

# Appendix F-2: Proposed Refinements Historic Architecture Technical Report

## Durham-Orange Light Rail Transit Project



*Connecting all points of the Triangle*

Report Prepared by New South Associates, Inc.  
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Ellen Turco – Historian and Co-Author  
Scott Morris – Historian and Co-Author

Reviewed by HDR, Inc.  
Josh Fletcher, RPA –  
Cultural Resources Specialist

**June 2018**



## Supplemental Environmental Assessment Architectural Resources Technical Report

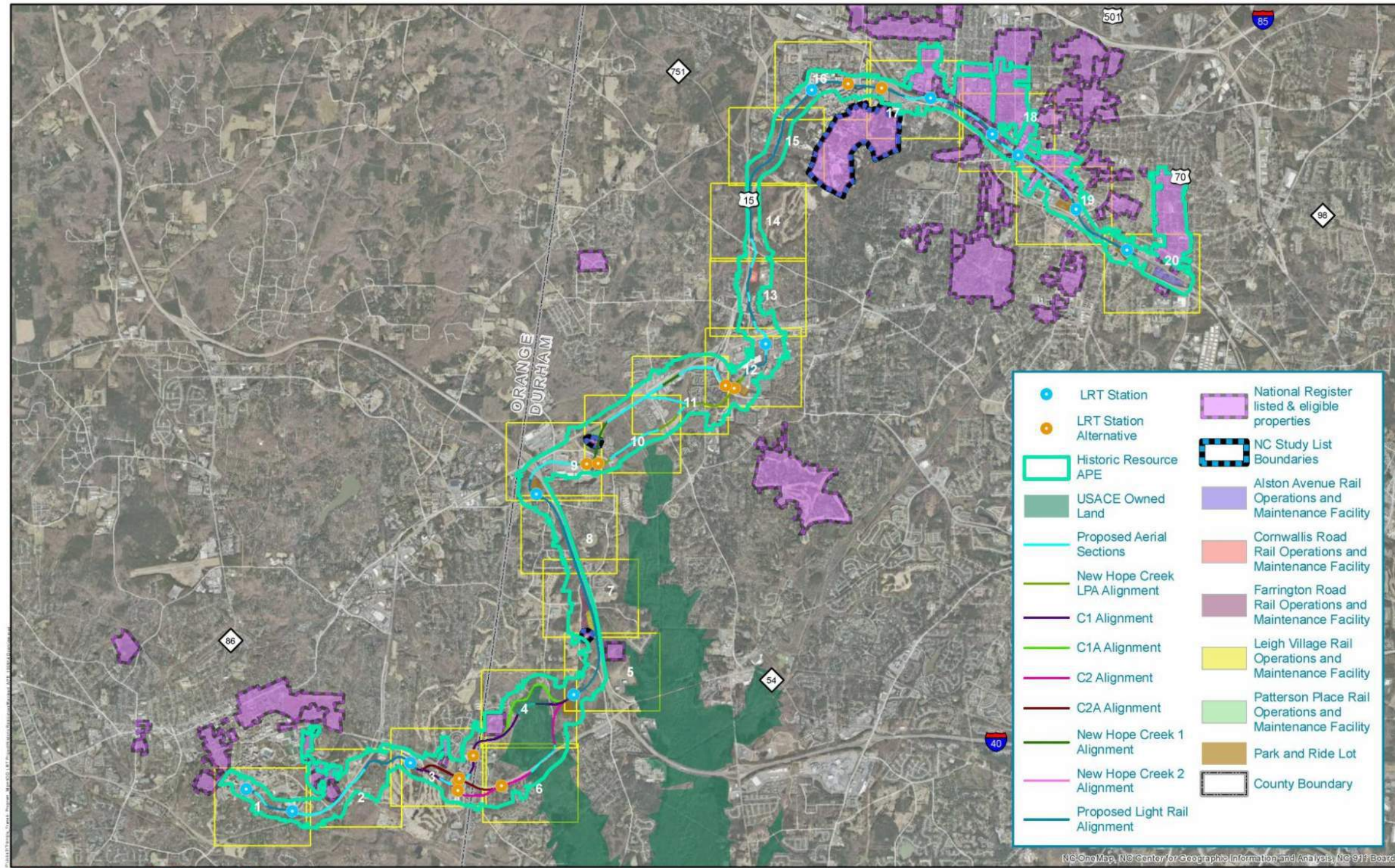
### Attachment F-2c: Map of Previously Identified NRHP-Eligible Resources in the Revised APE

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Figure 1: Historic Resources APE - Overview

Common sections of the light rail alignment are referred to as the “Proposed Light Rail Alignment.”



Historic Resources APE Proposed Expansion  
DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT

Draft  
October 2014

00000 Feet

NORTH

NC One Map, NC Center for Geographic Information and Analysis, NC 911 Board





**H.G. Baity House NR-eligible boundary (OR2772)**

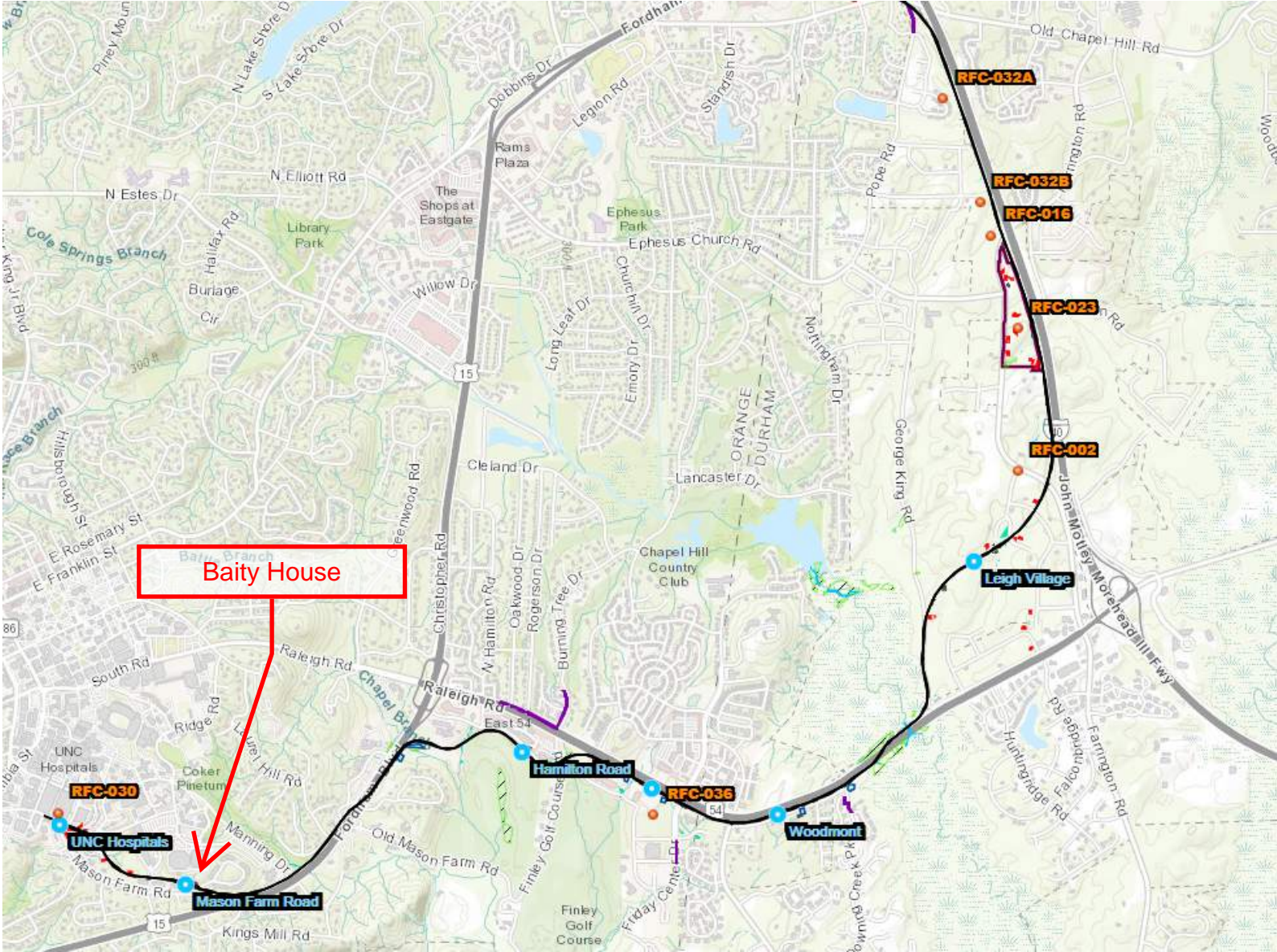
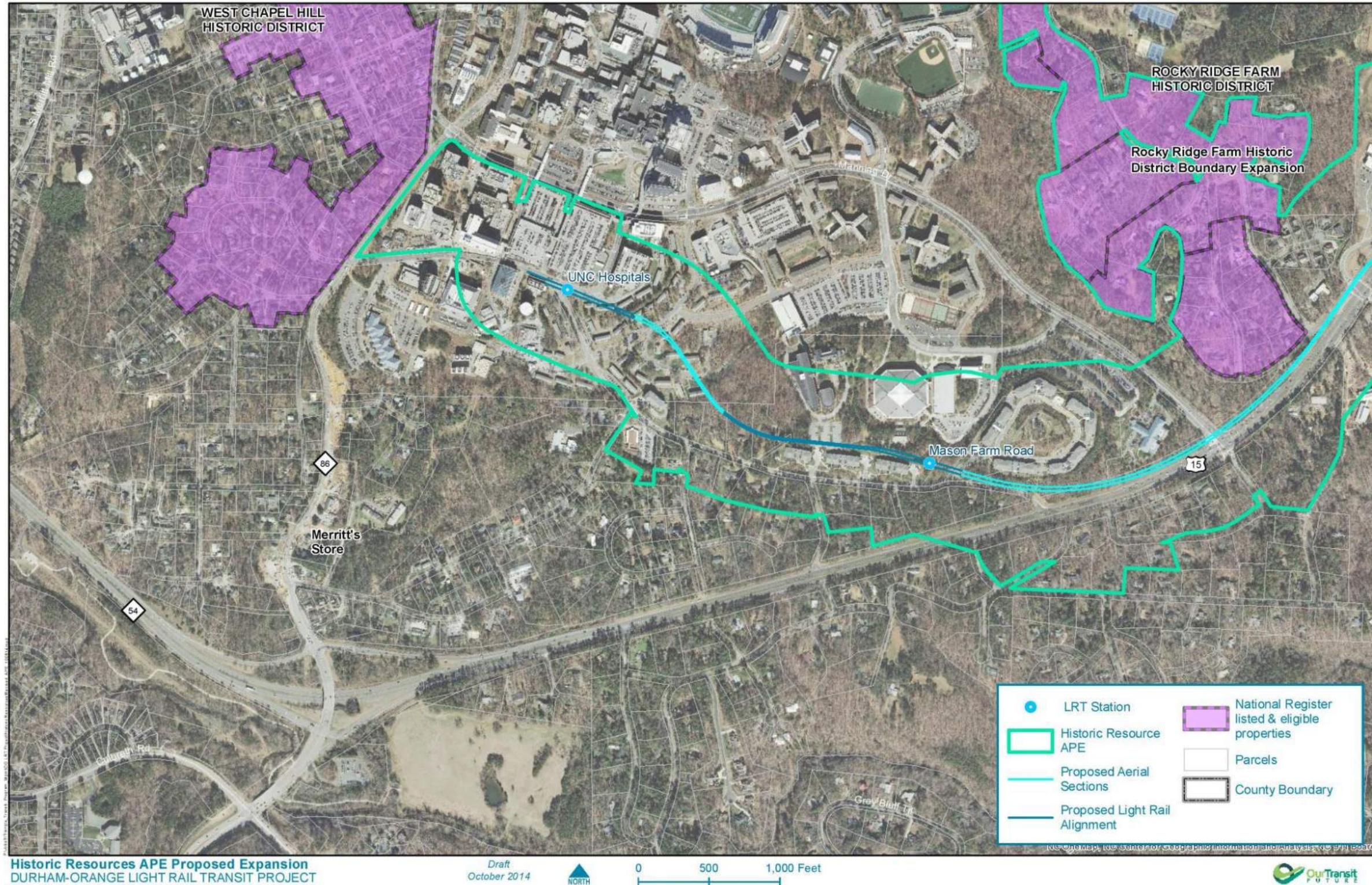




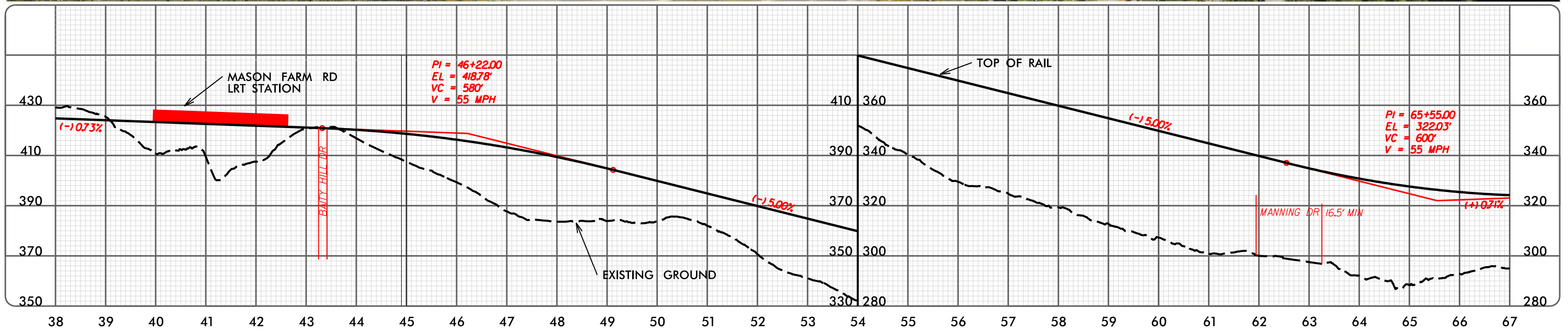
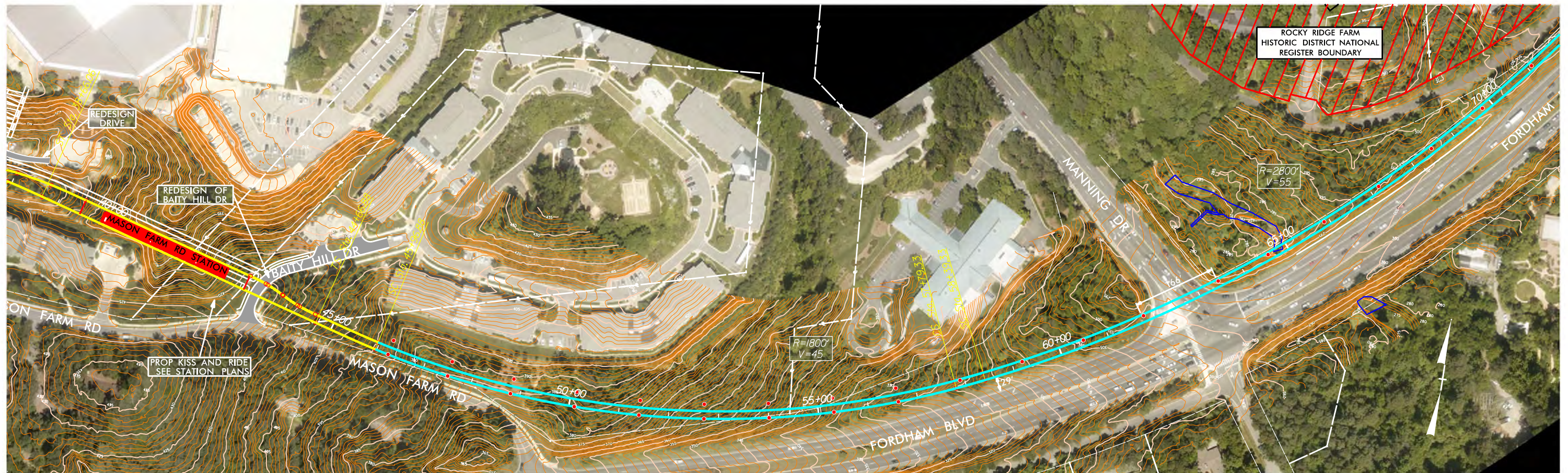
Figure 2: Historic Resources

Common sections of the light rail alignment are referred to as the “Proposed Light Rail Alignment.”

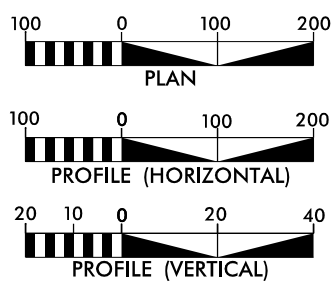




# MASON FARM ROAD STATION



### GRAPHIC SCALES



CONCEPT PLANS ONLY  
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15% BFED Design Plans,  
from DEIS

### LEGEND

- BRIDGE PIERS
- AT-GRADE TRK
- ELEVATED TRK
- WETLANDS
- █ STATION



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TELE 919.788.0224 FAX 919.788.0232  
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### PLAN AND PROFILE

SEGMENT A

PLAN &  
PROFILE

SHEET:  
A - 03

7/22/2015

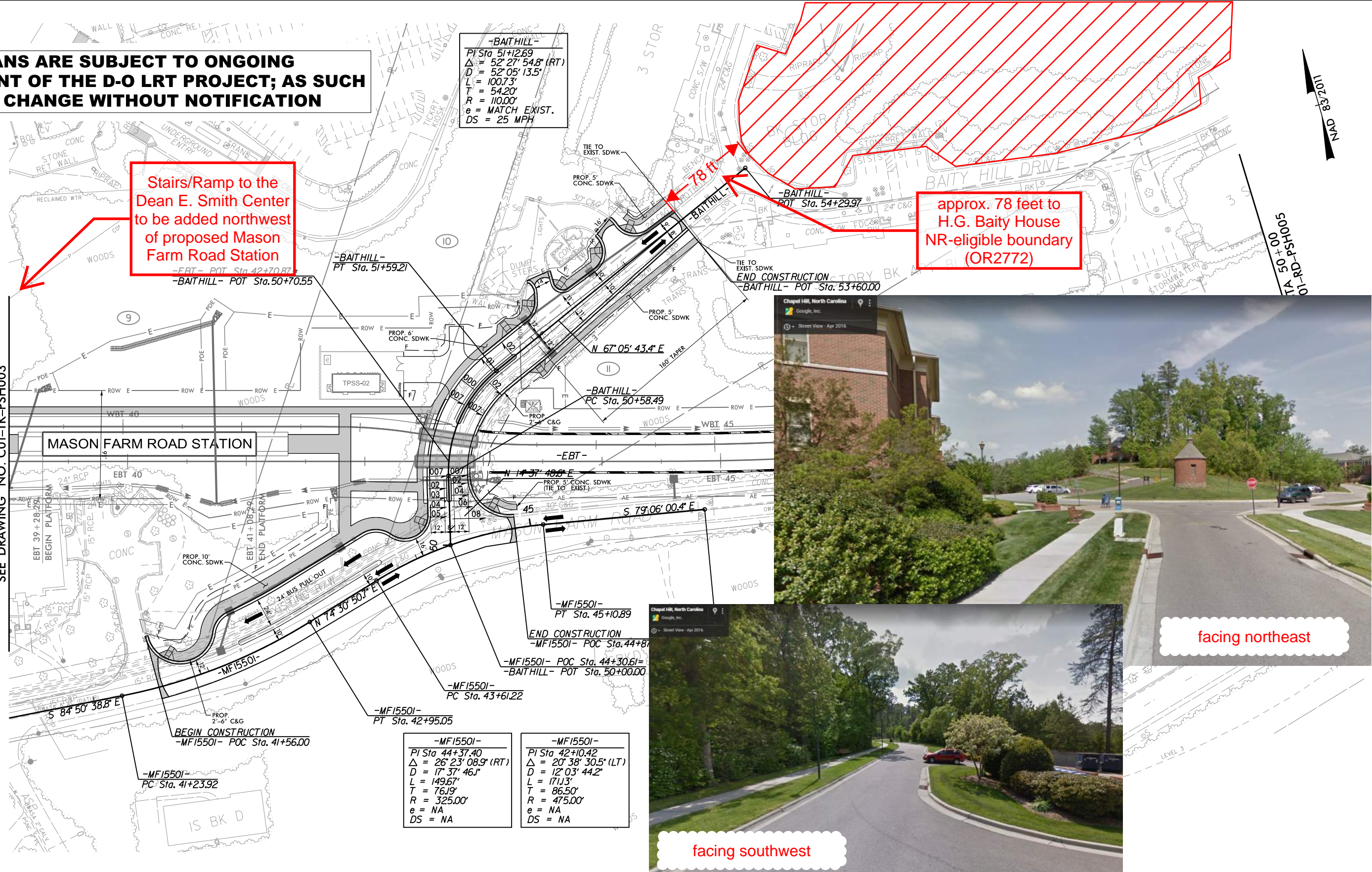


**THESE PLANS ARE SUBJECT TO ONGOING REFINEMENT OF THE D-O LRT PROJECT; AS SUCH THEY MAY CHANGE WITHOUT NOTIFICATION**

Stairs/Ramp to the Dean E. Smith Center to be added northwest of proposed Mason Farm Road Station

approx. 78 feet to H.G. Baity House NR-eligible boundary (OR2772)

MATCHLINE -EBT- STA. 39+00  
SEE DRAWING NO. C01-TK-PSH003



**-BAITHILL-**  
PI Sta 51+269  
 $\Delta = 52^{\circ} 27' 54.8''$  (RT)  
 $D = 52^{\circ} 05' 13.5''$   
 $L = 100.73'$   
 $T = 54.20'$   
 $R = 110.00'$   
 $e =$  MATCH EXIST.  
 $DS = 25$  MPH

**-MF1550I-**  
PI Sta 44+37.40  
 $\Delta = 26^{\circ} 23' 08.9''$  (RT)  
 $D = 17^{\circ} 37' 46.1''$   
 $L = 149.67'$   
 $T = 76.19'$   
 $R = 325.00'$   
 $e =$  NA  
 $DS =$  NA

**-MF1550I-**  
PI Sta 42+10.42  
 $\Delta = 20^{\circ} 38' 30.5''$  (LT)  
 $D = 12^{\circ} 03' 44.2''$   
 $L = 171.13'$   
 $T = 86.50'$   
 $R = 475.00'$   
 $e =$  NA  
 $DS =$  NA

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**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
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UNLESS ALL SIGNATURES ARE COMPLETED

DESIGNED BY:  
PAR  
DRAWN BY:  
PAR  
CHECKED BY:  
JTG  
DATE:  
2/21/18

**HDR Engineering, Inc.**  
555 Fayetteville Street, Suite 900  
Raleigh, NC 27601-3034

**GO Triangle**

**DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT**  
**LINE SECTION 1**  
**ROADWAY PLAN**  
**MASON FARM RD / BAITY HILL DR**

DRAWING NO.: C01-RD-PSH004  
SHEET NO.:  
REV.:



## Highland Woods Historic District

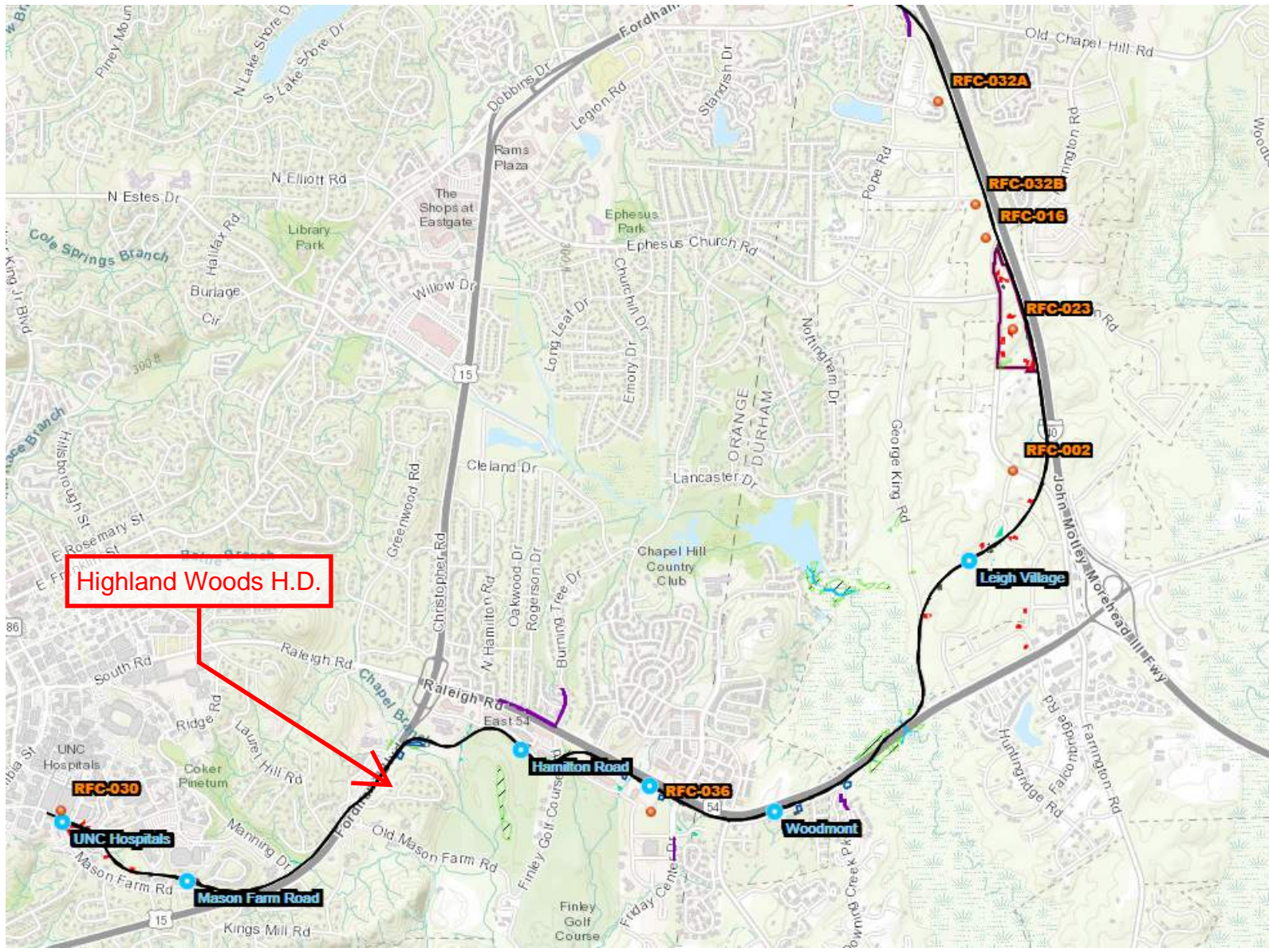
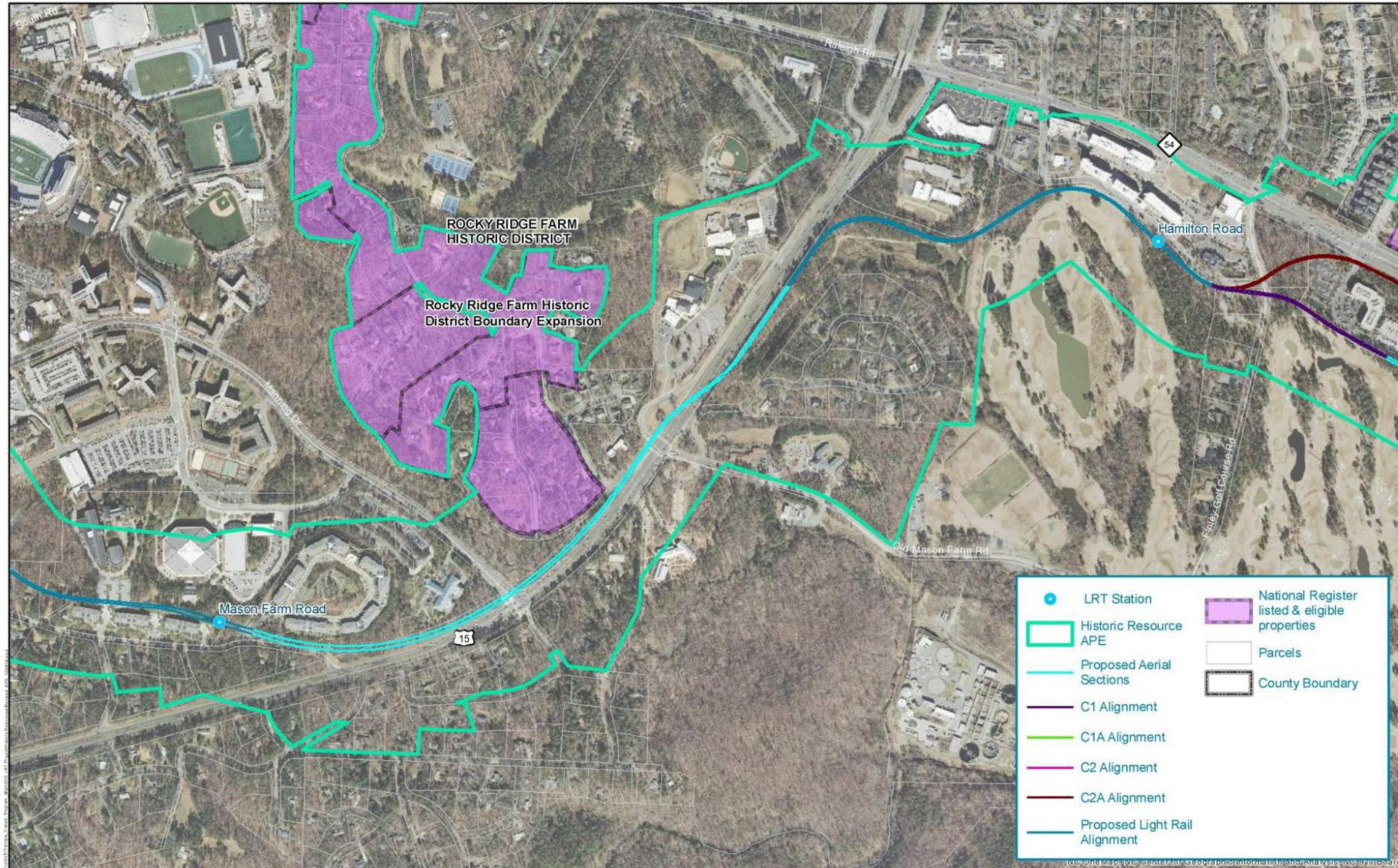




Figure 3: Historic Resources

Common sections of the light rail alignment are referred to as the “Proposed Light Rail Alignment.”



Historic Resources APE Proposed Expansion  
DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT

Draft  
October 2014

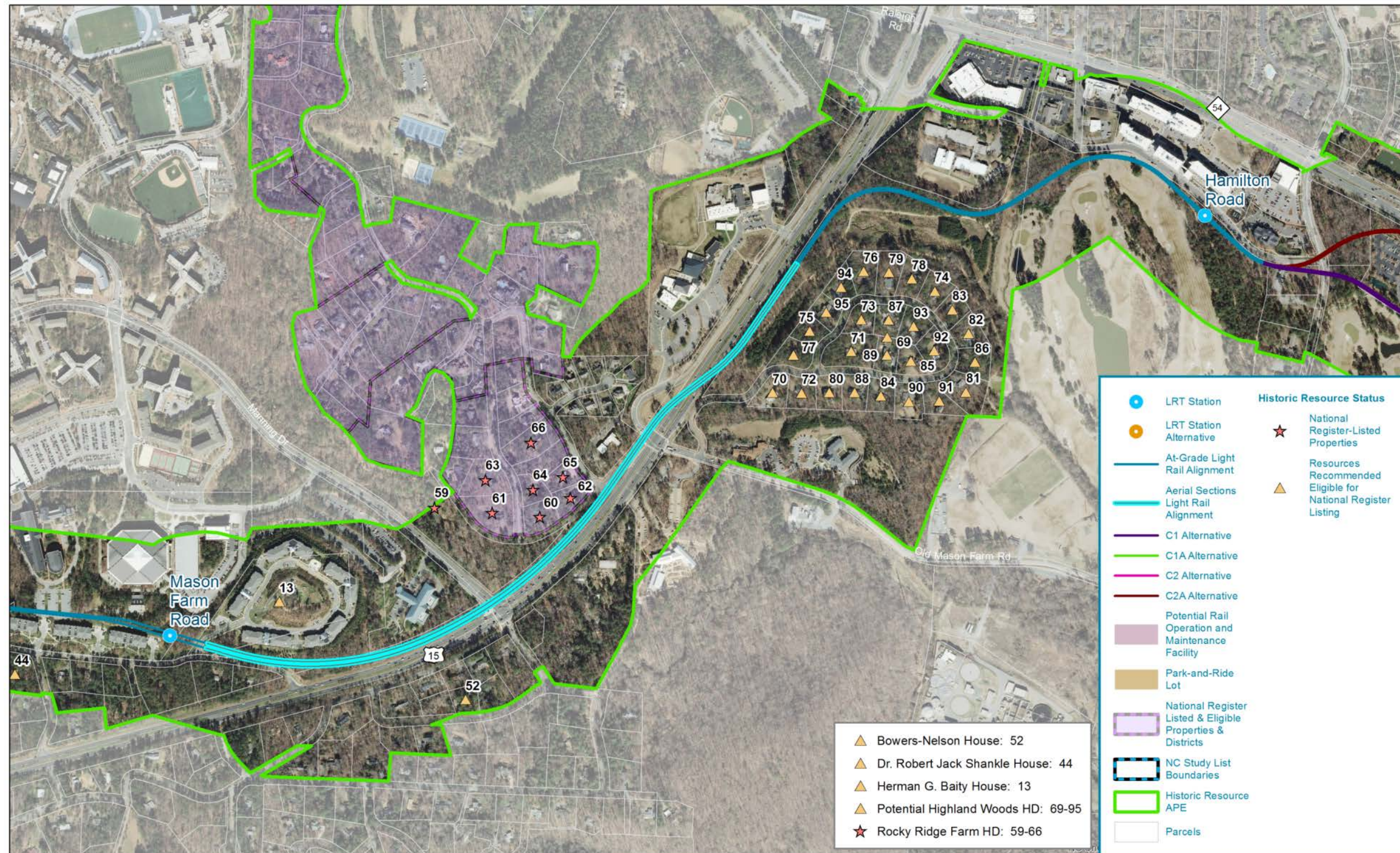


0 500 1,000 Feet



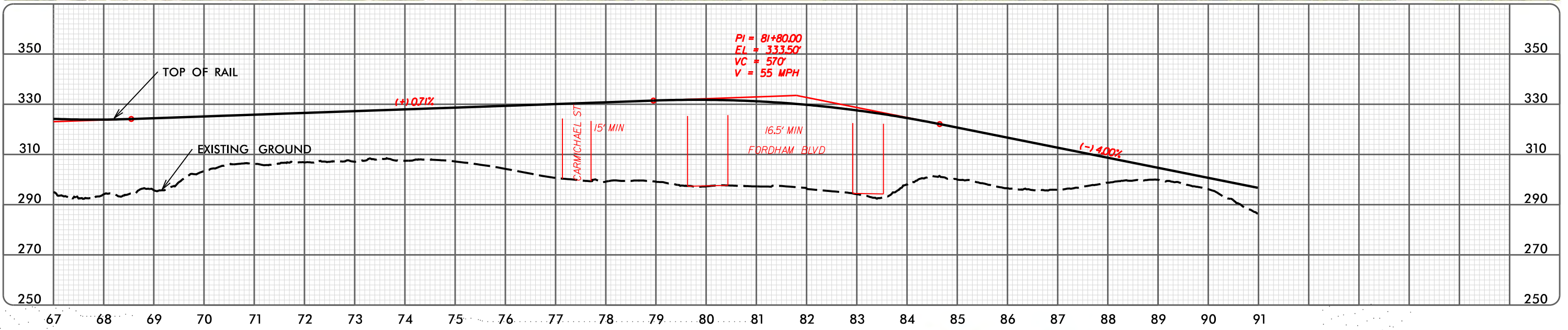
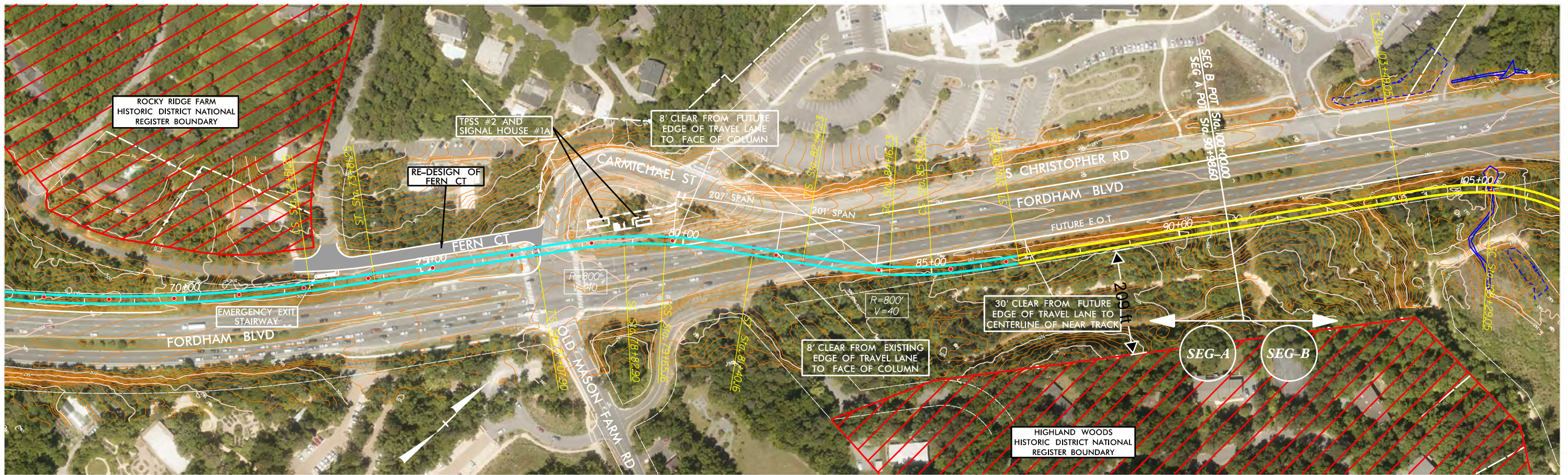


Figure 3. Area of Potential Effects Map 2

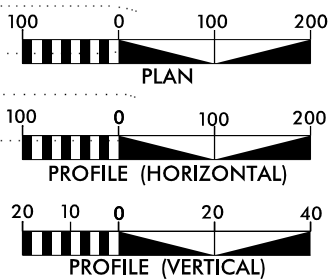




# FORDHAM BOULEVARD



### GRAPHIC SCALES



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15% BFED Design Plans,  
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- STATION



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SEGMENT A

PLAN &  
PROFILE

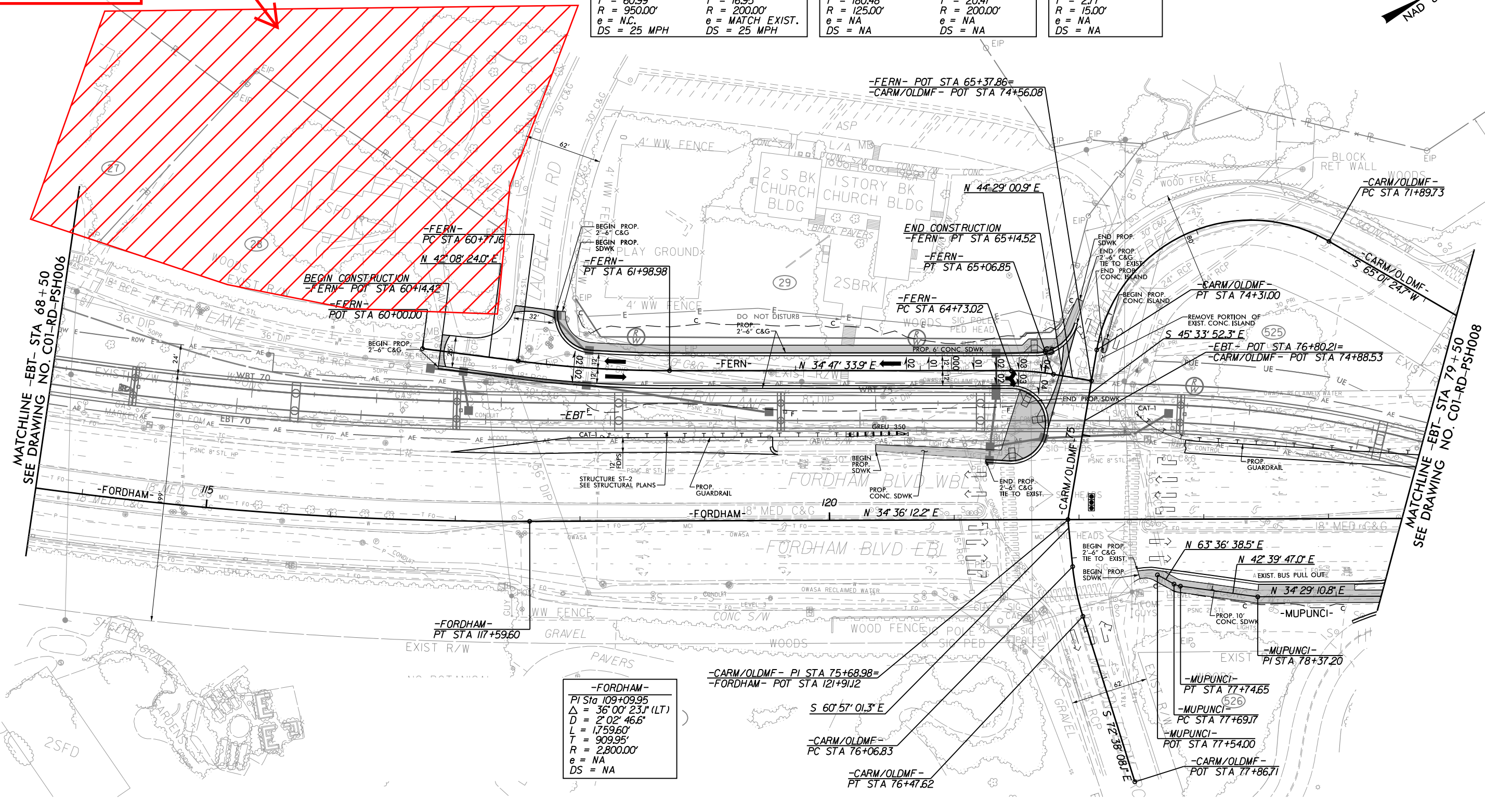
SHEET:  
A - 04

7/22/2015



Rocky Ridge Farm  
Historic District

-FERN-		-CARM/OLDMF-		-MUPUNCI-	
PI STA 61+38.16	PI STA 64+89.98	PI STA 73+70.21	PI STA 76+27.29	PI STA 77+71.94	
$\Delta = 7^{\circ} 20' 50.1''$ (LT)	$\Delta = 9^{\circ} 41' 27.0''$ (RT)	$\Delta = 110^{\circ} 35' 16.9''$ (LT)	$\Delta = 11^{\circ} 41' 06.9''$ (LT)	$\Delta = 20^{\circ} 56' 51.5''$ (LT)	
D = 6' 01' 52.1"	D = 28' 38' 52.4"	D = 45' 50' 11.8"	D = 28' 38' 52.4"	D = 381' 58' 18.7"	
L = 121.82'	L = 33.83'	L = 241.27'	L = 40.79'	L = 5.48'	
T = 60.99'	T = 16.95'	T = 180.48'	T = 20.47'	T = 2.77'	
R = 950.00'	R = 200.00'	R = 125.00'	R = 200.00'	R = 15.00'	
e = N.C.	e = MATCH EXIST.	e = NA	e = NA	e = NA	
DS = 25 MPH	DS = 25 MPH	DS = NA	DS = NA	DS = NA	



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# PRELIMINARY PLANS

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PAR  
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PAR  
CHECKED BY:  
JTG  
DATE:  
2/21/18



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555 Fayetteville Street, Suite 900  
Raleigh, NC 27601-3034

<b>DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT</b>		
<b>LINE SECTION 1</b>		
<b>ROADWAY PLAN</b>		
<b>FORDHAM BLVD / CARMICHAEL ST / FERN LN</b>		
DRAWING NO.: C01-RD-PSH007	SHEET NO.: 215	REV.

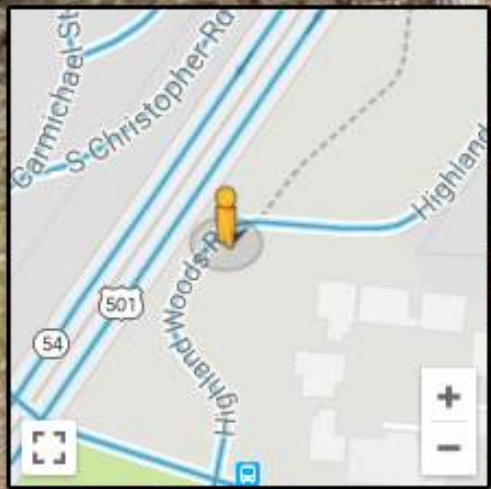


Highland Woods Rd  
Chapel Hill, North Carolina

Google, Inc.

Street View - Mar 2016

View is facing northeast from  
Highlands Woods Road  
adjacent to proposed BP-004.

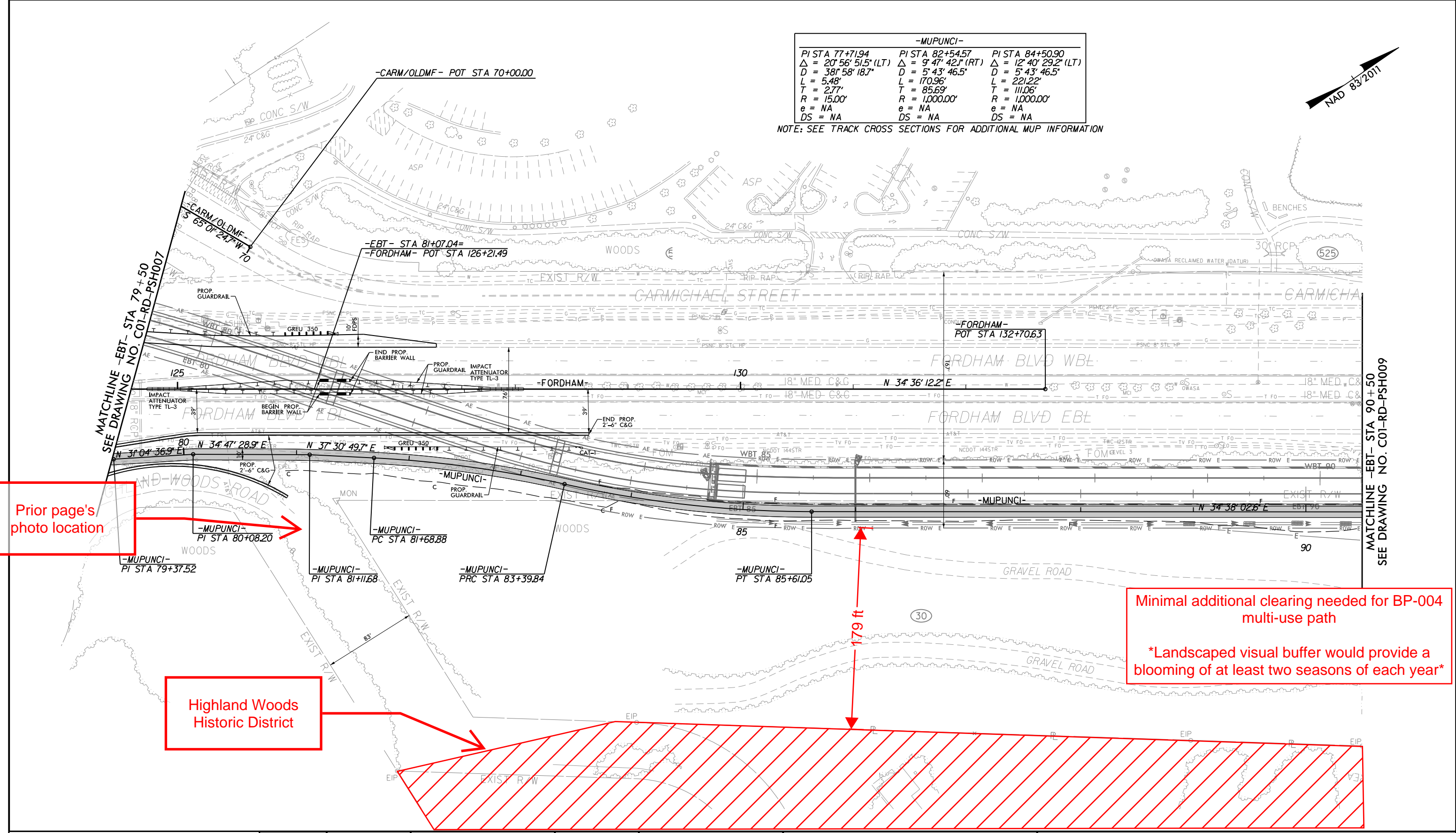


Google



-MUPUNCI-		
PI STA 77+71.94	PI STA 82+54.57	PI STA 84+50.90
$\Delta = 20^\circ 56' 51.5" (LT)$	$\Delta = 9^\circ 47' 42" (RT)$	$\Delta = 12^\circ 40' 29.2" (LT)$
$D = 381' 58" 18.7"$	$D = 5' 43" 46.5"$	$D = 5' 43" 46.5"$
$L = 5.48'$	$L = 170.96'$	$L = 221.22'$
$T = 2.77'$	$T = 85.69'$	$T = 111.06'$
$R = 15.00'$	$R = 1,000.00'$	$R = 1,000.00'$
$e = NA$	$e = NA$	$e = NA$
$DS = NA$	$DS = NA$	$DS = NA$

NOTE: SEE TRACK CROSS SECTIONS FOR ADDITIONAL MUP INFORMATION



Prior page's photo location

Highland Woods Historic District

Minimal additional clearing needed for BP-004 multi-use path  
 \*Landscaped visual buffer would provide a blooming of at least two seasons of each year\*

PLOT DRIVER: DO-LRT\_ILX17\_PDF-phtcfq  
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**PRELIMINARY PLANS**  
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 DRAWN BY:  
PAR  
 CHECKED BY:  
JTG  
 DATE:  
2/21/18

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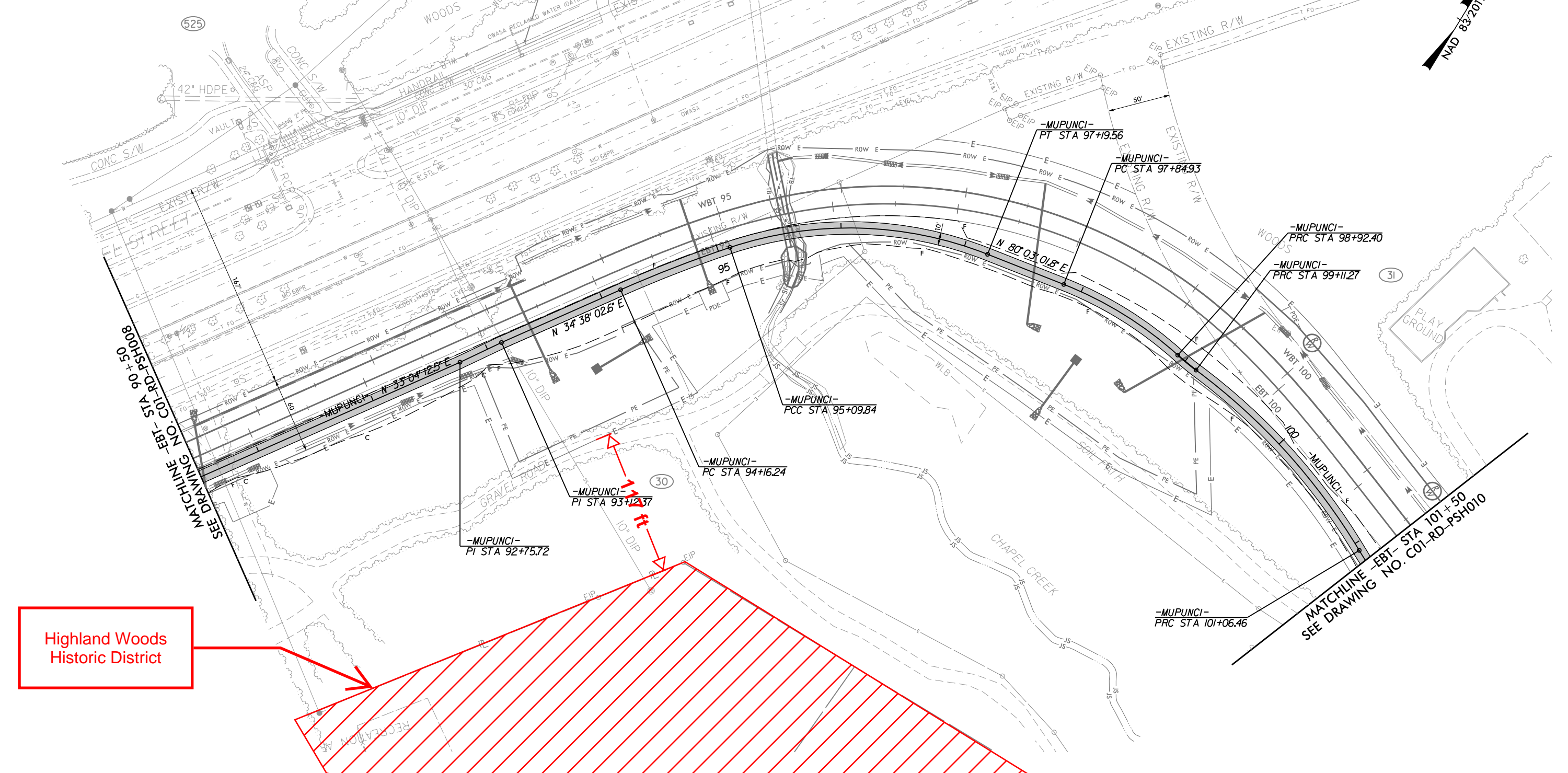
**GO** **Triangle**

**DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT**  
**LINE SECTION 1**  
**ROADWAY PLAN**  
**FORDHAM BLVD / CARMICHAEL ST**

DRAWING NO.: C01-RD-PSH008      SHEET NO.: 216      REV.

-MUPUNCI-				
PI STA 94+63.07	PI STA 96+19.19	PI STA 98+39.25	PI STA 99+01.84	PI STA 100+10.12
$\Delta = 5^\circ 21' 45.4" (RT)$	$\Delta = 40^\circ 03' 13.8" (RT)$	$\Delta = 20^\circ 31' 31.0" (RT)$	$\Delta = 5^\circ 24' 22.9" (LT)$	$\Delta = 22^\circ 22' 00.6" (RT)$
$D = 5^\circ 43' 46.5"$	$D = 19^\circ 05' 54.9"$	$D = 19^\circ 05' 54.9"$	$D = 28^\circ 38' 52.4"$	$D = 11^\circ 27' 33.0"$
$L = 93.60'$	$L = 209.72'$	$L = 107.47'$	$L = 18.87'$	$L = 195.19'$
$T = 46.83'$	$T = 109.35'$	$T = 54.32'$	$T = 9.44'$	$T = 98.85'$
$R = 1,000.00'$	$R = 300.00'$	$R = 300.00'$	$R = 200.00'$	$R = 500.00'$
$e = NA$	$e = NA$	$e = NA$	$e = NA$	$e = NA$
$DS = NA$	$DS = NA$	$DS = NA$	$DS = NA$	$DS = NA$

NOTE: SEE TRACK CROSS SECTIONS FOR ADDITIONAL MUP INFORMATION



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DRAWN BY: PAR
CHECKED BY: JTG
DATE: 2/21/18

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**HDR Engineering, Inc.**  
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 Raleigh, NC 27601-3034

**GO Triangle**

**DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT**  
**LINE SECTION 1**  
**ROADWAY PLAN**  
**MULTI USE PATH 1**

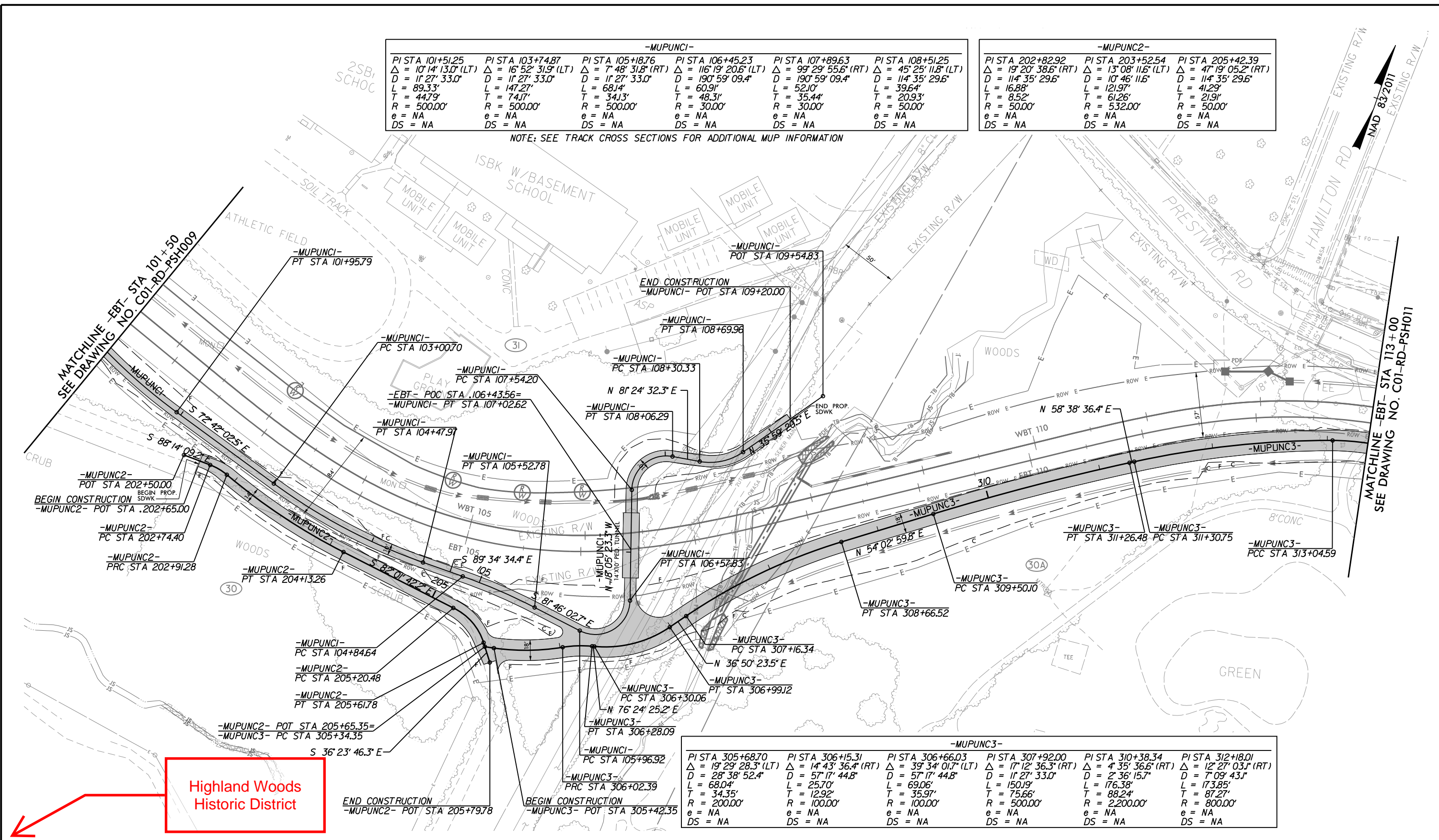
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-MUPUNCI-					
PI STA 101+51.25	PI STA 103+74.87	PI STA 105+18.76	PI STA 106+45.23	PI STA 107+89.63	PI STA 108+51.25
$\Delta = 10^{\circ} 14' 13.0''$ (LT)	$\Delta = 16^{\circ} 52' 31.9''$ (LT)	$\Delta = 7^{\circ} 48' 31.8''$ (RT)	$\Delta = 116^{\circ} 19' 20.6''$ (LT)	$\Delta = 99^{\circ} 29' 55.6''$ (RT)	$\Delta = 45^{\circ} 25' 11.8''$ (LT)
D = 11' 27' 33.0"	D = 11' 27' 33.0"	D = 11' 27' 33.0"	D = 190' 59' 09.4"	D = 190' 59' 09.4"	D = 114' 35' 29.6"
L = 89.33'	L = 147.27'	L = 68.14'	L = 60.91'	L = 52.10'	L = 39.64'
T = 44.79'	T = 74.17'	T = 34.13'	T = 48.31'	T = 35.44'	T = 20.93'
R = 500.00'	R = 500.00'	R = 500.00'	R = 30.00'	R = 30.00'	R = 50.00'
e = NA	e = NA	e = NA	e = NA	e = NA	e = NA
DS = NA	DS = NA	DS = NA	DS = NA	DS = NA	DS = NA

-MUPUNC2-		
PI STA 202+82.92	PI STA 203+52.54	PI STA 205+42.39
$\Delta = 19^{\circ} 20' 38.6''$ (RT)	$\Delta = 13^{\circ} 08' 11.6''$ (LT)	$\Delta = 47^{\circ} 19' 05.2''$ (RT)
D = 114' 35' 29.6"	D = 10' 46' 11.6"	D = 114' 35' 29.6"
L = 16.88'	L = 12.97'	L = 41.29'
T = 8.52'	T = 6.26'	T = 21.91'
R = 50.00'	R = 532.00'	R = 50.00'
e = NA	e = NA	e = NA
DS = NA	DS = NA	DS = NA

NOTE: SEE TRACK CROSS SECTIONS FOR ADDITIONAL MUP INFORMATION



-MUPUNC3-					
PI STA 305+68.70	PI STA 306+15.31	PI STA 306+66.03	PI STA 307+92.00	PI STA 310+38.34	PI STA 312+18.01
$\Delta = 19^{\circ} 29' 28.3''$ (LT)	$\Delta = 14^{\circ} 43' 36.4''$ (RT)	$\Delta = 39^{\circ} 34' 01.7''$ (LT)	$\Delta = 17^{\circ} 12' 36.3''$ (RT)	$\Delta = 4^{\circ} 35' 36.6''$ (RT)	$\Delta = 12^{\circ} 27' 03.1''$ (RT)
D = 28' 38' 52.4"	D = 57' 17' 44.8"	D = 57' 17' 44.8"	D = 11' 27' 33.0"	D = 2' 36' 15.7"	D = 7' 09' 43.1"
L = 68.04'	L = 25.70'	L = 69.06'	L = 150.19'	L = 176.38'	L = 173.85'
T = 34.35'	T = 12.92'	T = 35.97'	T = 75.66'	T = 88.24'	T = 87.27'
R = 200.00'	R = 100.00'	R = 100.00'	R = 500.00'	R = 2200.00'	R = 800.00'
e = NA	e = NA	e = NA	e = NA	e = NA	e = NA
DS = NA	DS = NA	DS = NA	DS = NA	DS = NA	DS = NA

Highland Woods  
Historic District

PLOT DRIVER: DO-LRT\_11X17\_PDF-phcfq  
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 FILE: C01-RD-PSH010.dgn  
 PENTABLE: DO-LRT\_RD.TBI  
 TIME: 3:26:23 PM  
 DATE: 2/12/2018

**PRELIMINARY PLANS**

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DESIGNED BY: PAR  
DRAWN BY: PAR  
CHECKED BY: JTG  
DATE: 02/11/18

**HDR Engineering, Inc.**  
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Raleigh, NC 27601-3034

**DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT**

**LINE SECTION 1  
ROADWAY PLAN  
MULTI USE PATH 1 / MULTI USE PATH 3**

DRAWING NO.: C01-RD-PSH010  
SHEET NO.: 218  
REV.



Walter Curtis Hudson Farm and Store

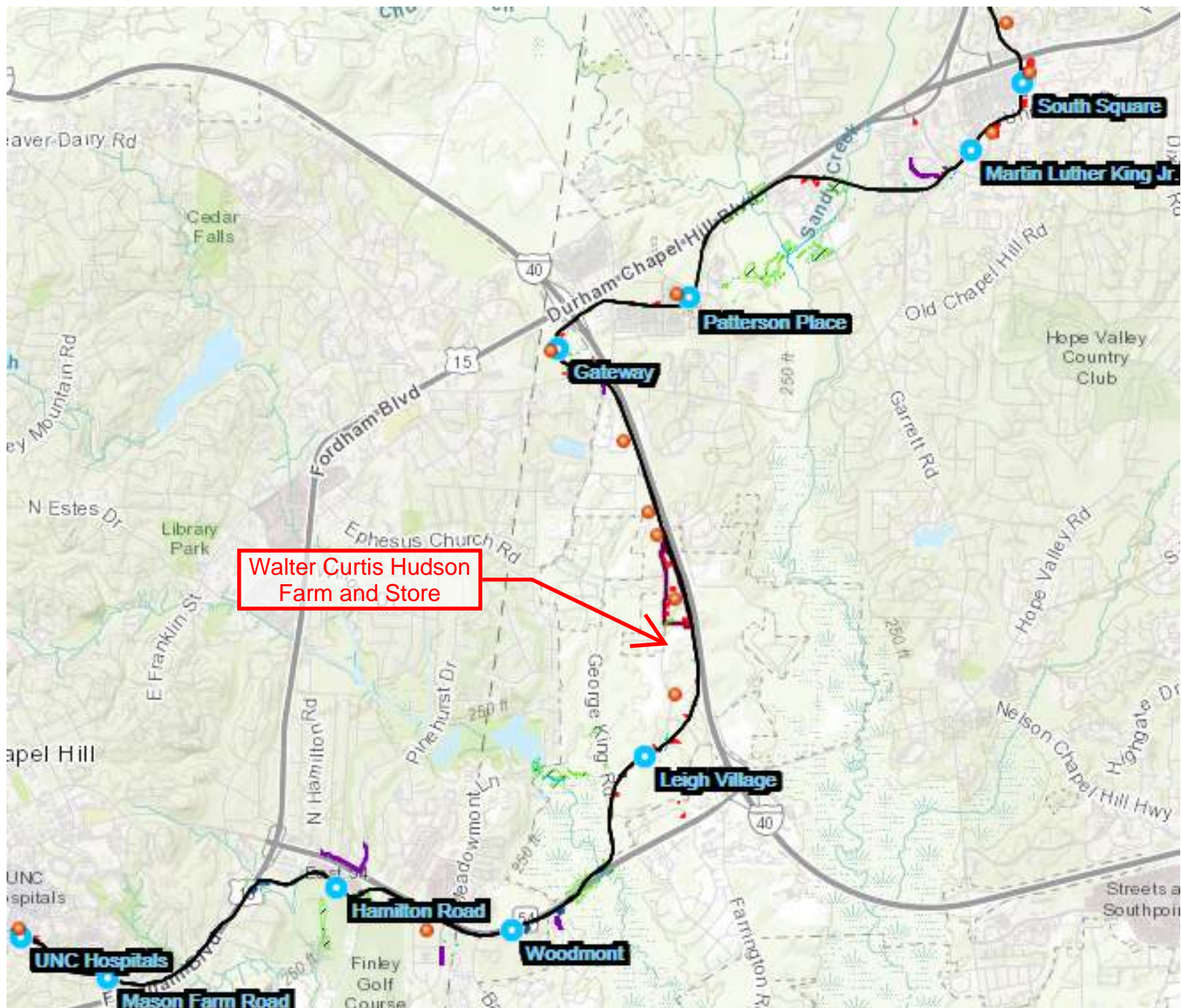




Figure 6: Historic Resources

Common sections of the light rail alignment are referred to as the “Proposed Light Rail Alignment.”

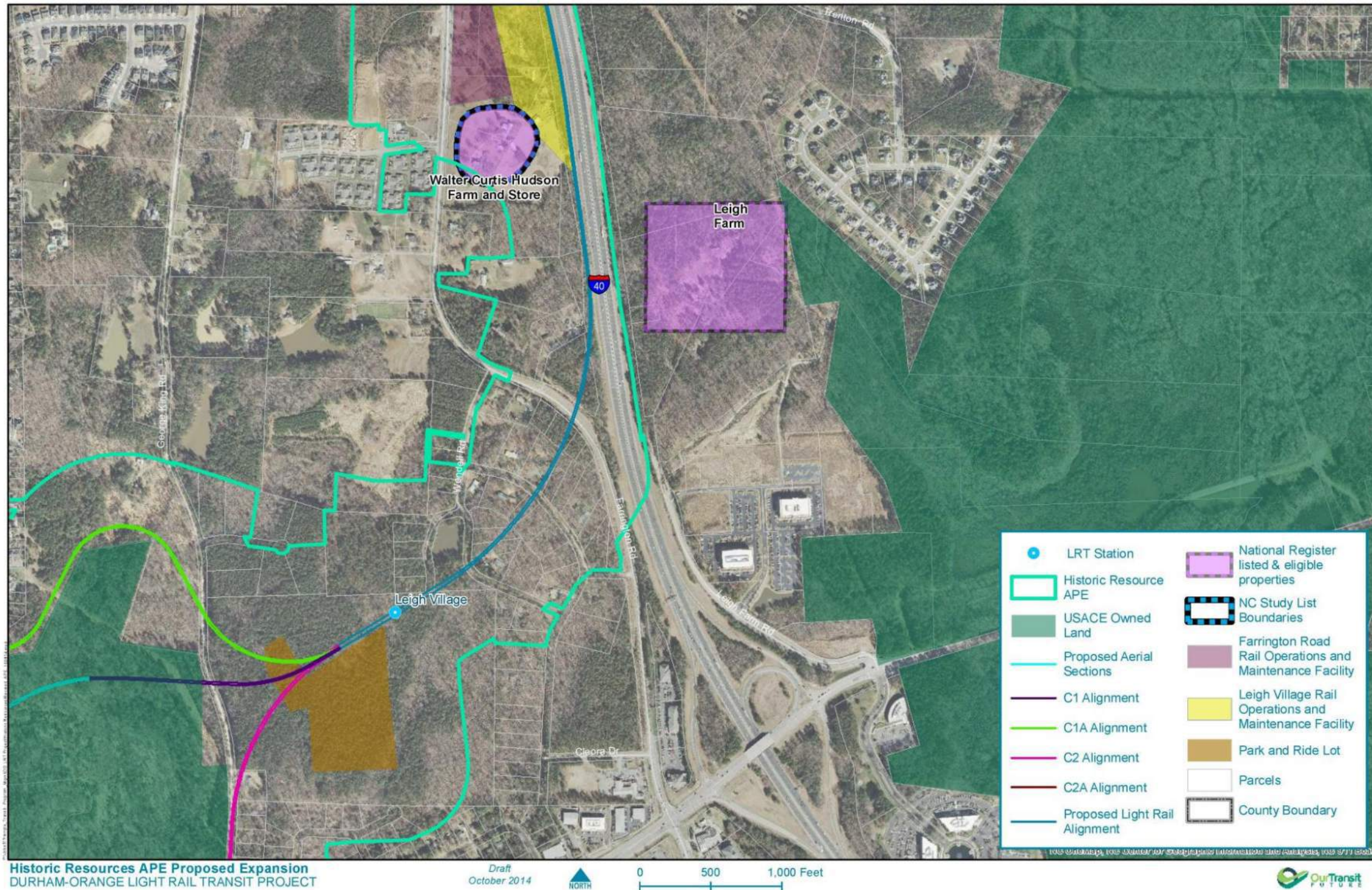
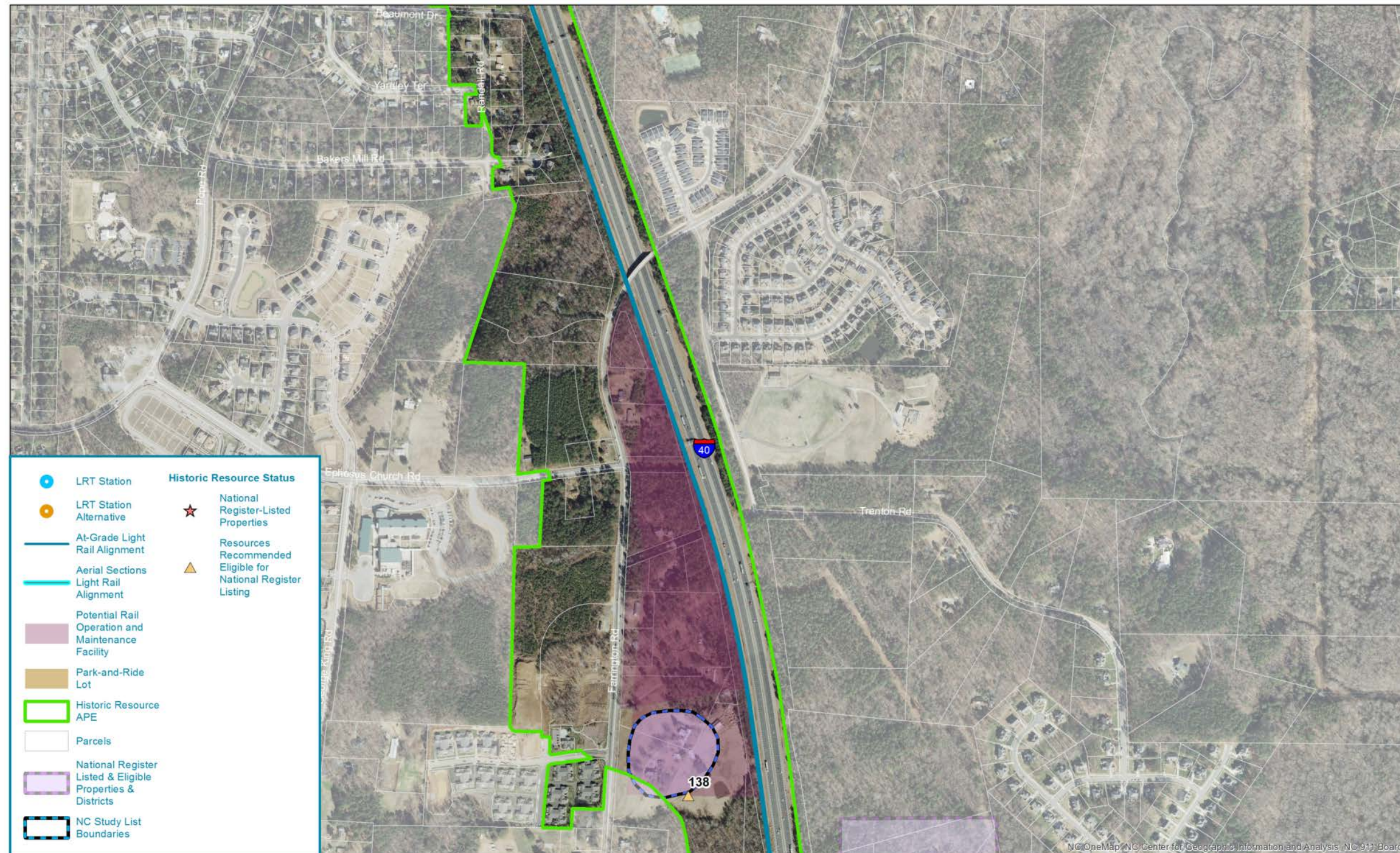




Figure 8. Area of Potential Effects Map 7



**Historic Resources**  
DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT

February 2015



0 500 1,000 Feet





with the Patterson's Mill store, erected in the early 1970s. However, a noncontributing farm pond erected after the recommended period of significance is included because of its central location on the property.

The boundaries are drawn to include acreage historically associated with the Walter Curtis Hudson Farm that retains its integrity and that is not associated with adjacent properties that have been built upon. It is drawn to exclude not only the portion of parcel 141555 occupied by the pole barn and wood storage building, but also all of the approximately 5.5 acres of parcel 179527. This latter excluded parcel is occupied by the store built by Elsie and John Booker in 1972-1973 from materials salvaged from demolished buildings in Durham and Wake counties, and by an altered log corn crib with later additions and two log outbuildings that were moved five miles to the store property in c1980.

**Figure 166. Proposed National Register boundaries of the Walter Curtis Hudson Farm outlined in dashed yellow lines (source: Durham County tax maps)**





Figure 95: National Register-eligible boundaries of Walter Curtis Hudson Farm in proximity to proposed project; note southern portion of Farrington Road ROMF, which is part of the proposed project, in purple at top

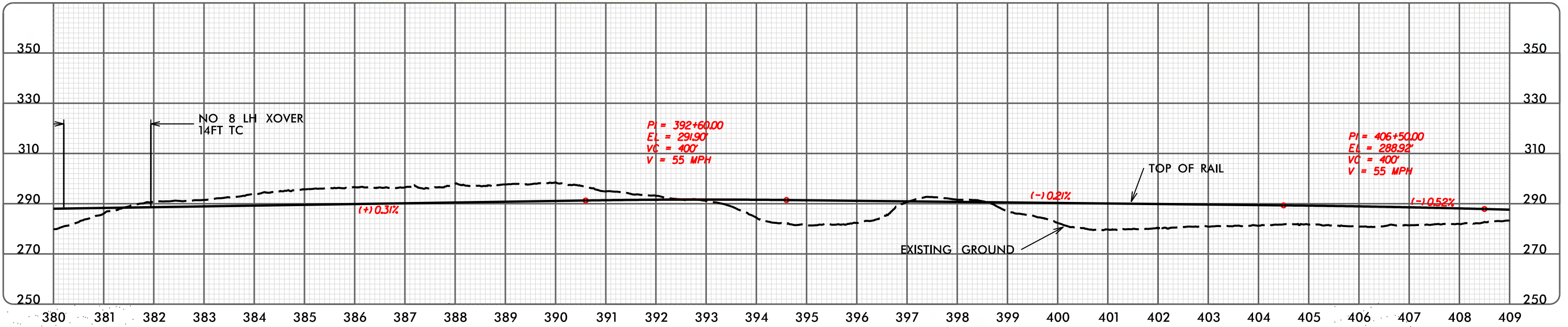
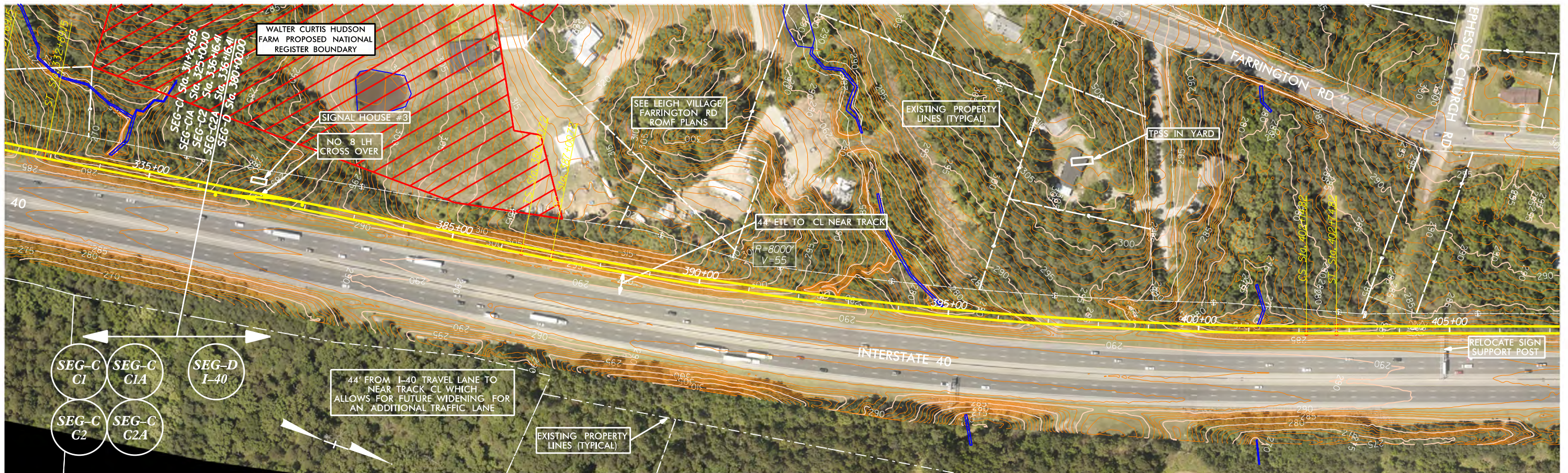


Figure 96: View looking west across field behind farmhouse toward farm pond; proposed project hidden by woods in background that shield farm from I-40

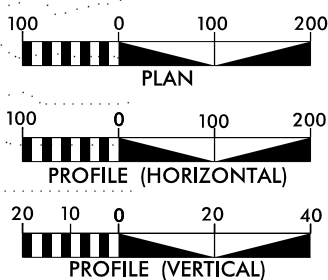




# ALONG INTERSTATE 40



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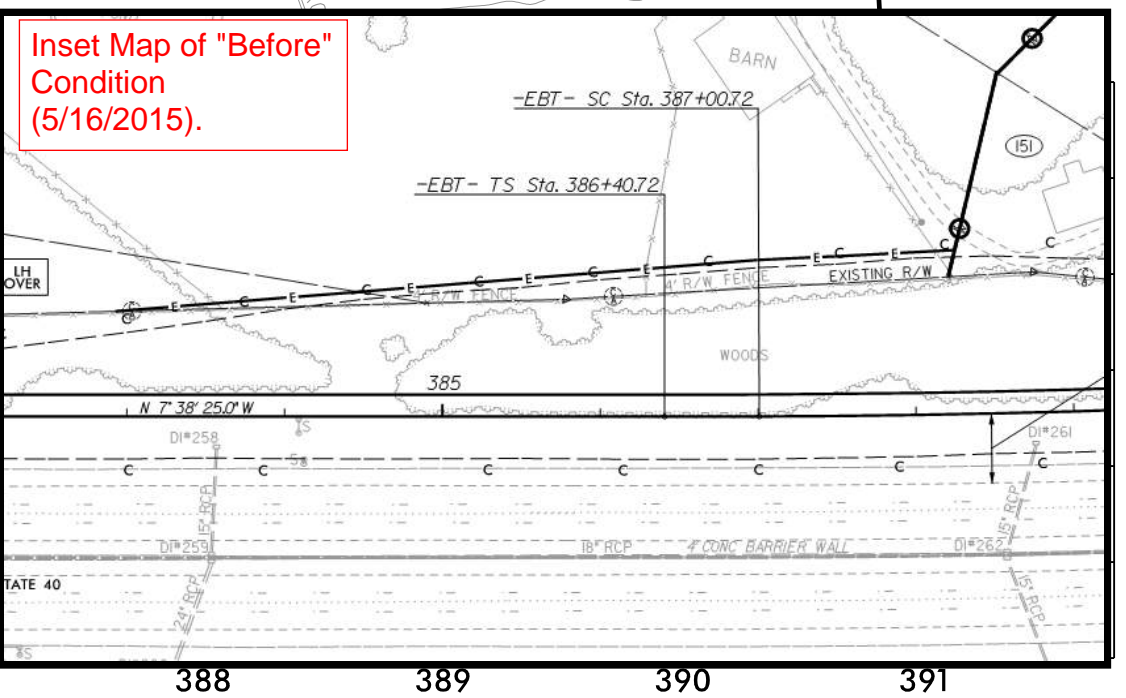
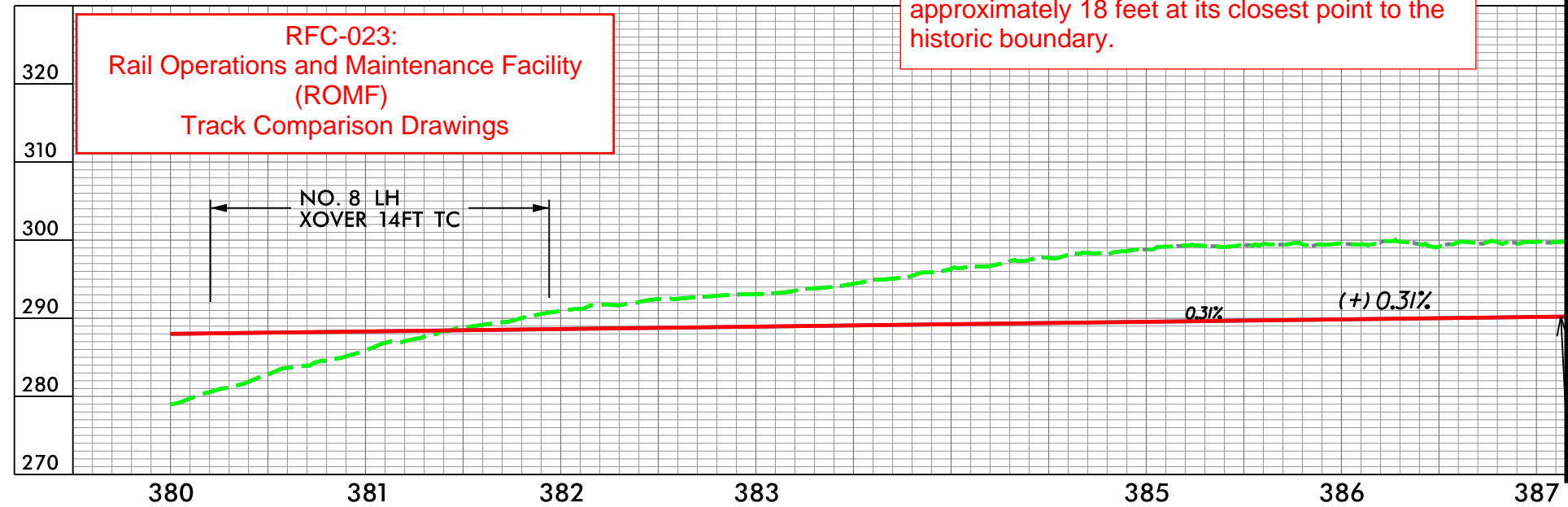
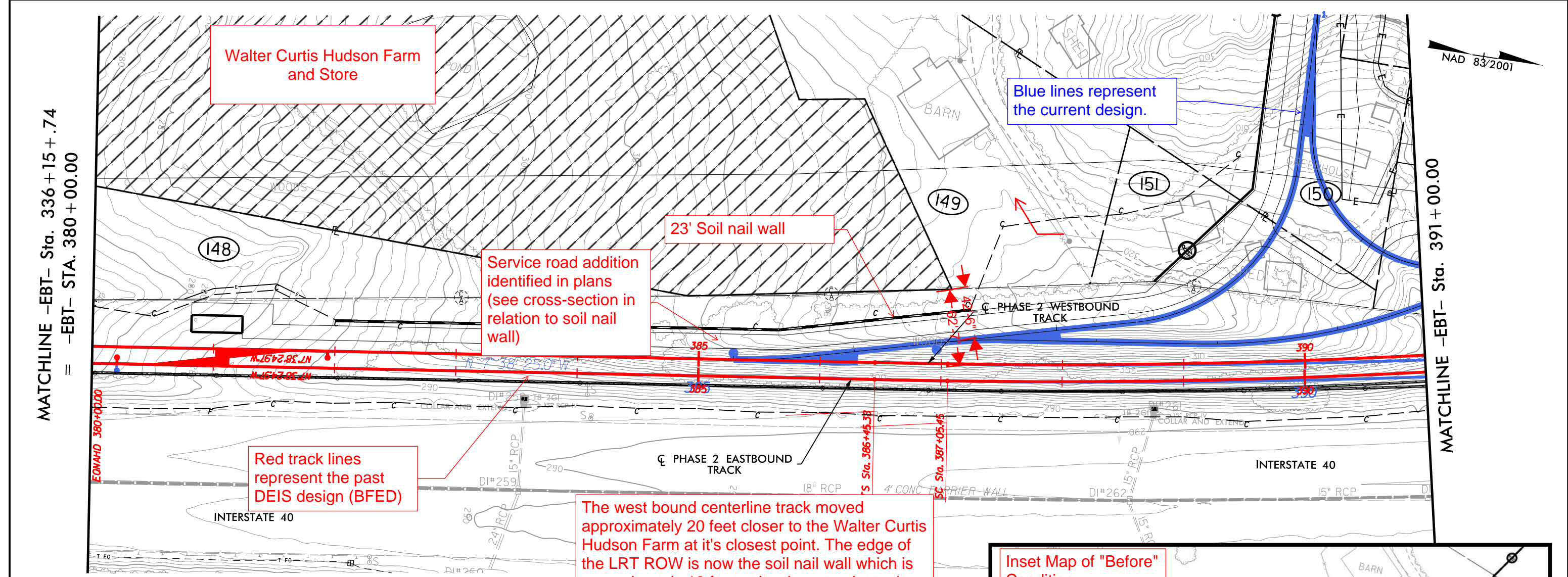
### PLAN AND PROFILE

SEGMENT D

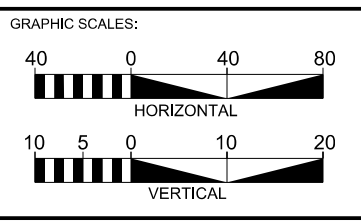
PLAN &  
PROFILE

SHEET:  
D - 01





REV 1 - \$TW-DATE-RESPONSE TO GO TRIANGLE COMMENTS



DESIGNED BY:

DRAWN BY:

CHECKED BY:

DATE:

Concept Drawings for RFC Coordination Only

INCOMPLETE PLANS  
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PRELIMINARY PLANS  
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**HDR**

HDR Engineering, Inc.  
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Raleigh, NC 27601-3034

PHASE 2  
DESIGN FEASIBILITY  
STUDIES,  
SUPPLEMENTAL  
ENGINEERING,  
& ADVANCED  
PERMITTING



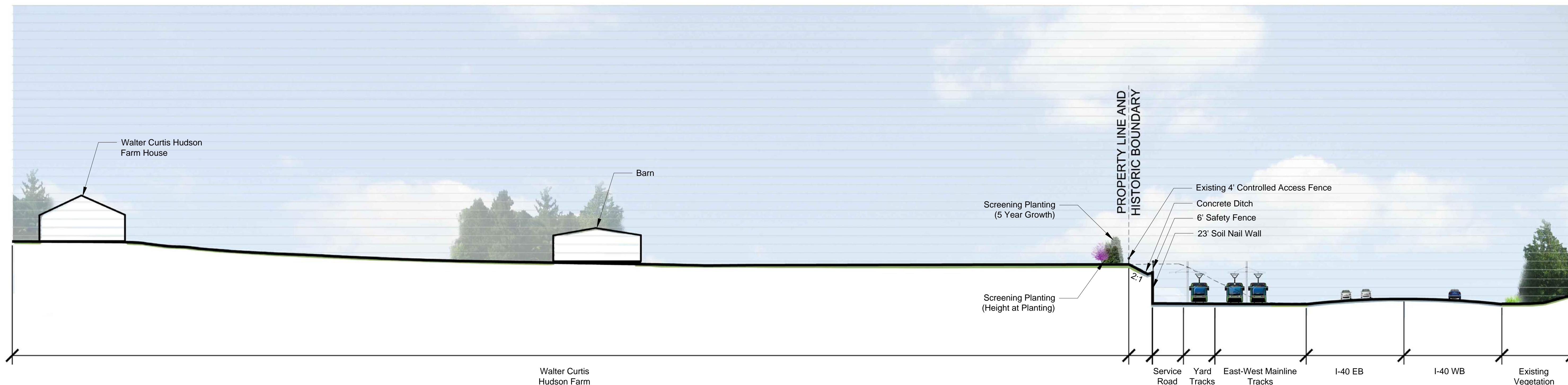
DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT  
TRACK ALIGNMENT PLAN AND PROFILE  
EBT STA. 380+00.00 - STA. 391+00.00

PROJECT NO.:      DRAWING NO.: TW-76      SHEET NO.:







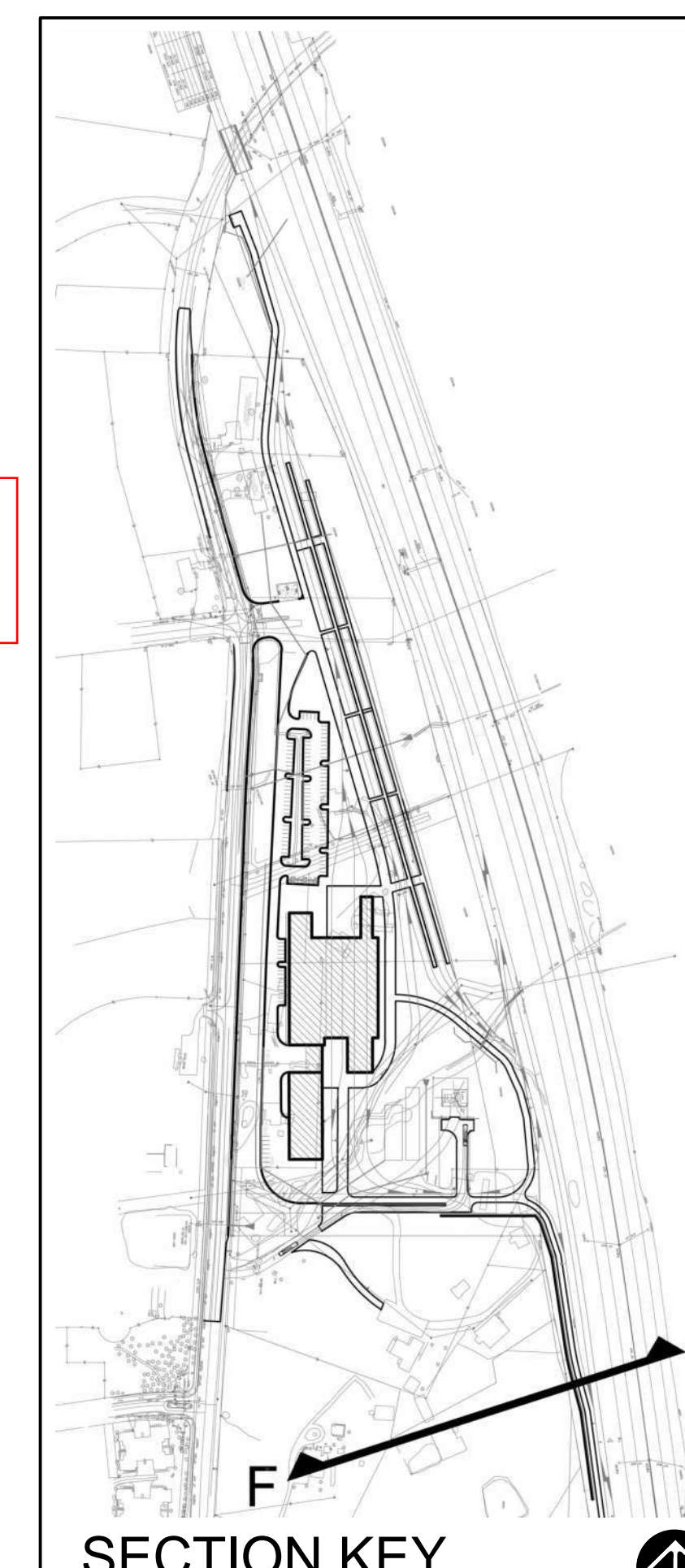


SITE SECTION F - VIEW OF WALTER CURTIS HUDSON FARM, LOOKING NORTH



**Soil Nail Wall Notes:**  
 The depth of the soil nail wall is 0.8 x the wall height plus 1 foot for the CIP fascia. A total depth of 19.4 feet.

\*Landscaped visual buffer would provide a blooming of at least two seasons of each year\*



SCALE: 1" = 30'



DESIGNED BY:  
**JS**  
 DRAWN BY:  
**JL,CL**  
 CHECKED BY:  
**SH**  
 DATE:  
**12/07/17**

PRELIMINARY PLANS

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HDR Engineering, Inc.  
 555 Fayetteville Street, Suite 900  
 Raleigh, NC 27601-3034

**Susan Hatchell**  
 Landscape Architecture, PLLC

711 W. North St.  
 Raleigh, NC 27603  
 (919) 838-9600



DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT

RAIL OPERATIONS & MAINTENANCE FACILITY (ROMF),  
 MAINTENANCE OF WAY (MOW) FACILITY, AND YARD

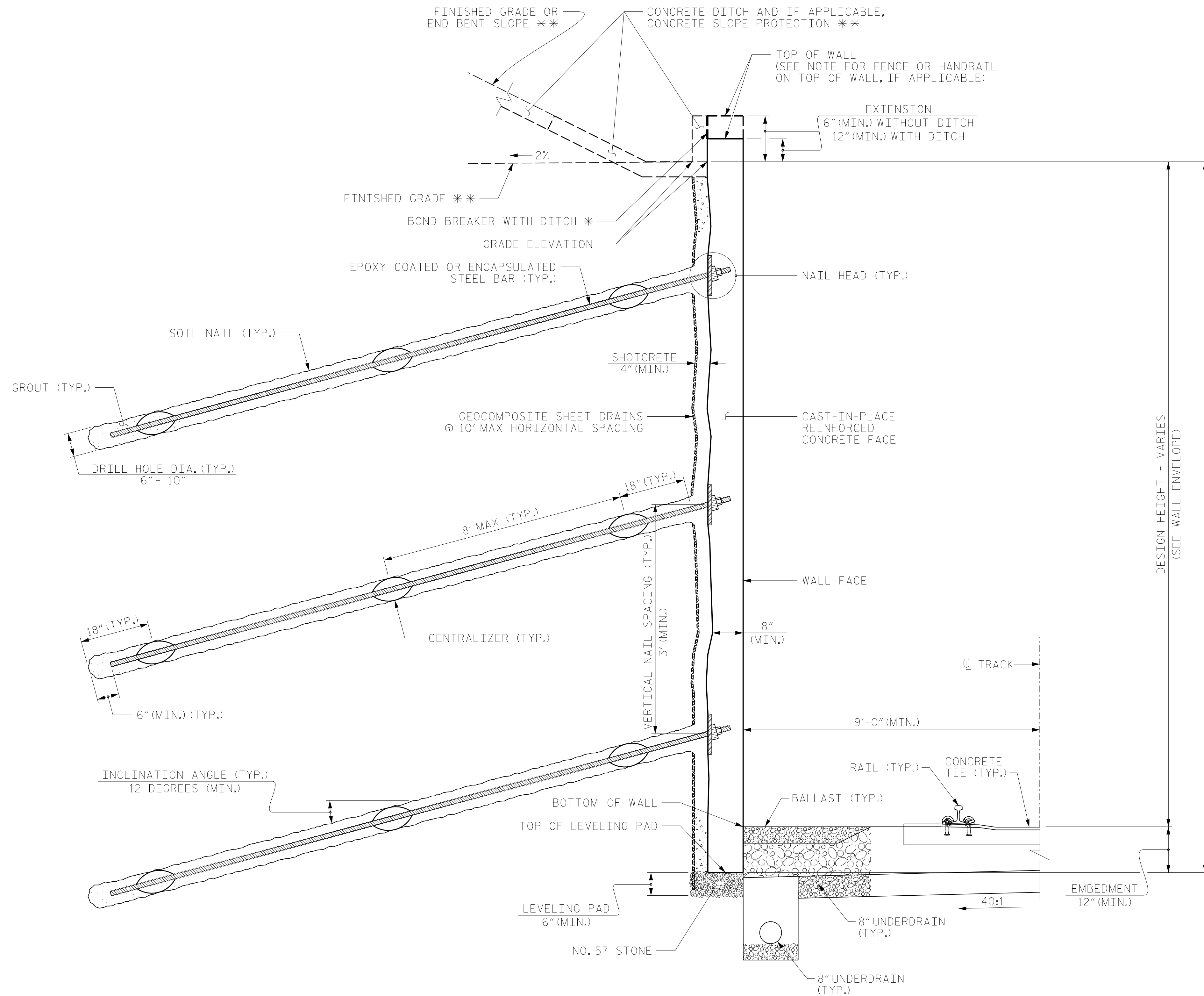
SITE SECTION F - WALTER CURTIS HUDSON FARM

PROJECT NO.:

DRAWING NO.:

SHEET NO.:





**SOIL NAIL WALL - TYPICAL SECTION**

\*\* SEE ROADWAY AND TRACK PLANS FOR FINISHED GRADE AND CONCRETE DITCH DETAILS.

**NOTES**

- FOR SOIL NAIL RETAINING WALLS, SEE SOIL NAIL RETAINING WALLS PROVISION.
- FOR STEEL BEAM GUARDRAIL, SEE ROADWAY PLANS AND PROVISIONS.
- A FENCE OR HANDRAIL IS REQUIRED ON TOP OF RETAINING WALLS. SEE FENCE OR HANDRAIL ATTACHMENT DETAILS.
- AN ARCHITECTURAL FINISH IS REQUIRED FOR THE CAST-IN-PLACE REINFORCED CONCRETE FACE FOR RETAINING WALL.
- BEFORE BEGINNING SOIL NAIL WALL DESIGN, SURVEY WALL LOCATION AND SUBMIT A REVISED WALL PROFILE VIEW (WALL ENVELOPE) FOR REVIEW. DO NOT START WALL DESIGN OR CONSTRUCTION UNTIL THE REVISED WALL ENVELOPE IS ACCEPTED.
- DESIGN SOIL NAIL WALLS FOR THE FOLLOWING:
  - 1) H = DESIGN HEIGHT + EMBEDMENT
  - 2) DESIGN LIFE = 75 YEARS
  - 3) MINIMUM EMBEDMENT ELEVATION =        FT
  - 4) IN-SITU ASSUMED MATERIAL PARAMETERS ABOVE ELEVATION        FT:
    - UNIT WEIGHT,  $\gamma$  =        LB/CF
    - FRICTION ANGLE,  $\phi$  =        DEGREES
    - COHESION,  $c$  =        LB/SF
  - 5) IN-SITU ASSUMED MATERIAL PARAMETERS BELOW ELEVATION        FT:
    - UNIT WEIGHT,  $\gamma$  =        LB/CF
    - FRICTION ANGLE,  $\phi$  =        DEGREES
    - COHESION,  $c$  =        LB/SF
- EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH SOIL NAILS.

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**PRELIMINARY PLANS**  
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DESIGNED BY:  
 GFW  
 DRAWN BY:  
 WBA  
 CHECKED BY:  
 LKA  
 DATE:

**CALYX**  
 ENGINEERS + CONSULTANTS  
 6750 TRYON ROAD  
 CARY, NC 27518  
 phone: 919.851.1912  
 CALYXengineers.com  
 NC License # F-1333

**HDR**  
**HDR Engineering, Inc.**  
 555 Fayetteville Street, Suite 900  
 Raleigh, NC 27601-3034

**GO** **Triangle**

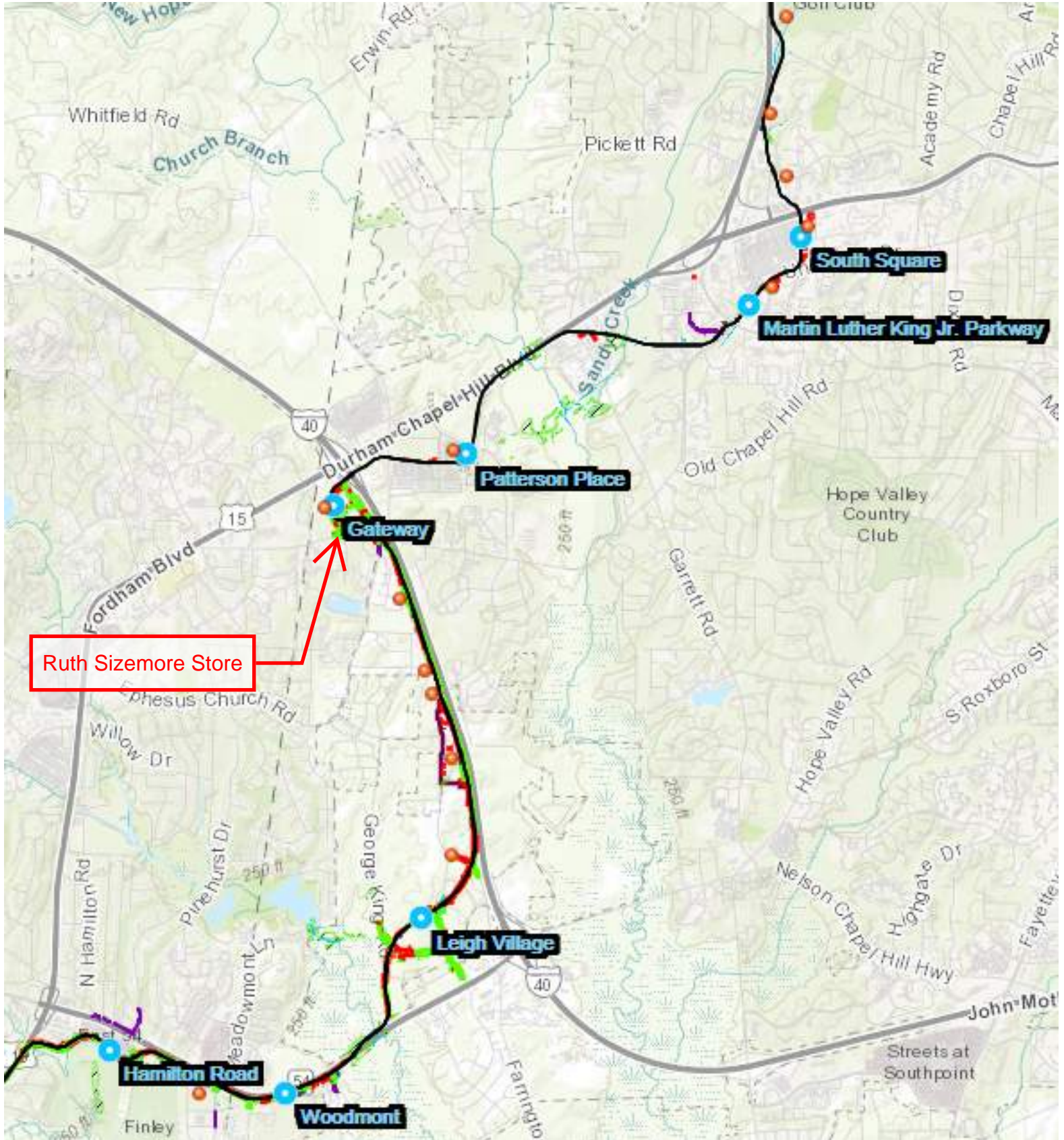
**DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT**

**SOIL NAIL WALL TYPICAL & NOTES**

DRAWING NO.: PW-ST-RTW006      SHEET NO.:      REV.

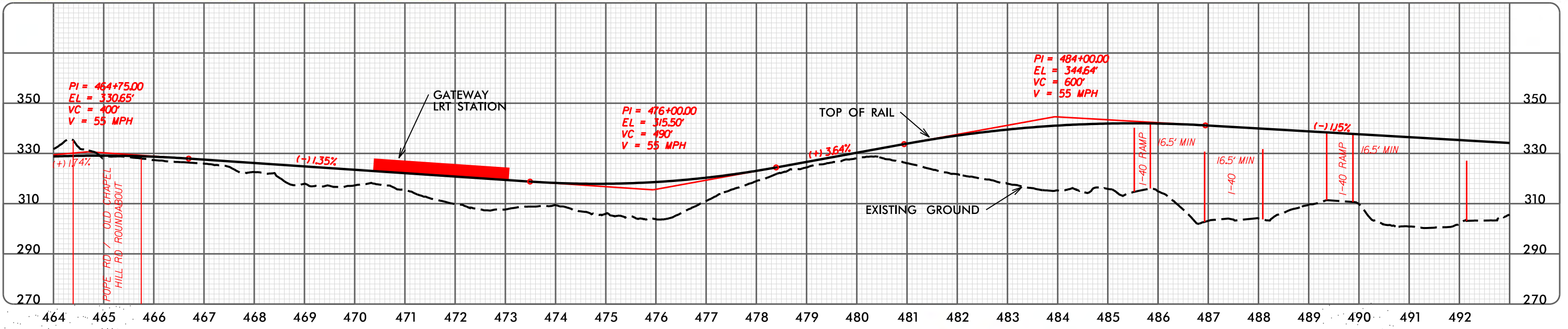
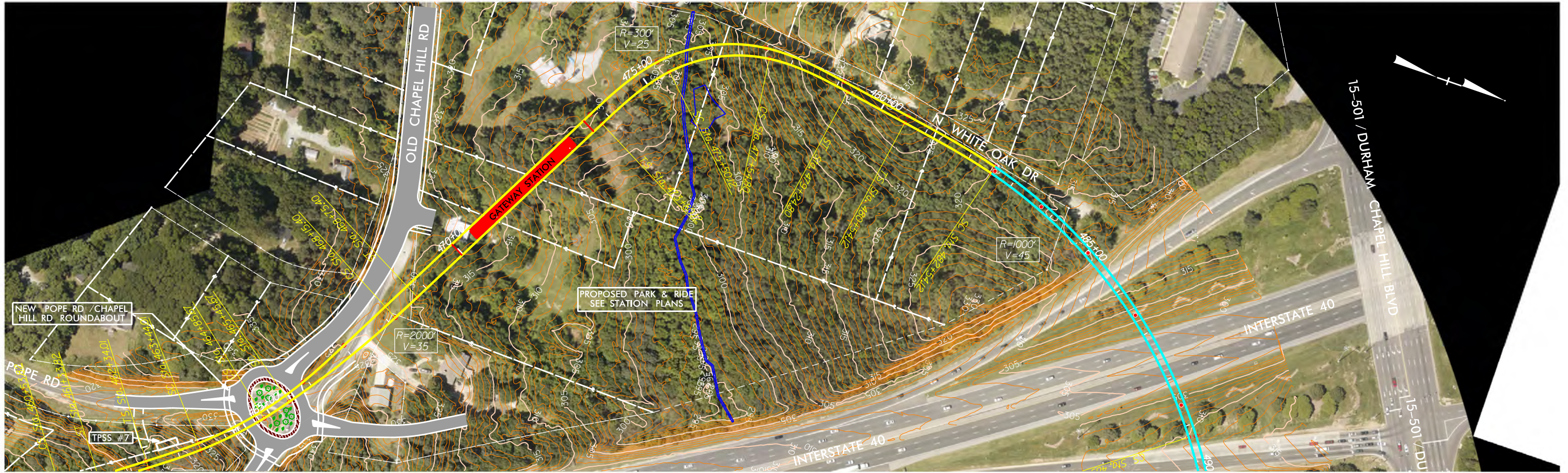


**Ruth Sizemore Store**

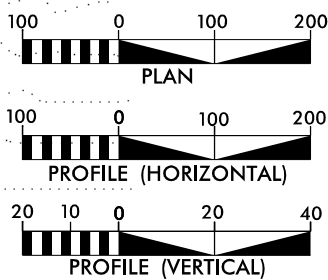




# GATEWAY STATION



### GRAPHIC SCALES



CONCEPT PLANS ONLY  
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INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION

### LEGEND

- BRIDGE PIERS
- AT-GRADE TRK
- ELEVATED TRK
- WETLANDS
- ▭ STATION



Prepared in the Office of



URS Corporation - North Carolina  
1600 Perimeter Park Drive, Suite 400  
Morrisville, North Carolina 27560  
Phone (919)461-1100 Fax (919)461-1415  
NC Lic.# C-2243



3220 GLEN ROYAL RD. RALEIGH, NC 27617  
TELE 919.788.0224 FAX 919.788.0232  
NC LICENSE #P-0189

### PLAN AND PROFILE

SEGMENT D

PLAN &  
PROFILE

SHEET:  
D - 04

3/30/2015



### 5.9 Ruth-Sizemore Store (DH-2561) (survey #166)

The Ruth-Sizemore Store, which was built in the mid-1920s, is located at 5520 Old Chapel Hill Road in Durham County. The FTA determined as a result of the proposed project that the store is National Register eligible under Criterion A in the area of significance of commerce as a rare surviving representative of a rural Durham County store (Figure 104 and Figure 105). The store has no known connection with significant persons, is not architecturally notable, and is unlikely to yield important information not readily available from other sources. It is therefore not National Register eligible under Criteria B, C, or D.

**Figure 104: Ruth-Sizemore Store: south front and east side elevations**



**Figure 105: Ruth-Sizemore Store: west side and north rear elevations**



The store stands on a 4.31-acre parcel at the northeast corner of the intersection of Old Chapel Hill Road (Old Durham Road) and North White Oak. Adjacent to its east on the parcel is a former pool hall, erected in the late 1920s or 1930s. A small house, built about 1910, stands to its north on the parcel. Both of



**Figure 108: National Register-eligible boundaries of Ruth-Sizemore Store in proximity to proposed project; former pool hall stands immediately east of store and house just to north; note location of park-and-ride lot, shaded in brown, and station and rail alignment in blue**



The proposed project at the Ruth-Sizemore Store encompasses the at-grade rail line and associated catenary system, the Gateway Station, and a park-and-ride lot north and east of the store and intersection at which it stands (Figure 108 and Figure 109). It would remove the pool hall and house near the store, and clear the mixed open and wooded, residential landscape to the store’s north and east (Figure 110 through Figure 112). The project would therefore introduce new visual and atmospheric elements to the historic property’s setting and have an indirect effect upon it. To avoid having a direct and adverse effect on the historic property, the project altered the design of the park-and-ride lot. The project initially changed the design and reduced the number of parking spaces, in order to retain the store and the land within its National Register-eligible boundaries. It changed the design a second time to add a larger buffer around the store that would be landscaped to visually separate the store from the proposed project. This change required removing additional planned parking spaces and also removed the planned installation of a sidewalk along North White Oak that would have been located within the National Register-eligible boundaries. The project would introduce new visual and atmospheric elements to the project’s setting, but would not diminish the characteristics that rendered the store eligible for National Register listing, including its location, design, setting, materials, workmanship, feeling, and association. The proposed project would have **No Adverse Effect** on this historic property.



Figure 109: Illustrative plan of proposed project Gateway Station; note store at lower left hand corner in red, green buffer around it, and park-and-ride and station above



Figure 110: Wintertime view looking southwest from outside of National Register-eligible boundaries with house at right, rear of Ruth-Sizemore Store at center, and former pool hall at left; proposed project would remove house, pool hall, and reduce number of trees



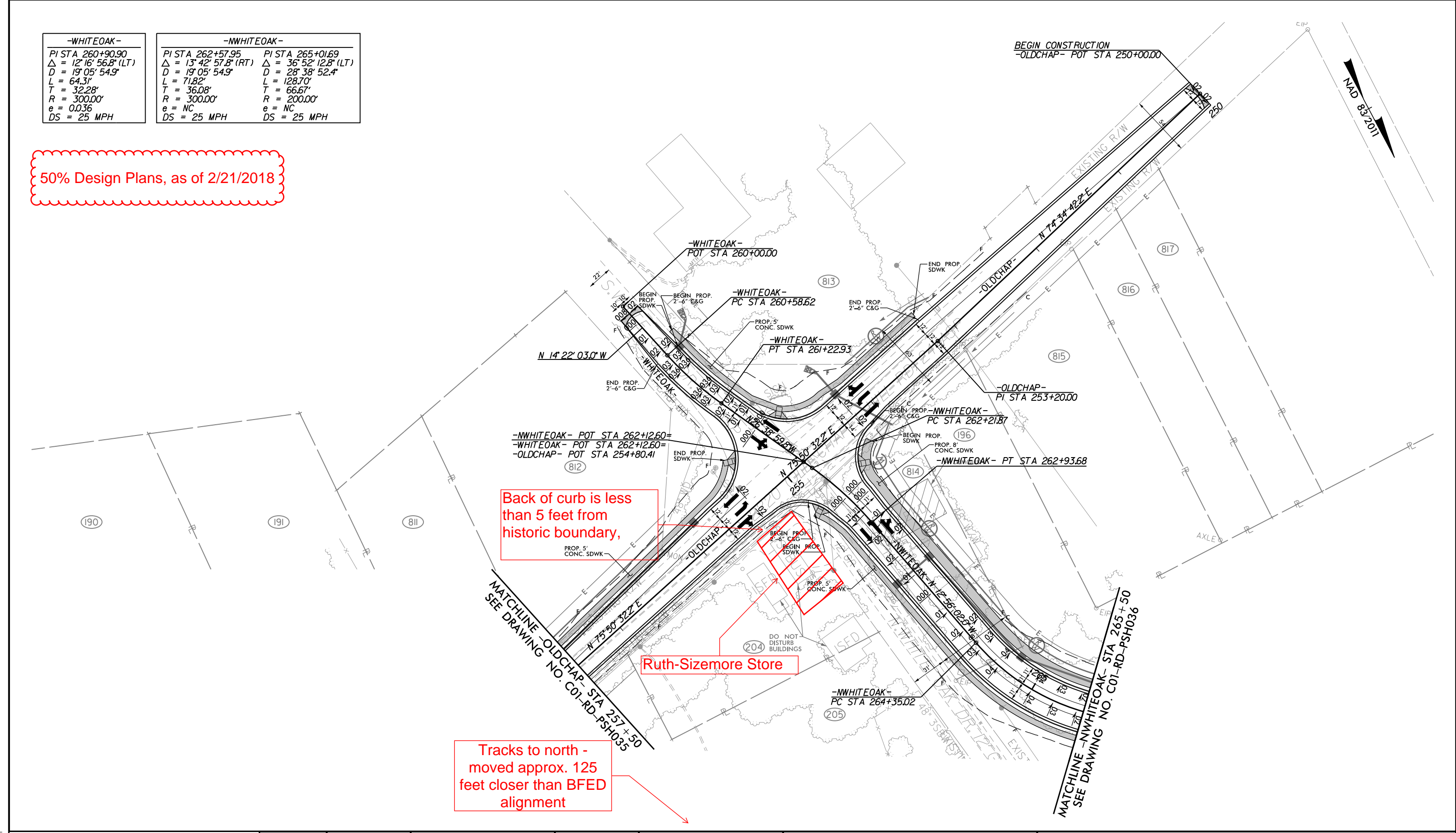






-WHITEOAK-	-NWHITEOAK-	
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$D = 19^\circ 05' 54.9"$	$D = 19^\circ 05' 54.9"$	$D = 28^\circ 38' 52.4"$
$L = 64.31'$	$L = 71.82'$	$L = 128.70'$
$T = 32.28'$	$T = 36.08'$	$T = 66.67'$
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50% Design Plans, as of 2/21/2018



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**PRELIMINARY PLANS**  
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 DOCUMENT NOT CONSIDERED FINAL  
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DESIGNED BY: PAR  
 DRAWN BY: PAR  
 CHECKED BY: JTG  
 DATE: 02/21/18

40 20 0 40 80  
 HORIZONTAL

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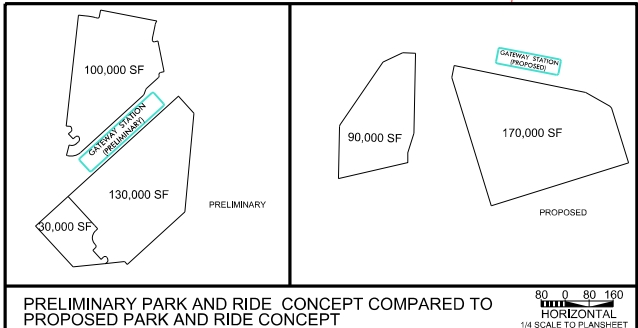
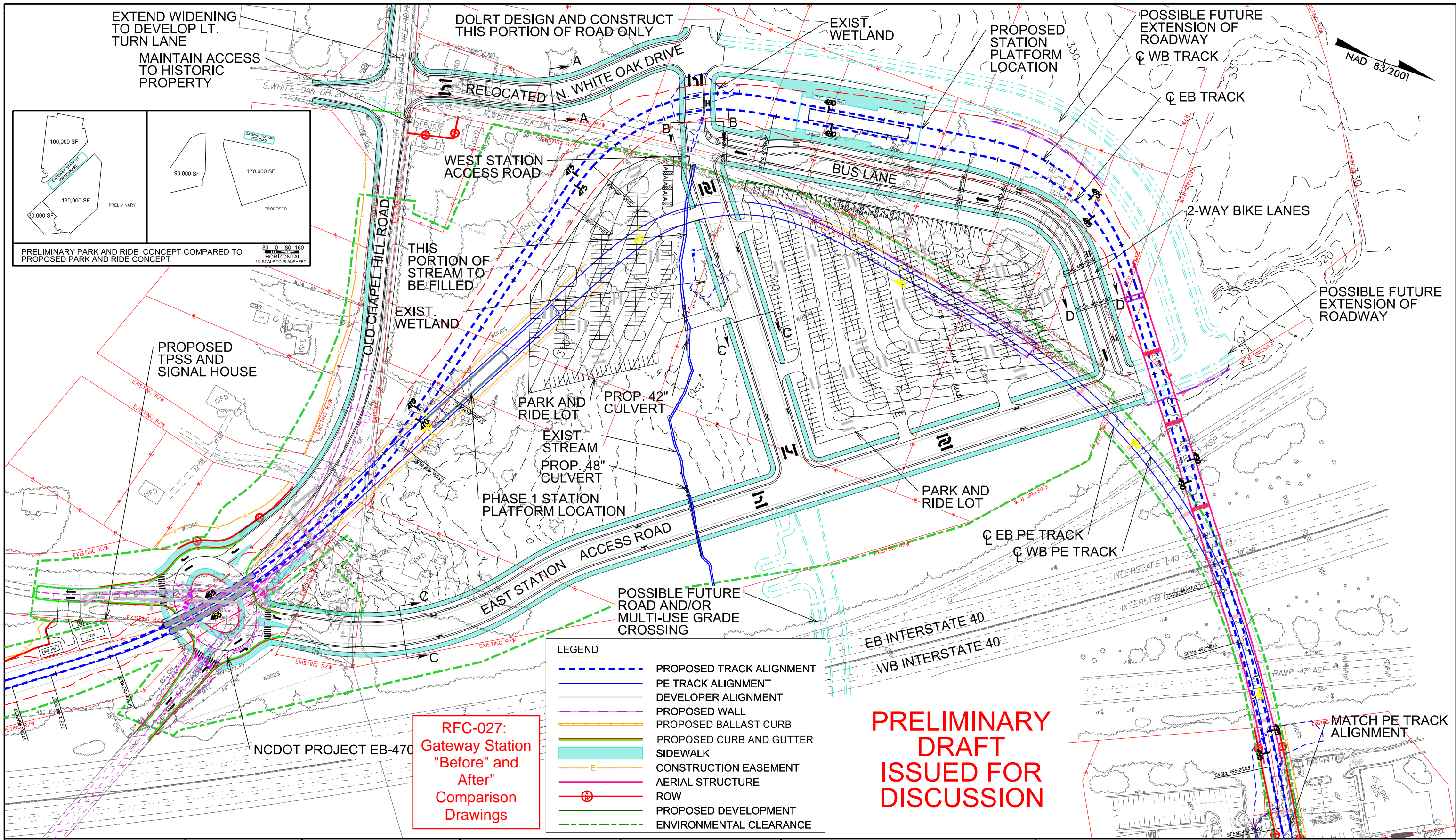
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**DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT**

**LINE SECTION 1  
 ROADWAY PLAN  
 N. WHITE OAK RD / OLD CHAPEL HILL RD**

DRAWING NO.: C01-RD-PSH036A  
 SHEET NO.:  
 REV.



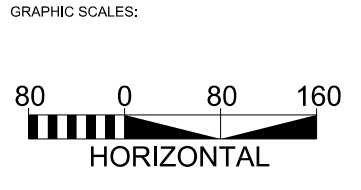


**LEGEND**

	PROPOSED TRACK ALIGNMENT
	PE TRACK ALIGNMENT
	DEVELOPER ALIGNMENT
	PROPOSED WALL
	PROPOSED BALLAST CURB
	PROPOSED CURB AND GUTTER
	SIDEWALK
	CONSTRUCTION EASEMENT
	AERIAL STRUCTURE
	ROW
	PROPOSED DEVELOPMENT
	ENVIRONMENTAL CLEARANCE

**RFC-027:**  
Gateway Station  
"Before" and  
After"  
Comparison  
Drawings

**PRELIMINARY  
DRAFT  
ISSUED FOR  
DISCUSSION**



DESIGNED BY:  
DRAWN BY:  
CHECKED BY:  
DATE: 8/21/2017

Concept Drawings for  
RFC Coordination Only

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**PRELIMINARY PLANS  
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PHASE 2  
DESIGN FEASIBILITY  
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SUPPLEMENTAL  
ENGINEERING,  
& ADVANCED  
PERMITTING

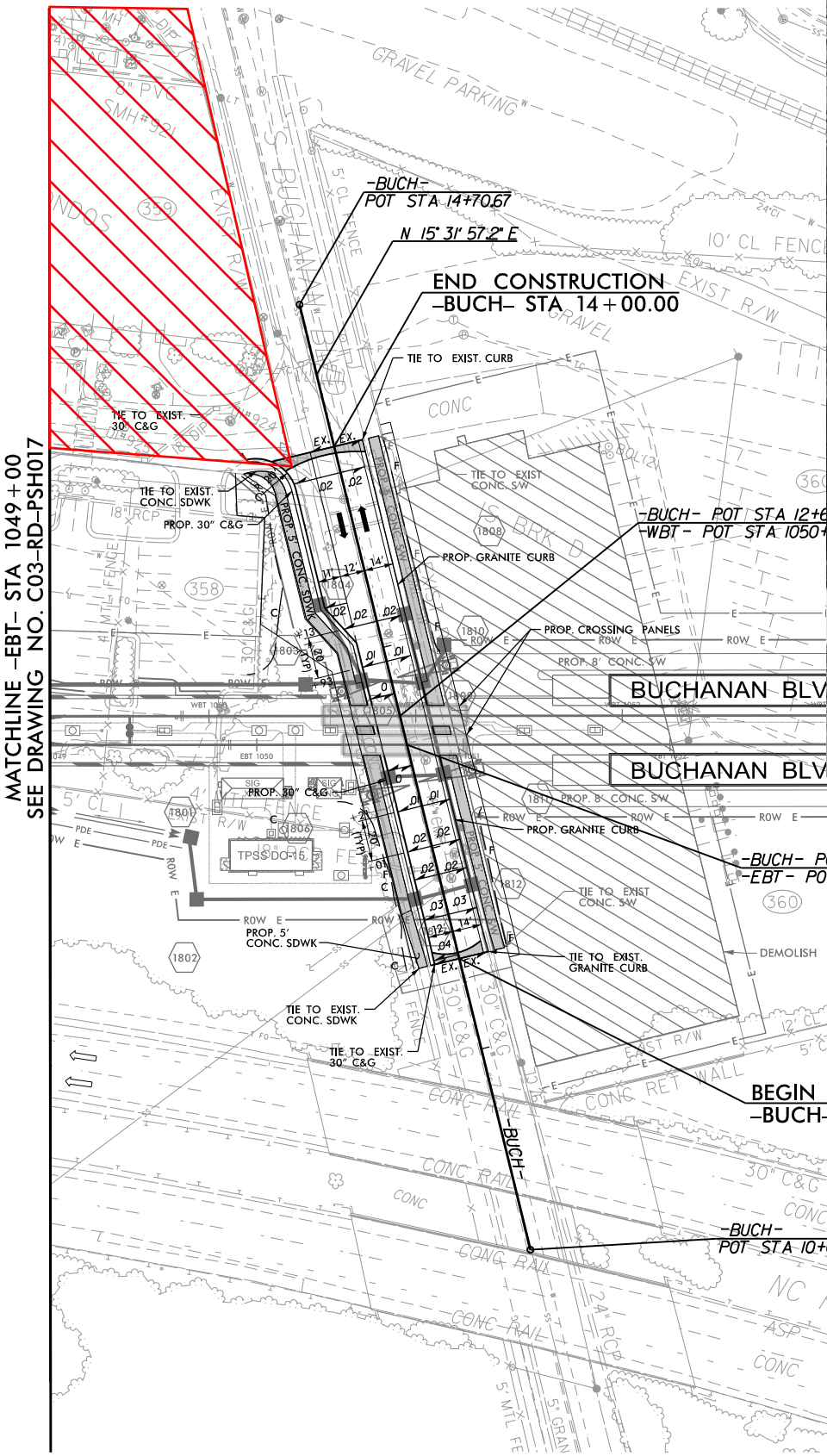


**DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT**

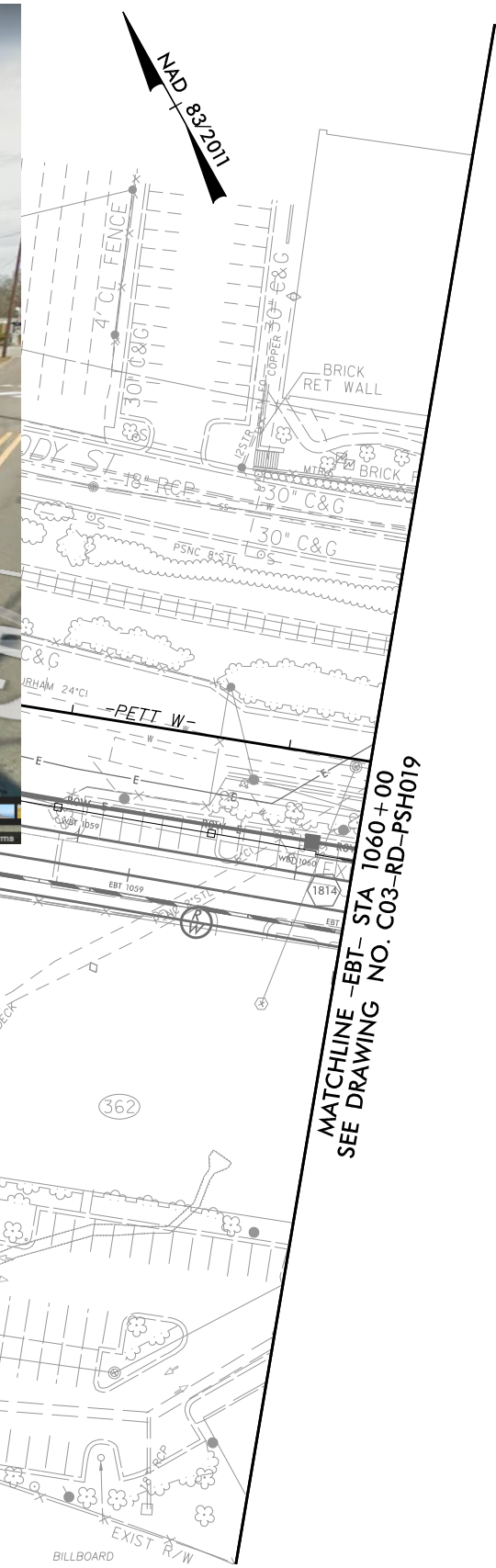
**GATEWAY STATION  
ALIGNMENT ALTERNATIVE A  
TRACK PLAN**

PROJECT NO.:      DRAWING NO.:      SHEET NO.:





View of Smith Warehouse from Buchanan Blvd., facing north



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 TNB  
 DRAWN BY:  
 TNB  
 CHECKED BY:  
 JTG  
 DATE:  
 03/15/18



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 Raleigh, NC 27601-3034

**GO Triangle**

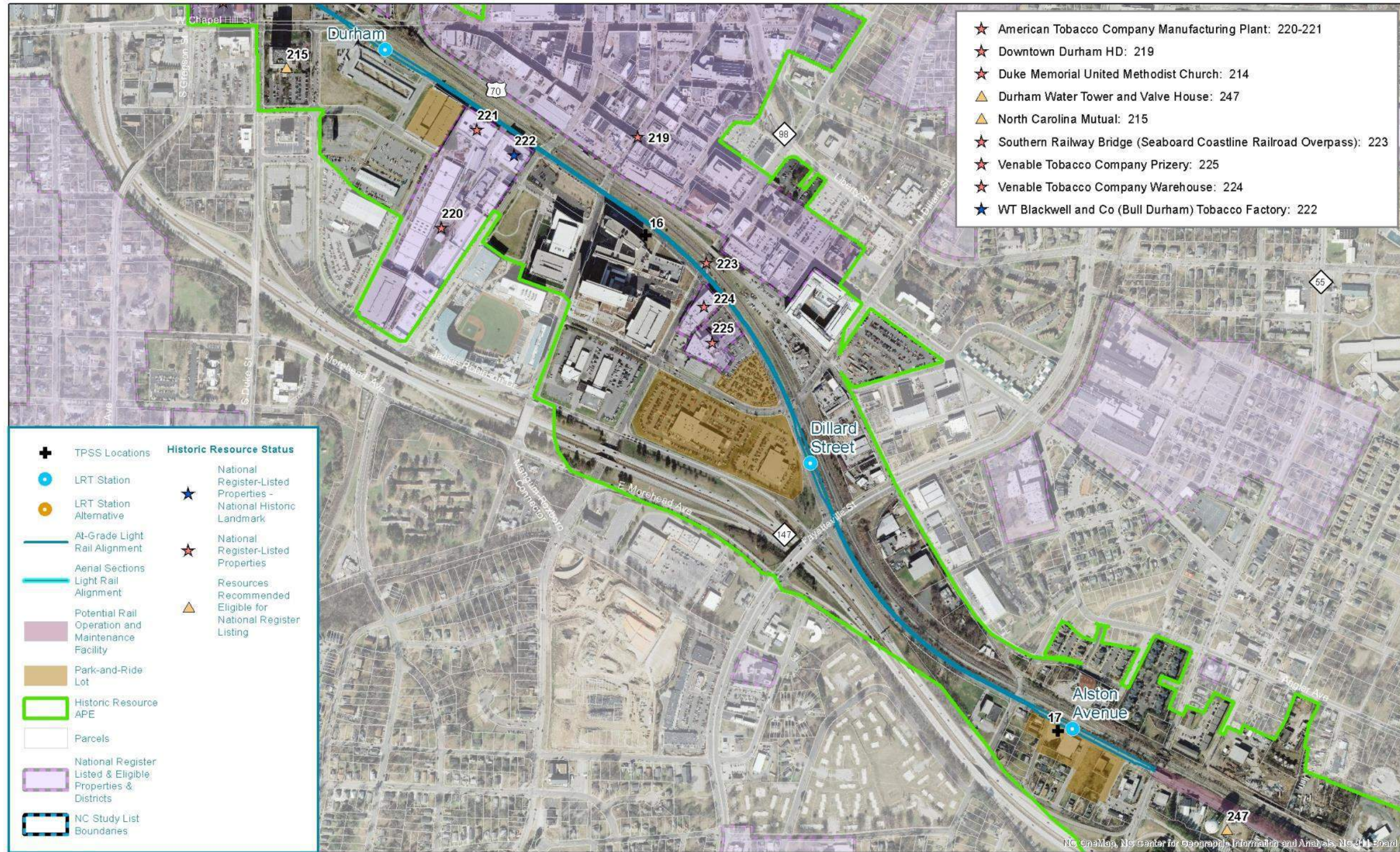
**DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT**

**LINE SECTION 3  
 ROADWAY PLAN  
 BUCHANAN BLVD**

DRAWING NO.: C03-RD-PSH018  
 SHEET NO.: 155  
 REV.



Figure 32: Area of Potential Effects Map 19



Historic Resources  
DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT

May 2015



0 500 1,000 Feet











Williams St

Google

Image capture: Feb 2017 © 2018 Google



**American Tobacco Company Manufacturing Plant (DH-1872) (survey #220-222)**

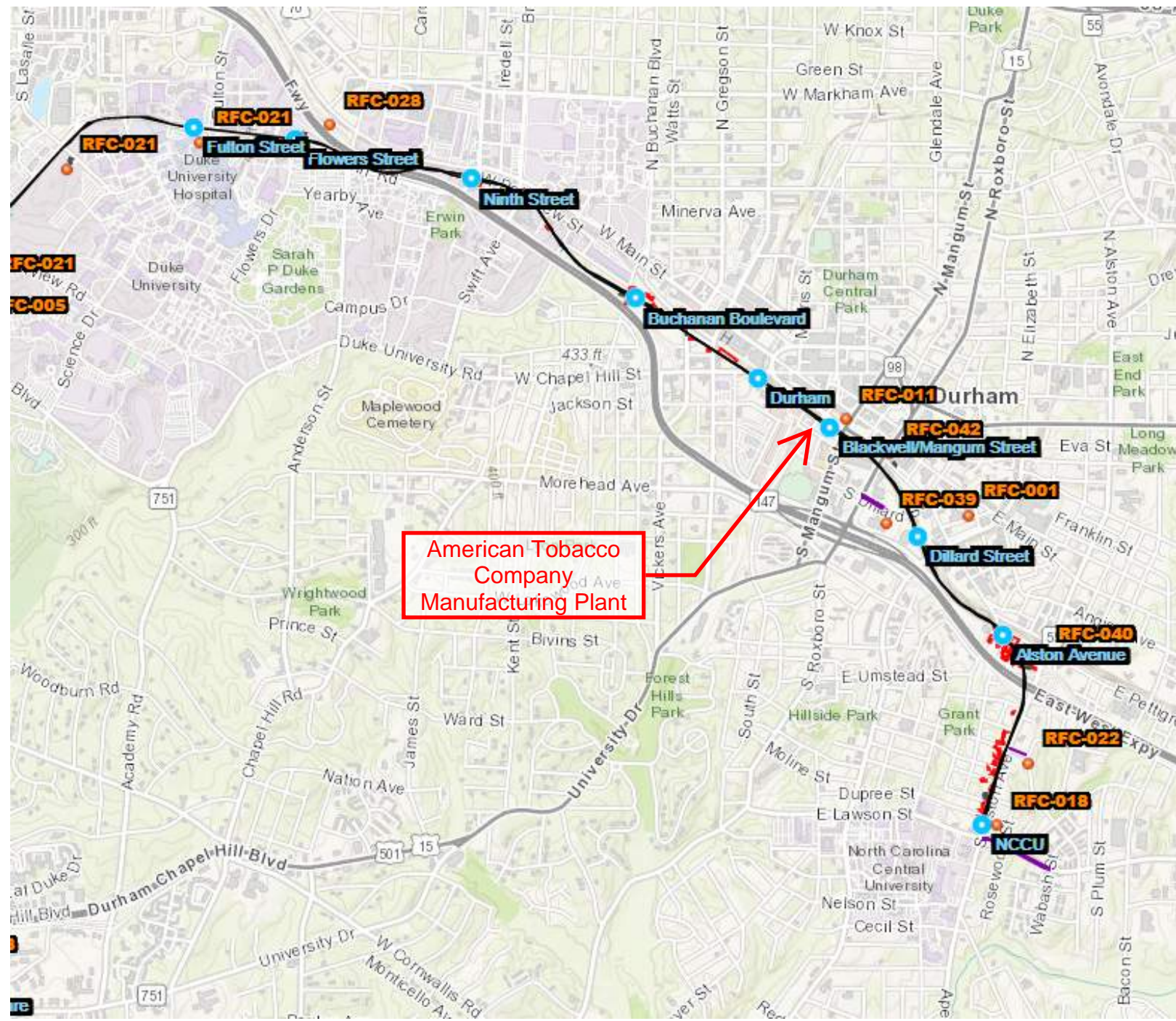


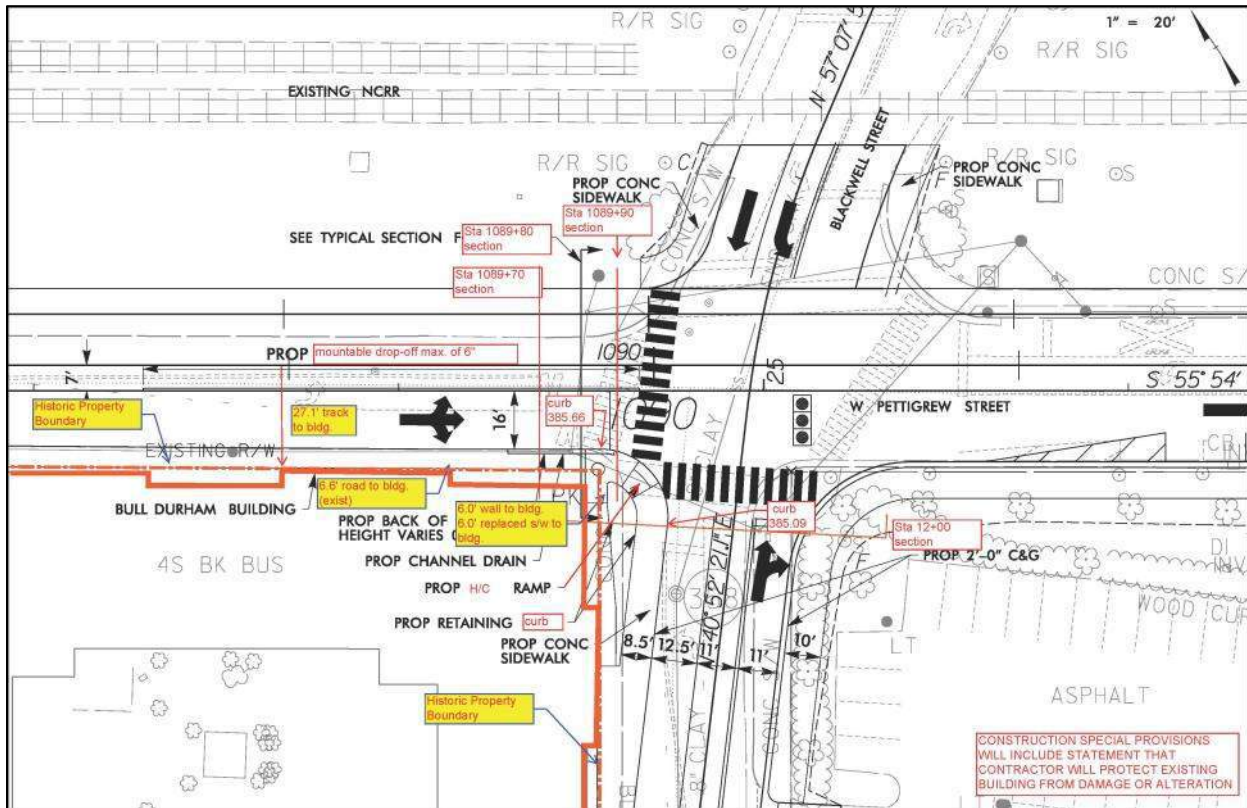


Figure 181: Northern portion of the National Register boundaries of the American Tobacco Company Manufacturing Plant in proximity to proposed project





**Figure 182: Design for proposed project at intersection of West Pettigrew and Blackwell streets; former Bull Durham tobacco factory located at lower left; proposed project extends across center of design from left to right**



The project near the manufacturing plant and tobacco factory is within a dense urban setting currently and historically supported by rail lines (Figure 183 through Figure 187). It would therefore not introduce a notable new visual element to the setting. Sanborn maps of Durham, including those of 1893 and 1913, depict the close proximity of the manufacturing plant and the tobacco factory to various sets of tracks (Figure 188 through Figure 190). On the 1913 Sanborn maps the distance—from the northern facades of the American Tobacco complex’s Hill Warehouse and the Bull Durham tobacco factory to the southern edge of the track sidings—is approximately 45 feet. The distance from the northeast corner of the Bull Durham factory to the southwestern edge of tracks is approximately 30 feet. And the distance from the southeast corner of the Bull Durham factory to the spur line is approximately 5 feet. Historic photographs show the same relationship (Figure 191 through Figure 193).

The proposed project will not take any property from within the National Register boundaries of the American Tobacco Company Manufacturing Plant and the W.T. Blackwell and Co. (Bull Durham) Tobacco Factory. It would therefore not have a direct effect on the historic properties. The project would not diminish the characteristics that rendered the historic properties eligible for National Register listing, including their location, design, setting, materials, workmanship, feeling, and association. Noise and vibration impacts on the Bull Durham factory, based upon its current use as an apartment building, will be moderate (see *Noise and Vibration Technical Report* (May 2015)). Given the extensive historic presence of railroad lines and the historic and current, heavily built-up urban setting, the proposed project would have **No Adverse Effect**, on the American Tobacco Company Manufacturing Plant and the W.T. Blackwell and Co. (Bull Durham) Tobacco Factory.



# Blackwell Mangum Station



*DRAFT for planning purposes only. Subject to change.*





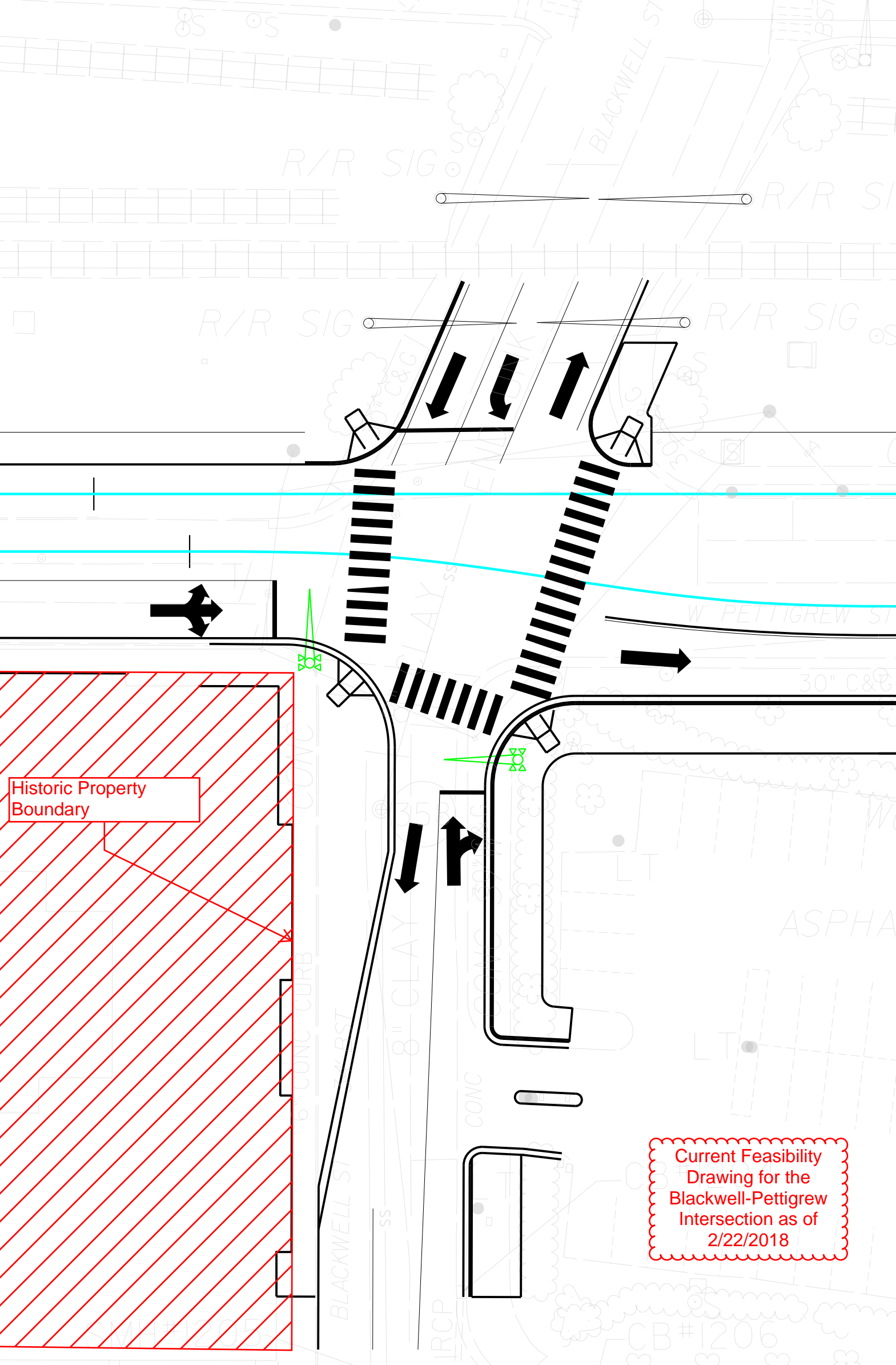


View toward Proposed Station



View from Proposed Station





Historic Property Boundary

Current Feasibility Drawing for the Blackwell-Pettigrew Intersection as of 2/22/2018





-PETT-			-BLACK-		
PI STA 17+48.22	PI STA 25+19.21	PI STA 26+00.82	PI STA 11+73.92		
$\Delta = 5' 30' 05.8''$ (RT)	$\Delta = 9' 22' 00.4''$ (RT)	$\Delta = 9' 22' 00.4''$ (LT)	$\Delta = 23' 10' 45.9''$ (RT)		
D = 1' 25' 56.8"	D = 1' 28' 42.0"	D = 1' 28' 42.0"	D = 60' 00' 00.0"		
L = 384.07'	L = 81.60'	L = 81.60'	L = 36.48'		
T = 192.19'	T = 40.96'	T = 40.96'	L = 38.63'		
R = 4,000.00'	R = 500.00'	R = 500.00'	R = 100.00'		
e = NC	e = 0.03	e = SEE PLANS	e = SEE PLANS		
DS = 45 MPH	DS = 35 MPH	DS = 30 MPH	DS = 15 MPH		

MATCHLINE -EBT- STA 1082+00  
SEE DRAWING NO. C03-RD-PSH020

MATCHLINE -EBT- STA 1093+50  
SEE DRAWING NO. C03-RD-PSH022

American Tobacco  
Company  
Manufacturing Plant  
(DH-1872)

201 ft

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TNB  
DRAWN BY:  
TNB

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REFINEMENT OF THE D-O LRT PROJECT; AS SUCH  
THEY MAY CHANGE WITHOUT NOTIFICATION**



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## DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT

**LINE SECTION 3  
ROADWAY PLAN  
PETTIGREW ST / BLACKWELL ST**

DRAWING NO.: C03-RD-PSH021      SHEET NO.:      REV.

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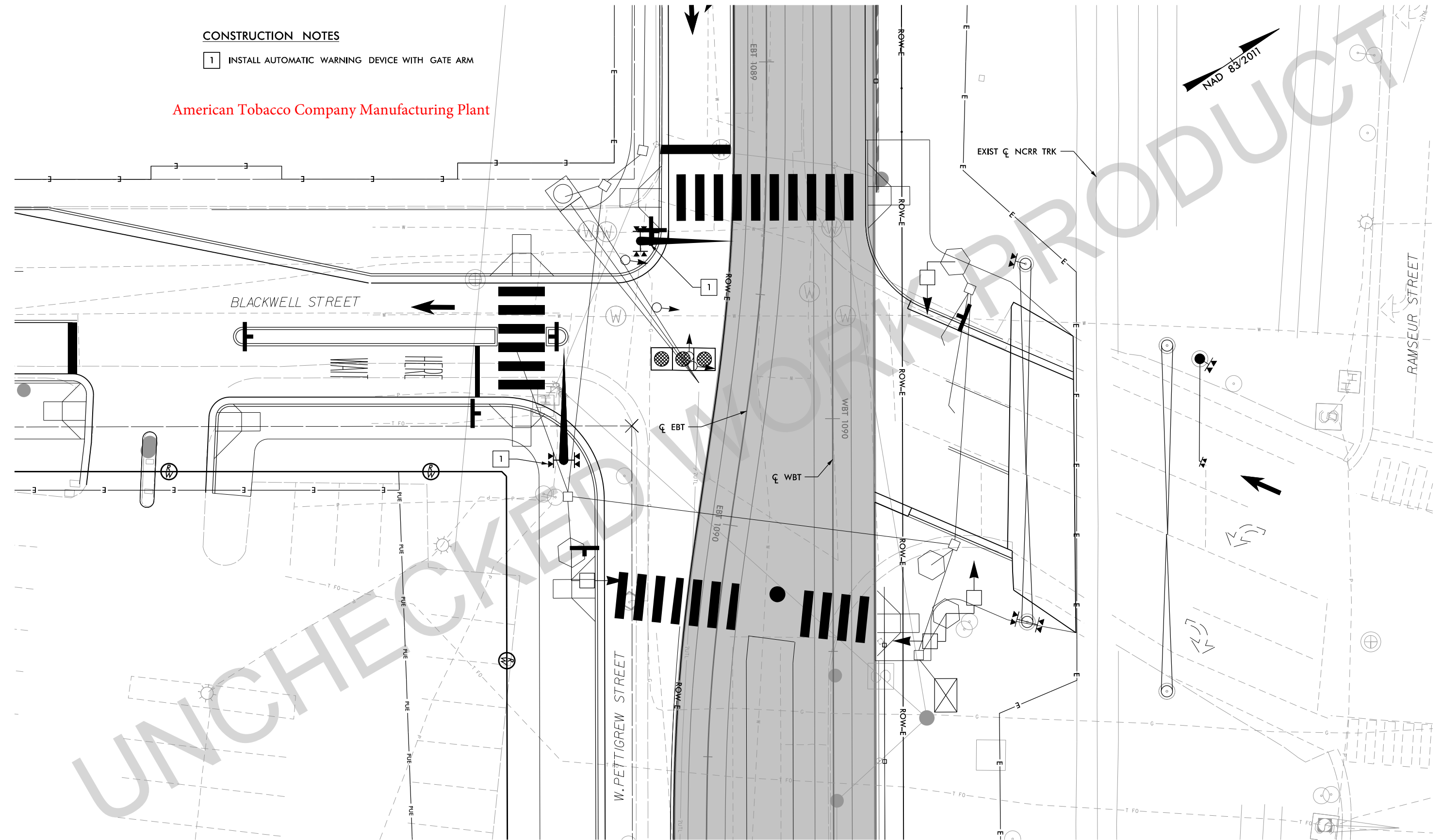




**CONSTRUCTION NOTES**

- 1 INSTALL AUTOMATIC WARNING DEVICE WITH GATE ARM

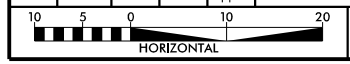
American Tobacco Company Manufacturing Plant



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DRAWN BY:	
CHECKED BY:	
DATE:	

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**HDR Engineering, Inc.**  
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 Raleigh, NC 27601-3034

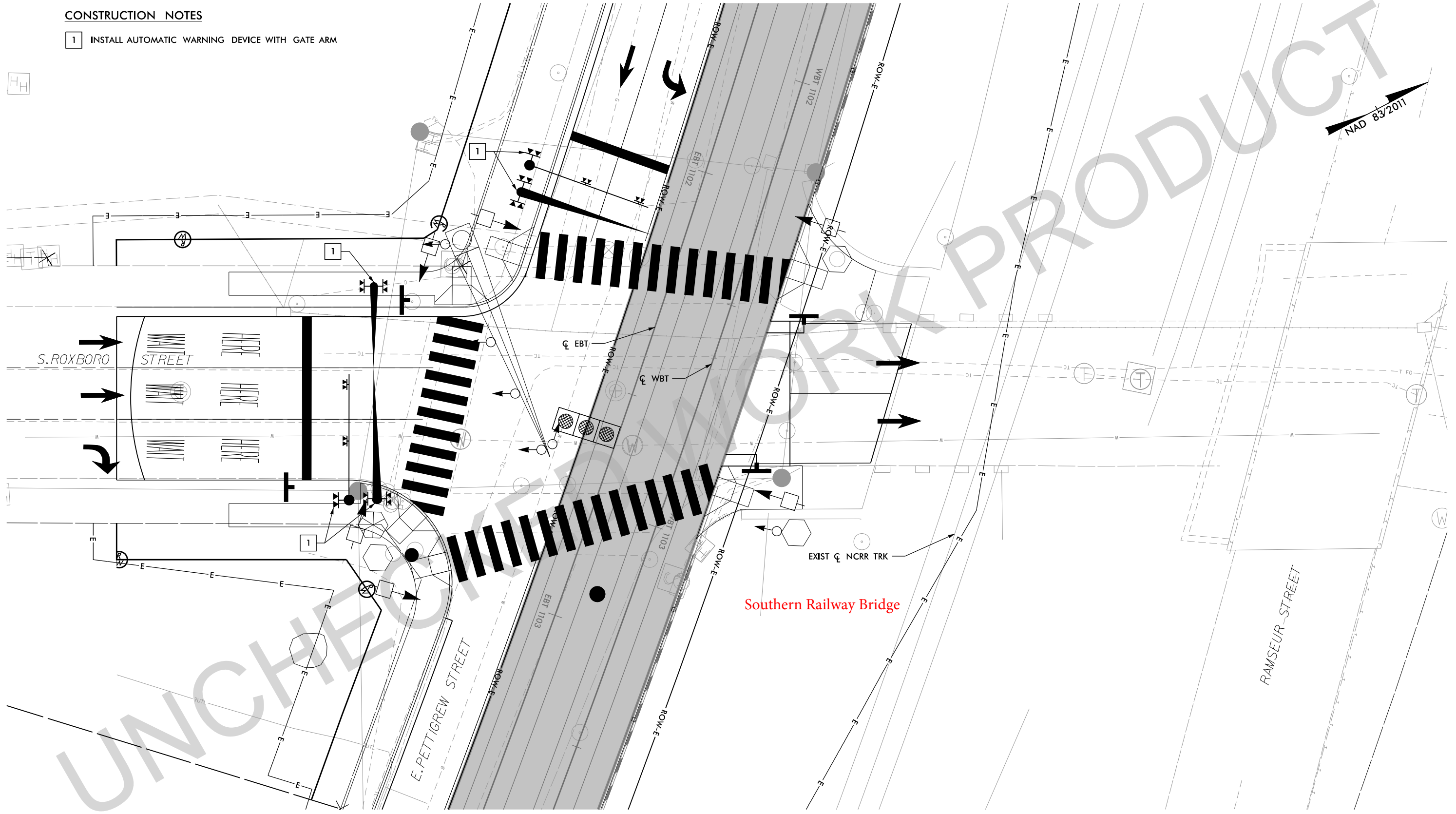
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<b>DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT</b>		
<b>LINE SECTION 3 BLACKWELL STREET GRADE CROSSING DETAILS</b>		
DRAWING NO.:	SHEET NO.:	REV.:
C03-TK-GRX-046		



**CONSTRUCTION NOTES**

- 1 INSTALL AUTOMATIC WARNING DEVICE WITH GATE ARM

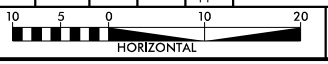


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 DRAWN BY:  
 CHECKED BY:  
 DATE:



/S1/

/D1/

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/D1/



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 555 Fayetteville Street, Suite 900  
 Raleigh, NC 27601-3034



*Triangle*

**DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT**

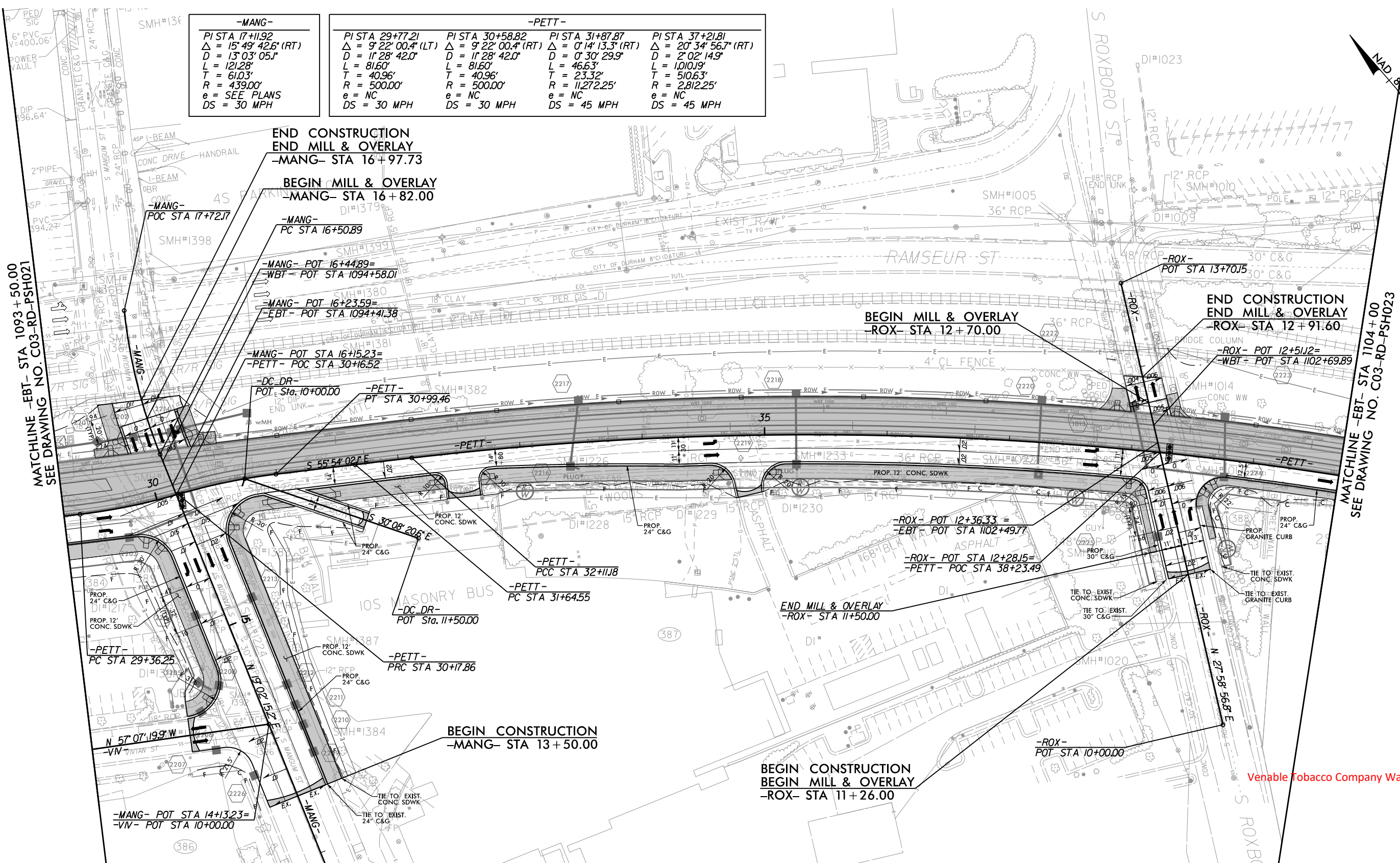
**LINE SECTION 3  
 ROXBORO STREET  
 GRADE CROSSING DETAILS**

DRAWING NO.: C03-TK-GRX-048

SHEET NO.:  
 REV.



-MANG-		-PETT-			
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$D = 13^\circ 03' 05.1"$	$D = 1^\circ 28' 42.0"$	$D = 1^\circ 28' 42.0"$	$D = 0^\circ 30' 29.9"$	$D = 2^\circ 02' 14.9"$	
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$R = 439.00'$	$R = 500.00'$	$R = 500.00'$	$R = 11272.25'$	$R = 2812.25'$	
$e = \text{SEE PLANS}$	$e = NC$	$e = NC$	$e = NC$	$e = NC$	
$DS = 30 \text{ MPH}$	$DS = 30 \text{ MPH}$	$DS = 30 \text{ MPH}$	$DS = 45 \text{ MPH}$	$DS = 45 \text{ MPH}$	



MATCHLINE -EBT- STA 1093 + 50.00  
SEE DRAWING NO. C03-RD-PSH021

MATCHLINE -EBT- STA 1104 + 00  
SEE DRAWING NO. C03-RD-PSH023

Venable Tobacco Company Warehouse

PLOT DRIVER: DO-LRT\_ILX17\_PDF-phtcfcg  
USER: mosmith  
FILE: C03-RD-PSH022.dgn

DATE: 3/6/2018  
TIME: 9:53:42 AM

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES ARE COMPLETED

DESIGNED BY: TNB
DRAWN BY: TNB
CHECKED BY: JTG
DATE: 03/15/18



**HDR Engineering, Inc.**  
555 Fayetteville Street, Suite 900  
Raleigh, NC 27601-3034

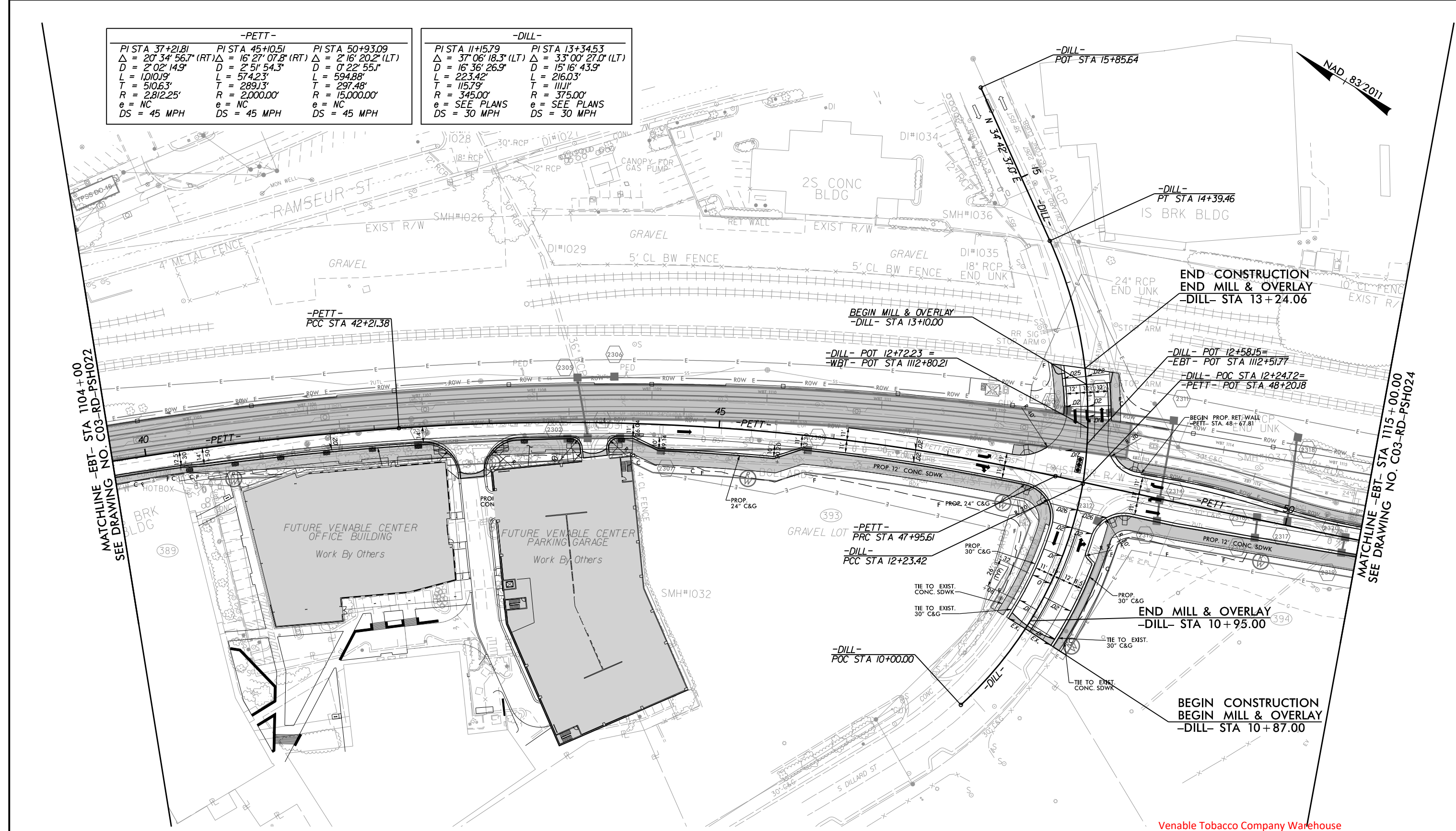


**DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT**  
**LINE SEGMENT 3**  
**ROADWAY PLAN**  
**PETTIGREW ST / MANGUIN ST / ROXBORO ST**

DRAWING NO.: C03-RD-PSH022	SHEET NO.: 159	REV.
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-PETT-			-DILL-	
PI STA 37+21.81	PI STA 45+10.51	PI STA 50+93.09	PI STA 11+15.79	PI STA 13+34.53
$\Delta = 20' 34" 56.7" (RT)$	$\Delta = 16' 27" 07.8" (RT)$	$\Delta = 2' 16" 20.2" (LT)$	$\Delta = 37' 06" 18.3" (LT)$	$\Delta = 33' 00" 27.0" (LT)$
D = 2' 02' 14.9"	D = 2' 51' 54.3"	D = 0' 22' 55.1"	D = 16' 36' 26.9"	D = 15' 16' 43.9"
L = 1010.19'	L = 574.23'	L = 594.88'	L = 223.42'	L = 216.03'
T = 510.63'	T = 289.13'	T = 297.48'	T = 115.79'	T = 111.11'
R = 2,812.25'	R = 2,000.00'	R = 15,000.00'	R = 345.00'	R = 375.00'
e = NC	e = NC	e = NC	e = SEE PLANS	e = SEE PLANS
DS = 45 MPH	DS = 45 MPH	DS = 45 MPH	DS = 30 MPH	DS = 30 MPH



PLOT DRIVER: DO-LRT\_ILX17\_PDF-phtcfg  
 USER: msmith  
 FILE: C03-RD-PSH023.dgn  
 PENTABLE: DO-LRT\_RD.tbl  
 TIME: 9:53:53 AM  
 DATE: 3/6/2018

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES ARE COMPLETED

DESIGNED BY: TNB  
 DRAWN BY: TNB  
 CHECKED BY: JTG  
 DATE: 03/15/18

40 20 0 40 80  
 HORIZONTAL

**HDR**  
**HDR Engineering, Inc.**  
 555 Fayetteville Street, Suite 900  
 Raleigh, NC 27601-3034

**GO Triangle**

**DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT**  
**LINE SECTION 3**  
**ROADWAY PLAN**  
**PETTIGREW ST / DILLARD ST**

DRAWING NO.: C03-RD-PSH023  
 SHEET NO.: 160  
 REV.

Venable Tobacco Company Warehouse



PLOT DRIVER: DO-LRT\_11X17\_PDF-phtcfcg  
 USER: ovogt  
 FILE: C03-RD-PSH028.dgn

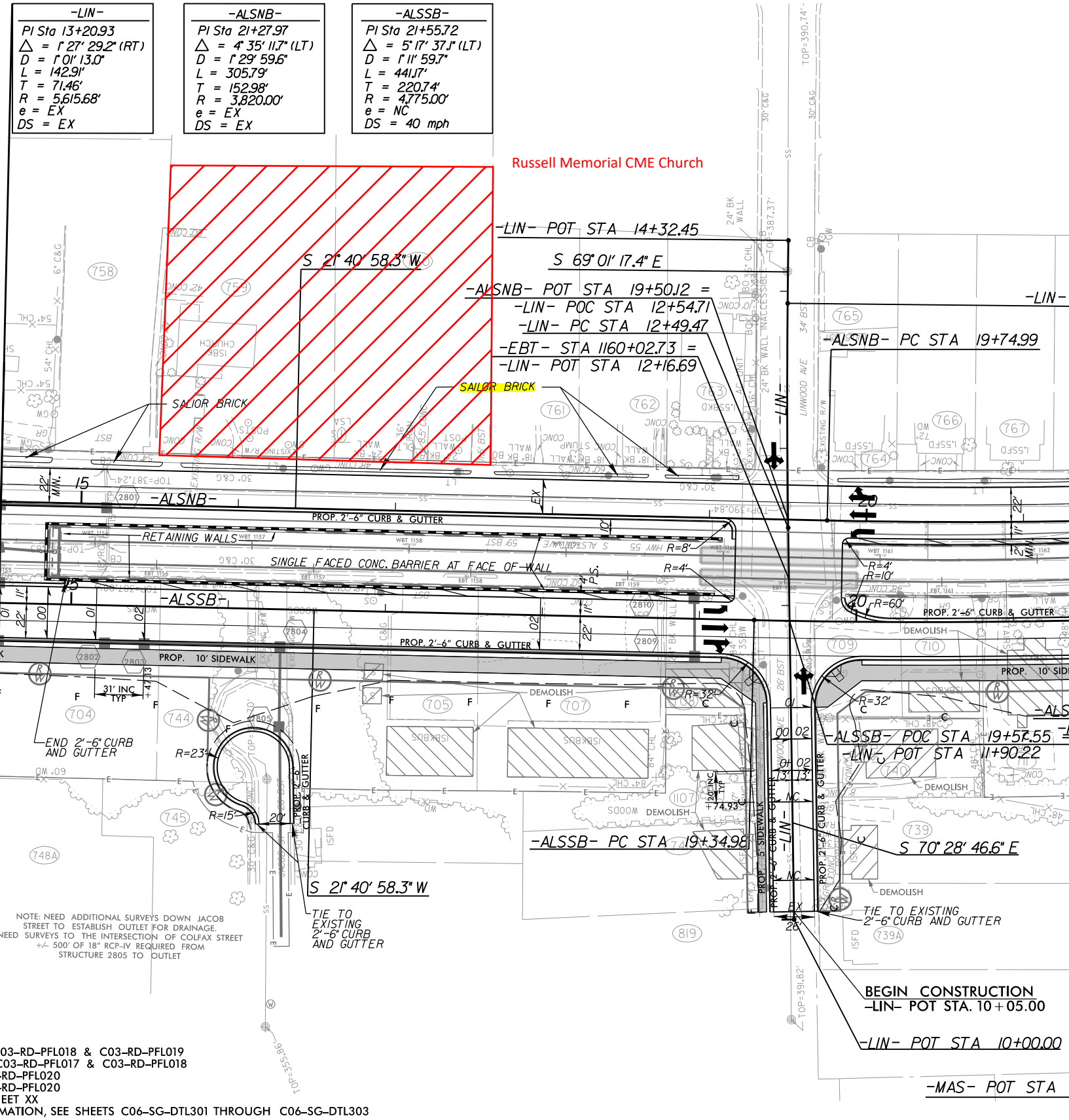
DATE: 3/7/2018  
 TIME: 11:49:33 AM

PENTABLE: DO-LRT\_RD.TBI

<p><b>-LIN-</b>          PI Sta 13+20.93  <math>\Delta = 1' 27' 29.2''</math> (RT)  <math>D = 1' 0' 13.0''</math>  <math>L = 142.91'</math>  <math>T = 71.46'</math>  <math>R = 5,615.68'</math>  <math>e = EX</math>  <math>DS = EX</math></p>	<p><b>-ALSNB-</b>          PI Sta 21+27.97  <math>\Delta = 4' 35' 11.7''</math> (LT)  <math>D = 1' 29' 59.6''</math>  <math>L = 305.79'</math>  <math>T = 152.98'</math>  <math>R = 3,820.00'</math>  <math>e = EX</math>  <math>DS = EX</math></p>	<p><b>-ALSSB-</b>          PI Sta 21+55.72  <math>\Delta = 5' 17' 37.1''</math> (LT)  <math>D = 1' 11' 59.7''</math>  <math>L = 441.17'</math>  <math>T = 220.74'</math>  <math>R = 4,775.00'</math>  <math>e = NC</math>  <math>DS = 40</math> mph</p>
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MATCHLINE -EBT- STA 1155+00  
SEE DRAWING NO. C03-RD-PSH027



REFERENCES:  
 FOR -ALSSB- PROFILE, SEE SHEET C03-RD-PFL018 & C03-RD-PFL019  
 FOR -ALSNB- PROFILE, SEE SHEET C03-RD-PFL017 & C03-RD-PFL018  
 FOR -Y5- PROFILE, SEE SHEET C03-RD-PFL020  
 FOR -Y6- PROFILE, SEE SHEET C03-RD-PFL020  
 FOR INTERSECTION DETAIL, SEE SHEET XX  
 FOR RR CROSSING SIGNAL INFORMATION, SEE SHEETS C06-SG-DTL301 THROUGH C06-SG-DTL303

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES ARE COMPLETED

DESIGNED BY: AEV
DRAWN BY: AEV
CHECKED BY: SCB
DATE: 03/15/2018

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**GO Triangle**

**DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT**  
**LINE SECTION 3**  
**ROADWAY PLAN**  
**ALSTON AVE / LINWOOD AVE**

DRAWING NO.: C03-RD-PSH028	SHEET NO.: 166	REV.
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