**Post Rail Clamp Bars**

**Rail 3/8" Ø x 1" Stainless Steel Hex Cap Screws and Washers**

**Base Plate:** Post ~ WF 5 x 6.49

**Rail Clamp Bar:**  
- 2 - 3/8" Ø x 10" C-I-P Hex Head Anchor Bolts with nuts & washers or See Detail "A".

**Section D-D**  
(Rails Not Shown)

**Elevation of Post "D"**

**Post "D" Details for Special Height Bicycle Railing (SHBR) on Concrete Parapet (INDEX 521-820)**

**Elevation of Post "B"**

**Post "B" Details for SHBR on Traffic Railing (INDEX 521-423) and for Pedestrian/Bicycle Railing (PBR) on Concrete Parapets (INDEX 521-820)**

**Post "B2" Details for SHBR on Traffic Railing (INDEX 521-427 and 515-021)**

**Section E-E (Rail Not Shown)**

**Elevation of Post "C"**

**Post "C1" Details for Pedestrian/Bicycle Railing (PBR) on Traffic Railings (INDEX 521-423)**

**Post "C2" Details for PBR on Traffic Railing (INDEX 521-427 & 515-021)**

**Detail "A"**

**Alternate Anchor Bolt**  
(Concrete Parapet Shown, Traffic Railings Similar)

**Cross References:**

- For post spacing on Concrete Parapets see Index 521-820.
- For post spacing on Traffic Railings see Index 515-021.
- For Rail Details see Sheet 2.
- For Railing Notes and Tapered End Transition Details see Sheet 3.
1. Work this Index with Index 521-423, 521-427, 521-428, 521-820 and 515-021 and Specification Section 515.
2. Shop Drawings: Submit shop drawings prior to fabrication.
   A. Include post and rail splice/expansion assembly location for curved alignments with radii < 40 feet and for all end terminations.
3. Materials:
   A. Supply Aluminum materials in accordance with Specification Section 965 and the following:
      Wrought Aluminum Post: ASTM B221, Alloy 6061-T6 or 6351-T5
      Rail End Cap: ASTM B26 sand cast aluminum alloy 356.0-F
      Plate and Bars: ASTM B209 Alloy 6061-T6 or 6351-T5
      Stop Pins: Press-fit aluminum or stainless steel pins or tubes
   B. Stainless Steel Fasteners: ASTM F-593, Alloy Group 2 (316).
   C. Bearing Pads: Plain or Fiber Reinforced meeting Specification Section 932 for Ancillary Structures.
4. Layout:
   A. Posts shall be uniformly spaced with reasonable consistency.
   B. Tapered End Transitions are required at the terminus of the approach ends of Bullet Railing mounted on a Traffic Railing. Bullet Railings on concrete parapets shielded by a traffic railing do not require Tapered End Transitions unless noted otherwise in the Plans.
   C. Adjust post spacings to avoid parapet obstacles, such as armor expansion plates, by 9 inches minimum.
   D. Rails shall be continuous over a minimum of 3 posts, except that lengths less than 12 feet need only be continuous over 2 posts.
   E. Space splices at 40 feet maximum. Splice all rails in a given railing section at about the same center line.
   F. Provide rail expansion assemblies in panels between posts on either side of a bridge expansion joint. Rail expansion assemblies are similar to the rail splice assemblies with increased space at the expansion assembly to allow for movement equal to 1.5 times the bridge joint opening or 1" greater than the expected joint movement.
5. Installation:
   A. Set rails near bridge expansion joints to allow for expected movement.
   B. Cutting of reinforcing steel is permitted for post installed anchors.
6. Payment: Includes the full cost of installed bullet railing. Cost of the Concrete Parapet or Traffic Railing is separate.

RAILING NOTES:

ELEVATION OF TAPERED END TRANSITION
(Single Rail Shown, Double or Triple Rail Similar)