

New Jersey Turnpike Authority

P.O. Box 5042, Woodbridge, NJ 07095



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Document Change Announcement

2016 Standard Supplementary Specifications Pre-stained Reactive Color Treatment Update DCA2024SS-02

Subject: Revisions to

Section 510 Guide Rail, Subsection 510.02 Materials,
Subsection 510.03 Methods of Construction
Section 915 Beam Guide Rail, Subsection 915.01 Rail Elements,
Subsection 915.03 Miscellaneous Hardware

Description of Change:

This DCA revises Sections 510 and 915 of the Standard Specifications, previously updated by DCA2021SS-05 and DCA2022SS-04, to allow for reactive color treatment products to be applied to galvanized beam guide rail on the Garden State Parkway by either the product manufacturer or the project Contractor. Other minor revisions and updates are incorporated by this DCA as well.

Notice to New Jersey Turnpike Authority Staff and Design Consultants

Effective immediately, all contracts currently in the design phase shall incorporate the revisions herein. For advertised contracts awaiting the opening of bids this revision shall be incorporated via addendum. Contact your New Jersey Turnpike Authority Project Manager for instruction.

The revisions may be accessed on the Authority's webpage:

<https://www.njta.com/doing-business/professional-services>

Recommended By:

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NOTE: The following tracked changes indicate REVISIONS to the latest version of the 2016 Standard Supplementary Specifications.

SECTION 510 – GUIDE RAIL

510.02 Materials

Materials shall conform to the following Subsections:

RAIL ELEMENT	915.01
POSTS AND RECYCLED/SYNTHETIC BLOCKOUTS.....	915.02
RUB RAIL.....	915.05
MISCELLANEOUS HARDWARE.....	915.03
GUIDE RAIL DELINEATORS.....	915.06
TERMINALS AND ANCHORAGES.....	915.07

Portland cement concrete for anchorages and post foundations shall conform to Section 905, Class B.

All metal components along the New Jersey Turnpike and Garden State Parkway shall be galvanized in accordance with Subsection 909.11. All galvanized metal components along the Garden State Parkway shall be pre-stained with a reactive color treatment in accordance with Paragraph 915.01(A). ~~Treated rail elements shall be stored and transported to the installation site in accordance with the product manufacturer's recommendations.~~ Treated beam guide rail that is damaged, as determined by the Engineer, shall be replaced with the same treatment and protocol as the original product application as defined in Section 915.01(A) or repaired in accordance with the reactive color treatment product manufacturer's recommendations.

The Contractor shall submit the manufacturer's certificates of compliance in accordance with Subsection 105.04 and shall include the following information specific to all metal components within Section 915:

- (A) Material test reports for all steel used
- (B) Certificate of compliance for hot dip galvanizing
- (C) Certificate of compliance for reactive color treatment product applied to hot dipped galvanized guide rail.
The reactive color treatment certification shall include:
 - (1) Product Trade Name
 - (2) Chemical composition of the product
 - (3) Batch or production run identification and date
 - (4) Product concentration, application rates, and number of coats
 - (5) Ambient conditions during product application and intermittent or final curing
 - (6) Duration of time from product application to intermittent or final cure

510.03 Methods of Construction

Prior to installing posts, the location of underground electrical conduits and other utilities, which may conflict with the posts, shall be determined. The Contractor must contact New Jersey One Call on-line (www.nj1-call.org) or by dialing 811 or (800) 272-1000 for a utility mark-out in accordance with Subsection 106.18. Post spacing may be adjusted by 6 inches, as approved by the Engineer, to eliminate such conflicts. The Contractor's attention is directed to Subsection 106.18, pertaining to utilities. Test pits, as directed, shall be made as specified in Section 522.

Remove trees and shrubs as specified in Subsection 201.03 along the entire length of the beam guide rail to be installed, extending a minimum of 4 feet behind the guide rail post.

The rail elements shall be constructed with the top edge in a straight line or smooth curve parallel to or concentric with the roadway. Where a vertical transition is required, the top edge of rail elements shall form the chords of a smooth vertical curve. The top of rail element height for all new guide rail installations shall be 31 inches. New guide rail shall be constructed with an allowable tolerance of +1 inch to -1 inch for the top of rail element height. The absolute tolerance for the top of rail element height for 31-inch-tall guide rail is +1 inch to -3 inches for rehabilitation projects.

Attach the beam guide rail element to the blockout at every post. No punching, drilling, reaming, or cutting of the rail elements will be permitted in the field unless specifically approved by the Engineer. Neither torchcutting nor welding of rail elements will be permitted. All new material shall be furnished, except where resetting or salvaging is called for. Damaged galvanized surfaces shall be repaired in accordance with Subsection 403.16. Repair damage to the pre-stained galvanized coating, if applicable, according to Subsection 915.01. Galvanized and pre-stained galvanized coatings damaged during installation of the beam guide rail, anchorages, connections, and treatments as shown on the Plans shall be repaired at the Contractor's expense.

The installation shall be made in such a manner that no unprotected end is exposed to approaching traffic.

SECTION 915 – BEAM GUIDE RAIL

Delete this Section in its entirety and replace with the following:

915.01 Rail Element

Rail elements shall be 12-gauge galvanized steel unless noted on the Plans.

Galvanized beam guide rail elements, including transition sections, connections, end treatments, rounded end sections and buffer end sections, shall be fabricated according to AASHTO M 180, Class A, Type I in Table 12. Ensure that the weight of the zinc coating conforms to AASHTO M 180, Type I in Table 21.

(A) Pre-Stained Reactive Color Treatment

Galvanized beam guide rail on the Garden State Parkway shall be pre-stained with a reactive color treatment prior to installation to create a uniform, rustic brown matte finish. The stain product shall penetrate the surface of the steel elements without harming the protective galvanized layer. The stain product finish shall be long lasting and resistant to fading, cracking, or peeling from the sun. The stain product finish shall be non-toxic and non-hazardous in its final cured state and shall be resistant to degradation from exposure to roadway salt and weather elements. The stain product shall be applied in one of the following methods for the entirety of pre-stained beam guide rail to be installed for the project:

(1) Manufacturer Applied

The stain product shall be applied to galvanized beam guide rail steel elements by the reactive color treatment product manufacturer, at the manufacturer's facility, prior to the contractor receiving the pre-stained steel elements to be installed. All project beam guide rail shall be pre-stained by the same manufacturer utilizing the same product formula, and applied, stored, and transported to the contractor in a consistent manner. Upon the contractor's acceptance of the pre-stained steel elements from the manufacturer, the contractor shall store, maintain, and transport the treated materials to the installation site in accordance with the reactive color treatment product manufacturer's recommendations.

(2) Contractor Applied

The stain product shall be applied to the galvanized beam guide rail steel elements by the contractor in a controlled yard environment according to the reactive color treatment product manufacturer's application instructions. Application of the stain product to new galvanized beam guide rail at the installation site, prior to or after guide rail installation, shall not be permitted. The contractor shall not utilize stain products from more than one reactive color treatment manufacturer or utilize different stain product formulas from the same manufacturer. The contractor shall apply and cure the stain product on all steel elements in a consistent manner. The treated rail elements shall be stored, maintained, and transported to the installation site in accordance with the reactive color treatment product manufacturer's recommendations.

915.03 Miscellaneous Hardware

For galvanized beam guide rail, ensure that connections or splices, transition sections, nuts, bolts, washers, and plates conform to AASHTO M 180, except as follows:

(A) Parapet connection attachments and terminal end connectors

~~(1) If high strength bolts are shown on the Plans, use high strength bolts, nuts, and washers conforming to ASTM M164. Zinc coated bolts, nuts, and washers to be treated according to AASHTO M232M~~

- (1) Use structural steel plates and shapes conforming to AASHTO M270 and galvanized per AASHTO M111.
- (2) Use steel for structural tubes conforming to ASTM A500 Grade B and galvanized.