
Article 6: Subdivision Design and Improvements

Section 6.1. General Purpose

The purpose of this article is to regulate and control the subdivision of land in the unincorporated County to promote the public health, safety, and general welfare of County residents. More specifically, this article is designed to promote the orderly development of New Hanover County by:

- 6.1.1. Coordinating the location and construction of streets and highways within proposed subdivisions with existing or planned streets and highways, and with other public facilities;
- 6.1.2. Coordinating the dedication or reservation of rights-of-way or easements for street and utility purposes;
- 6.1.3. Facilitating the adequate provision of water, sewerage, parks, schools, and playgrounds;
- 6.1.4. Facilitating the further re-subdivision of larger tracts into smaller parcels of land; and
- 6.1.5. Distributing population and traffic so as to avoid congestion and overcrowding which will create conditions essential to public health, safety, and the general welfare.

Section 6.2. Design Standards

6.2.1. GENERAL PROVISIONS

Any land area subject to the standards of this article determined by the County Commissioners to be unsuitable for residential occupancy shall be prohibited for subdivision development. The County Commissioners in making their determination shall be guided by an analysis of available data on topography, soils, flood plains, drainage, and ground and surface water.

The standards and requirements of this Article may be modified by the Planning Board in the case of a plan and program for a group, cluster, or planned unit development, which, in the judgment of the Planning Board provides adequate public spaces and improvements for circulation, recreation, light, air, and service needs of the tract when fully developed and populated, and which also provides such covenants or other legal provisions as will assure conformity to and achievement of the Land Development Plan.

6.2.2. SPECIFIC STANDARDS

A. Minimum Requirements

All subdivisions shall comply with the following standards.

1. Alleys

Alleys are permitted in residential districts if the TRC determines special conditions warrant a secondary means of access. Design standards for

alleys that are permitted shall be consistent with those recommended by the North Carolina Department of Transportation, Division of Highways (NCDOT).

2. Blocks

Blocks within all subdivisions shall comply with the following standards.

a. General

The lengths, widths and shapes of blocks shall be determined with regard to provision of adequate building sites suitable to the special needs of the type of use contemplated; the dimensional standards in the district related to lot sizes and dimensions; needs for vehicular and pedestrian circulation, control and safety of street traffic; limitations and opportunities of topography; and convenient access to public recreational areas.

b. Block Length

Blocks shall not exceed 1,000 feet in length.

c. Block Width

Blocks shall have sufficient width to allow two tiers of lots of minimum depth, except where single tier lots are required to separate residential development from through vehicular traffic, to separate the lots from another type of use, to provide for uncongested traffic flow, to allow for unusual topographic conditions or in instances where the lots are adjacent to subdivision perimeter property lines.

d. Pedestrian Access

Where deemed necessary by the TRC, a pedestrian access at least 15 feet in width may be required through a block or connecting streets or cul-de-sacs to provide convenient public access to a public or common area such as a park, open space area, school or a water area.

3. Buffer Easements

- a.** The County may require an easement as much as 50 feet in depth, in addition to the normal lot depth, for subdivisions adjacent to railroads, major streets, highways, or thoroughfares, and between various types of developments. This easement shall be part of the platted lots, but shall have the following restriction notice on the face of the plat:

This easement is established for the purpose of the planting of trees or other types of vegetation or the preservation of existing vegetation; the erection of structures on the easement and through access by motorized vehicles is prohibited.

- b.** Buffers shall comply with Section 5.4, Landscaping and Buffering.

4. Building Setback

The minimum building setback or the distance between the street right-of-way and the building line shall not be less than that established in the dimensional standards for the district in which the subdivision is located.

Proposed building setbacks shall be measured from the most restrictive right-of-way line as determined by the dedication or reservation of such right-of-way.

5. Easements

Easements shall comply with the following standards:

a. Storm Sewer, Sanitary Sewer, or Water Main Utility Easements

1. Utility easements for storm sewers, sanitary sewers, or water mains shall be separate and distinct from any building area on a lot, and shall be separate from the lot or located along the lot line, or entirely on a lot, as determined by the Cape Fear Public Utility Authority and the County Engineer.
2. Easements up to 30 feet or more in width are required for gravity sewer lines.
3. Easements of not less than 15 feet are required for water lines, other underground and above ground public utilities, or for piped drainage facilities.
4. Shallow swale easements along the perimeter of lots may be less than 30 feet if they are determined safe and adequate by the County Engineer.

b. Drainage Easements

Where a subdivision is traversed by a watercourse or drainage way, an easement shall be indicated on all plats of the subdivision. The easement shall conform substantially with the lines of the watercourses or drainage ways and shall be of sufficient width for maintenance purposes, as determined by the County Engineer. The County Engineer may require the subdivider to convey easements to the County providing access to and along watercourses or drainage ways traversing the subdivision for the purpose of maintaining such watercourses or drainage ways. (3/03)

c. Electrical and Communication Utility Easements

Electrical and communication utility easements may be required along perimeter lot lines for underground or aboveground public or private utilities. The width of such easements shall be based upon the type of utility installed as required by the design specifications and the area required for adequate maintenance of the utilities. It is recommended that electric power and communications services be placed underground.

d. Deeds of Easements

1. Easements to be dedicated to the County for the operation, use, replacement and maintenance of public open space and public utilities, including but not limited to water mains, sanitary sewer mains, stormwater management facilities, and all appurtenances, together with the means of access to them, shall be dedicated for the public use by a separate deed of easement. If such easements are correctly and adequately described on the final subdivision plat, the easements may be described in a separate deed of easement by reference to the recorded final plat. The appropriate governing body shall ascertain that the easements are correctly and adequately described on the final plat.
2. The deed of easement shall be in the format as determined and approved by the County Attorney. All utilities, appurtenances, and facilities within the easement to be dedicated shall be constructed to the specifications of the County, and shall remain the property of the subdivider until officially accepted for operation, use, and maintenance as part of the County's system. Official acceptance shall be by resolution of the Board of County Commission. The deed of easement shall be recorded with the Office of the Register of Deeds.

6. Lots

Lots shall be laid out as follows:

- a. A lot's size, and its shape and location on a site shall respect the natural features of the site, including but not limited to topographic conditions, waterways, wetlands, contemplated use, and the surrounding area.
- b. Lots in subdivisions shall comply with the dimensional standards and other regulations and requirements of the zoning district in which they are located.
- c. Corner lots for commercial development shall have width sufficient to permit adequate building setback from side streets or driveways.
- d. Double frontage or reverse frontage lots shall be avoided, to the maximum extent practicable.
- e. Side lot lines shall be substantially at right angles or radial to street lines. Where side lot lines intersect at the rear of the lot, the angle of intersection should not be less than 60 degrees.
- f. Lots shall not have a depth greater than four times their mean width.
- g. Each lot in a subdivision shall individually abut or be adjacent to an approved public or approved private street or private access easement. Condominium and townhouse-style subdivisions may be exempted from this requirement at the discretion of the TRC, provided that in all cases each individual lot shall be assured safe and reasonable vehicular access to and from an approved street.

- h. Every conventional residential lot shall front a public or private street or access easement for a distance of at least 34 feet.

7. Streets

- a. Local streets shall be laid out so that their use by through traffic will be discouraged.
- b. All streets shall be designated by the subdivider to be either public or private in accordance with North Carolina General Statute 136-102.6. The streets shall comply with the requirements of the N.C.G.S. The subdivider shall submit concurrently with the final plat all disclosure statements required by the General Statute.
- c. When a planned subdivision is adjacent to an arterial, a marginal access street may be required to provide access for lots fronting on the arterial.
- d. All streets that are in alignment with other existing and named streets shall bear the existing street name. Names of proposed streets or subdivisions shall not duplicate or be phonetically similar to existing street names. No proper names can be used. It shall be the responsibility of the subdivider to erect official street name signs at all intersections associated with the subdivision in accordance with the *Addressing Standards and Procedures Manual*. The subdivider may acquire and erect official street name signs or may choose to contract with the County to install the street signs, which shall be paid for by the subdivider.

e. Access to Adjacent Properties

The arrangement of streets in subdivisions shall make provisions for the continuation of existing streets in adjoining areas, or their proper projection where adjoining land is not subdivided and where they may be deemed necessary for public requirements. For large subdivisions adjacent to large tracts of unsubdivided property, street projections shall be required into the adjacent unsubdivided tracts at a maximum distance of every 1000 feet. The street arrangement shall be such as not to cause a hardship to owners of adjoining property when developed and when they seek to provide for convenient access thereto. The use of residential strips of land in order to prevent the extension of proposed or existing streets or access thereto is prohibited.

f. Alignment with Thoroughfares

1. When any portion of a proposed major thoroughfare of the urban area runs through or is associated with the tract of land to be subdivided, the pattern of streets within the proposed subdivision shall be in accordance with the proposed alignment of corridors or rights-of-way of said official thoroughfare plan. Such rights-of-way as required by the appropriate governing agency shall be shown on all plats, preliminary and final.

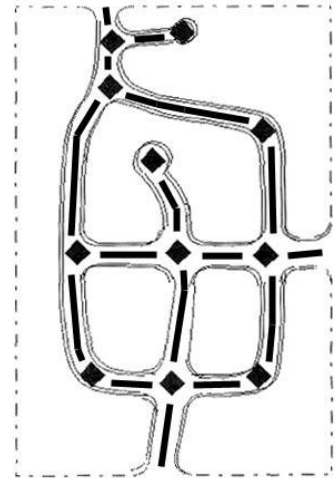
2. When any portion of a major or minor thoroughfare that is shown on the Wilmington Urban Area Thoroughfare Plan, as amended, runs through or is associated with the land to be subdivided, the subdivider shall design the street network and shall dedicate the maximum right-of-way width required by NCDOT. The subdivider shall also reserve any additional right-of-way as shown in the Thoroughfare Plan. No buildings or structures shall be constructed the reserved right-of-way area. Such reservations shall expire 24 months from the date of recordation of the final subdivision plan, unless the right-of-way is acquired by a public agency.
3. When any portion of a proposed major or minor thoroughfare shown on the Wilmington Urban Area Thoroughfare Plan runs through the tract of land to be subdivided, both the preliminary plan and final plat for the subdivision shall disclose the presence of the planned thoroughfare by including a note on the plat stating, "This subdivision crosses a proposed thoroughfare right-of-way; present status should be confirmed with the NC Department of Transportation."

g. Street Connectivity Standards

1. Interconnected street systems promote orderly and safe development by ensuring that streets function in an independent manner to provide adequate access for emergency and service vehicles and enhance access by ensuring continuous and connected transportation routes.
2. All proposed streets shall be continuous and connect to existing or platted streets without offset with the exception of cul-de-sacs, as permitted, and except as provided below.
3. The street network for any subdivision shall achieve a connectivity ratio of not less than 1.40. The connectivity ratio shall be defined as the number of street links divided by the number of nodes, including cul-de-sac heads or other vehicle turnarounds. A "node" refers to the terminus of a street or the intersection of two (2) or more. Any curve or bend of a street that has a minimum centerline radius of 100 feet or more shall not be considered a node. Roundabouts also shall not be counted as nodes. A divided entrance is one node.

4. A link shall be any portion of a street, other than an alley, defined by a node at either end. Street projections to adjacent properties shall be considered links. For the purpose of determining the number of links in a development, boulevards, median-divided roadways, and divided entrances shall be treated the same as conventional two-way roadways. Street links and nodes along a collector or arterial street providing access to a proposed subdivision shall not be considered in computing the connectivity ratio.

16 links/11 nodes = 1.45 ratio



5. Residential streets shall be designed to minimize the block length of local streets, to provide safe access to residences with minimal need for steep driveways and to maintain connectivity between and through residential neighborhoods for autos and pedestrians.
6. Where necessary to provide access or to permit the reasonable future subdivision of adjacent land, rights-of-way and improvements shall be extended to the boundary of the development. A temporary turnaround may be required where the dead end exceeds 500 feet in length. The platting of partial width rights-of-way shall be prohibited, except where the remainder of the necessary right-of-way has already been platted, dedicated, or established by other means.
7. New subdivisions may be exempt from the connectivity ratio standard as set forth in this section, provided the Planning Director determines there is no option for providing stub streets or connectivity due to existing documented environmental features such as wetlands or natural water bodies or existing adjacent developed property.

h. Intersections

Street intersections shall be laid out as follows:

1. Streets shall intersect as nearly as possible at right angle and no street shall intersect at less than seventy-five (75) degrees.
2. Intersections with a major street shall be at least 800 feet apart, measured from centerline to centerline.
3. Where a public or private street intersects a U.S. or N.C. numbered highway, or a N.C. secondary road, the intersection design shall be in accordance with the standards of the N. C. Department of Transportation, Division of Highways.
4. Street jogs with centerline offsets of less than 200 feet are prohibited.

i. Cul-de-sacs

A street designed to be permanently closed at one end shall have a permanent turnaround at the closed end, the right-of-way and pavement of which comply with the requirements specified by NCDOT. Cul-de-sacs shall not be longer than 500 feet. Longer cul-de-sacs may be authorized provided the Planning Director determines there is no option for providing stub streets or connectivity due to existing documented environmental features such as wetlands, natural water bodies, topographical features, environmental conditions or physical conditions such as property shape, property accessibility, or land use relationships.

j. Public Street Projections

1. Where there are lots fronting street projections to adjacent properties and services are required, a temporary turnaround that complies with NCDOT specifications shall be constructed at the end of the street at the property line.
2. Where there are no lots fronting street projections to adjacent properties frontage, the frontage being more or less one side lot length, the street (that complies with NCDOT specifications) may be constructed to the property line and dead-ended with no cul-de-sac.
3. In any and all cases, the developer shall be responsible for the cost of and placement of all required dead-end barricades and signs.
4. Additional rights-of-way needed for a temporary turnaround at the end of a street projection to adjacent properties shall be in the form of temporary easements or rights-of-way reserved by the subdivider. Upon extension of the street into the adjacent property, the requirement for a cul-de-sac shall cease and the temporary right-of-way granted for the cul-de-sac construction will revert to the adjacent property owner.
5. Street projections proposed for access to adjacent properties shall have temporary turnarounds installed in accordance with this article and NCDOT specifications.

k. Temporary Vehicle Turnarounds

1. In phasing the construction of street improvements within approved subdivisions, the developer shall make provision for vehicle turnarounds at the end of street construction for each phase.
2. If the street end of a particular planned phase of development is within a distance of 250 linear feet, more or less, from the next planned intersection in a succeeding phase, the developer shall construct the street to, and complete all improvements within, the intersection in accordance with requirements for completed

intersections, including barricades, as specified by NCDOT. The completed intersection shall then serve as a vehicular turnaround.

- I. When a lot or lots within a subdivision abut an existing public street, highway, or thoroughfare, the subdivider shall be responsible for the installation of all improvements to that portion adjacent to and which is to be utilized by that subdivision.

m. Traffic Calming During Preliminary Site Plan Review

In some cases, the inclusion of traffic calming devices in subdivision design is justified to promote speed limit compliance with posted speed limits and for up-holding the long-term operational safety of residential subdivision streets. Only traffic calming devices recognized by the Institute of Transportation Engineers (ITE) and/or other nationally recognized traffic engineering guidelines, with provisions to minimize impacts on bicyclists, pedestrians, and emergency response time shall be considered by the TRC for approval during the Preliminary Site Plan Review.

n. Traffic Calming on Existing Public Streets

Petitions for traffic calming devices on existing publicly designated streets shall be considered by the NCDOT as referenced in NCGS 136-102.8.

o. Traffic Calming on Existing Private Streets

No traffic calming devices shall be installed by a property owners association (POA) / homeowners association (HOA) until the following review process is complete:

1. The review process for installing traffic calming devices on existing private streets may be initiated by contacting the Planning and Inspections Department to obtain a copy of the most current Traffic Calming Petition Form and other associated informational materials. Petitioners must first obtain signatures from at least 70 percent of parcel owners within the affected area to demonstrate neighborhood support for traffic calming devices. The affected area will be determined by a scoping process involving the petitioner, a representation from the Planning and Inspections Department, County Fire Services office, County Engineering, and the Wilmington Urban Area Metropolitan Planning Organization (WMPO) prior to petition submittal. Only one signature per parcel is counted to determine 70 percent concurrence. County staff will verify that signatures match current tax records. If the required signatures are not obtained within 90 days, the petition will not move forward. If the signatures are determined to be valid, a letter from the Planning and Inspections Department will be sent to the petition contact describing the minimum application requirements to move forward with the review process.
2. To qualify for review, an application demonstrating the following shall be provided by the petitioner to the Planning and Inspections Department:

- i. The road is privately owned and maintained with a functional classification of local road or neighborhood collector;
 - ii. The roadway is “primarily residential”, with at least 75 percent of the properties fronting on the street being located in a Residential zoning district and/or residential land uses;
 - iii. Fifteen (15) percent of present day traffic exceeds 30 mph;
 - iv. Traffic volumes on the affected street must be less than 4,000 vehicles per day;
 - v. The street is not a primary route for emergency response;
 - vi. An active property owners association, as prescribed in Section 6.3.4, Property Owners’ Association (POA), exists to install and maintain traffic calming devices;
 - vii. A previous traffic calming device application has not been denied for the affected area within the last 12 months;
 - viii. Concurrence from a detailed engineering study that the traffic calming devices are warranted and feasible to implement within the affected area.
- 3.** As a fundamental component of a complete traffic calming application, the following criteria must be certified by a professional legally recognized by a State of North Carolina licensing board as licensed to perform such activities or undertakings.
- i. Roadway characteristics including alignment, grade, sight distance, intersection spacing, driveway location, edge treatments (curbing, shoulders, etc.), signage, pavement markings and on-street parking;
 - ii. Vehicle characteristics of existing traffic (based on a three-day vehicle classification study);
 - iii. Traffic speed and volume data (based on a three-day speed and volume study);
 - iv. Three-year crash history;
 - v. Recommended traffic calming devices including typical details (Recommended devices shall follow ITE and/or other nationally recognized traffic engineering guidelines, with provisions to minimize adverse impacts on bicycle, pedestrian safety, and emergency response);
 - vi. A conceptual plan demonstrating the proposed location of traffic calming devices and associated advanced warning signage/pavement markings (as required by the most recent version of the Manual on Uniform Traffic Control Devices);
 - vii. A recommended implementation schedule and preliminary line-item cost estimates.

4. Upon submittal of a completed application to the Planning and Inspections Department, the request will be considered by the TRC at their next regularly scheduled meeting. The TRC has the authority to reject an application based on engineering judgment, an absence of documented need and/or concerns with adverse impacts on emergency response, as well as bicycle and pedestrian safety. If approved by the TRC, the petitioner may initiate the final approval process by submitting the following information to the Planning and Inspections Department:
 - i. Final construction plans and details sealed by a professional legally recognized by a State of North Carolina licensing board as licensed to perform such activities and undertakings,
 - ii. Final implementation schedule and line item cost estimates (with associated contingency); and
 - iii. A surety in the form of a certified check and in accordance with Section 6.3.2, Guarantees of Improvements, to guarantee the installation of the traffic calming devices.
5. Petitioners(s) may appeal the Technical Review Committee denial of an application for a Preliminary Plan in accordance with Section 10.3.14, Appeal of Administrative Decision.

8. Street Trees

Except for trees in islands within dedicated rights-of-way, if street trees are planted, they shall be planted inside the property lines where they are less subject to injury, decrease the chance of accidents, and enjoy more favorable conditions for growth.

9. Subdivision Names

Subdivision names shall not duplicate or be phonetically similar to existing development or subdivision names within the County, except where they are additions to existing developments.

10. Evacuation Access Design

Roads within the subdivision shall be designed to provide sufficient capacity for safe and timely evacuation of residents in case of a hurricane if the subdivision or parts of it are located in a V-zone. Factors involved in determining the safety and timeliness of evacuation include the presence of low points, bridges, or other evacuation route bottlenecks, and vehicle capacities of the roads.

11. Barrier, Riverine and Estuarine Islands

Subdivisions that are located on riverine, estuarine, or barrier islands that are not connected to the mainland by a permanent network of roads and bridges shall establish a community boating facility on the island and on the mainland with the number of spaces in each facility being equal to or greater than the total number of lots.

12. Waterfront Access

Subdivisions that are located on riverine, estuarine, or barrier islands with lots containing beach front or sound front property shall dedicate sufficient property to ensure public access to the beach and sound. Such access shall not be less than 10 percent of the beach frontage and 5 percent of the sound frontage, and shall be spaced at intervals of no more than 1000 feet. Access ways shall not be less than 15 feet in width. These facilities shall be approved by and dedicated to New Hanover County or the State of North Carolina, and shall be directly accessible to a public road. Dedicated streets which run to the mean high water line may count toward meeting these requirements.

13. Transit Facilities

Transit system facilities (to include turnout lanes, shelters, signs, and markings), as designated by the County, may be constructed, provided, and installed in accordance with Technical Standards and Specifications, and acceptable traffic engineering specifications and standards.

14. Reservation of Sites for Public Facilities

To ensure orderly development of the County in accordance with the general principles set forth in the Comprehensive Plan, it is recommended that the subdivider reserve open spaces for such public purpose as parks, playgrounds, schools, and fire stations, and to provide the County an opportunity to buy this land at the fair market value for a period of 6 months from the date of submission of the preliminary plan.

Section 6.3. Improvements

6.3.1. IN GENERAL

- A.** Following approval of the preliminary plan, the sub-divider shall submit to the County Engineer and other appropriate state and local agencies design and construction plans for the installation of the improvements as required by this Ordinance and other specifications and policies of the County (see Section 10.3.7.D.2, Construction Plans Procedure).
- B.** Improvements within all subdivisions shall be installed and designed in accordance with the standards of this article and such other technical standards and specifications as have been adopted by New Hanover County or other entities with responsibility for providing facilities and services. Whenever topographic or other physical conditions of the site require more stringent engineering practices or standards, such standards and practices shall be utilized and followed in the design of a subdivision.

1. Access

All public agencies shall have access to the premises and structures of a subdivision under this article, during reasonable hours, to make those inspections deemed necessary by them to ensure compliance with the provisions of this article.

2. Inspection

Prior to commencing any work within the subdivision the subdivider shall make arrangements with the Planning Director to provide for adequate inspection of the improvements.

3. Erosion Control and Stormwater Management

The subdivider shall cause all grading, excavations, open cuts, side slopes, and other land surface disturbances to be mulched, seeded, sodded, or otherwise protected to comply with the approved Sedimentation and Erosion Control Plan for the site.

4. Water Quality Improvement

The subdivider shall pursue an approved plan for the control and improvement of surface water originating from rainfall running from impervious surfaces created within the development. Such works, which may consist of vegetated swales and retention structures, may be designed in concert with those facilities required under the approved Sediment and Erosion Control Plan, and in accordance with the Storm Water Design Manual and Specifications.

5. Existing Flora

The subdivider shall make every effort practically possible to protect and retain all existing vegetation not actually living in public roadways, building foundation sites, private driveways, paths, and trails. Existing trees shall be identified as prescribed in Section 5.4, Landscaping and Buffering, and shall be protected and preserved during construction in accordance with sound conservation practices. Temporary vegetation and mulching shall be used to protect critical areas, and permanent vegetation shall be installed as soon as practical.

6.3.2. GUARANTEES OF IMPROVEMENTS

Final plats of a subdivision shall be approved by the Planning and Inspections Department after the subdivider has complied with one of the following requirements:

- A.** The subdivider has installed all required improvements in accordance with the provisions of this Ordinance; or
- B.** Except in the case of Minor Subdivisions, the subdivider of an approved preliminary project in which the total cost of required improvements and administration does not exceed \$8,000,000.00 (the "Surety Limit"), provides a financial guarantee in-lieu of constructing improvements. The surety limits stated in this section shall be adjusted periodically in accordance with an appropriate established index approved by the County Attorney.
 - 1.** The financial guarantee shall take one of the following forms, at the election of the subdivider:
 - a.** A surety bond issued by any company authorized to do business in North Carolina;

- b. A letter of credit issued by any financial institution licensed to do business in North Carolina; or
 - c. Another form of guarantee that provides equivalent security to a surety bond or letter of credit.
- 2. A financial guarantee may be deposited in escrow with an escrow agent acceptable to the County, provided the subdivider shall file with the County Engineer an agreement between the escrow agent and the subdivider guaranteeing the following:
 - a. The escrow account shall be held in trust until released by the County and shall not be used or pledged by the subdivider in any other matter during the term of escrow; and
 - b. If the subdivider fails to complete the required improvements, the escrow agent shall, upon notification by the County and submission by the County to the escrow agent of an engineer's estimate of the amount needed to complete the required improvements, immediately either pay to the County the funds estimated to complete the required improvements, up to the full balance of the escrow account, or deliver to the County any other instruments fully endorsed or otherwise made payable in full to the County.
- 3. The amount of the financial guarantee shall not exceed 125 percent of the reasonably estimated cost of completion at the time the guarantee is issued. Any extension of the financial guarantee necessary to complete required improvements shall not exceed 125 percent of the reasonably estimated cost of completion of the remaining incomplete improvements still outstanding at the time the extension is obtained.
- 4. Conditions and stipulations to plat approval under this section are as follows:
 - a. The subdivider shall furnish a bona-fide estimate of the required improvements for verification by the County Engineer. Upon the County Engineer's determination that the estimate furnished is reasonable, the subdivider shall deposit with the County the surety bond, letter of credit, or other guarantee, as applicable, in the amount of the estimate determined reasonable by the County Engineer.
 - b. In the event the subdivider obtains a surety bond or letter of credit as its form of financial guarantee, such financial guarantee shall be issued by a company authorized to do business in North Carolina.
 - c. Financial guarantees in the form of a surety bond, letter of credit, or cash security may be reduced by the County Engineer if a portion of the required improvements have been installed, inspected, and approved. An addendum or amendment to the original surety bond or letter of credit shall be required.

6.3.3. REQUIRED IMPROVEMENTS

A. Permanent Monuments

Unless previously existing, a minimum of two permanent control monuments of stone or concrete shall be placed at the point of intersection on the centerline of intersecting public or private street rights-of-way or at the point of intersection of the tangents of curves when such point lies within the pavement of the proposed street. Otherwise, monuments may be placed on the centerline at the points of curvature and at the points of tangency of curves which are to be dedicated for street purposes. A table of dimensions, or dimension between control monuments, shall be shown on the map. Metal castings or access boxes for the control monuments mentioned above shall be placed in the pavement prior to release of final sureties for road construction or final approval of road construction. (Reference N.C.G.S. 39-32.1)

1. Such monuments shall be set a minimum of nine inches below the finished grade of the pavement. A metal casting of approved type will be mounted over the monument with its base flange mounted on a brick foundation with mortar joints of at least two course thickness, the top of which must be a minimum of one and three-quarters inches higher than the highest point of the monument. Permanent monuments shall be at least 30 inches in length, six inches in diameter, and shall have a metal pin or punch-marked metal plate embedded therein marking the point represented on the final plat.
2. In addition to the two required Control Monuments, a control point (i.e. railroad spike, P.K. nail, iron rod, rebar, etc.) shall be set at all other centerline intersections, point of curvature, and points of tangency prior to recordation. In the event that these points are destroyed during initial project construction, it shall be the developer's responsibility to have said points replaced in their original horizontal position.

B. Lot Corners

All lot corners, other than those marked by permanent monuments as herein described, shall be marked by metal stakes not less than three-quarter inches in diameter, no less than two and one-half feet in length.

C. Sewage Disposal and Water Supply

1. Water Supply

All subdivisions shall be connected to the water system of the applicable local governmental entity in order to provide water to every lot within the subdivision. Mains shall be constructed in accordance with established standards and policies. Water connections shall be constructed under the supervision and approval of the CFPWA. If a connection cannot be made to the public water system/CFPWA water system, the subdivider shall submit to the County along with the Preliminary Plan, a letter of approval of water supply signed by the appropriate authority. The subdivider shall install these facilities in accordance with the approved plans. Water distribution systems shall be installed in all new subdivisions.

2. Sewer Collection

All subdivisions shall connect to the sewerage system of the County in order to provide sewer service to every lot within the subdivision. Due consideration shall be given for existing or potential sewer lines for adjoining property in the design and arrangement of sewer lines for the proposed subdivision. If a connection cannot be made to the County's sewerage system, the subdivider shall submit to the appropriate governing body, along with the Preliminary Plan, a letter of approval of sewage disposal system signed by the appropriate authority. The subdivider shall install these facilities in accordance with the approved plans. Sewage collection systems shall be installed in all new subdivisions.

D. Streets

All streets shall be constructed, inspected, and approved in accordance with the following requirements.

1. Construction

All street right-of-way segments designated as public or private shall be constructed to minimum NCDOT standards. These standards are available for review at the County Planning and Inspections Department, the County Engineering Department, and at the Division Office of the NCDOT.

2. Public Streets

- a.** Standards shall include drainage, bridge, right-of-way, and pavement design.
- b.** The classification, and as a result, the construction standards for a public street segment may be upgraded to a higher classification if that street segment will eventually be required to provide access to or collect traffic from future development on adjacent properties.
- c.** All public streets shall be inspected and approved by the District Engineer, NCDOT, Division of Highways.

3. Private Streets

- a.** Streets designated as private shall be constructed to minimum construction standards as adopted by New Hanover County and certified by a professional, legally recognized by a State of North Carolina licensing board, as being licensed to perform such activities or undertakings.
- b.** Pavement design shall meet the requirements as specified and shown in the road profiles depicted in Appendix A: Subdivision Appendices and Certificates.
- c.** Streets designated as private may be allowed in subdivisions once they are reviewed and approved by the TRC. In their review, the TRC will consider unique physical conditions of the property, including but not limited to connectivity, topography, geometric design, storm water, tree preservation, ingress and egress, reduction of speed to desirable

or safe levels, and other safety measures, and that sufficient language is provided through a legally established POA that the streets will be properly maintained.

- d. Whenever a private street intersects a U.S. or NC highway, or Secondary Road, an approved NCDOT Driveway Permit signed by the District Engineer is required prior to final plat approval.
- e. Private road stubs and dead end streets shall be constructed/paved to the property boundary, and shall not contain gates or obstructions to qualify for connectivity standards as stated in Section 6.2.2.A.7.g.6.
- f. Streets designed as collector roads that accept traffic from local streets shall be required to be designated as public, and adhere to the standards under public streets, as noted above. (see Table for Private Road ROW Specifications, General Standards, and Road Profiles located in Appendix A: Subdivision Appendices and Certificates).

E. Surface Water Drainage

All drainage construction within the area of the proposed subdivision shall be reviewed by the County Engineer for conformance with the County's Stormwater Management Ordinance and the Storm Water Management Design Manual. Sufficient calculations shall be included with the preliminary plan to review hydraulic computations. The subdivider shall do all grading and install all drainage structures shown on the construction plans for the area specified by the final plat.

- 1. Wetlands, natural depressions, and areas of good draining soils shall be used in the development of drainage plans, if they exist.
- 2. Discharge of runoff from impervious surfaces directly into natural water bodies shall not be allowed. Runoff shall be routed along vegetated swales, through filter media of vegetation, gravel, sand, or other media, or to detention ponds for the purpose of increasing percolation and settling and filtering out non-point pollutants.

F. Street Name Signs

The sub-divider shall be responsible for erecting street name signs at all intersections within the subdivision. Signs on public streets shall conform with existing NCDOT regulations.

G. Recreation Space

Every subdivider of land for residential purposes shall dedicate a portion of such land, as set forth herein, for the purpose of providing active and passive recreation areas to serve the residents of the immediate neighborhood within the subdivision.

- 1. Recreation Areas Can Be Defined By Active Or Passive Recreation As Follows:
 - a. Active recreation consists of areas such as park land chosen without regard to natural features for the explicit purposes of enhancing design, such as village commons, or providing space for outdoor recreation activities which may include, but not be limited to, tennis courts, ball fields, swimming pools, and tot lots with play equipment.

- b. Passive recreation areas must consist of undisturbed, unique, and sensitive natural features when available, that may include streams, floodplains, wetlands (excluding tidal marsh), conservation resources, and natural heritage areas if identified. These natural spaces will be characterized by undisturbed soils and natural vegetative cover for wildlife habitat. Passive recreation areas may become part of designated County greenways. Amenities such as walking paths, piers, picnic areas, and other passive recreational uses will be allowed, if there is minimal disturbance of the vegetation.

2. Required Recreation Areas

All new residential subdivisions shall provide recreation space in the amount of 0.03 acres per dwelling unit within the subdivision. Fifty (50) percent of the required recreation area shall be designated for passive recreation and 50 percent of the required recreation area shall be designated for active recreation.

- 3. Recreation space areas shall be of such minimum dimensions as to be functionally usable and maintainable. Residential subdivisions in which the amount of required recreational space area does not exceed 10,000 square feet, shall be exempt from providing such space if the Board determines that:
 - a. The recreation space area cannot be combined with such areas serving adjacent property to form a functionally usable and maintainable area recreation space area; or
 - b. The recreation needs of the development can be adequately met by existing or planned County-owned park, recreation, or open space areas located close enough to such development to reasonably serve its residents. In determining the size of a subdivision for the purposes of this subsection, the County shall consider the entire project developed on a single tract or contiguous multiple tracts under common ownership, regardless of whether the subdivision is constructed in phases or stages. The developer of any subdivision that is exempt from providing on-site recreation or open space shall pay a fee to the County in-lieu of the dedication of land, to be used by the County to acquire recreation areas serving the development within the immediate area of the subdivision. Such in-lieu fee shall be determined and paid as provided in Section 6.3.3.G.4.n, Payments In-Lieu of Dedication.

4. Standards for Park, Recreation, and Open Space Areas

Except as otherwise approved by the County Commission, all park, recreation, and open space areas shall comply with the following criteria:

a. Unity

The dedicated land shall form a single parcel of land, whether or not the subdivision is developed in phases or sections, except where it is determined by the County Commission, that two or more parcels would be in the best interests of the residents of the subdivision and

the public. In such case, the appropriate governing body may require that such parcels be connected.

b. Usability

At least one-half of the required recreation space area land that is dedicated, must be (1) located outside of wetland areas under the jurisdiction of, federal and state regulatory agencies, and (2) be usable for active recreation. Areas set-aside to meet the Conservation Resources requirements (Section 5.7, Conservation Resources) can only be credited for one-half of the area used for passive recreation land. Tidal marshes cannot be counted to satisfy the recreation space area requirements.

c. Shape

The portion of dedicated land to be used for active recreation shall be of a shape that can be usable for active recreational facilities, including but not limited to: tennis courts, racquetball courts, swimming pools, exercise rooms, clubhouses, athletic fields, basketball courts, swings, slides, and play apparatus.

d. Greenways

If the recreation space area is a greenway, the land shall be a continuous linear parcel through the subdivision that is at least 30 feet in width.

e. Location

The dedicated land shall be located so that it can reasonably serve the recreation and open space needs of residents of the immediate neighborhood within the subdivision for which the land dedication is made, and can be combined with an adjacent park.

f. Access

All dwelling units in the subdivision shall have free, easy, and convenient ingress and egress to and from the park, recreation and open space areas provided within the subdivision by means of improved streets or dedicated walkways. Rights-of-way for such access shall be shown on the preliminary plans and final plats.

g. Topography

The average slope of the portion of dedicated land deemed usable for active recreation shall not exceed the average slope of the entire subdivision to be developed, and in no case shall the slope of the land dedicated be greater than 15 percent.

h. Required Stormwater Detention/Retention Facilities

Required stormwater detention/retention facilities shall not be accepted to fulfill the requirements set forth by this section. Amenities, such as walking paths, piers, picnic areas, and other passive recreational space that are associated with stormwater management

facilities (i.e. wet ponds) shall receive credit towards the calculation of recreation area lands if such amenities associated with stormwater management facilities are designed according to the standards specified in the Technical Manual to meet this requirement. (See Technical Manual for criteria).

i. Landscaping

Park, recreation, and open space areas shall be landscaped and shall be provided with sufficient natural or manmade screening or buffer areas to minimize any negative impacts upon adjacent dwelling units.

j. Encroachments

The park, recreation, and open space areas required by this section shall exclude roadways, parking areas, and other accessory uses, except recreational facilities.

k. Consistency with Master Parks Plan

If any portion of any subdivision proposed for residential development lies within an area designated on the officially adopted master parks plan as a park, such area shall be included as part of the area set-aside to satisfy the requirements of this section. This area shall be dedicated to public use.

l. Recreational Facilities

The County may require the installation of recreational facilities after considering (i) the character of the park, recreation, and open space area; (ii) the estimated age and the recreation needs of persons likely to reside in the subdivision; (iii) the proximity, nature, and excess capacity of existing County recreational facilities; and (iv) the cost of the recreational facilities.

m. Procedure for Dedication of Land

1. Designation of Land to Be Dedicated

Subdividers shall designate on the preliminary subdivision plan, the area or areas to be dedicated pursuant to this section.

2. Review of Land to Be Dedicated

Upon receipt of the preliminary subdivision plan, the Planning Director shall submit a copy to the appropriate agencies for review. The appropriate agencies shall submit any and all recommendations concerning the land to be dedicated to the Technical Review Committee at its next scheduled meeting.

3. Ownership

The type of ownership of land dedicated for park, recreation, or open space purposes shall be selected by the owner, developer, or subdivider, subject to the approval of the Technical Review Committee or Planning Director, whichever is making a decision

on the subdivision plat. Provided, however, any of such areas included in the master parks plan shall be dedicated to the County. The type of ownership may include, but is not necessarily limited to, the following:

- i. The County, subject to the acceptance by the County Commission;
- ii. Other public agencies, subject to their acceptance;
- iii. Property owner, condominium, or cooperative associations or organizations; or
- iv. Shared, undivided interest by all property owners in the subdivision.

n. Payments In-Lieu of Dedication

1. General Provisions

When the Technical Review Committee or Planning Director, whichever is making a decision on the subdivision plat, determines (upon the recommendation of the Planning and Inspections Department) that the park, recreation, and open space needs of a subdivision can also be adequately met by capital facilities constructed or to be constructed on County-owned property or property to be acquired by the County within a reasonable time that is located close enough to such subdivision to reasonably serve its residents, the appropriate governing agency may authorize the subdivider to make a payment to the County in-lieu of dedication. The Technical Review Committee or Planning Director, whichever is appropriate, may also authorize a combination dedication and partial payment in-lieu of dedication when such is determined to be in the best interest of the citizens of the area to be served. Any public dedication is subject to review and acceptance by the Technical Review Committee or Planning Director, whichever is making a decision on the subdivision plat.

2. Procedure

The subdivider shall include with the application for preliminary plan approval, a letter requesting approval to make a payment in-lieu of dedication. The letter shall include the proposed per acre value and the basis for the determination of such value. Upon receipt of the preliminary subdivision plan, the Planning Department shall submit a copy of the preliminary subdivision plan with the letter requesting a payment in-lieu of dedication to the Planning Director. The staff shall submit any recommendations concerning the request to the Technical Review Committee at its next scheduled meeting.

3. Amount of Payment

If the Technical Review Committee or Planning Director, whichever is making a decision on the subdivision plat, approves

a payment in-lieu of dedication, the amount of such payment shall be the product of the number of acres to be dedicated as outlined in subsection 2 above, and the average fair market value of the land being subdivided at the time of the submission of the preliminary subdivision plan. The Tax Department shall determine the average fair market value of the land based on the value of the land for property tax purposes, the information submitted by the subdivider, and other relevant information.

4. Use of Payments In-Lieu of Dedication

All monies received by the County in accordance with this section shall be used only for the acquisition or development of recreation, park, or open space areas that will benefit the new subdivision residents.

5. Required Payment In-Lieu of Dedication

In the event the Technical Review Committee or Planning Director, whichever is making a decision on the subdivision plat, finds that a land dedication does not meet the long range plans of the County it shall require payment in-lieu of a dedication.

6. Time of Payment

If a payment in-lieu of dedication is authorized, such payment shall be made before recording the final plat for the subdivision. If a subdivision is developed in phases, a payment relating to each phase must be made prior to the recording of a final plat for each phase.

o. Flexibility in Administration Authorized:

1. The requirements set forth in this subsection concerning the amount, size, location and nature of park, recreation, and open space areas to be provided in connection with residential developments are established by the County as standards that preemptively will result in the provision of that amount of recreational facilities and open space that is consistent with officially adopted County plans. The County recognizes, however, that due to the particular nature of a tract of land, or the nature of the facilities proposed for installation, or other factors, the underlying objectives of this article may be achieved even though the standards are not adhered to with mathematical precision. Therefore, the Technical Review Committee or Planning Director, whichever is making a decision on the subdivision plat, is authorized to permit minor deviations from these standards whenever it is determined that: (i) the objectives underlying these standards can be met without strict adherence to them; and (ii) because of peculiarities in the developer's tract of land or the facilities proposed, it would be unreasonable to require strict adherence to these standards.

2. Whenever the Technical Review Committee or Planning Director, whichever is making a decision on the subdivision plat, authorizes some deviation from the standards set forth in this section, the official record of action taken on the development application shall contain a statement of the reasons for allowing the deviation.

H. Fire Hydrants

The subdivider shall be responsible for providing adequate fire protection for the subdivision through the provision of fire hydrants. These fire hydrants shall be constructed to specifications established by County Fire Services, based on the current NC Fire Code standards. Hydrants shall be required as follows:

1. Subdivision with central water system:

For any major subdivision served by a central water system meeting state requirements (Section .2101, Title 10, Chapter 10D NCAC) for fire hydrants, the subdivider shall be required to install a fire hydrant at the entrance to the subdivision and additional hydrants equal either to the total linear feet of roadway divided by 1000 or the total number of lots/units divided by 40, whichever is greater. These additional hydrants shall be spaced evenly through the subdivision in order to provide maximum fire protection coverage, as determined by the County Fire Services. In no case shall a lot/unit be located more than 500 feet from a hydrant.

2. Subdivision with surface water bodies:

For any major subdivision without a central water system meeting state requirements, but either including or adjacent to an adequate permanent surface water body, the subdivider shall do one of the following:

- a. Install a dry fire hydrant as close to the water source as possible, with the adequacy of the water source and the location of the dry fire hydrant to be determined by County Fire Services; or
- b. Establish an easement or road to the water source providing permanent all-weather access that is adequate for fire-fighting equipment and vehicles as determined by County Fire Services.

I. Street Lights

The County, as applicable, shall install streetlights within subdivisions in accordance with the standards of the County. In instances where underground wiring is required, the subdivider shall be responsible for the initial contribution required under the utility company's street lighting service schedule (customer participation) at the time of installation.

J. Entrance Signs and Lighting

Signs delineating the subdivision name and any lighting associated with such sign shall be constructed in compliance with Section 5.6.2.J.1, Subdivision Identification Signs. Sign location shall be shown on the preliminary plan for subdivision.

K. Sidewalks, Trails and Bikeways

Sidewalks, walkways, and other pedestrian ways shall be provided by the subdivider within or adjacent to a subdivision, upon reasonable evidence that the sidewalks, walkways, or other pedestrian ways would be essential for pedestrian access to community facilities, that such is necessary to provide safe pedestrian movement outside the street or street rights-of-way area, or that such is an extension or could reasonably become an extension of existing sidewalks, walkways, and other pedestrian ways. All sidewalks, walkways, and other pedestrian ways shall be aligned as required by this Ordinance, and designed and constructed to conform to NCDOT specifications. Sidewalks shall be indicated on all preliminary plans.

1. Sidewalks shall be required to be constructed in the following circumstances:
 - a. On a minimum of one side of the right-of-way of all arterial or collector streets that are adjacent to the property to be developed;
 - b. On each side of the right-of-way of all arterial or collector streets that run through property to be developed if the subdivider intends to construct any portion of the thoroughfare as access to the subject development; and
 - c. On one side of the right-of-way of all local streets extending through the property to be developed in the R-15 and R-10 zoning districts.
 - d. On both sides of the right-of-way of all local streets extending through the property to be developed in the R-7, and R-5 zoning districts.
 - e. Except as required above, low density developments in R-20 shall be exempt from the sidewalk requirement.
2. The TRC may exempt sidewalk installation in specific cases upon a finding that sidewalks are unnecessary for the protection of the public safety or welfare due to conditions peculiar to the site.

3. Bikeways

The TRC may require the subdivider to make provisions for bikeways within subdivisions, i.e., increased right-of-way, etc. If the subdivider incorporates bikeways within a subdivision, the subdivider shall be responsible for providing the required markings and the acquisition and erection of all signs, signals, or other items in order to create safe bicycling conditions as deemed necessary by the County.

6.3.4. PROPERTY OWNERS' ASSOCIATION (POA)

A property owners' association (POA) shall be established for each subdivision containing private streets and drainage systems. The final plat for each such subdivision shall contain a certificate indicating the book and page number of the POA covenants, conditions, and restrictions. The covenants, conditions, and restrictions shall specify lot owners' responsibilities for maintenance of streets, utilities, storm water management facilities, drainage ditches or swales, or other areas designated as private areas or as common areas, and shall provide for assessments to finance all maintenance activities. Final plats for subdivisions

containing private streets and drainage improvements will not be approved until the subdivider's owners' association documents have been submitted and approved by the Planning and Inspections Department.

A. Required Conditions of Property Owners Associations (POAs):

Property owners associations (POAs) or similar legal entities that own and maintain park, recreation, and open space areas, streets, utilities, storm water management facilities, drainage ditches or swales, or other areas designated as private areas, or as common areas, shall be established in such a manner that:

1. Provision for the establishment of the association or similar entity shall be made before any lot in the development is sold or any building occupied.
2. Membership is mandatory for each property owner within the subdivision.
3. The association is responsible for the liability insurance, local taxes, and the maintenance of the areas.
4. Any sums levied by the association that remain unpaid become a lien on the individual property owner's property.
5. If all or any portion of the property held by the association is being disposed of, or if the association is dissolved, the passive and active recreation and open space is first offered to the County.
6. The right of use of the passive and active recreation or open space and all private improvements is guaranteed to each resident of the subdivision.
7. The declaration of covenants and restrictions that govern the association is submitted for review by the County Attorney and recorded prior to the recording of any final plat for the subdivision, and reference to the deed book and page provided on the plat.

B. Responsibilities:

Property owners' associations (POAs) shall be responsible for continuing upkeep and proper maintenance of all private infrastructure facilities and common areas within the respective subdivision.