



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.86      TIP No.:      County(ies): Beaufort      Page 1 of 3

General Project Information

WBS Element:	17BP.2.R.86	TIP Number:		Project Type:	Bridge Replacement	Date:	1/11/2019	
NCDOT Contact:	Robert T. Turnbull, Environmental Services, Inc.		Contractor / Designer:	HNTB North Carolina, P.C. / James A. Byrd, PE				
Address:	4901 Trademark Dr. Raleigh, NC 27610		Address:	343 E. Six Forks Road Suite 200 Raleigh, NC 27609				
	Phone:	(919) 212-1760		Phone:	(919) 424-0437			
	Email:	rturnbull@esinc.cc		Email:	jabyrd@hntb.com			
City/Town:	Pinetown		County(ies):	Beaufort				
River Basin(s):	Tar-Pamlico		CAMA County?	Yes				
Wetlands within Project Limits?	Yes							

Project Description

Project Length (lin. miles or feet):	0.284 mi.	Surrounding Land Use:	Rural Residential and Agriculture				
	Proposed Project		Existing Site				
Project Built-Upon Area (ac.)	1.9	ac.	0.7	ac.			
Typical Cross Section Description:	2 - 10' asphalt paved lanes with 2' paved shoulders, 4' grass shoulders.			2 - 10' asphalt paved lanes with grass shoulders. Wetlands are present in the northwest and southwest quadrants and will be impacted.			
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	Year:	Existing:	Year:			
General Project Narrative: (Description of Minimization of Water Quality Impacts)	<p>State project 17BP.2.R.86 involves the replacement of Beaufort County Bridge #060159 on SR 1611 (Jones Bridge Rd.) over Pungo Creek. The existing bridge consists of 1 @ 25' - 6", 2 @ 30' - 0", and 1 @ 25' - 6" prestressed concrete channels, concrete caps, and timber piles. It is to be replaced with a 2 @ 40' - 0", 1 @ 45' - 0" 21" cored slab (125' total length, 33' total width) at the same location.</p> <p>The project includes 0.16 miles of roadway improvements on the north end of the bridge and 0.10 on the south end of the bridge. In accordance with Tar-Pamlico River Buffer Regulations, the proposed bridge does not contain deck drains. Since the bridge is in normal crown, the stormwater from the bridge and approaches will be collected by two storm drainage systems at -DRV3- station 11+00 Rt. and -L- 19+00 RT. The storm drainage system on -DRV3- will be discharged into Pungo Swamp, and the system on -L- will discharge into a proposed ditch, which later discharges into Pungo Swamp. Class "I" rip rap pads are specified at the drainage outlets to lower discharge velocity and to minimize impacts.</p> <p>The roadside ditches in the northeast and northwest quadrant will be impacted by the proposed slope stakes. The ditch in the northwest quadrant will flow from north to south and will outlet into Pungo Creek to match existing drainage patterns. The proposed ditch will be a special lateral V-ditch with 3:1 or flatter front slopes and 3:1 back slopes. The ditch in the northeast quadrant will flow from south to north to match existing drainage patterns. The proposed ditch will be a special lateral V-ditch with 3:1 or flatter front slopes and 3:1 back slopes.</p>						

Waterbody Information

Surface Water Body (1):	Pungo Creek		NCDWR Stream Index No.:	29-34-35-1			
NCDWR Surface Water Classification for Water Body	Primary Classification:	Class C		None			
	Supplemental Classification:	Swamp Waters (Sw)		(NSW)			
Other Stream Classification:							
Impairments:	None						
Aquatic T&E Species?	No	Comments:					
NRTR Stream ID:				Buffer Rules in Effect:	Tar-Pamlico		
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	No	Dissipator Pads Provided in Buffer?	No		
Deck Drains Discharge Over Water Body?	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)						





09.08/99

**TIP PROJECT: 17BP.2.R.86**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**BEAUFORT COUNTY**

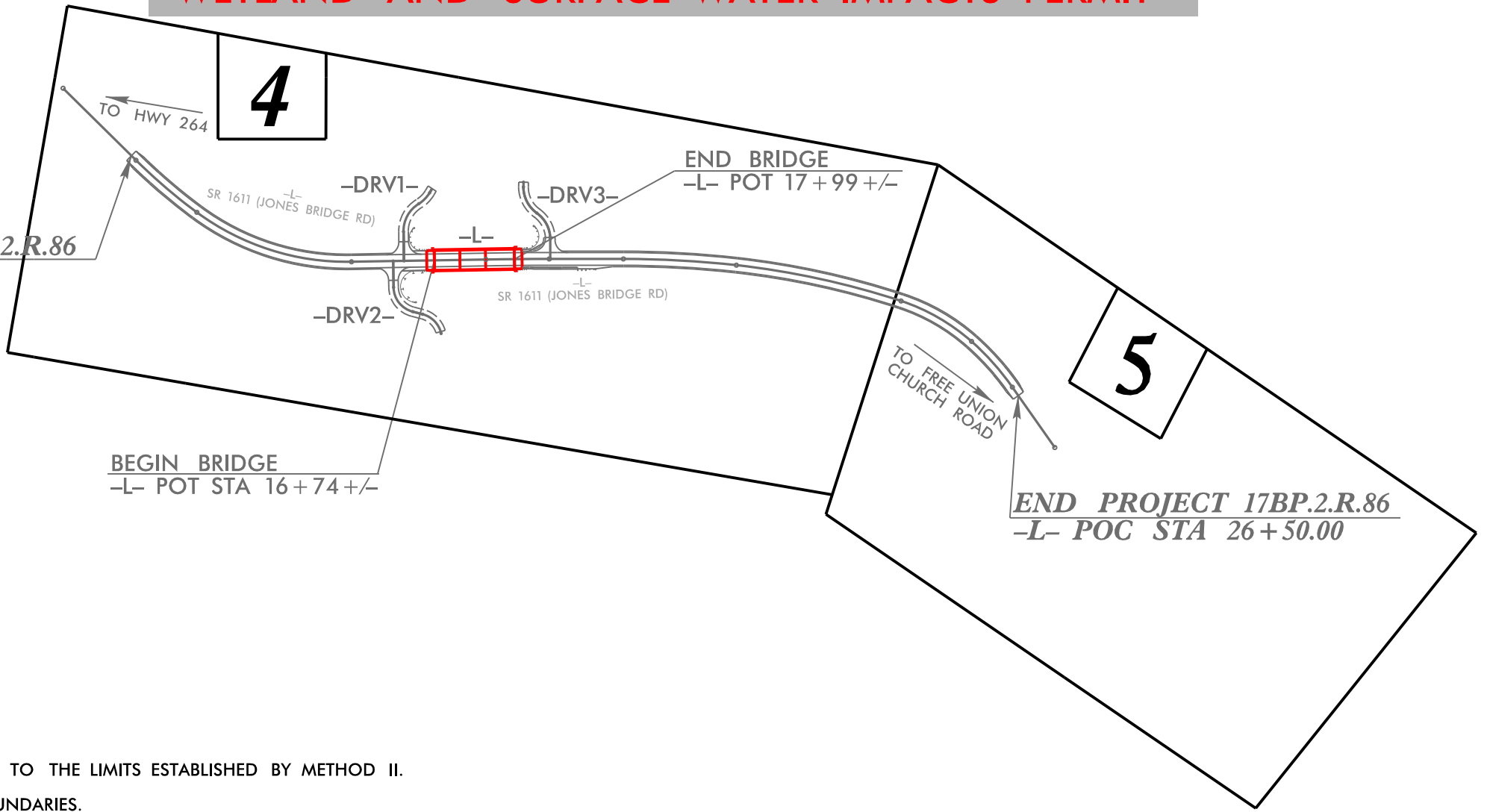
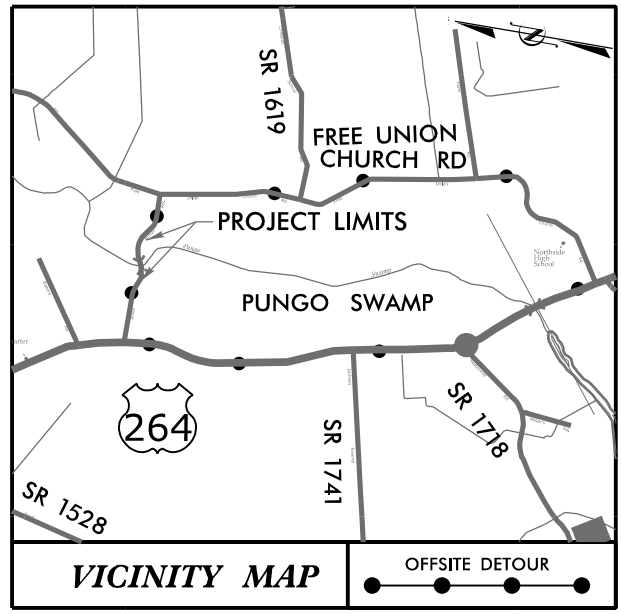
LOCATION: REPLACE BRIDGE NO. 159 OVER PUNGO SWAMP

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

**WETLAND AND SURFACE WATER IMPACTS PERMIT**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.2.R.86	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
17BP.2.R.86		PE	
17BP.2.R.86		RW/UTIL	

PERMIT DRAWING SHEET 1 OF 10

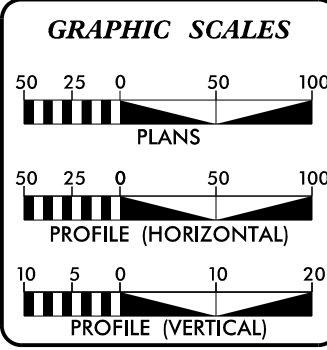


NOTES:

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

**CONTRACT:**



**DESIGN DATA**

ADT 2013 =	350
ADT 2033 =	660
K =	10 %
D =	60 %
T =	6 % *
V =	45 MPH
* TTST =	2% DUAL 4%
FUNC CLASS =	LOCAL
SUB-REGIONAL TIER	

**PROJECT LENGTH**

LENGTH OF ROADWAY PROJECT 17BP.2.R.86 =	0.260 MILES
LENGTH OF STRUCTURE PROJECT 17BP.2.R.86 =	0.024 MILES
TOTAL LENGTH OF PROJECT 17BP.2.R.86 =	0.284 MILES

**HNTB** Prepared In the Office of:  
HNTB NORTH CAROLINA, P.C.  
343 E. Six Forks Road, Suite 200  
Raleigh, North Carolina 27609  
NC License No: C-1554

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
FEBRUARY 6, 2019

LETTING DATE:  
JUNE 26, 2019

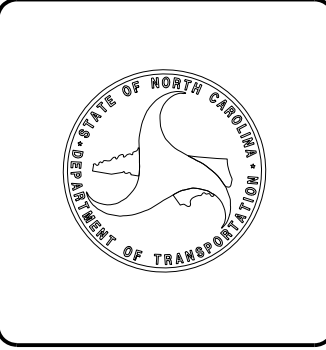
DOUGLAS WHEATLEY, PE PROJECT ENGINEER
ROY H. TELLIER, PE PROJECT DESIGN ENGINEER
HEATHER C. LANE, PE NCDOT CONTACT

**HYDRAULICS ENGINEER**

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

**ROADWAY DESIGN ENGINEER**

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



2/18/2019 11:17:17 AM \\17BP.2.R.86\_HYD\_prm\_TSH.dgn HNTB

8/17/19

WMT HOLDINGS LLC  
DB 1554 PG 411

**BEGIN PROJECT 17BP.2.R.86**  
-L- STA 11+50.00

# WETLAND & STREAM IMPACTS

NAD 83/NA 2011

ALL WETLANDS AREAS DETERMINED BY ROBERT TRUMBULL AS WETLANDS WA & WB

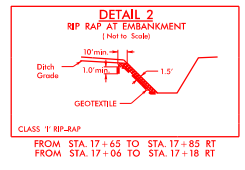
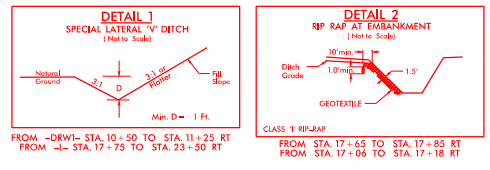
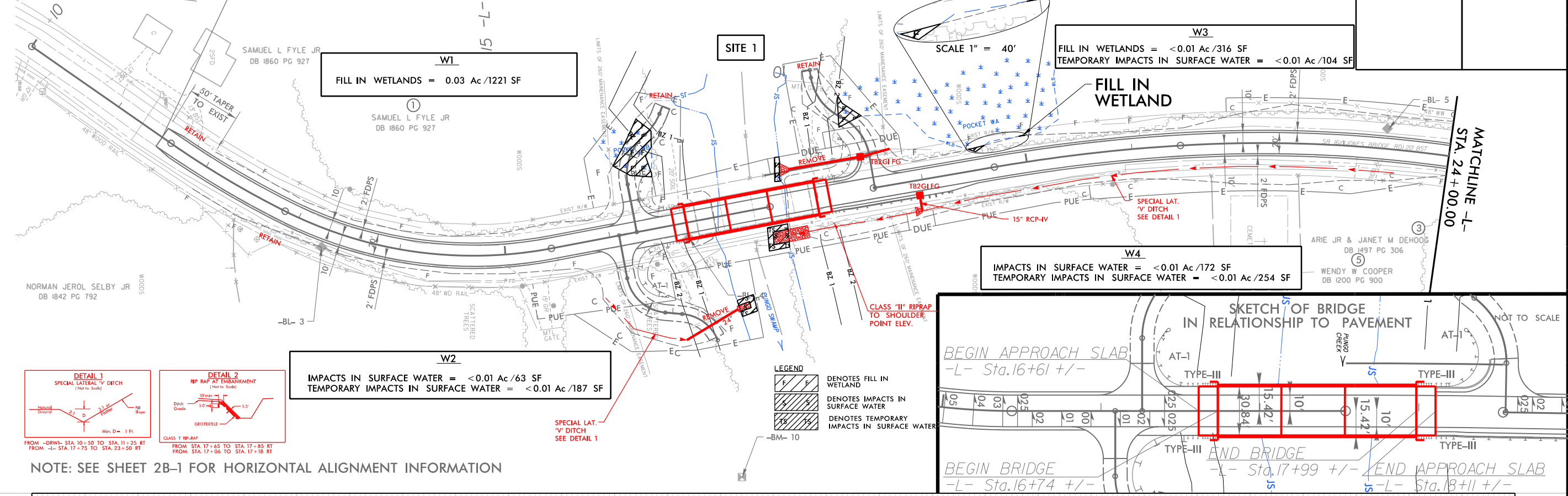
**HNTB**  
HNTB NORTH CAROLINA, P.C.  
240 S. SIX FORKS ROAD, SUITE 200  
RALEIGH, NORTH CAROLINA 27609  
NC LICENSE NO. 1-1984

**PERMIT DRAWING**  
**SHEET 2 OF 10**

PROJECT REFERENCE NO.  
**17BP.2.R.86**

SHEET NO.  
**4**

RW SHEET NO.  
ROADWAY DESIGN ENGINEER  
HYDRAULICS ENGINEER



NOTE: SEE SHEET 2B-1 FOR HORIZONTAL ALIGNMENT INFORMATION

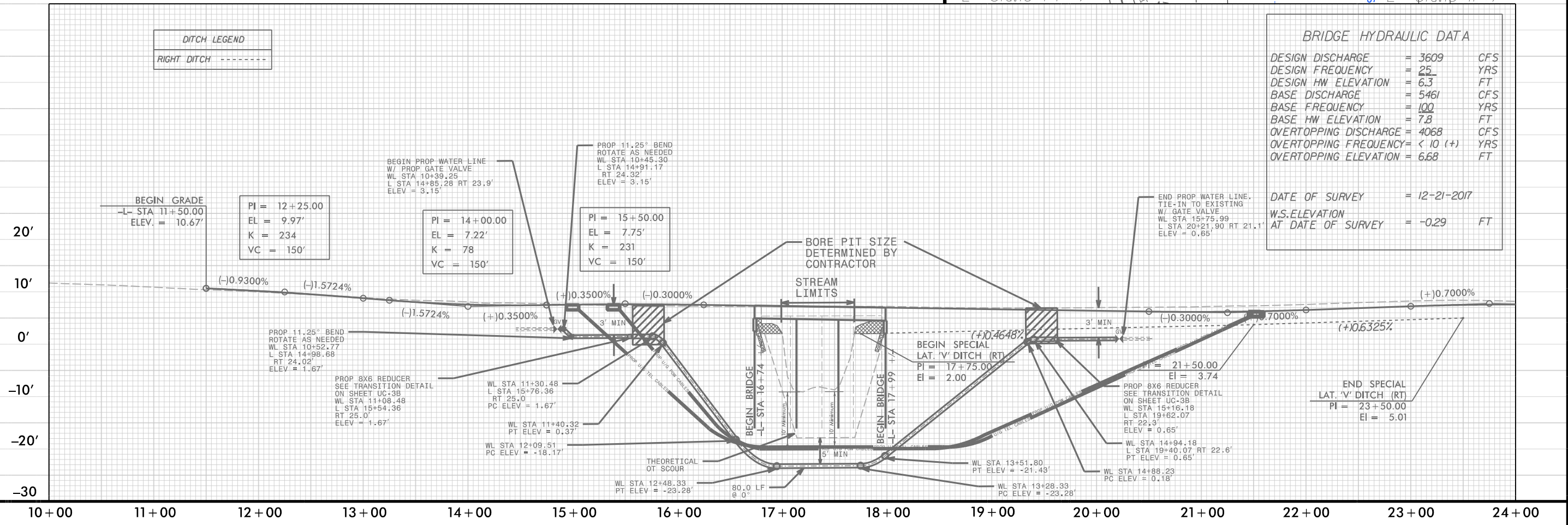
**DITCH LEGEND**

RIGHT DITCH - - - - -

**BRIDGE HYDRAULIC DATA**

DESIGN DISCHARGE	= 3609	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 6.3	FT
BASE DISCHARGE	= 5461	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 7.8	FT
OVERTOPPING DISCHARGE	= 4068	CFS
OVERTOPPING FREQUENCY	= < 10 (+)	YRS
OVERTOPPING ELEVATION	= 6.68	FT

DATE OF SURVEY = 12-21-2017  
 W.S. ELEVATION AT DATE OF SURVEY = -0.29 FT



2/27/2019 17BP.2.R.86\_HYD\_prm\_wet\_psh.dgn



# WETLAND & STREAM IMPACTS

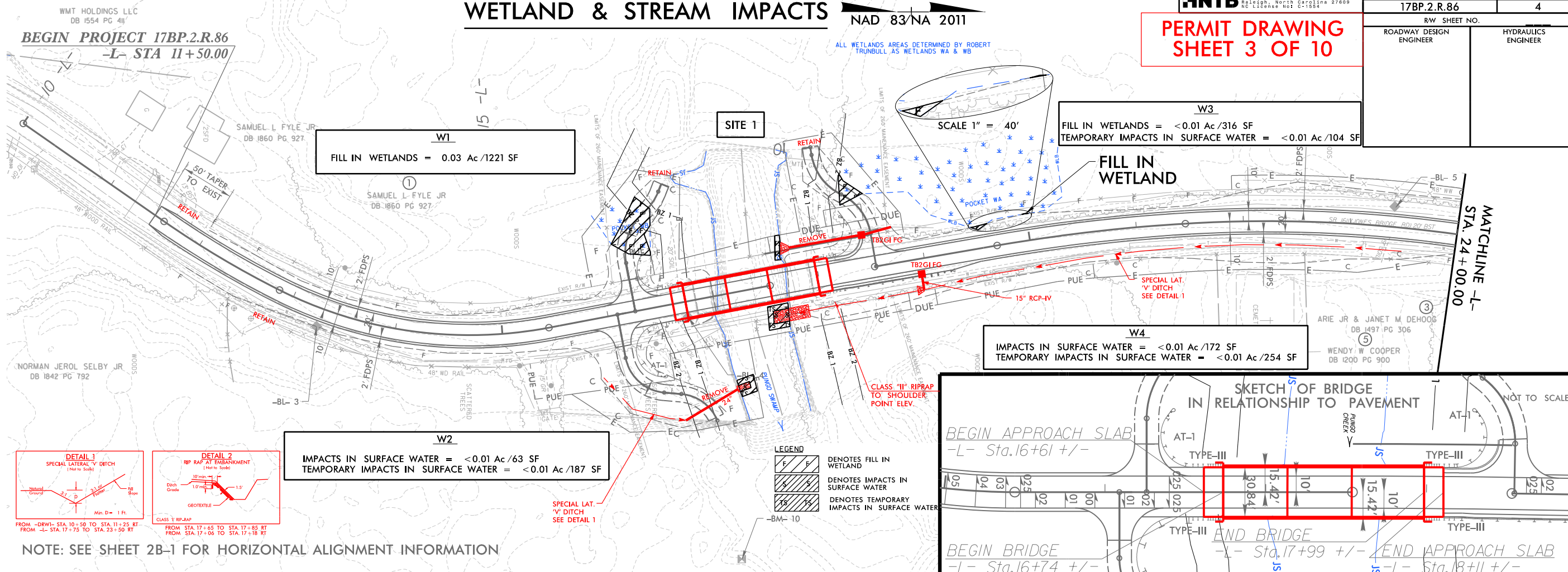
NAD 83/NA 2011

**HNTB**

**PERMIT DRAWING  
SHEET 3 OF 10**

PROJECT REFERENCE NO. 17BP.2.R.86 SHEET NO. 4

RW SHEET NO. ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER



NOTE: SEE SHEET 2B-1 FOR HORIZONTAL ALIGNMENT INFORMATION

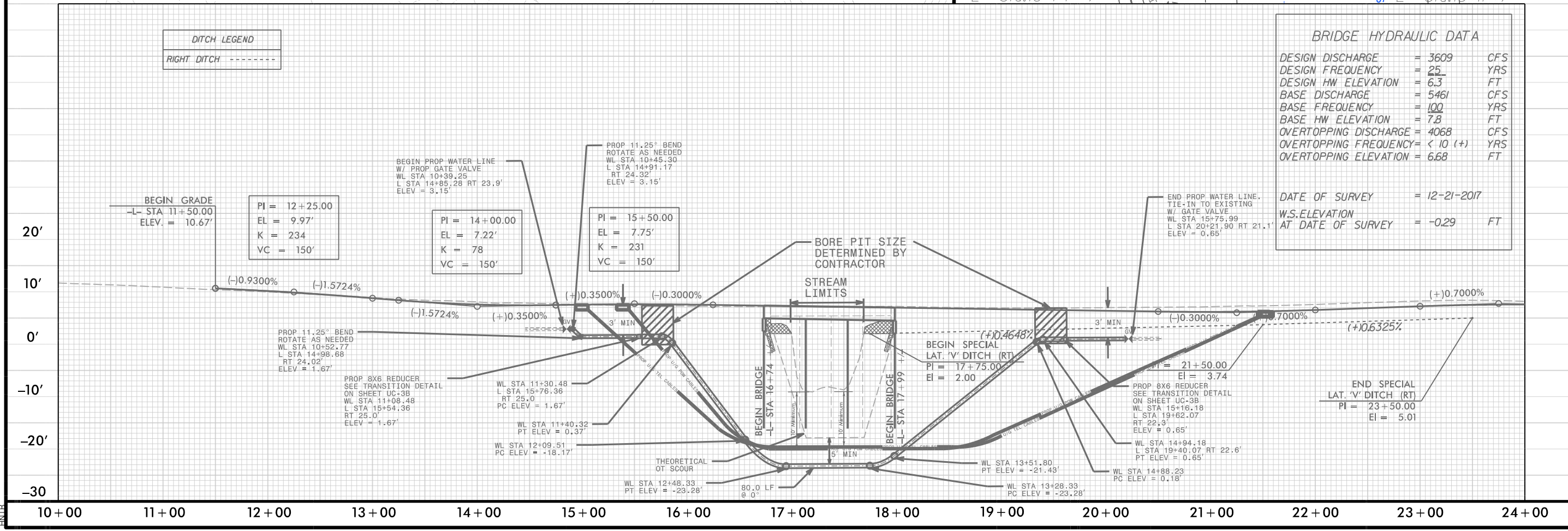
**DITCH LEGEND**

RIGHT DITCH - - - - -

**BRIDGE HYDRAULIC DATA**

DESIGN DISCHARGE	= 3609	CFS
DESIGN FREQUENCY	= 25	YRS
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 W.S. ELEVATION AT DATE OF SURVEY = -0.29 FT



8/17/19 2.17.19 17BP.2.R.86\_HYD\_prm\_wet\_psh.dgn

8/17/99

NATHANIEL AUSTIN GLADDING IV

# WETLAND & STREAM IMPACTS

NAD 83/NA 2011

**HNTB** HNTB NORTH CAROLINA, P.C.  
343 E. SIX FORKS ROAD, SUITE 200  
RALEIGH, NORTH CAROLINA 27609  
NC LICENSE NO. C-1554

PROJECT REFERENCE NO. SHEET NO.

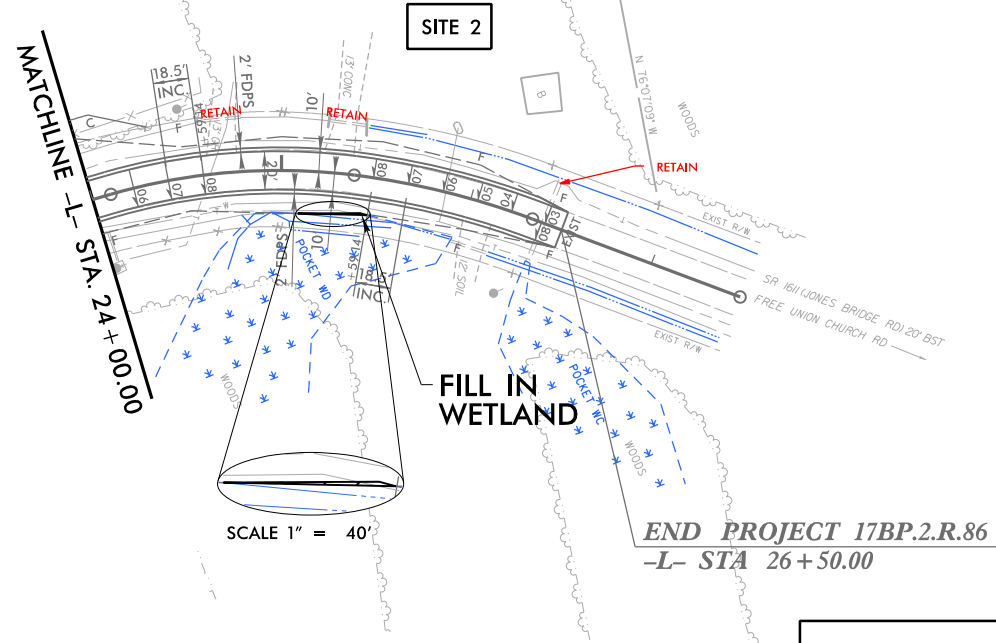
17BP.2.R.86 5

**PERMIT DRAWING  
SHEET 4 OF 10**

RW SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER



ARIE JR & JANET M DEHOOG

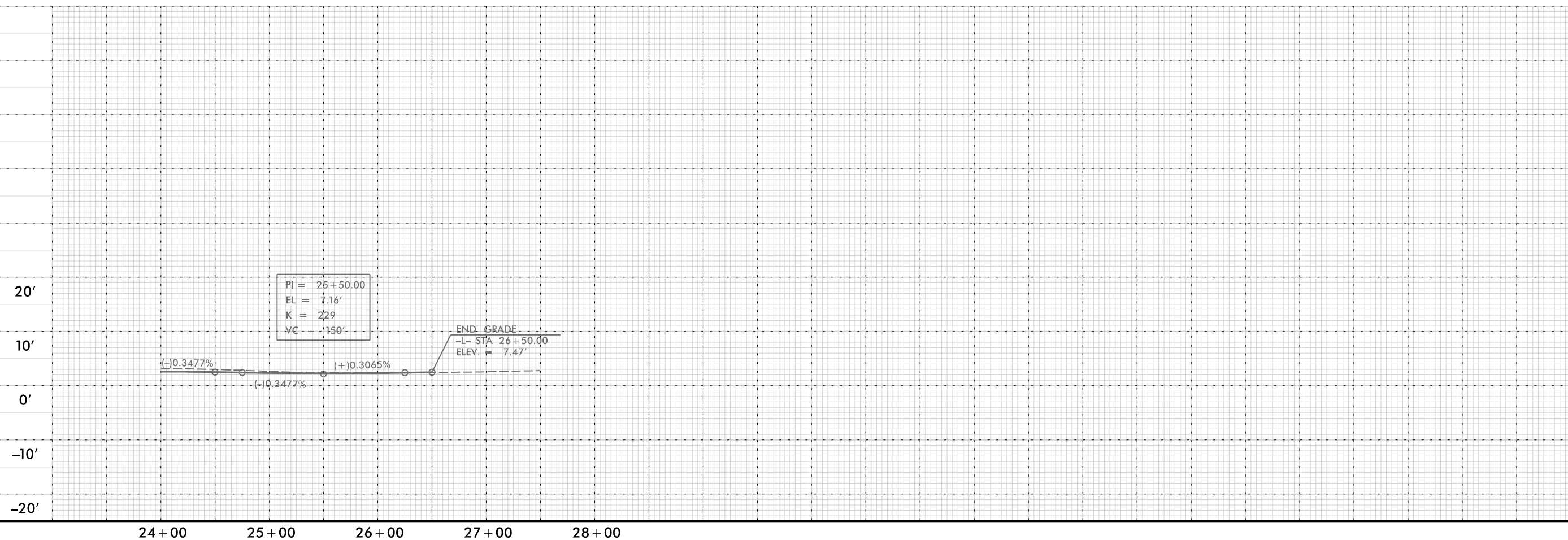
W1  
FILL IN WETLANDS = <math>< 0.01 \text{ Ac} / 15 \text{ SF}</math>

ALL WETLANDS AREAS DETERMINED BY DIVISION 2 ENVIRONMENTAL OFFICER AS WETLANDS WC, WD

LEGEND

DENOTES FILL IN WETLAND

NOTE: SEE SHEET 2B-1 FOR HORIZONTAL ALIGNMENT INFORMATION



2/15/09 17BP.2.R.86\_HYD\_prm\_wet\_psh5.dgn

8/17/99

NATHANIEL AUSTIN GLADDING IV

# WETLAND & STREAM IMPACTS

NAD 83/NA 2011

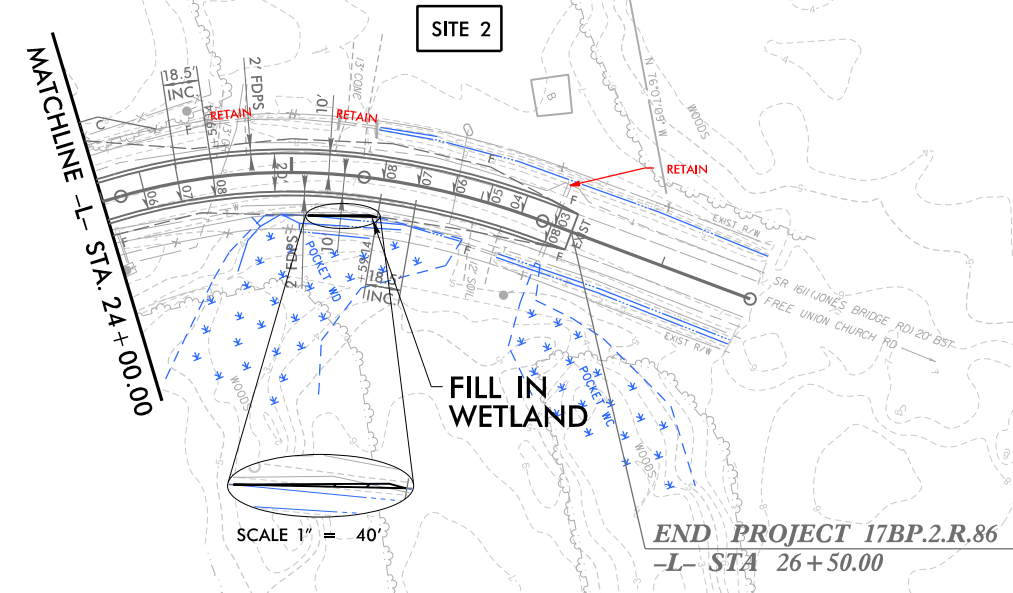
**HNTB**  
HNTB NORTH CAROLINA, P.C.  
340 E. SIX FORKS ROAD, SUITE 200  
RALEIGH, NORTH CAROLINA 27609  
NC LICENSE NO. C-1984

PROJECT REFERENCE NO. SHEET NO.  
17BP.2.R.86 5

**PERMIT DRAWING  
SHEET 5 OF 10**

RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

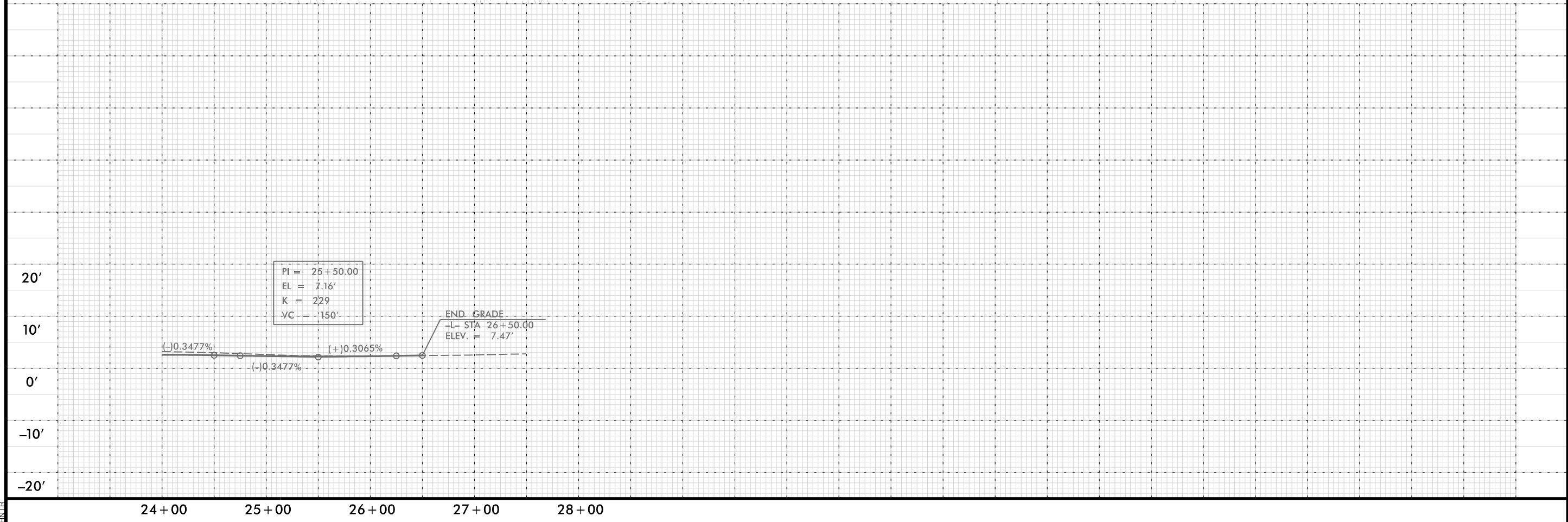
LEGEND  
DENOTES FILL IN WETLAND



W1  
FILL IN WETLANDS = <0.01 Ac /15 SF

ALL WETLANDS AREAS DETERMINED BY DIVISION 2 ENVIRONMENTAL OFFICER AS WETLANDS WC, WD

NOTE: SEE SHEET 2B-1 FOR HORIZONTAL ALIGNMENT INFORMATION



2/15/08 17BP.2.R.86\_HYD\_prm\_wet\_psh5.dgn



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WMT HOLDINGS LLC

# BUFFER IMPACTS

NAD 83/NA 2011

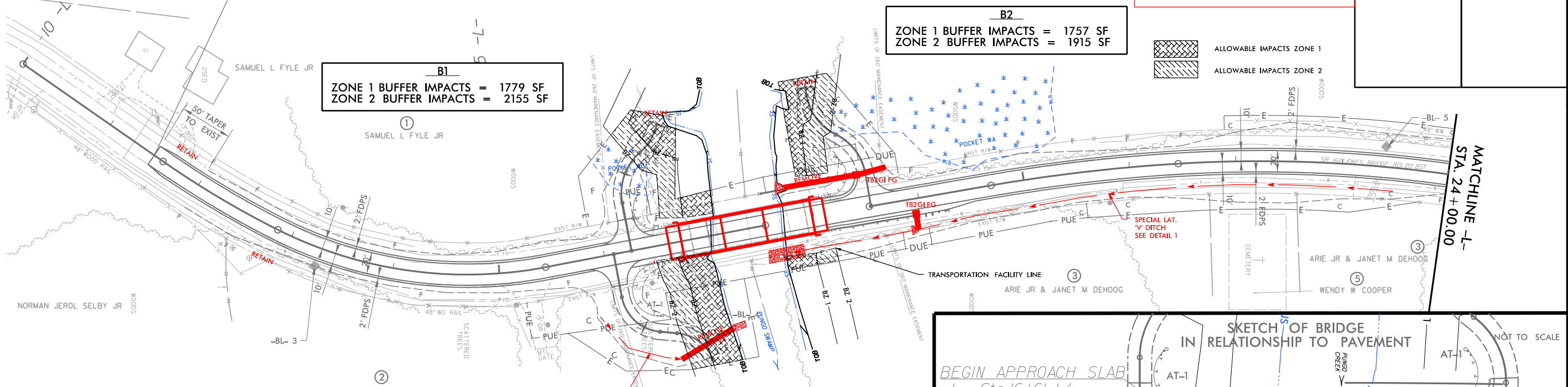
**HNTB** HNTB NORTH CAROLINA, P.C.  
240 F. ST. FORT WORTH, TEXAS 76102  
REG. NO. 10000000000000000000  
NC LICENSE NO. C-1954

PROJECT REFERENCE NO. 17BP.2.R.86 SHEET NO. 4

**PERMIT DRAWING  
SHEET 6 OF 10**

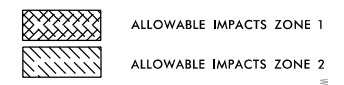
RW SHEET NO. ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

BEGIN PROJECT 17BP.2.R.86  
-L- STA 11+50.00



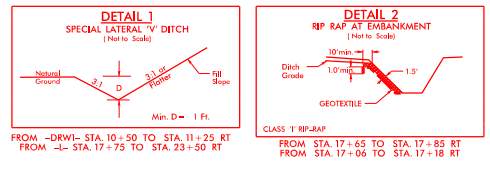
**B1**  
ZONE 1 BUFFER IMPACTS = 1779 SF  
ZONE 2 BUFFER IMPACTS = 2155 SF

**B2**  
ZONE 1 BUFFER IMPACTS = 1757 SF  
ZONE 2 BUFFER IMPACTS = 1915 SF

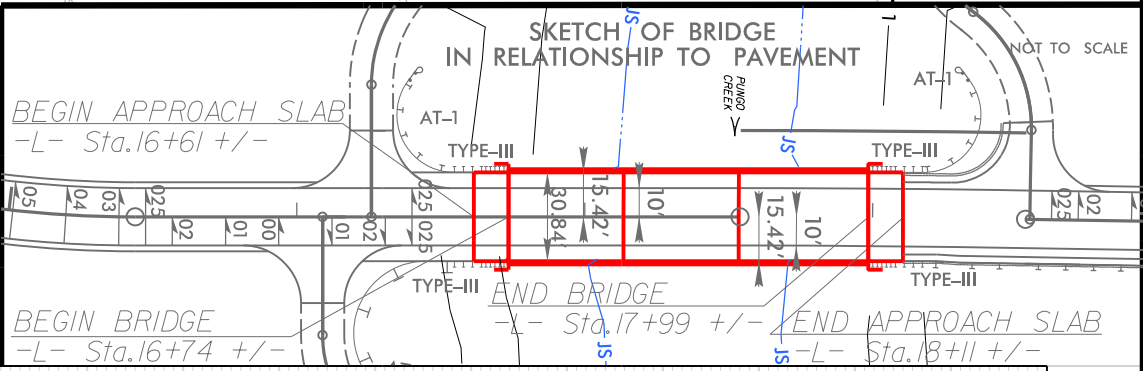


**B3**  
ZONE 1 BUFFER IMPACTS = 2925 SF  
ZONE 2 BUFFER IMPACTS = 2150 SF

**B4**  
ZONE 1 BUFFER IMPACTS = 392 SF  
ZONE 2 BUFFER IMPACTS = 217 SF



NOTE: SEE SHEET 2B-1 FOR HORIZONTAL ALIGNMENT INFORMATION



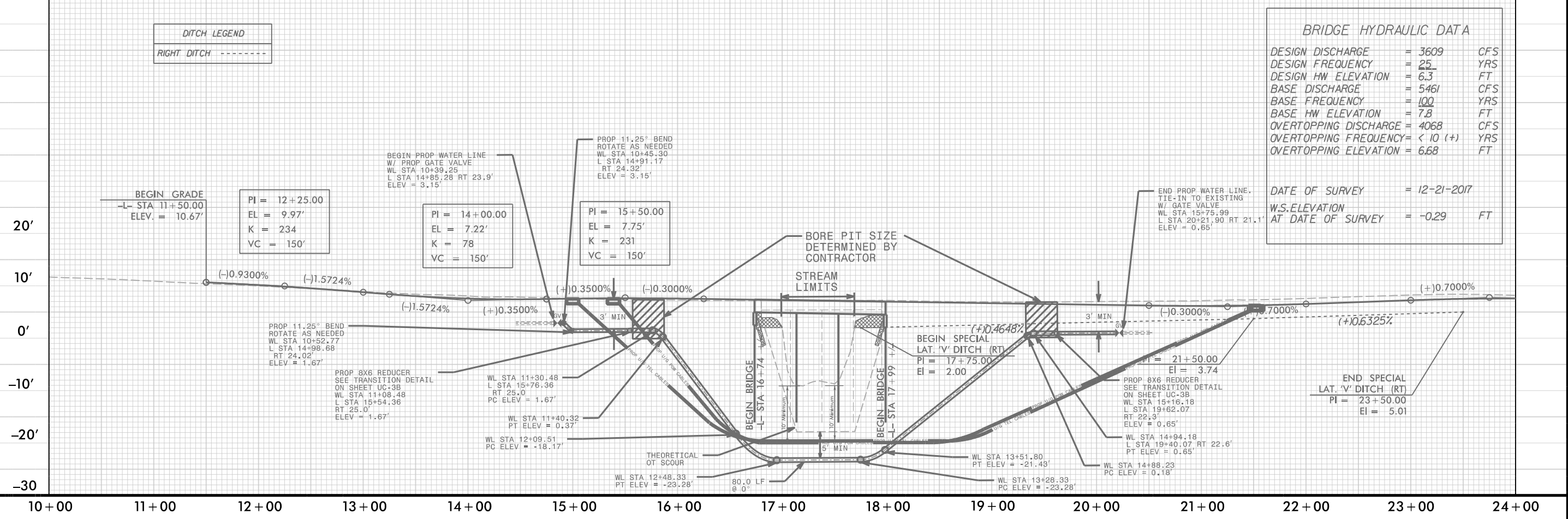
**DITCH LEGEND**

RIGHT DITCH	-----
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**BRIDGE HYDRAULIC DATA**

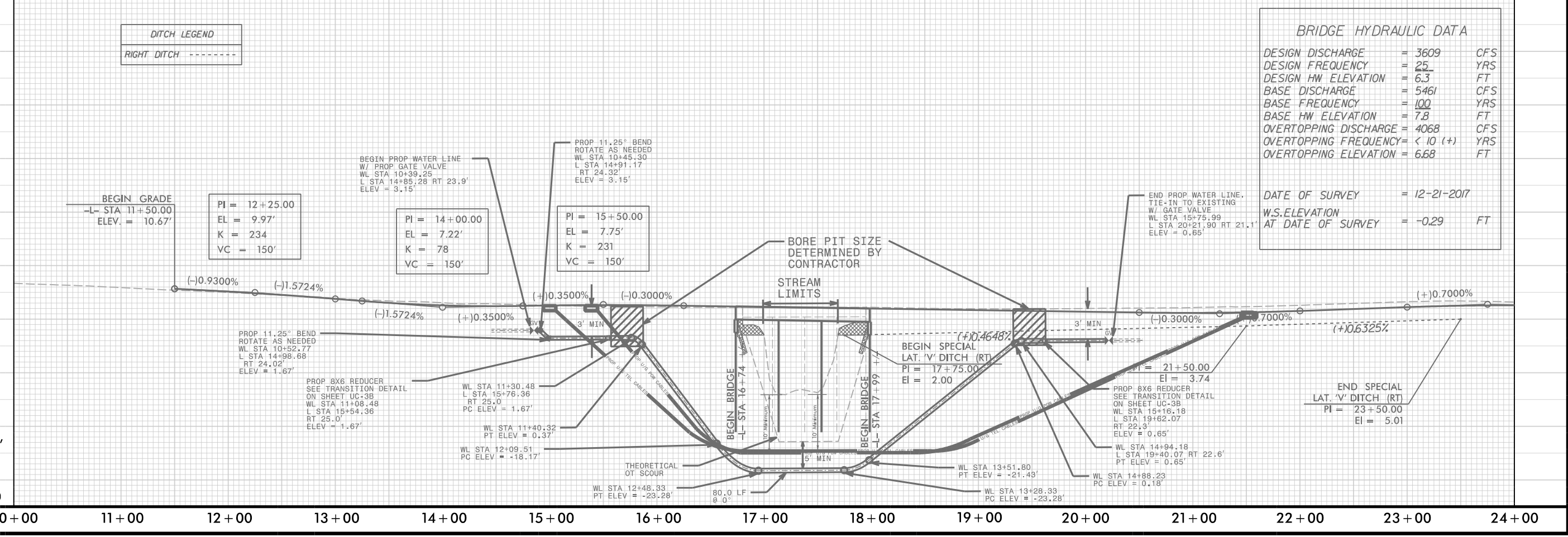
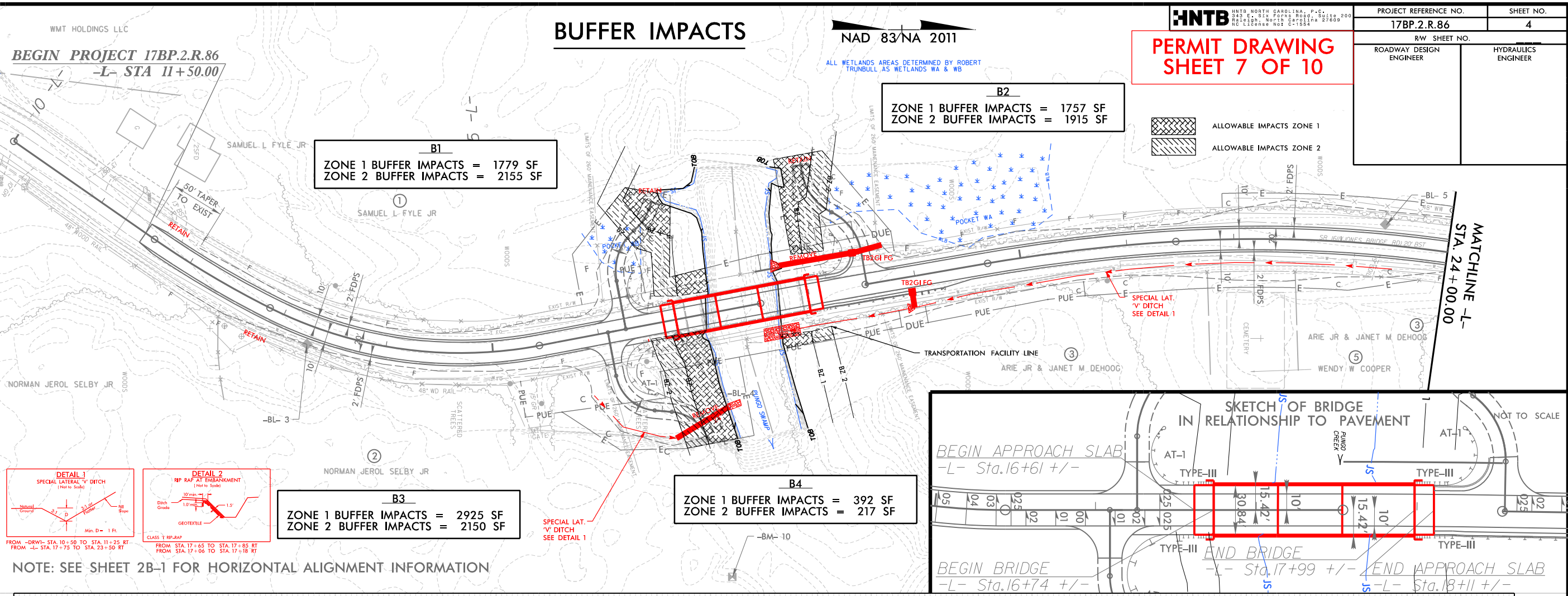
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OVERTOPPING FREQUENCY	= < 10 (+)	YRS
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DATE OF SURVEY = 12-21-2017  
W.S. ELEVATION AT DATE OF SURVEY = -0.29 FT



10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

8/17/19  
 2:27:39 17BP.2.R.86\_HYD\_prm\_buf.f - psh4.dgn  
 HNTB



**WETLAND AND SURFACE WATER IMPACTS 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)	Mechanized Clearing 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)
1	L Sta. 16+16 to Sta. 20+02	21" Cored Slab Bridge	0.0353					0.005	0.013			
2	L Sta. 25+09 to Sta. 25+48	Roadway Fill	0.000									
<b>TOTALS*:</b>			0.0356					0.005	0.013			

\*Rounded totals are sum of actual impacts

NOTES: Permanent Fill in Wetlands: 1552 SF  
 Permanent Surface Water Impacts: 235 SF  
 Temporary Surface Water Impacts: 545 SF

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 2/18/2019  
 Beaufort County Bridge #159  
 17BP.2.R.86

SHEET 8 OF 10

## RIPARIAN BUFFER IMPACTS SUMMARY

			IMPACT									BUFFER REPLACEMENT	
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	TYPE			ALLOWABLE			MITIGABLE			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> )		
B1	21" CORED SLAB BRIDGE	-L-16+27 TO 17+09 LT		X		1778.800	2155.000	3933.800					
B2	21" CORED SLAB BRIDGE	-L- 17+90 TO 18+42 LT		X		1757.000	1915.000	3672.000					
B3	21" CORED SLAB BRIDGE	-L- 16+47 TO 17+09 RT		X		2925.000	2150.000	5075.000					
B4	21" CORED SLAB BRIDGE	-L- 17+68 TO 18+16 RT		X		392.000	217.000	609.000					
<b>TOTAL:</b>						6852.800	6437.000	13289.800	0	0	0	0	0

N.C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
  
 BEAUFORT COUNTY BRIDGE NO. 159  
  
 DATE 2/18/2019  
 SHEET 9 OF 10



## WETLANDS IN BUFFER IMPACTS SUMMARY

SITE NO.	STATION (FROM/TO)	WETLANDS IN BUFFERS	
		ZONE 1 (ft <sup>2</sup> )	ZONE 2 (ft <sup>2</sup> )
B1	-L-16+37 TO 16+57 LT	0.000	374.000
<b>TOTAL:</b>		0.000	374.000

N.C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
  
 BEAUFORT COUNTY BRIDGE NO. 159  
  
 DATE 2/18/2019  
 SHEET 10 OF 10