# Index 424 Traffic Railing (Corral Shape)

## Design Criteria

***NCHRP Report 350*** Test Level 4 Criteria; ***AASHTO LRFD Bridge Design Specifications***; ***Structures Design Guidelines (SDG)***

## Design Assumptions and Limitations

The Corral Shape Traffic Railing is intended for use on bridges and retaining walls when an open traffic railing is desired. When constructed between the traveled way and sidewalks, the Corral Shape Traffic Railing can be used selectively with and without curbs to allow for and control deck drainage between the traveled way and adjacent sidewalks. Note that the "aesthetic openness" of the railing is effectively lost when it is used in an inboard application such as this. Use this railing in accordance with the requirements of ***SDG*** 6.7.

To preserve the crashworthiness of the Corral Shape Traffic Railings, inclusion of conduit and Embedded Junction Boxes (EJBs) into the standard, as designed, is not allowed. If conduit and EJBs are required inside the Corral Shape Traffic Railing, structural details at the EJB locations are required. Contact the Structures Design Office for additional guidance.

Design bridge decks supporting Corral Shape Traffic Railings in accordance with the requirements of ***SDG*** 4.2. For bridge decks up to a maximum thickness of 9", the two Bars 5R2 placed in the bridge deck may substitute for the longitudinal deck steel located within the limits of Bars 5T, provided that the total area of longitudinal deck steel beneath the railing, as required by calculation, is not reduced.

***Design Standards*** Indexes 20900, 20910 and 6100 Series contain details for the use of Corral Shape Traffic Railings on retaining walls and approach slabs.

Indicate use of Curb beneath railing on low side of deck without sidewalks and other locations where required to contain bridge deck runoff. Define Curb location in Structures Plans Superstructure Sheets by Stationing limits or other appropriate methods.

## Plan Content Requirements

In the Structures Plans:

Define lengths of End Posts in Structures Plans Superstructure Sheets.

In the Materials Note on the General Notes Sheet, specify the concrete class in accordance with the superstructure environment classification. See ***SDG*** 1.4.

Include the following Bridge Name Note on the General Notes Sheet:

> Place the following bridge name on the traffic railing in accordance with the Traffic Railing Design Standard:

[Use the name of the bridge or non-roadway facility crossed, or include the name of both facilities for roadway crossings, e.g.:

THOMASVILLE ROAD FLYOVER
TOMOKA RIVER
CSX RAILROAD
US 19 OVER EAST BAY DR

For multiple bridges, identify the associated bridge number, e.g.:

| Bridge No. | Name |
|---|---|
| 600103 | CHOCTAWHATCHEE BAY |
| 600104 | CHOCTAWHATCHEE BAY RELIEF] |

Show and label, by name or Index number, the Corral Shape Traffic Railing on the Plan and Elevation, Typical Section, Superstructure, Approach Slab and Finish Grade Elevations Cross Section sheets, and other sheets as required.

On the Superstructure section sheets, show the two Bars 5R2 placed in the bridge deck within the limits of Bars P along with the rest of the deck steel.

In the Roadway Plans when the Corral Shape Traffic Railing is used on retaining walls:

In the Materials Note on the General Notes Sheet, specify the concrete class in accordance with the retaining wall environment classification. See ***SDG*** 1.4.

Show and label, by name or Index number, the Corral Shape Traffic Railing on the Retaining Wall Control Drawings, and other sheets as required. Include cross references to ***Design Standards*** Index 6100 Series as appropriate.

All concrete and Bars P, R, S, T, U and V required to construct the traffic railing are included in the Estimated Traffic Railing Quantities. Do not include traffic railing concrete in the estimated concrete quantities, or Bars P, R, S, T, U and V in the reinforcing bar lists and estimated reinforcing steel quantities for supporting bridge decks, approach slabs or retaining walls.

## Payment

| Item number | Item description | Unit Measure |
|---|---|---|
| 521-5-6 | Concrete Traffic Railing, Bridge, Corral W/Curb | LF |
| 521-5-7 | Concrete Traffic Railing, Bridge, Corral Without Curb | LF |