

City of Hickory Commercial Plan Review Requirements

This document gives a general overview of the requirements for building plan submittal; however, since these requirements vary, the City encourages applicants to contact staff 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.

For construction of new commercial and multi-family buildings, six (6) complete sets of construction plans are required. All applications and plans must be submitted to the Permit Center on the second floor of City Hall. These plans must have appropriate seals and signatures of architects and engineers. If Health Department approval is needed, seven (7) complete sets of plans will be required. The following agencies review plans for commercial and multi-family projects. In some cases approvals from other agencies (county, state and federal) are required, which may increase the need for additional plan sets.

Planning and Development: (828) 323-7422 or visit <https://www.hickorync.gov/planning-and-development>.

Fire & Life Safety: (828) 323-7522 or visit <http://www.hickorync.gov/content/fire-life-safety>.

Engineering: (828) 323-7416 or visit <http://www.hickorync.gov/content/engineering>.

Public Utilities: (828) 323-7427 or visit <http://www.hickorync.gov/content/public-utilities>.

Catawba County Building Services: (828) 465-8399 or visit <http://www.catawbacountync.gov/building/>.

A listing of each agency's requirements is included in this document. These requirements constitute what a "complete" set of plans typically include. 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** required to be submitted, but should be reviewed and used as a guideline prior to plan submittal to help reduce resubmittals.

GENERAL PLAN REQUIREMENTS

In addition to the Unified Permit Application, the following requirements should be included on **all** plans as applicable:

- Written and graphic scale measurable using an architect's or engineer's scale
- North arrow
- Name and contact information of property owner, designer, and developer
- Date of plan
- Property boundaries, lot dimensions and calculated acreage
- List all easements located on the property
- North Carolina Professional Engineer's seal
- PIN of property being developed
- Vicinity Map (Maximum 1"=1000')

PLANNING AND DEVELOPMENT

Site Plan Requirements

Depending on a property's zoning district or applicable overlay district, certain projects may require additional information. The Land Development Code can be downloaded at <http://www.hickorync.gov/content/land-use-planning>.

General Information

- Indicate all special flood hazard areas on the site
- Existing and proposed uses of subject property
- Zoning district of site and adjacent properties
- Floor area ratio calculation
- Denote applicable overlay districts or watershed designations
- Denote if located within a Local Historic District
- Indicate regulated watershed

Site Information

- Indicate required setbacks and actual setbacks for existing and proposed buildings
- Indicate natural areas, if existing (wooded areas, wetlands, etc.)
- Indicate driveways and pedestrian access points to site
- Indicate type, location, and height of all free standing and wall mounted exterior light fixtures
- Indicate all existing and proposed sidewalks
- Other requirements as designated by zoning district or overlay

Parking, Loading, and Service Areas

- Indicate the number of off-street parking spaces required and proposed
- Indicate the locations and dimensions of all proposed parking spaces
- Show all loading and storage areas

Landscape and Buffering Information

- Indicate the location, type, size, and quantity of existing plant materials to be preserved and location of tree protection fencing
- Show the location of all overhead and underground utilities (existing and proposed)
- Indicate the location and a description of all landscape improvements, including all perimeter landscape areas and perimeter/interior parking lot landscaping
- 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.
- Indicate the location of all other landscape improvements including berms, walls, fences, courtyards, lights, and paved areas.
- Show required open space, and all streams, wetlands, and associated setback buffers

Building Information

- Show locations and square footage of all existing and proposed buildings on the site
- Indicate all building entrances
- Indicate building construction materials
- Indicate all building heights

- Indicate building elevation drawings with required glass, recesses, transition lines, etc.
- Indicate location of all solid waste storage areas. Illustrate screening and label screening materials used
- Indicate all ground, roof, and wall mounted mechanical equipment. Illustrate all screening and label screening materials used.
- Indicate location of all open storage areas. Illustrate screening and label materials used

Notes to appear on applicable plans:

- “All signage will be approved through separate permits.”*

HICKORY FIRE DEPARTMENT: DIVISION OF FIRE & LIFE SAFETY

Commercial Building Plan Review Submittal Requirements

If some of the below 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 at (828) 323-7500.

Fire Hydrants and Underground Water Supply Lines

- Proposed location of on-site fire hydrants.
- Location of existing fire hydrants within 400 feet for commercial buildings or 600 feet for 1 and 2 family dwellings, as fire apparatus would lay hose.
- 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.

Automatic Sprinkler System

- Location of the fire department connection for the sprinkler or standpipe system.
- 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.

Hazardous Materials

- Summary sheet of hazardous materials that will be handled, stored, or used in the building. Must include the name, quantities, and hazard classification of the different materials. Must also include the Material Safety Data Sheet for each material.
- The location and square footage of the area(s) in the building where the hazardous materials will be located.

High-piled Combustible Storage

- All high-piled combustible storage areas must be identified. 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.
- 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.

Fire Alarm System

- 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. Fire alarm plans submittal shall be engineer signed and sealed.

Plans for Grading Permits

- Information required on plans being submitted for a grading permit is dependent upon several factors. It is recommended that you contact the plans reviewer for the Hickory Fire Department Division of Fire & Life Safety before submitting plans. Some examples of the factors are: if the submitted plans are for erosion control only, when a set of construction plans submitted for building permits have been disapproved and the applicants chooses to seek a grading permit to begin the site work while revising the construction plans for a building permit, etc.

PUBLIC SERVICES DEPARTMENT: DIVISION OF PUBLIC UTILITIES

Requirements for Extension and Addition to Hickory Water and Sewer Systems

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, available online at <http://www.hickorync.gov/content/engineering>.

Planning and Design

- Verify water and sewer facilities exist and capable of serving project
- Engineer schedules meeting with Public Utilities Department to introduce project and obtain design criteria.

Sewer plans must show:

- Plan view established from official Benchmark tied to MSL.
- Profile view established from official Benchmark tied to MSL.
- Location and method of connecting to existing sewer system (Core, Doghouse, etc.)
- Type and class of material
- Size of line
- Slope of line
- Ground and surface elevation
- Existing utilities
- Service connection locations
- Proposed easement widths, (25' minimum)
- Call out separations between utilities on profile views.
- Creek crossing details
- Scale
- Installation Method
- Manholes (minimum of 0.2 feet of fall through invert)
- Pump station details (if applicable)
- Grease traps with calculations
- Other requirements on case by case basis.
- City of Hickory Public Utilities Standard Details (Manual of Practice)

Water Plans must show:

- Plan view established from official Benchmark tied to MSL.
- Profile view established from official Benchmark tied to MSL.
- Beginning tap location
- Type and class of material
- Existing utilities
- Valve locations
- Fire hydrant locations
- Service connection locations
- Proposed easement widths, (25' minimum),
- Engineer is responsible for preparing appropriate local, state and federal permits, (NCDEQ, PWS, NDPU, SEC, Army Corps, NC DOT, etc.). Once completely filled out the engineer shall provide originals to Public Utilities Department for execution by appropriate city official.
- 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.
- Scale
- City of Hickory Public Utilities Standard Details (Manual of Practice).
- Backflow assembly and enclosure
- Other requirements on case by case basis. Call out separations between utilities on profile views.
- Engineer responsible for correcting plans as requested by Public Utilities Department.
- With approved plans, engineer requests flow acceptance letter and/or capacity availability letter.

PUBLIC SERVICES DEPARTMENT: DIVISION OF ENGINEERING

For more information, please call (828) 323-7416. Before any application is submitted, the engineer shall review the requirements of the City of Hickory Manual of Practice, available online at <http://www.hickorync.gov/content/engineering>.

General

- Note referencing City of Hickory Manual of Practice with detail I.D. referenced
- Encroachment documents for irrigation systems, decorative pavers, landscaping, lighting, etc.

Site Grading and Erosion Control

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

Curb and Gutter & Drainage (Public Only)

- Construction details
- Drainage calculations for valley curb
- Accessible ramps at all street intersections
- Storm Pipes
- Stormwater collected minimum of 10' behind the property line

- 2500 ft² maximum drainage to street per stormwater inlet
- Storm pipes > 10' from buildings
- Manhole and inlet spacing < 300' (< 60" pipes)
- Inlet drainage basins; plans and calculations agree
- Velocity < 2.5 ft/s
- Cover meets DOT min depth of Class IV pipe (HDPE min cover 2')
- Inlets above 10-year flood level
- Inverts above normal pond level
- Energy dissipaters designed for 10-year storm
- Headwalls or flared end sections at inlets and outlets
- Easements shown for public drainage across private property

Stormwater Requirements

Development Data Block

- Amount of impervious area in acres (predevelopment)
- % of area that is impervious (predevelopment)
- Amount of impervious area in acres (post development)

Stormwater Plan

- PIN number(s) of adjacent properties
- Show and dimension all rights-of-way
- 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.)
- Depict and label all existing and proposed retaining walls, if applicable.

- Open Channels
- Property drains to channel
- Watershed; plans and calculations agree
- Channel dimensions: plans and calculations agree
- 10-year storm design
- 100-year storm analysis
- Side slopes < 1:3
- Lining installed in all open channels
- Lining specification meets or exceeds maximum velocity
- Location, size, invert and rim/grate elevations and pipe material for existing and proposed storm drains on and immediately adjacent to the site.

- % of area that is impervious (post development)
- Are Phase II requirements applicable?
- Are WSWS IV requirements applicable?
- Are WSWS III requirements applicable?
- Are HRC-O District requirements applicable?

- Depict and indicate all existing and proposed stormwater drainage structures, if applicable
 - The type of structure must be indicated
 - All structures must be labeled with a structure ID
 - Invert elevations must be indicated for all pipes, orifices, weirs, and openings in the structure
 - The elevation of the top of the structure must be indicated

- The appropriate standard installation detail must be referenced
- Depict and indicate all existing and proposed stormwater drainage pipes, if applicable
 - The material type of pipe must be indicated
 - All pipes must be labeled with a pipe ID
 - The length, size and slope of all pipes must be indicated
 - The appropriate standard installation detail must be referenced
- Depict and label all existing and proposed **stormwater conveyance ditches**, if applicable
 - All ditch sections must be labeled with a ditch ID
 - Indicate the % slope of all ditch sections
 - Provide ditch cross-sections, indicating ditch depth, top and bottom widths and side slopes
 - Indicate type and installation requirements for in ditch erosion protection, such as riprap, geo-blankets, etc.
- Depict and indicate all existing and proposed **detention/retention basins**, underground storage systems and all other BMP's, if applicable.
 - All basins must be labeled with a basin ID
 - Dimension basins
 - Indicate basin volume
 - For above ground basins, show basin contours
- Provide specific basin cross-sections and information, which indicates all pertinent design information
- Depict and indicate all existing and proposed stormwater control structures, if applicable
 - All structures must be labeled with a structure ID
 - Provide a specific control structure detail with dimensions, which indicates all pertinent design information
- Provide profiles for stormwater drainage system, if applicable. Must include:
 - Stormwater structures and pipes with all information as indicated above
 - All crossings with other existing and proposed underground utilities, with separation distances indicated
 - Proposed and finished grades
- Depict and label all stormwater dispersion devices
- Depict and Indicate all water courses and water bodies
- Show and label all existing and proposed structures and improved areas
- Show and label all flood zones, if applicable
- Depict and indicate all existing and proposed utilities
- Show existing and proposed easements; label and dimension
- Depict all adjacent streets and indicate name and width
- Provide all pertinent stormwater notes and detail

Additional Required Items:

- For pipes and ditches; capacity and velocity calculations must be submitted. Calculations must bear design professional seal and signature

- 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.
- All stormwater BMP designs must be in accordance with the requirements of the Land Development Code, Phase II Stormwater Ordinance, NCDEQ, DWQ's BMP Manual, and the State of North Carolina Administrative Code.
- For outlets, provide calculations for dispersion devices
- For inlets on public streets, provide stormwater spread calculations
- Copy of approval letter for erosion and sedimentation control plan must be provided.
- 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, DWQ's BMP Manual and the State of North Carolina Administrative Code.

Notes to Appear on Plans:

- *"Prior to CO, PE sealed as-built drawings of underground detention systems must be provided along with a certification."*
- *"Prior to installation, PE sealed shop drawings for underground detention systems must be furnished to City of Hickory Engineering Division for approval."*
- *"Coordinate all curb and street grades in intersection with Inspector."*
- *"In order to ensure proper drainage, keep a minimum of 0.5% slope on the curb."*
- *"Subsurface drainage facilities may be required in the street right-of-way in deemed necessary by the inspector."*
- *"All road improvements are to be coordinated with the City of Hickory Engineering Division prior to construction."*
- *"Developer shall provide street signs per CLDSM# 50.05" (9" signs only)*
- *"Sight triangles shown are the minimum required."*
- *"PE sealed shop drawings for retaining wall must be submitted to Building Inspections prior to construction."*
- *"Any building within the 100+1 Stormwater Elevation Line is subject to the restrictions of the City of Hickory Subdivision Ordinance."*
- *"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."*
- *"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."*
- *"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."*

- *“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.”*
- *“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.”*
- *“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.”*
- *“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.”*
- *““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 Division in accordance with the City Subdivision Ordinance.”*
- *“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.”*
- *“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.”*
- *“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 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)

PUBLIC SERVICES DEPARTMENT: DIVISION OF TRAFFIC

For more information, please call (828) 323-7500. Before any application is submitted, the engineer shall review the requirements of the City of Hickory Manual of Practice, available online at <http://www.hickorync.gov/content/engineering>.

General

- All parking must be in accordance to Manual of practice and ADA requirements
- Sign posts minimum 7ft from bottom of sign to top of grade
- TIA requirements match NCDOT requirements

Streets (Public Only)

- Profile with horizontal centerline data
- 5’ sidewalk width
- Catch basin / junction box sizes
- NCDOT driveway permit, if required
- Typical street cross section
- Sight triangles
- Details in accord with Manual of Practice

CATAWBA COUNTY BUILDING SERVICES

Plan Submittal requirements for Commercial Projects

This list *does not* include requirements for Environmental Health, Erosion Control, and Site Drainage & Detention from any jurisdiction within Catawba County. All sheets in the set must be stapled together in the order below to form a complete set.

- A completed Catawba County Plan Review Application. The application must be legible in order to input the correct information and contact data.
- Plan approval from the NCDOI Engineering Division per Table 104.1 of the 2018 NCAC&P. (if applicable)
- Plans submitted for review, in order to be approved, must be finalized drawings "For Construction".
- 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)
- 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".
- Provide sealed, signed, and dated plans as required by Section 204.3.5 of the 2018 NCAC&P.
- Provide door, including hardware, and window schedule.
- Provide floor plans of each floor with dimensions and showing room names and uses.
- Reflected ceiling plan layout and details.
- Roof plan layout and details.
- All construction within a flood hazard area must be clearly shown and designed per the NC Building Code.
- Include footing/foundation/slab plans with details and dimensions.
- 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."
- 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.
- Provide elevation drawings with dimensions.
- Provide complete stairway/ramp details. (riser, tread, guard, handrail, landing)
- Provide structural plans and details as needed (columns, girders, joists, rafters, beams, headers, lintels, connection details, etc.)
- 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.
- Provide designs and details for all fire resistance rated assemblies. Include designs and details for protection of penetrations, copied in completion onto plans.

- 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)
- 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.
- 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).
- 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.
- 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.
- 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.
- 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.
- Provide wall sections for each type of interior and exterior wall being constructed. Clearly designate existing walls from new wall or demolished walls.
- 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 Btu’s 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