MICHIGAN

DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

FOR

**24-INCH WIDE TEMPORARY WATER FILLED IMPACT ATTENUATOR, TEST LEVEL 3, SPECIAL, FURNISHED AND OPERATED**

GCB:CT 1 of 3 APPR:MRB:CRB:11-02-21

**a. Description.** This work consists of furnishing, installing, maintaining, operating, and removing a 24-inch wide NCHRP 350, Test Level 3 (TL-3) or MASH, TL-3 temporary water filled impact attenuator meeting the requirements of this special provision. If the requirements of this special provision conflict with the manufacturer’s specifications, follow the requirements of this special provision, unless otherwise approved by the Engineer.

**b. Materials.**

1. Furnish impact attenuators meeting NCHRP 350, TL-3 or MASH, TL-3 criteria and having a FHWA letter specifying the impact attenuator is eligible for federal aid reimbursement. Product modifications after FHWA eligibility letter issuance are prohibited;

2. Furnish an attenuator that can shield a concrete barrier ending with a rectangular cross-section, up to 24 inches in width;

3. Furnish one of the following attenuators:

A. Triton CET, manufactured by Trinity Highway Products, LLC.

B. ACZ-350, manufactured by Trinity Highway Products, LLC.

Other alternatives may be permitted if all the following conditions are satisfied:

C. The impact attenuator is a water filled unit capable of adequately shielding a concrete barrier ending with a 24-inch-wide rectangular cross-section. The anchorage and transition assembly to the concrete barrier ending must meet or exceed the requirements of NCHRP 350, TL-3 or MASH, TL-3 when connected to a concrete barrier ending with a 24-inch-wide rectangular cross-section;

D. The attenuation system provided must not require a foundation anchoring system for proper installation, unless otherwise specified by the Engineer;

E. The impact attenuator is suitable for exposure to bi-directional traffic on both sides of the attenuator;

F. The impact attenuator is suitable for installation at the proposed installation site, as determined by the Engineer;

G. Sand module attenuators are prohibited;

H. Submit a written request to the Engineer identifying the proposed attenuator, and include shop drawings of the proposed attenuator, transitional assemblies, end panels, and any other accessories required for attenuator installation;

I. Furnish FHWA letter(s) certifying the proposed attenuator is eligible for federal aid reimbursement as a NCHRP 350, TL-3 or MASH, TL-3 device;

J. Furnish all materials and hardware necessary for alternative attenuator installation;

K. Obtain written approval from the Engineer before installing an alternative attenuator; and

L. The alternative attenuator must meet all the requirements identified in this special provision.

4. Attenuator transition assemblies, transition panels, end panels, and other miscellaneous accessories required for proper installation must meet manufacturer’s specifications.

5. Ensure the 24-inch square attenuator object marker sign is made of 0.040 inch thick aluminum. The yellow stripes on the attenuator object marker sign must meet *ASTM D4956* specifications for Type IX retroreflective sheeting and must meet the requirements of Section 2C.64 and 2C.65 of the *MMUTCD*.

6. Guardrail beam elements, including associated hardware, and steel guardrail posts are in accordance with the requirements specified in section 908 of the Standard Specifications for Construction.

7. Wood guardrail posts and guardrail blocks must meet the requirements of section 912 of the Standard Specifications for Construction.

8. Furnish environmentally safe (non-toxic) anti-freezing agents suitable for use with the water-filled attenuation system provided and meeting manufacturer’s specifications.

**c. Construction.** Furnish, install, and operate the impact attenuator in accordance with subsection 812.03.D.11 of the Standard Specifications for Construction, and all applicable manufacturer’s specifications.

Attachments to the attenuator (also known as appurtenances) approved by the attenuator manufacturer may be installed per manufacturer’s specifications. Do not attach unapproved appurtenances to the attenuator.

**d. Measurement and Payment.** The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

**Pay Item** **Pay Unit**

Impact Attenuator, Water Filled, Temp, 24 inch Wide, Test Level-3, Spec, Furn Each

Impact Attenuator, Water Filled, Temp, 24 inch Wide, Test Level-3, Spec, Oper Each

1. **Impact Attenuator, Water Filled, Temp, 24 inch Wide, Test Level-3, Spec, Furn** includes all of the items identified in subsection 812.04.M.1 of the Standard Specifications for Construction. Payment will be made per subsection 812.04.C of the Standard Specification for Construction.

2. **Impact Attenuator, Water Filled, Temp, 24 inch Wide, Test Level-3, Spec, Oper** includes all of the items identified in subsection 812.04.M.2 of the Standard Specifications for Construction. Cleaning impact attenuators during construction is included as part of this pay item. Payment will be made per subsection 812.04.D of the Standard Specification for Construction.

All materials and work items described in this special provision will be included as part of the pay items defined in this special provision and will not be paid for separately.

Damage compensation will be handled in accordance with the requirements of subsection 812.04.A of the Standard Specifications for Construction.