Road & Bridge Design Publications

Monthly Update – May 2012

Revisions for the month of **May** are listed and displayed below. New special details are to be included in projects submitted for the **August** letting as is stated on the special detail index sheets. Please contact Wayne Pikka (pikkaw@michigan.gov) for any questions related to the changes.

Special Details

R-54-H: Concrete Barrier, Single Face: A note in the note section was revised to state that the under drain located behind the single face barrier is to be wrapped with geotextile fabric and surrounded by Class II AA material (as opposed to Class II).

Road Design Manual

14.27: Value Engineering: This section was updated to the new 23 CFR part 627 (dealing with implementation of federal value engineering requirements) which accommodates past changes in SAFETEA-LU. (Essentially, the changes remove the three year requirement and base the VE cost on the estimated construction cost at final design (if no scoping changes).

14.60.01, 14.60.02, 14.60.03, 14.60.04, 14.60.05: Submitting Completed Plans: Several minor corrections were made to bring the sections up to current practice.

14.68: Requests for Additional Plans/Proposals: This section was deleted as the information is now in ProjectWise.

MDOT Bulletin Board, 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
5-29-2012

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-29-H	4	DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK	10-20-11
R-31-F	2	INTEGRAL CURB AND INTEGRAL CURB & GUTTER	1-30-12
R-41-G	2	LONGITUDINAL PAVEMENT JOINTS	4-9-12
R-42-F	6	TYPICAL JOINT LAYOUTS FOR CONCRETE PAVEMENT	12-6-10
R-43-I	2	LOCATION OF TRANSVERSE JOINTS IN PLAIN CONCRETE PAVEMENT	2-8-12
R-45-I	2	PAVEMENT REINFORCEMENT FOR BRIDGE APPROACH	12-6-11
* R-54-H	4	CONCRETE BARRIER, SINGLE FACE	5-18-12
R-80-E	8	GRANULAR BLANKETS, UNDERDRAINS, OUTLET ENDINGS & BULKHEADS	3-29-12
R-99-B	2	CHAIN LINK FENCE WITH WIRE ROPE	11-1-00
R-100-G	4	SEEDING AND TREE PLANTING	9-8-11
R-126-I	5	PLACEMENT OF TEMPORARY BARRIER	3-26-12

*** Denotes New or Revised Special Detail to be included in projects for (beginning with) the August letting.**

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.

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.

Index to Bridge Detail Sheets

5-29-2012

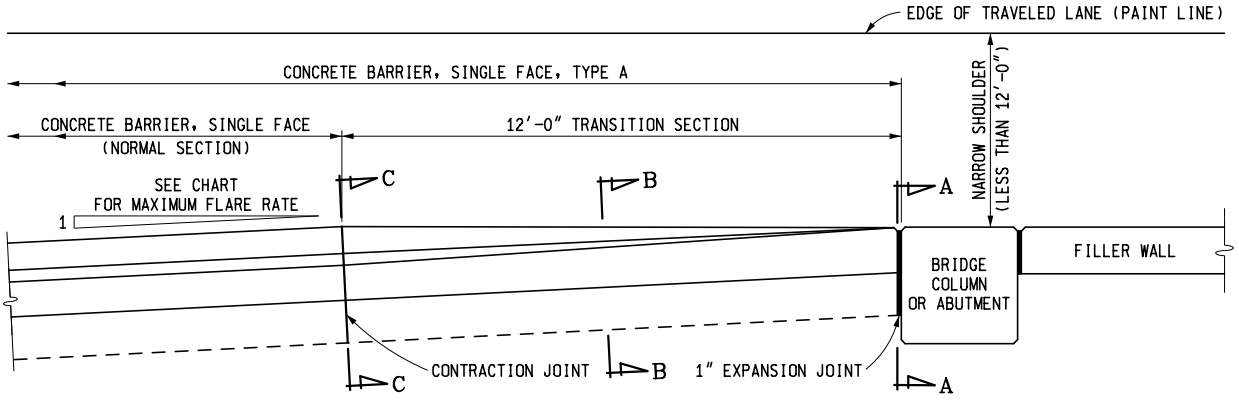
⑦

DETAIL NUMBER	NUMBER OF SHEETS	TITLE	CURRENT DATE
B-21-I	4	BRIDGE RAILING, 2 TUBE	6-3-11
B-23-E	4	BRIDGE RAILING, THRIE BEAM RETROFIT	10-19-09
B-25-G	6	BRIDGE RAILING, AESTHETIC PARAPET TUBE	1-30-12
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

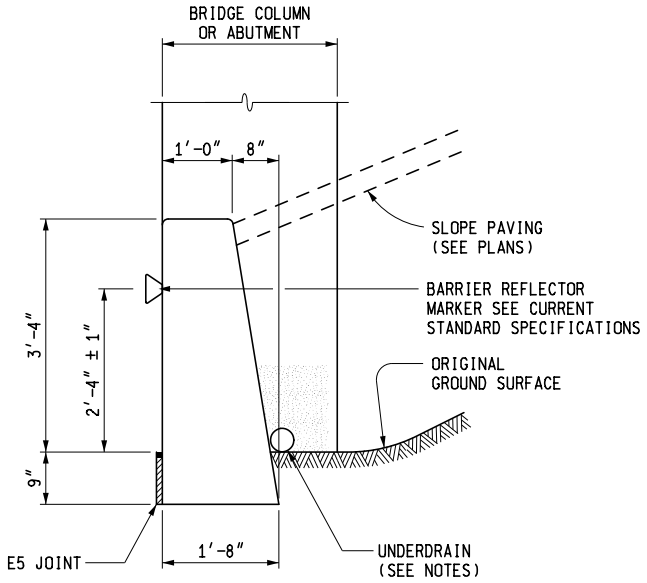
*** Denotes New or Revised Special Detail to be included in projects for (beginning with) the August letting.**

Note: 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.

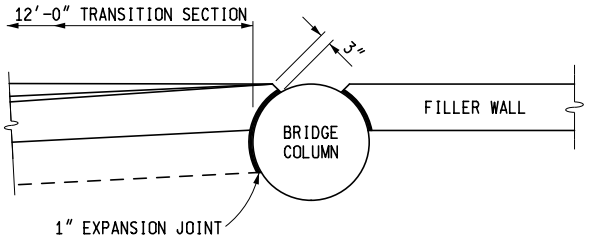
Detail PC-1L, PC-2G and PC-4E shall have structure specific information and quantities added to the sheet. The sheet shall then be added to the plans as a normal plan sheet.



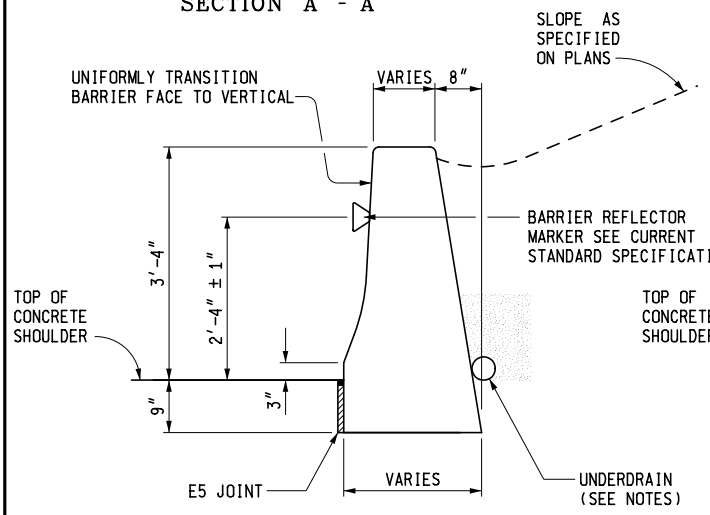
CONCRETE BARRIER, SINGLE FACE
(AT SQUARE COLUMN OR ABUTMENT)



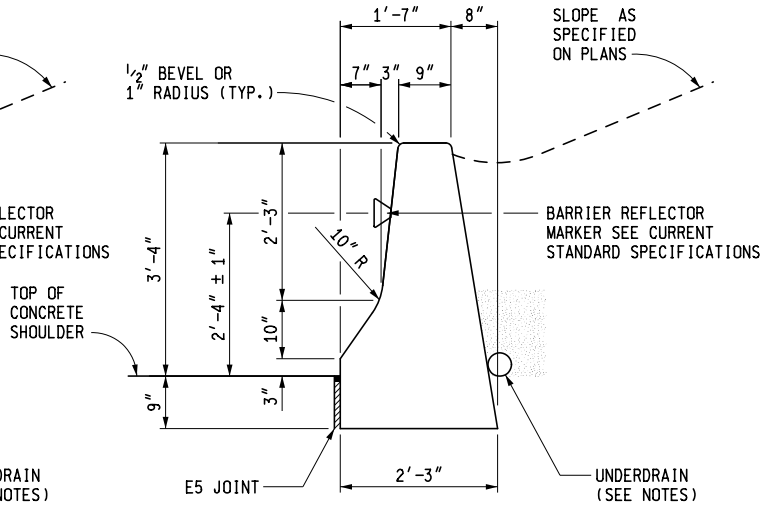
SECTION A - A



CONCRETE BARRIER, SINGLE FACE
(AT CIRCULAR COLUMN)



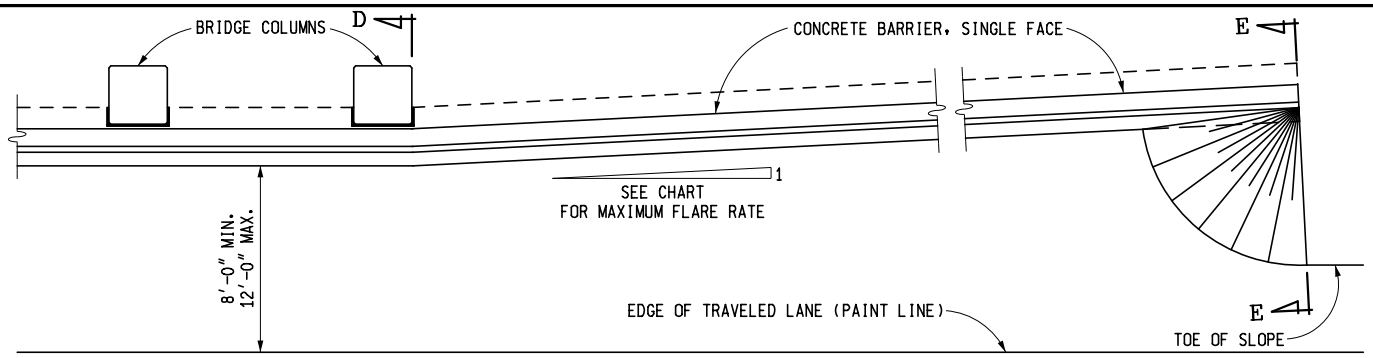
SECTION B - B



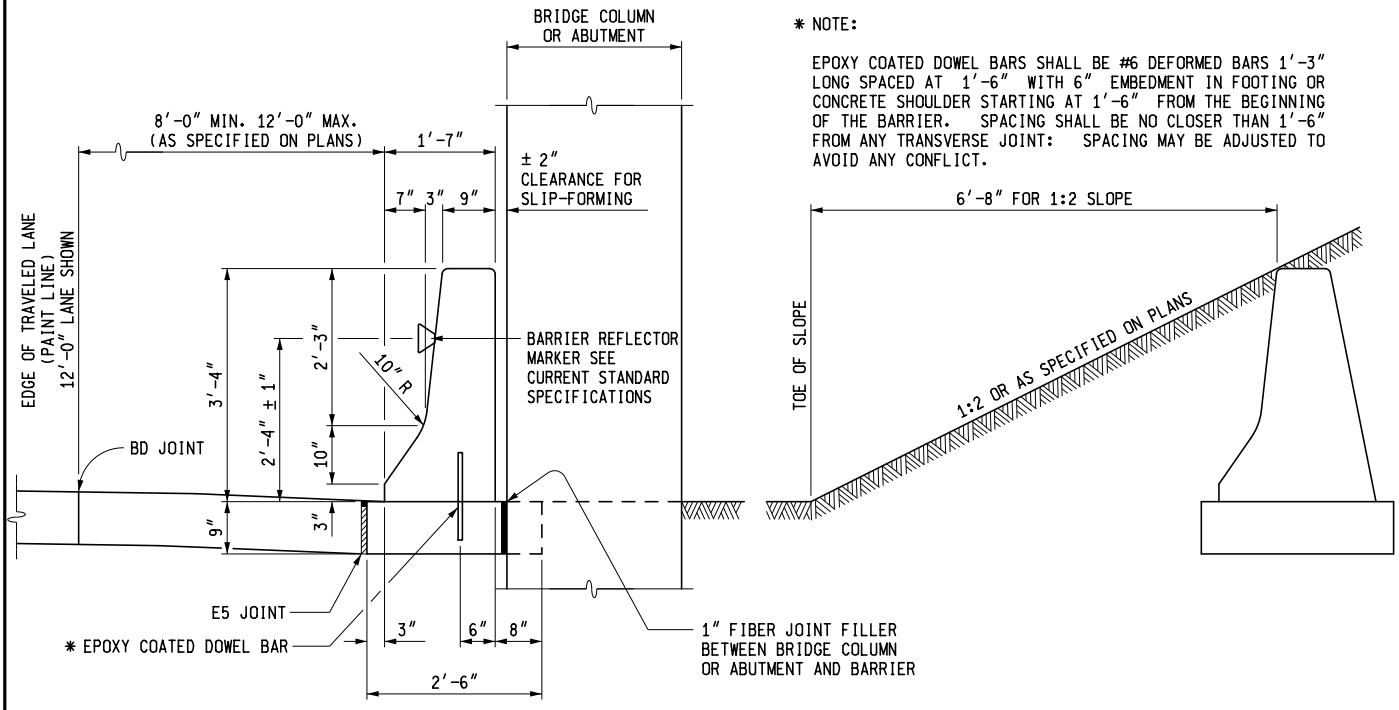
SECTION C - C

CONCRETE BARRIER, SINGLE FACE, TYPE A
(IN LINE WITH BRIDGE COLUMNS OR ABUTMENT)

MDOT Michigan Department of Transportation PREPARED BY DESIGN DIVISION DRAWN BY: B.L.T. CHECKED BY: W.K.P.	DEPARTMENT DIRECTOR Kirk T. Steudle APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES APPROVED BY: _____ DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR CONCRETE BARRIER, SINGLE FACE F.H.W.A. APPROVAL | 5-18-2012 PLAN DATE | R-54-H | SHEET 1 OF 4



PLAN VIEW



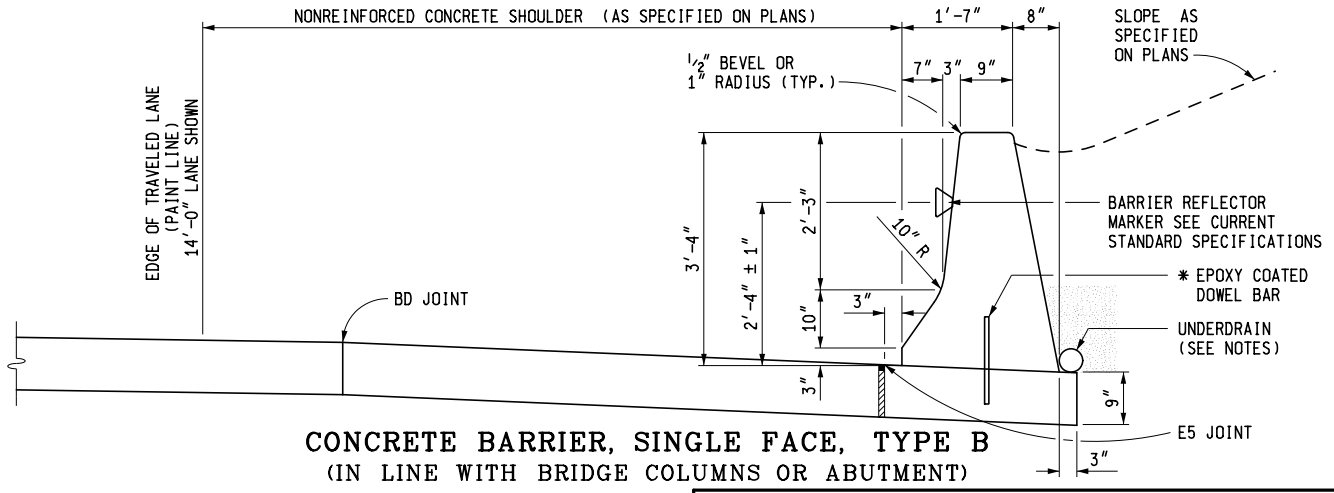
* NOTE:

EPOXY COATED DOWEL BARS SHALL BE #6 DEFORMED BARS 1'-3" LONG SPACED AT 1'-6" WITH 6" EMBEDMENT IN FOOTING OR CONCRETE SHOULDER STARTING AT 1'-6" FROM THE BEGINNING OF THE BARRIER. SPACING SHALL BE NO CLOSER THAN 1'-6" FROM ANY TRANSVERSE JOINT: SPACING MAY BE ADJUSTED TO AVOID ANY CONFLICT.

SECTION D - D

SECTION E - E

CONCRETE BARRIER, SINGLE FACE, TYPE B (SHOWN)
(IN FRONT OF BRIDGE COLUMNS OR ABUTMENTS)

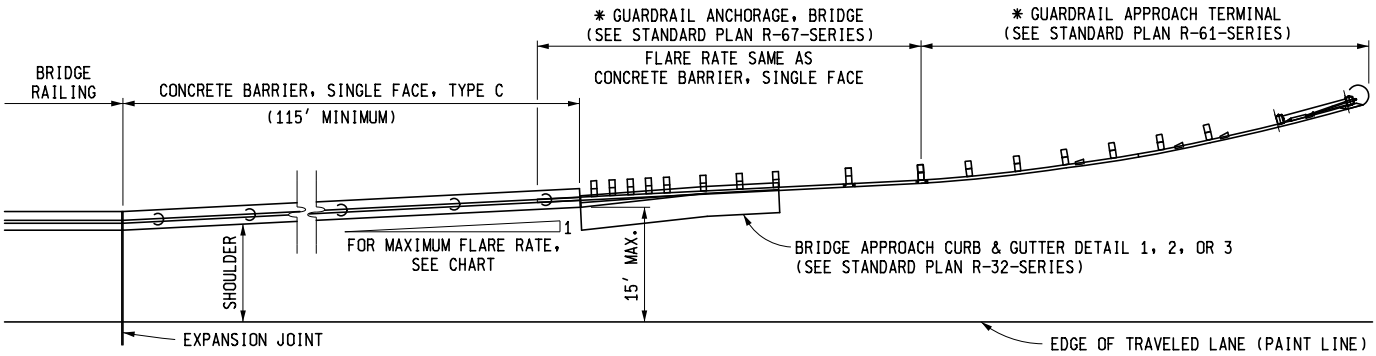


CONCRETE BARRIER, SINGLE FACE, TYPE B
(IN LINE WITH BRIDGE COLUMNS OR ABUTMENT)

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

CONCRETE BARRIER, SINGLE FACE

F.H.W.A. APPROVAL	5-18-2012 PLAN DATE	R-54-H	SHEET 2 OF 4



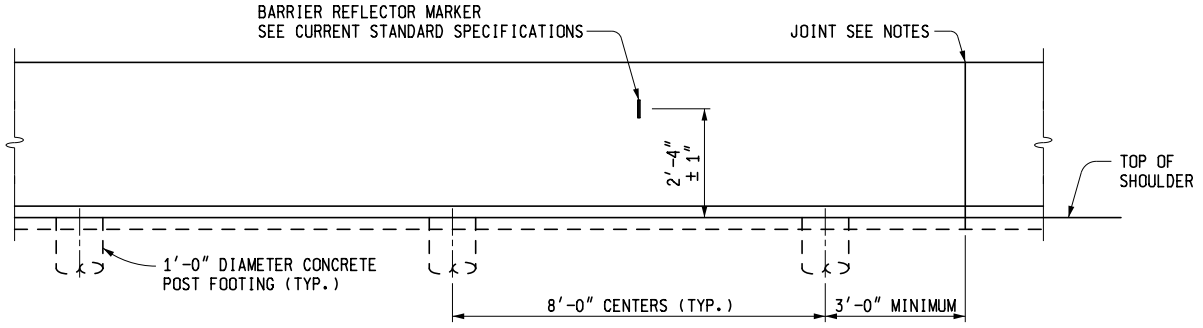
FLARE CHART	
MAXIMUM FLARE	DESIGN SPEED (MPH)
1:20	70
1:18	60
1:16	55
1:14	50
1:12	45
1:10	40
1:8	30

* GUARDRAIL ANCHORAGE, BRIDGE, DETAIL T1 WITH GUARDRAIL APPROACH TERMINAL TYPE 1T OR GUARDRAIL ANCHORAGE, BRIDGE, DETAIL T2 WITH GUARDRAIL APPROACH TERMINAL TYPE 1B

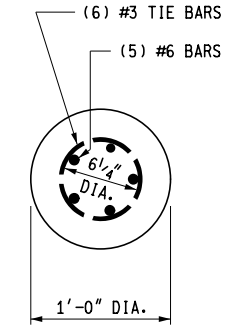
TRANSITION CONCRETE BARRIER, SINGLE FACE TO MATCH SHAPE OF BRIDGE BARRIER RAILING.

THE MAXIMUM FLARE RATE IS THE LARGEST ALLOWABLE DEPARTURE ANGLE FOR THE SPECIFIED DESIGN SPEED. THE FLARE RATE OF THE CONCRETE BARRIER IS LIMITED BY ITS LENGTH AND MAXIMUM 15' OFFSET.

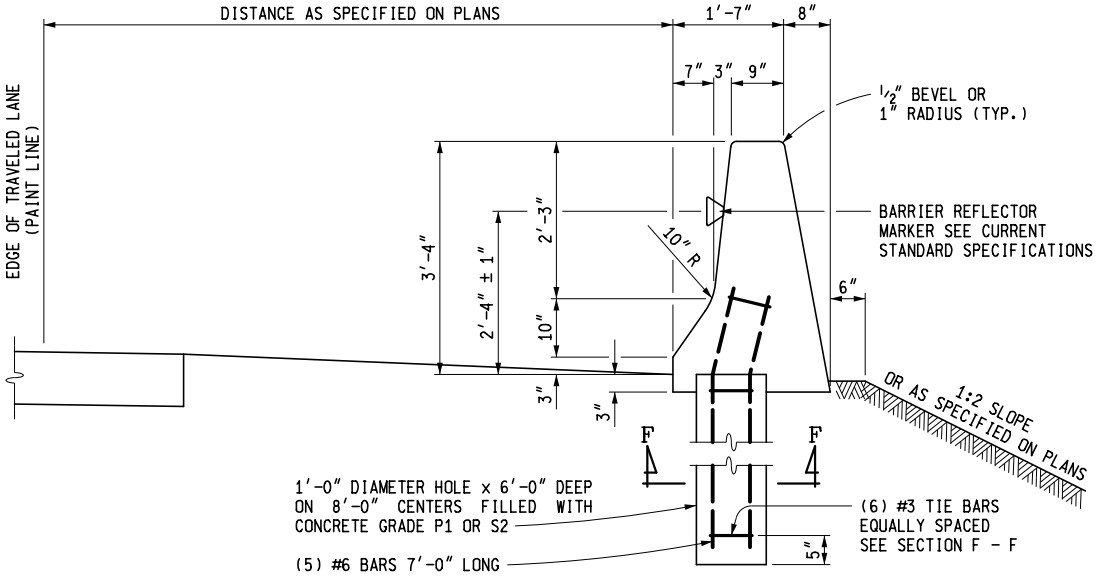
CONCRETE BARRIER, SINGLE FACE, TYPE C
(WITH GUARDRAIL ENDING)



ELEVATION VIEW



SECTION F - F
POST FOOTING



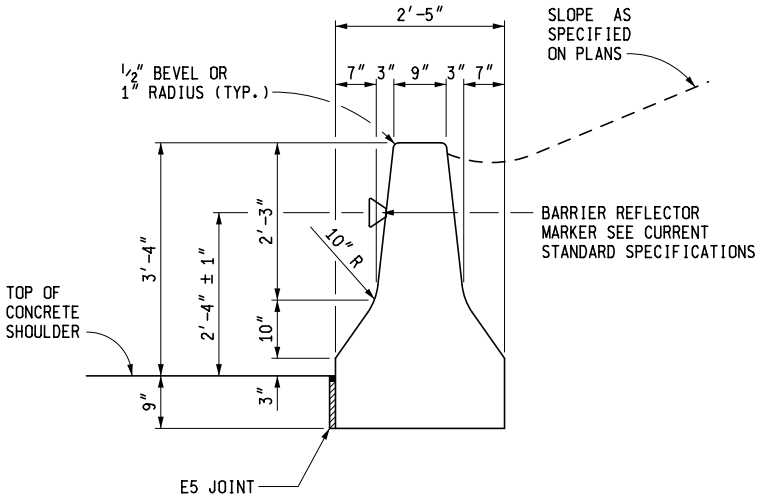
CROSS SECTION VIEW

CONCRETE BARRIER, SINGLE FACE, TYPE C
(IN LINE WITH BRIDGE COLUMNS OR ABUTMENT)

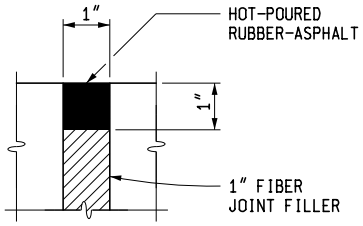
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

CONCRETE BARRIER, SINGLE FACE

F.H.W.A. APPROVAL	5-18-2012 PLAN DATE	R-54-H	SHEET 3 OF 4



ALTERNATE CONSTRUCTION SHAPE



E5 JOINT DETAIL

NOTES:

THE SIDE CONFIGURATION SPECIFIED ON THIS PLAN CONFORMS TO THE "NEW JERSEY" SHAPE AS SPECIFIED ON STANDARD PLAN R-49-SERIES EXCEPT FOR HEIGHT.

PLACE 1″ EXPANSION JOINTS IN THE CONCRETE BARRIER AT APPROXIMATELY 400′ INTERVALS. ALSO PLACE 1″ EXPANSION JOINTS AT STRUCTURES (INCLUDING SIGN SUPPORTS, LIGHT STANDARD FOUNDATIONS, BRIDGE PIERS, OR ANY STRUCTURE WITH A FOUNDATION). LOCATION OF EXPANSION JOINTS SHOULD BE ADJUSTED TO MATCH EXPANSION JOINTS IN THE SHOULDER. PLANE OF WEAKNESS JOINT SPACING SHALL BE 20′ MAXIMUM AND 10′ MINIMUM, EXCEPT WHEN THE BARRIER IS ON A CONCRETE SHOULDER. PLANE OF WEAKNESS JOINT SPACING SHALL COINCIDE WITH CONTRACTION JOINTS IN THE SHOULDER.

JOINTS IN THE CONCRETE FOOTING SHALL COINCIDE WITH THE JOINTS IN THE CONCRETE BARRIER.

PLANE OF WEAKNESS JOINTS IN THE CONCRETE BARRIER SHALL BE AT LEAST 2½″ DEEP AND SHALL BE EDGED.

IN A CUT SECTION, THE CONCRETE BARRIER SHALL BE ENDED BY BURYING IT IN THE SIDE SLOPE.

IN FILL SECTIONS, THE CONCRETE BARRIER SHALL BE ENDED WITH GUARDRAIL ANCHORAGE, BRIDGE, DETAIL T1 AND GUARDRAIL APPROACH TERMINAL TYPE 1T OR GUARDRAIL ANCHORAGE, BRIDGE, DETAIL T2 AND GUARDRAIL APPROACH TERMINAL TYPE 1B. THE GUARDRAIL ANCHORAGES SHALL BE BUILT ACCORDING TO STANDARD PLAN R-67-SERIES. THE GUARDRAIL APPROACH TERMINAL SHALL BE BUILT ACCORDING TO STANDARD PLAN R-61-SERIES. THE BRIDGE APPROACH CURB & GUTTER WILL BE EITHER DETAIL 1, 2, OR 3, AS SPECIFIED ON THE PLANS AND CONSTRUCTED ACCORDING TO STANDARD PLAN R-32-SERIES.

THE TOP AND FACES OF THE BARRIER SHALL NOT VARY MORE THAN ½″ IN 10′ WHEN CHECKED WITH A 10′ STRAIGHTEDGE, EXCEPT AT GRADE CHANGES AND CURVES, AND SHALL BE FREE OF HUMPS, SAGS, AND OTHER IRREGULARITIES.

"CONCRETE BARRIER, SINGLE FACE, TYPE A" IS CONCRETE BARRIER CAST MONOLITHIC WITH CONCRETE FOOTINGS; TYPE B IS CONCRETE BARRIER DOWELED TO NONREINFORCED CONCRETE SHOULDERS OR TO A SEPARATE BASE; TYPE C IS CONCRETE BARRIER PLACED ON CONCRETE POST FOOTINGS, WITH NO BACKFILL TO SUPPORT THE BACK SIDE OF THE BARRIER WALL.

WHEN "CONCRETE BARRIER, SINGLE FACE, TYPE A" IS DESIGNATED ON THE PLANS, THE BARRIER MAY BE CONSTRUCTED USING DOWELS AND A WIDENED BASE AS SPECIFIED FOR THE "CONCRETE BARRIER, SINGLE FACE, TYPE B". THE DOWELS, EXTRA WIDTH OF BASE, OR ANY EXTRA WORK REQUIRED WILL BE INCLUDED IN THE PAY ITEM "CONC BARRIER, SINGLE FACE, TYPE A".

THE UNDERDRAIN, LOCATED BEHIND THE CONCRETE BARRIER AND AT THE ELEVATION OF THE TOP OF SHOULDER, IS A MINIMUM 4″ DIAMETER FOUNDATION UNDERDRAIN WRAPPED WITH GEOTEXTILE. CLASS IIAA GRANULAR MATERIAL MUST BE PLACED AROUND THE UNDERDRAIN AND AT LEAST 12″ ABOVE IT. THE REMAINDER OF THE FILL CAN BE TYPICAL BACKFILL MATERIAL.

FOR DETAILS OF THE SHOULDER SECTION, SEE TYPICAL CROSS-SECTIONS IN THE ROAD PLANS.

BARRIER REFLECTOR MARKERS ARE TO BE SPACED AT THE FOLLOWING INTERVALS:

1) 50′-0″ ON TANGENT SECTIONS AND CURVES WITH A RADIUS OF 1150′ OR MORE.

2) 25′-0″ ON CURVES WITH A RADIUS LESS THAN 1150′.

BARRIER REFLECTOR MARKERS SHALL MATCH COLOR OF EDGE LINE.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR

CONCRETE BARRIER, SINGLE FACE

F.H.W.A. APPROVAL	5-18-2012 PLAN DATE	R-54-H	SHEET 4 OF 4

14.26 (revised 3-26-2012)

DISTRIBUTION OF PLANS TO UTILITY COMPANIES
(PPMS Task Description #3660)

Once the Design Unit has received plans marked with existing utility locations from the utility companies or a SUE consultant and the information has been added to the plans, the plans should be sent to the Utilities-Permits Section of the Development Services Division. The Utilities-Permits Section will distribute sets of plans to each utility company with a *transmittal letter*. On projects with little or no utility involvement the Utilities-Permits Section may elect to eliminate this plan distribution. When plans are distributed, a determination can usually be made at this time if the number or extent of utility conflicts will require a utility meeting and the necessary arrangements can be made at the same time.

Project Managers must be aware that this plan distribution is their responsibility to initiate and will not occur as part of any other distribution or meeting. On projects with utility conflicts this step is essential in identifying, coordinating and resolving all utility conflicts prior to THE Plan Review Meeting.

For additional information see Chapter 9.

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.

14.27 (continued)

VALUE ENGINEERING

Value Engineering Re-Study - If a project has a change to the project's scope between the final design and the letting the FHWA require an updated VE analysis.

Value Engineering Proposal/ Recommendation - The ideas resulting from a Value Engineering Study that provide the project's functional requirements at less cost or improve value or service with no increase in cost. VE Proposals must have documented decisions and implementation. Proposals/recommendations that increase the cost of a project and still provide improved value are classified as Value Engineering Design Suggestions.

Value Engineering Change Proposal (VECP) - A supplemental specification placed in all construction contracts with an estimated cost over $2 million. It encourages the contractor to propose changes in the contract requirements that will accomplish the project's functional requirements at less cost or improve value or service at little or no increase in cost. The net savings of each proposal is usually shared with the contractor at a stated reasonable rate (50-50). MDOT's procedures for Construction VECP's are contained in Bureau of Highways Informational Memorandum 1997-1.

MDOT State VE Coordinator - Design Division staff person responsible to assure all VE studies are completed per the Federal Regulations. The State VE Coordinator works with the Design Project Manager and other design personnel to schedule, complete, follow up and document VE Studies and decisions. The State VE Coordinator determines if the study can be done by MDOT personnel or by a consultant firm. If a consultant firm, they solicit and establish the contract per current vendor selection procedures. At year end, they prepare the annual FHWA report on VE Studies documenting VE studies and activities. They also determine if a recommendation may be warranted as a best practice and provide information statewide.

14.27 (continued)

VE Facilitator - A qualified facilitator experienced in performing and leading VE studies. MDOT personnel who facilitate VE studies must be experienced in VE studies and have additional facilitation and process reengineering training. VE studies done by outside consultant firms must have a VE facilitator with sufficient VE training, education and experience to be recognized by SAVE International as meeting the requirements for certification.

VE Team - The group with expertise to participate in the VE Study. At a minimum, design, construction, and maintenance shall be represented on the team. In the event of specialized projects, individuals with specific expertise necessary to perform a proficient value engineering study should be included in the team makeup. The VE team must also include member(s) experienced in estimating construction costs and cost-benefit analysis. All members should have completed a Module 1 Value Engineering training seminar or have prior Value Engineering experience. The composition of the expertise should reflect the complexity of the project design to be studied. At least two members of the team should be experienced in the high-cost areas of the project. Anyone directly involved in the design of the project should not be a team member, but is expected to participate as an information source.

14.27 (continued)

VALUE ENGINEERING

B. Federal Regulation

Title 23 CFR 627 under the authority of 23 USC Chapter 1, Section 106(e) requires a Value Engineering Study be conducted before the advertisement/letting of all Federal Aid projects with an estimated total project cost greater than $25 million for a road project, or $20 million total cost for a bridge project. See the previous section for definitions of "project" and VE study requirements. The VE Study might encompass a longer corridor of similar work, but only the projects for which there are design plans or sufficient scoping information available will receive VE credit.

Design/Build projects used to expedite the completion of a project are not exempt from VE requirement. A Value Engineering Study must be conducted prior to advertising the Request for Proposals of the Design/Build contract.

14.27 (continued)

C. Procedures

1. **Identification of Potential VE Studies.** The State VE Coordinator prepares a list of potential VE studies and sends it to the System Managers and FHWA for concurrence.

   The VE study is commonly performed between concept and 30% plan completion. Holding the VE Study early allows the recommendations to be considered without disruption to the design process.

2. **Funding.** The Design Project Manager will confirm or obtain sufficient funding in the C phase for the VE Study. The cost of a study can range from $15,000 to $75,000.

3. **Scheduling VE Study.** The Project Manager and State VE Coordinator determine the VE Team. Team members should not be directly involved in the project design.

   Based on the project, the State VE Coordinator and the Project Manager will choose one of the following methods for conducting the VE study:

   a. A Consultant is hired to perform all parts of the VE Study. Two to three MDOT/FHWA personnel are invited to join the VE team.

   b. MDOT performs all parts of the VE Study, usually facilitated by personnel from Performance Excellence Division.

   c. A Consultant is hired to provide a VE Facilitator/Trainer and MDOT/FHWA will provide the VE Team.

14.27 (continued)

VALUE ENGINEERING

4. **Information Needed for VE Study.** The Project Manager(s) gathers current project. information and provides it to the VE Facilitator. The VE Facilitator distributes the information to the VE Team prior to the first day of the VE Study. This information can include but is not limited to the following:

    1. Existing aerials
    2. Project photographs
    3. As Built plans, Base Plans
    4. Project area map
    5. Environmental clearance document or issues
    6. Right of Way plans or concerns
    7. Agreements
    8. Utility plans or encroachment issues
    9. Detour, staging concepts, or restrictions
    10. Traffic Data
    11. Crash data
    12. Context Sensitive Design issues
    13. Constructability issues
    14. Current Cost Estimate
    15. Scoping Reports/ Scope Verification Meeting Minutes
    16. Design Exceptions
    17. Construction/Letting Schedule
    18. Structure Appraisal and Inventory
    19. Bridge Safety Inspection Report
    20. Geotechnical soils reports and foundation reports
    21. Hydrology/hydraulic information
    22. Maintenance records

    In addition, the Project Manager should develop a written document to provide the VE Team with information on functionality (what is main purpose of project), constraints, needs, and/or any requirements that the VE Team should know about.

14.27 (continued)

5. **The VE Study.** The VE Study consists of the following phases:

    Information Phase: The Project Manager presents project background information and is available for questions. The VE team determines the needs, requirements, and constraints of the owners/users/stakeholders, as well as the design criteria. The VE team develops a cost model, breaks the project down into functions, and performs functional analysis.

    Speculation Phase: Brainstorming takes place to generate ideas to add value to the project without changing the function.

    Evaluation Phase: The best ideas from the Speculation Phase are selected for consideration based on best blend of performance, cost and schedule.

    Development Phase: Best ideas are developed into VE proposals and design recommendations through sketches, cost estimates, and schedules. Both first and life-cycle costs will be examined.

    Decision Phase: The Decision Team decides if the VE Proposals should be Accepted, Accepted for Further Study or Rejected. The final decisions are documented by the VE Team facilitator in the final VE Report. If a VE recommendation has a potential savings of more than $1.0 million, the Region Engineer must also be included on the Decision Team.

14.27 (continued)

VALUE ENGINEERING

6. **The VE Study Report**. The VE Facilitator/VE Team prepares and provides electronically a final report. A typical report includes the following: executive summary, participant list, research sources, project history (including project criteria, commitments, and constraints), existing design, performance criteria, basic functions, life cycle cost estimate, proposal descriptions and cost calculations, implementation plan and documentation of MDOT's decisions regarding the recommendations.

   The State VE Coordinator saves the final report in ProjectWise and provides a copy to the FHWA.

   Recommendations Accepted for Further Study. The MDOT Project Managers will report the outcome of unresolved recommendations that were labeled as "Recommendations Accepted for Further Study" to the State VE Coordinator for the annual report.

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14.27 (continued)

7. **Annual Reporting**

   MDOT Annual Report. The State VE Coordinator prepares an annual report on the VE recommendations received during the previous year. The report includes certain cost and savings data (recommendations, recommended cost savings, VE study cost, etc.). It is provided to MDOT Management and staff involved in scoping new projects to encourage alternate solutions that provide cost savings or maximized benefits at little or no increase in cost.

   FHWA Annual Report. The State VE Coordinator submits an annual report to the FHWA Division Office each year for national compilation and distribution. The report includes the number and cost of VE's held and the value of recommendations made (both accepted and rejected).

14.60

SUBMISSION OF COMPLETED PLANS

14.60.01 (revised 5-29-2012)

General

The final plan/proposal package should be submitted to the Specifications and Estimates Unit on or before the date listed under the heading "_-Week Projects Sent to S & E Unit" included in the calendar year's schedule of Letting and Board Dates. This date should not be confused with "Plan Completion Date." Plan completion date occurs before the OEC Meeting and is the date when 100% of the plan should be completed. A copy of the letting schedule is located on the Plan Development Services intranet website. The schedule generally incorporates the following time periods:

Schedule OEC Meeting	28 weeks prior to letting
Hold OEC Meeting	26 weeks prior to letting
Turn into Specifications and Estimates	8 weeks prior to letting
Advertisement*	5 or 6 weeks prior to letting

***** The Supervisor of the Specifications and Estimates Unit will determine which projects are candidates for letting with 3 or 4 week advertisements. Projects proposed for 3 week advertisements must have the approval of the Engineer of Design (except for Capital Preventive Maintenance and Pavement Marking projects).

14.60.02 (revised 5-29-2012)

Requirements

All plan/proposal package submittals should include at least the following, in addition to the plans:

1. One print of the title sheet
2. Generate Bid Based Prices Report (TRNS•PORT)
3. Submission of Final Plan/Proposal Package to Specifications & Estimates (Form 0269)
4. Advertising Data (Form 0256)
5. Final QA/QC Checklist verified by the Project Manager
6. Proposal level cost summary (TRNS•PORT)
7. Unique special provisions (approved) including maintaining traffic
8. Frequently used supplemental specifications and special provisions (package and checklist)
9. Required permits
10. Utility Relocation Status Report (Form 2286)
11. Utility Charge Estimate (Form 0223) - for bridge projects
12. ROW Certification for Advertising (Form 0725I or Form 0725N)
13. Coordination clauses
14. Completed and signed Certification & Acceptance (Form 0265)
15. Notices to Bidder
16. Progress schedule with any incentive/disincentive clauses
17. Road Cost Estimating Check List (Form 0268) (with any changes from the OEC Meeting marked in red)
18. Exception with a memorandum signed by the Region Engineer acknowledging the risks and a completed Exception Risk Analysis (Form 2912).
19. Structure Lump Sum Items Worksheet (Form 2911) if applicable

The Project Manager must get approval - signature on the Submission of Final Plan/Proposal Package to Specifications & Estimates (Form 0269) - from the Supervisor of the Specifications and Estimates Unit prior to submitting a final package without ***ALL*** of the above items.

14.60.03 (revised 5-29-2012)

Exceptions

There are some exceptions to the above minimum requirements for submittal of plan/proposal packages to the Specifications and Estimates Section. Exceptions are permitted in the following areas:

- Permits
- ROW Certification on non-federally funded projects
- Local Agency agreements
- Unique Special Provisions

In order to submit a package to the Specifications and Estimates unit with an allowable exception, the following steps must be followed:

- Perform a risk analysis for each appropriate exception.
- Invite appropriate experts for each exception to the OEC Meeting.
- Send the Exception Risk Analysis (Form 2912) along with the other required documents to the OEC participants (two weeks prior to the meeting).
- If the participants at the OEC meeting agree with your request for an exception, have them initial the Exception Risk Analysis (Form 2912).
- If the participants disagree with the need for an exception, they must attach written comments to the Exception Risk Analysis (Form 2912).
- The Exception Risk Analysis (Form 2912) along with any comments should be forwarded to the Region Engineer for his signature. If the Region Engineer approves the exception, a memo stating their understanding of the risks and their approval is sent to the Project Manager to be included in the plan/proposal package submitted to the Specifications and Estimates unit. NOTE: Unique Special Provision exceptions (those not approved by the Design Division - see Section 14.57) do not require Region Engineer approval.

14.60.03 (continued)

Exceptions

- If the exception is a permit, include a Notice to Bidders that a permit is required, the projected date of permit approval and identify any restrictive conditions.

Specifications and Estimates will not process the package without an approved exception.

Once a project is submitted to the Specifications and Estimates Unit the Project Manager can check ProjectWise for the status of a project.

Upon receipt of the plan/proposal package for processing, the Specifications and Estimates Unit may ask to review the project with the Design Unit in order to gain an insight into the type of work involved to determine if any additional special provisions and/or supplemental specifications are required.

The Specifications and Estimates Unit processes projects in the same sequence as they are submitted. Expedited or other projects requiring special attention should be brought to the attention of the Supervisor of the Unit prior to submittal. This includes projects without all the material described above.

14.60.04 (revised 5-29-2012)

QA/QC Review

It is the responsibility of the Project Manager to perform a QA/QC review of the entire plan/proposal package prior to submittal to the Specifications and Estimates Unit. As a minimum, in addition to those items listed under Section 14.60.02, the following items ***must*** be correct:

- Quantities and pay items on plan sheets must match those in TRNS•PORT.
- All Unique Special Provisions with a pay item must have a matching pay item in the plans and in TRNS•PORT.
- All 7000 numbers in TRNS•PORT must have a Unique Special Provision in the proposal.
- Any Frequently Used Special Provision with a pay item must have a matching pay item in the plans and in TRNS•PORT.
- All Frequently Used Special Provisions and Specifications include in the package are the latest version.
- TRNS•PORT files must be complete and correct.
- All references to standard plans and special details are the latest version.

14.60.05 (revised 5-29-2012)

TRNS•PORT Files

Listed below are some directions/reminders concerning TRNS•PORT files:

- Proposal ID should be “C.S.-J.N.”, with no extra spaces or characters, job number does not have an “A” or any other suffix
- County number is filled in
- Spec year is correct, both at proposal and project level
- Section and Line number have been run
- Primary Region has been filled in
- Section List indicate “Road Work” or “Bridge Work”
- Long description entered using standard wording
- Number of plan sheets filled in
- Contract type is filled in

14.60.05 (continued)

- All Pre-established prices have been marked
- Funding distribution adds to 100%
- Each Lump Sum item adds to 1.00
- Administrative unit has been filled in
- Beginning and Ending termini have been filled in
- CE percentage is correct
- Project should be identified as J.N. with A (######A)
- Control group changed to ”DS” in the Project and Proposal level
- The unit price is fixed for all dollar items
- Project start date and completion date filled in
- The supplemental description for all 7000 items is the same as the pay item in the Special Provision.

Listed below are some common oversights of plan/proposal packages submitted to the Specifications and Estimates Unit:

- Copies of Special Details not included in the plans.
- Undefined pay items. Every pay item used on the project must be covered by the Standard Specifications for Construction, Special Provision or Supplemental Specification.
- Identical pay items in both the road and bridge sections. These should be revised to appear in only one section. This eliminates the possibility of a Contractor bidding differently on the same pay item.
- Packaging of projects. Packages with road, bridge, utilities, signals, signing, etc. should be packaged prior to submittal to the Specifications and Estimates Unit.
- Project cost not within MFOS funding limits.
- Construction completion date exceeding a permit’s expiration date.
- Missing or incorrect Mobilization maximum amount.
- Funding for Incentive/Disincentive clause not programmed or quantity not properly entered in TRNS•PORT.
- Quantities for a Contractor Staking Special Provision not included in the plans and/or TRNS•PORT.

CHAPTER 14 PROCEDURES FOR PLAN PREPARATION INDEX (continued)

14.67 (revised 3-26-2012)

PRE-CONSTRUCTION MEETING

A pre-construction meeting is usually held with the low-bid contractor, subcontractors, and MDOT representatives after the letting and award of a project. Participants usually include (when applicable):

- Contractor
- Subcontractor(s)
- Resident/Delivery Engineer
- Project Manager/Designer/Consultant
- Soils Engineer
- Traffic Engineer
- Utility/Permits Engineer
- Region/TSC Materials Engineer
- Utility Companies
- Counties and/or Municipalities
- Railroad Companies
- FHWA Area Engineer

The agenda may include:

- Introduction of attendees
- Recording of Minutes & Attendance record
- Project description
- Designation of Supervisors
- Proposal (including any addenda)
- Subcontractors
- Real Estate
- Utilities and Railroads
- Affected Municipalities and or Counties
  - Haul routes and hours
  - Special use permits
  - local ordinances
- Testing Order
- Soils/Materials
- Traffic
- Progress Schedule
- Safety Program/Issues
- Work Orders and Contract Modifications
- Labor Compliance
- OJT/EEO/DBE Requirements
- Miscellaneous
- Erosion Control

14.67 (continued)

The Project Manager should be invited to all pre-construction meetings. However, due to the limited time to schedule and hold the meeting, advanced notification may be short. Also, the Project Manager may want to contact the Resident/Delivery Engineer prior to the meeting to discuss the need for their participation. In some instances attendance at the pre-construction meeting is not required on the simplest, most straightforward projects.

Minutes at this meeting are recorded by a Region/TSC representative and copies are distributed to the Engineer of Construction Field Services Division, Region Engineer, TSC Manager, and all participants.

14.68

Section deleted.

14.69

ARCHIVING PROJECT FILES (WORKSTATION FILES)

Presently, there is no formal process for archiving electronic files of design projects. The current informal process may be used by contacting the Design Computer Coordination Unit. A formal procedure is currently being developed and, when reviewed and approved, will be distributed.