STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

NICHOLAS J. TENNYSON
SECRETARY

October 15, 2015

Wilmington Regulatory Field Office
US Army Corps of Engineers
69 Darlington Ave.
Wilmington, NC 28403

ATTN: Ms. Liz Hair
NCDOT Coordinator

Dear Sir:

Subject: **Application for a Section 404 Nationwide Permit No. 23, and Section 401 Water Quality Certification** for the proposed replacement of Bridge No. 144, SR 1429 (Old Pine Log Road) over Soules Swamp, Columbus County. TIP No. B-4948; Federal Aid Project No. BRSTP-1429(7); WBS No. 40104.1.1

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No.144 with approximately 80-foot bridge on the existing alignment. This bridge will be replaced on the existing alignment while traffic will be shifted to an off-site detour. Permanent impacts to riparian wetlands include 0.07 acre of fill.

Please see enclosed copies of the Pre-Construction Notification (PCN), permit drawings, stormwater management plan, and design plans for the above referenced project. The Programmatic Categorical Exclusion (PCE) was completed in August 2014 and distributed shortly thereafter.

This project calls for a letting date of April 19, 2016 and a review date of March 1, 2016. The project schedule may be advanced if funding becomes available.

Regulatory Approvals

Section 404 Permit: All aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). The NCDOT requests that the project be authorized by NW 23 for bridge construction.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1548 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-707-6000
FAX: 919-250-4224
WEBSITE:
HTTPS://CONNECT.NCDOT.GOV/RESOURCES/ENVIRONMENTAL/PAGES/DEFAULT.ASPX

LOCATION:
CENTURY CENTER, BUILDING A
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

Section 401 Permit: We anticipate 401 General Certification number 3891 will apply to this project. NCDOT will adhere to all general conditions of this Water Quality Certificaton.

A copy of this permit application will be posted on the NCDOT Website at https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx, under *Quick Links > Permit Applications*. A copy of the PCE is also available at the above website address under *Quick Links > Environmental Documents*. Thank you for your assistance with this project. If you have any questions or need additional information, please contact John Merritt at jsmerritt@ncdot.gov or (919) 707-6140.

Sincerely,

for Richard W. Hancock, P.E., Manager
Project Development and Environmental Analysis Unit

cc: NCDOT Permit Application Standard Distribution List

Office Use Only:
Corps action ID no. _____
DWQ project no. _____
Form Version 1.3 Dec 10 2008

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	☒ Section 404 Permit	☐ Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 23	or General Permit (GP) number:	
1c. Has the NWP or GP number been verified by the Corps?	☐ Yes	☒ No

1d. Type(s) of approval sought from the DWQ (check all that apply):

☐ 401 Water Quality Certification – Regular ☐ Non-404 Jurisdictional General Permit

☐ 401 Water Quality Certification – Express ☐ Riparian Buffer Authorization

1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: ☒ Yes ☐ No	For the record only for Corps Permit: ☐ Yes ☒ No
1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.	☒ Yes	☐ No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	☐ Yes	☒ No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	☐ Yes	☒ No

2. Project Information

2a. Name of project:	proposed replacement of Bridge No. 144
2b. County:	Columbus
2c. Nearest municipality / town:	Chadbourn
2d. Subdivision name:	*not applicable*
2e. NCDOT only, T.I.P. or state project no:	B-4948

3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	*not applicable*
3c. Responsible Party (for LLC if applicable):	*not applicable*
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 707-6140
3g. Fax no.:	(919) 250-4224
3h. Email address:	jsmerritt@ncdot.gov

4. Applicant Information (if different from owner)	
4a. Applicant is:	☐ Agent ☐ Other, specify:
4b. Name:	*not applicable*
4c. Business name (if applicable):	
4d. Street address:	
4e. City, state, zip:	
4f. Telephone no.:	
4g. Fax no.:	
4h. Email address:	
5. Agent/Consultant Information (if applicable)	
5a. Name:	*not applicable*
5b. Business name (if applicable):	
5c. Street address:	
5d. City, state, zip:	
5e. Telephone no.:	
5f. Fax no.:	
5g. Email address:	

B. Project Information and Prior Project History	
1. Property Identification	
1a. Property identification no. (tax PIN or parcel ID):	*not applicable*
1b. Site coordinates (in decimal degrees):	Latitude: 34.310387 (DD.DDDDDD) Longitude: - 78.776212 (-DD.DDDDDD)
1c. Property size:	20 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Benson Mill Pond
2b. Water Quality Classification of nearest receiving water:	C;Sw
2c. River basin:	Lumbar
3. Project Description	
3a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: Existing conditions at the site include maintained/disturbed roadside shoulder and forested areas. Land use in the project vicinity is predominantly mixed residential and agricultrual.	
3b. List the total estimated acreage of all existing wetlands on the property: 4.33	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 200	
3d. Explain the purpose of the proposed project: To replace bridge 144	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing bridge 144 on the existing alignment. Traffic will follow an offsite detour during construction. Standard road building equipment, such as trucks, dozers, and cranes will be used.	
4. Jurisdictional Determinations	
4a. Have jurisdictional wetland or stream determinations by the Corps or State been requested or obtained for this property / project (including all prior phases) in the past? Comments:	☐ Yes ☒ No ☐ Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	☐ Preliminary ☐ Final
4c. If yes, who delineated the jurisdictional areas? Name (if known): Veronica Barnes	Agency/Consultant Company: Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation.	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	☐ Yes ☒ No ☐ Unknown
5b. If yes, explain in detail according to “help file” instructions.	
6. Future Project Plans	
6a. Is this a phased project?	☐ Yes ☒ No
6b. If yes, explain.	

C. Proposed Impacts Inventory

1. Impacts Summary

1a. Which sections were completed below for your project (check all that apply):

☒ Wetlands ☐ Streams - tributaries Buffers

☒ Open Waters ☐ Pond Construction

2. Wetland Impacts

If there are wetland impacts proposed on the site, then complete this question for each wetland area impacted.

2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	2f. Area of impact (acres)
Site 1 ☒ P ☐ T	Roadway fill	Riverine	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.07
Site 1 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
				2g. **Total wetland impacts**	0.07 Permanent 0.00 Temporary

2h. Comments: - There will also be 0.10 acre of hand clearing. Additionally, there will be 0.02 acre of temporary fill in wetlands in the hand clearing areas for the installation of erosion control measures, including temporary silt fence and/or special sediment control fence.

3. Stream Impacts

If there are perennial or intermittent stream impacts (including temporary impacts) proposed on the site, then complete this question for all stream sites impacted.

3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site 1 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 2 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 3 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 4 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
					3h. **Total stream and tributary impacts**	

3i. Comments:

4. Open Water Impacts

If there are proposed impacts to lakes, ponds, estuaries, tributaries, sounds, the Atlantic Ocean, or any other open water of the U.S. then individually list all open water impacts below.

4a. Open water impact number – Permanent (P) or Temporary (T)	4b. Name of waterbody (if applicable)	4c. Type of impact	4d. Waterbody type	4e. Area of impact (acres)
O1 ☐ P ☐ T	Soules Swamp	Fill	Stream	0.02
O1 ☐ P ☐ T				
O2 ☐ P ☐ T				
O3 ☐ P ☐ T				
		4f. Total open water impacts		0.02 X Temporary

4g. Comments:

5. Pond or Lake Construction

If pond or lake construction proposed, then complete the chart below.

5a. Pond ID number	5b. Proposed use or purpose of pond	5c. Wetland Impacts (acres)			5d. Stream Impacts (feet)			5e. Upland (acres)
		Flooded	Filled	Excavated	Flooded	Filled	Excavated	Flooded
P1								
P2								
	5f. Total							

5g. Comments:

5h. Is a dam high hazard permit required?	☐ Yes ☐ No If yes, permit ID no:
5i. Expected pond surface area (acres):	
5j. Size of pond watershed (acres):	
5k. Method of construction:	

6. Buffer Impacts (for DWQ)

If project will impact a protected riparian buffer, then complete the chart below. If yes, then individually list all buffer impacts below. If any impacts require mitigation, then you **MUST** fill out Section D of this form.

6a. Project is in which protected basin?			☐ Neuse ☐ Catawba	☐ Tar-Pamlico ☐ Randleman	☐ Other:
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
B1* ☐ P ☐ T	Phone line	Neuse	☐ Yes ☐ No		
		6h. **Total buffer impacts**			
6i. Comments: *Utility impacts					

D. Impact Justification and Mitigation

1. Avoidance and Minimization

1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project.

The proposed bridge No. 144 is approximately 24 feet longer than the existing bridge. The existing causeway is utilized to minimize jurisdictional impacts. All proposed mechanized clearing was changed to hand clearing.

1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques.

Construction will be top-down. Best Management Practices for the Protection of Surface Waters, as well as, Best Management Practices for Construction and Maintenance Activities will be implemented.

2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State

2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	☐ Yes ☒ No If no, explain: No mitigation proposed due to minimal impacts
2b. If yes, mitigation is required by (check all that apply):	☐ DWQ ☐ Corps
2c. If yes, which mitigation option will be used for this project?	☐ Mitigation bank ☐ Payment to in-lieu fee program ☐ Permittee Responsible Mitigation

3. Complete if Using a Mitigation Bank

3a. Name of Mitigation Bank:

3b. Credits Purchased (attach receipt and letter)	Type	Quantity

3c. Comments:

4. Complete if Making a Payment to In-lieu Fee Program

4a. Approval letter from in-lieu fee program is attached.	☐ Yes
4b. Stream mitigation requested:	linear feet
4c. If using stream mitigation, stream temperature:	☐ warm ☐ cool ☐ cold
4d. Buffer mitigation requested (DWQ only):	square feet
4e. Riparian wetland mitigation requested:	
4f. Non-riparian wetland mitigation requested:	acres
4g. Coastal (tidal) wetland mitigation requested:	acres

4h. Comments: The Crescent Road Mitigation Site will be debited.

5. Complete if Using a Permittee Responsible Mitigation Plan

5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.

6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ				
6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?			☐ Yes	☒ No
6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation. Calculate the amount of mitigation required.				
Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1			3 (2 for Catawba)	
Zone 2			1.5	
	6f. **Total buffer mitigation required:**			
6g. If buffer mitigation is required, discuss what type of mitigation is proposed (e.g., payment to private mitigation bank, permittee responsible riparian buffer restoration, payment into an approved in-lieu fee fund).				
6h. Comments:				

E. Stormwater Management and Diffuse Flow Plan (required by DWQ)	
1. Diffuse Flow Plan	
1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?	☐ Yes ☒ No
1b. If yes, then is a diffuse flow plan included? If not, explain why. Comments:	☒ Yes ☐ No
2. Stormwater Management Plan	
2a. What is the overall percent imperviousness of this project?	N/A
2b. Does this project require a Stormwater Management Plan?	☒ Yes ☐ No
2c. If this project DOES NOT require a Stormwater Management Plan, explain why:	
2d. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan: See attached permit drawings and stormwater management plan.	
2e. Who will be responsible for the review of the Stormwater Management Plan?	☐ Certified Local Government ☐ DWQ Stormwater Program ☒ DWQ 401 Unit
3. Certified Local Government Stormwater Review	
3a. In which local government's jurisdiction is this project?	not applicable
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	☐ Phase II ☐ NSW ☐ USMP ☐ Water Supply Watershed ☐ Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	☐ Coastal counties ☐ HQW ☐ ORW ☐ Session Law 2006-246 ☐ Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No N/A
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	☒ Yes ☐ No N/A
5b. Have all of the 401 Unit submittal requirements been met?	☒ Yes ☐ No N/A

F. Supplementary Information		
1. Environmental Documentation (DWQ Requirement)		
1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land?	☒ Yes	☐ No
1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)?	☒ Yes	☐ No
1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) Comments:	☒ Yes	☐ No
2. Violations (DWQ Requirement)		
2a. Is the site in violation of DWQ Wetland Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), DWQ Surface Water or Wetland Standards, or Riparian Buffer Rules (15A NCAC 2B .0200)?	☐ Yes	☒ No
2b. Is this an after-the-fact permit application?	☐ Yes	☒ No
2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):		
3. Cumulative Impacts (DWQ Requirement)		
3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality?	☐ Yes ☒ No	
3b. If you answered "yes" to the above, submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent DWQ policy. If you answered "no," provide a short narrative description. Due to the minimal transportation impact resulting from this bridge replacement, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect or cumulative effects study will not be necessary.		
4. Sewage Disposal (DWQ Requirement)		
4a. Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility. not applicable		

5. Endangered Species and Designated Critical Habitat (Corps Requirement)		
5a. Will this project occur in or near an area with federally protected species or habitat?	☒ Yes	☐ No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	☒ Yes	☐ No
5c. If yes, ind icate the USFWS Field Office you have contacted.	☒ Raleigh ☐ Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? NCNHP, USFWS website, field surveys		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	☐ Yes	☒ No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index		
7. Historic or Prehistoric Cultural Resources (Corps Requirement)		
7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)?	☐ Yes	☒ No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation		
8. Flood Zone Designation (Corps Requirement)		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	☒ Yes	☐ No
8b. If yes, explain how project meets FEMA requirements: NCDOT Hydraulics Unit coordination with FEMA		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		

for Richard W. Hancock, P.E. Applicant/Agent's Printed Name	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	10-15-15 Date

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.01; Released December 2014)

General Project Information

WBS Element:	40104.1.1	**TIP Number:**	B-4948	**Project Type:** Bridge Replacement	**Date:** 4/13/2015
NCDOT Contact:	Bill Zerman, PE	**Contractor / Designer:**	HDR | ICA Engineering / Trent Cormier		
Address:	1000 Birch Ridge Dr. Raleigh, NC 27610	**Address:**	5121 Kingdom Way, Suite 100 Raleigh, NC 27607		
Phone:	919-703-6301	**Phone:**	919-900-1608		
Email:	rpatel@ncdot.gov	**Email:**	tcormier@icaeng.com		
City/Town:	Chadbourn	**County(ies):**	Columbus		
River Basin(s):	Lumber	**CAMA County?**	No		
Wetlands within Project Limits?	Yes				

Project Description

Project Length (lin. miles or feet):	0.15	**Surrounding Land Use:**	Forest and agriculture

	Proposed Project	Existing Site
Project Built-Upon Area (ac.)	0.5 ac.	0.4 ac.
Typical Cross Section Description:	2 lanes @ 11' with 6' shoulders	2 lanes @ 10'
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 4570 Year: 2036	Existing: 3154 Year: 2016

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

The project consists of construction of a new 82'-4.5" (2 @ 41' -2 1/4") 21" PCCS bridge to replace the existing 55 feet 8 inch long bridge #144 on SR 1429 over Soules Swamp. The total project length is 0.147 miles. The project is located in the Lumber River Basin. The project drainage system consists of grass shoulders, grated inlets with associated pipes, and rip rap pad at the pipe outfall.

Jurisdictional Streams: Soules Swamp

The BMP measures used on this project to reduce stormwater impacts are listed below
Sheet flow on grass shoulders along the roadway: This will promote infiltration and filtration of pavement runoff by directing sheet flow over grassed shoulder slopes.

Outlet protection with rip rap: Rip rap outlet protection is provided at 17+71 LT to dissipate energy from the bridge storm water to provide a non-erosive sheet flow (approximately 60 feet) for infiltration and filtration before entering the stream with Q10=0.30 cfs and V10=0.70 fps.

No deck drains: This will avoid direct discharge of storm water from the bridge deck into the receiving water.

Bank stabilization: Bank stabilization with class II rip rap is provided at both sides of the stream at 18+02 & 18+67 to provide long-term bank stability to prevent erosion. This will provide a stable stream and the stream will not degrade in the evolution process.

Waterbody Information

Surface Water Body (1):	Soules Swamp	**NCDWR Stream Index No.:**	15-4-8
NCDWR Surface Water Classification for Water Body	**Primary Classification:**	Class C	
	Supplemental Classification:	Swamp Waters (Sw)	
Other Stream Classification:	None		
Impairments:	None		
Threatened/Endangered Species?	Yes	Comments: Wood Stork is May Affect Not Likely to Adversely Affect: All others are No Affect	
NRTR Stream ID:	Soules Swamp	**Buffer Rules in Effect:**	N/A
Project Includes Bridge Spanning Water Body?	Yes	**Deck Drains Discharge Over Buffer?**	No
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)	**Dissipator Pads Provided in Buffer?** Yes
(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)

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.01; Released December 2014)

WBS Element: 40104.1.1 **TIP No.:** B-4948 **County(ies):** Columbus

Preformed Scour Holes and Energy Dissipators

Sheet No.	Station (Road Projects) or Coordinates (Non-Road Projects)	Surface Water Body	Energy Dissipator Type	Riprap Type	Drainage Area (ac)	Conveyance Structure	Pipe/Structure Dimensions (in)	Q10 (cfs)	V10 (fps)	BMP Associated w/ Buffer Rules?
4	17+70	(1)Soules Swamp	Riprap Apron / Pad	Class 'B'	0.1	Pipe	15	0.3	1.4	No
4	18+90	(1)Soules Swamp	Riprap Apron / Pad	Class 'B'	0.0	Pipe	15	0.3	1.1	No

Additional Comments

* Refer to the NCDOT Best Management Practices Toolbox (2014), NCDOT Standards, the Federal Highway Administration (FHWA) Hydraulic Engineering Circular No. 14 (HEC-14), Third Edition, Hydraulic Design of Energy Dissipators for Culverts and Channels (July 2006), as applicable, for design guidance and criteria.

TIP PROJECT: B-4948

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

COLUMBUS COUNTY

N.C.	B-4948	1	
40104.1.1	BRSTP-1429(7)	PE	

LOCATION: BRIDGE NO. 144 OVER SOULES SWAMP ON SR 1429 (OLD PINE LOGGING ROAD)

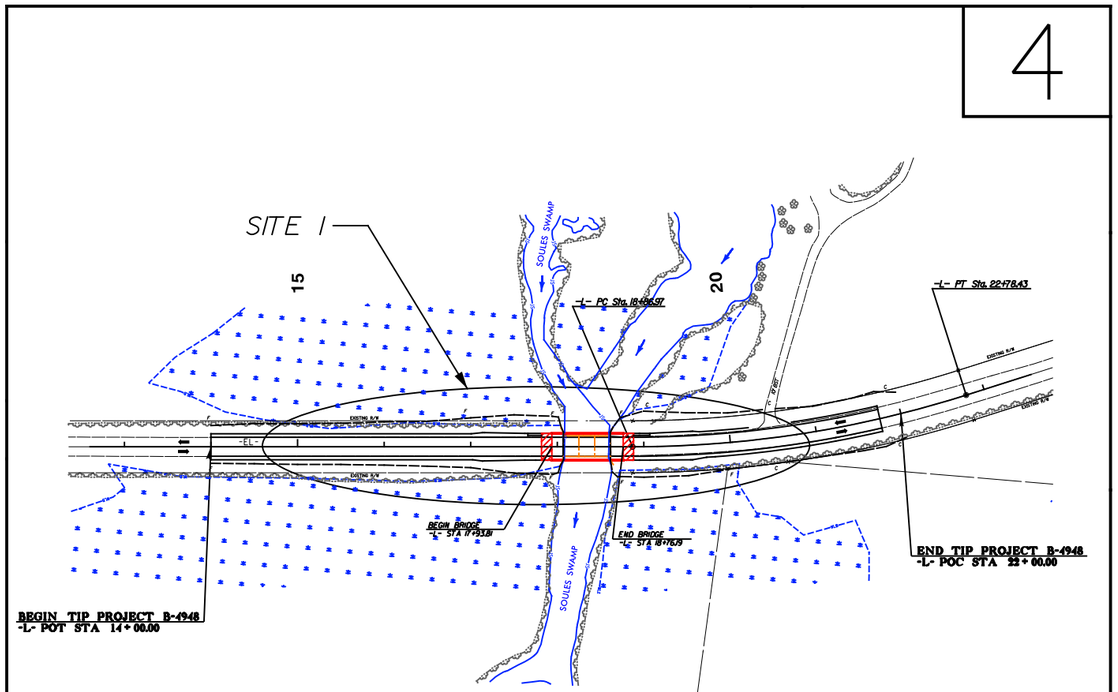
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

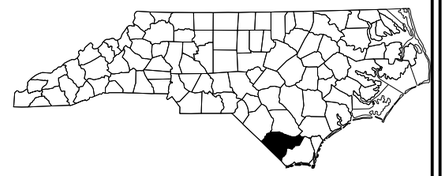
WETLAND AND SURFACE WATER IMPACTS PERMIT

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
COLUMBUS COUNTY
PROJECT: 40104.1.17 (B-4948)
BRIDGE NO. 144 OVER SOULES SWAMP ON SR 1429 (OLD PINE LOGGING ROAD)
SHEET OF
PERMIT DRAWING SHEET 1 OF 8

ENGLISH

4





NAD 83/ NSRS 2007

NOTES:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD —.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50′ 25′ 0 50′ 100′
PLANS

50′ 25′ 0 50′ 100′
PROFILE (HORIZONTAL)

10′ 5′ 0 10′ 20′
PROFILE (VERTICAL)

DESIGN DATA

ADT 2016 = 3154
ADT 2036 = 4570
K = 9 %
D = 60 %
T = 3 % *
V = 60 MPH
* TTST =1% DUAL = 2%
FUNC CLASS = LOCAL

SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4948	=	0.136 MILES
LENGTH STRUCTURE TIP PROJECT B-4948	=	0.016 MILES
TOTAL LENGTH TIP PROJECT B-4948	=	0.152 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL 17, 2015

LETTING DATE: APRIL 19, 2016

BILL ZERMAN, PE
PROJECT ENGINEER

BRIAN P. ROBINSON
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

6242015
ICA ENGINEERING, INC.
R:\ Hydraulics \PERMITS_Environmental\ Drawings \B4948_hyd_prm_wet_tsh.dgn

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-4948	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
COLUMBUS COUNTY

PROJECT: 40104.1.17 (B-4948)

BRIDGE NO. 144 OVER SOULES SWAMP ON SR 1429 (OLD PINE LOGGING ROAD)

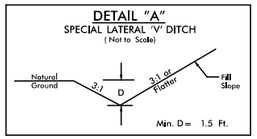
SHEET OF

PERMIT DRAWING SHEET 2 OF 8

ENGLISH

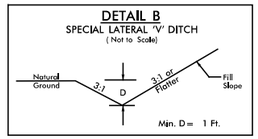
NAD 83/NSRS 2007

DETAIL "A"
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



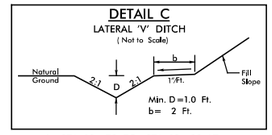
–L– STA. 19+00 TO STA. 22+00 LT

DETAIL B
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



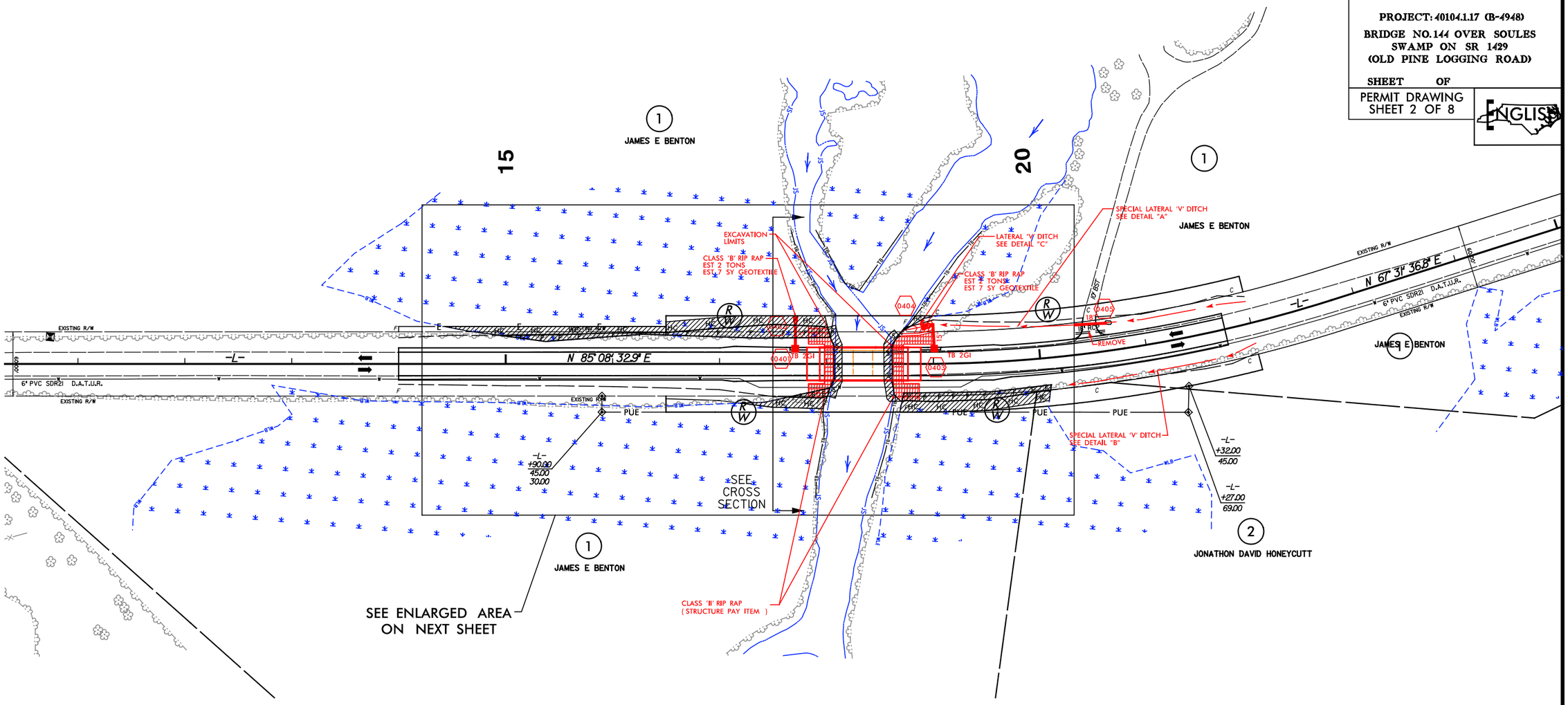
–L– STA. 20+15 TO STA. 22+00 RT

DETAIL C
LATERAL 'V' DITCH
(Not to Scale)



–L– STA. 18+70 TO STA. 19+00 LT

WETLAND AND SURFACE WATER IMPACTS PERMIT



PLAN VIEW
SITE 1

LEGEND

- WLB — WETLAND BOUNDARY
- F F — DENOTES FILL IN WETLAND
- HC HC — DENOTES HAND CLEARING
- S S S — DENOTES PERMANENT IMPACTS IN SURFACE WATER

100 0 50 100
SCALE: 1"= 100' HORIZ.

TOTAL PROJECT LENGTH: 0.152 MILES
PROPOSED BRIDGE: TWO SPAN: 2 @ 41'–2½" (21" PCCS WITH 2 VERTICAL ABUTMENTS)
EXISTING BRIDGE: 3 SPAN BRIDGE: 1 @18'8", 1@18'3", 1@18'9"

7/7/2015
$(USERNAME)$
$FILE$

5/14/99

WETLAND AND SURFACE WATER IMPACTS PERMIT

PROJECT REFERENCE NO.	SHEET NO.
B-4948	4A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
COLUMBUS COUNTY

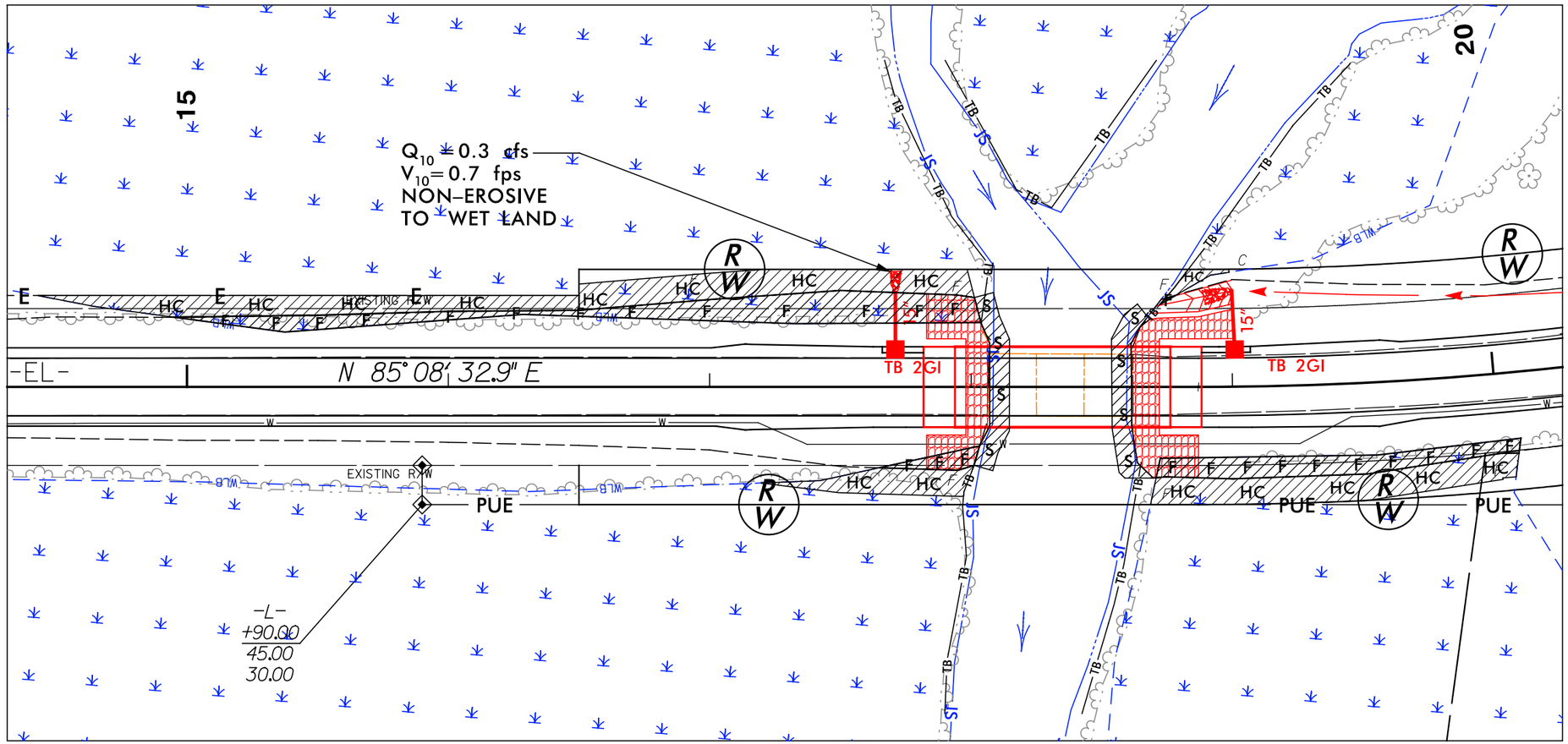
PROJECT: 40104.1.17 (B-4948)

BRIDGE NO. 144 OVER SOULES SWAMP ON SR 1429 (OLD PINE LOGGING ROAD)

SHEET OF

PERMIT DRAWING SHEET 3 OF 8

NAD 83/NSRS 2007



ENLARGED
PLAN VIEW
SITE 1

50 0 25 50
SCALE: 1"= 50' HORIZ.

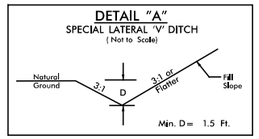
TOTAL PROJECT LENGTH: 0.152 MILES
PROPOSED BRIDGE: TWO SPAN: 2 @ 41'-2½" (21" PCCS WITH 2 VERTICAL ABUTMENTS)
EXISTING BRIDGE: 3 SPAN BRIDGE: 1 @18'8", 1@18'3", 1@18'9"

LEGEND

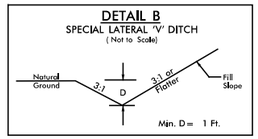
- WETLAND BOUNDARY
- F F — DENOTES FILL IN WETLAND
- HC HC — DENOTES HAND CLEARING
- S S — DENOTES PERMANENT IMPACTS IN SURFACE WATER

7/7/2015
$USERNAME$
$FILE$

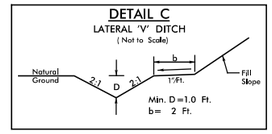
5/14/99



–L– STA. 19+00 TO STA. 22+00 LT



–L– STA. 20+15 TO STA. 22+00 RT



–L– STA. 18+70 TO STA. 19+00 LT

NAD 83/NSRS 2007

PROJECT REFERENCE NO.	SHEET NO.
B–4948	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
COLUMBUS COUNTY

PROJECT: 40104.1.17 (B-4948)

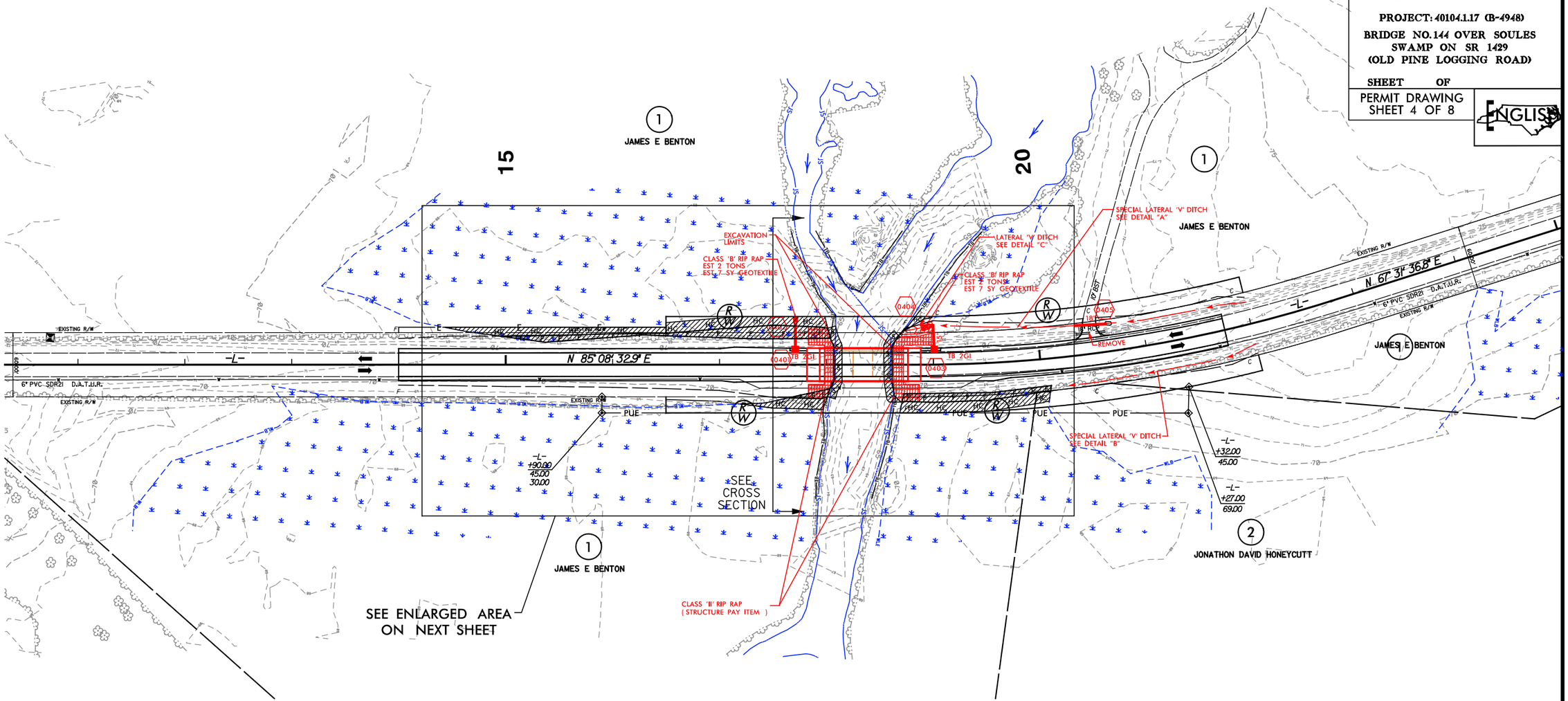
BRIDGE NO. 144 OVER SOULES SWAMP ON SR 1429 (OLD PINE LOGGING ROAD)

SHEET OF

PERMIT DRAWING
SHEET 4 OF 8

ENGLISH

WETLAND AND SURFACE WATER IMPACTS PERMIT



PLAN VIEW
SITE 1

LEGEND

- WLB — WETLAND BOUNDARY
- F F — DENOTES FILL IN WETLAND
- HC HC — DENOTES HAND CLEARING
- S S S — DENOTES PERMANENT IMPACTS IN SURFACE WATER

100 0 50 100
SCALE: 1"= 100' HORIZ.

TOTAL PROJECT LENGTH: 0.152 MILES
PROPOSED BRIDGE: TWO SPAN: 2 @ 41'–2½" (21" PCCS WITH 2 VERTICAL ABUTMENTS)
EXISTING BRIDGE: 3 SPAN BRIDGE: 1 @18'8", 1@18'3", 1@18'9"

7/7/2015
$(USERNAME)$
$FILE$

5/14/99

WETLAND AND SURFACE WATER IMPACTS PERMIT

PROJECT REFERENCE NO.	SHEET NO.
B-4948	4A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
COLUMBUS COUNTY

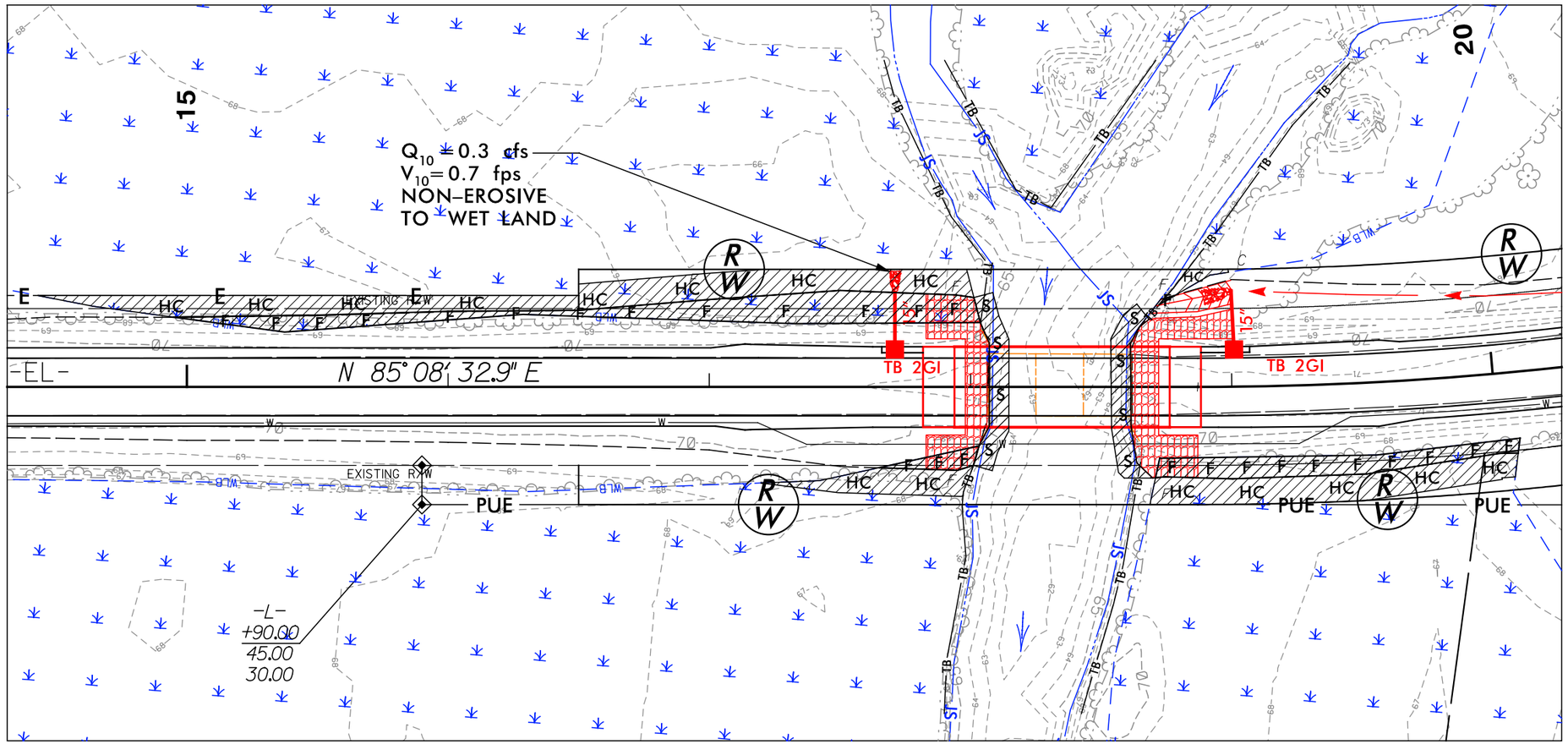
PROJECT: 40104.1.17 (B-4948)

BRIDGE NO. 144 OVER SOULES SWAMP ON SR 1429 (OLD PINE LOGGING ROAD)

SHEET OF

PERMIT DRAWING SHEET 5 OF 8

NAD 83/NSRS 2007



ENLARGED PLAN VIEW
SITE 1

LEGEND

- WETLAND BOUNDARY
- F F — DENOTES FILL IN WETLAND
- HC HC — DENOTES HAND CLEARING
- S S — DENOTES PERMANENT IMPACTS IN SURFACE WATER

50 0 25 50
SCALE: 1"= 50' HORIZ.

TOTAL PROJECT LENGTH: 0.152 MILES
PROPOSED BRIDGE: TWO SPAN: 2 @ 41'-2½" (21" PCCS WITH 2 VERTICAL ABUTMENTS)
EXISTING BRIDGE: 3 SPAN BRIDGE: 1 @18'8", 1@18'3", 1@18'9"

7/7/2015
$USERNAME$
$FILE$

5/14/99

WETLAND AND SURFACE WATER IMPACTS PERMIT

PROJECT REFERENCE NO.	SHEET NO.
B-4948	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
COLUMBUS COUNTY

PROJECT: 40104.1.17 (B-4948)

BRIDGE NO. 144 OVER SOULES SWAMP ON SR 1429 (OLD PINE LOGGING ROAD)

SHEET OF

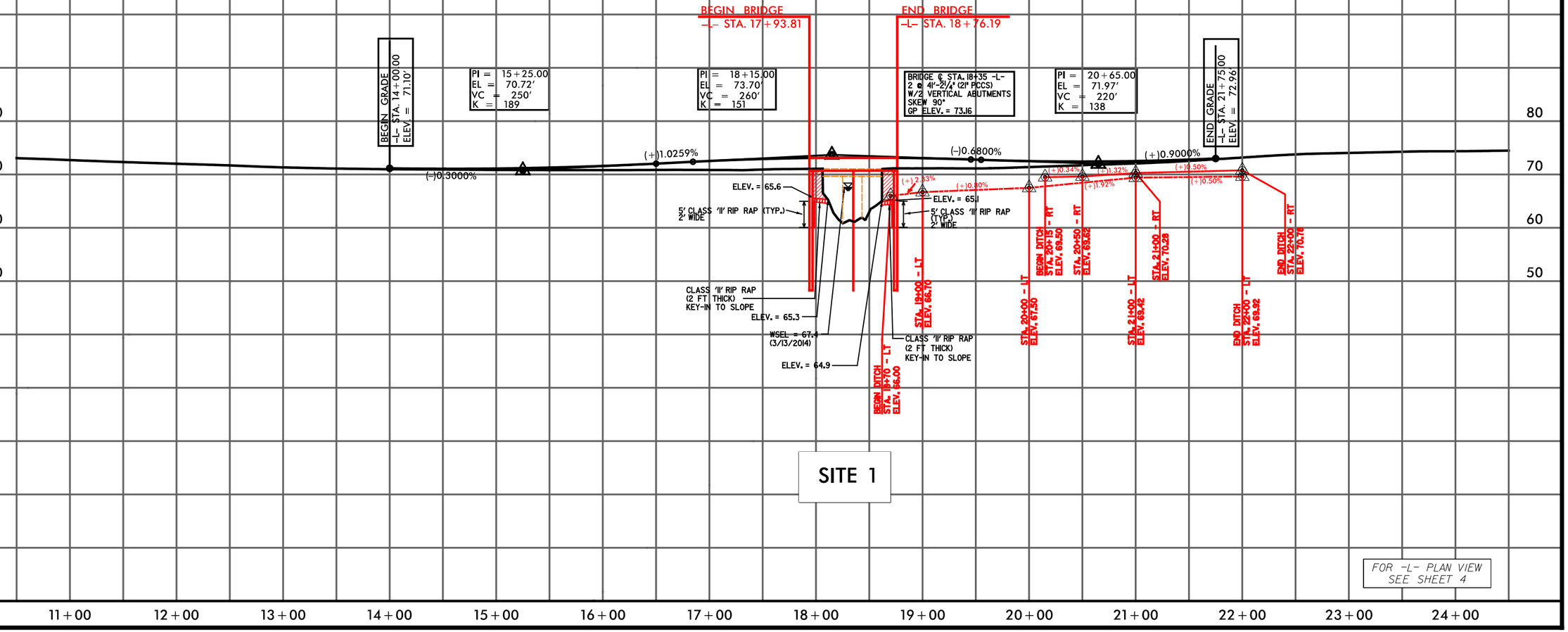
PERMIT DRAWING
SHEET 6 OF 8

ENGLISH

BM#1
–L– STA. 10+74.10, 25.33' LT
RR SPIKE IN BASE 18" HARDWOOD
ELEV. = 72.86'

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 700	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 70.0	FT
BASE DISCHARGE	= 1580	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 70.55	FT
OVERTOPPING DISCHARGE	= 2300	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 71.0	FT
DATE OF SURVEY	= 3/13/2014	
W.S. ELEVATION AT DATE OF SURVEY	= 67.4	FT



SITE 1

FOR –L– PLAN VIEW
SEE SHEET 4

6/2/2015
ICA ENGINEERING, INC.
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WETLAND AND SURFACE WATER IMPACTS PERMIT

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4948	X-3

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
COLUMBUS COUNTY

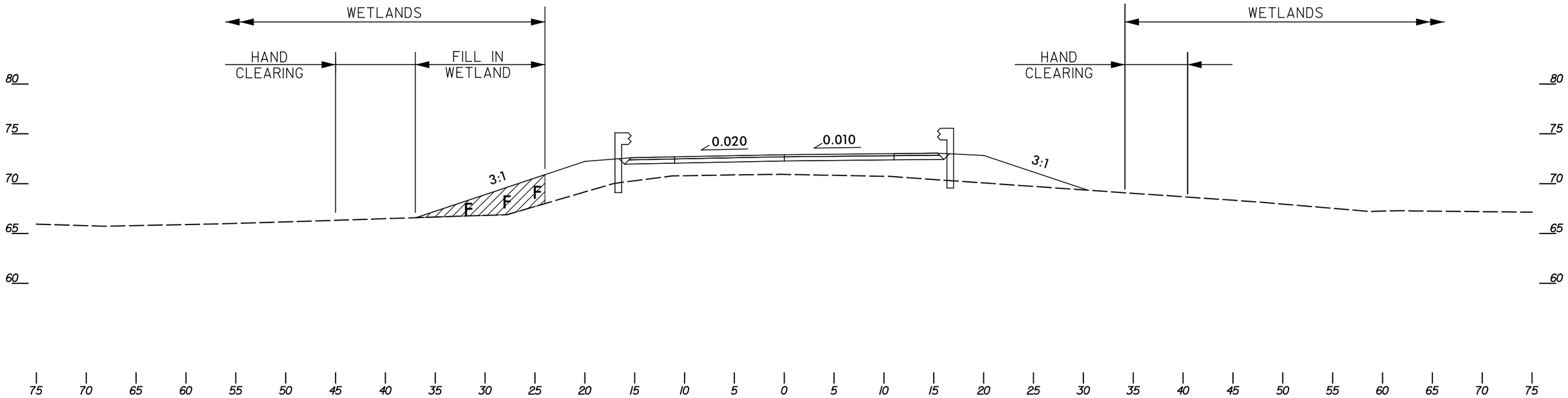
PROJECT: 40104.1.17 (B-4948)

BRIDGE NO. 144 OVER SOULES SWAMP ON SR 1429 (OLD PINE LOGGING ROAD)

SHEET OF

PERMIT DRAWING SHEET 7 OF 8

ENGLISH



SITE 1
X-SECTION
STA 17+50 -L-

LEGEND

F F DENOTES FILL IN WETLAND

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

7/7/2015
SUSERNAME$
SFILE$

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	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	14+43 TO 20+08	ROADWAY FILL	0.07				0.10					
	18+10 and 18+60							0.02				
TOTALS*:			0.07				0.10	0.02				

*Rounded totals are sum of actual impacts

NOTES:

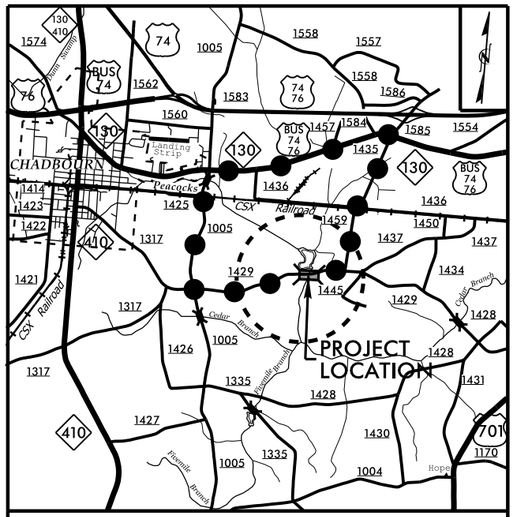
0.02 acres of temporary fill in Wetlands in the hand clearing areas for erosion control measures

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
B-4948, COLUMBUS COUNTY
BRIDGE #144 ON SR 1429 OVER
SOULES SWAMP
7/7/2015

ATN Revised 3/12/13

TIP PROJECT: B-4948

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



VICINITY MAP — DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

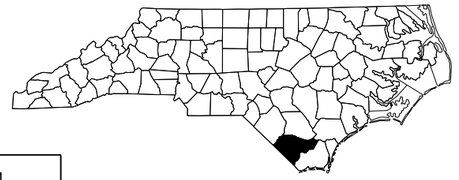
COLUMBUS COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4948	1	

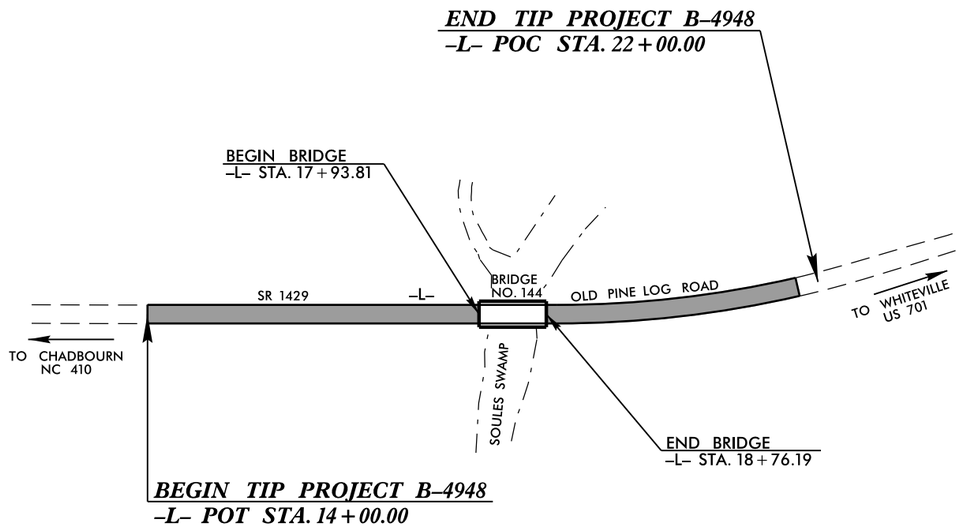
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
40104.1.1	BRSTP-1429(7)	PE
40104.2.1		R/W & UTIL.

LOCATION: ***BRIDGE NO. 144 OVER SOULES SWAMP ON SR 1429 (OLD PINE LOG ROAD)***

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



4



NAD 83/ NSRS 2007

NOTES:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:

GRAPHIC SCALES

50′ 25′ 0 50′ 100′ PLANS

50′ 25′ 0 50′ 100′ PROFILE (HORIZONTAL)

10′ 5′ 0 10′ 20′ PROFILE (VERTICAL)

DESIGN DATA

ADT 2016 = 3154
ADT 2036 = 4570
K = 9 %
D = 60 %
T = 3 % *
V = 60 MPH
* TTST =1% DUAL = 2%
FUNC CLASS = LOCAL

SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4948 = 0.136 MILES
LENGTH STRUCTURE TIP PROJECT B-4948 = 0.016 MILES
TOTAL LENGTH TIP PROJECT B-4948 = 0.152 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL 14, 2015

LETTING DATE: APRIL 19, 2016

REKHA PATEL, PE
PROJECT ENGINEER

BRIAN P. ROBINSON
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

14-APR-2015 09:23
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$$$$USERNAME$$$$

12/05/11

PROJECT REFERENCE NO.	SHEET NO.
B-4948	1B

Note: Not to Scale

S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite R/W Marker — RW
- Proposed Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

6/2/99

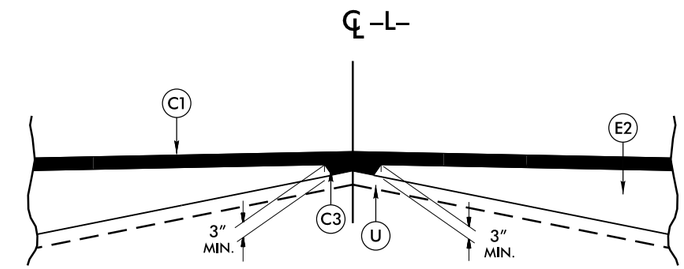
PROJECT REFERENCE NO.	SHEET NO.
B-4948	2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

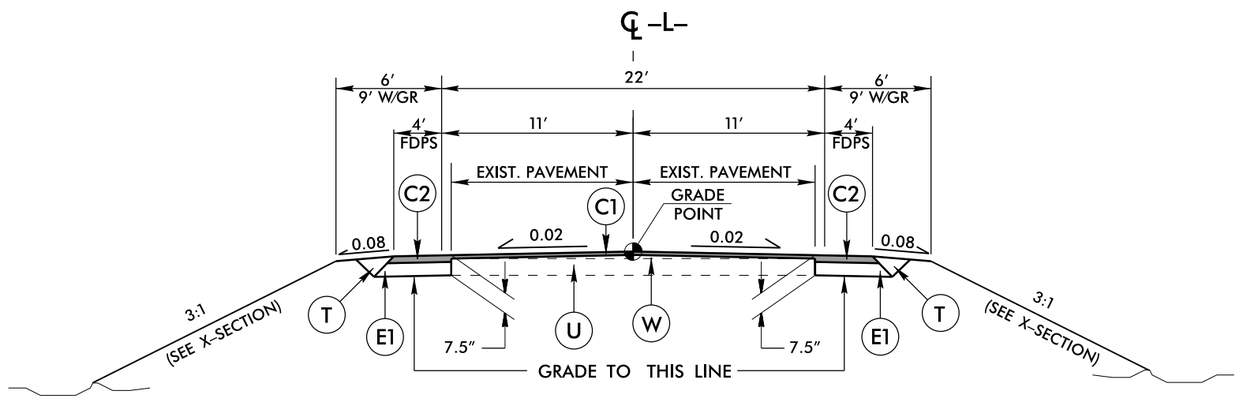
FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1½" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R1	CONCRETE SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT. (SEE WEDGING DETAIL)

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE SHOWN



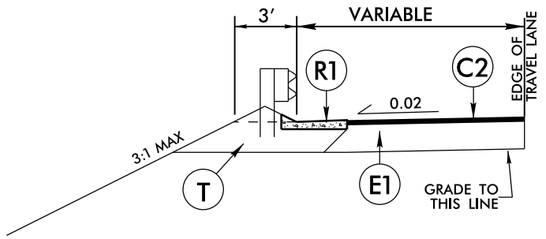
Detail Showing Method of Wedging



TYPICAL SECTION NO. 1

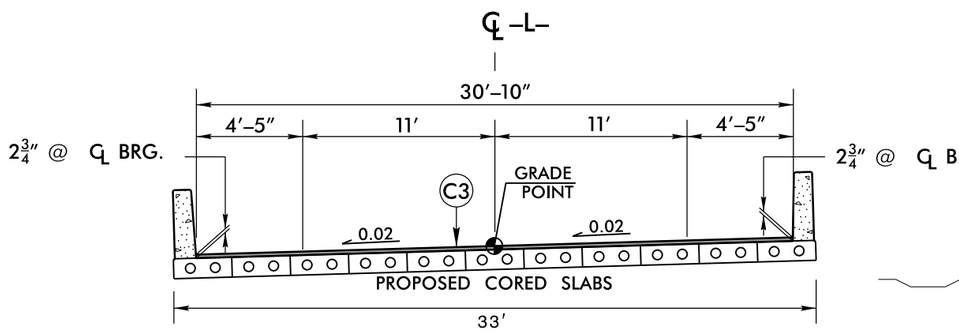
–L– STA. 14+00.00 TO –L– STA. 17+50.00
–L– STA. 19+00.00 TO –L– STA. 21+75.00

NOTE: RESURFACE SR 1435 FROM SR 1436 TO NC 130/US 74–76 BUS WITH (C1)



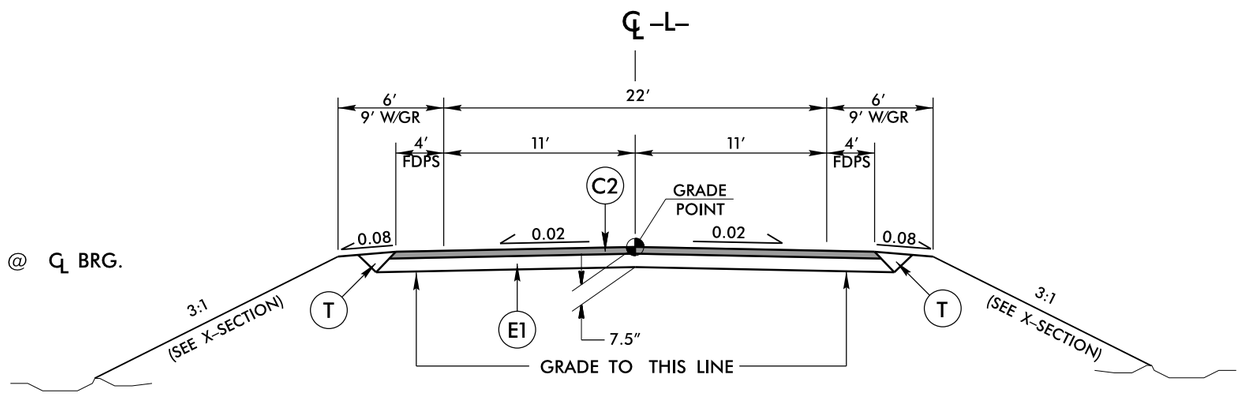
DETAIL SHOWING SHOULDER BERM GUTTER

–L– STA. 17+66.00 TO –L– STA. 17+81.81 (LT.) (BEGIN APPROACH SLAB)
–L– STA. 18+88.19 (END APPROACH SLAB) TO –L– STA. 19+07.00 (LT)



TYPICAL SECTION ON STRUCTURE

(SEE STRUCTURE PLANS)
–L– STA. 17+93.81 (BEGIN BRIDGE) TO –L– STA. 18+76.19 (END BRIDGE)



TYPICAL SECTION NO. 2

–L– STA. 17+50.00 TO –L– STA. 17+93.81 (BEGIN BRIDGE)
–L– STA. 18+76.19 (END BRIDGE) TO –L– STA. 19+00.00

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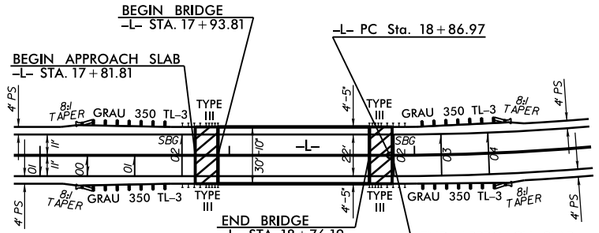
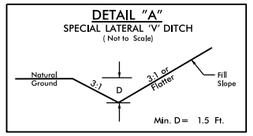
PROJECT REFERENCE NO.	SHEET NO.
B-4948	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

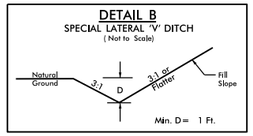
NAD 83/NSRS 2007

DETAIL OF BRIDGE IN RELATION TO THE PAVEMENT
(NOT TO SCALE)

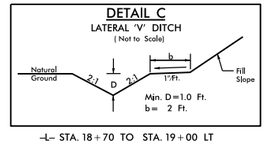




-L- STA. 19+00 TO STA. 22+00 LT



-L- STA. 20+15 TO STA. 22+00 RT



-L- STA. 18+70 TO STA. 19+00 LT

-L-
PI Sta 20+84.25
△ = 17° 36' 56.0" (LT)
D = 4° 30' 00.0"
L = 391.46'
T = 197.28'
R = 1,273.24'
SE = SEE PLANS

10 15 20 25

-L- POT Sta.10+00.00

BM#1

EXISTING R/W

TO PEACOCK RD

-L-

22' BST

6" PVC SDR21 D.A.T.U.R.

N 85°08'32.9" E

SR 1429 (OLD PINE LOG RD)

EXIST. 60' R/W

4" PS

GRAU 350 TL-3

BL-1

BL-2

PUE

EXCAVATION LIMITS

CLASS 'B' RIP RAP
EST 2 TONS
EST 7 SY GEOTEXTILE

BEGIN SBG +66

END SBG +07

BEGIN BRIDGE
-L- STA 17+93.81

END BRIDGE
-L- STA 18+76.19

-L- PC Sta. 18+86.97

LATERAL 'V' DITCH
SEE DETAIL "C"

SPECIAL LATERAL 'V' DITCH
SEE DETAIL "A"

SPECIAL LATERAL 'V' DITCH
SEE DETAIL "B"

-200' LF OF 6" H.D.P.E. DIRECTIONAL BORE

-L- PT Sta. 22+78.43

N 67° 31' 36.8" E

TO MIDWAY RD

N 89°55'37" E
396.86'

+57.27
210.24'

END TIP PROJECT B-4948
-L- POC STA 22+00.00

BEGIN TIP PROJECT B-4948
-L- POT STA 14+00.00

SOULES SWAMP

CLASS 'II' RIP RAP
(STRUCTURE PAY ITEM)

N 02°48'21" E
48.44'

1 JAMES E BENTON
DB 167 PG 52
97 E 353

1 JAMES E BENTON
DB 167 PG 52
97 E 353

1 JAMES E BENTON
DB 167 PG 52
97 E 353

2 JONATHON DAVID HONEYCUTT
DB 1032 PG 538
PB 39 PG 96

NOTES: (1) SEE SHEET 5 FOR -L- PROFILE
(2) SEE SHEETS S- TO S- FOR STRUCTURE PLANS

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