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Inter-Departmental Memorandum

Date: April 1, 2016
To: Design Team Leaders
From: Design Section Engineer
Greg Williams
Subject: **Erosion Control Plans, Details, and Quantities**

MDOT's plan requirements for erosion control have changed significantly over the last few years. The following is a summary of these updated requirements, provided as guidance for designers in plan development:

1. For all projects with at least 1 acre of disturbed area, the following sheets are required:
 - Erosion Control Detail Sheets ECD-1 through ECD-22
 - Special Design Sheets EC-1, TEC-2, TEC-3, and DT-1

Some projects with less than 1 acre of disturbed area, but requiring significant erosion control measures, may also need the above sheets.

Projects including soil reinforcing mat will require special design sheet DT-1A. Projects with Type D silt basins will require special design sheet TEC-D, and the 135 cubic yard capacity/acre design sheet is required.



Copies of updated special design sheets can be downloaded under *Special Design Sheets* from the Roadway Design web site.

2. Preliminary erosion control plans are to be included for most projects; however, some smaller projects (less than 1 acre of disturbed area) may not require them. The field review team should evaluate each project's specific erosion control needs and make a determination on what erosion control measures and sheets should be included in the plans. Sufficient right-of-way should be provided for required erosion control measures that may extend beyond the normal construction limits, such as silt basins, clean water diversions, and permanent riprap. The designer needs to keep in mind that ECP sheets must be ready to submit with the Storm Water Permit application for projects with over 5 acres of disturbed area.

The preliminary erosion control plan sheets should basically be copies of the Plan-Profile sheets with everything deleted except for ROW lines and markers, alignment, edge of pavement, construction limits, drainage structures, silt basins, streams, lakes, wetlands, and profiles. Profile labels should be deleted except for the grade percents. Working sheet numbers should begin with ECP3 to correspond with WK3. On these sheets, the designer will show required erosion control items at critical areas such as bridges, boxes, large pipes, and wetlands. Proposed bridge locations will require ECP-BR sheets that correspond to the bridge plans and the roadway ECP sheets. An impaired waters stamp should be shown on the corresponding ECP and Plan-Profile sheets for any stream that is on the 303(d) list. Items shown on the ECP sheets include, but aren't limited to: silt basins, stream diversions, erosion checks, grassed earth berms, clean water diversions, riprap at bridges, and silt fence/super silt fence at bridges or wetland areas. The contractor should decide what to do at other locations after the final plans have been printed.

3. Plan-Profile sheets should only show silt fence locations that are required at bridges and wetland areas. An estimated quantity for silt fence should still be shown on the Summary of Quantities sheets, but not on the Plan-Profile sheets. Permanent erosion control items (such as ditch treatment and permanent riprap), Type D silt basins, and other temporary erosion control items shown on the ECP sheets at wetlands/waters sites should also be shown on the Plan-Profile sheets.

4. The following five items are to be included on the Summary of Quantities listing for temporary ditch checks. Plan quantities for each should be based on 1/5 of the total number of estimated ditch checks:

235-A001	TEMPORARY EROSION CHECKS	BALES
907-237-A003	WATTLES, 20"	LIN FT
907-245-A001	TRIANGULAR SILT DIKE	LIN FT
907-246-A001	SANDBAGS	LIN FT
907-249-A001	RIPRAP FOR EROSION CONTROL	TON

5. A sufficient plan quantity of temporary silt fence should also be included for the following:
- All fill sections within the project limits
 - Sensitive areas such as at bridges or wetlands as discussed in point #3
 - Ditch checks as shown on sheet ECD-5

Designers are advised to determine the estimated plan quantity for temporary silt fence by first adding the lengths from items a and b above, next adding an additional 10% to that total, and then rounding the final quantity. The additional 10% is intended to account for replacement of damages, relocation due to construction phasing, and ditch checks.

234-A001	TEMPORARY SILT FENCE	LIN FT
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6. The following four items are to be included on the Summary of Quantities listing for inlet protection. Plan quantities for each should be based on 1/4 of the total number of inlets. Additional quantities of silt fence, wattles, and sand bags may be required for inlet protection during earlier construction phases as shown on sheet ECD-10:

907-234-D001	INLET SILTATION GUARD	EACH
235-A001	TEMPORARY EROSION CHECKS	BALES
907-237-A002	WATTLES, 12"	LIN FT
907-246-A001	SANDBAGS	LIN FT

7. Examples of other temporary erosion control pay items which may be required include, but are not limited to:

* 907-216-A001	SOLID SODDING	SQ YD
* 907-228-A001	EROSION CONTROL BLANKET, TYPE I	SQ YD
* 907-234-C002	SUPER SILT FENCE	LIN FT
907-234-F001	TURBIDITY BARRIER	LIN FT
236-A004	SILT BASIN, TYPE D	EACH
907-253-A001	COIR FIBER BAFFLE	LIN FT
907-254-A001	SEDIMENT RETENTION BARRIER	LIN FT
907-247-A001	TEMPORARY STREAM DIVERSION	EACH
907-249-B001	REMOVE AND RESET RIPRAP	CY
815-E001	LOOSE RIPRAP, SIZE 300	TON
815-F002	SEDIMENT CONTROL STONE	TON

*due to cost, use only when other measures are not adequate

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