Charlotte Department of Transportation
Land Development Site Plan Checklist [2008]

Project Name: _____ Date Reviewed: _____
Reviewer: _____ Telephone: _____
Contact: _____ Telephone: _____

This is a document generated to facilitate consistent plan reviews. Additional requirements may be necessary based on site-specific conditions. Sections highlighted in gray are informational for CDOT and used in the review of related requirements. Engineering and Property Management will review and comment on these items.

I. GENERAL SUBMITTAL REQUIREMENTS

____ Parcel Tax Number
____ Zoning:_____Rezoning Petition Number:_____ Conditional Notes/Plan Attached: _____
____ Site Jurisdiction: □ City Limits □ ETJ (Extra Territorial Jurisdiction)
____ City maintained street _____ NCDOT maintained street
____ Plans are sealed and dated as complete design
____ Site Plan sheet _____Vicinity map _____ North Arrow [See Section XV for additional requirements]
____ Title Block with site/development name
____ Property lines, right-of-way (ROW) lines, setback lines & easements- shown and labeled
____ Existing and proposed curblines, sidewalks, paved areas, and buildings/structures Street cross-sections/design - Charlotte Land Development Standards Manual (CLDSM)
____ If project is within the ETJ or connecting to a NCDOT maintained street, improvements must also meet the NCDOT's design standards/requirements.
____ If project is adjacent to an existing and/or planned CATS route or corridor, coordinate with CATS/Transit Oriented Development Specialist Tina Votaw 704.432.3013 and visit www.ridetransit.org for more information.

II. STREET CLASSIFICATION/TYPICAL CROSS-SECTION

____ Street Classification (Thoroughfares, Class I- IV; Collectors, Class V/V-C; Residential, Class VI/VI-L)
____ So*urce:* Mecklenburg-Union Metropolitan Planning Organization (MUMPO) Thoroughfare Plan; Charlotte Major Collector Street Plan; and Subdivision Ordinance
____ Transitional Setback [Zoning Ordinance 12.103]
____ Typical street cross-sections (conformance with CLDSM or adopted small area plans, pedscape plans, or other approved plans)
____ Bikeway Improvement Plan- may require additional improvements/right- of-way
____ Conditional Rezoning Site Plans- conformance with additional required transportation improvements/right-of-way

PUBLIC STREETS

_____	Class I	Freeway/Expressway	350 feet of R/W*	
_____	Class II	Limited Access Thoroughfare	200 feet of R/W*	
_____	Class III-C	Commercial Arterial	150 feet of R/W*	
_____	Class III	Major Thoroughfare	100 feet of R/W*	[CLDSM 11.09]
_____	Class IV	Minor Thoroughfare	70 feet of R/W*	[CLDSM 11.09]
_____	Class V-C	Commercial Collector	60 feet of R/W	[CLDSM 11.11]
_____		Divided Commercial Collector	62 feet of R/W	[CLDSM 11.12]
_____	Class V	Residential Collector	60 feet of R/W	[CLDSM 11.06, 11.07]
_____		Limited Residential Collector	60 feet of R/W	[CLDSM 11.08]
_____	Class VI	Local Residential	50 feet of R/W	[CLDSM 11.01, 11.02]
_____		Divided Residential	62 feet of R/W	[CLDSM 11.03]
_____	Class VI-L	Local Limited Residential	40 feet of R/W	[CLDSM 11.04, 11.05]
_____	Traditional Neighborhood Development Street		45 feet of R/W	[CLDSM 11.10]

* Additional right-of-way requirements may be necessary as determined by CDOT/NCDOT for thoroughfare streets. [Subdivision Ordinance 7.110; Zoning Ordinance 12.103]

PRIVATE STREETS

_____ Private Street [CLDSM 11.13]
_____ Divided Private Street [CLDSM 11.14]

PRIVATE ALLEYS

_____ Residential Alley One-Way Operation [CLDSM 11.19A]
_____ Residential Alley Two-Way Operation, Single Loaded [CLDSM 11.19C]
_____ Residential Alley Two-Way Operation, Double Loaded [CLDSM 11.19B]

III. STREET INTERSECTIONS

HORIZONTAL ALIGNMENT

_____ Minimum angle between two intersecting streets - 75º [CLSDM Standards of Street Design]
_____ Transition taper for streets of different classification/pavement width must occur in advance of or beyond the intersection [CLDSM 10.37]
Minimum curb and R/W radius: [CLSDM Standards of Street Design]
_____ Local Residential Street classifications - 20 feet
Collector Street Classifications - 30 feet
_____ Minimum offset/separation from adjacent public street intersection, measured from centerline to centerline, is applicable for both public and private streets: [CLSDM Standards of Street Design]
Local Residential Street classifications - 125 feet
Collector Street classifications - 200 feet
Thoroughfare Street classifications - determined by CDOT/NCDOT on project basis
_____ Private residential alley intersection (reviewed by CDOT) [CLDSM 11.20]

VERTICAL ALIGNMENT

_____ Maximum grade of public or private street intersecting a public street as the stop condition 5 % within 100 feet of the intersection [CLSDM Standards of Street Design]

IV. STREET TERMINATIONS

CUL-DE-SACS

_____ City of Charlotte/ETJ Residential Cul-de-sac [CLDSM 11.16]
_____ Oversized Residential Cul-de-sac with Raised Planter Island [CLDSM 11.21]
_____ Commercial Cul-de-sac [CLDSM 11.17]

STREET STUBS

_____ End-of-roadway barrier/markers [CLDSM detail 50.07A/B50.08A/B]
_____ Profiles for the extension of street stubs must be shown tying into existing grade within 300 feet of the phase/property line [Subdivision Ordinance 6.400]
_____ Private street stubs and drive aisles require a recorded (Register of Deeds) cross-access agreement allowing the adjoining parcel(s) cross-access rights. The access agreement is a non-exclusive easement for the purposes of ingress, egress, regress, passage and delivery by vehicles between the proposed property and the adjacent parcel. This agreement needs to be referenced on the plans and a copy of the recorded agreement provided to CDOT before the certificate of occupancy is issued.

HAMMERHEAD

_____ Residential hammerhead [CLDSM 11.18]
_____ Private residential alley hammerhead [CLDSM 11.20]

V. PUBLIC STREET DESIGN (Rolling Terrain)

(Use of level or hilly terrain criteria not permitted without prior approval of the Engineering and Property Management Review Engineer)

HORIZONTAL ALIGNMENT [CLDSM Standards of Street Design]

_____ Minimum centerline radius
- Local Residential Street - 150 feet
- Collector Street - 250 feet

_____ Minimum tangent between horizontal reverse curves
- Local Street - 50 feet
- Collector Street - 100 feet

_____ Horizontal alignment for Thoroughfare Street classifications must be in conformance with the current edition of AASHTO's *A Policy on Geometric Design of Highways and Streets.*

VERTICAL ALIGNMENT [CLDSM Standards of Street Design]

____ Minimum grade for any street - 0.5 percent
____ Maximum grade
- Local Residential Street - 10 percent
- Collector Street - 8 percent

____ Minimum K value (Crest/Sag)
- Local Residential Street - 20/20
- Collector Street (City Limits) - 28/35
- Collector Street (ETJ) - 30/35

____ Vertical alignment for Thoroughfare Street classifications must be in conformance with the current edition of AASHTO's *A Policy on Geometric Design of Highways and Streets.*

VI. PRIVATE STREET DESIGN [CLDSM 11.13, 11.14]

HORIZONTAL ALIGNMENT

___ Minimum centerline radius - 50 feet

VERTICAL ALIGNMENT

___ Maximum grade - 10 percent

___ Minimum K value (Crest/Sag) - 10/20

VII. CURB AND GUTTER REQUIREMENTS

SINGLE FAMILY DEVELOPMENTS [Subdivision Ordinance 8.110]

___ 2'-0" valley gutter or standard 2'-6" curb and gutter is required along all cul-de-sacs, local residential streets, and residential collector streets.

MULTI-FAMILY AND COMMERCIAL DEVELOPMENTS [Subdivision Ordinance 8.110]

___ 2'-0" valley gutter or standard 2'-6" curb and gutter is required on residential local and collector streets

___ 2'-6" standard curb and gutter is required along commercial and thoroughfare streets.

COMMERCIAL BUILDING DEVELOPMENTS [Chapter 19]

___ 2'-6" standard curb and gutter is required on thoroughfare streets and on other streets as listed above where required by Engineering and Property Management*

* NCDOT approval required for curb/gutter installations on Class II thoroughfares

MINIMUM CURBLINE LOCATIONS

___ Non-thoroughfare streets must meet the minimum curbline locations as dimensioned on the typical street cross-sections.

___ Thoroughfare streets and commercial arterials must meet the minimum curbline locations as determined by CDOT on a case by case basis

VIII. CULVERT CROSSINGS/RETAINING WALLS/HANDRAILS

_____ Culvert Crossing [CLDSM 10.36]

Provide a roadway cross-section to determine if handrails or guardrails are warranted.

_____ Handrail Design and Warrants [CLDSM 50.04]

_____ Guardrail Design [NCDOT 862.01]

A full guardrail design of sufficient length must be provided, including end treatments/impact attenuators as necessary. Guardrail design needs to be signed and sealed by a North Carolina Registered Professional Engineer with highway design experience. All relevant NCDOT standard details for guardrail must be provided but are insufficient as a design in and of themselves.

_____ Retaining Wall Design [CLDSM 10.39]

Proposed retaining walls that structurally support a public street must be designed and construction plans sealed by a North Carolina Registered Professional Engineer with retaining wall experience and submitted to CDOT for review. The retaining wall must be shown in plan and profile view with cross-sections at even station intervals.

IX. ACCESSIBLE RAMPS [CLDSM 10.31, 10.32, 10.33, 10.34]

_____ Accessible Ramps are required at each corner radius curb return where sidewalk is required.
_____ The placement of the accessible ramps [CLDSM 10.35A]
_____ Truncated domes on all accessible ramps [CLDSM 10.35B]
_____ Accessible ramp at sidewalk termination at the cul-de-sac bulb [CLDSM 11.16]

X. SIDEWALK

Sidewalks are required on both sides of all new or existing thoroughfare streets, collector streets, and local residential streets with exemptions stated on the typical cross-section details CLDSM 11.04,11.05, and 11.16 and within the Subdivision Ordinance. [Subdivision Ordinance 8.140]

_____ Minimum sidewalk widths
Local Residential Streets - 4 feet [Subdivision Ordinance 8.140]
Collector Streets - 4 feet [Subdivision Ordinance 8.140]
Thoroughfare Streets - 5 feet [CLDSM 11.09]
Urban zoning districts - 6 feet
Urban Residential (UR) [Zoning Ordinance 9.4070]
Mixed Use Development District (MUDD) [Zoning Ordinance 9.8506]
Neighborhood Services District (NS) [Zoning Ordinance 11.5070]
Transit Oriented Development (TOD) - 8 feet [Zoning Ordinance 9.1209]
_____ Uptown Mixed Use District (UMUD) must be in conformance with the adopted Center City Transportation Plan. [Zoning Ordinance 9.9050]
_____ Additional sidewalk requirements may be determined by a small area plan, pedscape plan, or other plans which may be adopted by City Council.
_____ NCDOT approval is needed for installation of sidewalk on Class II Thoroughfares
_____ Sidewalk located outside the R/W must be on a permanent easement dedicated to the City of Charlotte. The sidewalk easement extends from R/W to 2 feet behind back of sidewalk, or to face of building, whichever is less.

XI PLANTING STRIPS

Planting Strips are required along all new or existing thoroughfare streets, collector streets, and local residential streets where sidewalk is required. The planting strip width is the distance between the back-of-curb and gutter to the front of the sidewalk.

_____ Minimum Planting Strip Widths
_____ Local Residential Streets - 4 feet [CLDSM Typical Street Cross- sections]
_____ Collector Streets - 4 feet [CLDSM Typical Street Cross- sections]
_____ Thoroughfare Streets - 4 feet [CLDSM Typical Street Cross- sections]
_____ Urban zoning districts - 8 feet
Urban Residential (UR) [Zoning Ordinance 9.4070]
Mixed Use Development District (MUDD) [Zoning Ordinance 9.8506]
Neighborhood Services District (NS) [Zoning Ordinance 11.5070]
Transit Oriented Development (TOD) [Zoning Ordinance 9.1209]
_____ Uptown Mixed Use District (UMUD) must be in conformance with the adopted Center City Transportation Plan. [Zoning Ordinance 9.9050]
_____ Additional planting strip requirements may be determined by a small area plan, pedscape plan, or other plans which may be adopted by City Council.
_____ Additional right-of-way may be required to include the entire planting strip within the right-of-way.

XII CDOT SIGHT DISTANCE REQUIREMENTS

Within all sight distance and cross visibility triangles no structure, sign, plant, shrub, tree, berm, fence, wall, or other object of any kind shall be installed, constructed, set out or maintained so as to obstruct visibility at a level between 30 and 72 inches above the level of the center of the street intersection. [Zoning Ordinance 12.109]

INTERSECTION-APPROACH SIGHT TRIANGLES* [Zoning Ordinance 12.109]

_____ For private streets and driveways connecting to a public street the intersection-approach sight triangles are measured along right-of-way of public street and face-of-curb or edge of pavement of a private street/driveway

_____ At public street, private street, and Type III driveway connections to public streets, whichever is greater:
-35 feet x 35 feet measured along the rights-of-way or
-50 feet x 50 feet measured in both directions along the curb or pavement edge from the center point of the corner radius

_____ Sight distance triangles at all public street, private street, and driveway connections to NCDOT maintained roadways regardless of zoning (City Limits and ETJ):
-10 feet x 70 feet measured along rights-of-way

_____ Intersection-approach and pedestrian sight triangles must be shown on the development site plan. For any portion of these triangles that are located outside the right-of-way and within the development a sight distance easement must be provided.

* Exempted in the Urban Residential (UR), Urban Industrial (UI), Uptown Mixed Use District (UMUD), and Neighborhood Services District (NS)

PEDESTRIAN SIGHT TRIANGLES

_____ Pedestrian sight triangles are needed for driveways intersecting with public streets, particularly when structures are located at the setback line in urban zoning districts:
-10 feet x 10 feet with one leg measured along the back-of-sidewalk or right-of-way (whichever is the greater distance from the curb line) and the other leg measured along the driveway face-of-curb or edge-of-pavement.

INTERSECTION SIGHT DISTANCE

_____ Adequate Intersection Sight Distance (ISD) to be provided at all proposed public street connections, private street connections, and Type II/III driveways to existing public streets. [Source: CDOT's *Sight Distance Policy* and AASHTO's *A Policy on Geometric Design of Highways and Streets,* current edition]

_____ Proposed street and Type II/III driveway connections to all Class V & VI streets:
ISD is measured from a point 10 feet back from the projection of the through street curb line/edge of pavement in the outbound lane of the proposed connection to the center of the nearest approaching lane in both directions*

_____ Proposed street and Type II/III driveway connections to all Class I - IV streets (thoroughfares):
ISD is measured from a point 15 feet back from the projection of the through street curb line/edge of pavement in the outbound lane of the proposed connection to the center of the nearest approaching lane in both directions*

_____ Driver's eye height- 3.5 feet; approaching vehicle height- 3.5 feet

_____ ISD must be shown in both horizontal and vertical dimensions (plan/profile) along the sight line, not the roadway centerline

_____ ISD evaluation may be required at existing intersections adjacent to the site

* Reference CDOT's *Sight Distance Policy* for required sight distance length based on the design speed of the through street

STOPPING SIGHT DISTANCE

The minimum stopping sight distance must be available to the driver at all locations on public streets. Stopping sight distance applies to horizontal as well as vertical alignments.

_____ Horizontal Stopping Sight Distance
Measured along the centerline of the inside lane around the curve and the line of sight is a straight line between two points on the centerline of the lane

_____ Vertical Stopping Sight Distance
Measured on a straight line between the driver's eye and an object on the roadway surface. The height of the driver's eye traveling in a passenger car shall be measured at 3.5 feet above the roadway surface and the object shall be 2.0 feet above the roadway surface.

_____ New streets whose geometry causes the line-of-sight for stopping sight distance to extend outside the right-of-way will require sight-distance easements for the balance on the proposed site or their alignments must be revised to provide the required sight distance.

* Reference CDOT's *Sight Distance Policy* and *AASHTO* for required sight distance length based on the design speed of the through street

XIII CONNECTIVITY STREETS AND STREET STUB REQUIREMENTS [Subdivision Ordinance 6.200]

A *network* of streets shall be provided. Streets shall be set up to facilitate the most favorable development of the entire area, which may require providing a connection to a nonresidential land use. One stub per adjacent parcel may not be sufficient. Opportunities to reduce vehicle-miles of travel (VMT) are very important; such opportunities may occur from shortening travel distances, connecting different land uses, or both.

[Transportation Action Plan (TAP) Objective 2.9]

Connectivity is required to adjacent parcels under the following circumstances:

_____ a cul-de-sac is generally not permitted by the Subdivision Ordinance
_____ an existing street stub is present that must be connected
_____ a parcel is landlocked
_____ a parcel is undeveloped
_____ it would facilitate the most advantageous development of the entire area
_____ it provides a network of interconnected streets
_____ it would create/set up a second means of access for the site
_____ it establishes a street parallel to a thoroughfare, preventing a series of cul-de-sacs accessing the thoroughfare
_____ the maximum block length of 1,000 feet must be met [Subdivision Ordinance 7.150]

BICYCLE FACILITIES [Subdivision Ordinance 7.160]

_____ If a street connection is infeasible or impractical, a 10-foot shared bicycle/pedestrian path can be required in lieu of the street connection. If the path is to be public, it must meet ADA requirements.

_____ This site abuts an existing/proposed multi-use path/bicycle facility. A 10-foot-wide pedestrian/bicycle connection needs to be made.

GREENWAY FACILITIES

Streets should be designed to assure convenient access to greenways. Coordinate with Mecklenburg County Park & Recreation about connecting to the greenway.

XIV REGULATORY and WARNING SIGNS [Manual on Uniform Traffic Control Devices]

_____ Standard Manual on Uniform Traffic Control Devices (MUTCD) Stop (R1-1, 30"x30") signs must be indicated at all private Type III driveway/street connections to a public street and noted to be installed by the developer
_____ Standard MUTCD Stop signs (R1-1, 30"x30") should be indicated at all internal private street intersections and noted to be installed by the developer
_____ Stop signs are not necessary for Type II driveways
_____ Standard MUTCD Keep Right signs (R4-7, 24"x30") must be indicated at each end of proposed
_____ medians that are adjacent to 2 or more travel lanes in each direction and noted to be installed by the developer
_____ Standard MUTCD signage for Round-a-bouts[CLDSM 50.11]
_____ Standard MUTCD Do Not Enter signs (R5-1, 30"x30") must be provided to prevent vehicles from entering one-way driveway or drive aisles

XV DRIVEWAYS/SITE PLAN REVIEW

CDOT has authority to regulate street and driveway connections to public streets within the City and ETJ in accordance with the City's *Driveway Regulations*. Left and right-turn lanes that serve the development, medians to control turning movements, median closures, as well as other improvements may be required during the subdivision and commercial building permit process. Additionally, a traffic impact study may be required to evaluate the development's proposed access and impact to the adjacent street. City and NCDOT permits are required for connections to state maintained streets in the City and ETJ [City Code Section 19-51]

SITE PLAN REQUIREMENTS

_____ North Arrow and vicinity map
_____ Scale- not greater than 1"=20' nor less than 1"=50'
_____ Location of existing and proposed street rights-of-way, property lines, and setback lines
_____ Location of existing and proposed driveways adjacent, opposite, and on the property
_____ Location of existing and proposed sidewalks adjacent, opposite, and on the property
_____ Location of existing utilities
_____ Vertical profile for each proposed driveway
_____ Parking summary of existing, required, and proposed parking spaces
_____ Layout of existing/proposed parking spaces
_____ Arrangement of parking aisles including pavement markings
_____ Internal provisions for vehicular and pedestrian flow, including accessible ramps
_____ Designate the limits of the private street

SITE PLAN DESIGN REQUIREMENTS

Vehicle Overhang [CLDSM 50.09B]

_____ Sidewalks/pedestrian paths located adjacent to front-in parking spaces must be a minimum of 7 feet in width to eliminate pedestrian/vehicle conflicts. This requirement can be met with either a 7-foot wide sidewalk or a 2-foot-wide planting strip/5-foot wide sidewalk. [CLDSM 50.09A]

Loading Spaces

_____ Location, type/size, number, design vehicle type, and ingress/egress maneuvering path.
_____ Maneuvering not permitted in right-of-way or setback. [Zoning Ordinance 12.214/216]

Waste Collection

_____ Location, container type (dumpster, roll-out, etc.), design vehicle, and ingress/egress maneuvering path.
_____ Maneuvering not permitted in right-of-way or setback possible [Zoning Ordinance 12.202/203]

Pedestrian Connectivity

_____ Provide internal pedestrian circulation system [Zoning Ordinance 12.201]

Traffic Control Signs and Pavement Markings

_____ STOP signs required at all Type III driveways

_____ All internal traffic control (regulatory, warning, and guide) signs and pavement markings in public vehicular areas (private parking lots) must conform with the *Manual on Uniform Traffic Control Devices* (MUTCD) [North Carolina General Statutes]

Multi-family/townhouse developments [Zoning Ordinance 9.303]

_____ Minimum 5-foot offset is necessary between the edge of the drive lane and the front of each garage to provide drivers adequate visibility of backing vehicles. [CLDSM 11.19]

_____ Minimum 20-foot offset needs to be provided between the back of the sidewalk and the front of each garage to allow sufficient area for vehicle parking without blocking the sidewalk

Parking Spaces

_____ On-Street Parallel Parking Spaces considered on a case-by-case basis [CLDSM 50.09C]

_____ Parallel parking spaces along all streets need to be at least 7 feet wide and 22 feet long

_____ Parallel parking spaces must be located at least 20 feet from the driveway/street radius return

_____ Parking space dimensions, aisle widths, and parking angles [CLDSM 50.90A]

_____ Compact vehicle spaces [Zoning Ordinance 12.204]
Limited to 25% of total required parking amount. Must be grouped and not located randomly within parking bays

_____ Shared Parking on adjacent property
Provide address/location, number, % of required parking, design, and copy of required legally binding written agreement between the owner of the parking area and the owner of any use located on a different parcel and served by the parking area

_____ Parking Decks must be designed in accordance with CLDSM and CDOT's *Parking Deck Design Guidelines*

_____ Architectural plans for covered parking must be included with all submittals to review the circulation and parking configuration

_____ Handicap Parking space details CLDSM 50.10 A, B, and C must be provided in the plan set when proposing handicap parking

DRIVEWAY TYPES

_____ Type I - Residential drop curb/ramp type driveway [CLDSM 10.24, 10.25A, 10.25C, 10.27]
Use only for 3 or fewer residential units

_____ Type II - Commercial drop curb/ramp type driveway [CLDSM 10.24, 10.25B, 10.25D]
Use for driveways with a planting strip less than 6 feet in width or a sidewalk of at least 4 feet

_____ Type II - Modified - Commercial ramp-type driveway with radii
Use for driveways with a planting strip of at least 6 feet in width
The radii of the Type II- Modified driveway needs to be equal to the planting strip width
A Type II- Modified driveway cannot be used where valley gutter is installed

_____ Type III - Street-type driveway [CLDSM 10.28]
Use for high traffic volumes, direct access with left or right-turn lanes, and driveways with a significant number of tractor-trailer trucks (WB-40 and larger design vehicles)

_____ Type IV [CLDSM 10.25F]
Use on streets without curb/gutter and where no curb/gutter is required

DRIVEWAY DESIGN ELEMENTS [CDOT Driveway Regulations]

_____ Driveway Angle
90° for all driveway types, measured between the driveway and street curbline or edge of pavement.

_____ Driveway Alignment
Driveways must be located directly opposite existing driveways with proper lane alignment maintained. Offset driveways may be considered on a case-by-case basis if they are offset in a location that does not create conflicting left-turn movements.

_____ Storage lanes
Type III driveways must have sufficient storage lanes within the development.

_____ Internal Channelization
Type III driveways must have a minimum of 150 feet of internal channelization to eliminate possible conflicts of entering vehicles with parking vehicles and/or vehicles circulating within the site.

_____ Gated entrances
Provide location of gates and gate control equipment.
A minimum of 40 feet (vehicle length) must be provided between the card reader and the street right-of-way, setback line (urban districts), or back-of-sidewalk, whichever is greater.
For gated street and driveway requests, turnarounds may be required in advance of the gated area.
Gates must be approved by the Charlotte Department of Transportation

NUMBER/SPACING OF DRIVEWAYS

_____ Up to 3 driveways on a particular street from a commercial site will be considered on a case-by-case basis provided that spacing requirements can be met.

Type	Number/Spacing of proposed	Separation from Existing
Type I and II	2/20 feet; 3/50 feet	20
Type II- Modified	2/20 feet*; 3/50 feet*	20*
Type III	400 feet*	400*

* measured from beginning of driveway radius at street curbline

Note: Proposed driveways to public streets need to be numbered (i.e., DW-1, DW-2, DW-XX, etc.), dimensioned at the right-of-way/setback, labeled by type, and include radii lengths, as necessary.

DRIVEWAY WIDTHS

_____ Type I, II, and Type II-Modified- measured setback line

_____ Type III- measured face to face of curb

Type	Minimum Width	Maximum Width
Type I	15 feet*	30 feet
Type II (one way)	20 feet	30 feet
Type II (two-way)	26 feet	50 feet
Type II- Modified (one way)	20 feet	30 feet
Type II- Modified (two-way)	26 feet	50 feet
Type III (full movement)	38 feet	60 feet
Type III (restricted movement)	26 feet	32 feet

* 10 feet on residential streets

Note: Driveway widths need to be maintained through the setback. Beyond the setback line the driveway width can be reduced/tapered to a width adequate for the proposed circulation and parking configuration.

DRIVEWAY RADIUS

Type	Minimum Radius	Maximum Radius
Type I and II	N/A	N/A
Type II- Modified	6 or 8 feet*	12 or 14 feet**
Type III	10 feet	60 feet

* Radius equal to planting strip width. Ramp terminates at front edge of sidewalk with 6" curb height transitioning out (to 0") to maintained sidewalk grade.

** Radius equal to planting strip + sidewalk width. Ramp terminates at front edge of sidewalk with 6" curb height transitioning out (to 0") to maintained sidewalk grade. Radius continues as a 6" concrete band through the sidewalk at grade.

DRIVEWAY SIDE CLEARANCE FROM PROPERTY LINE

Type	Minimum Clearance
Type I and II	10 feet*
Type II-Modifed	10 feet + radius
Type III	150 feet**

* Where a Type I or II driveway exists on an adjacent property, no less than 20 feet shall separate the proposed driveway from the existing driveway.

** Where a Type III driveway, private street, or public street exists adjacent to the proposed driveway, a minimum clearance of 400 feet is necessary. Additional side clearances may be necessary where right-turn lanes are required.

DRIVEWAY SEPARATION FROM OTHER STREETS OR DRIVEWAYS

Type	Minimum Separation
Type I and II	20 feet
Type II- Modified	20 feet*
Type III	400 feet*

* Measured from beginning of driveway radius at street curbline

DRIVEWAY CORNER CLEARANCE TO PUBLIC OR PRIVATE STREET

Type	Minimum Clearance
Type I and II	20 feet*
Type II- Modified	20 feet**
Type III	300 feet**

* Measured from end of the street corner radius

** Measured from end of street corner radius to the beginning of driveway radius at the street curbline.

XVI TRANSPORTATION IMPROVEMENTS

Transportation improvements may be required through the development review process. CDOT has the authority to regulate street and driveway connections to public streets within the City and ETJ in accordance with the City's *Driveway Regulations*. Left and right-turn lanes that serve the development may be required during the subdivision and commercial building permit processes. Additional and offsite transportation improvements may be required to mitigate the impacts of a proposed development as identified in a traffic impact study reviewed/approved by CDOT during the rezoning process and committed to by the petitioner/developer in a conditional site development plan.

The construction plans for any required transportation improvements must include 3 separate/distinct plans: road improvements, traffic control/maintenance or traffic, and pavement markings.

TURN LANES

_____ Scale- not greater than 1"=20' nor less than 1"=50'.
_____ Left-turn lanes are required for developments that generate more than 500 trips per day.*
_____ Right-turn lanes may be required a major Type III driveways.*
_____ "Left-overs" may be required to prohibit left-turn and through movements at Type III driveways or intersections. [CLDSM 50.13]

* Turn lanes must be designed to the standards listed on pages 78-79 of the *NCDOT's Policy On Street and Driveway Access to North Carolina Highways* with the exception of a minimum storage length of 150 feet.

ROAD IMPROVEMENTS

_____ Scale- not greater than 1"=20' nor less than 1"=50'.
_____ The geometric design of all roadway and intersection improvements must meet the requirements in Section V. Public Street Design.
_____ Developer is responsible for acquiring any offsite right-of-way needed to construct required offsite transportation improvements. Right-of-way (existing) along any required offsite improvements needs to be verified with survey information (i.e., property corners identified by iron pins); tax maps are not sufficient verification.
_____ Verification of right-of-way acquisition/dedication is necessary prior to construction of any required transportation improvements.
_____ Completion, inspection, and acceptance by the City/NCDOT of all required transportation improvements is required prior to the issuance of a Certificate of Occupancy.
_____ Construction plans for street/intersection improvements need to include, but are not limited to, existing/proposed rights-of-way, widths, location of existing and new curb/gutter and/or edge of pavement/shoulder/ditch, storage lengths of existing turn lanes, existing traffic signal poles, conflicting utilities/other objects, and overlay and milling limits required by CDOT/NCDOT.

CROSS-SECTIONS

_____ Cross sections in accordance with CLDSM and *City/NCDOT Cross Section Requirements*; scale of 1"=5' for both vertical and horizontal dimensions.
_____ The engineering, design, and construction of the left-turn lane are the responsibility of the developer, and a registered professional engineer with roadway design experience must complete the design.

PAVEMENT MARKINGS/SIGNING

_____ Scale- not greater than 1"=20' nor less than 1"=50'.
_____ The pavement marking plans need to include all proposed pavement markings and NCDOT raised pavement markers. All pavement markings must be retroreflective thermoplastic, dimensioned, and conform to all CDOT standards.
_____ All pavement markings need to be designed in accordance with *CDOT's 2004 Pavement Markings* Standard

TRAFFIC CONTROL

_____ Scale- not greater than 1"=20' nor less than 1"=50'.

_____ The traffic control plan needs to be designed in accordance with USDOT's *Manual on Uniform Traffic Control Devices* and *CDOT's WATCH handbook*. All traffic control plans must be designed specific to the proposed widening improvement. Standard diagrams will not be acceptable.

TRAFFIC SIGNALS

_____ Any costs to modify an existing traffic signal installation made necessary by the construction of required improvement(s) are the responsibility of the developer. The costs may include, but are not limited to, the relocation of signal poles, controller, loop detectors, and pavement markings.

_____ The developer shall contact the Charlotte Department of Transportation (Gus Jordi, 704-336-7086) to identify any conflicts with traffic signal equipment. At least 60- 90 days will be required to coordinate relocation. Developer shall be responsible for all related relocation costs and/or any repair costs resulting from damages caused by the contractor/developer.

XVII. RIGHT-OF-WAY

_____ Developer is responsible for acquiring any offsite right-of-way (r/w) needed to construct required offsite transportation improvements. Should the developer not be able to acquire the necessary right-of-way and construction easements, the City will assist in the acquisition in accordance with the City's "Offsite R/W Acquisition Process". This process is administered by the Engineering & Property Management.

_____ Prior to plat recordation, offsite r/w and/or construction easements are required to be obtained. R/W and construction limits must be clearly shown on the roadway improvement plans.

XVIII. RIGHT-OF-WAY ENCROACHMENTS

All plans submitted must have note on the plans stating a Right-of-Way Encroachment Agreement is required for the installation of all non-standard items (irrigation systems, decorative concrete pavement, brick pavers, etc.) within a proposed/existing City maintained street right of way by a private individual, group, business, or homeowner's/business association.

_____ CDOT will review and evaluate the design and installation of all such requests during the encroachment process and may require modifications. CDOT may not approve all such requests.

_____ An encroachment agreement must be approved by CDOT prior to the construction/installation of the non-standard items.

_____ Contact CDOT for additional information concerning cost, submittal and liability insurance coverage requirements.

_____ If the existing street is maintained by NCDOT, a NCDOT Encroachment Agreement is required for the proposed improvements (contact NCDOT, 704.596.6900).