DESIGN STANDARDS
FOR DESIGN, CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS ON THE STATE HIGHWAY SYSTEM
2010
TOPIC NO. 625-010-003
NOTICE
These Design Standards are intended to support the various engineering obligations for designing, constructing, inspecting, maintaining and monitoring the highways, roads and streets on the State Highway System. They are prepared to encourage uniform application of designs and standard details in the preparation of project plans. These Standards may be adopted by other authorities for use on projects under their jurisdiction.

It is the responsibility of the Design Engineer of Record using these Standards to determine the fitness for a particular use of each standard in the design of a project. The inappropriate use of and adherence to these standards does not exempt the engineer from the professional responsibility of developing an appropriate design.

PATENTED DEVICES, MATERIALS AND PROCESSES
The use of any design, method, process, material or device either expressed or implied by these standards that are covered by patent, copyright, or proprietary privilege is the sole responsibility of the user. Any infringement on the rights of the inventor, patentee, assignee or licensee shall be the sole responsibility of the user. For additional information refer to Subsection 7-3 of the FDOT Standard Specifications for Road and Bridge Construction.
CERTIFICATION STATEMENT

I hereby certify that this Design Standard Book was compiled under my responsible charge from designs prepared, examined, adopted and implemented by the Florida Department of Transportation in accordance with established procedures, and as approved by the Federal Highway Administration.

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As To Planning
Design Standard No.
17900
Manager, Traffic Data Section
Transportation Statistics Office
Richard L. Reel, Jr.
P.E. No. 22400

Sig:
Date:

As To ITS
Design Standard Nos.
18100–18305
Deputy State Traffic
Operations Engineer
Mark C. Wilson
P.E. No. 46780

Sig:
Date:

As To Landscape
Architecture
Design Standard No.
544
State Transportation
Landscape Architect
Jeff H. Caster
LA0001592

Sig:
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<td>Added the following standard abbreviations: Base Line, Base Line Control</td>
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<td>+PDR Geosynthetic Research Institute +PDR High Density Polyethylene +PDR</td>
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<td>NPS Nominal Pipe Size</td>
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<td>Under Pressure &amp; Soiling detail changed “1/2” Exp. Joint to “1/2” Preformed Joint Filer.</td>
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<td>Deleted Hand Drafting Symbols</td>
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<td>&quot;GENERAL NOTES&quot;: Note 3, deleted &quot;Alternate II&quot; replaced with &quot;Index 200&quot;, Note 8 changed “Section 962” to “Section 962” to “Section 975”.</td>
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<td>NOTES FOR SYNTHETIC BAILS OR BALE TYPE BARRIERS, Note 2, deleted text</td>
<td>245</td>
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<td>&quot;GENERAL NOTES&quot;: Note 2, delete and replace with the following: &quot;Concrete shall be Class I (Structural), except ASTM C479 (400 psi) concrete may be substituted for precast items manufactured in plants meeting the requirements of Section 449 of the Specifications. Box shalre balanced with No. 3 bars (Grade 60) on 8” centers and both sides, sides and bottom.</td>
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<td>204</td>
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<td>RURAL DIVIDED detail, changed &quot;6 Shoulder Pavement&quot; to &quot;4 Shoulder Pavement&quot;</td>
<td></td>
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<td>&quot;GENERAL NOTES&quot;: Note 5, deleted and replaced with the following: &quot;Concrete shall be of Structural, except ASTM C479 (400 psi) concrete may be substituted for precast items manufactured in plants meeting the requirements of Section 449 of the Specifications.&quot;</td>
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<td>TREATMENT I: Criteria for using Treatment I, replaced text with the last bullet: &quot;Resurfacing build-up is less than 3&quot;.</td>
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<td>&quot;GENERAL NOTES&quot;: Note 4, deleted and replaced with the following: &quot;Concrete shall be Class II, except ASTM C479 (400 psi) concrete may be substituted for precast items manufactured in plants meeting the requirements of Section 449 of the Specifications.&quot;</td>
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<td>Top SLAB RETAINING WALL DIAGRAM (ALTERNATE III) to the notes: &quot;Additional Bars &amp; Girs: 6”. &quot;Use of additional Grade 60 (1/2) Max. 3/8“ Side Of Opening&quot;; added “Minimum 4 girders&quot;</td>
<td></td>
<td>1 of 2</td>
<td>&quot;GENERAL NOTES&quot;: Note 4, deleted and replaced with the following: &quot;Concrete shall be Class II, except ASTM C479 (400 psi) concrete may be substituted for precast items manufactured in plants meeting the requirements of Section 449 of the Specifications.&quot;</td>
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<td>Note 9, deleted second sentence and substitute, &quot;Additional bars used to restrain hole formers for precast structures with grouted pipe connections, may be left in with the hole surface.&quot;</td>
<td></td>
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<td>&quot;GENERAL NOTES&quot;: Note 4, deleted and replaced with the following: &quot;Concrete shall be Class II, except ASTM C479 (400 psi) concrete may be substituted for precast items manufactured in plants meeting the requirements of Section 449 of the Specifications.&quot;</td>
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<td>SLAB AND WALL DESIGN TABLE NOTES, added the following to the end of Note 10: &quot;See Index No. 201, Sheet 4 for allowable bar spacing adjustments when larger areas of reinforcing are substituted.&quot;</td>
<td></td>
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<td>&quot;GENERAL NOTES&quot;: Note 4, deleted and replaced with the following: &quot;Concrete shall be Class II, except ASTM C479 (400 psi) concrete may be substituted for precast items manufactured in plants meeting the requirements of Section 449 of the Specifications.&quot;</td>
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<td>Revised note to: &quot;NOTES FOR PRECAST OPTIONS AND EQUIPMENT REQUIREMENTS&quot; and added the following: Note 4, &quot;When an increased area of reinforcing is provided, then the maximum bar spacing may be increased by the squared ratio of increased steel area, but not to exceed 12 inches. Maximum Bar Spacing Provided: &lt; Max. Bar Spacing Required x (Steel Area Provided/Min. Steel Area Required).&quot;</td>
<td></td>
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<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
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<td>Changed maximum size of allowed PVC pipe to 36&quot;.</td>
<td></td>
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<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
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<td>ROUND PIPES DIMENSIONS, deleted the column, &quot;Wall Thickness (in.): Class III&quot; and subcolumn &quot;INCH&quot; and heading &quot;SPACING&quot;: Also deleted the # note at the bottom of the table.</td>
<td></td>
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<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
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<td>Delete General Notes 4, and substitute the following: &quot;For precast units the rear wall apron may be precast as a separate piece from the top slab. Provide a minimum of 7” - 84&quot; downs in accordance with Index No. 201 &quot;DICTIONAL CONSTRUCTION JOINTS&quot;.</td>
<td></td>
<td>2 of 6</td>
<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
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<td>In PLAIN view changed “1/2” Exp Joint (Typ.) to &quot;1/2” Preformed Joint Filer (Typ.).</td>
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<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
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<td>&quot;STEEL GRATE,&quot; &quot;TOP VIEW,&quot; for the overall dimension of the left side, inserted &quot;465/’’. &quot;To the smallest dimension at the upper left corner of the grate, inserted &quot;35/’’.</td>
<td></td>
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<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
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<td>In PLAIN view and Section 448 added &quot;Expansion Joint (Typ.) and &quot;Expansion Material Joint (Typ.) to “1/2” Preformed Joint Filer (Typ.).</td>
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<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
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<td>&quot;GUTTER INLET TYPE 6; &quot;SECTION 88; Changed the vertical dimension between the top of the joint and the grate elevation from &quot;35/’’ to &quot;465/’’.</td>
<td></td>
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<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
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<td>&quot;SECTION 44,” at the top right corner, for precast thickness changed &quot;6” to &quot;3” (some as left side).</td>
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<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
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<td>&quot;SECTION 88,” at the top, changed &quot;3-1/2 Precast&quot; to &quot;4-3&quot; Precast. &quot;PLAIN,&quot; at the top, changed &quot;1/2&quot; to &quot;3-1/2&quot;.</td>
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<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
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<tr>
<td>219</td>
<td>1 of 2</td>
<td>In &quot;PLAIN&quot; view changed &quot;1/2” Exp Joint (Typ.) to “1/2” Preformed Joint Filer (Typ.).</td>
<td></td>
<td>2 of 6</td>
<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
</tr>
<tr>
<td>220</td>
<td>1 of 3</td>
<td>&quot;GUTTER BOTTOM INLET TYPE 6; &quot;SECTION 88; upper left side, delete the dimension &quot;2-6” (Min.) and replaced with &quot;1-10” (Min.).</td>
<td></td>
<td>2 of 6</td>
<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
</tr>
<tr>
<td>221</td>
<td>1 of 2</td>
<td>Changed all of occurrence of &quot;Class I concrete&quot; to &quot;Class NS concrete.&quot;</td>
<td></td>
<td>2 of 6</td>
<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
</tr>
<tr>
<td>222</td>
<td>1 of 2</td>
<td>New Index added &quot;DEEP WELL INJECTION BOX&quot;.</td>
<td></td>
<td>2 of 6</td>
<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
</tr>
<tr>
<td>223</td>
<td>1 of 2</td>
<td>Changed &quot;PLATED ENDWALLS&quot; to &quot;PLATED WINGWALLS&quot; and &quot;SINGLE ENDWALLS&quot; to &quot;PLATED WINGWALLS,&quot;</td>
<td></td>
<td>2 of 6</td>
<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
</tr>
<tr>
<td>224</td>
<td>1 of 2</td>
<td>Changed &quot;Class I Concrete&quot; to &quot;Class NS.&quot;</td>
<td></td>
<td>2 of 6</td>
<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
</tr>
<tr>
<td>225</td>
<td>1 of 2</td>
<td>Changed &quot;Bond Beam&quot; to &quot;Link Slab,&quot; and &quot;Class I Concrete&quot; to &quot;Class NS.&quot;</td>
<td></td>
<td>2 of 6</td>
<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
</tr>
<tr>
<td>226</td>
<td>1 of 2</td>
<td>&quot;GENERAL NOTES&quot;: note 1 changed &quot;AHH701-1 (RSG Bridge Specifications) to &quot;4th Edition&quot; added note 10.</td>
<td></td>
<td>2 of 6</td>
<td>&quot;GENERAL NOTES&quot;: Deleted &quot;Class I concrete&quot; and substituted &quot;Class NS concrete.&quot;</td>
</tr>
<tr>
<td>Index Number</td>
<td>Sheet Number</td>
<td>Description</td>
<td>Index Number</td>
<td>Sheet Number</td>
<td>Description</td>
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</tr>
<tr>
<td>295</td>
<td>1 of 1</td>
<td><strong>GENERAL NOTES</strong> Note 2 changed “Specification Section 962” to “Specification Section 975”.</td>
<td>421</td>
<td>1 of 3</td>
<td>Changed REFLECTIVE RAILING MARKERS note: “Reflective Railing Markers shall meet Specification Section 993. Install markers on top of the Traffic Railing along the centerline at the spacing shown in the table above. Reflector color (white or yellow) shall match the color of the near edge line. The cost of the reflective markers shall be included in the Contract Unit Price for the Traffic Railing.”</td>
</tr>
<tr>
<td>300</td>
<td>1 thru 2</td>
<td>Index was expanded due to change in font.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>304</td>
<td>6 of 6</td>
<td>Added alternate location of detectable warning on linear ramps. Added note “On curbs ramps, landings and Kush transitions perpendicular to the curb line, the flow of domes shall be aligned with the centerline of the ramp. (See Pictorial View A) at top of sheet. Add Railroad Crossing PLN View.”</td>
<td>422</td>
<td>1 of 3</td>
<td>Added the following to the NAME, DATE and BRIDGE NUMBER note: “The name shall be shown as in the General Notes in the Structures Plans.” Changed REFLECTIVE RAILING MARKERS note</td>
</tr>
<tr>
<td>305</td>
<td>1 of 4</td>
<td>Deleted bar spacing table and revised notes (Sheet 7). Changed width of outside lanes (Sheet 4).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>307</td>
<td>2 of 3</td>
<td><em>UTILITY CONFLICT PIPES TIME STORM SEWERS STRUCTURES</em> changed to “UTILITY CONFLICT PIPES TIME STORM DRAIN STRUCTURES.”</td>
<td>423</td>
<td>1 of 3</td>
<td>Added the following to the NAME, DATE and BRIDGE NUMBER note: “The name shall be shown as in the General Notes in the Structures Plans.” Bicycle Railings to “Specialty Bicycle Railings” and Post “B1” to Post “B4.”</td>
</tr>
<tr>
<td>310</td>
<td>1 of 2</td>
<td>“SIDEWALKS WITH EGRESS BEAM FOR SURFACE MOUNTED RAILINGS”, “Clear Width”, deleted “3.5 min.” and substituted “4 min. a.”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>311</td>
<td>2 of 3</td>
<td><em>NOTES FOR CONCRETE SIDEWALKS ON CURVED ROADSWAY</em>: Deleted “Note 1”, and substituted the following: “Sidewalks shall be constructed in accordance with Section 522 the FST Standard Specifications. Public sidewalks curbs shall include detectable warning and be constructed in accordance with Index No. 504. Detectable warning are not required where sidewalks intersect vertical aligned curbs.” “Note 3”, deleted.</td>
<td>424</td>
<td>3 of 1</td>
<td>Changed 83 degrees to 93 degrees in CONVENTIONAL REINFORCED STEEL BENDING DIAGRAM Cross-section Table.</td>
</tr>
<tr>
<td>400</td>
<td>1 thru 26</td>
<td>Index expanded by one sheet due to font size change and added new sheet 2, “APPROACH END ANCHOR (STEEL) - (TSC)”, Index remeasured.</td>
<td>425</td>
<td>1 of 3</td>
<td>Added the following to the NAME, DATE and BRIDGE NUMBER note: “The name shall be shown as in the General Notes in the Structures Plans.”</td>
</tr>
<tr>
<td>401</td>
<td>1 of 26</td>
<td>New sheet added showing limits of pay for guardrail, details of shoulder treatment and miscellaneous asphalt for guardrail approach and treatment.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>405</td>
<td>5 of 26</td>
<td>Corrected spelling of guardrail in last paragraph.</td>
<td>426</td>
<td>1 of 3</td>
<td>Added Field testing proof load to the ADHESIVE BRIDGES ANCHORS and INOXESuw note: “Reflective Railings - THICK BEAM RETROFIT (GENERAL NOTES &amp; DETAIL S)”, deleted the BRIDGE NAME PLATE note and substituted the following: “If a portion of the existing Traffic Railing is to be removed that carries the bridge name, number and or date, or number of the installation of the Traffic Railings (Thin Beam Railings) will be placed on or adjacent to the bridge name, number and or date, then replace the information that has been removed or obscured, with the bridge name, number and or date.”</td>
</tr>
<tr>
<td>406</td>
<td>16 of 26</td>
<td>Deleted “RE-ERECTORS - (TSC) M” (See sheet 17)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>410</td>
<td>1 thru 25</td>
<td>Index completely revised and reorganized.</td>
<td>427</td>
<td>1 of 3</td>
<td>Added the following note: “NEOPRENE RAILS: Neoprene rails must be plain rails with a diameter thickness of 0.6 to 0.8 and must meet the requirements of Specification Section 932, except that testing of the finished products will be required.”</td>
</tr>
<tr>
<td>411</td>
<td>2 of 10</td>
<td>Changed tangent hWeels In Detal A to “2.49 = Design Speed 95 mph” [11] - Design Speed 25 mph.</td>
<td>428</td>
<td>2 of 4</td>
<td>Changed “SECTION A-4” and “SECTION B-8”, changed “Resilient Pad” to “Neoprene Pad”.</td>
</tr>
<tr>
<td>414</td>
<td>1 of 15</td>
<td>Updated Specification reference Section 971 to 975. Added steel section to ALTERNATE DESIGN note.</td>
<td>429</td>
<td>2 of 4</td>
<td>“SECTION A-4” and “SECTION B-8”, changed “Resilient Pad” to “Neoprene Pad”.</td>
</tr>
<tr>
<td>415</td>
<td>5 of 15</td>
<td>Added PTFE tape option to anchor bolt details.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>430</td>
<td>2 of 4</td>
<td>“SECTION A-4” and “SECTION B-8”, changed “Resilient Pad” to “Neoprene Pad”.</td>
</tr>
<tr>
<td>416</td>
<td>10 of 10</td>
<td>NOTES FOR WALL END SEWING: Note 1 changed the second sentence to “Except where the wall designates a particular type crash cushion for a specific location, the contractor can construct any of the rebar crash cushions listed on the Qualified Products List, subject to the uses and limitations described on their respective drawings.”</td>
<td>431</td>
<td>4 of 4</td>
<td>“SECTION A-4” and “SECTION B-8”, changed “Resilient Pad” to “Neoprene Pad”.</td>
</tr>
<tr>
<td>417</td>
<td>1 of 3</td>
<td>Changed offset of 1/4” to 3/4” from back edge of base plate in SECTION B-8.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>418</td>
<td>2 of 4</td>
<td>“SECTION A-4” and “SECTION B-8”, changed “Resilient Pad” to “Neoprene Pad”.</td>
<td>432</td>
<td>4 of 4</td>
<td>“SECTION A-4” and “SECTION B-8”, changed “Resilient Pad” to “Neoprene Pad”.</td>
</tr>
<tr>
<td>419</td>
<td>2 of 4</td>
<td>“SECTION A-4” and “SECTION B-8”, changed “Resilient Pad” to “Neoprene Pad”.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
475 2 of 4 "SECTION 4-A-1" and "SECTION 4-B-1", changed "Resilient Pad" to "Neoprene Pad".

476 2 of 4 "SECTION 4-A-1" and "SECTION 4-B-1", changed "Resilient Pad" to "Neoprene Pad".

480 1 of 2 "TRAFFIC RAILING (VERTICAL FACE RETROFIT) GENERAL NOTES & DETAILS," added the following to the "ALUMINUM-ALUMINUM ANCHORS AND SOWELS" note: "The field testing proof loads required by Specification Section 416 shall be (3,000 lbs) for Dowellers 60 on the inside face (traffic side) of the railing (1-6’-0" embedment) and 18,500 lbs for Dowellers 60 along the outside face of the traffic railing (15’ min. embedment)." Added PERFORMANCE RAIL note.

Also deleted the "REPLACEMENT MARKERS" note and substituted the following: "Reflective Rail Markers shall be installed in accordance with the requirements of Section 993. Markers shall be applied at the following locations:

(1) At the beginning and end of the traffic railing as required by the Project Information Sign on the QP.
(2) At stabilization signs in the QP."

4 of 9 Changed the "REQUIRED TEST METHOD" for Burst Strength, Soil-Geosynthetic Fishtail, Creep Reduction Factor & Joint Overlap to ASTM D 7676.

5 of 9 Updated values for CONTINUOUS PL 70.70 Deformed 4260 2006, 2016 & 2044: Added (QUICK 155T, 3x4x2, 4x2, 5x2, 4x4, 4x6, 4x6) geogrids.

6 of 9 Changed Joint Strength Overlap Value to 1.2 for all Monar products.

7 of 9 Deleted Application Usage 1 & 4 for SYNTEN D 117 & D 119.

7 of 9 Added Form 20.

8 of 9 Changed Creep Resistance and Creep Reduction Factors for TENS 961X 1200, 1200, 1220 & 1500.

9 of 9 Updated values for TENS 961X 220 & TENS 961X 330, added Cambridg 30/30, 24/24/20/20 & 24/24/30 extruded geogrids.

500 2 of 2 "HALF SECTION" detail, deleted "Storm Sewer Mains" replaced with "Storm Drain Trunk Lines".

501 3 of 9 Changed the "REQUIRED TEST METHOD" for Burst Strength, Soil-Geosynthetic Fishtail, Creep Reduction Factor & Joint Overlap to ASTM D 7676.

4 of 9 Updated values for CONTINUOUS PL 70.70 Deformed 4260 2006, 2016 & 2044: Added (QUICK 155T, 3x4x2, 4x2, 5x2, 4x4, 4x6, 4x6) geogrids.

5 of 9 Changed Joint Strength Overlap Value to 1.2 for all Monar products.

6 of 9 Deleted Application Usage 1 & 4 for SYNTEN D 117 & D 119.

7 of 9 Added Form 20.

8 of 9 Changed Creep Resistance and Creep Reduction Factors for TENS 961X 1200, 1220 & 1500.

9 of 9 Updated values for TENS 961X 220 & TENS 961X 330, added Cambridg 30/30, 24/24/20/20 & 24/24/30 extruded geogrids.

505 1 of 4 Sheet 3 is new. Renumbered other sheets.

515 5 of 7 In second symbolized note changed "Section 102-6." to "Section 102-8.".

520 3 of 7 Revised width of rigid pavement outside travel lane and changed location of rumble strip.

546 1 of 6 Added detail "PLAY," "PICTORIAL," and #4 & #5 Index sheets reordered.

5 of 6 Under "NOTES FOR 4-LANE DIVIDED ROADWAY," Note 1, changed reference from "Sheet 6" to "Sheet 2.".

600 2 of 13 OVERHEAD WORK, deleted "SECTION 4-4 - - - -" and substituted the following: "SECTION 4-4 OVERHEAD WORK ADDRESSING TRAFFIC WITH NO ENCROACHMENT BELOW THE OVERHEAD WORK AREA, T&S, shall be detected, shifting, diverted or passed as to not encroach in the area directly below the overhead work operations in accordance with the standard test methods for the area involved."

(1) Deck form placement and removal.
(2) Concrete deck placement.
(3) Rolling construction located at edge of deck.
(4) Structure demolition.

5 of 6 Changed "TRAVELWAY" to "Travel Lane". The designed weights of roadway pavement marked to carry through traffic and to separate it from opposing traffic or traffic occupying other lanes.

6 of 6 Auxiliary Lane. The designed weights of roadway pavement marked to separate speed change, turning, passing and climbing maneuvers from through traffic.

CLEAN ZONE WIDTHS FOR WORK ZONES, deleted the text "traffic" in the first sentence and substituted "traffic.".

Replaced chart "CLEAN ZONE WIDTHS FOR WORK ZONES."
<table>
<thead>
<tr>
<th>Index Number</th>
<th>Sheet Number</th>
<th>Description</th>
<th>Index Number</th>
<th>Sheet Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>851</td>
<td>1 of 2</td>
<td>Changed Pedestrian and Bicycle Railing designation.</td>
<td>5204</td>
<td>1 of 1</td>
<td>Changed &quot;Ribbed&quot; to &quot;Slotted&quot; in PLUS DETAIL.</td>
</tr>
<tr>
<td>2 of 2</td>
<td>Added requirement for set screw to be set flush against outside face of rail and 18-8 Alloy option in DETAIL. &quot;B.&quot; Changed field splice joint tolerance to ( \frac{1}{8} ) in DETAIL. &quot;B.&quot;</td>
<td>5205</td>
<td>1, 4, &amp; 6 of 7</td>
<td>Added note in Elevation Views to &quot;Extend post 2( \frac{1}{4} ) above high side wall&quot; when post caps are shown in the plans.</td>
<td></td>
</tr>
<tr>
<td>860</td>
<td>1 of 5</td>
<td>Changed &quot;Pedestrian/Railway&quot; to &quot;Pedestrian/Bicycle Railing&quot; and &quot;Bicycle Railing&quot; to &quot;Special Height Bicycle Railing&quot;. Added anchor bolt requirements to SWORN DRAWNVS note. Added filler metal &quot;1004.3&quot; to WELDING note.</td>
<td>2 of 5</td>
<td>Added德 &quot;DOE FOR NON-CONTINUOUS RAILING AT CORNERS&quot; detail Changed Pedestrian and Bicycle Railing designation. Maximum ramp length for slopes less than ( 6.25% ) and minimum clear picket opening at top to ( 3\frac{1}{8} ).</td>
<td></td>
</tr>
<tr>
<td>5 of 5</td>
<td>Changed Pedestrian and Bicycle Railing designation.</td>
<td>5206</td>
<td>1 of 1</td>
<td>Added &quot;POST LENGTH WITH CAP&quot; column, DADS D, P5 thru P8 to table and bordering details for corner posts.</td>
<td></td>
</tr>
<tr>
<td>861</td>
<td>1 of 2</td>
<td>Changed designation of 54&quot; trolley to &quot;Special Height Bicycle Railing&quot;.</td>
<td>5207</td>
<td>1 of 1</td>
<td>New Index added &quot;PRECAST SOUND BARRIERS-PRECAST POST CAPITAL&quot;.</td>
</tr>
<tr>
<td>2 of 2</td>
<td>Added requirement for set screw to be set flush against outside face of rail and 18-8 Alloy option in DETAIL. &quot;B.&quot; Changed field splice joint tolerance to ( \frac{1}{8} ) in DETAIL. &quot;B.&quot; Changed &quot;INTEGRAL TIE&quot; to &quot;A1011 TIE&quot;.</td>
<td>5210</td>
<td>2 of 5</td>
<td>Changed NAME AND BRIDGE NUMBER note, and &quot;Ribbed&quot; to &quot;Slotted&quot; in NEOPRENE ISOPHARM PLUS DETAIL. Added REFLECTIVE RAILING MARKET note and REFLECTIVE RAILING MARKET SPACING table.</td>
<td></td>
</tr>
<tr>
<td>870</td>
<td>1 of 5</td>
<td>Deleted Pedestrian and Bicycle designations from DESIGN LIVE LOADS and ALTERNATE DESIGN notes.</td>
<td>5211</td>
<td>3 of 5</td>
<td>Changed &quot;Ribbed&quot; to &quot;Slotted&quot; in NEOPRENE ISOPHARM PLUS DETAIL. Corrected Anchor Pin diameter in FIRE HOSE ACCESS DETAIL.</td>
</tr>
<tr>
<td>2 of 5</td>
<td>Deleted 4-6-6 Bicycle Railing option and &quot;X&quot; note. Changed maximum ramp length for slopes less than 6.25%.</td>
<td>5212</td>
<td>2 of 2</td>
<td>Added note for &quot;Full Depth Structural Asphalt&quot; above junction slab and changed coping dimension to 6&quot; Min.</td>
<td></td>
</tr>
<tr>
<td>3 of 5</td>
<td>Deleted 4-6-6 Bicycle Railing option.</td>
<td>5300</td>
<td>3 of 19</td>
<td>Increased max. gap at back of precast coping and added amber blocking.</td>
<td></td>
</tr>
<tr>
<td>4 of 5</td>
<td>Added requirement for set screw to be set flush against outside face of rail and 18-8 Alloy option in DETAIL. &quot;B.&quot; Changed field splice joint tolerance to ( \frac{1}{8} ) in DETAIL. &quot;B.&quot; Deleted Intermediate Posts from DETAIL. &quot;B.&quot; and &quot;C.&quot;</td>
<td>5301</td>
<td>4 of 19</td>
<td>Added note for &quot;Full Depth Structural Asphalt&quot; above junction slab and increased max. gap at back of precast coping.</td>
<td></td>
</tr>
<tr>
<td>880</td>
<td>1 of 5</td>
<td>Deleted Pedestrian and Bicycle designations from DESIGN LIVE LOADS and ALTERNATE DESIGN notes.</td>
<td>5302</td>
<td>5 of 19</td>
<td>Increased max gap at back of precast coping. Corrected size of Bar SUL in HUL REINFORCING TABLE.</td>
</tr>
<tr>
<td>2 of 5</td>
<td>Deleted 4-6-6 Bicycle Railing option and &quot;X&quot; note. Changed maximum ramp length for slopes less than 6.25%.</td>
<td>5303</td>
<td>1 of 19</td>
<td>Deleted sheet 2.</td>
<td></td>
</tr>
<tr>
<td>3 of 5</td>
<td>Deleted 4-6-6 Bicycle Railing option.</td>
<td>11200</td>
<td>1-2 of 5</td>
<td>Revised and rearranged notes, sheet renumbered to 1 of 2.</td>
<td></td>
</tr>
<tr>
<td>4 of 5</td>
<td>Added requirement for set screw to be set flush against outside face of rail and 18-8 Alloy option in DETAIL. &quot;B.&quot; and &quot;C.&quot; and ( \frac{1}{8} ) in DETAIL. &quot;B.&quot; Deleted Intermediate Posts from DETAIL. &quot;B.&quot; and &quot;C.&quot;</td>
<td>11201</td>
<td>2 of 2</td>
<td>Revised sheet 3 of 3, sheet 2 of 2 revised and rearranged notes. Deleted &quot;Class 1 Special Concrete&quot; replaced with &quot;Class 1 Concrete&quot;.</td>
<td></td>
</tr>
<tr>
<td>890</td>
<td>1 of 5</td>
<td>Changed trolley table revised connection bolt size revises for horizontal splice changed to 10. Modified materials spec. (10x10) added to Typical Detail Sign &amp; Truss Connection.</td>
<td>11300</td>
<td>1 of 1</td>
<td>Changed trolley table revised connection bolt size revises for horizontal splice changed to 10. Modified materials spec. (10x10) added to Typical Detail Sign &amp; Truss Connection.</td>
</tr>
<tr>
<td>2 of 5</td>
<td>Deleted 4-6-6 Bicycle Railing option and &quot;X&quot; note. Changed maximum ramp length for slopes less than 6.25%.</td>
<td>11301</td>
<td>1 of 5</td>
<td>Deleted 4-6-6 Bicycle Railing option. Changed 4-6-6 Bicycle Railing option.</td>
<td></td>
</tr>
<tr>
<td>3 of 5</td>
<td>Deleted 4-6-6 Bicycle Railing option.</td>
<td>11302</td>
<td>1 of 5</td>
<td>Deleted 4-6-6 Bicycle Railing option. Changed 4-6-6 Bicycle Railing option.</td>
<td></td>
</tr>
<tr>
<td>4 of 5</td>
<td>Added requirement for set screw to be set flush against outside face of rail and 18-8 Alloy option in DETAIL. &quot;B.&quot; and &quot;C.&quot; and ( \frac{1}{8} ) in DETAIL. &quot;B.&quot; Deleted Intermediate Posts from DETAIL. &quot;B.&quot; and &quot;C.&quot;</td>
<td>11303</td>
<td>5 of 5</td>
<td>Changed bolt spacing connection details.</td>
<td></td>
</tr>
<tr>
<td>5 of 5</td>
<td>Deleted 4-6-6 Bicycle Railing option. Changed trolley table revised connection bolt size revises for horizontal splice changed to 10. Modified materials spec. (10x10) added to Typical Detail Sign &amp; Truss Connection.</td>
<td>5100</td>
<td>2 of 2</td>
<td>Changed to plastic sleeve expansion joint and &quot;Premoulded Expansion Material&quot; to &quot;Preformed Joint Filler&quot;. Changed wall and expansion joint key.</td>
<td></td>
</tr>
<tr>
<td>5201</td>
<td>1 of 1</td>
<td>Texture Type &quot;2&quot; (Out Corbel Block) added.</td>
<td>11666</td>
<td>8 of 5</td>
<td>Changed SINGLE COLUMN GROUND STUD NOTES, Note E:1 and GUIDE TO USE THIS STANDARD, Note 4 and example. Modified concrete classification. Modified &quot;ALUMINUM COLUMN POST SELECTION TABLE&quot;.</td>
</tr>
<tr>
<td>5202</td>
<td>1 of 4</td>
<td>Added precast post caps. Changed clearance tolerance on stepped panel and Neoprene Pad options.</td>
<td>11730</td>
<td>1 of 1</td>
<td>Changed &quot;RIBBED&quot; to &quot;SLOTTED&quot; in PLUS DETAIL.</td>
</tr>
<tr>
<td>3 of 4</td>
<td>Changed #4 Bar Mark to Mars P5 &amp; P6 for Pile/Post Options A, B, &amp; C changed Texture Thickness to 3/4&quot; Max.</td>
<td>11734</td>
<td>1 of 1</td>
<td>Changed &quot;RIBBED&quot; to &quot;SLOTTED&quot; in PLUS DETAIL.</td>
<td></td>
</tr>
<tr>
<td>5203</td>
<td>1 of 5</td>
<td>Added precast post caps. Changed clearance tolerance on stepped panel and Neoprene Pad options.</td>
<td>17303</td>
<td>4 of 4</td>
<td>CASE II and CASE VIII dimensions and notes revised.</td>
</tr>
<tr>
<td>3 of 5</td>
<td>Changed #4 Bar Mark to Mars P5 &amp; P6 for Pile/Post Options A, B, C, E, and changed texture thickness dimension to 3/4&quot; Max.</td>
<td>17308</td>
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<td>WEIGHT Station and Station and Inspection Station signing details separated.</td>
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<td>SCHOOL SIGNS AND MARKINGS, on each sheet, in the Distance table at the bottom of the sheet, deleted the &quot;4&quot; column. Also deleted the &quot;4&quot; dimension from the detail drawings. 4 of 4</td>
<td>17279</td>
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<td>Round pole note revised pole height dimensions added to Type P-I through V-VIII Copper Ground note changed. 2 of 2</td>
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<td>Schedule 40 aluminum pipe (TS852) added as an alternate to stainless steel pipe in assembly details and signhead notes. Added backplates to signhead details.</td>
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<td>Case I and Case II revised: 18&quot; x 8&quot; marker detail revised notes at bottom right revised. 5 of 5</td>
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<td>Updated assembly dimensions. Changed shiled shrank reinforcing. Changed T-16. 3 of 3</td>
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<td>Revised sign FTV-94A-06 &amp; FTV-95B-06 and notes. 11 of 11</td>
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<td>GPL requirements added in new note 17. Added backplates to pole detail notes 6 &amp; 14 revised, deleted note 1b.</td>
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<td>Deleted concrete pole detail, Added METAL PIPE DETAIL and WRITING DIAGRAM. 3 of 3</td>
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<td>Added backplates to signhead displays. 1 of 3</td>
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<td>Added Type C Posts for larger skew ranges. Changed specification of elastomer from &quot;diameter&quot; to &quot;shear modulus&quot;.</td>
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<td>Changed anchor plate. Added &quot;Anchor Plate&quot; (dashed lines) (provide Design) to ELEVATION VIEW and TYPICAL SECTION.</td>
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<td>Imported pole from &quot;N&quot; to &quot;P&quot;. 1 of 1</td>
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<td>Changed grout pad and end bent lug from 6&quot; to 5½&quot; thickness.</td>
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<td>Mercury Vapor Luminaires changed to Induction Luminaires. Luminaire chart deleted, dimensions revised on spacing details and added to structural details. 2 of 2</td>
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<td>Added median barrier mounted light poles. Moved notes to sheet 2. 8 of 8</td>
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<td>Changed grout pad and end bent lug from 6&quot; to 5½&quot; thickness.</td>
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<td>21200</td>
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<td>Added detail for pole foundation to be used only behind guardrail. 3 of 3</td>
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<td>Changed Note 51, 5 &amp; 7. Added Note 8. Deleted seat pad and notes (former Notes 4d &amp; 7f). Added CSL tube note II. 3 of 3</td>
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<td>Clarified INSTRUCTIONS TO DESIGNER for variable and span lengths.</td>
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<td>Attaching for 600 O.D. Methyl Methacrylate to &quot;High Molecular Weight Methacrylate&quot;.</td>
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<td>Revised col-l代表大会 for 600 O.D. Methyl Methacrylate to &quot;High Molecular Weight Methacrylate&quot;.</td>
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STANDARD SYMBOLS FOR PLAN SHEETS

TRAFFIC SIGNALS SYMBOLS

EXISTING
- Traffic Signal Head (Span Wire Mounted)
- Traffic Signal Head (Pedestal Mounted)
- Traffic Signal Head (Most Arm Mounted)
- Traffic Signal Pole (Concrete, Wood, Metal)
- Vehicle Detector (Loop)
- Signal Cable (12 in Messenger Wire)
- Conduit
- Vehicle Detector (Points)
- Pedestrian Detector
- Pedestrian Signal Head (Pole Or Pedestal Mounted)
- Controller Cabinet (Base Mounted)
- Controller Cabinet (Pole Mounted)

PROPOSED
- Traffic Signal Head (Span Wire Mounted)
- Traffic Signal Head (Pedestal Mounted)
- Traffic Signal Head (Most Arm Mounted)
- Traffic Signal Pole (Concrete, Wood, Metal)
- Vehicle Detector (Loop)
- Signal Cable (12 in Messenger Wire)
- Conduit
- Vehicle Detector (Points)
- Pedestrian Detector
- Pedestrian Signal Head (Pole Or Pedestal Mounted)
- Controller Cabinet (Base Mounted)
- Controller Cabinet (Pole Mounted)

W - D W
- Walk - Don't Walk
- Flashing Don't Walk
- Signal Face Number
- Signal Lens
- Programmed Signal Head
- Messenger Wire
- Pole Tubulation Cross Reference
- Pole Tubulation Cross Reference (Joint Use Pole)
- Signal Phase

EXISTING
- Pole & Luminaire
- Existing Pole & Luminaire To Be Removed
- Existing Pole & Luminaire
- High Mast Lighting Tower
- City Or Utility Owned Luminaire & Pole
- PVC (Polyvinyl Chloride) Lighting Conduit And Conductors
- Rigid Galvanized Lighting Conduit And Conductors
- Lighting Pull-Box
- Light Distribution Point
- Joint Use Pole
- Pier Cap Underdeck Luminaire
- Pendant Hung Underdeck Luminaire

PROPOSED
- Pole & Luminaire
- Existing Pole & Luminaire To Be Removed
- Existing Pole & Luminaire
- High Mast Lighting Tower
- City Or Utility Owned Luminaire & Pole
- PVC (Polyvinyl Chloride) Lighting Conduit And Conductors
- Rigid Galvanized Lighting Conduit And Conductors
- Lighting Pull-Box
- Light Distribution Point
- Joint Use Pole
- Pier Cap Underdeck Luminaire
- Pendant Hung Underdeck Luminaire

SIGNING AND PAVEMENT MARKING SYMBOLS

- Pavement Arrow
- Single Solid Line
- Double Solid Line
- Skip Line
- Stop Bar
- Traffic Sign (Post Mounted)
- Traffic Sign (Overhead)
- Sign Number
- PCI = GS
- Sign Item Number
- Traffic Flow Arrow

See General Note, Sheet 1 of 3
CONCRETE CURB AND GUTTER

Rayon: Apply entire section so that gutter cross slope matches slope of adjacent circulating roadway pavement.

Note: For use adjacent to concrete or flexible pavement. For details depicting usage adjacent to flexible pavement, see Sheet 2. Expansion joint, preformed joint filler and joint seal are required between curb & gutter and concrete pavement only, see Sheet 2.

CONCRETE CURB
CURB AND GUTTER ENDINGS

CURB TYPE A

Curb and Gutter Endings

Curb and Gutter Types E & F

CONTRACTION JOINT IN CURB AND GUTTER

Expansion Joint Between Gutter and Concrete Pavement

CURB AND GUTTER AND TYPE A CURB ADJACENT TO FLEXIBLE PAVEMENT

Contraction Joint in Curb

Asphaltic Concrete Curb

GENERAL NOTES

1. For curb, gutter and curb & gutter provide 1/2" - 3/4" contraction joints at 10 centers (max.). Contraction joints adjacent to concrete pavement on tangents and flat curves are to match the pavement joints with intermediate joints not to exceed 10 centers. Curb, gutter and curb & gutter expansion joints shall be located in accordance with Section 520 of the Standard Specifications.

2. Ends of Curbs Types B and D shall transition from full to zero heights in 3'.

Shoulder Gutter

Sawcuts should be avoided within valley gutter and within curb and gutter endings.
<table>
<thead>
<tr>
<th>Design Speed (mph)</th>
<th>Entry Clearance (ft)</th>
<th>Cleared to Stop Distance (ft)</th>
<th>Total Decal. Distance (ft)</th>
<th>Cleared to Stop Distance (ft)</th>
<th>Total Decal. Distance (ft)</th>
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**DESIGN NOTES**

1. Bases for turn lane configurations:
   - Informal Driver
   - Stop condition (With or Without Stop Control)
   - Wet Pavement
   - Reaction time to entry point
   - Minimum braking distance for urban conditions,
   - 70 mph for L,
   - Comfortable deceleration rates for rural conditions
   (48.55 mph 200 threshold rate of 1.2 ft/s²).

**GENERAL NOTES**

1. The plan views shown are for turn lane taper shapes and dimensions purposes only, they do not prescribe the use of curb, gutter, shoulder or separators specifically to either rural or urban conditions.
2. Total deceleration distances must not be reduced except where lesser values are imposed by unavoidable control points.
3. Right turn lane tapers and distances identified left turn lanes under stop control conditions. Right turn lane tapers and/or distances are site specific under free flow or yield conditions.
4. These left turn configurations apply to continuous left turn lanes only where specifically called for in the plans.
5. For pavement marking see Index No. 13446.

**CONSTRUCTION**

- Limits of 4', 6', or 8' Traffic Separator
- Edge Of Turn Lane
- Edge Of Pavement

**MDM Curb and Traffic Separator**

- Type A
- Type B
- Type C
- Type D
- Type E
- Type F

**RAISED SEPARATION**

- Single Left Turns
  - The length of taper may be increased to L₂ for single left turns and L₃ for double left turns when:
    a. Left turn queue vehicles are adequately provided for within the design queue length.
    b. Through vehicle queues without access to left turn lane.
    c. Approved by District Design Engineer.
TYPICAL SECTION THRU TRAFFIC SEPARATOR
(Bridge Deck Shown, Approach Slab Similar)

- For 4'-0" width: Bars 4@1-6" (cmin) (Typ.)
- For 6'-0" width: Bars 4@1-6" (cmin) (Typ.)
- For 8'-0" width: Bars 4@1-6" (cmin) (Typ.)

= At the Contractor's option
a one piece bar may be
substitued for Bars 48 and
4E

LONGITUDINAL SECTION THRU TRAFFIC
SEPARATOR AT NOSE
(Bridge Deck Shown, Approach Slab Similar)

REINFORCING STEEL OPTION A

DETAIL AT EXPANSION JOINTS
(Strip Seal Shown, Other Armored Joint Types Similar)

NOTE:
See Structures Plans, Superstructure Sheets for actual
dimensions and joint orientation. Treatment of separators
on straight bridges shown. For treatment of separators
on skewed bridges see Index No. 490.
TYPICAL SECTION THRU TRAFFIC SEPARATOR
(Bridge Deck Shown, Approach Slab Similar)

- For 6'-0" width: Bars 4A @ 3 equal spaces (continuous).
- For 8'-0" width: Bars 4A @ 5 equal spaces (continuous).
- For 8'-6" width: Bars 4A @ 7 equal spaces (continuous).

- At the Contractor's option a one piece bar may be substituted for Bars 4B and 4E.

LONGITUDINAL SECTION THRU TRAFFIC SEPARATOR AT NOSE
(Bridge Deck Shown, Approach Slab Similar)

REINFORCING STEEL OPTION A

DETAIL AT EXPANSION JOINTS
(Strip Seal Shown, Other Armored Joint Types Similar)

DETAIL AT POURRED JOINT WITH BACKER ROD EXPANSION JOINTS

BRIDGE INSTALLATIONS - TYPE "F" CURB

REINFORCING STEEL OPTION B (NOT PERMITTED ON BRIDGE DECKS WITH PRESTRESSING STEEL)

Note:
See Structures Plans, Superstructure Sheets for actual dimensions and joint orientation. Treatment of separators on straight bridges shown. For treatment of separators on skewed bridges see Index No. 490.
**CONVENTIONAL REINFORCING STEEL BENDING DIAGRAMS**

**BARS 4E**
- See Note

**BARS 4A & 4E**
- Bar 4B

**Note:**
- Length of Bars 4E is 2'-5" for 4'-0" Separator.
- Length of Bars 4B is 4'-5" for 6'-0" Separator.
- Length of Bars 4E is 6'-11" for 8'-6" Separator.

**REINFORCING STEEL OPTION A**

**BARS 4C**
- See Note

**BARS 4A & 4C**
- Bar 4D

**Note:**
- Length of Bars 4C is 2'-4½" for 4'-0" Separator.
- Length of Bars 4C is 4'-4½" for 6'-0" Separator.
- Length of Bars 4C is 6'-10½" for 8'-6" Separator.

**REINFORCING STEEL OPTION B**

**ALTERNATE REINFORCING STEEL DETAILS (WELDED WIRE REINFORCEMENT)**

**OPTION A:** Use Welded Wire Reinforcement 3" x 4" - W5.0 x W6.7 as required by plans in place of Bars 4A, 4B, and 4E. Bend the Welded Wire Reinforcement to the dimensions of Bar 4B, shown in the bending diagram for Reinforcing Steel Option A.

**OPTION B:** Use Welded Wire Reinforcement 3" x 4" - W5.0 x W6.7 as required by plans in place of Bars 4A and 4C, shown in Reinforcing Steel Option B.

**Note:** Welded Wire Reinforcement shall conform to ASTM A855.

**W5.0 (Lap Splice Each Longitudinal Wire)**

**3"-0" Min. 1 Cap**

**W5.0**

**W6.7 (Typ.)**

**SPlice DETAIL**

(Between WWR 3" x 4" - W5.0 x W6.7 Sections)

**DRAINAGE JOINT DETAIL**

FOR 5" OPENING OR LESS

See Structures Plans, Superstructure Sheets for location(s) of drainage joints. Locations for drainage joints shall be limited to the consistent width sections of separator.

**NOTES:**
- **CONCRETE:** See General Notes in Structures Plans.
- **REINFORCING STEEL:** Reinforcing Steel shall be ASTM A416, Grade 60. Payment: Separators having widths of 4'-0", 6'-0", and 8'-6" shall be paid under the contract unit price for Traffic Separator Concrete (Type II or III). LF Separators having widths other than 4'-0", 6'-0", or 8'-6" shall be detailed in the plans as special separators and paid under the contract unit price for Traffic Separator Concrete Special, S.T.
- **TRAFFIC SEPARATOR CONSTRUCTION:** The Contractor may construct the separator by the use of stationary removable forms or by the use of slip forms without altering the separator dimensions shown. 5" W-GROOVES for all separators provide 5½" V-Grooves at 30'-0" centers (max.) equally spaced between expansion joints, and/or drainage joints.

**B R I D G E  I N S T A L L A T I O N S - T Y P E "E" A N D "F" C U R B S**

**ESTIMATED TRAFFIC SEPARATOR QUANTITIES**

**CONCRETE:**
- **CONSTANT WIDTH OF SEPARATOR:**
  - **TYPE "E"**
  - 4'-0" Width: 0.0456 CY per Ft.
  - 0.072 CY per Ft.
  - 6'-0" Width: 0.0784 CY per Ft.
  - 0.122 CY per Ft.
  - 8'-6" Width: 0.152 CY per Ft.
  - 0.214 CY per Ft.
- **TYPE "F"**
  - 4'-0" Width: 0.038 CY per Ft.
  - 0.059 CY per Ft.
  - 6'-0" Width: 0.053 CY per Ft.
  - 0.083 CY per Ft.
  - 8'-6" Width: 0.124 CY per Ft.
  - 0.164 CY per Ft.

**NOISE:**
- **TYPE "E"**
  - 4'-0" Width: 0.080 CY
  - 0.120 CY
  - 6'-0" Width: 0.123 CY
  - 0.197 CY
  - 8'-6" Width: 0.463 CY
  - 0.526 CY

**REINFORCING STEEL:**
(All quantities are based on an 8½" slab.)

**OPTION A:**
- 4'-0" Width: 6.50 Lb. per Ft.
- 6'-0" Width: 8.80 Lb. per Ft.
- 8'-6" Width: 11.05 Lb. per Ft.

**OPTION B:**
- 4'-0" Width: 7.77 Lb. per Ft.
- 6'-0" Width: 7.00 Lb. per Ft.
- 8'-6" Width: 9.45 Lb. per Ft.

**Dowel Detail**

Adhesive Bonding Material System

Hole diameter to meet adhesive bonding material requirements

Dowel Notes:
1. Short Dowels to clear if existing reinforcement is encountered.
2. Provide and install adhesive bonding material system in accordance with Sections 416 and 917 of the Specifications.
Note:
Profile grades should be established that will allow inlets to be located outside the return whenever practical. Inlets should be located to avoid conflict with pedestrian movement. Special care must be exercised to prevent conflict with public sidewalk curb ramps for the disabled. For information on public sidewalk curb ramps refer to Index No. 304.

**SHOWING LOCATION OF INLETS ON RETURN**

**TYPICAL RETURN PROFILES**
1. Public sidewalk curb ramps shall be constructed in the public right of way at locations that will provide continuous unobstructed pedestrian circulation paths to pedestrian areas, elements and facilities in the public right of way and to accessible pedestrian routes on adjacent sites. Curved facilities with sidewalks and those without sidewalks are to have curb ramps constructed at all street intersections and at turnouts that have curb returns. Partial curb returns shall extend to the limit prescribed by Index No. S55 to accommodate curb ramps. Ramps constructed at locations without sidewalks shall have a landing constructed at the top of each ramp, see Sheet 6.

2. The location and orientation of curb ramps shall be shown as in the plans.

3. Curb ramps running slopes at unrestrained sites shall not be steeper than 1:12 and cross slope shall be 0.02 or flatter. Transition slopes shall not be steeper than 1:12.

When altering existing pedestrian facilities where existing site development precludes the accommodation of a ramp slope of 1:12, a running slope between 1:12 and 1:10 is permitted for a rise of 6” maximum and a running slope of between 1:10 and 1:8 is permitted for a rise of 3” maximum. Where compliance with the requirements for cross slope cannot be fully met, the minimum feasible cross slope shall be provided.

Ramp running slope is not required to exceed 8” in length, except at sites where the plans specify a greater length.

4. If a curb ramp is located where pedestrians must walk across the ramp, then the walk shall have transition slopes to the ramp, the maximum slope of the transitions shall be 1:10. Ramps with curb returns may be used at locations where other improvements provide guidance away from that portion of curb perpendicular to the sidewalk. Improvements for guidance are not required at curb ramps for linear pedestrian traffic.

5. Curb ramp detectable warning surfaces shall extend the full width of the ramp and 24” deep. Detectable warning surfaces shall be constructed in accordance with Specification S27. See Sheet 6 of 6 for detectable warning layouts. Transition slopes are not to have detectable warnings.

6. Where a curb ramp is constructed within existing curb, curb and gutter and/or sidewalk, the existing curb or curb and gutter shall be removed to the nearest joint beyond the curb transitions or up to the extent that no remaining section of sidewalk is less than 5’ long. The existing sidewalk shall be removed to the nearest joint beyond the transition slope or walk around or to the extent that no remaining section of sidewalk is less than 5’ long. For details of Concrete Sidewalk See Index SI.0.

7. Alpha-numeric identifications are for reference (plans, permits, etc.).

8. Public sidewalk curb ramps are to be paid for as follows:
   Ramps, reconstructed sidewalks, walk around sidewalks, sidewalk landing and sidewalk curbs are to be paid for under the contract unit price for Sidewalk Concrete, (Type 2) Thick.
   ST. Curb transitions and reconstructed curbs are to be paid for under the contract unit price for the parent curb, i.e., Curb Conc. (Type 2), LF or Curb and Gutter Conc., (Type 2), LF.

   When a separate item for the removal and disposal of existing curb, curb and gutter, and/or sidewalk is not provided in the plans, the cost of removal and disposal of these features shall be included in the contract unit price for new curb, curb and gutter and/or sidewalk respectively.

9. Acceptance Criteria for Detectable Warnings:
   (a) The ramp detectable warning surface shall be complete and uniform in color and texture.
   (b) 90% of the individual truncated domes must comply with the design criteria.
   (c) There may be no more than 4 non-complying domes in any one square foot of surface.
   (d) No two adjacent domes may be non-compliant.
   (e) Surface may not deviate more than 0.10” from a true plane.

10. All sidewalk surfaces, ramp surfaces, and landings with a cross slope shown in this Index to be 0.02 shall be 0.02 maximum. All ramps surfaces and ramp transition slopes with a slope shown in this Index to be 1/12 shall be 1/12 maximum.

GENERAL NOTES
DIMENSIONAL FEATURES FOR PUBLIC SIDEWALK CURB RAMPS WHERE RAMP AND LANDING DEPTH ARE NOT RESTRICTED BY RIGHT OF WAY
**Ramp Widths For Curb Ramps CR 10, CR 11, CR 15, CR 16, And CR 17 May Be Reduced To 3' Min. In Restricted Conditions When Approved By The Engineer.**

* For BACK OF SIDEWALK CURB OR BUFFER TRANSITION And For RAMP AND SIDEWALK CURB OPTIONS See Sheet 4.

** Lower landing not required at driveways, parking lots, or other areas with pavement cross-slopes less than 2% (0.02).

**DIMENSIONAL FEATURES FOR PUBLIC SIDEWALK CURB RAMPS WHERE RAMP AND LANDING DEPTH ARE RESTRICTED BY RIGHT OF WAY**
DIMENSIONAL FEATURES FOR PUBLIC SIDEWALK CURB RAMPS FOR LINEAR PEDESTRIAN TRAFFIC

RAMP AND SIDEWALK CURB OPTIONS

MONOLITHIC CAST CURB

SEPARATELY CAST CURB

Construct Sidewalk Curb In Absence Of Adequate Buffer, Maintainable Surface Contour, Absorbing Structure, Or When Called For In The Plans Or Standards

BACK OF SIDEWALK CURB OR BUFFER TRANSITION

PUBLIC SIDEWALK CURB RAMPS
5' Refuge With Maximum Slope Of 0.02 Must Be Provided When Slopes Of 0.02 Or Flatter And 5' In Length Are Not Available On Crosswalks. The Refuge Can Be Constructed At Any Location Within The Crosswalk Or A 5' x 5' Concrete Landing With Maximum Slope Of 0.02 Can Be Constructed Adjacent To The Crosswalk.

Curb Transition ID: Existing Edges May Be Removed And Reconstructed Or Curb And Gutter For Pedestrian Use. See General Note B.

Slopes Shall Intersect At Centerline Of Median On The 0.02 Rate When The Edge Of Pavement Elevations Are Equal. The Slopes May Intersect At Centerline For Variable Edge Of Pavement Elevations Or To Accommodate Other Construction In The Median. However, Slopes Shall Not Be Steeper Than 1:12.

MEDIAN CROSSWALKS

LANDINGS FOR RAMPS WITHIN PUBLIC RIGHT OF WAY CONSTRUCTED AT LOCATIONS WHERE FUTURE SIDEWALKS ARE PROPOSED, WHERE STABLE SURFACES OTHER THAN SIDEWALKS ARE PART OF A CONTINUOUS PATH OR WHERE A CURB FALLS ALONG THE CIRCULATION PATH TO PEDESTRIAN ROUTES ON ADJACENT SITES
M214-09.005 \*

**METAL OR PLASTIC CAPS FOR DOWEL BARS**

![Diagram of Metal or Plastic Caps for Dowel Bars]

**Preformed Joint Filler (Pour Clean Holes Greater Than Bar Diameter)**

- Plain Steel Dowel Bar
- Plain Steel Dowel Bar (Coat and Lubricate In Accordance With Section 350 Of The Std. Spec.)
- Metal or Plastic Cap Strip (In Accordance With Section 350 Of The Std. Spec.)
- Sheet Metal/Bottom Strip (In Accordance With Standard Specifications)

**Butt Construction Joint To Be Used At Discontinuities Of Work**

![Diagram of Butt Construction Joint]

**Transverse Expansion Joint**

- Plain Steel Dowel Bar (Coat and Lubricate In Accordance With Section 350 Of The Std. Spec.)
- Parking Strip (Depth 1/4 to 1/3 D)
- Anticipated Break

**Transverse Contraction Joint, Vibro Cast Method**

- 3" To 9"
- 12" 12" 12" 12" 12" 12" 12" 12" 12" 12" 12" 12" 12" 12" 12" 12" 12" 12" 12" 12" 12"

**Dowel Bar Layout**

- 3/4" to 9"
- Plain Steel Dowel Bars
- Bend Up Against End Or Pavement After Forms Are Removed

**Dowels (Length 18")**

<table>
<thead>
<tr>
<th>Pavement Thickness</th>
<th>Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>6&quot;-1/2&quot;</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>7&quot;-1/2&quot;</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>9&quot;-1/2&quot;</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>11&quot;-1/2&quot;</td>
<td>3/4&quot;</td>
</tr>
</tbody>
</table>

**Longitudinal Butt Construction Joint**

- Initial 1/4" Saw Cut Or 1/4" Max. Formed Groove (Depth 1/4 to 1/3 D)
- Top Of Pavement
- Steel Tie Bar
- Approved Tie Bar Support
- Anticipated Break

**Longitudinal Lane-Tie Joint**

- Tie bars are deformed #4 or #5 reinforcing steel bars meeting the requirements of Section 350 of the Standard Specifications

**Provide a standard load transfer tie joint with #4 bars 25" in length at 24" or #5 bars 30" in length at 38" spacing.**

**Longitudinal Joints**

Note: For joint seat dimensions see Sheet 2.
ALTERNATE KEYWAY AND HOOK BOLT

STEEL HOOK BOLT ASSEMBLY

JOINT LAYOUT AT THRU INTERSECTION

JOINT LAYOUT AT 'T' INTERSECTIONS

NOTES
1. Longitudinal joints will not be required for single lane pavement 14" or less in width.
   For entrance and exit ramp joint details, see Sheet 4 of 4.
2. Arrangement of longitudinal joints are to be as directed by the Engineer.
3. Manholes, meter boxes and other projections into the pavement shall be boxed-in with
   1/2" preformed expansion joint material.

JOINT ARRANGEMENT

Transverse Dowelled Contraction Joints
Transverse Dowelled Expansion Joint
Tied Longitudinal Joints
Unlinked Keyed Joint

CONTRACTION ASSEMBLY

EXPANSION ASSEMBLY

NOTE: After the concrete has set to the extent that the keyway will retain its shape, the hex bolt and plastic insert shall be removed. The remaining portion of the hook bolt assembly shall be installed immediately prior to placing of concrete in the adjacent lane.

Anchor bolts shall be Grade C in accordance with ASTM A 307. Threaded sleeves shall develop the full strength of the bolt and meet the material and thread requirements of ASTM A 563.

Note: Proprietary contraction and expansion assemblies may be used.
Products shall be introduced to the State Construction Office in accordance with section 100 of the Product Evaluation Procedure.
2-THRU LANES WITH SINGLE LANE ENTRANCE RAMP

ENTRANCE RAMP WITH ADDED LANE

2-THRU LANES WITH SINGLE LANE EXIT RAMP


3-THRU LANES WITH AUXILIARY LANE AND 2-LANE EXIT RAMP

Transition From 10" to 12" Wide Over 3 Slabs

Transition From 12" to 12" Wide Over 3 Slabs

Note: On single lane ramps, longitudinal joint to be constructed along centerline of ramp.

* 13' with tied Concrete Shoulders or 14' with Asphalt Shoulders.
**DESIGN NOTES**

1. For rehabilitation projects, the designer must indicate in the plans the number of slabs to be removed, the number of slabs to be constructed/reconstructed, and the location of expansion joints.

2. Pay quantity of expansion joint to be calculated across pavement at right angles to the centerline of the roadway pavement. Should pavement joint included.

**GENERAL NOTES**

1. The centerline of roadway and the centerline of bridge do not necessarily coincide. Prior to the placement of the expansion joint, the centerline of the roadway pavement shall be determined.

2. For information on other types of concrete pavement joints see Index No. 306.

3. Pay quantity for expansion joint is the length of joint to be constructed across the roadway and shoulder pavements, measured at right angles to the centerline of the roadway. Payment for expansion joint shall be full compensation for joint construction, including reinforced concrete slab, sheet metal strip, and compression seal, but not including roadway pavement reconstruction associated with joint replacement or reconstruction. Expansion joint to be paid for under the contract unit price for Bridge Approach Expansion Joint, LF.

**DEVELOPMENT CHECKLIST**

STANDARD INDEX NO. XXX, SHEET X OF X

**REVISION LOG**

**NAME / INITIALS**

**DATE**

**NAME / INITIALS**

**DATE**

**REMARKS**

**SHEET NO.**

**INDEX NO.**

**2010 FDOT Design Standards**

**306**

**BRIDGE APPROACH EXPANSION JOINT**

**CONCRETE PAVEMENT**

**SECTION AA EXPANSION JOINT**

**WITH RIGID SHOULDER PAVEMENT**

**WITH GRASSED SHOULDER OR FLEXIBLE SHOULDER PAVEMENT**

**REINFORCING STEEL**

**DETAIL SHOWING SHEET METAL STRIP**

**OPTIONAL SEALS**

**J OINT DIMENSIONS**

**COMPRESSION SEAL DETAIL**

**Polychloroprene Compression Seals Installed As Per Manufacturer's Specifications.**

**Note:** All contacting surfaces between the compression seal and concrete shall be thoroughly coated with a lubricant-adhesive.
FLEXIBLE PAVEMENT NOTES

PAVEMENT REMOVAL AND REPLACEMENT

Pavement shall be mechanically sawed.

The replacement asphalt shall match the existing structural and friction courses for type and thickness.

The new base materials shall be either of the same type and composition as the materials removed or of equal or greater structural adequacy (See Index No. 514).

BACKFILL

COMPACTED AND STABILIZED FILL OPTION

Backfill material shall be placed in accordance with Section 125 of the Standard Specifications.

In Stage #1, construct compacted fill beneath the haunches of the pipe, using mechanical tamp suitable for this purpose. This compaction applies to the material placed beneath the haunches of the pipe and above any bedding.

In Stage #2, construct compacted fill along the sides of the pipe and up to the bottom of the base with the applicable Type B Stabilization. In lieu of Type B Stabilization, the contractor may construct using Optional Base Group 3.

FLOWABLE FILL OPTION

If compaction cannot be achieved through normal mechanical methods then Flowable Fill may be used.

Flowable Fill is to be placed in accordance with Section 121 of the Specifications, as approved by the Engineer.

Do not allow the utility being installed to float. If a method is provided to prevent flotation, Stages #1 and #2 can be combined, if approved by the Engineer.

In Stage #1, place flowable fill midway up on both sides of the utility. Allow to harden before placing Stage #2.

In Stage #2, place flowable fill to the bottom of the existing base course.

FLEXIBLE PAVEMENT CUT

TRENCH CUTS AND RESTORATIONS ACROSS ROADWAYS

RIGID PAVEMENT NOTES

PAVEMENT REMOVAL AND REPLACEMENT

High early strength cement concrete (5000 psi) shall meet the requirements of Standard Specification 346 shall be used for rigid pavement replacement.

Pavement shall be mechanically sawed and restored to conform with existing pavement joints within 12 hours. (See Index No. 305)

GRANULAR BACKFILL

Any edgework system that is removed shall be replaced with the same type materials. Any edgework system that is damaged shall be repaired with methods approved by the Engineer.

All material shall be placed in accordance with the Standard Specifications. All material shall be placed in accordance with Index No. 515.

In Stage #1, construct compacted fill beneath the haunches of the pipe, using mechanical tamps suitable for this purpose. This compaction applies to the material placed beneath the haunches of the pipe and above any bedding.

In Stage #2, construct fill along the sides of the pipe and up to the bottom of replacement pavement.

FLOWABLE FILL OPTION

If mechanical compaction cannot be achieved through normal mechanical methods than Flowable Fill may be used.

Flowable Fill is to be placed in accordance with Section 121 of the Specifications, as approved by the Engineer.

Do not allow the utility being installed to float. If a method is provided to prevent flotation, Stages #1 and #2 can be combined, if approved by the Engineer.

In Stage #1, place flowable fill midway up on both sides of the utility. Allow to harden before placing Stage #2.

In Stage #2, place flowable fill to the bottom of the stone layer.

RIGID PAVEMENT CUT

GENERAL NOTES

1. The details provided in this standard index apply to cases in which lack and bore or directional boring methods are not required by the Engineer.

2. Flowable Fill shall be placed directly over loose, or high plastic, or much material (see Index 503) which will cause settlement due to Fill weight. Where highly compressible material exists, the amount of pins and depth of Flowable Fill must be engineered to prevent pavement settlement.

3. These details do not apply to utility cuts longitudinal to the centerline of the roadway which may require the additional use of geotextiles, special bedding and backfill, or other special requirements.

4. Methods of construction must be approved by the Engineer.

5. Some pipe may require special granular backfill up to 6" above top of pipe. Geotextiles may be required to encapsulate the special granular material.

6. Where asphalt concrete overlaid with full slab concrete pavement, the replacement pavement shall have an overlay constructed over the replacement slab. The overlay shall match the existing asphalt pavement thickness. The replacement friction course shall match the existing friction course, except structural course may be used in lieu of dense graded friction course.

7. Existing broken and cracked pavements shall be treated as flexible pavements.

8. The use of Flowable Fill to reduce the live traffic is taken off a facility is acceptable but must have prior approval by the Engineer. Flowable Fill is allowed only when properly engineered for pavement crossings, whether through or diagonal, and shall not be installed for significant depths or lengths. The maximum length shall be fifty (50) feet and a minimum depth of six (6) feet unless supported by an engineering document prepared by a registered professional engineer that specializes in soils engineering. The engineering document shall address the evaluation of local groundwater flow, intergranular settlement potential.

9. Excavatable Flowable Fill is to be used when the flowable fill is selected.

10. When approved by the Engineer, in lieu of the pavement base, non-excavatable Flowable Fill may be used for manhole stabilization and pin and cover adjustments. Excavatable Flowable Fill shall not be used within the limits of the pavement base.
NOTES FOR UTILITY CONFLICT PIPE

1. These details are for construction field expedience to resolve utility conflicts that cannot be remedied by relocation. For conflicts determined during design, use the construction shop drawings for structure details.

2. Concrete used in conflict structures shall be as specified in ASTM C496. 4000 psi may be used in lieu of Class 1 concrete.

3. Maximum opening for pipe shall be the pipe ID plus 6”. Mortar used to seal the pipe into the opening will be of such mix that shrinkage will not cause leakage into or out of the structure.

4. If the conflicts structure is round or there are multiple inlets or outlets pipes, the wall section should be reviewed for strength.

5. If during the plans design or construction process it is determined that a district water supply line must pass though a storm drain structure, it must be shown on the design or construction plans and submitted to the Florida Department of Environmental Protection (FDEP) for review and comment. This index provides accepted methods for addressing conflicts when and where they cannot be reasonably avoided. To be submitted along with the plans shall be a justification describing inordinate cost and the impracticality of avoidance. It identified, properly justified and accomplished in accordance with this index, approval’s granted. Upon request, the Utility Agency Owner (UAO) must provide support data on the cost of relocation or adjustment to the FDOT for submission to the FPUE.

SECTION LONGITUDINAL TO CARRIER PIPE
(Nonpressure Or Nonfluid Carrier Installations)
No Joints Allowed Within Structure

UTILITY CONFLICT CONDITION I

Carrier casing: The casing shall be rated to the greatest pressure of either the carrier that’s carried for or design or that’s required for construction. The casing may be steel, cast iron, ductile iron or plastic. The casing can be seamless or sealed with sleeves.

Annular Space Plug/Seal/Option:
Flexible PVC Neoprene Flexible Seal
See Note No. 3

1' Min. Clearance Between Obstruction and Flow Line of Outlet Pipe

For Structure Type See Plans

Carrier Spacer Or Cradle (Cradle Option Shown)

SECTION LONGITUDINAL TO CARRIER PIPE
(Pressure Or Fluid Carrier Installations)

UTILITY CONFLICT CONDITION II

“Sump” Conflict Manholes Shall Not Be Used Unless the System Is Hydraulically Designed to Account for the Head Loss Generated If the Sump Is Completely Blocked

DESIGNER’S NOTE

SECTIONS BB

UTILITY CONFLICT PIPES THRU STORM DRAIN STRUCTURES

MISCELLANEOUS UTILITY DETAILS
PARTIAL CUTS FOR RING AND COVER ADJUSTMENTS

NOTES
1. No irregular seams are permitted. All seams must be clean scribed.
2. Pavement cut seams for underground utility structures in rigid pavement are the same longitudinally, but the transverse seams shall extend to the nearest existing joint.
3. See Sheet 1 for replacement pavement.

NONTRENCH PAVEMENT CUTS FOR UNDERGROUND UTILITY STRUCTURES IN PAVEMENT
**GENERAL NOTES**

1. For Repair and Replacement Criteria see Sheet 2 of 2.

2. Full-depth repairs consist of removing and replacing at least a portion of the existing slab to the bottom of the concrete.

3. Repair boundaries shall be sawed full-depth with diamond saw blades. On hot days, it may not be possible to make this cut without first making a wide, pressure relief cut within the repair boundaries. A carbide-tipped wheel saw may be used for this purpose, but the wheel saw must not intrude on the adjacent lane, unless the lane is slated for repair. The wheel saw cuts produce a ragged edge that promotes excessive spalling along joints. Hence, if wheel saw cuts are made, diamond saw cuts must be made 18 in. outside the wheel saw cuts. To prevent damage to the base, the wheel saw must not be allowed to penetrate more than 0.5 in. into the base.

4. No additional base or subgrade material shall be added and all loose base or subgrade material shall be removed prior to placement of the new concrete slab. The concrete slab shall be placed to the full-depth of the material removed. No additional compensation will be allowed for additional concrete required to bring proposed concrete slab up to finished grade.

5. Removal of the damaged concrete pavement shall be by W/O S. Any good concrete pavement which is damaged during removal of damaged areas shall be removed and replaced by the contractor at his expense.

6. If the roadway contract includes grinding, then the slab replacement shall be performed first.

7. During slab replacement operations, any saw cut over runs into adjacent slabs with epoxy.
# SLAB REPAIR AND REPLACEMENT CRITERIA

<table>
<thead>
<tr>
<th>DISTRESS PATTERN</th>
<th>SEVERITY/DESCRIPTION</th>
<th>REPAIR METHOD</th>
<th>REFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CRACKING</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longitudinal</td>
<td>Light: &lt;4&quot;, no faulting, spalling 4&quot; wide</td>
<td>None</td>
<td>Figure 10.2</td>
</tr>
<tr>
<td></td>
<td>Moderate: ≥4&quot;, ≤6&quot;, spalling ≥3&quot; wide</td>
<td>Clean and Seal</td>
<td>Figure 10.2</td>
</tr>
<tr>
<td></td>
<td>Severe: width ≥6&quot;, spalling ≥3&quot; faulting ≥6&quot;</td>
<td>Replace</td>
<td>Figure 10.3</td>
</tr>
<tr>
<td>Transverse</td>
<td>Light: &lt;4&quot;, no faulting, spalling ≤4&quot; wide</td>
<td>None</td>
<td>Figure 10.2</td>
</tr>
<tr>
<td></td>
<td>Moderate: ≥4&quot;, ≤6&quot;, spalling ≥3&quot; wide</td>
<td>Clean and Seal</td>
<td>Figure 10.2</td>
</tr>
<tr>
<td></td>
<td>Severe: width ≥6&quot;, spalling ≥3&quot; faulting ≥6&quot;</td>
<td>Replace</td>
<td>Figure 10.3, 10.4, and 10.5</td>
</tr>
<tr>
<td><strong>Corner Breaks</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A corner of the slab is separated by a crack that intersects the adjacent longitudinal and transverse joint, describing an approximate 45º angle with the direction of traffic.</td>
<td>Full Depth</td>
<td>Figure 10.4 and 10.5</td>
</tr>
<tr>
<td><strong>Intersecting Random Cracks (Shattered Slab)</strong></td>
<td>Cracking patterns that divide the slab into three or more segments.</td>
<td>Full Depth</td>
<td>Figure 10.3 and 10.4</td>
</tr>
<tr>
<td><strong>JOINT DEFICIENCIES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spall Nonwheel Path</td>
<td>Light:</td>
<td>≤6&quot;, slab depth, ≥2&quot; in length</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Moderate: ≥6&quot;, ≤9&quot;, slab depth, ≥2&quot; in length</td>
<td>None</td>
<td>Figure 10.4 and 10.5</td>
</tr>
<tr>
<td></td>
<td>Severe: ≥9&quot;, or length ≥12&quot;</td>
<td>Full Depth</td>
<td>Figure 10.4 and 10.5</td>
</tr>
<tr>
<td>Spall Wheel Path</td>
<td>Light:</td>
<td>≤6&quot;, slab depth, ≤2&quot; in length</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Moderate: ≥6&quot;, ≤9&quot;, slab depth, ≤2&quot; in length</td>
<td>Full Depth</td>
<td>Figure 10.4 and 10.5</td>
</tr>
<tr>
<td></td>
<td>Severe: ≥9&quot;, or length ≥12&quot;</td>
<td>Full Depth</td>
<td>Figure 10.4 and 10.5</td>
</tr>
<tr>
<td><strong>SURFACE DETERIORATION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pop Outs Nonwheel Path</td>
<td>Light:</td>
<td>Not deemed to be a traffic hazard</td>
<td>Keep under observation</td>
</tr>
<tr>
<td></td>
<td>Severe:</td>
<td>Flying debris deemed a traffic hazard</td>
<td>Full Depth</td>
</tr>
<tr>
<td>Pop Outs Wheel Path</td>
<td>Light:</td>
<td>Small pieces of surface pavement broken loose, normally ranging from 1 to 4 in. diameter and ≤2 to 2 in. in depth.</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Severe:</td>
<td>Small pieces of surface pavement broken loose, normally ≥3 in. diameter and ≥2&quot; in depth.</td>
<td>Full Depth</td>
</tr>
<tr>
<td><strong>MISCELLANEOUS DISTRESS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faulting</td>
<td>Light:</td>
<td>&lt;4/32&quot;</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Moderate: &gt;4/32&quot;, ≤8/32&quot;</td>
<td>Grid</td>
<td>Figure 10.4</td>
</tr>
<tr>
<td></td>
<td>Severe: &gt;8/32&quot;</td>
<td>Grid</td>
<td>Figure 10.4</td>
</tr>
<tr>
<td>Lane To Shoulder Drop-Off</td>
<td>Light:</td>
<td>0&quot;</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Moderate: ≥1&quot;, ≤2&quot;</td>
<td>Build Up</td>
<td>Figure 10.4</td>
</tr>
<tr>
<td></td>
<td>Severe: &gt;2&quot;, ≤4&quot;</td>
<td>Build Up</td>
<td>Figure 10.4</td>
</tr>
<tr>
<td>Water Bleeding Or Pumping</td>
<td>Seeping or ejection of water through joints or cracks.</td>
<td>Install appropriate drainage, edge drain, permeable subbase, reseal joints, etc.</td>
<td>N/A</td>
</tr>
<tr>
<td>Blowup</td>
<td>Upward movement of transverse joints or cracks often accompanied by shattering of the concrete.</td>
<td>Full Depth</td>
<td>Figure 10.3 and 10.4</td>
</tr>
</tbody>
</table>
NOTES FOR CONCRETE SIDEWALK ON CURBED ROADSWAYS

1. Sidewalks shall be constructed in accordance with Section 522 of the FDOT Standard Specifications. Public sidewalk curb ramps shall include detectable warnings and be constructed in accordance with Index No. 304. Detectable warnings are not required where sidewalks intersect urbanfired turnouts.

2. Bond breaker material can be any impermeable coated or sheet membrane or preformed material having a thickness of not less than 0.5 inch nor more than 1.0 inch.

3. For turnouts see Index No. 515.

4. Construct sidewalks with 1/2 inch Edge Beam through the limits of any surface mounted Pedestrian/Bicycle Picket Railing or Pipe Guardrail shown in the plans.

5. Sidewalk shall be paid for under the contract unit price for Sidewalk Concrete (--- Thick). S.Y.

CONCRETE SIDEWALK FOR CURBED ROADSWAYS
NOTES FOR CONCRETE SIDEWALKS ON UNCURBED ROADWAYS

1. Sidewalks shall be constructed in accordance with Section 522 of the FDOT Standard Specifications.

2. Provide detectable warnings that extend the full width of the sidewalk and 24" deep from the edge of pavement where sidewalks adjoin the following vehicular ways:
   - wide roads and streets
   - driveways with signalized entrances
   - driveways with entrance volumes greater than 600 vpd
   - driveways with entrance speeds of 25 mph or greater
   - right-in-right-out composite driveways

Detectable warning surfaces shall conform to the requirements described in the General Notes of Index 304. To the extent practical, the rows of truncated domes in a detectable warning surface should be aligned to be perpendicular or radial to the street, roadway, or driveway, as applicable.

For sidewalks continuous through driveways, detectable warning surfaces are not required.

3. For turnouts see Index No. 515.

4. Construct sidewalks with 1' thick Edge Slab on the limits of any surface mounted Pedestrian/Bicycle Sidewalk Railing or Pipe Guardrail shown in the plans. See Sheet 1 for details.

5. Sidewalk shall be paid for under the contract unit price for Sidewalk Concrete (--- Thick), SY.

CONCRETE SIDEWALK FOR UNCURBED ROADWAYS

JOINT LEGEND

- A: 1/8" Expansion Joints (Preformed Joint Filler)
- B: 1/2" Dummy Joints, Tooled
- C: 3/8" Formed Open Joints
- D: 3/8" Saw Cut Joints, 1/2" Deep (96 Hour) Max. 5 Centers
- E: 1/2" Saw Cut Joints, 1/2" Deep (12 Hour) Max. 30 Centers
- F: 1/2" Expansion Joint When Run Off Sidewalk Exceeds 120'

Intermediate locations when called for in the plans or at locations as directed by the Engineer.

CONCRETE SIDEWALK FOR UNCURBED ROADWAYS