City of Greensboro

North Carolina

Engineering and Inspections Department

Construction Drawings Approval Process

MAY 2016

Do You Need This Manual?

May 2016

To: Engineers, Surveyors, Architects, Developers and Contractors
From: Kenny Carroll, Engineering Division
Re: Construction Drawings Approval Process

The following is a detailed outline to obtain approval of any water main, sanitary sewer main, storm sewer drainage, Best Management Practice (BMP), public or private streets that are to be constructed by developers. Planning will provide you with a checklist to determine items that may be delayed with final design to be completed during construction review.
If your site development/subdivision meets any of the following criteria, then construction drawings must be submitted to the City of Greensboro Engineering Division for review and approval under the guidelines established in this manual:

Water Lines: (Water Resources 336-373-2055)

Plans are required for all non-metered water lines up to the building, including water lines to fire hydrants. For site development, the City's Engineering Division inspection will normally stop at the meter. However if three inch (3") or larger lines are used beyond the meter, inspection will continue to the building. Plans are required for all fire lines and will be inspected by the City Engineering Division to the main cut off valve of the building.
For subdivision work, plans are required on all public mains.

Profile on City Mylar is required on sixteen inch (16") and larger waterlines, and water lines where pipe deviates from the four feet (4') standard and/or conflicts.

Sewer Lines: (Water Resources 336-373-2055)

Plans are required for all sanitary sewer lines six inches (6") and larger. The City's Engineering Division inspection will go to the first clean-out on lines without manholes. For sewer mains, the inspection will continue to the last manhole. Plan and profiles for public mains must be drawn on City mylar. Plan and profile for all private sewer mains is required but should not be drawn on City mylar.
Plan and profile is required on all force mains (lift stations). Public force mains must be drawn on City mylar.

Roadway: (Engineering 336-373-2052) (GDOT 336-373-2859)

Plan and profile drawn on City mylar is required for all public roadway improvements. Plan and profile is also required for private streets.
Proposed sidewalk, turn lanes, and street widening (GDOT)

Storm Sewer: (Storm Water Conveyance (336-373-4653)

Plan and profile drawn on City mylar is required for all storm sewer systems that carry public street runoff.
Private systems that tie into public structures require a storm sewer permit.

Watershed Protection: (WP) (336-373-3260)

BMP final design and calculations

The Construction Drawings Approval Process

1. Preliminary plat or site plan **approval** initiated by City or County Planning Department (*you must have this approval prior to submitting any constructions* drawings. *Construction drawings submitted prior to Technical Review Committee or Planning approval will be returned to the Engineer without being reviewed*).

2. After preliminary approval by the City, submit construction drawings to the City of Greensboro's Engineering Division (Engineering will forward plans to the reviewing Divisions and compile comments for the Design Engineer.)

3. A review set of plans with comments will be returned to Design Engineer.

4. Resubmit corrections and **all red-lines** to the Engineering Division until all comments are resolved. ("OK as-noted" comments must be addressed prior to submitting for water and sewer permits).

5. Submit to Water Resources one copy of each drawing, forms, and fees for water and/or sewer permits. (Note: for public water and sewer main extensions outside the corporate limits, a utility agreement between the owner and the City of Greensboro and an annexation petition must be recorded with the Register of Deeds prior to the utility construction plans being approved. The extension must be approved by the County Commissioners and the City Council.

6. Submit drawings for "Approval" stamping and signatures.

7. Receive drawings stamped "Approved" with applicable signatures.

8. Notify developer or contractor that the drawings are "Approved" and construction may begin.

9. Revisions, including phasing, return to step No. 2. All revisions must be "hi-lighted" on each copy every time they are resubmitted for review. A two hundred dollar revision fee must accompany this resubmittal. Also "hi-light" the copies submitted for "Re-approval" stamping and signatures. Minor revisions may be approved by the City's construction inspector in the field.

10. Once utilities are constructed and have passed inspection, the design Engineer is notified to submit "as-built" water and sewer drawings.

11. "As-built" water and sewer drawings are verified by a City Utility Inspector. Resubmit with corrections as many times as necessary until "as-built" drawings are acceptable.

12. Original mylar will be requested from Design Engineer for any public improvements. Upon receipt of this mylar, the "as-built" drawings along with the inspection slips, will be released to Water Resources.

The Construction Drawings Approval Process

13. A Water Resources representative will contact the Design Engineer for a recorded document (plat, D or G drawing or deed) showing all easements on water or sewer lines outside of public street right of way. The recorded document and the "as-built" construction drawing must match.

14. Developer may submit their request for installation of water meters to Water Resources.

15. If constructed satisfactorily, roadway, sidewalk and storm sewer systems will be accepted for maintenance by the City Roadway Inspector. BMP's will be finalized by Watershed Protection.

See the following pages for detailed information on the above items numbered 2 through 12. Contact Engineering at 336-373-2302, or Water Resources at 336-373-2055 for additional information.

SUBMITTAL OF CONSTRUCTION DRAWINGS

Four (4) sets of construction drawings must be submitted to the Engineering Division Plan Coordinator (five sets, for the first submittal, via Guilford County Planning. If project is outside City Corporate Limits) when all or any part of the following improvements are to be included:

(a) Roadway; including sidewalk, (b) Water, (c) Sanitary Sewer, (d) Storm Drainage.

If any of the above are public improvements, they must be drawn on "City of Greensboro" mylar sheets which will be computer generated to City of Greensboro mylar standards. However, no private roadway, drainage, water, or sewer will be accepted if drawn on City standard mylar sheets unless it is shown in conjunction with public items. (After "as-built" prints have been reviewed and accepted, the "as-built" mylar original must be returned for permanent filing).

All construction drawings submitted for public infrastructure or private street improvements must be signed and sealed by a professional engineer registered in North Carolina.

Do not draw any more roadway, water and sewer lines, or storm drainage systems on mylar originals than that portion which is to be constructed in the Section or Phase that is submitted for approval (show existing topography 100 feet beyond stubbed streets).

If for any reason a change occurs in the design, Section, Phase, etc. the original mylar drawing must be altered to reflect the change; i.e., if a development Section or Phase line changes, the affected street segments must be removed from or extended on the original mylar drawing.

When any drawings are submitted to the City of Greensboro, they must always be accompanied by a transmittal letter (or note) stating: 1) the project name and, 2) the reason they are being submitted (i.e., for review, for "approval stamps", revised for phasing, for as-built review, etc.). Failure to identify the project and the reason it is being submitted will cause delay in the plan review process.

REVIEW PROCESS FOR CONSTRUCTION DRAWINGS

The three (3) sets of construction drawings will be logged-in and distributed by the plans coordinator as follows: one set to Engineering Division for roadway and drainage review, and two sets to Water Resources for water / sewer review. For record keeping, Engineering's Plan Coordinator maintains a file of all projects as they are submitted to the City and returned to the Design Engineer. Engineering's goal is to review all plans and return them within five working days of receipt (plans received after 11:00 a.m. will be recorded the following business day). Water Resources will review the plans and return, with their comments, one set to Engineering. Roadway and drainage comments will be transferred to a master set of plans. Upon completion, these sets of plans will be returned to the Design Engineer with the following stamp:

CITY OF GREENSBORO
ENGINEERING DIVISION

Date Received _____ Date Returned _____

Signed/Date Design Status of Construction Drawings:

_____ 336-373-2052 Roadway ☐ OK ☐ Correct & Resubmit

_____ 336-373-2760 Drainage ☐ OK ☐ Correct & Resubmit

_____ 336-373-2055 Water ☐ OK ☐ Correct & Resubmit

_____ 336-373-2055 Sewer ☐ OK ☐ Correct & Resubmit

_____ 336-373-2859 GDOT ☐ OK ☐ Correct & Resubmit

_____ 336-373-3260 WP ☐ OK ☐ Correct & Resubmit

Comments: _____

Submit _____sets of corrected drawings for review.

At this point, Water Resources and Engineering have each retained a file copy of their specific comments. Any questions the Design Engineer has regarding these comments should be directed to the area responsible for that review.

The Design Engineer will resubmit drawings until all "Roadway", "WP", "Drainage", "Water", and "Sewer" comments have been accepted as "OK" (**always** return the red-lined drawings).

Once water and sewer have been accepted as “OK”, the Design Engineer may submit for water and sewer permit numbers. (See subsection entitled “Water and Sewer Permits”).

After all six review items on the construction drawings have been accepted as “OK”, the Design Engineer will receive a copy back with the following stamp:

> CITY OF GREENSBORO
> ENGINEERING DIVISION
>
> Submit _____ sets of drawings for “APPROVED” stamps and signatures. (This number of drawings will allow one set to be returned. Submit any additional sets that may be required by you.)

Note: *The above number of sets indicated on the stamp does not include sets required for Water and/or Sewer permits. Also, submit the above sets with the appropriate Water and/or Sewer permits. (See next section for Information pertaining to Permits).*

WATER AND SEWER PERMITS

Once water and sewer improvements are accepted as ‘OK” during the plan review process, the Design Engineer shall submit to Water Resources all required plans, applications, and fees for State Water and Sewer permits (DO NOT submit to the Engineering Division). All water main (hydrants, firelines) and sewer main (manholes) construction requires a permit.

For water permits:

One set of water line construction drawings and the water application fee must be submitted with the permit application form entitled “Application for Approval of Plans and Specifications for Water Supply System.”

For sewer permits:

One set of sewer line construction drawings and application fee must be submitted along with a “Gravity Sewer Extension” form. When a lift station is part of the project, a form must be completed entitled: “Fast Track Application for Gravity Sewer, Pump Stations & Force Mains”, this must be submitted to the State for review and approval. These forms are reproduced in the Appendix and are available from Water Resources. For assistance, the Design Engineer may call at (336) 373-2055.

Water and Sewer Application Fee Schedule (calculate water and sewer separately):

0	-	1000 Ft.	$18.00
1001	-	2000 Ft.	$31.00
2001	-	5000 Ft.	$50.00
5001 and up			$75.00
Lift Station Review			$100.00

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Once permits have been issued, copies of completed permits and receipts will be returned to the Design Engineer.

STORM SEWER SYSTEM PERMIT

Private system improvements that tie-in to an existing public storm sewer system will require the Contractor to obtain a Storm Sewer System permit prior to beginning construction. This permit is available from the Stormwater Division. The proposed improvements will be inspected prior to the work being accepted by the City. (336) 373-2760

PAVEMENT CUT PERMIT

When the construction drawings do not include public street improvements but the Contractor must cut existing pavement to make utility tie-ins, a Pavement Cut permit is required from the Engineering Division. The pavement cut repair will be inspected prior to the improvements being accepted by the City. (336) 373-2302.

PLAN REVIEW AND INSPECTION FEES

The Greensboro City Council adopted an ordinance that established plan review and inspection fees effective July 18, 2006. These fees apply to any public construction drawings that show roadway, water line, or sewer lines with manholes.

The fee must be submitted to Engineering's Plan Coordinator in the Construction Plan Review section with the drawings that are to be stamped "Approved for Construction". There will be no approval of drawings without these fees. Make check or money order payable to the City of Greensboro. *No Cash will be accepted by Engineering.*

The (actual cover sheet or approved preliminary) of the "construction drawings" must have the following schedule drawn somewhere on the sheet.

WATER _____ L.F. X $1.50 = $_____ SEWER _____ L.F. X $1.50 = $_____ RDWY_____L.F. X $1.50 = $_____ TOTAL _____ = $_____
☐ ROADWAY TO BE PRIVATELY INSPECTED
DATE FEE (S) RECEIVED BY CITY OF GREENSBORO_____

The linear footage (rounded to the nearest foot), dollar amount for each item, and total dollar amount must be provided by the Engineer.

The City of Greensboro will require the following statement to be placed on the standard cover sheet that is currently used by Planning for preliminary site approval. Starting June 1,2004 this cover sheet must be included with any plan submitted to Engineering for construction approval.

The Construction Drawings Approval Process

The following statement must be filled out and signed by the financially responsible individual or party prior to approval by Engineering.

FINANCIAL RESPONSIBILITY ACKNOWLEDGEMENT:

……..IS TO PROVIDE A ONE-YEAR WARRANTY TO GUARANTEE THE PUBLIC IMPROVEMENT FROM FAILURE DUE TO FAULTY WORKMANSHIP OR MATERIALS. ONCE THE PROJECT IS COMPLETE THIS INDIVIDUAL OR CORPORATION WILL BE REQUIRED TO SIGN A NOTARIZED AGREEMENT. UPON COMPLETION AND RETURN OF THIS AGREEMENT, THEY WILL RECEIVE A FINAL ACCEPTANCE LETTER AND THE YEAR WARRANTY WILL BEGIN. THE CITY OF GREENSBORO WILL NOT RELEASE BONDS OR ACCEPT PUBLIC INFRASTRUCTURE FOR MAINTENANCE WITHOUT A FINAL INSPECTION.

……

FINANCIALLY RESPONSIBLE INDIVIDUAL OR CORPORATION SIGNATURE

ADDRESS: ……

……

……

TELEPHONE: ……

Engineering Division. These drawings will be logged in for filing purposes and forwarded to Water Resources for stamping and signing. *If water and/or sewer permits have not been issued at this time, the drawings will be held by Water Resources until the permit process has been completed, or for thirty days, whichever comes first (after thirty days Water Resources will discard drawings. Two sets* of stamped plans will be retained by Water Resources(one for the water and sewer/ one for the Watershed Protection) for their files. The remaining sets will be forwarded to the Engineering Division for the following stamps and distribution to construction inspectors, etc.

CITY OF GREENSBORO
ENGINEERING DIVISION

APPROVED FOR CONSTRUCTION

Contact Construction Inspections @ (336) 373-2377(W/S) or (336) 373-2336(Roadway)
Before Beginning Any Work.

Signed: _____ Date: _____

WATER RESOURCES DEPARTMENT

APPROVED FOR CONSTRUCTION
CITY OF GREENSBORO

BY: _____
WATER RESOURCES ADMINISTRATION

DATE: _____

CONTACT

ENGINEERING CONSTRUCTION INSPECTIONS
(336) 373-2377 BEFORE STARTING WORK

SEWER PERMIT NO. _____

WATER PERMIT NO. _____

The Design Engineer's office will be notified that approved plans are ready to be picked up. Plans involved in the process of obtaining construction approval for water/sewer, roadway/drainage, sidewalks, turn lanes, widening, and delayed BMP designs should always be forwarded to the Engineering Division of the Engineering and Inspections Department. This Division is located on the third floor of the Melvin Municipal Office Building, 300 W. Washington Street, Greensboro, North Carolina 27402. If the Design Engineer needs to mail their plans for review, the mailing address is P.O. Box 3136, Greensboro, North Carolina 27402-3136. Plans can be returned via mail after the review is complete if the appropriate contact information is provided. The telephone number is (336) 373-2052.

Approved construction plans are valid for a period of eighteen months from the date of approval. Plans are subject to re-review and changes may be required beyond this date.

REVISIONS TO APPROVED PLANS

Any revisions (including revised phasing) made to construction plans that have been approved by the City of Greensboro Division and/or Water Resources must be resubmitted prior to approval. The Design Engineer must "hi-light" all revisions on all copies each time they are resubmitted, including copies submitted for "Approval" stamps and signatures. The Design Engineer must make any appropriate revisions to the user fee schedule. Depending on the magnitude of the revisions a maximum of two hundred dollars will be assessed each time a set of approved construction plans is revised. Make check or money order payable to: City of Greensboro.

If street or subdivision names change during the review and construction process, the Engineer shall note the changes on the plans. The new name of the subdivision/street should be shown on the plans as well as the former name. (i.e. Ash Street AKA Birch Street)

The Construction Drawings Approval Process

AS-BUILT DRAWINGS

After construction of water and sewer improvements, a City Construction Inspector will request submittal of as-built drawings. The Design Engineer's firm will be contacted and requested to send two bound sets of as-built prints to the City's Engineering Division. The Design Engineer must sign, seal and show the words "As-Built", with a date, on the drawings. Engineering is involved with the as-built process for record keeping purposes and distribution of copies only. Both sets of prints are forwarded to the Construction Inspectors for on-site inspection and verification. If the as-built drawings are incorrect, the error will be noted and returned to the Design Engineer for corrections and re-submittal. This process is repeated until the water lines have been tested and chlorinated, the valves raised and referenced, sewer lines tested and TV Inspected, and the as-built drawings have been accepted by the City Inspector.

The as-built is then forwarded to the Engineering Division with the inspector's approval report attached. The office of the Design Engineer will be contacted and requested to submit any original drawings on "City" Mylar.

When these mylars are received, they will be given a file number and forwarded along with the as-built prints and the inspector's reports to Water Resources. A Water Resources representative will contact the Design Engineer for a copy of the recorded document showing all easements for the project. Once Water Resources representative is satisfied that water and sewer line easements are in place, water meters may be requested.

FOR QUESTIONS CONCERNING:

Status of Plans, Roadway, Storm Drainage and Inspection Fees

Contact the Engineering Division at (336) 373-2052

Water, Sewer, W & S Permits, Setting Water Meters, Sewer Connection, Fire Sprinkler Mains, Tapping Sleeve & Valve, and Backflow Preventors

Contact Water Resources at (336) 373-2055

COPIES OF THE FOLLOWING DOCUMENTS ARE ATTACHED:

State of North Carolina Department of Environmental Health and Natural Resources, Division of Environmental Management, Non Discharge Permit Application, Gravity Sewer Extension

City of Greensboro, Water Resources, Application for Approval of Plans and Specifications for Water Supply System

LEFT BLANK FOR NOTES AND CONTACT INFORMATION