

# City of Hickory

## Commercial Plan Review Requirements

The City of Hickory has developed this document to guide developers and design professionals through the requirements for building plan submittal. For construction of new commercial and multi-family buildings six (6) complete sets of construction plans are required. If Environmental Health approval is needed, seven (7) complete sets of plans will be required. These plans must have appropriate design professional seals and signatures. All applications and plans must be submitted to the Permit Center on the second floor of Hickory City Hall (76 North Center Street Hickory NC 28601).

This document is meant to give a general overview of the requirements for building plan submittal; however, since these requirements vary, the city encourages applicants to contact the city before submitting plans to discuss requirements and procedures. Some projects must obtain City Council or Planning Commission approval, a process that will involve public hearings. The following agencies review plans for commercial and multi-family projects. In some cases approvals from other agencies (county, state and federal) are required.

**Planning and Development:** This division reviews plans for compliance with the city's Land Development Code and other applicable regulations. The basic requirements are found in this document. For more information please call (828) 323-7422. A zoning compliance permit is required for all new construction and when existing buildings change occupancy classification. For more information please contact the Permit Center at (828) 323-7410 or visit <https://www.hickorync.gov/permit-center>.

**Fire & Life Safety:** This division reviews plans for their compliance with the NC fire and building codes. The division also reviews applications for sprinkler and fire alarm systems. The basic requirements are found below. For more information please contact the Hickory Fire & Life Safety Division at (828) 323-7522 or visit <https://www.hickorync.gov/fire-life-safety>.

**Engineering:** This division reviews plans to ensure compliance with the city's Manual of Practice street design, curb, gutter, and sidewalk requirements. The division also reviews for compliance with stormwater requirements. For more information you may contact the Engineering Division at (828) 323-7416 or visit <https://www.hickorync.gov/engineering>.

**Public Utilities:** This division handles new water or sewer services or additions to the existing systems. There may be requirements for water and sewer service applications to be approved for new construction or additions to existing systems. The Public Utilities Division will request information from and inform you of any fees. Fees are required to be paid before taps are scheduled. For more information please contact the Public Utilities Division at (828) 323-7427 or visit <https://www.hickorync.gov/public-utilities>.

**Catawba County Building Services:** In 2003, Catawba County took over responsibility for building inspections in the City of Hickory. Catawba County reviews all construction plans to ensure compliance with the North Carolina State Building Code. For your convenience, Catawba County Building Services has a Skype portal at Hickory City Hall. You may also visit their office in Newton. For more information please contact the Building Services Division at (828) 465-8399 or visit <http://www.catawbacountync.gov/building/>.

A listing of each agency's requirements is included in this document. It is important to note that these lists are meant to make it easier for developers and designers to see the information that is required with plans. This information does not replace the Land Development Code, NC State Building Code, NC State Fire Code, Manual of Practice, or any other applicable document. Some items in the checklist will not apply to all projects. This checklist is not a required to be submitted, but should be reviewed and used as a guideline prior to plan submittal.

# OFFICE OF BUSINESS DEVELOPMENT: DIVISION OF PLANNING AND DEVELOPMENT

## Site Plan Requirements

This list is meant to serve as a guide for development in the City of Hickory. Depending on a property's zoning district or applicable overlay district, certain projects may require additional information and approvals. The Land Development Code (LDC) can be downloaded at <https://www.hickorync.gov/land-development-code>.

### 1.0 General Information

- 1.1 \_\_\_\_\_ Scale measurable using an architect's or engineer's scale
- 1.2 \_\_\_\_\_ North arrow
- 1.3 \_\_\_\_\_ Name and contact information of owner, designer, and developer
- 1.4 \_\_\_\_\_ Date of plan
- 1.5 \_\_\_\_\_ Lot dimensions and calculated acreage
- 1.6 \_\_\_\_\_ List all easements located on the property
- 1.7 \_\_\_\_\_ Indicate all special flood hazard areas on the site
- 1.8 \_\_\_\_\_ Total amount of land to be disturbed (Land disturbances less than one acre require a grading permit issued by the City of Hickory Engineering Division. Land disturbances greater than one acre require Erosion Control permit issued by Catawba County)
- 1.9 \_\_\_\_\_ Existing and proposed uses of subject property and adjacent properties
- 1.10 \_\_\_\_\_ Zoning district of site and adjacent properties
- 1.11 \_\_\_\_\_ Floor area ratio (FAR) calculation (LDC Article 7)
- 1.12 \_\_\_\_\_ Denote applicable overlay districts and/or watershed designations (LDC Article 4)
- 1.13 \_\_\_\_\_ Denote if designated as a Local Historic Property (a Certificate of Appropriateness must be issued for all external changes to buildings) (LDC Article 4)

### 2.0 Site Information

- 2.1 \_\_\_\_\_ Indicate required setbacks and actual setbacks for existing and proposed buildings (LDC Article 7)
- 2.2 \_\_\_\_\_ Indicate natural areas, if existing (wooded areas, wetlands, etc.)
- 2.3 \_\_\_\_\_ Indicate driveways and pedestrian access points to site (new or modified driveway locations on NCDOT maintained roadways require an NCDOT driveway permit)
- 2.4 \_\_\_\_\_ Imperviousness (The plan must show all existing and proposed impervious surfaces along with the percentage imperviousness for the existing and proposed conditions.)
- 2.5 \_\_\_\_\_ Indicate type, location, and height of all free standing and wall mounted light fixtures (LDC Article 9)
- 2.6 \_\_\_\_\_ Indicate all existing and proposed sidewalks (LDC Articles 3 and/or 8)
- 2.7 \_\_\_\_\_ Other requirements as designated by zoning district or overlay (LDC Articles 3 and 4)

### 3.0 Parking, Loading, and Service Areas

- 3.1 \_\_\_\_\_ Indicate the number of off-street parking spaces required and proposed (LDC Article 9)
- 3.2 \_\_\_\_\_ Indicate the locations and dimensions of all proposed parking spaces (on-street parking will also be reviewed by NCDOT and/or the City of Hickory Traffic) (LDC Article 9)
- 3.3 \_\_\_\_\_ Show all loading and storage areas (LDC Article 9)

### 4.0 Landscape and Buffering Information

- 4.1 \_\_\_\_\_ Indicate the location, type, size, and quantity of existing plant materials to be preserved and location of tree protection fencing (LDC Article 9)
- 4.2 \_\_\_\_\_ Show the location of all overhead and underground utilities (existing and proposed)
- 4.3 \_\_\_\_\_ Indicate the location and a description of all landscape improvements, including all perimeter landscape areas and perimeter/interior parking lot landscaping (LDC Article 9)
- 4.4 \_\_\_\_\_ Include a table of all plants used with botanical and common name, quantity, and size (at time of planting and full growth) of all proposed landscape material (LDC Article 9 and MOP Section

700)

- 4.5 \_\_\_\_\_ Indicate the location of all other landscape improvements including berms, walls, fences, courtyards, lights, and paved areas
- 4.6 \_\_\_\_\_ Show required open space, and all streams, wetlands, and associated setback buffers

**5.0 Building Information**

- 5.1 \_\_\_\_\_ Show locations and square footage of all existing and proposed buildings on the site
- 5.2 \_\_\_\_\_ Indicate all building heights (LDC Article 7)
- 5.3 \_\_\_\_\_ Indicate all building entrances
- 5.4 \_\_\_\_\_ Indicate building construction materials (LDC Article 3)
- 5.5 \_\_\_\_\_ Indicate building elevation drawings with required glass, recesses, transition lines, etc. (LDC Article 3)
- 5.6 \_\_\_\_\_ Indicate all ground, roof, and wall mounted mechanical equipment. Illustrate all screening and label screening materials used. (LDC Articles 3 and 9)
- 5.7 \_\_\_\_\_ Indicate location of all solid waste storage areas. Illustrate screening and label screening materials used. Areas for roll-out containers, dumpsters, and compactors all require screening from public view. (LDC Article 9 and MOP Section 800)
- 5.8 \_\_\_\_\_ Indicate location of all open storage areas. Illustrate screening and label materials used (LDC Articles 6 and 9)

**Notes to appear on all plans:**

- 1. All new utility distribution and service lines for the development are to be placed underground (LDC Article 9)
- 2. All signage will be approved through separate permits (LDC Article 10)

## HICKORY FIRE DEPARTMENT: DIVISION OF FIRE & LIFE SAFETY

### Commercial Building Plan Review Submittal Requirements

The following information is required to be included with a commercial building's construction plans. Not every project will require the same amount and type of information, however, the more information that is provided with the plans, the less likelihood that additional information will be needed during the plan review process, which could cause a delay in the plan review process. If some of the information is not needed or unavailable, it is important that you call and discuss the circumstances before submitting your plans. If you have any questions or would like to schedule a pre-application meeting, please call (828) 323-7522. For projects including fire hydrants, underground water mains, or underground water line (run-in) for the sprinkler system it is important that you also contact the City of Hickory Public Utilities division for additional information they may require. They can be reached at (828) 323-7500.

#### 1.0 Fire Hydrants and Underground Water Supply Lines

- 1.1 \_\_\_\_\_ Proposed location of on-site fire hydrants.
- 1.2 \_\_\_\_\_ Location of existing fire hydrants within 500 feet travel distance (as fire apparatus would lay hose) of the building.
- 1.3 \_\_\_\_\_ Location of the underground water line (run-in) for automatic sprinkler system. Include point of connection from the City's water main to where the sprinkler system riser will be located.

#### 2.0 Automatic Sprinkler System

- 2.1 \_\_\_\_\_ Location of the fire department connection for the sprinkler or standpipe system.
- 2.2 \_\_\_\_\_ If the design professional is submitting information about the design of the automatic sprinkler system (other than Appendix B information) then a Sprinkler/Standpipe System Specification Sheet needs to be completed.

#### 3.0 Hazardous Materials

- 3.1 \_\_\_\_\_ Provide a summary sheet of hazardous materials that will be handled, stored, or used in the building. Information on the summary sheet shall include the name, quantities, and hazard classification of the different materials. Must also include the Material Safety Data Sheet for each material.
- 3.2 \_\_\_\_\_ The location and square footage of the area(s) in the building where the hazardous materials will be located.

#### 4.0 High-piled Combustible Storage

- 4.1 \_\_\_\_\_ All high-piled combustible storage areas must be identified. This includes the storage of combustible materials greater than 12 feet in height, or the storage of plastic, rubber, idle pallets, or similar products greater than 6 feet in height.
- 4.2 \_\_\_\_\_ The location and square footage of the high-piled storage area(s), classification of the commodities to be stored, storage height of the commodities, and method of storage must be shown on the plans.

#### 5.0 Fire Alarm System

- 5.1 \_\_\_\_\_ If fire alarm plans are being submitted with the building's construction plans then at a minimum they shall include the system layout, device locations, wiring riser diagram, and system description. System description shall include a summary of the type of system to be installed, detailed operating sequence of the system, and a general detail of the different products to be installed.

#### 6.0 Plans for Grading Permits

- 6.1 \_\_\_\_\_ The information that is needed to be included on plans being submitted for a grading permit is dependent upon several factors and therefore it is recommended that you contact the plans

reviewer for the Hickory Fire Department Division of Fire & Life Safety before submitting the plans. Some examples of the factors are if the submitted plans for the grading permit are for erosion control only. Another example is when a set of construction plans submitted for building permits have been disapproved and you then decide to switch over to a grading permit so you can begin the site work while revising the construction plans for a building permit.

**PUBLIC SERVICES DEPARTMENT: DIVISION OF PUBLIC UTILITIES**  
**Requirements for Extension and Addition to Hickory Water and Sewer Systems**

The following checklist outlines the City of Hickory requirements for extension of and addition to Hickory Water and/or Sewer Systems. This checklist acts as an agreement between the developer and the City of Hickory to state that the developer understands and agrees with these requirements.

Please find the following listing detailing the requirements for each phase of the project from design to construction and finally acceptance. All phases of the project will require the involvement of a professional engineer retained by the developer. Before any application, the engineer shall review the requirements of the City of Hickory Manual of Practice. It is available online at

**1.0 Planning and Design**

- 1.1 \_\_\_\_\_ Verify water and sewer facilities exist and capable of serving project
- 1.2 \_\_\_\_\_ Engineer schedules meeting with Public Utilities Department to introduce project and obtain design criteria.
- 1.3 \_\_\_\_\_ Engineer responsible for explaining project size, development phases and project coordination
- 1.4 \_\_\_\_\_ Engineer produces detailed plans and specifications for review by Public Utilities Department
- 1.5 \_\_\_\_\_ Sewer plans must show:
  - 1.5.1 \_\_\_\_\_ Plan view established from official Benchmark tied to MSL.
  - 1.5.2 \_\_\_\_\_ Profile view established from official Benchmark tied to MSL.
  - 1.5.3 \_\_\_\_\_ Type and class of material
  - 1.5.4 \_\_\_\_\_ Size of line
  - 1.5.5 \_\_\_\_\_ Slope of line
  - 1.5.6 \_\_\_\_\_ Ground and surface elevation
  - 1.5.7 \_\_\_\_\_ Existing utilities
  - 1.5.8 \_\_\_\_\_ Service connection locations
  - 1.5.9 \_\_\_\_\_ Proposed easement widths, (25' minimum)
  - 1.5.10 \_\_\_\_\_ Creek crossing details
  - 1.5.11 \_\_\_\_\_ Scale
  - 1.5.12 \_\_\_\_\_ Trench type
  - 1.5.13 \_\_\_\_\_ Manholes to have minimum of 0.2-inch fall through invert
  - 1.5.14 \_\_\_\_\_ Rubber boot seals
  - 1.5.15 \_\_\_\_\_ Butyl seal for manhole pieces and ring and lid
  - 1.5.16 \_\_\_\_\_ Pump station details (if applicable)
  - 1.5.17 \_\_\_\_\_ Grease traps with calculations
  - 1.5.18 \_\_\_\_\_ Other requirements on case by case basis.
  - 1.5.19 \_\_\_\_\_
- 1.6 \_\_\_\_\_ Water Plans must show:
  - 1.6.1 \_\_\_\_\_ Plan view established from official Benchmark tied to MSL.
  - 1.6.2 \_\_\_\_\_ Profile view established from official Benchmark tied to MSL.
  - 1.6.3 \_\_\_\_\_ Beginning tap location
  - 1.6.4 \_\_\_\_\_ Type and class of material
  - 1.6.5 \_\_\_\_\_ Existing utilities
  - 1.6.6 \_\_\_\_\_ Valve locations
  - 1.6.7 \_\_\_\_\_ Fire hydrant locations
  - 1.6.8 \_\_\_\_\_ Service connection locations
  - 1.6.9 \_\_\_\_\_ Proposed easement widths, (25' minimum),
  - 1.6.10 \_\_\_\_\_ Scale

- 1.6.11 \_\_\_\_\_ City of Hickory Public Utilities Standard Details (Manual of Practice).
- 1.6.12 \_\_\_\_\_ Backflow assembly and enclosure
- 1.6.13 \_\_\_\_\_ Other requirements on case by case basis.
- 1.7 \_\_\_\_\_ Engineer responsible for correcting plans as requested by Public Utilities Department.
- 1.8 \_\_\_\_\_ Resubmittal of corrected plans and specifications for review.
- 1.9 \_\_\_\_\_ With approved plans, engineer requests flow acceptance letter and/or capacity availability letter.
- 1.10 \_\_\_\_\_ Engineer responsible for preparing appropriate local, state and federal permits, (NCDENR, PWS, NDPU, SEC, Army Corps, etc., Pretreatment, NC DOT, etc.) once completely filled out the engineer shall provide originals to Public Utilities Department for execution by appropriate city official.
- 1.11 \_\_\_\_\_ Once form is executed it will be returned to engineer for submittal to appropriate agency.  
\_\_\_\_\_ Owner is responsible for paying all permit fees for submittal to appropriate authority having jurisdiction.
- 1.12 \_\_\_\_\_ Owner responsible for obtaining or surrendering any and all easements required to complete project.
- 1.13 \_\_\_\_\_ Engineer shall submit the required number of applications, plans, specifications and fees to permitting authority for approval.
- 1.14 \_\_\_\_\_ Engineer and/or Owner responsible for responding to all questions or requests for information required issuing permit.
- 1.15 \_\_\_\_\_ Hickory Public Utilities Department will receive permit when issued and will notify engineer and/or Owner or Engineer/Owner shall provide to Public Utilities Department.

## 2.0 Preconstruction

- 2.1 \_\_\_\_\_ Upon all permits being issued, engineer shall provide complete package to Hickory Public Utilities Department and Owner.
- 2.2 \_\_\_\_\_ Proposed Contractor shall be approved by Hickory Public Utilities Director prior to construction beginning.
- 2.3 \_\_\_\_\_ Proposed Utility Contractor shall provide Hickory Public Utilities with copy of current NC Utility License and Bond for project.
- 2.4 \_\_\_\_\_ Contractor and Engineer shall schedule pre-construction conference with Public Utilities Department prior to starting any construction.
- 2.5 \_\_\_\_\_ Engineer shall provide at pre-construction conference the Contractor and Public Utilities Department an identical set of approved plans and specifications.
- 2.6 \_\_\_\_\_ Engineer to provide Contractor with permits, encroachments and easements required to complete project at pre-construction conference.

## 3.0 Construction

- 3.1 \_\_\_\_\_ Contractor to call Engineer and Hickory Public Utilities Department prior to scheduling start date.
- 3.2 \_\_\_\_\_ Hickory Public Utilities Department shall be contacted for making taps onto the existing system. Tap fees shall be paid before taps will be made.
- 3.3 \_\_\_\_\_ Hickory Public Utilities Department shall be allowed to randomly inspect construction.
- 3.4 \_\_\_\_\_ No water fittings shall be buried without Hickory Public Utilities Department verifying installation and sufficient blocking.
- 3.5 \_\_\_\_\_ Concrete deadman restraints shall be installed in a manner and frequency as requested by Public Utilities Inspectors.
- 3.6 \_\_\_\_\_ Changes to the approved plans shall be approved by the Engineer and Hickory Public Utilities Department.
- 3.7 \_\_\_\_\_ Hickory Public Utilities Department shall be able to stop construction immediately upon noticing deficiencies. Construction shall not proceed until the Engineer notifies Hickory Public Utilities Department that deficiencies are corrected.
- 3.8 \_\_\_\_\_ All construction shall be to City of Hickory Public Utilities Department standards and

specifications.

- 3.9 \_\_\_\_\_ A punch list/final inspection shall be performed by Hickory Public Utilities Department and Engineer prior to contractor demobilizing, and all items shall be corrected or resolved in a timely manner.

#### 4.0 Approval and Acceptance

- 4.1 \_\_\_\_\_ All construction shall be complete, including landscaping and final inspection punch list items approved.
- 4.2 \_\_\_\_\_ Water pressure test and bacteria test shall be successfully completed with Engineer and Hickory Public Utilities Department present. Bacteria test shall be performed by a state approved laboratory and results provided to Hickory Public Utilities Department.
- 4.3 \_\_\_\_\_ Sanitary sewer air pressure test, mandrel test and leakage test for manholes shall be successfully completed with Engineer and Hickory Public Utilities Department present.
- 4.4 \_\_\_\_\_ Record drawings from the Engineer documenting actual installed conditions and locations shall be produced by the Engineer and reviewed by Hickory Public Utilities Department.
- 4.5 \_\_\_\_\_ With approved record drawings, the Engineer shall complete engineer's certification and applicant's certification and submit to the permitting authority that construction is complete and in compliance with approved plans and specifications. A copy of this certification shall be delivered to Hickory Public Utilities Department.
- 4.6 \_\_\_\_\_ Owner shall supply minimum of one (1) year warranty to Hickory Public Utilities Department, in writing, beginning at the completion of above step in this section.
- 4.7 \_\_\_\_\_ With completion of all previous points, the system shall be deemed approved.
- 4.8 \_\_\_\_\_ Payment of calculated tap fees to City of Hickory will activate any and all service connections paid for.
- 4.9 \_\_\_\_\_ Water and sewer taps for a respective structure must be paid at same time.

All the above points shall be followed and are agreed upon as requirements for connection to the City of Hickory water and/or sewer systems. If at any time, any item is not agreeable to the Owner/Engineer of this project then this agreement shall become null and void and this project shall not be accepted by City of Hickory Public Utilities Department for addition to the water or sewer systems for maintenance.



## **PUBLIC SERVICES DEPARTMENT: DIVISION OF ENGINEERING**

For more information or to set up a pre-application meeting, please call (828) 323-7416. Before any application is submitted, the project engineer shall review the requirements of the City of Hickory Manual of Practice (MOP). It is available online at <https://www.hickorync.gov/engineering>.

### **1.0 General**

- 1.1 \_\_\_\_\_ Note referencing City of Hickory Manual of Practice with detail I.D. referenced
- 1.2 \_\_\_\_\_ Encroachment documents for irrigation systems, decorative pavers, landscaping, lighting, etc.
- 1.3 \_\_\_\_\_ Property boundaries
- 1.4 \_\_\_\_\_ Engineering seal

### **2.0 Site Grading and Erosion Control**

- 2.1 \_\_\_\_\_ All disturbed areas shown
- 2.2 \_\_\_\_\_ All erosion / sedimentation control structures
- 2.3 \_\_\_\_\_ Erosion / sedimentation control approval letter from appropriate authority if disturbed areas is 1.0 acre or more.
- 2.4 \_\_\_\_\_ Existing contours at 2' increments resolved with existing grades
- 2.5 \_\_\_\_\_ Off-site drainage delineated and conveyed through site
- 2.6 \_\_\_\_\_ Temporary construction entrance

### **3.0 Streets (Public Only)**

- 3.1 \_\_\_\_\_ Plan
- 3.2 \_\_\_\_\_ Profile with horizontal centerline data
- 3.3 \_\_\_\_\_ Catch basin / junction box sizes
- 3.4 \_\_\_\_\_ Typical street cross section
- 3.5 \_\_\_\_\_ Details in accord with Manual of Practice
- 3.6 \_\_\_\_\_ 5' sidewalk width
- 3.7 \_\_\_\_\_ NCDOT driveway permit, if required
- 3.8 \_\_\_\_\_ Sight triangles

### **4.0 Curb and Gutter & Drainage (Public Only)**

- 4.1 \_\_\_\_\_ Construction details
- 4.2 \_\_\_\_\_ Drainage calculations for valley curb
- 4.3 \_\_\_\_\_ Location, size, invert and rim/grate elevations and pipe material for existing and proposed storm drains on and immediately adjacent to the site.
- 4.4 \_\_\_\_\_ Accessible ramps at all street intersections
- 4.5 \_\_\_\_\_ Storm Pipes
- 4.6 \_\_\_\_\_ Stormwater collected minimum of 10' behind the property line
- 4.7 \_\_\_\_\_ 2500 ft<sup>2</sup> maximum drainage to street per stormwater inlet
- 4.8 \_\_\_\_\_ Storm pipes > 10' from buildings
- 4.9 \_\_\_\_\_ Manhole and inlet spacing  $\leq$  300' (< 60" pipes)
- 4.10 \_\_\_\_\_ Inlet drainage basins; plans and calculations agree
- 4.11 \_\_\_\_\_ Velocity  $\leq$  2.5 ft/s
- 4.12 \_\_\_\_\_ Cover meets DOT min depth of Class IV pipe (HDPE min cover 2')
- 4.13 \_\_\_\_\_ Inlets above 10-year flood level
- 4.14 \_\_\_\_\_ Inverts above normal pond level
- 4.15 \_\_\_\_\_ Energy dissipaters designed for 10-year storm
- 4.16 \_\_\_\_\_ Headwalls or flared end sections at inlets and outlets
- 4.17 \_\_\_\_\_ Easements shown for public drainage across private property
- 4.18 \_\_\_\_\_ Open Channels

- 4.19 \_\_\_\_\_ Property drains to channel
- 4.20 \_\_\_\_\_ Watershed; plans and calculations agree
- 4.21 \_\_\_\_\_ Channel dimensions: plans and calculations agree
- 4.22 \_\_\_\_\_ 10-year storm design
- 4.23 \_\_\_\_\_ 100-year storm analysis
- 4.24 \_\_\_\_\_ Side slopes  $\leq$  1:3
- 4.25 \_\_\_\_\_ Lining installed in all open channels
- 4.26 \_\_\_\_\_ Lining specification meets or exceeds maximum velocity

## Stormwater Requirements

### 1.0 Development Data Block

- 1.1 \_\_\_\_\_ Name of property owner (s)
- 1.2 \_\_\_\_\_ Name, address, and phone number of contact person
- 1.3 \_\_\_\_\_ PIN number(s) of property being developed
- 1.4 \_\_\_\_\_ Size of property in acres
- 1.5 \_\_\_\_\_ Amount of impervious area in acres (predevelopment)
- 1.6 \_\_\_\_\_ % of area that is impervious (predevelopment)
- 1.7 \_\_\_\_\_ Amount of impervious area in acres (post development)
- 1.8 \_\_\_\_\_ % of area that is impervious (post development)
- 1.9 \_\_\_\_\_ Are Phase II requirements applicable?
- 1.10 \_\_\_\_\_ Are WSWS IV requirements applicable?
- 1.11 \_\_\_\_\_ Are WSWS III requirements applicable?
- 1.12 \_\_\_\_\_ Are HRC-O District requirements applicable?

### 2.0 Stormwater Plan

- 2.1 \_\_\_\_\_ Provide North arrow
- 2.2 \_\_\_\_\_ Include a 4"X4" vicinity map at a maximum scale of 1"=1000'
- 2.3 \_\_\_\_\_ Include a graphic scale for the plan
- 2.4 \_\_\_\_\_ Show all existing and proposed boundaries with dimensions (show entire property)
- 2.5 \_\_\_\_\_ PIN number(s) of adjacent properties
- 2.6 \_\_\_\_\_ Show existing and proposed topographical contours (5ft. increments or less), elevation labels must be provided for contours at 25 ft. intervals (contour information must be developed from actual field topographic survey, A copy of the sealed topographic survey will be required.)
- 2.7 \_\_\_\_\_ Depict and label all existing and proposed retaining walls, if applicable.
- 2.8 \_\_\_\_\_ Depict and indicate all existing and proposed stormwater drainage structures, if applicable
  - 2.8.1 \_\_\_\_\_ The type of structure must be indicated
  - 2.8.2 \_\_\_\_\_ All structures must be labeled with a structure ID
  - 2.8.3 \_\_\_\_\_ Invert elevations must be indicated for all pipes, orifices, weirs, and openings in the structure
  - 2.8.4 \_\_\_\_\_ The elevation of the top of the structure must be indicated
  - 2.8.5 \_\_\_\_\_ The appropriate standard installation detail must be referenced
- 2.9 \_\_\_\_\_ Depict and indicate all existing and proposed stormwater drainage pipes, if applicable
  - 2.9.1 \_\_\_\_\_ The material type of pipe must be indicated
  - 2.9.2 \_\_\_\_\_ All pipes must be labeled with a pipe ID
  - 2.9.3 \_\_\_\_\_ The length, size and slope of all pipes must be indicated
  - 2.9.4 \_\_\_\_\_ The appropriate standard installation detail must be referenced
- 2.10 \_\_\_\_\_ Depict and label all existing and proposed **stormwater conveyance ditches**, if applicable
  - 2.10.1 \_\_\_\_\_ All ditch sections must be labeled with a ditch ID
  - 2.10.2 \_\_\_\_\_ Indicate the % slope of all ditch sections
  - 2.10.3 \_\_\_\_\_ Provide ditch cross-sections, indicating ditch depth, top and bottom widths and side slopes

- 2.10.4 \_\_\_\_\_ Indicate type and installation requirements for in ditch erosion protection, such as riprap, geo-blankets, etc.
- 2.11 \_\_\_\_\_ Depict and indicate all existing and proposed **detention/retention basins**, underground storage systems and all other SCM's, if applicable
  - 2.11.1 \_\_\_\_\_ All basins must be labeled with a basin ID
  - 2.11.2 \_\_\_\_\_ Dimension basins
  - 2.11.3 \_\_\_\_\_ Indicate basin volume
  - 2.11.4 \_\_\_\_\_ For above ground basins, show basin contours
  - 2.11.5 \_\_\_\_\_ Provide specific basin cross-sections and information, which indicates all pertinent design information
- 2.12 \_\_\_\_\_ Depict and indicate all existing and proposed stormwater control structures, if applicable
  - 2.12.1 \_\_\_\_\_ All structures must be labeled with a structure ID
  - 2.12.2 \_\_\_\_\_ Provide a specific control structure detail with dimensions, which indicates all pertinent design information
- 2.13 \_\_\_\_\_ Provide profiles for stormwater drainage system, if applicable profiles must include the following
  - 2.13.1 \_\_\_\_\_ Stormwater structures and pipes with all information as indicated above
  - 2.13.2 \_\_\_\_\_ All crossings with other existing and proposed underground utilities, with separation distances indicated
  - 2.13.3 \_\_\_\_\_ Proposed and finished grades
- 2.14 \_\_\_\_\_ Depict and label all stormwater dispersion devices
- 2.15 \_\_\_\_\_ Depict and Indicate all water courses and water bodies
- 2.16 \_\_\_\_\_ Show and label all existing and proposed structures and improved areas
- 2.17 \_\_\_\_\_ Show and label all flood zones, if applicable
- 2.18 \_\_\_\_\_ Depict and indicate all existing and proposed utilities
- 2.19 \_\_\_\_\_ Show existing and proposed easements; label and dimension
- 2.20 \_\_\_\_\_ Depict all adjacent streets and indicate name and width
- 2.21 \_\_\_\_\_ Show and dimension all rights-of-way
- 2.22 \_\_\_\_\_ Provide all pertinent stormwater notes and details

### 3.0 Additional Required Items:

- 3.1 \_\_\_\_\_ For pipes and ditches; capacity and velocity calculations must be submitted. Calculations must bear design professional seal and signature
- 3.2 \_\_\_\_\_ For basins and control structures; pre and post development runoff calculations must be submitted. Storage volumes, inflow and out flow calculations must be submitted. Calculations must bear design professional seal and signature.
- 3.3 \_\_\_\_\_ All stormwater SCM designs must be in accordance with the requirements of the Land Development Code, Phase II Stormwater Ordinance, NCDEQ's BMP Manual, NCDEQ's Stormwater Design Manual, and the State of North Carolina Administrative Code.
- 3.4 \_\_\_\_\_ For outlets, provide calculations for dispersion devices
- 3.5 \_\_\_\_\_ For inlets on public streets, provide stormwater spread calculations
- 3.6 \_\_\_\_\_ Copy of approval letter for erosion and sedimentation control plan must be provided.
- 3.7 \_\_\_\_\_ All provisions for permits, bonds, operation and maintenance agreements, and easements must be met in accordance with the requirements of the Land Development Code, Phase II Stormwater Ordinance, Phase II Administrative Manual, NCDEQ's BMP Manual, NCDEQ's Stormwater Design Manual, and the State of North Carolina Administrative Code.

### Notes to Appear on Plans

1. The owner shall schedule a pre-construction conference with the City of Hickory Engineering Division before any work begins. The owner shall notify the City of Hickory Engineering Division ((828) 323-7416) at least seven (7) calendar days prior to commencing any work on the site. Failure to provide required notice shall result in the owner's responsibility to uncover any prior below-grade work for visual inspection by the Engineering Division.

(Place on cover sheet in all CAPS)

2. Coordinate all curb and street grades in intersection with Inspector
3. All road improvements are to be coordinated with the City of Hickory Engineering Department prior to construction.
4. Developer shall provide street signs per CLDSM# 50.05 (9" signs only)
5. Sight triangles shown are the minimum required
6. In rolling and hilly terrains, sweeping of the stone base and/or application of a tack coat may be required near intersections. These requirements shall be established by the Inspector and based on field conditions
7. Approval of this plan is not an authorization to grade adjacent properties. When field conditions warrant off-site grading, permission must be obtained in writing from the affected property owners.
8. In order to ensure proper drainage, keep a minimum of 0.5% slope on the curb.
9. Subsurface drainage facilities may be required in the street right-of-way if deemed necessary by the inspector.
10. Curb and gutter shown on plans may be adjusted based upon field staking by City Engineering. Associated storm drainage may also require modification based upon field conditions.
11. The purpose of the storm drainage easement (SDE) is to provide storm water conveyance. Buildings are not permitted in the easement area. Any other objects which impede storm water flow or system maintenance are also prohibited.
12. High density polyethylene (HDPE) storm drainage pipe installed within existing or proposed public street Right-of-way must be approved by the City Inspector prior to any backfill being placed. Backfill material must be approved by the City Inspector prior to placement of the material within the public street right-of-way.
13. The developer shall maintain each stream, creek, or backwash channel in an unobstructed state and shall remove from the channel and banks of the stream all debris, logs, timber, junk, and other accumulations.
14. Any building within the 100+1 Stormwater Elevation Line is subject to the restrictions of the City of Hickory Subdivision Ordinance.
15. Any construction or use within the Future Conditions Flood Fringe Line is subject to the restrictions imposed by the Floodway Regulations of the City of Hickory and Catawba County.
16. PE sealed shop drawings for retaining wall must be submitted to Building Inspections prior to construction.
17. "As-built" drawings and plans for the storm drainage system, including designed ditches, must be submitted prior to subdivision final inspection to the City Engineering Department in accordance with the City Subdivision Ordinance.
18. Prior to installation, PE sealed shop drawings for underground detention systems must be furnished to City of Hickory Engineering Department for approval.
19. Prior to CO, PE sealed as-built drawings of stormwater detention systems must be provided along with a certification.
20. Prior to CO for projects requiring stormwater detention systems, an easement, plat, operation agreement, and security must be completed and recorded.
21. Non-standard items (i.e.: pavers, irrigation systems, etc.) in the right-of-way require a Right-of Way Encroachment Agreement with the North Carolina Department of Transportation before installation.
22. Prior to plat recordation, Offsite R/W and/or construction easements are required to be obtained according to the guidelines of the "Offsite R/W Acquisition Process". The required R/W and construction limits are clearly shown on the roadway improvements plan.

## CATAWBA COUNTY BUILDING SERVICES

### Plan Submittal requirements for Commercial Projects

Listed below are the basic items required for a commercial plan review for compliance with the North Carolina State Building Code, this list is by no means exhaustive. Plan review could be delayed if any of the required items or information is missing. Please note that these are the minimum requirements for COMMERCIAL PLANS including those that do not require a design professional (per Section 204.3.5, NC Administrative Code and Policies {NCAC&P}.) Additional drawings, plans or information may be required. Please note that the designer, or permit applicant will be the points of contact during the review process. Not all jobs will require all of the following. If you have any questions, please call (828) 465-8399.

1. \_\_\_\_\_ A **completed** Catawba County Plan Review Application. The application must be legible in order to input the correct information and contact data.
2. \_\_\_\_\_ Approvals from other agencies (city, county, state) as may be required.
3. \_\_\_\_\_ Plan approval from the NCDOT Engineering Division per Table 104.1 of the 2018 NCAC&P. (if applicable)
4. \_\_\_\_\_ Correct number of bound set of paper plans as required by the jurisdiction in which your project is located.
5. \_\_\_\_\_ Plans submitted for review, in order to be approved, must be finalized drawings "For Construction".
6. \_\_\_\_\_ At a minimum, all plans must comply with the requirements of Section 106.2 of the 2018 NCAC&P. Completed 2018 Appendix B. Complete means no line left unaddressed, may indicate N/A if necessary. Incomplete or Incorrect Appendix B will not be accepted for review. Must be an exact replica, no modifications. (2018 NCAC&P 106.3.1)
7. \_\_\_\_\_ Plans must be drawn to scale with sufficient detail to fully indicate the nature and scope of the work to be permitted. Drawings must be legible. The minimum size sheet is 11"x17".
8. \_\_\_\_\_ Provide sealed, signed, and dated plans as required by Section 204.3.5 of the 2018 NCAC&P.
9. \_\_\_\_\_ If plans are not required to be sealed by a NC Registered Design Professional, per 2018 NCAC&P 106.2.1- "All information, drawings, specifications and accompanying data shall bear the name, address, and signature of the person responsible for the design."
10. \_\_\_\_\_ For new buildings and additions, the site plans must be included in the plans. Show all parking, accessible parking and access aisles, accessible parking signage details, walkways, accessible egress, distances to property lines and other structures on the same lot, utility locations, existing and proposed grades, curb openings, landings, ramps, retaining walls, etc.
11. \_\_\_\_\_ All construction within a flood hazard area must be clearly shown and designed per the NC Building Code.
12. \_\_\_\_\_ Include footing/foundation/slab plans with details and dimensions.
13. \_\_\_\_\_ Provide structural plans and details as needed (columns, girders, joists, rafters, beams, headers, lintels, connection details, etc.)
14. \_\_\_\_\_ If the building being constructed is a pre-engineered metal building, submit same number sets of the metal building plans or a letter of certification sealed, signed, and dated from the designer with your project plans.
15. \_\_\_\_\_ Review Chapter 17 of the NC State Building Code for Special Inspection requirements. If your building falls into one of the categories of Section 1705.1.1 – 1705.1.3, special inspections and testing will be required. Provide a schedule of special inspections in Appendix B and on the structural drawings, along with a completed Special Inspections Application (CatawbaCountyNC.gov – County Services – Building Codes & Services – Plan Review)
16. \_\_\_\_\_ Provide elevation drawings with dimensions.
17. \_\_\_\_\_ For all buildings provide a floor and life safety plan, with all required information listed on the Appendix B "Life Safety Plan Requirement's." Identify all fire resistance rated assemblies. Show the calculated occupant load, width, and travel distances for all means of egress including doors, stairways, corridors, exit discharge, etc. for each floor.
18. \_\_\_\_\_ Provide floor plans of each floor with dimensions and showing room names and uses.
19. \_\_\_\_\_ Provide wall sections for each type of interior and exterior wall being constructed. Clearly designate

- existing walls from new wall or demolished walls.
20. \_\_\_\_\_ If the work involves only a portion of the building, provide an overall plan of the building showing the area of work and the use and occupancy classification of the remaining space(s).
  21. \_\_\_\_\_ Provide designs and details for all fire resistance rated assemblies. Include designs and details for protection of penetrations, copied in completion onto plans.
  22. \_\_\_\_\_ Reflected ceiling plan layout and details.
  23. \_\_\_\_\_ Roof plan layout and details.
  24. \_\_\_\_\_ Show how Chapter 11 “Accessibility” of the NC Building Code is being met with regard to accessible route, accessible entrance, accessible exits, areas of refuge, toilet rooms, shower rooms, break rooms, reception areas, cashier and customer service counters, elevated platforms, etc. Detail how the requirements of Chapter 11 of the NCBC are being met using ICC A117.1-09. Include a statement of disproportionality if doing alteration to an area of primary function.
  25. \_\_\_\_\_ Provide door, including hardware, and window schedule.
  26. \_\_\_\_\_ Provide complete stairway/ramp details. (riser, tread, guard, handrail, landing)
  27. \_\_\_\_\_ If appropriate show all hazardous locations and submit data on the type and quantities of hazardous materials being stored, processed, manufactured, or used in the building.
  28. \_\_\_\_\_ Electrical: complete plans for proposed work and any demo of existing system, one-line diagram of service/feeder riser, panel schedule, load calculations, fault current data, location of service(s), conductor type and size, conduit size, trough size, power and lighting plans, location of any hazardous locations. For PV installations include a three-line diagram and specification sheets for new equipment including but not limited to Modules, Inverters, Combiners, etc.
  29. \_\_\_\_\_ Plumbing: location of water service entry, sewer or septic tank connection, Fixture count calculations based on occupant load, toilet stall dimensions, length and width, Isometric riser/venting diagram, trap primers as required, clear floor spaces (accessibility), fixture elevations with heights and width dimensions (accessibility), drinking fountains, service sinks, water heaters, materials of water and sewer piping.
  30. \_\_\_\_\_ Mechanical: dryer vent length, fire damper location with proper rating for assembly penetrated, clearly list rated assemblies on plans, outside air/ventilation calculations, Correct UL assembly details on plans, detailed plans for Type 1 hoods and related ductwork as applicable, gas piping diagrams (total BTUs on system, piping material, system pressure, location of regulators, distances of piping), louver and fan locations, ductwork, duct detector locations, air distribution devices indicating locations and cfm for fresh air, supply, return, and exhaust, permanent roof access on buildings > 16’, location all HVAC equipment, provide detailed schedule of all HAVC equipment.

Links and other helpful information may be found on our webpage. [catawbacountync.gov](http://catawbacountync.gov) – County Services – Building Code & Services – Plan Review

Enforceable Codes as of document’s last update: 2018 editions of NC Building, NC Residential, NC Existing Building Code, NC Energy Conservation, NC Plumbing, NC Mechanical, and NC Fuel Gas, NC Law and Administrative Policies, 2017 NEC with NC amendments, and ICC A117.1-09 (Accessibility).