This Traffic Railing Retrofit has been structurally evaluated to be equivalent or greater in strength to a design which has been successfully crash tested previously and approved for a NCHRP Report 350 Test Level 4 rating, except for the Tapered End Transition on Index No. 484.

CONCRETE: Concrete for the Traffic Railing (Vertical Face Retrofit). Spread Footing Approaches and replacement curb sections shall be Class IV. Concrete for Curb Transition Blocks shall be Class II (Bridge Deck).

REINFORCING STEEL: Reinforcing steel shall be ASTM A615, Grade 60, except Expansion Dowel Bar 8 which shall be ASTM A36 smooth round bar hot-dip galvanized in accordance with the Specifications.

EXPRESSION SLEEVE ASSEMBLY: Pipe sleeve shall be ASTM D2241 PVC pipe SDR13.5. End Cap shall be ASTM D2666 PVC socket fitting, Schedule 40. End of Sleeve assembly at railing open joint shall be sealed with silicone to prevent concrete intrusion during railing casting. A compressible expanded polystyrene plug is required in the end cap of the sleeve. Correct dowel positioning is required in order to provide for thermal movement of the deck.

ADHESIVE-BONDED ANCHORS AND DOWELS: Adhesive Bonding Material Systems for Anchors and Dowels shall comply with Specification Section 937 and be installed in accordance with Specification Section 416. The field testing proof loads required by Specification Section 416 shall be 23,800 lbs. for Dowel Bars 6D on the inside face (traffic side) of the railing (1'-0" embedment) and 18,500 lbs for Dowel Bars 6D along the outside face of the traffic railing (1'-0" min. embedment). The field testing proof loads required by Specification Section 993 shall be 23,800 lbs. for Dowel Bars 6D on the inside face (traffic side) of the railing (1'-0" embedment) and 18,500 lbs for Dowel Bars 6D along the outside face of the traffic railing (1'-0" min. embedment).

Bridges on Curved Alignments: The details presented in these Standards are shown for bridges on tangent alignments. Details for bridges on horizontally curved alignments are similar.

NAME, DATE AND BRIDGE NUMBER: The Name and Date Number shall be placed on the Traffic Railing so as to be seen on the driver's right side when approaching the bridge. The Date shall be the year the bridge was constructed. Letters and figures may be 3" tall black or white color. The Date shall be placed on the driver's left side when approaching the bridge.

REFLECTIVE RAILING MARKERS: Reflective Railing Markers shall meet Specification Section 993. Install markers on top of the existing traffic railing carrying existing elevation markers are removed. Markers are to be furnished by the Florida Department of Transportation and installed by the Contractor. The Department will determine the vertical Datum information for the marker.

SURFACE FINISH: Unless otherwise shown in the Plans, place a Class 5 Applied Coating on the top and sides of the Traffic Railing (Vertical Face Retrofit).

REFLECTIVE RAILING MARKERS: Reflective Railing Markers shall meet Specification Section 993. Install markers on top of the traffic railing 2" from the face on the traffic side at the spacing shown in the table below. Reflector color (white or yellow) shall match the color of the rear edge line.

PAYMENT: Payment under Traffic Railing (Vertical Face Retrofit) include all materials and labor required to construct the railing. Incidental work as required for transition blocks, curbs, spread footings approaches, reflective railing markers (including installation) shall also be included under Traffic Railing (Vertical Face Retrofit).

Concrete:
- CY/Ft.: 0.0064
- Increment: 0.003 per in. height

Reinforcing Steel:
- lb./Ft.: 12.27
- Increment: 0.10 lb. per in. length

ESTIMATED TRAFFIC RAILING QUANTITIES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>UNIT</th>
<th>QUANTITY</th>
</tr>
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<tr>
<td>Concrete</td>
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</tr>
<tr>
<td>Concrete</td>
<td>lb./Ft.</td>
<td>12.27</td>
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</tbody>
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TRAFFIC RAILING NOTES

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TRAFFIC RAILING - (VERTICAL FACE RETROFIT)

GENERAL NOTES & DETAILS

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