TRAFFIC RAILING NOTES

This Traffic Railing Retrofit has been structurally evaluated to be equivalent or greater in strength to a design which has been successfully crash tested in accordance with NCHRP Report 350 TL-4 criteria.

CONCRETE: Concrete for Transition Blocks and Curbs shall be Class II (Bridge Deck).

REINFORCING STEEL: Reinforcing steel shall be ASTM A615, Grade 60.

THRIE-BEAM GUARDRAIL: Steel Thrie-Beam Elements shall meet the requirements for Class B (10 Gauge) guardrail steel as AASHTO M180, Type IV (Zinc coated). The minimum panel length for Thrie-Beam Elements shall be 12'-6". Field drilled holes for Post connections shall be 3/8" by 2 1/2" slotted holes.

GUARDRAIL BOLTS: Guardrail bolts, nuts and washers shall be in accordance with AASHTO M180.

GUARDRAIL POSTS AND BASE PLATES: Posts and Base Plates shall be in accordance with ASTM A36 or ASTM A709 Grade 36.

ANCHOR BOLTS, NUTS AND WASHERS: Adhesive-Bonded Anchors and Anchor Bolts shall be fully threaded rods in accordance with ASTM F1554 Grade 105 or ASTM A593 Grade 87. At the Contractor’s option, Anchor Bolts for through bolting may be in accordance with ASTM 449. All Nuts shall be single self-locking hex nuts and in accordance with ASTM A563 or ASTM A194. Flat Washers shall be in accordance with ASTM F226 and Plate Washers (for long slotted bolts) only shall be in accordance with ASTM A36 or ASTM A709 Grade 36. After the nuts have been snug tightened, the anchor bolt threads shall be distorted to prevent removal of the nuts. Distorted threads and the exposed trimmed ends of anchor’s shall be coated with a galvanizing compound in accordance with the Specifications.

COATINGS: All Nuts, Bolts, Anchors, Washers, Guardrail Posts, Anchor Plates and Base Plates shall be hot-dip galvanized after fabrication.

ADHESIVE-BONDED ANCHORS AND DOWELS: Adhesive Bonding Material Systems for Anchors and Dowels shall comply with Specification Section 937/416 and be installed in accordance with Specification Section 416. The field testing proof loads required by Specification Section 416 shall be 15,000 lbs. Nuts shall fully engage bolts with a minimum of one bolt thread extending beyond the nuts. Distort the first thread on the outside of the nut to prevent loosening. Tighten guardrail bolts in 3 1/2" slots at guardrail posts that lie between the slotted expansion splice and bridge deck joint so that the bolt heads are in full contact with Thrie-beam elements, but not so tight as to impose movement due to expansion.

NEOPRENE PADS: Neoprene pads must be plain pads with a durometer hardness of 60 or 70 and meet the requirements of Specification Section 932, except that testing of the finished pad will not be required.

ELEVATION MARKERS: Elevation Markers shall be placed on the top surface of the end bents as directed by the Engineer when portions 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 markers.

REFLECTIVE RAILING MARKERS: Reflective Rail Railing Markers shall conform to Section 993 of the Specifications. Install markers at the top of the guardrail posts at the spacings shown in the table below. Reflective color (white or yellow) shall conform to the color of the near edgeline.

ELEVATION MARKER INSTALLATION: BRIDGE NAME PLATE: If a portion of the existing Traffic Railing is to be removed that carries the bridge name, number and or date, or if the installation of the Traffic Railing (Thrie-Beam Retrofit) will obscure the bridge name, number and or date, then replace the information that has been removed or obscured, with 3" tall black lettering on white nonreflective sheeting applied to the top of the adjacent guardrail. The information must be clearly visible from the right side of the approaching travel lane. The sheeting and adhesive backing shall comply with Specification Section 994 and may comprise of individual decals of letters and numbers.

PAINT: Payment will be made under Metal Traffic Railing (Thrie-Beam Retrofit) which shall include all materials and labor required to fabricate and install the barrier and lapped guardrail where necessary to maintain post spacing. The Pedestrian Safety Pipe Rail, Thrie-beam Elements, and Bridge Name Plate, Reflective Railing Markers and Installation of Elevation Markers, where required, will not be paid for directly but shall be considered as incidental work.

REFLECTIVE RAILING MARKER SPACING

<table>
<thead>
<tr>
<th>Distance from Edge of Travel Lane</th>
<th>Spacing (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edge of Travel Lane to Face of Railing</td>
<td></td>
</tr>
<tr>
<td>4&quot; to 8&quot;</td>
<td>60</td>
</tr>
<tr>
<td>&gt; than 8&quot;</td>
<td>None Required</td>
</tr>
</tbody>
</table>

THRIE-BEAM EXPANSION SECTION: Thrie-Beam Expansion Sections shall be installed at locations shown in the Plans. Install nuts for splice bolts finger-tight at 25" slots in thrie beam expansion sections. Nuts shall fully engage bolts with a minimum of one bolt thread extending beyond the nuts. Distort the first thread on the outside of the nut to prevent loosening. Tighten guardrail bolts in 3 1/2" slots at guardrail posts that lie between the slotted expansion splice and bridge deck joint so that the bolt heads are in full contact with thrie-beam elements, but not so tight as to impose movement due to expansion.

TRAFFIC RAILING RETROFIT NOTES

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