



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

July 12, 2011

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 Permit 13** for the proposed replacement of Bridge No. 175 over White Oak Creek and Bridge No. 38 over Jacob Fork River on SR 1901 (Wards Gap Road) in Burke County, Federal Aid Project No. BRZ-1901(2); Division 13; TIP No. B-4046; WBS 33412.1.1

Dear Madam:

The North Carolina Department of Transportation (NCDOT) proposes to replace bridge No. 175, a 36-foot single-span bridge over White Oak Creek on Wards Gap Road (SR 1901), with a 70-foot single-span bridge at existing location. No in-stream work is required for bridge removal. There will be 9 linear of bank stabilization at the output end of an 18" drain pipe, west of the bridge. There are no temporary impacts associated with the replacement of bridge No. 175.

NCDOT also proposes to replace bridge No. 38, a 121-foot triple-span bridge over Jacob Fork River on Wards Gap Road (SR 1901), with a 130-foot long triple-span bridge. This bridge replacement will be shifted slightly to the east of its existing location. Both concrete encasements are being retained from the removal of bridge No. 38. No in-stream work for bridge removal or new construction is required. There are no permanent or temporary impacts associated with the replacement of bridge No. 38.

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 attachment, NCDOT hereby requests NCWRC review. NCDOT request that NCWRC forward their comments to the Corps of Engineers and the NCDOT within 30 calendar days of receipt of this application.

Please see enclosed copies of the Pre-Construction Notification (PCN) Form, Notification of Jurisdictional Determination, State Stormwater Permit, Stormwater Management Plan, Permit drawings and Design plans. The Categorical Exclusion (CE) was completed on July 2, 2009. Documents were distributed shortly thereafter. Additional copies are available upon request.

This project calls for a letting date of April 17, 2012 and a review date of February 28, 2012; 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 Jennifer Harrod at (919) 707-6124.

Sincerely,

for Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDE

Cc: NCDOT Permit Application Standard Distribution List
File

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

B. Project Information and Prior Project History	
1. Property Identification	
1a. Property identification no. (tax PIN or parcel ID):	<i>not applicable</i>
1b. Site coordinates (in decimal degrees):	Latitude: 35.589741 (DD.DDDDDD) Longitude: - 81.585948 (-DD.DDDDDD)
1c. Property size:	2.79 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	White Oak Creek and Jacob Fork River
2b. Water Quality Classification of nearest receiving water:	White Oak Creek: WS-III, TR, ORW and Jacob Fork River: WS-III, ORW
2c. River basin:	Catawba
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: Heavily Developed and Disturbed with small sections of Broadleaf Deciduous Forest	
3b. List the total estimated acreage of all existing wetlands on the property: 0	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 135'	
3d. Explain the purpose of the proposed project: To replace two structurally deficient bridges.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing one 36-foot single-span bridge with a 70-foot single-span bridge at existing location over White Oak Creek. The project also involves replacing one 121-foot triple-span bridge with a 130-foot triple-span bridge over Jacob Fork River, east of existing alignment. Both replacements will utilize an off-site detour. 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: appears that a small crescent shaped wetland was included in JD, now outside of PSA.	<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): Martin L. Mitchell & Anne L. Timm; Attn: Timothy E. Black	Agency/Consultant Company: HSMM Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. November 19, 2002	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown
5b. If yes, explain in detail according to "help file" instructions.	

6. Future Project Plans

6a. Is this a phased project?

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)
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	
2g. Total wetland impacts					N/A Permanent N/A Temporary

2h. Comments:

3. Stream Impacts

If there are perennial or intermittent stream impacts (including temporary impacts) proposed on the site, then complete this question for all stream sites impacted.

3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Bank Stabilization	White Oak Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	10-15	9.0
Site 2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
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		
3h. Total stream and tributary impacts						9.0 Perm N/A Temp

3i. Comments:

4. Open Water Impacts

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

4a. Open water impact number – Permanent (P) or Temporary (T)	4b. Name of waterbody (if applicable)	4c. Type of impact	4d. Waterbody type	4e. Area of impact (acres)
O1 <input type="checkbox"/> P <input type="checkbox"/> T				
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				
4f. Total open water impacts				N/A Permanent N/A 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?		<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		
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 replacement bridge for No. 175 is 34 feet longer than the existing bridge while the replacement bridge for No. 38 is 9 feet longer. Both concrete encasements associated with the removal of bridge No. 38 are being retained. No in-stream work for bridge removal or new construction is required for bridge No. 38; An off site detour will be used.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. Standard construction techniques apply.		
2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State		
2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, explain: impacts due to bank stabilization are minimal; under threshold for mitigation for the NCDWQ; bank stabilization does not constitute a loss of waters of the U.S.	
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	
3. Complete if Using a Mitigation Bank		
3a. Name of Mitigation Bank: not applicable		
3b. Credits Purchased (attach receipt and letter)	Type	Quantity
3c. Comments:		
4. Complete if Making a Payment to In-lieu Fee Program		
4a. Approval letter from in-lieu fee program is attached.	<input type="checkbox"/> Yes	
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:		
5. Complete if Using a Permittee Responsible Mitigation Plan		
5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.		

6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ

6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?

Yes No

6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation. Calculate the amount of mitigation required.

Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1			3 (2 for Catawba)	
Zone 2			1.5	
6f. Total buffer mitigation required:				

6g. If buffer mitigation is required, discuss what type of mitigation is proposed (e.g., payment to private mitigation bank, permittee responsible riparian buffer restoration, payment into an approved in-lieu fee fund).

6h. Comments:

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

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

5. Endangered Species and Designated Critical Habitat (Corps Requirement)		
5a. Will this project occur in or near an area with federally protected species or habitat?	<input checked="" type="checkbox"/> Yes	<input 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? USFWS T/E County Listings and habitat descriptions per the USFWS website; The only T/E species listed with habitat in the project study area are: Dwarf-flowered heartleaf - last surveyed May 5, 2009; White irisette - last surveyed June 1, 2010; Small whorled pogonia - last surveyed May 24, 2011. These three species have a biological conclusion of No Effect; No habitat is present for the remaining four T/E species listed for Burke County.		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index		
7. Historic or Prehistoric Cultural Resources (Corps Requirement)		
7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation		
8. Flood Zone Designation (Corps Requirement)		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	<input type="checkbox"/> Yes	<input checked="" 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.)	7.11.11 Date

**U.S. ARMY CORPS OF ENGINEERS
Wilmington District**

Action ID: 200231351

County: **Burke**

Notification of Jurisdictional Determination

**Property Owner: NCDOT
Address: Gregory J. Thorpe, Project
Development and Environmental Analysis
1548 Mail Service Center
Raleigh, NC 27699-1548
Telephone: 919-733-3141**

**Authorized Agent: Hayes, Seay, Mattern &
Mattern, Inc.
Attn. Timothy E. Black
Address: 1305 Navaho Drive, Suite 303
Raleigh, NC 27609
Telephone: 919-878-5250**

**Size and Location of Property (waterbody, Highway name/number, town, etc.):
TIP No. B-4046, Bridge over White Oak Creek on SR 1901 near Casar, Burke County**

Basis for Determination: Delineation Map and Data Forms dated July 19, 2001 and provided August 27, 2002

Indicate Which of the Following apply:

- ◇ The surface waters and wetlands on this project have been delineated and the limits of the Corps jurisdiction have been explained to you. 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.

Placement of dredged or fill material in wetlands on this property without a Department of the Army permit is in most cases a violation of Section 301 of the Clean Water Act (33 USC 1311). A permit is not required for work on the property restricted entirely to existing high ground. If you have any questions regarding the Corps of Engineers regulatory program, please contact Steven W. Lund at 828-271-7980 x 4.

Project Manager Signature _____

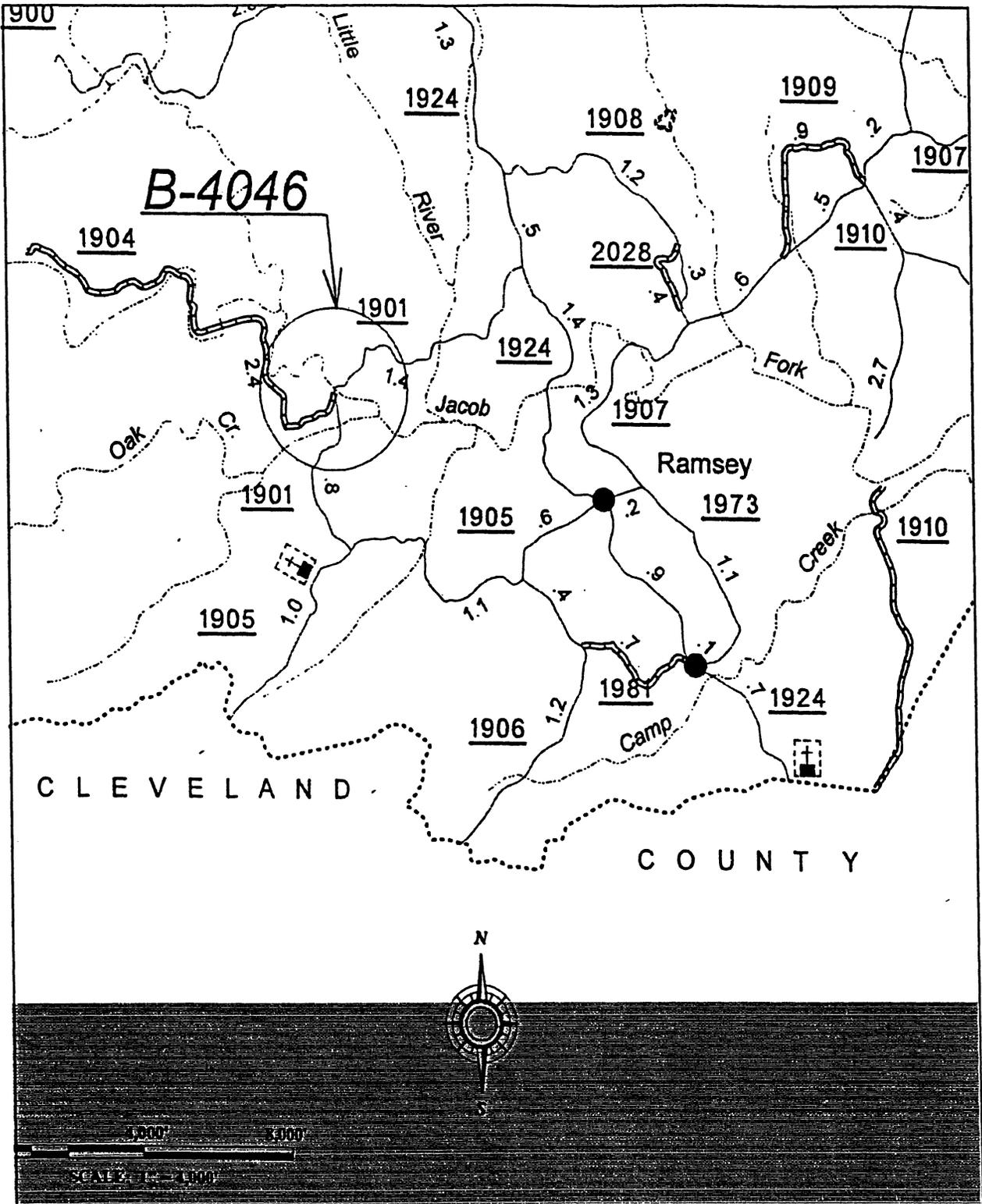
Steven W. Lund

Date: November 19, 2002

Expiration Date: November 19, 2007

SURVEY PLAT OR FIELD SKETCH OF DESCRIBED PROPERTY AND THE WETLAND DELINEATION FORM MUST BE ATTACHED TO THIS FORM.



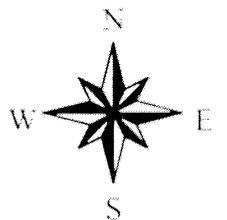


SITE VICINITY MAP
SR 1901 BRIDGE REPLACEMENT
OVER WHITE OAK CREEK (TIP B-4046)
BURKE COUNTY, NORTH CAROLINA
 (Excerpted from NCDOT County Highway Map, 2000)

FIGURE 1



Wetland Boundary
TIP Project No. B-4046



DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>B-4046 Bridge Replacement NRTR</u> Applicant/Owner: <u>NCDOT</u> Investigator: <u>Martin Mitchell (HSMM, Inc.)</u>	Date: <u>July 19, 2001</u> Co./City: <u>Burke County</u> State: <u>North Carolina</u>
Do Normal Circumstances exist on the site? Yes Is the site significantly disturbed (Atypical Situation)? No Is the area a potential Problem Area? No (If needed, explain on reverse)	Community ID: _____ Transect ID: _____ Plot ID: <u>SE6W</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Platanus occidentalis</u>	<u>S/S</u>	<u>FACW-</u>	9. <u>Vitis riparia</u>	<u>Vine</u>	<u>FACW</u>
2. <u>Ainus serrulata</u>	<u>S/S</u>	<u>FACW</u>	10. <u>Polvaonum punctatum</u>	<u>Herb</u>	<u>FACW</u>
3. <u>Rubus sp.</u>	<u>S/S</u>		11. <u>Pilea pumila</u>	<u>Herb</u>	<u>FACW</u>
4. <u>Impatiens capensis</u>	<u>Herb</u>	<u>FACW</u>	12. _____		
5. <u>Boehmeria cylindrica</u>	<u>Herb</u>	<u>FACW</u>	13. _____		
6. <u>Leersia oryzoides</u>	<u>Herb</u>	<u>OBL</u>	14. _____		
7. <u>Toxicodendron radicans</u>	<u>Vine</u>	<u>FAC</u>	15. _____		
8. <u>Microsteaium vimineum</u>	<u>Herb</u>	<u>FAC+</u>	16. _____		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 100%

Remarks: _____

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: <input type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input type="checkbox"/> Water Marks <input checked="" type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands
Field Observations: Depth of Surface Water: _____ (in.) Depth to Standing Water in Pit: _____ (in.) Depth to Saturated Soil: <u>surface</u> (in.)	Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input type="checkbox"/> Water-Stained Leaf Litter <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: <u>Adjacent to waterway shown in NCDOT black and white aerial photo.</u>	

DATA FORM (continued)
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

SOILS

Map Unit Name (Series and Phase): <u>Fontaflora-Ostin complex (18A)</u>		Drainage Class: <u>Well drained</u>			
Taxonomy (Subgroup): <u>Mesic Typic Udifluvents</u>		Field Observations Confirmed Mapped Type? <u>No</u>			
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structures, etc.
	A				SILTY SAND
Hydric Soil Indicators:					
<input type="checkbox"/> Histosol		<input type="checkbox"/> Concretions			
<input type="checkbox"/> Histic Epipedon		<input type="checkbox"/> High Organic Content in Surface Layer in Sandy Soils			
<input type="checkbox"/> Sulfidic Odor		<input type="checkbox"/> Organic Streaking in Sandy Soils			
<input type="checkbox"/> Aquic Moisture Regime		<input type="checkbox"/> Listed on Local Hydric Soils List			
<input type="checkbox"/> Reducing Conditions		<input type="checkbox"/> Listed on National Hydric Soils List			
<input type="checkbox"/> Gleyed or Low-Chroma Colors		<input type="checkbox"/> Other (Explain in Remarks)			
Remarks:					
Units mapped by NRCS are non-hydric. Soils observed likely represent hydric soil inclusion, which USDA reports to occur within Fontaflora-Ostin map units, or fluvaquents.					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? YES	Is this Sampling Point Within a Wetland? YES
Wetland Hydrology Present? YES	
Hydric Soils Present? YES	
Remarks:	



North Carolina Department of Environment and Natural Resources

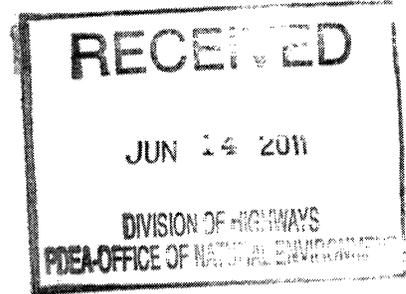
Division of Water Quality

Beverly Eaves Perdue
Governor

Coleen H. Sullins
Director

Dee Freeman
Secretary

June 10, 2011



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. SW1110501
TIP No. B-4046, NCSR 1901
Bridge Nos. 38 and 175
State Stormwater Permit
N C Department of Transportation
Burke County

Dear Dr. Thorpe:

The Asheville Regional Office received a completed Stormwater Application for the subject project on June 9, 2011. 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. SW1110501 dated June 10, 2011 to the NC Department of Transportation for the proposed replacement of Bridge No. 38 over Jacob Fork and Bridge No. 175 over White Oak Creek on NCSR 1901 (Wards Gap Road) in Burke 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,

Roger Edwards, Regional Supervisor
Surface Water Protection Section
Asheville Regional Office

Dr. Greg Thorpe, Ph.D.
June 10, 2011
Page Two

Attachment

cc: David Chang, P.E., NCDOT Hydraulics Unit
Ed Green, Division 13 Maintenance Engineer
Roger Bryan, Division 13 DEO
DWQ Transportation Permitting Unit
Mike Parker, 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

Burke 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. 38 over Jacob Fork and Bridge No. 175 over White Oak Creek on NCSR 1901 (Wards Gap Road) in Burke 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 runoff from the impervious surfaces has been directed away from surface waters as much as possible.
2. The Amount of built-upon area has been minimized 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. Vegetated roadside ditches are 3:1 slopes average or flatter.

6. A preformed scour hole and a special cut ditch (average slope of 3:1) will be constructed to treat stormwater draining to White Oak Creek and two (2) preformed scour holes will be constructed to treat stormwater draining to Jacob Fork.

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 10th day of June 2011.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



Coleen H. Sullins, Director
Division of Water Quality
By Authority of the Environmental Management Commission

Permit Number SW1110501



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

May 23, 2011

N.C. Division of Water Quality
Asheville Regional Office
2090 U.S. 70 Highway
Asheville, NC 28778

Attention: Mr. Mike Parker

Subject: **Stormwater Permit Request** for the Replacement of Bridge no. 38 over Jacob Fork and Bridge no. 175 over White Oak Creek on SR 1901 (Wards Gap Road) in Burke County TIP No. B-4046, WBS 33412.1.1

Dear Mr. Parker:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 38 over Jacob Fork and Bridge No. 175 over White Oak Creek on SR 1901 (Wards Gap Road).

A Stormwater Application Form, the stormwater management plan and two sets of project plans are provided with this request. Please review this project for authorization by your division.

Please contact Mr. John W. Twisdale, Jr., P.E. at (919) 707-6754 if you have any questions or concerns. Thank you for your time and consideration.

Sincerely,

David S. Chang, P.E.
Assistant State Hydraulics Engineer

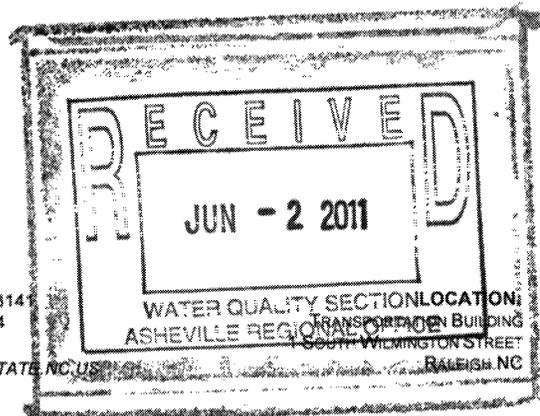
Enclosures (4)

Cc: w/out attachments:
Ms. Lori Beckwith, USACE
Mr. Brian Wrenn NCDWQ
File B-4046

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

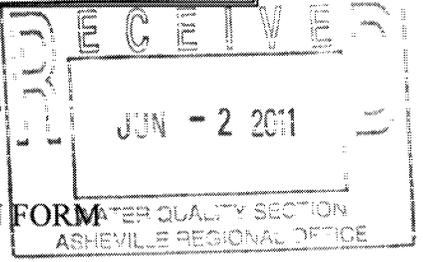
TELEPHONE: 919-733-3141
FAX: 919-733-9794

WEBSITE: WWW.DOH.DOT.STATE.NC.US



OFFICE USE ONLY		
Date Received	Fee Paid	Permit Number
June 2, 2011	Interstate Transfer \$505.00	SW1110501

**State of North Carolina
Department of Environment and Natural Resources
Division of Water Quality**



STORMWATER MANAGEMENT PERMIT APPLICATION FORM

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
LINEAR ROADWAY PROJECT**

This form may be photocopied for use as an original.

DWQ Stormwater Management Plan Review:

A complete stormwater management plan submittal includes this application form, a supplement form for each BMP proposed (see Section V), design calculations, and plans and specifications showing all road and BMP details.

I. PROJECT INFORMATION

NCDOT Project Number: 33412.1.1 (B-4046) County: Burke

Project Name: Replace Bridge No. 175 over White Oak Creek and Bridge No. 38 over Jacob Fork on SR 1901

Project Location: SR 1901 (Wards Gap Road) near intersection with SR 1904 (South Mountain State Park Ave)

Contact Person: Ray Lovinggood Phone: 1.919.707.6736 Fax: 1.919.250.4108

Receiving Stream Name: White Oak Creek and Jacob Fork River Basin: Catawba

Class: White Oak: WS-III, Tr, ORW: Jacob Fork: WS-III, ORW

Proposed linear feet of project: 1,325

Proposed Structural BMP and Road Station *(attach a list of station and BMP type if more room is needed)*

Performed Scour Holes at: -L- Sta 10+78 Rt, 18+00 Rt, and 20+00 Rt

Type of proposed project: *(check all that apply):*

- New
 Widening
 2 lane*
 4 lane*
 Curb and Gutter
 Bridge Replacement
 Other *(Describe)* _____

**2 lane and 4 lane imply that roadside ditches are used unless Curb and Gutter is also checked.*

II. REQUIRED ITEMS CHECKLIST

Initial in the space provided below to indicate the following design requirements have been met and supporting documentation is attached. Supporting documentation shall, at a minimum, consist of a brief narrative description including (1) the scope of the project, (2) how the items below are met, (3) how the proposed best management practices minimize water quality impacts, and (4) any significant constraints and/or justification for not meeting a, b, c and d to the maximum extent practicable.

Designer's Initials

- ROL a. The amount of impervious surface has been minimized as much as possible.
ROL b. The runoff from the impervious areas has been diverted away from surface waters as much as possible.
ROL c. Best Management Practices are employed which minimize water quality impacts.
ROL d. Vegetated roadside ditches are 3:1 slope or flatter. 4:1 FRONT SLOPE
2:1 BACK SLOPE AVG 3:1

III. OPERATION AND MAINTENANCE AGREEMENT

I acknowledge and agree by my initials below that the North Carolina Department of Transportation is responsible for the implementation of the four maintenance items listed. I agree to notify DWQ of any operational problems with the BMP's that would impact water quality or prior to making any changes to the system or responsible party.

Maintenance Engineer's Initials

- RA a. BMP's shall be inspected and maintained in good working order.
RA b. Eroded areas shall be repaired and reseeded as needed.
RA c. Stormwater collection systems, including piping, inlets, and outlets, shall be maintained to insure proper functioning.

Maintenance Engineer's Name: Ernie Aguirre

Title: DIVISION MAINTENANCE ENGINEER

IV. APPLICATION CERTIFICATION

I, (print or type name) Ray D. Lovinggood of Highway Design Branch, certify that the information included on this permit application form is, to the best of my knowledge, correct and that the project will be constructed in conformance with the approved plans and that the proposed project complies with the requirements of 15A NCAC 2H .1000.

Title: Project Design Engineer

Address: NCDOT Hydraulics Unit 1590 MSC Raleigh, NC 27699-1590

Signature: Ray D. Lovinggood

Date: 23 MAY 2011

V. SUPPLEMENT FORMS

The applicable state stormwater management permit supplement form(s) listed below must be submitted for each BMP specified for this project. Contact the Stormwater and General Permits Unit (919) 733-5083 for the status and availability of these forms.

Form SW401-Low Density	Low Density Supplement
Form SW401-Curb Outlet System	Curb Outlet System Supplement
Form SW401-Off-Site System	Off-Site System Supplement
Form SW401-Wet Detention Basin	Wet Detention Basin Supplement
Form SW401-Infiltration Basin	Infiltration Basin Supplement
Form SW401-Infiltration Trench	Underground Infiltration Trench Supplement
Form SW401-Bioretention Cell	Bioretention Cell Supplement
Form SW401-Level Spreader	Level Spreader/Filter Strip/Restored Riparian Buffer Supplement
Form SW401-Wetland	Constructed Wetland Supplement
Form SW401-Grassed Swale	Grassed Swale Supplement
Form SW401-Sand Filter	Sand Filter Supplement

RECEIVED

JUN - 2 2011

North Carolina Department of Transportation
Highway Stormwater Program
STORMWATER MANAGEMENT PLAN

Version 1.1

1110501 SW1110501

Page _____ of _____

General Project Information

Project No.:	33412.1 (TIP B-4046)	Date:	2-May-11
City/Town:	15 miles south of Morganton	Designer:	Ray D. Lovinggood, PE
County(ies):	WATERGATE REGION ASHEVILLE REGION Burke County	Project Manager:	John W. Twisdale, Jr., PE
River Basin(s):	Catawba	CAMA County?	no
Primary Receiving Water:	White Oak Cr & Jacob Fork	NCDWQ Stream Index:	no
NCDWQ Surface Water Classification for Primary Receiving Water	Primary: White Oak Cr.: WS-III, Tr. ORW Supplemental: Jacob Fork: WS-III, Tr. ORW	Outstanding Resource Waters (ORW)	

Other Stream Classification:		Type(s) of Impairment:	
303(d) Stream?	no	If yes, why?	
State Stormwater Permit Required?	yes	Due to ORW Classification	no
Could the Project Impact Threatened or Endangered Species?			

Description:	
Anadromous Fish Present?	no
Buffer Rules in Effect?	no

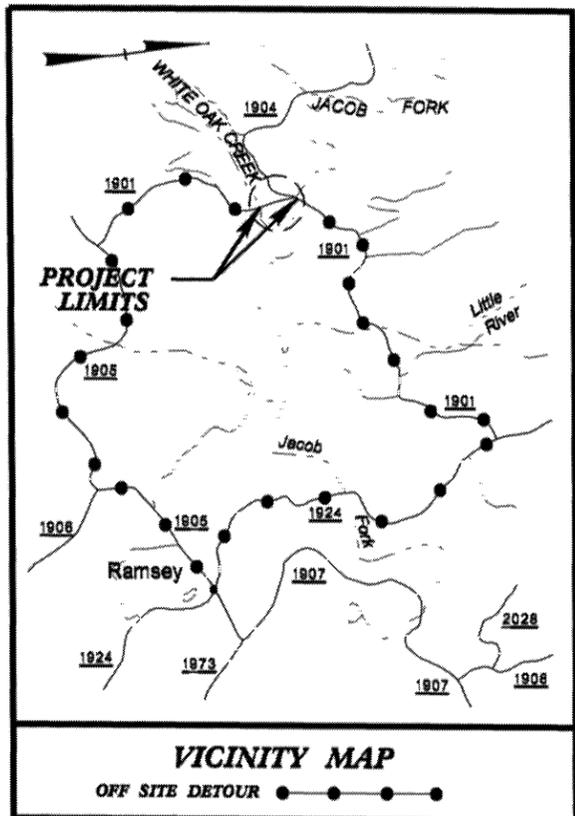
Existing Site	Buffer Rules:
Project Description	

Description of Existing Project Area:	The project site lies in a rural, mostly undeveloped foothills area of South Mountains. There are a few homes and one golf course complex nearby.
Average Daily Traffic (existing):	707
Existing Cross Section:	Two nine-foot lanes with open shoulders
Surrounding Land Use:	Rural
General Comments:	Near entrance to South Mountains State Park
Project Description	
Description of Proposed Project:	The project replaces two bridges: #38 over Jacob Fork and #175 over White Oak Creek, both on SR-1901, Wards Gap Road.
Average Daily Traffic (proposed):	1,105
Proposed Cross-Section:	Two ten-foot lanes with open shoulders.
Interchange Modification:	no
Terminus:	Median Type: N/A
Terminus:	
Project Length (lin. miles/feet):	0.251 miles (1,325 ft)
General Comments:	Added Impervious Area (ac.): 0.3 *
* 0.3 acres of additional pavement and 0.2 acres of pavement removal. Net change in paved area is an increase of 0.1 acres.	

SW1110501
1110501

TIP PROJECT: B-4046

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Symbology Sheet
See Sheet 1-C for Control Sheet

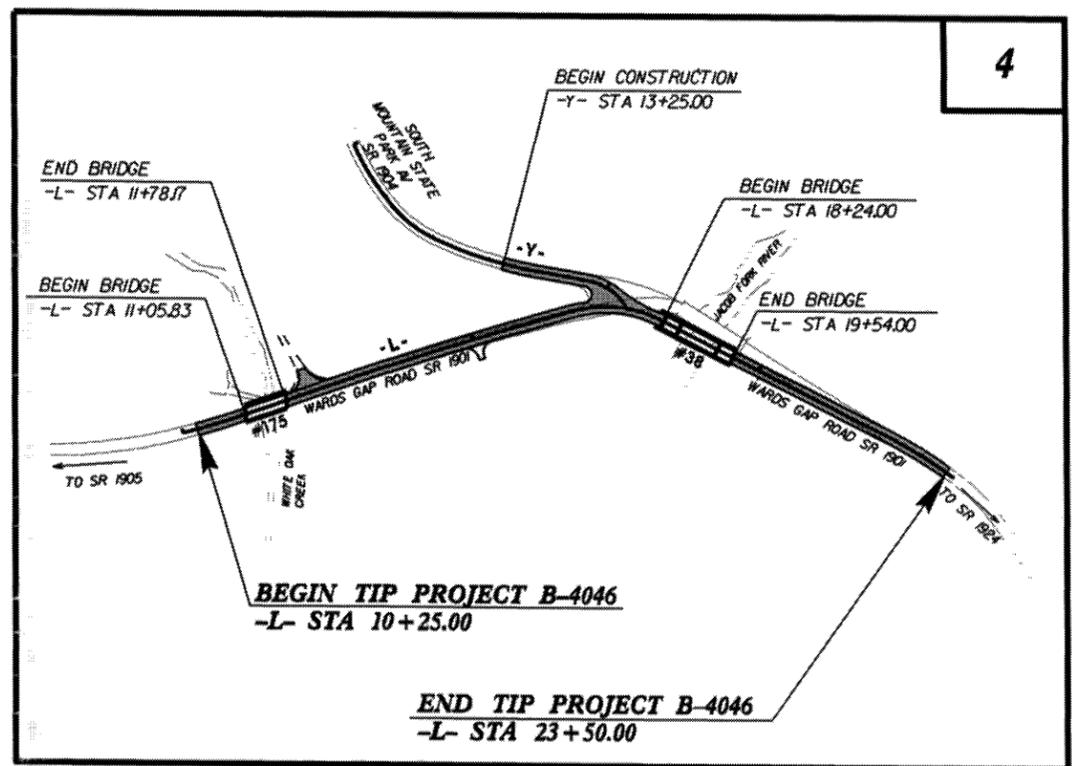
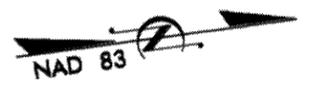


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BURKE COUNTY

**LOCATION: BRIDGE NO. 175 OVER WHITE OAK CREEK
AND BRIDGE NO. 38 OVER JACOB FORK RIVER
ON SR 1901 (WARDS GAP ROAD)**
TYPE OF WORK: GRADING, DRAINAGE, STRUCTURES AND PAVING

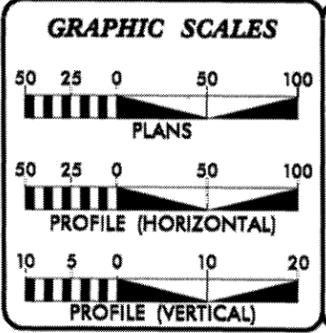
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4046	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33412.1.1	BRZ-1901(2)	PE	
33412.2.1	BRZ-1901(2)	ROW & UTIL.	



- NOTES:
1. THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
 2. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
 3. THIS PROJECT WILL HAVE A DESIGN EXCEPTION FOR MINIMUM HORIZONTAL CURVE RADIUS (200') AND HORIZONTAL SSD (130').

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2011 =	757
ADT 2031 =	1105
DHV =	12 %
D =	55 %
T =	3 % *
V =	40 MPH
CLASSIFICATION: RURAL LOCAL	
* TTST 1% DUAL 2%	SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT B-4046	=	0.213 MILES
LENGTH OF STRUCTURES PROJECT B-4046	=	0.038 MILES
TOTAL LENGTH OF PROJECT B-4046	=	0.251 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL 14, 2011

LETTING DATE: APRIL 17, 2012

GARY LOVERING, PE
PROJECT ENGINEER

ANTHONY C. WEST
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

RECEIVED
JUN - 2 2011
WATER QUALITY SECTION
ASHEVILLE REGIONAL OFFICE

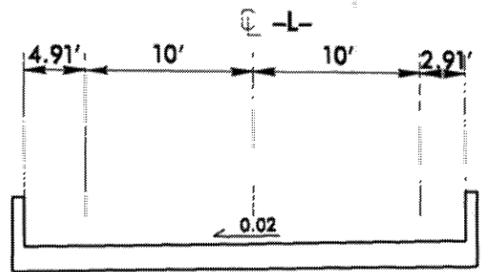
21 MAY 2011 12:49
R:\Roadway\110501\110501.dwg
\$\$\$\$\$USERNAME\$\$\$\$\$

6/2/99

PROJECT REFERENCE NO. B-4046	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	

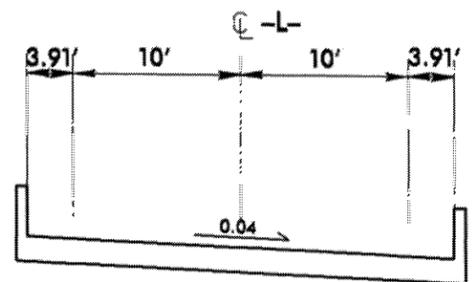
FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.SA, AT AN AVERAGE RATE OF 185 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.SA, AT AN AVERAGE RATE OF 185 LBS. PER SQ. YD. PLACED IN 2 LAYERS
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.SA, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1/2" DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
E1	PROP. APPROX. 4 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

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



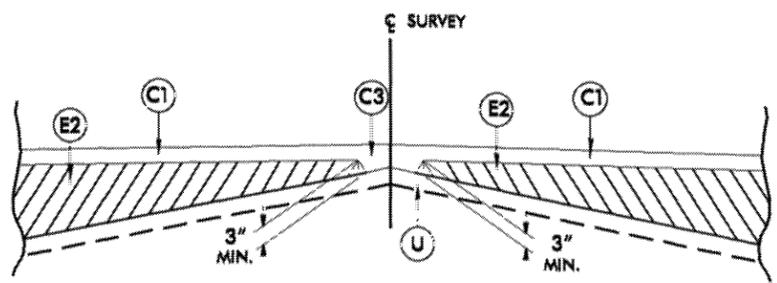
BRIDGE TYPICAL

BRIDGE #175 -L- STA 11-05.83 TO STA 11+78.17

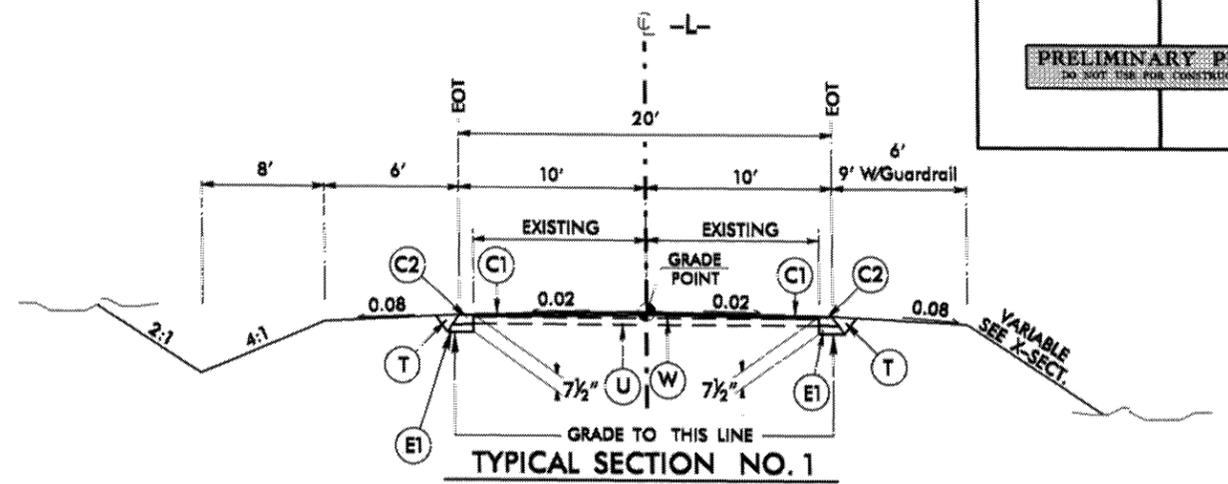


BRIDGE TYPICAL

BRIDGE #38 -L- STA 18+24.00 TO STA 19+54.00

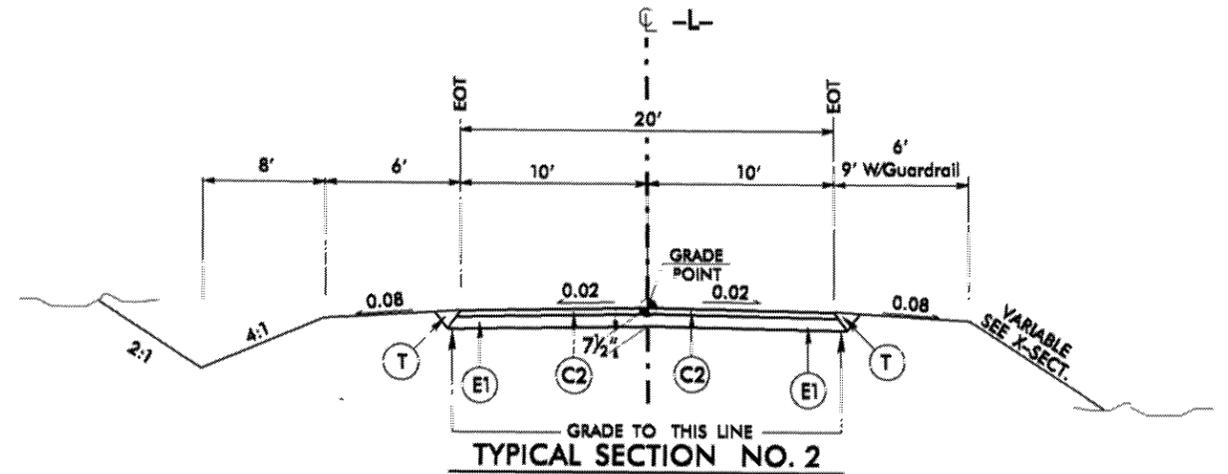


Detail Showing Method of Wedging



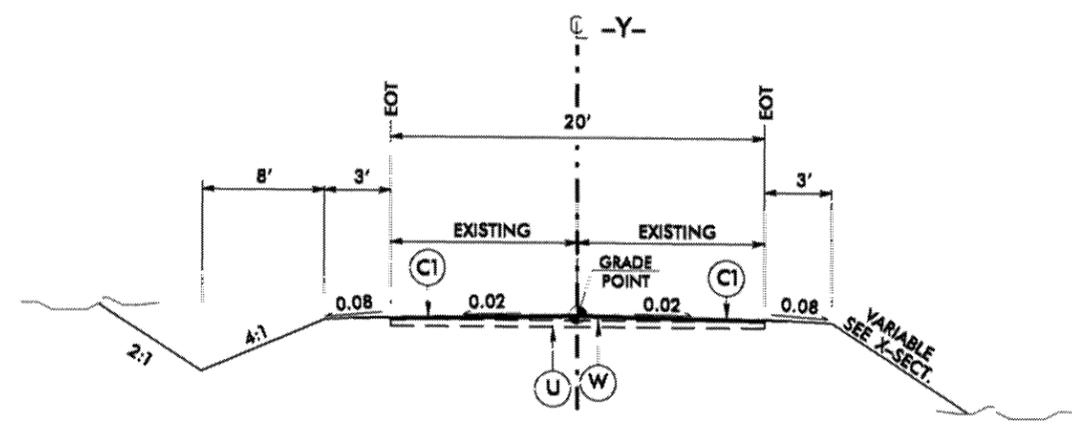
TYPICAL SECTION NO. 1

-L- STA 10+25.00 TO STA 11+05.83 (BEGIN BRIDGE)
 -L- STA 11-78.17 (END BRIDGE) TO STA 17+50.00
 -L- STA 21+50.00 TO STA 23+50.00



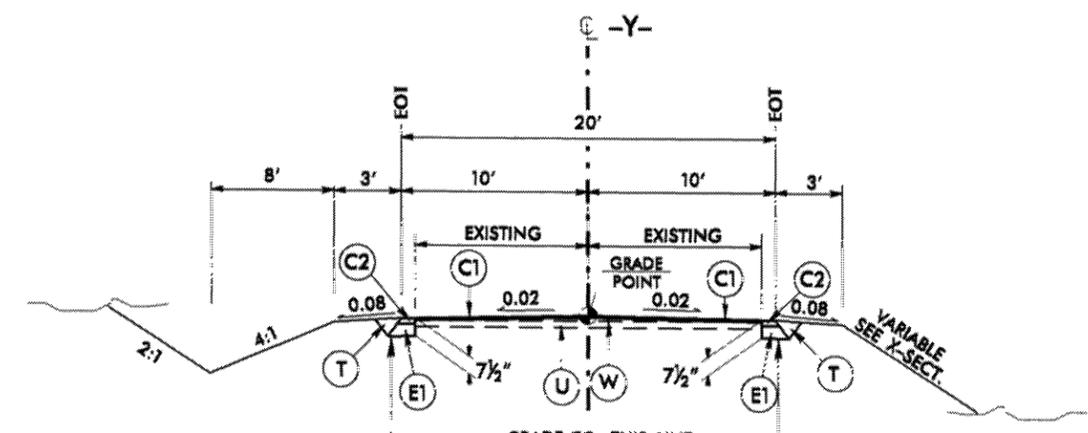
TYPICAL SECTION NO. 2

-L- STA 17+50.00 TO STA 18-24.00 (BEGIN BRIDGE)
 -L- STA 19+54.00 (END BRIDGE) TO STA 21+50.00



TYPICAL SECTION NO. 3

-Y- STA 13+25.00 TO STA 14-50.00



TYPICAL SECTION NO. 4

-Y- STA 14+50.00 TO STA 15+33.35

23 MAY 2011 12:48 PM
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 101\B4046.dwg

5/28/09
 23 MAY 2009 10:49 AM A:\4846.dwg pfl psh 5.dgn

PROJECT REFERENCE NO. B-4046	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	

BRIDGE #175 HYDRAULIC DATA

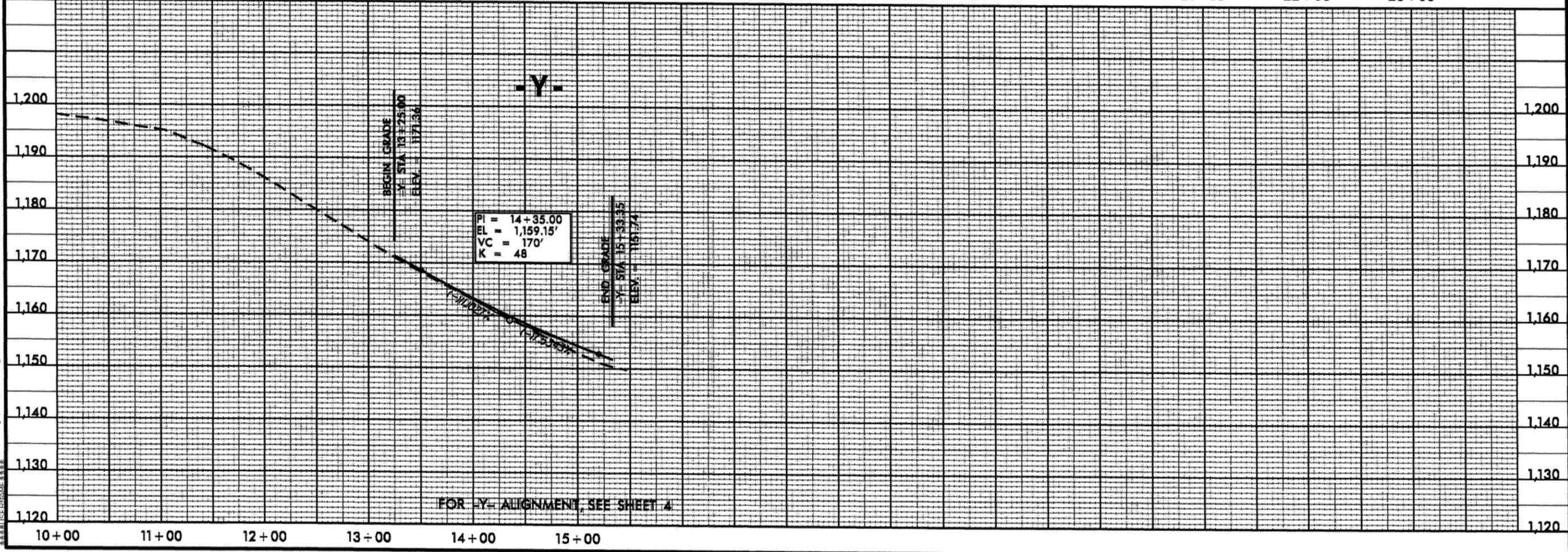
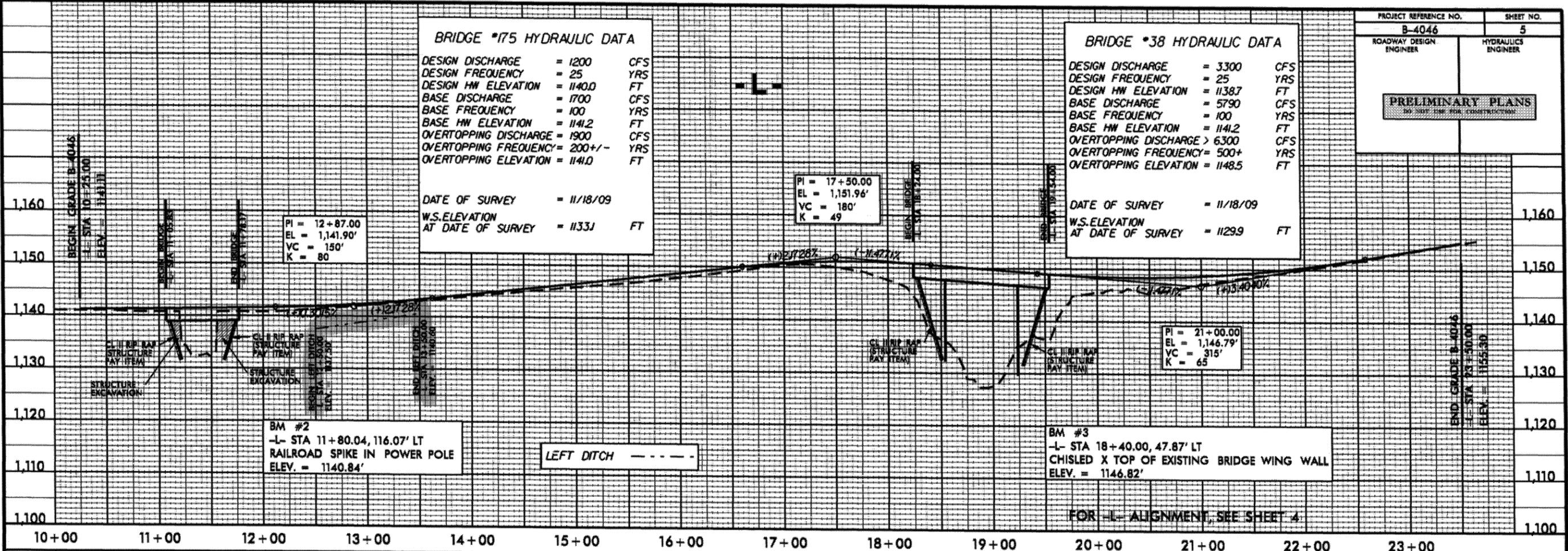
DESIGN DISCHARGE = 1200 CFS
 DESIGN FREQUENCY = 25 YRS
 DESIGN HW ELEVATION = 1140.0 FT
 BASE DISCHARGE = 1700 CFS
 BASE FREQUENCY = 100 YRS
 BASE HW ELEVATION = 1141.2 FT
 OVERTOPPING DISCHARGE = 1900 CFS
 OVERTOPPING FREQUENCY = 200+/- YRS
 OVERTOPPING ELEVATION = 1141.0 FT

DATE OF SURVEY = 11/18/09
 W.S. ELEVATION AT DATE OF SURVEY = 1133J FT

BRIDGE #38 HYDRAULIC DATA

DESIGN DISCHARGE = 3300 CFS
 DESIGN FREQUENCY = 25 YRS
 DESIGN HW ELEVATION = 1138.7 FT
 BASE DISCHARGE = 5790 CFS
 BASE FREQUENCY = 100 YRS
 BASE HW ELEVATION = 1141.2 FT
 OVERTOPPING DISCHARGE > 6300 CFS
 OVERTOPPING FREQUENCY = 500+ YRS
 OVERTOPPING ELEVATION = 1148.5 FT

DATE OF SURVEY = 11/18/09
 W.S. ELEVATION AT DATE OF SURVEY = 1129J FT





General Project Information

Project No.:	33412.1.1 (TIP B-4046)	Date:	2-May-11
City/Town:	15 miles south of Morganton	Designer:	Ray D. Lovinggood, PE
County(ies):	Burke County	Project Manager:	John W. Twisdale, Jr., PE
River Basin(s):	Catawba	CAMA County?	no
Primary Receiving Water:	White Oak Cr & Jacob Fork	NCDWQ Stream Index:	
NCDWQ Surface Water Classification for Primary Receiving Water	Primary:	White Oak Cr.: WSIII; Tr. ORW	Jacob Fork: WS-III; Tr. ORW
	Supplemental:	Outstanding Resource Waters (ORW)	
Other Stream Classification:			
303(d) Stream?	no	Types) of Impairment:	
State Stormwater Permit Required?	yes	If yes, why?	
Could the Project Impact Threatened or Endangered Species?	no	Due to ORW Classification	

Description: _____

Anadromous Fish Present? no

Description: _____

Buffer Rules in Effect? no

Buffer Rules: _____

Existing Site

Description of Existing Project Area: The project site lies in a rural, mostly undeveloped foothills area of South Mountains. There are a few homes and one golf course complex nearby.

Average Daily Traffic (existing): 707

Existing Cross Section: Two nine-foot lanes with open shoulders

Surrounding Land Use: Rural

General Comments: Near entrance to South Mountains State Park.

Project Description

Description of Proposed Project: The project replaces two bridges: #38 over Jacob Fork and #175 over White Oak Creek, both on SR-1901, Wards Gap Road.

Average Daily Traffic (proposed): 1,105

Proposed Cross-Section: Two ten-foot lanes with open shoulders.

Interchange Modification: no

Median Type: N/A

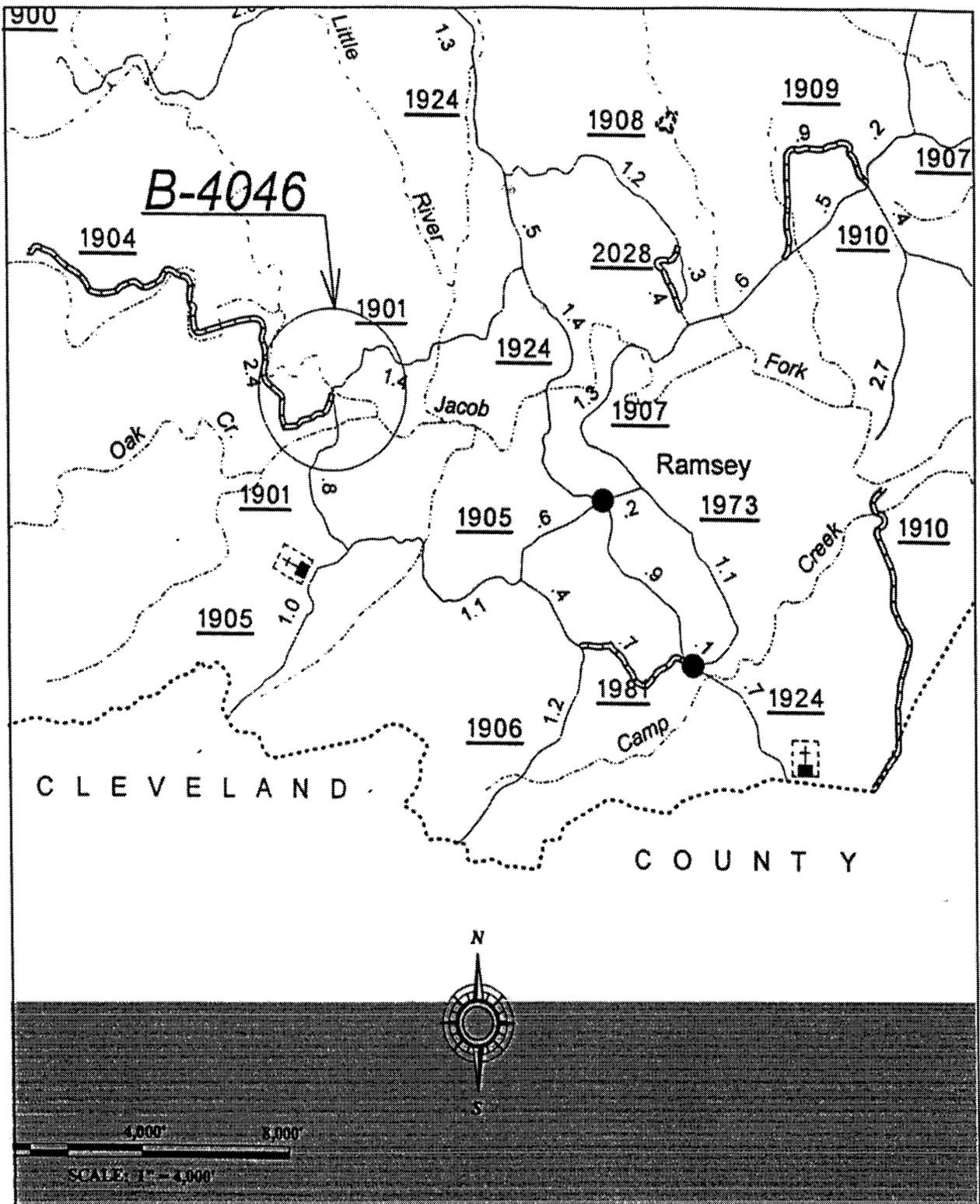
Terminus: _____

Terminus: _____

Project Length (lin. miles/feet): 0.251 miles (1,325 ft)

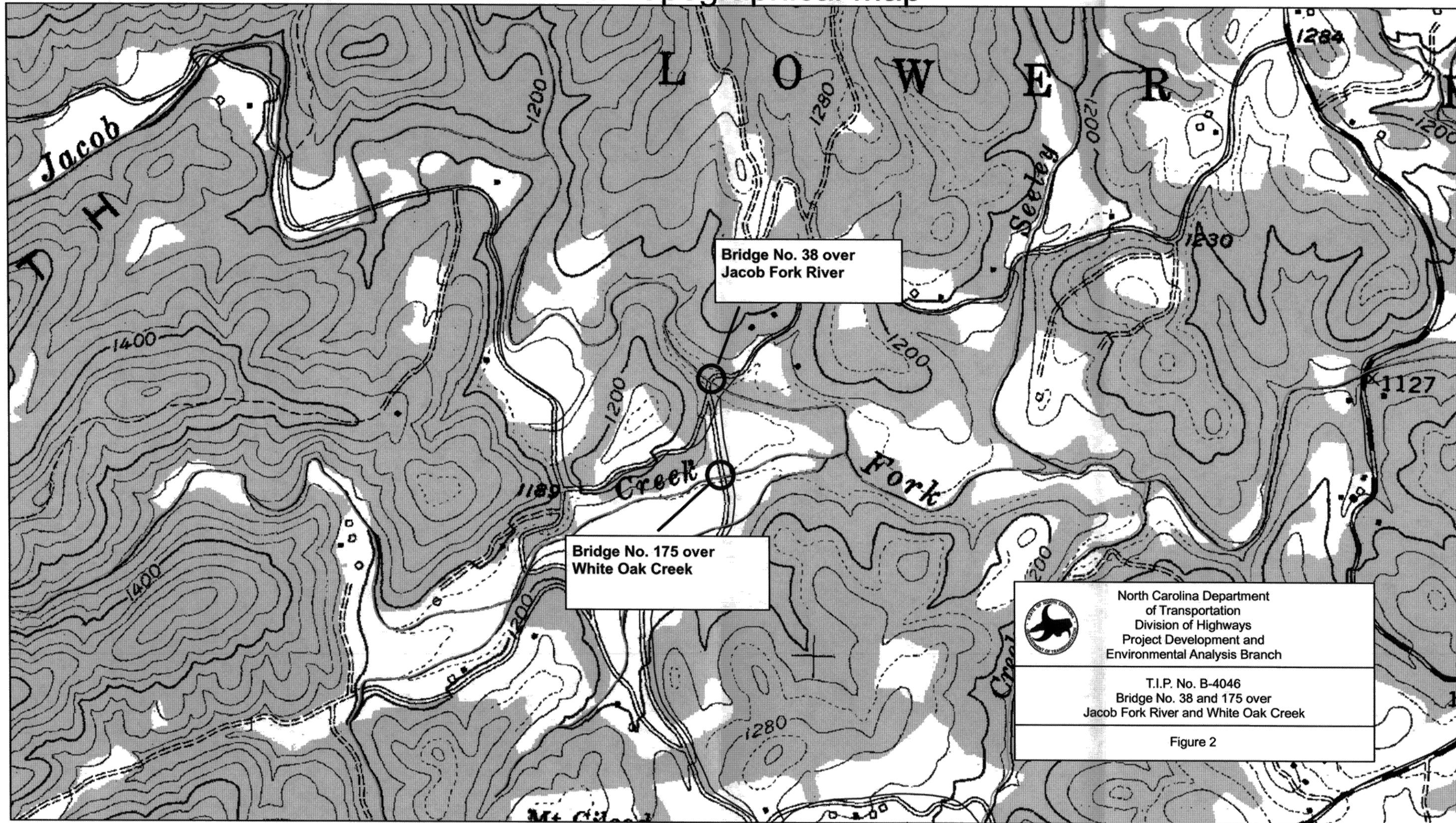
Added Impervious Area (ac.): 0.3

General Comments: 0.3 acres of additional pavement and 0.2 acres of pavement removal. Net change in paved area is an increase of 0.1 acres.



	<p>SITE VICINITY MAP SR 1901 BRIDGE REPLACEMENT OVER WHITE OAK CREEK (TIP B-4046) BURKE COUNTY, NORTH CAROLINA (Excerpted from NCDOT County Highway Map, 2000)</p>	<p>FIGURE 1</p>
---	--	------------------------

B-4046 Topographical Map



Bridge No. 38 over
Jacob Fork River

Bridge No. 175 over
White Oak Creek

 North Carolina Department
of Transportation
Division of Highways
Project Development and
Environmental Analysis Branch

T.I.P. No. B-4046
Bridge No. 38 and 175 over
Jacob Fork River and White Oak Creek

Figure 2

09/28/09

See Sheet 1-A For Index of Sheets
See Sheet 1-B for Symbology Sheet
See Sheet 1-C for Control Sheet

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BURKE COUNTY

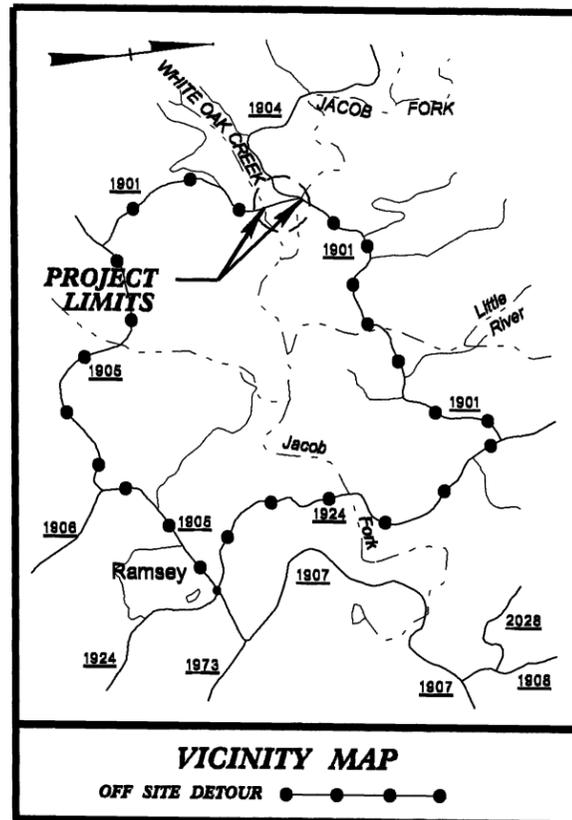
RECEIVED

MAY 26 2011

DIVISION OF HIGHWAYS
OFFICE OF NATURAL ENVIRONMENT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4046	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33412.1.1	BRZ-1901(2)	PE	
33412.2.1	BRZ-1901(2)	ROW & UTIL.	

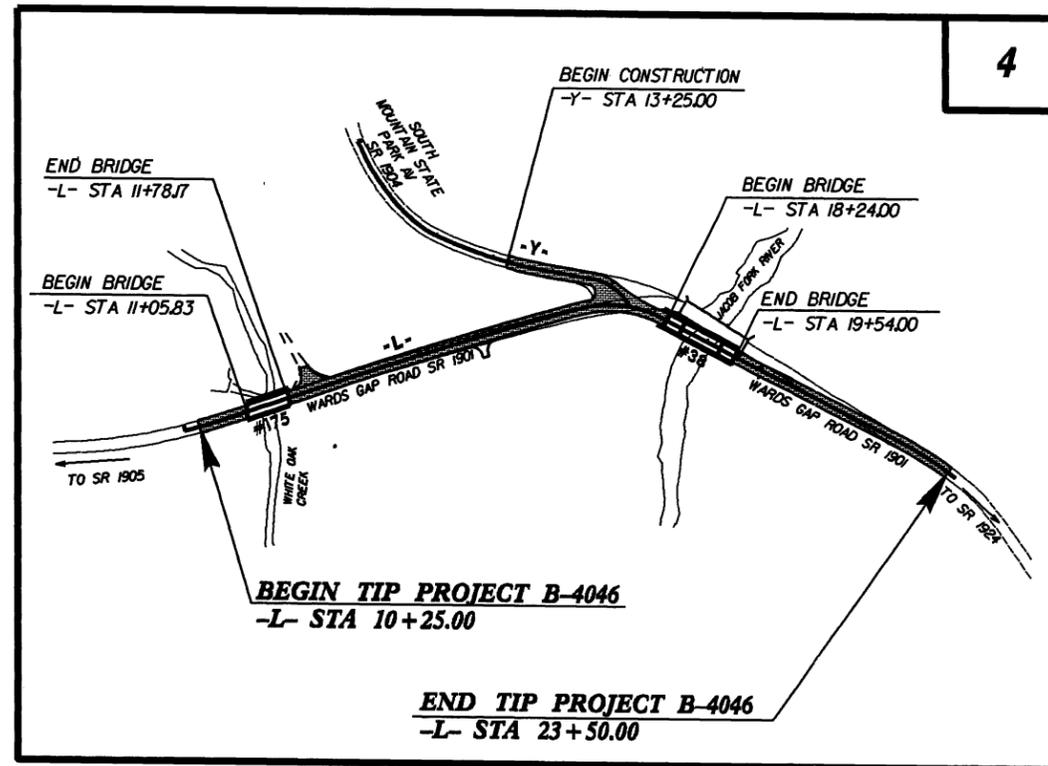
TIP PROJECT: B-4046



**LOCATION: BRIDGE NO. 175 OVER WHITE OAK CREEK
AND BRIDGE NO. 38 OVER JACOB FORK RIVER
ON SR 1901 (WARDS GAP ROAD)**

TYPE OF WORK: GRADING, DRAINAGE, STRUCTURES AND PAVING

WETLAND/SURFACE WATER PERMIT DWG.



NOTES:

1. THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
2. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
3. THIS PROJECT WILL HAVE A DESIGN EXCEPTION FOR MINIMUM HORIZONTAL CURVE RADIUS (200') AND HORIZONTAL SSD (130').

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:

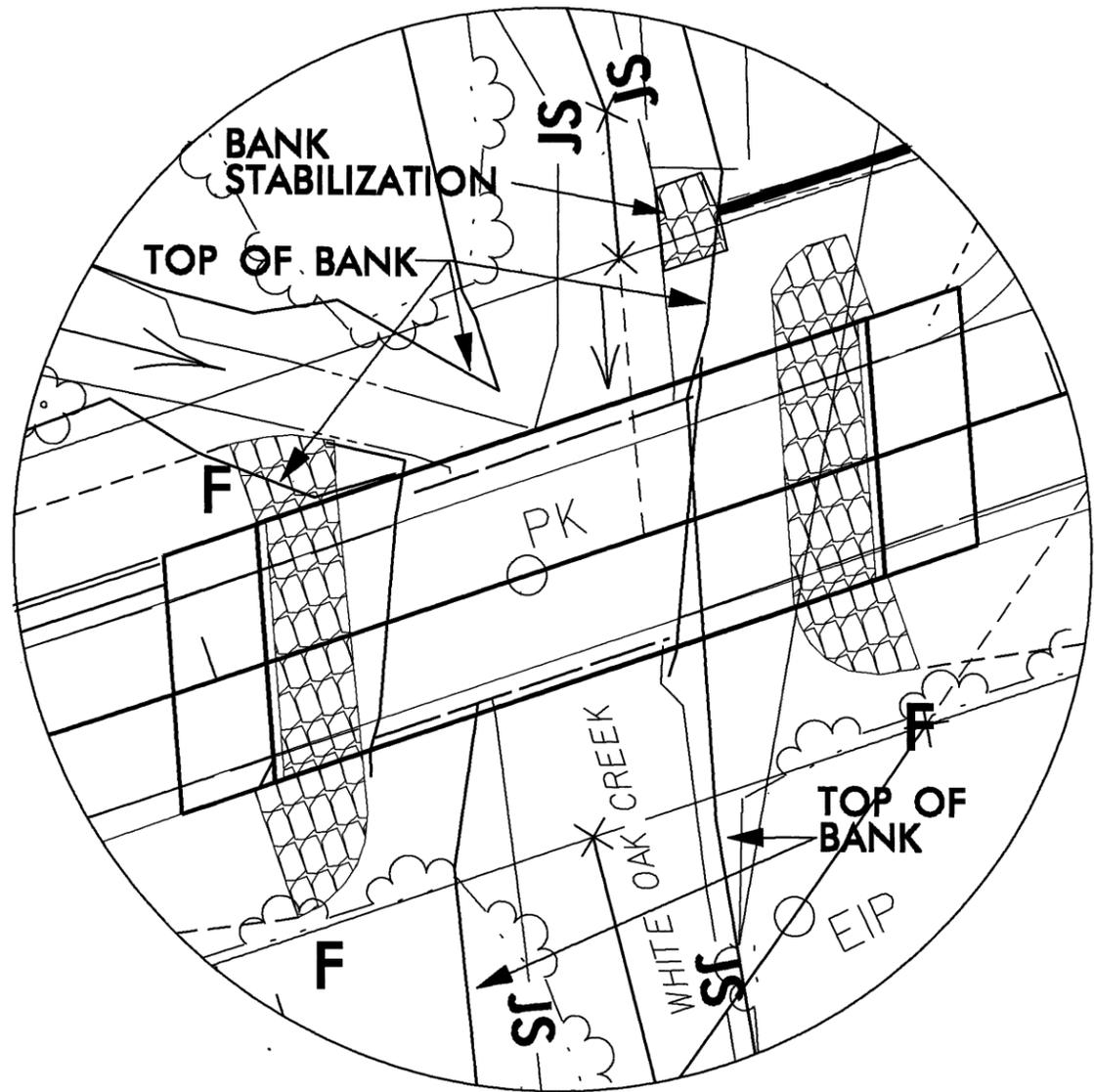
<p>GRAPHIC SCALES</p> <p>50 25 0 50 100 PLANS</p> <p>50 25 0 50 100 PROFILE (HORIZONTAL)</p> <p>10 5 0 10 20 PROFILE (VERTICAL)</p>	<p>DESIGN DATA</p> <p>ADT 2011 = 757 ADT 2031 = 1105 DHV = 12 % D = 55 % T = 3 % * V = 40 MPH CLASSIFICATION: RURAL LOCAL * TTST 1% DUAL 2% SUB-REGIONAL TIER</p>	<p>PROJECT LENGTH</p> <p>LENGTH OF ROADWAY PROJECT B-4046 = 0.213 MILES LENGTH OF STRUCTURES PROJECT B-4046 = 0.038 MILES TOTAL LENGTH OF PROJECT B-4046 = 0.251 MILES</p>	<p>Prepared in the Office of: DIVISION OF HIGHWAYS 1000 Birch Ridge Dr., Raleigh NC, 27610</p>	<p>HYDRAULICS ENGINEER</p> <p>SIGNATURE: _____ P.E.</p> <p>ROADWAY DESIGN ENGINEER</p> <p>SIGNATURE: _____ P.E.</p>	<p>DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA</p> <p>Permit Drawing Sheet 5 of 9</p> <p>STATE HIGHWAY DESIGN ENGINEER</p>
			<p>2006 STANDARD SPECIFICATIONS</p> <p>RIGHT OF WAY DATE: APRIL 14, 2011</p> <p>LETTING DATE: APRIL 17, 2012</p>		

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DGN\$\$\$\$\$
\$\$\$\$\$SERNAME\$\$\$\$\$

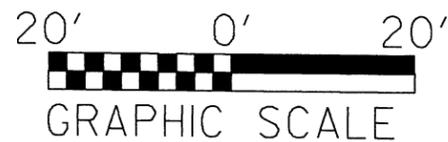
5/14/99

PROJECT REFERENCE NO.		SHEET NO.	
B-4046			
RAW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

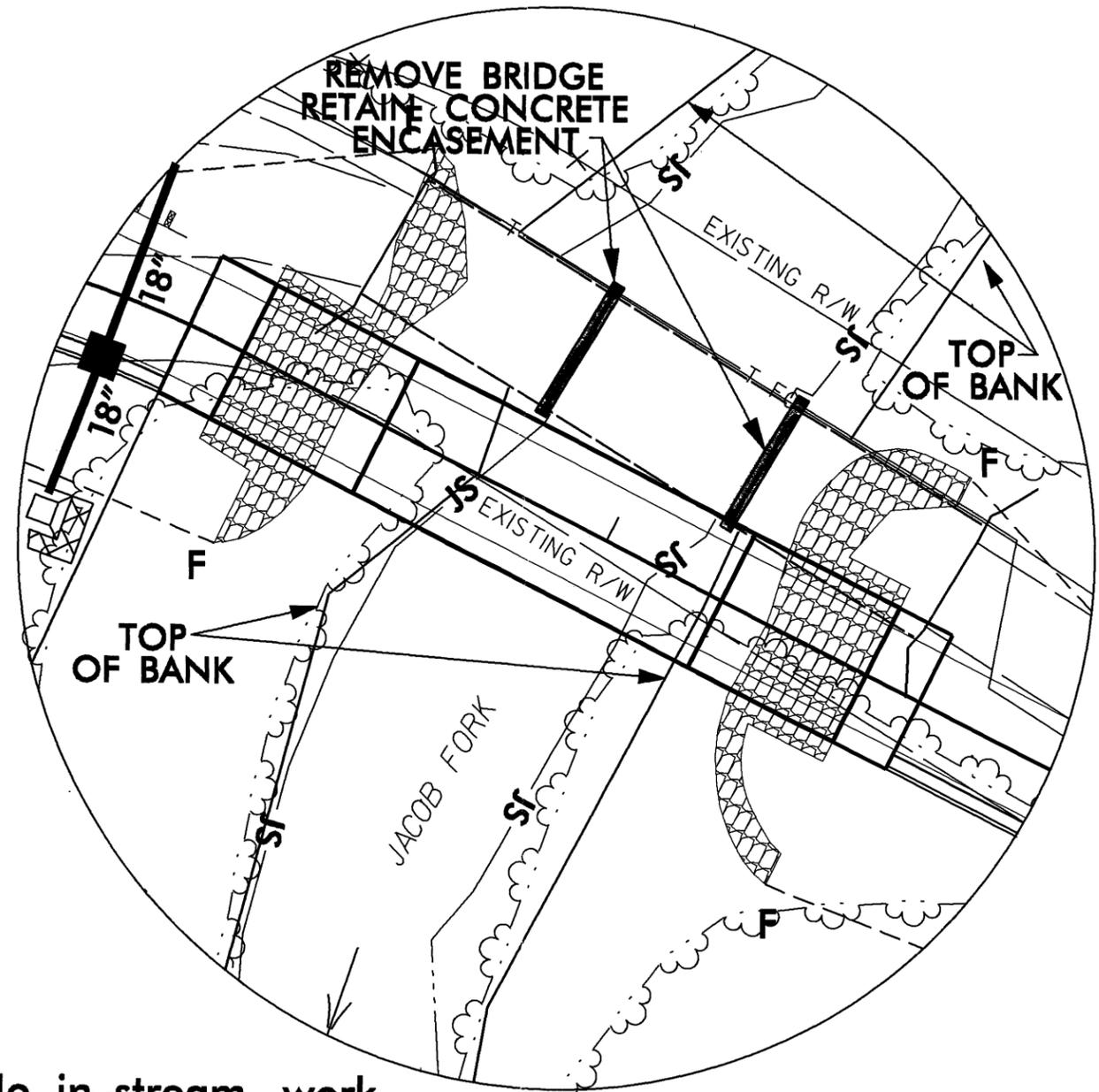
DETAIL SITE 1



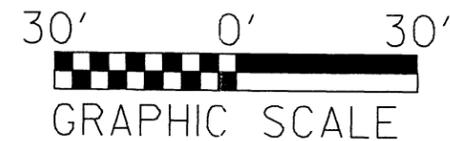
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DETAIL SITE 2



No in-stream work for bridge removal or new construction.

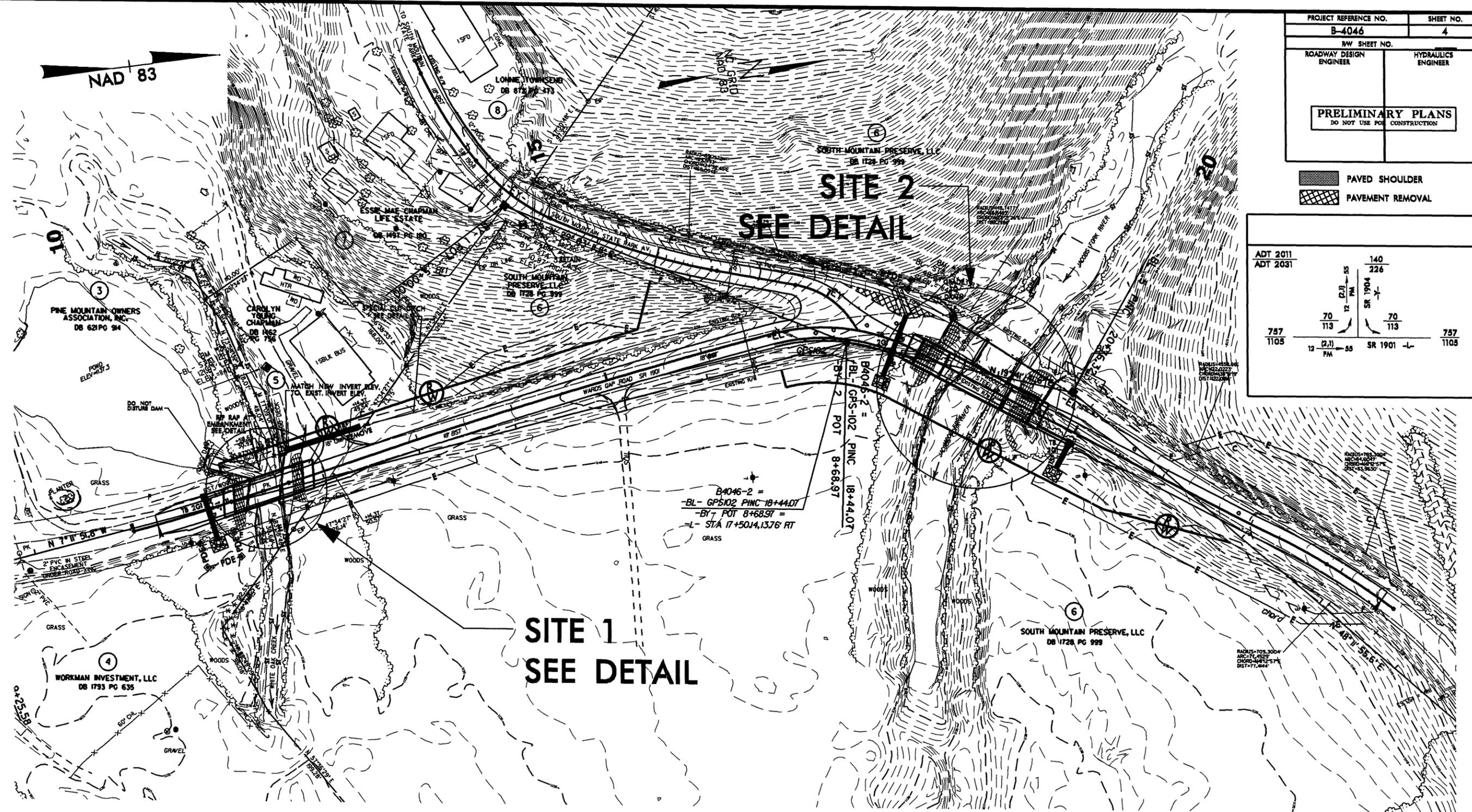
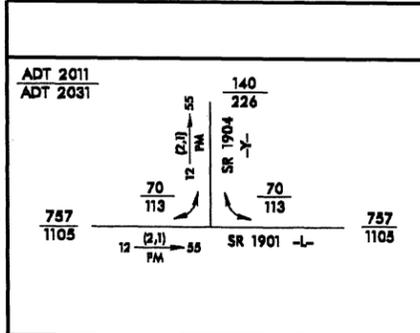


5/14/09

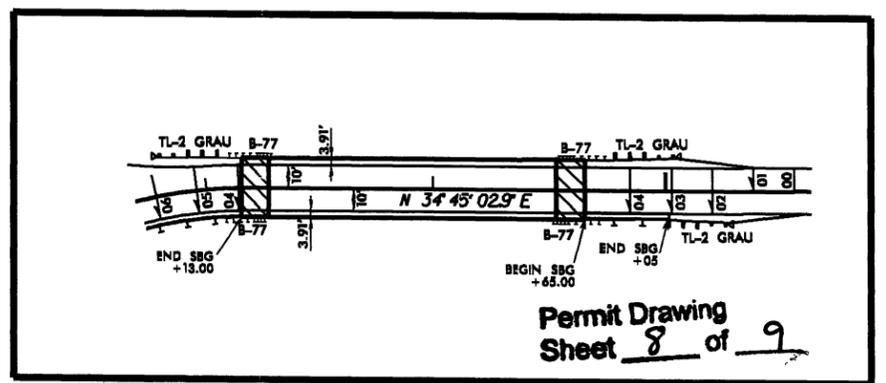
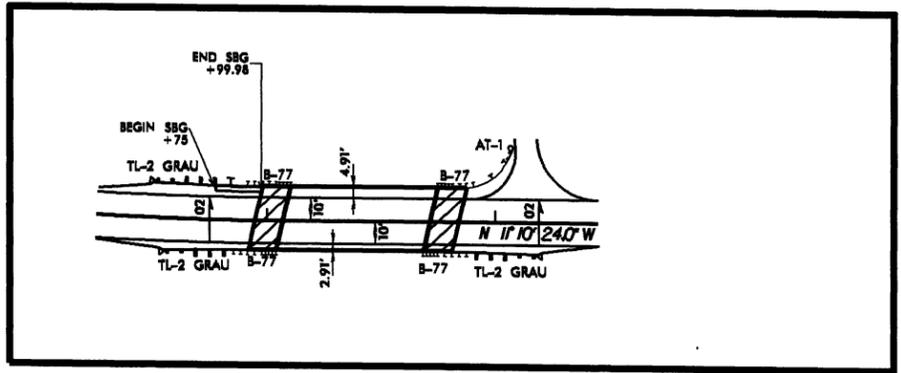


PROJECT REFERENCE NO.		SHEET NO.	
B-4046		4	
HW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS			
DO NOT USE FOR CONSTRUCTION			

- PAVED SHOULDER
- PAVEMENT REMOVAL



B4046-2 =
 -BL- GP5102 PINC 18+44.07
 -BY- POT 8+68.97 =
 -L- STA 17+50.14, 13.76 RT



Permit Drawing
 Sheet 8 of 9

SYSTEMS DESIGN
 CONSULTANTS
 INC.

5/28/99

PROJECT REFERENCE NO. B-4046	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

BRIDGE #75 HYDRAULIC DATA

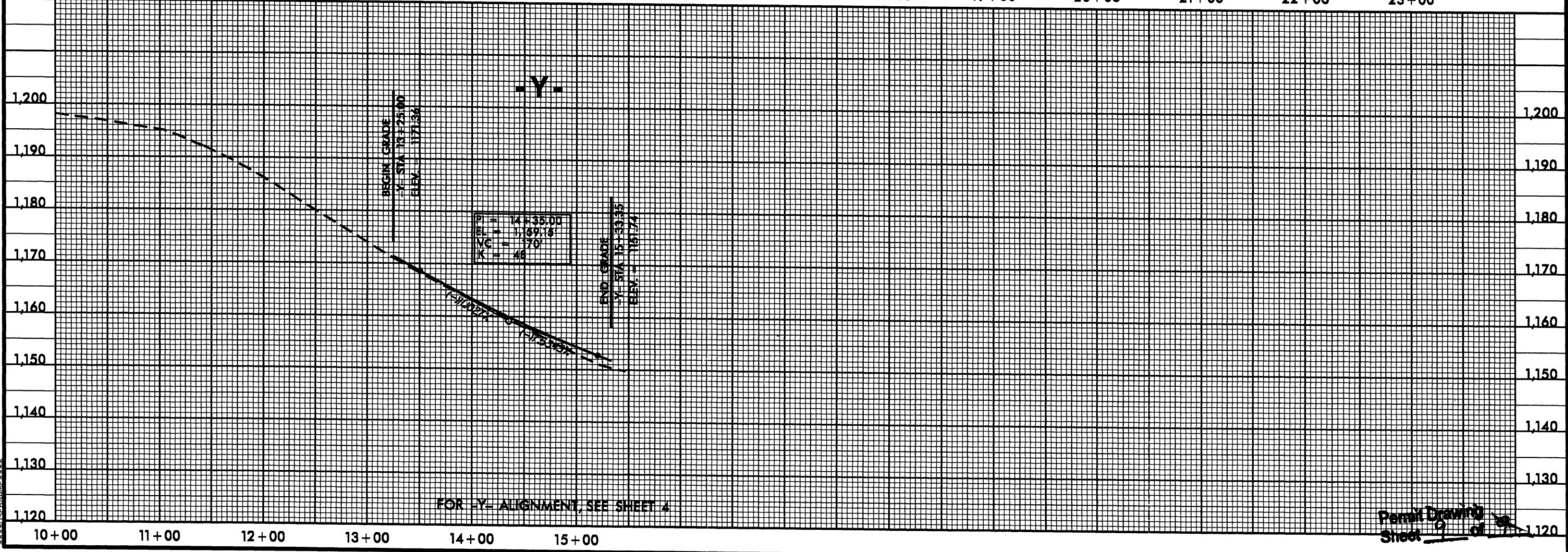
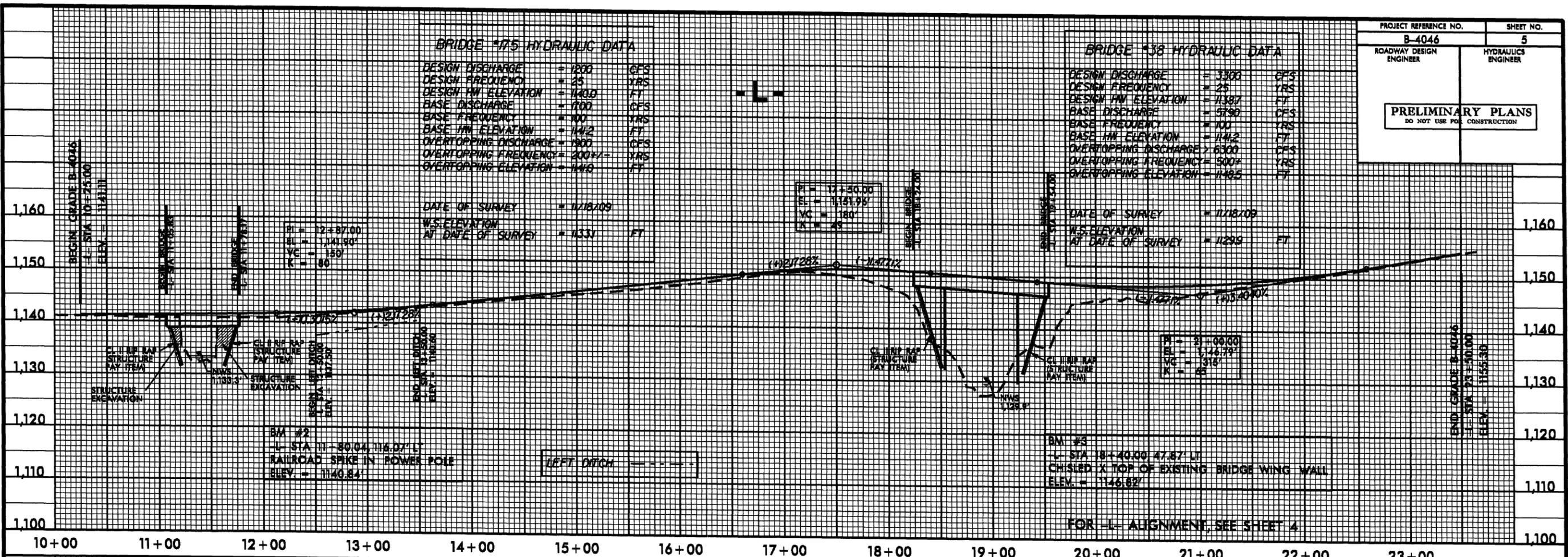
DESIGN DISCHARGE	= 1200	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 1140.0	FT
BASE DISCHARGE	= 700	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1141.2	FT
OVERTOPPING DISCHARGE	= 1800	CFS
OVERTOPPING FREQUENCY	= 200	YRS
OVERTOPPING ELEVATION	= 1149	FT

DATE OF SURVEY = 11/18/09
 W.S. ELEVATION AT DATE OF SURVEY = 1133 FT

BRIDGE #38 HYDRAULIC DATA

DESIGN DISCHARGE	= 3300	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 1139.7	FT
BASE DISCHARGE	= 5790	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1141.2	FT
OVERTOPPING DISCHARGE	= 6300	CFS
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING ELEVATION	= 1149.5	FT

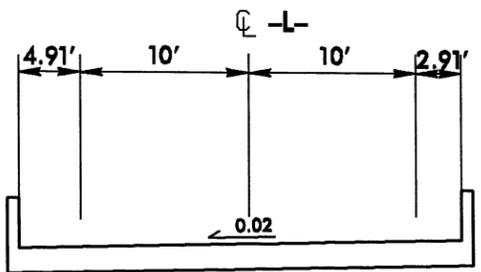
DATE OF SURVEY = 11/18/09
 W.S. ELEVATION AT DATE OF SURVEY = 1129 FT



VERTICAL CURVE DATA

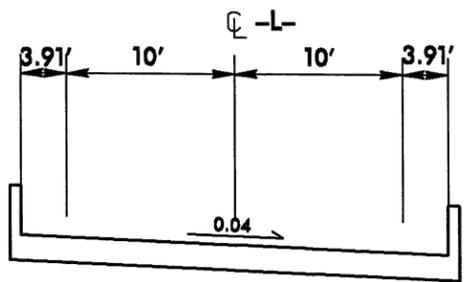
FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE BFD.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE BFD.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. PLACED IN 2 LAYERS
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE BFD.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
E1	PROP. APPROX. 4 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

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



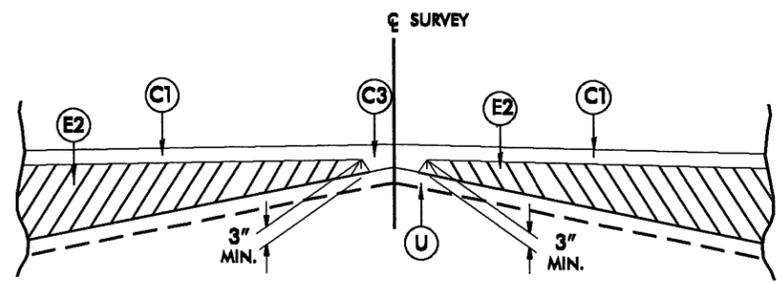
BRIDGE TYPICAL

BRIDGE #175 -L- STA 11+05.83 TO STA 11+78.17

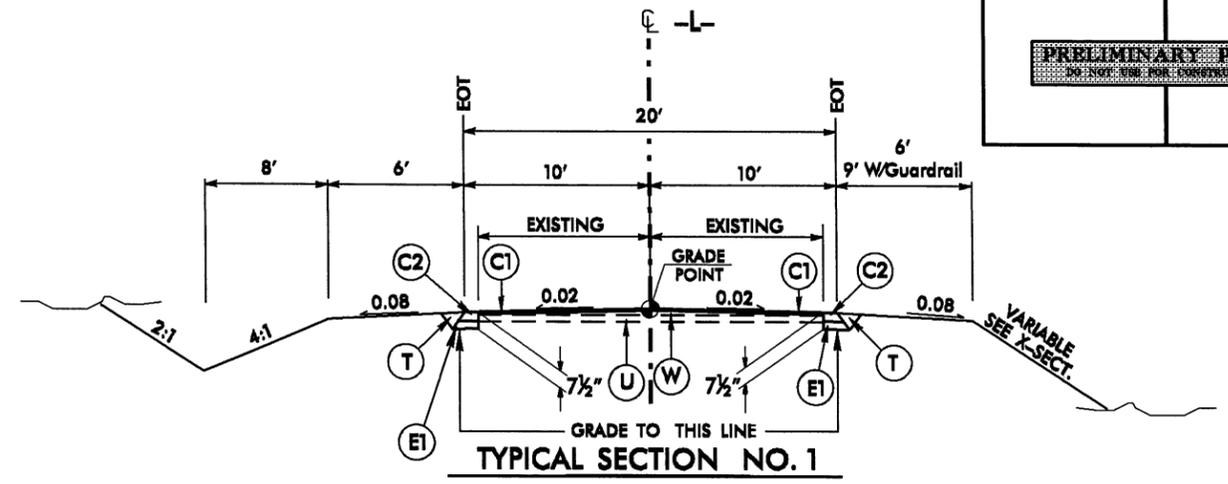


BRIDGE TYPICAL

BRIDGE #38 -L- STA 18+24.00 TO STA 19+54.00

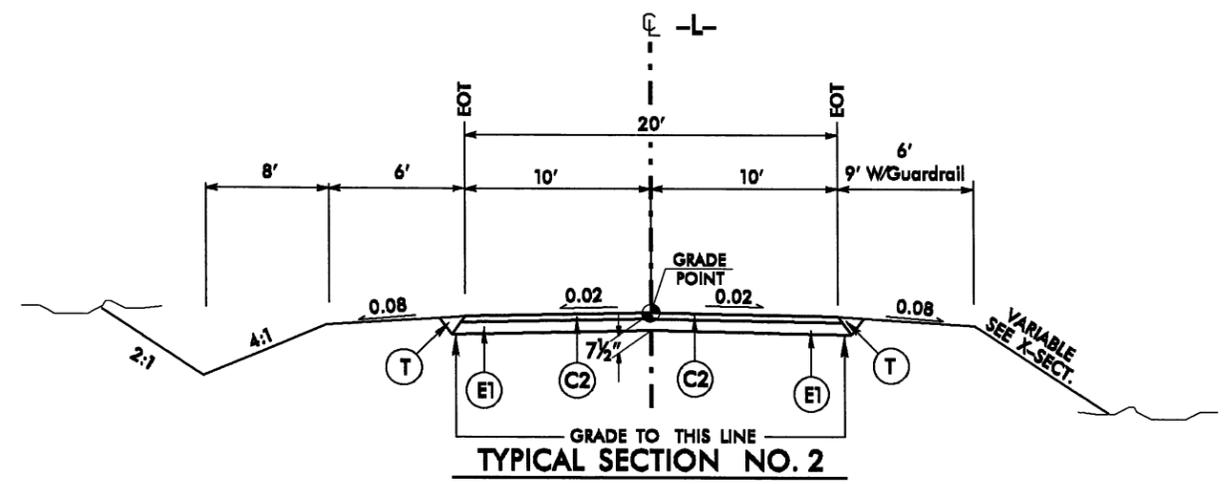


Detail Showing Method of Wedging



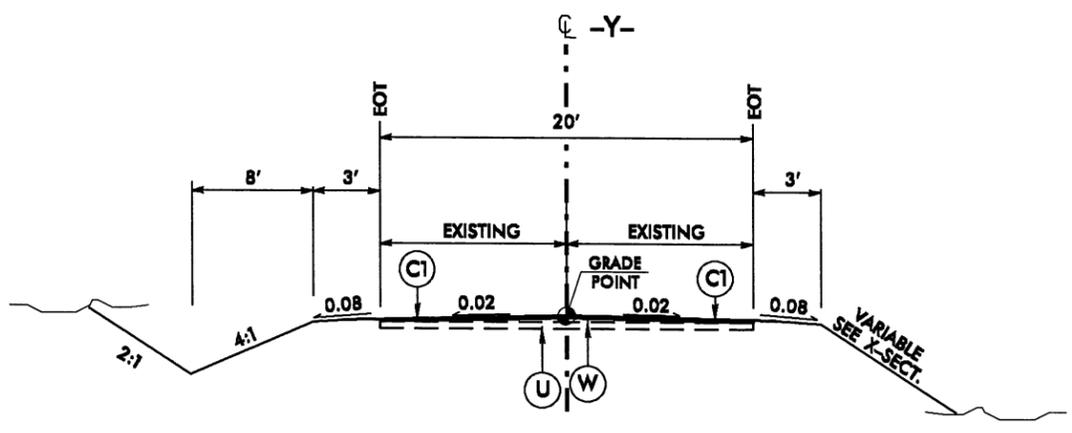
TYPICAL SECTION NO. 1

-L- STA 10+25.00 TO STA 11+05.83 (BEGIN BRIDGE)
-L- STA 11+78.17 (END BRIDGE) TO STA 17+50.00
-L- STA 21+50.00 TO STA 23+50.00



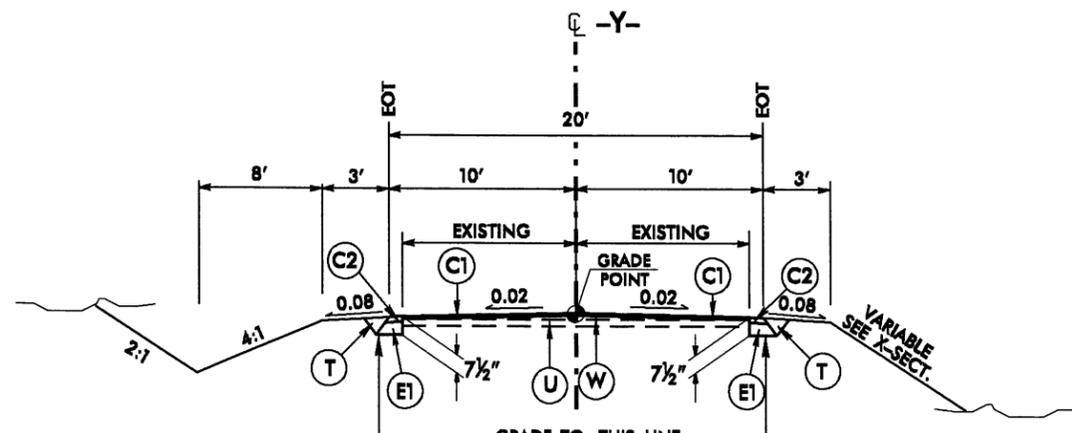
TYPICAL SECTION NO. 2

-L- STA 17+50.00 TO STA 18+24.00 (BEGIN BRIDGE)
-L- STA 19+54.00 (END BRIDGE) TO STA 21+50.00



TYPICAL SECTION NO. 3

-Y- STA 13+25.00 TO STA 14+50.00



TYPICAL SECTION NO. 4

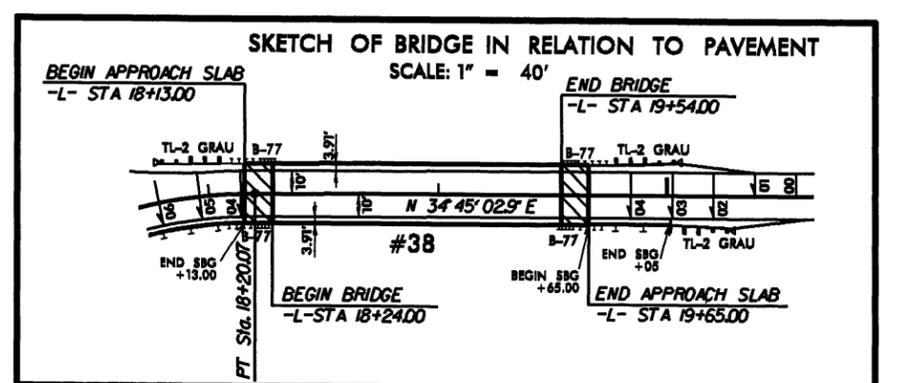
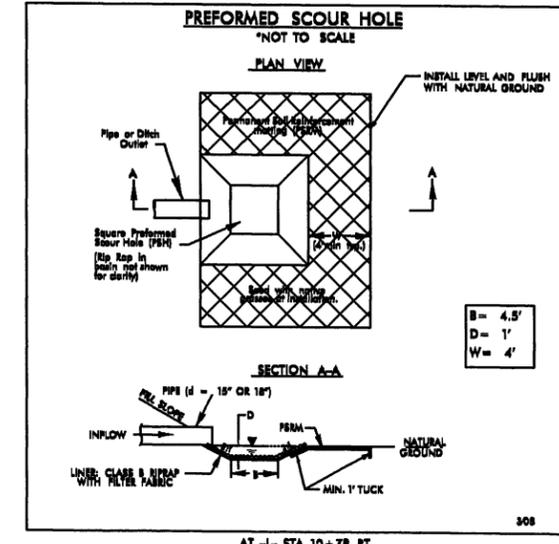
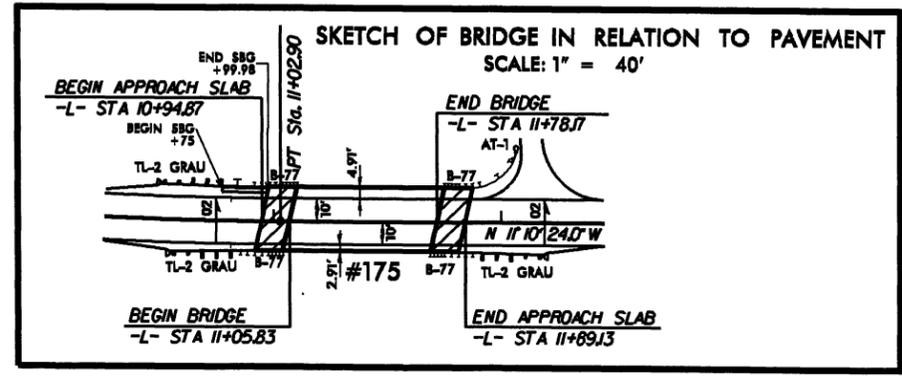
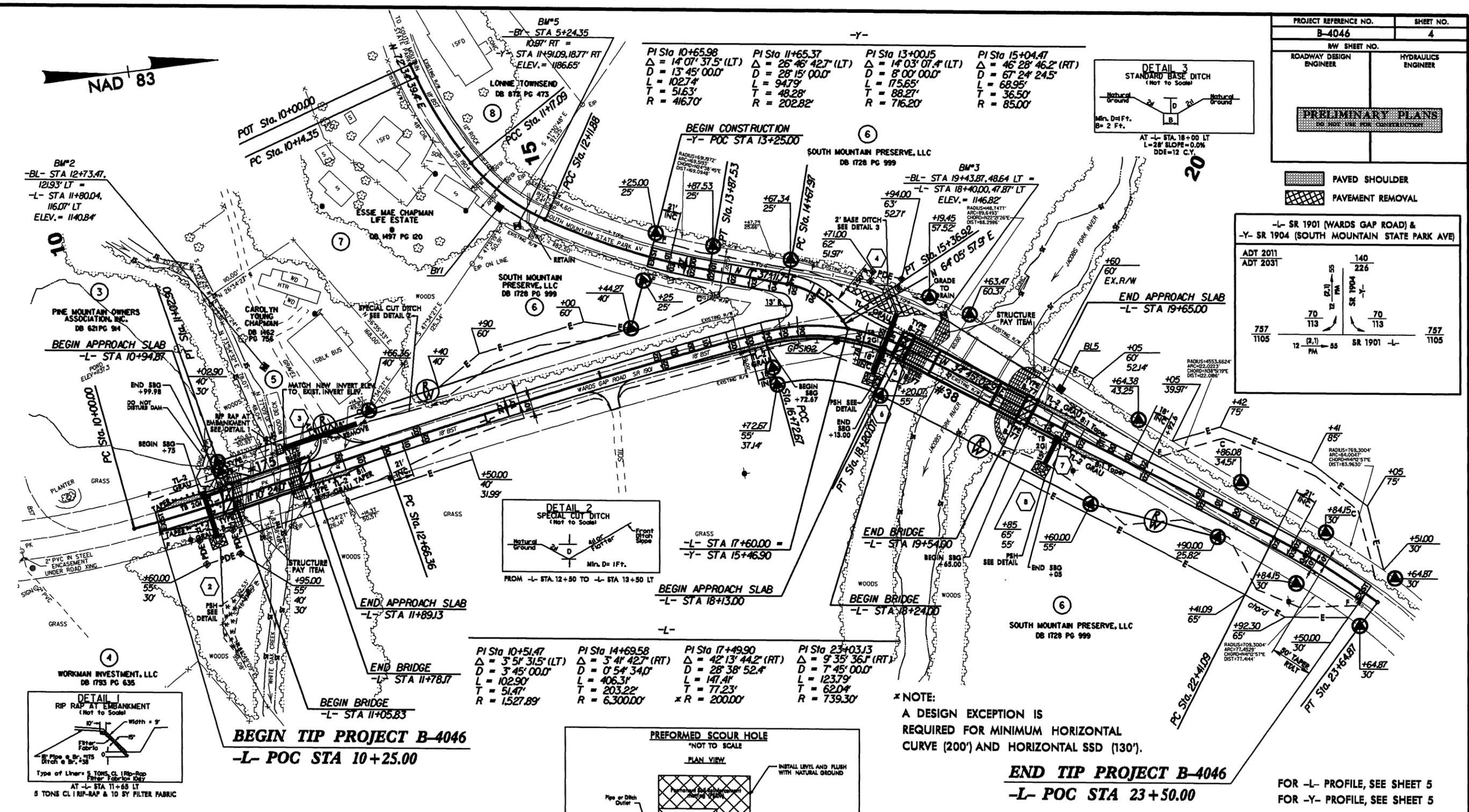
-Y- STA 14+50.00 TO STA 15+33.35

5/14/09

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PROJECT REFERENCE NO.	SHEET NO.
B-4046	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	



5/28/09

24 MAY 2010 09:45
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PROJECT REFERENCE NO. B-4046	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>NO PART SHALL BE FOR CONSTRUCTION</small>	

BRIDGE #75 HYDRAULIC DATA

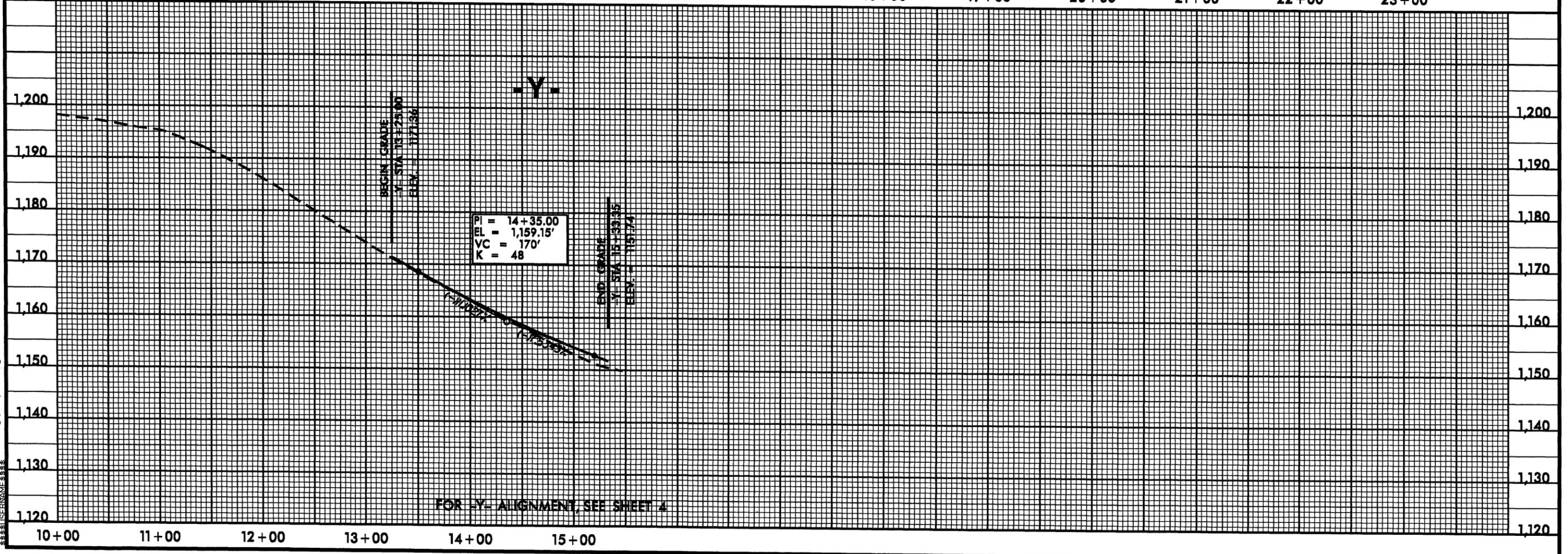
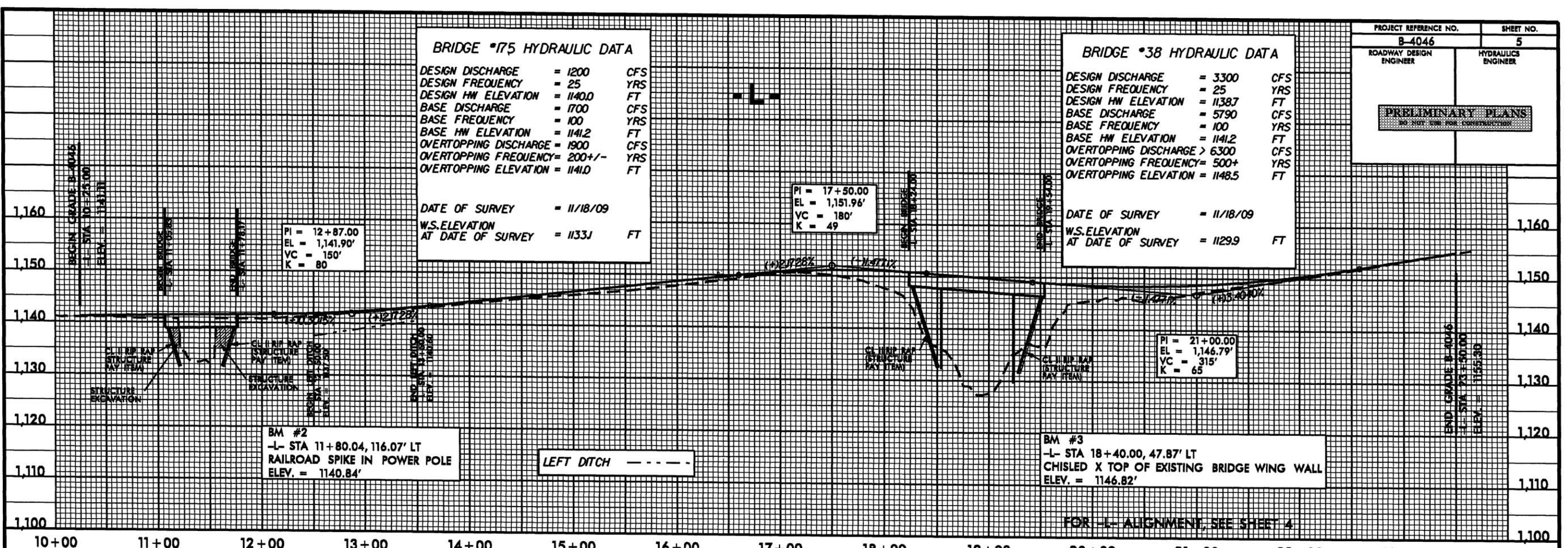
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 DESIGN FREQUENCY = 25 YRS
 DESIGN HW ELEVATION = 1140.00 FT
 BASE DISCHARGE = 1700 CFS
 BASE FREQUENCY = 100 YRS
 BASE HW ELEVATION = 1141.2 FT
 OVERTOPPING DISCHARGE = 1900 CFS
 OVERTOPPING FREQUENCY = 200+/- YRS
 OVERTOPPING ELEVATION = 1141.0 FT

DATE OF SURVEY = 11/18/09
 W.S. ELEVATION AT DATE OF SURVEY = 1133J FT

BRIDGE #38 HYDRAULIC DATA

DESIGN DISCHARGE = 3300 CFS
 DESIGN FREQUENCY = 25 YRS
 DESIGN HW ELEVATION = 1138.7 FT
 BASE DISCHARGE = 5790 CFS
 BASE FREQUENCY = 100 YRS
 BASE HW ELEVATION = 1141.2 FT
 OVERTOPPING DISCHARGE > 6300 CFS
 OVERTOPPING FREQUENCY = 500+ YRS
 OVERTOPPING ELEVATION = 1148.5 FT

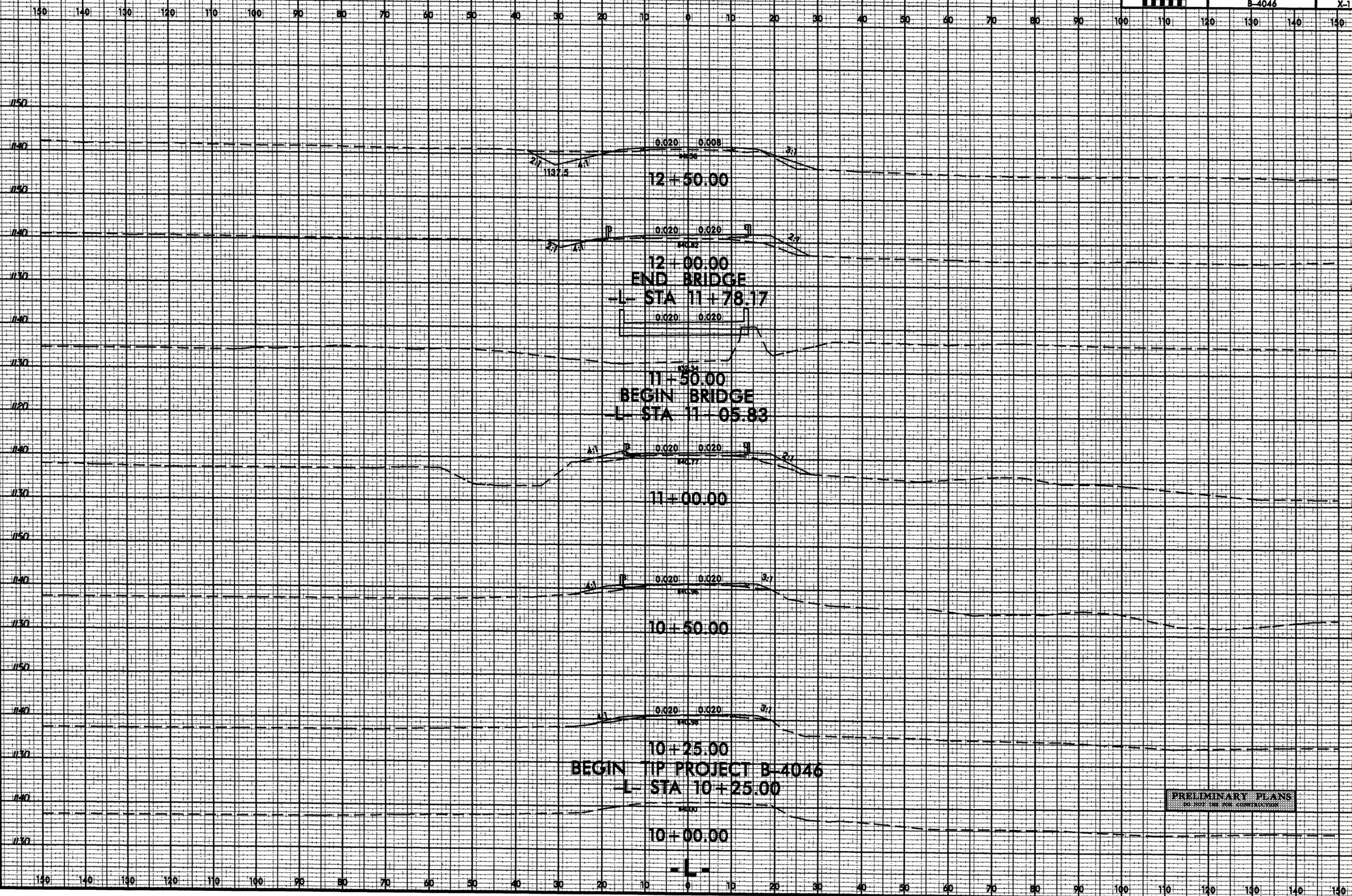
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8/23/99



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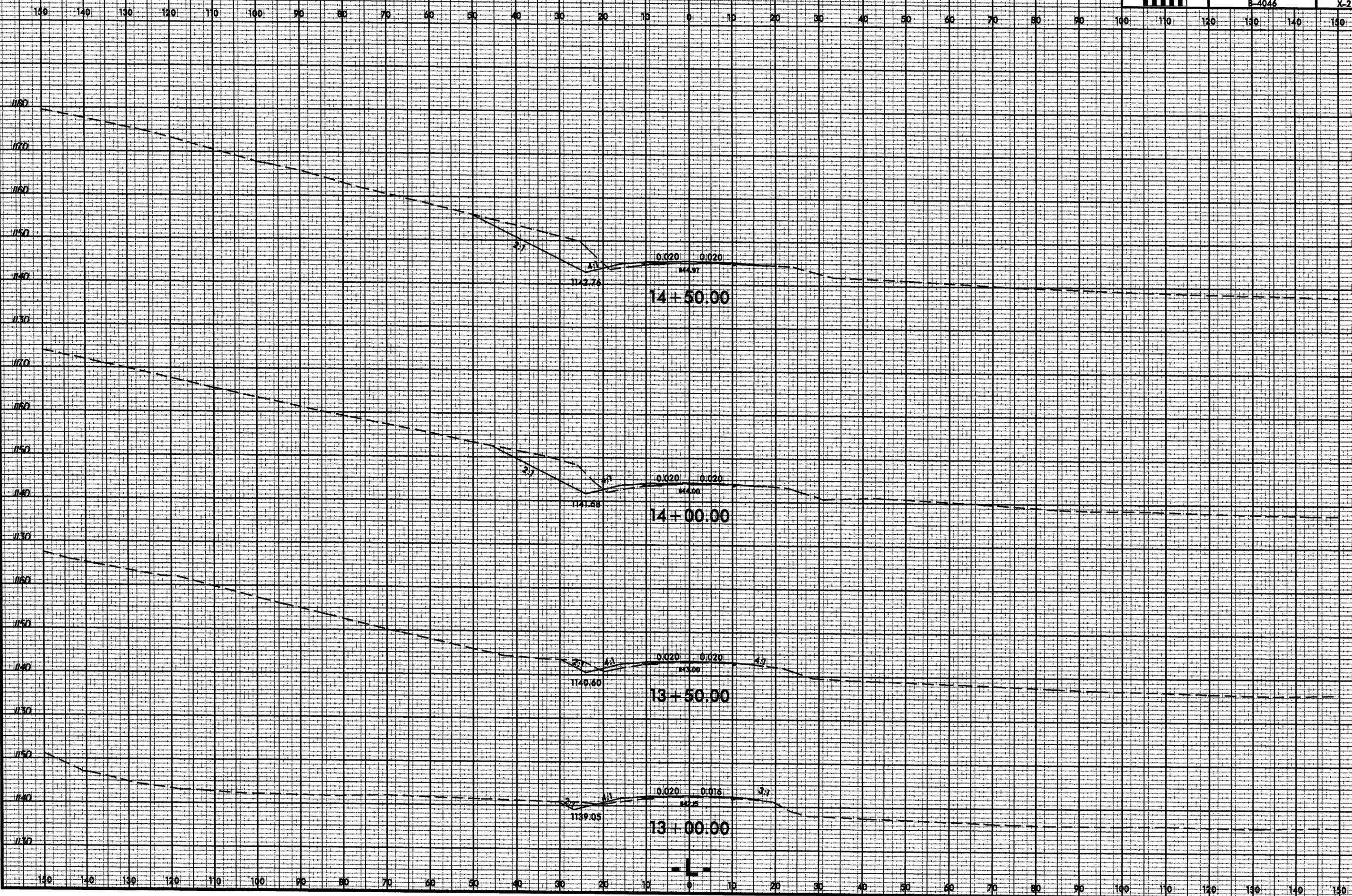
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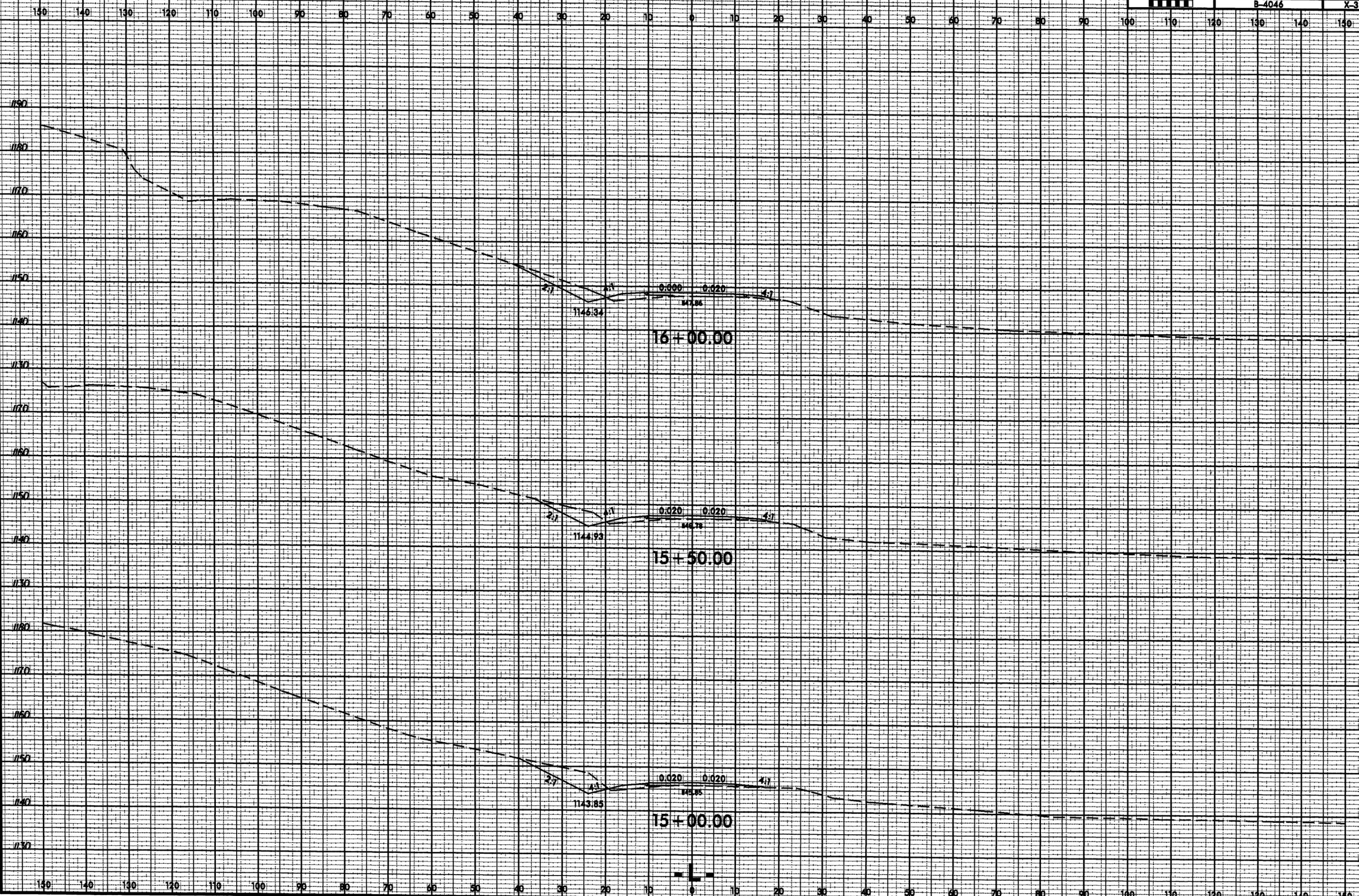


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8/23/99



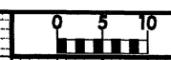
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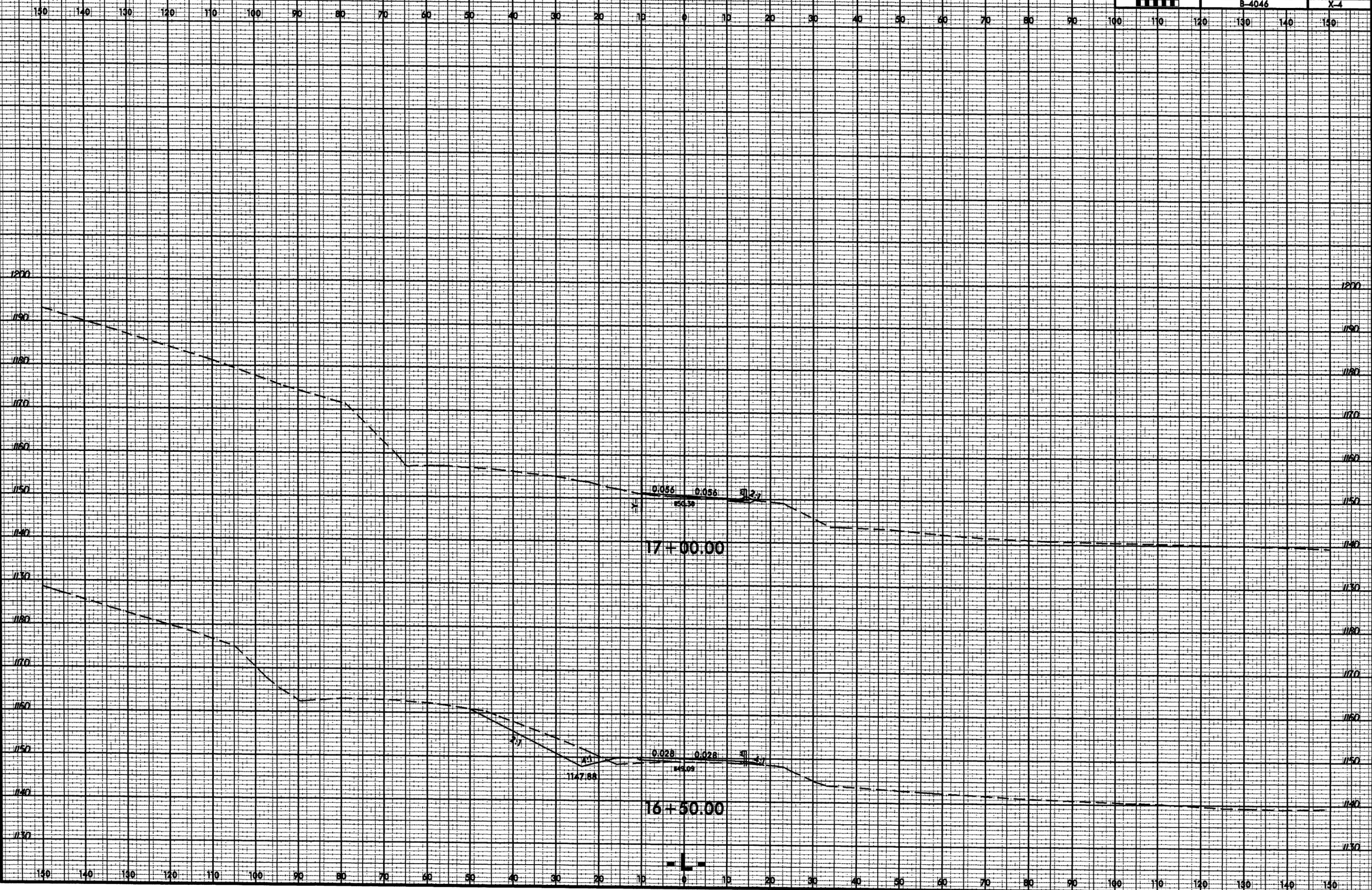
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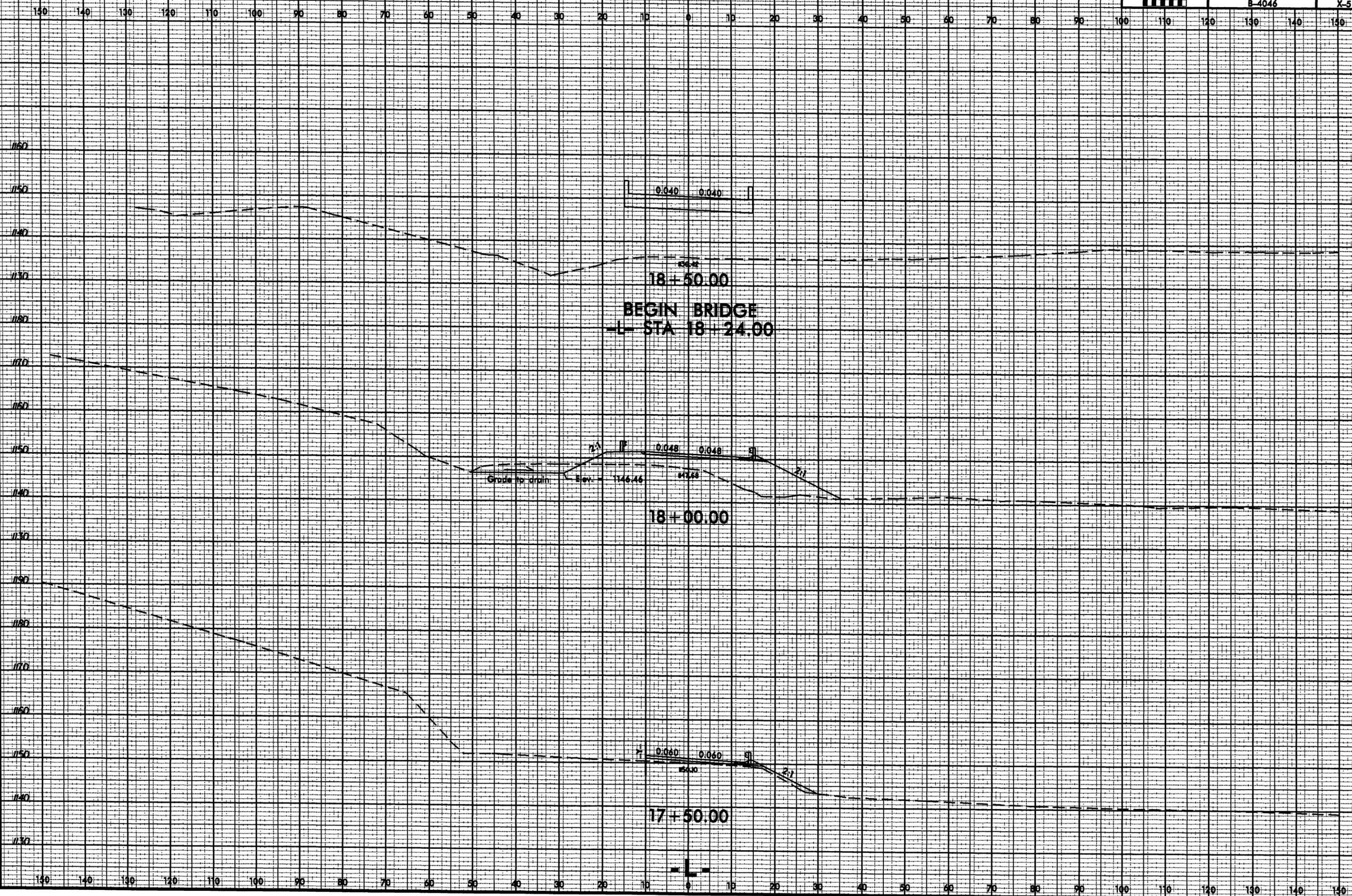


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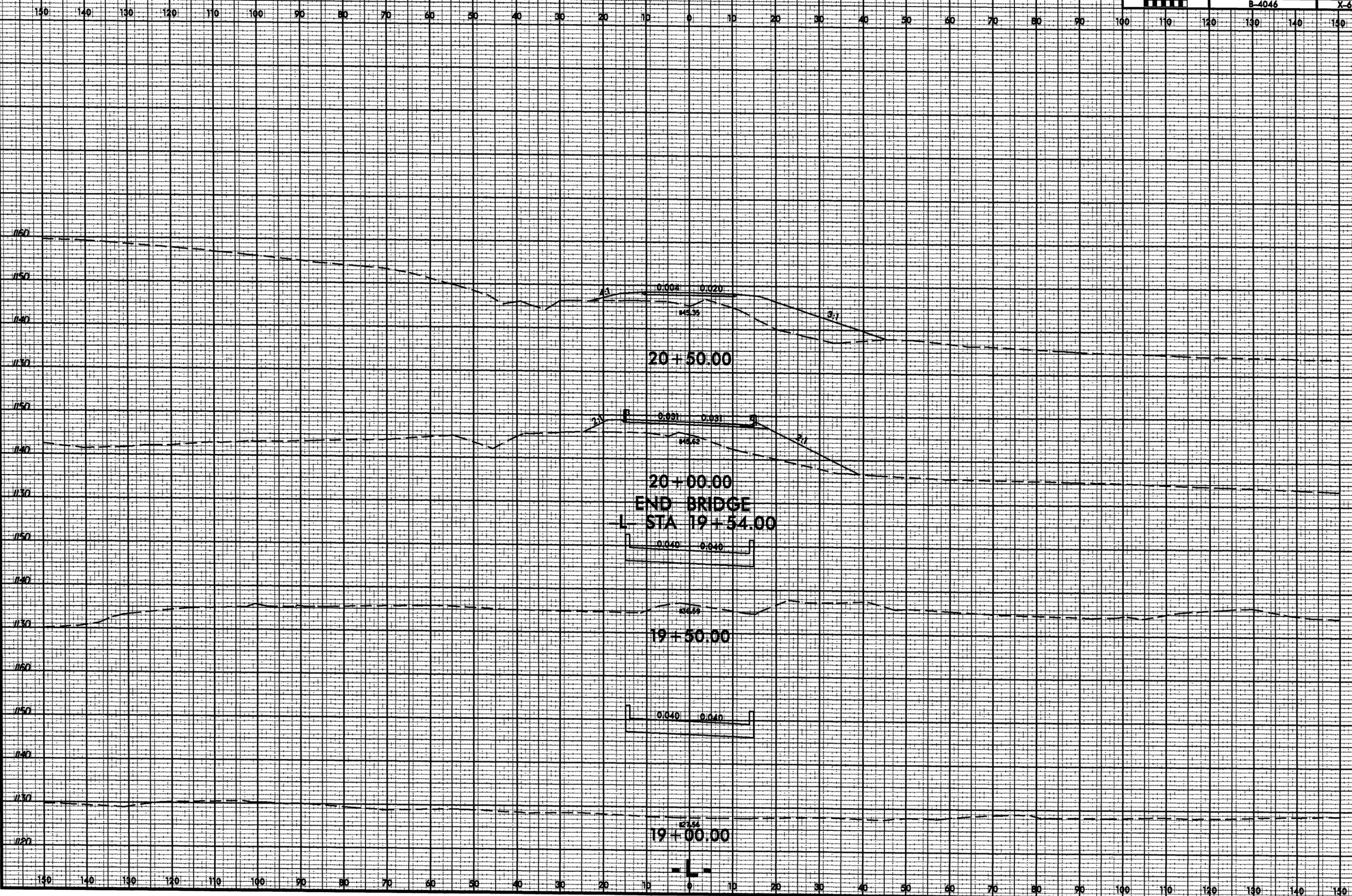


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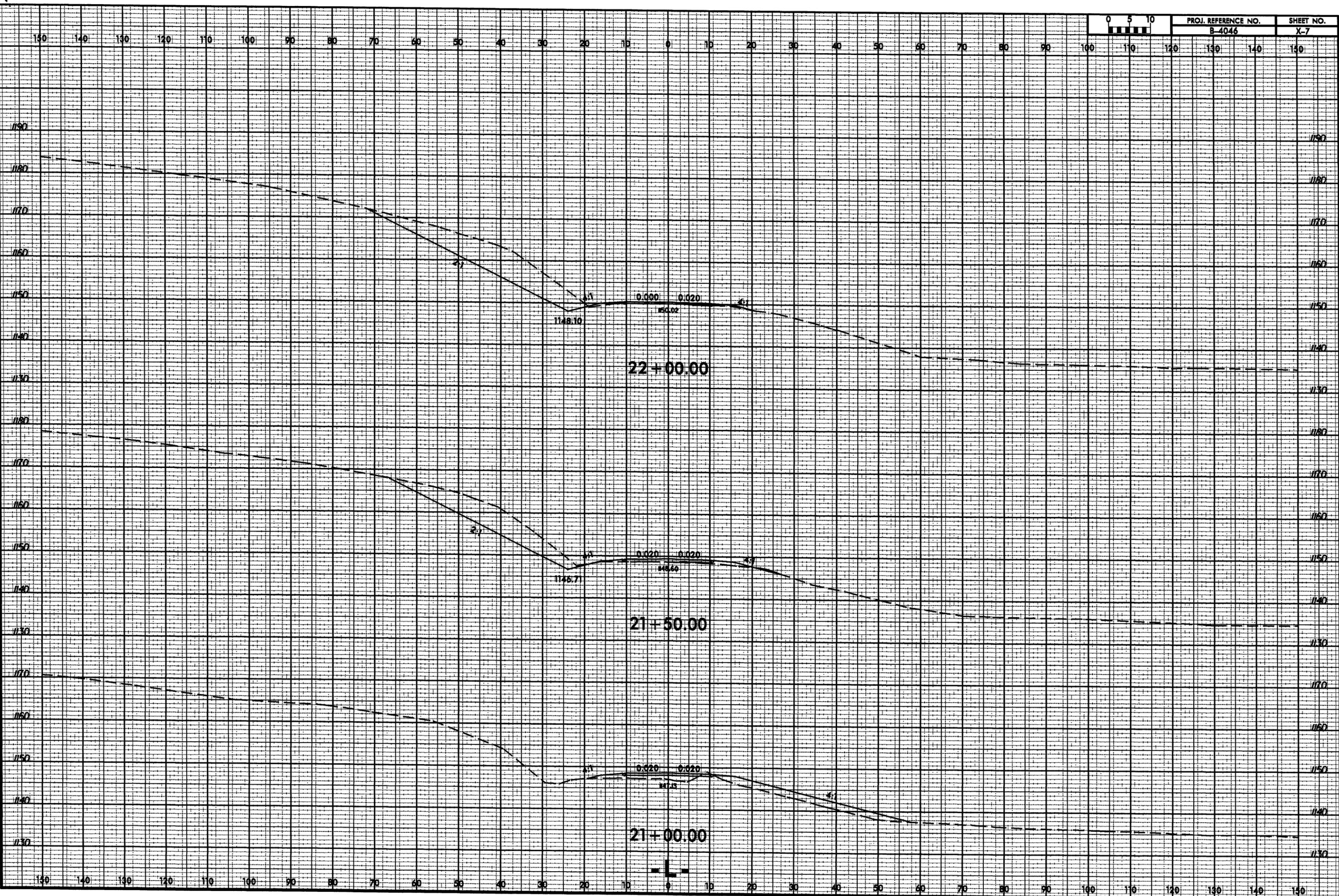


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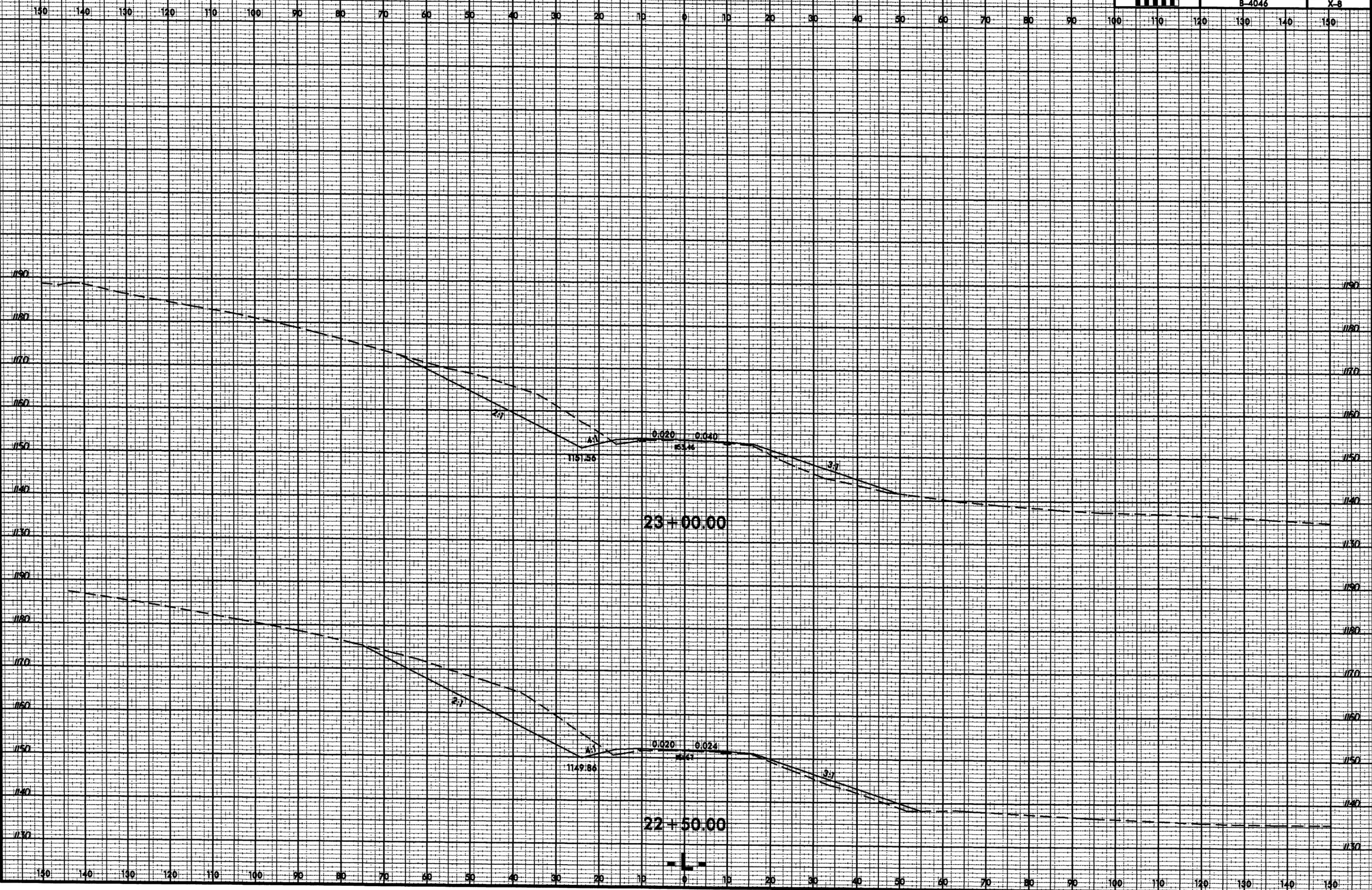


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8/23/99



PROJ. REFERENCE NO.	SHEET NO.
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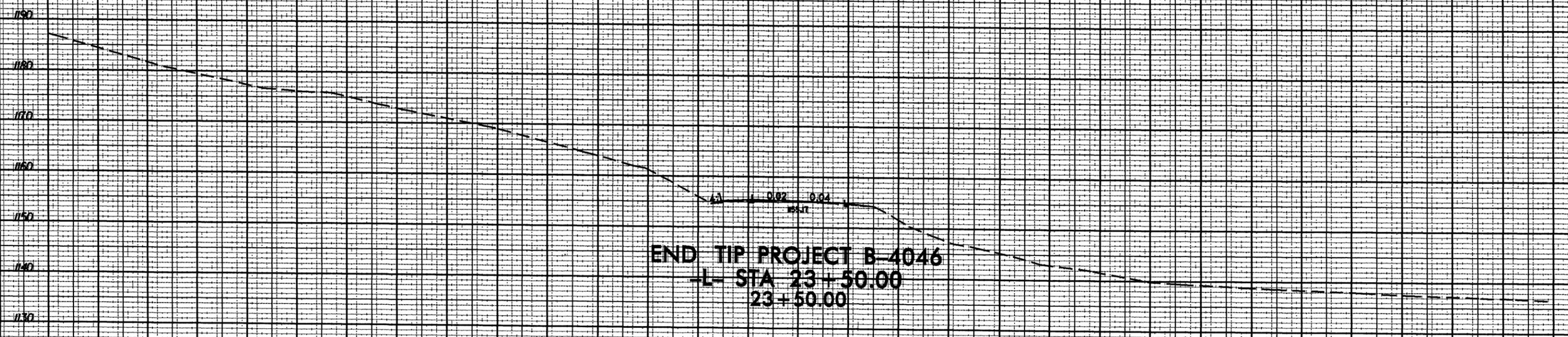
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8/23/99



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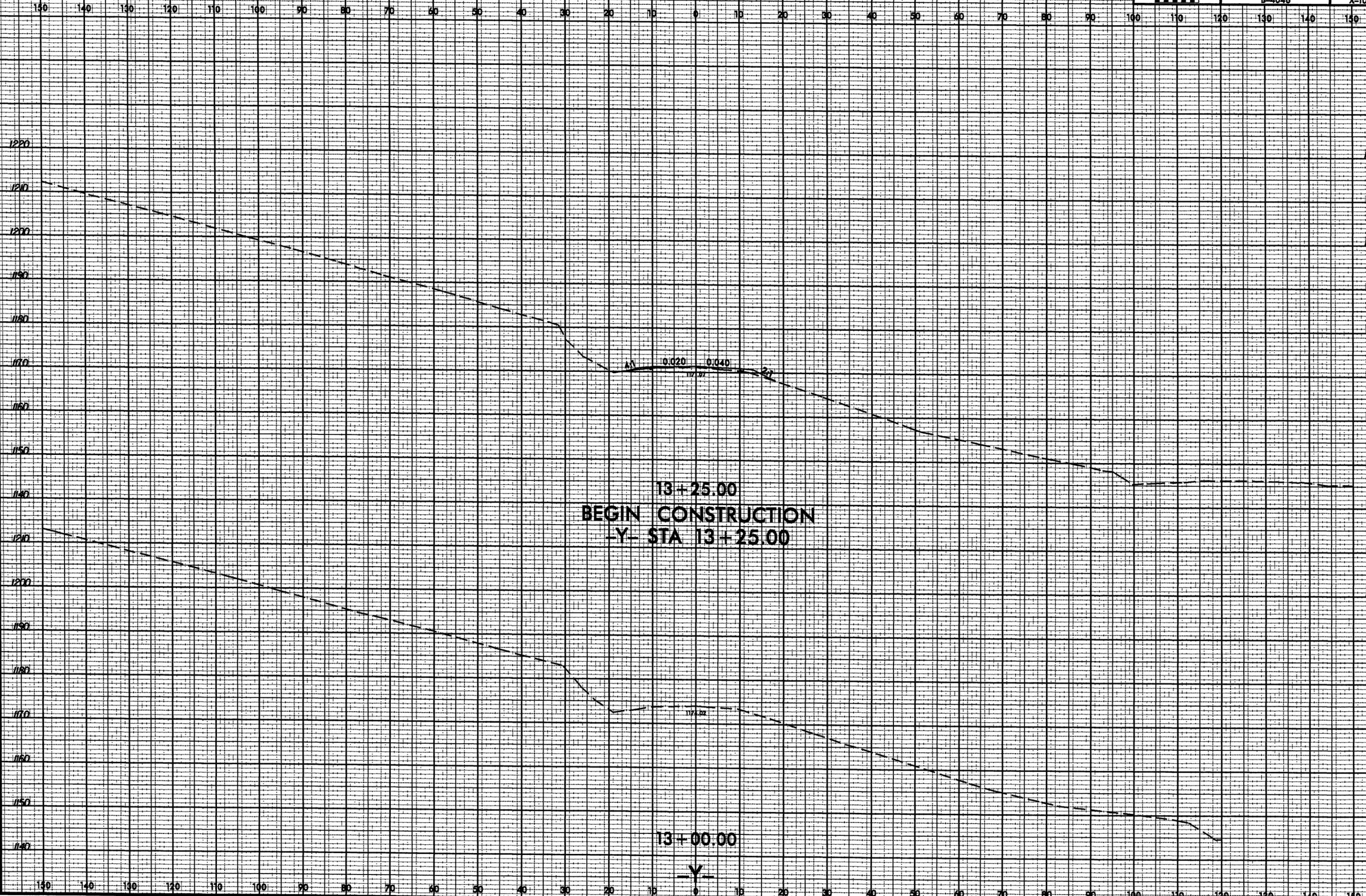
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8/23/99



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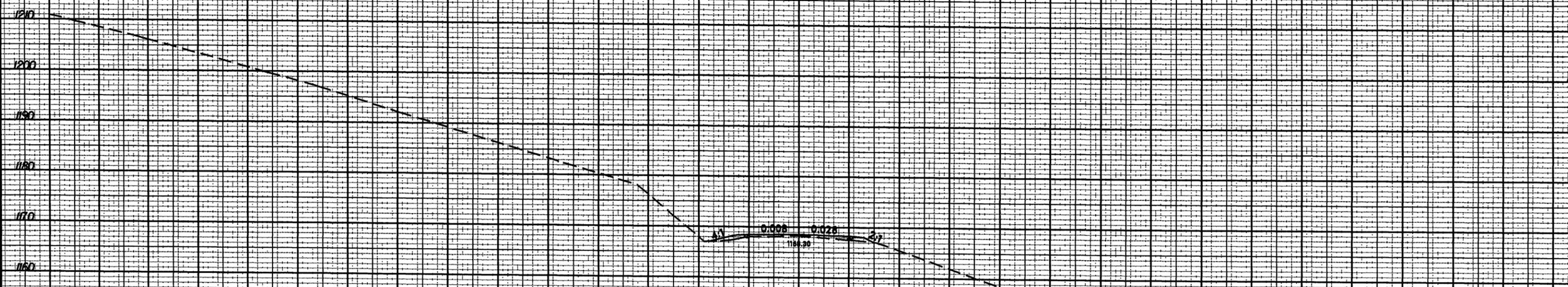
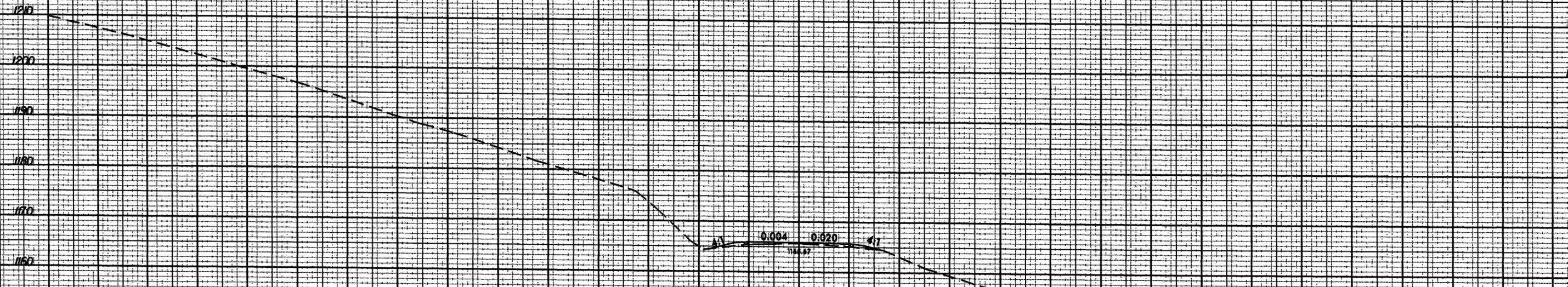
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8/23/99



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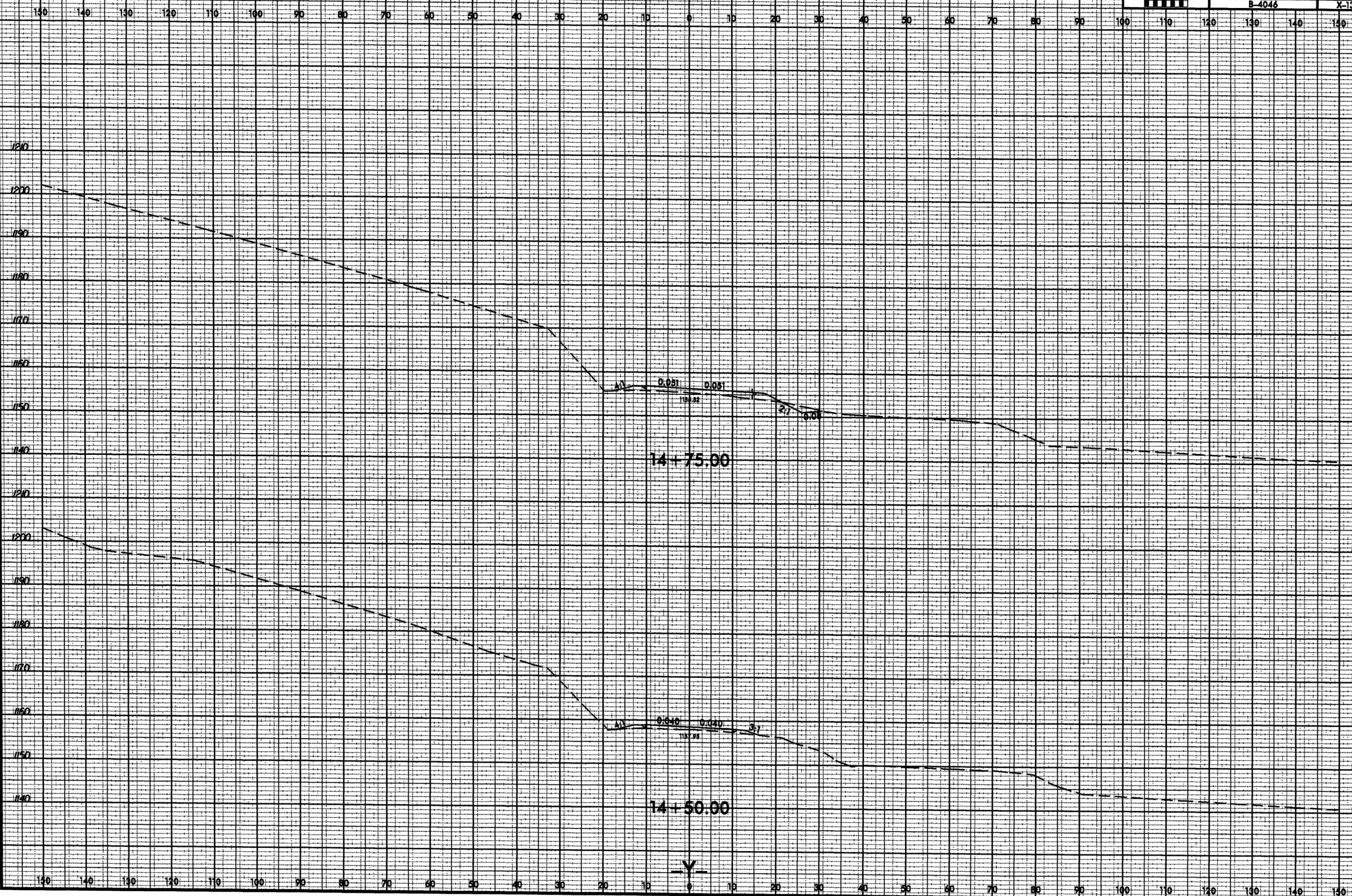
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8/23/99

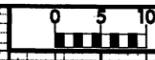


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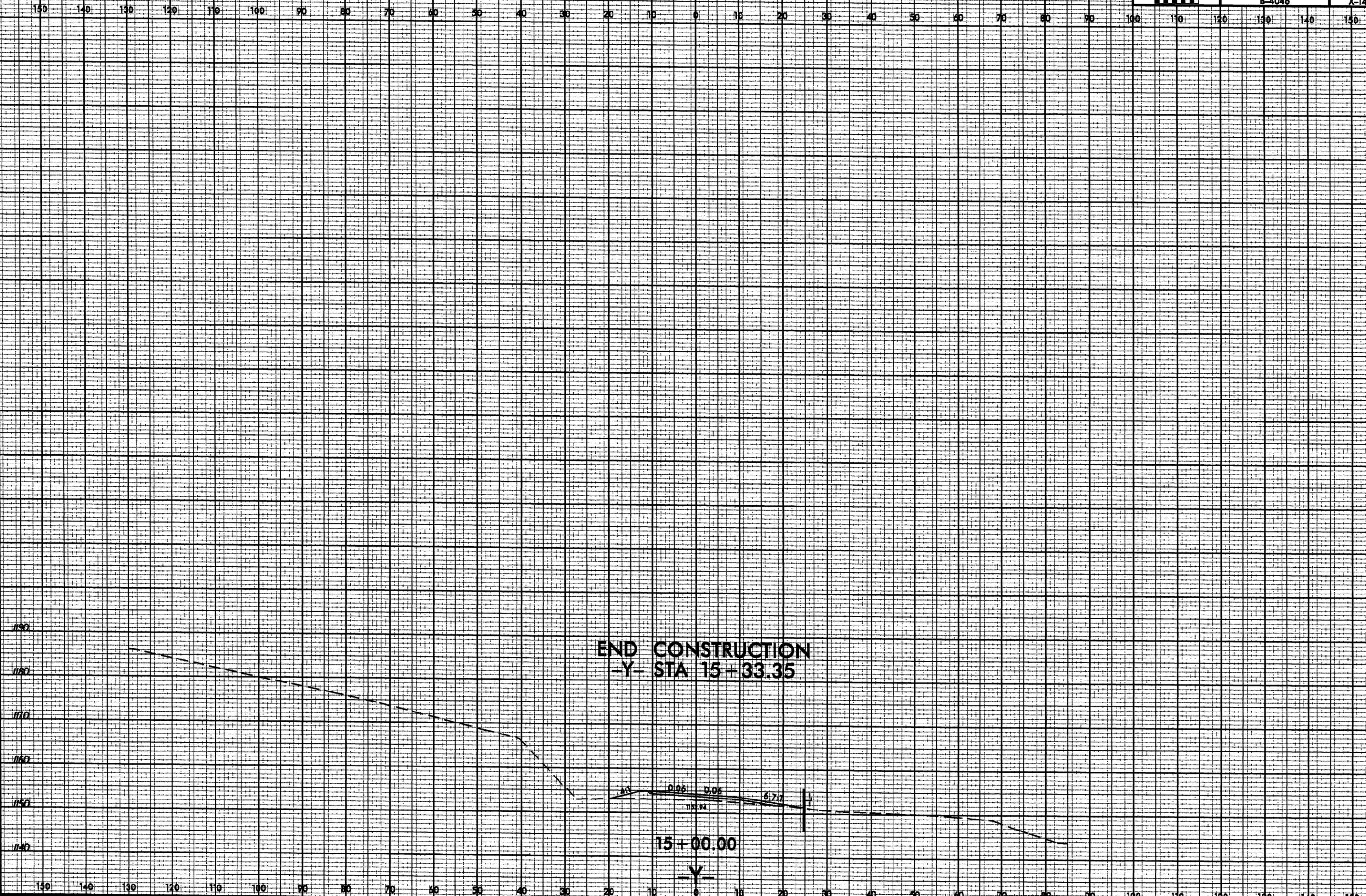


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8/23/99



PROJ. REFERENCE NO. B-4046	SHEET NO. X-14
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