STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

July 19, 2013

U.S. Army Corps of Engineers
Wilmington Regulatory Field Office
69 Darlington Avenue
Wilmington, North Carolina 28403

Attention: Mr. Brad Shaver
NCDOT Coordinator

Dear Sir:

Subject: **Application for Section 404 Nationwide Permits (NWP) 23, 13, and Section 401 Water Quality Certification** for the replacement of Bridge No. 408 over Stewarts Creek on SR 1105 in Duplin County; TIP Project B-5143; Federal Aid Project No. BRZ-1105(20); Debit $240 from WBS No. 42304.1.1.

Please find enclosed PCN, EEP Acceptance Letter, permit drawings, stormwater management plan, and roadway plans for the above referenced project proposed by the North Carolina Department of Transportation (NCDOT). A Programmatic Categorical Exclusion (PCE) was completed for this project on March 12, 2012 and distributed shortly thereafter. Additional copies are available at the NCDOT website: http://207.4.62.65/PDEA/EnvironmentalDocs/. The NCDOT proposes to replace existing Bridge No. 408 over Stewarts Creek on SR 1105 in Duplin County. The project involves replacement of the existing structurally deficient bridge and approach with new structures. Bridge 408 will be replaced with a new 72-foot long single span bridge.

Proposed permanent impacts to riparian wetlands from bridge construction are 0.09 acre of fill and 0.04 acre of excavation. There will also be 20 feet of linear stream impacts due to bank stabilization. Traffic will be detoured off-site during construction.

This project calls for a letting date of January 21, 2014 and a review date of December 3, 2013; however, the let date may advance as additional 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

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-707-6000
FAX: 919-212-5785
WEBSITE:NCDOT.GOV

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

771.115(b). The NCDOT requests that the project be authorized by NW 23 for bridge construction and NW 13 for bank stabilization.

Section 401 Permit: We anticipate 401 General Certification numbers 3891 and 3885 will apply to this project. NCDOT is requesting written concurrence from the North Carolina Department of Environmental and Natural Resources, Division of Water Quality. We are providing two copies of this application to the NCDWQ for their approval. Authorization to debit the $240 Permit Application Fee from WBS Element 42304.1.1 is hereby given.

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

If you have any questions or need additional information, please contact Chris Manley at cdmanley@ncdot.gov or (919) 707-6135.

Sincerely,

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 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:	Replacement of Bridge 408 over Stewarts Creek on SR 1105
2b. County:	Duplin
2c. Nearest municipality / town:	Warsaw
2d. Subdivision name:	*not applicable*
2e. NCDOT only, T.I.P. or state project no:	B-5143

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) 707-6135
3g. Fax no.:	(919) 250-4224
3h. Email address:	cdmanley@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: 34.9432 (DD.DDDDDD)	Longitude: - 78.117343 (-DD.DDDDDD)
1c. Property size:	1.5 acres	
2. Surface Waters		
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Stewarts Creek	
2b. Water Quality Classification of nearest receiving water:	C; Sw	
2c. River basin:	Cape Fear	
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 agriculture in addition to forested wetlands. Land use in the project vicinity is predominantly medium- to low-residential with some agriculture.		
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: 100		
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 70-foot 4 span bridge with a 72-foot single span bridge on the existing alignment with an off-site detour. Standard road building equipment, such as trucks, dozers, and cranes will be used. Overhead power and power poles will remain in place. Telephone and water will be relocated by directional bore method within jurisdictional areas.		
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: Action ID 2009-859 (see attached)	☒ 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): Jim Hauser	Agency/Consultant Company: NCDOT Other:	
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. November 02, 2009		
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	Excavation	Riparian	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.04
Site 1 ☒ P ☐ T	Fill	Riparian	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.09
Site 1 ☐ P ☒ T	Fill	Riparian	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.02
Site 2 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 3 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 4 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
				2g. **Total wetland impacts**	0.13 Permanent 0.02 Temporary

2h. Comments: There will be 0.10 ac of hand clearing. Proposed temporary impacts to wetlands of 0.02 ac 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 2 ☒ P ☐ T	Bank Stabilization	Stewarts Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	40	20
Site 2 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 3 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 4 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
					3h. **Total stream and tributary impacts**	20 Perm 0 Temp

3i. Comments: Stream impacts are from embankment rip rap.

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	0.0 Permanent 0.0 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 will be a single span verses the existing 4-span bridge; the proposed bridge will be at approximately the same grade as the existing structure; an off-site detour will be used; 3:1 fill slopes will be used in jurisdictional areas; no deck drains. Placement of stormwater control measures outside wetlands where practicable. Best Management Practices for the Protection of Surface Waters will be implemented.

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

Hand clearing will be used instead of mechanized clearing. Open trench excavation avoided for utility relocation by using trenchless (directional bore) method.

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:	0.26 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.

NC EEP will provide wetland mitigation

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
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	☐ Yes ☐ No N/A
5b. Have all of the 401 Unit submittal requirements been met?	☐ Yes ☐ No N/A

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

5. Endangered Species and Designated Critical Habitat (Corps Requirement)	
5a. Will this project occur in or near an area with federally protected species or habitat?	☐ Yes ☒ No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	☐ Yes ☒ No
5c. If yes, ind icate the USFWS Field Office you have contacted.	☐ Raleigh ☐ Asheville
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? NCNHP, USFWS, 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	

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.)	7-18-13 Date

Ecosystem
PROGRAM

July 18, 2013

Mr. Gregory J. Thorpe, Ph.D.
Manager, Project Development and Environmental Analysis Unit
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

B-5143, Replace Bridge Number 408 over Stewart's Creek on SR 1105 (Carlton Chapel Church Road), Duplin County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory riparian wetland mitigation for the subject project. Based on the information supplied by you on July 17, 2013, the impacts are located in CU 03030006 of the Cape Fear River basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Cape Fear 03030006 SICP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	0	0.13	0	0	0	0

*Some of the stream and wetland impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details.

This impact and associated mitigation need were under projected by the NCDOT in the 2013 impact data. EEP will commit to implement sufficient compensatory stream mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies using the delivery timeline listed in Section F.3.c.iii of the N.C. Department of Environment and Natural Resources' Ecosystem Enhancement Program In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-707-8420.

Sincerely,

James B. Stanfill

James B. Stanfill
EEP Asset Management Supervisor

cc: Mr. Brad Shaver, USACE – Wilmington Regulatory Field Office
Ms. Amy Chapman, Division of Water Quality, Wetlands/401 Unit
Mr. Mason Herndon, Division of Water Quality – Fayetteville Office
File: B-5143

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR LINEAR ROADWAY PROJECTS

(Version 1.2; Released September 2011)

Project/TIP No.: 42304.1.1 B-5143 **County(ies):** Duplin

General Project Information

Project No.:	42304.1.1 B-5143		**Project Type:**	Bridge Replacement	**Date:** 1/16/2013
NCDOT Contact:	Bill Elam		**Contractor / Designer:**		
Address:	1020 Brich Ridge Dr Raleigh, NC 27610		**Address:**		
Phone:	919.707.6718		**Phone:**		
Email:	belam@ncdot.gov		**Email:**		
City/Town:	Carlton Crossroads		**County(ies):**	Duplin	
River Basin(s):	Cape Fear		**CAMA County?**	No	
Primary Receiving Water:	Six Runs Creek		**NCDWQ Stream Index No.:**	18-68-2-10	
NCDWQ Surface Water Classification for Primary Receiving Water	**Primary:**		Class C		
	Supplemental:		Swamp Waters (Sw)		
Other Stream Classification:	None				
303(d) Impairments:	None				
Buffer Rules in Effect	N/A				

Project Description

Project Length (lin. Miles or feet):	0.136 miles	**Surrounding Land Use:**	rural, farmland

	Proposed Project	**Existing Site**
Project Built-Upon Area (ac.)	0.38 ac.	0.31 ac.
Typical Cross Section Description:	2 10' lanes with 6'-11" paved shoulders Bridge will be 2 10' lanes with 3'-11" shoulders.	2 9' lanes with variable shoulder width. Bridge is 2 12' lanes with +/- 2' shoulders.
Average Daily Traffic (veh/hr/day):	Design/Future: 365/450 vpd	Existing: 330 (2005)

General Project Narrative:

The project consists of replacing Bridge #408 on SR 1105 (Carlton Chapel Church Rd.) over Stewarts Creek. The approach work will consist of raising the existing roadway grade and providing grass shoulders and guardrail. Bridge #408 existing 4 span structure (69'-10" total length) will be replaced with a 1 span 70', 24" cored slab bridge, 2.5' deep cap with vertical sheet pile abutments.

Best Management Practices:
-Promotion of sheet flow and infiltration with grass shoulders.
-Drainage systems outlet to rip rap pads in ditches.
-Removal of existing road fill under bridge will improve bridge conveyance and reduce bridge opening velocities.

References

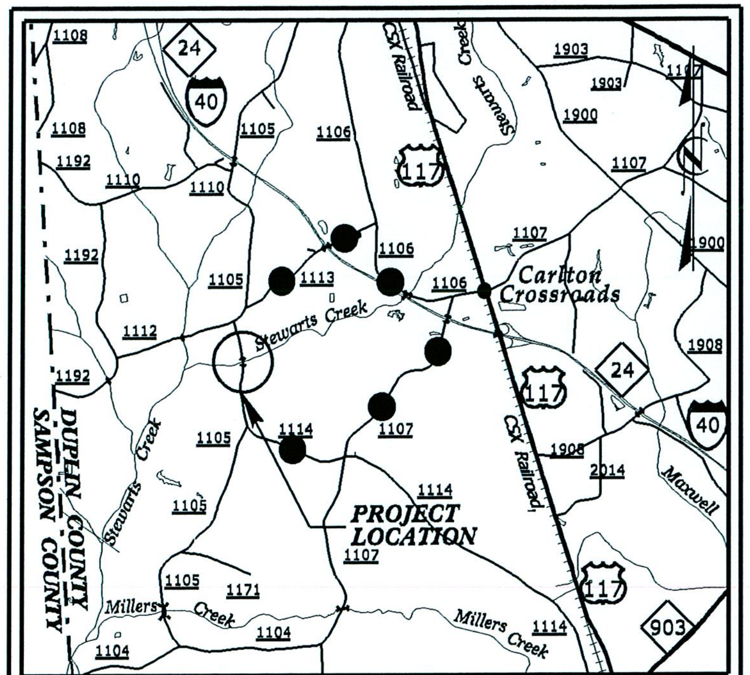
TIP PROJECT: B-5143

CONTRACT:

09/08/99

7/15/2013
amkeeter
R:\Hydraulics\PERMITS_Environmental\Drawings\B5143_Hyd_prm_wet_tsh.dgn
$$$$SYSTIME$$$$
$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

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



VICINITY MAP

OFF-SITE DETOUR

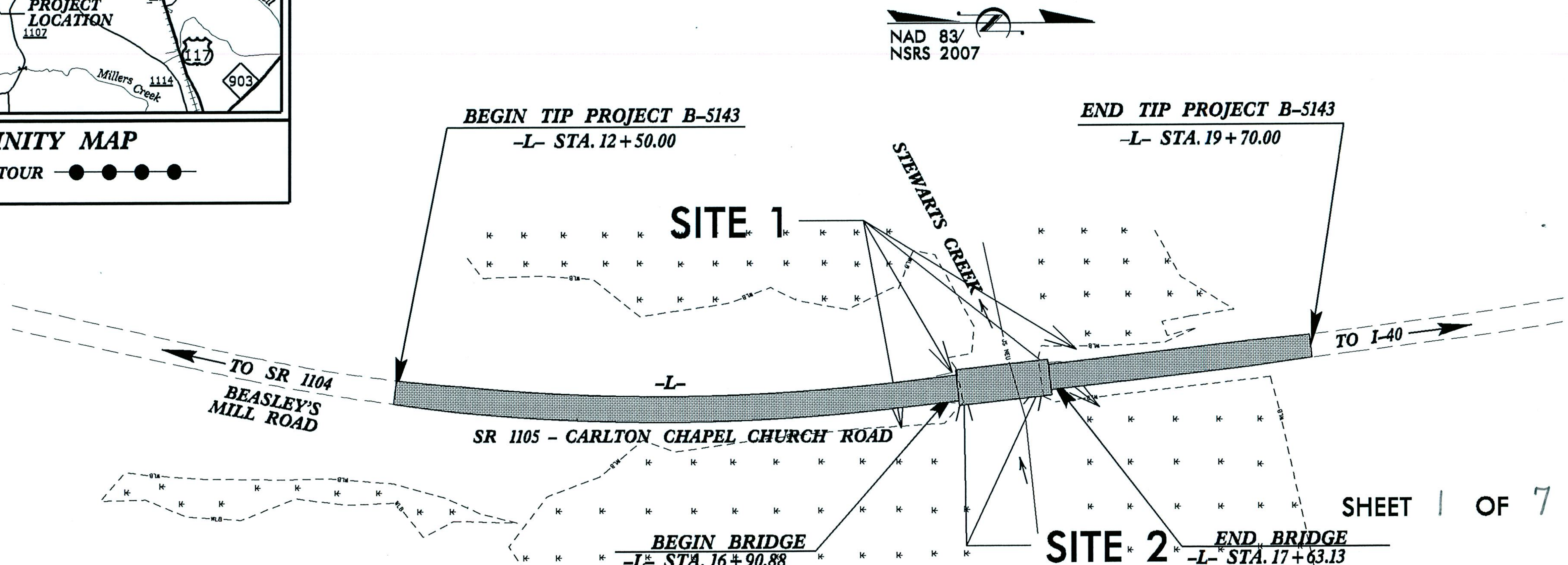
STATE	STATE PROJECT REFERENCE NO.		SHEET NO.	TOTAL SHEETS
N.C.	B-5143		1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION		
42304.1.1	BRZ-1105(20)	P.E.		
42304.2.1	BRZ-1105(20)	R/W & UTIL.		

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

DUPLIN COUNTY

LOCATION: BRIDGE NO. 408 OVER STEWARTS CREEK ON SR 1105

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



SHEET 1 OF 7

WETLAND AND SURFACE WATER IMPACTS PERMIT

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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

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 2013 = 365 VPD
ADT 2035 = 450 VPD
DHV = 10 %
D = 60 %
*T = 5 %
V = 60 MPH
*(TTST 2% + DUAL 3%)
FUNC. CLASS. = RURAL LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5143	=	0.122 MILE
LENGTH STRUCTURE TIP PROJECT B-5143	=	0.014 MILE
TOTAL LENGTH TIP PROJECT B-5143	=	0.136 MILE

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 20, 2012

LETTING DATE:
OCTOBER 15, 2013

GARY LOVERING, PE
PROJECT ENGINEER

SUSAN C. LANCASTER, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

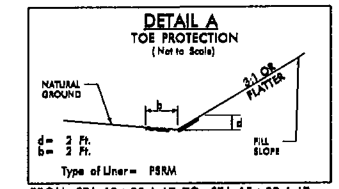
SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

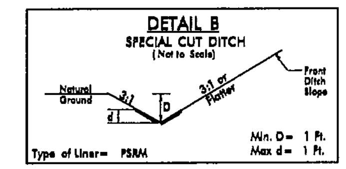
PROJECT REFERENCE NO.	SHEET NO.
B-5143	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

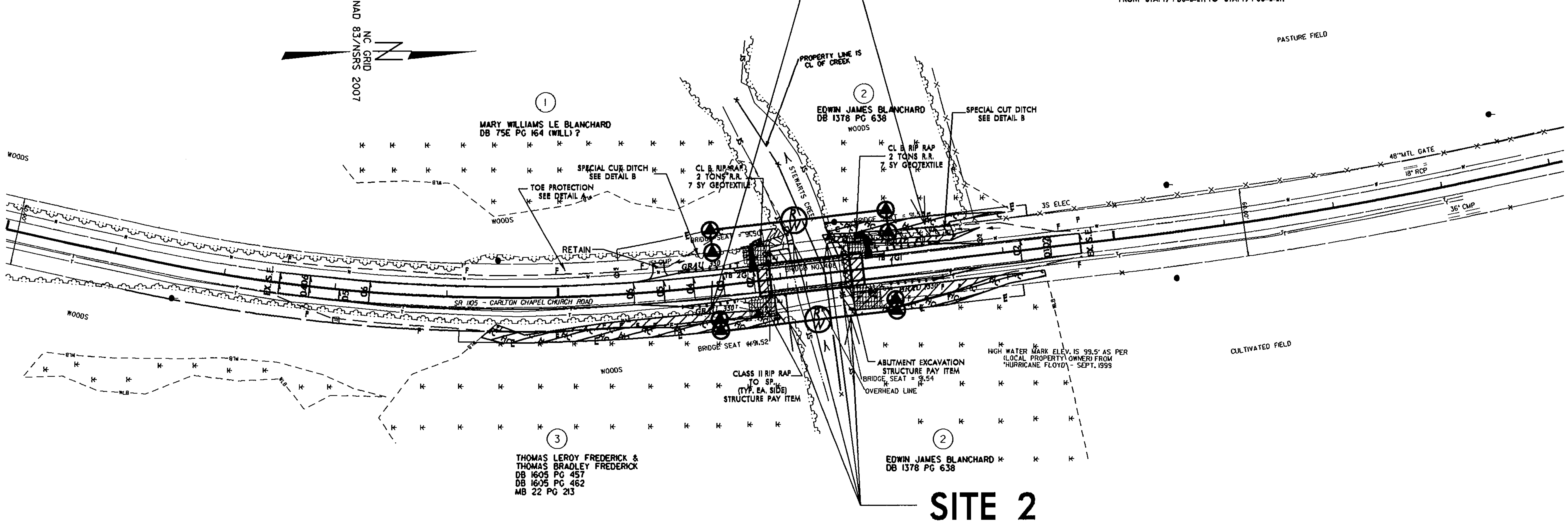
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



FROM STA. 13+00-L-LT. TO STA. 15+82-L-LT.



FROM STA. 16+02-L-LT. TO STA. 17+07-L-LT.
FROM STA. 17+50-L-LT. TO STA. 19+00-L-LT.



▨ DENOTES IMPACTS IN SURFACE WATER

▨ DENOTES EXCAVATION IN WETLAND

▨ DENOTES HAND CLEARING

▨ DENOTES FILL IN WETLAND

100' 0' 100'
SCALE 1"=100'

SHEET 2 OF 7

8/17/99

REVISIONS

7/15/2013
amlceeter
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PROJECT REFERENCE NO.	SHEET NO.
B-5143	4
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

REVISIONS

8/17/99

SITE 1

SITE 2

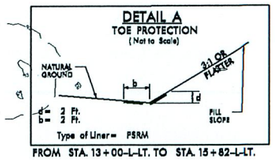
NAD 83/NSRS 2007 NC GRID

10+00

15+00

20+00

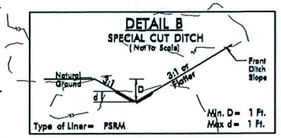
DETAIL A
TOE PROTECTION
(Not to Scale)



Type of Liner= PSRM

FROM STA. 13+00-L-LT. TO STA. 15+82-L-LT.

DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



Type of Liner= PSRM Min. D= 1 Ft. Max d= 1 Ft.

FROM STA. 16+02-L-LT. TO STA. 17+07-L-LT.
FROM STA. 17+50-L-LT. TO STA. 19+00-L-LT.

PASTURE FIELD

MARY WILLIAMS LE BLANCHARD
DB 75E PG 164 (WILL) ?

EDWIN JAMES BLANCHARD
DB 1378 PG/638

PROPERTY LINE IS CL OF CREEK

SPECIAL CUT DITCH SEE DETAIL B

CL B RIP RAP 2 TONS B.R. 7 SY GEOTEXTILE

TOE PROTECTION SEE DETAIL A

RETAIN

SR 1105 - CARLTON CHAPEL CHURCH ROAD

BRIDGE SEAT = 9.50

BRIDGE SEAT = 9.52

CLASS II RIP RAP TO SP. (TYP. EA. SIDE) STRUCTURE PAY ITEM

ABUTMENT EXCAVATION STRUCTURE PAY ITEM

OVERHEAD LINE

HIGH WATER MARK ELEV. IS 99.5 AS PER (LOCAL PROPERTY) OWNER/FROM "HURRICANE FLOYD" - SEPT, 1999

CULTIVATED FIELD

48"MTL GATE

18" RCP

36" CMP

3S ELEC

THOMAS LEROY FREDERICK &
THOMAS BRADLEY FREDERICK
DB 1605 PG 457
DB 1605 PG 462
MB 22 PG 213

EDWIN JAMES BLANCHARD
DB 1378 PG 638

WOODS

S S	DENOTES IMPACTS IN SURFACE WATER
E E	DENOTES EXCAVATION IN WETLAND
HC HC	DENOTES HAND CLEARING
F F	DENOTES FILL IN WETLAND

100' 0' 100'
SCALE 1"=100'

SHEET 3 OF 7

7/5/2013
amlocster
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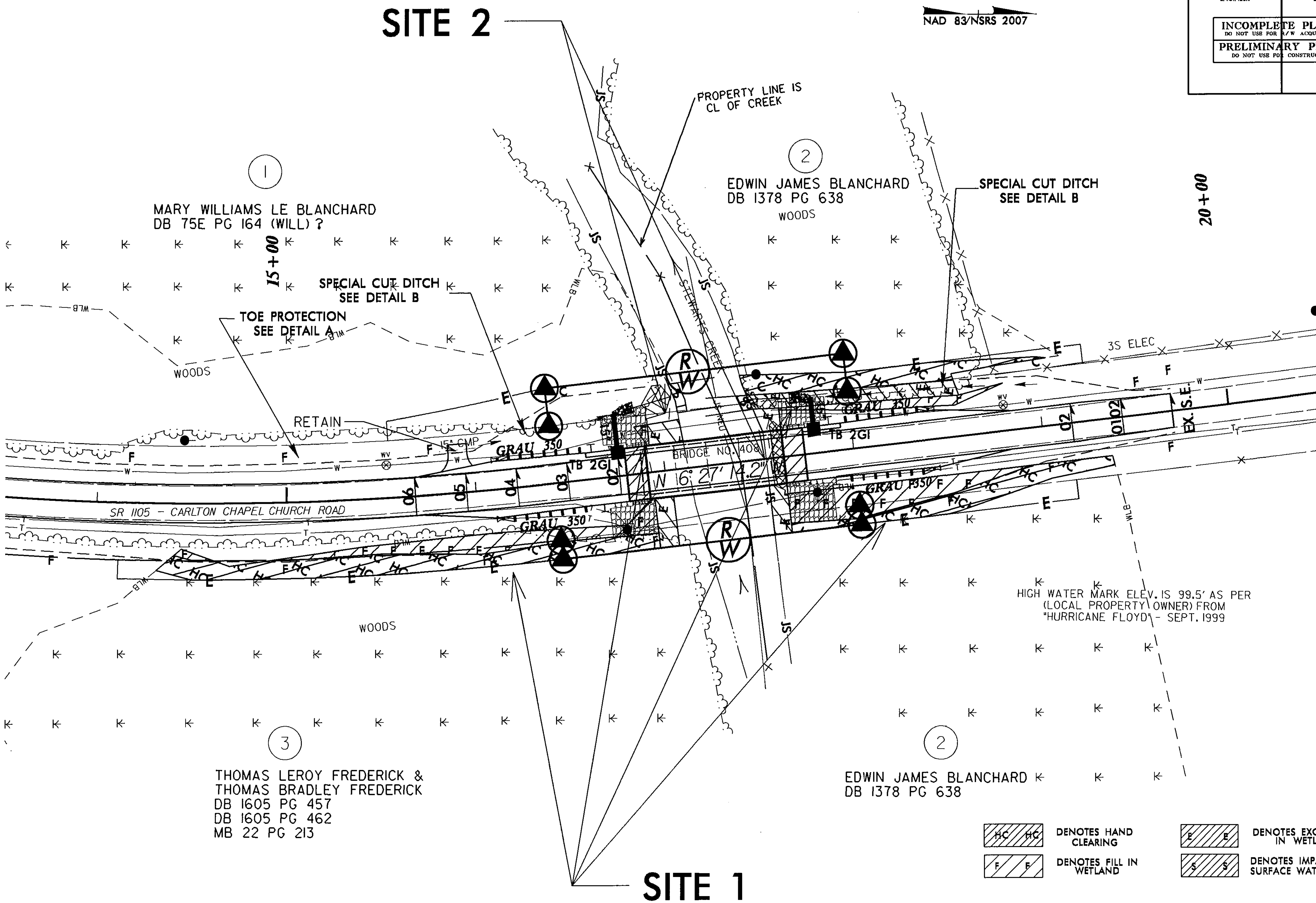
PROJECT REFERENCE NO.	SHEET NO.
B-5143	4b
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



HC HC	DENOTES HAND CLEARING
F F	DENOTES FILL IN WETLAND
E E	DENOTES EXCAVATION IN WETLAND
S S	DENOTES IMPACTS IN SURFACE WATER

50' 0' 50'
SCALE 1"=50'

SHEET 4 OF 7

REVISIONS

8/17/99

7/15/2013
amkoster
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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-5143	4 PFL

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

14+00 15+00 16+00 17+00 18+00 19+00 20+00

100

90

80

70

STA. 17+27 -L-
1 @ 70' — 24" CORED SLAB
90° SKEW
GRADE EL. = 94.36'
100 yr. = 94.19'
25 yr. = 93.0'

EXISTING ROAD

3.3%

(-)0.6544%

(-)0.6544%

(-)11.1209%

(+)0.3000%

NG LT

NG RT

SHEETPILE ABUTMENT

LOW SIDE LOW STEEL ABUTMENT EXCAVATION TO APPROX ELEV 90.5'
EST 15 CY

N.W.S. = 90.0'
(10/13/2011)

PI = 17+79.00
EL = 94.02'
VC = 80'
K = 171
V_d = 65 mph

SHEET 5 OF 7

7/15/2013
amkeeter
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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-5143	X-3

19 + 50.00

3.16:1 0.021 0.009 3.76:1
92.69

19 + 00.00

WLB WLB
3:1 3:1 0.020 0.020 3:1
89.53 92.45

18 + 50.00

WLB WLB
3:1 3:1 0.020 0.020 3:1
89.53 92.54

18 + 00.00

WLB WLB
3:1 3:1 0.020 0.020 3:1
89.53 92.71

END BRIDGE –L– STA. 17 + 63.13

0.020 0.020

17 + 50.00

85.87

0.020 0.020
89.81

17 + 00.00

BEGIN BRIDGE –L– STA. 16 + 90.88

WLB
3:1 3:1 0.030 0.030 3:1
89.53 93.20

16 + 50.00

WLB
3:1 0.048 0.048 3:1
93.45

16 + 00.00

–L–

SHEET 6 OF 7

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	14+33 to 16+94 -L-	Fill	0.03		0.01		0.05					
	17+60 to 19+36 -L-	Fill	0.06		0.03		0.04					
2	17+10 to 17+50-L-LT	Embankment Rip Rap						0.02		20		
TOTALS:			0.09		0.04		0.10	0.02		20		

Note: 0.02 acre of Temporary Fill in Wetlands in the Hand Clearing areas for erosion control measures.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

DUPLIN COUNTY
WBS - 42304.1.1 (B-5143)

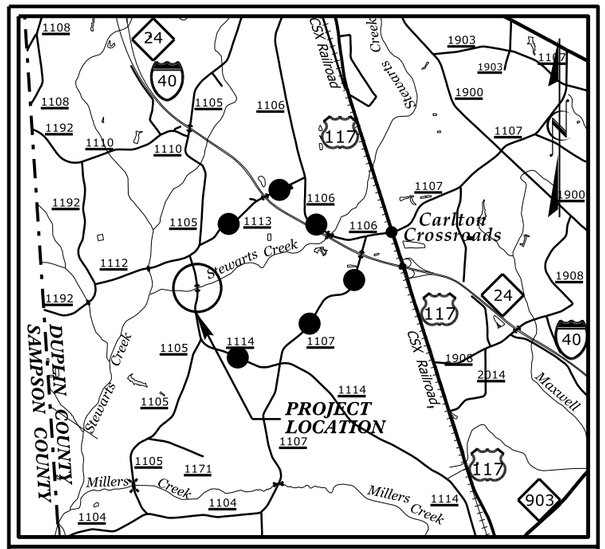
SHEET 7 of 7 7/18/2013

ATN Revised 3/31/05

09/08/99

TIP PROJECT: B–5143

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



VICINITY MAP

OFF–SITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

DUPLIN COUNTY

LOCATION: BRIDGE NO. 408 OVER STEWARTS CREEK ON SR 1105

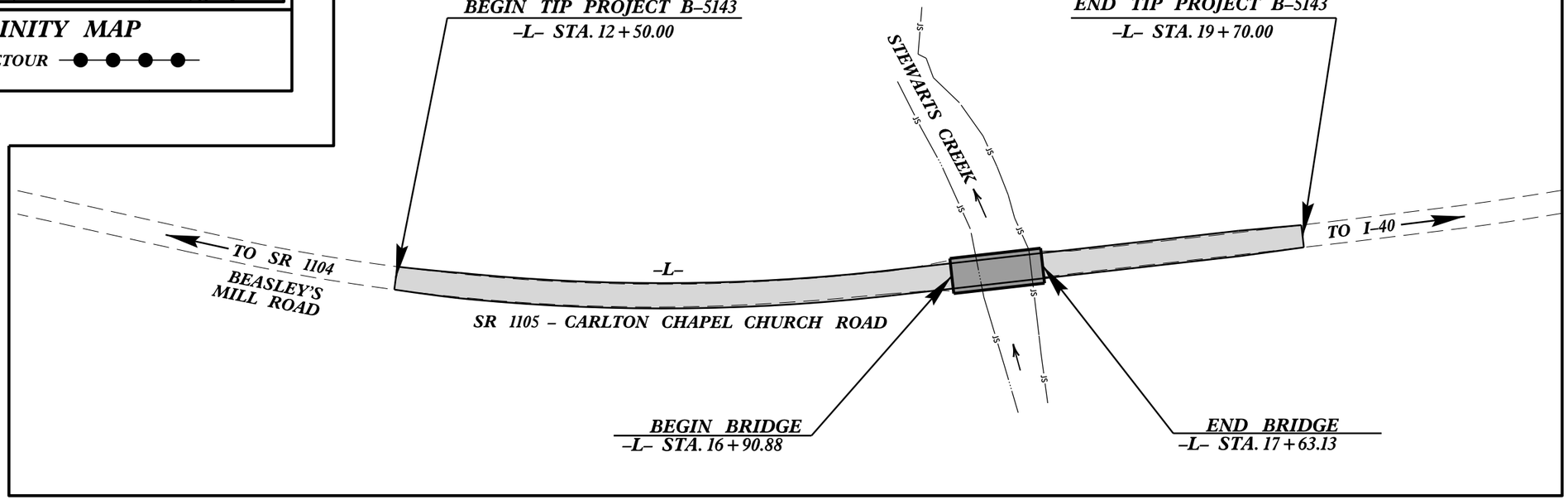
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B–5143	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
42304.1.1	BRZ–1105(20)	P.E.
42304.2.1	BRZ–1105(20)	RW & UTIL.

4

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 2013 = 365 VPD
ADT 2035 = 450 VPD
DHV = 10 %
D = 60 %
*T = 5 %
V = 60 MPH
*(TTST 2%+ DUAL 3%)
FUNC. CLASS. = RURAL LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B–5143 = 0.122 MILE
LENGTH STRUCTURE TIP PROJECT B–5143 = 0.014 MILE
TOTAL LENGTH TIP PROJECT B–5143 = 0.136 MILE

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 20, 2012

LETTING DATE: OCTOBER 15, 2013

GARY LOVERING, PE
PROJECT ENGINEER

SUSAN C. LANCASTER, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

23-JUL-2012 09:29
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$$$$$USERNAME$$$$

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
B-5143	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
- 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.

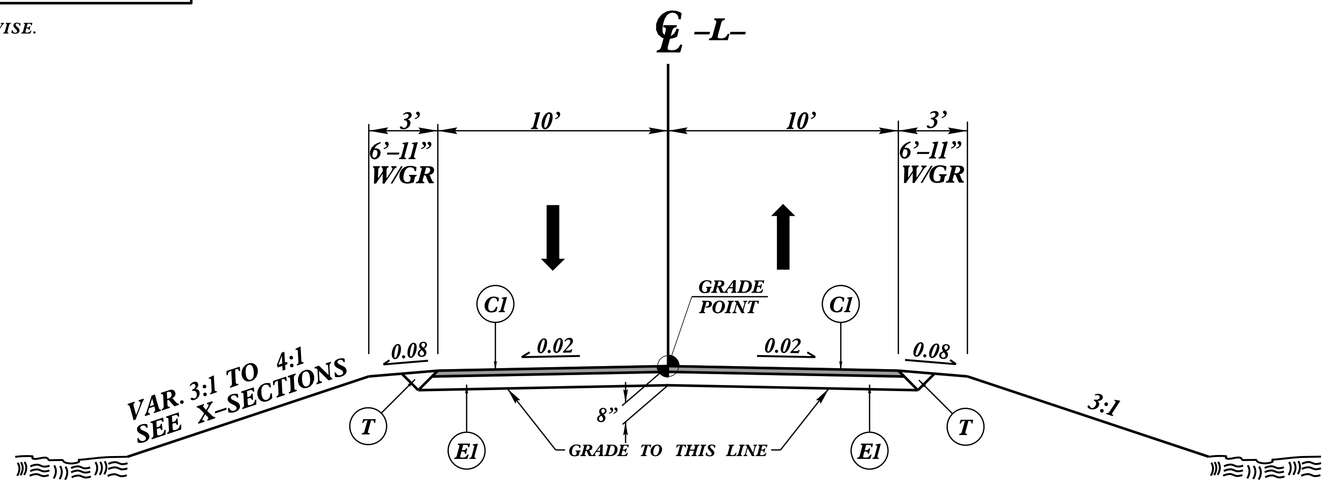
PROJECT REFERENCE NO.	SHEET NO.
B–5143	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 3” ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E1	PROP. APPROX. 5” ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.

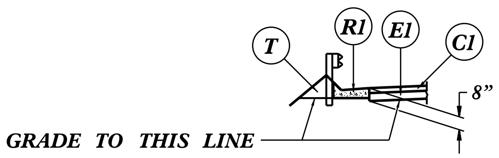
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:

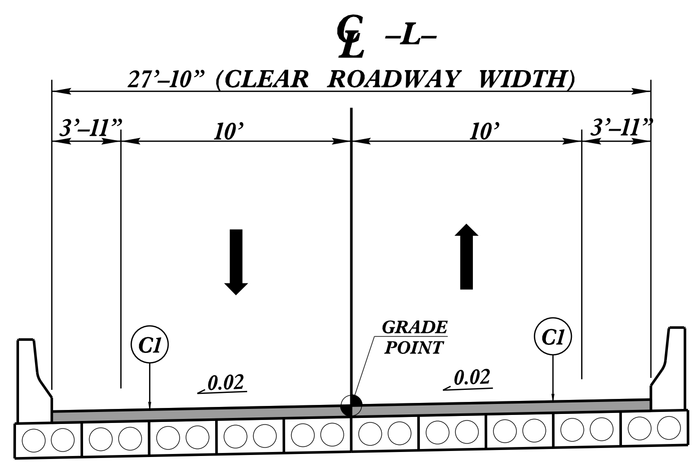
–L– STA. 12 + 50.00 TO 16 + 90.88 (BEGIN BRIDGE)
–L– STA. 17 + 63.13 (END BRIDGE) TO 19 + 70.00



DETAIL SHOWING SHOULDER BERM GUTTER ON TOP OF SUBGRADE

–L– STA. 16 + 61.75 TO –L– STA. 16 + 82.00 (LT)
–L– STA. 17 + 74.00 TO –L– STA. 17 + 94.25 (LT)

NOTE: PAVE TO FACE OF GUARDRAIL



TYPICAL SECTION NO. 3

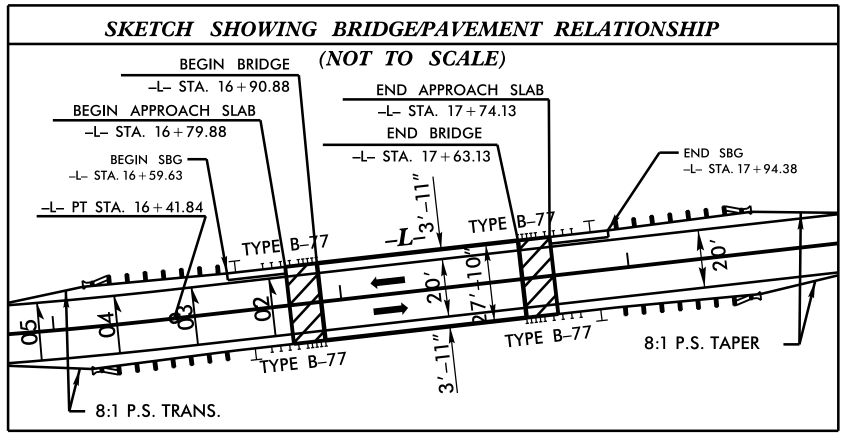
24” CORED SLAB BRIDGE
SEE STRUCTURE PLANS

USE TYPICAL SECTION NO. 3 AT THE FOLLOWING LOCATION:

–L– STA. 16 + 90.88 (BEGIN BRIDGE) TO 17 + 63.13 (END BRIDGE)

PROJECT REFERENCE NO.	SHEET NO.
B–5143	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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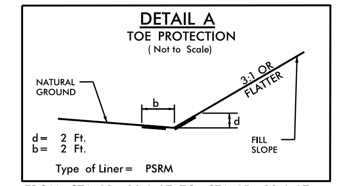
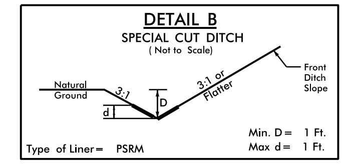


FROM STA. 13+00–L–LT. TO STA. 15+82–L–LT.

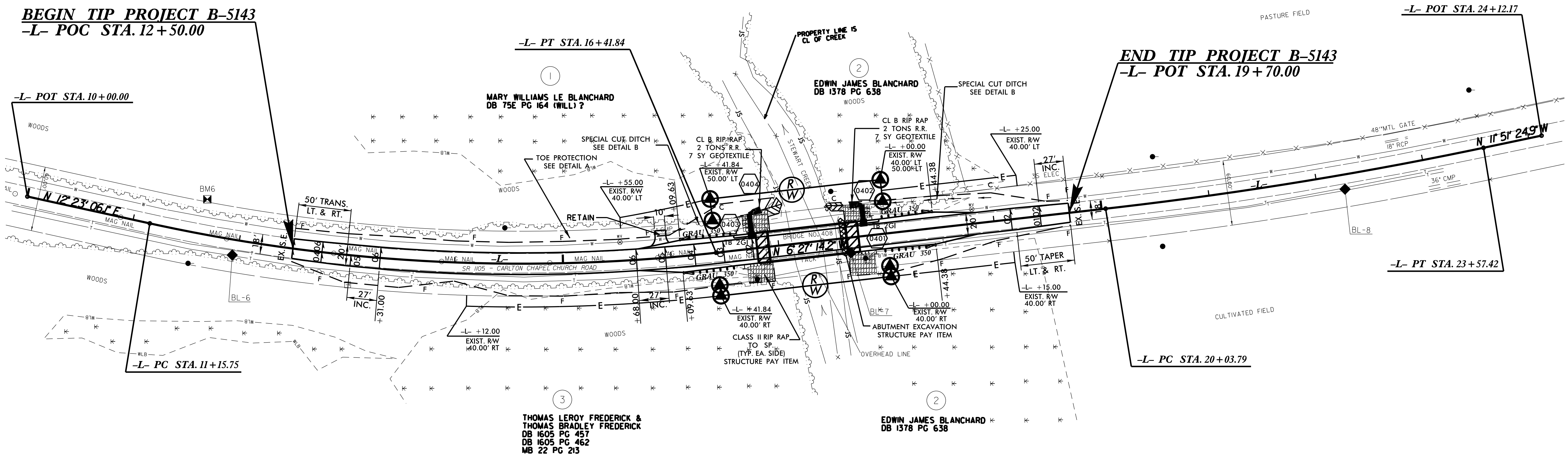


FROM STA. 16+02–L–LT. TO STA. 17+07–L–LT.
FROM STA. 17+50–L–LT. TO STA. 19+00–L–LT.

10+00

15+00

20+00



–L–	
PI Sta 13+81.19	PI Sta 21+80.74
Δ = 18° 50' 20.3" (LT)	Δ = 5° 24' 10.7" (LT)
D = 3° 34' 51.6"	D = 1° 31' 40.4"
L = 526.08'	L = 353.62'
T = 265.44'	T = 176.94'
R = 1,600.00'	R = 3,750.00'
SE = 0.06	
RO = SEE PLANS	

NOTES:
1.) FOR –L– PROFILE SEE SHEET 5.
2.) ALL DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE ON PLANS.
3.) FOR STRUCTURE PLANS SEE SHEETS S–1 THRU S–XX.

REVISIONS

8/17/99

23-JUL-2012 09:29
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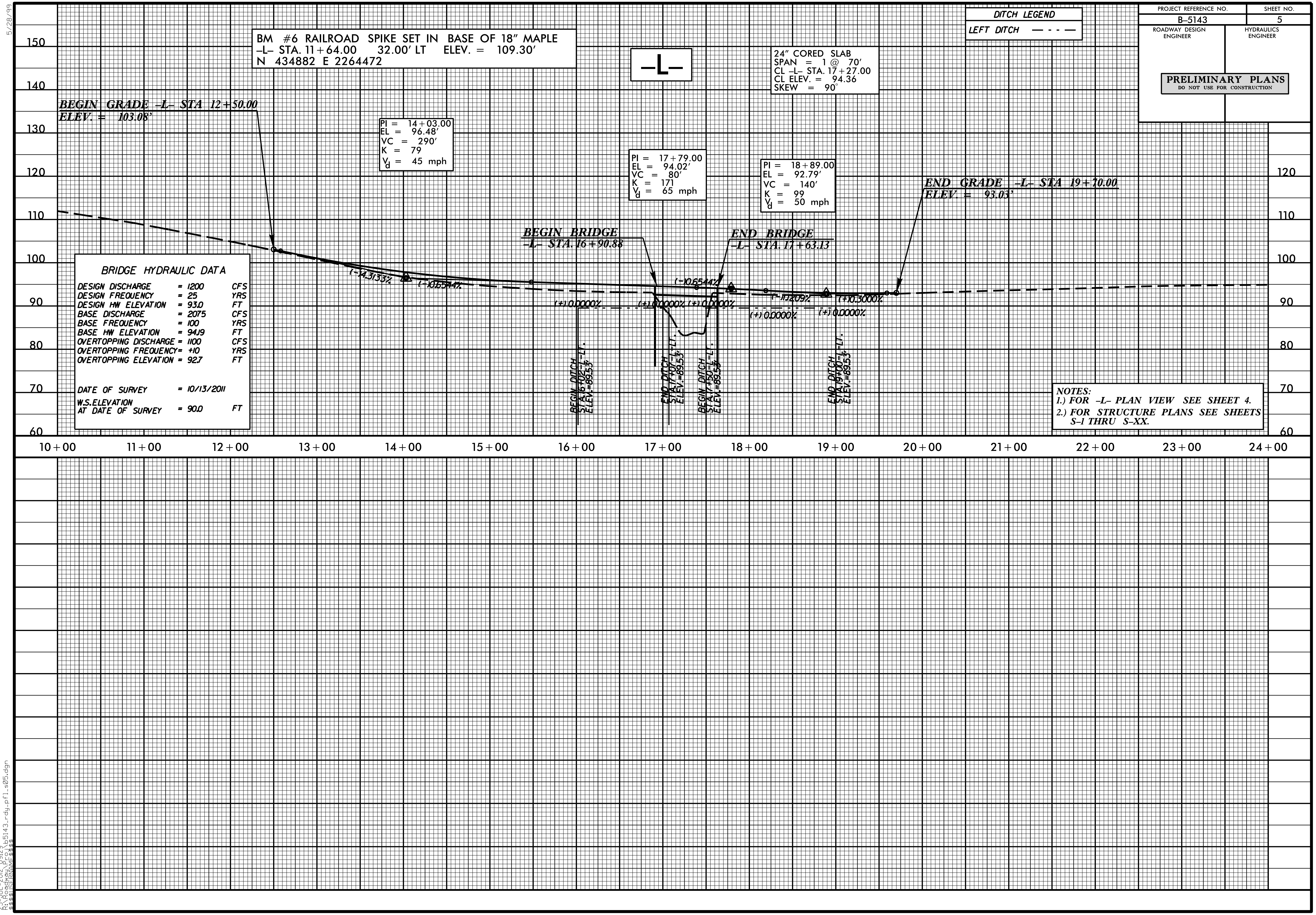
5/28/99



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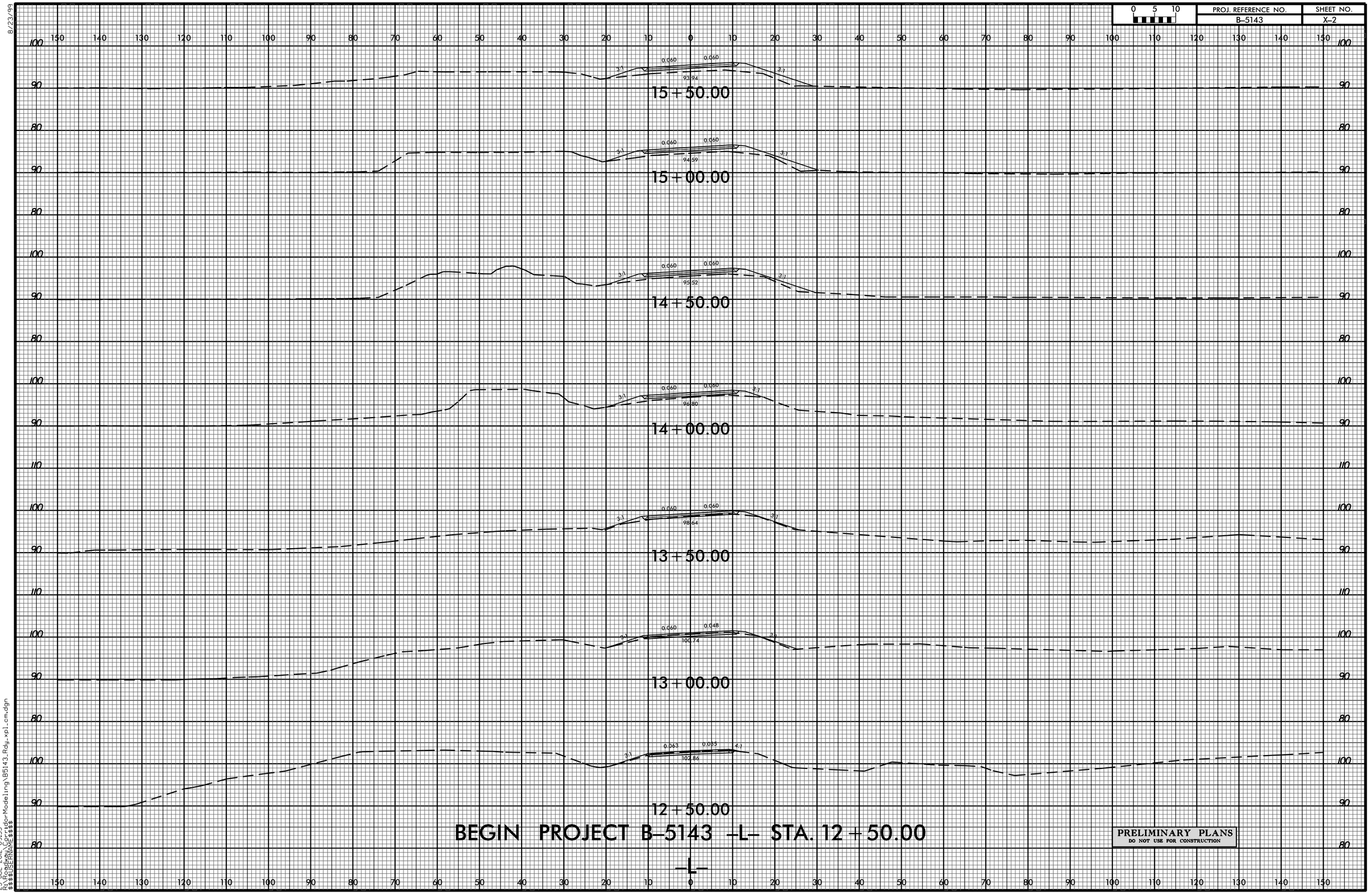
8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B–5143	X–2



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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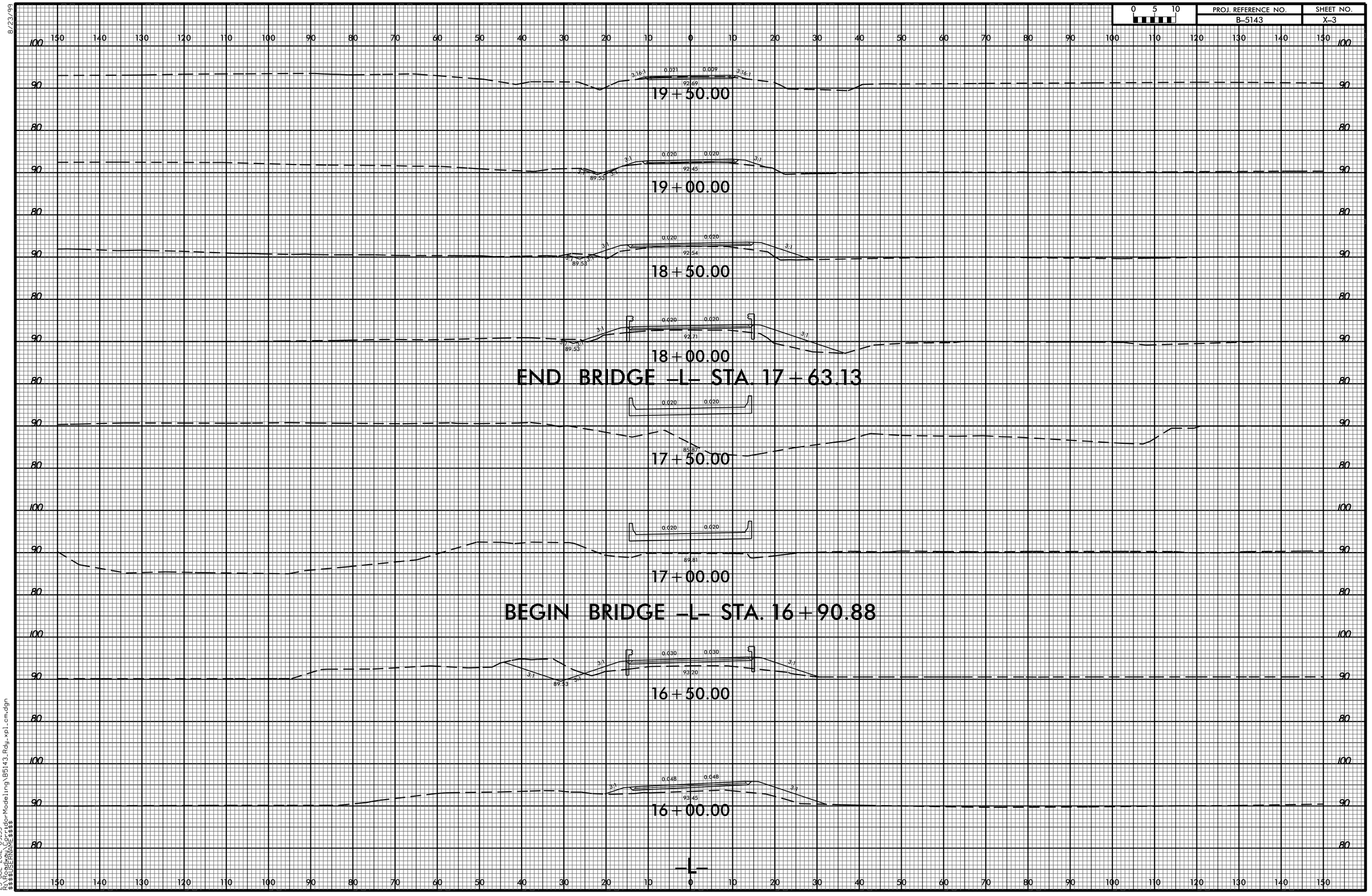

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0 5 10

PROJ. REFERENCE NO.	SHEET NO.
B–5143	X–4

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

100

90

80

4:1 0.025 0.007 4:1

92.83

19+70.00

END PROJECT B–5143 –L– STA. 19+70.00

–L–

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

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