



FULTON COUNTY SEWER DESIGN GUIDE - SEWER REVIEW CHECKLIST

Department of Public Works
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Telephone: 404-612-3421
www.fultoncountyga.gov

Project Name: _____

Project Number: _____

Date: _____

Reviewed By: _____

(UPDATED: JUNE 2020)

General Comments

Review of sewer plans includes points of connection to Fulton County's (FC) sanitary sewer system, extensions of sewer main, sewers that are to be the responsibility of Fulton County for maintenance, sewers in utility easements dedicated to Fulton County. Private sewers generally fall under plumbing codes administered by local cities. Fulton County reserves the right to set criteria for construction and arrangement of any sewer that connects to FC sewer system or to deny connection for reasons of capacity, method of construction or failure to follow good engineering practices in design of sewers or due to the nature of the discharge to the sewer.

- ____ 1. Provide Fulton County Project Name, Project Number, and site address on all water and sewer related sheets (Cover, Utility Plans, Profiles and Details).
- ____ 2. Cover sheet shall contain the note: Wastewater services provided by Fulton County.
- ____ 3. Add Fulton County Standard Sewer Notes. Please see Sewer and Water Notes Form at the following link: <https://www.fultoncountyga.gov/services/water-services/development-permitting/permitting-process>
If there is a conflict between Fulton County Notes and the General Notes, then priority shall be given to Fulton County Notes.
- ____ 4. Replace covers on existing manholes with new (landscape and/or pavement) manhole cover.
- ____ 5. Please utilize Fulton County's standard utility details. A list of the most commonly used sanitary sewer details can be found at the following link: <http://www.fultoncountyga.gov/fcwr-developer-information/fcwr-standard-details>.
Provide the following standard details 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 701, 703, 704, 706, 709, and 711 where applicable. Please include any additional Fulton County details you consider applicable for this project.
- ____ 6. Add all road names on the overall utility plan of the entire property and if the sanitary sewer line that serves the site is within the ROW of an existing roadway, the speed limit must be shown. The term "variable right-of-way" or similar shall not be used. If ROW varies, show approximate dimensions in areas of interest.

- ____7. For resubmittals, the engineer must submit written responses to each of the specific review comments along with the revised plans. These comments are valid for ninety (90) days. If after the 90-days period the reviewer has not received amended drawings with written responses, the submitted construction plans will be discarded and a new submittal (including payment of the review fee) will be required.

Utility Plan/Profiles

- ____8. Developer shall network gravity pipeline through site to serve upstream property owners. A new manhole will be required at the upstream property line. This will be at the developer's expense. This requirement is per Fulton County Sanitary Sewer Regulations.
- ____9. Manhole inverts shall have a minimum 2/10 of a foot (.20') drop across the manhole.
- ____10. Minimum slopes for wastewater pipes are as follows:
- a. 1.0% on 6" lines
 - b. 0.7% on 8" lines
 - c. 0.5% on 10" lines
 - d. 0.4% on 12" lines
 - e. 0.3% on 15" lines
 - f. 0.25% on 18" lines
 - g. 21" & larger sizes, maintain 2 feet/sec. at 1/4 capacity
 - h. Slopes less than 0.7% shall be pre-approved based on a minimum velocity of 2.0 ft/s based on normal flow.
- ____11. D.I.P. wastewater is required where line:
- a. has less than 4-feet of cover in unpaved areas
 - b. has less than 6-feet of cover in paved areas
 - c. crosses over storm sewer or utility line, or is within 1-foot of a storm sewer or utility line
 - d. is in a fill area
 - e. has more than 18-feet of cover, minimum class 51 D.I.P. will be required
 - f. has more than 30-feet of cover, minimum class 52 D.I.P. will be required
 - g. DIP may be required for other conditions
- ____12. Unless the use of DIP is required as specified previously, it is acceptable to use PVC in accordance with ASTM D-3034 (SDR 35) and ASTM 2321 for depths of cover up to 12 feet and for pipe diameters up to fifteen (15) inches. For depths of cover greater than 12 feet, use PVC in accordance with AWWA C900 SDR 18 (or DIP as specified previously).
- ____13. State size, material type, percent grade, and length of all pipes. Show direction of sewer flow on utility plan.
- ____14. Show location of all existing and proposed sanitary sewer, water, storm sewer, power and gas lines. Please review Fulton County detail 101 for underground utility location requirements. Power and gas lines locations should be based on (sketch) drawings prepared by utility.
- ____15. A minimum of eighteen 18-inches of vertical clearance between sewer mains and other utilities crossing must be obtained. When local conditions prevent a vertical separation of 18-inches, the sewer passing over or under water mains shall be constructed of materials with joints that are equivalent to water main standards of construction and shall be pressure tested to assure water-tightness prior to backfilling. A minimum of ten 10-feet (edge-to-edge) of horizontal clearance between pipes and structures must be obtained. When local conditions prevent a horizontal separation of 10-feet, parallel installation of sewer pipes shall conform to State regulations.

- ___16. Pipe material cannot be changed between manholes.
- ___17. When different size pipes are connected to a MH, the crest crown of each are required to be aligned.
- ___18. Concrete collars on waste water lines are required when the slope is greater than 20% of conditions. The maximum allowable slope is 35%.
- ___19. For all wastewater pipes above the ground, wrapped and coated steel pipe shall be used. All bored sewer shall be steel encased and field welded.
- ___20. Maximum distance between manholes is 400-feet.
- ___21. Provide reflection angles at all manholes. Minimum angle between influent and effluent waste water line at a manhole is 90 degrees.
- ___22. No more than 4 connections are allowed per manhole. Provide 12" minimum between pipe penetrations.
- ___23. All service lines connecting to an existing wastewater line shall be made with either a manhole or a sleeve connection (for lines of 10-inches diameter or less. Trunk lines of 12-inches or greater require a manhole connection.
- ___24. Profile all existing lines that will have new utility crossings and all proposed wastewater pipes showing all utility with crossings. Existing wastewater lines will be CCTV inspected over which construction occurs for as-built approval.
- ___25. When laterals connect to manholes indicate invert in elevation on wastewater profiles.
- ___26. Split lateral connections are not allowed. A single lateral is required for each individual building site.
- ___27. Laterals shall be provided for each lot, building, and unit. Laterals to serve a single lot or building may extend a maximum of 125 linear feet, off site. Laterals must be 6" pipe at a minimum 1% slope.
- ___28. Sewer service lateral cleanouts shall be installed at the edge of public road right-of-way or County easement on owner's property.
- ___29. No structure can be within 5 feet of a sewer cleanout. Including, but not limited to any type of building, porches, foundations, stairs, signs, fences, retaining wall, etc.
- ___30. Maximum length between cleanouts shall be 70-feet.
- ___31. For 6" piping (private systems) install cleanouts where there is a change in direction. For 8" piping or larger change of direction requires MH.
- ___32. Laterals shall achieve a 90-degree bend to the main line through the use of a tee-wye. DIP will require an additional 45-degree bend to achieve perpendicular lateral service.
- ___33. If sanitary sewer laterals cross storm sewer, please provide a profile sketch or other information to document vertical separation on the same sanitary sewer profile sheet.
- ___34. Profile all laterals from the building to the tie-in location for non-residential projects. Profile all laterals from the dumpster drain to the tie-in location. Profile all laterals from the building through the grease trap to the tie-in location.

____35. For lateral replacement, please add the following note to construction plans:

- a. If applicable, contractor to remove the existing wastewater lateral back to the tee-wye at the 8-inches wastewater line. Provide a plug at the tee-wye. Pour concrete around the plug and the tee-wye. The Contractor has the option of abandoning the lateral in place and slip lining the 8-inches wastewater line from manhole to manhole. The openings of all laterals would be cut out as normal except for the abandoned lateral. Slip lining to be in accordance with current Fulton County Standards and Specifications. If the line is already been slip-lined, the Contractor has the options of either pipe burst the line in accordance with current Fulton County Standards and Specifications or remove the existing lateral back to the tee-wye. All existing active laterals shall be restored to full service.

____36. An outside drop is required at a manhole when the following conditions are exceeded:

Incoming Pipe Size (inches) Maximum Drop (in inches)

8	27
10	27
12	30
15	39
18	41

____37. Manholes in excess of 24-feet shall be pre-approved by the Development Permitting Section, on an individual basis.

____38. All manholes outside of roadways and ROW shall be a minimum 18" aboveground and shall be shown in sanitary sewer profile. If a manhole is in a flood plain or high water area, they shall have watertight covers and extend above the ten-year floodplain level: clearly indicate and provide details. Manholes flush with the ground may be allowed, on a pre-approved basis.

____39. Please add the following notes for all applicate manholes.

- a. Add notes to the existing manholes
 1. Contractor to field verify the location and invert of the existing wastewater line prior to construction.
 2. Remove and replace the existing invert to accept the new line as required in the field.
 3. Core for new lateral from the inside of the manhole in the presence of the inspector.
 4. New drop line to enter manhole at 0.44-feet above the effluent invert.
 5. Rebuild the water table and invert with rowlock bricks to direct the runoff from the new line to existing effluent invert.
 6. Rehabilitate existing manhole as required in field to bring manhole into compliance with Fulton County Standards and Regulations.
- b. Add notes to doghouse manholes.

1. Contractor to field verify the location and invert of the existing wastewater line prior to construction.
2. The Contractor is to cut and remove the top half of the pipe only upon final approval by the Fulton County Inspector.
3. The new influent line is to enter the structure a minimum of 0.53-feet above the effluent elevation to allow new water table to be built.
4. Build the water table and invert with rowlock bricks to direct the runoff from the new lines to existing effluent invert.

___40. Proposed depths of wastewater lines in excess of 24-feet are not allowed except as approved by Fulton County Development Permitting Section.

___41. Manholes that receive discharge from force mains shall be coated with Epoxy Tech CPP series epoxy or approved equal.

Grease Trap/Test manhole

___42. Grease trap, oil interceptor, pretreatment, etc., approval required from Water and Pollution Control Division of Public Works. Please call the Water Quality Superintendent at (404) 612-9425. Copy of approval certificate must be sent to Development Permitting Engineer before issuance of LDP.

___43. Test manholes must be downstream of the grease traps, and have a minimum of 1-foot of fall. The test manholes must have an 180-degree connection between the effluent and influent lines with no other connections to the manhole. The test manhole is the last discharge point of the pretreatment system before the sanitary sewer. The sanitary sewer connection from the pretreatment system will not be allowed to connect to the site sanitary sewer line by going under or through the building. The connection to the sanitary sewer line must be kept to the exterior of the building structure. The connection from the building to the pretreatment system will be a direct straight line. One 90- or 45-degree angle will be allowed with a clean out if a straight line is not obtainable.

___44. The test manhole will be located a maximum of 4-feet from the last tank in the pretreatment system and must have an invert in the test manhole. The test manhole shall have a minimum depth of 4-feet and a maximum depth of 12-feet.

___45. The pipe between the grease trap and test manhole must be PVC.

Dumpster Pad

___46. Obtain approval from Fulton County Board of Health, Environmental Health Division for the dumpster pad for any non-single family residential and commercial project. Copy of this approval or, if not required, copy of the variance must be provided to Development Permitting Engineer prior to issuance of LDP.

___47. Provide drains for the dumpster pads. The drain shall be an ABT S-2900B-02 Catch basin or equivalent with a galvanized trash bucket and a bolt down cast iron frame and grate. A foul air trap or p-trap shall be placed on the outlet pipe. The outlet pipe shall be a 6" DIP to the first cleanout. All portions of the dumpster pad shall drain to this cleanout/MH.

___48. No storm water from upside the dumpster pad shall flow onto the pad. This drain shall connect to the adjacent wastewater sewer system. Do not drain the dumpster pad to the storm sewer system.

- ___ 49. Provide a 5/8-inch freeze-proof hose bibb with a reduced pressure (RP) backflow preventer within 50-feet of all portions of the dumpster pads.

Additional Design Considerations

- ___ 50. If a manhole is in a flood plain or high water area, they shall have watertight covers and extend above the ten-year floodplain level: clearly indicate and provide details.
- ___ 51. Riprap shall be placed for the full width of the excavation at all creeks crossings where wastewater pipe lines cross and shall extend to the top of bank.
- ___ 52. If wastewater pipes are to be constructed adjacent to rivers and other waterways (may require state waters buffer variance), a registered Land Surveyor shall certify the location of the waterway. Offset distance from the top of bank of the creek shall be provided to all manholes. All creek banks within 10-feet of the centerline of the pipe shall be reinforced with riprap per County Standards.
- ___ 53. Force main effluent manholes shall conform to Fulton County Standard Detail 116.
- ___ 54. Individual single-family residential pump stations to be approved by the County.
- ___ 55. Pavement to be repaired to local City standards.
- ___ 56. Jack and Bore to be performed in accordance with Fulton County Standard Details 107 and 129. Show steel casing for jack and bore installations.
- ___ 57. Show steel casing where wastewater line crosses under a retaining wall footing, approved hardscape features, creeks, where the line is aerial, and other cases where it is determined that additional protection is required.

Easements

- ___ 58. Show all private and/or Fulton County easements. All offsite and onsite wastewater easements documents must be reviewed and approved by the Fulton County Department of Public Works before a permit will be issued. The document package must be completed and sent to the Development Permitting Engineer for initial review. Construction permits will not be issued until the easement package has been reviewed and approved by the Land Division.
- ___ 59. All easements shall allow adequate room to construct the sanitary sewer and appurtenances. Permanent easements shall be a minimum of 20-feet wide, 10-feet on each side of the line; except that when the depth of the sanitary sewer exceeds 10-feet the required sanitary sewer easement width shall increase such that the easement width is at least twice the depth from the ground surface to bottom of the pipe.
- ___ 60. If there is a recorded offsite easement dedicated to Fulton County, show book number and date of existing recorded offsite easement; this shall also be shown on the final plat if residential property.
- ___ 61. No retaining wall, building, pole, sign or other vertical structure shall be constructed in sanitary sewer easements, including vehicular access easements around structures, without approval from the Department of Public Works.
- ___ 62. No surface water shall be impounded on a sanitary sewer easement.
- ___ 63. No other pipeline or utility shall be placed in a sanitary sewer easement without an encroachment agreement.

- ____ 64. All fences or other barriers crossing the Wastewater easement will be installed with a 12-foot locked double gate so that Fulton County can have access. Fulton County will provide the lock and key.

GDOT

- ____ 65. A City utility encroachment permit or Georgia D.O.T. encroachment permit will be required before the utilities construction will be allowed within the ROW. For all planned encroachment of state routes, please ensure the surveyor identifies all existing utility elevations and locations along the length of your project site on all state routes. The surveyor should obtain data from ROW limit to ROW limit.
- ____ 66. Provide to Fulton County Development Permitting Engineer all information required for state encroachment permit. Fulton County files for the permit but it is developer's responsibility to provide accurate, correct information for permit, and to periodically check with Fulton County permitting as to status.

Flow Calculations

- ____ 67. For all residential projects of 5 lots or more, and all commercial developments; please complete the "Request for Water and Sewer Utility Availability" Application, and send it to Development Permitting Engineer for determination of adequate capacity.
- ____ 68. For commercial development projects, please complete the "Waste Water Discharge Survey", and send it to Development Permitting Engineer and copy Ngozi Daramola at Ngozi.Daramola@fultoncountyga.gov.
- ____ 69. Please complete the table below, and submit total sewer requirements with construction plans. Use sewage flows reported in Table JT-1 - Sewage Flow Schedule of the Georgia Department of Public Health Manual for On-Site Sewage Management Systems:
https://dph.georgia.gov/sites/dph.georgia.gov/files/related_files/site_page/EnvHealthOnsiteManual2016.pdf
Use peaking factor from 10 State Standards. This calculation report shall have the seal and signature of a Georgia Registered Engineer.

Facility Type	Quantity/ Number of Units	Water Usage per Unit (GPD)	Total Sewer Requirement (GPD) (column 2 x column 3)
Total Sewer Requirement (GPD)			