



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

March 19, 2004

US Army Corps of Engineers
Regulatory Field Office
6508 Falls of Neuse Road, Suite 120
Raleigh, NC 27615

ATTENTION: Mr. John Thomas
NCDOT Coordinator

Dear Sir:

Subject: **Nationwide 23 and 33 Permit Application** for the Replacement of Bridge No. 7 over South Fork New River on NC 163, Ashe County. Federal Aid Project No. BRSTP-163(1), State Project No. 8.1711401, TIP Project No. B-4010.

Please find enclosed three copies of the project planning report for the above referenced project. The document states that Bridge No. 7 will be replaced with a new 300-foot long bridge approximately 45 feet north of the existing structure. Traffic will be maintained on the existing bridge during construction.

There are no wetland impacts associated with this project. The only surface water impacted by this project is South Fork of New River. Anticipated impacts to South Fork New River are temporary and consist of 0.0121 ac of fill. South Fork New River is located in the New River Basin and is classified by the Division of Water Quality as Class WS-IV HQW. NCDOT's High Quality Waters Standards will be enforced throughout project construction.

Demolition: The superstructure of Bridge No. 7 includes concrete curbing, decking, and girders. The removal of the curbing, deck, and girders has the potential to result in temporary fill of up to 34 cubic yards. The substructure includes three interior bents with concrete caps and "H" piles, located in the streambed. The removal of the substructure has the potential to result in temporary fill of 45 cubic yards. A total of approximately 79 cubic yards of temporary fill may be excavated from South Fork New River due to bridge demolition activities.

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.NCDOT.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

Temporary Work Bridge

There will be 0.0121 acres of temporary impacts from the construction of a temporary work bridge in South Fork New River (see permit drawing Sheets 4 and 5 of 6). A temporary work bridge will be required to provide access to the site by the construction equipment to construct proposed concrete girder bridge and to remove the existing bridge. on the northern side of the creek.

Restoration Plan: No permanent fill will result from the subject activity. The materials used as temporary fill in the construction of the work bridge will be removed shortly after they are no longer needed.

Schedule for Restoration of Temporary Fill Areas: It is assumed that the Contractor will begin construction of the proposed work bridge shortly after the date of availability for the project. The Let date is July 20, 2004 with a date of availability of August 30, 2004.

Removal and Disposal: The workbridge will be removed within 90 days after it is no longer needed. All materials placed in the stream by the Contractor will be removed. All other materials removed by the Contractor will be disposed of at an off site upland location.

FEDERALLY-PROTECTED SPECIES

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered, and Proposed Threatened are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of February 5, 2003 the Fish and Wildlife Service (FWS) lists seven federally protected species for Ashe County (Table 1).

Biological conclusions of "No Effect" were reached for all applicable species as reflected in the attached CE dated June 2002 due to lack of habitat.

Table 1. Federally-Protected Species for Ashe County

Common Name	Scientific Name	Federal Status	Habitat Present	Biological Conclusion
Bog Turtle	<i>Clemmys muhlenbergii</i>	T(S/A)	N	NA
Heller's Blazing Star	<i>Liatris helleri</i>	T	N	No Effect
Roan Mountain Bluet	<i>Houstonia montana</i> (=Hedyotis purpurea var. montana)	E	N	No Effect
Spreading Avens	<i>Geum radiatum</i>	T	N	No Effect
Swamp pink	<i>Helonias bullata</i>	T	N	No Effect
Virginia spirea	<i>Spiraea virginiana</i>	T	Y	No Effect
Rock gnome lichen	<i>Gymnoderma lineare</i>	E	N	No Effect

"E" - denotes Endangered (a species that is in danger of extinction throughout all or a significant portion of its range).

"T"- denotes Threatened a species which is likely to become endangered species within the foreseeable future throughout all or a significant portion of its range.

Regulatory Approvals

Section 404 Permit: It is anticipated that the construction of the work bridge will be authorized under Section 404 Nationwide Permit 33 (Temporary Construction Access and Dewatering). We are, therefore, requesting the issuance of a Nationwide Permit 33 authorizing construction of the work bridge. All other aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). Therefore, we do not anticipate requesting an individual permit, but propose to proceed under a Nationwide 23 as authorized by a Nationwide Permit 23 (FR number 10, pages 2020-2095; January 15, 2002).

Section 401 Permit: We anticipate 401 General Certifications numbers 3403 and 3366 will apply to this project. In accordance with 15A NCAC 2H .0500(a) and 15A NCAC 2B .0200 we are providing two copies of this application to the North Carolina Department of Environment and Natural Resources, Division of Water Quality, for their records.

We also anticipate that 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 requests that NCWRC forward their comments to the Corps of Engineers.

A copy of this permit application will be posted on the DOT website at: <http://www.ncdot.org/planning/pe/naturalunit/permit.html>.

If you have any questions or need additional information, please contact Brett Feulner at (919) 715-1488.

Sincerely,



Gregory K. Thorpe, Ph.D. Environmental Management Director,
Project Development and Environmental Analysis Branch

w/ attachment:

Mr. John Hennessy, NC DWQ (2 copies)
Mr. Omar Sultan, Programming and TIP
Ms. Marla Chambers, NCWRC
Mr. Art McMillan, PE, Highway Design
Ms. Marella Buncick, USFWS
Mr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design

Mr. Carl McCann, P.E., Division Engineer
Mr. David Franklin, USACE, Wilmington
Mr. Heath Slaughter, DEO
Mr. Jay Bennett, P.E., Roadway Design
Mr. Derrick Weaver, Planning Engineer
Mr. Keith Phillips, Roadside Environmental

USACE Action ID No. _____ DWQ No. _____

(If any particular item is not applicable to this project, please enter "Not Applicable" or "N/A".)

I. Processing

- 1. Check all of the approval(s) requested for this project:

<input checked="" type="checkbox"/> Section 404 Permit	<input type="checkbox"/> Riparian or Watershed Buffer Rules
<input type="checkbox"/> Section 10 Permit	<input type="checkbox"/> Isolated Wetland Permit from DWQ
<input type="checkbox"/> 401 Water Quality Certification	

- 2. Nationwide, Regional or General Permit Number(s) Requested: NW 23 and 33

- 3. If this notification is solely a courtesy copy because written approval for the 401 Certification is not required, check here:

- 4. If payment into the North Carolina Wetlands Restoration Program (NCWRP) is proposed for mitigation of impacts (verify availability with NCWRP prior to submittal of PCN), complete section VIII and check here:

- 5. If your project is located in any of North Carolina's twenty coastal counties (listed on page 4), and the project is within a North Carolina Division of Coastal Management Area of Environmental Concern (see the top of page 2 for further details), check here:

II. Applicant Information

- 1. Owner/Applicant Information

Name: NCDOT

Mailing Address: Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh, NC 27966-1548

Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794

E-mail Address: gthorpe@dot.state.nc.us

- 2. Agent/Consultant Information (A signed and dated copy of the Agent Authorization letter must be attached if the Agent has signatory authority for the owner/applicant.)

Name: _____

Company Affiliation: _____

Mailing Address: _____

Telephone Number: _____ Fax Number: _____

E-mail Address: _____

III. Project Information

Attach a **vicinity map** clearly showing the location of the property with respect to local landmarks such as towns, rivers, and roads. Also provide a detailed **site plan** showing property boundaries and development plans in relation to surrounding properties. Both the vicinity map and site plan must include a scale and north arrow. The specific footprints of all buildings, impervious surfaces, or other facilities must be included. If possible, the maps and plans should include the appropriate USGS Topographic Quad Map and NRCS Soil Survey with the property boundaries outlined. Plan drawings, or other maps may be included at the applicant's discretion, so long as the property is clearly defined. For administrative and distribution purposes, the USACE requires information to be submitted on sheets no larger than 11 by 17-inch format; however, DWQ may accept paperwork of any size. DWQ prefers full-size construction drawings rather than a sequential sheet version of the full-size plans. If full-size plans are reduced to a small scale such that the final version is illegible, the applicant will be informed that the project has been placed on hold until decipherable maps are provided.

1. Name of project: B-4010: Replacement of Bridge 7 on NC 163 over the South Fork of New River

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4010

3. Property Identification Number (Tax PIN): _____

4. Location
County: Ashe Nearest Town: Obids
Subdivision name (include phase/lot number): _____
Directions to site (include road numbers, landmarks, etc.): _____

5. Site coordinates, if available (UTM or Lat/Long): Pt 30001 36°19'01.82", 81°24' 17.44
Pt 30001 36°19'01.89", 81°24' 18.52
(Note – If project is linear, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)

6. Property size (acres): _____

7. Nearest body of water (stream/river/sound/ocean/lake): South Fork New River

8. River Basin: New River
(Note – this must be one of North Carolina's seventeen designated major river basins. The River Basin map is available at <http://h2o.enr.state.nc.us/admin/maps/>.)

9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application: Farmland and pasture.

10. Describe the overall project in detail, including the type of equipment to be used: Plans for replacing the bridge include replacing the current bridge downstream of the existing bridge. Equipment used will include regular equipment utilized on bridge replacement projects.

11. Explain the purpose of the proposed work: The purpose is to replace the old bridge that is functionally obsolete and structurally deficient.

IV. Prior Project History

If jurisdictional determinations and/or permits have been requested and/or obtained for this project (including all prior phases of the same subdivision) in the past, please explain. Include the USACE Action ID Number, DWQ Project Number, application date, and date permits and certifications were issued or withdrawn. Provide photocopies of previously issued permits, certifications or other useful information. Describe previously approved wetland, stream and buffer impacts, along with associated mitigation (where applicable). If this is a NCDOT project, list and describe permits issued for prior segments of the same T.I.P. project, along with construction schedules.

N/A

V. Future Project Plans

Are any future permit requests anticipated for this project? If so, describe the anticipated work, and provide justification for the exclusion of this work from the current application.

N/A

VI. Proposed Impacts to Waters of the United States/Waters of the State

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to wetlands, open water, and stream channels associated with the project. The applicant must also provide justification for these impacts in Section VII below. All proposed impacts, permanent and temporary, must be listed herein, and must be clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) must be shown on a delineation map, whether or not impacts are proposed to these systems. Wetland and stream evaluation and delineation forms should be included as appropriate. Photographs may be included at the applicant's discretion. If this proposed impact is strictly for wetland or stream mitigation, list and describe the impact in Section VIII below. If additional space is needed for listing or description, please attach a separate sheet.

1. Provide a written description of the proposed impacts: A temporary work bridge will be constructed in South Fork New River

2. Individually list wetland impacts below: 0 _____

Wetland Impact Site Number (indicate on map)	Type of Impact*	Area of Impact (acres)	Located within 100-year Floodplain** (yes/no)	Distance to Nearest Stream (linear feet)	Type of Wetland***

- * List each impact separately and identify temporary impacts. Impacts include, but are not limited to: mechanized clearing, grading, fill, excavation, flooding, ditching/drainage, etc. For dams, separately list impacts due to both structure and flooding.
- ** 100-Year floodplains are identified through the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRM), or FEMA-approved local floodplain maps. Maps are available through the FEMA Map Service Center at 1-800-358-9616, or online at <http://www.fema.gov>.
- *** List a wetland type that best describes wetland to be impacted (e.g., freshwater/saltwater marsh, forested wetland, beaver pond, Carolina Bay, bog, etc.) Indicate if wetland is isolated (determination of isolation to be made by USACE only).

List the total acreage (estimated) of all existing wetlands on the property: 0 _____
 Total area of wetland impact proposed: 0 _____

3. Individually list all intermittent and perennial stream impacts below:

Stream Impact Site Number (indicate on map)	Type of Impact*	Length of Impact (linear feet)	Stream Name**	Average Width of Stream Before Impact	Perennial or Intermittent? (please specify)
1	Temporary work bridge		South Fork New River	120	Perennial

- * List each impact separately and identify temporary impacts. Impacts include, but are not limited to: culverts and associated rip-rap, dams (separately list impacts due to both structure and flooding), relocation (include linear feet before and after, and net loss/gain), stabilization activities (cement wall, rip-rap, crib wall, gabions, etc.), excavation, ditching/straightening, etc. If stream relocation is proposed, plans and profiles showing the linear footprint for both the original and relocated streams must be included.
- ** Stream names can be found on USGS topographic maps. If a stream has no name, list as UT (unnamed tributary) to the nearest downstream named stream into which it flows. USGS maps are available through the USGS at 1-800-358-9616, or online at www.usgs.gov. Several internet sites also allow direct download and printing of USGS maps (e.g., www.topozone.com, www.mapquest.com, etc.).

Cumulative impacts (linear distance in feet) to all streams on site: _____

4. Individually list all open water impacts (including lakes, ponds, estuaries, sounds, Atlantic Ocean and any other water of the U.S.) below:

Open Water Impact Site Number (indicate on map)	Type of Impact*	Area of Impact (acres)	Name of Waterbody (if applicable)	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)

* List each impact separately and identify temporary impacts. Impacts include, but are not limited to: fill, excavation, dredging, flooding, drainage, bulkheads, etc.

5. Pond Creation

If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.

Pond to be created in (check all that apply): uplands stream wetlands
 Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.): _____

Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.): _____

Size of watershed draining to pond: _____ Expected pond surface area: _____

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts.

Minimization of jurisdictional impacts was accomplished through the use of a work bridge instead of a causeway

VIII. Mitigation

DWQ - In accordance with 15A NCAC 2H .0500, mitigation may be required by the NC Division of Water Quality for projects involving greater than or equal to one acre of impacts to freshwater wetlands or greater than or equal to 150 linear feet of total impacts to perennial streams.

USACE – In accordance with the Final Notice of Issuance and Modification of Nationwide Permits, published in the Federal Register on March 9, 2000, mitigation will be required when necessary to ensure that adverse effects to the aquatic environment are minimal. Factors

including size and type of proposed impact and function and relative value of the impacted aquatic resource will be considered in determining acceptability of appropriate and practicable mitigation as proposed. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland and/or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferable in the same watershed.

If mitigation is required for this project, a copy of the mitigation plan must be attached in order for USACE or DWQ to consider the application complete for processing. Any application lacking a required mitigation plan or NCWRP concurrence shall be placed on hold as incomplete. An applicant may also choose to review the current guidelines for stream restoration in DWQ's Draft Technical Guide for Stream Work in North Carolina, available at <http://h2o.enr.state.nc.us/ncwetlands/strmgide.html>.

1. Provide a brief description of the proposed mitigation plan. The description should provide as much information as possible, including, but not limited to: site location (attach directions and/or map, if offsite), affected stream and river basin, type and amount (acreage/linear feet) of mitigation proposed (restoration, enhancement, creation, or preservation), a plan view, preservation mechanism (e.g., deed restrictions, conservation easement, etc.), and a description of the current site conditions and proposed method of construction. Please attach a separate sheet if more space is needed.

N/A

2. Mitigation may also be made by payment into the North Carolina Wetlands Restoration Program (NCWRP). Please note it is the applicant's responsibility to contact the NCWRP at (919) 733-5208 to determine availability and to request written approval of mitigation prior to submittal of a PCN. For additional information regarding the application process for the NCWRP, check the NCWRP website at <http://h2o.enr.state.nc.us/wrp/index.htm>. If use of the NCWRP is proposed, please check the appropriate box on page three and provide the following information:

Amount of stream mitigation requested (linear feet): _____
Amount of buffer mitigation requested (square feet): _____
Amount of Riparian wetland mitigation requested (acres): _____
Amount of Non-riparian wetland mitigation requested (acres): _____
Amount of Coastal wetland mitigation requested (acres): _____

IX. Environmental Documentation (required by DWQ)

Does the project involve an expenditure of public (federal/state) funds or the use of public (federal/state) land?

Yes No

If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)?
Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation.

Yes No

If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter.

Yes No

X. Proposed Impacts on Riparian and Watershed Buffers (required by DWQ)

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to required state and local buffers associated with the project. The applicant must also provide justification for these impacts in Section VII above. All proposed impacts must be listed herein, and must be clearly identifiable on the accompanying site plan. All buffers must be shown on a map, whether or not impacts are proposed to the buffers. Correspondence from the DWQ Regional Office may be included as appropriate. Photographs may also be included at the applicant's discretion.

Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify _____)?

Yes No If you answered "yes", provide the following information:

Identify the square feet and acreage of impact to each zone of the riparian buffers. If buffer mitigation is required calculate the required amount of mitigation by applying the buffer multipliers.

Zone*	Impact (square feet)	Multiplier	Required Mitigation
1		3	
2		1.5	
Total			

* Zone 1 extends out 30 feet perpendicular from near bank of channel; Zone 2 extends an additional 20 feet from the edge of Zone 1.

If buffer mitigation is required, please discuss what type of mitigation is proposed (i.e., Donation of Property, Conservation Easement, Riparian Buffer Restoration / Enhancement, Preservation or

Payment into the Riparian Buffer Restoration Fund). Please attach all appropriate information as identified within 15A NCAC 2B .0242 or .0260.

XI. Stormwater (required by DWQ)

Describe impervious acreage (both existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property.

N/A

XII. Sewage Disposal (required by DWQ)

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.

N/A

XIII. Violations (required by DWQ)

Is this site in violation of DWQ Wetland Rules (15A NCAC 2H .0500) or any Buffer Rules?

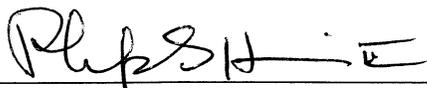
Yes No

Is this an after-the-fact permit application?

Yes No

XIV. Other Circumstances (Optional):

It is the applicant's responsibility to submit the application sufficiently in advance of desired construction dates to allow processing time for these permits. However, an applicant may choose to list constraints associated with construction or sequencing that may impose limits on work schedules (e.g., draw-down schedules for lakes, dates associated with Endangered and Threatened Species, accessibility problems, or other issues outside of the applicant's control).



Applicant/Agent's Signature

3/10/04

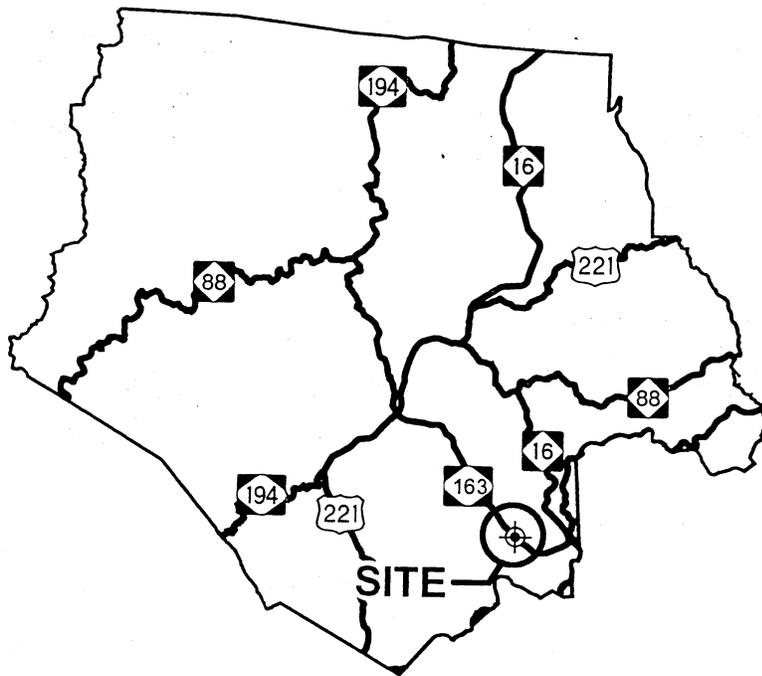
Date

(Agent's signature is valid only if an authorization letter from the applicant is provided.)

NORTH CAROLINA

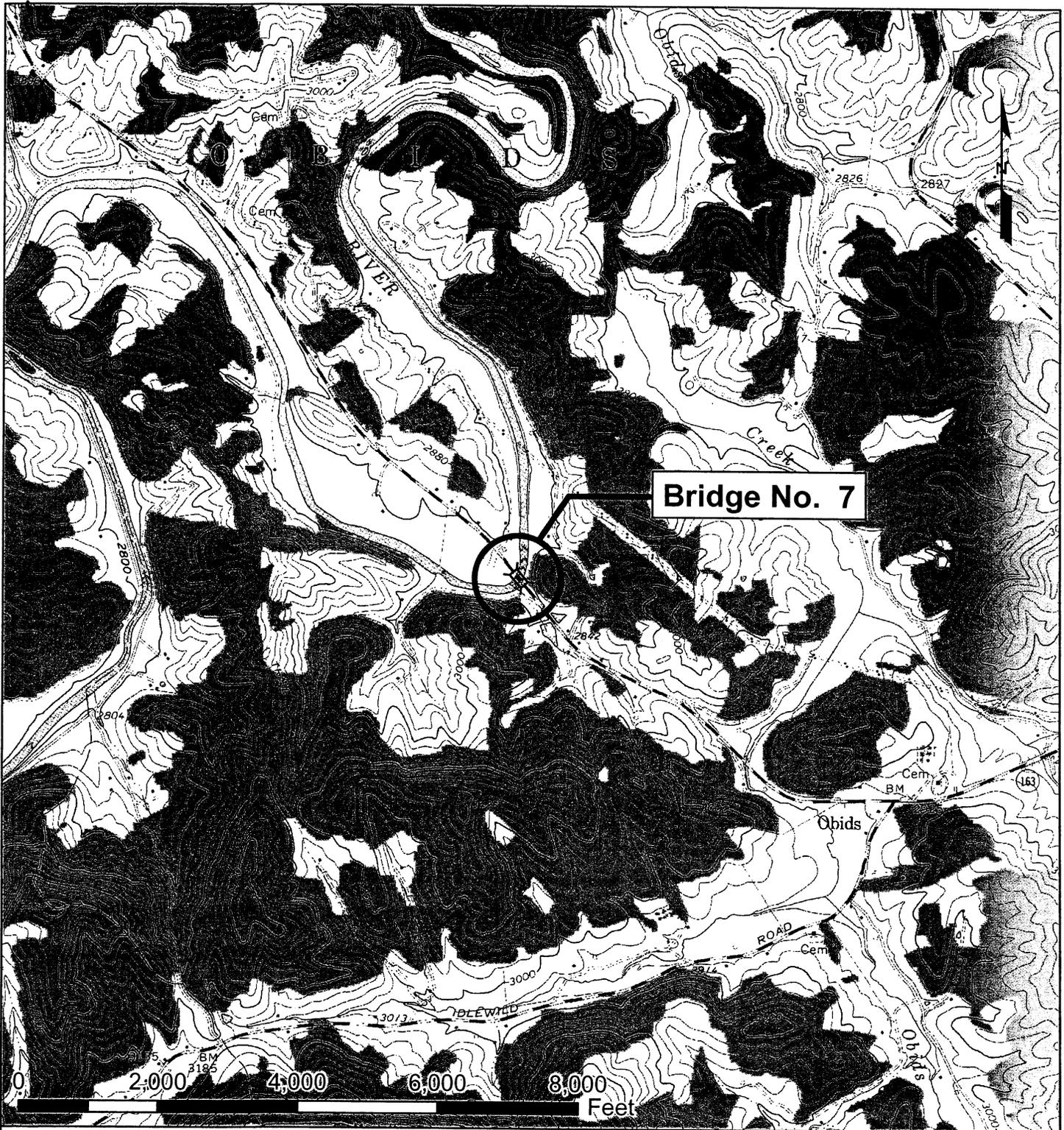


ASHE



VICINITY MAPS

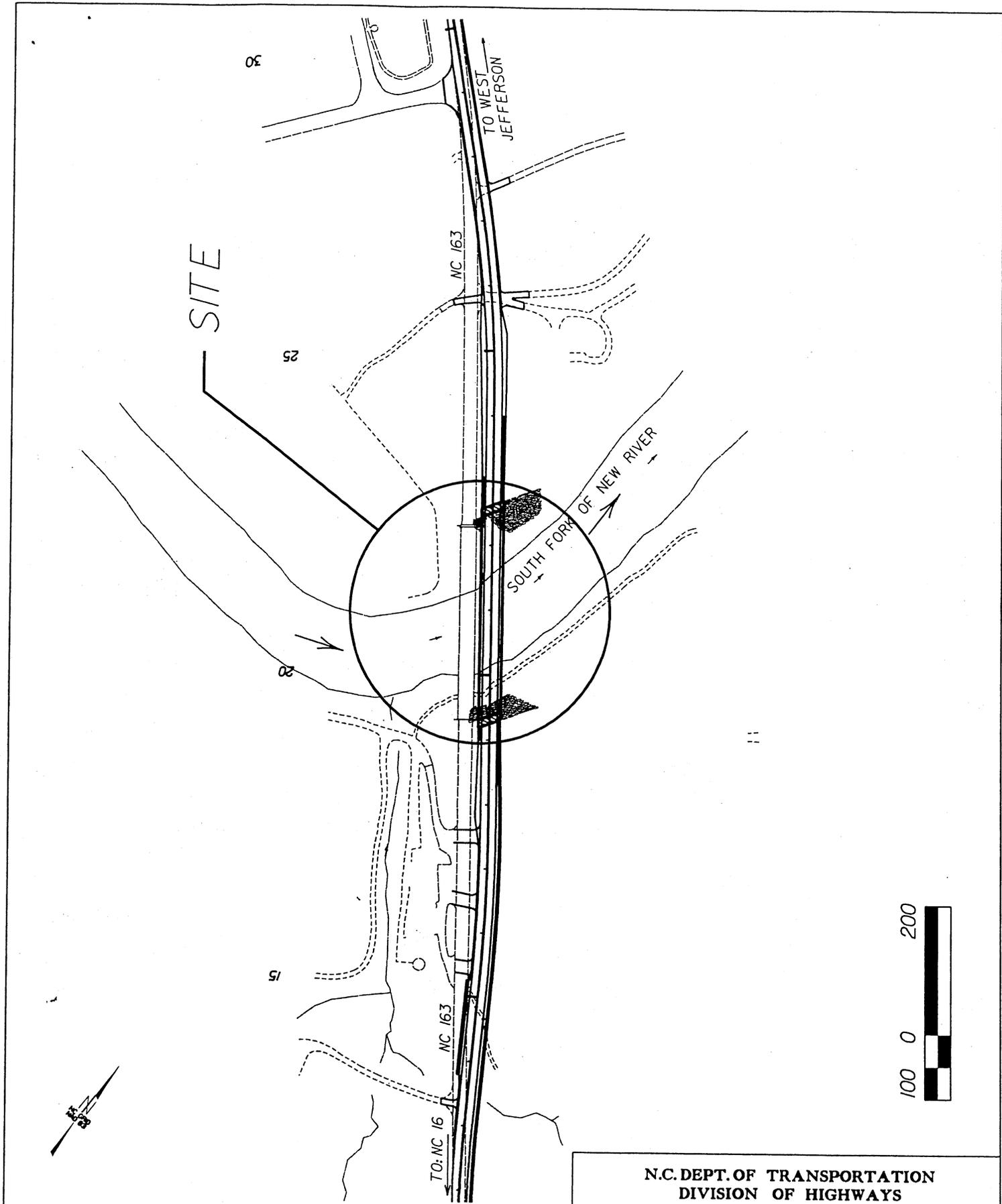
NCDOT
DIVISION OF HIGHWAYS
ASHE COUNTY
PROJECT: 8.1711401 (B-4010)
REPLACE BRIDGE NO. 7 ON NC 163
OVER SOUTH FORK NEW RIVER



1 inch equals 2,000 feet

LOCATION

NCDOT
 DIVISION OF HIGHWAYS
 ASHE COUNTY
 PROJECT: 8.1711401 (B-4010)
 REPLACE BRIDGE NO. 7 ON NC 163
 OVER SOUTH FORK NEW RIVER



SITE MAP

N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 ASHE COUNTY

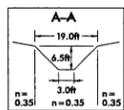
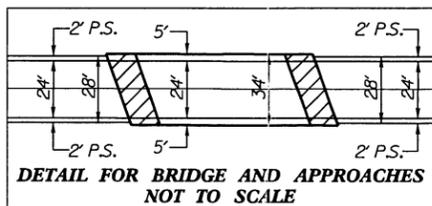
PROJECT 8.1711401 (B-4010)

BRIDGE NO. 7 ON NC 163
 OVER SOUTH FORK NEW RIVER

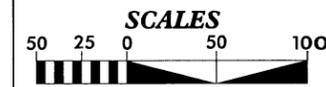
5/17/02

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY MCDOT FOR MONUMENT "B40-1" WITH STATE PLANE GRID COORDINATES OF NORTHING: 943527.6175(1) EASTING: 12910329035(1) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99991771 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B40-1" TO "L" STATION 11+00.00 IS S 37° 28' 24.29" E Distance 1666.56 Ft. ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS MVD 88

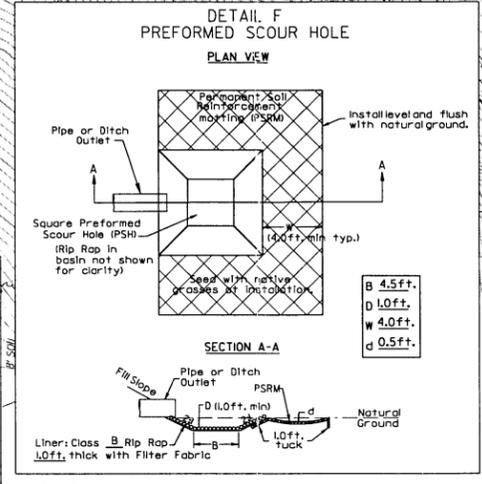
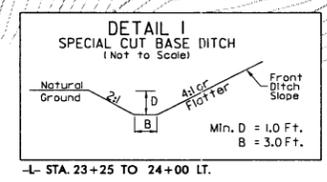
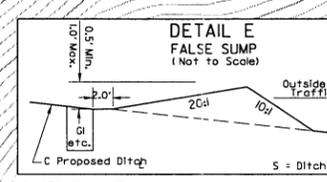
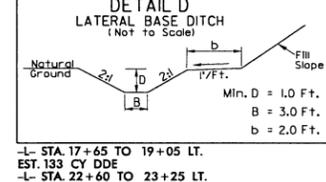
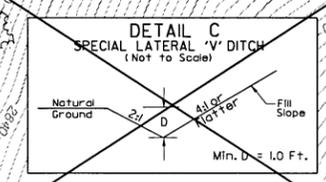
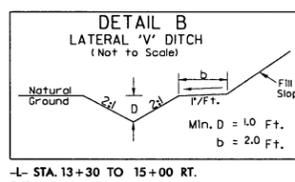
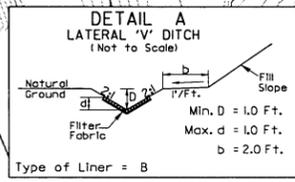
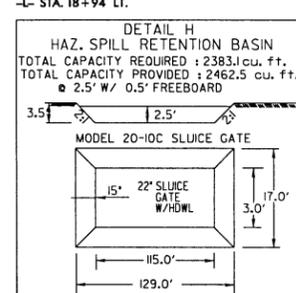
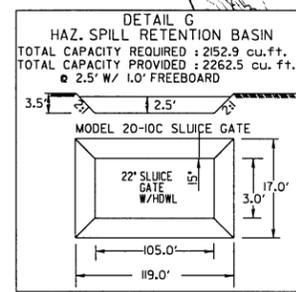
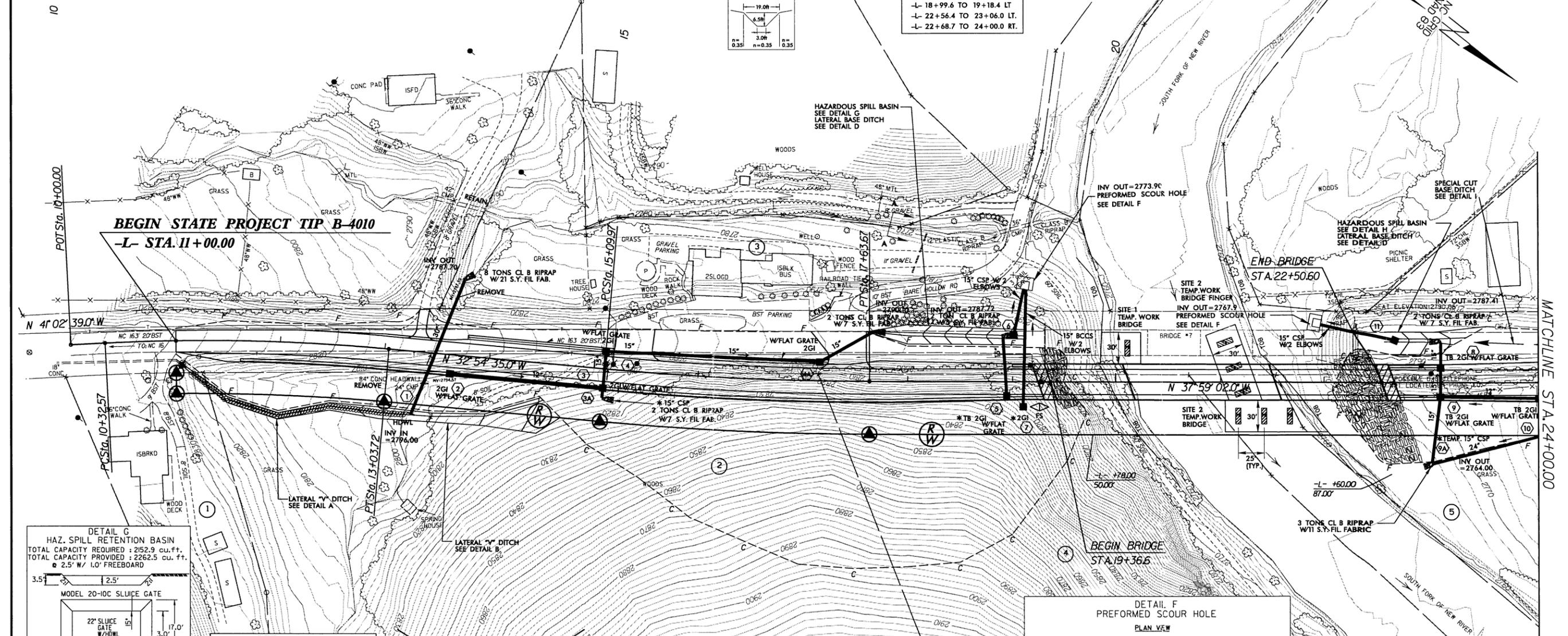


English



PROJECT REFERENCE NO. B-4010		SHEET NO. 4	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

- EXPRESSWAY GUTTER**
 -L- 13+78.0 TO 15+08.0 LT
 -L- 15+55.0 TO 17+16.0 LT
- SHOULDER BERM GUTTER**
 -L- 11+62.1 TO 19+30.8 RT
 -L- 18+99.6 TO 19+18.4 LT
 -L- 22+56.4 TO 23+06.0 LT.
 -L- 22+68.7 TO 24+00.0 RT.



- *TEMPORARY DRAINAGE**
1. TEMPORARILY PLUG PROPOSED OUTFLOW PIPE INSIDE STRUCTURE 3 AND PLACE TEMPORARY PIPE 3A WHILE HAZARDOUS SPILL BASIN IS BEING BUILT.
 2. STUB PIPES FROM STRUCTURES 8 AND 12 UP TO THE EXISTING DITCH. PLACE COVER ON STRUCTURE 12 DURING CONST. BUILD FALSE SUMP AFTER HAZ. SPILL BASIN IS BUILT.
 3. TEMPORARILY PLUG PROPOSED OUTFLOW PIPE INSIDE STRUCTURE 18 AND PLACE TEMPORARY PIPE 17A WHILE HAZARDOUS SPILL BASIN IS BEING BUILT.
 4. PLUG TEMPORARY PIPES 3A AND 17A AFTER COMPLETION OF HAZARDOUS SPILL BASINS.

REVISIONS

02/26/2004 R:\Hydraulics\B4010-HVD-PMT.dgn

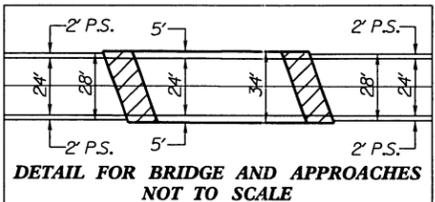
PLANS PREPARED BY :
RUMMEL KLEPPER & KAHL, LLP
consulting engineers
 5800 FARINGDON PLACE SUITE 105
 RALEIGH, NORTH CAROLINA 27609-3960

FOR
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

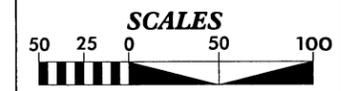
5/17/02

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY MCDOT FOR MONUMENT "B4010-1" WITH STATE PLANE GRID COORDINATES OF NORTHING: 943527.6175(1) EASTING: 12910329035(1) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99991771 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4010-1" TO L- STATION 11+00.00 IS S 37° 28' 24.29" E Distance 1,666.56 Ft. ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

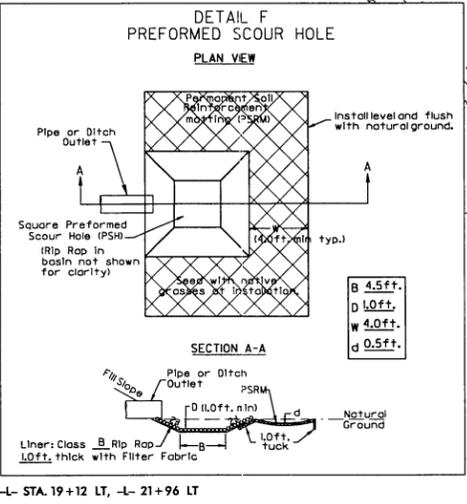
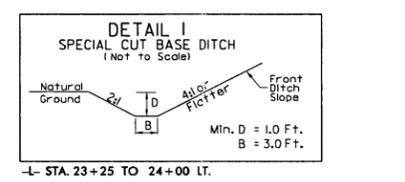
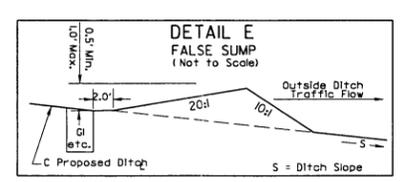
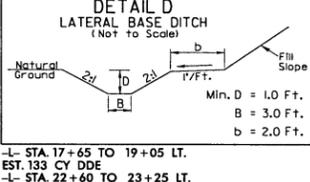
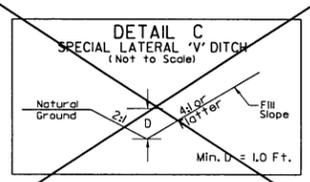
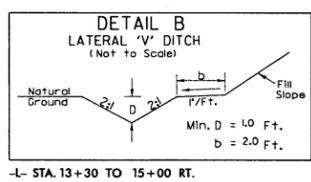
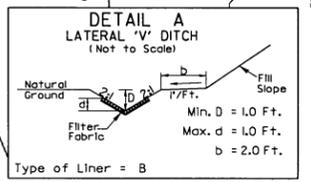
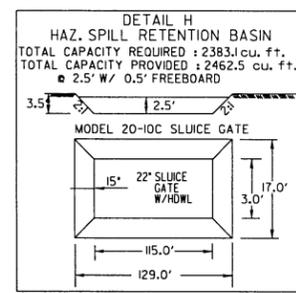
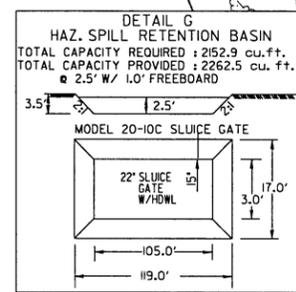
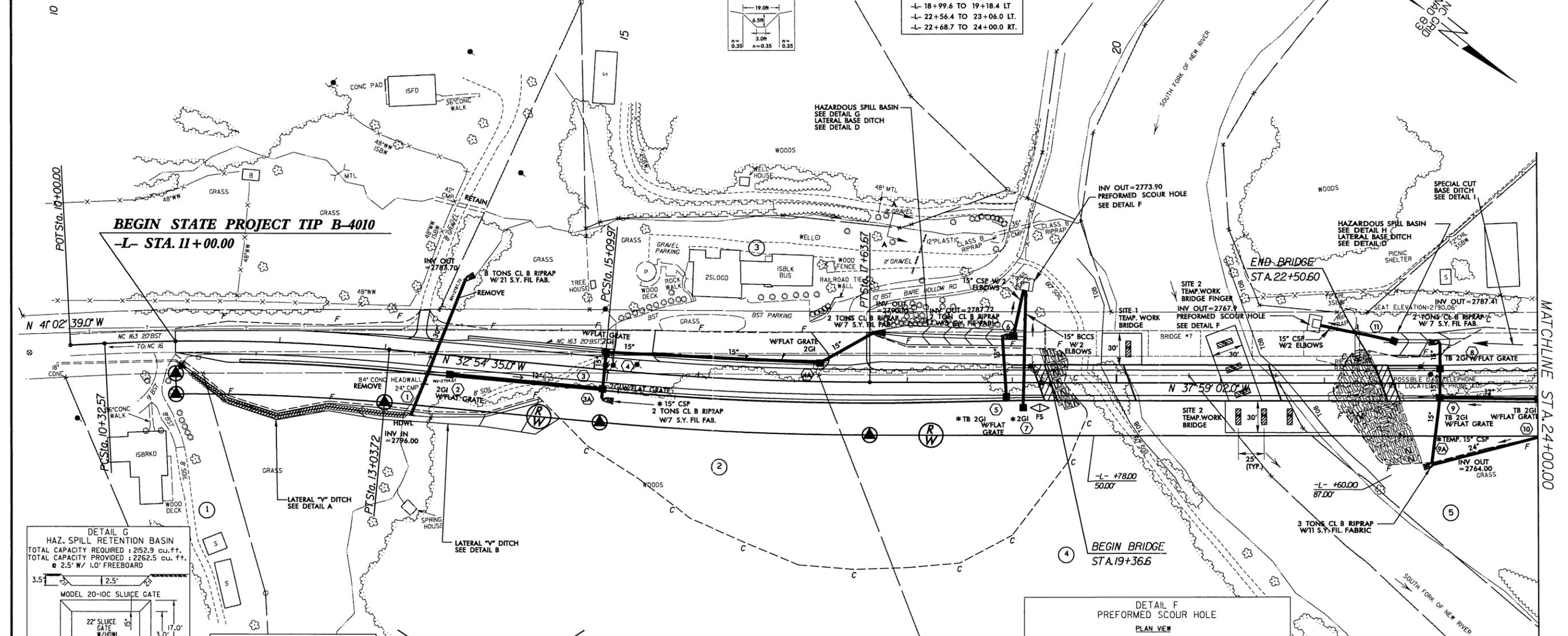
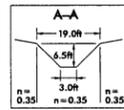


English



PROJECT REFERENCE NO. B-4010		SHEET NO. 4	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

- EXPRESSWAY GUTTER**
 -L- 13+78.0 TO 15+08.0 LT
 -L- 15+55.0 TO 17+16.0 LT
- SHOULDER BERM GUTTER**
 -L- 11+62.1 TO 19+30.8 RT
 -L- 18+99.6 TO 19+18.4 LT
 -L- 22+56.4 TO 23+06.0 LT
 -L- 22+68.7 TO 24+00.0 RT.



- *TEMPORARY DRAINAGE**
- TEMPORARILY PLUG PROPOSED OUTFLOW PIPE INSIDE STRUCTURE 3 AND PLACE TEMPORARY PIPE 3A WHILE HAZARDOUS SPILL BASIN IS BEING BUILT.
 - STUB PIPES FROM STRUCTURES 8 AND 12 UP TO THE EXISTING DITCH. PLACE COVER ON STRUCTURE 12 DURING CONST. BUILD FALSE SUMP AFTER HAZ. SPILL BASIN IS BUILT.
 - TEMPORARILY PLUG PROPOSED OUTFLOW PIPE INSIDE STRUCTURE 18 AND PLACE TEMPORARY PIPE 18A WHILE HAZARDOUS SPILL BASIN IS BEING BUILT.
 - PLUG TEMPORARY PIPES 3A AND 18A AFTER COMPLETION OF HAZARDOUS SPILL BASINS.

███ DENOTES TEMPORARY FILL IN SURFACE WATER

PLANS PREPARED BY :
RUMMEL KLEPPER & KAHL, LLP
consulting engineers
 5800 FARINGDON PLACE SUITE 105
 RALEIGH, NORTH CAROLINA 27609-3960

FOR
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

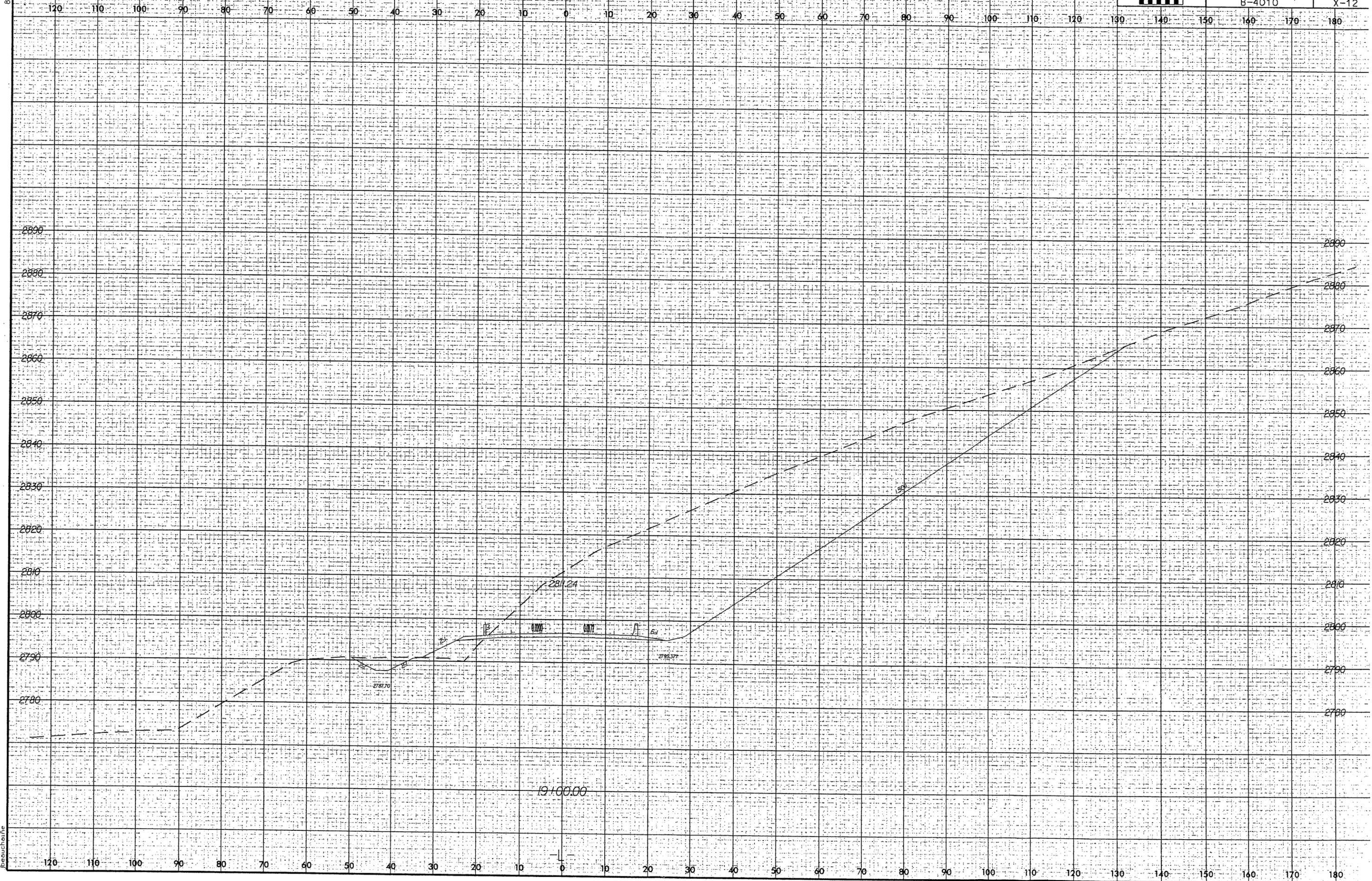
REVISIONS

02/26/2004 R:\Hydraulics\B4010-HVD-PMT.dgn

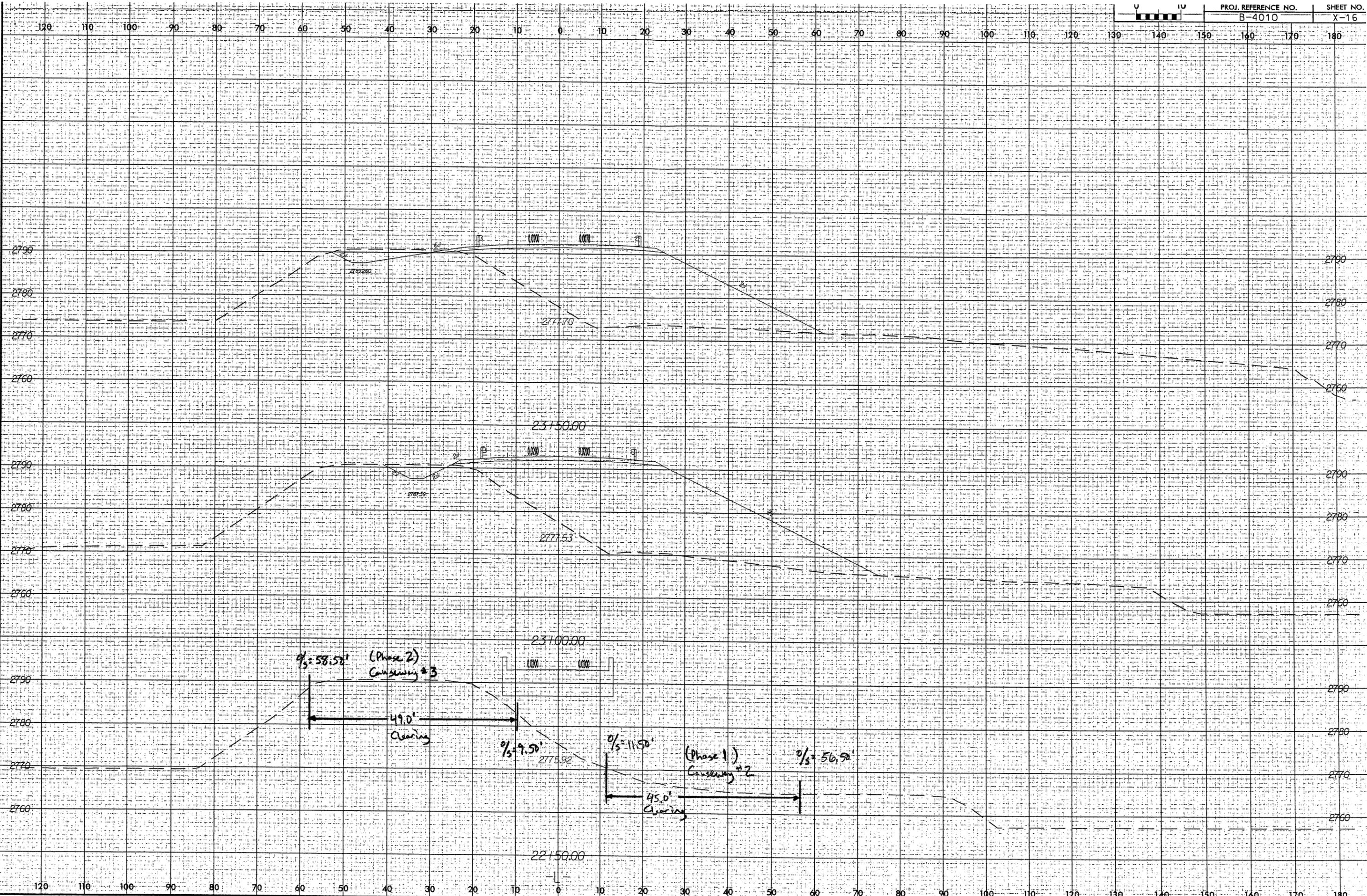
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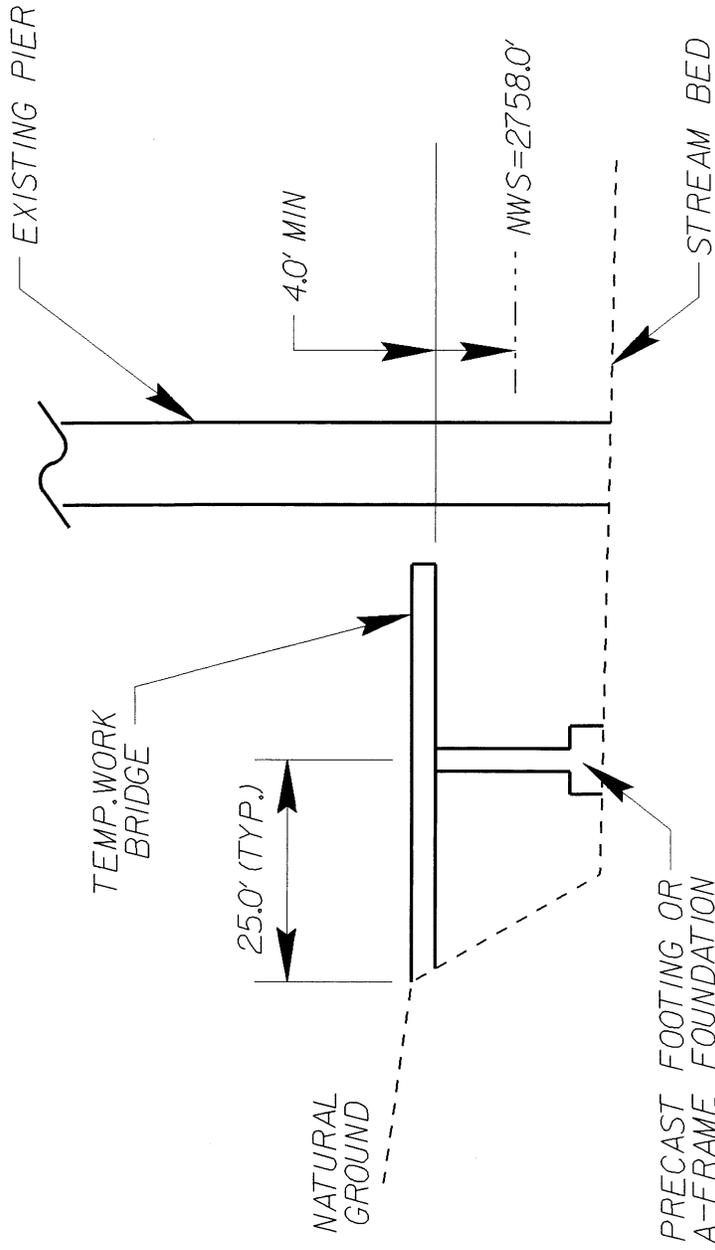


PROJ. REFERENCE NO.	SHEET NO.
B-4010	X-12



05/20/2003 10:53:40 AM
 F:\Roadway\Xsc\B4010_F0Y_XPL_L.DGN
 jneuchaine





AREA OF TEMP. IMPACT DUE TO TEMP. FOOTINGS/ FOUNDATIONS OF BRIDGE = 75 sqft (0.0017 ac)

WORK BRIDGE LAYOUT IS ESTIMATED. ACTUAL LAYOUT MAY VARY DEPENDING ON CONTRACTOR.

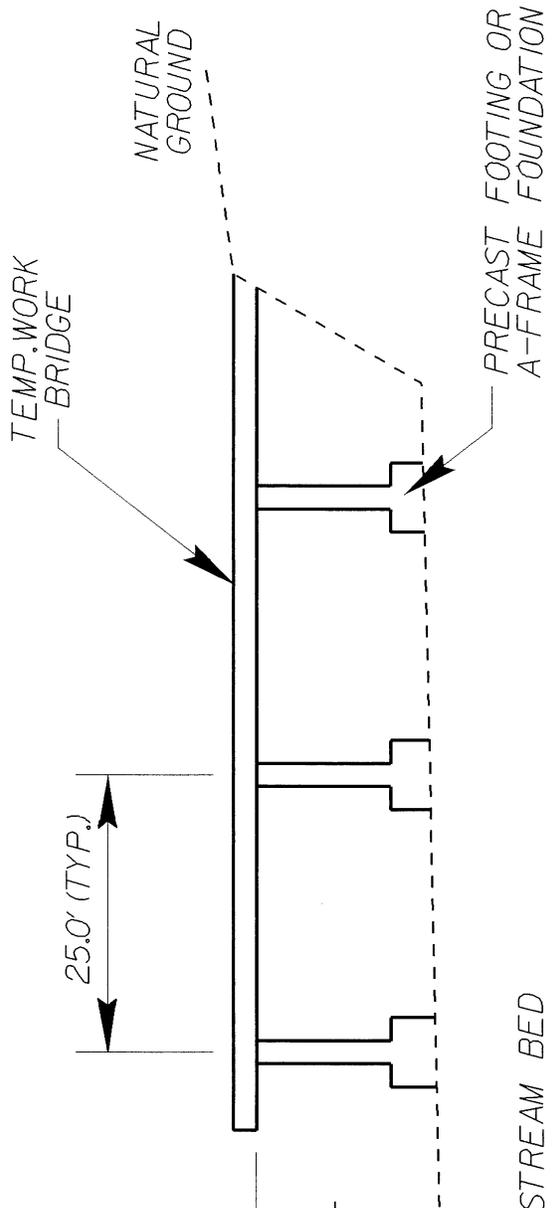
NOT TO SCALE

TEMPORARY WORK BRIDGE SITE 1
 (FOR PROP. BRIDGE CONSTRUCTION AND EXISTING BRIDGE REMOVAL)

N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 ASHE COUNTY

PROJECT 8.1711401 (B-4010)

BRIDGE NO. 7 ON NC 163
 OVER SOUTH FORK NEW RIVER



NWS = 2758.0'

AREA OF TEMP. BRIDGE DUE TO IMPACT DUE TO TEMP. FOOTINGS/ FOUNDATIONS OF BRIDGE = 225 sqft (0.0052 ac)

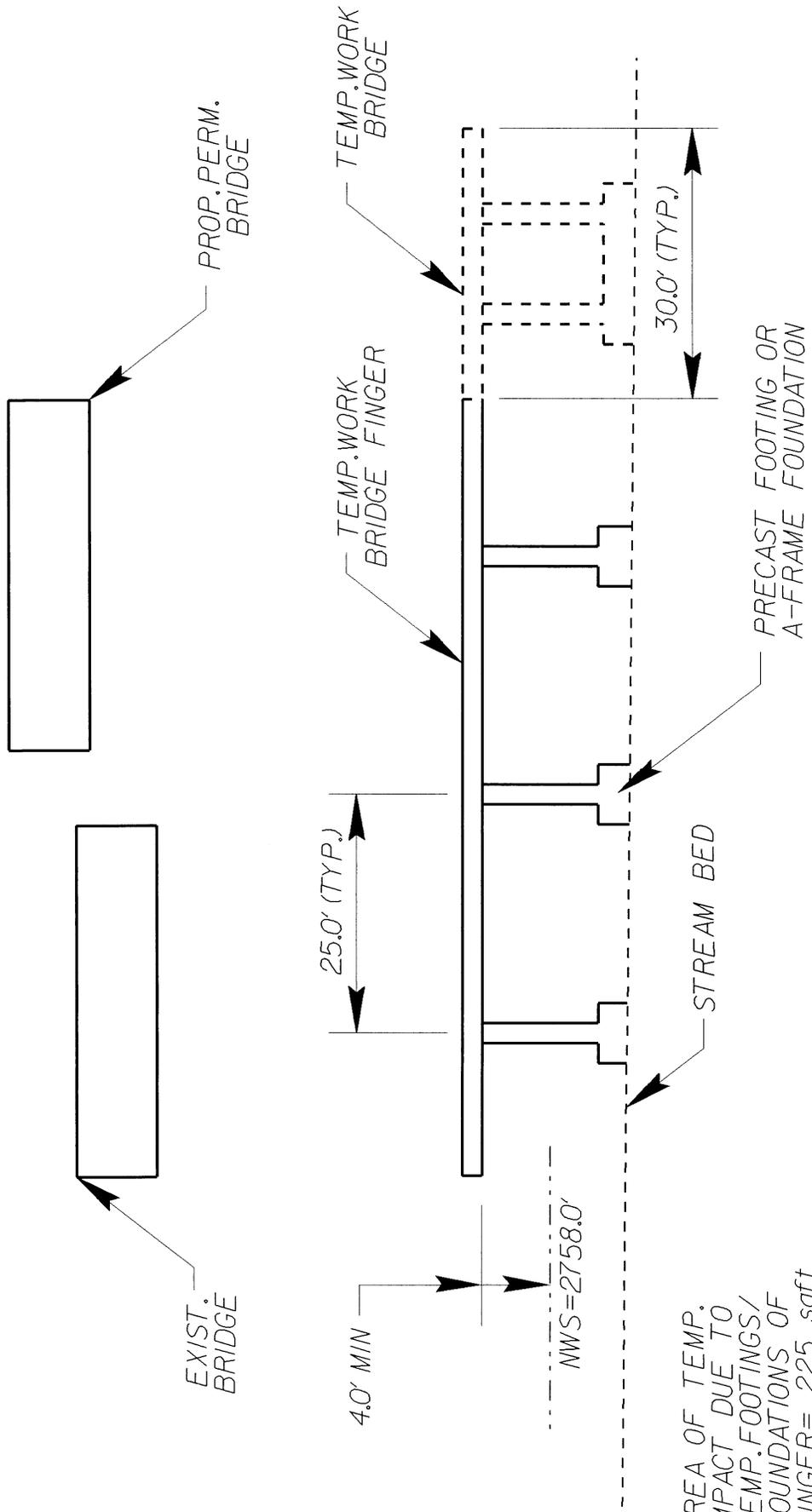
WORK BRIDGE LAYOUT IS ESTIMATED. ACTUAL LAYOUT MAY VARY DEPENDING ON CONTRACTOR.

NOT TO SCALE

TEMPORARY WORK BRIDGE SITE 2
 (FOR PROP. BRIDGE CONSTRUCTION AND EXISTING BRIDGE REMOVAL)

N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 ASHE COUNTY

PROJECT 8.1711401 (B-4010)
 BRIDGE NO. 7 ON NC 163
 OVER SOUTH FORK NEW RIVER



AREA OF TEMP. IMPACT DUE TO TEMP. FOOTINGS/ FOUNDATIONS OF FINGER = 225 sqft (0.0052 ac)

WORK BRIDGE LAYOUT IS ESTIMATED. ACTUAL LAYOUT MAY VARY DEPENDING ON CONTRACTOR.

NOT TO SCALE

TEMP. WORK BRIDGE FINGER SITE 2
 (FOR PROP. BRIDGE CONSTRUCTION AND EXISTING BRIDGE REMOVAL)

N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 ASHE COUNTY

PROJECT 8.1711401 (B-4010)
 BRIDGE NO. 7 ON NC 163
 OVER SOUTH FORK NEW RIVER

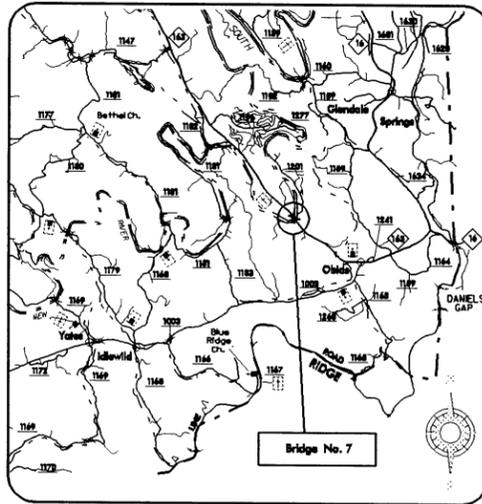
PROPERTY NO.	PROPERTY OWNER NAME	DEED INFO
5	EVAZELLA. PARSONS	DB 136 PG 1347

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
ASHE COUNTY

PROJECT 8.1711401 (B-4010)
BRIDGE NO.7 ON NC 163
OVER SOUTH FORK NEW RIVER

CONTRACT: A304454 TIP PROJECT: B-4010

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



VICINITY MAP

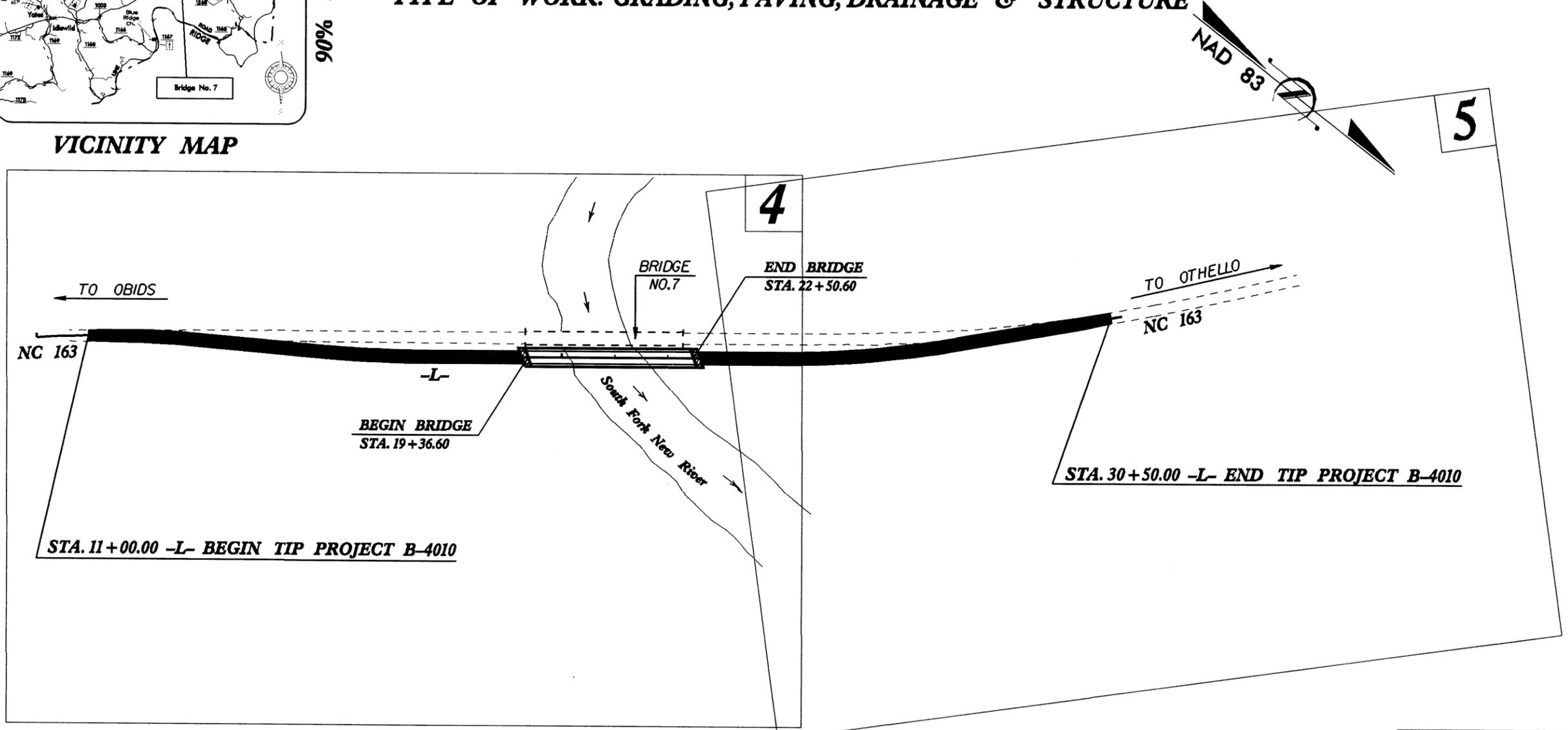
90% SUBMITTAL

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

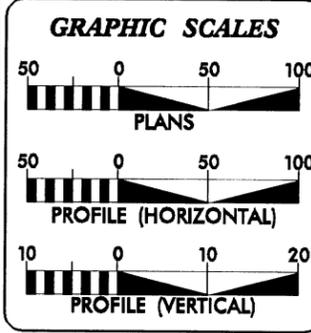
ASHE COUNTY

LOCATION: Replace Bridge No. 7 & approaches on NC 163, over South Fork New River
TYPE OF WORK: GRADING, PAVING, DRAINAGE & STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4010	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33378.1.1	BRSTP-163(1)	PE	
33378.3.1	BRSTP-163(2)	RW, UTIL.	



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2004 = 2,880
ADT 2025 = 4,800
DHV = 13 %
D = 60 %
* T = 6 %
V = 60 MPH
* (2% TTST & 4% DUAL)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4010	0.310 MI
LENGTH STRUCTURE TIP PROJECT B-4010	0.059 MI
TOTAL LENGTH TIP PROJECT B-4010	0.369 MI

PLANS PREPARED BY :
RUMMEL, KLEPPER & KAHL, LLP
consulting engineers
5800 FARINGDON PLACE, SUITE 105
RALEIGH, NORTH CAROLINA 27609
FOR

DIVISION OF HIGHWAYS

2002 STANDARD SPECIFICATIONS
RIGHT OF WAY DATE: July 31, 2003
LETTING DATE: July 20, 2004

NCDOT CONTACT: Teresa M. Bruton, P.E.
Project Engineer—Design Services

Michael T. Merritt, P.E.
PROJECT ENGINEER

Stephen E. Roberts, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.

ROADWAY DESIGN ENGINEER

P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.

STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR

DATE

J:\COMNOS\302157\DGN\B40101.SH 11/06/02

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL SYMBOLS

*S.U.E = SUBSURFACE UTILITY ENGINEER

ROADS & RELATED ITEMS

Edge of Pavement	-----
Curb	-----
Prop. Slope Stakes Cut	-----C-----
Prop. Slope Stakes Fill	-----F-----
Prop. Woven Wire Fence	-----○-----
Prop. Chain Link Fence	-----□-----
Prop. Barbed Wire Fence	-----◇-----
Prop. Wheelchair Ramp	-----WCR-----
Curb Cut for Future Wheelchair Ramp	-----CCFR-----
Exist. Guardrail	----- -----
Prop. Guardrail	----- -----
Equality Symbol	-----⊕-----
Pavement Removal	-----■-----

RIGHT OF WAY

Baseline Control Point	-----◆-----
Existing Right of Way Marker	-----△-----
Exist. Right of Way Line wMarker	-----△-----
Prop. Right of Way Line with Proposed	-----▲-----
R/W Marker (Iron Pin & Cap)	-----▲-----
Prop. Right of Way Line with Proposed	-----▲-----
(Concrete or Granite) RW Marker	-----●-----
Exist. Control of Access Line	-----C/A-----
Prop. Control of Access Line	-----C/A-----
Exist. Easement Line	-----E-----
Prop. Temp. Construction Easement Line	-----E-----
Prop. Temp. Drainage Easement Line	-----TDE-----
Prop. Perm. Drainage Easement Line	-----PDE-----

HYDROLOGY

Stream or Body of Water	-----
River Basin Buffer	-----RBB-----
Flow Arrow	-----→-----
Disappearing Stream	----->-----
Spring	-----○-----
Swamp Marsh	-----
Shoreline	-----
Falls, Rapids	-----
Prop Lateral, Tail, Head Ditches	-----

STRUCTURES

MAJOR	
Bridge, Tunnel, or Box Culvert	-----CONC-----
Bridge Wing Wall, Head Wall and End Wall	-----)CONC WW(-----

MINOR

Head & End Wall	-----CONC HW-----
Pipe Culvert	-----= = = =-----
Footbridge	-----X-----
Drainage Boxes	-----□ CB-----
Paved Ditch Gutter	-----

UTILITIES

Exist. Pole	-----●-----
Exist. Power Pole	-----○-----
Prop. Power Pole	-----○-----
Exist. Telephone Pole	-----○-----
Prop. Telephone Pole	-----○-----
Exist. Joint Use Pole	-----○-----
Prop. Joint Use Pole	-----○-----
Telephone Pedestal	-----□-----
UG Telephone Cable Hand Hold	-----□-----
Cable TV Pedestal	-----□-----
UG TV Cable Hand Hold	-----□-----
UG Power Cable Hand Hold	-----□-----
Hydrant	-----◇-----
Satellite Dish	-----◇-----
Exist. Water Valve	-----○-----
Sewer Clean Out	-----○-----
Power Manhole	-----P-----
Telephone Booth	-----□-----
Cellular Telephone Tower	-----□-----
Water Manhole	-----W-----
Light Pole	-----○-----
H-Frame Pole	-----○-----
Power Line Tower	-----□-----
Pole with Base	-----□-----
Gas Valve	-----◇-----
Gas Meter	-----◇-----
Telephone Manhole	-----T-----
Power Transformer	-----T-----
Sanitary Sewer Manhole	-----S-----
Storm Sewer Manhole	-----S-----
Tank; Water, Gas, Oil	-----○-----
Water Tank With Legs	-----○-----
Traffic Signal Junction Box	-----S-----
Fiber Optic Splice Box	-----S-----
Television or Radio Tower	-----○-----
Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement	-----TS-----

Recorded Water Line	-----W-----
Designated Water Line (S.U.E.*)	-----W-----
Sanitary Sewer	-----SS-----
Recorded Sanitary Sewer Force Main	-----FSS-----
Designated Sanitary Sewer Force Main(S.U.E.*)	-----FSS-----
Recorded Gas Line	-----G-----
Designated Gas Line (S.U.E.*)	-----G-----
Storm Sewer	-----S-----
Recorded Power Line	-----P-----
Designated Power Line (S.U.E.*)	-----P-----
Recorded Telephone Cable	-----T-----
Designated Telephone Cable (S.U.E.*)	-----T-----
Recorded UG Telephone Conduit	-----TC-----
Designated UG Telephone Conduit (S.U.E.*)	-----TC-----
Unknown Utility (S.U.E.*)	-----UTL-----
Recorded Television Cable	-----TV-----
Designated Television Cable (S.U.E.*)	-----TV-----
Recorded Fiber Optics Cable	-----FO-----
Designated Fiber Optics Cable (S.U.E.*)	-----FO-----
Exist. Water Meter	-----○-----
UG Test Hole (S.U.E.*)	-----○-----
Abandoned According to UG Record	-----ATTUR-----
End of Information	-----E.O.I-----

BOUNDARIES & PROPERTIES

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Property Line Symbol	-----P L-----
Exist. Iron Pin	-----○ EP-----
Property Corner	-----+-----
Property Monument	-----ECM-----
Property Number	-----123-----
Parcel Number	-----6-----
Fence Line	-----X X X X-----
Existing Wetland Boundaries	-----WW & ISBW-----
High Quality Wetland Boundary	-----WLB-----
Medium Quality Wetland Boundaries	-----HQ WLB-----
Low Quality Wetland Boundaries	-----MQ WLB-----
Proposed Wetland Boundaries	-----LQ WLB-----
Existing Endangered Animal Boundaries	-----EAB-----
Existing Endangered Plant Boundaries	-----EPB-----

BUILDINGS & OTHER CULTURE

Buildings	-----
Foundations	-----
Area Outline	-----
Gate	-----
Gas Pump Vent or UG Tank Cap	-----
Church	-----
School	-----
Park	-----
Cemetery	-----
Dam	-----
Sign	-----
Well	-----
Small Mine	-----
Swimming Pool	-----

TOPOGRAPHY

Loose Surface	-----
Hard Surface	-----
Change in Road Surface	-----
Curb	-----
Right of Way Symbol	-----R/W-----
Guard Post	-----○ GP-----
Paved Walk	-----
Bridge	-----
Box Culvert or Tunnel	-----
Ferry	-----
Culvert	-----
Footbridge	-----
Trail, Footpath	-----
Light House	-----

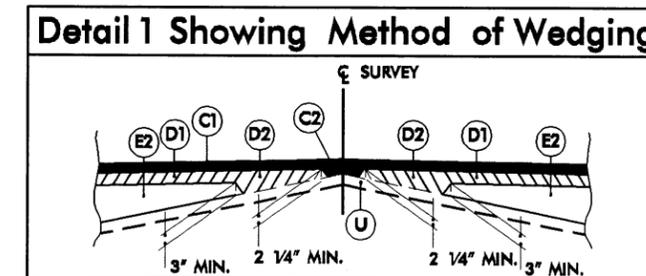
VEGETATION

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

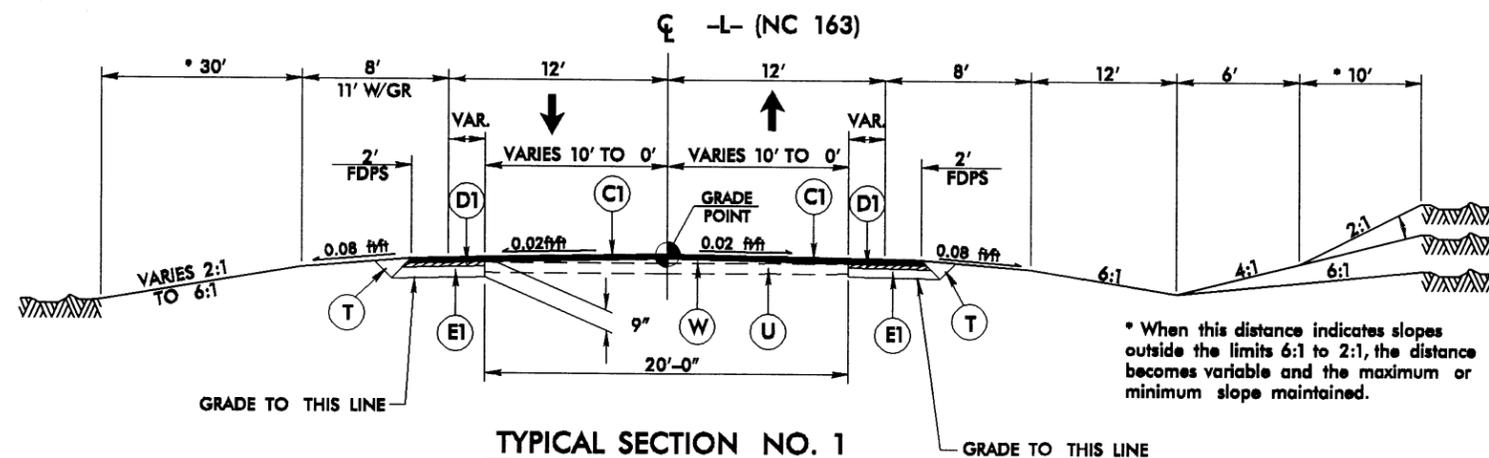
RAILROADS

Standard Gauge	-----
RR Signal Milepost	-----
Switch	-----

PAVEMENT SCHEDULE			
ITEM	DESCRIPTION	ITEM	DESCRIPTION
C1	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 140 LBS. PER SQ. YD. IN EACH OF TWO LAYERS	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 GREATER THAN 5 1/2" IN DEPTH OR LESS THAN 3" IN DEPTH.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.	T	EARTH MATERIAL
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	U	EXISTING PAVEMENT
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 GREATER THAN 4" IN DEPTH OR LESS THAN 2 1/4" IN DEPTH.	W	WEDGING (SEE DETAIL 1)
E1	PROP. APPROX. 4" BITUMINOUS CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.		

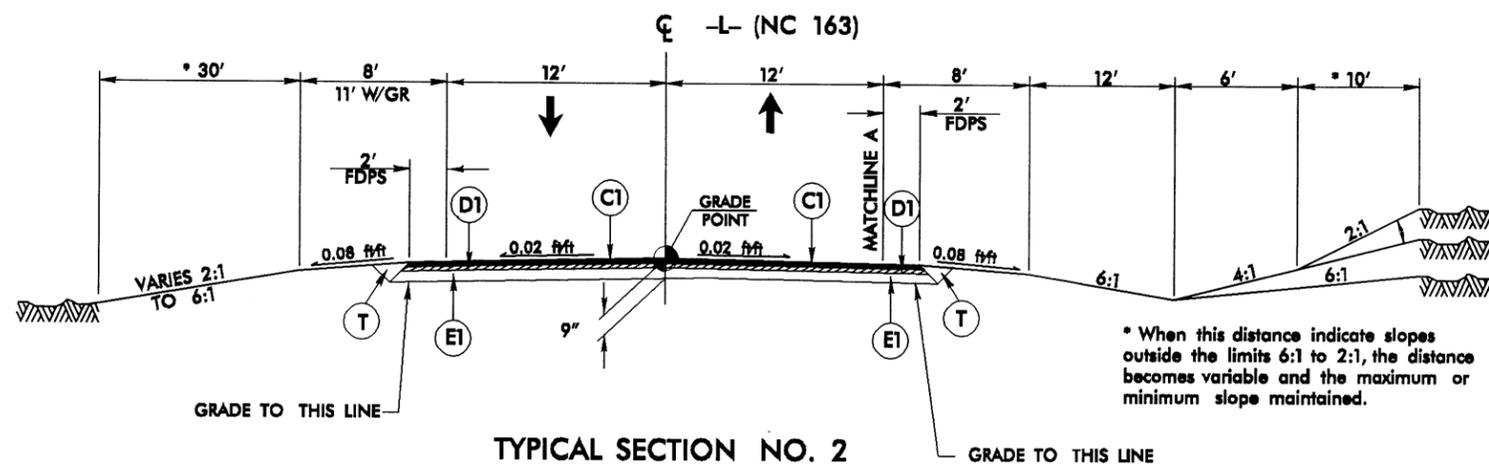


NOTE: All Pavement Edge Slopes Are To Be 1:1.



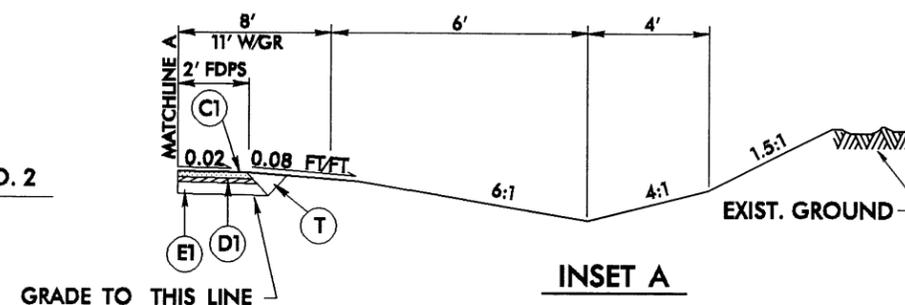
USE TYPICAL SECTION No. 1
 -L- STA. 11+00.00 TO 14+57+/-
 -L- STA. 26+97+/- TO 30+50.00

NOTE: NO WIDENING LEFT SIDE
 -L- STA 11+00.00 TO 12+17.00,
 -L- STA 28+52.28 TO 30+50.00



USE TYPICAL SECTION No. 2
 -L- STA. 14+57+/- TO 19+36.60 (Begin Bridge)
 -L- STA. 22+50.60 (End Bridge) TO 26+97+/-

USE INSET A IN CONJUNCTION WITH TYPICAL SECTION NO. 2
 -L- STA. 15+25 TO 19+36.60 (Begin Bridge)

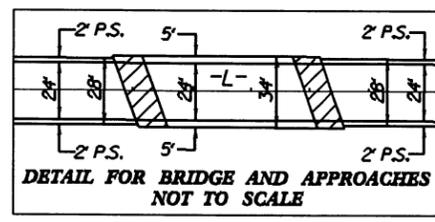


PLANS PREPARED BY :
RUMMEL • KLEPPER & KAHL, LLP
consulting engineers
 5800 FARINGDON PLACE SUITE 105
 RALEIGH, NORTH CAROLINA 27609-3960
FOR
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-4010	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	

DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY MCOOT FOR MONUMENT "B4010-1" WITH STATE PLANE GRID COORDINATES OF NORTHING: 943527.6175(1) EASTING: 12910329035(1) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99991711 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4010-1" TO L- STATION 11+00.00 IS S 37° 28' 24.29" E Distance 1,666.56 ft. ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS MVD 88

PI Sta 11+68.37 Δ = 8° 08' 04.0" (RT) D = 3' 00' 00.0" L = 271.15' T = 135.80' R = 1,909.86' Se = .05 R.O. = 144'	PI Sta 16+36.90 Δ = 5° 04' 27.0" (LT) D = 2' 00' 00.0" L = 253.71' T = 126.94' R = 2,864.79' Se = .05 R.O. = 135'
--	--

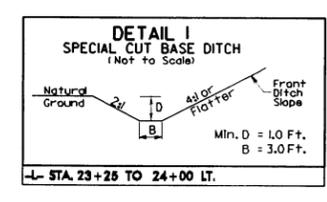
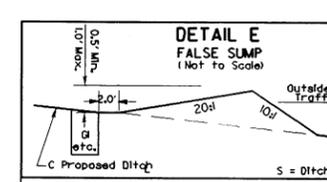
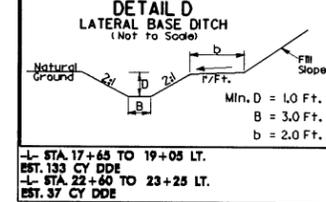
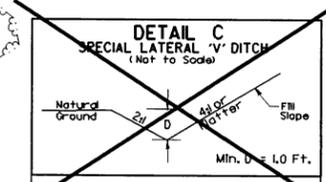
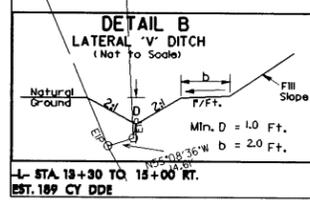
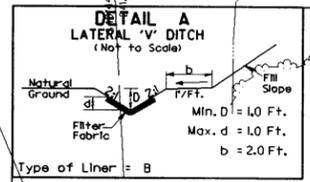
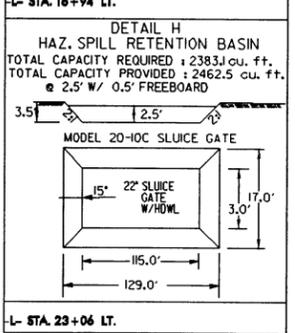
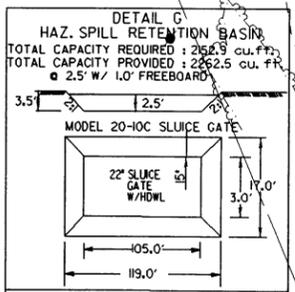
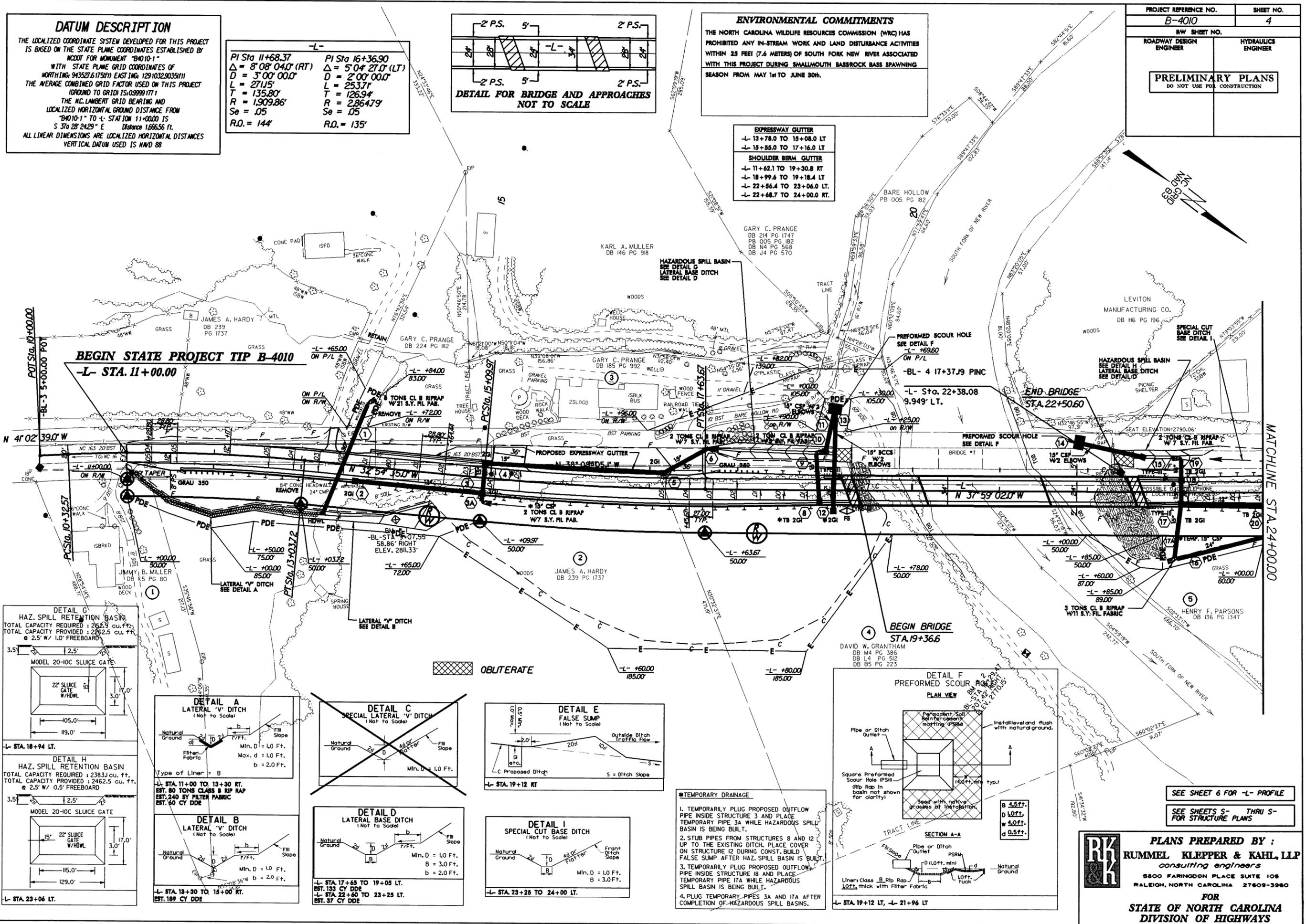


ENVIRONMENTAL COMMITMENTS
 THE NORTH CAROLINA WILDLIFE RESOURCES COMMISSION (NCRWC) HAS PROHIBITED ANY IN-STREAM WORK AND LAND DISTURBANCE ACTIVITIES WITHIN 25 FEET (7.6 METERS) OF SOUTH FORK NEW RIVER ASSOCIATED WITH THIS PROJECT DURING SMALLMOUTH BASS/ROCK BASS SPAWNING SEASON FROM MAY 1st TO JUNE 30th.

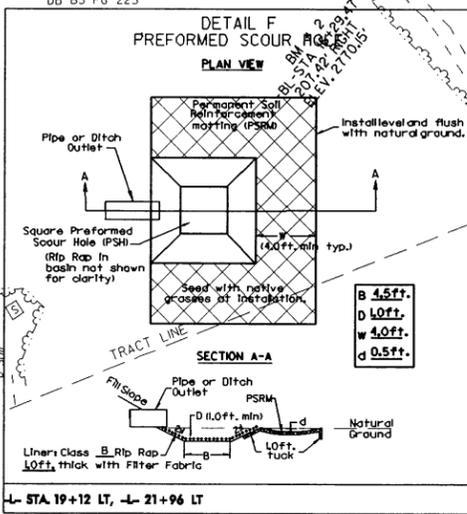
EXPRESSWAY GUTTER
 -L- 13+78.0 TO 15+08.0 LT
 -L- 15+55.0 TO 17+16.0 LT

SHOULDER BERM GUTTER
 -L- 11+62.1 TO 19+30.8 RT
 -L- 18+99.6 TO 19+18.4 LT
 -L- 22+86.4 TO 23+06.0 LT
 -L- 22+68.7 TO 24+00.0 RT.

5/17/2004 12:41 PM C:\psh\sh104.dgn



- TEMPORARY DRAINAGE**
1. TEMPORARILY PLUG PROPOSED OUTFLOW PIPE INSIDE STRUCTURE 3 AND PLACE TEMPORARY PIPE 3A WHILE HAZARDOUS SPILL BASIN IS BEING BUILT.
 2. STUB PIPES FROM STRUCTURES 8 AND 12 UP TO THE EXISTING DITCH. PLACE COVER ON STRUCTURE 12 DURING CONST. BUILD FALSE SLUMP AFTER HAZ. SPILL BASIN IS BUILT.
 3. TEMPORARILY PLUG PROPOSED OUTFLOW PIPE INSIDE STRUCTURE 18 AND PLACE TEMPORARY PIPE 17A WHILE HAZARDOUS SPILL BASIN IS BEING BUILT.
 4. PLUG TEMPORARY PIPES 3A AND 17A AFTER COMPLETION OF HAZARDOUS SPILL BASINS.



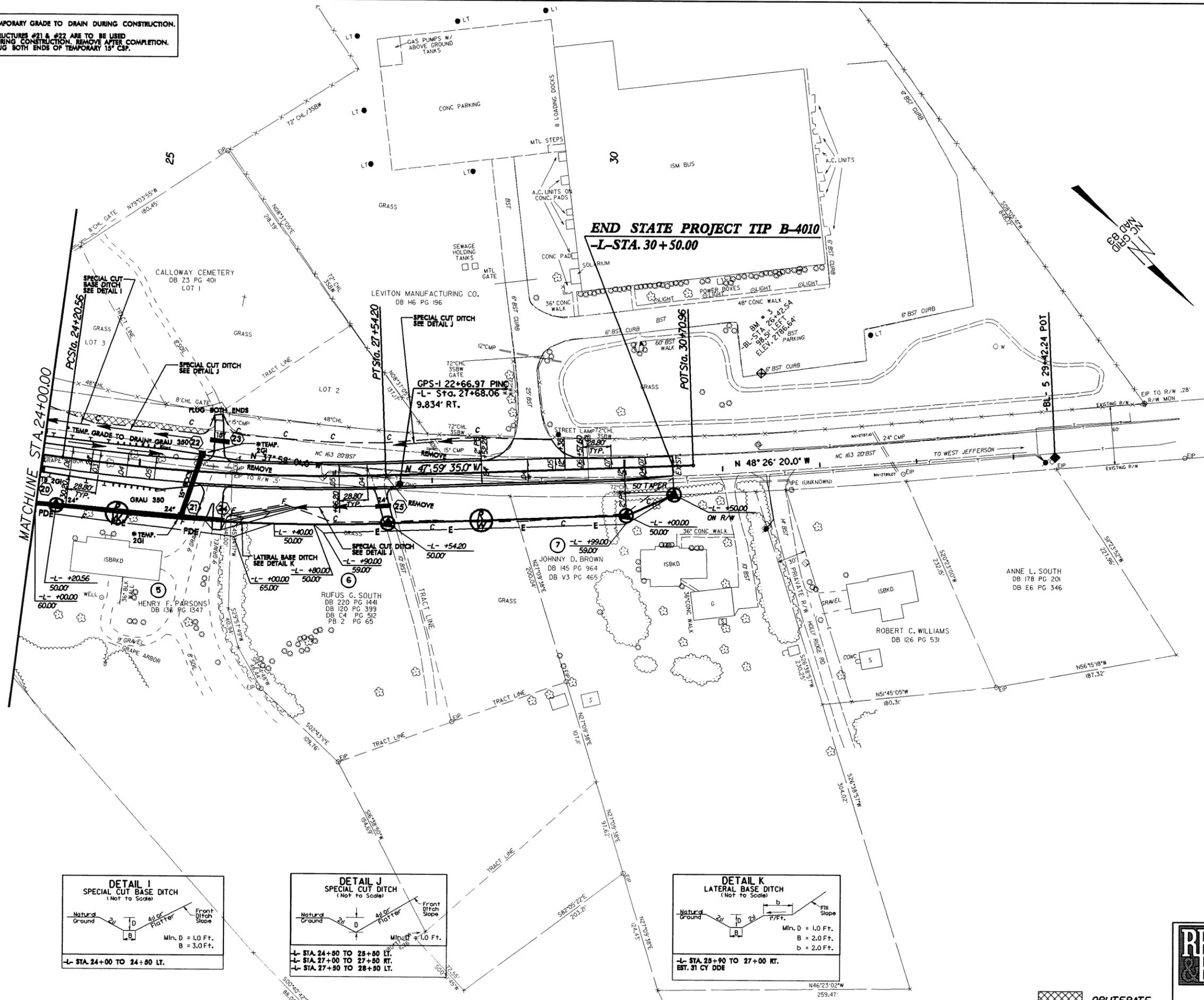
SEE SHEET 6 FOR -L- PROFILE
 SEE SHEETS S- THRU S- FOR STRUCTURE PLANS

PLANS PREPARED BY :
RUMMEL KLEPPER & KAHL, LLP
consulting engineers
 8800 FARMINGTON PLACE SUITE 105
 RALEIGH, NORTH CAROLINA 27609-3980

FOR
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

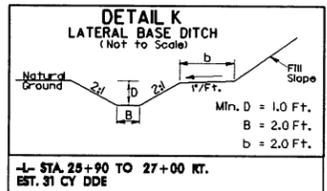
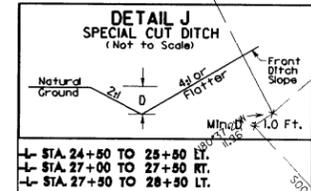
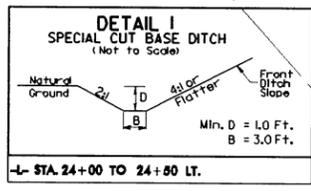
PROJECT REFERENCE NO.	SHEET NO.
B-4010	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	

* TEMPORARY GRADE TO DRAIN DURING CONSTRUCTION.
 * STRUCTURES #21 & #22 ARE TO BE USED DURING CONSTRUCTION. REMOVE AFTER COMPLETION. PLUG BOTH ENDS OF TEMPORARY 15" CSP.



END STATE PROJECT TIP B-4010
 -L- STA. 30+50.00

-L-
 PI Sta 25+87.81
 $\Delta = 10^{\circ}00'33.0''$ (LT)
 $D = 3^{\circ}00'00.0''$
 $L = 333.64'$
 $T = 167.24'$
 $R = 1,909.86'$
 $S_e = .05$
 $R.O. = 14\%$



OBUTERATE

SEE SHEET 6 FOR -L- PROFILE

PLANS PREPARED BY :
RUMMEL KLEPPER & KAHL, LLP
consulting engineers
 8800 FARMINGDON PLACE SUITE 106
 RALEIGH, NORTH CAROLINA 27609-3960

FOR
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

REVISIONS
 PARCEL 5: INITIAL CONTACT; PERMANENT DRAINAGE EASEMENT TAKEN FROM PARCEL 6 INSTEAD OF PARCEL 7.
 R/W REVISION DATE:

5/17/202
 08-MAR-2004 12:30
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 kyoiland

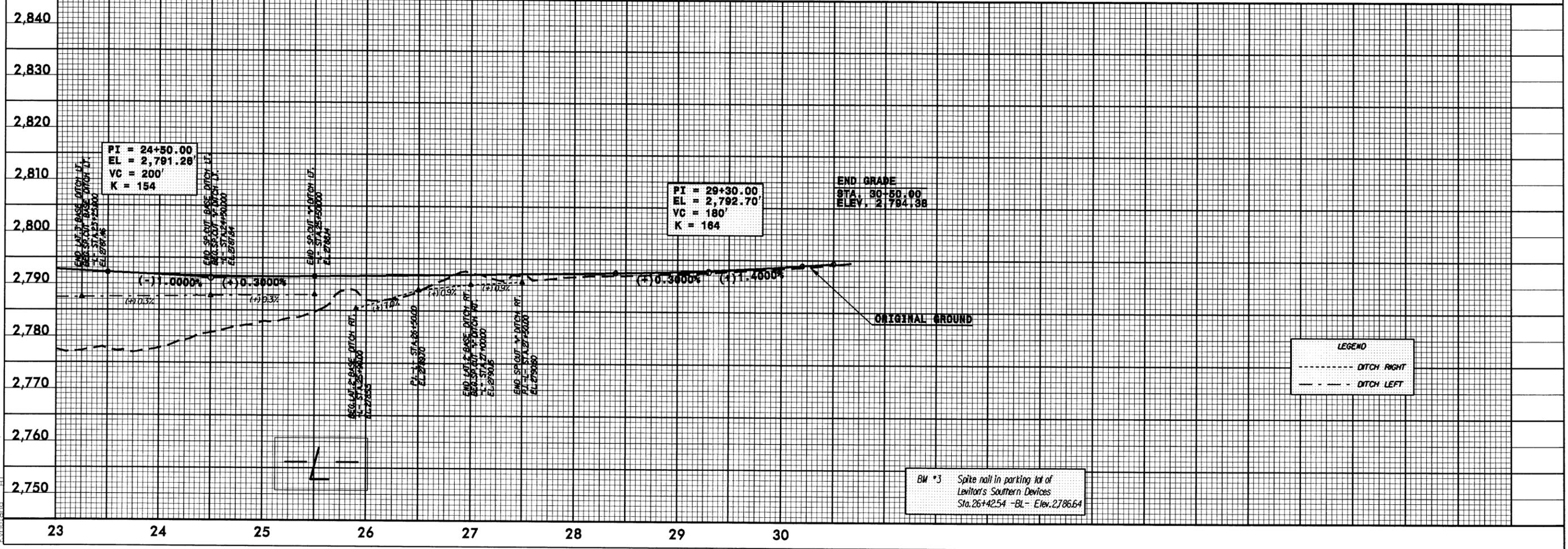
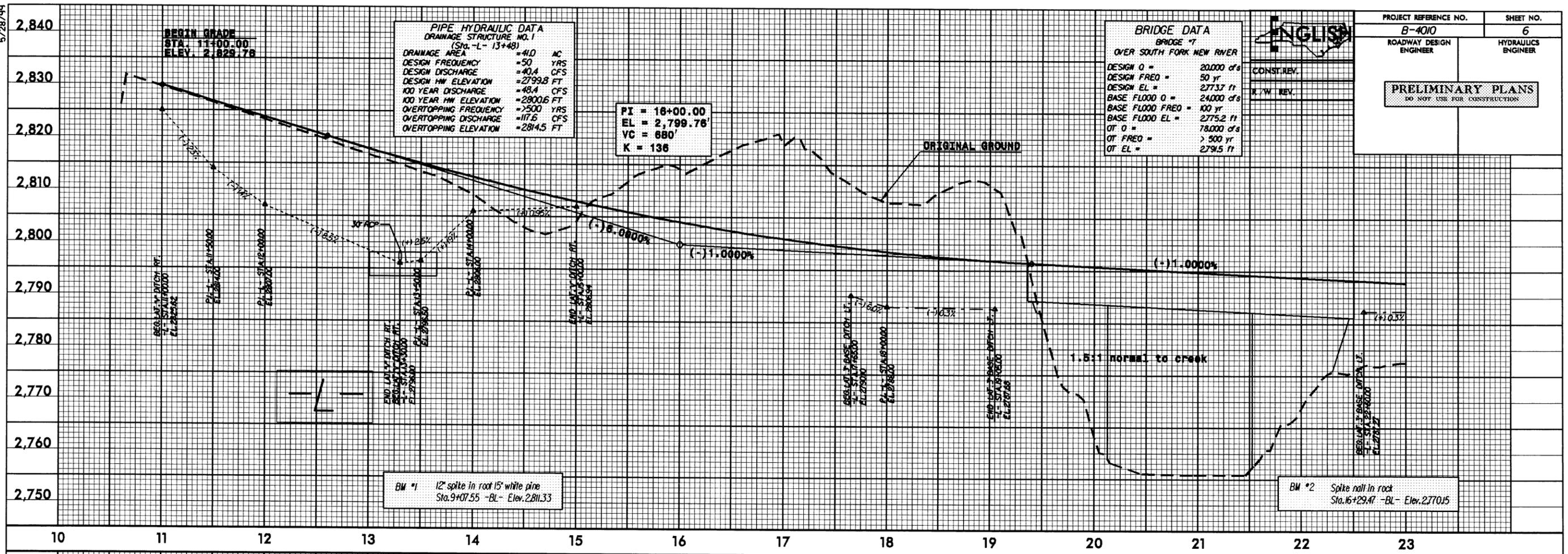
5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-4010	6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



BRIDGE DATA	
BRIDGE #7 OVER SOUTH FORK NEW RIVER	
DESIGN Q =	20,000 cfs
DESIGN FREQ =	50 yr
DESIGN EL =	277.37 ft
BASE FLOOD Q =	24,000 cfs
BASE FLOOD EL =	277.2 ft
OT Q =	78,000 cfs
OT FREQ =	> 500 yr
OT EL =	279.5 ft

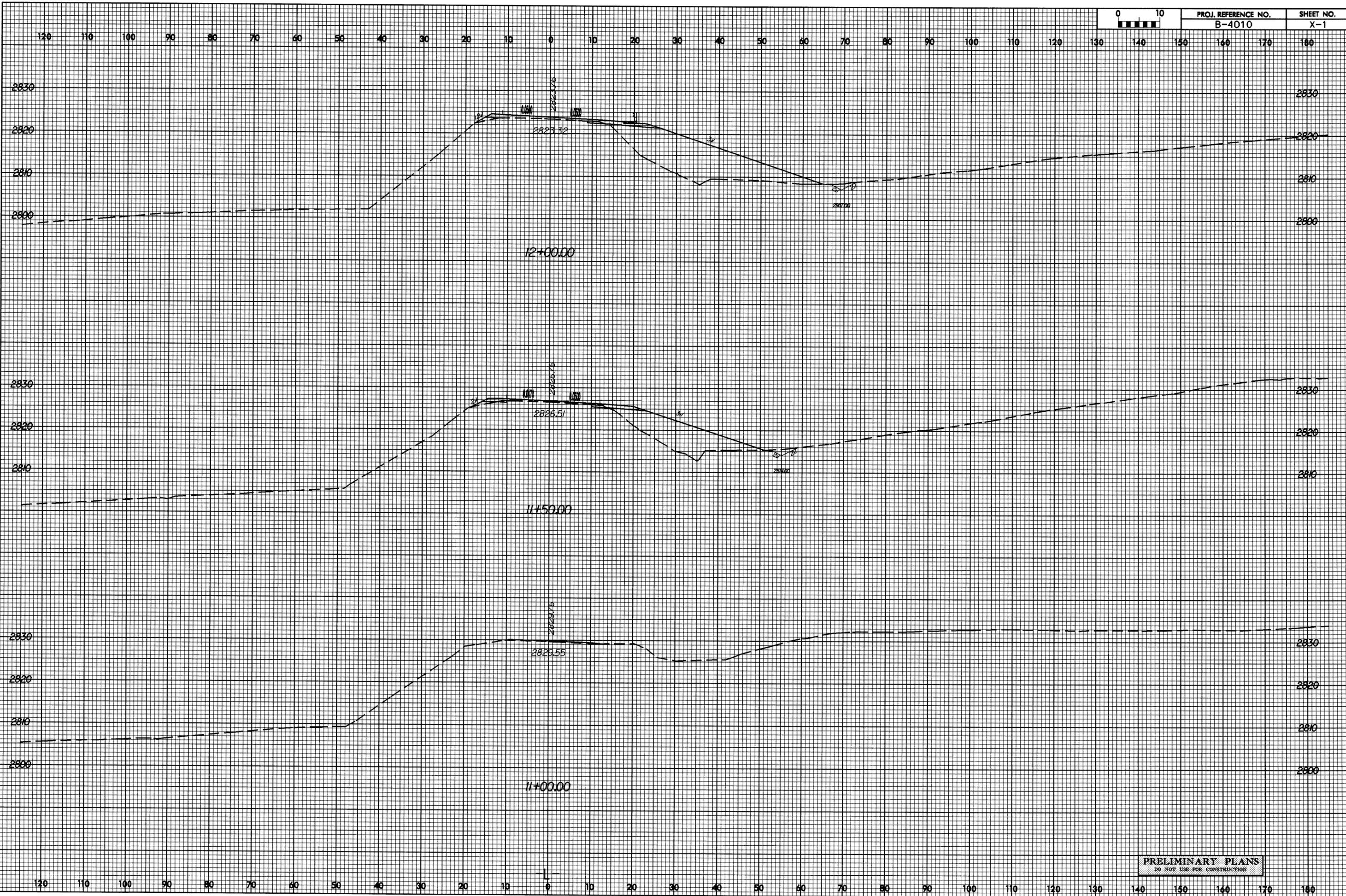
PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO. 1 (Sta. L-13+48)	
DRAINAGE AREA =	410 AC
DESIGN FREQUENCY =	50 YRS
DESIGN DISCHARGE =	40.4 CFS
DESIGN HW ELEVATION =	279.8 FT
100 YEAR DISCHARGE =	48.4 CFS
100 YEAR HW ELEVATION =	280.6 FT
OVERTOPPING FREQUENCY =	> 500 YRS
OVERTOPPING DISCHARGE =	117.6 CFS
OVERTOPPING ELEVATION =	281.5 FT



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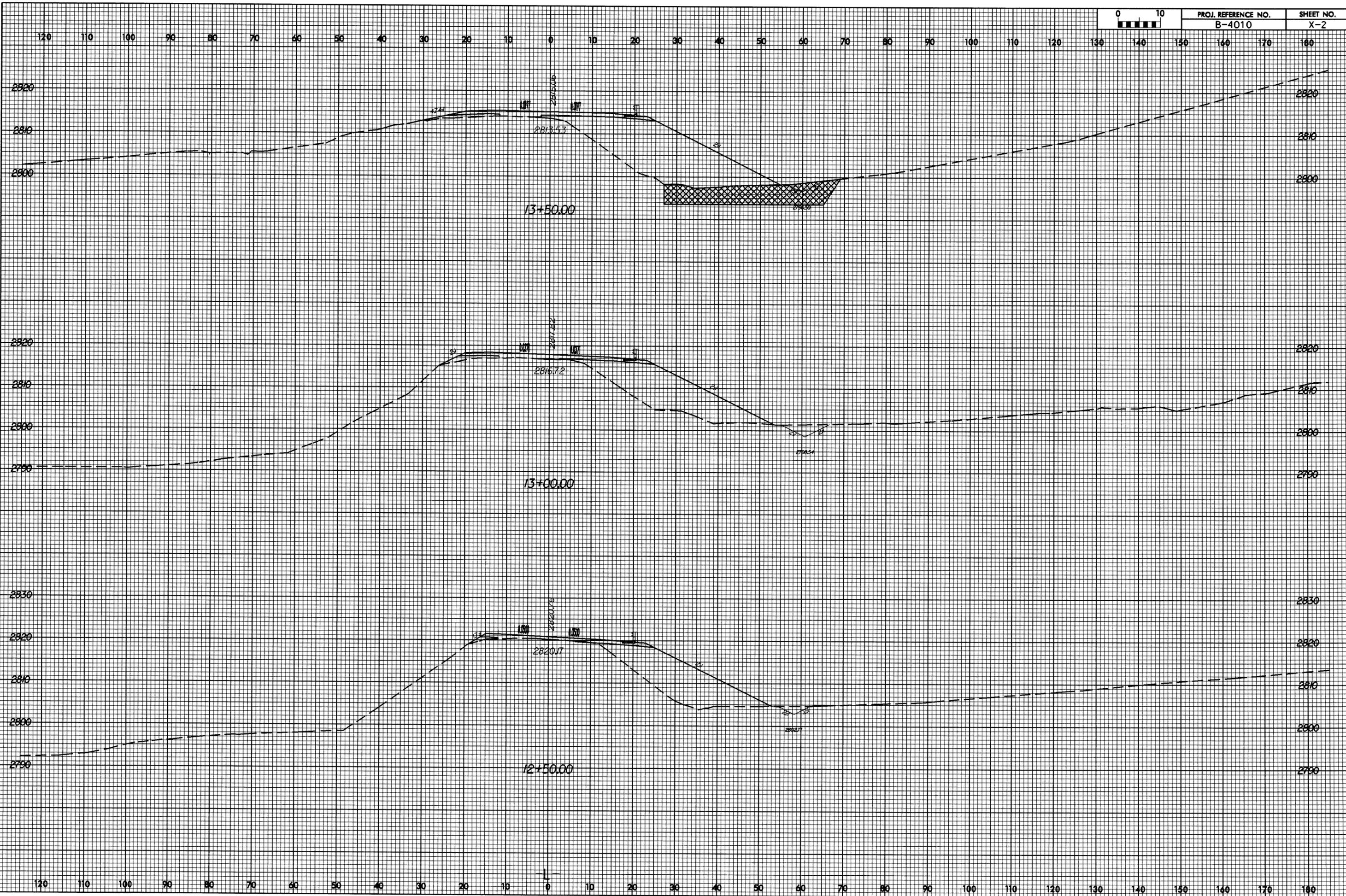
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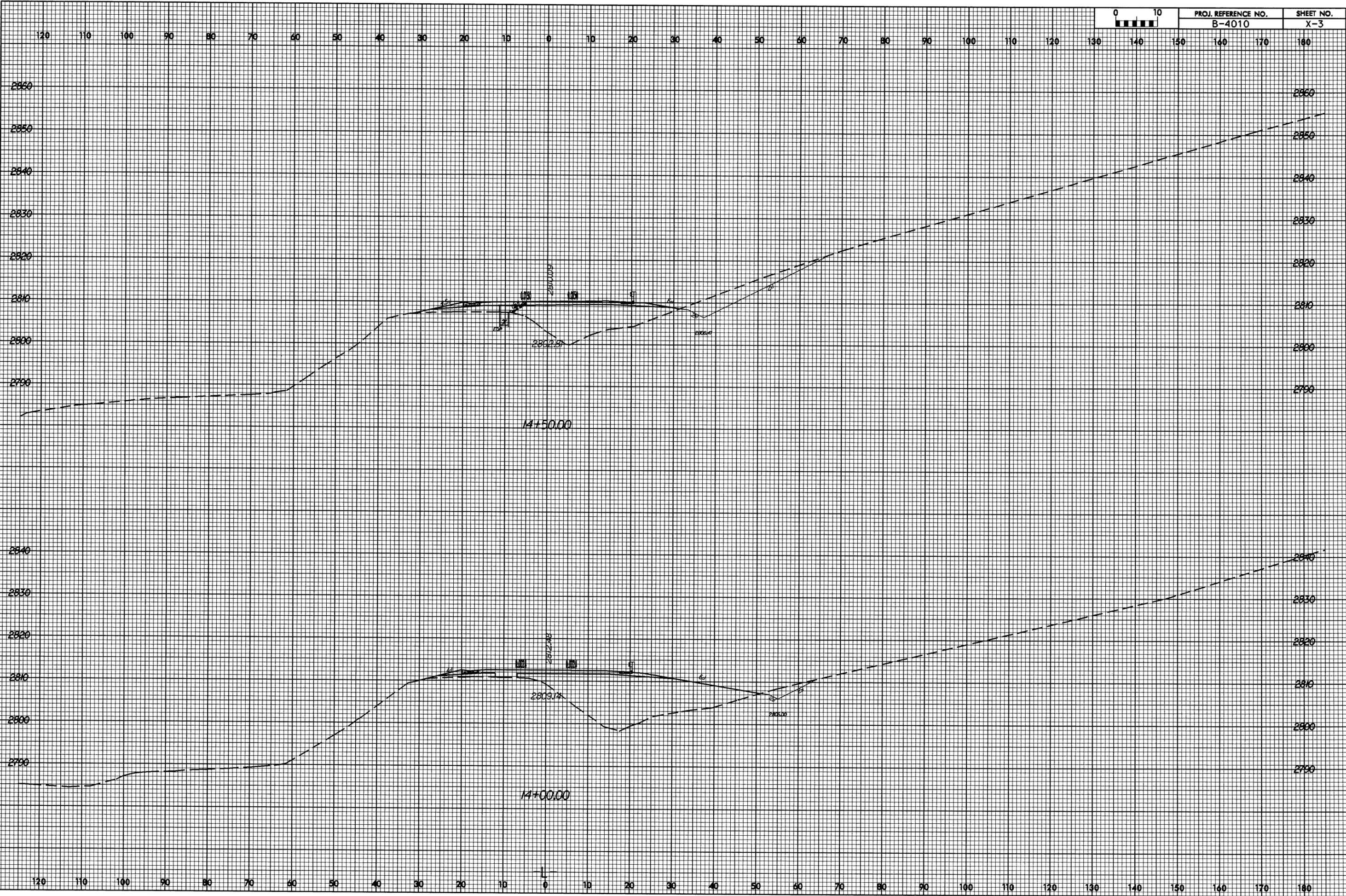
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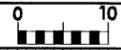
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PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





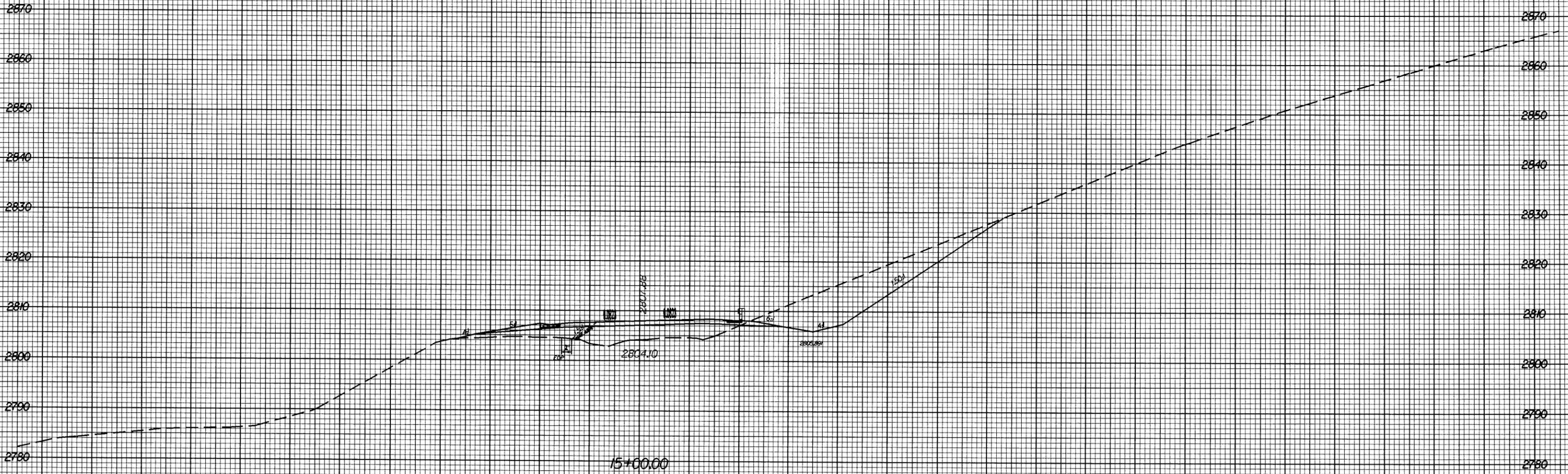
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B-4010

SHEET NO.
X-4

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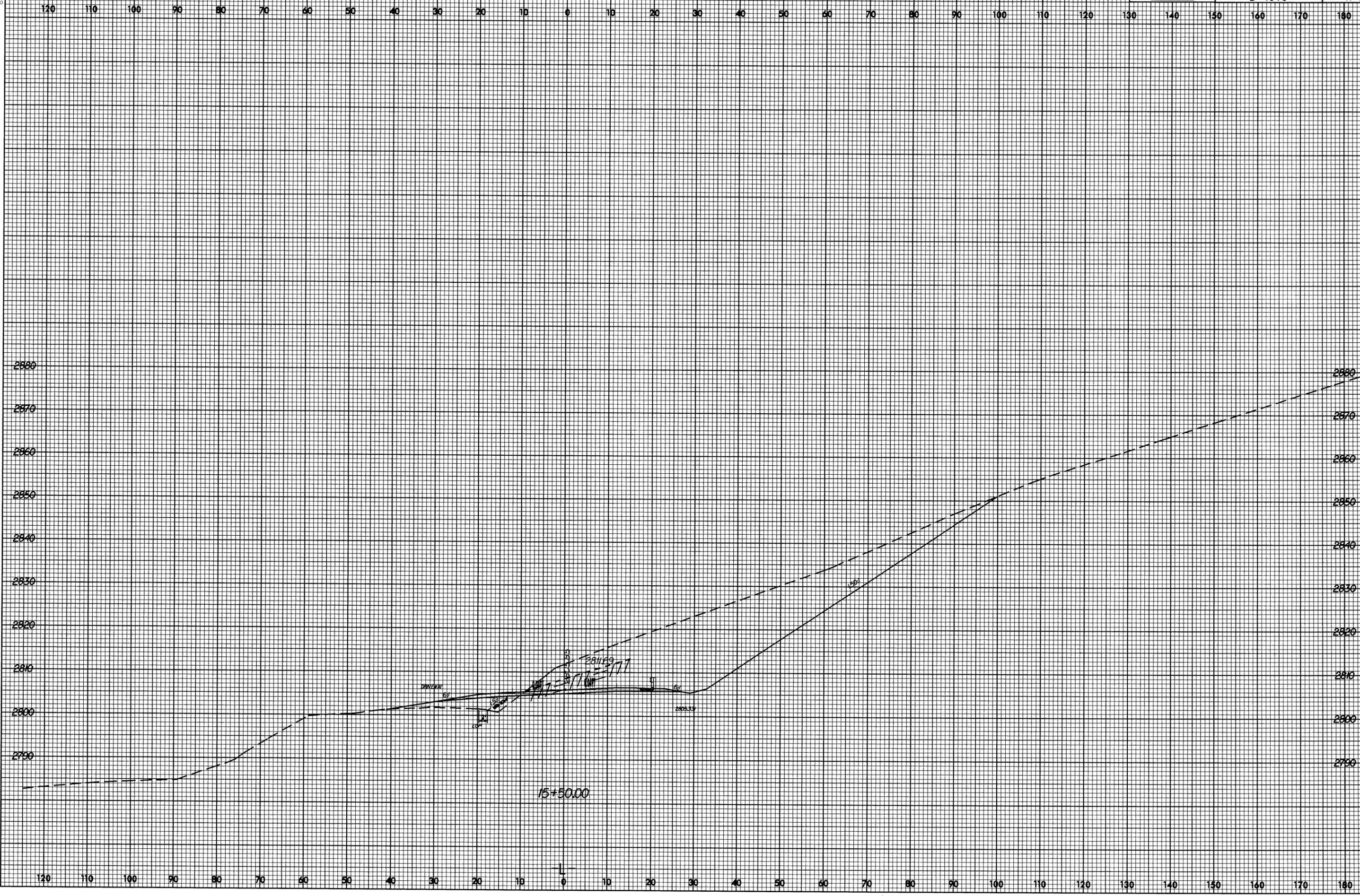
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B-4010	X-5



15+50.00

PROFILING

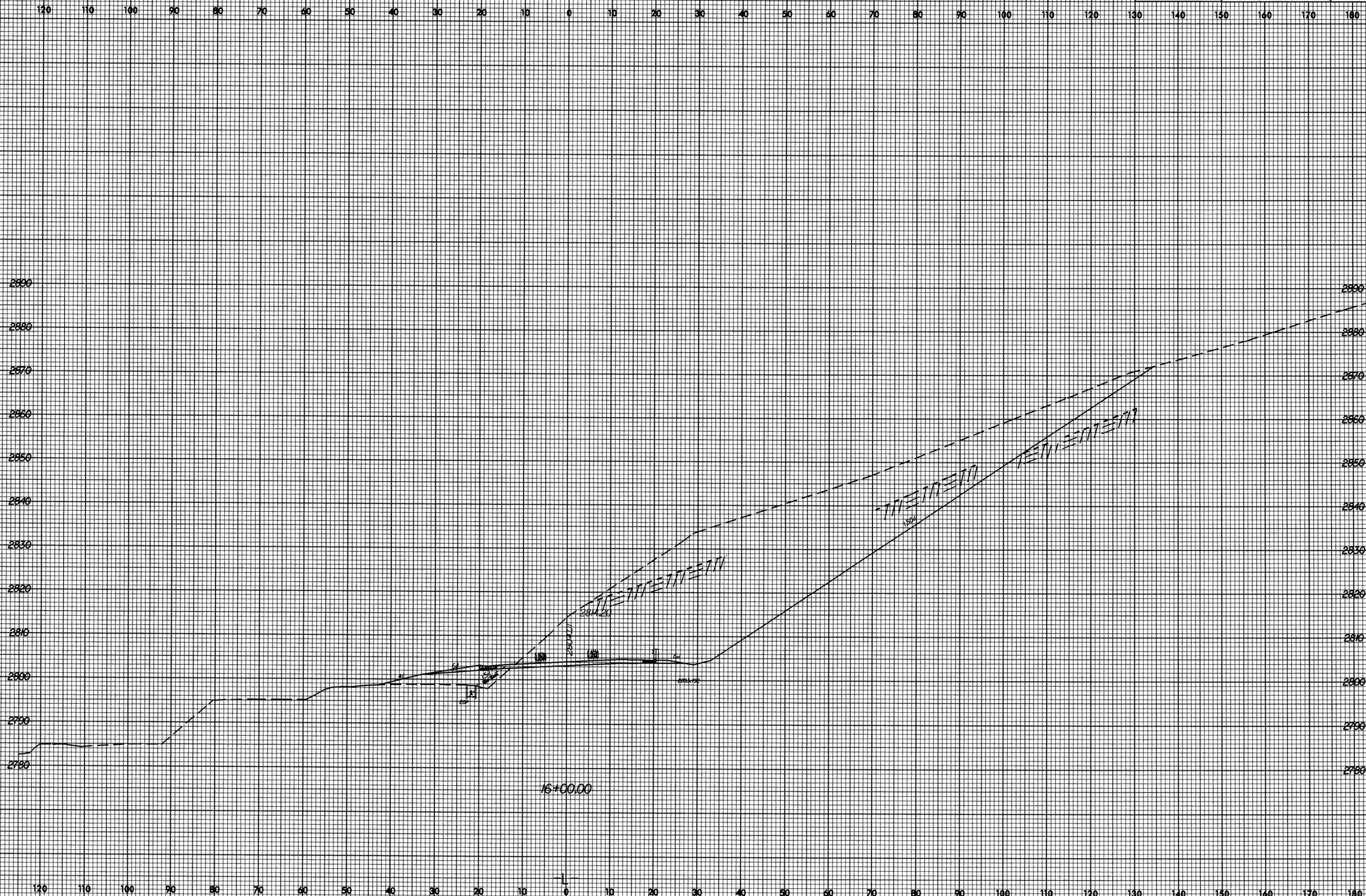


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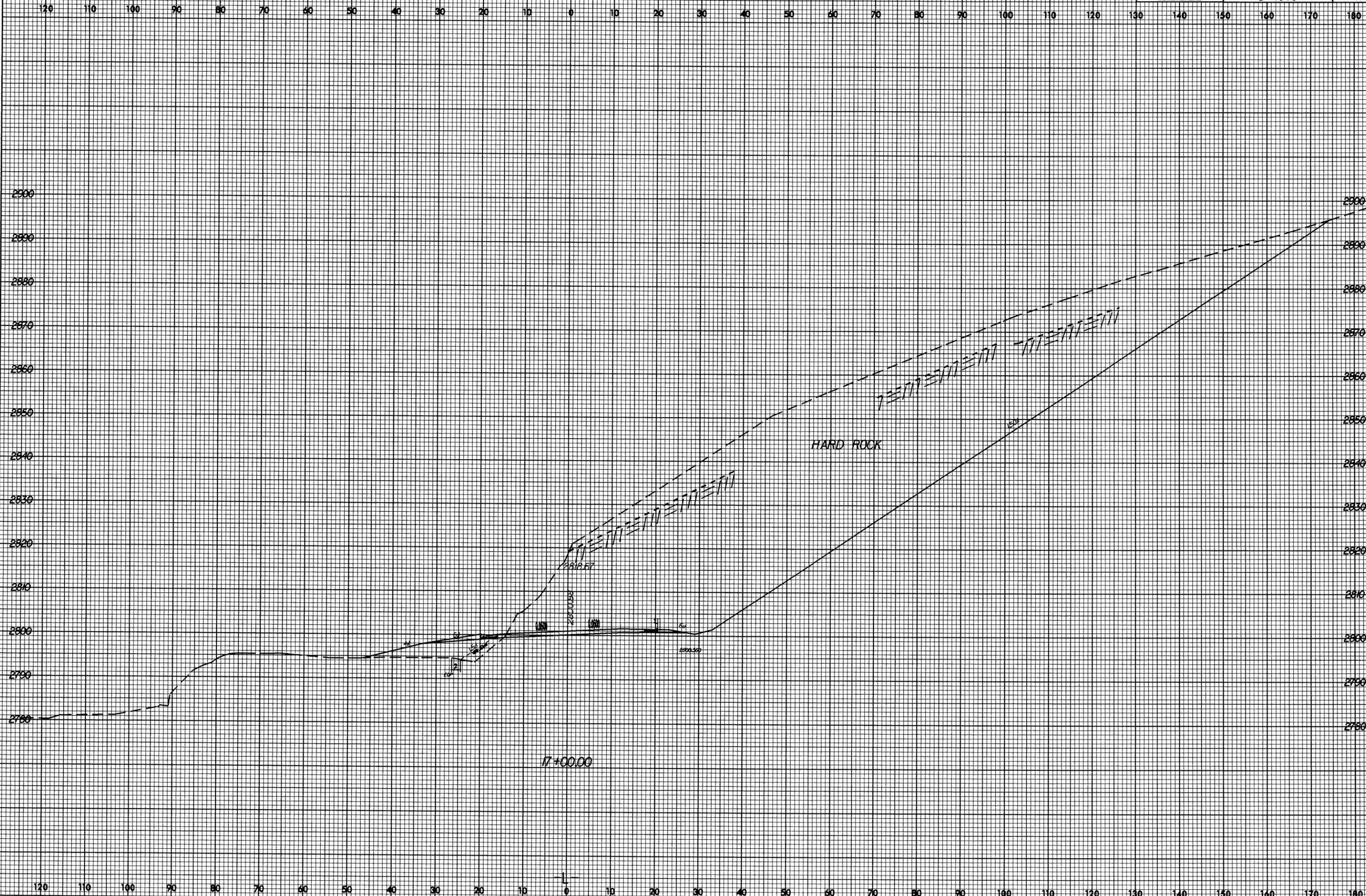
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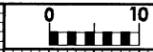
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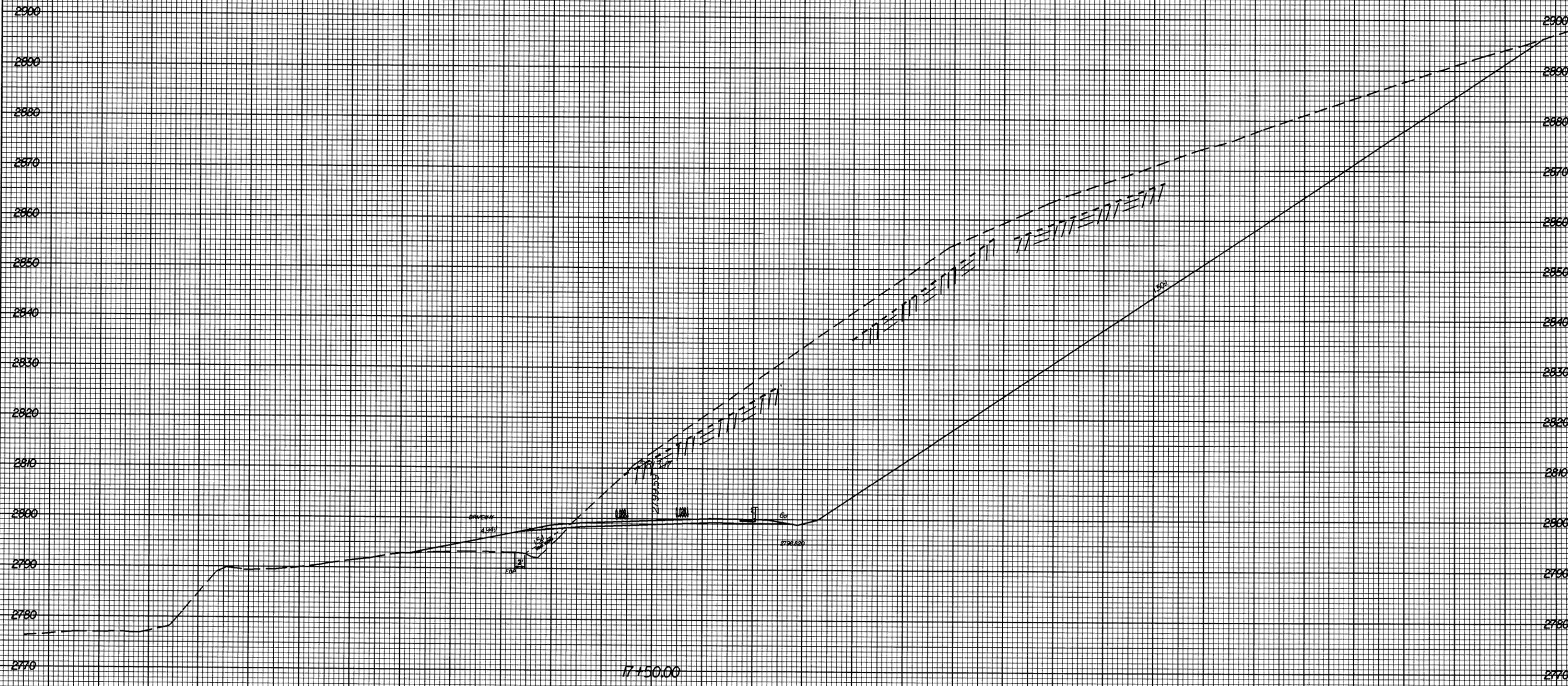
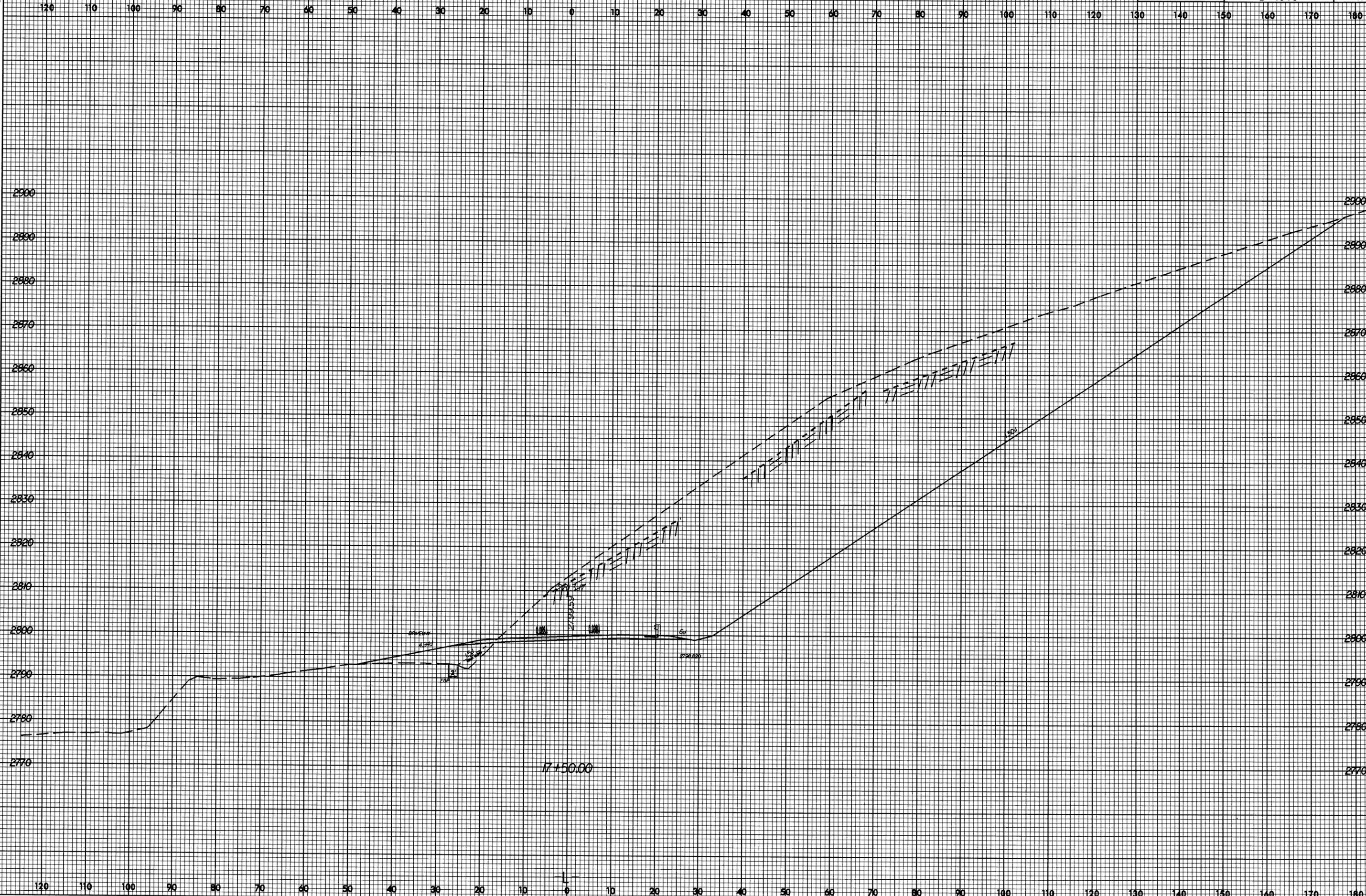


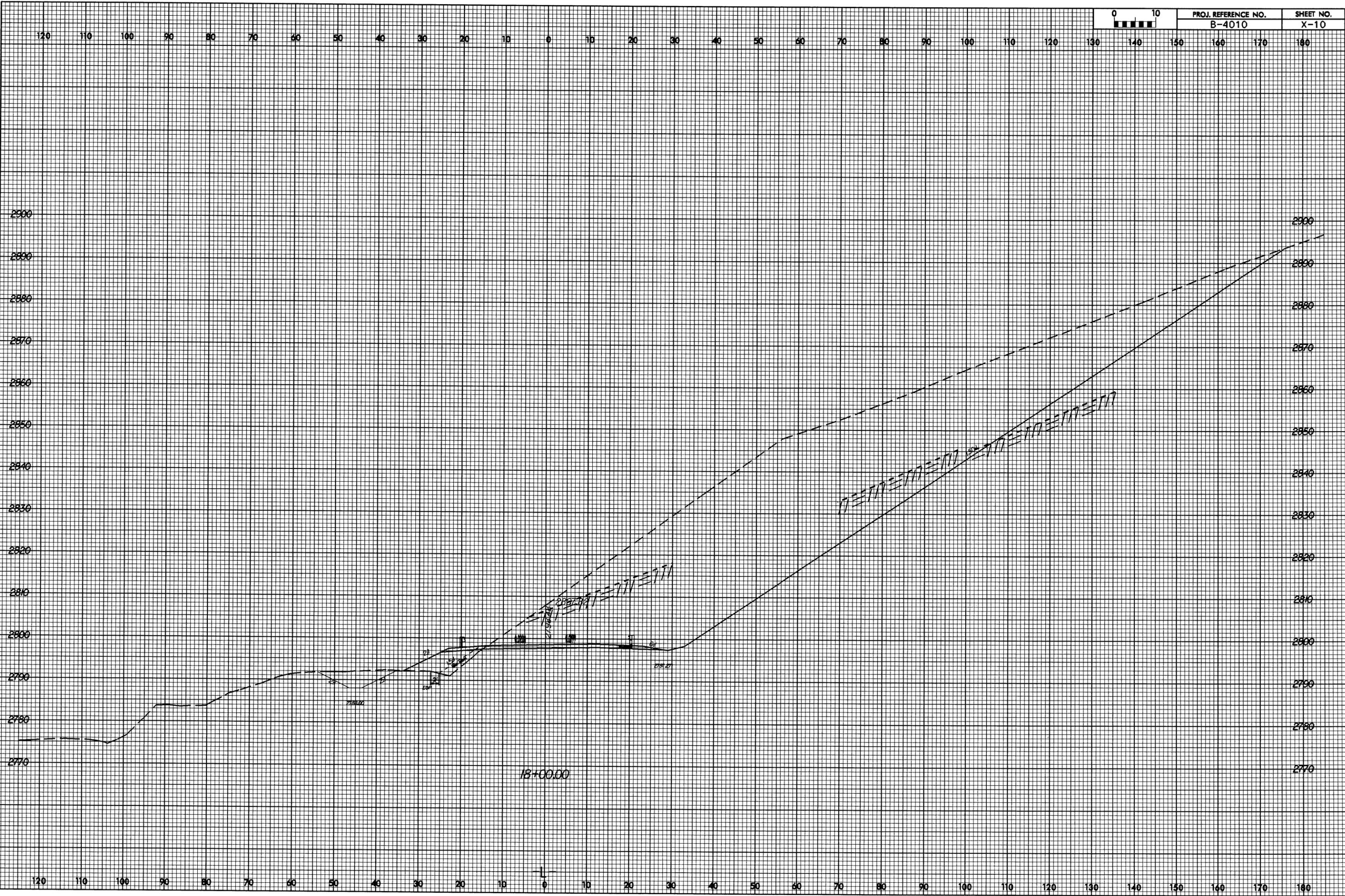
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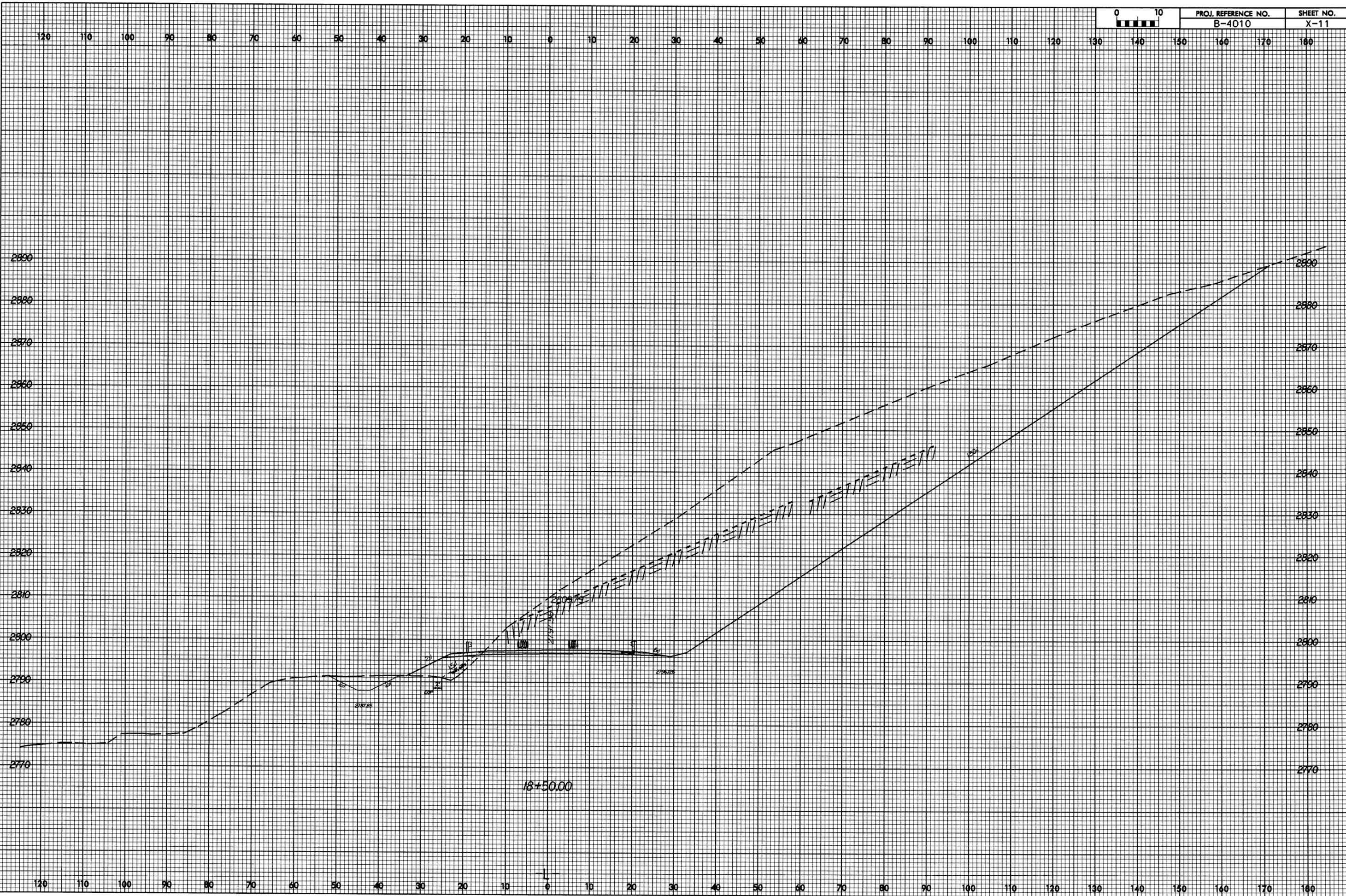


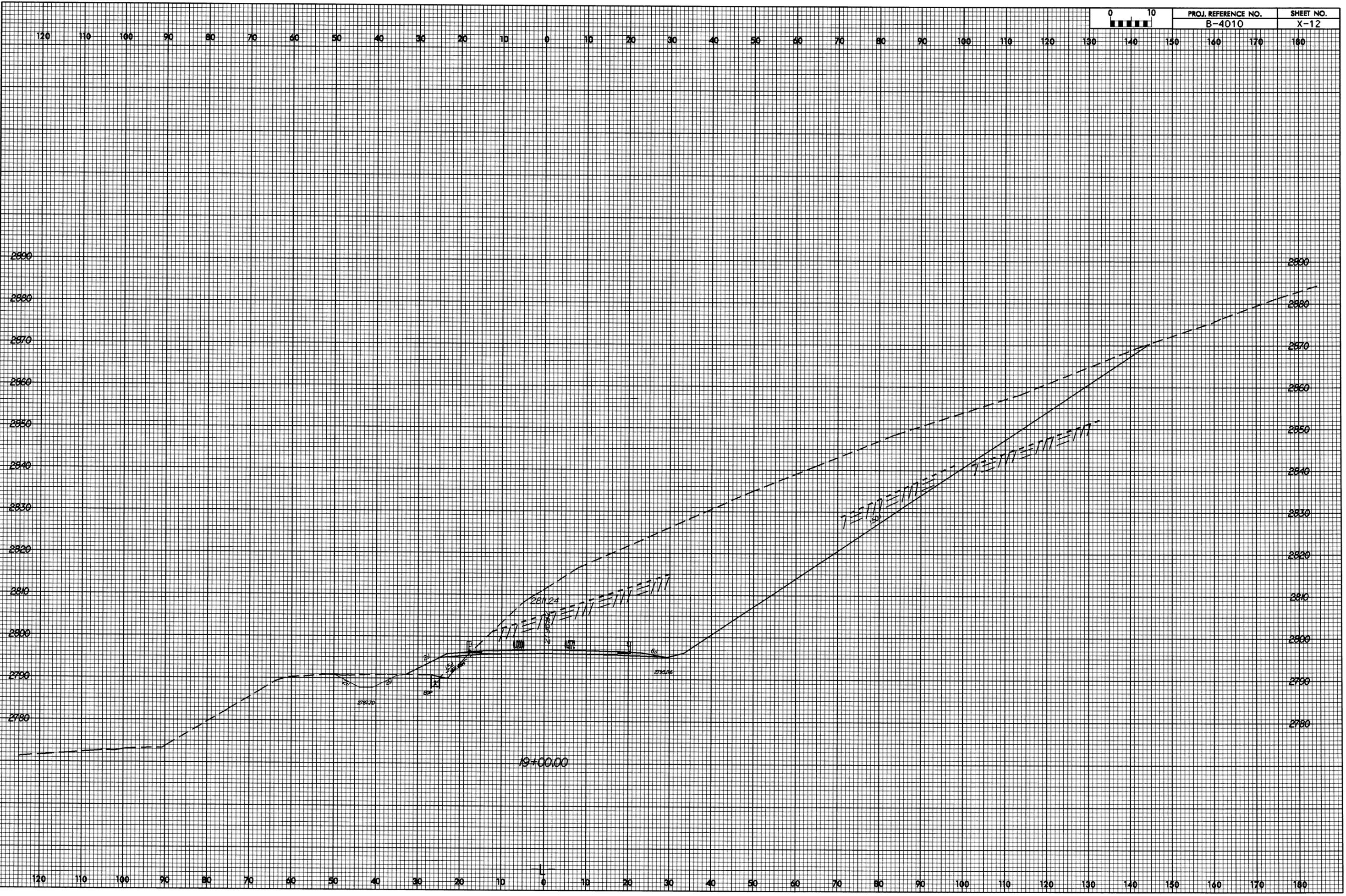
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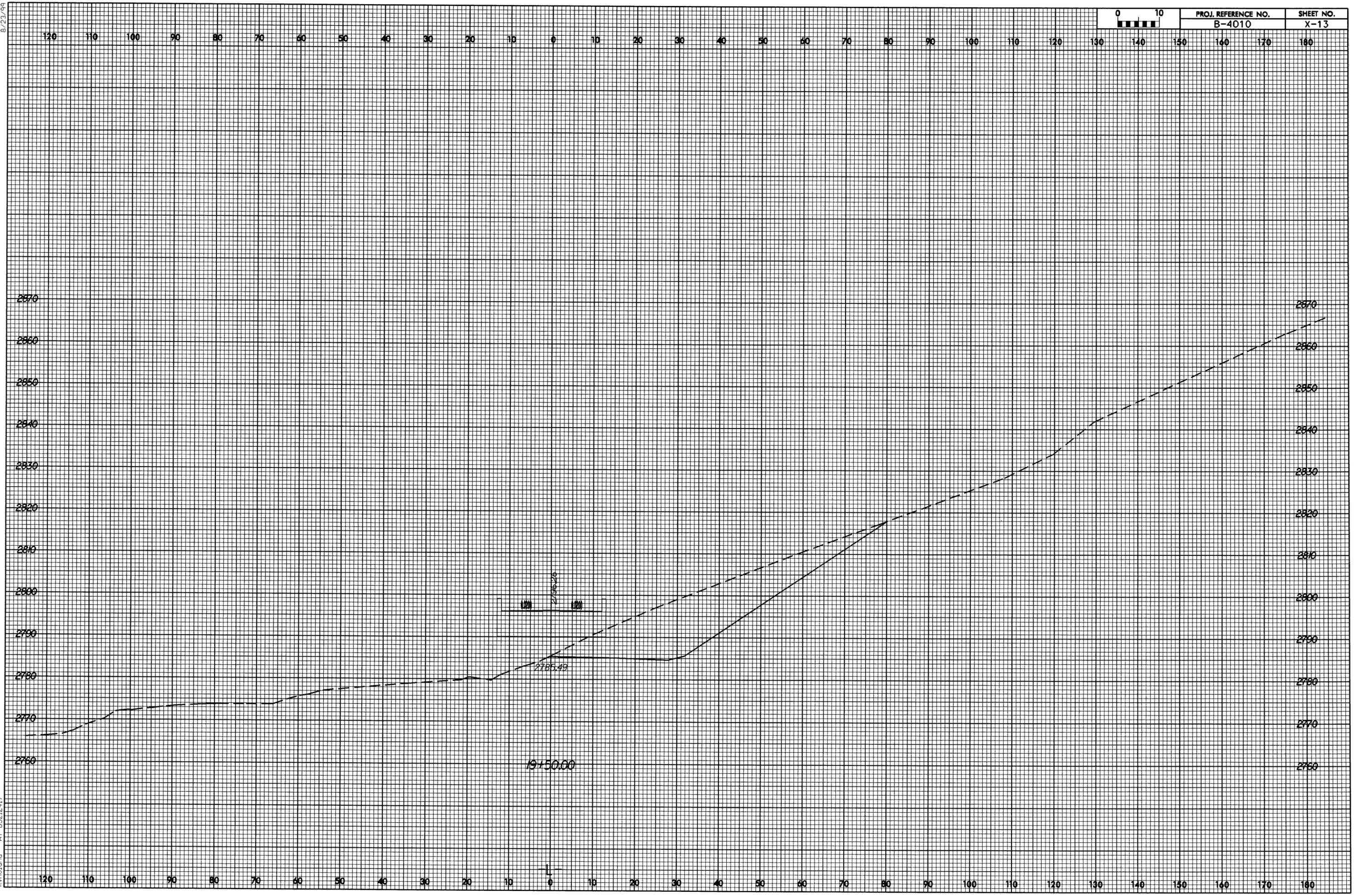
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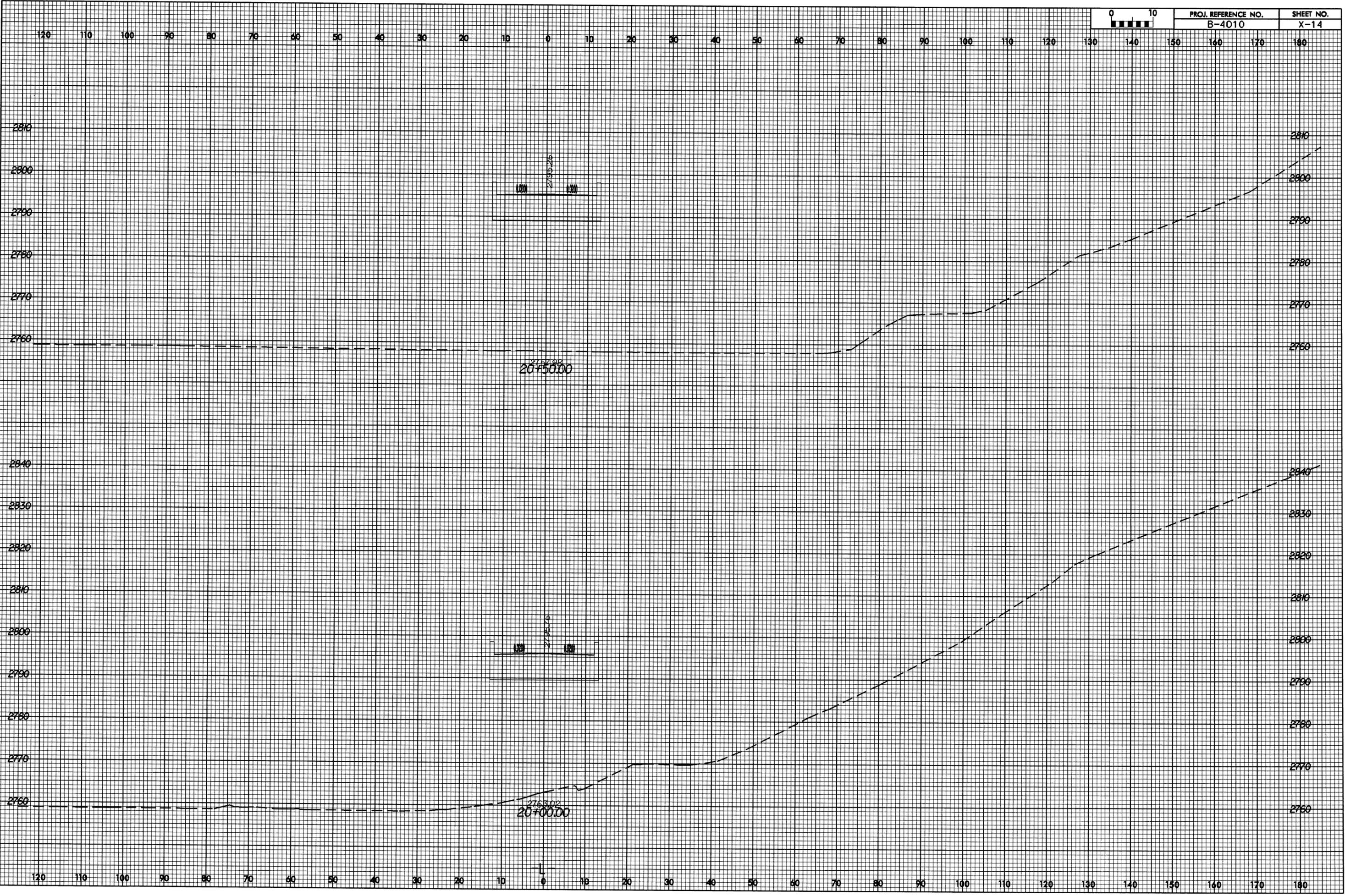


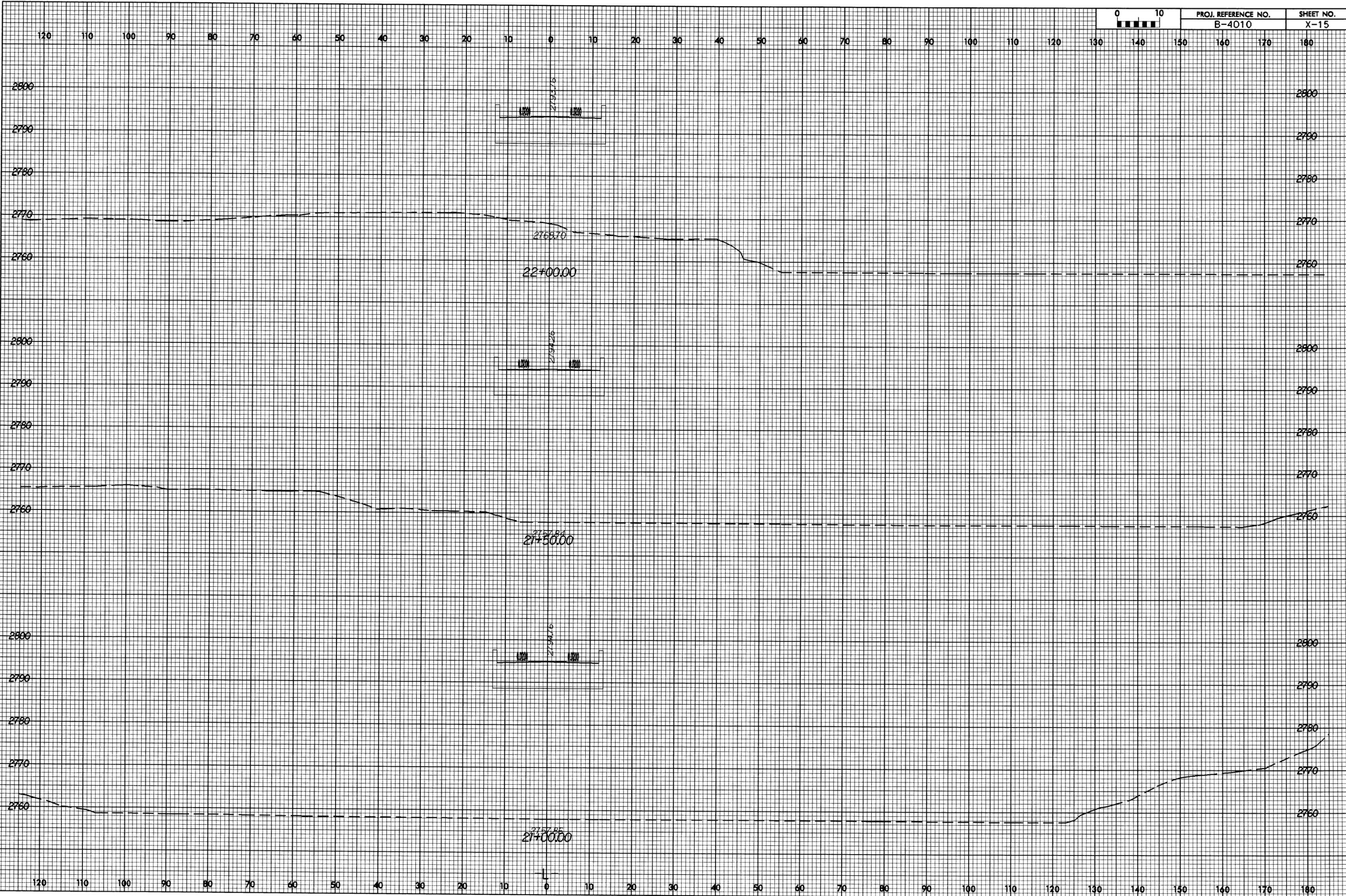


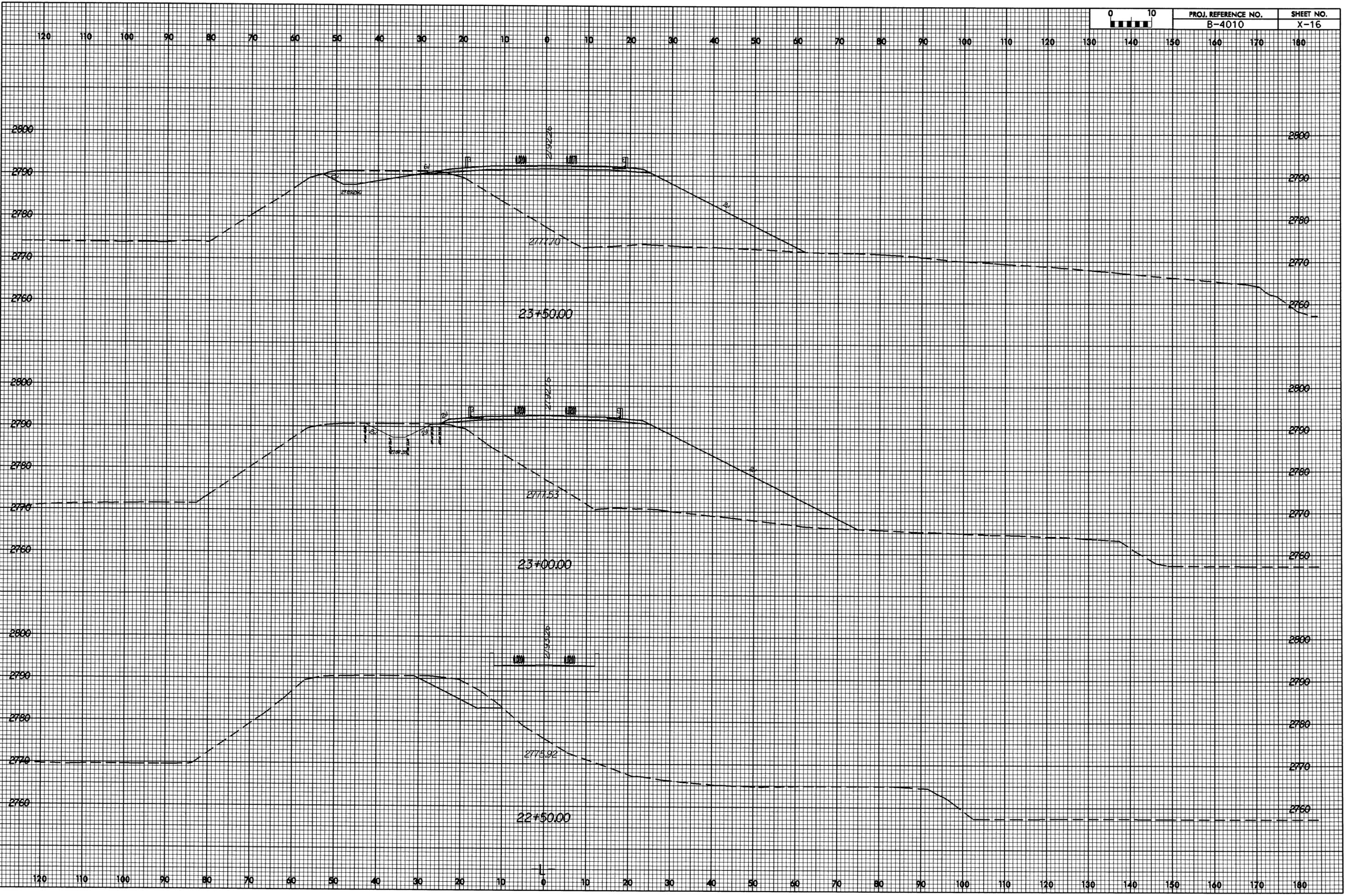


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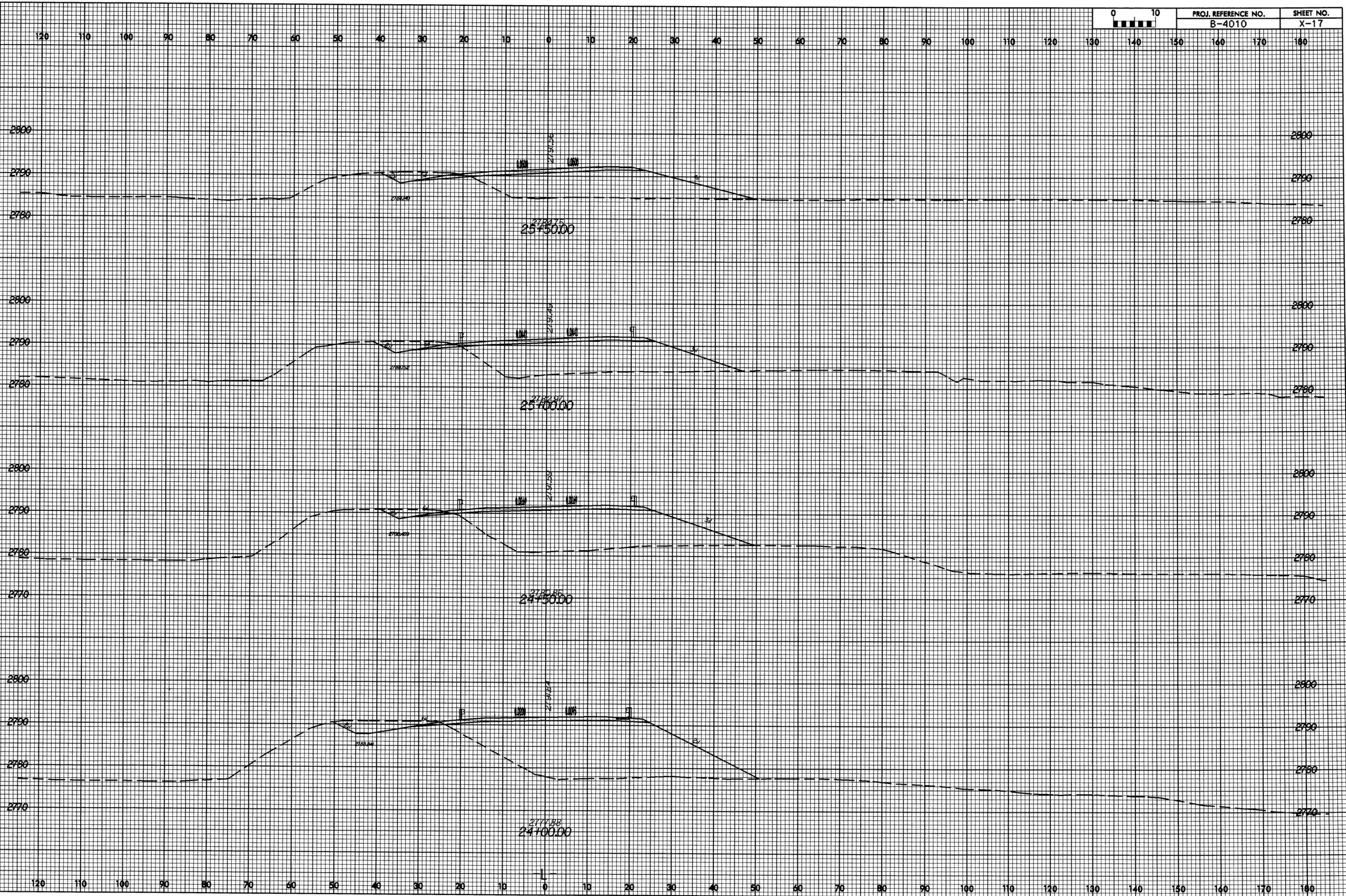
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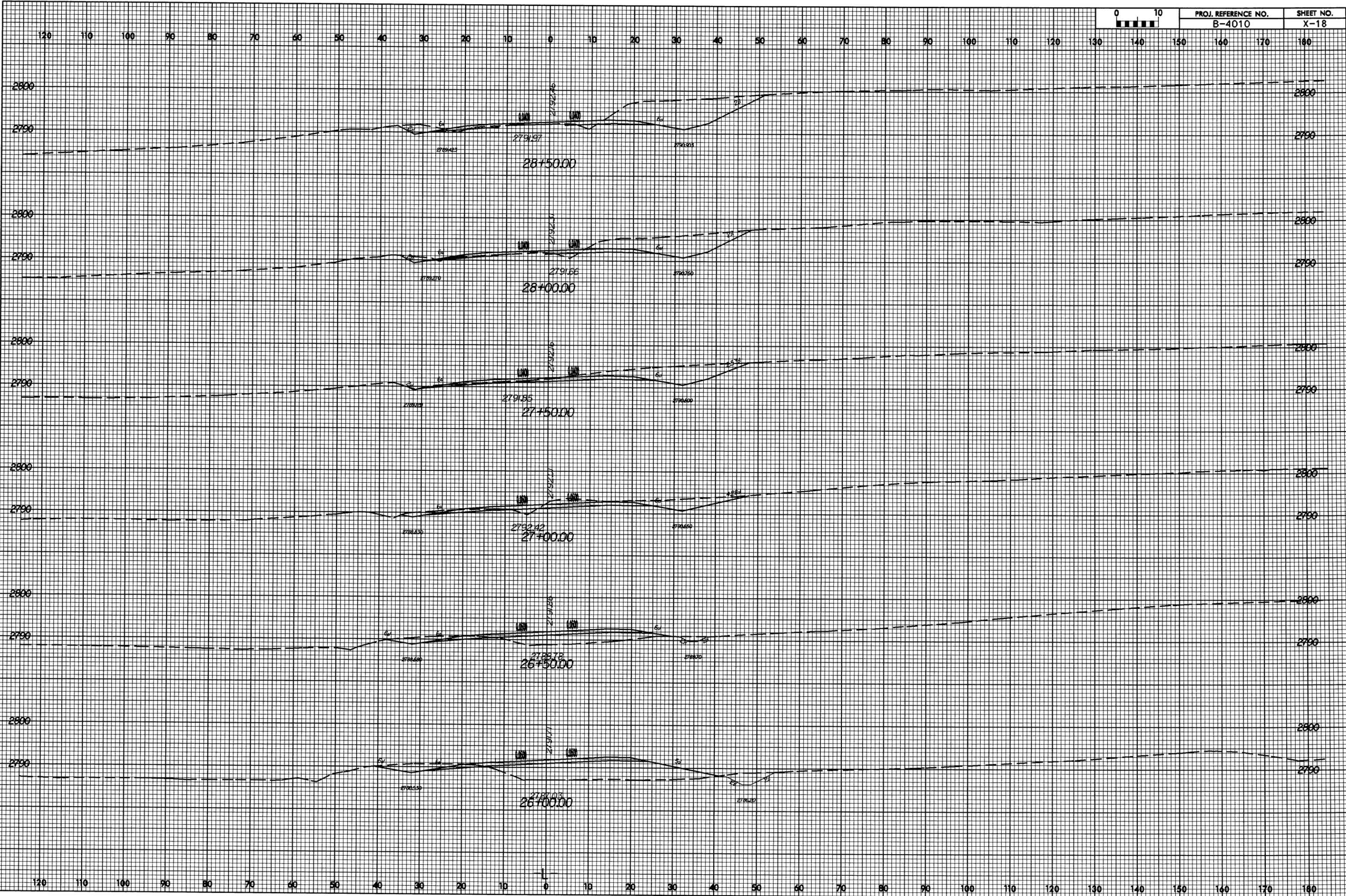




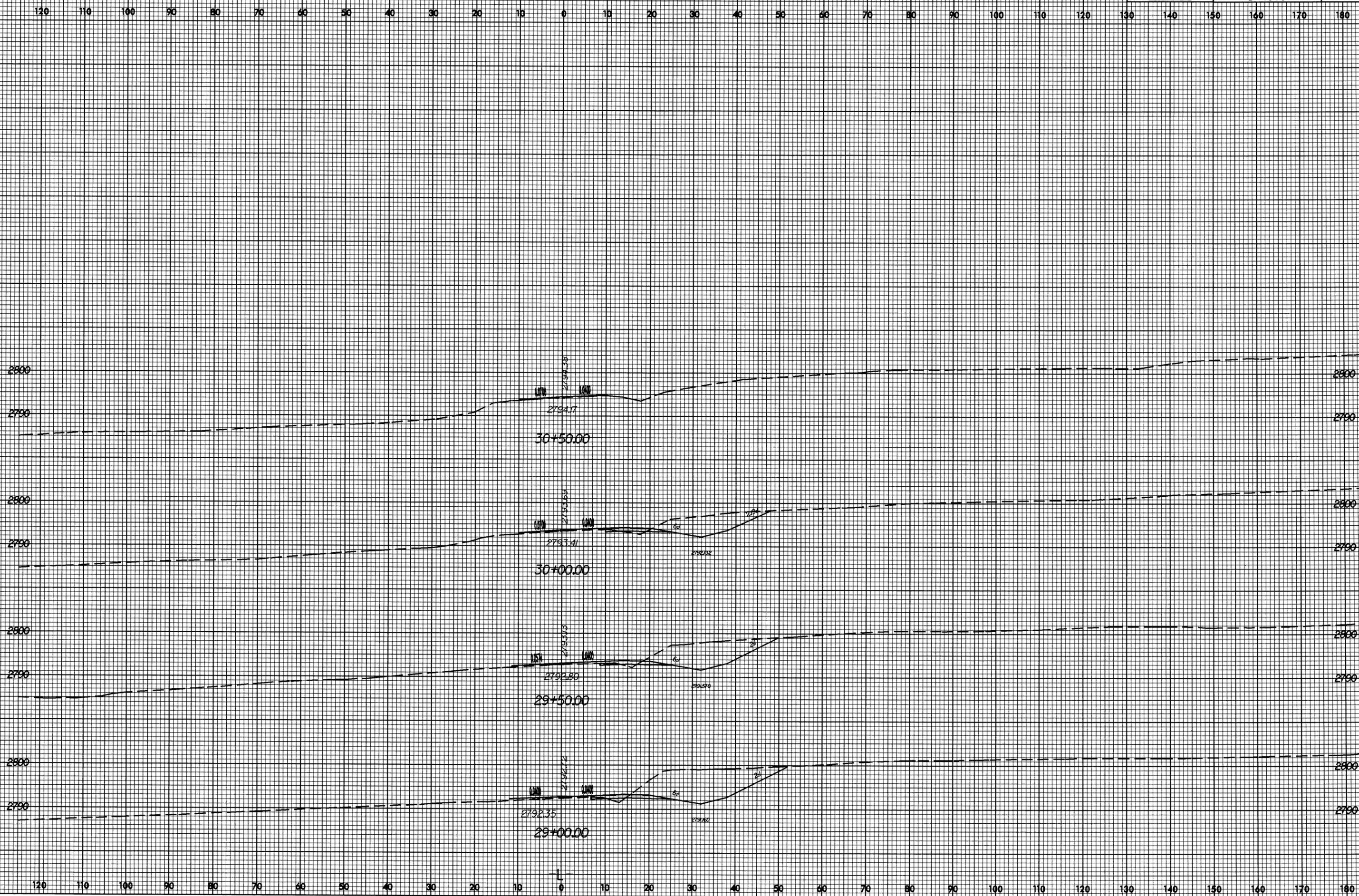
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8/23/99



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