# Index 550-010 Bridge Fencing (Vertical)

## Design Criteria

***NCHRP Report 350***, Test Level 3 Criteria; ***AASHTO LRFD Bridge Design Specifications***; ***Structures Design Guidelines (SDG)***

## Design Assumptions and Limitations

The Traffic Railing mounted version of this fence (back of railing mounted with tension wires) is based on a design that was successfully crash tested in accordance with the ***AASHTO Guide Specifications for Bridge Railings*** Performance Level 2 pickup test. Modifications have been made to improve the crashworthiness to ***NCHRP Report 350*** Test Level 3 Criteria. This fence can be used on Index 521-422, 521-423, 521-427, 521-428 and 521-480 Series Traffic Railings, certain non-FDOT standard concrete traffic railings meeting the requirements of ***SDG*** 6.7 and on existing New Jersey and F-Shape Traffic Railings listed in the ***Standard Plans Instructions*** Index 536-002.

The Concrete Parapet mounted version of this fence (top of parapet mounted with horizontal rails) is not a crash tested design and cannot be used on traffic railings. This fence can be used on Concrete Parapets constructed in accordance with Index 521-820 in lieu of the bullet railing shown on Indexes 521-820 and 515-022.

Evaluate the expansion joint movements of the bridge. Expansion rails are required for concrete parapet installations at expansion joints where the total movement exceeds

1-inch. If the total movement at an individual expansion joint is 6-inches or less, the bridge fence will span the joint without using an expansion assembly. If the total movement at an individual expansion joint exceeds 6-inches, an Expansion Assembly must be installed at that location.

Use of the Concrete Parapet mounted version of this fence in lieu of Index 550-011 Bridge Fencing (Curved Top) Index 550-012 Bridge Fencing (Enclosed), or Index 550-013 Bridge Fencing (Over Railroad) should be based on project and site specific requirements.

## Plan Content Requirements

In the Structures and/or Roadway Plans:

Show and label, by name or Index number, the Bridge Fencing (Vertical) on the Plan and Elevation, Typical Section, Superstructure and Approach Slab sheets, Retaining Wall Control Drawings, and other sheets as required.

Show the limits of fencing in the plans if they are not from begin of approach slab at Begin Bridge to end of approach slab at End Bridge.

Show quantities for bridge fencing with quantities for Traffic Railings and/or Concrete Parapets.

Determine if bridge fencing requires grounding. If required, provide details in the superstructure sheets.

Provide locations for expansion joints requiring expansion rails or expansion assemblies in the superstructure layout sheets.

Designate the required finish in the General Notes, e.g., zinc or aluminum coated, or polyvinyl chloride (PVC) coated. If PVC coated fence is used, include the following notes in the General Notes:

1. A note specifying the color of the PVC coating for chain link fabric.
2. A note to paint the fence framework to match the color of the PVC chain link fabric.
3. A note for preparation of galvanized steel for painting.
4. A note to coat tension wire and fence fittings to match the color of the PVC chain link fabric.

## Consideration for Approval of Alternative Technical Proposals

Alternate fencing systems may be considered for approval with concurrence from the District Structures Design Engineer. Fabricators must be listed in the ***Material Acceptance and Certification System (MAC)*** as an approved Metals Production Facility.

Design calculations meeting the wind load requirements for the project site in accordance with the ***SDG*** must be submitted for review and approval by the EOR. Technical Specifications with material and testing requirements should be submitted by the Contractor for approval prior to acceptance of any alternative technical proposal (*Contractor Savings Initiative* for Design-Bid-Build projects, or *Alternative Technical Concept* for Design Build/P3 projects).

## Payment

| Item number | Item Description | Unit Measure |
|---|---|---|
| 550-10-315 | Fencing, Type R, 0 - 5.0', Vertical | LF |
| 550-10-325 | Fencing, Type R, 5.1 - 6.0', Vertical | LF |
| 550-10-335 | Fencing, Type R, 6.1 - 7.0', Vertical | LF |