



Michigan DOT

PBES, Bridge Slides, GRS, and Decked Beams

Peter O. Jansson

September 16, 2015

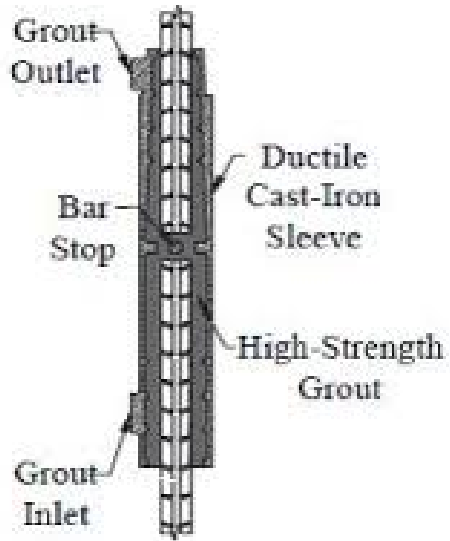


U.S. Department of Transportation
Federal Highway Administration

AMERICAN ASSOCIATION
OF STATE HIGHWAY AND
TRANSPORTATION OFFICIALS

AASHIO

PBES/Grouted Splices



PBES/Grouted Splices



PBES/Grouted Splices, cont.

- Grouted splices are easy to design/use, perform well
- Previously approved contract special provision was developed, working on standard details.
- Contractors like using the grouted splices, but if the schedule allows it they may VE to traditional CIP
- Use templates to ensure fit-up for grouted splices
 - First MDOT project used over 14,000 grouted splices for precast footing and precast retaining wall. Only a couple segments did not fit initially but modifications were made to accommodate them
- Contractors: Don't use precast footings
- Consider weight and crane locations

Decked PCI Beams



Decked Prestressed Box Beams



Decked Box Beams, cont.

- Camber issues
 - Staged construction
 - Differential camber
- Fabricator inexperience with haunches/decks
- Longer (concrete) girders can pose weight issues
- Remote location considerations

Geosynthetic Reinforced Soil – Integrated Bridge System (GRS-IBS)



GRS-IBS cont.

- Used by county road commissions
 - Direct forces can be used
 - Relatively inexpensive and fast
- Ensure first courses of blocks are level

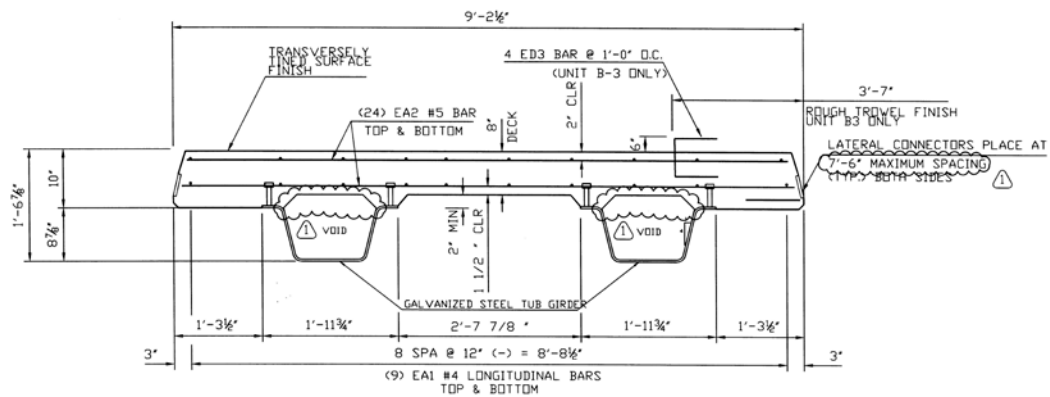
Bridge Slides



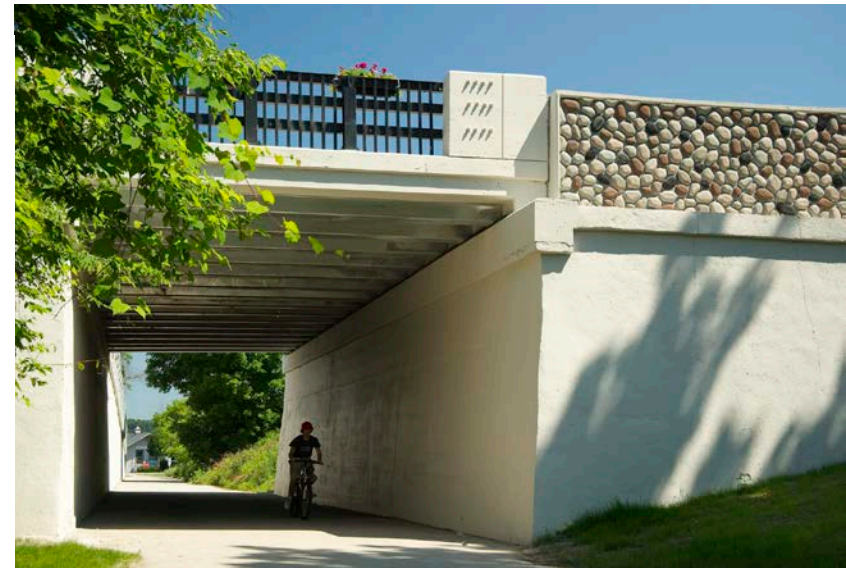
Bridge Slides cont.

- First bridge slide took portions of three days to slide into place
 - Hydraulic ram stroke was too short
 - Teflon was not dimpled and lubrication had to constantly be re-applied
 - Elastomeric bearing pads curled
 - Longitudinal drift
- Second bridge slide took less than a day

Decked steel tub girders



TYPICAL INTERIOR BRIDGE UNIT CROSS SECTION
B2 & B3 UNIT



Decked Steel Tub Girders

