
7.0 SUBDIVISION DESIGN STANDARDS

Contents	Page
7.1 General Design Standards.....	7-2
7.1.1 Streets	7-2
7.1.2 Street Intersections.....	7-2
7.1.3 Street Names	7-2
7.1.4 Street Signs	7-2
7.1.5 Streetlights	7-3
7.1.6 Sidewalks.....	7-3
7.1.7 Curb and Gutter	7-3
7.1.8 Blocks	7-3
7.1.9 Lots	7-3
7.1.10 Easements.....	7-4
7.1.11 Utilities	7-5
7.1.12 Water and Sewer.....	7-5
7.1.13 Stormwater	7-5
7.1.14 Fire Protection.....	7-5
7.2 Minimum Requirements for Subdivision Road Construction.....	7-5

7.0 SUBDIVISION DESIGN STANDARDS

7.1 GENERAL DESIGN STANDARDS

7.1.1 STREETS

The location and width of all proposed streets shall be in conformity with official plans of the City and with existing or amended plans of the Planning Commission. The proposed street layout shall be coordinated with the street system of the surrounding area and, where possible, existing principle streets shall be extended. Where in the opinion of the City Council it is desirable to provide for street access to an adjoining property, proposed streets shall be extended by dedication to the boundary of such property.

Permanent dead end streets or cul-de-sacs shall not exceed eight hundred feet in length and shall be provided with a turnaround having a paving diameter of at least eighty feet and a right of way diameter of at least one hundred feet. Temporary dead-end streets shall be provided with a turn around having a radius of at least one half of the street right of way. Rural cul-de-sac access streets shall have a maximum length of eight hundred feet and shall be provided with turnarounds with a minimum right of way diameter of one hundred and twenty feet and a minimum paving diameter of eighty feet.

Alleys of at least twenty feet in width shall be provided to the rear of all lots used for business purposes. All dead end alleys shall provide a turn around with a paving diameter of eighty feet.

There shall be no reserve strips platted in any subdivision. All streets shall comply with the construction standards as detailed in Section 7.2. Private streets shall be permitted provided they comply with the right-of-way and all construction standards of a publicly-dedicated street.

7.1.2 STREET INTERSECTIONS

Insofar as practical, streets shall intersect at an angle of ninety degrees for a minimum of fifty feet from the roadway intersection. In no case shall the angle of intersection be less than seventy-five degrees. Intersections having more than four corners shall be prohibited.

Proposed streets that intersect at opposite sides of another street (either existing or proposed) shall be laid out to intersect directly opposite from each other. A minimum length of one hundred and fifty feet between survey centerlines shall separate intersections that cannot be aligned.

Intersections with a major thoroughfare shall be at least one thousand and three hundred feet apart, measured centerline to centerline.

Property lines at street intersections shall be rounded with a minimum radius of twenty feet.

7.1.3 STREET NAMES

Proposed streets, in alignment with others existing and named, shall bear the assigned name of the existing street. In no case shall the name for a proposed street duplicate or be phonetically similar to existing street names, irrespective of the use of the suffix street, avenue, boulevard, drive, place or court.

7.1.4 STREET SIGNS

Street signs shall be installed by the City. The developer shall reimburse the City for the full costs of installation.

7.1.5 STREET LIGHTS

The developer shall install streetlights within subdivisions in accordance with City standards. In instances where underground wiring is required, the developer shall pay to the applicable power company the charges for underground terminal facilities for all street lighting. If the developer desires a different lighting design, other than the City standards, the developer shall pay the City an amount equal to the difference in material and installation cost.

7.1.6 SIDEWALKS

Sidewalks, walkways and other pedestrian ways shall be provided by the developer within and/or adjacent to any major subdivision. All sidewalks shall be located within the public right of way, be installed to City standards and shall be approved by the City Engineer.

Sidewalks required by street type are as follows:

1. Sidewalks shall be provided along both sides of all major thoroughfares as shown on the official Thoroughfare or Transportation Plan.
2. Sidewalks shall be provided along one side of all minor streets, including cul-de-sacs.

When sidewalk construction is required by the Unified Development Ordinance, the City Council for site plans requiring City Council approval or the Planning Director for plans requiring staff approval, may allow the developer the option of paying a fee in lieu for sidewalk construction. The fees acquired from this ordinance shall be used for sidewalk projects within the city of Goldsboro and its extra-territorial jurisdiction. The City of Goldsboro reserves the right to require sidewalk construction and not allow a fee in lieu. The fee for sidewalk construction shall be \$15.00 a lineal foot. Driveways shall be subtracted from the lineal frontage of the property.

The design and arrangement of all sidewalks shall be in accordance with City standards, provide for extension to adjoining properties and be shown on the preliminary plat.

7.1.7 CURB AND GUTTER

Curb and gutter shall be installed within all proposed subdivisions and on adjacent thoroughfares and streets. Installation of curb and gutter on minor streets may be waived in the Watershed Protection District and rural areas if approved storm water control structures have been installed. All curbs and gutters or drainage ditches shall be designed to meet City standards.

The City Council may allow the curb and gutter requirement to be waived and allow the installation of swales with minimal slopes for minor non-entrance roads within residential subdivisions. Roads that utilize swales in lieu of curb and gutter shall provide sidewalks that meet City standards. The primary entrance roads of residential subdivision roads shall be curb and gutter. All swales shall meet City of Goldsboro standards and shall be sodded.

7.1.8 BLOCKS

Block length and width or acreage within bounding roads shall be such as to accommodate the size of lot required by the zoning district in which it is located. In no case shall block lengths exceed fourteen hundred feet or be less than four hundred feet. Blocks shall have a width sufficient to allow two tiers of lots.

7.1.9 LOTS

Lot size, depth, width and setbacks shall be in conformance with the requirements of this Ordinance. In subdivisions where septic systems, private wells and/or community water systems are to be employed, in addition to meeting the minimum size of this Ordinance, such lots shall have to meet

the minimum size requirements of the Wayne County Health Department for the installation of the aforementioned utility systems.

Lot lines shall be substantially at right or radial angles to the street lines. All lot lines characterized by subdividing an existing or proposed building or portion thereof shall meet all the applicable North Carolina State Building Code regulations including, but not limited to, fire walls.

Lots subject to flooding and lots deemed to be uninhabitable shall not be platted for residential occupancy nor for other such uses as may increase danger to health, life or property or aggravate the flood hazard.

Lots shall be of such configuration to provide adequate building sites. All remnants of lots or residual parcels of a larger tract must be added to adjacent lots, rather than allowed to remain as an unusable parcel.

Corner lots for residential purposes shall have an extra width to permit appropriate building setback from and orientation to both adjacent streets.

Double frontage lots shall be avoided except where necessary to provide residential separation from highways, traffic arteries, railroads or other incompatible uses. Where double frontage lots are allowed, the depth of said lots shall be increased by a minimum of twenty feet to provide an additional separation between the residence and the highway, traffic artery, railroad or other non-compatible use.

Where land is subdivided into parcels larger than ordinary building lots, such lots shall be so arranged as to allow for the opening of future streets and further logical subdivision.

All lots shall be provided access in accordance with City standards. All lots shall have a minimum frontage along a public or private street of at least 50 feet except that the frontage of a cul de sac lot may be reduced to 35 feet.

7.1.10 EASEMENTS

Utility easements shall be centered on the rear or side lot lines and shall be at least fifteen feet in width.

Where a subdivision is traversed by a watercourse, drainage way, channel or stream, there shall be provided a storm water easement or drainage right of way conforming substantially with the lines of such watercourse and such further width or construction as will be adequate for the purpose of storm water drainage. Parallel streets or parkways may be required in connection therewith.

Rural access streets and cul-de-sacs shall have a minimum easement of ten feet on either side of the right of way. Wider easements may be necessary as determined by the City Engineer to facilitate proper grading of cross sections and storm drainage systems.

The developer, as necessary to accommodate future utilities and adequate drainage, shall provide additional easements.

All access easements shall include a recorded instrument that provides for perpetual maintenance in a condition that permits access by emergency vehicles to all the properties served. The cost of maintenance is to be shared equally by all of the owners served by such easement. All access easements shall be installed prior to the issuance of a certificate of occupancy by the City Inspections Department.

All easements are to be cleared and stabilized as approved by the City Engineer.

7.1.11 UTILITIES

Electric, cable, telephone and other communication lines within the subdivision and serving the subdivision shall be installed underground according to City standards and without expense to the City. The Council may grant modifications to these requirements upon recommendation from the City Engineer that topography, soil conditions or other practicable difficulties would result in an undue hardship.

7.1.12 WATER AND SEWER

Water and sanitary sewer mains shall be installed in accordance with City standards and shall be approved by the Goldsboro City Engineer and the State of North Carolina, when such utilities are accessible and available within one thousand feet of the proposed subdivision. Should septic systems and wells be utilized, such shall meet the requirements of the State Board of Health and be approved by the Wayne County Health Department.

7.1.13 STORM WATER

Storm water drainages facilities shall be installed in accordance with City standards and shall be approved by the City Engineer and, where applicable, by the State of North Carolina.

7.1.14 FIRE PROTECTION

All lots served by public water supply systems shall also be afforded fire protection by means of hydrants installed in accordance with City standards, as approved by the City Engineer.

7.2 MINIMUM REQUIREMENTS FOR SUBDIVISION ROAD CONSTRUCTION

The following design standards shall be considered minimum requirements:

- a. *Curb and Gutter.* Curb and gutter shall be installed within proposed subdivisions and on major thoroughfares and minor streets. When contiguous subdivisions are developed with curb and gutter, a proposed subdivision shall be designed with curb and gutter.
- b. *Streets, Alleys and Access Easements.* The design standards which shall apply to streets, alleys and access easements are as follows:
 1. *Right-of-way Widths.* Minimum street right-of-way widths shall be shown on the major thoroughfare plan and shall be not less than the following:
 - a. Major Thoroughfares
 1. Controlled access - 100 ft.
 2. Arterial Streets
 - a. Primary - 90 ft.
 - b. Secondary - 80 ft.
 - b. Minor Streets
 1. Local residential street - 60 ft.
 2. Cul-de-sac - 50 ft.
 3. Collector streets - 66 ft.
 4. All residential streets located beyond the corporate limits of the city - 60 ft.
 - c. Rural access streets
 1. Local residential street - 60 ft.
 2. Cul-de-sac - 60 ft.
 - d. Access easements
 1. Minimum right-of-way width - 30 ft.

2. Compacted crowned roadbed surface consisting of three inches of crush and run base of 20 ft.
3. Existing access easements shall have a minimum right-of-way width of 20 ft.
4. Existing access easements shall provide a compacted crowned road base surface consisting of three inches of crush and run of 18 ft. in width.

1. *Paved Widths*

- a. Major thoroughfares
 1. Limited access - four 12-foot lanes with 16-foot median strip. Pavement thickness design shall be as approved by the Engineering Department.
 2. Arterial streets:
 - a. Primary - 65 ft. back to back of curb. Three (3) inches of asphalt on six-inch stone base. 24-inch concrete curb and gutter.
 - b. Secondary - 53 ft. back to back of curb. Three (3) inches asphalt on six inch stone base. 24-inch concrete curb and gutter.
- b. Minor streets
 1. Local residential streets - 31 ft. back to back of curb. Three inches of asphalt on six-inch stone base. 24-inch concrete curb and gutter or 30-inch rolled type gutter.
 2. Cul-de-sacs - 31 ft. back to back of curb. Three inches of asphalt on six-inch stone base. 24-inch concrete curb and gutter or 30-inch rolled type gutter.
 3. Collector streets - 45 ft. back to back of curb. Three inches of asphalt on six-inch stone base. 24-inch concrete curb and gutter.
 4. All residential streets located beyond the corporate limits of the city or within its extraterritorial jurisdiction shall have a paved width of 31 ft. back to back of curb if provided with curb and gutter. Three inches of asphalt on six-inch stone base.
 5. Minor Cul-de-Sacs - Cul-de-sacs serving less than six lots - 28 ft. back to back of curb and utilizing three inches of asphalt on six inches of stone base. 24-inch concrete curb and gutter or 30-inch rolled type gutter.
- c. Rural Access Streets. If approved by the City Council, paved width of 22 ft. minimum three inches of asphalt on six-inch stone base.

Whenever three (3) inches of asphalt are required, the amount of asphalt may be reduced to two (2) inches if the proposed asphalt is superpave.

3. *Grades.* Unless necessitated by exceptional topography and subject to the approval of the City Engineer, street grades shall be as follows:
 - a. Street grades shall be not less than .5%
 - b. Grades approaching intersections shall not exceed 5% for a distance of not less than 100 ft. from the center line of said intersection.

- c. Each rural access street or cul-de-sac shall have a minimum six-foot wide shoulder with a maximum grade of 1:10. Each rural access street or cul-de-sac cross-section shall be provided with drainage swales with maximum grades of 1:5 beginning from the outer edge of the shoulder to the centerline of the drainage swale.
 - d. In areas where topography requires modifications to accommodate adequate drainage or street cross-sections, the Engineering Department may waive or modify requirements of shoulder and/or drainage grades.
 - e. After preliminary approval of the subdivision plat and before construction, the plan, profile and proposed cross-sections for proper street and storm drainage system design shall be submitted to the Engineering Department for approval. Proposed cross-sections shall be drawn at 50-ft. stations along the center line of the proposed streets. Additional information and/or calculations may be required for storm drainage and street improvement within the subdivision. Proposed plans, profiles and cross-sections shall be designed for a minimum ten-year frequency storm. Existing drainage ways within the subdivision shall be designed to accommodate a minimum 25-year frequency storm.
 - f. Storm sewer piping and appurtenances shall be designed and installed in a manner and location approved by the Engineering Department.
 - g. Driveway culverts to proposed lots within the subdivision shall not be permitted unless approved in writing by the Engineering Department.
4. *Horizontal curves.* Where a centerline deflection angle of more than 10° occurs, a circular curve shall be introduced having a center line radius of not less than the following:
- a. Major thoroughfares - as required by design speed*
 - b. Collector streets - 350 ft.
 - c. Minor streets - 250 ft.
 - d. Cul-de-sacs - as required by design speed*

Circular curves may be combined to produce a compound curve provided the difference between the two branches of the curve does not exceed 5°.

*For super-elevated curves, use the criteria set forth in "A Policy on Geometric Design of Rural Highways" and "A Policy on Arterial Highways in Urban Areas", as appropriate, wherein the minimum safe radius is defined as:

$$R = \frac{V^2}{15(e+f)}$$

R = Minimum Safe Radius
V = Design speed in miles per hour
e = Rate of superelevation in feet per foot
f = Side friction factor

- 5. *Vertical Curves.* All vertical curves shall have such length as necessary to provide safe sight distance and shall be approved by the City Engineer. A minimum sight distance of 200 feet shall be maintained.
- 6. *Tangents.* A tangent of at least 100 ft. in length shall be provided between curves on all streets.
- 7. *Intersections.* Street intersections shall be laid out as follows:
 - a. Streets shall intersect as nearly as possible at right angles and no street shall

- intersect at less than 75°.
 - b. Intersections with a major thoroughfare shall be at least 1,300 feet apart measured from center line to center line.
 - c. Property lines at street intersections shall be rounded with a minimum radius of 20 ft.
 - d. Street jobs with center line offsets of less than 150 ft. shall be prohibited.
8. *Cul-de-sac.* Permanent dead-end streets shall not exceed 800 ft. in length and shall be provided with a turnaround having a roadway diameter of at least 80 ft. and a right-of-way diameter of at least 100 ft. Temporary dead-end streets shall be provided with a turnaround having a radius of at least one-half the right-of-way of the street. Rural cul-de-sac access streets shall have a maximum length of 800 feet and shall be provided with turnarounds with a minimum right-of-way diameter of 120 ft. and a minimum paving diameter of 80 ft.
- c. *Blocks.* The length and width of blocks within subdivisions shall be as follows:
- 1. *Length.* Block lengths shall not exceed 1,400 feet or be less than 400 feet. Where deemed necessary by the Planning Commission, a pedestrian crosswalk at least five feet in width may be required.
 - 2. *Width.* Blocks shall have sufficient width to allow two tiers of lots of minimum depth except where a greater width is required to separate residential development from through vehicular traffic.

7.3 SECTION RESERVED