

# **SIGHT DISTANCE POLICY**



City of Charlotte  
Department of Transportation

600 East Fourth Street  
Charlotte, NC 28202-2858

**August 2023 Edition**

## **I. DEFINITIONS**

AASHTO: American Association of State Highway and Transportation Officials

Advisory Speed: A recommended speed for all vehicles operating on a section of roadway and based on the roadway design, operating characteristics, and conditions (definition adapted from the 2009 *Manual on Uniform Traffic Control Devices*). Advisory speeds are non-regulatory and are posted as subplates to warning signs that indicate the underlying reason for the recommended speed.

Arterial Street: A street whose main function is to provide mobility to the traveling public, i.e., through traffic. Providing access to abutting properties is a secondary concern. All arterials are identified on the CRTPO *Comprehensive Transportation Plan*.

CDOT: City of Charlotte Department of Transportation

City: City of Charlotte, North Carolina

City Code: Code of the City of Charlotte, North Carolina, latest revision, including the Unified Development Ordinance (UDO).

Collector Street: Streets as defined as such in the UDO or as shown on the City of Charlotte Streets Map.

Cross Street: A street intersecting the one on which a driver is presently on. No inference of right-of-way should be made from the term “cross street,” and the term should just be a synonym for “intersecting street.” A cross street may be a Major Street or a Minor Street (*q.v.*).

Design speed: The speed selected to determine the various geometric design features of a roadway. It is logically and rationally related to the anticipated operating speed, topography, land use context, modal mix, and functional classification of the roadway. In urban areas on streets and roadways with posted speeds of 45 MPH and less, the target speed, posted speed limit, and design speed should all be equal (definition paraphrased from 2018 AASHTO Green Book, pages 2-23 and 2-24). For streets and roadways with posted speeds of 50 or greater, the design speed shall be the posted speed plus 5 MPH.

Director, Department of Transportation: The Director of the Charlotte Department of Transportation or their designee. Also referred to as the Transportation Director.

Driver: Operator of a motor vehicle

Driver’s Eye Height: The vertical distance from the pavement surface to the driver’s eye.

ETJ: Extraterritorial jurisdiction. Land outside the city limits of Charlotte that falls under City zoning and regulatory control.

Existing Features: Any existing objects that are not built or installed by a given project.

Green Book: *A Policy on Geometric Design of Highways and Streets*, AASHTO, latest edition. Tables and exhibits that are referenced in this document refer to the 2018 edition of the Green Book.

Horizontal Alignment: Tangents and curves in the horizontal plane that define the location of the street.

Intersection: The location of a public street, private street, or driveway where it crosses or meets a public street.

Landscaping: Roadside and median improvements involving trees, bushes, shrubs, and other plants; grading and mounding; and signs, fences, and decorative walls.

Local Street: A street that serves the primary function of access to residential, industrial, or commercial property. The object is to provide access to abutting properties and not be a conveyance for through traffic. Subordinate to all other street classifications.

Major Street: Relative to a given street, one that is more important, has a higher volume, functional classification, design speed, right-of-way, or any combination of these. A major street is typically an unimpeded through movement in an unsignalized intersection or a movement that receives most of the green time at a signalized intersection.

Minor Street: The street in a given intersection that is required to yield the right-of-way, indicated by signs or traffic signals, to a major street.

NCDOT: The North Carolina Department of Transportation.

NCGS: North Carolina General Statute/Statutes, as required by context.

New Facility: A proposed roadway, bridge, culvert, or landscape project; major reconstruction or major widening project.

Object Height: The vertical distance from the roadway surface to the top of an object in the roadway.

Posted Speed: The maximum legal speed for a roadway, as posted on signs along a roadway. In the absence of any signage, the North Carolina statutory speed limit is 35 MPH inside city limits and 55 outside them per NCGS 20-141(b).

Private Street: A street that is located on private property and that is not maintained by a government agency. Also, streets with rights-of-way that have been dedicated to the public but have not yet been accepted for maintenance.

Public Street: A street that is located on right-of-way dedicated to the public and that has been accepted by the City of Charlotte or NCDOT for maintenance.

Right-of-way: (1) The legal authority to construct a transportation conveyance across property. (2) The precedence of who yields to whom in a given circumstance, such as at an intersection.

Roundabouts: An Informational Guide (current edition): National Cooperative Highway Research Program report #672 published by the Transportation Research Board. Provides operating and design parameters for roundabouts.

Side Street: See Cross Street.

Sight Distance: The length of roadway visible to the driver who is traveling along the roadway or waiting to enter or cross the roadway.

Sight Obstruction: Any object that limits the view of the driver.

Sight Triangle: (1) An area formed by the curb lines or edges of the roadway and a straight line from the driver's eye on one street to an object on the other street. (2) An area formed by measuring along the right-of-way or curb lines from their projected point of intersection back a certain distance from the intersection along two legs of the intersection and a straight line between the end points thus established.

State System Street: Any street, road, or highway that is maintained by the North Carolina Department of Transportation.

Thoroughfare: *Obsolete*; The UDO uses the term "arterial" instead of "thoroughfare." See "arterial street."

Through Street: See Major Street.

Vertical Profile: Tangents and curves in the vertical plane that define the elevations and alignment of the roadway.

## **II. APPLICATION AND INTENT**

### **A. Enabling Authority**

Authority for this Sight Distance Policy comes from Section 2.3.B.6 of the Charlotte Streets Manual and the following three sections of NCGS: [160A-306](#), [160A-307](#), and [160D-916](#).

The Transportation Director has the overall responsibility for the improvement, operation, and maintenance of Charlotte's street system. Included in this responsibility are the evaluation, prevention, and abatement of obstructions to the view of motorists, bicyclists, and pedestrians using any street or approach to any street intersection that may constitute a traffic hazard or a condition dangerous to the public safety. This Sight Distance Policy has been developed to aid in the evaluation of public safety in and adjacent to the public right-of-way within the City of Charlotte and its ETJ. This policy regulates design of new roadways and reconstruction of existing roadways. The policy also applies to roadway designs within Charlotte or its ETJ constructed by private developers who intend to dedicate roadways and roadway improvements to the City or State for public maintenance. It also applies to landscape improvements adjacent to new and existing roadways.

### **B. Scope and Intent of the Sight Distance Policy**

Sight distance is the length of roadway visible to the driver who is traveling along the roadway or who is waiting to enter or cross the roadway. Types of sight distance include, but are not limited to, stopping sight distance, intersection sight distance, and passing sight distance. The horizontal alignment and vertical profile of a roadway affect sight distance. Objects such as buildings, walls, parked cars, cut or fill slopes, trees, bushes, hedges, tall crops, signs, and other objects within and outside of the right-of-way can affect sight distance. Some objects may be located within sight-distance areas and not significantly obstruct the required visibility of the driver. The driver may be able to see over, under, or around some objects within sight distance areas. Objects that may be required within sight distance areas, such as fire hydrants, utility poles, and traffic control devices, shall be located so that they minimize visual obstruction.

The intent of this Sight Distance Policy is to ensure that motorists have sufficient time and distance to perceive and react to conditions that they may encounter in typical scenarios on a street or roadway. It is not intended to override or impede other goals and policies of the City, such as accommodating bicyclists, pedestrians, and transit as co-equal users of the right-of-way, promoting good urban design, or having a substantial tree canopy. Should this policy conflict with another goal or policy of the City, the Transportation Director shall make a decision on how to address the conflict, conferring with the director(s) of the involved department(s) as necessary.

This Sight Distance Policy provides sight distance parameters for motorists. The principles of providing sight distance are still applicable for walking, biking, and transit. These users of the right-of-way have the same rights and responsibilities to perceiving and reacting to conditions that motorists do, and therefore expect that sufficient sight distance is provided in analogous

situations. Horizontal or vertical curves with limited sight distance (blind curves), constrained intersection geometry, etc., should be avoided for motorists, pedestrians, bicyclists, and transit users alike. For sight distance parameters in these other modes of transportation, please consult appropriate national guidance and best practices and coordinate with CDOT staff.

This policy should not be applied without qualification to existing conditions. To the extent deemed possible by the City, existing facilities will be required to match these requirements. The sight distance requirements presented in this policy are minimum requirements and should be increased to the maximum practical extent.

It is recognized that certain improvements financed partially or wholly with State or Federal funds or on facilities that fall under the jurisdiction of other governmental agencies are subject to the standards and policies prescribed by those agencies. Such standards and policies may be more stringent than those of the City of Charlotte and may take precedence over City standards or policies. In all cases, the more restrictive of any two conflicting standards or policies shall apply.

### **III. INTERSECTION-APPROACH SIGHT TRIANGLES**

Intersection approach sight triangles provide drivers the ability to perceive an upcoming intersection, see if there is any conflicting traffic, and take evasive action if necessary. These sight triangles are for approaches to intersections and are separate concepts from departure sight triangles (“intersection sight distance”) mentioned later in this document.

UDO Section 31.3.D establishes two pairs of sight triangles that shall be preserved at approaches to public street intersections, as follows:

- 50’ x 50’ sight triangle
- 10’ x 10’ sight triangle

#### **50’ x 50’ triangles:**

For each public or private street intersection with another public street, or at a Type III driveway connection to a public street, 50’ x 50’ sight triangles shall be provided. These are measured from the midpoint of the curb return along the face of curb. These sight triangles shall be preserved and reserved at all intersections as described above and shall be shown on all applicable plans.

#### **10’ x 10’ triangles:**

For all driveways regardless of type or intersecting street classification, 10’ x 10’ sight triangles shall be provided that allow drivers to see pedestrians and bicyclists on sidewalks and shared-use paths. They are oriented with one leg at the back of sidewalk/shared-use path or right-of-way, whichever is greater, and one leg at the back of curb of the driveway.

For diagrams of these two sets of triangles, see UDO sections 31.3.D.2 and .3.

City Code allows that the Transportation Director may waive all or part of these requirements where a waiver could not constitute a traffic hazard or a condition dangerous to public safety. In order to determine if the required approach sight distance sight triangles may be waived, the following should be considered:

- 1) Large intersections – Turn lanes, medians, bicycle facilities, planting strips, sidewalks, and other features increase the cross-visibility and distance between two vehicles entering an intersection from different approaches. The additional sight distance gained by applying a 50'x50' sight triangle is insignificant when the intersection includes several of these items. It may be appropriate to waive sight distance triangles in these cases where it helps accomplish other design goals or avoids unwanted removal of existing features. Conversely, small intersections (those with few turn lanes, limited or nonexistent bicycle facilities, or no median) may benefit greatly from the presence of additional approach sight distance provided by the application of standard sight triangles.
- 2) One-way streets – Intersections that include one or more one-way streets will typically have at least one corner where the through lanes are close to or abut the curb on the left side street. This greatly reduces the available approach sight distance, and it may be important to ensure the standard approach sight triangle is applied, at least on the corners with reduced visibility. Where two one-way streets intersect, only the corner between the two entering approaches requires approach sight distance; the other three corners need no approach sight distance, except what may be necessary to detect a pedestrian or bicyclist crossing. Consideration should also be given to whether the operation of the street as one-way could ever be altered.
- 3) Exemption by ordinance – Section 31.3.D.2 of the UDO exempts certain placetypes from mandatory use of the 50' x 50' sight triangles. In these areas, the Transportation Director may establish any necessary sight triangle(s) on a case-by-case basis.

No object that impedes sight distance between a height of 30 and 72 inches above the ground surface, subject to the exceptions established in the UDO, shall be located within either of the UDO-defined sight triangles.

#### **IV. STOPPING SIGHT DISTANCE**

Stopping sight distance is defined as the minimum amount of distance required for a driver to perceive an approaching conflict, evaluate the conflict, apply the brakes, and comfortably bring their car to a complete stop and avoid the conflict. The minimum stopping sight distance must be available to the driver at all locations on publicly-traveled ways. Stopping sight distance applies to horizontal as well as vertical alignments. Stopping sight distance on horizontal curves is 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 (i.e., a chord). On vertical curves, stopping sight distance is 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. Driver's-eye heights for single-unit and tractor-trailer trucks shall be measured at 7.6 feet above the roadway surface. Figures 1 and 2 illustrate that measurement of stopping sight distance horizontally and vertically, respectively.

A more detailed explanation of the measurement of stopping sight distance is included in the Green Book. The minimum stopping sight distance required is based on wet pavements and depends on the design speed and the grade of the roadway. Table I presents the minimum stopping sight distances for various design speeds on level terrain. Table II presents stopping sight distance requirements that have been adjusted for grades; for grades not listed in the table, linear interpolation can be used to determine the appropriate value.

New streets or driveways that fail to provide adequate stopping sight distance will not be approved. Proposed subdivisions shall provide full stopping sight distance on all internal streets. 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 or their alignments shall be revised to provide the sight distance within the right-of-way.

TABLE I.  
Minimum Stopping Sight Distance for Level Conditions for passenger cars  
(Table 3-1, 2018 Green Book)

<b>Design Speed (MPH)</b>	<b>Minimum Stopping Sight Distance (ft.)</b>
15	80
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570



TABLE II.  
 Stopping Sight Distance on Grades for passenger cars  
 (Table 3-2, 2018 Green Book)

<b>Design Speed</b>	<b>SSD: -3%</b>	<b>SSD: -6%</b>	<b>SSD: -9%</b>	<b>SSD: +3%</b>	<b>SSD: +6%</b>	<b>SSD: +9%</b>
15	80	82	85	75	74	73
20	116	120	126	109	107	104
25	158	165	173	147	143	140
30	205	215	227	200	184	179
35	257	271	287	237	229	222
40	315	333	354	289	278	269
45	378	400	427	344	331	320
50	446	474	507	405	388	375
55	520	553	593	469	450	433
60	598	638	686	538	515	495

(Speeds are in MPH and distances are in feet.)

## V. INTERSECTION SIGHT DISTANCE

Intersection sight distance allows a driver to observe a gap in traffic, evaluate its size and approach rate, and cross and/or merge into the gap, usually from a stopped condition. It is sometimes described as a “departure sight triangle” in order to contrast it with the 50’x50’ intersection approach triangle mentioned previously.

Along the approaches and departures from an at-grade intersection, there must be sufficient sight distance for the operator of a vehicle to control the vehicle to avoid collisions. The amount of sight distance required depends on the type of traffic control at the intersection and the speeds of the vehicles.

Intersection sight distance is measured from a driver’s eye height of 3.5 feet to an object height of 3.5 feet as measured from the pavement surface. Driver’s-eye heights for single-unit and tractor-trailer trucks shall be measured at 7.6 feet above the roadway surface.

### A. General Case

Intersection sight distance is a multi-variable parameter. Intersection sight distance is a function of the intersecting-street cross-section, intersecting street approach grade, minor street approach grade, design vehicle, and intersecting street laneage. The Green Book lists default values of intersection sight distance reflected in subsections B-E of this section, but states that it must be calculated on a case-by-case basis if any of the parameters listed above does not fall within a default range. The necessary formulas and adjustment factors for non-default values may be

found in section 9.5.3 and its various subsections in the Green Book. The default/assumed values for these parameters are as follows:

1. -3.0% to +3.0% through street approach grade
2. 0.0% minor street (the street that stops/yields) approach grade
3. Two-lane through street
4. Undivided through street
5. Passenger car design vehicle

Intersection sight distance is measured along the centerline of the major street, although the line of sight is the chord between the driver and the object.

### B. Yield Sign Control and Modern Roundabouts

Yield-controlled intersections involve a traditional intersection with yield signs as the means of traffic control on the minor street (modern roundabouts are accommodated differently). The sight distance for the driver on the minor street must be sufficient for the driver to observe a vehicle on the through street approaching from either the left or the right and bring their vehicle to a stop prior to reaching the intersection as shown in Figure 3. The assumed design speed approaching the yield sign is 15 mph, resulting in a stopping sight distance of 80 feet and an intersection sight distance of 180 feet. For cases where the design speed is greater than 15 mph, see Table 9-15 of the Green Book.

Intersection Sight Distance for roundabouts needs to be provided to two separate potential conflicts. The first potential conflict is between a motorist entering the roundabout and one already in the circulating roadway. The second potential conflict is between a motorist entering the roundabout and second motorist entering at the entrance immediately upstream of the first motorist. Accordingly, there are two branches to ISD, both of which need to be evaluated. Figure 4 shows these two lines of sight. Guidance in *Roundabouts: An Informational Guide* states that the amount of ISD provided should be no larger than what is necessary. Otherwise, increased speeds in the roundabout are possible. Inscribed diameters of roundabouts should be as small as possible to minimize vehicular speeds and therefore the amount of sight distance needed, while still accommodating the appropriate design vehicle. Please reference *Roundabouts: An Informational Guide* for more information on selecting an appropriate inscribed diameter.

For purposes of the following table, the design speed of a roundabout's circulating roadway is assumed to be equal to the posted advisory speed approaching the roundabout or 25 MPH, whichever is less. In the absence of a posted advisory speed, the design speed should be assumed to be 10 MPH less than the posted speed limit of the road or 25 MPH, whichever is less. The ISD for a roundabout is measured at a point 50 feet in advance of the entry-leg yield line.

TABLE III:  
 Intersection Sight Distance at Roundabouts  
 Exhibit 6-59, *Roundabouts: An Informational Guide*, 2<sup>nd</sup> Edition, 2010.

<b>Design Speed</b>	<b>Intersection Sight Distance</b> Both the minimum and recommended maximum <i>Values rounded to nearest 5 feet</i>
10	75
15	110
20	150
25	185
30	220

C. Stop Sign Control

At approaches to intersections that are controlled by stop signs or at driveways and alleys where the driver is required to stop before entering the street by the City Code or North Carolina General Statutes, the driver must have an unobstructed view of the entire intersection and adequate sight distance for any of the various vehicular movements allowed upon departure of the intersection. These movements may include crossing the street, turning left, or turning right onto the street. Where the through street is either undivided or divided with a median narrower than 20 feet, the crossing or left-turn movements are treated as a single operation. Where the median can provide storage for the design vehicle (at least 20 feet), the crossing or left-turn movement can be considered in two phases.

No obstruction to the driver’s view shall be located within the sight triangles as defined in the UDO Section 31.3.D, to permit an adequate view of the intersection (See UDO for graphics). In addition, there shall be no sight obstructions located in the triangular areas shown in Figures 5 through 7 to allow for safe departure through the intersection. The measurement of intersection sight distance is along the centerline of the appropriate lane of the roadway and is measured from an eye height of 3.5 feet above the surface of the roadway to an object 3.5 feet above the surface of the roadway. The location of the driver’s eye ( $D_1$ ) is dependent on the classification of the intersecting streets as follows:

TABLE IV  
Driver's eye offsets

<b>Through-street classification</b>	<b>Through-street posted speed</b>	<b>Placetypes</b>	<b>Sight Distance offset, measured from the through-street back of curb</b>
Main Street (per Streets Map)	Any	Any	10 feet
Local	Any	Any	10 feet
Collector	Any	Any	10 feet
Arterial	≤ 35 MPH	Placetypes identified as being excluded from providing the 50' x 50' sight triangles per Section 31.3.D.2 of the UDO	10 feet
		All other placetypes	14.5 feet
	≥ 40 MPH	Any	14.5 feet

For purposes of this table, a street being classified as a Main Street will supersede any functional classification of local, collector, or arterial.

The sight distance lengths  $D_2$  and  $D_3$  shown in Figures 7 through 9 for left- or right-turns onto the through street are dependent on the design speed of the roadway and are presented in Table V.

For all-way stop-controlled intersections, only the required approach sight triangles must be provided. If, however, an all-way stop-controlled intersection may reasonably become signalized in the future, treat the intersection as if it were signalized (see next section).

TABLE V.  
 Intersection Sight Distance for stop-sign and signal-controlled intersections for passenger cars  
 (Tables 9-7 and 9-9, 2018 Green Book)

Design Speed (MPH)	Minimum Intersection Sight Distance for Left turn from Stop (ft.)	Minimum Intersection Sight Distance for Right Turns and Crossing (ft.)
15	170	145
20	225	195
25	280	240
30	335	290
35	390	335
40	445	385
45	500	430
50	555	480
55	610	530
60	665	575
65	720	625

It is recommended that the amount of Intersection Sight Distance necessary to permit a left turn from a stop condition also be the design sight distance for the right-turn and crossing conditions. For the left-turn condition, **additional sight distance is required when crossing multiple lanes and/or roads with medians**. See Figures 8 and 9 for more information.

#### D. Traffic Signal Control

Full intersection sight distance for the stop-sign-controlled condition shall be provided at all signal-controlled intersections as well. See Table V. The sight distance shall be provided to accommodate (1) turns on red after stopping and (2) conditions when the signal is operating in flash mode.

#### E. Left turns from the through street

Drivers making left turns from through streets onto cross streets must be able to judge an adequate gap in oncoming traffic, accelerate from a complete stop, and exit the roadway. On tangent horizontal alignments with intersecting streets, the stop-controlled intersection sight distance parameter (See Condition C) will likely govern and provide sufficient sight distance to perform the left-turn from the major road maneuver. However, in curved horizontal alignments, especially on median-divided roadways, the left-turn from the major road condition can be a separate, and possibly more restrictive, requirement. The designer should not automatically assume that this requirement is superseded by a stop-controlled requirement and should evaluate this case separately. Figure 10 shows the measurement method for determining the sight

distance-for left-turns from the through street. Table VI gives the minimum sight distance for this movement across one lane, two lanes, and two lanes plus a 15-foot median ( $D_1$ ).

TABLE VI.

Intersection Sight Distance for left turns from the major road for passenger cars  
(Table 9-17, 2018 Green Book)

Design Speed (MPH)	Sight Distance for crossing 1 lane (ft.)	Sight Distance for crossing 2 lanes (ft.)	Sight Distance for crossing 2 lanes plus a median (ft.)
15	125	135	150
20	165	180	200
25	205	225	250
30	245	265	300
35	285	310	345
40	325	355	395
45	365	400	445
50	405	445	495
55	445	490	545
60	490	530	595
65	530	575	645

## **VI. EXISTING CONDITIONS AT PUBLIC STREETS AND INTERSECTIONS; STREET TREES**

The Director of Transportation has the responsibility to evaluate, prevent, and abate obstructions to the view of motorists using any street or approach to any street intersection so as to constitute a traffic hazard or a condition dangerous to the public safety according to Section 31.3.D.4 of the UDO. The UDO sets forth restrictions on objects and combinations of objects that obstruct the view of motorists. The UDO further provides for notification and enforcement of violations.

The evaluation of adequate provision of sight distance shall generally conform to the requirements set forth in this policy. It is recognized that in some cases existing conditions may exist that prevent the attainment of desirable sight distance due to social, economic, or environmental considerations. In these cases, the maximum practical sight distance, up to the desirable values, shall be obtained. In addition, where desirable sight distance is not attained, additional measures such as warning signs, reduced speed zones, and other traffic controls may be imposed. In all cases, except those specifically exempted in the UDO, the minimum provision of adequate stopping sight distance shall be required.

Where proper sight distance cannot be achieved for the driver on the side street at the design speed of the intersecting roadway, an appropriate alternative shall be vetted through and

approved by CDOT. Potential mitigating options may include, but are not limited to, posting a speed reduction on the through street, landscape improvements, or altogether prohibiting the street- or driveway connection to the through street. All streets that are being designed as part of one contiguous development, such as a subdivision, shall provide appropriate intersection and stopping sight distances in all cases. Because the streets are being designed and are not already-existing streets, it is incumbent upon the developer and their consultant(s) to submit a development plan that satisfies all sight-distance requirements. Phasing a development such that only portions are built at any one given time does not eliminate the requirement to provide sight distance.

The City believes that having a substantial tree canopy is an important value for the City, and that having large-maturing trees that provide shade are necessary components of the public right-of-way. In order to balance the potentially competing interests of providing sight distance and promoting streets lined with large-maturing trees, the following guidelines are provided. For purposes of items 1, 2, and 3 below, the 10-foot offset is measured to the center of the tree (as best as can be determined).

1. Trees are prohibited within 10 feet of an edge of a crosswalk (marked or unmarked) or bicycle-only crossing (marked or unmarked).
2. At an intersection or midblock crossing, trees are prohibited within 10 feet of a traffic signal, sign, street name marker, or other traffic control device. For purposes of this item, a midblock crossing may be marked with a crosswalk and/or bicycle-only crossing, or it may be indicated only with signage.
3. Trees are prohibited within 10 feet of the edge of a driveway to any site other than a single-family home, a duplex, or a triplex.
4. Trees are prohibited in the planting strip between two adjacent accessible ramps on an intersection corner, regardless of the offsets in (1), (2), and (3) above.
5. A line of trees shall not inherently be considered a sight distance impediment unless crash histories at a given location clearly indicate otherwise.
6. Landscaping and trees in the central island of a roundabout are encouraged to terminate the vista of an approaching leg and to restrict the available ISD to that which has been provided in Section V.B.
7. Choosing to remove a tree in order to achieve sight distance should be a last-resort option only. Other, less-intrusive means should be tried first.
8. The Transportation Director may consult with the City Arborist, or their respective designees, when evaluating conditions under this subsection.

## **VII. PASSING SIGHT DISTANCE**

As a general statement, there are no two-lane city streets on which crossing the centerline to pass another motor vehicle is allowed. However, if passing zones are established on city streets, the Director of Transportation will establish the required amount of passing sight distance, which shall be no less than what is required in the Green Book. On State-maintained roadways, the Director of Transportation and the North Carolina Department of Transportation will establish the required passing sight distance.

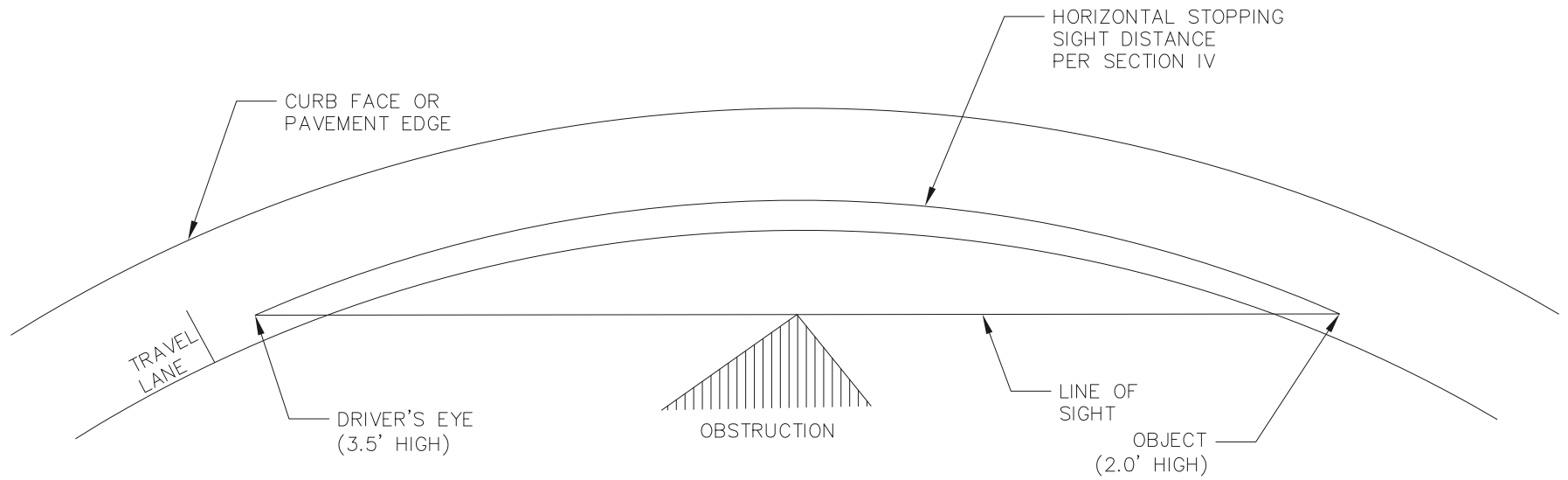
## **VIII. ON-STREET PARKING**

On-street parking is prohibited within the proximity of an intersection as defined in [NCGS 20-162](#). Also, on-street parking is restricted in sight triangles per UDO Sections 31.3.D.2.b and 31.3.D.3.b. This dimension is the minimum required and should not automatically be considered to provide sufficient sight distance. It is beyond the scope of this Sight Distance Policy to govern locations of on-street parking beyond that which is necessary to achieve sufficient sight distance.

If parked vehicles cause a sight-distance obstruction to sight distance, the Transportation Director has the authority to abate such nuisances per Section 31.3.D.4 of the UDO and Section VI of this policy.

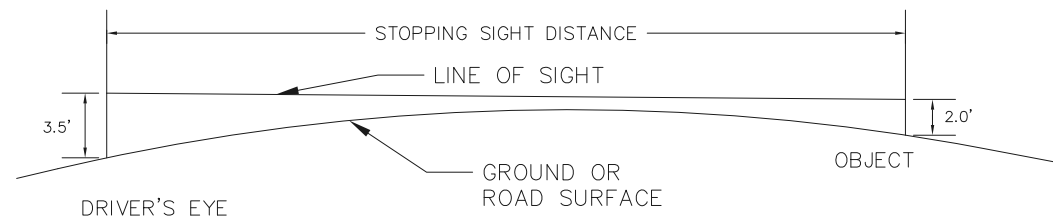


NOT TO SCALE



<b>CITY OF CHARLOTTE</b> DEPARTMENT OF TRANSPORTATION
MEASUREMENT OF HORIZONTAL STOPPING SIGHT DISTANCE
<b>FIGURE 1</b>

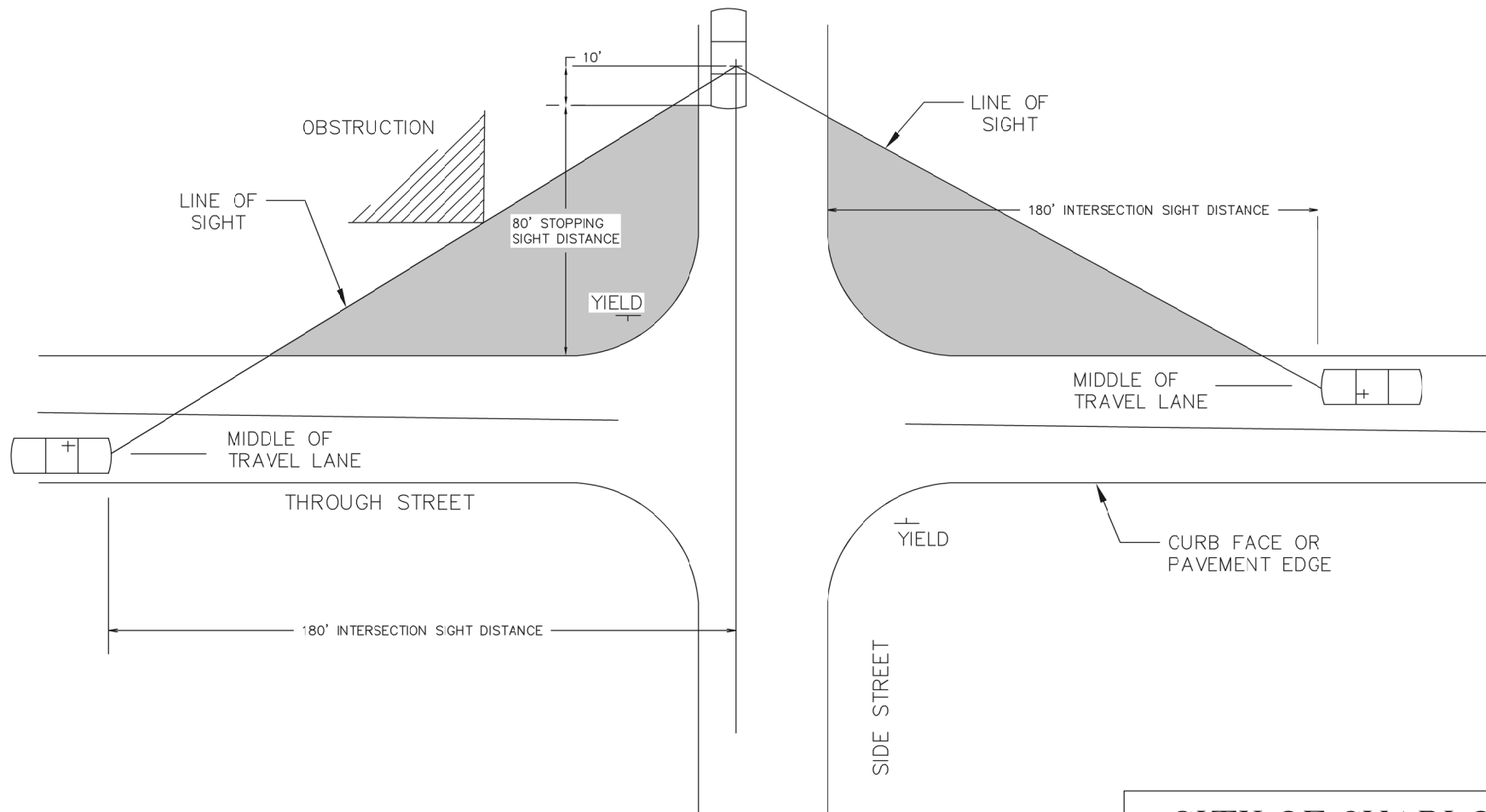
NOT TO SCALE



CITY OF CHARLOTTE  
DEPARTMENT OF TRANSPORTATION

MEASUREMENT OF VERTICAL  
STOPPING SIGHT DISTANCE

FIGURE 2

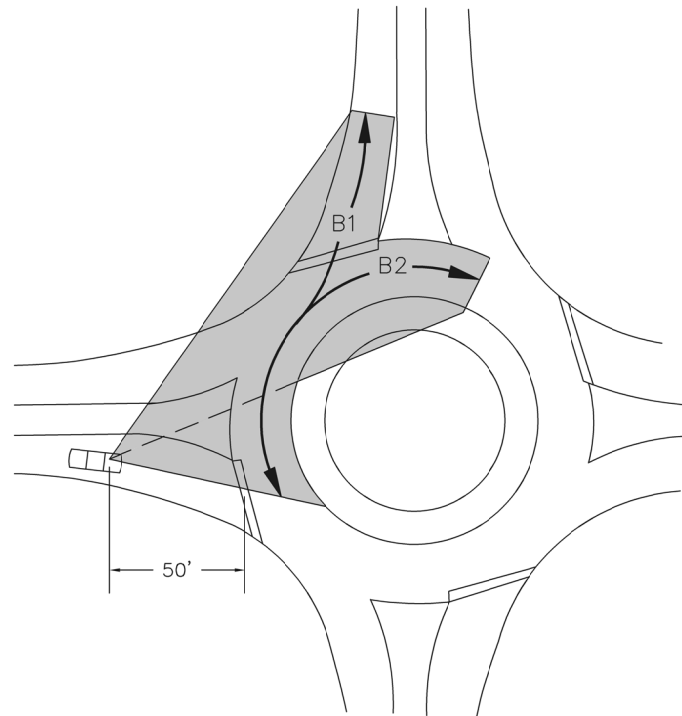


CITY OF CHARLOTTE  
DEPARTMENT OF TRANSPORTATION

SIGHT DISTANCE  
YIELD SIGN CONTROLLED  
INTERSECTIONS

FIGURE 3

NOT TO SCALE



NOTES:

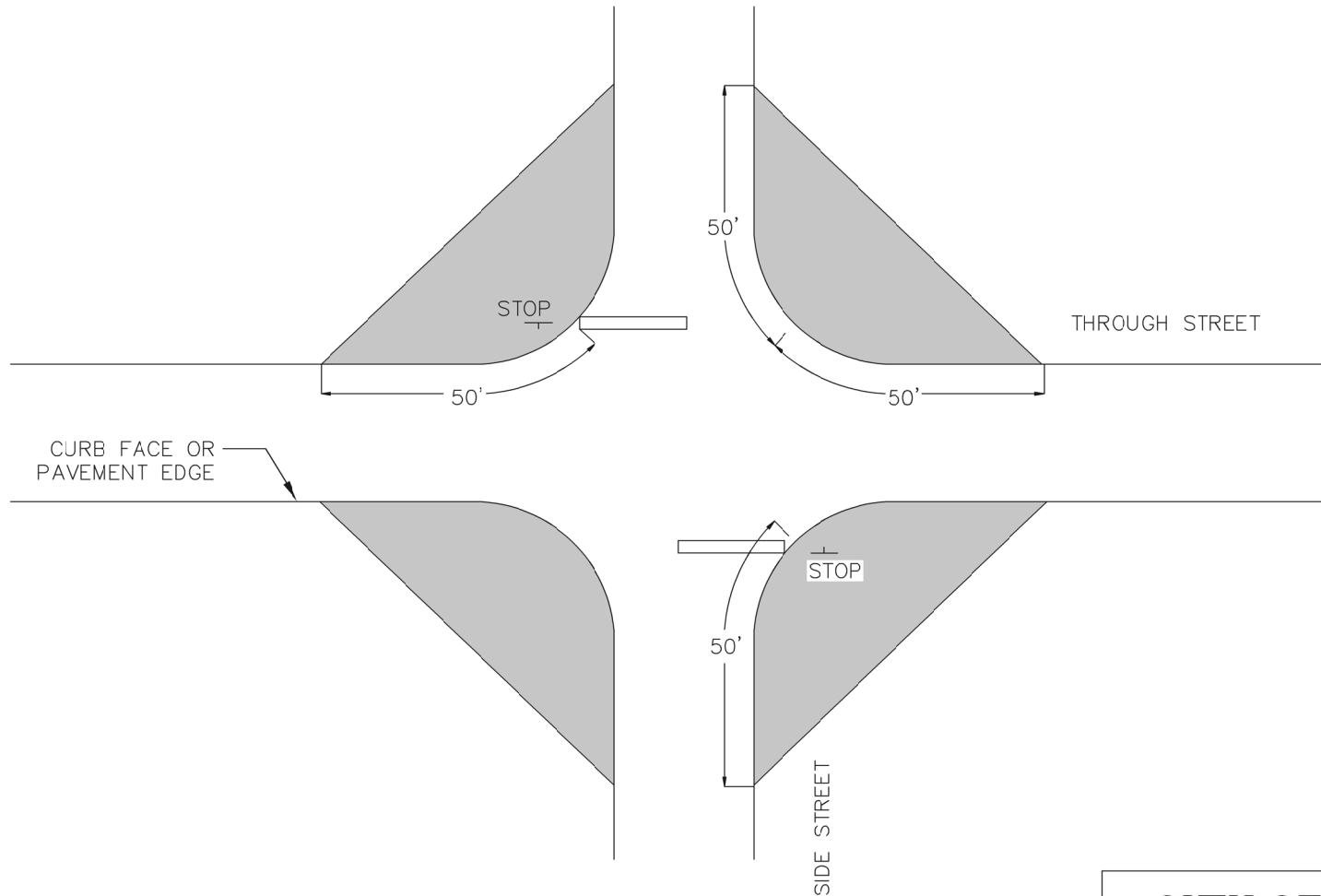
1. B1: ENTERING STREAM DISTANCE
2. B2: CIRCULATING STREAM DISTANCE
3. FOR LENGTHS OF B1 AND B2, SEE TABLE III
4. THE 50-FOOT LENGTH SPECIFIED ABOVE IS LIMITED INTERSECTION SIGHT DISTANCE. EXCESSIVE INTERSECTION SIGHT DISTANCE RESULTS IN A HIGHER CRASH FREQUENCY.

CITY OF CHARLOTTE  
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SIGHT DISTANCE  
ROUNDBABOUTS

FIGURE 4

NOT TO SCALE

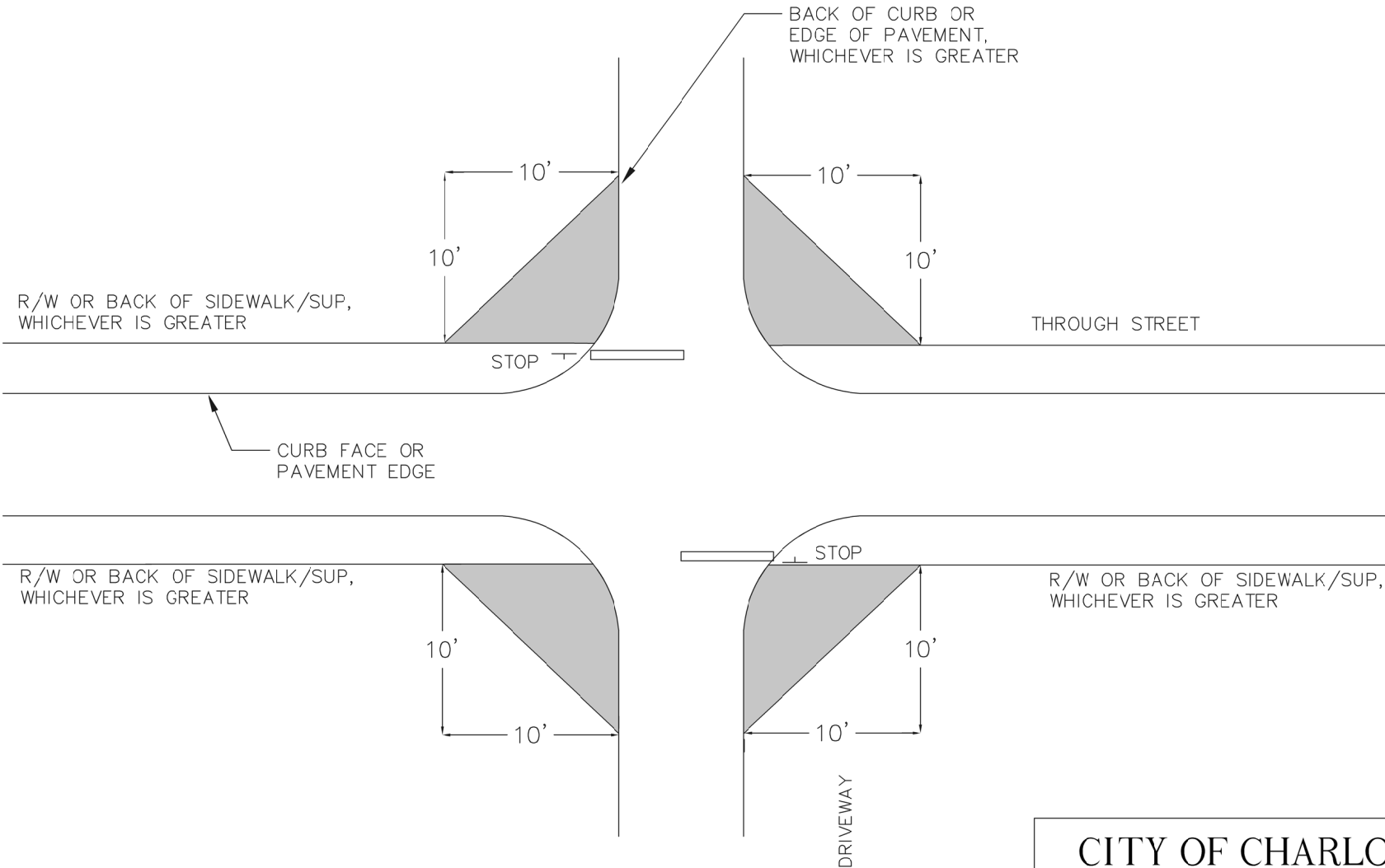


NOTE:  
THIS FIGURE IS A SUPPLEMENT TO UDO SECTION 31.3.D. THE UDO SHALL GOVERN IN ANY CONFLICT.

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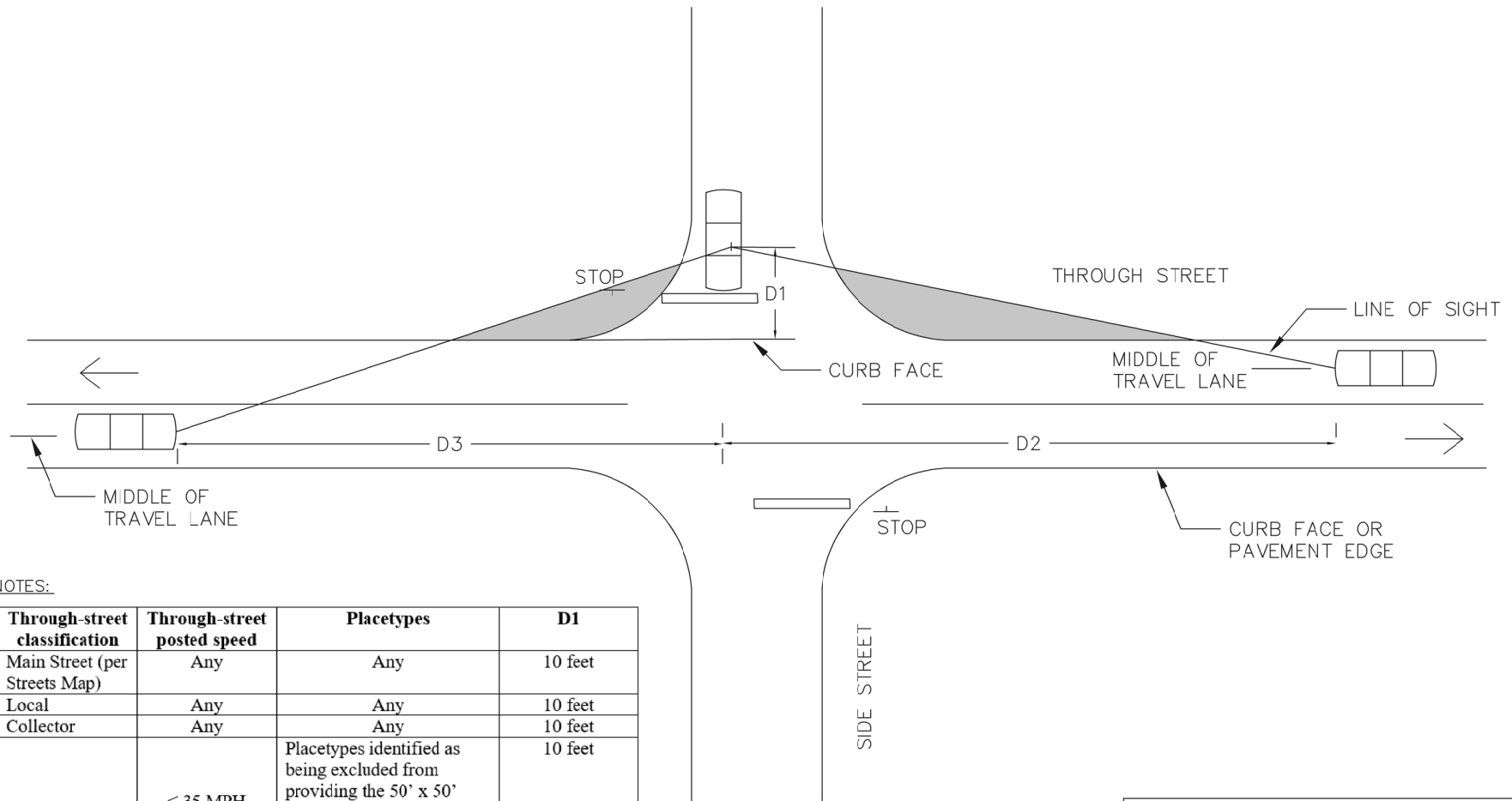
INTERSECTION SIGHT TRIANGLES  
AT PUBLIC STREET INTERSECTIONS  
PER UDO SECTION 31.3.D

FIGURE 5



- NOTES:  
1. SUP=SHARED USE PATH  
2. THIS FIGURE IS A SUPPLEMENT TO UDO SECTION 31.3.D. THE UDO SHALL GOVERN IN ANY CONFLICT.

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INTERSECTION SIGHT TRIANGLES  
AT DRIVEWAY CONNECTIONS  
PER UDO SECTION 31.3.D  
FIGURE 6



NOTES:

Through-street classification	Through-street posted speed	Placetypes	D1
Main Street (per Streets Map)	Any	Any	10 feet
Local	Any	Any	10 feet
Collector	Any	Any	10 feet
Arterial	≤ 35 MPH	Placetypes identified as being excluded from providing the 50' x 50' sight triangles per Section 31.3.D.2 of the UDO	10 feet
		All other placetypes	14.5 feet
	≥ 40 MPH	Any	14.5 feet

D2 = SEE TABLE V  
 D3 = SEE TABLE V

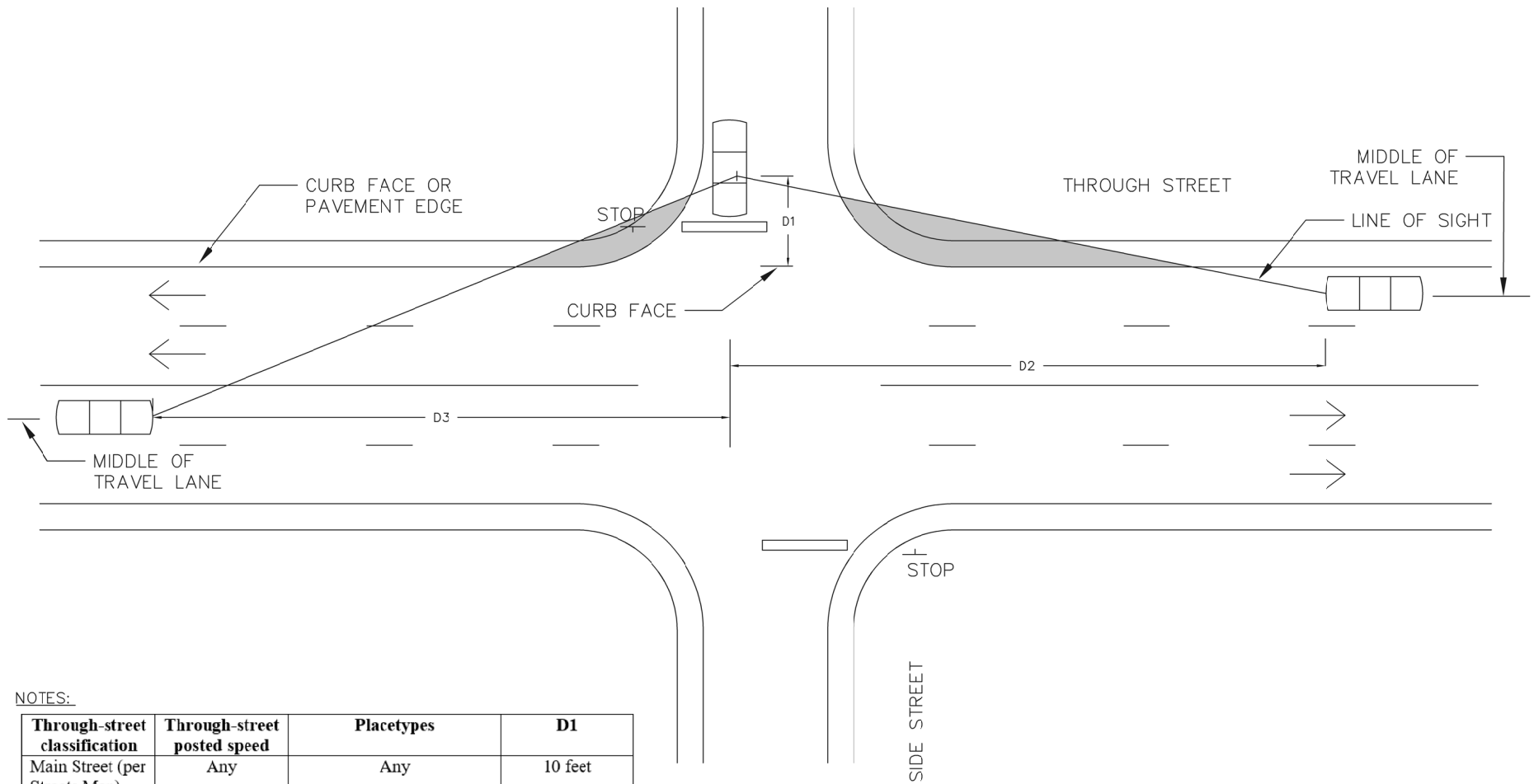
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INTERSECTION SIGHT DISTANCE  
 STOP SIGN CONTROL

---

**FIGURE 7**



NOTES:

Through-street classification	Through-street posted speed	Placetypes	D1
Main Street (per Streets Map)	Any	Any	10 feet
Local	Any	Any	10 feet
Collector	Any	Any	10 feet
Arterial	≤ 35 MPH	Placetypes identified as being excluded from providing the 50' x 50' sight triangles per Section 31.3.D.2 of the UDO	10 feet
		All other placetypes	14.5 feet
	≥ 40 MPH	Any	14.5 feet

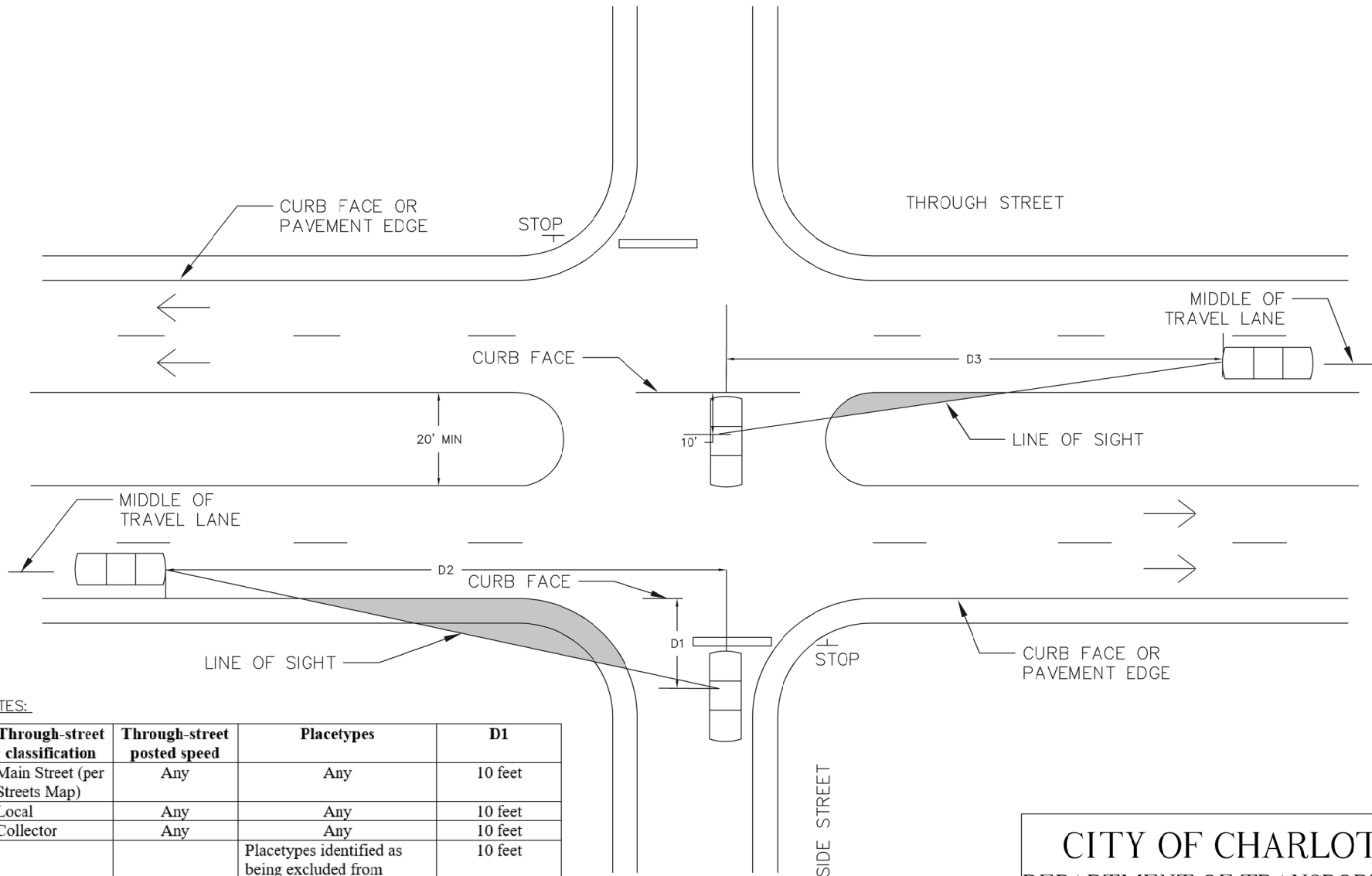
D2 = SEE TABLE V  
 D3 = SEE TABLE V

CITY OF CHARLOTTE  
 DEPARTMENT OF TRANSPORTATION

INTERSECTION SIGHT DISTANCE  
 STOP SIGN CONTROL  
 MULTI-LANE ROADWAY

FIGURE 8





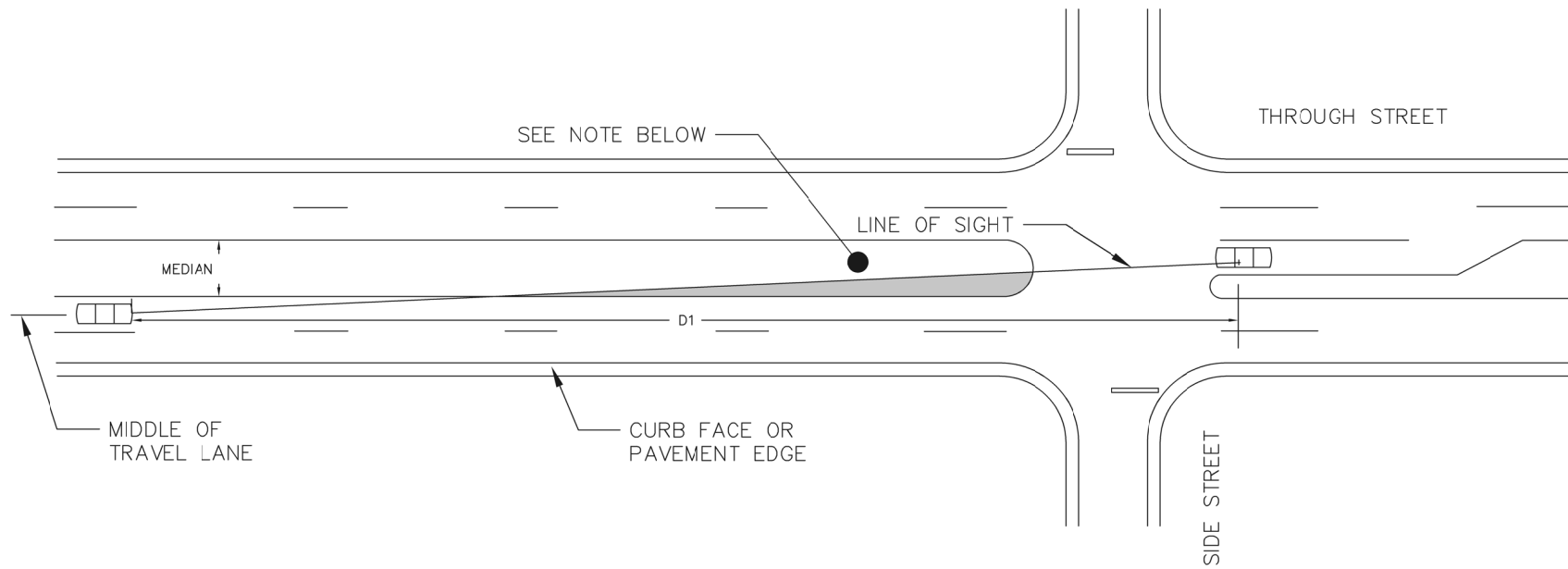
NOTES:

Through-street classification	Through-street posted speed	Placetypes	D1
Main Street (per Streets Map)	Any	Any	10 feet
Local	Any	Any	10 feet
Collector	Any	Any	10 feet
Arterial	≤ 35 MPH	Placetypes identified as being excluded from providing the 50' x 50' sight triangles per Section 31.3.D.2 of the UDO	10 feet
		All other placetypes	14.5 feet
	≥ 40 MPH	Any	14.5 feet

D2 = SEE TABLE V  
 D3 = SEE TABLE V

CITY OF CHARLOTTE  
 DEPARTMENT OF TRANSPORTATION  
 INTERSECTION SIGHT DISTANCE  
 STOP SIGN CONTROL  
 WIDE MEDIAN  
 FIGURE 9

NOT TO SCALE

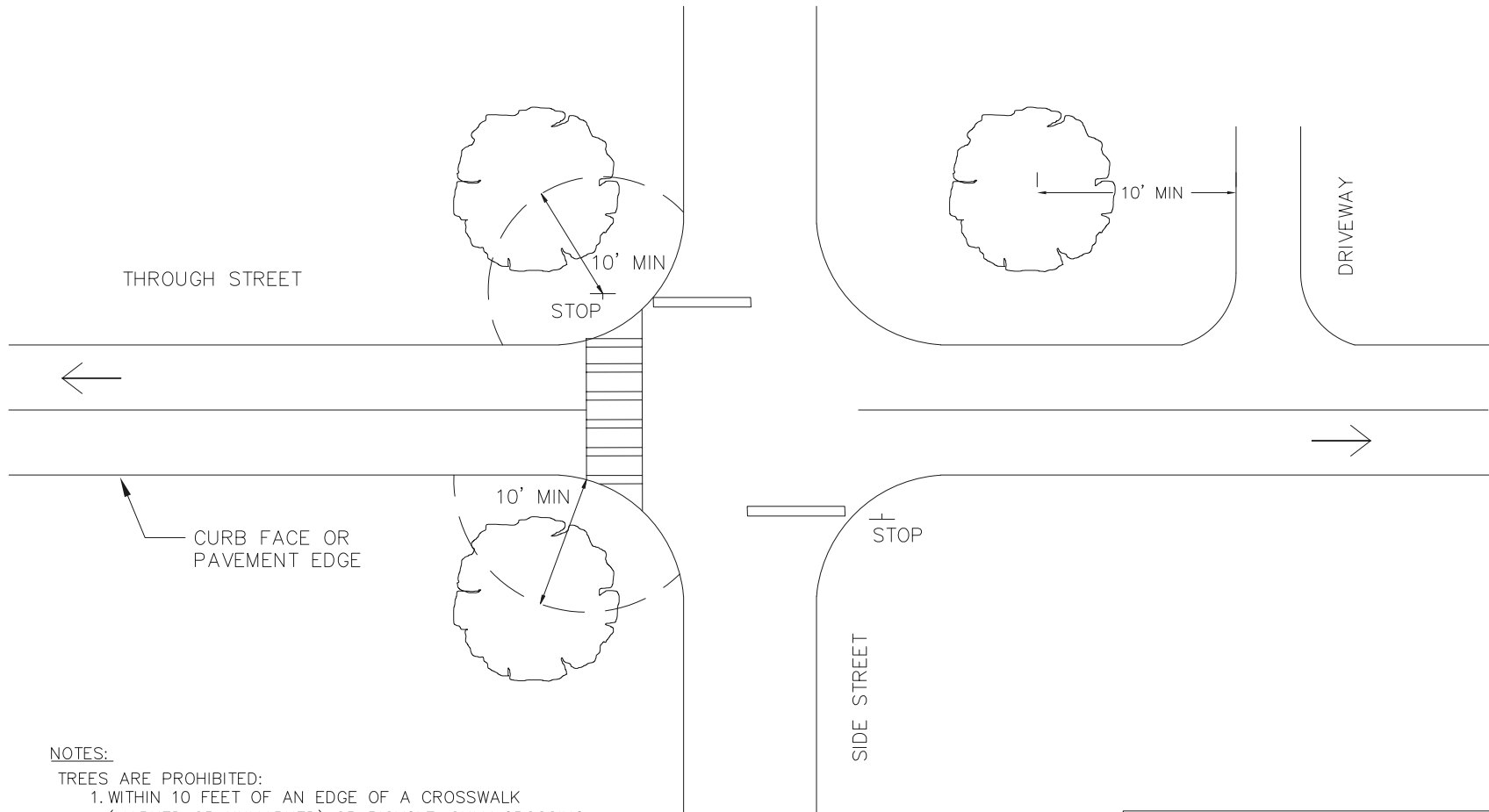


NOTE:  
EASTBOUND LEFT-TURN LANE NOT SHOWN FOR SIMPLICITY. IF LINES OF SIGHT FROM BOTH LEFT-TURN LANES CONFLICT OR OTHERWISE CROSS THROUGH THE OPPOSING VEHICLE, POSITIVE-OFFSET LEFT-TURN LANES SHOULD BE CONSIDERED.

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SIGHT DISTANCE FOR  
LEFT TURN FROM THROUGH STREET

FIGURE 10



NOTES:

TREES ARE PROHIBITED:

1. WITHIN 10 FEET OF AN EDGE OF A CROSSWALK (MARKED OR UNMARKED) OR BICYCLE-ONLY CROSSING (MARKED OR UNMARKED)
2. WITHIN 10 FEET OF A TRAFFIC SIGNAL, SIGN, STREET NAME MARKER, OR OTHER TRAFFIC CONTROL DEVICE AT BOTH INTERSECTION OR MIDBLOCK CROSSING.
3. WITHIN 10 FEET OF THE EDGE OF A DRIVEWAY TO ANY SITE OTHER THAN A SINGLE-FAMILY HOME, A DUPLEX, OR A TRIPLEX.

CITY OF CHARLOTTE DEPARTMENT OF TRANSPORTATION
CLEARANCE AT TREES
FIGURE 11