STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI
SECRETARY

April 20, 2012

U. S. Army Corps of Engineers
Regulatory Field Office
Post Office Box 1890
Wilmington, NC 28402-1890

ATTN: Mr. Ronnie Smith
NCDOT Coordinator

Dear Sir:

Subject: **Application for Section 404 Nationwide Permits 13, 23, and 33, and Section 401 Water Quality Certification,** for the Replacement of Bridge No. 23 on west bound US 74 (future I-74) over Gum Swamp Creek in Scotland County, North Carolina. TIP No. B-4817. Federal Aid Project No. BRNHS-74(71).

Debit $240.00 from WBS Element 38587.1.1.

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 23 over Gum Swamp Creek on US 74 (west bound lane only) in Scotland County. The project involves replacement of the existing 90-foot structure with a 135-foot long bridge in the same location. There will be 0.07 acre of permanent riparian wetland impacts due to fill and mechanized clearing, 22 feet of bank stabilization, and 0.02 acre of temporary stream impacts due to a temporary causeway on this project.

Please find enclosed the Pre-Construction Notification (PCN) form, preliminary jurisdictional determination, stormwater management plan, permit drawings, and design plans for the above referenced project. A Categorical Exclusion (CE) was completed for this project on May 14, 2010 and distributed shortly thereafter. Additional copies are available upon request.

The proposed let date for the project is December 18, 2012 with a review date of October 30, 2012. However, the let date may advance as additional funds become available.

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

TELEPHONE: 919-707-6100
FAX: 919-212-5785
WEBSITE: WWW.NCDOT.ORG

LOCATION:
CENTURY CENTER BUILDING B
1020 BIRCH RIDGE DR.
RALEIGH, NC 27610

A copy of this permit application will be posted on the NCDOT Website at: http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Amy James at aejames@ncdot.gov or (919) 707-6129.

Sincerely,

E. L. Lush

for Gregory J. Thorpe, Ph.D., 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: 13 23 33 or General Permit (GP) number:		
1c. Has the N WP 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:	Replacement of Bridge 23 over Gum Swamp Creek on west bound US 74
2b. County:	Scotland
2c. Nearest municipality / town:	Laurel Hill
2d. Subdivision name:	*not applicable*
2e. NCDOT only, T.I.P. or state project no:	B-4817

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 (fo r LLC if applicable):	*not applicable*
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 707-6129
3g. Fax no.:	(919) 212-5785
3h. Email address:	aejames@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: 34.799744 (DD.DDDDDD)	Longitude: - 79.532121 (-DD.DDDDDD)
1c. Property size:	5.4 acres	
2. Surface Waters		
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Gum Swamp Creek	
2b. Water Quality Classification of nearest receiving water:	C; Sw	
2c. River basin:	Lumber	
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: Land use in the project vicinity consists primarily of agricultural, timber, and forested land with low to mid-density residential development.		
3b. List the total estimated acreage of all existing wetlands on the property: 3.3		
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 1,120		
3d. Explain the purpose of the proposed project: To replace a structurally deficient and functionally obsolete bridge.		
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing a 90-foot bridge with a 135-foot, 3-span bridge on the existing alignment with an on-site detour. Standard road building equipment, such as trucks, dozers, and cranes will be used.		
4. Jurisdictional Determinations		
4a. Have jurisdictional wetland or stream determinations by the Corps or State been requested or obtained for this property / project (including all prior phases) in the past? Comments:	☒ Yes ☐ No ☐ Unknown	
4b. If the Corps made the jurisdictional determination, what type of determination was made?	☒ Preliminary ☐ Final	
4c. If yes, who delineated the jurisdictional areas? Name (if known): Ashley Cox	Agency/Consultant Company: NCDOT Other:	
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. October 18, 2010		
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 2 ☒ P ☐ T	Fill	Riverine Swamp	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.01
Site 2 ☒ P ☐ T	Mechanized Clearing	Riverine Swamp	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.06
				2g. **Total wetland impacts**	0.07 Permanent 0.0 Temporary

2h. Comments: Considered as one site in impact summary

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	Bank Stabilization	Gum Swamp Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	15	11
Site 3 ☐ P ☒ T	Causeway/ Bridge	Gum Swamp Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	15	66
Site 4 ☒ P ☐ T	Bank Stabilization	UT to Gum Swamp Creek	☐ PER ☒ INT	☒ Corps ☐ DWQ	3	11
					3h. **Total stream and tributary impacts**	22 Perm 66 Temp

3i. Comments: 44 square feet of impacts due to piers

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				
O2 ☐ P ☐ T				
O3 ☐ P ☐ T				
O4 ☐ P ☐ T				
			4f. Total open water impacts	X Permanent X Temporary

4g. Comments:

5. Pond or Lake Construction

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

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

5g. Comments:

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

6. Buffer Impacts (for DWQ)

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

6a. Project is in which protected basin?	☐ Neuse ☐ Catawba	☐ Tar-Pamlico ☐ Randleman	☐ Other:

6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
B1 ☐ P ☐ T			☐ 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.

The proposed bridge is 45 feet longer than the existing bridge and will be at approximately the same grade and alignment; no deck drains on bridge; the additional conveyance area created by lengthening the bridge will reduce bridge opening velocities.

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

NCDOT Best Management Practices for Bridge Demolition, Removal and Construction will be followed, as well as those for Sedimentation and Erosion Control; the shoulder berm and gutter system will drain to a preformed scour hole instead of Gum Swamp Creek.

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: Wetland impacts will occur on the edge of a much larger system and as such should not cause any change in wetland quality or function. Therefore, no compensatory mitigation is proposed.
2b. If yes, mitigation is required by (check all that apply):	☐ DWQ ☐ Corps
2c. If yes, which mitigat ion 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:	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: If required from 1a, see attached buffer permit drawings.	☐ 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.	
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
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? USFWS county list, field surveys in 2007 and 2010.		
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		

Dr. Gregory J. Thorpe, Ph D Applicant/Agent's Printed Name	E. L. Lusk Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	4.20.12 Date

Scanned & Sent to USACE on 10/21/10

ATTACHMENT

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): 10-14-10

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD: Ms. Erica McLamb, N.C. Department of Transportation, 1598 Mail Service Center, Raleigh, NC 27699-1598

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: (NCDOT/B-4817/ replacement of Bridge No. 23 over Gum Swamp Creek on US 74, Scotland County, Division 8) Wilmington - NCDOT B-4817 - SAW-2010-00848

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: (USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: NC County/parish/borough: Scotland City: Robbins

Center coordinates of site (lat/long in degree decimal format):
Lat. 34.8°N, Long. 79.53° W.

Universal Transverse Mercator:

Name of nearest waterbody: Gum Swamp Creek (SA)

Identify (estimate) amount of waters in the review area:

Non-wetland waters: 1120 linear feet, width (ft) 15 feet (SA Creek), 10 feet (SB), 3 feet (SC) and/or acres.

Cowardin Class: Riverine

Stream Flow: Perennial (SA, SB, portion of SC) Intermittent (portion of SC)

Wetlands: 3.3 acres.

Cowardin Class: PFO4 (WG), PFO1

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal:

Non-Tidal:

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date:

☒ Field Determination. Date(s): 10-14-10

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party

who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: NC DOT.

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.

- ☒ Office concurs with data sheets/delineation report.
- ☐ Office does not concur with data sheets/delineation report.

☐ Data sheets prepared by the Corps: .

☐ Corps navigable waters' study: .

☐ U.S. Geological Survey Hydrologic Atlas: .

- ☐ USGS NHD data.
- ☐ USGS 8 and 12 digit HUC maps.

☒ U.S. Geological Survey map(s). Cite scale & quad name: Gibson NC Quads 24000:1

☐ USDA Natural Resources Conservation Service Soil Survey. Citation:

☐ National wetlands inventory map(s). Cite name: .

☐ State/Local wetland inventory map(s): .

☐ FEMA/FIRM maps: .

☐ 100-year Floodplain Elevation is: (Nation al Geodectic Vertical Datum of 1929)

☐ Photographs: ☐ Aerial (Name & Date): .
or ☐ Other (Name & Date): .

☐ Previous determination(s). File no. and date of response letter: .

☒ Other information (please specify): NCDOT LIDAR

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

10/18/10

Signature and date of
Regulatory Project Manager
(REQUIRED)

10/21/10

Signature and date of
person requesting preliminary JD
(REQUIRED, unless obtaining
the signature is impracticable)

Site number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
SA	34.8	-79.53	Riverine	485 linear feet	B, Sw
SB	34.8	-79.53	Riverine	425 linear feet	B, Sw
SC	34.8	-79.53	Riverine	210 linear feet	B, Sw
WA	34.8	-79.53	PFO1A	0.2 ac	Wetland
WB	34.8	-79.53	PFO1C	0.48 ac	Wetland
WC	34.8	-79.53	PFO1C	0.06 ac	Wetland
WD	34.8	-79.53	PSS1H	0.01 ac	Wetland
WE	34.8	-79.53	PFO1C	0.78 ac	Wetland
WF	34.8	-79.53	PFO1C	0.23 ac	Wetland
~~WG~~	~~34.8~~	~~-79.53~~	~~PFO4A~~	~~0.14 ac~~	~~Wetland~~
WH	34.8	-79.53	PFO1F	0.34 ac	Wetland
WI	34.8	-79.53	PFO1F	0.88 ac	Wetland
WJ	34.8	-79.53	PFO1A	0.36 ac	Wetland

North Carolina Department of Transportation
Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR LINEAR ROADWAY PROJECTS

(Version 1.2; Released September 2011)

Project/TIP No.: B-4817 **County(ies):** Scotland

General Project Information

Project No.:	B-4817	**Project Type:**	Bridge Replacement	**Date:**	2/22/2012
NCDOT Contact:	Bill Elam	**Contractor / Designer:**			
Address:	1020 Birch Ridge Road Raleigh NC 27610	**Address:**			
Phone:	919-707-6718	**Phone:**			
Email:	belam@ncdot.gov	**Email:**			
City/Town:	Ida Mills	**County(ies):**	Scotland		
River Basin(s):	Lumber	**CAMA County?**	No		
Primary Receiving Water:	Gum Swamp Creek	**NCDWQ Stream Index No.:**	14-32-(12)		
NCDWQ Surface Water Classification for Primary Receiving Water	**Primary:**	Class C	Class B		
	Supplemental:	Swamp Waters (Sw)			
Other Stream Classification:					
303(d) Impairments:	None				
Buffer Rules in Effect	N/A				

Project Description

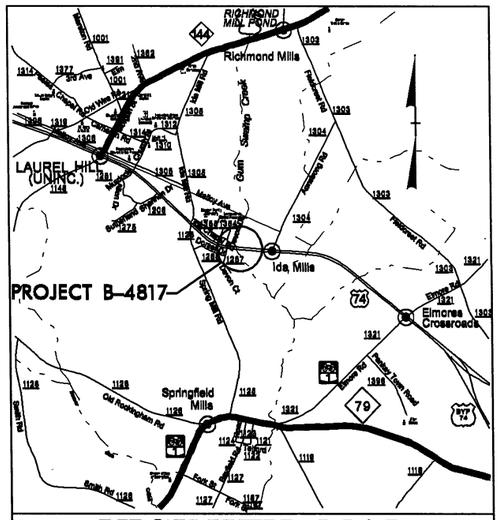
Project Length (lin. Miles or feet):	0.222 miles	**Surrounding Land Use:**	Rural Farmland with Flat terrain and Sandy Soils

	Proposed Project	Existing Site
Project Built-Upon Area (ac.)	0.80 ac.	0.60 ac.
Typical Cross Section Description:	Two 12' lanes with 12' outside paved shoulder and 4' inside paved shoulder	
Average Daily Traffic (veh/hr/day):	Design/Future: 45400	Existing: 27000

General Project Narrative:

This project involves the replacement of the west bound lane bridge of US 74. The project is on existing location. The project crosses Gum Swamp Creek. A preformed scour hole was used at Station 19+80 -L- Lt. Deck drainage was used, but not over the creek. There is a grass median with side slopes of 4:1 or flatter. Other ditches were very steep and had to be stabliized with rip rap. Gum Swamp Creek is Class C above the bridge and Class B below the bridge. The proposed 3 @ 45 ft 36" girder bridge (length = 105 ft) replaces the existing 2 @ 45 ft (length = 90 ft). The additional conveyance area provided (700 sq. ft. proposed vs 610 sq. ft existing) will reduce the bridge opening velocities.

References



3/20/2012
ameadows
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$$$$$SYSTIME$$$$$
$$$$$$$$$$$DGN$$$$$$$$$$$$$$
$$$USERNAME$$$$

09/08/99

TIP PROJECT: B-4817

CONTRACT:

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4817	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
38587.1.1	BRNHS-74(71)	PE
38587.2.1	BRNHS-74(71)	R/W & UTILITIES
38587.3.1	BRNHS-74(71)	CONST.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SCOTLAND COUNTY

LOCATION: BRIDGE NO. 23 ON US 74 (FUTURE I-74) WBL OVER GUM SWAMP CREEK

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

VICINITY MAP

WETLAND AND SURFACE WATER IMPACTS PERMIT

Permit Drawing
Sheet 1 of 9

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2012 = 27000
ADT 2035 = 45400
DHV = 10 %
D = 60 %
T = 20 % *
V = 60 MPH
V_{DET} = 40 MPH

*TTST=17% DUAL=3%
FUNC CLASS = PRINCIPAL ARTERIAL
"STATEWIDE TIER"

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4817 = 0.196 MILES
LENGTH STRUCTURE TIP PROJECT B-4817 = 0.026 MILES
TOTAL LENGTH OF TIP PROJECT B-4817 = 0.222 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 30, 2011

LETTING DATE:
DECEMBER 18, 2012

JAMES A. SPEER, PE
PROJECT ENGINEER

DANIEL W. GARDNER, JR., PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

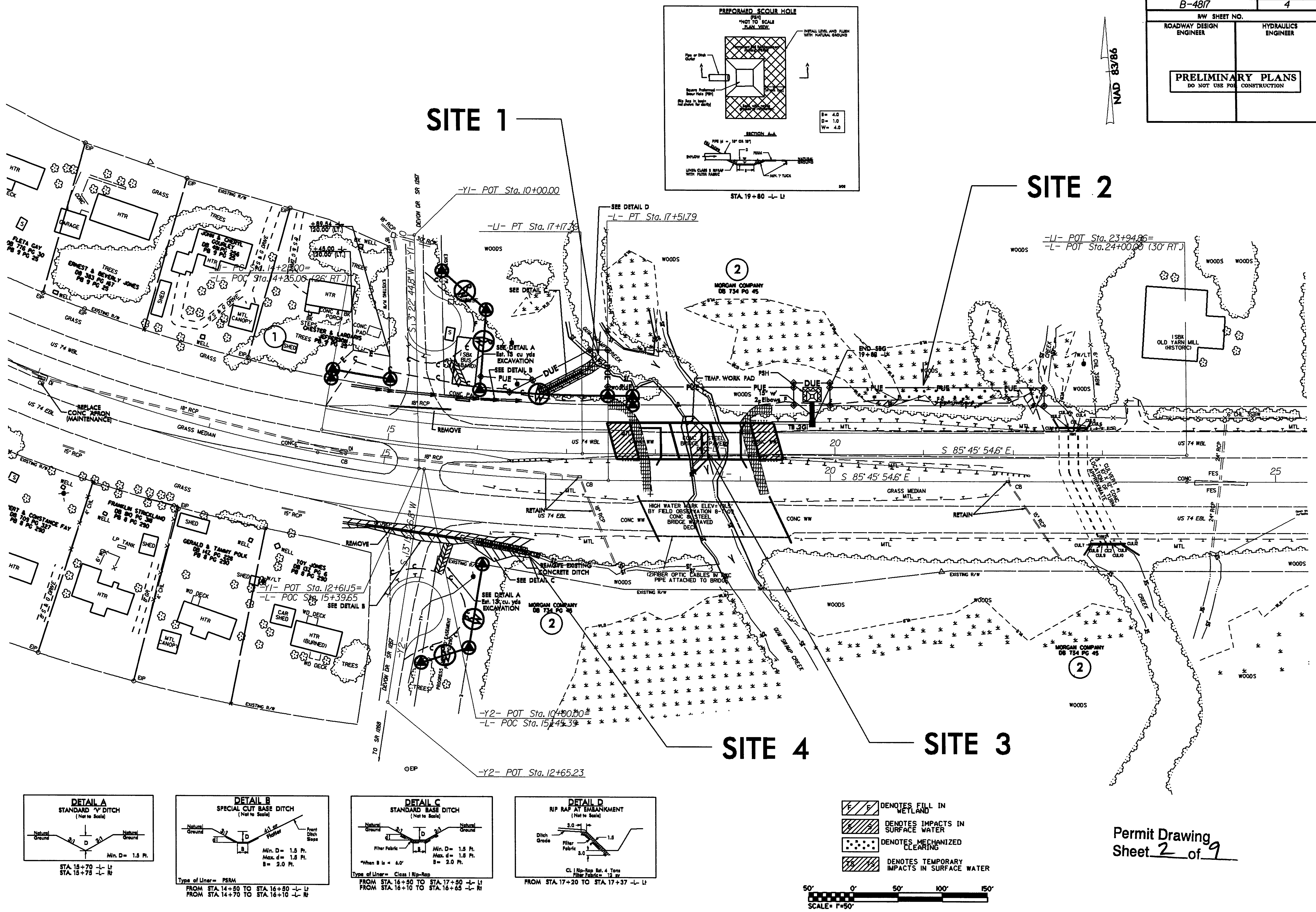
SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

SIGNATURE: P.E.
STATE HIGHWAY DESIGN ENGINEER

PROJECT REFERENCE NO.	SHEET NO.
B-4817	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



NAD 83/86
PREFORMED SCOUR HOLE
STA. 19+80 -L- Lt
SITE 1
SITE 2
SITE 3
SITE 4
-Y1- POT Sta. 10+00.00
-L1- PT Sta. 17+17.39
SEE DETAIL D
-L- PT Sta. 17+51.79
-L1- POT Sta. 23+94.86=
-L- POT Sta. 24+00.00 (30' RT)
MORGAN COMPANY
DB 734 PG 45
1SBK
OLD YARN MILL
(HISTORIC)
-L1- PC Sta. 14+25.00=
-L- POC Sta. 14+25.00 (26' RT)
SEE DETAIL A
SEE DETAIL B
SEE DETAIL C
TEMP. WORK PAD
US 74 WBL
US 74 EBL
GRASS MEDIAN
S 85° 45' 54.6" E
HIGH WATER MARK ELEV.
BY FIELD OBSERVATION
CONC & STEEL
BRIDGE W/PAVED
DECK
REMOVE EXISTING
CONCRETE DITCH
(2) FIBER OPTIC CABLES IN PVC
PIPE ATTACHED TO BRIDGE
-Y1- POT Sta. 12+61.15=
-L- POC Sta. 15+39.65
-Y2- POT Sta. 10+00.00=
-L- POC Sta. 15+45.39
-Y2- POT Sta. 12+65.23
GUM SWAMP CREEK
DEVON DR SR 1267
DETAIL A
STANDARD 'V' DITCH
(Not to Scale)
Min. D= 1.5 Ft.
STA. 15+70 -L- Lt
STA. 15+75 -L- Rt
DETAIL B
SPECIAL CUT BASE DITCH
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
Type of Liner= PSRM
FROM STA. 14+50 TO STA. 16+50 -L- Lt
FROM STA. 14+70 TO STA. 16+10 -L- Rt
DETAIL C
STANDARD BASE DITCH
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
Type of Liner= Class I Rip-Rap
FROM STA. 16+50 TO STA. 17+50 -L- Lt
FROM STA. 16+10 TO STA. 16+65 -L- Rt
DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
FROM STA. 17+20 TO STA. 17+37 -L- Lt
DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
SCALE= 1"=50'

Permit Drawing
Sheet 2 of 9

5/14/99

4/2/2012
ameadows
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$$$$SYSTIME$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-4817	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/86

SITE 1

SITE 2

SITE 3

SITE 4

PREFORMED SCOUR HOLE
PSH
*NOT TO SCALE
PLAN VIEW
SECTION A-A
B= 4.0
D= 1.0
W= 4.0
STA. 19+80 -L- Lt

-Y1- POT Sta. 10+00.00
-L- PT Sta. 17+17.76
SEE DETAIL D
-L- PT Sta. 17+51.78
-Y1- POT Sta. 14+25.00=
-L- POT Sta. 14+25.06 (26' RT)
-Y1- POT Sta. 12+61.15=
-L- POC Sta. 15+39.65
-Y2- POT Sta. 10+80.00=
-L- POC Sta. 15+45.39=
-Y2- POT Sta. 12+65.23
-Y1- POT Sta. 23+94.86=
-L- POT Sta. 24+00.00 (30' RT)

S 13° 22' 44.8" W
S 85° 45' 54.6" E
20
25

SEE DETAIL A
Est. 13 cu yds
EXCAVATION
SEE DETAIL B
SEE DETAIL C
DUE
PUE
REMOVE
REMOVE EXISTING CONCRETE DITCH
REMP. WORK PAD
RETAIN
US 74 WBL
US 74 EBL
DEVON DR SR 1858
TO SR 1858
EXISTING R/W
GRASS MEDIAN
MTL
CONC WW
BRIDGE APPROACH SLAB
HIGH WATER MARK ELEV= 1181.1' (BY FIELD OBSERVATION) 8-1 YDS CONC. ON STEEL BRIDGE W/ PAVED DECK
42" RUBBER GATIC CABLES IN PVC PIPE ATTACHED TO BRIDGE
SILVA CREEK
1 SBK OLD YARN MILL (HISTORIC)
MORGAN COMPANY DB 734 PG 45
BEGIN SBG 19+88 -L-
END SBG 19+88 -L-
REPLACE CONC APRON (MAINTENANCE)
ERNEST & BEVERLY JONES DB 363 PG 187 PB 9 PG 25
JOHN & CHERYL CONNELEY DB 4911 PG 336 PB 9 PG 25
FRANKLIN STRICKLAND DB 850 PG 98 PB 8 PG 250
GERALD TAMMY POLK DB 1011 PG 228 PB 8 PG 250
TOY JONES DB 1011 PG 228 PB 8 PG 250
VERT & CONSTANCE FAY DB 1006 PG 327 PB 8 PG 250
DESTA GAY DB 759 PG 30 PB 9 PG 29
CHESTER & LAURA MAYS DB 1 PG 29
HTR
GARAGE
SHED
WELL
LP TANK
CONC & BR PORCH
MTL CANOPY
WD DECK
CAR SHED
HTR (BURNED)
TREES
WOODS
GRASS
EXISTING R/W
EIP
EOP
EOA
EOW
EOG
CONC PAD
CONC DI
CB
FES
RETAIN
18" RCP
15" RCP
24" RCP
SILT & DEBRIS FENCE
PROPOSED EASEMENT

DETAIL A
STANDARD "V" DITCH
(Not to Scale)
Natural Ground
3:1
2:1
D
2.0
Min. D= 1.5 Ft.
STA 15+70 -L- Lt
STA 15+75 -L- Rt

DETAIL B
SPECIAL CUT BASE DITCH
(Not to Scale)
Front Ditch Slope
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
Type of Liner= PERM
FROM STA 14+50 TO STA 16+50 -L- Lt
FROM STA 14+70 TO STA 16+10 -L- Rt

DETAIL C
STANDARD BASE DITCH
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
*When B is < 4.0'
Type of Liner= Class I Rip-Rap
FROM STA 16+50 TO STA 17+50 -L- Lt
FROM STA 16+10 TO STA 16+65 -L- Rt

DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
Filter Fabric
3.0
1.5
1
3.0
Cl. I Rip-Rap Ext. 4 Tons
Filter Fabric= 12' W
FROM STA 17+20 TO STA 17+37 -L- Lt

F/F DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES MECHANIZED CLEARING
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

50' 0' 50' 100' 150'
SCALE: 1"=50'

Permit Drawing
Sheet 3 of 9

3/26/2012
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PROJECT REFERENCE NO.	SHEET NO.
B-4817	4B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 4 of 9

8/17/99

REVISIONS

3/26/2012
bdsm
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$$$$SYSTIME$$$$
$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

F.A. PROJECT NO BRNHS-74(71)

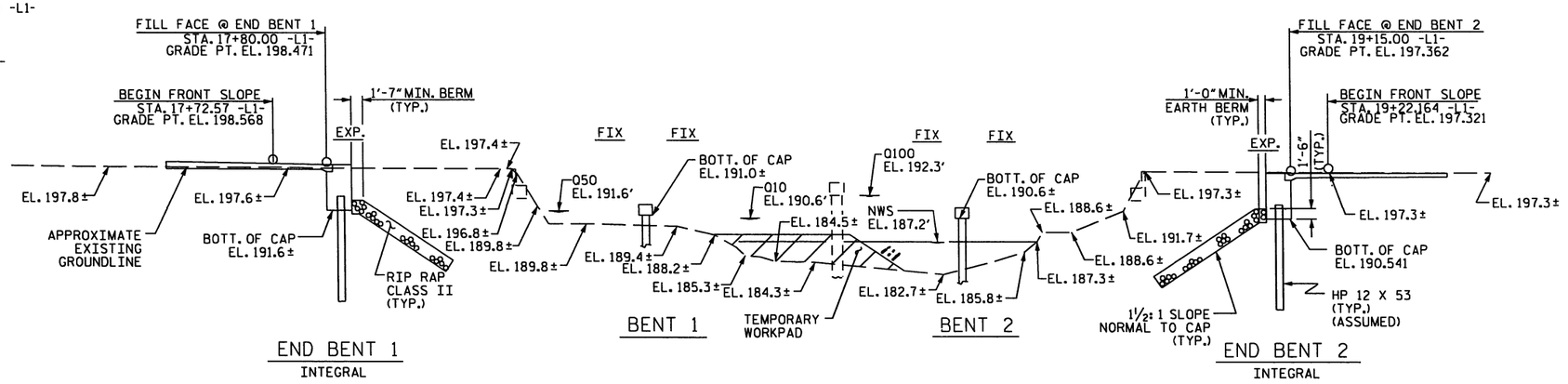
GRADE DATA

-3.8087% △ -0.5762%

PI STA. 16+55.00 -L1-
EL. 198.86'
VC = 440'

17+50 | 18+00 | 18+50 | 19+00

210 | 200 | 190 | 180



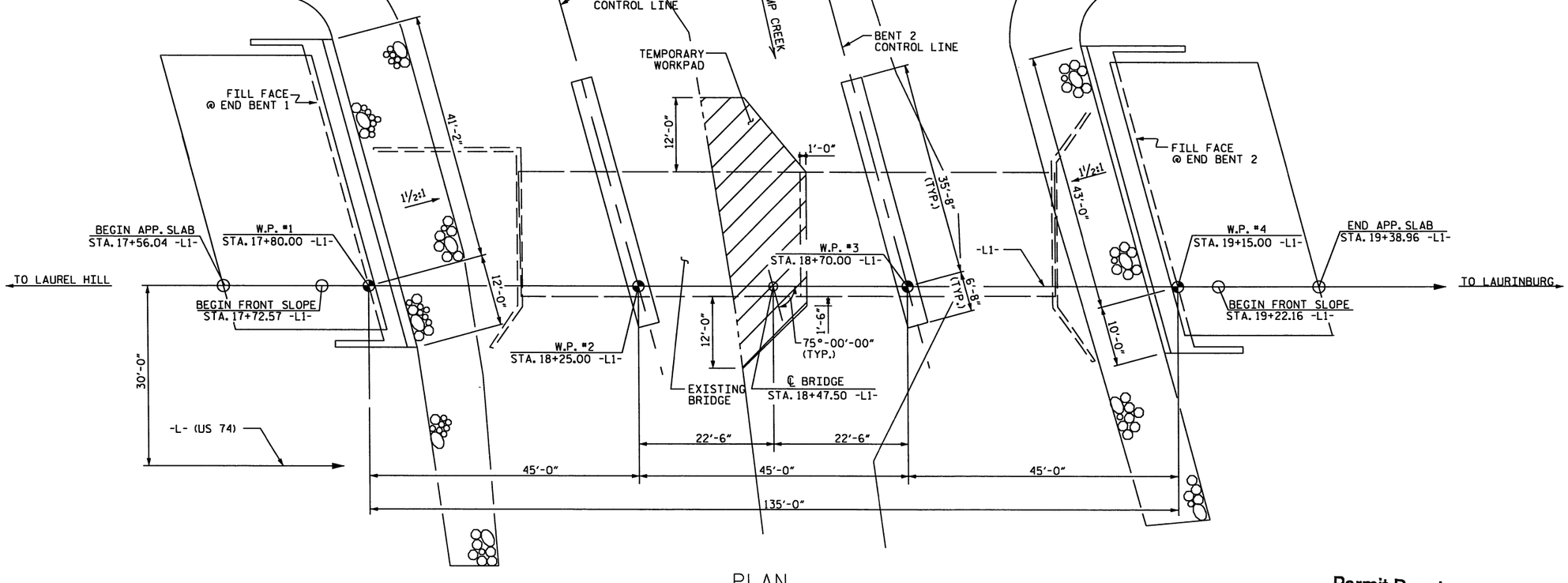
SECTION ALONG -L1-

SECTION TAKEN AT RIGHT ANGLES TO BENTS AND END BENTS

HORIZONTAL CURVE DATA -L-

PI STA. = 13+92.53
Δ = 23°-41'-43.3" (LT.)
D = 3°-15'-00.0"
L = 729.09'
T = 329.83'
R = 1,762.95'

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PLAN

FOR CLARITY, PILES ARE NOT SHOWN IN PLAN VIEW

Permit Drawing
Sheet 5 of 9

PROJECT NO. B-4817
SCOTLAND COUNTY
STATION: 18+47.50 -L1-

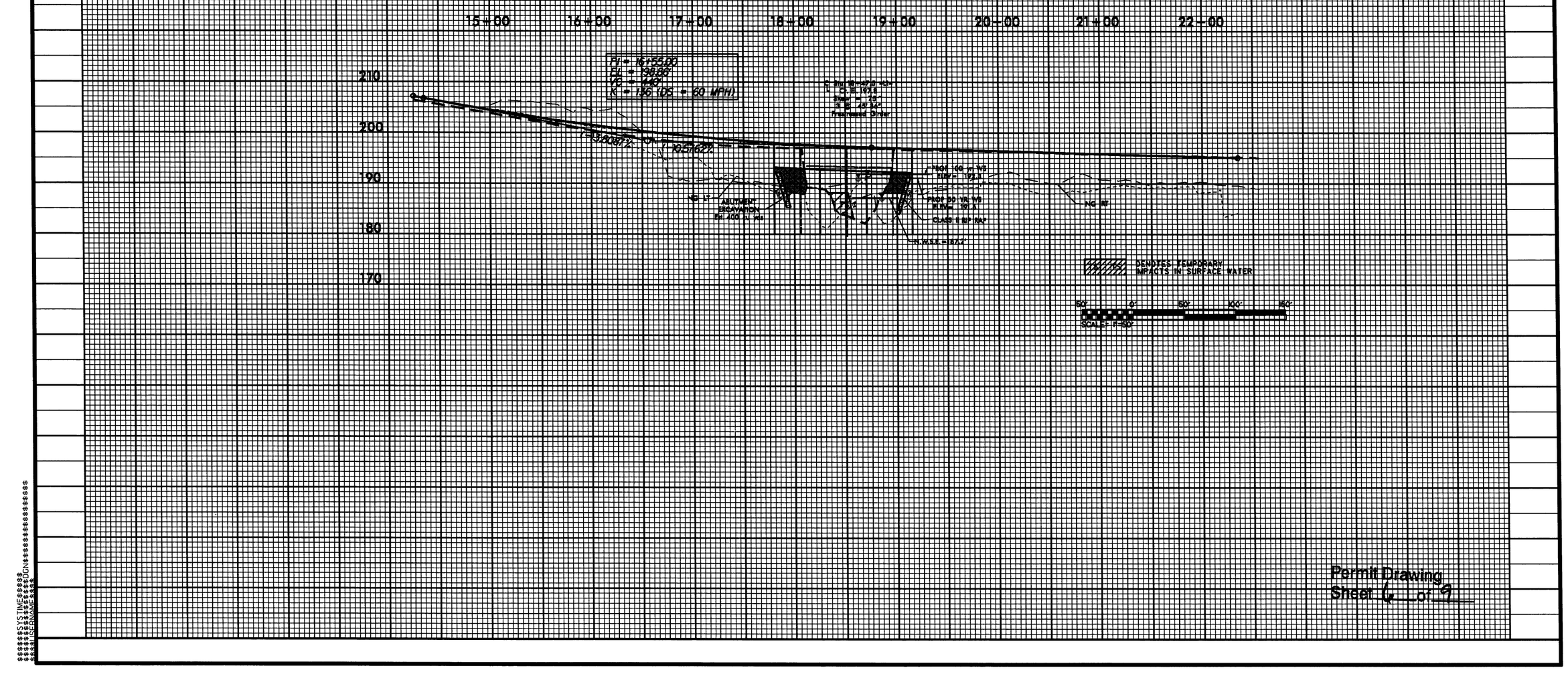
SHEET 1 OF 2 REPLACE BRIDGE #23

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
PRELIMINARY
GENERAL DRAWING
FOR BRIDGE OVER GUM SWAMP CREEK ON US 74 WBL BETWEEN SR 1267 AND SR 1304

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

DRAWN BY : HARISH SHAH DATE : 06-21-11
CHECKED BY : W. K. FISCHER DATE : 10/31/11

NC005



5/14/99

PROJECT REFERENCE NO.	SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 6 of 9

$$$$SYSTIME$$$$
$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-4817	PFL
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

15+00 16+00 17+00 18+00 19+00 20+00 21+00

210
200
190
180
170

PI = 16+55.00
EL = 198.86'
VC = 440'
K = 136 (DS = 60 MPH)

(-13.8087%

(-10.5762%

C L Stu 18+47.5 -L1-
Ct. El. 197.8
Skew = 75^
3 @ 45'-3.6"
Prestressed Girder

PROP 100 yr WS
ELEV = 192.3

PROP 50 YR. WS
ELEV = 191.6

NG LT

ABUTMENT
EXCAVATION
Est. 400 cu yds

NG RT

CLASS II RIP RAP

N.W.S.E. = 187.2'

DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

Permit Drawing
Sheet 7 of 9

3/20/2012
ameadows
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8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B-4817	A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
2	MORGAN COMPANY	P.O. BOX 1167 LAUREL HILL, NC 28351

NCDOT
DIVISION OF HIGHWAYS
SCOTLAND COUNTY
PROJECT: 38587.1.1 (B-4817)
IDA MILLS
BRG. #23 ON US 74
OVER GUM SWAMP CREEK

SHEET 8 OF 9 1/17/12

$$$$$$$$SYSTIME$$$$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$$$USERNAME$$$$

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
1	17+34-L1- LT	Bank Stablization						<0.01		11		
2	20+33-22+35-L1-LT	Fill	0.013			0.06						
3	18+52-L1-	Bridge/Causeway							0.024		66	
4	16+53-L1-RT	Bank Stablization						<0.01	<0.01	11		
TOTALS:			0.01			0.06		<0.01	0.02	22	66	

IMPACTS DUE TO PIERS = 44sf

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SCOTLAND COUNTY
WBS - 38587.1.1 (B-4817)

SHEET 9 of 9 03/26/12

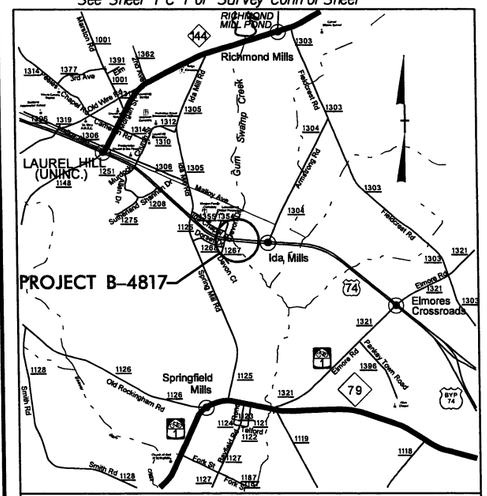
ATN Revised 3/31/05

09/08/99

TIP PROJECT: B-4817

CONTRACT:

See Sheet 1-A For Index of Sheet
See Sheet 1-B For Conventional Symbols
See Sheet 1-C For Survey Control Sheet



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SCOTLAND COUNTY

LOCATION: BRIDGE NO. 23 ON US 74 (FUTURE I-74) WBL OVER GUM SWAMP CREEK

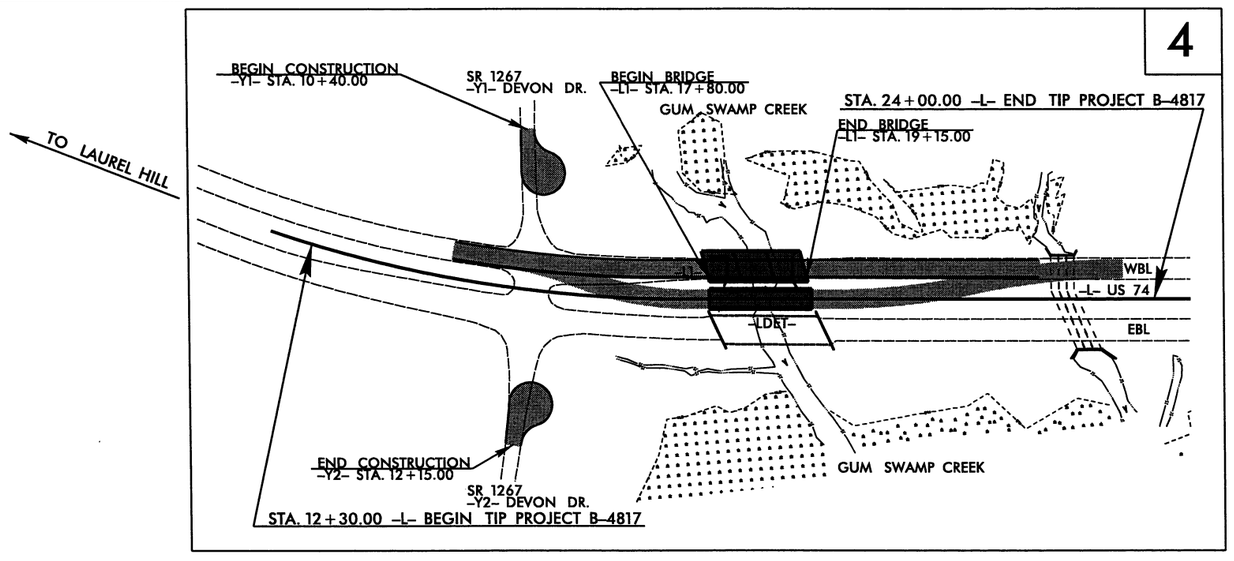
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4817	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
38587.1.1	BRNHS-74(71)	PE
38587.2.1	BRNHS-74(71)	R/W & UTILITIES
38587.3.1	BRNHS-74(71)	CONST.

NAD 83/86

4



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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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 2012 = 27000
ADT 2035 = 45400
DHV = 10 %
D = 60 %
T = 20 % *
V = 60 MPH
V_{DET} = 40 MPH

*TTST=17% DUAL=3%
FUNC CLASS=PRINCIPAL ARTERIAL "STATEWIDE TIER"

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4817 = 0.196 MILES
LENGTH STRUCTURE TIP PROJECT B-4817 = 0.026 MILES
TOTAL LENGTH OF TIP PROJECT B-4817 = 0.222 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: NOVEMBER 30, 2011

LETTING DATE: DECEMBER 18, 2012

JAMES A. SPEER, PE
PROJECT ENGINEER

DANIEL W. GARDNER, JR., PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

30-NOV-2011 08:23
R:\Roadway\Proj\b4817_rdy_tsh.dgn
$$$$USERNAME$$$$

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
B-4817	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 — 23
- 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
- Proposed Right of Way Line with Iron Pin and Cap Marker
- Proposed Right of Way Line with Concrete or Granite Marker
- 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
- Curb Cut Future Ramp — CCFR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

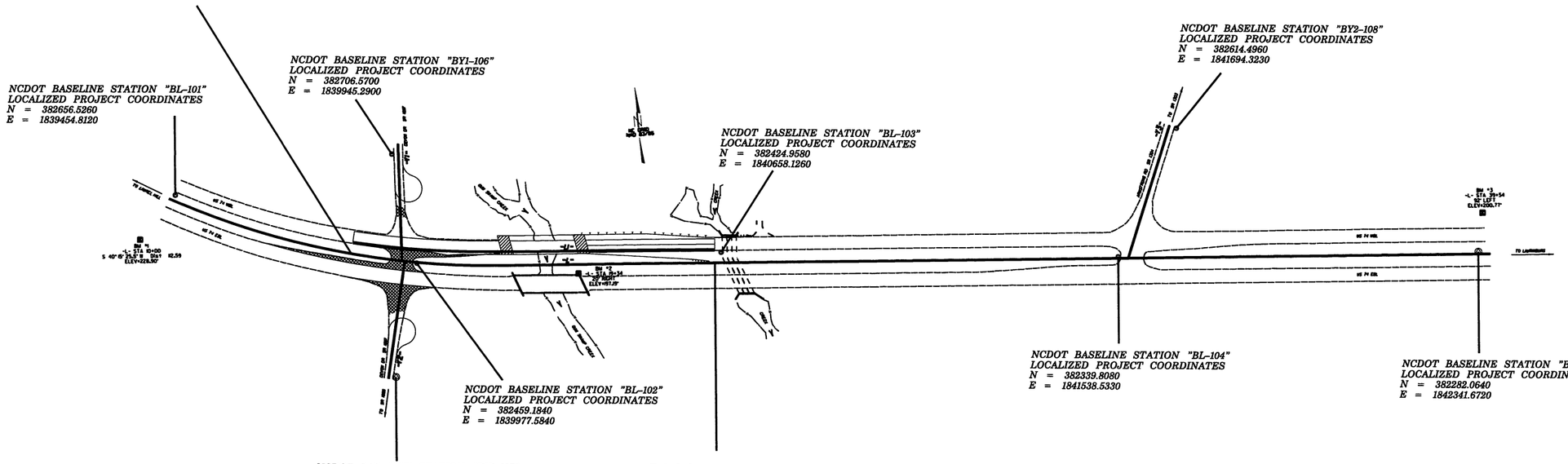
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole (S.U.E.*)
- Abandoned According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

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-4817	1-C
Location and Surveys	

SURVEY CONTROL SHEET B-4817

LOCALIZED PROJECT COORDINATES
-L- STA. 14+25.00 BEGIN TIP PROJECT B-4817
N = 382492.9781
E = 1839833.7948



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "BARTELLS"
WITH NAD 83/86 STATE PLANE GRID COORDINATES OF
NORTHING: 382428.805(ft) EASTING: 1839836.454(ft)
ELEVATION: 208.47(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99989764
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BARTELLS" TO -L- STATION 14+25.00 IS
N 02°22'22.2" W 64.228'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 29

NOTES:

1. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
   HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   B4817_LS_CONTROL.TXT

   SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

⊙ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
101	BL-101	382656.5260	1839454.8120	222.17	10+10.87	12.69 LT
102	BL-102	382459.1840	1839977.5840	201.54	15+72.65	1.99 RT
103	BL-103	382424.9580	1840658.1260	194.65	22+53.97	23.24 LT
104	BL-104	382339.8080	1841538.5330	195.86	31+38.26	3.33 LT
105	BL-105	382282.0640	1842341.6720	196.99	39+43.47	5.86 LT

BY1

POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
106	BY1-106	382706.5700	1839945.2900	205.32	10+22.21	14.31 RT
102	BL-102	382459.1840	1839977.5840	201.54	OUTSIDE PROJECT LIMITS	
107	BY1-107	382210.4880	1839907.3970	206.41	OUTSIDE PROJECT LIMITS	

BY2

POINT	DESC.	NORTH	EAST	ELEVATION	Y2 STATION	OFFSET
108	BY2-108	382614.4960	1841694.3230	198.45	OUTSIDE PROJECT LIMITS	
104	BL-104	382339.8080	1841538.5330	195.86	OUTSIDE PROJECT LIMITS	

BM1 ELEVATION = 228.98
N 382564 E 1839367
L STATION 10+00.00
S 48°15'25.58" W DIST 112.59
RR-SPIKE IN BASE OF 16" PINE TREE RT OF US 74

BM2 ELEVATION = 197.19
N 382485 E 1840336
L STATION 19+34.00 28 RIGHT
"X" MARK IN NE WW ON EAST BOUND BRIDGE ON US 74

BM3 ELEVATION = 200.77
N 382368 E 1842259
L STATION 39+54.00 92 LEFT
RR-SPIKE IN BASE OF 22" PINE TREE LT OF US 74

NOTE: DRAWING NOT TO SCALE

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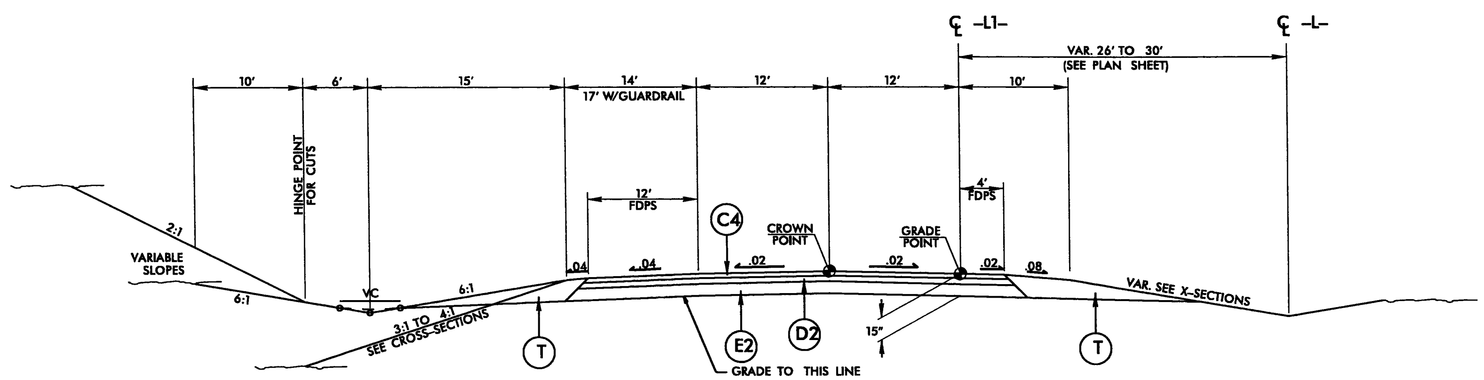
PROJECT REFERENCE NO.	SHEET NO.
B-4817	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

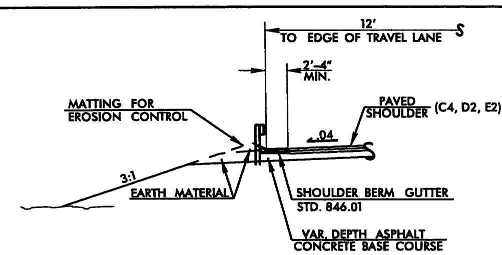
PAVEMENT SCHEDULE

C1	PROP. APPROX. 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.	E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
C2	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF THE TWO LAYERS.	E2	PROP. APPROX. 9" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	J	PROP. 8" AGGREGATE BASE COURSE
C4	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	T	EARTH MATERIAL
D1	PROP. APPROX. 2½" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
D2	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.	V	VARIABLE DEPTH MILLING, AS DIRECTED BY THE ENGINEER.

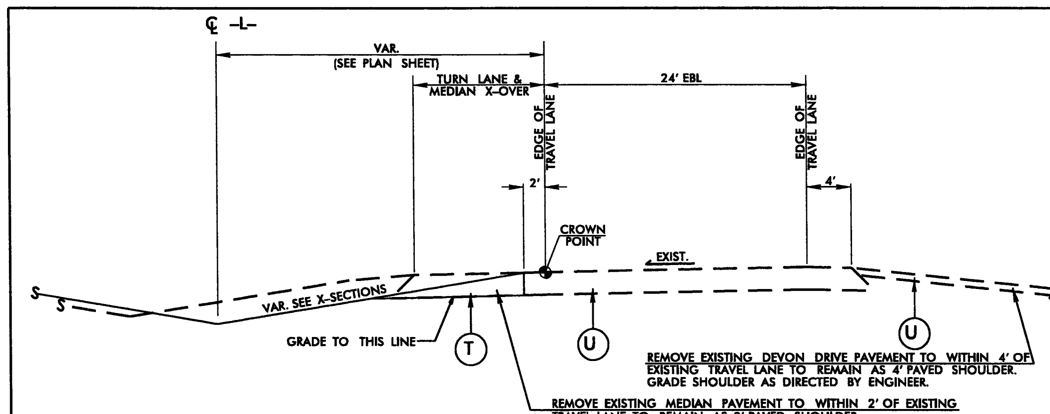


TYPICAL SECTION NO. 1

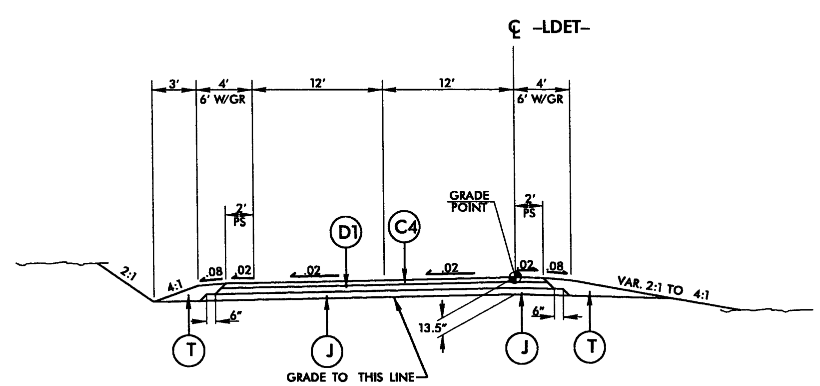
USE TYPICAL SECTION NO. 1 AS FOLLOWS
-L1- STA. 14+25.00 TO STA. 17+80.00 (BEGIN BRIDGE)
-L1- STA. 19+15.00 (END BRIDGE) TO STA. 22+34.86



USE IN CONJUNCTION WITH TYPICAL SECTION NO. 1
END OF APPROACH SLAB TO -L- STA. 19+82.00 LT.
NOTE: SEE STD. 846.04 FOR DI INSTALLATION IN SHOULDER BERM GUTTER
SEE TYPICAL SECTION FOR SHOULDER COMPOSITION



USE IN CONJUNCTION WITH TYPICAL SECTION NO. 1
-L- STA. 12+30.00+/- TO STA. 15+86.00+/- (EBL MED.)
-L- STA. 14+20.00+/- TO STA. 16+14.00+/- (EBL OUTSIDE)



TYPICAL SECTION NO. 2

NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 2
-LDET- STA. 10+00.00 TO STA. 11+32.73

USE TYPICAL SECTION NO. 2 AS FOLLOWS
-LDET- STA. 11+32.73 TO STA. 12+97.00+/- (BEGIN BRIDGE)
-LDET- STA. 14+37.00+/- (END BRIDGE) TO STA. 16+54.43

NOTE: TRANSITION FROM TYPICAL SECTION NO. 2 TO EXISTING
-LDET- STA. 16+54.43 TO STA. 18+68.19

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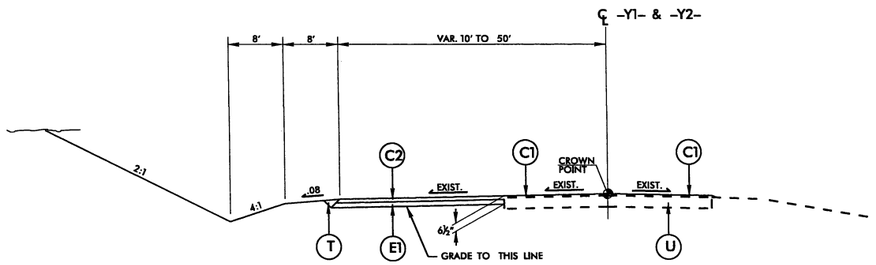
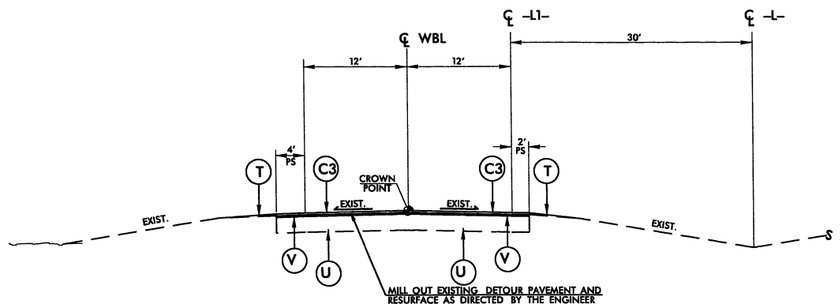


TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AS FOLLOWS
-Y1- STA. 10+40.00 TO STA. 11+30.00
-Y2- STA. 11+25.94 TO STA. 12+15.00



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4 AS FOLLOWS
-L1- STA. 22+34.86 TO STA. 23+49.73

PROJECT REFERENCE NO.	SHEET NO.
B-4817	2-A

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE

C1	1¼" TYPE SF9.5A
C2	2½" TYPE SF9.5A
C3	1½" TYPE S9.5C
C4	3" TYPE S9.5C
D1	2½" TYPE I19.0C
D2	3" TYPE I19.0C
E1	4" TYPE B25.0B
E2	9" TYPE B25.0C
J	8" AGGREGATE BASE COURSE
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	VARIABLE DEPTH MILLING

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-4817	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-	-LI-
PI Sta 13+92.53	PI Sta 15+71.78
Δ = 23° 41' 43.3" (LT)	Δ = 10° 06' 21.5" (LT)
D = 3° 15' 00.0"	D = 3° 27' 05.6"
L = 729.09'	L = 292.79'
T = 369.83'	T = 146.78'
R = 1,762.95'	R = 1,660.00'
	SE = .07
	RO = SEE PLANS

NAD 83/86

PREFORMED SCOUR HOLE (PSH)
"NOT TO SCALE"
PLAN VIEW

SECTION A-A

B= 4.0
D= 1.0
W= 4.0

STA. 19+80 -L- Lt

BEGIN PROJECT B-4817 -L- STA. 12+30.00

-BYI-106 POT 5+00.00 =
-YI- STA. 10+22.21 (14.31 RT.)
ELEV = 209.32'
REBAR & CAP

-YI- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-YI- STA. 10+40.00

-LI- PT Sta. 17+17.79

-L- PT Sta. 17+51.79

-L- PC Sta. 14+28.00=
-L- POC Sta. 14+25.00 (26' RT.)

GUARDRAIL BARRICADE

SEE DETAIL D

REMOVE EXISTING STRUCTURE

NOTE: MILL THE WBL DETOUR PAVING FROM -L1- STA. 22+34.86 TO STA. 23+49.73 AND RESURFACE BEFORE FINAL TRAFFIC PATTERN IS PLACED BACK ON THE WESTBOUND LANES. (SEE TYP. SECTION NO. 4)

-LI- POT Sta. 23+94.86=
-L- POT Sta. 24+00.00 (30' RT.)

END GRADE WBL
-LI- STA. 22+34.86

-BL-103 PINC 17+40.18=
-L- STA. 22+53.97 (23.24' LT.)
-T2- POT 6+12.25
ELEV=194.65'
REBAR & CAP

REPLACE CONC. APRON (MAINTENANCE)

BEGIN GRADE WBL
-LI- STA. 14+25.00

REMOVE MEDIAN CROSSOVER

RETAIN GUARDRAIL

REMOVE GUARDRAIL

REMOVE EXISTING CONCRETE DITCH

SEE DETAIL C

SEE DETAIL A
Est. 18 cu. yds EXCAVATION

SEE DETAIL B

GUARDRAIL BARRICADE

-YI- POT Sta. 12+61.15=
-L- POC Sta. 15+39.65

-BL-102 PINC 10+58.78 =
-BYI- PINC 7+49.48 =
-TI- POT 9+44.23 =
-L- STA. 15+72.65 (1.99' RT.)
ELEV=201.54'
REBAR & CAP SET

-Y2- POT Sta. 10+00.00
-L- POC Sta. 15+45.39

END CONSTRUCTION
-Y2- STA. 12+15.00

-BYI-107 POT 10+07.90 =
-Y2- STA. 12+58.84 (16.06 LT.)
ELEV = 206.41'
REBAR & CAP
-Y2- POT Sta. 12+65.23

HIGH WATER MARK ELEV= 196.5' BY FIELD OBSERVATION 8-1-09 BM #2 SEE SHEET 1-C ELEV=197.19'

12" FIBER OPTIC CABLES IN RNC PIPE ATTACHED TO BRIDGE

MORGAN COMPANY DB 734 PG 45

GUM SWAMP CREEK

OLD YARN MILL (HISTORIC)

-LI- PT Sta. 17+17.79

SBG = SHOULDER BERM GUTTER

S 85° 45' 54.6" E

END BRIDGE
-LI- STA. 19+15.00

END APPR. SLAB
-LI- STA. 19+38.96

BEGIN APPR. SLAB
-LI- STA. 17+56.04

BEGIN BRIDGE
-LI- STA. 17+80.00

(NTS)
SKETCH SHOWING BRIDGE/ROADWAY RELATIONSHIP

END MILLING AND RESURFACING
-LI- STA. 23+49.73

END PROJECT B-4817 -L- STA. 24+00.00

DETAIL A
STANDARD 'V' DITCH
(Not to Scale)
STA. 15+70 -L- Lt
STA. 15+75 -L- Rt

DETAIL B
SPECIAL CUT BASE DITCH
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
Type of Liner= PSRM
FROM STA. 14+50 TO STA. 16+50 -L- Lt
FROM STA. 14+70 TO STA. 16+10 -L- Rt

DETAIL C
STANDARD BASE DITCH
(Not to Scale)
Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
*When B is < 6.0'
Type of Liner= Class I Rip-Rap
FROM STA. 16+50 TO STA. 17+50 -L- Lt
FROM STA. 16+10 TO STA. 16+65 -L- Rt

DETAIL D
RIP RAP AT EMBANKMENT
(Not to Scale)
Cl. I Rip-Rap Est. 4 Tons
Filter Fabric= 12 sy
FROM STA. 17+20 TO STA. 17+37 -L- Lt

SEE SHEET 5 FOR -L- AND -LI- PROFILE
SEE SHEET 6 FOR -YI- AND -Y2- PROFILE
SEE SHEET S-1 THRU S-_ FOR STRUCTURE PLANS

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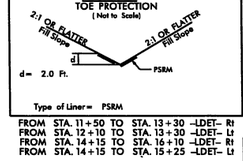
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-4817	4A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/86

DETAIL E
TOE PROTECTION
(Not to Scale)



d= 2.0 Ft.
Type of Liner= PSRM

FROM STA. 11+50 TO STA. 13+30 –LDET– Rt
FROM STA. 12+10 TO STA. 13+30 –LDET– Lt
FROM STA. 14+15 TO STA. 16+10 –LDET– Rt
FROM STA. 14+15 TO STA. 15+25 –LDET– Lt

–L–	–L1–
PI Sta 13+92.53	PI Sta 15+71.78
Δ = 23° 41' 43.3" (LT)	Δ = 10° 06' 21.5" (LT)
D = 3° 15' 00.0"	D = 3° 27' 05.6"
L = 729.09'	L = 292.79'
T = 369.83'	T = 146.78'
R = 1,762.95'	R = 1,660.00'
	SE = .01
	RO = SEE PLANS

–LDET–			
PI Sta 10+53.11	PI Sta 11+89.84	PI Sta 15+66.81	PI Sta 17+67.97
Δ = 13° 38' 27.7" (RT)	Δ = 21° 27' 29.8" (LT)	Δ = 12° 00' 22.6" (LT)	Δ = 12° 00' 22.6" (RT)
D = 12° 54' 16.0"	D = 12° 54' 16.0"	D = 5° 58' 05.9"	D = 5° 58' 05.9"
L = 105.71'	L = 166.29'	L = 201.17'	L = 201.17'
T = 53.11'	T = 84.13'	T = 100.95'	T = 100.95'
R = 444.00'	R = 444.00'	R = 960.00'	R = 960.00'
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS

$V_{DET.}$ = 40 MPH

NOTE: MILL THE WBL DETOUR PAVING FROM –L1– STA. 22+34.86 TO STA. 23+49.73 AND RESURFACE BEFORE FINAL TRAFFIC PATTERN IS PLACED BACK ON THE WESTBOUND LANES. (SEE TYP. SECTION NO. 4)

BEGIN PROJECT B–4817 –L– STA. 12+30.00

-BYI-106 POT 5+00.00 =
-YI- STA. 10+22.21 (14.31 RT.)
ELEV = 209.32'
REBAR & CAP

-YI- POT Sta. 10+00.00

-LI- PT Sta. 17+17.79

-L- PT Sta. 17+51.79

REMOVE EXISTING STRUCTURE

-YI- POT Sta. 23+94.86=
-L- POT Sta. 24+00.00 (30' RT.)

-BL-103 PINC 17+40.18=
-L- STA. 22+53.97 (23.24 LT.)
-T2- POT 6+12.25
ELEV=194.65'
REBAR & CAP

-LI- POT Sta. 10+28.00=
-L- POC Sta. 14+25.00 (26' RT.)

-L- PC Sta. 14+28.00=

BEGIN CONSTRUCTION
-LDET- PC Sta. 10+00.00=
-LI- POC Sta. 14+91.31
-L- POC Sta. 14+92.31

-YI- POT Sta. 12+61.15=
-L- POC Sta. 15+39.65

-LDET- PT Sta. 12+71.99

-LDET- PC Sta. 14+65.85

-LDET- PRC Sta. 11+05.71

-LDET- PRC Sta. 16+67.02

-BL-102 PINC 10+58.78 =
-BYI- PINC 7+49.48 =
-TI- POT 9+44.23 =
-L- STA. 15+72.65 (1.99' RT.)
ELEV=201.54'
REBAR & CAP, SET

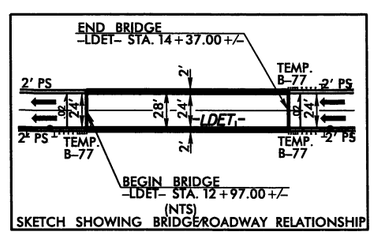
-Y2- POT Sta. 10+00.00=
-L- POC Sta. 15+45.39

-BYI-107 POT 10+07.90 =
-Y2- STA. 12+58.84 (16.06 LT.)
ELEV = 206.41'
REBAR & CAP

-Y2- POT Sta. 12+65.23

END CONSTRUCTION
-LDET- PT Sta. 18+68.19=
-LI- POT Sta. 23+49.73
-L- POT Sta. 23+54.87

END PROJECT B–4817 –L– STA. 24+00.00



(NTS)
SKETCH SHOWING BRIDGE/ROADWAY RELATIONSHIP

SEE SHEET 6 FOR –LDET– PROFILE

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-4817	5

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-

BEGIN GRADE WBL
-L- STA 14+25.00=
-L1- STA 14+25.00 (26 LT)
SEE -L1- PROFILE

END GRADE WBL
-L- STA 22+40.00=
-L1- STA 22+34.86 (30 LT)
SEE -L1- PROFILE

BM1 ELEVATION = 228.90
N 382564 E 1839367
-L- STATION 10+00
S 40^ 15' 25.50" W DIST 112.59
RR-SPIKE IN BASE OF 16" PINE TREE RT. OF US 74

BM2 ELEVATION = 197.19
N 382405 E 1840336
-L- STATION 19+34.00 20' RIGHT
"X" MARK IN NE WW ON EAST BOUND BRIDGE ON US 74

SEE SHEET 4 FOR PLAN VIEW

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 1900	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 191.6	FT
BASE DISCHARGE	= 2422	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 192.3	FT
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 195.0	FT
DATE OF SURVEY	= 08/07/09	
W.S.ELEVATION AT DATE OF SURVEY	= 187.2	FT

-L1-

PI = 16+55.00
EL = 198.86'
VC = 440'
K = 136 (DS = 60 MPH)

Sta. 18+47.5 -L1-
Cr. El. 197.8
Skew = 75°
3 @ 45'
36" Prestressed Girder

BEGIN STANDARD BASE DITCH
-L1- STA 14+26.00
EL = 200.80

BEGIN SPECIAL BASE DITCH
-L1- STA 15+50.00
EL = 198.00

END SPECIAL BASE DITCH
-L1- STA 16+25.00
EL = 198.40

END STANDARD BASE DITCH
-L1- STA 16+90.00
EL = 198.00

BEGIN SPECIAL BASE DITCH
-L1- STA 17+05.00
EL = 198.59

END STANDARD BASE DITCH
-L1- STA 17+20.00
EL = 198.58

BEGIN GRADE -L1- STA 14+26.00
EL = 201.67

CLASS II RIP RAP

ABUTMENT EXCAVATION
Est 400 cu Yds

END GRADE -L1- STA 22+34.86
EL = 195.57
BEGIN MILLING AND RESURFACING

END MILLING AND RESURFACING
-L- STA 23+49.78

SEE SHEET 4 FOR PLAN VIEW

30-NOV-2011 08:24
C:\projects\b4817_rdy_pf1.dgn
$$$$USERNAME$$$$

5/28/99

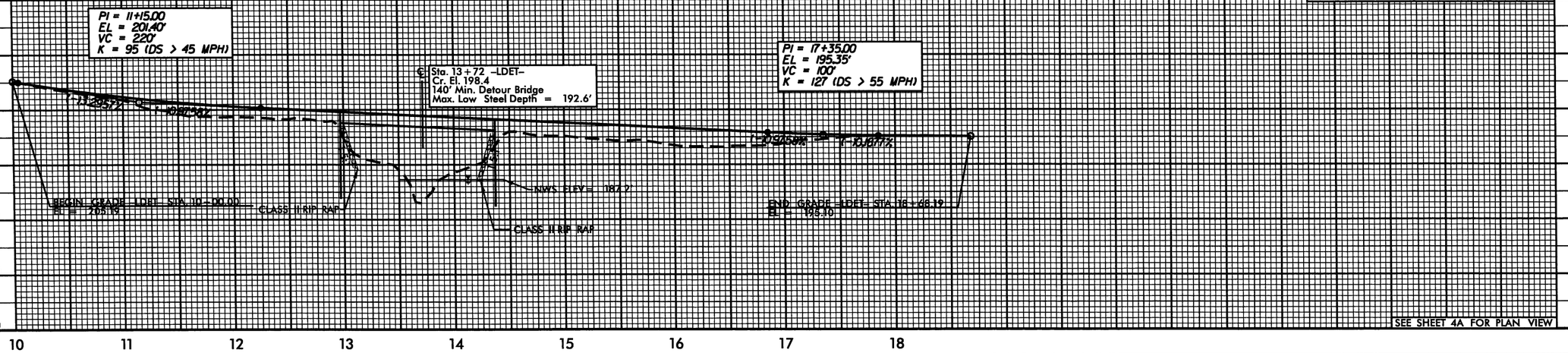
PROJECT REFERENCE NO.	SHEET NO.
B-4817	6

ROADWAY DESIGN ENGINEER

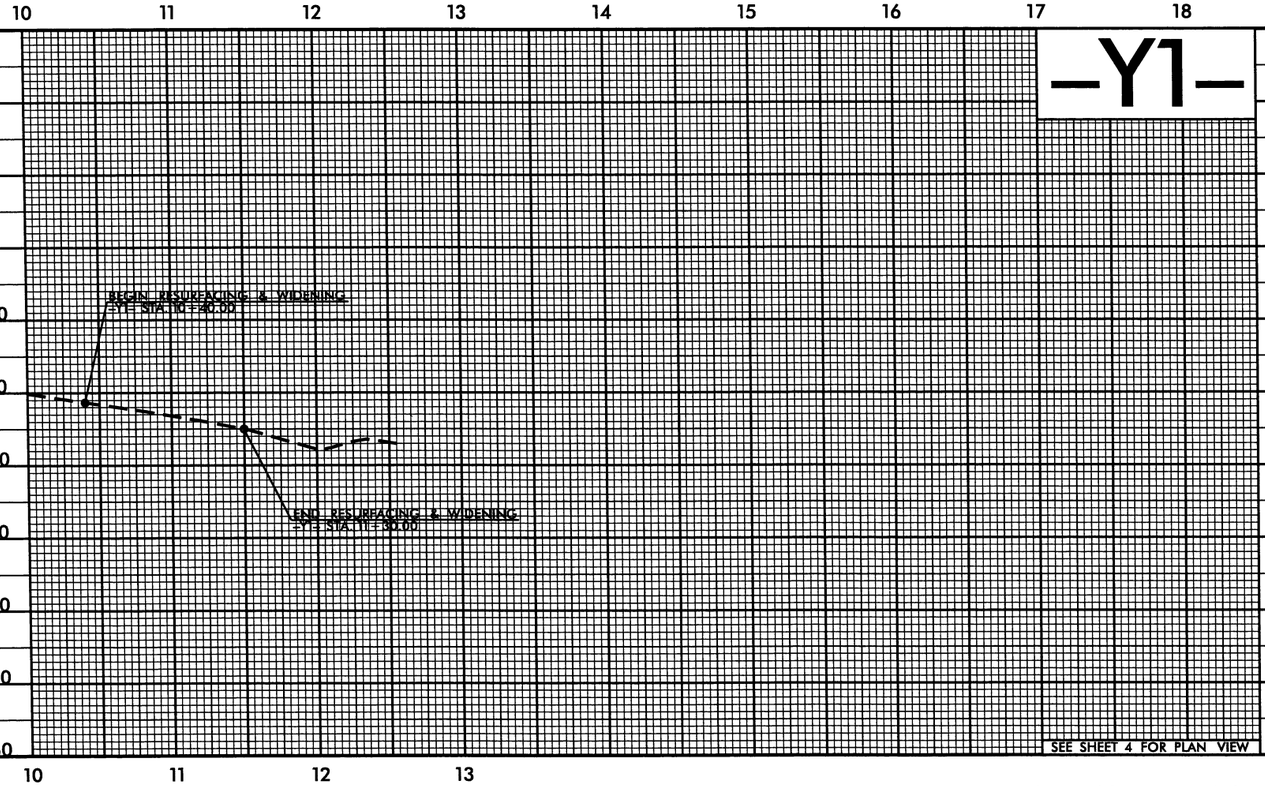
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

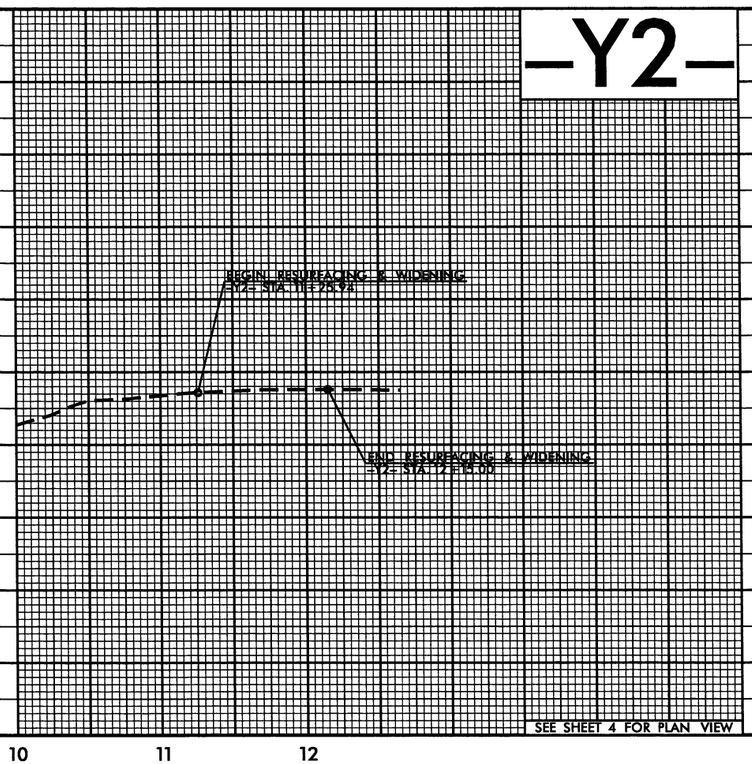
-LDET-



-Y1-



-Y2-



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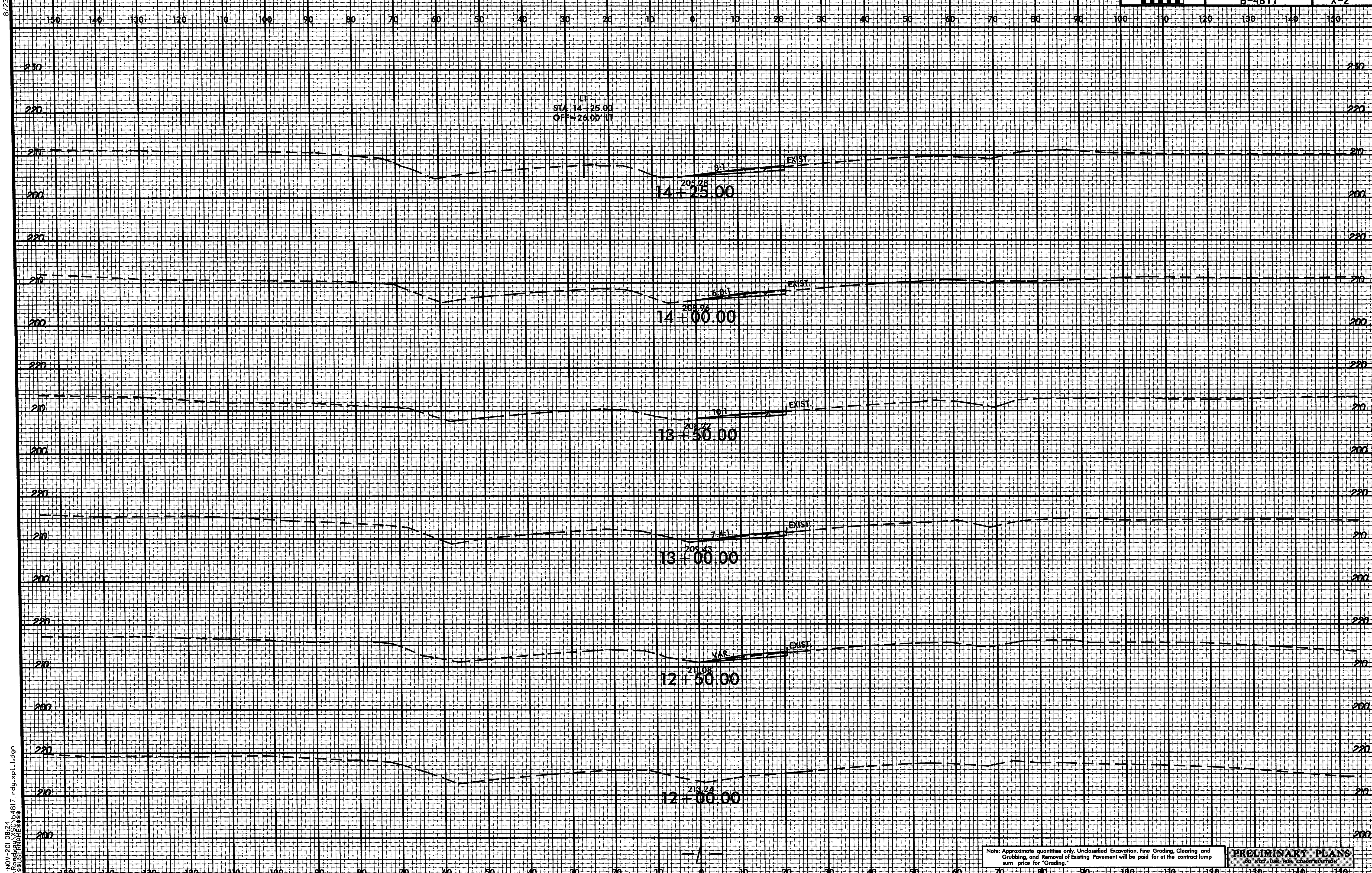
PROJ. REFERENCE NO.	SHEET NO.
B-4817	X-2



Note: Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/23/99

30-NOV-2011 08:24
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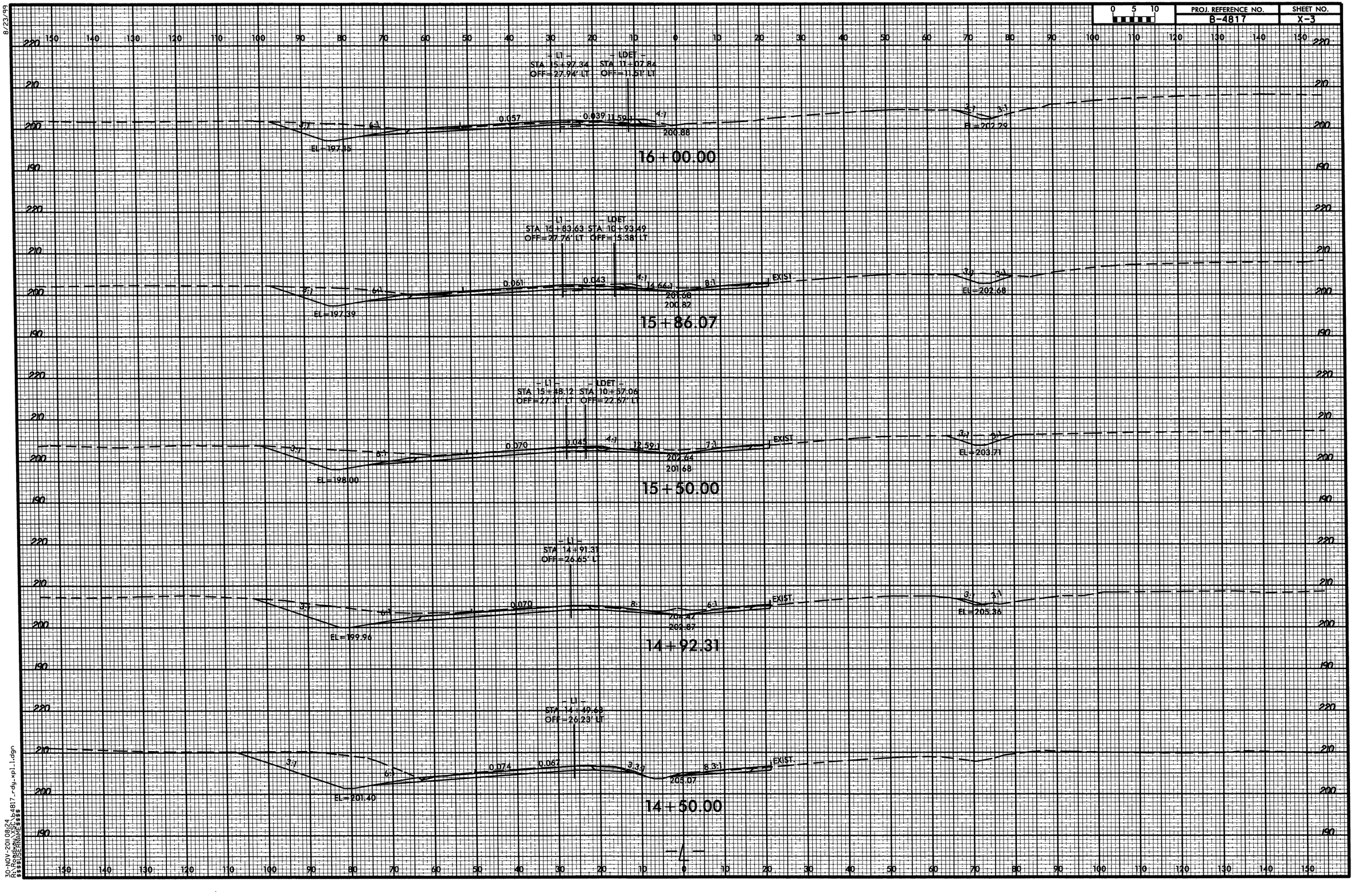
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4817	X-3



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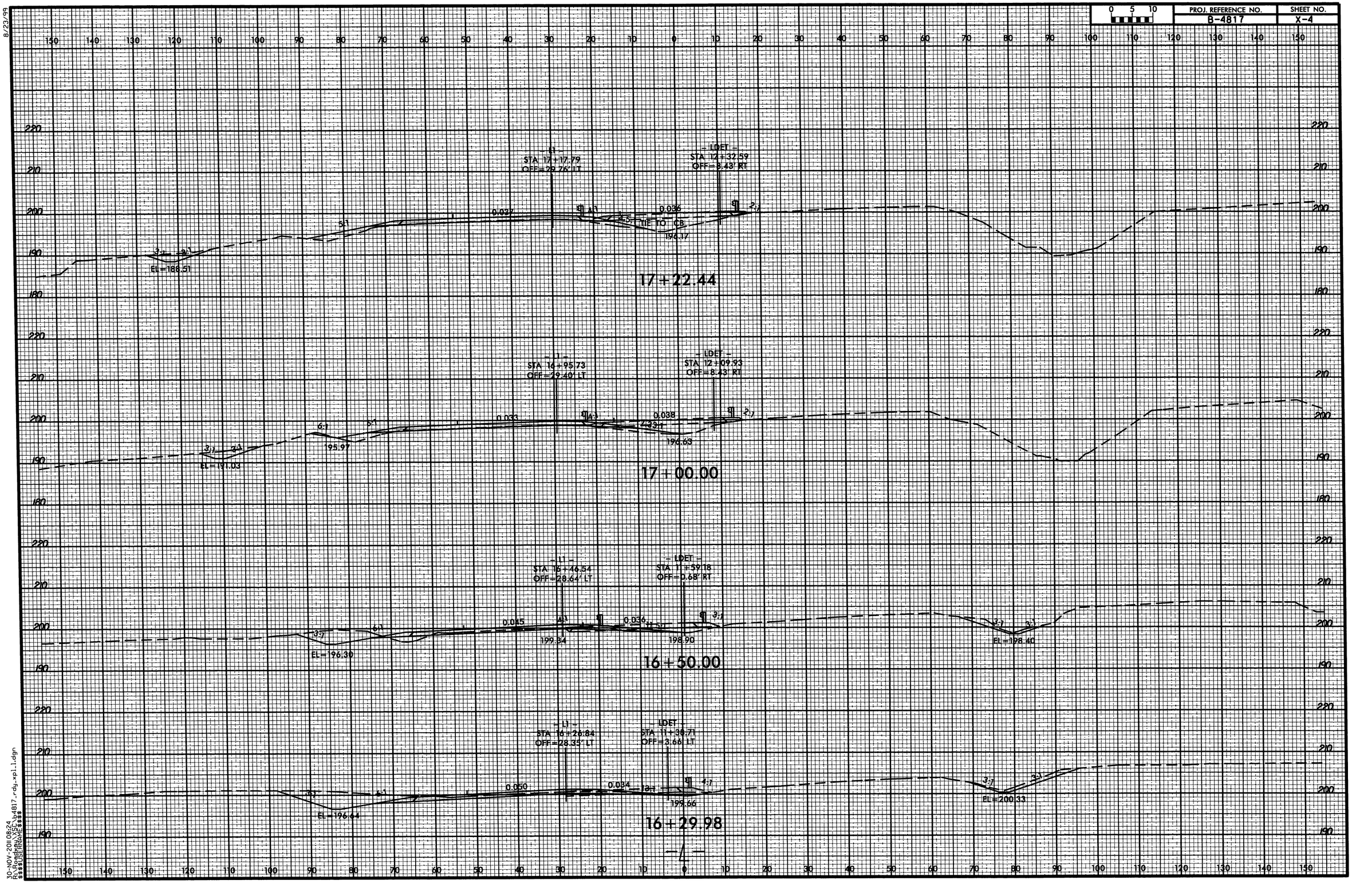
$$$$USERNAME$$$$

8/23/99



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R:\Roadway\xsc_b4817_rdy_xpl1.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4817	X-5

— LT —
STA 17+94.86
OFF=30.00' LT

— DET —
STA 13+10.38
OFF=12.00' RT

0.020

0.020

192.47

18+00.00

— LT —
STA 17+81.84
OFF=30.00' LT

— DET —
STA 12+97.36
OFF=12.00' RT

0.020

0.020

194.50

17+86.98

— LT —
STA 17+70.91
OFF=30.00' LT

— DET —
STA 12+86.43
OFF=12.00' RT

0.020

4:1

2:1

0.020

3:1

197.00

17+76.05

— LT —
STA 17+46.52
OFF=30.00' LT

— DET —
STA 12+62.14
OFF=11.89' RT

0.020

4:1

2:1

0.020

4:1

3:1

194.18

17+51.76

30-NOV-2011 08:24
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$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4817	X-6

220 210 200 190 180

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

— LT —
STA 18+94.86
OFF=30.00' LT

— DET —
STA 14+10.38
OFF=12.00' RT

0.020

0.020

189.80

19+00.00

— LT —
STA 18+94.09
OFF=30.00' LT

— DET —
STA 14+09.61
OFF=12.00' RT

0.020

0.020

189.78

18+99.23

— LT —
STA 18+44.86
OFF=30.00' LT

— DET —
STA 13+60.38
OFF=12.00' RT

0.020

0.020

185.14

18+50.00

— LT —
STA 18+06.09
OFF=30.00' LT

— DET —
STA 13+21.61
OFF=12.00' RT

0.020

0.020

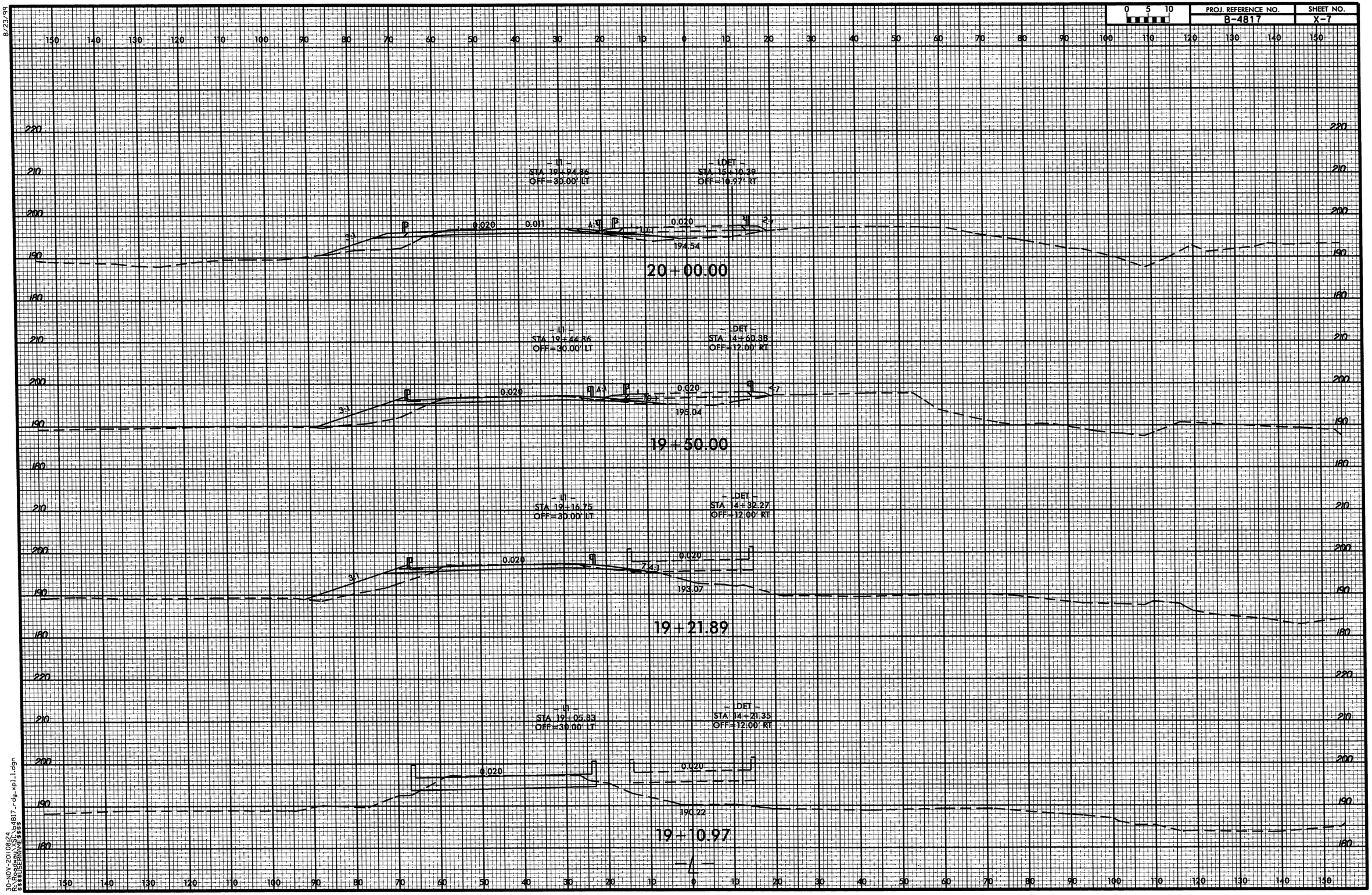
190.88

18+11.23

30-NOV-2011 08:24
R:\Projects\b4817_rdy_xpl1.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4817	X-7



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R:\Projects\VDOT\b4817_rdy_xpl_l.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4817	X-8

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

220 210 200 190 180

— LT —
STA 21+16.28
OFF=30.00' LT

— LDET —
STA 18+32.63
OFF=2.45' LT

3:1 | 0.020 | 0.019 | 0.014 | 4:1 | 193.21

21+21.42

— LT —
STA 20+94.86
OFF=30.00' LT

— LDET —
STA 18+10.73
OFF=1.06' RT

3:1 | 0.020 | 0.014 | 0.021 | 4:1 | 193.27

21+00.00

— LT —
STA 20+71.97
OFF=30.00' LT

— LDET —
STA 15+67.61
OFF=4.26' RT

3:1 | 0.020 | 0.008 | 4:1 | 0.021 | 3:1 | 193.50

20+77.11

— LT —
STA 20+44.86
OFF=30.00' LT

— LDET —
STA 15+69.59
OFF=7.34' RT

3:1 | 0.020 | 0.001 | 4:1 | 0.021 | 2:1 | 194.12

20+50.00

30-NOV-2011 08:24
R:\roadway\projects\b4817_rdy_xpl_1.dgn
$$$$USERNAME$$$$

8/23/96

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4817	X-9

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

210 200 190 180

LT
STA 22+34.86
OFF=30.00' LT

LDET
STA 17+53.04
OFF=23.10' LT

DETOUR WEDGING

0.019 4:1

193.02

22+40.00

LT
STA 22+20.20
OFF=30.00' LT

LDET
STA 17+38.26
OFF=21.22' LT

DETOUR WEDGING

3:1 0.020 0.020 0.019 4:1 1.5:1

192.77

22+25.34

LT
STA 21+94.86
OFF=30.00' LT

LDET
STA 17+12.63
OFF=17.43' LT

3:1 0.020 0.020 0.018 4:1 3.7:1 TIE TO C6

193.89

22+00.00

LT
STA 21+44.86
OFF=30.00' LT

LDET
STA 16+81.73
OFF=7.92' LT

3:1 0.020 0.020 0.002 2:1 4:1

192.99

21+50.00

30-NOV-2011 08:24
R:\Roadway\Jobs\b4817_rdy_xpl_1.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
B-4817	X-10

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

220 210 200 190 180

– LDET –
STA 18+63.31
OFF=29.99' LT

192.31

23+50.00

– LDET –
STA 18+13.28
OFF=28.43' LT

LJ
STA 22+94.86
OFF=30.00' LT

DETOUR WEDGING

0.020 4:1

193.57

23+00.00

– LJ – – LDET –
STA 22+44.86 STA 17+63.10
OFF=30.00' LT OFF=24.26' LT

DETOUR WEDGING

0.020 4:1

193.34

22+50.00

30-NOV-2011 08:24
R:\Projects\X\B4817_rdy_xpl_1.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
B-4817	X-11

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

220 210 200 190

4:1 EXIST. 206.82

11+00.00

4:1 EXIST. 207.64

10+75.00

VAR EXIST. 208.38

10+50.00

209.13

10+25.00

209.89

10+00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

30-NOV-2011 08:24
R:\Roadway\SC\b4817_rdy_xpl_gl.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4817	X-12

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

210
200
190

202.22

12+00.00

203.65

11+75.00

205.00

11+50.00

EXIST

2:1 4:1

201.75

203.95

4:1 VAR.

203.79

11+25.00

—Y1—

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

30-NOV-2011 08:24
R:\Projects\XSEC_b4817_rdy_xpl_y1.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
B-4817	X-13

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

210 220 210 200 220 210 200

207.56
12+50.00

207.62
12+25.00

2:1 4:1 EXIST.
204.78
207.61
12+00.00

2:1 4:1 EXIST.
203.92
207.57
11+75.00

2:1 4:1 EXIST.
203.58
207.40
11+50.00

207.16
11+25.00

206.78
11+00.00

-Y2-

30-NOV-2011 08:24
R:\Roadway\XSC\b4817_rdy_xpl_y2.dgn
$$$$USERNAME$$$$