STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

September 12, 2008

U.S. Army Corps of Engineers
Regulatory Field Office
Post Office Box 1000
Washington, NC 27889-1000

Attn: Mr. William Wescott
NCDOT Coordinator

Dear Sir:

Subject: **General Permit 31, Nationwide Permit 13, and Riparian Buffer Authorization** for the replacement of Bridge #24 and improvements to US 64 Business/NC 33 in Edgecombe County, between Tarboro and Princeville. State Project No. 8.1290601. Federal Aid Project Number BRSTP-064(1). Debit $240.00 from WBS 32782.1.1.TIP No. B-2965.

Please find enclosed the PCN form, USFWS concurrence letter, permit drawings, riparian buffer drawings, and half-size plan sheets for the above referenced project. An Environmental Assessment (EA) was completed for this project on December 28, 2004, and distributed shortly thereafter. Also, Finding Of No Significant Impact (FONSI) was completed for this project on November 13, 2007, and distributed shortly thereafter. Additional copies are available upon request. The North Carolina Department of Transportation (NCDOT), Division of Highways, in consultation with the Federal Highway Administration (FHWA), proposes to make improvements to US 64 Business/NC 33 in Edgecombe County, between Tarboro and Princeville. Construction starts south of Walston Street in Princeville and continues to SR 1308 (Albemarle Avenue) in Tarboro, including the replacement of Bridge No. 24. The project is approximately 0.66 mile in length.

Regulatory Approvals

Section 404 Permit: Application is hereby made for the Department of Army Section 404 Regional General Permit No. 198200031 authorizing for the above-described activities for impacts associated the construction of Bridge No. 24. We are also requesting the issuance of a Nationwide Permit 13 for bank stabilization (72 CFR; 11092-11198, March 12, 2007).

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

TELEPHONE: 919-715-1500
FAX: 919-715-1501

WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD
PLB SUITE 168
RALEIGH, NC 27604

Section 401 Permit: We anticipate 401 General Certification numbers 3704 and 3689 will apply to this project. NCDOT is providing five copies of this application to the North Carolina Department of Environmental and Natural Resources, Division of Water Quality, for their approval. Authorization to debit the $240 Permit Application Fee from WBS Element 32782.1.1 is hereby given.

Tar-Pamlico River Riparian Buffer Authorization: NCDOT requests that the NC Division of Water Quality review this application and issue a written approval for a Tar-Pamlico River Riparian Buffer Authorization.

A copy of this permit application 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 Mr. Chris Manley, at 919-715-1487.

Sincerely,

E. R. Fuhr

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

cc List:

W/attachment

Mr. Brian Wrenn, NCDWQ (5 Copies)

W/o attachment (see website for attachments)

Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Mark Staley, Roadside Environmental
Mr. Richard E. Greene, P.E. Div. 4 Engineer
Mr. Chad Coggins, Div. 4 Environmental Officer
Mr. Scott McLendon, USACE, Wilmington
Mr. Gary Jordan, USFWS
Mr. Travis Wilson, NCWRC
Mr. Ron Sechler, NMFS
Ms. Anne Deaton, NCDMF
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Joseph Miller, PDEA Project Planning Engineer

Office Use Only: Form Version March 05

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:
   - ☒ Section 404 Permit
   - ☒ Section 10 Permit
   - ☒ 401 Water Quality Certification
   - ☒ Riparian or Watershed Buffer Rules
   - ☐ Isolated Wetland Permit from DWQ
   - ☐ Express 401 Water Quality Certification

2. Nationwide, Regional or General Permit Number(s) Requested: GP 31 & NW 13

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 Ecosystem Enhancement Program (NCEEP) is proposed for mitigation of impacts, attach the acceptance letter from NCEEP, 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: Gregory J. Thorpe, Ph.D., Environmental Management Director
   Mailing Address: NCDOT - PDEA
   1598 Mail Service Center
   Raleigh, NC 27699-1598
   Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794
   E-mail Address: _____

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-2965, Bridge #24 over the Tar River, US Business 64

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-2965

3. Property Identification Number (Tax PIN): N/A

4. Location
   County: Edgecombe Nearest Town: Tarboro and Princeville
   Subdivision name (include phase/lot number): N/A
   Directions to site (include road numbers/names, landmarks, etc.): US Business 64, bridge between Tarboro and Princeville over the Tar River.

5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
   Decimal Degrees (6 digits minimum): 35.8937 °N -77.5323 °W

6. Property size (acres): N/A

7. Name of nearest receiving body of water: Tar River

8. River Basin: Tar-Pamlico
   (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: Currently there is a bridge with a sufficiency rating of 21.2 out of a possible 100 that is considered functionally obsolete. The land use in the project area is predominantly commercial, residential, and parkland. This area also has historic properties as well as a dike on the Princeville side of Tar river.

10. Describe the overall project in detail, including the type of equipment to be used: B-2965 includes the improvements to US 64 Business/NC 33 (Main Street) from south of Walston Street in Princeville to SR 1308 (Albemarle Avenue) in Tarboro, and replacement of Bridge No. 24 over the Tar River. The approximate length is 0.66 mile. The existing Bridge No. 24 will be removed without dropping any components into the water. Typical construction, earth moving, and road surface equipment will be used.

11. Explain the purpose of the proposed work: The purpose of B-2965 is to replace Bridge No. 24 (due to being functionally obsolete and structurally deficient) and provide improvements along US 64B/NC 33. This section of US 64B/NC33 including the bridge is strategically important to the overall economy and transportation service between the towns of Princeville and Tarboro.

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. A field visit by both the USACE (9/05/07) and DWQ (4/25/08) has been preformed to determine the jurisdictional status and locations of wetland lines and streams and buffers. By request of these Nationwide Permits we are also requesting the official jurisdictional determination.

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. Each impact must be listed separately in the tables below (e.g., culvert installation should be listed separately from riprap dissipater pads). Be sure to indicate if an impact is temporary. All proposed impacts, permanent and temporary, must be listed, and must be labeled and clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) should 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: There will be minor impacts to the wetlands on the Princeville side due to fill, excavation, and hand clearing. There will also be minor impacts to the Tar River on the north side along the bank as a result of fill with Class II Rip Rap.

2. Individually list wetland impacts. Types of 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.

Wetland Impact Site Number (indicate on map)	Type of Impact	Type of Wetland (e.g., forested, marsh, herbaceous, bog, etc.)	Located within 100-year Floodplain (yes/no)	Distance to Nearest Stream (linear feet)	Area of Impact (acres)
1	Permanent fill	Forested	yes	720	0.06
1	Excavation	Forested	yes	720	0.01
1	Temporary Fill	Forested	yes	720	0.03
Total Wetland Impact (acres)					0.10

3. List the total acreage (estimated) of all existing wetlands on the property: 3.5

4. Individually list all intermittent and perennial stream impacts. Be sure to identify temporary impacts. Stream impacts include, but are not limited to placement of fill or culverts, dam construction, flooding, relocation, stabilization activities (e.g., cement walls, rip-rap, crib walls, 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. To calculate acreage, multiply length X width, then divide by 43,560.

Stream Impact Number (indicate on map)	Stream Name	Type of Impact	Perennial or Intermittent?	Average Stream Width Before Impact	Impact Length (linear feet)	Area of Impact (acres)
2	Tar River	Permanent Fill	Perennial	200 ft	71	0.02
Total Stream Impact (by length and acreage)					71	0.02

5. Individually list all open water impacts (including lakes, ponds, estuaries, sounds, Atlantic Ocean and any other water of the U.S.). Open water impacts include, but are not limited to fill, excavation, dredging, flooding, drainage, bulkheads, etc.

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

6. List the cumulative impact to all Waters of the U.S. resulting from the project:

Stream Impact (acres):	0.02
Wetland Impact (acres):	0.10
Open Water Impact (acres):	0

Total Impact to Waters of the U.S. (acres)	0.12
Total Stream Impact (linear feet):	71

7. Isolated Waters
Do any isolated waters exist on the property? ☐ Yes ☒ No
Describe all impacts to isolated waters, and include the type of water (wetland or stream) and the size of the proposed impact (acres or linear feet). Please note that this section only applies to waters that have specifically been determined to be isolated by the USACE.

8. 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.): N/A
Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.): N/A
Current land use in the vicinity of the pond: N/A
Size of watershed draining to pond: N/A Expected pond surface area: N/A

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.
The temporary work bridge required for this project has been designed to avoid potential habitat for the Tar River spinymussel. This was discussed with the USFWS and NCDOT has received their concurrence. We are going from four in-water bents to one in-water bent. Deck drainage will be constructed so that runoff is diverted to the ends of the proposed bridge and treated prior to entering surface waters. An in-stream moratorium for anadromous fish, from February 15 to June 15, will be implemented. Bottom weighted silt curtains will be required. Design Standards in Sensitive Watersheds will be implemented. There will be a clearing and grubbing restriction between November 15 and April 1 in riparian buffers (The EA greensheet incorrectly interpreted WRC's letter from March 22, 2005). The use of preformed scour holes and hand clearing where possible.

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 January 15, 2002, 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 NCEEP 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.
   Compensatory mitigation is not proposed for this project due to the impacts being very minimal. All of the wetland impacts are directly adjacent to the existing road fill (No Segmenting by New Location). The stream impacts are the result of bank stabilization for shoring up under the bridge on the north side only. Therefore the size and function of the Tar River will not be affected (no loss of Waters of the U.S. from stream impacts).

2. Mitigation may also be made by payment into the North Carolina Ecosystem Enhancement Program (NCEEP). Please note it is the applicant's responsibility to contact the NCEEP at (919) 715-0476 to determine availability, and written approval from the NCEEP indicating that they are will to accept payment for the mitigation must be attached to this form. For additional information regarding the application process for the NCEEP, check the NCEEP website at http://h2o.enr.state.nc.us/wrp/index.htm. If use of the NCEEP is proposed, please check the appropriate box on page five and provide the following information:

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

IX. Environmental Documentation (required by DWQ)

1. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? Yes ☒ No ☐

2. 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 ☐

3. 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.

1. Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 02B .0243 (Catawba) 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify_____)? Yes ☒ No ☐

2. If "yes", 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	11,405	3 (2 for Catawba)	N/A
2	8,695	1.5	N/A
Total	20,100		N/A

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

3. If buffer mitigation is required, please discuss what type of mitigation is proposed (i.e., Donation of Property, Riparian Buffer Restoration / Enhancement, or Payment into the Riparian Buffer Restoration Fund). Please attach all appropriate information as identified within 15A NCAC 2B .0242 or .0244, or .0260. No mitigation required because of bridge impacts being allowable.

XI. Stormwater (required by DWQ)

Describe impervious acreage (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. If percent impervious surface exceeds 20%, please provide calculations demonstrating total proposed impervious level. Impervious acreage will remain similar of that of the existing.

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. Cumulative Impacts (required by DWQ)

Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? Yes ☐ No ☒
If yes, please submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent North Carolina Division of Water Quality policy posted on our website at http://h2o.enr.state.nc.us/ncwetlands. If no, please provide a short narrative description:

XV. 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).
There are two federally protected species listed for Edgecombe County, the Tar River spinymussel and the red-cockaded woodpecker. The USFWS has concurred with the biological conclusion of May Affect, Not Likely to Adversely Affect for the Tar River spinymussel provided that we span the potental habitat on the north bank (See attached USFWS letter dated October 1, 2007). The red-cockaded woodpecker has a biological conclusion of No Effect due to lack of habitat.

E. P. Luck — 9.12.08

Applicant/Agent's Signature **Date**
(Agent's signature is valid only if an authorization letter from the applicant is provided.)

CR.10.04.07
CC: L.W. Williams

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

October 1, 2007

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

Dear Dr. Thorpe:

This letter is in response to your letter of September 26, 2007 which provided the U.S. Fish and Wildlife Service (Service) with the biological determination of the North Carolina Department of Transportation (NCDOT) that the replacement of Bridge No. 24 on US 64 Business/NC 33 (Main Street) over the Tar River in Edgecombe County (TIP No. B-2965) may affect, but is not likely to adversely affect the federally endangered Tar River spinymussel (*Elliptio steinstansana*). These comments are provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to information provided, a mussel survey was conducted at the project site on August 11, 2006. The survey extended 100 meters upstream and 400 meters downstream of US 64 Business/NC 33. Although a large number of mussels representing six species were observed, no Tar River spinymussels were observed. Almost all suitable habitat for Tar River spinymussel occurs upstream of the work area, with only a small amount of marginal habitat occurring on the right bank downstream of the existing bridge. The new bridge and associated work bridge will be constructed downstream of the existing bridge. As a conservation measure, NCDOT has agreed to not place piles within 20 feet of the right bank in order to span the area of marginal habitat.

Based on the mussel survey results and other available information, the Service concurs with your determination that the proposed bridge replacement may affect, but is not likely to adversely affect the Tar River spinymussel. We believe that the requirements of section 7(a)(2) of the ESA have been satisfied. We remind you that obligations under section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered in this review; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by this identified action.

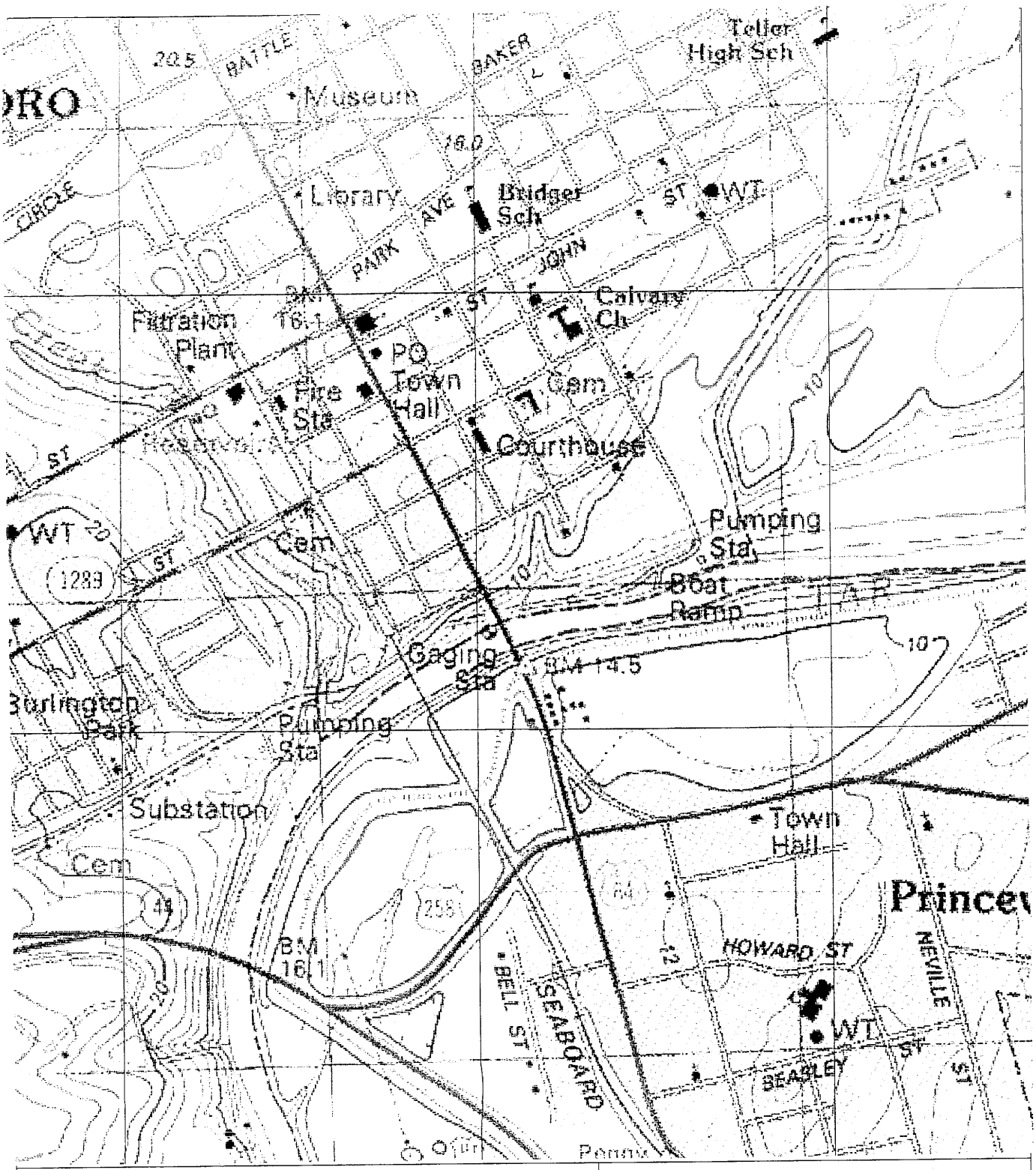
The Service appreciates the opportunity to review this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520 (Ext. 32).

Sincerely,

Gary Jordan

for Pete Benjamin
Field Supervisor

cc: William Wescott, USACE, Washington, NC
Rob Ridings, NCDWQ, Raleigh, NC
Travis Wilson, NCWRC, Creedmoor, NC
Chris Militscher, USEPA, Raleigh, NC
John Sullivan, FHWA, Raleigh, NC
David Harris, NCDOT, Raleigh, NC



TOPO MAP

SCALE: 1" : 2000'

NCDOT

DIVISION OF HIGHWAYS
EDGECOMBE COUNTY
PROJECT: B-2965 (BRIDGE #24)
BRIDGE NO. 24 OVER
TAR RIVER
ON US BUS. 64

Permit Drawing
Sheet 1 of 11

SHEET OF

02 / 20 / 2008

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	26+95 TO 28+78 -L- LT	ROAD FILL	0.06		0.01		0.08					
2	38+60 -L- CL	PROPOSED BRIDGE & RIP RAP EMBANKMENT						0.02		71		
TOTALS:			0.06	0.00	0.01	0.00	0.08	0.02	0.00	71	0	0.00

NOTE: SURFACE WATER IMPACTS AS A RESULT OF THE PROPOSED BENT FOOTINGS ARE 243 SF (0.006 Ac).

Temporary impacts to wetlands of 0.03 acres of Temporary Fill in Wetlands in the Hand Clearing areas for the installation of erosion control measures

Permit Drawing
Sheet 2 of 11

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
Edgecombe County
Project: B-2965 (Bridge #24)

SHEET 9/10/2008

PROPERTY OWNERS

NAMES AND ADDRESSES

		NAMES	ADDRESSES
Site 1	28	Melvin Ray Johnson	205 Fifith St. Tarboro, NC 27886
Site 1	30	V. E. Fountain	P.O. Box 629 Tarboro, NC 27886
Site 1	31	Walter L. Williams	210 w. 10th. St. Greenville, NC 27834

NCDOT

DIVISION OF HIGHWAYS
EDGECOMBE COUNTY
PROJECT: B-2965
BRIDGE NO. 24 OVER
THE TAR RIVER
US 64 BUSINESS / NC 33
(MAIN ST)

Permit Drawing
Sheet 3 of 11
SHEET OF 02 / 20 / 2008

See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

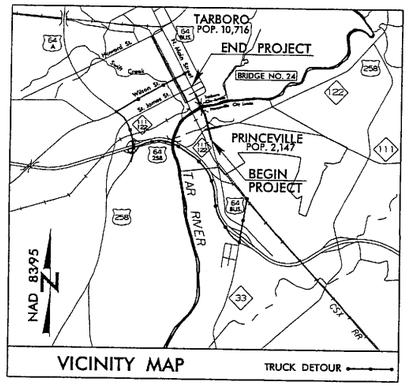
EDGECOMBE COUNTY

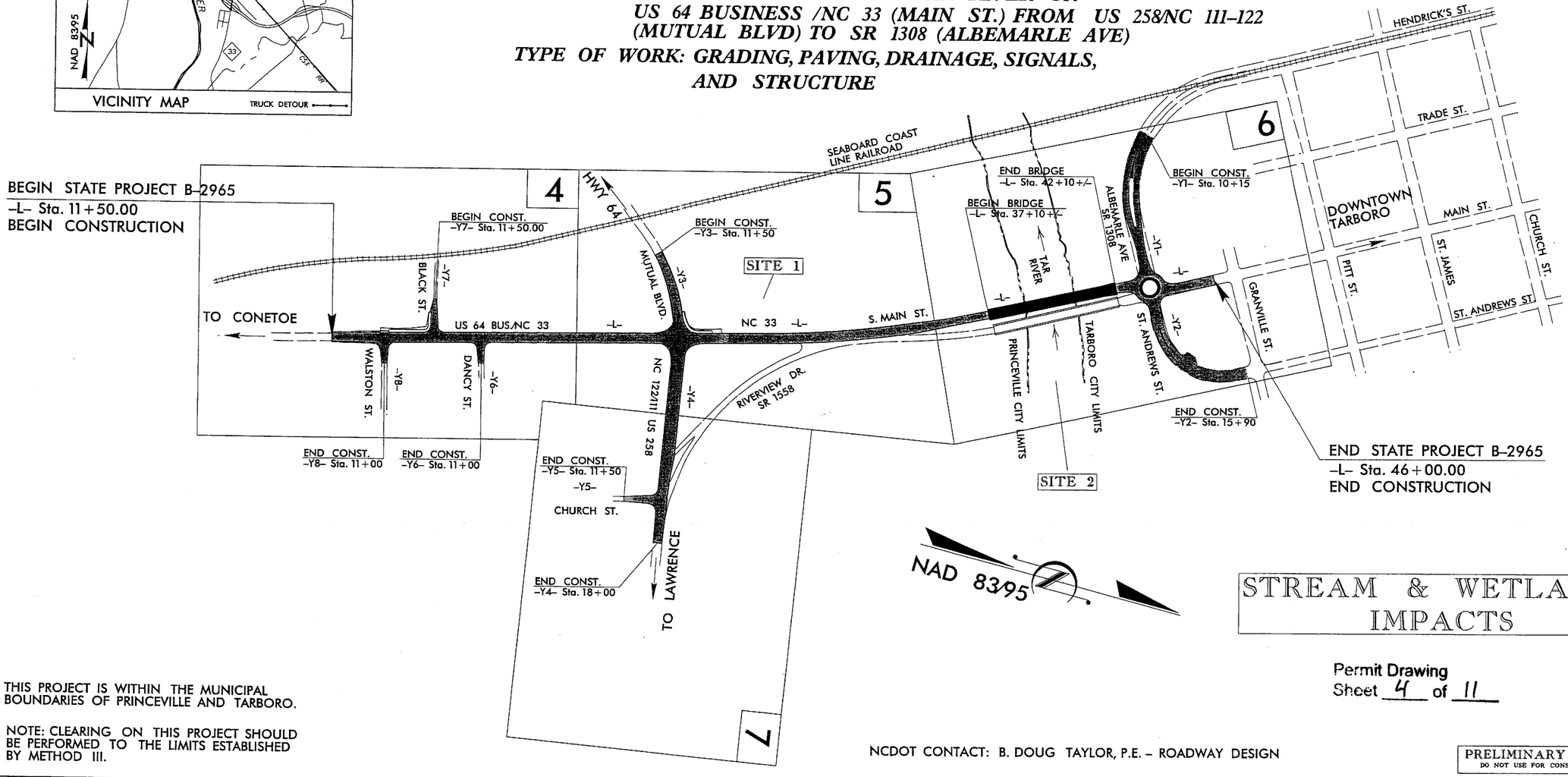
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-2965	1	

WBS NO.	F. A. PROJ. NO.	DESCRIPTION
32782.1.1	BRSTP-064B(1)	P.E.
32782.2.2	BRSTP-064B(1)	R.O.W./UTILITIES

LOCATION: BRIDGE NO. 24 OVER THE TAR RIVER ON US 64 BUSINESS /NC 33 (MAIN ST.) FROM US 258/NC 111-122 (MUTUAL BLVD) TO SR 1308 (ALBEMARLE AVE)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNALS, AND STRUCTURE





STREAM & WETLAND IMPACTS

Permit Drawing
Sheet 4 of 11

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF PRINCEVILLE AND TARBORO.

NOTE: CLEARING ON THIS PROJECT SHOULD BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

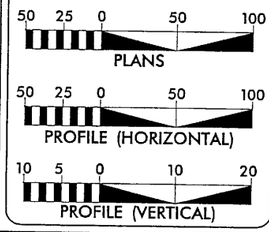
NCDOT CONTACT: B. DOUG TAYLOR, P.E. – ROADWAY DESIGN

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TIP PROJECT: B-2965

CONTRACT: 32782.3.1

GRAPHIC SCALES



DESIGN DATA

ADT 2008 = 13,350
ADT 2028 = 17,950
DHV = 10 %
D = 60 %
T = 5 % *
V = 40 MPH & 25 MPH ON BRIDGE & NORTH INCLUDING ROUNDABOUT
* TTST 3 % DUAL 2 %
FUNC CLASS: COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-2965 = 0.559 MILES
LENGTH STRUCTURE TIP PROJECT B-2965 = 0.095 MILES
TOTAL LENGTH TIP PROJECT B-2965 = 0.654 MILES

Prepared in the Office of:
MULKEY ENGINEERS & CONSULTANTS

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 21, 2007

LETTING DATE: DECEMBER 16, 2008

TIM HAYES, P.E.
PROJECT ENGINEER

JEFF RECK, P.E.
HYDRAULICS ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

1/14/2008
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MULKEY
ENGINEERS & CONSULTANTS
P.O. Box 83139
RALEIGH, N.C. 27636
(919) 851-1913
(919) 851-1918 (FAX)
WWW.MULKEYINC.COM

PROJECT REFERENCE NO.	SHEET NO.
B-2965	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

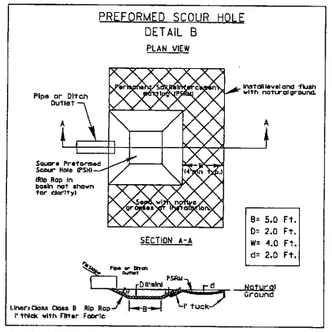
Permit Drawing
Sheet 5 of 11

FOR -L- PROFILE SEE SHEET 8
FOR -Y3- PROFILE SEE SHEET 10
FOR -Y4- PROFILE SEE SHEET 10

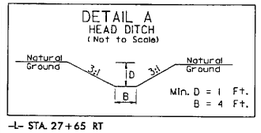
STREAM & WETLAND IMPACTS

NAD 83/95

PREFORMED SCOUR HOLE
DETAIL B

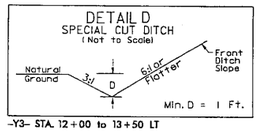


DETAIL A
HEAD DITCH
(Not to Scale)



-L- STA. 27+65 RT

DETAIL D
SPECIAL CUT DITCH
(Not to Scale)



-Y3- STA. 12+00 to 13+50 LT

-L- STA. 29+38 LT

SITE 1

DENOTES EXCAVATION IN WETLAND

DENOTES FILL IN WETLAND

DENOTES HAND CLEARING

DIKE EASEMENT
DB 712 PG 308

-L- STA.21+00.00
MATCH LINE SHEET 4

-L- STA.35+00.00
MATCH LINE SHEET 6

MATCH LINE SHEET 7
-Y4- STA.13+00.00

PAUL P. SHIRLEY
MELVIN RAY JOHNSON
MARY L. PITT
EMERSON WAYNE GRIMMER
FLORANCE WIGGINS TRUSTEE
MILTON MATTHEWSON DAVIS
TOWN OF PRINCEVILLE
PAUL P. SHIRLEY
MELVIN JOHNSON
BOBBY JAMES ARMFIELD
DORTHY HARLEY
ESTHER JOHNSON
GLINNIE MATHEWSON, HEIRS
HILLERY GINNE
CATHERINE H. YARRELL
TOWN OF PRINCEVILLE
MILTON J. MORNING
PRINCEVILLE BOARD OF COMM
MARY M. DAVIS
WILLIAM SAVAGE
V.E. FOUNTAIN
WALTER L. WILLIAMS
E.J.POPE & SON,INC.
C. E. PUTNAM AGENCY,INC.
BENJAMIN H. PHILLIPS
PRINCEVILLE REDEVELOPMENT COMMISSION
TOWN OF PRINCEVILLE

SEE DETAIL-D- SPECIAL CUT DITCH
RETAIN AND PLUG W/ FLOWABLE FILL
RETAIN
REMOVE
USE ROCK PLATING AT STA. 26+70 - 29+25 LT AND STA. 26+70 - 29+80 RT SEE DETAIL 2-F
SPECIAL ENDWALL SEE DETAIL 2-J
PREFORMED SCOUR HOLE SEE DETAIL B
SCOUR HOLE OUTLET Q10 = 8.4 CFS
PLUG W/ FLOWABLE FILL
REMOVE
RETAIN S75°06'44"W 15.73'
COLLAR & EXTEND
HEAD DITCH SEE DETAIL A EST. DDE = 38 CY
5'-5" BARREL
ROCK PLATING AT FILL SLOPE SEE DETAIL C
GRADE TO DRAIN
BENJAMIN H. PHILLIPS

6/10/2008
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MULKEY
ENGINEERS & CONSULTANTS
PO Box 33127
RALEIGH, N.C. 27636
(919) 851-1313 (FAX)
WWW.MULKEYINC.COM

PROJECT REFERENCE NO.	SHEET NO.
B-2965	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

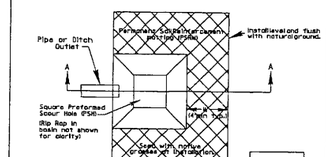
Permit Drawing
Sheet 6 of 11

FOR -L- PROFILE SEE SHEET 8
FOR -Y3- PROFILE SEE SHEET 10
FOR -Y4- PROFILE SEE SHEET 10

STREAM & WETLAND IMPACTS

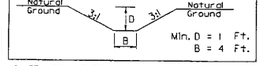
NAD 83/95

PREFORMED SCOUR HOLE
DETAIL B
PLAN VIEW



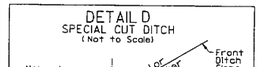
-L- STA. 29+38 LT

DETAIL A
HEAD DITCH
(Not to Scale)



-L- STA. 27+65 RT

DETAIL D
SPECIAL CUT DITCH
(Not to Scale)



-Y3- STA. 12+00 to 13+50 LT

DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
DENOTES HAND CLEARING

SITE 1

-L- STA.21+00.00
MATCH LINE SHEET 4

MATCH LINE SHEET 7
-Y4- STA.13+00.00

-L- STA.35+00.00
MATCH LINE SHEET 6

PAUL P. SHIRLEY
SEE DETAIL D SPECIAL CUT DITCH
MELVIN RAY JOHNSON
MARY L. PITT
EMERSON WAYNE GRIMMER
TOWN OF PRINCEVILLE
FLORANCE WIGGINS TRUSTEE
MILTON MATTHEWSON DAVIS
PAUL P. SHIRLEY
MELVIN JOHNSON
BOBBY JAMES ARMFIELD
DORTHY PEREE
ESTHER JOHNSON
GLINNIE MATHEWSON, HEIRS
HILLERY GINNE
CATHERINE H. YARRELL
MILTON J. MORNING
PRINCEVILLE BOARD OF COMM
MARY M. DAVIS
WILLIAM SAVAGE
V.E. FOUNTAIN
WALTER L. WILLIAMS
E.J.POPE & SON,INC.
OKE EASEMENT DB 712 PG 308
BENJAMIN H. PHILLIPS
C. E. PUTNAM AGENCY,INC.
PRINCEVILLE REDEVELOPMENT COMMISSION

RETAIN AND PLUG W/ FLOWABLE FILL
RETAIN
REMOVE
USE ROCK PLATING AT STA 28+70 = 29.25 LT AND STA 29+70 = 29.60 RT SEE DETAIL 2-F
SPECIAL ENDWALL SEE DETAIL 2-J
PREFORMED SCOUR HOLE SEE DETAIL B
SCOUR HOLE OUTLET Q10 = 8.4 CFS
PLUG W/ FLOWABLE FILL
REMOVE
RETAIN
RETAIN S75°06'44"W 15.73'
COLLAR & EXTEND HEAD DITCH SEE DETAIL A EST. DOE = 30 CY
RCP W/ FW MH SEE DETAIL 2-H
ROCK PLATING AT FILL SLOPE SEE DETAIL C
5'x3' BARREL
GRADE TO DRAIN
RETAIN
RETAIN

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STREAM & WETLAND IMPACTS

DENOTES IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
B-2965	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L-, -R- ROUNDABOUT DETAIL SEE DETAIL SHEET 2-E
FOR -L- PROFILE SEE SHEET 9
FOR -Y1- PROFILE SEE SHEET 10
FOR -Y2- PROFILE SEE SHEET 10
FOR -R- PROFILE SEE SHEET 9
FOR -DRIVE- PROFILE SEE SHEET 9

Permit Drawing
Sheet 7 of 11

DETAIL E
RIP RAP AT EMBANKMENT
(Not to Scale)

Pier
Varies 0 to 10'
2
Natural Ground
Est. 185 Tons
Type of Liner = CLASS II RIP RAP

-L- STA. 40+50 (UNDER BRIDGE)

NAD 8395

SITE 2

MATCH LINE SHEET 5
-L- STA. 35+00.00

REVISIONS
8/17/95

DIKE EASEMENT DB 712 PG 308
E.J. POPE & SON, INC.
CLASS II RIP RAP STRUCTURE PAY ITEM
EDGECOMBE COUNTY
PRINCEVILLE TOWN LIMITS BEGIN AT RIVER BANK IS PROPERTY LINE
TAR RIVER
CLASS II RIP RAP SEE DETAIL E STRUCTURE PAY ITEM
WORK BRIDGE
NO DECK DRAINS REQUIRED
TARBORO TOWN LIMITS BEGIN AT RIVER BANK
TARBORO HISTORIC DISTRICT
TOWN OF TARBORO
WARP GUTTER TO CB
FLAG POLE
RETAIN
REMOVE
FOUNTAIN ALBERMARLE LIMITED PA.
CHAIN LINK FENCE
THOMAS B. LANCASTER NEWBORN
DIKE EASEMENT DB 712 PG 302
PRINCEVILLE BAPTISM SITE
PRINCEVILLE REDEVELOPMENT COMMISSION
TARBORO CITY LIMITS
CLASS II RIP-RAP STRUCTURE PAY ITEM
MILTON D. OAKESS QUALIFIED FAMILY TRUST
PIPE CLEANOUT
WARP GUTTER TO CB GEORGE T. THORNE
REM CB RETAIN
3-8000 GALLON TANKS
1-12000 GALLON TANKS
MTL. CANOPY
6 GAS PUMP ISLANDS
MARIE S. WILLIAMS
HELEN G. QUIGLESS
ST. ANDREWS ST.
MAIN ST.
BUSWAY DRIVE
TBD!

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP

BEGIN BRIDGE
-L- 37+10.00
APPROACH SLAB
-L- 36+85.00
450'
50' TAPER
END BRIDGE
-L- 42+10.00
APPROACH SLAB
-L- 42+35.02
TYPE-III
SIDEWALK
TYPE-III

5/29/2008
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STREAM & WETLAND IMPACTS

PROJECT REFERENCE NO.	SHEET NO.
B-2965	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L-,-R- ROUNDABOUT DETAIL SEE DETAIL SHEET 2-E
FOR -L- PROFILE SEE SHEET 9
FOR -Y1- PROFILE SEE SHEET 10
FOR -Y2- PROFILE SEE SHEET 10
FOR -R- PROFILE SEE SHEET 9
FOR -DRIVE- PROFILE SEE SHEET 9

Permit Drawing
Sheet 8 of 11

REVISIONS
8/17/99

DENOTES IMPACTS IN SURFACE WATER

SITE 2

DETAIL E
RIP RAP AT EMBANKMENT
(Not to Scale)
Pier
Varies 0' to 10'
2
Natural Ground
Est. 185 Tons
Type of Liner = CLASS II RIP RAP
-L- STA. 40+50 (UNDER BRIDGE)

NAD 1983

MATCH LINE SHEET 5
-L- STA.35+00.00

DIKE EASEMENT DB 712 PG 308
E.J. PORE & SON, INC.
CLASS II RIP RAP STRUCTURE PAY ITEM
PRINCEVILLE TOWN LIMITS BEGIN AT RIVER BANK IS PROPERTY LINE
TAR RIVER
CLASS II RIP RAP SEE DETAIL E STRUCTURE PAY ITEM
WORK BRIDGE
NO DECK DRAINS REQUIRED
EDGECOMBE COUNTY
10-SPAN STEEL & CONCRETE BRIDGE
CHAIN LINK FENCE
THOMAS B. LANCASTER NEWBORN
DIKE EASEMENT DB 712 PG 302
PRINCEVILLE BAPTISM SITE
PRINCEVILLE CORP. LIMITS
RIVER BANK IS PROPERTY LINE
POWELL PKWY
PRINCEVILLE REDEVELOPMENT COMMISSION
TARBORO TOWN LIMITS BEGIN AT RIVER BANK
TARBORO CITY LIMITS
TOWN OF TARBORO
WARP GUTTER TO CB
CB REMOVE
RETAIN
REMOVE
MELTON D. GROSS QUALIFIED FAMILY TRUST
PIPE CLEANOUT
FOUNTAIN ALBERMARLE LIMITED PA.
WARP GUTTER TO CB GEORGE T. THORNE
REM CB RETAIN
MAIN ST. 79' EXIST
MARIE S. WILLIAMS
HELEN G. QUIGLESS
WOODS
GRASS

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP

BEGIN BRIDGE
-L- 37+10.00
APPROACH SLAB
-L- 36+85.00
450'
50' TAPER
END BRIDGE
-L- 42+10.00
APPROACH SLAB
-L- 42+35.02
TYPE-III
SIDEWALK
-L-
46'
45'
34'-F-F
10'
5'6"
2%
15'
TYPE-III

5/28/2008
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PROJECT REFERENCE NO.	SHEET NO.
B-2965	9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM 2
-L- 35+76.57 EL = 32.80' 212.86' RT
RR SPIKE IN BASE OF 36" PECAN

-BL- 3
EL = 47.64'

FOR -L- PLAN VIEW SEE SHEET 6

-L-

BM 3
-L- 42+76.56 EL = 49.57' 5.81' LT
RR SPIKE IN BASE OF 18" PINE

-BL-101
EL = 49.62'

BLEND TO EXISTING

BEGIN BRIDGE
-L- STA 37+10.00

EXISTING BRIDGE

PI = 39+60.00
EL = 56.30'
VC = 510'
K = 106
DS = 50

(+)2.3395%

(-)2.4677%

END BRIDGE
-L- STA 42+10.00

END GRADE
-L- STA 42+84.19
EL = 46.30'

BEGIN GRADE
-L- STA 44+04.34
EL = 49.55'

END GRADE
-L- STA 45+35.00
EL = 50.57'

-L- STA 46+00.00

ROUNDABOUT

(+)0.7807%

TEMPORARY WORK BRIDGE

OHW ELEV. = 25.4 +/-

WS ELEV. = 24.4 (12-20-05)

-L- 43+04.25
-R- 10+00.00 AH =
-R- 12+51.33 BK
EL = 48.70'

-L- 43+84.29
-R- 11+25.66
EL = 49.95'

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 40,000	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 44.7	FT
BASE DISCHARGE	= 46,700	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 46.3	FT
OVERTOPPING DISCHARGE	= 57,800	CFS
OVERTOPPING FREQUENCY	= 200	YRS
OVERTOPPING ELEVATION	= 49.4	FT
DATE OF SURVEY	= 12-20-05	
W.S. ELEVATION AT DATE OF SURVEY	= 24.4	FT

-R-

FOR -R- PLAN VIEW SEE SHEET 2-E & 6

BEGIN GRADE
-R- STA 10+00.00 AH =
-R- STA 12+51.33 BK
-L- 43+04.25
EL = 48.70'

PI = 11+25.67
EL = 50.58'
VC = 125.67'
K = 31
DS = 35

END GRADE
-R- STA 12+51.33 BK =
-R- STA 10+00.00 AH
-L- 43+04.25
EL = 48.70'

(+)1.997%

(-)1.997%

PI = 10+00.00 AH =
PI = 12+51.33 BK
EL = 48.07'
VC = 125.66'
K = 31
DS = 35

-R- 10+76.77
-Y2- 10+40.00
EL = 49.57'

-R- 11+25.67
-L- 43+84.29
EL = 49.95'

-R- 12+02.43
-Y1- 15+80.12
EL = 49.08'

-DRIVE-

BEGIN GRADE
-DRIVE- STA 10+16.17
EL = 46.51'

PI = 10+70.00
EL = 45.68'
VC = 100'
K = 23

PI = 11+75.00
EL = 48.56'
VC = 20'
K = 8

PI = 12+20.00
EL = 48.70'
VC = 20'
K = 7

END GRADE
-DRIVE- STA 12+30.00
EL = 49.03'

(-)1.549%

(+)2.741%

(+)10.320%

(+)13.271%

FOR -DRIVE- PLAN VIEW SEE SHEET 6

Permit Drawing
Sheet 9 of 11

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-6

29+00.00

28+50.00

28+00.00

27+50.00

27+00.00

26+50.00

Permit Drawing
Sheet 10 of 11

1/28/2008
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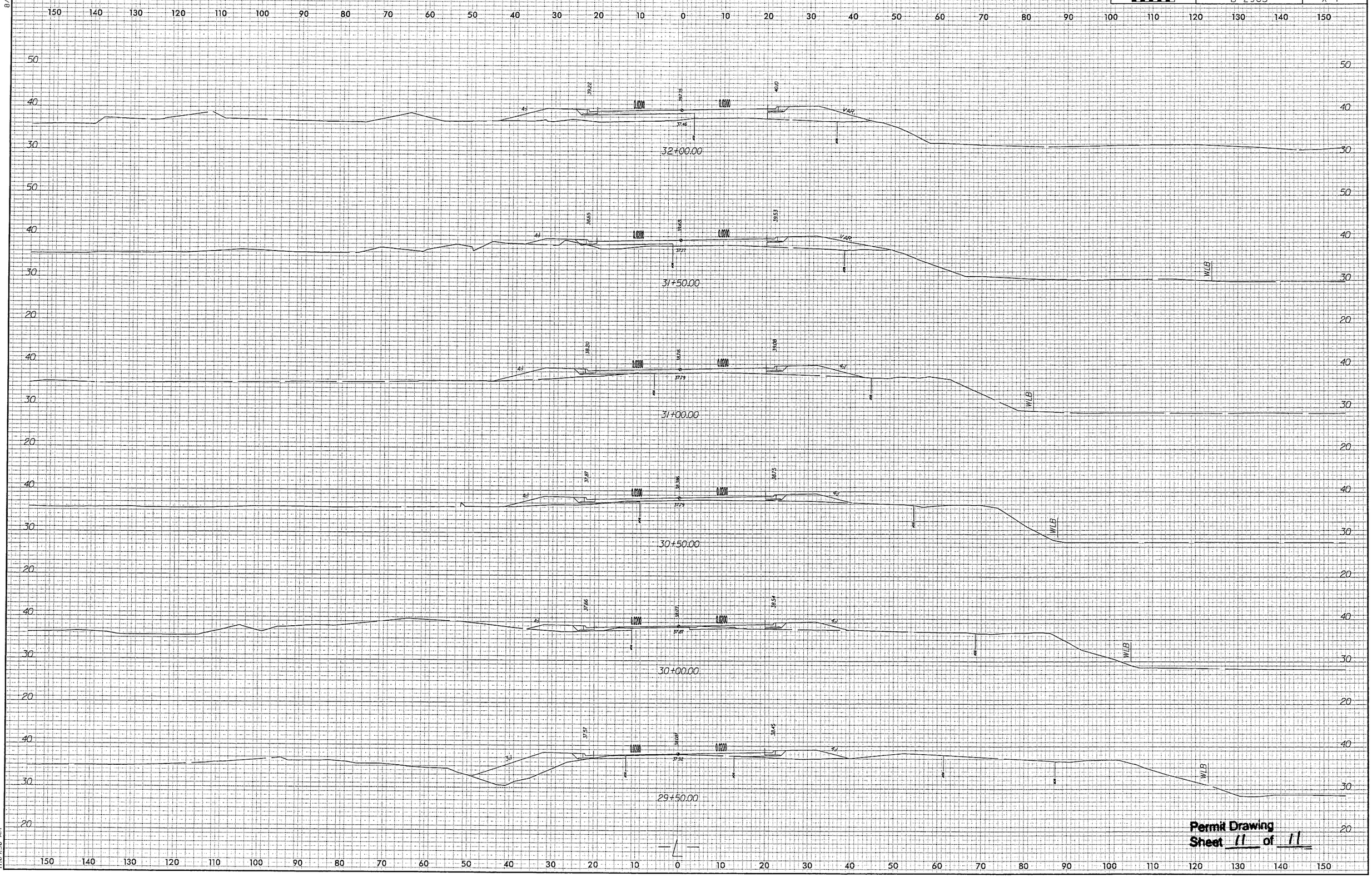
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-7



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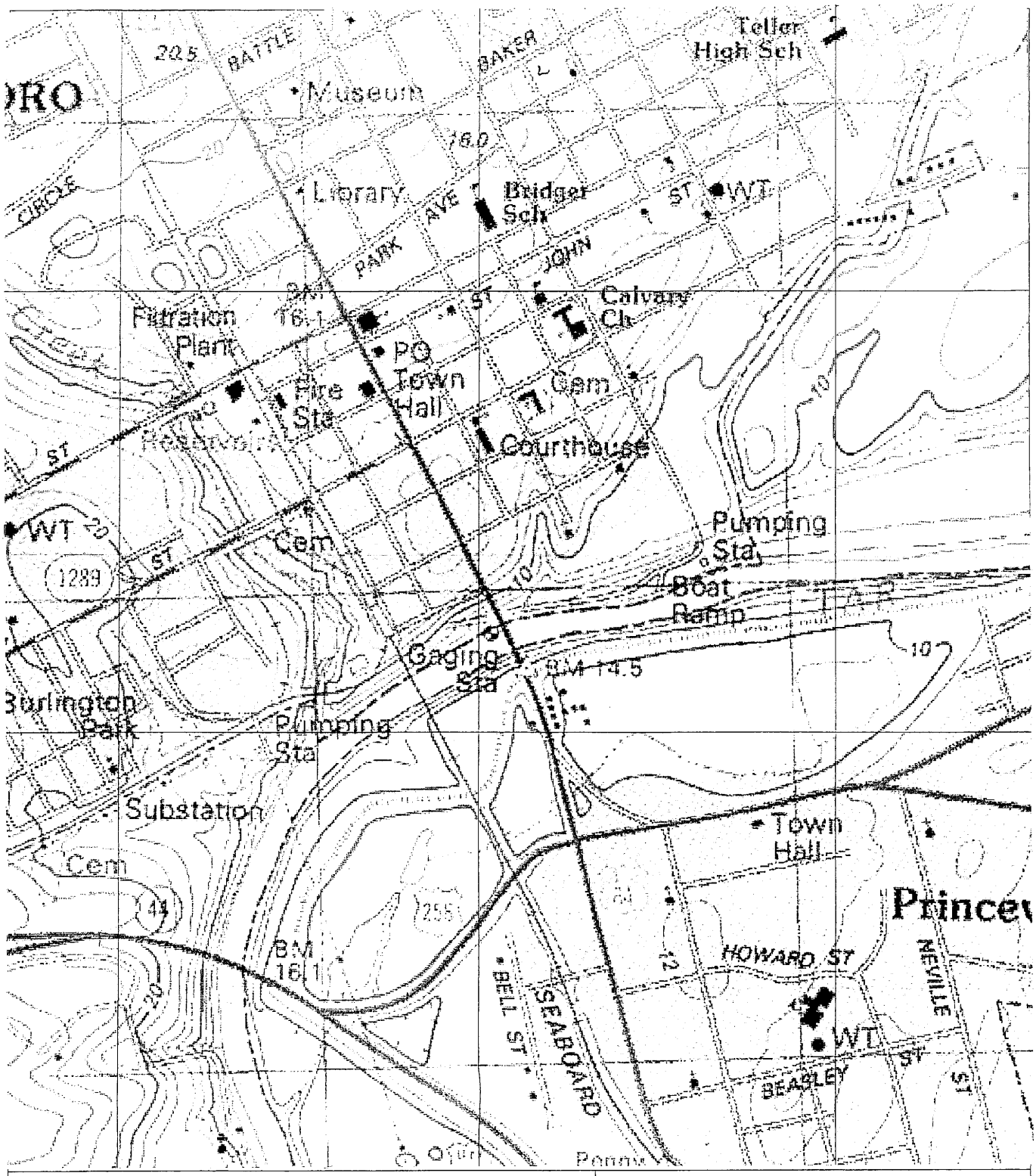
Permit Drawing
Sheet 11 of 11



TOPO MAP

SCALE: 1" : 2000'

NCDOT

DIVISION OF HIGHWAYS
EDGECOMBE COUNTY
PROJECT: B-2965 (BRIDGE #24)
BRIDGE NO. 24 OVER
TAR RIVER
ON US BUS. 64

Buffer Drawing
Sheet 1 of 6

SHEET OF

02 / 20 / 2008

BUFFER IMPACTS SUMMARY

			IMPACT									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
2	BRIDGE	37+45 TO 41+24 -L-		X		11405	8695	20100					
TOTAL:						11405	8695	20100	0	0	0		

Buffer Drawing
Sheet 2 of 6

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

EDGECOMBE COUNTY
PROJECT: B-2965 (BRIDGE #24)

2/20/2008
SHEET OF

Rev. May 2006

PROPERTY OWNERS

NAMES AND ADDRESSES

		NAMES	ADDRESSES
Site 1	36	Dike Easement	No Address
Site 1	37	Edgecombe County	P.O. Box 10 Tarboro, NC 27886
Site 1	38	No Property Owner Name	No Address
Site 1	39	Thomas B. Lancaster Mewborn	2233 Panola Street Tarboro, NC 27886
Site 1	40	Town Of Tarboro	P.O. Box 220 Tarboro, NC 27886

NCDOT

DIVISION OF HIGHWAYS
EDGECOMBE COUNTY
PROJECT: B-2965
BRIDGE NO. 24 OVER
THE TAR RIVER
US 64 BUSINESS / NC 33
(MAIN ST)

Buffer Drawing
Sheet 3 of 6

SHEET OF 02 / 20 / 2008

See Sheet 1-A for Index of Sheets

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-2965	1	

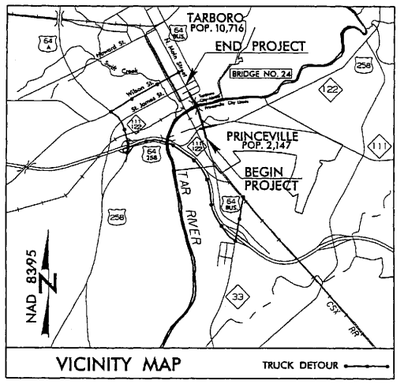
WBS NO.	F.A. PROJ. NO.	DESCRIPTION
32782.1.1	BRSTP-064B(1)	P.E.
32782.2.2	BRSTP-064B(1)	R.O.W./UTILITIES

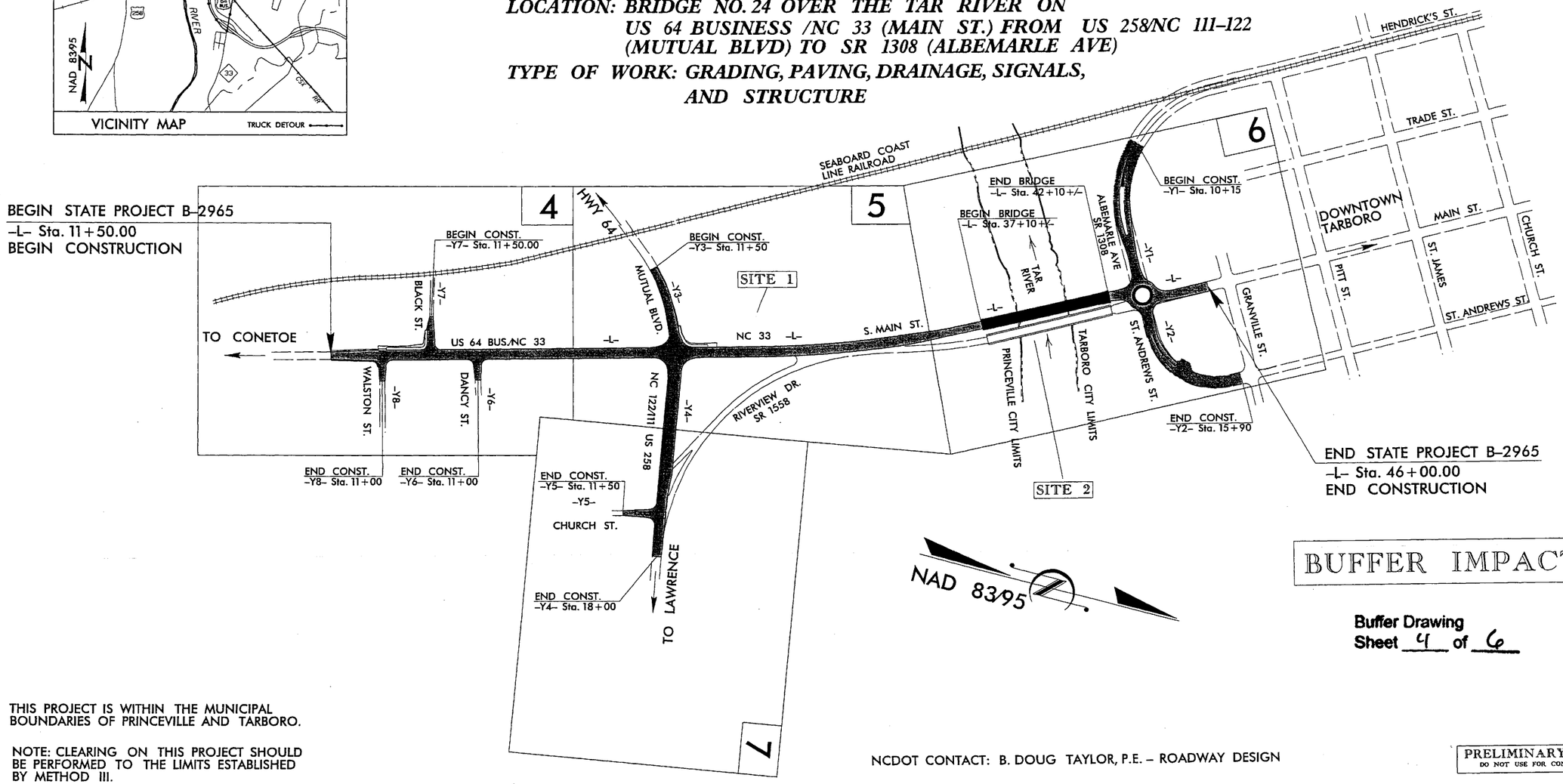
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

EDGECOMBE COUNTY

LOCATION: BRIDGE NO. 24 OVER THE TAR RIVER ON US 64 BUSINESS /NC 33 (MAIN ST.) FROM US 258/NC 111-122 (MUTUAL BLVD) TO SR 1308 (ALBEMARLE AVE)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNALS, AND STRUCTURE





BUFFER IMPACTS

Buffer Drawing Sheet 4 of 6

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF PRINCEVILLE AND TARBORO.

NOTE: CLEARING ON THIS PROJECT SHOULD BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

NCDOT CONTACT: B. DOUG TAYLOR, P.E. – ROADWAY DESIGN

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TIP PROJECT: B-2965

CONTRACT: 32782.3.1

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2008 = 13,350
ADT 2028 = 17,950
DHV = 10 %
D = 60 %
T = 5 % *
V = 40 MPH & 25 MPH ON BRIDGE & NORTH INCLUDING ROUNDABOUT
* TTST 3 % DUAL 2 %
FUNC CLASS: COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-2965	=	0.559 MILES
LENGTH STRUCTURE TIP PROJECT B-2965	=	0.095 MILES
TOTAL LENGTH TIP PROJECT B-2965	=	0.654 MILES

Prepared in the Office of:
MULKEY
ENGINEERS & CONSULTANTS

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 21, 2007

LETTING DATE: DECEMBER 16, 2008

TIM HAYES, P.E.
PROJECT ENGINEER

JEFF RECK, P.E.
HYDRAULICS ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

1/14/2008
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BUFFER IMPACTS

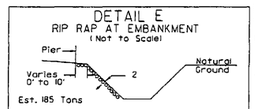
ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

SITE 1

NAD 8395

DETAIL E
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner = CLASS II RIP RAP

-L- STA. 40+50 (UNDER BRIDGE)

PROJECT REFERENCE NO.	SHEET NO.
B-2965	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L-,-R- ROUNDABOUT DETAIL SEE DETAIL SHEET 2-E
FOR -L- PROFILE SEE SHEET 9
FOR -Y1- PROFILE SEE SHEET 10
FOR -Y2- PROFILE SEE SHEET 10
FOR -R- PROFILE SEE SHEET 9
FOR -DRIVE- PROFILE SEE SHEET 9

Buffer Drawing
Sheet 5 of 6

REVISIONS 8/17/

MATCH LINE SHEET 5
-L- STA. 35+00.00

DIKE EASEMENT DB 712 PG 308

E.J. POPE & SON, INC.

CLASS II RIP RAP STRUCTURE PAYITEM

EDGECOMBE COUNTY

PRINCEVILLE TOWN LIMITS
BEGIN AT RIVER BANK IS PROPERTY LINE

TAR RIVER

TARBORO TOWN LIMITS
BEGIN AT RIVER BANK

TOWN OF TARBORO

CLASS II RIP RAP SEE DETAIL E STRUCTURE PAY ITEM

WORK BRIDGE

NO DECK DRAINS REQUIRED

CHAIN LINK FENCE

THOMAS B. LANCASTER-NEWBORN

DIKE EASEMENT DB 712 PG 302

PRINCEVILLE BAPTISM SITE

PRINCEVILLE REDEVELOPMENT COMMISSION

PRINCEVILLE TOWN LIMITS
RIVER BANK IS PROPERTY LINE

TARBORO CITY LIMITS

TARBORO HISTORIC DISTRICT

CLASS II RIP-RAP STRUCTURE PAYITEM

PIPE CLEANOUT

RETAIN

WARP GUTTER TO CB

REMOVE

FOUNTAIN ALBERMARLE LIMITED PA.

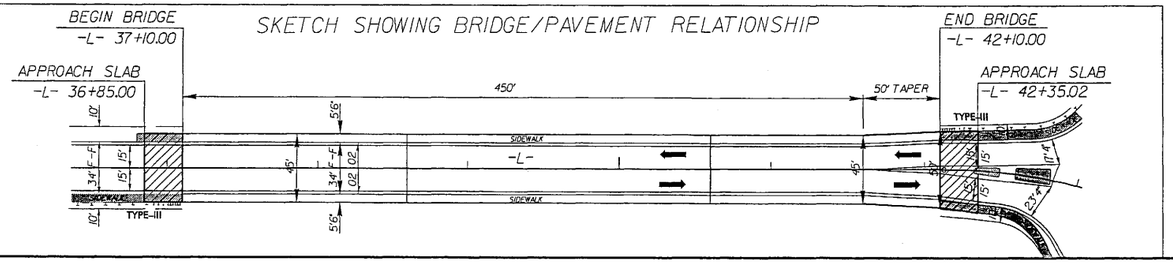
WARP GUTTER TO CB
GEORGE T. THORNE

REM CB
RETAIN

MARIE S. WILLIAMS

HELEN G. QUIGLESS

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP



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PROJECT REFERENCE NO.	SHEET NO.
B-2965	9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM 2
-L- 35+76.57 EL = 32.80' 212.86' RT
RR SPIKE IN BASE OF 36" PECAN

-BL- 3
EL = 47.64'

FOR -L- PLAN VIEW SEE SHEET 6

-L-

BM 3
-L- 42+76.56 EL = 49.57' 5.81' LT
RR SPIKE IN BASE OF 18" PINE

-BL-101
EL = 49.62'

BLEND TO EXISTING

BEGIN BRIDGE
-L- STA. 37+10.00

EXISTING BRIDGE

PI = 39+60.00
EL = 56.30'
VC = 510'
K = 106
DS = 50

(+)12.3395%

(-)2.4677%

END BRIDGE
-L- STA. 42+10.00

END GRADE
-L- STA. 42+84.19
EL = 48.30'

ROUNDABOUT

BEGIN GRADE
-L- STA. 44+04.34
EL = 49.55'

(+)0.7807%

END GRADE
-L- STA. 45+35.00
EL = 50.57'

-L- STA. 46+00.00

TEMPORARY WORK BRIDGE

-L- 43+04.25 PI = 10+00.00 AH =
-R- 12+51.33 BK
EL = 48.70'

-L- 43+84.29 PI = 11+25.66
-R- 11+25.66
EL = 49.95'

OHW ELEV. = 25.4 +/-

WS ELEV. = 24.4 (12-20-05)

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 40,000	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 44.7	FT
BASE DISCHARGE	= 46,700	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 46.3	FT
OVERTOPPING DISCHARGE	= 57,800	CFS
OVERTOPPING FREQUENCY	= 200	YRS
OVERTOPPING ELEVATION	= 49.4	FT
DATE OF SURVEY	= 12-20-05	
W.S. ELEVATION AT DATE OF SURVEY	= 24.4	FT

-R-

FOR -R- PLAN VIEW SEE SHEET 2-E & 6

BEGIN GRADE
-R- STA. 10+00.00 AH =
-R- STA. 12+51.33 BK
-L- 43+04.25
EL = 48.70'

PI = 11+25.67
EL = 50.58'
VC = 125.67'
K = 31
DS = 35

(+)1.997%

(-)1.997%

END GRADE
-R- STA. 12+51.33 BK =
-R- STA. 10+00.00 AH
-L- 43+04.25
EL = 48.70'

PI = 10+00.00 AH =
PI = 12+51.33 BK
EL = 48.07'
VC = 125.66'
K = 31
DS = 35

-R- 10+76.77
-Y2- 10+40.00
EL = 49.57'

-R- 11+25.67
-L- 43+84.29
EL = 49.95'

-R- 12+02.43
-Y1- 15+90.12
EL = 49.08'

-DRIVE-

BEGIN GRADE
-DRIVE- STA. 10+16.17
EL = 46.51'

PI = 10+70.00
EL = 45.68'
VC = 100'
K = 23

PI = 11+75.00
EL = 48.56'
VC = 20'
K = 8

PI = 12+20.00
EL = 48.70'
VC = 20'
K = 7

END GRADE
-DRIVE- STA. 12+30.00
EL = 49.03'

(-)1.5419%

(+)2.7417%

(+)0.3202%

(+)3.2716%

FOR -DRIVE- PLAN VIEW SEE SHEET 6

Buffer Drawing
Sheet 6 of 6

5/28/
1/22/2008
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See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

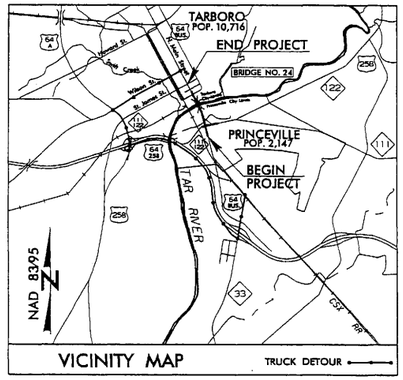
EDGECOMBE COUNTY

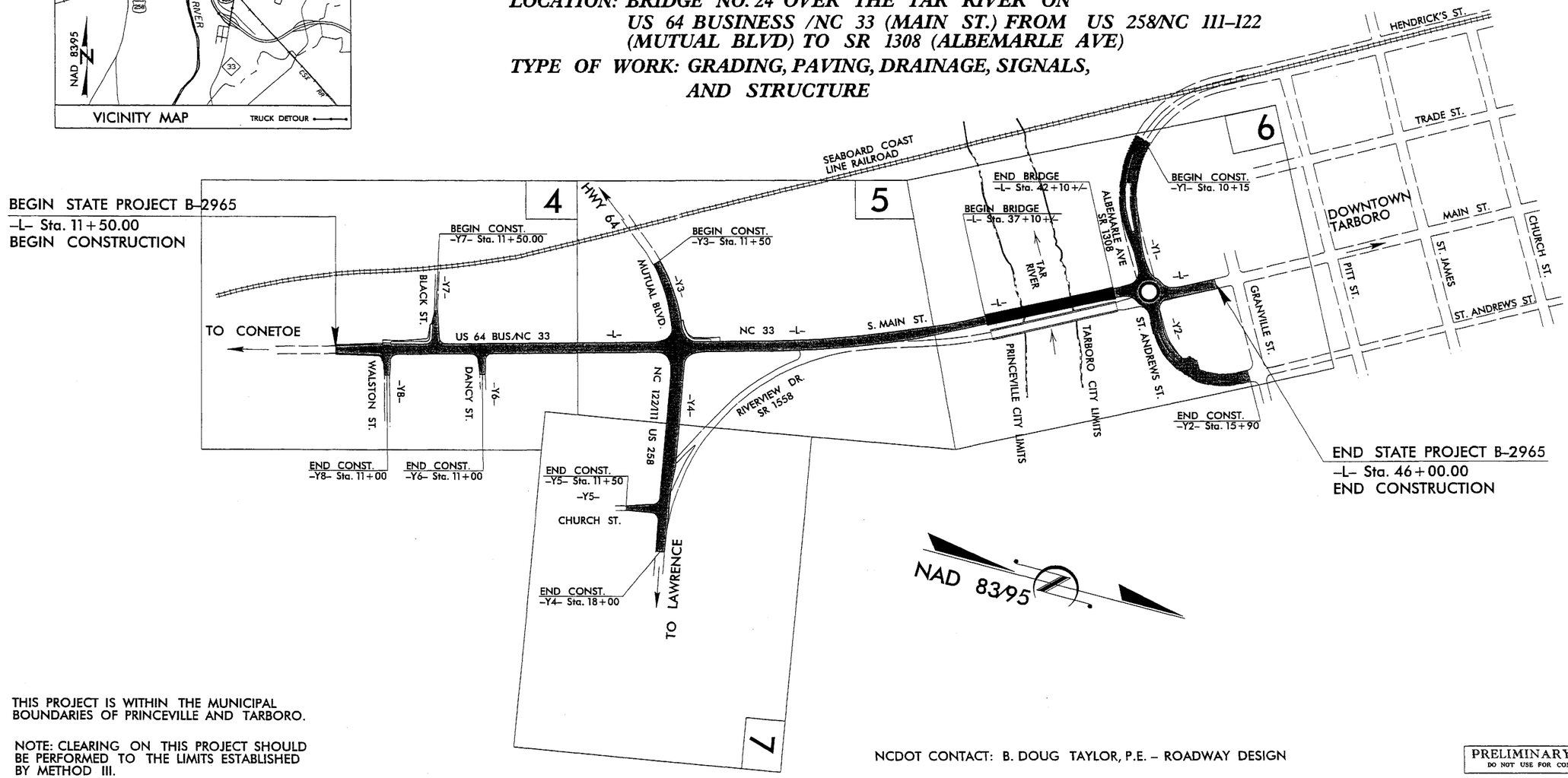
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-2965	1	

WBS NO.	F. A. PROJ. NO.	DESCRIPTION
32782.1.1	BRSTP-064B(1)	P.E.
32782.2.2	BRSTP-064B(1)	R.O.W. /UTILITIES

LOCATION: BRIDGE NO. 24 OVER THE TAR RIVER ON US 64 BUSINESS /NC 33 (MAIN ST.) FROM US 258/NC 111-122 (MUTUAL BLVD) TO SR 1308 (ALBEMARLE AVE)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNALS, AND STRUCTURE





THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF PRINCEVILLE AND TARBORO.

NOTE: CLEARING ON THIS PROJECT SHOULD BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

NCDOT CONTACT: B. DOUG TAYLOR, P.E. – ROADWAY DESIGN

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TIP PROJECT: B-2965

CONTRACT: 32782.3.1

1/18/2008
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GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2008 = 13,350
ADT 2028 = 17,950
DHV = 10 %
D = 60 %
T = 5 % *
V = 40 MPH &
25 MPH ON BRIDGE & NORTH INCLUDING ROUNDABOUT
* TTST 3 % DUAL 2 %
FUNC CLASS: COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-2965	=	0.559 MILES
LENGTH STRUCTURE TIP PROJECT B-2965	=	0.095 MILES
TOTAL LENGTH TIP PROJECT B-2965	=	0.654 MILES

Prepared in the Office of:
MULKEY
ENGINEERS & CONSULTANTS

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 21, 2007

LETTING DATE: DECEMBER 16, 2008

TIM HAYES, P.E.
PROJECT ENGINEER

JEFF RECK, P.E.
HYDRAULICS ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

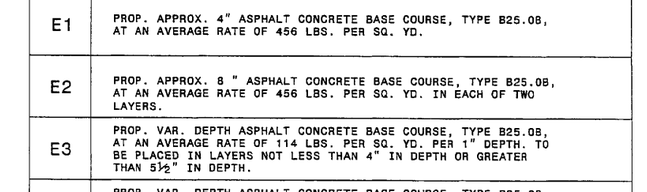
P.E.
STATE HIGHWAY DESIGN ENGINEER

PROJECT REFERENCE NO.	SHEET NO.
B-2965	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

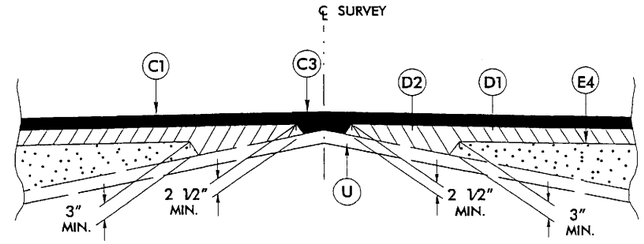
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

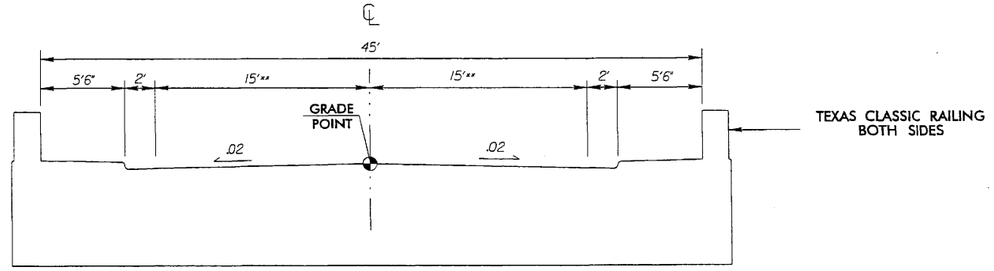
A1	7" PORTLAND CEMENT CONCRETE PAVEMENT.
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. PER 1½" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 4 " ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. APPROX. 8 " ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 4" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
E4	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 5½" IN DEPTH.
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	9"x18" CONCRETE CURB.
R3	1'-6" CONCRETE CURB AND GUTTER.
R4	5" MONOLITHIC CONCRETE ISLAND (KEYED IN).
S	4" CONCRETE SIDEWALK.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).



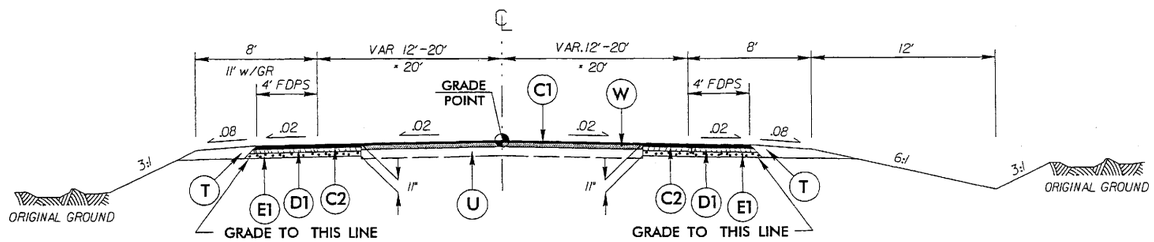
MILLING DETAIL FOR PROFILE CONNECTIONS
TYING PROPOSED PAVEMENTS TO EXISTING PAVEMENTS



STANDARD WEDGING DETAIL



TYPICAL SECTION ON STRUCTURE
** WIDENED AN ADDITIONAL 1' FOR HYDRAULIC SPREAD



TYPICAL SECTION NO. 1

–L– STA. 11+50.00 TO 13+00.00
* –L– STA. 13+00.00 TO 13+59.00
–Y3– STA. 11+50.00 TO 13+90.00

NOTES:

1. SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 1' MINIMUM WIDTH FULL DEPTH PAVEMENT.

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

3. SEE MILLING DETAIL FOR PROFILE CONNECTIONS.

1/8/2008
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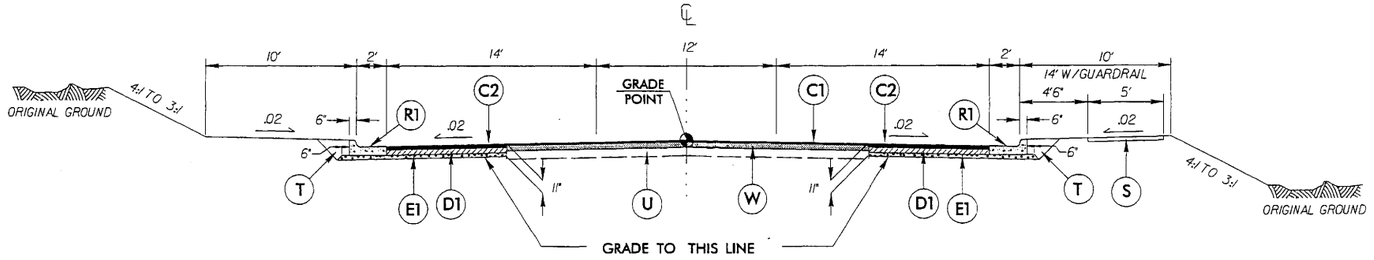
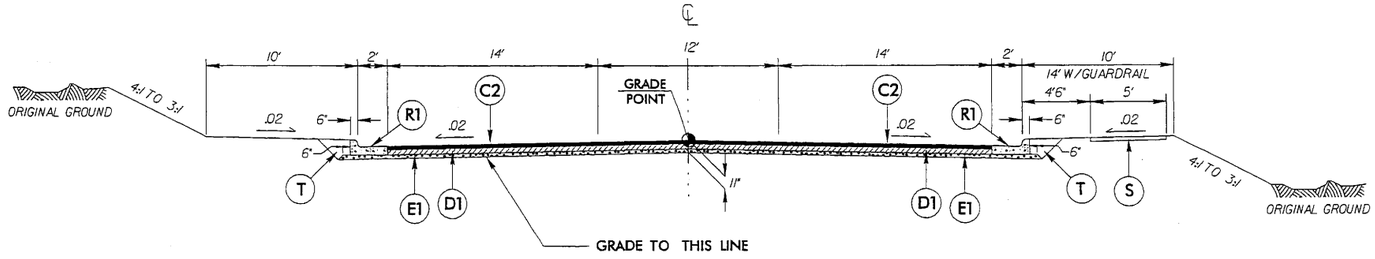
PROJECT REFERENCE NO.	SHEET NO.
B-2965	2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 2

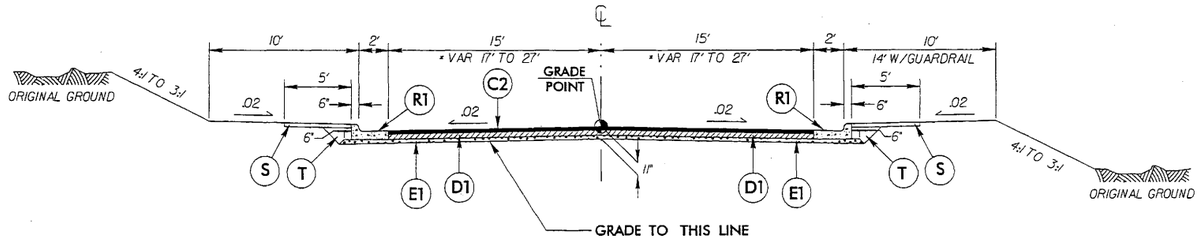
–L– STA. 13+59.00 TO 31+84.04



TYPICAL SECTION NO. 3

–L– STA. 31+84.04 TO 34+25.00

TRANSITION FROM T.S. NO. 3 TO T.S. NO. 4
–L– STA. 34+25.00 TO 35+60.00



TYPICAL SECTION NO. 4

–L– STA. 35+60.00 TO 37+10.00 (BEGIN BRIDGE)
* –L– STA. 42+10.00 (END BRIDGE) TO 42+84.19 (ROUNDABOUT)

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
A1	7" PCCP
C1	1½" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	4" I19.0B
D2	VAR. I19.0B
E1	4" B25.0B
E2	8" B25.0B
E3	VAR. B25.0B (4"min)
E4	VAR. B25.0B (3"min)
R1	2'-6" C & G
R2	9"x18" CURB
R3	1'-6" C & G
R4	5" CONC. ISLAND
S	SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

NOTES:

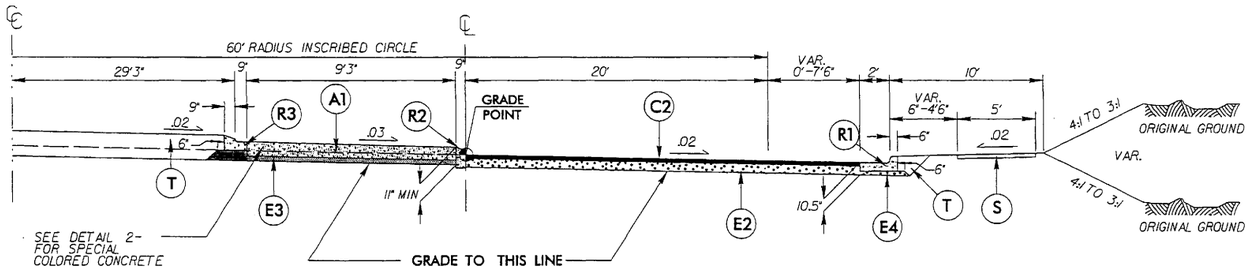
1. SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 1' MINIMUM WIDTH FULL DEPTH PAVEMENT.

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

3. SEE MILLING DETAIL FOR PROFILE CONNECTIONS.

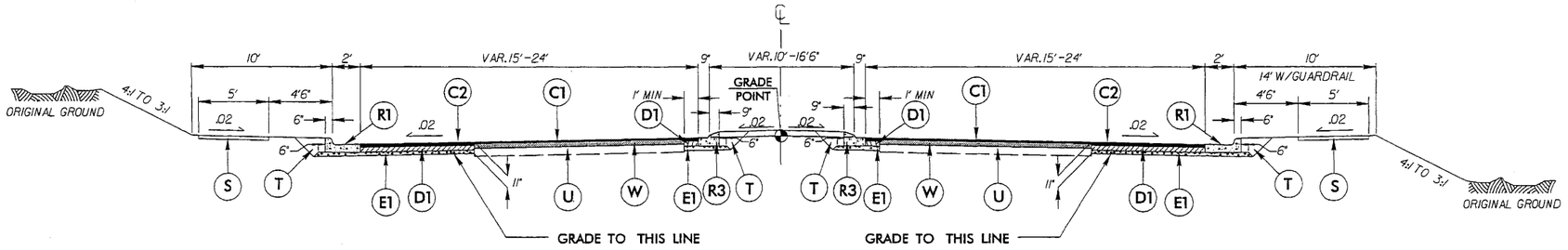
PROJECT REFERENCE NO.	SHEET NO.
B-2965	2-B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 5

–R– STA. 10+00.00 TO 12+51.33



TYPICAL SECTION NO. 6

–Y1– STA. 12+50.00 TO 13+87.58

–Y2– STA. 12+50.65 TO 13+15.00

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
A1	7" PCCP
C1	1½" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	4" I19.0B
D2	VAR. I19.0B
E1	4" B25.0B
E2	8" B25.0B
E3	VAR. B25.0B (4"min)
E4	VAR. B25.0B (3"min)
R1	2'-6" C & G
R2	9"x18" CURB
R3	1'-6" C & G
R4	5" CONC. ISLAND
S	SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

NOTES:

1. SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 1' MINIMUM WIDTH FULL DEPTH PAVEMENT.

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

3. SEE MILLING DETAIL FOR PROFILE CONNECTIONS.

6/2/

1/18/2008
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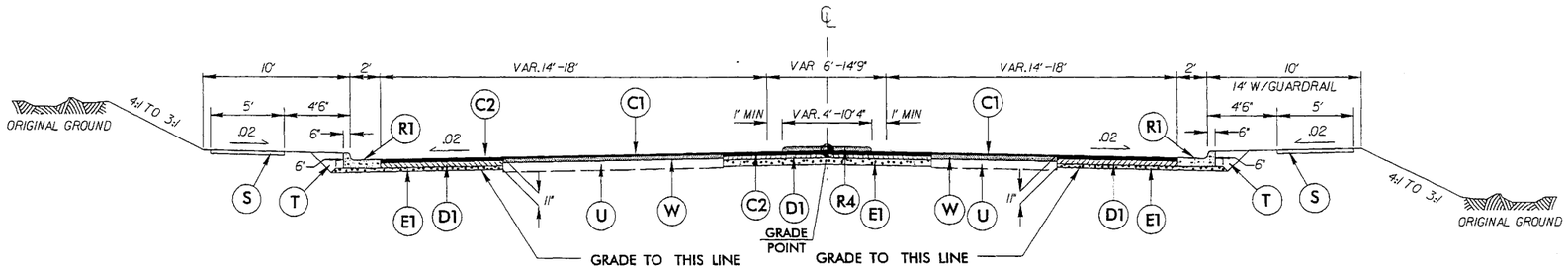
PROJECT REFERENCE NO.	SHEET NO.
B-2965	2-C
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

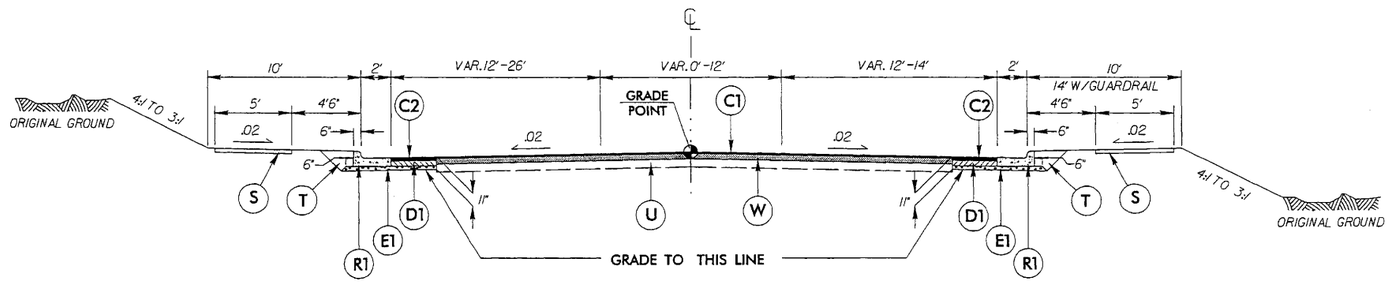
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 7

–Y1– STA. 13+87.58 TO 15+70.12 (ROUNDABOUT)
–Y2– STA. 10+60.00 (ROUNDABOUT) TO 12+50.65

TRANSITION FROM T.S. NO. 6 TO EXISTING
–L– STA. 44+04.34 (ROUNDABOUT) TO 46+00.00



TYPICAL SECTION NO. 8

–Y4– STA. 10+20.11 TO 18+00.00
–Y3– STA. 13+90.00 TO 14+73.87

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
A1	7" PCCP
C1	1½" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	4" I19.0B
D2	VAR. I19.0B
E1	4" B25.0B
E2	8" B25.0B
E3	VAR. B25.0B (4"min)
E4	VAR. B25.0B (3"min)
R1	2'-6" C & G
R2	9"x18" CURB
R3	1'-6" C & G
R4	5" CONC. ISLAND
S	SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

NOTES:

1. SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 1' MINIMUN WIDTH FULL DEPTH PAVEMENT.

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

3. SEE MILLING DETAIL FOR PROFILE CONNECTIONS.

6/2

1/18/2008
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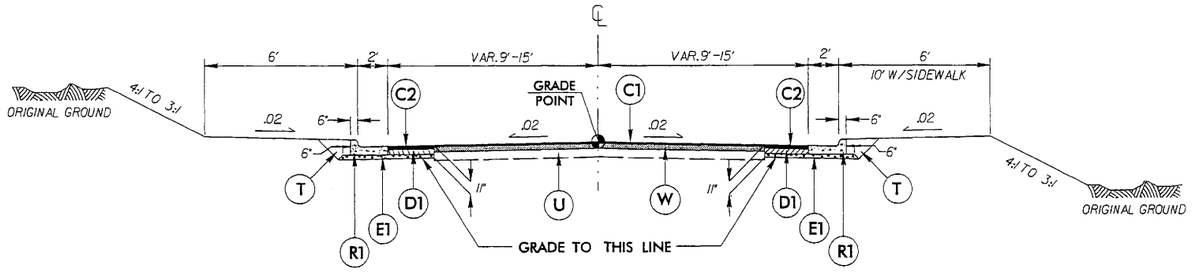
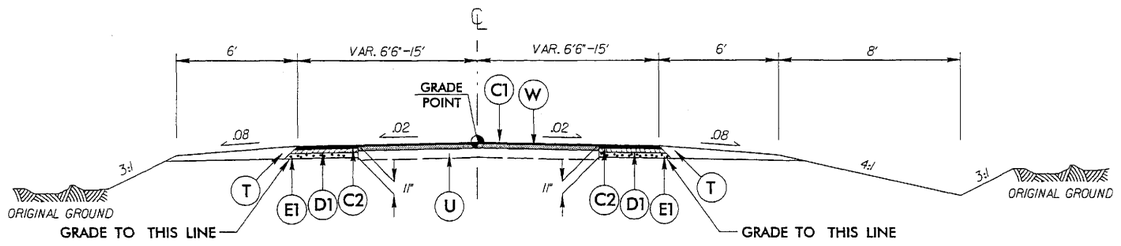
PROJECT REFERENCE NO.	SHEET NO.
B-2965	2-D
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 9

–Y5– STA. 10+20.07 TO 11+50.00
–Y6– STA. 10+20.00 TO 10+46.40
–Y7– STA. 12+53.16 TO 12+80.00
–Y8– STA. 10+20.00 TO 10+44.94



TYPICAL SECTION NO. 10

–Y6– STA. 10+46.40 TO 11+00.00
–Y7– STA. 11+50.00 TO 12+53.16
–Y8– STA. 10+44.94 TO 11+00.00

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
A1	7" PCCP
C1	1½" S9.5B
C2	3" S9.5B
C3	VAR. S9.5B
D1	4" I19.0B
D2	VAR. I19.0B
E1	4" B25.0B
E2	8" B25.0B
E3	VAR. B25.0B (4"min)
E4	VAR. B25.0B (3"min)
R1	2'-6" C & G
R2	9"x18" CURB
R3	1'-6" C & G
R4	5" CONC. ISLAND
S	SIDEWALK
T	EARTH MATERIAL
U	EXIST. PAVEMENT
W	WEDGING

NOTES:

1. SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT TO PROVIDE 1' MINIMUM WIDTH FULL DEPTH PAVEMENT.

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

3. SEE MILLING DETAIL FOR PROFILE CONNECTIONS.

6/21/
1/18/2008
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PROJECT REFERENCE NO.	SHEET NO.
B-2965	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 8
FOR -Y6- PROFILE SEE SHEET 11
FOR -Y7- PROFILE SEE SHEET 11
FOR -Y8- PROFILE SEE SHEET 11

TRAFFIC DIAGRAM

US 64 BUS/NC 33 — -L-

7,900 / 10,300	100 / 200	800 / 1,100	8,500 / 11,200

-Y8- WALSTON ST.

ADT 2005 / ADT 2030: 900 / 1,300

TRAFFIC DIAGRAM

ADT 2005 / ADT 2030

-Y7- BLACK ST.: 200 / 300

8,500 / 11,200	-100 / 100	200 / 200	8,800 / 11,300

US 64 BUS/NC 33 — -L-

TRAFFIC DIAGRAM

US 64 BUS/NC 33 — -L-

8,800 / 11,300	100 / 200	200 / 300	8,900 / 11,400

-Y6- DANCY ST.

ADT 2005 / ADT 2030: 300 / 500

NAD 83/95

-L- POT Sta. 10+00.00
BEGIN STATE PROJECT B-2965
BEGIN CONSTRUCTION
-L- POT Sta. 11+50.00
-Y7- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-Y7- POT Sta. 11+50.00
-L- POT Sta. 15+44.14
-Y7- POT Sta. 13+00.02
-L- POT Sta. 13+51.77
-Y8- POT Sta. 10+00.00
-L- POT Sta. 17+27.06
-Y6- POT Sta. 10+00.00
END CONSTRUCTION
-Y6- POT Sta. 11+00.00
END CONSTRUCTION
-Y8- POT Sta. 11+00.00
-Y8- POT Sta. 11+68.25
-Y6- POT Sta. 11+58.59
MATCH LINE SHEET 5
-L- STA. 21+00.00
BL-104 POT 5+00.00
(-L- Sta. 20+16.57 31.54 RT)

LUCILLE S. JOHNSON DB 1316 PG 513
GLENNIE MATTHEWSON HEIRS DB 488 PG 88
MARY ELIZA LLOYD HEIRS
1 JAMES H. COFIELD DB 990 PG 781
3 ENOCH ARMFIELD DB 867 PG 381
5 JAMES E. BRIDGERS, ET UX DB 1092 PG 588
6 MARY ELIZABETH BLACK DB 884 PG 869
8 GLENNIE MATTHEWSON NO RECORDS
10 JAMES J. PARKER, JR. DB 1078 PG 481
12 MILTON M. DAVIS DB 97E PG 145
13 PRINCEVILLE CDC EAST TARBORO DB 1403 PG. 19
11 TOWN OF PRINCEVILLE
CHARLES G. WILLIAMS DB 1151PG 243
MARY B. COFIELD DB 1348 PG 964
2 EVA JONES HEIRS SP 766-162 DB 769 PG 241
4 C. B. REYNOLDS DB 4065 PG 197
DENNIS TAYLOR DB 1290 PG 167
JOSEPH PORTER DB 958 PG 446
EMMA GODWIN, DB 1313 PG 1001
L. V. STATON DB 1228 PG 105
5A JAMES E. BRIDGERS, EU UX DB 1233 PG 1082 DB 885 PG 528
7 ELAINE BRIDGERS DB 896 PG 288
9 EMMA DANCY WILKINS DB 1162 PG 953
11 TOWN OF PRINCEVILLE

US 64 BUS
SR 8/4
DANCY ST. SR 1651
BLACK ST. SR 1652
WALSTON ST. SR 1654

REVISIONS 8/17/9

4/30/2008
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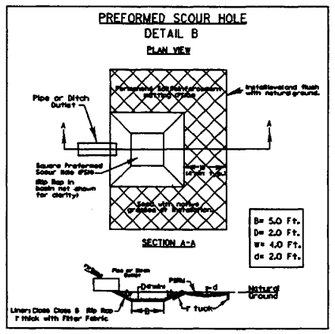
8/17/99

REVISIONS

B-2965	5

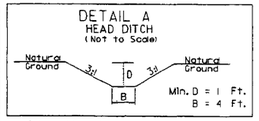
FOR -L- PROFILE SEE SHEET 8
FOR -Y3- PROFILE SEE SHEET 10
FOR -Y4- PROFILE SEE SHEET 10

PREFORMED SCOUR HOLE
DETAIL B



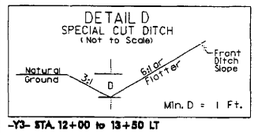
-L- STA. 29+38 LT

DETAIL A
HEAD DITCH
(Not to Scale)



-L- STA. 27+65 RT

DETAIL D
SPECIAL CUT DITCH
(Not to Scale)

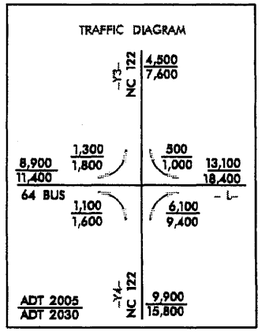


-Y3- STA. 12+00 to 13+50 LT

PI Sta 32+52.79
Δ = 11° 42' 06.8" (LT)
D = 1° 25' 56.6"
L = 816.95'
T = 409.90'
R = 4,000.00'
SE = RC
RO = 4%

PI Sta 12+62.88
Δ = 35° 23' 36.4" (RT)
D = 8° 48' 53.0"
L = 401.53'
T = 207.40'
R = 650.00'
SE = 04
RO = 4%

TRAFFIC DIAGRAM



CUL1	782336.0495	2435113.4962	25.30
CUL2	782339.9068	2435112.3884	25.29
CEI	782337.8329	2435112.8765	29.35
HWI	782337.6994	2435112.5993	30.93
CUL3	782334.5322	2435038.0763	24.69
CUL4	782317.7386	2435037.0250	24.73

8/17/9

REVISIONS

-L-

PI Sta 32+52.79	PI Sta 42+79.22	PI Sta 44+13.34
Δ = 11° 42' 06.8" (LT)	Δ = 21° 33' 20.7" (RT)	Δ = 22° 19' 38.7" (LT)
D = 1° 25' 56.6"	D = 16° 22' 12.8"	D = 16° 22' 15.3"
L = 816.95'	L = 131.68'	L = 136.38'
T = 409.90'	T = 66.63'	T = 69.07'
R = 4,000.00'	R = 350.00'	R = 349.99'
SE = RC	SE = 02	SE = 02
RO = 41'	RO = SEE PLANS	RO = SEE PLANS

-Y1-

PI Sta 11+90.90
Δ = 45° 58' 34.6" (LT)
D = 12° 43' 56.6"
L = 361.10'
T = 190.90'
R = 450.00'
SE = NC
RO = SEE PLANS

-Y2-

PI Sta 14+02.73
Δ = 88° 34' 24.5" (LT)
D = 22° 55' 05.9"
L = 386.47'
T = 243.85'
R = 250.00'
SE = NC
RO = SEE PLANS

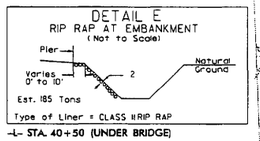
-R-

PI Sta 10+57.10	PI Sta 11+04.80	PI Sta 11+82.76	PI Sta 12+30.46
Δ = 109° 58' 15.1" (LT)	Δ = 70° 01' 45.4" (LT)	Δ = 109° 57' 56.8" (LT)	Δ = 70° 02' 02.8" (LT)
D = 143° 14' 22.0"	D = 143° 14' 22.0"	D = 143° 14' 22.0"	D = 143° 14' 22.0"
L = 76.77'	L = 48.89'	L = 76.77'	L = 48.89'
T = 57.10'	T = 28.02'	T = 57.09'	T = 28.03'
R = 40.00'	R = 40.00'	R = 40.00'	R = 40.00'
SE = 02	SE = 02	SE = 02	SE = 02

-DRIVE-

PI Sta 10+55.24	PI Sta 11+21.47	PI Sta 12+07.57
Δ = 84° 53' 14.7" (LT)	Δ = 3° 15' 10.2" (LT)	Δ = 107° 28' 09.2" (RT)
D = 229° 10' 59.2"	D = 3° 07' 31.3"	D = 229° 10' 59.2"
L = 37.04'	L = 104.08'	L = 46.89'
T = 22.86'	T = 52.05'	T = 34.08'
R = 25.00'	R = 1,833.25'	R = 25.00'

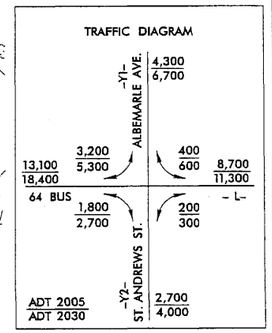
DETAIL E
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner = CLASS II RIP RAP

-L- STA. 40+50 (UNDER BRIDGE)

TRAFFIC DIAGRAM



PROJECT REFERENCE NO.	SHEET NO.
B-2965	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L-, -R- ROUNDABOUT DETAIL SEE DETAIL SHEET 2-E
FOR -L- PROFILE SEE SHEET 9
FOR -Y1- PROFILE SEE SHEET 10
FOR -Y2- PROFILE SEE SHEET 10
FOR -R- PROFILE SEE SHEET 9
FOR -DRIVE- PROFILE SEE SHEET 9

NAD 1983

BY1-102-POT 6+00.00
(-Y1- STA 13+98.75 39.79 RT)

-L- POC Sta. 43+04.25
-R- PC Sta.10+00.00 =
-R- PCC Sta.12+51.33

-L- PC Sta.42+12.59
END BRIDGE
-L- POT Sta. 42+10.00

-DRIVE- PCSta. 10+32.37
-DRIVE- POTSta. 10+00.00
N64°08'14.5"E

-L- PTSta. 36+59.84
BEGIN BRIDGE
-L- POT Sta. 37+10.00

NOTE: PROVIDE ACCESS TO LOG HOUSE AT ALL TIME DURING CONSTRUCTION

NOTE: ALL CONSTRUCTION ACTIVES ON OR AROUND FLOOD CONTROL DIKE SHOULD BE SUBMITTED TO AND APPROVED BY THE ENGINEER.

DO NOT DISTURB DIKE

DIKE EASEMENT DB 712 PG 308

E.J.POPE & SON,INC. DB 1002 PG 332

CLASS II RIP RAP STRUCTURE PAYITEM

CLASS II RIP RAP SEE DETAIL E STRUCTURE PAY ITEM

EDGECOMBE COUNTY DB 712 PG 300

NO DECK DRAINS REQUIRED

TARBORO TOWN LIMITS RIVER BANK

TARBORO CITY LIMITS

PRINCEVILLE TOWN LIMITS RIVER BANK IS PROPERTY LINE

TOWN OF TARBORO DB 912 PG. 330

DO NOT DISTURB FLAG POLE

WARP GUTTER TO CB

-L- PRC Sta. 43+44.27
-Y1- POT Sta.16+30.13
-Y2- POT Sta.10+00.00
-L- POC Sta. 43+84.29
-R- PCC Sta.11+25.67
BL- 101 POT 19+99.90=
BY1- POT 7+81.13=
BY2- POT 5+00.00
(-L- STA. 44+61.08 34.59 LT)
(-Y1- Sta. 16+23.13 45.45 LT)
-L- PT Sta. 44+80.65

-Y1- PC Sta.10+00.00
BEGIN CONSTRUCTION
-Y1- POC Sta.10+15.00

BEGIN GRADE
-Y1- POC Sta.12+50.00

-Y1- PT Sta.13+61.10

-Y1- POT Sta.15+90.12
-R- PCC Sta.12+02.43

FOUNTAIN ALBEMARLE LIMITED PA. DB 1135 PG 460

-Y2- POT Sta.10+40.00
-R- PCC Sta.10+76.77
-Y2- PC Sta.11+58.88

-Y2- PT Sta.15+45.35

END GRADE
-Y2- POC Sta.13+15.00
MARIE S. WILLIAMS DB 1318 PG 164

-Y2- POT Sta. 16+76.00

END CONSTRUCTION
-Y2- POC Sta. 15+90.00

END STATE PROJECT B-2965
END CONSTRUCTION
-L- POT Sta. 46+00.00
-L- POT Sta. 49+53.05

HELEN G. QUIGLESS DB 1140 PG 159

-DRIVE- PTSta. 12+20.38
N 83° 27' 58.8" E

-DRIVE- POTSta. 12+38.99
N 75° 18' 34.2" E

-DRIVE- POTSta. 12+58.83

BL-PINC 12+01.55 (NCGS "PRINCE")
(-L- Sta. 36+60.91 81.78 RT)

POWELL PARK

PRINCEVILLE REDEVELOPMENT COMMISSION DB 1014 PG 459

DIKE EASEMENT DB 712 PG 302

PRINCEVILLE BAPTISM SITE

DO NOT DISTURB SITE

DO NOT DISTURB DIKE

THOMAS B. LANCASTER MEBORN DB 883 PG. 117

REMOVE EXIST. SIDEWALK

REMOVE BRIDGE STRUCTURE PAY ITEM

CHAIN LINK FENCE

DO NOT DISTURB BUILDING

BY2-103-POT 7+02.02
(-Y2- STA 11+35.62 27.64 RT)
TOWN OF TARBORO DB UNKNOWN

GEORGE T. THORNE DB 1363 PG 922

REMOVE ISLAND

-L- PT Sta. 37+59.84

-L- PT Sta. 42+10.00

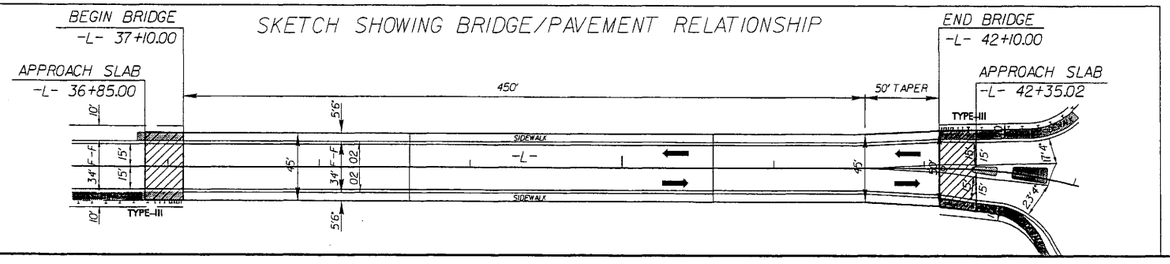
-L- PC Sta. 42+12.59

-L- PT Sta. 36+59.84

-L- STA 35+00.00

MATCH LINE SHEET 5

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP



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PROJECT REFERENCE NO.	SHEET NO.
B-2965	7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

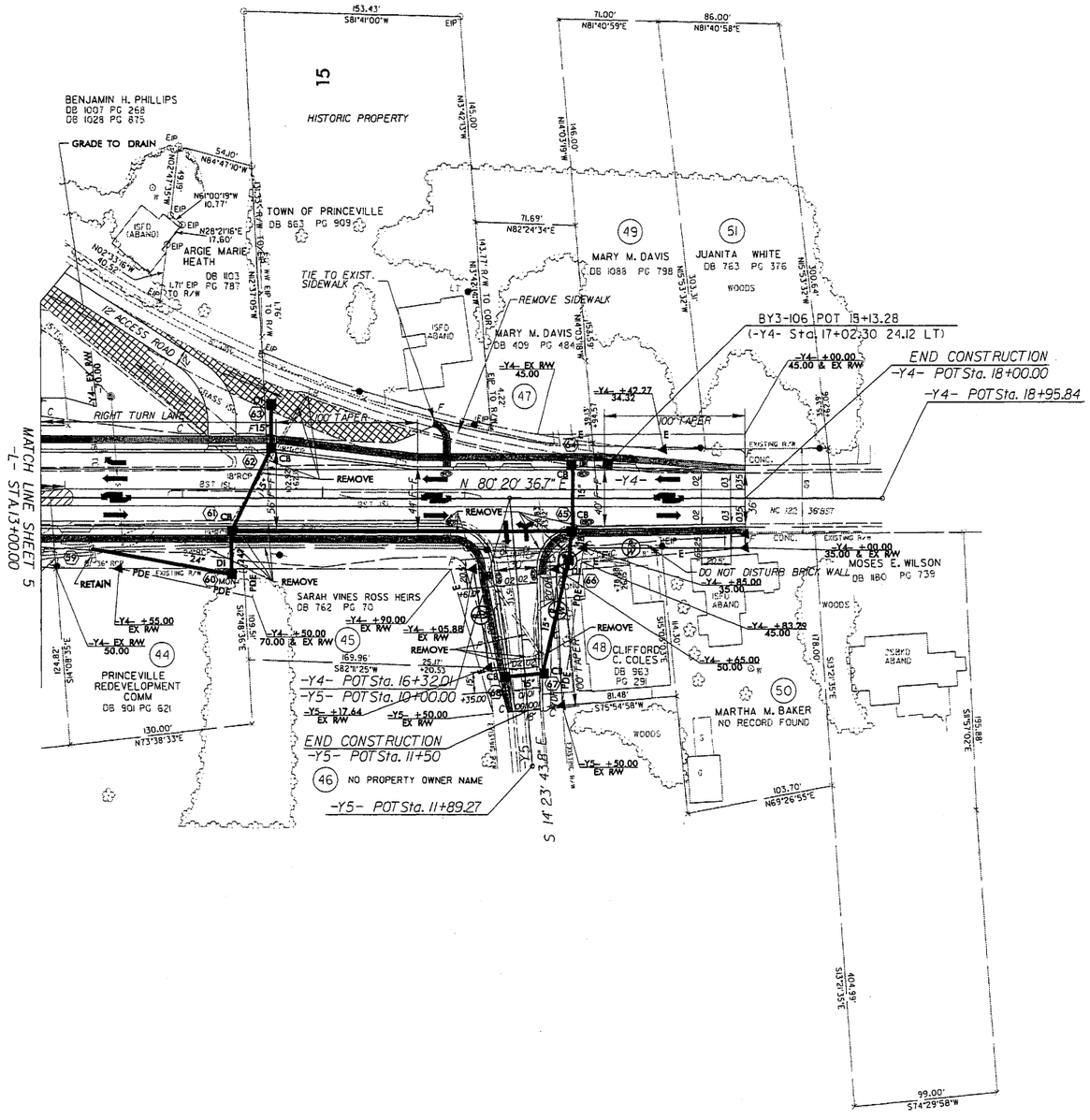
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -Y4- PROFILE SEE SHEET 10
FOR -Y5- PROFILE SEE SHEET 11

NAD 83'95

REVISIONS

8/17/9



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PROJECT REFERENCE NO.	SHEET NO.
B-2965	8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-

FOR -L- PLAN VIEW SEE SHEET 4 & 5

-BL- 104
EL = 37.81'

BLEND TO EXISTING

-L- STA.11+50.00

BEGIN GRADE
-L- STA.13+00.00
EL = 37.79'

PI = 14+00.00
EL = 38.09'
VC = 200'
K = 3.33
DS = 75

PI = 16+00.00
EL = 37.49'
VC = 200'
K = 292
DS = 80

PI = 21+00.00
EL = 39.42'
VC = 450'
K = 590
DS = 60

(+)0.3000% (-)0.3000% (-)0.3000% (+)0.3860% (+)0.3860% (-)0.3771%

-L- 13+45.77
-Y8- 10+00.00
EL = 37.91'

-L- 15+44.14
-Y7- 13+00.02
EL = 37.69'

-L- 17+21.06
-Y6- 10+00.00
EL = 37.98'

-BL- 1
EL = 36.49'

BM 1
-L- 29+24.46 EL = 36.22' 39.72' RT
RR SPIKE IN BASE OF POWER POLE

-BL- A2
EL = 37.50'

-BL- 2
EL = 37.50'

-L-

FOR -L- PLAN VIEW SEE SHEET 5

PI = 24+50.00
EL = 38.10'
VC = 250'
K = 368
DS = 80

PI = 26+75.00
EL = 38.78'
VC = 200'
K = 332
DS = 80

PI = 31+50.00
EL = 37.35'
VC = 550'
K = 208
DS = 75

(-)0.3771% (+)0.3022% (+)0.3022% (-)0.3011% (-)0.3011% (+)2.5395%

-L- 25+03.99
-Y3- 14+50.08
-Y4- 10+00.00
EL = 38.33'

5/28/

1/18/2008
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PROJECT REFERENCE NO.	SHEET NO.
B-2965	9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM 2
-L- 35+76.57 EL = 32.80' 212.86' RT
RR SPIKE IN BASE OF 36" PECAN

-BL- 3
EL = 47.64'

FOR -L- PLAN VIEW SEE SHEET 6

-L-

BM 3
-L- 42+76.56 EL = 49.57' 5.81' LT
RR SPIKE IN BASE OF 18" PINE

-BL-101
EL = 49.62'

BLEND TO EXISTING

BEGIN BRIDGE
-L- STA 37+10.00

END BRIDGE
-L- STA 42+10.00

END GRADE
-L- STA 42+84.19
EL = 48.30'

BEGIN GRADE
-L- STA 44+04.34
EL = 49.55'

END GRADE
-L- STA 45+35.00
EL = 50.57'

-L- STA 46+00.00

PI = 39+60.00
EL = 56.30'
VC = 510'
K = 106
DS = 50

(+)2.3395%
(-)2.4677%
ROUNDABOUT
(+)0.7807%

-L- 43+04.25
-R- 10+00.00 AH
-R- 12+51.33 BK
EL = 48.70'

-L- 43+84.29
-R- 11+29.66
EL = 49.95'

BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 40,000	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 44.7	FT
BASE DISCHARGE	= 46,700	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 46.3	FT
OVERTOPPING DISCHARGE	= 57,800	CFS
OVERTOPPING FREQUENCY	= 200	YRS
OVERTOPPING ELEVATION	= 49.4	FT
DATE OF SURVEY	= 12-20-05	
W.S. ELEVATION AT DATE OF SURVEY	= 24.4	FT

-R-

FOR -R- PLAN VIEW SEE SHEET 2-E & 6

BEGIN GRADE
-R- STA 10+00.00 AH =
-R- STA 12+51.33 BK
EL = 48.70'

PI = 11+25.67
EL = 50.58'
VC = 125.67'
K = 31
DS = 35

(+)1.997%
(-)1.997%

END GRADE
-R- STA 12+51.33 BK =
-R- STA 10+00.00 AH
EL = 48.70'

PI = 10+00.00 AH =
PI = 12+51.33 BK
EL = 48.07'
VC = 125.66'
K = 31
DS = 35

-R- 10+76.77
-L- 10+40.00
EL = 49.57'

-R- 11+25.67
-L- 43+84.29
EL = 49.95'

-R- 12+02.43
-L- 15+90.12
EL = 49.08'

-DRIVE-

BEGIN GRADE
-DRIVE- STA 10+16.17
EL = 46.51'

PI = 10+70.00
EL = 45.68'
VC = 100'
K = 23

(-)1.549%
(+)2.741%

PI = 11+75.00
EL = 48.56'
VC = 20'
K = 8

PI = 12+20.00
EL = 48.70'
VC = 20'
K = 7

(+)0.3202%
(+)3.271%

END GRADE
-DRIVE- STA 12+30.00
EL = 49.63'

FOR -DRIVE- PLAN VIEW SEE SHEET 6

5/28/

1/8/2008
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PROJECT REFERENCE NO.	SHEET NO.
B-2965	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/28/

-Y1-

FOR -Y1- PLAN VIEW SEE SHEET 6

-BY1- 102
EL = 46.63'

-BY1- A101
EL = 49.62'

BEGIN GRADE
-Y1- STA.12+50.00
EL = 48.17'

END GRADE
-Y1- STA.15+70.12
EL = 48.68'

(+)0.6154%

ROUNDABOUT

-R- 12+02.43
-Y1- 13+90.22
EL = 49.08'

-Y2-

FOR -Y2- PLAN VIEW SEE SHEET 6

-BY2- 103
EL = 49.27'

BEGIN GRADE
-Y2- STA.10+60.00
EL = 49.17'

PI = 11+80.00
EL = 51.60'
VC = 240'
K = 103
DS = 50

(+)2.0250%

(-)0.2963%

END GRADE
-Y2- STA.13+15.00
EL = 51.20'

ROUNDABOUT

-R- 10+76.17
-Y2- 10+40.00
EL = 49.57'

-Y3-

FOR -Y3- PLAN VIEW SEE SHEET 5

-BY3- 105
EL = 40.37'

-BY3- A1
EL = 36.49'

BEGIN GRADE
-Y3- STA.12+50.00
EL = 40.25'

PI = 13+50.00
EL = 36.72'
VC = 200'
K = 73
DS = 40

(-)1.7650%

(-)0.3000%

(+)0.9768%

END GRADE
-Y3- STA.14+13.87
EL = 37.93'

BEGIN SPECIAL CUT
-Y3- STA.12+90.00 LT
EL = 35.28'

END SPECIAL CUT
-Y3- STA.13+50.00 LT
EL = 35.73'

-L- 25+03.99
-Y3- 14+93.88
-Y4- 10+00.00
EL = 38.33'

-Y4-

FOR -Y4- PLAN VIEW SEES SHEETS 5 & 7

-BY3-106
EL = 37.85'

BEGIN GRADE
-Y4- STA.10+20.11
EL = 37.93'

PI = 11+00.00
EL = 37.01'
VC = 150'
K = 95
DS = 45

(-)1.5116%

(+)0.4200%

PI = 15+50.00
EL = 38.90'
VC = 150'
K = 214
DS = 65

(+)0.4200%

(-)0.2800%

END GRADE
-Y4- STA.18+00.00
EL = 38.20'

-L- 25+03.99
-Y3- 14+93.88
-Y4- 10+00.00
EL = 38.33'

-Y4- 16+32.01
-Y5- 10+00.00
EL = 38.67'

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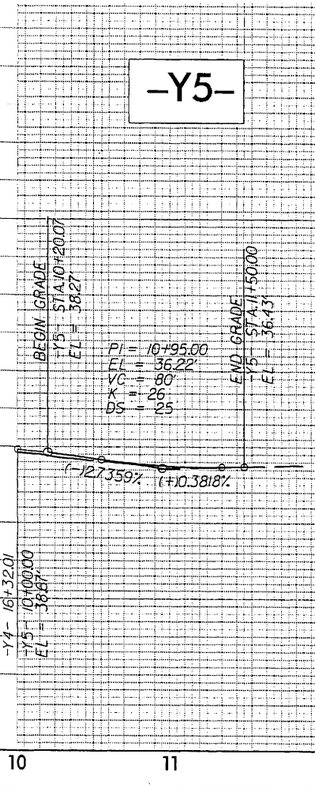
PROJECT REFERENCE NO.	SHEET NO.
B-2965	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

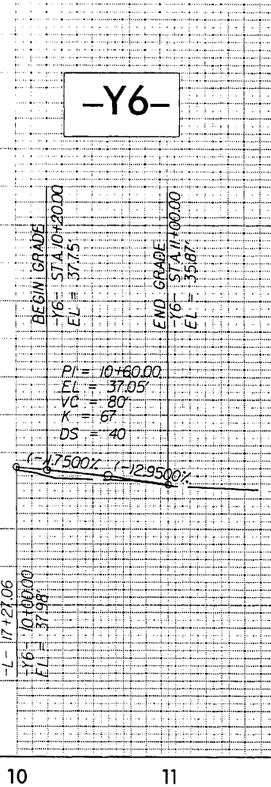
-Y5-

FOR -Y5- PLAN VIEW SEE SHEET 7



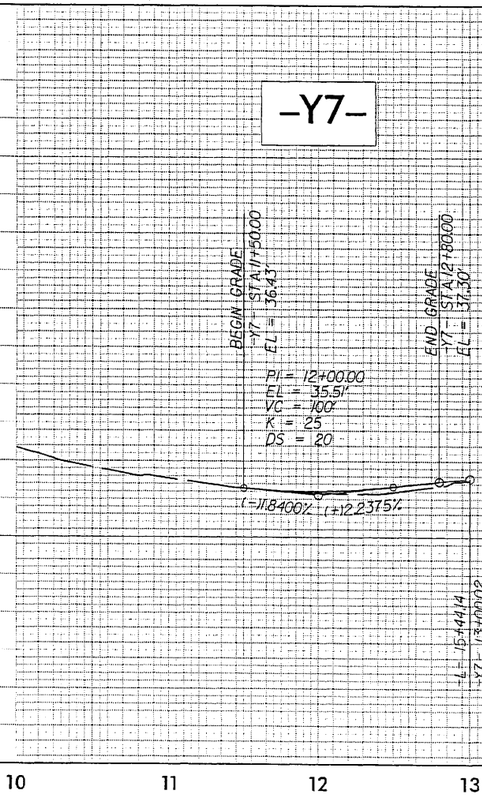
-Y6-

FOR -Y6- PLAN VIEW SEE SHEET 4



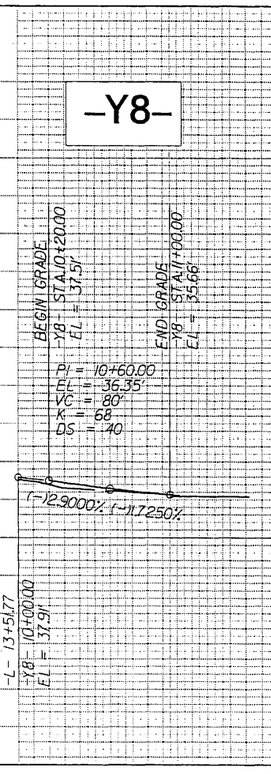
-Y7-

FOR -Y7- PLAN VIEW SEE SHEET 4



-Y8-

FOR -Y8- PLAN VIEW SEE SHEET 4



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PROJ. REFERENCE NO.	SHEET NO.
B-2965	X-1

NOTE: APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, SHOULDER BORROW, FINE GRADING, CLEARING AND GRUBBING, BREAKING OF EXISTING PAVEMENT, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CROSS-SECTION SUMMARY

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	EMBANKMENT

LOCATION	UNCLASSIFIED EXCAVATION	EMBANKMENT

LOCATION	UNCLASSIFIED EXCAVATION	EMBANKMENT

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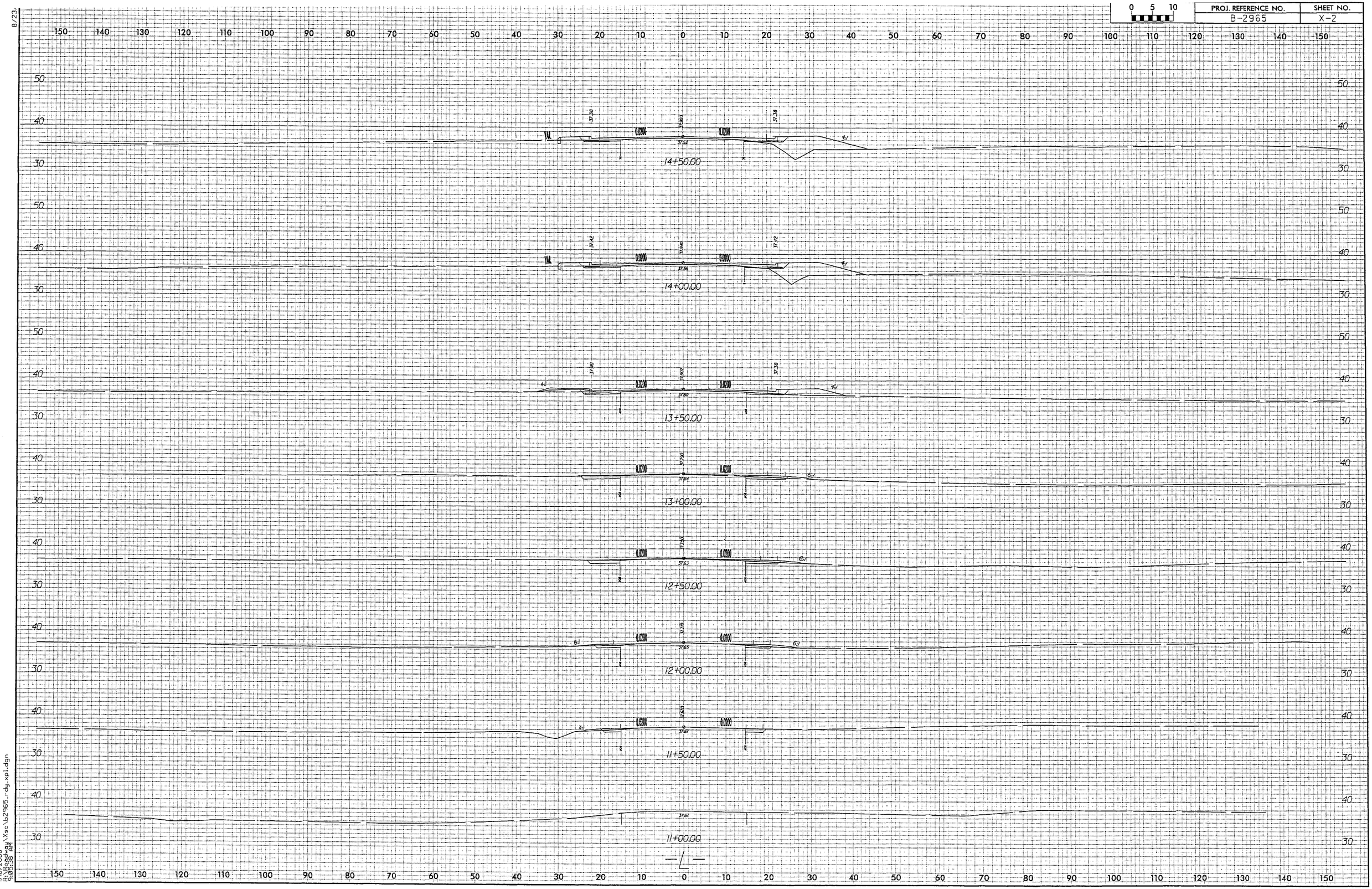
	B-2965	X-2



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9:05:38 AM

8/23/

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-3

18+00.00

17+50.00

17+00.00

16+50.00

16+00.00

15+50.00

15+00.00

1/18/2008
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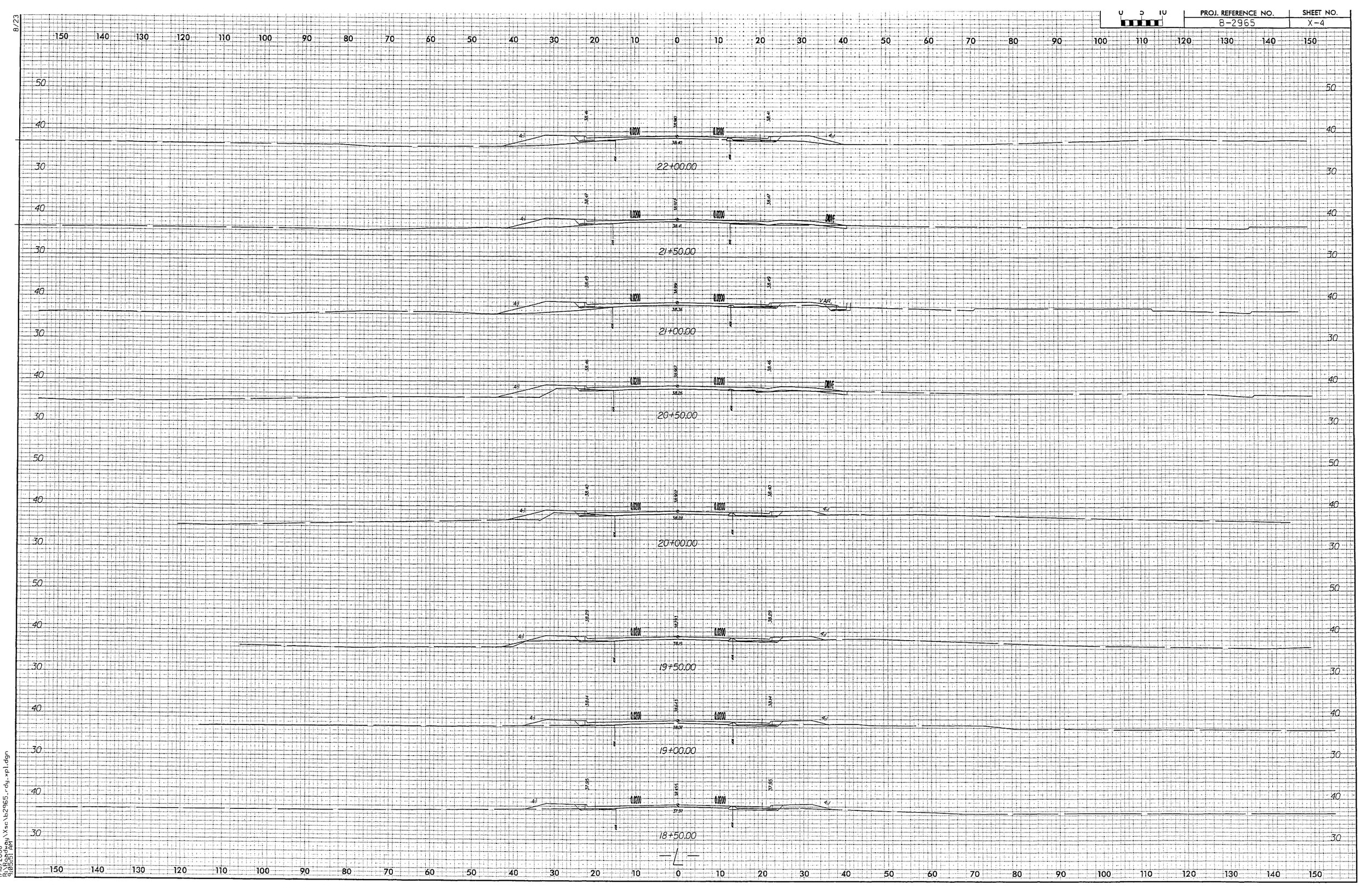
	B-2965	X-4



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-5

26+00.00

25+50.00

25+00.00

24+50.00

24+00.00

23+50.00

23+00.00

22+50.00

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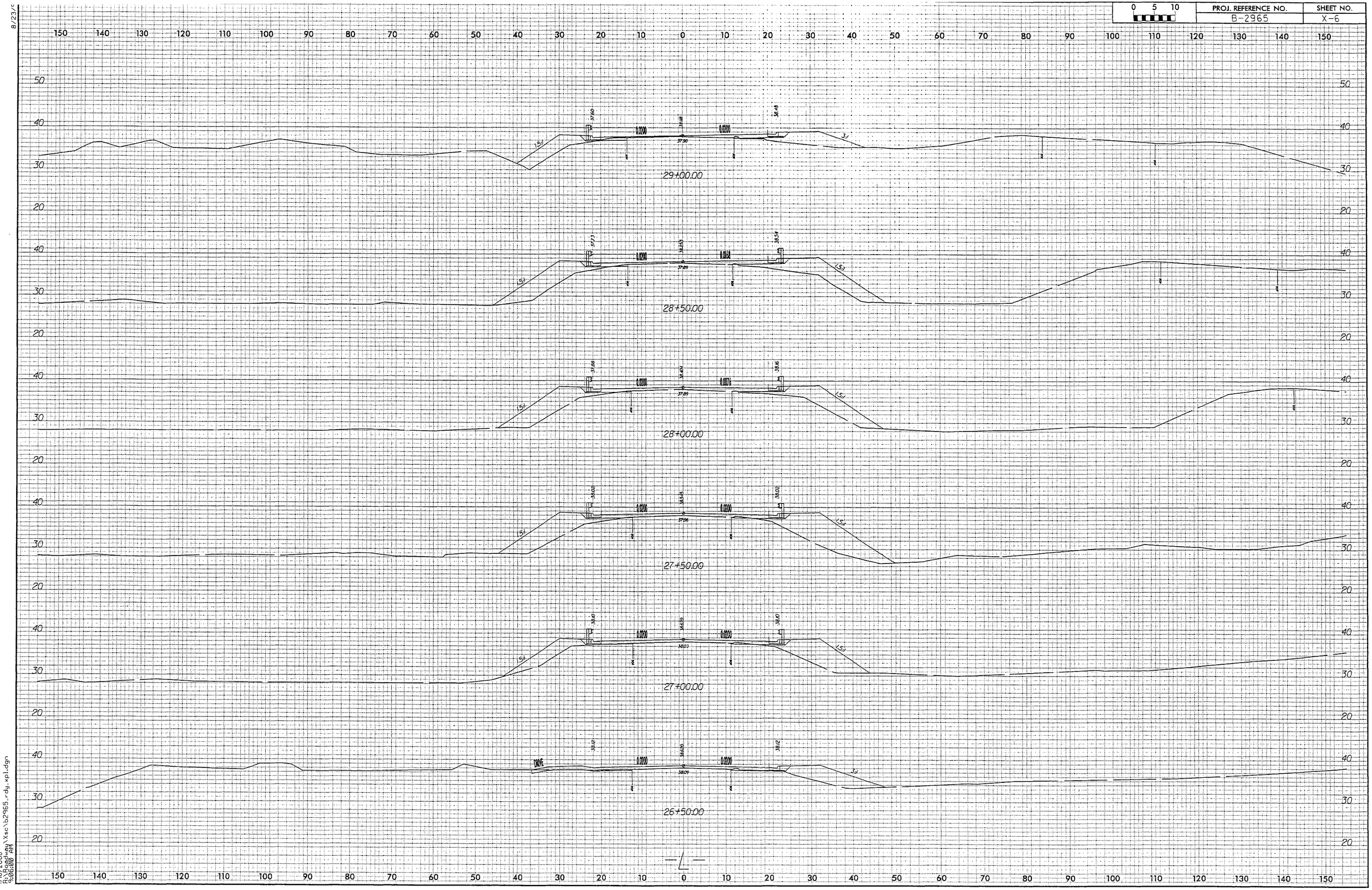
	B-2965	X-6



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-7

32+00.00

31+50.00

31+00.00

30+50.00

30+00.00

29+50.00

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-8

35+00.00

34+50.00

34+00.00

33+50.00

33+00.00

32+50.00

8/23/

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-9

37+50.00

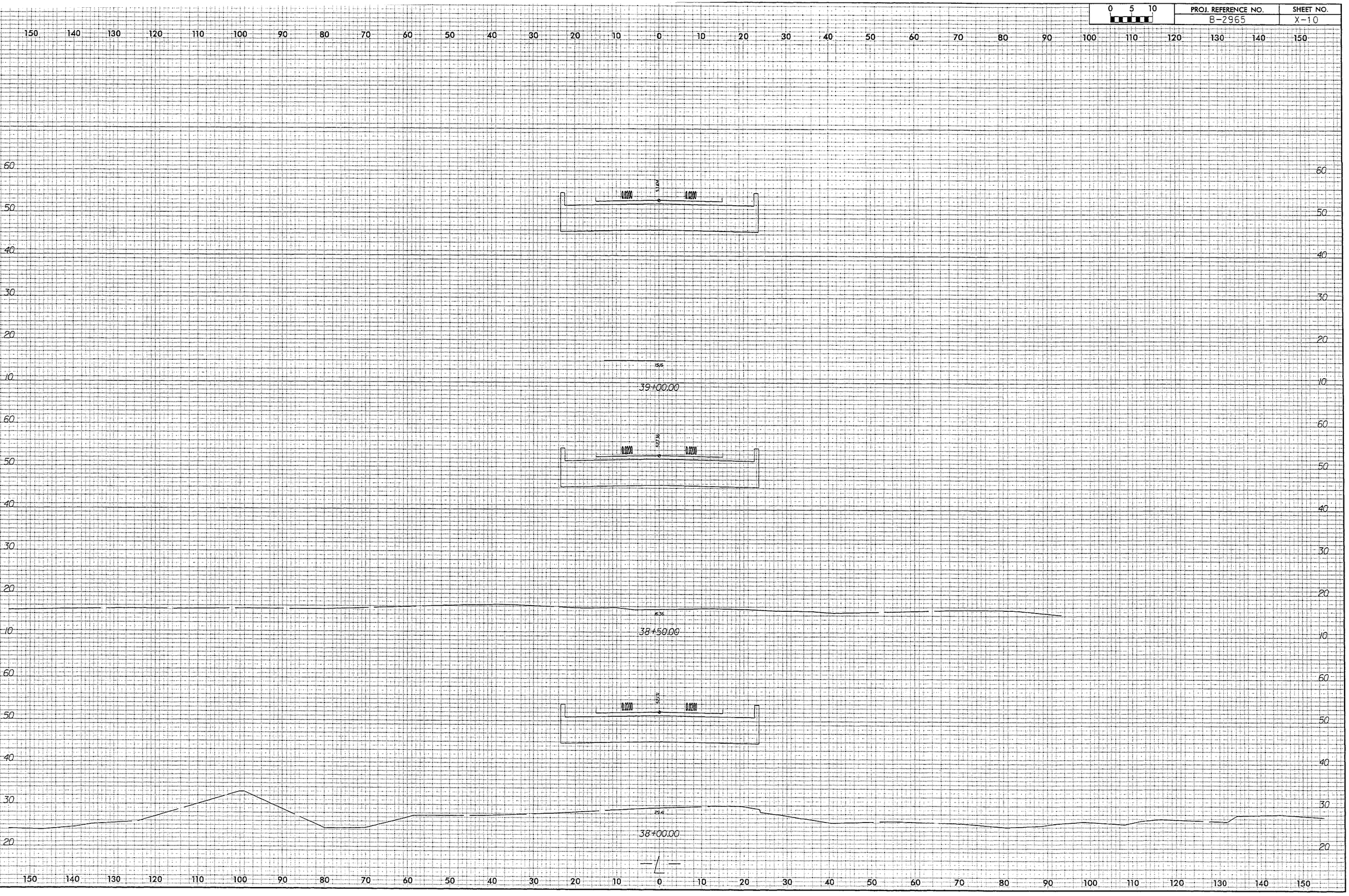
37+00.00

36+50.00

36+00.00

35+50.00

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-10



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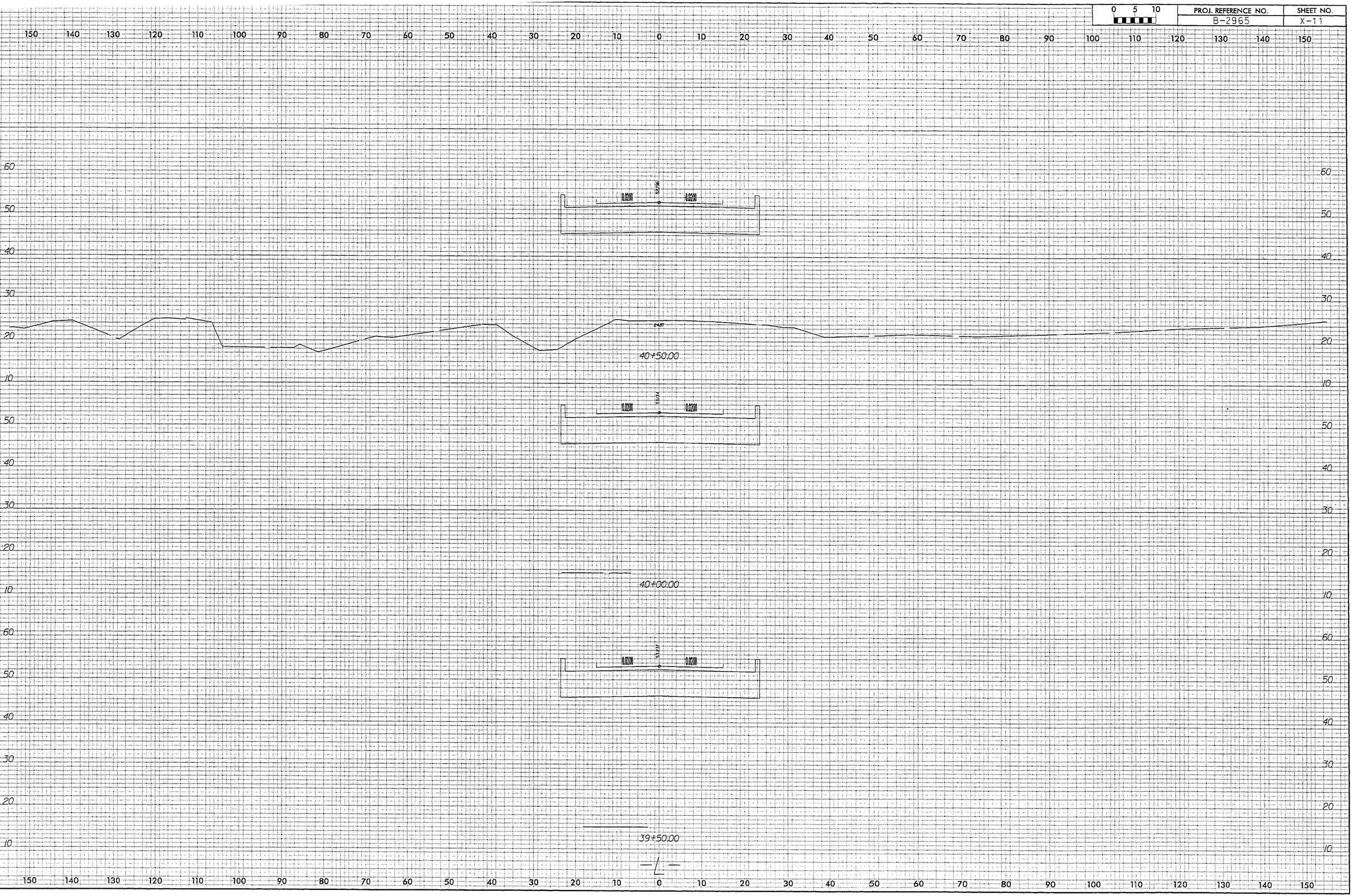
	B-2965	X-11



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	B-2965	X-12

43+50.00

43+00.00

42+50.00

42+00.00

41+50.00

41+00.00

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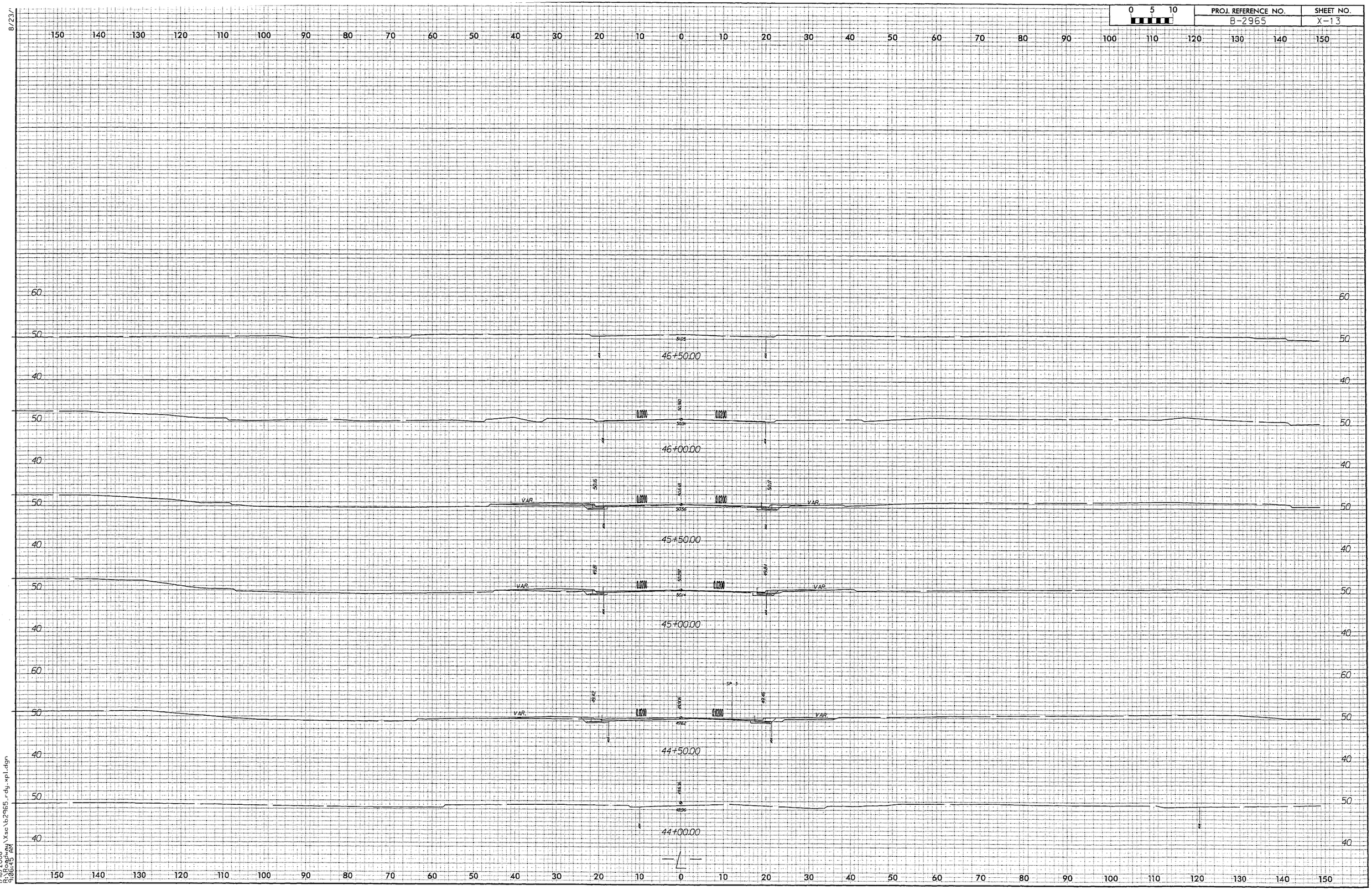
	B-2965	X-13



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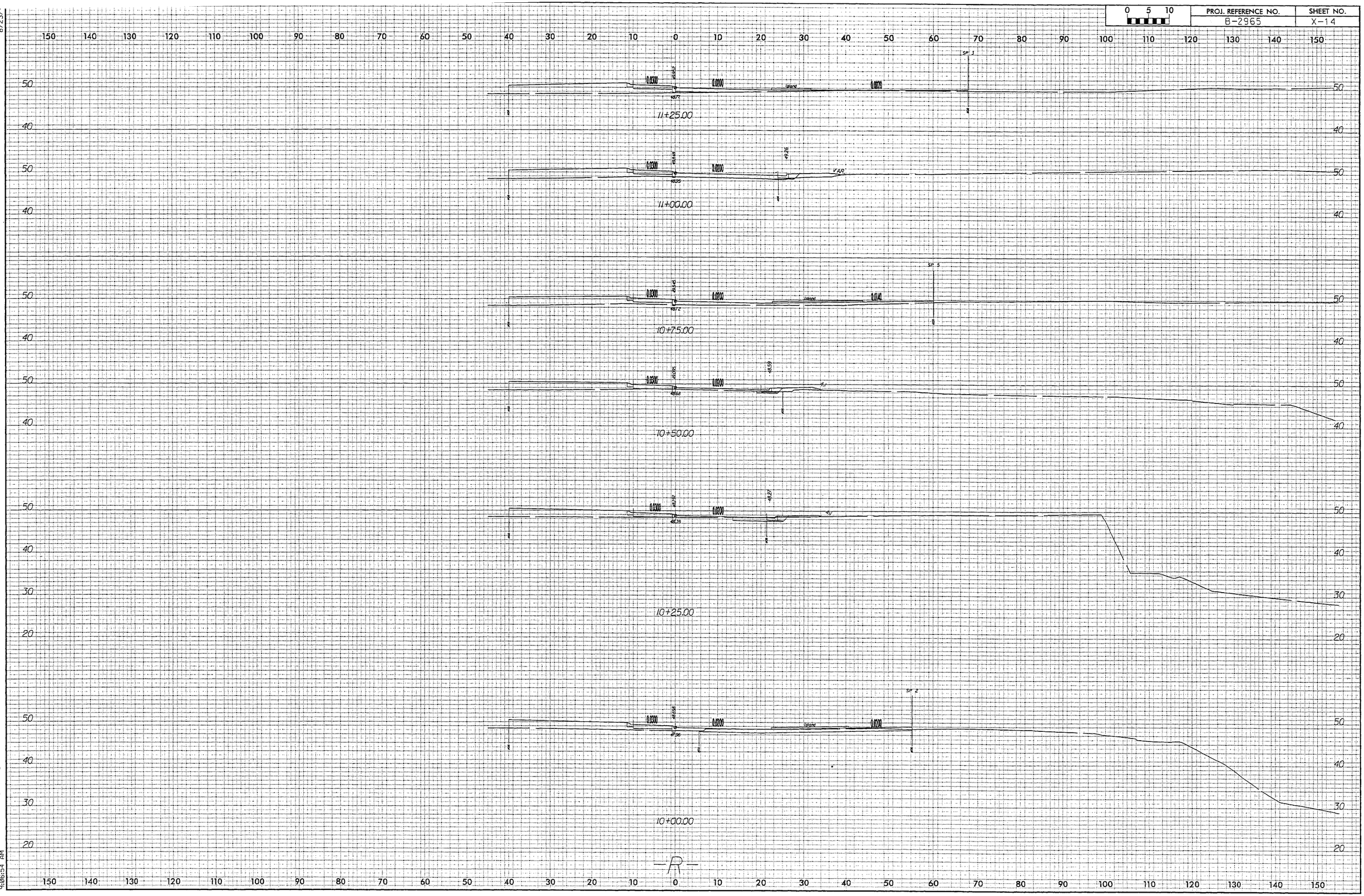
	B-2965	X-14



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-15

12+50.00

12+25.00

12+00.00

11+75.00

11+50.00

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-16

13+50.00

13+00.00

12+50.00

12+00.00

11+50.00

11+00.00

10+50.00

10+00.00

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-17

16+00.00

15+50.00

15+00.00

14+50.00

14+00.00

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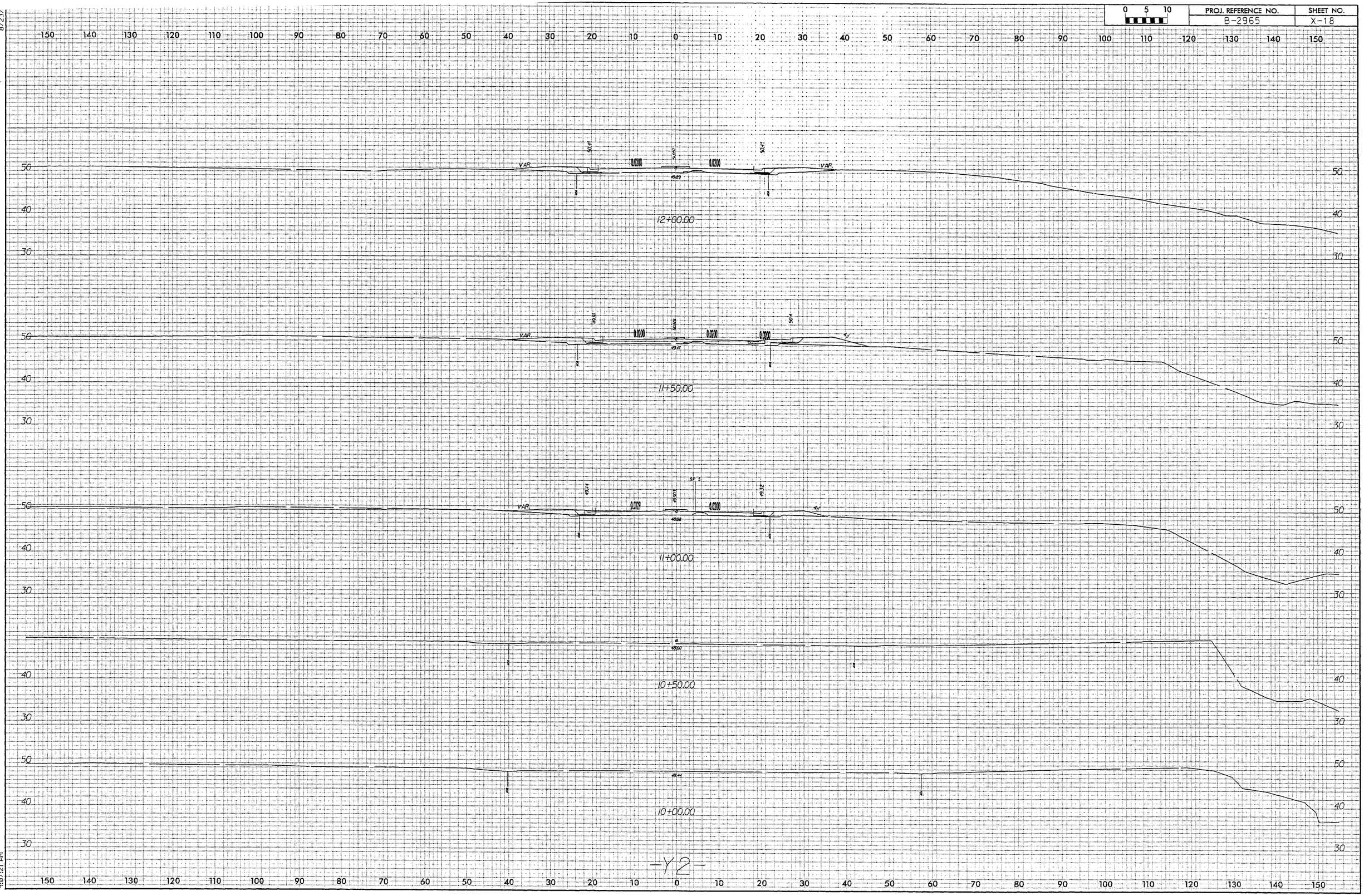
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-18



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-19

16+50.00

16+00.00

15+50.00

15+00.00

14+50.00

14+00.00

13+50.00

13+00.00

12+50.00

-Y2-

1/18/2008
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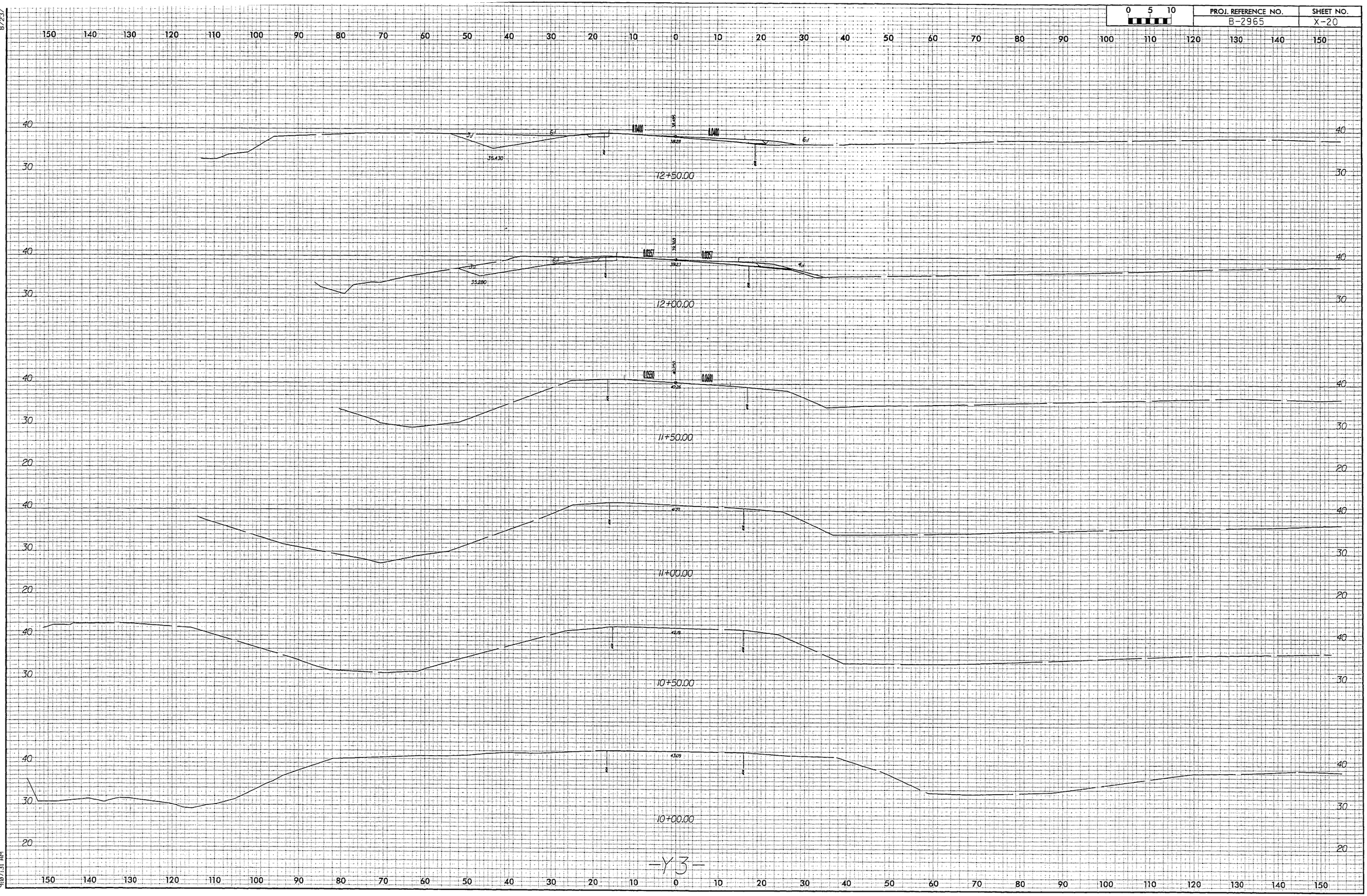
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-20



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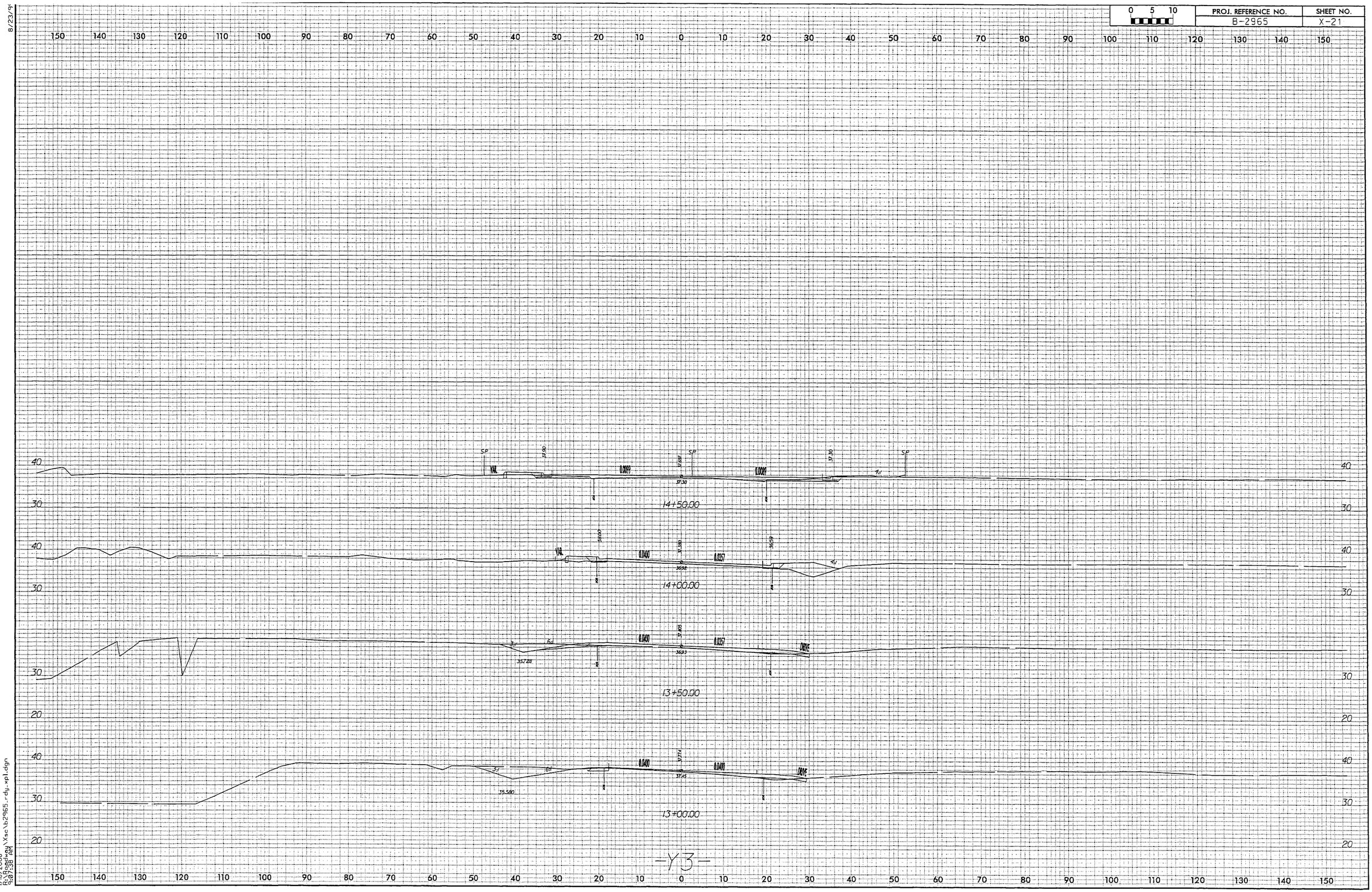
B-2965	X-21

0 5 10



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-22

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

40
30

14+00.00
37.52 38.20 37.76 37.91 0.0200 0.0200 4:1

13+50.00
37.31 38.26 37.55 37.42 0.0200 0.0200 4:1

13+00.00
37.10 37.66 37.34 37.14 0.0200 0.0200 4:1

12+50.00
36.89 37.40 37.13 37.17 0.0200 0.0200 4:1

12+00.00
36.69 37.40 36.91 37.05 0.0200 0.0200 4:1

11+50.00
36.51 37.52 36.75 36.88 0.0200 0.0200 VAR. DRIVE

11+00.00
36.56 37.705 36.79 36.76 0.0200 0.0200 4:1

10+50.00
SP SP
36.97 37.69 37.96 36.97 0.0156 0.0129

10+00.00
37.94

-Y4-

1/8/2008
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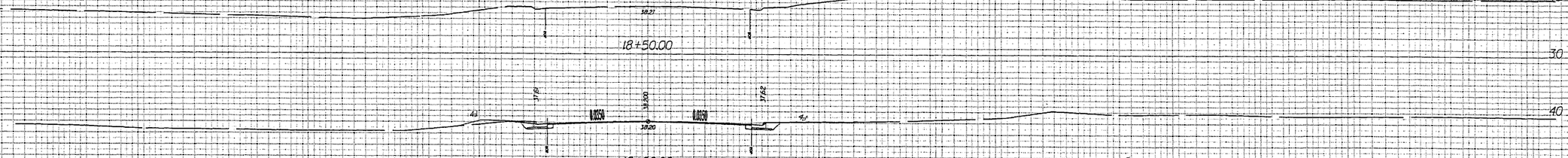
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-23

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

18+50.00

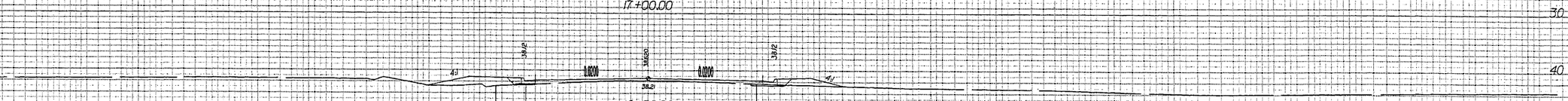


18+00.00

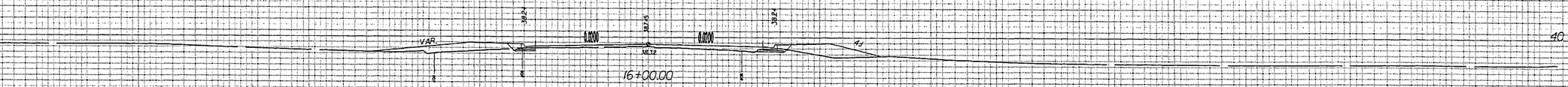
17+50.00

17+00.00

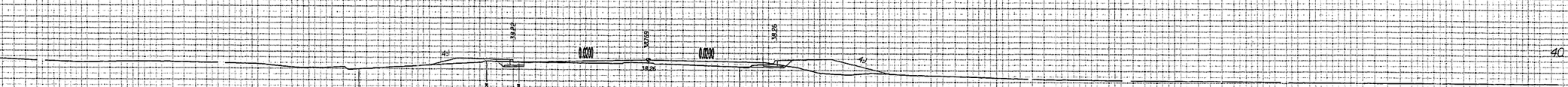
16+50.00



16+00.00

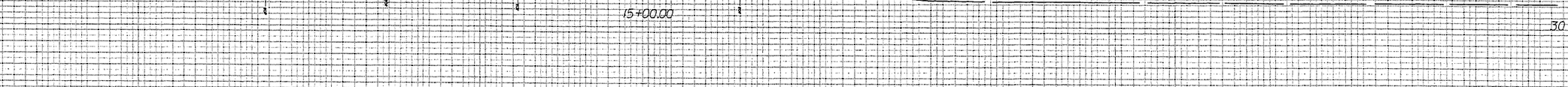


15+50.00



15+00.00

14+50.00



-Y4-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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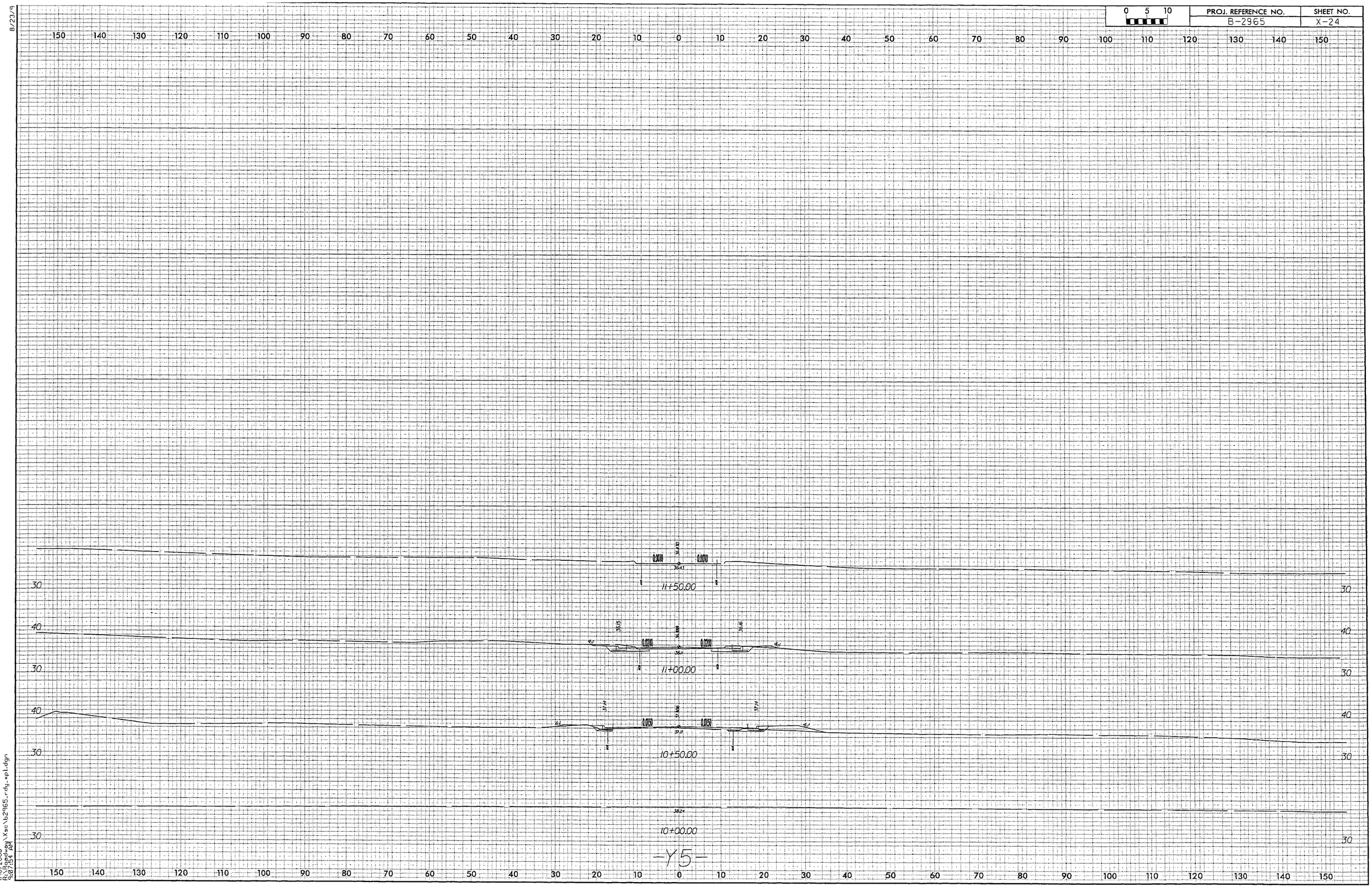
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-24



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	B-2965	X-25

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

30

35.25

11+50.00

1.0000 35.70 0.0000

35.74

11+00.00

0.0149 37.50 0.0153

36.52

34.547 34.544

10+50.00

37.50

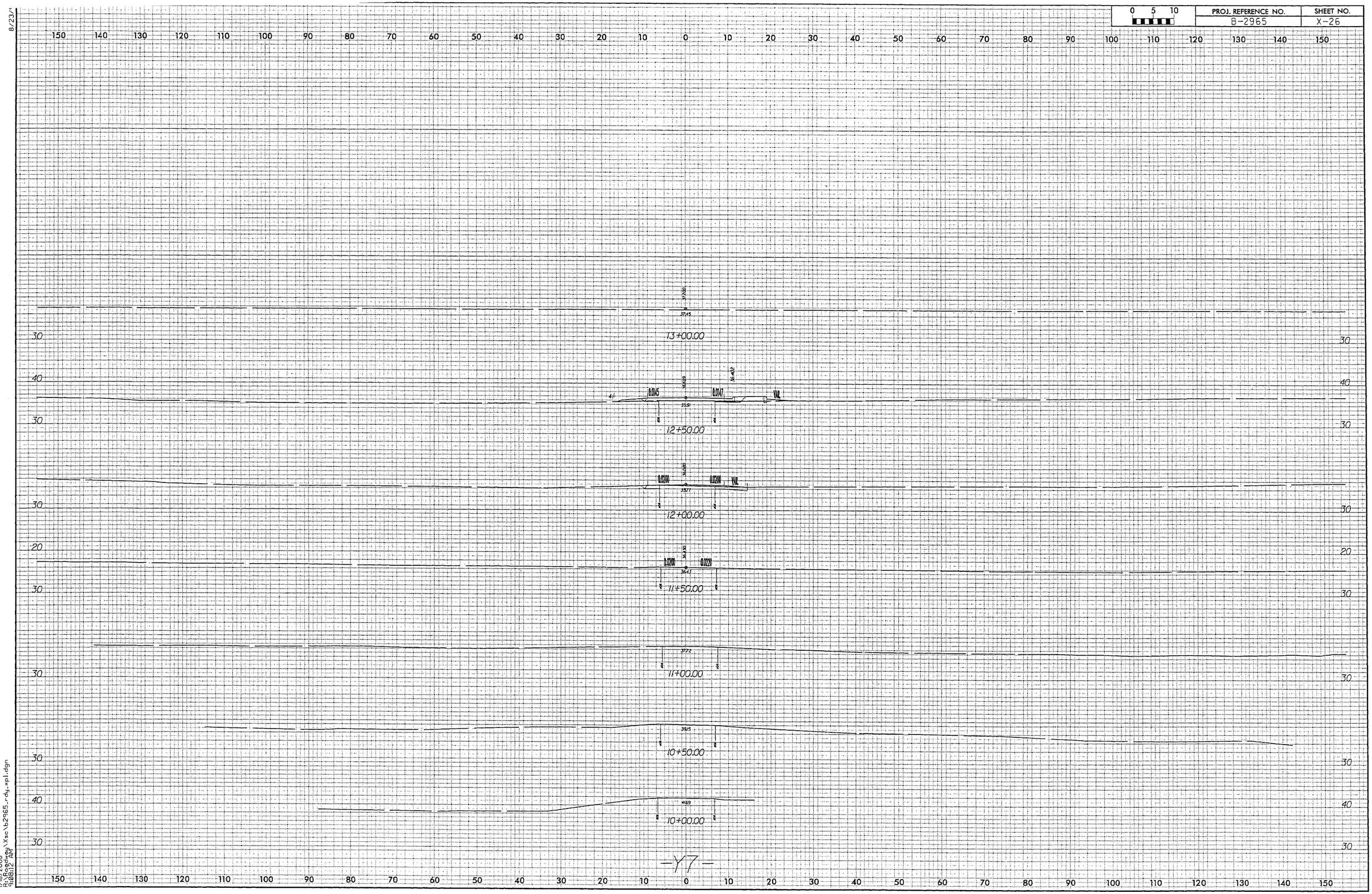
37.73

10+00.00

-Y6-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-26



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-2965	X-27

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

30

11+50.00

15.42

0.0050 33.60 0.0200

35.66

11+00.00

0.0045 35.06 0.0146

36.28

10+50.00

37.20

37.60

10+00.00

30

-Y8-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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