

WATER - SEWER - ROADWAY CHECKLIST

PROCEDURE OVERVIEW:

1. Request a Pre-Plan meeting with staff to discuss codes, service locations, etc. (Optional)
2. Submit the plans to the Permit Application Center. Use the applicable checklists below to prepare and submit three [3] sets, along with applicable fees, and all related stormwater forms. Submit water and sewer plans with applications to SCDHEC for construction permits.
 - a. Encroachment Application, if needed
 - b. Fee Schedule
 - c. Fee Schedule Site Grading
 - d. SCDHEC Notice of Intent (N.O.I.) Application
 - i. Disturbance less than one acre and not part of L.C.P. (Larger Common Plan) – Complete Sections I, II, III, IVA, and VIB. No DHEC fee is required.
 - ii. Disturbance for one or more acres or part of L.C.P. – Complete all sections. \$125 DHEC fee is required.
 - e. Stormwater Management and Erosion Control Checklist
 - f. Stormwater and Sediment Control Certification
 - g. Stormwater Management Device Permanent Maintenance Agreement
 - h. City of Rock Hill Land Disturbance Fee - \$250 per disturbed acre rounded up to next whole number. (For example: Fee for 1.3 ac. of disturbance is equal to 2 x \$250.00 = \$500.00.) Make check payable to City of Rock Hill.
 - i. Civil Site Construction Plans Checklist (if applicable)
3. Review: PAC will send notice of plan approval or disapproval generally within 14 days. You then submit:
 - a. Revised Plan [if required], and/or
 - b. Pre-Construction Checklist
4. With plan approval, submit:
 - a. Four (4) copies of approved roadway plan with cost estimates for staff to prepare the extension agreements.
 - b. Four (4) copies of approved water and sewer plan with cost estimates for staff to prepare the extension agreements.
 - c. Utility Extension Requirements Form for Water and Sewer
5. Owner/Developer and City: sign extension agreement. Right-of-way documents prepared, if required.
6. Submit 5 copies of approved Stormwater/erosion control plans for stamping and check made payable to SCDHEC for \$125.
7. The City will send Notice of Intent (NOI) package to SCDHEC and within 7 days SCDHEC will issue National Pollutant Discharge Elimination System (NPDES) Permit.
8. Schedule Preconstruction meeting (after NOI approval) and receive grading permit and permit to construct water/sewer extensions.
9. Call for required inspections. See W/S/R Checklist

USE THE APPROPRIATE CHECKLISTS ON THE FOLLOWING PAGES TO ENSURE PLANS ARE COMPLETE. See current fee schedule to Determine plan review fee and include with plan submittal. **REMEMBER:** A grading permit is required from the city of Rock Hill **prior to** clearing, grading, tree removal or any land disturbing activities.

PLAN REVIEW CHECKLIST - SEWER CONSTRUCTION PLANS

- Preliminary Plat approved (Subdivisions) _____ (date)
- Major Site Development Plan approved (if applicable) _____ (date)
- Construction Plans approved:

GENERAL:

- Plans and specifications signed and sealed by Engineer with COA seal as applicable.
- Vicinity map shown.
- Street names designated on drawings.
- North arrow and bar scale shown.
- Legend
- Benchmark [must use true elevations]

SEWER CONSTRUCTION PLANS:

- Utility conduit crossings must be shown.
- Size and material of existing sewer main(s) shown at proposed tie-in. Provide invert elevation of existing at tie in and slope of the existing main.
- Existing manholes shown.
- Sewer mains shown in center of street right-of-way or within 30 foot minimum right-of-way.
- Size and material of proposed sewer mains shown. (DI if inside SCDOT R-O-W)
- Sewer profile shown. Information shall include all invert, top of manhole, existing ground, and proposed finished ground elevations, other pipes and proposed pipe slope.
- Distance between manholes shall not exceed four hundred feet for 8" pipe. If pipe material changes 40 feet or less to nearest MH, pipe material shall continue to MH.)
- Minimum full-pipe velocity of two feet per second (0.60% for 8" pipe); maximum full-pipe velocity of ten feet per second (8.00% for 8" pipe).
- The minimum elevation drop across manhole invert shall be 0.2 feet.
- Minimum allowable cover over SDR 35", PVC is 48".
- Stone bedding shall be used for PVC sewer pipe in accordance with current City of Rock Hill Standards (No.67 stone 6" beneath pipe and 6" on each side up to the springline of the pipe).
- Ductile iron pipe shall be used where sewer main is exposed, above ground, closer to surface than four feet, deeper than 12 feet or outside the road R/W. 4 mil epoxy coated inside and out long span steel pipe shall be used at all creek crossings.
- Maximum sewer depth is 18'.
- Ductile iron pipe shall be used where sewer main crosses within 18" (vertical) of water mains or 12" of other underground pipes or conduits. Ductile iron pipe must extend at least nine feet beyond both sides of the pipes being crossed.
- Minimum vertical clearance between sanitary sewer and storm drain pipes is 12".
- Minimum vertical clearance between sanitary sewer and water pipes is 18".
- Minimum horizontal clearance between sanitary sewer and water pipes is 10 feet.
- Pipe angle(s) at manholes shall not be less than 90 degrees when measured from incoming to outgoing pipe.
- Show pipe angles at manholes, measured to the right from the downstream manhole.
- Future extension of sewer mains provided for at phase and property boundaries. Right-of-way to be provided.
- Individual sewer services shown on plans, with service sizes indicated on plan or detail sheets (services shown 5' from centerline of lot and 10 feet clear of water service). Services may be at the low point of the lot if grades dictate. Cleanouts shall be shown at street R/W line, but shall not be located where a driveway may be constructed.
- Sewer services shall connect to the main by wyes or tie to manholes at invert level.
- Schedule 40 PVC shall be used for sewer services.
- Statement that materials and plans are to comply with current City of Rock Hill Standard Specifications and Details included on plans. Specifications available at PAC or online at www.cityofrockhill.com.

PLAN REVIEW CHECKLIST - WATER CONSTRUCTION

- Preliminary Plat approved (Subdivisions) _____ (date)
- Major Site Development Plan approved. (if applicable) _____ (date)
- Construction plans approved

GENERAL:

- Plans and specifications signed and sealed by Engineer, with COA seal as applicable.
- Vicinity map shown.
- Street names designated on drawings.
- North arrow and bar scale shown.

WATER CONSTRUCTION PLANS:

- Utility conduit crossings must be shown.
- Size and material of existing water main shown.
- Stainless steel-tapping sleeve assembly and valve required on existing water main.
- Pipe sizes shown (8" mains in general, 4" mains allowed on cul-de-sacs).
- Pipe materials and pressure classes shown (C900 CL 150 PVC or PC350 ductile iron where crossing sewer/storm drain). Pressure class to be selected by Engineer for conditions (not less than pressure classes listed). DI to be used in SCDOT R-O-W.
- Minimum cover over pipes 36".
- Minimum vertical clearance between water and storm drain pipes 12" (if less than 24" clearance, use ductile iron water pipe).
- Minimum vertical clearance between water and sanitary sewer pipes 18". (Must meet Five States Standards)
- Minimum horizontal clearance between water and sanitary sewer pipes 10' (generally - no crosses).
- Water system looped where possible.
- Future extension of water mains provided for at phase or property boundaries (valved before blowoff). Right-of-way to be provided.
- Gate valves shown (two at each tee, one at end of water main to be extended in the future).
- Fire hydrant spaces as follows (hydrants Mueller Centurion II or America Darling MMK-73, painted silver by manufacturer):
 - o *Commercial and industrial:* 300' - 500'
 - o *Residential:* 500' - 800' (last FH less than 400' from furthest lot)
 - o *Apartments/Condominiums:* Farthest point of building not to be more than 500 feet from hydrant.
- Show existing fire hydrant location to proposed development shown.
- Water mains located behind curb, 2' clear of catch basins.
- Water mains shown on road profiles (especially at crossings with other utilities).
- In line reaction blocking designated at termination of water mains, tees, etc. (dimensions shown on detail page)
- Reaction blocking at all changes in direction greater than 11 1/4 degrees. (Dimensions shown on detail page)
- Blow-off assemblies or fire hydrants shown at ends of waterlines.
- Air release valves shown at significant high points.
- Install UL approved 14 gage solid copper tracer wire along all PVC pipes. Bring wire up into valve boxes and connect bared wire to valve volts for continuity.
- Water mains lying outside public street R/W shall lie in a minimum 20' wide utility easement.
- Individual water services and meters shown on plans, with service sizes indicated (services shown 5' from centerline of lot and 10' clear of sewer service). NOTE: 1 1/2" services are no longer available.
- Type K copper service pipe for 3/4", 1", and 2" water services.
- Meter box designed (3/4" - Ford YM221-233; 1" - Ford YD+L111-444; 2" cdr Systems Corp. WA02-1830-18C OR Carson Industries 1730-18-6 Super Jumbo Plastic Meter Box if in non-traffic area). Meter boxes shall not be located in driveways. Double meter boxes made by Ford will be allowed on 1" residential services.
- Statement that materials and plans are to comply with current City of Rock Hill Standard Specifications and Details included on plans. Specifications available online at www.cityofrockhill.com.
- Cross-connection Control used as applicable (per Inspection Division).
- SCDHEC Permit to Construct Received by Permit Applicant Center Permit No. _____

- Submit any SCDOT encroachment applications to the Permit Application Center for processing. The owner/developer and the City of Rock Hill are to be listed as the applicant on the encroachment form for any utility work in the ROW.

WHEN PLANS ARE APPROVED - CONTACT KEN STURGIS OR SCOTT TURNER AT 803-329-5512 TO PREPARE EXTENSION AGREEMENT AND ANY OTHER RIGHT OF WAY OR ENCROACHMENT DOCUMENTS.

ROAD DESIGN CHECKLISTS

GENERAL DESIGN

- Cul-de-sacs are less than 500' in length measured from center of turn-around to r/w of intersecting street that is not a dead-end and serve maximum of 20 lots, and:
 - o have landscape area in center,
 - o r/w radius of at least 50', paved radius of at least 40'. T-head limited to cul-de-sacs and streets shorter than 120 feet and terminate in a 20' paved section that is at least 70' wide.
 - o Limited to no more than 15% of linear road footage in residential developments and no more than 10% in non-residential developments
- Minimum intersection angle = 75 degrees.
- Sight distances required: 2 lanes = 100'/10 mph; 4 lanes = 120'/10 mph; 6 lanes = 130'/10 mph. See Table 7-100(B)(7) of the Zoning Code for additional requirements for 3 and 5 lanes.
- Sight triangles measured from intersection of r/w lines = 25' when an alley, private drive or driveway intersect a public street (See Article 7-100(I)(2) of the Zoning Code)
- Reverse curve tangents at least 100' on places and lanes, 150' on collectors. Arterials determined by SCDOT & Development Engineer.
- R/W, pavement widths, and grades comply with Article 7 of the Zoning Code.
- Centerline curve radii comply with Article 7 of the Zoning Code.
- Minimum stopping distances: residential and major collectors = 225' @ 35 mph; lower classes = 150' @ 25 mph.
- Maximum temporary dead-end street length = 350'. Temporary paved turn-around provided.
- Indicate public or private streets.
- Additional r/w is provided for existing platted streets that do not conform to minimum requirements of Zoning Code.
- All pavement markings in public ROW shall be thermoplastic.
- Location of sidewalks shown on site plan and road section.
 - o See Figure 7-100(B)(1) of the Zoning Code for locations.
 - o Sidewalk separated from back of curb by an average of 7 feet.
- Road section meets one of the following standards:(See Article 7 - Zoning Code)
 - o Collector and commercial/industrial streets - 10" aggregate base course, 2" surface asphalt course and 2" surface asphalt course.
 - o Subdivision streets - 8" aggregate base course, 1 1/2" surface asphalt course and 1 1/2" surface asphalt course.

***All proof rolls must be scheduled with a 24-hour notice.
Contact Ken Pomerantz at 803-329-5558 to schedule proof roll.***

CURB AND GUTTER

- Proof roll for curb and gutter will be conducted with a loaded tandem axle dump truck with 15 tons loaded on truck or a loaded 615 C pan or greater.
- All water and sewer lines will be tested before any proof roll is scheduled.
- All utility crossings will be placed in the roadway ROW before any proof roll is scheduled.
- The standard 50' ROW and an additional 10' behind road ROW (70' total) will be cleared and graded before any proof roll is conducted.
- No loose material allowed on top of sub grade. Sub grade shall be packed and smooth on top with no ruts, depressions or cracks in the surface.
- Sub grade shall not have any deflection in surfaces for proof roll to pass.

- A re-inspection fee of \$150.00 per trip will be charged if proof roll fails. Fees will be collected prior to any inspection. Temperature must be 35 degrees and rising "in the shade" for a minimum of 48 hours before any concrete is poured.
- A 72-hour minimum curing period is required after last section of curb is poured before any proof roll on road area is conducted. Curbs should also be properly back filled and compacted before road sub grade is proof rolled.

ROAD SUBGRADE

- Entire storm drain system must be inspected by the Infrastructure Division before road sub grade is proof rolled. Contact the Infrastructure Division at 803-329-5558 to schedule storm drain and proof roll inspections. Major corrections of storm drain system in road ROW (i.e. pipe collars in road crossings) must be corrected before any road sub grade proof roll is scheduled.
- Proof roll on road sub grade will be conducted with a loaded tandem axle dump truck with 15 tons loaded on truck. A current weight ticket will be required by the inspector.
- No loose material allowed on top of subgrade. Subgrade shall be packed and smooth on top with optimum moisture content.
- Sub grade shall not have any deflection in surfaces for proof roll to pass. All noted deflections are subject to a \$150.00 re-inspection fee.
- Temperature must be above 32 degrees "in the shade" for a minimum of 48 hours before any proof roll on road sub grade is conducted.
- A re-inspection fee of \$150.00 per trip will be charged if proof roll fails. Fees will be collected prior to any re-inspection.

STONE BASE

- Stone base shall be properly set and compacted with optimum moisture content.
- Stone base shall not have any deflection in surface for proof roll to pass. If any deflection is noted, area must be corrected and proof rolled again. All noted deflections are subject to a \$150.00 re-inspection fee.
- Temperature must be 40 degrees and rising "in the shade" for a minimum of 48 hours in order for any paving to take place.
- A re-inspection fee of \$150.00 per trip will be charged if proof roll fails. Fees will be collected prior to any re-inspection.

SIDEWALKS

- Proof rolls for sidewalks will be conducted with an unloaded tandem dump truck or a 12-G motor grader or greater.
- Sidewalks shall be a minimum of 5 feet wide and 6" thick. Sidewalks will be placed 7 feet behind curb and gutter.
- No loose material allowed on top of sub grade. Sub grade should be packed and smooth on top with optimum moisture content.
- Sub grade shall not have any deflection in surfaces for proof roll to pass. If any deflection is noted, area must be corrected and reproof rolled. All noted deflections are subject to a \$150.00 re-inspection fee.
- All contraction joints should be hand tooled at 10' minimum intervals. Expansion joint is to be placed every 100 feet.
- ADA approved handicap ramps with truncated domes are to be placed at every intersection.
- A re-inspection fee of \$150.00 per trip will be charged if proof roll fails. Fees will be collected prior to any re-inspection.

GENERAL CONDITIONS

- All proof rolls will be conducted between the hours of 8:00 a.m. and 4:00 p.m. Monday -Thursday.
- Proof roll will be redone if the project is rained on before any concrete, stone, or asphalt is installed.
- The Contractor or the Engineer of Record will schedule proof roll. The Engineer of Record or his or her representative should be present at all proof rolls.
- Undercutting unsuitable material is acceptable, using only approved compactable, suitable fill. Undercutting using extra stone as fill is not acceptable.
- Any field changes must be approved by both the Engineer of Record and the City of Rock Hill Infrastructure Division.
- If a Geotechnical/Soils Engineer is used on the project, he or she should be present at all proof rolls.

- The City of Rock Hill will have the final decision on all proof rolls.

INSTRUCTIONS: The project architect/engineer should use this form as a checklist prior to allowing a contractor to begin construction. Please make sure all submittals have been sent to the Permit Application Center.

The contractor must apply for a City Of Rock Hill Contractor's Permit to Construct and a Grading Permit before construction can begin. Also, complete the process checklist below.

Process Checklist:

- Construction plans and specifications approved by City of Rock Hill.
- Water and/or Sewer Extension Agreements submitted to City.
- Right-of-way Agreements signed and submitted to City.
- DHEC Permit to Construct for water. Expiration Date: __/__/__
- DHEC Permit to Construct for sewer. Expiration Date: __/__/__
- SCDOT Utility Encroachment permit approved and submitted to City. Expiration Date: __/__/__
- SCDOT Driveway Encroachment permit approved and submitted to City. Expiration Date: __/__/__
- Street Improvements Agreements approved by City Council.
- Railroad Encroachment permit approved and submitted to City.
- Copy of City of Rock Hill Land Development/Grading Permit. Date Issued: __/__/__
- NPDES (National Pollutant Discharge Elimination System) permit. Date Issued: __/__/__
- Special Conditions:
 - _____
 - _____
 - _____
 - _____

NOTE: AS BUILTS MUST BE RECEIVED PRIOR TO FINAL PLAT APPROVAL.

STORM DRAINAGE STRUCTURES AND EROSION CONTROL MEASURES MUST BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT.