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**Greg Thomas**  
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**DESIGN MEMORANDUM NO. 06-17**

**TO:** Chief District Engineers  
KYTC Central Office Directors  
Transportation Engineer Branch Managers  
Project Development Branch Managers  
Active Consultants

**FROM:** William S. Gulick, P.E., Director  
Division of Highway Design 

**DATE:** December 18, 2017

**SUBJECT:** Manual for Assessing Safety Hardware (MASH) Initial Implementation  
For Guardrail, Cast-in-Place Concrete Barriers and End Treatments  
Active Sepia List Implementation

Pursuant to State Highway Engineer Memo 2017-01 concerning the cabinet's adoption of the MASH testing criteria for our safety hardware and the initial implementation for KYTC longitudinal guardrail and corresponding end terminals, the standard drawings listed below have been revised and one new drawing added to the KYTC Active Sepia List.

Thru the implementation of the below listed sepias it should be noted that designers will not lay out guardrail recommendations for a project any differently than current guidance. There are no alterations in the Length of Need (LON), and grading is similar for the end treatments. Although the offset block will now be 8 inches instead of 6 inches, this shouldn't have an effect on the designer when laying out the guardrail system. The guardrail splice location has been shifted to mid-span with the Midwest Guardrail System and also shouldn't affect the designer's layout of the system. The exceptions to this is that additional shoulder widening along normal guardrail installations is no longer required with the Midwest Guardrail System and 6' post lengths. However, when deemed necessary, 7' post lengths may be utilized.

**The Following drawings have been revised:**

GUARDRAIL TRANSITION FROM NORMAL SHOULDER TO NARROW BRIDGE RBB-010-0  
GUARDRAIL CONNECTOR TO BRIDGE END TYPE A AND A-1 COMPONENTS RBC-003-08  
GUARDRAIL CONNECTOR TO BRIDGE END TYPE D RBC-004-07  
GUARDRAIL CONNECTOR TO BRIDGE END TYPE A RBC-005  
GUARDRAIL CONNECTOR TO BRIDGE END TYPE A-1 RBC-006



GUARDRAIL CONNECTOR TO CONCRETE MEDIAN BARRIER END RBC-100-04  
CONNECTION DETAILS OF CRASH CUSHION TYPE VI TO DOUBLE FACE GUARDRAIL RBC-110-11  
CRASH CUSHION TYPE VII CLASS B AND C (ONE & TWO DIRECTION) RBE-040-10  
CRASH CUSHION TYPE VI (ONE & TWO DIRECTION) RBE-060-14  
CRASH CUSHION TYPE VI-BT RBE-100-10  
CRASH CUSHION TYPE IX RBE-200-06  
CRASH CUSHION TYPE IX-A RBE-205-06  
TYPICAL GUARDRAIL INSTALLATIONS RBI-001-11  
INSTALLATION OF GUARDRAIL END TREATMENT TYPE 1 RBI-004-05  
CONCRETE MEDIAN BARRIER FIXED-FORM OR SLIP-FORM (PERMANENT) RBM-001-10  
STEEL BEAM GUARDRAIL ("W"-BEAM) RBR-001-12  
STEEL GUARDRAIL POSTS RBR-015-05  
GUARDRAIL END TREATMENT TYPE 1 RBR-020-06  
GUARDRAIL END TREATMENT TYPE 4A RBR-035-11  
GUARDRAIL END TREATMENT TYPE 7 RBR-050-07  
GUARDRAIL END TREATMENT TYPE 7 ALTERNATE ANCHOR RBR-051  
DELINEATORS FOR GUARDRAIL RBR-055

**One new drawing has been added:**

**GUARDRAIL SYSTEM TRANSITION DETAIL**

The revised drawings have been placed on the Active Sepia list. These will be added to the Standard Drawings with the next revision of the manual

**These revised drawings will be in effect for projects let after January 01, 2018.**

The Active Sepia List can be found on the Highway Design Web Page at the following link:

<http://transportation.ky.gov/Highway-Design/Pages/Sepias2017.aspx>

In addition, until further notice, the following note should be added to the plans starting with the January 2018 Letting:

**“When the plans call for a Type 1 or Type 4 End Treatment, a MASH eligibility letter from FHWA is required for these end terminals. When a MASH tested eligibility letter is not available for the end terminal being utilized, the most recent NCHRP 350 eligibility letter from FHWA for that terminal will apply. Acceptance of the terminal will be at the discretion of the engineer.”**

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