**Scheme 1:** Typical Section Through Deck Mounted Railing (Adhesive Anchor Option shown - Scheme 1A)

- **Pedestrian/Bicycle Railing:** Index No. 852, Steel
- **Traffic Railing:** Required for all schemes (Type Varies, 32" F-Shape shown, see Plans)

**Scheme 1A - Details (Thru-Bolt Option)**

- **Thru-Bolt Plate Washer Detail**
- **Bottle-Guard** (See Detail on Sheet 2)
- **Neoprene or Resilient Pad**
- **Bridge Deck Sidewalk**

**Scheme 1B - Details (Thru-Bolt Option)**

- **Thru-Bolt Plate Washer**
- **Deck Joint**
- **Inside Face of Concrete Curb**
- **Approach Slab**

**Plan**

- **Open Joint**
- **Intermediate Joint**
- **V-Groove in both faces & top of Concrete Curb (Equally spaced between open joints)**

**Typical Section Through Deck Mounted Railing**

- **Begin or End Approach Slab**
- **Concrete Curb**
- **Approach Slab**

**Elevation of Inside Face of Railing**

- **Begin or End Approach Slab**
- **Concrete Curb**
- **Approach Slab**

**Notes:**

- **Open Joint**
- **Intermediate Joint**
- **V-Groove in both faces & top of Concrete Curb (Equally spaced between open joints)**

**Thru-Bolt Plate Washer Detail**

- **Bolt & Nut**
- **Flat Washer under Head & Nuts**
- **Bolt with double Hex Nuts, ASTM A307 Hex**

**Index No. 852, Steel Pedestrian/Bicycle Railing**

- **Existing railing to be removed (See Plans)**
- **Bottle-Guard** (See Detail on Sheet 2)
- **Bridge Curb**

**Thru-Bolt Plate Washer Detail**

- **Bolt & Nut**
- **Flat Washer under Head & Nuts**
- **Neoprene or Resilient Pad**

**Legend:**

- **Open Joint**
- **Intermediate Joint**
- **V-Groove in both faces & top of Concrete Curb (Equally spaced between open joints)**

**Side Mounted Railing (Retrofit)**

- **Concrete Curb**
- **Approach Slab**
- **Begin or End Approach Slab**

**Notes:**

- **Open Joint**
- **Intermediate Joint**
- **V-Groove in both faces & top of Concrete Curb (Equally spaced between open joints)**

**Thru-Bolt Plate Washer Detail**

- **Bolt & Nut**
- **Flat Washer under Head & Nuts**
- **Neoprene or Resilient Pad**

**Index No. 852, Steel Pedestrian/Bicycle Railing**

- **Existing railing to be removed (See Plans)**
- **Bottle-Guard** (See Detail on Sheet 2)
- **Bridge Curb**
ALTERNATE REINFORCING (WELDED WIRE REINF.) DETAILS
NOTE: Place wire panels to minimize the end overhang. End Overhangs greater than 48" are not permitted.

WELDED WIRE REINFORCEMENT (WWR)

CURB REINFORCING STEEL NOTES:
1. All bar dimensions in the bending diagrams are out to out.
2. The reinforcement for the curb on a retaining wall shall be the same as detailed for an 8" deck.
3. All reinforcing steel at the open joints shall have a 2" minimum cover.
4. Bar splices may be continuous or spliced at the construction joints. Bar splices for Bars 4S shall be a minimum of 1'-0".
5. At the option of the Contractor Welded Wire Reinforcement (WWR) may be used in lieu of all Bars 4P and 4S. WWR must consist of Deformed Wire meeting the requirements of Specification Section 931.

BILL OF REINFORCING STEEL

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REINFORCEMENT STEEL BENDING DIAGRAMS

SCHEME 2 - CONCRETE CURB DETAILS

DETAIL "A" - SECTION AT INTERMEDIATE OPEN JOINT

INTERMEDIATE JOINT SEAL NOTES:
At Intermediate Open Joints, seal the lower 6" portion of the open joint with Pre-cured Silicone Sealant (F' wide). Apply sealant prior to any Class V finish coating and remove all curing compound and loose material from the surface prior to application of bonding agent.

SCHEME 3 - SIDE-MOUNTED SUPPORT BRACKET DETAILS

TYPICAL SECTION THROUGH BOTTOM RAIL
(Post Not Shown for Clarity)

SCHEME 1 - BOTTLE GUARD DETAIL

TYPICAL SECTION THROUGH BOTTOM RAIL
(Post Not Shown for Clarity)

SCHEME 3 - BOTTLE GUARD DETAIL

CROSS REFERENCE:
See Sheet 3 for Bridge Railing Notes.
BRIDGE RAILING NOTES:

APPLICATIONS NOTE: Railings are limited to use on bridges with an expansion joint thermal movements not exceeding 5'. Scheme 3 is limited to bridge retrofit applications using additional sidewalk width is required.

RAILING DETAILS: For railing fabrication and installation details and notes see Index No. 852, except that railing shall be fabricated and installed normal to the Profile Grade longitudinally and vertically transversely, unless otherwise shown in the Contract Plans.

BOTTLE GUARD: 1. Shape shall be in accordance with ASTM A36.

CONCRETE CURB: Construct concrete curb vertical with the top surface finished level transversely. Concrete class shall be the same as the bridge deck.

SIDE MOUNTED SUPPORT BRACKET: 1. Shape and stiffener plates shall be in accordance with ASTM A36. Welding shall be in accordance with the American Society for Structural Welding Code (Steel) AWS D1.1 (current edition). Weld metal shall be E60XX or E70XX. Non-destructive testing of welds is not required. The bracket shall be hot-dip galvanized after fabrication in accordance with Specification Section 962.

PAYMENT: Payment shall be at per linear foot (Item No. 515-2-abb) for the steel railing and includes the cost of support brackets (Scheme 3). Concrete and reinforcing steel quantities for the concrete curb (Scheme 2), will be included in the bridge deck plan quantity pay items. Payment will be plan quantity measured as the length along the center line of the top rail, and includes rails, posts, pickets, rail splice assembly, base plates, bottle-guards, anchor bolts, nuts, washers, resilient or neoprene pads and all incidental materials and labor required to complete installation of the railing.