STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

June 26, 2012

U. S. Army Corps of Engineers
Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, NC 27587

ATTN: Mr. John T. Thomas, Jr.
NCDOT Coordinator

Dear Sir:

Subject: **Application for Section 404 Nationwide Permits 23 and 13 and Section 401 Water Quality Certification** for the replacement of Bridge No. 15 over Little Yadkin River on SR 1604 (Spainhour Mill Road) in Forsyth County, Federal Aid Project No. BRZ-1604(4), Division 9, T.I.P No. B-4744.

Debit $240.00 from WBS No. 38517.1.1

The North Carolina Department of Transportation (NCDOT) proposes to replace bridge No. 15 over Little Yadkin Road on SR 1604 (Spainhour Mill Road) in Forsyth County.

An onsite detour located west of existing bridge will be used. There will be 423 feet of permanent stream impacts due to replacement of the bridge and associated roadfill. Bank stabilization accounts for 21 linear feet of stream impacts requiring no mitigation whereas the remaining 402 linear feet of stream impacts (two streams each at 215 feet and 187 feet, respectively) will require mitigation at 1:1 ratio.

Please see the enclosed copies of the Pre-Construction Notification (PCN), USACE Jurisdictional Determination Letter, Ecosystem Enhancement Program (EEP) letter, stormwater management plan, permit drawings, and design plans for the above-referenced project. The Categorical Exclusion (CE) for this project was completed in March 2010. Additional copies are available upon request.

This project let date for the project is February 19, 2013 with a review date of December 17, 2012. However, the let date may advance as additional funds become available.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
NATURAL ENVIRONMENT UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

TELEPHONE: 919-707-6000

FAX: 919-212-5785

WEBSITE: WWW.NCDOT.ORG

LOCATION:
Century Center Building B
1020 Birch Ridge Drive
Raleigh, NC 27610

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

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Greg Price at gwprice@ncdot.gov or (919) 707-6148.

Sincerely,

E. R. Lusk

for Gregory J. Thorpe, Ph.D., Manager
Project Development and Environmental Analysis Unit

cc: NCDOT Permit Application Standard Distribution List

Office Use Only:
Corps action ID no. _____
DWQ project no. _____
Form Version 1.3 Dec 10 2008

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	☒ Section 404 Permit	☐ Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 23 and 13 or General Permit (GP) number:		
1c. Has the NWP or GP number been verified by the Corps?	☐ Yes	☒ No

1d. Type(s) of approval sought from the DWQ (check all that apply):

☒ 401 Water Quality Certification – Regular ☐ Non-404 Jurisdictional General Permit

☐ 401 Water Quality Certification – Express ☐ Riparian Buffer Authorization

1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: ☐ Yes ☒ No	For the record only for Corps Permit: ☐ Yes ☒ No
1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.		☒ Yes ☐ No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.		☐ Yes ☒ No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?		☐ Yes ☒ No

2. Project Information

2a. Name of project:	Replacement of Bridge No. 15 on SR 1604 (Spainhour Mill Road) over Little Yadkin River
2b. County:	Forsyth
2c. Nearest municipality / town:	King
2d. Subdivision name:	*not applicable*
2e. NCDOT only, T.I.P. or state project no:	B-4744

3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	*not applicable*
3c. Responsible Party (for LLC if applicable):	*not applicable*
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 707-6148
3g. Fax no.:	(919) 212-5785
3h. Email address:	gwprice@ncdot.gov

4. Applicant Information (if different from owner)	
4a. Applicant is:	☐ Agent ☐ Other, specify:
4b. Name:	*not applicable*
4c. Business name (if applicable):	
4d. Street address:	
4e. City, state, zip:	
4f. Telephone no.:	
4g. Fax no.:	
4h. Email address:	
5. Agent/Consultant Information (if applicable)	
5a. Name:	*not applicable*
5b. Business name (if applicable):	
5c. Street address:	
5d. City, state, zip:	
5e. Telephone no.:	
5f. Fax no.:	
5g. Email address:	

B. Project Information and Prior Project History		
1. Property Identification		
1a. Property identification no. (tax PIN or parcel ID):	*not applicable*	
1b. Site coordinates (in decimal degrees):	Latitude: 36.255996 (DD.DDDDDD)	Longitude: - 80.442683 (-DD.DDDDDD)
1c. Property size:	4.5 acres	
2. Surface Waters		
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Little Yadkin River	
2b. Water Quality Classification of nearest receiving water:	WS IV	
2c. River basin:	Yadkin	
3. Project Description		
3a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: Land use in the project vicinity is primarily agriculture, interspersed with residential development and forestland.		
3b. List the total estimated acreage of all existing wetlands on the property: No wetlands on property		
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 520		
3d. Explain the purpose of the proposed project: To replace a structurally deficient bridge.		
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing a 3 span 136-foot bridge with a 3 span 177.5-foot bridge on the existing bridge location with an onsite detour. The new bridge will be of sufficient width to provide for two 10-foot lanes with 4-foot offsets on each side. The existing roadway will be widened to provide two 10-foot lanes with 6-foot shoulders (4 feet paved) on each side to accommodate bicycles. 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: 1 perennial stream, 2 intermittent streams	☒ Yes	☐ No ☐ Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	☐ Preliminary ☒ Final	
4c. If yes, who delineated the jurisdictional areas? Name (if known): Greg Price	Agency/Consultant Company: NCDOT Other:	
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. September 14, 2011		
5. Project History		
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	☐ Yes	☒ No ☐ Unknown
5b. If yes, explain in detail according to "help file" instructions.		
6. Future Project Plans		
6a. Is this a phased project?	☐ Yes	☒ No
6b. If yes, explain.		

C. Proposed Impacts Inventory

1. Impacts Summary

1a. Which sections were completed below for your project (check all that apply):

☐ Wetlands ☒ Streams - tributaries ☐ Buffers

☐ Open Waters ☐ Pond Construction

2. Wetland Impacts

If there are wetland impacts proposed on the site, then complete this question for each wetland area impacted.

2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	2f. Area of impact (acres)
☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
				2g. **Total wetland impacts**	

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 ☒ P ☐ T	Bank stabilization	Little Yadkin River	☒ PER ☐ INT	☒ Corps ☐ DWQ	45	7
Site 2 ☒ P ☐ T	Bank stabilization	Little Yadkin River	☒ PER ☐ INT	☒ Corps ☐ DWQ	45	7
Site 3 ☒ P ☐ T	Bank stabilization	Little Yadkin River	☒ PER ☐ INT	☒ Corps ☐ DWQ	45	7
Site 4 ☒ P ☐ T	Roadway fill	UT to Little Yadkin River	☐ PER ☒ INT	☒ Corps ☐ DWQ	1.5	215
Site 5 ☒ P ☐ T	Roadway fill	UT to Little Yadkin River	☐ PER ☒ INT	☒ Corps ☐ DWQ	3	187
				3h. **Total stream and tributary impacts**		423 Perm

3i. Comments:

4. Open Water Impacts

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

4a. Open water impact number – Permanent (P) or Temporary (T)	4b. Name of waterbody (if applicable)	4c. Type of impact	4d. Waterbody type	4e. Area of impact (acres)
O1 ☐ P ☐ T				
O2 ☐ P ☐ T				
O3 ☐ P ☐ T				
O4 ☐ P ☐ T				
			4f. Total open water impacts	X Permanent X Temporary

4g. Comments:

5. Pond or Lake Construction

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

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

5g. Comments:

5h. Is a dam high hazard permit required?	☐ Yes ☐ No If yes, permit ID no:
5i. Expected pond surface area (acres):	
5j. Size of pond watershed (acres):	
5k. Method of construction:	

6. Buffer Impacts (for DWQ)

If project will impact a protected riparian buffer, then complete the chart below. If yes, then individually list all buffer impacts below. If any impacts require mitigation, then you **MUST** fill out Section D of this form.

6a. Project is in which protected basin?			☐ Neuse ☐ Catawba	☐ Tar-Pamlico ☐ Randleman	☐ Other:
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
B1 ☐ P ☐ T			☐ Yes ☐ No		
B2 ☐ P ☐ T			☐ Yes ☐ No		
B3 ☐ P ☐ T			☐ Yes ☐ No		
			6h. **Total buffer impacts**		
6i. Comments:					

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 replacement will take place on existing alignment and is longer, completely spanning Little Yadkin River. The number of bents in water will be reduced from 2 bents to 0 bents. Temporary access in Little Yadkin River is not necessary to remove existing bridge or to construct the proposed bridge.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. NCDOT will use Best Management Practices for Bridge Demolition and Removal as well as Best Management Practices for the Protection of Surface Waters.		
2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State		
2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	☒ Yes ☐ No If no, explain:	
2b. If yes, mitigation is required by (check all that apply):	☒ DWQ ☒ Corps	
2c. If yes, which mitigation option will be used for this project?	☐ Mitigation bank ☒ Payment to in-lieu fee program ☐ Permittee Responsible Mitigation	
3. Complete if Using a Mitigation Bank		
3a. Name of Mitigation Bank: not applicable		
3b. Credits Purchased (attach receipt and letter)	Type	Quantity
3c. Comments:		
4. Complete if Making a Payment to In-lieu Fee Program		
4a. Approval letter from in-lieu fee program is attached.	☒ Yes	
4b. Stream mitigation requested:	402 linear feet at 1:1 mitigation ratio per discussion with USACE from JD visit	
4c. If using stream mitigation, stream temperature:	☒ warm ☐ cool ☐ cold	
4d. Buffer mitigation requested (DWQ only):		
4e. Riparian wetland mitigation requested:	acres	
4f. Non-riparian wetland mitigation requested:	acres	
4g. Coastal (tidal) wetland mitigation requested:	acres	
4h. Comments:		
5. Complete if Using a Permittee Responsible Mitigation Plan		
5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.		

6. **Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ**				
6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?			☐ Yes	☒ No
6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation. Calculate the amount of mitigation required.				
Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1			3 (2 for Catawba)	
Zone 2			1.5	
	6f. **Total buffer mitigation required:**			
6g. If buffer mitigation is required, discuss what type of mitigation is proposed (e.g., payment to private mitigation bank, permittee responsible riparian buffer restoration, payment into an approved in-lieu fee fund).				
6h. Comments:				

E. Stormwater Management and Diffuse Flow Plan (required by DWQ)	
1. Diffuse Flow Plan	
1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?	☐ Yes ☒ No
1b. If yes, then is a diffuse flow plan included? If not, explain why. Comments:	☐ Yes ☐ No
2. Stormwater Management Plan	
2a. What is the overall percent imperviousness of this project?	N/A
2b. Does this project require a Stormwater Management Plan?	☒ Yes ☐ No
2c. If this project DOES NOT require a Stormwater Management Plan, explain why:	
2d. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan: See attached permit drawings.	
2e. Who will be responsible for the review of the Stormwater Management Plan?	☐ Certified Local Government ☐ DWQ Stormwater Program ☒ DWQ 401 Unit
3. Certified Local Government Stormwater Review	
3a. In which local government's jurisdiction is this project?	not applicable
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	☐ Phase II ☐ NSW ☐ USMP ☐ Water Supply Watershed ☐ Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	☐ Coastal counties ☐ HQW ☐ ORW ☐ Session Law 2006-246 ☐ Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☒ No
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	☐ Yes ☐ No N/A
5b. Have all of the 401 Unit submittal requirements been met?	☐ Yes ☐ No N/A

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

5. Endangered Species and Designated Critical Habitat (Corps Requirement)		
5a. Will this project occur in or near an area with federally protected species or habitat?	☐ Yes	☒ No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts? No habitat for any of the listed species.	☐ Yes	☒ No
5c. If yes, indicate the USFWS Field Office you have contacted.	☐ Raleigh ☐ Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? USFWS county list and NCNHP database along with field surveys.		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	☐ Yes	☒ No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index		
7. Historic or Prehistoric Cultural Resources (Corps Requirement)		
7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)?	☐ Yes	☒ No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation		
8. Flood Zone Designation (Corps Requirement)		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	☐ Yes	☒ No
8b. If yes, explain how project meets FEMA requirements: NCDOT Hydraulics Unit coordination with FEMA		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		

Dr. Gregory J. Thorpe, Ph D Applicant/Agent's Printed Name	E. L. Lusk Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	6·26·12 Date

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. **201101703** County: **Forsyth** U.S.G.S. Quad: **Pinnacle**

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner/Agent: **Greg Price**
Address: **NC DOT**
1598 Mail Service Center
Raleigh, NC 27699-1598
Telephone No.: **919 715-7217**

Property description:
Size (acres)
Nearest Waterway **Little Yadkin River**
USGS HUC **03040101**
Nearest Town **King**
River Basin **Yadkin River**
Coordinates N **36.2558419** W **-80.4428897**
Location description **Bridge #15 on SR 1604 adjacent to Little Yadkin River, west of King, in Forsyth County, North Carolina. TIP B-4744.**

Indicate Which of the Following Apply:

A. Preliminary Determination

_ Based on preliminary information, there may be wetlands on the above described property. We strongly suggest you have this property inspected to determine the extent of Department of the Army (DA) jurisdiction. To be considered final, a jurisdictional determination must be verified by the Corps. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331).

B. Approved Determination

_ There are Navigable Waters of the United States within the above described property subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

X There are waters of the U.S. including wetlands on the above described project area subject to the permit requirements of Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ We strongly suggest you have the wetlands on your property delineated. Due to the size of your property and/or our present workload, the Corps may not be able to accomplish this wetland delineation in a timely manner. For a more timely delineation, you may wish to obtain a consultant. To be considered final, any delineation must be verified by the Corps.

X The waters of the U.S. including wetland on your project area have been delineated and the delineation has been verified by the Corps. We strongly suggest you have this delineation surveyed. Upon completion, this survey should be reviewed and verified by the Corps. Once verified, this survey will provide an accurate depiction of all areas subject to CWA jurisdiction on your property which, provided there is no change in the law or our published regulations, may be relied upon for a period not to exceed five years.

_ The wetlands have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on _____. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ There are no waters of the U.S., to include wetlands, present on the above described property which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in Washington, NC, at (252) 946-6481 to determine their requirements.

Action ID: _____

Placement of dredged or fill material within waters of the US and/or wetlands without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). If you have any questions regarding this determination and/or the Corps regulatory program, please contact **John Thomas** at **919 554-4884 ext. 25**.

C. Basis For Determination

Stream channels within your project site which are tributaries of Little Yadkin River which flows into the Yadkin River and the Atlantic Ocean. .

D. Remarks

E. Appeals Information (This information applies only to approved jurisdictional determinations as indicated in B. above)

This correspondence constitutes an approved jurisdictional determination for the above described site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

District Engineer, Wilmington Regulatory Division
Attn:Jean Gibby, Project Manager,
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the District Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by **November 14, 2011**.

It is not necessary to submit an RFA form to the District Office if you do not object to the determination in this correspondence.

Corps Regulatory Official: _____

Date **09/14/2011** Expiration Date **09/14/2016**

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at our website at http://regulatory.usacesurvey.com/ to complete the survey online.

Copy furnished:

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL		
Applicant: NC DOT / Greg Price/ B-4744	File Number: SAW 2011 01703	Date: September 14 2011
Attached is:		See Section below
☐ INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
☐ PROFFERED PERMIT (Standard Permit or Letter of permission)		B
☐ PERMIT DENIAL		C
☒ APPROVED JURISDICTIONAL DETERMINATION		D
☐ PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the district engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: John Thomas @ 919 554-4884 ext. 25	If you only have questions regarding the appeal process you may also contact: Mr. Mike Bell, Administrative Appeal Review Officer CESAD-ET-CO-R U.S. Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 9M15 Atlanta, Georgia 30303-8801

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

For appeals on Initial Proffered Permits and approved Jurisdictional Determinations send this form to:

District Engineer, Wilmington Regulatory Division, Attn:Jean Gibby, Project Manager, Raleigh Regulatory Field Office, 3331 Heritage Trade Drive , Suite 105, Raleigh, North Carolina 27587

For Permit denials and Proffered Permits send this form to:

Division Engineer, Commander, U.S. Army Engineer Division, South Atlantic, Attn: Mr. Mike Bell, Administrative Appeal Officer, CESAD-ET-CO-R, 60 Forsyth Street, Room 9M15, Atlanta, Georgia 30303-8801

Ecosystem enhancement PROGRAM

June 7, 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-4744, Replace Bridge Number 15 on SR 1604 over the Little Yadkin River, Forsyth 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 June 5, 2012, the impacts are located in CU 03040101 of the Yadkin River basin in the Central Piedmont (CP) Eco-Region, and are as follows:

Yadkin 03040101 CP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	402	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 919-715-1929.

Sincerely,

James B. Stanfill for

Michael Ellison
EEP Deputy Director

cc: Mr. John Thomas, USACE – Raleigh Regulatory Field Office
Mr. David Wainwright, Division of Water Quality, Wetlands/401 Unit
File: B-4744

NCDOT Highway Stormwater Program

Released: July 2010 (DRAFT)

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

Version 1.1

Page of

General Project Information

Project No.:	B-4744		**Date:**	19-Mar-12			
City/Town:	Tobaccoville		**Designer:**	Stephen Sykes			
County(ies):	Forsyth County		**Project Manager:**	Jay Twisdale, Jr., P.E.			
River Basin(s):	**Yadkin-Pee Dee**		**CAMA County?**	no	**TVA County?**	no	
Primary Receiving Water:	Little Yadkin River		**NCDWQ Stream Index:**	12-77			
NCDWQ Surface Water Classification for Primary Receiving Water		**Primary:**	Water Supply IV (WS-IV)				
		Supplemental:					
Other Stream Classification:							
303(d) Stream?	no	**Type(s) of Impairment:**					
State Stormwater Permit Required?	no	**If yes, why?**					
Could the Project Impact Threatened or Endangered Species?			no				
Description:							
Anadromous Fish Present?	**no**						
Description:							
Buffer Rules in Effect?	no		**Buffer Rules:**				

Existing Site

Description of Existing Project Area:	Rural, Forsyth County
Average Daily Traffic (existing):	adt=1200 vpd (2013)
Existing Cross Section:	two way-two lane with 9' lanes and 2-3' soft shoulders
Surrounding Land Use:	woods, some agricultural and rural yard
General Comments:	

Project Description

Description of Proposed Project:	Grading, paving, drainage and structure			
Average Daily Traffic (proposed):	adt=1800 vpd (2035)			
Proposed Cross-Section:	2 way-2 lane with 10' lanes and 6' shoulders (4' paved)			
Interchange Modification:	no	**Median Type:**		
Terminus:	Project begins on SR 1604(Spainhour Mill Road) on the north side of the bridge at -L- Sta 13+20 and heads south			
Terminus:	Project ends on SR 1604(Spainhour Mill Road) on the south side of the bridge. at -L- Sta. 23+00			
Project Length (lin. miles/feet):	0.186 mi/980'	**Added Impervious Area (ac.):**	0.3 Ac.	
General Comments:				

NCDOT Highway Stormwater Program

Released: July 2010 (DRAFT)

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

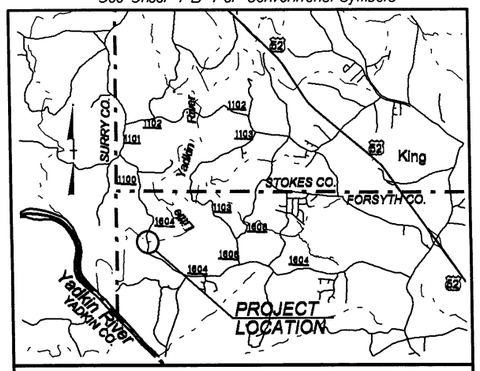
Version 1.1

Environmental Summary

Riparian Buffer and Jurisdictional Stream Impacts and Associated SCMs

Station	Stream Name	Stream Type	Jurisdict. Stream	Buffer?	Classific-ation?	Proposed Structure	SCM Type	Checklist Complete?	DA (ac.)	Q_2 (ft^3/s)	Q_{10} (ft^3/s)	WQv^c (ft^3)
L STA. 17+86.5	LITTLE YADKIN RIVER	Perennial	RPW	No	Water Supply IV (WS-IV)	bridge	no	yes				

General Comments:



09/08/99

TIP PROJECT: B-4744

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

VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

FORSYTH COUNTY

LOCATION: BRIDGE #15 OVER LITTLE YADKIN RIVER ON SR 1604 (SPAINHOUR MILL RD.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4744	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
38517.1.1	BRZ-1604(4)	P.E.
38517.2.1	BRZ-1604(4)	R/W, UTIL

Permit Drawing
Sheet 1 of 7

WETLAND/SURFACE WATER PERMIT DWG.

DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE K-VALUES AND ASSOCIATED NIGHTTIME SSD.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:

GRAPHIC SCALES

DESIGN DATA

ADT 2013 = 1200 VPD
ADT 2035 = 1800 VPD
DHV = 12 %
D = 65 %
T = 12 % *
V = 40 MPH
V_{DET} = 35 MPH
* TTST 2 % DUAL 10 %
FUNC CLASS = COLLECTOR
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4744 = 0.163 MI
LENGTH STRUCTURE TIP PROJECT B-4744 = 0.034 MI
TOTAL LENGTH OF TIP PROJECT B-4744 = 0.197 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JANUARY 13, 2012

LETTING DATE: FEBRUARY 19, 2013

JAMES A. SPEER, PE
PROJECT ENGINEER

ALLISON K. WHITE
PROJECT DESIGN ENGINEER

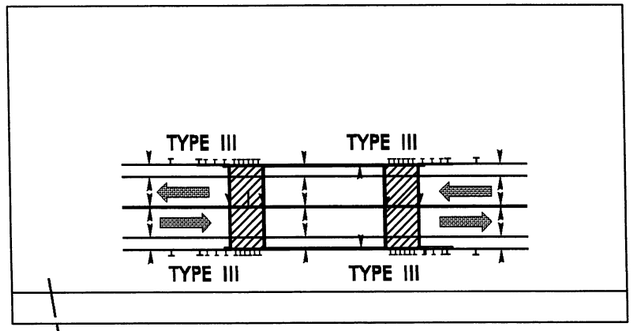
HYDRAULICS ENGINEER

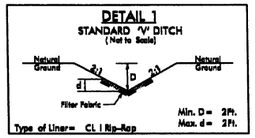
SIGNATURE: P.E.

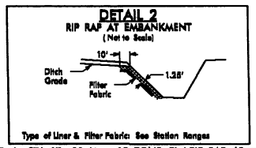
ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

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







PROJECT REFERENCE NO.	SHEET NO.
B-4744	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS

ROW REVISION – MSH 3/18/12 – PARCEL 4 – CHANGED PROPERTY LINE – TO STA 20+00 – PARCEL 3200

ROW REVISION – MS 3/15/12 – PARCEL 5 – COMBINED PARCEL 5 WITH PARCEL 3

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

DETAIL 1
STANDARD 'V' DITCH
(Not to Scale)

Min. D = 2Ft.
Max. d = 2Ft.

Type of Liner = CL I Rip-Rap

FROM -L- STA. 16+85 TO STA. 17+43 Lt.
FROM -L- STA. 18+31 TO STA. 19+75 Lt.

DETAIL 2
RIP RAP AT EMBANKMENT
(Not to Scale)

Type of Liner & Filter Fabric: See Station Ranges

AT -L- STA. 17+50 Lt. 15 TONS CL I RIP RAP; 65 sy FF
AT -L- STA. 18+25 Lt. 12 TONS CL I RIP RAP; 40 sy FF

NOTE:
THE EXISTING DITCH FROM -L- STA 20+44 to 22+53 LT (SITE 4) WILL BE FILLED IN DUE TO ROADWAY WIDENING.
A NEW DITCH WILL BE CONSTRUCTED APPROXIMATELY 7 FEET AWAY FROM THE EXISTING DITCH.

Permit Drawing
Sheet 2 of 7

100' 0' 100'
GRAPHIC SCALE

▨ DENOTES IMPACTS IN SURFACE WATER

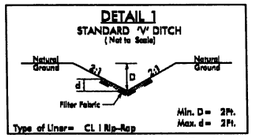
NOTE:
SEE SHEET NO. 5 FOR -DET- ALIGNMENT
SEE SHEET NO. 6 PROFILES
SEE SHEET NO. 2-B FOR DRIVEWAY DETAILS

PROJECT REFERENCE NO.	SHEET NO.
B-4744	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/95

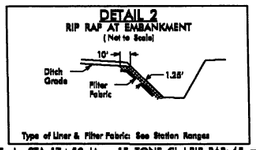
DETAIL 1
STANDARD "V" DITCH
(Not to Scale)



Type of Liner = CL I Rip-Rap Min. D = 2Ft. Max. d = 3Ft.

FROM -L- STA. 16+88 TO STA. 17+43 Lt.
FROM -L- STA. 18+31 TO STA. 19+75 Lt.

DETAIL 2
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner & Filter Fabric See Station Ranges

AT -L- STA. 17+50 Lt. 15 TONS CL I RIP RAP; 65 sy FF
AT -L- STA. 18+25 Lt. 12 TONS CL I RIP RAP; 40 sy FF

NOTE:
THE EXISTING DITCH FROM -L- STA 20+44 to 22+53 LT (SITE 4) WILL BE FILLED IN DUE TO ROADWAY WIDENING.
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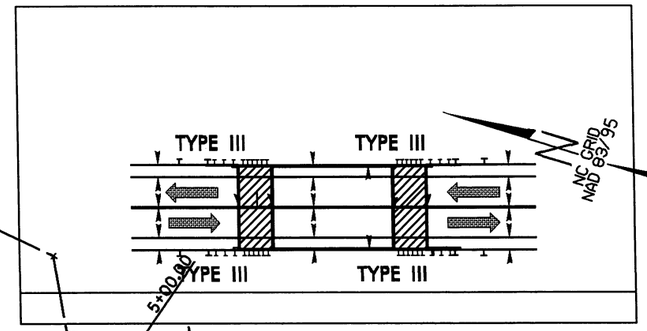
Permit Drawing
Sheet 3 of 7



IMPACTS IN SURFACE WATER SITE 1

IMPACTS IN SURFACE WATER SITE 2

IMPACTS IN SURFACE WATER SITE 4

IMPACTS IN SURFACE WATER SITE 3

NOAH GATES AND WIFE BETH GATES DB 2078 PG 3442 (1)

STEVEN K. ABEE AND WIFE SUSAN R. WINKLER-ABEE DB 2965 PG 3875

JOE SPANGLER AND WIFE JANET M. SPANGLER DB 1326 PG 19

JOE SPANGLER AND WIFE JANET M. SPANGLER DB 1935 PG 540 (2)

STEVEN K. ABEE AND WIFE SUSAN R. WINKLER-ABEE DB 2965 PG 3875 (3)

STEVEN K. ABEE AND WIFE SUSAN RENEE WINKLER-ABEE DB 2909 PG 3539

SANDRA M. RANNELLS DB 2872 PG 2389 (4)

DALLAS W. BUTNER AND SHERRY W. BUTNER DB 2447 PG 1457

100' 0' 100'
GRAPHIC SCALE

DENOTES IMPACTS IN SURFACE WATER

NOTE:
SEE SHEET NO. 5 FOR -DET- ALIGNMENT
SEE SHEET NO. 6 PROFILES
SEE SHEET NO. 2-B FOR DRIVEWAY DETAILS

REVISIONS
8/17/99
ROW REVISION - MS 3/15/12 - PARCEL 5 - COMBINED PARCEL 5
ROW REVISION - MW 1/18/12 - PARCEL 14 - CHANGED PROPERTY OWNERNAME-TO SANDRA M. RANNELLS 3200

8/17/99

REVISIONS

ROW REVISION - AKW 1/27/12 - PARCEL 1 - CHANGED TIE TO TCE FROM LT -L- STA 13+22.00 TO 16+32.00

PROJECT REFERENCE NO.	SHEET NO.
B-4744	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DETOUR

NAD 83/95

NOTE:
THE EXISTING DITCH FROM -L- STA 20+44 to 22+53 LT (SITE 4) WILL BE FILLED IN DUE TO ROADWAY WIDENING.
A NEW DITCH WILL BE CONSTRUCTED APPROXIMATELY 7 FEET AWAY FROM THE EXISTING DITCH.

Permit Drawing
Sheet 4 of 7

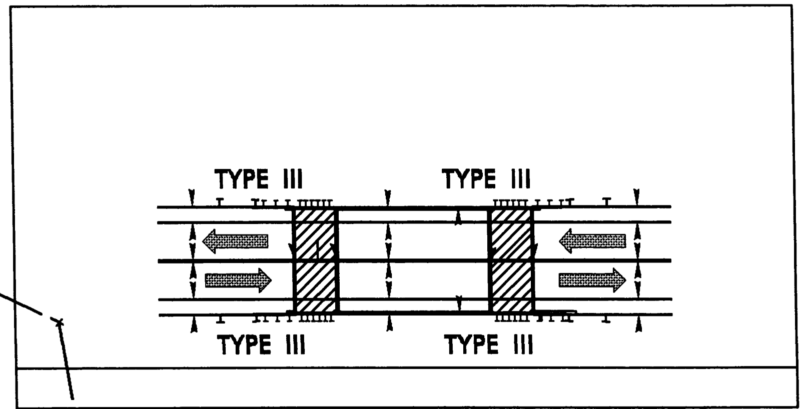
▨ DENOTES IMPACTS IN SURFACE WATER

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

PROJECT REFERENCE NO.	SHEET NO.
B-4744	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

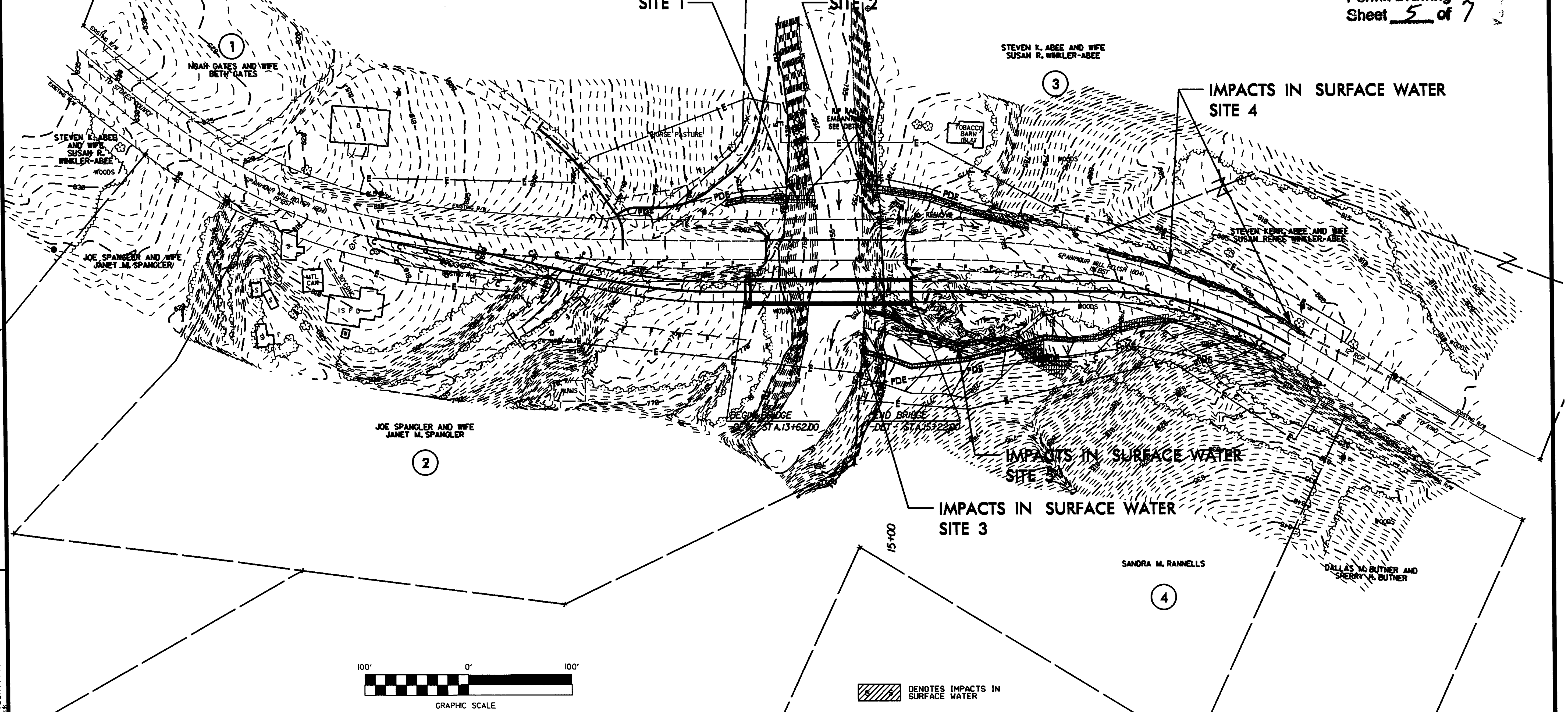
DETOUR



NAD 83/95

NOTE:
THE EXISTING DITCH FROM -L- STA 20+44 to 22+53 LT (SITE 4) WILL BE FILLED IN DUE TO ROADWAY WIDENING.
A NEW DITCH WILL BE CONSTRUCTED APPROXIMATELY 7 FEET AWAY FROM THE EXISTING DITCH.

Permit Drawing
Sheet 5 of 7



IMPACTS IN SURFACE WATER SITE 1
IMPACTS IN SURFACE WATER SITE 2
IMPACTS IN SURFACE WATER SITE 4
IMPACTS IN SURFACE WATER SITE 5
IMPACTS IN SURFACE WATER SITE 3
NOAH GATES AND WIFE BETH GATES
STEVEN K. ABEE AND WIFE SUSAN R. WINKLER-ABEE
JOE SPANGLER AND WIFE JANET M. SPANGLER
SANDRA M. RANNELLS
DALLAS M. BUTNER AND SHERRY H. BUTNER
HORSE PASTURE
TOBACCO BARN
WOODS
BEGIN BRIDGE -DET- STA.13+62.00
END BRIDGE -DET- STA.15+22.00
15+00
100' 0' 100'
GRAPHIC SCALE
DENOTES IMPACTS IN SURFACE WATER

NOTE:
SEE SHEET NO. 5 FOR -DET- ALIGNMENT
SEE SHEET NO. 6 PROFILES
SEE SHEET NO. 2-B FOR DRIVEWAY DETAILS

PROJECT REFERENCE NO.	SHEET NO.
B-4744	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PROPERTY OWNERS

NAMES AND ADDRESSES

Permit Drawing
Sheet 6 of 7

PARCEL NO.	NAMES	ADDRESSES
3	STEVEN K. ABEE & SUSAN R. WINKLER ABEE	P.O. BOX 69 TOBACCOVILLE NC 27050

PARCEL NO.	NAMES	ADDRESSES

5/14/9

$$$$SYSTIME$$$$
$$$$USERNAME$$$$

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS						SURFACE WATER IMPACTS				
			CAMA Permanent Fill In Wetlands (ac)	404 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	17+50 Lt	Bank Stabilzation							<0.01		7		
2	18+25 Lt	Bank Stabilization							<0.01		7		
3	18+20 Rt	Bank Stabilization							<0.01		7		
4	20+45 - 22+53 Lt	Roadway Fill							0.01		215		
5	18+24 - 20+00 Rt	Roadway Fill							0.01		187		
TOTALS:			0	0	0	0	0	0	0.03	0	423	0	0

NOTE:

1. Temporary impact for on-site detour bridge substructure: 20 sq. ft.

N.C.D.O.T.
DIVISION OF HIGHWAYS
Forsyth County
PROJECT: 38517.1.1 (B-4744)
Bridge #15 Over Little Yadkin River
on SR 1604 (Spainhour Mill Rd.)

(05/29/2012)

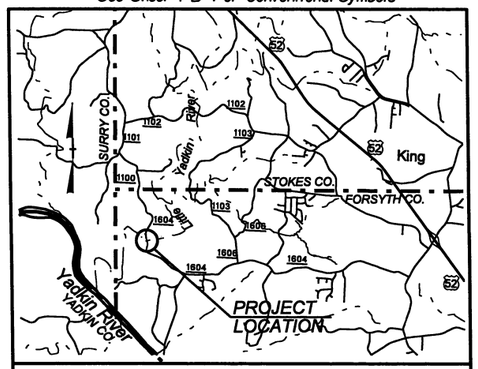
ATN Revised 3/31/05

09/08/99

TIP PROJECT: B-4744

CONTRACT:

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

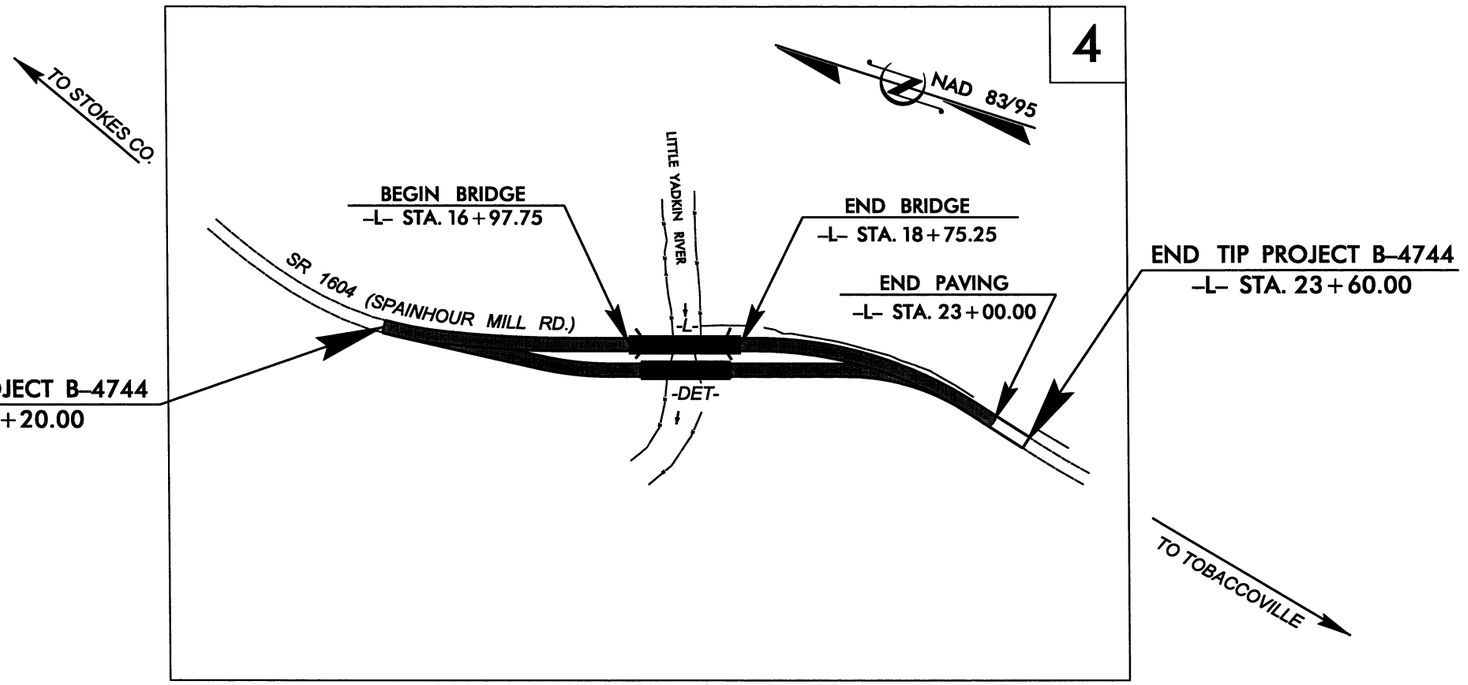
FORSYTH COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4744	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
38517.1.1	BRZ-1604(4)	P.E.
38517.2.1	BRZ-1604(4)	R/W, UTIL

LOCATION: BRIDGE #15 OVER LITTLE YADKIN RIVER ON SR 1604 (SPAINHOUR MILL RD.)

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE



DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE K-VALUES AND ASSOCIATED NIGHTTIME SSD.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2013 = 1200 VPD
ADT 2035 = 1800 VPD
DHV = 12 %
D = 65 %
T = 12 % *
V = 40 MPH
V_{DET} = 35 MPH
* TTST 2 % DUAL 10 %
FUNC CLASS = COLLECTOR
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4744 = 0.163 MI
LENGTH STRUCTURE TIP PROJECT B-4744 = 0.034 MI
TOTAL LENGTH OF TIP PROJECT B-4744 = 0.197 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JANUARY 13, 2012

LETTING DATE: FEBRUARY 19, 2013

JAMES A. SPEER, PE
PROJECT ENGINEER

ALLISON K. WHITE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

12-JAN-2012 11:24
R:\Roadway\Proj\b4744_rdy_tsh.dgn
$$$$USERNAME$$$$

04/16/11

PROJECT REFERENCE NO.	SHEET NO.
B-4744	1-B

Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — IP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Known Soil Contamination: Area or Site
- Potential Soil Contamination: Area or Site

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign
- Well
- 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 — FWA
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line
- Proposed Right of Way Line with Iron Pin and Cap Marker
- Proposed Right of Way Line with Concrete or Granite R/W Marker
- Proposed Control of Access Line with Concrete C/A Marker
- Existing Control of Access
- Proposed Control of Access
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — HH
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

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

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-4744	1C
Location and Surveys	

SURVEY CONTROL SHEET B-4744

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
3	BL-3	915941.6570	1574595.8920	834.78	OUTSIDE PROJECT LIMITS	
2	B4744-2	915619.4000	1574542.7690	814.25	13+42.21	37.97 LT
1	B4744-1	915101.7460	1574662.4140	781.33	18+81.76	15.37 LT
4	BL-4	914637.0070	1574660.2250	807.63	23+45.72	19.50 LT
5	BL-5	914260.9460	1574667.5820	836.51	OUTSIDE PROJECT LIMITS	

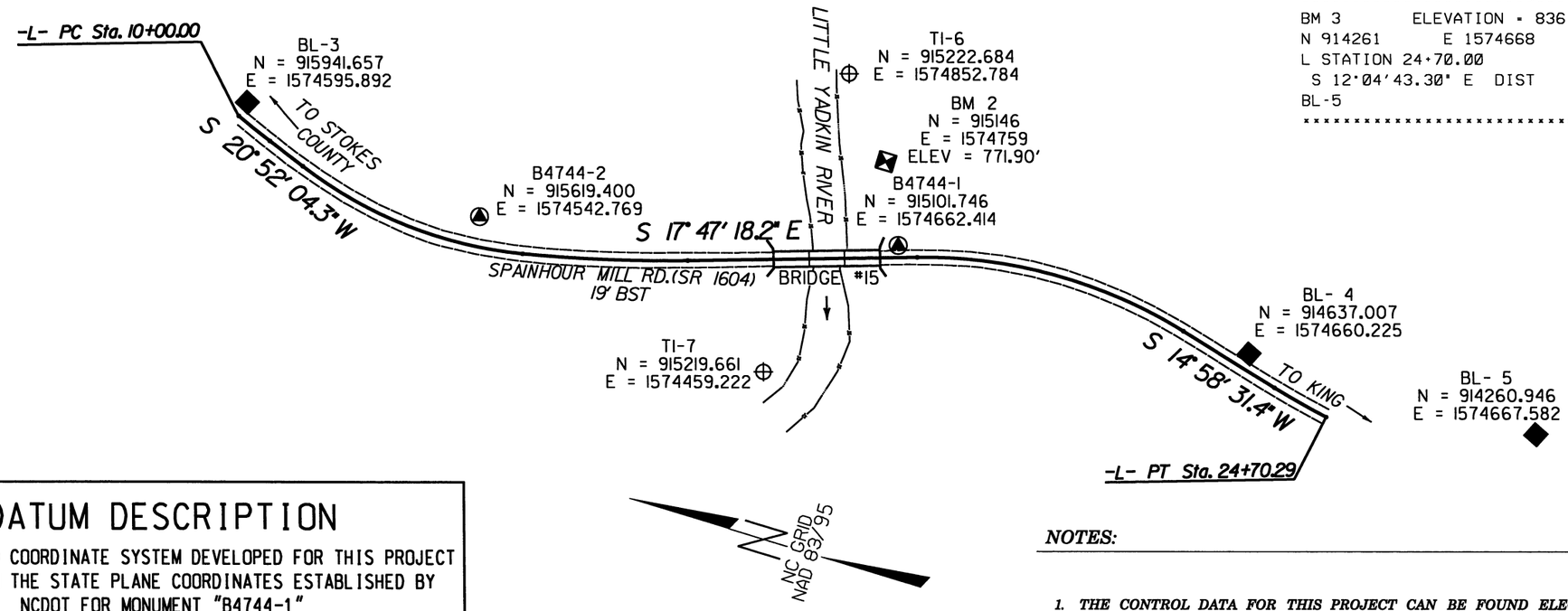
T-LINE

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
6	T1-6	915222.6840	1574852.7840	767.42	18+24.76	233.59 LT
7	T1-7	915219.6610	1574459.2220	768.75	17+07.41	142.08 RT

```
**************************************
BM 1       ELEVATION = 834.78
N 915942       E 1574596
L STATION 10+00.00 TO BM1
 S 74°41'16.23" E  DIST   20.36'
BL-3
**************************************

**************************************
BM 2       ELEVATION = 771.90
N 915146       E 1574759
L STATION 18+69.00 122 LEFT
R/R SPIKE SET IN BASE OF 48" FORKED
SYCAMORE NEAR BLOCK TOBACCO BARN
**************************************

**************************************
BM 3       ELEVATION = 836.51
N 914261       E 1574668
L STATION 24+70.00
 S 12°04'43.30" E  DIST    266.00'
BL-5
**************************************
```



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4744-1"
WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
NORTHING: 915101.746(ft) EASTING: 1574662.414(ft)
ELEVATION: 781.33(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99999404
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4744-1" TO -L- STATION 10+00.00 IS
N 5°49'12.19" W 849.67'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

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/

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   B4744_LS_CONTROL_110113.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

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6/2/99

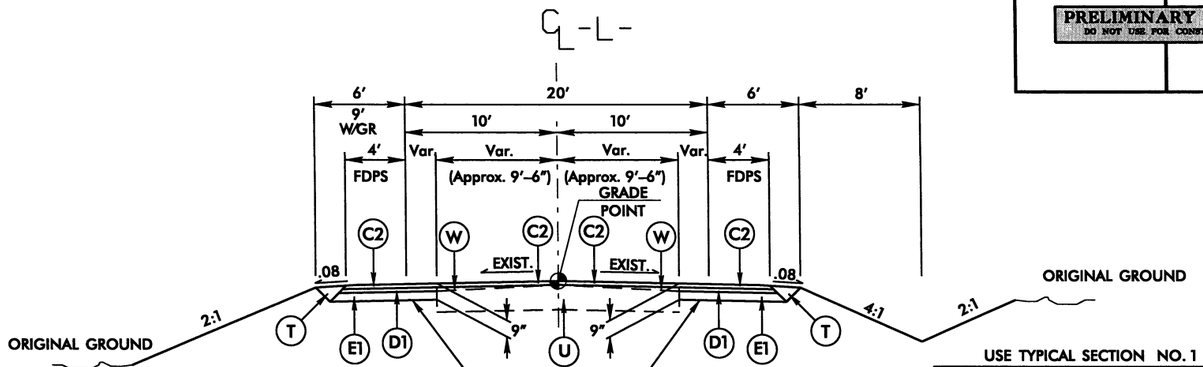
PROJECT REFERENCE NO.	SHEET NO.
B-4744	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE

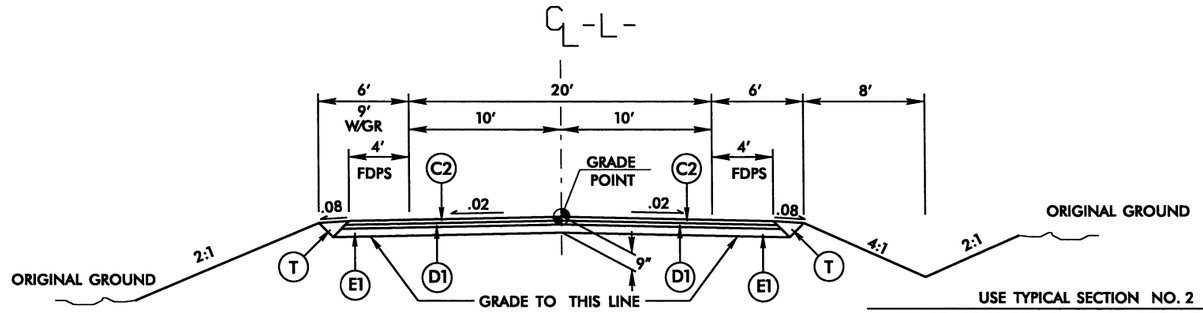
C1	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1.5" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2.5" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 4" IN DEPTH OR GREATER THAN 5.5" IN DEPTH.
J1	PROP. 6" AGGREGATE BASE COURSE.
J2	PROP. 8" AGGREGATE BASE COURSE.
P	PRIME COAT AT THE RATE OF .35 GAL PER SQ. YD.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL NO. 1)

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



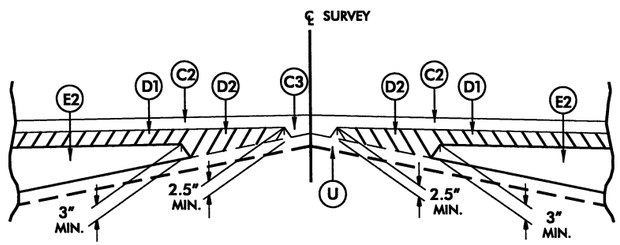
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
-L- STA. 13+20.00 TO -L- STA. 15+00.00
-L- STA. 21+75.00 TO -L- STA. 23+00.00



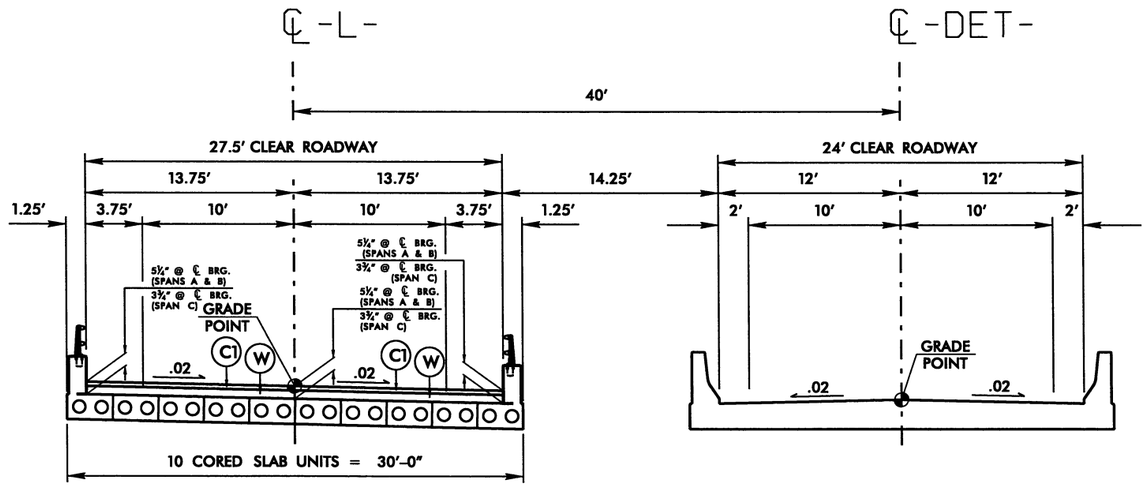
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
-L- STA. 15+00.00 TO -L- STA. 16+97.75 (BEGIN BRIDGE)
-L- STA. 18+75.25 (END BRIDGE) TO -L- STA. 21+75.00



Detail Showing Method of Wedging

DETAIL 1



TYPICAL SECTION ON STRUCTURE

BEGIN BRIDGE -L- STA. 16+97.75 TO END BRIDGE -L- STA. 18+75.25

TYPICAL SECTION ON DETOUR STRUCTURE

BEGIN BRIDGE -L- STA. 13+62.00 TO END BRIDGE -L- STA. 15+22.00

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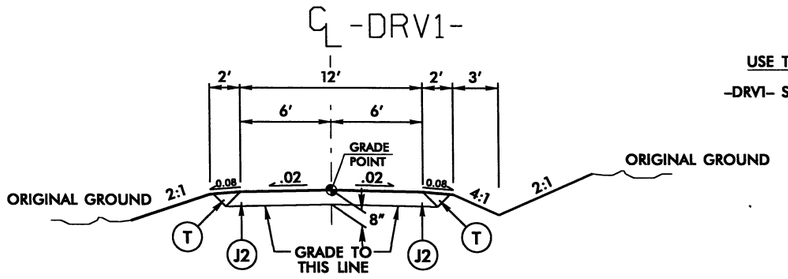
PROJECT REFERENCE NO.	SHEET NO.
B-4744	2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

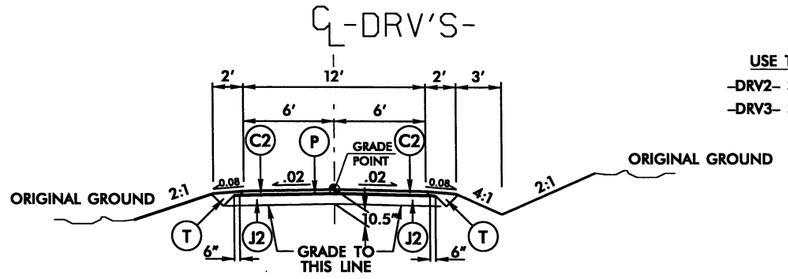
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

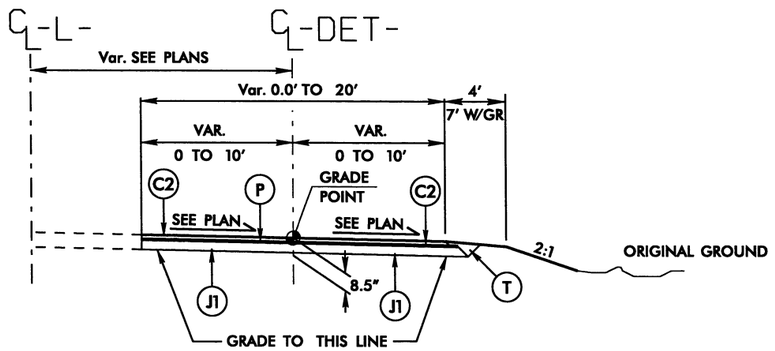
-DRV1- STA. 10+10.00 TO 11+00.00



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

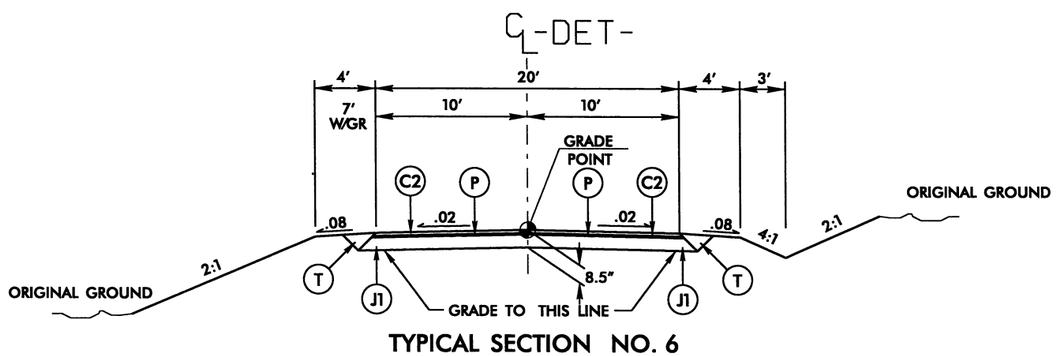
-DRV2- STA. 10+65.00 TO 11+33.66
-DRV3- STA. 10+06.00 TO 11+90.00



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5

-DET- STA. 11+10.00 TO STA. 11+73.85
-DET- STA. 17+23.95 TO STA. 18+98.45



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6

-DET- STA. 11+73.85 TO BEGIN TEMP BRDG 13+62.00
END TEMP BRDG 15+22.00 TO-L- STA. 17+23.95

PAVEMENT SCHEDULE	
C1	1.25" SF9.5A
C2	2.5" SF9.5A
C3	VAR. SF9.5A
D1	2.5" I19.0B
D2	VAR. I19.0B
E1	4" B25.0B
E2	VAR. B25.0B
J1	6" ABC
J2	8" ABC
P	PRIME COAT
T	EARTH MATERIAL
U	EXIST PAVEMENT
W	WEDGING

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-4744	2-B

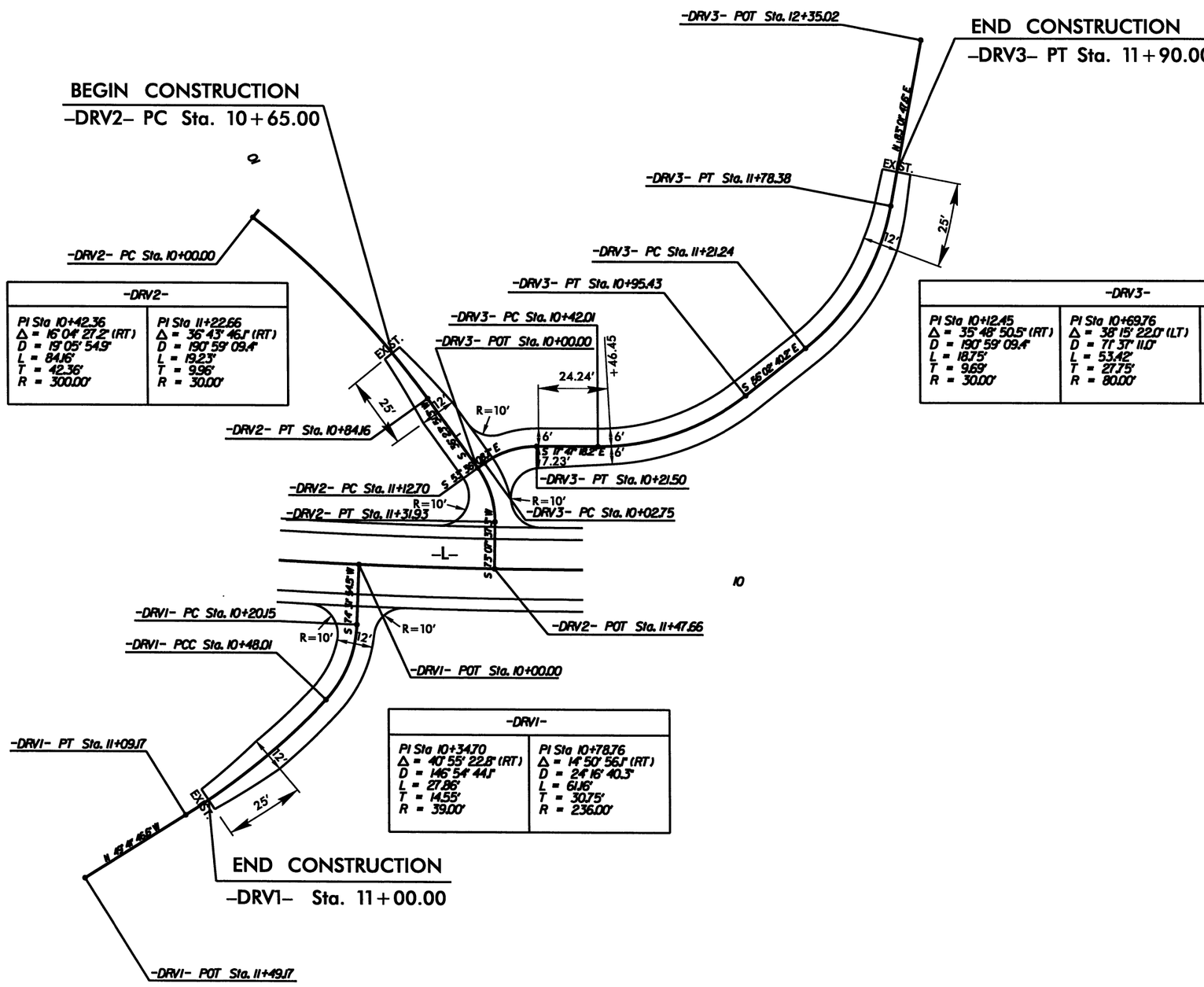
ROADWAY DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

20' 10' 0' 20' 40'

DRIVEWAY DETAIL

SCALE 1" = 20'



-DRV2-	
PI Sta 10+42.36 Δ = 16° 04' 27.2" (RT) D = 19° 05' 54.9" L = 84.16' T = 42.36' R = 300.00'	PI Sta 11+22.66 Δ = 36° 43' 46.1" (RT) D = 190° 59' 09.4" L = 19.23' T = 9.96' R = 30.00'

-DRV3-		
PI Sta 10+12.45 Δ = 35° 48' 50.5" (RT) D = 190° 59' 09.4" L = 18.75' T = 9.69' R = 30.00'	PI Sta 10+69.76 Δ = 38° 15' 22.0" (LT) D = 71° 37' 11.0" L = 53.42' T = 27.75' R = 80.00'	PI Sta 11+51.09 Δ = 40° 55' 32.2" (LT) D = 71° 37' 11.0" L = 57.14' T = 29.85' R = 80.00'

-DRV1-	
PI Sta 10+34.70 Δ = 40° 55' 22.8" (RT) D = 146° 54' 44.1" L = 27.86' T = 14.55' R = 39.00'	PI Sta 10+78.76 Δ = 14° 50' 56.1" (RT) D = 24° 16' 40.3" L = 61.16' T = 30.75' R = 236.00'

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PROJECT REFERENCE NO.	SHEET NO.
B-4744	3

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF QUANTITIES

52899

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COMPUTED BY:	TAH	DATE:	9/15/11
CHECKED BY:	NKB	DATE:	9/15/11

PROJECT REFERENCE NO.	SHEET NO.
B-4744	3-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE)							
SIZE								12"	15"	18"	24"	30"	36"	42"	48"
THICKNESS OR GAUGE		FROM	TO												
-DRV1- 10+50.31	RT	401							40						
-DRV1- 10+50.31	RT	401							40						
-L- 16+25.32	LT	402			788.3	775.0									
-L- 19+00.90	LT														
-L- 19+00.90	RT	403													
-L- 19+00.90	RT	403	404												
-L- 19+00.90	RT	404	OUT												
-L- 19+88.50	LT	405								28					
-L- 22+58.48	LT	406	407					16							
-L- 22+65.82	LT	407													
-L- 23+04.60	LT	406	408						108						
-L- 17+08.28	RT	409						36							
-L- 18+69.18	RT	410						48							
TOTAL								100	108	28					

STATION	BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHERWISE)													CLASS III R.C. PIPE OR ALUMINIZED C.S. PIPE, TYPE IR OR HDPE PIPE, TYPE S OR D							
SIZE	12"	15"	18"	24"		30"		36"		42"		48"		12"	15"	18"	24"	30"	36"	42"	48"
THICKNESS OR GAUGE	.064	.064	.064	.064		.079		.079		.109		.109									
-DRV1- 10+50.31																					
-DRV1- 10+50.31																					
-L- 16+25.32		124																			
-L- 19+00.90																					
-L- 19+00.90																					
-L- 19+00.90		96																			
-L- 19+00.90																					
-L- 19+88.50																					
-L- 22+58.48																					
-L- 22+65.82																					
-L- 23+04.60																					
-L- 17+08.28																					
-L- 18+69.18																					
TOTAL		220																			

STATION	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS.		QUANTITIES FOR DRAINAGE STRUCTURES * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B')	LIN. *FT.		C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE			
							A	B					
				R.C.P.	C.S.P.	PER EACH (0' THRU 5.0')	5.0' THRU 10.0'	10.0' AND ABOVE		E	F	G	
-DRV1- 10+50.31													
-DRV1- 10+50.31													
-L- 16+25.32													
-L- 19+00.90													
-L- 19+00.90													
-L- 19+00.90													
-L- 19+00.90													
-L- 19+88.50													
-L- 22+58.48													
-L- 22+65.82													
-L- 23+04.60													
-L- 17+08.28													
-L- 18+69.18													
TOTAL													

STATION	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH GRATE STD. 840.22	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH GRATE STD. 840.24	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	J.B. STD. 840.31 OR 840.32	SPRING BOX STD. 840.41						CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-DRV1- 10+50.31																					36	PIPE REMOVAL
-DRV1- 10+50.31																						APPEARS TO BE TWO PIPES ADJACENT TO EACH OTHER.
-L- 16+25.32																					120	PIPE REMOVAL
-L- 19+00.90																					24	PIPE REMOVAL FROM SOIL DRIVE
-L- 19+00.90	1	1																				
-L- 19+00.90																		2				15" CSP w2 ELBOWS
-L- 19+00.90																						
-L- 19+88.50																						
-L- 22+58.48																						
-L- 22+65.82												1										SPRING BOX (TO BE LOCATED BY ENGINEER)
-L- 23+04.60																					104	PIPE REMOVAL
-L- 17+08.28																						TEMP. 12" PIPE
-L- 18+69.18																						TEMP. 12" PIPE
TOTAL	1	1										1						2			284	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I. (N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH
-L- (RT)	18+86.21	19+12.00	25.8
		TOTAL:	25.8
		SAY:	26

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. +20%	BORROW	WASTE
PHASE I (CONST. -DET-)					
-DET- 10+00.00	-DET- 13+82.00	113	2797	3399	
-DET- 15+22.00	-DET- 18+98.44	1165	2207	2514	
SUBTOTAL:		1278	5004	2853	
PHASE II (CONST. -L-)					
-L- 13+20.00	-L- 22+75.00	1204	1968	1019	255
-DRV1- 10+14.00	-DRV1- 11+00.00	7	137	130	
-DRV2- 10+65.00	-DRV2- 11+33.66	6	13	7	
-DRV3- 10+06.00	-DRV3- 11+90.00	4	532	528	
SUBTOTAL:		1221	2650	1684	
PHASE III (REMOVE -DET-)					
-DET- 10+00.00	-DET- 18+98.44	5004			5004
SUBTOTAL:		5004			5004
TOTAL:		7503	7654	4537	5259
PROJECT TOTALS:		7503	7654	4537	5259
5% FOR BORROW PIT				227	
GRAND TOTALS:		7503	7654	4764	
SAY:		8253	7016	6248	

DRAINAGE DITCH EXCAVATION = 1252 CY
UNDERCUT EXCAVATION = 400 CY (CONTINGENCY)
SHALLOW UNDETCUT EXCAVATION = 70 CY (CONTINGENCY)
FABRIC FOR SOIL STABILIZATION = 200 SY (CONTINGENCY)
CLASS IV SUBGRADE STABILIZATION = 380 CY (CONTINGENCY)

Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

Earthwork quantities are calculated by the Roadway Design Unit. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS		REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GRAU 350	TYPE B-77	
-L-	16+16.50	16+97.75	LT	81.25				16+97.75	6.25	9		62.5		2.25	1	1	
-L-	15+66.95	16+97.75	RT	131.25			16+97.75		6.25	9	112.5		3.25		1	1	
-L-	18+75.25	19+55.38	LT	81.25			18+75.25		6.25	9	62.5		2.25		1	1	
-L-	18+75.25	19+57.67	RT	81.25				18+75.25	6.25	9		62.5		2.25	1	1	
-DET-	12+79.43	13+62.00	LT	81.25				13+62.00	6.25	9		62.5		2.25	1	1	
-DET-	12+33.17	13+62.00	RT	131.25			13+62.00		6.25	9	112.5		3.25		1	1	
-DET-	15+22.00	16+53.25	LT	131.25			15+22.00		6.25	9	112.5		3.25		1	1	
-DET-	15+22.00	16+03.25	RT	81.25				15+22.00	6.25	9		62.5		2.25	1	1	
			PROJECT TOTAL:	800											8	8	
		LESS DEDUCTION FOR ANCHOR UNIT															
			GRAU 350:	-400													
			TYPE B-77:	-150													
			GRAND TOTAL:	250											8	8	
			SAY:	250											8	8	
	ADDITIONAL GUARDRAIL POST: 5																

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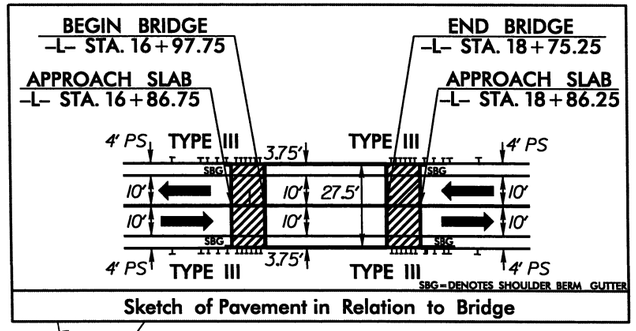

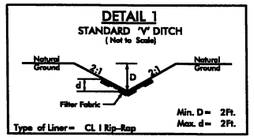

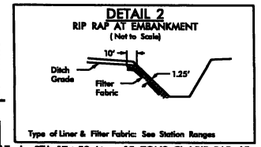

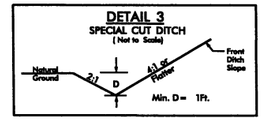

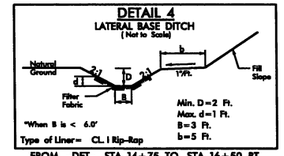

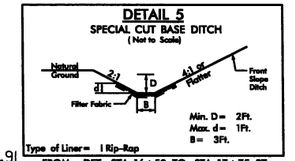

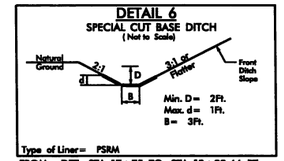

PROJECT REFERENCE NO.	SHEET NO.
B-4744	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-				
PI Sta 10+25.01 Δ = 2° 51' 53.2" (LT) D = 5° 43' 46.5" L = 50.00' T = 25.01' R = 1,000.00'	PI Sta 12+58.21 Δ = 32° 11' 25.1" (LT) D = 10° 36' 37.2" L = 303.39' T = 155.81' R = 540.00' e = 0.06 FT/FT	PI Sta 15+10.28 Δ = 6° 27' 57.4" (LT) D = 3° 05' 49.4" L = 208.78' T = 104.50' R = 1,850.00' e = 0.06 FT/FT RO = SEE PLANS	PI Sta 20+87.61 Δ = 32° 45' 49.5" (RT) D = 9° 14' 28.5" L = 354.54' T = 182.26' R = 620.00' e = 0.06 FT/FT RO = SEE PLANS	PI Sta 24+32.90 Δ = 4° 17' 09.4" (LT) D = 5° 43' 46.5" L = 74.80' T = 37.42' R = 1,000.00'

-DRV1-	-DRV2-	-DRV3-
SEE DETAIL SHEET 2-B FOR -DRV1- CURVE DATA	SEE DETAIL SHEET 2-B FOR -DRV2- CURVE DATA	SEE DETAIL SHEET 2-B FOR -DRV3- CURVE DATA

NOTE:
SEE SHEET NO. 5 FOR -DET- ALIGNMENT
SEE SHEET NO. 6 PROFILES
SEE SHEET NO. 2-B FOR DRIVEWAY DETAILS

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
B-4744	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-DETOUR-

NAD 83/95

REVISIONS 8/17/99

-L- PC Sta. 10+00.00
-L- PT Sta. 10+50.00
-DET- POT Sta. 10+00.00
-DET- POT Sta. 5+00.00
BL - 3 POT
-L- PC Sta. 11+02.39
-L- PCC Sta. 14+05.78
-L- PT Sta. 16+14.56
-DET- PC Sta. 12+23.29
-DET- PT Sta. 13+34.61
-L- PC Sta. 19+05.35
-DET- PC Sta. 17+05.50
-DET- PT Sta. 18+98.45
-L- PT Sta. 22+59.88
-L- PC Sta. 23+95.48
-L- PT Sta. 24+70.29
B1477-2 PINC 8+26.61
B4744-1 PINC 13+57.91
BL - 4 PINC 18+22.63
-DRV1- POT Sta. 11+49.11
-L- POC Sta. 15+39.64
-DRV1- POT Sta. 10+00.00
END CONSTRUCTION
-DRV1- Sta. 11+00.00
(SEE DETAIL SHEET 2-B)
BEGIN BRIDGE
END BRIDGE
BM-2
SEE SHEET 1C
ELEV. = 771.90'

1 NOAH GATES AND WIFE BETH GATES DB 2078 PG 3442
2 JOE SPANGLER AND WIFE JANET M. SPANGLER DB 1935 PG 540
3 STEVEN K. ABEE AND WIFE SUSAN R. WINKLER-ABEE DB 2965 PG 3875
4 DALLAS M. BUTNER AND SHERRY H. BUTNER DB 2500 PG 280
5 STEVEN KERR ABEE AND WIFE SUSAN RENEE WINKLER-ABEE DB 2809 PG 3539

JOE SPANGLER AND WIFE JANET M. SPANGLER DB 1326 PG 19
STEVEN K. ABEE AND WIFE SUSAN R. WINKLER-ABEE
DALLAS M. BUTNER AND SHERRY H. BUTNER DB 2447 PG 1457

BUILD DITCH WITH DETOUR KEEP AS PERMANENT DITCH
SPECIAL CUT DITCH
SEE DETAIL 3

GRADE TO DRAIN PLACE APPROX. 30 SY PSRM ON SLOPE

REMOVE EXISTING GUARDRAIL

INSTALL RIP RAP WITH DETOUR KEEP AS PERMANENT EROSION CONTROL MEASURE
SLOPE PROTECTION CLASS I RIP RAP
EST 55 TONS
EST 140 SY FF

BUILD DITCH WITH DETOUR KEEP AS PERMANENT DITCH
SEE DETAIL 4
LATERAL BASE DITCH
W/CL I RIP RAP

BUILD DITCH WITH DETOUR KEEP AS PERMANENT DITCH
SEE DETAIL 5
SPECIAL CUT BASE DITCH
W/CL I RIP RAP

BUILD DITCH WITH DETOUR KEEP AS PERMANENT DITCH
SEE DETAIL 6
SPECIAL CUT BASE DITCH
W/PSRM

DETAIL 3
SPECIAL CUT DITCH
(Not to Scale)
Min. D = 1Ft.
FROM -DET- STA. 10+00 TO STA. 11+50 RT
(-L- STA 13+46.40 TO 14+94.91 RT)

DETAIL 4
LATERAL BASE DITCH
(Not to Scale)
*When B is < 6.0'
Min. D = 2 Ft.
Max. d = 1 Ft.
B = 3 Ft.
b = 5 Ft.
Type of Liner = CL. I Rip-Rap
FROM -DET- STA. 14+75 TO STA. 16+50 RT
(-L- STA 18+16.27 TO 19+96.53 RT)

DETAIL 5
SPECIAL CUT BASE DITCH
(Not to Scale)
Min. D = 2Ft.
Max. d = 1Ft.
B = 3Ft.
Type of Liner = I Rip-Rap
FROM -DET- STA. 16+50 TO STA. 17+75 RT
(-L- STA 19+96.53 TO 21+23.55 RT)

DETAIL 6
SPECIAL CUT BASE DITCH
(Not to Scale)
Min. D = 2Ft.
Max. d = 1Ft.
B = 3Ft.
Type of Liner = PSRM
FROM -DET- STA. 17+75 TO STA. 18+98.44 RT
(-L- STA 21+23.55 TO 22+47.14)

-L-	-DRV1-	-DET-	
SEE SHEET 4 FOR -L- LINE CURVE DATA	SEE DETAIL SHEET 2-B FOR -DRV1- CURVE DATA	PI Sta 12+79.13 Δ = 12° 45' 59.4" (LT) D = 11° 27' 33.0" L = 111.41' T = 55.94' R = 500.00'	PI Sta 18+04.49 Δ = 31° 35' 10.8" (RT) D = 16° 22' 12.8" L = 192.95' T = 98.99' R = 350.00'

NOTE:
SEE SHEET NO. 7 FOR PROFILES
SEE SHEET NO. 2-B FOR DRIVEWAY DETAILS

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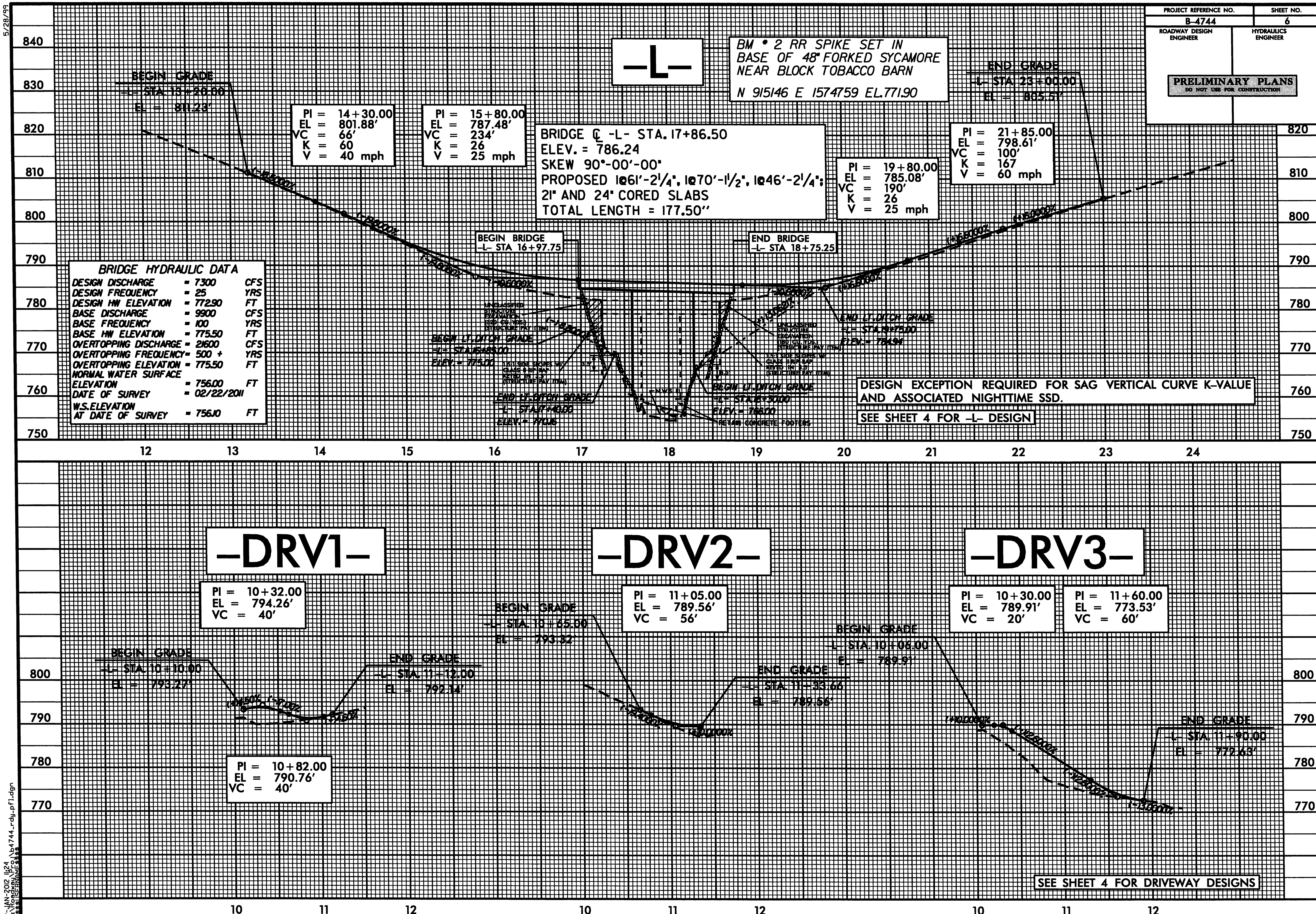

PROJECT REFERENCE NO. B-4744
SHEET NO. 6
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
5/28/99
-L-
BM # 2 RR SPIKE SET IN BASE OF 48" FORKED SYCAMORE NEAR BLOCK TOBACCO BARN
N 915146 E 1574759 EL.771.90
BEGIN GRADE -L- STA. 13+20.00 EL = 811.23'
END GRADE -L- STA. 23+00.00 EL = 805.51'
PI = 14+30.00 EL = 801.88' VC = 66' K = 60 V = 40 mph
PI = 15+80.00 EL = 787.48' VC = 234' K = 26 V = 25 mph
BRIDGE ℄ -L- STA. 17+86.50
ELEV. = 786.24
SKEW 90°-00'-00"
PROPOSED 1@61'-2 1/4", 1@70'-1/2", 1@46'-2 1/4";
21" AND 24" CORED SLABS
TOTAL LENGTH = 177.50"
PI = 19+80.00 EL = 785.08' VC = 190' K = 26 V = 25 mph
PI = 21+85.00 EL = 798.61' VC = 100' K = 167 V = 60 mph
BEGIN BRIDGE -L- STA 16+97.75
END BRIDGE -L- STA 18+75.25
BRIDGE HYDRAULIC DATA
DESIGN DISCHARGE = 7300 CFS
DESIGN FREQUENCY = 25 YRS
DESIGN HW ELEVATION = 772.90 FT
BASE DISCHARGE = 9900 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 775.50 FT
OVERTOPPING DISCHARGE = 21600 CFS
OVERTOPPING FREQUENCY = 500 + YRS
OVERTOPPING ELEVATION = 775.50 FT
NORMAL WATER SURFACE ELEVATION = 756.00 FT
DATE OF SURVEY = 02/22/2011
W.S. ELEVATION AT DATE OF SURVEY = 756.10 FT
BEGIN LT. DITCH GRADE -L- STA.16+85.00 ELEV. = 775.00
END LT. DITCH GRADE -L- STA.17+40.00 ELEV. = 771.06
BEGIN LT. DITCH GRADE -L- STA.18+50.00 ELEV. = 768.00
END LT. DITCH GRADE -L- STA.19+75.00 ELEV. = 784.94
RETAIN CONCRETE FOOTERS
DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE K-VALUE AND ASSOCIATED NIGHTTIME SSD.
SEE SHEET 4 FOR -L- DESIGN
840 830 820 810 800 790 780 770 760 750
12 13 14 15 16 17 18 19 20 21 22 23 24
-DRV1-
PI = 10+32.00 EL = 794.26' VC = 40'
BEGIN GRADE -L- STA. 10+10.00 EL = 793.27'
END GRADE -L- STA. 11+12.00 EL = 792.14'
PI = 10+82.00 EL = 790.76' VC = 40'
-DRV2-
BEGIN GRADE -L- STA. 10+65.00 EL = 793.32'
PI = 11+05.00 EL = 789.56' VC = 56'
END GRADE -L- STA. 11+33.66 EL = 789.56'
-DRV3-
PI = 10+30.00 EL = 789.91' VC = 20'
PI = 11+60.00 EL = 773.53' VC = 60'
BEGIN GRADE -L- STA. 10+06.00 EL = 789.91'
END GRADE -L- STA. 11+90.00 EL = 772.63'
SEE SHEET 4 FOR DRIVEWAY DESIGNS
800 790 780 770
10 11 12 10 11 12 10 11 12

PROJECT REFERENCE NO.	SHEET NO.
B-4744	7

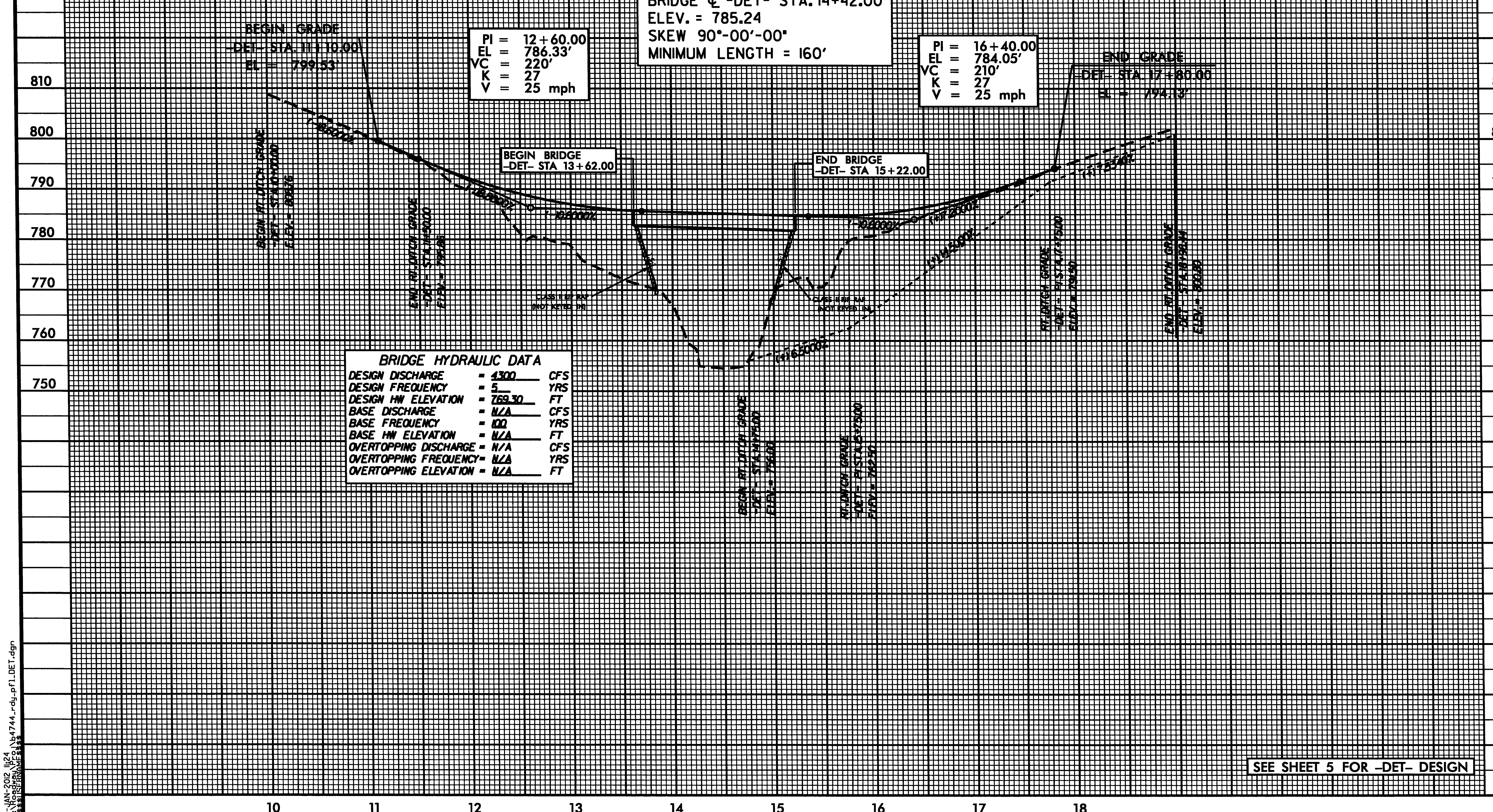
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-DET-

BRIDGE ℄ -DET- STA. 14+42.00
ELEV. = 785.24
SKEW 90°-00'-00"
MINIMUM LENGTH = 160'



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	4300	CFS
DESIGN FREQUENCY	=	5	YRS
DESIGN HW ELEVATION	=	769.30	FT
BASE DISCHARGE	=	N/A	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	N/A	FT
OVERTOPPING DISCHARGE	=	N/A	CFS
OVERTOPPING FREQUENCY	=	N/A	YRS
OVERTOPPING ELEVATION	=	N/A	FT

SEE SHEET 5 FOR -DET- DESIGN

5/14/99

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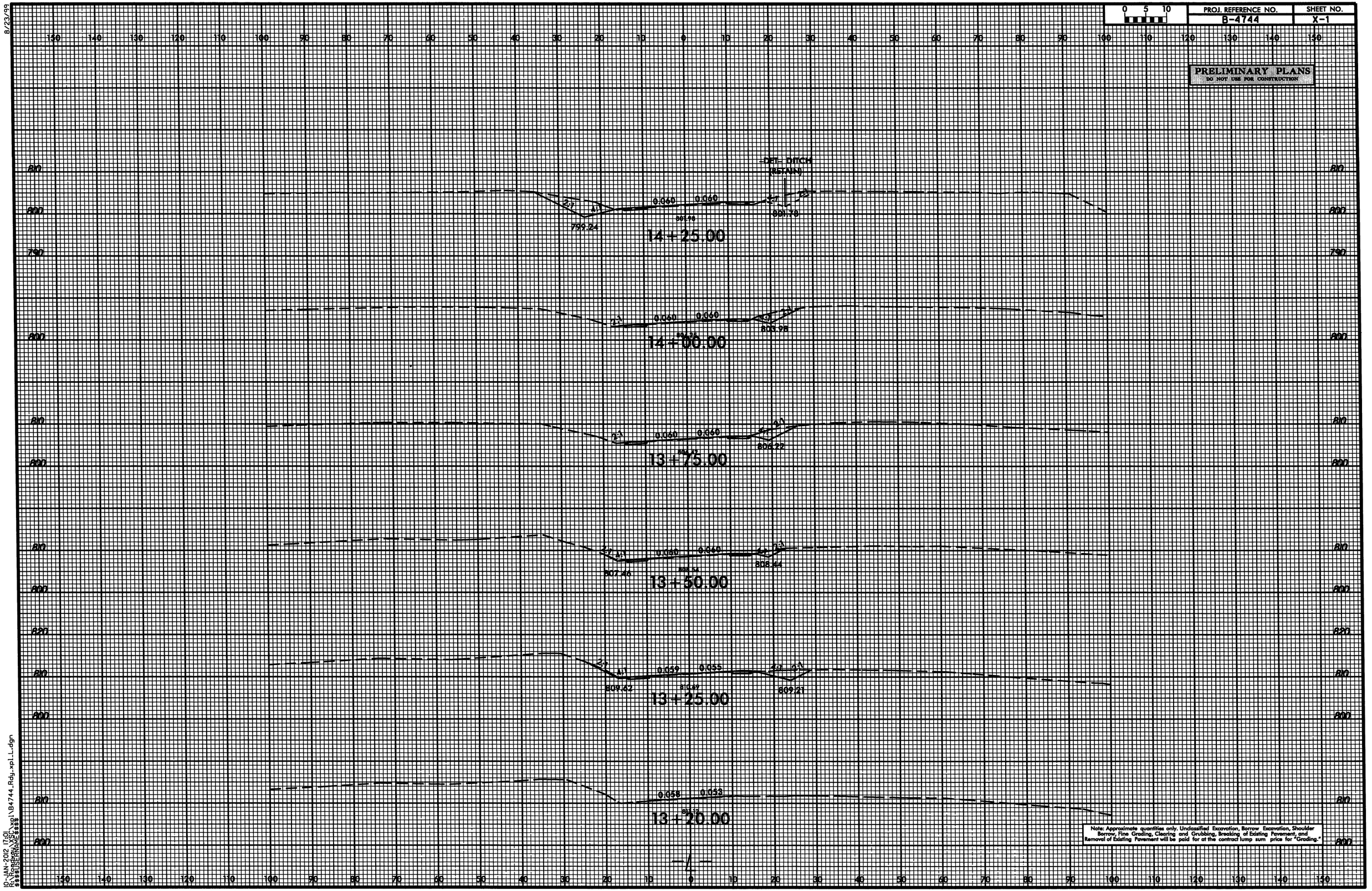
8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4744	X-1

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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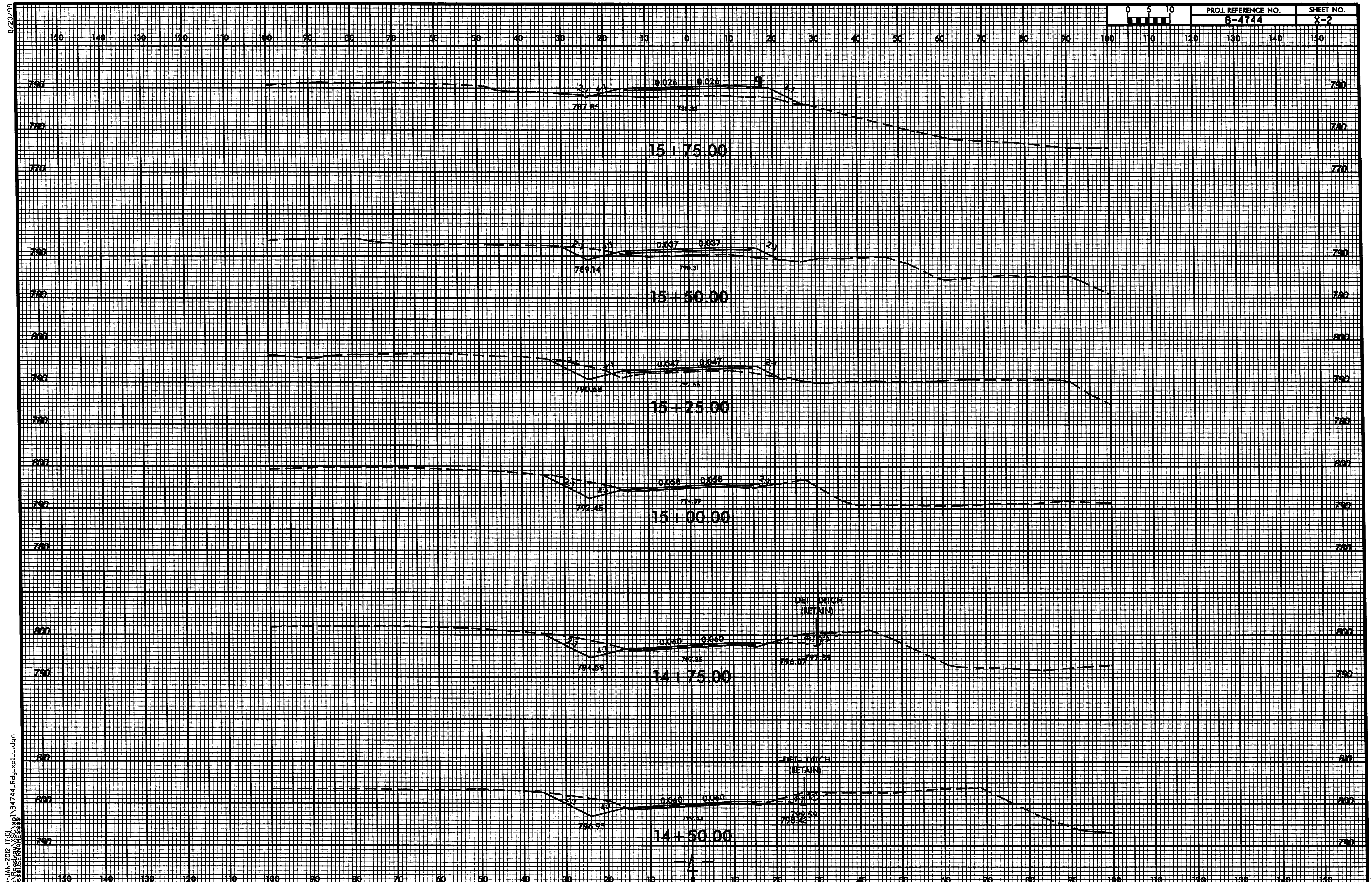

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0 5 10
PROJ. REFERENCE NO.
B-4744
SHEET NO.
X-2
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
0.026 0.026
787.85
15+75.00
0.037 0.037
789.14
15+50.00
0.047 0.047
790.68
15+25.00
0.058 0.058
792.46
15+00.00
DET. DITCH (RETAIN)
0.060 0.060
794.59
796.07
797.35
14+75.00
DET. DITCH (RETAIN)
0.060 0.060
796.95
798.43
799.59
14+50.00
-L-
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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4744	X-3

UNCLASSIFIED STRUCTURE EXCAVATION

17+05.00

16+75.00

16+50.00

16+25.00

16+00.00

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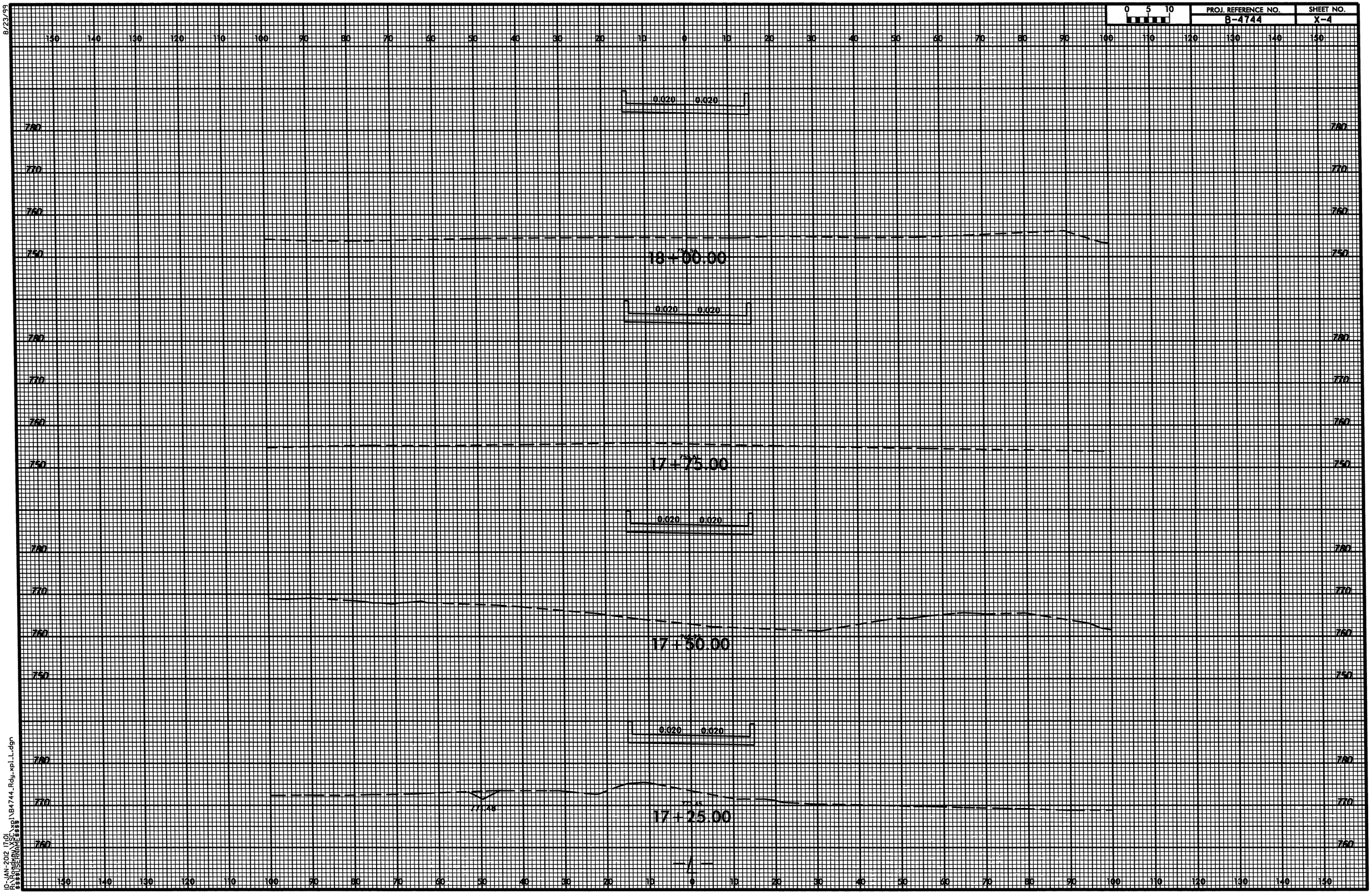
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4744	X-4



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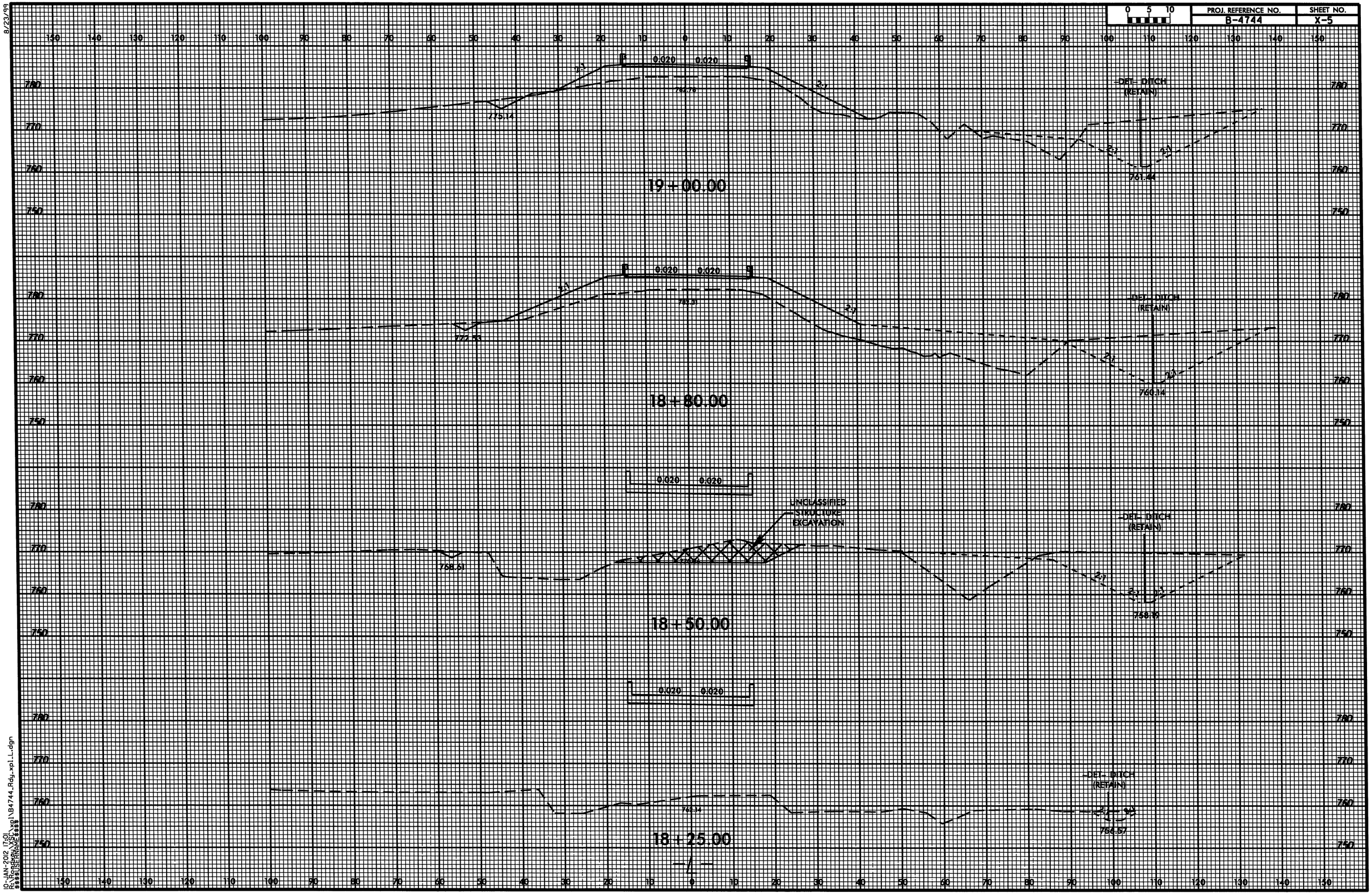
	B-4744	X-5



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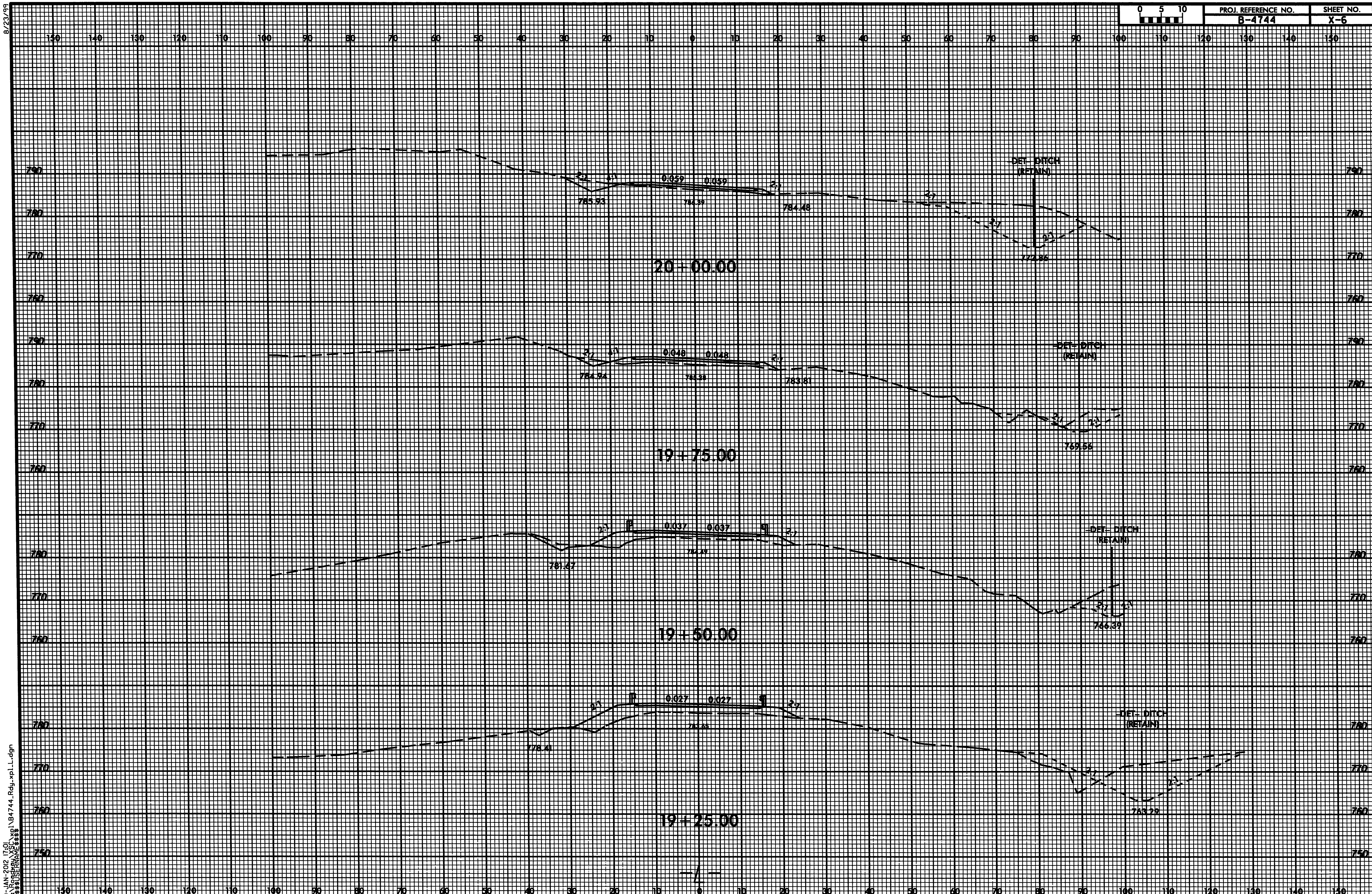
B-4744	X-6



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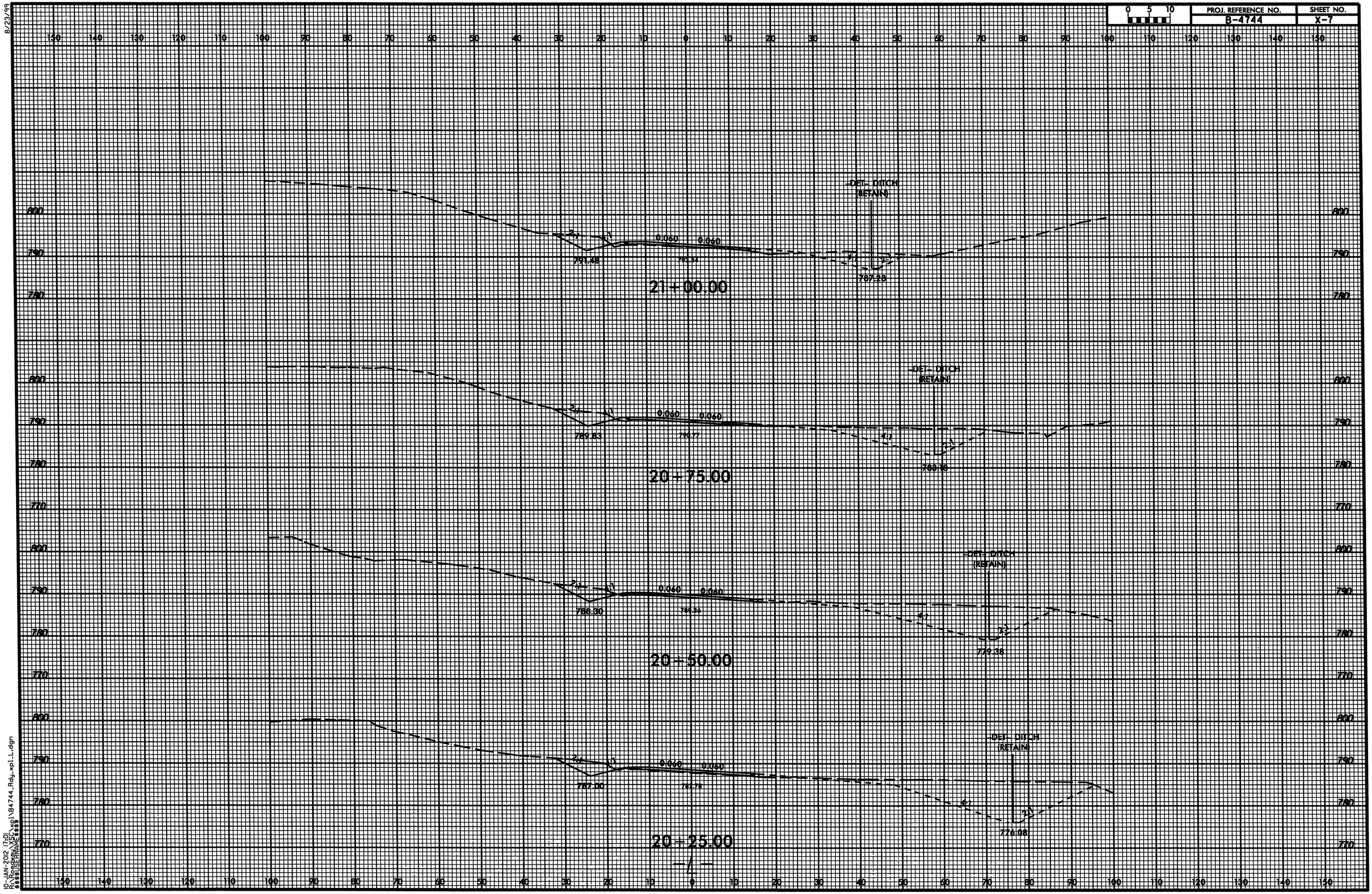
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4744	X-7



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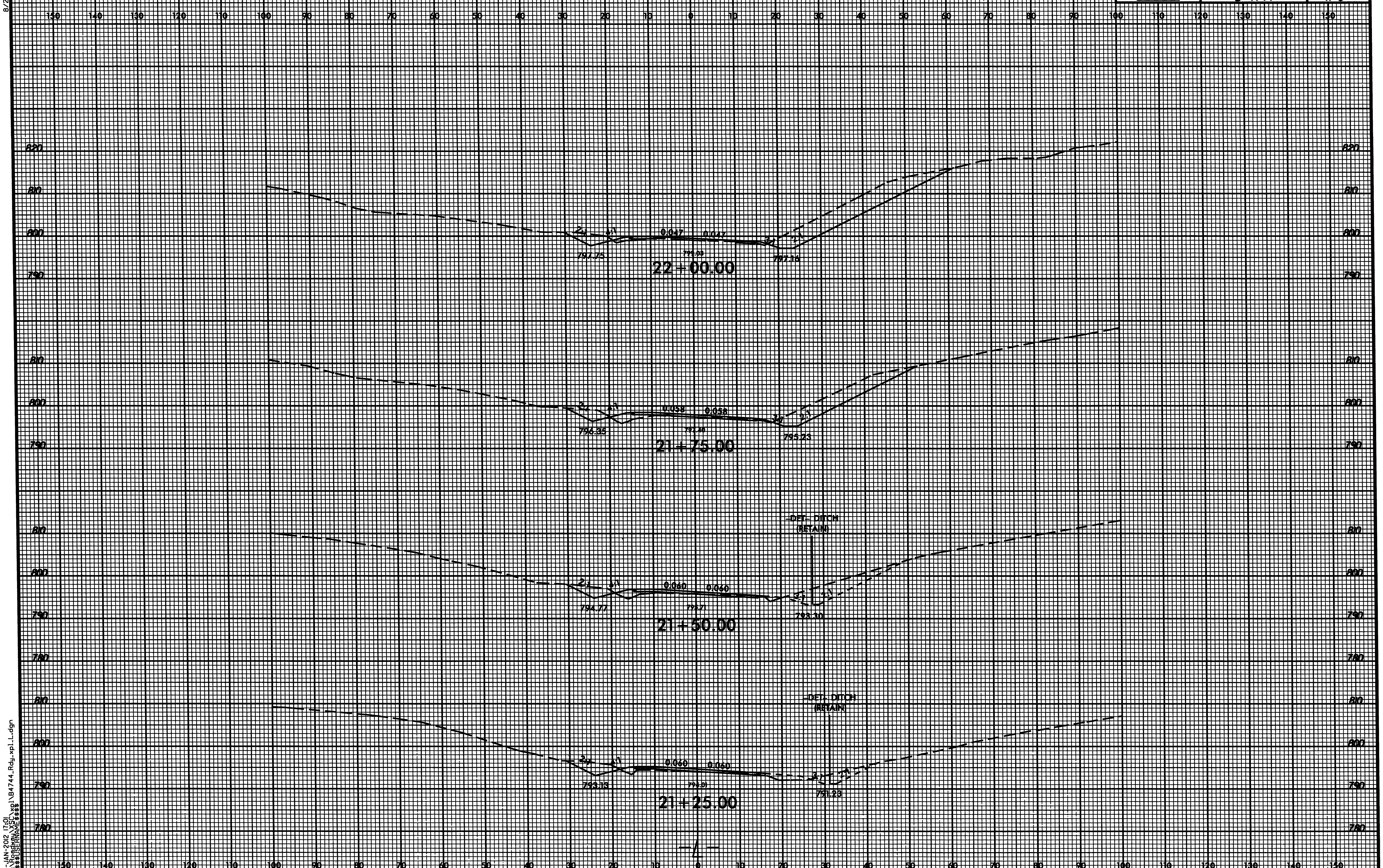
PROJ. REFERENCE NO.	SHEET NO.
B-4744	X-8



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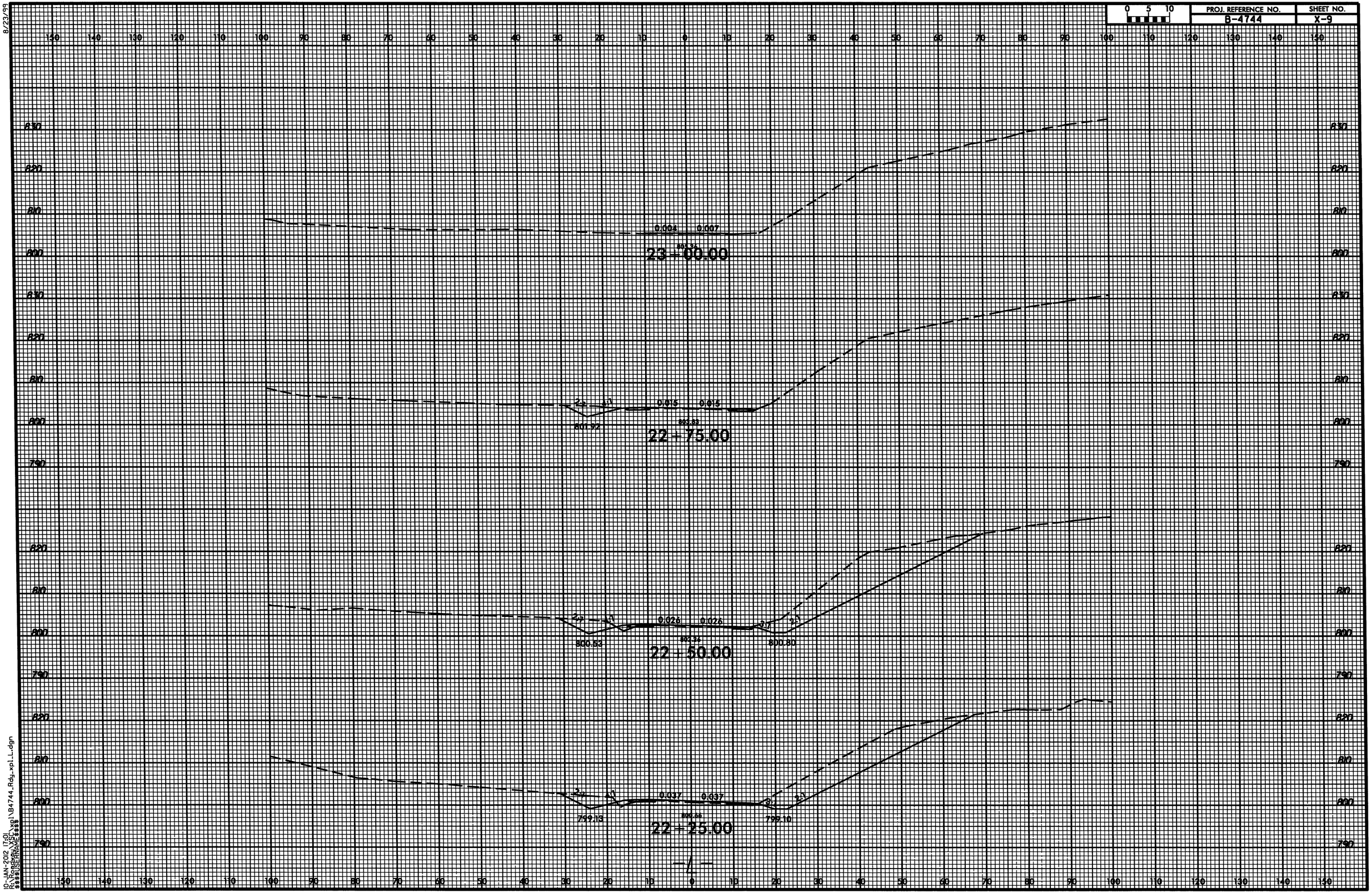
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4744	X-9



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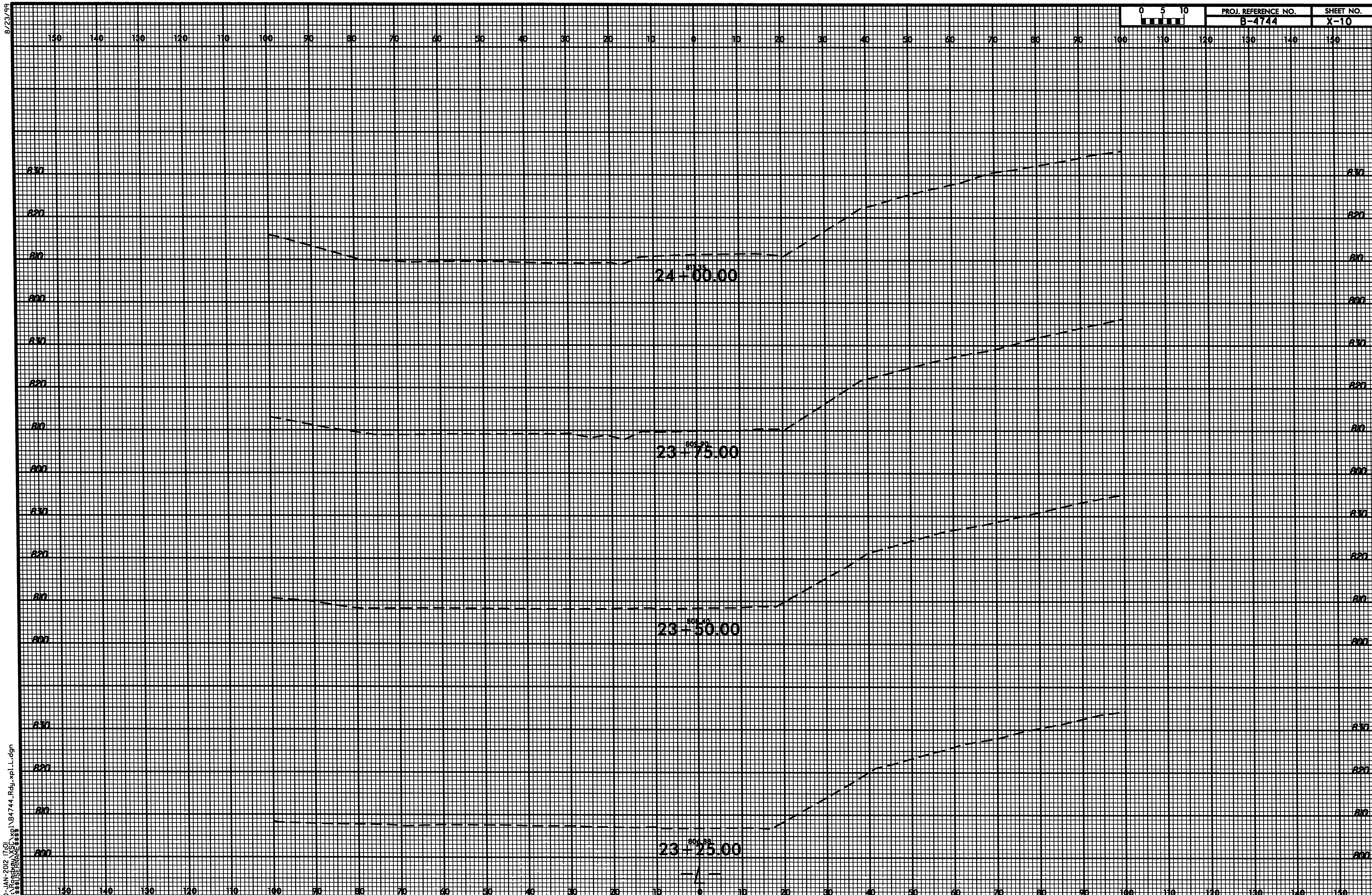

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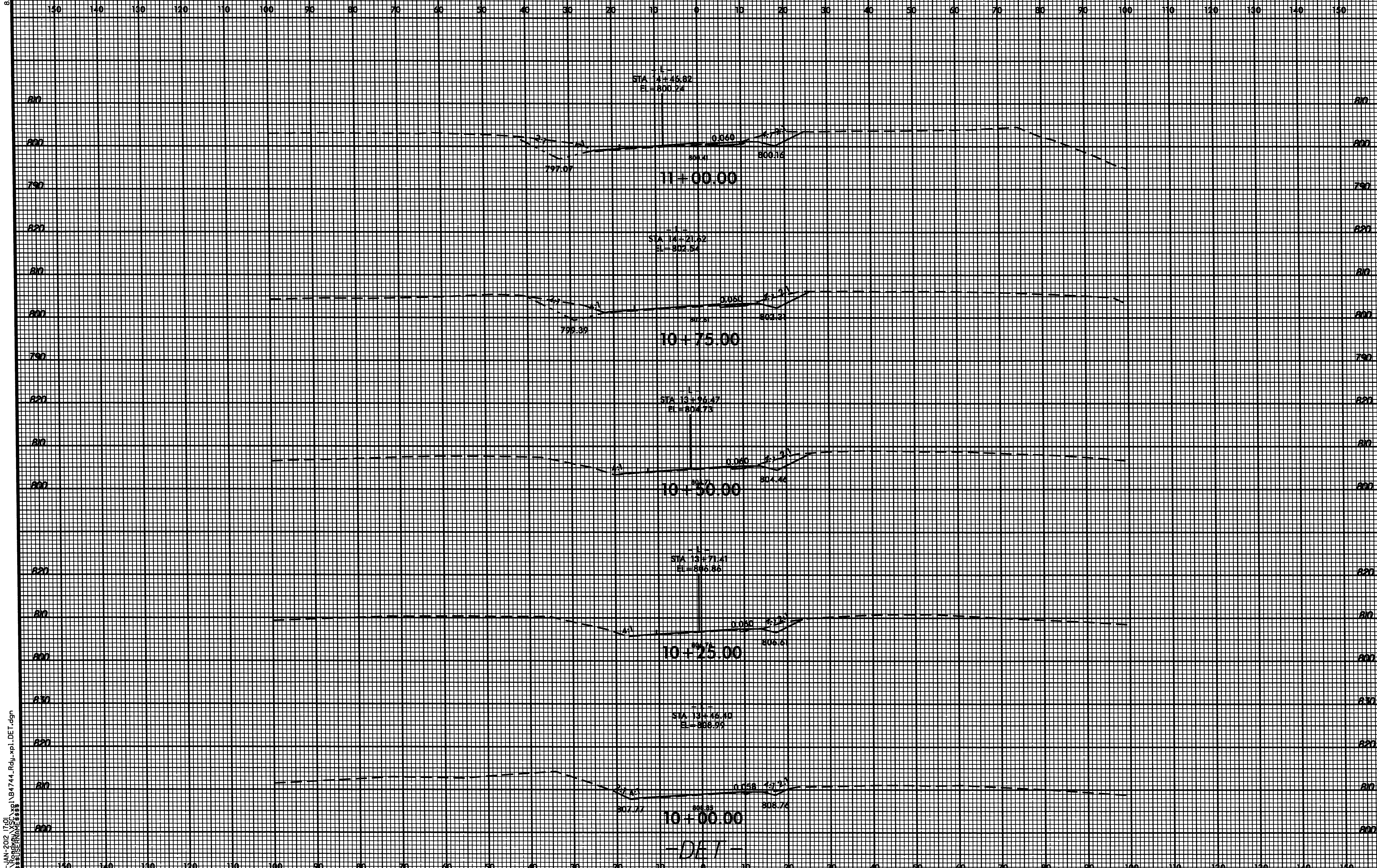
PROJ. REFERENCE NO.	SHEET NO.
B-4744	X-11

0 5 10



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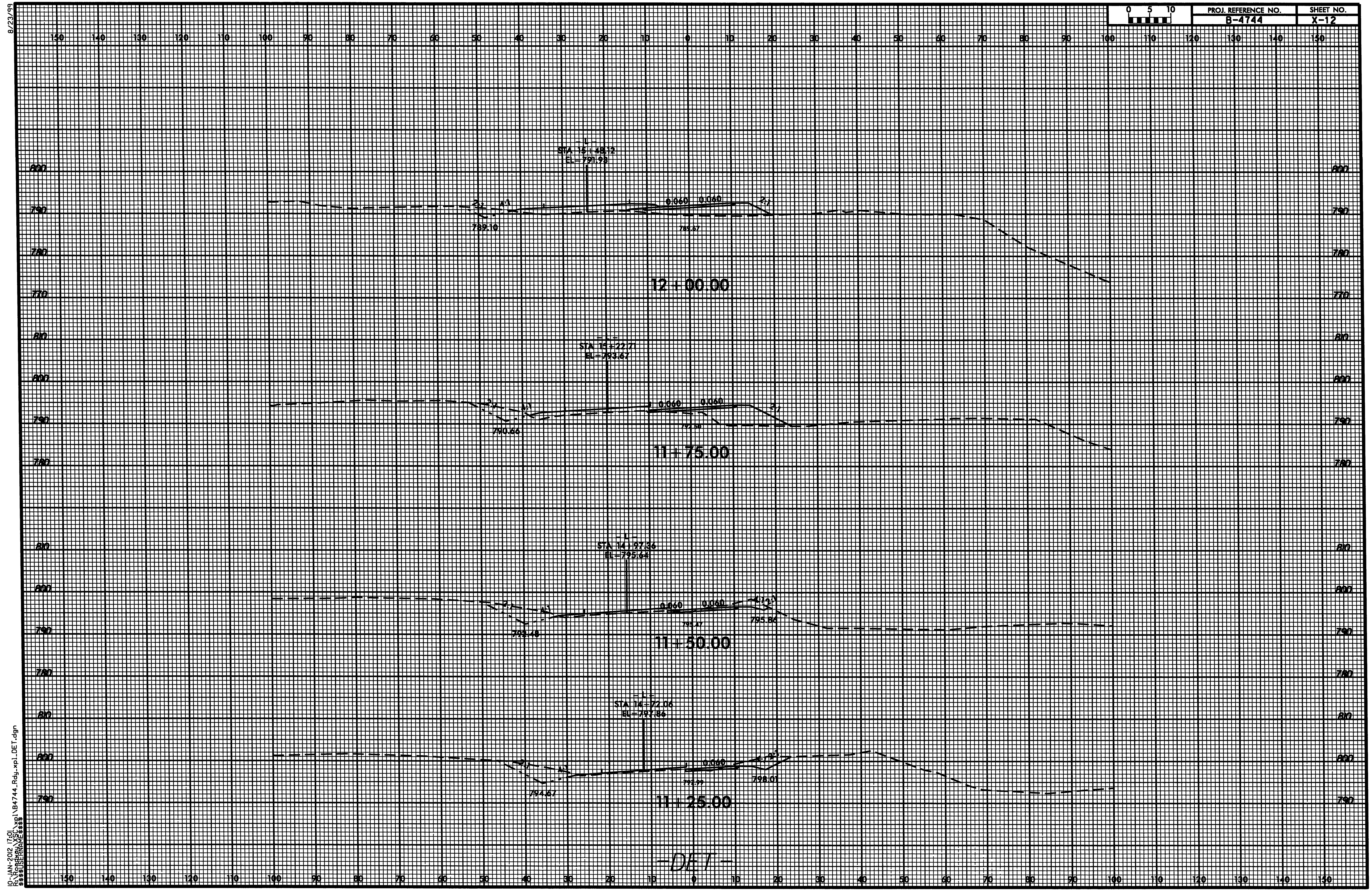

PROJ. REFERENCE NO.
B-4744
SHEET NO.
X-12
0 5 10
8/23/99
-L-
STA 15+48.12
EL=791.98
0.060
0.060
789.10
12+00.00
STA 15+22.71
EL=793.67
790.66
11+75.00
-L-
STA 14+97.36
EL=795.64
792.48
795.86
11+50.00
-L-
STA 14+72.06
EL=797.86
794.67
798.01
11+25.00
-DET-
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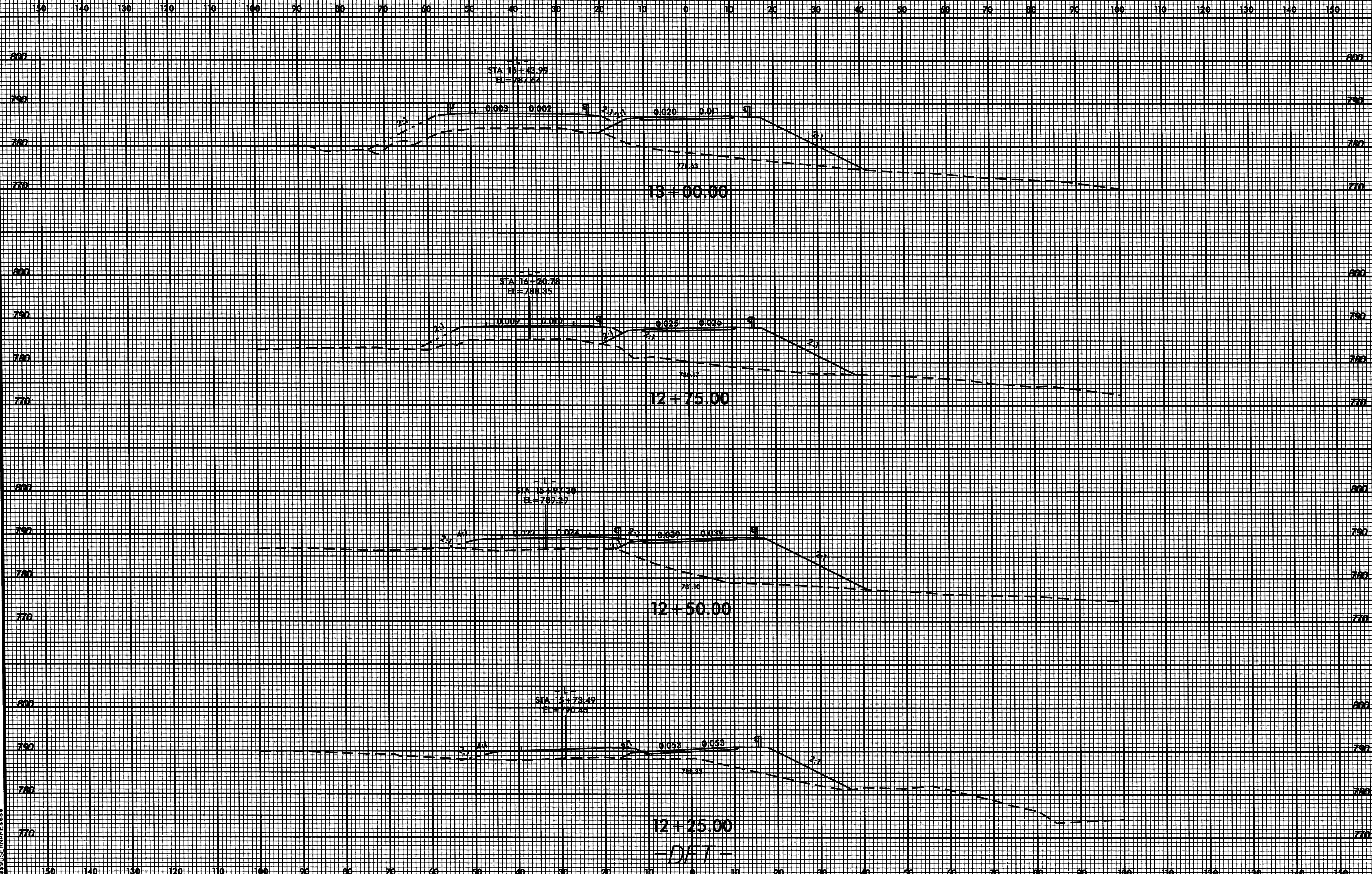
PROJ. REFERENCE NO.	SHEET NO.
B-4744	X-13



8/23/99

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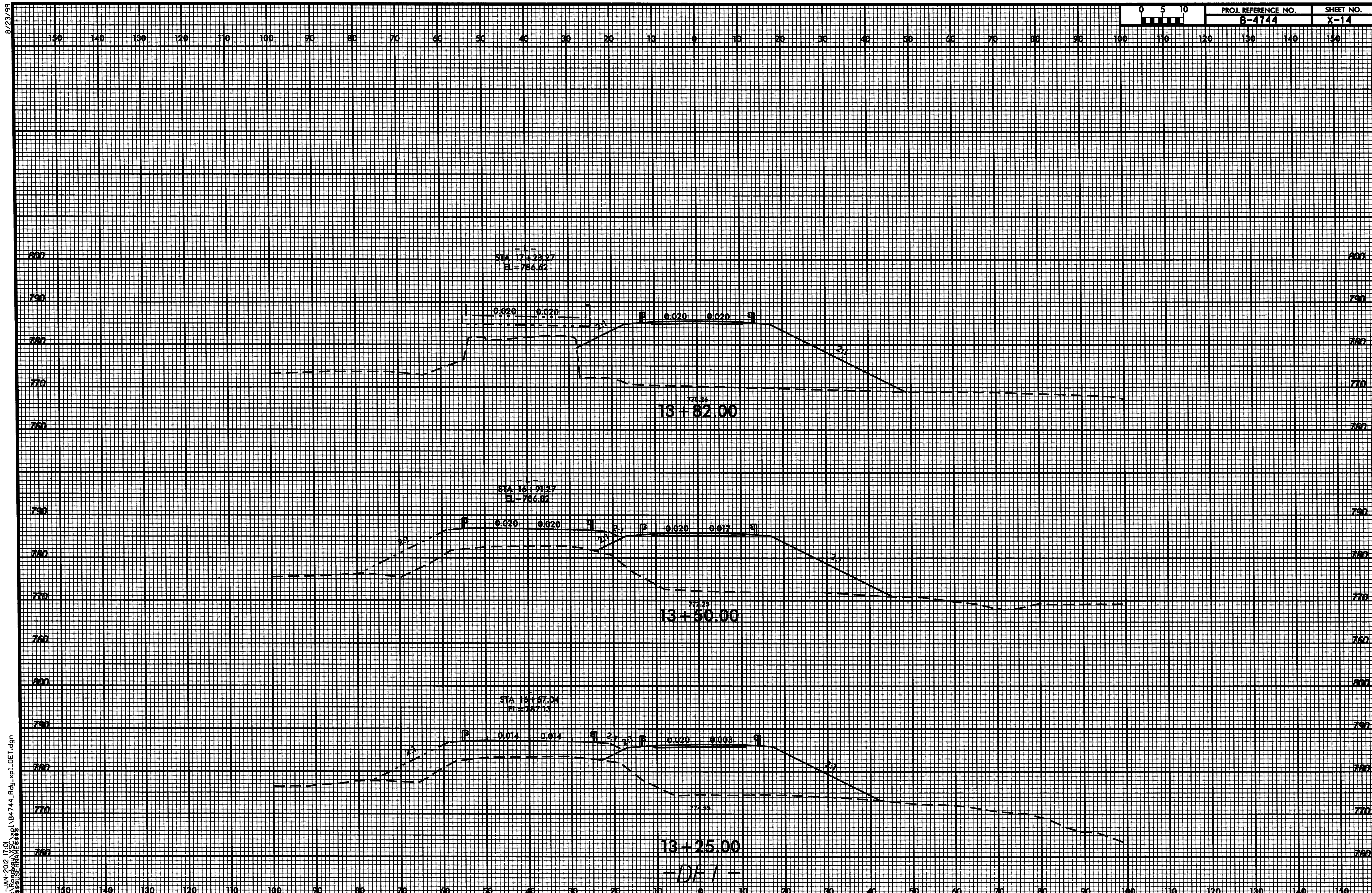
PROJ. REFERENCE NO.	SHEET NO.
B-4744	X-14



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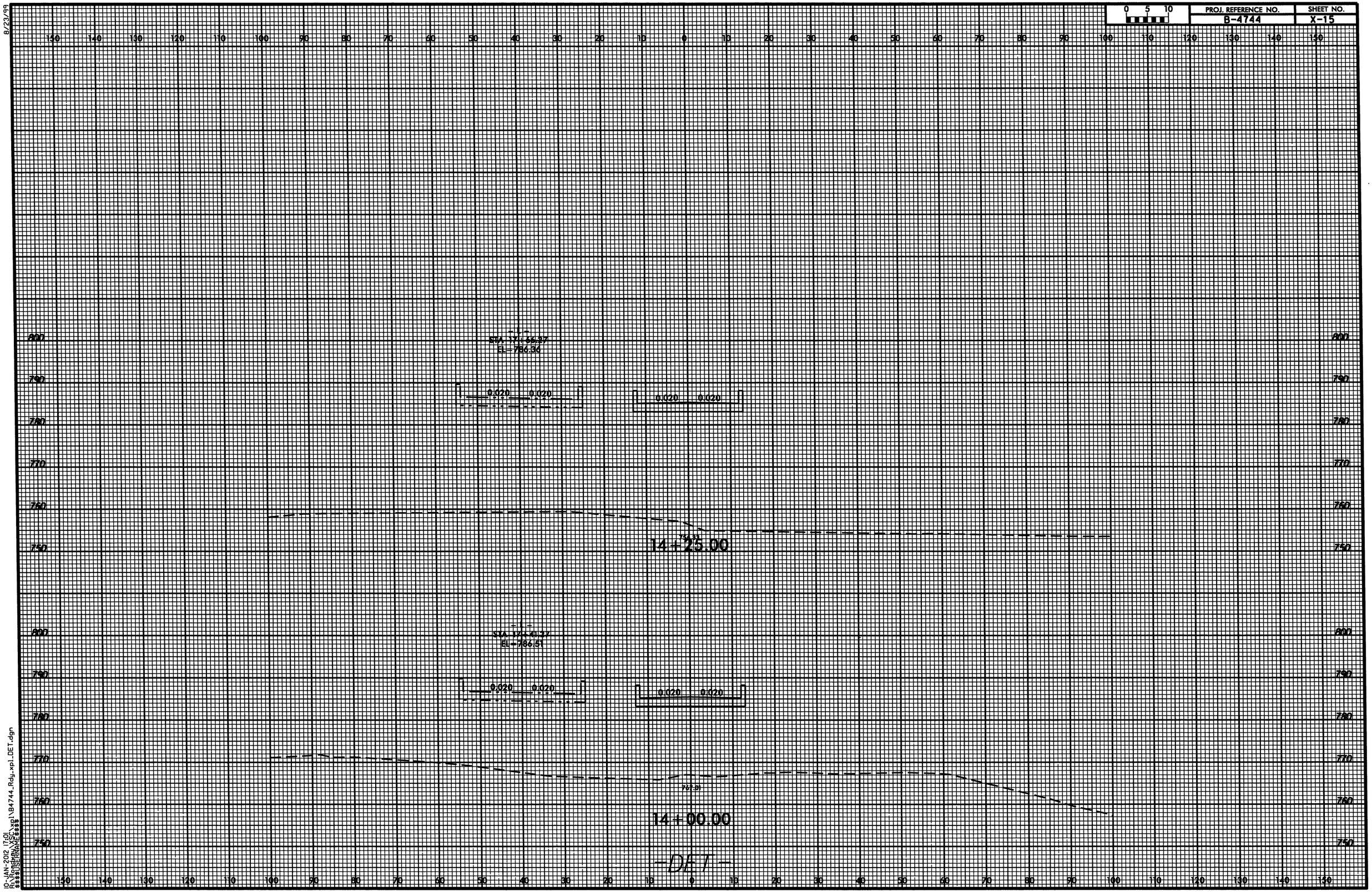
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4744	X-15



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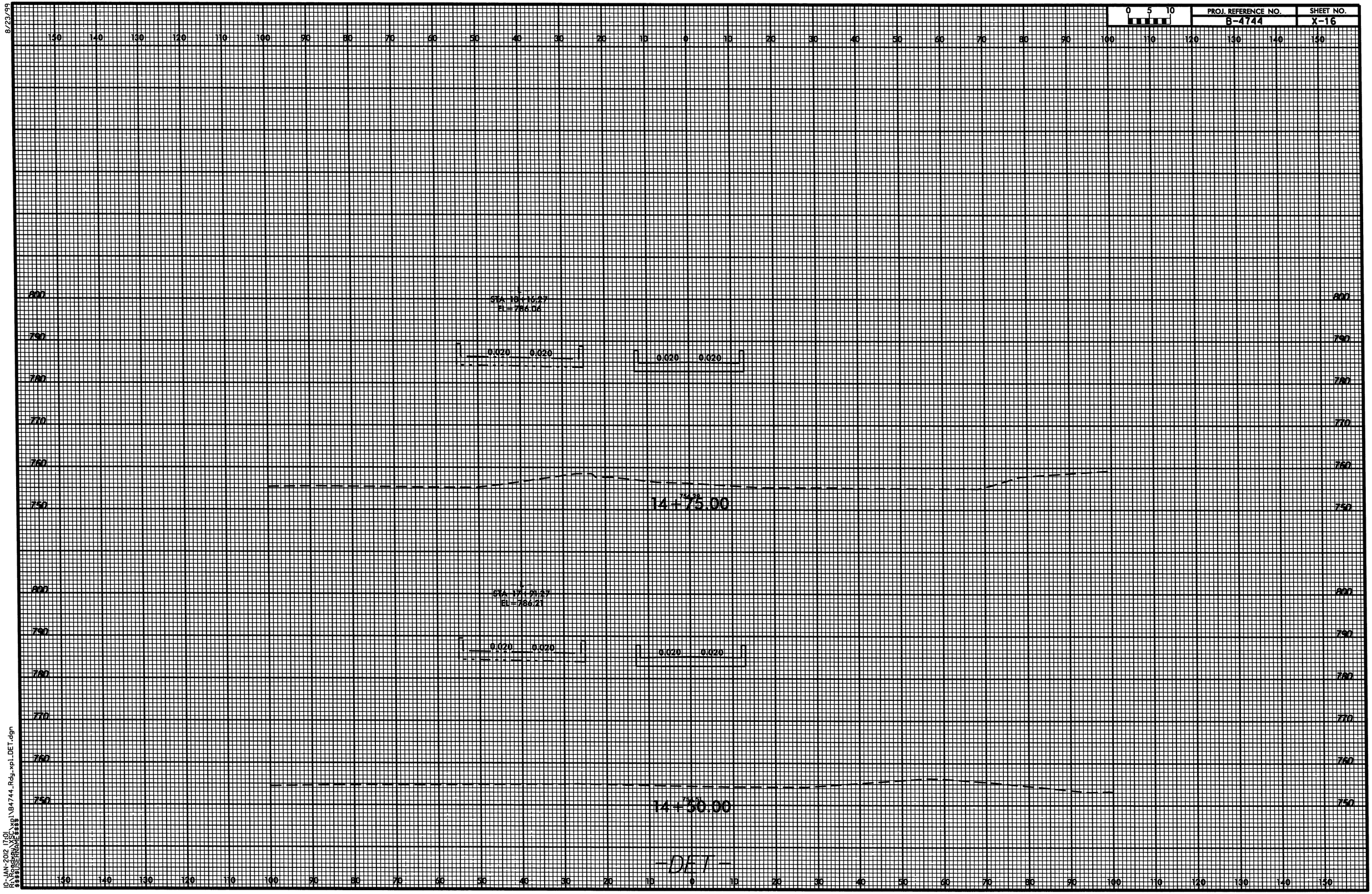
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4744	X-16



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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4744	X-17

STA 18+91.27
EL=785.62

0.020 0.020 2:1 2:1 0.020 0.020 2:1 2:1

770.83 780.56

15+50.00

STA 18+65.27
EL=785.75

0.020 0.020 2:1 2:1 0.020 0.020 2:1 2:1

772.31 759.06

15+22.00

STA 18+41.27
EL=785.91

0.020 0.020 0.020 0.020

769.5 759.53

15+00.00

-DET-

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$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4744	X-18

STA 19+56.37
EL=784.42

STA 19+41.29
EL=785.97

STA 19+16.27
EL=785.65

16+25.00

16+00.00

15+75.00

-DET-

10-JAN-2012 17:01
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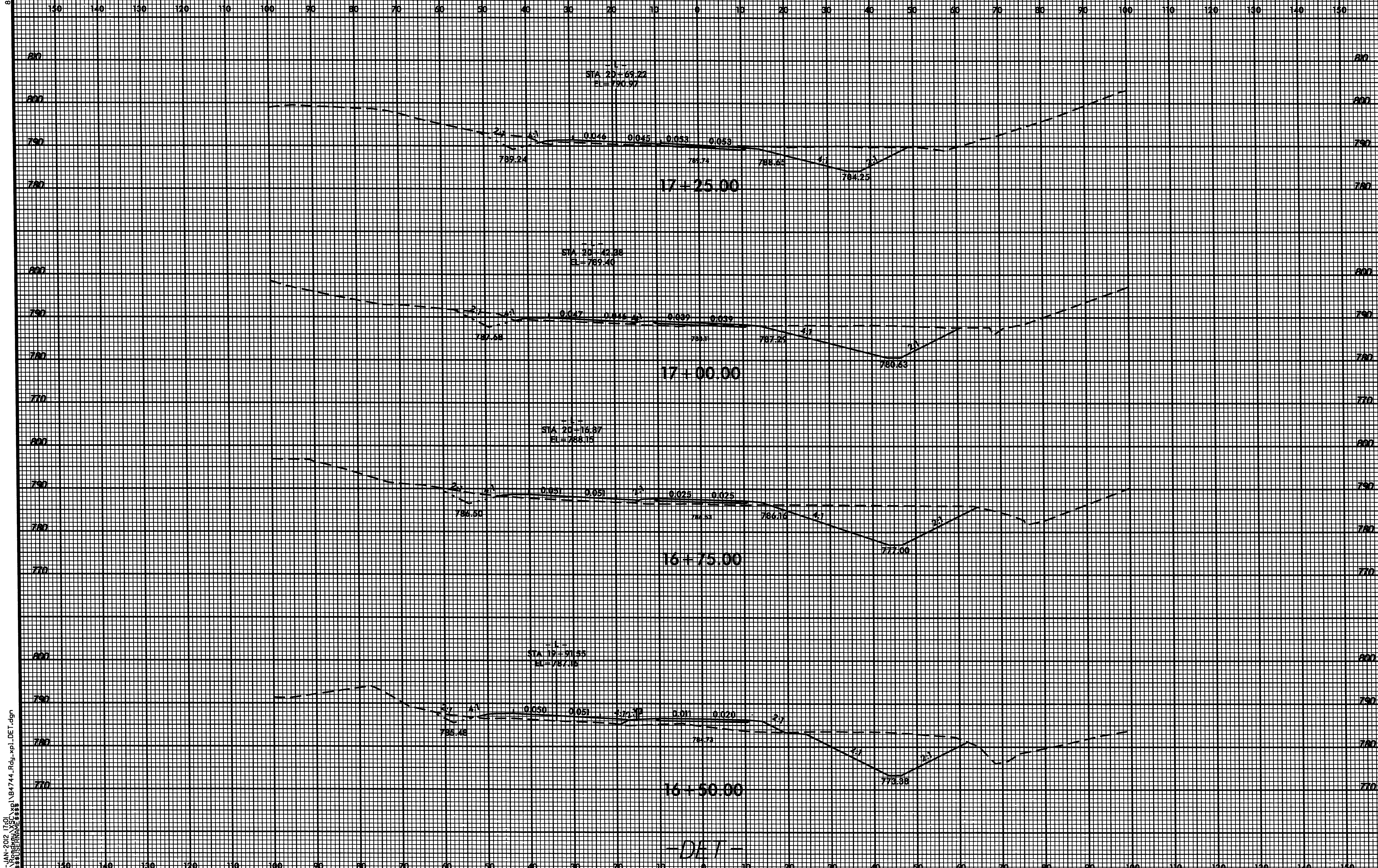
PROJ. REFERENCE NO.	SHEET NO.
B-4744	X-19



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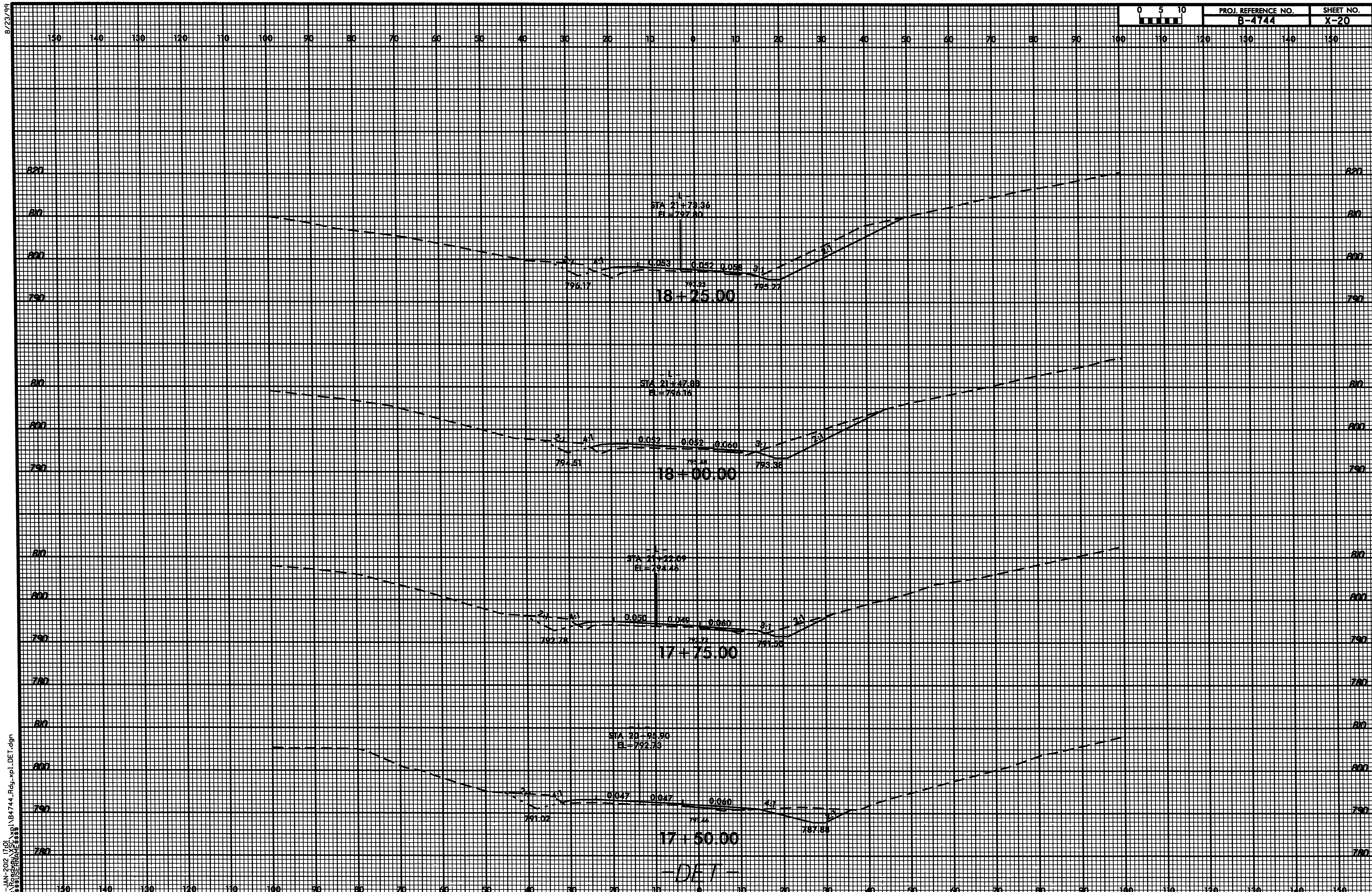

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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4744	X-21

STA 22+47.14
EL=802.34

STA 22+23.68
EL=800.98

STA 21+98.60
EL=799.39

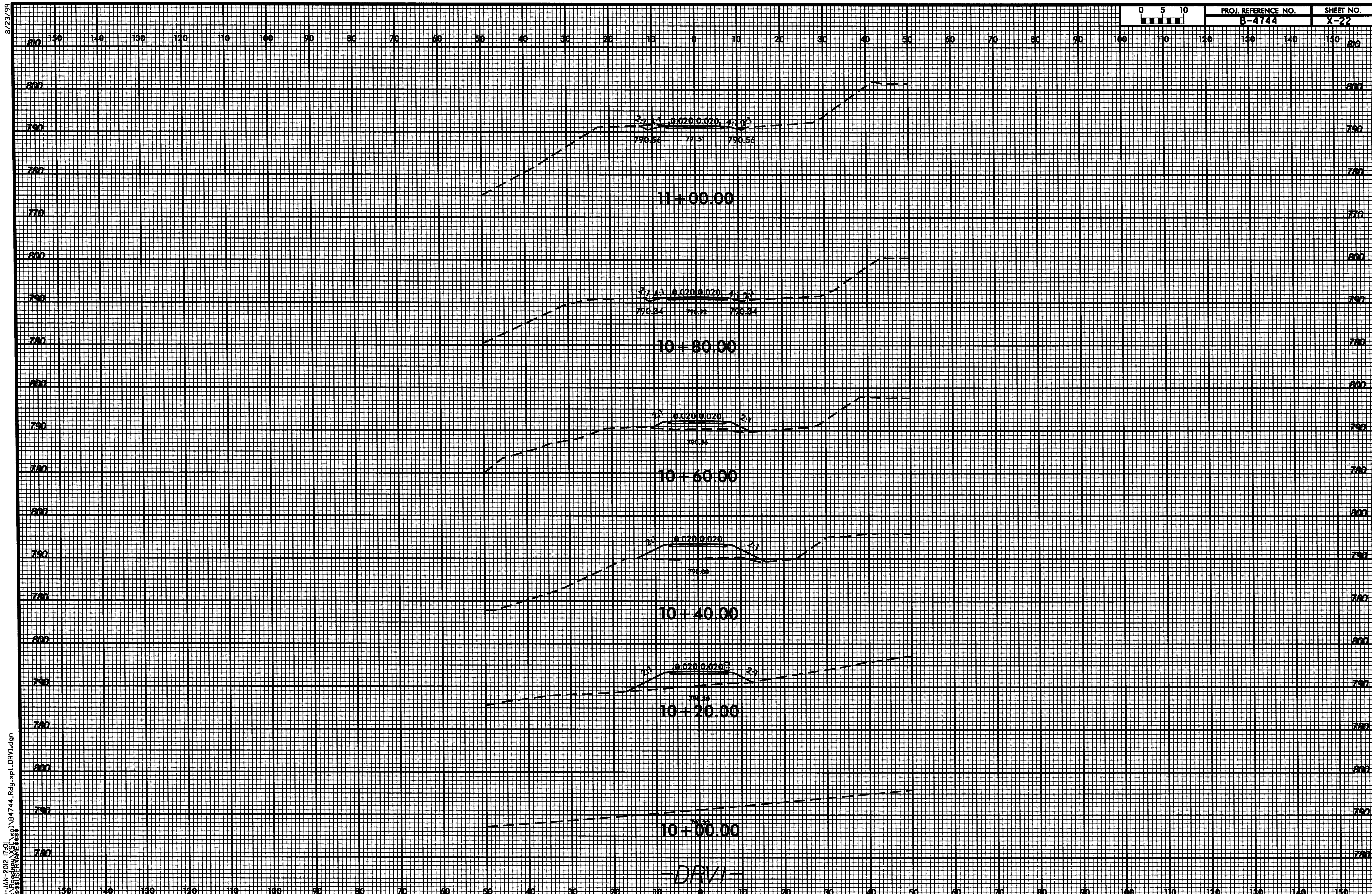
18+98.44

18+75.00

18+50.00

-DET-

PROJ. REFERENCE NO.	SHEET NO.
B-4744	X-22



8/23/99

10-JAN-2012 17:01
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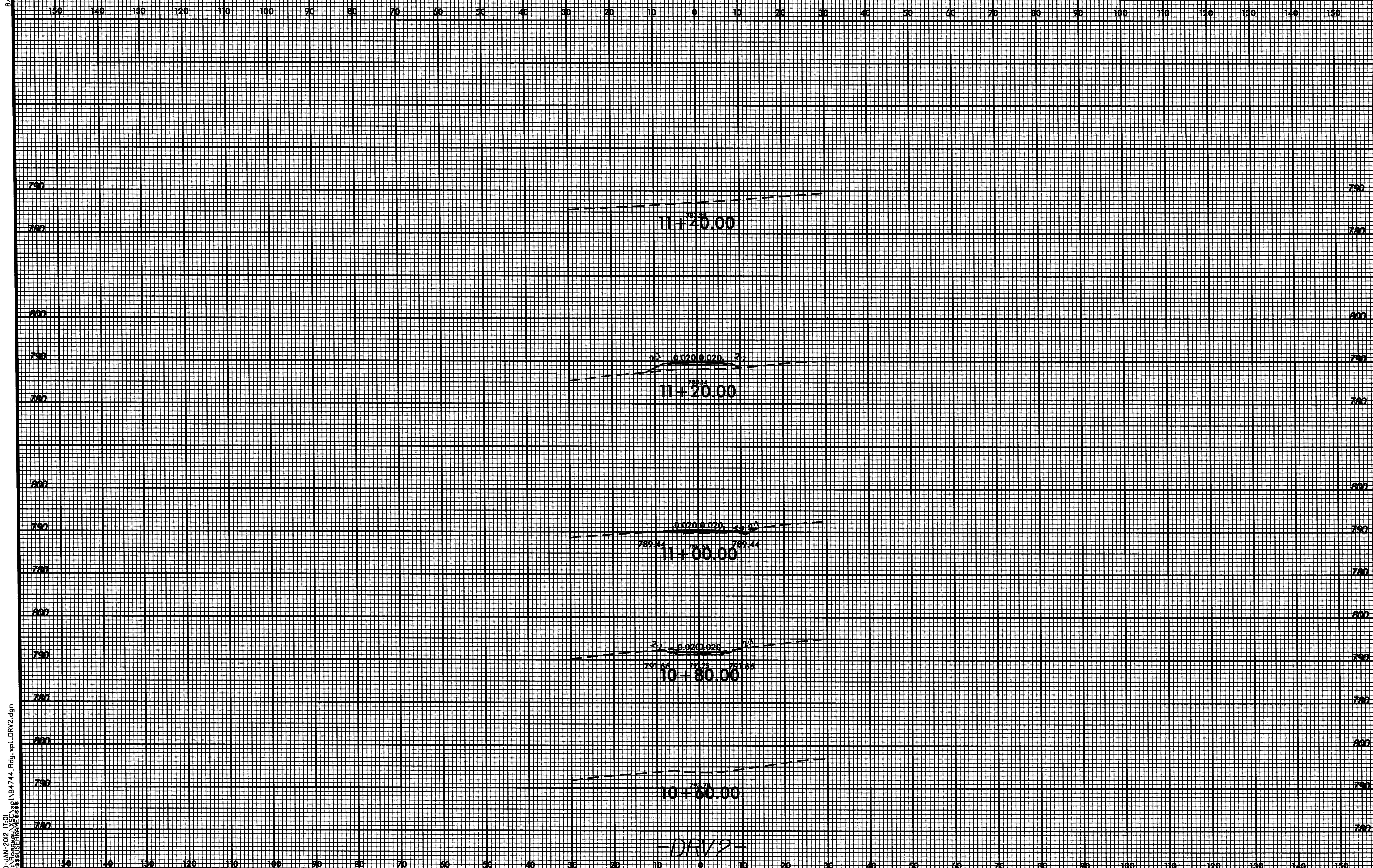
PROJ. REFERENCE NO.	SHEET NO.
B-4744	X-23



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10-JAN-2012 17:01
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$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4744	X-24

STA 16+47.61
EL=787.54

10+60.00

STA 16+17.8662
EL=788.46

10+40.00

STA 15+88.8319
EL=789.17

10+20.00

10+00.00

-DRV3-

10-JAN-2012 17:01
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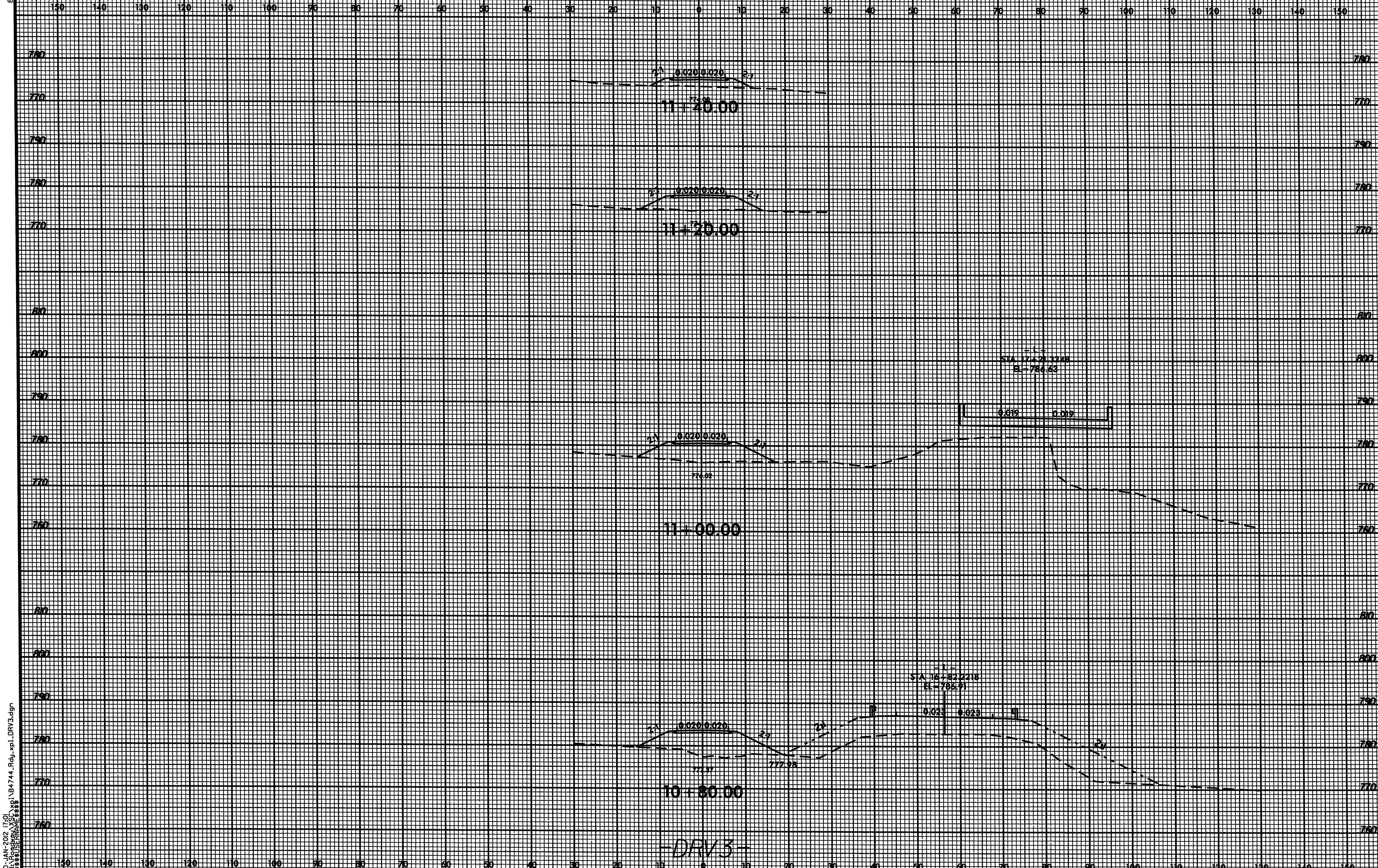
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4744	X-25



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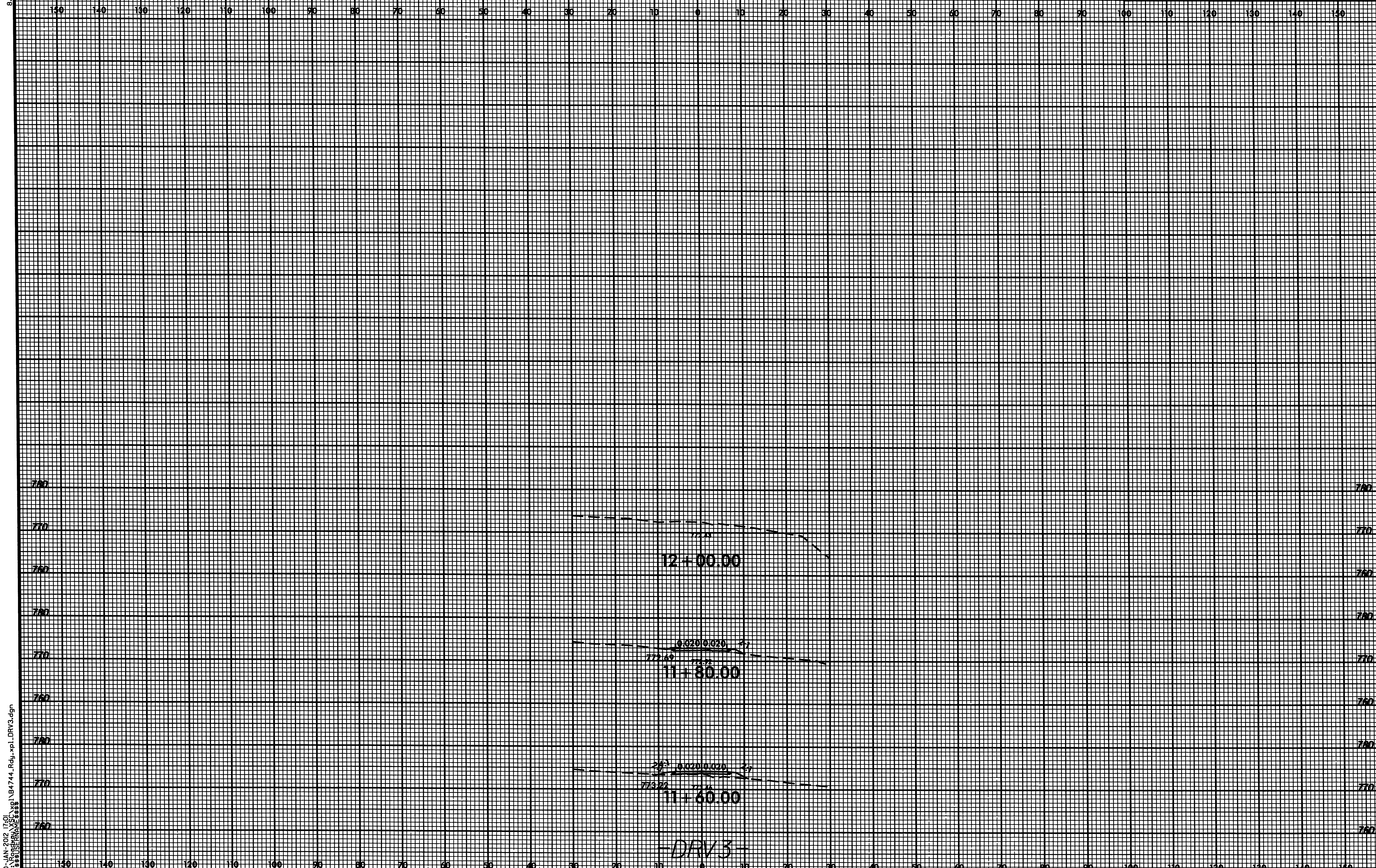
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4744	X-26



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