Memorandum

U.S. Department
of Transportation
Federal Highway Administration

Subject: CA PFH 112-1(1) SOUTH FORK SMITH RIVER ROAD PAVEMENT RECOMMENDATIONS

Date: July 6, 2005

From: Steve Deppmeier, Pavements Engineer

To: Ryan Tyler, Project Manager
Frank Grannis, Lead Designer

The projected traffic loading from data distributed on June 28, 2005 by Frank Grannis will not generate significant pavement loading and thus CFLHD's minimum pavement structural section will be incorporated.

Existing pavement were as follow:

Bridge	Sample Id	HACP	HACP Condition	Base	Subgrade
Rock Creek	C-RC1	6"	Low severity transverse & longitudinal joint cracking	3"	9" – 3' A-1-a (0) GP-GM PI = 5
Boulder Creek	C-BC1	3.5"	Low severity transverse & longitudinal joint cracking	2"	5.5" – 3' A-2-4 (0) SC-SM; R = 40 PI = 5
Steven Memorial	C-SM1	2.5"	Low severity transverse & longitudinal joint cracking	3"	5.5" – 2' A-1-a (0) GC-GM PI = 4
Hurdy Gurdy	C-HG1	4"	Low severity transverse & longitudinal joint cracking	2"	6" – 5' A-1-b (0) SM; R = 73 PI = 1

All surfaces had been chip sealed within the last 3 to 5 years. No significant cracking or other distress was noted within the bridge approach areas.

Subgrade was good material, being classified as A-2-4 or better. A soil resilient modulus of 9500 psi, or design R-Value of 40 was used in the pavement calculations.

Traffic loading is light, with an ADT of 211 for the design year of 2008. A 2% growth factor was applied, generating only an ADT of 314 for 2028. Trucks constitute only 1% of the vehicle classifications.

Rock Creek Bridge Approach: very little pavement distress, HACP 6 inches.

Hurdy Gurdy Bridge Approach: again, very little pavement distress, HACP 4 inches.

Pavement Recommendations

Based on the above, including that the existing pavement is 2.5 inches to 6 inches thick, the following is the recommended pavement design:

3 inches HACP
6 inches Base Course
SN = 2.16

The above is CFL's minimum pavement structural section for a 4R project.

Note: At the contractor's discretion the existing pavement can be recycled and used for base course, fill material, or for temporary detour surfacing.

Pavement Materials

- The HACP should be 403 HACP if less than 5000 tons, or if greater than 5000 tons and placed in only one construction season, specify 402 HACP, Class B, Grading E, with a Type V smoothness.
- Antistrip additive will be Type III (Hydrated Lime) at 1%.
- The asphalt cement should be PG 64-16 if after the state converts to the PG binder grades. If the state has not convert, then the asphalt cement should be AR-4000.
- The 3 inch depth HACP shall be placed in two lifts.
- Tack coat at 0.10 gal/yd^2 is required between lifts and should either be a CSS-1, CSS-1h, SS-1, or SS-1h emulsion.
- A fog seal at 0.10 gal/yd^2 should be included in the contract. The emulsion type can be a CSS-1, CSS-1h, SS-1, SS-1h.
- A prime coat should be applied on the aggregate base material prior to paving. The emulsion type should either be CSS-1, CC-1h, SS-1, or SS-1h. For determining quantities use an application rate of 0.27 gal/yd^2. An item for blotter material should be included at 14.75 lb/yd^2.

Attachments: ADT Summary
DARWin Pavement Calculations
Laboratory Results
May 2004 Material Quotation Sheet by Granite Construction

CC: Mike Voth, Lead Pavements Engineer
Materials