



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

October 26, 2012

Wilmington Regulatory Field Office
US Army Corps of Engineers
69 Darlington Avenue
Wilmington, North Carolina 28403

ATTN: Mr. Ronnie Smith
NCDOT Coordinator

Dear Sir:

Subject: **Application for a Section 404 Nationwide Permit No. 23** for the proposed replacement of Bridge No. 278 over Livingston Creek and Bridge No. 275 over Livingston Creek Overflow on SR 1824 in Columbus County. Federal Aid Project No. BRZ-1824(1), TIP No. B-4480, WBS Element 38385.1.1.

The North Carolina Department of Transportation (NCDOT) proposes to replace the 55-foot, 3-span Bridge No. 278 with a 110-foot, 2-span bridge and the 41-foot, 2-span Bridge No. 275 with a 70-foot, single-span bridge, both on the existing alignment. Traffic will follow an offsite detour during construction. Permanent impacts to jurisdictional resources include 0.02 acre of fill and 0.07 acre of mechanized clearing in wetlands. Bridge piers in surface waters will be less than 0.01 acre.

Please see enclosed copies of the Pre-Construction Notification (PCN), Preliminary Jurisdictional Determination Form, permit drawings, stormwater management plan, and design plans for the above referenced project. The Categorical Exclusion (CE) was completed in November 2011. Copies were distributed shortly thereafter. Additional copies are available upon request.

This project calls for a letting date of June 18, 2013 and a review date of April 30, 2013. The project schedule may be advanced if funding becomes available.

Regulatory Approvals

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


Section 401 Permit: We anticipate 401 General Certification number 3891 will apply to this project. All general conditions of the Water Quality Certification will be met and therefore NCDOT is not requesting written approval. NCDOT is providing two copies of this application to the NCDWQ for their review.

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

TELEPHONE: 919-707-6000
FAX: 919-250-4224

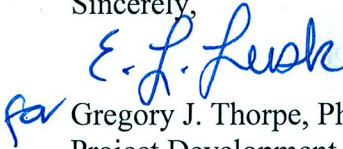
WEBSITE: WWW.NCDOT.GOV/DOH/PRECONSTRUCT/PE/

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



A copy of this permit application and its distribution list will be posted at the NCDOT Website at <https://connect.ncdot.gov/resources/Environmental>. If you have any questions or need additional information, please contact Tyler Stanton at tstanton@ncdot.gov or (919) 707-6156.

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:	<input checked="" type="checkbox"/> Section 404 Permit	<input type="checkbox"/> Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 23 or General Permit (GP) number:		
1c. Has the NWP or GP number been verified by the Corps?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1d. Type(s) of approval sought from the DWQ (check all that apply):		
<input checked="" type="checkbox"/> 401 Water Quality Certification – Regular <input type="checkbox"/> Non-404 Jurisdictional General Permit <input type="checkbox"/> 401 Water Quality Certification – Express <input type="checkbox"/> 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: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	For the record only for Corps Permit: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

2. Project Information

2a. Name of project:	Replacement of Bridges No. 278 and No. 275 over Livingston Creek and Livingston Creek Overflow on SR 1824
2b. County:	Columbus
2c. Nearest municipality / town:	Delco
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no:	B-4480

3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	<i>not applicable</i>
3c. Responsible Party (for LLC if applicable):	<i>not applicable</i>
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 707-6156
3g. Fax no.:	(919) 250-4224
3h. Email address:	tstanton@ncdot.gov

4. Applicant Information (if different from owner)	
4a. Applicant is:	<input type="checkbox"/> Agent <input type="checkbox"/> Other, specify:
4b. Name:	<i>not applicable</i>
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:	<i>not applicable</i>
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):	<i>not applicable</i>
1b. Site coordinates (in decimal degrees):	Latitude: 34.2725 (DD.DDDDDD) Longitude: - 78.2701 (-DD.DDDDDD)
1c. Property size:	1.95 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Livingston 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 forested areas. Land use in the project vicinity is predominantly agriculture with some residential properties.	
3b. List the total estimated acreage of all existing wetlands on the property: 0.50	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 260	
3d. Explain the purpose of the proposed project: To replace two structurally deficient bridges	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing a 55-foot 3-span bridge (no. 278) with a 110-foot, 2-span bridge and a 41-foot 2-span bridge (no. 275) with a 70-foot single-span bridge; both on the existing alignment. Traffic will follow an offsite detour during construction. Standard road building equipment, such as trucks, dozers, and cranes will be used.	
4. Jurisdictional Determinations	
4a. Have jurisdictional wetland or stream determinations by the Corps or State been requested or obtained for this property / project (including all prior phases) in the past? Comments: See attached	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	<input checked="" type="checkbox"/> Preliminary <input type="checkbox"/> Final
4c. If yes, who delineated the jurisdictional areas? Name (if known): Chris Underwood	Agency/Consultant Company: NCDOT Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. 10 November 2010	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown
5b. If yes, explain in detail according to "help file" instructions.	
6. Future Project Plans	
6a. Is this a phased project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Mech. Clearing	Riverine	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.02
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Fill	Riverine	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	<0.01
Site 2 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Mech. Clearing	Riverine	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.05
Site 2 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Fill	Riverine	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.02
Site 3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site 4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
2g. Total wetland impacts					0.09 Permanent 0.00 Temporary

2h. Comments:

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 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
3h. Total stream and tributary impacts						X Perm X Temp

3i. Comments:

4. Open Water Impacts

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

4a. Open water impact number – Permanent (P) or Temporary (T)	4b. Name of waterbody (if applicable)	4c. Type of impact	4d. Waterbody type	4e. Area of impact (acres)
O1 <input type="checkbox"/> P <input type="checkbox"/> T				
O1 <input type="checkbox"/> P <input type="checkbox"/> T				
O2 <input type="checkbox"/> P <input type="checkbox"/> T				
O3 <input type="checkbox"/> P <input type="checkbox"/> T				
4f. Total open water impacts				X Permanent X Temporary

4g. Comments: Impacts due to piers are less than 0.01 acre

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?	<input type="checkbox"/> Yes <input type="checkbox"/> 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?			<input type="checkbox"/> Neuse <input type="checkbox"/> Catawba	<input type="checkbox"/> Tar-Pamlico <input type="checkbox"/> Randleman	<input type="checkbox"/> 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 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
B2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
B3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> 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 No. 278 is 55 feet longer than the existing bridge and the proposed Bridge No. 275 is 29 feet longer than the existing bridge; the proposed bridges will be at a slightly higher grade as the existing structures; there will be minimal permanent fill and no excavation in jurisdictional areas. Bridge No. 278 reduces bents in Livingston Creek from 2 to 1 and Bridge No. 275 will eliminate the bent in Livingston Creek Overflow. Deck drains have been eliminated from both bridges and there will be no direct discharge into surface water. The removal of existing road fill for longer bridge and increasing bridge openings will improve hydrological conveyance and wildlife passage, and reduce bridge opening velocities. Stream-side areas will be graded such that elevations match natural/undeveloped floodplain in project vicinity. Promotion of sheet flow and infiltration over rip/rap pads or grassed surfaces.

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

Construction will be top-down. Best Management Practices for Protection of Surface Waters and for Bridge Demolition and Removal will be implemented.

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

2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, explain: Due to the minimal amount of impacts compensatory mitigation is not proposed.
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2b. If yes, mitigation is required by (check all that apply):	<input type="checkbox"/> DWQ <input type="checkbox"/> Corps
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2c. If yes, which mitigation option will be used for this project?	<input type="checkbox"/> Mitigation bank <input type="checkbox"/> Payment to in-lieu fee program <input type="checkbox"/> 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.	<input type="checkbox"/> Yes
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4b. Stream mitigation requested:	linear feet
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4c. If using stream mitigation, stream temperature:	<input type="checkbox"/> warm <input type="checkbox"/> cool <input type="checkbox"/> cold
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4d. Buffer mitigation requested (DWQ only):	square feet
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4e. Riparian wetland mitigation requested:	acres
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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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1b. If yes, then is a diffuse flow plan included? If not, explain why. Comments:	<input type="checkbox"/> Yes <input type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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?	<input type="checkbox"/> Certified Local Government <input type="checkbox"/> DWQ Stormwater Program <input checked="" type="checkbox"/> 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):	<input type="checkbox"/> Phase II <input type="checkbox"/> NSW <input type="checkbox"/> USMP <input type="checkbox"/> Water Supply Watershed <input type="checkbox"/> Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Coastal counties <input type="checkbox"/> HQW <input type="checkbox"/> ORW <input type="checkbox"/> Session Law 2006-246 <input type="checkbox"/> Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No N/A
5b. Have all of the 401 Unit submittal requirements been met?	<input type="checkbox"/> Yes <input type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2b. Is this an after-the-fact permit application?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	<input type="checkbox"/> Raleigh <input type="checkbox"/> Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? NCNHP, USFWS website, field surveys		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> 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	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	10-26-12 Date

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

- A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): November 24, 2010**

- B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:**
Chris Underwood
NCDOT
1598 Mail Service Center
Raleigh, NC 27699-1598

- C. DISTRICT OFFICE, FILE NAME, AND NUMBER: Wilmington, NCDOT/B-4480, SAW-2009-01692**

- D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:**
B-4480, bridges nos. 275 and 278 on SR 1824 over Livingston Creek in Columbus County, North Carolina

(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: North Carolina County/parish/borough: Columbus City: Delco
Center coordinates of site (lat/long in degree decimal format):
Lat. 34.27200° N, Long. 78.27038° W.
Universal Transverse Mercator:
Name of nearest waterbody: Livingston Creek

Identify (estimate) amount of waters in the review area:
Non-wetland waters: 200 linear feet: ~20 width (ft) and/or acres.
Cowardin Class: Riverine
Stream Flow: Perennial
Wetlands: 3.66 acres.
Cowardin Class: Forested

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

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

- Office (Desk) Determination. Date: November 24, 2010
- Field Determination. Date(s):

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

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply

- checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: vicinity map, jurisdictional resources map. DOT *← RDS*
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.

- RDS* → Office concurs with data sheets/delineation report.
- Office does not concur with data sheets/delineation report.

- Data sheets prepared by the Corps:
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.

- U.S. Geological Survey map(s). Cite scale & quad name: *ACME* *← RDS* *Freeman*; 1:24000;
- USDA Natural Resources Conservation Service Soil Survey.

Citation:


- National wetlands inventory map(s). Cite name: SAW shapefile.
- State/Local wetland inventory map(s):
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)

- Photographs: Aerial (Name & Date): made Aug. 2009. *Color Aerial* *← RDS*
or Other (Name & Date):

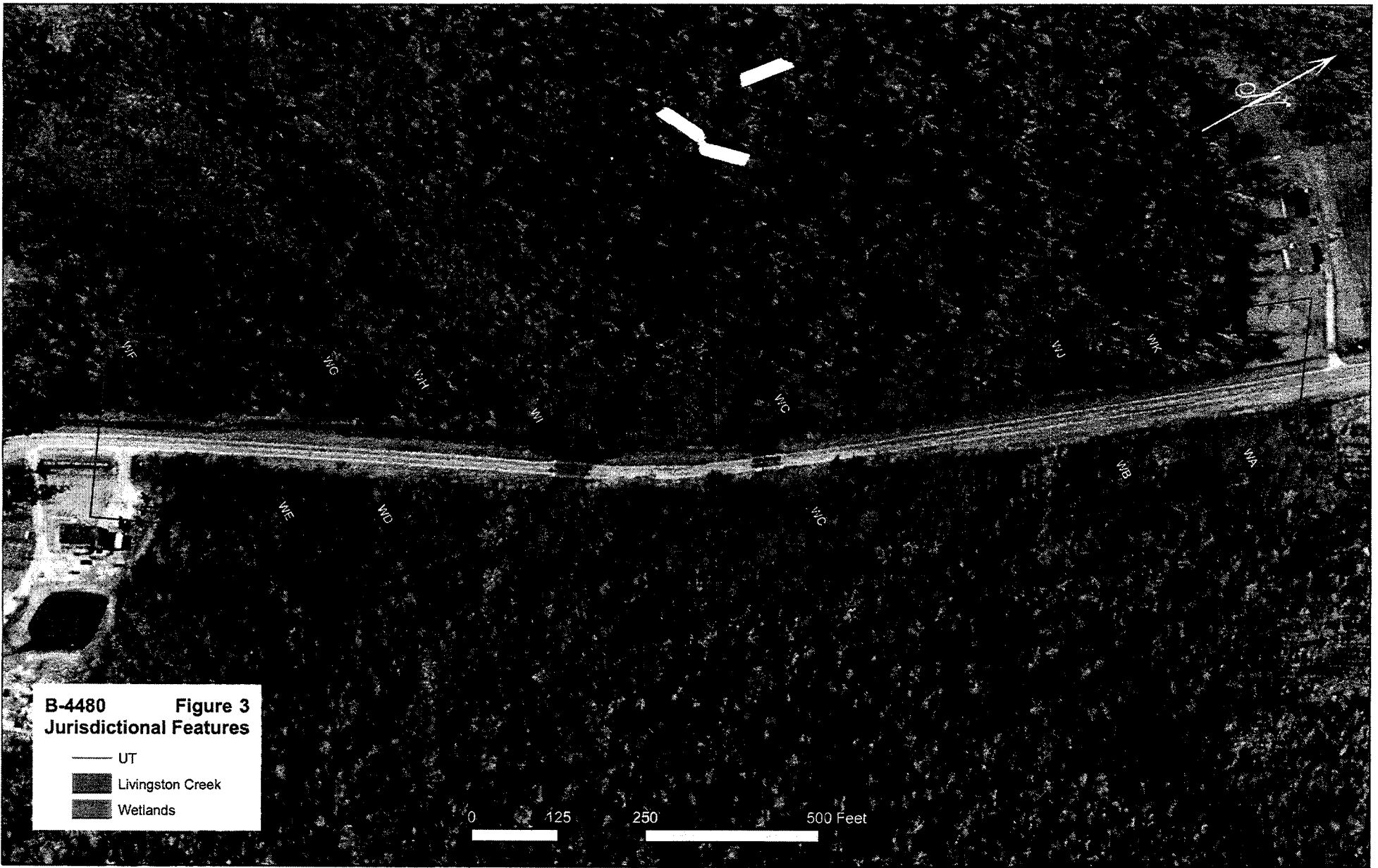
- Previous determination(s). File no. and date of response letter:

- Other information (please specify): *2007 NCDOT LIDAR* *← RDS*

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


11-24-10
Signature and date of
Regulatory Project Manager
(REQUIRED)

Chris Underwood *11/16/10*
Signature and date of
person requesting preliminary JD
(REQUIRED, unless obtaining
the signature is impracticable)



B-4480 **Figure 3**
Jurisdictional Features

- UT
- Livingston Creek
- Wetlands

0 125 250 500 Feet



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



(Version 1.2; Released September 2011)

Project/TIP No.: B-4480 (38385.1.1)

County(ies): Columbus

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General Project Information

Project No.: B-4480 (38385.1.1)		Project Type: Bridge Replacements (2)		Date: 7/1/2012	
NCDOT Contact: Galen Cail		Contractor / Designer: Galen Cail			
Address: 1020 Birch Ridge Dr. Raleigh, N.C. 27610		Address: 1020 Birch Ridge Dr. Raleigh, N.C. 27610			
Phone: 919.707.6711		Phone:			
Email: gcail@ncdot.gov		Email:			
City/Town: Acme, NC		County(ies): Columbus			
River Basin(s): Cape Fear		CAMA County? No			
Primary Receiving Water: Livingston Creek		NCDWQ Stream Index No.:			
NCDWQ Surface Water Classification for Primary Receiving Water		Primary: Class C			
		Supplemental: Swamp Waters (Sw)			
Other Stream Classification:					
303(d) Impairments:					
Buffer Rules in Effect N/A					

Project Description

Project Length (lin. Miles or feet): 0.161 miles	Surrounding Land Use: Wooded
Proposed Project	
Project Built-Upon Area (ac.): 0.60 ac.	Existing Site
Typical Cross Section Description: 12' Travel Lanes, 2' Paved Shoulder, 4' Grass Shoulders. 3:1 Side Slopes	9' Travel Lanes, 4' Grassed Shoulders, 5:1 Side Slopes
Average Daily Traffic (veh/hr/day): Design/Future: 600 (2035)	Existing: 475 (2013)

General Project Narrative:

The project consists of relacing Bridge# 278 and Bridge # 275 on SR 1824 over Livingston Creek with approximately 462' of approach work on the southwest side of the structure and 370' on the northeast side. The approach work will consist of raising the existing roadway grade and providing grass shoulders and guardrails. Bridge #278 existing 3 span structure (55.5' total length) will be replaced with a 2 span (1@45', 1@65') total 110' -21" and 24" cored slab bridge. Bridge #275 existing 2 span structure (41' total length) will be replaced with a 1 span 70' 24" cored slab beidge. Bridge #275 eliminates 1 bent in water. Bridge #278 reduces the number of bents in Livingston Creek from 2 to 1.

Best Mgmt. Practices:

- Promotion of sheet flow and infiltration with grassed shoulders except where shoulder berm gutter to 2GI northeast quadrant of bridge.
- Drainage systems outlet to rip rap pads. System in NW quad outlets to existing grassed ditch.
- Eliminated Deck Drains on bridge.
- Removal of existing road fill under bridges will improve bridge conveyance and reduce bridge opening velocities.
- 3:1 side slopes used in wetlands.

References

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

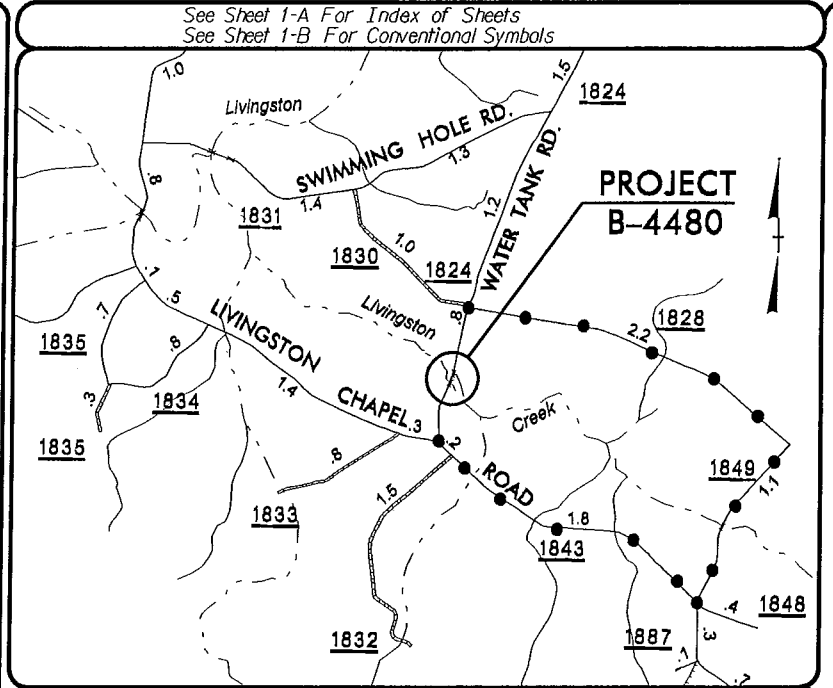
COLUMBUS COUNTY

LOCATION: BRIDGES NO. 275 & 278 OVER LIVINGSTON CREEK ON SR 1824
TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURES

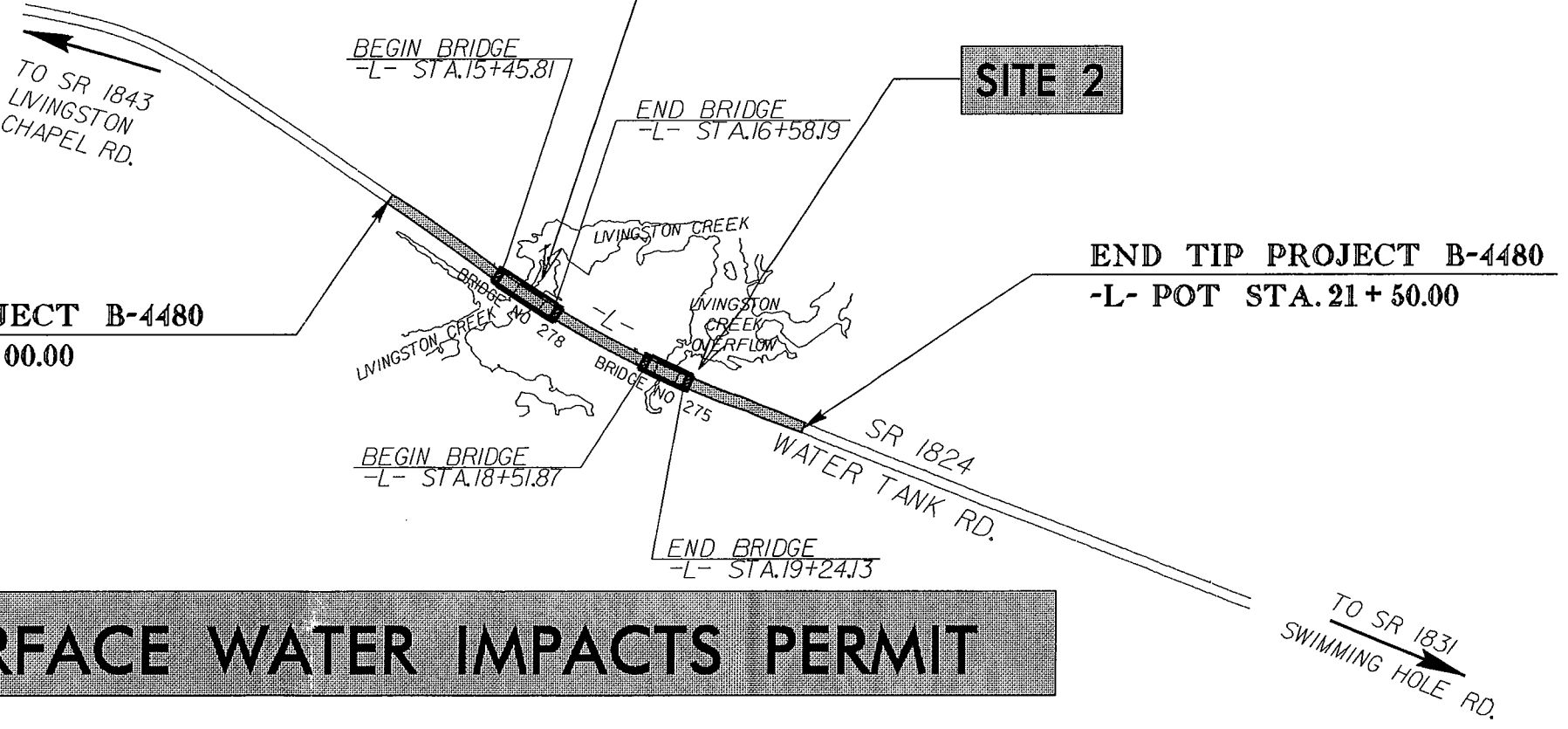
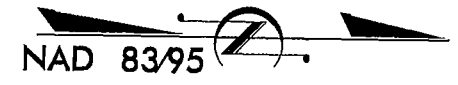
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4480	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38385.1.1	BRZ-1824(1)	P.E.	
38385.2.1	BRZ-1824(1)	RW & UTIL.	

Permit Drawing
Sheet 1 of 9

TIP PROJECT: B-4480



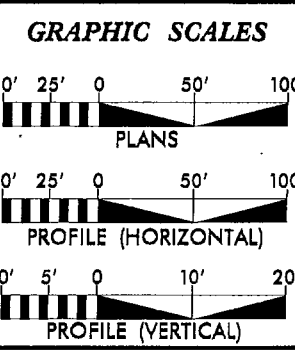
VICINITY MAP DETOUR



WETLAND AND SURFACE WATER IMPACTS PERMIT

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2013 =	475
ADT 2035 =	600
DHV =	10 %
D =	60 %
T =	5 % *
V =	60 MPH
* TTST =	2% DUAL 3%
FUNC CLASS =	LOCAL SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY	TIP PROJECT B-4480 =	0.126 MI.
LENGTH STRUCTURE	TIP PROJECT B-4480 =	0.035 MI.
TOTAL LENGTH OF	TIP PROJECT B-4480 =	0.161 MI.

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

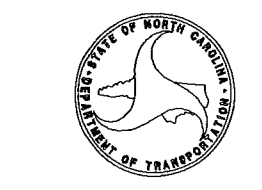
2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: MAY 7, 2012	REKHA PATEL, PE PROJECT ENGINEER
LETTING DATE: JUNE 18, 2013	MICHAEL LITTLE, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



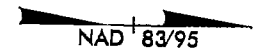
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CONTRACT: C203155

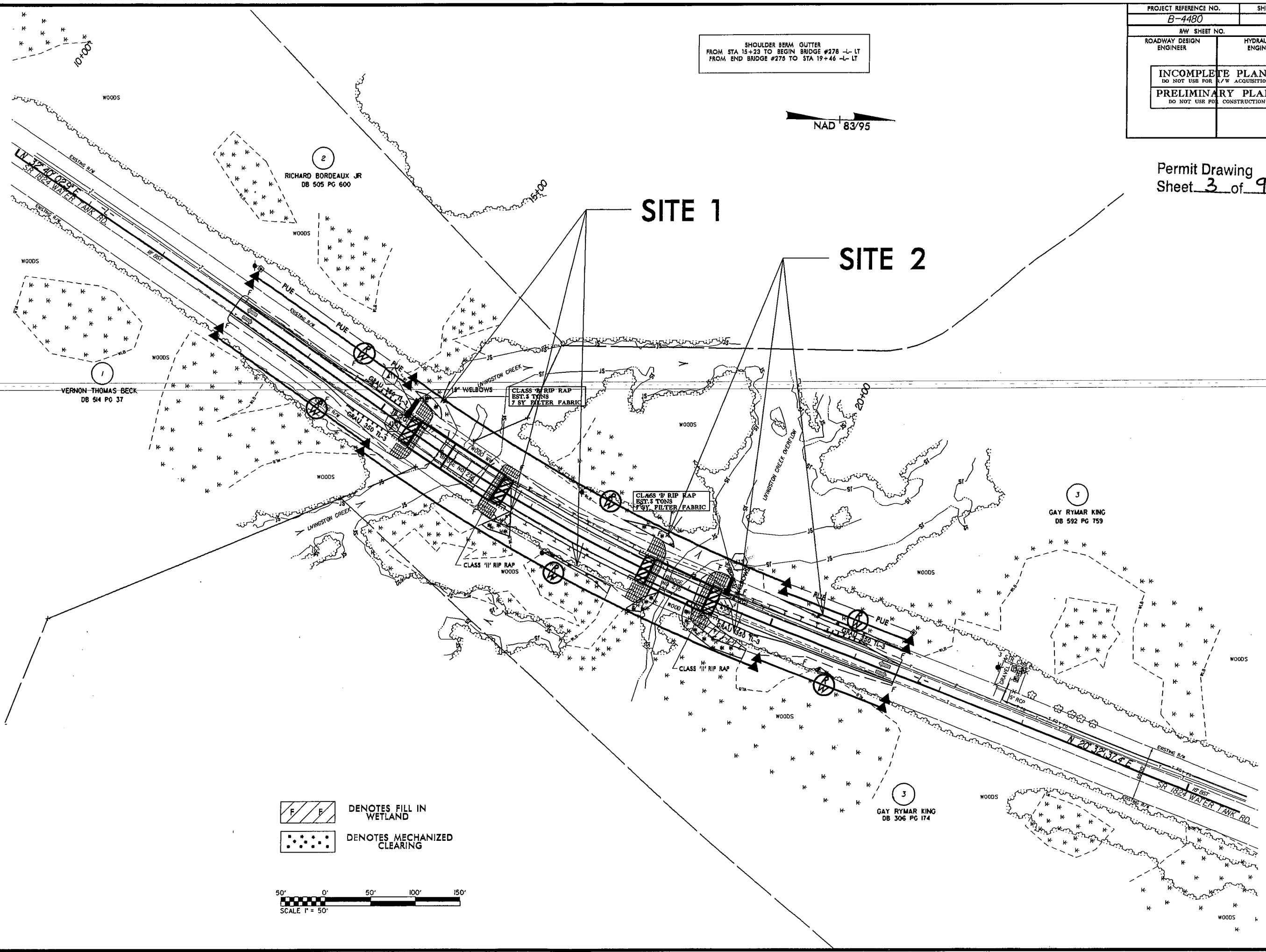
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RW SHEET NO.	
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INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

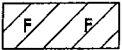
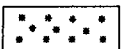
Permit Drawing
Sheet 3 of 9

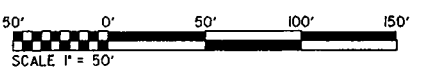
SHOULDER BERM GUTTER
FROM STA 15+23 TO BEGIN BRIDGE #278 -L- LT
FROM END BRIDGE #275 TO STA 19+46 -L- LT



8/17/95
 REVISIONS
 6/28/2012
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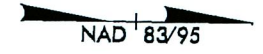
 DENOTES FILL IN WETLAND
 DENOTES MECHANIZED CLEARING



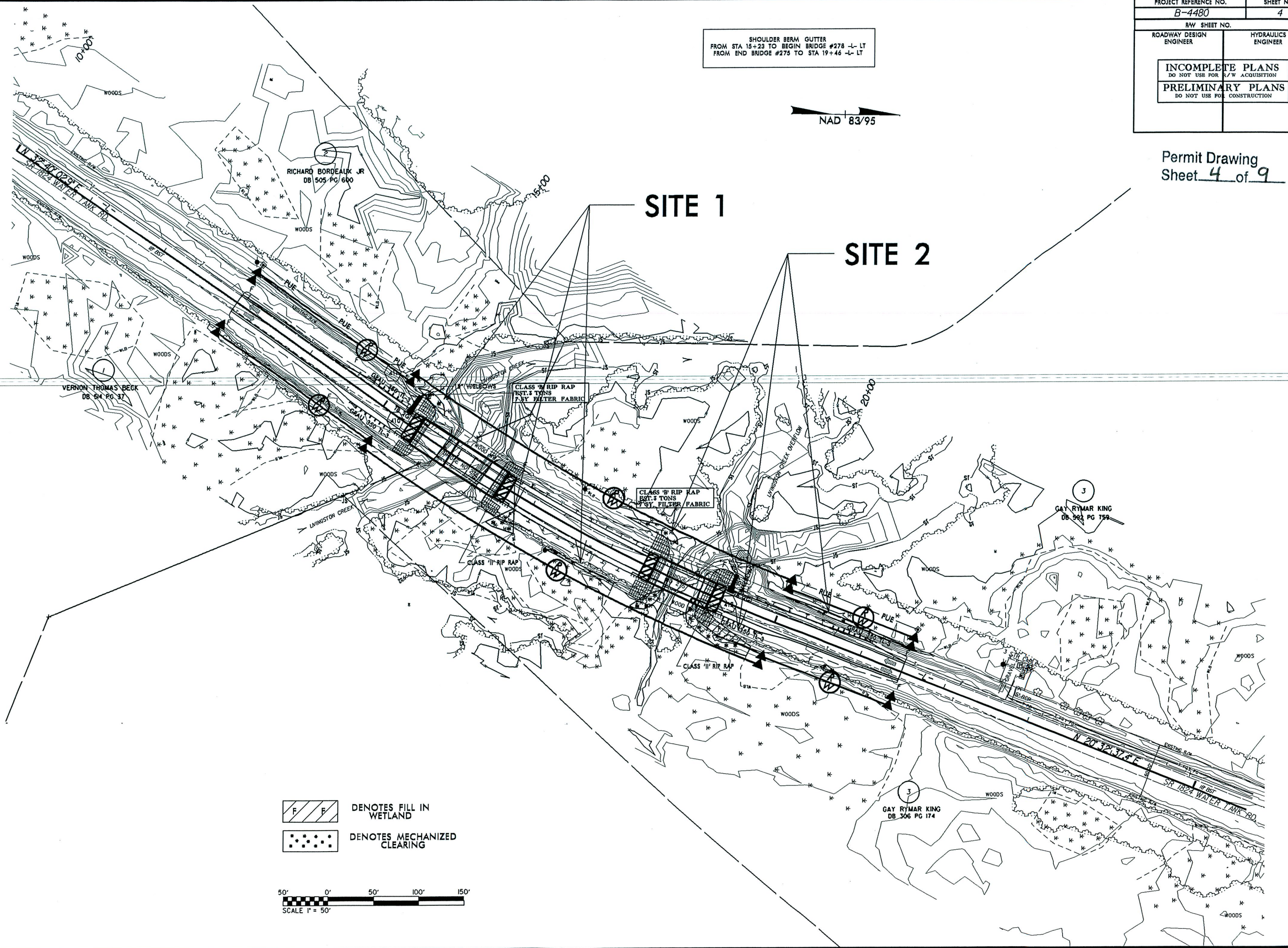
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PROJECT REFERENCE NO.	SHEET NO.
B-4480	4
RAW SHEET NO.	
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PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

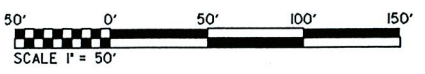
SHOULDER BERM GUTTER
FROM STA 15+23 TO BEGIN BRIDGE #278 -L- LT
FROM END BRIDGE #275 TO STA 19+46 -L- LT



Permit Drawing
Sheet 4 of 9



 DENOTES FILL IN WETLAND
 DENOTES MECHANIZED CLEARING

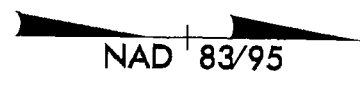


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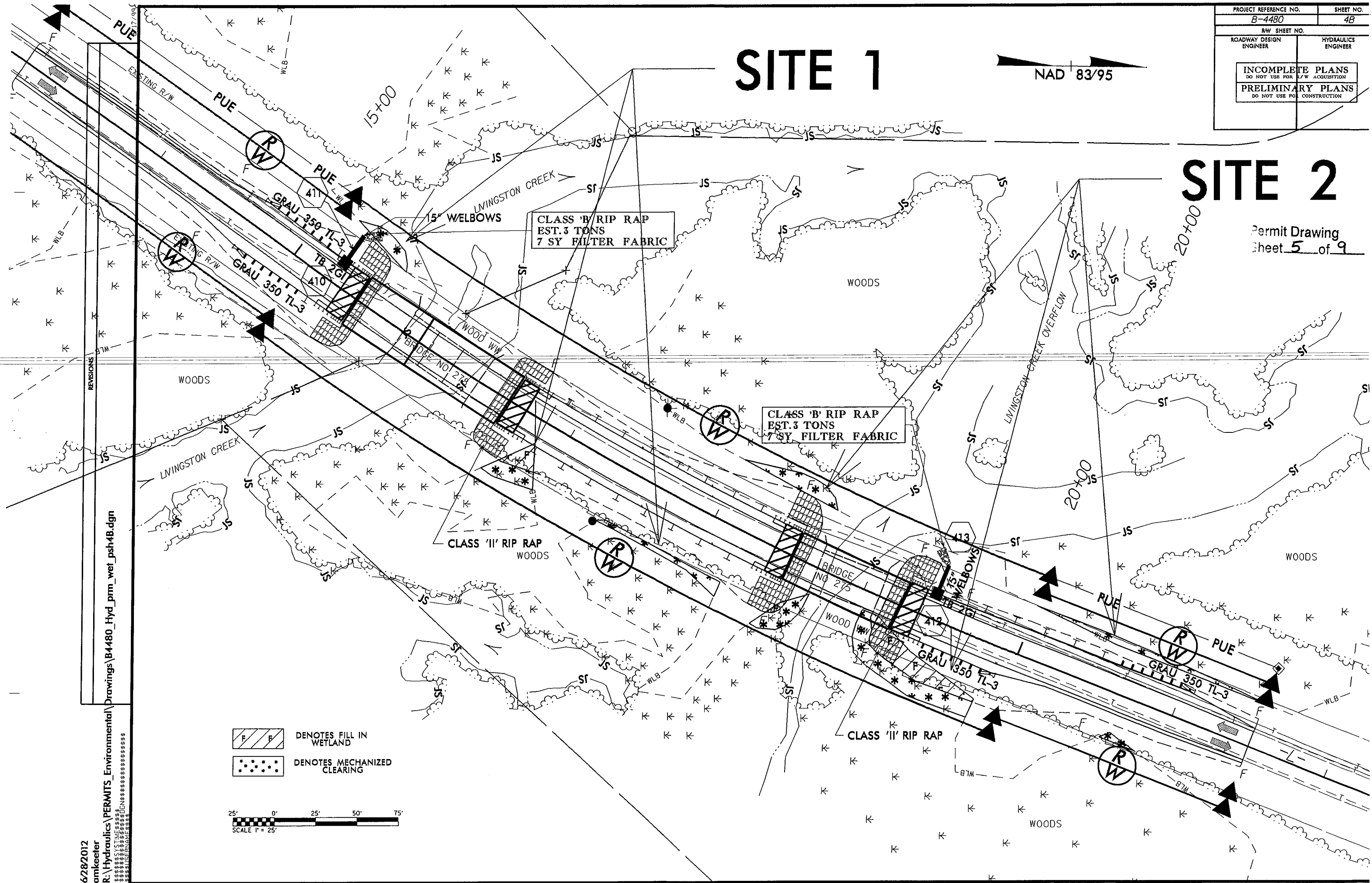
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RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SITE 1



SITE 2

Permit Drawing
Sheet 5 of 9

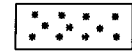


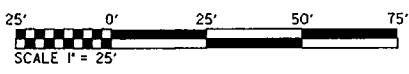
CLASS 'B' RIP RAP
EST. 3 TONS
7 SY FILTER FABRIC

CLASS 'B' RIP RAP
EST. 3 TONS
7 SY FILTER FABRIC

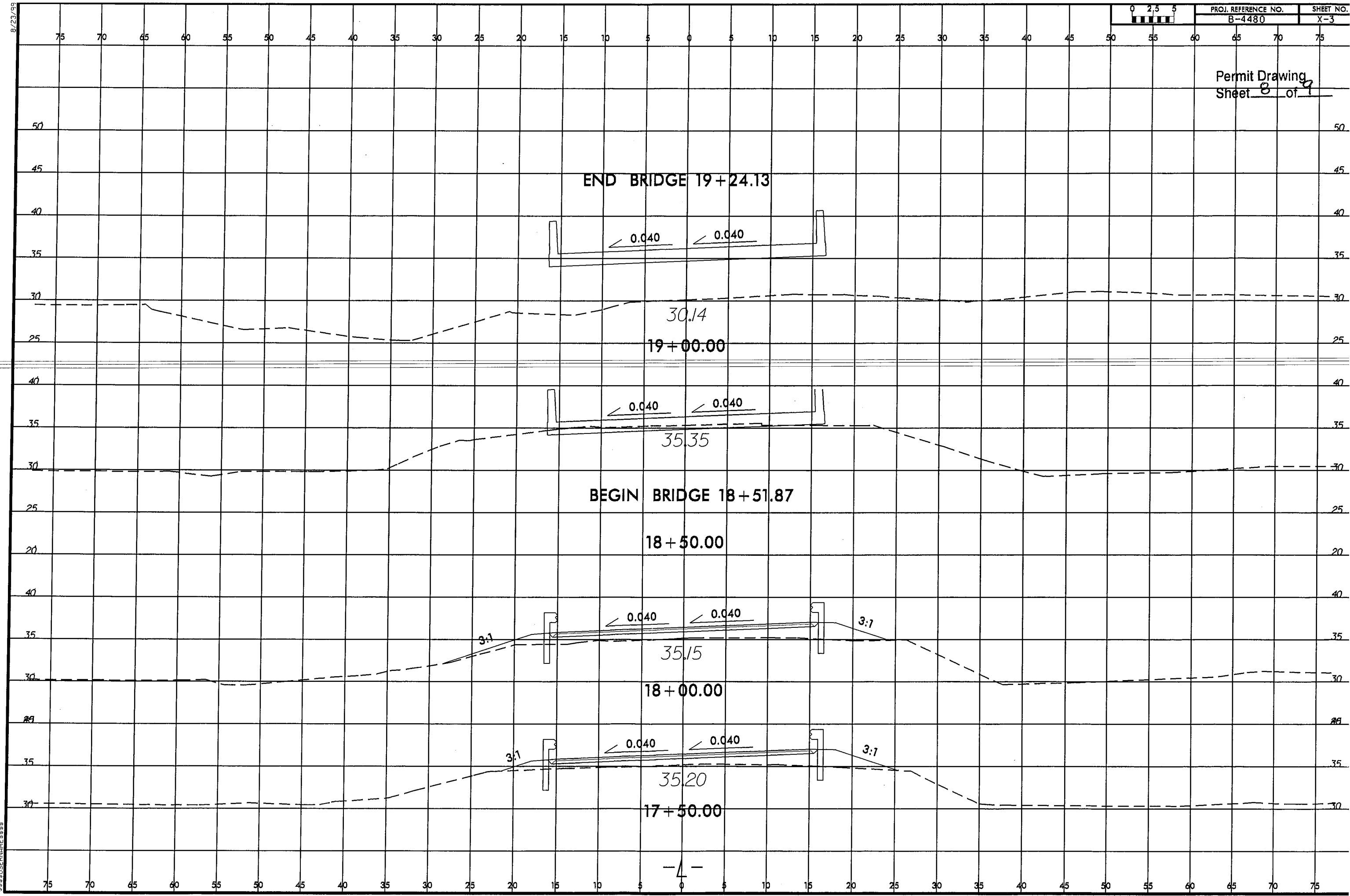
CLASS 'II' RIP RAP
WOODS

CLASS 'II' RIP RAP

-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING



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6/28/2012
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8/23/99

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			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	15+20 to 15+61-L-LT	Fill				<0.01						
	16+65 to 17+00-L-RT	Fill	<0.01			<0.01						
	17+38 to 18+21-L-RT	Fill				<0.01						
2	18+00 to 18+72-L-	Bridge				0.02						
	19+04 to 19+87-L-RT	Fill	0.02			0.02						
	20+00 to 21+53-L-LT	Fill				<0.01						
	20+63 to 20+87-L-RT	Fill				<0.01						
TOTALS:			0.02			0.07						

Site 1 Pier Impacts for 8 HP 14 x 73 Steel Piles = 1.2 sq.ft.

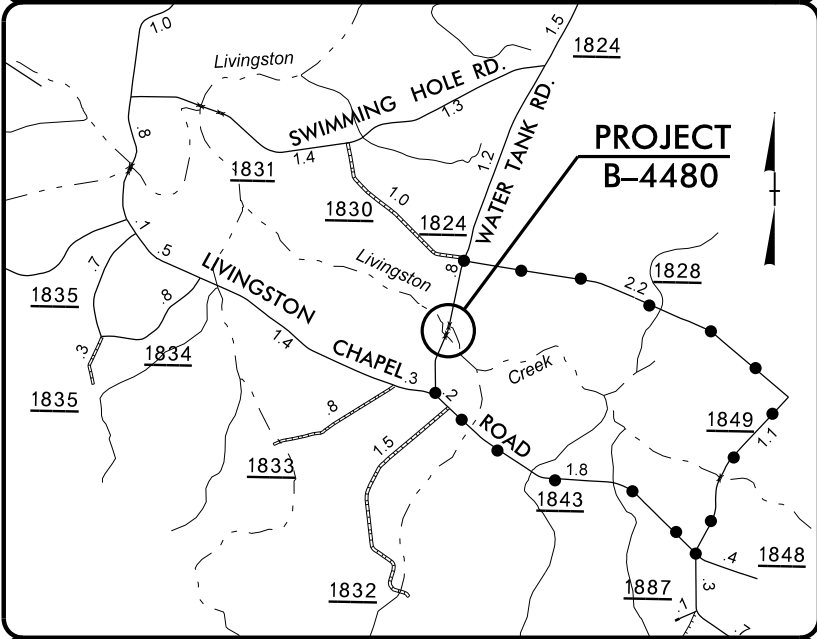
Permit Drawing
Sheet 9 of 9

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

COLUMBUS COUNTY
WBS - 38385.1.1 (B-4480)

TIP PROJECT: B-4480

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



VICINITY MAP

DETOUR

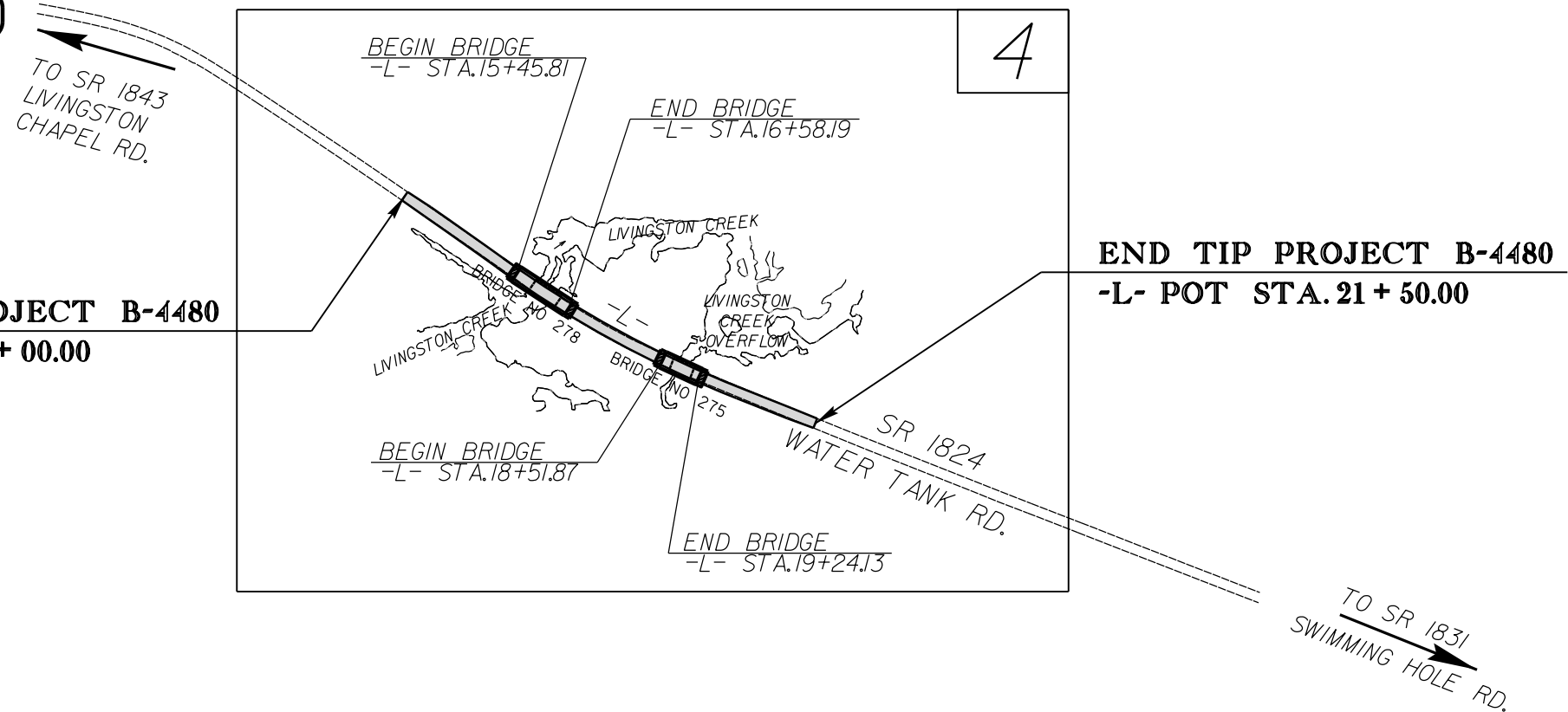
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

COLUMBUS COUNTY

LOCATION: BRIDGES NO. 275 & 278 OVER LIVINGSTON CREEK ON SR 1824

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4480	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38385.1.1	BRZ-1824(1)	P.E.	
38385.2.1	BRZ-1824(1)	R/W & UTIL.	



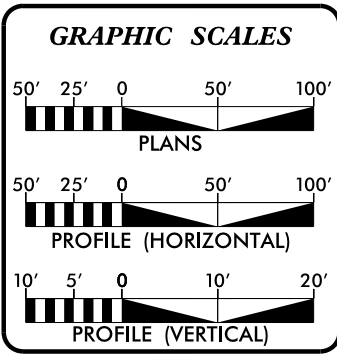
BEGIN TIP PROJECT B-4480
-L- POC STA. 13 + 00.00

END TIP PROJECT B-4480
-L- POT STA. 21 + 50.00

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2013 =	475
ADT 2035 =	600
DHV =	10 %
D =	60 %
T =	5 % *
V =	60 MPH
* TTST =	2% DUAL 3%
FUNC CLASS =	LOCAL
SUBREGIONAL TIER	

PROJECT LENGTH

LENGTH ROADWAY	TIP PROJECT B-4480 =	0.126 MI.
LENGTH STRUCTURE	TIP PROJECT B-4480 =	0.035 MI.
TOTAL LENGTH OF	TIP PROJECT B-4480 =	0.161 MI.

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

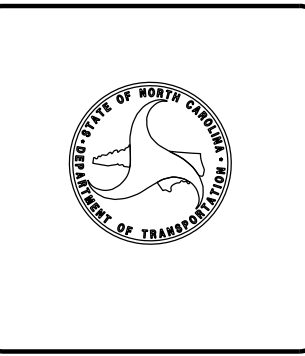
2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	REKHA PATEL, PE PROJECT ENGINEER
MAY 7, 2012	
LETTING DATE:	MICHAEL LITTLE, PE PROJECT DESIGN ENGINEER
JUNE 18, 2013	

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



04/16/11

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	○ EP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	②③
Existing Fence Line	-x-x-x-
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	WLB
Proposed Lateral, Tail, Head Ditch	▬
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	○
Proposed Right of Way Line with Concrete or Granite R/W Marker	△
Proposed Control of Access Line with Concrete C/A Marker	△
Existing Control of Access	○
Proposed Control of Access	○
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	-----
Proposed Slope Stakes Fill	-----
Proposed Curb Ramp	○
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	□

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	○
Storm Sewer	S

UTILITIES:

POWER:	
Existing Power Pole	○
Proposed Power Pole	○
Existing Joint Use Pole	○
Proposed Joint Use Pole	○
Power Manhole	○
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	○
Telephone Booth	□
Telephone Pedestal	□
Telephone Cell Tower	○
U/G Telephone Cable Hand Hole	○
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	○
Water Meter	○
Water Valve	⊗
Water Hydrant	○
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	A/G Water

TV:

TV Satellite Dish	○
TV Pedestal	□
TV Tower	⊗
U/G TV Cable Hand Hole	○
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

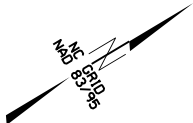
SANITARY SEWER:

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	□
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.

SURVEY CONTROL SHEET B-4480



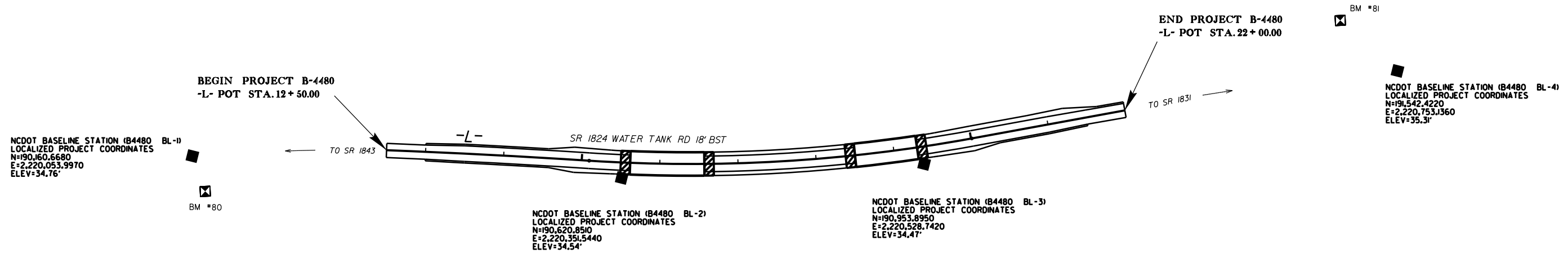
BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
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2	B4480 BL-2		190620.8510	2220351.5440	34.54	15+55.22	13.80 RT
3	B4480 BL-3		190953.8950	2220528.7420	34.47	19+30.39	14.30 RT
4	B4480 BL-4		191542.4220	2220753.1360	35.31	25+59.74	16.64 RT

.....
 80 ELEVATION=35.10'
 N 190153 E 2220080
 L STATION 10+15.00 45 RIGHT
 RR SPIKE IN BASE OF 22" PINE

.....
 81 ELEVATION=34.09'
 N 191499 E 2220652
 L STATION 24+83.00 63 LEFT
 RR SPIKE IN BASE OF 20" GUM

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+00.00	40.00	190394.8520	2220230.6264
L	13+00.00	-40.00	190438.9186	2220163.8571
L	13+00.00	30.00	190400.3603	2220222.2802
L	13+00.00	-30.00	190433.4103	2220172.2033
L	15+09.50	40.00	190567.7880	2220347.3800
L	15+09.50	-40.00	190613.2437	2220281.5485
L	20+01.01	-40.00	191039.0993	2220504.0301
L	20+01.01	40.00	191011.0255	2220578.9425
L	21+50.00	40.00	191150.5393	2220631.2260
L	21+50.00	29.97	191154.0602	2220621.8309
L	21+50.00	-30.03	191175.1156	2220565.6464
L	21+50.00	-40.00	191178.6131	2220556.3136
L	20+01.01	-50.00	191042.6085	2220494.6661
L	20+01.01	50.00	191007.5163	2220588.3065
L	15+09.50	-50.00	190618.9256	2220273.3196
L	15+09.50	50.00	190562.1061	2220355.6089

TYPE	STATION	NORTH	EAST
POT	10+00.00	190164.8140	2220034.5810
PC	11+67.94	190306.1849	2220125.2262
PRC	15+09.50	190590.5158	2220314.4643
PT	20+01.01	191025.0624	2220541.4863
POT	25+65.33	191553.4950	2220739.5190



DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B4480-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 192065.843(ft) EASTING: 2220914.273(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00001974 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4480-1" TO -L- STATION 12+50.00 IS S 23° 45' 52.9" W 1847.40' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES:

- THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT: [HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/doh/preconstruct/highway/location/project/) THE FILES TO BE FOUND ARE AS FOLLOWS: B4480_Ls_CONTROL_110810.TXT
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT. PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

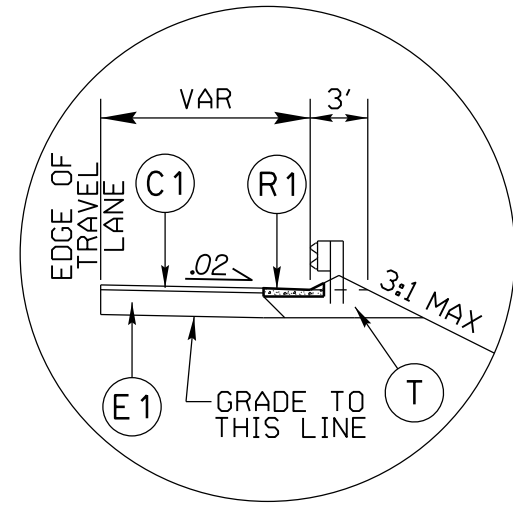
07 MAY 2012 12:15:16 B4480_1s_1c.dgn

6/2/99

PROJECT REFERENCE NO. B-4480	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

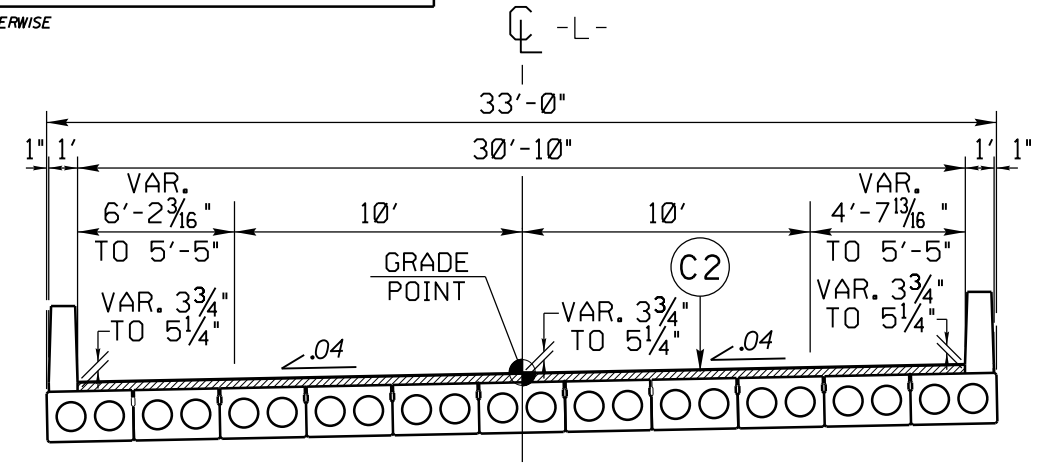
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT 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.
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL

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



INSET NO. 1

Use with Typical Section No. 1



DETAIL SHOWING ASPHALT WEARING SURFACE ON CORED SLAB BRIDGE

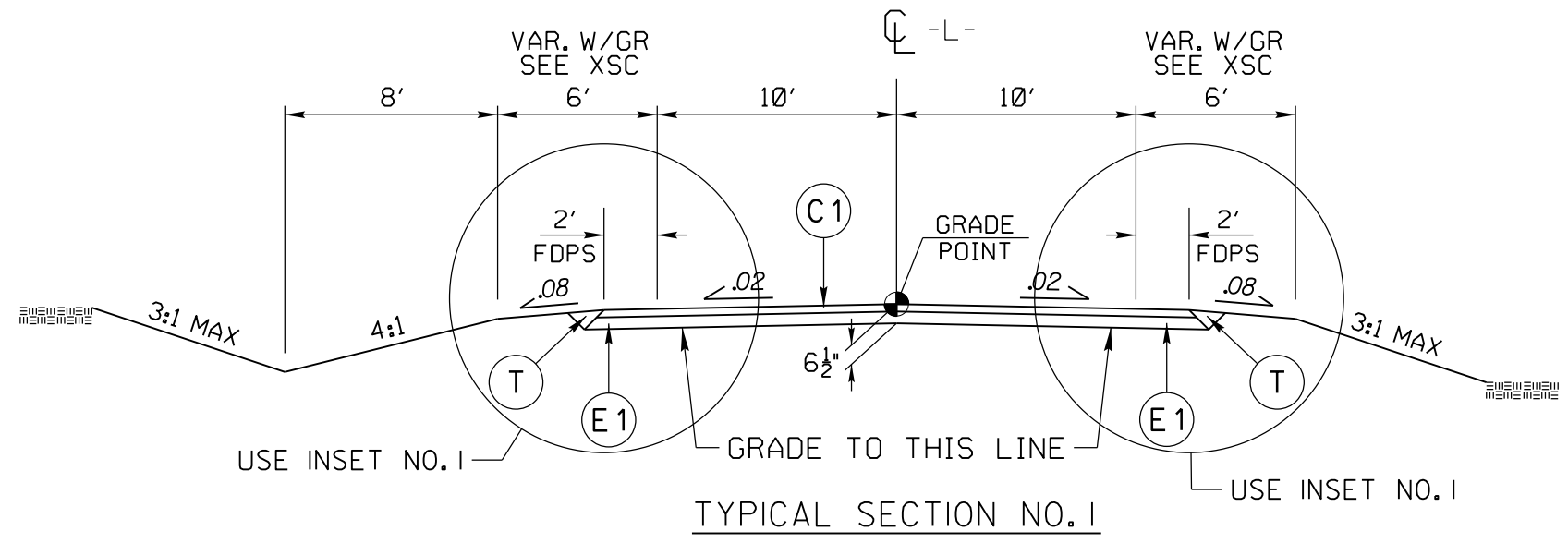
-L- STA. 15+45.81 TO -L- STA. 16+58.19
-L- STA. 18+51.87 TO -L- STA. 19+24.13

USE TYPICAL SECTION NO. 1

- L- STA. 13+50.00 TO -L- STA. 15+45.81 (BEGIN BRIDGE)
- L- STA. 16+58.19 (END BRIDGE) TO -L- STA. 18+51.87 (BEGIN BRIDGE)
- L- STA. 19+24.13 (END BRIDGE) TO -L- STA. 21+00.00

USE INSET NO. 1 FOR:

- L- STA. 15+23.00 TO BEGIN OF APPROACH SLAB (LT.) REVERSE
- L- STA. 15+27 +/- TO BEGIN OF APPROACH SLAB (RT.)
- END OF APPROACH SLAB TO -L- STA. 16+76 +/- (LT.) REVERSE
- END OF APPROACH SLAB TO -L- STA. 16+76 +/- (RT.)
- L- STA. 18+33 +/- TO BEGIN OF APPROACH SLAB (LT.) REVERSE
- L- STA. 18+33 +/- TO BEGIN OF APPROACH SLAB (RT.)
- END OF APPROACH SLAB TO -L- STA. 19+46.00 (LT.) REVERSE
- END OF APPROACH SLAB TO -L- STA. 19+43 +/- (RT.)

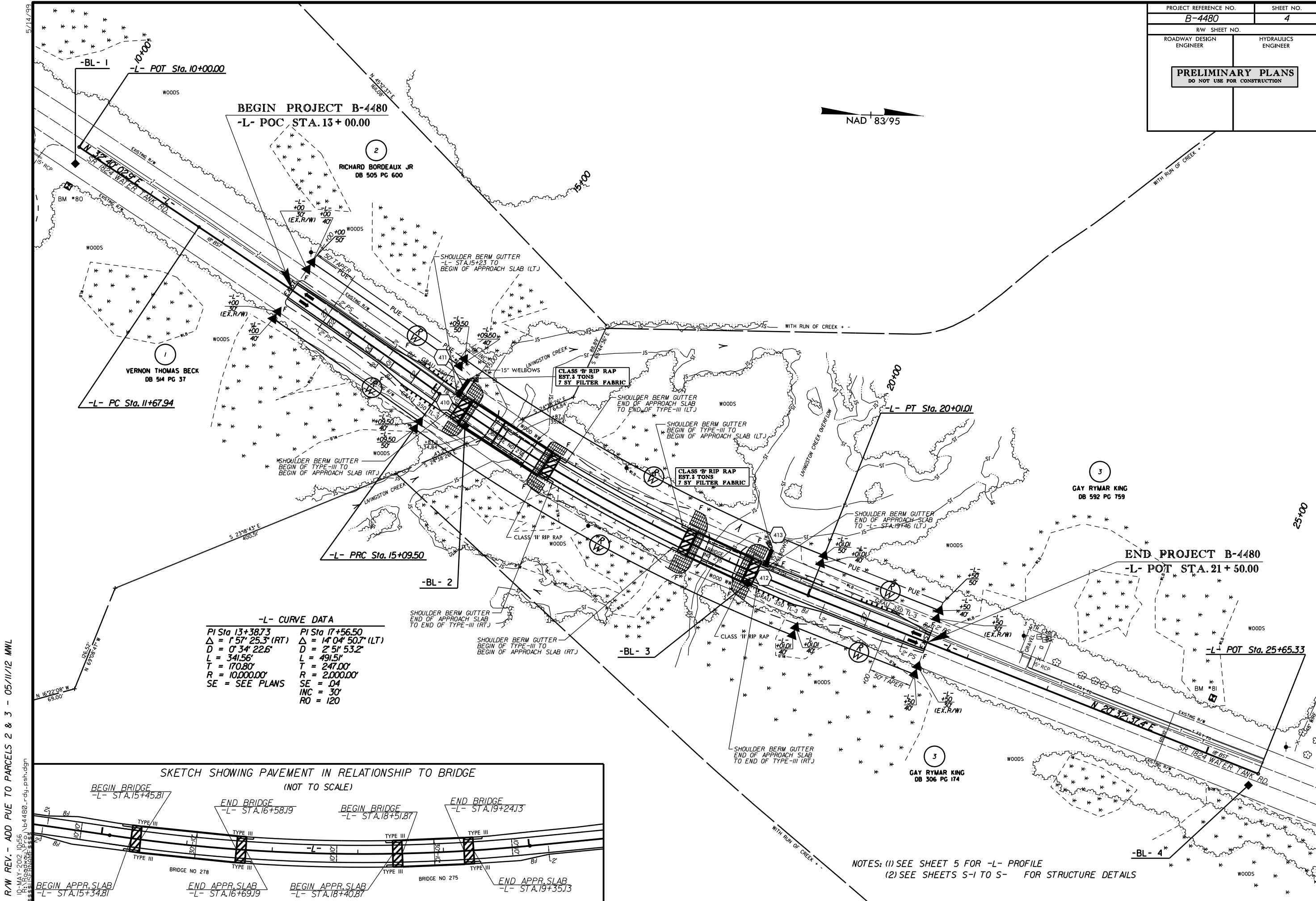
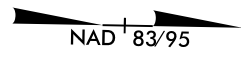


TYPICAL SECTION NO. 1

NOTES:

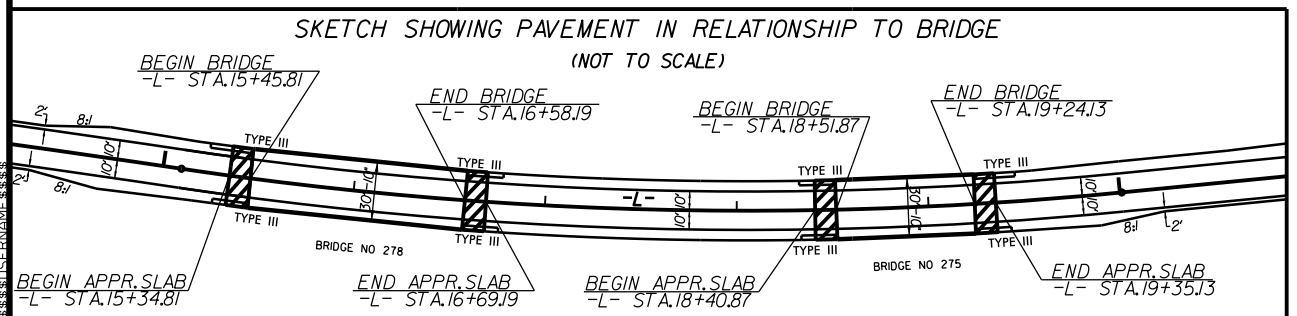
- (1) TRANSITION FROM EXISTING TO T.S. NO. 1
-L- STA. 13+00.00 TO -L- STA. 13+50.00
- (2) TRANSITION FROM T.S. NO. 1 TO EXISTING
-L- STA. 21+00.00 TO -L- STA. 21+50.00

07-MAY-2012 12:15:18 B4480_Rdy_tup.dgn



-L- CURVE DATA

PI Sta 13+38.73	PI Sta 17+56.50
$\Delta = 1^{\circ} 57' 25.3"$ (RT)	$\Delta = 1^{\circ} 04' 50.7"$ (LT)
D = 0' 34' 22.6"	D = 2' 51' 53.2"
L = 341.56'	L = 491.51'
T = 170.80'	T = 247.00'
R = 10,000.00'	R = 2,000.00'
SE = SEE PLANS	SE = .04
	INC = 30'
	RO = 120



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

R/W REV. - ADD PUE TO PARCELS 2 & 3 - 05/11/12 MWL
10-MAY-2012 10:56
s:\projects\4480\1\4480_rdy.psh.dgn

BM 80 EL.35.10
RAILROAD SPIKE IN BASE OF 22 INCH PINE TREE
-BL- STA.5+08 (26' RT.)
-L- STA.10+14.54 (44.95' RT.)

-L-

BM 81 EL.35.31
RAILROAD SPIKE IN BASE OF 20 INCH GUM TREE
-BL- STA.19+78 (78' LT.)
-L- STA.24+83.43 (62.59' LT.)

-L- STA.16+02
BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 2200	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 33.50	FT
BASE DISCHARGE	= 3586	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 35.07	FT
OVERTOPPING DISCHARGE	= 3586	CFS
OVERTOPPING FREQUENCY	= +100	YRS
OVERTOPPING ELEVATION	= 35J	FT

-L- STA.18+88
BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 2200	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 33.5	FT
BASE DISCHARGE	= 3586	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 35.07	FT
OVERTOPPING DISCHARGE	= 3586	CFS
OVERTOPPING FREQUENCY	= +100	YRS
OVERTOPPING ELEVATION	= 35J	FT

BEGIN GRADE -L- STA.13+00.00
EL = 35.22 (INCL. 1/4" RESURFACE)

C/L -L- Sta.16+02
1@46'-2 1/4" - 2'CS; 1@66'-2 1/4" - 24"CS
EL = 36.1'
Skew = 90°

C/L -L- Sta.18+88
1@ 72'-3" - 24"CS
EL = 36.2'
Skew = 90°

END GRADE -L- STA.21+50.00
EL = 35.42 (INCL. 1/4" RESURFACE)

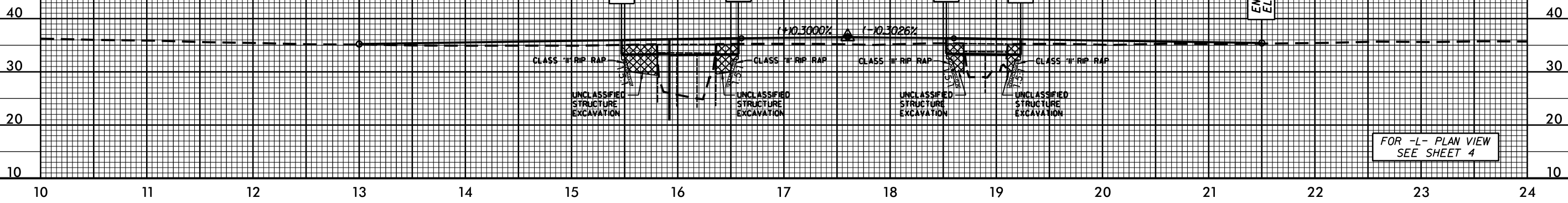
BEGIN BRIDGE
-L- STA.15+45.81

END BRIDGE
-L- STA.16+58.19

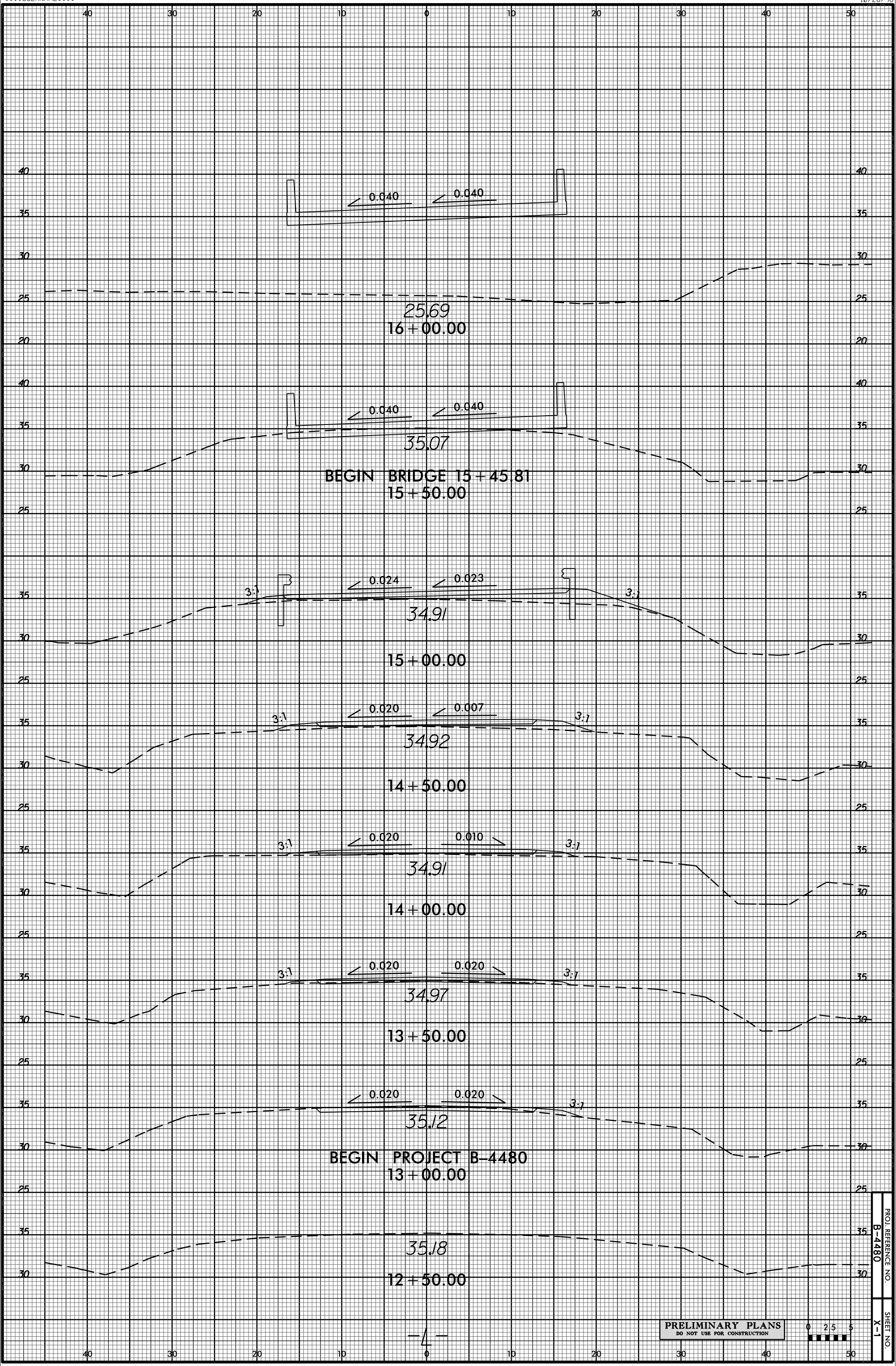
PI = 17+60.00
EL = 36.60'
VC = 200'
K = 332

BEGIN BRIDGE
-L- STA.18+51.87

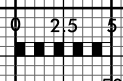
END BRIDGE
-L- STA.19+24.13



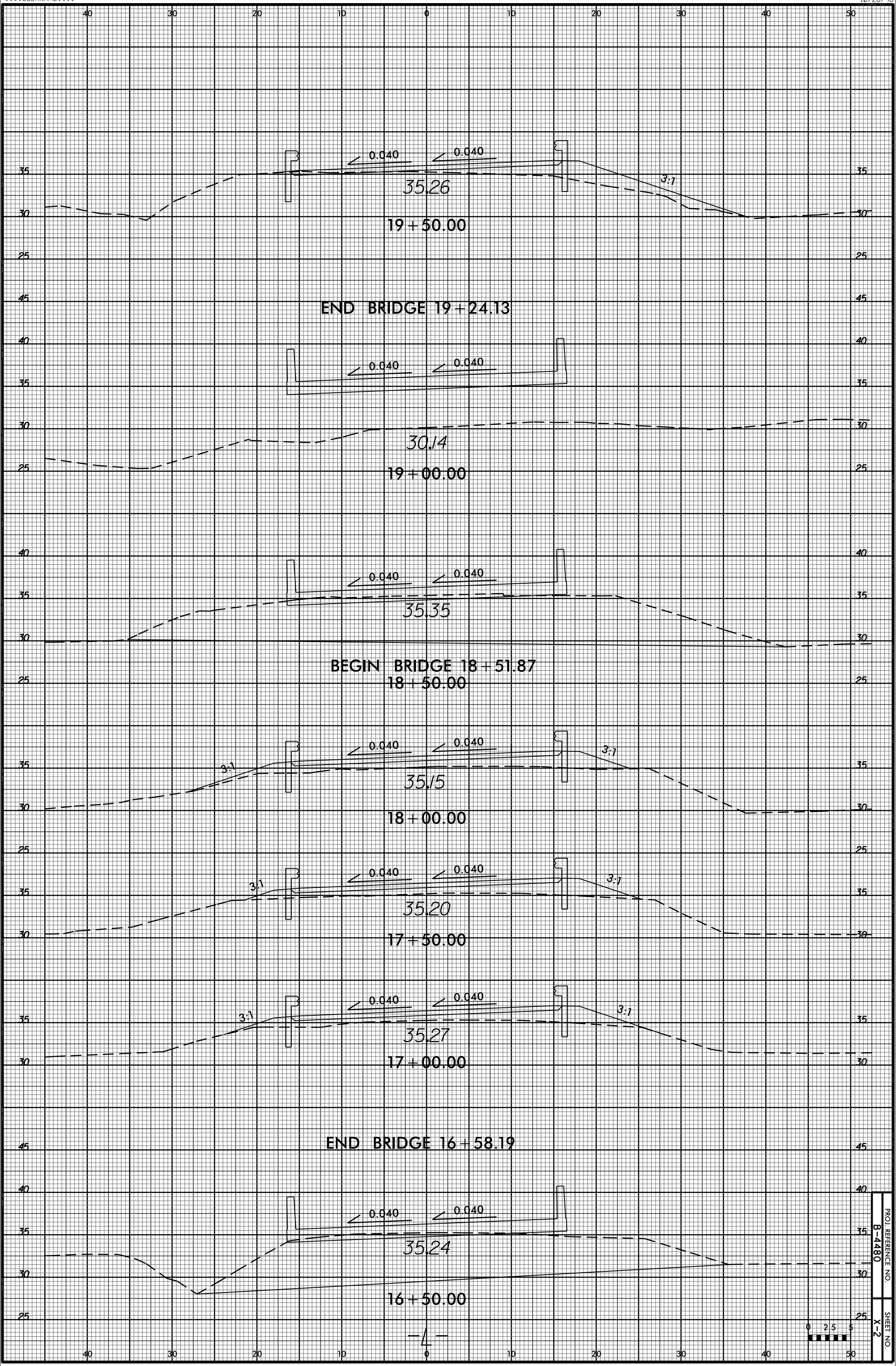
5/14/99
07-MAY-2012 12:22
4480-RD-RD-4480-rdy-pl.dgn

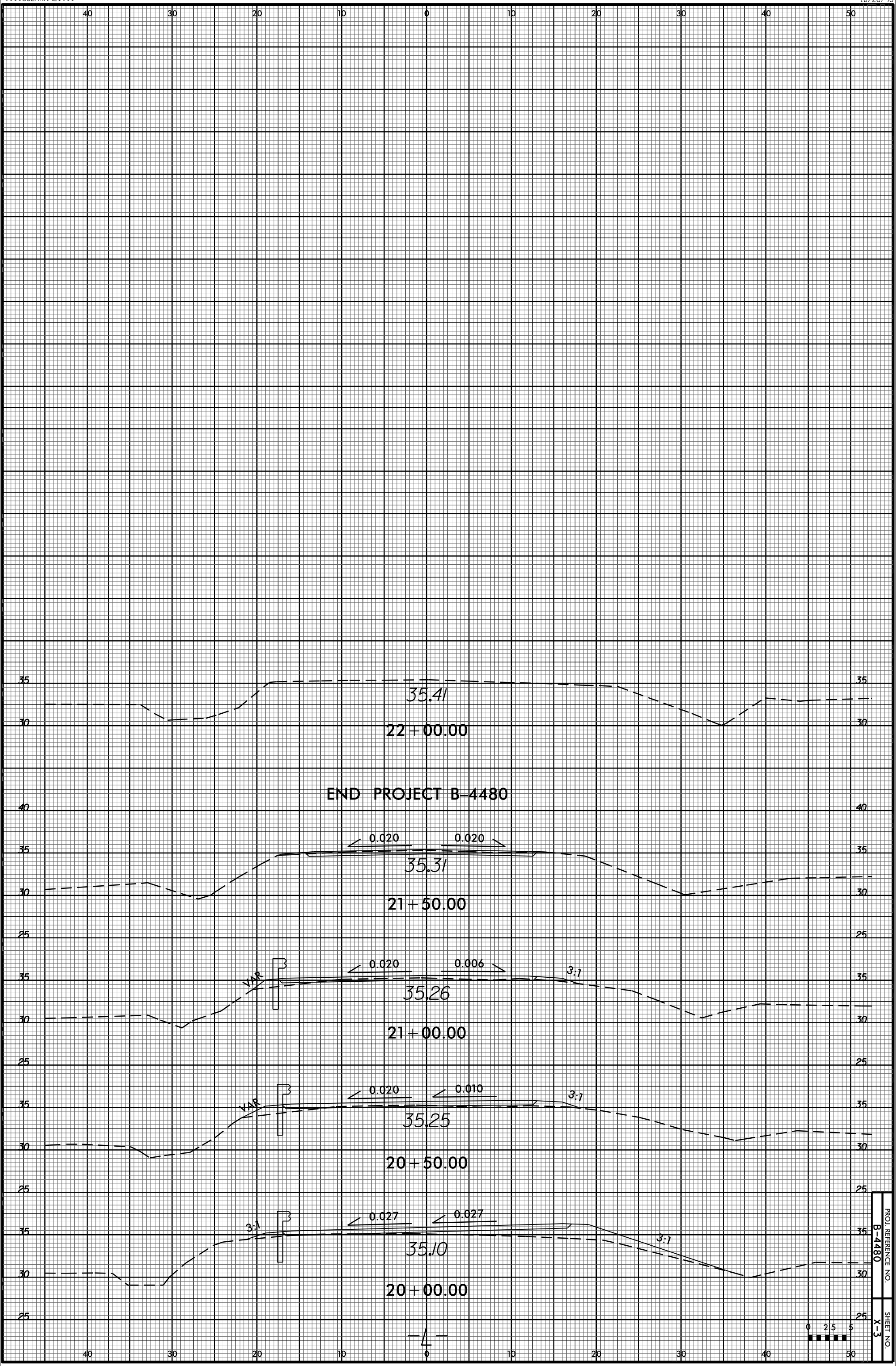


PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PROJ. REFERENCE NO. B-4480
SHEET NO. X-1





PROJ REFERENCE NO. B-4480
SHEET NO. X-3