CHAPTER 6 PLAN SUBMITTAL REQUIREMENTS

Construction Plans, As-Built Record Drawing Submittal Requirements, Certifications, and Encroachment Agreements

A. GENERAL REQUIREMENTS

Ensure the following are included:

1. Plans submitted on 24” x 36” sheets to include vicinity map, north arrow, legend, datums, sheet index, match lines, scales, existing conditions, and proposed improvements.
2. Plans and calculations sealed by registered design professional in the state of North Carolina.
3. Copies of required permits & agreements (e.g., US Army Corps of Engineers 401/404 Permit, NCDEQ Sedimentation & Erosion Control permit, NCDOT 3-Party Encroachment Agreement, NCDOT Driveway Permit, City of Kannapolis Water & Sewer Extension Permit, City of Kannapolis Utility Encroachment Agreement, Temporary Construction Easement, Impacts to/Encroachments upon Adjacent Properties).
4. For projects with intermittent and/or perennial streams, provide a copy of the NC DWQ Stream Identification Form (latest version) submitted to the NC Division of Water Resources. The report must be signed and include the certification number of the qualified individual certified to make legal determination of stream origins and identify surface waters in accordance with NCGS 143-214.25A(B) and KDO 3.8 H.(3).
5. The lowest finish floor elevations for residential structures must be a minimum of 2.0’ above the downstream road crossing elevation or 2.0’ above the calculated 100-yr flood elevation. Areas with the potential to flood during the 100-yr event shall have no basement finished floor elevation lower than the downstream catch basin rim elevation, plus 2.0’. Slab on grade residential structures must be a minimum of 1.0’ above the highest point of the downstream catch basin or yard inlet.

B. PLAN NOTES

Site Plan Sheet Notes:

1. The City of Kannapolis Land Development Standards Manual and NCDOT Standard Specifications are used for construction of the roadways, including the NCDOT SuperPave Manual.
2. Section 1018 of the NCDOT Standard Specifications will be used for the acceptance of borrow material being used for embankments backfill or other intended uses.
3. A 48-hr notice for scheduling is required for the proof roll. Adequate time will be provided for the inspector to perform grade checks on the subgrade and ABC. A proof roll will be performed prior to:
   a. Placement of curb and gutter.
   b. Placement of ABC.
   c. Placement of asphalt.
4. Aggregate Base Course shall be provided from approved sources as outlined in Section 1010 of the NCDOT Standard Specifications.
5. A Pre-Paving meeting will be required prior to any paving.
6. A NCDOT approved Job Mix Formula must be submitted for approval prior to paving.
7. Asphalt mixes and depths will adhere to the typical section for roadways approved in the construction drawings. Minimum depths unless otherwise noted will be 2 ½” of I 19.0C placed in one lift and 2” of S9.5C placed in two lifts. The first lift of S9.5C will be placed immediately on the I19.0C, and the second lift will be placed prior to acceptance of the road. Drainage will be required on the roadway during the transition of the two lifts of S9.5C.
8. A Pre-Pour meeting will be required prior to any concrete pours.
9. A NCDOT approved Mix Design must be submitted on a NCDOT form 312U prior to placing any concrete.

10. Refer to detail sheets for the proper installation requirements for storm piping using NCDOT Standard Drawing 300.01.
11. The contractor shall be required to submit a video of the storm system prior to acceptance of the system. In new subdivisions, 2 videos of the storm system shall be required. The first video is required to be performed prior to the first proof roll. The second video is required after the installation of dry utilities, but prior to acceptance of the streets by the City of Kannapolis.
12. Erosion Control Permit is required on-site during construction. NCDEQ will be inspecting the project for compliance with the erosion control plan if disturbing more than 1 ac City of Kannapolis Erosion Control Permit required for all construction disturbing less than 1 ac City will be inspecting the project for compliance with the erosion control plan.
13. The approved typical section includes a shoulder behind the curb and gutter on both sides of the roadway. The shoulder must be preserved during grading of adjacent properties.
14. Only street legal vehicles, legally loaded appropriately for the hauling vehicle, shall be used to transport construction materials on City streets.
15. Notify the City of any work being performed on the weekends. No work requiring testing or observation by the City will be permitted without written permission.
16. Noise Ordinance: 7:00am to 9:00pm – weekdays, 8:00am to 9:00pm weekends.

Utility Plan Sheet Notes:

1. All water main and sanitary sewer work shall be in accordance with the City of Kannapolis Land Development Standards Manual and standard specifications for wastewater collection and distribution for the Water and Sewer Authority of Cabarrus County (WSACC). Contractor shall always have a copy of these specifications on-site.
2. All existing water and sewer mains are owned and operated by the City of Kannapolis. The site inspector must be contacted at least 48 hrs prior to making any connection to the existing system.
3. Sanitary sewer laterals and water meter locations are approximate and are subject to relocation due to field locations. Under no circumstance will cleanouts and meters be located in driveways, sidewalks or under pavement of any type.
4. Water meters shall meet City of Kannapolis standards. Contractor is responsible for installing meter boxes and purchasing meters. Contractor shall coordinate with site inspector to have water meters delivered to the City of Kannapolis.
5. The developer will be responsible for paying applicable water and sewer connection fees before Zoning Clearance Permits are issued.
6. Contractor is fully responsible for contacting all appropriate parties assuring that utilities are located prior to commencement of construction. Call North Carolina 811 (1-800-632-4949) for utility locating services as required by law prior to commencement of any work. Contractor shall verify location and depth of all utilities prior to construction.
7. Contractor shall be responsible for sewer overflows that occur due to activities initiated by them and shall be responsible for, but not limited to, the costs associated with performing remedial work of/for environmental impacts and/or the paying of fines assessed by regulatory agencies and/or third-party claims.
8. Water & Sewer mains shall have a minimum cover of 36”.
9. Bedding for PVC sewer mains and laterals should be WSACC class B bedding.
10. Unless otherwise noted, waterlines shall be PVC C900 for 6” - 12” diameter and PVC SDR 13.5 for 2” - 4” diameter per WSACC standards.
11. Unless otherwise noted, sewer mains shall be PVC SDR 35 per WSACC standards.
12. Laterals shall have a No-Hub cap and stainless-steel No-Hub band at the clean out.
13. Ductile iron pipe shall be required for both water and sanitary sewer if the following clearances are not met:

a. Waterline crossing under sanitary sewer (for any clearance).
b. 18” vertical clearance for waterline installed above sewer line.
c. 10’ horizontal separation for waterline parallel to sewer line (or 18” vertical separation in separate ditches).
d. For waterline, 18” clearance with storm drains.
e. For waterline, 12” clearance with gas mains, telephone ducts and underground cables.
f. For sanitary sewer, 18” clearance with storm drains.
g. Regardless of pipe material, a minimum 12” separation shall be required for water and sewer between other piping.

14. Initial connection to the existing water main shall be in accordance with the City of Kannapolis detail for a temporary by-pass connection for filling new water mains. The temporary jumper connection shall be removed, and the waterline connected to the existing system only after the proposed system has been pressure tested, chlorinated, and accepted by the City of Kannapolis. No other connections will be allowed to the system until the proposed system has been accepted.
15. Notify the city of any work being performed on the weekends. No work requiring testing or observation by the city will be permitted without written permission.
16. Noise Ordinance: 7:00am to 9:00pm – Weekdays, 8:00am to 9:00pm Weekends.

C. AS-BUILT RECORD DRAWING SUBMITTAL REQUIREMENTS

Prior to final acceptance of the improvements, the project engineer shall submit 1- signed and sealed copy of the As-Built Record Drawings, 1- digital pdf file, 1- AutoCad file, and 1- ArcGIS shape file. As-Built Record Drawings shall be tied to NAD 83 horizontal datum and to the NAVD 88 vertical datum. The project engineer shall provide all certifications that are required by the state for water and sewer improvements and that are required by the City for stormwater, water quality, and embankments.
As-Built Record Drawings shall include the following:

1. **Signature and Seal of NC Licensed Professional Engineer:** see 21 NCAC 56 .1103 (c) (7) for required statement by a licensed engineer sealing the As-Built record drawings if the original design engineer is unable to seal the As-Built Record Drawings.
2. **Site Impervious Area:** verify and label the total impervious area of the site.
3. **Sanitary Sewer**
   a. Elevations: rim, invert in (including inside drop), invert out.
   b. Summary table on cover sheet showing linear footage and type of pipe installed.
   c. Changes need to be reflected in plan and profile sheets.
   d. Permanent easements shown (if applicable).
   e. Lateral cleanouts shown in plan view.
   f. Profile & cross section of all sewer easement outfalls.
4. **Water**
   a. Valve, fitting, and fire hydrany locations.
   b. Summary table on cover sheet showing linear footage and type of pipe installed.
   c. Verify minimum cover over pipe in profile view.
   d. Verify type of pipe installed.
   e. Show restrained joint pipe (if applicable).
   f. Distances between appurtenances need to be shown in plan view.
   g. Meters shown in plan view.

5. **Storm Drainage Conveyance Systems**
   a. Invert elevations (invert in and out).
   b. Rim elevations (junction boxes, gutter lines).
   c. Invert elevations on culverts (box and pipe).
   d. Flared end sections elevation.
   e. Rip rap energy dissipation apron dimensions
   f. Linear footage of piping and type of pipe installed.
   g. Topographic survey of ditches.
   h. Profile and cross section of all storm drainage easement outfalls.
   i. All dimensions shall be shown in plan and profile views.
   j. Update the pipe schedule.
   k. Revised calculations of as-built storm drainage conveyance systems with a statement from the Engineer of either in compliance or not in compliance with the approved design.
   l. Storm Drainage Conveyance System Certification.
6. **Stormwater Control Measures (SCM's)**
   a. Method used to seal joints in pipes and wall openings.
   b. Type of sand (sand filters).
   c. Biomix material composition and infiltration rate (Bioretention).
   d. Channel liner materials.
   e. Riser dimensions and elevations.
   f. Anti-floatation block dimensions.
   g. Stage storage chart for storage basins, forebays, detention areas, chambers, etc.
   h. Calculations verifying that the as-built design complies with design guidelines for the SCM and that the system provides the required detention storage and reduced runoff discharge rates.
   i. As-built topo verifying:
      i. Location and storage capacity of SCM.
      ii. Basin side slopes (interior and exterior), top of embankment widths.
      iii. Riser/spillway elevations and widths.
      iv. Location of drainage features.
      v. Location/outline of underground filter systems.
      vi. Pipe inverts, pipe size, and pipe materials.
      vii. Underdrain inverts, cleanout inverts, underdrain pipe size and materials.
      viii. Thickness of energy dissipation aprons and filters.
      ix. Orifice/weir inverts and dimensions.
      x. Bottom drain gate size/type and critical elevations (invert and top of valve stem).
   j. Planted material certifications.
   k. SCM certification.
7. **Streets**
   a. Road profile
   b. Radius points
   c. Curb elevations

D. CERTIFICATIONS

Certification forms for Stormwater As-Builts, Stormwater Control Measures, Retaining Walls, Bridges, and Embankments can be found in Appendix A.

E. ENCROACHMENT AGREEMENTS

1. Encroachments of any utilities, structures, or landscaping, including, but not limited to, driveways, pools, fences, trees, wells, reservoirs, or other obstructions, which would interfere with free, easy, and clear access to utilities on any easement, are prohibited. However, certain utilities, structures, filling, or grading may be permitted upon execution of an express Encroachment Agreement. The City of Kannapolis may authorize an Encroachment Agreement, but only after review and approval of detailed plans.
2. In the event the City authorizes an Encroachment Agreement, obtaining the encroachment shall require the following:
    a. A list of appurtenances being requested to encroach into the easement.
    b. Provide a map of the encroachments with:
        i. Site plan/map showing location of easements with the encroaching items (buildings, parking, utilities, etc.).
        ii. Plat or deed book and page number that has the property and/or easement.
3. The Director of Engineering may impose additional and reasonable conditions upon the granting of any encroachment.
4. For Right-of-Way Extension/Service Permit, see Appendix A.