

**GENERAL NOTES**

1. For definitions and descriptions of access connection “Categories” and access “Classifications” of highway segments, and for other detailed information on access to the State Highway System, refer to FDOT Rule Chapter 14-96, “State Highway System Access Management Classification System And Standards.”

2. For this index the term “turnout” applies to that portion of driveways or side roads adjoining the outer roadway. For this index the term “connection” encompasses a driveway or side road and their appurtenant islands, separators, transition laterals, auxiliary lanes, driveway flares, drainage pipes and structures, crossovers, sidewalks, curb cut ramps, signing, pavement marking, required signalization, maintenance of traffic or other means of access to or from controlled access facilities. The turnout requirements set forth in this index do not provide complete intersection design, construction or maintenance requirements.

3. The location, positioning, orientation, spacing and number of connections and median openings shall be in conformance with FDOT Rule Chapter 14-97.

4. On Department construction projects all driveways not shown on the plans shall be reconstructed at their existing location in conformance to these standards, or, in conformance to permits issued during the construction project.

5. Driveways shall have sufficient length and size for all vehicular crossing, stacking, maneuvering, standing and parking to be carried out completely beyond the right-of-way line. Except for vehicles stopping to enter the highway, the turnout areas and drives within the right of way shall be used only for moving vehicles entering or leaving the highway.

6. Connections with expected daily traffic over 4000 vpd shall be constructed as intersecting side roads. The design requirement of this index and that of the local government will be used to select appropriate connection widths, radii and intersection design, subject to the approval of the Department. For connections with expected daily traffic less than 4000 vpd, the Department will determine if a drop curb or radius returns are required in accordance with existing or planned connections. Where radius returns apply, the design requirements of this index and that of the local government will be used to select appropriate connection widths, radii and intersection design, subject to the approval of the Department.

7. Any connection requiring or having a specified median opening with left turn storage and served directly by that opening shall have radial returns.

8. Where a connection is intended to align with a connection across the highway, the through lanes shall align directly with the corresponding through lanes. Connections shall be in conformance with FDOT Rule Chapter 14-96, “State Highway System Access Management Classification System And Standards.” Connection Permits Administrative Process” and Rule Chapter 14-97, “State Highway System Access Management Classification System And Standards.”

9. For new connections and for connections on all new construction and reconstruction projects, pavement materials and thicknesses shall meet the requirements applicable to either that detailed for “Curbed Roadway-Flared Turnouts”, or, that described in “Table 515-2” for connections with radial returns and/or auxiliary lanes.

10. The responsibility for the cost of construction or alteration to an access connection shall be in accordance with FDOT Rule Chapter 14-96.

**DESIGN NOTES**

1. Prior to the adoption of FDOT Rules Chapters 14-96 and 14-97, connections to the State Highway System were defined and permitted by Classes. Connections have been redefined by Categories under Rule 14-96, and the term “Class” has been applied to highway segments of the State Highway System as defined under Rule 14-97.

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**NOT INTENDED FOR FULL INTERSECTION DESIGN**

**SUMMARY OF GEOMETRIC REQUIREMENTS FOR DRIVEWAY TURNOUTS**

<table>
<thead>
<tr>
<th>ELEMENT DESCRIPTION</th>
<th>CONNECTION WIDTH W</th>
<th>FLARE (Drop Curb) F</th>
<th>RETURNS (Radius) R &amp; U</th>
<th>ANGLE OF DRIVE Y</th>
<th>DIVISIONAL ISLAND (Throat Median)</th>
<th>SETBACK G</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURBED ROADWAYS</td>
<td>2-Way 2</td>
<td>2-Way 2</td>
<td>25 Min.</td>
<td>60°-90°</td>
<td>12 Min.</td>
<td></td>
</tr>
<tr>
<td>FLUSH SHOULDER ROADWAYS</td>
<td>2-Way 2</td>
<td>2-Way 2</td>
<td>25 Min.</td>
<td>60°-90°</td>
<td>12 Min.</td>
<td></td>
</tr>
</tbody>
</table>

**LEGEND**

- Return Radius Point
- Or Flare Point
- Buffer Areas
- Frontage
- Boundary Line
- Driveway Width
- Driveway Angle
- Corner Clearance
- Setback
- Outside Radius
- Inside Radius
- Distance Between Connections
- Flare

**REV IS IO N DESCRIPTION**

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**LAST REVISION**

04/01/16

**DESIGN STANDARDS**

**FY 2017-18**

**INDEX NO.**

01 of 7
CURBED ROADWAY - FLARED TURNOUTS

1. Drop curb, concrete sidewalks (6" thick) and driveways (6" thick) shall meet Specification Sections 520 and 522. The driveway foundation shall meet the requirements of Subarticle 322-A.

2. For details of drop curb and sidewalk curb ramps refer to Indexes 300 and 304 respectively.

3. Where turnouts are constructed within existing curb and gutter, the existing curb and gutter shall be removed either to the nearest joint beyond the flare point or to the extent that no remaining section is less than 9' long, and, drop curb constructed in accordance with Notes Nos. 1 and 2.

4. For turnouts with radial returns see the requirements under the "Summary Of Geometric Requirements For Turnouts", the "General Notes", the details of "Flush Shoulder Roadway- Turned Construction" and the detail of "Limits Of Clearing & Grubbing, Stabilization And Base At Intersections".

5. Maintenance of pavement shall extend out to the right of way or 2' past the back of sidewalk, whichever distance is less.

6. The maintenance and operation of highway lighting, traffic signals, associated equipment, and other necessary devices shall be the responsibility of a public agency.

7. All pavement markings on the State highways, including acceleration and deceleration lane markings, and signing installed for the operation of the State highway shall be maintained by the Department.

8. All signing and marking installed for the operation of the connection (such as stop bars and stop signs for the connection) shall be the responsibility of the permittee.

9. All sidewalk surfaces crossing driveways with a cross slope shown in this Index to be 0.02 shall be 0.02 Maximum.

SPECIAL NOTES FOR CURBED ROADWAYS - FLARED TURNOUTS

1. Driveways indicated as 'Adverse Applications' are those with slopes that can cause overhang drag for representative standard passenger vehicles under fully loaded conditions; or, those with slopes that can cause drivers who are leaving the roadway to slow or pause to the extent that traffic demand volumes will be impeded.

2. Driveways indicated as 'Marginal Applications' are those with slopes that can readily accommodate representative standard passenger vehicles and those that can accommodate representative standard trucks, vans, buses and recreational vehicles operating under normal crown and superelevation conditions.

3. Driveways indicated as 'General Applications' are those with slopes that can readily accommodate representative standard passenger vehicles and those that can accommodate representative standard trucks, vans, buses and recreational vehicles operating under normal crown and superelevation conditions.

4. The standard flared driveways on this index may not accommodate vehicles with low beds, low undercarriage or low appendage features. Where such vehicles are design vehicles, driveways shall have site specific flare designs or Category III designs.

5. When specific flare type driveways shall be constructed, the type shall be designated in the plans using the assigned alpha-numeric designation.
* See ‘DESIGN NOTES FOR CURBED ROADWAY - FLARED TURNOUTS’

SIDEWALK ADJACENT TO CURB

SIDEWALK WITH UTILITY STRIP ON 0.02 SLOPE

SIDEWALK WITH UTILITY STRIP ON 0.04 SLOPE

DRIVEWAY SECTIONS ON CURBED FACILITIES WITH SIDEWALKS
MODIFICATIONS OF 'ADVERSE' AND 'MARGINAL' APPLICATIONS

MODIFICATIONS TO ADVERSE AND MARGINAL SECTIONS

SIDEWALK ADJACENT TO CURB
SIDEWALK WITH UTILITY STRIP ON 0.02 SLOPE

SIDEWALK WITH UTILITY STRIP ON 0.04 SLOPE

ADVERSE* AND MARGINAL* SECTIONS MODIFIED TO ACHIEVE GENERAL* APPLICATION

ADVERSE* SECTIONS MODIFIED TO ACHIEVE MARGINAL* APPLICATION

* See 'DESIGN NOTES FOR CURBED ROADWAY - FLARED TURNOUTS'
DRIVE ENTRANCES NOTES:

- Drainage pipe size and length shall be that shown on the plans, or as stipulated by permit, or, as determined by the Engineer during construction. The size shall be at least that established by the FDOT District, but not less than 15" diameter or equivalent. For minimum cover over drainage pipe see Specification Section 125. Pipe arch or elliptical pipe may be required to obtain necessary cover. At minimal cover applications a modified pavement apron is permitted. See "PERMISSIBLE PAVEMENT MODIFICATION" Index 273. For spacing between adjacent pipe end treatments see Index 273.

- Stable material may be required for graded turnouts to private property as directed by the Engineer in accordance with Section 102-8 of the Standard Specifications.

- In the 5' pavement at graded connections is not required where there is paved shoulder 4' or more in width. The 5' pavement requirement may be waived for connections serving one or two homes or field entrances with less than 20 trips per day, or 5 trips per hour as approved by permit or by the Engineer, or when not itemized in the plans.

- Paved turnouts shall be constructed for all paved connecting facilities. The connecting point will be determined by the Engineer.

- Paved turnouts shall be constructed for all business, commercial, industrial or high volume residential graded connecting facilities. The connecting point shall be 30' from edge of travel way or at R/W line, whichever is less.

- Paved turnouts shall be constructed for all connecting facilities over 4000 vehicles per day. The connecting point shall be at the R/W line.

- See "Summary of Geometric Requirements For Turnouts" chart for return radius lengths and supplemental information.

INTERSECTIONS NOTES:

- Return Radius Point or Transition Point.
### Material Types and Thicknesses in Driving Areas for All Connections

<table>
<thead>
<tr>
<th>Course</th>
<th>Materials</th>
<th>Thickness (in.)</th>
<th>Connections</th>
<th>Roadway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural</td>
<td>Asphaltic Concrete</td>
<td>1&quot;</td>
<td>15'</td>
<td>5'</td>
</tr>
<tr>
<td>Bases</td>
<td>Optional Base (See Spec. Section 285)</td>
<td>0.66'</td>
<td>0.66'</td>
<td>0.66'</td>
</tr>
</tbody>
</table>

1. Minimum thickness.
2. All materials shall be approved by the Department prior to being placed.
3. Connection structure other than traffic lanes. See Notes 1 and 2 below.
4. Travel way flares (bypass lanes), auxiliary lanes serving more than a single connection, and all median crossovers including their auxiliary lanes and/or transition tapers. See Notes 1 and 2 below.

### NOTES

1. The pavement should be structurally adequate to meet the expected traffic loads and should not be less than that shown above, except as approved by the Department for graded connections. Other Department-approved equivalent pavements may be used at the discretion of the Engineer.

2. Auxiliary lanes and their transition tapers shall be the same structure as the abutting travel way pavement thickness or any of the roadway structures tabulated above, whichever is thicker.

3. If an asphalt base course is used for a turnout, its thickness may be increased to match the edge of travel way pavement thickness in lieu of a separate structural course. 6" of Portland cement concrete will be acceptable in lieu of the asphalt base and structural courses. See Notes 4 and 5 below.

4. A structural course is required for flexible pavements when they are used for auxiliary lanes serving more than a single connection.

5. Connections paved with Portland cement concrete shall be Class NS concrete at least 6" thick. The Department may require greater thickness when called for in the plans or stipulated by permit. Materials and construction shall conform with FDOT Standard Specifications Sections 347, 356 and 522.

6. The Department may require other pavement criteria where local conditions warrant.

### PAVEMENT STRUCTURE FOR TURNOUTS AND AUXILIARY LANES

#### TABLE 515-1

**FOR FLUSH SHOULDER ROADWAY CONNECTIONS**

#### LIMITS OF CONSTRUCTION AND MAINTENANCE FOR FLUSH SHOULDER ROADWAY CONNECTIONS

1. Auxiliary lane pavements and crossover pavements shall be maintained by the Department.

2. Department maintenance of turnout pavement extends 9' from edge of the travel way or to the edge of paved shoulder, whichever is greater. The remainder of any turnout paved area on the right of way shall be maintained by the owner or his authorized agent. As a function of routinely reworking shoulders, the Department may grade and shape existing material on nonpaved areas beyond the maintained pavement.

3. Control and maintenance of drainage facilities within the right of way shall be solely the responsibility of the Department, unless specified differently by Department permit.

4. The maintenance and operation of highway lighting, traffic signals, associated equipment, and other necessary devices shall be the responsibility of a public agency.

5. All pavement markings on the State highways, including acceleration and deceleration lane markings, and signing installed for the operation of the State highway shall be maintained by the Department.

6. All signing and marking installed for the operation of the connection (such as stop bars and stop signs for the connection) shall be the responsibility of the permittee.
FLUSH SHOULDER ROADWAY - TURNOUT PROFILES

CURBED ROADWAY - TURNOUT PROFILES

STORMWATER RUNOFF AND PROFILE OPTION NOTES

ROADWAY PAVEMENT SLOPES AND SLOPES OF AButting FLUSH SHOULDER ROADWAY TURNOUT SURFACES (G)