

Common Design Errors/Omissions

2003-1

Jan 22, 2003

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Title Sheet

- ✓ Physical Reference Numbers must be included in the P.O.B. and P.O.E. stationing blocks along with Control Section Mile Points.
- ✓ It is not necessary to list "C" phase on Title/Plan Sheets (i.e., JN 11111C), simply list the "A" phase. However, ROW plans must list the "B" phase.
- ✓ List ESAL's along with other traffic data. Flexible ESAL's for full depth HMA and composite pavements, Rigid ESAL's for Concrete pavement.
- ✓ Title Sheet map should include Township & Range; e.g., T1N, R1E. The "T1N" goes on the side of the map and the "R1E" goes on the top of the map.
- ✓ Make sure stationing difference between P.O.B. and P.O.E. matches the corresponding M.P.'s that are listed. If station equations exist they must be shown on the Title Sheet. The length of the project (miles) should be listed just above the upper-left corner of the "Contract For:" box located in the lower-right hand corner of the Title Sheet.

Typical Cross Sections - Misc Details:

- ✓ Make sure that the grading/earthwork on your project is addressed appropriately; e.g., Excavation, Earth; Roadway Grading, Machine Grading, Intersection Grading, Trenching, etc., and that the Special Provision (if required) clearly states which items of work are included. Typelines should be shown on the Typical indicating lateral pay limits of the specific item being used. Also, a note and leader to the bottom of excavation stating "Grade To This Line, Paid for as *pay item name.*"
- ✓ Driveway widths and types - Detail M openings on commercial drives, Min 30' opening face to face of curb. Dimensions should be shown edge to edge of curb & gutter at the throat.
- ✓ Side road approaches - Min 30' width edge to edge for Det III approach.
- ✓ Min. ditch width should be 4' for hydraulics, safety, future cleanout and ease of construction.
- ✓ When profile cold-milling for cross slope modification, be sure to identify the Cold-Milling Control Point (usually the outside edge of the traveled lane).

Typical Cross Sections - Misc Details: (cont.)

- ✓ Proposed widenings should be dimensioned from existing edge of pavement that will remain to the proposed edge of metal. Proposed lane widths should be dimensioned above.
- ✓ When excavating adjacent to existing pavement, the limits of excavation should be shown at a 1:1 slope from the bottom of existing pavement to remain.
- ✓ Circles should be placed at points where proposed cross slope changes.
- ✓ A berm should be constructed behind proposed curb and gutter. The berm should be a min. of 2 ft wide, preferably 5-6 ft wide, and may slope either towards the curb and gutter or away (preferably towards), typically at 6%.
- ✓ HMA Application Estimate
 - ▶ Use the proper PG (Performance Grade) number for each mix.
 - ▶ Identify the mix(es) that are to be used as HMA Approach in the REMARKS column.
 - ▶ Hand Patching, if used, should be listed as an item and the mixture to be used should be listed in the REMARKS column.
 - ▶ High Stress mixes are to be used for top and leveling courses only and should be identified as "HMA, (Type), High Stress" in the ITEM column.
 - ▶ Where High Stress mixtures are to be used as HMA Approach, top and leveling courses will be paid for as "HMA Approach, High Stress". Associated base course, if applicable, would be paid for simply as "HMA Approach".
 - ▶ The latest HMA Mixture Selection Guide (dated January, 2002) states that when all of the HMA on a project is High Stress, it should be paid for as standard HMA mixtures listing the High Stress PG number. This has changed and will be reflected in the next version of the Guide. Wherever High Stress mixtures are used they are to be paid for as such.
 - ▶ "Bituminous Bond Coat" should be just "Bond Coat". Don't change it to "HMA Bond Coat". The standard cell will be updated to reflect this.

Notesheet:

- ✓ Fill in the survey data, if applicable, in the upper left corner of the notesheet.
- ✓ Make sure the Standard Plan list is up to date. Due to the fact that OEC's should now be held 6 months prior to letting and it's likely that Standard Plans/Special Details will change during that time period, prints of Special Details do not need to be sent in with the OEC package.

Notesheet (Cont.):

- ✓ Make sure that any pay items triggered by a FUSP or SS are included.
- ✓ Ride Quality is not a Federal participating item. See IM02-22 which can be found on the MDOT website by clicking on “Maps & Publications” >”Publications”>”Highways Instructional Memos”. This should be coded correctly in TrnsPort.
- ✓ HMA Quality Initiative quantity should be estimated @ 1 dlr per ton of mix to be tested.
- ✓ The item of “Videotaping Sewer and Culv Pipe” should be set up on projects with new storm sewer. See 402.03.K of the 2003 specbook for pipe size limitations.

Plan/Profile Sheets:

- ✓ Ex/Prop bridge underclearance on profile sheets.
- ✓ Pavement widths dimensioned, centerline to edge, at all locations where the width changes. Include stationing at these points.
- ✓ Meet minimum sewer and ditch grades.
- ✓ List Drainage Structure Cover types.
- ✓ List Sidewalk Ramp types, as per the Standard Plan.
- ✓ Try to figure out how to maintain traffic first, then do the design.
- ✓ Widening should be dimensioned from the existing edge of pavement to remain to the proposed EOM.
- ✓ If you can come up with reasonable estimates, it's good to have estimated earthwork quantities to be included in items such as “Roadway Grading” etc. It's better to not give estimates than to guess. This also applies to estimated quantities of each mixture to be paid as HMA Approach.

General:

- ✓ Breakdown ID summary is not necessary at the Plan Review. A copy of the cost estimate is sufficient.
- ✓ It is extremely helpful for OEC review if project documents such as The Plan Review Letter, Design Exceptions, Pavement Design Letter, etc are included. See Requirements for the OEC meeting.
- ✓ Copies of FUSP's and SS's do not need to be included in the Plan Review and OEC packages. The checklists will be sufficient. However, a copy of applicable FUSP's and SS's must be available at these meetings in case questions arise.
- ✓ Quantity checks between the plans and Trnsport are essential. Pay items must match Trnsport EXACTLY. The exception is with pay items like Dr Structure Cover where the number and types of covers can be listed after the pay item in parentheses and in zero line weight. "**Dr Structure Cover (2G, 4B)**".
- ✓ Adding items of work to Standard Pay Items by note is to be avoided. All non-standard pay items need a Special Provision.
- ✓ When in doubt, check the Design Manual.