

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**CONCRETE BARRIERS, GLARE SCREENS, BRIDGE BARRIER RAILINGS, AND  
FOUNDATIONS FOR LIGHT STANDARDS**

GCB:CT

1 of 3

APPR:TEB:CAL:03-27-23

FHWA:APPR:03-29-23

**a. Description.** This work consists of constructing concrete barriers, glare screens, bridge barrier railings, and foundations for light standards, as specified in sections 711 and 804 of the Standard Specifications for Construction, with the additions, exceptions and modifications contained in this special provision.

**b. Materials.** Furnish materials for constructing concrete barriers, glare screens, and foundations for light standards in accordance with subsection 804.02 of the Standard Specifications for Construction, with the following exception:

1. Furnish Grade 4500HP concrete meeting the requirements specified in section 1004 of the Standard Specifications for Construction, with the following modifications:

A. The Lower Specification Limit (LSL) for 28-day compressive strength is 5,000 pounds per square inch (psi).

B. The rejection limit for an individual 28-day compressive strength sample test result is 4,500 psi.

Furnish materials for constructing bridge barrier railings in accordance with subsection 711.02 of the Standard Specifications for Construction.

Furnish penetrating water repellent from the Qualified Products List (706.03.S).

Furnish epoxy resin adhesive for crack injection from the Qualified Products List (914.06).

Furnish additional materials, as approved by the Engineer, for repairing and sealing concrete barrier cracks.

**c. Construction.** Construct concrete barriers, glare screens, bridge barrier railings, and foundations for light standards in accordance with sections 711 and 804 of the Standard Specifications for Construction, with the exception that subsection 804.03.B of the Standard Specifications for Construction, in its entirety, will not be applicable, and will be replaced with the following:

1. General Requirements. Ensure concrete barriers, glare screens, bridge barrier railings, and foundations for light standards are located as required by the contract. Ensure surface has a uniform appearance and is free of irregularities.

When using slip-formed methods, repair minor defects in concrete barriers and glare screens

while the concrete is plastic, using mortar obtained by screening out the coarse aggregate from the barrier or glare screen concrete. When using fixed-formed methods, repair minor defects in concrete barriers and glare screens in accordance with subsection 706.03.R.1 of the Standard Specifications for Construction.

Concrete barriers, glare screens, bridge barrier railings, and foundations for light standards failing to meet the requirements of this special provision will be rejected by the Engineer, and must either be repaired or replaced, as determined by the Engineer, at no additional cost to the contract.

2. Concrete Barriers and Glare Screens. Use either fixed form or slip form methods, in accordance with Standard Plan R-49 Series, R-54 Series, and R-76 Series.

Construct single-slope concrete barriers and glare screens within the following tolerances:

- A. Slope - Barrier Face.  $\pm 3.4$  degrees.
- B. Deflection (Sag/Swell) - Barrier Face. 1.5 inches maximum.
- C. Barrier Top Height. -0/+1.5 inches.

Barrier base width and top width must not be less than specified on the plans.

Subsection c.2 of this special provision is not applicable to light standard foundations, or bridge barrier railings.

3. Light Standard Foundations. Cast in place light standard foundations using fixed forms, in accordance with Standard Plan R-50 Series. Slip forming is prohibited. The Engineer may approve casting the footings without using forms where soil conditions allow.

Form the top and faces of light standard foundations within a tolerance of 1/2 inch over 10 feet, based on the use of a 10-foot straightedge, except at grade changes and curves.

4. Bridge Barrier Railings. Cast in place bridge barrier railings using fixed forms, in accordance with all applicable standard plans and details. Slip forming is prohibited.

Form the top and faces of bridge barrier railings within a tolerance of 1/2 inch over 10 feet, based on the use of a 10-foot straightedge, except at grade changes and curves.

5. Repairing and Sealing Localized Cracks. Repair and seal localized cracks in concrete barriers, glare screens, light standard foundations, and bridge barrier railings in accordance with the following requirements based on crack width.

- A. Insignificant cracks (width of 0.006 inches or less). No treatment required.
- B. Moderate cracks (width greater than 0.006 inches, up to 0.015 inches). Apply penetrating sealer per the requirements of subsection 706.03.S of the Standard Specifications for Construction.
- C. Wide cracks (width greater than 0.015 inches). Unless otherwise specified by the Engineer, apply epoxy resin using crack injection methods per the requirements of

subsection 712.03.U of the Standard Specifications for Construction. Consult with the Engineer if any cracks are deemed too wide for epoxy injection. Obtain the Engineer's approval before using alternative materials and methods for repairing and sealing cracks deemed too wide for epoxy injection.

**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**

Sealing Localized Conc Barrier Cracks.....Lump Sum

**Sealing Localized Conc Barrier Cracks** includes cleaning, repairing, and sealing all localized cracks in accordance with the requirements of this special provision, at all locations specified by the Engineer. Also includes miscellaneous clean-up. No compensation will be made to the Contractor for surplus materials.

Except for sealing localized concrete barrier cracks, all other work items described in this special provision will be included as part of the pay items defined in sections 711 and 804 of the Standard Specifications for Construction and will not be paid for separately. Additional payment will not be provided for furnishing modified Grade 4500 or 4500HP concrete, as specified in this special provision.