

SECTION 200 - PLANS

201. WATER PRESSURE FLOW TEST

- 1.) After submittal of the preliminary plans, a water pressure flow test must be run on any existing Authority water line to determine the adequacy of water supply for the project. The test shall consist of fire hydrant flow test and a twenty-four (24) hour pressure test, and the fee for the tests will be paid by the Developer/Contractor. (See Section 102.2)

Test information shall consist of:

- A.) Static Pressure and Elevation of Static Gauge
- B.) Recorded Flow in GPM and Residual Pressure
- C.) Maximum Elevation in Development
- D.) Available Flow at Maximum Elevation with 20 PSI Residual Pressure
- E.) Twenty-four (24) hour pressure chart

An adequate supply of water for the proposed project must be available prior to the submittal of any construction plans unless an exception is granted by the Authority. The results of any flow test are valid for six months.

- 2.) All projects which have flow test / pressure chart test results showing static pressures of less than 35 psi will require a special design study to be completed and submitted to the Authority for approval to insure that no problems will be encountered during peak demand periods. This study must be approved by the Authority before any construction plans will be approved.

202. PLAN REQUIREMENTS

1.) Preliminary Plans

Three (3) copies of preliminary plans will be prepared and submitted for review as described in Section 102.1. Preliminary plans shall include the portion of the county tax maps highlighting the land to be developed, the type of development, the number of units, the tie-in location and the general plan for water supply. The plans shall also include the name, address and telephone number of the Developer or his representative. Questions relating to adequate fire protection, multiple feeds, water supply and proposed location of connection(s) should be resolved at this stage before proceeding with detailed planning. The submittal for preliminary review must include all land to be developed although the land is to be developed in several phases or units. Adequacy determinations of the existing water supply system will be made for the entire project.

2.) Construction Plans

Construction plans shall be submitted to the Authority in accordance with the requirements detailed in Section 102. All plans for water main projects shall bear a suitable title showing the name of the project. Plans shall show the scale in feet, the north arrow, date, the name of the design professional, the design professional's signature and his registration stamp. All design professionals preparing construction plans and specifications must be registered in the State of Georgia as a professional engineer or a registered land surveyor. If the project requires a water line extension of more than 500 feet to reach the project, a registered professional engineer must design and stamp the line extension. The cover sheet shall include the Owner's/Developer's name, address, telephone number, and fax number, plus the design professional's name, address, telephone number, and fax number. The cover sheet shall also include the funding source if state or federally funded, and a detailed project location map. The cover sheet shall also show the numbers of the tax map and parcel in bold letters.

The plans shall be clear and legible. They shall be drawn to a scale which will permit all necessary information to be plainly shown. Plans shall be submitted on 24" x 36" drawing sheets and shall be submitted concurrently in an "Autocad" drawing electronic format. A sheet index shall be provided, as well as a legend of symbols used. Horizontal locations shall be referenced to Georgia State Plane Coordinates (West Zone feet). Vertical locations shall be shown referenced to Mean Sea Level. Reference all horizontal locations to the NAD83/94 (latest adjustment) datum and reference all vertical locations to the NAVD88 datum. All orthometric locations shall be referenced to Geoid 99/03. All points are subject to verification by the Cherokee County Water & Sewerage Authority. Water line locations shall be shown on plans and submitted in ASCII Text or EXCEL electronic format for each point. The Developer shall provide ASCII or EXCEL spread sheet files for coordinate data. (comma delimited). Each Point I.D. (Valves, Water Main, etc...) shall be show at the correct location on the printed plans.

Water Mains along County or State Roads and cross country shall be located at 50' intervals (ground and top of pipe). If Water Main is within the development and maintains a constant distance behind curb and constant depth, locate at all transitions (vertical and horizontal). All fittings, tees and bends, valves, and air release valves shall also be located. All vertical locations shall be finished ground and top of pipe. The Contractor shall place a vertical piece of 2" diameter P.V.C. pipe on top of the pipe at all bends, tees, fittings, valves, elevation transitions, horizontal transitions and every 50' along the length of the force main (County or State Roads and cross country) for the purpose of enabling the surveyor/engineer to locate the force main for "As-Builts". The Contractor will then be responsible for removing the vertical P.V.C. sections after the as-built locations have been verified by the Authority. The ground, top of pipe, top of fitting and top of valve elevation of shall be located. The size and material of all pipes, valves and fittings shall be recorded. All electronic point data shall include

- a.) Point ID (see CCWSA staff)

- b.) Northing
- c.) Easting
- d.) Ground Elevation
- e.) Top of Pipe, Valve or Hydrant Elevation
- f.) Point Description (Pipe, Fitting or Valve Type and Size)

Construction Plans shall consist of the following:

- A.) Site plan showing the water layout only with project name, streets, street names, topography with contour lines at two foot intervals, location map, lot layout (if subdivision) or building location (multi-family, commercial or industrial site), land lots, district and north arrow. Lot numbers shall run in consecutive order and there shall be no duplicate lot numbers within the project. Note if any other utilities are existing. Plan scale shall be a minimum of 1"=100'. Both the Construction Plans and "As-Builts" shall show station numbers along the alignment plus call out the specific stations of all features such as tees, crosses, fire hydrants, bends, etc. along with the Point I.D. Match lines shall be provided where necessary.
- B.) Proposed pipe materials, sizes, lengths and alignment.
- C.) Proposed service lateral locations.
- D.) Location, type and size of water valves and air release valves (to be installed at highest points of system).
- E.) Thrust blocks where used.
- F.) Fire hydrant locations.
- G.) Water system materials.
- H.) Location and sizes of existing water lines surrounding project, with nearest line valve in each direction from proposed connection.
- I.) Detail of connection to existing water lines.
- J.) Proposed meter sizes and locations.
- K.) Detailed plan of fire line meters, detector meters, compound meters, backflow preventers, etc. if applicable.
- L.) Any other items incidental to the proposed system.
- M.) Details of special water line installations such as stream crossings, elevated lines on piers, bridges, pipe bedding, special highway crossings, railroad crossings, etc.
- N.) Show all right-of-way widths, easement widths and pavement widths.
- O.) Plan and profile sheets shall be prepared with a horizontal scale of 1"=50' and a vertical scale of 1"=10'. These scales also apply to any profile view of sanitary sewers.
- P.) Bench marks and control points shall be shown on the plan sheets. Horizontal and vertical coordinate data shall be provided for each bench mark and control point. The vertical datum used shall be the elevation above mean sea level.
- Q.) A sheet index shall be provided, as well as a legend of symbols used.
- R.) Each plan sheet should include a note stating "The Contractor must call the Utilities Protection Center "Call Before You Dig" telephone number (1-800-282-7411) four days before starting any excavation.
- S.) All construction plans submitted for review of revisions requested by the

Authority must list each revised item with a cloud around the revised area on the plan sheet and must identify which reviewing authority requested the revision.

- T.) Each set of construction plans shall include a reproduction of the following information (**Detail W729**) from the Utilities Protection Center:

DETAIL W729

**COLOR CODES
FOR
UTILITY LOCATING**

RED	ELECTRIC
YELLOW	GAS-OIL
ORANGE	TELEPHONE/CATV
BLUE	WATER
GREEN	SEWER

IF YOU DIG GEORGIA

CALL US FIRST !

1-800-282-7411

It's The Law !

Utilities Protection Center, Inc.

**THREE WORKING DAYS
BEFORE
YOU DIG GEORGIA
CALL**

**Utilities Protection
Center, Inc.**



1-800-282-7411

It's The Law !

The General Notes for Water System Construction shown on the following pages (**Detail W730**) shall be included in each set of plans.

DETAIL W730

**CHEROKEE COUNTY WATER AND SEWERAGE AUTHORITY
WATER SYSTEM CONSTRUCTION
GENERAL NOTES**

- 1.) All water system construction must follow the current Cherokee County Water and Sewerage Authority Water Main Standards.
- 2.) All water mains shall be ductile iron pipe, except where the Construction Manager approves otherwise. Ductile iron pipe shall be thickness Class 50, designed in accordance with A.W.W.A. C150 and manufactured in accordance with AWWA C151. All ductile iron pipe shall have an

outside bituminous coating per A.W.W.A. C151 and an inside standard cement lining with bituminous seal coat per A.W.W.A. C104. All references to A.W.W.A. standards shall mean latest revisions published.

- 3.) All line valves shall be marked by concrete valve markers.
- 4.) A concrete valve marker is to be placed directly above the plug on all dead-end water mains.
- 5.) Information regarding underground utilities on these plans is not guaranteed as to accuracy or completeness. Prior to beginning work, the Contractor shall request a field location through the utilities protection center and any utility owners thought to have facilities in the area. The Contractor shall promptly compare these field-marked locations with the project plans and then notify the Designer of any anticipated problems or need for contract changes. It is the Contractor's responsibility to excavate or cause the utility owner to excavate for the purpose of determining exact elevations or locations at utility crossings and other critical locations well in advance of the work under this contract. Damage to existing utilities resulting from the Contractor's negligence shall be repaired at the Contractor's expense.
- 6.) All service lines under pavement shall be encased in Schedule 40 P.V.C. casing with a minimum diameter of 2", extending a minimum of 3 feet beyond the pavement and/or sidewalk on each side of the road.
- 7.) Concrete blocking shall be placed at all bends, tees, valves, reducers and all other fittings. Prior to blocking, fittings shall be wrapped with polyethylene film.
- 8.) The developer shall obtain a construction permit from the C.C.W.S.A. and notify the Chief Inspector at least 4 days before beginning construction. The Contractor shall notify the Chief Inspector or his designated representative by 8:30 a.m. of each workday when work is scheduled unless authorized otherwise.
- 9.) Water mains shall be installed so that the top of the pipe is a minimum of four feet below final grade, four feet below the edge of the pavement, or four feet below the ditch paralleling the road, whichever is deepest. Contractor shall place a vertical piece of 2" P.V.C. pipe on top of the water main every 50' along the length of the main and at other locations as required by the Water Main Standards Section 507.
- 10.) All fittings and valves are to be mechanical joint with retainer glands unless otherwise approved. Retainer glands shall be EBAA Mega-Lug or approved equal.
- 11.) Type 4 bedding is required at all restrained pipe installations.
- 12.) Flow Test Information:
Static Pressure: _____ psi at _____ ft.
Recorded Flow: _____ GPM with _____ psi residual pressure.
Maximum Elevation in Development _____ m.s.l. (to be determined by developer.)
Flow Available at Max. Elevation: _____ GPM with 20 psi residual pressure.
Size of water main at point of connection to project: _____ inches
Date of flow test: _____

(End of General Notes)

3.) Erosion And Sedimentation Control Plan

- a.) The provisions of the Erosion and Sedimentation Act of 1975 (O.C.G.A. 12-7-1 et seq.), as amended, shall govern all land disturbing activities as relates to construction performed. The Cherokee County Water & Sewerage Authority is not delegated enforcement powers for enforcing the provisions of the Erosion and Sediment Control Act of 1975.
- b.) The Georgia Soil and Water Conservation Commission has taken provisions of ACT 599 and published a **MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA**, 2000 Edition (or any more current edition as they are published). Water construction plans and specifications shall include appropriate segments of this manual. Developers, Engineers, Design Professionals and Contractors performing work in Cherokee County are responsible for acquiring a copy of this manual and using the best practical methods contained therein to control the erosion and sedimentation of the construction site in conformance with the intent of ACT 599. Copies may be purchased from the Georgia Soil And Water Conservation Commission, P.O. Box 8024, Athens, Georgia 30603. For additional information, call the Commission at 706-542-3065.
- c.) **Plan:** An erosion and sediment control plan, meeting the requirements of applicable state regulations, shall be provided as part of the overall construction drawings. Use reference in "2" above for guidance. All erosion and sediment control measures must be designed for a 25 year, 24 hour storm event. The Erosion and Sediment Control Plan is to include a note that all erosion control measures are to be in place before the construction activity begins. The plan must meet the requirements of the E.P.D.'s NPDES Storm Water Monitoring Permit.
- d.) **Erosion Control Details:** Erosion Control Details and Symbols may be taken directly from the **Manual For Erosion and Sediment Control In Georgia**, 2000, referenced above.
- e.) The erosion control plan must be approved by the Natural Resource Conservation Service (N.R.C.S.). As stated in Section 102.5, the approval of the plan included in the N.R.C.S. Report of Technical Review must be attached to the initial submittal of construction plans.
- f.) All bid projects must include line items for erosion and sedimentation (E. & S.) control measures with a unit price for each type of E. & S. measure installed.

203. PLAN APPROVAL

All plans must be submitted to the Cherokee County Water and Sewerage Authority for approval as delineated in Section 102. No work shall begin until plan approval is received from the Authority and a Construction Permit is issued by the Authority. The C.C.W.S.A. General Manager or his designated representative of the C.C.W.S.A. shall have final approval of the preliminary plans, construction plans and final plans. If a discrepancy occurs between the approved plans and the Water Main Standards, the Standards shall be the superseding document. The General Manager of the Authority or his designated representative may modify or cause to be modified any plans that he believes are in the best interest and future integrity of the Authority.

204. REVISIONS TO APPROVED PLANS

When any deviations from approved plans are proposed, the Chief Inspector shall be notified for authorization. Revised plans should be submitted as soon as possible to the Chief Inspector. Minor changes not affecting water system operation may be allowed in the field during construction by the Chief Inspector. The Chief Inspector shall have authority as to what constitutes a minor or major change. "As-Built" drawings and the required electronic data on disc shall be furnished to the Authority at the completion of construction (See Section 604).

Any section or unit must be built in accordance with the plans. If the Developer decides to phase a section off, a new set of plans showing the phase change will have to be resubmitted and approved.

205. APPROVAL BY OTHER GOVERNMENT AGENCIES

No part of the plan approval process is intended to relieve the developer of the responsibility to comply with the minimum standards of the Cherokee County Water & Sewerage Authority, Georgia Department of Natural Resources, E.P.A., E.P.D., N.R.C.S., Georgia Department of Transportation, Cherokee County, or other appropriate regulatory agency.

Generally speaking, the following documents should be provided to the Authority with the plans, and should also be sent to the proper agency claiming jurisdiction:

- 1.) An approved Erosion and Sedimentation Control Plan (Note: A Land Disturbing Activity Permit and a Grading Permit must be acquired by the Developer prior to beginning construction). Include with this plan the Natural Resource Conservation Service Report of Technical Review approving the erosion control measures.
- 2.) A letter stating that none of the water mains, services, or other utilities associated with the project are constructed on or proposed to be constructed

on a solid waste landfill, according to the records of the County Roads and Bridges Department.

- 3.) A letter approving the plans and specifications from the E.P.D. - Drinking Water Program. This requirement applies to line extensions to the site only. The Authority has the delegation of authority to review the water facilities for minor additions, residential developments and commercial developments.
- 4.) A copy of the Comprehensive Monitoring Plan that complies with the E.P.D.'s N.P.D.E.S. Storm Water Monitoring Permit regarding storm water discharge.

The submittals listed above are not intended to be an all-inclusive list of submittals needed to adhere to all of the government agencies having jurisdiction over construction on a project. It is up to the Developer to inform himself and adhere to the development regulations of the respective governing agencies.

206. RELOCATION OF EXISTING WATER AND SEWER FACILITIES

All existing water or sewer facilities that have to be relocated, as might occur at roadway entrances, easements, elevation changes, etc., will be relocated by the Developer's Contractor at the Developer's expense. The Authority will inspect all such work prior to acceptance.

207. EASEMENT ACQUISITION AND UTILITY ENCROACHMENT PERMITS

- 1.) It shall be the responsibility of the Developer to obtain any off-site easements required to connect the project to the existing water system. Easements will be conveyed to the Cherokee County Water and Sewerage Authority for all facilities which are to be conveyed to the Authority. This process must be started early enough to allow construction of the water mains before any building construction is to begin. No building permits, water meter or sewer tap applications shall be issued until off-site water mains and sewers have been constructed and accepted. This condition shall override any provision for speed up of house starts such as furnishing a bond to guarantee completion of the streets and other appurtenances. A sample water main easement agreement is included at the end of Section 200.
- 2.) All easements shall allow adequate room to construct the water main and appurtenances. Permanent easements shall be a minimum of 20 feet wide. Wider easements shall be required where water and sewer lines are deeper than normal. The maximum cross-slope of the permanent easement shall be

10%.

- 3.)** Easement drawings shall be prepared for work outside the development prior to approval of the water system plans. The drawings shall be of a size suitable for legal recording and shall be prepared by a Registered Land Surveyor. The drawing must be clear and legible for printing. The drawing shall be at a reasonable scale and shall not be a reduced copy of the plan sheet. The drawing will show property lines, the name of property owners with the length of line encroaching on each property owner, size of line, width of permanent and construction easement, scale of drawing, north arrow, land lot and district numbers, and a tie to the nearest land lot corner. Any streets or other existing easements shall also be shown. Easement agreements referencing these drawings shall be prepared and attached to the drawings, signed by the property owners, and recorded at the Cherokee County Clerk of Superior Court's office. A copy of the recorded easement agreement shall be provided to the Authority before the Authority's Construction Permit is issued to the Developer.
- 4.)** *See Section 603-4*
- 5.)** The Developer is responsible for obtaining all permits and easements necessary to construct water mains to and on the site to be developed. Construction permits will not be issued until all other permits and easements have been obtained and until any special conditions such as insurance requirements have been complied with. (See Sections 102.11 and 102.12.)

DETAIL W731

WATER LINE EASEMENT AGREEMENT

GEORGIA, CHEROKEE COUNTY

This grant of easement made this _____ day of _____, 20____, from _____ of the State of Georgia and County aforesaid, hereinafter called Grantor, to **CHEROKEE COUNTY WATER AND SEWERAGE AUTHORITY**, a Political Subdivision of the State of Georgia, herein called the Grantee.

WITNESSETH, that Grantor for and in consideration of the sum of \$1.00 and other valuable considerations in hand paid, at and before the sealing and delivery of these presents, does grant, bargain, sell, and convey unto Grantee an easement and perpetual right-of-way over, upon, through, under and/or across the property of the Grantor in Land Lot _____, of _____ District, Cherokee County, Georgia, (Subdivision Name, Phase, Unit and or Pod

_____ Lot Number _____) and being a strip of land more particularly described and shown on the plat attached hereto and made a part hereof showing the dimensions and location of this easement. The easement covered by this instrument is _____ feet wide, with the permission to use up to _____ feet wide during construction and any and all additional easements for off-site water or sewerage service as deemed necessary by the Cherokee County Water and Sewerage Authority. The easement begins and ends where the said pipeline enters and leaves the property line as indicated above, and totals approximately _____ feet in length.

The easement covered by this instrument is for the purpose of a water line, together with the right to go upon said land to install said water line, to inspect, maintain, repair, or replace the same, as may from time to time be necessary.

The Grantor does hereby covenant that they are lawfully seized and possessed of the real estate above described, and hold title in the name(s) of Grantors shown below.

In witness whereof, said GRANTOR has hereunto signed this agreement on the date written above.

WITNESS

GRANTOR(S)

Printed Name

Printed Name

Signature

Notary Public

Printed Name

Signature

Signature