

CHAPTER 10: INFRASTRUCTURE

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REVISED BY BOA APPROVAL: 2-1-2016

CHAPTER 10: INFRASTRUCTURE

Section 10.1 Street Standards

10.1.1 Conformance with Comprehensive Transportation Plan (CTP)

The location and design of streets shall be in conformance with the adopted Metropolitan Planning Organization's Comprehensive Transportation Plan. Where conditions warrant, right-of-way width and pavement width in excess of the minimum street standards may be required. In any case where any part of a development lies within the corridor of a Thoroughfare shown on a roadway corridor official Map adopted pursuant to NCGS Chapter 136, Article 2E, no development approval shall be granted with respect to the property in the roadway corridor. Provided, however, no development Plat approval shall be delayed by the provision of the Roadway corridor official map procedure for more than three (3) years from the date of its original submittal.

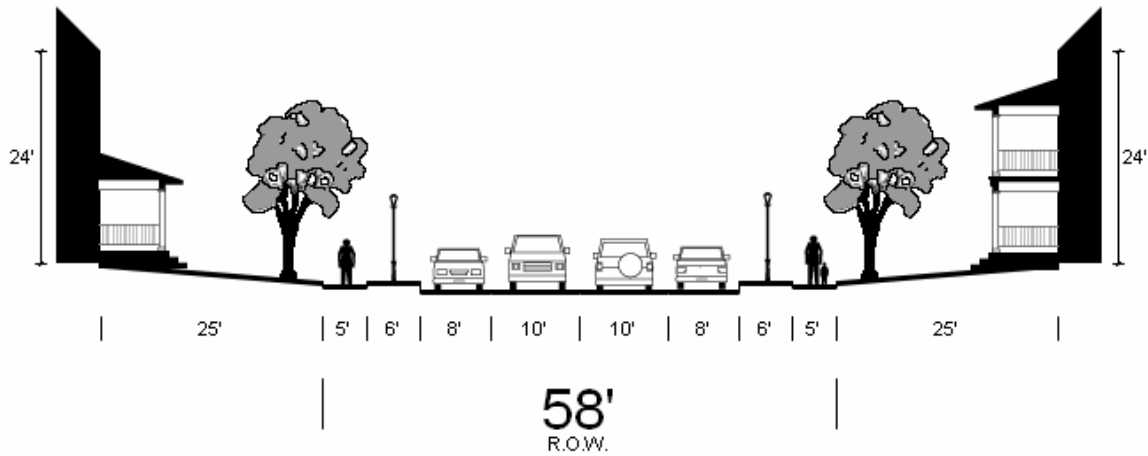
10.1.2 Blocks

- A. The lengths, widths, and shapes of blocks shall be determined with due regard to: provision of adequate building sites suitable to the special needs of the type of use contemplated; zoning requirements; needs for vehicular and pedestrian circulation; control and safety of road traffic; limitations and opportunities of topography; and convenient access to water areas.
- B. Blocks shall not be less than 400 feet nor more than 1,200 feet in length. Where a longer block will reduce the number of railroad grade crossings, major stream crossings, or where longer blocks will result in less traffic through residential developments from adjoining business or industrial areas, the Development Administrator may authorize block lengths in excess of 1,200 feet.
- C. Blocks shall have sufficient width to allow two (2) tiers of lots of minimum depth except where single tier lots are required to separate residential development from through vehicular traffic or another type of use, in nonresidential developments, or where abutting a water area.
- D. Block and lot numbers shall conform to the Town road numbering system, if applicable.

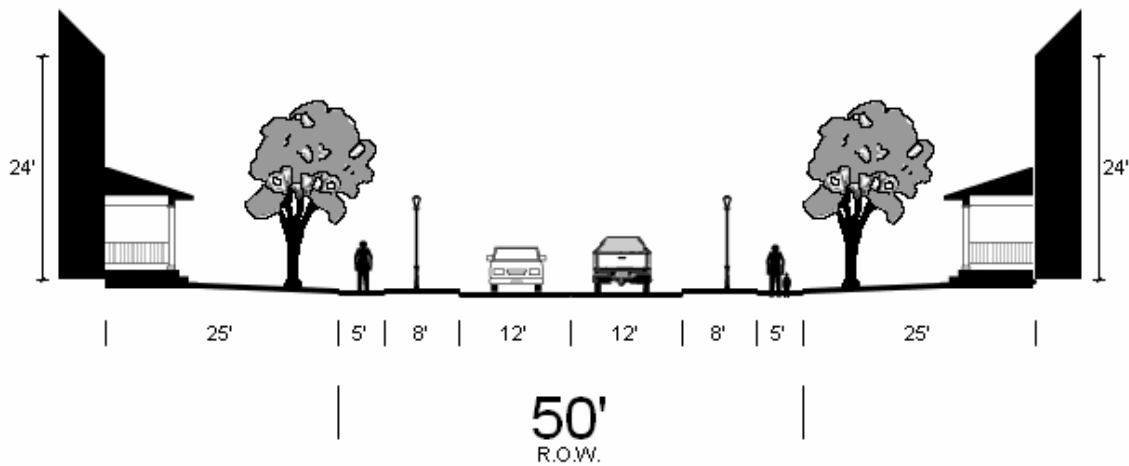
10.1.3 Street Design

- A. All roads shall be public and shall be constructed in accordance with the latest edition of the *Subdivision Roads Minimum Construction Standards*, established for the particular type of street in question by the NC DOT Division of Highway, unless otherwise specified in this Ordinance or a higher or more restrictive standard is established by this Ordinance. If a higher or more restrictive standard is required, the street shall meet that higher or more restrictive standard. The term "constructed" as used in this Chapter in reference to NCDOT standards refers to all standards of design and construction, including right-of-way widths.
- B. Additionally, the latest edition of the NCDOT Division of Highways *Traditional Neighborhood Development Guidelines* may be followed for developments that utilize a more traditional design. In the absence of TND specific design guidelines, the criteria of the *Development Roads Minimum Construction Standards* shall be followed.

C. In addition to NCDOT requirements, the following cross sections shall apply to all new residential streets:



Residential Street (on-street parking both sides)



*Residential Street (no on-street parking)**

*This cross section may only be utilized if each lot has a minimum of three (3) parking spaces, not including garage spaces.

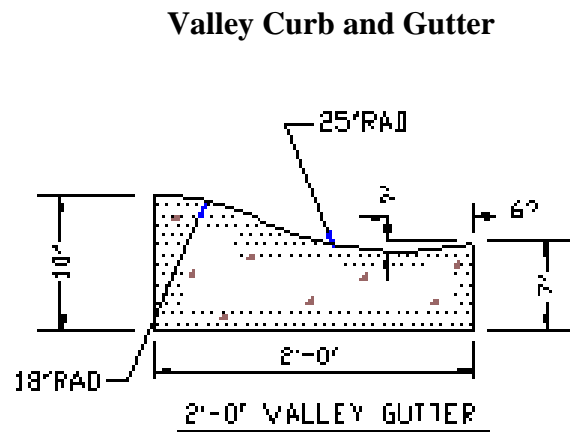
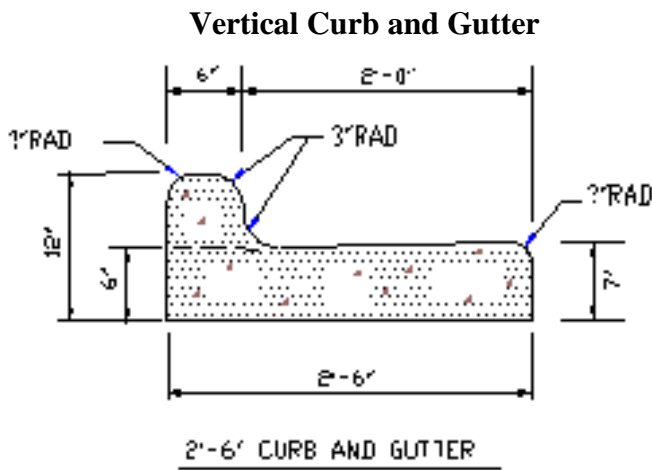
10.1.4 On-Street Parking

On-street parking shall be at least 8 feet wide (to back of curb) and 22 feet long and be marked on the pavement.

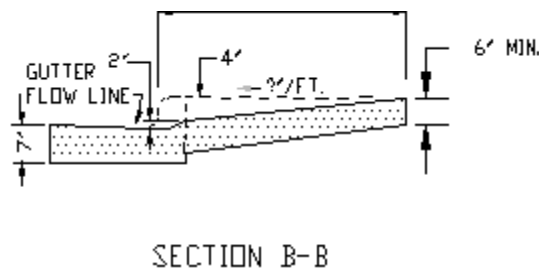
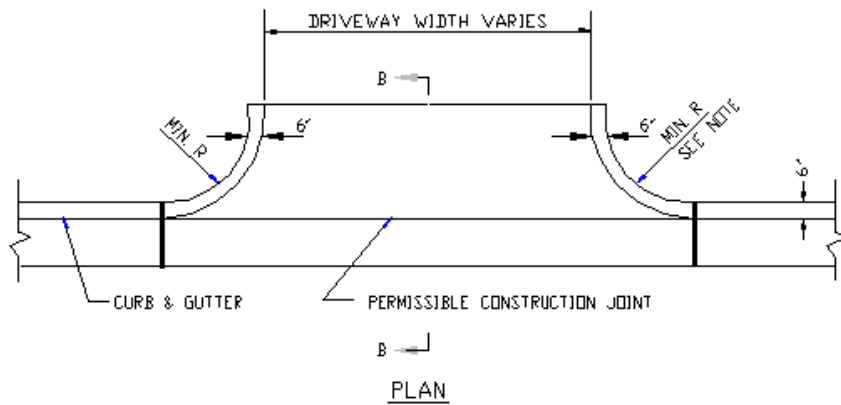
10.1.5 Curb and Gutter

Curb and gutter is required. The minimum width for vertical curb and gutter is two feet six inches (2'-6") and for valley curb and gutter is two feet (2'-0"). Below are details for vertical curb and gutter and valley curb and gutter. Valley curb and gutter is recommended **for residential developments. Vertical Curb and Gutter is required for driveways in Commercial and Industrial Districts.** (BOA 2-1-2016)

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Minimum turning radius for residential curb cuts is two feet (2'-0") and for commercial curb cuts is five feet (5'-0").



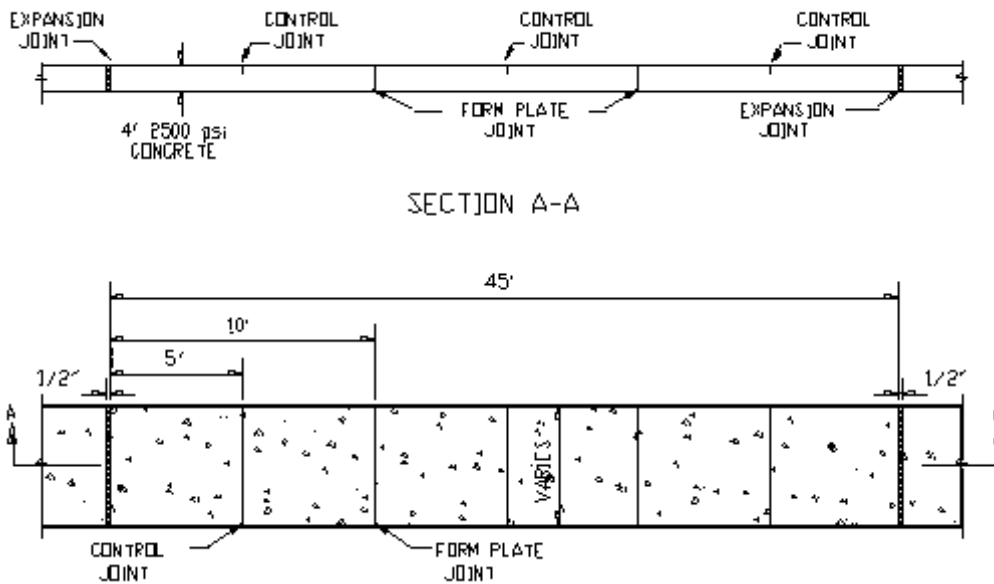
10.1.6 Sidewalks

- A. Sidewalks shall be required along all major and minor thoroughfares and along roads that extend the sidewalks of an existing sidewalk network.
- B. **New Streets:** As part of the new street construction, sidewalks shall be constructed along new streets per the standards of paragraph D below. The preferred placement of sidewalks is on both sides of the street, with the minimum requirement being on one (1) side of the street. (BOA 2-1-2016) Sidewalks shall not be required on cul-de-sac streets of less than 200 feet.

C. Existing Streets: As part of a proposed subdivision or new development along an existing publicly-maintained street in the town limits, sidewalks shall be constructed along all street frontages per the standards of paragraph D below. (BOA 2-1-2016)

D. Sidewalk Standards:

Sidewalks shall be at least five (5) feet wide and consist of a minimum thickness of four inches of concrete. At vehicular traffic areas such as driveways the minimum thickness shall be six (6) inches. Also, poured-in-place **control** joints shall be installed to match the width **of the sidewalk** and expansion joints **shall be placed** every twenty (20) feet **of the sidewalk**. Sidewalks shall be constructed of not less than 3,000 psi concrete. Sidewalks shall slope toward the road a cross-slope of one-fourth (¼) inch per foot, and shall have a broom finish. (BOA 2-1-2016)



E. Payment in lieu for sidewalks alternative: (BOA 2-1-2016)

As an alternative to sidewalks construction, the applicant has the option to make a payment in lieu of constructing the required sidewalks and shall be informed of the amount of payment in lieu before issuance of a zoning permit. Payment in lieu requirements:

- Approval must be given for payment in lieu of sidewalks by the Planning and Zoning Administrator with guidance from the Planning Board, and/or Technical Review Committee.

Payment in lieu of sidewalks is allowed where:

- Construction of sidewalks would be inconsistent or unreasonable based on surrounding conditions such as topography, wetlands, etc.
- Where a sidewalk would not connect to adjacent sidewalks nor are there proposed or adopted plans for a connecting sidewalk at the site.

Payment in lieu is not permitted if:

- Site is located in the RS and CB zoning districts.
- If property is adjacent to any existing sidewalk.
- Adjacent to sidewalk appearing on a proposed development plan, and/or adjacent to any sidewalk planned for construction within one year or any sidewalk planned for construction.

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Payment in lieu of sidewalks fund requirements:

Funds must be equal to the estimated cost of construction of the required sidewalk, which includes materials, labor, engineering and any required infrastructure improvements for that sidewalk. Payment shall be made prior to approval of "as built" or final plat approval.

Fund appropriations:

Such funds shall be used at the discretion of the Town to use in building or completing pedestrian, bikeway, and / or pathway systems.

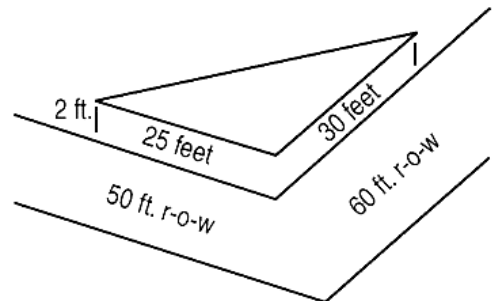
10.1.7 Cul-de-sacs

- A. Permanent dead end streets should not exceed 800 feet in length unless necessitated by topography or property accessibility.
- B. If the road length does not exceed 300 feet and if construction difficulties will not permit a turnaround, the use of "Y" or a "T" or other turning space of a design which will allow a vehicle with a wheel base of at least 25 feet to complete a turning movement with a maximum of one (1) backing movement, shall be permitted.
- C. Cul-de-sacs shall not be used to avoid the extension a road, unless an exception is granted by the Board of Aldermen.

10.1.8 Sight Distance

- A. A sight triangle shall be maintained on each corner of property at the intersection of two streets, a street and an alley, a street and a railroad, and also at the point where driveways, private drives, or entrances to common parking areas intersect with a public or private street right-of-way. The sight triangle is a triangular area connecting the intersection of the right-of-way lines and the end points of the sight distance for the intersecting streets as set forth in the latest edition of the NCDOT Subdivision Roads Minimum Construction Standards.
- B. In the event that a proposed new street connection is located on a site near an adjoining property not under the ownership of the developer, the City shall have the authority to acquire right-of-way (as set forth in NCGS 40-A) on the adjoining property for such area as necessary to establish a sight triangle.
- C. The following are the distances used to establish a sight triangle as measured from an intersecting right-of-way:

<u>Right of Way width</u>	<u>Distance (feet)</u>
50'	25'
60'	30'
70'	35'
80'	40'
90'	45'
100' (or greater)	50'



- D. A sight triangle shall contain no fence, structure, earth bank, hedge, planting, wall or other obstruction between a height greater than two (2) feet above the property line grade as established by the city engineer. **The following are exempted from this provision:**

1. Public utility poles.
 2. Trees trimmed (to the trunk) to a height at least nine (9) feet above the level of the intersection.
 3. Other plant species of open growth habit that are not planted in the form of a hedge and which are so planted and trimmed as to leave in all seasons a clear and unobstructed cross-view.
 4. A supporting member or appurtenance to a permanent building lawfully existing on the effective date of this ordinance.
 5. Official warning signs or signals.
 6. Signs which conform to the sign regulations of Chapter 6 mounted 10 feet or more above the ground with supports that do not encroach on the clear-vision area.
- E. The Administrator (or his/her designee) may waive this provision where the natural contour of the ground is such that there can be no cross visibility at the intersection.

10.1.9 Access Management, Driveways, and Connectivity

10.1.9.1 Development Access

- A. At least two (2) entry points will be provided in developments that contain 100 or more dwelling units and to all lots within the development. The Board of Aldermen may allow other alternatives if the curb cuts for the two (2) accesses cannot meet the minimum distance allowed according to NCDOT regulations at any location.
- B. For developments of greater than 30 lots, a minimum 30 foot secondary access easement is required for Fire Department access. The easement shall be cleared so that a fire truck may pass, but does not have to be improved to public road standards. It shall be a minimum 20 feet width, provide an all-weather surface approved by the Fire Marshal, and not exceed 10 percent grade.

10.1.9.2 Restriction of Access

Where a development abuts or contains an existing or proposed thoroughfare, the Board of Aldermen may require marginal access streets, reverse frontage or such other treatment as may be necessary for adequate separation of through and local traffic.

10.1.9.3 Reserve Strips and Half Streets

Reserve strips and non-access easements adjoining street rights-of-way for the purpose of preventing access to or from adjacent property (except those required by the Board of Aldermen to prevent access to thoroughfares) and half-streets shall not be permitted.

10.1.9.4 Driveways

The number of street and driveway connections permitted serving a single property frontage or commercial development shall be the minimum deemed necessary by the Town or NCDOT for reasonable service to the property without undue impairment of safety, convenience, and utility of the roadway. Normally, not more than two (2) driveways shall be permitted for any single property frontage. The arrangement of driveways should be related to adjacent driveways and nearby street intersections and meet the following criteria:

1. Commercial drives leading to a site in the Commercial or Industrial districts must include vertical curb and gutter as stated in 10.1.5. **(BOA 2-1-2016)**

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2. Residential drives shall be located a minimum of 10 feet from the point of tangency of curb radii of street intersections.
3. Driveways serving streets with traffic volumes in excess of 300 ADT or accessing thoroughfares shall be located a minimum of 250 feet from the point of tangency of the radius of curvature of the intersecting street.
4. Where two (2) driveways are proposed along a single property frontage to facilitate operations, the minimum distance between the centerlines of the drives shall be 200 feet.
5. The minimum distance between the centerlines of driveways into shopping centers or facilities generating in excess of 300 ADT shall be a minimum of 400 feet.
6. Full access driveways open to signalization should be 1000 feet apart. Driveways which access thoroughfares and serve more than 1500 ADT shall provide deceleration lanes in approach to the driveway.

10.1.9.5 Through Traffic

Residential collector and local roads shall be laid out in such a way that their use by through traffic will be discouraged. The intent of the street design is to provide multiple connections to existing and future developments, disperse traffic, and maintain reduced speeds. Roads shall be designed or walkways dedicated to assure convenient access to parks, playgrounds, schools, or other places of public assembly.

10.1.9.6 Intersections

- A. Where public and private streets intersect, the design standards of the NCDOT Division of Highways, *Development Roads Minimum Construction Standards* shall apply.
- B. Streets shall be designed so as to intersect as nearly as possible at right angles, and no street shall intersect any other street at an angle of less than 60 degrees. Streets crossing natural areas or streams shall cross at or near to right angles as possible within limits of topographic conditions.
- C. Offset intersections are to be avoided unless exception is granted by the Board of Aldermen. Intersections which cannot be aligned should be separated by a minimum length of 200 feet between survey centerlines.
- D. Intersections with arterial, collectors, and thoroughfares (major intersections) shall be at least 1,000 feet from centerline to centerline, or more if required by the Board of Aldermen.
- E. Median breaks shall be provided to allow safe and efficient movement of traffic. The desirable spacing of median breaks shall be at 1,000 foot intervals, with the minimum allowable spacing to be at 500 foot intervals.
- F. An approved permit is required for connection to any existing State System road. This permit is required prior to any construction on the road. The application is available at the office of the nearest district engineer of the Division of Highways.

10.1.9.7 Traffic Control Signs, Signals, and Markings

Traffic control signs, signals, and markings shall be in accordance with the latest edition of the North Carolina Manual on Uniform Traffic Control (NCMUTC).

10.1.9.8 Development Entrance Markers and Landscaped Medians

The Planning Board may permit development entrance markers and landscaped medians within the public right-of-way, or an easement set aside for such purposes, subject to the following conditions and any additional conditions the Planning Board may find to be appropriate in the individual circumstance:

- The Town will not be responsible for maintenance.
- An entity responsible for maintenance such as a Property Owner's Association shall be created. **(BOA 2-1-2016)**
- No such improvements shall interfere with sight distance or with normal maintenance requirements or otherwise pose a hazard to vehicular or pedestrian traffic.
- In the event of loss, damage or lack of maintenance, the Town may remove all improvements and shall require the Property Owner's Association to maintain the area in accordance with Town standards. **(BOA 2-1-2016)**
- NCDOT must approve any such improvements in streets to be maintained by NCDOT.
- The Town must approve any such improvements in streets to be maintained by the Town.

10.1.9.9 Connectivity

A. 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. Whenever practicable, provisions shall be made for the continuation of planned streets into adjoining areas.

B. The street network for any development shall achieve a connectivity ratio of not less than 1.40 (see example below). The phrase “connectivity ratio” means the number of street links divided by the number of nodes or link ends, including cul-de-sac heads. A “link” means and refers to that portion of a street defined by a node at each end or at one end. Approved stubs to adjacent property shall be considered links. However, alleys shall not be considered links. A “node” refers to the terminus of a street or the intersection of two (2) or more streets, except that intersections that use a roundabout shall not be counted as a node.

For the purposes of this section, an intersection shall be defined as:

1. any curve or bend of a street that fails to meet the minimum curve radius as established by NCDOT Division of Highways, *Subdivision Roads Minimum Construction Standards* or
2. any location where street names change (as reviewed and approved by the Administrator).

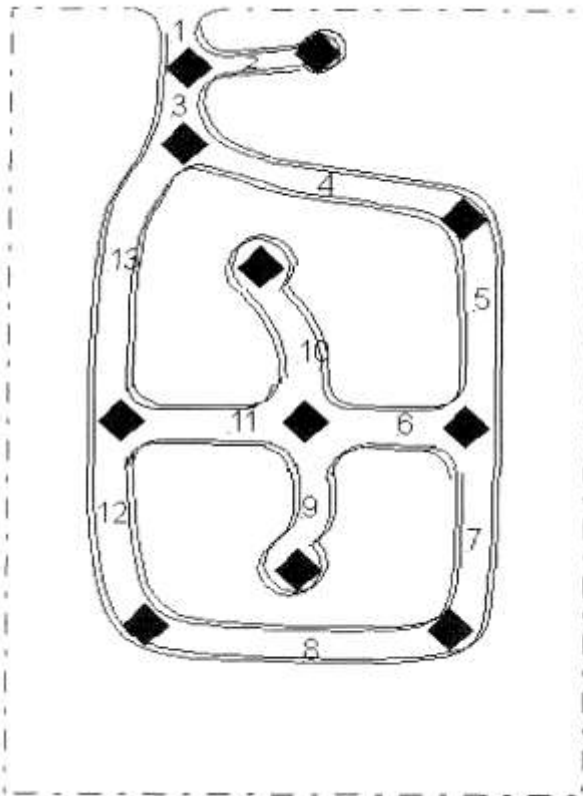
For purposes of this subsection, the street links and nodes within the collector or thoroughfare streets providing access to a proposed development shall not be considered in computing the connectivity ratio.

Exemption: New developments that intend to provide one new cul-de-sac street shall be exempt from the connectivity ratio standard as set forth in this section, provided the Administrator determines the following:

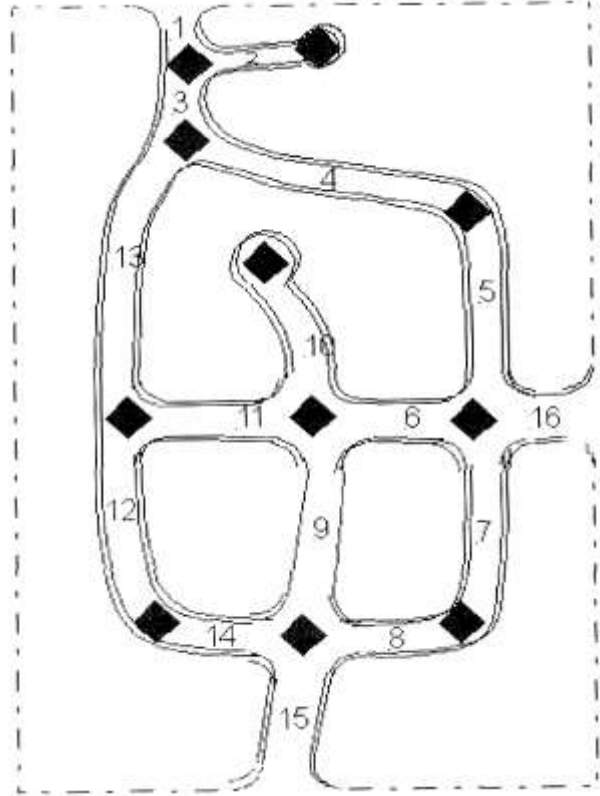
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- there are no options for providing stub streets due to topographic conditions, adjacent developed sites, or other limiting factors; and
- interconnectivity (use of a looped road) within the development cannot be achieved or is unreasonable based on the constraints of the property to be developed.

Example 1: Development that does not meet the Ratio
(13 links/11 nodes = 1.18 ratio)



Example 2: Same development modified to meet Ratio
(16 links/11 nodes = 1.45 ratio)



- C. Where it is deemed necessary and beneficial to the interconnectivity of local land development by the Planning Board, proposed roads shall be extended by dedication to the boundary of the developing property and a temporary turn around provided within the existing right of way (stub out). The temporary turnaround shall meet the same standards for cul-de-sac construction as set forth by the NCDOT Subdivision Roads Minimum Construction Standards. A sign shall be erected at the temporary turn around that informs the public of the intended future connection of the road to future development. The road shall be designated and constructed as a public road and shall be required except when the Development Administrator determined that:
1. Physical barriers or environmentally sensitive area be crossed (for example, railroad, watercourses, steep topography, or flood area)
 2. There is a large discrepancy in the size of the adjacent parcel (A smaller parcel being subdivided may not have to provide a stub to a much larger parcel, if other, more desirable, interconnections are available to the large parcel).

3. The stub road would connect to property for which development rights have been sold for a public purpose and access to the property is not desirable for orderly development of the road network.
4. The stub road would cause the existing roads to go over the capacity for which the roads were initially designed.

10.1.10 Street Names and Signs

- A. Street names shall be submitted to and approved by the Rowan County Telecommunications Department.
- B. Proposed streets which are obviously in alignment with others that already exist shall bear the names of existing streets.
- C. In no case shall the name of a proposed development or street duplicate or be phonetically similar to existing development names or street names, irrespective of the use of suffix street, avenue, boulevard, driveway, place, or court.
- D. Standard street name signs shall be installed by the Town at all intersections inside the Town limits in accordance with Town Standards, with the Subdivider reimbursing the Town for the cost. The developer may, however, with design and material approval of the Board of Aldermen, install a different street name sign type at no cost to the Town. In such case, the developer or his successors or assignees shall be responsible for replacing such signs in instances of loss, damage or deterioration; otherwise, the Town will replace such signs with its standard sign.

10.1.11 Right-of-Way Dedication

Developments that adjoin existing streets maintained by either the Town or NCDOT shall dedicate the additional street right-of-way necessary to meet the minimum width requirements for the type of classification of the adjoining street. When any part of the development is on both sides of an existing street, the entire minimum right-of-way shall be provided. When the development is located on only one side of an existing street, one-half of the minimum right-of-way, measured from the centerline of the existing street, shall be provided. The dedication requirements of this Section shall not apply to infill single-family residential and two-family residential lots fronting on existing streets that have already been accepted for maintenance by the Town or NCDOT.

Section 10.2 Utility Standards

10.2.1 Water & Sanitary Sewer Systems

- A. All water and sewer service for the Town is furnished by the City of Salisbury and all water and sewer line connection and installation shall be in accordance with Salisbury-Rowan Utility standards and Chapter 17 of the City of Salisbury Code of Ordinances.
- B. The Town may, in order to serve future non-residential development, require the developer to install certain oversized water and sewer improvements and/or to increase such improvements to a size and/or extend beyond that necessary for the needs created by a non-residential development. In such cases, the Town shall enter into an agreement to reimburse the developer for the oversizing and/or extension based upon rates as agreed to by the Town.

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- C. For any development to which a public water and/or sanitary sewer system is not available, that development must have a suitable source of water supply and sanitary sewage disposal, which complies with the regulations of the North Carolina Department of Environment and Natural Resources (NCDENR).
- D. All developments shall be accompanied by a written application and/or notice submitted to the appropriate state or local agency responsible for approving the particular system or systems at the time the Preliminary Plat is submitted.

10.2.2 Utility Location

- A. Utilities shall be located as depicted below within the planting strip and sidewalk areas. All electrical and telephone lines in new developments shall be buried. Water and sewer lines shall be located and installed in accordance with Salisbury-Rowan Utility standards.
- B. Utility pedestals shall be located minimum of two (2) feet behind the sidewalk and near property lines between buildings and shall be screened with a wall, fence, or evergreen landscaping.
- C. Where utility easements are necessary, they shall be a minimum of 20 feet and shall be placed along a lot line (centered with 10 feet on each side of the lot line). The subdivider shall be responsible for incorporating the design of all utilities and services into the easement and construction design.

10.2.3 Lighting

10.2.3.1 Applicability

The provisions of this Section shall apply to the installation of all outdoor lighting within the jurisdiction of this Ordinance except that the following shall be exempt from this Section:

- A. Outdoor lighting installed for governmental purposes by local, state or federal governmental units and their agents.
- B. Outdoor lighting required to be installed by laws or regulations of a local, state or federal governmental unit.
- C. Outdoor lighting installed for one and two-family dwellings.
- D. Outdoor lighting associated with a bona fide farm operation.

10.2.3.2 Prohibited Outdoor Lighting

The following types of outdoor lighting are prohibited unless exempt by Section 10.2.3.1 above:

- A. Light fixtures that imitate an official highway or traffic control light or sign.
- B. Light fixtures in the direct line of vision with any traffic control light or sign.
- C. Light fixtures that have a flashing or intermittent pattern of illumination.
- D. Privately owned light fixtures located in the public right-of-way.
- E. Light fixtures that are a source of glare by their design, orientation or intensity.

- F. Searchlights.
- G. Structure highlighting that is illuminated between 12 midnight and 7:00am.
- H. Unshielded open vertical light fixtures.
- I. Light fixtures that violate any law of the State of North Carolina relative to outdoor lighting.

10.2.3.3 Plan Approval Required

Outdoor lighting for non-residential developments is subject to approval by the Administrator and Technical Review Committee (TRC). The lighting plan shall show sufficient information to determine compliance with the standards of this Section and may require a photometric plan upon determination of the Administrator. In approving lighting plans the Administrator and TRC may modify the standards of this Section where the applicant agrees and where equal or better performance would result. In granting modifications, the Administrator and TRC may require such conditions as will secure, insofar as practicable, the objectives of the requirements modified.

10.2.3.4 Outdoor Lighting Requirements

- A. Outdoor lighting fixtures shall be installed in a manner to protect the street and neighboring properties from direct glare or hazardous interference of any kind. Glare or hazardous interference are situations where the sensation produced by luminance within the visual field is sufficiently greater than the luminance to which the eyes are adapted, such as to cause annoyance, discomfort, or loss in visual performance and visibility.
- B. Outdoor lighting shall be constructed and operated to minimize the spillover of obtrusive light onto property outside the boundaries of the property on which the lighting is sited which could result in annoyance, discomfort or distraction to persons on the other property.
- C. All outdoor lighting fixtures, subject to this section, except for temporary and emergency lighting, that would otherwise cause glare or obtrusive spillover shall be shielded, recessed or otherwise oriented or treated in such a way to prevent glare or obtrusive spill over.
- D. As a general principle, all outdoor lighting shall be directed downward and away from adjoining property and streets.
- E. All floodlights shall be installed such that the fixture shall be aimed down at least 45 degrees from vertical, or the front of the fixture is shielded such that no portion of the light bulb extends below the bottom edge of an external shield. Floodlights and display lights shall be positioned such that any such fixture located within 50 feet of a public street right-of-way is mounted and aimed perpendicular to and away from the right-of-way, with a side-to-side horizontal aiming tolerance not to exceed 15 degrees from perpendicular to the right-of-way.

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- F. The mounting height of all outdoor lighting shall not exceed 40 feet above finished grade, except that the mounting height of outdoor sports field and outdoor performance area lighting fixtures shall not exceed 80 feet from finished grade.
- G. All light fixtures shall meet the IESNA definition of cutoff fixtures. Forward throw fixtures (type IV light distribution, as defined by the IESNA) are required within 25 feet of any public street right-of-way. Alternatively, directional fixtures (such as floodlights) may be used provided they shall be aimed and shielded in accordance with this Section.
- H. Sign lighting shall be regulated in accordance with Chapter 6.
- I. Lighting fixtures shall be selected, located, aimed, and shielded so that direct illumination is focused exclusively on the building façade, plantings, and other intended site features and away from adjoining properties and the public street right-of-way.

10.2.3.5 Street Lighting Provisions

- A. The developer shall provide street lighting along public streets within the corporate limits. The following are general provisions for street lighting:
 - B. The developer, as a minimum standard, shall install and maintain street lights at street intersections or terminations, unless the distance between street intersections exceeds 350 feet.
 - C. Consideration should be made to place all lighting at all intersections and other high pedestrian use areas.
 - D. Lighting should be planned to ensure adequate illumination for safety of both the pedestrian and the automobile.
 - E. Where sidewalks exist on one side of the street only, street lighting will be placed on that side to ensure adequate illumination for the pedestrian.
 - F. Additional lighting on a street with existing lighting should be similar in style and illumination to the existing lighting.

10.2.3.6 Decorative Lighting

Decorative lighting is encouraged in residential and mixed-use developments. This option is only permitted in developments with Homeowners Associations that will maintain the lights.

10.2.3.7 Standards for Acceptance of Lighting by Town

- A. The Town of Granite Quarry may choose to take over responsibility for payment of monthly billing and on-going maintenance of a street light, provided that the street light:
 - Is within Town-owned right-of-way, and
 - Is within a street right-of-way accepted for maintenance purposes by the Town of Granite Quarry or the North Carolina Department of Transportation; and
 - Meets Town standards, or the petitioner has paid any cost to have the light brought up to Town standards

- B. Takeover billing shall become effective for the billing cycle following the approval of the request. The Town will not reimburse any billing for which the requesting party is responsible for. This includes any billing between the date of the development's request and the date of the changeover of billing. The Town will not accept any take-over billing of decorative lighting fixtures.
- C. The Town may accept street lighting that exceeds the Town's standards for spacing and/or illumination subject to approval by the Town Board of Aldermen.

10.2.3.8 Removal of Street Lighting

An individual homeowner or neighborhood organization may request removal of a street light provided the overall lighting pattern in the neighborhood is consistent with the requirements of Section 10.2.3.5. Requests to remove all lighting within a neighborhood shall require the unanimous consent of all property owners within the neighborhood and approval by the Town Board of Aldermen.

Section 10.3 Stormwater Management

10.3.1 Comprehensive Storm Drainage Plan

Storm drainage plans shall be considered on an individual basis depending upon the situation within a given development.

10.3.2 Easements

- A. Maintenance easements may be required depending upon the size of the drainage way and the maintenance responsibility as determined by the Town.
- B. In any case where maintenance is to be the responsibility of the property owner, the Town may require a right to enter for maintenance purposes where the Town Board determines that the public health, safety, or general welfare constitutes a public necessity for such maintenance. Such easements shall have a maximum grade of 15 percent.
- C. The minimum width of a drainage easement shall be 20 feet. Additional width shall be required for lines that are deep. The width of the easement shall be five (5) feet plus two (2) times the depth of the line.
- D. Where easements are required, they shall be noted on the Final Plat.

10.3.3 Obstruction of Drainage Channels Prohibited

No fences or structures shall be constructed across an open drainage channel that will reduce or restrict the flow of water. The Zoning Administrator may require any water course or stormwater management facility to be located within dedicated a drainage easement officially recorded at the Rowan County Register of Deeds as a "public storm drainage easement" that provides sufficient width for maintenance.

10.3.4 Grading Standards

The following standards shall be followed in establishing the grading plan for a development:

- A. No grading shall take place in an undisturbed stream buffer as required by Section 7.6.
- B. Developments shall be designed and constructed with a positive drainage flow away from

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buildings towards approved stormwater management facilities. Plans for drainage facilities shall be approved by the Town Engineer.

- C. In the design of site grading plans, all impervious surfaces in the proposed development (including off street parking) shall be considered.
- D. Site grading and drainage facilities shall protect sinkholes, wetlands, ponds and lakes from increased sediment loading.
- E. All disturbed areas within the dedicated right-of-way and easements of any development street shall be restored with vegetation and the landscaping standards of Chapter 8 shall be met.

Section 10.4 Fire Protection Standards

- A. Residential areas and subdivisions (single family and/or duplex) shall require fire hydrants located such that each structure or portion thereof will be within 500 feet of a hydrant.
- B. Multi-family developments (apartments, townhouses, condominiums, etc.) shall require fire hydrants located such that each structure or portion thereof will be within 500 feet of a hydrant.
- C. Non-residential areas and subdivisions shall require fire hydrants to be located such that each structure or portion thereof will be within 500 feet of a hydrant. This determination shall be made via vehicle access routes, (roadways, fire lanes, etc.) and by hose placement from the firefighting equipment in lieu of linear measurements. Fire hydrants shall be located at the right-of-way and the hydrant shall be located as not to exceed 600 feet between hydrants. When practical hydrants shall be located at street intersections, with intermediate hydrants between intersections, and at entrance drives to the property.
- D. For any structures that has a sprinkler system or a standpipe system a fire hydrant shall be located no more than 100 feet from the fire department connection. This hydrant shall be dedicated to the fire department connection and shall be in addition to the hydrants required above.
- E. When possible, fire hydrants shall be located a minimum of 50 feet from any structure.
- F. In proposed subdivisions, where all structures have not been constructed, hydrant spacing shall be measured along the street right-of-way with spacing provided as shown above.
- G. Dead end water mains shall be provided with a fire hydrant or a blow-off in accordance with the Salisbury-Rowan Utility Standards. Water mains serving fire hydrants shall be a minimum of six inch (6") in diameter for single family residential projects and a minimum of eight inch (8") in diameter or all other residential and nonresidential projects. Each phase of a project shall be designed and constructed to provide the minimum number of hydrants necessary to conform to the above requirements upon completion of the phase.
- H. The determination of distance shall be made via vehicle access routes (roadways, fire lanes,

etc.) and by hose placement from the firefighting equipment located adjacent to the fire hydrant in lieu of direct measurements. The distances specified above are meant to reflect the actual length of fire hose which would be laid by the fire department to reach the structure in the event of a fire at or in that structure. Distances shall be measured beginning at the point of the structure farthest from the hydrant, thence along an Unobstructed Pathway to a point in the centerline of the street, thence along the centerline of the street to a point opposite the hydrant. Unobstructed Pathway means a route which may be taken by firemen in laying fire hose. The Unobstructed Pathway shall be, and remain, free of trees and shrubs, walls, fences, wells, structures, or other obstacles to the passage of firefighters, hose and equipment for a width of 10 feet) and a minimum vertical distance of thirteen feet six inches (13'-6") and shall not be through, under, or over any portion of any structure, ditch or waterway.

- I. For any subdivision without a fire suppression rated water system, that either has or has access to an adequate permanent surface water supply (100,000 gallon storage in a 50-year drought), the applicant shall be required to install a dry fire hydrant system. An all-weather access road for fire-fighting equipment shall be provided by the applicant to this permanent surface water supply. Where the subdivision is neither served by a public water system nor has or is adjacent to an adequate permanent surface water supply, such subdivision shall be thoroughly reviewed by the TRC and the applicant to determine if there are alternative measures to ensure adequacy of fire protection. Where deemed necessary and without creating an undue hardship on the applicant, the Planning Board may require the applicant to install alternative fire protection measures.
- J. The developer of any new subdivision, subdivision or project, or development, whether it be single or multiple, or whether residential or commercial, is responsible for funding and installing the required fire hydrant(s) and water main to comply with the above requirements.

Section 10.5 Garbage & Refuse Collection

- A. All nonresidential development shall be required to provide one (1) or more dumpsters for solid waste collection that are:
 - 1. Located so as to facilitate collection and minimize any negative impact on persons occupying the development site, neighboring properties, or public rights-of-way;
 - 2. Located in the side or rear yard; and
 - 3. Screened with an opaque fence or wall and gate.
- B. The method of garbage disposal shall be indicated on each site plan or preliminary plat that is submitted.