



# Road & Bridge Design Publications

Monthly Update – April 2014

Revisions for the month of **April** are listed and displayed below. The special detail index from **March** will remain in effect. Contact Wayne Pikka ([pikkaw@michigan.gov](mailto:pikkaw@michigan.gov)) for questions related to the road changes. Contact Vladimir Zokvic ([zokvicv@michigan.gov](mailto:zokvicv@michigan.gov)) for questions related to the bridge changes.

## Road Design Manual

1.02.03: Vicinity Maps: Revised the language in the second paragraph in regards to items on vicinity maps to a more permissive “might include”. Also, updated the location of the Drainage Coordinator in the Environmental Section of the Bureau of Highways.

1.02.05C: Notes, Charts, Legends, & Conventions: Revised the third paragraph to eliminate a statement regarding the concrete joint legend and instead include a general reference to see the “Road Sample Plans” for more details.

11.01.02: Overview: Revised the types of specs the Specifications Engineer maintains and the groupings that appear in a drop down menu for previously approved specs.

11.01.06: Location of Additional Information: Revised the location of additional information for supplemental specifications & special provisions and also provided a list of the “types” of additional information available there.

11.02.01F, G, & H: Types of Special Provisions: Added “ITS Approved”, “Real Estate Demolition”, and “Innovative Contracting” Special Provision sections to the types of special provisions section.

11.06.01: Special Provision Approval Procedure: Added four paragraphs and a flow chart dealing with approving Frequently Used Special provisions.

14.31.01: Environmental Classification (PPMS Task 3150): Added several paragraphs regarding Form 1775-LAP (Environmental Study for Project Classification).

## Bridge Design Guides

6.42.03A: Updated the haunch dimension location.

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.

# MICHIGAN DESIGN MANUAL

## ROAD DESIGN

### 1.02.03 (revised 4-21-2014)

#### Vicinity Maps

A vicinity map may be required 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 level of detail may vary as needed and might include some of the following items;

- centerline
- right-of-way limits
- topographical features such as county roads, city limits, lakes, rivers, railroads, drainage courses, etc.
- section corners, ¼ corners, section numbers and lines, township and range, north arrow

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

### 1.02.04 (revised 4-21-2014)

#### 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 in the Environmental Section of the Bureau of Highways.

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.)

# MICHIGAN DESIGN MANUAL

## ROAD DESIGN

### 1.02.05 (revised 4-21-2014)

#### Typical Cross Sections

Typical cross sections are included in plans to give a graphic display of the existing and proposed cross sections of the roadway. They also describe to the contractor where each typical section will apply. All integral parts of the roadway and the roadbed should be shown including: subbase, base, surfacing, shoulders, slopes, medians, barriers, curbs, gutters, ditches, sidewalks, and so forth.

#### A. Stationing

Only the alignment required to construct the project should be shown. Stationing should be continuous with no overlaps or gaps. Stationing for superelevated sections should include the superelevation transitions. Each different condition that cannot readily be shown on one typical section should have its own section. Stationing, where that section applies, should be shown under the section. An overall Right of Way dimension shall be included. The designer should ensure that the entire project has an appropriate typical cross section.

#### B. Scale

Typical cross sections should be drawn to a scale that will allow the typical to fill the width of the page. Show the scale (horizontal and vertical) in the title block.

For horizontal dimensions, use decimals, not feet and inches (only for fractional dimensions, example 12' not 12.00'; 2.5' not 2'-6"; 2.67' not 2'-8"). Vertical dimensions are typically in inches (example 18" not 1'-6" or 1.5').

### 1.02.05 (continued)

#### C. Notes, Charts, Legends, & Conventions

Typical section notes should be placed on the lower right corner of the first typical cross section sheet.

The HMA application chart shall be shown on the first typical cross section sheet which has an HMA section. This chart shall include: the HMA mix, the rate of application, the performance grade, and remarks.

All concrete typical sections should indicate the location of longitudinal joints required. For more details see the [Road Sample Plans](#).

#### D. Existing Typical Cross Section

Often, a separate existing typical cross section is needed to show the existing conditions and removals.

When the existing conditions are incorporated into the proposed cross section, they should be shown with dashed lines.

Typical sections should show pavement and shoulder slopes and grading or subbase slopes. Also, show existing and proposed crown point location.

# MICHIGAN DESIGN MANUAL ROAD DESIGN

## CHAPTER 11

### SPECIFICATIONS AND SPECIAL PROVISIONS

#### 11.01

#### GENERAL INFORMATION

##### 11.01.01

##### References

- A. Michigan Manual of Uniform Traffic Control Devices, Current Edition
- B. Standard Specifications for Construction, Current Edition
- C. 23 CFR 635
- D. FHWA Technical Advisory HAIM-20 March 20, 2010
- E. US Government Printing Office Style Manual
- F. BOH IM 1998-11; 2003-10
- G. Engineering Operations Committee Minutes June 6, 2002

##### 11.01.02 (revised 4-21-2014)

##### Overview

Specifications are documents that detail directions, provisions, and requirements for the work to be performed. Specifications provide a description of the work, construction methods, materials, and the method used to measure and pay for work items.

#### 11.01.02 (continued)

A designer's first choice should be to utilize the Standard Specifications and pay items already established that will not require the use or development of a special provision. If a standard specification and pay item does not exist to cover the necessary item of work, the designer should look for a special provision of the types listed herein that fit the situation or require only slight modification. If none of these sources covers the specific work, one could possibly be a starting point in developing a new special provision. As a last resort, the designer may need to write a new special provision to cover the necessary item of work.

The Specifications Engineer maintains the Standard Specifications for Construction, Supplemental Specifications, and Frequently Used, Previously Approved, Template, Recommended, **Real Estate Demolition, and Innovative Contracting** Special Provisions. These documents can be found at the MDOT web site links:

[2012 Standard Specifications for Construction](#)

[Supplemental Specifications](#)

[Frequently Used Special Provisions](#)

[Previously Approved Special Provisions](#) - A drop down box allows you to select the following groupings:

- ITS
- Templates
- Recommended
- Previously Approved
- **Real Estate Demolition**
- **Innovative Contracting**

# MICHIGAN DESIGN MANUAL

## ROAD DESIGN

### 11.01.03

#### Definitions

The following definitions are provided:

- A. Standard Specifications for Construction - The book of specifications approved for general application and repetitive use.
- B. Supplemental Specifications - Detailed specifications that add to or supersede the Standard Specifications for Construction.
- C. Special Provisions - Revisions and additions to the Standard and Supplemental Specifications which are applicable to an individual project and are shown on the web in the groupings listed herein.
- D. Pay Item - Term used to describe an item of work in the contract.
- E. Method of Measurement - The method used to measure material used or work done on a project. Measurement can be by the unit or lump sum, or included in the measurement for other items.

### 11.01.04

#### Order of Precedence

See subsection 104.06 of the [Standard Specifications for Construction](#) for the order of precedence if plan/proposal information differs or conflicts.

### 11.01.05 (revised 7-22-2013)

#### Roles and Responsibilities

The following definitions are provided to clarify the roles and responsibilities in relation to Special Provisions:

### 11.01.05 (continued)

- A. Project Manager - MDOT person responsible for the design phase of the project, including the development and review of special provisions for compliance with the special provision guidelines prior to submitting to Quality Assurance for review.
- B. Special Provision Author - Designer (MDOT or consultant) as determined by the Project Manager who drafts a special provision for a project. The Project Manager is the "author" of record for special provisions drafted by consultants.
- C. Special Provision Reviewer - A person(s) assigned by the Specifications Engineer to review and provide feedback on special provisions. Assignments are based on their technical knowledge.
- D. Specifications Engineer - Oversees the special provision review and approval process. Often performs the second review with an emphasis on conflicts with the Standard Specifications for Construction; use of appropriate pay items and general organization of the information. Also oversees determination of which special provisions will be placed on the various maintained lists.

### 11.01.06 (revised 4-21-2014)

#### Location of Additional Information

Additional information regarding supplemental specifications and, special provisions is available on the Design Division [Plan Development](#) web site including:

- [Frequently Asked Questions](#)
- [ProjectWise Unique SP Search](#)
- [Special Provision Technical Reviewers Listing](#)
- [Special Provision Training](#)
- [Special Provision Formatting Instructions](#)
- [Special Provisions using "Modified" or "Special"](#)
- [Tracking Changes Using ProjectWise and Microsoft Word for Special Provisions](#)

# MICHIGAN DESIGN MANUAL

## ROAD DESIGN

### 11.02

#### SPECIAL PROVISIONS

##### 11.02.01 (revised 4-21-2014)

#### Types of Special Provisions

Special provisions provide revisions and additions to the Standard and Supplemental Specifications which are applicable to individual projects. Use a special provision when work is required that is not covered by the Standard or Supplemental Specifications and a new pay item is needed and/or the construction method, the materials, and/or the basis of payment is revised.

The following sections describe a variety of Special Provision categories.

#### A. Frequently Used Special Provisions (FUSP)

Special provision used on a regular basis with stable requirements applicable to a number of projects. All FUSP's are reviewed and approved by MDOT and the FHWA.

#### B. Unique Special Provisions

Special provision written specifically to cover work not covered in the Standard or Supplemental Specifications for a specific project.

#### C. Template Special Provisions

An approved special provision with stable requirements but with project specific information left out to be added later by the Project Manager.

These special provisions have been standardized to cover an item of work but must be modified to fit a specific project. Some of these may be used without further review and some require review using the regular special provision review and approval process. To create a template special provision, an electronic copy must be sent to the Specifications Engineer. Designers should follow the instructions listed at the top of the template document and proceed accordingly.

### 11.02.01 (continued)

#### D. Recommended Special Provisions

An approved special provision containing requirements thought to provide the best results for a specific type of work or construction practice.

The majority of these have been developed by reviewing duplicate special provisions approved for use over several years and selecting the best practices and incorporating them into a single special provision which is posted to the website as Acrobat Adobe (pdf) file. In order to provide continuity in the specifications for similar work and to make more efficient use of the review and approval process, designers are asked to use the recommended special provisions whenever possible. Recommended special provisions are intended to be used without revision and no further review and approval is required.

#### E. Previously Approved Special Provisions

Unique project specific special provision that has been reviewed and approved for use in one project yet may be used on other projects without change or as a starting point for a new special provision.

Use these documents whenever possible to reduce the variation in descriptions of work, construction and measurement and payment for similar items of work.

# MICHIGAN DESIGN MANUAL ROAD DESIGN

## 11.02.01

### Types of Special Provisions

#### **F. ITS Approved Special Provisions**

These are special provisions developed and approved for use on Intelligent Transportation System projects. These special provisions are written and reviewed by the ITS Program Unit and only reviewed for format as part of the regular review process. These special provisions are added to or removed from the list by the ITS Program Unit.

#### **G. Real Estate Demolition Special Provisions**

Occasionally it is necessary to place the demolition of certain buildings or features on parcels into Trunkline projects. These special provisions have been developed to make it easier for the real estate section to develop the correct special provisions and add them to the trunkline projects.

#### **H. Innovative Contracting Special Provisions**

Due to the use of innovative contracting methods which are different from our standard process certain special provisions are developed to allow designers to create the necessary special provisions or use already approved special provisions in their projects depending on the type of innovative contracting method being used.

# MICHIGAN DESIGN MANUAL

## ROAD DESIGN

### 11.06

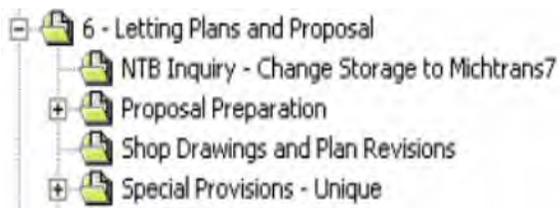
#### SPECIAL PROVISION APPROVAL PROCEDURE

##### 11.06.01 (revised 4-21-2014)

###### Overview

All unique special provisions, except those listed as being exempt previously in [Section 11.02.02A](#), that are part of the proposal must have approval of the Specifications Engineer. The Project Manager is required to submit all unique special provisions, even those written by consultants, to the Specifications Engineer at least 6 weeks prior to the plan completion date. Drafts of unique special provisions must be available for review and discussion at the Plan Review meeting.

The approval process is electronic and uses ProjectWise to route files, reviewers' comments and approvals. special provisions must be in Microsoft Word format and must be located in ProjectWise in the "Special Provisions - Unique" folder under the "6-Letting Plans and Proposal" folder for the project it applies to. For more details or assistance with using ProjectWise, contact appropriate support staff for your office.



An overview of the approval procedure is shown on the next page.

### 11.06.01 (continued)

The Specifications Engineer will return special provisions not meeting the defined voice, outline and format. Returned special provisions will be sent to the Project Manager for revisions. These documents will need to be resubmitted before the review and approval process can begin. See [Section 11.02.05](#) for how to rename a special provision file name when it is resubmitted.

Project Managers are encouraged to use special provisions available on the [Previously Approved Special Provisions](#) web page whenever possible. If any changes are made to the approved document, it must be saved with a new filename. When submitting a revised (previously approved) special provision the track changes features of Microsoft Word must be used to delineate the changes made to the original document. This will substantially expedite the approval process.

If there are special circumstances such as tight project deadlines, or related special provisions that should be reviewed together, provide this information as a comment within the Word document when submitting the documents for review. Be sure to include the name of the individual that has provided preliminary reviews if it is appropriate to have this person assigned to review the final special provision.

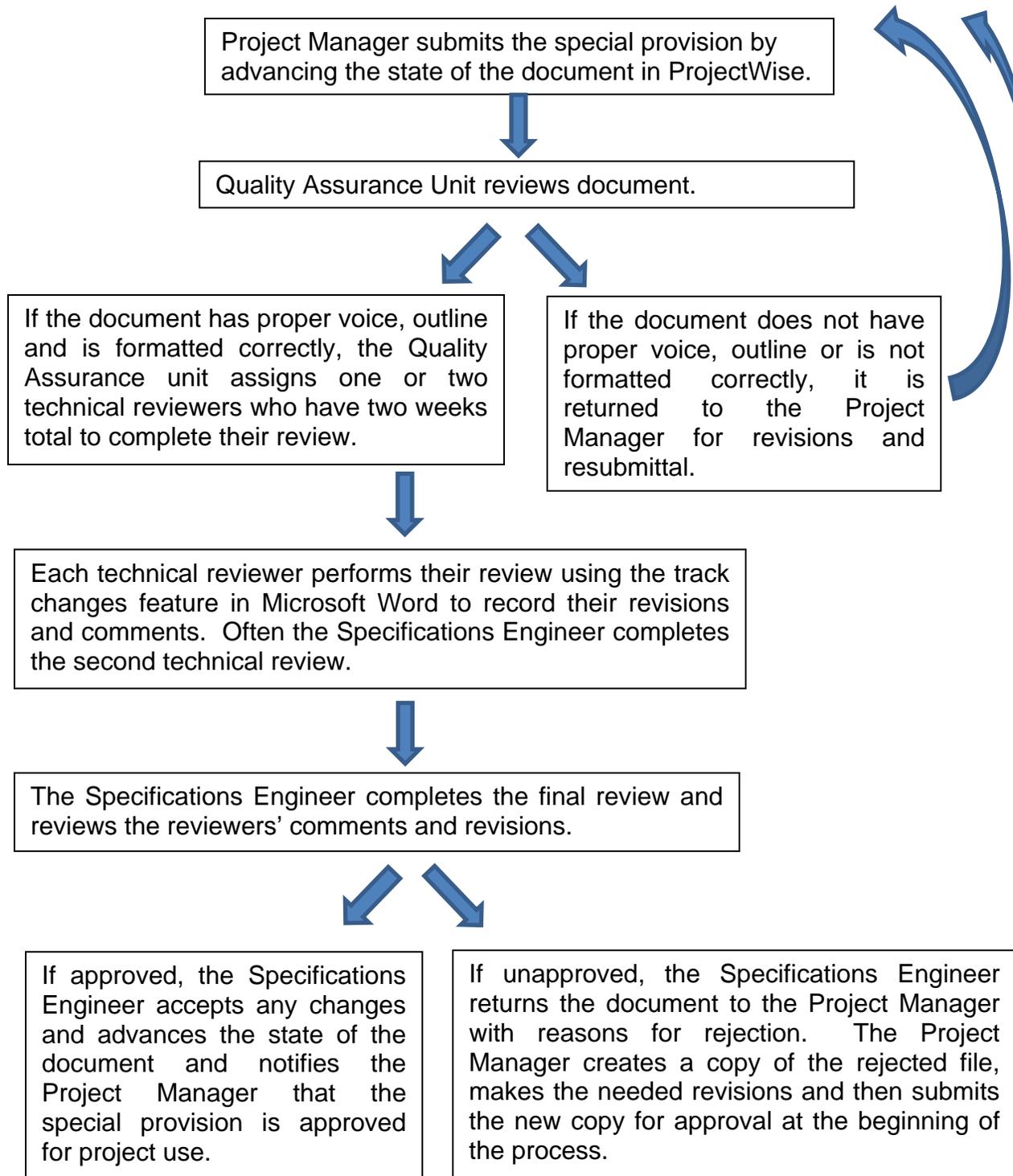
Unique special provisions must be approved prior to advertisement. When a project is submitted to the Specifications and Estimates Unit for advertisement with unapproved unique special provisions, the Project Manager must complete [Form 2908](#) Special Provision - Exception Risk Analysis, including approval by the appropriate region engineer. Although minimal use is encouraged, this form does allow for exceptions for multiple unique special provisions.

# MICHIGAN DESIGN MANUAL ROAD DESIGN

## 11.06.01 (continued)

### Overview

#### **UNIQUE SPECIAL PROVISION APPROVAL PROCEDURE**



## MICHIGAN DESIGN MANUAL ROAD DESIGN

### 11.06.01 (continued)

#### Overview

All Frequently Used Special Provisions (FUSPs) and all non-job related special provisions must be approved prior to being placed in a proposal just like all unique special provisions. All FUSPs must meet the requirements contained in [Sections 11.02.01A, 11.09.03, and 11.10](#) as well as the formatting, voice and outlining requirements for unique special provisions. All non-job related special provisions must meet the formatting, voice and outlining requirements for unique special provisions.

All Frequently Used Special Provisions and all non-job related special provisions should be sent by e-mail to the [MDOT-DesignFUSP@Michigan.gov](mailto:MDOT-DesignFUSP@Michigan.gov) mail box. This e-mail should include two attachments for each special provision. The Microsoft Word file using Microsoft Word version 2010 (.docx) and the appropriate MDOT Form ([Form 0372](#) – FUSP Request Form or [Form 0373](#) – Non-Job Related SP Request Form) filled out by the requestor. If this information is not submitted or complete the entire package will be returned without being placed into the review process. Proper justification will be needed for FUSPs to be processed outside the annual review period as specified in [Section 11.10](#).

### 11.06.01 (continued)

Once a properly completed FUSP request is received it will be placed into ProjectWise where it will be reviewed and approved following the procedure outlined on the next page.

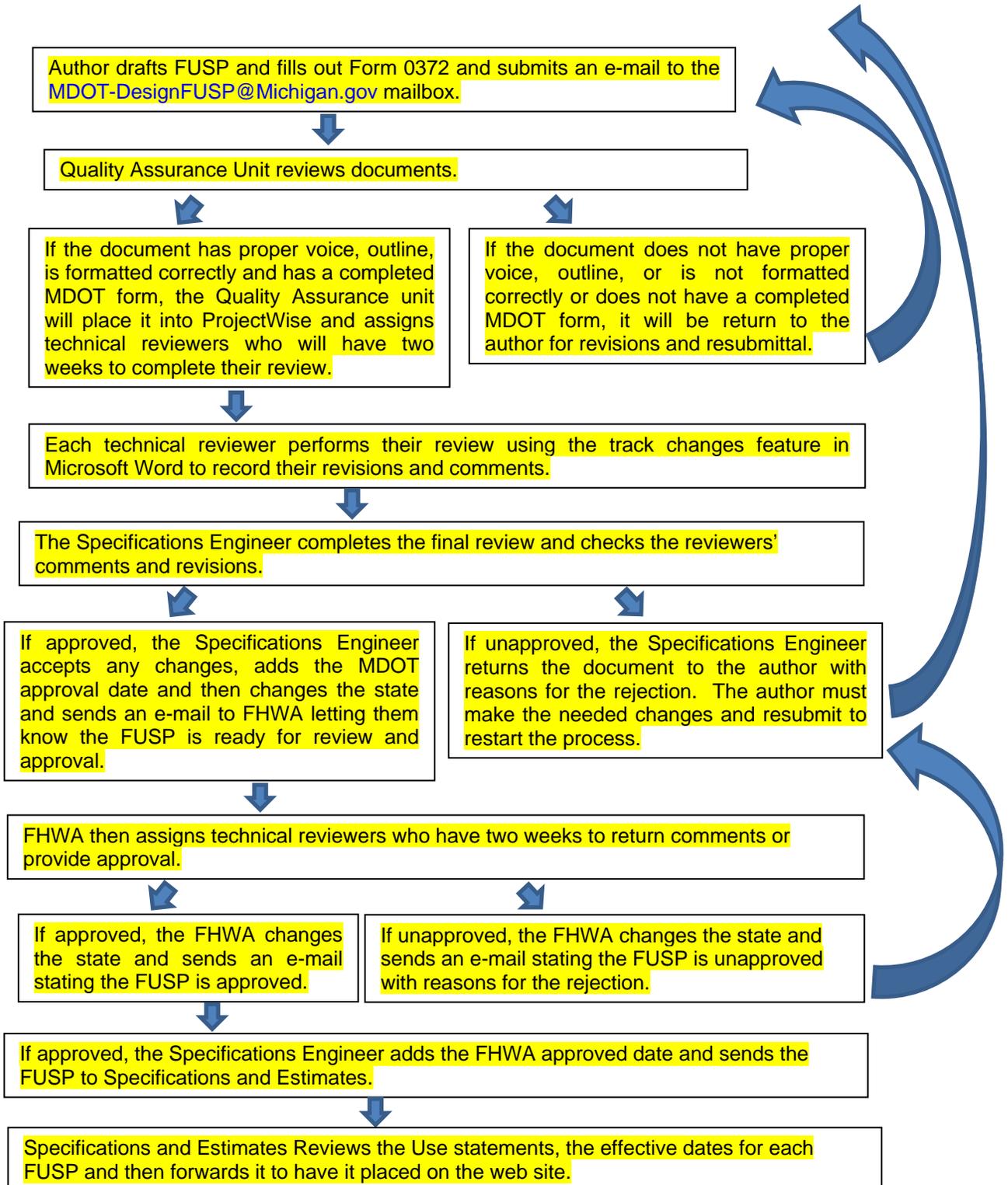
Once a properly completed non-job related special provision request is received it will be placed into ProjectWise where it will be reviewed and approved following the same procedure used to review unique special provisions found on the previous page.

# MICHIGAN DESIGN MANUAL ROAD DESIGN

## 11.06.01 (continued)

### Overview

#### FREQUENTLY USED SPECIAL PROVISION APPROVAL PROCEDURE



## MICHIGAN DESIGN MANUAL ROAD DESIGN

**14.30** (revised 2-18-2010)

### PRELIMINARY CONSTRUCTABILITY REVIEW

(PPMS Task Description 3565)

Constructability is taken into account during the scoping and early plan development process (and in conjunction with the [Early Project Scoping Constructability Checklist](#)). After the Job Concept Statement has been created in MPINS, the Project Manager/Concept Author should consult with the Region/TSC Delivery Engineer concerning items such as Coordinating with other Agencies, Permits, Staging, Maintaining Traffic, Site Investigation, and Right of Way. Much of the work under this task should occur before the Scope Verification Meeting. On small projects this task may consist of only the transmittal of base plans to the Resident/Delivery Engineer for comment. On large projects with complex staging, one or more meetings with the Resident/Delivery Engineer and Region/TSC Traffic and Safety Engineer may be required throughout this task. In both instances the review and incorporation of any comments must occur prior to Preliminary Plan Development.

**14.31** (revised 3-26-2012)

### ENVIRONMENTAL REVIEW AND CLEARANCE

Environmental review and clearance is a two step process: Environmental Classification (PPMS Task 3150) and Environmental Certification (PPMS Task 3155).

**14.31.01** (revised 4-21-2014)

#### Environmental Classification (PPMS Task 3150)

Environmental Classification is required by the National Environmental Policy Act (NEPA). All projects must be reviewed for potential environmental impacts and classified according to the significance of those impacts. Class I Actions are those projects with significant environmental impacts and require the preparation of an Environmental Impact Statement (EIS). Class II Actions have minor or no environmental impacts and require Categorical Exclusion (CE) documentation ([Form 1775-LAP](#)). Class III Actions are projects where the significance of the impacts is not known and require the preparation of an Environmental Assessment (EA).

Most projects are classified as CEs. However, environmental review is still required to identify non-significant environmental impacts, and establish measures to mitigate those impacts. Measures to mitigate can include avoidance, design changes, protective measures, or replacement. Establishing mitigation measures can be complex and require coordination with state, federal and local resource agencies. Often, mitigation measures can be developed through collaboration between the Project Manager (PM) and MDOT Environmental Staff.

## MICHIGAN DESIGN MANUAL ROAD DESIGN

### 14.31.01 (continued)

#### Environmental Classification

The Environmental Clearance Coordinator (ECC) will contact the PM about one year prior to the Base Plan Date (BPD), or upon notification of project programming for projects of short development duration. The ECC will request information about the scope and location of the project. This information can include the extent of grading and filling, right of way requirements, detour information, etc., and is critical in assessing project environmental impacts. The project description, location, and other pertinent project information are put on the Environmental Classification ([Form 1775-LAP](#)). MDOT Environmental Staff may contact the PM for more details about the project in order to assess impacts.

Once impacts are assessed, collaboration occurs between the PM and MDOT Environmental Staff, to develop mitigation measures. The goal of collaboration is to develop measures that both allow the project to accomplish its transportation goal and minimize impacts to the environment. Once impacts are identified and mitigation measures established the project can be classified as a CE. The PM will be notified and the Environmental Classification ([Form 1775-LAP](#)) and supporting documentation will be stored in ProjectWise under the Project Job Number. Classification is also recorded in the MAP database (MPINS/MFOS/REMIS). Classification is scheduled to occur on or before the completion of Base Plan Review (PPMS Task 3380).

The Form [1775-LAP](#) filled out by the ECC will have highlighted mitigation measures in bold text to signify that those measures are to be transmitted directly to the TSC Construction Engineer for the project.

It will be the responsibility of the Project Manager and the ECC to ensure that all mitigation measures whether or not highlighted in bold on the [1775-LAP](#) form are incorporated into the project plans and proposal.

### 14.31.01 (continued)

Prior to completions of the NEPA review process, preliminary engineering and other activities and analyses must not materially affect the objective consideration of alternatives in the NEPA review process. FHWA defines Preliminary Design as activities that define the general project location and design concepts. It includes, but is not limited to, preliminary engineering and other activities and analyses, such as environmental assessments, topographic surveys, metes and bounds surveys, geotechnical investigations, hydrologic analysis, hydraulic analysis, utility engineering, traffic studies, financial plans, revenue estimate, hazardous materials assessments, general estimates of the types and quantities of materials, and other work needed to establish parameters for the final design.

If the information required for classification requires engineering work or environmental coordination extending beyond the BPD, the FHWA will allow preliminary engineering tasks to extend up to the Plan Review upon notification from the ECC. Projects permitted to continue beyond the BPD prior to classification must be approved by the Bureau of Development Environmental Manager and include:

## MICHIGAN DESIGN MANUAL ROAD DESIGN

### 14.31.01 (continued)

#### Environmental Classification

PPMS Task	Task
3535	Conduct Structural, Architectural and Aesthetic Review
3570	Prepare Preliminary Structure Plans
3565	Preliminary Constructability Review
3540	Develop Maintaining Traffic Plans
3555	Prepare/Review Preliminary Traffic Signal Operations
3551	Preliminary Signal Plans
3552	Preliminary Permanent Pavement Markings
3553	Preliminary Non-Freeway Signs
3554	Preliminary Freeway-Signs
3580	Develop Preliminary Plans
3590	Review Preliminary Plans
352M	The Plan Review
3670	Develop Municipal Utility Plan
3675	Develop Electrical Plans
3505	Preliminary Pavement Design and Selection
3672	Develop Special Drainage Structure Plan
3560	Conduct Preliminary Geometrics and Roadside Safety Reviews
3610	Compile Utility Information
360M	Utility Conflict Resolution Plan Distribution
3660	Resolve Utility Issues
361M	Utility Meeting
3510	Perform Roadway Geotechnical Investigation
3630	Prepare and Process Participation/Special Operational Agreements

## MICHIGAN DESIGN MANUAL ROAD DESIGN

### 14.31.01 (continued)

#### Environmental Classification

The Bureau of Development Environmental Manager will report to FHWA each quarter of the fiscal year the number of projects that have allowed any of the tasks noted above to be performed before the environmental classification.

Final design or right of way acquisition cannot proceed prior to classification. FHWA defines final design as any design activities following preliminary design and expressly includes the preparation of final construction plans and detailed specifications for the performance of construction work.

Between base plans and quality assurance review, environmental mitigation measures are to be fully developed and detailed in the plan package.

Development of the materials necessary to convey the environmental mitigation measures within the [Form 1775-LAP](#) will include but not be limited to:

- Project specific Plan Notes
- Notice to Bidders
- Unique Special Provisions

Design staff must take into account that individual pay items needing modification to meet the requirements of environmental mitigation measures require the inclusion of an appropriate unique or frequently used Special Provision to ensure proper construction.

### 14.31.01 (continued)

Design staff will prepare a memo to be transmitted to the Construction Engineer for their use at the Pre-Construction meeting. The memo should highlight the specific environmental mitigation measures in the plans and proposal and include construction specific instructions related to environmental mitigation highlighted with bold text in the [Form 1775-LAP](#).

The Construction Engineer will be responsible for ensuring that the contractor is made aware of all environmental mitigation measures and the consequences of not meeting them.

### 14.31.02 (new section 3-26-2012)

#### Environmental Certification (PPMS Task 3155)

Environmental Certification is the final step in the Environmental Review and Clearance Process. This task takes place during Project Plan Quality Assurance Review (PPMS Task 3865). During Certification, plans and other documents are reviewed to ensure that all areas of concern are avoided, all mitigation measures are in place, and all commitments adhered to. This review is conducted by the ECC and documented (Form [2002](#)).

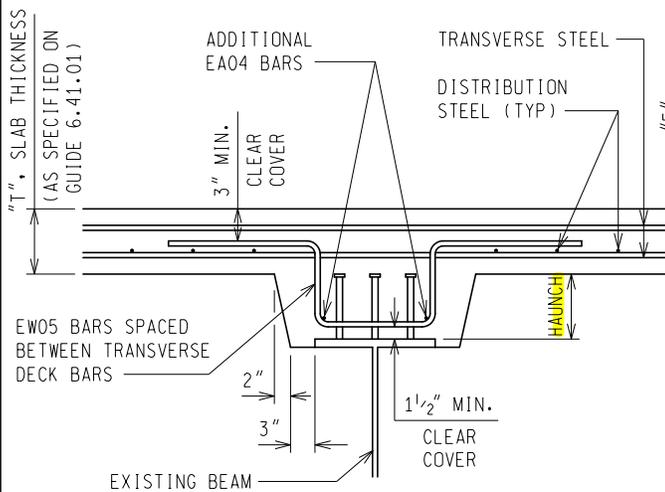
If all mitigation measures are in place and all commitments adhered to, the project will be certified. The PM will be notified and Environmental Certification Form (Form [2002](#)) and supporting documentation will be stored in ProjectWise under the Project Job Number. Certification is also recorded in the MAP database (MPINS/MFOS/REMIS).

DRAWN BY: BLT  
 CHECKED BY: VZ  
 APPROVED BY: DAJ

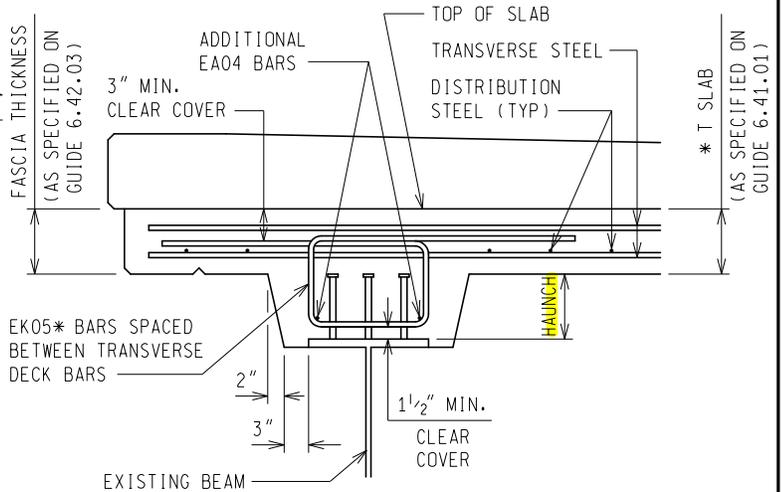
MICHIGAN DEPARTMENT OF TRANSPORTATION  
 BUREAU OF HIGHWAY DEVELOPMENT

ISSUED: 04/21/14  
 SUPERSEDES: 04/23/12

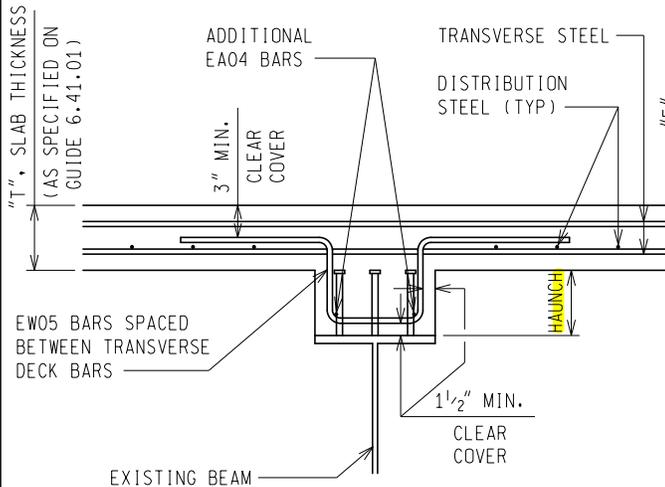
HAUNCH DETAILS



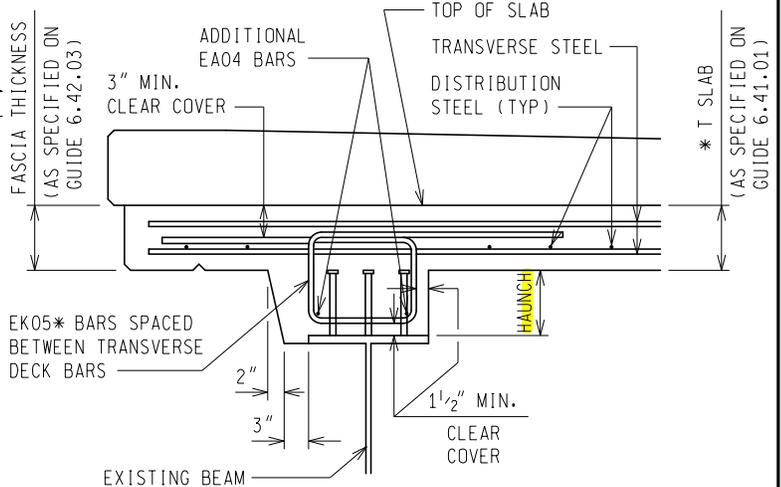
**INTERIOR BEAM HAUNCH > 6" DETAIL**  
 CONVENTIONAL FORMS



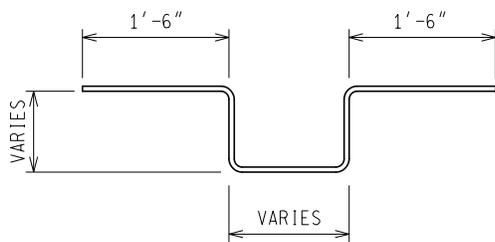
**FASCIA BEAM HAUNCH > 6" DETAIL**  
 CONVENTIONAL FORMS



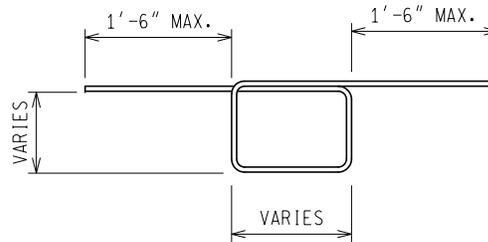
**INTERIOR BEAM HAUNCH > 6" DETAIL**  
 METAL STAY IN PLACE FORMS



**FASCIA BEAM HAUNCH > 6" DETAIL**  
 METAL STAY IN PLACE FORMS



**EW05 BAR**



**EK05\* BAR**

NOTES:

\* USE EW05 BAR WHEN OVERHANG IS GREATER THAN 1'-6"

DETAIL HAUNCH REINFORCEMENT ON PLAN SHEETS AND STEEL REINFORCEMENT DETAILS SHEET.

SHOW LIMITS OF HAUNCH REINFORCEMENT ALONG THE LENGTH OF EACH BEAM. WHERE LIMITS ARE UNKNOWN PROVIDE EXTRA HAUNCH REINFORCEMENT IN QUANTITY TOTALS.

STEEL BEAMS SHOWN: PCI AND BOX BEAMS SIMILAR.

PLAN NOTES:

THE HAUNCH REINFORCEMENT QUANTITY SHOWN PROVIDES THE AMOUNT NECESSARY TO COVER THE LIMITS SHOWN ON THE PLANS. ADDITIONAL REINFORCEMENT SHALL BE PROVIDED IN AREAS WHERE THE HAUNCH EXCEEDS 6" IN DEPTH.

PREPARED BY  
 DESIGN DIVISION

6.42.03A