



North Carolina Department of Transportation  
**Highway Stormwater Program**  
**STORMWATER MANAGEMENT PLAN**  
 FOR NCDOT PROJECTS



(Version 2.07; Released October 2016)

**WBS Element:** 17BP.2.R.78      **TIP No.:** SF-530055      **County(ies):** Lenoir      **Page** 1 **of** 1

**General Project Information**

<b>WBS Element:</b>	17BP.2.R.78	<b>TIP Number:</b>	SF-530055	<b>Project Type:</b>	Bridge Replacement	<b>Date:</b>	7/17/2017
<b>NCDOT Contact:</b>	Paul (Andy) Jordan, P.E.		<b>Contractor / Designer:</b>	Kimley-Horn & Associates			
<b>Address:</b>	NCDOT Hydraulics Design Unit		<b>Address:</b>	421 Fayetteville Street			
	1020 Birch Ridge Drive			Suite 600			
	Raleigh, NC 27610			Raleigh, NC 27601			
<b>Phone:</b>	919-707-6729		<b>Phone:</b>	919-677-2000			
<b>Email:</b>	pajordan@ncdot.gov		<b>Email:</b>	dan.robinson@kimley-horn.com			
<b>City/Town:</b>	Bethel		<b>County(ies):</b>	Lenoir			
<b>River Basin(s):</b>	Neuse		<b>CAMA County?</b>	No			
<b>Wetlands within Project Limits?</b>	No						

**Project Description**

<b>Project Length (lin. miles or feet):</b>	.082 miles	<b>Surrounding Land Use:</b>	Rural
<b>Project Built-Up Area (ac.)</b>		<b>Proposed Project</b>	<b>Existing Site</b>
		0.3 ac.	0.2 ac.
<b>Typical Cross Section Description:</b>	2 @ 11' wide lanes with 4' 6" paved shoulders and 1' 3" metal rails		1 @ 25.33' wide bridge

<b>Annual Avg Daily Traffic (veh/hr/day):</b>	<b>Design/Future:</b> NA	<b>Year:</b> 2040	<b>Existing:</b> 1700 vpd	<b>Year:</b> 2011
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**General Project Narrative:**  
**(Description of Minimization of Water Quality Impacts)**

The bridge replacement on SR 1324 (Kennedy Home Road) conveys Whitelace Creek from West to East and ultimately drains into the Neuse River. The existing bridge , overall length (OAL) = 31' and width 25.33' will be replaced with a bridge having an OAL = 50' and width = 33'. The new bridge is wider than the existing bridge to provide the required shoulders and lane width necessary for roadway and drainage. The roadway is being widened to provide the 11' travel lanes for safe travel and to accommodate a bike route. The proposed bridge and roadway improvements minimized the existing overtopping condition and will now convey the 100 yr storm event through the provided bridge opening.

An existing ditch was filled by the widened typical section from station 13+80 to approximately 14+50 Lt. The existing roadway is normal crown and drains to the existing ditch, however the proposed design is superelevated away from the ditch and the existing ground adjacent to the new fill slope drains away from the roadway into the farm field. This proposed condition eliminates the need for replacing the ditch. No new roadside ditches were introduced as part of this project.

Runoff from the bridge is captured on the low side of the bridge in shoulder berm gutter and traffic bearing 2GI's on the north eastern quadrant of the road. The 15" pipe system is designed to outfall into an existing roadside ditch (with rip rap outlet protection) outside of buffer zones 1 and 2. The existing vegetated ditch will treat the minimal increase in impervious area from the bridge widening.

Whitelace Creek is a NON-FEMA stream that is shown on Flood Insurance Rate Map (FIRM) panel 3720358400J, dated April 16, 2013. The Whitelace Creek area is located within the Neuse River Special Flood Hazard Area outer floodplain fringe and the existing bridge 55 is not included in the effective Neuse River HEC-RAS model. A hydraulic analysis on Whitelace Creek was performed to assess the potential flood level increases associated with this project. Based on this analysis, the proposed bridge replacement project was not shown to cause an increase in the design year or base flood year levels along the study reach of Whitelace Creek.

**Waterbody Information**

<b>Surface Water Body (1):</b>	Whitelace Creek		<b>NCDWR Stream Index No.:</b>	27-76	
<b>NCDWR Surface Water Classification for Water Body</b>	<b>Primary Classification:</b>	Class C			
	<b>Supplemental Classification:</b>	Nutrient Sensitive Waters (NSW)			
<b>Other Stream Classification:</b>					
<b>Impairments:</b>	None				
<b>Aquatic T&amp;E Species?</b>	No	<b>Comments:</b>			
<b>NRTR Stream ID:</b>				<b>Buffer Rules in Effect:</b>	Neuse
<b>Project Includes Bridge Spanning Water Body?</b>	Yes	<b>Deck Drains Discharge Over Buffer?</b>	No	<b>Dissipator Pads Provided in Buffer?</b>	No
<b>Deck Drains Discharge Over Water Body?</b>	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
(If yes, provide justification in the General Project Narrative)					

See Sheet 1A For Index of Sheets  
See Sheet 1B For Conventional Symbols

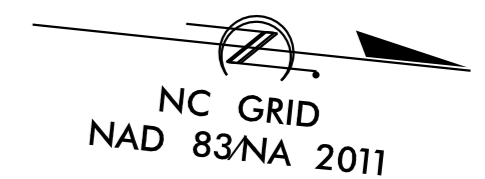
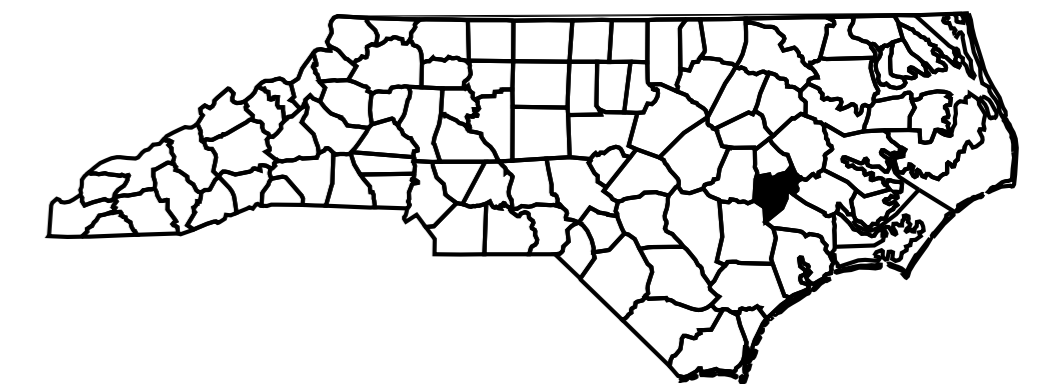
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**LENOIR COUNTY**

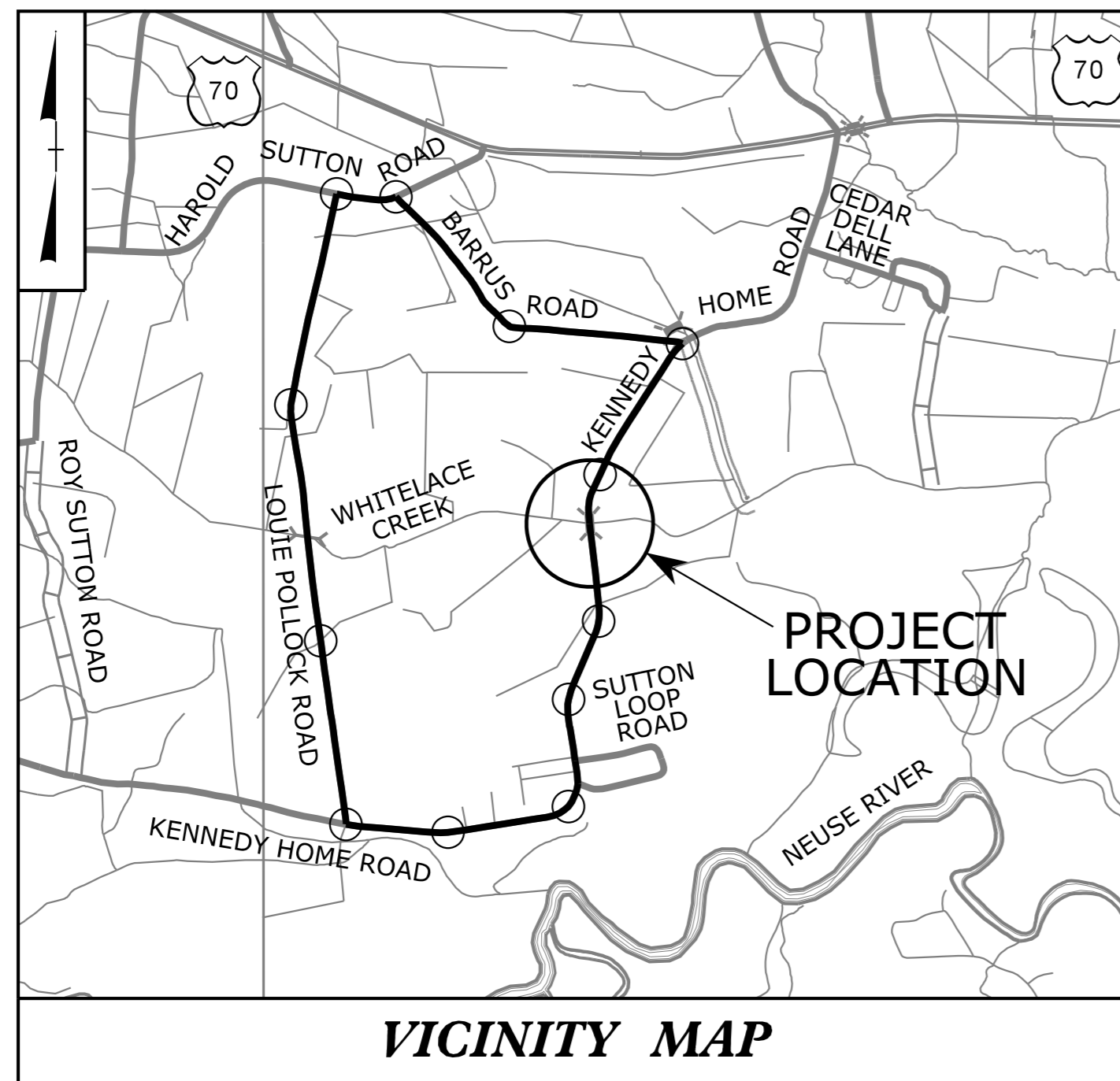
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SF-530055	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.2.R.78		PE	

DOCUMENT NOT CONSIDERED FINAL  
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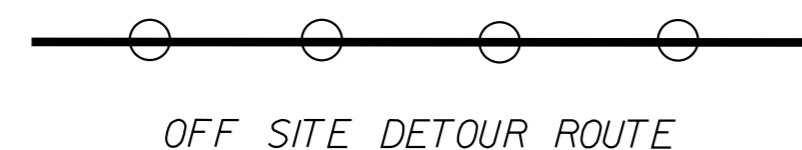
**PERMIT DRAWINGS**



**PROJECT: SF-530055**



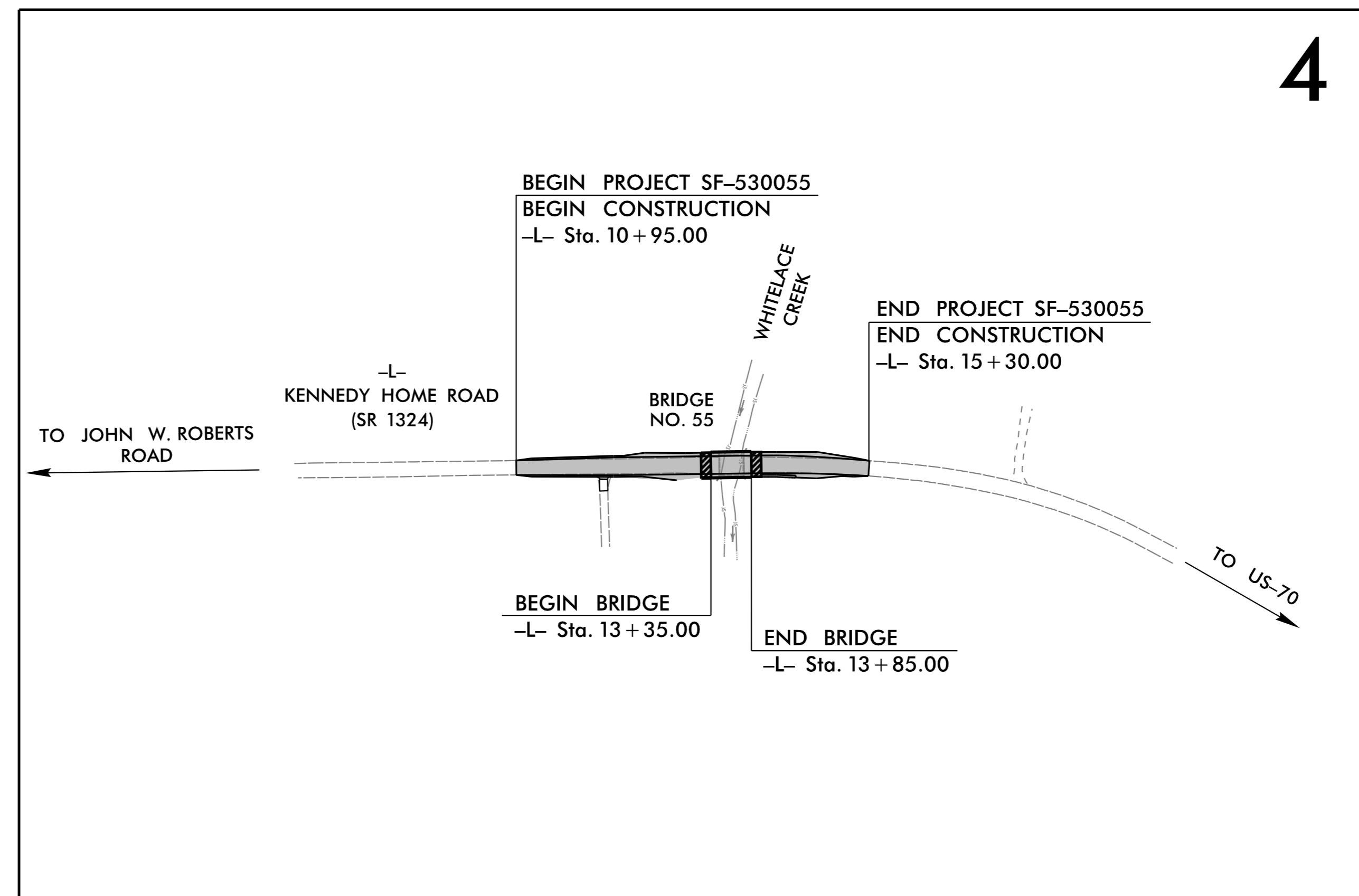
**VICINITY MAP**



**LOCATION:** BRIDGE NO. 55 OVER WHITEFACE CREEK  
ON SR 1324 (KENNEDY HOME ROAD)

**TYPE OF WORK:** GRADING, DRAINAGE, PAVING, AND STRUCTURE

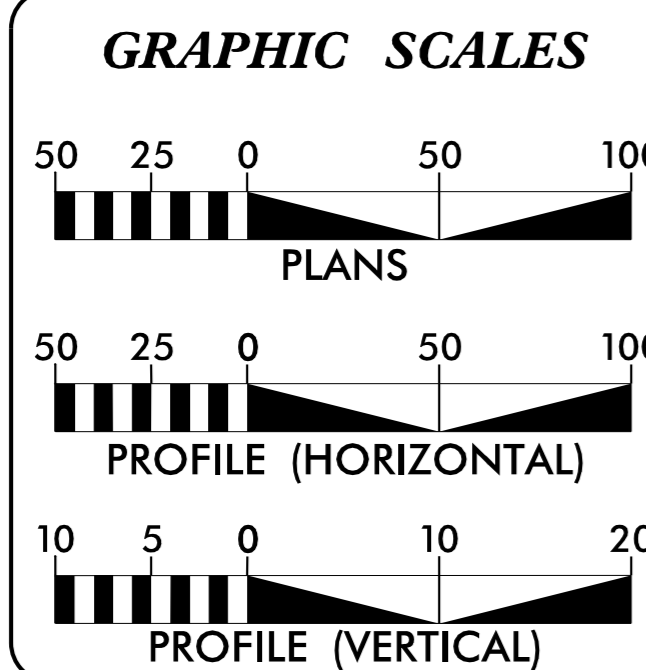
**BUFFER IMPACTS**



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II  
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

**CONTRACT:**



**DESIGN DATA**

ADT 2011	=	1700 vpd
ADT 2040	=	4000 vpd
D	=	6%
T	=	6%
V	=	60 MPH
FUNC CLASS = SUB REGIONAL TIER		

**PROJECT LENGTH**

LENGTH ROADWAY PROJECT 17BP.2.R.78	=	0.073 MILES
LENGTH STRUCTURE PROJECT 17BP.2.R.78	=	0.009 MILES
TOTAL LENGTH PROJECT 17BP.2.R.78	=	0.082 MILES

PLANS PREPARED FOR THE NCDOT BY:

**Kimley Horn**

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 6, 2017

LETTING DATE: FEBRUARY 28, 2018

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TYLER SPRING, E.I. PROJECT DESIGN ENGINEER

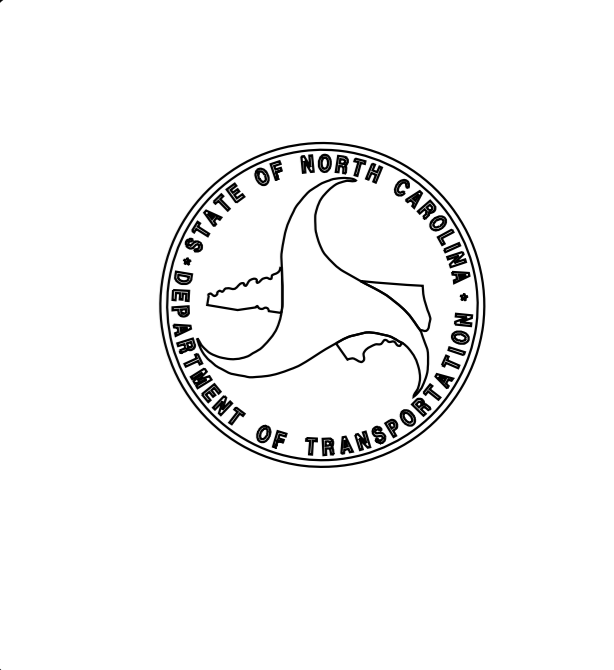
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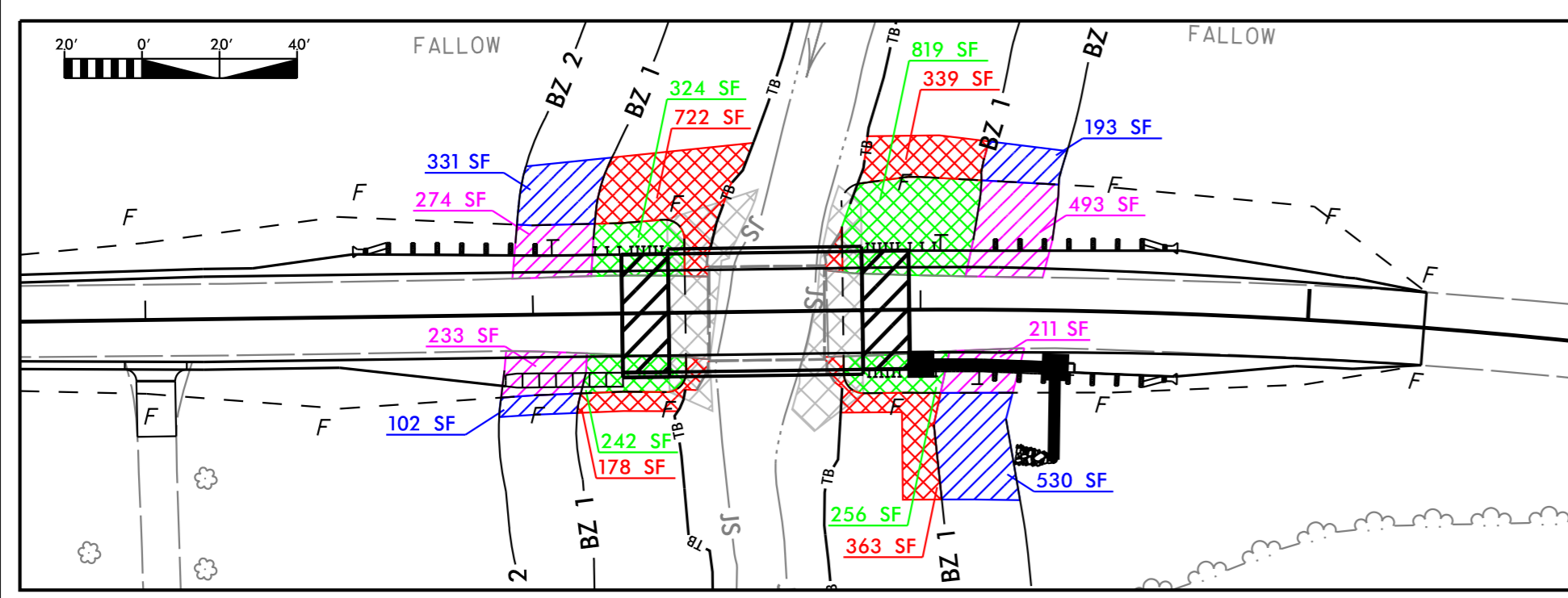
**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.





-L-

PI Sta 15+12.49  
 $\Delta = 9^{\circ}05'25.9''$  (RT)  
 $D = 3^{\circ}38'16.2''$   
 $L = 249.89'$   
 $R = 1,575.00'$

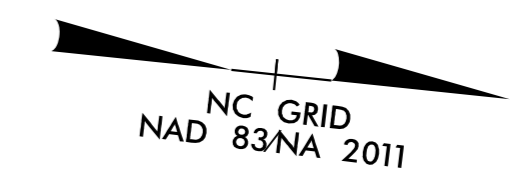
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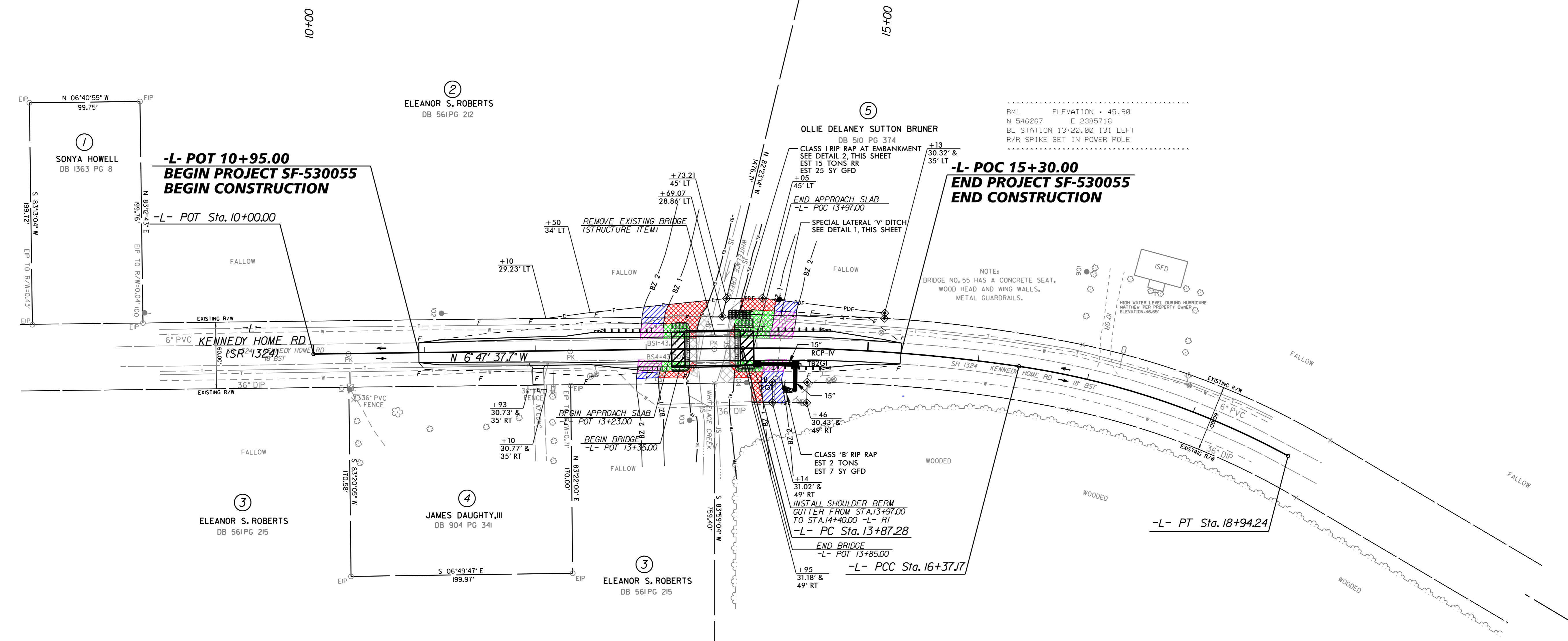
421 FAYETTEVILLE STREET, SUITE 600  
 RALEIGH, NC 27601

RIGHT-OF-WAY REV.  
 CONST. REV.

PROJECT REFERENCE NO. SF-530055	SHEET NO. 3
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

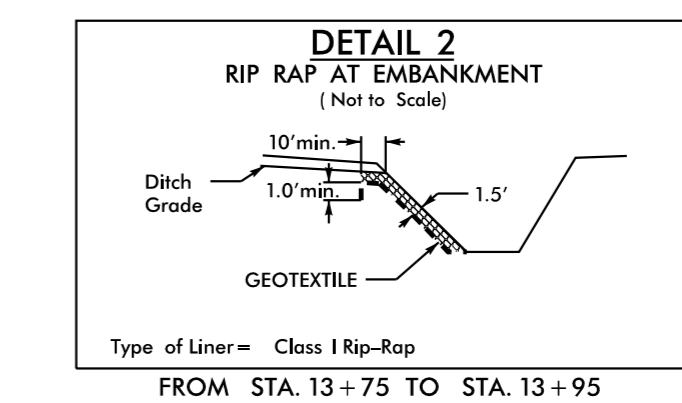
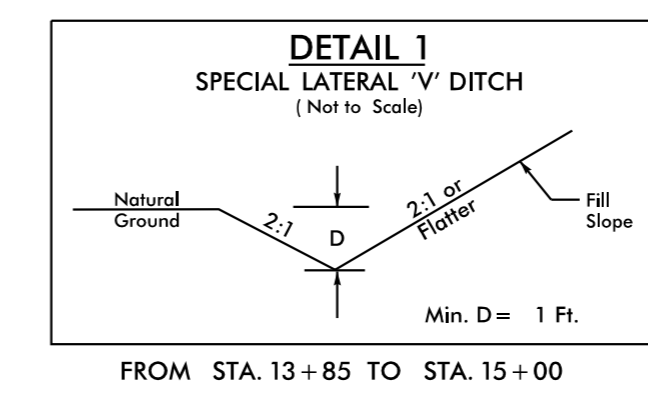


REVISIONS

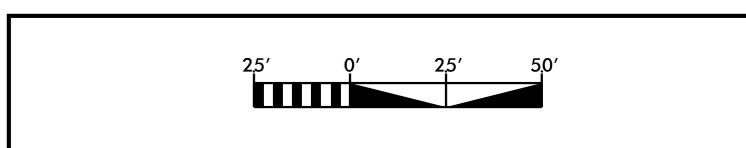


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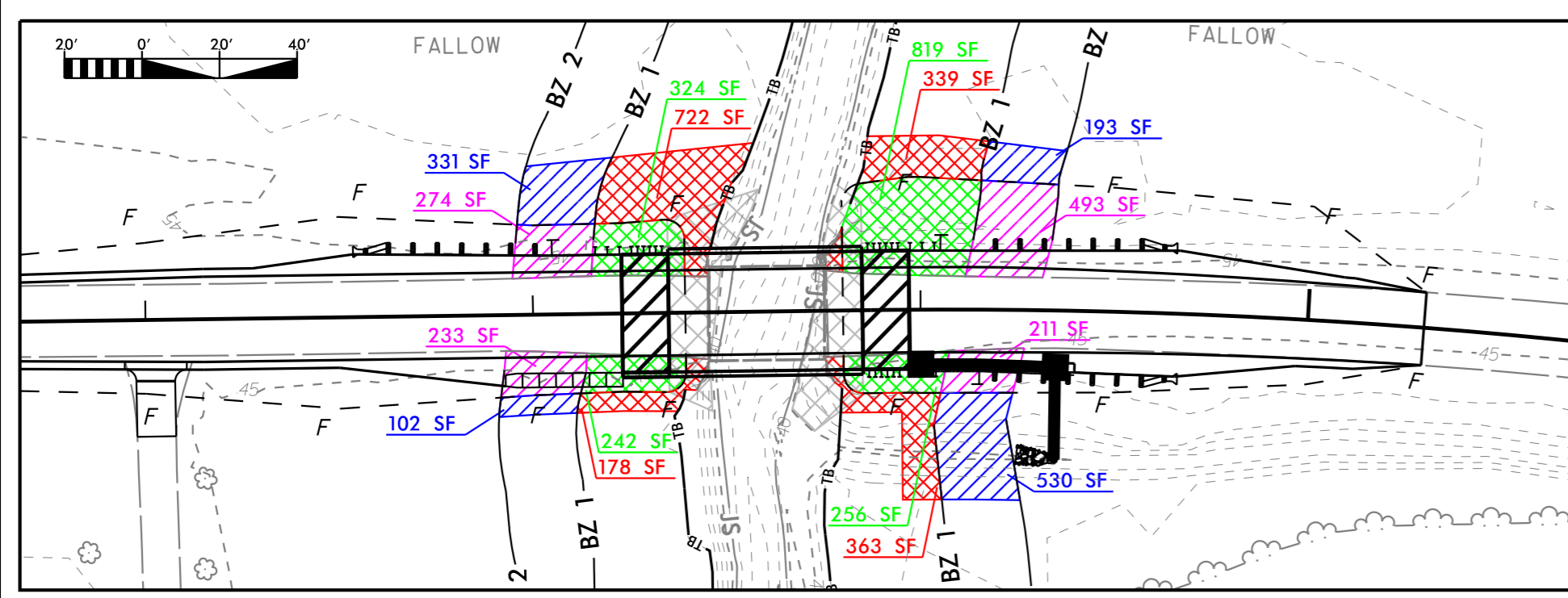
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- BRIDGE EXCAVATION
- TEMPORARY IMPACTS ZONE 1
- TEMPORARY IMPACTS ZONE 2
- PERMANENT IMPACTS ZONE 1
- PERMANENT IMPACTS ZONE 2



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-L-

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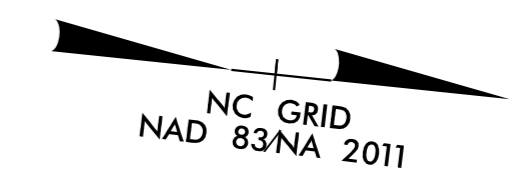
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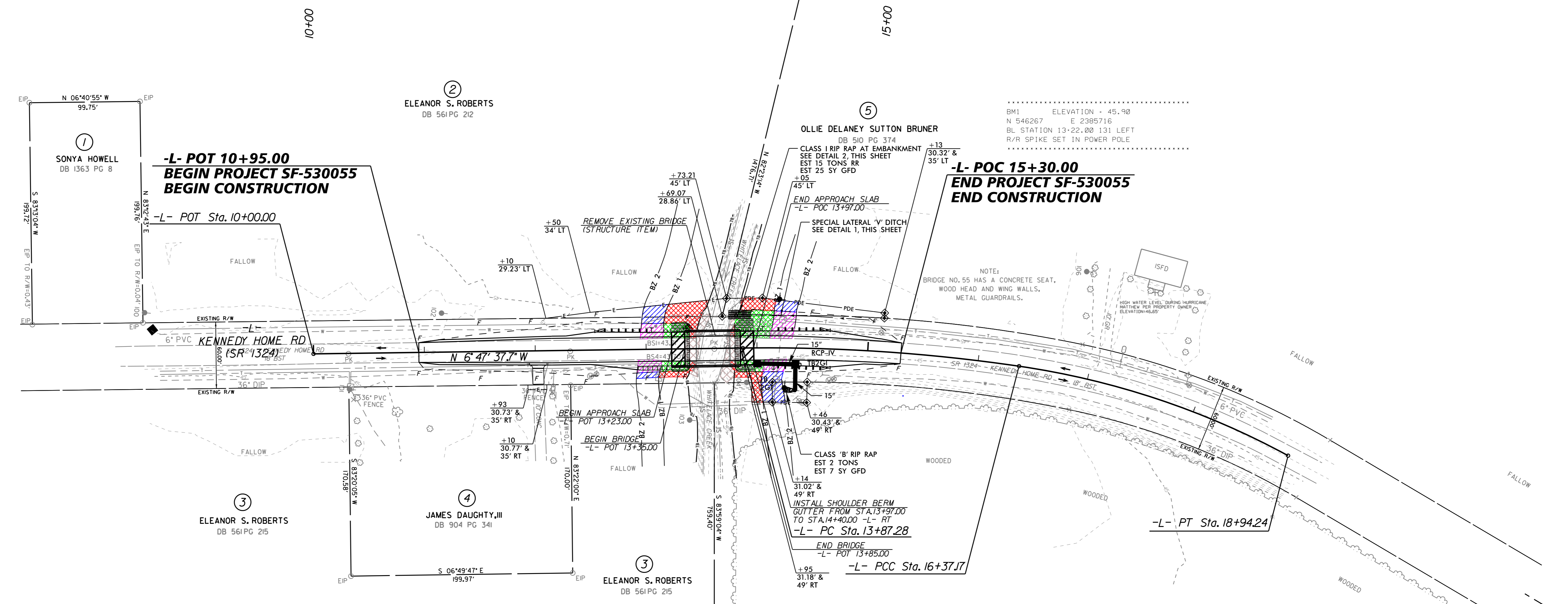
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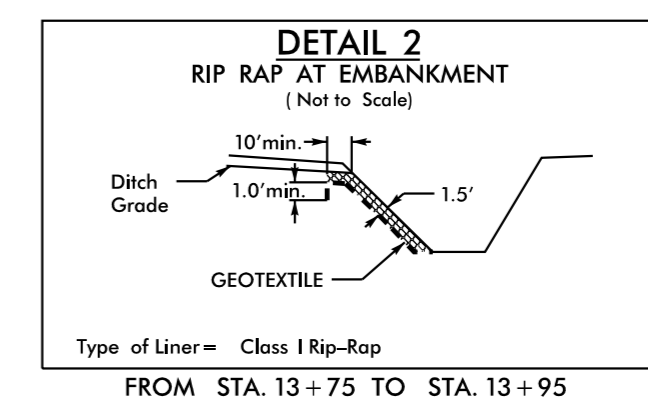
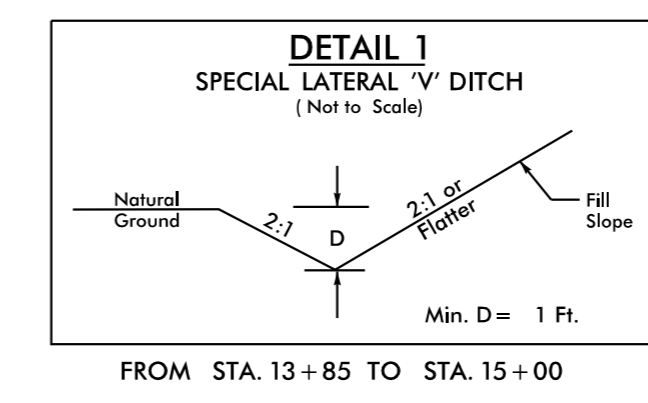
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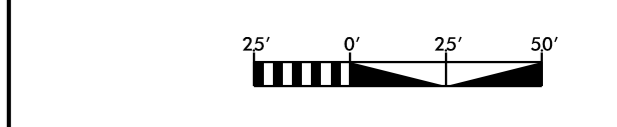
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- BRIDGE EXCAVATION
- TEMPORARY IMPACTS ZONE 1
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- PERMANENT IMPACTS ZONE 2



K:\PAL\_Roadway\01036379 - Bridge55\Hydraulics\PERMITS\_Environmental\Drawings\01036379\_hyd\_prm\_bur\_dph\_conc.dgn 8/28/2017

## BUFFER IMPACTS SUMMARY

			IMPACT									BUFFER REPLACEMENT	
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	TYPE			PERMANENT			TEMPORARY			ZONE 1 (ft <sup>2</sup> )	ZONE 2 (ft <sup>2</sup> )
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft <sup>2</sup> )	ZONE 2 (ft <sup>2</sup> )	TOTAL (ft <sup>2</sup> )	ZONE 1 (ft <sup>2</sup> )	ZONE 2 (ft <sup>2</sup> )	TOTAL (ft <sup>2</sup> )		
1	BRIDGE 55	-L- 13+35 TO 13+85		X		1642	1212	2854	1635	1156	2791		
<b>TOTAL:</b>						1642	1212	2854	1635	1156	2791		

N.C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
  
 LENOIR COUNTY  
 PROJECT: BRIDGE 55 REPLACEMENT  
  
 8/24/2017  
 SHEET 2 OF 5

See Sheet 1A For Index of Sheets  
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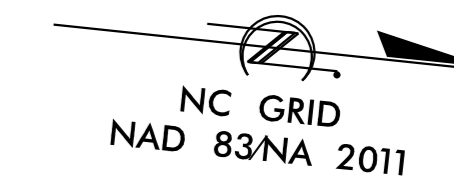
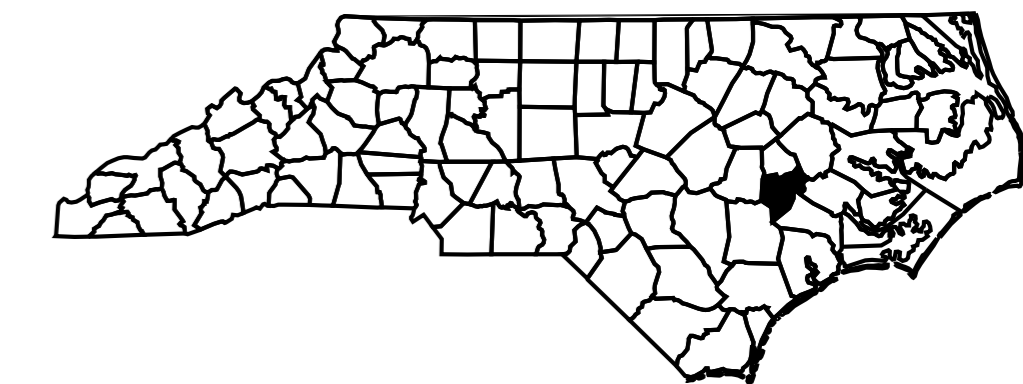
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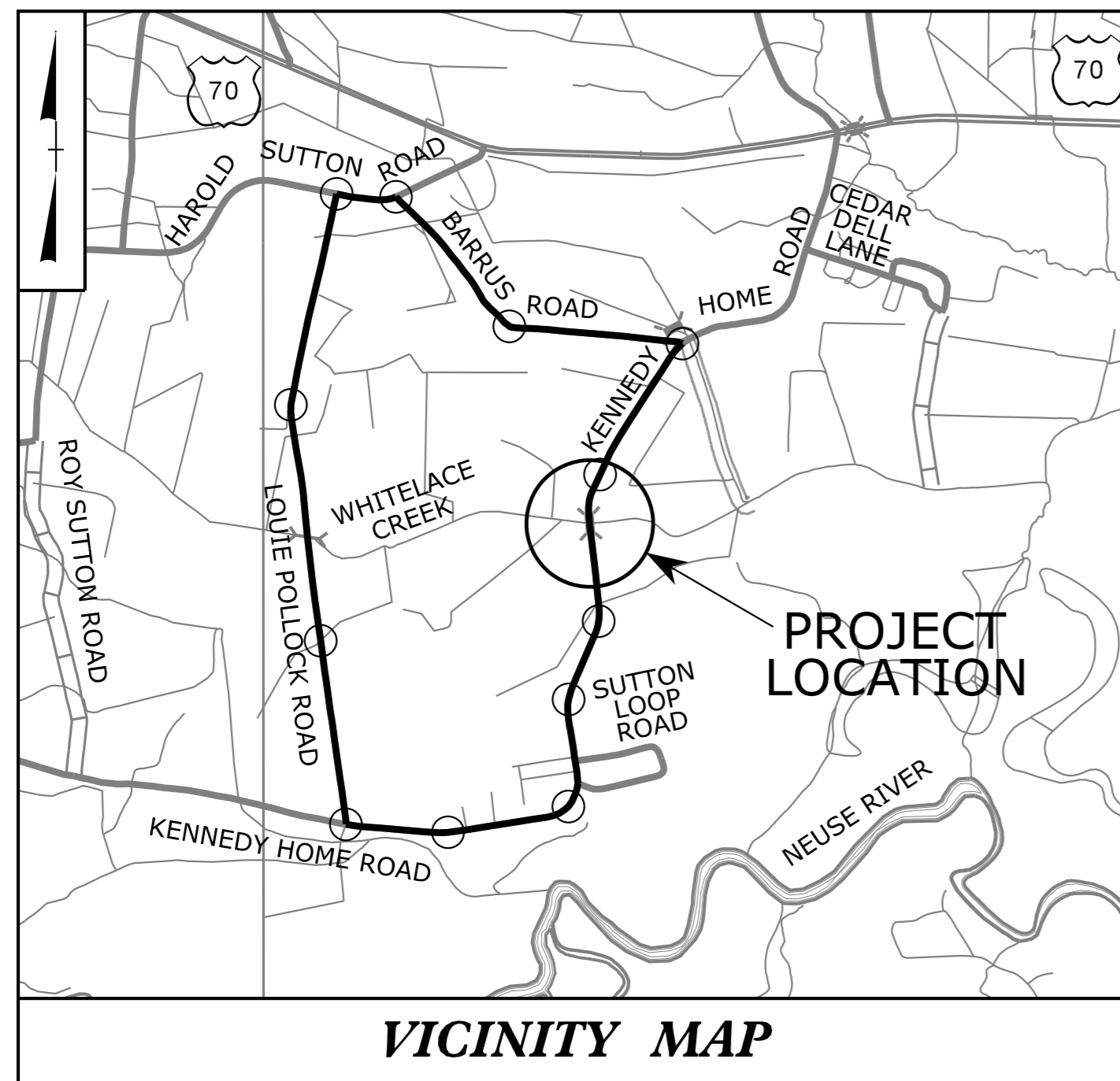
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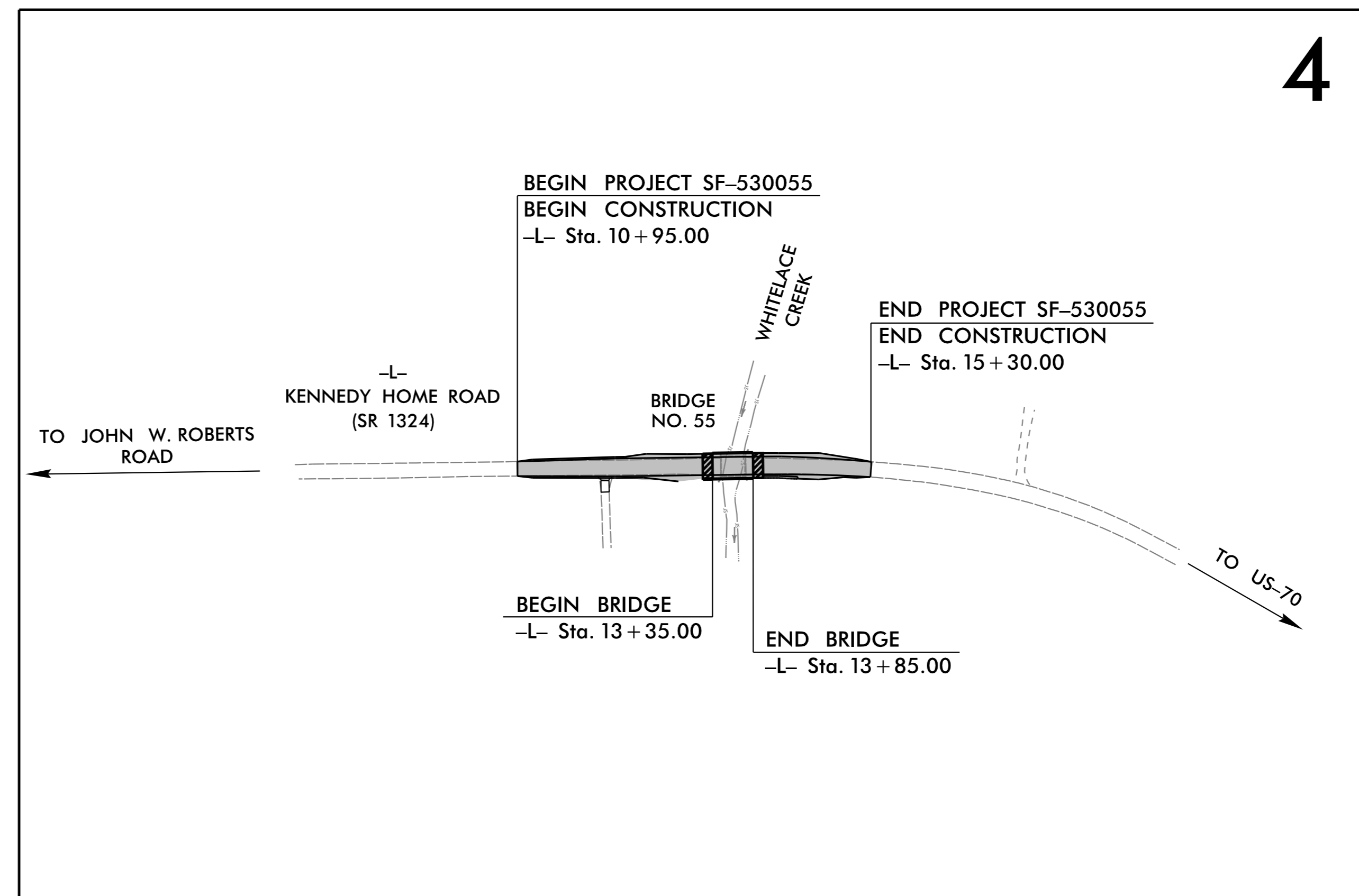
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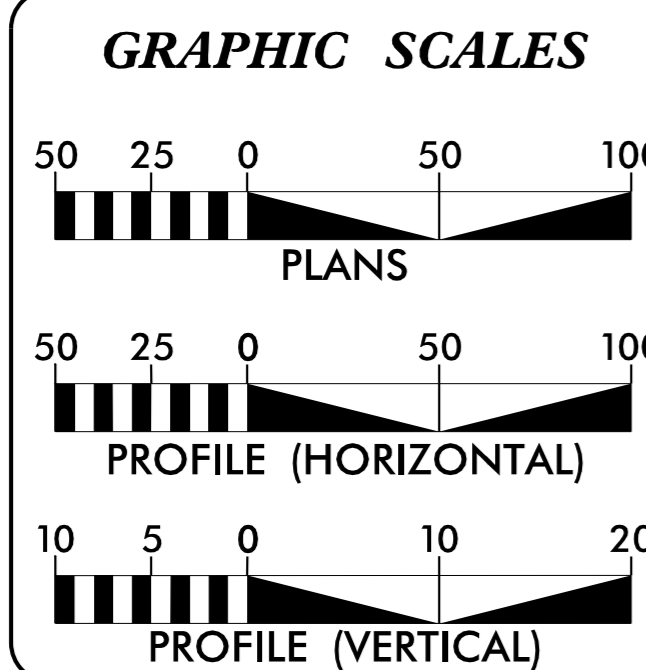
**STREAM IMPACTS**



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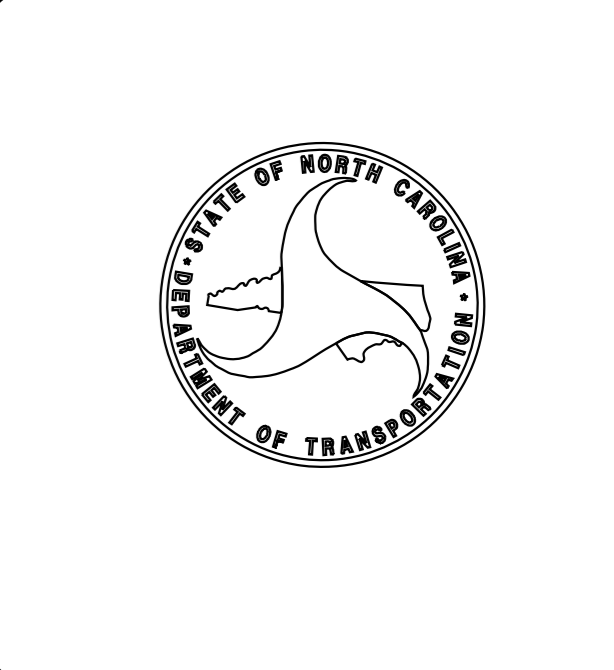
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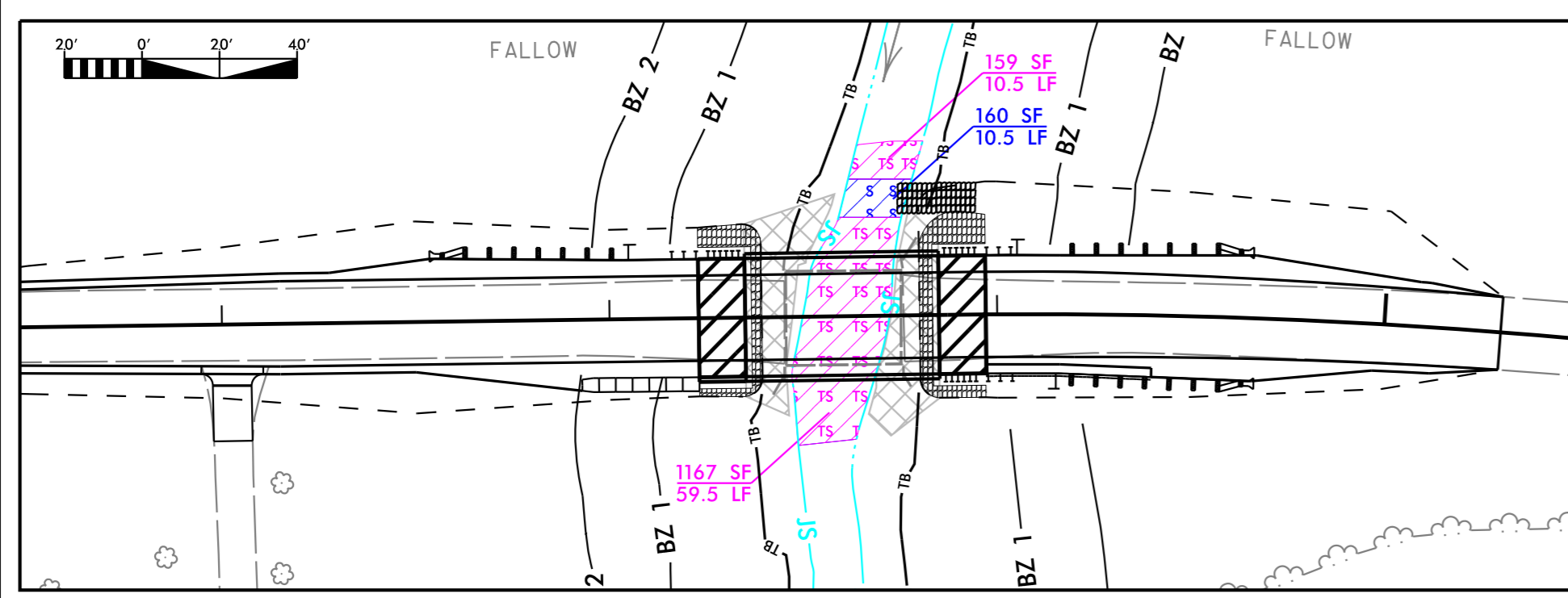
**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.





-L-

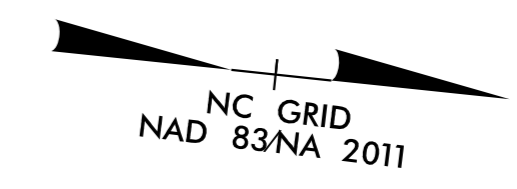
PI Sta 15+12.49	PI Sta 17+67.05
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**Kimley Horn**

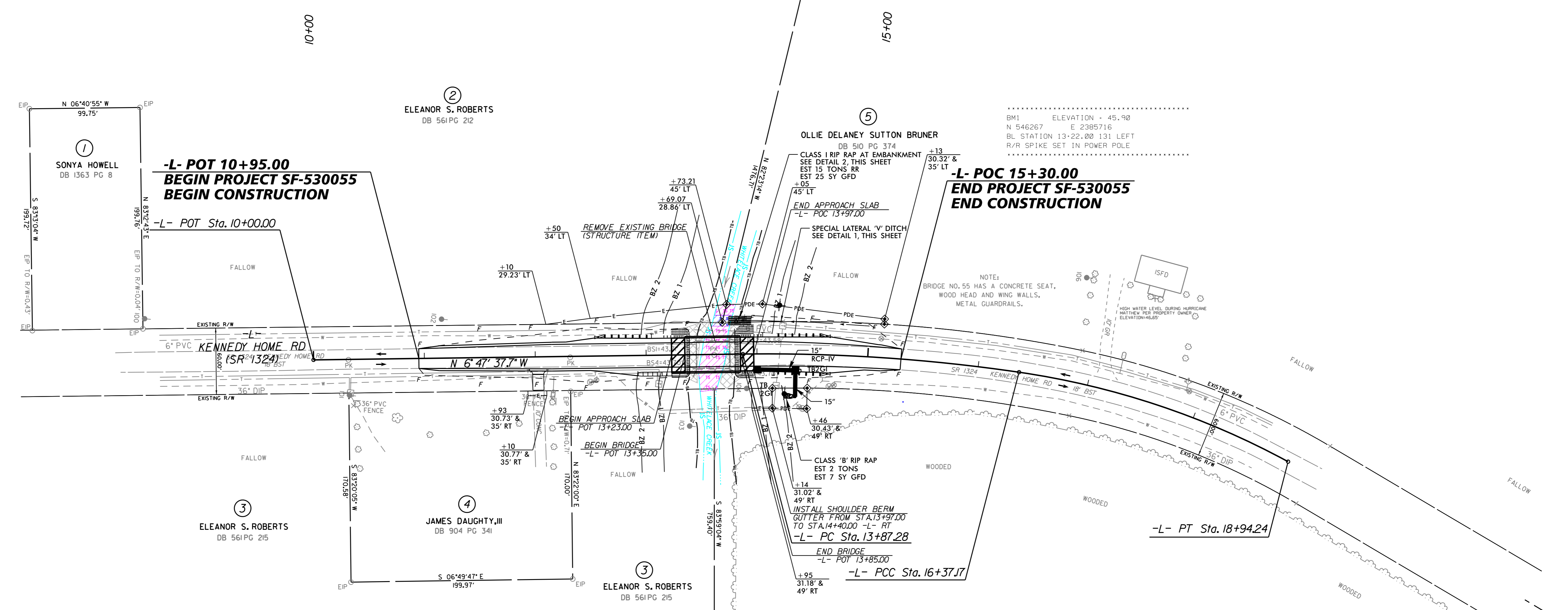
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RIGHT-OF-WAY REV.  
CONST. REV.

PROJECT REFERENCE NO. SF-530055	SHEET NO. 3
RW SHEET NO.	
ROADWAY ENGINEER	HYDRAULICS ENGINEER
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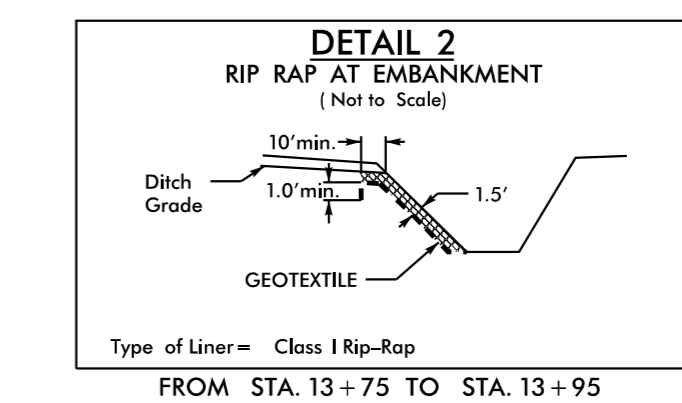
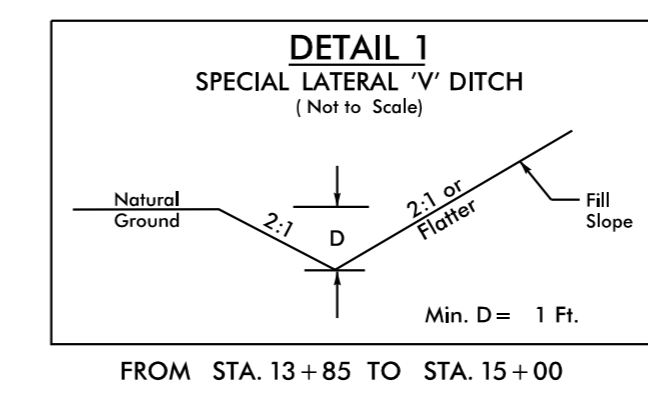
REVISIONS



**DATUM DESCRIPTION**

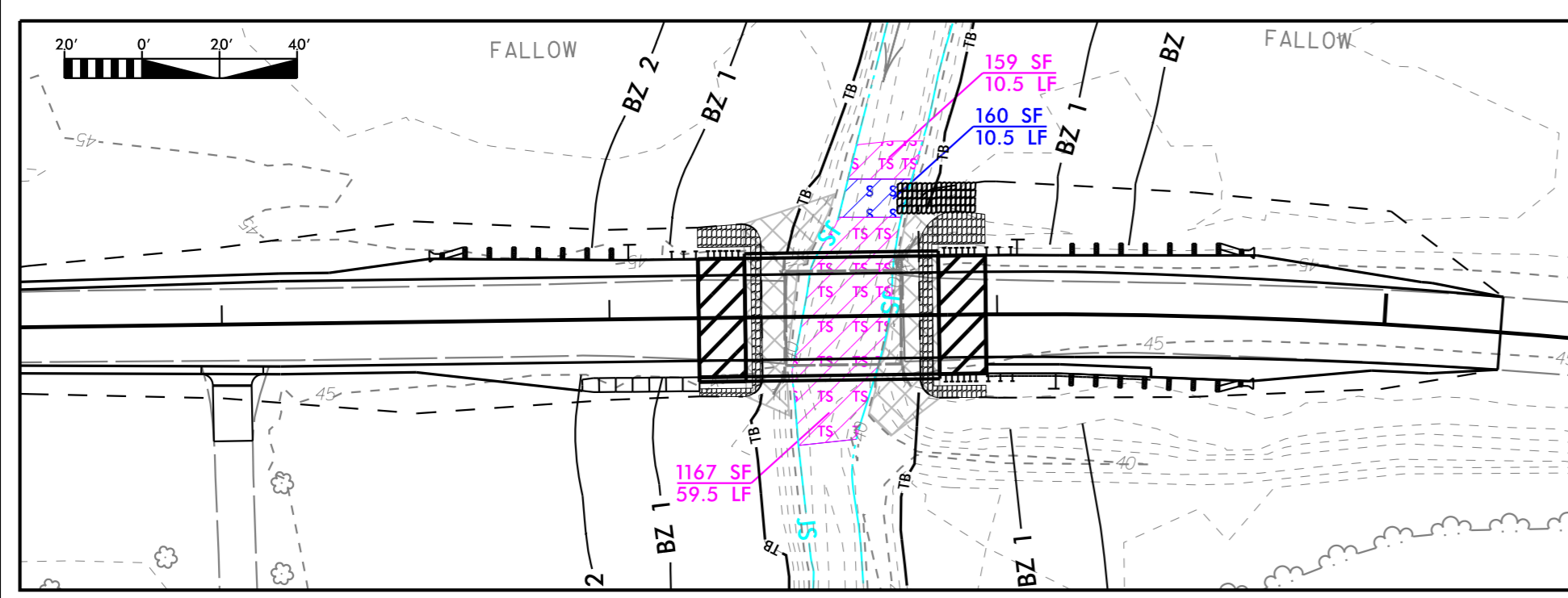
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- BRIDGE EXCAVATION
- PERMANENT IMPACTS IN SURFACE WATERS
- TEMPORARY IMPACTS IN SURFACE WATERS

K:\PAL\_Roadway\01036379 - Bridge55\Hydraulics\PERMITS\Environmental\Drawings\01036379\_hyd\_prm\_wel\_d4hdgn 8/28/2017



-L-

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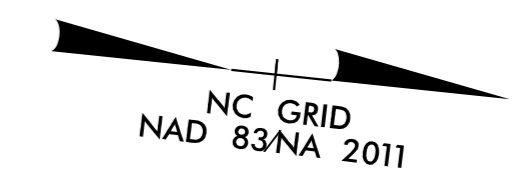
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**Kimley Horn**

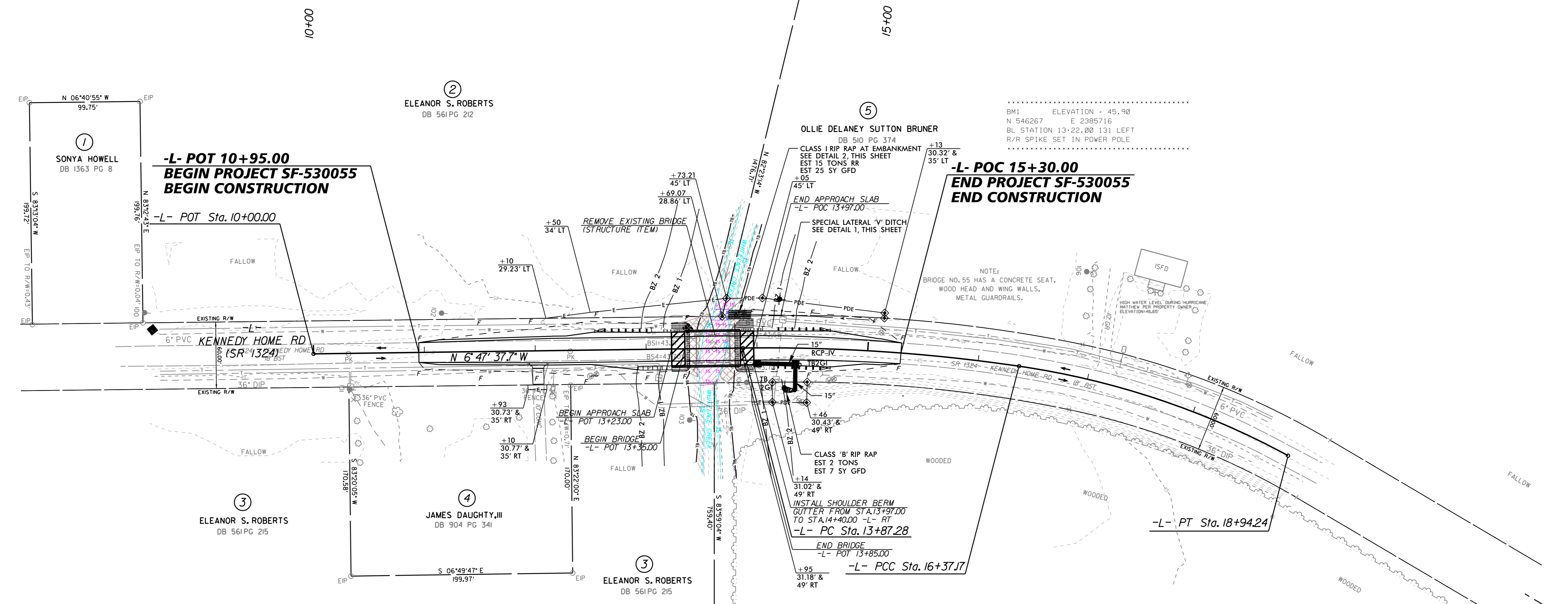
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RIGHT-OF-WAY REV.  
 CONST. REV.

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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



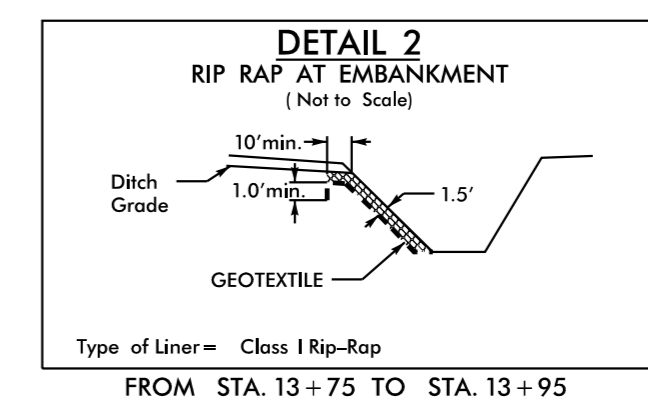
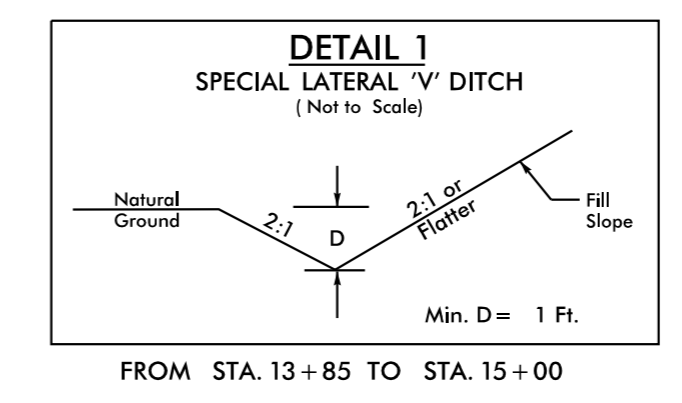
REVISIONS



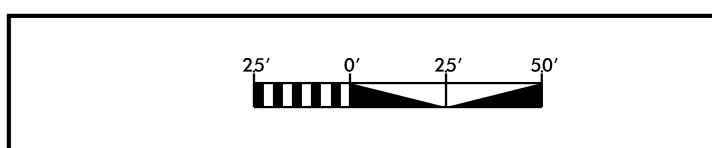
**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "BL-3" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 546552.881(ft) EASTING: 2385882.440(ft) ELEVATION: 45.36(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99987606 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-3" TO -L- STATION IS

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88



- BRIDGE EXCAVATION
- PERMANENT IMPACTS IN SURFACE WATERS
- TEMPORARY IMPACTS IN SURFACE WATERS



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**WETLAND PERMIT IMPACT SUMMARY**

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS					
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Temp. Disturbance in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)	Non-404 Existing Channel Impacts Permanent (ft)
1	L- STA 13+35 TO 13+85	BRIDGE 55						< 0.01	0.030	11.000	70.000		
<b>TOTALS*:</b>								< 0.01	0.030	11	70	0	0

\*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 08-24-2017  
 LENOIR COUNTY  
 BRIDGE 55 REPLACEMENT  
 SHEET      2              OF              5