



Road & Bridge Design Publications

Monthly Update – February 2013

Revisions for the month of **February** are listed and displayed below. Please contact Wayne Pikka (pikkaw@michigan.gov) for questions regarding the road changes. Contact Vladimir Zokvic (zokvicv@michigan.gov) for questions related to the bridge changes.

Standard Plans & Special Details

The special detail index was updated to account for recent standard plan approvals. The distribution letter explaining the changes and the inserts used to keep a hard copy of the standard plan booklet up to date can be found at:

http://mdotwas1.mdot.state.mi.us/public/design/files/englishstandardplans/files/standard_plan_distribution.pdf

The new standard plans have been placed on the website.

Road Design Manual

1.02.03: Vicinity Maps: The language involving the necessity of vicinity maps was revised to a more permissive “may be included.” Also, the vicinity map may be combined with the drainage map.

9.02.02: Private Utility Relocation Policy: A reference to Chapter 9 was revised to Chapter 14.

9.02.03: Plan Distribution Process for Utility Relocation: This section was deleted with the information moved to Chapter 14.26.

9.02.04: Including Utility Work in Contracts: A reference to Chapter 9 was eliminated, section B5 was revised, and steps for the project manager were relocated and renumbered.

9.02.05: Utility Status Report Certification: This section was deleted. The information was moved to Chapter 14.39.

9.03.03: Utilities on Plans: A reference to SUE was added and a contact was revised.

9.04.09: Subsurface Utility Engineering (SUE): This is a new section which was moved from Chapter 14.17.



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14.16: Request for Utility Information: Utility Coordination information was moved to Chapter 14.25 and the section updated to current practice.

14.17: Subsurface Utility Engineering: This section was deleted. The information was moved to 9.04.09.

14.26: Distribution of Preliminary Plans to Utilities and Utility Coordination Meeting: Utility Coordination information was added and the section updated to current practice.

14.34: Utility Meeting: This section was deleted. The information was moved to Chapter 14.26.

14.39: Utility Status Report Certification: The title of this section was revised and the section updated to current practice.

Updates to MDOT Cell Library, Bridge Auto Draw Program, etc., may be required in tandem with some of this month's updates. Until such updates to automated tools can be made, it is the designer's/detailer's responsibility to manually incorporate any necessary revisions to notes and plan details to reflect these revisions.

Index to Special Details

2-19-2013

⑥

SPECIAL DETAIL NUMBER	NUMBER OF SHEETS	TITLE	CURRENT DATE
21	2	GUARDRAIL AT INTERSECTIONS	5-24-01
24	5	GUARDRAIL ANCHORED IN BACK SLOPE TYPES 4B & 4T	7-22-02
R-99-B	2	CHAIN LINK FENCE WITH WIRE ROPE	11-1-00
R-126-I	5	PLACEMENT OF TEMPORARY BARRIER	3-26-12
<p style="text-align: center;">* Denotes New or Revised Special Detail to be included in projects for (beginning with) the May letting.</p> <p>Note: Former Standard Plans IV-87, IV-89, IV-90, and IV-91 Series, used for building cast-in-place concrete head walls for elliptical and circular pipe culverts, are now being replaced with plans that detail each specific size. The Municipal Utilities Unit will provide these full sized special details for inclusion in construction plans for MDOT jobs. To assure prompt delivery, requests must be made in advance.</p> <p>Former Standard Plans IV-93 and IV-94 series have been replaced with precast concrete box & three-sided culverts as per the 2012 Standard Specifications for Construction.</p>			

Index to Bridge Detail Sheets

2-19-2013

⑦

DETAIL NUMBER	NUMBER OF SHEETS	TITLE	CURRENT DATE
EJ3Z	1 or 2	EXPANSION JOINT DETAILS	6-8-11
EJ4M	1 or 2	EXPANSION JOINT DETAILS	6-8-11
PC-2G	1	70" PRESTRESSED CONCRETE I-BEAM DETAILS	3-31-06
PC-4E	1	PRESTRESSED CONCRETE 1800 BEAM DETAILS	3-31-06
PC-1L	1	PRESTRESSED CONCRETE I-BEAM DETAILS	7-12-06
<p>* Denotes New or Revised Special Detail to be included in projects for (beginning with) the May letting.</p>			
Note:	<p>Details EJ3Z & EJ4M are interactive, i.e. designers and detailers choose details based upon railing type and angle of crossing. Place all details appropriate for the project, structure specific information, and the Expansion Joint Device quantity on the sheet. The sheet shall then be added to the plans as a normal plan sheet.</p> <p>Detail PC-1L, PC-2G and PC-4E shall have structure specific information and quantities added to the sheet. The sheet shall then be added to the plans as a normal plan sheet.</p>		

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1.02.03 (revised 2-19-2013)

Vicinity Maps

A vicinity map may be included for projects involving new route locations or significant right-of-way acquisitions. The map may be drawn to any recognized scale which is at least 750 scale (1"=750'), that permits showing the entire project on one plan sheet, whenever possible. A scale smaller than 750 scale is not recommended because of its inability to display detail.

The vicinity map should show the centerline, right-of-way limits, and important topographic features such as: county roads, city limits, lakes, rivers, railroads, drainage courses, etc. The map should also show section corners, 1/4 corners, section numbers and lines, and the township and range. A north arrow should always be included.

The vicinity map may be combined with the drainage map at the discretion of the Designer.

1.02.04 (revised 11-28-2011)

Drainage Maps

The drainage map should show ditch lines using arrows to show the direction of flow, culverts, bridges, etc., for both existing and proposed conditions. Drainage structure sizes, both upstream and downstream, should also be shown. Show all county drains within the project limits.

When a drainage course is a county drain, it should be indicated on the plans and drainage sheet. If the survey does not indicate the information, check with the MDOT Drainage Coordinator (Supervising Engineer – Utilities, Drainage & Roadside Section) in the Design Division

An additional drainage sheet may be required on urban projects showing existing sewers and structures. Upon completion of the drainage design, proposed sewers, structures, and their quantities may be added to this sheet.

The drainage map should also include the following items or information:

- The direction of flow for all existing and proposed ditches, drains, sewers and culverts
- North Arrow
- Names of streets, highways, county roads, railroads, rivers, etc.
- Outline of the proposed road
- Tabulation of drainage data for all culverts 30" or greater in diameter
- Drainage districts

For small or intermediate sized culverts the tabulation only needs to include design runoff and the drainage area. Drainage areas which are equal to or greater than 2 square miles require a more elaborate tabulation. (See *MDOT Drainage Manual* Section 5.3.4 for information on this tabulation.)

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CHAPTER 9

INDEX

UTILITIES

9.01 REFERENCES

9.02 MUNICIPAL AND PRIVATE UTILITY RELOCATION POLICIES AND PROCEDURES

- 9.02.01 Municipal Utility Relocation Policy
 - A. General Information Applying to All Municipal Utilities
 - B. Water Main Relocation Costs and Betterments
 - C. Water Main Relocation Studies

- 9.02.02 Private Utility Relocation Policy

9.02.03 Section Deleted

- 9.02.04 Including Utility Work in Contracts
 - A. General
 - B. Procedures

9.02.05 Section Deleted

9.03 DESIGN GUIDELINES

- 9.03.01 Utility Poles and Light Standards
 - A. General Considerations
 - B. Authorization
 - C. Clarification of Terms Used in Guidelines
 - D. Lateral Offset Guide
 - E. Light Standard Details

- 9.03.02 Municipal Utility Alterations and Notifications of Utility Design Units

- 9.03.03 Utilities on Plans

- 9.03.04 Section Deleted

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CHAPTER 9 UTILITIES INDEX (continued)

9.04 MISCELLANEOUS

- 9.04.01 Utility Trenches
- 9.04.02 Overhead Power Lines
- 9.04.03 Permit Applications
- 9.04.04 Temporary Utility Hook-Ups
- 9.04.05 Water Main Appurtenance
- 9.04.06 Gas Main Relocation Policy under Pavement Widening and Reconstruction
- 9.04.07 Sanitary Sewers and Water Mains
- 9.04.08 Sanitary Sewer Leads to Houses
- 9.04.09 Subsurface Utility Engineering (SUE)

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9.02.01C (continued)

Municipal Utility Relocation Policy

If the final joint (Region/TSC and Municipal Utilities Unit) recommendation is to relocate the facility, and said relocation costs have been programmed, design plans for the relocation will be developed by the Municipal Utilities Unit.

However, if the final joint recommendation is to relocate and the **costs have not been programmed**, a decision by the Region will be required. Their decision shall be based on all pertinent data, including the perceived advantages/disadvantages of each option, plus their ability to reallocate Region funds for this purpose. Failure of the Region to reallocate funds will result in only relocating utilities in direct construction conflict with the construction project. For further information refer to Guidance Documents 10086 and 10087.

9.02.02 (revised 2-19-2013)

Private Utility Relocation Policy

Private utilities are those utilities that are individually owned or owned by groups of individuals and stockholders. Private utilities normally provide communication services (telephone, cable TV, etc.), electric service, gas and oil.

Private utilities may be located within trunkline right-of-way, by permit issued by the Department. Act 368, Public Acts of 1925 allows private and Municipal Utilities use of the right-of-way by obtaining permission in the form of a permit issued by the Department. If conflicts between private utilities and a trunkline improvement project exist, relocation or adjustment of the utility is at the utility company's expense as stated in Act 368, Public Acts of 1925. However, if a utility company has right of occupancy in its existing location, they may meet the eligibility requirements for reimbursement.

9.02.02 (continued)

It may be possible for the Designer to make adjustments or changes to the plans to avoid or reduce conflicts. This may eliminate or reduce the relocation costs. Every effort should be made to minimize utility conflicts while maintaining the integrity of the construction project.

Possible utility conflicts should be investigated early in plan development. Coordination between the Designer, the TSC Utility Coordinator and the Utilities Coordination & Permits Section of the Development Services Division is very important. Plans are to be distributed to the utility companies as described in Chapter 14 Sections 14.16 and 14.26.

9.02.03

Section deleted.

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9.02.04 (revised 2-19-2013)

Including Utility Work in Contracts

The Utilities Coordination & Permits Section of the Development Services Division established a procedure for billing utility companies for expenses incurred as part of a construction project. The Designer should be aware of this procedure as it includes information on which items may be reimbursable.

A. General

Utility companies occupying trunkline right-of-way by virtue of Act 368, P.A. 1925, and the Michigan Department of Transportation's Utility Accommodation Policy are subject to relocating their facilities at their expense if a conflict exists due to a Department project. If during the preliminary design and utility coordination meetings it is determined that the Department can make adjustments to its plans which would allow either the utility company's facilities to remain in place or reduce their relocation cost, efforts should be made to do so if the overall Department project is not affected. If the utility company is located in MDOT right-of-way by permit, costs incurred by the Department to revise its plans in order to accommodate a utility company are billable to that utility company. Such adjustments will require coordination and concurrence with the Utilities Coordination and Permits Section of the Development Services Division.

9.02.04A (continued)

Utility companies with facilities that have manholes within the roadway are responsible for adjusting these manholes if required by the project. Most utility companies will adjust their own manholes during the course of the project which will require a Notice to Bidders - Utility Coordination in the proposal. However, provisions may be made at the utility company's request to include adjustment of their manholes in the work items of the project. Including manhole adjustments or any other utility work or project re-design costs, will be charged to the utility.

Municipal utilities shall not be charged any relocation costs due to project conflicts within their corporate limits except as provided for in the water main relocation policy. (See [Section 9.02.01B](#)) If they are operating outside their corporate limits, relocation costs would be at their expense and any chargeable project expenses are to be administered through the Governmental Coordination Engineer.

The Governmental Coordination Engineer is to be contacted if a project involves relocation of municipal utilities or chargeable expenses are incurred and the municipal utility is operating outside the corporate limits of the municipality.

An agreement shall be required in the event chargeable expenses are involved.

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9.02.04 (continued)

Including Utility Work in Contracts

B. Procedures

This procedure shall be used when work on behalf of a non-municipal utility is to be performed by MDOT contractor during construction. Upon a mutual agreement between a utility and MDOT, work items are incorporated in MDOT road and/or bridge construction projects and charged to the utility.

Note: Municipal utility work shall be coordinated with the MDOT Design, Municipal Utility Section.

Example work items that may be chargeable to a utility through this process include adjustment of utility manholes, existing facility removals, supporting utility poles, and utility bridge attachments.

Project Manager / TSC Utility Coordinator

1. Convene a meeting with the TSC Utility Coordinator, Project Manager (PM), and each utility to determine whether any work on behalf of the utility shall be included in the project. The following utility coordination issues shall be discussed:
 - Proposed construction schedule
 - Type of work required
 - Plan Completion Date

Project Manager

2. Ensure the agreed upon utility work is included in the plans and appropriate contract documents.

9.02.04B (continued)

3. Complete Utility Charge Estimate, ([Form 0223](#)). See Utility Charge Estimate example.

Note: When the total estimated cost of the utility work is less than \$1,000, MDOT shall not charge the utility. MDOT shall incorporate the utility work into the project at no cost to the utility. If a pay item(s) is not federally participating, it shall be funded 100% by MDOT.

4. Send [Form 0223](#) to TSC Utility Coordinator if the total estimated cost of the utility work is greater than \$1,000 and less than \$100,000. The appropriate plan sheets that indicate or illustrate that the utility work has been included in the project shall also be sent, if available.

Note: For costs greater than \$100,000, an individual agreement shall be required. The PM shall contact MDOT Development Services Division - Agreements Section to initiate this request.

5. Receive copy of [Form 0223](#) and Utility Approval Letter (see example of Utility Approval Letter) or notification of utility denial from TSC Utility Coordinator.

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9.02.04B (continued)

Including Utility Work in Contracts

6. Develop a special provision that covers any utility work to be completed by the MDOT contractor. See example of Special Provision for Utility Work. The pay item shall be established as a lump sum pay item, with an established maximum based on the line titled as "Maximum Contract Bid Amount (125% of Subtotal)" from [Form 0223](#).

Note: The maximum contract bid amount is not the "Total Maximum Charge to the Utility."

Note: Lump sum pay item(s) for utility work are the preferred method. However, per unit pay item(s) can be considered for items of work that are not suitable as lump sum.

Note: When the utility work involves asbestos removal and disposal, contact Construction Field Services Division, Specifications Section to obtain the special provision. The special provision informs the contractor that the measurement and payment are as stated in the Special Provision for Utility Coordination and Utility Work.

7. Establish a separate non-federally participating category in Trns-port for each utility.
8. Ensure MPINS reflects the utility funding.

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9.02.05

Section deleted.

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9.03.02 (revised 12-22-2011)

Municipal Utility Alterations and Notification of Utility Design Units

Municipal Utility alterations are most often designed by the Utilities, Drainage, and Roadside Section of the Design Division. The most common alterations are designed by the Municipal Utility (water main and sanitary sewers), Hydraulics (drainage and storm sewer cost participation), and the Electrical (freeway lighting) Design Units. Close coordination between the Road or Bridge Design Unit and the Utility Design Units is needed.

The designer must inform the Utilities, Drainage, and Roadside Section of possible involvement early in the project design. After a scope verification meeting is held and plans are developed sufficiently to identify possible utility involvement, a set of prints should be sent to the appropriate Utilities, Drainage and Roadside Section Design Unit. This informs that particular design unit of their possible involvement and establishes a contact that should continue as the project progresses.

9.03.03 (revised 2-19-2013)

Utilities on Plans

All available utility information should be in the plans as soon as it becomes available. This information may be from survey, old plans, a Subsurface Utility Engineering (SUE) consultant, and/or information provided by the utilities. Approximate location, size and type of utility should be indicated. The names of the utility companies and contact information by Control Section may be obtained from the TSC Utility Coordinator.

All utilities carrying dangerous, hazardous, or critical materials should be flagged on all plan sheets where the utility is shown. A boxed in note in bold letters should be connected to all high voltage lines, gas and oil lines, and to other lines carrying critical materials. These may include fiber optics, water transmission lines 36" and larger, asbestos cement pipes, and so forth. Acceptable examples of such flags are: "Hazardous", "Flammable Material", or "Caution-Critical Underground Utility". Refer to the Road Sample Plans.

All plans involving any excavation should include the "Miss Dig" note. "Miss Dig" provides a central source of information regarding the location of underground utilities throughout the state. Most underground utilities participate in the "Miss Dig" system but the note on plans should carry a disclaimer. The note reads or is similar to the following:

For protection of underground utilities, the Contractor shall dial 1-800-482-7171 a minimum of 72 hours (three working days excluding Saturdays, Sundays, and Holidays) prior to excavating in the vicinity of utility lines. All "Miss Dig" participating members will thus be routinely notified. This does not relieve the Contractor of the responsibility of notifying utility owners who may not be a part of the "Miss Dig" alert system.

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9.04.07 (continued)

Sanitary Sewers and Water Mains

The Design Unit is reminded to use the appropriate trench details shown on Standard Plan R-83-Series, and to determine from the current specifications for City of Detroit sewers, the premium joint type. The size of sewer, along with the type and quantity of premium joints should be included in the proposal.

Communities other than City of Detroit -

On projects that require rebuilding or relocating sanitary or combination sewers, premium joints are required, the quantity and size of sewer and the type of joint should be shown in the proposal. A special provision will be required for special items.

9.04.08

Sanitary Sewer Leads to Houses

On projects where sanitary sewer house leads are encountered, some disposition of the existing sewer usually has to be made. This may entail reconstructing the lead, bulkheading and abandoning the lead, or just bulkheading the lead.

9.04.09 (added 2-19-2013)

Subsurface Utility Engineering (SUE)

SUE is defined as a branch of engineering practices that involves managing certain risks associated with utility mapping at appropriate quality levels, utility coordination, utility relocation design and coordination, utility condition assessment, communication of utility data to concerned parties, utility relocation cost estimates, implementation of utility accommodation policies, and utility design. [American Society of Civil Engineers (ASCE) Standard 38-02]

This section addresses basic information about SUE. It also provides general guidelines to assist the TSC Utility Coordinator and the Project Manager with determining whether or not SUE contracted services shall be considered for a particular project. It is not intended to be an all-encompassing document or to replace sound engineering judgment, which is the basis for deciding whether or not to use SUE.

Funding for SUE contracted services are typically funded from the project's design phase budget. It is recommended that an evaluation on the merits of applying SUE be done early during the project's scoping or design phase so that appropriate funding, if needed, may be allocated. The earlier the need for SUE services are identified, the better these services may be coordinated during the project's design phase.

If the need for SUE contracted services are determined prior to the development of the design scope of work it is recommended that SUE services be included as part of that scope. This is particularly beneficial on consultant design projects where the prime consultant is then responsible for both the design and SUE services. This tends to enhance coordination of these functions during the project's design phase.

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9.04.09 (continued)

Subsurface Utility Engineering (SUE)

All SUE providers shall be selected from MDOT's SUE prequalification list.

The following guidelines provide items to consider when making a determination of whether to consider using SUE for a given project. It is not intended to be all inclusive.

- Impact of encountering unknown subsurface utility conflicts during construction
- Impact of encountering inaccurately located subsurface utilities presents a high probability for delay of the projects completion schedule, and/or may increase contractor cost
- Critical nature of project progress schedule and/or completion date
- Potential safety risks involved with the project as it relates to subsurface utilities present
- Type and amount of subsurface utilities present

SUE may be applied to varying degrees on a project depending on the situation. A project may include one or multiple utility quality levels depending on the risk factor associated with each subsurface utility. Subsurface utility data evaluation is an important part of the utility coordination and SUE process. The following section provides issues to consider when determining what specific quality level to choose.

Utility Quality Levels - A professional opinion of the quality and reliability of utility information. Such reliability is determined by the means and methods of the professional. Each of the four existing utility data quality levels is established by different methods of data collection and interpretation. (ASCE Standard 38-02)

9.04.09 (continued)

Utility Quality Level D - Information derived from existing records or oral recollections. (ASCE Standard 38-02)

Utility Quality Level C - Information obtained by surveying and plotting visible above-ground utility features and by using professional judgment in correlating this information to quality level D information. (ASCE Standard 38-02)

Utility Quality Levels D and C are typically used on almost all MDOT construction projects. Both involve contacting utility owners and obtaining available utility records. They may also include a site visit to survey visible surface features that may be used to verify utility records.

Utility Quality Levels D and C are typically suitable when a project has only a few subsurface utilities, their location is fairly well known, and there is not much risk in only using available utility records provided by the utilities.

Utility Quality Level B - Information obtained through the application of appropriate surface geophysical methods to determine the existence and approximate horizontal position of subsurface utilities. Utility Quality Level B data shall be reproducible by surface geophysics at any point of their depiction. This information is surveyed to applicable tolerances defined by the project and is reduced onto plan documents. (ASCE Standard 38-02)

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9.04.09 (continued)

Subsurface Utility Engineering (SUE)

Utility Quality Level B, also referred to as “designating”, involves the horizontal mapping of subsurface utilities to a projects survey control. Obtaining Utility Quality Level B information is a good idea to consider when the project owner does not want to take any chances. It is suggested that Utility Quality Level B information be considered for those subsurface utilities that have discrepancies or may impact the project if not in the exact or close to the position shown. Once the Utility Quality Level B information is obtained it is compared with the project plans to identify conflicts. Obtaining Utility Quality Level B information shall also be considered when:

- Discrepancies are apparent between what is shown on utility records and what is represented in the field
- The project involves lots of utilities and/or the utility owners are unsure of their location
- An adverse effect on the project could be caused by utilities that are not shown accurately on the records
- Impact of delay based on horizontal location received from utility records may cause the project to miss a critical project completion date
- It is suspected that there are more utilities in the project limits than what are shown and/or received from utility records
- It is suspected that there are buried structures (tanks and/or foundations) not shown on drawings

9.04.09 (continued)

Utility Quality Level A - Precise horizontal and vertical location of utilities obtained by the actual exposure (or verification of previously exposed and surveyed utilities) and subsequent measurement of subsurface utilities, usually at a specific point. Minimally intrusive excavation equipment is typically used to minimize the potential for utility damage. Precise horizontal and vertical location, as well as other utility attributes, is shown on plan documents. Accuracy is typically set to 15-mm (approximately 5/8”) vertical and to applicable horizontal survey and mapping accuracy as defined or expected by the project owner. (ASCE Standard 38-02)

Utility Quality Level A, also referred to as “locating”, involves using non-destructive excavation techniques for example, air-based vacuum excavation to expose the subsurface utility and then obtain its precise horizontal and vertical position. It is important to consider using Utility Quality Level A when any of the following condition exists:

- A subsurface utility could have a major impact on the project and thus knowing the exact position is critical
- Precise vertical location of subsurface utilities is critical to a design feature of the project. This often occurs when modifying a design in order to leave a utility in its current location
- Proposed grade changes may require subsurface utility relocations or cause a utility to have insufficient cover
- There is a possibility that subsurface utilities vertical elevations could be inaccurate
- Impact of delay, based on vertical location received from utility records, may cause the project to miss a critical project completion date

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CHAPTER 14 PROCEDURES FOR PLAN PREPARATION INDEX (continued)

14.12 REQUEST FOR SURVEY / MAPPING

14.12.01 Road

14.12.02 Bridge

14.13 PROJECT AREA CONTAMINATION SURVEY

14.14 REVIEW / REVISE PPMS NETWORK

14.15 CHANGE REQUEST (REVIEW OF PROJECT SCOPE, COST AND SCHEDULE)

14.16 REQUEST FOR UTILITY INFORMATION

14.17 Section Deleted

14.18 PAVEMENT DESIGN

14.19 REQUEST FOR PAVEMENT CORES / SOIL BORINGS

14.20 RECEIPT OF SURVEY / MAPPING DATA

14.21 BRIDGE REVIEW

14.21.01 Review by Bridge Design

14.21.02 Historic Bridges

14.21.03 Bridge Loading and Underclearance Review

14.21.04 Special Structures / Footing Design

14.22 RAILROAD COORDINATION

14.23 REQUEST FOR TRAFFIC VOLUMES

14.24 REQUEST FOR CRASH ANALYSIS AND SAFETY REVIEW

14.25 REQUEST FOR SPECIAL SOILS INVESTIGATIONS AND / OR DESIGNS

14.26 DISTRIBUTION OF PRELIMINARY PLANS TO UTILITIES AND UTILITY COORDINATION MEETING

14.27 VALUE ENGINEERING

14.28 REQUEST FOR PRELIMINARY MAINTAINING TRAFFIC

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CHAPTER 14 PROCEDURES FOR PLAN PREPARATION INDEX (continued)

14.29 PRELIMINARY GEOMETRIC REVIEW FOR NON-FREEWAY RECONSTRUCTION / NEW CONSTRUCTION (4R) AND FREEWAY RESURFACING, RESTORATION, REHABILITATION AND RECONSTRUCTION / NEW CONSTRUCTION (3R/4R)

14.30 PRELIMINARY CONSTRUCTABILITY REVIEW

14.31 ENVIRONMENTAL REVIEW AND CLEARANCE

14.31.01 Environmental Classification

14.31.02 Environmental Certification

14.32 MDOT ENVIRONMENTAL PERMITS

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14.34 Section Deleted

14.35 FINAL ROW SUBMITTAL

14.35 THE PLAN REVIEW

14.36.01 Requirements

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14.37 REVIEW OF PROJECT SCOPE, COST AND SCHEDULE

14.38 ROW REVISIONS

14.39 UTILITIES STATUS REPORT CERTIFICATION

14.40 MDEQ PERMITS FOR SEWER AND WATER MAINS

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14.15

CHANGE REQUEST (REVIEW OF PROJECT SCOPE, COST AND SCHEDULE)

Once the scope has been verified, any changes in cost, limits, work, schedule or funding should be submitted to the appropriate System Manager or Statewide Transportation Planning Division. This is done with a Project Authorization/Program Revision Request form (2604) either through MPINS or by paper. The guidelines for which is to be used are as follows:

- Any request to set up a new project or establish a new phase must be submitted through the paper process.
- Any request to delete either a project or a currently programmed phase must be submitted through the paper process.
- Any complex multiple project changes should be submitted through the paper process. This would include any splits, combines, transfers of road work or structures from one job to another.
- Any change to a currently programmed phase that is not of the type indicated in the first 3 above, may be submitted electronically through MPINS.
- Any general project information changes to currently programmed projects may be submitted electronically through MPINS.

If a revision to a project includes requests for items which may be submitted electronically and items which must be submitted through the paper process, the requests should be combined and processed through the paper process.

14.16 (revised 2-19-2013)

REQUEST FOR UTILITY INFORMATION (PPMS Task Description 3610) (PPMS Milestone 311M)

This process outlines the responsibilities and procedures for gathering utility information early in a project's design phase. Gathering utility information typically occurs after the project scope verification has been completed. For this procedure, utility is defined as any type of private, public, municipal, or county drain commission facility that is within or near the limits of the proposed construction project.

Capital preventive maintenance and pavement marking projects are examples of projects that do not require plan distribution to utilities. The project must not include any guardrail work or any work beyond the outside edge of the shoulder, or require any excavation, trenching, boring, etc., into the aggregate base or subbase material. The Project Manager shall evaluate each project and use discretion on whether plans need to be distributed for utility coordination.

Subsurface Utility Engineering (SUE) projects that use a consultant to provide the underground utility information may not need to follow this entire procedure. The Project Manager may need to coordinate this request for utility information with the SUE vender.

Procedure Project Manager

1. Contact the TSC Utility Coordinator to request Letter Requesting Utility Information at Base Plan Stage, (Form 2480). Provide the following information:

- Project Location
- Scope of Work
- Control Section(s)
- Job Number(s)
- Proposed Plan Completion Date
- Consultant Information

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14.16 (continued)

REQUEST FOR UTILITY INFORMATION

Note:

When project information exceeds the allowed space on Form 2480 an additional document shall be supplied by the Project Manager detailing this information. The applicable field(s) on Form 2480 shall state "see attached sheet" when this occurs.

2. Receive the Cover Letter and all Form 2480 letters within 7 working days from the TSC Utility Coordinator.
3. Review and sign Form 2480 letters
4. Send Form 2480 letters and plans to the utilities with courtesy copies to TSC Utility Coordinator.

Note:

Old plans, Right-of-Way maps, or MDOT Construction Base Plans are acceptable for sending to the utilities. The plans must provide the project's location and limits of work. Vicinity maps may be included for general information, but shall not be used as the sole project plans as they provide inadequate information for the utilities to plot their facilities. This includes log jobs that may affect a utility.

5. Receive returned Form 2480 and plans from the TSC Utility Coordinator

Note:

The TSC Utility Coordinator will follow-up with non-responsive utilities and provide a status to the Project Manager.

6. Plot all utility facilities on the Preliminary Plans.

14.17

Section deleted.

14.18 (revised 3-26-2012)

PAVEMENT DESIGN

After the scope verification meeting, the Project Manager should determine the estimated pavement costs of the project. Depending on the type of work and estimated cost, a Life Cycle Cost Analysis (LCCA) may be required. This along with the actual pavement design will be done by either the Region/TSC Pavement Design Engineer or the Operations Unit of the Construction Field Services Division – Pavement Operations. Those done by the Operations Unit must be submitted for approval to the Engineering Operations Committee (EOC). See [Section 6.01.06](#).

14.19

REQUEST FOR PAVEMENT CORES / SOIL BORINGS (PPMS Task Description #'s 3110 & 3510)

Most projects will require pavement core information, especially those involving pavement removal, rubblizing, crushing and shaping and/or cold milling. This information is useful not only in verifying the type of fix but also in assisting the Contractor in developing their bid prices. Pavement cores should be requested as soon as possible after the Scope Verification Meeting. The Project Manager should check with the Region/TSC involved to find out if cores were taken during the Call-for-Projects process.

When requesting pavement cores the Project Manager should include the following:

- Set of plans
- Description of what information is needed
- Desired location
- A target date when the information is needed

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14.26 (revised 2-19-2013)

DISTRIBUTION OF PRELIMINARY PLANS TO UTILITIES AND UTILITY COORDINATION MEETING (PPMS Task Description 3660) (PPMS Milestone M361)

Preliminary plan distribution to utilities shall be completed whether or not utility conflicts have been identified. It is important to provide preliminary plans because it allows the utilities an opportunity to review the proposed project, to ensure facilities are plotted accurately, and provides notification to relocate facilities in conflict.

Distribution of preliminary plans, and the Utility Coordination Meeting if necessary, typically occurs after THE Plan Review Meeting and before the Omissions and Errors Check (OEC) Meeting. The TSC Utility Coordinator and the Project Manager shall work together to determine if a particular project warrants scheduling a Utility Coordination Meeting. Some projects may not require a Utility Coordination Meeting while others may require several meetings. Those invited usually include:

- TSC Utility Coordinator
- Project Manager
- Private/Public utilities
- Municipalities
- Road Commissions
- Design Team key members
- Design Consultant representatives
- MDOT construction team members

The preferred method for preliminary plan distribution is to send separate letters to public/private and municipal utilities that address the following:

14.26 (continued)

- The Letter to Public/Private Utilities at Preliminary Plan Stage, (Form 2481) includes the following:
 - References Public Act (PA) 368 of 1925 entitled Highway Obstructions and Encroachments; Use of Highway by Public Utilities
 - Gives legal notification to relocate
 - Authorizes preliminary engineering for reimbursable relocations
- The Letter to Municipal Utilities at Preliminary Plan Stage, (Form 2482) is used because MDOT may be responsible for the relocation costs associated with municipal utility relocations within their corporate limits. This may require MDOT to complete the following:
 - Perform the relocation design
 - Include relocation work in the project plans
 - Formalize an agreement

If Forms 2481 and 2482 are not sent to the utilities, the Utility Coordination Meeting Invitation letter must cite PA 368, authorize preliminary engineering, provide relocation reimbursement information, and be accompanied by preliminary plans.

Procedure

Project Manager

1. Send preliminary plans to the TSC Utility Coordinator for distribution to utilities.
2. Complete a preliminary assessment of utility issues and conflicts with the TSC Utility Coordinator and Design Team.

Note:

It may be beneficial to have a conflict list and special plans with cross section details for use as presentation tools to the utilities.

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14.26 (continued)

DISTRIBUTION OF PRELIMINARY PLANS TO UTILITIES AND UTILITY COORDINATION MEETING

3. Participate in the Utility Coordination Meeting if scheduled. The meeting shall discuss the following topics:

- Introductions
- Project Summary
 - Plan completion date
 - Letting Date
 - Construction start date
- Key work areas that potentially involve utility conflicts
- Municipal utilities
 - Relocations
 - Plan and specifications preparation
 - Betterments
- Review entire project using one of the following methods:
 - Review the project utility by utility with each utility taking a turn to describe issues and concerns over the entire project.

Note:

If a utility only has minor involvement in the project, or has other schedule commitments the utility's involvement shall be discussed early in the meeting.

- Review the plans sheet by sheet. Each utility takes a turn describing involvement and concerns for each sheet.

Note:

The TSC Utility Coordinator shall act as a facilitator and a resource for utility relocation policies/procedures in helping the utilities and Design Team work through the various utility issues and arrive at mutually agreeable resolutions to utility conflicts.

4. Receive meeting minutes from the TSC Utility Coordinator.

5. Ensure any required changes to the plans are made prior to OEC.

14.27 (revised 5-29-2012)

VALUE ENGINEERING (PPMS Task Description 3375)

A. Definitions

Value Engineering (VE) - A systematic multi-disciplined team review of function, cost and worth. The VE study identifies where these elements are out of balance and develops alternatives to increase value in a product or service by accomplishing the same function more effectively. VE is not a "cost reduction" which saves money by reducing the function of the project.

Applicable VE Project - A portion of highway that is proposed for construction, reconstruction, or improvement as described in the preliminary design report or applicable environmental clearance document. A project may consist of several job numbers/contracts or phases over several years.

Estimated Total Cost of a Project - The estimated cost of the project includes the cost of all phases of a project including environment, design, right-of-way, utilities and estimated construction cost based on final design.

Road Projects VE Study Cost Threshold - VE studies are required on all road projects that have a total greater than \$25 million. If any part of the environmental clearance document is contracted, it must have a VE study even if the cost of that work is less than \$25 Million. VE studies may also be conducted for projects when it is determined that a VE study may be beneficial to the project.

Bridge Project VE Study Cost Threshold - A project is considered a bridge project if the majority of the cost/work is related to bridge work. VE studies are required on all bridge projects that have a total cost greater than \$20 million. If any part of the environmental clearance document is contracted, it must have a VE study even if the cost of that work is less than \$20 Million.

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14.33 (revised 3-26-2012)

PRELIMINARY ROW SUBMITTAL (PPMS Task Description #3361) (PPMS Milestone 331M)

Preliminary Right of Way plans are developed for use by the Development Services Division to: conduct title searches and preliminary appraisals, assign parcel numbers, and prepare the ownership sheet. Preliminary ROW plans should be submitted at least 6 months prior to the Final ROW due date. An estimated number of parcels affected must be entered in the PPMS network to establish the task duration.

The Project Manager initiates the review process by completing and submitting Preliminary ROW Plans Submittal (Form 0271). This form includes distribution and attachment requirements.

Additional information on preliminary ROW plans and plan requirements can be found in Sections 5.16, 5.17 and 5.18.

14.34

Section deleted.

14.35 (revised 3-26-2012)

FINAL ROW SUBMITTAL (PPMS Task Description #3581) (PPMS Milestone 361M)

The scheduled Final ROW date is one of the most important deadlines that must be met. The signed Final ROW Plans and Authorization to Acquire ROW (Form 0271B) is the document that gives the Development Services Division the authorization to initiate acquisition activities. The design plans must have enough detail and review to have reached a point where the designer is reasonably assured that the ROW being requested will not be changed except for minor design revisions to accommodate the actual acquisition. Form 0271B includes distribution and attachment requirements.

NOTE: On large projects, it may be desirable to have an informal plan review with representatives from the Project Development and Control Section of the Development Services Division, the Region Real Estate Agent and the Design ROW Engineer in Quality Assurance prior to the formal ROW submittal. This may help avoid future revisions and ensure that the Development Services Division is receiving all the information it needs.

Additional information on final ROW plans including plan content requirements can be found in Sections 5.16, 5.19 and 5.20.

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14.38 (revised 3-26-2012)

ROW REVISIONS

ROW revisions occur only after final ROW is submitted, not between preliminary and final ROW submittals. Revisions should be processed whenever changes in proposed ROW occur or when changes in the design plans could affect the appraisal of and/or negotiations for a ROW parcel(s). ROW revisions are processed by submitting a completed Request to Revise ROW (Form [0271A](#)) to the Design ROW Engineer in Quality Assurance with the standard size reproducible(s) of the revised sheets and one print of each sheet with the revision circled in red. The Request to Revise ROW (Form [0271A](#)) should include a description of each revision. The Design ROW Engineer will review the plans and submit the ROW revision to the Development Services Division.

Revisions, unless originated by the Development Services Division, are strongly discouraged within six months of the letting date. If a revision is necessary within six months of the letting, consult with the Project Development and Control Section of the Development Services Division, or the Design ROW Engineer to determine the best method for processing the revision.

Additional information on ROW revisions can be found in [Section 5.21](#).

14.39 (revised 2-19-2013)

UTILITIES STATUS REPORT CERTIFICATION (PPMS Task Description 3660)

All projects require a utility certification prior to the contract award. The utility certification is comprised of the completion and inclusion of the Utilities Status Report (Form 2286), and the Notice to Bidders – Utility Coordination document if necessary, in the final plan/proposal package distributed for review at the Omissions and Errors Check (OEC) Meeting and later submitted to the Specifications and Estimates Unit for processing prior to advertisement.

Form [2286](#) informs project bidders and the awarded contractor of utility impacts and/or coordination requirements that can be expected. Utility impacts will be described using the following four categories as indicated on Form [2286](#):

- Relocation work identified
- Utility to relocate prior to start date
- Notice to Bidders - Utility Coordination
- Work included in contract

A Notice to Bidders - Utility Coordination document shall be used when one of the following conditions applies:

- There is contract work which will need to be coordinated with a utility's work. The document describes in detail the coordination effort necessary.
- There may be utility facilities that could affect normal contractor operations and/or scheduling. The document includes additional information that may be useful to the contractor.

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14.39 (continued)

UTILITIES STATUS REPORT CERTIFICATION

Procedure

Project Manager

1. Request preliminary Form 2286 and Notice to Bidders - Utility Coordination from the TSC Utility Coordinator in preparation for the Plan Review Meeting mailing.

Note:

If no utility involvement in the project, the TSC Utility Coordinator may provide the final Form 2286 and Notice to Bidders - Utility Coordination.

2. Request final Form 2286 and Notice to Bidders - Utility Coordination after the Plan Completion Date in preparation for final plan turn-in .

14.40 (revised 3-26-2012)

MDEQ PERMITS FOR SEWER AND WATER MAINS (PPMS Task Description 3680)

Plans that include additions or changes to water mains, sanitary sewers or combination storm and sanitary sewers require a Michigan Department of Environmental Quality (MDEQ) permit. The Project Manager should contact the Design Engineer-Municipal Utilities as early as possible in the scope verification/plan development process when water mains or sanitary sewers are involved. The Municipal Utilities Unit will complete the required plan sheets and specifications, seal the plans (Licensed Professional Engineer) and make the distribution to any municipalities involved. The municipalities will request the permit from the MDEQ and return an approved copy to MDOT. If possible, a copy of the permit should be included in the proposal. For additional information see Section 9.04.07.