



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY  
GOVERNOR

ANTHONY J. TATA  
SECRETARY

March 14, 2013

U. S. Army Corps of Engineers  
Regulatory Field Office  
151 Patton Avenue, Room 208  
Asheville, NC 28801-5006

ATTN: Ms. Loretta Beckwith  
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permits 23 & 33 and 401 Water Quality Certification** for the proposed replacement of Bridge No. 9 over Tusquitee Creek on SR 1300 in Clay County, Federal Aid Project No. BRZ-1300(8); WBS No. 38507.1.1; Division 14; TIP No. B-4734

Dear Madam:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 9 (an 81-foot long bridge) over Tusquitee Creek on SR 1300 with a 100-foot long, 2-span bridge. There will be 117 square feet of permanent impact to Tusquitee Creek due to the installation of an interior bridge bent. There will be 0.05 acre of temporary impact to Tusquitee Creek; 0.04 acre of which is due to the installation of a causeway for the removal of the existing bridge bent and the installation of the new bridge bent, and <0.01 acre of which is associated with the installation of bank stabilization for embankment protection.

A "Temporary Causeways for Bridge Bent Removal / Construction" description with accompanying schematic is attached to the Pre-Construction Notification (PCN).

Please see enclosed copies of the PCN, State Stormwater Permit, permit drawings, and design plans. A Programmatic Categorical Exclusion (PCE) was completed in March 2012 and distributed shortly thereafter. Additional copies are available upon request.

Comments from the North Carolina Wildlife Resources Commission (NCWRC) will be required prior to authorization by the Corps of Engineers. By copy of this letter and attachments, NCDOT hereby requests NCWRC review. NCDOT requests that NCWRC

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

TELEPHONE: 919-707-6000  
FAX: 919-212-5785  
WEBSITE: [NCDOT.GOV](http://NCDOT.GOV)

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

forward their comments to the Corps of Engineers and the NCDOT within 30 calendar days of receipt of this application.

This project calls for a letting date of August 20, 2013 and a review date of July 2, 2013; however, the let date may advance as additional funding becomes available.

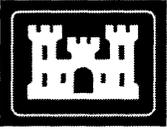
A copy of this permit application and its distribution list will be posted on the NCDOT Website at: <http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html>. If you have any questions or need additional information, please call Bill Barrett at (919) 707-6103.

Sincerely,



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

<b>Pre-Construction Notification (PCN) Form</b>		
<b>A. Applicant Information</b>		
<b>1. Processing</b>		
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 33                      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 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
<b>2. Project Information</b>		
2a. Name of project:	Replacement of Bridge 9 over Tusquitee Creek on SR 1300	
2b. County:	Clay	
2c. Nearest municipality / town:	Hayesville	
2d. Subdivision name:	<i>not applicable</i>	
2e. NCDOT only, T.I.P. or state project no.:	B-4734	
<b>3. Owner Information</b>		
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) 707-6103	
3g. Fax no.:	(919) 212-5785	
3h. Email address:	wabarrett@ncdot.gov	

<b>4. Applicant Information (if different from owner)</b>	
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:	
<b>5. Agent/Consultant Information (if applicable)</b>	
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>B. Project Information and Prior Project History</b>	
<b>1. Property Identification</b>	
1a. Property identification no. (tax PIN or parcel ID):	<i>not applicable</i>
1b. Site coordinates (in decimal degrees):	Latitude: 35.7044 (DD.DDDDDD) Longitude: - 83.8000 (-DD.DDDDDD)
1c. Property size:	0.50 acres
<b>2. Surface Waters</b>	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Tusquitee Creek
2b. Water Quality Classification of nearest receiving water:	WS-IV;Tr;HQW
2c. River basin:	Hiwassee
<b>3. Project Description</b>	
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: rural with single-family homes.	
3b. List the total estimated acreage of all existing wetlands on the property: <0.01 acre	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 150	
3d. Explain the purpose of the proposed project: To replace a structurally deficient (sufficiency rating of 22 out of 100) and functionally obsolete (structural evaluation rating of 2 out of 9) bridge.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing an 81-foot bridge with a 100-foot, 2-span bridge on the existing alignment with an off-site detour. Standard road building equipment, such as trucks, dozers, and cranes will be used. The only permanent impact will be from the new bridge bent (117 sq. ft.). The temporary impacts will be incurred from installation of a temporary causeway to remove the existing bent and to install a new bridge bent, and from activity associated with the installation of bank stabilization for embankment protection (Note: riprap will not be below OHW). See attached "Temporary Causeway description" w/ schematic.	
<b>4. Jurisdictional Determinations</b>	
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: issued by Dave Baker	<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 type="checkbox"/> Preliminary <input checked="" type="checkbox"/> Final
4c. If yes, who delineated the jurisdictional areas? Name (if known): Bill Barrett / NCDOT	Agency/Consultant Company: Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. June 2, 2010	
<b>5. Project History</b>	
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.	

<b>6. Future Project Plans</b>	
6a. Is this a phased project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6b. If yes, explain.	

<b>C. Proposed Impacts Inventory</b>						
<b>1. Impacts Summary</b>						
1a. Which sections were completed below for your project (check all that apply):						
<input type="checkbox"/> Wetlands <input checked="" type="checkbox"/> Streams - tributaries <input type="checkbox"/> Buffers <input type="checkbox"/> Open Waters <input type="checkbox"/> Pond Construction						
<b>2. Wetland Impacts</b>						
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 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		
Site 5 <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 6 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
<b>2g. Total wetland impacts</b>					X Permanent X Temporary	
2h. Comments:						
<b>3. Stream Impacts</b>						
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 checked="" type="checkbox"/> T	causeway	Tusquitee Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	50	51
Site 1 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	associated w/ installation of riprap *	Tusquitee Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	50	31
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		
Site 5 <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 6 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
<b>3h. Total stream and tributary impacts</b>						0 Perm 82 Temp
3i. Comments: * no riprap below OHW line. Temporary impact associated with the installation of the riprap.						

**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				
O2 <input type="checkbox"/> P <input type="checkbox"/> T				
O3 <input type="checkbox"/> P <input type="checkbox"/> T				
O4 <input type="checkbox"/> P <input type="checkbox"/> T				
<b>4f. Total open water impacts</b>				X Permanent X Temporary

4g. Comments:

**5. Pond or Lake Construction**

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

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

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.

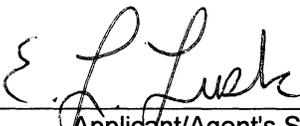
6a. Project is in which protected basin?		<input type="checkbox"/> Neuse <input type="checkbox"/> Tar-Pamlico <input type="checkbox"/> Other: <input type="checkbox"/> Catawba <input type="checkbox"/> Randleman			
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream 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		
<b>6h. Total buffer impacts</b>					
6i. Comments:					

<b>D. Impact Justification and Mitigation</b>		
<b>1. Avoidance and Minimization</b>		
1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project. The proposed bridge is 19 feet longer than the existing bridge; the proposed bridge will be at approximately the same grade as the existing structure; and an off site detour will be used. The existing bridge has over-topping flows near the 5 year event. Because of the need to open up as much flow area as possible under the bridge, a cored slab bridge, with the shallow depth of its superstructure (21 inches) will be utilized.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. <i>Design Standards in Sensitive Watersheds</i> will be implemented during construction. NCDOT will follow the Trout Stream moratorium from January 1 to April 15. BMPs for Bridge Removal will be implemented.		
<b>2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State</b>		
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: Temporary impacts do not require mitigation.	
2b. If yes, mitigation is required by (check all that apply):	<input type="checkbox"/> DWQ <input type="checkbox"/> Corps	
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	
<b>3. Complete if Using a Mitigation Bank</b>		
3a. Name of Mitigation Bank: not applicable		
3b. Credits Purchased (attach receipt and letter)	Type	Quantity
3c. Comments:		
<b>4. Complete if Making a Payment to In-lieu Fee Program</b>		
4a. Approval letter from in-lieu fee program is attached.	<input type="checkbox"/> Yes	
4b. Stream mitigation requested:	linear feet	
4c. If using stream mitigation, stream temperature:	<input 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:		
<b>5. Complete if Using a Permittee Responsible Mitigation Plan</b>		
5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.		

<b>6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ</b>				
6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?				<input type="checkbox"/> Yes <input 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.				
<b>Zone</b>	<b>6c. Reason for impact</b>	<b>6d. Total impact (square feet)</b>	<b>Multiplier</b>	<b>6e. Required mitigation (square feet)</b>
Zone 1			3 (2 for Catawba)	
Zone 2			1.5	
<b>6f. Total buffer mitigation required:</b>				
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:				

<b>E. Stormwater Management and Diffuse Flow Plan (required by DWQ)</b>	
<b>1. Diffuse Flow Plan</b>	
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: If required from 1a, see attached buffer permit drawings.	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>2. Stormwater Management Plan</b>	
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.	
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
<b>3. Certified Local Government Stormwater Review</b>	
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
<b>4. DWQ Stormwater Program Review</b>	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Coastal counties <input checked="" 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>5. DWQ 401 Unit Stormwater Review</b>	
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

<b>F. Supplementary Information</b>	
<b>1. Environmental Documentation (DWQ Requirement)</b>	
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
<b>2. Violations (DWQ Requirement)</b>	
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):	
<b>3. Cumulative Impacts (DWQ Requirement)</b>	
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.	
<b>4. Sewage Disposal (DWQ Requirement)</b>	
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	

<b>5. Endangered Species and Designated Critical Habitat (Corps Requirement)</b>		
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? NHP and NCDOT field surveys.		
<b>6. Essential Fish Habitat (Corps Requirement)</b>		
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		
<b>7. Historic or Prehistoric Cultural Resources (Corps Requirement)</b>		
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		
<b>8. Flood Zone Designation (Corps Requirement)</b>		
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.)	3-19-13 Date

## TIP No. B-4734

### Temporary Causeways for Bridge Bent Removal / Construction

NCDOT proposes to replace Bridge No. 9, (an 81-foot long bridge) over Tusquitee Creek on SR 1300 with a 100-foot long, 2-span bridge. Tusquitee Creek is classified as WS-IV;Tr;HQW. This bridge has over-topping flows near the 5 year event. Because of the need to open up as much flow area as possible under the bridge, a cored slab bridge, with the shallow depth of its superstructure (21 inches) is the suitable structure. Because the maximum span length for a 21-inch cored slab is 55 feet, two spans are required.

In order to be able to remove the existing bent in the stream, and to construct the bent for the new bridge, a causeway will be needed. As the causeways will block greater than 50% of the stream volume, NCDOT would like to get agreement on the scenarios for bent removal/construction **prior to submitting the permit application.**

In the scenarios provided below, use of the pink causeway will block 57% of the stream flow. Utilizing both the pink and green causeways (if needed), will block 72% of the stream flow.

Three Scenarios are provided below. It is hoped that the work can be conducted utilizing Scenario 1; however, this will not be determinable until the work is being conducted. In the event that the footer cannot be removed by overturning, then either Scenario 2 or 3 is proposed; depending on the Agencies' agreement with, or not, with Scenario 2 that utilizes chipping of the footing.

#### SCENARIO 1:

The contractor will install the peach causeway section. If they are able to remove the footing in its entirety by overturning, there will be no need to install the brown causeway section. The peach section will remain in place until the shafts, columns and caps for the new bent are complete, **blocking 57% of the stream flow for approximately 6 weeks.** At this point the causeway can be removed.

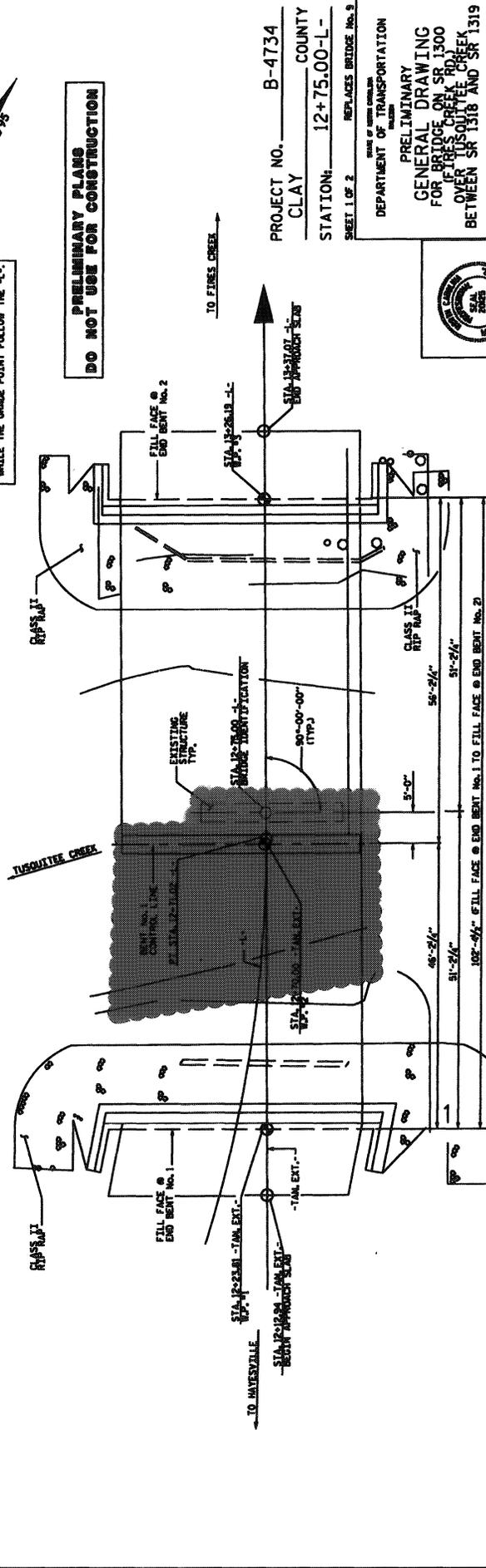
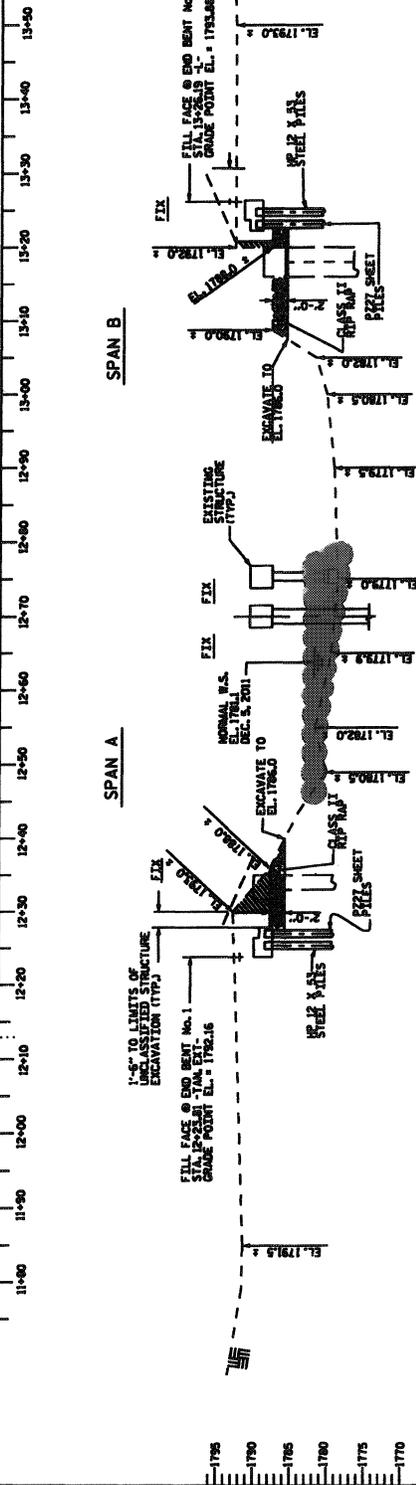
#### SCENARIO 2:

The contractor will install the peach causeway section. If they are **not able** to remove the footing by overturning, and the agencies are agreeable, the contractor will chip out the footing from the peach causeway and remove all debris. There will be no need to install the brown causeway section. The peach section will remain in place until the shafts, columns and caps for the new bent are complete, **blocking 57% of the stream flow for approximately 6 weeks.** At this point the causeway can be removed.

#### SCENARIO 3:

The contractor will install the peach causeway section first. If they are **not able** to remove the footing by overturning, and the agencies disallow the chipping of the footer as presented in Scenario 2, then the brown causeway will be installed, **blocking a total of 72% of the steam flow for approximately one week for the demolition.** At this point the brown causeway can be removed. The peach section will remain in place until the shafts, columns and caps for the new bent are complete, **blocking 57% of the stream flow for approximately 6 weeks.** At this point the causeway can be removed.

Subsequent to removal of the causeway(s), the original flow of the stream will be restored. During the construction/removal of the causeway(s), Best Management Practices for Bridge Removal (BPM) will be implemented, and the surrounding stream and banks will be monitored. If any damage to the area is found during the preceding work, it will be repaired and the Department (NCDOT) will be notified immediately.



PROJECT NO. B-4734  
 COUNTY CLAY  
 STATION: 12+75.00-L-

SHEET 1 OF 2 REPLACES BRIDGE No. 9

STATE OF MISSISSIPPI  
 DEPARTMENT OF TRANSPORTATION

PRELIMINARY  
 GENERAL DRAWING  
 FOR BRIDGE ON SR 1300  
 OVER FIBRES CREEK, BR  
 OVER MUSOUTEE CREEK  
 BETWEEN SR 1318 AND SR 1319

DATE: 07/12  
 CHECKED BY: M. C. CHECK

NO.	DATE	BY	REVISIONS

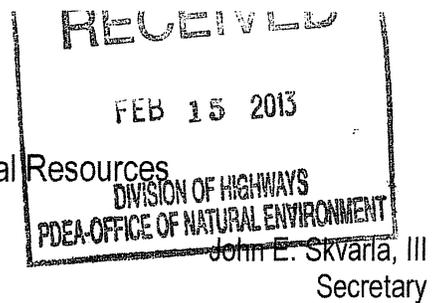


North Carolina Department of Environment and Natural Resources

Division of Water Quality

Charles Wakild, P.E.

Director



Pat McCrory  
Governor

February 13, 2013

Dr. Gregory J. Thorpe, Ph.D.  
Environmental Management Director, PDEA  
North Carolina Department of Transportation  
Project Development and Environmental Analysis  
1598 Mail Service Center  
Raleigh, NC 27699-1598

Subject: Permit No. SW1130201  
TIP No. B-4734, NCSR 1300  
Bridge No. 9  
State Stormwater Permit  
N C Department of Transportation  
Clay County

Dear Dr. Thorpe:

The Asheville Regional Office received a completed Stormwater Application for the subject project on February 8, 2013. Staff review of the plans and specifications has determined that the project, as proposed, will comply with the Stormwater Regulations set forth in Title 15A NCAC 2H.1000. We are forwarding Permit No. SW1130201 dated February 13, 2013 to the NC Department of Transportation for the proposed replacement of Bridge No. 9 on NCSR 1300 over Tusquitee Creek in Clay County.

This permit shall be effective from the date of issuance until rescinded and shall be subject to the conditions and limitations as specified therein.

If any parts, requirements, or limitations contained in this permit are unacceptable, you have the right to request an adjudicatory hearing upon written request within thirty (30) days following receipt of this permit. This request must be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714. Unless such demands are made this permit shall be final and binding.

If you have any questions, or need additional information concerning this matter, please contact **Mr. Mike Parker** at (828) 296-4500.

Sincerely,

Chuck Cranford, Regional Supervisor  
Surface Water Protection Section  
Asheville Regional Office

**STATE OF NORTH CAROLINA  
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES  
DIVISION OF WATER QUALITY**

**STATE STORMWATER MANAGEMENT PERMIT**

**STORMWATER PERMIT**

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules, and Regulations

PERMISSION IS HEREBY GRANTED TO

**NC Department of Transportation**

Clay County

FOR THE

Construction of a public road/bridge in compliance with the provisions of 15A NCAC 2H.1000 (hereafter referred to as the "stormwater rules") and the approved stormwater management plans and specifications and other supporting data as attached and on file with and approved by the Division of Water Quality and considered a part of this permit for replacement of Bridge No. 9 over Tusquitee Creek on NCSR 1300 in Clay County.

This permit shall be effective from the date of issuance until rescinded and shall be subject to the following specified conditions and limitations:

**I. DESIGN STANDARDS**

1. The amount of impervious surface has been minimized as much as possible.
2. The runoff from the impervious areas has been diverted away from surface waters as much as possible.
3. Best management Practices are employed which minimizes water quality impacts.
4. Approved plans and specifications for this project are incorporated by reference and are enforceable parts of the permit.
5. NCDOT will attempt to construct all vegetated roadside ditches at 3:1 slopes or flatter.

## II. SCHEDULE OF COMPLIANCE

1. The permittee shall at all times provide adequate erosion control measures in conformance with the approved Erosion Control Plan.
2. The Director may notify the permittee when the permitted site does not meet one or more of the minimum requirements of the permit. Within the time frame specified in the notice, the permittee shall submit a written time schedule to the Director for modifying the site to meet minimum requirements. The permittee shall provide copies of revised plans and certification in writing to the Director that the changes have been made.
3. The permittee shall submit all information requested by the Director or his representative within the time frame specified in the written information request.
4. The permittee shall submit to the Director and shall have received approval for revised plans, specifications, and calculations prior to construction for the following items:
  - a. Major revisions to the approved plans, such as road realignment, deletion of any proposed BMP, changes to the drainage area or scope of the project, etc.
  - b. Project name change.
  - c. Redesign of, addition to, or deletion of the approved amount of built-upon area, regardless of size.
  - d. Alteration of the proposed drainage.
5. The Director may determine that other revisions to the project should require a modification to the permit.

## III. GENERAL CONDITIONS

1. This permit is not transferable to any person except after notice to and approval by the Director. The Director may require modification or revocation and reissuance of the permit to change name and incorporate such other requirements as may be necessary. ~~A formal permit request must be submitted to the Division of Water Quality accompanied by the appropriate fee, documentation from the parties involved, and other supporting materials as may be appropriate. The approval of this request will be considered on its merits and may or may not be approved. The permittee is responsible for compliance with the terms and conditions of this permit until such time as the Director approves the transfer.~~
2. Failure to abide by the conditions and limitations contained in this permit may subject the Permittee to enforcement action by the Division of Water Quality, in accordance with North Carolina General Statute 143-215.6(A) to 143-215.6(C).
3. The issuance of this permit does not preclude the Permittee from complying with any and all statutes, rules, regulations, or ordinances, which may be imposed by other government agencies (local, state, and federal), which have jurisdiction.
4. The issuance of this permit does not prohibit the Director from reopening and modifying the permit, revoking and reissuing the permit, or terminating the permit as allowed by laws, rules, and regulations contained in Title 15A of the North Carolina Administrative Code, Subchapter 2H .1000; and North Carolina General Statute 143-215.1 et. al.
5. The permit may be modified, revoked and reissued or terminated for cause. The filing of a request for a permit modification, revocation and reissuance or termination does not stay any permit condition.
6. The permit issued shall continue in force and effect until revoked or terminated.
7. The permittee shall notify the Division of any name, ownership or mailing address changes within 30 days.

Permit issued this the 13th day of February 2013.

**NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION**



*PSR* Charles Wakild, P.E. Director  
Division of Water Quality  
By Authority of the Environmental Management Commission

**Permit Number SW1130201**









5/14/99

PROJECT REFERENCE NO. B-4734	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

**-L-**  
**(SR 1300)**

**-YREV1-**  
**(SR 1318)**

**STRUCTURE HYDRAULIC DATA**

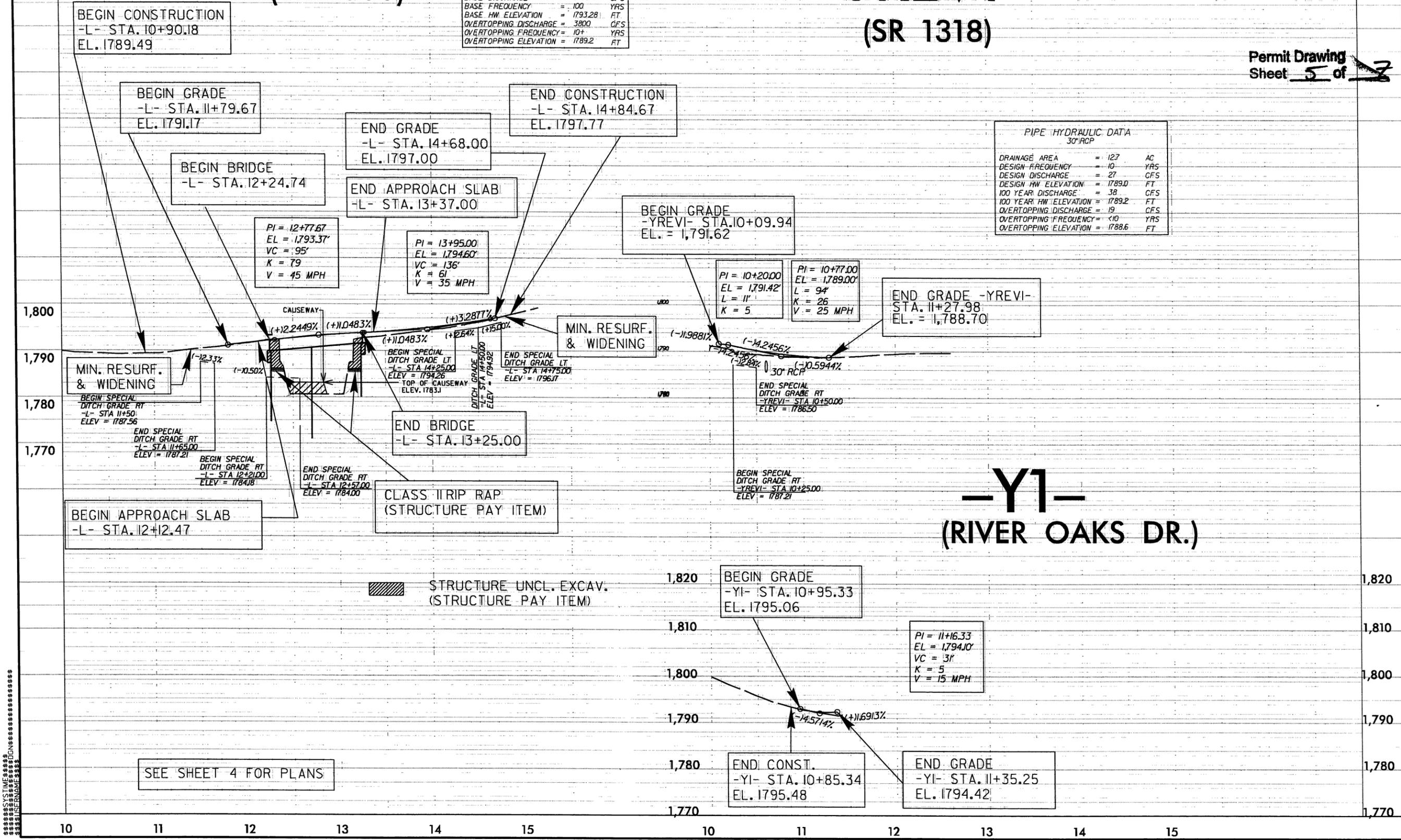
1 @ 45" (2' CORED) SLAB  
1 @ 55" (2' CORED) SLAB

DESIGN DISCHARGE	= 6000	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 1791.7	FT
BASE DISCHARGE	= 8400	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1793.28	FT
OVERTOPPING DISCHARGE	= 3800	CFS
OVERTOPPING FREQUENCY	= 10+	YRS
OVERTOPPING ELEVATION	= 1789.2	FT

**PIPE HYDRAULIC DATA**  
30" RCP

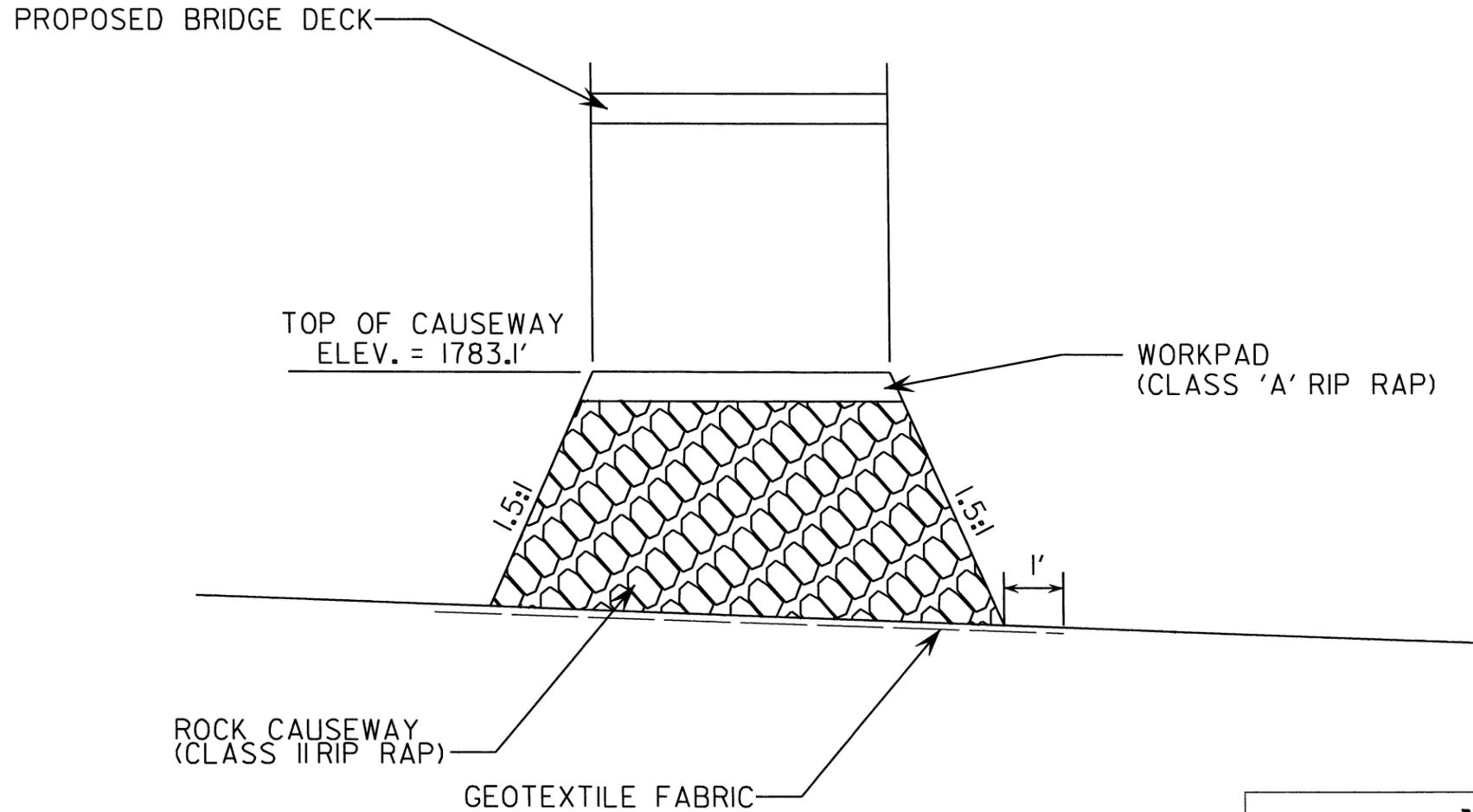
DRAINAGE AREA	= 127	AC
DESIGN FREQUENCY	= 10	YRS
DESIGN DISCHARGE	= 27	CFS
DESIGN HW ELEVATION	= 1789.0	FT
100 YEAR DISCHARGE	= 38	CFS
100 YEAR HW ELEVATION	= 1789.2	FT
OVERTOPPING DISCHARGE	= 19	CFS
OVERTOPPING FREQUENCY	= 10	YRS
OVERTOPPING ELEVATION	= 1788.6	FT

Permit Drawing  
Sheet 5 of 8



# CAUSEWAY DETAIL (NOT TO SCALE)

Permit Drawing  
Sheet 6 of 7



\$FILES\$

10/30/2012

QUANTITIES OF ESTIMATES: CAUSEWAY

VOLUME OF CLASS 'A' RIP RAP= 51 yds<sup>3</sup>

AREA OF CLASS 'A' RIP RAP= 0.031 acres

Estimate 70 Tons Class 'A' Rip Rap

VOLUME OF CLASS II RIP RAP= 115 yds<sup>3</sup>

AREA OF CLASS II RIP RAP= 0.040 acres

Estimate 155 Tons Class II Rip Rap

Estimate 210 SY of Geotextile Fabric

**NCDOT**

DIVISION OF HIGHWAYS  
CLAY COUNTY

PROJECT: 38507.1.1 (B-4734)

REPLACEMENT OF BRIDGE NO.9  
OVER TUSQUITEE CREEK  
ON SR 1300 (FIRES CREEK RD.)

10 / 25 / 2012

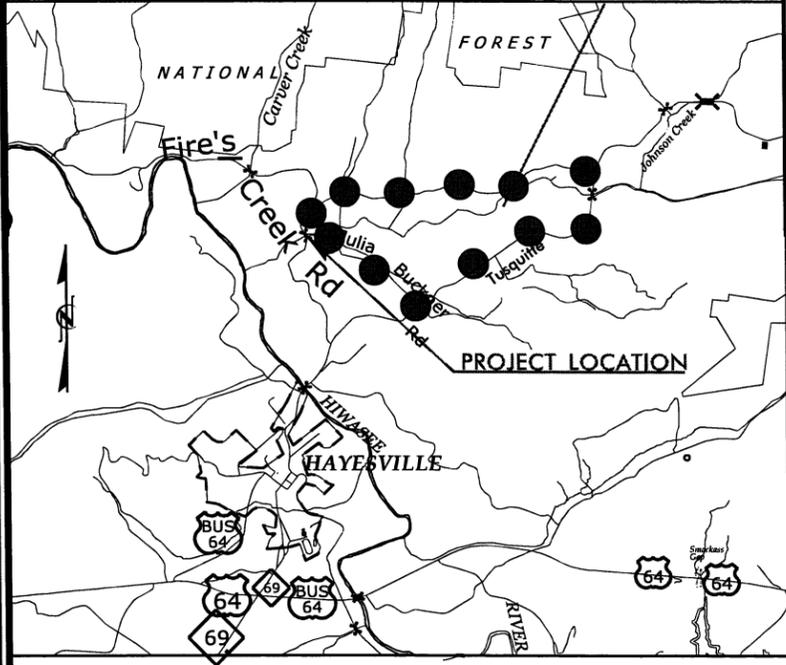


04-SEP-2012 11:04 R:\Roadway\Projects\B4734\_Rdy\_rsh.dgn \$\$\$USERNAME\$\$\$

**TIP PROJECT: B-4734**

**CONTRACT:**

See Sheet 1-A For Index of Sheets



**VICINITY MAP**      ●●● OFFSITE DETOUR

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

THIS PROJECT IS NOT WITHIN MUNICIPAL BOUNDARIES.

THIS IS NOT A CONTROL OF ACCESS PROJECT.

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

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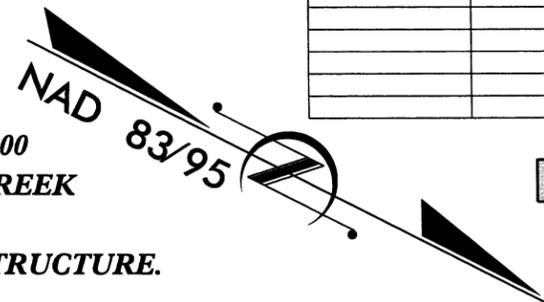
# CLAY COUNTY

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**LOCATION: REPLACEMENT OF BRIDGE NO. 9 ON SR 1300  
(FIRES CREEK ROAD) OVER TUSQUITEE CREEK**

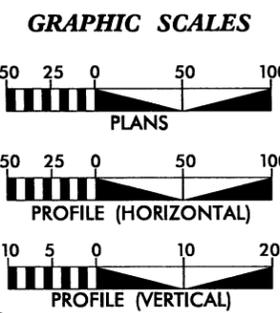
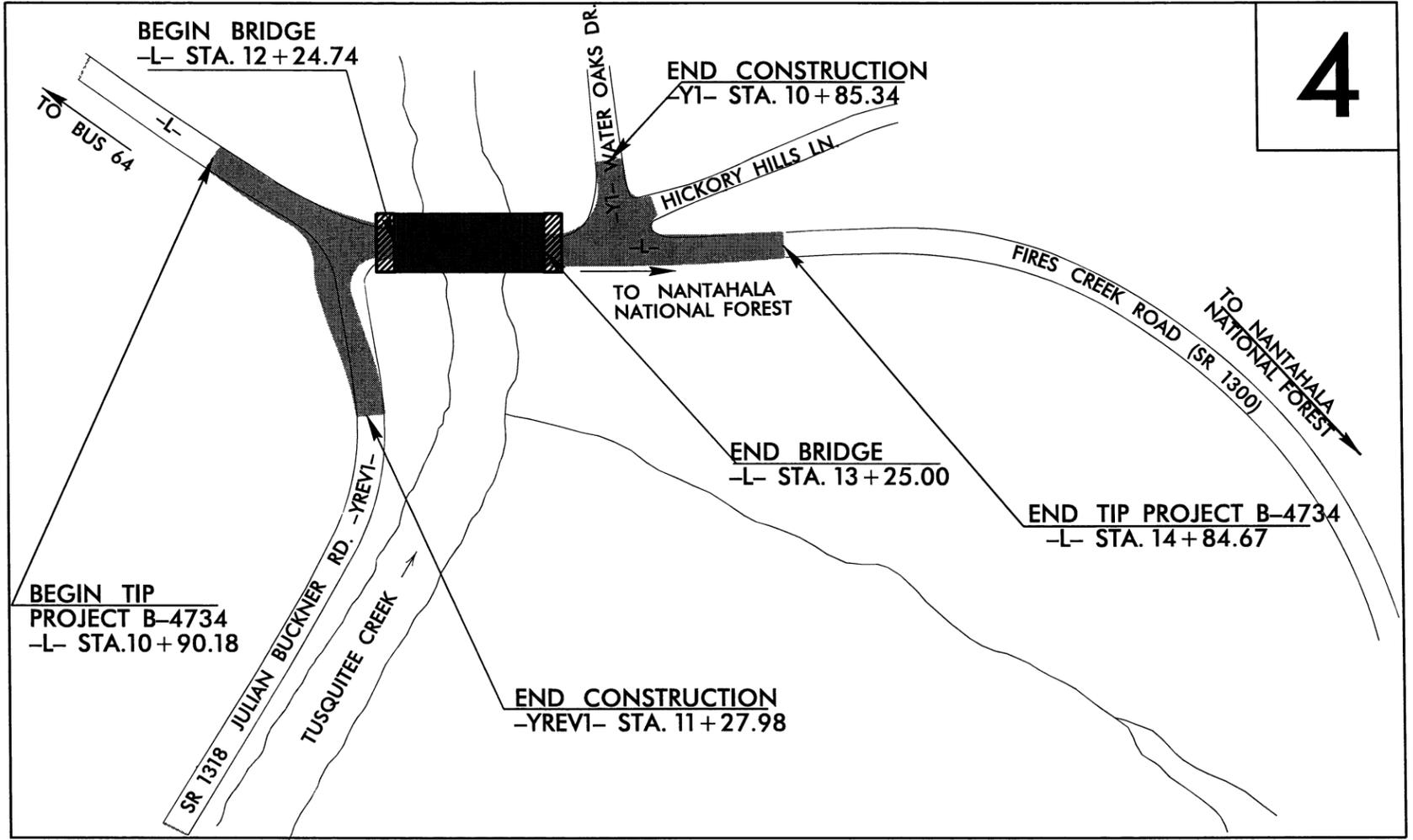
**TYPE OF WORK: PAVING, GRADING, DRAINAGE AND STRUCTURE.**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4734	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38507.1.1	BRZ-1300(8)	PE	
38507.2.1	BRZ-1300(8)	RAW & UTILITIES	



**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

4



**DESIGN DATA**

ADT 2010 =	500
ADT 2035 =	900
DHV =	10 %
D =	60 %
T =	5 % *
V =	40 MPH
* TTST =	2% DUAL 3%
FUNC CLASS =	LOCAL RURAL
SUBREGIONAL TIER	

**PROJECT LENGTH**

TOTAL LENGTH TIP PROJECT B-4734 =	0.075 MI.
LENGTH STRUCTURE TIP PROJECT B-4734 =	0.019 MI.
LENGTH ROADWAY TIP PROJECT B-4734 =	0.056 MI.

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

2012 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
AUGUST 31, 2012

**LETTING DATE:**  
FEBRUARY 17, 2015

**JIMMY GOODNIGHT, PE**  
PROJECT ENGINEER

**TIM GOINS, PE**  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.



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	○
Property Corner	✕
Property Monument	⊠
Parcel/Sequence Number	Ⓜ
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	⊠
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-----
Proposed Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----
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	⊙
Small Mine	⋈
Foundation	⊠
Area Outline	⊠
Cemetery	⊠
Building	⊠
School	⊠
Church	⊠
Dam	⊠

### HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
Jurisdictional Stream	-----
Buffer Zone 1	-----
Buffer Zone 2	-----
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Wetland	-----
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 Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Drainage / Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Aerial Utility Easement	-----

### 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	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR: Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	-----
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	-----
End of Information	-----

# SURVEY CONTROL SHEET B-4734

PROJECT REFERENCE NO. <b>38507.1.1</b>	SHEET NO. <b>1C</b>
Location and Surveys	

NCDOT BASELINE STATION B-4734 BL-1  
LOCALIZED PROJECT COORDINATES  
N = 514,945.4110  
E = 559,229.9050  
ELEV. = 1,804.77'

BM-1 = 1,802.36'

NCDOT BASELINE STATION B-4734 BY1-6  
LOCALIZED PROJECT COORDINATES  
N = 515,437.3360  
E = 559,039.6700  
ELEV. = 1,814.18'

BM-4 = 1,815.04'

NCDOT BASELINE STATION B-4734 BL-2  
LOCALIZED PROJECT COORDINATES  
N = 515,264.8030  
E = 559,405.8860  
ELEV. = 1,788.62'

BM-2 = 1,791.20'

NCDOT BASELINE STATION B-4734 BY-7  
LOCALIZED PROJECT COORDINATES  
N = 515,417.1752  
E = 559,421.7271  
ELEV. = 1,790.24'

NCDOT BASELINE STATION B-4734 BL-3  
LOCALIZED PROJECT COORDINATES  
N = 515,583.8130  
E = 559,356.9320  
ELEV. = 1,792.83'

NCDOT BASELINE STATION B-4734 BL-4  
LOCALIZED PROJECT COORDINATES  
N = 515,843.9750  
E = 559,202.3993  
ELEV. = 1,807.96'

NCDOT BASELINE STATION B-4734 GPS-101  
LOCALIZED PROJECT COORDINATES  
N = 515,503.8150  
E = 559,534.2820  
ELEV. = 1,788.39'

NCDOT BASELINE STATION B-4734 BY-5  
LOCALIZED PROJECT COORDINATES  
N = 515,531.6710  
E = 559,693.8100  
ELEV. = 1,789.39'

BM-3 = 1,820.42'

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	514945.4110	559229.9050	1804.77	OUTSIDE PROJECT LIMITS	
2	BL-2	515264.8030	559405.8860	1788.62	10+22.23	14.91 RT
3	BL-3	515583.8130	559356.9320	1792.83	13+46.78	13.18 RT
4	BL-4	515843.9750	559202.3993	1807.96	OUTSIDE PROJECT LIMITS	

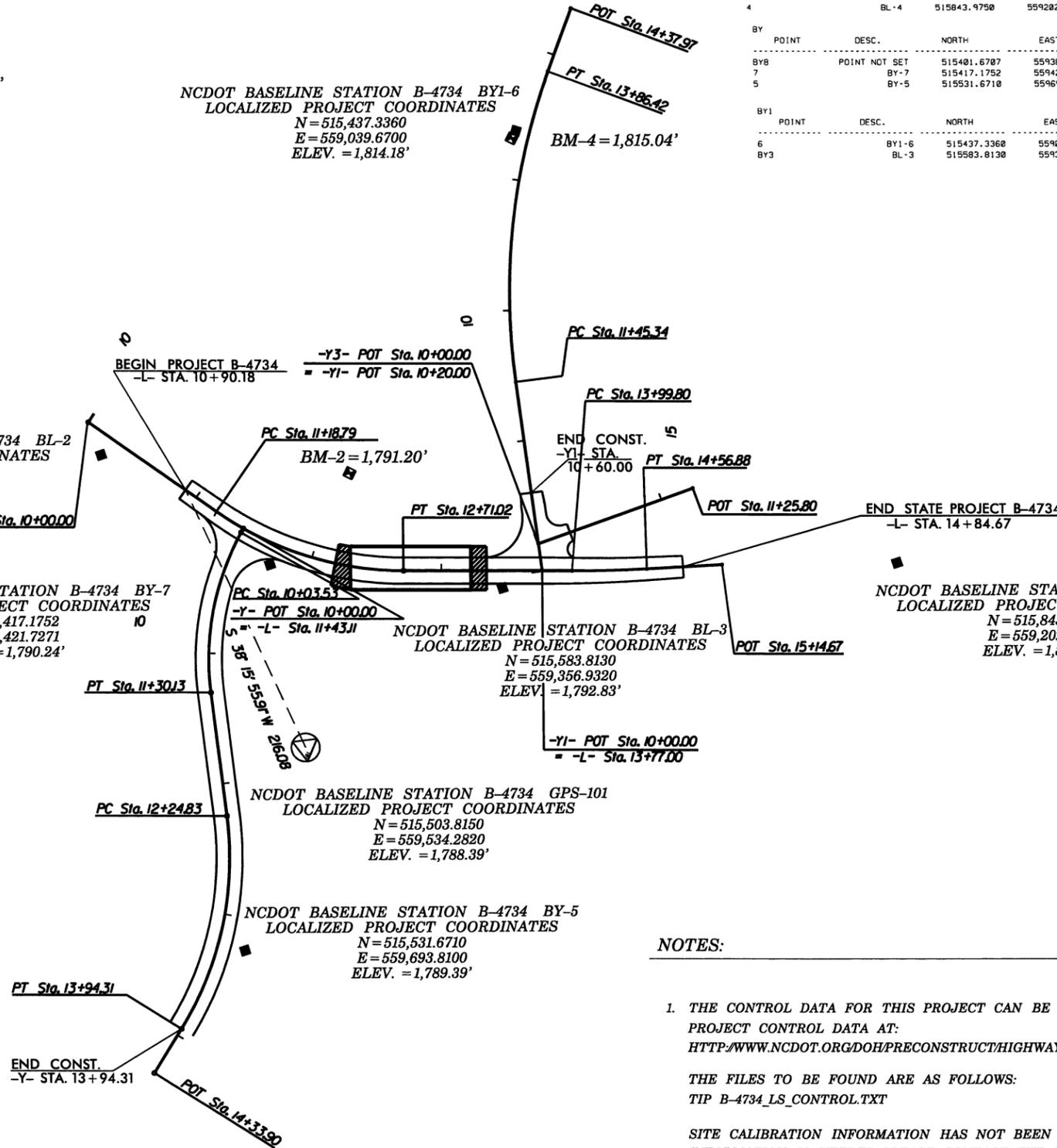
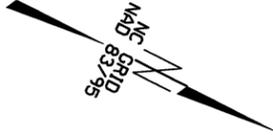
  

BY POINT	DESC.	NORTH	EAST	ELEVATION	Y STATION	OFFSET
BY8	POINT NOT SET	515401.6707	559384.8828	UNKNOWN	OUTSIDE PROJECT LIMITS	
7	BY-7	515417.1752	559421.7271	1790.24	10+15.00	30.73 LT
5	BY-5	515531.6710	559693.8100	1789.39	13+22.59	21.22 LT

BY1 POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
6	BY1-6	515437.3360	559039.6700	1814.18	13+36.17	10.25 LT
BY3	BL-3	515583.8130	559356.9320	1792.83	OUTSIDE PROJECT LIMITS	

- .....
- BM1 ELEVATION = 1802.36  
N 514960 E 559223  
BL STATION 5+09.00 13 LEFT  
RR SPIKE IN 15' WALNUT  
.....
- .....
- BM2 ELEVATION = 1791.20  
N 515440 E 559332  
BL STATION 10+49.00 47 LEFT  
RR SPIKE IN 30' POPLAR  
.....
- .....
- BM3 ELEVATION = 1820.42  
N 516158 E 559344  
Y STATION 12+67.00 729 LEFT  
RR SPIKE IN DOUBLE CHERRY  
.....
- .....
- BM4 ELEVATION = 1815.04  
N 515437 E 559046  
Y1 STATION 13+30.00 12 LEFT  
RR SPIKE IN POWER POLE  
.....



**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS 101" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 515503.8150(ft) EASTING: 559534.2820(ft) ELEVATION: 1788.393(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 99979658 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS 101" TO -L- STATION 10+90.18 IS S 38 15 55.91 W 216.08 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

**NOTES:**

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:  
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/)

THE FILES TO BE FOUND ARE AS FOLLOWS:  
TIP B-4734\_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.

GEOID : GEOID 03  
NOTE: DRAWING NOT TO SCALE

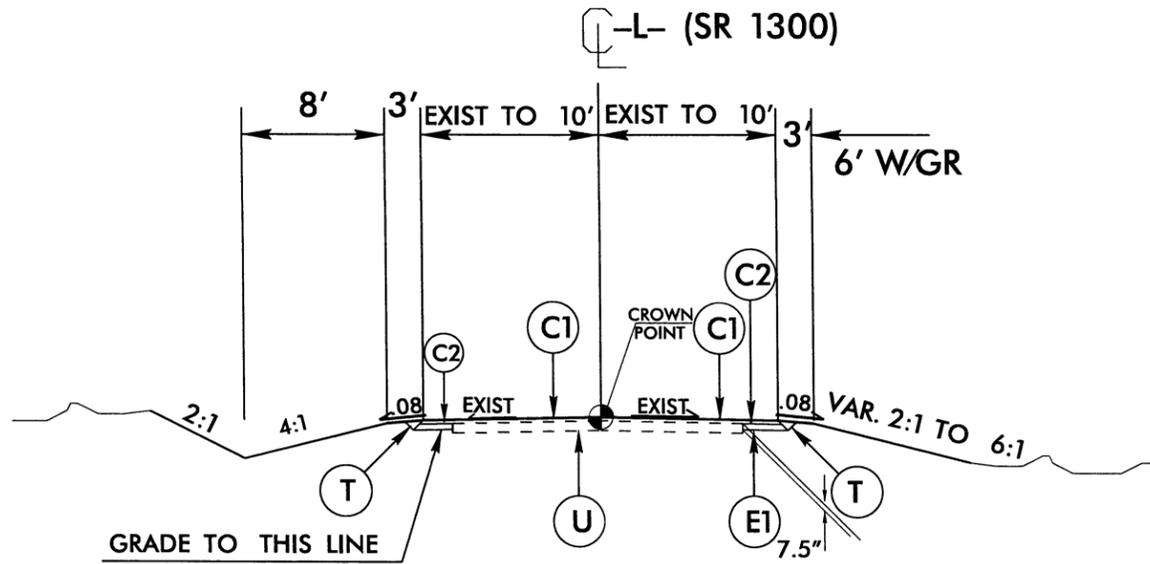
6/2/99  
RA SEP-2012 11:04 AM 4734.LS.LSDGN

6/2/99

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 280 LBS. PER SQ. YD.
C2	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	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. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT TO BE RETAINED.
W	ASPHALT WEDGING (SEE DETAIL)

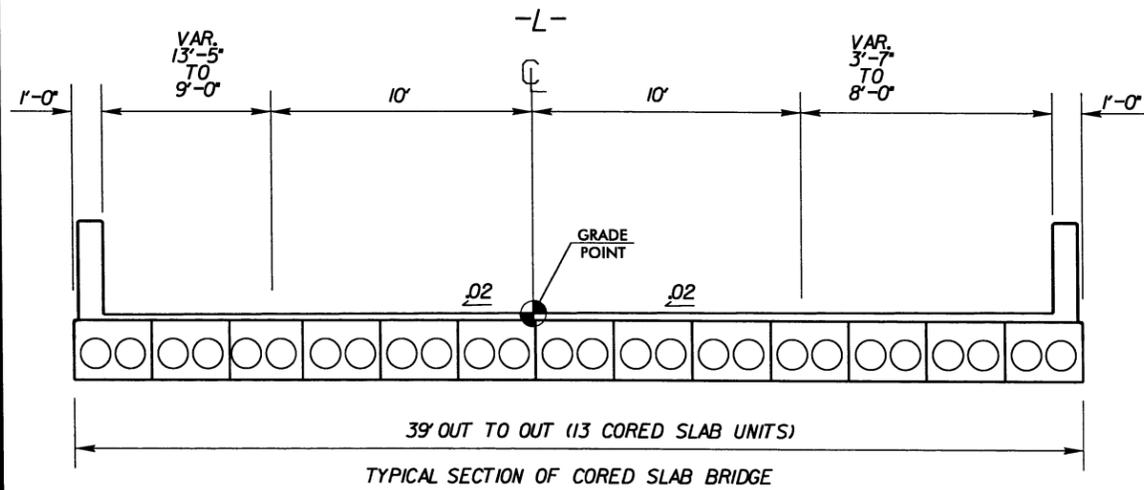
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PROJECT REFERENCE NO. <b>B-4734</b>	SHEET NO. <b>2</b>
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

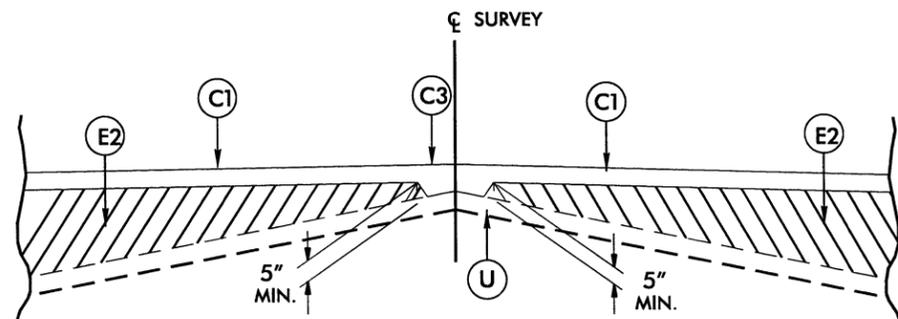


**TYPICAL SECTION NO. 1**

USE TYPICAL SECTION NO. 1  
 -L- STA. 10+90.18 TO STA. 11+79.67  
 -L- STA. 14+68.00 TO STA. 14+84.67

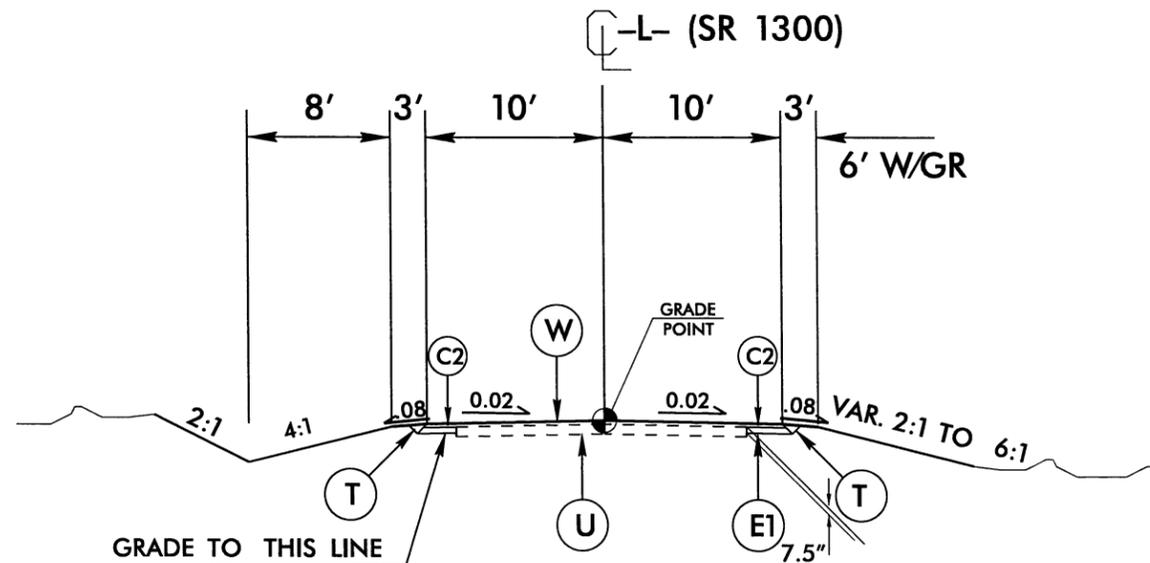


-L- STA. 12+24.74 (BEGIN BRIDGE)  
 TO -L- STA. 13+25.00 (END BRIDGE)



**Detail Showing Method of Wedging**

-L- STA. 11+79.67 TO STA. 11+80.30  
 -L- STA. 13+72.67 TO STA. 14+68.00



**TYPICAL SECTION NO. 2**

USE TYPICAL SECTION NO. 2  
 -L- STA. 11+79.67 TO STA. 11+80.30  
 -L- STA. 13+72.67 TO STA. 14+68.00

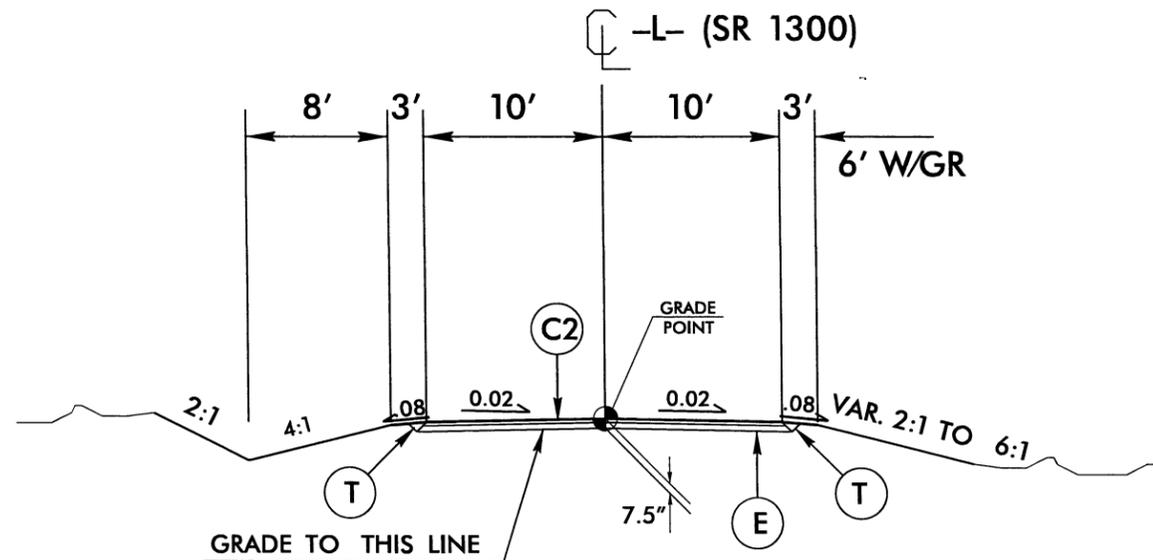
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6/2/99

PROJECT REFERENCE NO. <b>B-4734</b>	SHEET NO. <b>2A</b>
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

PAVEMENT SCHEDULE	
C1	2.5" S9.5B
C2	2.5" SF9.5A,
C3	VAR. DEPTH SF9.5A,
E1	5" B25.0B,
E2	VAR. DEPTH B25.0.
T	EARTH MATERIAL
U	EXISTING PAVEMENT TO BE RETAINED.
W	ASPHALT WEDGING (SEE DETAIL)

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

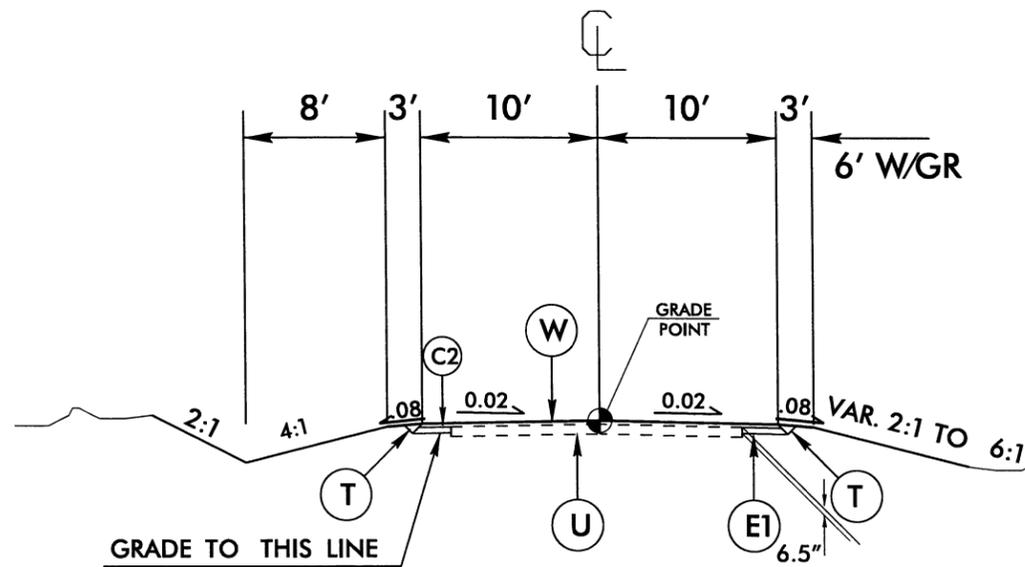


**TYPICAL SECTION NO. 3**

USE TYPICAL SECTION NO. 3

-L- STA.11+80.30 TO STA.12+24.74 (BEGIN BRIDGE)  
-L- STA.13+25.00 (END BRIDGE) TO 13+72.67

**-YREV1- (SR 1318)  
JULIA BUCKNER RD.**

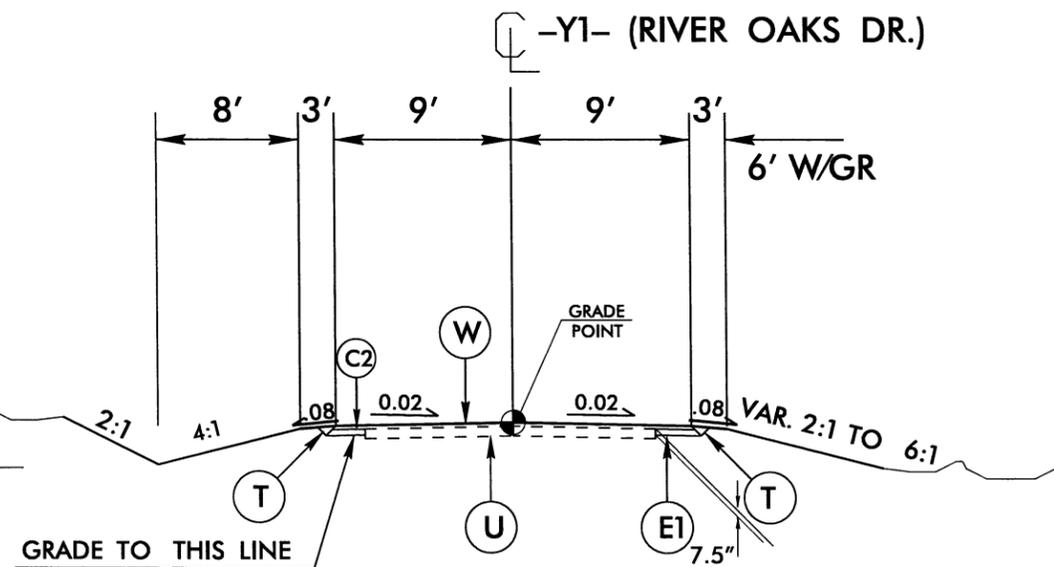


**TYPICAL SECTION NO. 4**

USE TYPICAL SECTION NO. 4

-YREV1- STA. 10+09.94 TO 11+27.98

**-Y1- (RIVER OAKS DR.)**



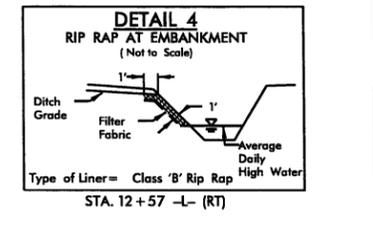
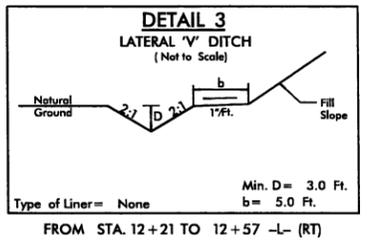
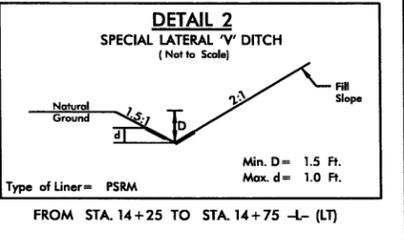
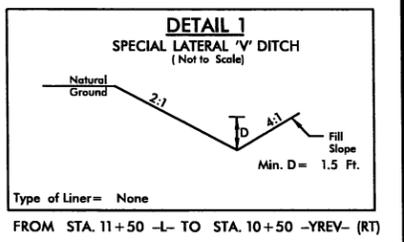
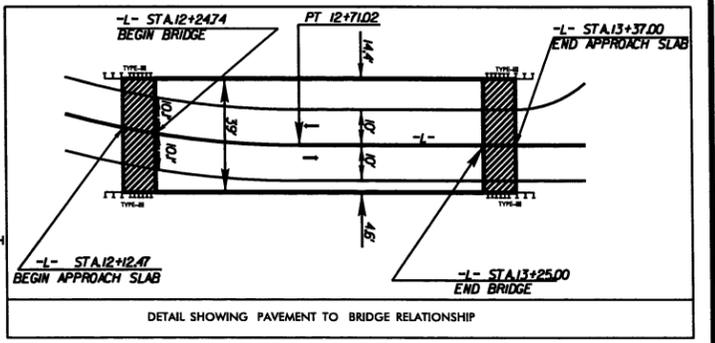
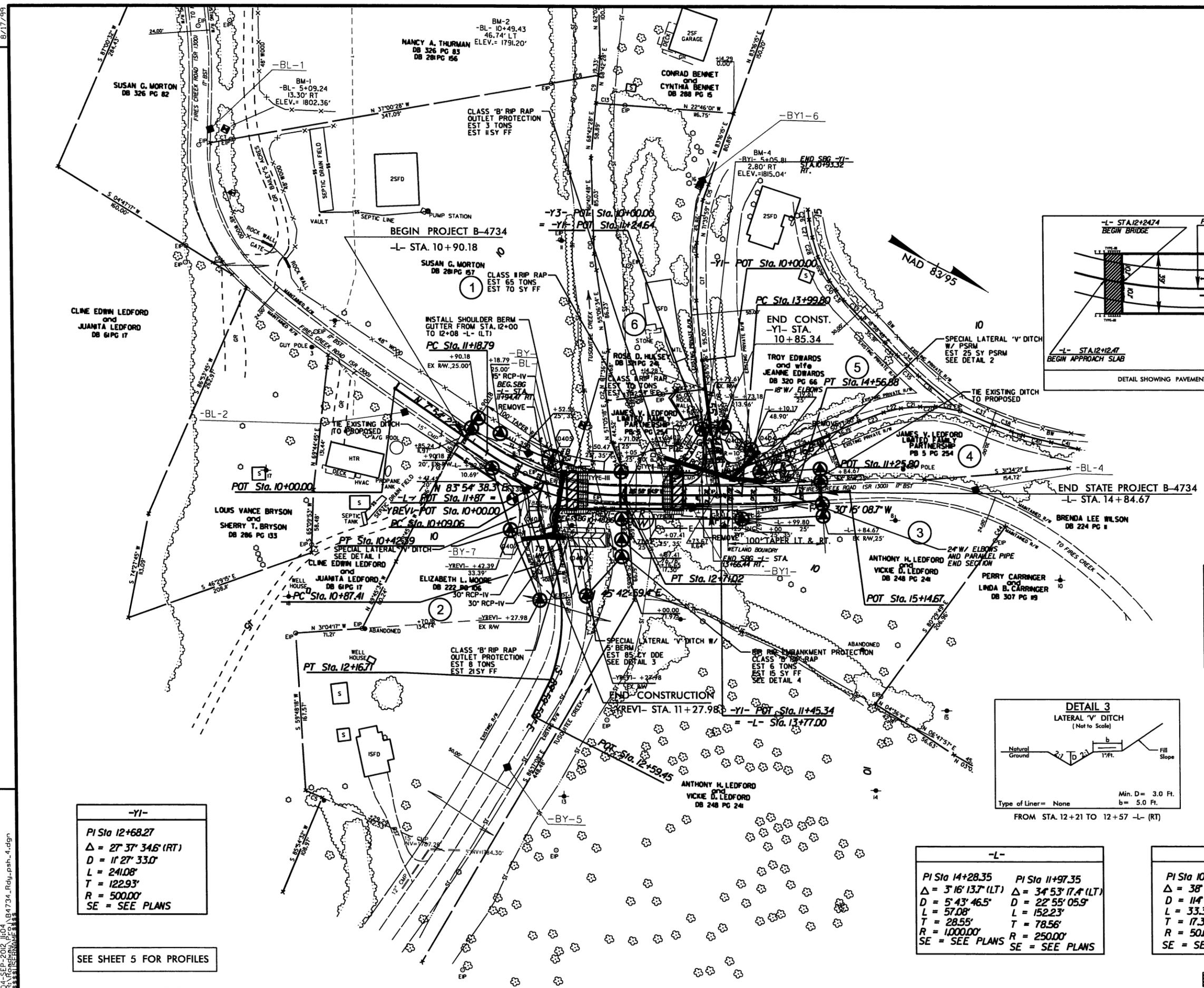
**TYPICAL SECTION NO. 5**

USE TYPICAL SECTION NO. 5

-Y1- STA. 10+85.34 TO STA. 11+35.25

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\$\$\$\$11/15/99\$\$\$\$

PROJECT REFERENCE NO. <b>B-4734</b>	SHEET NO. <b>4</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



<b>-YI-</b>
PI Sta 12+68.27
$\Delta = 27^\circ 37' 34.6''$ (RT)
D = 11' 27" 33.0"
L = 241.08'
T = 122.93'
R = 500.00'
SE = SEE PLANS

SEE SHEET 5 FOR PROFILES

<b>-L-</b>	<b>-YREVI-</b>
PI Sta 14+28.35	PI Sta 11+97.35
$\Delta = 3^\circ 16' 13.7''$ (LT)	$\Delta = 34^\circ 53' 17.4''$ (LT)
D = 5' 43" 46.5"	D = 22' 55" 05.9"
L = 57.08'	L = 152.23'
T = 28.55'	T = 78.56'
R = 1000.00'	R = 250.00'
SE = SEE PLANS	SE = SEE PLANS

<b>-L-</b>	<b>-YREVI-</b>
PI Sta 10+26.37	PI Sta 11+54.53
$\Delta = 38^\circ 11' 39.0''$ (LT)	$\Delta = 37^\circ 59' 29.0''$ (RT)
D = 11' 35" 29.6"	D = 29' 22" 56.8"
L = 33.33'	L = 129.30'
T = 17.31'	T = 67.13'
R = 50.00'	R = 195.00'
SE = SEE PLANS	SE = SEE PLANS



8/17/99  
 REVISIONS  
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**--L--**  
**(SR 1300)**

**--YREVI--**  
**(SR 1318)**

**STRUCTURE HYDRAULIC DATA**  
1 @ 45' (2" CORED SLAB)  
1 @ 55' (2" CORED SLAB)

DESIGN DISCHARGE	= 6000	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 1791.7	FT
BASE DISCHARGE	= 8400	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1793.28	FT
OVERTOPPING DISCHARGE	= 3800	CFS
OVERTOPPING FREQUENCY	= 10+	YRS
OVERTOPPING ELEVATION	= 1789.2	FT

**PIPE HYDRAULIC DATA**  
30" RCP

DRAINAGE AREA	= 127	AC
DESIGN FREQUENCY	= 10	YRS
DESIGN DISCHARGE	= 27	CFS
DESIGN HW ELEVATION	= 1789.0	FT
100 YEAR DISCHARGE	= 38	CFS
100 YEAR HW ELEVATION	= 1789.2	FT
OVERTOPPING DISCHARGE	= 19	CFS
OVERTOPPING FREQUENCY	= <10	YRS
OVERTOPPING ELEVATION	= 1788.6	FT

BEGIN CONSTRUCTION  
-L- STA. 10+90.18  
EL. 1789.49

BEGIN GRADE  
-L- STA. 11+79.67  
EL. 1791.17

BEGIN BRIDGE  
-L- STA. 12+24.74

END GRADE  
-L- STA. 14+68.00  
EL. 1797.00

END CONSTRUCTION  
-L- STA. 14+84.67  
EL. 1797.77

PI = 12+77.67  
EL = 1793.37'  
VC = 95'  
K = 79  
V = 45 MPH

PI = 13+95.00  
EL = 1794.60'  
VC = 136'  
K = 61  
V = 35 MPH

BEGIN GRADE  
-YREVI- STA. 10+09.94  
EL. = 1,791.62

PI = 10+20.00  
EL = 1791.42'  
L = 11'  
K = 5

PI = 10+77.00  
EL = 1789.00'  
L = 9'  
K = 26  
V = 25 MPH

END GRADE -YREVI-  
STA. 11+27.98  
EL. = 1,788.70

MIN. RESURF.  
& WIDENING

MIN. RESURF.  
& WIDENING

END BRIDGE  
-L- STA. 13+25.00

CLASS II RIP RAP  
(STRUCTURE PAY ITEM)

BEGIN APPROACH SLAB  
-L- STA. 12+12.47

STRUCTURE UNCL. EXCAV.  
(STRUCTURE PAY ITEM)

BEGIN GRADE  
-YI- STA. 10+95.33  
EL. 1795.06

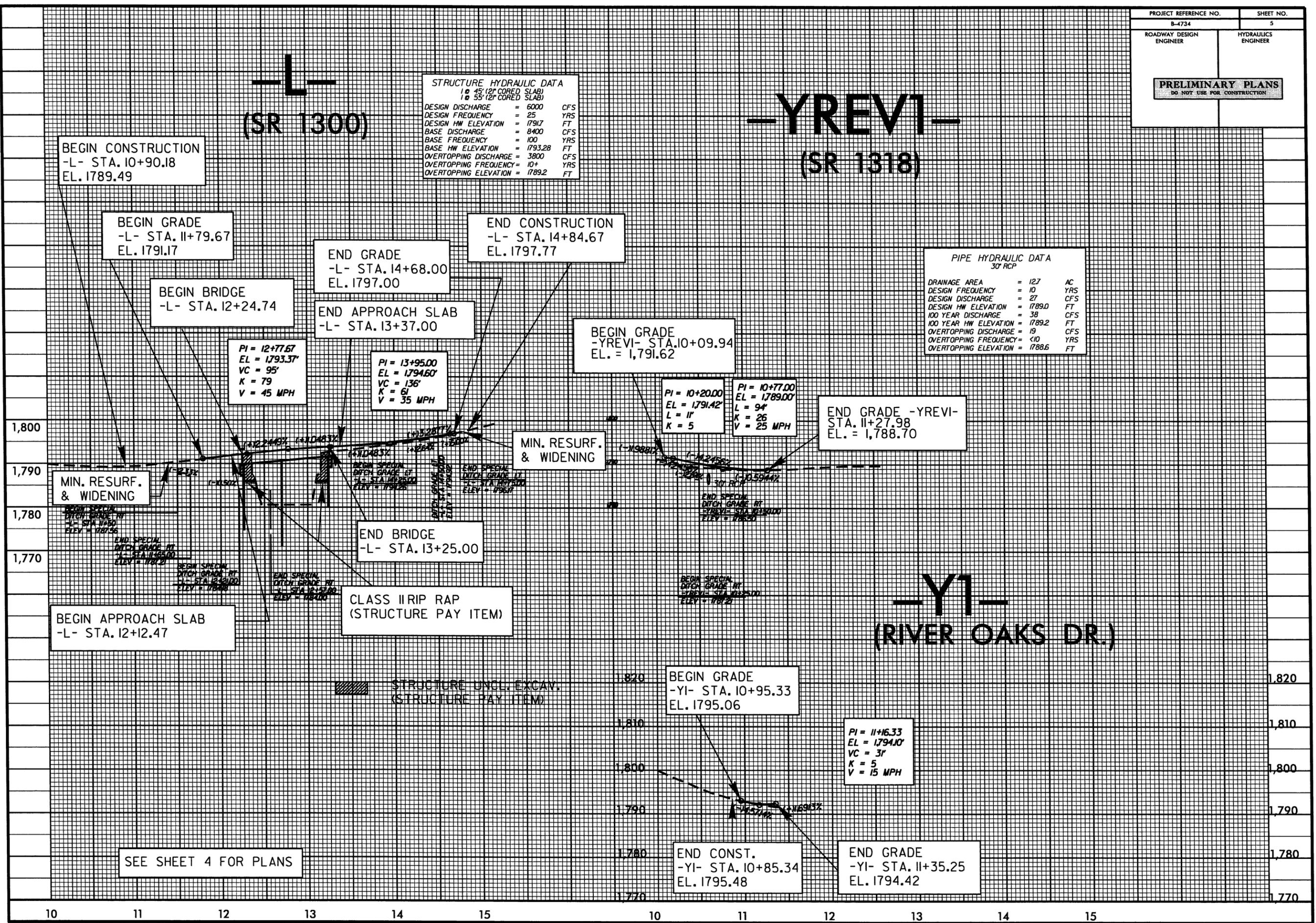
PI = 11+16.33  
EL = 1794.10'  
VC = 31'  
K = 5  
V = 15 MPH

SEE SHEET 4 FOR PLANS

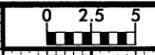
END CONST.  
-YI- STA. 10+85.34  
EL. 1795.48

END GRADE  
-YI- STA. 11+35.25  
EL. 1794.42

**--YI--**  
**(RIVER OAKS DR.)**

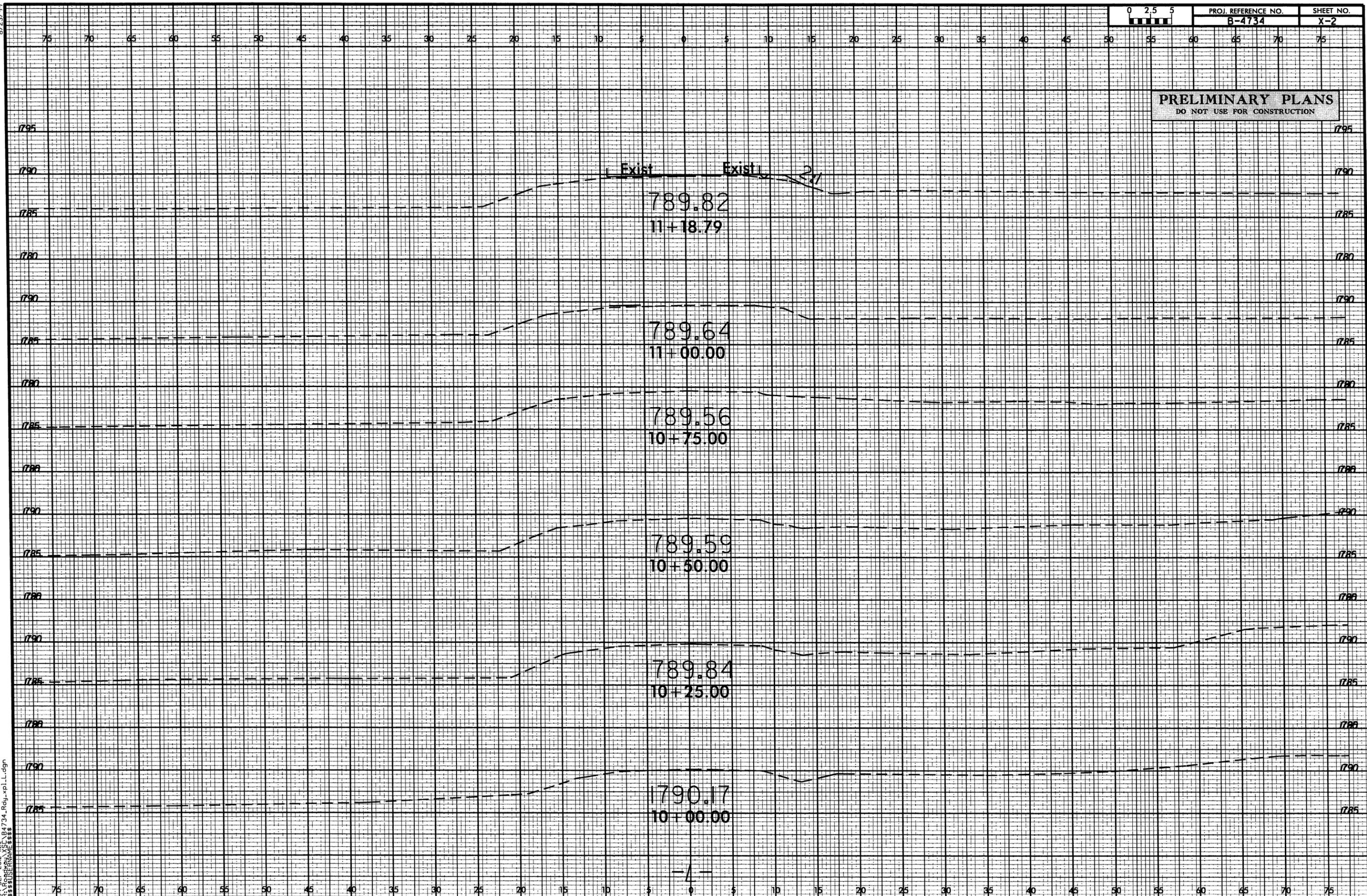


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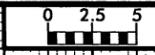
PROJ. REFERENCE NO. B-4734 SHEET NO. X-2

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

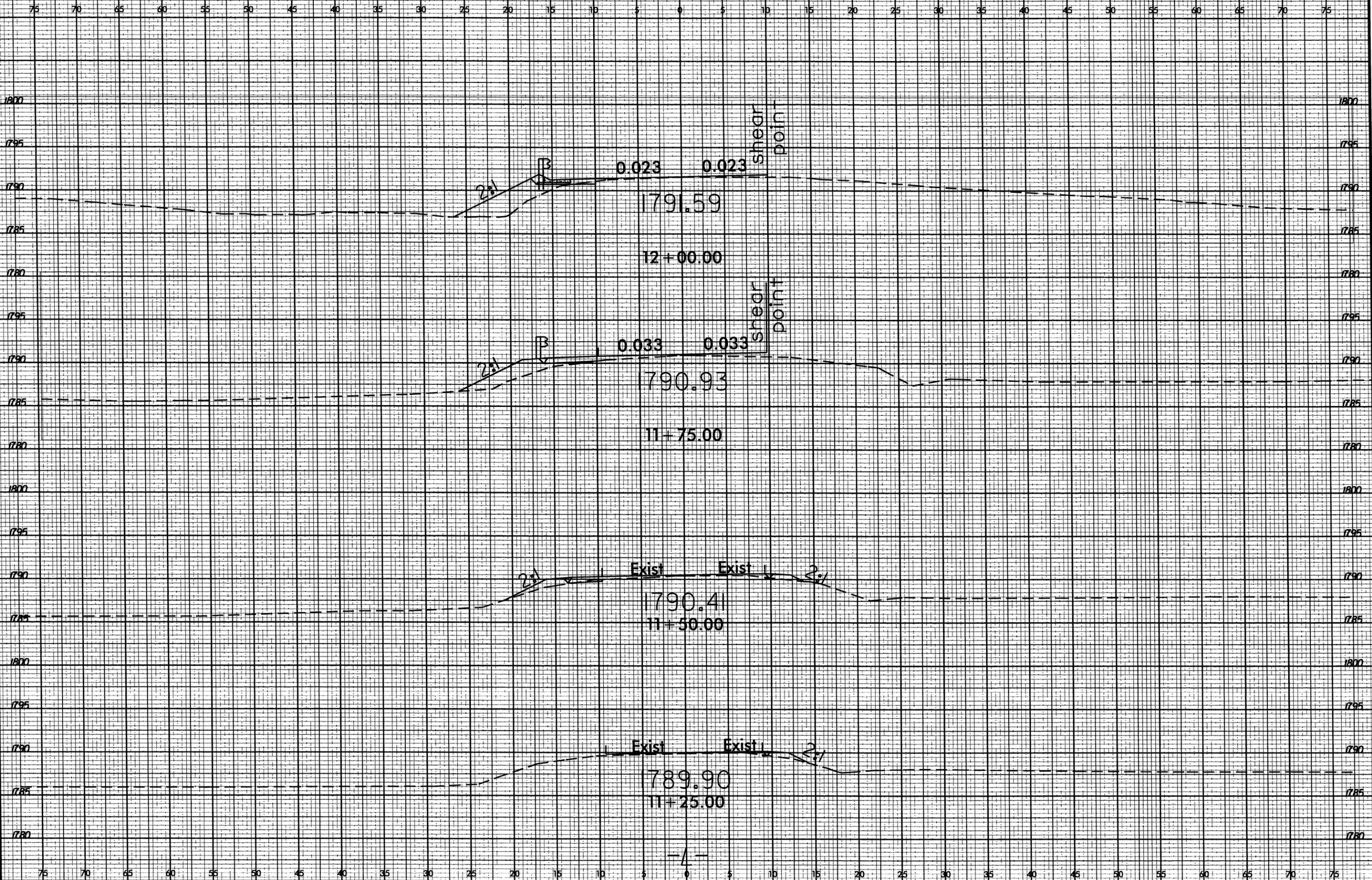


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8/23/99



PROJ. REFERENCE NO. B-4734 SHEET NO. X-3



0.023 0.023

1791.59

12+00.00

0.033 0.033

1790.93

11+75.00

Exist Exist

1790.41

11+50.00

Exist Exist

789.90

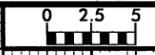
11+25.00

-/-

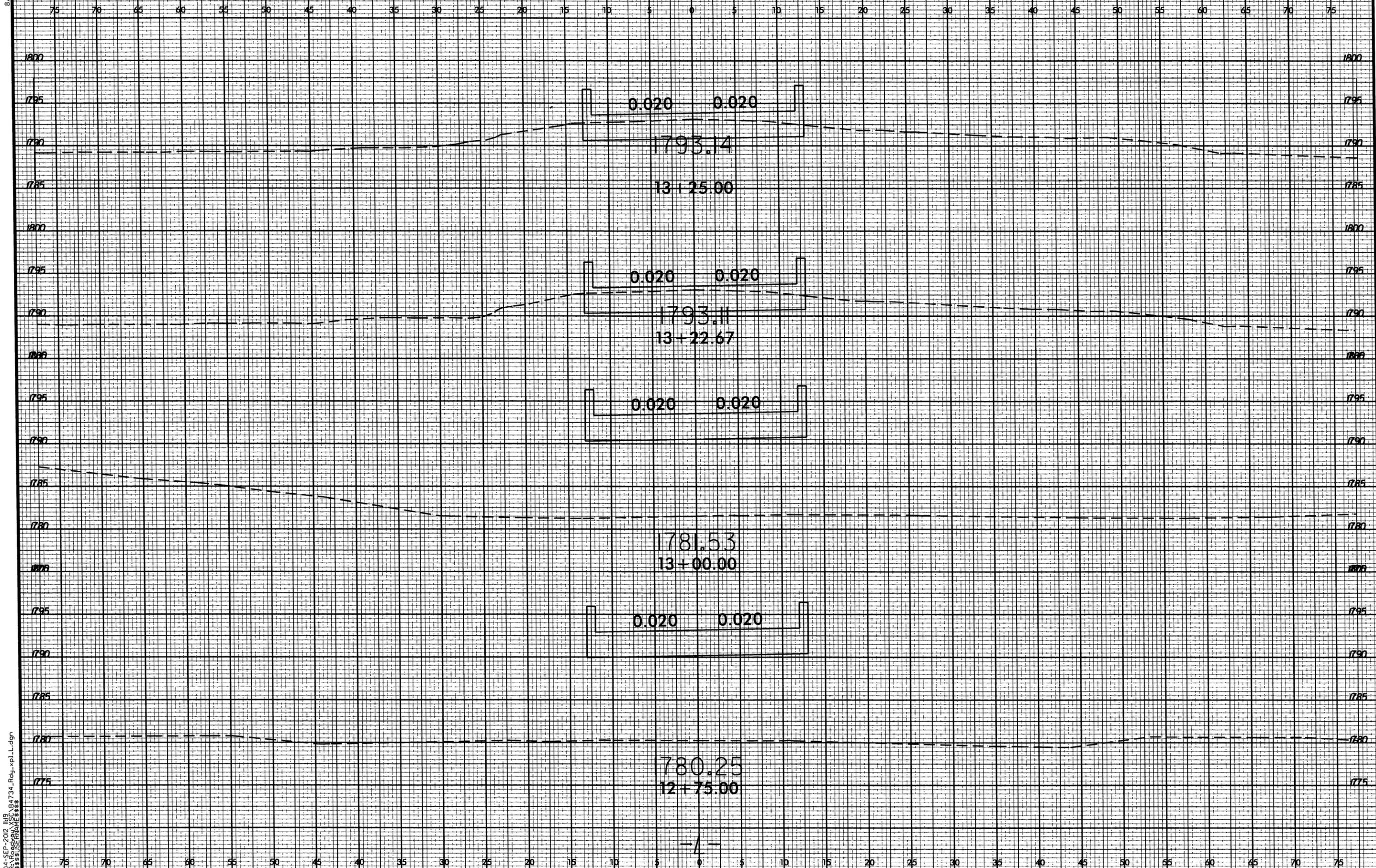
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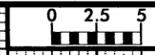
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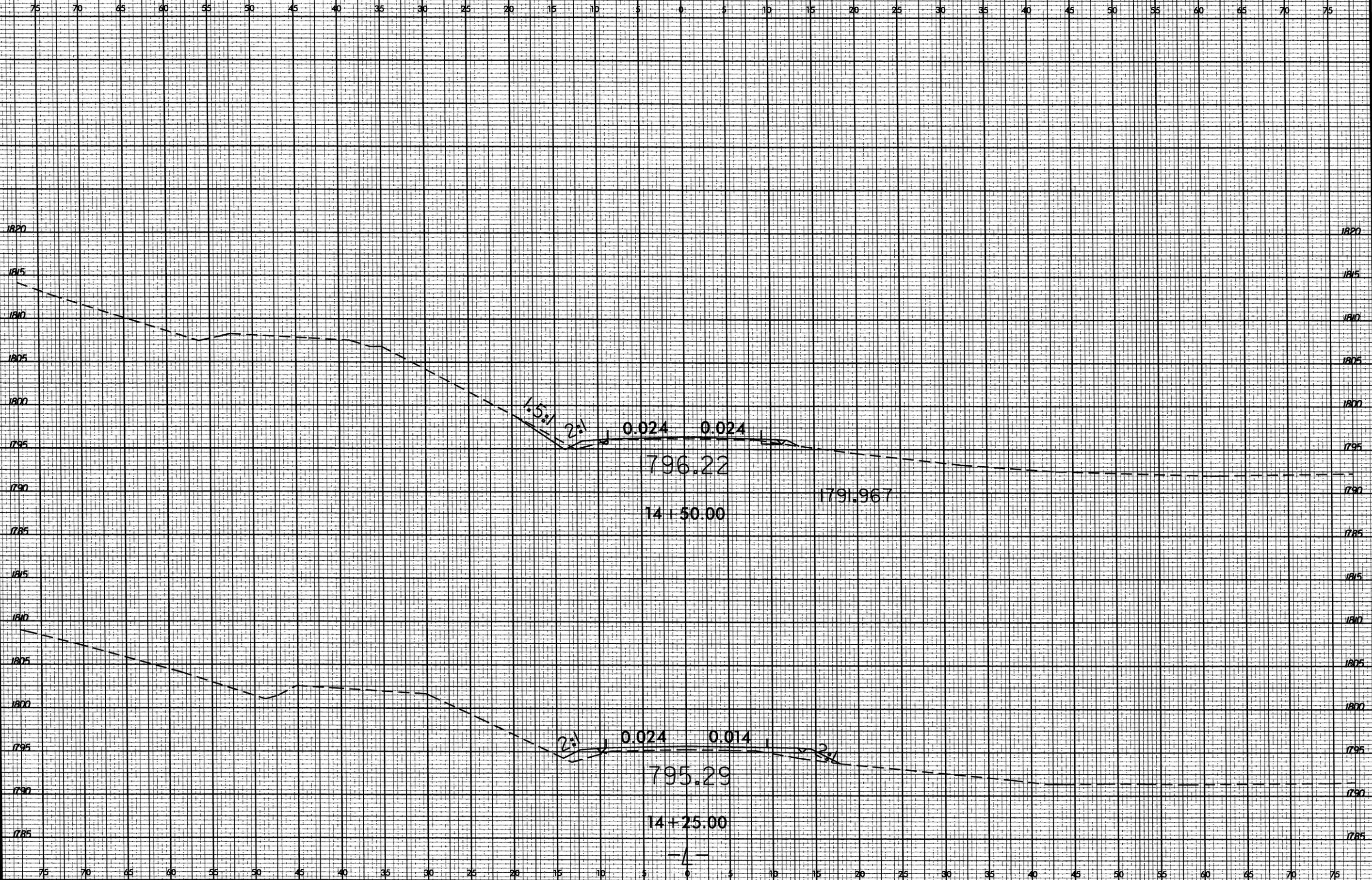
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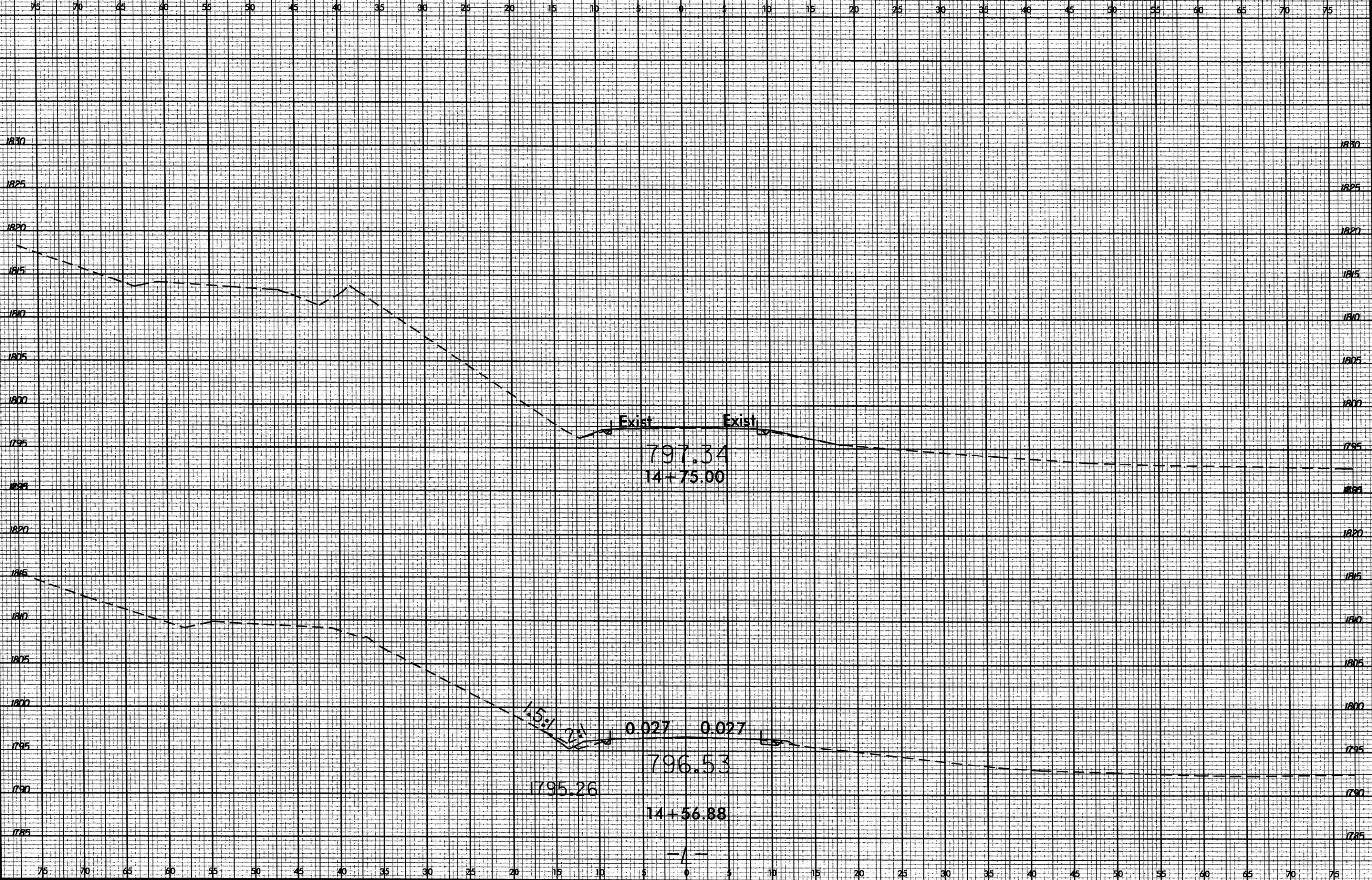


PROJ. REFERENCE NO.	SHEET NO.
B-4734	X-7



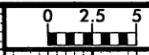
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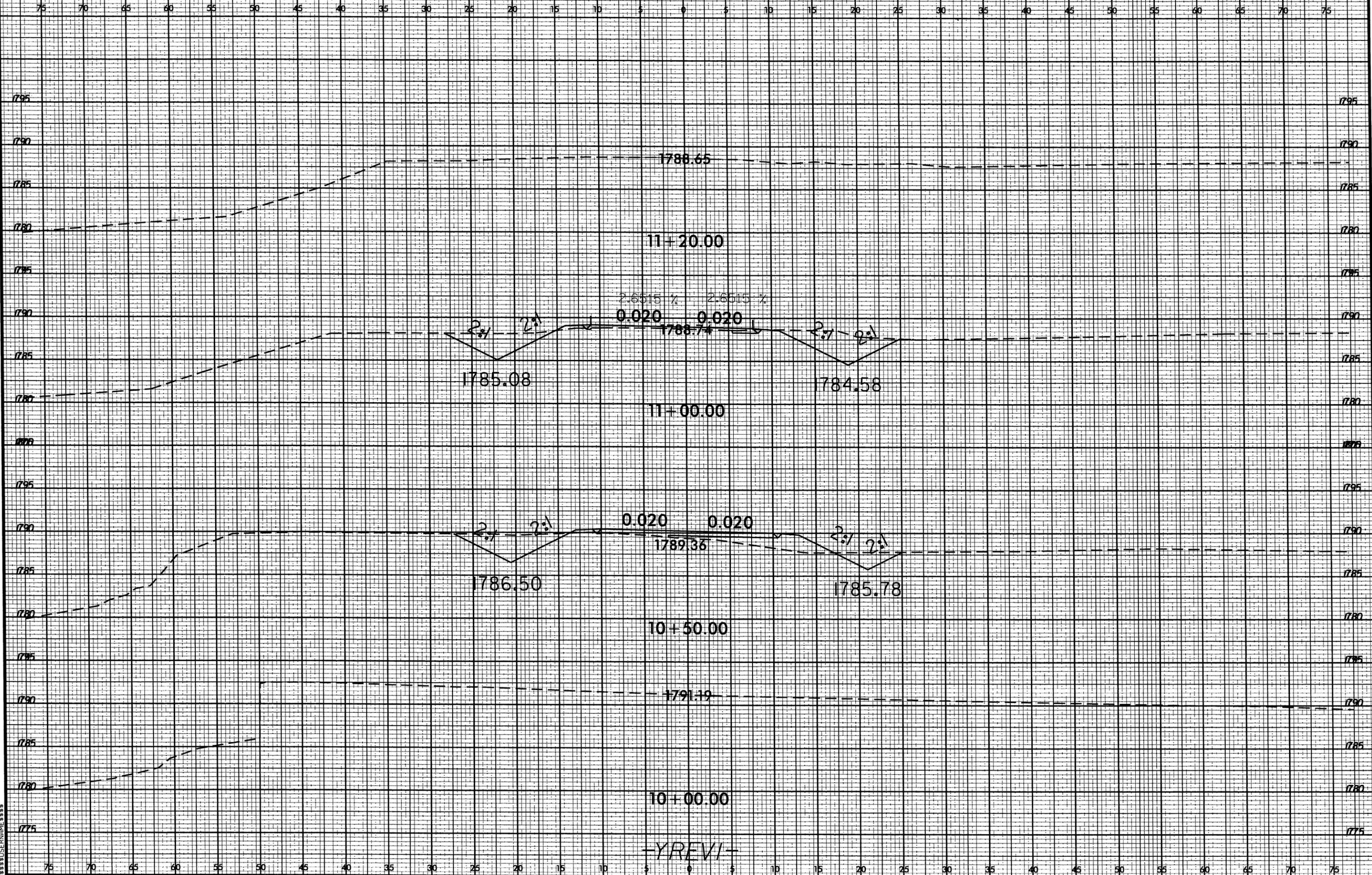
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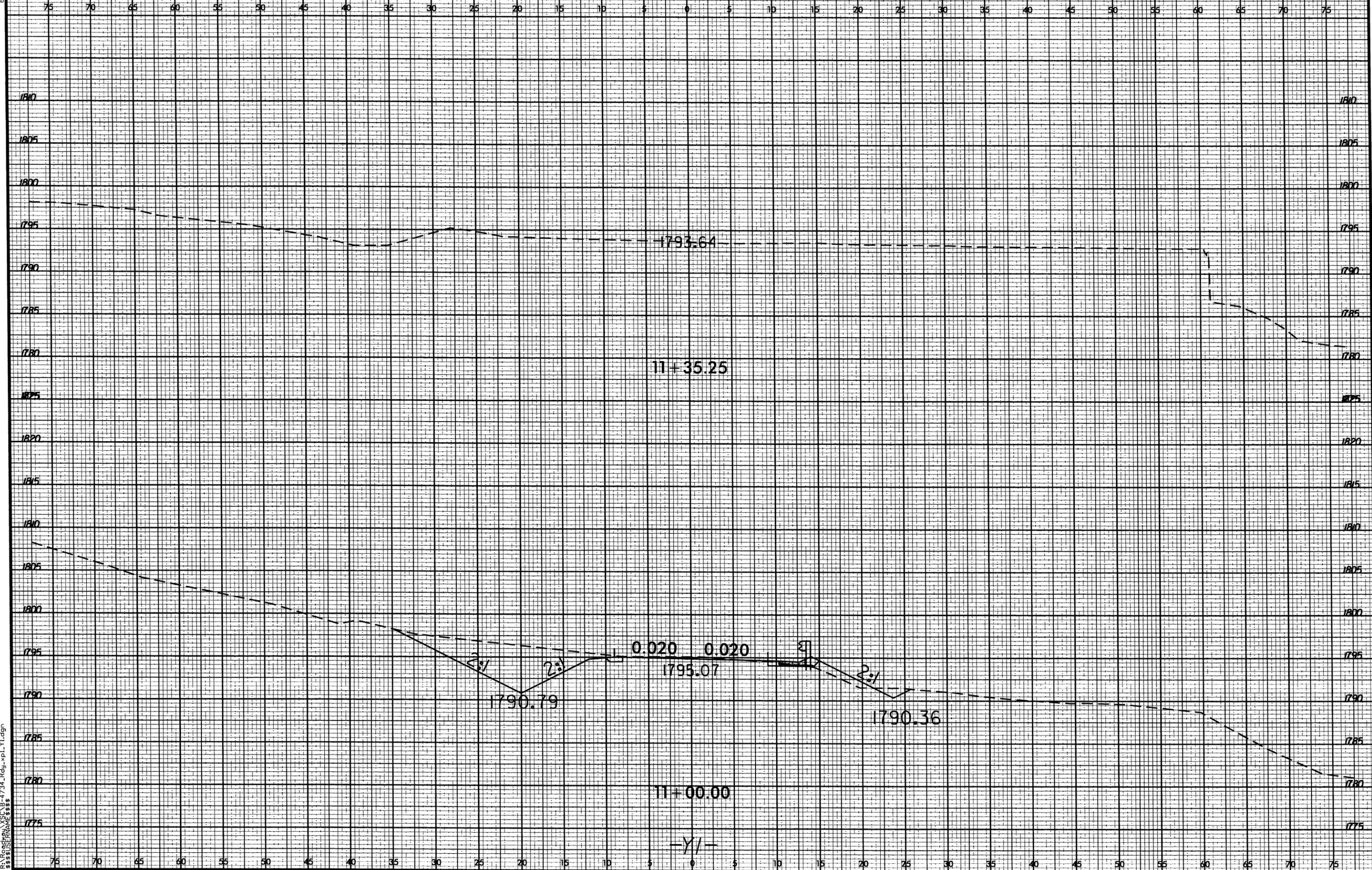
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X-9



-YREVI-

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04 SEP 2002 10:05 AM B-4734\_Rdy.plt Y1.dgn