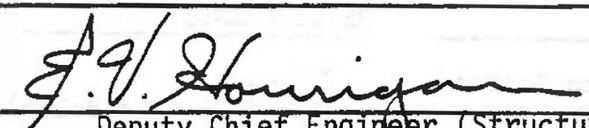


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TO:		ENGINEERING INSTRUCTION	
		NEW YORK STATE DEPARTMENT OF TRANSPORTATION	
Bureau		SUBJECT BDD SHEETS 81-44 AND 81-44A - PROTECTIVE SCREENING ON STRUCTURES	
SUPERSEDED BY EI 96-010		Subject Code: 7.35-2	
EFFECTIVE 3/18/96			
Distribution:		Code: <u>E.I. - 81-29</u>	
<input checked="" type="checkbox"/> Main Office <input type="checkbox"/> Regions <input type="checkbox"/> Special		Date: <u>JULY 1, 1981</u>	
APPROVED: 		Supersedes:	
Deputy Chief Engineer (Structures)		E.I. 78-42	

Attached are copies of the following BDD Sheets which are effective immediately:

BDD 81-44 - "Protective Screening On Steel Bridge Railing" And

BDD 81-44A - "Protective Screening On Concrete Bridge Barriers".

BDD Sheet 81-44 is a revision of and supersedes BDD 78-44. The major change is the addition of a detail for attaching protective screening to new three (3) bolt anchorage system bridge railing installations.

BDD Sheet 81-44A is a new sheet and contains details and instructions for installations on concrete bridge barriers, whether new or existing, and, if new, whether cast-in-place or slipformed. On barriers that are slipformed, and on existing barriers, the anchor bolts shall be grouted in core-drilled holes. On new barriers, that are traditionally cast in forms, the anchor bolts shall be cast into the barrier at the time the barrier is cast. For installations on pre-cast barriers, or if assistance is needed in preparing details for any system not shown, contact the Special Design Unit of the Structures Division. Both new BDD Sheets shall be used as guidelines wherever fencing is to be placed on structures.

Also attached is a copy of Item No. 15607.061001 - "Protective Screening For Bridges (Steel Chain Link Fence - Aluminum Coated)." This item was created to provide for the use of one item for protective screening installations on structures, whether attaching to bridge railing or mounting on concrete barriers. This item shall supersede Item No. 15607.0610 with the same title, issued by E.I. 78-42. Letting dates after 10/1/81 shall contain the new Specification.

The "Design Criteria For Bridges 77-1", distributed by E. I. 77-39, is not affected by this Engineering Instruction.

ITEM NO. 15607.061001 - PROTECTIVE SCREENING FOR BRIDGES
(STEEL CHAIN LINK FENCE-ALUMINUM COATED)

DESCRIPTION:

The work shall consist of furnishing and installing protective screening, including all hardware and construction systems necessary to complete the work. Protective screening shall be installed according to the details and at the locations indicated on the Contract Plans.

MATERIALS:

Materials used for this work shall conform to the following requirements:

<u>PART</u>	<u>REQUIREMENTS</u>
Steel Fence Fabric (Aluminum Coated)	710-04
Posts, Rails, Braces, and Fittings	710-10.01 (See Below)
Angles and Plates	ASTM A 36
U-Bolts	ASTM A307
Nuts and Bolts	ASTM A307
Pipe Supports	ASTM A 53
Anchor Bolts	ASTM A449

The materials used for the posts, rails, and braces shall conform to Subsection 710-10.01, or the following:

Class B Steel Tubing. Posts, rails, and braces shall be manufactured by cold-rolling and electric-resistance welding of steel strip conforming to ASTM A569 or ASTM A607. All tubing shall be given corrosion protection by in-line application of hot-dip galvanizing, followed by a chromate conversion coating and an electrostatically sprayed thermoplastic acrylic coating on the outside surface. The inside surface shall be given corrosion protection by in-line application of a zinc-rich paint after fabrication.

The protective coatings shall conform to the following requirements:

External Surfaces

- A. Hot-Dip. The external surface shall be hot-dip galvanized with "Special High Grade" or "High Grade" slab zinc conforming to ASTM B6. The weight of the coating shall not be less than 0.3 oz. per square foot.
- B. Chromate Conversion Coating. The chromate conversion coating shall specifically be designed for use as a pretreatment of galvanized surfaces. The coating shall be applied prior to the application of the thermoplastic acrylic coating at the Manufacturer's recommended rate.
- C. Thermoplastic Acrylic Coating. The thermoplastic acrylic coating shall be electrostatically applied with a minimum dry film thickness of 0.3 Mils.

Internal Surfaces - The internal surfaces of the steel tubing shall be coated with a zinc-rich coating and shall have a minimum dry film thickness of 0.3 Mils. The zinc-rich coating shall contain not less than 80% zinc dust, by weight, and shall be capable of providing galvanic protection.

ITEM NO. 15607.061001 - PROTECTIVE SCREENING FOR BRIDGES
(STEEL CHAIN LINK FENCE-ALUMINUM COATED)

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MATERIALS: (CONTD)

All material, except fence fabric, shall be galvanized. Unless otherwise specified, galvanizing shall be in accordance with the requirements of Subsection 719-01, type as applicable.

Standard-formed steel posts and rails shall be fabricated from steel having a minimum yield strength of 35 ksi, and a minimum of 12 percent elongation for a 2-inch gauge length.

All edges of the fence fabric shall be "knuckled" (wire ends bent back upon themselves to eliminate sharp wire ends).

Unless otherwise noted on the plans:

1. Posts shall be a nominal 2 1/2" size (2.375" O.D.). Minimum weight per foot shall be 5.79 lbs. for Schedule 40 Pipe and 4.64 lbs. for Class B Steel Tubing.
2. Top and Bottom rails shall be a nominal 1 1/4" size (1.66" O.D.). Minimum weight per foot shall be 2.27 lbs. for Schedule 40 Pipe and 1.33 lbs. for Class B Steel Tubing.
3. Pipe supports shall be 1 1/2" nominal size Schedule 30 Pipe.

CONSTRUCTION DETAILS:

Fence fabric shall be firmly attached to the posts, rails, and braces. All wire shall be stretched taut and be installed to the required elevations.

The posts shall be fastened to the structure in accordance with the details indicated on the Contract Plans. Fence posts shall be set parallel to the bridge railing posts, where applicable. Where there are no bridge railing posts, the fence posts shall be set so that they are truly vertical.

All the top rails shall pass through the base of the post caps and shall form a continuous brace from end-to-end of each stretch of fence fabric. Top rail lengths shall be joined with sleeve couplings. At expansion joints of the structure, expansion sleeves shall be used. Top rails shall be securely fastened to terminal posts by means of rail end connectors approved by the Engineer. Horizontal braces shall be provided at all terminal posts, midway between the top and bottom rails, and shall extend from the terminal post to the first adjacent intermediate post. Braces shall be securely fastened to the intermediate posts by brace ends and brace bands. Braces shall be securely fastened to the terminal posts by rail end connectors, approved by the Engineer. Braces shall be made from the same material as the top and bottom rails.

All welding shall meet the requirements of Section 203, Welding, of the New York State Steel Construction Manual.

Field welding shall be allowed only where indicated on the Contract Plans, or where ordered by the Engineer.

ITEM NO. 15607.061001 - PROTECTIVE SCREENING FOR BRIDGES
(STEEL CHAIN LINK FENCE-ALUMINUM COATED)

CONSTRUCTION DETAILS:(CONTD)

All finished surfaces of welds, and surfaces from which the galvanizing has been removed, shall be repaired in accordance with the requirements of Subsection 719-01. Any galvanizing repair shall be done at the Contractor's expense.

Unless otherwise noted on the plans:

1. The fabric shall be securely fastened to all terminal posts by 1/4" x 3/4" tension bars with 11 gauge pressed steel bands spaced approximately 14 inches apart.
2. Fabric shall be attached to top and bottom rails with 6 gauge tie wires at 2-foot centers.
3. The fabric shall be securely fastened to all vertical posts by 6 gauge aluminum ties at 12" centers.
4. If a tension wire is required by the Contract Documents, the fabric shall be attached to it with 6 gauge aluminum ties.

METHOD OF MEASUREMENT:

Measurement will be taken as the number of linear feet of protective screening installed.

Measurement will be taken along the bottom of the bottom rail, center-to-center of terminal posts.

BASIS OF PAYMENT:

The unit price bid per linear foot shall include the cost of furnishing all labor, materials, and equipment necessary to complete the work.

WJW:GD

MAY 15, 1981