STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

July 10, 2014

Mr. Tom Steffens
U.S. Army Corps of Engineers
Regulatory Field Office
2407 West 5th St.
Washington, NC 27889

Mr. Stephen Lane
N.C. Dept. of Environment and
Natural Resources
Division of Coastal Management
400 Commerce Avenue
Morehead City, NC 28557

Dear Sirs:

Subject: **Application for a Section 404 Nationwide Permit 23, Section 401 Water Quality Certification and CAMA Major Development Permit** for the proposed replacement of Bridge No. 33 over the North River on US 70 in Carteret County, North Carolina; TIP No. B-4722B; Federal Aid Project No. BRNHS-0070 (84); Debit $400 from WBS No. 38496.1.1

The North Carolina Department of Transportation (NCDOT) proposes to replace the 1,028 foot, 47-span bridge over the North River, with an approximately 1,350 foot, 15-span bridge on a new alignment north of the existing. Traffic will remain on-site during construction. Permanent impacts to jurisdictional resources include 0.03 acre of wetland fill and 0.58 acre of fill in surface waters.

Please see enclosed copies of the Pre-Construction Notification (PCN), Preliminary Jurisdictional Determination Form, Cedar Point Mitigation Site debit ledger, permit drawings, utility permit drawings, stormwater management plan, MP forms and roadway plans for the above referenced project. The Categorical Exclusion (CE) was completed in September 2012 and distributed shortly thereafter.

This project calls for a letting date of April 21, 2015 and a review date of March 3, 2015. 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: WWW.NCDOT.GOV/DOH/PRECONSTRUCT/PE/

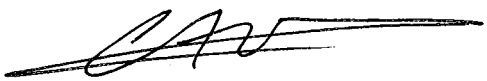
LOCATION:
CENTURY CENTER, BUILDING A
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

Section 401 Permit: We anticipate 401 General Certification number 3891 will apply to this project. NCDOT is requesting written concurrence from the North Carolina Department of Environmental and Natural Resources, Division of Water Resources.

CAMA Major Permit: NCDOT requests that the proposed work be authorized under a Coastal Area Management Act Major Permit. The landowner receipts will be forwarded as soon as they are available. Authorization to debit the $400 Permit Application Fee from WBS Element 38496.1.1 is hereby given.

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 CE 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 Tyler Stanton at tstanton@ncdot.gov or (919) 707-6156.

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. 33 over the North River on US 70
2b. County:	Carteret
2c. Nearest municipality / town:	Beaufort
2d. Subdivision name:	*not applicable*
2e. NCDOT only, T.I.P. or state project no:	B-4722B

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) 707-6156
3g. Fax no.:	(919) 250-4224
3h. Email address:	tstanton@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: 34.78915 (DD.DDDDDD)	Longitude: - 76.60982 (-DD.DDDDDD)
1c. Property size:	5 acres	
2. Surface Waters		
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	North RIver	
2b. Water Quality Classification of nearest receiving water:	SA; HQW	
2c. River basin:	White Oak	
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 marsh. Land use in the project vicinity is predominantly residential with some agriculture and forested areas.		
3b. List the total estimated acreage of all existing wetlands on the property: 0.25		
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 0		
3d. Explain the purpose of the proposed project: Replace a structurally deficient bridge that is approaching the end of its useful life. Replacement of the bridge will result in safer traffic operations.		
3e. Describe the overall project in detail, including the type of equipment to be used: The proposed replacement of Bridge No. 33 over the North River in Carteret County will be realigned to the north of the existing bridge. Approximately 42,000 sf of existing causeway will be removed Traffic will remain on-site 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: A preliminary JD request was sent May 27, 2010; however, a signed form was never received.	☐ 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): Tyler Stanton	Agency/Consultant Company: NCDOT 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	Fill	Coastal	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.03
Site 2 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 3 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 4 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 5 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
				2g. **Total wetland impacts**	0.03 Perm 0.00 Temp

2h. Comments: *There will be 0.01 ac of hand clearing in wetlands and proposed temporary impacts to wetlands of <0.01 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 1 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 2 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 3 ☐ 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	North River	Fill	River	0.58
O1 ☐ P ☒ T	North River	Fill	River	0.56
O2 ☐ P ☐ T				
O3 ☐ P ☐ T				
		4f. Total open water impacts		0.58 Perm 0.56 Temp

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			☐ Yes ☐ No		
B2 ☐ P ☐ T			☐ Yes ☐ No		
B3 ☐ P ☐ T			☐ Yes ☐ No		
		6h. **Total buffer impacts**			
6i. Comments:					

D. Impact Justification and Mitigation

1. Avoidance and Minimization

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

Sheet pile is being utilized on the northern side of the causeway due to instability of bed materials which also allows for minimization of impacts to the surrounding wetlands and jurisdictional stream impacts. Ditches have been designed to meet grass swale criteria on the remainder of the existing causeways to treat all runoff and promote infiltration. The grade of the proposed bridge was designed such that deck drains are not required.

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

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:
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: not applicable

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:	acres
4f. Non-riparian wetland mitigation requested:	acres
4g. Coastal (tidal) wetland mitigation requested:	0.06 acres

4h. Comments:

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, indicate 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.)	7-10-14 Date

DCM MP-1

APPLICATION for Major Development Permit

(last revised 12/27/06)

North Carolina DIVISION OF COASTAL MANAGEMENT

1. Primary Applicant/ Landowner Information

Business Name		Project Name (if applicable)		
North Carolina Department Of Transportation		B-4722B (38496.1.1)		
Applicant 1: First Name	MI	Last Name		
Richard	W	Hancock, P.E.		
Applicant 2: First Name	MI	Last Name		
If additional applicants, please attach an additional page(s) with names listed.				
Mailing Address		PO Box	City	State
1598 Mail Service Center			Raleigh	NC
ZIP	Country	Phone No.		FAX No.
27699-1598	USA	919 - 707 - 6000 ext.		- -
Street Address *(if different from above)*		City	State	ZIP
				-
Email				

2. Agent/Contractor Information

Business Name				
N/A				
Agent/ Contractor 1: First Name	MI	Last Name		
Agent/ Contractor 2: First Name	MI	Last Name		
Mailing Address		PO Box	City	State
ZIP		Phone No. 1		Phone No. 2
		- - ext.		- - ext.
FAX No.		Contractor #		
Street Address *(if different from above)*		City	State	ZIP
				-
Email				

<Form continues on back>

3. Project Location

County (can be multiple)	Street Address		State Rd. #
Carteret			US 70
Subdivision Name	**City**	**State**	**Zip**
N/A			-

Phone No.	Lot No.(s) *(if many, attach additional page with list)*
- - ext.	, , , ,
a. In which NC river basin is the project located? White Oak	b. Name of body of water nearest to proposed project North River
c. Is the water body identified in (b) above, natural or manmade? ☒Natural ☐Manmade ☐Unknown	d. Name the closest major water body to the proposed project site. North River
e. Is proposed work within city limits or planning jurisdiction? ☐Yes ☒No	f. If applicable, list the planning jurisdiction or city limit the proposed work falls within. N/A

4. Site Description

a. Total length of shoreline on the tract (ft.)	b. Size of entire tract (sq.ft.)
~2,725'	530,700
c. Size of individual lot(s) N/A, , , *(If many lot sizes, please attach additional page with a list)*	d. Approximate elevation of tract above NHW *(normal high water)* or NWL *(normal water level)* 6.8' ☒NHW or ☐NWL

e. Vegetation on tract
Herbacous with sparse shrubs

f. Man-made features and uses now on tract
Bridge, causeway, and road

g. Identify and describe the existing land uses adjacent to the proposed project site.
Residential and forest land

h. How does local government zone the tract?	i. Is the proposed project consistent with the applicable zoning? (Attach zoning compliance certificate, if applicable)
Residential	☐Yes ☐No ☒NA

j. Is the proposed activity part of an urban waterfront redevelopment proposal? ☐Yes ☒No

k. Has a professional archaeological assessment been done for the tract? If yes, attach a copy. ☒Yes ☐No ☐NA

If yes, by whom? NCDOT (Reference CE)

l. Is the proposed project located in a National Registered Historic District or does it involve a National Register listed or eligible property? ☐Yes ☒No ☐NA

<Form continues on next page>

m. (i) Are there wetlands on the site?	☒Yes ☐No
(ii) Are there coastal wetlands on the site?	☒Yes ☐No
(iii) If yes to either (i) or (ii) above, has a delineation been conducted? *(Attach documentation, if available)*	☒Yes ☐No
n. Describe existing wastewater treatment facilities. None	
o. Describe existing drinking water supply source. None	
p. Describe existing storm water management or treatment systems. None	

5. Activities and Impacts

a. Will the project be for commercial, public, or private use?	☐Commercial ☒Public/Government ☐Private/Community
b. Give a brief description of purpose, use, and daily operations of the project when complete. The purpose of the project is replace the existing bridge, to improve the level of service for the traveling public.	
c. Describe the proposed construction methodology, types of construction equipment to be used during construction, the number of each type of equipment and where it is to be stored. Typical highway and bridge construction vehicles and equipment will be used, including, but not limited to, dump trucks, cranes, graders, and bull dozers. Storage and staging areas will be located on uplands.	
d. List all development activities you propose. Replace/Lengthen bridge; Remove portion of existing road fill/causeway to improve bridge hydraulic conveyance and offset surface water being filled in. Addition of fill due to widening facility.	
e. Are the proposed activities maintenance of an existing project, new work, or both?	New work
f. What is the approximate total disturbed land area resulting from the proposed project?	6.7 ☐Sq.Ft or ☒Acres
g. Will the proposed project encroach on any public easement, public accessway or other area that the public has established use of?	☒Yes ☐No ☐NA
h. Describe location and type of existing and proposed discharges to waters of the state. 2 GI's are located on either side of the proposed bridge that discharge on high ground into grass swales constructed on existing causeway.	
i. Will wastewater or stormwater be discharged into a wetland?	☐Yes ☒No ☐NA
If yes, will this discharged water be of the same salinity as the receiving water?	☐Yes ☐No ☐NA
j. Is there any mitigation proposed? If yes, attach a mitigation proposal.	☒Yes ☐No ☐NA

<Form continues on back>

6. Additional Information

In addition to this completed application form, (MP-1) the following items below, if applicable, must be submitted in order for the application package to be complete. Items (a) – (f) are always applicable to any major development application. Please consult the application instruction booklet on how to properly prepare the required items below.

a. A project narrative.

b. An accurate, dated work plat (including plan view and cross-sectional drawings) drawn to scale. Please give the present status of the proposed project. Is any portion already complete? If previously authorized work, clearly indicate on maps, plats, drawings to distinguish between work completed and proposed.

c. A site or location map that is sufficiently detailed to guide agency personnel unfamiliar with the area to the site.

d. A copy of the deed (with state application only) or other instrument under which the applicant claims title to the affected properties.

e. The appropriate application fee. Check or money order made payable to DENR.

f. A list of the names and complete addresses of the adjacent waterfront (riparian) landowners and signed return receipts as proof that such owners have received a copy of the application and plats by certified mail. Such landowners must be advised that they have 30 days in which to submit comments on the proposed project to the Division of Coastal Management.

Name See attached Phone No.

Address

Name Phone No.

Address

Name Phone No.

Address

g. A list of previous state or federal permits issued for work on the project tract. Include permit numbers, permittee, and issuing dates.

N/A

h. Signed consultant or agent authorization form, if applicable.

i. Wetland delineation, if necessary.

j. A signed AEC hazard notice for projects in oceanfront and inlet areas. *(Must be signed by property owner)*

k. A statement of compliance with the N.C. Environmental Policy Act (N.C.G.S. 113A 1-10), if necessary. If the project involves expenditure of public funds or use of public lands, attach a statement documenting compliance with the North Carolina Environmental Policy Act.

7. Certification and Permission to Enter on Land

I understand that any permit issued in response to this application will allow only the development described in the application. The project will be subject to the conditions and restrictions contained in the permit.

I certify that I am authorized to grant, and do in fact grant permission to representatives of state and federal review agencies to enter on the aforementioned lands in connection with evaluating information related to this permit application and follow-up monitoring of the project.

I further certify that the information provided in this application is truthful to the best of my knowledge.

Date July 10, 2014 Print Name for Richard Hancock, P.E.

Signature

Please indicate application attachments pertaining to your proposed project.

☒DCM MP-2 Excavation and Fill Information ☒DCM MP-5 Bridges and Culverts

☐DCM MP-3 Upland Development

☐DCM MP-4 Structures Information

Form DCM MP-2

EXCAVATION and FILL

(Except for bridges and culverts)

Attach this form to Joint Application for CAMA Major Permit, Form DCM MP-1. Be sure to complete all other sections of the Joint Application that relate to this proposed project. Please include all supplemental information.

Describe below the purpose of proposed excavation and/or fill activities. **All values should be given in feet.**

	Access Channel (NLW or NWL)	Canal	Boat Basin	Boat Ramp	Rock Groin	Rock Breakwater	Other (excluding shoreline stabilization)
Length							
Width							
Avg. Existing Depth					NA	NA	
Final Project Depth					NA	NA	

1. EXCAVATION

☒ *This section not applicable*

a. Amount of material to be excavated from below NHW or NWL in cubic yards.

_____

b. Type of material to be excavated.

_____

c. (i) Does the area to be excavated include coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.

☐CW _____ ☐SAV _____ ☐SB _____

☐WL _____ ☐None

(ii) Describe the purpose of the excavation in these areas:

_____

_____

d. High-ground excavation in cubic yards.

_____

2. DISPOSAL OF EXCAVATED MATERIAL

☒ *This section not applicable*

a. Location of disposal area.

_____

b. Dimensions of disposal area.

_____

c. (i) Do you claim title to disposal area?

☐Yes ☐No ☐NA

(ii) If no, attach a letter granting permission from the owner.

d. (i) Will a disposal area be available for future maintenance?

☐Yes ☐No ☐NA

(ii) If yes, where?

_____

e. (i) Does the disposal area include any coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.

☐CW _____ ☐SAV _____ ☐SB _____

☐WL _____ ☐None

(ii) Describe the purpose of disposal in these areas:

_____

_____

f. (i) Does the disposal include any area in the water?

☐Yes ☐No ☐NA

(ii) If yes, how much water area is affected?

_____

3. SHORELINE STABILIZATION

☐ *This section not applicable*

(If development is a wood groin, use MP-4 – Structures)

a. Type of shoreline stabilization:
☐Bulkhead ☒Riprap ☐Breakwater/Sill ☒Other: Sheet pile

b. Length: 1880'
Width: 15'

c. Average distance waterward of NHW or NWL: 5 ft.

d. Maximum distance waterward of NHW or NWL: 5.2 ft.

e. Type of stabilization material:
Class II Rip Rap

f. (i) Has there been shoreline erosion during preceding 12 months?
☐Yes ☐No ☒NA
(ii) If yes, state amount of erosion and source of erosion amount information.

g. Number of square feet of fill to be placed below water level.
Bulkhead backfill _____ Riprap 689 SF
Breakwater/Sill _____ Other _____

h. Type of fill material.
N/A

i. Source of fill material.
TBD

4. OTHER FILL ACTIVITIES

☒ *This section not applicable*

(Excluding Shoreline Stabilization)

a. (i) Will fill material be brought to the site? ☐Yes ☐No ☐NA
If yes,
(ii) Amount of material to be placed in the water _____
(iii) Dimensions of fill area _____
(iv) Purpose of fill

b. (i) Will fill material be placed in coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.
☐CW _____ ☐SAV _____ ☐SB _____
☐WL _____ ☐None
(ii) Describe the purpose of the fill in these areas:

5. GENERAL

a. How will excavated or fill material be kept on site and erosion controlled?
Use of Standard NCDOT Best Management Practices and erosion control measures.

b. What type of construction equipment will be used (e.g., dragline, backhoe, or hydraulic dredge)?
Crane, bulldozer, dump truck, motor grader

c. (i) Will navigational aids be required as a result of the project?
☐Yes ☒No ☐NA
(ii) If yes, explain what type and how they will be implemented.

d. (i) Will wetlands be crossed in transporting equipment to project site? ☐Yes ☒No ☐NA
(ii) If yes, explain steps that will be taken to avoid or minimize environmental impacts.

July 10, 2014
Date

for Richard Hancock, P.E.
Applicant Name

B-4722B
Project Name

Applicant Signature

Form DCM MP-5

BRIDGES and CULVERTS

Attach this form to Joint Application for CAMA Major Permit, Form DCM MP-1. Be sure to complete all other sections of the Joint Application that relate to this proposed project. Please include all supplemental information.

1. BRIDGES

☐ *This section not applicable*

a. Is the proposed bridge:
☐Commercial ☒Public/Government ☐Private/Community

b. Water body to be crossed by bridge:
North River

c. Type of bridge (construction material):
Prestressed Concrete Girders

d. Water depth at the proposed crossing at NLW or NWL:
9.5'

e. (i) Will proposed bridge replace an existing bridge? ☒Yes ☐No
If yes,
(ii) Length of existing bridge: 1,030'
(iii) Width of existing bridge: 28'
(iv) Navigation clearance underneath existing bridge: 8.7'
(v) Will all, or a part of, the existing bridge be removed?
(Explain) The entire existing bridge will be removed.

f. (i) Will proposed bridge replace an existing culvert? ☐Yes ☒No
If yes,
(ii) Length of existing culvert: _____
(iii) Width of existing culvert: _____
(iv) Height of the top of the existing culvert above the NHW or NWL: _____
(v) Will all, or a part of, the existing culvert be removed?
(Explain)

g. Length of proposed bridge: 1,350'

h. Width of proposed bridge: 36'

i. Will the proposed bridge affect existing water flow? ☒Yes ☐No
If yes, explain: Proposed bridge will have fewer bents in the river as well as approximately 12,800 CY of causeway removal.

j. Will the proposed bridge affect navigation by reducing or increasing the existing navigable opening? ☒Yes ☐No
If yes, explain: The existing structure provides a minimum vertical clearance of approximately 7', which is greater than the proposed minimum vertical clearance of 3.5'. However, the proposed structure has a deeper superstructure depth in order to increase the span lengths to 90', is longer than the existing structure, and is being built on a crest vertical curve. Therefore, the proposed maximum vertical clearance of 8.7' is the same as the existing maximum vertical clearance near proposed Bent 8. Additonally, horizontal clearance will increase by approx. 322'.

k. Navigation clearance underneath proposed bridge: 8.7'

l. Have you contacted the U.S. Coast Guard concerning their approval? ☒Yes ☐No
If yes, explain: An application for Preliminary Public Notice for Navigational Purposes has been submitted.

m. Will the proposed bridge cross wetlands containing no navigable waters? ☐Yes ☒No
If yes, explain:

n. Height of proposed bridge above wetlands: N/A; Bridge is only over surface water

2. CULVERTS

☒ *This section not applicable*

a. Number of culverts proposed: _____

b. Water body in which the culvert is to be placed:

_____

< Form continues on back>

c. Type of culvert (construction material):

_____

d. (i) Will proposed culvert replace an existing bridge? ☐Yes ☐No

If yes,

(ii) Length of existing bridge: _____

(iii) Width of existing bridge: _____

(iv) Navigation clearance underneath existing bridge: _____

(v) Will all, or a part of, the existing bridge be removed? (Explain)

_____

_____

_____

e. (i) Will proposed culvert replace an existing culvert? ☐Yes ☐No

If yes,

(ii) Length of existing culvert(s): _____

(iii) Width of existing culvert(s): _____

(iv) Height of the top of the existing culvert above the NHW or NWL: _____

(v) Will all, or a part of, the existing culvert be removed? (Explain)

_____

_____

_____

f. Length of proposed culvert: _____

g. Width of proposed culvert: _____

h. Height of the top of the proposed culvert above the NHW or NWL.

_____

i. Depth of culvert to be buried below existing bottom contour.

_____

j. Will the proposed culvert affect navigation by reducing or increasing the existing navigable opening? ☐Yes ☐No

If yes, explain:

_____

_____

_____

k. Will the proposed culvert affect existing water flow? ☐Yes ☐No

If yes, explain:

_____

_____

_____

3. EXCAVATION and FILL

☐ *This section not applicable*

a. (i) Will the placement of the proposed bridge or culvert require any excavation below the NHW or NWL? ☒Yes ☐No

If yes,

(ii) Avg. length of area to be excavated: 305'

(iii) Avg. width of area to be excavated: 143'

(iv) Avg. depth of area to be excavated: 10'

(v) Amount of material to be excavated in cubic yards: 12,800

b. (i) Will the placement of the proposed bridge or culvert require any excavation within coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.

☐CW _____ ☐SAV _____ ☐SB _____

☐WL _____ ☒None

(ii) Describe the purpose of the excavation in these areas:

_____

_____

_____

c. (i) Will the placement of the proposed bridge or culvert require any high-ground excavation? ☒Yes ☐No

If yes,

(ii) Avg. length of area to be excavated: 83' (@ end bent)

(iii) Avg. width of area to be excavated: 116'

(iv) Avg. depth of area to be excavated: 6'

(v) Amount of material to be excavated in cubic yards: 1250

d. If the placement of the bridge or culvert involves any excavation, please complete the following:

(i) Location of the spoil disposal area: TBD by contractor. If material is suitable, it may be used as part of the proposed roadway fill.

(ii) Dimensions of the spoil disposal area: TBD

(iii) Do you claim title to the disposal area? ☐Yes ☐No *(If no, attach a letter granting permission from the owner.)*

(iv) Will the disposal area be available for future maintenance? ☐Yes ☐No

(v) Does the disposal area include any coastal wetlands/marsh (CW), submerged aquatic vegetation (SAVs), other wetlands (WL), or shell bottom (SB)?

☐CW ☐SAV ☐WL ☐SB ☒None

If any boxes are checked, give dimensions if different from (ii) above.

(vi) Does the disposal area include any area below the NHW or NWL? ? ☐Yes ☒No

If yes, give dimensions if different from (ii) above.

e. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed below NHW or NWL? ☒Yes ☐No

If yes,

(ii) Avg. length of area to be filled: 359'

(iii) Avg. width of area to be filled: 28'

(iv) Purpose of fill: Proposed Roadway.

f. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed within coastal wetlands/marsh (CW), submerged aquatic vegetation (SAV), shell bottom (SB), or other wetlands (WL)? If any boxes are checked, provide the number of square feet affected.

☒CW 1,117 ☐SAV _____ ☐SB _____

☐WL _____ ☐None

(ii) Describe the purpose of the excavation in these areas:

Fill is for proposed roadway North of existing roadway.

g. (i) Will the placement of the proposed bridge or culvert result in any fill (other than excavated material described in Item **d** above) to be placed on high-ground? ☐Yes ☒No

If yes,

(ii) Avg. length of area to be filled: _____

(iii) Avg. width of area to be filled: _____

(iv) Purpose of fill:

4. GENERAL

a. Will the proposed project require the relocation of any existing utility lines? ☒Yes ☐No

If yes, explain: Existing telephone lines will be relocated by directional bore on the north side. Overhead power lines are not in confilict with the proposed bridge; however, adjustments may become necessary prior to

b. Will the proposed project require the construction of any temporary detour structures? ☐Yes ☒No

If yes, explain:

construction.

If this portion of the proposed project has already received approval from local authorities, please attach a copy of the approval or certification.

< Form continues on back>

c. Will the proposed project require any work channels? ☐Yes ☒No

If yes, complete Form DCM-MP-2.

d. How will excavated or fill material be kept on site and erosion controlled?

Use of Standard NCDOT Best Management Practices and erosion control measures.

e. What type of construction equipment will be used (for example, dragline, backhoe, or hydraulic dredge)?

Typical highway construction vehicles and equipment.

f. Will wetlands be crossed in transporting equipment to project site? ☐Yes ☒No

If yes, explain steps that will be taken to avoid or minimize environmental impacts.

g. Will the placement of the proposed bridge or culvert require any shoreline stabilization? ☒Yes ☐No

If yes, complete form MP-2, Section 3 for Shoreline Stabilization only.

July 10, 2014

Date

B-4722B

Project Name

for Richard Hancock, P.E.

Applicant Name

Applicant Signature

The Cedar Point Mitigation Site is located in Carteret County adjacent to both NC 24 and the White Oak River. The site was designed as an emergent marsh and a constructed channel within the site promotes tidal exchange within the mitigation area. The Cedar Point site provides mitigation to offset impacts from improvements to NC 24 as well as for future impacts in the White Oak River basin. The Cedar Point Mitigation site was constructed in 2002 but had to be replanted in May 2003 due to vegetation failure. After five years of monitoring and both the vegetation and hydrologic monitoring meeting success criteria, the site was closed out in April 2008.

To offset unavoidable coastal marsh impacts associated with TIP B-4722B, the Cedar Point Mitigation Site will be debited .03 acres of Brackish Marsh restoration. This debit is reflected in the debit ledger below.

HUC	Mitigation Type	Starting Amount (Ac.)	Additional Notes
3020106	Brackish Marsh Preservation	12.92	Do not debit.
3020106	Brackish Marsh Restoration	0.78	

Mitigation Type	Debit Amount	Status	Site TIP	Action ID#	NOTES
Brackish Marsh Restoration	0.03	Close Out	B-4722B	Action ID# will be entered once the permit is received.	

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR LINEAR ROADWAY PROJECTS

(Version 1.2; Released July 2012)

Project/TIP No.: B-4722B **County(ies):** CARTERET

General Project Information

Project No.:	B-4722B		**Project Type:**	BRIDGE REPLACEMENT		**Date:**	
NCDOT Contact:	PAUL ATKINSON, PE		**Contractor / Designer:**	CHRISTOPHER R. LEWIS			
Address:	1020 BIRCH RIDGE RD. RALEIGH, NC 27610		**Address:**	1020 BIRCH RIDGE RD. RALEIGH, NC 27610			
Phone:	(919) 707-6707		**Phone:**	(919) 707-6714			
Email:	PATKINSON@NCDOT.GOV		**Email:**	CRLEWIS2@NCDOT.GOV			
City/Town:	BEAUFORT		**County(ies):**	CARTERET			
River Basin(s):	WHITE OAK		**CAMA County?**	Yes			
Primary Receiving Water:	NORTH RIVER		**NCDWQ Stream Index No.:**	21-35-1			
NCDWQ Surface Water Classification for Primary Receiving Water	**Primary:**		Class SA				
	Supplemental:		High Quality Waters (HQW)				
Other Stream Classification:	Designated Shellfish Harvesting Areas	Primary Nursery Areas					
303(d) Impairments:	fecal coliform	turbidity					
Buffer Rules in Effect	N/A						

Project Description

Project Length (lin. Miles or feet):	0.672 MILES	**Surrounding Land Use:**	COMMERCIAL SHELLFISH NURSERY	
	Proposed Project		**Existing Site**	
Project Built-Upon Area (ac.)	6.70	ac.	2.10	ac.
Typical Cross Section Description:	TWO 12 FT. TRAVEL LANES WITH 4 FT. PAVED SHOULDERS		24 FT. PAVEMENT WIDTH WITH 2 FT. GRASS SHOULDERS	
Average Daily Traffic (veh/hr/day):	Design/Future:	14,600 ADT	Existing:	10,600 ADT

General Project Narrative:

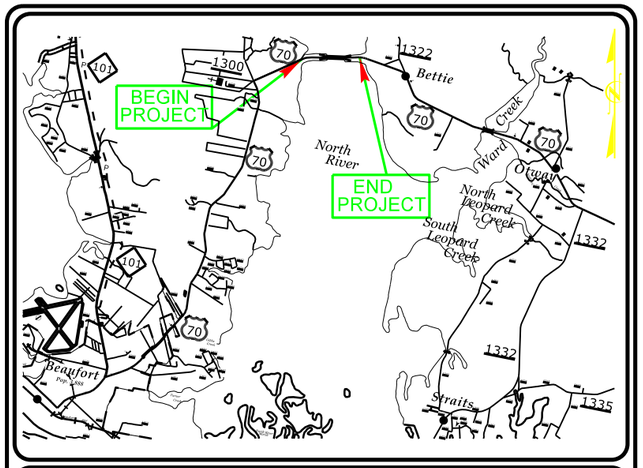
THE PROPOSED REPLACEMENT OF BRIDGE NO. 33 OVER THE NORTH RIVER IN CARTERET COUNTY WILL BE REALIGNED TO THE NORTH OF THE EXISTING BRIDGE. APPROXIMATELY 42,000 SF OF EXISTING CAUSEWAY WILL BE REMOVED AT THE REQUEST OF REGULATORY AGENCIES. SHEET PILE IS BEING UTILIZED ON THE NORTHERN SIDE OF THE CAUSEWAY DUE TO INSTABILITY OF BED MATERAILS WHICH ALSO ALLOWS FOR MINIMIZATION OF IMPACTS TO THE SURROUNDING WETLANDS AND JURISDICTIONAL STREAM IMPACTS. NOTE: ALTHOUGH GRASS SWALES ARE NOT REQUIRED, DITCHES WERE DESIGNED TO MEET GRASS SWALE CRITERIA ON THE REMAINDER OF THE EXISTING CAUSEWAYS TO TREAT ALL RUNOFF AND PROMOTE INFILTRATION AT THE REQUEST OF REGULATORY AGENCIES. THE GRADE OF THE PROPOSED BRIDGE WAS DESIGNED SUCH THAT DECK DRAINS ARE NOT REQUIRED.

References

09/26/99

TIP PROJECT: B-4722B

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



VICINITY MAP
NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CARTERET COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4722B	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
38496.1.1	BRNHS-0070(84)	PE
38496.2.1	BRNHS-0070(84)	R/W & UTIL.

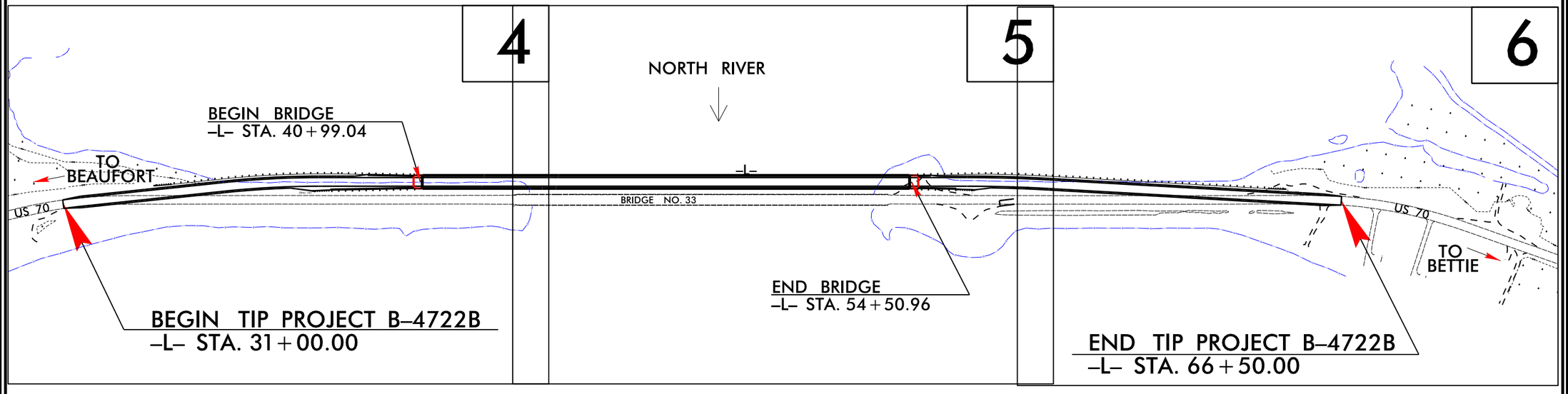
LOCATION: BRIDGE NO. 33 OVER THE NORTH RIVER ON US 70

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

WETLAND AND SURFACE WATER IMPACTS PERMIT

PERMIT DRAWING
SHEET 1 OF 11

NAD 83/
NSRS 2007



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

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 2015 = 10,600
ADT 2035 = 14,600
DHV = 10 %
D = 55 %
T = 4 %*
V = 60 MPH
*(TTST 1% + DUAL 3%)
FUNC CLASS =
RURAL ARTERIAL
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4722B = 0.416 MILES
LENGTH STRUCTURE TIP PROJECT B-4722B = 0.256 MILES
TOTAL LENGTH OF TIP PROJECT B-4722B = 0.672 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 30, 2013

LETTING DATE:
APRIL 21, 2015

GARY R. LOVERING, PE
PROJECT ENGINEER

SUSAN C. LANCASTER, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

6/17/2014
crlewis2
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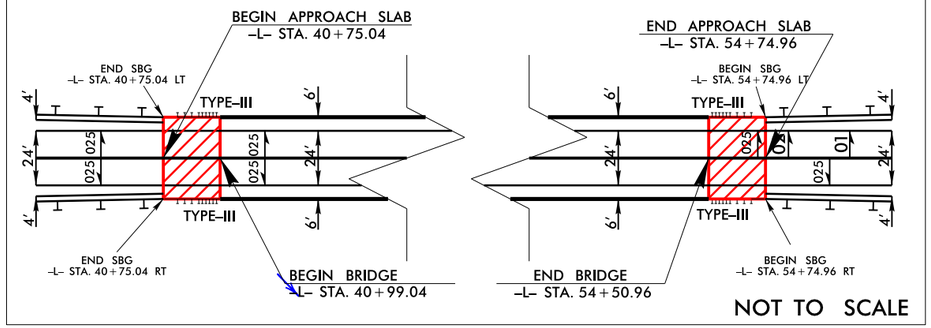

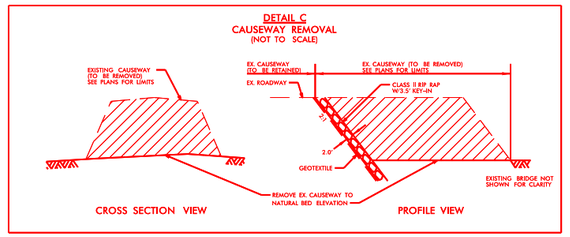

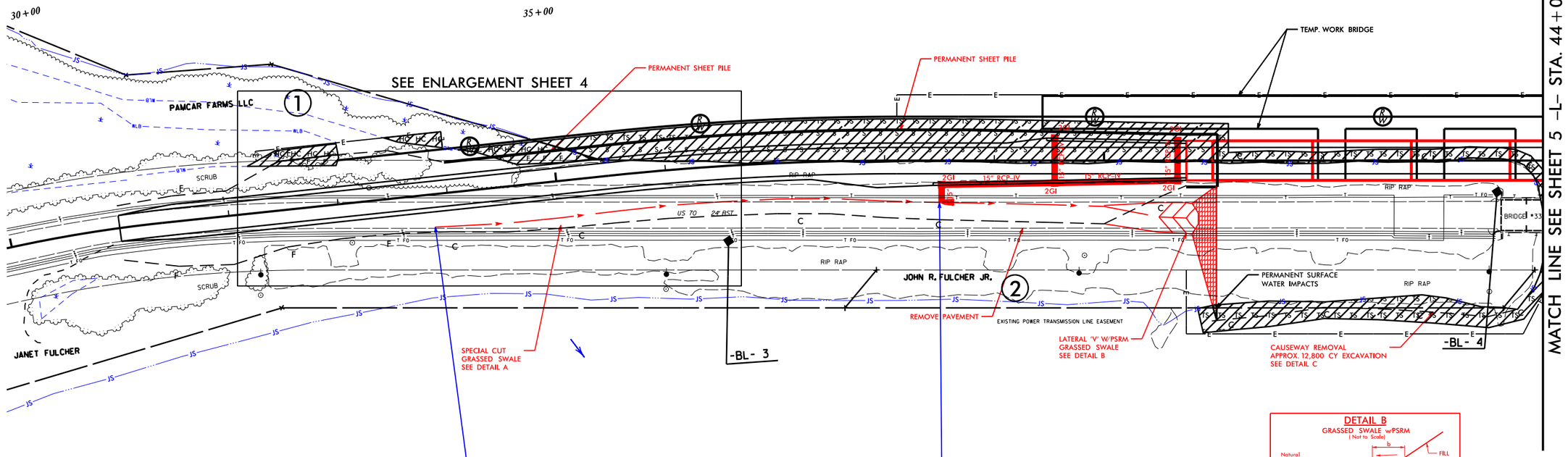

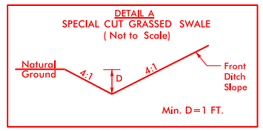

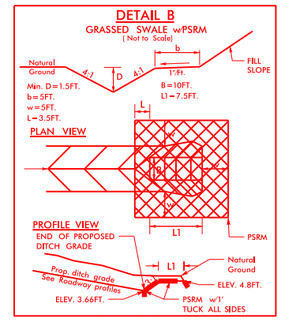

PROJECT REFERENCE NO.	SHEET NO.
B–4722B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING SHEET 2 OF 11

–L– STA. 40+80 TO 44+05 RT.

MATCH LINE SEE SHEET 5 –L– STA. 44+00.00

SPECIAL CUT
SEE DETAIL A
GRASSED SWALE DATA

–L– STA. 33+86 TO 38+50 RT.
DA=0.61 ACRES C=0.58
Q_2= CIA=(0.58)(5.42)(0.61)=1.9CFS
Q_{10}= (0.58)(7.06)(0.61)=2.5CFS
SLOPE: FRONT=4:1 BACK=4:1
LONGITUDNAL=0.3%
REQUIRED LENGTH=61FT.
ACTUAL LENGTH=464FT.
V_2=1.1FPS V_{10}=1.2FPS
d_2=0.7FT. d_{10}=0.7FT.

SPECIAL CUT
SEE DETAIL A
LATERAL 'V'
SEE DETAIL B
GRASSED SWALE DATA

–L– STA. 38+50 TO 40+86 RT.
TOTAL DA=1.53 ACRES
ADDITIONAL DA TO BE TREATED=0.92 ACRES C=0.79
Q_2= CIA=(0.79)(5.42)(0.92)+1.9=6.0CFS
Q_{10}= (0.79)(7.06)(0.92)+2.5=8.0CFS
SLOPE: FRONT=4:1 BACK=4:1
LONGITUDNAL=0.3%
REQUIRED LENGTH=92FT.
ACTUAL LENGTH=236FT.
V_2=1.5FPS V_{10}=1.6FPS
d_2=1.1FT. d_{10}=1.2FT.

–L– STA. 40+50 TO 40+86 RT.

–L– STA. 33+86 TO 40+50 RT.

F F	DENOTES FILL IN WETLAND
S S	DENOTES IMPACTS IN SURFACE WATER
HC HC	DENOTES HAND CLEARING
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SITE 1

▨ PAVEMENT REMOVAL

NOTES

1) FOR –L– PROFILE, SEE SHEET 7

REVISIONS

8/17/99

6/17/2014
crlewis2
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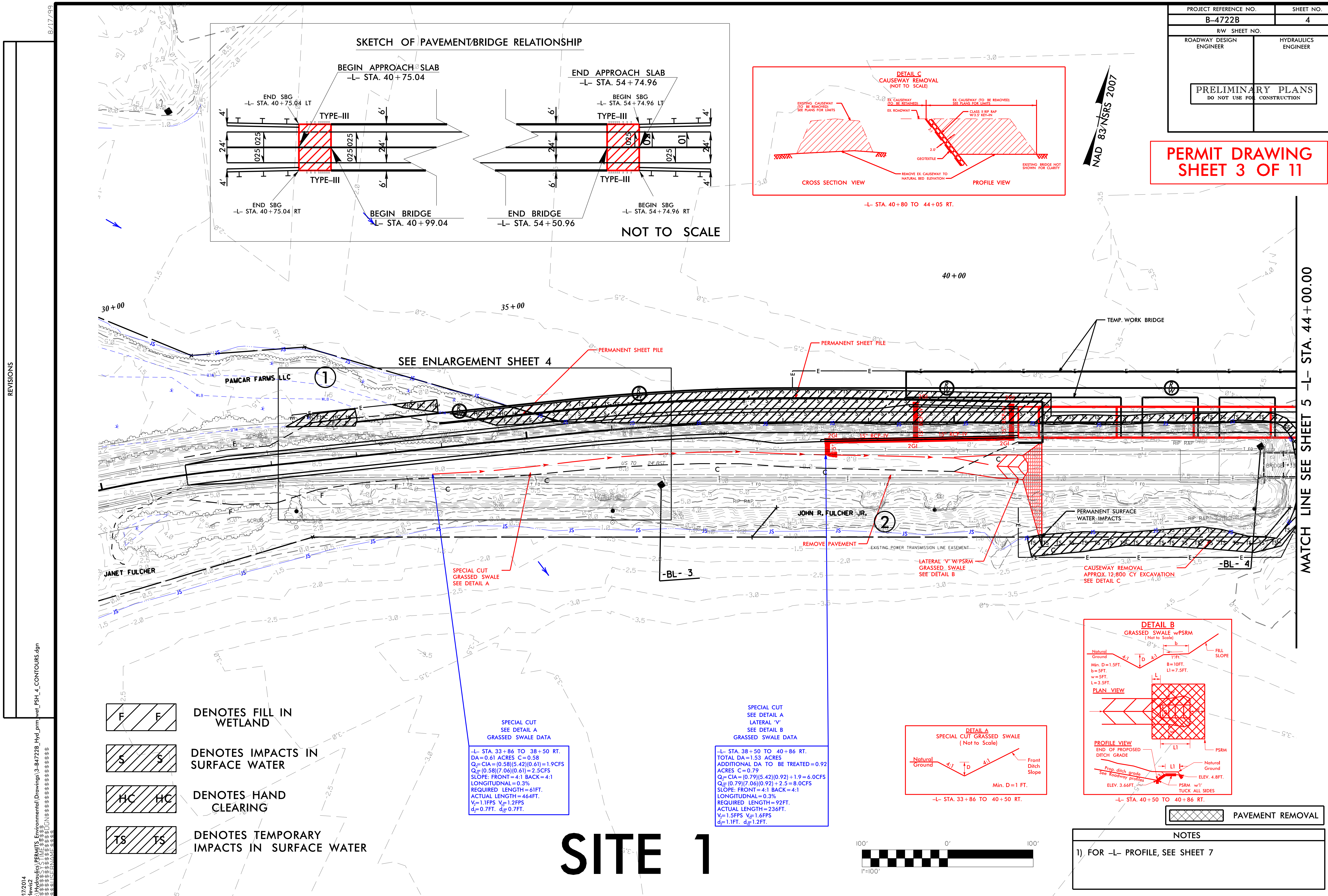


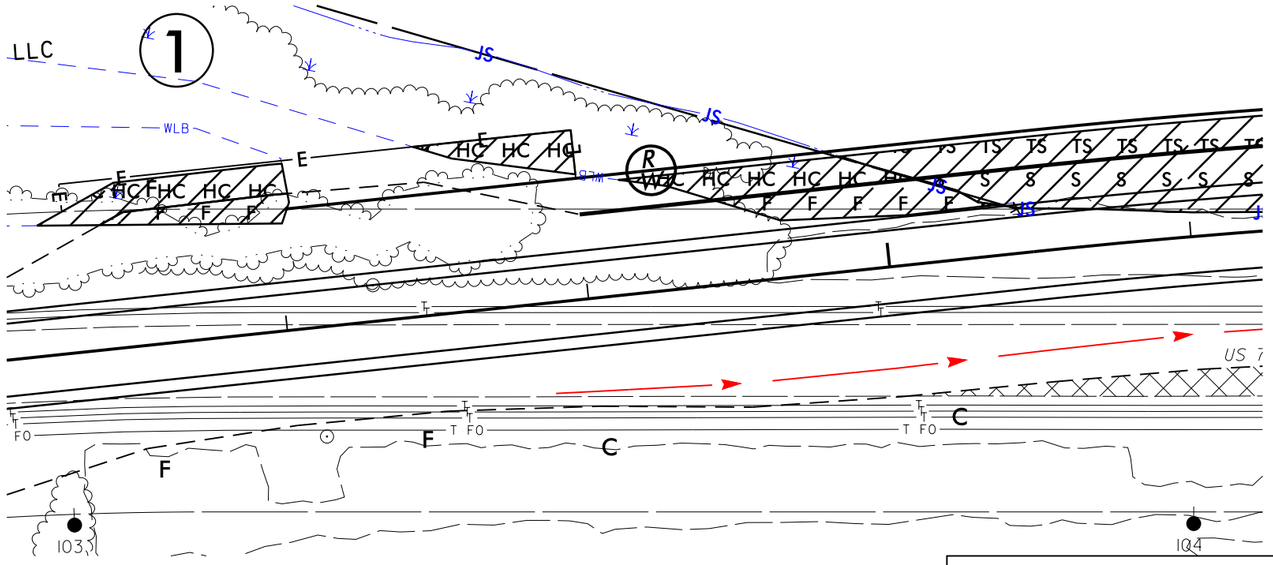
PROJECT REFERENCE NO. B-4722B
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
PERMIT DRAWING
SHEET 3 OF 11
NAD 83/NSRS 2007
SKETCH OF PAVEMENT/BRIDGE RELATIONSHIP
BEGIN APPROACH SLAB
-L- STA. 40+75.04
END APPROACH SLAB
-L- STA. 54+74.96
END SBG
-L- STA. 40+75.04 LT
BEGIN SBG
-L- STA. 54+74.96 LT
TYPE-III
END SBG
-L- STA. 40+75.04 RT
BEGIN BRIDGE
-L- STA. 40+99.04
END BRIDGE
-L- STA. 54+50.96
BEGIN SBG
-L- STA. 54+74.96 RT
NOT TO SCALE
DETAIL C
CAUSEWAY REMOVAL
(NOT TO SCALE)
CROSS SECTION VIEW
PROFILE VIEW
-L- STA. 40+80 TO 44+05 RT.
SEE ENLARGEMENT SHEET 4
PAMCAR FARMS LLC
JANET FULCHER
JOHN R. FULCHER JR.
PERMANENT SHEET PILE
TEMP. WORK BRIDGE
PERMANENT SURFACE WATER IMPACTS
REMOVE PAVEMENT
EXISTING POWER TRANSMISSION LINE EASEMENT
SPECIAL CUT GRASSED SWALE SEE DETAIL A
LATERAL 'V' W/PSRM GRASSED SWALE SEE DETAIL B
CAUSEWAY REMOVAL APPROX. 12,800 CY EXCAVATION SEE DETAIL C
MATCH LINE SEE SHEET 5 -L- STA. 44+00.00
-BL- 3
-BL- 4
DETAIL B
GRASSED SWALE w/PSRM
(Not to Scale)
PLAN VIEW
PROFILE VIEW
-L- STA. 40+50 TO 40+86 RT.
DETAIL A
SPECIAL CUT GRASSED SWALE
(Not to Scale)
Min. D=1 FT.
-L- STA. 33+86 TO 40+50 RT.
SPECIAL CUT
SEE DETAIL A
GRASSED SWALE DATA
-L- STA. 33+86 TO 38+50 RT.
DA=0.61 ACRES C=0.58
Q2=CIA=(0.58)(5.42)(0.61)=1.9CFS
Q10=(0.58)(7.06)(0.61)=2.5CFS
SLOPE: FRONT=4:1 BACK=4:1
LONGITUDNAL=0.3%
REQUIRED LENGTH=61FT.
ACTUAL LENGTH=464FT.
V2=1.1FPS V10=1.2FPS
d2=0.7FT. d10=0.7FT.
SPECIAL CUT
SEE DETAIL A
LATERAL 'V'
SEE DETAIL B
GRASSED SWALE DATA
-L- STA. 38+50 TO 40+86 RT.
TOTAL DA=1.53 ACRES
ADDITIONAL DA TO BE TREATED=0.92
ACRES C=0.79
Q2=CIA=(0.79)(5.42)(0.92)+1.9=6.0CFS
Q10=(0.79)(7.06)(0.92)+2.5=8.0CFS
SLOPE: FRONT=4:1 BACK=4:1
LONGITUDNAL=0.3%
REQUIRED LENGTH=92FT.
ACTUAL LENGTH=236FT.
V2=1.5FPS V10=1.6FPS
d2=1.1FT. d10=1.2FT.
DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES HAND CLEARING
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
PAVEMENT REMOVAL
NOTES
1) FOR -L- PROFILE, SEE SHEET 7
SITE 1
REVISIONS

F F DENOTES FILL IN WETLAND

HC HC DENOTES HAND CLEARING

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER



50′ 0′ 50′

1"=50′

PLAN VIEW

SITE 1

NCDOT

DIVISION OF HIGHWAYS

CARTERET COUNTY

PROJECT: 38496.1.1 (B-4722B)

BEAUFORT-BETTIE

BRIDGE NO. 33 OVER

NORTH RIVER ON US 70

SHEET 4 OF 11 6/17/14

PROJECT REFERENCE NO.	SHEET NO.
B-4722B	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING
SHEET 5 OF 11

REVISED 8/27/2014

5/28/99

NOTES

1) FOR -L- PLAN VIEW, SEE SHEETS 4, 5 AND 6

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=		CFS
DESIGN FREQUENCY	=	50	YRS
DESIGN HW ELEVATION	=	7.3	FT
BASE DISCHARGE	=		CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	8.0	FT
OVERTOPPING DISCHARGE	=	21,000	CFS
OVERTOPPING FREQUENCY	=		YRS
OVERTOPPING ELEVATION	=	3.1	FT
DATE OF SURVEY	=	4/18/2012	FT
OHW ELEVATION AT DATE OF SURVEY	=	2.4	FT

8/27/2014
crlewis2
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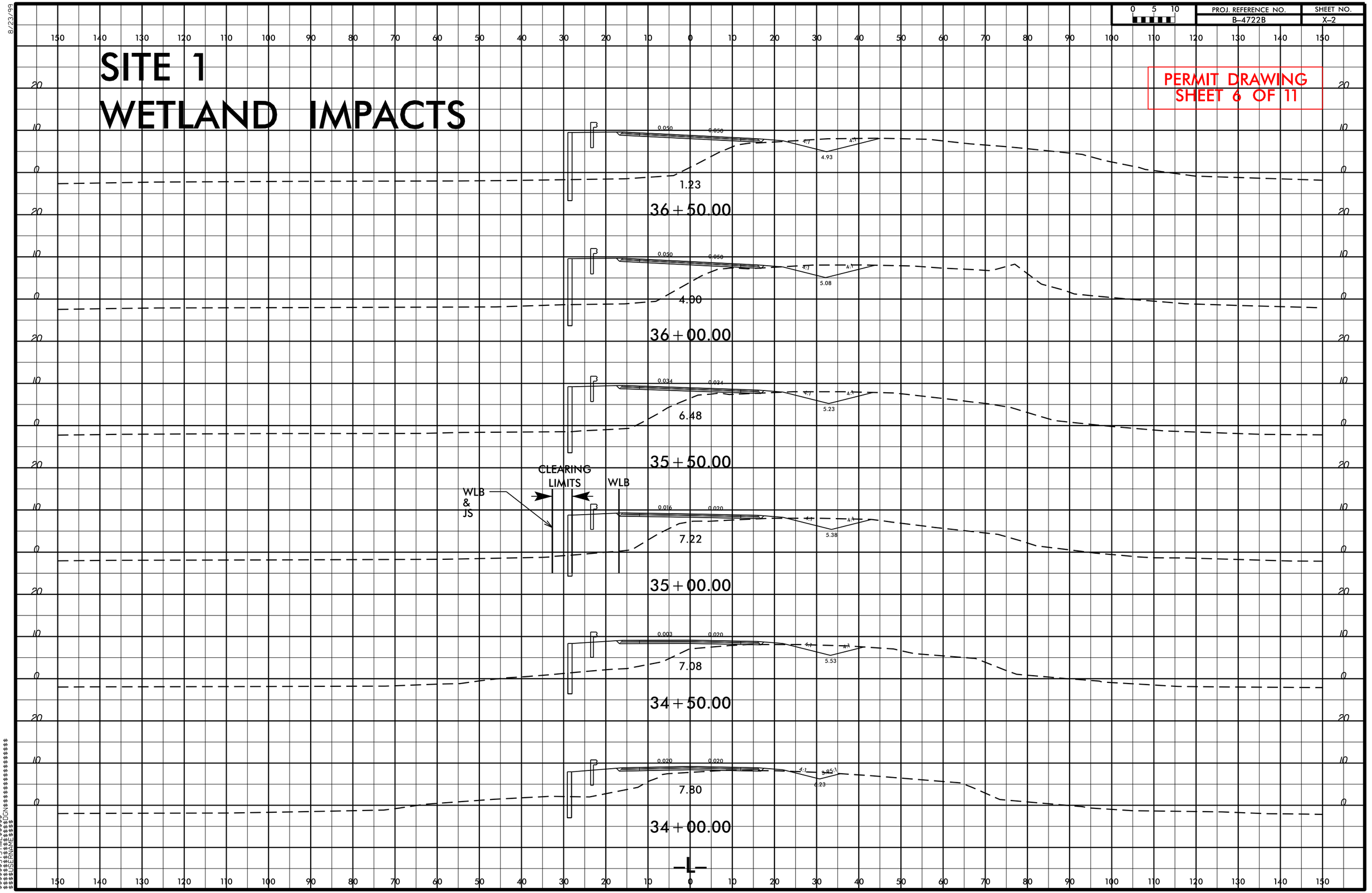
$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4722B	X-2

SITE 1
WETLAND IMPACTS

PERMIT DRAWING
SHEET 6 OF 11



6/17/2014
cfinney2
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$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B-4722B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING
SHEET 7 OF 11

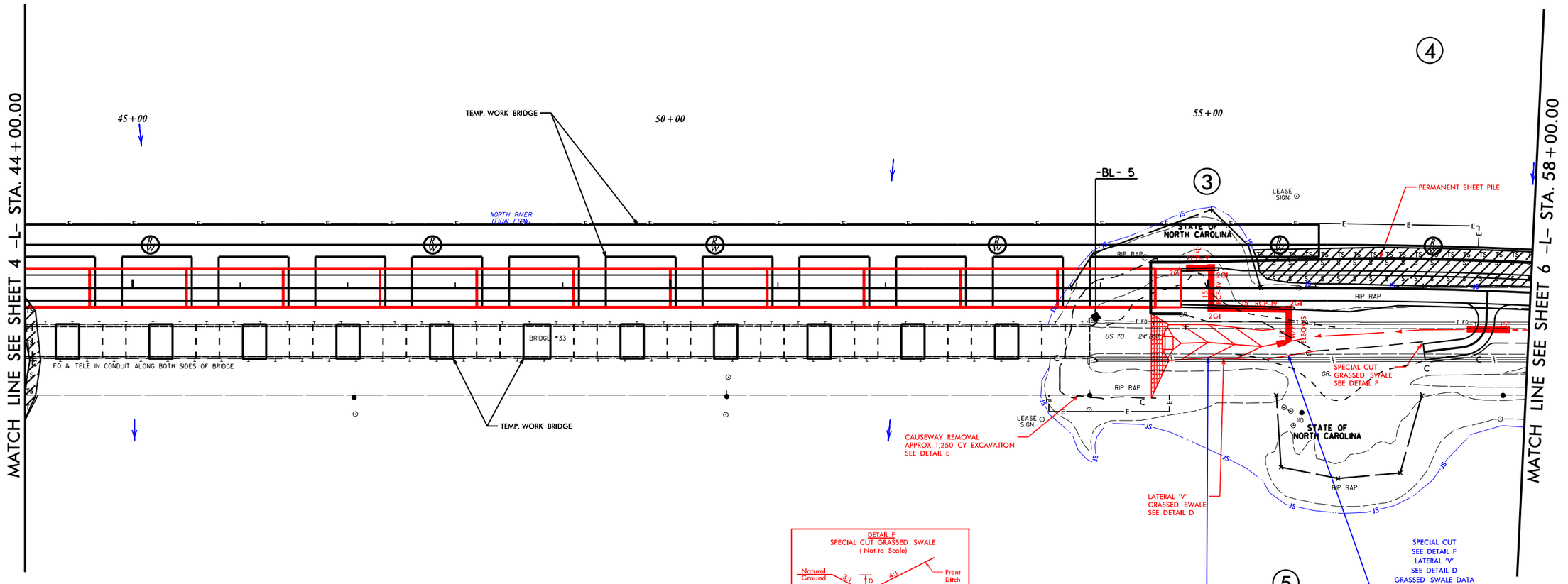
SITE 1

▨ S S	DENOTES IMPACTS IN SURFACE WATER
▨ TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/NSRS 2007

MATCH LINE SEE SHEET 4 -L- STA. 44+00.00

MATCH LINE SEE SHEET 6 -L- STA. 58+00.00

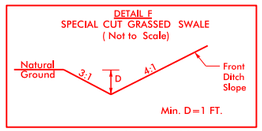


PERMANENT SHEET PILE

CAUSEWAY REMOVAL
APPROX. 1,250 CY EXCAVATION
SEE DETAIL E

LATERAL 'V'
GRASSED SWALE
SEE DETAIL D

SPECIAL CUT
GRASSED SWALE
SEE DETAIL F



-L- STA. 55+50 TO 64+50 RT.

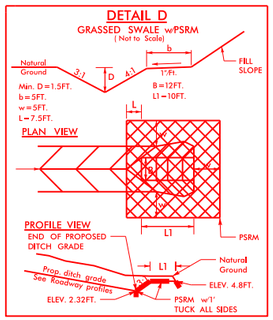
SPECIAL CUT
SEE DETAIL F
LATERAL 'V'
SEE DETAIL D
GRASSED SWALE DATA

-L- STA. 55+00 TO 55+75 RT.
TOTAL DA=1.69 ACRES
ADDITIONAL DA TO BE TREATED=0.67
ACRES C=0.85
Q_2=CIA=(0.85)(5.42)(0.67)+3.0=6.1CFS
Q_{10}=(0.85)(7.06)(0.67)+3.9=8.0CFS
SLOPE: FRONT=4:1 BACK=3:1
LONGITUDNAL=0.3%
REQUIRED LENGTH=67FT.
ACTUAL LENGTH=75FT.
V_2=1.50FPS V_{10}=1.60FPS
d_2=1.10FT. d_{10}=1.20FT.

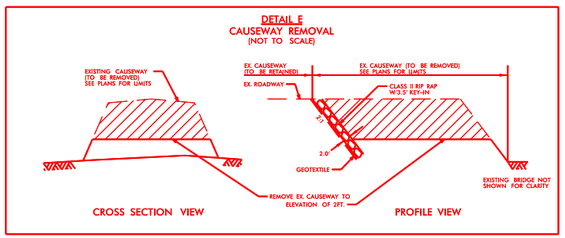
LEASE SIGN

LATERAL 'V'
SEE DETAIL D
GRASSED SWALE DATA

-L- STA. 54+57 TO 55+00 RT.
TOTAL DA=1.72 ACRES
ADDITIONAL DA TO BE TREATED=0.03
ACRES C=0.3
Q_2=CIA=(0.3)(5.42)(0.03)+6.1=6.1CFS
Q_{10}=(0.3)(7.06)(0.03)+8.0=8.0CFS
SLOPE: FRONT=4:1 BACK=3:1
LONGITUDNAL=0.6%
REQUIRED LENGTH=3FT.
ACTUAL LENGTH=58FT.
V_2=2.00FPS V_{10}=2.10FPS
d_2=1.00FT. d_{10}=1.10FT.



-L- STA. 54+57 TO 55+50 RT.



-L- STA. 53+62 TO 54+64 RT.

100' 0' 100'

1"=100'

▨	PAVEMENT REMOVAL

NOTES

1) FOR -L- PROFILE, SEE SHEET 7

6/17/2014
crlewis2
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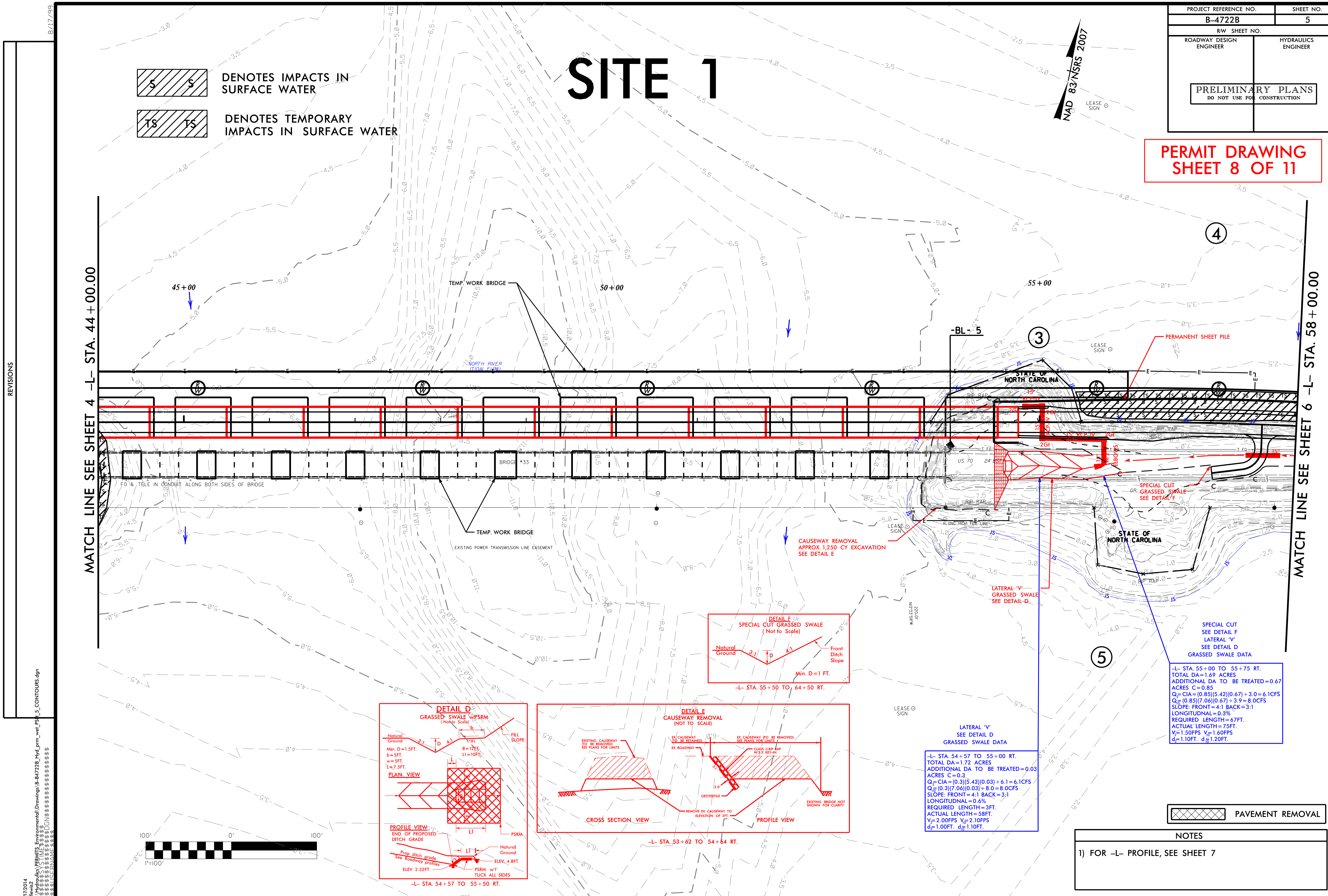
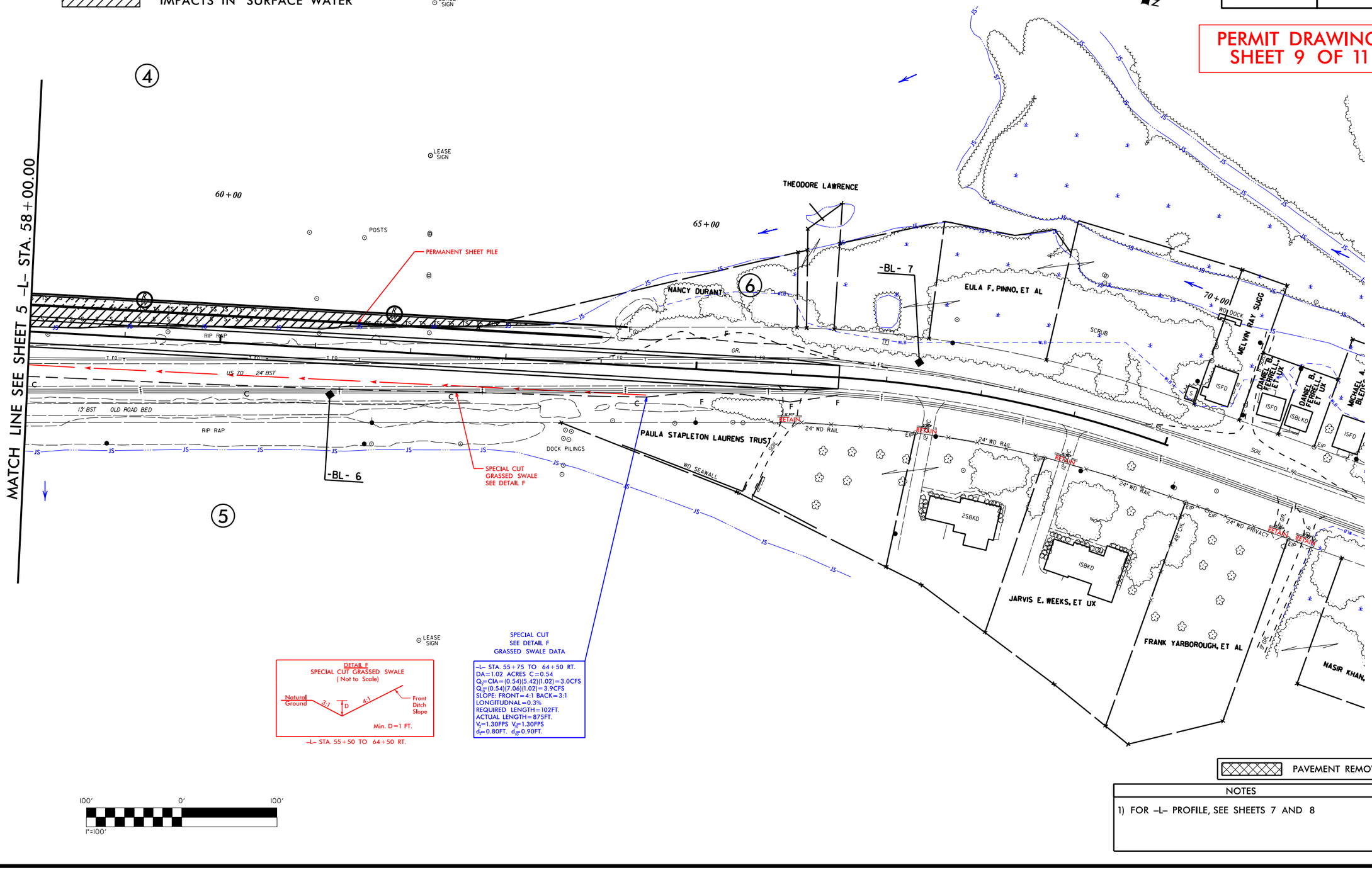


SITE 1
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
PROJECT REFERENCE NO. B-4722B
SHEET NO. 5
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
PERMIT DRAWING SHEET 8 OF 11
NAD 83/NSRS 2007
MATCH LINE SEE SHEET 4 -L- STA. 44+00.00
MATCH LINE SEE SHEET 6 -L- STA. 58+00.00
45+00
50+00
55+00
-BL- 5
TEMP. WORK BRIDGE
NORTH RIVER (TIDAL FLOW)
BRIDGE #33
FO & TELE IN CONDUIT ALONG BOTH SIDES OF BRIDGE
EXISTING POWER TRANSMISSION LINE EASEMENT
STATE OF NORTH CAROLINA
PERMANENT SHEET PILE
RIP RAP
US 70
ALONG HIGH TIDE LINE
SPECIAL CUT GRASSED SWALE SEE DETAIL F
CAUSEWAY REMOVAL APPROX. 1,250 CY EXCAVATION SEE DETAIL E
LATERAL 'V' GRASSED SWALE SEE DETAIL D
LEASE SIGN
DETAIL F
SPECIAL CUT GRASSED SWALE
(Not to Scale)
Natural Ground
Front Ditch Slope
Min. D=1 FT.
-L- STA. 55+50 TO 64+50 RT.
DETAIL D
GRASSED SWALE w/PSRM
(Not to Scale)
Natural Ground
FILL SLOPE
Min. D=1.5FT.
b=5FT.
w=5FT.
L=7.5FT.
B=12FT.
L1=10FT.
PLAN VIEW
PROFILE VIEW
END OF PROPOSED DITCH GRADE
Prop. ditch grade See Roadway profiles
Natural Ground
ELEV. 4.8FT.
ELEV. 2.32FT.
PSRM
PSRM w/1' TUCK ALL SIDES
-L- STA. 54+57 TO 55+50 RT.
DETAIL E
CAUSEWAY REMOVAL
(NOT TO SCALE)
EXISTING CAUSEWAY (TO BE REMOVED) SEE PLANS FOR LIMITS
EX. CAUSEWAY (TO BE RETAINED)
EX. ROADWAY
EX. CAUSEWAY (TO BE REMOVED) SEE PLANS FOR LIMITS
CLASS I RIP RAP W/3.5' KEY-IN
GEOTEXTILE
REMOVE EX. CAUSEWAY TO ELEVATION OF 2FT.
EXISTING BRIDGE NOT SHOWN FOR CLARITY
CROSS SECTION VIEW
PROFILE VIEW
-L- STA. 53+62 TO 54+64 RT.
LATERAL 'V'
SEE DETAIL D
GRASSED SWALE DATA
-L- STA. 54+57 TO 55+00 RT.
TOTAL DA=1.72 ACRES
ADDITIONAL DA TO BE TREATED=0.03 ACRES C=0.3
Q2=CIA=(0.3)(5.42)(0.03)+6.1=6.1CFS
Q10=(0.3)(7.06)(0.03)+8.0=8.0CFS
SLOPE: FRONT=4:1 BACK=3:1
LONGITUDNAL=0.6%
REQUIRED LENGTH=3FT.
ACTUAL LENGTH=58FT.
V2=2.00FPS V10=2.10FPS
d2=1.00FT. d10=1.10FT.
SPECIAL CUT
SEE DETAIL F
LATERAL 'V'
SEE DETAIL D
GRASSED SWALE DATA
-L- STA. 55+00 TO 55+75 RT.
TOTAL DA=1.69 ACRES
ADDITIONAL DA TO BE TREATED=0.67 ACRES C=0.85
Q2=CIA=(0.85)(5.42)(0.67)+3.0=6.1CFS
Q10=(0.85)(7.06)(0.67)+3.9=8.0CFS
SLOPE: FRONT=4:1 BACK=3:1
LONGITUDNAL=0.3%
REQUIRED LENGTH=67FT.
ACTUAL LENGTH=75FT.
V2=1.50FPS V10=1.60FPS
d2=1.10FT. d10=1.20FT.
PAVEMENT REMOVAL
NOTES
1) FOR -L- PROFILE, SEE SHEET 7
100' 0' 100'
1"=100'
REVISIONS
8/17/99
6/17/2014



PROJECT REFERENCE NO.	SHEET NO.
B-4722B	6

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PERMIT DRAWING
SHEET 9 OF 11

SITE 1

▨ S S — DENOTES IMPACTS IN SURFACE WATER

▨ TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

LEASE SIGN

SPECIAL CUT
SEE DETAIL F
GRASSED SWALE DATA

DETAIL F
SPECIAL CUT GRASSED SWALE
(Not to Scale)

Min. D=1 FT.

-L- STA. 55+50 TO 64+50 RT.

-L- STA. 55+75 TO 64+50 RT.
DA=1.02 ACRES C=0.54
Q_2=CIA=(0.54)(5.42)(1.02)=3.0CFS
Q_{10}=(0.54)(7.06)(1.02)=3.9CFS
SLOPE: FRONT=4:1 BACK=3:1
LONGITUDNAL=0.3%
REQUIRED LENGTH=102FT.
ACTUAL LENGTH=875FT.
V_2=1.30FPS V_{10}=1.30FPS
d_2=0.80FT. d_{10}=0.90FT.

▨ PAVEMENT REMOVAL

NOTES

1) FOR -L- PROFILE, SEE SHEETS 7 AND 8

100' 0' 100'
1"=100'

REVISIONS

8/17/99

6/17/2014
crlewis2
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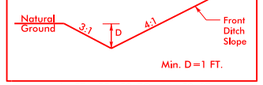

PROJECT REFERENCE NO.	SHEET NO.
B-4722B	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SITE 1

PERMIT DRAWING
SHEET 10 OF 11

▨ S S — DENOTES IMPACTS IN SURFACE WATER

▨ TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SPECIAL CUT
SEE DETAIL F
GRASSED SWALE DATA

-L- STA. 55+75 TO 64+50 RT.
DA=1.02 ACRES C=0.54
Q_2=CIA=(0.54)(5.42)(1.02)=3.0CFS
Q_{10}=(0.54)(7.06)(1.02)=3.9CFS
SLOPE: FRONT=4:1 BACK=3:1
LONGITUDNAL=0.3%
REQUIRED LENGTH=102FT.
ACTUAL LENGTH=875FT.
V_2=1.30FPS V_{10}=1.30FPS
d_2=0.80FT. d_{10}=0.90FT.

DETAIL F
SPECIAL CUT GRASSED SWALE
(Not to Scale)

Natural Ground
3:1
D
4:1
Front Ditch Slope
Min. D=1 FT.

-L- STA. 55+50 TO 64+50 RT.

▨ PAVEMENT REMOVAL

NOTES
1) FOR -L- PROFILE, SEE SHEETS 7 AND 8

REVISIONS

8/17/99

6/17/2014
crlewis2
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$$$$USERNAME$$$$

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	32+21 TO 63+45 LT	1350 FT. BRIDGE	0.03				0.04	0.58	0.56			
TOTALS*:			0.03				0.04	0.58	0.56	0	0	0

*Rounded totals are sum of actual impacts

NOTES:
All wetlands associated with this project are CAMA wetlands.
<0.01 acres of Temporary Fill in Wetlands in the Hand Clearing areas for erosion control measures.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
B-4722B
CARTERET COUNTY
BRIDGE 33 ON US 70
OVER NORTH RIVER

Revised
7/15/2014

B-4722B NEU Narrative

Utility Owners:

- **Telephone:** Century Link (contact: Mitch Averitte 252-247-4493)
- **Power:** Duke Energy Progress Distribution (contact: Eddie Watkins 919-518-5248)

General Utility Relocations:

All utility lines inside the project limits will be adjusted as necessary to avoid conflict with the proposed bridge.

Existing Utilities:

- **Telephone:** Existing telephone located on both the north and south sides of US 70; both of these lines are in conflict with the proposed bridge and will need to be relocated.

- **Power:** Existing distribution located on the south side of US 70; currently these lines are not in conflict with the proposed bridge, however we are having the poles scanned to make sure that they meet minimum height clearances. We will reassess the power and determine if it needs to be relocated once the poles have been scanned.

Proposed Utilities:

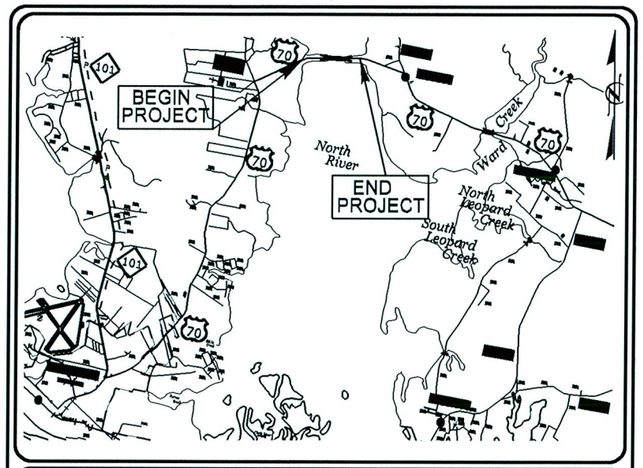
- **Telephone:** Existing telephone lines on both the north and south side of US 70 will be removed and relocated 5' inside the right-of-way line on the north side on US 70 by method of directional bore. At the bridge the telephone line will be attached to the bridge via the railing.

09/08/99

TIP PROJECT: B-4722B

F.A. PROJ.: C203563

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



VICINITY MAP
NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NEU PERMIT PLANS
CARTERET COUNTY

LOCATION: BRIDGE NO. 33 OVER THE NORTH RIVER ON US 70

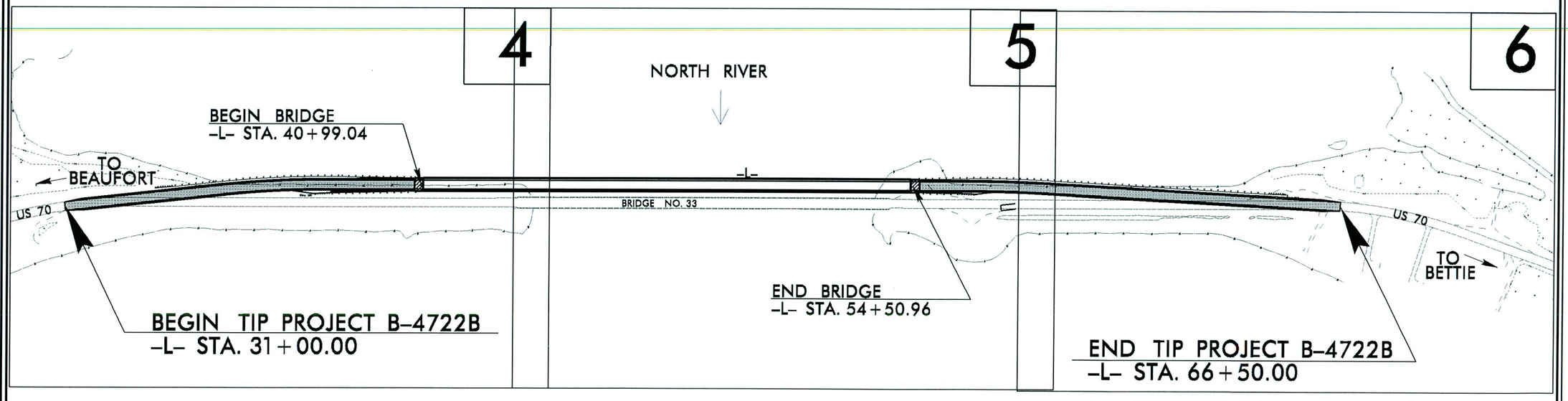
TYPE OF WORK: RELOCATION OF FIBER OPTIC CABLE

T.I.P. NO.	SHEET NO.
B-4722B	1

REVISION 7/10/14

Utility Permit Drawing
Sheet 1 of 16

NAD 83/ NSRS 2007

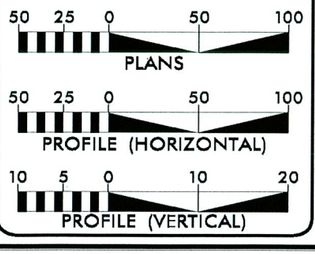


CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



INDEX OF SHEETS

UTILITY OWNERS ON PROJECT

(A) DUKE PROGRESS
(B) CENTURY LINK

PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING
1555 MAIL SERVICES CENTER
RALEIGH NC 27699-1555
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E. — UTILITIES SECTION ENGINEER
Corey Bousquet, P.E. — UTILITIES SQUAD LEADER PROJECT ENGINEER
Mariko Hafeez — UTILITIES PROJECT DESIGNER

10-JUL-2014 07:29
R:\Utilities\Engineering\NEU\Permit Plans and Narrative\B-4722B_Ut_tsh_UEL_psh.dgn
$$$$USERNAME$$$$

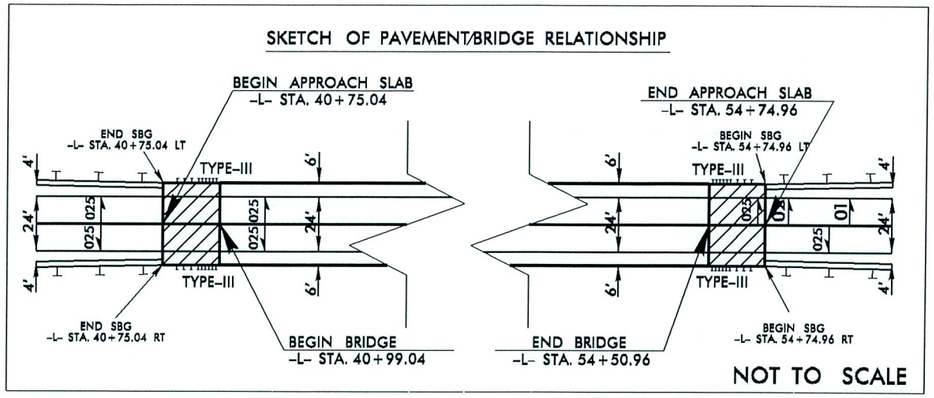
PROJECT REFERENCE NO.	SHEET NO.
B-4722B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

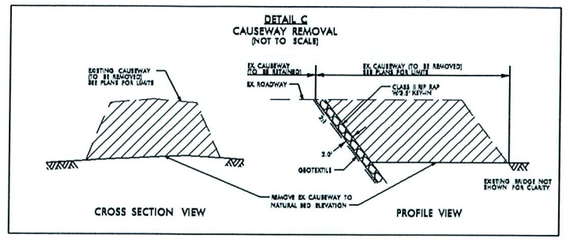
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Utility Permit Drawing
Sheet 2 of 16

NAD 83/NSRS 2007

SKETCH OF PAVEMENT/BRIDGE RELATIONSHIP

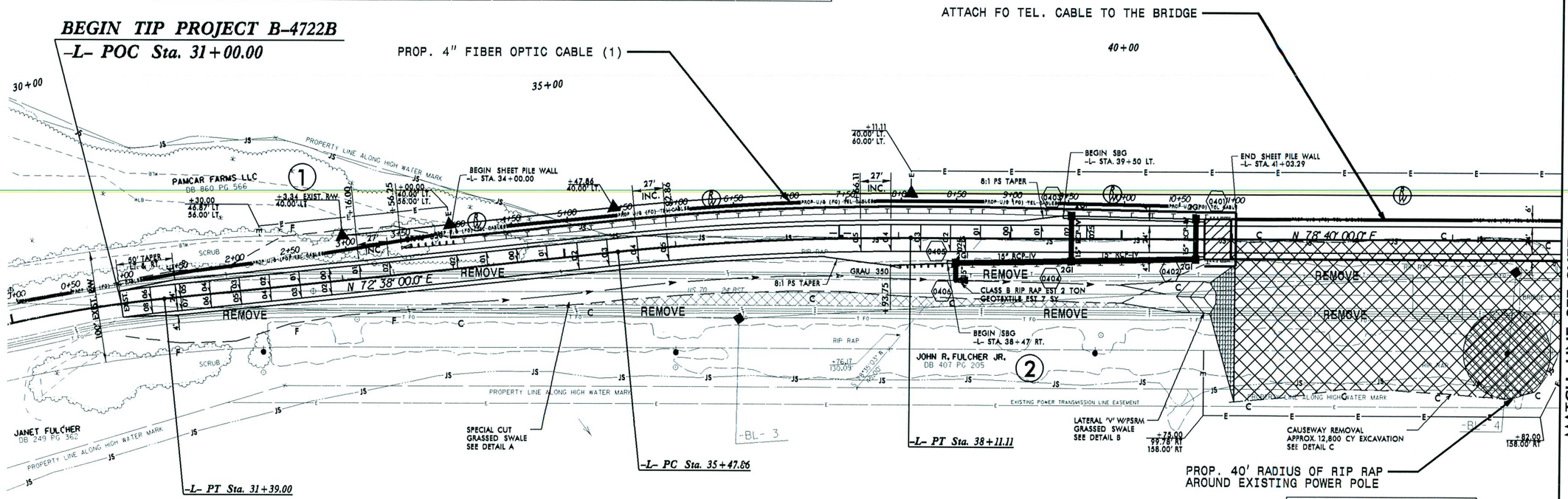




-L- STA. 40+80 TO 44+05 RT.

BEGIN TIP PROJECT B-4722B

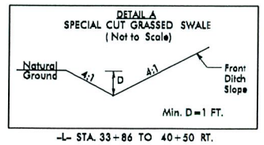
-L- POC Sta. 31+00.00



-L-

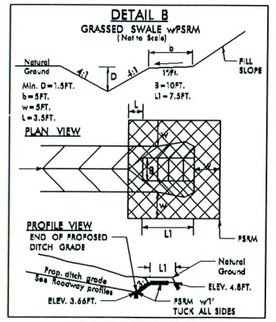
PI Sta 29+39.23	PI Sta 36+79.61
Δ = 18° 07' 56.7" (RT)	Δ = 6° 02' 00.0" (RT)
D = 4° 30' 00.5"	D = 2° 17' 30.6"
L = 402.93'	L = 263.25'
T = 203.16'	T = 131.75'
R = 1,273.20'	R = 2,500.00'

DETAIL A
SPECIAL CUT GRASSED SWALE
(Not to Scale)



-L- STA. 33+86 TO 40+50 RT.

DETAIL B
GRASSED SWALE w/PSRM
(Not to Scale)



-L- STA. 40+50 TO 40+86 RT.

PAVEMENT REMOVAL

NOTES

1) FOR -L- PROFILE, SEE SHEET 7

REVISIONS 8/17/99

10-JUL-2014 07:54
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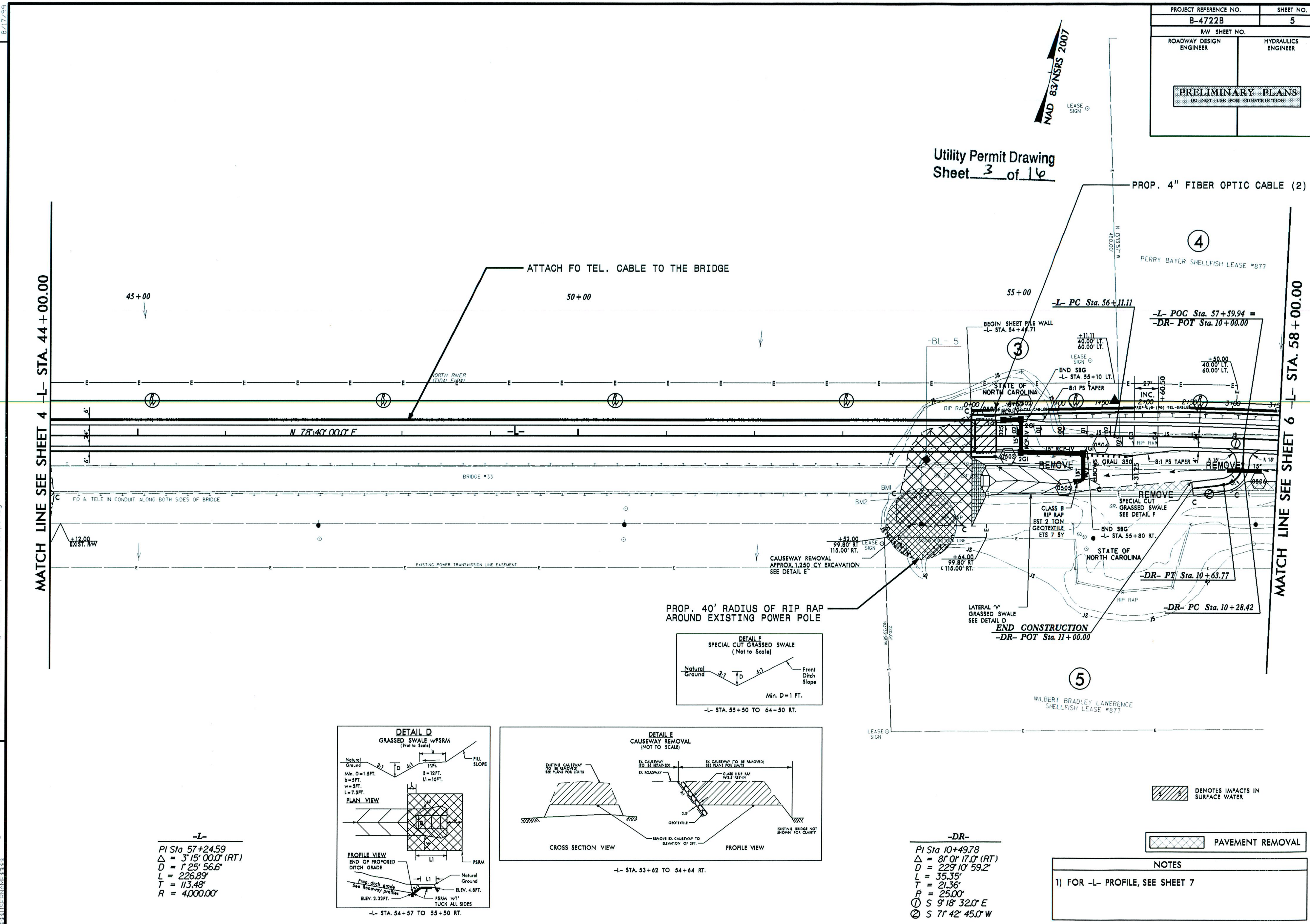
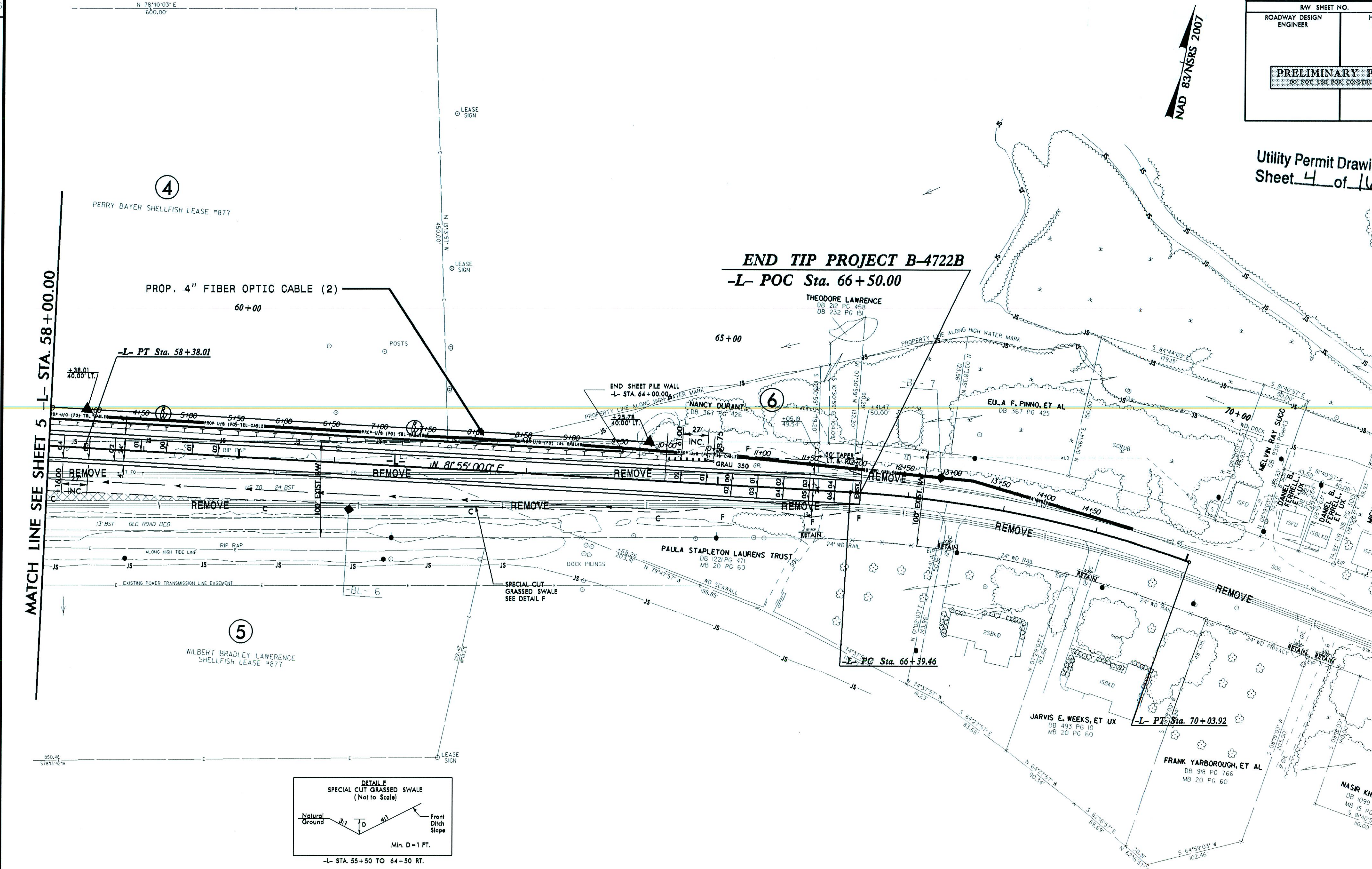

PROJECT REFERENCE NO.
B-4722B
SHEET NO.
5
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
NAD 83/NSRS 2007
Utility Permit Drawing
Sheet 3 of 16
PROP. 4" FIBER OPTIC CABLE (2)
ATTACH FO TEL. CABLE TO THE BRIDGE
PERRY BAYER SHELLFISH LEASE #877
MATCH LINE SEE SHEET 4 -L- STA. 44+00.00
MATCH LINE SEE SHEET 6 -L- STA. 58+00.00
45+00
50+00
55+00
-L- PC Sta. 56+11.11
-L- POC Sta. 57+59.94 = -DR- POT Sta. 10+00.00
BEGIN SHEET PILE WALL -L- STA. 54+46.71
NORTH RIVER (TIDAL FLOW)
STATE OF NORTH CAROLINA
END SBG -L- STA. 55+10 LT.
8:1 PS TAPER
N 78°40' 00.0" E
BRIDGE #33
FO & TELE IN CONDUIT ALONG BOTH SIDES OF BRIDGE
EXIST. R/W
REMOVE
CLASS B RIP RAP EST 2 TON GEOTEXTILE ETS 7 SY
SPECIAL CUT GRASSED SWALE SEE DETAIL F
END SBG -L- STA. 55+80 RT.
CAUSEWAY REMOVAL APPROX. 1,250 CY EXCAVATION SEE DETAIL E
EXISTING POWER TRANSMISSION LINE EASEMENT
PROP. 40' RADIUS OF RIP RAP AROUND EXISTING POWER POLE
-DR- PT Sta. 10+63.77
-DR- PC Sta. 10+28.42
LATERAL 'V' GRASSED SWALE SEE DETAIL D
END CONSTRUCTION -DR- POT Sta. 11+00.00
WILBERT BRADLEY LAWERENCE SHELLFISH LEASE #877
LEASE SIGN
DETAIL F SPECIAL CUT GRASSED SWALE (Not to Scale)
Natural Ground
Front Ditch Slope
Min. D=1 FT.
-L- STA. 55+50 TO 64+50 RT.
DETAIL D GRASSED SWALE w/PSRM (Not to Scale)
PLAN VIEW
PROFILE VIEW
-L- STA. 54+57 TO 55+50 RT.
DETAIL E CAUSEWAY REMOVAL (NOT TO SCALE)
CROSS SECTION VIEW
PROFILE VIEW
-L- STA. 53+62 TO 54+64 RT.
-L-
PI Sta 57+24.59
Δ = 3° 15' 00.0" (RT)
D = 1° 25' 56.6"
L = 226.89'
T = 113.48'
R = 4,000.00'
-DR-
PI Sta 10+49.78
Δ = 8° 01' 17.0" (RT)
D = 229° 10' 59.2"
L = 35.35'
T = 21.36'
R = 25.00'
① S 9° 18' 32.0" E
② S 71° 42' 45.0" W
DENOTES IMPACTS IN SURFACE WATER
PAVEMENT REMOVAL
NOTES
1) FOR -L- PROFILE, SEE SHEET 7

PROJECT REFERENCE NO.	SHEET NO.
B-4722B	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Utility Permit Drawing
Sheet 4 of 16



NAD 83/NSRS 2007
MATCH LINE SEE SHEET 5 -L- STA. 58+00.00
PERRY BAYER SHELLFISH LEASE #877
PROP. 4" FIBER OPTIC CABLE (2)
-L- PT Sta. 58+38.01
END TIP PROJECT B-4722B
-L- POC Sta. 66+50.00
THEODORE LAWRENCE
DB 212 PG 458
DB 232 PG 151
END SHEET PILE WALL
-L- STA. 64+00.00
NANCY DURANT
DB 367 PG 426
EULA F. PINNO, ET AL
DB 367 PG 425
MELVIN RAY SUGG
PAULA STAPLETON LAURENS TRUST
DB 1221 PG 471
MB 20 PG 60
SPECIAL CUT GRASSED SWALE SEE DETAIL F
-L- PC Sta. 66+39.46
WILBERT BRADLEY LAWERENCE SHELLFISH LEASE #877
JARVIS E. WEEKS, ET UX
DB 493 PG 10
MB 20 PG 60
-L- PT Sta. 70+03.92
FRANK YARBOROUGH, ET AL
DB 918 PG 766
MB 20 PG 60
NASIR KHAN
REMOVE

DETAIL F
SPECIAL CUT GRASSED SWALE
(Not to Scale)

Natural Ground 3:1 D 4:1 Front Ditch Slope

Min. D=1 FT.

-L- STA. 55+50 TO 64+50 RT.

-L-

PI Sta 57+24.59	PI Sta 68+22.94
Δ = 3° 15' 00.0" (RT)	Δ = 16° 24' 03.3" (RT)
D = 1° 25' 56.6"	D = 4° 30' 00.5"
L = 226.89'	L = 364.45'
T = 113.48'	T = 183.48'
R = 4,000.00'	R = 1,273.20'

PAVEMENT REMOVAL

NOTES

1) FOR -L- PROFILE, SEE SHEETS 7 AND 8

REVISIONS

8/17/99

10-JUL-2014 07:57
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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-4722B	7
DESIGNED BY: MEH	
DRAWN BY: MEH	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION
UTILITIES ENGINEERING SEC.
PHONE: (919)707-6690
FAX: (919)250-4151

UTILITY CONSTRUCTION
PLANS ONLY

Utility Permit Drawing
Sheet 5 of 12

UTILITY CONSTRUCTION

PROPOSED GROUND

EXISTING GROUND

PROP. U/G FO TELE. CABLE

100 90 80 70 60 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100

0 1+00 2+00

FO Tel Cable (1)

02-JUL-2014 11:15
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5/14/93

PROJECT REFERENCE NO.	SHEET NO.
B-47228	8

DESIGNED BY: MEH
DRAWN BY: MEH
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

UTILITY CONSTRUCTION PLANS ONLY

Utility Permit Drawing
Sheet 6 of 16

UTILITY CONSTRUCTION

EXISTING GROUND

PROPOSED GROUND

PROP. U/G FO TELE. CABLE

100 90 80 70 60 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100

3+00 4+00 5+00

FO Tel Cable (1)

02-JUL-2014 11:15
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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-4722B	9
DESIGNED BY: MEH	
DRAWN BY: MEH	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151	UTILITY CONSTRUCTION PLANS ONLY

Utility Permit Drawing
Sheet 7 of 10

UTILITY CONSTRUCTION

EXISTING GROUND

PROP. U/G FO TELE. CABLE

90 80 70 60 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100 -110

6+00 7+00 8+00

FO Tel Cable (1)

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-4722B	10

DESIGNED BY: MEH
DRAWN BY: MEH
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION
UTILITIES ENGINEERING SEC.
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FAX:(919)250-4151

UTILITY CONSTRUCTION
PLANS ONLY

Utility Permit Drawing
Sheet 8 of 16

UTILITY CONSTRUCTION

EXISTING GROUND

PROP. U/G FO TELE. CABLE

FO Tel Cable (1)

90 80 70 60 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100 -110

9+00 10+00 11+00

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-4722B	11
DESIGNED BY: MEH	
DRAWN BY: MEH	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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FAX:(919)250-4151

UTILITY CONSTRUCTION PLANS ONLY

Utility Permit Drawing
Sheet 9 of 10

UTILITY CONSTRUCTION

PROPOSED GROUND

EXISTING GROUND

PROP. U/G FO TELE. CABLE

FO Tel Cable (2)

100 90 80 70 60 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100

0 1+00 2+00

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-4722B	12
DESIGNED BY: MEH	
DRAWN BY: MEH	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	

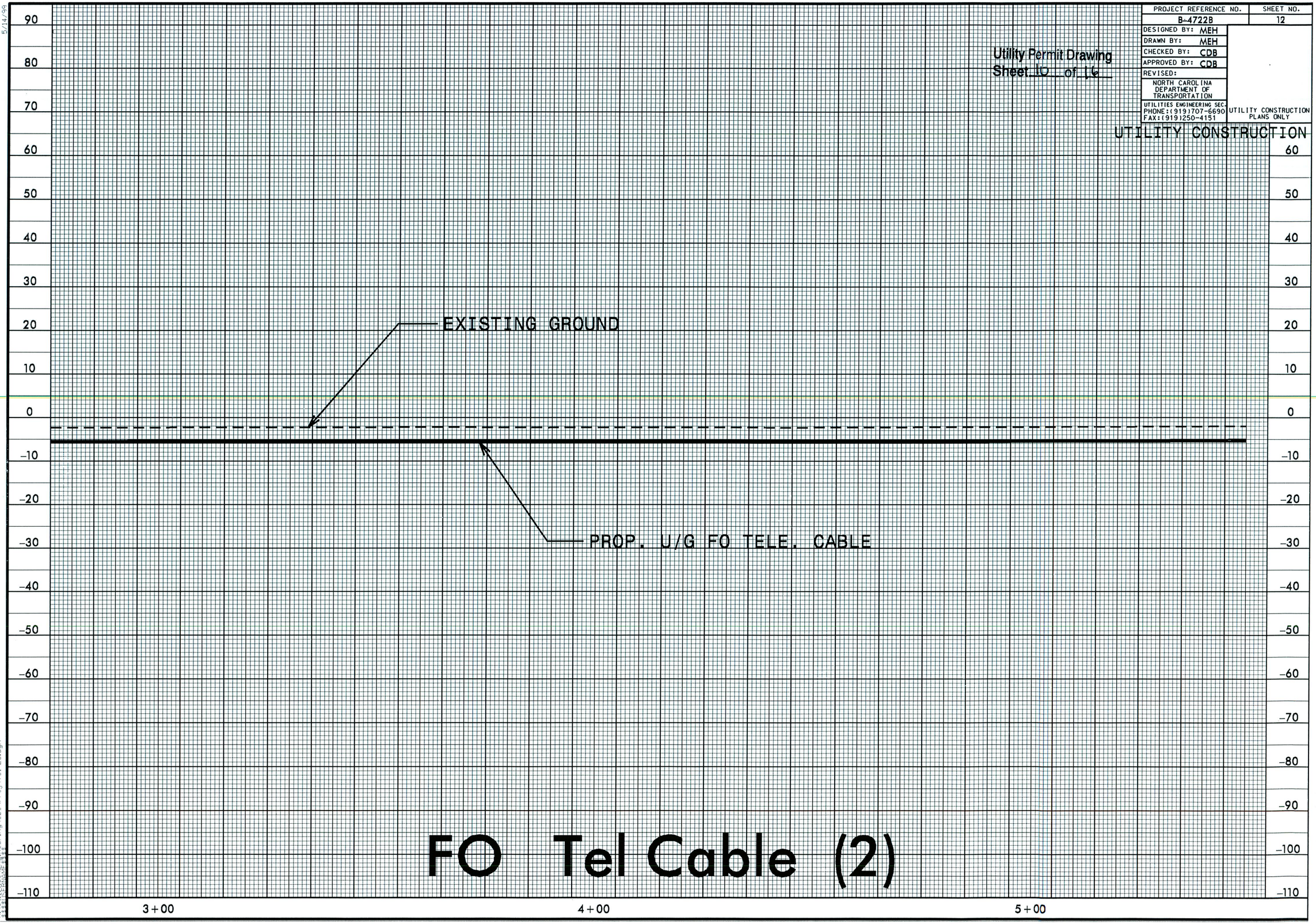
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

UTILITIES ENGINEERING SEC.
PHONE:(919)707-6690
FAX:(919)250-4151

UTILITY CONSTRUCTION PLANS ONLY

Utility Permit Drawing
Sheet 10 of 16

UTILITY CONSTRUCTION



FO Tel Cable (2)

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PROJECT REFERENCE NO.	SHEET NO.
B-4722B	13

DESIGNED BY: MEH
DRAWN BY: MEH
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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FAX:(919)250-4151

UTILITY CONSTRUCTION PLANS ONLY

Utility Permit Drawing
Sheet 11 of 16

UTILITY CONSTRUCTION

EXISTING GROUND

PROP. U/G FO TELE. CABLE

FO Tel Cable (2)

90 80 70 60 50 40 30 20 10 0 –10 –20 –30 –40 –50 –60 –70 –80 –90 –100 –110

6+00 7+00 8+00

5/14/99

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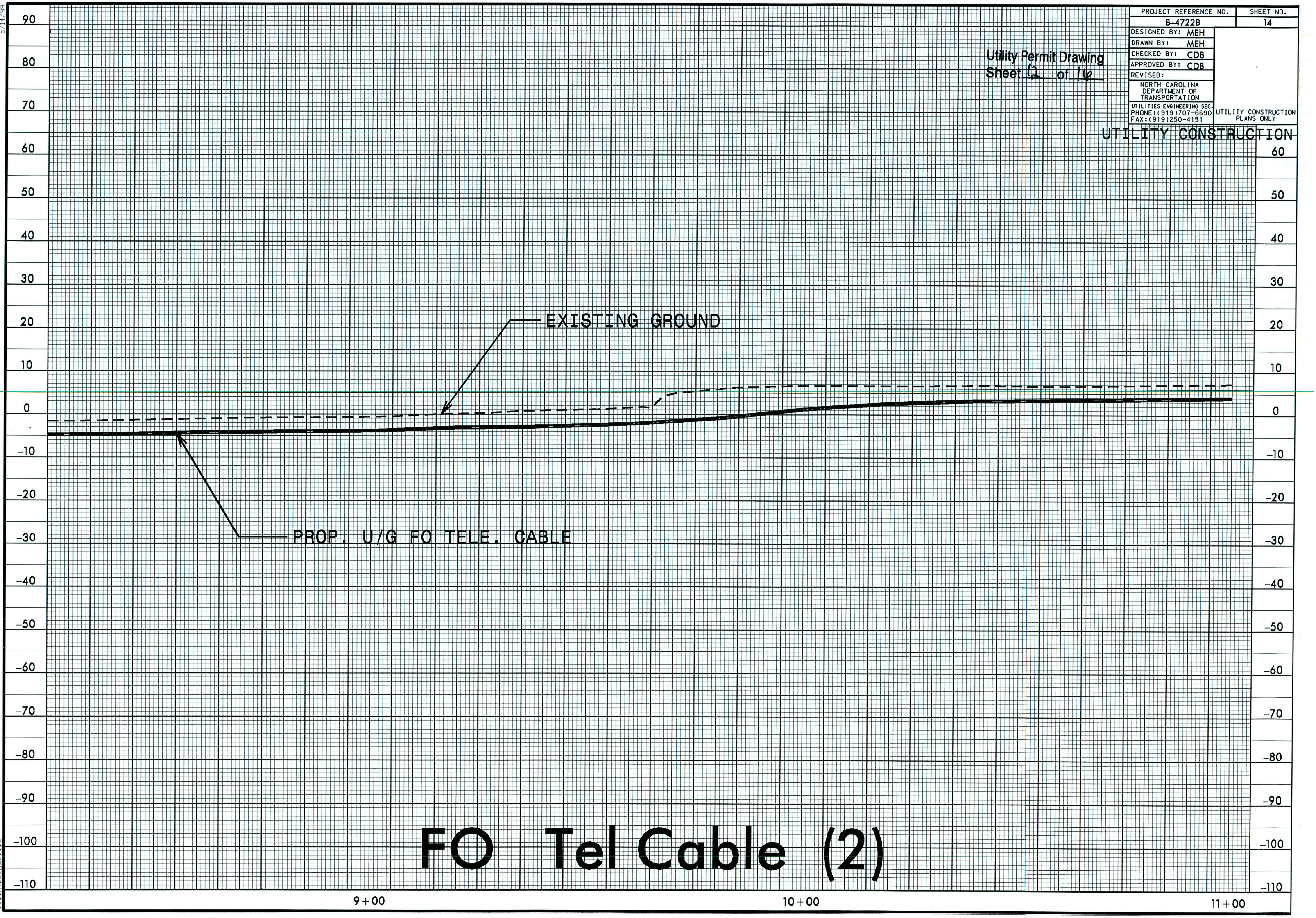
PROJECT REFERENCE NO. B-4722B
SHEET NO. 14
DESIGNED BY: MEH
DRAWN BY: MEH
CHECKED BY: CDB
APPROVED BY: CDB
REVISED:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC. PHONE:(919)707-6690 FAX:(919)250-4151
UTILITY CONSTRUCTION PLANS ONLY
Utility Permit Drawing
UTILITY CONSTRUCTION
EXISTING GROUND
PROP. U/G FO TELE. CABLE
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
9+00
10+00
11+00
FO Tel Cable (2)

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-4722B	15
DESIGNED BY: MEH	
DRAWN BY: MEH	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	UTILITY CONSTRUCTION PLANS ONLY

Utility Permit Drawing
Sheet 13 of 16

UTILITY CONSTRUCTION

EXISTING GROUND

PROP. U/G FO TELE. CABLE

100 90 80 70 60 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100

11+00 12+00 13+00

FO Tel Cable (2)

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-4722B	16
DESIGNED BY: MEH	
DRAWN BY: MEH	
CHECKED BY: CDB	
APPROVED BY: CDB	
REVISED:	

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

UTILITIES ENGINEERING SEC.
PHONE: (919) 707-6690
FAX: (919) 250-4151

UTILITY CONSTRUCTION PLANS ONLY

Utility Permit Drawing
Sheet 14 of 16

UTILITY CONSTRUCTION

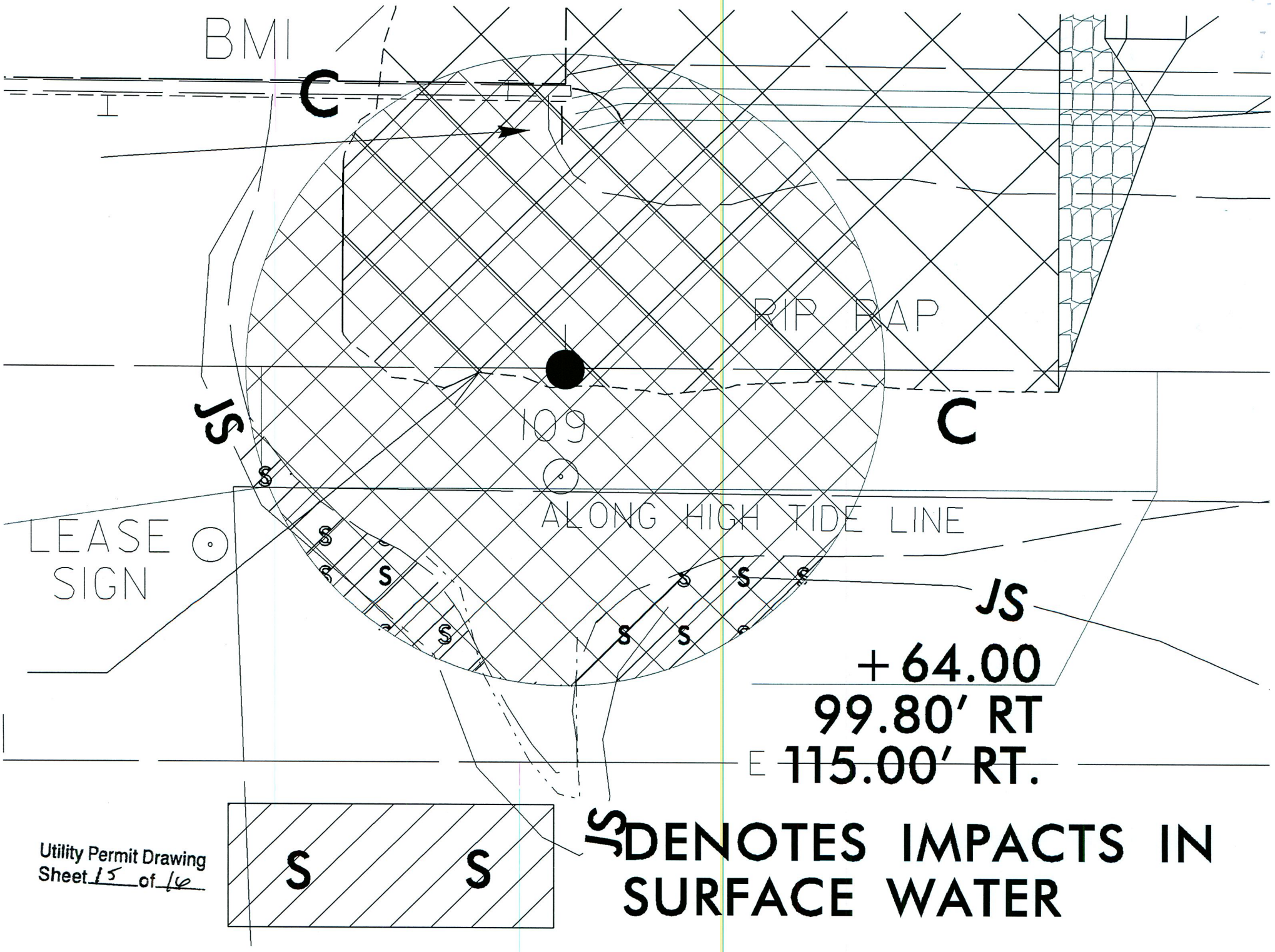
100 90 80 70 60 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100

EXISTING GROUND

PROP. U/G FO TELE. CABLE

14 + 00

FO Tel Cable (2)



Utility Permit Drawing
Sheet 15 of 16

			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	L Sta. 53+50.55 to L Sta. 54+22.71	Rip Rap						0.13				
TOTALS:								0.13				

Note:

Utility Permit Drawing
Sheet 16 of 16

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CARTERET COUNTY
WBS - 38496.1.1 (B-4722B)

SHEET 1 OF 1 3/19/2014

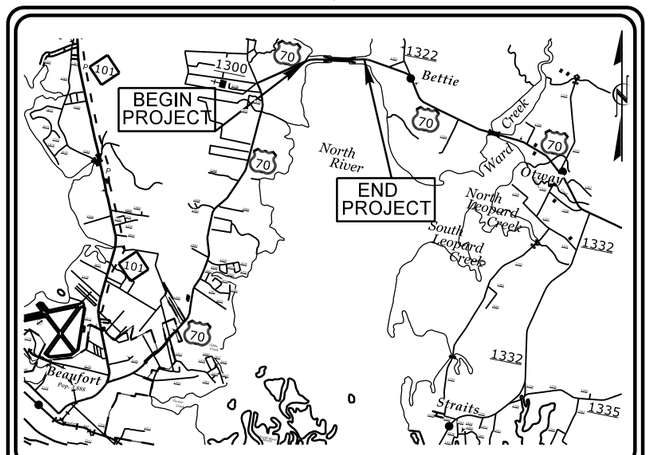
Revised 8/1/13

ATN Revised 3/31/05

09/08/99

TIP PROJECT: B-4722B

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



VICINITY MAP
NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CARTERET COUNTY

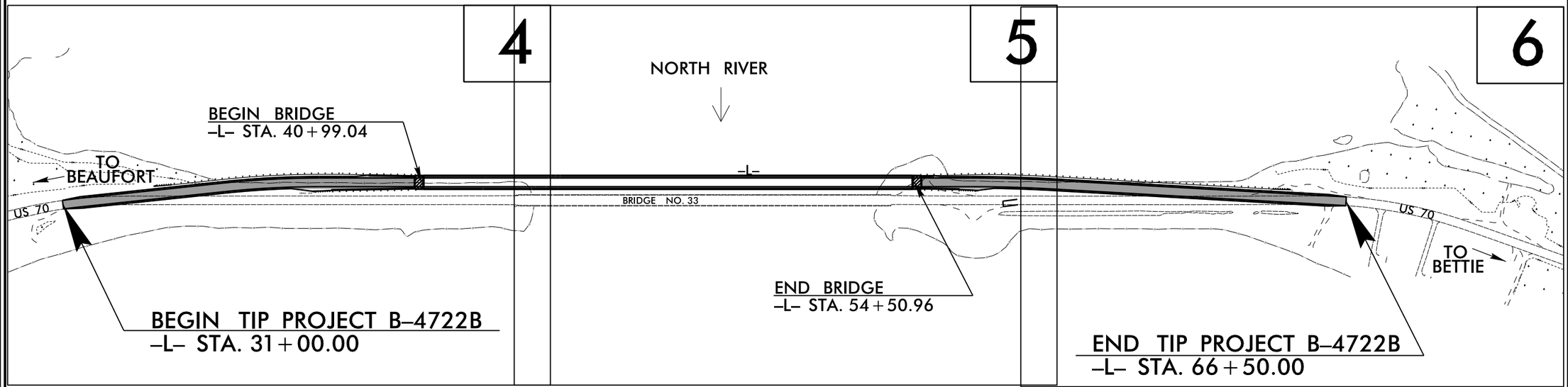
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4722B	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
38496.1.1	BRNHS-0070(84)	PE
38496.2.1	BRNHS-0070(84)	R/W & UTIL.

LOCATION: BRIDGE NO. 33 OVER THE NORTH RIVER ON US 70

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

NAD 83/
NSRS 2007



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:

GRAPHIC SCALES

PLANS: 50 25 0 50 100
PROFILE (HORIZONTAL): 50 25 0 50 100
PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2015 = 10,600
ADT 2035 = 14,600
DHV = 10 %
D = 55 %
T = 4 %*
V = 60 MPH
*(TTST 1% + DUAL 3%)
FUNC CLASS =
RURAL ARTERIAL
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4722B = 0.416 MILES
LENGTH STRUCTURE TIP PROJECT B-4722B = 0.256 MILES
TOTAL LENGTH OF TIP PROJECT B-4722B = 0.672 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 30, 2013

LETTING DATE:
APRIL 21, 2015

GARY R. LOVERING, PE
PROJECT ENGINEER

SUSAN C. LANCASTER, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

30-APR-2013 15:45
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04/16/11

PROJECT REFERENCE NO.	SHEET NO.
B-4722B	1-B

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 — SS
- 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.

PROJECT REFERENCE NO.	SHEET NO.
B-4722B	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

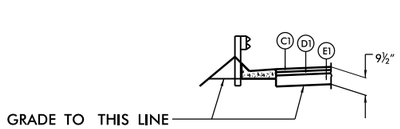
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE

FINAL PAVEMENT DESIGN

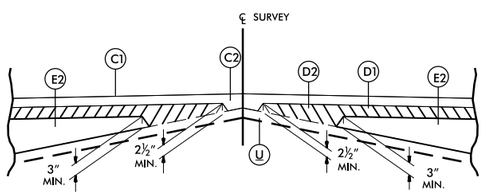
C1	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2″ IN DEPTH.
D1	PROP. APPROX. 2½″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½″ IN DEPTH OR GREATER THAN 4″ IN DEPTH.
E1	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 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.
J	6″ AGGREGRATE BASE COURSE.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING)

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

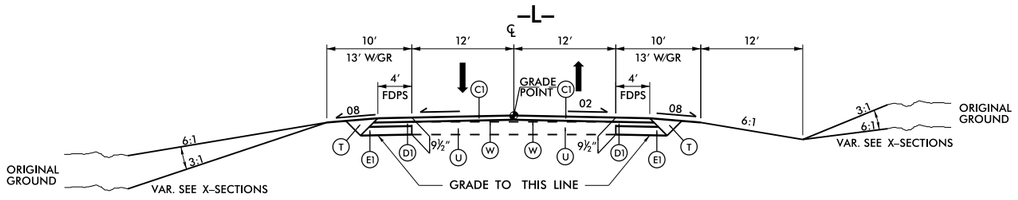


DETAIL SHOWING SHOULDER BERM GUTTER ON TOP OF SUBGRADE

–L– STA. 39+50 TO –L– STA. 40+76 (LT)
–L– STA. 38+47 TO –L– STA. 40+76 (RT)
–L– STA. 54+74 TO –L– STA. 55+10 (LT)
–L– STA. 54+74 TO –L– STA. 55+80 (RT)



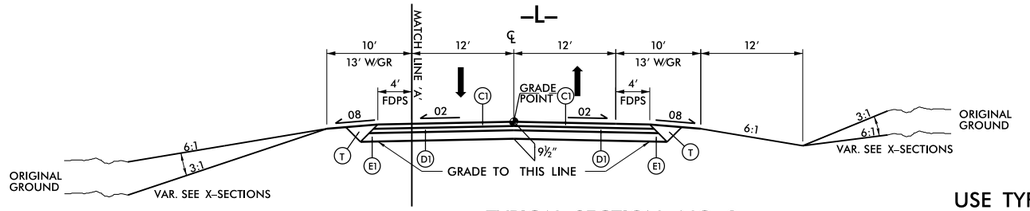
Detail Showing Method of Wedging



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:

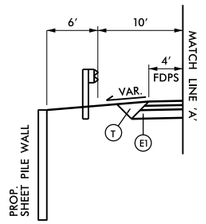
–L– STA. 31+00.00 TO –L– STA. 33+17.84
–L– STA. 63+94.30 TO –L– STA. 66+50.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AT THE FOLLOWING LOCATIONS:

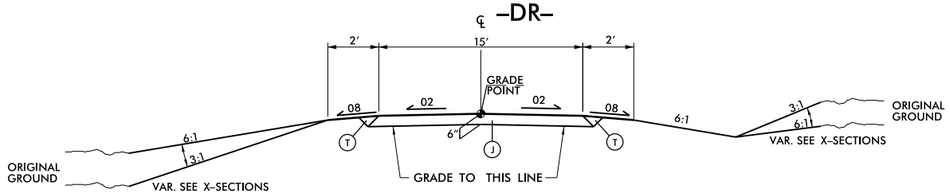
–L– STA. 33+17.84 TO –L– STA. 40+99.04 (BEGIN BRIDGE)
–L– STA. 54+50.96 (END BRIDGE) TO –L– STA. 63+94.30



TYPICAL SECTION NO. 2A

USE TYPICAL SECTION NO. 2A AT THE FOLLOWING LOCATIONS:

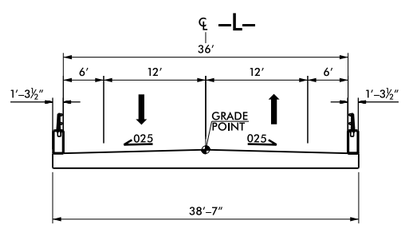
–L– STA. 34+00.00 TO –L– STA. 40+99.04 (BEGIN BRIDGE)
–L– STA. 54+50.96 (END BRIDGE) TO –L– STA. 64+00.00



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AT THE FOLLOWING LOCATION:

–DR– STA. 10+12.00 TO 11+00.00



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4 AT THE FOLLOWING LOCATION:

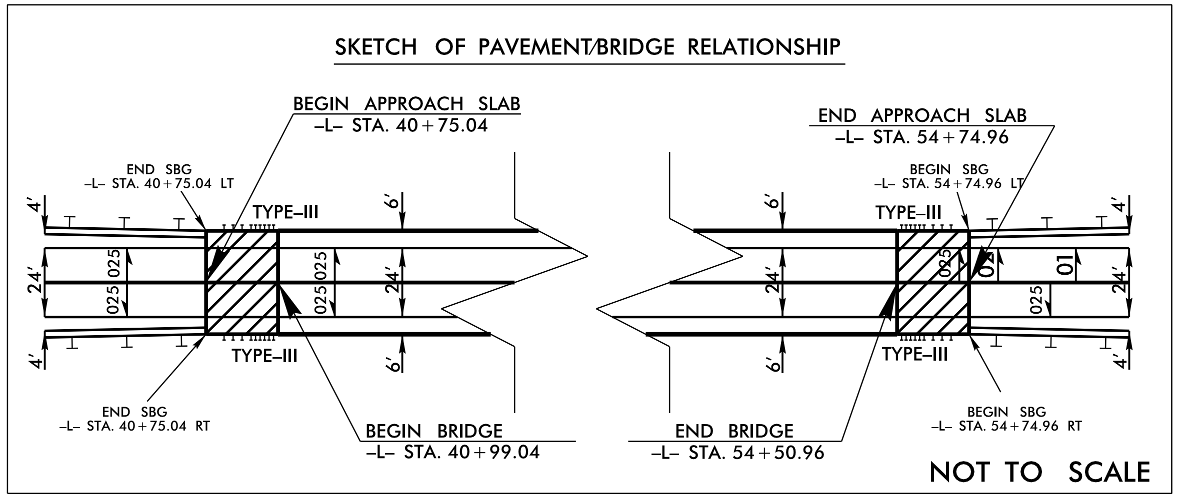
–L– STA. 40+99.04 (BEG. BRIDGE) TO –L– STA. 54+50.96 (END BRIDGE)

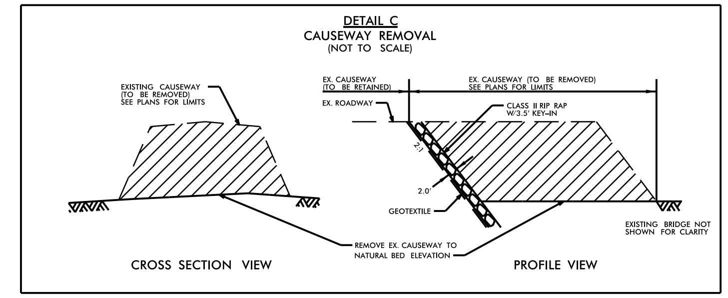
PROJECT REFERENCE NO.	SHEET NO.
B-4722B	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

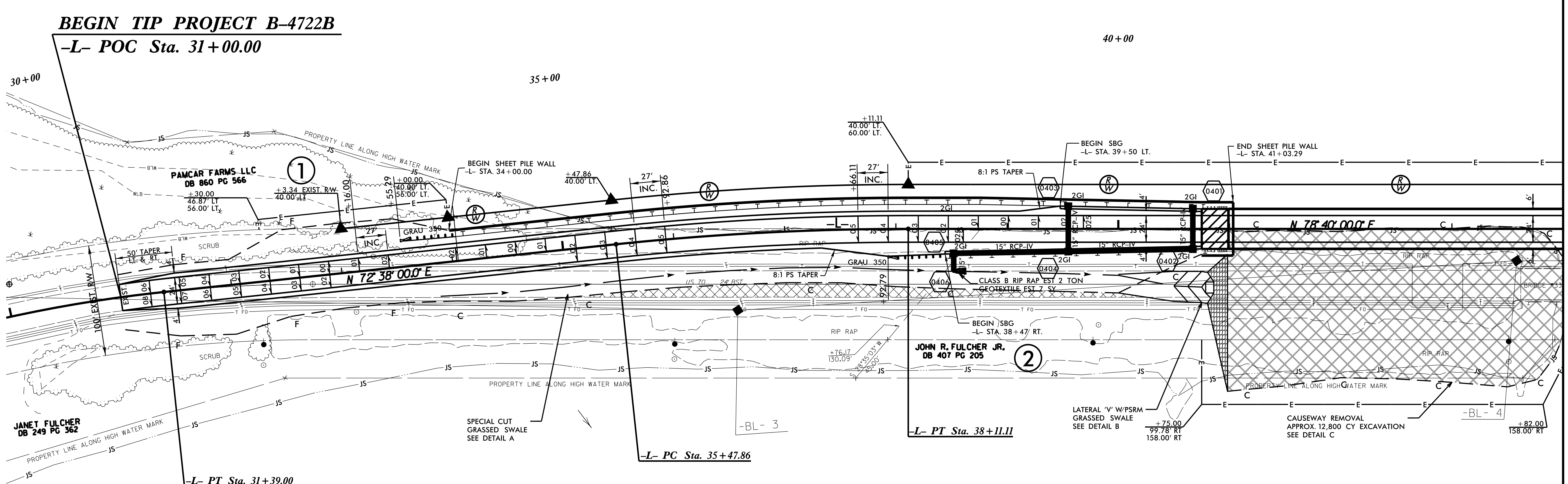
8/17/99

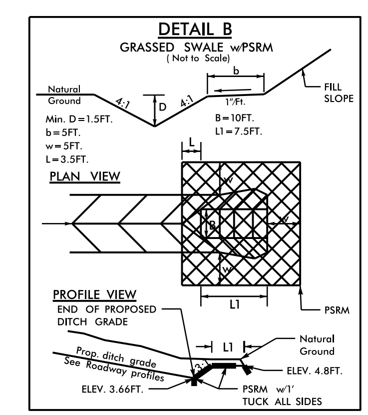




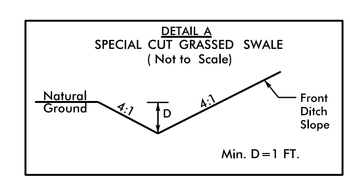
-L- STA. 40+80 TO 44+05 RT.

NAD 83/NSRS 2007





-L- STA. 40+50 TO 40+86 RT.



-L- STA. 33+86 TO 40+50 RT.

-L-

PI Sta 29+39.23	PI Sta 36+79.61
Δ = 18° 07' 56.7" (RT)	Δ = 6° 02' 00.0" (RT)
D = 4° 30' 00.5"	D = 2° 17' 30.6"
L = 402.93'	L = 263.25'
T = 203.16'	T = 131.75'
R = 1,273.20'	R = 2,500.00'

PAVEMENT REMOVAL

NOTES

1) FOR -L- PROFILE, SEE SHEET 7

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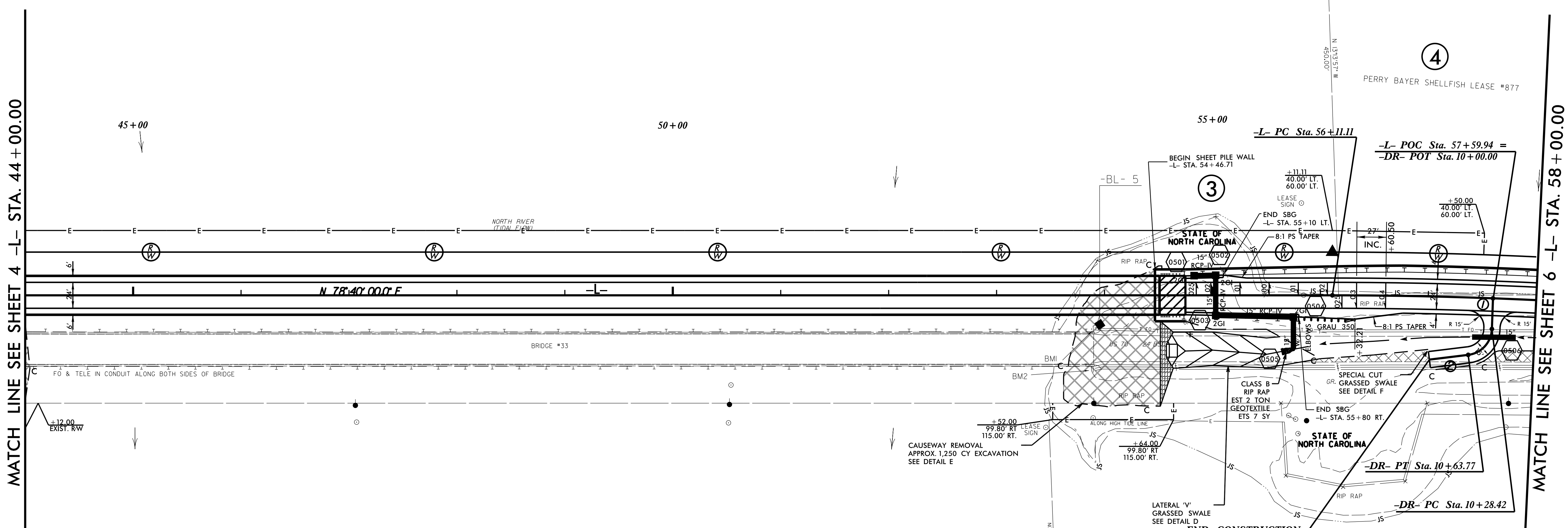
PROJECT REFERENCE NO.	SHEET NO.
B-4722B	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

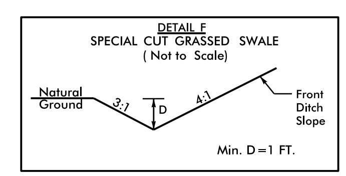
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

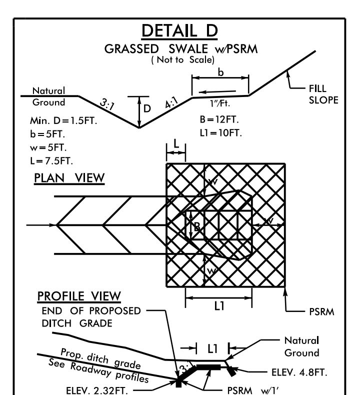
8/17/99



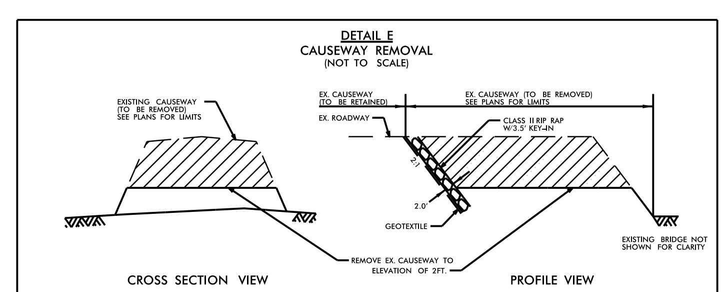
MATCH LINE SEE SHEET 4 -L- STA. 44+00.00
MATCH LINE SEE SHEET 6 -L- STA. 58+00.00
45+00
50+00
55+00
N 78°40' 00.0" E
-L-
NORTH RIVER (TIDAL FLOW)
BRIDGE #33
FO & TELE IN CONDUIT ALONG BOTH SIDES OF BRIDGE
+12.00 EXIST. R/W
-BL- 5
BEGIN SHEET PILE WALL -L- STA. 54+46.71
STATE OF NORTH CAROLINA
-L- PC Sta. 56+11.11
+11.11 40.00' LT. 60.00' LT.
END SBG -L- STA. 55+10 LT.
8:1 PS TAPER
-L- POC Sta. 57+59.94 = -DR- POT Sta. 10+00.00
+50.00 40.00' LT. 60.00' LT.
27' INC.
PERRY BAYER SHELLFISH LEASE #877
LEASE SIGN
RIP RAP
15" RCP-IV
GRAU 350
CLASS B RIP RAP EST 2 TON GEOTEXTILE ETS 7 SY
SPECIAL CUT GRASSED SWALE SEE DETAIL F
END SBG -L- STA. 55+80 RT.
+52.00 99.80' RT 115.00' RT.
+64.00 99.80' RT 115.00' RT.
CAUSEWAY REMOVAL APPROX. 1,250 CY EXCAVATION SEE DETAIL E
ALONG HIGH TIDE LINE
LATERAL 'V' GRASSED SWALE SEE DETAIL D
END CONSTRUCTION -DR- POT Sta. 11+00.00
-DR- PT Sta. 10+63.77
-DR- PC Sta. 10+28.42
WILBERT BRADLEY LAWERENCE SHELLFISH LEASE #877
BM1
BM2



-L- STA. 55+50 TO 64+50 RT.



-L- STA. 54+57 TO 55+50 RT.



-L- STA. 53+62 TO 54+64 RT.

-L-
PI Sta 57+24.59
Δ = 3°15' 00.0" (RT)
D = 1°25' 56.6"
L = 226.89'
T = 113.48'
R = 4,000.00'

-DR-
PI Sta 10+49.78
Δ = 81°01' 17.0" (RT)
D = 229°10' 59.2"
L = 35.35'
T = 21.36'
R = 25.00'
① S 9°18' 32.0" E
② S 71°42' 45.0" W

PAVEMENT REMOVAL

NOTES

1) FOR -L- PROFILE, SEE SHEET 7

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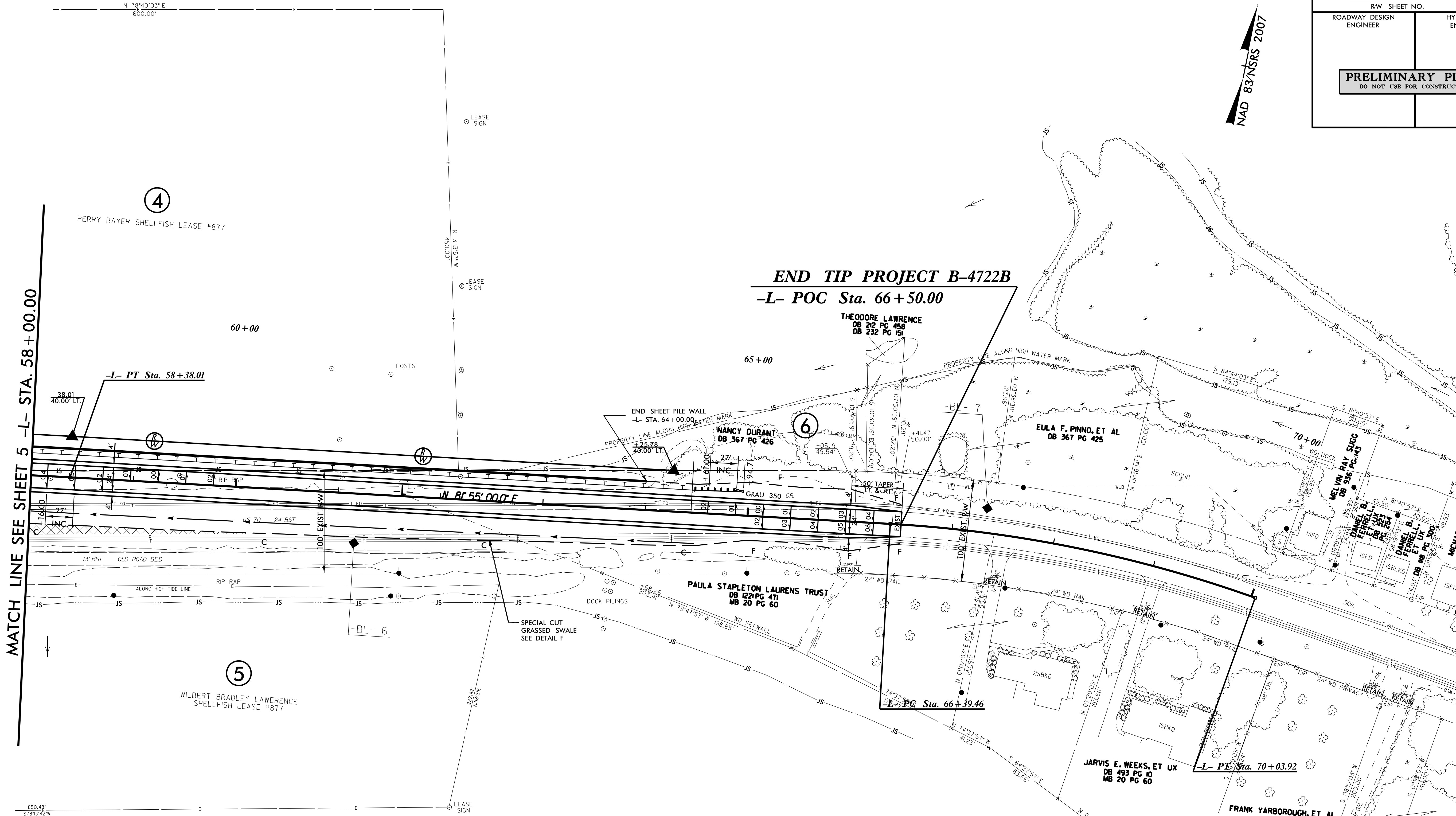
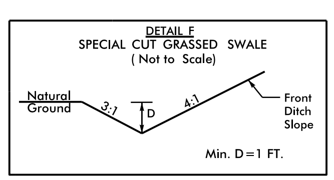
PROJECT REFERENCE NO.	SHEET NO.
B-4722B	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



NAD 83/NSRS 2007
MATCH LINE SEE SHEET 5 -L- STA. 58+00.00
END TIP PROJECT B-4722B
-L- POC Sta. 66+50.00
-L- PT Sta. 58+38.01
-L- PC Sta. 66+39.46
-L- PT Sta. 70+03.92
N 81°55'00.0" E
PERRY BAYER SHELLFISH LEASE #877
WILBERT BRADLEY LAWERENCE SHELLFISH LEASE #877
THEODORE LAWRENCE DB 212 PG 458 DB 232 PG 151
NANCY DURANT DB 367 PG 426
EULA F. PINNO, ET AL DB 367 PG 425
PAULA STAPLETON LAURENS TRUST DB 1221 PG 471 MB 20 PG 60
JARVIS E. WEEKS, ET UX DB 493 PG 10 MB 20 PG 60
FRANK YARBOROUGH, ET AL DB 918 PG 766 MB 20 PG 60
MELVIN RAY SUGG DB 936 PG 143
END SHEET PILE WALL -L- STA. 64+00.00
SPECIAL CUT GRASSED SWALE SEE DETAIL F
100' EXIST. RW
60+00
65+00
70+00
US 70 24' BST
13' BST OLD ROAD BED
RIP RAP
DOCK PILINGS
WD SEAWALL
24' WD RAIL
RETAIN
-BL- 6
-BL- 7
GRAU 350 GR.
50' TAPER LT. & RT.



-L- STA. 55+50 TO 64+50 RT.

-L-

PI Sta 57+24.59	PI Sta 68+22.94
Δ = 3°15' 00.0" (RT)	Δ = 16°24' 03.3" (RT)
D = 1°25' 56.6"	D = 4°30' 00.5"
L = 226.89'	L = 364.45'
T = 113.48'	T = 183.48'
R = 4,000.00'	R = 1,273.20'

PAVEMENT REMOVAL

NOTES

1) FOR -L- PROFILE, SEE SHEETS 7 AND 8

REVISIONS

8/17/99

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-4722B	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

RIGHT DITCH - - - - - - -
EXCAVATION

–L–

BEGIN GRADE
–L– STA. 31+00.00
ELEV. = 8.01'

PI = 33+18.00
EL = 9.38'
VC = 240'
K = 299
V = 60 MPH

(+)0.6284%
(+)0.1735%
(+)1.4078%
(–)0.3000%
(–)0.1735%
(+)1.2007%

PI = 39+00.00
EL = 8.37'
VC = 300'
K = 218
V = 60 MPH

BEGIN BRIDGE
–L– STA. 40+99.04

14.63

BEGIN SPECIAL CUT DITCH
–L– STA. 33+86.07 (RT)
ELEV. 6.43

SPECIAL CUT DITCH
–L– STA. 34+50.00 (RT)
ELEV. 5.53

END SPECIAL CUT DITCH
BEGIN LATERAL V DITCH
–L– STA. 40+50.00 (RT)
ELEV. 3.73

END LATERAL V DITCH
–L– STA. 40+75.00 (RT)
ELEV. 3.66

SHEET PILE
3.5' KEY-IN TYPICAL
CL II RIP RAP FOR CAUSEWAY REMOVAL
EX. CAUSEWAY REMOVAL SEE DETAIL C

BM# 1 NOS TIDAL BENCHMARK NO 1 1973
–L– STA. 34+14.65 25.06' RT
ELEV. = 9.30' N 386940 E 2717976

NOTES
1) FOR –L– PLAN VIEW, SEE SHEETS 4, 5 AND 6

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= _____	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 7.3	FT
BASE DISCHARGE	= _____	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 8.0	FT
OVERTOPPING DISCHARGE	= 21,000	CFS
OVERTOPPING FREQUENCY	= _____	YRS
OVERTOPPING ELEVATION	= 3.1	FT
DATE OF SURVEY	= 4/18/2012	FT
OHW ELEVATION AT DATE OF SURVEY	= 2.4	FT

PI = 47+82.00
EL = 18.96'
VC = 1,000'
K = 417
V = 60 MPH

15 @ 90' 54" PRESTRESSED CONCRETE GIRDER
CL = –L– STA. 47+75.00
CL ELEV. = 15.96'
SKEW = 90

END BRIDGE
–L– STA. 54+50.96

PI = 57+42.00
EL = 7.44'
VC = 300'
K = 232
V = 60 MPH

14.63

(+)1.2007%
(+)1.2000%
(+)0.6000%
(+)0.3000%
(–)1.2000%
(+)0.0958%

EXCAVATE TO ELEV. OF 2' SEE DETAIL E
CL II RIP RAP FOR CAUSEWAY REMOVAL
3.5' KEY-IN TYPICAL
SHEET PILE

BEGIN LATERAL V DITCH
–L– STA. 54+75.00 (RT)
ELEV. 2.32

LATERAL V DITCH
–L– STA. 55+00.00 (RT)
ELEV. 2.47

END LATERAL V DITCH
BEGIN SPECIAL CUT DITCH
–L– STA. 55+50.00 (RT)
ELEV. 2.62

SPECIAL CUT DITCH
–L– STA. 58+50.00 (RT)
ELEV. 3.32

7.58

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-4722B	8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

RIGHT DITCH - - - - - - -

-L-

PI = 65+90.00
EL = 8.25'
VC = 120'
K = 458
V = 60 MPH

END GRADE
-L- STA. 66+50.00
ELEV. = 8.15'

(+) 0.0035% (-) 0.0167%

(+) 0.3000%

END SPECIAL CUT DITCH
-L- STA. 64+50.00 (RT)
ELEV. 5.92

7.58

NOTES
1) FOR -L- PLAN VIEW, SEE SHEET 6

-DR-

BEGIN GRADE
-DR- STA. 10+12.00
ELEV. = 7.35'

END GRADE
-DR- STA. 11+00.00
ELEV. 7.20'

(-) 0.1749%

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