






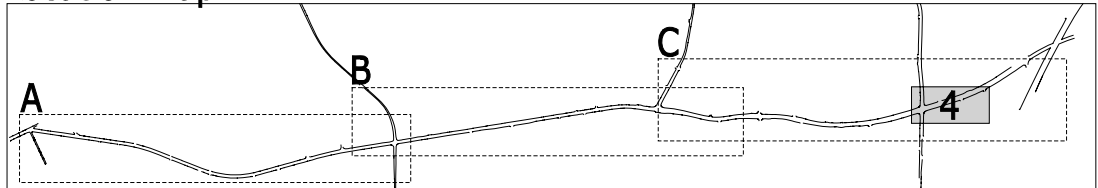


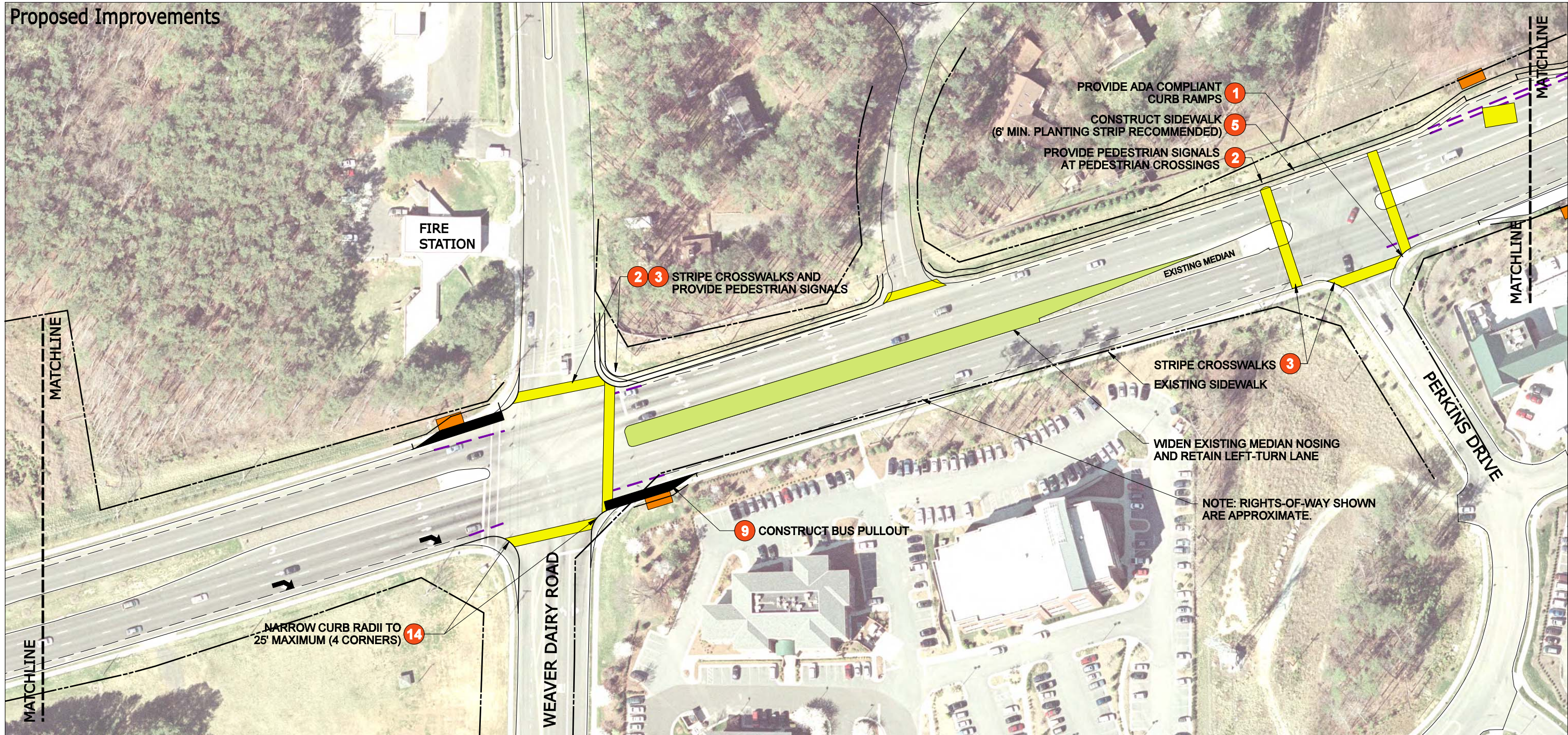
Key

	RETAINING WALL		BUS SHELTER		SEE ILLUSTRATIONS #1 AND #2 FOR DETAILS OF PROPOSED IMPROVEMENTS
	SIDEWALK		BUS PULLOUT		
	CROSSWALK		MEDIAN POCKET		

Location Map not to scale



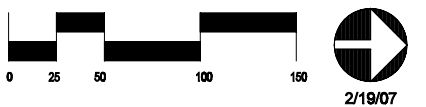
Proposed Improvements










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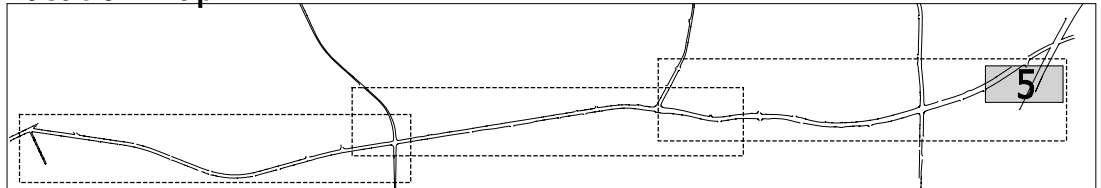
PLAN C4



Key

	RETAINING WALL		BUS SHELTER		SEE ILLUSTRATIONS #1 AND #2 FOR DETAILS OF PROPOSED IMPROVEMENTS
	SIDEWALK		BUS PULLOUT		
	CROSSWALK		MEDIAN POCKET		

Location Map not to scale



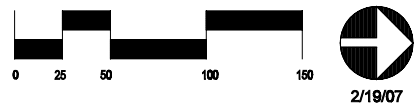
Proposed Improvements

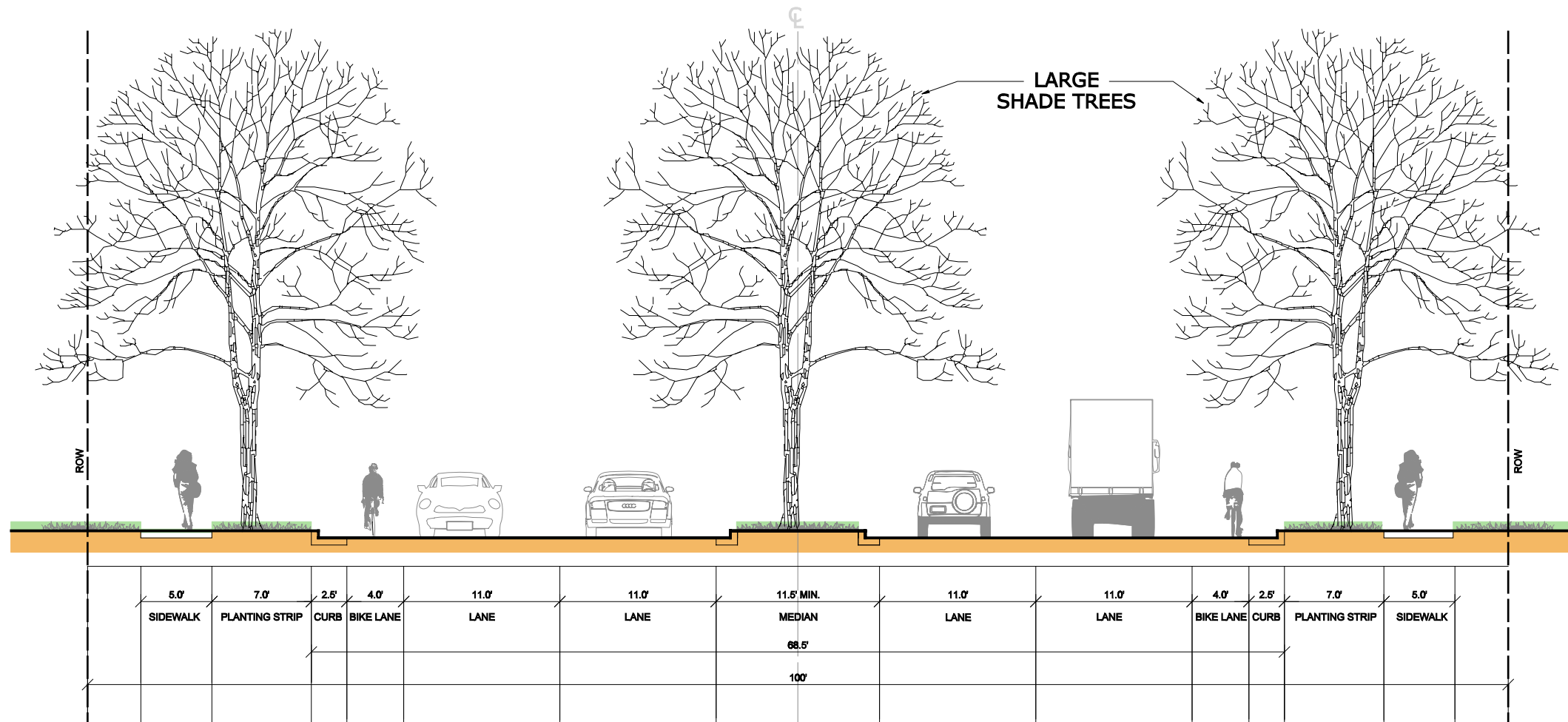


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PLAN C5





Idealized Boulevard Section

IDEALIZED BOULEVARD SECTION

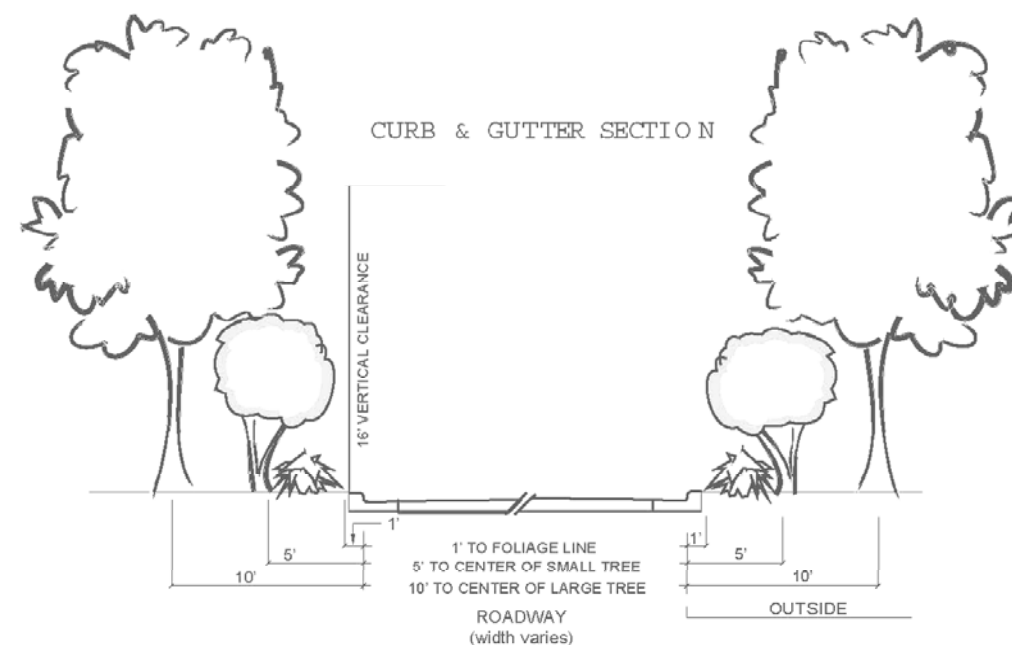
Ideally, the typical cross-section for the Boulevard would resemble the illustration shown at left, which is adapted from the publication *Creating Livable Streets: Street Design Guidelines for 2040* (Second Edition, June 2002) by Portland Metro.

This idealized section features shade trees planted both in the median and in seven-foot-wide planting strips on either side of the roadway, which is comprised of eleven-foot lanes and four-foot bike lanes. Five-foot minimum sidewalks are placed on the outside of the tree planting strip. This street configuration has the following advantages:

- The raised median narrows the roadway and encourages slower vehicular traffic speeds.
- Marked bike lanes further narrow the roadway and create dedicated space for bicyclists.
- Trees between the roadway and the sidewalk form a visual barrier that clearly divides pedestrian space from vehicular space.
- Trees, especially shade trees, provide shade that makes the pedestrian and vehicular environments more pleasant by moderating heat and glare.
- A seven-foot minimum width planting strip provides enough space and soil volume for street trees to thrive.

This street configuration, however, may be difficult to achieve fully in the context of the Martin Luther King, Jr. Boulevard, given the following constraints:

- NCDOT Planting guidelines govern the distance that trees of various types may be planted relative to the roadway (see below).
- The Boulevard corridor is constrained by topography in several locations and by a typical 100'-wide Right of Way (ROW), both of which limit the space available for modification and tree planting. Moving the sidewalks out, for example, will require the construction of retaining walls in several locations.
- If the existing outside curbs remain where they are in a typical cross-section, the addition of bike lanes reduces the available median width to about eleven feet, which leaves about eight feet of lawn width in the median. An eight-foot grassed median may be difficult to maintain, since mowers will be quite close to traffic.
- The cost of maintenance of trees and lawn in the Boulevard ROW will have to be added to the Town's landscape maintenance budget.



NCDOT Standard for 35 MPH Roadway

NCDOT STANDARDS

The diagram at left is taken from NCDOT's Guidelines for Planting within Highway Right-of-Way, for roadways signed at 35 MPH. It should be noted that traffic frequently moves faster than 35 MPH on the Boulevard at present.

Given that NCDOT has jurisdiction of the Boulevard, these guidelines are expected to apply. The pertinent restrictions shown here are the minimum planting distances from edge of curb of five and ten feet, for small and large trees, respectively.

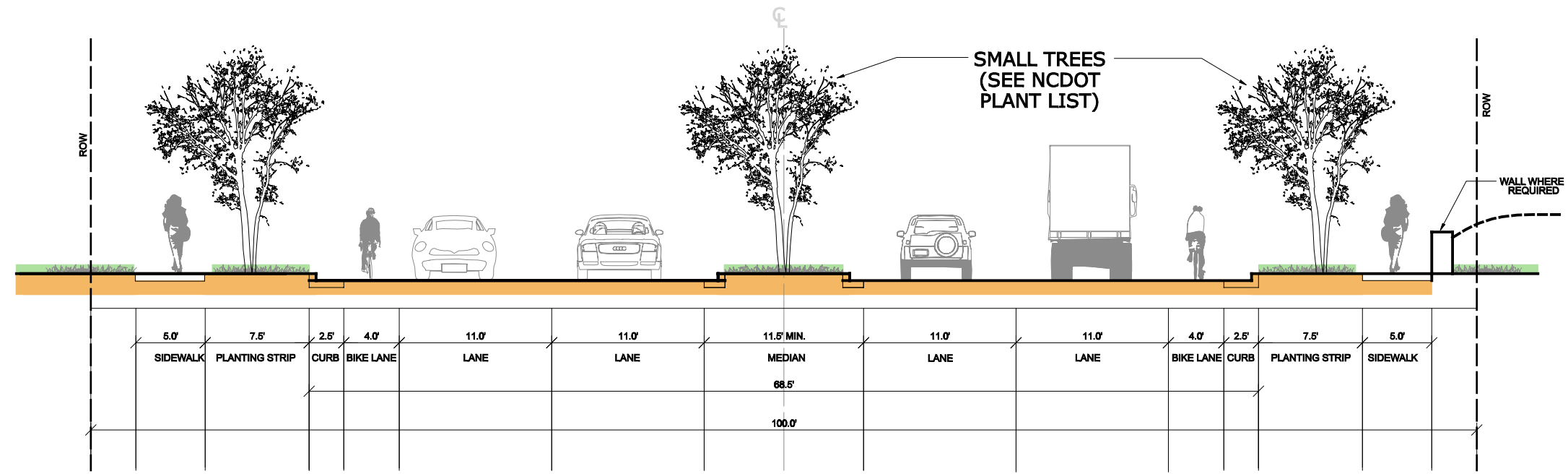
This restriction compels modification of the idealized cross-section shown above; see the following page for two examples of such modification.

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Boulevard Design Issues





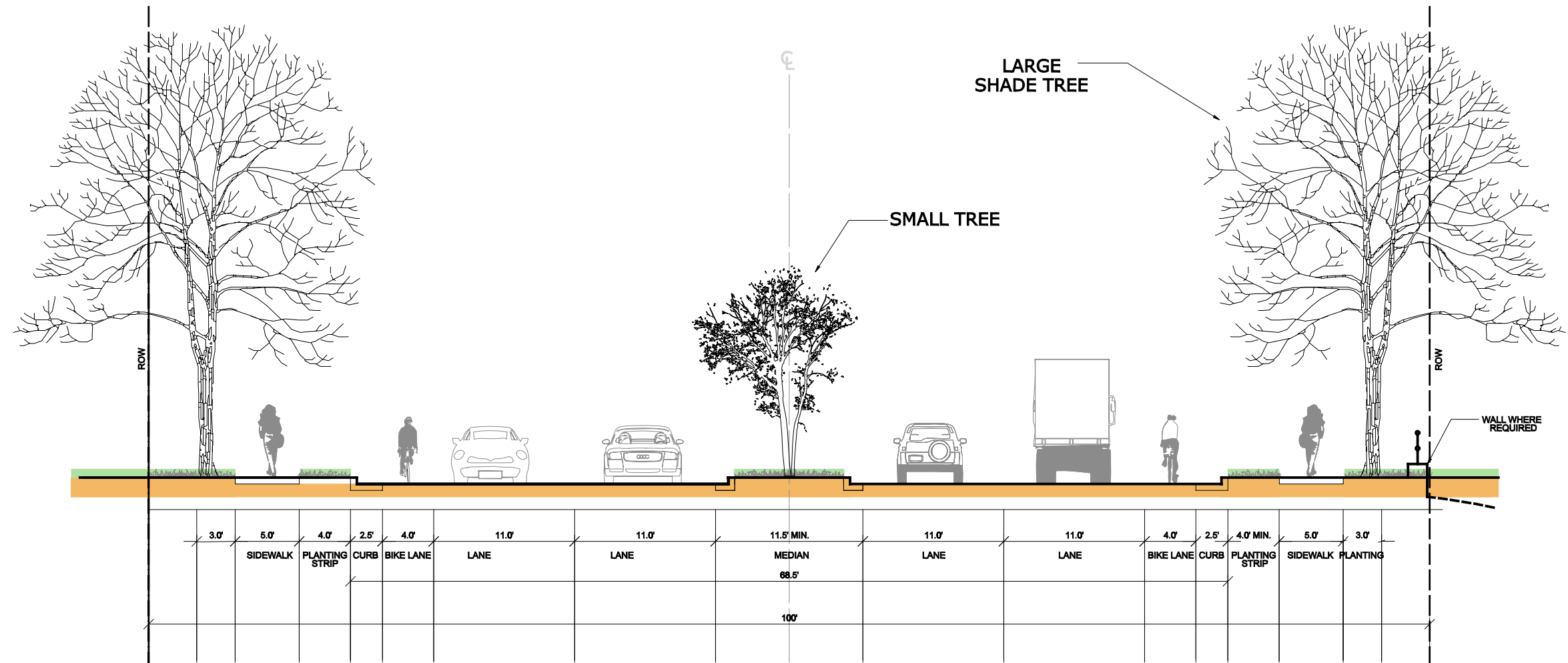
Alternative A

Given the practical considerations discussed on the previous page, the adaptation of an idealized Boulevard cross-section to these conditions is illustrated by the following two illustrative options:

ALTERNATIVE A

MEDIAN
The NCDOT minimum distance from the face of curb to the centerline of a small tree is five feet for this roadway. Given a typical median curb and gutter width of 18 inches, the minimum width for a median with small trees is 11.5 feet, measured from the outside edge of each gutter. This dimension, however, should be increased wherever conditions permit.

PLANTING STRIP
Given the same five-foot minimum setback distance from the curb, a 7.5' wide planting strip will accommodate a small tree planted five feet from the curb and three feet from the sidewalk, as shown at left.



Alternative B

ALTERNATIVE B

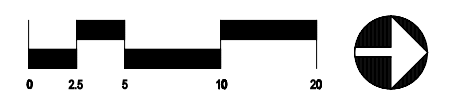
MEDIAN
If the median can be constructed at least twenty feet wide measured from face of curb, large trees may be accommodated in the median under NC DOT planting guidelines. However, unless the outside curbs are moved out, this width will not be available through much of the corridor. Thus, this option shows small trees in the median similar to Option A. A site survey and curb relocation study should be done to determine the feasibility of creating wider medians, particularly north of Mt. Bolus Road. Provision of wider medians must be weighed against the cost of additional curb relocation and other site work.

PLANTING STRIP
This Option shows a narrower, four-foot lawn planting strip without trees, a five-foot sidewalk, and shade tree planting behind the walk. The four-foot minimum planting strip is recommended to serve as increased buffer space between the sidewalk and vehicular traffic, and is double the space that is currently found between the curb and sidewalk in much of the corridor. The recent widening of the MLK Boulevard north of Homestead employs a three-foot standard planting strip width. The goal of Option B is to allow tree planting as close to the roadway as possible while still maintaining generous buffer space between the sidewalk and the curb, and between the trees and the sidewalk. A four- or five-foot lawn strip offers the added benefit of giving the Boulevard a greener appearance than is possible with a two-foot strip, particularly considering the overall scale of the roadway.

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Boulevard Design Alternatives





KEY to Improvements*

- 1. Construct ADA-compliant curb ramps
- 2. Provide pedestrian signals
- 3. Stripe crosswalk
- 4. Construct sidewalk across driveway
- 5. Construct sidewalk with 6' min. planting strip
- 6. Provide median pocket
- 7. Construct stone retaining wall at back of walk
- 8. Stripe bike lanes

- 9. Construct bus pullout
- 10. Replace bench at bus stop
- 11. Widen Boulevard at Intersection
- 12. Stripe 11' wide travel lanes
- 13. Construct raised median
- 14. Narrow curb radius to 25 feet maximum

Note: If crosswalks are marked, they must be accompanied by pedestrian signals or other approved signage. Midblock crossings like those shown at median pockets are subject to NCDOT certification of warrant and approval, based on MUTCD Guidelines.

* Not all improvements shown in each illustration

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Illustration 1: Median Pocket and Bus Stops



KEY to Improvements Shown*

- 1. Construct ADA-compliant curb ramps
- 2. Provide pedestrian signals
- 3. Stripe crosswalk
- 4. Construct sidewalk across driveway
- 5. Construct sidewalk with 6' min. planting strip
- 6. Provide median pocket
- 7. Construct stone retaining wall at back of walk
- 8. Stripe bike lanes

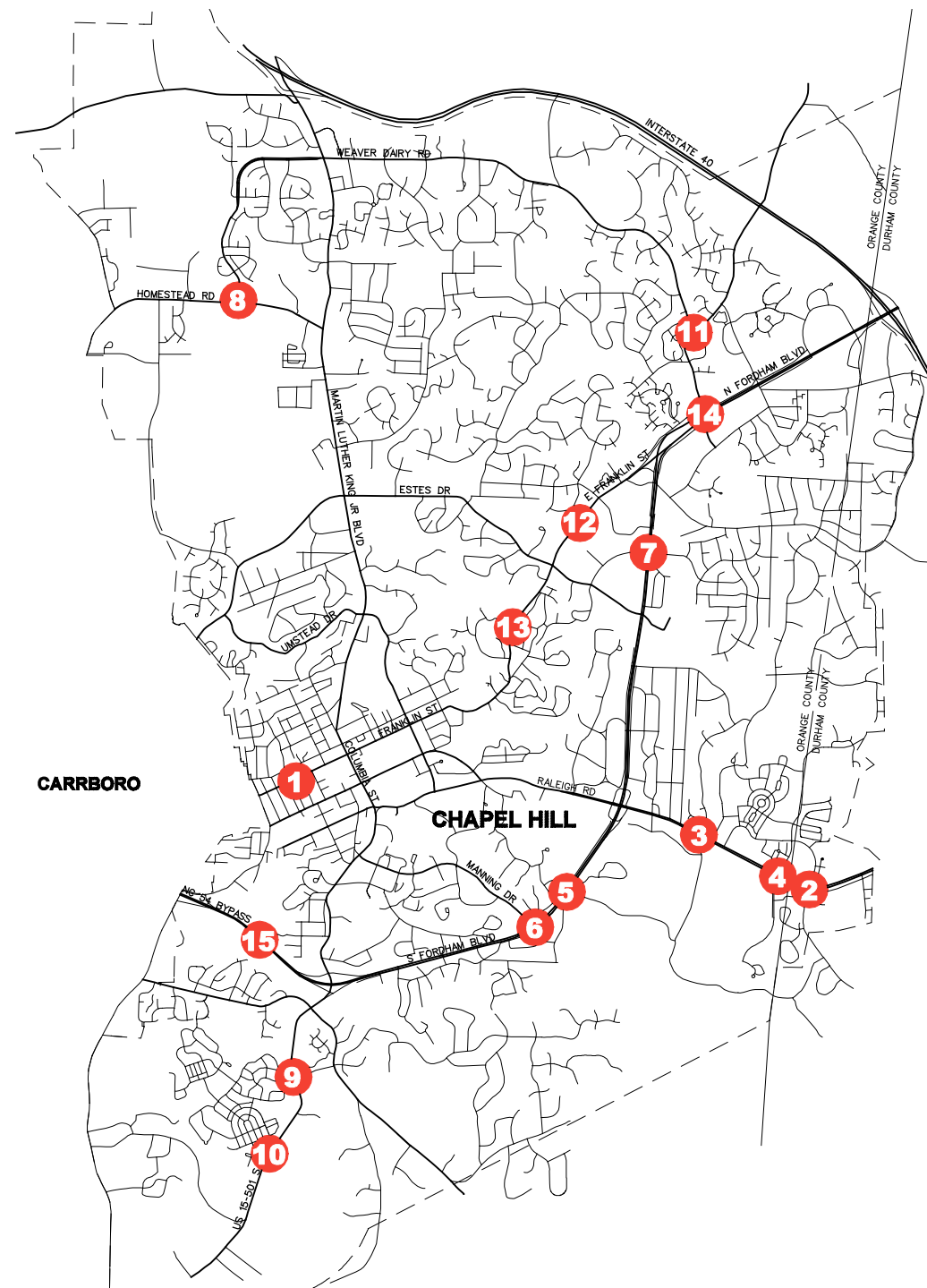
- 9. Construct bus pullout
- 10. Replace bench at bus stop
- 11. Widen Boulevard at Intersection
- 12. Stripe 11' wide travel lanes
- 13. Construct raised median
- 14. Narrow curb radius to 25 feet maximum

* Not all improvements shown in each illustration

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Illustration 2: Typical Intersection



Introduction to Part II: Town Intersections

In Spring of 2006, the Town of Chapel Hill identified a number of primary locations that merited study with a view toward improving pedestrian safety. The Town selected these locations because of a high number of crashes, the incidence of pedestrian injury or fatality, or because of other known dangerous conditions. The locations chosen for study are shown at left, and are predominately intersections.

The Town selected Ramey Kemp and Associates, a traffic engineering firm, and Lappas + Havener, PA, a landscape architecture and planning firm, to perform an evaluation of these fifteen intersections and to make recommendations for improvement. That work was performed in Summer and Fall of 2006, and the result is contained in the following plan sheets.

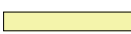

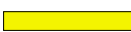


Concurrently with this Study, a Community Task Force explored options for the short- and long term improvement of pedestrian safety at two locations of particular interest to their surrounding communities: Fordham Boulevard at Manning Drive and at Old Mason Farm Road. The improvements at those locations recommended in this Study are intended to help further that community planning process, and not to preclude any additional improvements that this Task Force may recommend.

Intersections in Study

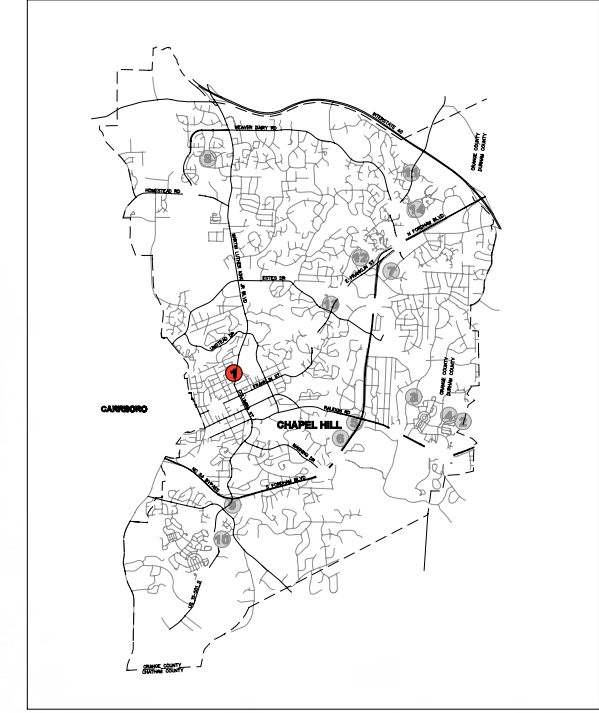
1. West Franklin Street at McDonald's
2. NC 54 at East Barbee Chapel Road
3. NC 54 at Finley Golf Course Road/Burning Tree Drive
4. NC 54 at Meadowmont Lane
5. Fordham Boulevard at Old Mason Farm Road
6. Fordham Boulevard at Manning Drive
7. Fordham Boulevard at Willow Drive
8. Homestead Road at Weaver Dairy Road Extension
9. US 15-501 South at Bennett Road
10. US 15-501 South at Market Street
11. Erwin Road at Weaver Dairy Road
12. East Franklin Street at Couch Road
13. East Franklin Street at Elizabeth Street
14. Roedham Boulevard at Erwin Road ("Superstreet" Intersection)
15. NC 54 Bypass east of Greensboro Street

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Key

	SIDEWALK		PEDESTRIAN REFUGE
	CROSSWALK		FLASHING WARNING SIGN
	HIGH VISIBILITY CROSSWALK		

Vicinity Map not to scale



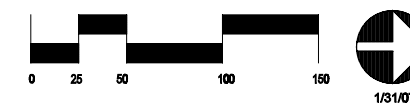
Proposed Improvements

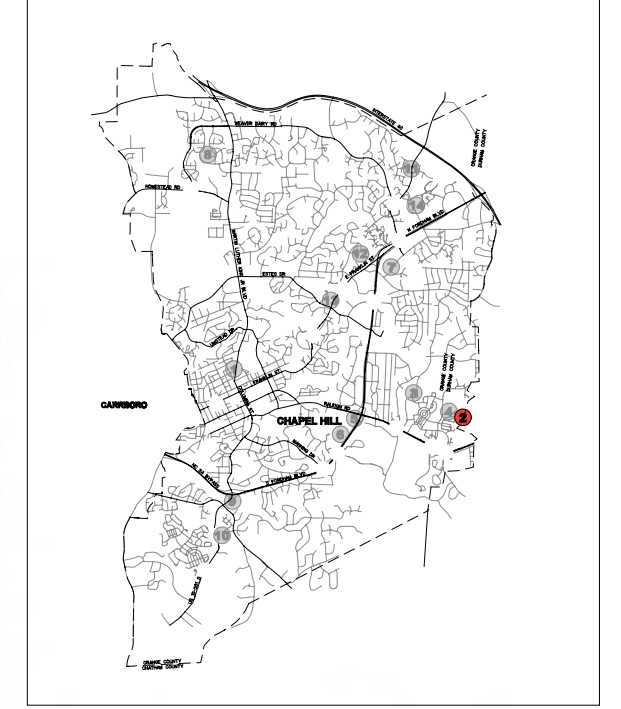







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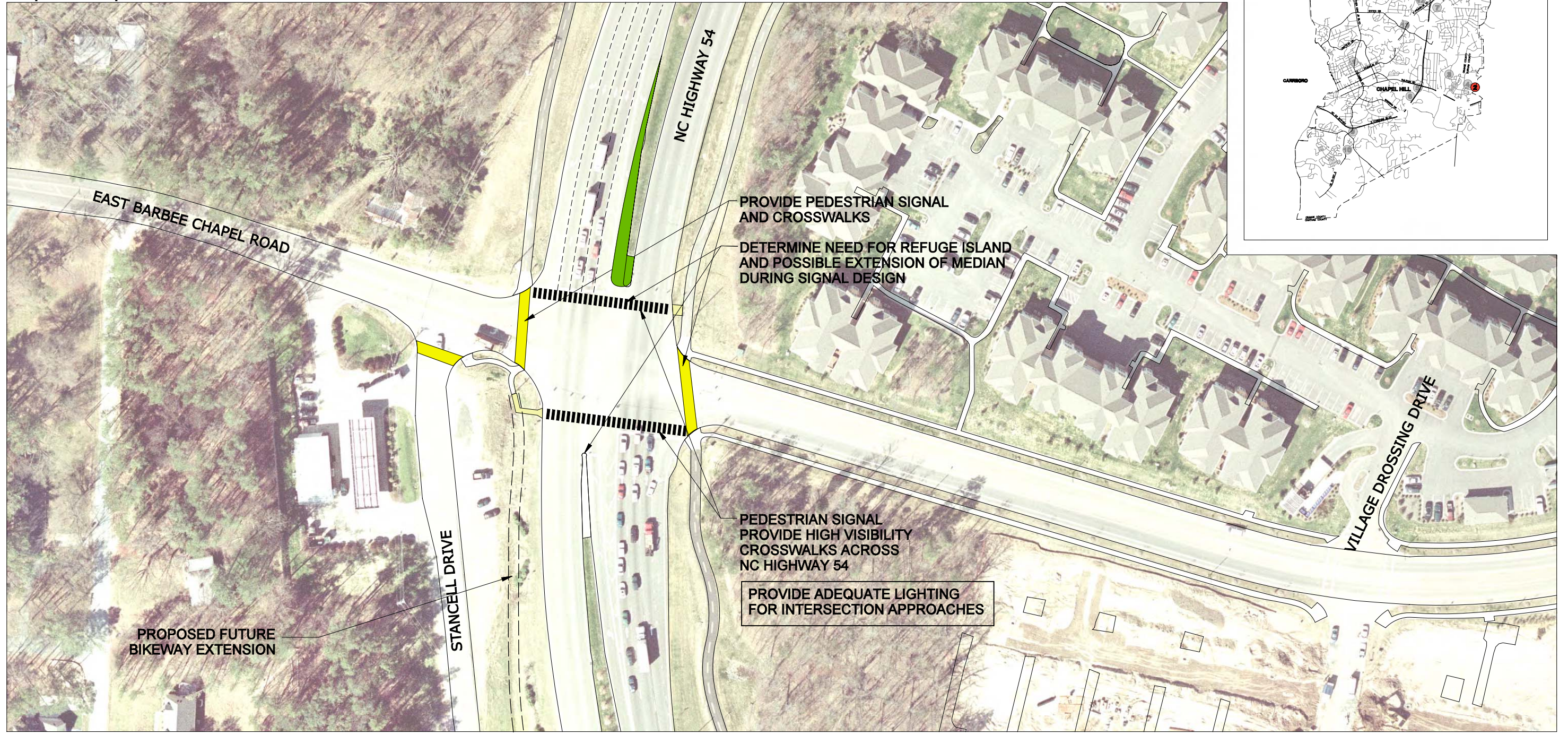
1. West Franklin Street at McDonald's





Key	
	SIDEWALK
	CROSSWALK
	HIGH VISIBILITY CROSSWALK
	PEDESTRIAN REFUGE
	FLASHING WARNING SIGN

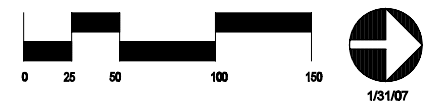
Proposed Improvements



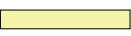

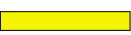


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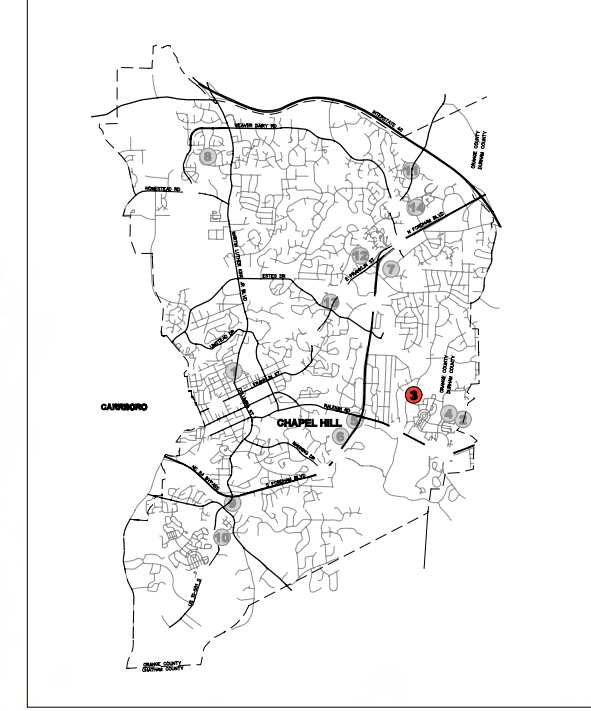
2. NC 54 at East Barbee Chapel Road



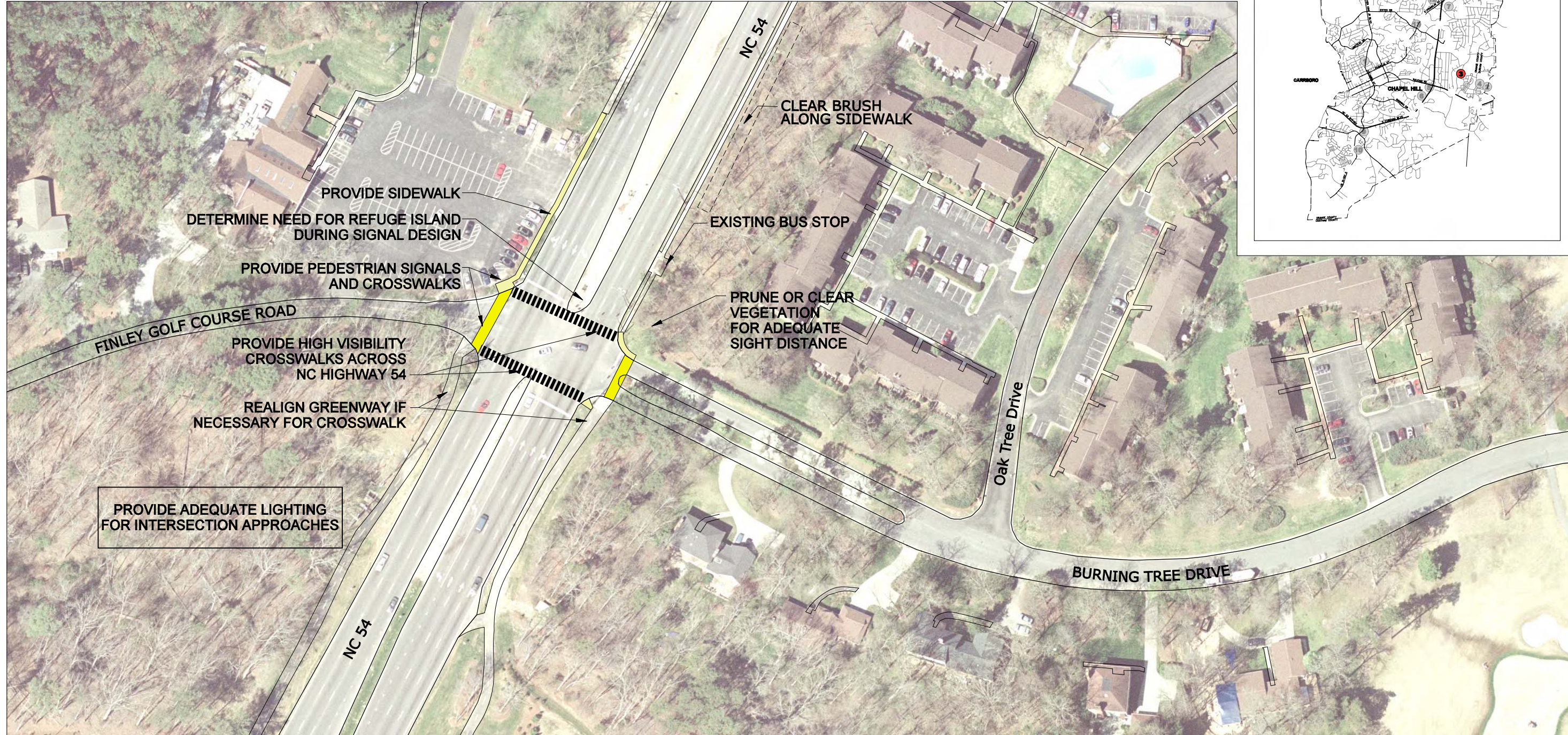
Key

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	CROSSWALK		FLASHING WARNING SIGN
	HIGH VISIBILITY CROSSWALK		

Vicinity Map not to scale



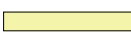

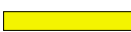


Proposed Improvements



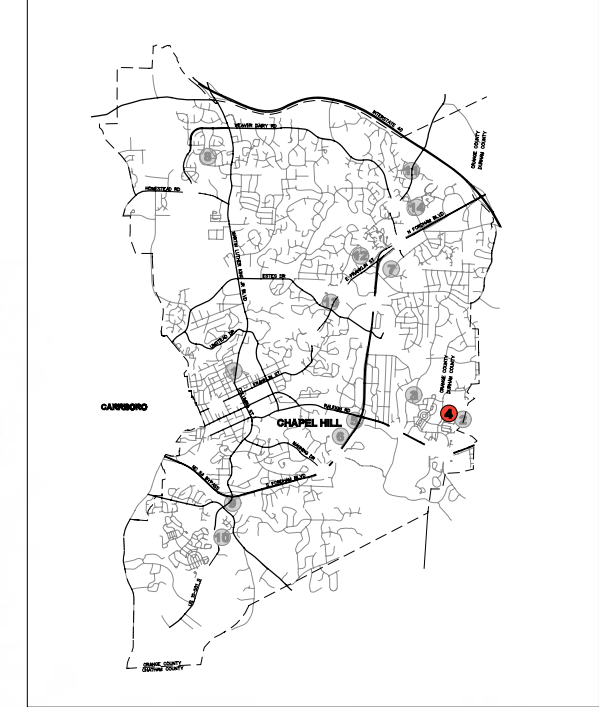
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3. NC 54 and Finley Golf Course Road/Burning Tree Drive

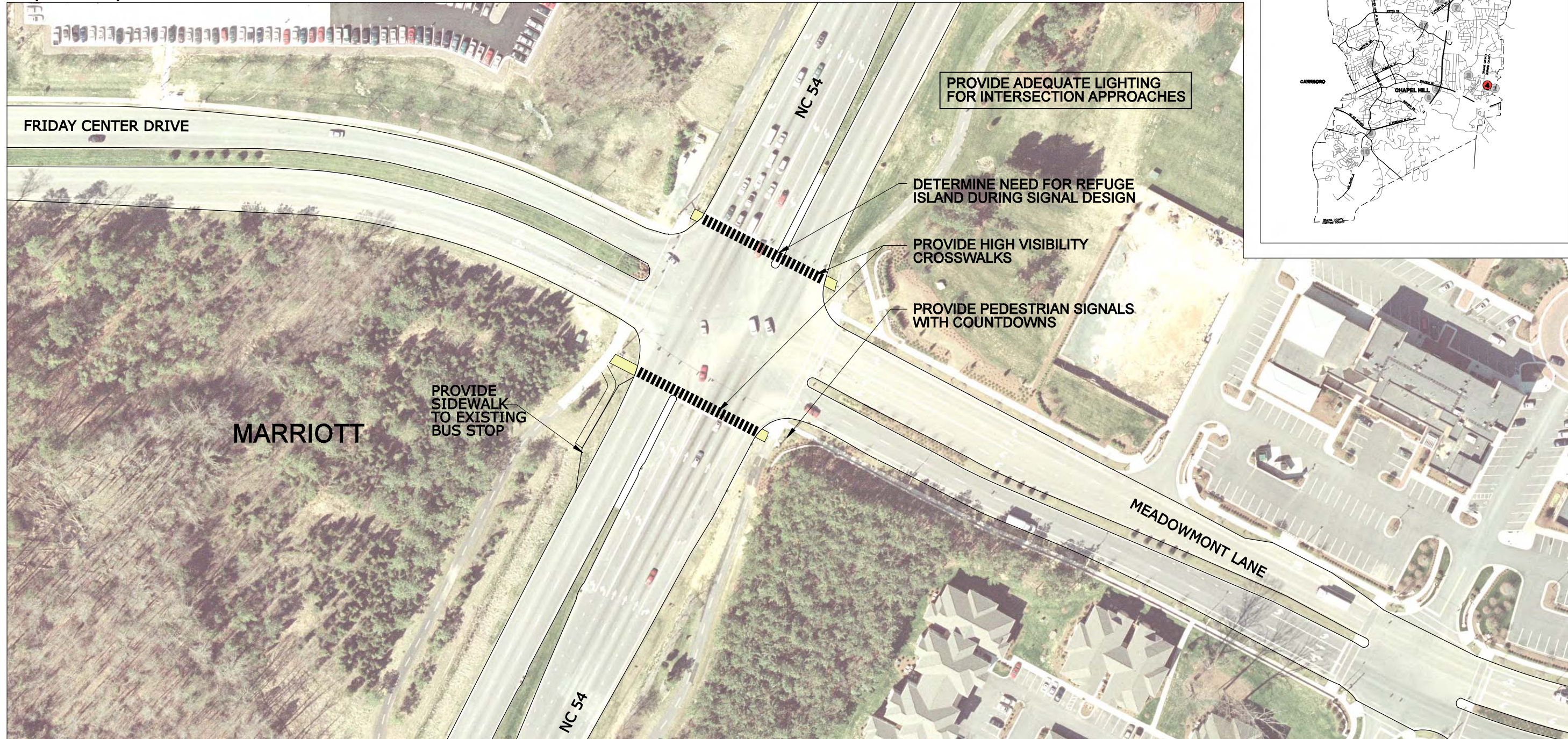
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	CROSSWALK		FLASHING WARNING SIGN
	HIGH VISIBILITY CROSSWALK		

Vicinity Map not to scale



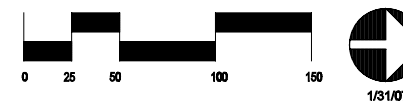
Proposed Improvements

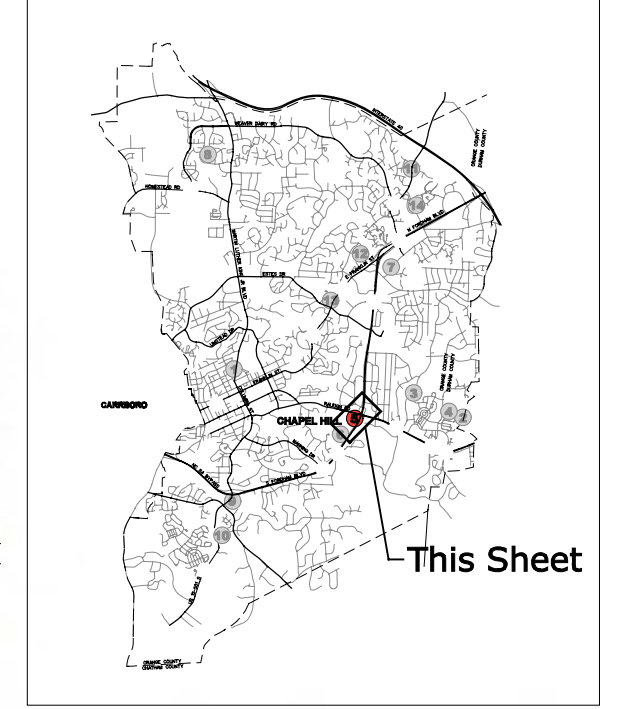


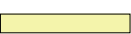




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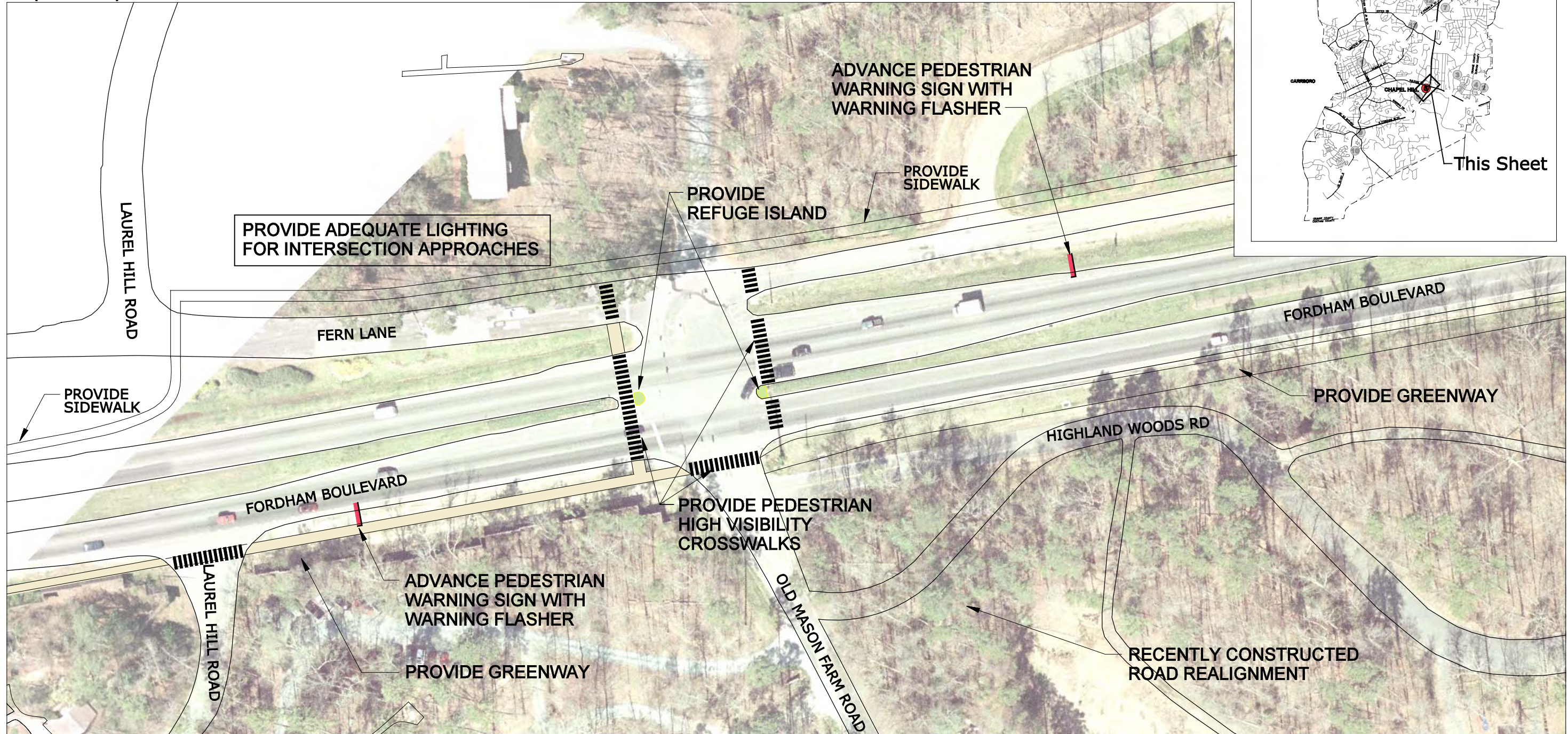
4. NC 54 at Meadowmont Lane





Key	
	SIDEWALK
	CROSSWALK
	HIGH VISIBILITY CROSSWALK
	PEDESTRIAN REFUGE
	FLASHING WARNING SIGN

Proposed Improvements



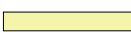

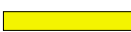


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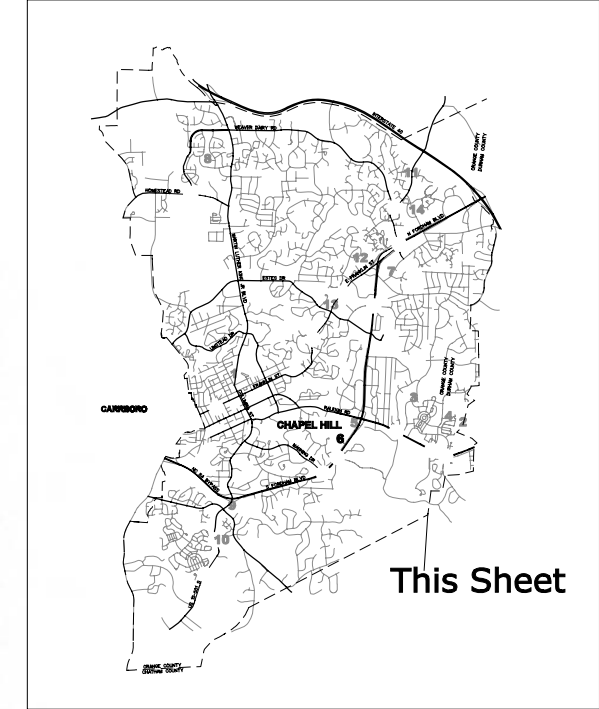
5. Fordham Boulevard at Old Mason Farm Road (Task Force Recommendations for Buildout Conditions)



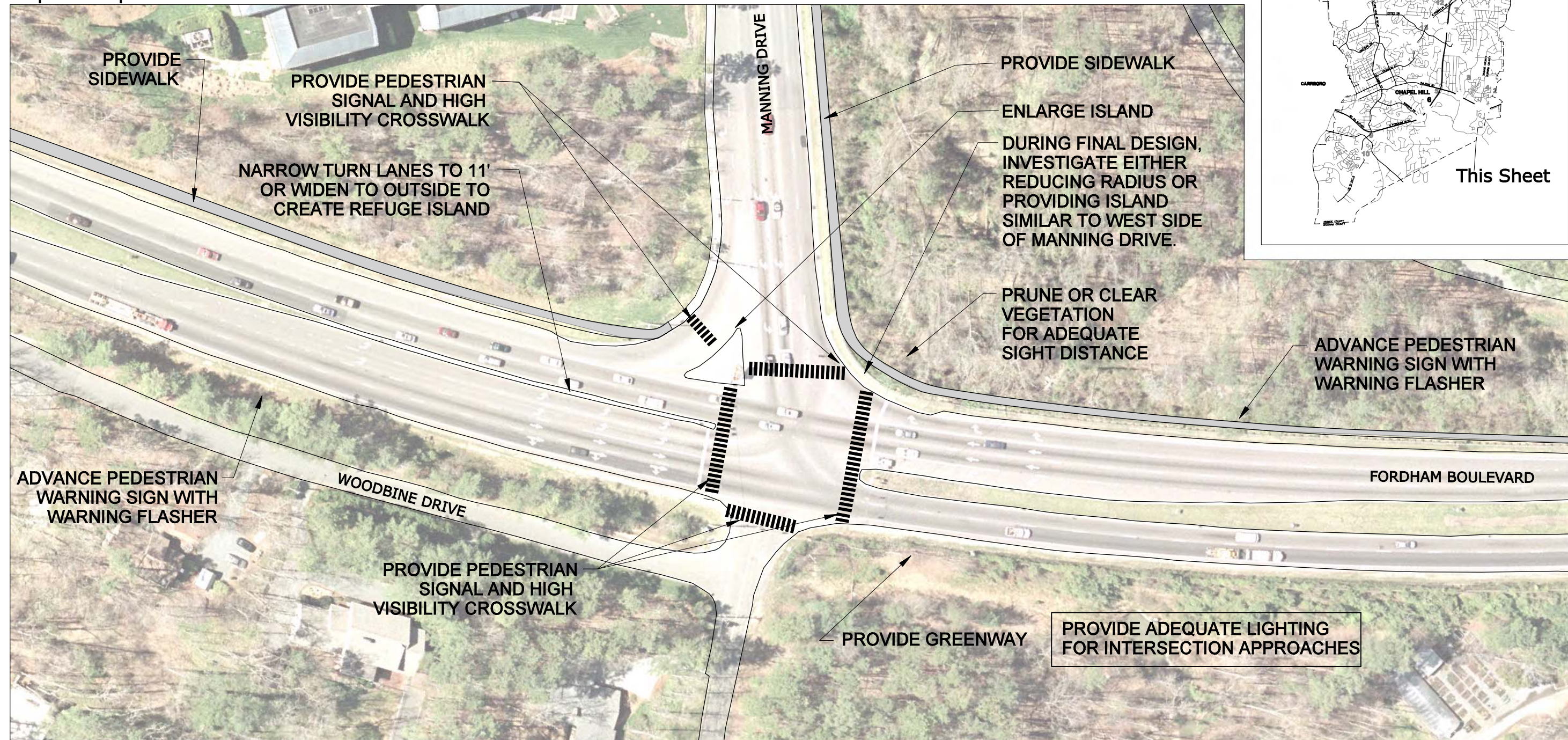
Key

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	CROSSWALK		FLASHING WARNING SIGN
	HIGH VISIBILITY CROSSWALK		

Vicinity Map not to scale



Proposed Improvements



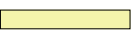

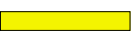


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6. Fordham Boulevard at Manning Drive (Task Force Recommendations for Buildout Conditions)



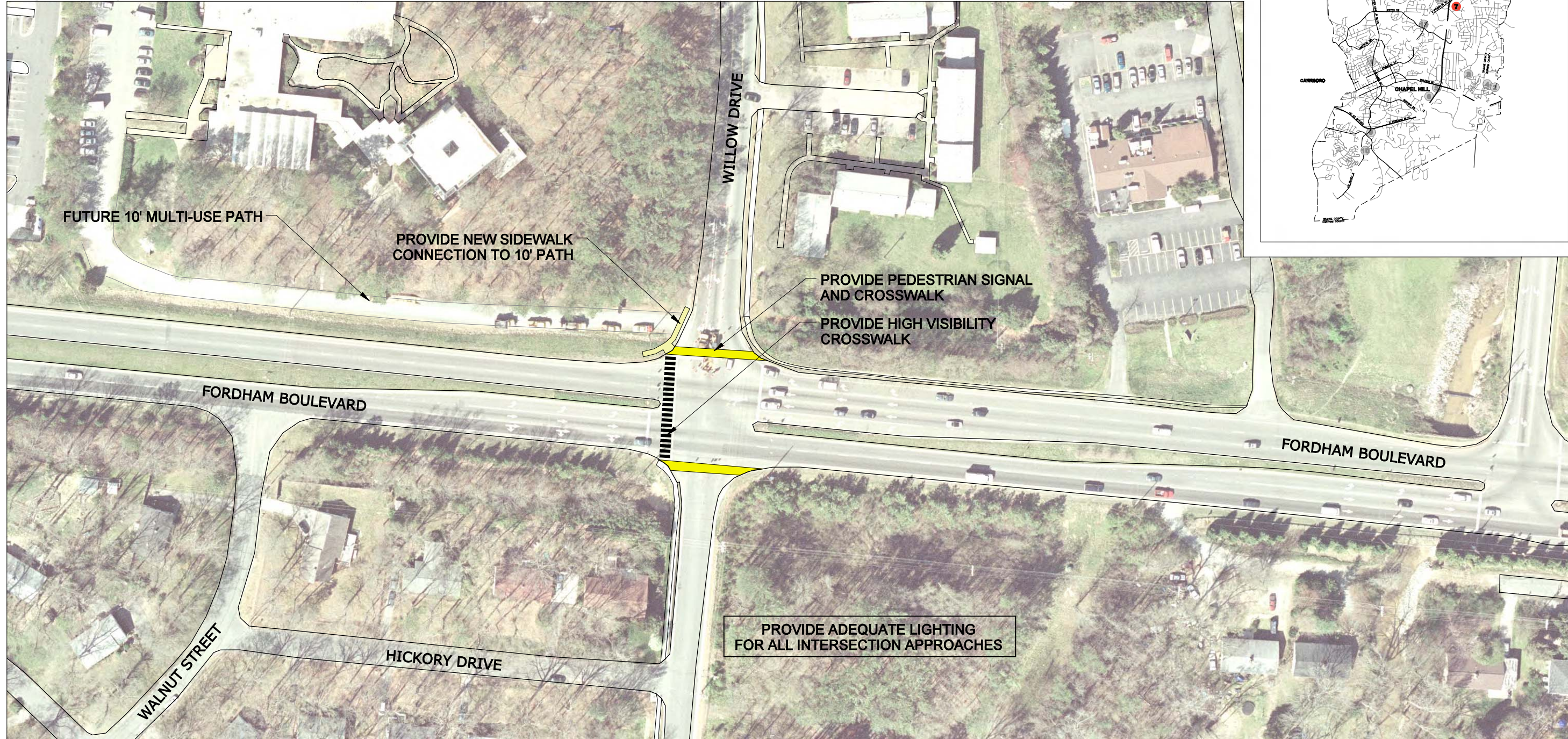
Key

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	CROSSWALK		FLASHING WARNING SIGN
	HIGH VISIBILITY CROSSWALK		

Vicinity Map not to scale



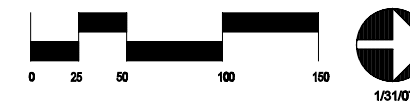
Proposed Improvements



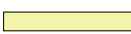

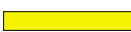


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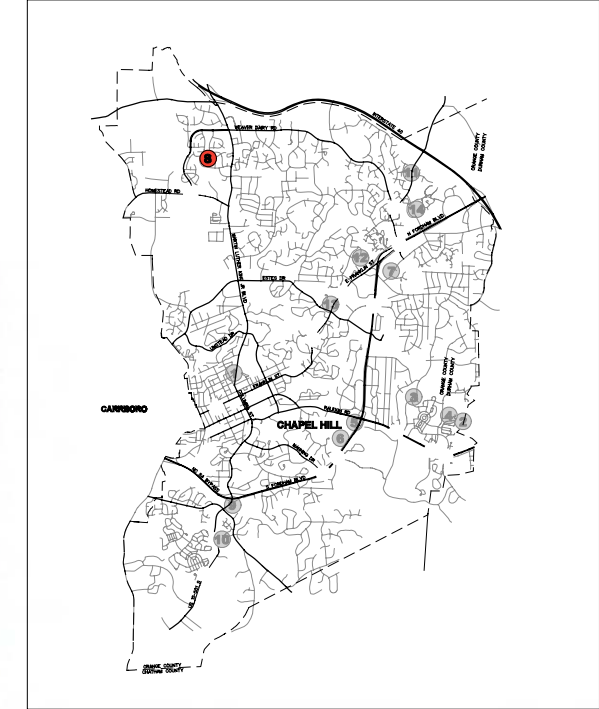
7. Fordham Boulevard at Willow Drive



Key

	SIDEWALK		PEDESTRIAN REFUGE
	CROSSWALK		FLASHING WARNING SIGN
	HIGH VISIBILITY CROSSWALK		

Vicinity Map not to scale

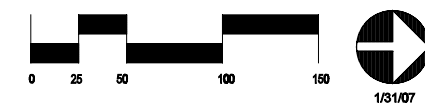


Proposed Improvements

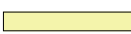

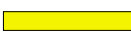




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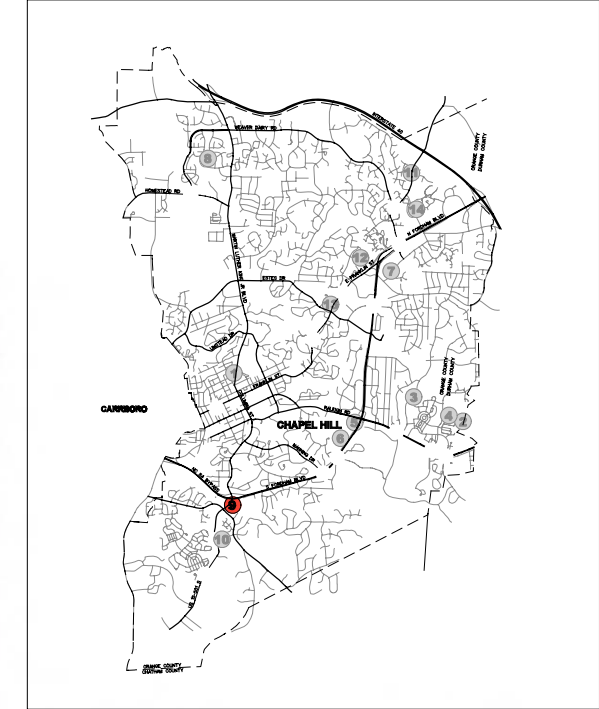
8. Homestead Drive at Weaver Dairy Road Ext.



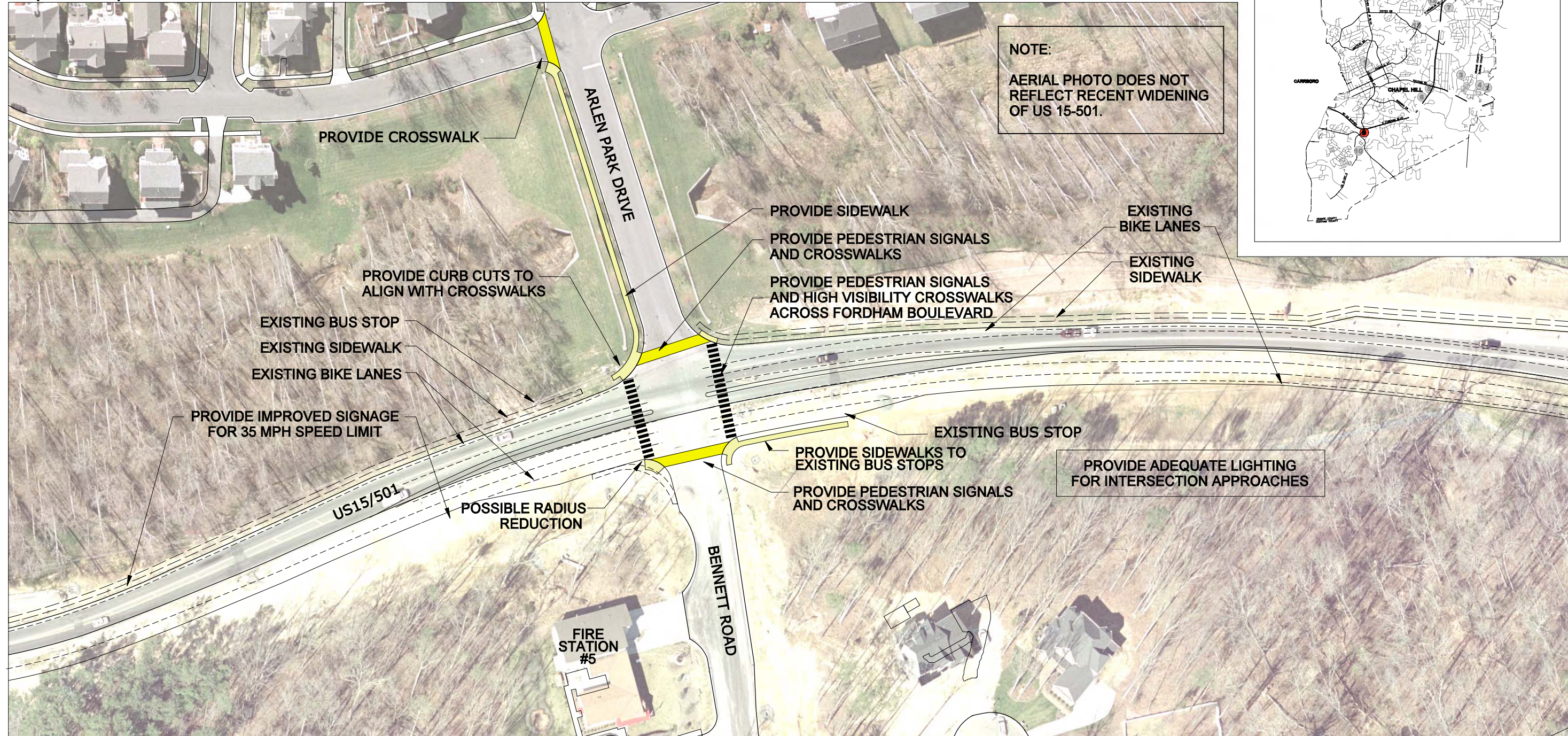
Key

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	CROSSWALK		FLASHING WARNING SIGN
	HIGH VISIBILITY CROSSWALK		

Vicinity Map not to scale



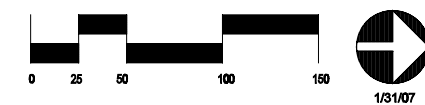
Proposed Improvements



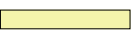

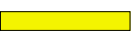


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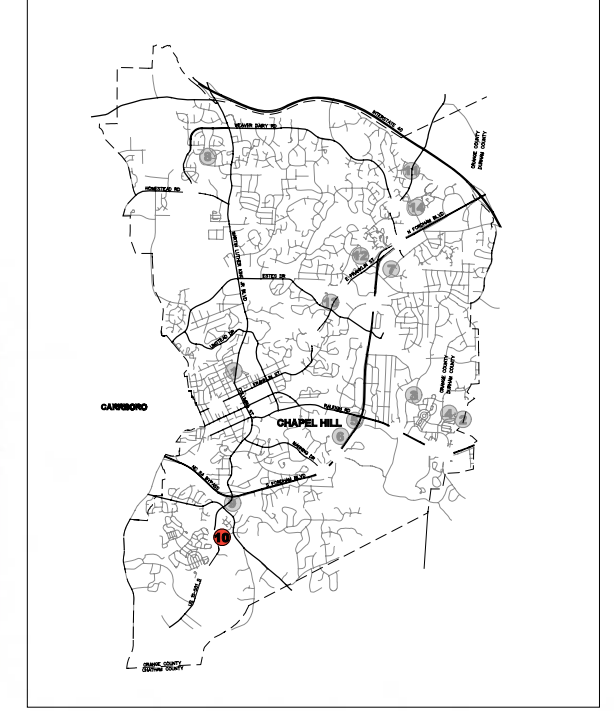
9. US 15-501 South at Bennett Road



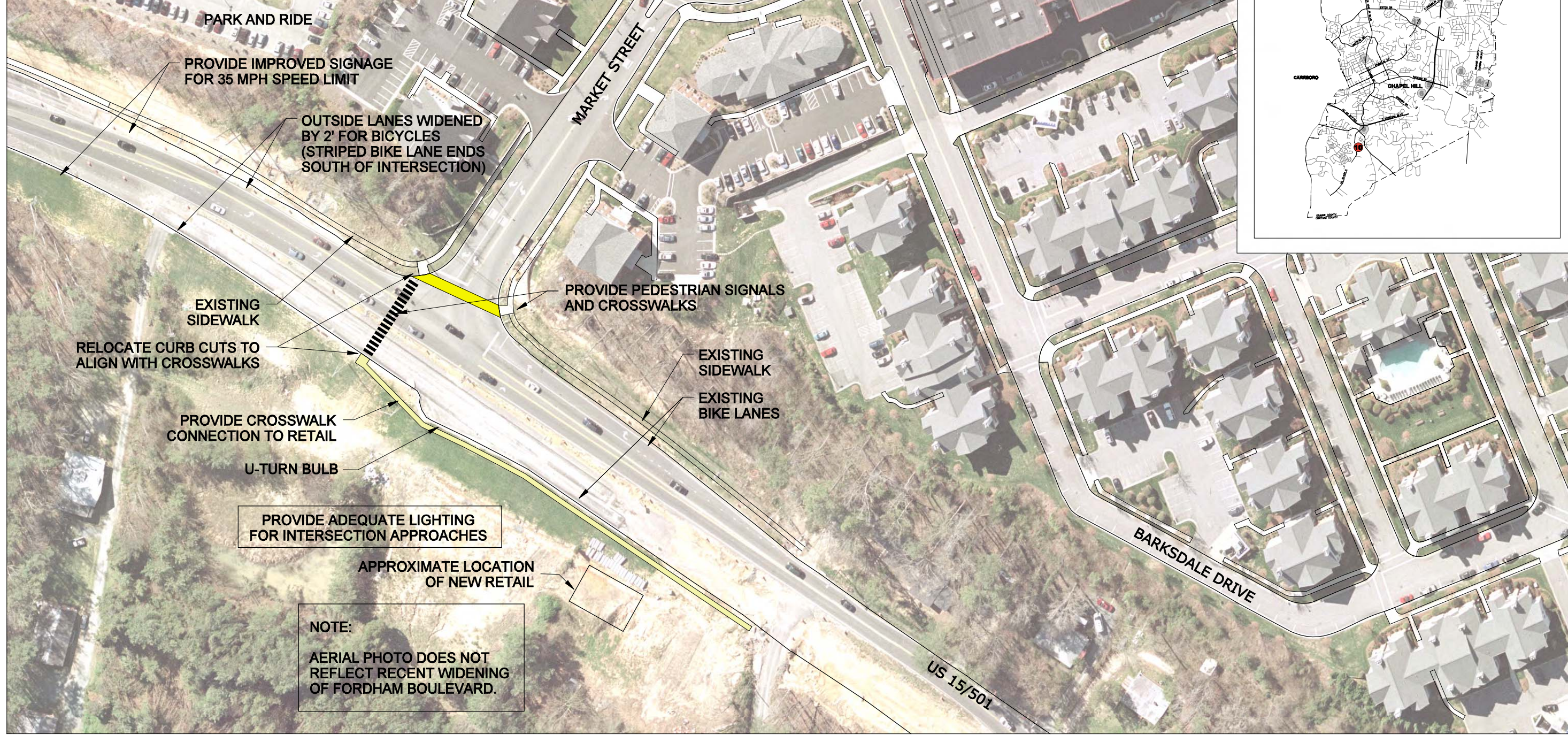
Key

	SIDEWALK		PEDESTRIAN REFUGE
	CROSSWALK		FLASHING WARNING SIGN
	HIGH VISIBILITY CROSSWALK		

Vicinity Map not to scale



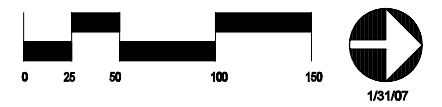
Proposed Improvements



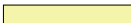




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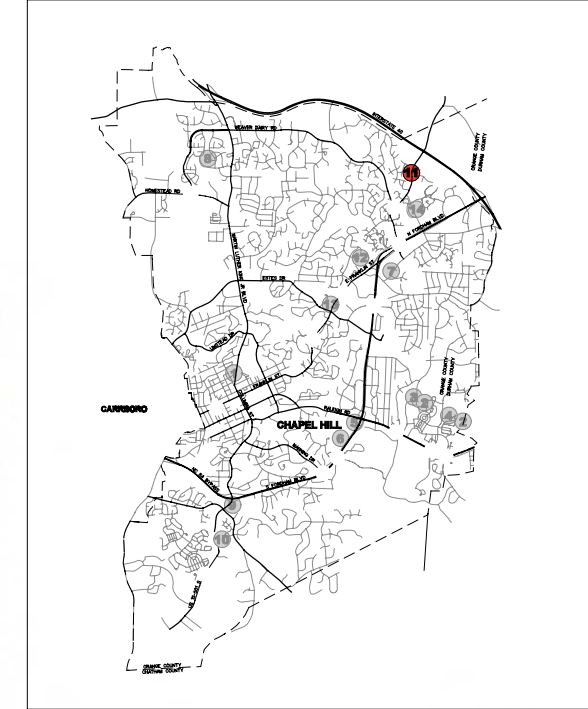
10. US 15-501 South at Market Street



Key

	SIDEWALK		PEDESTRIAN REFUGE
	CROSSWALK		FLASHING WARNING SIGN
	HIGH VISIBILITY CROSSWALK		

Vicinity Map not to scale



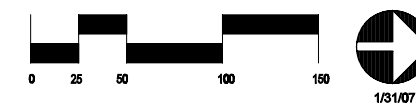
Proposed Improvements



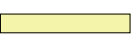




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11. Erwin Road at Weaver Dairy Road

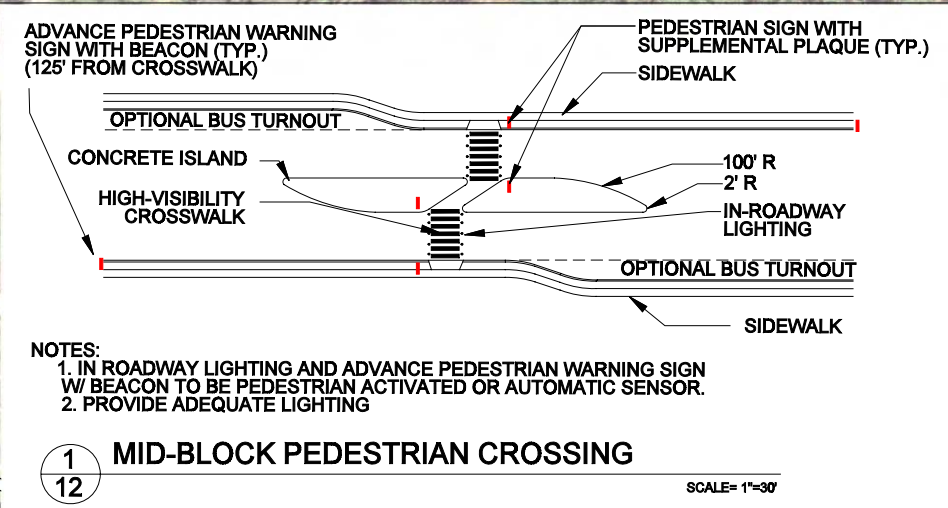


Key

	SIDEWALK		PEDESTRIAN REFUGE
	CROSSWALK		FLASHING WARNING SIGN
	HIGH VISIBILITY CROSSWALK		



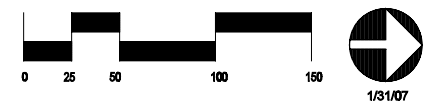
Proposed Improvements



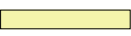

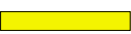


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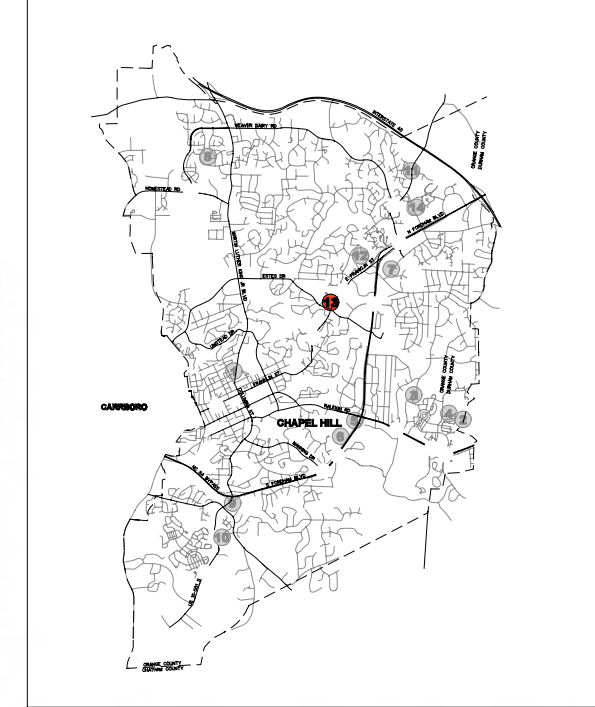
12. East Franklin Street at Couch Street



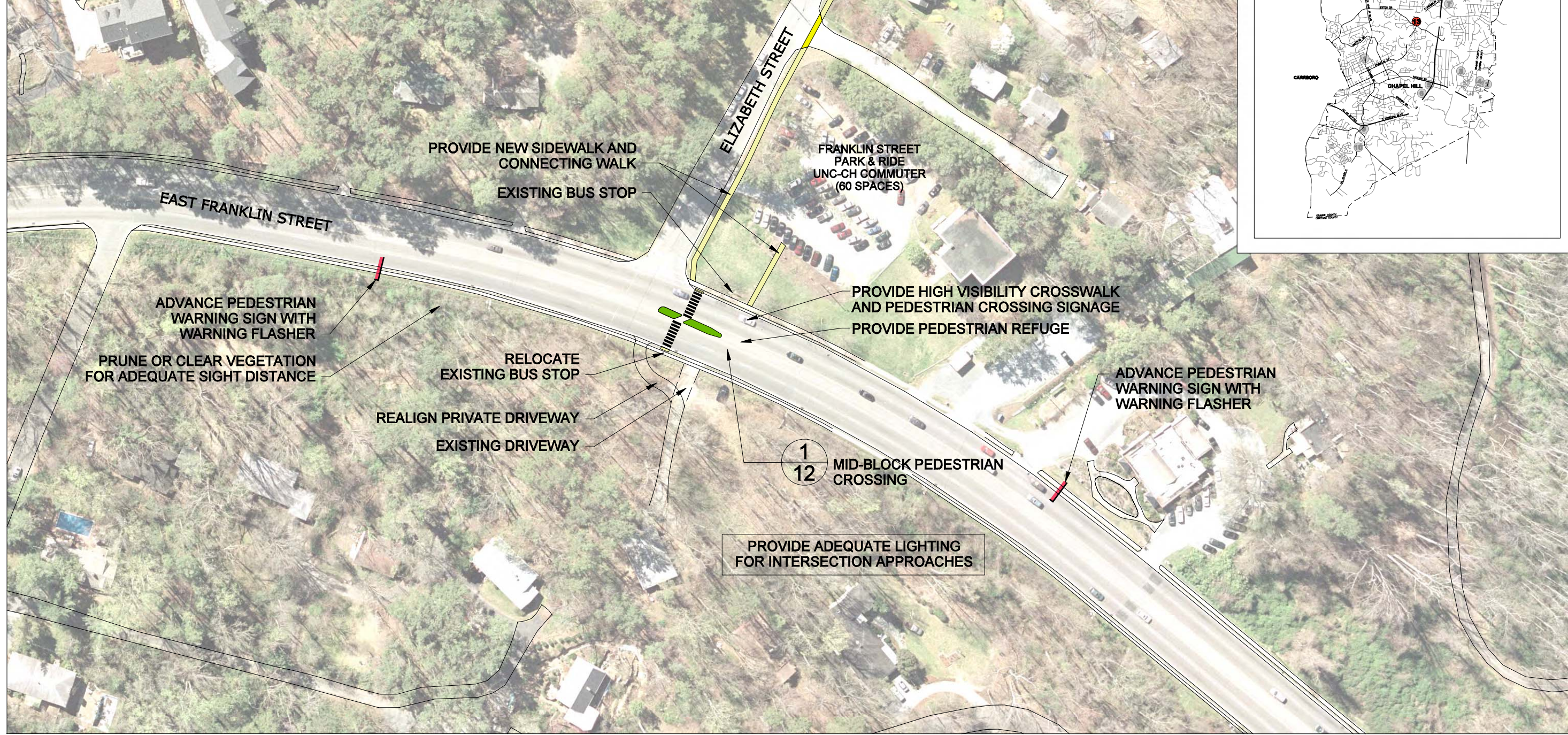
Key

	SIDEWALK		PEDESTRIAN REFUGE
	CROSSWALK		FLASHING WARNING SIGN
	HIGH VISIBILITY CROSSWALK		

Vicinity Map not to scale

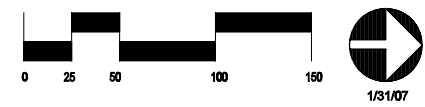


Proposed Improvements

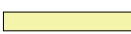

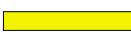




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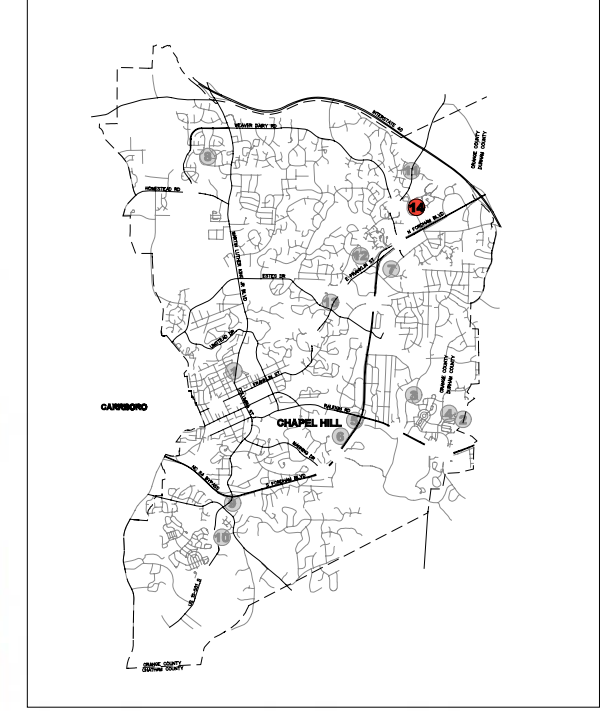
13. East Franklin Street at Elizabeth Street



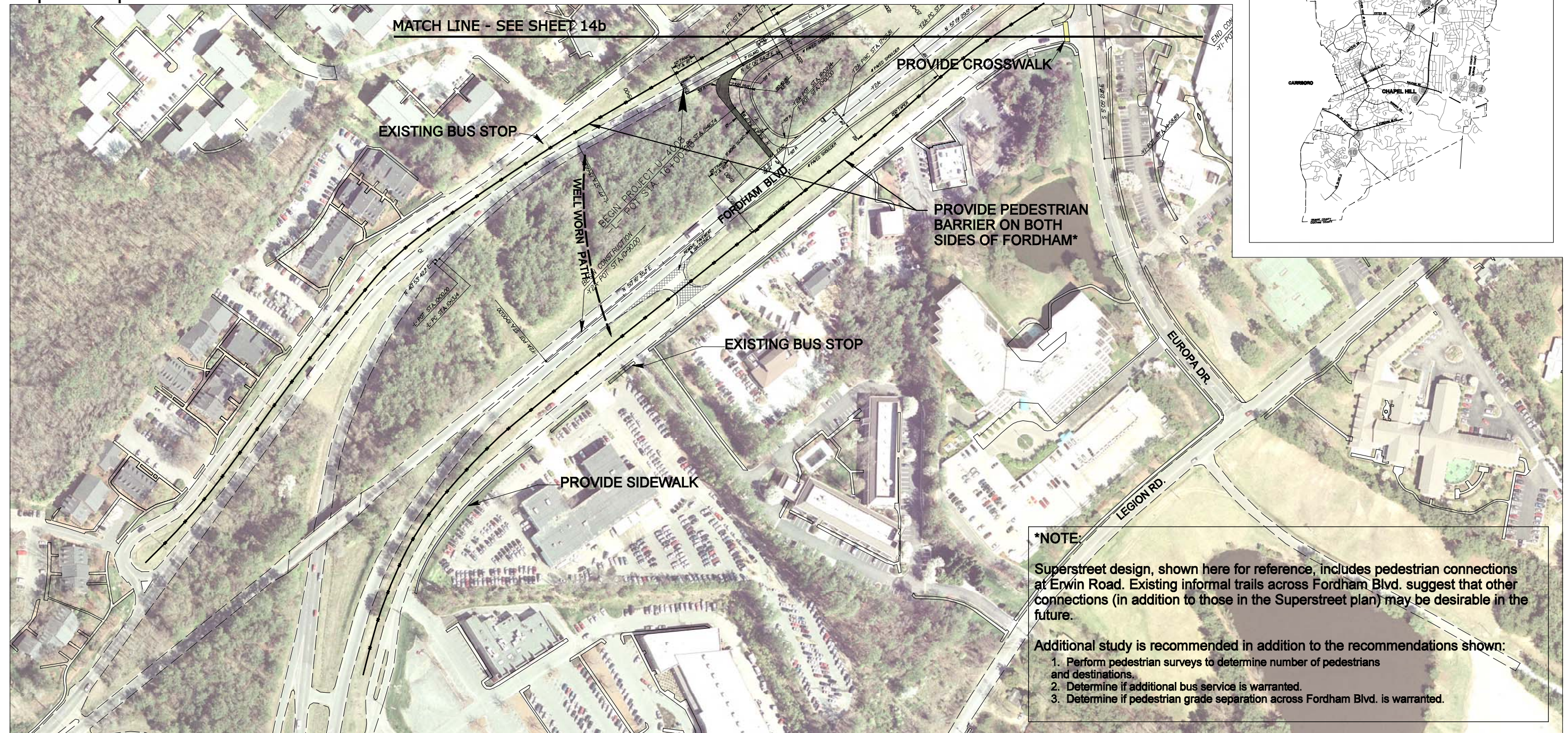
Key

	SIDEWALK		PEDESTRIAN REFUGE
	CROSSWALK		FLASHING WARNING SIGN
	HIGH VISIBILITY CROSSWALK		

Vicinity Map not to scale



Proposed Improvements








***NOTE:**
 Superstreet design, shown here for reference, includes pedestrian connections at Erwin Road. Existing informal trails across Fordham Blvd. suggest that other connections (in addition to those in the Superstreet plan) may be desirable in the future.
 Additional study is recommended in addition to the recommendations shown:
 1. Perform pedestrian surveys to determine number of pedestrians and destinations.
 2. Determine if additional bus service is warranted.
 3. Determine if pedestrian grade separation across Fordham Blvd. is warranted.

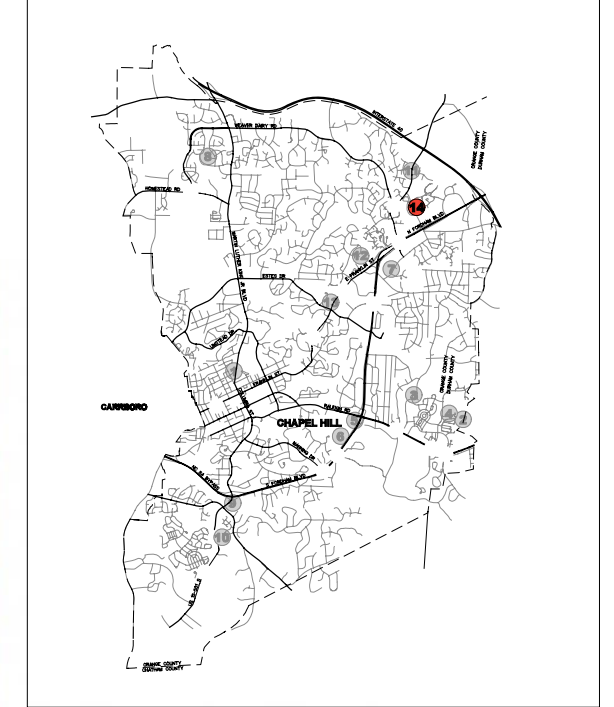
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14a. Fordham Boulevard at Erwin Road ("Superstreet" Intersection)

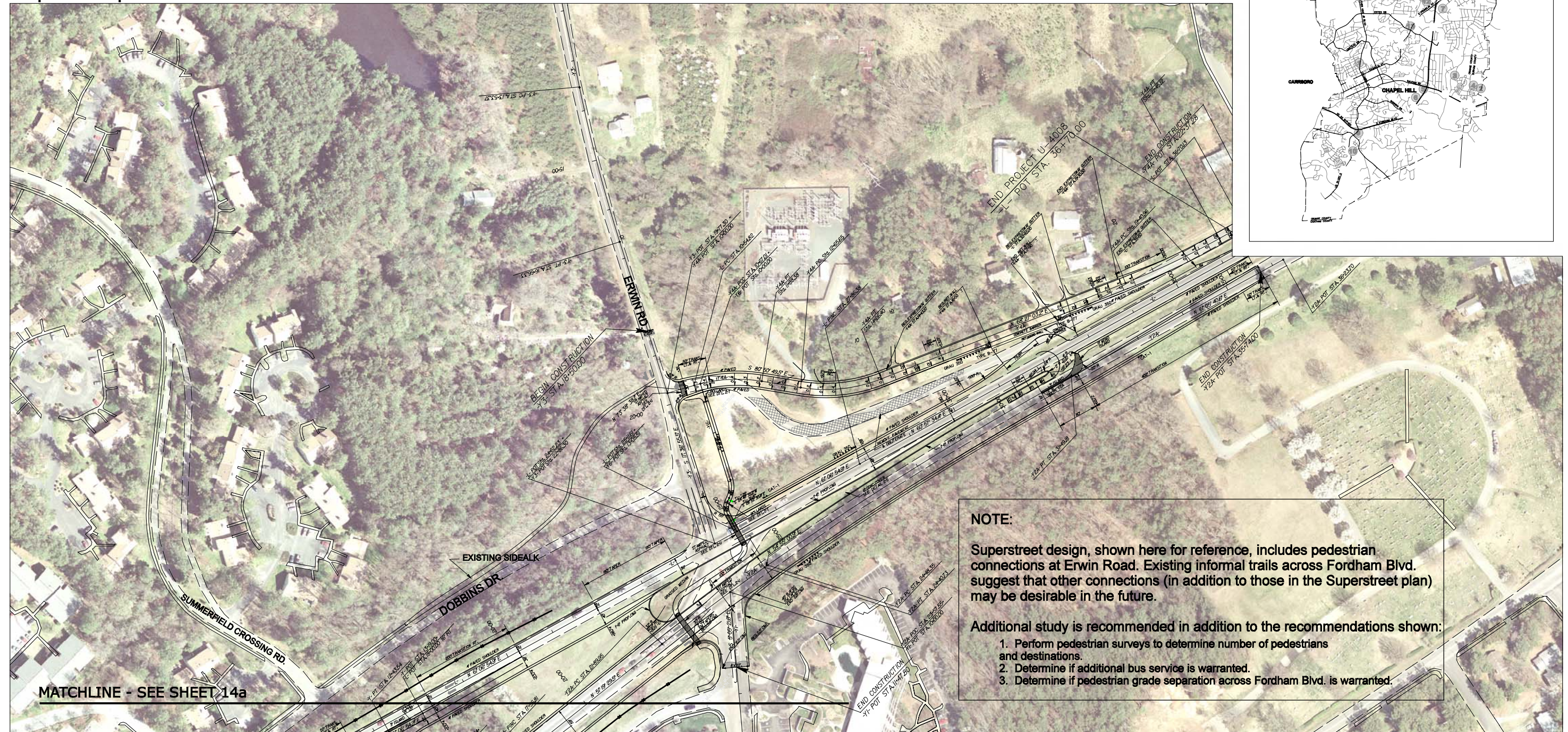
Key

	SIDEWALK		PEDESTRIAN REFUGE
	CROSSWALK		FLASHING WARNING SIGN
	HIGH VISIBILITY CROSSWALK		

Vicinity Map not to scale



Proposed Improvements



NOTE:

Superstreet design, shown here for reference, includes pedestrian connections at Erwin Road. Existing informal trails across Fordham Blvd. suggest that other connections (in addition to those in the Superstreet plan) may be desirable in the future.

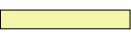

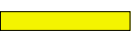


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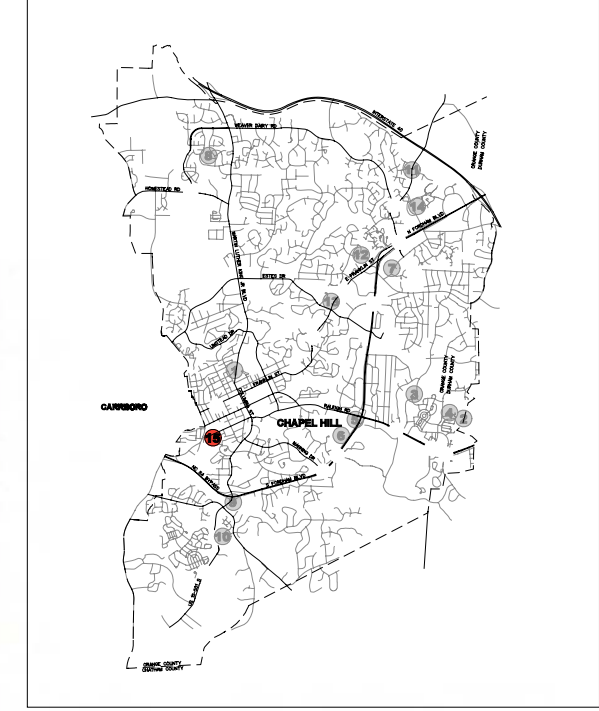
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14b. Fordham Boulevard at Erwin Road ("Superstreet" Intersection)

Key

	SIDEWALK		PEDESTRIAN REFUGE
	CROSSWALK		FLASHING WARNING SIGN
	HIGH VISIBILITY CROSSWALK		

Vicinity Map not to scale



Proposed Improvements



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15. NC 54 Bypass East of Greensboro Street

