# STANDARD ENGINEERING DETAILS

## Part 2 - Wastewater

*Revised 2014*

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1. The above requirements were calculated in accordance with "Thrust Restraint for Ductile Iron Pipe," Third Edition, 1992, published by DIPRA, with the following assumptions:

2. The restrained joint lengths calculated above for bends were for bends in the horizontal direction or vertical up direction. If a bend is oriented in the vertical down position, the restrained joint length calculated above shall be multiplied by 3.0.

3. Polyethylene wrapped piping shall be restrained 1.25 times the above shown lengths.

4. A minimum of 20 feet of pipe shall be restrained on the small side.

5. In-line valves and tees (branch) shall be restrained as dead ends.

6. *Note: In-line valves and tees (branch) shall be restrained as dead ends.

7. The restrained joint lengths calculated above for bends were for bends in the horizontal direction or vertical up direction. If a bend is oriented in the vertical down position, the restrained joint length calculated above shall be multiplied by 3.0.

8. The vertical down position, the restrained joint length calculated above shall be multiplied by 3.0.

9. The vertical down position, the restrained joint length calculated above shall be multiplied by 3.0.

Final restoration in improved areas shall be in compliance with all applicable regulations of governing agencies. Surface restoration within Orange County right-of-way shall comply with requirements of R/W agencies.

Initial backfill: select common fill compacted to 95% of the maximum density as per AASHTO T-180.

Bedding depth shall be 4" minimum for pipe diameter up to 12" and 6" minimum for pipe diameter 16" and larger.

Type A bedding material shall conform to FDOT No. 57 aggregate.

Trench backfill: common fill compacted to 95% of the maximum density as per AASHTO T-180.

Water shall not be permitted in the trench during construction.