



**ENGINEERING OPERATIONS COMMITTEE  
MEETING MINUTES  
JANUARY 4, 2018 – 9:00 A.M.  
MULTI-MODAL CONFERENCE ROOMS**

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Present: Mark Van Port Fleet      Mark Geib      Brad Wieferich  
          Kim Avery                      Jason Gutting      Harold Zweng  
          Mark Bott                        Robert Ranck      Jeff Forster  
          Matt Chynoweth                Mark Sweeney

Absent: Greg Losch                    Theodore Burch  
          Kristin Schuster                Jason Cole

Guests: Erik Carlson                Imad Gedaoun      Taylor Snow  
          Dave Gauthier                    Therese Kline      Carlos Torres

OLD BUSINESS

1. Approval of the November 2, 2017 Meeting Minutes – December Email Approval
2. I-75BL, Mackinac Trail/ 3 Mile Road Roundabout, Superior Region – December Email Approval
3. US-41/M-28 Roundabouts at Walmart Drive (County Road 492) and US-41/M-28 at Brickyard Road, Superior Region – December Email Approval
4. I-75 Alternate Pavement Bid, University Region – December Email Approval
5. I-696 Alternate Bid – Metro Region – December Email Approval

NEW BUSINESS

1. Laker Line, Grand Region – Jason Cole

**Description:** Transit Signal Priority (TSP) for the “Laker Line” Bus Rapid Transit (BRT), M-45 in Ottawa and Kent Counties

**Job Number:** N/A–Permit Application by Interurban Transit Partnership (aka The Rapid)

**Control Section:** 41081/70041

**Letting Date:** N/A–Tentative Construction 2018

The Grand Rapids TSC, the Muskegon TSC, the Grand Region Office, and the Signals Operations Unit have been involved with reviewing plans for the Laker Line, including evaluating the request for TSP on M-45. Based on traffic projections and modeling of the corridor, it was determined that TSP (within the parameters proposed) will not significantly

impact traffic operations of the corridor, and is vital to the success of the BRT route. Therefore, it is recommended that the Laker Line be allowed to install TSP on the M-45 corridor.

The Engineering Operations Committee (EOC) is requested to approve the Laker line being allowed to install TSP on the M-45 corridor.

*ACTION: This item was tabled since there was no region representative present.*

## 2. Video Inspections of Underdrains – Dave Gauthier

**Description:** Video inspection of all underdrain systems

**Job Number:** N/A

**Control Section:** N/A

**Letting Date:** N/A

Historically the Department (Soils Research Unit at Construction Field Services) has provided video inspection of underdrain systems if requested by the Engineer. In the past, not all Transportation Service Centers (TSCs) were aware of the availability of this service. As the word spread throughout the state, the volume of requests for video inspection increased. Over the past several years, the inspectors operating the video equipment have noticed an improvement in the quality of the installation of underdrain. They attribute this improvement to the fact that contractors know their work will be video inspected and have improved their installation practices.

The EOC is requested to approve (1) Requirement of video inspection of all underdrains installed as part of a project similar to the requirement for larger diameter culverts and sewers, and adoption of the attached special provision as frequently used and use in all projects with pay items for underdrain (ultimately the special provision would be incorporated into the 2020 spec book or the next edition), (2) Removal of prefabricated drainage system (PDS) from the spec book because it has had minimal use in the last five (5) years and it is not possible to video inspect this type of pipe (this action should be implemented in conjunction with the requirement to video inspect all underdrains), and (3) Elimination of the requirement for rodent screens from underdrain outlet ends due to lack of maintenance and increased evidence of premature plugging causing water to back up in the pavement structure resulting from the use of recycled crushed concrete in the base layer.

*ACTION: The EOC approves the removal of rodent screens and PDS from the Standard Specifications, to be allowed by Special Provision as appropriate. The EOC approves the concept of video inspection of underdrains, and directs Dave Gauthier to work with industry to develop pilot specifications and identify pilot projects.*

## 3. Culvert Committee – Harold Zweng

**Description:** Statewide

**Job Number:** N/A

**Control Section:** N/A

**Letting Date:** N/A

In June 2017, the Environmental Services Section and Hydraulics Unit approached the EOC with a proposal to create a culvert committee. The EOC directed the proponents to develop a Guidance Document and membership roster, and report back to the EOC in six months. The Guidance Document has been developed with input from several work areas and includes membership from multiple disciplines.

The EOC is requested to provide guidance on the appointment of officers for the committee and to approve the Guidance Document.

*ACTION: This item was tabled, pending further discussion between the three Bureau Directors and COO. EOC members will review and provide comments on the document to Hal.*

## 4. Special Provision for Corrugated Polyethylene Pipe for Culverts, Modified–12C401(A660) – Therese Kline

**Description:** Special Provision for Corrugated Polyethylene Pipe for Culverts, Modified-12C401(A660)

**Job Number:** N/A

**Control Section:** N/A

**Letting Date:** N/A

The special provision updates Division 4, Section 401 of the Standard Specifications for Construction to include 48-inch diameter Corrugated Polyethylene Pipe. Industry has provided three test sites (2002, 2003 and 2007) with larger diameter pipe that have functioned well for the previous 10 to 15 years in similar conditions to the requirements stated above (M-31, M-32, business route 127). Approval is sought to allow the use of larger diameter, 48-inch, approved polyethylene pipe in Class A and Class B installations as defined in Tables 401-1 in the Standard Specification for Construction in rural 2-lane, 2-way traffic with ADT of 20,000 or less; or adjacent to but outside the 1:1 influence of other roadways within MDOT right of way.

The EOC is requested to approve the Special Provision for Corrugated Polyethylene Pipe for Culverts, Modified.

*ACTION: The Committee voted to allow the expanded use of corrugated plastic pipe (AASHTO M 294), up to 48-inch diameter, for non-freeway two-lane/two-way locations of 20,000 ADT or less, for Class A and B culverts. A frequently used*

*special provision, and associated use statement, will be written to make this allowance; including modifications to Table 401-1 of the 2012 spec book.*

5. Update on the Manual for Assessing Safety Hardware (MASH)-Compliant Permanent Concrete Barriers (PCBs) – Carlos Torres

**Description:** Update on MASH-Compliant Permanent Concrete Barriers (PCBs) (*previously submitted for the March 9 and November 2, 2017 meetings*)

**Route/Location:** All new PCB installations on projects with a letting date after 12/31/17

**Job Number:** All new PCB installations on projects with a letting date after 12/31/17

**Control Section:** All new PCB installations on projects with a letting date after 12/31/17

**Letting Date:** All projects let after 12/31/17

On all projects let after 12/31/17, new PCBs installations on the National Highway System (NHS) must be MASH compliant. Therefore, MDOT needs to adopt MASH-compliant permanent concrete barrier designs as soon as possible.

To date, the only MASH-compliant, cast-in-place PCB design with an FHWA eligibility letter is the Manitoba Constrained-Width, Tall Wall barrier. At the 11/2/17 EOC meeting, EOC voted in favor of adopting the Manitoba Tall Wall barrier in lieu of the unreinforced, single-slope PCB that the EOC approved on March 9, 2017. However, **there are potential issues with the Manitoba Tall Wall barrier:** Higher strength concrete (6,500 psi mix) is required; Substantial increase in barrier construction costs; and modified barrier designs for certain applications are not covered under the FHWA eligibility letter nor is it addressed in the Manitoba Constrained-Width, Tall Wall report prepared by the Midwest Roadside Safety Facility.

On 12/13/17, a MASH TL-3 pickup truck crash test was conducted on the Ohio Department of Transportation's (ODOT) semi-reinforced, 42" tall single-slope permanent concrete barrier (PCB). The test passed MASH, TL-3 criteria, and the barrier performed well. As a result, **ODOT will be self-certifying their semi-reinforced, 42" tall single-slope PCB.** Since ODOT did not conduct the full suite of crash tests, their PCB design does not qualify for an FHWA eligibility letter. However, ODOT feels comfortable self-certifying this PCB design, and it appears the FHWA – Ohio Division Office is on board with this. The ODOT PCB design is a possible alternative for MDOT consideration.

Another alternative would be to use the Tennessee Department of Transportation's (TDOT) single-slope concrete median barrier design that was analyzed by the Texas A&M Transportation Institute (TTI) using finite-element modeling under MASH, TL-3 and MASH, TL-4 conditions (refer to TDOT's PCB standard plans for additional information).

EOC is requested to consider approving one of the following alternatives if it recommends abandoning the Manitoba Tall Wall option:

- A. Reinstate the unreinforced, single-slope PCB designs that the Barrier Advisory Committee recommended and EOC subsequently approved on March 9, 2017.
- B. Adopt ODOT's semi-reinforced PCB design.
- C. Adopt TDOT's reinforced PCB design.

*ACTION: The Committee voted to reverse its 11/2/17 recommendation to adopt the Manitoba Tall Wall PCB design and, in its place, reinstate the unreinforced, single-slope PCB designs that the Committee approved on 3/9/17. The unreinforced, single-slope PCB designs will be interim standards for MDOT. This approval acknowledges the Department will regard the unreinforced, single-slope PCB designs to be MASH-compliant by way of MDOT self-certification. The complete set of updated standards and details depicting the unreinforced, single-slope PCB designs will be submitted to EOC for final approval by the Committee.*

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Harold Zweng, Acting Secretary  
Engineering Operations Committee

RA:

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