



**TYPICAL SECTION**  
(Looking in the Direction of Stationing)

**LEGEND:**

➡ Direction of Traffic

**SCHEDULE OF REPAIRS:**

- ① Repair the concrete spalls on the bridge railing, curbs and slab underside within Spans 1 thru 6.
- ② Repair the concrete spalls and install galvanic cathodic protection panel system for the bent caps at Bents 2 thru 6.
- ③ Pour flowable fill into gaps in the existing slope protection.
- ④ Replace the existing metal Bridge Railing along the entire length of the bridge on both sides.
- ⑤ Remove existing concrete grout overlay and replenish with Rubble Riprap and new gunite overlay at End Bents 1 & 7 slope protection.

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
460-71-2 Metal Traffic Railing, Steel Post and Rail	LF	400

**NOTES**

- 1. Remove the remains of the existing metal railings. Remove and replace any deteriorated anchor bolts as needed. See Sheet BX66 for details.
- 2. Geometry and layout of the new metal railing shall match the existing.
- 3. The new metal railing, posts, anchor bolts, nuts and washers shall be made of steel.
- 4. The new steel railings shall be galvanized in accordance with ASTM A123.
- 5. The new steel posts, steel railing sleeves, anchor bolts, nuts and washers shall be galvanized in accordance with ASTM A1059.

Bridge No. 720366

REVISIONS						Christopher R Howard, P.E. No. 54161 Infrastructure Engineers, Inc. 2511 St. Johns Bluff Road South, Suite 103 Jacksonville, Florida 32246 Ph.: 1-888-451-6822 Fax: 904-645-3993 Certificate of Authorization No. 6876	DRAWN BY: DLJ 09/12 CHECKED BY: GIE 09/12 DESIGNED BY: GIE 09/12 CHECKED BY: CRH 09/12	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET TITLE:		REF. DWG. NO.
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION			ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME:	SHEET NO.	
						SR 10	DUVAL	426176-1-52-01	SR 10 & SERVICE ROAD OVER SAN PABLO RIVER	B3-07			

Method of identifying properly proportioned and mixed adhesive materials.

Time and temperature schedule for initial set and full-strength cure.

Special requirements for special installation conditions such as damp holes, or horizontal or near horizontal orientation of the anchor or dowel.

### **937-5 Undercut Anchor Systems.**

**937-5.1 General:** The undercut anchor sleeve shall form a cone shaped undercut or expand into a preformed cone or reverse cone shaped undercut. Anchors using only self-cutting teeth that are expanded to form the undercut are not permitted.

Undercut anchors with a marked setting indicator not requiring a specified setting torque are permitted. The marked setting indicator shall indicate the displacement of the anchor bolt relative to the anchor sleeve and must be visible above the concrete surface after setting operation is complete.

Requirements provided in this Section are not applicable for anchoring conduit(s) unless specifically called for in the Plans.

**937-5.2 Minimum Performance Requirements:** Use undercut anchor systems designed in accordance with ACI 318, Appendix D. Use only undercut anchor systems qualified for use in cracked concrete, meeting the assessment criteria of Qualification of Post-Installed Mechanical Anchors in Concrete (ACI 355.2) as specified in ACI 318, Appendix D. Use only Category 1 undercut anchors as defined in ACI 318, Appendix D.

**937-5.3 Packaging and Marking:** The undercut anchor systems shall be delivered to the project site in packaging with the manufacturer's label identifying the product.

Each package or anchor shall be clearly marked with the following information:

Manufacturer's name and address

Product Name

Anchor material grade

LOT Identification Number

Include the manufacturer's instructions for installation of the anchor with each package or anchor with the following information, as a minimum:

Diameter and depth of drilled holes for applicable anchor sizes,

Cleaning and preparation procedures for drilled holes,

Description of tools permitted or required for installation.

## **STRUCTURAL STEEL AND MISCELLANEOUS METAL ITEMS (OTHER THAN ALUMINUM).**

**(REV 7-30-13)**

ARTICLE 962-9 (Page 1087) is deleted and the following substituted:

### **962-9 Galvanizing.**

**962-9.1 Plates, Structural Shapes, Bars, and Strip:** When galvanizing is specified in the Contract Documents for ferrous metal products, other than fasteners and hardware items, provide galvanizing in accordance with the requirements of ASTM A123, Specifications for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products or the requirements of ASTM A1059,

Specification for Zinc Alloy Thermo-Diffusion Coatings (TDC) on Steel Fasteners, Hardware, and Other Products, as specified in the Contract Documents.

Thickness or weight of zinc coating for ASTM A1059 shall be for Coating Class 40.

**962-9.2 Fasteners and Hardware:** When zinc coating is required in the Contract Documents, fasteners and hardware items shall be galvanized in accordance with the requirements of ASTM A153, Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware, or the requirements of ASTM A1059, Specification for Zinc Alloy Thermo-Diffusion Coatings (TDC) on Steel Fasteners, Hardware, and Other Products, as specified in the Contract Documents, except for high strength fasteners as noted below:

1. Do not galvanize ASTM A490 bolts.

2. Mechanically galvanize ASTM A325 Type 1 bolts in accordance with ASTM B695, Class 50.

3. For all anchor rods and hardware galvanized in accordance with ASTM A123, treat the coated rods, nuts and washers with chromate after coating in a water solution containing 0.2% sodium dichromate 3 ounces/10 gallons. Coat the bolt, nut and washer used in the fastener assembly by the same zinc process, and provide a test report on the zinc coating thickness.

4. For anchor rods fabricated from material having a yield strength greater than 80,000 psi apply an electroplated zinc coating SC 3, Type II in accordance with ASTM B633.

Thickness or weight of zinc coating for ASTM A1059 shall be for Coating Class 40.

**962-9.3 Qualifications of Galvanizer:** Use galvanizer's listed on the Department's Qualified Providers List (QPL). Listing must occur prior to commencing the work.