



TRAFFIC BARRIER WITH INERTIAL CRASH PANEL AND SOUNDWALL SYSTEM, MASH TL-4

Northern Infrastructure Products

SGR73a



SHEET NO.

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INTENDED USE

The proprietary Traffic Barrier with Inertial Crash Panel and Soundwall System is a MASH TL-4 system intended for installation along roadsides where a combination traffic barrier with soundwall system is required. The MASH TL-4 System uses all the same components used for the MASH TL-3 Traffic Barrier with Soundwall System shown in SGR72a with the addition of inertial crash panels at a height of 10.8 ft [3.289 m] above the pavement. The components used for both the MASH TL-3 and MASH TL-4 Systems consist of 15-ft [4.562m] long precast concrete single slope traffic barriers with soundwall panels mounted above. The precast concrete traffic barrier sections are 43.3 in [1100 mm] high (of which 39.4 in [1000 mm] was projecting above the pavement) and 25.5 in [648 mm] wide at the base. Mounted on top of each precast concrete traffic barrier unit between flanges of the set-back vertical W10x33 [W250x49] steel posts in drilled concrete footings installed at 15 ft [4.572 m] centers are stacked soundwall panels. The Inertial Crash Panels consist of 15-ft [4.562 m] long by 1-ft high [305 mm] by 16.5-in (419 mm) deep precast concrete segments secured to each other on the traffic face in front of each steel post with a front steel strap, and behind each steel post with a steel tension strap.

The crash tested installation consisted of five precast concrete traffic barriers and five precast inertial crash panels with an overall length of 75 ft [22.9 m]. There were five rows of soundwall panels stacked on top of each other plus the concrete inertial crash panel between the third and fourth row of noise barrier panels as follows starting from the bottom: 1.5 ft (457 mm) noise barrier panel, 3 ft (917 mm) noise barrier panel, 2 ft (610 mm) noise barrier panel, 1 ft (305 mm) inertial crash panel, and two 3 ft (917 mm) noise barrier panels. The total overall height of the installation measured from top of pavement was 16.8 ft [5.123 m].

MASH Tests 3-10 and 3-11 were performed prior to addition of inertial crash panels for MASH Test 4-12. Other than some scuffing on the traffic face of the precast concrete traffic barrier at the impact site, there was no observed damage to the traffic barrier or soundwall panels from MASH Tests 3-10 and 3-11. MASH Test 4-12 did result in two traffic barriers being pushed back by 0.25 inch [6 mm], gouging at the impact site on one traffic barrier and at the adjacent joint, and cracking on one traffic barrier. There was also some scuffing on the concrete face of one of the inertial crash panels and front steel strap. One steel post had a permanent deflection and was pushed back to 2 degrees from vertical when measured from the pavement.

Depth and diameter for the drilled concrete footings for roadside installations will have to be designed for each site to address local soil conditions and code requirements including design wind pressure, seismic, etc.

APPROVALS

The proprietary Traffic Barrier with Inertial Crash Panel and Soundwall System has been fully tested in conformance with MASH, 2016 Test Level 4 and is determined eligible for Federal reimbursement by the FHWA.

FHWA Eligibility Letter: B-371

CONTACT INFORMATION

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