DelDOT Standard Details Update for MASH 2016
MASH Implementation Timeline

- June 30, 2018: W-beam terminals
- Dec. 31, 2018: Cable barriers, & their terminals, crash cushions
- Dec. 31, 2019: Bridge rails, transitions, all other longitudinal barriers including portable barriers installed permanently, all other terminals, sign supports, & other breakaway hardware

Tangent Terminals Only
MASH 2016 Update Committee

- Started late 2018
- Consists of members from Bridge, Project Development, Construction, Maintenance, Consultants.
- Intent is to update the Standard Details to MASH compliant designs.
- Department wide effort.
Standard B-1: Types 1-31, 2-31, and 3-31 Guardrail Applications

- Sheet 1 of 3 – minor revisions to existing sheet
- Sheet 2 of 3 – no changes anticipated
- Sheet 3 of 3 – revisions to existing sheet to reflect MASH tested devices
Standard B-1 Types 1-31, 2-31, and 3-31 Guardrail Applications Additions

- Adding Guardrail on 2:1 Slope
- Guardrail with a one post omission
- Note for butterfly reflectors to be placed at the guardrail splice point
Passing MASH Guardrail Test 3-11
Standard B-2 Grading for Guardrail End Treatment Attenuator, Types 1, 2, and 3

- Sheets 1, 2 and 3 – minor revisions to existing sheet
- Access the Approved Product List.
- Use the grading detail OR FOLLOW THE MANUFACTURERS RECOMMENDATIONS.
Standard Guardrail over Culverts Types 1-31, 2-31, and 3-31

- Minor changes to the Standard Details
- Maximum span length of 25 feet.
- Test failed for span length over 25 feet.
Standard Detail Sheet B-4 End Anchorage, Type 31
Standard Detail Sheet B-4 End Anchorage, Type 31

Replace
Standard B-5 Guardrail to Barrier Connection, Approach Type 1-31 and 2-31

• Approach Type 2-31, Sheets 4 and 5 will be replaced.
• Sheet 6 of 6 will remain with minor revisions to existing sheet
• In lieu of the Approach Type 2-31, new details for Guardrail to Barrier Connection Approach will be developed:
  • 34” Tall Thrie Beam Transition to Concrete Buttress
  • 31” Tall Thrie Beam to Barrier Connection
Guardrail to Barrier Connection, Approach Type 1-31

- Tested with no curb.
- Utilize with 2” curb to assist with runoff.
Standard B-5: Guardrail to Barrier Connection, Approach, Type 2-31
MASH 2016 Test on Stacked W-Beam
Figure 3. Selected AGT design: (a) original as-tested configuration and (b) critical configuration for evaluating the standardized buttress.
Standard B-6
Bridge Rail Retrofit
Bridge Retrofit

- All 5 sheets will be deleted.
- Any bridge retrofit will be designed specific to the bridge.
Section B-14: Concrete Safety Barrier

- 36” F-Shaped Barrier for TL-4
- 42” F-Shaped Barrier for TL-5
- 42” Single Slope Barrier for TL-5
- Approach Guardrail Transition (AGT) for Bridge Parapet & Concrete Barrier
AGT:
Approach Guardrail Transition
Temporary Traffic Control Devices

- Utilize the DelDOT Approved Product List for Temporary/Permanent Impact Attenuators.
- Developing sunset dates for NCHRP 350 devices.
- No more 350 packets?
- Special Thanks to Traffic Safety for developing the list.
Resources

- FHWA Eligibility Site
- TRB: Transportation Research Board
- Texas A&M Transportation Institute (TTI)  www.roadsidepooledfund.org
- Special Thanks to GPI and WRA for assisting in updating the DelDOT Standard Details.