Transportation

PAT McCRORY
Governor

NICHOLAS J. TENNYSON
Secretary

November 21, 2016

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

Attention: Ms. Liz Hair
NCDOT Coordinator

Subject: **Application for Section 10, Section 404 Nationwide Permits 12, 23 and Section 401 Water Quality Certification** for replacement of Bridge Nos. 171 and 172 over the South River on SR 1851/1426 (Faircloth Road), Cumberland and Sampson Counties, North Carolina, Federal Aid Project No. BRZ-1851(3), TIP No. B-4950.

Debit $240.00 from WBS Element No. 40108.1.1

Dear Madam,

The North Carolina Department of Transportation (NCDOT) proposes to replace existing Bridge Nos. 171 and 172 in Cumberland and Sampson Counties. Bridge No. 171 is a 91-foot bridge to be replaced with a 120-foot bridge. Bridge No. 172 is a 151-foot bridge to be replaced with a 185-foot bridge. The new bridges will be placed on existing alignment. The new bridges will include two 10-foot lanes in each direction and 6-foot shoulders on each side. Traffic will be detoured offsite.

Please find enclosed the Pre-Construction Notification (PCN) form, DMS Acceptance Letter stormwater management plan, permit drawings, utility permit drawings, and roadway design plans for the above referenced project. A Programmatic Categorical Exclusion (PCE) was completed for this project on February 24, 2016, and distributed shortly thereafter. Additional copies are available at the NCDOT website: https://connect.ncdot.gov/resources/Environmental/

The proposed let date for the project is May 16, 2017 with a review date of March 28, 2017. However, the let date may advance as additional funds become available.

Regulatory Approvals

Section 404 Permit: All aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). The NCDOT requests that the project be authorized by a NW 23 for bridge construction. We are also requesting issuance of NW 12 for utility pole and line installation.

Section 10 Permit: South River is listed as a Section 10 water. NCDOT is requesting a Section 10 permit.

Section 401 Permit: We anticipate 401 General Certification numbers 3884 and 3891 will apply to this project. NCDOT is requesting written concurrence from the North Carolina Department of Environmental Quality, Division of Water Resources.

A copy of this permit application and its distribution list will be posted at the NCDOT website at https://connect.ncdot.gov/resources/Environmental/. Should you have any questions regarding this information, please contact Deanna Riffey at (919) 707-6151 or driffey@ncdot.gov

Sincerely,

for Philip S. Harris III, P.E., C.P.M.
Natural Environment Section Head

cc: NCDOT Permit Application Standard Distribution List

Office Use Only:
Corps action ID no. _____
DWQ project no. _____
Form Version 1.4 January 2009

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	☒ Section 404 Permit ☒ Section 10 Permit	
1b. Specify Nationwide Permit (NWP) number: 23 12 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 Bridges 171 and 172 on SR 1851/1426 (Faircloth Bridge Road) over South River
2b. County:	Cumberland / Sampson
2c. Nearest municipality / town:	Stedman
2d. Subdivision name:	*not applicable*
2e. NCDOT only, T.I.P. or state project no:	B-4950

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) 707-6151
3g. Fax no.:	(919) 212-5785
3h. Email address:	driffey@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: 35.0527 (DD.DDDDDD) Longitude: - 78.6566 (-DD.DDDDDD)
1c. Property size:	14.5 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	South River
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: Land use within the vicinity is agriculture, low desity residential housing, and forested areas.	
3b. List the total estimated acreage of all existing wetlands on the property: 3.5 acres	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 147 linear feet	
3d. Explain the purpose of the proposed project: Both bridges are considered structurally deficient and is functionally obsolete due to structure and substructure conditions.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacement of existing Bridge No. 171 , a 91 -foot 3 span bridge, with a 120-foot 3 span bridge and Bridge No. 172, a 151- foot 5 span bridge, with a 185-foot 5 span bridge. Both new bridges will have 10-foot travel lanes in each direction with 6-foot shoulders on each side. The new bridges will be placed on the same alignment as the existing bridges. Traffic will be detoured offsite. 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): John Merritt	Agency/Consultant Company: NCDOT Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. 5/18/2011	
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	2f. Area of impact (acres)
Site 1/2 ☒ P ☐ T	Fill	Riverine Swamp Forest	☒ Yes ☐ No	☒ Corps ☐ DWQ	<0.01
Site 1/2 ☒ P ☐ T	Excavation	Riverine Swamp Forest	☒ Yes ☐ No	☒ Corps ☐ DWQ	<0.01
Site 1/2 ☒ P ☐ T	Mechanized Clearing	Riverine Swamp Forest	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.01
Site 2 ☒ P ☐ T	Fill	Riverine Swamp Forest	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.14
Site 2 ☒ P ☐ T	Mechanized Clearing	Riverine Swamp Forest	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.06
Site 2/3 ☒ P ☐ T	Fill	Riverine Swamp Forest	☒ Yes ☐ No	☒ Corps ☐ DWQ	<0.01
Site 2/3 ☒ P ☐ T	Excavation	Riverine Swamp Forest	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.01
Site 2/3 ☒ P ☐ T	Mechanized Clearing	Riverine Swamp Forest	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.02
Site 3 ☒ P ☐ T	Fill	Riverine Swamp Forest	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.03
Site 3 ☒ P ☐ T	Mechanized Clearing	Riverine Swamp Forest	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.03
				2g. **Total wetland impacts**	0.32 ac Permanent 0 ac Temporary

2h. Comments: Bridge Hand clearing: Site 1/2 = 0.03 acres and Site 2/3 = 0.18 acres.Utilities Hand Clearing: Site1 = 0.10 acres, Site2 = 0.08 acres, and Site 3 = 0.05 acres for poles/lines.

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 1/2 ☐ P ☒ T	Bridge171	South River	☒ PER ☐ INT	☒ Corps ☐ DWQ	110	80
Site 2/3 ☐ P ☒ T	Bridge172	South River	☒ PER ☐ INT	☒ Corps ☐ DWQ	110	48
					3h. Total stream and tributary impacts	0 ft Perm 128 ft Temp

3i. Comments: Bents: Bridge #171 = <0.01 acres and Bridge #172 = <0.01 acres

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: Buffer impacts for this project are less than 40 linear feet for the road crossings and are exempt.

D. Impact Justification and Mitigation

1. Avoidance and Minimization

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

Replace in place was incorporated to minimize water resources impacts along with lengthening both bridges and grassed shoulder section were incorporated to diffuse runoff along the slopes and to facilitate infiltration. Other than no build the minimal effects to the wetlands and stream on this project is unavoidable.

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

NCDOT Best Management Practices for Construction and Maintenance Activities will be employed.

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:	0
4c. If using stream mitigation, stream temperature:	☒ warm ☐ cool ☐ cold
4d. Buffer mitigation requested (DWQ only):	square feet
4e. Riparian wetland mitigation requested:	0.32 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:	☐ 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 N/A
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	☐ Coastal counties ☐ HQW ☐ ORW ☐ Session Law 2006-246 ☐ Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No N/A
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	☐ Yes ☐ No N/A
5b. Have all of the 401 Unit submittal requirements been met?	☐ Yes ☐ No N/A

F. Supplementary Information		
1. Environmental Documentation (DWQ Requirement)		
1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land?	☒ Yes	☐ No
1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)?	☒ Yes	☐ No
1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) Comments:	☒ Yes	☐ No
2. Violations (DWQ Requirement)		
2a. Is the site in violation of DWQ Wetland Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), DWQ Surface Water or Wetland Standards, or Riparian Buffer Rules (15A NCAC 2B .0200)?	☐ Yes	☒ No
2b. Is this an after-the-fact permit application?	☐ Yes	☒ No
2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):		
3. Cumulative Impacts (DWQ Requirement)		
3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality?	☐ Yes ☒ No	
3b. If you answered "yes" to the above, submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent DWQ policy. If you answered "no," provide a short narrative description. Due to the minimal transportation impact resulting from the 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 and NCNHP database along with field surveys. Surveys last conducted for Pondberry and Michaux's sumac on July 20, 2016. Habitat is present, but no Pondberry or Michaux's sumac were found during survey. Biological conclusion is No Effect. Habitat was not found in the study area for American chaffseed, red-cockaded woodpecker, rough-leaved loosestrife, and Saint Francis' satyr butterfly. Biological conclusion is No Effect.		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	☐ Yes	☒ No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index		
7. Historic or Prehistoric Cultural Resources (Corps Requirement)		
7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)?	☐ Yes	☒ No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation		
8. Flood Zone Designation (Corps Requirement)		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	☒ Yes	☐ No
8b. If yes, explain how project meets FEMA requirements: NCDOT Hydraulics Unit coordination with FEMA		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		

for Philip S. Harris III, P.E., C.P.M. Applicant/Agent's Printed Name	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	11-21-2016 Date

Mitigation Services
ENVIRONMENTAL QUALITY

PAT MCCRORY
Governor

DONALD R. VAN DER VAART
Secretary

November 4, 2016

Mr. Philip S. Harris, III, P.E., CPM
Project Development and Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

Subject: Mitigation Acceptance Letter:

B-4950, Replace Bridges 171 and 172 on SR 1851 / SR 1426 (Faircloth Bridge Road) over the South River, Cumberland County

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the compensatory wetland mitigation for the subject project. Based on the information supplied by you on November 3, 2016, the impacts are located in CU 03030006 of the Cape Fear River basin in the Southern Inner Coastal Plain (SOCP) 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	0.32	0	0	0	0

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

The impacts and associated mitigation needs were under projected by the NCDOT in the 2016 impact data. DMS will commit to implement sufficient compensatory wetland 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 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 DMS.

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

Sincerely,

James B. Stanfill
Credit Management Supervisor

cc: Ms. Liz Hair, USACE – Wilmington Regulatory Field Office
Ms. Amy Chapman, NCDWR
File: B-4950

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.06; Released June 2016)

WBS Element: 40108.1.1 **TIP No.:** B-4950 **County(ies):** Cumberland Sampson

General Project Information

WBS Element:	40108.1.1	**TIP Number:**	B-4950	**Project Type:**	Bridge Replacement	**Date:**	11/9/2016
NCDOT Contact:	Paul Atkinson			**Contractor / Designer:**	Richard Bollinger, PE Will Weathersbee, PE		
Address:	1020 Birch Ridge Rd. Raleigh, NC 27610			**Address:**	8601 Six Forks Road, Suite 260 Raleigh, NC 27615		
Phone:	919-707-6707			**Phone:**	919-480-4066		
Email:	patkinson@ncdot.gov			**Email:**	richard.bollinger@rsandh.com will.weathersbee@rsandh.com		
City/Town:	Stedman			**County(ies):**	Cumberland	Sampson	
River Basin(s):	Cape Fear			**CAMA County?**	No	No	
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	0.20	**Surrounding Land Use:**	Woods, Residential				
	Proposed Project			**Existing Site**			
Project Built-Upon Area (ac.)	0.7	ac.		0.5	ac.		
Typical Cross Section Description:	Two 10' lanes with 6' shoulders on the approach, and two 10' lanes with 5'-5" shoulders on the bridge			Two 10' lanes with no shoulder on the approach, and two 10' lanes with 2' shoulders on the bridge.			
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 1038	Year: 2037		Existing: 654	Year: 2017		
General Project Narrative: (Description of Minimization of Water Quality Impacts)	This is a bridge replacement project. Existing bridge 171 is 1@30' -4", 1@30'-1", and 1@30'-4". Existing bridge 172 is 1@30' -3", 3@30'-1", and 1@30'-3". Proposed bridge 171 is a 1@35' 21", 1@55' 24", and 1@30' 21". Proposed bridge 172 is a 1@35' 21", 2@55' 24", and 1@40' 21". To minimize impacts, grassed shoulder sections were used to diffuse roadway sheet flow runoff along the slopes and to facilitate infiltration. No deck drains were used on either bridge replacement.						

Waterbody Information

Surface Water Body (1):	South River			**NCDWR Stream Index No.:**	18-68-12-(0.5)		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C				
		Supplemental Classification:	Swamp Waters (Sw)				
Other Stream Classification:	None						
Impairments:	None						
Aquatic T&E Species?	Yes	Comments:	American Alligator, Pondberry, Wood Stork, Michaux's Sumac - no impacts, no effect				
NRTR Stream ID:	South River				**Buffer Rules in Effect:**	N/A	
Project Includes Bridge Spanning Water Body?	Yes	**Deck Drains Discharge Over Buffer?**	No		**Dissipator Pads Provided in Buffer?**	No	
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)			(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)							

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 2.06; Released June 2016)

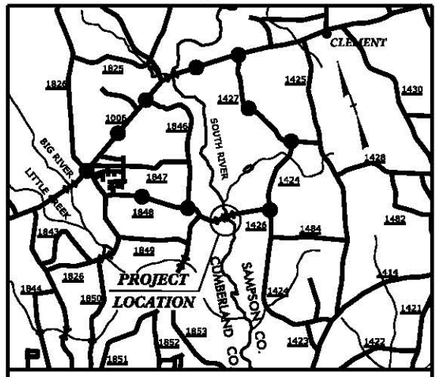
WBS Element: 40108.1.1 **TIP No.:** B-4950 **County(ies):** Cumberland Sampson **Page** 2 **of** 2

Additional Waterbody Information

Surface Water Body (2):	Ut to South River		**NCDWR Stream Index No.:**	18-68-12-(0.5)		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Class C			
		Supplemental Classification:	Swamp Waters (Sw)			
Other Stream Classification:	None					
Impairments:	None					
Aquatic T&E Species?	Yes	Comments:	American Alligator, Pondberry, Wood Stork, Michaux's Sumac - no impacts, no effect			
NRTR Stream ID:	SA1			**Buffer Rules in Effect:**	N/A	
Project Includes Bridge Spanning Water Body?	Yes	**Deck Drains Discharge Over Buffer?**	No	**Dissipator Pads Provided in Buffer?**	N/A	
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

TIP PROJECT: B-4950

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



VICINITY MAP

75% PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND AND SAMPSON COUNTIES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4950	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
40108.1.1	BRZ-1851 (3)	PE
40108.2.1	BRZ-1851 (3)	ROW,UTIL

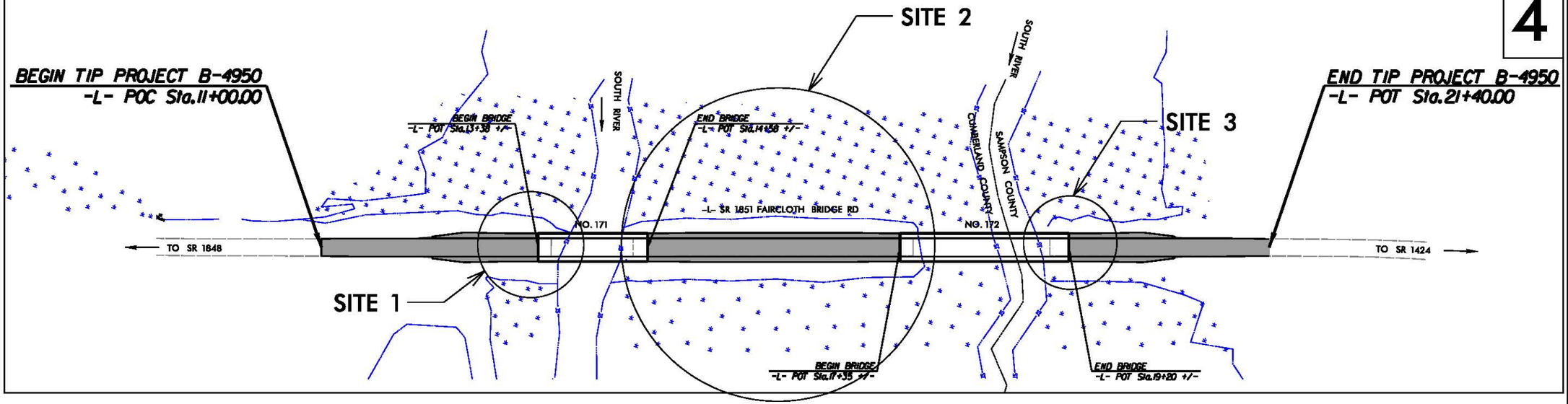
LOCATION: REPLACE BRIDGES 171 AND 172 OVER SOUTH RIVER ON SR 1851 /SR 1426 (FAIRCLOTH BRIDGE ROAD)

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

WETLAND AND SURFACE WATER IMPACTS PERMIT

NAD 83/NA 2011

4



PERMIT DRAWING
SHEET 1 OF 10

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

CONTRACT:

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2017 = 654
ADT 2037 = 1,038
K = 10 %
D = 60 %
T = 3 % *
V = 60 MPH
*(TTST=1% + DUAL=2%)
FUNC CLASS = LOCAL
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4950	=	0.139 MILE
LENGTH STRUCTURE TIP PROJECT B-4950	=	0.058 MILE
TOTAL LENGTH TIP PROJECT B-4950	=	0.197 MILE

PLANS PREPARED BY:
RS&H
8601 SIX FORKS RD, SUITE 260
RALEIGH, NC 27615
919-926-4100
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 22, 2016

LETTING DATE: MAY 16, 2017

JENNIFER FARINO, PE
PROJECT ENGINEER

JARED BOND, PE
PROJECT DESIGN ENGINEER

TATIA L. WHITE, PE, PLS
NCDOT CONTACT

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

REVISIONS

9/13/2016
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PROJECT REFERENCE NO.	SHEET NO.
B-4950	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H

PERMIT DRAWING
SHEET 2 OF 10

NAD 83/NA 2011

REVISIONS 8/17/99

10

20

SITE 1

SITE 2

SITE 3

BEGIN TIP PROJECT B-4950
-L- POC Sta. 11+00.00

END TIP PROJECT B-4950
-L- POT Sta. 21+40.00

WILLIAM L. HUGHES
1

MICHAEL EDWARD OWENS
& WIFE, LINDA GAIL OWENS
2

MARY B. AUTRY
3

JAMES FRANKLIN WILLIAMS
& WIFE, GEALDA WILLIAMS
4

CUMBERLAND COUNTY

SAMPSON COUNTY

SOUTH RIVER

TB 2GI

REMOVE EXISTING BRIDGE

15"RCP-III

18" RCP

MTL GATE

RETAIN 13'SOIL

TO SR 1848

SR 1851 FAIRCLOTH BRIDGE RD 20' BST

TO SR 1824

BRIDGE #171

BRIDGE #172

CONC

OUTLET 0401
Q10=0.60 CFS
V10=0.50 FPS

EXCAVATION IN WETLANDS

EXCAVATION LIMITS

HAND CLEARING

OUTLET 0406
Q10=0.80 CFS
V10=0.53 FPS

POND

EARTH DAM

ISLAND

WOODS

DENOTES EXCAVATION IN WETLANDS

DENOTES HAND CLEARING

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

50' 0' 50'

9/17/2016
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PROJECT REFERENCE NO.	SHEET NO.
B-4950	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

RS&H

PERMIT DRAWING SHEET 3 OF 10

REVISIONS 8/17/99

10

20

SITE 1

SITE 2

SITE 3

BEGIN TIP PROJECT B-4950
-L- POC Sta. 11+00.00

END TIP PROJECT B-4950
-L- POT Sta. 21+40.00

WILLIAM L. HUGHES (1)

MICHAEL EDWARD OWENS & WIFE, LINDA GAIL OWENS (2)

MARY B. AUTRY (3)

JAMES FRANKLIN WILLIAMS & WIFE, GEALDA WILLIAMS (4)

CUMBERLAND COUNTY

SAMPSON COUNTY

SOUTH RIVER

TB 2GI

REMOVE EXISTING BRIDGE

EXCAVATION IN WETLANDS

EXCAVATION LIMITS

HAND CLEARING

15"RCP-III

18" RCP

MTL GATE

RETAIN LYNSOIL

TO SR 1848

TO SR 1424

SR 1851 FAIRCLOTH BRIDGE RD 20' BST

BRIDGE #171

BRIDGE #172

CONC

OUTLET 0401
Q10=0.60 CFS
V10=0.50 FPS

OUTLET 0406
Q10=0.80 CFS
V10=0.53 FPS

POND

EARTH DAM

ISLAND

WOODS

DENOTES EXCAVATION IN WETLANDS

DENOTES HAND CLEARING

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

50' 0' 50'

9/13/2016
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PROJECT REFERENCE NO.	SHEET NO.
B-4950	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H

PERMIT DRAWING
SHEET 4 OF 10

SITE 1

SITE 2

NAD 83/NA 2011

REVISIONS
8/17/99

TB 2GI

REMOVE EXISTING BRIDGE

15"RCP-III

TB 2GI

OUTLET 0401
Q10 = 0.60 CFS
V10 = 0.50 FPS

EXCAVATION IN WETLANDS

EXCAVATION LIMITS

HAND CLEARING

EXCAVATIO

EXCAVATION LIMITS

BRIDGE #171
CONC

SOUTH RIVER

WOODS

POND

DENOTES EXCAVATION IN WETLANDS

DENOTES HAND CLEARING

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

20' 0' 20' 40'
10'

8/17/2016
R:\Hydro\projects\PERMITS_Environmental\Drawings\B4950_hyd_prm_psh_02_Enlargement1.dgn
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PROJECT REFERENCE NO.	SHEET NO.
B-4950	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

RS&H

PERMIT DRAWING
SHEET 5 OF 10

SITE 1

SITE 2

TB 2GI

REMOVE EXISTING BRIDGE

15"RCP-III

TB 2GI

OUTLET 0401
Q10 = 0.60 CFS
V10 = 0.50 FPS

EXCAVATION IN WETLANDS

EXCAVATION LIMITS

HAND CLEARING

EXCAVATION LIMITS

EXCAVATIO

SOUTH RIVER

BRIDGE #171
CONC

WOODS

POND

RW

DENOTES EXCAVATION IN WETLANDS

DENOTES HAND CLEARING

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

20' 0' 20' 40'
10'

REVISIONS 8/17/99

9/13/2016
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PROJECT REFERENCE NO.	SHEET NO.
B-4950	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

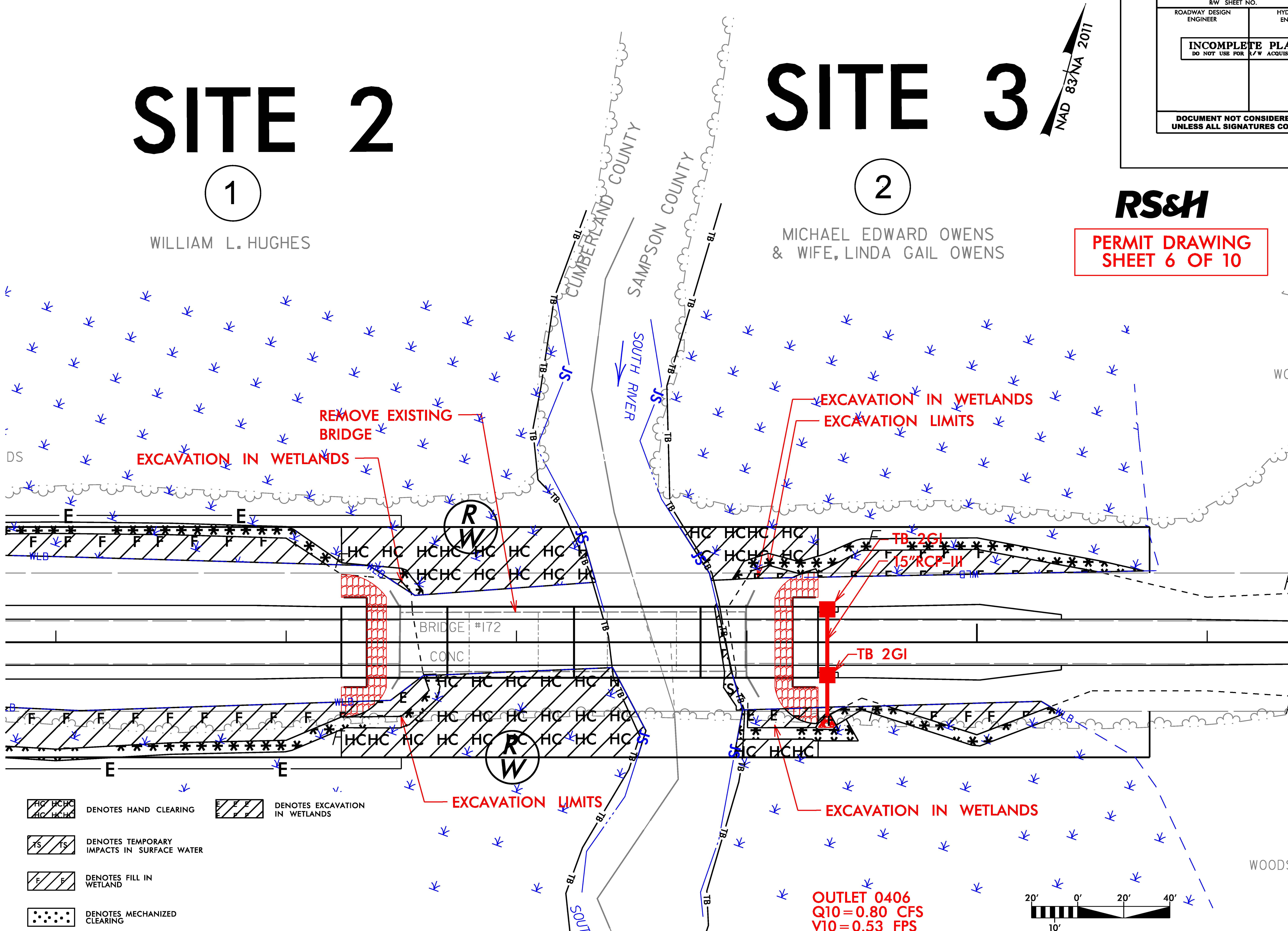
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H

PERMIT DRAWING
SHEET 6 OF 10

SITE 2

SITE 3



NAD 83/NA 2011
1
WILLIAM L. HUGHES
2
MICHAEL EDWARD OWENS
& WIFE, LINDA GAIL OWENS
CUMBERLAND COUNTY
SAMPSON COUNTY
SOUTH RIVER
REMOVE EXISTING BRIDGE
EXCAVATION IN WETLANDS
EXCAVATION LIMITS
BRIDGE #172
CONC
TB 2GI
15"RCP-III
TB 2GI
EXCAVATION LIMITS
EXCAVATION IN WETLANDS
WOODS
DENOTES HAND CLEARING
DENOTES EXCAVATION IN WETLANDS
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
OUTLET 0406
Q10 = 0.80 CFS
V10 = 0.53 FPS
20' 0' 20' 40'
10'

REVISIONS

8/17/99

9/13/2016
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8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B-4950	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H

PERMIT DRAWING
SHEET 7 OF 10

NAD 83/NA 2017

SITE 2

1

WILLIAM L. HUGHES

SITE 3

2

MICHAEL EDWARD OWENS
& WIFE, LINDA GAIL OWENS

CUMBERLAND COUNTY

SAMPSON COUNTY

SOUTH RIVER

REMOVE EXISTING BRIDGE

EXCAVATION IN WETLANDS

EXCAVATION LIMITS

EXCAVATION IN WETLANDS

EXCAVATION LIMITS

TB 2GI
1.5"RCP-III

TB 2GI

BRIDGE #172
CONC

WLB

RW

DENOTES HAND CLEARING

DENOTES EXCAVATION IN WETLANDS

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

OUTLET 0406
Q10 = 0.80 CFS
V10 = 0.53 FPS

20' 0' 20' 40'
10'

WOODS

9/13/2016
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5/14/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B-4950	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H

STRUCTURE HYDRAULIC DATA
DA= 203 SQ.MI.

DESIGN DISCHARGE	= 6100	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 101.8	FT
BASE DISCHARGE	= 8900	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 103.6	FT
OVERTOPPING DISCHARGE	= 9700	CFS
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING ELEVATION	= 104.0	FT

PI = 12+00.00
EL = 103.82'
VC = 200'
K = 286

BRIDGE STA.= 13+98.00 -L-
1@35' 21" CORED SLAB, 1@55' 24" CORED SLAB,
1@30' 21" CORED SLAB, WITH 4' END BENT CAPS
SKEW = 90°
C ELEV.= 104.62'

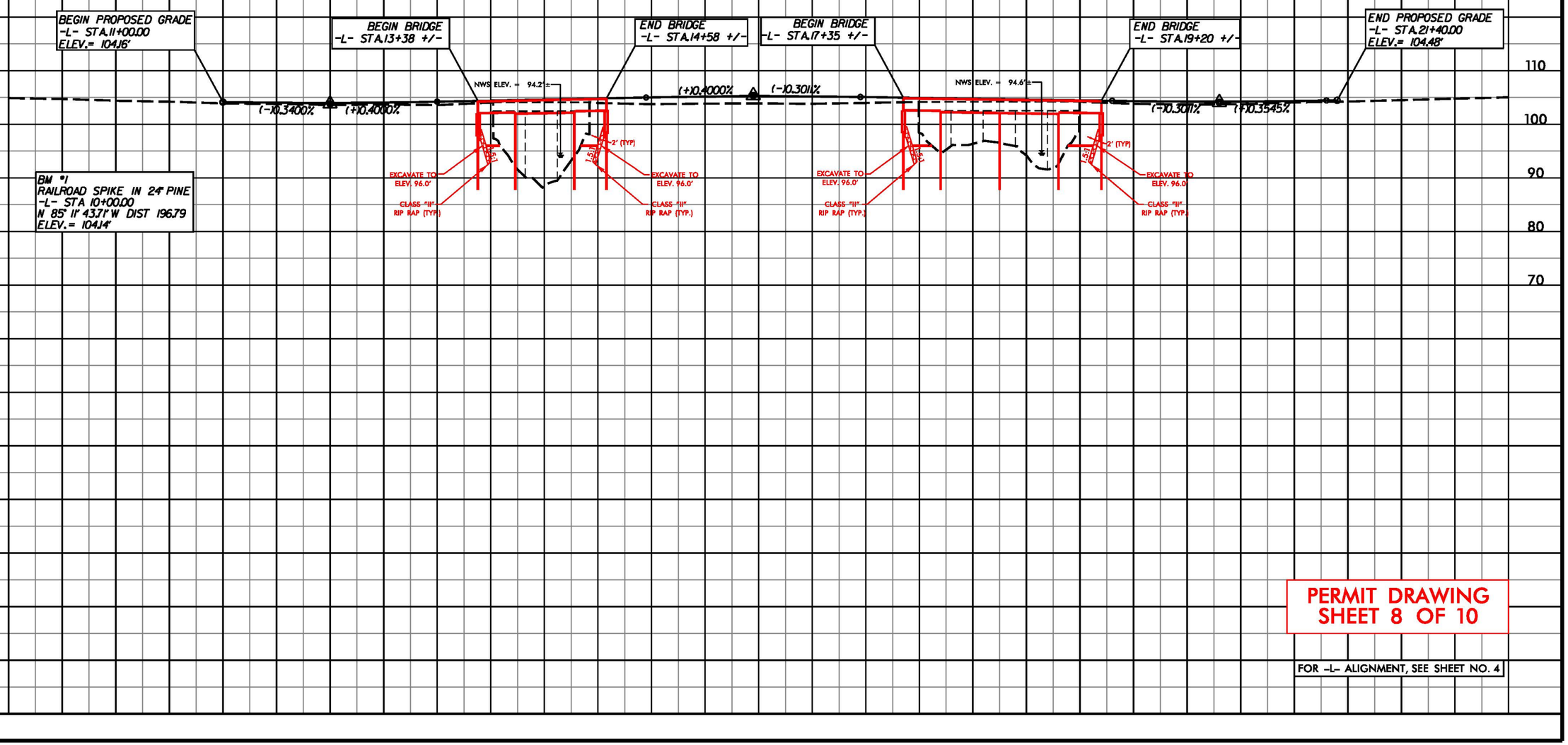
PI = 15+95.00
EL = 105.40'
VC = 200'
K = 285

STRUCTURE HYDRAULIC DATA
DA= 203 SQ.MI.

DESIGN DISCHARGE	= 6100	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 101.8	FT
BASE DISCHARGE	= 8900	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 103.6	FT
OVERTOPPING DISCHARGE	= 9700	CFS
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING ELEVATION	= 104.0	FT

BRIDGE STA.= 18+27.50 -L-
1@35' 21" CORED SLAB, 2@55' 24" CORED SLAB,
1@40' 21" CORED SLAB
WITH 4' END BENT CAPS
SKEW = 90°
C ELEV.= 104.70'

PI = 20+30.00
EL = 104.09'
VC = 200'
K = 328



BM #1
RAILROAD SPIKE IN 24" PINE
-L- STA 10+00.00
N 85° 11' 43.71" W DIST 196.79
ELEV.= 104.14'

PERMIT DRAWING
SHEET 8 OF 10

FOR -L- ALIGNMENT, SEE SHEET NO. 4

8/13/2016
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12:58:46 PM

WETLAND IMPACTS

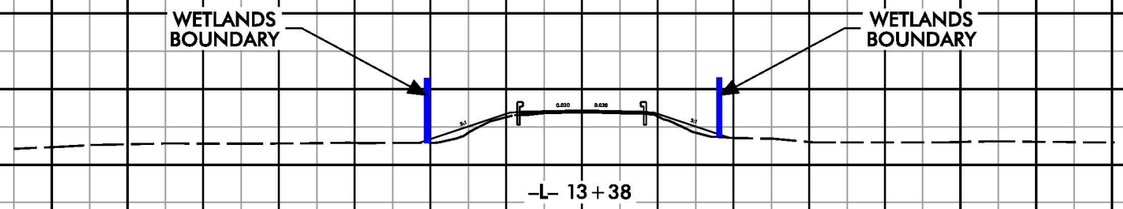
PROJECT REFERENCE NO.	SHEET NO.
B-4950	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H

SITE 1



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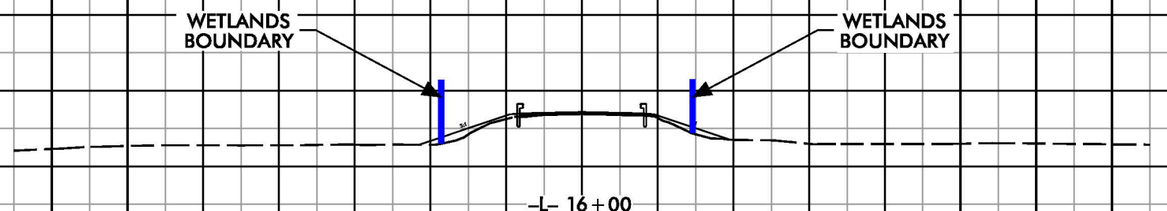

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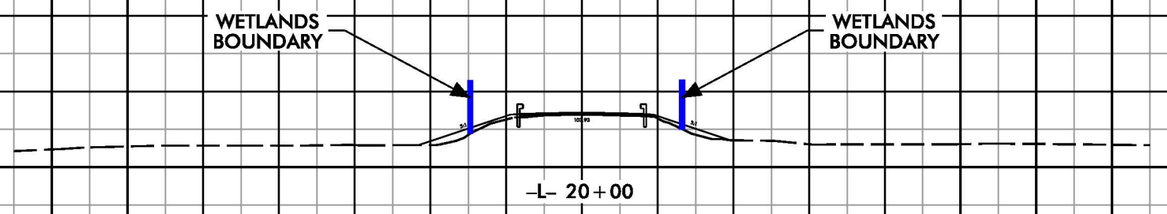

PERMIT DRAWING
SHEET 9 OF 10

REVISIONS

5/14/99

11/7/2016
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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)
1/2	-L- 13+10 TO 14+71	Bridge 171	< 0.01		< 0.01	0.01	0.03		0.02		80	
2	-L- 14+71 TO 17+23	Roadway Fill Slope	0.14			0.06						
2/3	-L- 17+23 TO 19+33	Bridge 172	< 0.01		0.01	0.02	0.18		< 0.01		48	
3	-L- 19+33 TO 20+73	Roadway Fill Slope	0.03			0.03						
TOTALS*:			0.18		0.02	0.12	0.21		0.02		128	

*Rounded totals are sum of actual impacts

NOTES:

Proposed Bridge Impacts from SMU

Bridge 171: <.01 acres for all permanent bents. No temporary impacts will be required.

Bridge 172: <.01 acres for all permanent bents. No temporary impacts will be required.

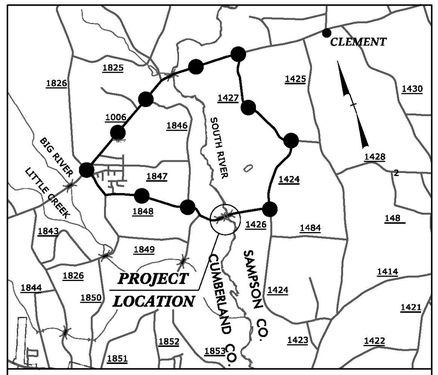
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
11/7/2016
Cumberland / Sampson
B-4950
40108.1.1

SHEET 10 OF 10

Revised 2013 10 24

TIP PROJECT: B-4950

CONTRACT:



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NEU PERMIT PLANS
CUMBERLAND AND SAMPSON COUNTIES

LOCATION: REPLACE BRIDGES 171 AND 172 OVER SOUTH RIVER ON SR 1851/SR 1426 (FAIRCLOTH BRIDGE ROAD)

TYPE OF WORK: POWER LINE RELOCATION

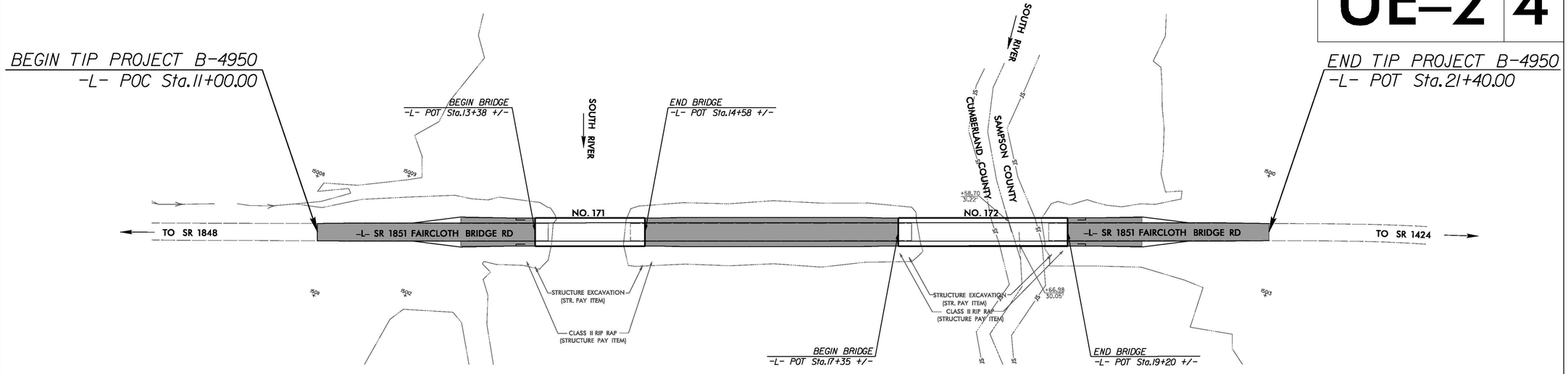
T.I.P. NO.	SHEET NO.
B-4950	UE-1

WETHERILL ENGINEERING
1223 Jones Franklin Road
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

NAD 83
NSRS 2007

UE-2 4



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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

GRAPHIC SCALES

PLANS 0 50 100
PROFILE (HORIZONTAL) 0 50 100
PROFILE (VERTICAL) 0 10 20

INDEX OF SHEETS

UTILITY OWNERS ON PROJECT

(A) SOUTH RIVER EMC (POWER)

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: 22 JULY 2016

LETTING DATE: 16 MAY 2017

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

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Bo Hemphill UTILITIES SQUAD LEADER PROJECT ENGINEER
John D. Schriner, PLS UTILITIES PROJECT DESIGNER

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

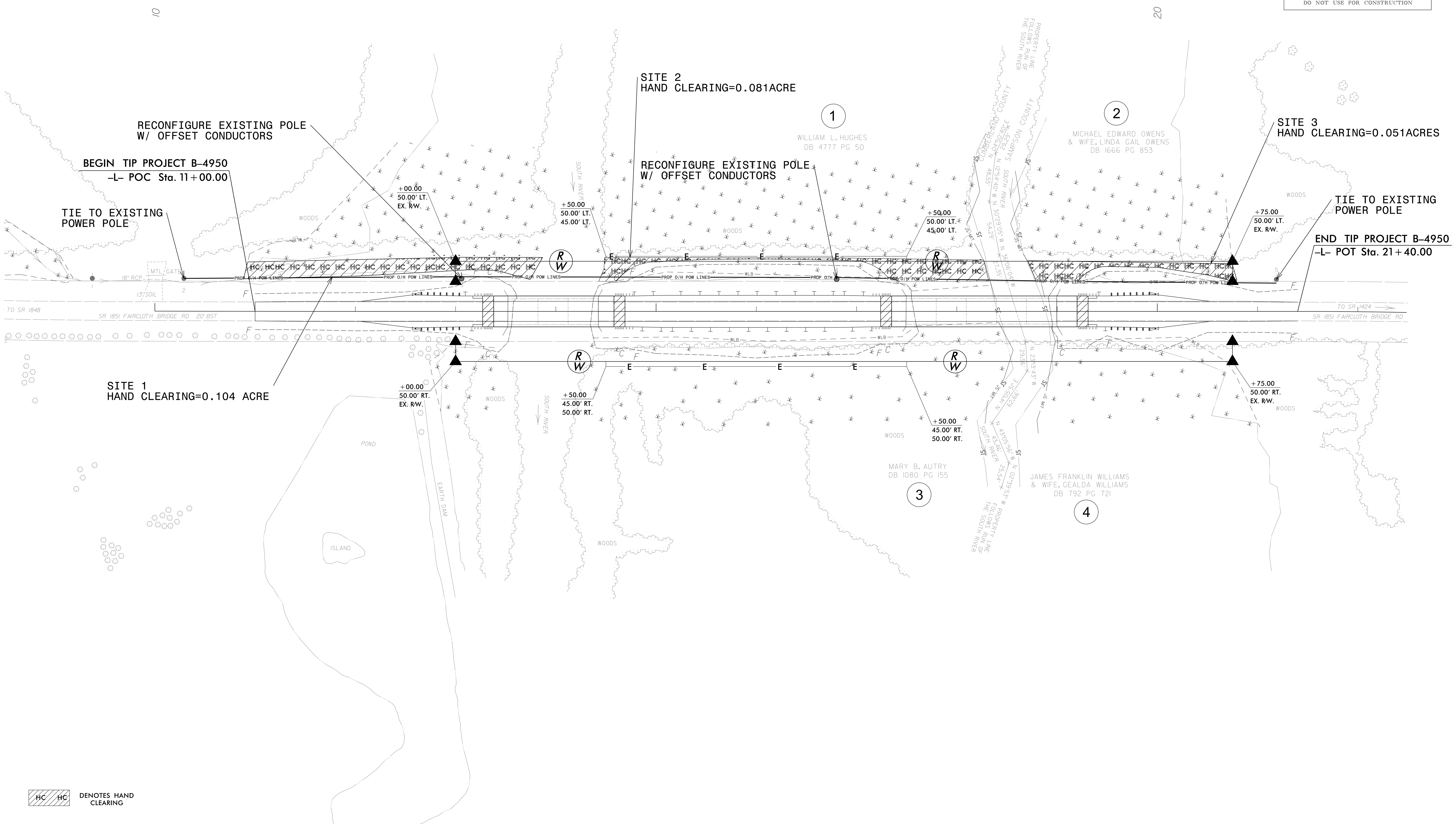
PROJECT REFERENCE NO.	SHEET NO.
B-4950	UE-2

WETLAND AND SURFACE WATER IMPACTS PERMIT

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



REVISIONS

Utility Summary Sheet

			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	10+88 to 13+87	Power Lines					0.10					
2	14+43 to 18+32	Power Lines					0.09					
3	18+71 to 20+79	Power Lines					0.05					
TOTALS:							0.24					

Note: Clearing for utility relocation will not exceed the current clear zone being maintained for the existing utilities.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

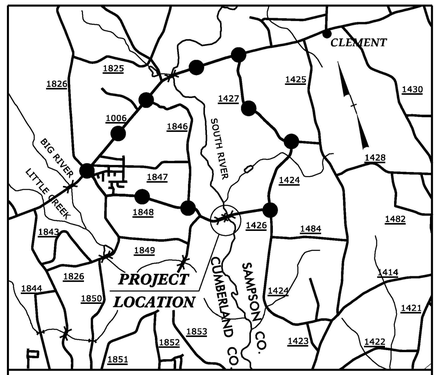
CUMBERLAND & SAMPSON COUNTIES
WBS - 40108.1.1 (B-4950)

09/08/59

TIP PROJECT: B-4950

CONTRACT:

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



DETOUR

VICINITY MAP

ROW PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND AND SAMPSON COUNTIES

LOCATION: REPLACE BRIDGES 171 AND 172 OVER SOUTH RIVER ON SR 1851 / SR 1426 (FAIRCLOTH BRIDGE ROAD)

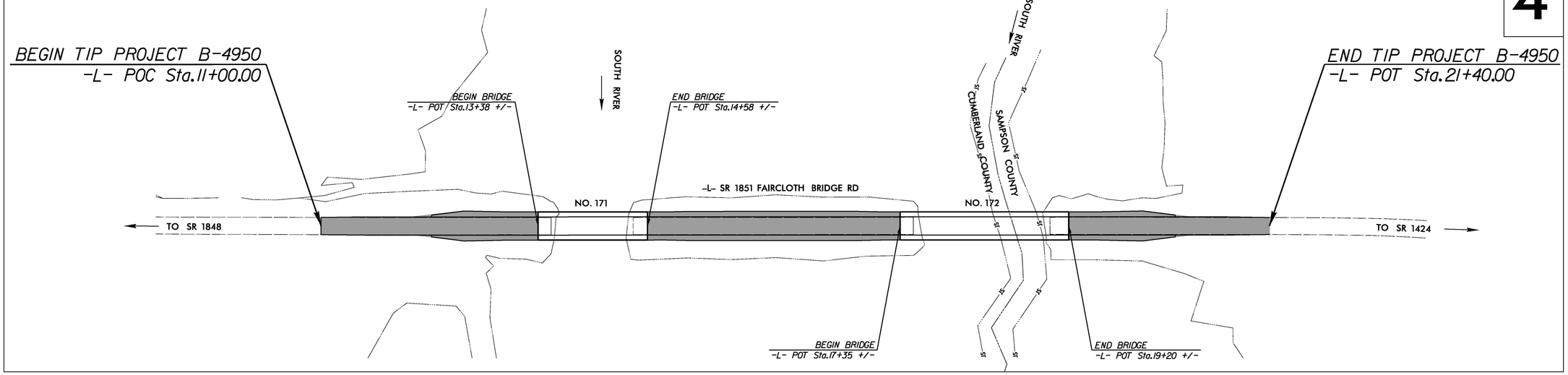
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4950	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
40108.1.1	BRZ-1851 (3)	PE
40108.2.1	BRZ-1851 (3)	ROW,UTIL

NAD 83/ NSRS 2007

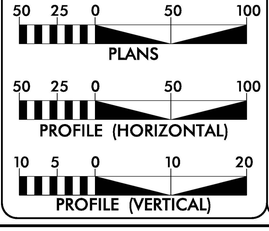
4



THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III "MODIFIED" W/HAND CLEARING BEYOND THE SLOPE STAKES.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2017 = 654
ADT 2037 = 1,038
K = 10 %
D = 60 %
T = 3 % *
V = 60 MPH
*(TTST=1% + DUAL=2%)
FUNC CLASS = LOCAL
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4950	=	0.139 MILE
LENGTH STRUCTURE TIP PROJECT B-4950	=	0.058 MILE
TOTAL LENGTH TIP PROJECT B-4950	=	0.197 MILE

PLANS PREPARED BY:

RS&H
8601 SIX FORKS RD, SUITE 260
RALEIGH, NC 27615
919-926-4100

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 21, 2016

LETTING DATE:
MAY 16, 2017

JENNIFER FARINO, PE
PROJECT ENGINEER

JARED BOND, PE
PROJECT DESIGN ENGINEER

TATIA L. WHITE, PE, PLS
NCDOT CONTACT

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

13-JUL-2016 14:59
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04/06/15

PROJECT REFERENCE NO.	SHEET NO.
B-4950	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

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
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil
- Potential Contamination Area: Soil
- Known Contamination Area: Water
- Potential Contamination Area: Water
- Contaminated Site: Known or Potential

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
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

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

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E.*) — W
- U/G Water Line LOS C (S.U.E.*) — W
- U/G Water Line LOS D (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) — G
- U/G Gas Line LOS C (S.U.E.*) — G
- U/G Gas Line LOS D (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
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line LOS B (S.U.E.*) — ?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 LOS A (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-4950	2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

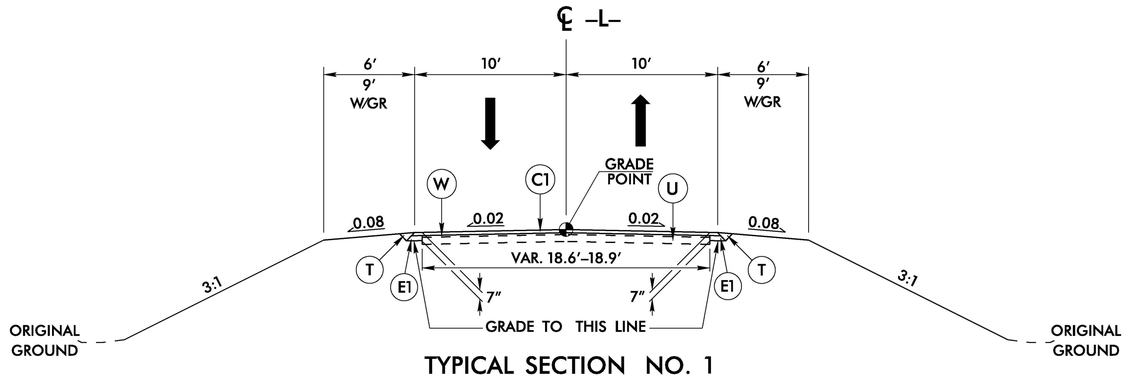
RS&H

PAVEMENT SCHEDULE

(FINAL PAVEMENT DESIGN)

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.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

NOTE: ALL PAVEMENT SLOPES 1:1 UNLESS NOTED OTHERWISE

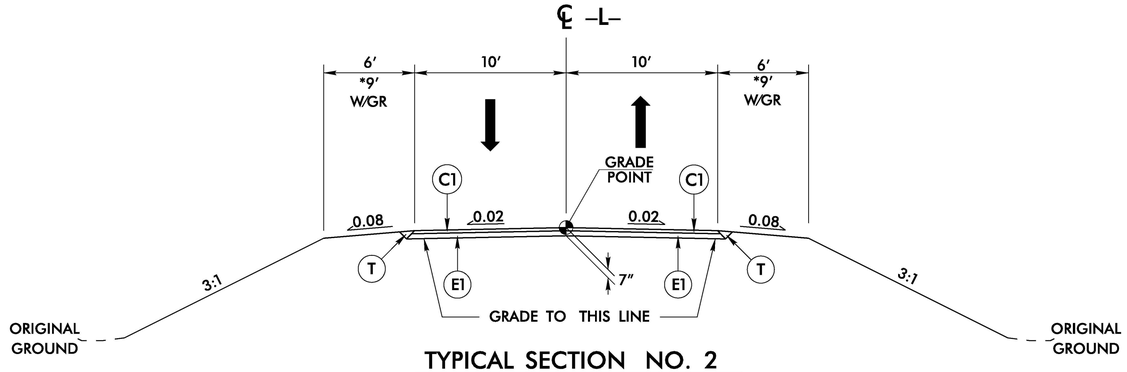


TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

–L– STA. 11+00.00 TO –L– STA. 11+50.00

–L– STA. 20+90.00 TO –L– STA. 21+40.00



TYPICAL SECTION NO. 2

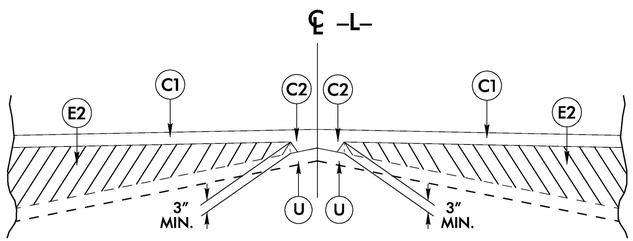
* PAVE TO FACE OF GUARDRAIL

USE TYPICAL SECTION NO. 2

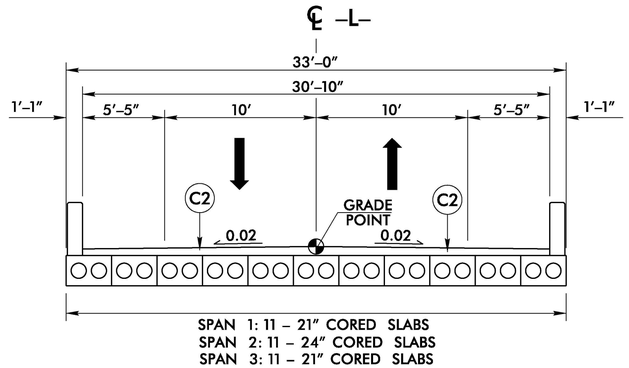
–L– STA. 11+50.00 TO –L– STA. 13+38 +/–

–L– STA. 14+58 +/– TO –L– STA. 17+35 +/–

–L– STA. 19+20 +/– TO –L– STA. 20+90.00



STANDARD WEDGING DETAIL



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

–L– STA. 13+38 +/– TO –L– STA. 14+58 +/–

–L– STA. 17+35 +/– TO –L– STA. 19+20 +/–

PROJECT REFERENCE NO.	SHEET NO.
B-4950	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

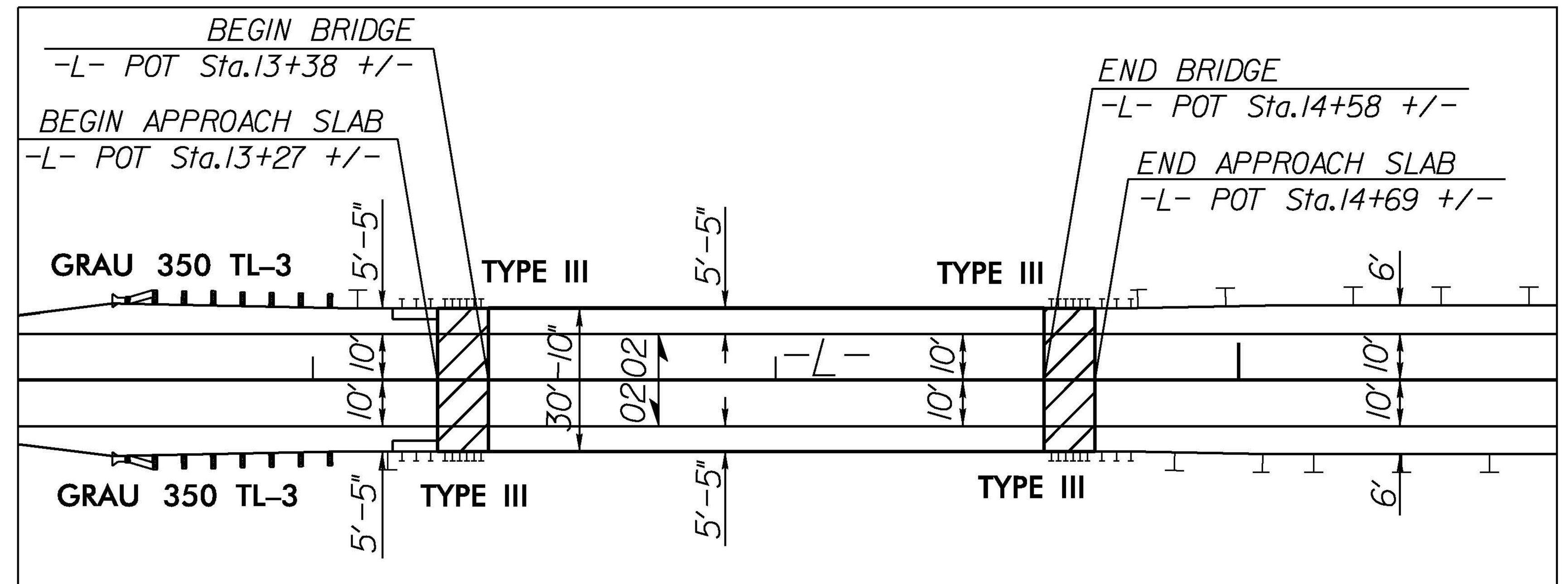
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H

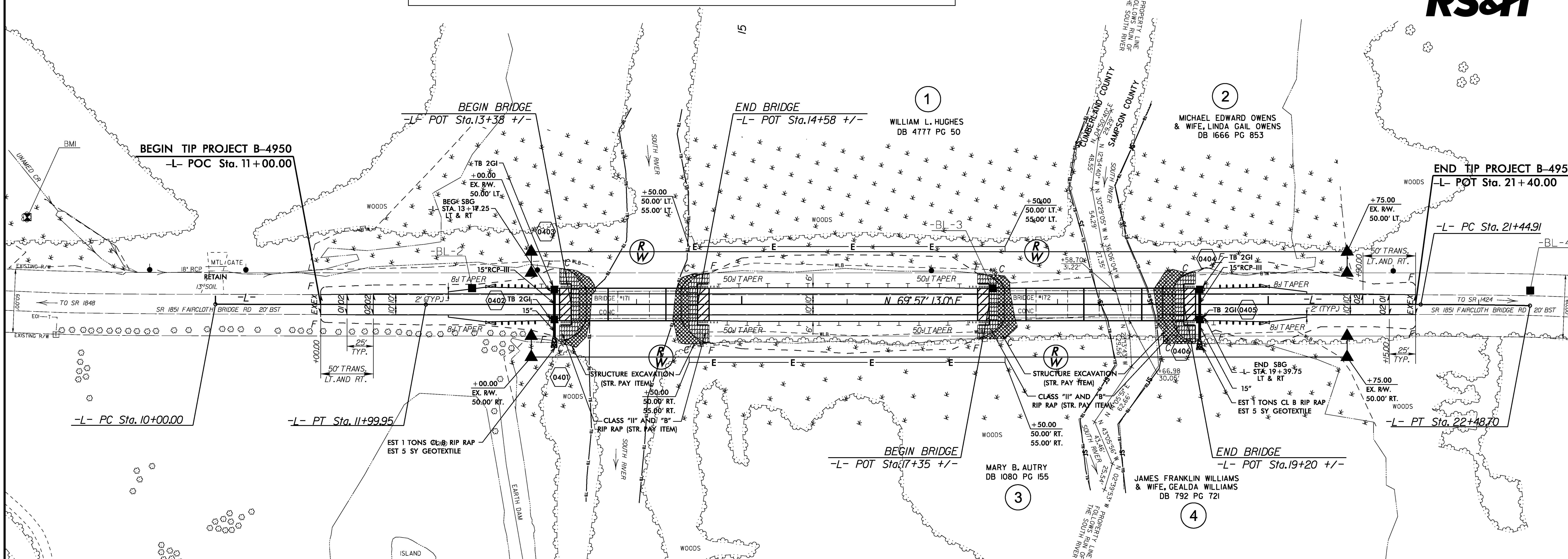
NAD 83/NSRS 2007

-L- CURVE DATA

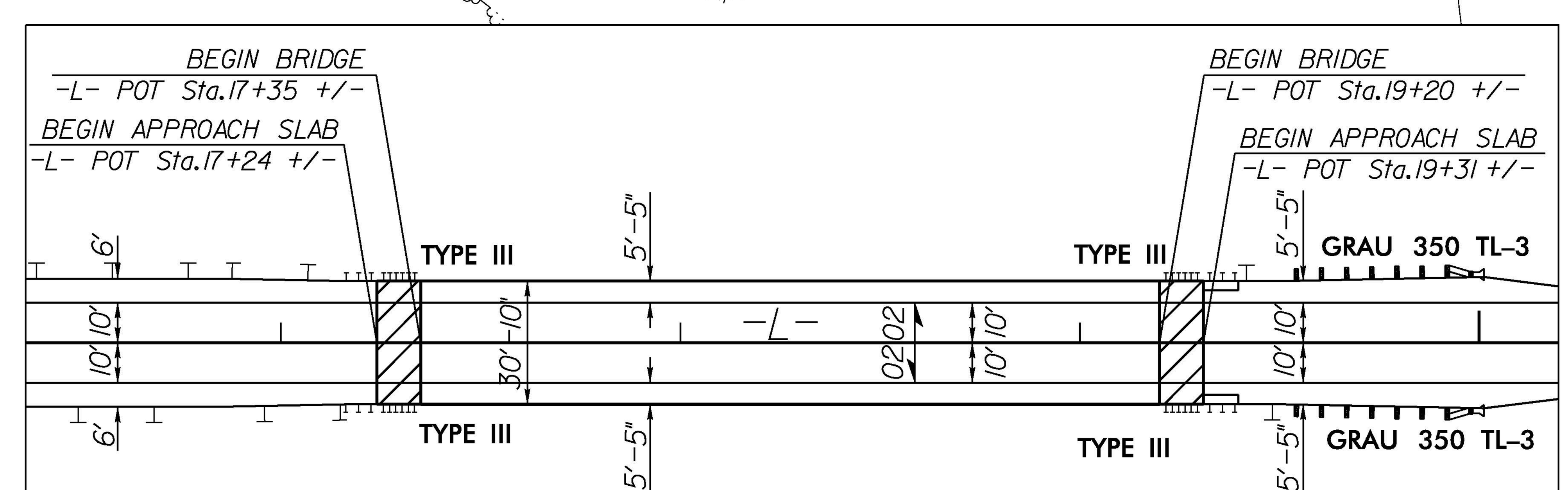
PI Sta 10+99.98	PI Sta 21+96.81
BK= N 70° 05' 50.1" E	Δ = 1° 10' 35.1" (RT)
Δ = 0° 08' 37.0" (LT)	D = 1° 08' 00.2"
D = 0° 04' 18.6"	L = 103.80'
L = 199.95'	T = 51.90'
T = 99.98'	R = 5,055.27'
R = 79,766.46'	
SE = NC	
RO = SEE PLANS	



BRIDGE 171 SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP N.T.S.



BEGIN TIP PROJECT B-4950
-L- POC Sta. 11+00.00
END TIP PROJECT B-4950
-L- POT Sta. 21+40.00
BEGIN BRIDGE
-L- POT Sta.13+38 +/-
END BRIDGE
-L- POT Sta.14+58 +/-
BEGIN BRIDGE
-L- POT Sta.17+35 +/-
END BRIDGE
-L- POT Sta.19+20 +/-
-L- PC Sta. 10+00.00
-L- PT Sta. 11+99.95
-L- PC Sta. 21+44.91
-L- PT Sta. 22+48.70
WILLIAM L. HUGHES
DB 4777 PG 50
MICHAEL EDWARD OWENS
& WIFE, LINDA GAIL OWENS
DB 1666 PG 853
MARY B. AUTRY
DB 1080 PG 155
JAMES FRANKLIN WILLIAMS
& WIFE, GEALDA WILLIAMS
DB 792 PG 721
CUMBERLAND COUNTY
SAMPSON COUNTY
SOUTH RIVER
WOODS
ISLAND
EARTH DAM
SR 1851 FAIRCLOTH BRIDGE RD 20' BST
TO SR 1848
TO SR 1424
N 69° 57' 13.0" E
STRUCTURE EXCAVATION (STR. PAY ITEM)
CLASS "II" AND "B" RIP RAP (STR. PAY ITEM)
EST 1 TONS CL B RIP RAP
EST 5 SY GEOTEXTILE
END SBG
-L- STA. 19+39.75
LT & RT
50' TRANS. LT. AND RT.



BRIDGE 172 SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP N.T.S.

FOR -L- PROFILE, SEE SHEET NO. 5

FOR STRUCTURE PLANS, SEE SHEETS S-1 THRU S-?

REVISIONS

8/17/99

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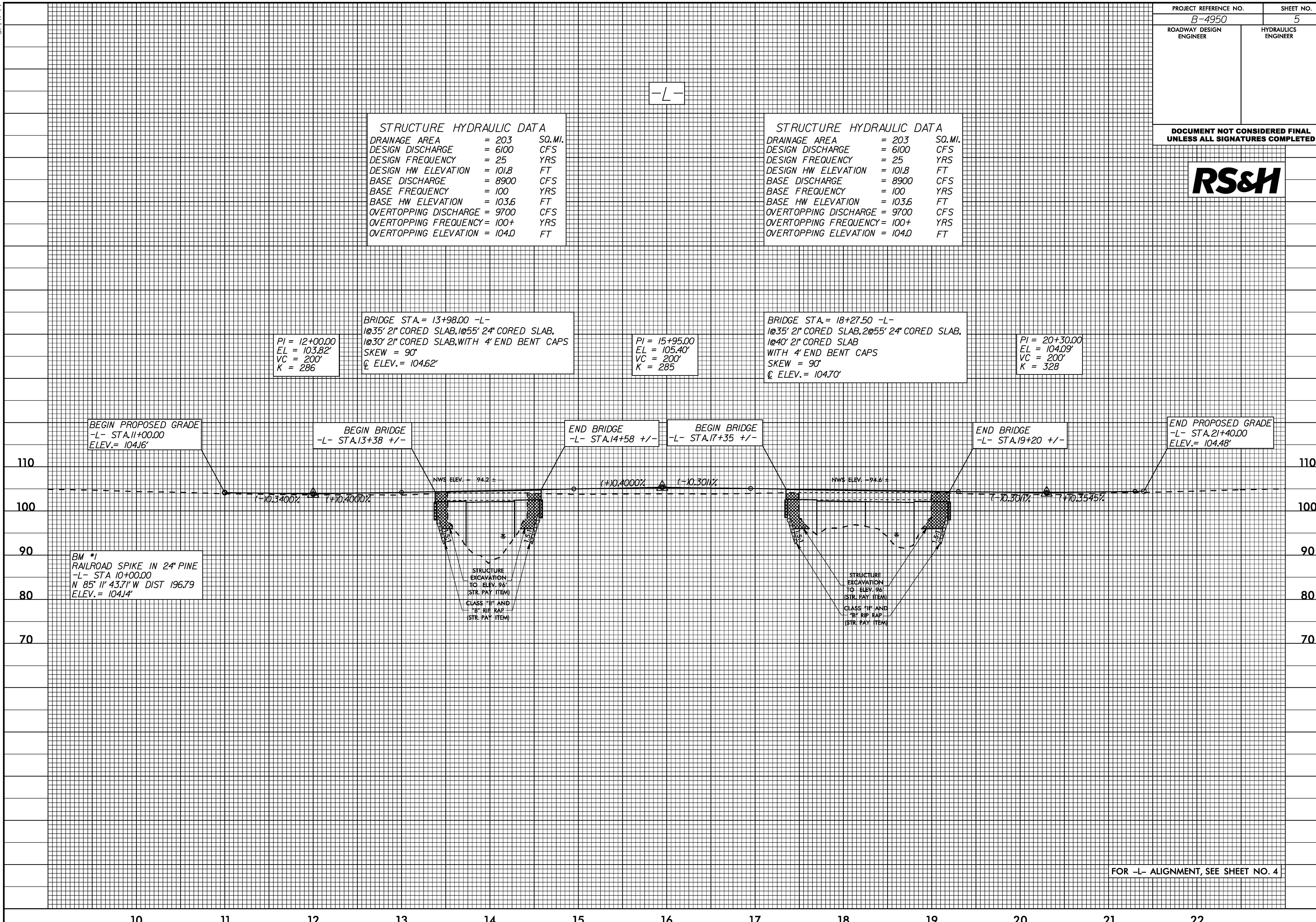
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-4950	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

RS&H



-L-
STRUCTURE HYDRAULIC DATA
DRAINAGE AREA = 203 SQ.MI.
DESIGN DISCHARGE = 6100 CFS
DESIGN FREQUENCY = 25 YRS
DESIGN HW ELEVATION = 101.8 FT
BASE DISCHARGE = 8900 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 103.6 FT
OVERTOPPING DISCHARGE = 9700 CFS
OVERTOPPING FREQUENCY = 100+ YRS
OVERTOPPING ELEVATION = 104.0 FT
STRUCTURE HYDRAULIC DATA
DRAINAGE AREA = 203 SQ.MI.
DESIGN DISCHARGE = 6100 CFS
DESIGN FREQUENCY = 25 YRS
DESIGN HW ELEVATION = 101.8 FT
BASE DISCHARGE = 8900 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 103.6 FT
OVERTOPPING DISCHARGE = 9700 CFS
OVERTOPPING FREQUENCY = 100+ YRS
OVERTOPPING ELEVATION = 104.0 FT
PI = 12+00.00
EL = 103.82'
VC = 200'
K = 286
BRIDGE STA. = 13+98.00 -L-
1@35' 21" CORED SLAB, 1@55' 24" CORED SLAB,
1@30' 21" CORED SLAB, WITH 4' END BENT CAPS
SKEW = 90°
℄ ELEV. = 104.62'
PI = 15+95.00
EL = 105.40'
VC = 200'
K = 285
BRIDGE STA. = 18+27.50 -L-
1@35' 21" CORED SLAB, 2@55' 24" CORED SLAB,
1@40' 21" CORED SLAB
WITH 4' END BENT CAPS
SKEW = 90°
℄ ELEV. = 104.70'
PI = 20+30.00
EL = 104.09'
VC = 200'
K = 328
BEGIN PROPOSED GRADE
-L- STA. 11+00.00
ELEV. = 104.16'
BEGIN BRIDGE
-L- STA. 13+38 +/-
END BRIDGE
-L- STA. 14+58 +/-
BEGIN BRIDGE
-L- STA. 17+35 +/-
END BRIDGE
-L- STA. 19+20 +/-
END PROPOSED GRADE
-L- STA. 21+40.00
ELEV. = 104.48'
110
100
90
80
70
NWS ELEV. = 94.2' ±
NWS ELEV. = 94.6' ±
(-)0.3400%
(+)0.4000%
(+)0.4000%
(-)0.3011%
(-)0.3011%
(+)0.3545%
1.5:1
1.5:1
1.5:1
1.5:1
STRUCTURE EXCAVATION TO ELEV. 96' (STR. PAY ITEM)
CLASS "II" AND "B" RIP RAP (STR. PAY ITEM)
STRUCTURE EXCAVATION TO ELEV. 96' (STR. PAY ITEM)
CLASS "II" AND "B" RIP RAP (STR. PAY ITEM)
BM #1
RAILROAD SPIKE IN 24" PINE
-L- STA 10+00.00
N 85° 11' 43.71" W DIST 196.79
ELEV. = 104.14'
FOR -L- ALIGNMENT, SEE SHEET NO. 4
10
11
12
13
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15
16
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18
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20
21
22

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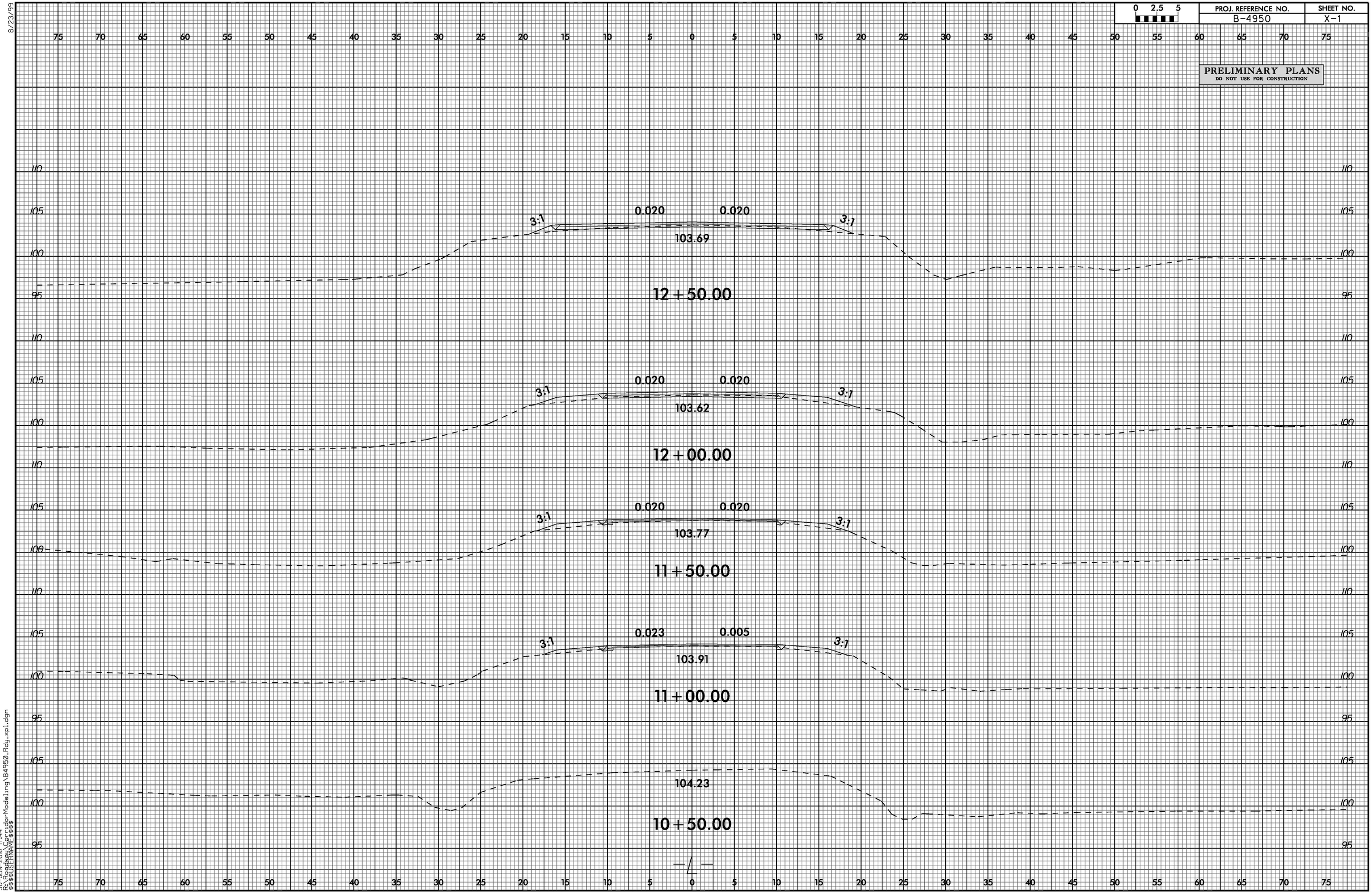
8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4950	X-1

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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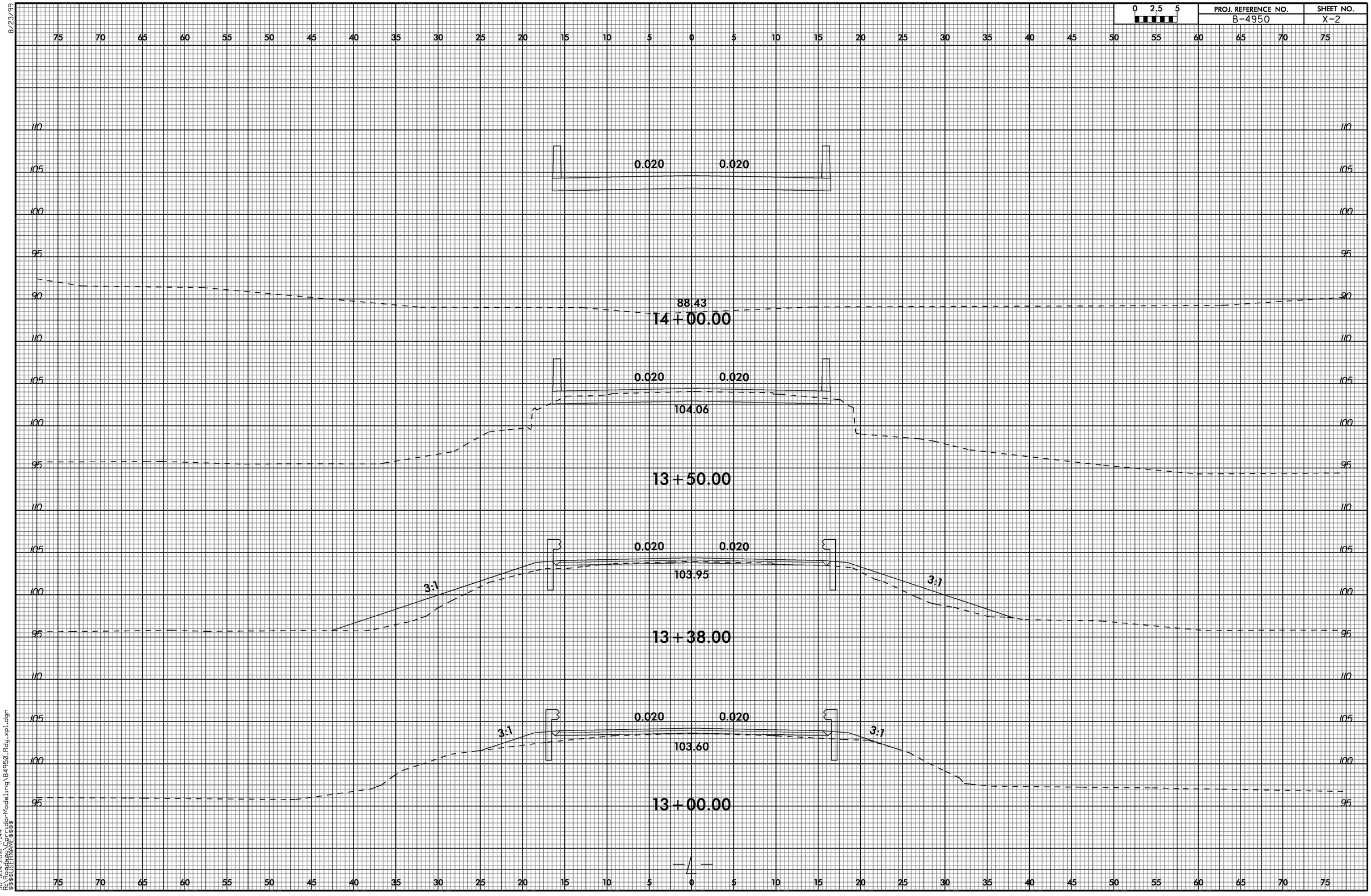
8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4950	X-2



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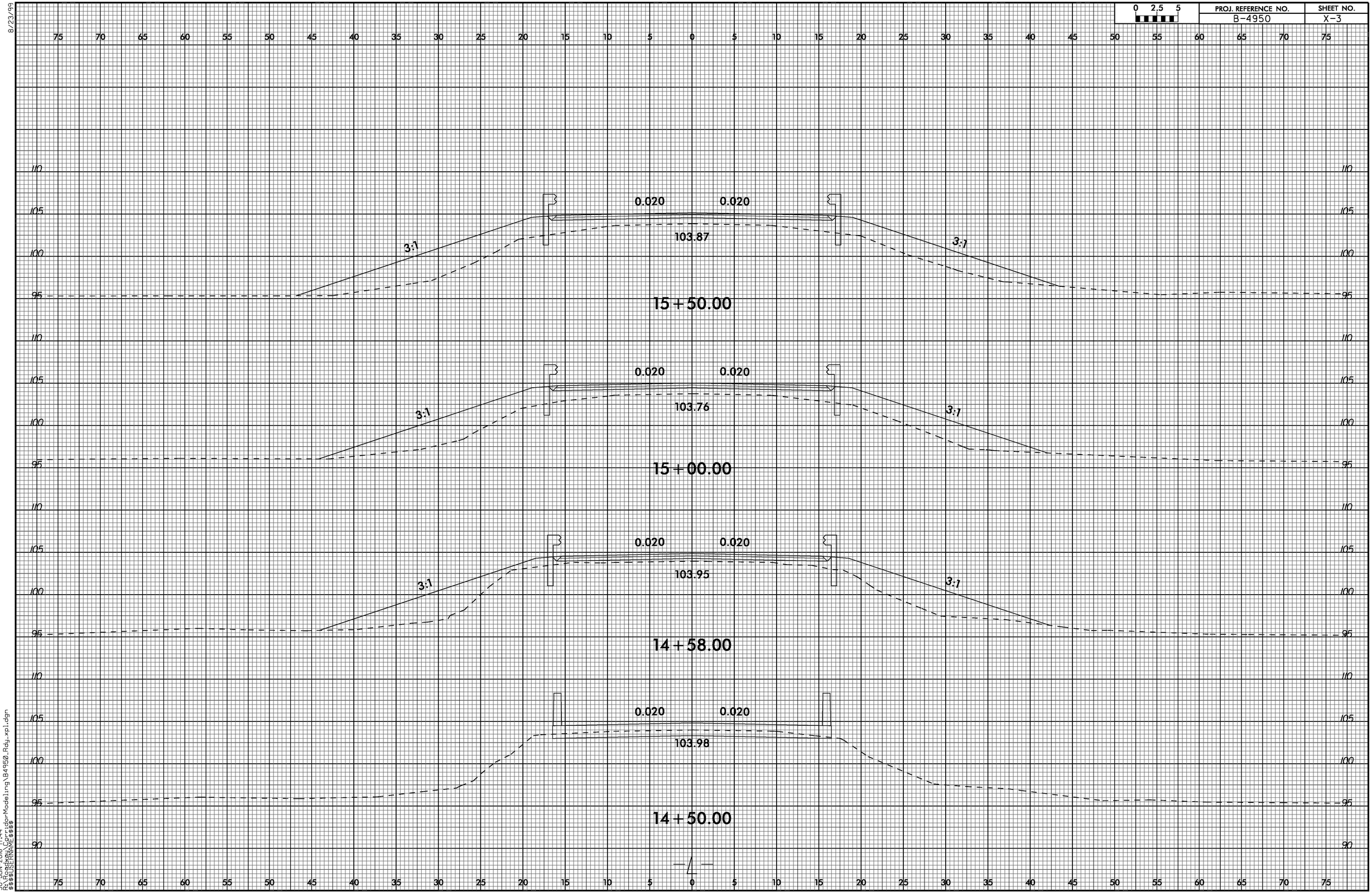
	B-4950	X-3



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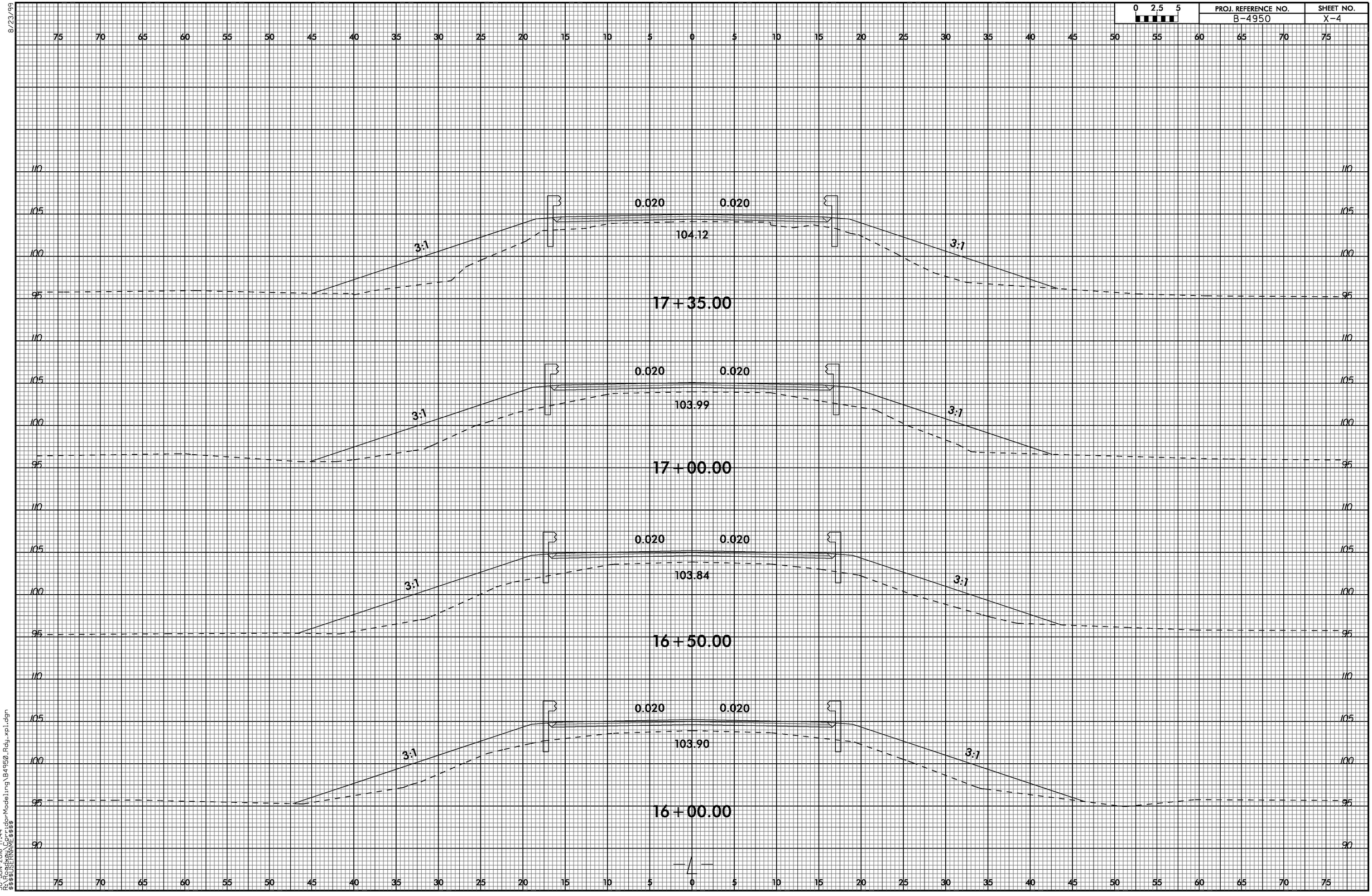
8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4950	X-4



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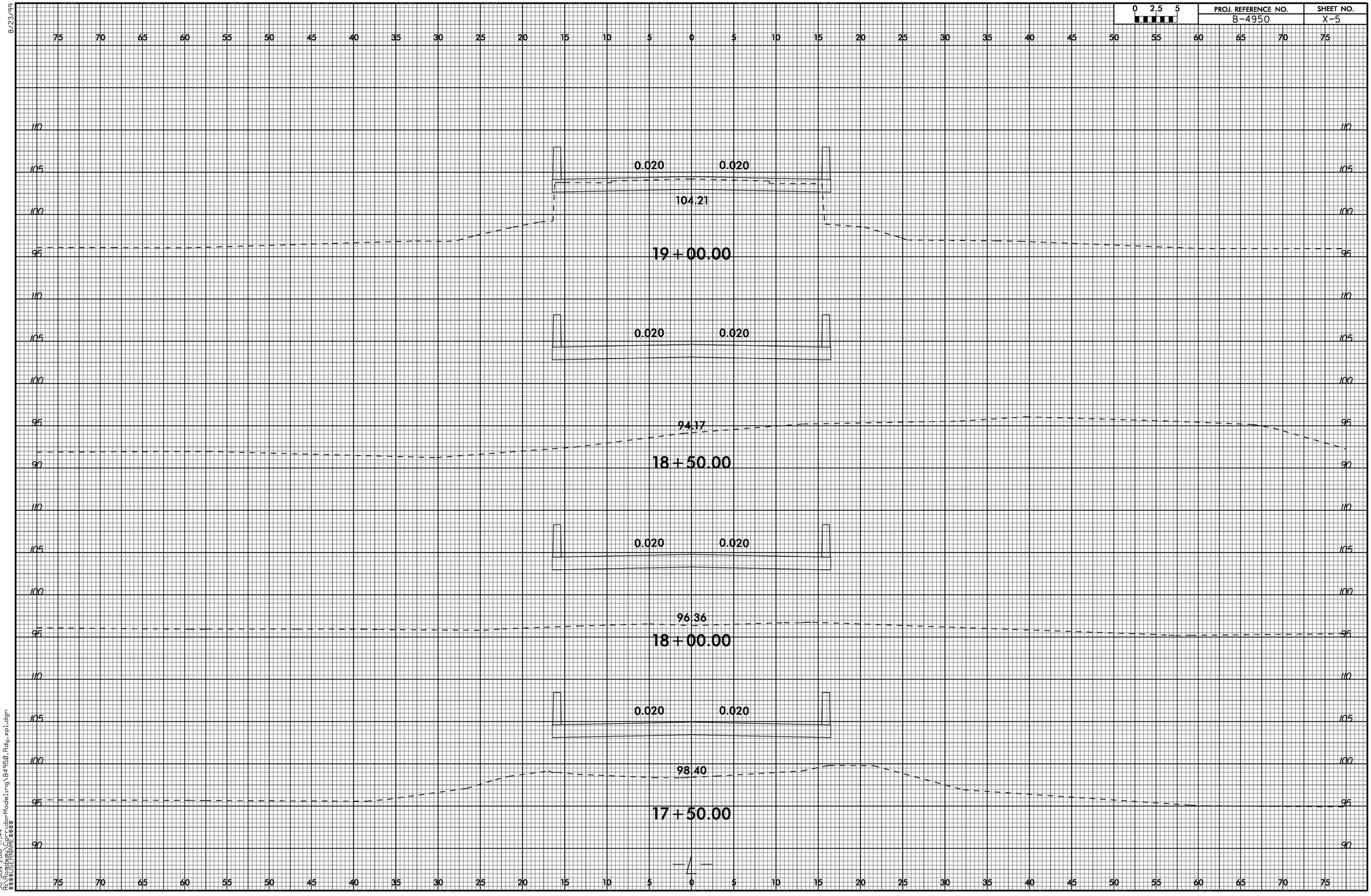
8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4950	X-5



PROJ. REFERENCE NO.	SHEET NO.
B-4950	X-6

8/23/99

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8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4950	X-7

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

105
100
110
105
100

104.26

21+50.00

0.008 0.015

3:1 3:1

104.22

21+40.00

105
100
110
105
100

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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