



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN



(Version 3.00; Released August 2021)

FOR NCDOT PROJECTS

WBS Element: 38432.1.FD2 TIP/Proj No: B-4607 County(ies): Pitt Page 1 of 4

General Project Information

WBS Element:	38432.1.FD2	TIP Number:	B-4607	Project Type:	Bridge Replacement	Date:	10/22/2021
NCDOT Contact:	Michael Aman, PE			Contractor / Designer:	TGS Engineers (Ben Henegar, PE)		
Address:	1037 W.H. Smith Blvd Greenville, NC 27835			Address:	706 Hillsborough Street Suite 200 Raleigh, NC 27603		
Phone:	252-439-2812			Phone:	919-773-8887 ext. 123		
Email:	mcaman@ncdot.gov			Email:	bhenegar@tgsengineers.com		
City/Town:	Ayden, NC			County(ies):	Pitt		
River Basin(s):	Neuse			CAMA County?	No		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	0.133 miles	Surrounding Land Use:	Agricultural and Rural Residential					
Proposed Project				Existing Site				
Project Built-Up Area (ac.)	0.41	ac.	0.35	ac.				
Typical Cross Section Description:	Two 10' paved lanes with 3'-11" paved + 3' graded shoulders.			Two 10' paved lanes with 3' grassed shoulders.				
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	1060	Year:	2040	Existing:	650	Year:	2019

General Project Narrative:
(Description of Minimization of Water Quality Impacts)

The project involves the replacement of NCDOT Bridge # 730043 on SR 1923 (Gardnerville Rd.) over Swift Creek in Pitt County, NC southeast of Ayden, NC. The proposed 190' long by 30' wide 3-span (24" cored slab) bridge will replace the existing 175' long by 25.5' wide 7-span (reinforced concrete deck on steel I-beam) bridge. The proposed grade will be approximately 1.0' above existing grade.

The project is within the Neuse River Basin and shall adhere to the Neuse River Riparian Buffer Rules. The proposed bridge will have no direct discharge into Swift Creek (no deck drains). Stormwater runoff from the south proposed bridge approach will flow to four traffic bearing grated inlets and will outlet to the east into a preformed scour hole outside buffer zone 2. The runoff from the north proposed bridge approach will flow to two traffic bearing grated inlets and will outlet to the west into a grassed swale outside buffer zone 2.



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WBS Element: 38432.1.FD2

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County(ies): Pitt

Page 2 of 4

General Project Information

Waterbody Information

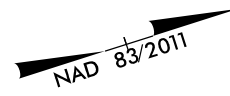
Surface Water Body (1):	Swift Creek		NCDWR Stream Index No.:	27-97-(0.5)	
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C		
	Supplemental Classification:		Swamp Waters (Sw) (NSW)		
Other Stream Classification:	None				
Impairments:	None				
Aquatic T&E Species?	No	Comments:			
NRTR Stream ID:	Swift Creek			Buffer Rules in Effect:	Neuse
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	No	Dissipator Pads Provided in Buffer?	
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)					

Surface Water Body (2):			NCDWR Stream Index No.:		
NCDWR Surface Water Classification for Water Body	Primary Classification:				
	Supplemental Classification:				
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:				Buffer Rules in Effect:	
Project Includes Bridge Spanning Water Body?		Deck Drains Discharge Over Buffer?		Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?		(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)					

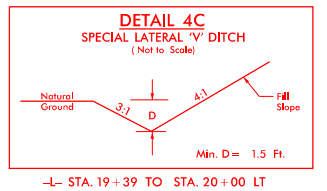
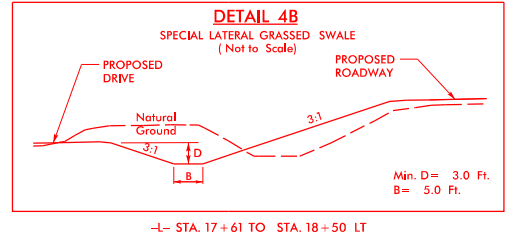
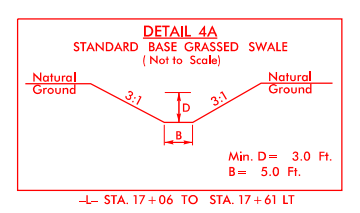
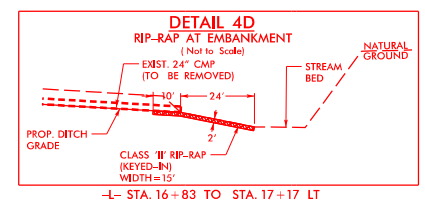
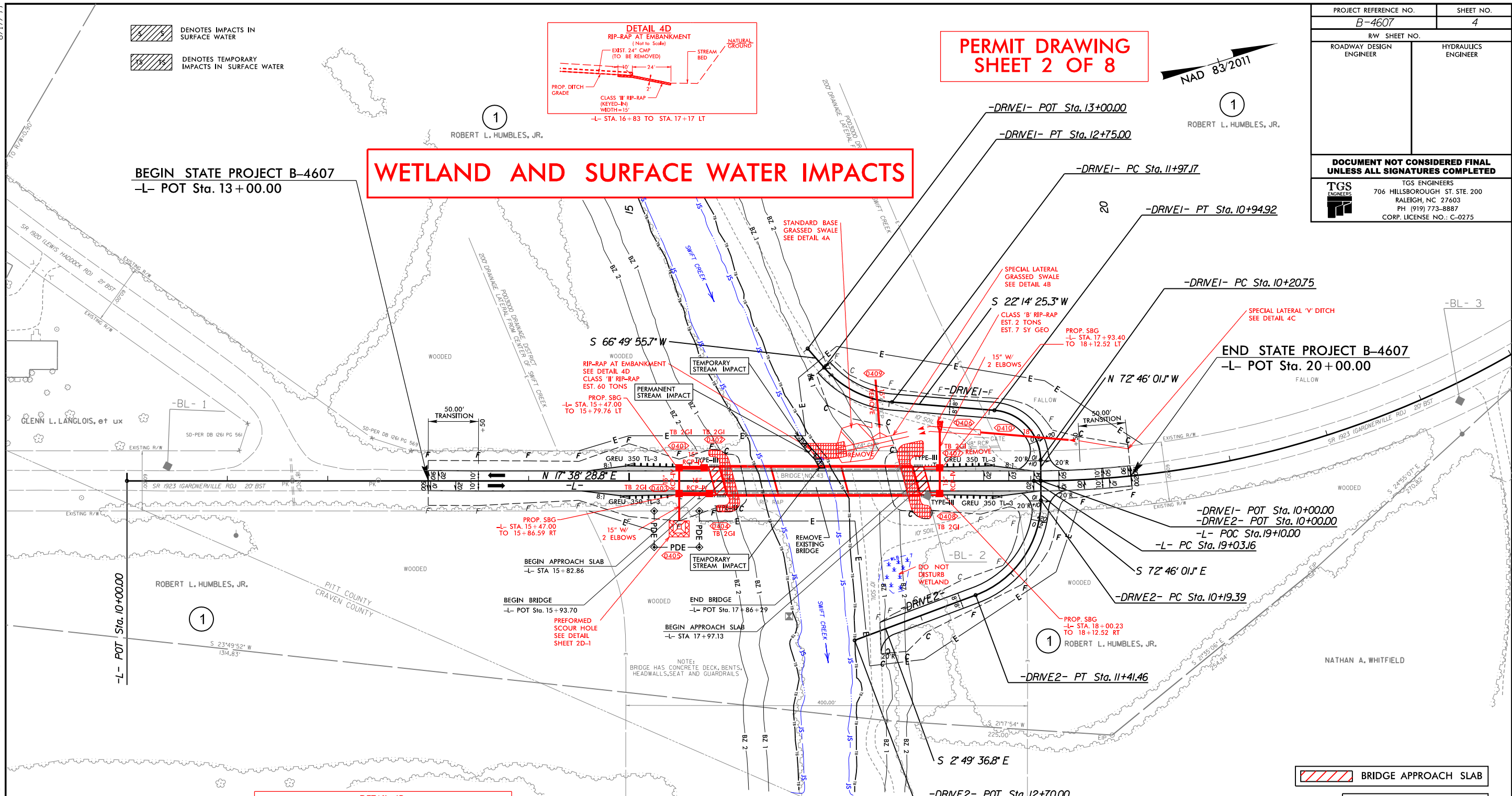
Surface Water Body (3):			NCDWR Stream Index No.:		
NCDWR Surface Water Classification for Water Body	Primary Classification:				
	Supplemental Classification:				
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:				Buffer Rules in Effect:	
Project Includes Bridge Spanning Water Body?		Deck Drains Discharge Over Buffer?		Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?		(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)					

PROJECT REFERENCE NO. B-4607		SHEET NO. 4	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
		TGS ENGINEERS 706 HILLSBOROUGH ST. STE. 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	

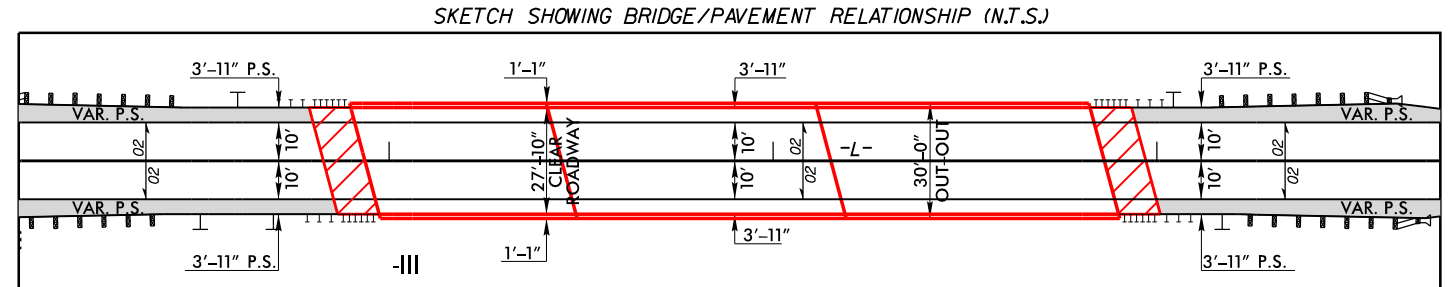
PERMIT DRAWING
SHEET 2 OF 8



WETLAND AND SURFACE WATER IMPACTS



-DRIVE1-		-DRIVE2-		-L-	
PI Sta 10+66.56	PI Sta 12+38.18	PI Sta 10+89.34	PI Sta 22+74.83		
$\Delta = 84^\circ 59' 33.6''$ (LT)	$\Delta = 44^\circ 35' 30.5''$ (RT)	$\Delta = 69^\circ 56' 24.3''$ (RT)	$\Delta = 42^\circ 19' 41.2''$ (LT)		
D = 114' 35" 29.6"	D = 57' 17" 44.8"	D = 57' 17" 44.8"	D = 5' 58" 05.9"		
L = 74.17'	L = 77.83'	L = 122.07'	L = 709.21'		
T = 45.81'	T = 41.00'	T = 69.94'	T = 371.67'		
R = 50.00'	R = 100.00'	R = 100.00'	R = 960.00'		
			SE = MATCH EX.		




BRIDGE APPROACH SLAB

SEE SHEET 5 FOR PROFILES

FOR STRUCTURE PLANS, SEE SHEET S-1 THRU S-22

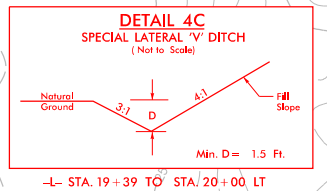
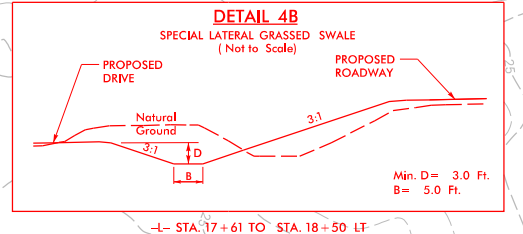
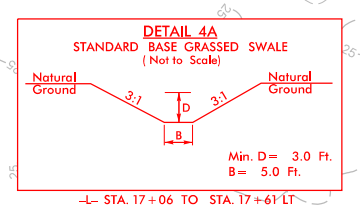
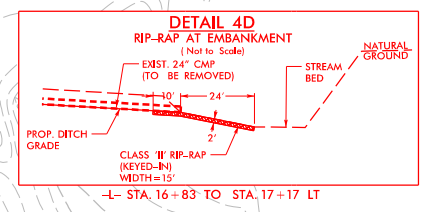
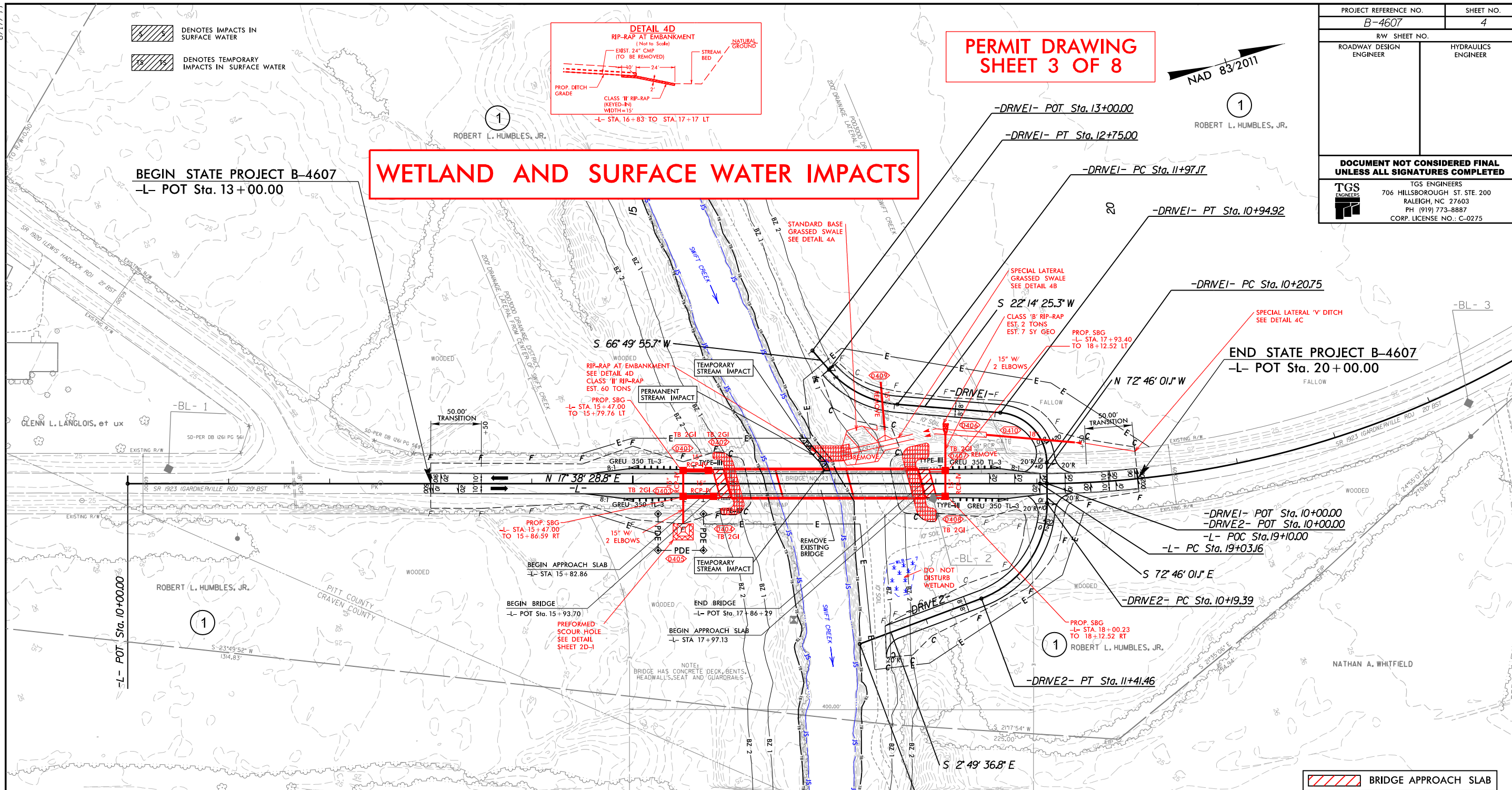
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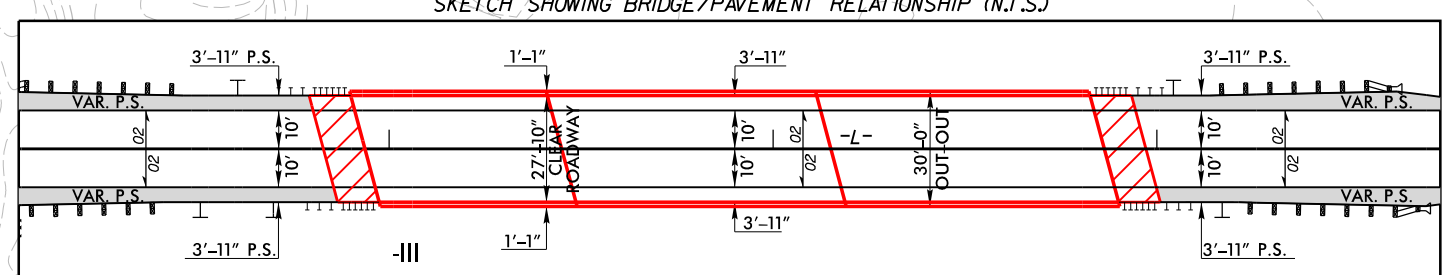
**PERMIT DRAWING
SHEET 3 OF 8**



WETLAND AND SURFACE WATER IMPACTS



-DRIVE1-	-DRIVE2-	-L-
PI Sta 10+66.56 $\Delta = 84^\circ 59' 33.6"$ (LT) $D = 114' 35" 29.6"$ $L = 74.17'$ $T = 45.81'$ $R = 50.00'$	PI Sta 12+38.18 $\Delta = 44^\circ 35' 30.5"$ (RT) $D = 57' 17" 44.8"$ $L = 77.83'$ $T = 41.00'$ $R = 100.00'$	PI Sta 10+89.34 $\Delta = 69^\circ 56' 24.3"$ (RT) $D = 57' 17" 44.8"$ $L = 122.07'$ $T = 69.94'$ $R = 100.00'$
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 BRIDGE APPROACH SLAB

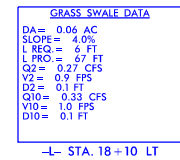
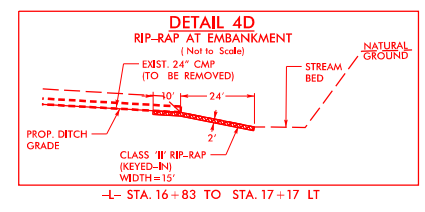
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FOR STRUCTURE PLANS, SEE SHEET S-1 THRU S-22

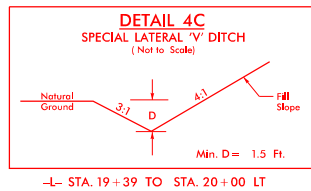
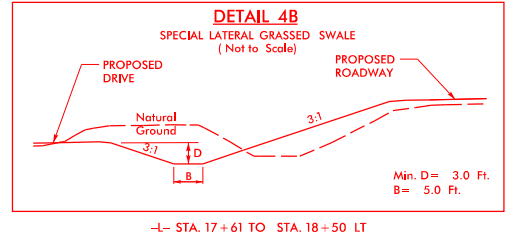
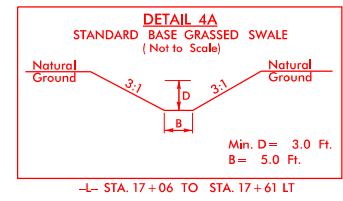
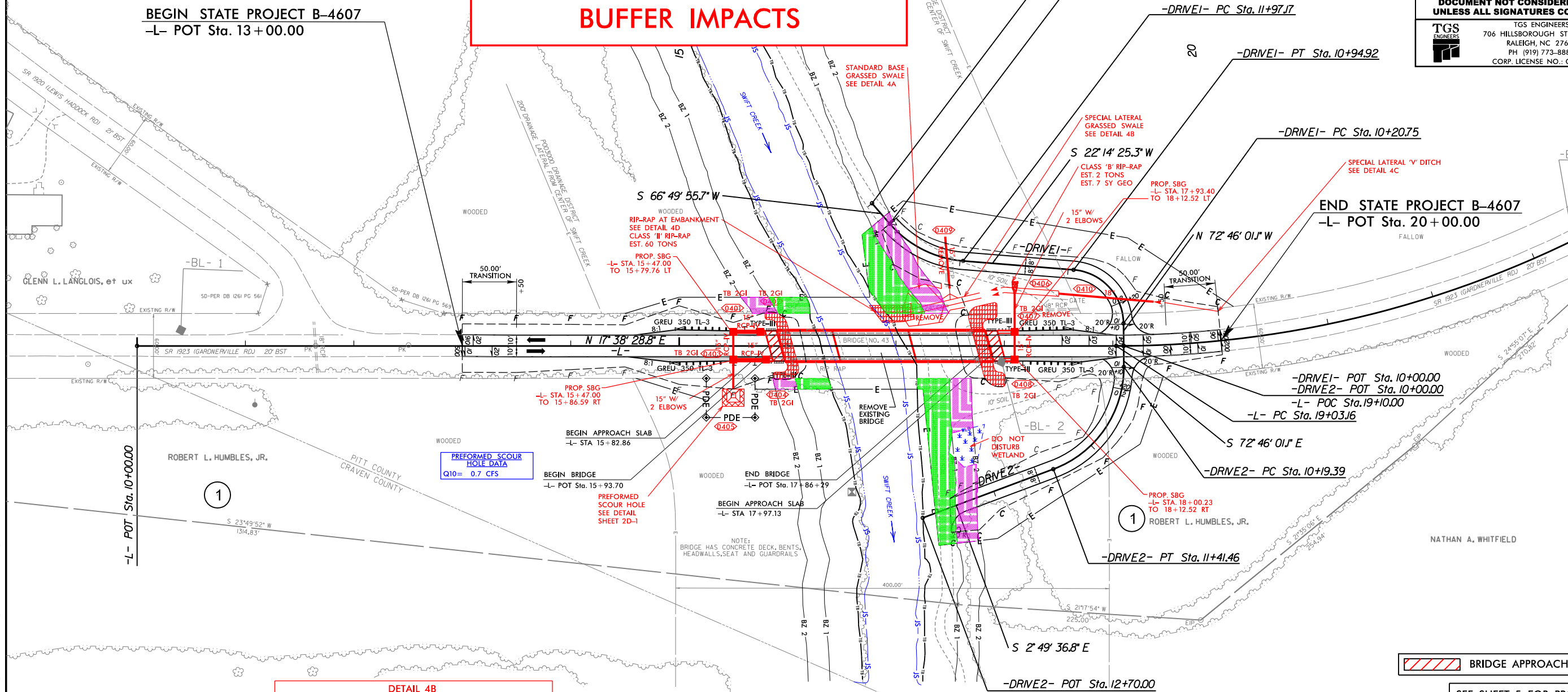
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PROJECT REFERENCE NO. B-4607	SHEET NO. 4
RW SHEET NO.	
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 TGS ENGINEERS 706 HILLSBOROUGH ST. STE. 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	

**PERMIT DRAWING
SHEET 4 OF 8**



BUFFER IMPACTS



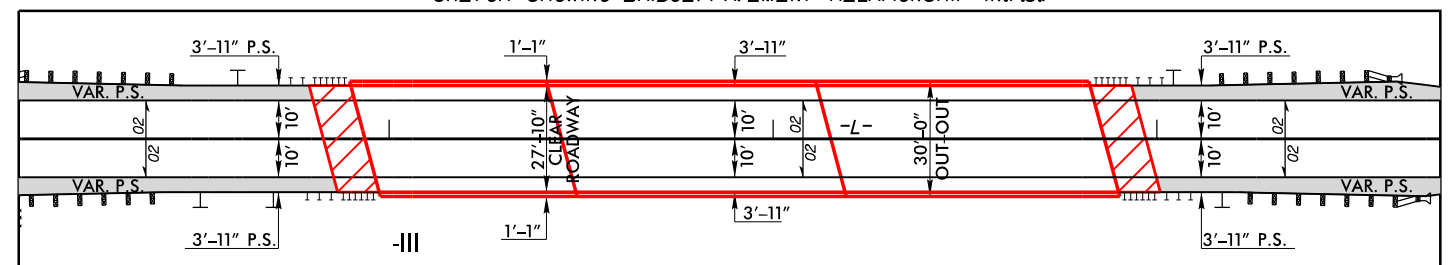
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 BRIDGE APPROACH SLAB


SEE SHEET 5 FOR PROFILES

FOR STRUCTURE PLANS, SEE SHEET S-1 THRU S-22

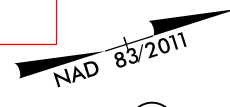
SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP (N.T.S.)



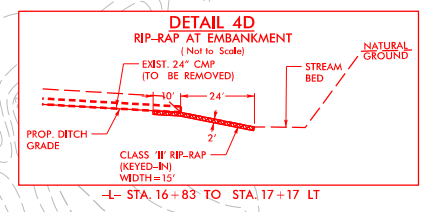
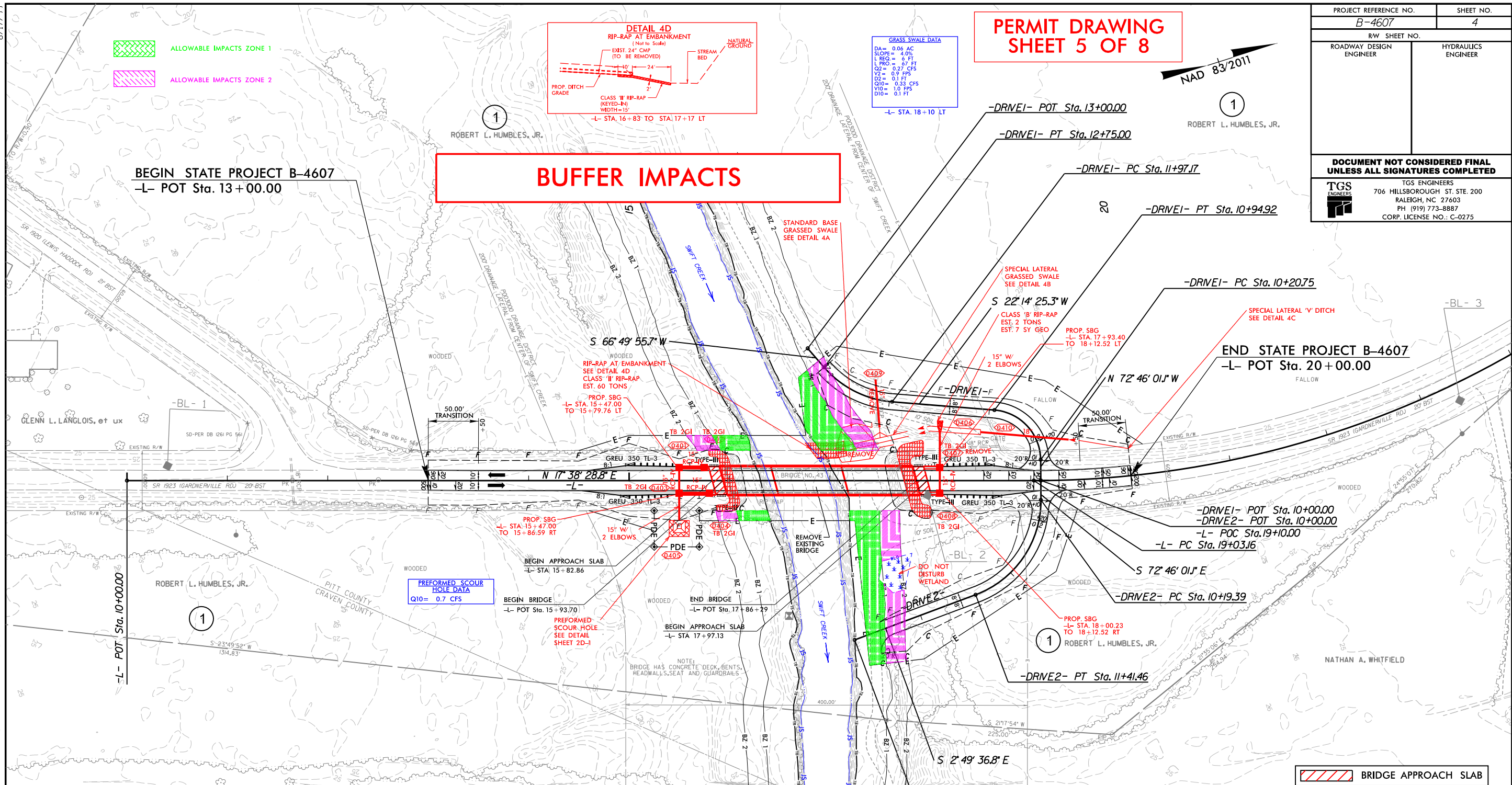
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**PERMIT DRAWING
SHEET 5 OF 8**

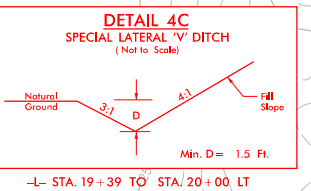
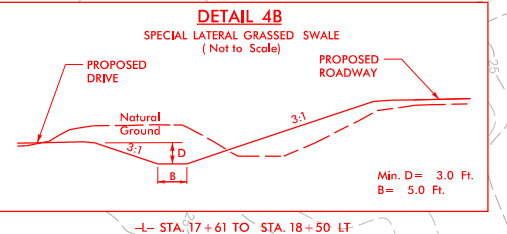
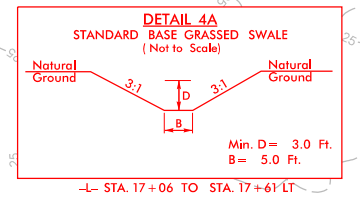
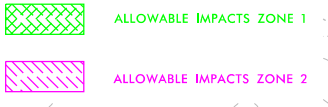


BUFFER IMPACTS

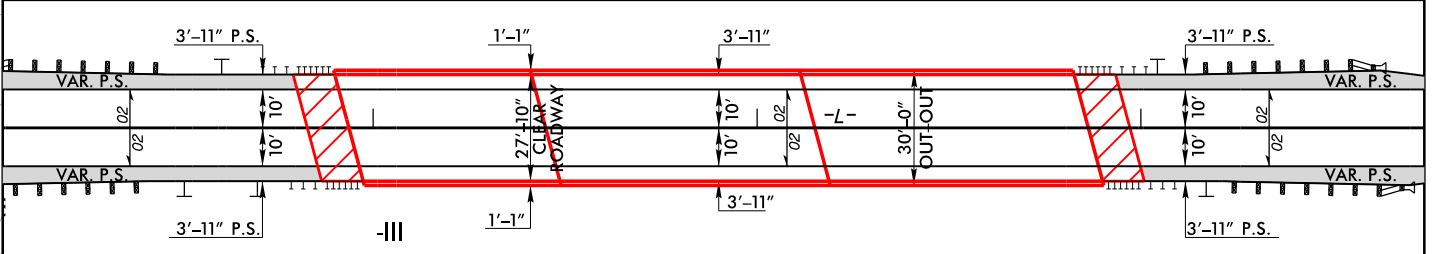


GRASS SWALE DATA

DA =	0.06 AC
SLOPE =	4.0%
L REQ =	6 FT
PRO =	0.9 FPS
Q2 =	0.27 CFS
Q3 =	0.9 FPS
D2 =	0.1 FT
Q10 =	0.23 CFS
Y10 =	1.0 FPS
D10 =	0.1 FT



-DRIVE1- PI Sta 10+66.56 $\Delta = 84^\circ 59' 33.6"$ (LT) $D = 114' 35" 29.6"$ $L = 74.17'$ $T = 45.81'$ $R = 50.00'$	-DRIVE2- PI Sta 12+38.18 $\Delta = 44^\circ 35' 30.5"$ (RT) $D = 57' 17" 44.8"$ $L = 77.83'$ $T = 41.00'$ $R = 100.00'$	-L- PI Sta 10+89.34 $\Delta = 69^\circ 56' 24.3"$ (RT) $D = 57' 17" 44.8"$ $L = 122.07'$ $T = 69.94'$ $R = 100.00'$	-L- PI Sta 22+74.83 $\Delta = 42^\circ 19' 41.2"$ (LT) $D = 5' 58" 05.9"$ $L = 709.21'$ $T = 371.67'$ $R = 960.00'$ $SE = MATCH EX.$
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 BRIDGE APPROACH SLAB

SEE SHEET 5 FOR PROFILES

FOR STRUCTURE PLANS, SEE SHEET S-1 THRU S-22

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 User: thansan

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)
	-L- 16+65 to 16+95 LT	Rip-Rap at Embankment						< 0.01	< 0.01	20	20	
TOTALS*:								< 0.01	< 0.01	20	20	

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 10/22/2021
 Pitt County
 B-4607
 38432.1.FD2
 SHEET **6** OF **8**

RIPARIAN BUFFER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	IMPACTS									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE			ZONE 1 (ft ²)	ZONE 2 (ft ²)
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft ²)	ZONE 2 (ft ²)	TOTAL (ft ²)	ZONE 1 (ft ²)	ZONE 2 (ft ²)	TOTAL (ft ²)		
	-L- 15+57 to 16+20 LT	1@50', 1@70', 1@70' (24" CSU)		X		497	359	856					
	-L- 15+86 to 16+41 RT	1@50', 1@70', 1@70' (24" CSU)		X		311	207	518					
	-L- 16+69 to 17+49 LT	1@50', 1@70', 1@70' (24" CSU)		X		2081	2035	4116					
	-L- 17+20 to 17+71 RT	1@50', 1@70', 1@70' (24" CSU)		X		3265	2413	5678					
TOTALS*:						6154	5014	11168	0	0	0	0	0

NOTES:
Total Buffer Impacts = 0.26 Ac

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
10/22/2021
Pitt County
B-4607
38432.1.FD2
SHEET 7 OF 8

