

ROAD COMMISSION FOR OAKLAND COUNTY

SPECIAL PROVISION
FOR
GUARDRAIL, WOOD BACK

RCOC/DESIGN:CL/JOB

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RCOC20SP807A

ORG:04-05-21

a. Description

The work under this section consists of furnishing all labor, material and equipment required for installation of a wooden board on the back of the guardrail as shown on the plans, details, and as specified herein. This specification shall be in general compliance with sections 807, 908, and 912 of the *Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction* except as herein provided.

b. Materials

1. Lumber

The lumber used to back the steel or wooden guardrail posts shall be a nominal size of the size specified in section C of this specification and be pressure treated wood of the same specifications as the guardrail blocks as specified in section 912. It shall be cut to lengths of at least 12 ½ feet.

2. Hardware

The fastening hardware shall be low carbon steel with a hot dipped galvanized coating. The required hardware is depended on the post being used as described below. Stainless steel shall never be used in place of galvanized hardware and shall never be placed into contact with each other.

A. Steel Post

On steel posts 5/8 – 11 x 3-inch carriage bolt or longer, grade 1 or better shall be used with a 15/16-inch, grade 1, galvanized hex nut.

B. Wood posts

On wood posts hex head lag screws shall be ½ inch diameter and 5 inches long with a hex head size of ¾ inch being grade 1 or better. This screw shall meet or exceed ANSI/ASME B18.2.1. Galvanized flat washers will be required with the screw that meets or exceeds ANSI B18.22.1. The washer shall have an inside diameter of 9/16 inch and outside diameter of 1 3/8 inch.

c. Construction

The wooden board must be at in sections of at least 12 ½ feet long and installed onto the back of wooden or steel guardrail posts as shown on the plans, special detail, or as directed by the Engineer. This work shall be done after the guardrail has been installed including terminals and anchorages. The wood board shall never be installed behind approach or departing terminals. The top of the board shall be flush with the top of the guardrail post. The hardware installed must be installed flush with the back of the board to provide a smooth finish for pedestrians to safely brush against without snagging. Two

hex lag screws or carriage bolts are required on each end of the board and at mid span and the board shall be butted end to end and flush with the guardrail post. Distinct installation requirements for installing the wood back to wood or steel post with w-beams or thrie beams are as follows.

1. Steel posts with w-beams

If steel posts are used, install a 2-inch x 12-inch nominal size board (Actual size: 1 1/2 inch by 11 1/4 inch) as described above and as follows. The nut for the carriage bolt shall be located within the guardrail section and the dome shape head of the carriage bolt shall be sufficiently tightened so that it is flush with the face of board.

2. Wood posts with w-beams

If wood posts are used, install a 2-inch x 12-inch nominal size board (Actual size: 1 1/2 inch by 11 1/4 inch) as described above and as follows. Countersinking the hex lag screws with washers is required to achieve a smooth surface. To accommodate the post bolt nuts at each post, a notch at each end of the 2 x 12 and a hole at mid span shall be cut to keep the back of the board flush with the guardrail posts. The hole shall be 1 - 3/4 inch in diameter.

3. Wood or steel posts with thrie beams

Guardrail post that have thrie beams attached in short sections or as part of a bridge anchorage shall have a 2 x 12 board and an additional 2-inch x 6-inch nominal size board (Actual size: 1 1/2 inch by 5 1/2 inch) installed the same way. No additional payment will be made for work associated with installing additional 2 x 6 boards on post with thrie beams.

d. Measurement and Payment

The above-described work will be paid for at the contract unit price for the following pay item(s):

Pay Items	Pay Unit
Guardrail, Wood Back.....	Foot

Guardrail, Wood Back will be measured along the centerline of the guardrail. Payment includes furnishing all required materials, equipment and labor described above which includes installing the wood back to type A, B, T or MGS guardrail. The guardrail post and beam elements shall be paid for separately as specified on plans.