Montana Department of Transportation
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Helena, MT 59620-1001

Consultant Design			
Action	Info	Date 5/15/06 Routing	Attach / Initial
	✓	Bureau Chief	
		Consultant plans Eng	
		Design Supervisor	
		CTEP Engineer	
	✓	ALL ENGINEERING STAFF	
	✓	ALL DESIGN CONSULTANTS	
	✓	File	

Memorandum

To: Distribution

From: Loran Frazier, PE, Chief Engineer

Date: May 11, 2006

Subject: Revised Surfacing Structural Coefficients and Layer Thicknesses

The Materials Bureau has evaluated the properties of pavement materials used in Montana. Based on the evaluation, the Bureau recommends changing the structural coefficients used in MDT's 1991 Pavement Design Manual (1991 Manual). The following coefficients should be used for designing surfacing sections for future projects. These coefficients supersede those presented in the 1991 Manual.

Virgin Materials	**Coefficient (per inch)**	**Coefficient (per mm)**
Plant Mix Surfacing (All Grades)	0.41	0.01614
Crushed Aggregate Course	0.14	0.00551
Milled Plant Mix Surfacing	0.12	0.00472
Pulverized Plant Mix Surfacing / Crushed Aggregate Course Mixture	0.12	0.00472
Treated Base Course	0.20	0.00787
Existing Materials		
Plant Mix Surfacing (All Grades)	0.33	0.01299
Crushed Aggregate Course	0.12	0.00472
Milled Plant Mix Surfacing	0.12	0.00472
Pulverized Plant Mix Surfacing / Crushed Aggregate Course Mixture	0.12	0.00472
Treated Base Course	0.20	0.00787
Special Borrow	0.07	0.00276

The coefficients of existing materials should be reduced based on the condition of the material. Guidelines for the reduction are in the 1991 Manual. Coefficients for materials not shown remain the same and are also presented in the 1991 Manual.

The minimum surfacing layer thicknesses will remain the same as stated in the Surfacing Design Guidelines, published April 7, 2005.

Value Engineering Proposals using the revised coefficients will not be considered. Change orders to reduce surfacing depths based upon the revised surfacing coefficients will be considered on a case-by-case basis.

Effective Dates

Department staff and design consultants should begin designing surfacing sections using the revised coefficients immediately. The surfacing design unit and design consultants will begin designing the preliminary surfacing section (Activities 600 and 106) using the revised coefficients. Implementation of the new coefficients for projects with actual finish dates for Activities 600 and 106 will depend on the stage a project is at in the development process. Guidance for both Department staff and design consultants is as follows:

- Projects before distribution of the scope of work report - Redesign
- Projects after distribution of the scope of work but before the distribution of the final plans – Evaluate each project and redesign on a case-by-case basis
- Projects after distribution of the final plans – do not redesign

The revised coefficients will not change surfacing thicknesses or recommended treatments on pavement preservation projects.

LF

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