

Article 32. Network, Cross-Access, & Driveway Regulations

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32.1 BLOCK AND NETWORK DESIGN STANDARDS

This section contains specifications for street networks, external connectivity, internal connectivity, and block length that shall be applicable to any land development project.

A. Street Network

1. A network of interconnected public streets providing both external and internal connectivity is required for new development. The Subdivision, Streets, and Infrastructure Administrator (SSI Administrator), in consultation with the Charlotte Department of Transportation (CDOT), may allow network-required private streets for external and/or internal connectivity in consideration of the conditions below. Any such network required private street shall have a recorded public access easement.

- a. Site conditions require street geometry not allowed for a public street.
- b. A public street is not needed to enhance the existing public street network.
- c. The proposed street does not stub into an adjacent property.
- d. The proposed street does not connect to an existing street on an adjacent property.
- e. A Charlotte Water line that connects to an adjacent property is not located or proposed to be located within the street right-of-way.

2. Cemeteries, places of worship, and educational facilities are exempt from the street network requirements. However, if any of these uses are part of a mixed-use development, this exemption shall not apply.

B. External Connectivity

1. Existing Street Stubs

- a. Existing adjacent street stubs shall be extended into the development on the stub street's proper projection.
- b. Any existing and abutting paper street stubs shall be extended into the development on the stub street's proper projection.

2. Block Length

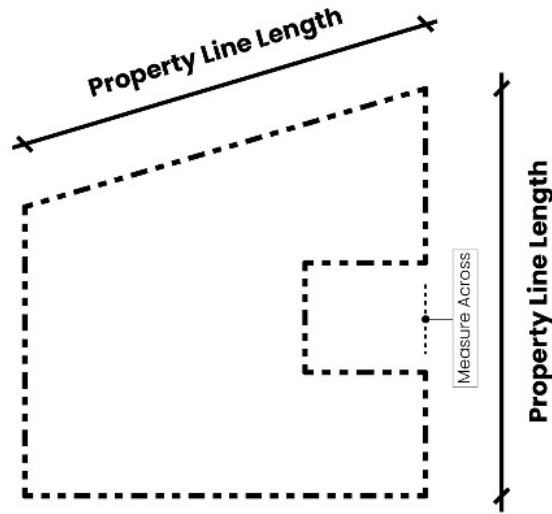
Requirements for additional new collector and local streets shall be determined as follows, using the preferred block length for the applicable Place Type.

- a. The following process shall determine the required number of blocks along the boundary of the development:

Step 1. Identify the applicable Place Type in Table 32-1: Preferred Block Length.

Step 2. Measure the length of each property boundary and for each measurement divide by the preferred block length spacing from Table 32-1.

PROPERTY LINE LENGTH



$$\frac{\text{Property Line Length}}{\text{Preferred Block Length}} = \# \text{ of Blocks}$$

Step 3. When a fractional number results, round the result down to the nearest whole number.

Step 4. When the result is less than two, but the boundary exceeds the maximum average block length (Table 32-2: Maximum Average Block Length), one local street is required.

b. Where an odd-shaped parcel has a series of property line lengths shorter than the preferred block length, but separate blocks would be required if the site was measured across (as opposed to along the boundary segments), then a new street or streets shall be required.

c. Where the extension of non-local and adjacent local streets creates a street network that meets the required number of blocks, no additional new streets are required. However, if the distance from a parcel boundary to the nearest adjacent street exceeds the maximum block length, then a new street or streets shall be required.

Table 32-1: Preferred Block Length

Place Type	Preferred Block Length Along Property Boundary
Neighborhood 1	600'
Neighborhood 2	600'
Neighborhood Center	500'
Community Activity Center ¹	500'
Regional Activity Center	400'
Innovation Mixed Use	500'
Manufacturing and Logistics	800'
Commercial	600'
Campus	500'
Parks and Preserves ²	1,000'

¹ The preferred block length for development located within a transit station area is 400 feet.

² The SSI Administrator, in consultation with CDOT, may increase the preferred block lengths to accommodate the use-intensity and operation of the park or preserve.

Table 32-2: Maximum Average Block Length	
Place Type	Maximum Average Block Length
Neighborhood 1	800'
Neighborhood 2	650'
Neighborhood Center	650'
Community Activity Center ¹	650'
Regional Activity Center	600'
Innovation Mixed Use	650'
Manufacturing and Logistics	1,500'
Commercial	650'
Campus	650'
Parks and Preserves ²	1,500'

¹ The maximum average block length for development located within a transit station area is 600 feet.

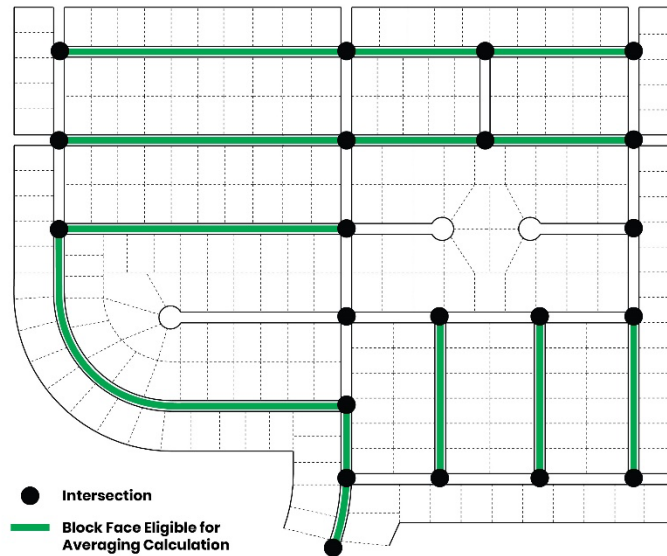
² The SSI Administrator, in consultation with CDOT, may increase the maximum average block lengths to accommodate the use-intensity and operation of the park or preserve.

- d. New collector and local streets, if required, shall be located to create the blocks calculated in this section, including any required street stubs.
 - i. When the property abuts a collector or local street, align where possible, with existing streets or existing driveways to create four-way intersections.
 - ii. All new development should provide for more than one access for ingress and egress at the time of development, if feasible.
 - iii. New street stubs shall not be required to stub to existing lots if the SSI Administrator, in consultation with CDOT, determines that the size or shape of the lot makes a future street extension infeasible and/or of little functional value.
- e. No individual block length created by the addition of a new street, except in the Manufacturing and Logistics or Parks and Preserves Place Types, shall exceed 1,000 feet. In the Manufacturing and Logistics or Parks and Preserves Place Types, no individual block length shall exceed 1,500 feet.

C. Internal Connectivity

1. Once the external connectivity has been established, the external streets shall be connected to create an internal network.
2. No individual block length, except in the Manufacturing and Logistics or Parks and Preserves Place Types, shall exceed 1,000 feet. In the Manufacturing and Logistics or Parks and Preserves Place Types, no individual block length shall exceed 1,500 feet. Exceptions to the maximum individual block length may be allowed as noted in item D below.
3. The average block length for an entire site, measured from street centerline to street centerline, shall not exceed the maximum average block length shown in Table 32-2: Maximum Average Block Length.
 - a. The following streets are not included in the calculation for average block length:
 - i. Cul-de-sac streets.
 - ii. Street stubs.
 - iii. Streets whose length is determined by the depth of an individual or back-to-back residential lots.
4. Exceptions to the maximum individual block length may be allowed as noted in Item D below. When an exception for the maximum block length has been granted in the Manufacturing and Logistics or Parks and Preserves Place Types, the length of the block will be included in the block averaging calculation based on its length or 1,500 feet, whichever is smaller. For all other Place Types, when an exception has been granted for the maximum block length, the length of the block will be included in the block averaging calculation based on its length or 1,000 feet, whichever is less.

ELIGIBLE BLOCK FACES



D. Exceptions

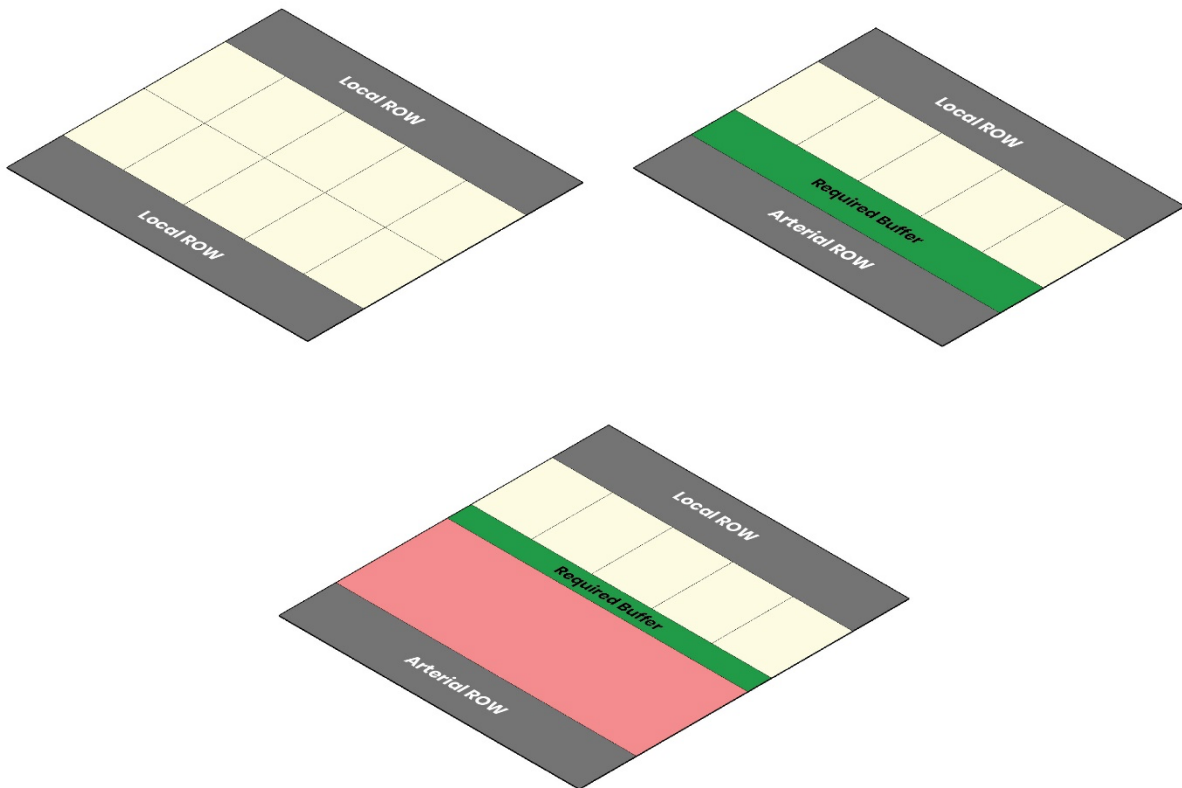
The SSI Administrator, in consultation with CDOT, may modify the maximum individual block length, eliminating the need for a street stub or paper street when any of the following conditions exist:

1. A man-made physical barrier to a connection exists, such as a freeway, railroad line, rapid transit line, or gas pipeline.
2. A natural physical barrier exists, such as areas of steep slopes, wetlands, floodplain, creeks, or streams.
3. An industrial use is located adjacent to a proposed residential property, allowing future traffic to said industrial use to traverse the residential property to reach a non-local street.
4. The shape of the property does not allow the requirements to be met.
5. There are right-of-way, sight distance, or access constraints to providing the recommended spacing.
6. Accessibility to the subject property or an adjacent property requires modification of the spacing requirements.
7. Manufacturing, distribution, warehousing, industrial, or security functions do not allow the spacing requirements to be met.
8. It is advantageous to the street network to align a new street with an existing street, major driveway, or traffic signal.

E. Block Widths

Block widths shall be sufficient to allow two tiers of lots except where a single tier of lots will facilitate nonresidential development, the separation of nonresidential and residential developments, or the separation of residential development from arterials.

BLOCK WIDTHS



F. Street Offsets

Where there is an offset in the alignment of a street across an intersection, the offset of the centerlines shall conform to the standards of the Charlotte Land Development Standards Manual (CLDSM). The SSI Administrator, in consultation with CDOT, may modify this requirement based on analysis of safety and operational conditions.

G. Cul-De-Sacs and Dead-End Streets

1. Cul-de-sacs and other permanent dead-ends on public or network-required private streets are subject to SSI Administrator approval and shall only be allowed when supporting documentation shows either:
 - a. A natural or man-made barrier, such as a waterway, railroad, limited-access expressway, or unusual topography exists which prevents connection; or
 - b. When a connection is infeasible due to the site design or land use of abutting property.
2. Cul-de-sacs shall not be longer than the preferred street spacing in Table 32-1.
3. A pedestrian and bicycle connection through a cul-de-sac shall be required in the following instances:
 - a. When a vehicular connection is impractical, or when environmental conditions make a vehicular connection impractical; or
 - b. When a new pedestrian and bicycle connection through a cul-de-sac would connect to an existing pedestrian and bicycle pathway.

c. The requirement for a pedestrian and bicycle connection through a cul-de-sac, and the associated standards in Section 34.4.C, may be modified or eliminated if the developer/owner can document, and it can be confirmed by the Planning Department in consultation with CDOT, that there are significant topographical or unusual conditions related to the land.

4. No cul-de-sacs are permitted in Transit Station Areas and the Uptown/Center City Regional Activity Center.

H. Half Streets

Where a new development abuts an existing half street, the new development shall construct the remainder of the half street.

I. Traffic Calming

Wherever a street exceeds the maximum average block length provided in Table 32-2, the following conditions shall apply:

1. For residential wide or office/commercial wide, provide at least one pair of midblock curb extensions, as described in the CLDSM, or another approved slow point.
2. For all other street types, the developer shall consult with the SSI Administrator about the possible use of other traffic calming devices as available in the CLDSM, or as approved by the CDOT Director.

For traffic calming desired on streets not exceeding the maximum block length the developer shall receive approval from the SSI Administrator, in consultation with CDOT, for use of traffic calming devices as available in the CLDSM, or as approved by the CDOT Director.

32.2 CROSS-ACCESS

The purpose of cross-access is to improve connectivity by providing direct access between adjacent parcels, thereby improving safety for all modes by reducing conflicts between traffic and other modes and improving multi-modal mobility options by removing some vehicular trips from arterial streets.

A. Cross-Access

1. Abutting parcels which each front on an arterial street shall provide cross-access between the parcels when the following conditions occur:

- a. Subdivision as defined by Section 31.3.A; or
- b. Construction of a new principal structure.

2. When a parcel fronting either a collector or a local street abuts a corner lot which has frontages on both the collector or local street and also on an arterial street, both parcels shall provide cross-access to each other.

3. If an abutting parcel is undeveloped or does not currently have cross access, a cross-access stub connection shall be constructed.

4. Exceptions

- a. The following are excepted from cross-access requirements:
 - i. Residential development on properties zoned the N1-A, N1-B, N1-C, N1-D, or N1-E Zoning Districts.
 - ii. Development activities in the Parks and Preserves Place Type, the Manufacturing and Logistics Place Type, and the Regional Activity Center Place Type located within the I-277 loop.
 - iii. Connections between sites in the Manufacturing and Logistics Place Type and sites in the Neighborhood 1 Place Type or Neighborhood 2 Place Type.

- b. Cross-access requirements, and the associated standards found in Section 34.5, may be modified or eliminated by the CDOT Director when it is determined that:
 - i. An obstruction exists due to a significant natural feature or existing infrastructure; or
 - ii. Significant topographical differences between abutting parcels prevents potential cross-access connections; or
 - iii. Existing site conditions make cross-access connections either infeasible and/or of little functional value.

5. Easements

- a. If cross-access is required, cross-access easements shall allow for the connection of pedestrian connections, vehicular drives, and driveways on the property.
 - b. All cross-access easements shall be recorded. Easement recordation may be by plat or by a separate legal instrument when no plat is required.
 - c. Recorded easements shall not include limitations that would render the cross-access unusable during reasonable business hours for the affected uses.
 - d. A joint maintenance agreement shall be required between owners of abutting properties subject to cross-access requirements, and the agreement shall define maintenance responsibilities of each property owner.
6. Cross-access connections shall not be blocked or obstructed in such a way as to prevent intended pedestrian and vehicular traffic during agreed upon times of access.

32.3 DRIVEWAYS AND STREET ACCESS

A. Plan Approval Required

1. No driveway to a public street or private street shall be constructed, relocated, or altered without a plan approval by CDOT. Access to a North Carolina Department of Transportation (NCDOT) maintained street or roadway shall also require an NCDOT Driveway Permit. Single-family uses are exempt from obtaining a driveway plan approval but shall comply with the Charlotte Streets Manual (CSManual) and CLDSM and item B.1.c. below.
2. All driveway design, placement, and construction shall comply with the CSManual and CLDSM.
3. Driveway plan approval shall be required for existing driveways when any of the below actions occur. Any approved driveway plan may also require associated improvements to the driveway itself, the site, and/or roadways.
 - a. Subdivision as defined per Section 31.3.A; or
 - b. Construction of a new principal structure; or
 - c. Change of use for a structure of 4,000 square feet or more in gross floor area or change of use that creates more than 20 additional daily trips; or
 - d. Expansion of an existing building by 1,000 square feet; or
 - e. Changes to on-site parking layout or on-site circulation.

B. Access Management

1. Driveway Location and Placement

- a.** An approved driveway location and access shall be determined based upon the applicable Place Type and street classification standards as described in the CSManual.
- b.** Driveways shall be in a location with limited negative impact on the traffic flow and operations of the street.
- c.** Driveways shall be in a location that does not conflict with or negatively impact the storm drainage system. If other standards require driveway placement in a location such that the storm drainage system would be negatively impacted, the developer is responsible for making alterations to the storm drainage system to mitigate or eliminate the impact. See Section 24.3.A.2 for additional drainage requirements.
- d.** Driveways near an un-signalized intersection shall be located a minimum of 75 feet from the intersection. CDOT may reduce this requirement based on analysis of safety and operational conditions of the intersection.
- e.** Driveways near a signalized intersection shall be located a minimum of 200 feet from the intersection. If the property frontage is less than 200 feet, CDOT may reduce this requirement based on analysis of safety and operational conditions of the intersection.
- f.** CDOT may require existing driveway(s) to be relocated or closed in conjunction with any of the activities pursuant to item A.3 above. Required new curb, amenity zone/planting strip, and/or sidewalk/shared-use path shall be provided where the driveway(s) was previously located.
- g.** An existing curb cut may be relocated to a new location approved by CDOT if the existing curb cut is eliminated, new curb is constructed, and an amenity zone/planting strip and sidewalk/shared-use path is provided where the driveway was previously located.
- h.** A new driveway is prohibited for an existing development that already has access to a street from an existing driveway, unless CDOT determines there is a significant operational or circulation issue.

2. Access Restrictions

- a.** Plan approval may include imposing driveway access restrictions that limit vehicular movements to less than full-movement in order to provide safe and efficient street operations.
- b.** Driveway access shall be limited to less than full movement under any of the following conditions:
 - i.** The proposed access location is within 150 feet of a signalized intersection.
 - ii.** The proposed access location is within the physical limits of existing or future single or dual left-turn lanes.
 - iii.** The proposed access is near an intersection or street section where a safety and/or street operations problem exists.
 - iv.** The proposed access does not meet sight distance requirements of item D below.
 - v.** Other circumstances where full movement at the proposed access location will negatively impact safe and efficient street operations, as determined by CDOT.
- c.** CDOT may reduce access restrictions based on analysis of safety and operational conditions.

C. Driveway Alignment and Internal Access

1. Channelization and design of internal access shall comply with the CSManual.
2. The angle of a driveway intersection with the public or network-required private street shall be 90 degrees. A reduced angle of no less than 75 degrees may be approved by CDOT if any of the following conditions exist:
 - a. Topographical challenges.
 - b. Natural features.
 - c. Existing right-of-way constraints.
 - d. Existing building(s) to remain.
3. New driveways shall align with existing streets and existing driveways where possible to create four-way intersections.

D. Sight Distance

1. All driveways shall provide sight distance as described in the CSManual.
2. All driveways shall meet American Association of State Highway and Transportation Officials (AASHTO) Intersection Sight Distance Requirements.

F. Turn Lanes

Turn lanes for driveways shall be required as described in the CSManual.

G. Payment for Traffic Signal Installation or Modifications

If a plan approval related to a driveway requires modifications to an existing traffic signal or installation of a new traffic signal, the property owner/developer shall pay for the traffic signal improvements. Additionally, the property owner/developer shall obtain, if necessary, and dedicate the associated right-of-way. Details shall be defined in a Signal Agreement, as described in the CSManual.

H. Restrictions on Residential Driveways

Lots containing single-family, duplex, triplex, or quadraplex dwellings shall be limited to one driveway per street frontage. Additionally, lots containing duplex, triplex, or quadraplex dwellings shall be limited to one curb cut per street frontage. Driveway access to arterials shall be prohibited from single-family, duplex, triplex, or quadraplex lots that also front on a collector or local street.