

ARTICLE IV DESIGN STANDARDS AND REQUIRED IMPROVEMENTS

Section 4-1. Purpose

The purpose of design and improvement standards is to create functional and attractive land developments, to minimize adverse impacts, and to ensure that such developments will be an asset to the city. To promote this purpose, all proposed land developments shall conform to the following standards.

Section 4-2. Site Design Standards, Generally

1. Site Analysis

An analysis shall be made of characteristics of the development site, such as site context, geology and soil, topography, ecology, existing vegetation, structures, and road networks, visual features, and past and present use of the site.

2. Site Design, Generally

Site design shall take into consideration all existing local and regional plans of the city, and shall be based on the site analysis. To the extent practical, development shall be located to preserve any natural features on the site, to avoid areas of environmental sensitivity, and to minimize negative impacts and alteration of natural features.

The following specific areas shall be preserved to the extent consistent with the reasonable utilization of the site.

1. Unique and/or fragile areas, including wetlands as defined in Sec. 404, Federal Water Pollution Control Act Amendments of 1972, as determined by the U.S. Corps of Engineers.
2. Trees 10" or more DBH (Diameter Breast High) in accord with Section 4-5 of the Loris Zoning Ordinance.
3. Flood plain areas, as determined by FEMA (Federal Emergency Management Agency) and delineated on Flood Boundary and Floodway Maps for the City of Loris, except as provided herein and in related regulations.
4. Habitats of endangered wildlife, as identified on federal and state lists.
5. Historically significant structures and sites, as listed on federal, state, and/or local lists of historic places.
6. The development shall be designed to avoid adversely affecting ground water and aquifer recharge; to reduce cut and fill; to avoid unnecessary impervious cover; to prevent flooding; to provide adequate access to lots and sites; an to mitigate adverse effects of shadow, noise, odor, traffic, drainage, and utilities on neighboring properties.

Section 4-3. Streets

1. Circulation System Design

The street system shall be designed to permit the safe, efficient, and orderly movement of traffic; to have a simple and logical pattern; to respect natural features and topography; and to present an attractive streetscape.

2. Streets To Be Public

All streets shall be public dedicated streets and improved accordingly with the provisions of this Ordinance.

3. Layout and Alignment

1. Proposed streets shall be coordinated with the street system in the surrounding area and where possible shall provide for the continuation of existing streets abutting the development.
2. All streets shall be opened to the exterior property lines of the development unless permanently terminated by a vehicular turn-around or an intersection with another street.
3. Reserve strips controlling access to streets are prohibited except where their control is placed with the city under conditions approved by the Planning Commission.
4. No half streets shall be permitted.

4. Alleys

1. Alleys are not permitted in residential developments.
2. Paved alleys are permitted in commercial and industrial developments to provide service access, off-street loading and unloading, and parking consistent with and adequate for the uses proposed.

5. Cul-de-sacs

1. Dead-end streets designed to be permanently closed at one end shall not exceed one thousand (1,000) feet in length measured from the right-of-way of the intersecting street to the center point of the turn-around.
2. Turn-arounds shall be provided at the closed end of a street and shall have a minimum radius of fifty (50) feet. Pavement width shall have a minimum

curb radius of forty (40) feet. A landscape center island may be provided if sight lines are not obstructed. If such island is provided, the pavement width of the turn-around shall be a minimum of thirty (30) feet.

3. Temporary dead-end streets which extend for a greater distance than the depth of one abutting lot shall be provided with a temporary turn-around conforming to the illustration in this Section.

6. Intersections

1. No more than two streets shall intersect at any one point.
2. All streets shall intersect as nearly as possible at ninety degree right angles.
3. Streets entering upon opposite sides of a given street shall have their center lines directly opposite or shall be off set a minimum distance of 150 feet for minor streets and 400 feet for major streets, measured along the centerline of the streets being intersected.
4. Street intersections shall be located at least 150 feet from the right-of-way of any railroad track, measured from the centerpoint of the intersection to the railroad right-of-way line nearest the intersection.
5. Private driveways shall not intersect a public street within 50 feet of an intersection, measured from the street right-of-way.

7. Right-of-way, Lane, and Pavement Widths

Minimum street right-of-way, lane, and pavement widths shall be as follows

<u>Classification</u>	<u>Lane Width</u>	<u>Pavement Width</u>	<u>Right-of-Way Width</u>
Minor Street	10'	24'	50'
with parking (one side)	10'	34'	50'
Major Street	11'	28'	66'
with turning lane	11'	40'	66'
Alley	9'	18'	22'

8. Sight Distance

Where horizontal curves are used, the minimum sight distance shall be as follows

	Design Speed MPH	Minimum Curve Radii	Minimum Sloping Sight Distance
Minor	30-35 mph	275 ft.	200 ft.
Major	35-45 mph	350 ft.	240 ft.

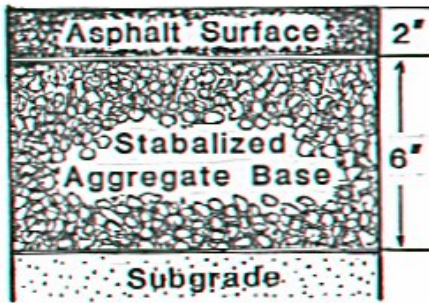
9. Required Improvements

1. Dimensional Specifications

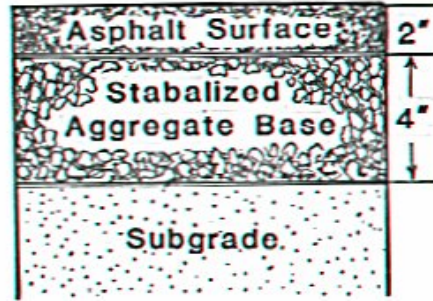
Street improvements shall adhere to the following specifications:

For Minor Streets

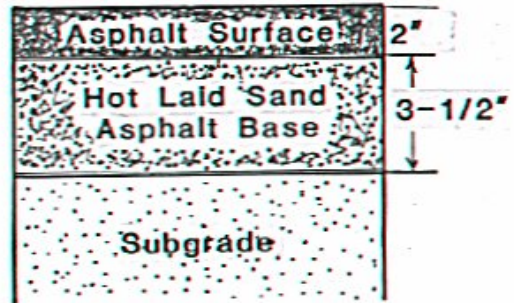
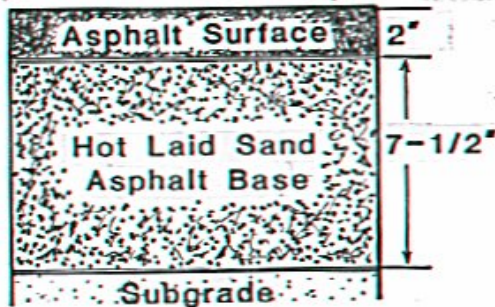
POOR SUBGRADE



GOOD SUBGRADE



For Major (Collector) Streets



Note: All subgrades shall be considered “poor” unless the applicant proves otherwise through “proof roll testing,” 50,000 lbs. Per tandem vehicle. Test results shall be reviewed for approval by the Director of Public Works.

b. Sub-grade Categories

Sub-grade categories are based on prevailing soil conditions and properties.

Four of the five major soils in Loris — Goldsboro, Lynchburg, Norsmond, and Woodington — pose constraints to street development because of wetness. As such, they are generally considered to be “poor” subgrade.

c. Construction Specifications

All streets shall be constructed in accord with the South Carolina Standard Specification for Highway Construction Manual, Latest Edition. Specifically:

- c-1 Earth work shall be completed in accord with Section 200.
- c-2 Base and Subbases shall be constructed in accord with Section 300, as applicable to the proposed base course.
- c-3 Paving shall be constructed in accord with Sections 400 or 500, as applicable to the proposed paving material.

d. Substitutions

If substitutions of the base, subbase, or paving materials required by Section 403(9)(a) above are proposed, they shall be submitted for approval to the Public Works Director, together with test results to ensure equivalency by an independent testing laboratory satisfactory to the Director of Public Works.

e. Testing

All required compaction and materials tests shall be performed at the expense of the developer, and in the presence of the Public Works Director.

f. Inspections

A registered engineer shall inspect all phases of construction and certify satisfactory completion of the following steps to the Director of Public Works:

- At completion of clearing and grubbing operations.
- At completion of rough grading.
- At completion of subgrade work.
- Before and after all prime and sealer applications.
- During final pavement application.
- Final acceptance inspection.

In addition, once notified, the Director will inspect the quality of construction of each stage within two working days. This inspection must be conducted prior to starting construction on the next phase.

Section 4-4. Curb and Gutter

1. Requirement

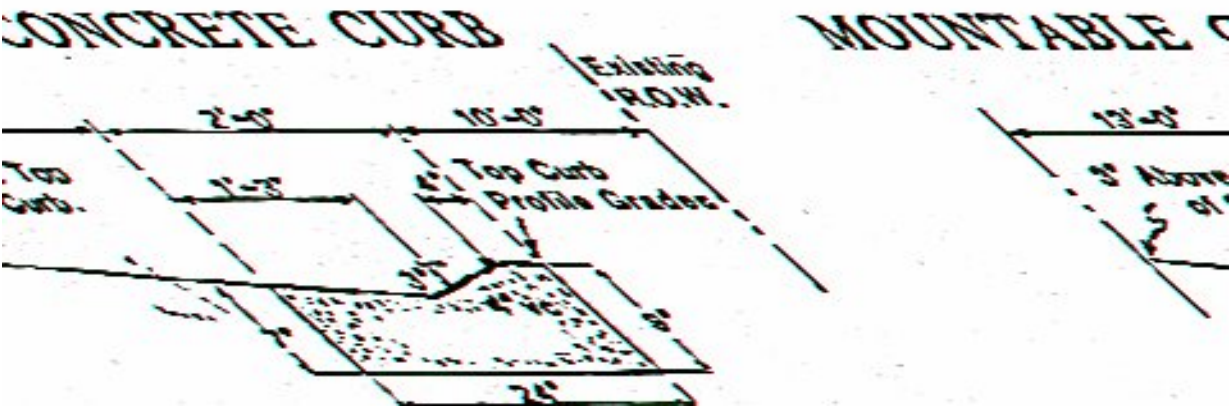
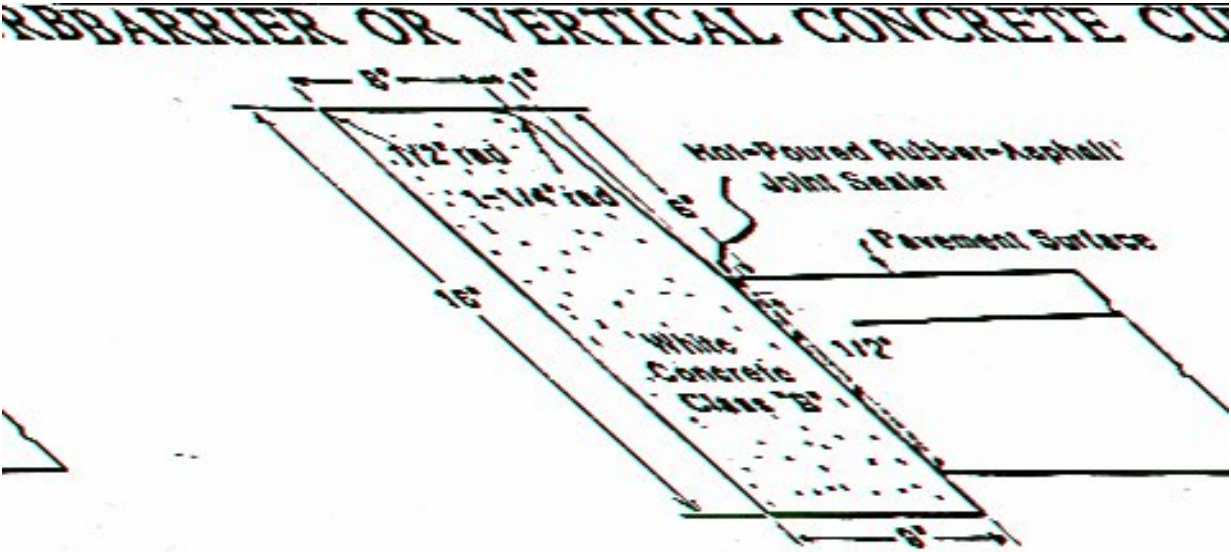
Curbs and gutters shall be required and installed along both sides of all streets.

2. Construction Specifications

Curbs and gutters shall be constructed in accordance with Section 720 of the Standard Specifications For Highway Construction Manual, latest Edition.

3. Design Specifications

Acceptable curb types are illustrated as follows:



A valley gutter, not pictured, may be substituted for the above on minor residential streets, provided it is at least 3 feet wide.

4. Transition

The transition from one type to another shall be made only at street intersections with adequate provisions being made for driveway entrances.

Section 4-5. Shoulders

Shoulders shall consist of stabilized turf or other material acceptable to the Public Works Director and shall be prepared in compliance with Section 209 of the Standards Specifications Manual previously referenced.

Section 4-6. Signage and Names

1. Street Signs

1. Design and placement of traffic signs shall follow state regulations or the requirements specified in the Manual of Uniform Traffic Control Devices for Streets and Highways, published by the U.S. Department of Transportation. Responsibility for installation shall rest with the developer.
2. At least two street name signs shall be placed at each four-way street intersection, and one at each “T” intersection. Signs shall be installed under street lights, where possible, and free of visual obstruction. The design of street names signs shall be approved by the Public Works Director and of a uniform size and color.

2. Names

1. Streets. Street names shall be subject to approval of the Planning Commission and Horry County 911 Addressing. Proposed street names shall be substantially different in sound and spelling from existing streets in the city and county unless at a future date plans call for a tie-in between the proposed street and an existing street.
2. Subdivisions and other Developments. Subdivision and development names shall be subject to the approval of the Planning Commission and shall not duplicate the name of any recorded subdivision or development.

Section 4-7. Underground Wiring

1. Where Required

All electric, telephone, television or other communication lines, both main and service connections servicing new subdivisions shall be provided by underground wiring within easements or dedicated public rights-of-way, installed in accordance with the prevailing standards and practices of the utility or other companies providing such services.

Lots that abut existing easements or public rights-of-way where overhead electric or telephone distribution supply lines and service connections have previously been installed may be supplied with electric and telephone service from those overhead lines, but the service connections from the utilities, should a road widening or an extension of service, or other such condition occur as a result of the development and necessitate the replacement or relocation of such utilities, such replacement or relocation shall be underground.

2. Exceptions

Where conditions are such that underground wiring is not practical, the Planning Commission may make an exception, provided; the placement and alignment of poles shall be designed to lessen the visual impact of overhead lines; that clearing swaths through treed areas shall be avoided by selective cutting and staggered alignment; that trees shall be planted in open areas and at key locations to minimize the view of poles and alignments; and that alignments shall follow rear lot lines and other alignments, as practical.

Section 4-8. Street Lighting

1. Where Required

Street lighting shall be provided at all street intersections, and between intersections where the distance is 800 feet or more; provided that such spacing between intersections shall be not less than 400 feet between street lights.

2. Height

The maximum height of street lights shall be 25 feet.

3. Shielding

Street lighting shall be properly shielded so as not to create a hazard to drivers or a nuisance to residents.

Section 4-9. Easements

1. Drainage Easements

1. Where a subdivision or development is traversed by a water course, drainage way, channel, or stream, adequate areas for storm water or drainage easements shall be allocated, conforming substantially with the lines of such water course, and of sufficient width to carry off storm water and provide for maintenance and improvements of the water course.
2. The location of any surface drainage course shall not be changed without the approval of the Planning Commission.

2. Utility Easements

1. Adequate areas of suitable size and location shall be allocated for utility easements. The location and size of such easements shall be coordinated with the public and private utilities involved.

2. Where provided along side or rear lot lines, utility easements shall be not less than 20 feet in width. No structures or trees shall be placed within such easements. Such easements shall be maintained by the property owner(s) and may be used to satisfy yard requirements.

3. Maintenance

1. Covenant restrictions placed in the deed of a lot which contains a utility easement shall stipulate that the city or utility company with lines in such easement shall have full right of access to such easement.
2. The city shall maintain only those easements specifically accepted for public maintenance.

Section 4-10. Blocks

1. Residential

1. Block lengths shall be appropriate to topographic conditions and density to be served, but shall not exceed 1,000 feet in length, or be less than 300 feet in length.
2. Blocks should be of sufficient width to allow for two tiers of lots of appropriate depth, except where reverse frontage lots are required along a major street, or where prevented by the size, topographical conditions, or other inherent conditions of property.

2. Commercial and Industrial

Blocks intended for commercial or industrial development may vary from the standards of design detailed above in favor of dimensions more suitable to their prospective use; provided such blocks permit adequate traffic circulation.

Section 4-11. Lots

1. Accessibility

All lots except those in Exempt Subdivisions, as defined by this Ordinance, shall be accessible by a public street.

2. Design

The lot size, width, depth, shape, grade, and orientation shall be in proper relation to street and block design, to existing and proposed topographical conditions, and for the type of development and use contemplated.

3. Dimensions

All lots shall meet the minimum area and dimensional requirements of the zoning district in which they are to be located.

4. Double Frontage

Double or reverse frontage lots shall be prohibited, except where required to provide separation of residential development from major streets or to overcome specific disadvantages of topography or orientation. All residential reverse frontage lots shall have a minimum rear yard of 50 feet, measured from the shortest distance of the proposed back building line to the street right-of-way and shall within such rear yard and immediately adjacent to the right-of-way, have a non-access planting screen easement of at least 20 feet in depth.

5. Alignment

Side lot lines shall be aligned at approximately right angles to straight street lines and radial to curved street lines.

Section 4-12. Sidewalks

1. Where Required

A pedestrian system shall be provided where required by the Planning Commission for safety, i.e. access to recreational and educational facilities.

2. Design Specifications

Sidewalks shall be placed parallel to streets, with exceptions permitted to preserve natural features or to provide visual interest where required for pedestrian safety.

3. Construction Specifications

1. Sidewalks shall be four inches thick except at points of vehicular crossings, where they shall be at least six inches thick. At vehicular crossings, sidewalks shall be reinforced with welded wire fabric mesh or an equivalent.
2. Sidewalks shall be installed in accord with Section 720 of the Standard Specifications for Highway Construction Manual, latest Edition.
3. Graded areas shall be planted with grass or treated with other suitable ground cover.

Section 4-13. Areas Subject To Flooding

If the area being developed, or any part thereof, is located within the boundary of a designated Flood Plain Area, as delineated by the Flood Boundary and Floodway Maps for the City, adequate plans and specifications for protection from flooding shall be provided as herein required:

1. Not To Be Expanded

Any plat which contains land subject to flooding shall be accompanied by evidence that no appreciable expansion of the area subject to flooding would result from the proposed development of the land, and that the proposed development will be adequately protected from inundation without appreciable interference with the flow of any watercourse or into an impounding basin.

All such evidence including surveys and specifications shall be submitted with the Final Plat, and no final Plat shall be approved in the absence thereof.

In no case shall any fill, levee, or other protective works be approved unless sufficient compensating adjustments of waterways, ditches, or impounding basins are made to prevent any appreciable expansion of flood hazard areas.

2. Streets Subject to Flooding

The center line of all streets should be at least on the ten-year flood line.

Section 4-14. Water Supply

1. DHEC Approval Required

All subdivisions and lots within such developments shall be provided with water supplies and systems conforming to the requirements, rules, and policies of the South Carolina Department of Health and Environmental Control (DHEC), and approved by said agency.

2. When Required to Connect to City Supply System

Depending on the number of housing units, residential subdivisions shall be required to connect to the city’s public water supply system if public service is available within the following distances.

<u>Size of Development</u>	<u>Distance</u>
1 unit	200 feet
2 units	400 feet
3 units	600 feet
4 units	800 feet
5-15 units	1,000 feet

3. System Requirements

The water supply system shall be adequate to handle domestic demand including fire flow, based on complete development.

4. System Approval Required

Improvement plans and specifications for all water supply systems for which the developer is responsible shall be submitted for approval with the Final Plat.

5. System To Include Fire Hydrants

Fire hydrants shall be installed by the developer in accordance with Section 4.16.

Section 4-15. Sanitary Sewerage Facilities

1. DHEC Approval Required

All developments and lots within subdivisions shall be provided with sanitary sewerage facilities conforming to requirements, rules, and policies of the South Carolina Department of Health and Environmental Control (DHEC), and approved by said agency. Said facilities shall be “stubbed out” prior to road service.

2. When Required to Connect to City Sewerage System

Depending on the number of housing units , residential subdivisions shall be connected to the city’s public sanitary sewer system if public service is available within the following distances:

<u>Size of Development</u>	<u>Distance</u>
1 unit	200 feet
2 units	400 feet
3 units	600 feet
4 units	800 feet
5-15 units	1,000 feet

If a public system is not in place or cannot be extended, the developer must provide individual subsurface disposal systems where appropriate, given site density, soil, slope, and other conditions and subject to applicable DHEC regulations.

3. System Requirements

The sanitary sewer system shall be adequate to handle the necessary flow based on complete development.

4. System Approval Required

Improvement plans and specifications for all disposal systems for which the developer is responsible shall be submitted for approval with the Final Plat.

Section 4-16. Fire Hydrants

Fire hydrants shall be installed and spaced throughout each subdivision to maintain a 500' radius between hydrants. The location and spacing of hydrants shall be approved by the Fire Chief.

Section 4-17. Survey and Markings

All land developments within the jurisdiction of this Ordinance shall be surveyed, platted, and marked in accord with the Minimum Standards Manual for the Practice of Land Surveying in South Carolina, as promulgated by the Code of Laws of South Carolina, 1976, Title 40, Chapter 21. This Manual is hereby adopted by reference and is as much a part of this Ordinance as if contained herein.