

ECUA Engineering Manual

2025 Edition

March 2025

Update Summary of Proposed Significant Changes:

Division 1 – Procedures

Minor changes or clarifications only

Division 2 – Design Standards

Section 101 – Plan Preparation

- Minor changes or clarifications only

Section 556 – Water Distribution Systems

- Establishes flow requirements of max day potable flow plus the required fire flow
- Establishes minimum required design fire flow shall be per the National Fire Protection Agency (NFPA)
- Hydraulic modeling of the water system may be required of the EOR to demonstrate adequate supply and pressure for potable and fire flow demands.
- 3-inch and 4-inch diameter water mains are allowed in low density residential zones only.
- Water mains shall be ductile iron if located within easements, under roadways, or when 50% or more of the pipe is covered by concrete or asphalt.
- Water mains that are 12-inches in diameter or larger shall be installed with a casing on all arterial or major roadway crossings as determined by ECUA.
- General hydrant spacing from any above ground features (pad-mounted transformers, utility poles, driveways, etc.) shall be 3.5 feet minimum.
- Water service for newly subdivided property shall require the water main to be extended to serve each new lot and in accordance with Section 3.2 of this design standard.
- Verification of capacity may be required through an extended period simulation hydraulic model of ECUA's water distributions system at no cost to ECUA.

Section 570 – Gravity Sewer Collection Systems

- Connections of individual properties and buildings to the ECUA wastewater collection system shall be accomplished by gravity flow to the maximum extent practicable.
- Needs County verbiage a for private lift stations

- Polymer concrete manhole required for new force main connections 6-inch in diameter or larger (or when flows greater than 250 gpm).
- Manholes that are 12-feet in depth or deeper shall be reinforced polymer concrete and manufactured by Armorock or US Composite Pipe.
- Service laterals within the public right-of-way shall not be located under the concrete driveway or turnout.
- The ECUA may require flow measuring devices where flows in excess of 10,000 gpd can be expected.

Section 575 – Wastewater Lift Stations

- System extensions shall be designed to connect to existing gravity sewer collection systems as much as practical. Addition of a lift station shall only be considered when connection to an existing gravity sewer is not possible or practical.
- A tractor trailer tanker (WB-50 design vehicle) shall have access to within 30 feet of the station pump out location. A Vacuum Truck (SU design vehicle) shall be able to access the wetwell.
- The system design should focus around a single design point while noting the maximum and minimum head conditions to ensure the pump will perform adequately throughout the range of head conditions the pump will experience. Pressure at the pump shall not exceed 70 PSI. If needed, a second lift/pump station may be required to keep pressures below the maximum.
- Emergency pumping capability shall be provided for all lift stations. For lift stations that receive flow from one or more lift stations through a force main or lift stations discharging through pipes 12 inches or larger in diameter, the design shall provide for uninterrupted pumping capability, including an in-place emergency generator. Where portable pumping and/or generating equipment or manual transfer is used, the design shall include sufficient storage capacity with an alarm system to allow time for detection of lift station failure and transportation and connection of emergency equipment.
- Flow measuring devices shall be provided with lift stations that have a design flow of 350 gpm or greater.

Section 576 – Wastewater Force Main Systems

- Hydraulic modeling may be required to demonstrate capacity within ECUA's collection system and to identify any negative impacts to the operation of ECUA lift stations.
- All force mains 2-inches and larger in diameter connecting to an ECUA force main or force main extension shall include a check valve and vault per Detail D-23. The check valve vault may be eliminated only by written approval from ECUA.
- Engineer shall provide a plan and profile view on the design drawings with all surrounding utilities shown for the location of the proposed check valve vault. Engineer may be required to perform a Level "A" quality utility locate.

- The inside depth of the check valve vault shall not exceed 6-feet. If the inside depth of the proposed check valve is greater than 6-feet the Engineer shall coordinate with ECUA staff to determine an optimal location.
- Low pressure sewer service lateral connections shall not be located under the roadway without approval from ECUA. Costs to relocate service connections and abandon existing connections shall be at the property owners expense.

Division 3 – Technical Specifications

Section 1000 – Miscellaneous Project Support

- Minor changes or clarifications only

Section 1900 – Building Demolition

- Minor changes or clarifications only

Section 2000 – Clearing and Grubbing/Grassing/Sodding

- If work in an area is scheduled to be suspended for 14 calendar days or more, then temporary grassing shall be established within 7 calendar days of the last work in the area. Work suspension due to contractor means and methods, negligence, or delays, is not justification for an adjustment of erosion control measure quantities.

Section 2100 – Earthwork

- Minor changes or clarifications only

Section 2221 – Trench Excavation, Backfill & Compaction

- *Pursuant to Florida Statute 553.63*, any trench or similar excavation having a depth in excess of five (5) feet will be subject to the Excavation Safety Standards established by the Occupational Safety and Health Administration, 29.C.F.R., Part 1926 - Safety and Health Regulations for Construction, Subpart P – Excavations.

Section 2300 – Horizontal Directional Drilling

- HDD equipment operators shall be trained to operate the specific horizontal directional drilling equipment for ECUA's project with at least 3 years experience in directional drilling obtained within the last five years. All pipe of similar type and material shall be furnished by a single manufacturer.
- Perform HDD operations under the constant direction of a drilling supervisor who shall remain on site and be in responsible charge throughout the drilling operation. The drilling supervisor shall have supervised directional drilling of a minimum of 5,000 linear feet of pipe of a similar or greater diameter, of similar material, over similar lengths, and with similar subsurface conditions.
- Any fusion technician who operates fusion equipment on the project shall be have current manufacturer's certification for the equipment on the project.

- Prior to the start of the project a copy of the manufacturer's certification of each fusion technician to be used on the project shall be submitted to the project owner.
- Any fusion technician who operates fusion equipment on the project must have an infrared or contact pyrometer.
- Any fusion technician who operates fusion equipment on the project must be capable of operating a fusion data recording device.
- Any fusion technician who operates fusion equipment on the project shall use a data recording device for any fusion made on the project.
- Fusion Unit Data Recording Device Requirements
- Fusion Unit Requirements

Section 2310 – Jack and Bore

- Personnel Requirements
- Inspector notification

Section 2320 – Cured-in-Place Pipe Lining (CIPPL)

- Required Qualifications of Contractor (Unless otherwise approved by ECUA) – The Installation Contractor shall have a minimum of five (5) years of continuous experience installing the product proposed. Additionally, the Installation Contractor must have successfully installed at least 500,000 LF of the proposed product in similar conditions. The Installation Contractor shall provide experienced crews using the product proposed and installed in similar conditions. The Installation Contractor shall employ an onsite Superintendent having installed at least 250,000 LF of the proposed product in similar conditions and have a minimum of three (3) years of documented CIPP industry experience. Documentation shall be provided with the Bid that demonstrates that the bidder has successfully completed the installations described above. This documentation shall include Owner Name and Address, Contact Phone Number, Length of CIPP Installed, and Completion Date. Failure to provide sufficient documentation may be grounds for rejection of the bid.

Section 2330 – Cured-in-Place Lateral Lining (CIPLL)

- Minor changes or clarifications only

Section 2340 – Pipe Bursting

- Minor changes or clarifications only
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Section 2350 – Test and Seal

- This section has been deleted

Section 2556 – Water Distribution Systems

- Minor changes or clarifications only

Section 2570 – Gravity Sewer Collection Systems

- Polymer concrete manhole specifications
- *COSTS FOR ALL ACCEPTANCE TESTS AND INSPECTIONS (INCLUDING CCTV OF SEWER MAINS AND LATERALS) SHALL BE INCLUDED WITH THE CONTRACTOR'S UNIT PRICE OF THE INSTALLED SEWER MAINS AND LATERALS, UNLESS OTHERWISE INDICATED.*
- All sewer mains and service laterals shall be inspected using CCTV in accordance with Section 2651 – Television Inspection. Sewer mains and laterals shall be cleaned and adequately partially flooded prior to the CCTV inspection to provide ECUA inspector and camera operator with a gauge for low point (belly) severity and limits.

Section 2573 – Manhole Coatings/Rehabilitation

- Minor changes or clarifications only

Section 2575 – Wastewater Lift Stations

- Minor changes or clarifications only

Section 2576 – Wastewater Force Main Systems

- Minor changes or clarifications only

Section 2577 – Fiberglass Wet Wells

- Minor changes or clarifications only

Section 2578 – Wet Well Coatings and Rehabilitation

- No changes at this time

Section 2651 – Television Inspection

- NASSCO PACP Version 7 required and compatible with IT Pipes Software

Section 2830 – Fencing

- Minor changes or clarifications only

Section 3200 – Cast-in-Place Concrete

- Minor changes or clarifications only

Section 3300 – Paving for Driveways and Parking Areas

- Minor changes or clarifications only