



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

July 6, 2021

MEMORANDUM

TO: Lamar Sylvester, PE, Director of Field Support

FROM: Don Parker, PE State Work Zone Engineer

DocuSigned by:

Don A. Parker

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SUBJECT: Anchoring Portable Concrete Barrier Type K in Asphalt Pavement

The FHWA/AASHTO implementation date for MASH-16 compliant barrier systems was January 1, 2020. In an August 30, 2017 memo from the Work Zone Traffic Control Section to the NCDOT Guardrail Committee regarding the implementation date for temporary traffic control devices, it was stated that all portable concrete barrier and steel barrier manufactured on or after January 1, 2020 must meet MASH-16 crash standards. Currently, the only non-proprietary portable concrete barrier product available in the southeast region that has passed the MASH-16 test standard is the Kansas style temporary concrete barrier, otherwise known as K Wall. The Department approved this design on November 14, 2019 for both standalone and anchoring into concrete pavements and bridge decks. **This barrier system, however, has not passed the MASH-16 test standard for anchoring into asphalt pavements.**

This same K wall barrier system has passed NCHRP Report No. 350 criteria for anchoring into asphalt pavements (reference Midwest Roadside Safety Facility Report No. TRP-03-180-06, dated February 23, 2007). To date, there is no data to support that the continued use of properly installed portable concrete barrier anchored in asphalt pavement passing the NCHRP Report No. 350 crash test criteria pose more risk than unanchored portable concrete barrier to workers, motorists, and Department assets in situations where the deflection of standalone portable concrete barrier should be reduced.

For these reasons, we recommend allowing the non-proprietary K wall barrier system design currently on the approved products list to be anchored into asphalt pavement using the NCHRP 350 approved method until a suitable and practical MASH-16 approved solution becomes available for the type K. This method requires a 1 ½" diameter A36 steel pin, a minimum of 36" long with a 3" x 3" x ½" A36 steel cap installed in each of the three holes on the traffic side of each barrier segment. A standard drawing is forthcoming.

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Any comments pertaining to this should be directed to myself or Karmen Dais at (919) 814-4935 or by email at daparker@ncdot.gov or kedais@ncdot.gov

DAP/dap

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