

ROAD COMMISSION FOR OAKLAND COUNTY

SPECIAL PROVISION
FOR
GUARDRAIL APPROACH TERMINAL, TYPE 2M, MSKT

RCOC/DESIGN:AP/JO/AL

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RCOC20SP807B

ORG:04-05-21

REV:02-13-26

a. Description

This work consists of furnishing and delivering a tangent *Manual for Assessing Safety Hardware* (MASH), Test Level 3 (TL-3) compliant guardrail approach terminal (Type 2M), selected from those listed herein, to the job site; submitting detailed drawings and installation manuals for the selected terminal(s) to the Engineer; and installing the device(s) as shown on the plans or as directed by the Engineer. Complete this work in accordance with manufacturer's details and specifications, and this special provision.

b. Materials

Select from the following guardrail approach terminals.

1. MSKT, manufactured by Road Systems, Inc.

Ensure all posts within the terminal limits are made of steel. Provide materials for the selected terminal(s) meeting manufacturer's specifications and the requirements of this special provision. Ensure the selected guardrail terminal meets MASH, TL-3 criteria and has an FHWA federal aid eligibility letter.

Provide detailed drawings of the selected guardrail approach terminal(s) prepared by the respective guardrail approach terminal manufacturer(s). The drawings must contain details depicting the terminal attached to MDOT Type MGS-8 guardrail, detailed in Standard Plan R-60- Series.

Provide materials meeting the requirements of subsection 807.02 of the *Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction* for transitions required for connecting Guardrail Approach Terminal, Type 2M to Type B or Type T guardrail, as depicted in Standard Plan R-60-Series.

Provide installation and maintenance manuals for the selected guardrail approach terminal(s) prepared by the respective guardrail approach terminal manufacturer(s).

Provide high intensity adhesive reflective sheeting for placement on the terminal's impact head. The reflective sheeting must meet the stripe dimensions, colors, and pattern, based on traffic conditions, as shown on Standard Plan R-62-Series. The three-inch stripes, alternating black and yellow, on the reflective sheeting must slope downward at an angle of 45 degrees toward the roadway. The yellow stripes on the reflective sheeting must meet *ASTM D 4956* specifications for Type IX retroreflective sheeting and must meet the requirements of Section 2C.72 of the 2025 *MMUTCD*.

c. Construction

At least 14 days prior to terminal installation, provide the Engineer one electronic copy of the detailed drawings, installation manuals, and maintenance manuals for the selected guardrail approach terminal(s). Before terminal installation commences, all questions, comments, or concerns raised by the Engineer concerning the detailed drawings, installation manuals, and/or maintenance manuals must be addressed.

The Contractor must ensure that the guardrail terminal manufacturer is available to consult, by telephone or e-mail, with the Engineer, the Engineer's designated representative, at no additional cost to the Department. Consultation will encompass the installation of guardrail terminals. Provide the manufacturer's name, telephone number, and e-mail address to the Engineer prior to terminal installation. Provide responses from the manufacturer to any telephone or e-mail inquiries from the Engineer, the Engineer's designated representative, within 2 working days.

Provide staff that have been trained by the respective guardrail terminal manufacturer to install the guardrail terminals utilized on the project. Training materials and course content for guardrail installation crew training will be as determined by the respective manufacturer. Provide manufacturer issued and dated training certificates for all staff on the guardrail installation crew. Training must have occurred within the previous 3 years. Training certificates must be provided to the Engineer 14 days before guardrail installation work commences. Provide updated training certificates no later than 48 hours after personnel changes occur.

Construct guardrail terminals in accordance with section 807 of the *MDOT 2020 Standard Specifications for Construction*, the manufacturer's installation manual(s), and the detailed drawings provided by the manufacturer.

Construct transitions for connecting Guardrail Approach Terminal, Type 2M to Type B or Type T guardrail in accordance with the appropriate details on Standard Plan R-60-Series and section 807 of the *MDOT 2020 Standard Specifications for Construction*.

Do not attach reflectors or other attachments within the limits of the guardrail approach terminal. Attach guardrail reflectors within the limits of transition sections, detailed on Standard Plan R-60- Series, when connecting Guardrail Approach Terminal, Type 2M to guardrail Type B or Type T.

Unless otherwise specified by the Engineer, install guardrail approach terminal with a 1 foot-0-inch offset, in relation to the rear of the terminal, measured at the nose (front) of the terminal.

Completely cover the portion of the impact head assembly facing traffic with high intensity adhesive reflective sheeting meeting the requirements of this special provision.

Provide the guardrail terminal manufacturer's installation checklist, completed and signed by the Contractor, for each individual guardrail terminal installed. Upon completion of

guardrail work, provide written certification from the Contractor that all guardrail terminal installations have been installed per the contract and the manufacturers' specifications and guidelines.

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
Guardrail Approach Terminal, Type 2M, MSKT.....	Each

Guardrail Approach Terminal, Type 2M, MSKT includes all materials, labor, and equipment required to furnish and install a guardrail approach terminal meeting the requirements of this special provision.

Payment for **Guardrail Approach Terminal, Type 2M, MSKT** includes all materials, labor, and equipment within the length of each terminal, as defined in subsections d.1 of this special provision, and also includes payment for all materials, labor, and equipment required to construct a transition section, per Standard Plan R-60-Series, for connecting Guardrail Approach Terminal, Type 2M, MSKT to guardrail Type B or Type T.

The lengths specified in subsections d.1 of this special provision do not include a transition section, per Standard Plan R-60-Series, for connecting Guardrail Approach Terminal, Type 2M to guardrail Type B or Type T.

1. MSKT

Overall length is 46 feet, 10½ inches, measured from Post 1 unless denoted otherwise in the plans.

If the pay item lengths defined in this special provision conflict with the pay item lengths specified in the manufacturer's details and/or specifications, the pay item lengths defined in this special provision will take precedence.

Payment for all consultations between the manufacturer and the Engineer, the Engineer's designated representative, and/or Contractor, preparing and submitting detailed drawings, installation manuals, operation/maintenance manuals, and other required documentation will be included as part of this pay item, and will not be paid for separately.

The required reflective sheeting on the impact head is included as part of this pay item and will not be paid for separately.

Unless otherwise specified by the Engineer, payment will be made after guardrail terminal installation has been completed and all required documentation has been submitted to the Engineer.