



**ETOWAH WATER AND SEWER AUTHORITY
ENGINEERING & CONSTRUCTION DEPARTMENT**

JANUARY 2023

DEVELOPMENT GUIDELINES FOR WATER MAINS & SANITARY SEWER SYSTEMS

This list of guidelines has been put together as an aid for developers during plan development and permitting process. Although an effort has been made to include all Etowah Water and Sewer Authority (Authority) standards pertaining to the development of the Water and Sanitary Sewer Systems, other items may be necessary as required by the Authority. This listing should not be considered as a static document and therefore, every effort to obtain the latest revision should be made. The latest version of these guidelines and/or the Authority's "Standard Specifications for Water Mains and Sanitary Sewers" can be downloaded from the Authority's website at www.etowahwater.org.

GENERAL

1. The Authority's position for setting water meters on private development projects is as follows:

No water meters shall be set on any private developer project until the water and sanitary sewer systems are constructed and tested per approved plans and the Authority's Standard Specifications. This includes constructed access to new and existing water and sanitary sewer easements.

The water meters for commercial developments and the last ten (10) for subdivisions will not be set until all required documents (as-built drawings, easements, ownership form, etc.) have been submitted to and accepted by the Authority.

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2. Minimum 10' horizontal distance between water and sanitary sewers.
3. Minimum 18" vertical distance between water and sanitary sewers.
4. Where water and sanitary sewer lines cross, the water main shall be 18" above the sanitary sewer. If the sanitary sewer must be above the water main, the sanitary sewer shall be at least 18" above and encased in concrete a minimum of 10' on each side of the water main. Joints shall be spaced to provide maximum distance from crossing. The Authority will consider steel casing as an equal to concrete encasement on a case by case basis.
5. Where water or sanitary sewer mains cross storm drains, minimum 18" vertical separation shall be maintained. When vertical separation is less than 3', 20' of concrete encasement is required, 10' each side of centerline of storm sewer, along water mains and sanitary sewers. The Authority will consider steel casing as an equal to concrete encasement on a case by case basis.
6. The minimum cover over water and sanitary sewer lines shall be 4'. Water mains 12" and larger shall have minimum of 5' of cover. When water and sanitary sewer lines are located within road right-of-ways minimum cover shall also be required below nearest edge of pavement or ditch.
7. Water mains and sanitary sewers shall be located outside of paved areas. Locating water mains and sanitary sewers in paved areas will only be allowed when no other alternative exists. No 2" PVC water mains will be allowed under roadways. Bore under existing roadways where possible to prevent pavement damage.
8. All elevation data shall be referenced to mean sea level (MSL) and survey horizontal data shall be referenced to state-plane coordinate system including all proposed manholes.
9. A legible project location map shall be provided on the drawings.
10. The Authority shall be furnished an initial set of preliminary drawings in pdf format for review and final drawings in pdf and AutoCAD format prior to approval of drawings.
11. Plans requiring water or sanitary sewer main construction shall be stamped by Professional Engineer or Registered Land Surveyor.
12. Fire sprinkler system drawings must be reviewed and approved for compliance with the Authority's Backflow Prevention Program prior to installation.
13. Fire mains shall be constructed in accordance with the Authority's "Standard Specifications for Water Mains and Sanitary Sewers" latest edition, and meet all fire system codes and ordinances of Dawson County Government. Fire sprinkler systems containing antifreeze will not be allowed to connect on to the Authority's water system.
14. The following fees shall be paid prior to plan approval:

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Water Permit Review Fee: \$2,500.00
Sewer Permit Review Fee: \$1,500.00
Water and Sewer Permit Fee: \$3,500.00

15. Drawings requiring public water, public sanitary sewer or private fire main construction shall bear the following notes:

“Etowah Water and Sewer Authority shall be notified 24 hours prior to any water main or sanitary sewer construction or repairs. Only contractors approved by Etowah Water and Sewer Authority will be allowed to perform construction or repairs connected to said water or sanitary sewer mains. Call the Engineering and Construction Department at (706) 216-8474 prior to beginning any construction, or to apply to become an approved contractor.”

“All water main and sanitary sewer materials and workmanship shall be in accordance with the Authority's “Standard Specifications for Water Mains and Sanitary Sewers”, latest edition. The Contractor shall prepare material submittals for all materials and products necessary to construct the project per approved Drawings and these Standard Specifications and submit them to the Authority for review and approval. The Authority prefers electronic submittals, which can be emailed to John Cronan at jcronan@etowahwaterga.gov and Tim Collins at tcollins@etowahwaterga.gov.”

“The Contractor shall be responsible for maintaining a marked-up set of design drawings showing all "as-built conditions". These "record drawings" shall be made available to the designer and/or the Authority upon request. The mark-ups shall be at the site at all times and shall be utilized to develop final record drawings. Final acceptance of water main and/or sanitary sewer construction will not be granted until as-built drawings (PDF and AutoCAD files) have been received by Authority’s Engineering and Construction Department.”

16. The following dedication certificate shall appear on the final plat and/or as-built drawings:

Owners Dedication Certificate
Etowah Water and Sewer Authority
Dawson County, Georgia

The owner of the land shown on this plat and whose name is subscribed thereto, and in person or through a duly authorized agent, acknowledges that this plat was made from an actual survey and dedicated to the Etowah Water and Sewer Authority forever, all water mains, sanitary sewers, easements, and associated appurtenances thereon shown.

Owner _____

Date _____

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17. Design professionals are required to use the latest edition of the Authority's standard details wherever applicable. Copies of the standard details are included in the Authority's "Standard Specifications for Water Mains and Sanitary Sewers" latest edition and available online.
18. Final plat and as-built drawings shall be furnished to the Authority in PDF format for review after construction is completed. After PDF red-line comments have been addressed an electronic copy in PDF and AutoCAD format, version 2015 or later will be required prior to project approval.
19. No trees shall be located within perpetual water or sanitary sewer easements or above fire protection water mains in order to prevent pipeline damage. Dawson County's Tree Protection Ordinance shall be considered and addressed by the project owners, designers, and contractors as is applicable.
20. Contractors are required to possess a business license to work within the applicable jurisdiction and a Georgia Utility Contractors license to install water and sanitary sewer system connecting to Etowah Water and Sewer Authority utility systems. Proof of said license and all other applicable permits (Georgia Erosion and Sedimentation Control, Georgia Department of Transportation (GDOT), etc.) shall be on the job site.
21. Projects requiring GDOT permit for installation of water mains and/or sanitary sewers within GDOT right-of-way shall provide paper and electronic copies of an 8½" x 11" exhibit for the Authority's submittal to GDOT for said permit.
22. Verify all service connections on water mains and sanitary sewers to be abandoned and reconnected, as required.

WATER

1. Developments proposing to connect to the Authority's water system shall meet all requirements of these development guidelines, the Authority's "Standard Specifications for Water Mains and Sanitary Sewers" latest edition, the Backflow Prevention Program, and all other ordinances and requirements as may be required by the Authority.
2. A 20'-0" permanent easement shall be required on all water mains 8" and smaller, and 30'-0" on all water mains 12" and larger on private property. Easements shall be recorded at the Dawson County Clerk of Courts Office. The water main shall be in the centerline of the easement and no buildings or other structures shall be built within easements. Easements shall be shown on all plans including landscape plan and an additional 8½" x 11" easement Exhibit "A" shall be provided to be included with easement document. Easement document form will need to be approved by Authority staff. Include total area of easement to be dedicated to the Authority in square feet. The Authority will require that all easements through property and along public or private roadways be provided, as requested, at no cost to the Authority.

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3. Developments requiring installation of water mains, fire hydrants or sanitary sewers shall be required to sign a "Facilities Dedication" ownership form dedicating water and sanitary sewer systems to Etowah Water and Sewer Authority prior to final project approval. An 11" x 17" Exhibit "A" shall be provided indicating location of facilities and will be included with dedication form prepared by Authority staff.
4. Easement documents shall be recorded by the developer and original documents returned to the Authority.
5. Water mains shall be placed in the back 5'-0" of Dawson County or GDOT right-of-way.
6. Existing water supply systems shall have adequate capacity to meet future potable water demands of proposed development. If not, developer may be required to make improvements to the Authority's water distribution system.
7. No more than one (1) fire hydrant shall be placed on water mains that are smaller than 8" diameter. Note: The Dawson County Fire Marshall should be contacted to see if stricter requirements are in order for specific project types.
8. No fire hydrant shall be placed on water mains smaller than 6" diameter in any case. Fire hydrants shall have a maximum spacing of 500'.
9. Gate valves shall be installed on all fire hydrant leads.
10. Valve location markers shall be installed for all valves (except fire hydrant lead valves). The markers shall be four feet long concrete posts. The marker posts shall extend from 12" to 18" above finished grade.
11. Blow-off assemblies, fire hydrants, or standard terminations with 1" blow-off shall be placed at terminus of all dead end lines. Standard terminations shall be installed where water main will be extended in future.
12. Water mains 6" and larger shall be ductile iron pipe (including fire protection system water mains).
13. Pipe for 2" diameter water mains shall be polyvinyl chloride (PVC) pressure rated pipe. The pipe shall have a SDR of 13.5 and a pressure rating of not less than 315 psi.
14. A continuous tracer wire shall be attached to the pipe on all 2" polyvinyl chloride (PVC) water main installations.
15. In general, 2" diameter pipe will only be allowed around the radius of cul-de-sacs and located outside of paved areas.
16. Tapping sleeve and valves shall be required on all connections to an existing water main. A back tap may be installed when required.

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17. In-line gate valves are required every 1,000' to 1,500'.
18. Each tax parcel shall be served by a separate water meter. Master meters will not be allowed in apartment or condominium developments. Master meters serving multi-unit buildings, such as apartments and commercial retail centers, shall also install privately owned and operated sub-meters for water tracking purposes.
19. Commercial multi-unit buildings containing units to be leased and used as restaurants or other business types requiring installation of a sanitary sewer pre-treatment device, shall be required to install a separate water meter.
20. Deduct meters on private water service lines serving cooling towers are not allowed in any circumstance.

SANITARY SEWER

1. Developments proposing to connect to the Authority's sanitary sewer system shall meet all requirements of these development guidelines, the Authority's "Standard Specifications for Water Mains and Sanitary Sewers" latest edition, the Backflow Prevention Program, Pretreatment Program, and all other ordinances and requirements as may be required by the Authority.
2. A 40'-0" permanent easement shall be required on all sanitary sewers when depth of cover is less than 15' and 60'-0" permanent easement when depth of cover is greater than 15'; and recorded at the Dawson County Clerk of Courts Office. The sewer shall be on the centerline of the easement and no buildings or other structures shall be built within easements. Permanent easements between houses or building shall be 60'-0" minimum or 40'-0" Fee Simple deeded to the Authority and recorded at the Dawson County Clerk of Courts Office. Easements shall be shown on all plans including landscape plan and an additional 8½" x 11" Exhibit "A" shall be provided to be included with easement document prepared by Authority staff. All sanitary sewer easements shall be fully executed prior to final project approval. Include total area of easement to be dedicated to the Authority in square feet. The Authority will require that all easements through property, upstream and downstream, and along public or private roadways be provided, as requested, at no cost to the Authority.
3. Developments requiring installation of public sewer mains within public right-of-way shall be required to sign and record a "Facilities Dedication" ownership form prior to plan approval. An 11" x 17" Exhibit "A" shall be provided indicating location of facilities and will be included with dedication form prepared by Authority staff.
4. Easement documents shall be recorded by the developer and original documents returned to the Authority prior to plans approval for the project.

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5. Proposed average and peak sanitary sewer flows shall be submitted prior to plan approval to determine if all downstream wastewater facilities including wastewater treatment plant, gravity sanitary sewer lines, and wastewater pumping stations shall have adequate capacity for future wastewater flows from proposed development.
6. All stream buffer encroachment variances shall be obtained from Georgia Environmental Protection Division (EPD) and/or U.S. Army Corps of Engineers (USCOE) permit prior to plan approval.
7. Minimum slope for 8" and larger gravity sanitary sewer pipe shall be 0.50%, the maximum slope shall be 15.0%.
8. Gravity sanitary sewer pipe material shall be SDR 26 PVC (PS115) unless depth of cover is 25' or greater or less than 4'. In cases outside these parameters the Authority will review and approve based on site conditions and pipe bedding specified. Ductile iron is not allowed in the Authority's sewer system.
9. Bedding for sanitary sewers shall be Class B or greater per the Authority's Standards Specifications for Water and Sanitary Sewers and Details.
10. Sanitary sewage force mains shall be PVC C-900 DR-14 (305 psi) Green (marked "Sewer Force Main") pipe. DIP will be considered and may be allowed on case by case basis. Air Relief / Vacuum Valves shall be required at all high points.
11. Service lateral pipe material shall be SDR 26 PVC sanitary sewer pipe.
12. Cleanouts shall be placed on all building service laterals at the point at which Authority maintenance terminates. This point shall be the curb line, the property line, the right of way line, or the easement line, as applicable. Cleanouts shall be 6" and have a brass cap. Cleanouts shall not be placed in pavement areas if at all possible. If required, use traffic-grade cleanouts when located within pavement areas.
13. All residential service lines shall be connected to gravity sewer pipe if at all possible. If connection to manhole is required, then the invert of building service lines shall be placed at or above the crown of the sanitary sewer but not to exceed 2' above the crown of the sanitary sewer.
14. Buildings proposing to connect to sanitary sewer shall be connected by a separate sanitary sewer tap.
15. The minimum diameter of sanitary sewer pipe shall be 8" with the exception of building service laterals that may be 6".
16. Manholes shall be placed at all changes in direction and/or grade of sanitary sewers. Manholes shall be spaced such that the distance between manholes does not exceed 400'. The minimum angle between lines entering and exiting a manhole is 90 degrees.

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17. Outside drop connections shall be constructed at manholes on all influent sanitary sewers where the invert elevation is greater than 2' above the invert elevation of the effluent sanitary sewer. Outside drops shall not exceed 18 vertical feet. Slope of incoming pipe into outside drop manhole may not exceed 10%.
18. Sewage pumping stations will not be permitted unless the developer can demonstrate extreme hardship would result if the station were denied. Pumping stations will be discouraged and only permitted on a case by case basis. All pumping stations shall be located above the 100 year flood plain and out of storm drainage flow paths.
19. All sewage pumping stations shall have a permanent auxiliary power source. Additionally, they shall be provided with a remote telemetry system compatible with the Authority's existing system and a potable water service with a backflow preventer per the Authority's Backflow Prevention Program.
20. Plans and profiles showing all utility and pipeline crossings as well as existing and proposed grades shall be provided for all sanitary sewers. Building services are exempt.
21. Sanitary Sewer Maintenance Access shall be maintained on all Sanitary Sewer Easements. Maintenance Access is defined as alignment grades, soil compaction and cross slopes that will allow a sewer jet truck (weighing approximately 80,000 lbs.) to navigate easily.

Maximum grade shall not exceed 15% and easement contour lines shall be shown on grading plans. Width of access roads shall be 15' with 4' shoulders. Gravel access roads are required along all sanitary sewers. Sod overlaying gravel access roads will be allowed in yards between houses. Driveway curb cuts are required to identify access roads within subdivision for each sanitary sewer easement. Minimum of 2' contour intervals shall be shown. Access to existing sanitary sewer easements located within proposed construction areas shall be maintained during all phases of construction.
22. Sanitary sewers over 15'-0" in depth will not be permitted unless the developer can demonstrate no other alternative exists. Each instance will be reviewed on a case by case basis.

BACKFLOW PREVENTION AND PRETREATMENT

1. Projects requiring Backflow Prevention Installation shall bear the following notes:

"Prior to backflow preventer installation, contact the Authority's Engineering and Construction Department at (706) 216-8474."
2. As a minimum, commercial, industrial, and institutional establishments and multi-family housing shall install and maintain double check valve assemblies immediately downstream from the Authority water meter in a separate meter box or vault, as applicable.

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3. All water service lines installed for landscaping and/or irrigation purposes shall have a double check valve assembly, at a minimum, installed immediately downstream from the Authority's water meter.
4. Establishments determined to present a high hazard backflow potential shall install and maintain reduced pressure zone (RPZ) backflow preventers in above ground, non-freezing enclosures.
5. Double detector check valves, at a minimum, shall be installed on all fire sprinkler mains. Valves shall be housed in a vault as close to the Authority water main as is possible. A water meter that reads in gallons equipped with Sensus iPeril touch read/radio read device compatible with Authority's water meter and billing system shall be required.
6. Projects requiring Pre-Treatment shall bear the following note:

"Prior to Pre-Treatment device installation, contact Dawson Forest Water Reclamation Facility at (706) 216-2497."
7. Sand traps and oil separators with sample station manholes shall be installed in all sanitary sewer service lines from service stations, garages, car washes, and similar operations. Proposed pretreatment devices shall be specifically designed for required pretreatment and details for premanufactured devices shall be pre-approved by the Authority and included in permitted drawings.
8. Grease traps and sample station manholes shall be installed in process waste lines of all sanitary service sewers for commercial, industrial, and institutional establishments with food preparation areas.
9. Sample station manholes shall be installed in all sanitary sewer service lines from laundromats.
10. Hair traps (inside trench trap is acceptable) and sample station manholes shall be installed in all sanitary sewer service lines from veterinary clinic/animal control facilities.
11. Domestic sewage shall not pass through pretreatment devices or sample station manholes.
12. When dumpster pad drains are to be tied onto the sanitary sewer they shall tie directly per the Authority's Standard Detail No. 750. No other wastewater, domestic, or food process waste streams may go through the dumpster pad drain or service line.
13. Rainwater shall be prevented from entering the sanitary sewer at all dumpster pad locations. Method must be detailed on drawings.
14. Grease trap and oil separator details shall appear on the project drawings and shall be approved prior to installation.

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15. Oil separators shall be sized by Engineer to handle two (2) times the expected flow rate.
16. Grease traps shall be sized by Engineer to handle the daily expected flow rate with the minimum allowable size being 1500 gallons.
17. Sample station manholes shall be required on all industrial and institutional sanitary sewer services. Domestic sewage shall not pass through sample station manholes.
18. More detailed information is available from the Authority's Engineering and Construction Department at (706) 216-8474.

The following are contacts of the Authority, Dawson County, and the Georgia Department of Transportation.

ETOWAH WATER AND SEWER AUTHORITY ADMINISTRATION OFFICE

1162 Highway 53 East
Dawsonville, Georgia 30534
Contact: Brooke Anderson
Phone: (706) 216-8474

ETOWAH WATER AND SEWER AUTHORITY ENGINEERING AND CONSTRUCTION DEPARTMENT (Administration Office)

1162 Highway 53 East
Dawsonville, Georgia 30534
Contact: John Cronan
Phone: (706) 216-8474

DAWSON COUNTY ENVIRONMENTAL HEALTH DEPARTMENT

189 Highway 53 West, Suite 102
Dawsonville, GA 30534
Contact: Environmental Specialist
Phone: (706) 265-2930

DAWSON COUNTY PLANNING AND DEVELOPMENT

25 Justice Way, Suite 2322
Dawsonville, Georgia 30534
Contact: Senior Plans Examiner
Phone: (706) 344-3500

DAWSON COUNTY BUILDING INSPECTIONS DEPARTMENT

25 Justice Way, Suite 2322
Dawsonville, Georgia 30534
Contact: Chief Inspector
Phone (706) 344-3500

DAWSON COUNTY FIRE MARSHAL

393 Memory Lane
(Fire Station No. 1)
Dawsonville, Georgia 30534
Contact: Fire Marshall
Phone: (706) 344-3666

DAWSON COUNTY PUBLIC WORKS

25 Justice Way, Suite 2232
Dawsonville, Georgia 30534
Contact: Public Works Director
Phone: (706) 344-3501

GEORGIA DEPARTMENT OF TRANSPORTATION - UTILITIES

1475 Jesse Jewell Parkway, Suite 100
Gainesville, Georgia 30501
Contact: District Utilities Engineer
Phone: (770) 533-8318