



**ENGINEERING OPERATIONS COMMITTEE  
MEETING MINUTES  
MARCH 18, 2022, 9:00 A.M. – 11:00 A.M.  
VIA TEAMS**

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Present:	Carol Aldrich	Mark Dionise	Kristin Schuster	Hal Zweng
	Mark Bott	Jason Gutting	Brad Wieferich	
	Gregg Brunner	Ryan Mitchell	Kim Zimmer	
Absent:	Matt Chynoweth	Tony Kratofil	Gorette Yung	
	Rebecca Curtis	Will Thompson		
Guests:	Jason Gailitis	Clint Mayoral	Jim Ranger	
	Kevin Kennedy	Matthew Radulski	Carlos Torres	

OLD BUSINESS

1. Approval of the January 14, 2022, meeting minutes – Brad Wieferich (acting Chair)

*ACTION: Approved*

2. Michigan Department of Transportation (MDOT) new materials and products – Jason Gutting

*ACTION: For information only*

3. Exception request for an LCCA on the rehabilitation of US-131 in St Joseph and Kalamazoo Counties - Sarah Fedders (**February email approval**)

*ACTION: Approved*

4. Alternate Pavement Bid in Berrien County, Southwest Region, I-94 from I-94 BL to Britain Avenue Freeway Reconstruction & Rehabilitation - Ben Krom (**February email approval**)

*ACTION: Approved*

5. Use of Alternative Technical Concepts (ATC) for the superstructure replacement on Warren Road over US-23 NB in Ann Arbor Charter Township, Washtenaw County - Matt Chynoweth (**March email approval**)

The Innovative Contracting Committee (ICC) is requesting approval for a Design/Bid/Build with ATC contract for the partial superstructure replacement of Warren Road over US-23 NB. On Friday, February 11, 2022, a high load hit and severely damaged the Warren Road bridge span over US-23 NB which resulted in emergency contracting to demolish the damaged span. This bridge is a critical link relative to regional mobility and the University

Region would like it back in operation by October 30, 2022. In discussions with various fabricators, MDOT was made aware of longer than normal lead times for structural precast concrete elements, and we thought providing a base design and allowing an ATC phase to allow prime contractors to work with fabricators on potential options for faster fabrication timelines was a good solution. See below for specific information. This project has already been approved by the ICC.

*ACTION: Approved*

### NEW BUSINESS

1. Safety Topic: Dehydration – Hal Zweng

<<See Appendix A>>

*ACTION: For information only*

2. Revisions to Michigan Test Method 102 and Elimination of MTM 122E and MTM 122M – Kevin Kennedy

Issue Statement – Request approval of revisions to Michigan Test Method (MTM) 102 (Abrasion Resistance of Aggregate by the Los Angeles (LA) Machine) and elimination of MTM 122E and MTM 122M (Determination of the drainability Characteristics of Granular Materials).

Major Issue(s) – MTM 102-Revisions encompass major procedural changes for the Aggregate Lab and new direction for which grades can be used to fulfill which specification requirements for LA Abrasion. This officially recognizes that some materials perform better/worse at different gradations and takes steps to ensure this difference in some materials is not allowing sub-par materials to be used on MDOT projects while also not penalizing suppliers for having material that performs better at different grades. It also removes the retesting procedures to align with the Materials Quality Assurance Procedures for resampling and testing as we are often not aware of what specification the material will be held to at the time of sample submission and cannot follow current retest guidance.

MTM 122E and MTM 122M – This is an outdated MTM that has not been used since the department was using the metric system.

Background/History – MTM 102 was reviewed by Construction Field Services, the regions, industry (Michigan Aggregate Association; Asphalt Pavement Association of Michigan; Michigan Concrete Association), and the Federal Highway Administration.

MTM 122E and MTM 122M are not currently used have not been used in years and there is no anticipated future use.

Recommendation(s) – Approve revisions to MTM 102 and approve the elimination of MTM 122E and MTM 122M.

Status – New Submittal

*ACTION: Approved*

3. Proposed MDOT Bridge and Bridge Railing Ornamental Fence Guidelines – Carlos Torres

Subject/Issue – Proposed MDOT Bridge and Bridge Railing Ornamental Fence Guidelines.

Major Issue(s) – Currently, MDOT does not have guidelines pertaining to the installation of decorative/ornamental fences on MDOT structures. MDOT's Standards Unit, in conjunction with the Barrier Advisory Committee (BAC), developed draft guidelines for inclusion in MDOT's Bridge Design Manual (BDM) pertaining to ornamental fences. This will help create statewide consistency with the use of ornamental fences on MDOT bridges. The Engineering Operations Committee (EOC) review and approval of the draft guidelines is requested.

Background/History – Ornamental fences have been installed on MDOT bridge railings and bridge decks. Until now, the review and approval process for ornamental fences has been somewhat subjective, and their approval has typically occurred at the Region and/or Transportation Service Center level without input from MDOT's Crash Barrier Engineer or MDOT's BAC. However, there are potential safety implications with installing a decorative/ornamental fence if installed within the clear zone, or if placed on top of or behind a crashworthy bridge railing and the fence is located within the railing's zone of intrusion (ZOI).

The draft guidelines were proposed by BAC, with input from other areas such as the Bridge Design support area, the Standards Unit, the Roadside Development support area, and the Development Services Division. In addition, BAC reviewed information from nine state transportation agencies, as well as the ZOI guidelines from the 2011 American Association of State Highway and Transportation Officials Roadside Design in the development of the proposed guidelines.

Recommendation(s) – EOC review and approval of the proposed BDM ornamental fence guidelines. The proposed guidelines will be contained in a new section of the BDM; Section 7.05.06. Also, Section 2.02.11 of the BDM will be revised to include language pertaining to ornamental fencing requests on MDOT structures. The proposed additions/changes are highlighted in the draft documents provided to the EOC.

Status – Awaiting EOC approval to implement the proposed additions and revisions in the BDM.

*ACTION: Approved with minor edits and removal of "high end of the clear zone range" references in section 7.05.06*

4. Ornamental Fence Installation on I-94 at Capital Avenue Bridge in the City of Battle Creek – Carlos Torres

Subject/Issue – Ornamental Fence Installation on I-94 at Capital Avenue Bridge.



Major Issue(s) – Ornamental fence installation is proposed on top of the proposed bridge railings on the I-94 at Capital Avenue bridge in the city of Battle Creek, Calhoun County (Marshall Transportation Service Center (TSC)-Southwest Region).

Currently, MDOT does not have guidelines pertaining to the installation of decorative/ornamental fences when installed as part of MDOT projects. MDOT's Standards Unit, in conjunction with the Barrier Advisory Committee (BAC), developed draft guidelines for inclusion in MDOT's Bridge Design Manual (BDM) pertaining to ornamental fences. Until the BDM decorative/ornamental fence guidelines are approved by the EOC and implemented, EOC review and approval is requested for proposed ornamental fence installations on MDOT bridge railings.

Background/History – Ornamental fences have been installed on MDOT bridge railings and bridge decks. Until now, the review and approval process for ornamental fences has been somewhat subjective, and their approval has typically occurred at the Region and/or TSC level without input from MDOT's Crash Barrier Engineer or MDOT's BAC. However, there are potential safety implications with installing a decorative/ornamental fence if installed within the clear zone, or if placed on top of or behind a crashworthy bridge railing and the fence is located within the railing's zone of intrusion.

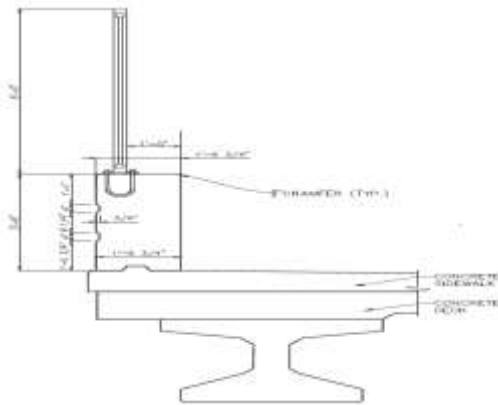
The design speed for both directions of Capital Avenue is 35 mph and the average daily traffic (ADT) on Capital Avenue is 13,720 vehicles per day.

The proposed bridge cross section is depicted below. On both sides of the structure, the bridge railing face will be located 12 feet from the nearest traveled lane. There will be a 10' wide raised sidewalk in front of each bridge railing and a 2' shoulder between the nearest traveled lane and the face of the raised sidewalk.



**TYPICAL BRIDGE CROSS SECTION**  
 S04 OF 13081 (CAPITAL AVENUE OVER I-94)

The proposed ornamental fence will be placed on top of a modified Type 6 bridge barrier railing with vertical faces on both sides of the barrier, and a nominal width of 1'-6 3/4". The ornamental fence support posts will be located 1'-0" from the face of barrier facing traffic.



The clear zone range based on the design speed and ADT on Capital Avenue is 14' to 16'. The proposed ornamental fence on each side of the structure would be located 13' from the nearest traveled lane, so the proposed ornamental fences would be located within the clear zone of Capital Avenue traffic. However, the design speed on Capital Avenue is less than 40 miles per hour and the ornamental fence will be placed 12 inches from the bridge railing face. Therefore, the proposed ornamental fence installation would be acceptable based on the proposed ornamental fence guidelines in Section 7.05.06 of the BDM (subject to review and approval by the EOC).

Recommendation(s) – Ornamental fence installation on top of the proposed bridge railings at the subject location should be permissible based on the proposed BDM ornamental fence guidelines. Since this project had a February 2022 letting date, the Marshall TSC proceeded with advertising the project with the proposed ornamental fence. Therefore, this topic is being shared with the EOC on a for your information (FYI) only basis.

Status – Topic provided as an FYI to the EOC, so no further action required by the EOC.

*ACTION: For information only*

5. Design Build delivery method for the design and reconstruction of the I-75 and M-32 interchange in the City of Gaylord – Ryan Mitchell, Jason Gailitis, Clint Mayoral, Matthew Radulski, and James Ranger

Issue Statement – Request approval for the use of Design Build delivery method for the design and reconstruction of the I-75 and M-32 interchange in the City of Gaylord.

Major Issue(s) – Design and construct an interchange that improves operations and minimizes risk to the department.

Background/History – The I-75 and M-32 interchange is an important link in the community, positioned in the middle of the City of Gaylord. The objective is to study, design, and construct a modern interchange configuration to address condition, congestion, and traffic flow issues. Work includes reconstruction of the I-75 bridges over M-32, reconstruction of M-32 from Edelweiss/Meecher Road to Wisconsin Avenue including widening within the interchange, adjustment of ramp acceleration and deceleration lanes, traffic signals, non-motorized pathway, snowmobile pathway, interchange lighting, and pavement markings.

Early analysis shows that a Diverging Diamond Interchange could be a good option, however, a full feasibility study will be done to evaluate this option.

Alternate Pavement Bidding (APB) was looked at and it was confirmed that this project did not meet the criteria for APB.

Currently exploring if an Interchange Access Change Request will be needed for this project.

Municipal and private utilities are located under I-75 along both sides of M-32, including municipal water/sewer, overhead/underground electric, telecommunications, and gas.

Potential right of way (ROW) takes from two (2) businesses on the east side; however, the project team will evaluate options to shift the interchange to the west to stay within existing ROW.

Public and stakeholder meetings will be necessary. Additional effort is expected to discuss interchange concepts that the City of Gaylord is less familiar with, such as Diverging Diamond Interchange.

There is the potential for noise abatement walls. A noise study for entire project will be necessary, not just the interchange.

Maintenance of traffic will utilize lane closures and traffic shifts on M-32 and I-75.

Project Cost: \$34M

RFP Issuance: October 2024

Letting Date: February 2025

Construction Duration: 2025 - 2027


Job Number: 215026PES

Control Section: 69014

Recommendation(s) – The Innovative Contracting Committee recommends approval to use Design Build.

Status – New

*ACTION: Approved*

 Digitally signed  
by: Carol Aldrich  
Date: 2022.04.21  
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Carol Aldrich. Secretary  
Engineering Operations Committee

RA:lrp

cc: EOC Members	C. Libiran (MDOT)	D. DeGraaf (MCA)
Meeting Guests	L. Mester (MDOT)	C. Mills (APAM)
Region Engineers (MDOT)	C. Newell (MDOT)	D. Needham (MAA)
Assoc. Region Engineers (MDOT)	M. Ackerson-Ware (MRPA)	R. Vandeventer (MITA)
TSC Managers (MDOT)	T. Burch (FHWA)	
L. Doyle (MDOT)	R. Brenke (ACEC)	



## Appendix A – Safety Topic

## Dehydration

### Symptoms and Prevention

Dehydration can be defined as the excessive loss of water from the body. The loss can be via sweat, urine, or breathing (respiratory loss). Dehydration can occur any time of the year, but it is more likely to happen during hot weather.

Our bodies require a certain amount of fluid intake daily to function. You may have heard of the rule of thumb in which you should be drinking eight 8-ounce glasses of water per day. This is just an estimate and the actual amount one should drink throughout the day varies depending on a variety of factors including age, weight, activity level, and the climate of where you live. Adults that work outdoors are at greater risk for dehydration. Basic fluid intake serves to replace the fluids which are required to perform our normal bodily functions. If we take in less or lose more fluid than our bodies need, the result is dehydration.

### Symptoms

Mild to moderate dehydration is likely to cause one or more of the following symptoms:

- Excessive thirst
- Sleepiness or tiredness
- Dry mouth
- Decreased urine output
- Darker-colored urine
- Muscle weakness/fatigue
- Dry, cool skin
- Headache
- Dizziness or lightheadedness

Severe dehydration, a medical emergency, can cause one or more of the following symptoms:

- Extreme thirst
- Irritability and confusion
- Very dry mouth, skin and mucous membranes
- Lack of sweating
- Little or no urination — any urine that is produced will be very dark yellow or amber
- Sunken eyes
- Feeling lethargic
- Shriveled and dry skin lacking elasticity and doesn't bounce back when pinched into a fold
- Low blood pressure
- Rapid heart beat and breathing
- Fever
- In the most serious cases, delirium or unconsciousness

Please remember that thirst is not always a reliable gauge of the body's need for water. Since not everyone experiences thirst if dehydrated, it is important to recognize other symptoms.

Just a small reduction in body fluids and electrolytes leads to a lower circulating blood volume. As a result, your heart must pump harder to maintain adequate blood flow to your vital organs and your body is less able to control blood pressure, distribute nutrients, and eliminate waste.

Also, because blood flow to your skin is reduced and you have less water in your system, you don't perspire or dissipate heat the way you normally would. In extreme cases this can cause your body core temperature to rise leading to heat exhaustion and possibly heat stroke.

Not all cases of dehydration have such serious consequences, but even mild dehydration can adversely affect reaction time, concentration, and judgment. There can also be a cumulative effect of dehydration. It can occur over several days resulting in fatigue which can lead to inattention to hazards and possible injuries. Think of how you feel after several hot humid days during the peak of summer. Therefore, prevention is key to inhibiting the signs of dehydration.

### Prevention

Drinking fluids to replenish lost fluids and electrolytes is usually enough for mild dehydration. It is better to have frequent, small amounts of fluid rather than trying to force large amounts of fluid at one time. Remember, thirst is not a good indicator. A conscientious effort to drink fluids may help. This means drinking before, during, and after exertion or physical activity. Consider all sources of fluids as part of a fluid replacement plan. Severe dehydration will require immediate medical treatment.

For additional/related information, refer to the Heat Stress safety topic on the MDOT Safety and Security Administration team website.

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If you have any questions, comments, or suggestions, please contact the MDOT Safety and Security Administration office at 517-241-1697 or email us at [MDOT-SafetyAdmin@michigan.gov](mailto:MDOT-SafetyAdmin@michigan.gov).

For other safety topics, procedures, and training materials, please visit the Inside MDOT Safety and Security Administration team website.

**As with any training, please be sure to take attendance and complete an MDOT Attendance Form (MDOT 0037). Submit a copy of the Attendance Form to Safety and Security Administration and retain the original in your training files for future reference.**