



**STEWART**  
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# West Ellerbee Creek Multi-Use Path Connector

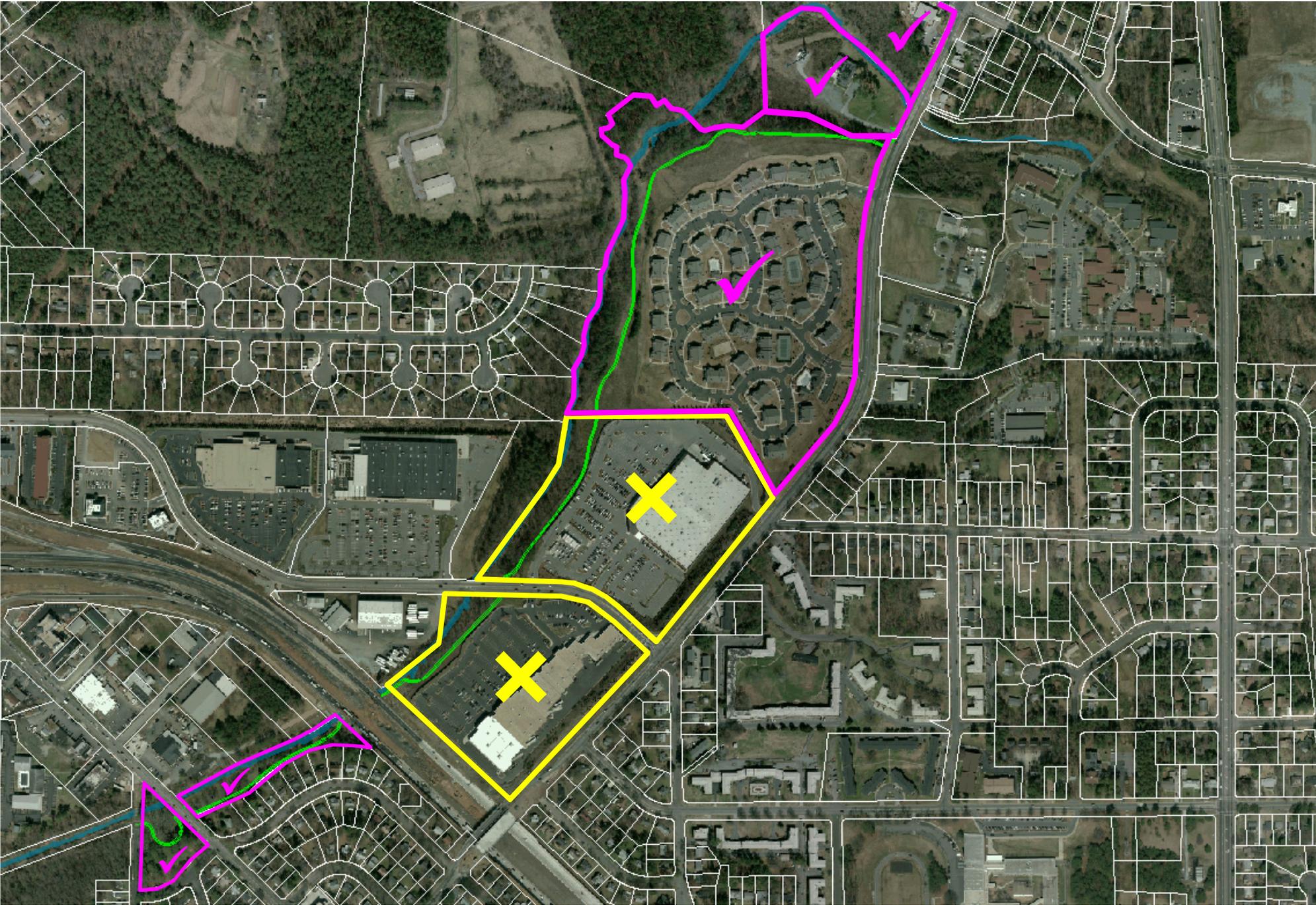
February 2014

- Introduction
- Project Status
  - Design Status
  - Existing Easement Status
  - Property Acquisition Status
- Alternative Evaluation
- Closing

- Design Complete
- Durham Site-Plan and review complete and approved
- Water Quality Permits Acquired

# Right of Way Update

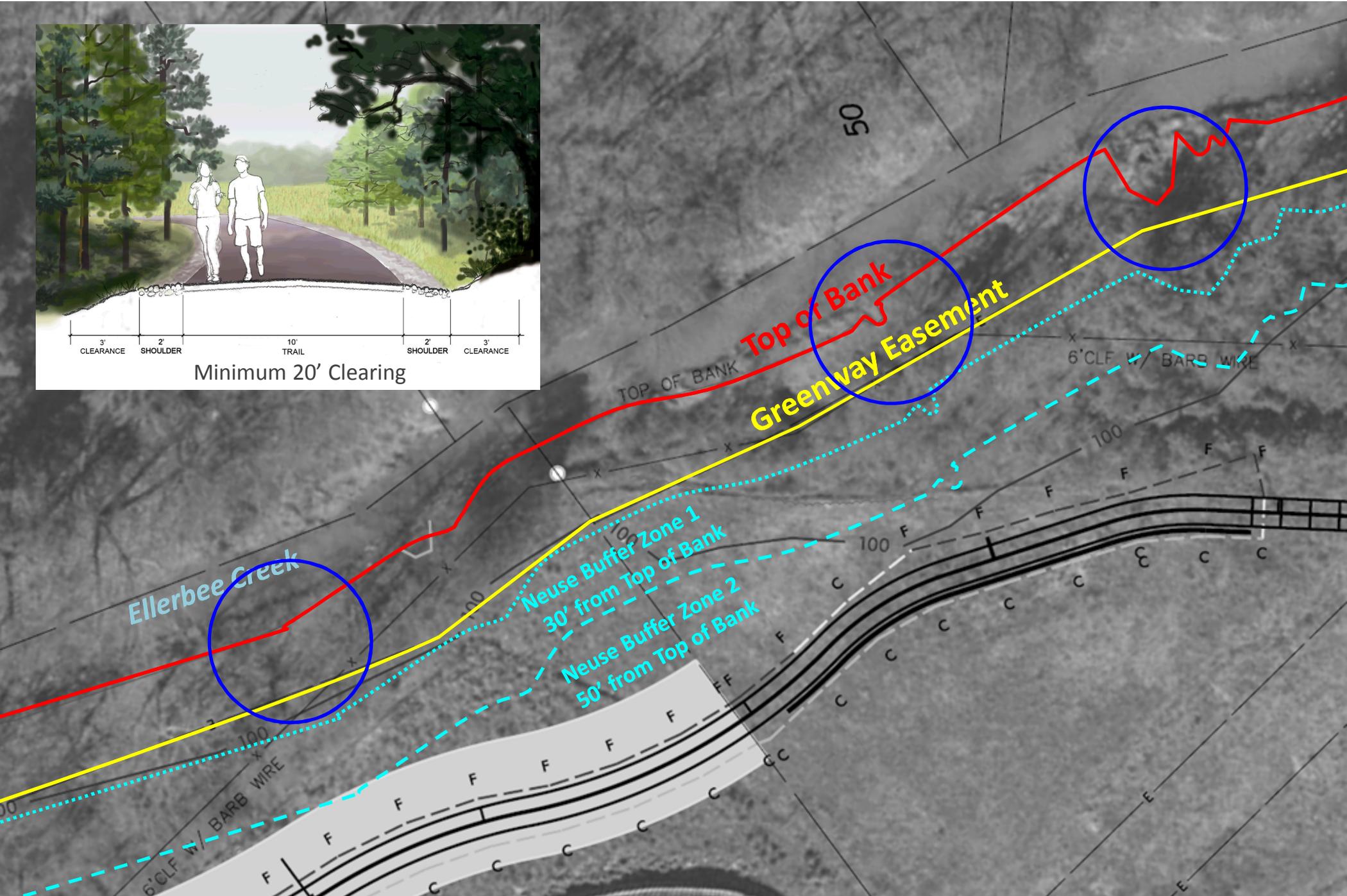
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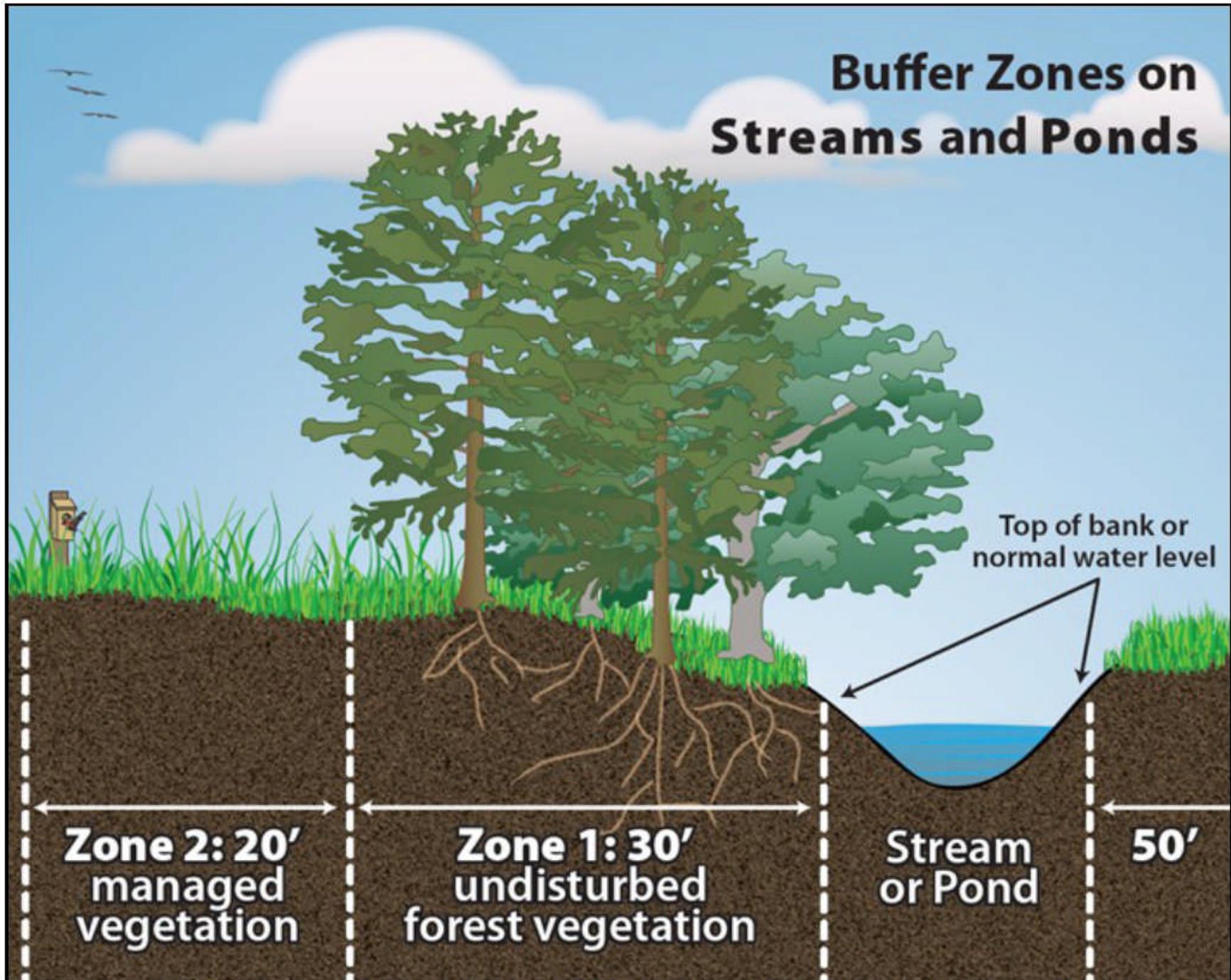




# Use of Existing Easement

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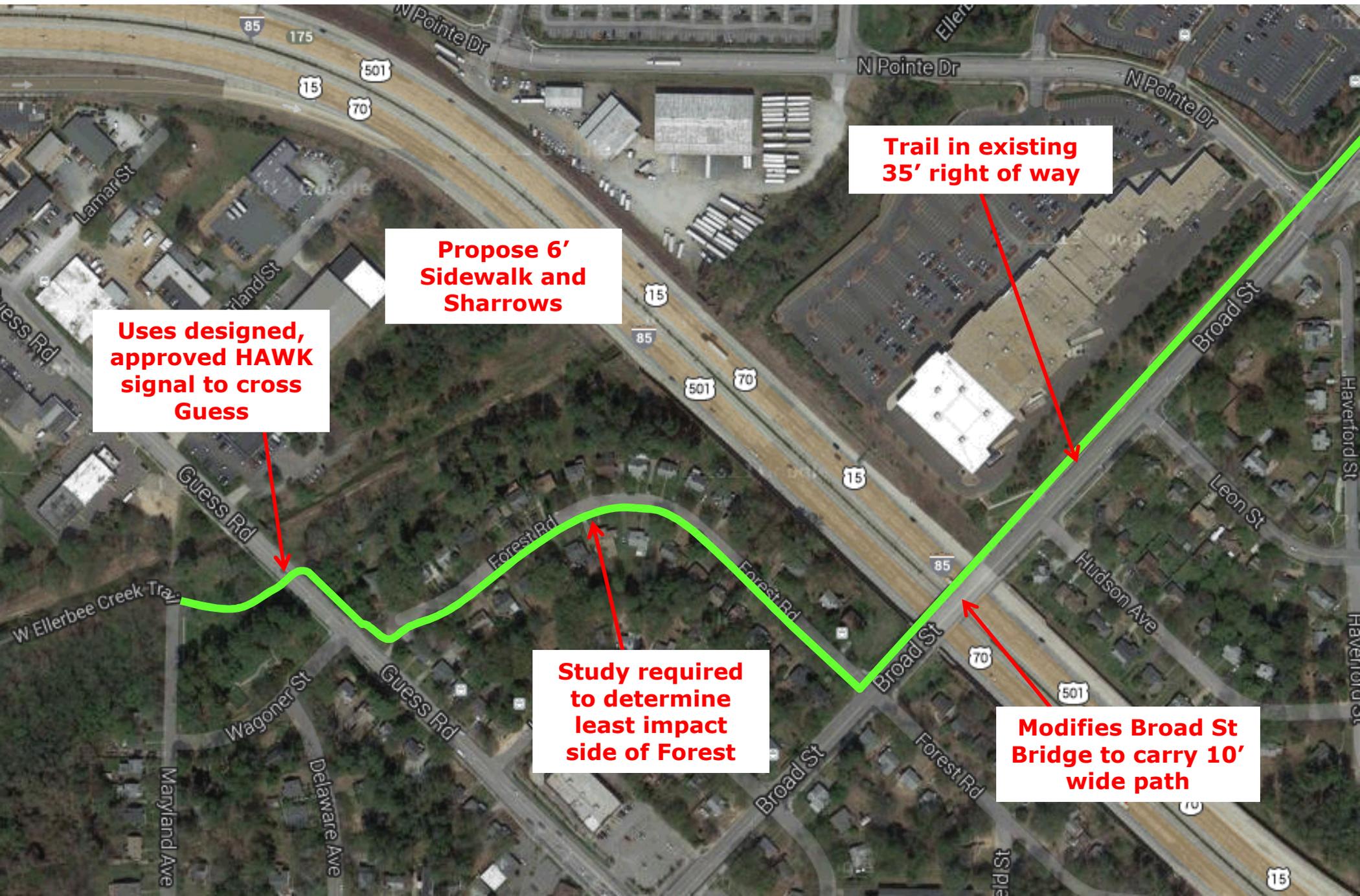




- Alternate - Forest Road to Broad Street Alignment

# Forest Road to Broad Street

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**Trail in existing 35' right of way**

**Propose 6' Sidewalk and Sharrows**

**Uses designed, approved HAWK signal to cross Guess**

**Study required to determine least impact side of Forest**

**Modifies Broad St Bridge to carry 10' wide path**



**OH Utilities**

**Curb can be changed to stand-up curb. Saves 2' on each side**

**On street Parking**



**Mature Street  
Trees**

Propose Improvement w/in  
existing curbs.

- No Property Acquisition
- No Utility relocation
- No tree removal
- May consolidate parking to one side
- Will analyze best typical section

# Crossing of Broad Street Bridge

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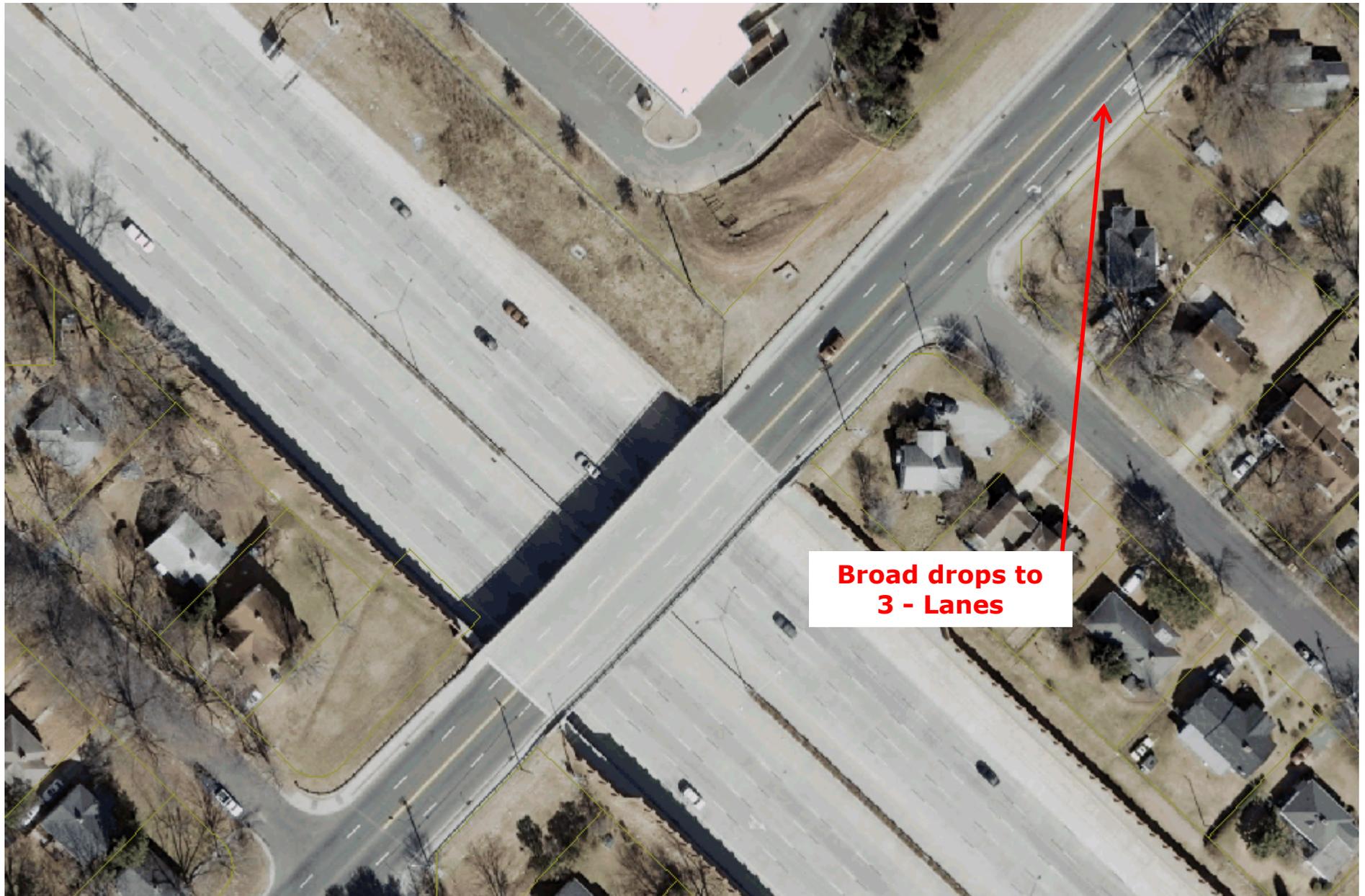


- High pedestrian use observed
- Opportunity to create real bus stop
- Four lanes and easily be reconfigured to three
- Recommend 8-10 wide multi-use path with vertical divider



# Potential for Lane Consolidation

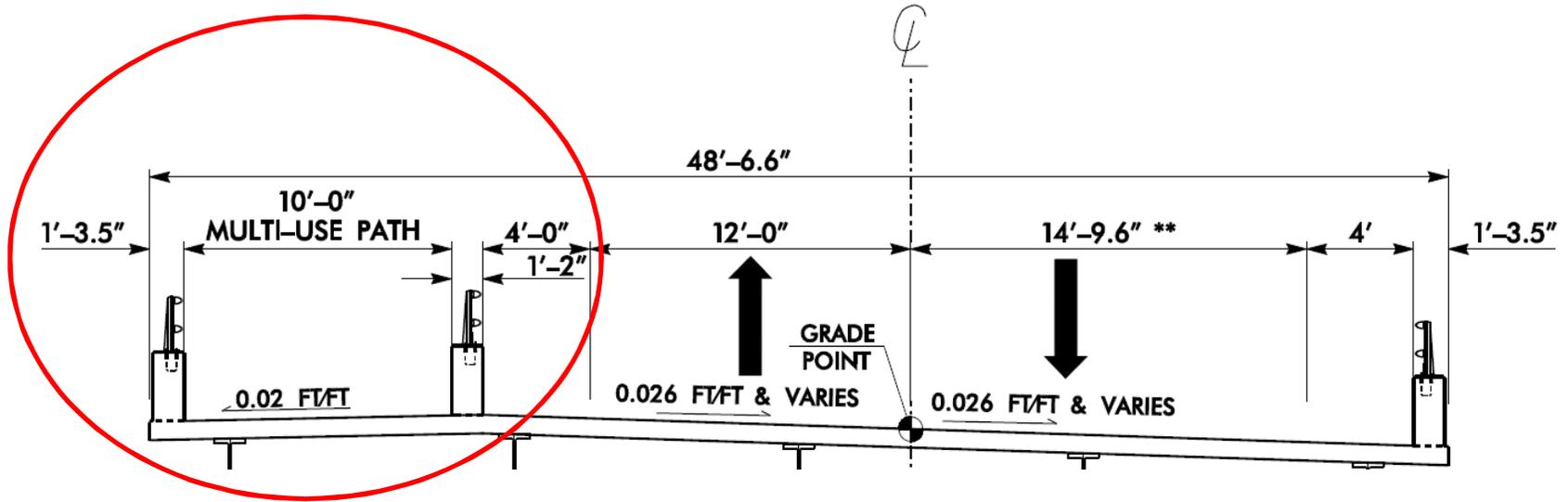
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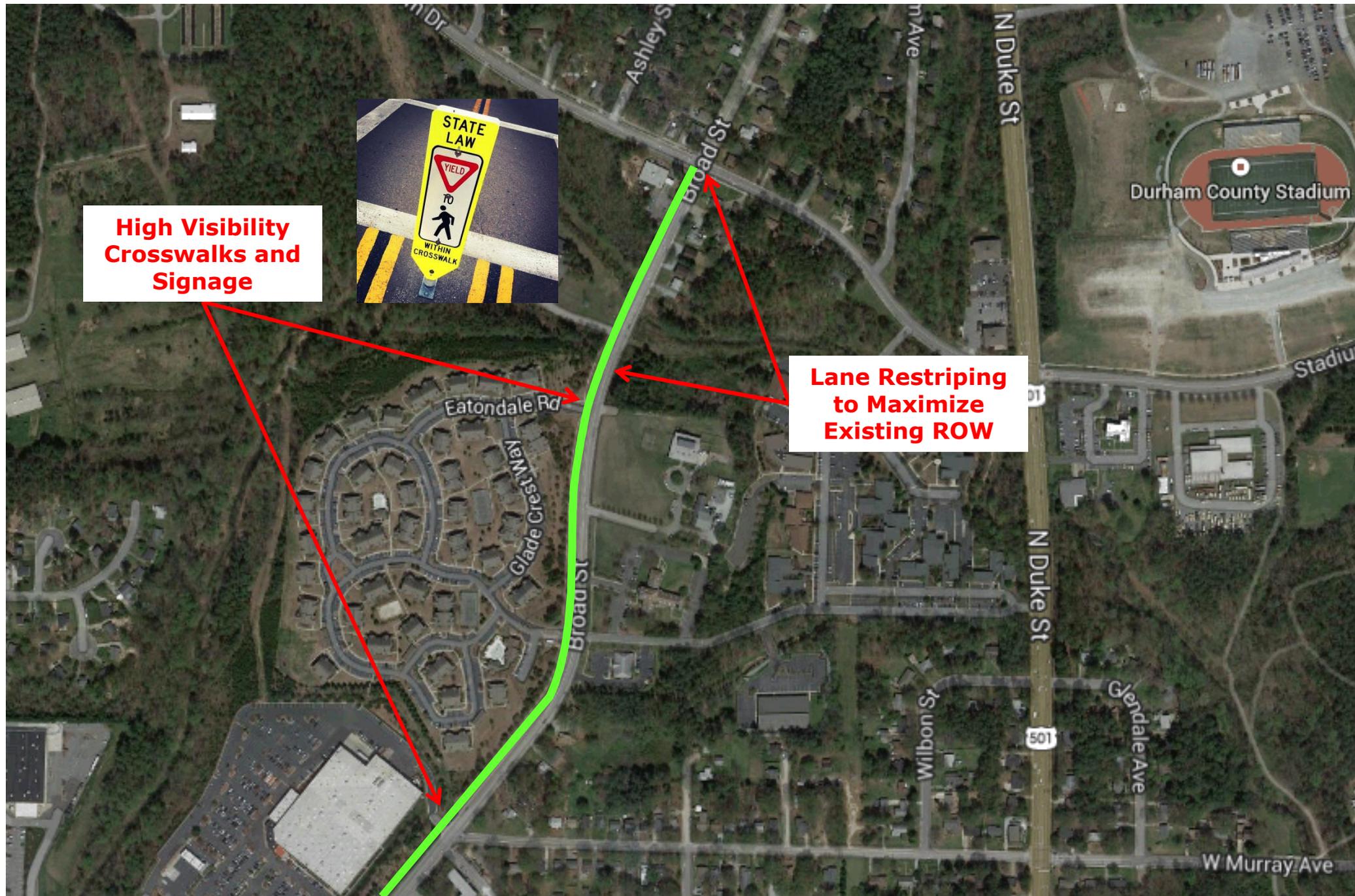


**Broad drops to  
3 - Lanes**

# Example Typical Section

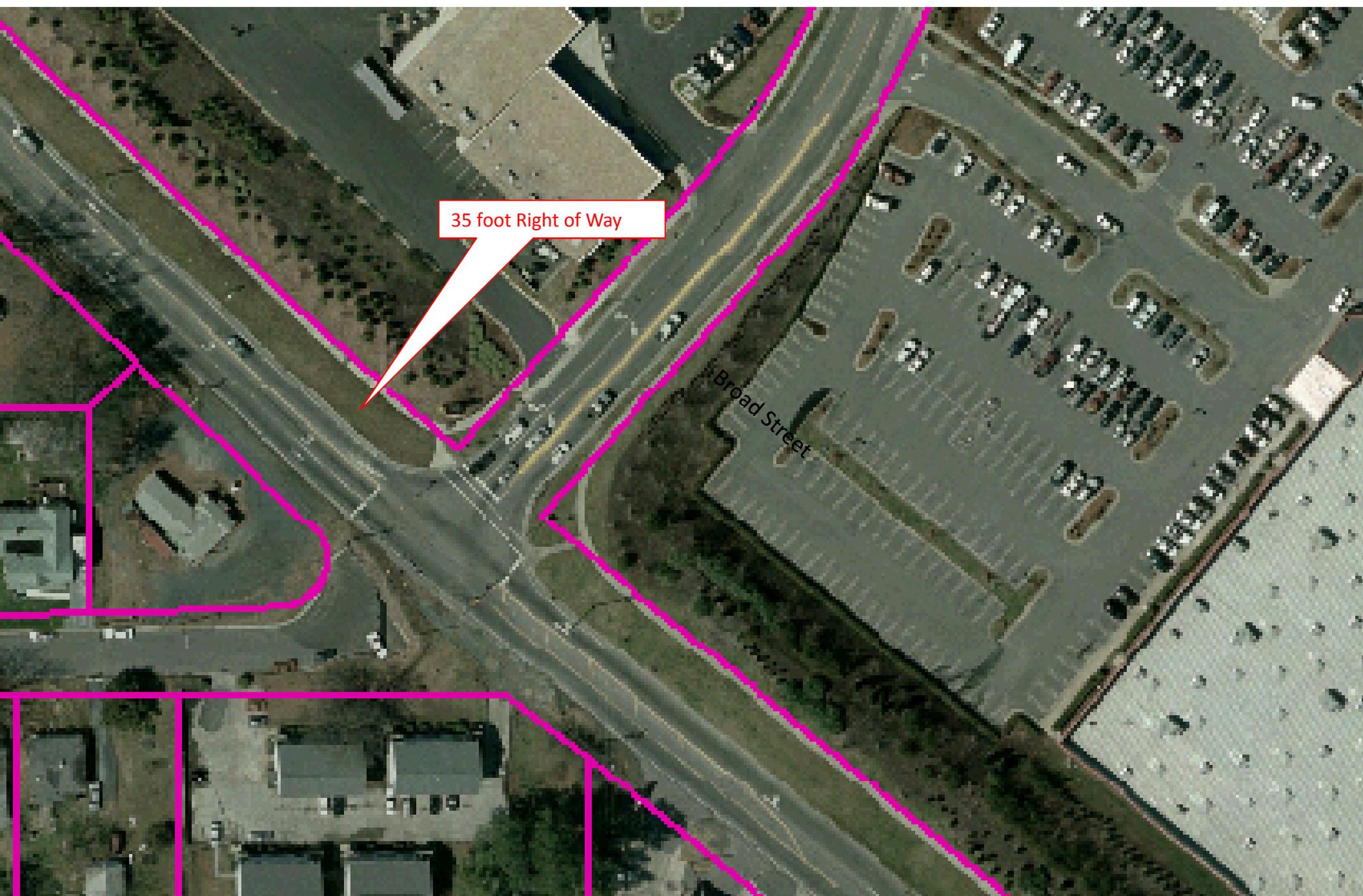
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# Broad Street Right of Way

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35 foot Right of Way

Broad Street

# Broad Street Connector

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# Broad Street Connector

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Creek Alignment	\$1,672,411
Broad St. Alignment	\$1,262,044
Requested CMAQ Funding*	\$1,081,600

\*CMAQ funding requires a 20% match from the City. If construction costs are reduced, CMAQ funding will be reduced and the City match Will be adjusted accordingly.

West Ellerbee Creek-Phase 2 Construction-CIP 13-14 Cost Estimate		CREEK TRAIL AS APPROVED - 15% construction contingency incl.		
<b>CREEK TRAIL AS APPROVED</b>		<b>Construction</b>	Through Park to Guess Rd.	\$ 75,970.00
\$ 1,381,290.00	Construction Total (includes 15% Contingency)		Hawk Signal	\$ 89,500.00
\$ 41,438.70	3% Construction Escalation 2014		From Guess Rd. to I-85 Ped. Culvert	\$ 267,806.00
\$ 42,681.86	3% Construction Escalation 2015		From I-85 Ped Culvert to North Pointe Dr.	\$ 294,341.00
\$ 1,465,410.56	Total Construction estimate		Full Signal	\$ 100,000.00
\$ 132,000.00	Professional Services (includes 10% contingency)		From North Point Dr. to Broad St.	\$ 553,673.00
\$ 75,000.00	Land Acquisition (funded CIP FY 13/14)		<b>Construction Total</b>	<b>\$ 1,381,290.00</b>
\$ 1,672,410.56	Total cost estimate			
\$ (75,000.00)	FY 13/14 CIP Funding	<b>Professional Services</b>	Property acquisition support	\$ 5,000.00
\$ (1,081,600.00)	CMAQ Funding		Additional Services – CD approvals	\$ 5,000.00
\$ 515,810.56			Additional Services – Alternate Route Research	\$ 8,000.00
			NCDOT Certification Submittals and Support	\$ 7,000.00
			Construction Admin and Materials Testing	\$ 95,000.00
			10% Design Contingency	\$ 12,000.00
			<b>Design Total</b>	<b>\$ 132,000.00</b>
			<b>Design and Construction Total</b>	<b>\$ 1,513,290.00</b>
NOTE:				
1. The land acquisition estimate is a strong unknown. The land owners have made it clear that they are opposed to selling the land.				
2. \$1,081,600 of the funding will come from CMAQ, which requires a 20% match for construction by the City. That means the requirements for materials, labor, testing and oversight will be much more stringent than a typical City project. This will drive up the cost and will add more time to the duration of the project.				
CMAQ-Congestion Management Air Quality				

West Ellerbee Creek-Phase 2 Construction-CIP 13-14 Cost Estimate				BROAD ST. ALIGNMENT ROUTE - 15% construction contingency incl.		
<b>BROAD ST. ALIGNMENT ROUTE</b>				<b>Construction</b>	Through Park to Guess Rd.	\$ 75,697.00
\$ 940,563.00	Construction Total (includes 15% Contingency)				Hawk Signal	\$ 89,500.00
\$ 28,217.00	3% Construction Escalation 2014				From Guess Rd. to Forest Rd	\$ 116,366.00
\$ 29,064.00	3% Construction Escalation 2015				From Forest Rd. to Broad St.	\$ 115,000.00
\$ 997,844.00	Total Construction estimate				Pedestrian upgrade at North Pointe Dr.	\$ 10,000.00
\$ 189,200.00	Professional Services (includes 10% contingency)				Widen Sidewalk Along Broad	\$ 200,000.00
\$ 75,000.00	Land Acquisition (funded CIP FY 13/14)				Streetscape Additions Along Broad	\$ 150,000.00
\$ 1,262,044.00	Total cost estimate				<b>Construction Total</b>	<b>\$ 756,563.00</b>
\$ (75,000.00)	FY 13/14 CIP Funding					
\$ (850,000.00)	CMAQ Funding would be lower due to lower construction costs.			<b>Professional Services</b>	Redesign, Survey, Geotech, Platting, Public Involvement, Utility Coordination	\$ 80,000.00
\$ 337,044.00					Construction Admin and Materials Testing	\$ 85,000.00
					NCDOT Certification Submittals and Support	\$ 7,000.00
					10% Design Contingency	\$ 17,200.00
					<b>Design Total</b>	<b>\$ 189,200.00</b>
					<b>Design and Construction Total</b>	<b>\$ 940,563.00</b>
NOTE:						
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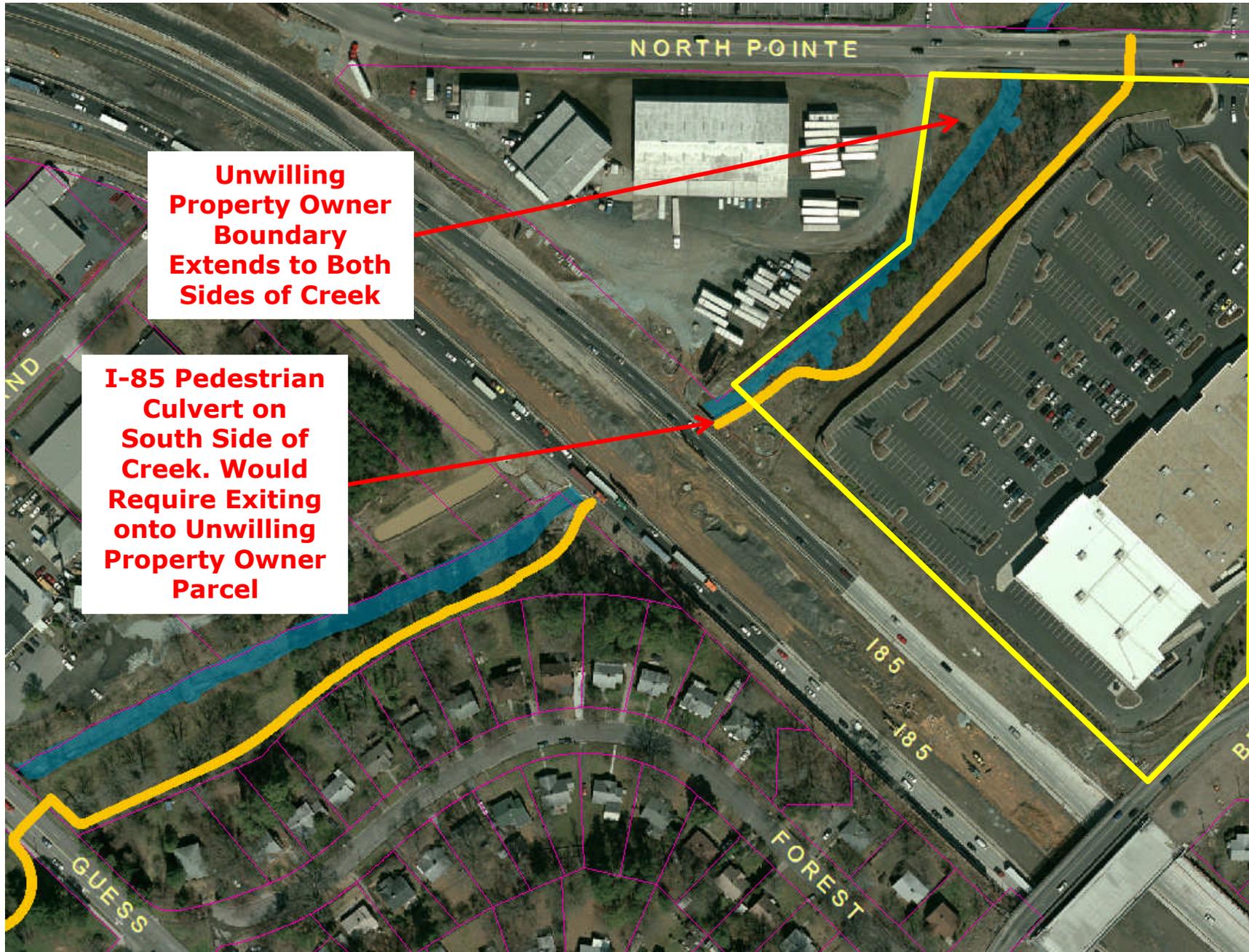
- Next steps:
  - Decision making point of proceeding with existing trail alignment and acquisition (possibly condemnation) or pursue alternate trail alignment

- END OF SLIDE PRESENTATION
  
- The following Slides are back for alternative route investigations

- Option 1 - Opposite Side of Creek
- Option 2 - Behind Noise Wall, Behind Homes on Forest Road
- Option 3 - Along North Side of I-85 to Broad Street

# Option 1 - Alignment on Opposite Side of Creek

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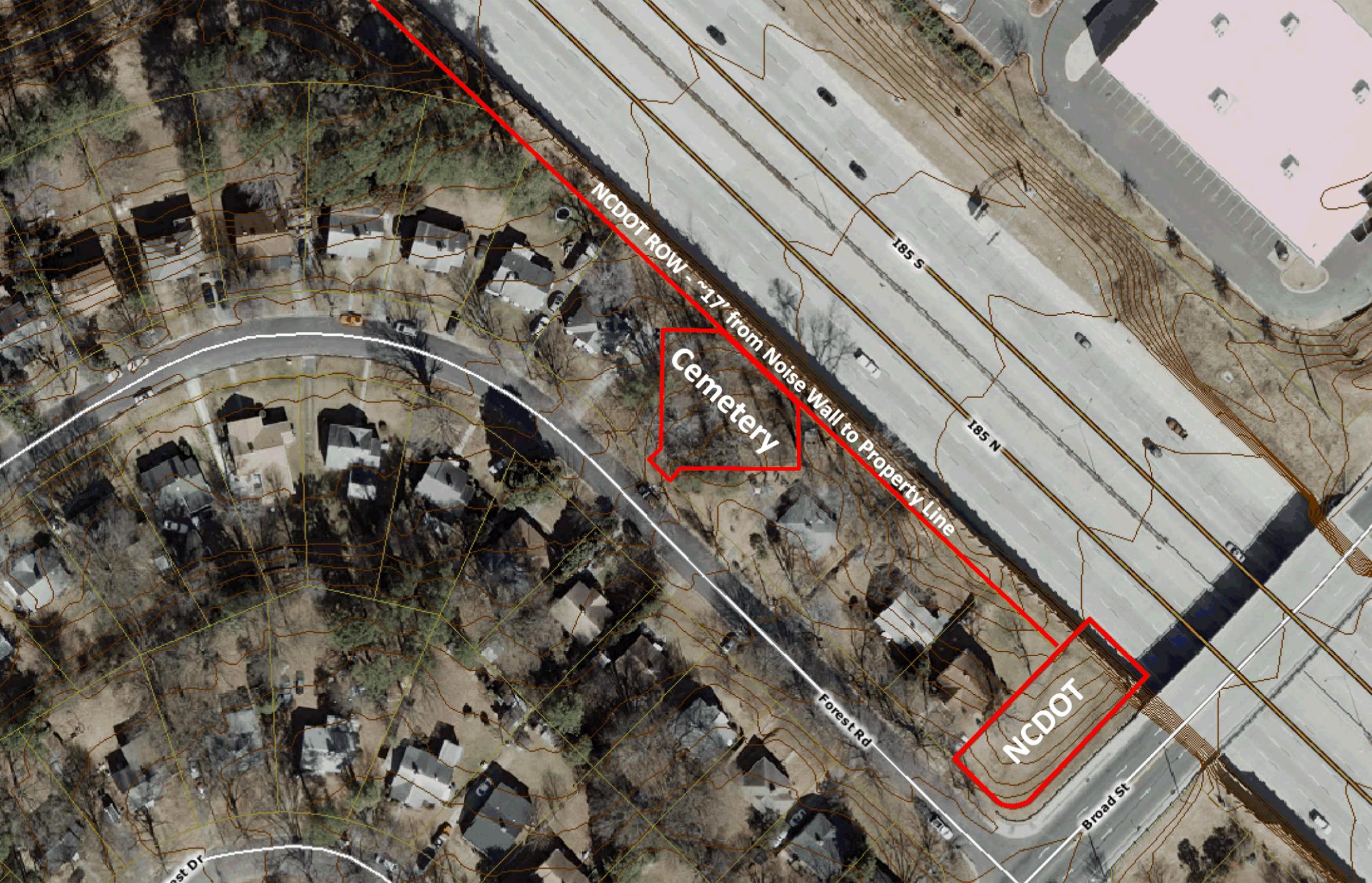
**Unwilling  
Property Owner  
Boundary  
Extends to Both  
Sides of Creek**

**I-85 Pedestrian  
Culvert on  
South Side of  
Creek. Would  
Require Exiting  
onto Unwilling  
Property Owner  
Parcel**

- ~~Option 1 - Opposite Side of Creek~~
- Option 2 - Behind Noise Wall, Behind Homes on Forest Road
- Option 3 - Along North Side of I-85 to Broad Street
- Option 4 - Along Forest Road to Broad Street

# Option 2 - Behind Noise Wall

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NCDOT ROW - ~17' from Noise Wall to Property Line

Cemetery

NCDOT

Forest Rd

Broad St

185 S

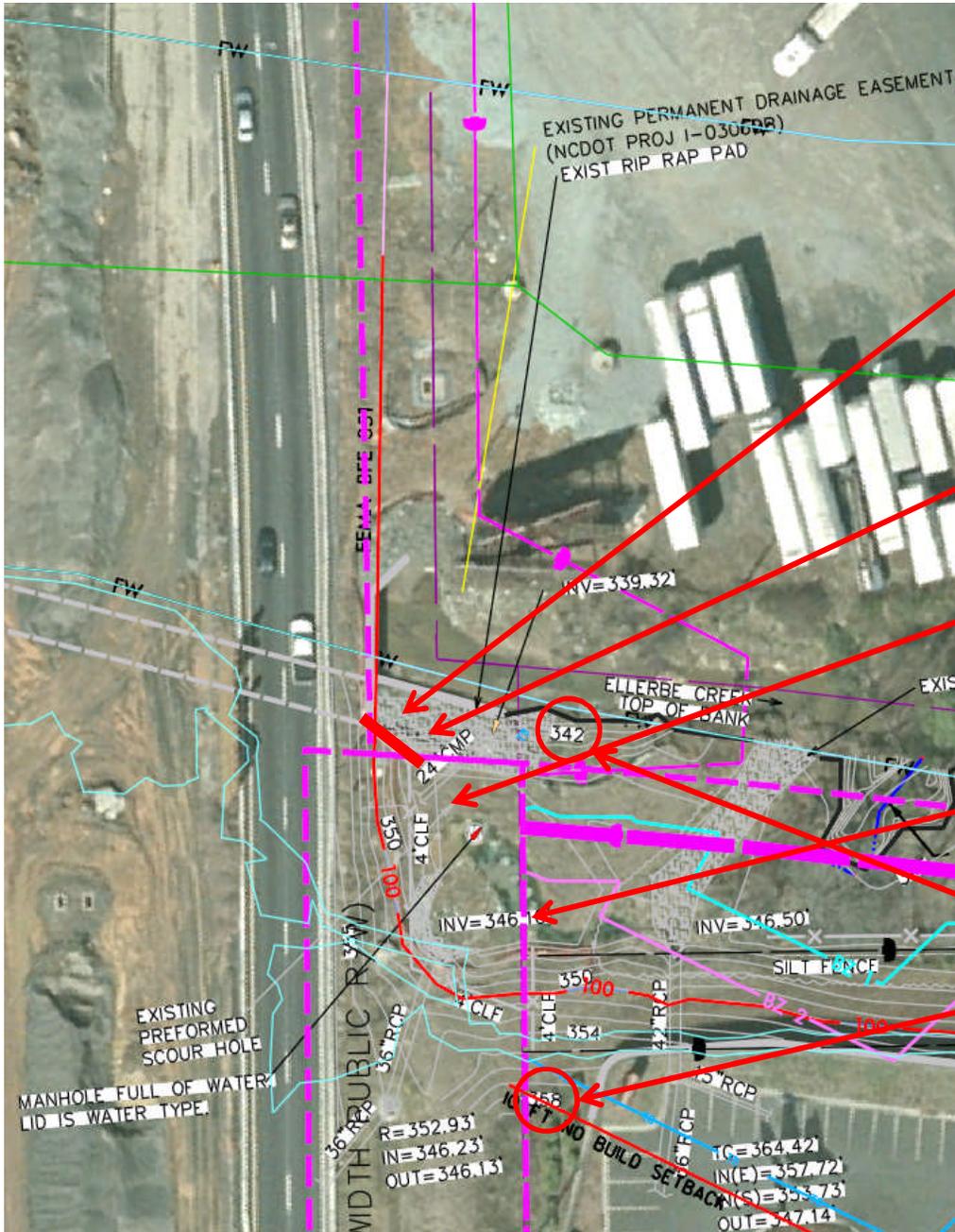
185 N

est Dr

- ~~• Option 1 - Opposite Side of Creek~~
- ~~• Option 2 - Behind Noise Wall, Behind Homes on Forest Road~~
- Option 3 - Along North Side of I-85 to Broad Street
- Option 4 - Along Forest Road to Broad Street

# Option 3 - Northern Approach to I-85 Pedestrian Culvert

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Entrance to Pedestrian Culvert

Wingwall

NCDOT Scour Hole – Must maintain function of this drainage device

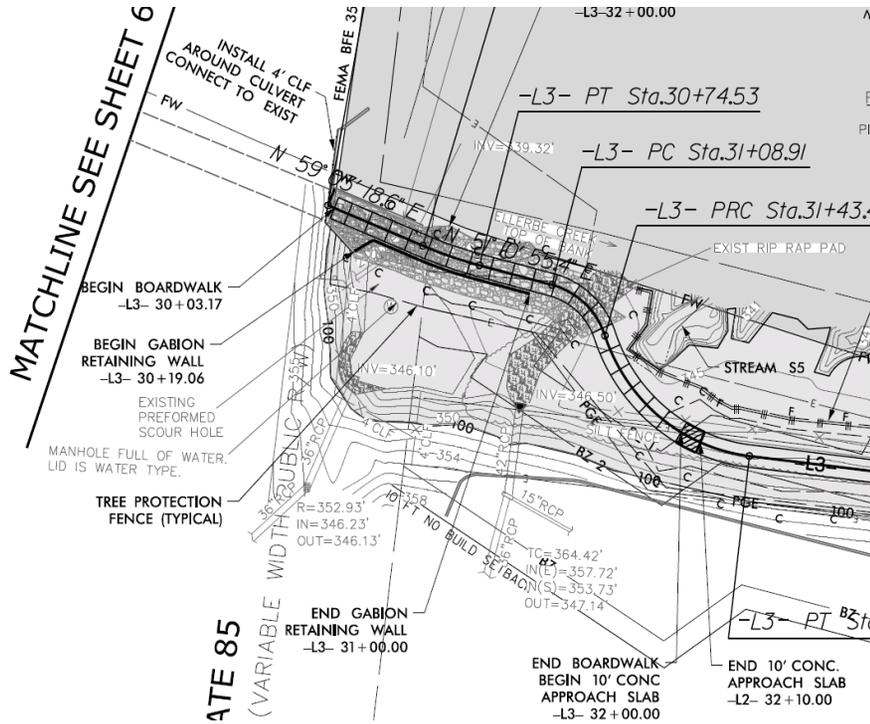
Property Line / NCDOT ROW

16' elevation change

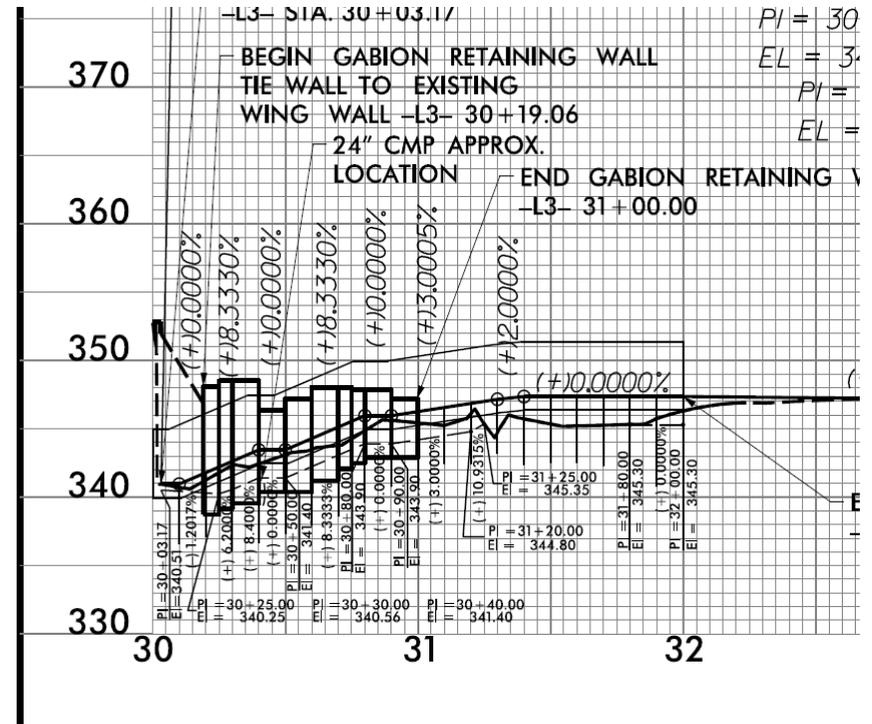
# Option 3 - Northern Approach to I-85 Pedestrian Culvert

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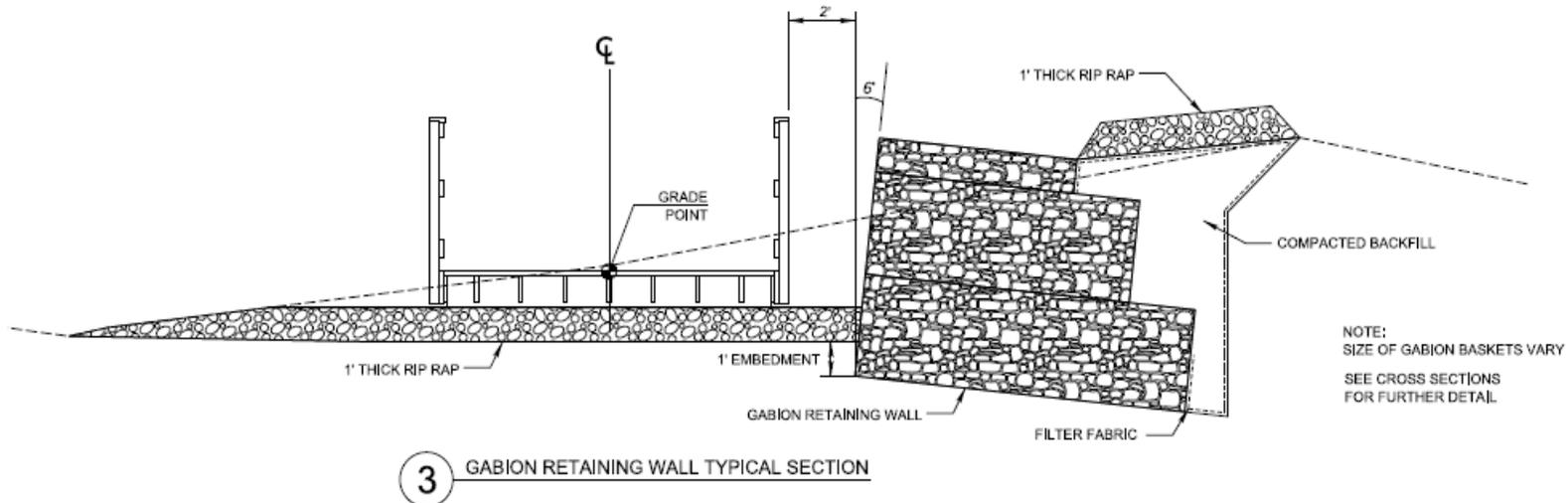




Plan View – Note gabion wall extends beyond NCDOT ROW



Profile – Note steep grade is unavoidable given drainage constraints.



Gabion Wall Detail – Wall required to maintain drainage of NCDOT I-85 scour hole.

# Northern Approach to I-85 Pedestrian Culvert

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**No sound barrier**

**10' elevation change  
Over 18' - 55%**