

# EXPECTED IMPLEMENTATION JANUARY 2017

## 515 METAL PEDESTRIAN/BICYCLE RAILINGS, GUIDERAILS, AND HANDRAILS.

(REV 5-3-16) (FA 5-4-16) (1-17)

ARTICLE 515-5 is deleted and the following substituted:

### 515-5 Installation.

**515-5.1 General:** Place a 1/8 inch thick bearing pad with dimensions matching the base plate between the base plate and concrete surface.

**515-5.2 Bullet Railings:** Install rail posts perpendicular to the profile grade longitudinally and plumb transversely.

**515-5.3 Pedestrian /Bicycle Railings and Guiderails:** For locations other than bridges, fabricate and install posts plumb. On bridges, fabricate and install posts perpendicular to the profile grade line longitudinally and plumb transversely. Use aluminum shim plates to make necessary adjustments. Bond stacked shim plates with adhesive bonding material and field trim shim plates to match the foundation contours. Beveled shim plates may be used in lieu of trimmed flat shim plates.

If shims greater than 1/2 inch total thickness are required, provide longer anchor bolts. Bolts must be long enough to secure washers and nuts and meet the minimum embedment length.

Post tolerance from plumb is plus or minus one inch, measured at 42 inches above the foundation. Rails must form a smooth continuous line without hills or dips greater than 1/2 inch between any three posts or side sway greater than 1/2 inch between post assemblies.

### 515-5.4 Anchoring:

**515-5.4.1 General:** Secure nuts to a snug tight condition. Tack weld nuts to stem or distort bolt threads to prevent nut loosening and removal. Coat damaged galvanizing on bolt stems, nuts, and tack welds in accordance with Section 562.

**515-5.4.2 Adhesive Anchors:** Install anchors in accordance with Section 416.

**515-5.4.3 C-I-P and Thru-Bolt Anchors:** Use galvanized hex head anchor bolts. When thru-bolting is used, coat cut reinforcing steel inside the drilled hole with a zinc galvanizing compound in accordance with Section 562 prior to installing bolts.

**515-5.4.4 Embedded Guiderail Posts:** Core holes into the foundation concrete, then clean holes, in accordance with the manufacturer's instructions. At a minimum, use oil free compressed air to remove loose particles, brush the inside surface to free loose particles, then use compressed air again to remove any remaining particles. Use a Type A, B, or F epoxy mortar to secure guiderail posts into the cored holes.