



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

February 7, 2013

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 Section 404 Nationwide Permits 23 & 13, and Section 401 Water Quality Certification** for the proposed replacement of Bridge No. 31 over Browns Creek on SR 1700 in Bladen County. Federal Aid Project No. BRZ-1700(8), TIP No. B-4436, WBS Element 38363.1.1.

The North Carolina Department of Transportation (NCDOT) proposes to replace the 51-foot, 3-span Bridge No. 31 with a 90-foot, 2-span bridge on the existing alignment. Traffic will follow an offsite detour during construction. Permanent impacts to jurisdictional resources include 229 feet of bank stabilization.

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 February 2012. Copies were distributed shortly thereafter. Additional copies are available upon request.

This project calls for a letting date of October 15, 2013 and a review date of August 27, 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 and 13.

Section 401 Permit: We anticipate 401 General Certification numbers 3891 and 3885 will apply to this project.

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

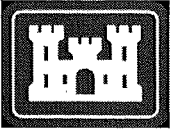
A copy of this permit application and its distribution list will be posted at the NCDOT Website at <https://connect.ncdot.gov/resources/Environmental>. If you have any questions or need additional information, please contact Tyler Stanton at tstanton@ncdot.gov or (919) 707-6156.

Sincerely,



fo 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 13 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 type="checkbox"/> Yes <input checked="" 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 checked="" type="checkbox"/> Yes	<input 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 Bridge No. 31 over Browns Creek on SR 1700
2b. County:	Bladen
2c. Nearest municipality / town:	Elizabethtown
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no:	B-4436

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: 34.6123 (DD.DDDDDD) Longitude: - 78.5995 (-DD.DDDDDD)
1c. Property size:	1.61 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Browns Creek
2b. Water Quality Classification of nearest receiving water:	C
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: 0.0	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 300	
3d. Explain the purpose of the proposed project: To replace a structurally deficient and functionally obsolete bridge	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing a 51-foot 3-span bridge with a 90-foot, 2-span bridge 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): Veronica Barnes	Agency/Consultant Company: NCDOT Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. 27 October 2009	
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 type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site 1 <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 2 <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 2 <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 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					X Perm X Temp

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 checked="" type="checkbox"/> P <input type="checkbox"/> T	Bank Stabilization	Browns Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	15	229
Site 1 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	Bank Stabilization	Browns Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	15	38
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		
3h. Total stream and tributary impacts						229 Perm 38 Temp

3i. Comments: Sheetpile will be set at approximate shoulder point; however, the stream bank will still need to be armoured at 2:1 with rip rap to prevent the stream bank between stream and sheetpile from eroding and maintain existing/low flow stream width. Additionally, rip rap will be placed for stabilization under the bridge where existing vertical abutment will be removed and sloped back.

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?

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?			<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:					

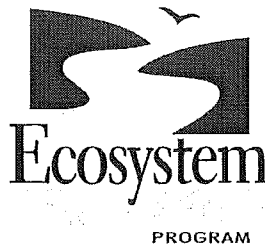
D. Impact Justification and Mitigation		
1. Avoidance and Minimization		
1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project. The proposed Bridge No. 31 is 39 feet longer than the existing bridge and will be at a slightly higher grade as the existing structure; there will be no fill and no excavation in jurisdictional areas. Bridge No. 31 reduces bents in Browns Creek from 2 to 1. Deck drains have been eliminated 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 except where shoulder berm gutter is proposed.		
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, explain:	
2b. If yes, mitigation is required by (check all that apply):	<input type="checkbox"/> DWQ <input checked="" type="checkbox"/> Corps	
2c. If yes, which mitigation option will be used for this project?	<input type="checkbox"/> Mitigation bank <input checked="" 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 checked="" type="checkbox"/> Yes	
4b. Stream mitigation requested:	229 linear feet	
4c. If using stream mitigation, stream temperature:	<input checked="" type="checkbox"/> warm <input type="checkbox"/> cool <input type="checkbox"/> cold	
4d. Buffer mitigation requested (DWQ only):	square feet	
4e. Riparian wetland mitigation requested:	acres	
4f. Non-riparian wetland mitigation requested:	acres	
4g. Coastal (tidal) wetland mitigation requested:	acres	
4h. Comments: Mitigation is for bank stabilization only; therefore a 1:1 mitigation ratio will be used.		
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?				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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 <small>(Agent's signature is valid only if an authorization letter from the applicant is provided.)</small>	2.7.13 Date



December 11, 2012

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

B-4436, Replace Bridge Number 31 on SR 1700 (Mercer Mill Road) over Brown's Creek, Bladen County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream mitigation for the subject project. Based on the information supplied by you on December 5, 2012, the impacts are located in CU 03030005 of the Cape Fear River basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Cape Fear 03030005 SICP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	229	0	0	0	0	0

This impact and associated mitigation need were under projected by the NCDOT in the 2012 impact data. EEP will commit to implement sufficient compensatory stream mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies using the delivery timeline listed in Section F.3.c.iii of the N.C. Department of Environment and Natural Resources' Ecosystem Enhancement Program In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

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

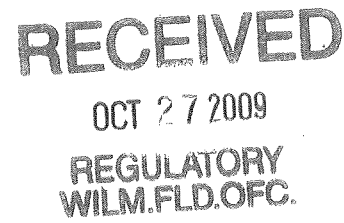
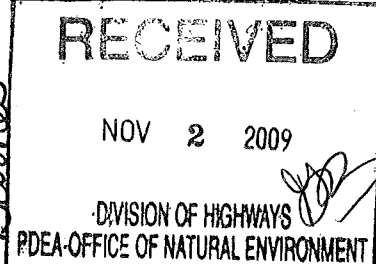
Sincerely,

Suzanne Klimek
 EEP Acting Director

cc: Mr. Ronnie Smith, USACE – Wilmington Regulatory Field Office
 Ms. Amy Chapman, Division of Water Quality, Wetlands/401 Unit
 File: B-4436

Restoring... Enhancing... Protecting Our State





ATTACHMENT

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): October 22, 2009

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

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: SAW-2009-01943
(NCDOT/B-4436/Bridge No. 31 over Browns Creek on (SR 1700) Mercer Mill Brown Marsh Road/ Bladen County/Div. 6)

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
B-4436

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

State: North Carolina County/parish/borough: Bladen City: Elizabethtown
Center coordinates of site (lat/long in degree decimal format):
Lat. 34.6123 N, Long. -78.5995W.
Universal Transverse Mercator:
Name of nearest waterbody: Brown's Creek

Identify (estimate) amount of waters in the review area:
Non-wetland waters: 696 linear feet: 5 width (ft) and/or acres.
Cowardin Class: Riverine
Stream Flow: Perennial
Wetlands: 0.39 acres.
Cowardin Class: PF01C

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

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

- Office (Desk) Determination. Date: October 22, 2009
- 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 who requested this preliminary JD is hereby advised of his or her option to

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

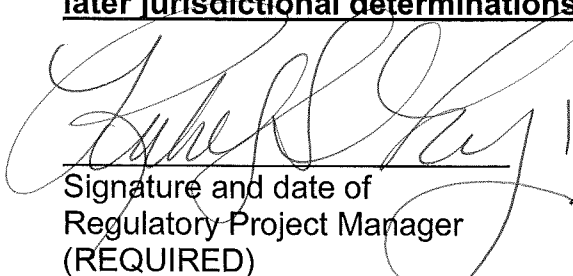
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has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

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

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

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: NCDOT.
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps:
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: Elizabethtown
- USDA Natural Resources Conservation Service Soil Survey.
Citation: Bladen County.
- 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): Bladen County 2003.
or Other (Name & Date):
- Previous determination(s). File no. and date of response letter:
- Other information (please specify):

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.


Signature and date of
Regulatory Project Manager
(REQUIRED) 10/21/09



Signature and date of
person requesting preliminary JD
(REQUIRED, unless obtaining
the signature is impracticable) 10/23/09

Table 1. Waterbodies within the project area

Site number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
Brown's Creek	34° 36' 47.73" N	78° 36' 18.71"W.	Riverine	354 lin. ft.	Perennial
PA	34° 36' 47.73" N	78° 36' 18.71"W.	Riverine	159 lin. ft.	Perennial
SB	34° 36' 47.73" N	78° 36' 18.71"W.	Riverine	355 lin. ft.	Perennial
WA	34° 36' 47.73" N	78° 36' 18.71"W.	Riverine	0.12 ac	PFO1C
WB	34° 36' 47.73" N	78° 36' 18.71"W.	Riverine	0.27 ac	PFO1C



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-4436 (38363.1.1)

County(ies): Bladen

Page 1 of 2

General Project Information

Project No.: B-4436 (38363.1.1)		Project Type: Bridge Replacement		Date: 11/19/2012	
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: 919.707.6711		
	Email: gcail@ncdot.gov		Email: gcail@ncdot.gov		
City/Town: Elizabethtown, NC		County(ies): Bladen			
River Basin(s): Cape Fear		CAMA County? No			
Primary Receiving Water: Brown's Creek		NCDWQ Stream Index No.:			
NCDWQ Surface Water Classification for Primary Receiving Water		Class C			
		Primary:			
		Supplemental:			
Other Stream Classification:					
303(d) Impairments:					
Buffer Rules in Effect		N/A			

Project Description

Project Length (lin. Miles or feet):	0.133 miles	Surrounding Land Use:	Wooded
	Proposed Project		Existing Site
Project Built-Upon Area (ac.)	0.59 ac.		0.49 ac.
Typical Cross Section Description:	11' Travel Lanes, 4' Paved Shoulder, 2' Grass Shoulders. 3:1 Side Slopes		9' Travel Lanes, 4' Grassed Shoulders, 2:1 Side Slopes
Average Daily Traffic (veh/hr/day):	Design/Future: 6,912 (2033)	Existing:	4,840 (2013)

General Project Narrative:

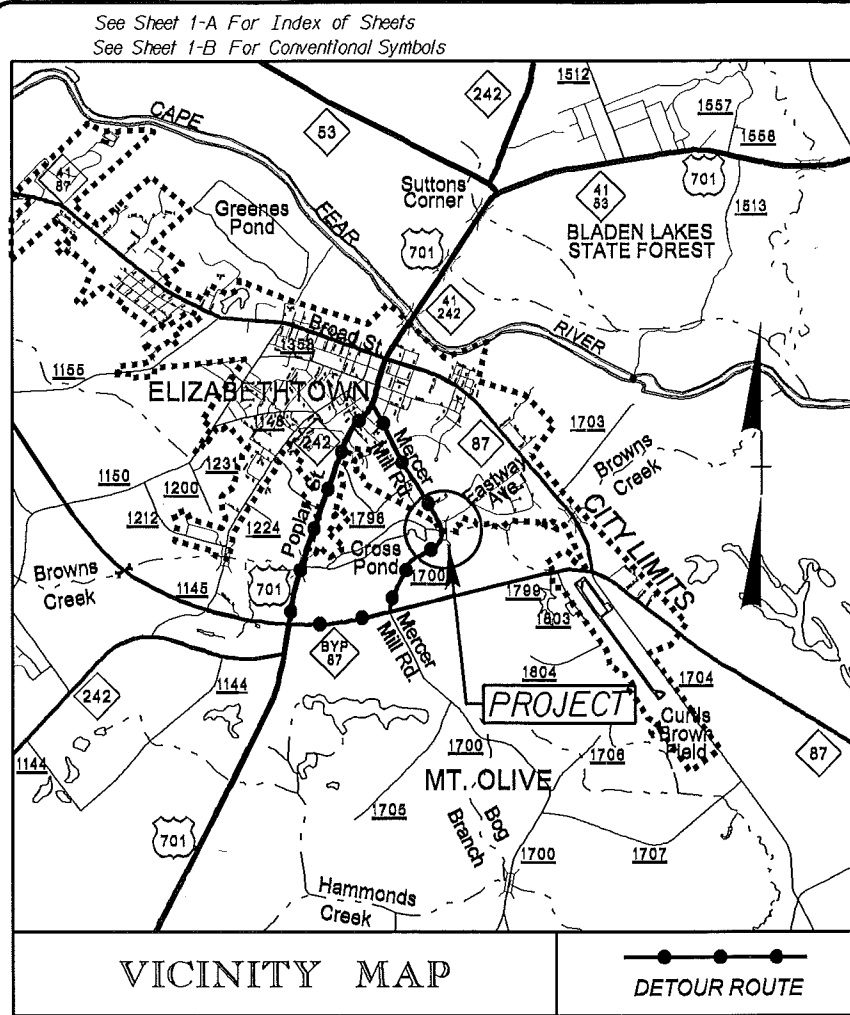
The project consists of relacing Bridge# 31 on SR 1700 (Mercer Mill Road) over Brown's Creek. The approach work will consist of raising the existing roadway grade and providing grass shoulders and guardrails. Bridge #31 existing 3 span structure (51' total length) will be replaced with a 2 span (1@55', 1@35') total 90' and 21" cored slab bridge. Bridge #31 eliminates 1 bent in water.

Best Mgmt. Practices:

- Promotion of sheet flow and infiltration with grassed shoulders except where shoulder berm gutter to 2GI at bridge.
- Drainage systems outlet to rip rap pads. System in NE quad outlets to existing ditch. System in SW quad outlets to proposed ditch.
- Eliminated Deck Drains on bridge.
- Removal of existing road fill under bridges will improve bridge conveyance and reduce bridge opening velocities.

References

TIP PROJECT: B-4436



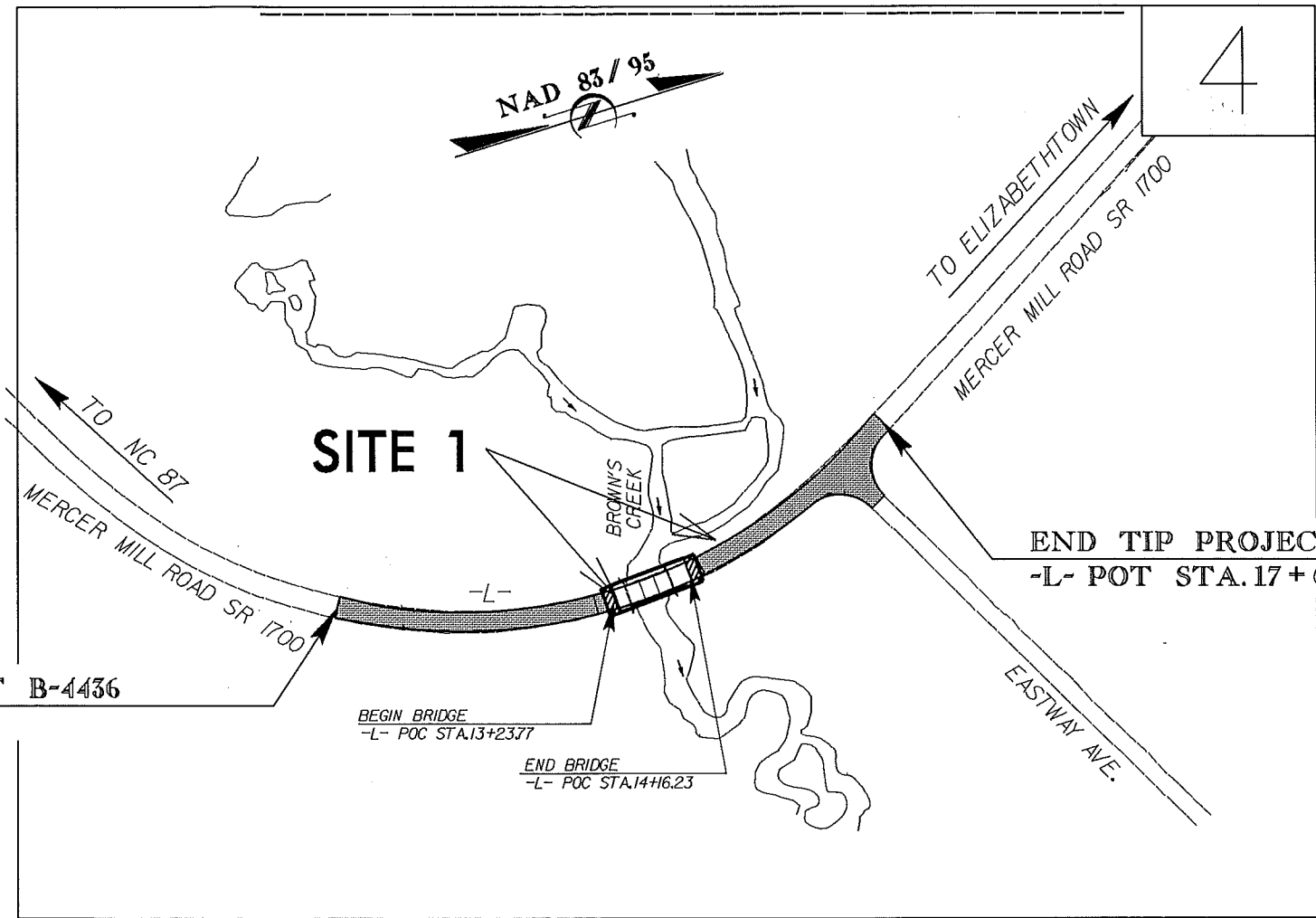
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
BLADEN COUNTY

LOCATION: BRIDGE NO. 31 OVER BROWNS CREEK ON SR 1700
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4436	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
38363.1.1	BRZ-1700(B)	PE	
38363.2.1	BRZ-1700(B)	RW & UTIL.	

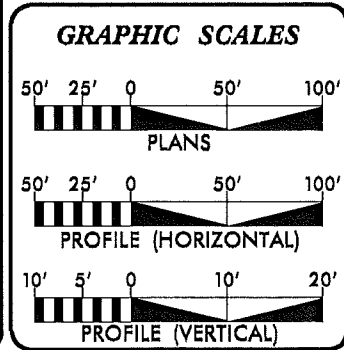
Permit Drawing
Sheet 1 of 10

WETLAND AND SURFACE WATER IMPACTS PERMIT



A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF ELIZABETHTOWN. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

CONTRACT:



DESIGN DATA

ADT 2013	=	4,840
ADT 2033	=	6,912
DHV	=	10 %
D	=	60 %
T	=	3 % *
V	=	40 MPH
FUNC. CLASS.	=	COLLECTOR
* TTST	1% DUAL	2% SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4436	=	0.115 MI.
LENGTH STRUCTURE TIP PROJECT B-4436	=	0.018 MI.
TOTAL LENGTH OF TIP PROJECT B-4436	=	0.133 MI.

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 9, 2012

LETTING DATE:
OCTOBER 15, 2013

REKHA PATEL, P.E.
PROJECT ENGINEER

MICHAEL W. LITTLE, P.E.
PROJECT DESIGN ENGINEER

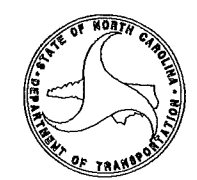
HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

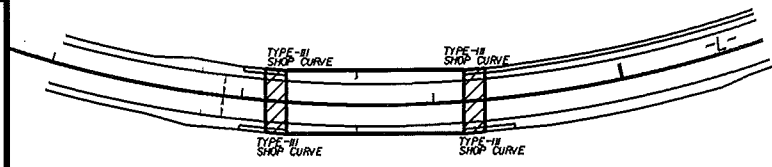
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SIGNATURE: _____ P.E.



\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DDGN\$\$\$\$\$
\$\$\$\$\$SERNAME\$\$\$\$\$

SKETCH SHOWING PAVEMENT IN RELATIONSHIP TO BRIDGE
(NOT TO SCALE)

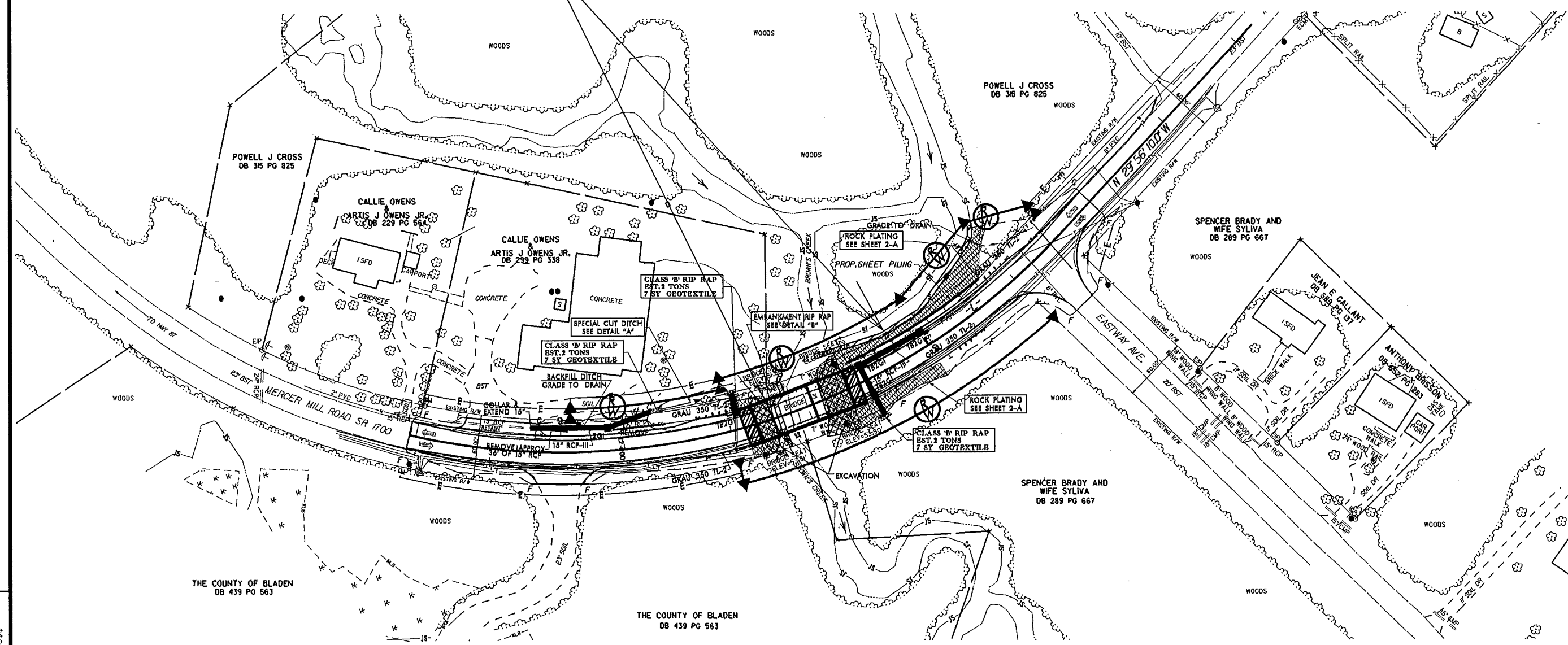


NAD 83/95

PROJECT REFERENCE NO. B-4436	SHEET NO. 4
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 2 of 10

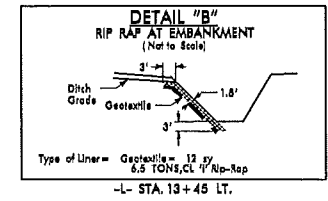
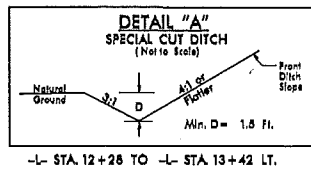
SITE 1



REVISIONS

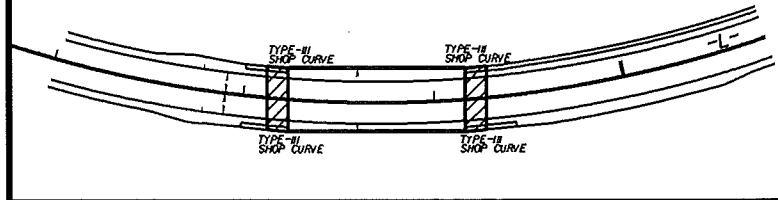
1/19/2012

- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES IMPACTS IN SURFACE WATER



NOTE: USE ROCK PLATING (SEE DETAIL SHEET 2-A)
-L- STA. 14+30.00 +/- TO -L- STA. 16+25.00 +/- (LEFT)
-L- STA. 14+30.00 +/- TO -L- STA. 15+00.00 +/- (RIGHT)

SKETCH SHOWING PAVEMENT IN RELATIONSHIP TO BRIDGE
(NOT TO SCALE)

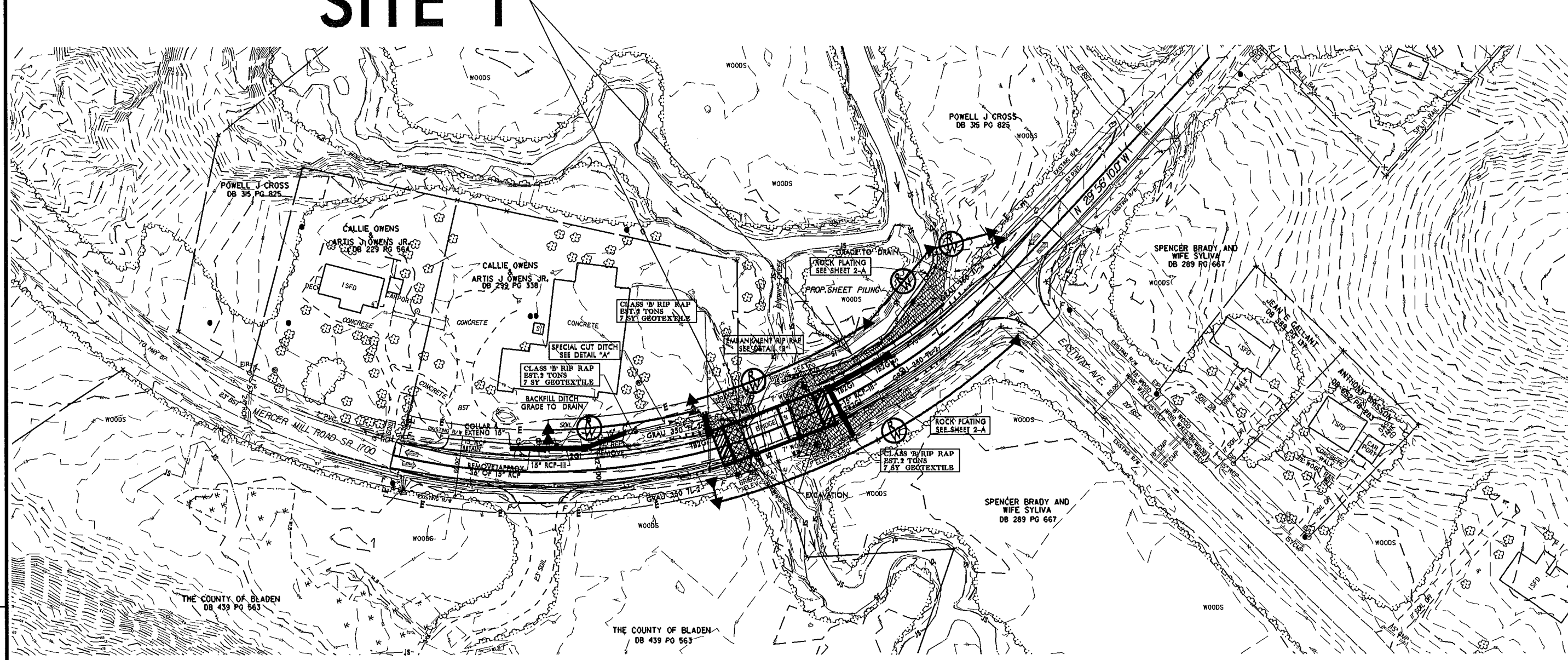


NAD 83/95

PROJECT REFERENCE NO. B-4436	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 3 of 10

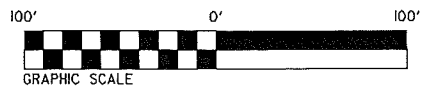
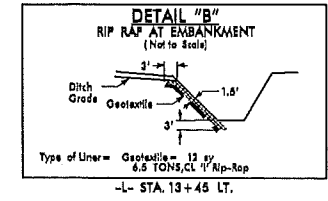
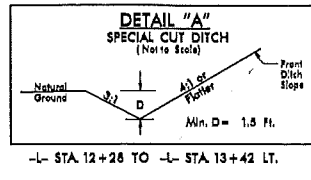
SITE 1



REVISIONS

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER



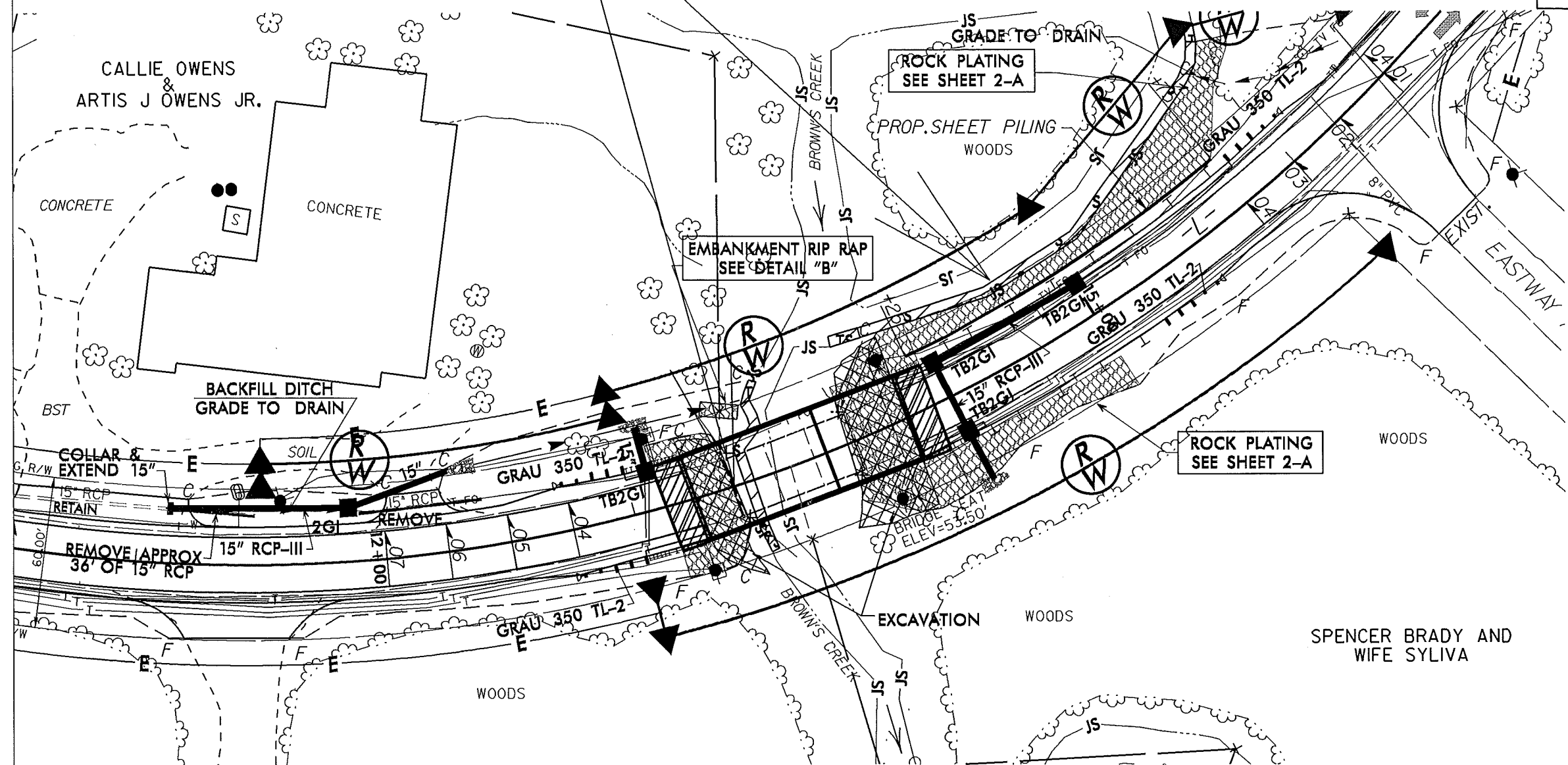
NOTE: USE ROCK PLATING (SEE DETAIL SHEET 2-A)
-L- STA. 14+30.00 +/- TO -L- STA. 16+25.00 +/- (LEFT)
-L- STA. 14+30.00 +/- TO -L- STA. 15+00.00 +/- (RIGHT)

SITE 1

NAD 83/95

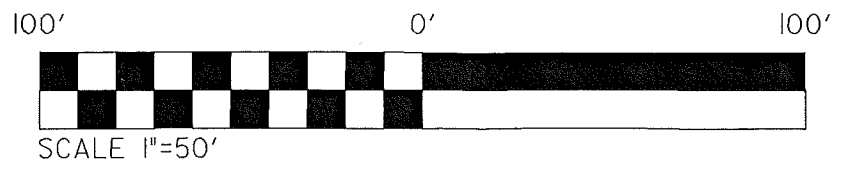
PROJECT REFERENCE NO. B-4436	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<p>INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION</p> <p>PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION</p>	

Permit Drawing
Sheet 4 of 10



DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER



NOTE: USE ROCK PLATING (SEE DETAIL SHEET 2-A)
 -L- STA. 14+30.00 +/- TO -L- STA. 16+25.00 +/- (LEFT)
 -L- STA. 14+30.00 +/- TO -L- STA. 15+00.00 +/- (RIGHT)

REVISIONS

11/9/2012

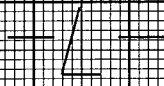
SYSTEMS
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PROJECT REFERENCE NO. B-4436	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 5 of 10

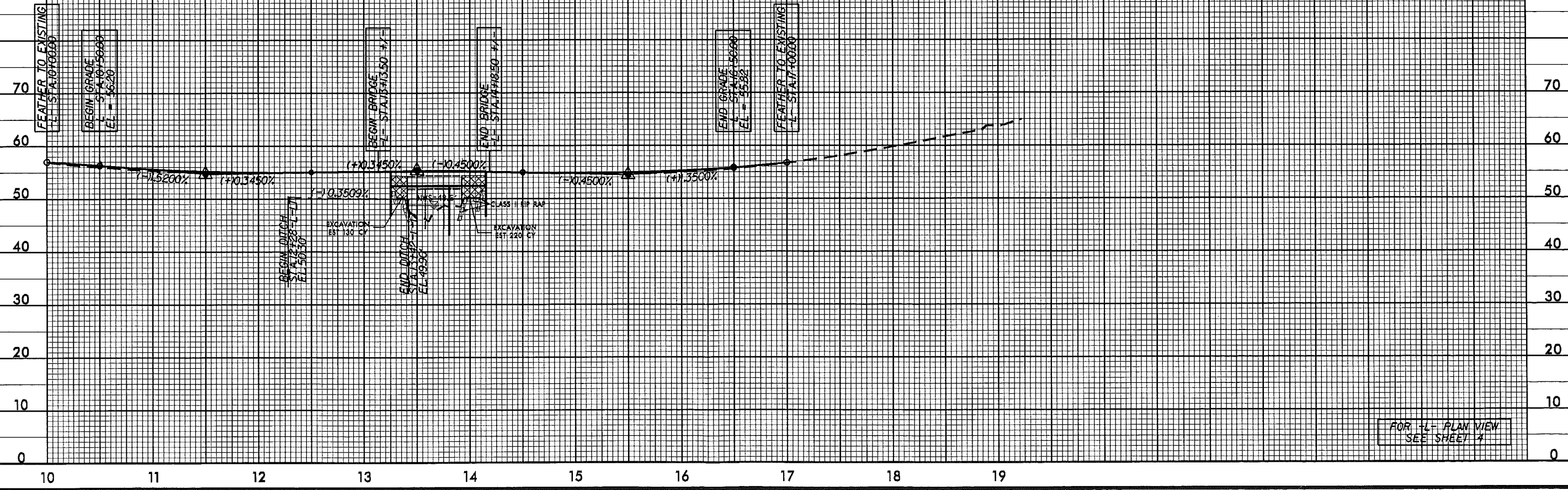
BM *L EL = 52.97
RR SPIKE IN BASE OF 120 BIRCH
-BL- STA 7+84 (48' LT.)
-L- STA 12+88.98 (68' 85" LT.)



PI = 11+50.00
EL = 54.68
VC = 200
K = 107

PI = 13+50.00
EL = 56.37
VC = 200
K = 242

PI = 15+50.00
EL = 54.47
VC = 200
K = 111



FOR -L- PLAN VIEW
SEE SHEET 4

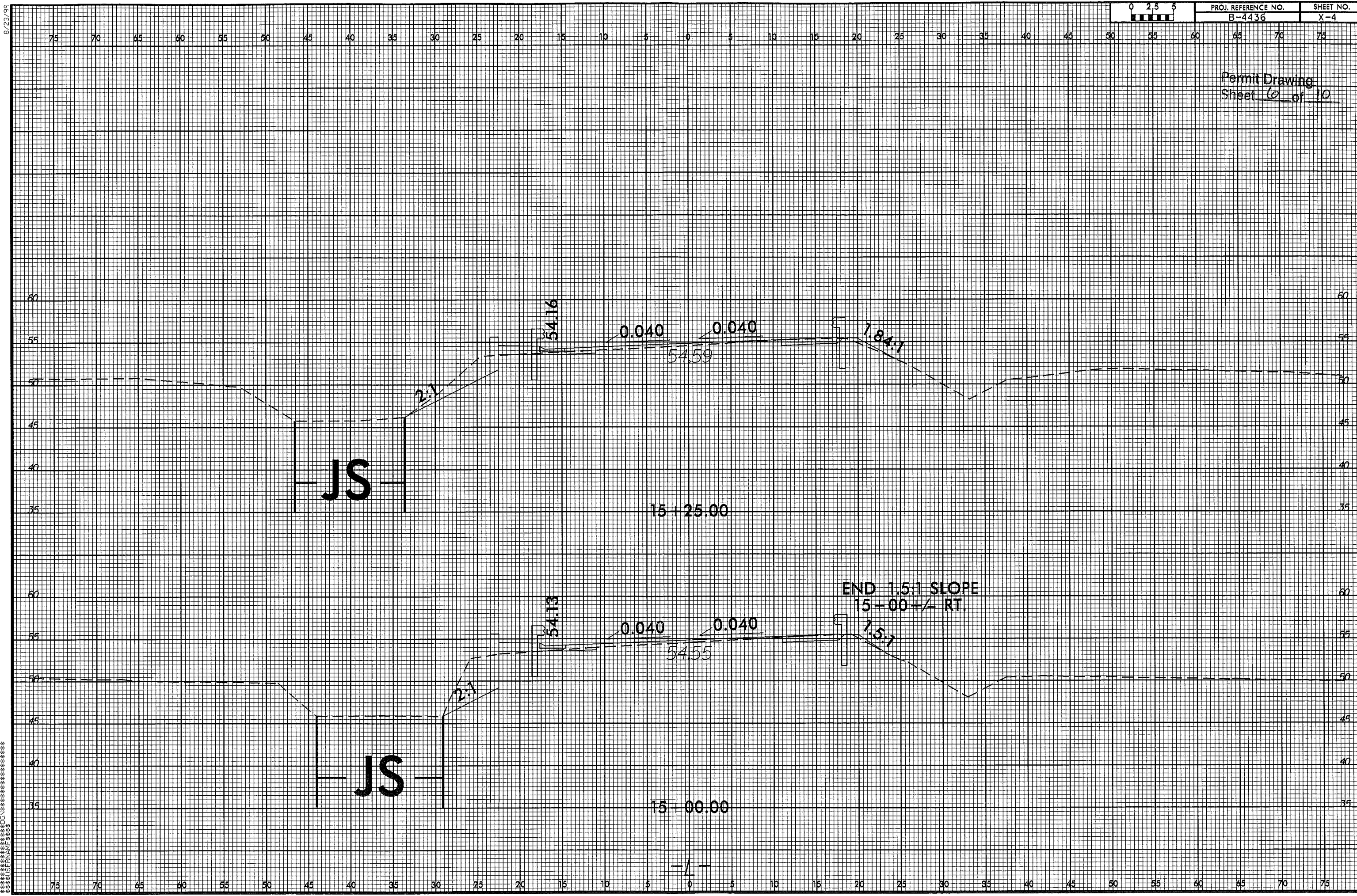
SYTIME:SSSSS
DUNCS
LICRMA

8/23/99



PROJ. REFERENCE NO. B-4436	SHEET NO. X-4
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Permit Drawing
Sheet 6 of 10



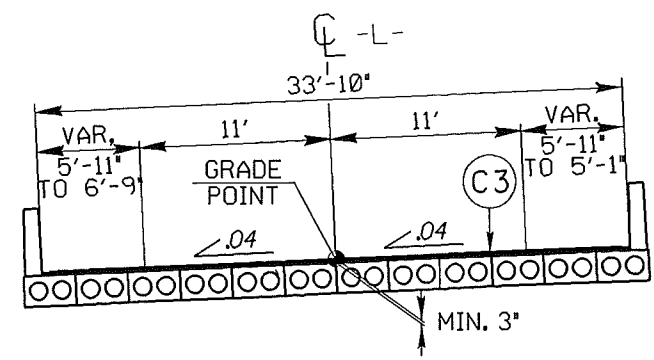
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6/2/99

PROJECT REFERENCE NO. B-4436	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

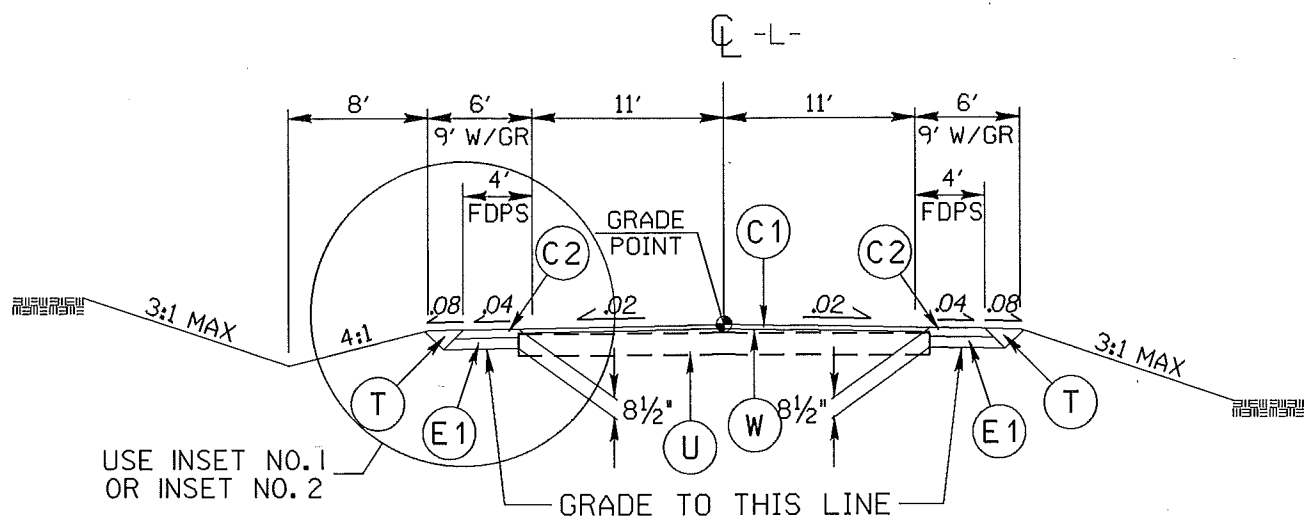
PAVEMENT SCHEDULE			
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 89.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 4" IN DEPTH OR GREATER THAN 8 1/2" IN DEPTH.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE 89.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R1	SHOULDER BERN GUTTER
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE 89.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1 1/2" IN DEPTH OR GREATER THAN 2" IN DEPTH.	T	EARTH MATERIAL
E1	PROP. APPROX. 5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
		W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

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



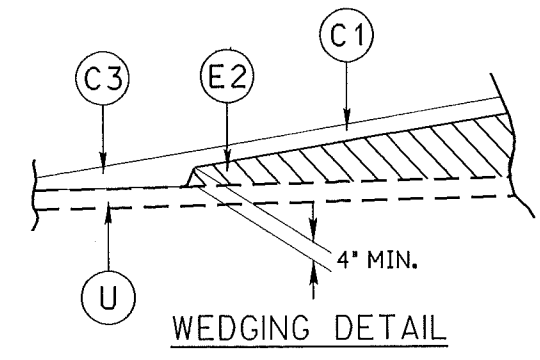
DETAIL SHOWING ASPHALT WEARING SURFACE ON CORED SLAB BRIDGE
-L- STA. 13+23.77 TO -L- STA. 14+16.23

Permit Drawing Sheet 7 of 10



TYPICAL SECTION NO. 1

USE INSET NO. 1 OR INSET NO. 2



WEDGING DETAIL

USE TYPICAL SECTION NO. 1

-L- STA. 10+50.00 TO -L- STA. 12+75.00
-L- STA. 14+75.00 TO -L- STA. 16+50.00

USE INSET NO. 1 FOR:

-L- STA. 15+75.00 TO -L- STA. 15+80.00 (LT.) REVERSE

USE INSET NO. 2 FOR:

-L- STA. 14+75.00 TO -L- STA. 15+75.00 (LT.)

NOTES:

- (1) TRANSITION FROM EXISTING TO T.S. NO. 1
-L- STA. 10+00.00 TO -L- STA. 10+50.00
- (2) TRANSITION FROM T.S. NO. 1 TO EXISTING
-L- STA. 16+50.00 TO -L- STA. 17+00.00

USE TYPICAL SECTION NO. 2

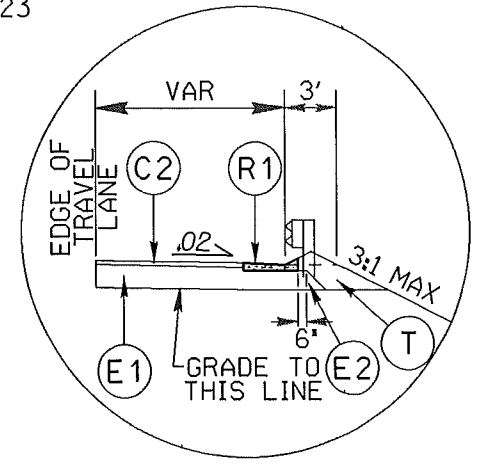
-L- STA. 12+75.00 TO -L- STA. 13+23.77 (BEGIN BRIDGE)
-L- STA. 14+16.23 (END BRIDGE) TO -L- STA. 14+75.00

USE INSET NO. 1 FOR:

-L- STA. 13+06 +/- TO -L- STA. 13+12.77 (RT.)
-L- STA. 13+03 +/- TO -L- STA. 13+12.77 (LT.) REVERSE
-L- STA. 14+27.23 TO -L- STA. 14+42.00 (RT.)

USE INSET NO. 2 FOR:

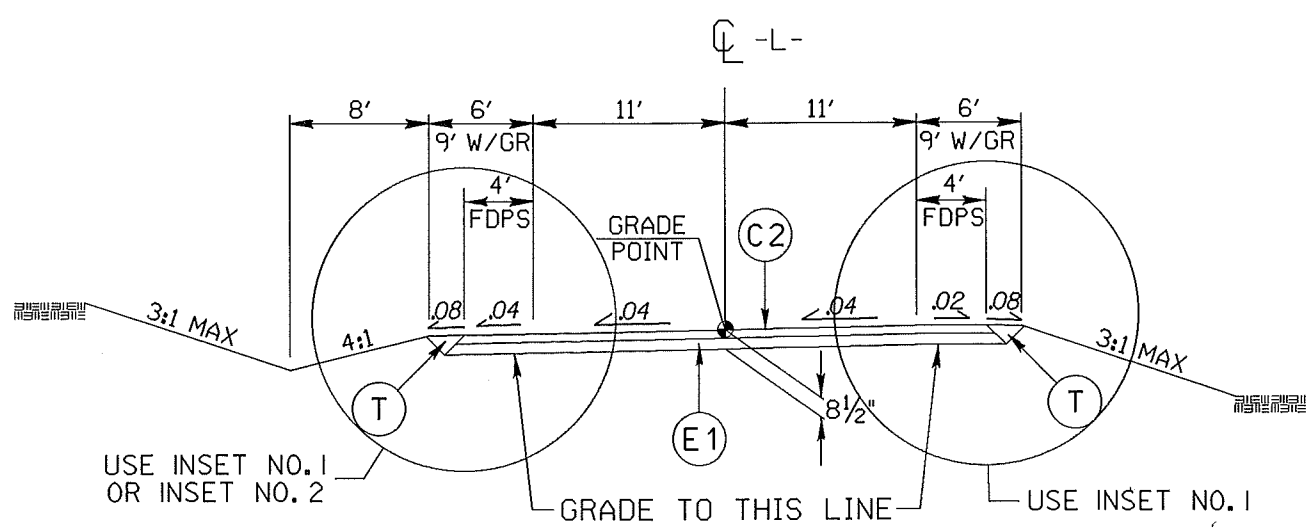
-L- STA. 14+25.00 TO -L- STA. 15+75.00 (LT.)



INSET NO. 1

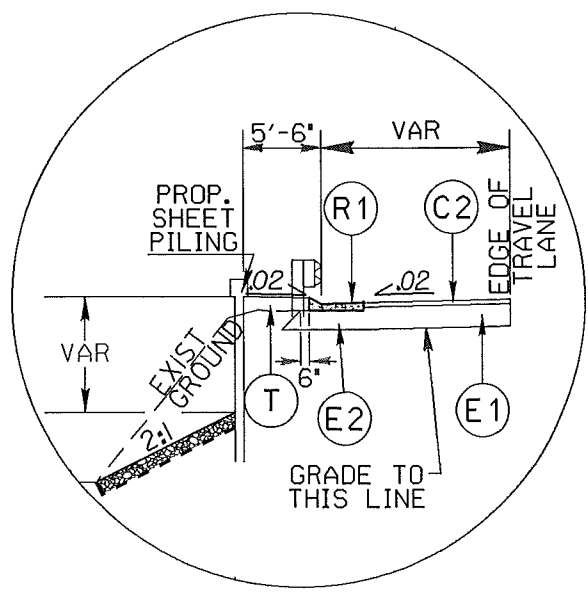
INSET NO. 1

Use with Typical Section No. 1
Use with Typical Section No. 2



TYPICAL SECTION NO. 2

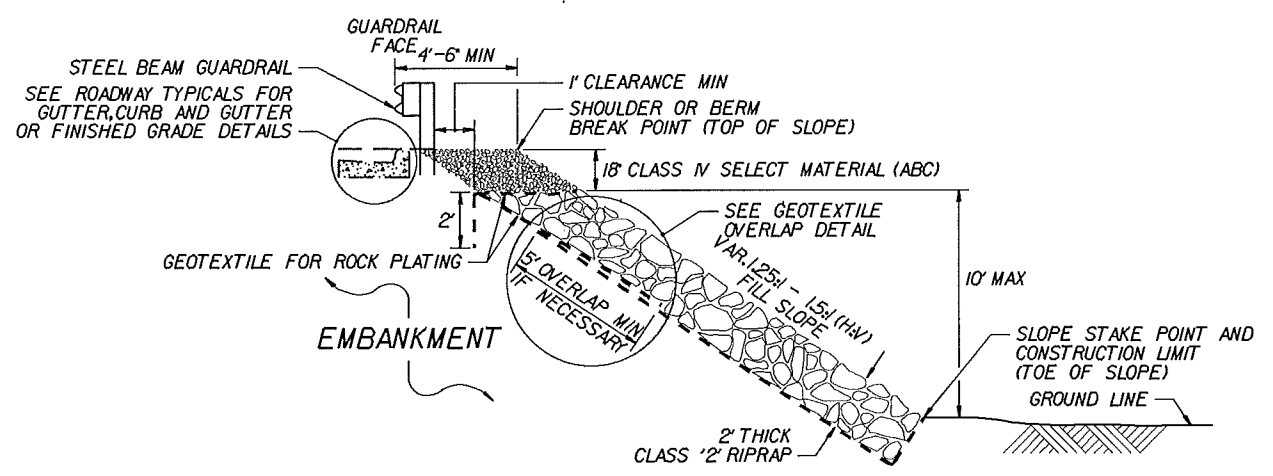
USE INSET NO. 1 OR INSET NO. 2



INSET NO. 2

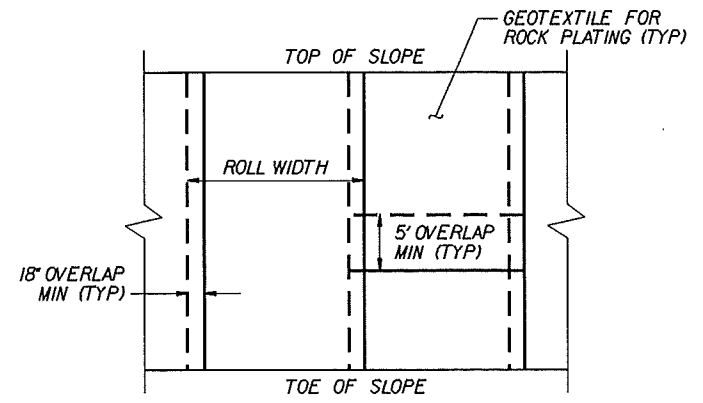
INSET NO. 2

Use with Typical Section No. 1
Use with Typical Section No. 2



ROCK PLATING DETAIL NO. 1

USE ROCK PLATING DETAIL NO. 1
 -L- STA 14+30 +/- TO -L- STA 16+25 +/- (LT.)
 -L- STA 14+30 +/- TO -L- STA 15+00 +/- (RT.)



GEOTEXTILE OVERLAP DETAIL
(PLAN VIEW) - N. T. S.

FOR ROCK PLATING,
SEE ROCK PLATING SPECIAL DETAIL

ROCK PLATING DETAILS AND LOCATIONS WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE ROADWAY DESIGN UNIT ON JANUARY 24th 2012 AND SEALED BY PROFESSIONAL ENGINEER, SHIHAI ZHANG, LICENSE NO. 038176, AND LICENSED GEOLOGIST TYLER C. BOTTOMS, LICENSE NO. 2240.

 SYSTEMS

PROPERTY OWNERS
NAMES AND ADDRESSES

ID NO.	NAMES	ADDRESSES
1	POWELL J. CROSS	203 WOODHOUSE DRIVE ELIZABETHTOWN, NC 28337

Permit Drawing
Sheet 9 of 10

NCDOT
DIVISION OF HIGHWAYS
BLADEN COUNTY
PROJECT: 38363.1.1 (B-4436)
ELIZABETHTOWN
BRIDGE #31 ON SR1700 (MERCER MILL RD)
OVER BROWN'S CREEK

SHEET **OF** **11 / 19 / 12**

WETLAND PERMIT IMPACT SUMMARY

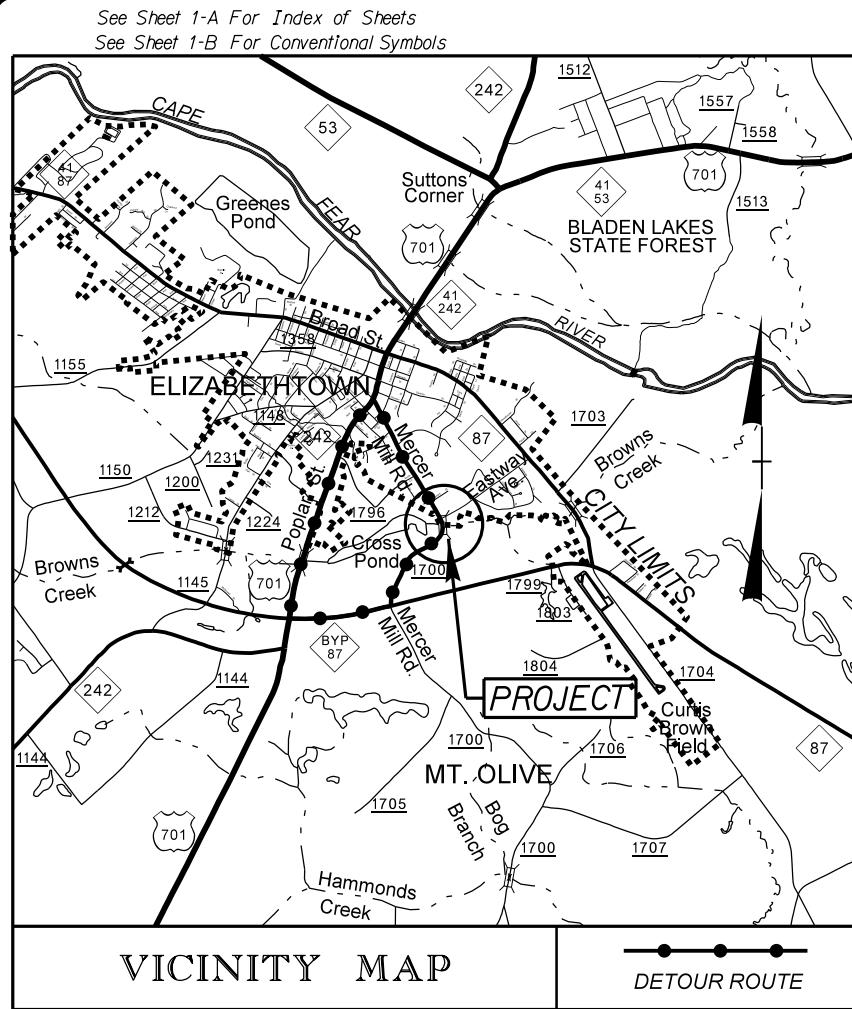
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	13+45 to 13+50 -L-	Bank Stabilization						<0.01	<0.01	49	18	
1	14+00 to 16+05 -L- LT	Bank Stabilization						0.02	<0.01	180	20	
TOTALS:								0.02		229	38	

Permit Drawing
Sheet 10 of 10

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

BLADEN COUNTY
WBS - 38363.1.1 (B-4436)

TIP PROJECT: B-4436



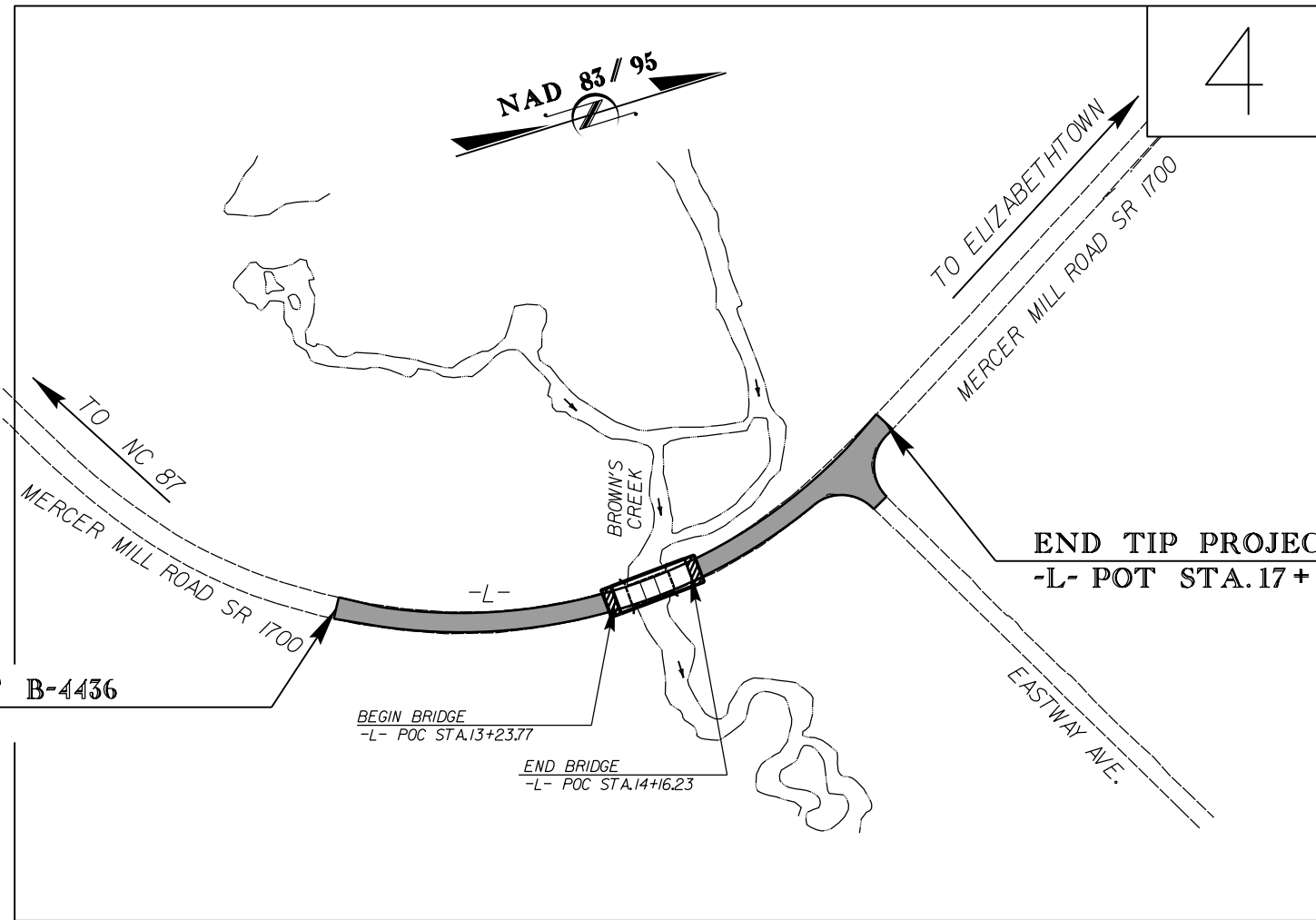
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BLADEN COUNTY

LOCATION: BRIDGE NO. 31 OVER BROWNS CREEK ON SR 1700

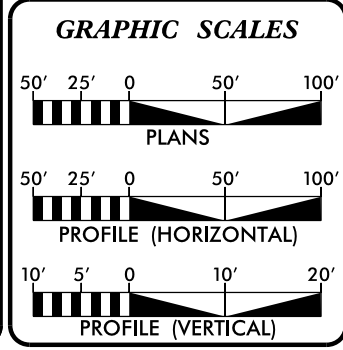
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4436	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38363.1.1	BRZ-1700(8)	PE	
38363.2.1	BRZ-1700(8)	RW & UTIL.	



A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF ELIZABETHTOWN.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

CONTRACT:



DESIGN DATA

ADT 2013	= 4,840
ADT 2033	= 6,912
DHV	= 10 %
D	= 60 %
T	= 3 % *
V	= 40 MPH
FUNC. CLASS. = COLLECTOR	
* TTST 1% DUAL 2%	
SUBREGIONAL TIER	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4436	= 0.115 MI.
LENGTH STRUCTURE TIP PROJECT B-4436	= 0.018 MI.
TOTAL LENGTH OF TIP PROJECT B-4436	= 0.133 MI.

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

2012 STANDARD SPECIFICATIONS	RIGHT OF WAY DATE:	LETTING DATE:
	JULY 9, 2012	OCTOBER 15, 2013
	REKHA PATEL, P.E. PROJECT ENGINEER	MICHAEL W. LITTLE, P.E. PROJECT DESIGN ENGINEER

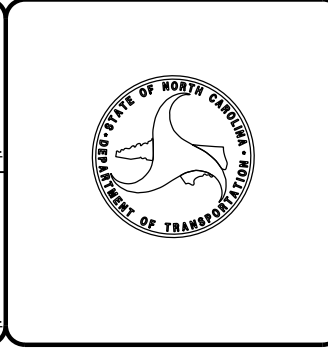
HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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\$\$\$\$\$USERNAME\$\$\$\$\$

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	○ EP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	①②③
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	○
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	-----
False Sump	▽

RAILROADS:

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

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite RW 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	-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	▨
Single Tree	⊗
Single Shrub	⊗
Hedge	-----
Woods Line	-----

VEGETATION:

Orchard	⊗
Vineyard	□ Vineyard

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□ CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊕
Storm Sewer	-----

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	-----
Designated U/G Power Line (S.U.E.*)	-----

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	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

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	-----

TV:

TV Satellite Dish	⊗
TV Pedestal	⊕
TV Tower	⊗
U/G TV Cable Hand Hole	□
Recorded U/G TV Cable	-----
Designated U/G TV Cable (S.U.E.*)	-----
Recorded U/G Fiber Optic Cable	-----
Designated U/G Fiber Optic Cable (S.U.E.*)	-----

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-4436	1-C
Location and Surveys	

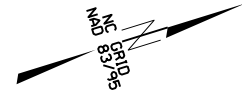
SURVEY CONTROL SHEET B-4436

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	B4436 - BL-1	313678.9137	2120415.8795	58.55	OUTSIDE PROJECT LIMITS	
2	B4436 - BL-2	314117.3262	2120529.9656	54.91	13+99.21	18.36 RT
3	B4436 - BL-3	314538.1687	2120350.0735	61.92	18+53.62	18.13 RT

ROW MARKER IRON PIN AND CAP-E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	16+03.48	50.00	314332.3080	2120502.4379
L	16+00.00	-70.00	314278.9033	2120394.9227
L	16+20.00	-30.00	314312.7476	2120423.0774
L	15+00.00	-50.00	314200.8977	2120444.5947
L	13+00.00	50.00	314013.7600	2120564.5342
L	13+00.00	30.00	314014.7647	2120544.5594
L	13+00.00	-50.00	314018.7839	2120464.6604
L	11+50.00	-40.00	313880.2434	2120450.9157
L	11+50.00	-32.00	313878.1827	2120457.8145
L	13+00.00	-40.00	314018.2815	2120474.6478

L			
TYPE	STATION	NORTH	EAST
PC	10+00.00	313731.5727	2120429.5588
PT	16+57.96	314359.5675	2120432.0005
POT	19+22.38	314588.7047	2120300.0486

 BM1 ELEVATION = 52.97
 N 313966 E 2120440
 L STATION 12+39.00 69 LEFT
 RR SPIKE IN 20" BIRCH



NCDOT GPS STATION (B4436-1)
 LOCALIZED PROJECT COORDINATES
 N=314916.9850
 E=2120140.5140
 ELEV=80.67

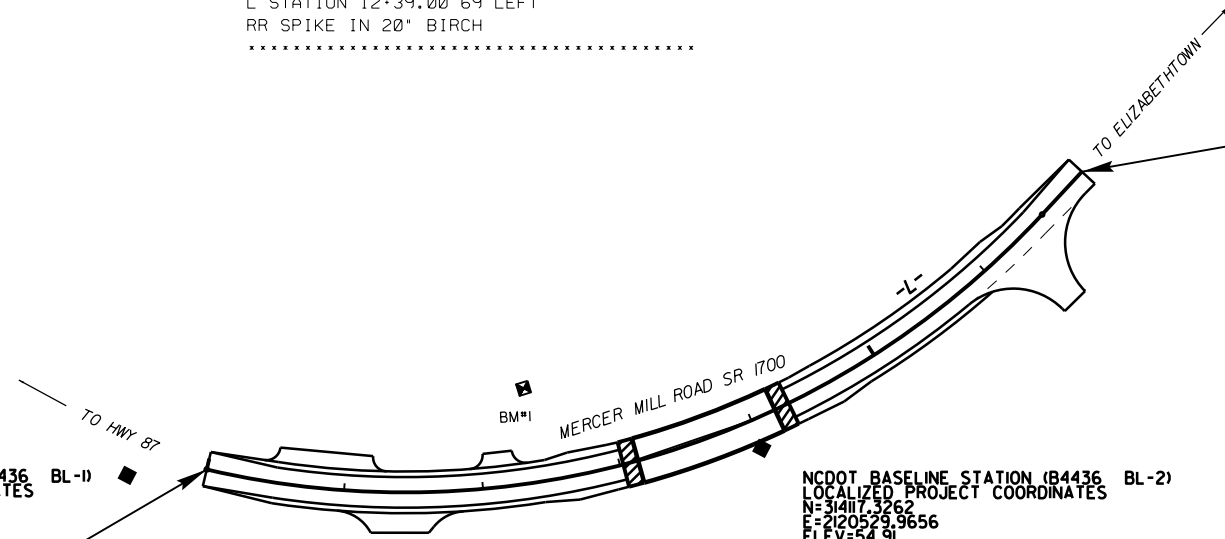
NCDOT BASELINE STATION (B4436 BL-3)
 LOCALIZED PROJECT COORDINATES
 N=314538.1687
 E=2120350.0735
 ELEV=61.92

NCDOT BASELINE STATION (B4436 BL-1)
 LOCALIZED PROJECT COORDINATES
 N=313678.9137
 E=2120415.8795
 ELEV=58.55

NCDOT BASELINE STATION (B4436 BL-2)
 LOCALIZED PROJECT COORDINATES
 N=314117.3262
 E=2120529.9656
 ELEV=54.91

BEGIN PROJECT B-4436
 -L- PC STA. 10+00.00

END PROJECT B-4436
 -L- POT STA. 17+00.00



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4436-1"
 WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
 NORTHING: 314916.9850(ft) EASTING: 2120140.5140(ft)
 ELEVATION: 80.67(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99993498
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4436-1" TO -L- STATION 10+00.00 IS
 S 13° 42' 11.9" E 1220.1431'
 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/DOHPRECONSTRUCT/HIGHWAYLOCATIONPROJECT/](http://www.ncdot.org/DOHPRECONSTRUCT/HIGHWAYLOCATIONPROJECT/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4436_LS_CONTROL.TXT
 SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION
 SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

NOTE: DRAWING NOT TO SCALE

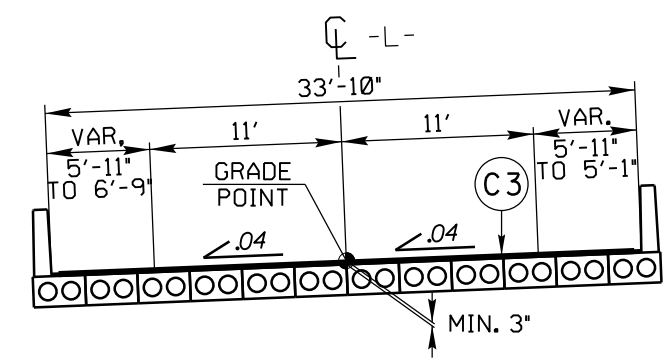
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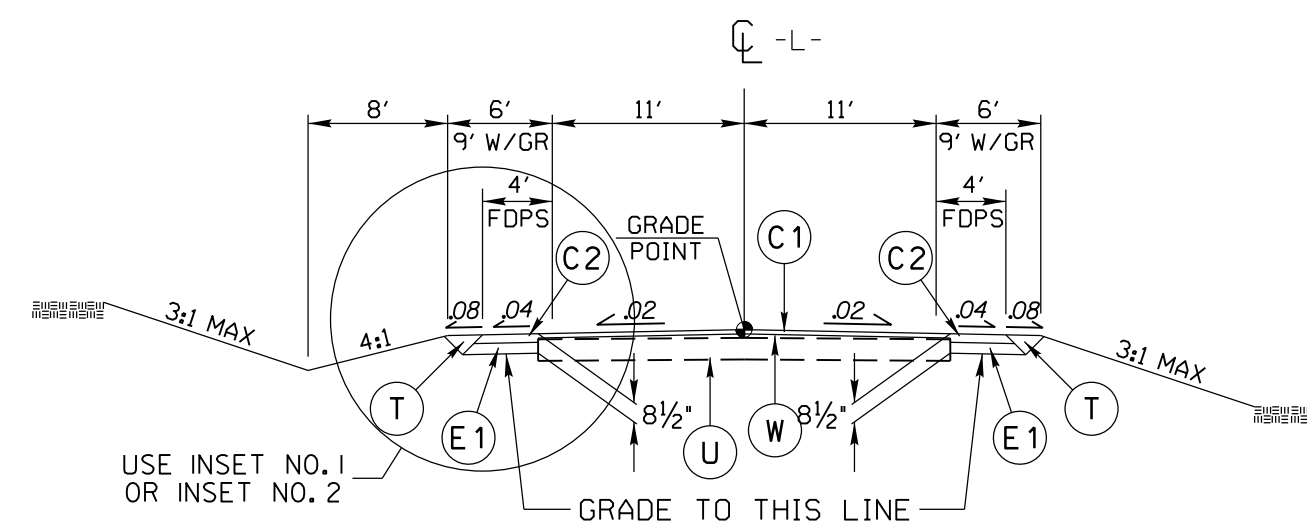
PROJECT REFERENCE NO. B-4436	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PAVEMENT SCHEDULE			
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 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 4" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R1	SHOULDER BERM GUTTER
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1½" IN DEPTH OR GREATER THAN 2" IN DEPTH.	T	EARTH MATERIAL
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
		W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

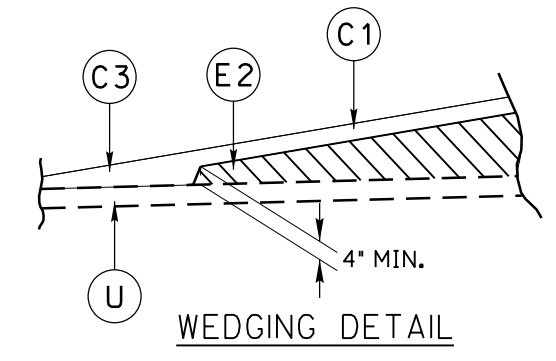
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



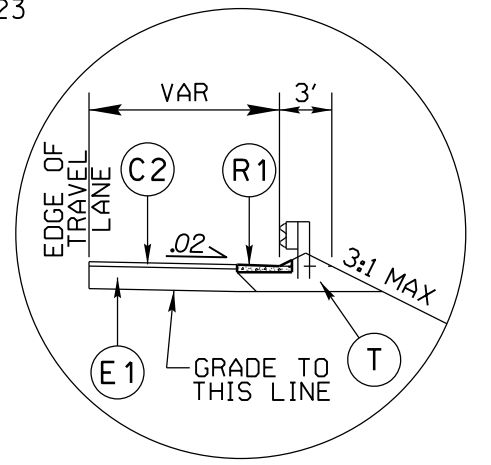
DETAIL SHOWING ASPHALT WEARING SURFACE ON CORED SLAB BRIDGE
-L- STA. 13+23.77 TO -L- STA. 14+16.23



TYPICAL SECTION NO. 1



WEDGING DETAIL



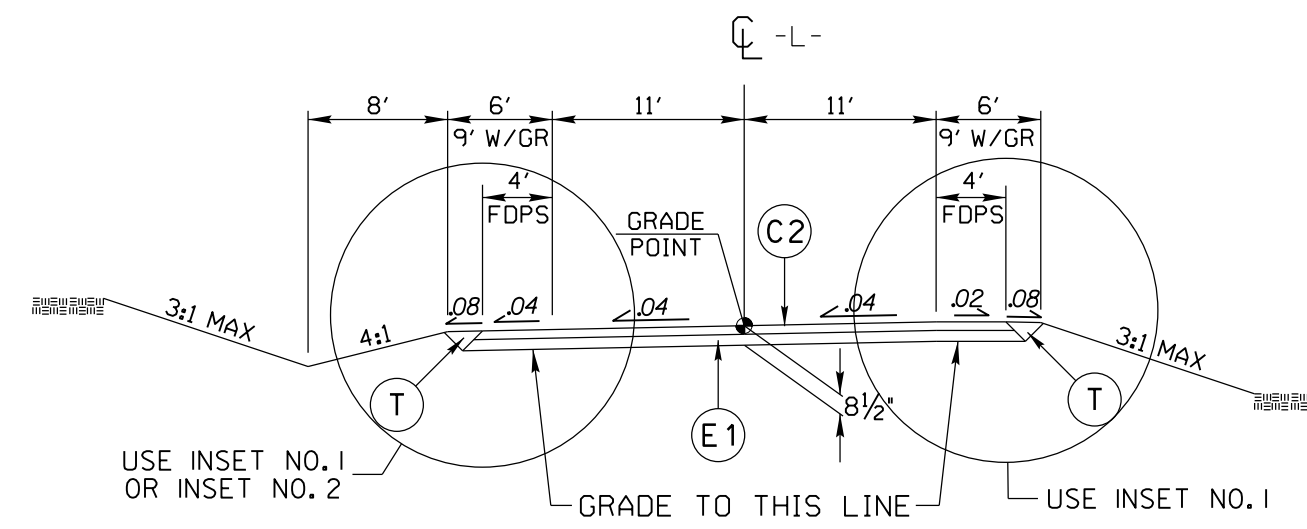
INSET NO. 1

USE TYPICAL SECTION NO. 1
-L- STA. 10+50.00 TO -L- STA. 12+75.00
-L- STA. 14+75.00 TO -L- STA. 16+50.00

USE INSET NO. 1 FOR:
-L- STA. 15+75.00 TO -L- STA. 15+80.00 (LT.) REVERSE

USE INSET NO. 2 FOR:
-L- STA. 14+75.00 TO -L- STA. 15+75.00 (LT.)

NOTES:
(1) TRANSITION FROM EXISTING TO T.S. NO. 1
-L- STA. 10+00.00 TO -L- STA. 10+50.00
(2) TRANSITION FROM T.S. NO. 1 TO EXISTING
-L- STA. 16+50.00 TO -L- STA. 17+00.00

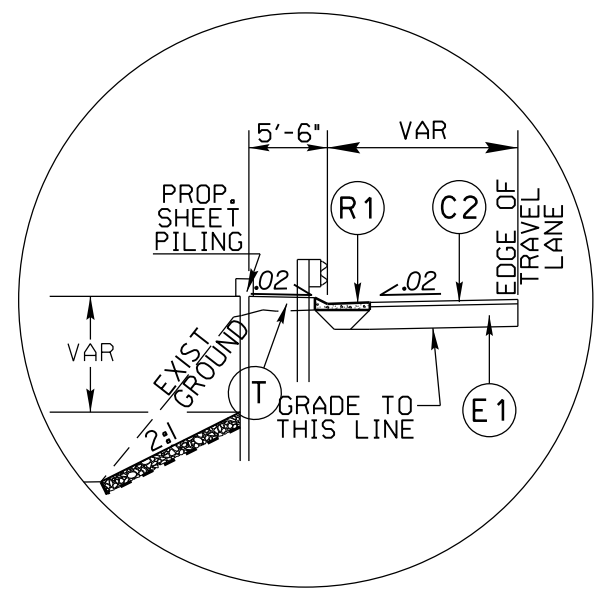


TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
-L- STA. 12+75.00 TO -L- STA. 13+23.77 (BEGIN BRIDGE)
-L- STA. 14+16.23 (END BRIDGE) TO -L- STA. 14+75.00

USE INSET NO. 1 FOR:
-L- STA. 13+06 +/- TO -L- STA. 13+12.77 (RT.)
-L- STA. 13+03 +/- TO -L- STA. 13+12.77 (LT.) REVERSE
-L- STA. 14+27.23 TO -L- STA. 14+42.00 (RT.)

USE INSET NO. 2 FOR:
-L- STA. 14+25.00 TO -L- STA. 15+75.00 (LT.)



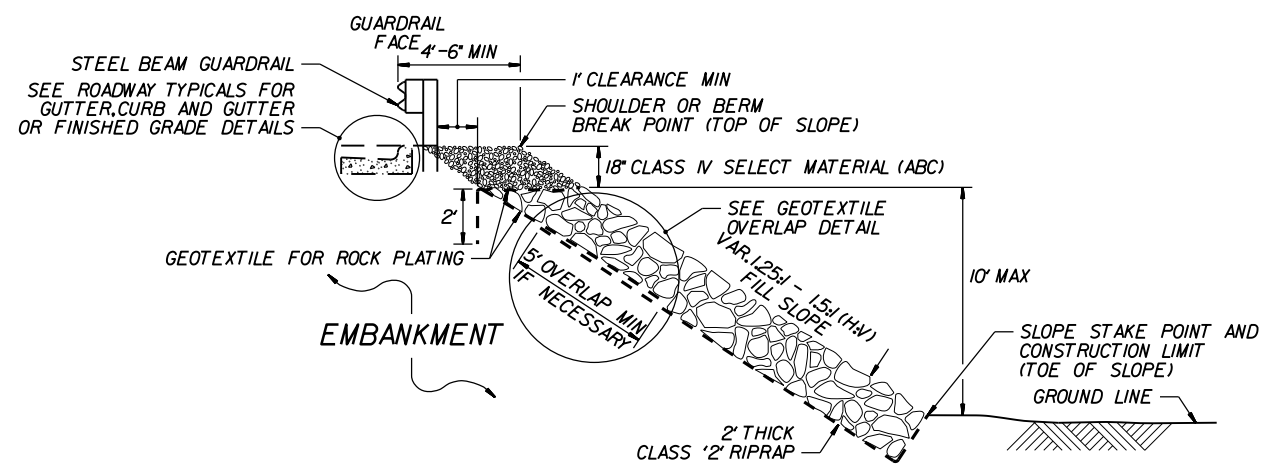
INSET NO. 2

INSET NO. 2

Use with Typical Section No. 1
Use with Typical Section No. 2

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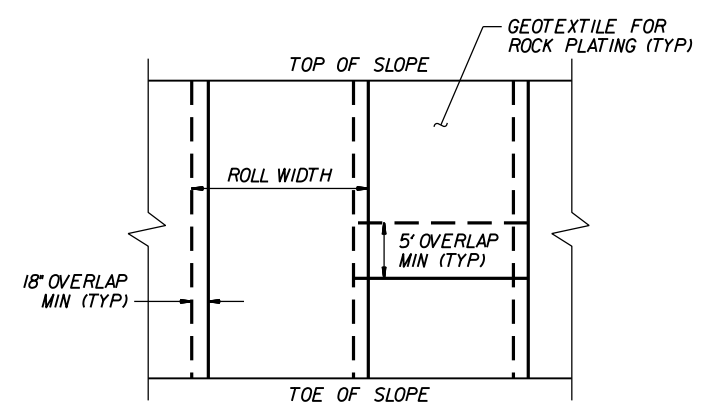
PROJECT REFERENCE NO.	SHEET NO.
B-4436	2-A
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



ROCK PLATING DETAIL NO. 1

USE ROCK PLATING DETAIL NO. 1

- L- STA 14+30 +/- TO -L- STA 16+25 +/- (LT.)
- L- STA 14+30 +/- TO -L- STA 15+00 +/- (RT.)



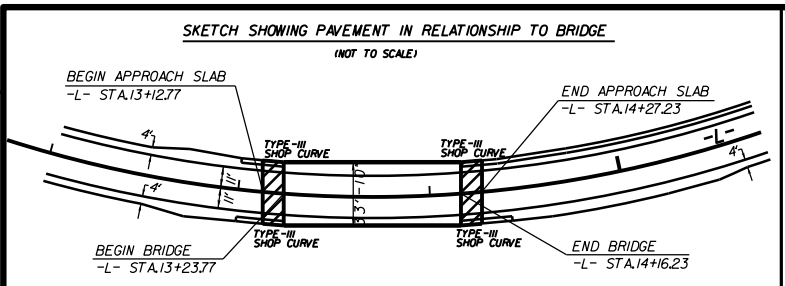
GEOTEXTILE OVERLAP DETAIL
(PLAN VIEW) - N. T. S.

FOR ROCK PLATING,
SEE ROCK PLATING SPECIAL DETAIL

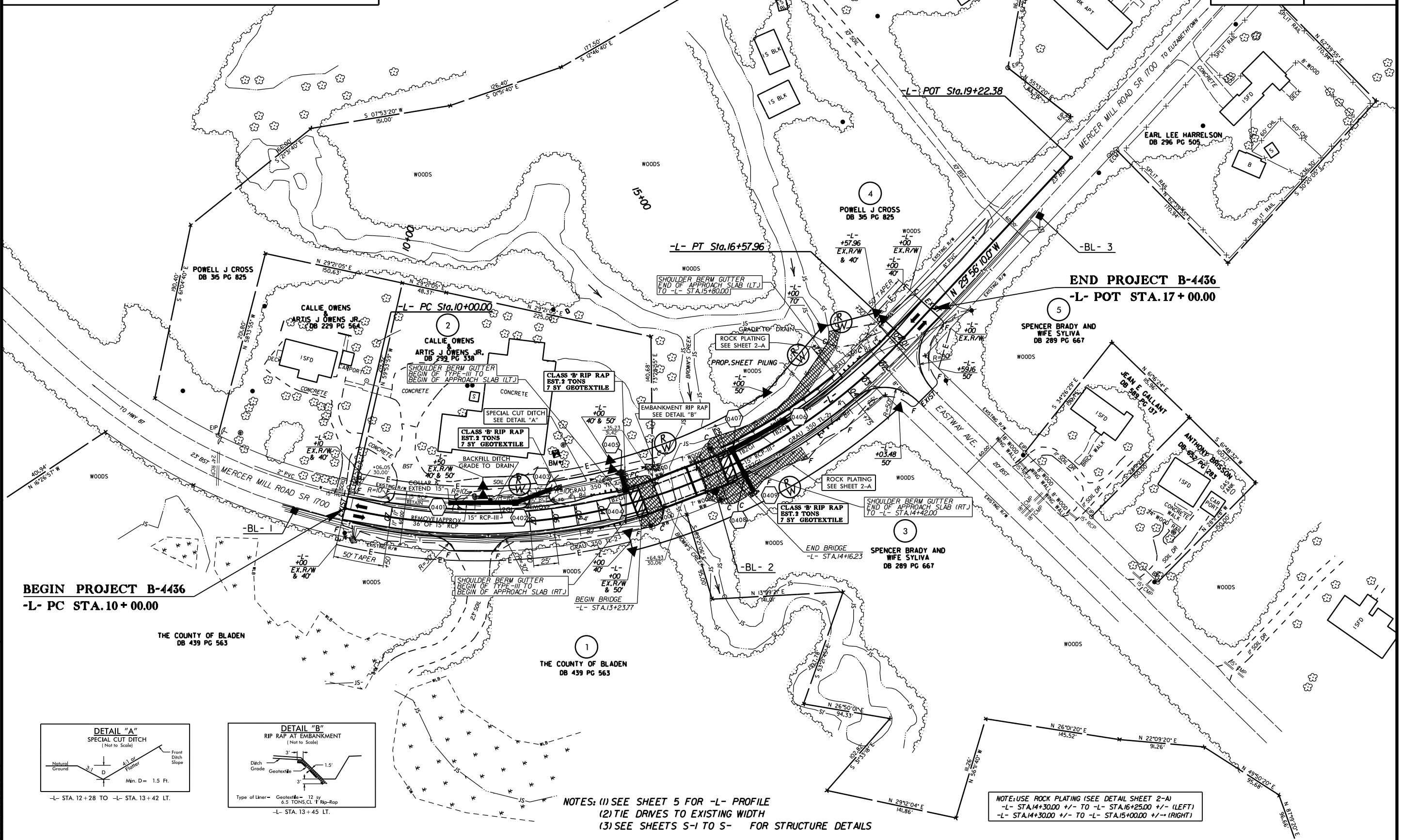
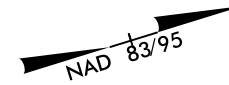
ROCK PLATING DETAILS AND LOCATIONS WERE PROVIDED THROUGH A SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT. THE DOCUMENT WAS SUBMITTED TO THE ROADWAY DESIGN UNIT ON JANUARY 24th 2012 AND SEALED BY PROFESSIONAL ENGINEER, SHIHAI ZHANG, LICENSE NO. 038176, AND LICENSED GEOLOGIST TYLER C. BOTTOMS, LICENSE NO. 2240.

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PROJECT REFERENCE NO.	SHEET NO.
B-4436	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	

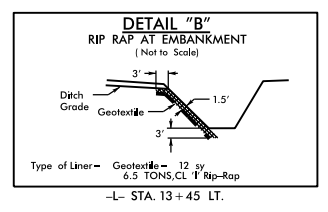
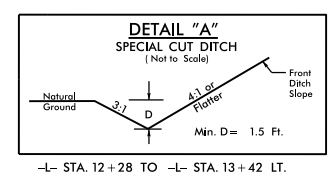


-L- CURVE DATA
 PI Sta 13+63.16
 $\Delta = 60^\circ 19' 04.0''$ (LT)
 $D = 9^\circ 10' 02.4''$
 $L = 657.96'$
 $T = 363.16'$
 $R = 625.00'$
 SE = SEE PLANS



BEGIN PROJECT B-4436
 -L- PC STA. 10+00.00

END PROJECT B-4436
 -L- POT STA. 17+00.00



NOTES: (1) SEE SHEET 5 FOR -L- PROFILE
 (2) TIE DRIVES TO EXISTING WIDTH
 (3) SEE SHEETS S-1 TO S- FOR STRUCTURE DETAILS

NOTE: USE ROCK PLATING (SEE DETAIL SHEET 2-A)
 -L- STA. 14+30.00 +/- TO -L- STA. 16+25.00 +/- (LEFT)
 -L- STA. 14+30.00 +/- TO -L- STA. 15+00.00 +/- (RIGHT)

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PROJECT REFERENCE NO. SHEET NO.

B-4436 5

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM *1 EL = 52.97
RR SPIKE IN BASE OF 20' BIRCH
-BL- STA.7+84 (48' LT.)
-L- STA.12+38.98 (68.85' LT.)

-L-

STRUCTURE HYDRAULIC DATA
DESIGN DISCHARGE = 1900 CFS
DESIGN FREQUENCY = 25 YRS
DESIGN HW ELEVATION = 52.8 FT
BASE DISCHARGE = 2380 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 53.04 FT
OVERTOPPING DISCHARGE = 4000 CFS
OVERTOPPING FREQUENCY = 100 YRS
OVERTOPPING ELEVATION = 55.3 FT

PI = 11+50.00
EL = 54.68'
VC = 200'
K = 107

PI = 13+50.00
EL = 55.37'
VC = 200'
K = 252

PI = 15+50.00
EL = 54.47'
VC = 200'
K = 111

TRANSITION FROM EXISTING
-L- STA.10+00.00

BEGIN GRADE
-L- STA.10+50.00
EL = 56.20

BEGIN BRIDGE
-L- STA.13+23.77

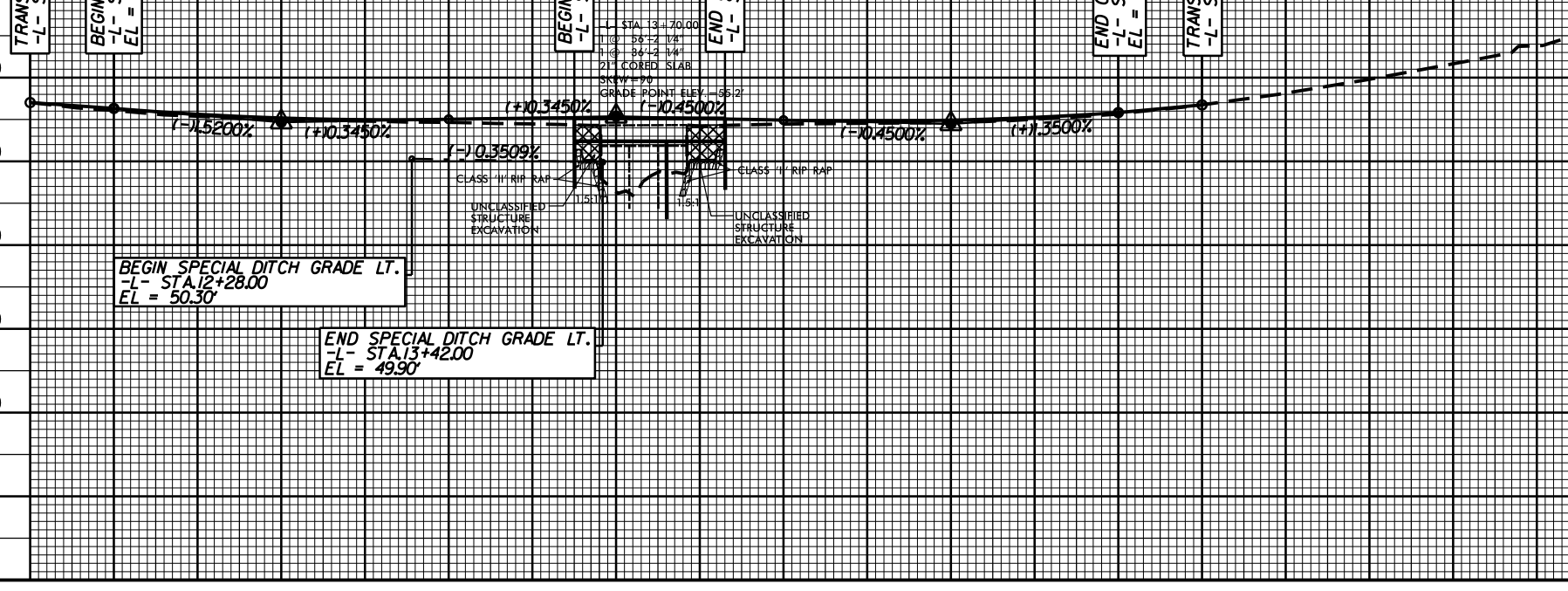
END BRIDGE
-L- STA.14+62.3

END GRADE
-L- STA.16+50.00
EL = 55.82

TRANSITION TO EXISTING
-L- STA.17+00.00

70
60
50
40
30
20
10
0

70
60
50
40
30
20
10
0



BEGIN SPECIAL DITCH GRADE LT.
-L- STA.12+28.00
EL = 50.30

END SPECIAL DITCH GRADE LT.
-L- STA.13+42.00
EL = 49.90

FOR -L- PLAN VIEW
SEE SHEET 4

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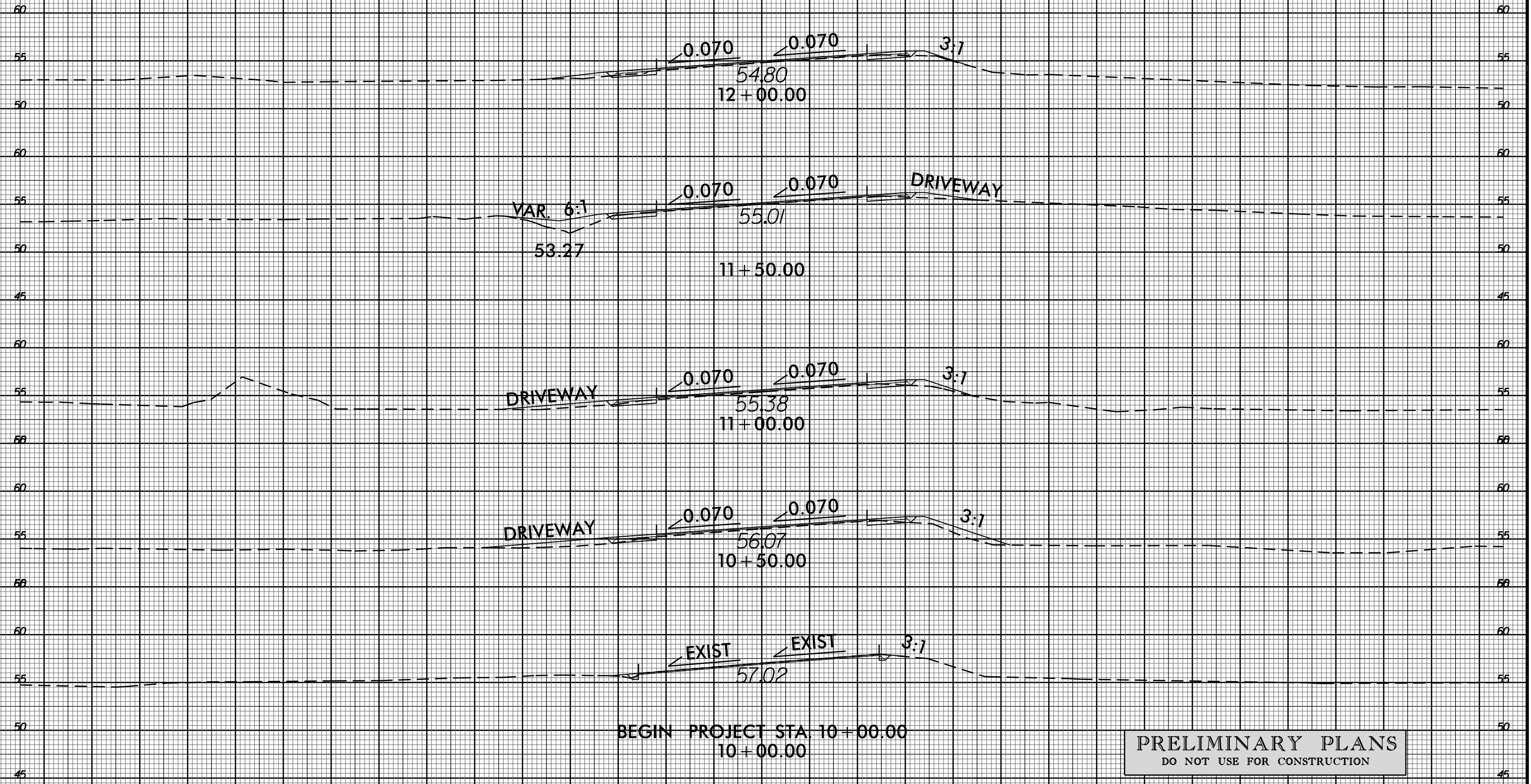
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PROJ. REFERENCE NO.
B-4436

SHEET NO.
X-1

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

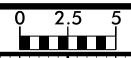


PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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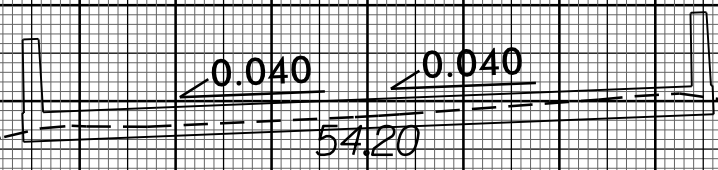
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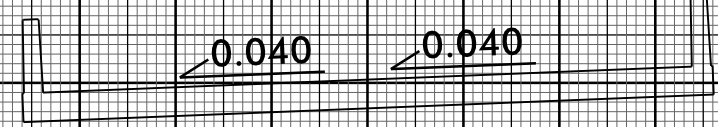


PROJ. REFERENCE NO. B-4436 SHEET NO. X-2

END BRIDGE STA. 14+16.23

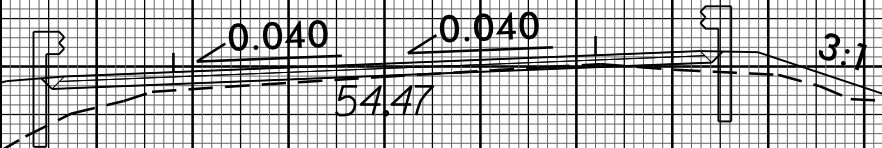


14+00.00

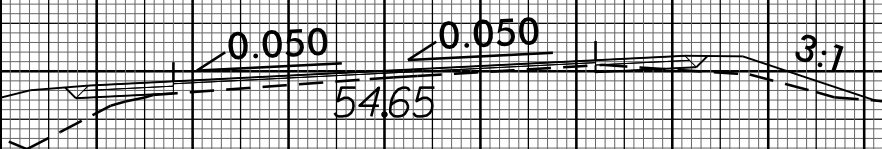


13+50.00

BEGIN BRIDGE STA. 13+23.77



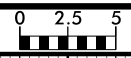
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12+50.00

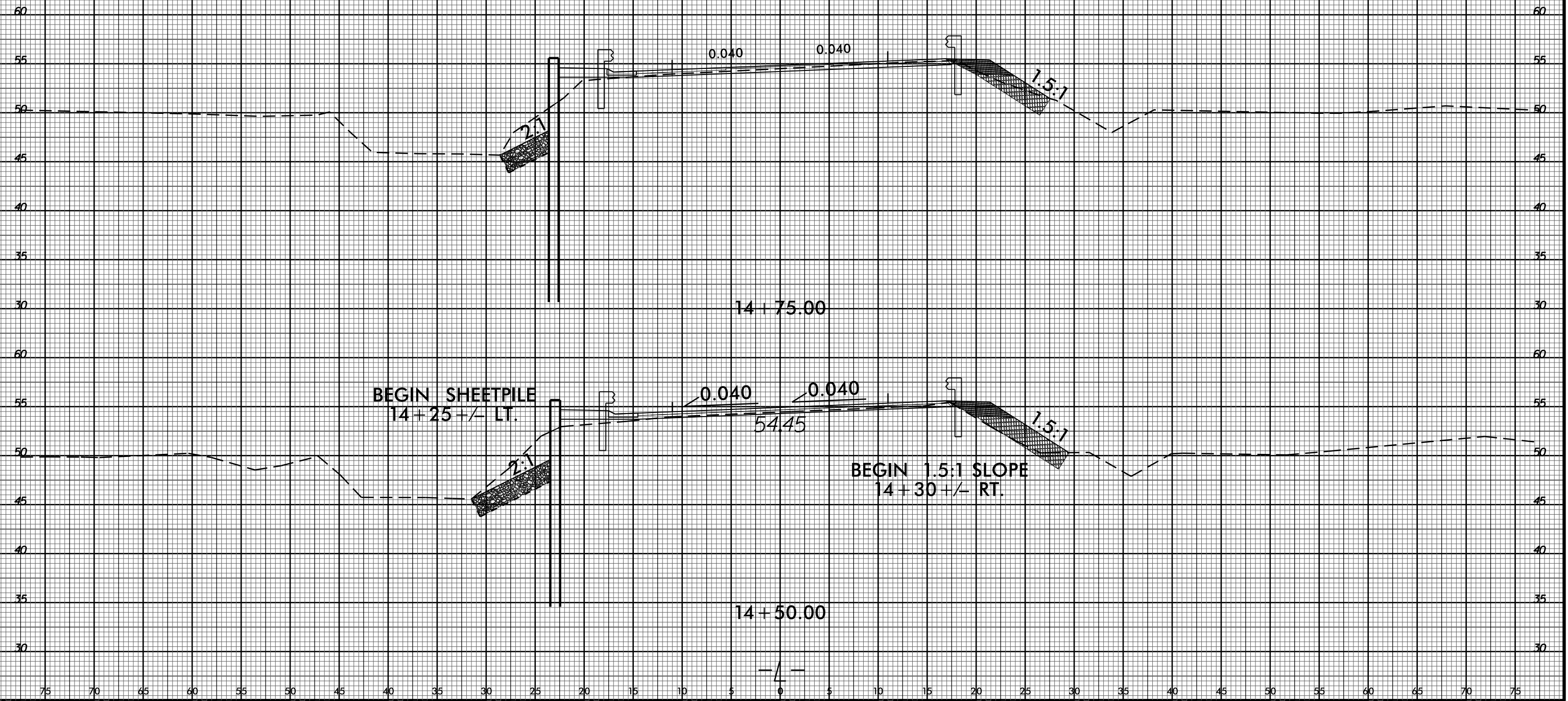
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PROJ. REFERENCE NO. B-4436 SHEET NO. X-3

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BEGIN SHEETPILE
14+25 +/- LT.

BEGIN 1.5:1 SLOPE
14+30 +/- RT.

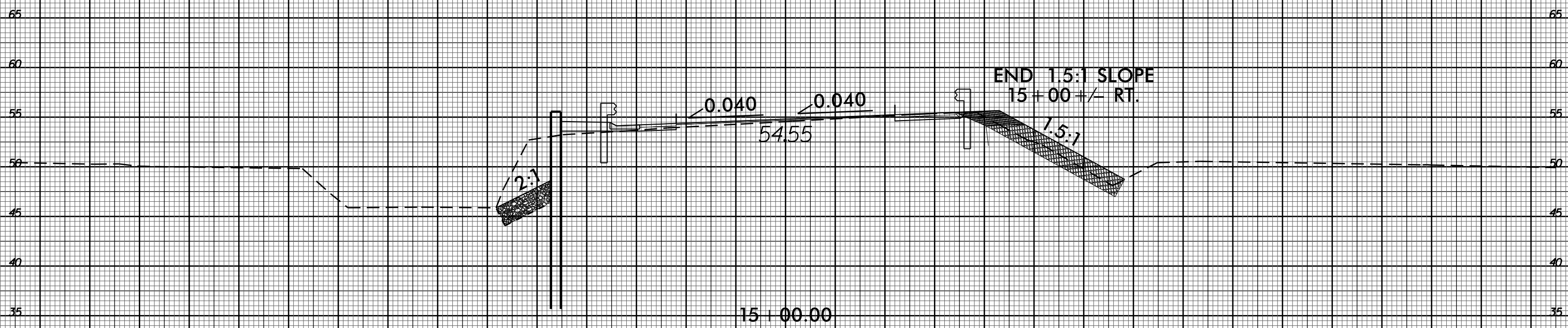
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14+50.00

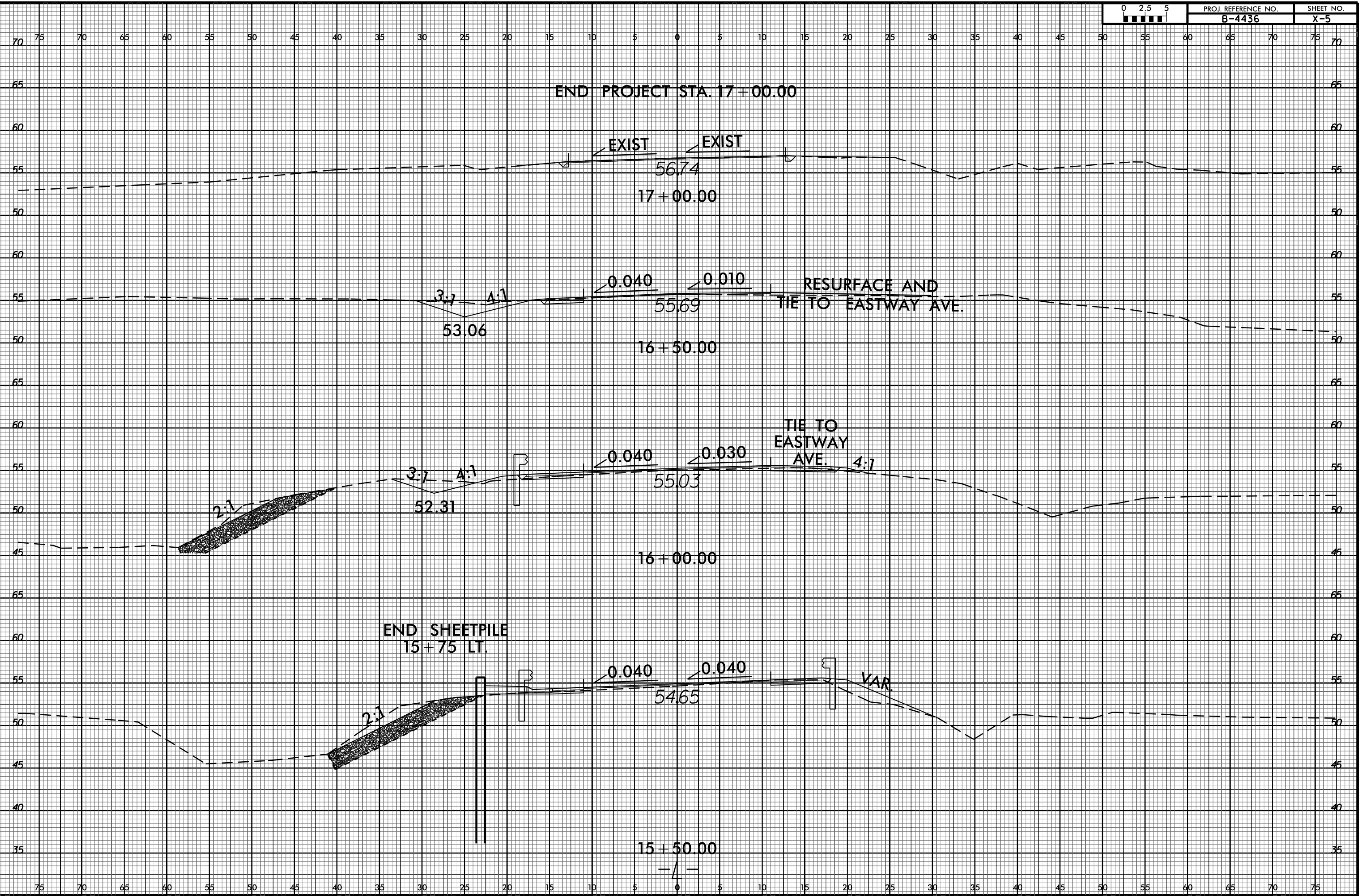
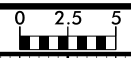
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