Chapter 16. DEVELOPMENT PLAN REQUIREMENTS

16.1 Purpose and Intent

This Chapter describes the information required for all development activity to ensure compliance with the standards found in this Ordinance. The submission of a complete application in accordance with this Chapter is necessary prior to the scheduling of any review by the Administrator, Technical Review Committee, Land Use Review Board, Tree Board, and/or Town Council.

16.2 Environmental Survey

Identification of existing trees, understory vegetation, known endangered species, habitats, wetlands, perennial streams, floodplains, topographical features and historic resources on a site prior to the advanced preparation of development plans enables the reasonable and practical planned preservation of existing and environmentally sensitive areas. This requirement provides the Town and the applicant the ability to evaluate the proposed development in order to preserve vegetation, to improve the appearance of the proposed development, to encourage the use of the existing forest and tree canopy, specimen trees and significant vegetation, and to encourage the preservation of cultural resources. An environmental survey is intended to identify historic buildings, areas and landscapes; to identify forest stands or trees of a uniform size and species; specimen trees of varying sizes and species, particularly free standing or open-grown or field grown trees; a distinctive tree line or forest edge; existing watercourses and previously documented endangered species' habitats.

A. The use of digital geographic data obtained from the Town of Knightdale or Wake County is deemed to be sufficient for the Sketch Plan and Master Plan phases of submittal requirements.

B. For Construction Documents, the Environmental Survey requirements are as follows:

1. Provide a general written description of the significant vegetation. Significant vegetation is defined as being 12 inches in diameter at breast height (DBH) or greater and native understory species two (2) inches or greater (e.g. dogwood, holly, redbud, etc.). For specimens and tree stands, identify the species or general species composition, the general size and height, the average spacing (in tree stands) and the overall health and vigor of the tree(s).

2. Denote the dripline of any existing forest stand, as measured between existing tree trunks 6 inches or greater located at the edge of the stand.

3. Identify all free standing, open grown or field-grown specimen trees located on the site 12" or greater DBH.

4. Denote the presence of any historic resources identified for preservation under Section 7.6.

5. Show all other important natural features influencing site design such as the location of wetlands, rock outcroppings, site topography at two foot contour intervals, slopes steeper than 15%, and perennial streams, natural drainage ways, lakes, and other water bodies, and floodplains indicating both the flood fringe and the flood way. USGS and FEMA data shall be used to determine the location of perennial streams unless stream data determination has already been obtained from the Division of Water Quality or from a licensed engineering firm.

6. Denote the presence of any known endangered species' habitats indicated in any surveys completed by Wake County, the State of North Carolina, or other governmental agency.

7. Show all buffer delineations as follows:

a. Buffer boundaries including all undisturbed buffer zones must be clearly delineated on all Development Plans for approval by the Town, on all Construction Documents, including grading and clearing plans, erosion and sediment control plans, and site plans.

b. Buffer boundaries for all required undisturbed buffer zones must be clearly delineated on-site prior to any land disturbing activities. Where existing trees are to be preserved in a buffer zone, limits of grading shall maintain a minimum 20-foot separation from the base of each tree on the upland side of the buffer or to the dripline.

c. Buffer boundaries including all buffer zones as well as all buffer requirements must be specified on the record plat, on individual deeds, and in property association documents for lands held in common.

C. This requirement can be waived by the Administrator if the site lacks qualifying natural features.

16.3 Floodplain Development Permit Requirements

In addition to the Environmental Survey, floodplain development plans shall be required when applying for a Floodplain Development Permit. All plans shall be submitted at a scale not less than 1 inch = 50 feet unless otherwise authorized by the Administrator. Application for a Floodplain Development Permit shall be made to the floodplain administrator on forms furnished by him or her prior to any development activities proposed to be located within flood prone areas. The following items/information shall be presented to the floodplain administrator to apply for a floodplain development permit:

A. A plot plan drawn to scale which shall include, but shall not be limited to, the following specific details of the proposed floodplain development:

1. The nature, location, dimensions, and elevations of the area of development/disturbance; existing and proposed structures, the location of utility systems, proposed grading/pavement areas, fill materials, storage areas, drainage facilities, and other proposed development;

2. The boundary of the Special Flood Hazard Area as delineated on the FIRM or other flood map as determined in Section 6.5.C.1 or a statement that the entire lot is within the Special Flood Hazard Area;

3. Flood zone(s) designation of the proposed development area as determined on the FIRM or other flood map as determined in Section 6.5.C.1;

4. The boundary of the floodway(s) or non-encroachment area(s) as determined in Section 6.5.C.1;

5. The Base Flood Elevation (BFE) where provided as set forth in Section 6.5.C.1; or 6.5.E. subsections 3.e, 4, and 5;

6. The old and new location of any watercourse that will be altered or relocated as a result of proposed development;

7. Preparation of the plot plan for the original development of property by or under the direct supervision of a registered land surveyor or professional engineer and certified by same. Additions to an existing structure such as a deck are exempt.

B. Proposed elevation, and method thereof, of all development within a Special Flood Hazard Area including but not limited to:

1. Elevation in relation to mean sea level of the proposed reference level (including basement) of all structures;

2. Elevation in relation to mean sea level to which any non-residential structure will be flood-proofed;

3. Elevation in relation to mean sea level to which any proposed utility systems will be elevated or floodproofed;

C. If flood proofing, a flood proofing certificate and back-up plans from a registered professional engineer or architect certifying that the non-residential flood-proofed development will meet the flood-proofing criteria in 6.5.E, Subsection 3.b. and Subsection 5.

D. A Foundation Plan drawn to scale, which shall include details of the proposed foundation system to ensure all provisions of this ordinance are met. These details include but are not limited to:

1. Proposed method of elevation, if applicable (i.e., fill, solid foundation perimeter wall, solid backfilled foundation, open foundation on columns/piers);

2. Should solid foundation perimeter walls be used in floodplains, details of sufficient openings to facilitate the unimpeded movements of floodwaters in accordance with 6.5.E, Subsection 3.d.;

E. Usage details of any enclosed space below the regulatory flood protection elevation.

F. Plans and/or details for the protection of public utilities and facilities such as sewer, gas, electrical, and water systems to be located and constructed to minimize flood damage;

G. If floodplain development permit is issued for placement of Recreational Vehicles and/or Temporary Structures, documentation to ensure Section 6.5.E(3)f. and g. of this code is met.

H. If a watercourse is proposed to be altered and/or relocated, a description of the extent of watercourse alteration or relocation; an engineering report on the effects of the proposed project on the flood-carrying capacity of the watercourse and the effects to properties located both upstream and downstream; and a map (if not shown on plot plan) showing the location of the proposed watercourse alteration or relocation.

16.4 Sketch Plan Requirements

In addition to information on the Environmental Survey, the Sketch Plan shall show in simple sketch form the proposed layout of streets, lots, buildings, public open spaces and other features in relation to existing conditions based upon the size of the tract proposed for development. All plans shall be submitted at a scale not less than 1 inch = 50 feet unless otherwise authorized by the Administrator. It shall also include the following information:

A. A sketch vicinity map, including north arrow, showing the location of the subdivision or site in relation to neighboring tracts, subdivisions, roads, and waterways.

B. The name, address, and telephone number of the property owner.

C. The name of the proposed subdivision.

D. The boundary lines of the property.

E. The total acreage.

F. The existing and proposed land uses and the existing land uses of adjacent properties.

G. The existing topographic and planimetric conditions of the property including contours not exceeding five (5) foot intervals. Wake County or Town of Knightdale topographic information may be used to fulfill this requirement. All existing conditions are to be documented out to a radius of 300 feet around the subject subdivision or site.

H. The location, names, and right-of-way width of any existing streets on or within 300 feet of the land to be subdivided.

I. Lots of adjacent developed or platted properties.

J. Zoning classification of the land and adjacent properties.

K. Illustrative building elevations denoting general design elements and materials.

L. Watershed classification, if any.

The size and number of completed applications shall be set by the Administrator.

16.5 Master Plan Requirements

The Master Plan shall be drawn to the following specifications and must contain or be accompanied by the information listed below. All plans shall be submitted at a scale not less than 1 inch = 50 feet unless otherwise authorized by the Administrator. No processing or review of a Master Plan will proceed without all of the following information:

A. The boundary, as determined by survey, of the area to be developed with all bearings and distances shown and the location within the area, or contiguous to it, of any existing streets, railroad lines, perennial streams, wetlands, easements or other significant features of the tract.

B. Scale denoted both graphically and numerically with north arrow.

C. A vicinity map at a scale no smaller than 1 inch equals 1,200 feet showing the location of the subdivision with respect to adjacent streets and properties.

D. The location of proposed buildings, parking and loading areas, streets, alleys, easements, lots, parks or other open spaces, site reservations (i.e. school sites), property lines and building setback lines with street dimensions, tentative lot dimensions, and the location of any building restriction areas (i.e. flood hazard areas, buffer locations, watershed protection districts, and/or jurisdictional wetlands). Site calculations shall include total acreage of tract, acreage in parks and other non-residential uses, total number and acreage of parcels, and the total number of housing units.

E. Calculations for required and proposed recreational open space.

F. The proposed name of the development, street names, the owner's name and address, the names of adjoining subdivisions or property owners, the name of the Township, county, and state in which the development is located, the date of plan preparation, and the zoning classification of the tract to be developed, and of adjoining properties.

G. Corporate limits and extra-territorial jurisdiction boundaries (where applicable).

H. Typical cross-sections of proposed streets. Where a proposed street is an extension of an existing street, the profile of the street shall include 300 feet of the existing roadway, with a cross section of the existing street. Where a proposed street within the development abuts a tract of land that adjoins the development and where said street may be expected to extend into said adjoining tract of land, the profile shall be extended to include 300 feet of the said adjoining tract.

I. The proposed limits of construction for all proposed development activity.

J. A timetable for estimated project completion for each phase proposed.

K. Original contours at intervals of not greater than 2 feet for the entire area to be subdivided and extending into adjoining property for a distance of 300 feet at all points where street rights-of-way connect to the adjoining property and 50 feet at all other points of common project boundaries. Wake County or Town of Knightdale digital topography may be used to satisfy this requirement but should be field-verified to ensure accuracy. This requirement may be waived for developments smaller than one (1) acre or where insufficient topographic changes warrant such information.

L. 2-D utility plan showing location of sanitary sewer lines, water distribution lines, storm sewer lines, manholes, clean-outs, fire hydrants, fire lines, valves, underground private utilities, backflow prevention devices showing make and model, meters and pipe sizes. If applicable, also show well and septic locations, force mains and pump stations.

M. Supplemental Plans as applicable:

1. **Landscape Plan** in accordance with Section 16.8
2. **Lighting Plan** in accordance with Section 16.9
3. **Signs & Markings Plan** in accordance with Section 16.10
4. **Architectural Plans** in accordance with Section 16.11
5. **Traffic Impact Analysis** (if required) in accordance with Section 16.12
6. **Stormwater Management Plan** in accordance with Section 16.13

In addition to the above required information, the following additional information may be required by the Administrator, the Land Use Review Board, or the Town Council on a discretionary site-specific basis:

N. Environmental Impact Statement, pursuant to Article 113A of the North Carolina General Statutes, if: the development exceeds 2 acres in area, and; if the Land Use Review Board deems it necessary due to the nature of the land or peculiarities in the proposed design.

O. Development Permit and Certification application with supporting documentation as required by the Knightdale Flood Damage Prevention Ordinance in Chapter 6.

The size and number of completed applications shall be set by the Technical Review Committee.

16.6 Construction Drawings/Preliminary Plat Requirements

The Construction Drawings for Site Plans and Preliminary Plats for Major Subdivisions shall be submitted in accordance with the specifications of this Section except where specifically noted. The size and number of complete application submittal copies required shall be set by the Administrator.

Construction Drawings/Preliminary Plats must be drawn to the following specifications and must contain or be accompanied by the applicable information listed below. All plans shall be submitted at a scale not less than one (1) inch = 60 feet unless otherwise authorized by the Administrator.

A. No processing or review of Construction Documents/Preliminary Plats will proceed without all of the following information:

1. The boundary, as determined by survey, of the area to be subdivided or built upon with all bearings and distances shown and the location and the location within the area, or contiguous to it, of any existing streets, railroad lines, water courses, easements, bridges or other significant features of the tract. One corner of the tract shall be tied to the NC State Plane 1983 Coordinate System.

2. Scale in feet denoted both graphically and numerically with north arrow and declination.

3. A sketch vicinity map at a scale no smaller than one (1) inch equals 1,200 feet showing the relationship between the proposed subdivision or building site and surrounding area.

4. For Construction Documents for Site Plans, as-built drawings of all water, sewer and stormwater management facilities illustrating their layouts and connections to existing systems. Such plans shall show all easements and rights-of-way to demonstrate that the facilities are property places and shall indicate the locations of all fire hydrants, blow-off valves, manholes, pumps, force mains and gate valves. They shall also show the field location, size, depth and planted vegetation of all stormwater measures, controls and devices. This information is not part of the Construction Documents, but must be submitted upon completion of the project and before a certificate of occupancy shall be granted.

5. Environmental Survey in accordance with 16.2.

6. Existing topography and finish grading with contours drawn at two (2) foot intervals. This requirement may be waived for developments smaller than one (1) acre or where insufficient topographic changes warrant such information. Elevations to be based on NAVD 88 (North American Vertical Datum of 1988) with benchmark indicated.

7. Corporate limits and extra-territorial jurisdiction boundaries (where applicable).

8. The proposed names of the Development and streets, the owner's name and address, signature of the owner or owner's duly authorized agent, the surveyor's name, the names of existing and proposed adjoining subdivisions or property owners, the names of the township, county, and state in which the development is located, the date of preparation, and the zoning classification of the tract to be developed and of adjoining properties, and the names, widths, right-of-way dimensions, pavement design, utility and storm drainage locations of adjoining streets.

9. Proposed lot lines, lot and block numbers and exact dimensions (for Preliminary Plats only).

10. The future ownership (dedication or reservation for public use to a governmental body; for owners to duly constituted home owners' associated, for tenant's remaining in subdivider's ownership of recreation and open space lands).

11. A statement from the Town of Knightdale regarding the availability of adequate water and sewer capacity for the proposed development.

12. The plans and profiles for utility layouts including sanitary sewers, storm sewers and water lines, illustrating connections to existing systems. Specific data includes, but is not limited to: pipe material, size, length and slope; drainage areas and run-off for each storm drain pipe; invert elevations and top elevations for structures; water meter locations and size; sewer service lateral locations and size; detailed pump station plans; volume and cycle time calculations, total discharge head calculations, pump selection curve, and hydrostatic uplift calculations for pump stations and force mains; fire hydrant locations; valve, fittings and blow-off locations; details for borings; temporary and permanent sampling station locations; etc. All systems shall conform to current Town standards and the Knightdale Standards Specifications and Construction Details Manual.

13. Note estimated calculation of sewer capacity requested in gallons per day and provide methodology for how such calculation was derived.

14. The location and size of all utility lines, easements and right-of-way. Easements shall be provided on all Construction Documents and Preliminary Plats as follows:

a. **Utility Easements:** Easements for underground or above ground utilities shall be provided for and centered along rear or side lot lines, and shall be a minimum of 10 feet in width. Easements for water lines, sanitary sewers, and storm drains shall be centered on the pipe and a minimum of 20 feet in width or as required by the *Knightdale Standard Specifications and Construction Details Manual.*

b. **Drainage Easements:** Where a development is crossed by a stream or drainage way, an easement shall be provided conforming with the lines of such stream and of sufficient width as shall be adequate to maintain the overall integrity of the drainage area and provide for its periodic maintenance.

c. **Landscape Easements:** Landscape easements along streets should be designed in accordance with the provisions of Chapters 6.0 Environmental Protection and 8.0 Tree Protection and Landscaping. The Town may require landscape easements for developments where industrial or commercial uses abut residential uses.

d. **Public Access Easements:** Public Access Easements shall be provided for sidewalks, trails, greenways, and other pedestrian and bicycle facilities that provide connections other than within public rights-of-way.

15. The location of proposed buildings, parking and loading areas, streets, alleys, lots, parks or other open spaces, reservations (i.e. school sites), property lines and building setback lines with street dimensions, tentative lot dimensions, and the location of any building restriction areas (i.e. flood hazard areas, watershed protection districts, and/or jurisdictional wetlands.

16. Site calculations shall include total acreage of tract, acreage in parks and other non-residential uses, total number and acreage of parcels, the total number of housing units, area of all mixed-use and non-residential buildings, gross project density per acre, linear feet of streets and the accurate locations and descriptions of all monuments, markers and control points.

17. The number, location and dimensions of all off-street parking and loading spaces and the location and dimensions of all walkways indicating the type of surfacing, size, angle of stalls and width of aisles.

18. The location and dimensions of proposed recreation areas, open space, and required amenities and improvements including the calculated area of all required open space dedications in accordance with Chapter 7.

19. The location and dimensions of any sidewalks, curb and gutters to be installed along public street frontages, and other required street improvements designated in Chapter 9 of this Ordinance. Required right-of-way shall be drawn in the location shown on any official plan at the width specified in this Ordinance.

20. Typical cross sections of proposed streets showing rights-of-way, pavement widths, grades, and design engineering data for all corners and curves. Where a proposed street is an extension of an existing street the profile of the street shall include 300 feet of the existing roadway, with a cross section of the existing street. Where a proposed street within the subdivision abuts a tract of land that adjoins the subdivision and where said street may be expected to extend into said adjoining tract of land, the profile shall be extended to include 300 feet of the said adjoining tract.

21. The location of any existing or proposed demolition landfills in the site. Such sites shall not be used for building.

22. A copy of the full soil erosion and sedimentation permit application including forms, plans and calculations to be submitted to the North Carolina Department of Natural Resources-Erosion Control Office along with copies of all other local, State and Federal floodplain development permits required (i.e. Wetlands, Riparian Buffers, Mining, etc.); and a copy of all approval letters prior to Site Plan or Preliminary Plat approval.

23. Copy of all other Local, State, and Federal permits required prior to floodplain development permit issuance (i.e., Wetlands, Erosion and Sedimentation Control, Riparian Buffers, Mining, etc.).

24. Final proposed elevations of all non-single-family and duplex buildings proposed for construction as part of this approval. Subsequent buildings within the development may be handled as separate Site Plans. Such elevations shall include all facades visible from platted streets.

25. Supplemental Plans as applicable:

- **a.** **Landscape Plan** in accordance with Section 16.8
- **b.** **Lighting Plan** in accordance with Section 16.9
- **c.** **Signs & Markings Plan** in accordance with Section 16.10
- **d.** **Architectural Plans** in accordance with Section 16.11
- **e.** **Traffic Impact Analysis** (if required) in accordance with Section 16.12
- **f.** **Stormwater Management Plan** in accordance with Section 16.13

In addition to the above required information, the following additional information may be necessary for specific sites as determined by the Administrator or the Technical Review Committee:

26. Where a proposed water and sewer system does not contemplate the use of publicly owned and operated facilities, the proposed facility plans as approved by the appropriate agency shall be submitted with the Constructions Documents or Preliminary Plat.

27. Where public or community water supply and/or sewerage systems are not available or to be provided, a written statement form the Wake County Health Department shall be submitted with the Construction Documents or Preliminary Plat indicating that each lot has adequate land area and soil conditions suitable to accommodate the proposed methods of water supply and sewage disposal.

B. Certification Statements: The following certification must appear on the cover sheet for Construction Drawings for Site Plans and Preliminary Plats for Major Subdivisions:

1. **Professional Design Engineer Certification.** These improvements shall be constructed in accordance with the following drawings and with the Standard Specifications of the Town of Knightdale.

   I, _____, PE, certify that the Standard Specifications of the Town of Knightdale have been thoroughly checked and found to be applicable to this project. All exceptions to the applicable Town standards have been previously approved by the Town of Knightdale and said exceptions are shown on Sheet(s) _____ of these drawings.

   Seal By: _____, PE
   Date: _____

The following certification must appear on each sheet containing drawings for Construction Drawings for Site Plans and Preliminary Plats for Major Subdivisions:

2. **Town Certification.** This design has been reviewed by the Engineer for the Town of Knightdale, and to the best of my knowledge and belief, it conforms to the requirements established in the Standard Specifications of the Town of Knightdale.

   By: _____ Date: _____
   Town Engineer

   These plans are approved by the Town of Knightdale and serve as construction plans for this project.

   By: _____ Date: _____
   Administrator

16.7 Final Plat Requirements

The final plat shall be prepared by a registered land surveyor, licensed to practice in the State of North Carolina and must be drawn to a scale of not more than 1 inch = 60 feet unless otherwise authorized by the Administrator, and shall meet the requirements of the Wake County Register of Deeds Office. The final plat shall constitute all portions of the preliminary plat site, which the subdivider proposes to record, and develop at the time. The size and number of completed applications shall be set by the Technical Review Committee.

No Final Plat shall be approved unless and until the subdivider has installed in the platted area all improvements required by this Ordinance or has posted Improvement Guarantees in accordance with Chapter 17. The Final Plat shall be drawn in black ink on mylar and shall contain the following:

A. The exact boundary of the tract of land being subdivided showing clearly the disposition of all portions of the tract. One corner of the tract shall be tied to the NC State Plane 1983 Coordinate System.

B. Scale denoted both graphically and numerically with north arrow and declination. A vicinity map showing the location of the subdivision with respect to adjacent streets and properties.

C. As-built drawings of all water, sewer and stormwater management facilities illustrating their layouts and connections to existing systems. Such plans shall show all easements and rights-of-way to demonstrate that the facilities are property places and shall indicate the locations of all fire hydrants, blow-off valves, manholes, pumps, force mains and gate valves. They shall also show the field location, size, depth and planted vegetation of all stormwater measures, controls and devices. This information shall not be placed on the Final Plat but must be submitted at the time of request fro Final Plat approval or release of any surety for required improvements, whichever comes later.

D. Sufficient data to determine readily and reproduce accurately on the ground the location, bearing, and length of every street, alley line, lot line, building line, easement line, and setback line. All dimensions shall be measured to the nearest one-hundredth of a foot and all angles to the nearest second.

E. The lines and names of all streets, alley lines, lot lines, lot and block numbers, lot addresses, building setback lines, easements, reservations, on-site demolition landfills, and areas dedicated to public purpose with notes stating their purposes.

F. Minimum floor finish elevations shall be shown for each lot which wholly or partly lies within any floodplain boundary-Knightdale Text. All lots subject to flooding shall be noted with the following statement:

"Any construction or use within the areas delineated as floodway are subject to the restrictions imposed by the Knightdale Flood Damage Prevention Ordinance."

G. The accurate locations and descriptions of all monuments, markers, and control points.

H. Underground and aerial utility easements shall be shown and indicated with dimensions and widths.

I. The name of the township in which the subdivision is located, the name of the subdivision, the name of the owner, the name, registration number, and seal of the registered surveyor under whose supervision the plat was prepared, the date of the plat, and the words "Final Plat."

J. The exact location of stream corridor buffer boundaries including all buffer zones as well as all buffer requirements must be specified on the record plat, on individual deeds, and in property association documents for lands held in common.

K. Submittal of payment in lieu of dedicated open space (if applicable).

L. All residential landscaping notes as required in Section 8.7

M. **Certification Statements:** All of the following information must appear on the Final Plat:

1. Certificate of Survey and Accuracy. I,_____, certify that this map was (drawn by me)(drawn under my supervision) from (an actual survey made by me)(an actual survey under my supervision)(deed description recorded in Book____, Page____, Book_____, Page____, etc)(other); that the error of closure as calculated by latitudes and departures is 1:___, that the boundaries not surveyed are shown as broken lines plotted from information found in Book____, Page____; that this map was prepared in accordance with G.S. 47- 30 as amended. Witness my hand and seal this___ day of_____, A.D., _____ (year).

_____
Surveyor

_____
Official Seal License or Registration Number

2. Certificate of Ownership and Dedication. I hereby certify that I am the owner of the property shown and described, which is located in the subdivision jurisdiction of the Town of Knightdale and that I hereby adopt this plan of subdivision with my free consent, establish minimum building setback lines, preserve and protect all soils and vegetation in the tree protection areas as required in Section 8.5 of the Town of Knightdale Unified Development Ordinance, plant supplementary or replacement trees as required, and dedicate all streets, alleys, walks, parks, and other sites and easements, to public or private uses as noted. Furthermore, I hereby dedicate all sanitary sewer and water lines that are located in public utility easements or rights-of-way to the City of Raleigh, and I hereby dedicate all storm sewer lines that are located in public utility easements or rights-of-way to the Town of Knightdale

_____ _____
Date Owner(s)

I (officer authorized to take acknowledgments) do hereby certify that _____ personally appeared before me this day and acknowledged the due execution of this certificate. Witness my hand and (where an official seal is required by law) official seal this ___ day of_____, A.D., _____ (year).

_____
Official Seal Notary

_____
Commission Expires

3. Certificate of Approval of the Design and Installation of Streets and Other Required Improvements. I hereby certify that all streets and other required improvements have been installed in an acceptable manner and according to the Town of Knightdale's *Standard Specifications and Details Manual* or that guarantees of the installation of the required improvements in an amount and manner satisfactory to the Town of Knightdale has been received.

_____ _____
Date Town Engineer, Town of Knightdale

4a. Certificate of Approval for Recording. I hereby certify that the subdivision plat shown hereon has been found to comply with the Unified Development Ordinance for the Town of Knightdale, North Carolina, and that this plat has been approved by the Town of Knightdale for recording in the Office of the Register of Deeds of Wake County.

_____ _____
Date Administrator, Town of Knightdale

OR

(The following certificate shall appear on all plats which do not meet the definition of subdivision as defined in this Ordinance, but which need approval from the Town for recording at the Wake County Register of Deeds Office. This Certificate is to be used in lieu of 4a. above.)

4b. Certificate of Approval for Recording. I hereby certify that the subdivision plat shown is exempt from the subdivision provisions of the Unified Development Ordinance for the Town of Knightdale, North Carolina, and is therefore exempt from its provisions. The plat has been found to comply with the zoning regulations of the Unified Development Ordinance for the Town of Knightdale, North Carolina, and has been approved by the Town of Knightdale for recording in the Office of the Register of Deeds of Wake County.

_____ _____
Date Administrator, Town of Knightdale

The following Certificate shall be placed on the final plat only when the proposed subdivision is not to be connected to publicly owned and operated water supply and sewage disposal systems:

5. Certification of Approval of Water Supply and Sewage Disposal Systems. I hereby certify that the water supply and sewage systems installed or proposed for installation in _____ Subdivision meet necessary public health requirements and are hereby approved.

_____ _____
Date County Health Officer or Authorized Representative

6. Review Officer Certification. State of North Carolina, County of Wake
I, _____, Review Officer of Wake County, certify that the map or plat to which this certification is affixed meets all the statutory requirements for recording.

_____ _____
Date Review Officer
Town of Knightdale, Wake County

7. North Carolina Department of Transportation Certification.
Division of Highways

Proposed Subdivision Road
Construction Standards Certification

APPROVED:_____ DATE:_____
District Engineer

16.8 Landscape Plan Requirements

A tree/landscaping plan shall be required on all non-residential and multi-family uses in a residential district prior to any site disturbance. The plan shall contain the following information:

A. An accurate drawing of property boundaries.

B. A development summary including the total development acreage, proposed use(s), required parking and provided parking spaces, and total building square footage.

C. The location of proposed buildings, driveways, parking areas, required parking spaces, and traffic patterns.

D. The location of all overhead and underground utilities.

E. Name of the project, name and address of owner, name and address of engineer, scale, date, legend, and north arrow.

F. General location, type and quantity of existing plant materials.

G. Existing plant materials and areas to be left in natural state.

H. Methods and details for protecting the critical root zone (CRZ) of existing plant materials during construction.

I. Locations, size and labels for all proposed plants.

J. Plant lists with common name, botanical name, quantity, and spacing and size of all proposed landscape material at the time of planting.

K. Location and description of other landscape improvements, such an earth berms, walls, fences, screens, sculptures, fountains, lights, courtyards, walks or paved areas. Berms shall have topo.

L. Planting and installation details as necessary to ensure conformance with all required standards as referenced in Chapter 8.

16.9 Lighting Plan Requirements

Any person submitting a site plan or applying for a building, electrical, or sign permit to install outdoor lighting fixtures shall submit evidence that the proposed work will comply with Chapter 11. The lighting plan shall include at least the following:

A. A site plan drawn to scale showing the building(s), landscaping, parking areas, and proposed exterior lighting fixtures.

B. Specifications of the illuminating devices, lamps, supports, and other devices, including the IESNA cut-off classification of the fixture(s) used. This description may include but is not limited to manufacturers catalog cuts, enlarged or reduced to the correct scale of the site plan, and drawings including sections where required.

C. Locations of all pole-mounted and building-mounted fixtures and a numerical point-by-point FC grid maximum of ten (10) feet by ten (10) feet for small and medium size projects (less than 2 acres) and 25 foot by 25 foot grid for large projects. This point-by-point grid or photometric report must indicate the minimum, maximum and average FC levels within the lighted area of the site and the average to minimum ratio to determine uniformity. The minimum (lowest number) is usually at the outer edges of the illuminated area or between two fixtures. The average light level is determined by adding the FC values of all points in the grid and dividing by the total number of points. This information is usually calculated by a computer program and is available from the manufacturer of the specified fixture.

The above required plans and descriptions shall be sufficiently complete to enable the Administrator to readily determine compliance with the requirements of Chapter 11. An isolux lighting plan is also permitted in fulfillment of this Section, provided that it indicates the FCs at grade by contour diagram or grid points that cover the site, and indicated the minimum, maximum and average FCs as well as the average to minimum uniformity ratio.

16.10 Signs and Markings Plan

A signs and markings plan shall depict sign and marking details of the proposed development and shall consist of:

A. Location of all street signs within the public right-of-way as well as private parking lots and drives, including sign and pole materials, text and dimensions;

B. Location of all pavement markings and striping within the public right-of-way as well as private parking lots and drives, including materials and dimensions.

16.11 Architectural Plans

Architectural plans shall depict architectural details of the proposed development and shall consist of:

A. Preliminary color renderings of building elevations plus typical cross sections to clearly define the character of the project as required by the Administrator;

B. A cross-section elevation plan depicting all buildings, structures, monuments, and other significant natural and man-made features of the proposed development; and

C. An exterior building materials inventory.

Architectural plans do not include full construction drawings and interior arrangements are not considered as part of this review.

16.12 Traffic Impact Analysis (TIA)

A Traffic Impact Analysis (TIA) is required for any proposed rezoning, preliminary subdivision or master plan, if the nature of the proposed rezoning or development is such that the number of trips it can be expected to generate equals or exceed 150 new peak hour trips. Trips are those occurring on peak days on the adjacent roadway(s).

A. Preparer: A traffic-engineering consultant licensed as professional engineer shall prepare the TIA.

B. Procedure:

1. **Pre-Submittal Conference:** The applicant shall arrange for a Pre-Submittal Conference to discuss the project with the Town and the developer's traffic-engineering consultant. The applicant shall supply the following information for consideration and discussion at the Conference: traffic analysis base information, site location map, site layout, data on existing and proposed land uses, projected timing of construction and build-out year, and description of project. The Pre-Submittal Conference will determine the appropriateness and extent of the individual TIA requirements as outlined in Subsection E below.

2. **Submittal of TIA:** Two copies of the study shall be submitted to the Administrator who shall notify the applicant if additional studies or analyses are necessary. Once a report is determined to be complete, a finding of such completion shall be made by the Administrator on the TIA and proceedings on any application that were stayed pending completion of the TIA may resume.

3. **Post-Submittal Conference:** After the completion of the study, the town and/or consultant shall arrange a time to meet with the Applicant to discuss the study's findings and recommendations.

C. Study Area Boundaries: The extent of the study for the TIA depends upon the location and size of the proposed project and the prevailing conditions of the surrounding area. The study area should include an analysis of all major intersections, site drives and adjacent roadways, plus off-site intersections where site traffic will constitute 10% or more of any intersection approaching volume during the peak hour; however, the limits of the study area shall not exceed a distance of one-half mile from the perimeter boundaries of the site. Controlled access roadways are not included in the study area or analysis; however, controlled access ramp intersections with non-controlled access roadways are subject to analysis.

D. Contents: The following is a general outline of issues to be addressed by the TIA. Specific components will be determined for each project during the Pre-Submittal Conference:

1. **Site Description:** A detailed report, containing illustrations and narrative, shall describe the site's characteristics, adjacent land uses, as well as any anticipated development within the site's vicinity influencing future traffic conditions.

2. **Study Area:** The report shall indicate the geographic location of the study area, roadway segments, critical intersections, and access points to be analyzed.

3. **Existing Traffic Conditions:** An analysis of the existing traffic conditions, including all data used for the analysis shall be provided in the report, including:

4. Traffic count and turning movement information, including the date and source from which this information was obtained;

5. Correction factors used to convert collected traffic data into representative average daily traffic volumes;

6. **Roadway characteristics, including:**

   a. Design configuration of existing or proposed roadways;

   b. Existing traffic control measures;

   c. Existing driveways and turning movement conflicts in the vicinity of the site

   d. Existing Level of Service (LOS) for roadways and intersections without project development traffic. LOS shall be calculated for the weekday peak hour, and in the case of uses generating high levels of weekend traffic, the Saturday peak hour.

7. **Horizon Year(s) and Background Traffic:** The report shall identify the horizon year(s) that were analyzed in the study, the background traffic growth factors for each horizon year, and the method and assumptions used to develop the background traffic growth. Unless otherwise approved, development impacts shall be examined for the first (1st) and tenth (10th) years after the development is completed.

8. **Trip Generation, Trip Reduction, and Trip Distribution:** A summary of projected a.m. and p.m. peak hour and average daily trip generation for the proposed development shall be provided in addition to projected trip distribution to and from the site. The factors used to determine trip generation, reduction, and distribution are also to be included in the summary.

   Trip generation shall be measured based on the current edition of the Institute for Transportation Engineers (ITE) Trip Generation Manual. In the case of a rezoning where the uses are not known, trip generation calculations shall assume the permitted use that generates the highest number of peak hour trips or a likely mix of uses agreed upon by the Administrator.

9. **Traffic Assignment:** The report shall identify the projected roadway segment, intersection or driveway traffic volumes, with and without the proposed development, for the horizon year(s) of the study.

10. **Impact Analysis:** The report shall address the impact of projected horizon year(s) traffic volumes. It shall identify the methodology used to evaluate the impact. The weekday peak hour impact shall be evaluated as well as the Saturday peak hour for those uses exhibiting high levels of weekend traffic generation.

11. **Mitigation / Alternatives:** The study shall clearly indicate those recommended improvements and associated costs that are necessary to achieve a goal of Level of Service (LOS) "C" on new or planned roadway facilities and LOS "D" on existing roadway facilities. Where existing conditions are below LOS "D", improvements must be recommended that, at a minimum, attain or maintain existing levels of service and delay measured at each intersection approach. Only the Town Council may grant exceptions to these improvement requirements.

12. **Other Factors to Include in Study:** In each case, the issue as to whether adequate service levels will be maintained will be resolved by evaluating the projected impact of the proposed development on the public facilities in question at the time occupancy is expected to occur. This analysis will take into account, not only the status of existing facilities and the impact of the proposed development, but also the project impact of the following on the capacity of those facilities:

    a. Projected capital improvements either by the Town or NCDOT that will increase the capacity of the facilities in question;

    b. Traffic from other nearby approved developments shall be included in the analysis;

    c. Those improvements related to other approved development projects.

E. Report Findings

1. If a proposed development does not meet the applicable service level standards, one or more of the following actions may be necessary:
2. Reduce the size, scale, scope, or density of the development to decrease traffic generation.
3. Divide the project into phases, allowing for only one phase at a time until traffic capacity is adequate for the next phase of development;
4. Dedicate right-of-way for street improvements;
5. Construct new streets;
6. Expand the capacity of existing streets;
7. Redesign ingress and egress to the project to reduce traffic conflicts;
8. Alter the use and type of development to reduce peak hour traffic;
9. Reduce existing traffic;
10. Eliminate the potential for additional traffic generation from undeveloped properties in the vicinity of the proposed development;
11. Integrate non-vehicular design components (i.e. pedestrian and bicycle and transit improvements) to reduce trip generation;
12. Recommend denial of the application for which the TIA is submitted.

F. Revisions: If the Administrator determines that a significant change (including, but not limited to: new connectivity patterns or higher-intensity uses) in the project proposal has occurred that will possibly lead to different findings and mitigation measures, a revised TIA shall be required.

16.13 Stormwater Management Plan Requirements

A. Permit Required; Must Apply for Permit: A stormwater permit is required for all development and redevelopment unless exempt pursuant to the provisions of Section 6.3(C)(2): Exemptions. A permit may only be issued subsequent to a properly submitted and reviewed stormwater management plan, pursuant to this Section.

B. Purpose: The stormwater management plan shall govern the design, installation and construction of stormwater management and control practices on the site, including structural BMPs and elements of site design for stormwater management other than structural BMPs. The plan is intended to provide a mechanism for the review, approval and inspection of the approach to be used for the management and control of stormwater for the development or redevelopment site consistent with the requirements of this ordinance, whether the approach consists of structural BMPs or other techniques such as low-impact or low-density design.

C. Preparer: A qualified registered North Carolina professional engineer, surveyor or landscape architect shall prepare the stormwater management plan. The engineer, surveyor or landscape architect shall perform service only in their area of competence, and shall verify that the design of all stormwater management facilities and practices meets the submittal requirements for complete plans, that the designs and plans are sufficient to comply with applicable standards and policies found in the Manual, and that the designs and plans ensure compliance with this ordinance.

D. Review Procedures

1. Effect of Permit

The permit does not continue in existence indefinitely after the completion of the project; rather, compliance after project construction is assured by Section 6.3(G): Maintenance, of this ordinance.

2. Authority to File Stormwater Management Plans

All stormwater management plans required pursuant to this Code shall be submitted to the Administrator by the land owner or the land owner's duly authorized agent.

E. Establishment of Plan Requirements, Schedule, and Fees.

1. Plan Contents and Form

The Administrator shall establish requirements for the content and form of all stormwater management plans and shall amend and update those requirements from time to time. At a minimum, the stormwater management plan shall describe in detail how post-development stormwater runoff will be controlled and managed, the design of all storm water facilities and practices, and how the proposed project will meet the requirements of this ordinance, including Section 6.3(F), Standards. Incomplete submittals shall be treated pursuant to Section 15.1(C): Completeness Review.

2. Submission Schedule

The Administrator shall establish a submission schedule for stormwater management plans, which shall be reviewed and approved by the Town Council. The schedule shall establish deadlines by which complete applications must be submitted for the purpose of ensuring that there is adequate time to review plans, and that the various stages in the review process are accommodated.

3. Approval

If the Administrator finds that the stormwater management plan complies with the standards of this ordinance, the Administrator shall approve the plan. The Administrator may impose conditions of approval as needed to ensure compliance with this ordinance. The conditions shall be included as part of the approval.

4. Fails to Comply

If the Administrator finds that the stormwater management plan fails to comply with the standards of this ordinance, the Administrator shall notify the applicant and shall indicate how the plan fails to comply. The applicant shall have an opportunity to submit a revised application.

5. Revision and Subsequent Review

A complete revised stormwater management plan shall be reviewed by the Administrator after its re-submittal and shall be approved, approved with conditions or disapproved.

If a revised plan is not re-submitted within 30 calendar days from the date the applicant was notified, the application shall be considered withdrawn, and a new submittal for the same or substantially the same project shall be required along with the appropriate fee.

One re-submittal of a revised plan may be submitted without payment of an additional permit review fee. Any re-submittal after the first re-submittal shall be accompanied by an additional fee.

This page intentionally left blank