

City of Fayetteville  
Water and Sewer  
Development Standards

June 2003



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CITY OF FAYETTEVILLE COUNTY OF FAYETTE  
STATE OF GEORGIA

**PREAMBLE**

WHEREAS, Local municipal corporations are given the power, in Title 36 of the Official Code of Georgia Annotated, to operate and maintain the effective operation of the water and sewer department; and

WHEREAS, it is the desire of the Mayor and City Council to provide for the safe and efficient operation of the water and sewer systems, and to provide standards for the construction and attachment to the systems, and penalties for violations of regulations; and

WHEREAS, the Mayor and City Council find that it is in the best interest of the citizens of Fayetteville to adopt a Water and Sewer Development Standards governing the water and sewer systems, and to provide for other lawful purposes;

**Statement of Necessity**

It is hereby determined necessary for the protection of the public health, safety, welfare, and convenience of the citizens of the City of Fayetteville, and for the orderly development of city water distribution and sewerage collection and transportation systems, to provide development standards and procedure for the installation of water and sewerage systems.

A RESOLUTION TO ENDORSE DEVELOPMENT STANDARDS FOR WATER AND SEWERAGE SYSTEMS FOR THE CITY OF FAYETTEVILLE, GEORGIA.

Whereas, Fayetteville City Council has approved this RESOLUTION titled Development Standards for the construction of Water and Sewerage Systems in Fayetteville, Georgia.

NOW, THEREFORE be it adopted and enacted by the authority of the City of Fayetteville, as follows:

1. That Development Standards for Design and Installation of Water and Sewerage Systems be adopted. These standards shall apply to all Water and Sewerage Systems constructed within the boundaries of Fayetteville City Limits, Fayetteville, Georgia.
2. That this resolution shall be in force and effect from and after the date of its approval by the City Council of Fayetteville, Georgia.
3. That the City of Fayetteville may withhold the issuance of sewer and water taps/connections, or acceptance of any building to which this resolution applies, until there is compliance with the regulations and specifications contained in said Development Standards for Water and Sewerage Systems. That the City of Fayetteville may withhold the issuance of permits and/or occupancy or use permit in any subdivision, development or improvement or any part thereof, to which this resolution applies, until there is compliance with the regulations and specifications contained in said Development Standards for Water and Sewerage Systems.
4. That a copy of this resolution, including Development Standards for Water and Sewerage Systems to be filed with the permanent records of the minutes of the Fayetteville City Council, and that it may be inspected by any interested party during regular office hours, at City Hall, Fayetteville, Georgia. Any interested party may obtain a copy from the Water and Sewer Department for a cost of \$7.00.
5. That violation of this resolution shall be punished in accordance with Section 15-10-60 of the Official Code of Georgia.

## PURPOSE

It is the purpose of these standards and procedures to insure that all water distribution and sewage collection and treatment systems, constructed in The City of Fayetteville, Georgia, satisfy all existing and future City of Fayetteville, County, State, and Federal regulations.

After the passage of this resolution, water and sewer systems in the City of Fayetteville will be constructed only after the plans have been approved as outlined in these standards. Only systems constructed in accordance with these standards will be allowed to connect, or be allowed additional service connections, to the City of Fayetteville Water or Sewer System either immediately following construction or anytime in the future.

CITY OF FAYETTEVILLE WATER & SEWER DEPARTMENT  
GUIDELINES AND PROCEDURES FOR WATER AND SEWER  
LINE CONSTRUCTION

1. Projects shall be designed by a Registered Professional Engineer from the State of Georgia. Before a preliminary water or sewer plan is prepared, the proposed development should be discussed with the Water and Sewer Department as to the location, size, etc., and a letter of water and/or sewer availability should be obtained. Engineering reports or flow data tabulations may be required for larger developments, industrial projects, or unusual case projects.
2. Approval shall be valid for a period of one (1) year. If construction has not begun within one (1) year, the approval shall be invalid and the plans and specifications must be resubmitted for review, or a written request for approval may be made to the Water and Sewer Department for an extension of time.
3. All property lines and right-of-way lines must be properly staked before inspection of water and/or sewer lines. If necessary, after grading of property, the lines are to be restaked.
4. Prior to beginning construction, the developer shall give a forty-eight (48) hour notice to the Water and Sewer Department. Authorized representatives of the Water and Sewer Department shall have access to the work for inspection. When all water and/or sewer construction has been completed, the developer or his representative shall meet with a representative of the Water and Sewer Department at the job site. All permits, drawings and construction will be examined at this time to insure that the work has been completed in accordance with the approved plans and these standards. If additional work is required by the developer, it will be noted at this time and reinspected upon completion. When the construction has been completed and passes the final inspection by the Water and Sewer Department, the developer shall submit to the City of Fayetteville Water and Sewer Department, transfer of ownership documents and two (2) copies of certified as-built plans (24" x 36") for future reference, and copies of the Georgia Department of Transportation (GA DOT) approved permits (if applicable).

The City of Fayetteville Water and Sewer Department will prior to the receipt of "certified" as-built drawings and permits will require Closed Circuit Television Inspection and video recording of the new sewer system. The Closed Circuit Television inspection Technicians will be on the City's approved vendors list. All Closed Circuit Television vendors must have the capability of creating as-built drawings of the televised system. All cost and or repairs shall be borne by the Developer or Owner of said property. The Closed Circuit Television Technicians are authorized by the City of Fayetteville Water and Sewer Department to require any and all repairs of said sewer system upon discovery during TV inspection. All inspections will cease until all repairs have been completed.

The City of Fayetteville Water and Sewer Department will, upon receipt of the closed circuit television video, as-built plans from videoing, permits, and certified as-built drawings will issue a letter of acceptance thus beginning the one year warranty period.

5. The offices of the Water and Sewer Department are located at 328 First Mannassas Mile, Fayetteville, Georgia.
6. Authorized representatives from the Water and Sewer Department will make inspections during construction. This will not relieve the owner of the responsibility to schedule an inspection before work is hidden from view. Failure to do so can stop work and hidden work shall be exposed for inspection.
7. The Developer or his agent shall sign for these guidelines.
8. Any materials or workmanship found substandard will not be accepted.
9. Work must be done during normal week workdays and work hours. The Director of Water & Sewer Department must approve any variation. No fee will be charged for the first inspection or the first reinspection called in. For any additional reinspections performed, there will be a \$25.00 charge assessed for each reinspection.
10. Fire Hydrants shall be placed according to the Fire Protection Ordinance. Fire hydrants will have an appropriate gate valve and a valve box set to grade and level. A gate valve shall be rodded to tee and fire hydrant rodded to valve if shorter than rodded tee, use anchor tee and anchor coupling. A 2' x 2' concrete pad shall be installed at all valve boxes.
11. Bore and/or water taps on a State or State-aid Road will require a permit from the State DOT. Since the City of Fayetteville will be the eventual owner of this line, all

information shall be submitted to the City of Fayetteville so the City may submit this information to the DOT.

12. Any open entrance of water and sewer lines will be plugged to prevent foreign materials from entering when no work on that portion of line is in progress.
13. After completion of construction and testing of water or sewer lines and related facilities, but before water will be left on or any meters set, the Owner must furnish the following as a package:
  - a. A recorded deed of conveyance to the City of Fayetteville showing the declared value for water and sewer lines and easement for future water and/or sewer line construction should be presented.
  - b. An itemized list of materials from the material supplier complete with project description must be presented.
  - c. The recorded final plat must show all water and sewer line easements with appurtenances. The Department must be furnished with two (2) blue-line copies of "certified as-built" plans. Field notes should accompany two copies of the final water and sewer plan. Sewer laterals shall be measured from manholes and footage to be shown on the as-built drawing.
  - d. All water and sewer lines are subject to field changes if directed by the Water & Sewer Department. At any time during construction, any and all changes are to be noted on final certified as-builts.
  - e. Before acceptance of water lines, a pressure test consisting of a hydrostatic pressure of two hundred (200) psi, which must be held for a length of two (2) hour. A representative from the Water and Sewer Department must be present during the test procedure.
  - f. All sewer lines must be televised by an approved Closed Circuit Television vendor with the capability to provide videotapes, and as-built drawings. At time of acceptance all videotape, as-built drawings, printouts, and related material of said sewer system should be turned over to the City of Fayetteville Water and Sewer Department. All sewer lines must be air tested with the requirement of 5 psi for 5 minutes with no more than a 2 psi loss in that time frame. A representative from the Water and Sewer Department must be present during the test procedure.



14. Before the one (1) year warranty period is over, the Department will make an inspection of the development. The Water and Sewer Department will notify the developer in writing of any problems in the water and/or sewer system. The Department will not accept the maintenance of the development nor release the letter of credit until all corrections have been made. Any damage to meters and boxes will be the responsibility of the developer or owner, and must bear the costs of repairs or replacement before acceptance.
15. All plans and construction of water and sewer lines and appurtenances will be subject to review and inspection by the Department, including an independent consulting engineer. However, such review/inspection by the Department shall not relieve the Developer/Installer of proper surveys, design, engineering, and construction. The Department's personnel assume no liability in the performance of reviews, approvals, and inspections.
16. The provisions for water line construction shall also apply to sewerage force mains as applicable.
17. Tracing wire (14-gauge wire) shall be wrapped around sewer lines, to the clean-outs and extend 12" above ground.
18. All pipeline contractors must possess an Underground Contractors License (UCL).

CITY OF FAYETTEVILLE WATER & SEWER DEPARTMENT SPECIFICATIONS ON  
SUBDIVISIONS (MATERIALS TO BE USED ARE TO BE DOMESTIC MAKE ONLY)

PROJECT NO. \_\_\_\_\_ CONTACT: \_\_\_\_\_  
SUBDIVISION: \_\_\_\_\_

- ◆ For all water mains, DIP shall be used. Pipe, fittings, and appurtenances require class 50 DIP.
- ◆ 3/4" All thread rod
- ◆ 3/4" Tie bolts & nuts
- ◆ 3/4" x 4" Tee head bolt and nut
- ◆ 6" Gate valves, CIMJ O.L. W/ACC
- ◆ 2" Gate Valves, MJ
- ◆ Valve boxes (24" x 36" CI, screw type w/CI lid)
- ◆ Concrete Valve Pad and Post
- ◆ 6" x 6" x 6" tees, MJ DI, SB, W/ACC
- ◆ 6" Cap, MJ
- ◆ 6" 90 degree bend, MJ SB DI W/ACC
- ◆ 6" x 12" FC Repair clamp (226-069012). If a 6" x 15" is needed, use 226-069015.
- ◆ 8" x 12" FC repair clamp (226-09512) DB.B. If an 8" x 15" is needed, use 226-090515.
- ◆ 1" Type "K" soft annealed copper tubing.
- ◆ 6" x 1" CC Double strap saddle (D.I.)
- ◆ 1" Corp stops (F1000 Ford or McDonald equal)
- ◆ 90 degree Sweep or Sanitary bend for sewer laterals
- ◆ For single service residential: 6" x 6" x 4" Wye

**IF MATERIAL NEEDED IS NOT LISTED ABOVE, USE THE SAME SPECIFICATIONS FOR LIKE ITEMS OR SIZES.**

PROJECT CHECKLIST  
Fayetteville Water & Sewer Department

Date Received: \_\_\_\_\_ Review Date: \_\_\_\_\_

Engineer: \_\_\_\_\_

Development: \_\_\_\_\_

Review Comments: \_\_\_\_\_

Construction Approval Checklist

- \_\_\_\_\_ Two (2) sets of water/sewer plans (24" x 36") and specifications
- \_\_\_\_\_ Project Location Map
- \_\_\_\_\_ All proposed and existing roadways complete with name, centerline, pavement width, and rights-of-ways. Indicate if paved or unpaved.
- \_\_\_\_\_ A copy of DOT permit showing the City of Fayetteville as owner, along with five (5) copies of the utility permit application package.
- \_\_\_\_\_ Details of each bore installation under state or county roads.
- \_\_\_\_\_ Title block, including name, address and telephone number of the project engineer.
- \_\_\_\_\_ Developer's name, address, and telephone number.
- \_\_\_\_\_ Location of all existing and proposed utilities and easements including storm drainage location - topographical information at 2' intervals.
- \_\_\_\_\_ Stamp of a civil engineer currently registered in the State of Georgia.
- \_\_\_\_\_ Lengths, sizes and materials of construction, etc.
- \_\_\_\_\_ Plan and profile of the proposed sewer line locations, including appropriate station numbers and line slopes.
- \_\_\_\_\_ Typical water/sewer detail sheet with all applicable details.
- \_\_\_\_\_ Note: Notify Fayetteville Water & Sewer Department 48 hours before beginning every phase of construction or pressure testing.
- \_\_\_\_\_ Thrust blocking where needed. Wrap fittings with bituminous coating.
- \_\_\_\_\_ Manhole construction details, connection locations.

**Checklist continued**

- \_\_\_\_\_ Number of pumps and pump sizes.
- \_\_\_\_\_ Construction easement locations if water/sewer line crosses or is constructed on private property. Bearings and other dimensions necessary for the construction of the proposed sewer line in the easement provided.
- \_\_\_\_\_ Project Name.
- \_\_\_\_\_ Locations of connections to existing systems with details.
- \_\_\_\_\_ Plans and specifications to be in accordance with the Fayetteville Water & Sewer Department Development Standards.
- \_\_\_\_\_ Deed of Conveyance and Easement
- \_\_\_\_\_ Developer's Itemized List
- \_\_\_\_\_ Line grades and Manhole locations
- \_\_\_\_\_ Completed service lines
- \_\_\_\_\_ Cleanup
- \_\_\_\_\_ All applicable water and sewer line tests successfully completed and witnessed by Water Department representative
- \_\_\_\_\_ Pipe certifications from pipe manufacturers
- \_\_\_\_\_ Letter from Developer requesting acceptance
- \_\_\_\_\_ One (1) year bond or maintenance agreement
- \_\_\_\_\_ Two (2) copy's of certified as-built drawings (24" x 36") stamped by licensed engineer currently registered in the State of Georgia
- \_\_\_\_\_ All sewer lines must be televised by an approved Closed Circuit Television vendor with the capability to provide videotapes, and as-built drawings. At time of acceptance all videotapes, as-built drawings, printouts, and related material of said sewer system should be turned over to the City of Fayetteville Water and Sewer Department

\_\_\_\_\_ Contractor \_\_\_\_\_ Phone No.

\_\_\_\_\_ Developer \_\_\_\_\_ Phone No.

## TECHNICAL REQUIREMENTS FOR WATER LINE INSTALLATION

1. All waterlines installed within the Department's jurisdiction shall be of approved sizes Ductile Iron Pipe (DIP) material (size 6" to 8" lines requires 50 DIP). All existing county or state roads shall be bored and cased with minimum 0.250 inches of wall thickness steel casing. Casing is not required under interior subdivision streets that are under development. Casing shall be installed from ditch line to ditch line, or five (5) feet behind curbing, or as required by the GA DOT, whichever applies. The same casing requirement applies to sewers and sewerage force mains.
2. Water lines shall be laid on the right-of-way but not in the ditch line or pavement unless otherwise approved by the Water Department. A minimum of three (3) foot of cover on all line is required - to be measured from top of pipe to final grade line. When placed outside streets and rights-of-way, a minimum 20-foot wide permanent easement shall be shown on the plans and dedicated to the City of Fayetteville. Easement shall not be obstructed by any permanent structure, fencing, or other obstructions preventing access for maintenance of the sewer system.
3. Water lines shall be cased at all creek crossings using steel casing with bituminous wrapping having a minimum wall thickness of 0.250".
4. Main water line valves, including 2" where needed, to be of gate type mechanical joint with 2" operating nut. Location shall be stenciled on aluminum plate on a concrete valve marker.
5. All fittings under pressure to be blocked with concrete per the Water & Sewer Department standard details or approved equal.
6. Valves and valve boxes (cast iron only) set to grade and level. All valve boxes outside the pavement shall have two-foot square concrete pads 4' thick, including fire hydrant valve boxes.

7. Typical single water service to be no less than a 3/4" tap on short side service. If it is a long side service, use a 1" tap. A 2" PVC service sleeve shall be provided for each lot requiring a long side service to extend 1-6 feet from back of curb depending on the sidewalk and utilities. This shall be installed by the Developer's contractor. After the curb has been installed, a "W" shall be cut into the gutter using a circular pipe saw and shall be painted blue according to the standardized color; and placing a 2" PVC pipe vertically and adjacent to an iron pin immediately behind the curb or at the edge of the pavement. The meter box shall not extend 1" above final grade. Meter stops shall be placed inside meter boxes at the end of all service lines. Boxes are to be placed on right-of-way. Any double service is to be placed at property line right-of-way.
8.
  - a. Before acceptance of water lines, a pressure test consisting of a hydrostatic pressure of two hundred (200) psi must be held for a length of two (2) hours. A representative from the City of Fayetteville Water and Sewer Department must be present during the test procedure.
  - b. A Sufficient liquid solution of chlorine shall be added to new water lines to secure a chlorine residual of fifty (50) parts per million for sterilization. The lines will then remain unused for a 24-hour period. The lines will be thoroughly flushed and the City of Fayetteville Water & Sewer Department shall conduct a total coliform analysis. A total coliform colony count of zero colonies per one-hundred (100) milliliters sample is required. If necessary, the developer will repeat the sterilization process until purity is found acceptable. A fee of \$100.00 per test will be assessed.
9. The developer must accomplish disinfection of water lines and the disposal of heavily chlorinated water (following disinfection) in accordance with the latest edition of AWWA Standard C600. The developer may utilize the sanitary sewer system or onsite impoundment as appropriate for dechlorination and disposal of heavily chlorinated water. Prior to utilizing the sanitary sewer system for disposal the developer shall notify the Water and Sewer Department. No open flushing of heavily chlorinated water is allowed.
10. At no time will water be turned on by anyone other than the City of Fayetteville Water & Sewer Department personnel.
11. No water service to the development nor the one-year warranty will begin until the Department receives all documents required and final approval has been granted in writing by the Department when requested by the Developer/Owner.

- | 12. The contractor will flag all lines upon completion of services. Cut a "V" and paint valve locations on the curb painted blue.
13. Crossings. Water mains crossing sewers shall be laid to provide a minimum vertical distance of two (2) feet between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. At crossings, one full length of water pipe shall be located so both joints will be as far from the sewer as possible. Special structural support for the water and sewer pipes may be required.
14. Any 2" service line; use Schedule 80 with brass compression type joints or fittings. Any copper service, no flair fittings or solder fittings allowed. Any pipe, flux, or joint compound used in the installation or repair of water lines must comply with United States Environmental Protection Agency (US EPA) and Georgia Environmental Protection Agency (GA EPD) requirements regarding lead and copper content.
15. When roadways and streets are proposed to be constructed over existing water lines, the Developer will be required to install nestable corrugated steel casing pipe around the existing water main as required by the Water and Sewer Department.
16. The developer shall be required to ensure that none of the water mains, service lines, and the structures that are going to be connected to these water lines are being found on or in close proximity of an abandoned landfill site or any other site used for waste disposal.
17. All dead-end lines must have a fire hydrant installed at the endpoint. For any future development, a concrete marker must be placed at the dead-end.
18. Show all possible water connections (water lines may need to be extended).

## GENERAL REQUIREMENTS FOR ROUGH INSPECTION

1. Meter box(es) installed +/- three (3) feet from property line and right-of-way.
2. Meter box(es) will be set so that the curb stop is accessible, meter location centered and house connection is inside the box.
3. Bricks, gravel, and rock will not be allowed to be used to install meter box.
4. No meter box(es) will be installed that would require a meter to be installed in excess of 14" deep.
5. Meter box(es) will not be in pavement or concrete. This includes sidewalks and driveways.
6. Service lines may be required to be exposed up to five (5) feet curbside if there is reason to believe there may be damage resulting from other utilities.
7. Taps for service lines will not be installed under driveways.
8. Service laterals shall be of Type K, uniformly soft copper. Single service laterals shall be of 3/4" copper size. Double service laterals shall be 1" copper size. All copper connections shall be compression. Curb stops shall be ball-valve type lockwing Ford B-11-233-W or equal, Ford B-41-233-W or equal. Branch tees shall be 7"-center to center and shall have a 1" compression copper inlet and two 3/4" outlets with male iron pipe connections, and shall be Ford U-4843-14 or equal. Center to center shall be from the 1" inlet to the 3/4" outlet; overall distance between 3/4" outlets shall be 14-inches or greater. A "W" shall be cut into the gutter using a circular pipe saw and placing a 2" PVC pipe vertically and adjacent to an iron pin immediately behind the curb or at the edge of the pavement. The meter box shall extend 1" above final grade and painted blue according to standardized color. Meter stops shall be placed inside meter boxes at the end of all service lines.
9. For repairs on 1" service lines Ford C-44-44 or equal repair couplings will be used.
10. For repairs on 3/4" service lines Ford C-44-33 or equal repair couplings will be used.



11. All repairs or alterations prior to final inspection will be borne by builder/developer.
12. All repairs on service lines will be inspected by the Building Inspector or a representative of his or her department.

#### GENERAL REQUIREMENTS FOR FINAL INSPECTION

1. Meter box(es) will be flush with final grade.
2. Meter box(es) shall not be arranged in landscape areas where it will collect water.
3. Service lines from customers' side of the meter to structure will be exposed for inspection.

CHECKLIST SHOWING REVISIONS REQUIRED FOR APPROVAL BY  
THE WATER & SEWER DEPARTMENT

SUBDIVISION OR DEVELOPMENT \_\_\_\_\_

**W A T E R   L I N E S**

\*\*\* WATER MAIN LOCATION TO BE ON NORTH AND WEST SIDE WHEN POSSIBLE.

- |  |                               |
|--|-------------------------------|
| ____ ORIGINAL STAMP & SIGNATURE OF STATE-APPROVED ENGINEER   | ____ LOCATION MAP             |
| ____ LIST OWNER/DEVELOPER - ADDRESS & PHONE NO.  | ____ 24-HOUR CONTACT          |
| ____ LEGEND, IF NEEDED   | ____ SCALE                    |
| ____ SIZE OF LINES AND TYPE OF PIPES   | ____ NORTH ARROW              |
| ____ CONTOURS OR PERTINENT ELEVATIONS  | ____ RIGHT-OF-WAY             |
| ____ OVERALL LAYOUT OF SUBDIVISION OR DEVELOPMENT  | ____ EASEMENTS                |
| ____ LINE FOOTAGE/TYPE PIPE/NO. OF FIRE HYDRANTS   | ____ GATE VALVE LOCATION      |
| ____ .250" W.T. STEEL CASING   | ____ STREAM BUFFER            |
| ____ NO. OF LOTS OR DEVELOPMENT UNITS  | ____ SEPARATE SHEET FOR WATER |
| ____ FIRE HYDRANT SPACING (500')   | ____ SERVICE CONDUITS         |
| ____ DETAIL SHEET  |                               |
| ____ (a) STREET CROSSING (b) CREEK CROSSING © FIRE HYDRANT (d) CONCRETE BLOCKING (e) Fire Hydrant CUL-DE-SAC DETAIL (f) SERVICE CONDUIT DETAIL |                               |
| ____ FIRE FLOW EVALUATION  |                               |

**PLEASE NOTE:** ONE SET OF FINAL APPROVED DRAWINGS MUST BE KEPT ON THE JOB SITE AT ALL TIMES. FAILURE TO HAVE APPROVED PLANS ON THE JOB SITE WILL CAUSE WORK STOPPAGE. DEVELOPER OR HIS ENGINEER SHALL BE RESPONSIBLE FOR "CERTIFIED AS-BUILTS" ON FIELD CHANGES OF APPROVED DRAWINGS.

ENGINEER REVIEW CERTIFICATION:  
 INITIAL REVIEW \_\_\_\_\_  
 FINAL REVIEW \_\_\_\_\_

\_\_\_\_\_  
 GEORGIA PROFESSIONAL ENGINEER DATE

\_\_\_\_\_  
 GEORGIA PROFESSIONAL ENGINEER DATE

BEFORE ANY METERS WILL BE SET IN THE PROJECT, THE FOLLOWING MUST BE FURNISHED TO THE WATER & SEWER DEPARTMENT AS ONE PACKAGE.

1. A Deed of Conveyance properly executed, witnessed and notarized (form furnished) and recorded.
2. An itemized list of materials (form supplied), complete with project description.
3. Two blue-line copies of the "certified as-built" water and sewer plans. (The final plat must show the installation of water and/or water and sewer lines with appurtenances. Sewer "as-builts" are to have plan and profile sheets).
4. All sewer lines must be televised by an approved vendor with the capability to provide videotapes, and as-built drawings. At time of acceptance all videotapes, as-built drawings, printouts, and related material of said sewer system should be turned over to the City of Fayetteville Water and Sewer Department. All sewer lines must be air tested. The test requirements are as follows: 5 psi for 5 minutes with a 2 psi drop in the pressure allowed.
5. A lien waiver from the material supplier showing total amounts paid.

## TECHNICAL REQUIREMENTS OF SEWER LINE INSTALLATION

1. Plans must be stamped by a Registered Engineer of the State of Georgia.
2. Plan and profile sheets are required showing:
  - A. EXISTING AND FUTURE GRADE
  - B. DEPTHS OF BURY OR CUTS
  - C. INVERT ELEVATIONS AND MANHOLE ELEVATIONS
  - D. DISTANCE BETWEEN MANHOLES, NOT TO EXCEED 400 FEET (MUST BE NUMBERED)
  - E. TYPE AND SIZE OF PIPE (PVC SDR 26, NO SDR 35)
  - F. CLASS OF BEDDING
  - G. SIZE OF LINES
  - H. CLEAN-OUT TO PROPERTY RIGHT-OF-WAY LINES (service connections) and CLEAN-OUT TO EDGE OF EASEMENTS
  - I. D.I.P. AT CREEK CROSSINGS, UNDER PAVINGS, STORM DRAIN CROSSINGS, WATER LINE CROSSING, AND DRAINAGE WAYS
  - J. PERCENT OF FALL AND MANHOLE DEPTH
  - K. OTHER PERTINENT FEATURES (e.g., storm drain crossings, water line crossings, creeks and drainage ways, existing and proposed streets/roads, special construction, etc.)
3. A detail sheet is required showing:
  - A. Bedding detail (Class B or better when applicable)
  - B. Manhole detail: outside drop, invert construction (solid concrete or precast concrete with rubber boots) at influent/effluent openings
  - C. STUB OUT detail (service line connections)
  - D. Highway, railroad, and major road crossings when applicable
  - E. Creek and drainage way crossings when applicable
  - F. Other, as appropriate
4. Bedding is to be Class B (to spring line of pipe) or better, depending on soil conditions. Bedding is to be #57 stone or smaller and to be a minimum of 4" under pipe. This includes service lines as well as main lines.
5. Grades and direction will change at manholes only. Where possible and except as otherwise approved, manholes and sanitary sewer lines shall be located underneath the street pavement preferable centered with the pavement. Manholes are to be installed at the end of each line; at all changes in grade, size or alignment; at all intersections; and at a distance of a maximum of 400 feet between each manhole. When placed outside streets and rights-of-way, a minimum 20-foot wide permanent easement shall be shown on the plans and dedicated to the City of Fayetteville. Easement shall not be obstructed by any permanent structure, fencing, or other

obstructions preventing access for maintenance of the sewer system.

6. Cover Depth. The top of all sewers entering or crossing streams shall be at a sufficient depth below the natural bottom of the stream bed to protect the sewer line. In general, the following cover requirements must be met:
  - 1) One foot of gravel cover where the sewer is located in rock;
  - 2) Three feet of cover in other material;
  - 3) In major streams, more than three feet of cover may be required; and
  - 4) In paved stream channels, the top of the sewer line should be placed below the bottom of the channel pavement.
7. Manholes shall be set on each side of road bores.
8. Road bores require minimum .250" wall thickness steel casing.
9. Creek crossings: .250" wall thickness steel casing "coated" with DIMJ solid sleeves with transition gaskets or steel casing .250" weight with PVC SDR 26 carrier pipe. 40' DIP can be used along with steel casing. After carrier pipe is set at proper grades, concrete anchors shall be installed at each end of the crossing. Additional center anchors may also be required for longer spans.
10. The minimum slope in feet per 100 feet for an 8" diameter sewer is 0.40; a 10" diameter sewer is .28; a 12" diameter sewer is .22.
11. Service lines shall have a clean-out at the property right-of-way line or located within the easement with a 4-foot minimum piece of 4" or 6" temporary capped pipe exposed for ease in locating. This temporary riser pipe shall be cut off and capped (threaded cap or equal) at four inches minimum above the final ground line after the service line is tied in and final grading is completed. The cap shall have a brass or metal plate for ease in locating if necessary. After the curb has been installed, an "S" or "L" shall be cut into the gutter using a circular pipe saw immediately behind the curb or at the edge of the pavement and shall be painted green according to standardized color.
12. Alignment. Sewers crossing streams should be designed to cross the stream as nearly perpendicular to the stream flow as possible and shall be free from change in grade. Sewer systems shall be designed to reduce the number of stream crossings.

13. Sewers entering or crossing streams shall be constructed of DIP with mechanical joints; otherwise they shall be constructed so they will remain watertight and free from changes in alignment or grade. Material used to backfill the trenches shall be stone, coarse aggregate, washed gravel, or other materials that will not readily erode, cause siltation, damage pipe during placement, or corrode the pipe.
14. In residential development, when connecting the gravity line to the service line, a 6" x 4" convertor or a Fernco connector may be used. When a Fernco connector is used, the proper bedding should be #57 stone or smaller and should be placed at a minimum of 4" under the pipe.
15. No driveways will be constructed over a sewer lateral. Place sewer laterals within the side yard setback or the middle of the property line. It is the responsibility of the owner/developer/contractor to relocate the sewer lateral if a conflict arises.
16. Gravity sewer lines are subject to testing per the Departments sewer specifications which are as follows: All sewer lines must be televised by an approved vendor with the capability to provide videotapes, and as-built drawings. At time of acceptance all videotapes, as-built drawings, printouts, and related material of said sewer system should be turned over to the City of Fayetteville Water and Sewer Department. All sewer lines must be air tested. The test requirements are as follows: 5 psi for 5 minutes with a 2 psi drop in the pressure allowed. A representative should be contacted from the Water and Sewer Department for approval of all tests and televising.
17. Crossings. Sewers crossing water mains shall be laid to provide a minimum vertical distance of two (2) feet between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. At crossings, one full length of water pipe shall be located so both joints will be as far from the sewer as possible. Special structural support for the water and sewer pipes may be required.

**Force Mains:**

At least ten (10) foot horizontal separation between water mains and sanitary sewer mains must be provided. There shall be a two (2) foot vertical separation at crossings. All force mains must be a minimum of four inch 4" in size and must be class 50 DIP unless otherwise approved by the City of Fayetteville Water and Sewer Department. At the endpoint of the Force Main where the Gravity Line begins, manhole

construction shall consist of cast in lining with the total number of manholes affected and type of lining used, shall be determined and approved by the Water and Sewer Department.

**SIZE OF LINES:**

1. All gravity sewer lines will be 8" or larger.
2. All commercial service lines will be 6" minimum for single service, otherwise 8". Residential service lines may be 4" minimum for single service.
3. Size and type of pipe used will be subject to final determination by the Water & Sewer Department.

**APPROVED PIPE:**

1. PVC SDR 26 pipe and DIP Class 50 pipe.
  - A. PVC SDR 26 pipe has a maximum bury depth of 16' and a minimum of 5'. Anything over 16' or less than 5' requires DIP Class 50 pipe.
  - B. DIP is required for grades greater than 10 percent and concrete collars are required for grades greater than 15 percent.
  - C. Soil conditions will also determine the use of PVC SDR 26 or DIP Class 50 pipe, and/or possibly a higher degree on classification of bedding (e.g., mucky conditions may require deeper excavations and more bedding gravel).
  - D. PVC SDR 26 pipe will be run from manhole to manhole.
  - E. Where DIP Class 50 pipe shall be connected to SDR 26 PVC pipe connection shall be a Fernco coupling or equivalent.
  - F. The approved manufactures of the PVC SDR 26 are: CERTAINTEED, ETI, NAPCO, CAPCO, DIAMOND.

**MANHOLE CONSTRUCTION:**

1. Maximum distance between a manhole is 400 feet.
2. Manhole inverts will be constructed of solid concrete or precast concrete with rubber boots at influent and effluent openings.
3. "RV 30" butyl joint sealant or equal will be used on each manhole section (ring) and these rings (joints) are to be wiped with grouting material for water proofing. All lift holes will be filled with grout.
4. 6" or more gravel is required under the manhole.
5. Drop manhole construction is required when the incoming invert elevation is more than two feet above the outgoing invert. Outside drop to be constructed with DIP. No PVC.

**Lift Station Construction:**

1. All proposed lift stations and existing lift station upgrades shall be submitted to the City of Fayetteville in a proposed certified engineered drawing format and shall be consistent with the Flygt design of the Water and Sewer Department's existing stations.
2. Pumps shall be sized to provide a minimum flow velocity of 2.5 feet per second to achieve proper scouring and cleaning of force main.
3. The wet well shall be equipped with float switches. A "Multitrode" sensor will not be acceptable.
4. Check valves shall be of a "ball" type configuration; "swing" check valves will not be acceptable. Check valves must be located in a separate vault or pit.
5. The force main must be equipped with a single isolation valve located outside of the check valve vault or pit for proper maintenance and cleaning of check valves.



6. SCADA (Supervisory Control And Data Acquisition) All proposed lift stations and existing lift station upgrades shall be equipped with a SCADA system that is compatible with the City of Fayetteville Water and Sewer Department's existing SCADA system based upon design by Consolidated Electric Company.
7. Upon completion of the lift station construction, the site shall be secured by fencing approved by the City of Fayetteville Water and Sewer Department.
8. Lift station site shall be equipped with the proper lighting to provide nocturnal maintenance and safe working conditions and must be approved by the City of Fayetteville Water and Sewer Department.
9. Standby Power (GENERATOR)
  - A. Standby emergency generator shall be powered by natural gas where available. Generator will be permanently stationed at site. Where natural gas is unavailable, generator will be powered by diesel fuel. Gasoline powered generators will be unacceptable.
  - B. Generator shall be capable of handling 150% of the power requirement of the station.

**SUBDIVISION OR DEVELOPMENT**

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**S A N I T A R Y   S E W E R L I N E S**

- \_\_\_ ORIGINAL STAMPED BY STATE REGISTERED ENGINEER
- \_\_\_ LIST OWNER/DEVELOPER- ADDRESS & PHONE NO
- \_\_\_ CLASS AND TYPE OF PIPE
- \_\_\_ DISTANCE BETWEEN MANHOLES
  
- \_\_\_ LOCATION MAP
  
- \_\_\_ LEGEND AND SCALE
  
- \_\_\_ LINE FOOTAGE/TYPE PIPE/NO. MANHOLES
  
- \_\_\_ SEPARATE SHEET FOR
  
- \_\_\_ LAYOUT/CONTOURS OR PERTINENT ELEVATIONS
- \_\_\_ DETAIL SHEET
  - (a) BEDDING DETAIL CLASS (b) MANHOLE DETAIL-OUTSIDE DROP-INVERT
  - (CONSTRUCTION SOLID CONCRETE OR PRECAST W/RUBBER BOOTS AT OPENINGS)
  - (c) STUB OUT DETAIL (d) SHALLOW MANHOLE DETAIL (e) CREEK CROSSING
  - (f) JACK & BORE DETAIL (g) CLEAN-OUT DETAIL
- \_\_\_ NO LANDFILL AREAS INVOLVED
  
- \_\_\_ STREAM BUFFER
- \_\_\_ SIZE OF LINES
- \_\_\_ 24-HOUR CONTACT
- \_\_\_ PLAN & PROFILE SHEETS
- \_\_\_ GRADES (MINIMUM .50)
  
- \_\_\_ OVERALL PLAN SHEET FOR SEWER
- \_\_\_ NO. OF LOTS OR DEVELOPED UNITS
  
- \_\_\_ EXISTING SEWERAGE CAPACITY

PLEASE NOTE: ONE SET OF FINAL APPROVED DRAWINGS MUST BE KEPT ON THE JOB SITE AT ALL TIMES. FAILURE TO HAVE APPROVED PLANS ON THE JOB SITE WILL CAUSE WORK STOPPAGE. DEVELOPER OR HIS ENGINEER SHALL BE RESPONSIBLE FOR "CERTIFIED AS-BUILTS" ON FIELD CHANGES OF APPROVED DRAWINGS.

ENGINEER REVIEW CERTIFICATION:

INITIAL REVIEW \_\_\_\_\_  
FINAL REVIEW \_\_\_\_\_

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GEORGIA PROFESSIONAL ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

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GEORGIA PROFESSIONAL ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

WATER/SEWER CONSTRUCTION MATERIALS

STATE OF GEORGIA

COUNTY OF FAYETTE

PROJECT # \_\_\_\_\_

PROJECT NAME: \_\_\_\_\_

LENGTH:	DIAMETER:		LENGTH:	DIAMETER:
_____,	_____ " ( ) (_____) Water Main		_____,	_____ " SEWER LINE
_____,	_____ " ( ) (_____) Water Main		_____,	_____ " SEWER LINE
_____,	_____ " ( ) (_____) Water Main		_____,	_____ " SEWER LINE
_____,	_____ " _____ Water Main		_____	MANHOLES
_____ FIRE HYDRANTS,			_____ TEES,	
_____ GATE VALVES, OTHER LARGE ITEMS, (i.e., CROSSES, ETC.): _____				

THIS IS TO STATE THAT THE WATER AND SEWER LINES IN THE ABOVE-STATED PROJECT ARE DONATED TO THE CITY OF FAYETTEVILLE WATER AND SEWER DEPARTMENT AS OF THIS DATE AT A DECLARED COST OF \$ \_\_\_\_\_ FOR WATER LINES AND/OR \$ \_\_\_\_\_ FOR WATER LINES AS TO THE MAINTENANCE OF SAID LINE AND/OR LINES.

DATED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
(GRANTOR)

ATTEST:

BY: \_\_\_\_\_  
(NAME AND TITLE)

\_\_\_\_\_

\_\_\_\_\_  
NOTARY PUBLIC

\_\_\_\_\_  
MY COMMISSION EXPIRES

IMPROVEMENTS OTHER THAN WATER/SEWER LINES

STATE OF GEORGIA

COUNTY OF FAYETTE

PROJECT # \_\_\_\_\_

PROJECT NAME: \_\_\_\_\_

DESCRIPTION OF FACILITIES: \_\_\_\_\_

**LIFT STATIONS, ETC.:**

\_\_\_\_\_ MOTOR MAKE: \_\_\_\_\_ H.P. SERIAL # \_\_\_\_\_

\_\_\_\_\_ MOTOR MAKE: \_\_\_\_\_ H.P. SERIAL # \_\_\_\_\_

\_\_\_\_\_ MOTOR MAKE: \_\_\_\_\_ H.P. SERIAL # \_\_\_\_\_

ELECTRIC CURRENT CHARACTERISTICS: \_\_\_\_\_ PHASE \_\_\_\_\_ VOLTS, \_\_\_\_\_ HERTZ

**PUMPS:**

MAKE: \_\_\_\_\_ CAPACITY: \_\_\_\_\_ GPM, \_\_\_\_\_ TDH; SERIAL # \_\_\_\_\_

MAKE: \_\_\_\_\_ CAPACITY: \_\_\_\_\_ GPM, \_\_\_\_\_ TDH; SERIAL # \_\_\_\_\_

COST OF LIFT STATION: \$ \_\_\_\_\_; LABOR: \$ \_\_\_\_\_

**GENERATOR:**

MAKE: \_\_\_\_\_ MODEL: \_\_\_\_\_ SERIAL # \_\_\_\_\_

COST OF GENERATOR: \$ \_\_\_\_\_; LABOR: \$ \_\_\_\_\_

THIS IS TO STATE THAT THE FACILITIES LISTED IN THE ABOVE-STATED PROJECT ARE DONATED TO THE CITY OF FAYETTEVILLE WATER AND SEWER DEPARTMENT AS OF THIS DATE AT A DECLARED COST OF \$ \_\_\_\_\_ FOR LIFT STATION AND/OR \$ \_\_\_\_\_ FOR GENERATOR WITH A ONE YEAR WARRANTY AS TO THE MAINTENANCE OF SAID FACILITY.

DATED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_.

ATTEST: \_\_\_\_\_ (GRANTOR)

BY: \_\_\_\_\_ (NAME AND TITLE)

\_\_\_\_\_  
NOTARY PUBLIC

MY COMMISSION EXPIRES  
DEED OF CONVEYANCE AND EASEMENT

STATE OF GEORGIA, FAYETTE COUNTY

IN CONSIDERATION OF ONE DOLLAR AND OTHER CONSIDERATIONS to them paid, Grantors, \_\_\_\_\_ of the City of Fayetteville to hereby give and convey unto City of Fayetteville Water and Sewer Department, political subdivision of the State of Georgia, its successors and assigns, a tract or parcel of land, which is described as follows:

All that tract or parcel of land lying and being in Land Lot(s) \_\_\_\_\_, \_\_\_\_\_ Land District, Fayette County, Georgia, in a subdivision known as \_\_\_\_\_ and along the roads rights-of-way located in said subdivision.

A free, permanent and uninterrupted easement, use, liberty and privilege of a right-of-way for \_\_\_\_\_ (\_\_) feet in width, in, on, under and through the property of the undersigned, for the purpose of laying, maintaining and operating a line of water or sewer pipe or pipes, including all appurtenant structures, as a part of the water or sewerage system of said department, and for the aforesaid consideration, the undersigned hereby agrees that said department, through its agents, may lay such additional lines of water or sewer pipe or pipes in, on, under and through said property, and the said pipe or pipes may be of such size and in, on, under, and through said property, and the said pipe or pipes may be of such size and may be laid at such depth as may be determined by the department or its agents, and the undersigned hereby expressly agrees that said department shall have a construction and maintenance easement of such minimum working width (not to exceed an additional \_\_\_\_\_ (\_\_) feet) as is reasonably necessary for the proper installation and maintenance of such water or sewer line or lines; and the undersigned further agrees that said department, its successors and assigns, shall have the right to operate and maintain said line or lines in and through said property and right-of-way granted, with the right of ingress and egress to and from the same to the extent necessary to install, inspect, repair, keep up, replace, maintain and operate said line.

This Deed is also made for conveying all of Grantor's right, title and interest in and to any water or sewer lines or appurtenances thereto on the above-described property. The Grantor and Grantee agree that the fair market value of the property and water or sewer lines and appurtenances thereto being conveyed by this Deed is \$\_\_\_\_\_.

TO HAVE AND TO HOLD said land and appurtenances unto said City of Fayetteville Water and Sewer Department, its successors, executors, administrators, and assigns, in fee simple.

Grantors warrant the title to said land against the lawful claims of all persons.

IN WITNESS WHEREOF, Grantor(s) has hereunto set its hand(s) and affixed its seal this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Signed, sealed and delivered \_\_\_\_\_ (L.S.)  
in the presence of: \_\_\_\_\_ (L.S.)  
\_\_\_\_\_ (L.S.)

\_\_\_\_\_  
Notary Public

\_\_\_\_\_  
My Commission Expires

NOW THEREFORE BE IT ENACTED AND ORDAINED BY THE  
MAYOR AND CITY COUNCIL OF THE CITY OF FAYETTEVILLE, GEORGIA:

All conflicting ordinances concerning the water and sewer system Development Standards are hereby repealed, and the following provisions are hereby adopted.

This Resolution shall become effective immediately upon its adoption.

If any section, subsection, sentence, clause, phase, or other portion of this local Resolution is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed as a separate, distinct and independent provision, and such holding shall not affect the validity of the remaining portions hereof.

Approved by the Mayor and City Council of the City of Fayetteville, this the \_\_\_\_\_ day of \_\_\_\_\_, 1996 by the following voting for adoption:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Attest:

\_\_\_\_\_  
MAYOR

\_\_\_\_\_  
CLERK

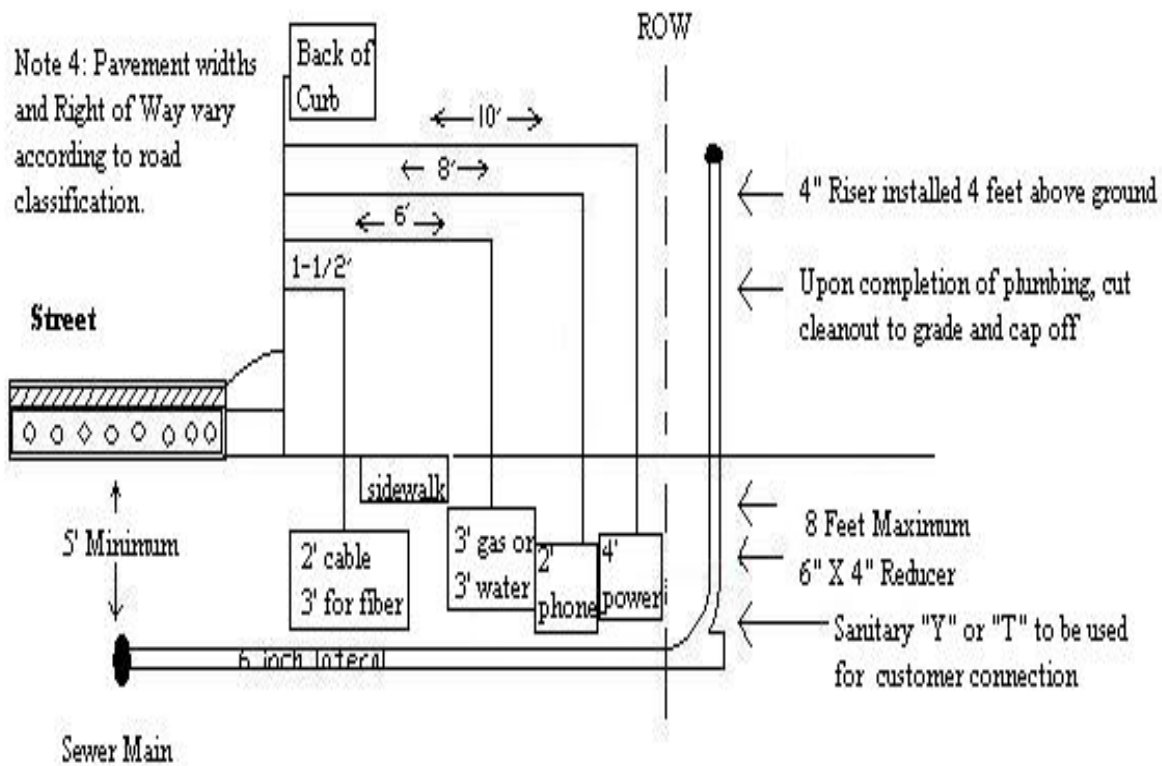
Public Streets Typical Utility Locations

Note 1: Utility locations are measured from back of furthest curb location.

Note 2: Power and phone to use joint trench if possible. If a joint trench is used, the power trench shown below shall be the location of both utilities. Power shall be installed first with 2 feet of cover. Telephone shall then be installed with the remaining 2 feet of cover.

Note 3: Keep gas and water on opposite sides of the road.

Note 4: Pavement widths and Right of Way vary according to road classification.



City of Fayetteville