### Dimensions & Quantities

<table>
<thead>
<tr>
<th>Location</th>
<th>Span</th>
<th>Rise</th>
<th>Pipe Size</th>
<th>Double Pipe</th>
<th>Triple Pipe</th>
<th>Quad Pipe</th>
<th>Standard Weight Pipe</th>
<th>Extra Spring Pipe</th>
<th>Single Pipe</th>
<th>Double Pipe</th>
<th>Triple Pipe</th>
<th>Quad Pipe</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>5'-6&quot;</td>
<td>9.50'</td>
<td>3&quot;</td>
<td>3'</td>
<td>3'</td>
<td>3'</td>
<td>3.09'</td>
<td>2.41'</td>
<td>2.5'</td>
<td>2.5'</td>
<td>2.5'</td>
<td>2.5'</td>
</tr>
<tr>
<td>A2</td>
<td>6'-4&quot;</td>
<td>7.90'</td>
<td>3&quot;</td>
<td>3'</td>
<td>3'</td>
<td>3'</td>
<td>2.41'</td>
<td>2.71'</td>
<td>2.67'</td>
<td>2.71'</td>
<td>2.71'</td>
<td>2.71'</td>
</tr>
<tr>
<td>A3</td>
<td>7'-1&quot;</td>
<td>7.50'</td>
<td>3&quot;</td>
<td>3'</td>
<td>3'</td>
<td>3'</td>
<td>2.41'</td>
<td>2.36'</td>
<td>2.41'</td>
<td>2.41'</td>
<td>2.41'</td>
<td>2.41'</td>
</tr>
<tr>
<td>A4</td>
<td>8'-0&quot;</td>
<td>7.50'</td>
<td>3&quot;</td>
<td>3'</td>
<td>3'</td>
<td>3'</td>
<td>2.41'</td>
<td>2.36'</td>
<td>2.41'</td>
<td>2.41'</td>
<td>2.41'</td>
<td>2.41'</td>
</tr>
<tr>
<td>A5</td>
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<td>3'</td>
<td>3'</td>
<td>3'</td>
<td>2.41'</td>
<td>2.36'</td>
<td>2.41'</td>
<td>2.41'</td>
<td>2.41'</td>
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</tbody>
</table>

**NOTES:**
- See Sheets 5 and 6 for details and general notes.
- Piles shown for estimating pipe quantities and are for information only.

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**SECTION**

**TOP VIEW - SINGLE PIPE**

**TOP VIEW - MULTIPLE PIPE**

**SIDE DRAIN MITERED END SECTION - SINGLE AND MULTIPLE CORRUGATED METAL PIPE-ARCH**

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**2008 FDOT Design Standards**
Options For Top Opening:

- Multiple Drain Pipe Only.
- #3 Steel Bars

GRADE DETAIL
FOR SINGLE & MULTIPLE DRAIN PIPE

See General Notes, Sheet 6.

ANCHOR DETAIL

CONCRETE PIPE CONNECTOR DETAIL

Drain Size | A | N | L | La
--- | --- | --- | --- | ---
10" | 4 | 5 | 6 | 7
14" | 4 | 6 | 8 | 9
18" | 4 | 8 | 10 | 11
24" | 4 | 10 | 12 | 13
30" | 4 | 12 | 14 | 15
36" | 4 | 14 | 16 | 17

Notes:
- 1/4" bolts are standard for all grate fasteners, except when the contractor desires to use the specified upper taps for the intermediate fasteners on multiple drain pipe, which will require the following bolt lengths:
- 1/4" x 2" For Single and Multiple Drain Pipe
- 5/8" x 4" Only when grates are called for in the plans.

Anchors required for DPI only.
Anchors are required at center in concrete, bend anchors where required to center in concrete.
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2.5' 1' DITCH TRANSITION

Flow D Ditch Bottom Side Ditch

Modified slope when minimum cover or less occurs both on exiting and proposed installations

PERMISSIBLE PAVEMENT MODIFICATION

GENERAL NOTES

1. Unless otherwise designated in the plans, concrete pipe mitered and sections may be used with any type of side drain pipe. Corrugated steel pipe mitered and sections may be used with any type of side drain pipe except aluminum pipe and, corrugated aluminum mitered and sections may be used with any type of side drain pipe except steel pipe. When bimetallic coated metal pipe is specified for side drain pipes, mitered and sections shall be constructed with like pipe or concrete pipe. When the mitered end section pipe is dissimilar to the side drain pipe, a concrete jacket shall be constructed in accordance with Index No. 280.

2. Concrete pipe used in the assembly of mitered end sections shall be of sufficient length to avoid excessive connections.

3. Corrugated metal pipe grating that is damaged during handling and perforating for mitered end section shall be repaired.

4. That portion of corrugated metal pipe in direct contact with the concrete slab and extending 12" beyond shall be brine washed coated prior to placing of the concrete.

5. Corrugated polyethylene pipe (CPE) for side drain application of 15", 18" or 24" diameter shall utilize either corrugated metal or concrete mitered and sections. When used in conjunction with corrugated metal mitered and sections, connection shall be by either a formed mitered specifically designed to join CPE pipe and metal pipe or other coupling approved by the State Drainage Engineer. When used in conjunction with a concrete mitered and section, connection shall be by concrete jacket constructed in accordance with Index No. 280.

6. When existing multiple side drain pipes are placed with the dimensions shown in this detail, or have corrosive pipes, or are non-uniform pipes, the mitered and sections will be constructed either separately as single pipe mitered and sections or as a single multiple pipe end sections as directed by the Engineer; however, mitered and sections will be paid for each, based on each independent pipe end.

7. In addition to the requirements of Section 430-4, side drain curvatures shall comply with the cover requirements shown on Index No. 205.

8. The reinforced concrete slab shall be constructed for all sizes of side drain pipe and cast in place with Class 2 concrete.

9. Round pipe size 16" or greater, pipe with a size of 15" x 14" or greater and elliptical pipe 19" x 30" or greater shall be grated unless excepted in the plans. Smaller sizes of pipe shall be grated only when called for in plans. The lower grate on mitered end sections shall be installed with grating system as specified in Index No. 205.

10. Corrugated metal pipe grating that is damaged during beveling and perforating for mitered end section shall be repaired.

11. That portion of corrugated metal pipe in direct contact with the concrete slab and extending 12" beyond shall be brine washed coated prior to placing of the concrete.

12. The project engineer shall contact the District Drainage Engineer for possible alternate treatment prior to constructing side drain mitered and sections when a minimum spacing of 30' will not result between the toe points of the mitered end sections.

13. The cost of all pipe (i.e., grates, fasteners, reinforcing, anchors, concrete, sealants, jackets and coupling bands) shall be included in the cost for the mitered end section. Sodding shall be paid for separately under the contract unit price for Performance Turf, SY.

14. Mitered end sections shall be paid for under the contract unit price for Mitered End Section (SD), Ea., based on each independent pipe end.