

## Section 556. — BRIDGE RAILING

### Description

**556.01** This work consists of furnishing, erecting, removing, and resetting bridge railing.

Bridge railing is designated as concrete, steel, aluminum, or timber according to the predominant material contained in the railing.

### Material

**556.02** Conform to the following Sections and Subsections:

|  |        |
|--|--------|
| Aluminum bolt heads and nuts           | 717.14 |
| Aluminum alloy for bridge rail         | 717.13 |
| Aluminum-impregnated caulking compound | 725.28 |
| Aluminum welding wire                  | 717.15 |
| Box beam rail                          | 710.07 |
| Concrete                               | 552    |
| Painting                               | 563    |
| Reinforcing steel                      | 709.01 |
| Structural steel                       | 555    |
| Timber                                 | 557    |

### Construction Requirements

**556.03 General.** Accurately place anchor bolts to provide correct and true alignment of the railing. Set anchor bolts so that they project not more than 3/8 inch beyond the nut when tightened. Chamfer or round by grinding or filing all sharp exposed metal edges.

Do not erect railing until centering or falsework for the supporting span is removed. Construct bridge railing so that it does not follow any unevenness in the curb, sidewalk, or wall that supports the railing. The railing shall present a smooth, uniform appearance in its final position. Set all posts vertical.

**556.04 Concrete Railing.** Construct according to Section 552.

**556.05 Steel Railing.** Construct according to Section 555.

**556.06 Aluminum Railing.** Construct according to Section 555 except as amended by the following:

**(a) Cutting.** Material that is 1/2 inch thick or less may be cut by shearing, sawing, or milling. Saw or mill material that is over 1/2 inch thick. Do not flame cut. Make cut edges true, smooth, and free from excessive burrs or ragged breaks. Fillet reentrant cuts by drilling before cutting.

**(b) Bending.** Material may be heated to a maximum 400 °F for a period not to exceed 30 minutes to facilitate bending.

**(c) Rivet and bolt holes.** Drill rivet and bolt holes to finished size, or subpunch smaller than the nominal diameter of the fastener and ream to size. Subpunch to a diameter that is smaller than that of the finished hole by at least one quarter the thickness of the piece. Make the finished diameter of holes not more than 7 percent greater than the nominal diameter of the fastener except:

(1) Fabricate slotted bolt holes as required; and

(2) Fabricate anchor bolt holes up to 25 percent larger, not to exceed 1/2 inch larger than the nominal bolt diameter.

**(d) Welding.** Weld according to AWS Structural Aluminum Welding Code D1.2.

**(e) Contact with other material.** Do not place aluminum alloys in contact with copper, copper base alloys, lead, or nickel. Where aluminum alloys come in contact with other metals, coat the contacting surfaces thoroughly with an aluminum-impregnated caulking compound or place a neoprene gasket between the surfaces.

Where aluminum alloys come in contact with concrete or stone, coat the contacting surfaces with an aluminum-impregnated caulking compound. When bond between aluminum and concrete is required, coat the aluminum with zinc-chromate paint and allow to dry before installation.

Where aluminum alloys come in contact with wood, coat the contacting wood surface with 3 coats of paint according to Section 563 and coat the contacting aluminum surface with an aluminum caulking compound.

**556.07 Timber Railing.** Construct according to Section 557.

**556.08 Remove and Reset Bridge Railing.** Remove and store the existing bridge railings and appurtenances. Replace all railings, supports, and hardware damaged during removal, storage, or resetting.

**556.09 Painting.** Where required by the contract, paint according to Section 563.

**556.10 Acceptance.** Material (except concrete, painting, reinforcing steel, structural steel, and timber) for bridge railings will be evaluated under Section 106.03. Furnish a production certification with each shipment of bridge railing.

Section 556

Concrete will be evaluated under Section 552 except compressive strength will be evaluated under Subsection 106.04.

Painting will be evaluated under Section 563.

Reinforcing steel will be evaluated under Section 554.

Structural steel will be evaluated under Section 555.

Timber will be evaluated under Section 557.

Construction of bridge railings will be evaluated under Subsections 106.02 and 106.04.

**Measurement**

**556.11** Measure the Section 556 items listed in the bid schedule according to Subsection 109.02.

**Payment**

**556.12** The accepted quantities will be paid at the contract price per unit of measurement for the Section 556 pay items listed in the bid schedule. Payment will be full compensation for the work prescribed in this Section. See Subsection 109.05.