



**ENGINEERING OPERATIONS COMMITTEE
MEETING MINUTES
MARCH 9, 2017 – 9:00 A.M.
MULTI-MODAL CONFERENCE ROOM**

Present: M. Van Port Fleet R. Ranck J. Gutting B. Wieferich H. Zweng
M. Geib S. Bower K. Avery K. Schuster M. Sweeney
M. Bott S. Masters (FHWA)

Absent: C. Rogers

Guests: B. Krom M. Eacker T. Kline I. Gedaoun C. Stein
K. Wallace J. Ranger C. Torres

OLD BUSINESS

1. Approval of the February 6, 2017 Meeting Minutes – M. Van Port Fleet

ACTION: Approved with minor edits.

NEW BUSINESS

1. Contractor Manager General Contractor (CGMC) – C. Stein

Route/Location: US-31/M-72/M-37, Murchie Bridge to east/Garfield Avenue, Traverse City
Job Number: 131655
Control Section: 28013
Project Cost: \$9,960,000
Letting Date: December 2021

Approval is being requested to utilize a Construction Manager/General Contractor (CMGC) procurement method for the referenced project. A CMGC contracting method is being requested to allow for the Contractor's input on potential MOT options, staging, and production schedules to incorporate into the Proposal/Estimate.

This corridor has one of the highest ADTs in North Region. A previous contract successfully utilized CMGC on this corridor in 2015. The collaboration between Design and Contractor helped determine potential MOT options, staging, and production schedules to minimize user impact and expedite construction.

The Innovative Contracting Committee (ICC) has approved the use of the CMGC contracting method for this project.

ACTION: Approved

2. Alternate Pavement Bid (APB) – C. Stein

Route/Location: M-6, Jackson Street to Wilson Avenue, Ottawa & Kent Counties

Job Number: 128123

Control Section: 70025

Project Cost: \$10,210,000

Letting Date: June 2017

Approval is being requested to utilize an Alternate Pavement Bidding (APB) contracting method for the referenced project. This project meets all the required APB selection criteria. The life cycle costs of the two pavement designs are within 3.74%. Both alternatives are expected to have similar environmental, right of way, drainage, and utility impacts along with similar maintaining traffic concepts. Paving is the controlling operation for the construction schedule.

The APB Coordinator and the Innovative Contracting Committee recommend this project be approved for the APB contracting method.

ACTION: Approved

3. Pavement Selection – B. Krom

Route/Location: I-75, Springwells Street to Clark Avenue, City of Detroit

Job Number: 130783

Control Section: 82194

Letting Date: June 2017

Department policy requires that Life Cycle Cost Analysis (LCCA) be used to determine the lowest cost pavement design alternative following the procedures outlined in the MDOT Pavement Design and Selection Manual. Final pavement selection requires approval by the Engineering Operations Committee.

Alternative #1: Reconstruct with Hot Mix Asphalt Pavement

2"	HMA, 4E50, Top Course (mainline & inside shoulder)
3.75"	HMA, 3E50, Leveling Course (mainline & inside shoulder)
7.5"	HMA, 3E50, Base Course (mainline & inside shoulder)
6"	Aggregate Base Course (mainline & inside shoulder)
18"	Sand Subbase (8.51" existing, 9.49" new)
6" dia.	Subbase Underdrain System
37.25"	Total Section Thickness

Present Value Initial Construction Cost	\$1,897,515/directional mile
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Present Value Initial User Cost	\$193,901/directional mile
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Present Value Maintenance Cost	\$539,705/directional mile
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Equivalent Uniform Annual Cost (EUAC)	\$89,572/directional mile
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Alternative #2: Reconstruct with Jointed Plain Concrete Pavement

12.5"	Non-Reinforced Concrete Pavement, P1 Modified, w/ 16' joint spacing
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4"	Existing Open Graded Drainage Course
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	Existing Geotextile Separator
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10"	Existing Sand Subbase
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	Existing Underdrain System
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26.5"	Total Thickness
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Present Value Initial Construction Cost	\$1,553,732/directional mile
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Present Value Initial User Cost	\$148,923/directional mile
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Present Value Maintenance Cost	\$547,912/directional mile
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Equivalent Uniform Annual Cost (EUAC)	\$74,613/directional mile
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Pavement designs are based on the 1993 AASHTO "Guide for Design of Pavement Structures" and the AASHTO pavement design software, DARWin Version 3.1, 2004.

The Equivalent Uniform Annual Cost calculation is based on the pavement selection process as approved by the EOC on June 3, 1999. Construction costs are derived from historical averages on similar projects while user costs are calculated using the MDOT Construction Congestion Cost model.

ACTION: EOC approves the selection of Alternative #2, Reconstruct with Jointed Plain Concrete Pavement, which has the lowest life cycle cost.

4. Plastic Pipe Qualification Procedure – T. Kline

The AASHTO LRFD Bridge Design Guide, Section 12 Thermoplastic Pipe, has recently been updated from the previous 2010 version. This requires that the MDOT design procedure for plastic pipe design be revised. The updated procedure maintains historical design factors of safety for plastic pipe design while meeting the requirements of the updated LRFD guidelines.

The Joint Pipe Operations Committee recommends approval of the updated MDOT plastic pipe design procedure.

ACTION: Approved

5. MASH Compliant Permanent Concrete Barriers (PCB) – C. Torres

The FHWA-AASHTO joint implementation agreement requires that all projects let after December 2017 specify MASH 2016 compliant PCB designs. A new single slope PCB

design has been developed that meets these new requirements. Special details required to update the Standard Plan R-49 series have been developed to reflect these changes.

The Barrier Advisory Committee (BAC) has approved these changes and recommends that MDOT submit this new PCB design to FHWA utilizing the Self Certification process. In addition, the BAC recommends that all projects let after December 31, 2017 utilize this new PCB design.

ACTION: Approved

Steven Bower, Secretary
Engineering Operations Committee

RA:SB

cc: EOC Members	M. DeLong	D. DeGraaf (MCA)
Meeting Guests	D. Jones	J. Becsey (APAM)
K. Steudle	W. Tansil	D. Needham (MAA)
L. Mester	C. Libiran	Monica Ackerson Ware (MRPA)
D. Wresinski	R. Jorgenson (FHWA)	
Region Engineers	R. Brenke (ACEC Michigan)	
Assoc. Region Engineers	G. Bukoski (MITA)	
TSC Managers		