Index D22420 Traffic Railing (32" F Shape - GFRP Reinforced)

Design Criteria

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

Design Assumptions and Limitations

The 32" F-Shape Traffic Railing is the basic default traffic railing for use on FDOT bridges and retaining walls. Use this railing in accordance with the requirements of ***SDG*** 6.7.

The details as shown for installing for 2" diameter conduits and associated Embedded Junction Boxes (EJBs) in traffic railings have been determined to be crashworthy in accordance with the requirements of ***NCHRP Report 350***, ***AASHTO Manual for Assessing Safety Hardware (MASH)*** and the ***AASHTO LRFD Bridge Design Specifications***. To preserve the crashworthiness of traffic railings, no more than two 2" diameter conduits and associated EJBs, as shown on ***Design Standards*** Index 21210, may be installed within a traffic railing or traffic railing/noise wall.

Reinforcing cover for Traffic Railings is shown as 2½", which accommodates slip forming tolerances. For modified designs 2" minimum cover is usually adequate for stationary form construction.

Design bridge decks supporting 32" F-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 5S placed in the bridge deck may substitute for the longitudinal deck reinforcing located within the limits of Bars 5V, provided that the total area of longitudinal deck reinforcing beneath the railing, as required by calculation, is not reduced.

Design Standards Indexes 20900, 20910 and 6100 Series and ***Developmental Design Standards*** Index D22900 contain details for the use of 32" F-Shape Traffic Railings on retaining walls and approach slabs.

Plan Content Requirements

Insert the entire ***Developmental Design Standards*** Index, received from the Central Office monitor, into the appropriate component plan set in accordance with ***PPM***, Volume 2, Section 3.8.

In the Structures Plans:

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 32" F-Shape - GFRP Reinforced Traffic Railing on the Plan and Elevation, Typical Section, Superstructure, Approach Slab and Finish Grade Elevations Cross Section sheets, Retaining Wall Control Drawings, and other sheets as required. Show limiting stations when transitioning to other type traffic railings. Include cross references to ***Design Standards*** Index 20900 or 20910 or ***Developmental Design Standards*** Index D22900 as appropriate.

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

In the Roadway Plans when the 32" F-Shape - GFRP Reinforced 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 32" F-Shape - GFRP Reinforced Traffic Railing on the Retaining Wall Control Drawings, and other sheets as required. Show limiting stations when transitioning to other type traffic railings. Include cross references to ***Design Standards*** Index 6100 Series as appropriate.

All concrete and Bars 5P, 5S and 5V 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 5P, 5S and 5V in the reinforcing bar lists and estimated reinforcing bar quantities for supporting bridge decks, approach slabs or retaining walls.

Payment

Item number	Item Description	Unit Measure
916-521-A	Concrete Traffic Railing, Bridge 32" F Shape, GFRP Reinforced	LF
916-521-A	Concrete Traffic Railing with Junction Slab, 32" F Shape, GFRP Reinforced	LF