

III - DESIGN STANDARDS

2 - CIRCULATION CLASSIFICATION AND CHARACTER

The Circulation Classification and Character section of the Design Standards chapter prescribes the types of circulation routes, the location of the circulation routes, the connections and transitions between the circulation routes, and the character of the circulation routes for the Alston ACCP. The General Provisions provide overall guidelines for all circulation routes. Two diagrams (Figure III.2 and Figure III.3) are provided on pages 30 -31:

The Circulation Diagram: Recommended Locations and Types of Intersections, Access Points, Collector Streets, and Street A Conceptual Locations provides information on site access and the two street types that form the basis of the minimum required length for “main streets”.

The Circulation Diagram: Conceptual Street Type Classifications illustrates the circulation route locations and types. The table following the Street Type Classifications diagram adds descriptions of typical locations for each circulation type. A menu of circulation typical plans gives specific dimensions for the character of the various circulation route types.

The prescriptions documented in this chapter are critical in order to achieve the pedestrian-friendly network of streets vital to a walkable, sustainable new community.

GENERAL PROVISIONS

1. The Circulation Plans found within this section vary from the current Town of Cary Street Design Standards and shall apply to the Alston ACCP only. The Alston ACCP calls for a pedestrian-oriented, mixed-use community design that requires comprehensive changes to all aspects of planning including street design. The typical plan variations for non-thoroughfares depend upon a recommended 25 mph posted speed limit, naturally integrated traffic calming measures such as frequent intersections, on-street parking, bends in the streets and similar, and approval by the Town of Cary Planning and Engineering Departments.
2. Transitions from one Circulation Type or Character to another shall be designed to ensure smooth changes between paving, parking, sidewalks, planting strips and similar.
3. In exceptional cases, the Engineering and Planning Departments may require alternative street sections depending on specific site conditions and/or to address safety and/or traffic flow issues. At an intersection where two different circulation route types meet (with the exception of alleys) the larger curb radius range shall be used. Variations shall require approval by the Town of Cary Planning and Engineering Departments.
4. Crosswalks of a different paving material, texture and color from the asphalt street are encouraged where sidewalks traverse vehicular travel lanes. Crosswalks with brick pavers with flashing (variation) are preferred in the Town Center, Neighborhood Center and Special District zones. Paving materials shall be approved by the Town of Cary Planning and Public Works and Utilities Departments.
5. Landscaping, including median and street tree plantings, shall be planted and maintained by the property owner(s), developers, homeowner’s associations and/or other private entities. Landscaping within the I-540 and NC 55 interchange, as described in the Entry A: I-540 Gateway in Chapter III part 3 of the document, is encouraged to be provided by, but is not the responsibility of the developers of the property located in each quadrant of the interchange.
6. General Provisions for Street Trees:
 - a. A single species of tree or a small group of complementary tree species as approved by the Town of Cary Planning Department, shall be consistent along an entire circulation route (the length of the street), but shall vary from one circulation route to the next. For example, one street may have Hedge Maples and Southern Sugar Maples, while the next street over may have White Oaks, Laurel Oaks and Red Oaks. Refer to the Town of Cary Community Appearance Manual for approved tree species. Where street length exceeds 2,400 feet, larger or more varied groups of complementary tree species shall be used to avoid a

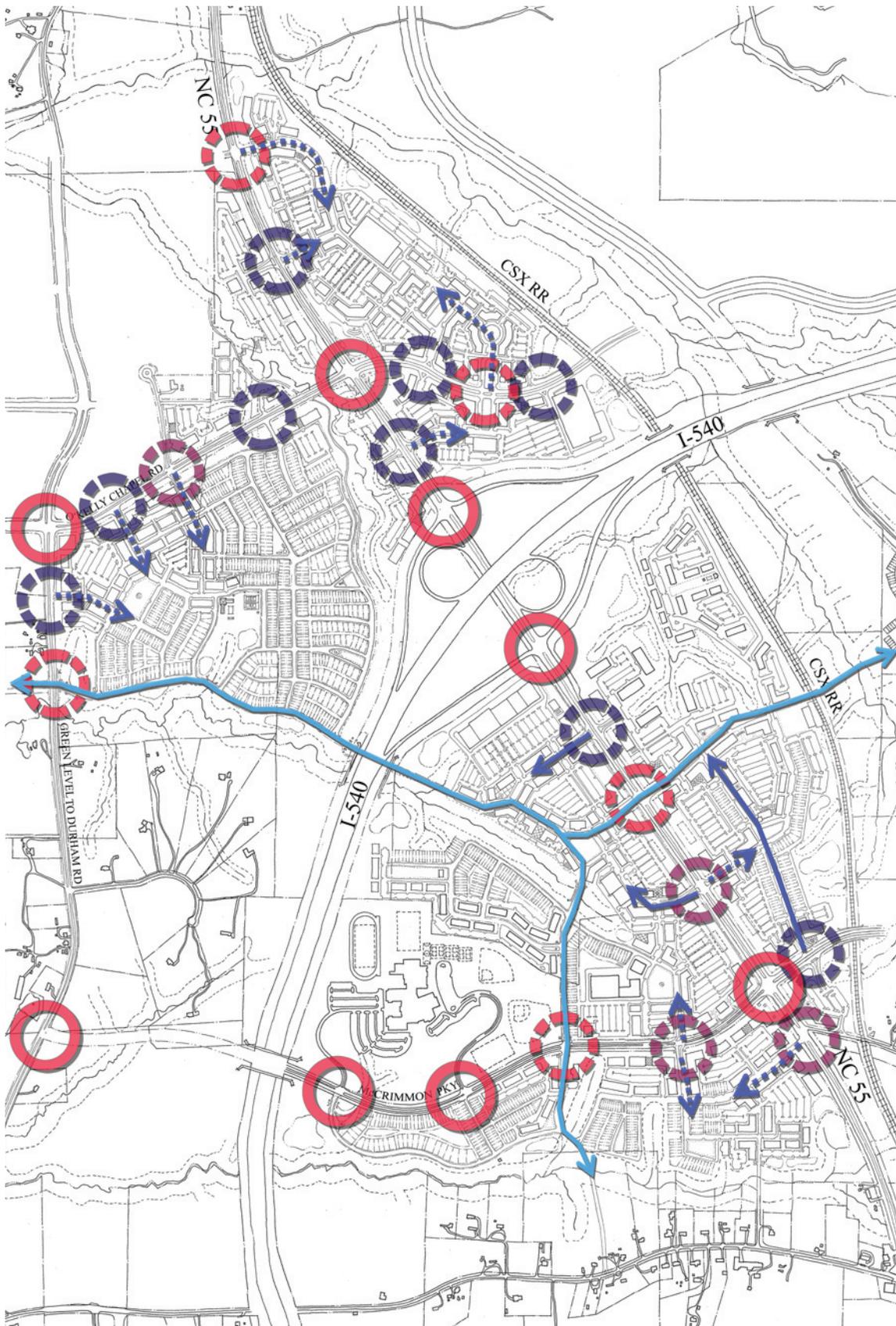
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- monoculture.
- b. The Town of Cary may approve or require variations in the width of planting strips between curb and sidewalk from those shown in the following Circulation Plans and Sections, depending on the species of street tree selected, planting technology or methods used and engineering design of the back of curb and sidewalk. Final planting strip width will be determined at site development plan stage.
 - c. Trees shall be planted at regular intervals along circulation routes appropriate to the particular location and species. Refer to the Town of Cary Community Appearance Manual for approved tree species and planting intervals.
 - d. Street trees are required along all new internal circulation routes and existing Town/State circulation routes, except where such circulation routes are adjacent to existing wooded areas, and existing trees are sufficient as shown on a site development plan and approved by the Town of Cary Planning Department. Trees and other plantings within NCDOT controlled and maintained right-of-ways shall meet NCDOT standards (refer to NCDOT *Guidelines for Planting within Highway Right-of-Way*).
 - e. Street trees shall be placed in planting strips within the public right-of-way, set 3 feet minimum from curb face and centered in the planting strip or within minimum 4 foot by 6 foot planting pits within sidewalks or hardscape areas.
 - f. Street trees shall be placed a minimum of 3' off the edge of greenways and multi-use trails.
 - g. Street trees shall be placed to align where possible with lot lines and to screen walls of units so as to frame and not block the front porches, stoops and doors of units.
 - h. Landscape maintenance plans should address limbing streetscape trees. In order to create comfortable pedestrian passage, street trees shall have their limbs pruned over sidewalks to approximately 7 feet above grade when reasonably mature. Street trees shall be straight and true, have healthy trunks and a full, balanced crown and branching habit. Street trees with unbalanced crowns, a poor branching habit, and excessively bent or curved trunks will be rejected and shall, if deemed necessary by the Town of Cary Planning Department, be replaced.
7. The typical plans for Collector, Street A, and Street B circulation types found in this section of the Alston ACCP, when applied to residential development, were designed to be used with an alley-loaded housing product. When an alley-loaded product is not used for at least 60% of a residential development, then alternate parking provisions shall be provided equal to an additional 0.25 parking spaces per dwelling unit.

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CIRCULATION DIAGRAM:
Recommended Locations and Types of Intersections, Access Points, Collector Streets, and Street A Conceptual Locations

The recommended thoroughfare intersections and access points shown on this diagram are subject to approval by NCDOT.

-  Planned or approved by NCDOT full-service intersection
-  Recommended full-service intersection
-  Recommended right-in/right-out and left-over intersection
-  Recommended right-in/right-out thoroughfare access point
-  Collector Street
-  Street A from Thoroughfare to a connection with a Collector
-  Street A extending from Thoroughfare to a connection with another Street A, Collector, or Thoroughfare

Figure III.2

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CIRCULATION DIAGRAM: Conceptual Street Type Classifications

This diagram illustrates how the available street types might be reasonably applied in the Alston area, to create a meaningful hierarchy of roadway connections.

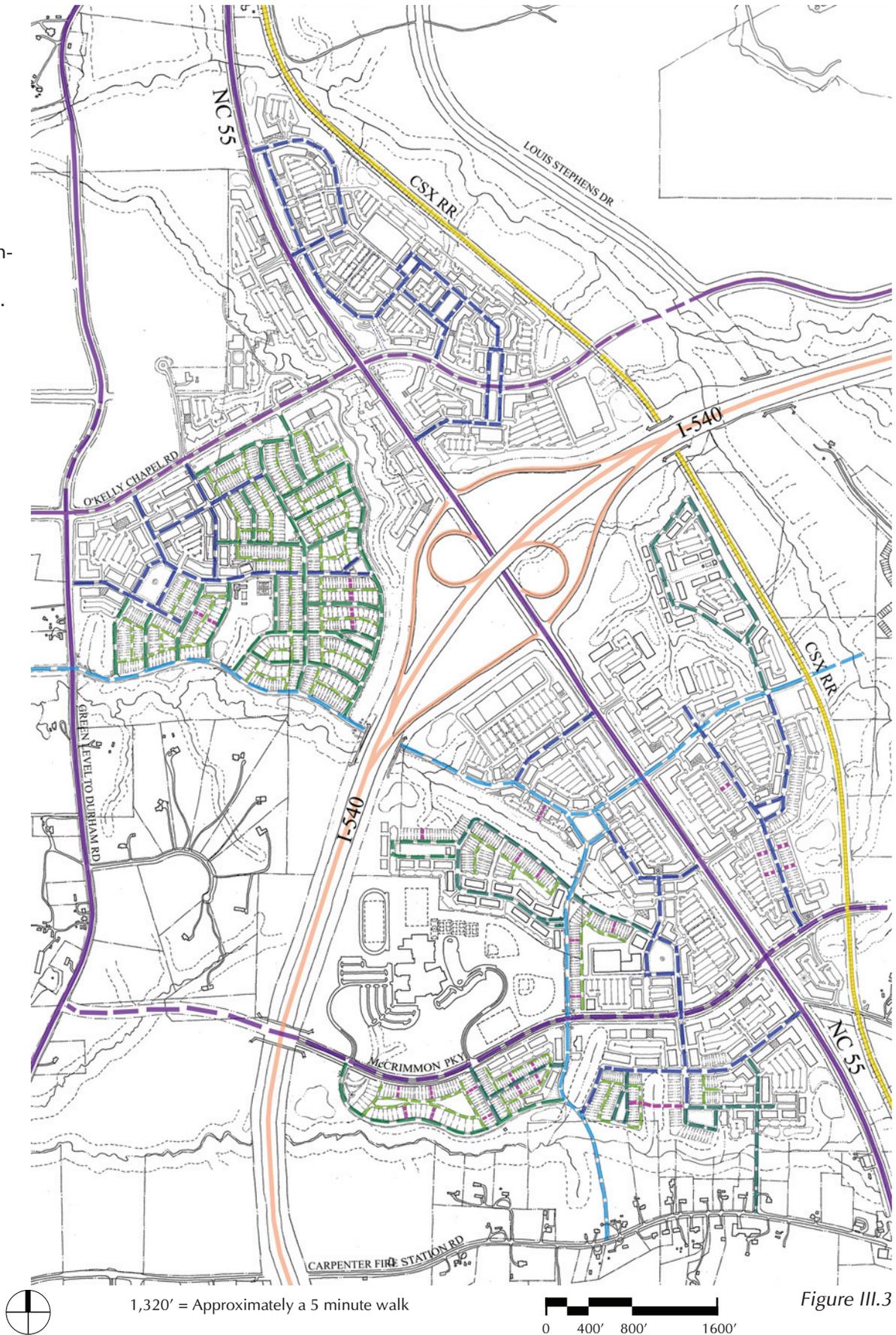


Figure III.3

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CIRCULATION CLASSIFICATIONS

	CLASSIFICATION	PUBLIC OR PRIVATE DESIGNATION	DESCRIPTION OF TYPICAL LOCATION
	I-540 (FREEWAY)	See NCDOT standards	location set by NCDOT
	THOROUGHFARE	public	location set by Town of Cary
	COLLECTOR	public	location set by Town of Cary
	STREET A	public or private	Street A provides connectivity between thoroughfares and collectors and/or from thoroughfares and/or collectors to Street B types. Street A types are typically found in mixed-use areas, commercial areas, and office areas, but may also be found in residential areas.
	STREET B	public or private	Street B provides circulation through residential areas. Street B types connect with thoroughfares, collectors, and/or Street A types.
	ALLEY	private	Alleys may provide connectivity along the rear of residential lots between Street A and/or Street B types.
	PASSAGE	private	Passages provide mid-block pedestrian connections through residential areas.
	CSX RAIL LINE		existing location

NOTES

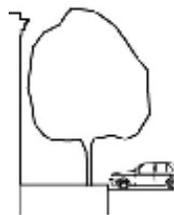
1. Providing connectivity throughout the Alston Regional Activity Center is key; the circulation diagram illustrates a high degree of roadway connectivity.
2. Thoroughfare and collector locations are set.
3. Alleys are optional.
4. Both public and private streets should conform to the menu of typical plan diagrams contained in this document.

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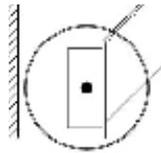
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KEY for Cross Sections and Typical Plans on Pages 34 - 41

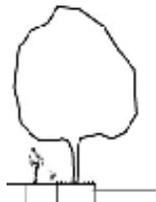
- ∨ ^ : Travel Lanes
- ∨_b ^_b: Travel Lanes widened for shared vehicle and bicycle use
- P(a) : Parking (angled)
- P(p) : Parking (parallel)
- c : Curb and Gutter
- PI : Planting Strip
- SW : Sidewalk
- SB : Setback
- MU : Multi-Use Trail
- r : Curb Radius



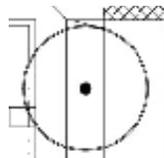
Tree in Pit (section)



Tree in Pit (plan)



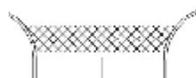
Tree in Planting Strip (section)



Tree in Planting Strip (plan)



Building Footprint



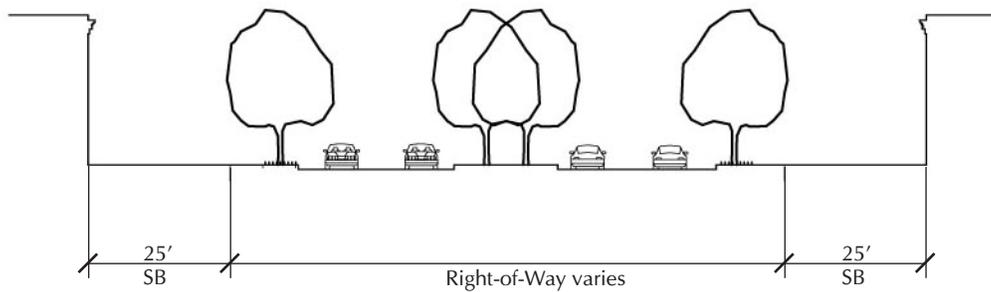
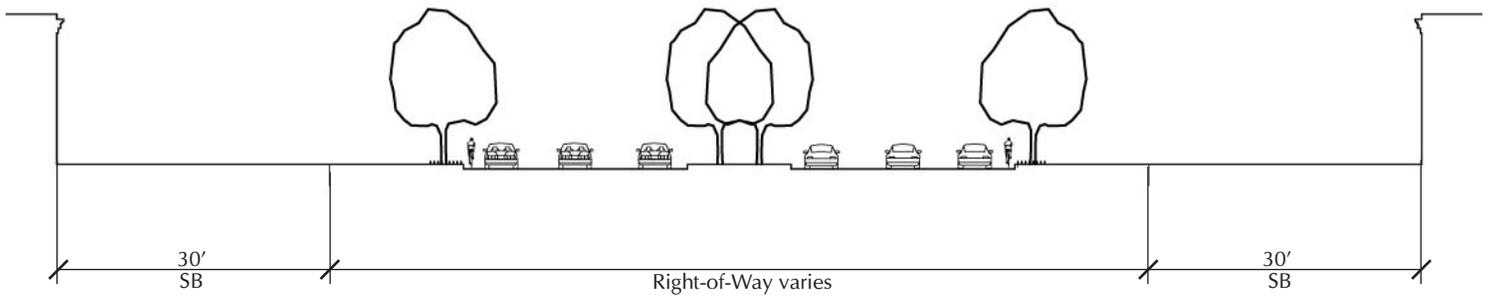
Crosswalk

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THOROUGHFARE:

- Dimensions within the Right-of-Way and curb radii shall be as per the Town of Cary Comprehensive Plan.
- Twenty-five to thirty foot setbacks are required along Thoroughfares.
- Trees and other plantings within NCDOT controlled and maintained right-of-ways are subject to NCDOT approval (refer to NCDOT *Guidelines for Planting within Highway Right-of-Way*).



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COLLECTOR: Typically 70 foot Right-of-Way

These are the preferred dimensions; changes require approval of the Engineering and Planning Departments. A narrower right-of-way may be approved by the Engineering Department to make more sidewalk width available for cafe seating. Collectors through the Alston Activity Center should be designed for no greater than 25 mph posted speed.

Following are five different typical plans for Collectors within the Alston area. Select the appropriate plan based on the description of associated conditions and related development. The typical plans utilized may change along the length of a collector corresponding to changes in uses and/or conditions.

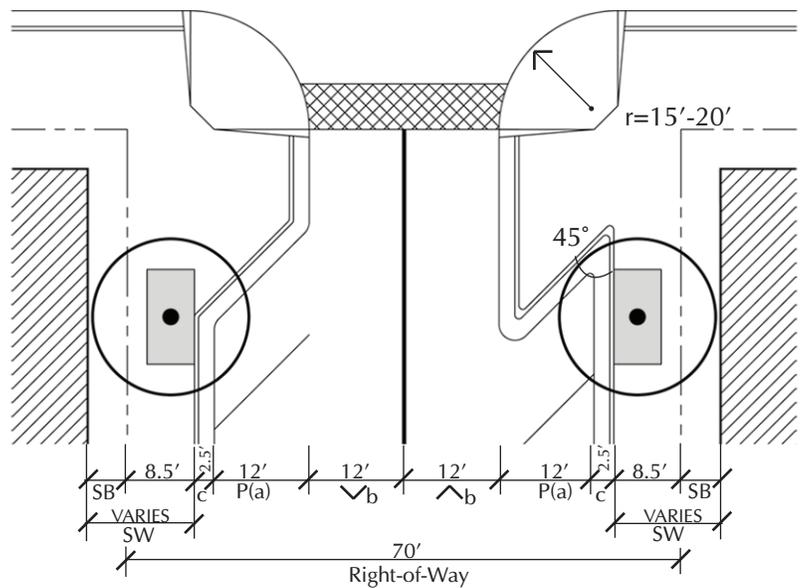
PLANS 1 AND 2: OVERVIEW

Either Plan 1 or Plan 2, below, should generally be used for collector segments fronted by street level commercial, office, or contiguous mixed-use development. (Any upper floor(s) may be commercial, office, or residential.) Plan 1 or 2 should be used for collector segments that constitute part of a main street as defined in Chapter III Part 1 of this document. Plan 2 is generally more appropriate than Plan 1 where the adjacent uses are residential-only

PLAN 1: GROUND FLOOR COMMERCIAL CONDITION

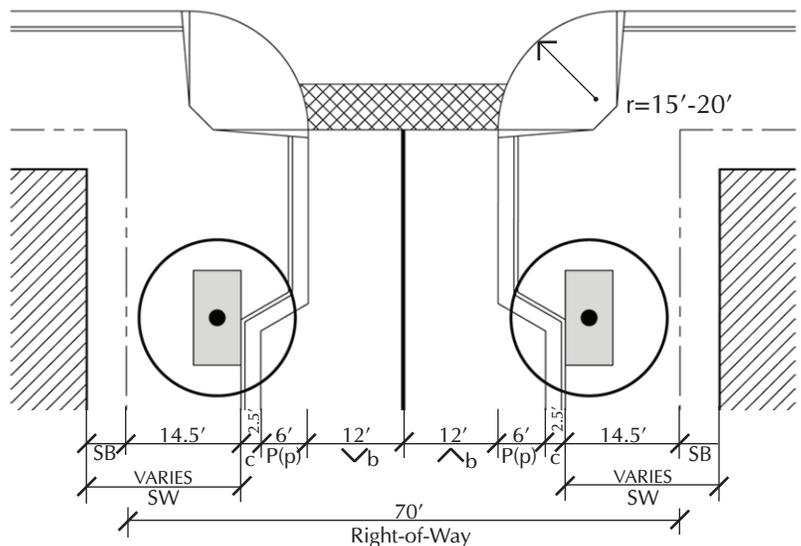
Reverse-in angled parking may be acceptable. Plan 1 is not appropriate for traffic volumes that exceed 10,000; Town of Cary Engineering staff may require Plan 2 below.

Sidewalk dimensions may vary based on providing cafe seating as described in Chapter III Part 1, Design Zones.



PLAN 2: COMMERCIAL/RESIDENTIAL CONDITION

Sidewalk dimensions may vary based on providing cafe seating as described in Chapter III Part 1, Design Zones.



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COLLECTOR: Typically 70 foot Right-of-Way, continued

PLAN 3: RESIDENTIAL CONDITION

Use this typical plan for collector segments with or fronted by adjacent residential development only, outside of contiguous mixed-use areas. This plan is not appropriate for main streets.

PLAN 4: DRIVE CONDITION

Use this typical plan for single-loaded collector segments with or fronted by residential development on one side of the street and natural areas on the other side, with a greenway. This plan is not appropriate for main streets or mixed-use areas. Single-loaded main street or mixed-use segments having a natural area on one side of the street should use a modified version of Plan 1 or 2.

See the related streetscape treatment for the Drive Typical Section in Chapter III Part 3, Streetscape, of this document.

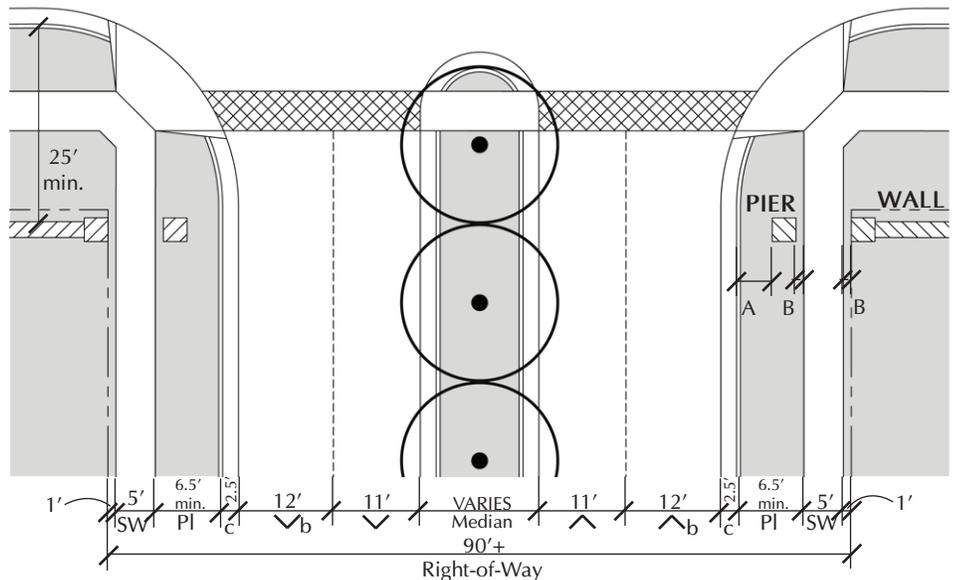
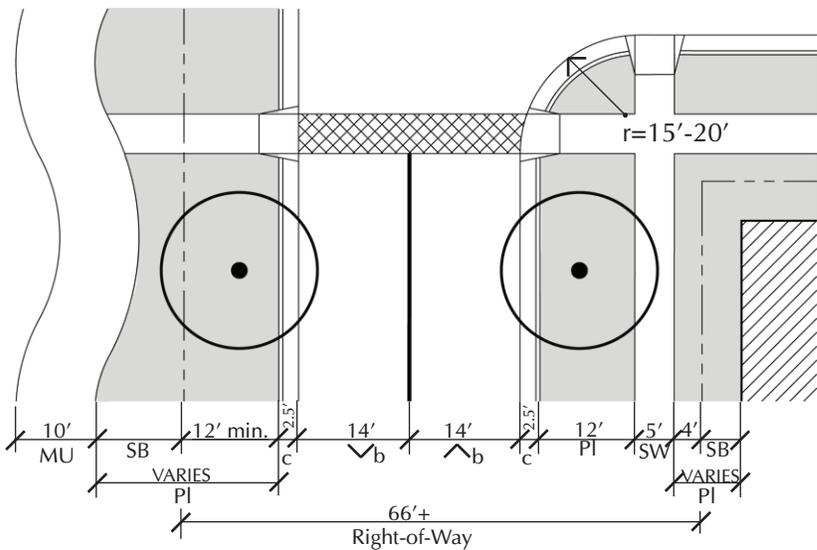
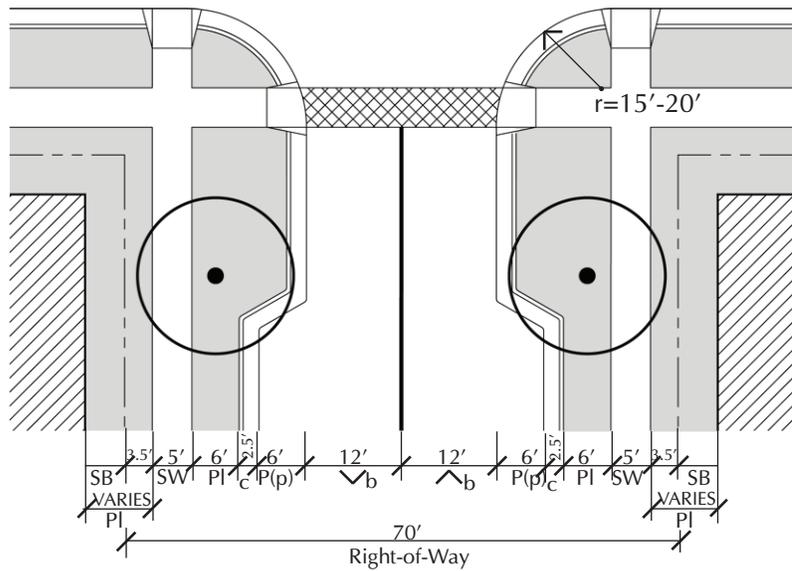
PLAN 5: ENTRY CONDITION

Use this typical plan at thoroughfare intersections where multiple approach and entry lanes are required, in conjunction with expansion of Right-of-Way. This Plan may be supplemented with turn lanes as needed. Illustrated Collector sidewalk width and back-of-curb treatment should transition to the appropriate Plan 1-4 treatment as soon as feasible.

Pier Setback:

- A. 3' minimum setback from face of curb.
- B. 1' setback from sidewalk.

See the related streetscape treatments for different entry types in Chapter III Part 3 of this document.



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STREET A: Typically 62 foot Right-of-Way

These are the preferred dimensions; changes require approval of the Engineering and Planning Departments. A narrower right-of-way may be approved by the Engineering Department to make more sidewalk width available for cafe seating.

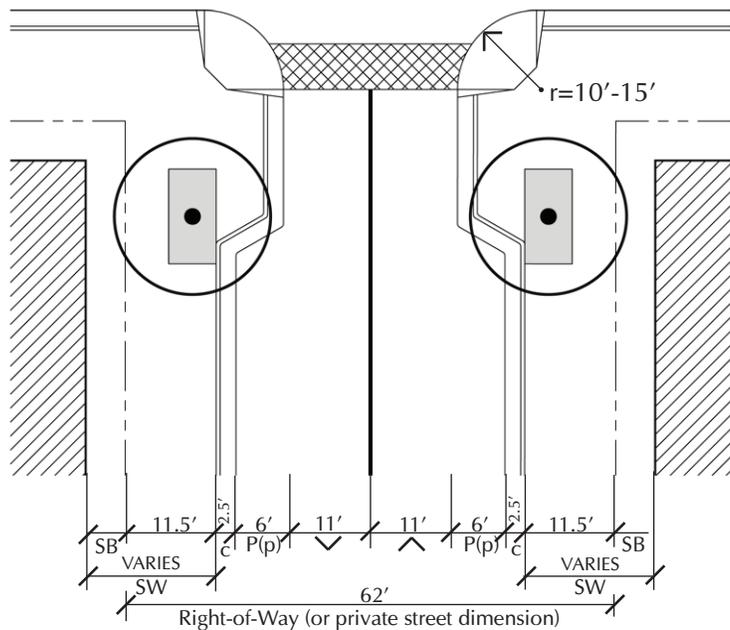
Following are four different typical plans for Street A Circulation Types within the Alston area. Please select the appropriate plan based on the description of associated conditions and related development.

PLANS 1 AND 2: OVERVIEW

Either Plan 1 or Plan 2, below, should generally be used for Street A segments fronted by street level commercial, office, or contiguous mixed-use development. (Any upper floor(s) may be commercial, office, or residential.) Plan 1 or 2 should be used for Street A segments that constitute part of a main street as defined in Chapter III Part 1. Plan 1 is generally more appropriate than Plan 2 on Street A segments where the adjacent uses are residential-only.

PLAN 1: COMMERCIAL/RESIDENTIAL CONDITION

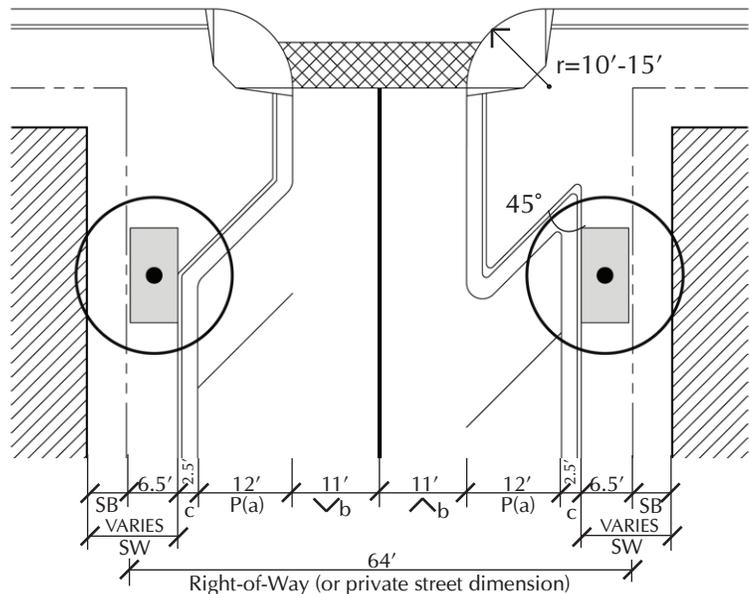
Sidewalk dimensions may vary based on providing cafe seating as described in Chapter III Part 1, Design Zones.



PLAN 2: GROUND FLOOR COMMERCIAL CONDITION

Reverse-in angled parking may be acceptable.

Sidewalk dimensions may vary based on providing cafe seating as described in Chapter III Part 1, Design Zones.



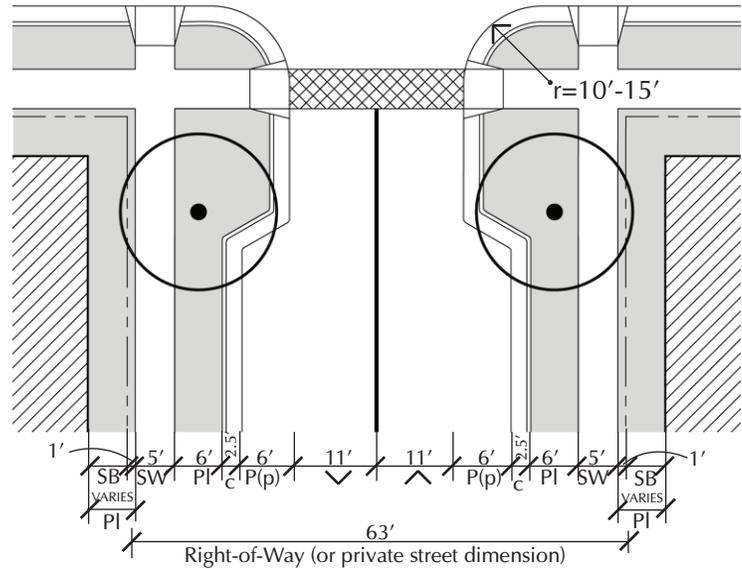
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STREET A: Typically 62 foot Right-of-Way, continued

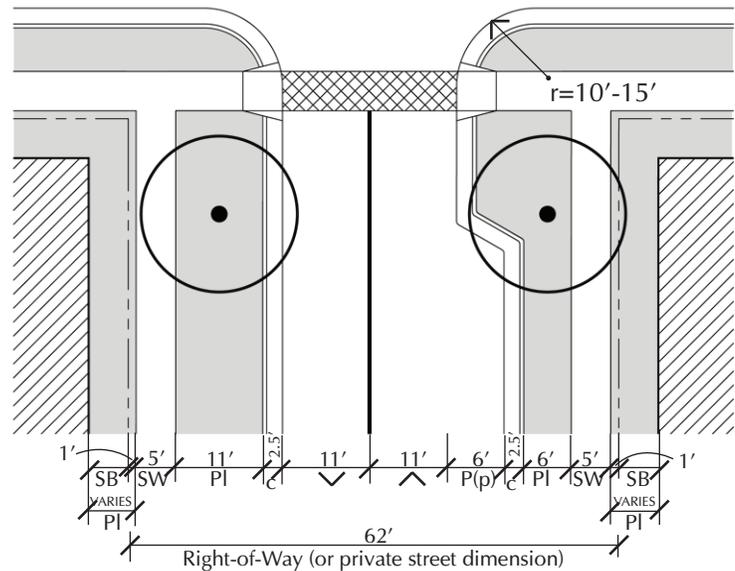
PLAN 3: RESIDENTIAL CONDITION

Use this typical plan for Street A segments with or fronted by adjacent residential development only, outside of contiguous mixed-use areas. This plan is not appropriate for main streets.



PLAN 4: RESIDENTIAL CONDITION WITH PARALLEL PARKING ON ONE SIDE ONLY

Use this typical plan for Street A segments with or fronted by adjacent residential development only, outside of contiguous mixed-use areas. This plan is not appropriate for main streets.



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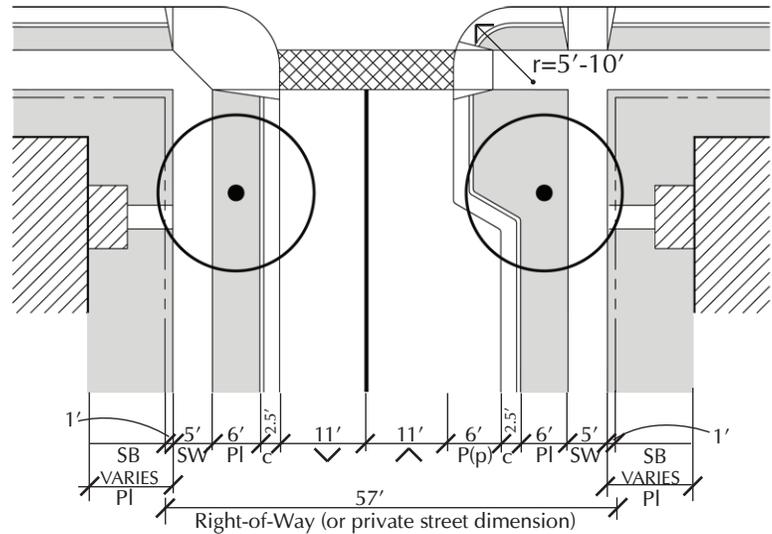
STREET B: Typically 54 foot Right-of-Way

These are the preferred dimensions; changes require approval of the Engineering and Planning Departments.

Following are three different typical plans for Street B Circulation Types within the Alston area. Please select the appropriate plan based on the description of associated conditions.

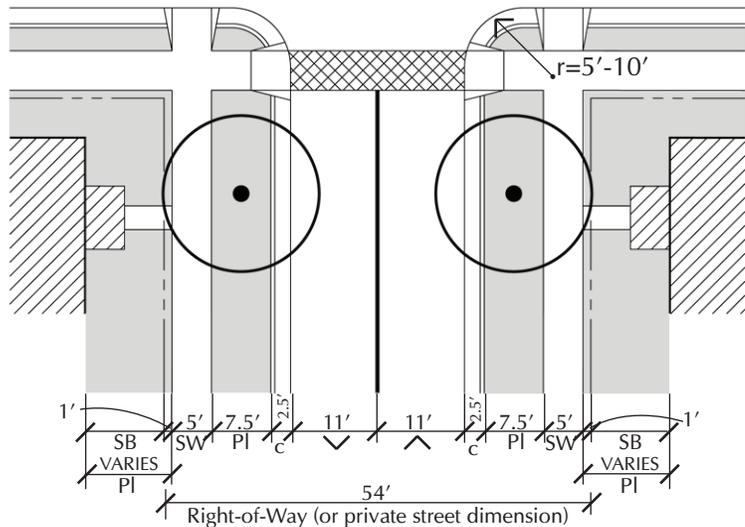
PLAN 1: RESIDENTIAL CONDITION WITH PARALLEL PARKING ON ONE SIDE ONLY

Use this typical plan for Street B Circulation Types with adjacent residential development only.



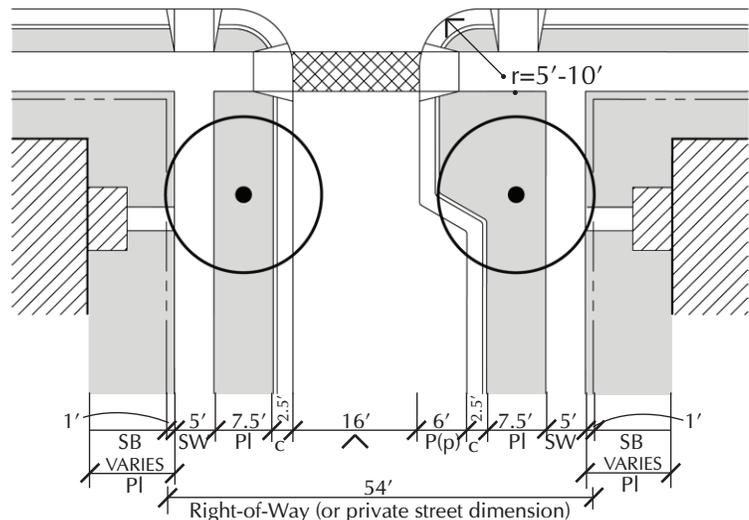
PLAN 2: RESIDENTIAL CONDITION WITHOUT ON-STREET PARKING

Use this typical plan for Street B Circulation Types with adjacent residential development only. Use of this plan is generally only available when ample provision within the neighborhood is made for other adequate nearby or off-street parking.



PLAN 3: RESIDENTIAL ONE-WAY CONDITION WITH PARALLEL PARKING ON ONE SIDE

Use this typical plan for Street B Circulation Types with adjacent residential development. One-way condition shall apply to Single-Family Detached and Townhouse areas only.

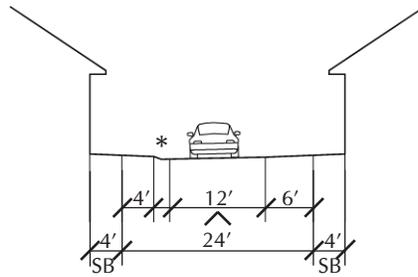


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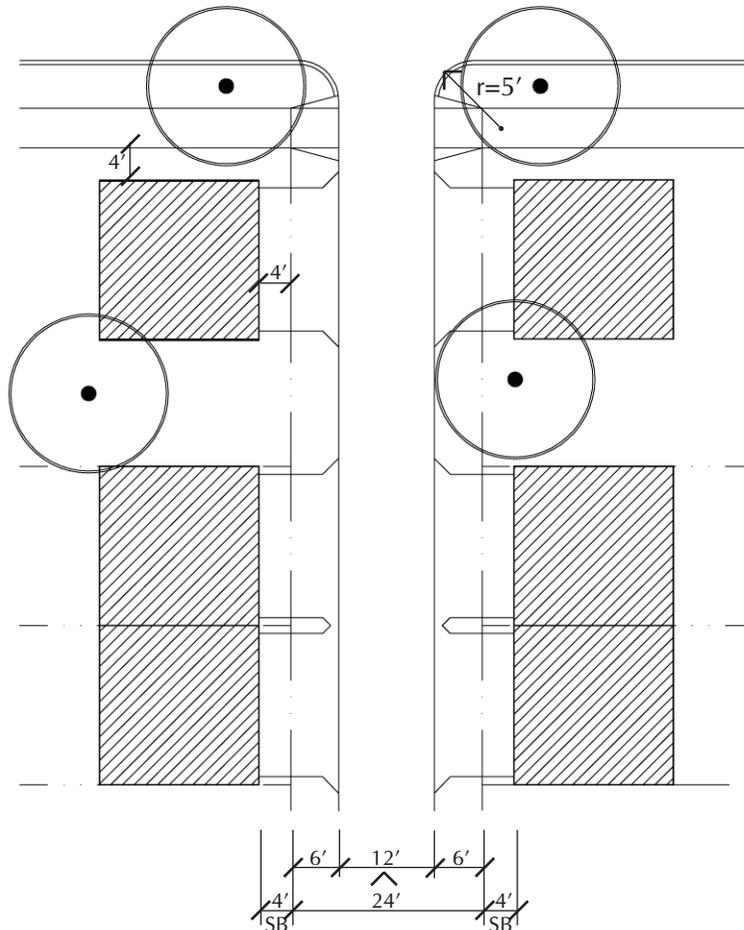
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ALLEY: Typically 24 foot Width

- Dead-end alleys are not permitted.
- Alley length shall be limited to 1000' with no curvature (tangent section). A non-tangent section with curvature may require additional travel lane width.
- Street Trees are not required due to utilities and frequency of driveways. Trees planted in private rear yards that overhang and shade the alleys are encouraged.
- The typical alley cross section may be altered for drainage management purposes if requested by the Town of Cary Engineering Department.



* 2 foot wide V Gutter



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PASSAGE: 15 foot or 30 foot Public Easement (privately owned and maintained)

TYPE A:

30' Public Easement with houses fronting the passage.

Setbacks as follows:

- 0' without porch or stoop
- 10'-15' with porch or stoop

TYPE B:

15' Public Easement with predominantly sides of houses facing the passage.

Setbacks as follows:

- Side setback: 8'-18'
- Front or side setback with porch: 10'-18'

