**SECTION C-C**

(ALTERNATE ANCHOR BOLT DETAIL "A"

Concrete Parapet Shown,
Traffic Railings Similar)

2 – 3/4” Ø x 12” Anchor Bolts threaded full length with hex nuts and washers set in drilled holes (diameter per manufacturer’s recommendation) with an Adhesive Bonding System in accordance with Sections 416 and 937 of the Specifications. Expansion Anchors are not permitted. Cutting of reinforcing steel is permitted for drilled hole installation.

**SECTION D-D**

(RAILS NOT SHOWN)

**ELEVATION OF POST "B"**

POST "B1" DETAILS FOR SPECIAL HEIGHT BICYCLE RAILING ON TRAFFIC RAILINGS (INDEX NO. 423 AND 821)

AND POST "B2" DETAILS FOR PEDESTRIAN/BICYCLE RAILING ON CONCRETE PARAPETS (INDEX NO. 820)

**SECTION E-E**

(RAIL NOT SHOWN)

ELEVATION OF POST "C"

POST "C" DETAILS FOR PEDESTRIAN/BICYCLE RAILING ON TRAFFIC RAILINGS (INDEX NO. 423 AND 821)

NOTE: After nuts have been tightened, the bolt threads shall be deformed to prevent removal of nuts. Tack welding of nuts to anchor bolts, to prevent theft, is permitted. Coat deformed or tack welded threads with a galvanizing compound in accordance with Section 562 of the Specifications.

**SECTION F-F**

BASE PLATE DETAIL

**RAIL TO POST CONNECTION DETAIL**

CROSS REFERENCES:

- For Post "A" and Post "B2" spacing see Index No. 820.
- For Post "B1" & Post "C" spacing see Index Nos. 423 or 821.
- For Rail Details see Index Sheet 2.
- For Railing Notes and Tapered End Transition Details see Sheet 3.
Sheet No. 2010 Interim Design Standard

2 of 3

Date
07/01/10

REVISIONS

ALUMINUM PEDESTRIAN/BICYCLE
BULLET RAILING DETAILS

NOTE: Provide for drive fit.

SECTION A-A
TYPICAL SECTION THRU RAIL

RAIL SPLICE ASSEMBLY DETAIL (TYPICAL AT BRIDGE EXPANSION JOINTS AND RAIL SPLICE LOCATIONS)

VIEW E-E

VIEW D-D

RAIL END CAP DETAIL

CROSS REFERENCE:
For Railing Notes and Tapered End Transition Details, See Sheet 3.
ALUMINUM PEDESTRIAN/BICYCLE
BULLET RAILING DETAILS

RAIL INSTALLATION: Set Rail Posts normal to Profile Grade longitudinally and vertical transversely. Post spacings that land on barrier or parapet obstacles such as armor expansion plates etc. shall be adjusted to clear obstacles by 9" without exceeding maximum post spacing. Set Posts on 9" thick resilient or neoprene pads in accordance with Section 922 of the Specifications. The pad dimension shall be the same as the post base plate. Provide rail expansion joint in panels between posts on either side of Bridge Expansion Joints. Rail expansion joints shall be similar to rail splice with provision for movement equal to 1.5 times the bridge joint opening or 3" greater than the expected joint movement. Take care to ensure rails are set with the proper openings. Remove any burrs or sharp edges on rails and posts to prevent injury.

RAIL SPLICES: Rails shall be continuous over a minimum of 3 posts, except that lengths less than 12' need only be continuous over 2 posts. Space splices at 40'-0" maximum centers. Locate center of splice 1'-5" minimum from the edge of a post. Splice all rails in any railing section about the same center line.

RESILIENT AND NEOPRENE PADS: Resilient and Neoprene Pads shall be in accordance with the Specifications except that testing of the finished pads is not required. Neoprene pads shall be durometer hardness 60 to 70.

SHOP DRAWINGS: Submit complete details including rail, post and expansion joint locations and description of material of the proposed railing for the Engineer's approval prior to fabrication.

CROSS REFERENCE:
For Post Details see Sheet 1.
For Rail Details see Sheet 2.