

**ST. JOHNS IMPROVEMENT DISTRICT
PERMIT INFORMATION AND CRITERIA MANUAL
FOR USE OF OR CONNECTION TO WORKS OF THE DISTRICT**

EXHIBIT II

DESIGN DISCHARGE FOR CULVERTED CROSSINGS IN IRRIGATION LATERALS

| Irrigation Culvert | Lateral Served | Design Flow at Flow Way (cfs) | Length of Lateral (miles) | Minimum Culvert Diameter for a Crossing of an Irrigation Lateral (feet) Based on Distance Away from Main Flow Way | | | | | | |
|--------------------|----------------|-------------------------------|---------------------------|--|------|--------|------|--------|------|--------|
| | | | | 0.5 mi ⁵ | 1 mi | 1.5 mi | 2 mi | 2.5 mi | 3 mi | 3.5 mi |
| IC1 | L1 (North) | 179 | 3.0 | 10.5 | 9.5 | 8.5 | 7.0 | 5.5 | -- | -- |
| IC1A | L1A (North) | 89 | 2.5 | 7.5 | 7.0 | 5.5 | 4.5 | -- | -- | -- |
| IC2 | L2 (South) | 89 | 2.0 | 7.5 | 6.5 | 4.5 | -- | -- | -- | -- |
| IC3 | L3 (North) | 179 | 3.5 | 10.5 | 10.0 | 9.0 | 8.0 | 6.5 | 5.0 | -- |
| IC4 | L4 (South) | 89 | 2.0 | 7.5 | 6.5 | 4.5 | -- | -- | -- | -- |
| IC5 | L5 (North) | 179 | 3.5 | 10.5 | 10.0 | 9.0 | 8.0 | 6.5 | 5.0 | -- |
| IC6 | L6 (South) | 89 | 2.0 | 7.5 | 6.5 | 4.5 | -- | -- | -- | -- |
| IC7 | L7 (North) | 179 | 3.5 | 10.5 | 10.0 | 9.0 | 8.0 | 6.5 | 5.0 | -- |
| IC8 | L8 (South) | 89 | 2.0 | 7.5 | 6.5 | 4.5 | -- | -- | -- | -- |
| IC9 | L9 (North) | 179 | 3.5 | 10.5 | 10.0 | 9.0 | 8.0 | 6.5 | 5.0 | -- |
| IC10 | L10 (South) | 89 | 2.0 | 7.5 | 6.5 | 4.5 | -- | -- | -- | -- |
| IC11 | L11 (North) | 179 | 3.5 | 10.5 | 10.0 | 9.0 | 8.0 | 6.5 | 5.0 | -- |
| IC12 | L12 (South) | 89 | 2.0 | 7.5 | 6.5 | 4.5 | -- | -- | -- | -- |
| IC13 | L13 (North) | 179 | 3.5 | 10.5 | 10.0 | 9.0 | 8.0 | 6.5 | 5.0 | -- |
| IC14 | L14 (South) | 89 | 2.0 | 7.5 | 6.5 | 4.5 | -- | -- | -- | -- |
| IC15 | L15 (North) | 179 | 3.5 | 10.5 | 10.0 | 9.0 | 8.0 | 6.5 | 5.0 | -- |
| IC16 | L16 (South) | 89 | 2.0 | 7.5 | 6.5 | 4.5 | -- | -- | -- | -- |

Notes:

1. The design flow rate shall be based on the head differential across the irrigation culvert when the main flow way water level is at the maximum water supply elevation and the water level in the irrigation lateral has been surcharged as outlined in the water conservation practices, including additional factors of safety.
2. Head losses as a result of a culvert crossing shall not exceed 0.1 foot. The head loss shall be calculated using a design flow for the area served by the canal at the crossing location and an even distribution of water supply to the basin.

3. Each culvert shall be set at an elevation which ensures that it will be fully submerged during its use, thereby utilizing the full cross sectional area of the culvert.
4. Culvert crossings within 660 feet of the main flow way are prohibited.
5. The minimum diameter of a crossing of an irrigation lateral located less than ½ mile from the main flow way shall be approved per the review of the District Administrator and District Engineer for compliance with minimum design criteria.
6. Alternate culvert diameters may be approved per the review of the District Administrator and District Engineer for compliance with minimum design criteria.