STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

March 31, 2008

US Army Corps of Engineers
3331 Heritage Trade Drive, Suite 105
Wake Forest, NC 27587

Attention: Andy Williams
NCDOT Coordinator, Division 7

Subject: **Application for Section 404 Individual Permit and Section 401 Water Quality Certification,** Improvement of SR 1306 (South Mebane St.) from SR 1158 (Huffman Mill Road) to NC 54 (Chapel Hill Road), Alamance County, Federal Aid No. STP-1306(8), State Project No. 8.2473101, Division 7, TIP U-3303A and U-3303B.

$570.00 Debit WBS Element 34911.1.1.

Dear Sir:

The North Carolina Department of Transportation (NCDOT), proposes to improve 2.4 miles of SR 1306 (South Mebane Street) from SR 1158 (Huffman Mill Road) to NC 62 (Alamance Road), in Alamance County, North Carolina. The proposed project is composed of two sections, which are both in final design: U-3303A which includes improvements from South Mebane Street to NC 62 and U-3303B which includes improvements from NC 62 to NC 54 (Chapel Hill Road). The proposed improvements consist of a combination of widening the existing roadway from two lanes to a four-lane curb and gutter section with a raised, grass median and a five lane undivided section. This application package consists of the cover letter, ENG Form 4345, half size plan sheets, U-3303A NEPA/404 Merger 4B and 4C meeting minutes (no meetings were held for U-3303B), permit drawings, jurisdictional determination (Rapanos) forms, and the Ecosystem Enhancement Program (EEP) confirmation letter.

Purpose and Need

The purpose of this project is to address the anticipated transportation needs along this corridor by improving the existing facility in a manner that increases capacity and safety, promotes an atmosphere conducive to multiple forms of transportation, and provides system linkage.

Summary of Impacts

The project lies in the Piedmont Physiographic Province in the Cape Fear River Basin. The project area lies in HUC 03030002, sub-basin 03-06-03. Permanent impacts to jurisdictional areas of the proposed project are summarized in Table 1.

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

TELEPHONE: 919-715-1334 or 919-715-1335

FAX: 919-715-5501

WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD. SUITE 240
RALEIGH NC 27604

Table 1. Summary of Jurisdictional Permanent Impacts

Section	HUC	Riverine Wetlands (ac)	Streams (ft)
U-3303A	03030002	0.02	353
U-3303B	03030002	0	115
Total		**0.02**	**468**

Summary of Mitigation

Throughout the design and NEPA process this project has been designed to avoid and minimize impacts to jurisdictional areas. EEP will provide mitigation as required for 317 linear feet of perennial stream impacts in Section A of the proposed project. Mitigation is not required for the remaining stream and wetland impacts.

PROJECT SCHEDULE

U-3303A and U-3303B will be let October 21, 2008 (review date of September 9, 2008) with a date of availability of November 17, 2008.

NEPA DOCUMENT STATUS

An Environmental Assessment was approved May 2, 2002. A Finding of No Significant Impact (FONSI) was approved on September 23, 2003. The right of way (ROW) consultation for the proposed project was completed on March 05, 2008 and distributed shortly thereafter. Existing and projected conditions in the study area were described including natural systems and wetlands. Alignments were evaluated with respect to costs, social and economic impacts, and environmental consequences. The EA, FONSI and ROW consultation have been provided to regulatory review agencies involved in the approval process. Additional copies will be provided upon request.

INDEPENDENT UTILITIES

The subject project is in compliance with 23 CFR Part 771.111(f) which lists the Federal Highway Administration (FHWA) characteristics of independent utility of a project:

> (1) The project connects logical termini and is of sufficient length to address environmental matters on a broad scope;
> (2) The project is usable and a reasonable expenditure, even if no additional transportation improvements are made in the area;
> (3) The project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

RESOURCE STATUS

Wetland and stream delineations within U-3303 (A and B sections) were conducted using the field delineation method outlined in the *1987 Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987). The North Carolina Division of Water Quality's (DWQ) *Identification Methods for the Origins of Intermittent and Perennial Stream.*

Wetland impacts have decreased since the EA was completed. The decrease in wetland impacts is a result of Wetland 2 being filled by a private project and therefore no longer exists. Also, Wetland 1 decreased in size due to an alteration of its hydrology.

Stream impacts have increased since the EA was completed. Stream impacts in the EA were calculated based on a symmetrical widening of Mebane Road and a proposed right of way (ROW) of 100 feet; however, this did not account for impacts beyond 100-feet due to permanent drainage easements, culvert extensions, construction access, and piping of the stream at Site 2 (Section A) due to the proximity of homes to the project area. The EA also did not include impacts to two additional streams (Section A, Sites 1 and 3) which were delineated after the EA was approved.

Within Section A of the project area, one wetland, one intermittent and two perennial unnamed tributaries (UT) to Gum Creek were identified. Jurisdictional areas within Section A were verified by United States Army Corp of Engineers (USACE) representative Andy Williams on June 12, 2007.

Within Section B of the project area two intermittent UT's to Little Alamance Creek were identified. Jurisdictional features within Section B were verified by USACE representative John Thomas on March 30, 2006.

IMPACTS TO WATERS OF THE UNITED STATES

The project is located in the Cape Fear River Basin in Alamance County. This area is part of Hydrologic Cataloging Unit 03030002 of the South Atlantic-Gulf Coast Region. One riverine wetland and three UT's to Gum Creek (NCDWQ classification C; NSW; NCDWQ SIN 16-19-7) are located in Section A of the proposed project. Two unnamed tributaries to Little Alamance Creek (NCDWQ classification C; NSW; NCDWQ SIN 16-19-11) are located in Section B of the proposed project. No wetlands are located within Section B.

There are no designated Outstanding Resource Waters (ORW), High Quality Waters (HQW), Water Supply I (WS-I), or Water Supply (WS-II), waters occur within 1.0 mile of the project area. However, the UT's to Little Alamance Creek drain into a section of Little Alamance Creek that is listed on the 2006 Final 303(d) list. This section is located within 1-mile of the project area; however it is not listed due to sedimentation.

Wetlands

There will be a total of 0.02 acre of impacts to the riverine wetland located within Section A of the proposed project (Site 1). Construction of the road will result in less than 0.01 acre of permanent roadway fill and an additional 0.02 acre of mechanized clearing will be required to allow for equipment access and construction of the roadway.

Surface Waters

Surface water impacts are summarized in the following table:

Table 2. Summary of Impacts to Jurisdictional Streams

Project Section	Site No.	Stream Name	Structure Type	Permanent Impacts (ft)	Temporary Impacts (ft)	Mitigation Requirements
U-3303A	1	Intermittent UT to Gum Creek	24" RCP to the North and 36" RCP to the South	36	0	Not required
U-3303A	2	Perennial UT to Gum Creek	60" RCP and 66" RCP	305	46	Required
U-3303A	3	Perennial UT to Gum Creek	2 36" RCP	12	19	Required
U-3303B	1	Intermittent UT to Little Alamance Creek	24" RCP	39	28	Not required
U-3303B	2	Intermittent UT to Little Alamance Creek	24" RCP	76	32	Not required
Total				468	125	

U-3303A

Site 1: There will be 36 linear feet of permanent impacts to the intermittent UT to Gum Creek at this location due to the extension of a 24-inch culvert in the northern quadrant of the intersection and a 36-inch reinforced concrete pipes (RCP) in the southern quadrant of the intersection. The pipes are necessary to convey the portion of the stream under the roadway fill that will be used to widen the road improve the intersection at this location.

Site 2: There will be 305 linear feet of permanent impacts to the perennial UT to Gum Creek at this location due to the construction of a new 60-inch and a 66-inch RCP in the channel in the northern, eastern, and southern quadrants of the intersection. It is necessary to replace the existing pipes due to the deterioration of the existing pipes and the increased volume of water that will be conducted. Piping additional sections of the stream is necessary to convey the stream under the roadway fill necessary to accommodate the widening of the road and improvement of the intersection at this location. It is not possible to relocate the stream due to the proximity of residential buildings and yards.

There will also be an additional 46 linear feet of temporary stream impacts to allow access for equipment and construction of the new roadway and pipes.

Site 3: There will be 12 linear feet of permanent impacts to the perennial UT to Gum Creek at this location due to the extension of two 36-inch RCPs to the north of Mebane Street. The pipes are necessary to convey the portion of the stream under the roadway fill that will be used to widen the road. These pipes cannot be buried 20 percent due to the existing pipes and bed elevations.

There will be 19 linear feet of temporary impacts to allow access for equipment and construction of the new roadway and pipes.

U-3303B

Site 1: There will be 39 linear feet of permanent impacts to the intermittent UT to Little Alamance Creek due to the extension of two 24-inch RCPs to the northern and western quadrant of the intersection. The pipes are necessary to convey the portion of the stream under the roadway fill that will be used to widen the road improve the intersection at this location.

There will be 28 linear feet of temporary impacts to allow access for equipment and construction of the new roadway and pipes.

Site 2: There will be 76 linear feet of permanent impacts to the intermittent UT to Little Alamance Creek due the extension of two 24-inch RCPs to the southern quadrant of the intersection and northwest of South Mebane Street. The pipes are necessary to convey the portion of the stream under the roadway fill that will be used to widen the road improve the intersection at this location.

There will be 32 linear feet of temporary impacts to allow access for equipment and construction of the new roadway and pipes.

PROTECTED SPECIES

Plants and animals with Federal classification of Endangered (E) or Threatened (T) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of February 26, 2008, the U.S. Fish and Wildlife Service (USFWS) website does not list any federally protected species for Alamance County. North Carolina Natural Heritage Database (searched February 27, 2006) indicates that there are no known occurrences of federally protected species within 1-mile of the project area.

MITIGATION OPTIONS

The USACE has adopted, through the Council on Environmental Quality (CEQ), a wetland mitigation policy that embraces the concept of "no net loss of wetlands" and sequencing. The purpose of this policy is to restore and maintain the chemical, biological, and physical integrity of the waters of the United States. CEQ has defined mitigation of wetland and surface water impacts to include: avoiding impacts, minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts (40 CFR 1508.20).

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts, and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Avoidance measures were taken during the planning phase and minimization measures were incorporated as part of the project design. Minimization includes the examination of appropriate and practicable steps to reduce the adverse impacts.

Avoidance and Minimization

Avoidance and minimization has been employed in the project area to the maximum extent practicable. The following measures were implemented:

- NCDOT's Best Management Practices (BMPs) for the Protection of Surface Waters will be enforced.
- Impacts to jurisdictional streams and wetland were minimized through the utilization of symmetrical widening.
- At Site 1 (Section A), the side slope has been increased from 4:1 to 3:1 to minimize fill in the wetlands. If 2:1 was used it would require guardrail which in turn requires a 3-foot wider shoulder, therefore it was not possible to increase the side slope beyond 3:1.

Compensatory Mitigation

The construction of the proposed project will result in permanent impacts to 0.02 acres riverine wetlands and 468 linear feet of stream impacts within the Cape Fear River Basin. For this project, mitigation will be required for stream impacts within U-3303A at Site 2 and Site 3. Mitigation is required at a ratio of 1:1 based on the USACE verification for impacts to 317 linear feet of perennial stream (please see the enclosed EEP acceptance letter). Compensatory mitigation is not proposed for the 0.02 acres of riverine wetlands because the impacts are minimal.

CULTURAL RESOURCES

The North Carolina Department of Cultural Resources, State Historic Preservation Office conducted a review of the project and in a letter dated August 24, 2000 stated that no properties of architectural, historic, or archaeological significance that will be affected by the proposed project. This letter is included in the FONSI.

FEMA COMPLIANCE

The five streams in the project area are not subject to FEMA review therefore, no compliance is required.

UTILITY IMPACTS

No jurisdictional impacts will occur due to the removal or relocation of utilities.

ICE STUDY

An Indirect and Cumulative Impact (ICI) study for this project has been completed and the report was distributed to the appropriate agencies and is included in the appendix of the EA. Copies of this report are available upon request.

WILD AND SCENIC RIVERS

This project will not impact any designated Wild and Scenic Rivers or any rivers included in the list of study rivers (Public Law 90-542, as amended) or North Carolina Natural and Scenic Rivers.

ESSENTIAL FISH HABITAT

The project will not impact any essential fish habitat afforded protection under the Magnuson-Stevens Act of 1996 (16 U.S.C 1801 *et seq.*).

Application is hereby made for a Department of the Army Section 404 Individual Permit as required for the above-described activities for the proposed TIP project U-3303 (Sections A and B). We are also hereby requesting a Section 401 Water Quality Certification from the Division of Water Quality. In compliance with Section 143-215.3D(e) of the NCAC, we will provide $570 to act as payment for processing the Section 401 permit. We are providing five copies of this application to the North Carolina Department of Environment and Natural Resources, Division of Water Quality, for their review.

Thank you for your assistance with this project. If you have any questions or need any additional information about this project, please contact Erica McLamb at (919) 715-1521.

Sincerely,

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

w/attachment

Mr. Brian Wrenn, NCDWQ (5 Copies)
Mr. Travis Wilson, NCWRC
Ms. Kathy Matthews, USEPA
Mr. Ronald Mikulak, USEPA – Atlanta, GA
Mr. Clarence W. Coleman, P.E., FHWA
Mr. Gary Jordan, USFWS

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. J. M. Mills, P.E., Division 7 Engineer
Mr. Jerry Parker, Division 7 Environmental Officer
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Ma'ad Hassan, PDEA
Mr. Scott McLendon, USACE, Wilmington
Ms. Beth Harmon, EEP
Mr. Todd Jones, NCDOT External Audit Branch
Mr. Drew Joyner, PE, Human Environment Unit Head

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT
(33 CFR 325)

OMB APPROVAL NO. 0710-003
Expires December 31, 2004

Public reporting burden for this collection of information is estimated to average 10 hours per response, although the majority of applications should require 5 hours or less. This includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302; and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003), Washington, DC 20503. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authority: Rivers and Harbors Act, Section 10, 33 USC 403: Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research and Sanctuaries Act, 33 USC 1413, Section 103. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETED

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME North Carolina Department of Transportation	8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required)
6. APPLICANT'S ADDRESS 1598 Mail Service Center Raleigh, NC 27699-1548	9. AGENT'S ADDRESS
7. APPLICANT'S PHONE NOs. W/AREA CODE a. Residence b. Business (919) 733-3141	10. AGENT'S PHONE NOs. W/AREA CODE a. Residence b. Business

11. **STATEMENT OF AUTHORIZATION**

I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

APPLICANT'S SIGNATURE DATE

NAME, LOCATION, AND DESCRIPTION OR PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions

NCDOT TIP No. U-3303, Alamance County NC

13. NAME OF WATERBODY, IF KNOWN (if applicable) 3 unnamed tributaries to Gum Creek and 2 unnamed tributaries to Little Alamance Creek.

14. PROJECT STREET ADDRESS (if applicable)

15. LOCATION OF PROJECT

Alamance — COUNTY
NC — STATE

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) **Section, Township, Range, Lat/Lon, and/or Accessors's Parcel Number, for example.**

17. DIRECTIONS TO THE SITE I-85 to Huffman Road. North on Huffman Road. Right on South Mebane Street.

18. Nature of Activity (Description of project, include all features)

Improvement of 2.4 miles of SR 1306 (South Mebane Street) from SR 1158 (Huffman Mill Road) to NC 62 (Alamance Road), in Alamance County, North Carolina. It is planned as a four-lane facility with a grass median.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

Address the anticipated transportation needs along this corridor by improving the existing facility in a manner that increases capacity and safety, promotes an atmosphere conducive to multiple forms of transportation, and provides system linkage.

USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Needed in order to provide wider roadway, construction access, and construction of reinforced concrete pipes.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards

See attached permit drawings.

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

0.02 acre of wetlands, 475 linear feet of stream

23. Is Any Portion of the Work Already Complete? Yes ___ No _X_ IF YES, DESCRIBE THE COMPLETED WORK

24. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list).

See Attached List

25. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

26. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

E. L. Luck 4.1.08

SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Subject: Minutes from Interagency 4B Hydraulic Design Review Meeting on September 21, 2005 for U-3303A in Alamance County

Team Members:

John Thomas-USACE	(present)
John Hennessy-NCDWQ	(present)
Sue Homewood-NCDWQ	(present)
Gary Jordan-USFWS	(absent)
Travis Wilson-NCWRC	(present)
Chris Militscher-EPA	(present)
Donnie Brew-FHWA	(present)
James Bridges-PDEA	(absent)
Deanna Riffey-NEU	(present)

Participants:
Marshall Clawson, NCDOT Hydraulics
Galen Cail, NCDOT Hydraulics
Jeff Reck, KCI Associates
Jimmy Goodnight, NCDOT Roadway
Tim Goins, NCDOT Roadway

John Thomas said he did not receive plans. So a set was provided for him at the meeting.

It was mentioned the entire project will be curb and gutter and is in a high residential area.

Chris asked about the status of the document. Deanna said the EA and FONSI were signed 5/02 and 9/03, respectively.

John Hennessy questioned the minimization measures that have been taken. It was stated that minimization measures have been investigated including new alignment, asymmetrical widening, and symmetrical widening. Symmetrical widening was determined to have the least amount of impacts, including residential property impacts.

John Hennessy asked if stormwater treatment was required. Marshall replied that no stormwater treatment is required. Also, since the document has been signed, the Jordan Lake Watershed Buffer Rules will not apply. The stream classifications are C-NSW.

Deanna asked what side slopes are prescribed. Jimmy stated that the roadway side slopes are 2:1.

A comment was made about the pipe alignment(realignment) on sheet 6 and/or whether a stream relocation is practical. It was stated the stream relocation and improved pipe alignment would be reviewed in more detail. However, at this time a stream realignment does not seem practical at this location considering the proximity of culverts, up and downstream, and the presence of extensive housing.

A comment was made about the wetlands North of the roadway on sheet 8. It was stated that, presently, there is ongoing grading at this site. It was questioned if the existing wetlands have been impacted. John Thomas stated he would investigate.

Subject: Minutes from Interagency 4C Permit Review Meeting on May 16, 2007 for U3303A Alamance County

Team Members:

John Thomas-USACE	(present)
Andrew Williams-USACE	(present)
Brian Wrenn-NCDWQ	(present)
Kathy Matthews-EPA	(present)
Chris Militscher-EPA	(absent)
Travis Wilson-NCWRC	(absent)
Gary Jordan-USFW	(absent)
Donnie Brew-FHWA	(present)
Deanna Riffey-NEU	(present)
Maad Hassan-PDEA	(present)

Participants:
Marshall Clawson, NCDOT Hydraulics
Galen Cail, NCDOT Hydraulics
Audrey Burnette, KCI Associates
Timothy Goins, NCDOT Roadway
Mark Staley, NCDOT Roadside Env.

PROJECT GENERAL COMMENTS:

- The Permit Summary sheet will be revised to reflect permanent stream impacts instead of temporary stream impacts. Also, for any wetland impacts less than 0.01 acres state as < 0.01 instead of 0.00 acres.
- Show surface water impact hatching from waters edge to waters edge. Improve clarity of stream impacts/hatching.

The plans were reviewed on a sheet by sheet basis with comments and recommendations made as follows:

SHEET NO. 5

The wetland boundary has changed on sheet 5 which will result in an increase of permanent fill and mechanized clearing impacts. Wetland delineation will need to be verified.

SHEET 6:

It was stated the existing 42" and 48" pipes under –Y8- and –L-, respectively will be replaced with a 60" and 66" pipe system.

SHEET NO. 8

It was stated the existing 2 @ 36" pipes will be extended with 2 @ 36" pipes. Also, pipes cannot be buried 20% due to existing pipes and bed elevations.

Meeting adjourned

Ecosystem Enhancement PROGRAM

RECEIVED
DEC 14 2007
DIVISION OF HIGHWAYS
PDEA-OFFICE OF NATURAL ENVIRONMENT

December 10, 2007

Mr. Gregory J. Thorpe, Ph.D.
Environmental Management Director
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

U-3303A, Burlington – SR 1306/SR 1363 (Mebane Street) from SR 1158 (Huffman Mill Road) to NC 54 (Chapel Hill Road), Alamance County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the stream restoration mitigation for the subject project. Based on the information supplied by you on December 10, 2007, the impacts are located in CU 03030002 of the Cape Fear River Basin in the Central Piedmont (CP) Eco-Region, and are as follows:

Warm Stream: 324 feet

EEP commits to implementing sufficient stream restoration mitigation credits to offset the impacts associated with this project by the end of the MOA Year in which this project is permitted, in accordance with Section X of the Amendment No. 2 to the Memorandum of Agreement between the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, fully executed on March 8, 2007. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-715-1929.

Sincerely,

James B. Stanfill for

William D. Gilmore, P.E.
EEP Director

cc: Mr. Andy Williams, USACE – Raleigh
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: U-3303A

Ecosystem Enhancement PROGRAM

December 10, 2007

Mr. Andy Williams
U. S. Army Corps of Engineers
Raleigh Regulatory Field Office
6508 Falls of the Neuse Road, Suite 120
Raleigh, North Carolina 27615

Dear Mr. Williams:

Subject: EEP Mitigation Acceptance Letter:

U-3303A, Burlington – SR 1306/SR 1363 (Mebane Street) from SR 1158 (Huffman Mill Road) to NC 54 (Chapel Hill Road), Alamance County; Cape Fear River Basin (Cataloging Unit 03030002); Central Piedmont (CP) Eco-Region

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the stream mitigation for the unavoidable impact associated with the above referenced project. As indicated in the NCDOT's mitigation request dated December 10, 2007, stream mitigation from EEP is required for approximately 324 feet of warm stream impacts.

Stream mitigation associated with this project will be provided in accordance with Section X of the Amendment No. 2 to the Memorandum of Agreement between the N. C. Department of Environment and Natural Resources, the N. C. Department of Transportation, and the U. S. Army Corps of Engineers fully executed on March 8, 2007 (Tri-Party MOA). In the mitigation request, the NCDOT indicated this project would only require stream mitigation at a 1:1 ratio. EEP commits to implement sufficient stream mitigation up to 324 stream restoration credits to offset the impacts associated with this project by the end of the MOA year in which this project is permitted. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-715-1929.

Sincerely,

James B. Stanfill for

William D. Gilmore, P.E.
EEP Director

cc: Mr. Gregory J. Thorpe, Ph.D., NCDOT-PDEA
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: U-3303A

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION: U-3303 (Improvement of SR 1306 from SR 1158 to NC 54)
State: County/parish/borough: City:
Center coordinates of site (lat/long in degree decimal format): Lat. 36.069° N, Long. -79.470° W.
Universal Transverse Mercator:
Name of nearest waterbody: UT's to Gum Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Big Alamance Creek
Name of watershed or Hydrologic Unit Code (HUC): 03030002
- ☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- ☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
- ☐ Office (Desk) Determination. Date:
- ☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
- ☐ Waters subject to the ebb and flow of the tide.
- ☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☒ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 418 linear feet: 1-3 width (ft) and/or acres.
   Wetlands: 0.20 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

---

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 263 **square miles**
Drainage area: 2 **square miles**
Average annual rainfall: 45 inches
Average annual snowfall: 9.1 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **3** tributaries before entering TNW.

Project waters are **2-5** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **2-5** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: UT>UT>Gum Creek>Big Alamance Creek.
Tributary stream order, if known: 0.

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[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is:
- ☐ Natural
- ☐ Artificial (man-made). Explain: .
- ☒ Manipulated (man-altered). Explain: Stream has been pipes in several sections.

Tributary properties with respect to top of bank (estimate):
Average width: 1 feet
Average depth: 1 feet
Average side slopes: **2:1**.

Primary tributary substrate composition (check all that apply):
- ☐ Silts
- ☐ Sands
- ☐ Concrete
- ☐ Cobbles
- ☐ Gravel
- ☐ Muck
- ☐ Bedrock
- ☐ Vegetation. Type/% cover:
- ☐ Other. Explain: in the project area, the remaining portions of the channel that have not been piped these areas have been rip rapped.

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Filled with riprap.
Presence of run/riffle/pool complexes. Explain: No.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 0-10 %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **6-10**
Describe flow regime: Intermittent.
Other information on duration and volume: .

Surface flow is: **Discrete and confined**. Characteristics: .

Subsurface flow: **Unknown**. Explain findings: .
- ☐ Dye (or other) test performed: .

Tributary has (check all that apply):
- ☒ Bed and banks
- ☐ OHWM[6] (check all indicators that apply):
  - ☐ clear, natural line impressed on the bank
  - ☐ changes in the character of soil
  - ☐ shelving
  - ☒ vegetation matted down, bent, or absent
  - ☐ leaf litter disturbed or washed away
  - ☐ sediment deposition
  - ☐ water staining
  - ☐ other (list):
  - ☐ the presence of litter and debris
  - ☐ destruction of terrestrial vegetation
  - ☐ the presence of wrack line
  - ☐ sediment sorting
  - ☐ scour
  - ☐ multiple observed or predicted flow events
  - ☐ abrupt change in plant community
- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
- ☒ High Tide Line indicated by:
  - ☐ oil or scum line along shore objects
  - ☐ fine shell or debris deposits (foreshore)
  - ☐ physical markings/characteristics
  - ☐ tidal gauges
  - ☐ other (list):
- ☒ Mean High Water Mark indicated by:
  - ☐ survey to available datum;
  - ☐ physical markings;
  - ☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: Water is clear.
Identify specific pollutants, if known: roadside runoff.

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[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

- ☐ Riparian corridor. Characteristics (type, average width): .
- ☐ Wetland fringe. Characteristics: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size:0.2 acres

Wetland type. Explain: PFO.

Wetland quality. Explain:Medium, it is located an Alluvial foreset, however it has been impacted by the surrounding urban development..

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: .

Surface flow is: **Discrete and confined**

Characteristics: .

Subsurface flow: **Unknown**. Explain findings: .

- ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

- ☒ Directly abutting
- ☐ Not directly abutting
  - ☐ Discrete wetland hydrologic connection. Explain: .
  - ☐ Ecological connection. Explain: .
  - ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **2-5** river miles from TNW.

Project waters are **1-2** aerial (straight) miles from TNW.

Flow is from: **Wetland to navigable waters**.

Estimate approximate location of wetland as within the **5 - 10-year** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: Located in an alluvial forest, water was clear.

Identify specific pollutants, if known: Roadside runoff.

(iii) Biological Characteristics. Wetland supports (check all that apply):

- ☒ Riparian buffer. Characteristics (type, average width):330.
- ☒ Vegetation type/percent cover. Explain:Green ash, dogwood, red maple, swamp dogwood, 85% coverage.
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **1**

Approximately (0.20) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
Y	0.2		

Summarize overall biological, chemical and physical functions being performed: Contributes to chemical integrity of the adjacent stream.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: The wetland provides a last line of water treatment before the water enters a piped section of the stream, and therefore contributes to the chemical integrity of the stream..

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☒ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: Tributaries at site 2 and site 3 are perennail. These area were verified by USACE representative Andy Williams.
   - ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: The tributary at site 1 is intermittent. This are was verified by USACE representative Andy Williams..

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: **418** linear feet**1-3**width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☒ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: **0.2** acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .

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[8]See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name: .
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:NCGIS 2008.
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☐ Photographs: ☐ Aerial (Name & Date): .
or ☐ Other (Name & Date): .
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: Site 1 is an intermittent stream. Site 2 and 3 are perennial stream. The wetland at Site 1 is connected to the the stream via a pipe. The wetland at Site has a significant nexus because it contributes to the chemical integrity of the downstream system. This form addressed jurisdictional areas located within the U-3303A project study area .

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION: U-3303 (Improvement of SR 1306 from SR 1158 to NC 54)
State: County/parish/borough: City:
Center coordinates of site (lat/long in degree decimal format): Lat. 36.069° N, Long. -79.470° W.
Universal Transverse Mercator:
Name of nearest waterbody: UT's to Little Alamance Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Big Alamance Creek
Name of watershed or Hydrologic Unit Code (HUC): 03030002
- [x] Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- [ ] Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
- [ ] Office (Desk) Determination. Date:
- [ ] Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
- [ ] Waters subject to the ebb and flow of the tide.
- [ ] Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - [ ] TNWs, including territorial seas
   - [ ] Wetlands adjacent to TNWs
   - [x] Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - [ ] Non-RPWs that flow directly or indirectly into TNWs
   - [ ] Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - [ ] Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - [ ] Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - [ ] Impoundments of jurisdictional waters
   - [ ] Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: 175 linear feet: 1-2 width (ft) and/or acres.
   Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Established by OHWM.**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   - [ ] Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

---

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: .

   Summarize rationale supporting determination: .

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) **General Area Conditions:**
   Watershed size: 175 **square miles**
   Drainage area: 2 **square miles**
   Average annual rainfall: 45 inches
   Average annual snowfall: 9.1 inches

   (ii) **Physical Characteristics:**
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☒ Tributary flows through **3** tributaries before entering TNW.

   Project waters are **2-5** river miles from TNW.
   Project waters are **1 (or less)** river miles from RPW.
   Project waters are **2-5** aerial (straight) miles from TNW.
   Project waters are **1 (or less)** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: .

   Identify flow route to TNW[5]: UT>Little Alamance Creek>Big Alamance Creek.
   Tributary stream order, if known: 0.

---

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is:
- ☐ Natural
- ☐ Artificial (man-made). Explain: .
- ☒ Manipulated (man-altered). Explain: Piped under existing, sedimentation.

Tributary properties with respect to top of bank (estimate):
Average width: 1 feet
Average depth: 1 feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☒ Sands	☐ Concrete
☒ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Filled with riprap.
Presence of run/riffle/pool complexes. Explain: yes.
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 5-10 %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **6-10**
Describe flow regime: Intermittent.
Other information on duration and volume: .

Surface flow is: **Discrete and confined.** Characteristics: .

Subsurface flow: **Unknown**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
- ☒ Bed and banks
- ☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☒ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	

- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: Water is clear.
Identify specific pollutants, if known: roadside runoff.

---

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

- ☐ Riparian corridor. Characteristics (type, average width): .
- ☐ Wetland fringe. Characteristics: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain: .

Wetland quality. Explain: .

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

- ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
  - ☐ Discrete wetland hydrologic connection. Explain: .
  - ☐ Ecological connection. Explain: .
  - ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List.**

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

- ☐ Riparian buffer. Characteristics (type, average width): .
- ☐ Vegetation type/percent cover. Explain: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: Contributes to chemical integrity of the adjacent stream.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet width (ft), Or, acres.
   ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   ☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: The tributaries at site 1 and site 2 are intermitten. This are was verified by USACE representative John Thomas and NCDWQ representative Sue Homewood.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☒ Tributary waters: **175** linear feet**1-2**width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

---

[8]See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

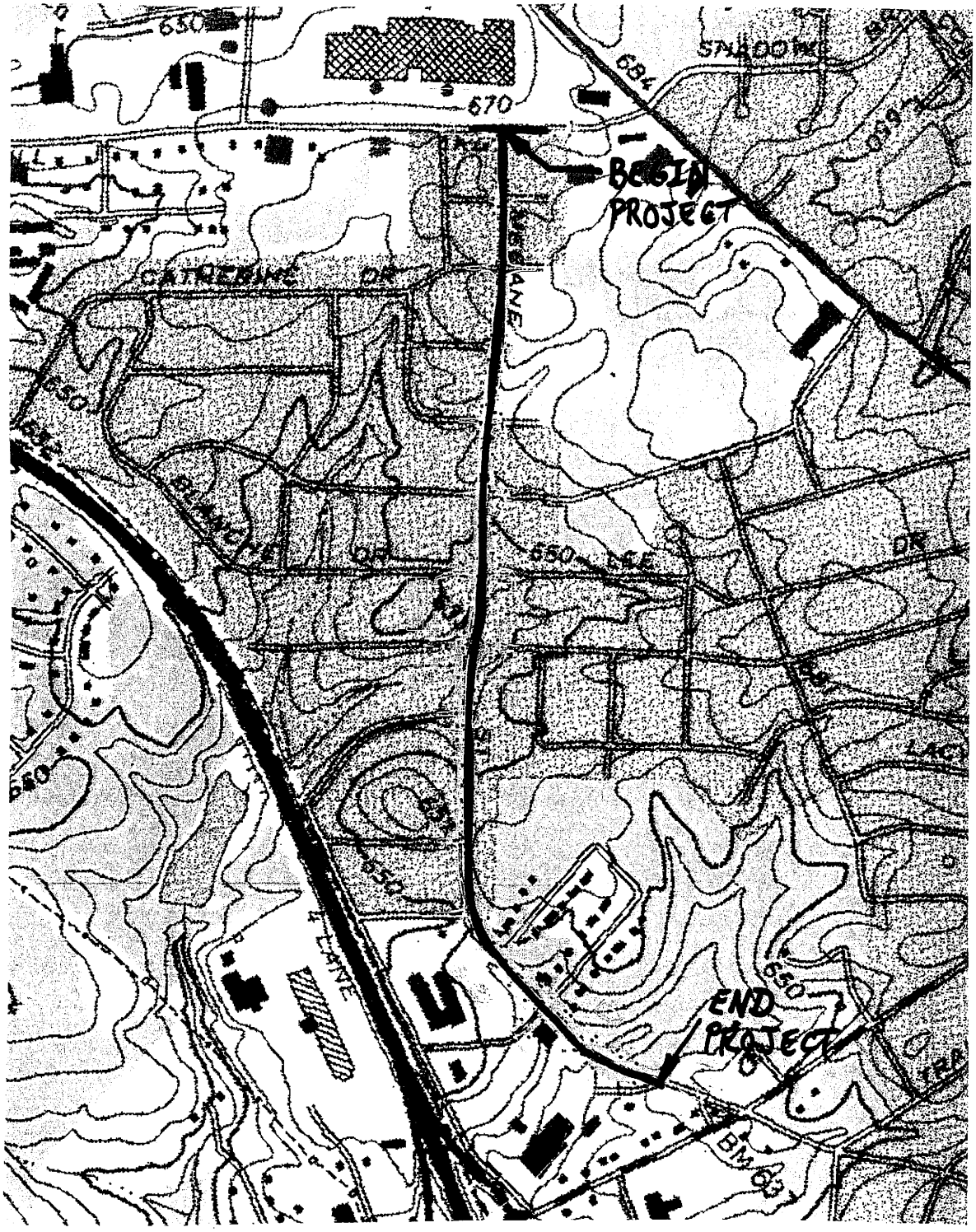
Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☐ U.S. Geological Survey map(s). Cite scale & quad name: .
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name:NCGIS 2008.
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☐ Photographs: ☐ Aerial (Name & Date): .
or ☐ Other (Name & Date): .
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: Sites 1 and 2 are intermittent streams and it was determined that they are jurisdicational streams. This form addressed jurisdictional areas located within the U-3303B project area.



N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

ALAMANCE COUNTY
PROJECT: U-3303A

SHEET 1 OF 13

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	SITE NO.	NAMES	ADDRESSES
29	1	Horald Fogleman C/C GPIN 3-21-193	1063 N. Riverview Dr. Burlington, NC 27217
18	1	PEC Family Lmtd. Ptnrshp 201 C/O GPON 3-21-23	3530 Cardwell Drive Burlington, NC 27215
37	2	M. Amjad Bhatti C/O GPIN 12-13-69A	3210 Elk Drive Burlington, NC 27215
40	2	Wanyette Bridges C/O GPIN 12-13-70A	3340 Neptune Drive Las Cruces, NM 88012
46	2	Belkis Espaillat C/O GPIN 12-13-49	2702 May Drive Burlington, NC 27215
48	2	Marion Howe C/O GPIN 12-13-48	2701 Terrace Drive Burlington, NC 27215
74	3	Keystone Group, Inc.	3708 Alliance Dr. Greensboro, NC 27407
20	20	Andrew J. Gregory	1810 Chester Rd. Raleigh, NC 27608

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

ALAMANCE COUNTY
PROJECT: U-3303A

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	27+22 LT	Roadway Fill	<0.01			0.02		<0.01		36		
	to 28+40 RT -L-											
2	40+94 LT	60" & 66" RCP						0.04	<0.01	305	46	
	to 43+83 RT -L_											
3	72+38 -L-	Extend 2 @ 36" RCP						<0.01	<0.01	12	19	
TOTALS:			<0.01			0.02		0.04	<0.01	353	65	

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

ALAMANCE COUNTY
PROJECT: 34911.1.1 (U-3303A)
WIDEN S. MEBANE ST
3 of 13 March-08

ATN Revised 3/31/05

09/08/99

TIP PROJECT: U-3303A

CONTRACT:

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

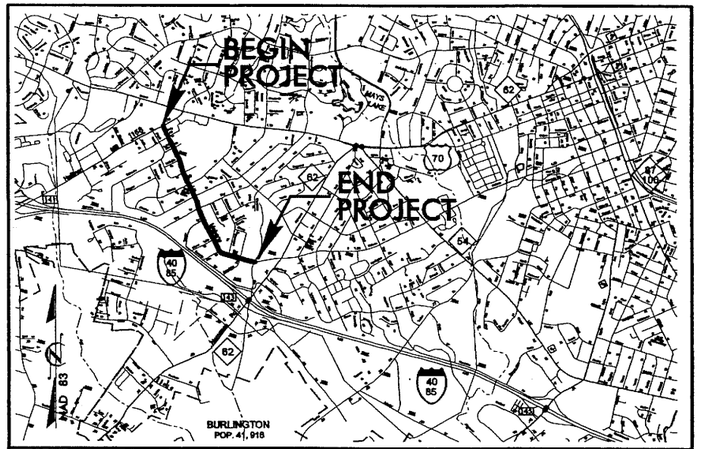
See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3303A	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34911.1.1	STP-1306(8)	P.E.
34911.2.3	STP-1306(15)	R/W

ALAMANCE COUNTY

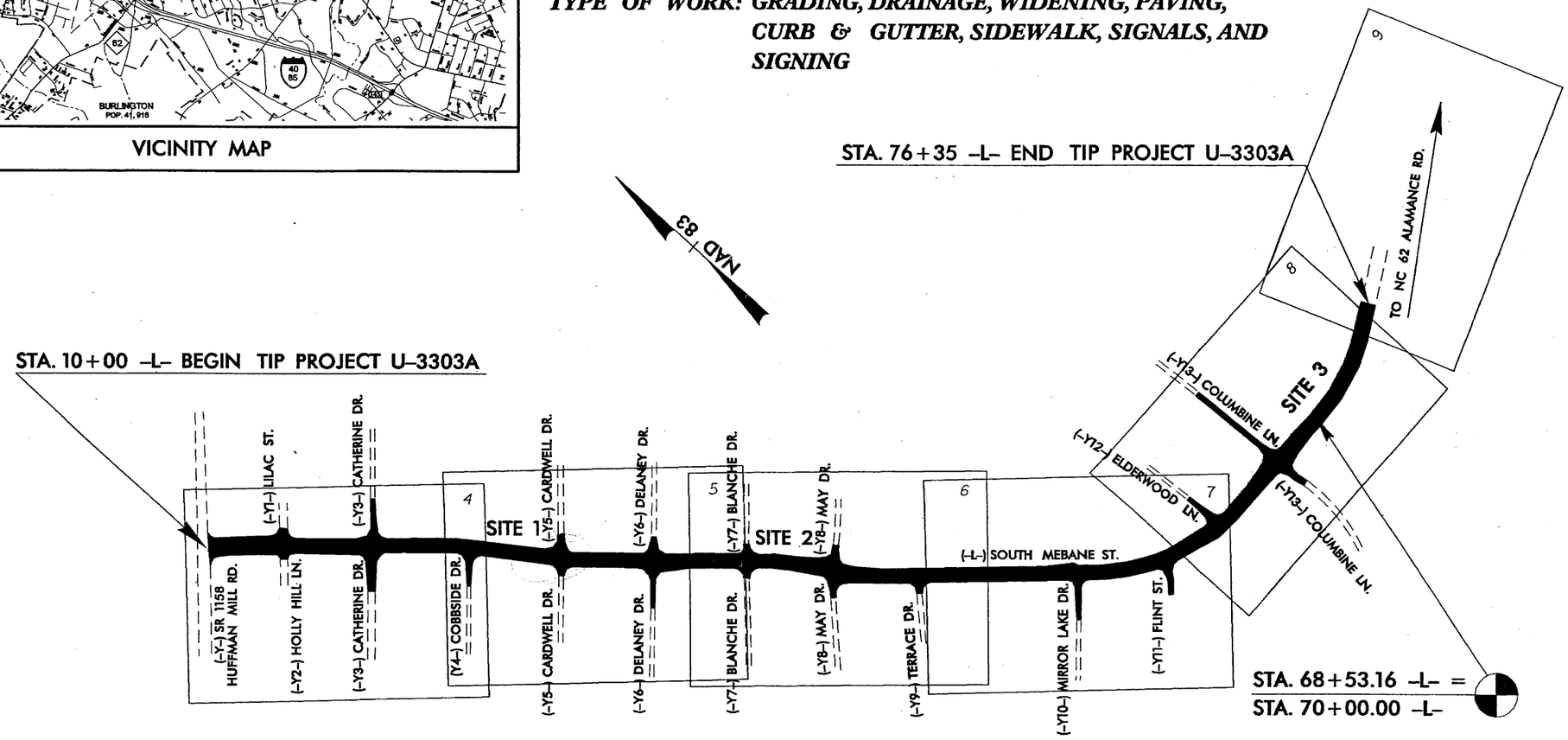


VICINITY MAP

LOCATION: BURLINGTON – SR 1306 (SOUTH MEBANE ST.)
FROM SR 1158 (HUFFMAN MILL RD.)
TO NC 62 (ALAMANCE RD.)

TYPE OF WORK: GRADING, DRAINAGE, WIDENING, PAVING, CURB & GUTTER, SIDEWALK, SIGNALS, AND SIGNING

Permit Drawing
Sheet 4 of 13



CLEARING ON THIS PROJECT SHALL BE DONE ACCORDING TO METHOD II.
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF BURLINGTON.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2005 = 21,175
ADT 2025 = 33,100
DHV = 10 %
D = 55 %
T = 3 % *
V = 40 MPH

* TTST 2% DUAL 1%

PROJECT LENGTH

LENGTH ROADWAY F.A. PROJECT STP-1306(8) = 1.26 MI
TOTAL LENGTH STATE PROJECT 34911.1.1 = 1.26 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
January 19, 2007

LETTING DATE:
October 21, 2008

JIMMY GOODNIGHT
PROJECT ENGINEER

TIM GOINS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

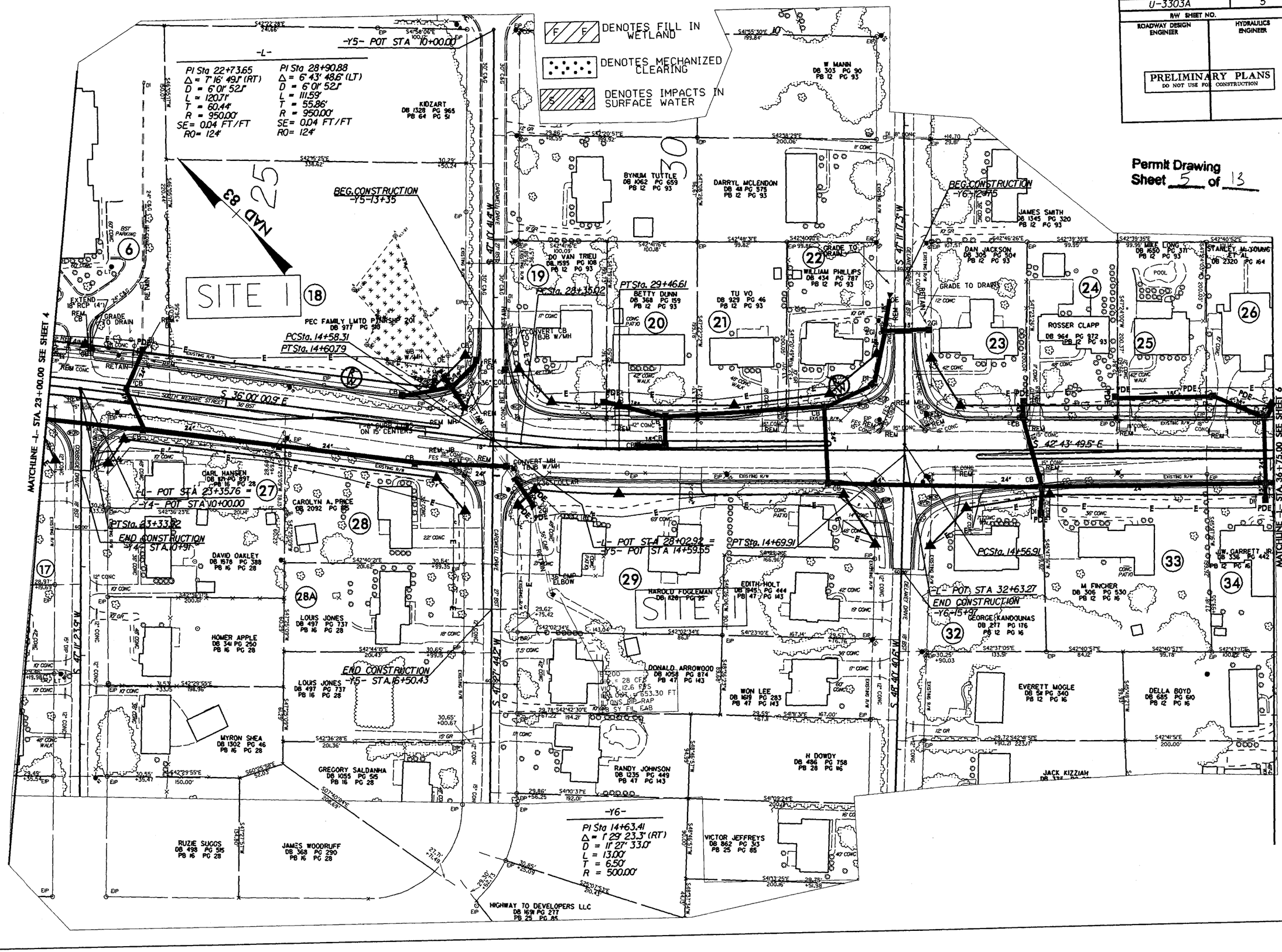
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER P.E.

PROJECT REFERENCE NO.	SHEET NO.
U-3303A	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 5 of 13



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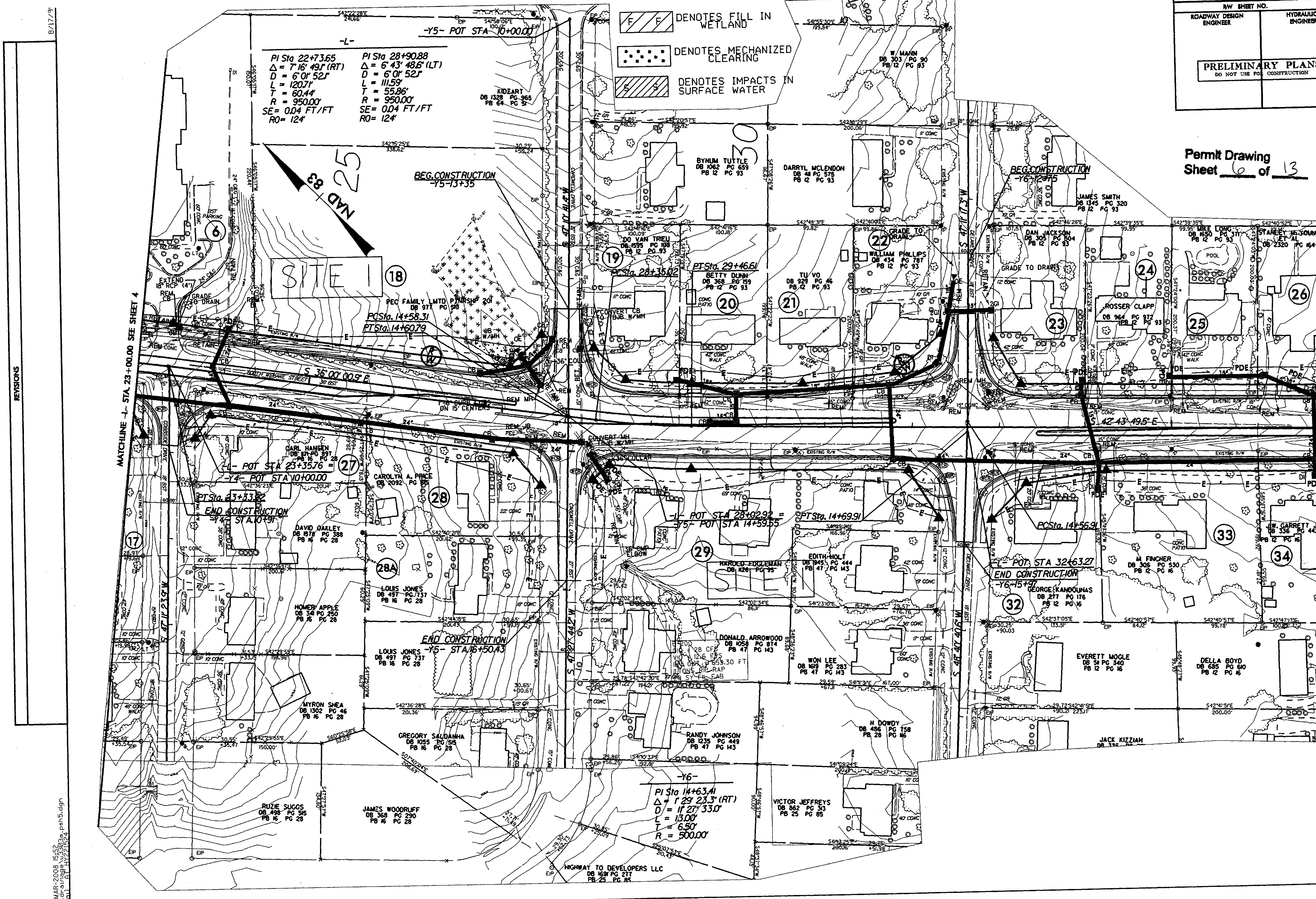
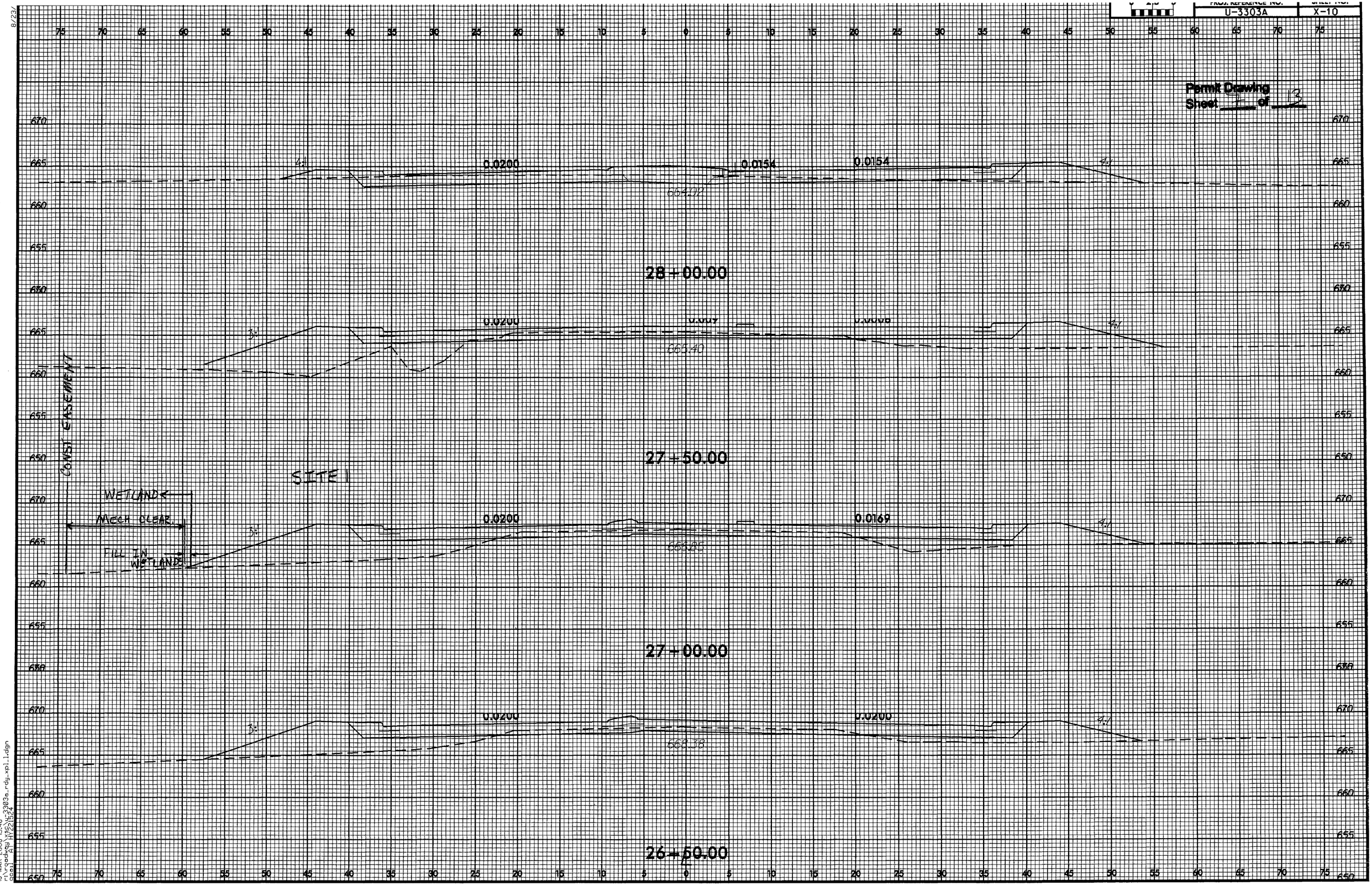
PROJECT REFERENCE NO.	SHEET NO.
U-3303A	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 6 of 13



Permit Drawing
Sheet 7 of 13



PROJECT REFERENCE NO.	SHEET NO.
U-3303A	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 8 of 13

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

REVISIONS

8/17/95

18-MAR-2008 16:54
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PROJECT REFERENCE NO.	SHEET NO.
U-3303A	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 9 of 13

REVISIONS

8/17/99

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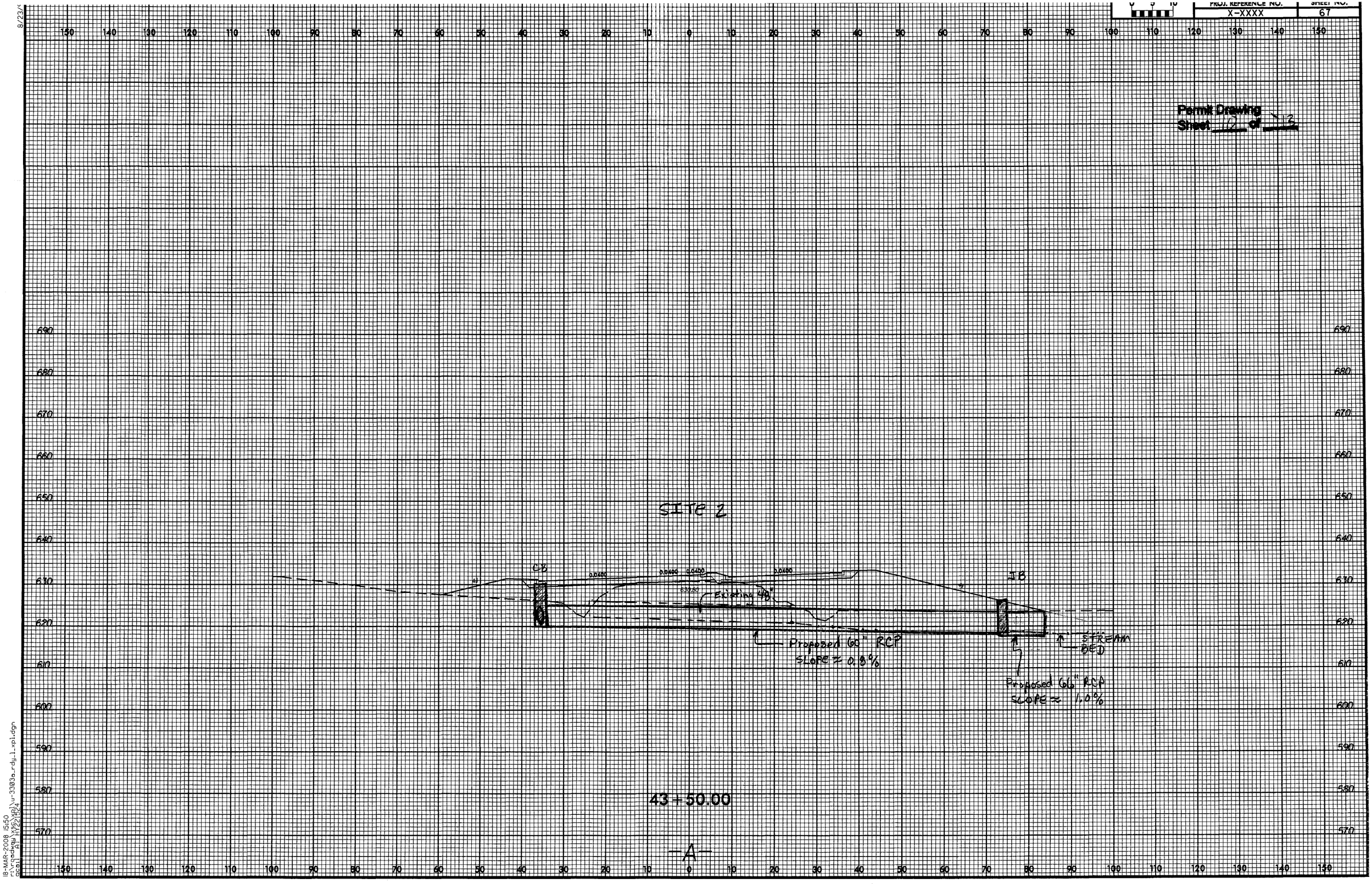
PROJ. REFERENCE NO. X-XXXX

SHEET NO. 67

Permit Drawing
Sheet 12 of 13



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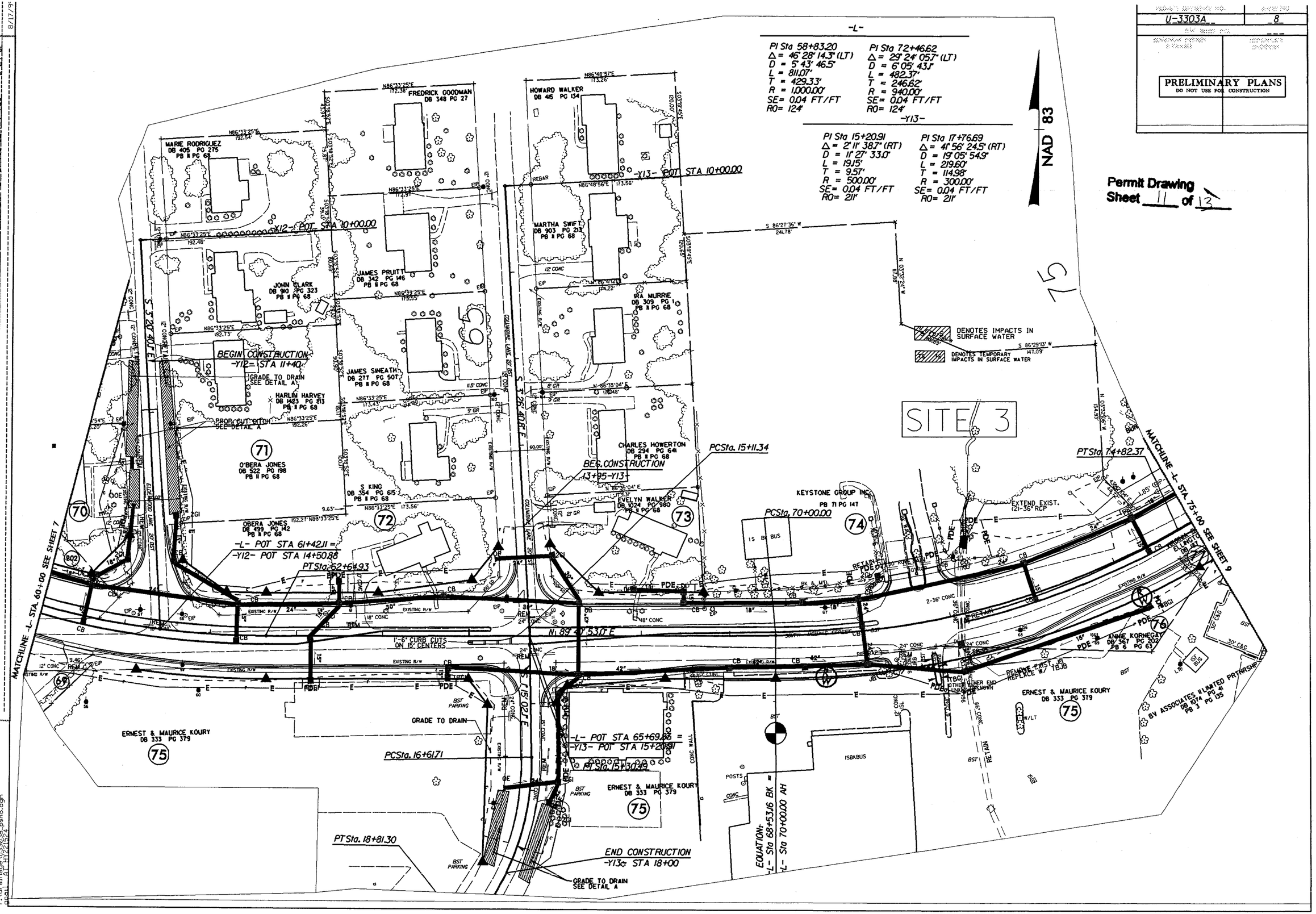

U-3303A 8
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing
Sheet 11 of 13
NAD 83
-L-
PI Sta 58+83.20
Δ = 46° 28' 14.3" (LT)
D = 5° 43' 46.5"
L = 811.07'
T = 429.33'
R = 1,000.00'
SE = 0.04 FT/FT
RO = 124'
PI Sta 72+46.62
Δ = 29° 24' 05.7" (LT)
D = 6° 05' 43.1"
L = 482.37'
T = 246.62'
R = 940.00'
SE = 0.04 FT/FT
RO = 124'
-Y13-
PI Sta 15+20.91
Δ = 2° 11' 38.7" (RT)
D = 11° 27' 33.0"
L = 191.5'
T = 95.7'
R = 500.00'
SE = 0.04 FT/FT
RO = 211'
PI Sta 17+76.69
Δ = 41° 56' 24.5" (RT)
D = 19° 05' 54.9"
L = 219.60'
T = 114.98'
R = 300.00'
SE = 0.04 FT/FT
RO = 211'
-Y13- POT STA 10+00.00
-Y12- POT STA 10+00.00
S 86°27'36" W
241.78'
N 0°32'23" W
187.18'
S 86°29'13" W
147.09'
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
SITE 3
MARIE RODRIGUEZ DB 405 PG 275 PB II PG 68
FREDRICK GOODMAN DB 348 PG 27
HOWARD WALKER DB 415 PG 134
MARTHA SWIFT DB 903 PG 213 PB II PG 68
JOHN CLARK DB 910 PG 323 PB II PG 68
JAMES PRUITT DB 342 PG 146 PB II PG 68
IRA MURRIE DB 309 PG 1 PB II PG 68
JAMES SINEATH DB 277 PG 507 PB II PG 68
HARLIN HARVEY DB 1423 PG 813 PB II PG 68
O'BERA JONES DB 522 PG 198 PB II PG 68
S KING DB 354 PG 615 PB II PG 68
OBERA JONES DB 499 PG 142 PB II PG 68
CHARLES HOWERTON DB 294 PG 641 PB II PG 68
EVELYN WALKER DB 1024 PG 980 PB II PG 68
KEYSTONE GROUP INC. PB 71 PG 147
ERNEST & MAURICE KOURY DB 333 PG 379
ANNE KORNEGAY DB 367 PG 202 PB 6 PG 63
BY ASSOCIATES LIMITED PARTNERSHIP DB 1574 PG 41 PB 3 PG 135
BEGIN CONSTRUCTION
-Y12- STA 11+40
GRADE TO DRAIN SEE DETAIL A
PROP. CUT DITCH SEE DETAIL A
-L- POT STA 61+42.11 =
-Y12- POT STA 14+50.88
PTSta. 62+64.93
BEG. CONSTRUCTION
13+95-Y13
PCSta. 15+11.34
PCSta. 70+00.00
PTSta. 74+82.37
N 89° 27' 53.0" E
1'-6" CURB CUTS ON 15' CENTERS
-L- POT STA 65+69.88 =
-Y13- POT STA 15+20.91
PTSta. 15+30.49
PCSta. 16+61.71
PTSta. 18+81.30
END CONSTRUCTION
-Y13- STA 18+00
EQUATION:
-L- Sta 68+53.16 BK =
-L- Sta 70+00.00 AH
MATCHLINE -L- STA. 60+00 SEE SHEET 7
MATCHLINE -L- STA. 75+00 SEE SHEET 9
STEEPENED THE SLOPES BETWEEN -L- STA. 67+90R & 71+30 RTO ROING CHANNELIZ INSIDE PROP R/W TIED PROP SW INTO EXIST SW -L- STA 66+02 RT TOG 8-24-07
8/17/9
18-MAR-2008 16:57
pi0303a_psh8.dgn

U-3303A	8

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 12 of 13

-L-

PI Sta 58+83.20
Δ = 46° 28' 14.3" (LT)
D = 5° 43' 46.5"
L = 811.07'
T = 429.33'
R = 1,000.00'
SE= 0.04 FT/FT
RO= 124'

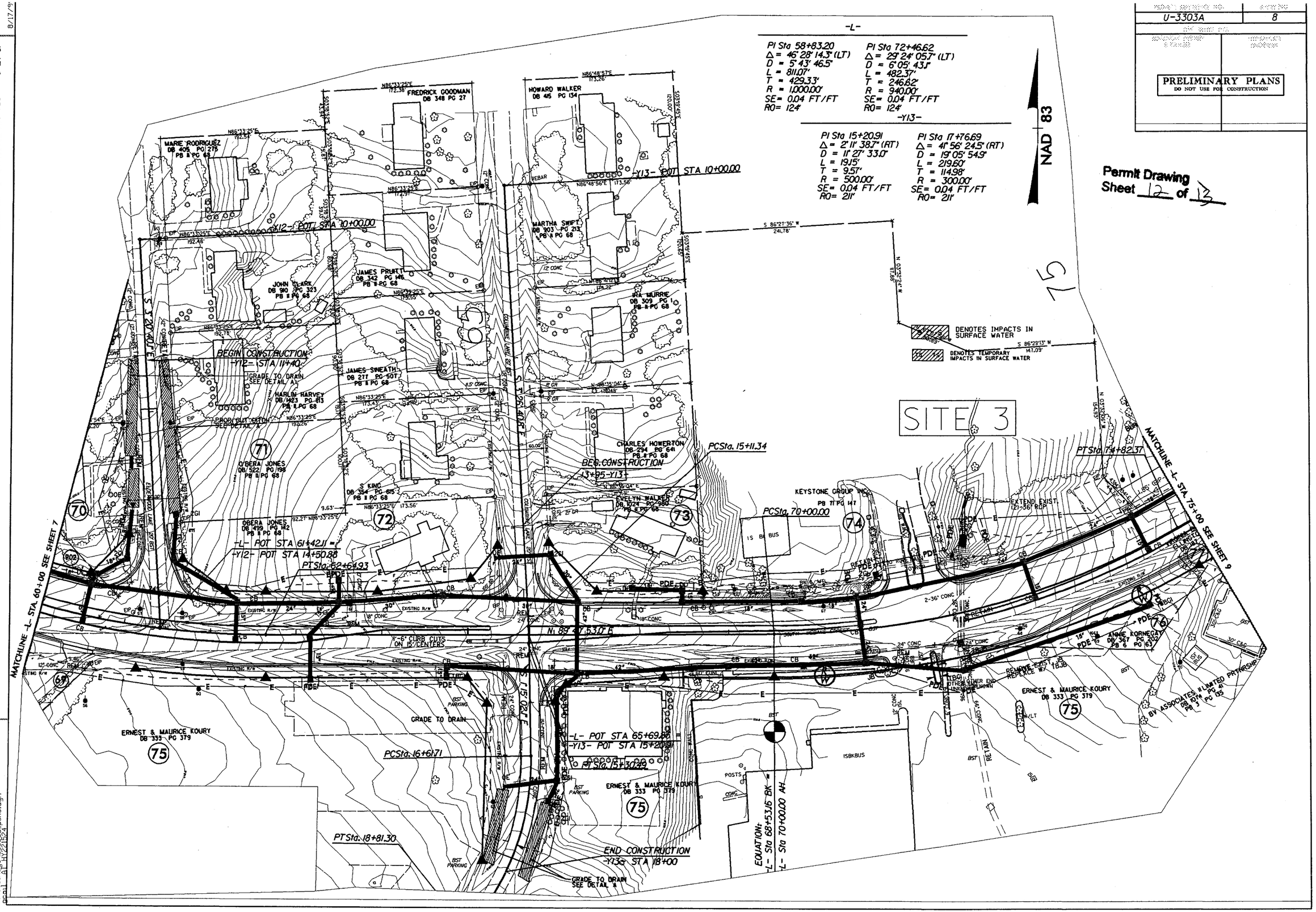
PI Sta 72+46.62
Δ = 29° 24' 05.7" (LT)
D = 6° 05' 43.5"
L = 482.37'
T = 246.62'
R = 940.00'
SE= 0.04 FT/FT
RO= 124'

-Y13-

PI Sta 15+20.91
Δ = 2° 11' 38.7" (RT)
D = 11° 27' 33.0"
L = 19.15'
T = 9.57'
R = 500.00'
SE= 0.04 FT/FT
RO= 211'

PI Sta 17+76.69
Δ = 41° 56' 24.5" (RT)
D = 19° 05' 54.9"
L = 219.60'
T = 114.98'
R = 300.00'
SE= 0.04 FT/FT
RO= 211'

NAD 83



REVISIONS	
STEEPENED THE SLOPES BETWEEN -L- STA 67+90Rt.& 71+30 RtTO BRING CHANNELIZ.INSIDE PROP.R/W.TIED PROP.SW INTO EXIST.SW -L- STA.66+02 RT. TDG	8-24-07
	8/17/9

18-MAR-2008 16:57
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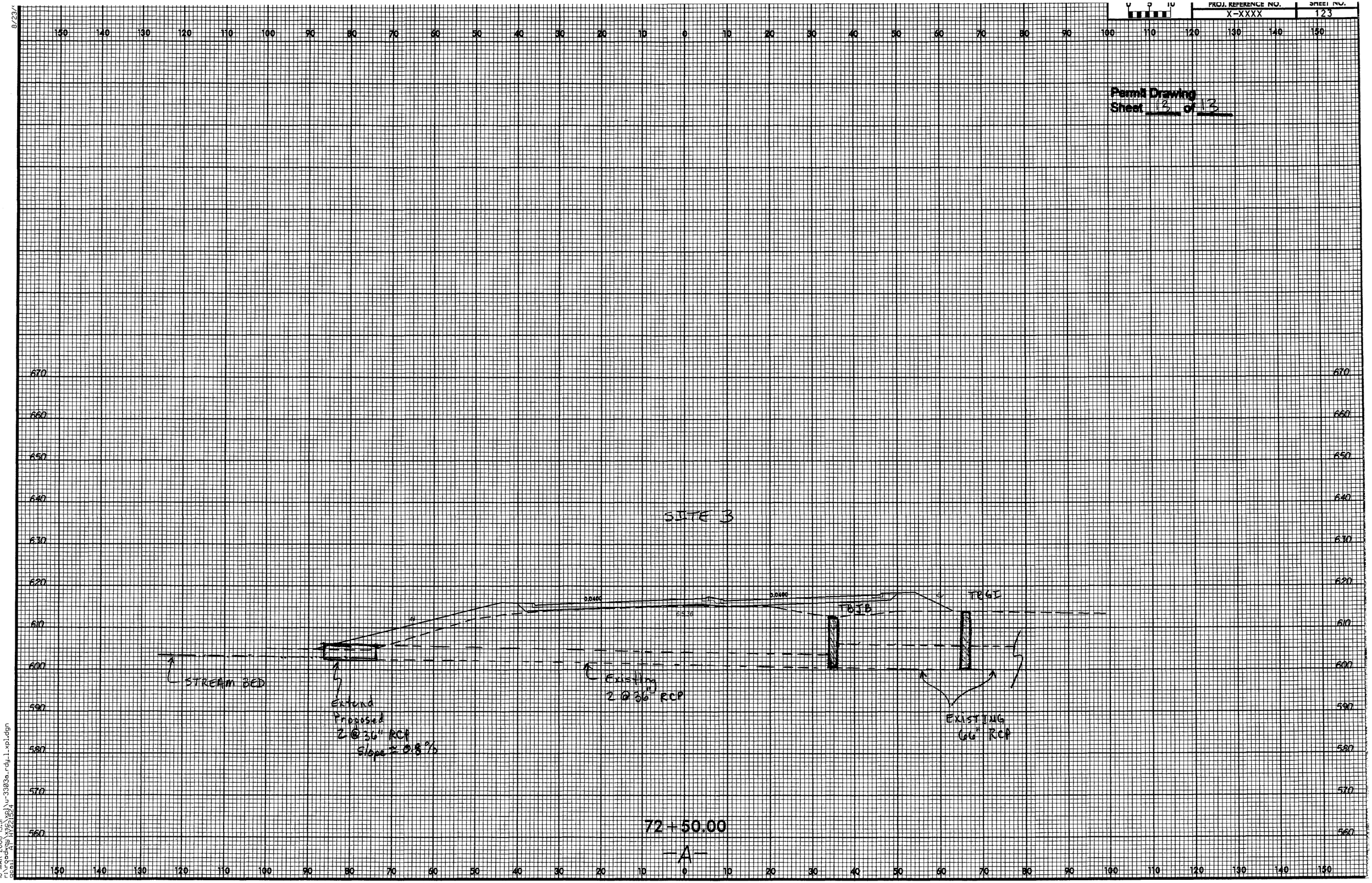
pcarl $$ HY221524



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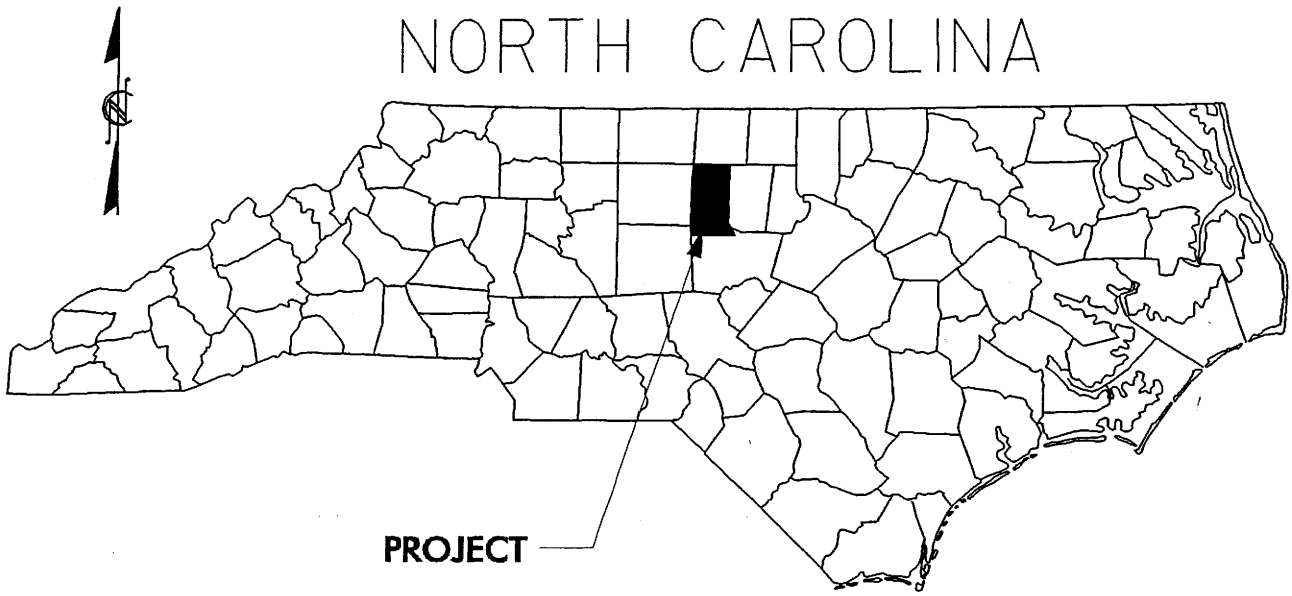
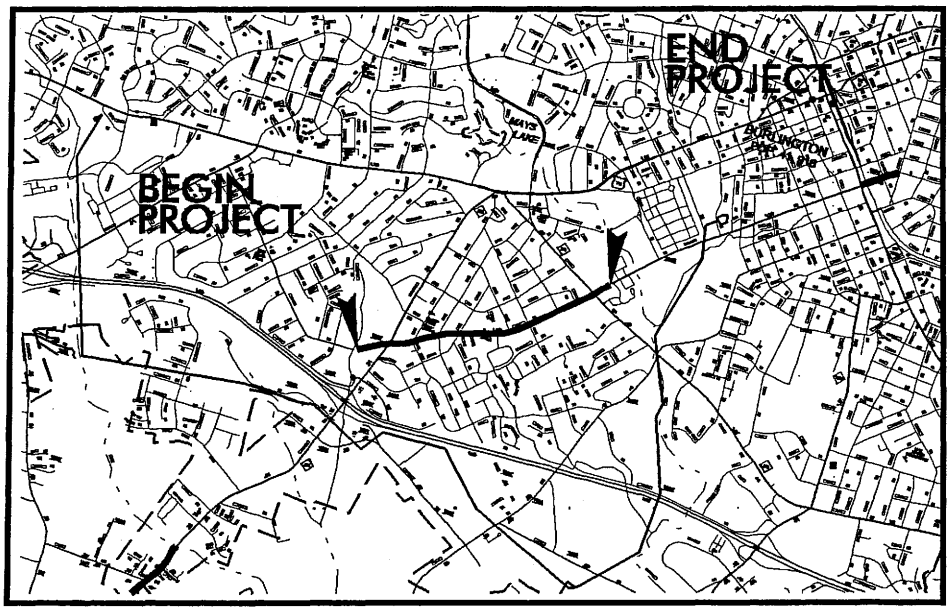




VICINITY MAP

VICINITY MAPS

NCDOT

DIVISION OF HIGHWAYS

ALAMANCE COUNTY

PROJECT: 34911.1.1 (U-3303B)

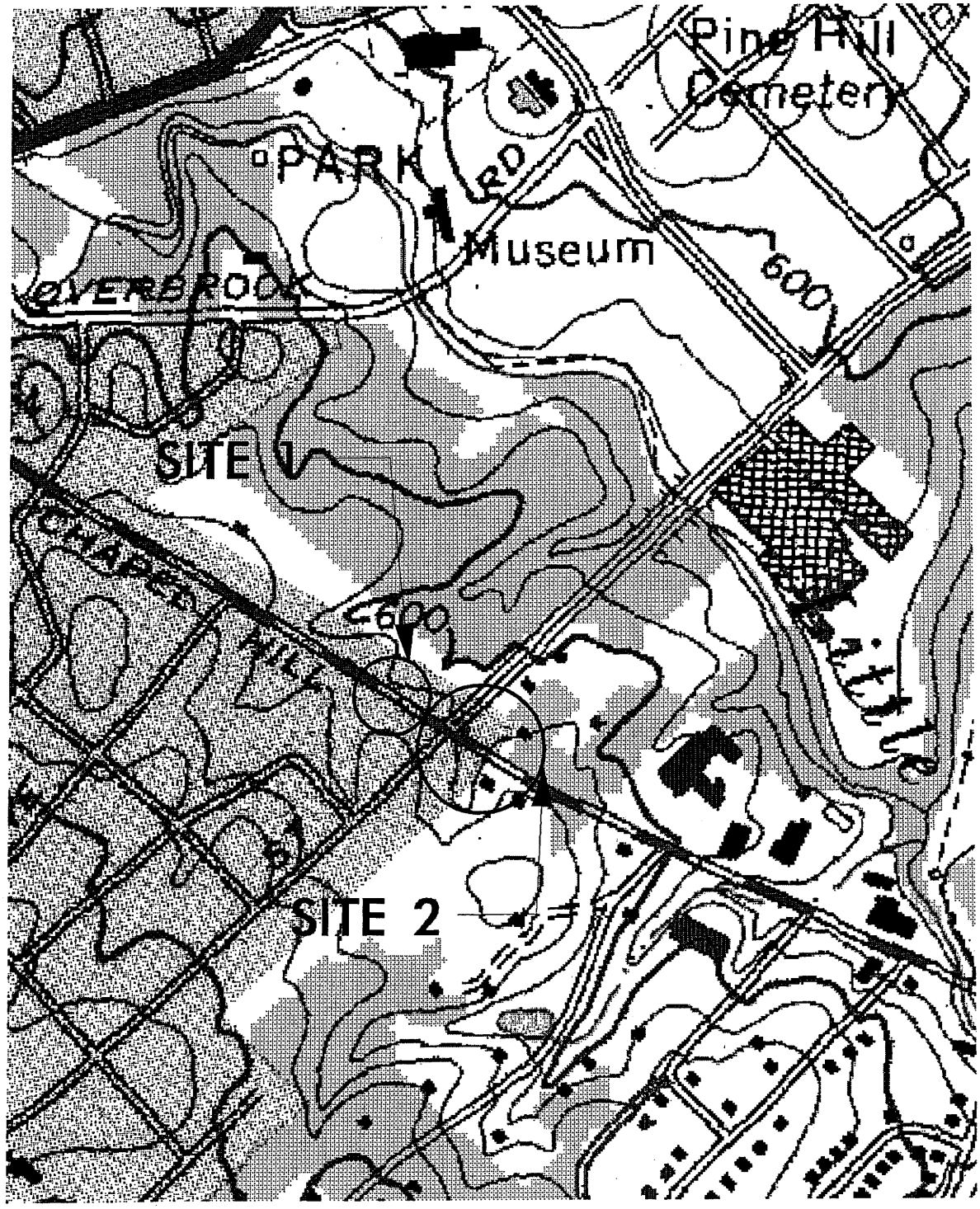
BURLINGTON-SR 1306-1363

(SOUTH MEBANE ST.)

FROM NC 62 TO NC 54

(CHAPEL HIILL RD)

SHEET 1 OF 8 06 / 07 / 06



SITE MAP

NCDOT

DIVISION OF HIGHWAYS
ALAMANCE COUNTY
PROJECT: 34911.1.1 (U-3303B)
BURLINGTON-SR 1306-1363
(SOUTH MEBANE ST.)
FROM NC 62 TO NC 54
(CHAPEL HIILL RD)

SHEET 2 OF 8 06 / 07 / 06

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
101	THE CITY OF BURLINGTON	PO BOX 1358 BURLINGTON, NC 27216
104	WILLIAM SKELTON HEIRS	1540 S. MEBANE ST. BURLINGTON, NC 27215
99	ELOISE BRYAN	BOX 1118 BURLINGTON, NC 27216
97	AMY GILLAND	432 CHAPEL HILL RD. BURLINGTON, NC 27215

NCDOT

DIVISION OF HIGHWAYS
ALAMANCE COUNTY
PROJECT: 34911.1.1 (U-3303B)
BURLINGTON-SR 1306-1363
(SOUTH MEBANE ST.)
FROM NC 62 TO NC 54
(CHAPEL HIILL RD)

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	17+70 -Y14- lt. & rt.	24"						0.002	0.001	39	28	
2	21+65 -Y14- rt. & 138+40 -L- lt.	24"						0.004	0.002	76	32	
TOTALS:								0.006	0.003	115	60	

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

ALAMANCE COUNTY
WBS - 34911.1.1 (U-3303B)

SHEET 4 of 8 7/26/2006

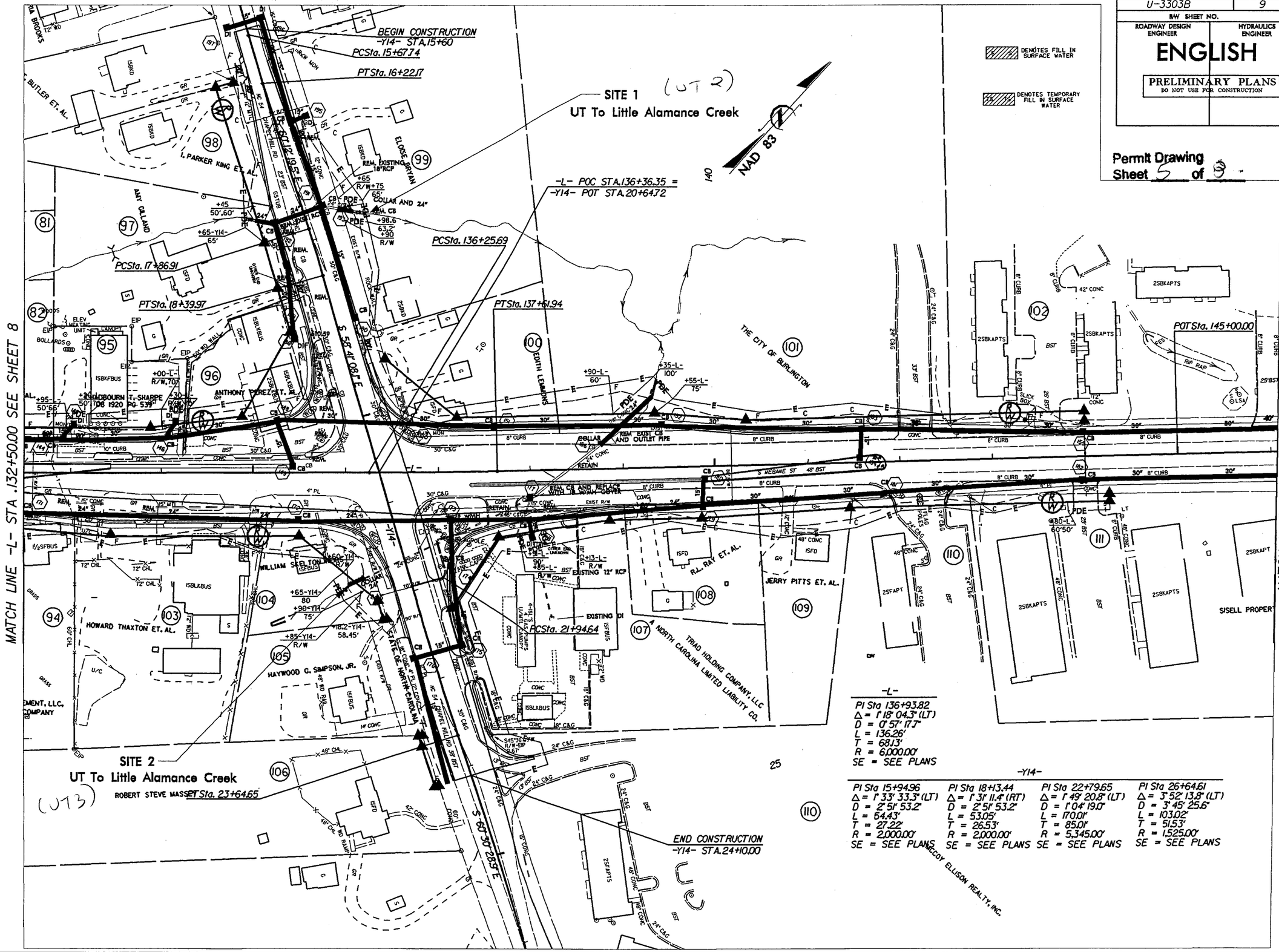
ATN Revised 3/31/05

PROJECT REFERENCE NO.	SHEET NO.
U-3303B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 5 of 9



REVISIONS

REVISED PARCEL 110 TO REFLECT GLENWOOD APARTMENTS, LLC. ADDED DO NOT DISTURB GROUND LIGHTS NOTE ON THIS PARCEL PER R/W REQUEST. TDG 5-5-06

8/17/99

09-JUN-2006 10:46
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pbullings 8/17/2006

PROJECT REFERENCE NO.	SHEET NO.
U-3303B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

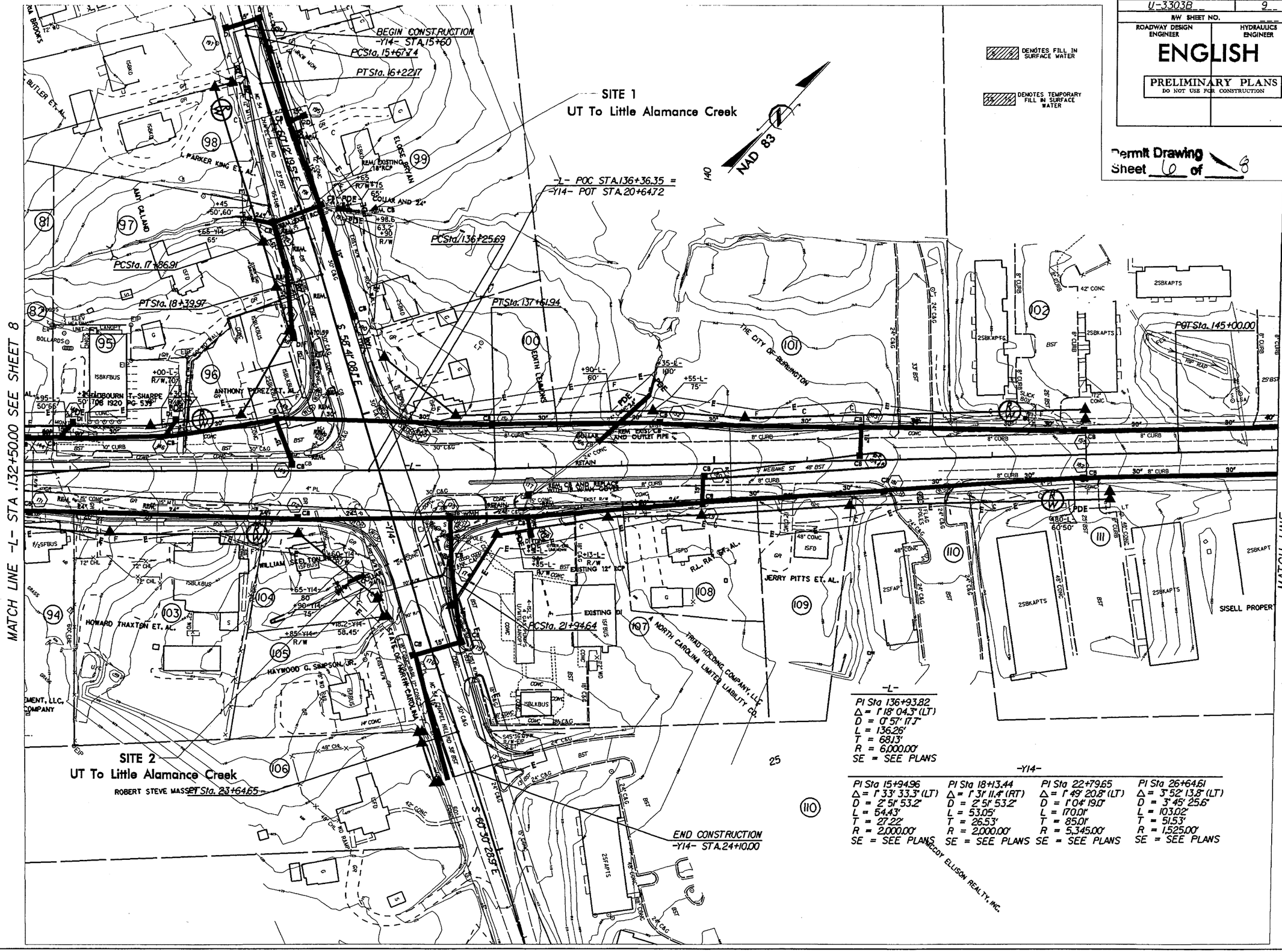
ENGLISH

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 6 of 8

DENOTES FILL IN SURFACE WATER

DENOTES TEMPORARY FILL IN SURFACE WATER



NEVISIONS

REVISED PARCEL 110 TO REFLECT GLENWOOD APARTMENTS, LLC. ADDED DO NOT DISTURB GROUND LIGHTS NOTE ON THIS PARCEL PER R/W REQUEST. TDG 5-5-06

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-3303B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

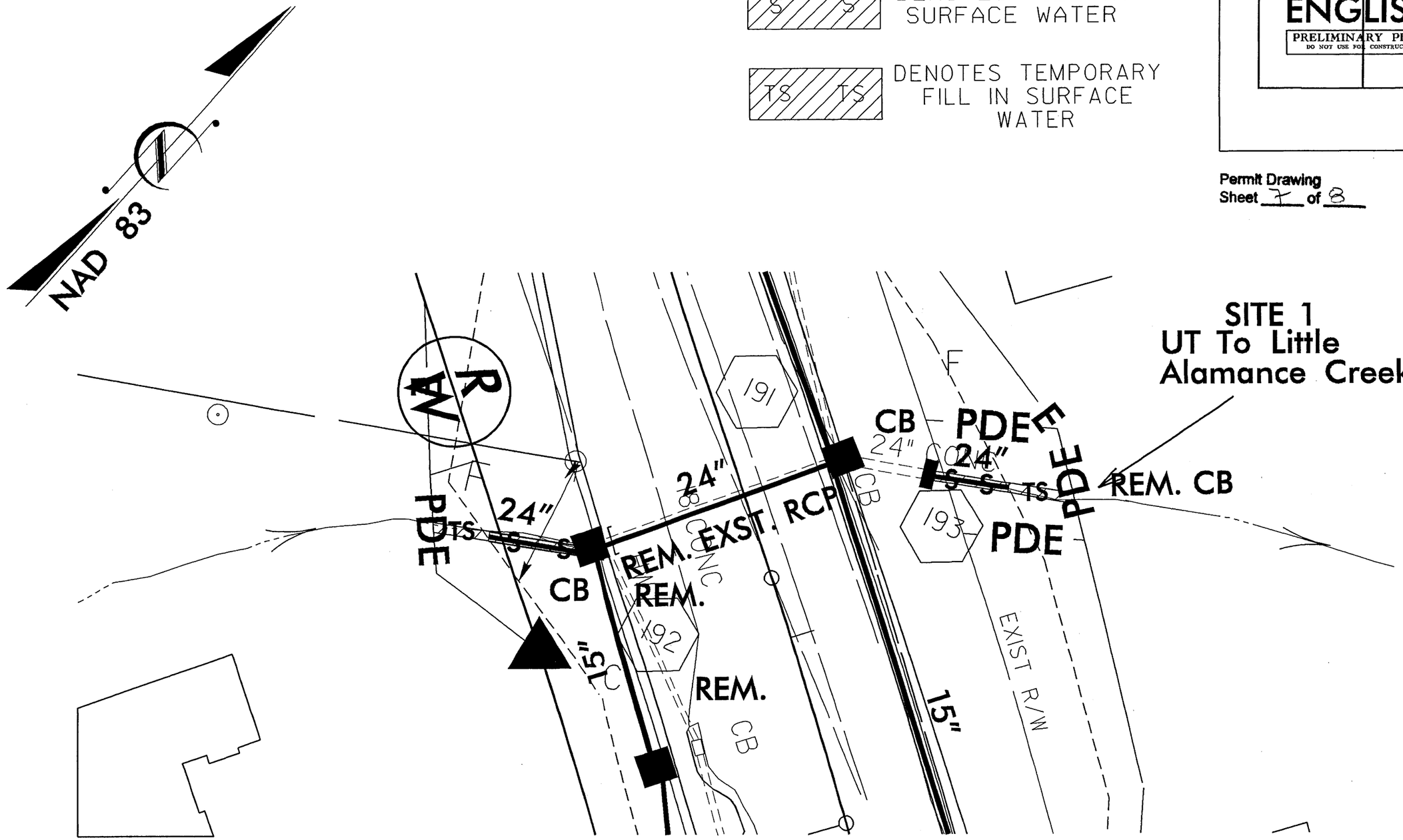
ENGLISH

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 7 of 8

S S DENOTES FILL IN SURFACE WATER

TS TS DENOTES TEMPORARY FILL IN SURFACE WATER



REVISIONS

8/17/99

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mhunter

PROJECT REFERENCE NO.	SHEET NO.
U-3303B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

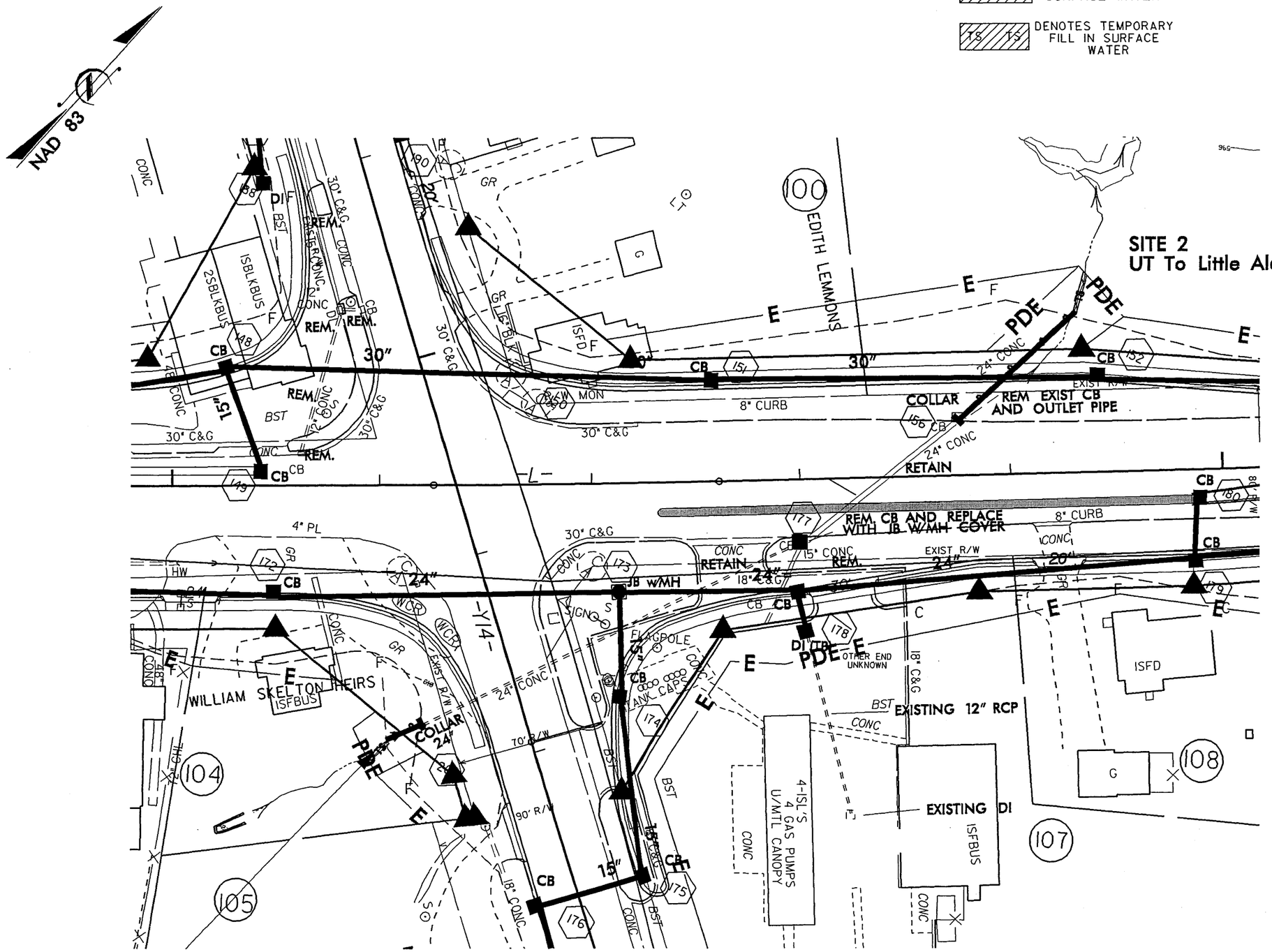
ENGLISH

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DENOTES FILL IN SURFACE WATER

DENOTES TEMPORARY FILL IN SURFACE WATER

Permit Drawing
Sheet 8 of 8



SITE 2
UT To Little Alamance Creek

REVISIONS

8/17/99

03-JUN-2006 10:04
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ARCHITECT

09/08/99

TIP PROJECT: U-3303A

CONTRACT:

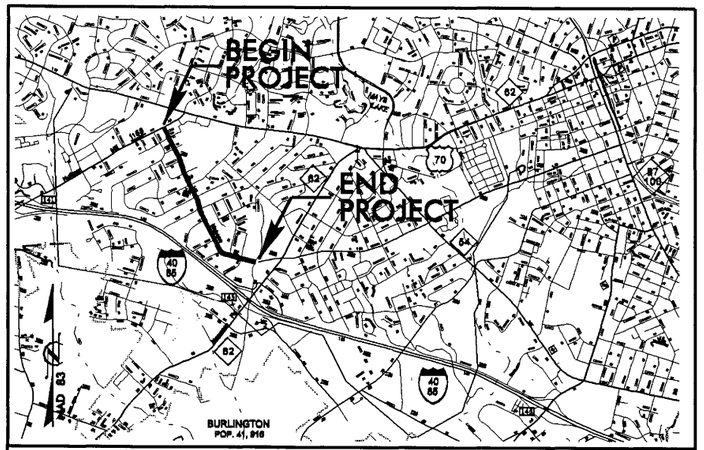
See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3303A	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34911.1.1	STP-1306(8)	P.E.
34911.2.3	STP-1306(15)	R/W

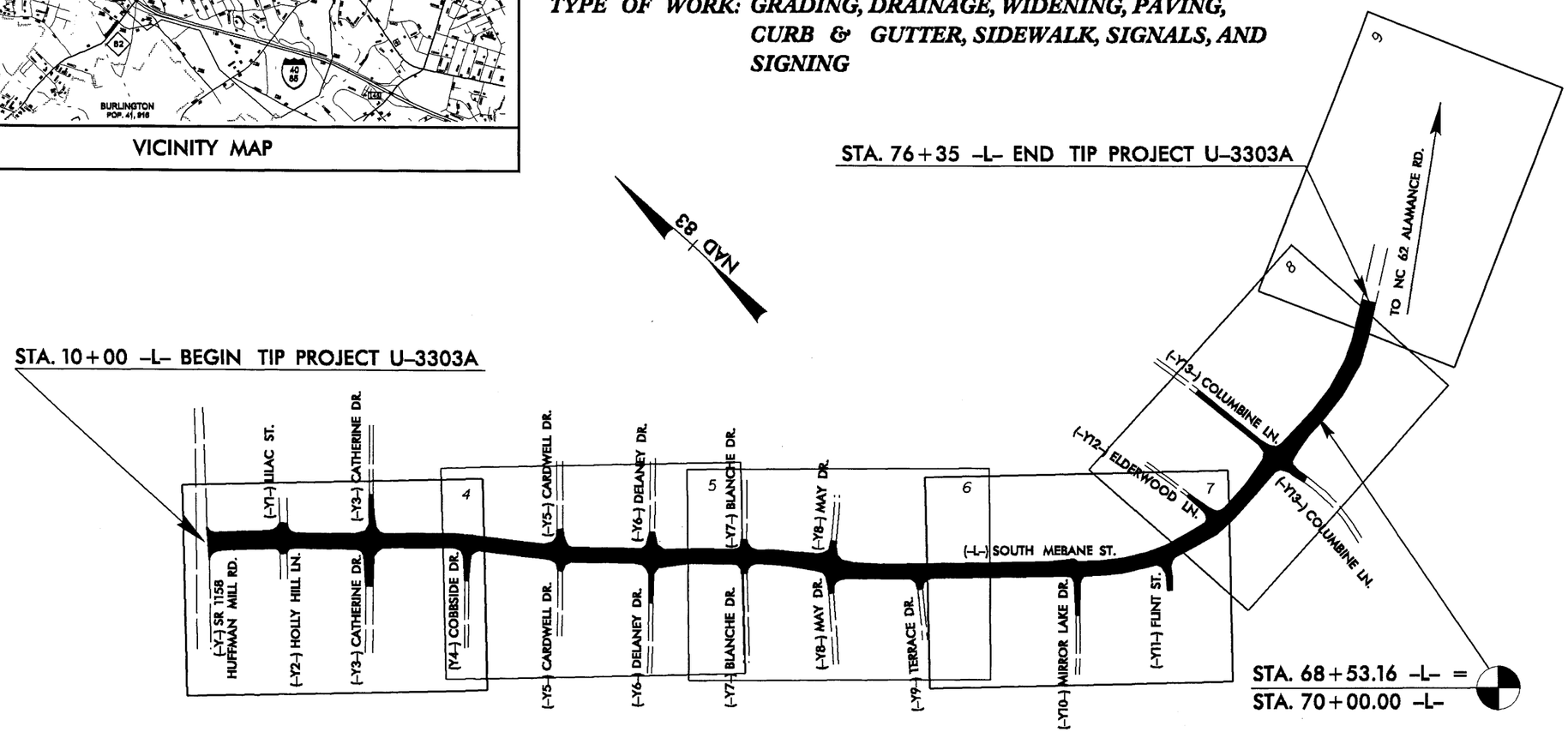
ALAMANCE COUNTY



VICINITY MAP

LOCATION: BURLINGTON – SR 1306 (SOUTH MEBANE ST.)
FROM SR 1158 (HUFFMAN MILL RD.)
TO NC 62 (ALAMANCE RD.)

TYPE OF WORK: GRADING, DRAINAGE, WIDENING, PAVING, CURB & GUTTER, SIDEWALK, SIGNALS, AND SIGNING



CLEARING ON THIS PROJECT SHALL BE DONE ACCORDING TO METHOD II.
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF BURLINGTON.

SEP 21 2007
DIVISION OF HIGHWAYS
HYDRAULICS UNIT

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2005 = 21,175
ADT 2025 = 33,100
DHV = 10 %
D = 55 %
T = 3 % *
V = 40 MPH

* TTST 2% DUAL 1%

PROJECT LENGTH

LENGTH ROADWAY F.A. PROJECT STP-1306(8) = 1.26 MI
TOTAL LENGTH STATE PROJECT 34911.1.1 = 1.26 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
January 19, 2007

LETTING DATE:
October 21, 2008

JIMMY GOODNIGHT
PROJECT ENGINEER

TIM GOINS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER P.E.

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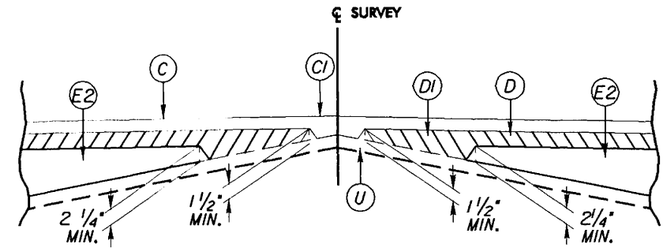
PROJECT REFERENCE NO.	SHEET NO.
U-3303A	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

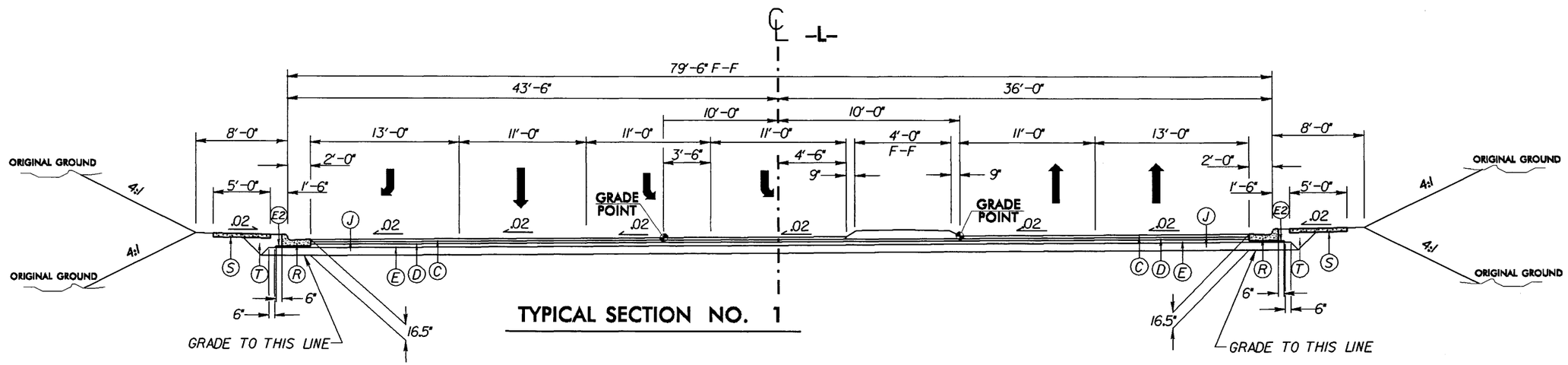
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE

C	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 140 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	J1	PROP. VAR. DEPTH AGGREGATE BASE COURSE.
C1	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 1½" IN DEPTH.	R	2'-6" CONCRETE CURB AND GUTTER.
D	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R1	1'-6" CONCRETE CURB AND GUTTER.
D1	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 2¼" IN DEPTH OR GREATER THAN 4" IN DEPTH.	S	4" CONCRETE SIDEWALK.
E	PROP. APPROX. 3.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.	T	EARTH MATERIAL.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2)
J	PROP. 8" AGGREGATE BASE COURSE.		



DETAIL SHOWING METHOD OF WEDGING



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USE TYPICAL SECTION NO. 1

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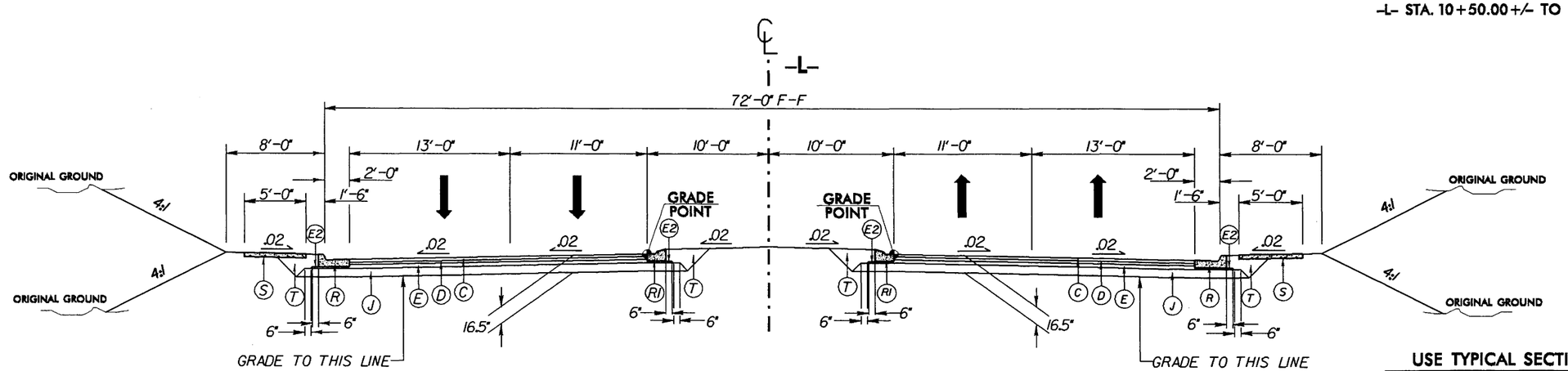

TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

-L- STA. 14+50.00 TO -L- STA. 76+35.00

6/2/99

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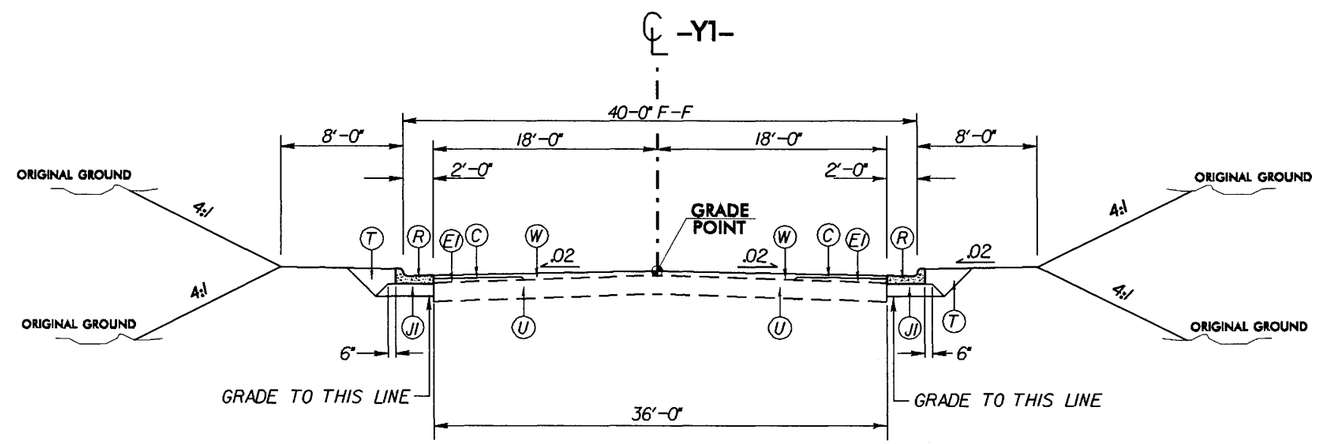
PROJECT REFERENCE NO.	SHEET NO.
U-3303A	2A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE

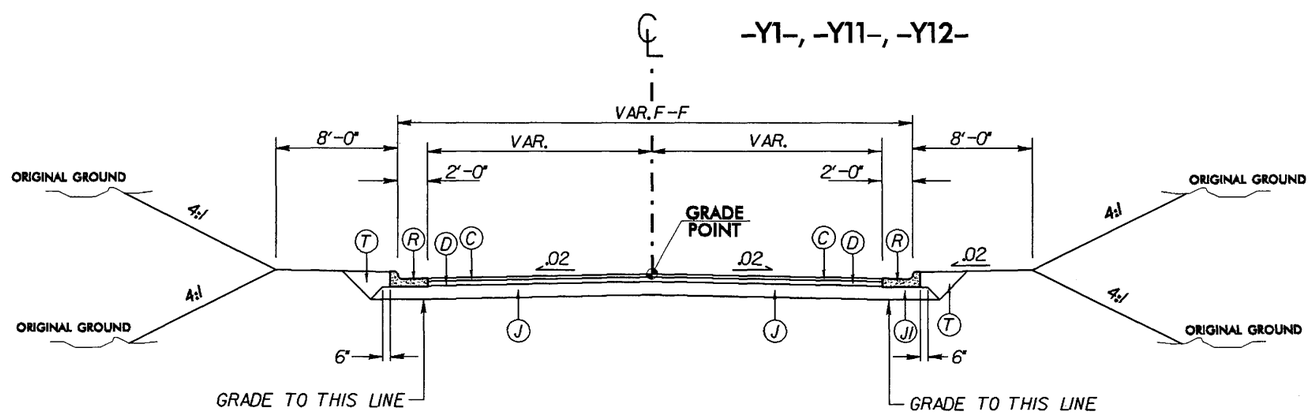
C	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 140 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	J1	PROP. VAR. DEPTH AGGREGATE BASE COURSE.
C1	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.	R	2'-6" CONCRETE CURB AND GUTTER.
D	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R1	1'-6" CONCRETE CURB AND GUTTER.
D1	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 2¼" IN DEPTH OR GREATER THAN 4" IN DEPTH.	S	4" CONCRETE SIDEWALK.
E	PROP. APPROX. 3.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.	T	EARTH MATERIAL.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 8½" IN DEPTH.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2)
J	PROP. 8" AGGREGATE BASE COURSE.		



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-Y1- STA. 13+01.96 TO -Y1- STA. 13+80.00



TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

-Y1- STA. 13+80.00 TO -Y1- STA. 14+67.39
-Y11- STA. 10+34.04 TO -Y11- STA. 10+90.00
-Y12- STA. 11+96.33 TO -Y12- STA. 14+16.33

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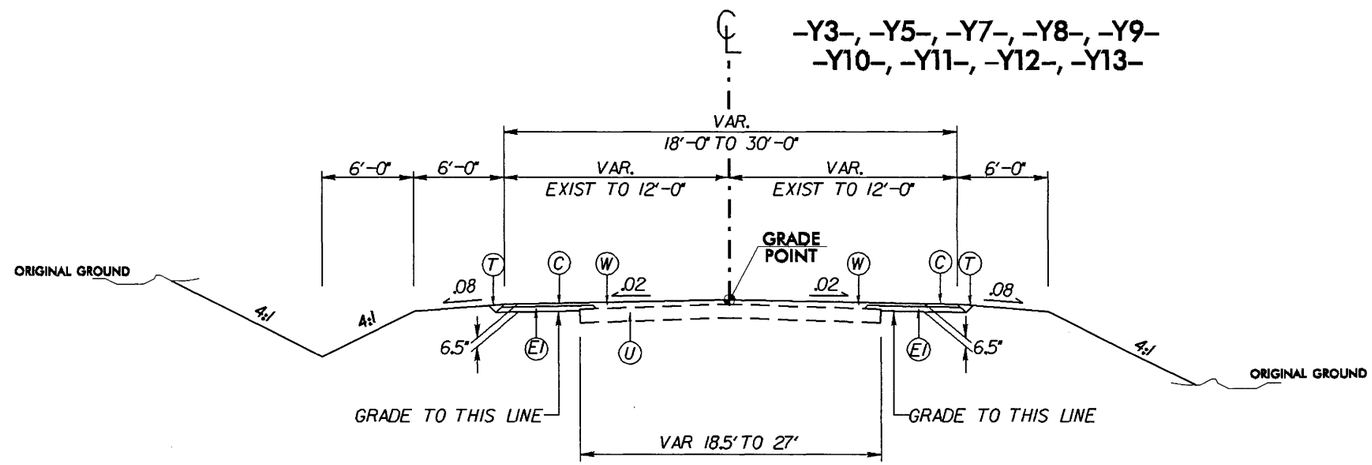
PROJECT REFERENCE NO.	SHEET NO.
U-3303A	2B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE

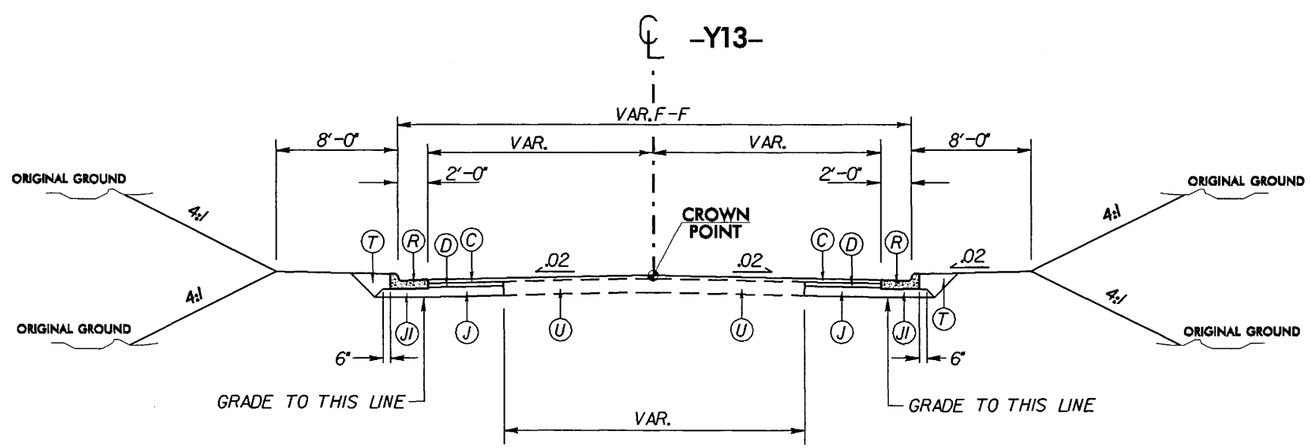
C	PROP. APPROX. 8" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 140 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	J1	PROP. VAR. DEPTH AGGREGATE BASE COURSE.
C1	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.	R	2'-6" CONCRETE CURB AND GUTTER.
D	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R1	1'-6" CONCRETE CURB AND GUTTER.
D1	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 3¼" IN DEPTH OR GREATER THAN 4" IN DEPTH.	S	4" CONCRETE SIDEWALK.
E	PROP. APPROX. 3.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.	T	EARTH MATERIAL.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 3½" IN DEPTH.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2)
J	PROP. 8" AGGREGATE BASE COURSE.		



TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO. 5

-Y3- STA. 10+41.95 TO -Y3- STA. 15+03.98
-Y5- STA. 14+93.77 TO -Y5- STA. 16+50.43
-Y7- STA. 13+23.17 TO -Y7- STA. 14+73.25
-Y7- STA. 15+41.26 TO -Y7- STA. 16+92.60
-Y8- STA. 13+50.00 TO -Y8- STA. 15+39.99
-Y8- STA. 16+08.39 TO -Y8- STA. 18+41.90
-Y9- STA. 10+34.10 TO -Y9- STA. 11+88.90
-Y10- STA. 10+34.00 TO -Y10- STA. 11+73.00
-Y11- STA. 10+90.00 TO -Y11- STA. 12+52.17
-Y12- STA. 11+96.33 TO -Y12- STA. 14+16.33
-Y13- STA. 15+54.92 TO -Y13- STA. 17+66.13



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6

-Y13- STA. 13+94.42 TO -Y13- STA. 14+86.86

6/2/99

18-SEP-2007 16:11
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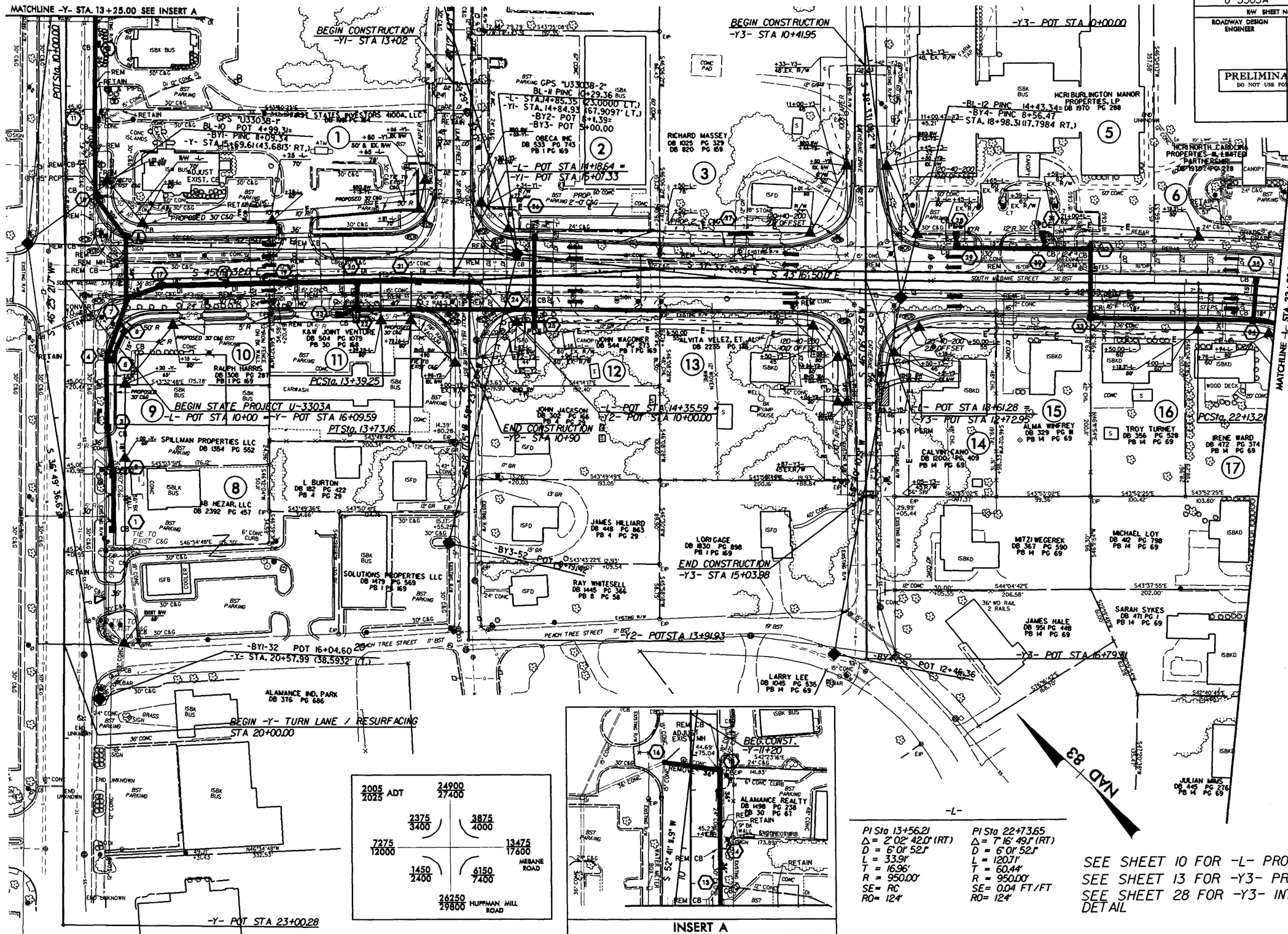
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3303A	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99



-L-

PI Sta 13+56.21	PI Sta 22+73.65
Δ = 2°02'42.0" (RT)	Δ = 7°16'49.1" (RT)
D = 6°01'52.1"	D = 6°01'52.1"
L = 33.91'	L = 120.71'
T = 16.96'	T = 60.44'
R = 950.00'	R = 950.00'
SE = RC	SE = 0.04 FT/FT
RO = 124'	RO = 124'

SEE SHEET 10 FOR -L- PROFILE
SEE SHEET 13 FOR -Y3- PROFILE
SEE SHEET 28 FOR -Y3- INTERSECTION DETAIL

18-SEP-2007 16:13
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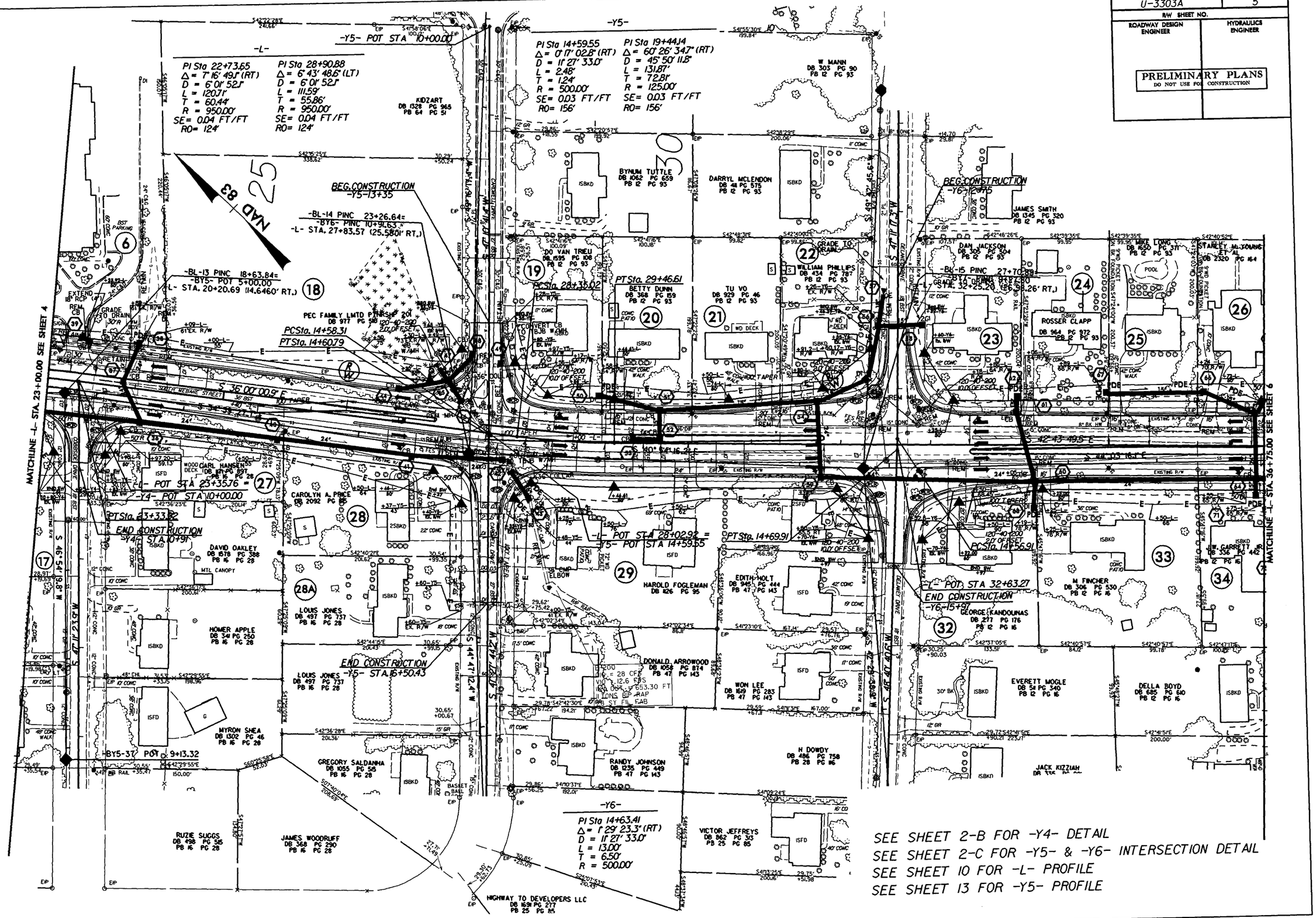
PROJECT REFERENCE NO.	SHEET NO.
U-3303A	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/17/99

REVISIONS



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PROJECT REFERENCE NO.	SHEET NO.
U-3303A	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99

-Y8-

PI Sta 13+68.46
Δ = 7° 15' 12.6" (RT)
D = 2° 51' 53.2"
L = 253.20'
T = 126.77'
R = 2,000.00'
SE = 0.04 FT/FT
RO = 191'

PI Sta 16+04.59
Δ = 12° 00' 32.1" (LT)
D = 5° 43' 46.5"
L = 209.60'
T = 105.18'
R = 1,000.00'
SE = 0.04 FT/FT
RO = 191'

-L-

PI Sta 39+00.17
Δ = 9° 44' 29.1" (RT)
D = 6° 01' 52.1"
L = 161.52'
T = 80.95'
R = 950.00'
SE = 0.04 FT/FT
RO = 124'

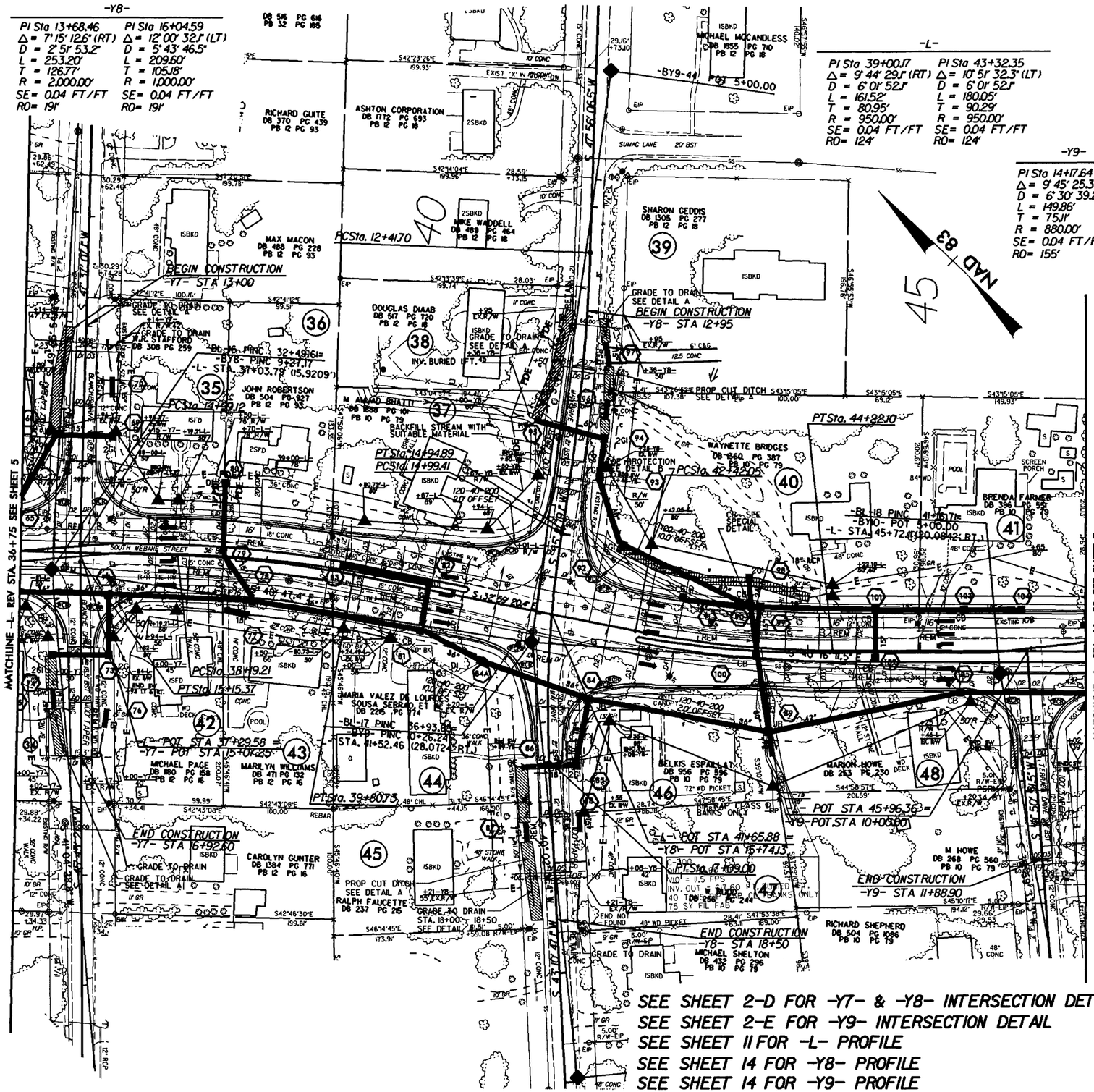
PI Sta 43+32.35
Δ = 10° 51' 32.3" (LT)
D = 6° 01' 52.1"
L = 180.05'
T = 90.29'
R = 950.00'
SE = 0.04 FT/FT
RO = 124'

-Y9-

PI Sta 14+17.64
Δ = 9° 45' 25.3" (LT)
D = 6° 30' 39.2"
L = 149.86'
T = 75.11'
R = 880.00'
SE = 0.04 FT/FT
RO = 155'

-Y7-

PI Sta 15+07.25
Δ = 1° 51' 45.8" (LT)
D = 11° 27' 33.0"
L = 16.26'
T = 8.13'
R = 500.00'
SE = 0.02 FT/FT
RO = 152'



SEE SHEET 2-D FOR -Y7- & -Y8- INTERSECTION DETAIL
SEE SHEET 2-E FOR -Y9- INTERSECTION DETAIL
SEE SHEET 11 FOR -L- PROFILE
SEE SHEET 14 FOR -Y8- PROFILE
SEE SHEET 14 FOR -Y9- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-3303A	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y8-

PI Sta 13+68.46
Δ = 7° 15' 12.6" (RT)
D = 2° 51' 53.2"
L = 253.20'
T = 126.77'
R = 2,000.00'
SE = 0.04 FT/FT
RO = 191'

PI Sta 16+04.59
Δ = 12° 00' 32.1" (LT)
D = 5° 43' 46.5"
L = 209.60'
T = 105.18'
R = 1,000.00'
SE = 0.04 FT/FT
RO = 191'

-L-

PI Sta 39+00.17
Δ = 9° 44' 29.1" (RT)
D = 6° 01' 52.1"
L = 161.52'
T = 80.95'
R = 950.00'
SE = 0.04 FT/FT
RO = 124'

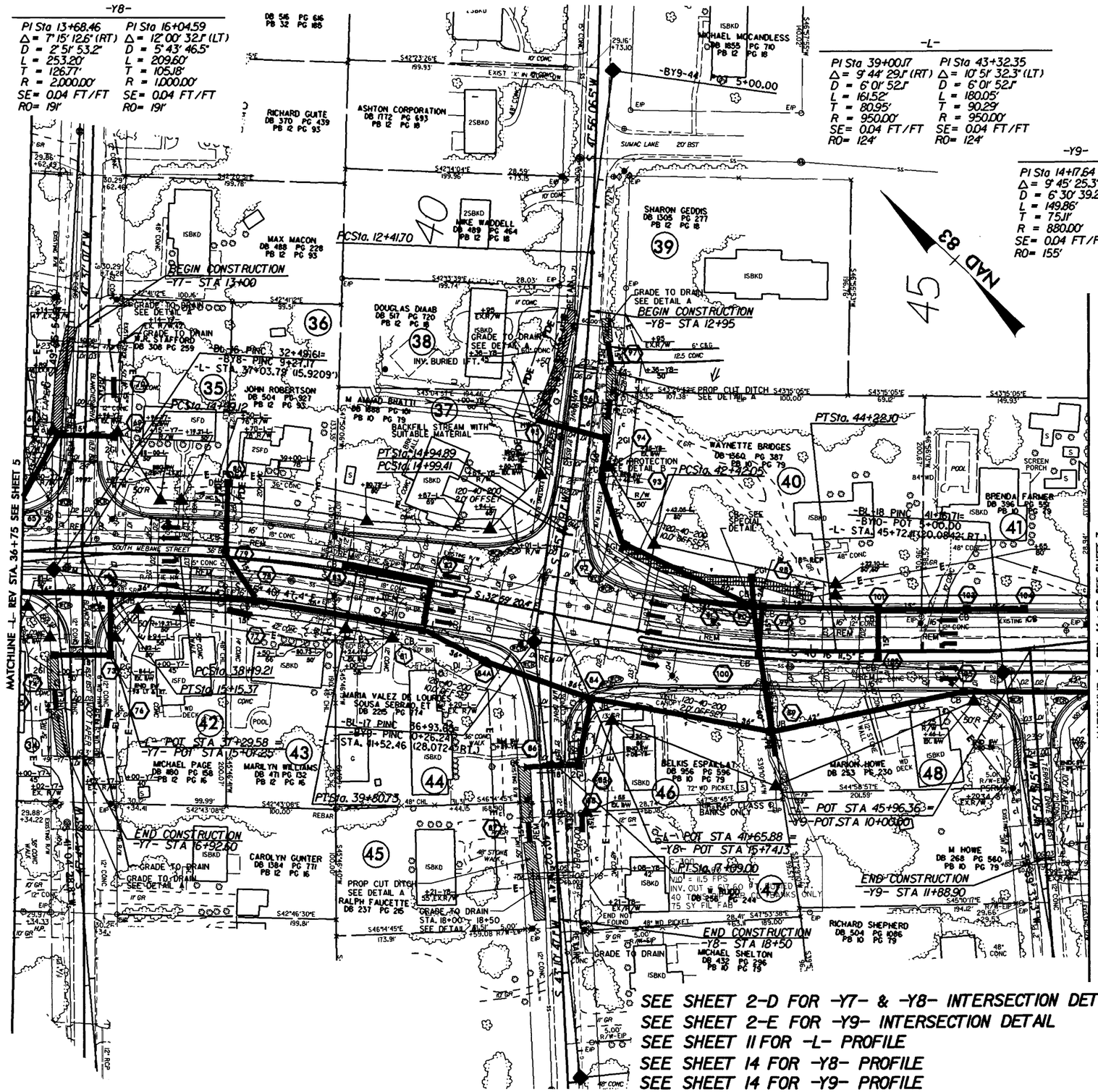
PI Sta 43+32.35
Δ = 10° 51' 32.3" (LT)
D = 6° 01' 52.1"
L = 180.05'
T = 90.29'
R = 950.00'
SE = 0.04 FT/FT
RO = 124'

-Y9-

PI Sta 14+17.64
Δ = 9° 45' 25.3" (LT)
D = 6° 30' 39.2"
L = 149.86'
T = 75.11'
R = 880.00'
SE = 0.04 FT/FT
RO = 155'

-Y7-

PI Sta 15+07.25
Δ = 1° 51' 45.8" (LT)
D = 11° 27' 33.0"
L = 16.26'
T = 8.13'
R = 500.00'
SE = 0.02 FT/FT
RO = 152'



SEE SHEET 2-D FOR -Y7- & -Y8- INTERSECTION DETAIL
SEE SHEET 2-E FOR -Y9- INTERSECTION DETAIL
SEE SHEET 11 FOR -L- PROFILE
SEE SHEET 14 FOR -Y8- PROFILE
SEE SHEET 14 FOR -Y9- PROFILE

REVISIONS

8/17/99

18-SEP-2007 16:18
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PROJECT REFERENCE NO.	SHEET NO.
U-3303A	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

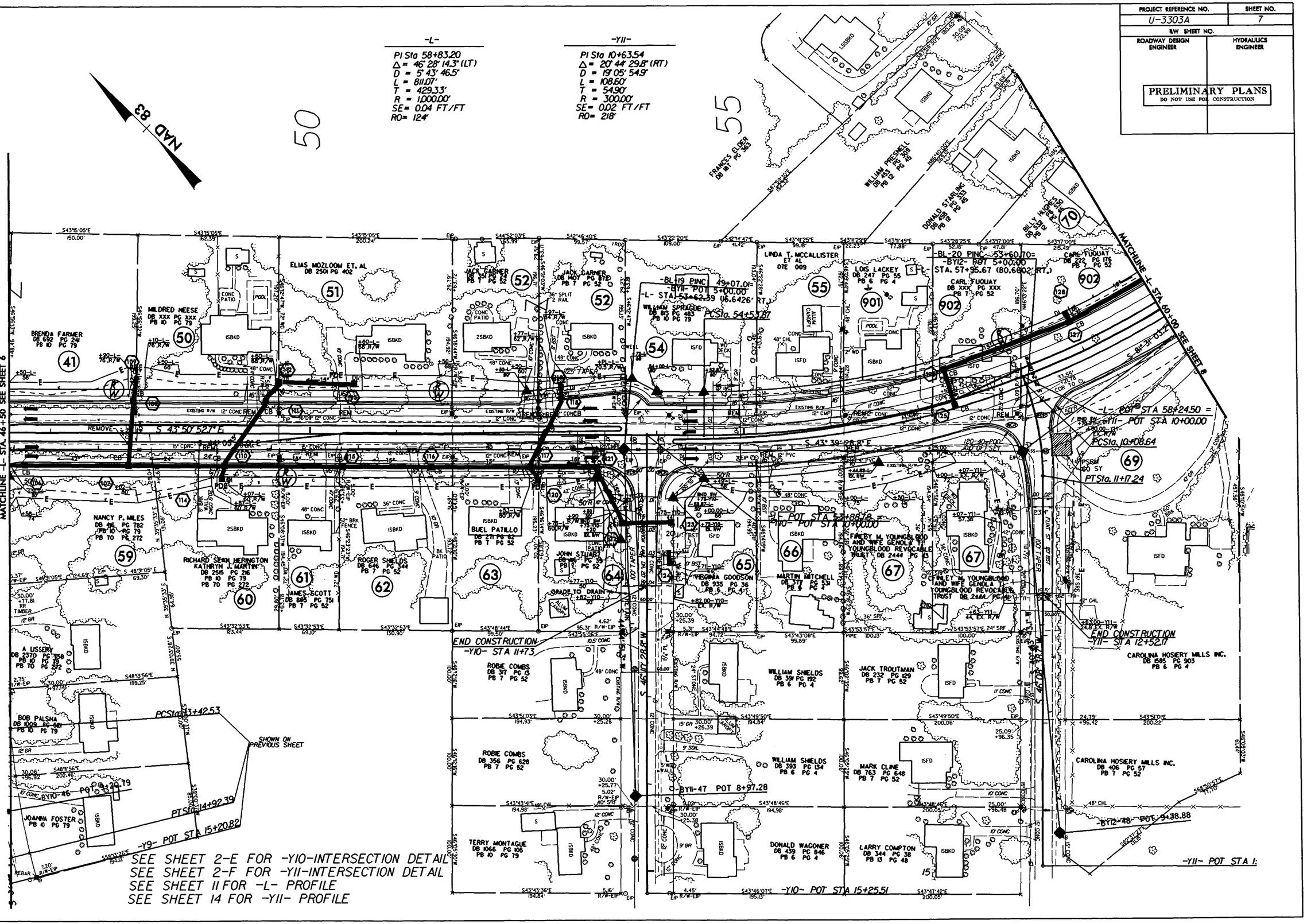
-L-
PI Sta 58+83.20
Δ = 46° 28' 14.3" (LT)
D = 5° 43' 46.5"
L = 811.07'
T = 429.33'
R = 1,000.00'
SE = 0.04 FT/FT
RO = 124'

-Y11-
PI Sta 10+63.54
Δ = 20° 44' 29.8" (RT)
D = 19° 05' 54.9"
L = 108.60'
T = 54.90'
R = 300.00'
SE = 0.02 FT/FT
RO = 218'

REVISIONS

PARCELS 49 AND 41 WERE COMBINED PER R/W REQUEST DATED 3-22-07. TDG	8-10-07	COMBINED PARCELS 67 & 68 PER R/W REQUEST DATED 3-8-07. TDG 8-10-07
PARCELS 52 AND 53 WERE COMBINED PER R/W REQUEST DATED 4-2-07. TDG	8-10-07	REVISED NAME ON PARCEL 55 PER R/W REQUEST DATED 3-19-07. TDG 8-10-07
PARCEL 59 WAS REDUCED DUE TO NEW PROPERTY LINE (R/W REQ DATED 3-16-07) TDG	8-10-07	REVISED NAME ON PARCEL 51 PER R/W REQ DATED 3-6-07. TDG 8-10-07

8/17/99



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PROJECT REFERENCE NO.	SHEET NO.
U-3303A	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99

STEEPENED THE SLOPES BETWEEN -L- STA 67+90Rt.& 71+30 RtTO BRING CHANNELIZ.INSIDE PROP.R/W. TIED PROP.SW INTO EXIST.SW -L- STA.66+02 RT. TDG 8-24-07

-L-

PI Sta 58+83.20
Δ = 46° 28' 14.3" (LT)
D = 5° 43' 46.5"
L = 811.07'
T = 429.33'
R = 1,000.00'
SE = 0.04 FT/FT
RO = 124'

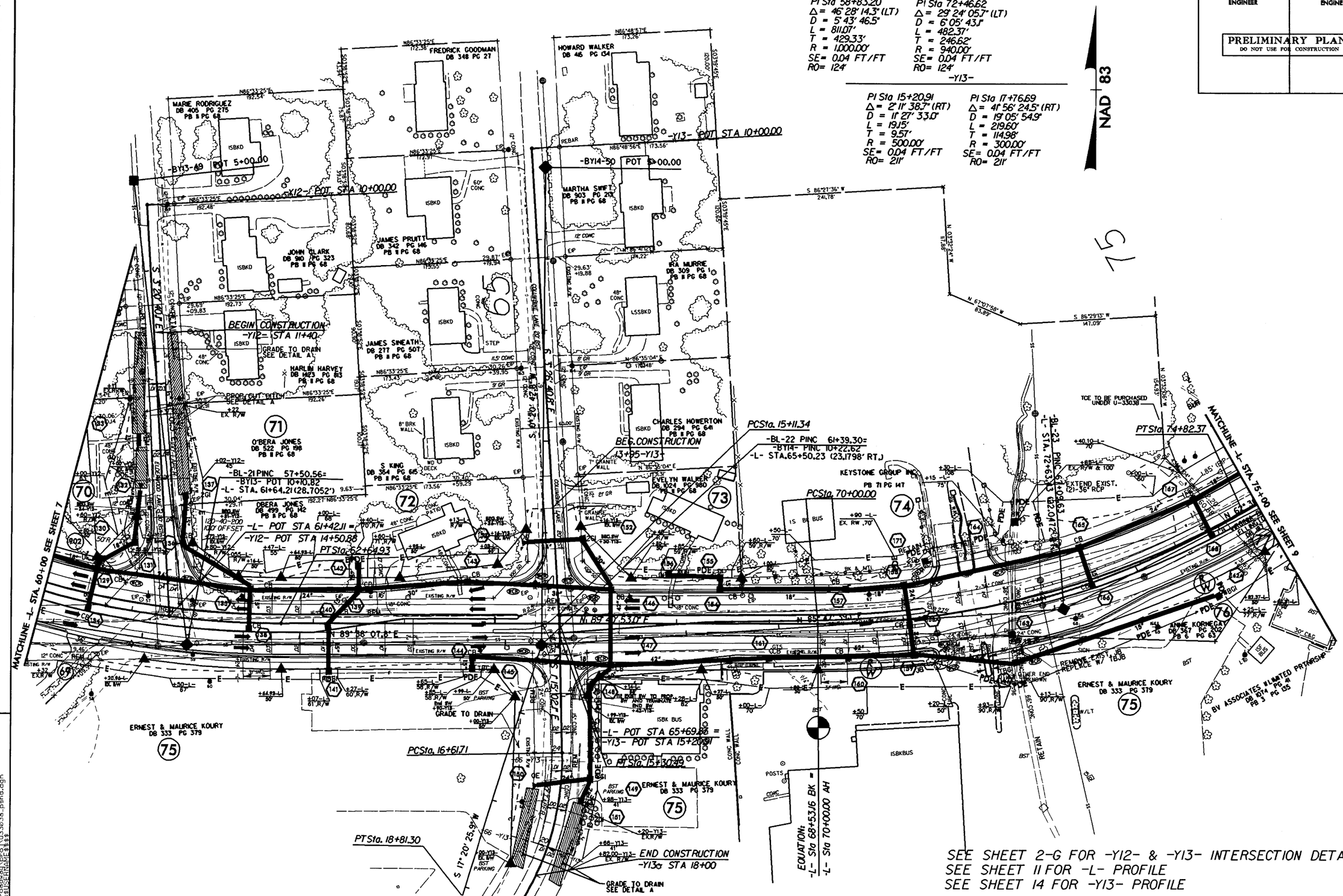
PI Sta 72+46.62
Δ = 29° 24' 05.7" (LT)
D = 6° 05' 43.5"
L = 482.37'
T = 246.62'
R = 940.00'
SE = 0.04 FT/FT
RO = 124'

-Y13-

PI Sta 15+20.91
Δ = 2° 11' 38.7" (RT)
D = 11° 27' 33.0"
L = 19.15'
T = 9.57'
R = 500.00'
SE = 0.04 FT/FT
RO = 211'

PI Sta 17+76.69
Δ = 41° 56' 24.5" (RT)
D = 19° 05' 54.9"
L = 219.60'
T = 114.98'
R = 300.00'
SE = 0.04 FT/FT
RO = 211'

NAD 83



SEE SHEET 2-G FOR -Y12- & -Y13- INTERSECTION DETAIL
SEE SHEET 11 FOR -L- PROFILE
SEE SHEET 14 FOR -Y13- PROFILE

18-SEP-2007 16:19
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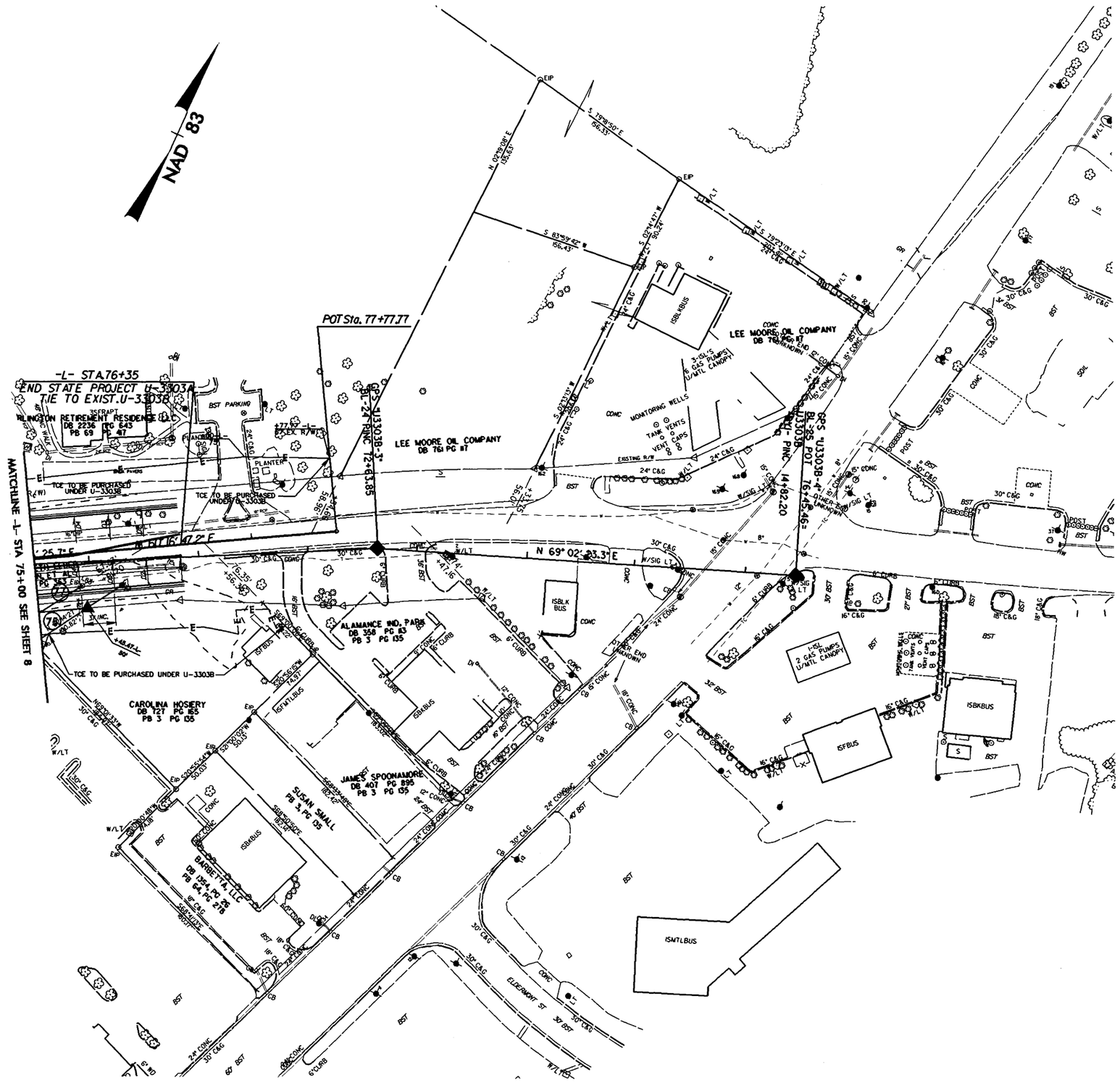
PROJECT REFERENCE NO.	SHEET NO.
U-3303A	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99



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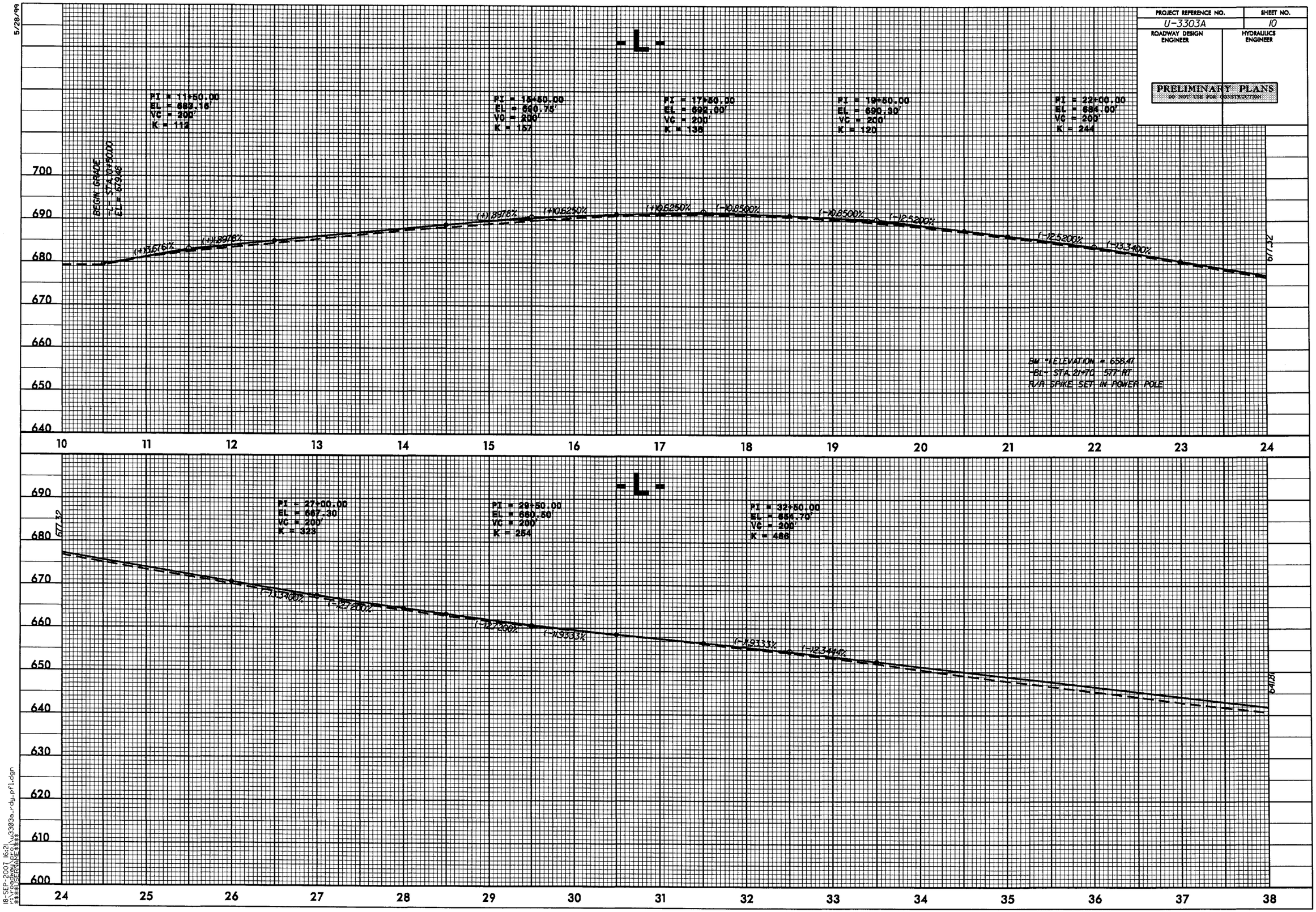
5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3303A	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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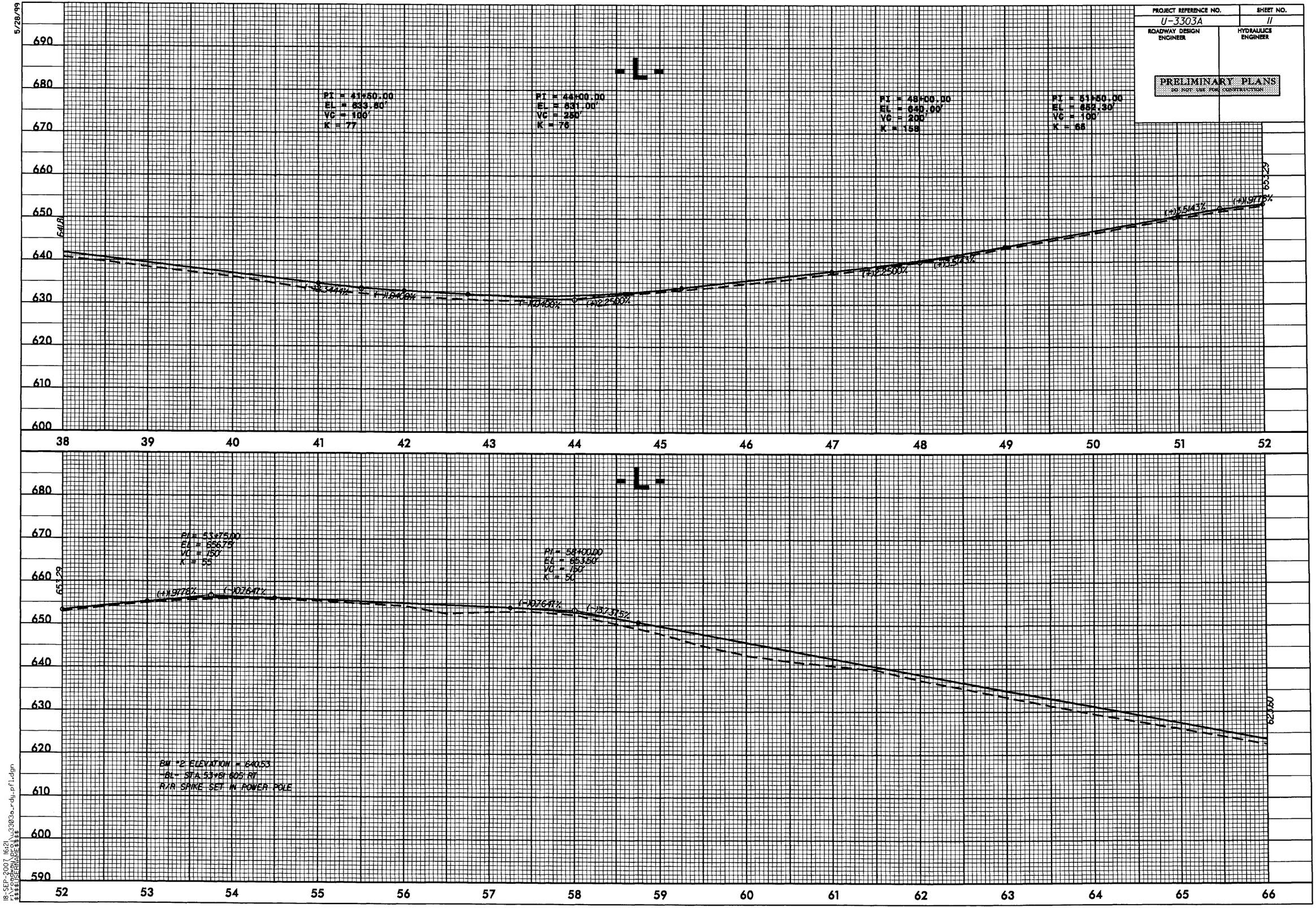
PROJECT REFERENCE NO.	SHEET NO.
U-3303A	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/28/99



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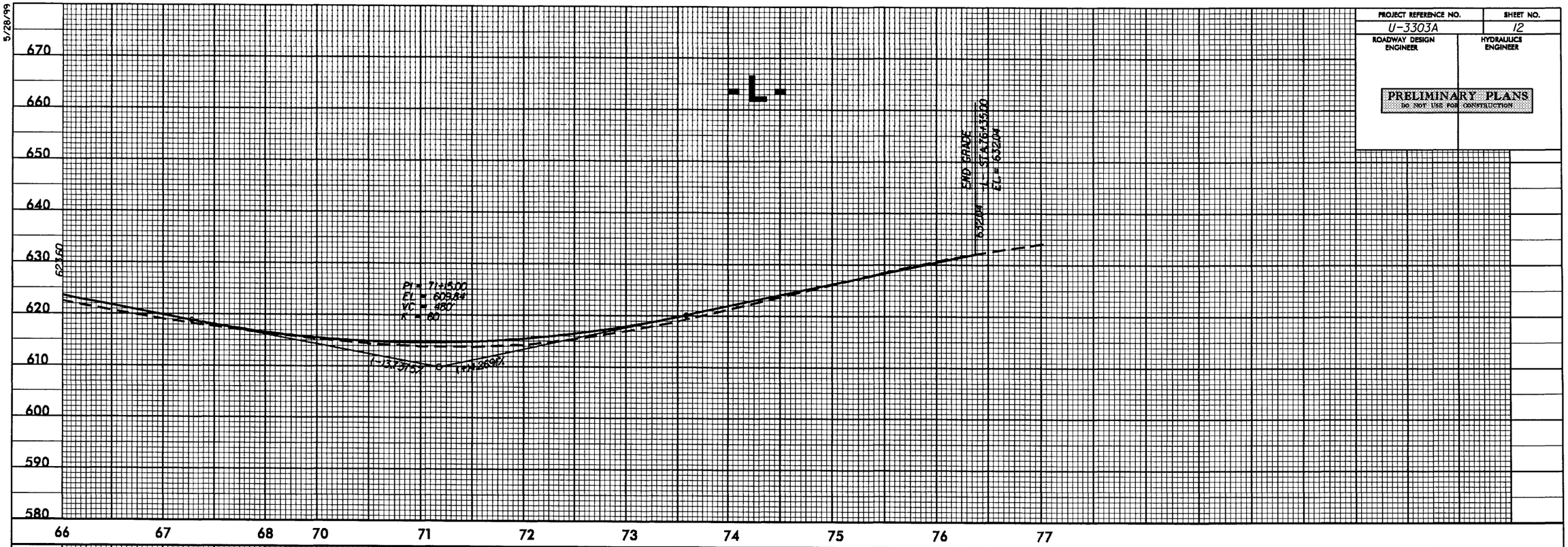
PROJECT REFERENCE NO.	SHEET NO.
U-3303A	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



5/28/99

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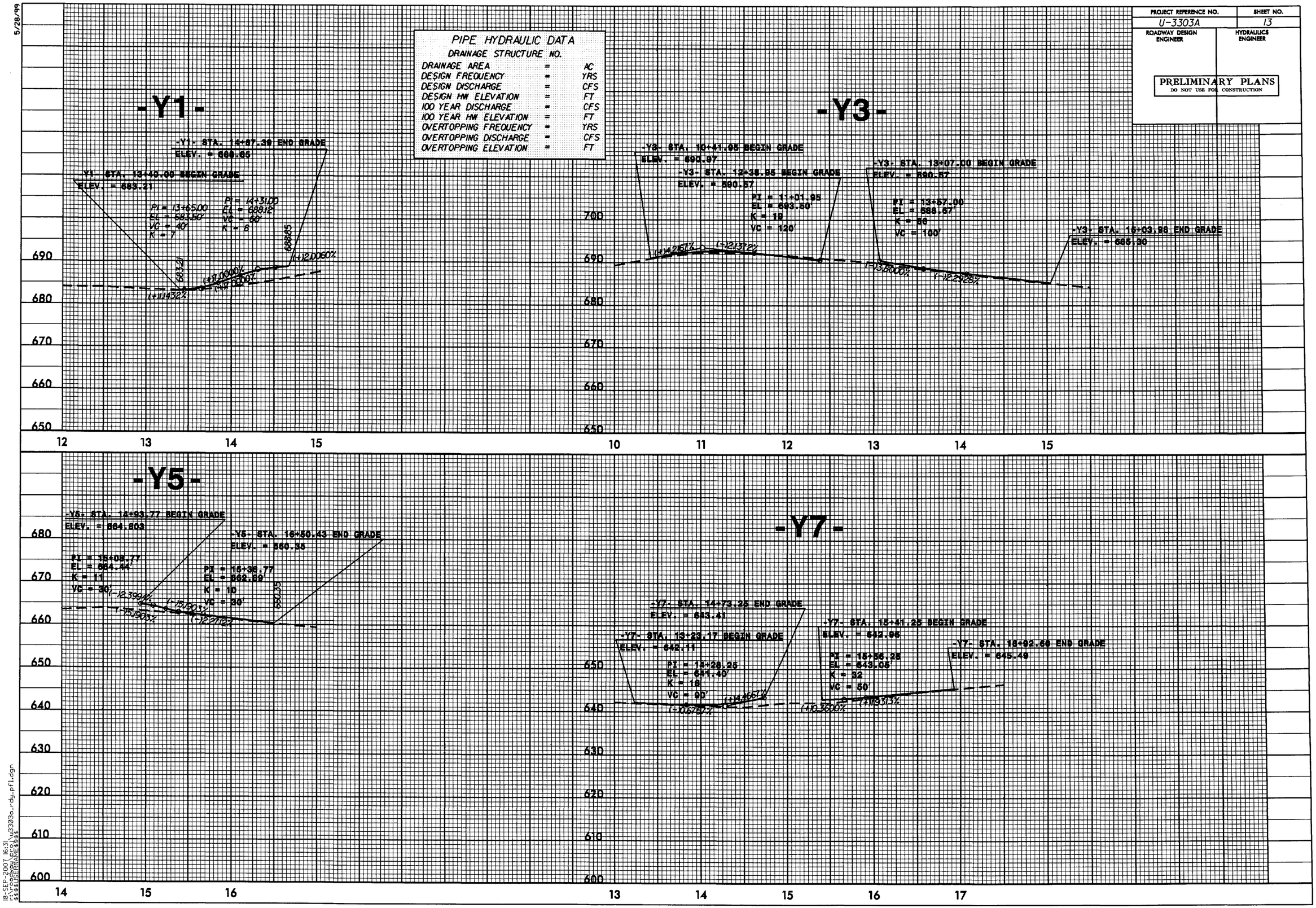
5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3303A	13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	=	AC
DESIGN FREQUENCY	=	YRS
DESIGN DISCHARGE	=	CFS
DESIGN HW ELEVATION	=	FT
100 YEAR DISCHARGE	=	CFS
100 YEAR HW ELEVATION	=	FT
OVERTOPPING FREQUENCY	=	YRS
OVERTOPPING DISCHARGE	=	CFS
OVERTOPPING ELEVATION	=	FT



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5/28/99

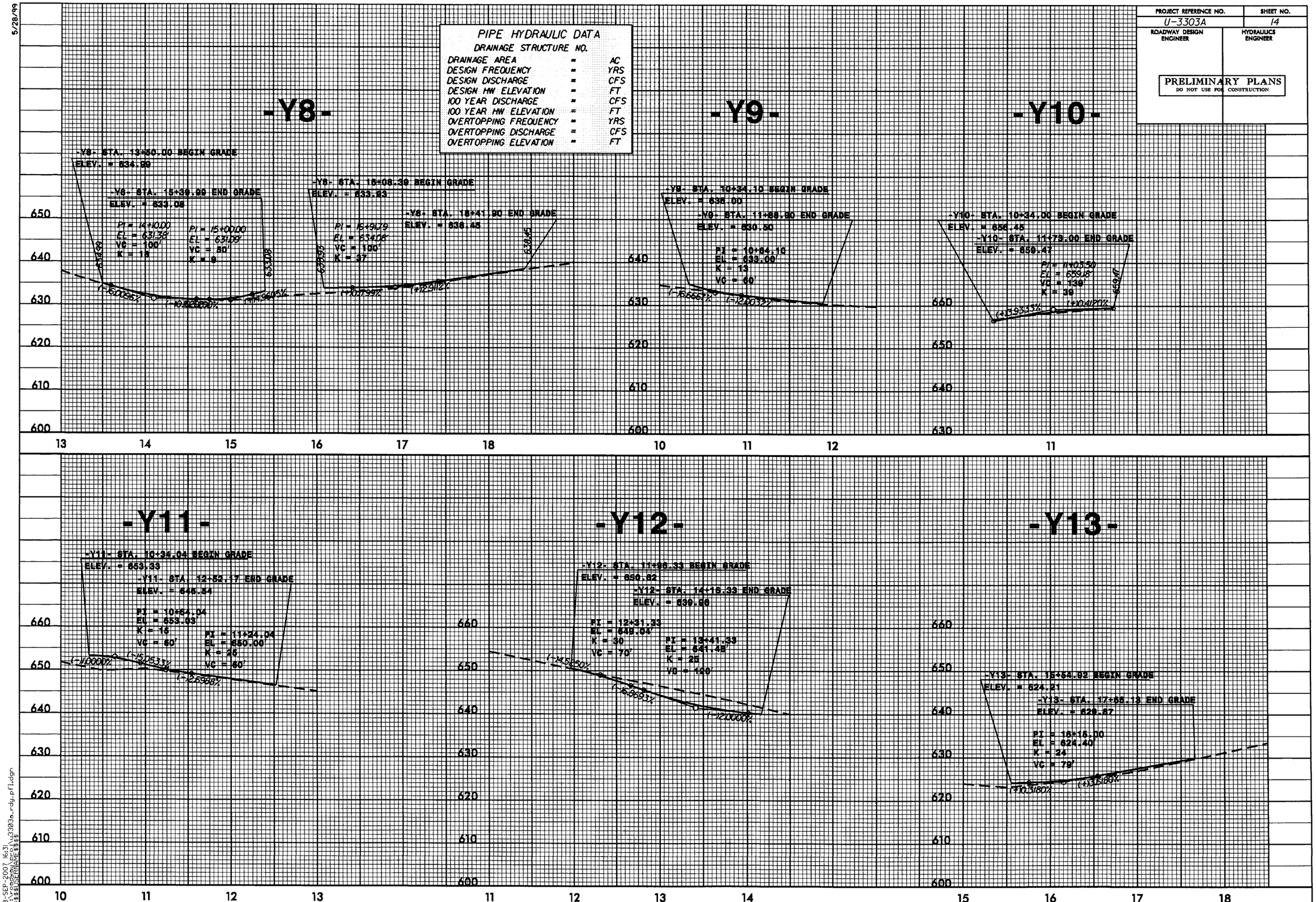
PROJECT REFERENCE NO.	SHEET NO.
U-3303A	14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO.

DRAINAGE AREA	=	AC
DESIGN FREQUENCY	=	YRS
DESIGN DISCHARGE	=	CFS
DESIGN HW ELEVATION	=	FT
100 YEAR DISCHARGE	=	CFS
100 YEAR HW ELEVATION	=	FT
OVERTOPPING FREQUENCY	=	YRS
OVERTOPPING DISCHARGE	=	CFS
OVERTOPPING ELEVATION	=	FT



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09/08/99

TIP PROJ.: U-3303B

PROJECT: 34911.1.1

See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3303B	1	

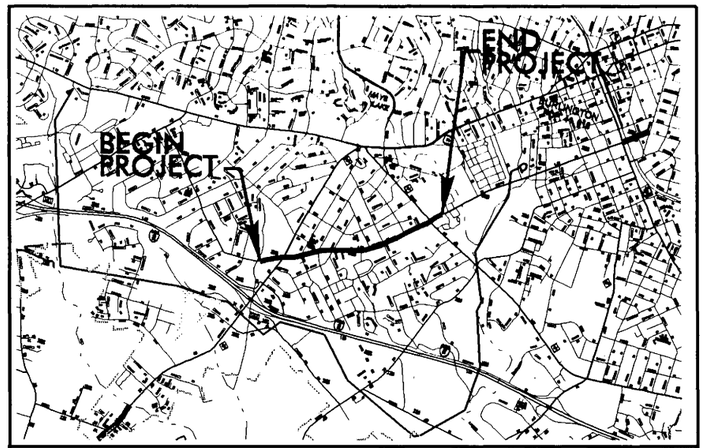
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34911.1.1	STP-1306(8)	P.E., R/W

RECEIVED
SEP 21 2007
DIVISION OF HIGHWAYS
HYDRAULICS UNIT

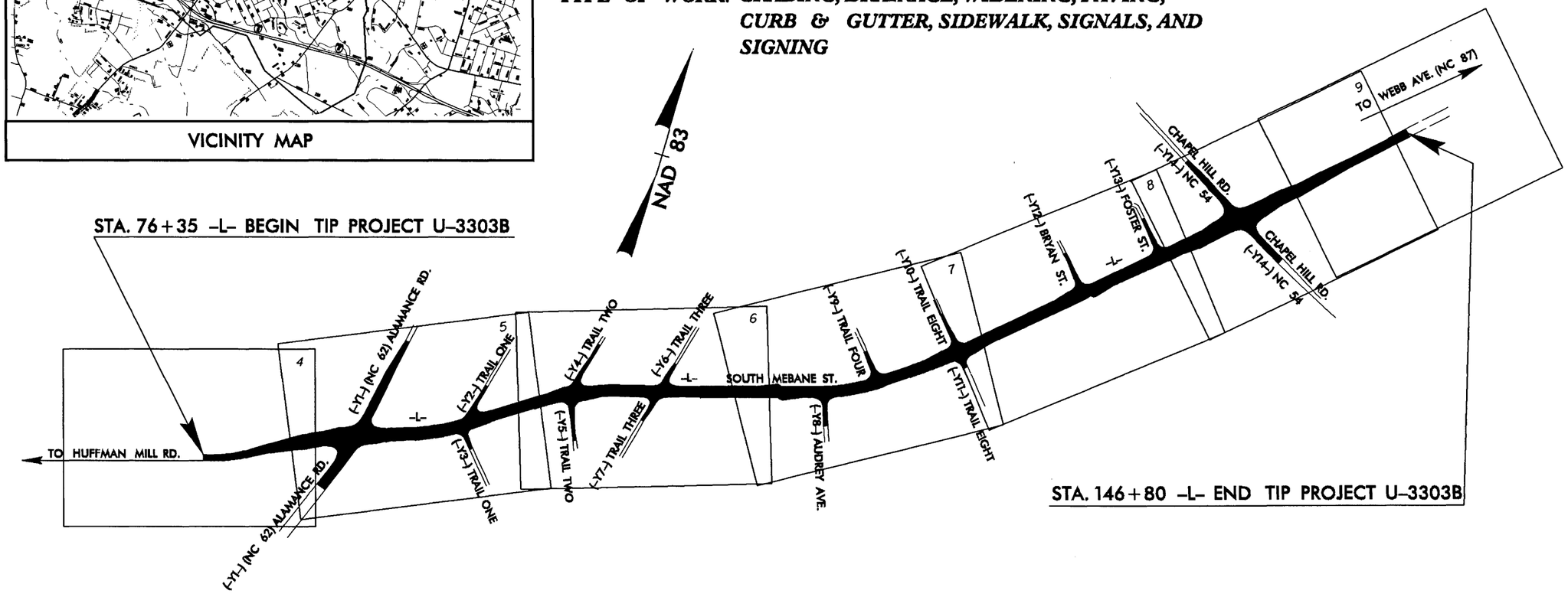
ALAMANCE COUNTY

LOCATION: BURLINGTON – SR 1306-1363 (SOUTH MEBANE ST.) FROM NC 62 TO NC 54 (CHAPEL HILL RD.)

TYPE OF WORK: GRADING, DRAINAGE, WIDENING, PAVING, CURB & GUTTER, SIDEWALK, SIGNALS, AND SIGNING



VICINITY MAP



CLEARING NOTE METHOD II .
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF BURLINGTON.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2005 = 21,175
ADT 2025 = 33,100
DHV = 10 %
D = 55 %
T = 3 % *
V = 40 MPH

* TTST 2% DUAL 1%

PROJECT LENGTH

LENGTH ROADWAY F.A. PROJECT STP-1306(8) = 1.334 MI
TOTAL LENGTH STATE PROJECT 34911.1.1 = 1.334 MI

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

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: January 19, 2007

LETTING DATE: October 21, 2008

JIMMY GOODNIGHT
PROJECT ENGINEER

TIM GOINS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ADMINISTRATOR DATE

19-SEP-2007 14:42
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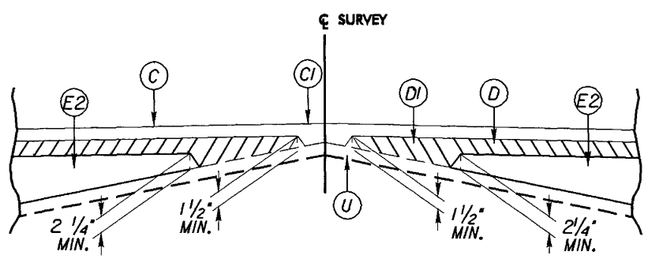
PROJECT REFERENCE NO.	SHEET NO.
U3303B	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE

C	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.	J1	PROP. VAR. DEPTH AGGREGATE BASE COURSE.
C1	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 1½" IN DEPTH.	R	2'-6" CONCRETE CURB AND GUTTER.
D	PROP. APPROX. 2.5 " ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	R1	1'-6" CONCRETE CURB AND GUTTER.
D	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 2¼" IN DEPTH OR GREATER THAN 4" IN DEPTH.	S	4" CONCRETE SIDEWALK.
E	PROP. APPROX. 3.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.	T	EARTH MATERIAL.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2)
J	PROP. 8" AGGREGATE BASE COURSE.		



DETAIL SHOWING METHOD OF WEDGING

6/2/99

19-SEP-2007 14:43
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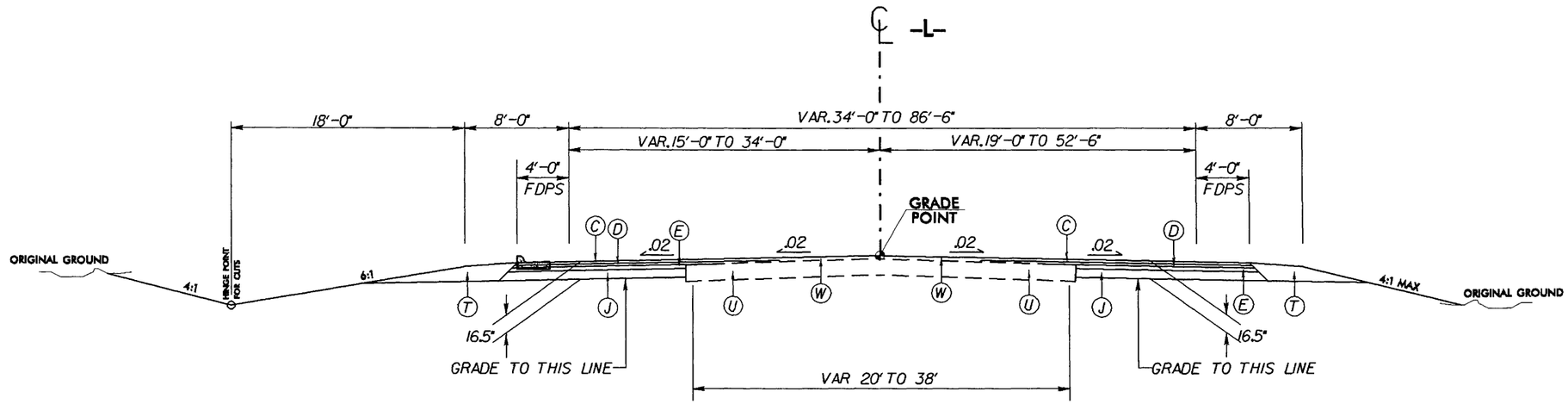
PROJECT REFERENCE NO.	SHEET NO.
U-3303B	2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

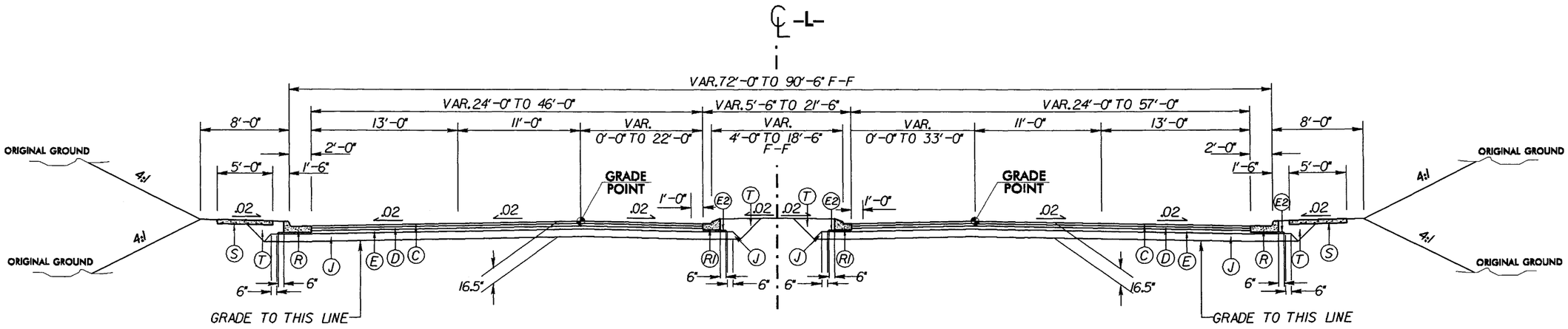
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

-L- STA. 76+35 TO -L- STA. 78+30



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

-L- STA. 78+30.00 TO -L- STA. 86+20.00
-L- STA. 86+20.00 TO -L- STA. 88+20.00
-L- STA. 89+60.00 TO -L- STA. 99+75.00
-L- STA. 102+65.00 TO -L- STA. 111+55.00
-L- STA. 113+17 TO -L- STA. 139+85.00

6/2/99
19-SEP-2007 14:43
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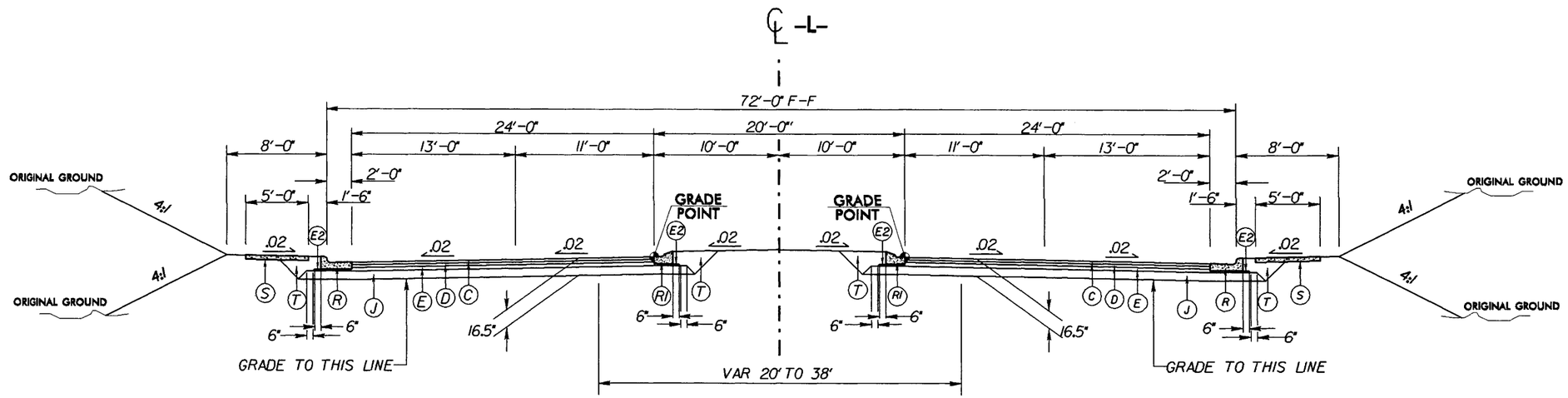
$$$$USERNAME$$$$

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
U-3303B	2-B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

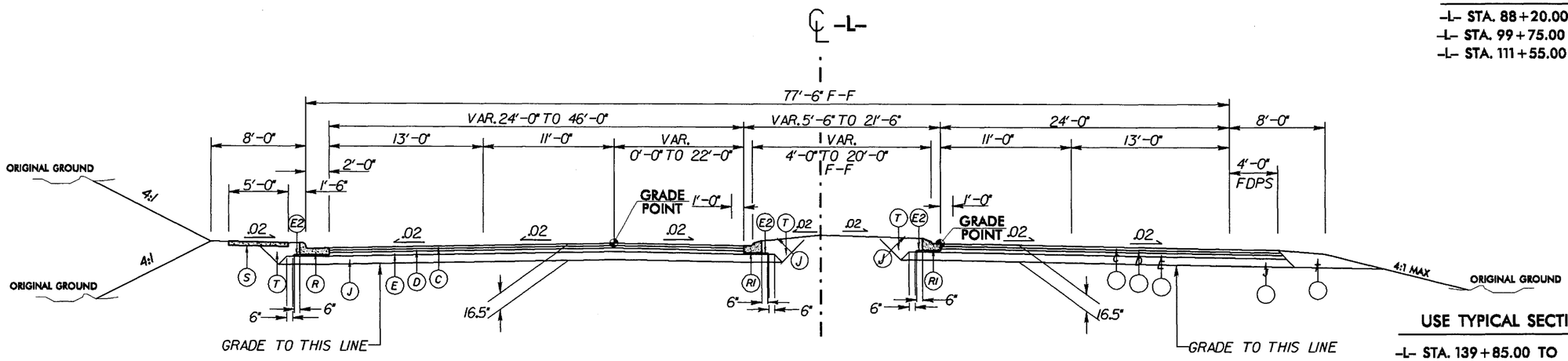
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-L- STA. 88+20.00 TO -L- STA. 89+60.00
-L- STA. 99+75.00 TO -L- STA. 102+65.00
-L- STA. 111+55.00 TO -L- STA. 113+17.00

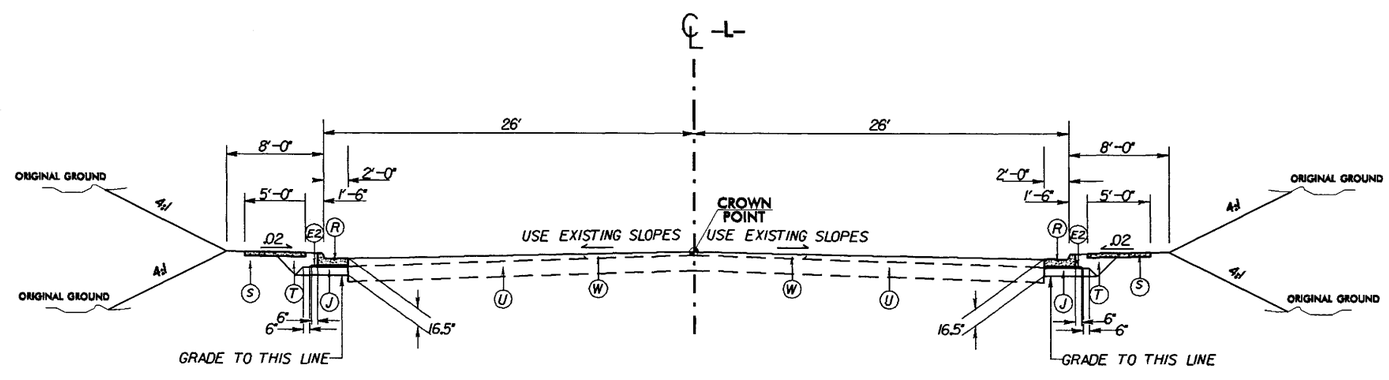


TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

-L- STA. 139+85.00 TO -L- STA. 142+87.73

NOTE: FROM -L- STA. 142+87.73 TO -L- STA. 144+00.00
TRANSITION FROM TYPICAL SECTION NO. 4 TO TYPICAL SECTION NO.4A



TYPICAL SECTION NO. 4A

USE TYPICAL SECTION NO. 4A

-L- STA. 144+00 TO -L- STA. 146+80

NOTE: END PROPOSED 5" CONC. SIDEWALK AT -L- STA. 148+00+/- RT. AND LT.

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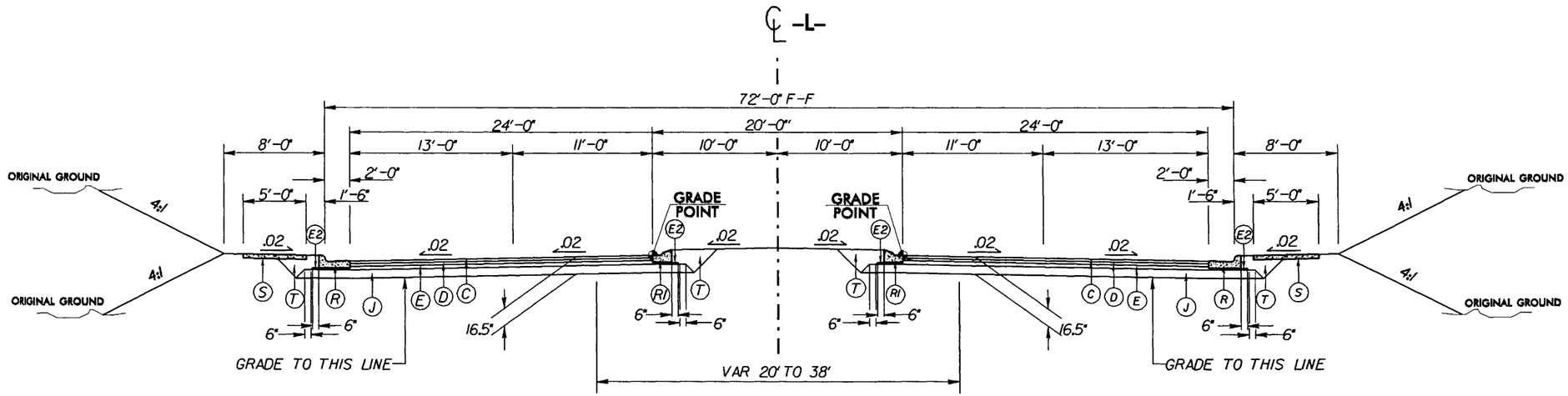
PROJECT REFERENCE NO.	SHEET NO.
U-3303B	2-B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

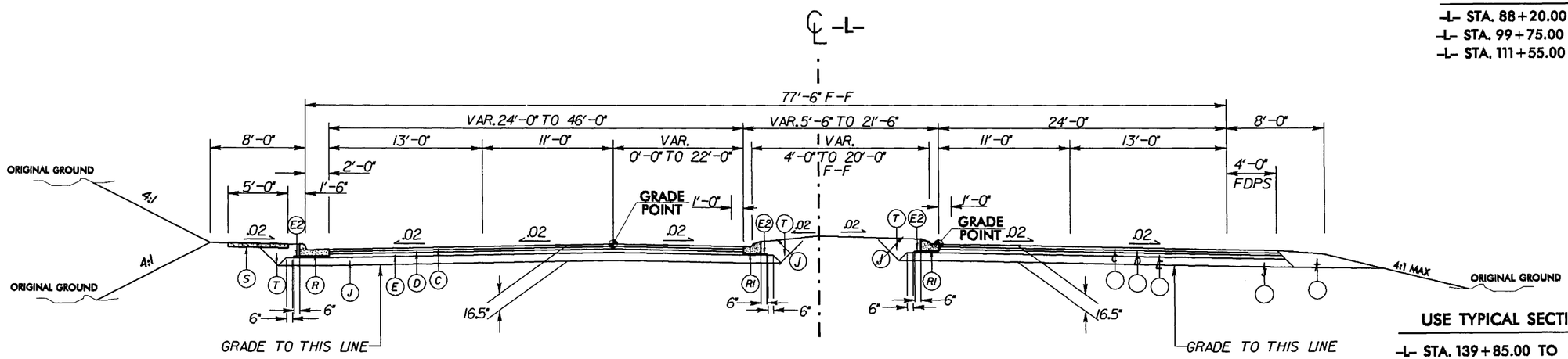
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-L- STA. 88+20.00 TO -L- STA. 89+60.00
-L- STA. 99+75.00 TO -L- STA. 102+65.00
-L- STA. 111+55.00 TO -L- STA. 113+17.00

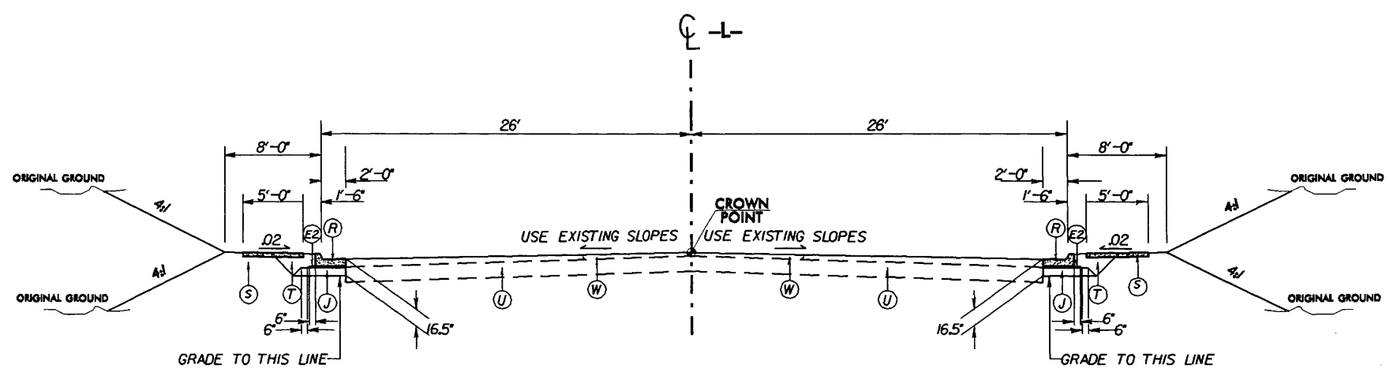


TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

-L- STA. 139+85.00 TO -L- STA. 142+87.73

NOTE: FROM -L- STA. 142+87.73 TO -L- STA. 144+00.00
TRANSITION FROM TYPICAL SECTION NO. 4 TO TYPICAL SECTION NO.4A



TYPICAL SECTION NO. 4A

USE TYPICAL SECTION NO. 4A

-L- STA. 144+00 TO -L- STA. 146+80

NOTE: END PROPOSED 5" CONC. SIDEWALK AT -L- STA. 148+00+/- RT. AND LT.

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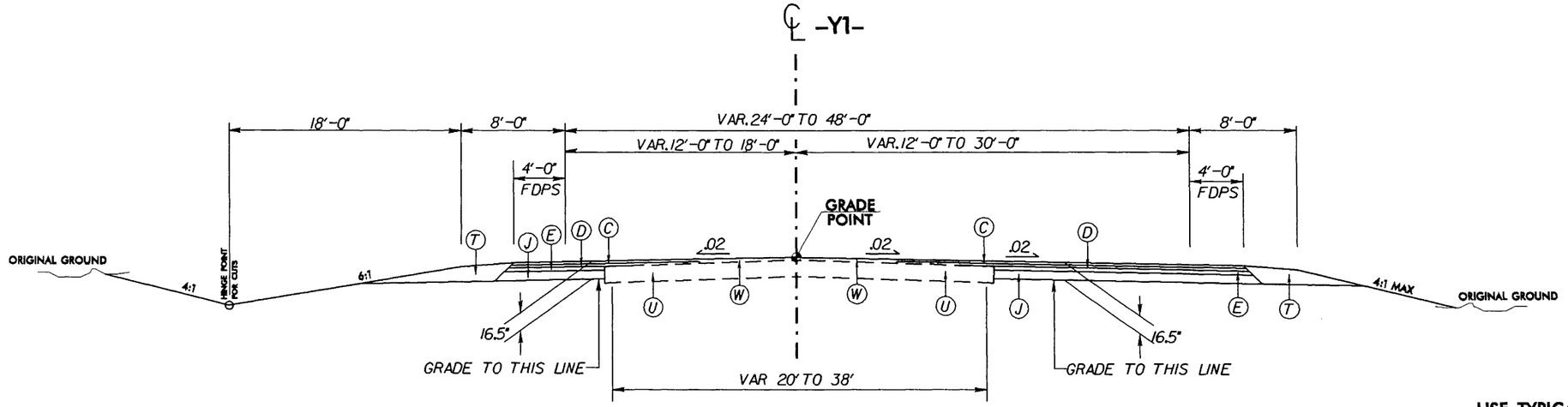
ss3302ednl01.sht

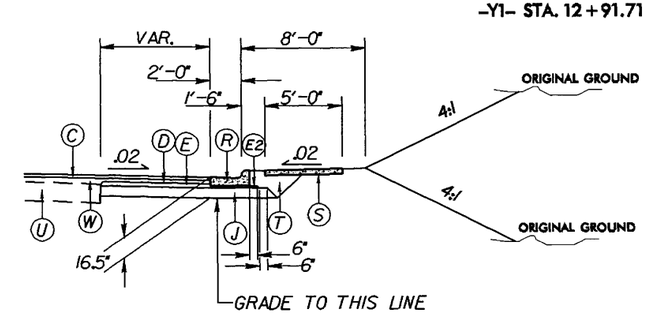
PROJECT REFERENCE NO.	SHEET NO.
U-3303B	2-C
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 5

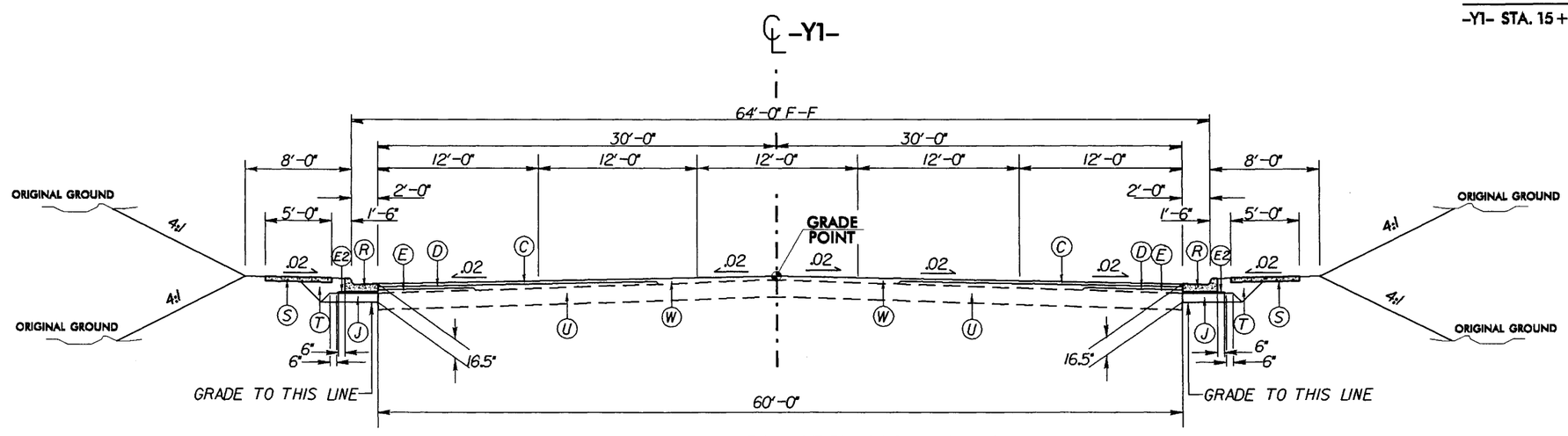
USE TYPICAL SECTION NO. 5
-Y1- STA. 12+91.71 TO -Y1- STA. 18+79.07



PARTIAL SECTION NO. 5A

TO BE USED IN CONJUNCTION WITH TYP. NO. 5

USE TYPICAL SECTION NO. 5A
-Y1- STA. 15+11.71 TO -Y1- STA. 18+79.07 RT.



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6
-Y1- STA. 19+82.66 TO -Y1- STA. 23+00.00

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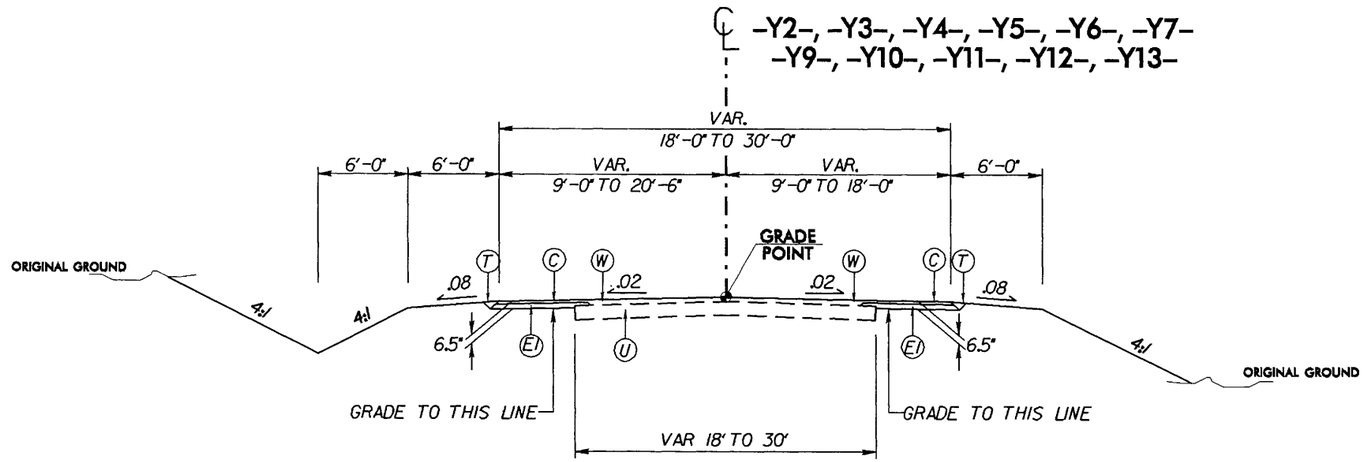
PROJECT REFERENCE NO.	SHEET NO.
U-3303B	2-D
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

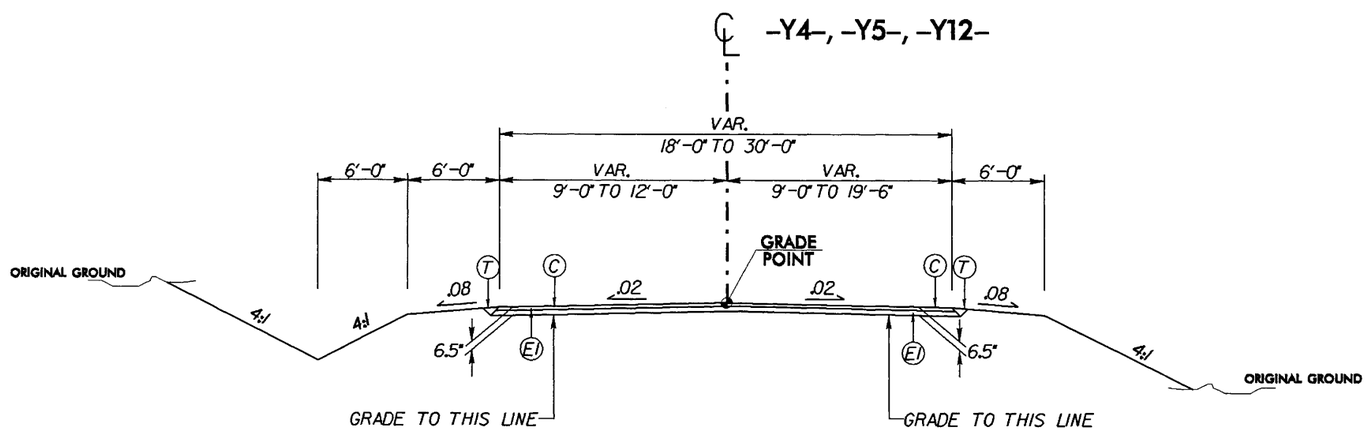
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7

-Y2- STA. 10+50.00 TO -Y2- STA. 12+69.65
-Y3- STA. 10+37.93 TO -Y3- STA. 11+50.00
-Y4- STA. 10+00.00 TO -Y4- STA. 10+50.00
-Y5- STA. 12+50.00 TO -Y5- STA. 12+75.00
-Y6- STA. 11+50.00 TO -Y6- STA. 12+50.08
-Y7- STA. 10+39.31 TO -Y7- STA. 12+00.00
-Y9- STA. 11+00.00 TO -Y9- STA. 12+62.41
-Y10- STA. 10+00.00 TO -Y10- STA. 12+13.04
-Y11- STA. 10+34.00 TO -Y11- STA. 11+40.00
-Y12- STA. 10+50.00 TO -Y12- STA. 11+50.00
-Y13- STA. 10+50.00 TO -Y13- STA. 12+64.05



TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO. 8

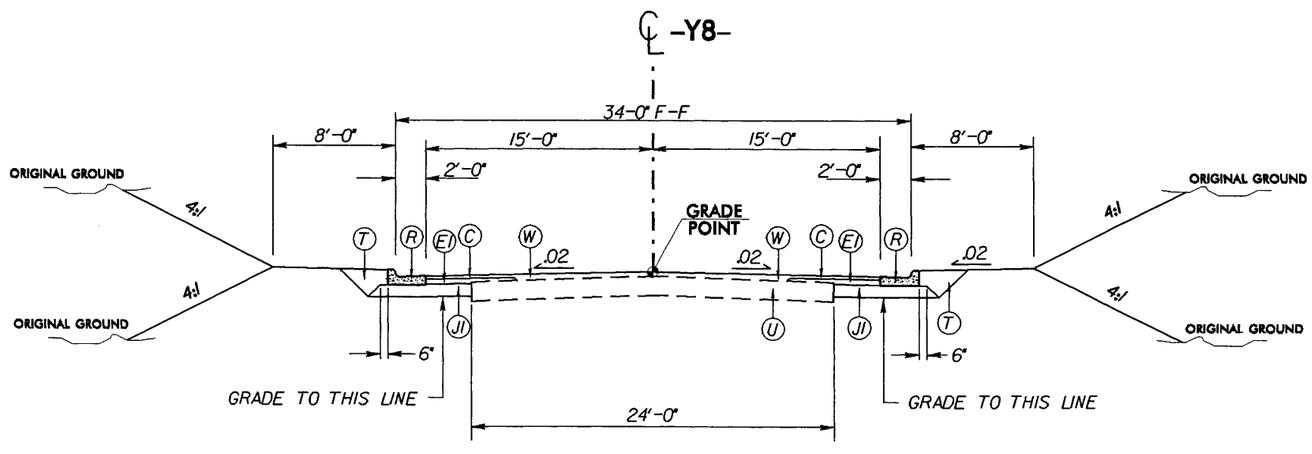
NOTE: FROM -Y4- STA. 10+50.00 TO -Y4- STA. 11+00.00 TRANSITION FROM T.S. 7 TO T.S. 8

-Y4- STA. 11+00.00 TO -Y4- STA. 12+92.36
-Y5- STA. 10+34.10 TO -Y5- STA. 12+00.00

NOTE: FROM -Y5- STA. 12+00.00 TO -Y5- STA. 12+50.00 TRANSITION FROM T.S. 8 TO T.S. 7

NOTE: FROM -Y12- STA. 11+50.00 TO -Y12- STA. 12+00.00 TRANSITION FROM T.S. 7 TO T.S. 8

-Y12- STA. 12+00.00 TO -Y12- STA. 12+76.89



TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO. 9

-Y8- STA. 10+34.00 TO -Y8- STA. 12+00.00

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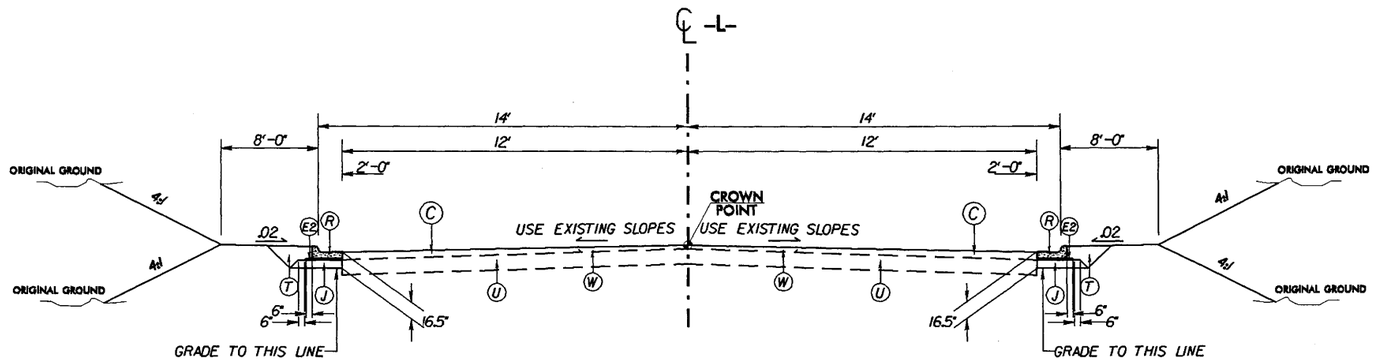
PROJECT REFERENCE NO.	SHEET NO.
U-3303B	2-E
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

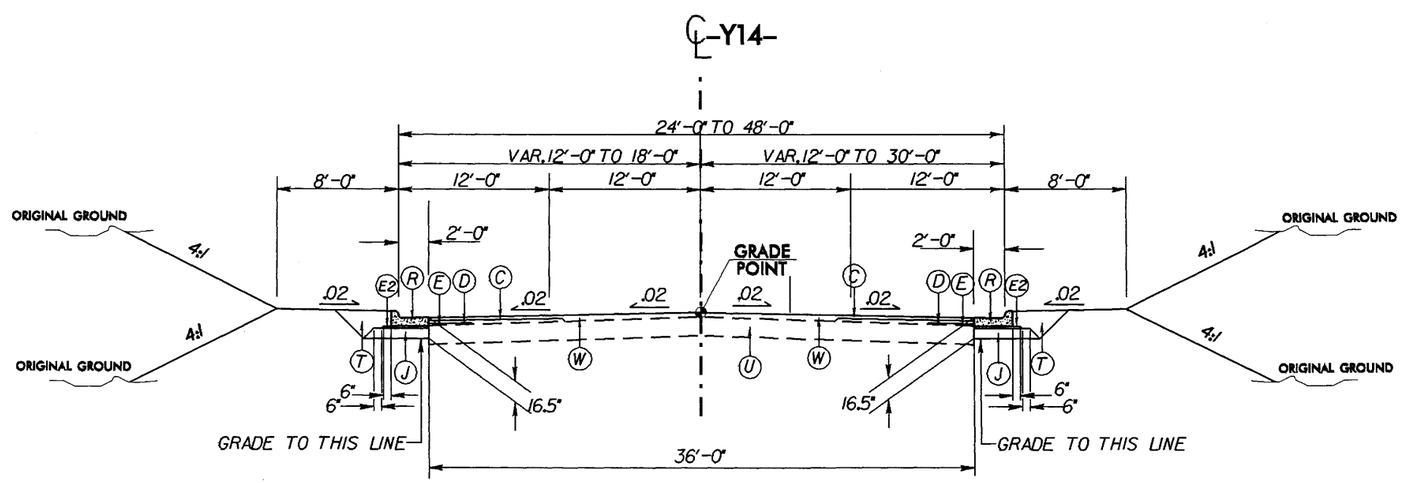
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11

-Y14- STA. 15+45.00 TO -Y14- STA. 16+00



TYPICAL SECTION NO. 12

USE TYPICAL SECTION NO. 12

-Y14- STA. 16+00.00 TO -Y14- STA. 20+29.35
-Y14- STA. 21+05.76 TO -Y14- STA. 24+10.00

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PROJECT REFERENCE NO.	SHEET NO.
U-3303B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

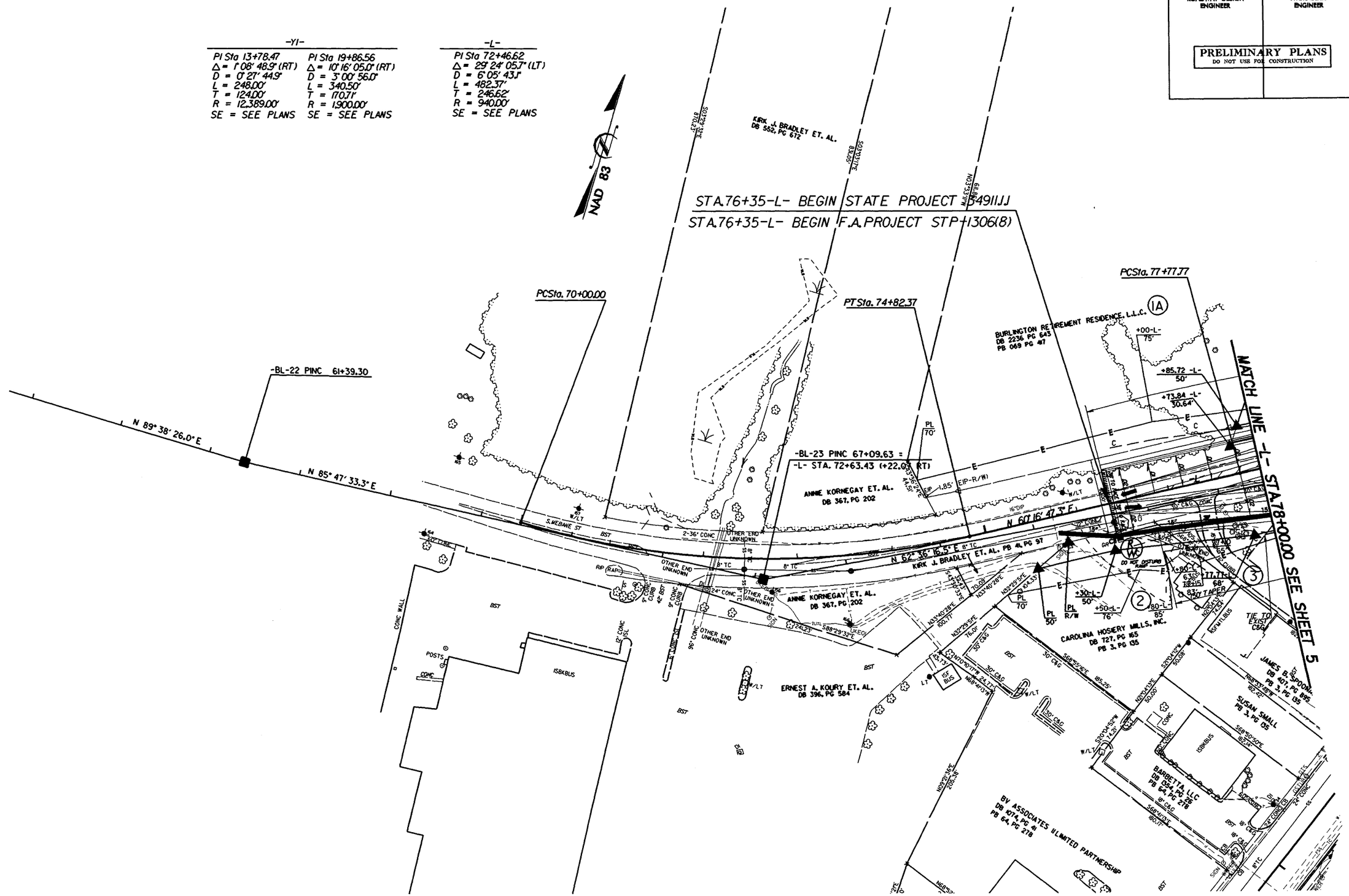
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y1-

PI Sta 13+78.47	PI Sta 19+86.56
Δ = 1° 08' 48.9" (RT)	Δ = 10° 16' 05.0" (RT)
D = 0° 27' 44.9"	D = 3° 00' 56.0"
L = 248.00'	L = 340.50'
T = 124.00'	T = 170.71'
R = 12,389.00'	R = 1,900.00'
SE = SEE PLANS	SE = SEE PLANS

-L-

PI Sta 72+46.62
Δ = 29° 24' 05.7" (LT)
D = 6° 05' 43.1"
L = 482.37'
T = 246.62'
R = 940.00'
SE = SEE PLANS



REVISIONS

REVISION CONSIST OF CHANGING OWNERSHIP & PROPERTY LINE FOR PARCEL IA TO BURLINGTON RETIREMENT RESIDENCE LLC. CFP 8/25/06

8/17/99

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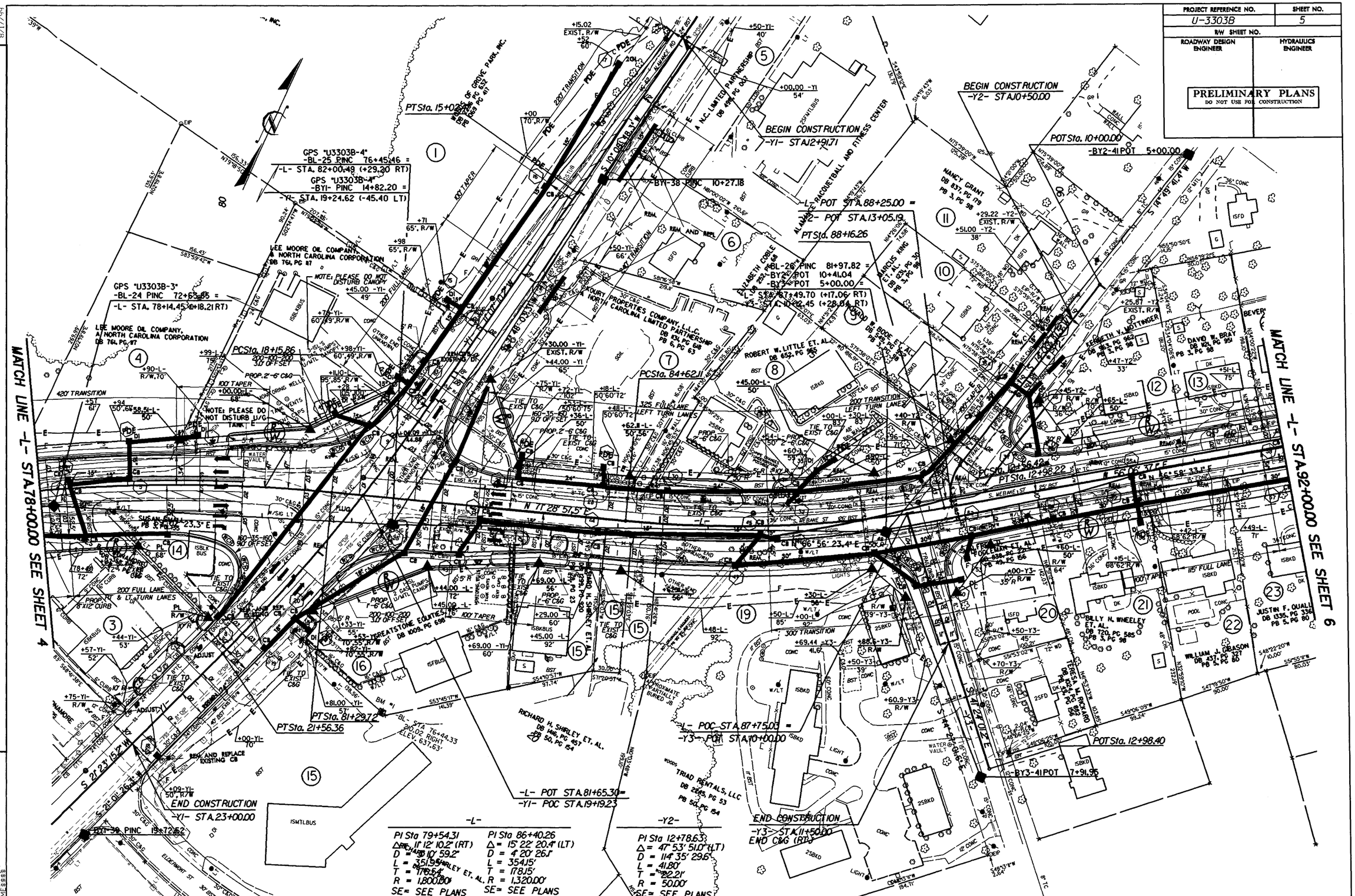
PROJECT REFERENCE NO.	SHEET NO.
U-3303B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99 REVISED SOME OF THE PDE TO SHOW TDE AND ADDED NOTE TO NOT DISTURB CANOPY ON PARCEL 4 PER R/W REQUEST DATED 3-18-07. TDG 8-13-07



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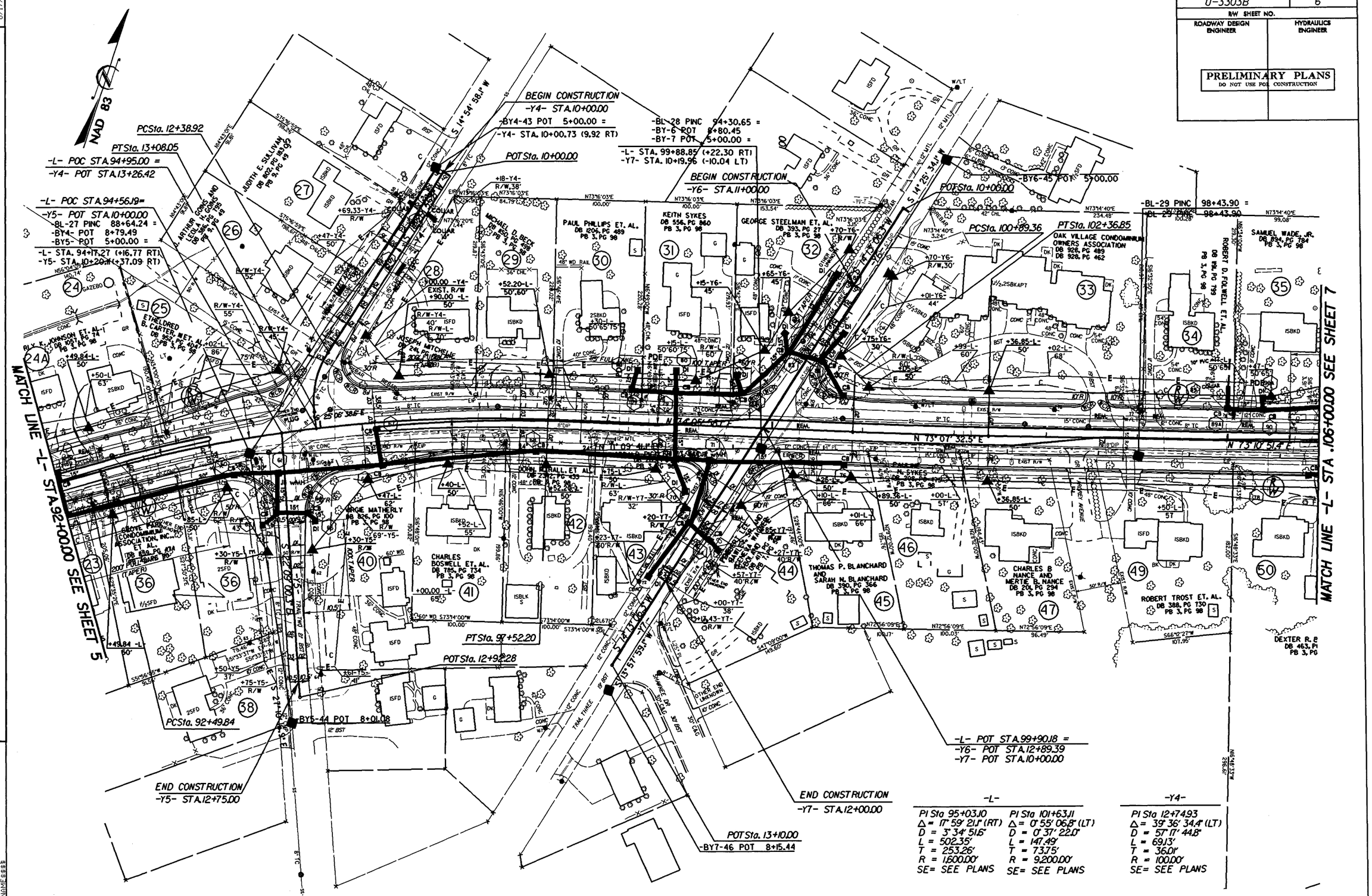
PROJECT REFERENCE NO.	SHEET NO.
U-3303B	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99 REVISED PARCEL NAME ON 33 TO SHOW OAK VILLAGE CONDOMINIUM OWNERS ASSOCIATION PER R/W REQUEST. JBW 12-06-06



-L-	
PI Sta 95+03.10	PI Sta 101+63.11
Δ = 17° 59' 21.1" (RT)	Δ = 0° 55' 06.8" (LT)
D = 3° 34' 51.6"	D = 0° 37' 22.0"
L = 502.35'	L = 147.49'
T = 253.26'	T = 73.75'
R = 1,600.00'	R = 9,200.00'
SE= SEE PLANS	SE= SEE PLANS

-Y4-
PI Sta 12+74.93
Δ = 39° 36' 34.4" (LT)
D = 57° 17' 44.8"
L = 69.13'
T = 36.01'
R = 100.00'
SE= SEE PLANS

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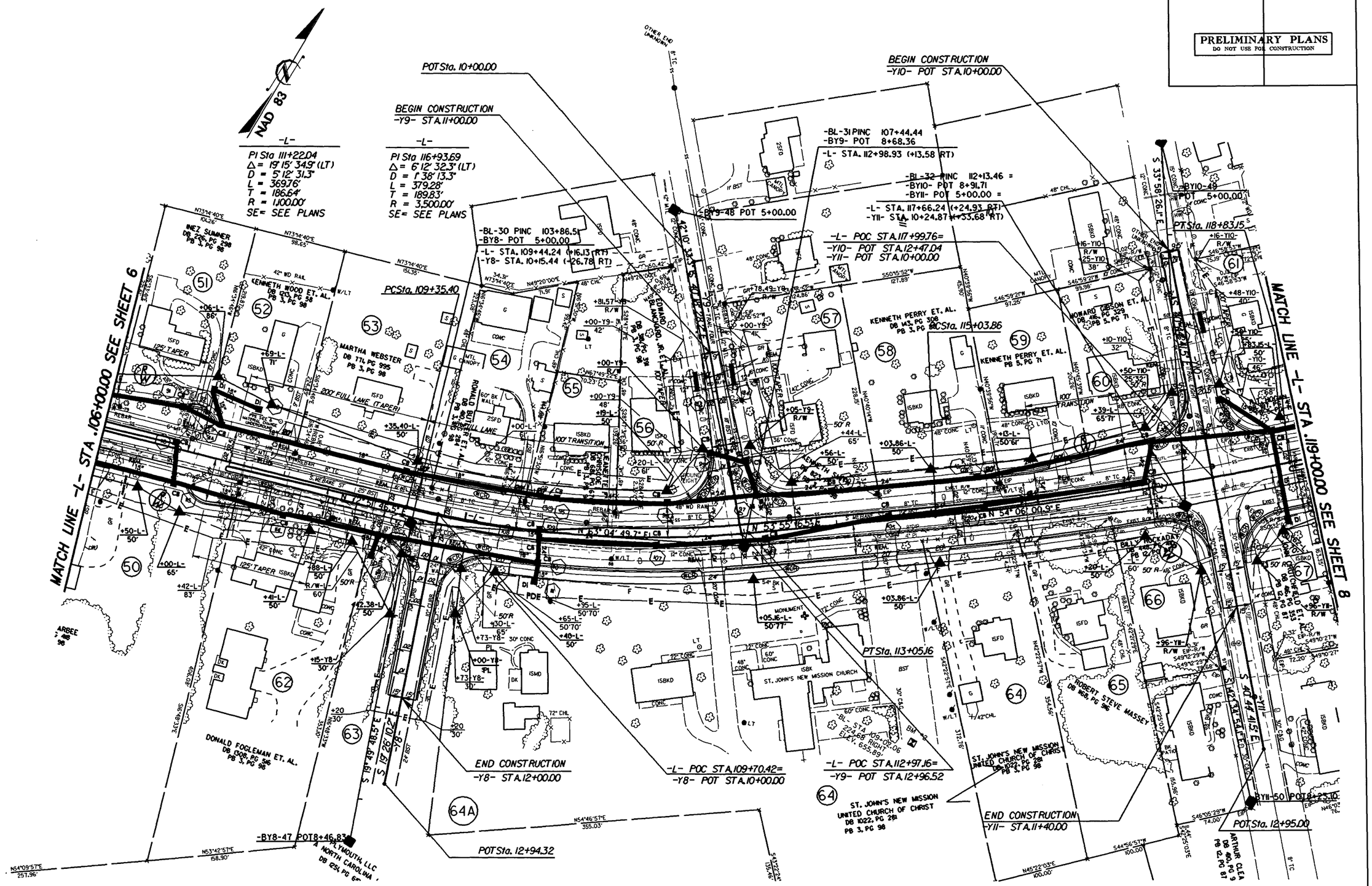
PROJECT REFERENCE NO.	SHEET NO.
U-3303B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99



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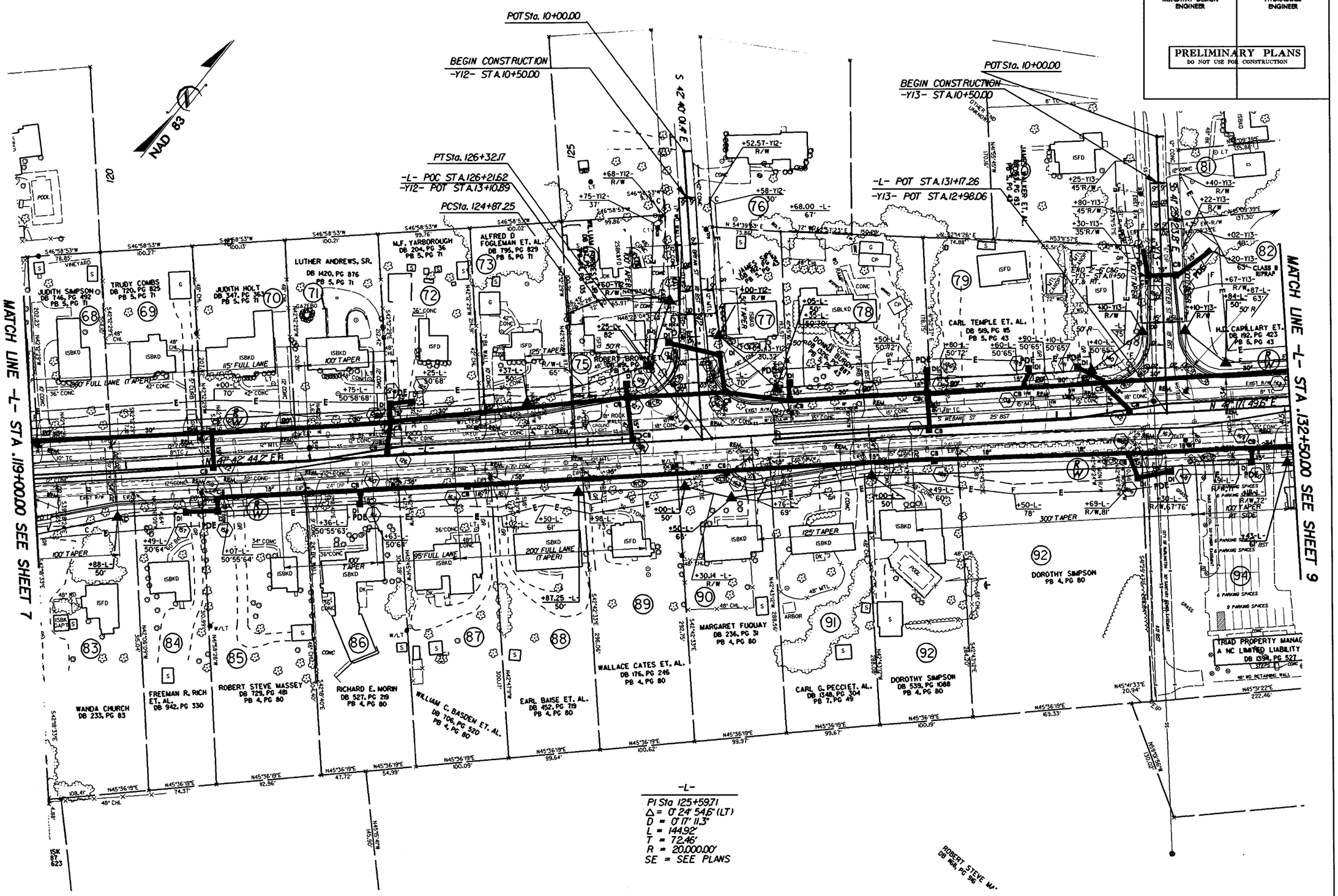
PROJECT REFERENCE NO.	SHEET NO.
U-3303B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



REVISIONS

8/17/09

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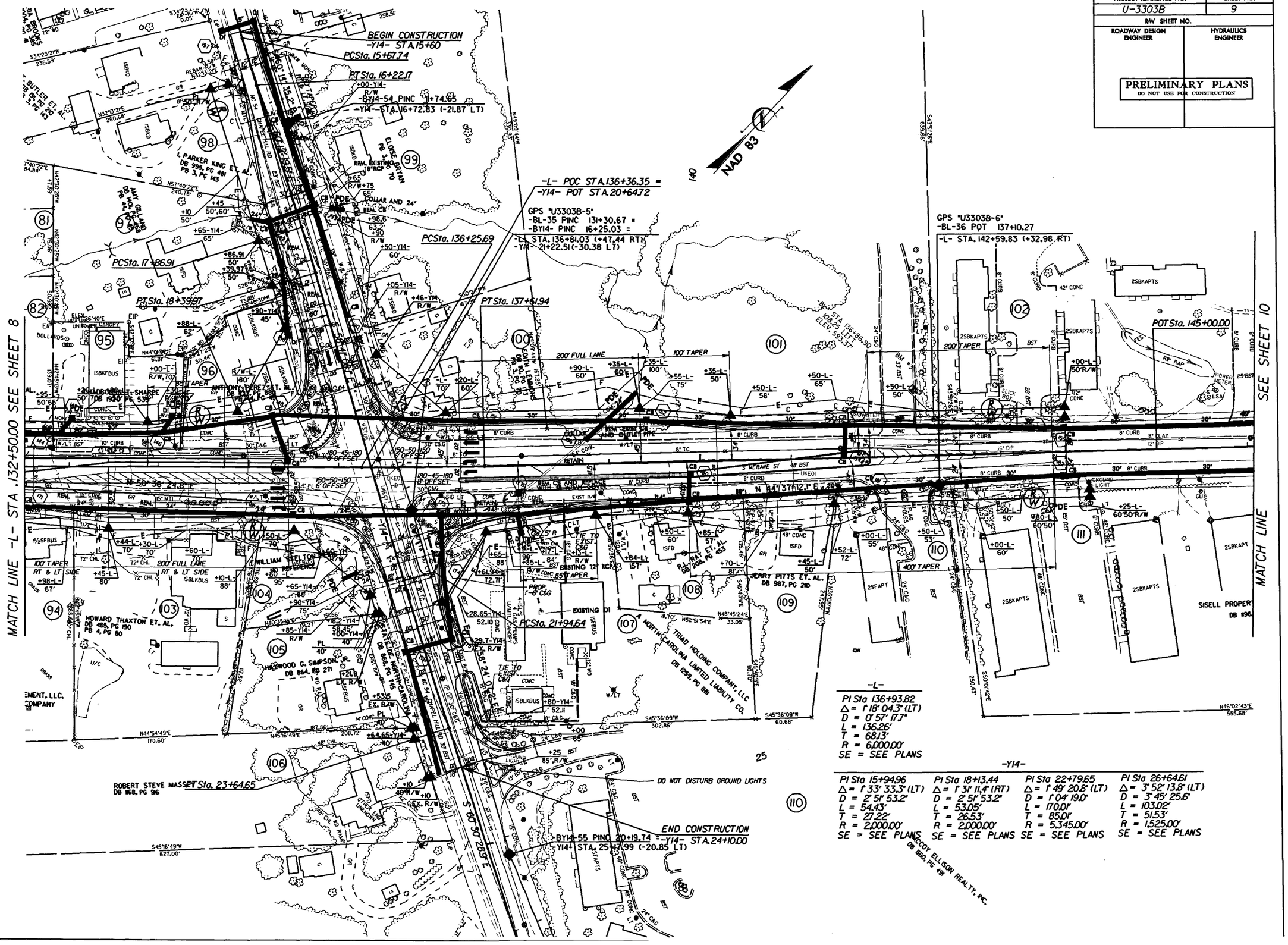
PROJECT REFERENCE NO.	SHEET NO.
U-3303B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

8/17/99 REVISED PARCEL 110 TO REFLECT GLENWOOD APARTMENTS, LLC. ADDED DO NOT DISTURB GROUND LIGHTS NOTE ON THIS PARCEL PER R/W REQUEST. TDG 5-5-06



-L-

PI Sta 136+93.82
Δ = 1° 18' 04.3" (LT)
D = 0° 57' 17.7"
L = 136.26'
T = 68.13'
R = 6,000.00'
SE = SEE PLANS

-Y14-

PI Sta 15+94.96	PI Sta 18+13.44	PI Sta 22+79.65	PI Sta 26+64.61
Δ = 1° 33' 33.3" (LT)	Δ = 1° 31' 11.4" (RT)	Δ = 1° 49' 20.8" (LT)	Δ = 3° 52' 13.8" (LT)
D = 2° 51' 53.2"	D = 2° 51' 53.2"	D = 1° 04' 19.0"	D = 3° 45' 25.6"
L = 54.43'	L = 53.05'	L = 170.01'	L = 103.02'
T = 27.22'	T = 26.53'	T = 85.01'	T = 51.53'
R = 2,000.00'	R = 2,000.00'	R = 5,345.00'	R = 1,525.00'
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS

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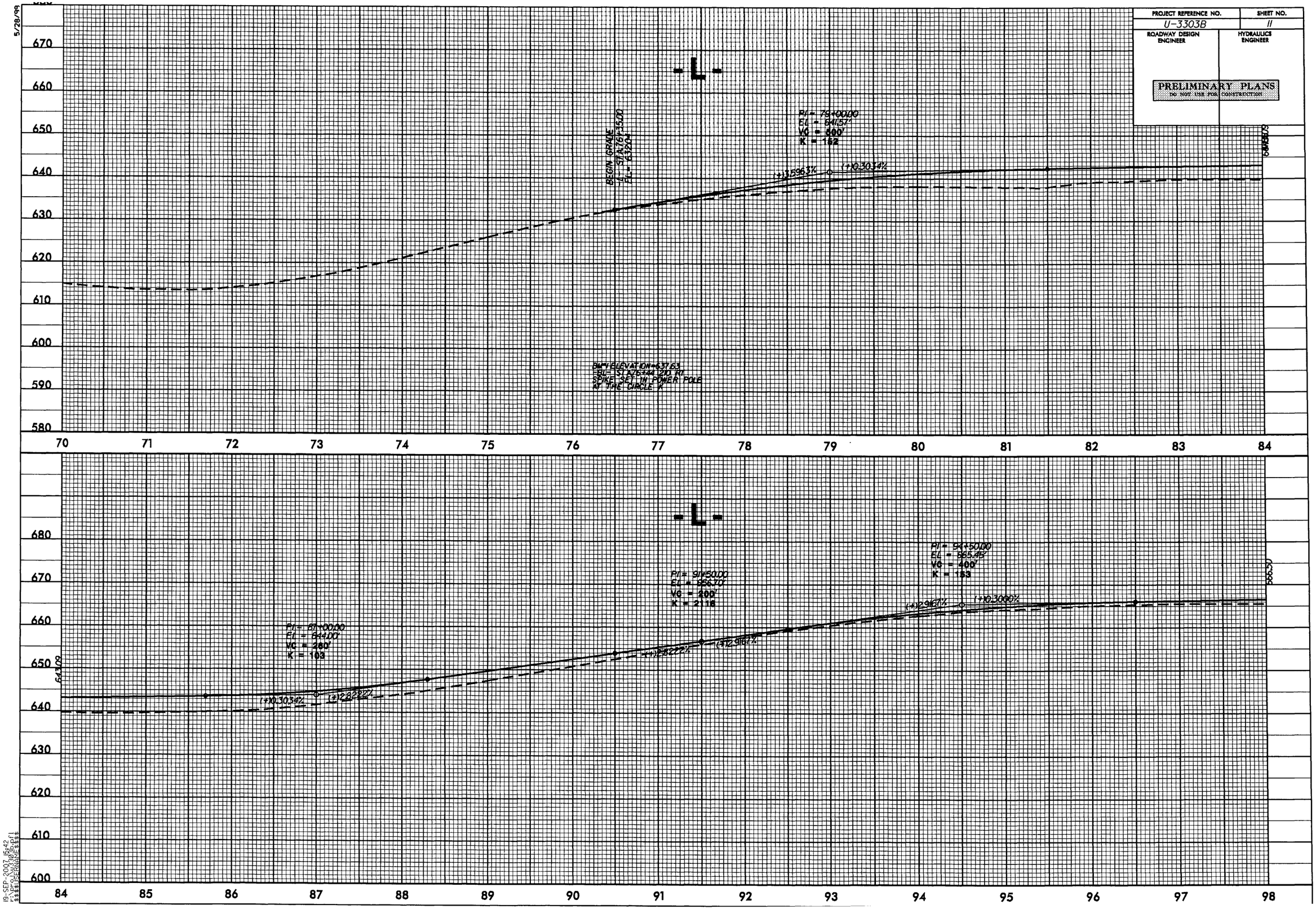
rs9503 (HYDRA 8.8)

PROJECT REFERENCE NO.	SHEET NO.
U-3303B	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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PROJECT REFERENCE NO.	SHEET NO.
U-3303B	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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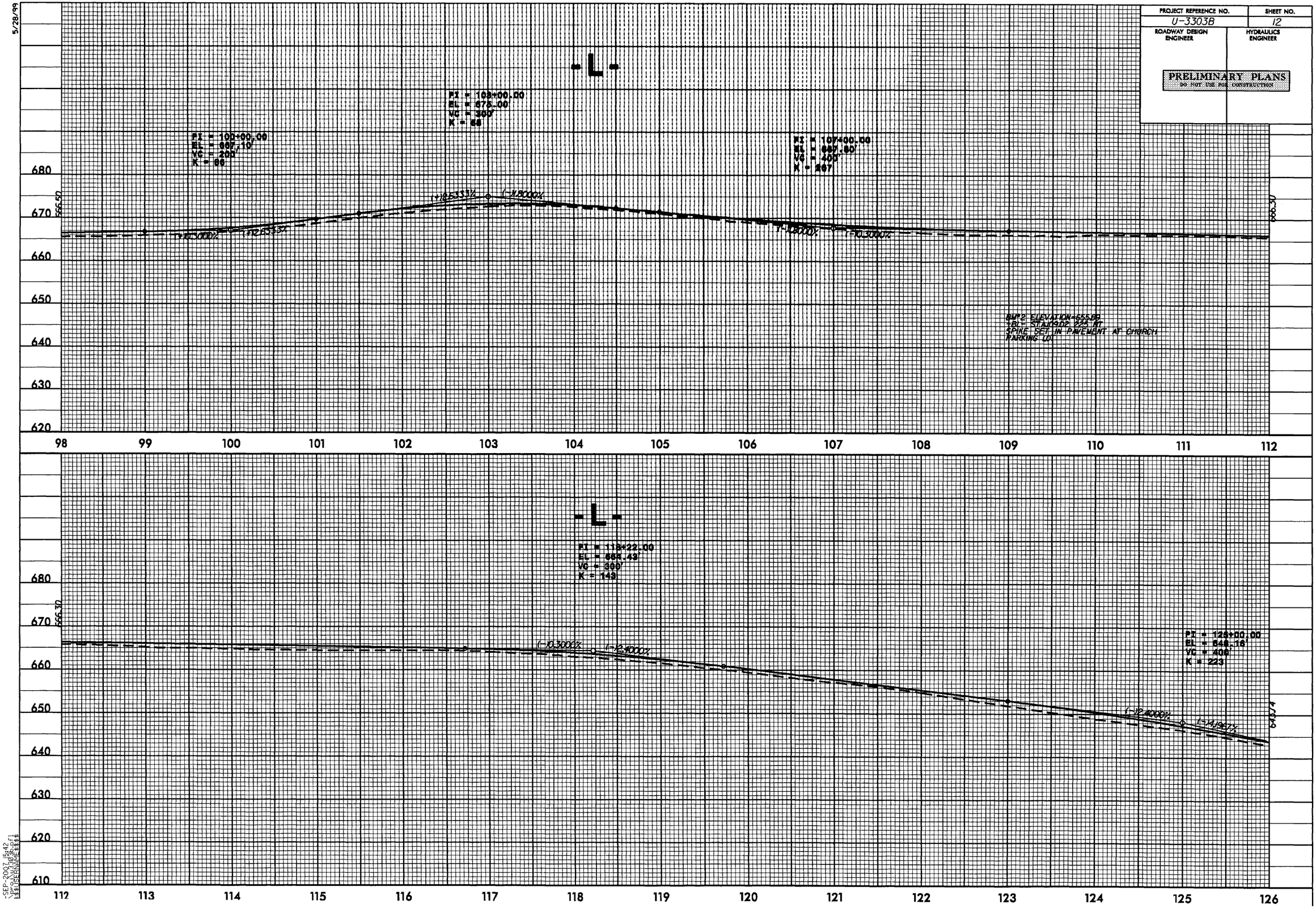

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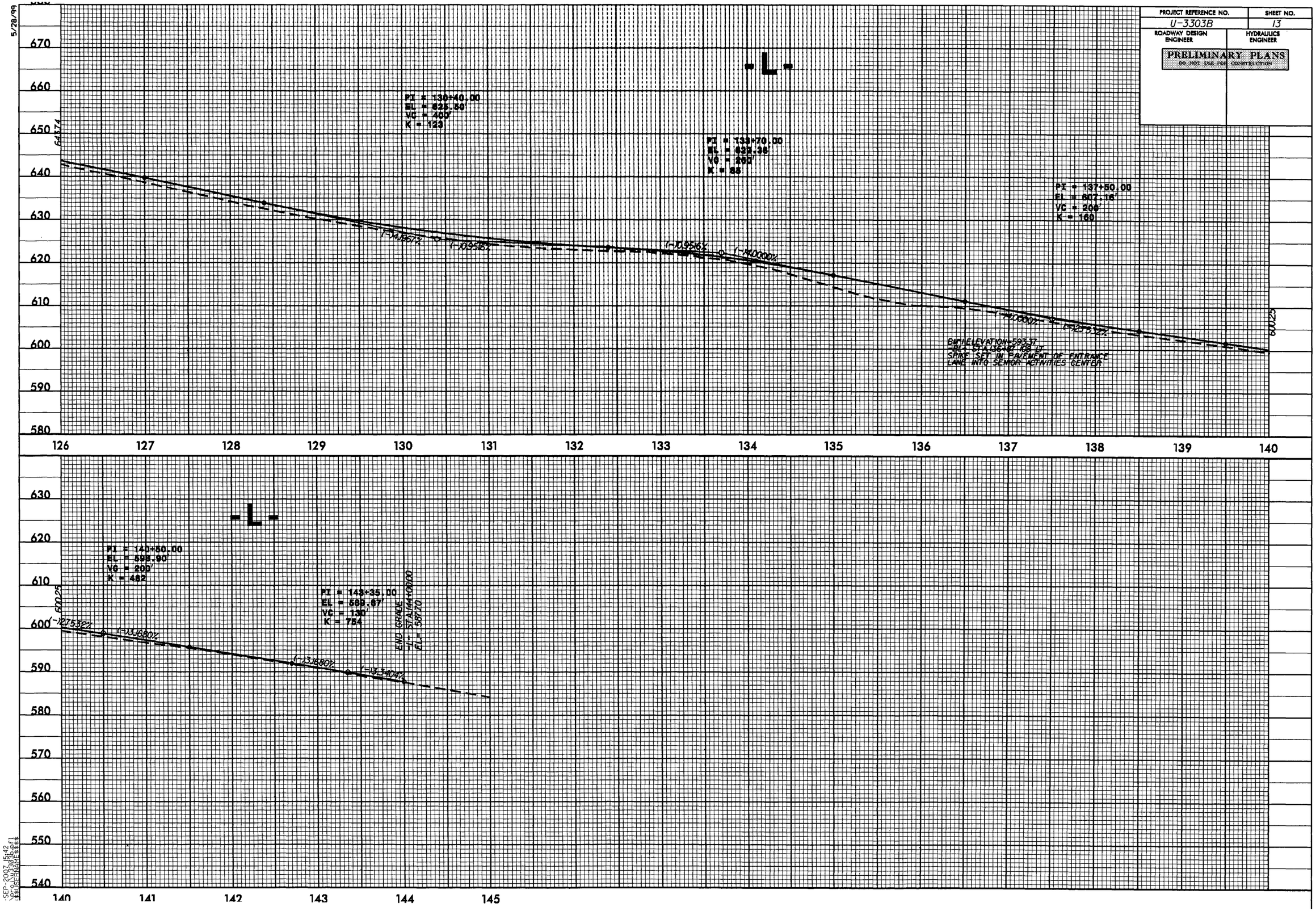
PROJECT REFERENCE NO.	SHEET NO.
U-3303B	13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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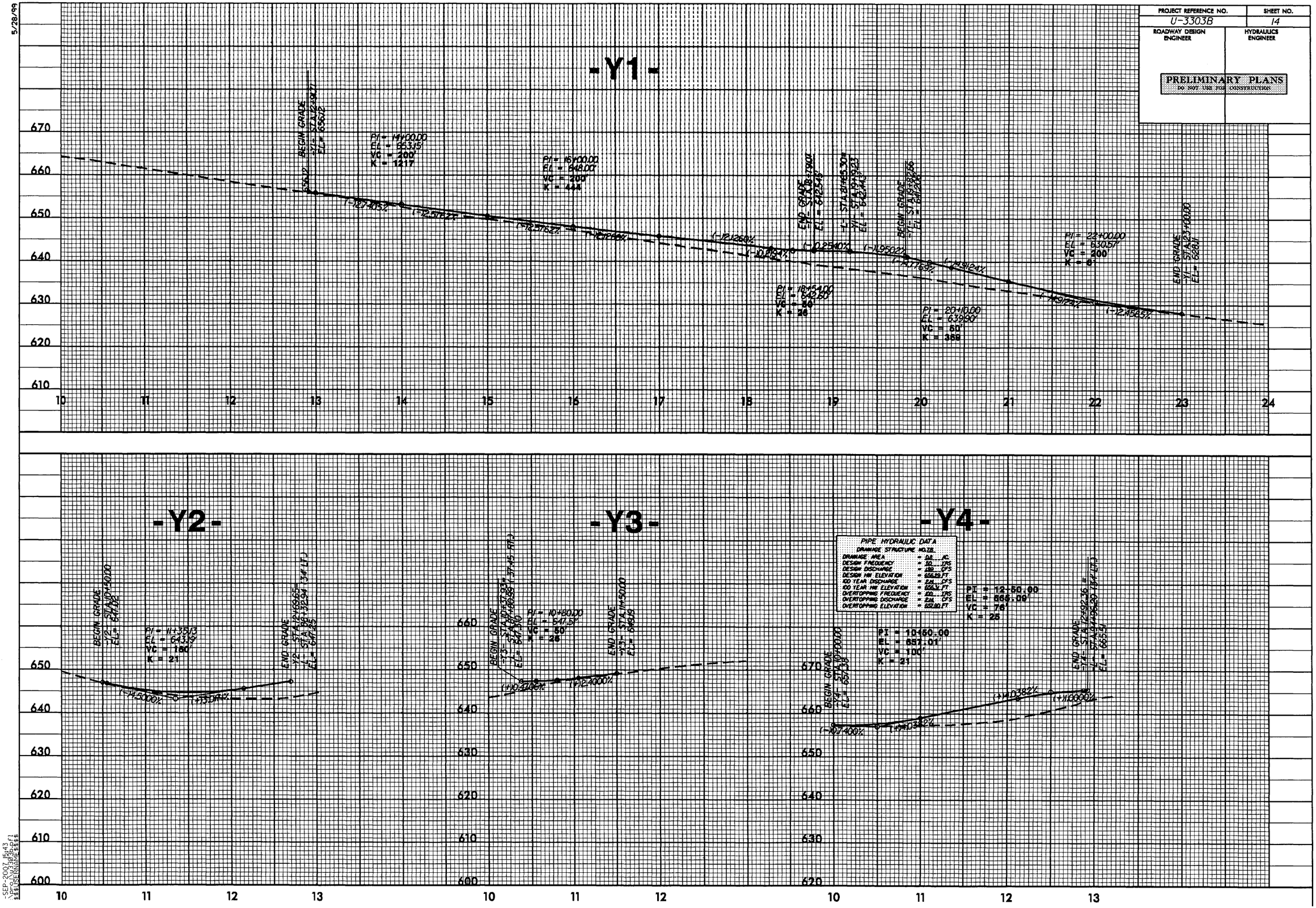
PROJECT REFERENCE NO.	SHEET NO.
U-3303B	14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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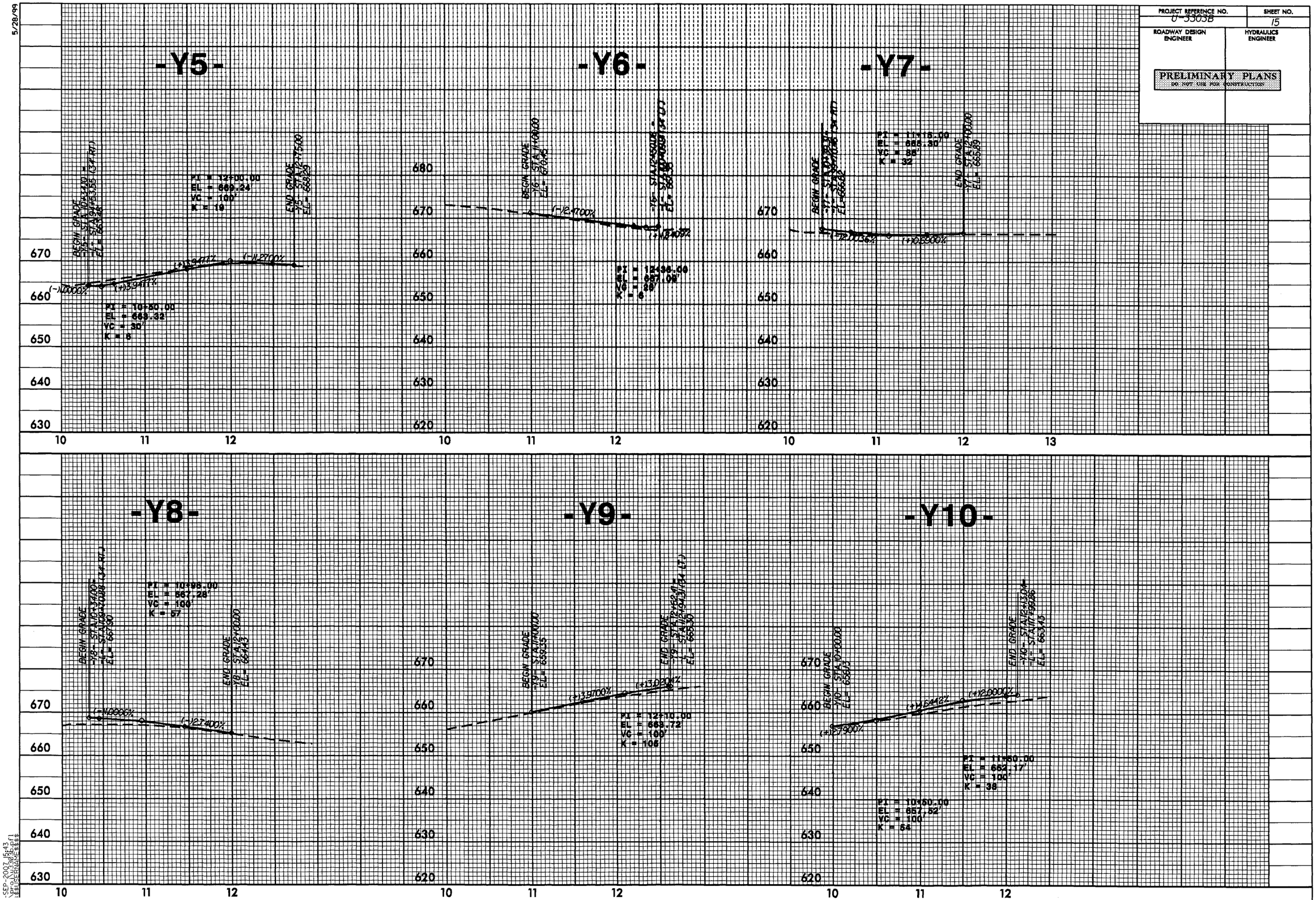
PROJECT REFERENCE NO.	SHEET NO.
U-3303B	15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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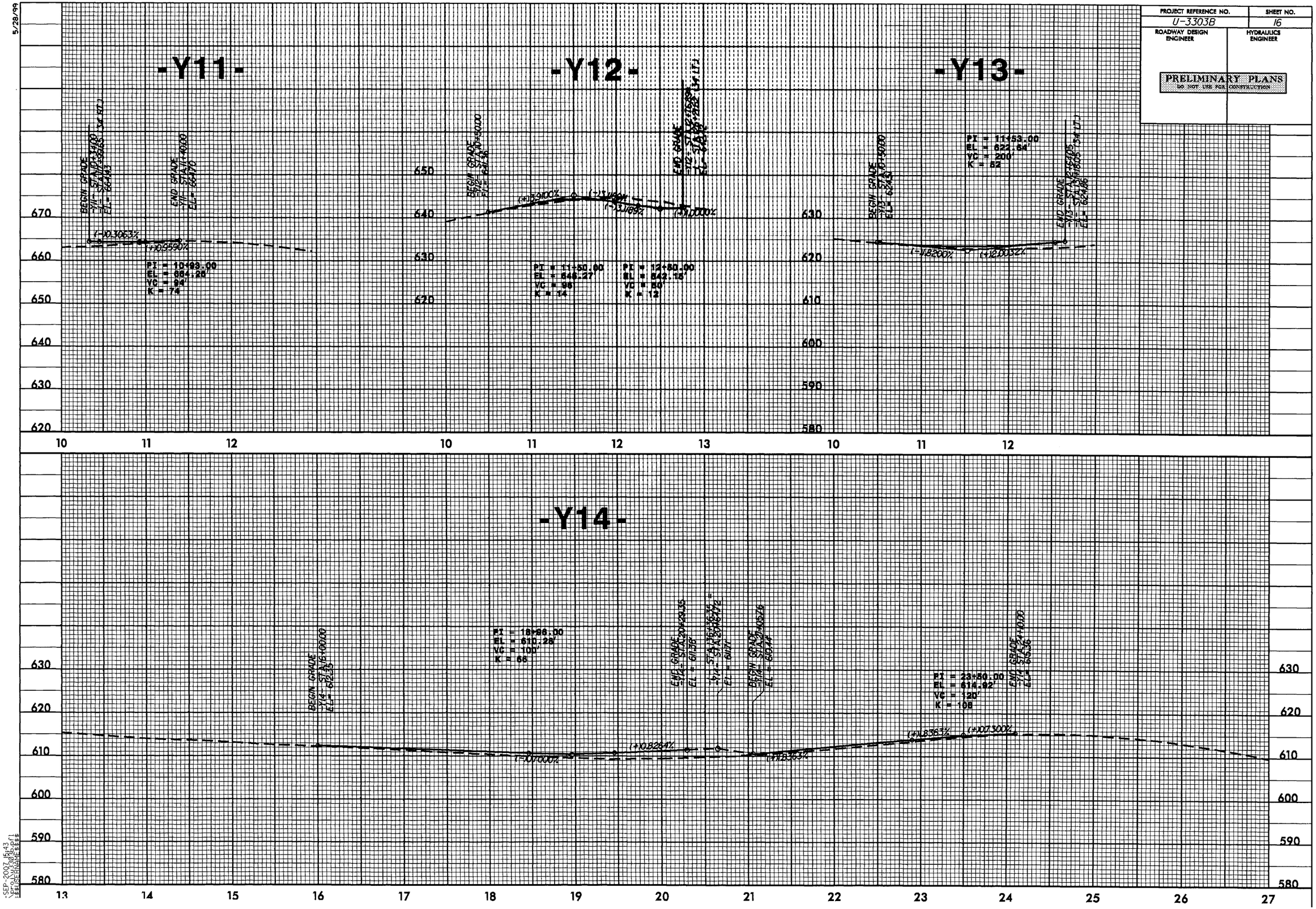
PROJECT REFERENCE NO.	SHEET NO.
U-3303B	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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PROJECT REFERENCE NO.	SHEET NO.
U-3303B	X-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CROSS SECTION INDEX

CROSS SECTION EARTHWORK SUMMARY	X-1A	NAME
-L- 72+50 TO 144+50	X-2 thru X-26	SOUTH MEBANE
-Y1- 12+00 TO 23+00	X-27 thru X-31	NC 62 ALAMANCE ROAD
-Y2- 10+00 TO 13+00	X-32 thru X-33	TRAIL ONE
-Y3- 10+00 TO 12+50	X-34 thru X-35	TRAIL ONE
-Y4- 10+00.00 TO 13+00.00	X-36 thru X-37	TRAIL TWO
-Y5- 10+00.00 TO 12+50.00	X-38 thru X-39	TRAIL TWO
-Y6- 10+00.00 TO 12+50.00	X-40 thru X-41	TRAIL THREE
-Y7- 10+00.00 TO 13+00.00	X-42 thru X-43	TRAIL THREE
-Y8- 10+00.00 TO 12+50.00	X-44 thru X-44	AUDREY AVE
-Y9- 10+00.00 TO 12+50.00	X-45 thru X-45	TRAIL FOUR
-Y10-10+00.00 TO 12+00.00	X-46 thru X-46	TRAIL EIGHT
-Y11- 10+00.00 TO 12+50.00	X-47 thru X-47	TRAIL EIGHT
-Y12- 10+00.00 TO 13+00.00	X-48 thru X-49	BRYAN STREET
-Y13- 10+00.00 TO 12+50.00	X-50 thru X-51	FOSTER STREET
-Y14- 14+00.00 TO 27+00.00	X-52 thru X-56	NC 54 CHAPEL HILL ROAD

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PROJ. REFERENCE NO.	SHEET NO.
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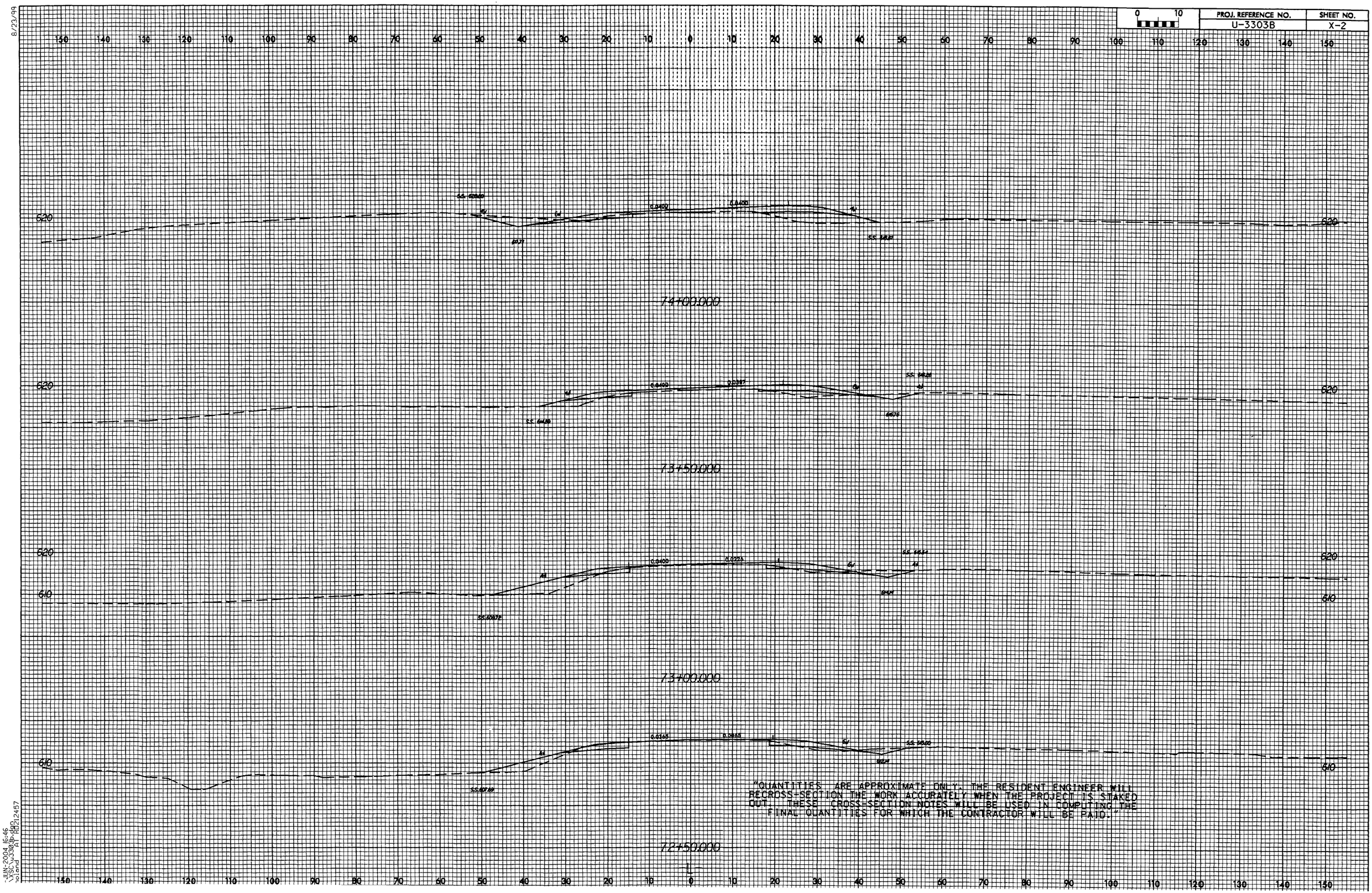

"QUANTITIES ARE APPROXIMATE ONLY. THE RESIDENT ENGINEER WILL RECROSS-SECTION THE WORK ACCURATELY WHEN THE PROJECT IS STAKED OUT. THESE CROSS-SECTION NOTES WILL BE USED IN COMPUTING THE FINAL QUANTITIES FOR WHICH THE CONTRACTOR WILL BE PAID."

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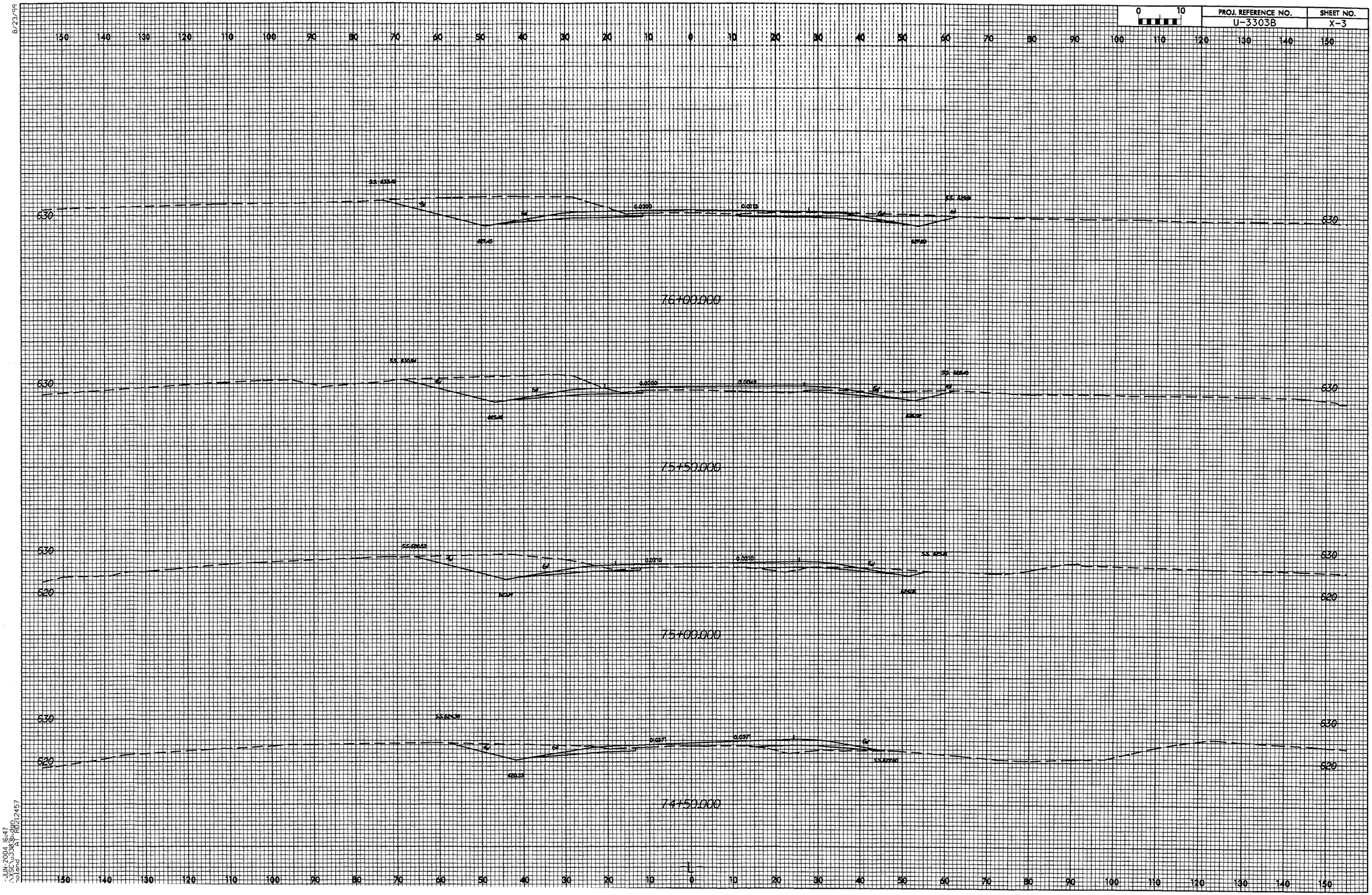

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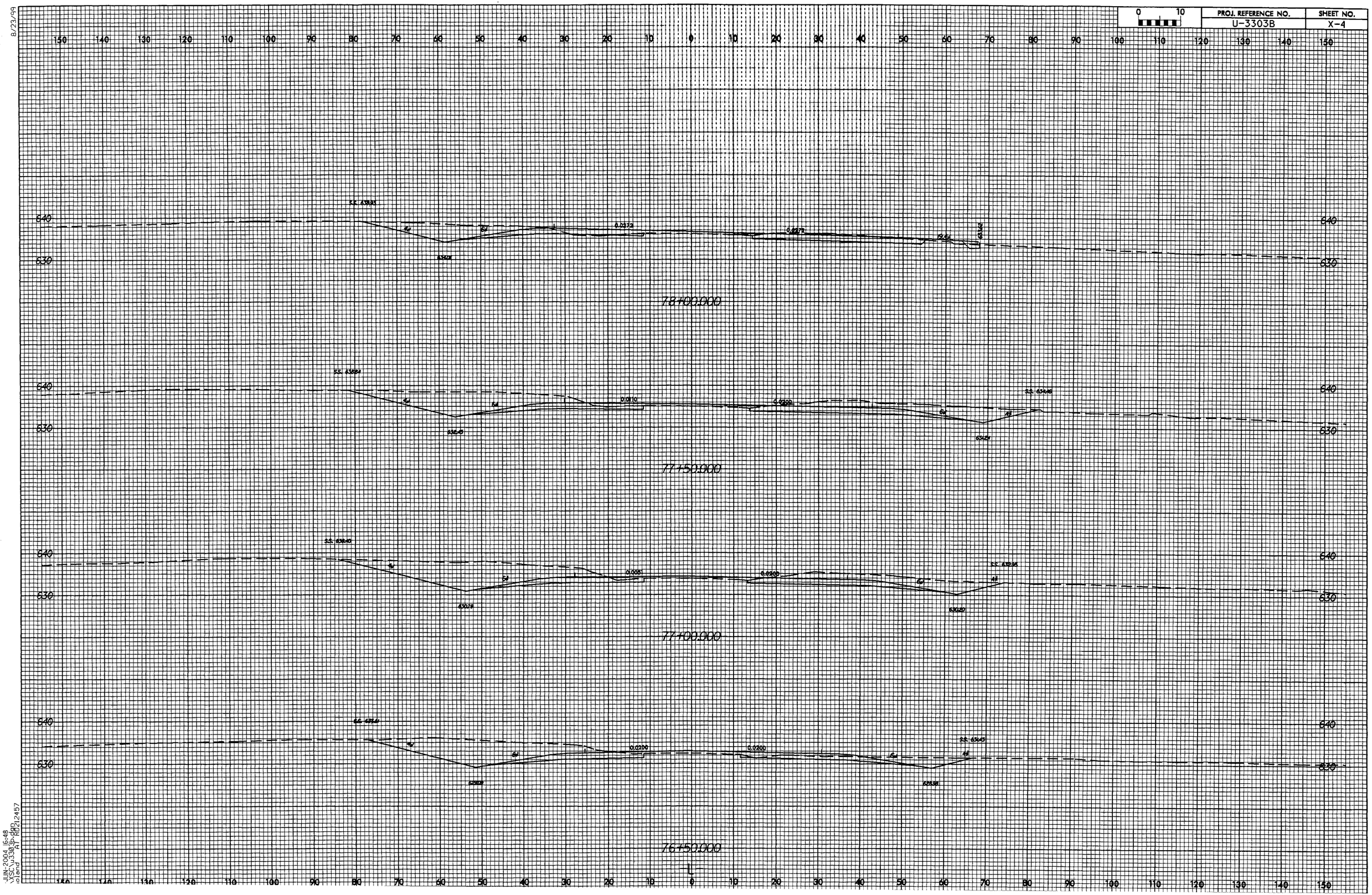
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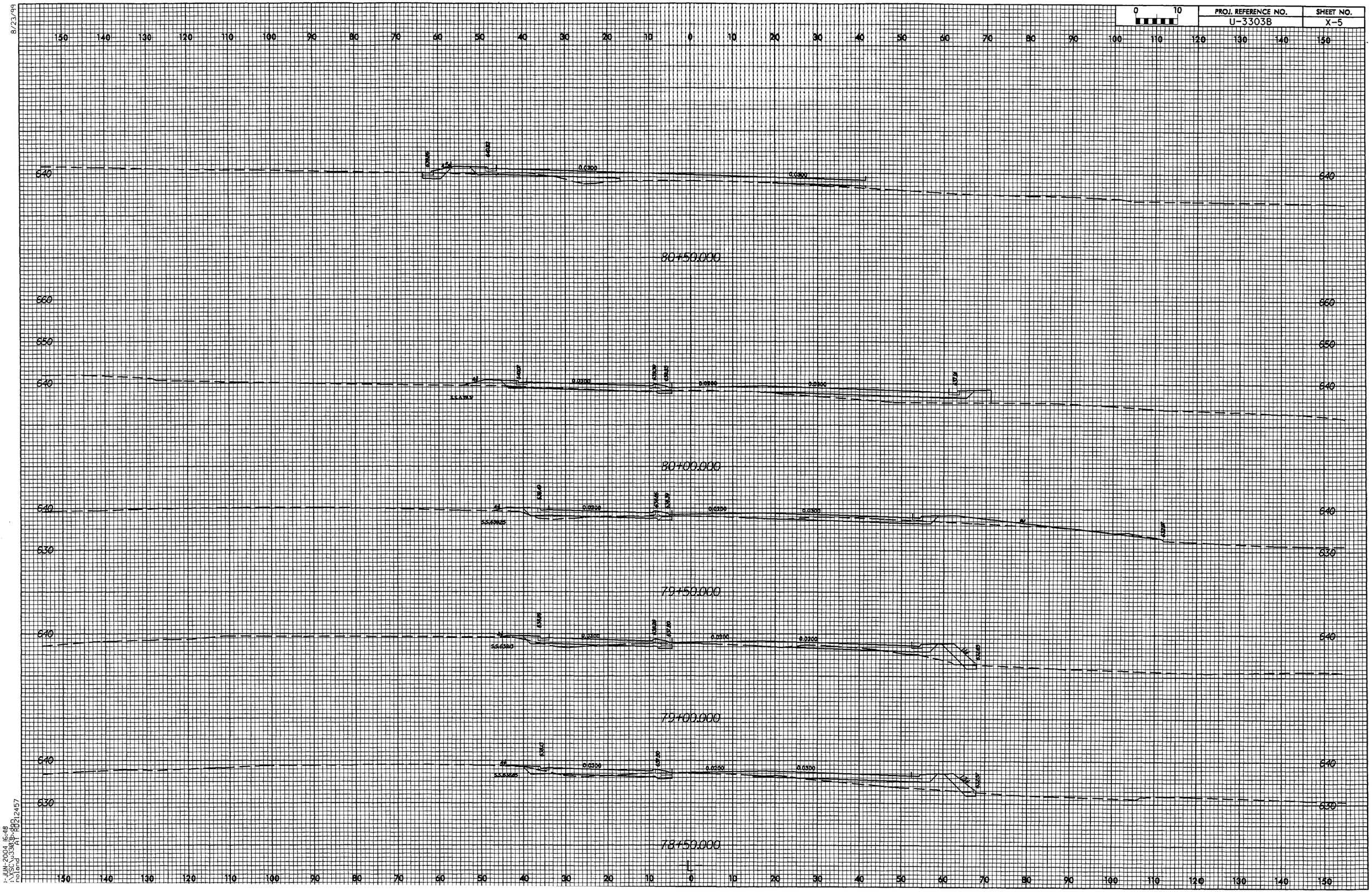

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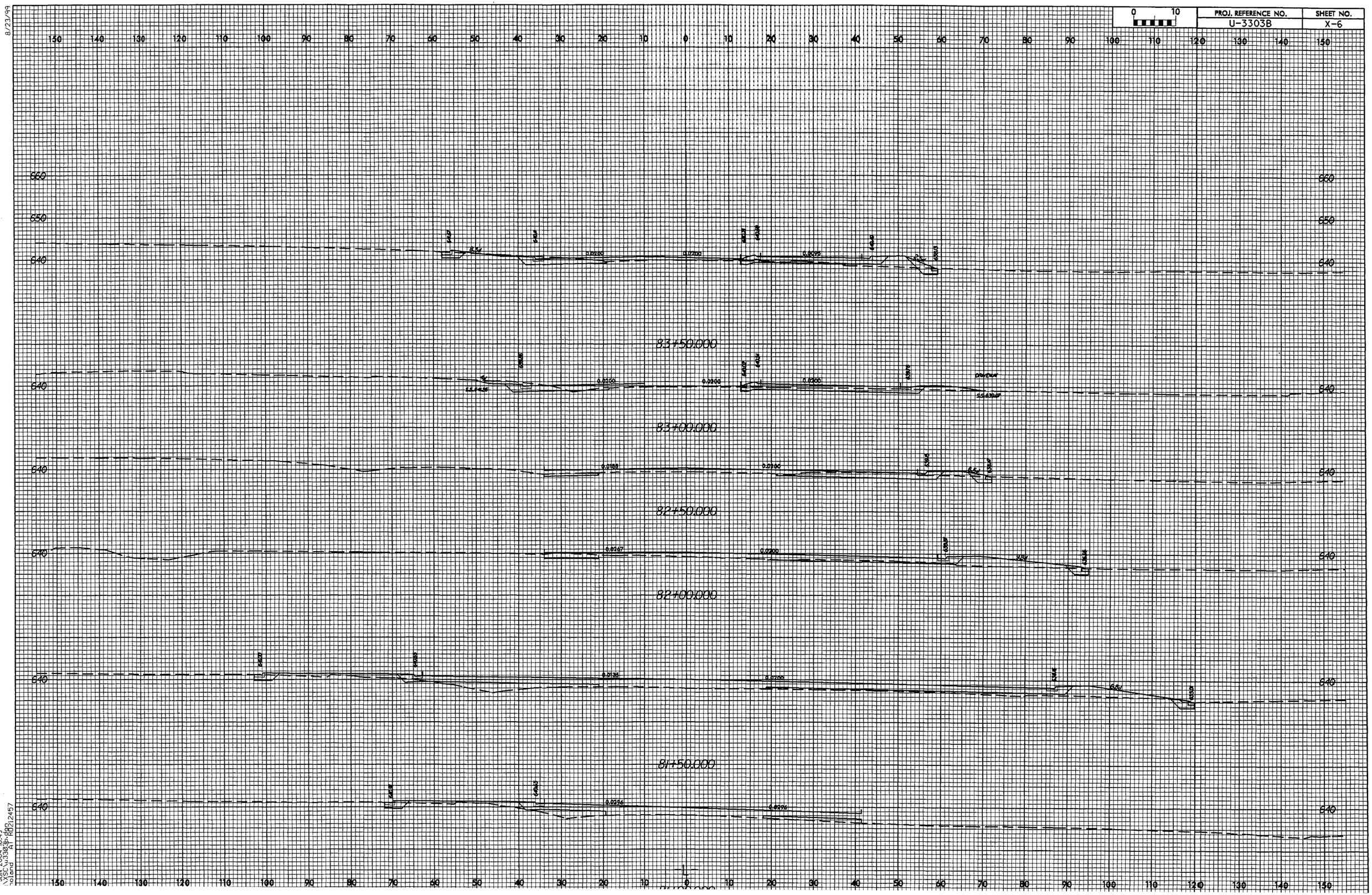

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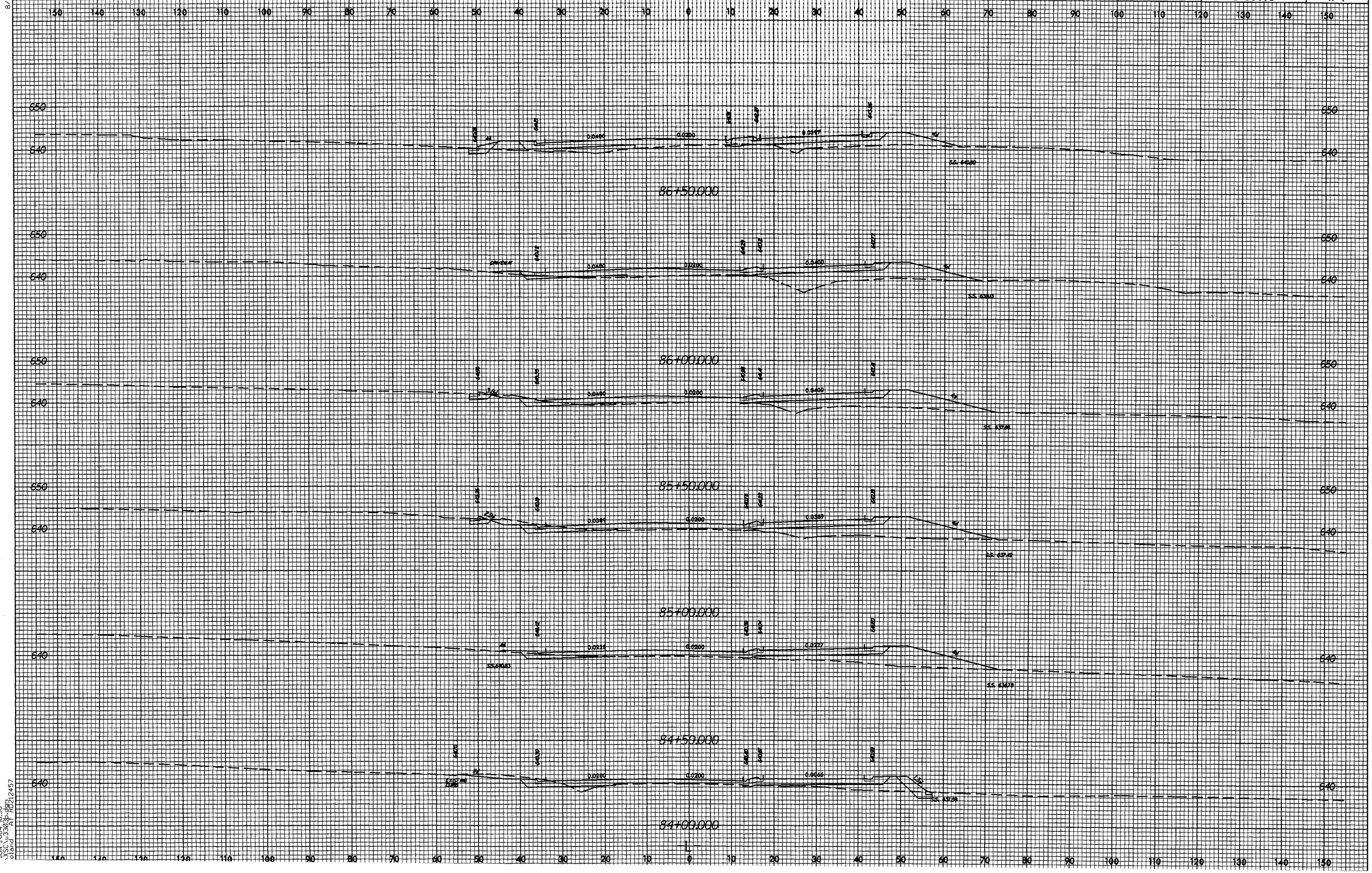

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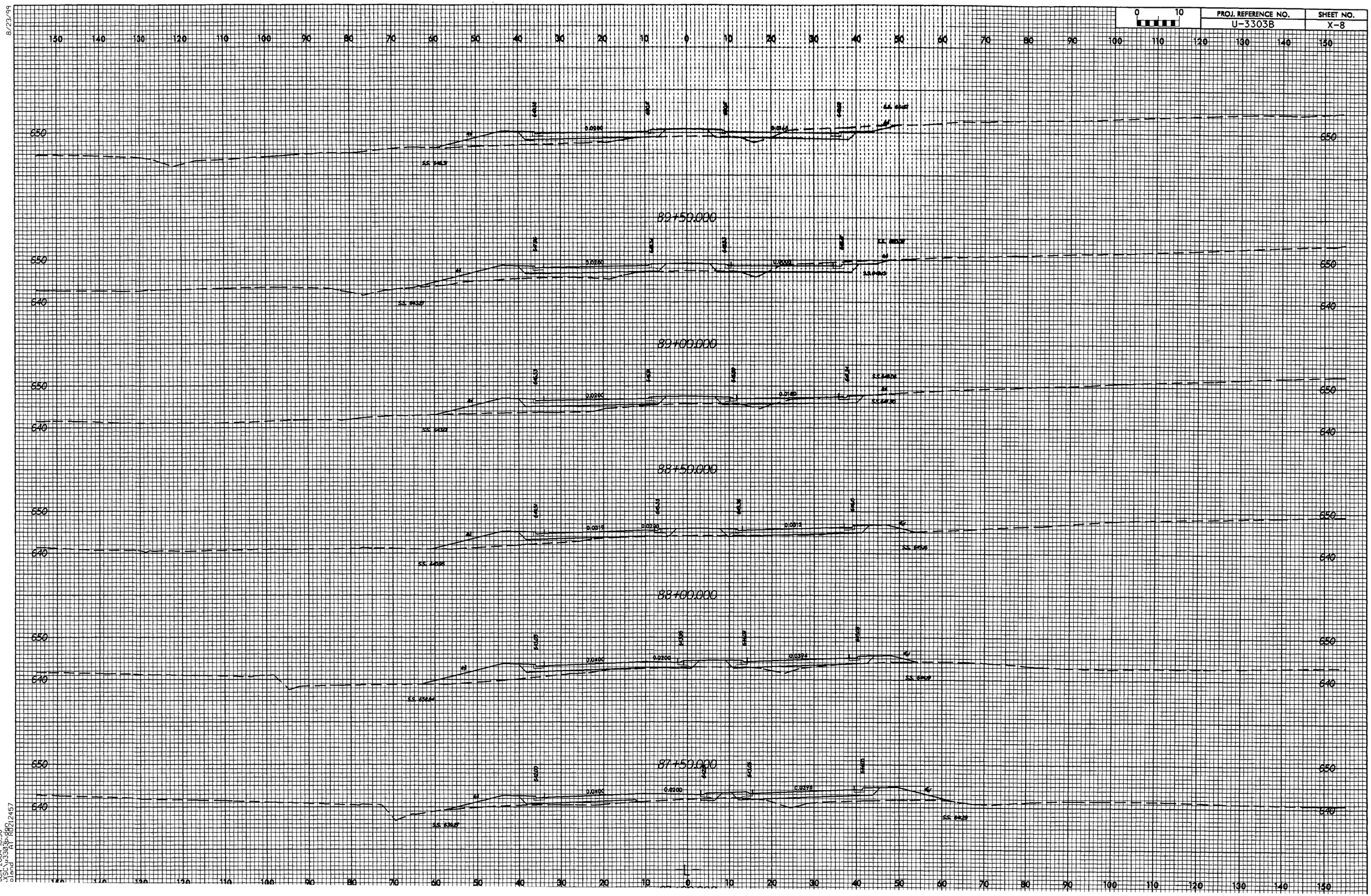
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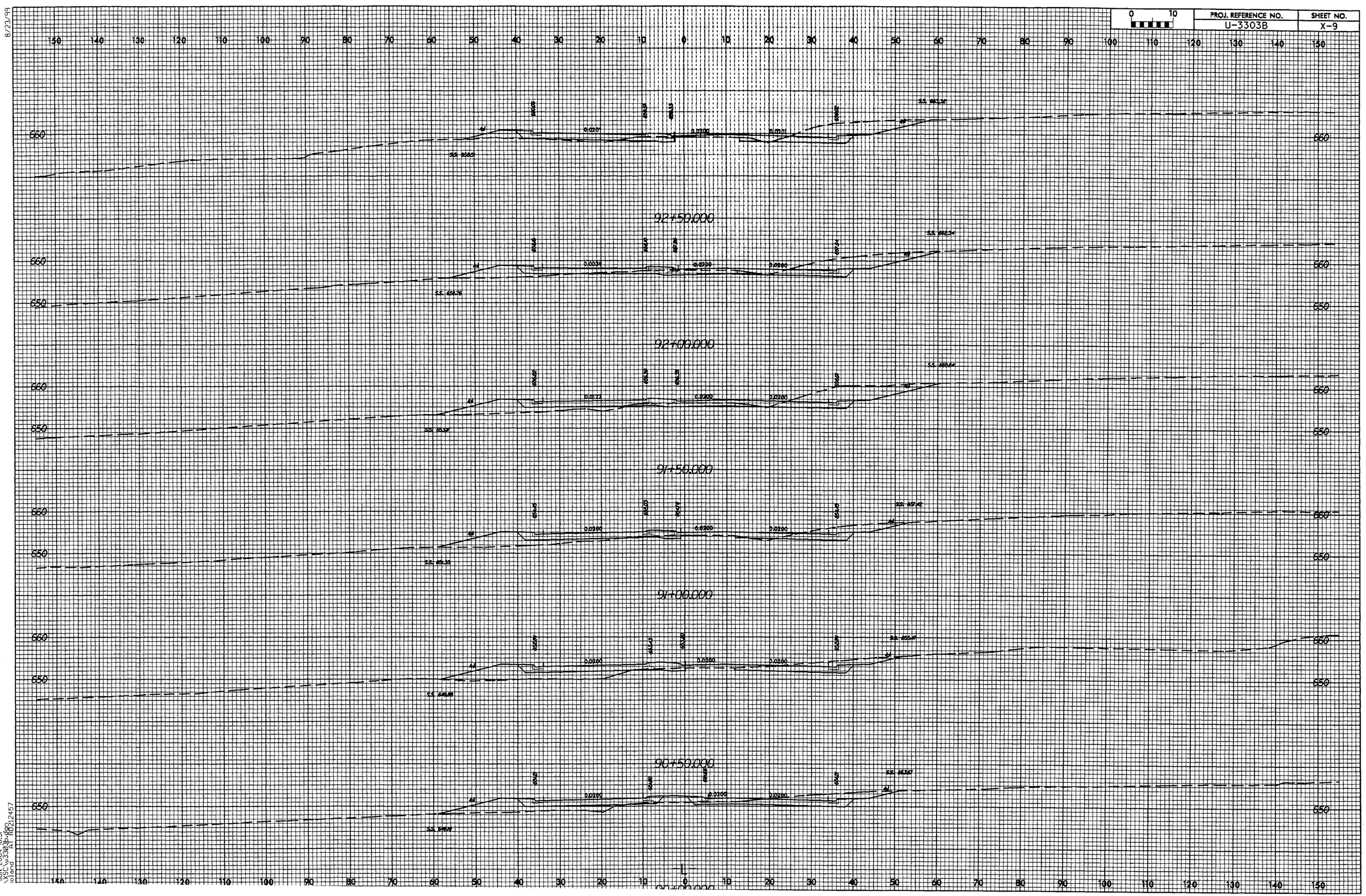

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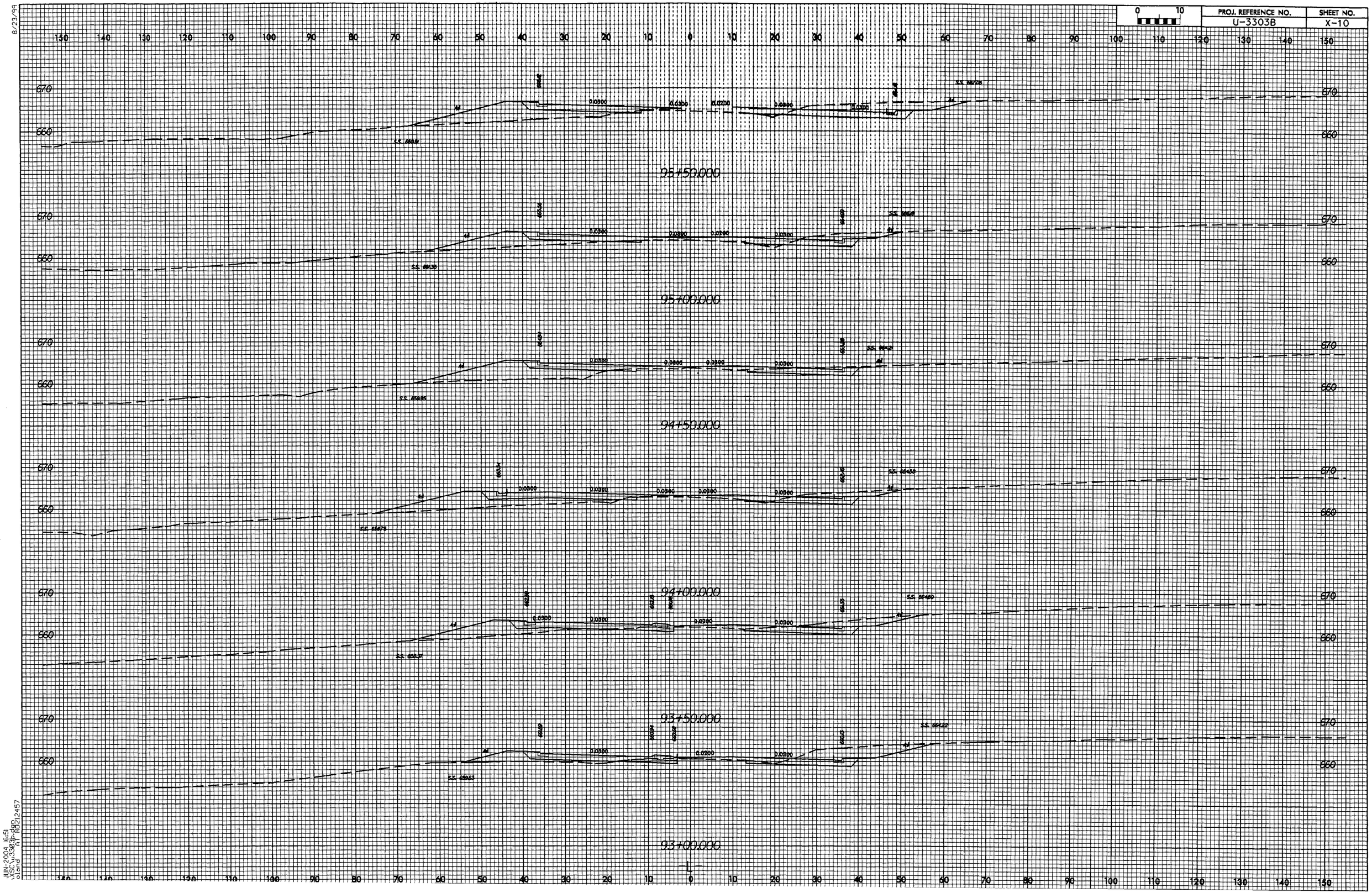
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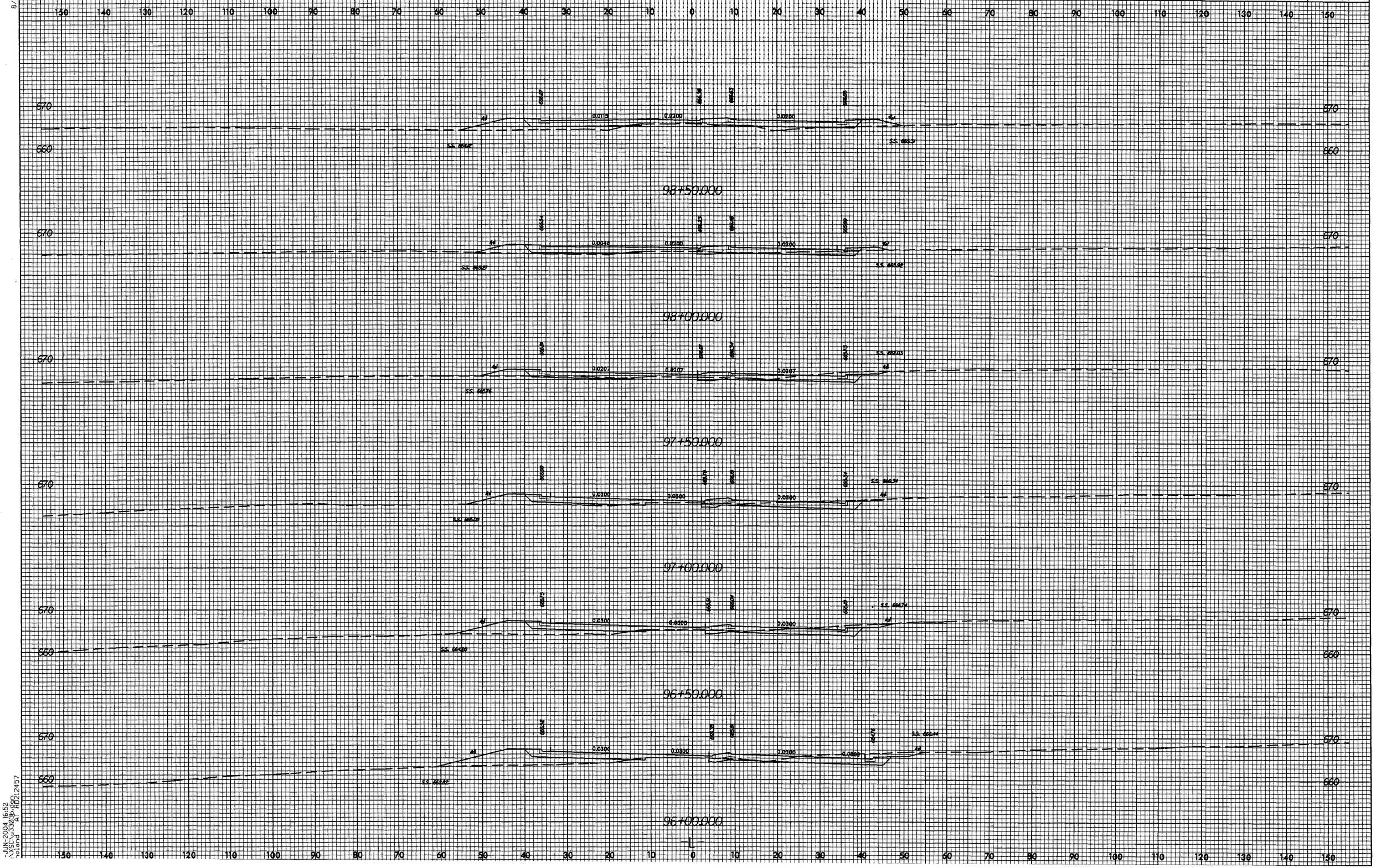

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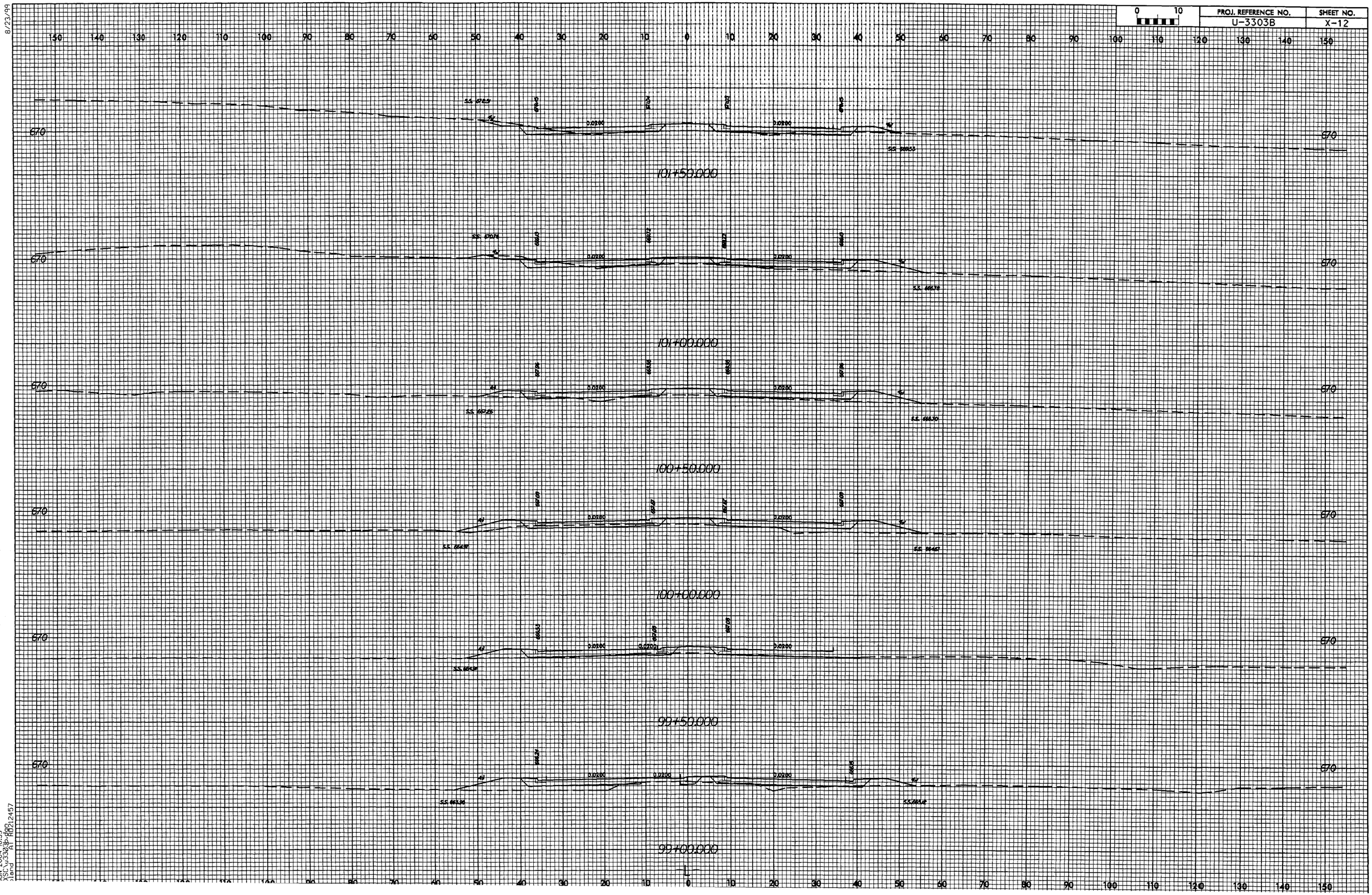

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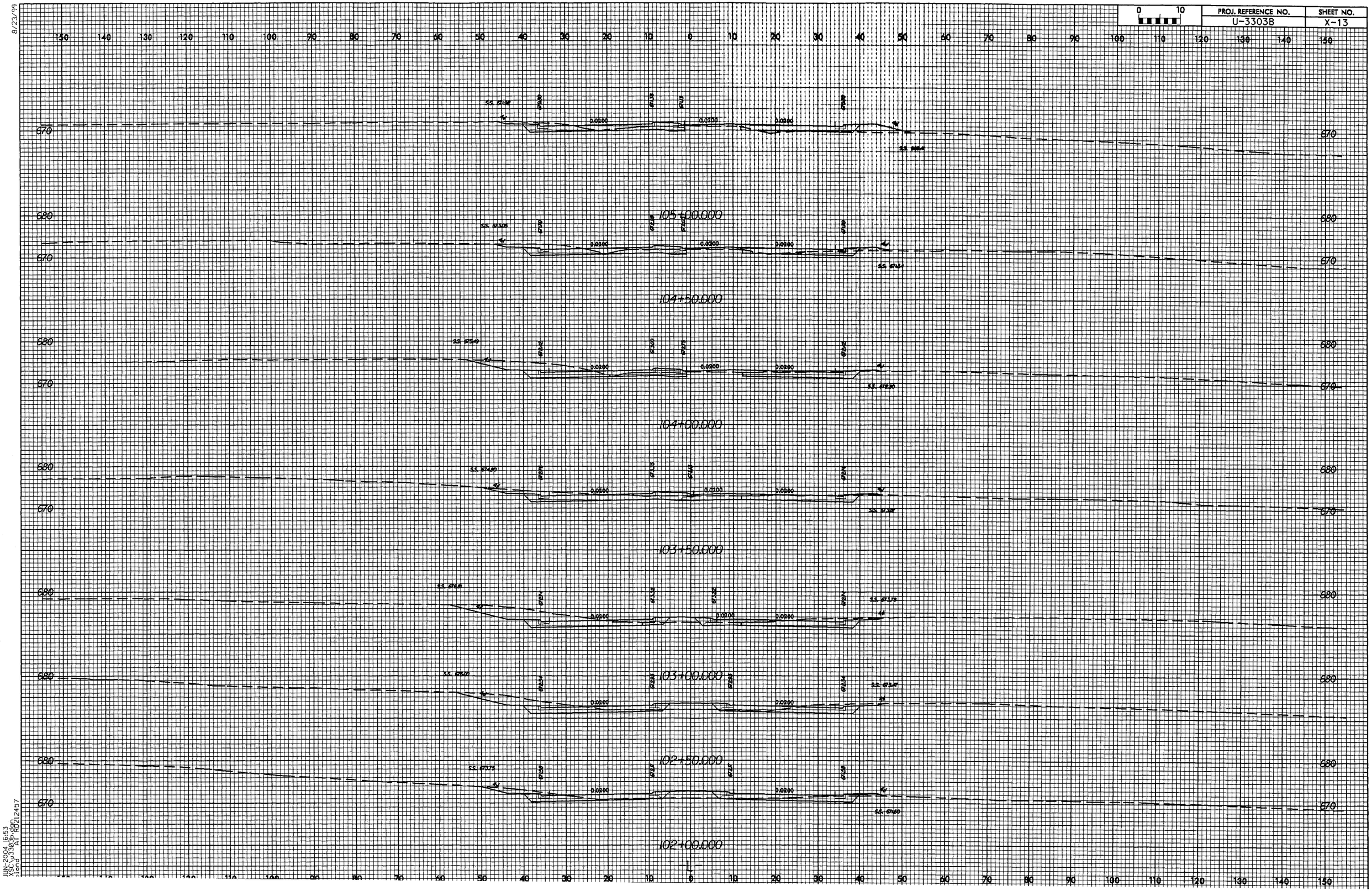

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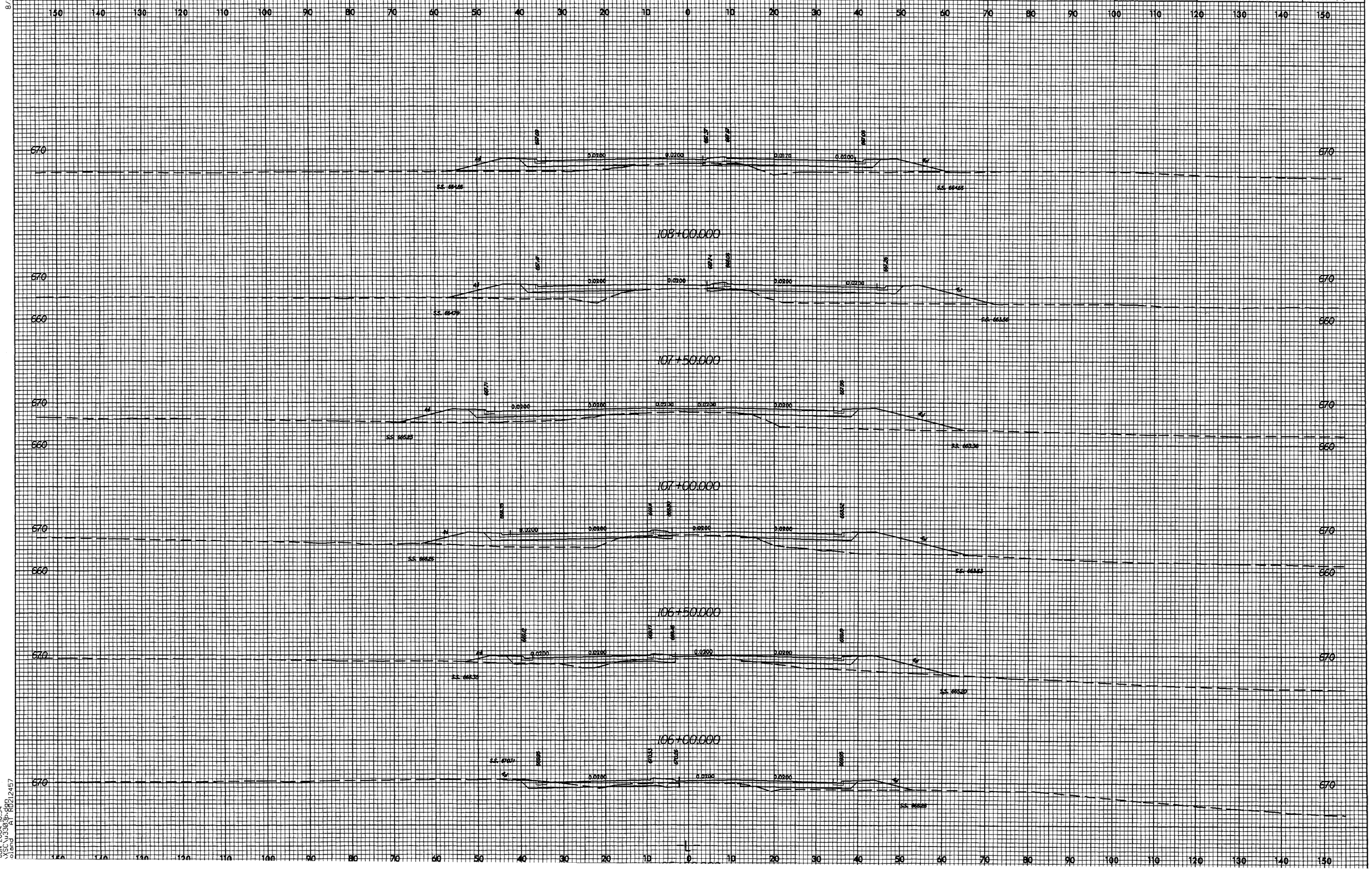

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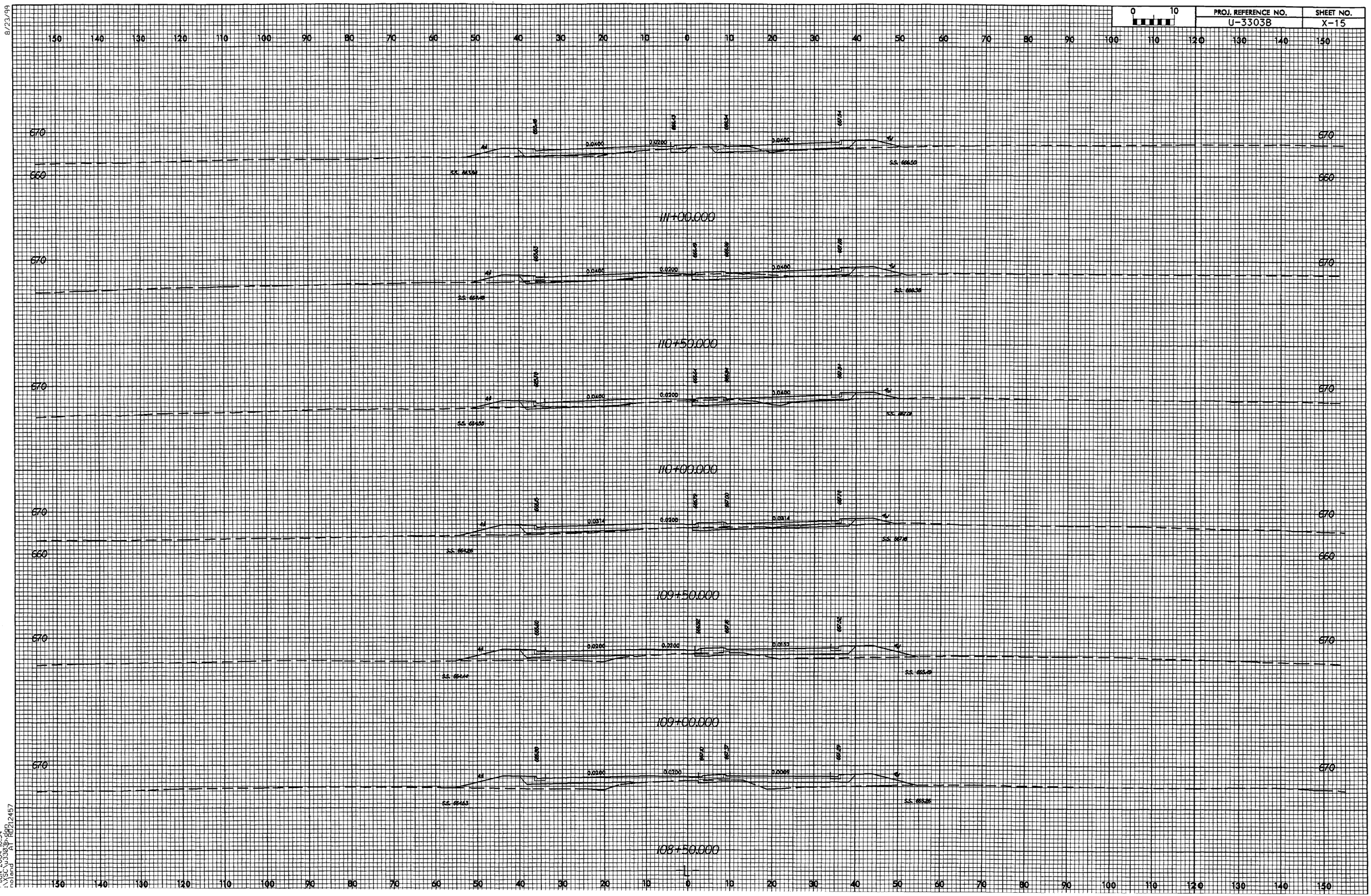

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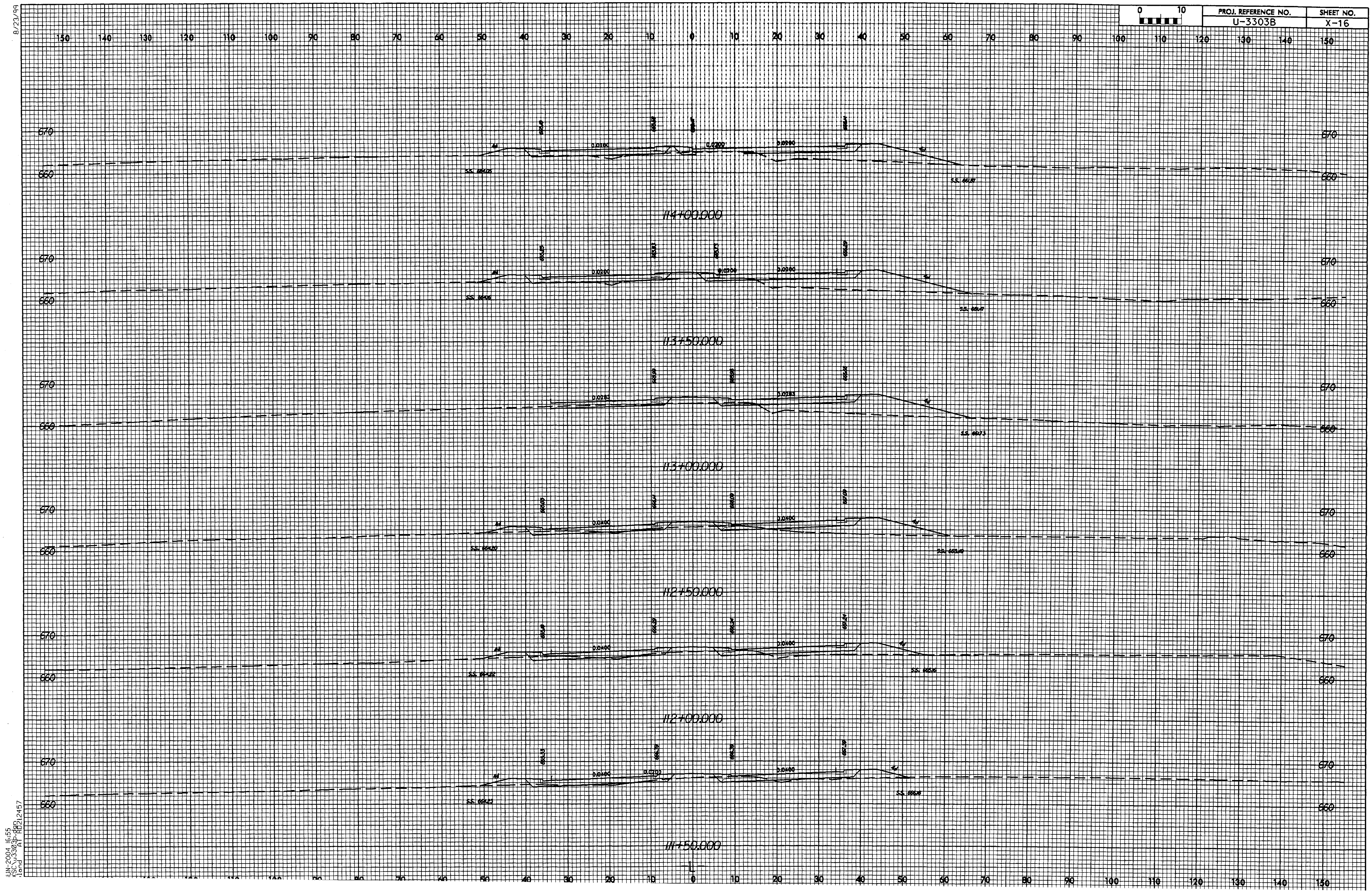

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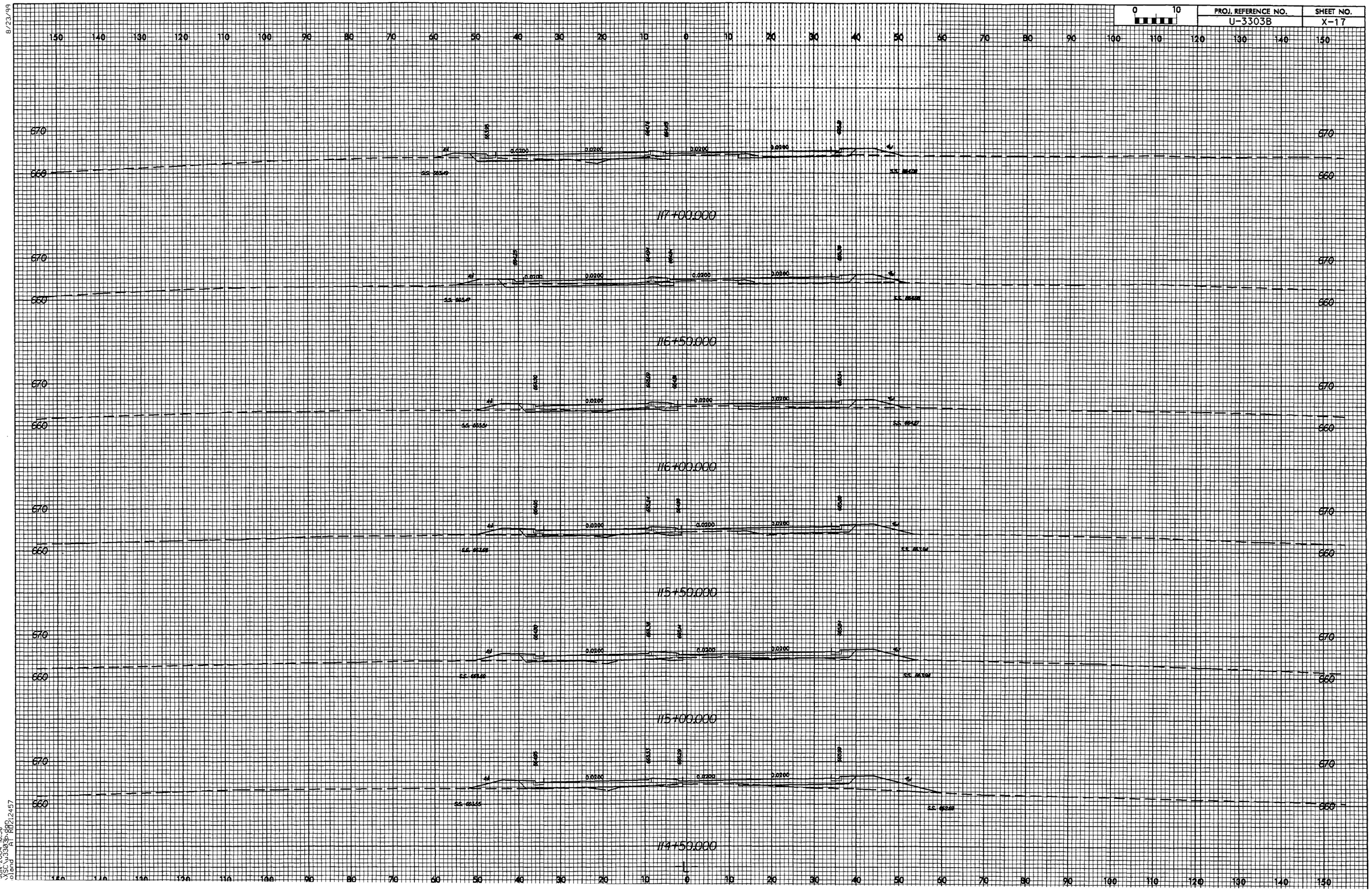

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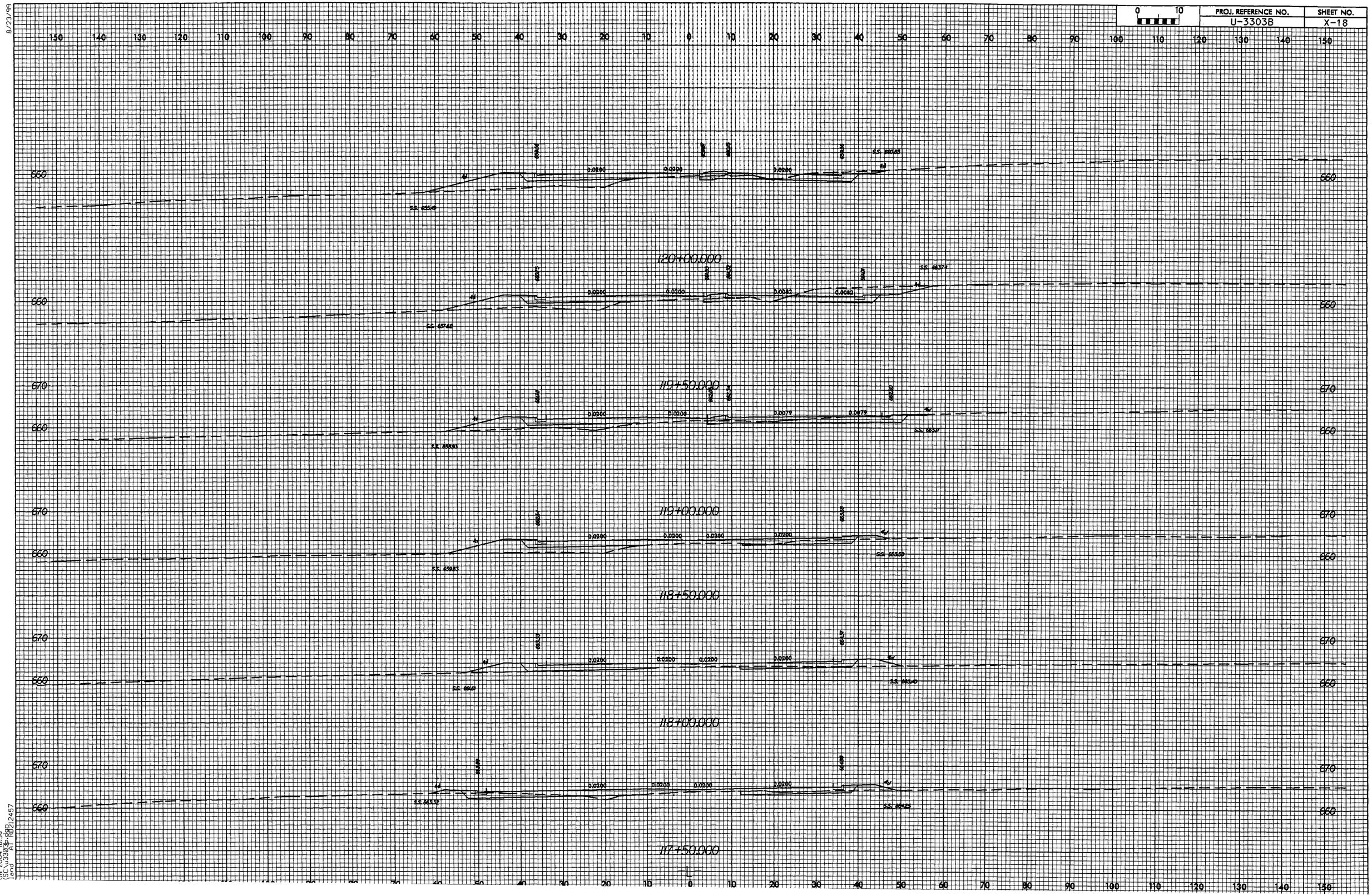

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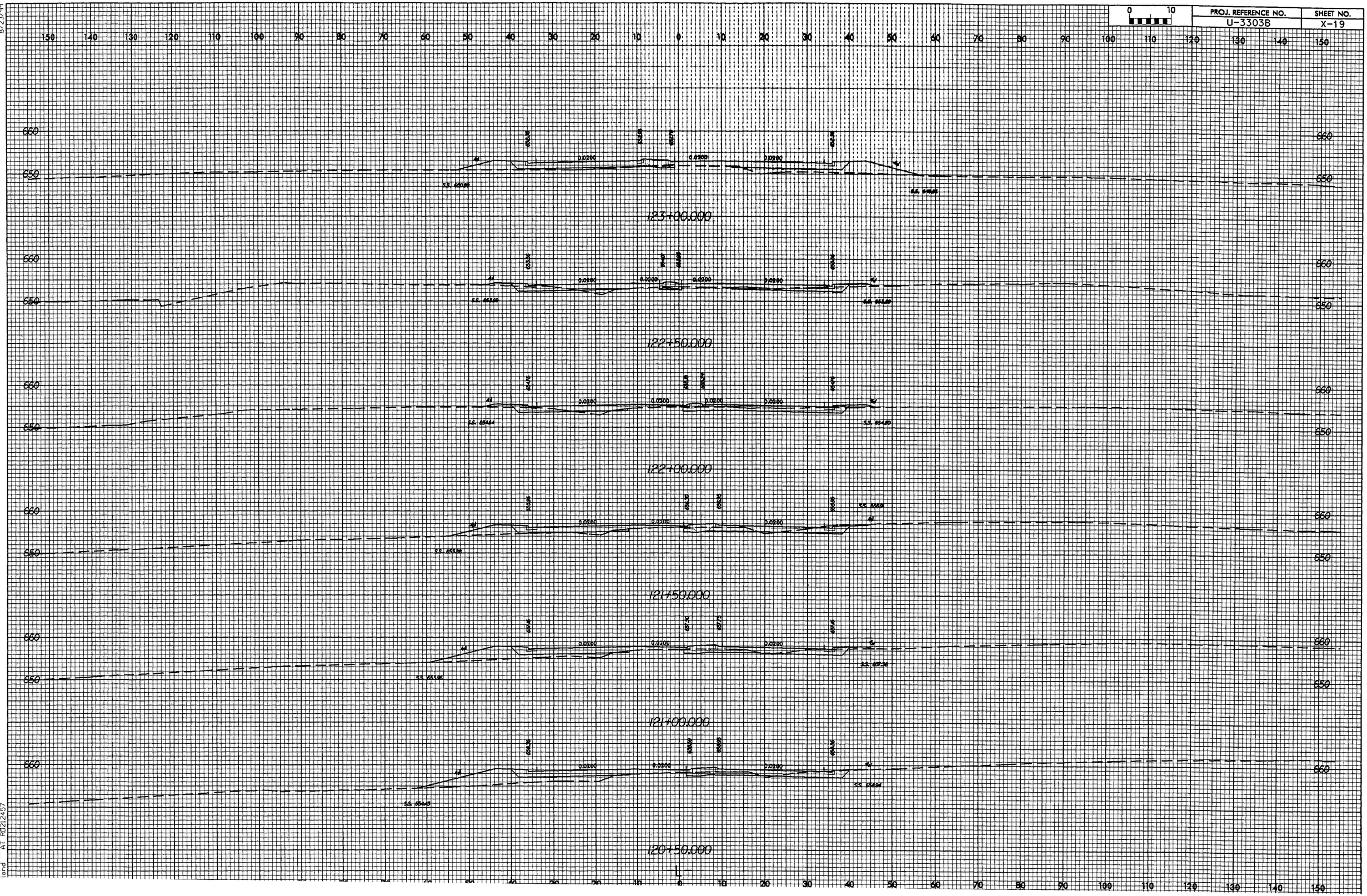

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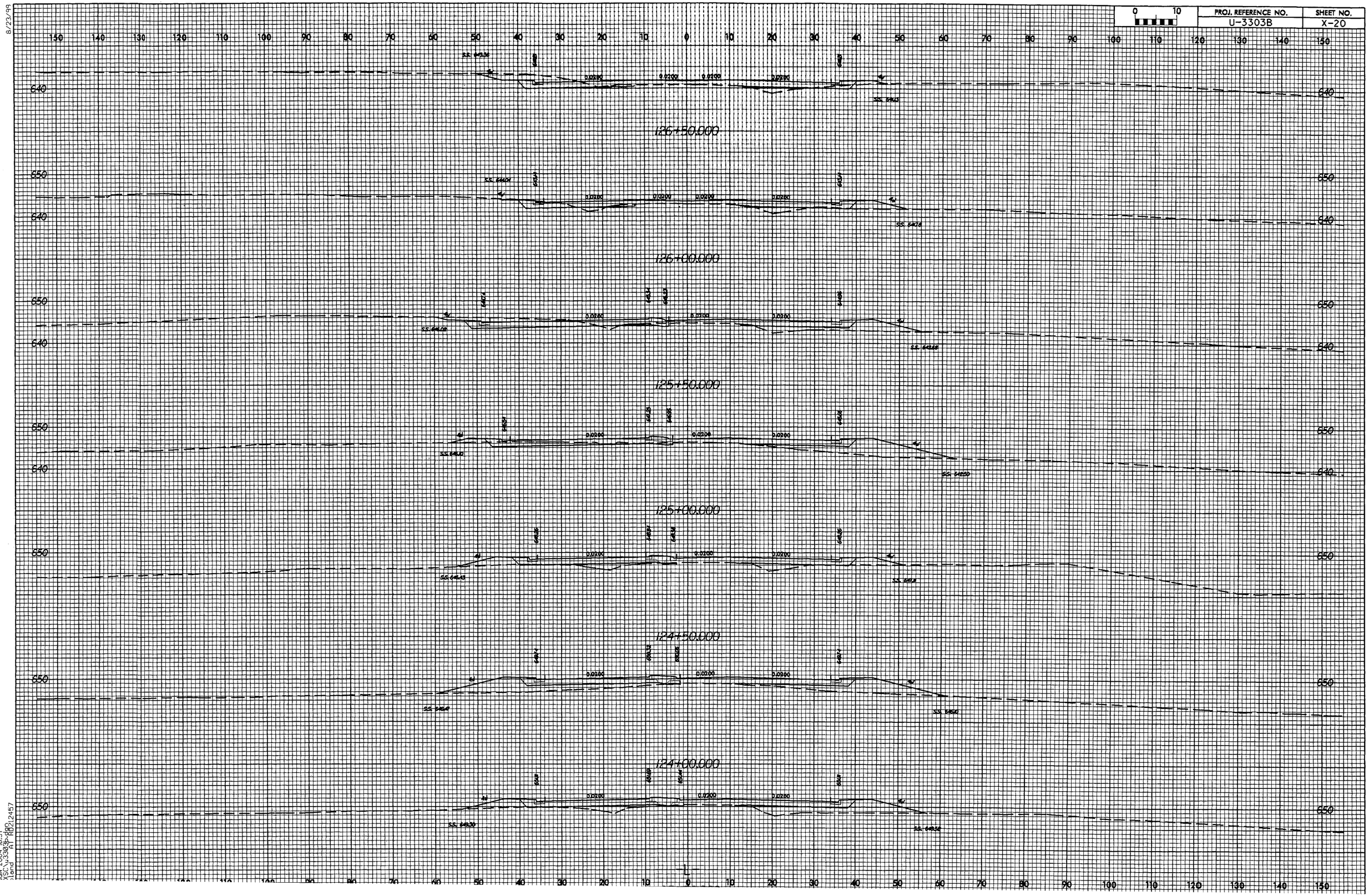
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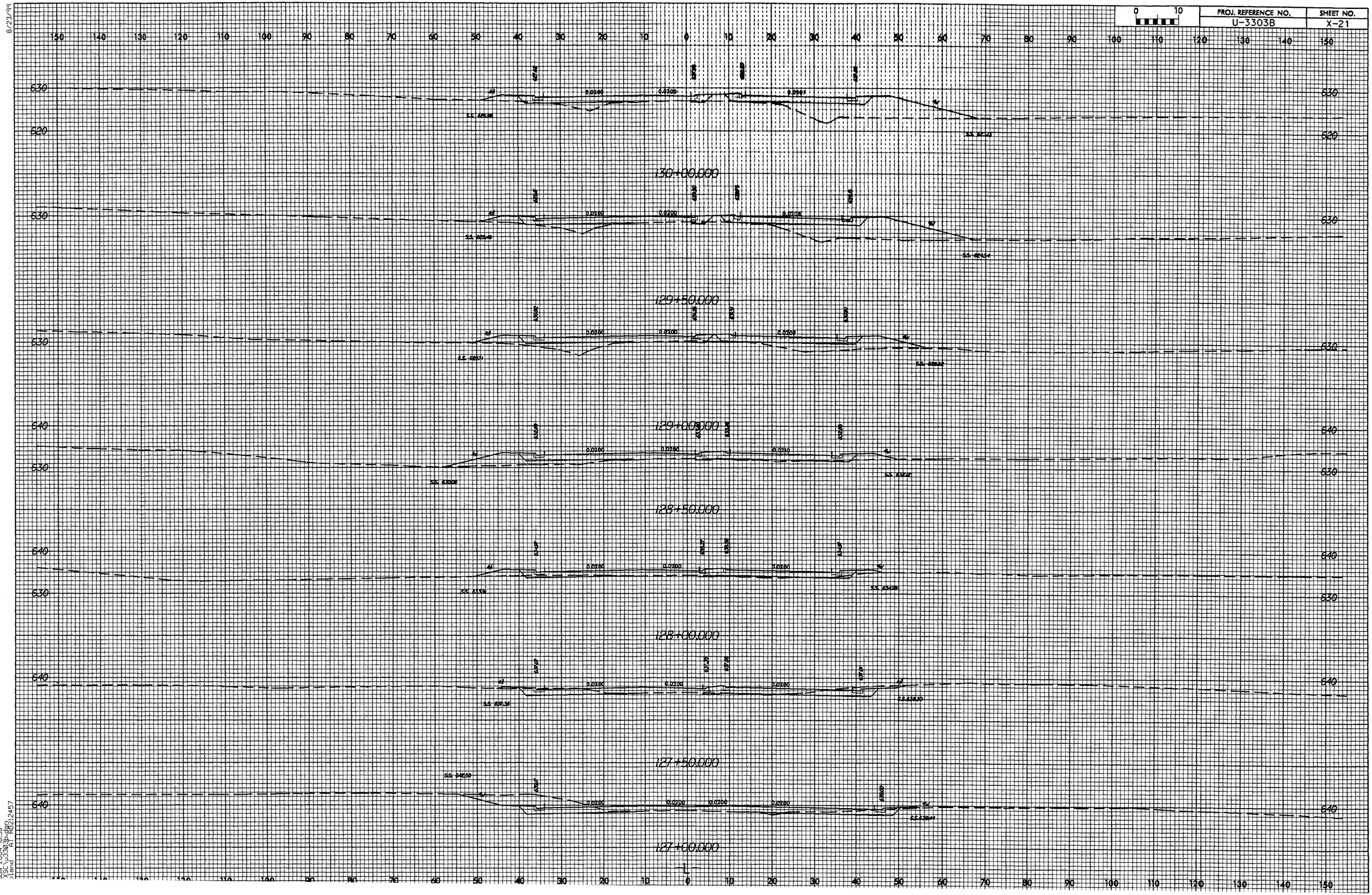

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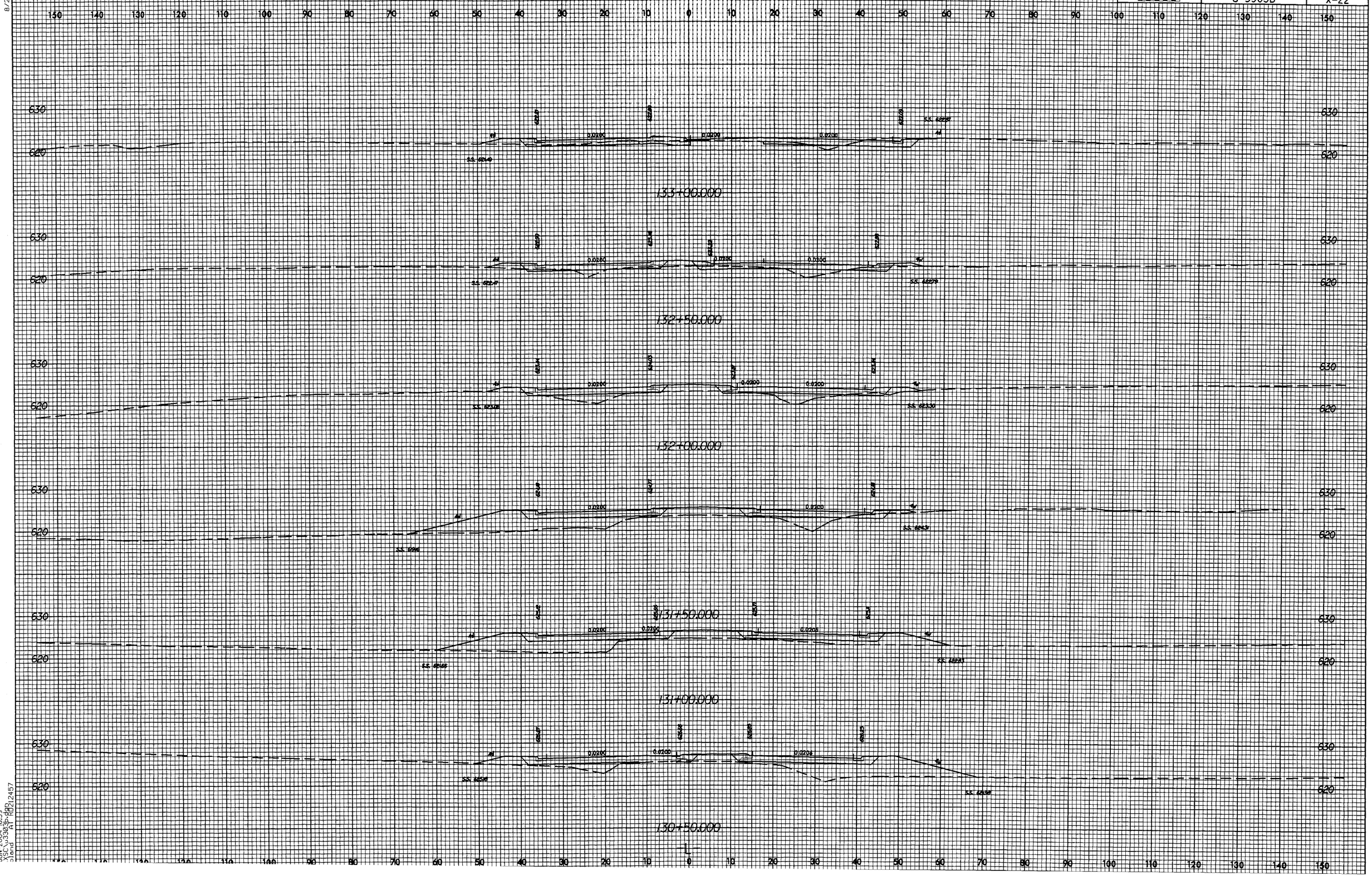

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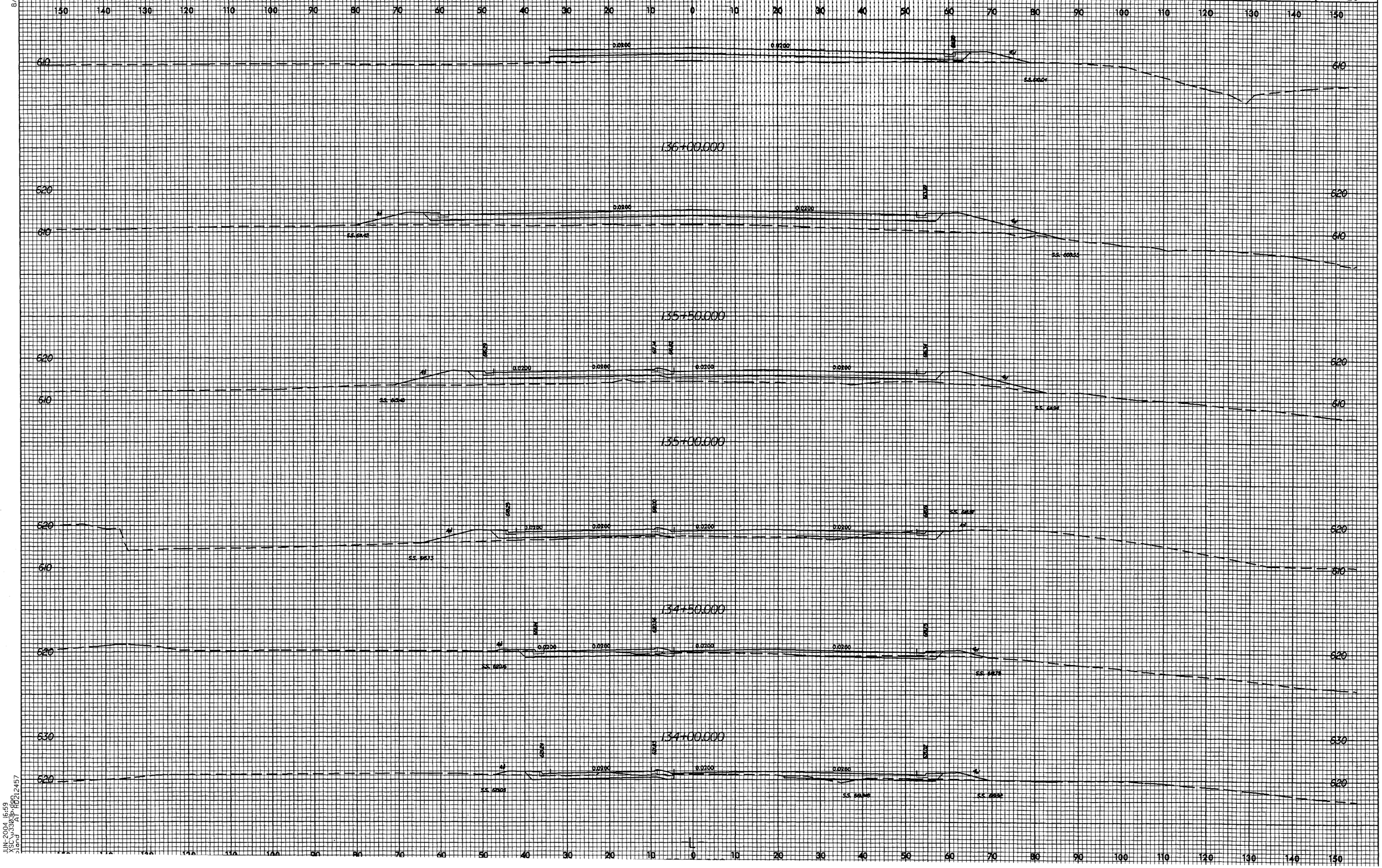

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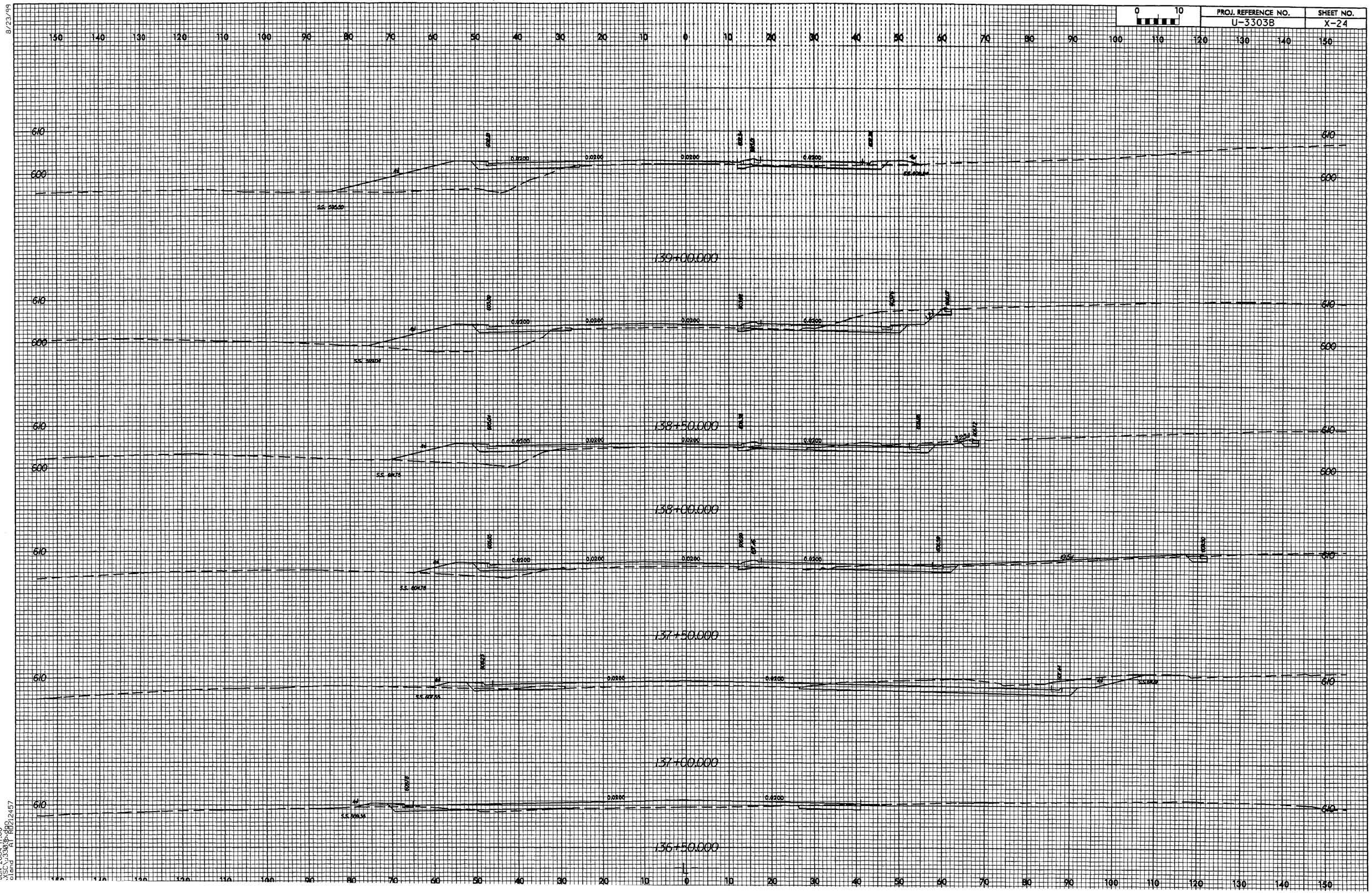

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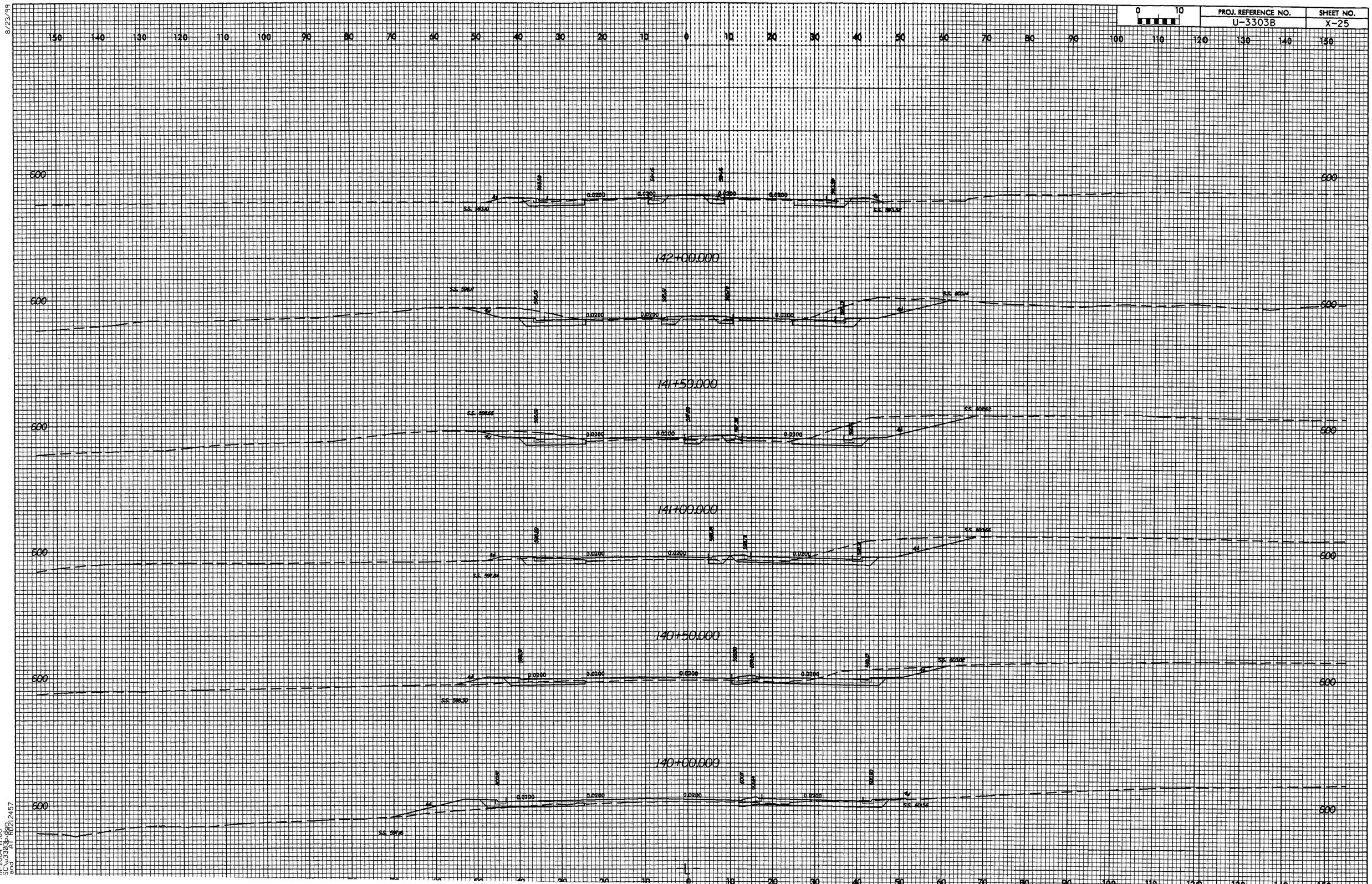

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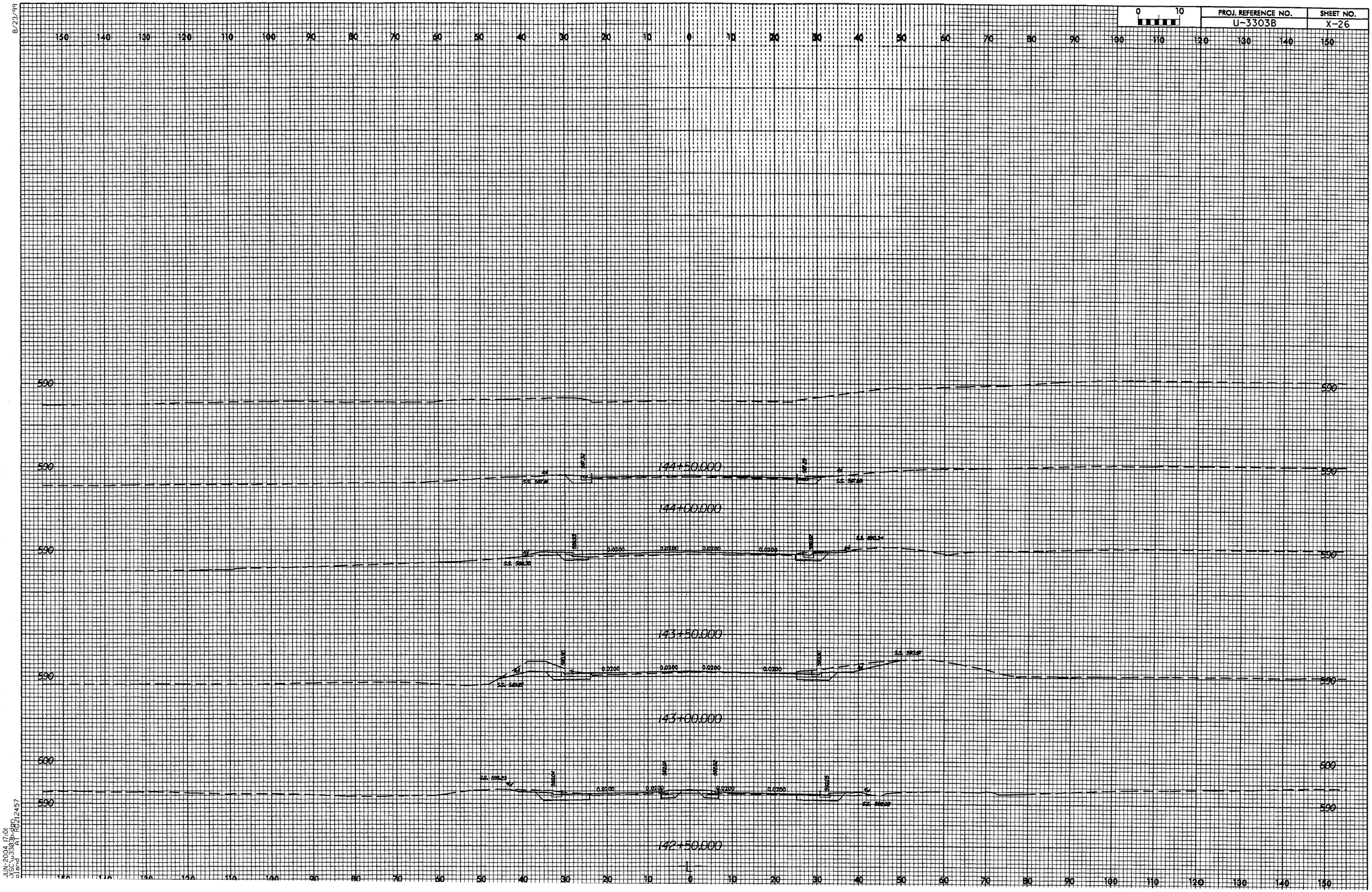

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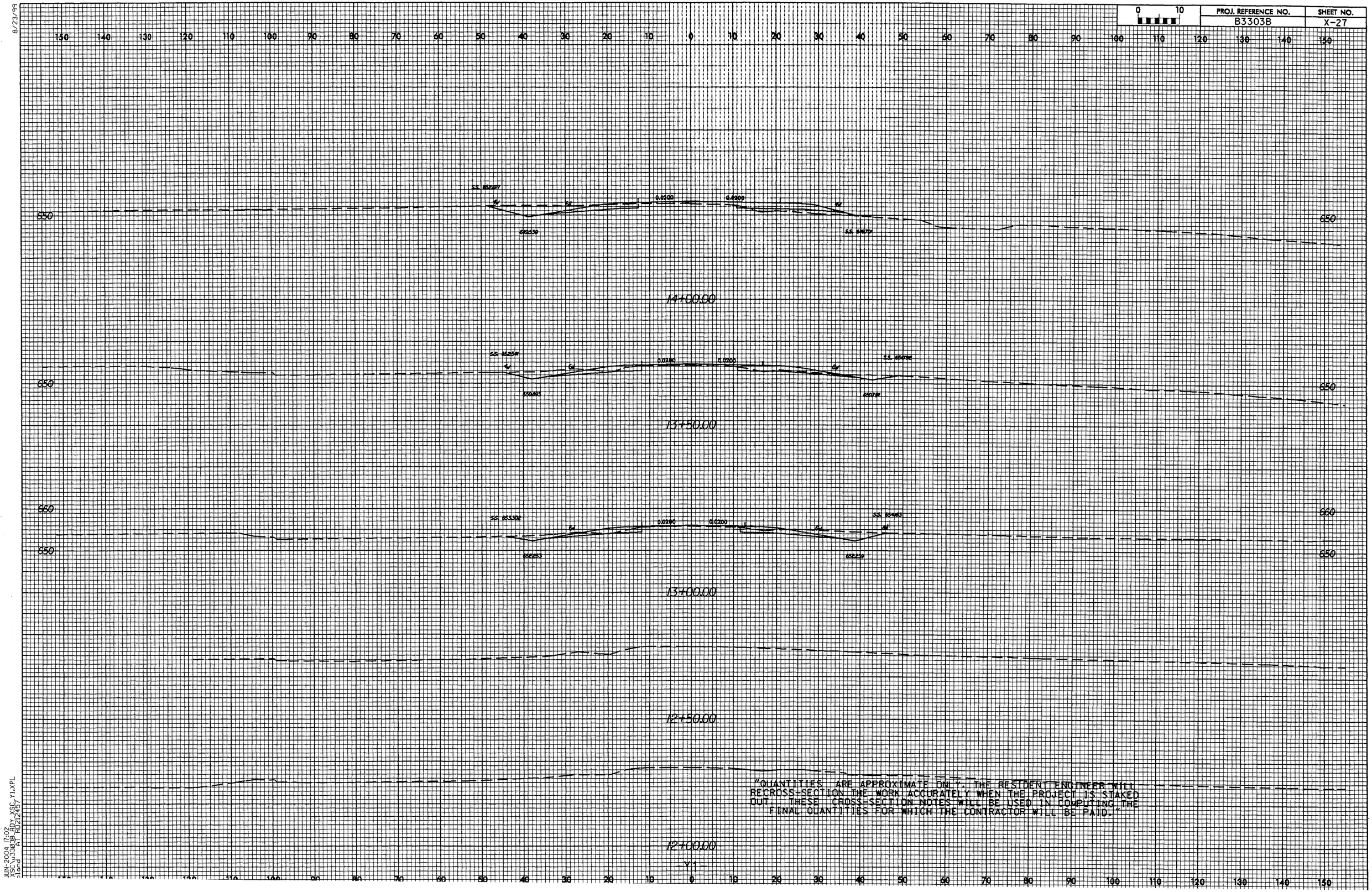

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0 10	PROJ. REFERENCE NO.	SHEET NO.
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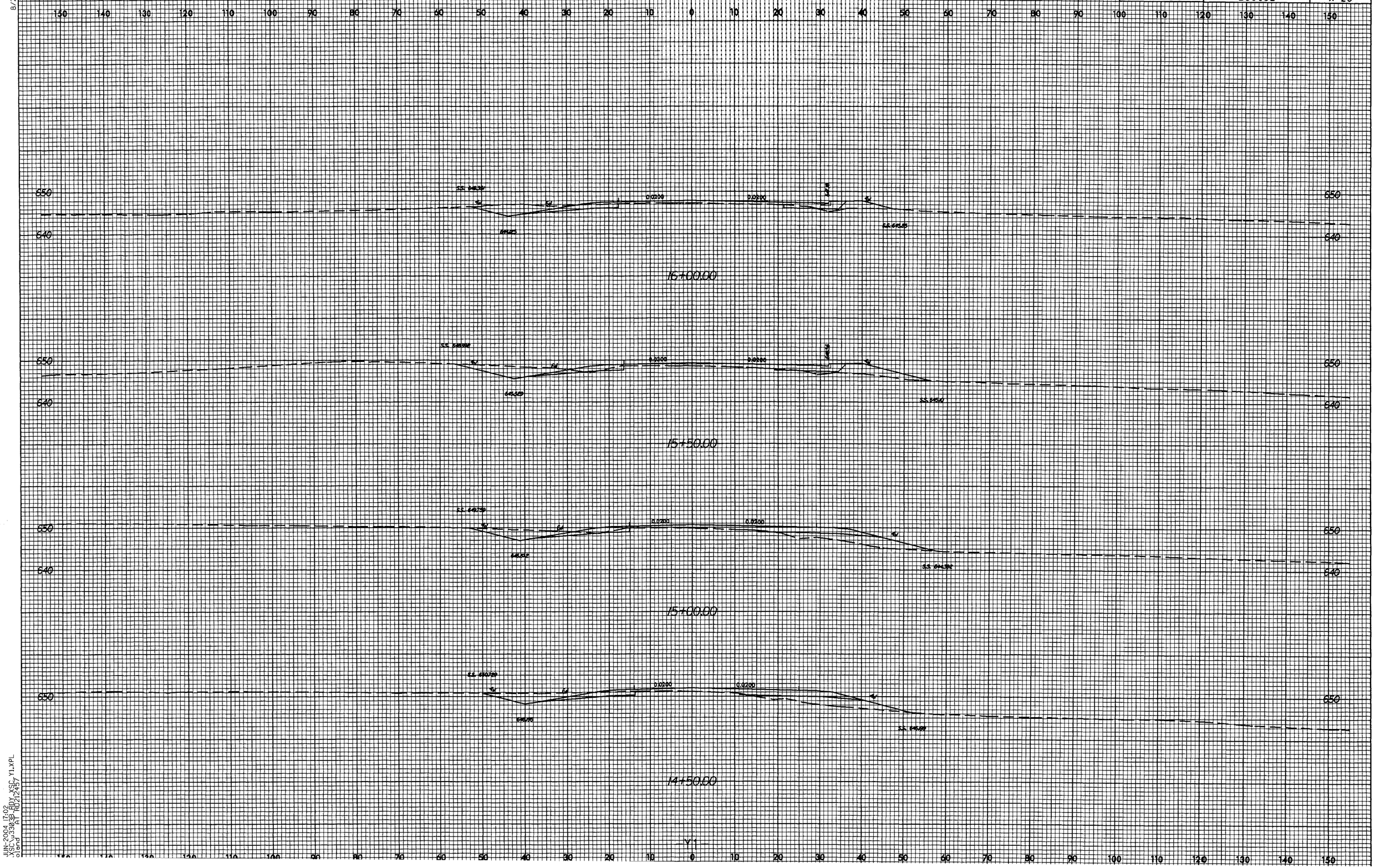

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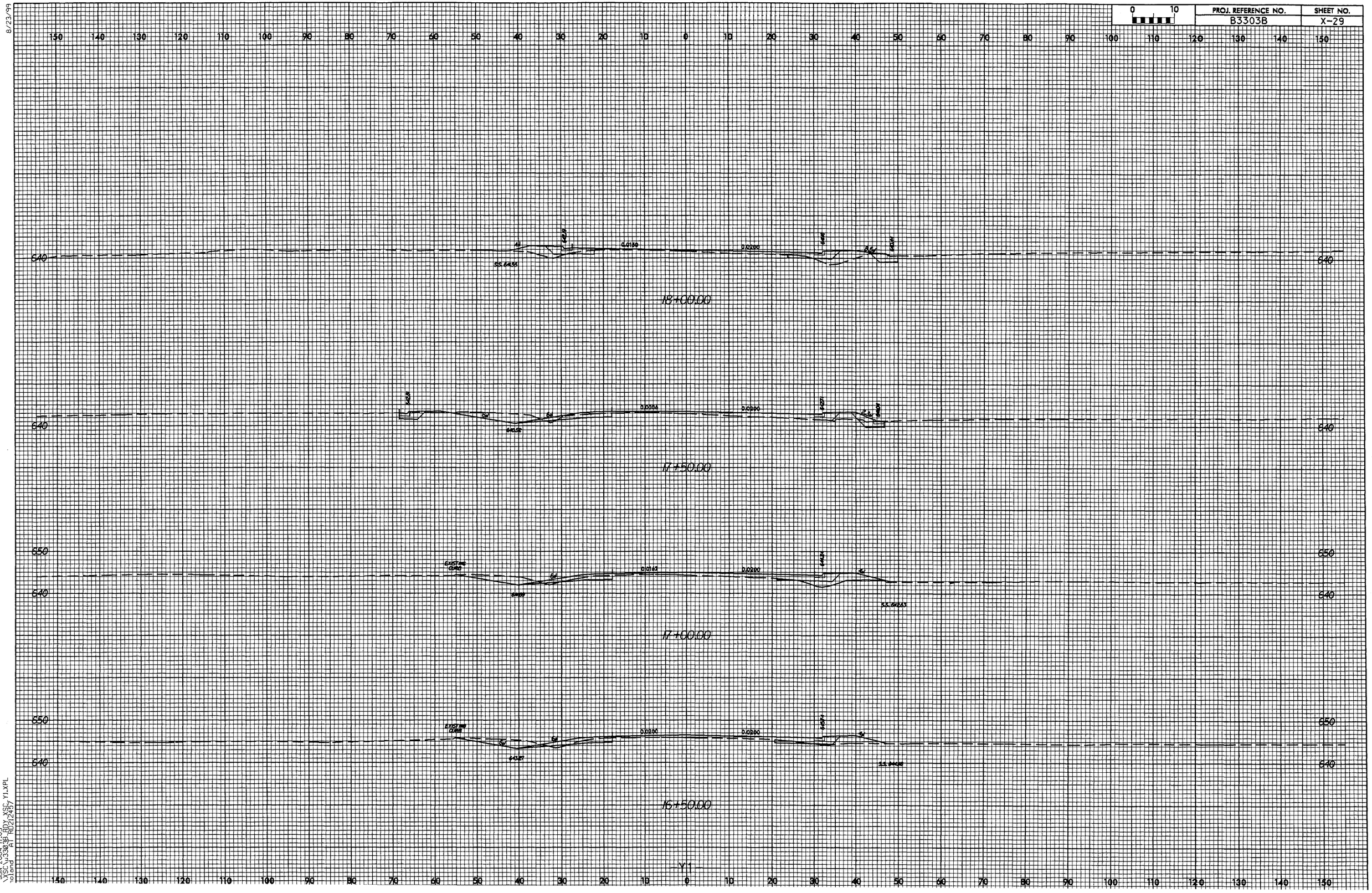

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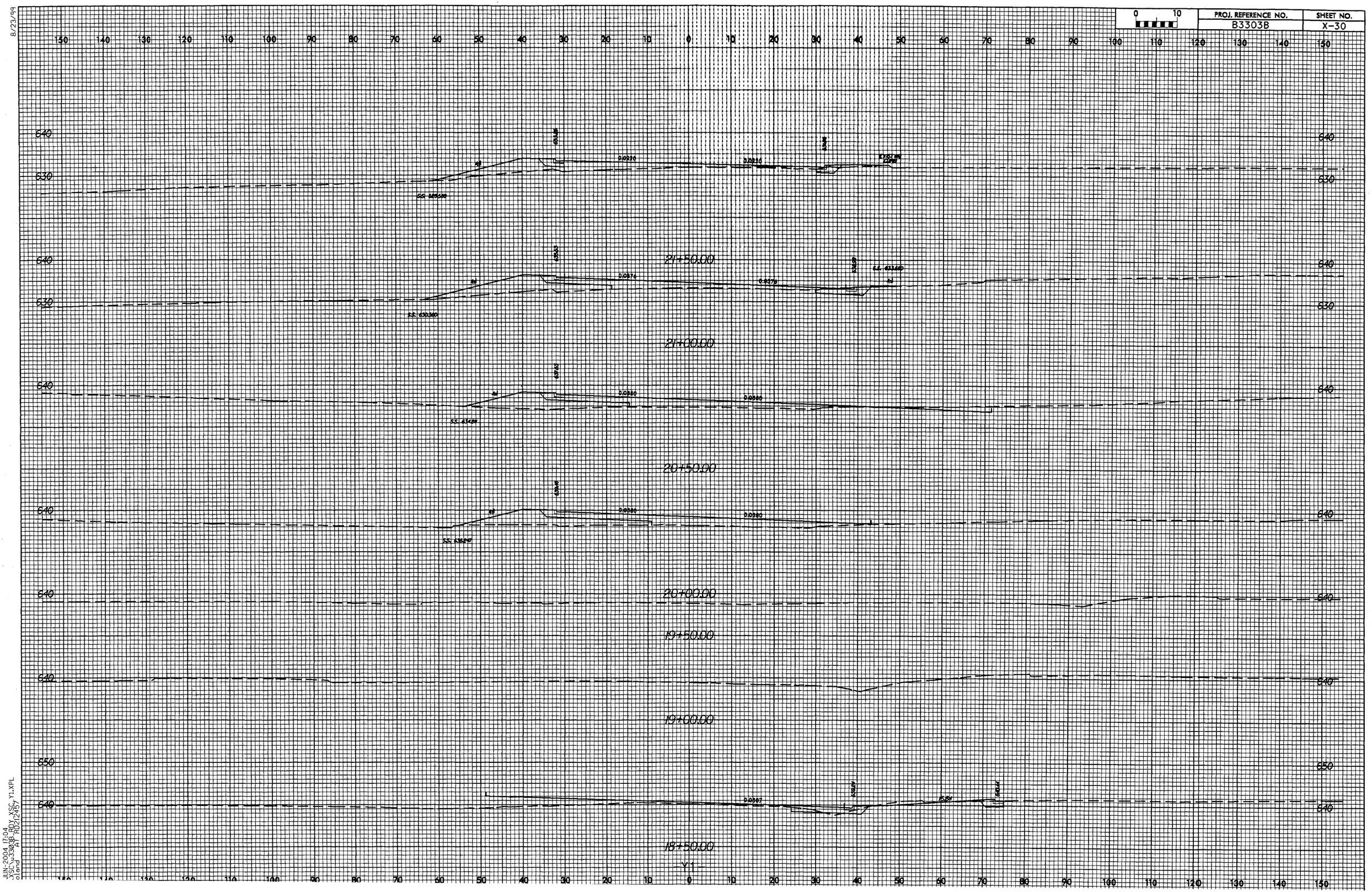
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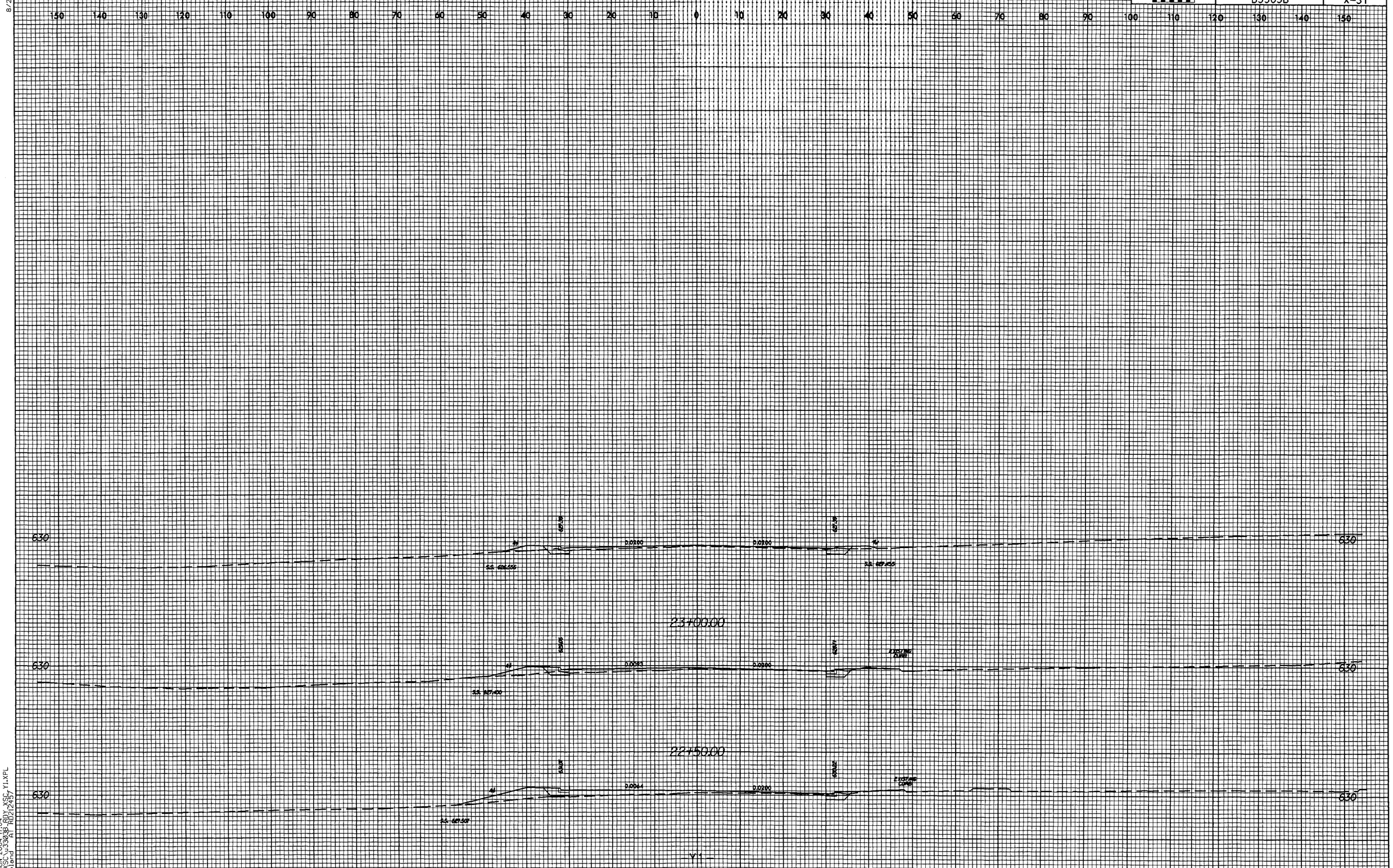

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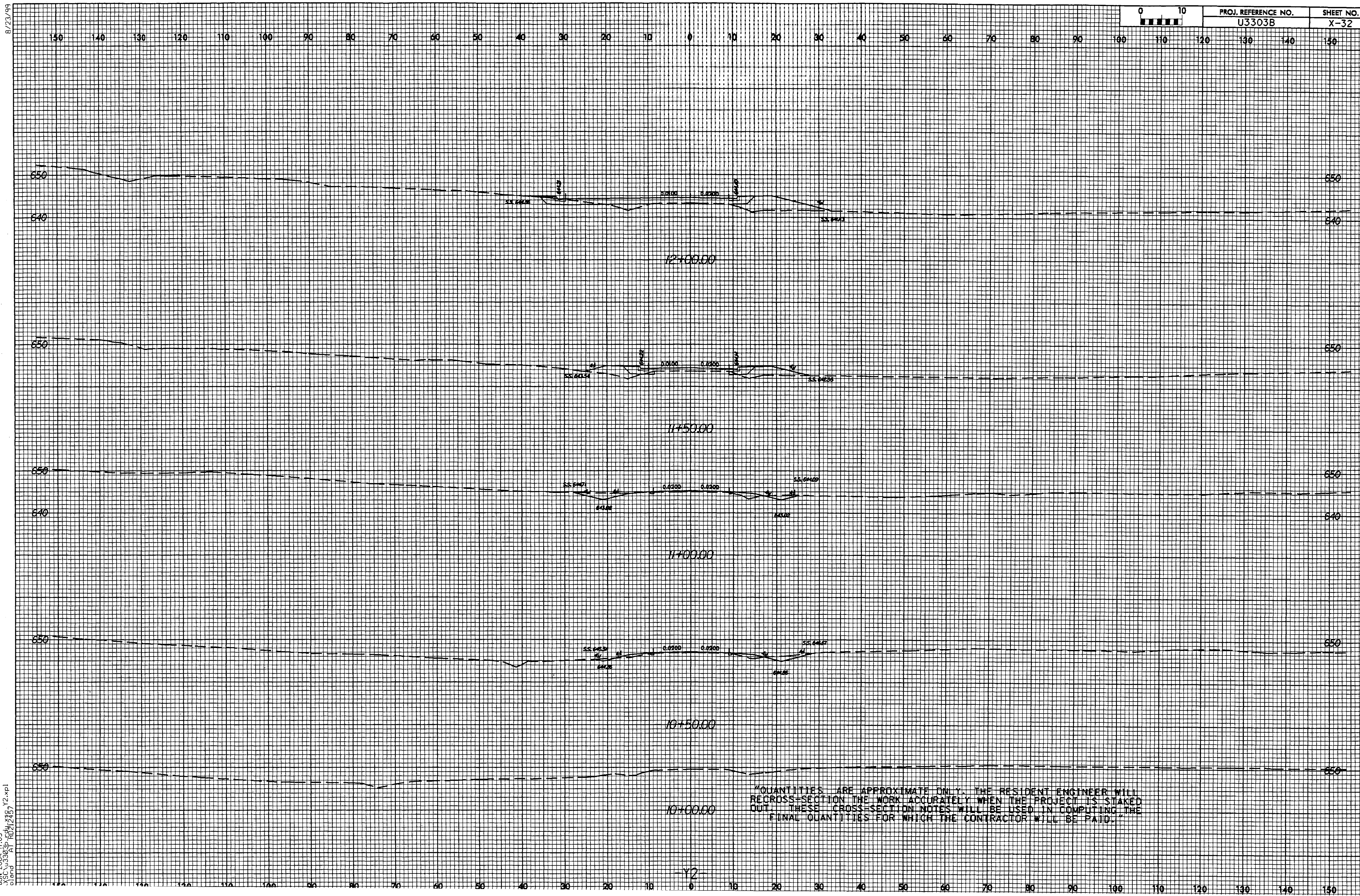

"QUANTITIES ARE APPROXIMATE ONLY. THE RESIDENT ENGINEER WILL RECROSS-SECTION THE WORK ACCURATELY WHEN THE PROJECT IS STAKED OUT. THESE CROSS-SECTION NOTES WILL BE USED IN COMPUTING THE FINAL QUANTITIES FOR WHICH THE CONTRACTOR WILL BE PAID."

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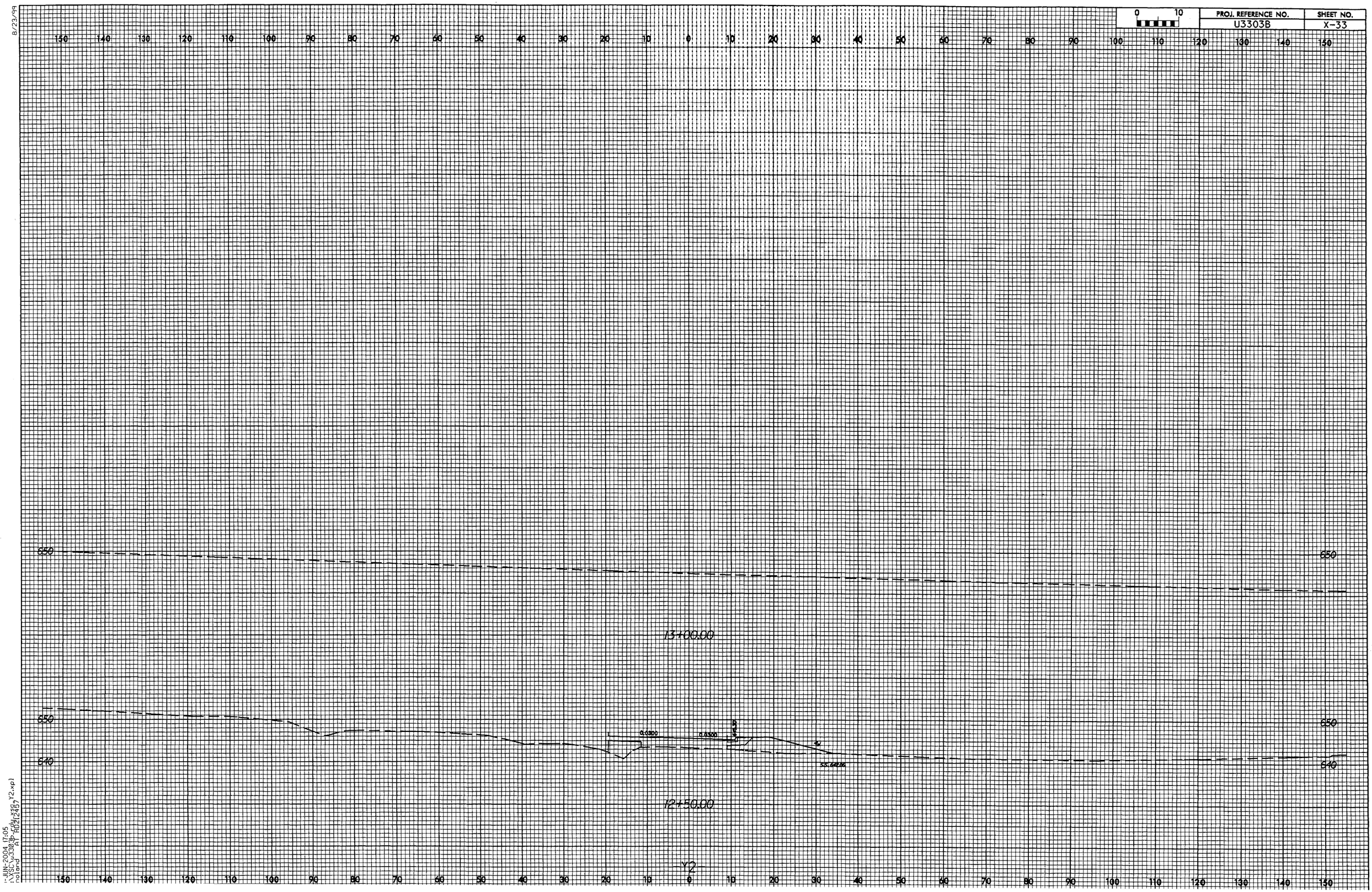

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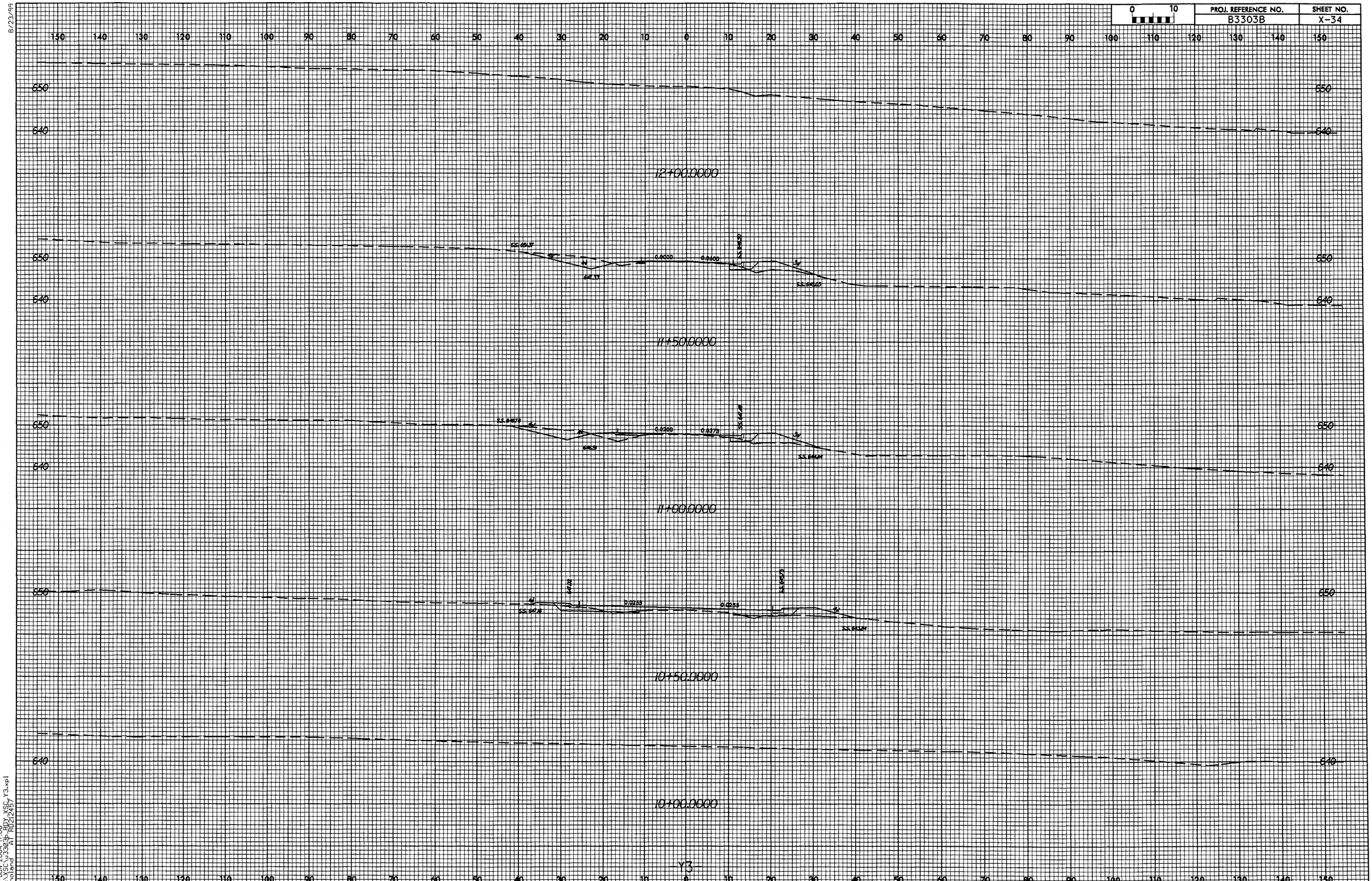

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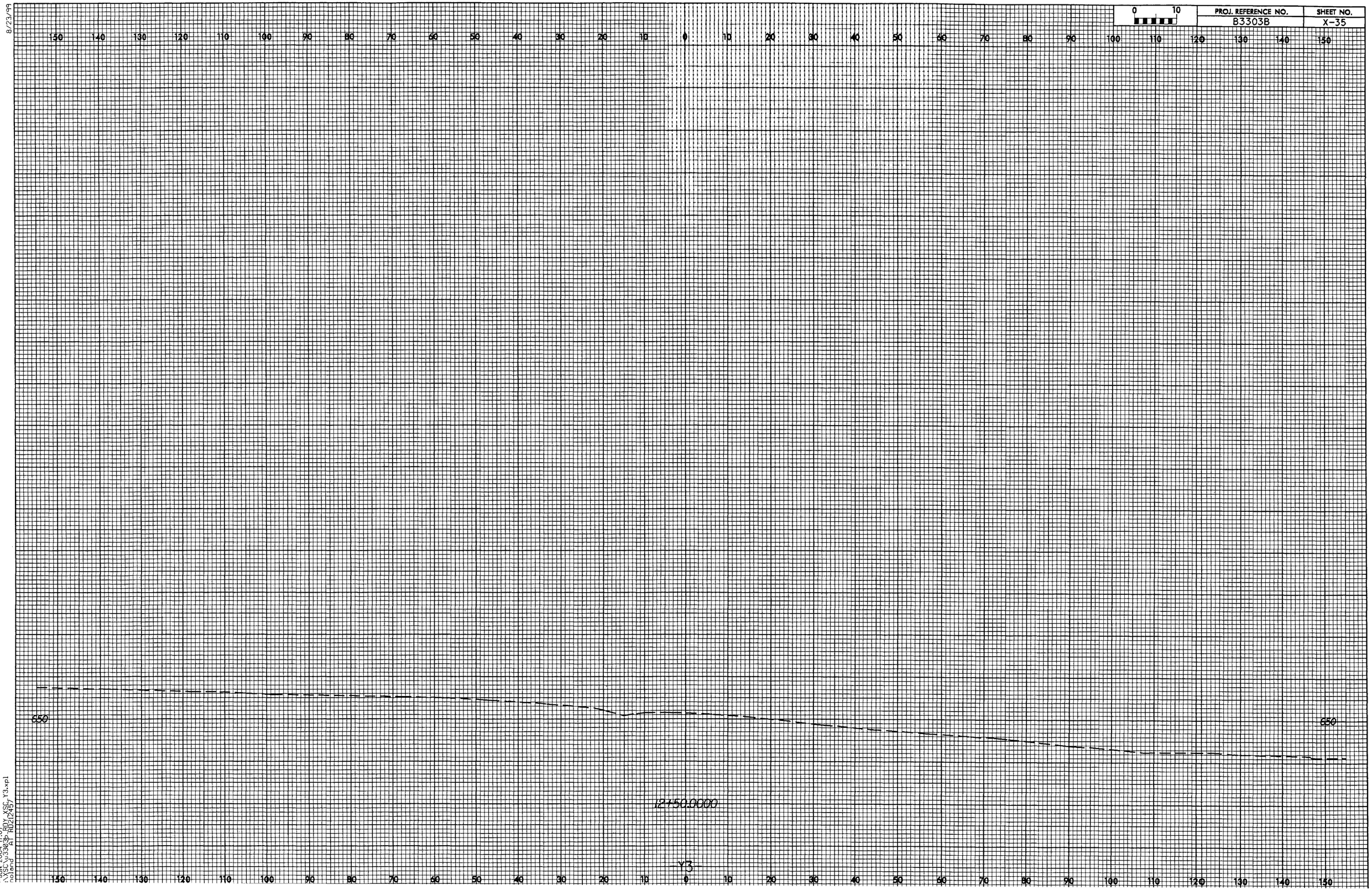

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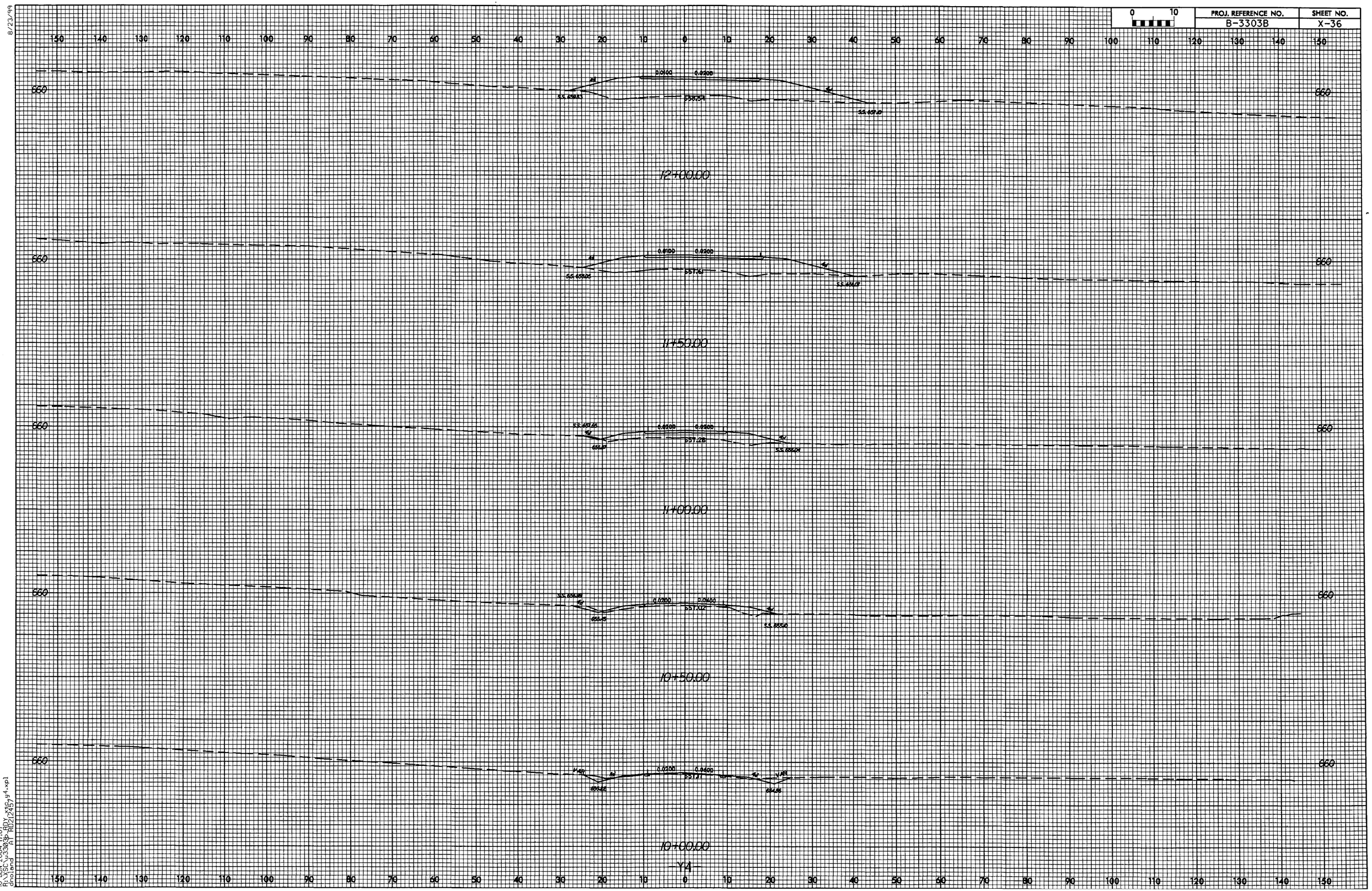

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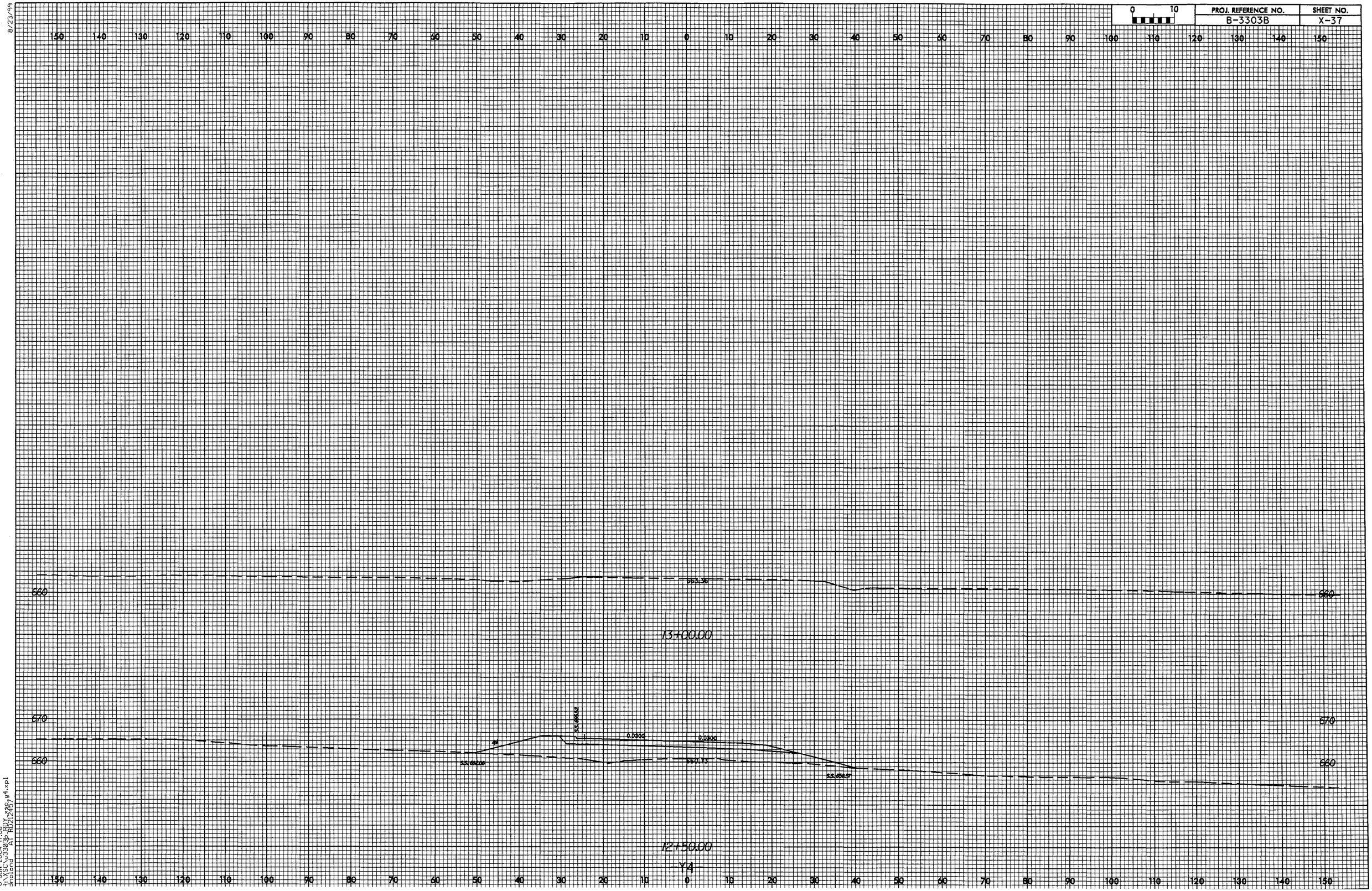

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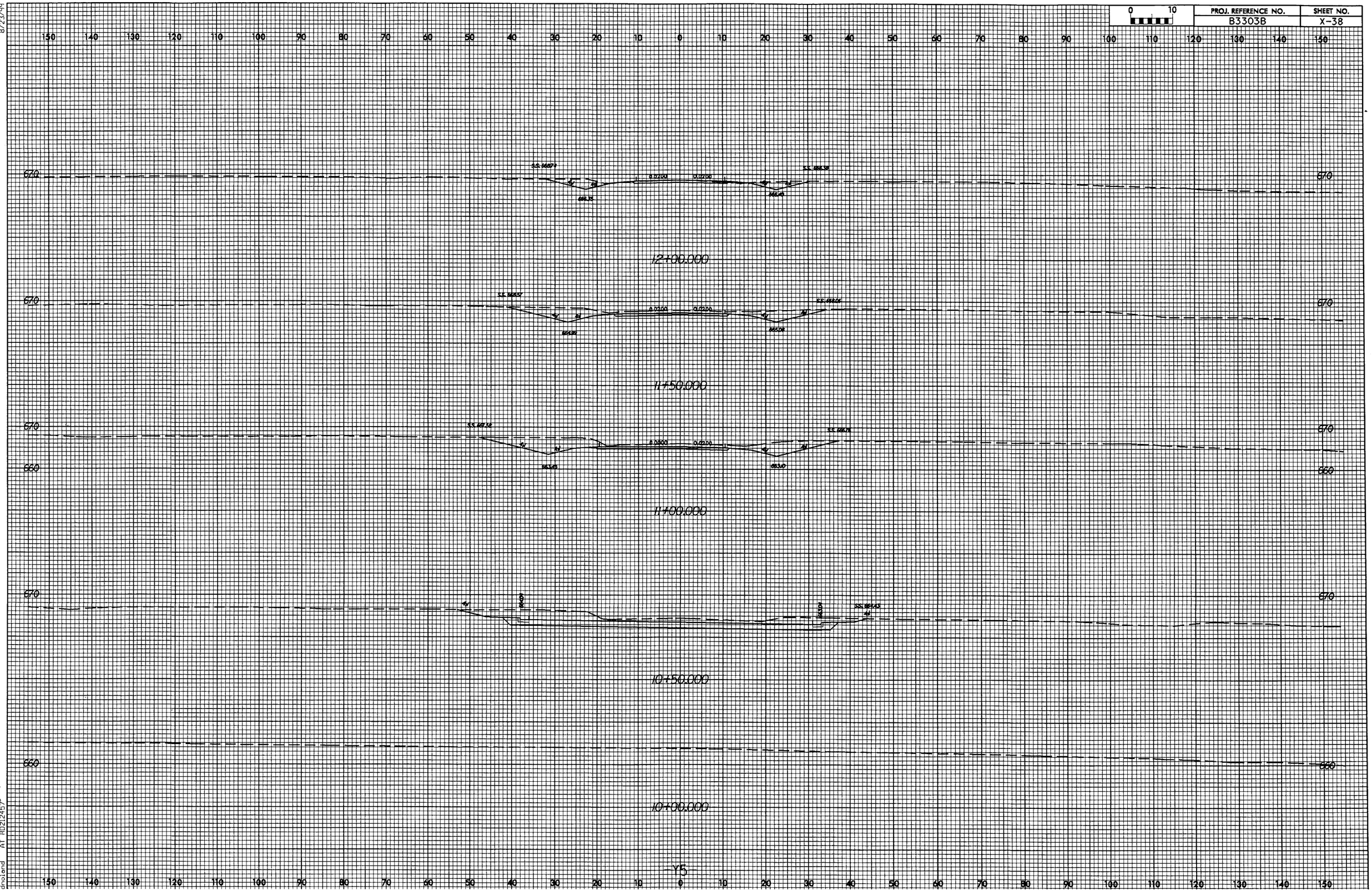

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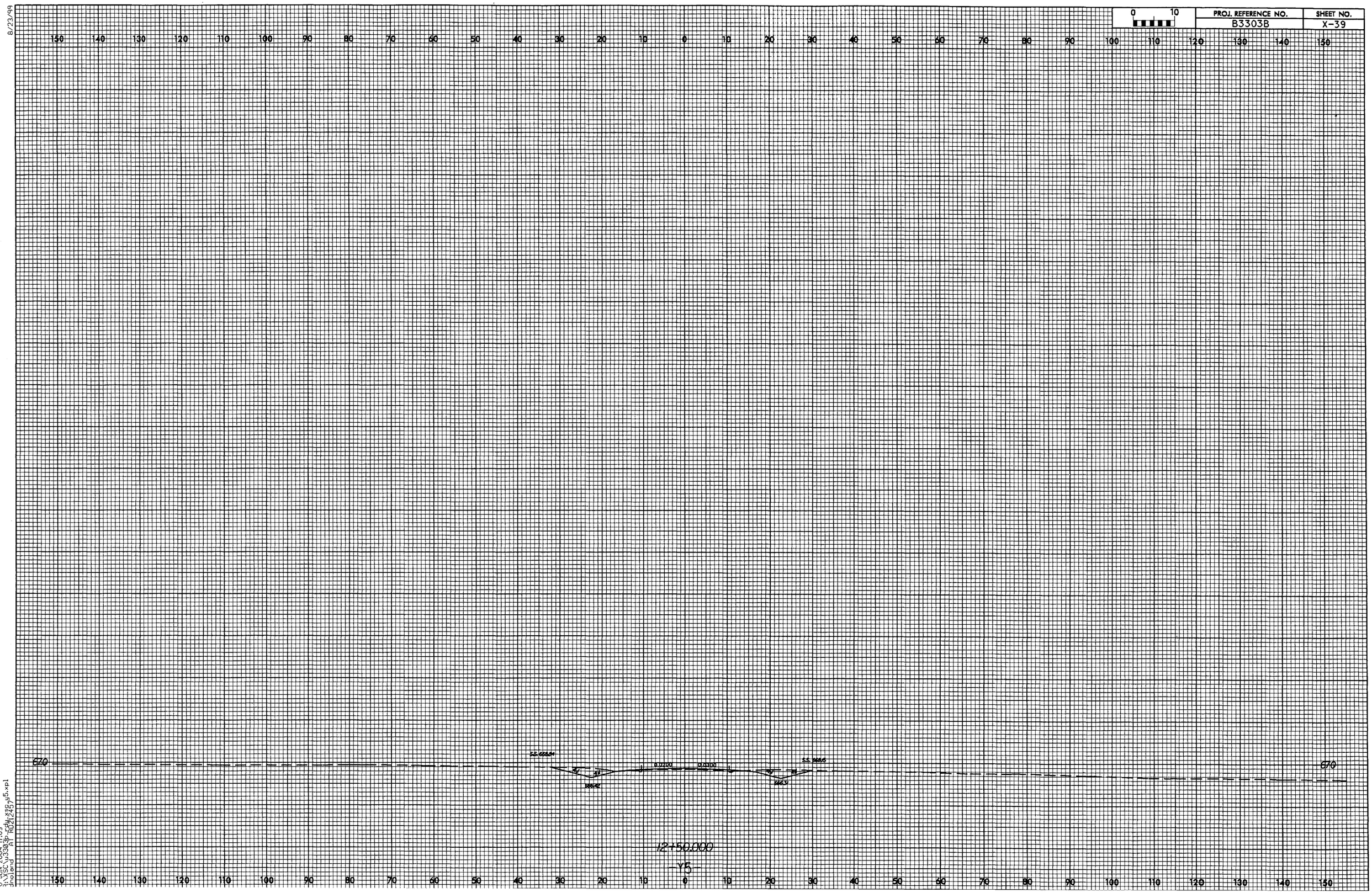

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0 10	PROJ. REFERENCE NO.	SHEET NO.
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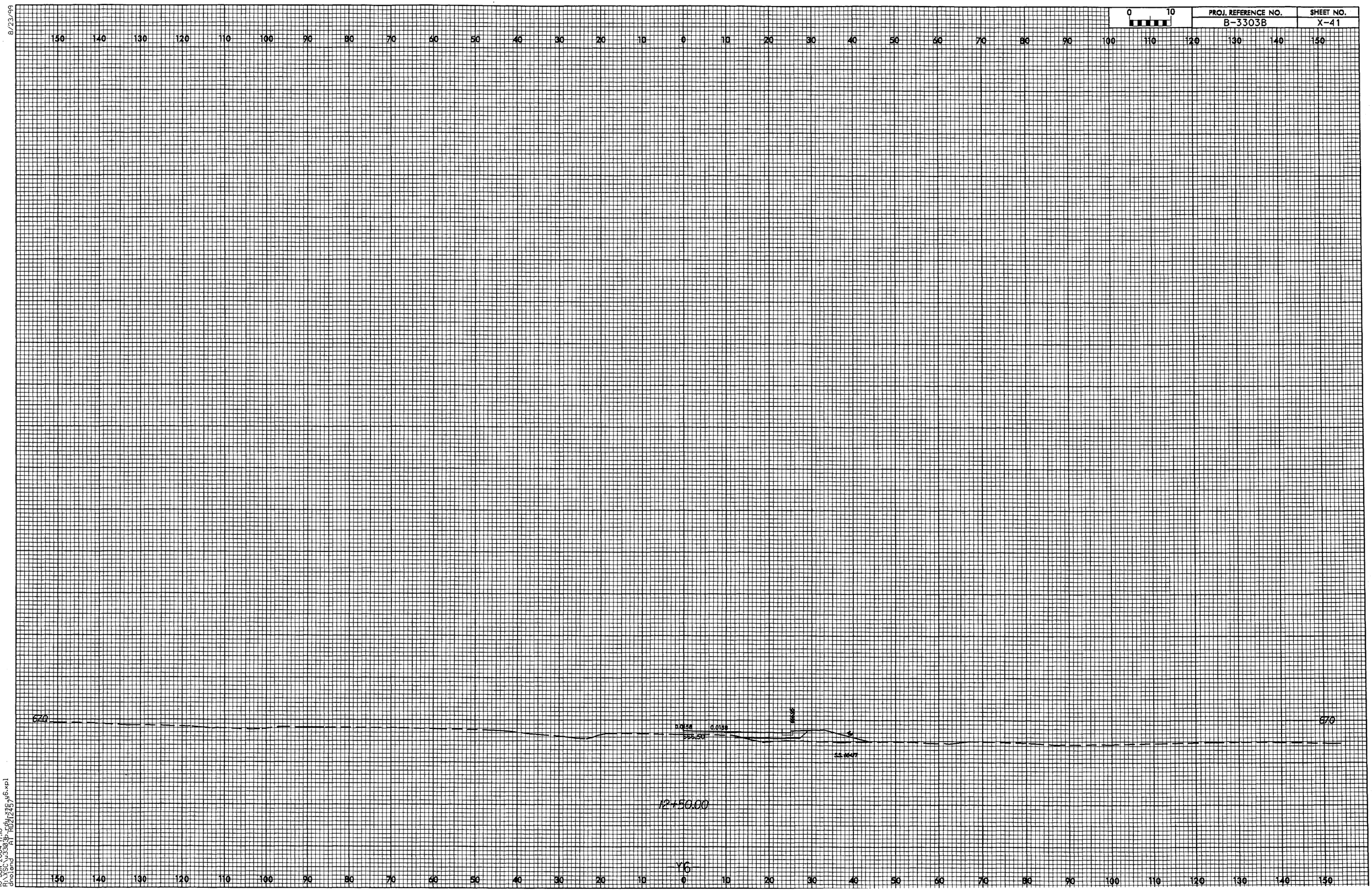

10-JUN-2004 11:10
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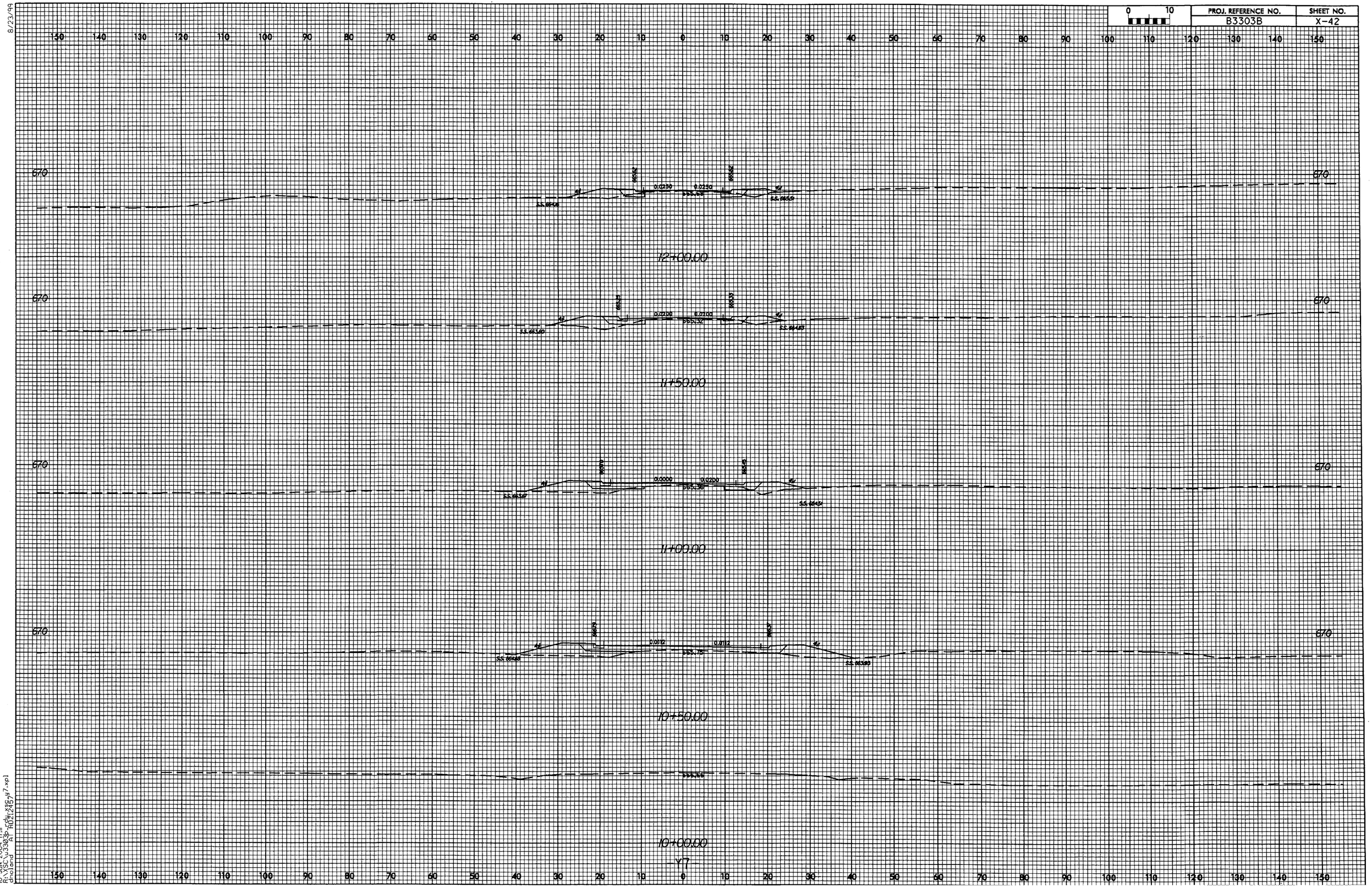
8/23/99

PROJ. REFERENCE NO.	SHEET NO.
B3303B	X-42



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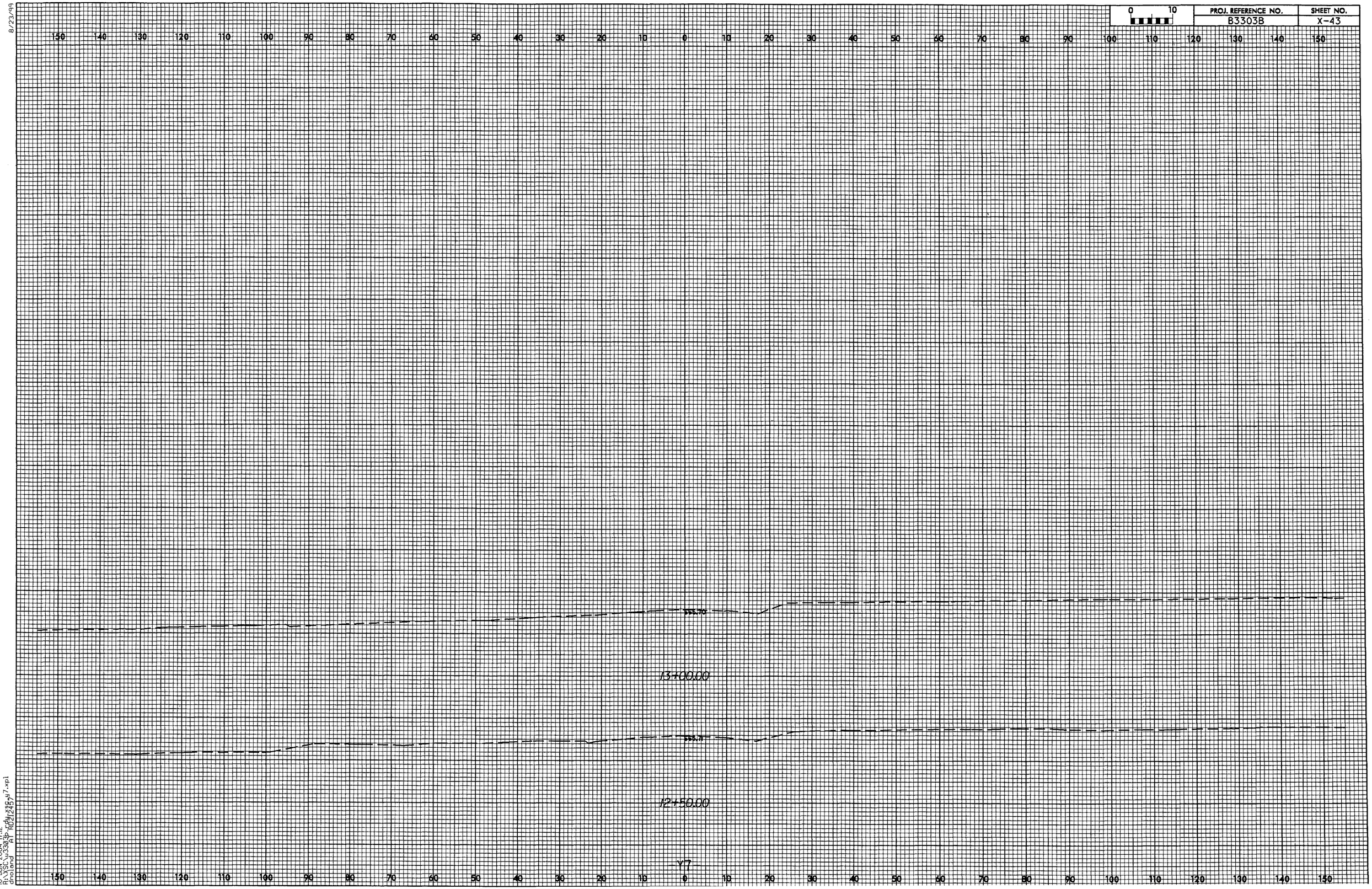
8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	B3303B	X-43



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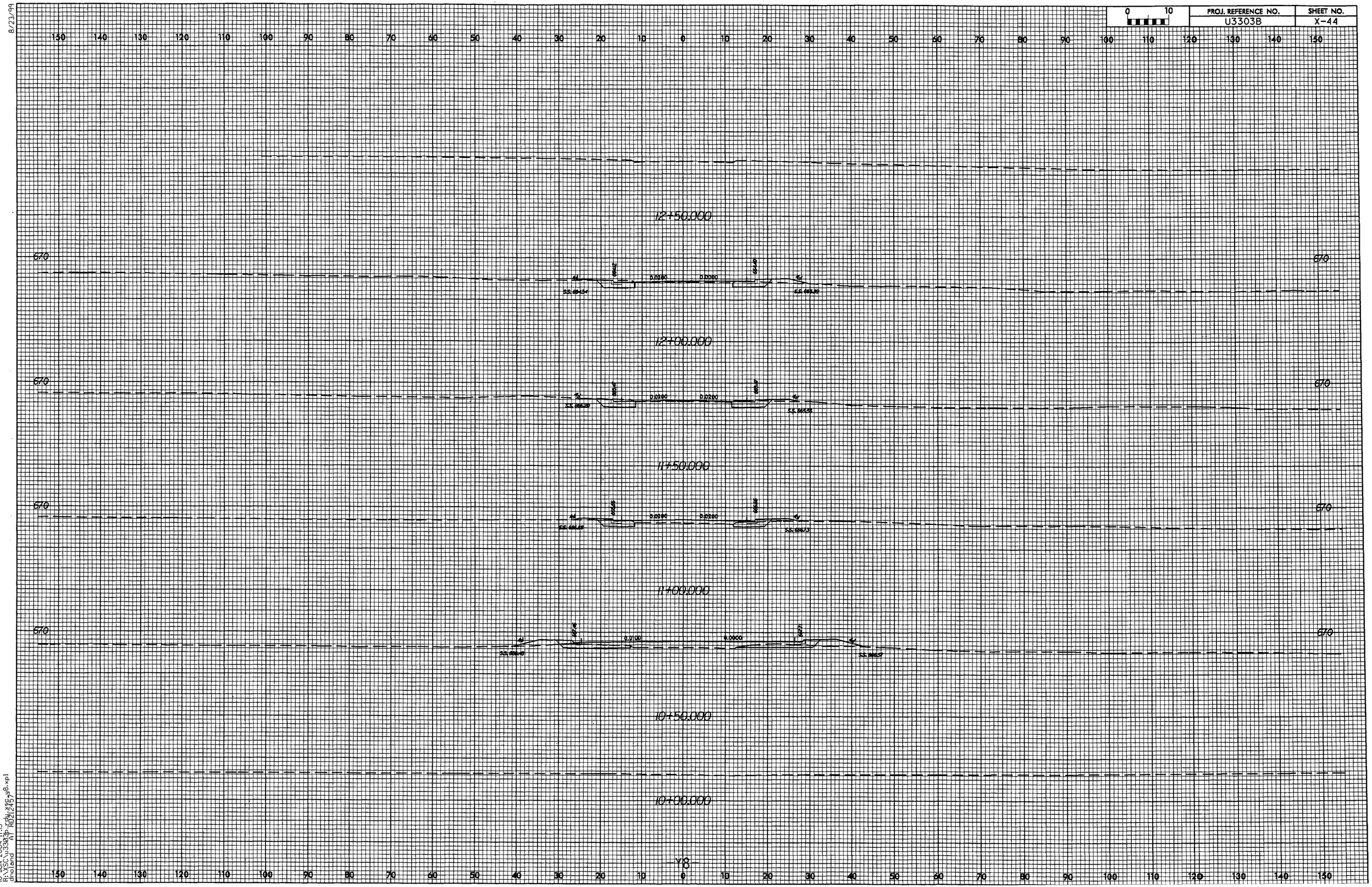

8/23/99
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8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
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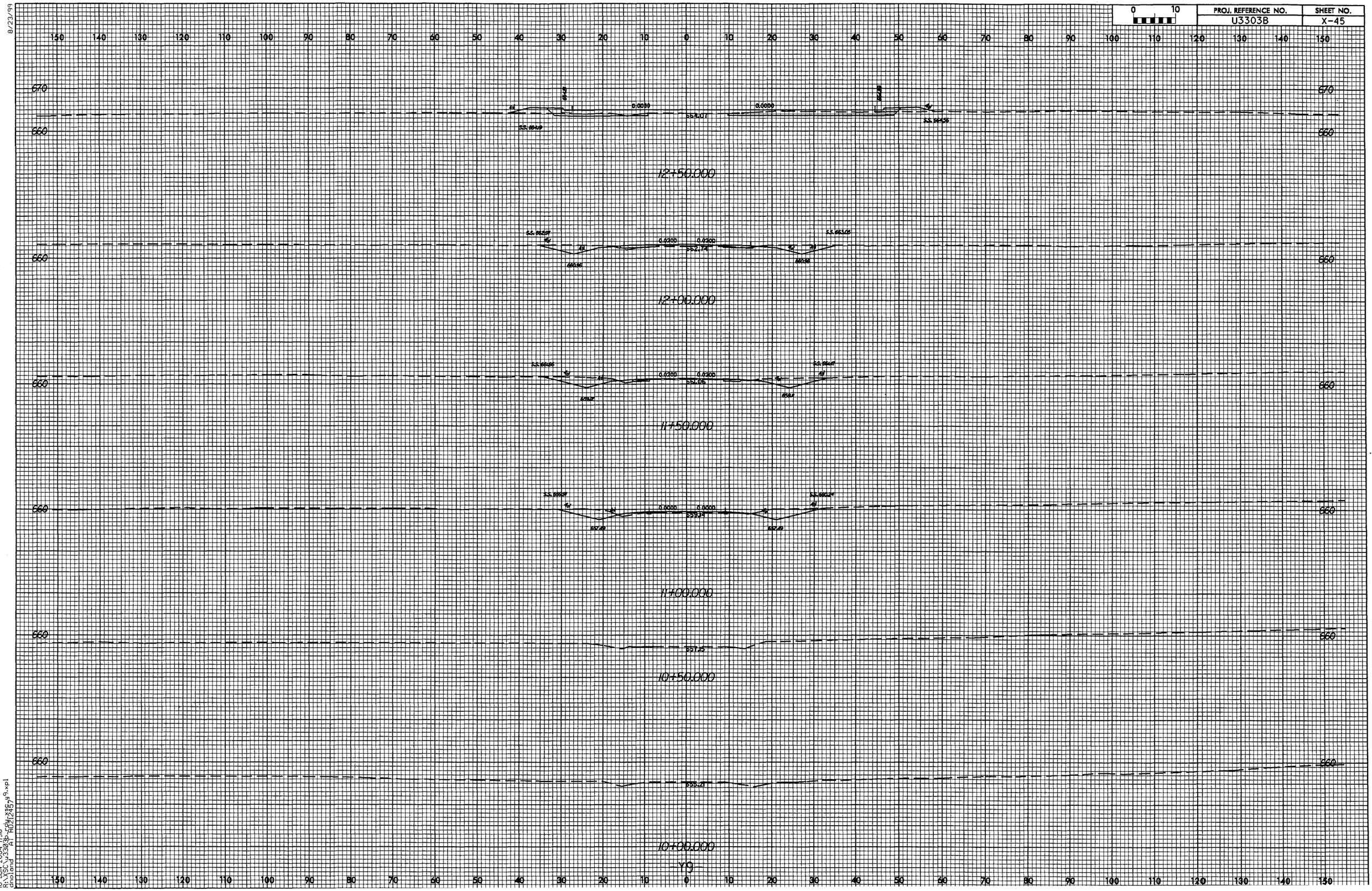

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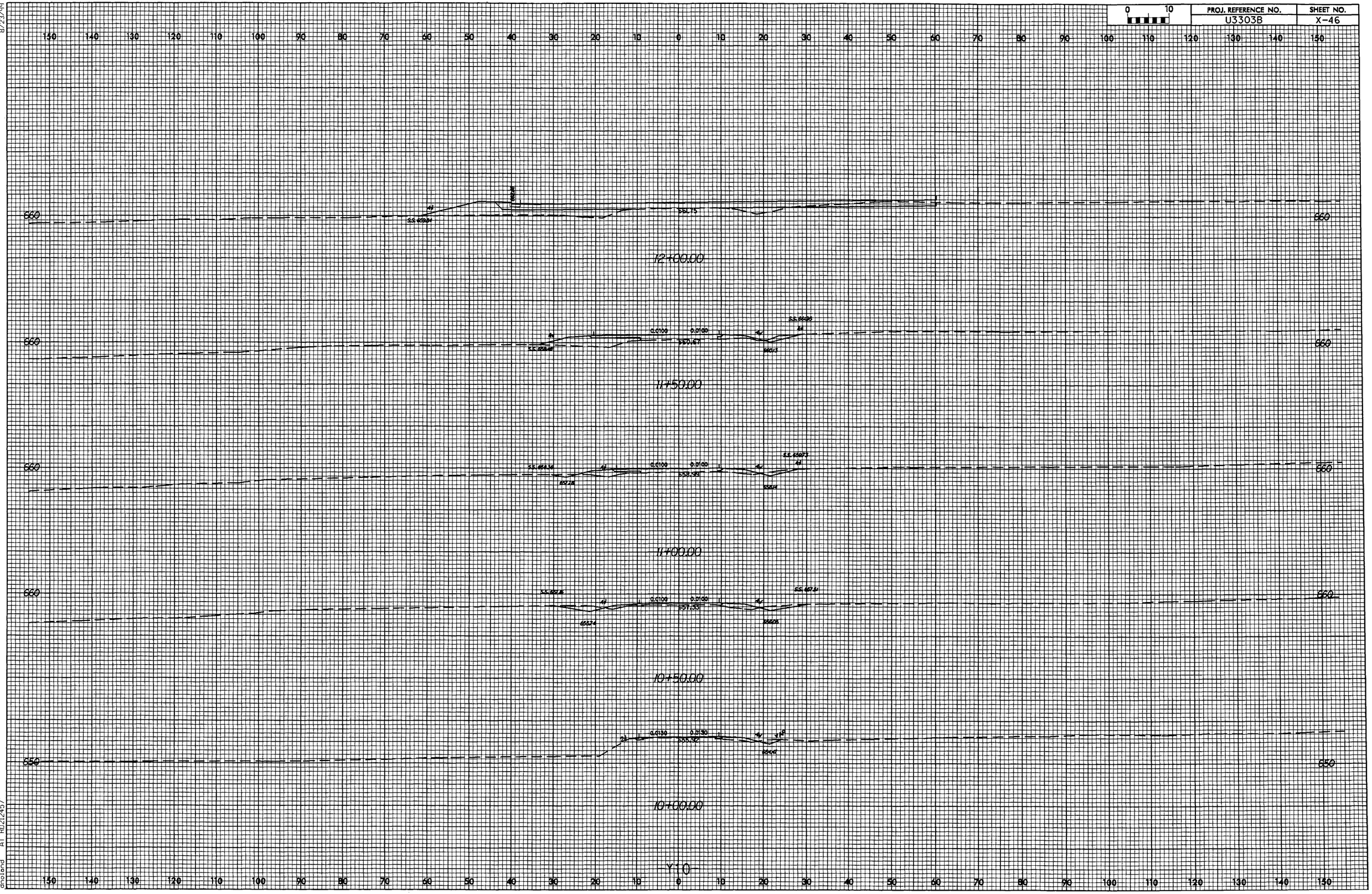
U3303B	X-46



8/23/99

10-JUN-2004 17:14
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A4 R0S1 245

8/23/99

10-JUN-2004 17:14
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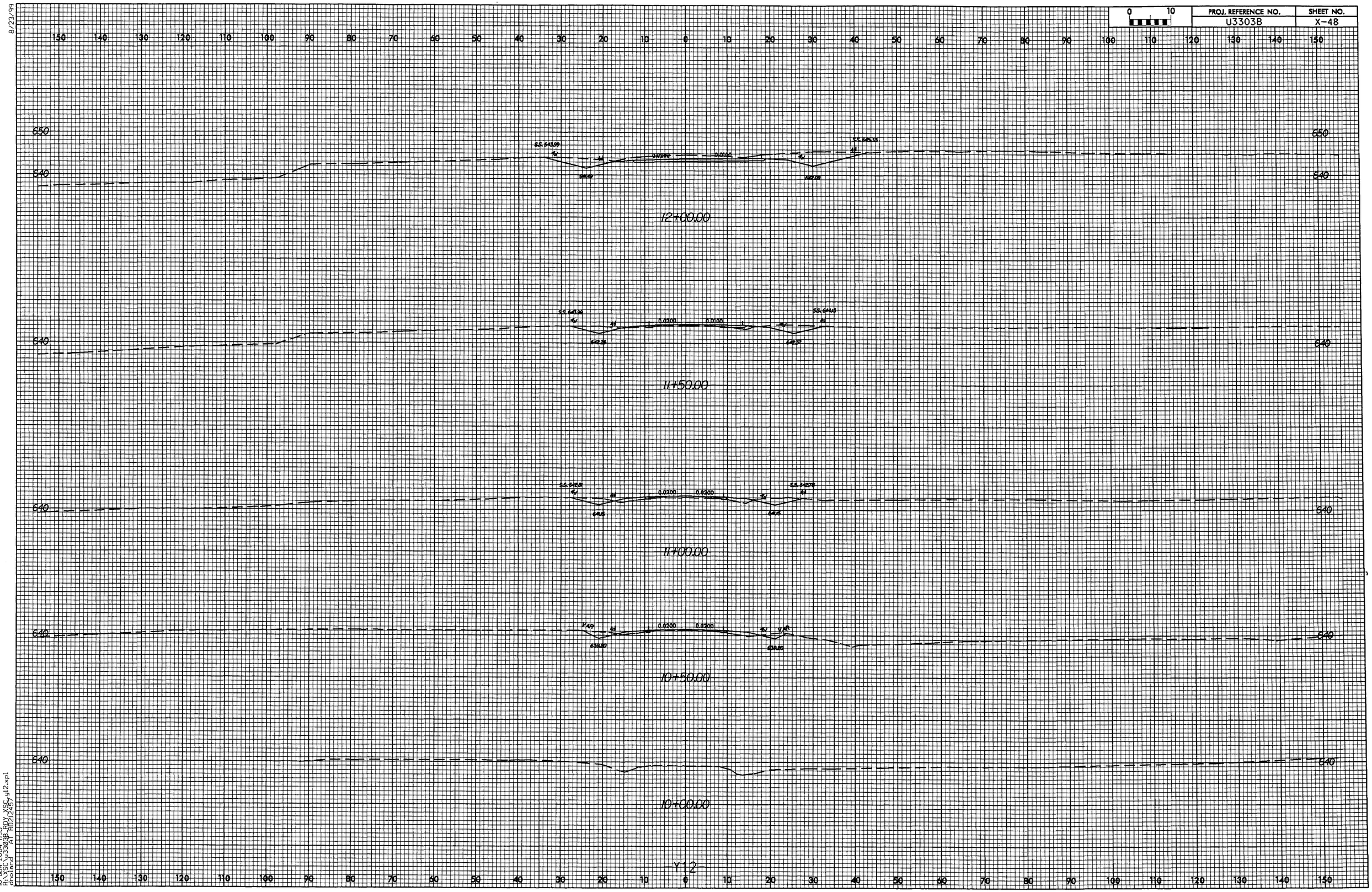
8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	U3303B	X-48



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0 10	PROJ. REFERENCE NO.	SHEET NO.
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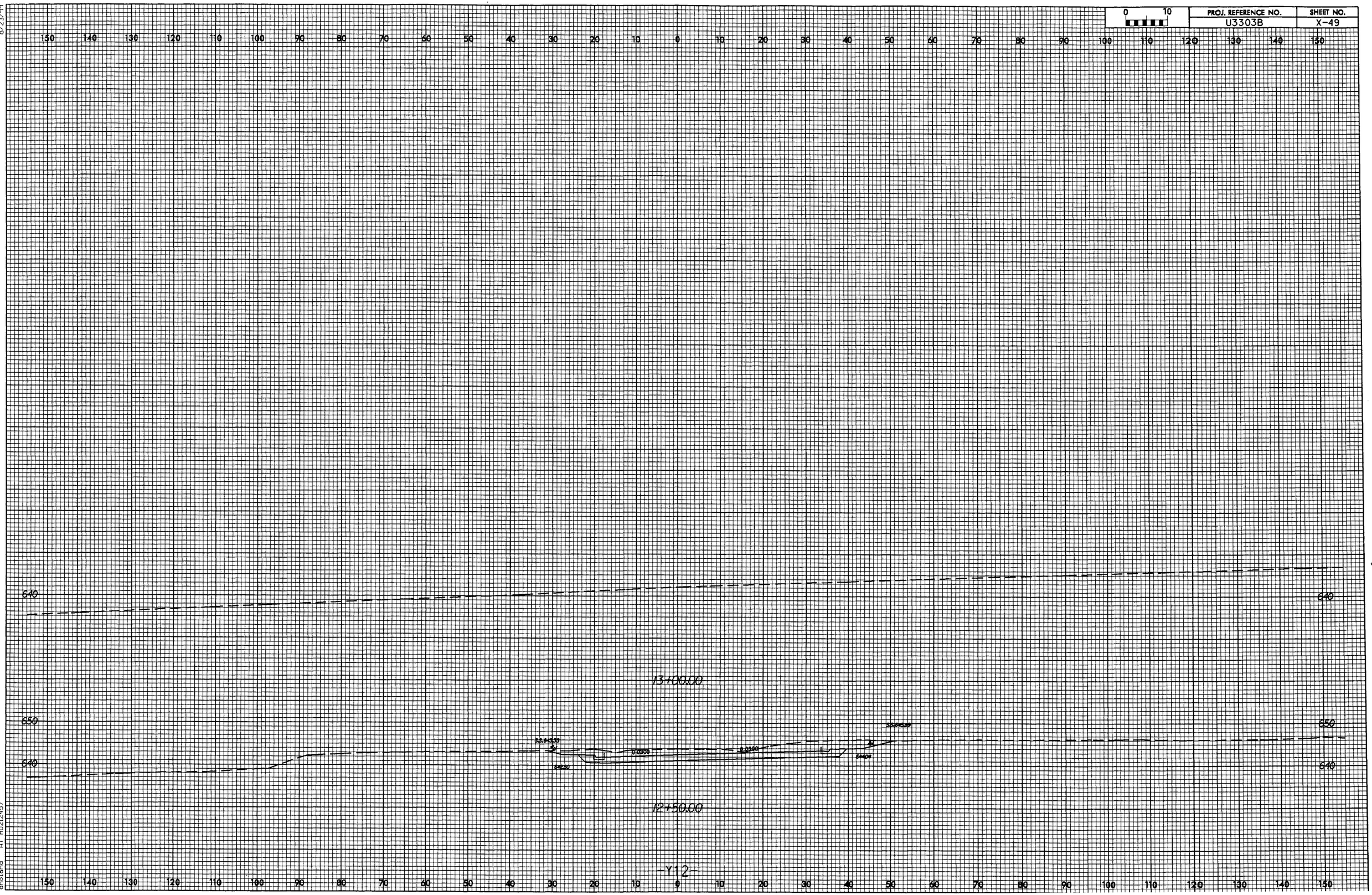

8/23/99
10-JUN-2004 17:15
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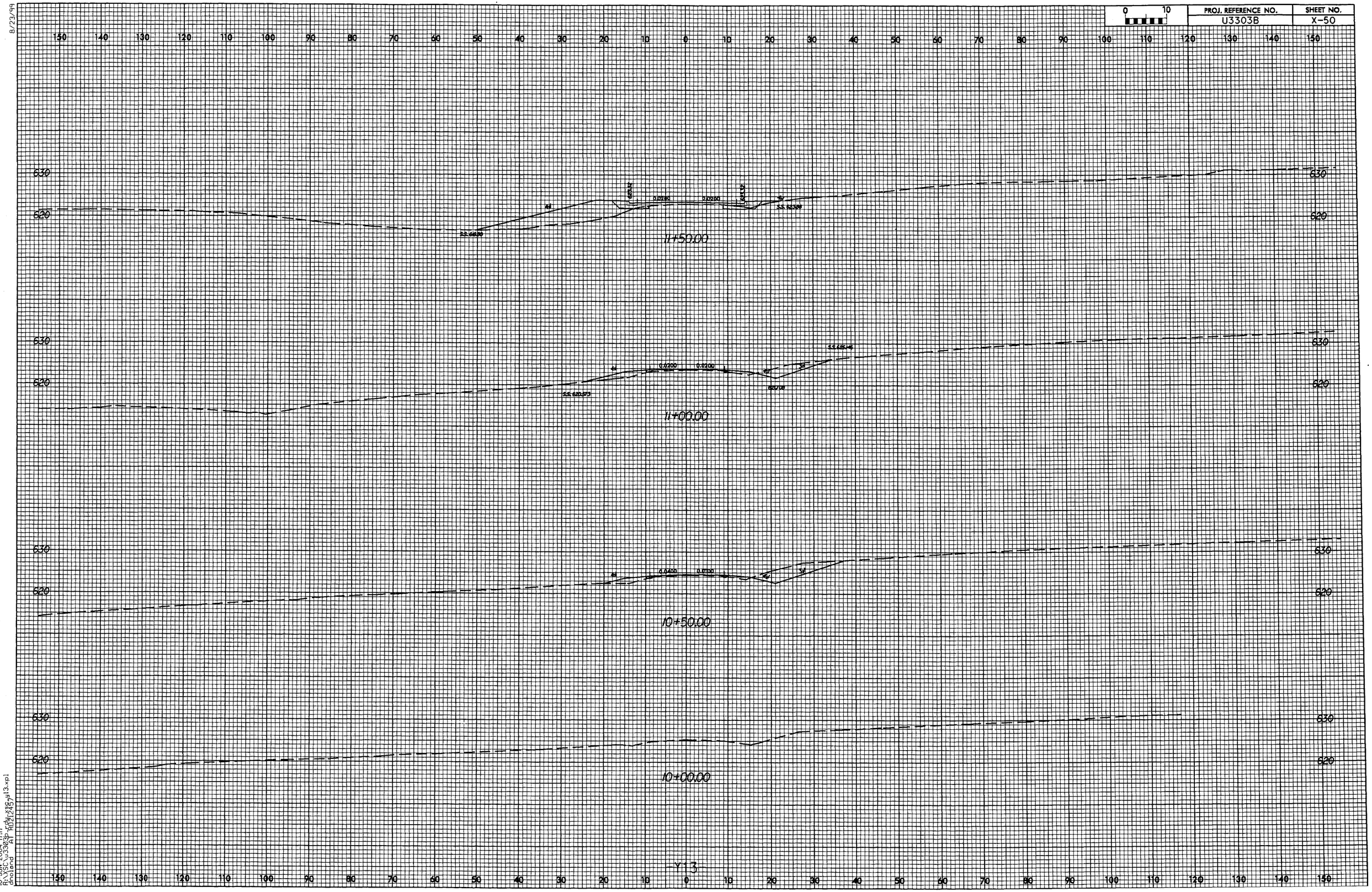
8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U3303B	X-50



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8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
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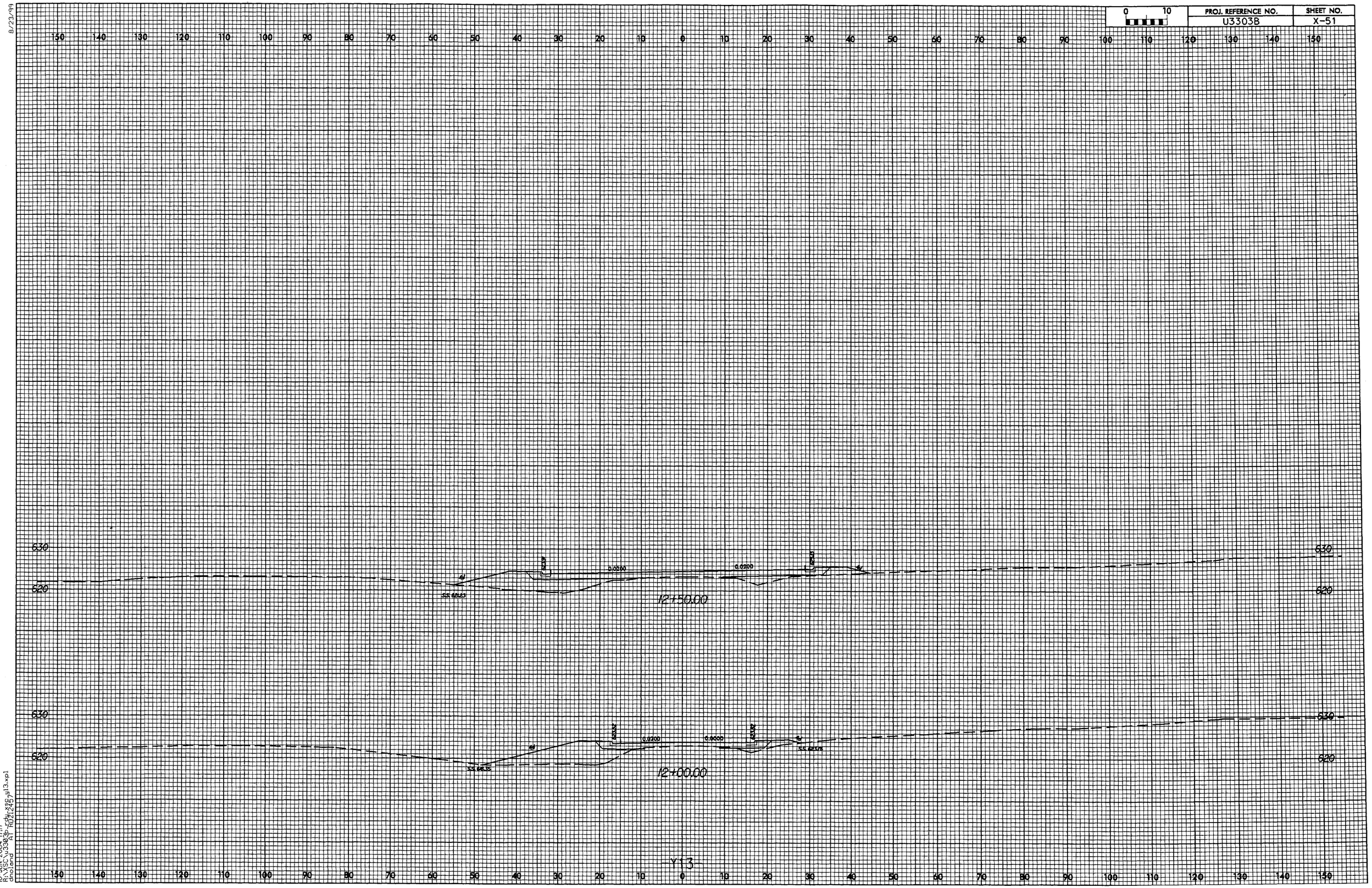

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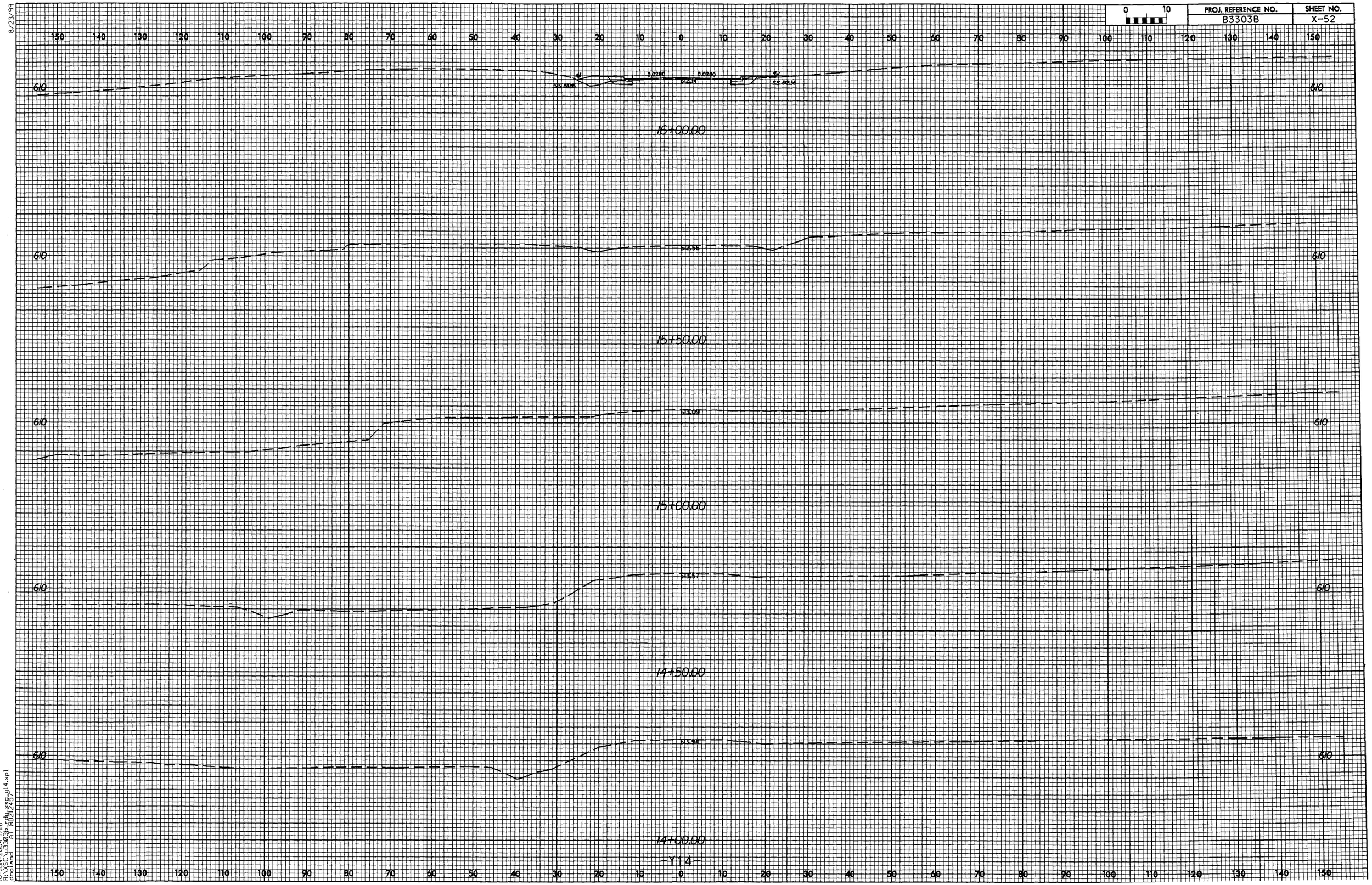

8/23/99

10-JUN-2004 17:18
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8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
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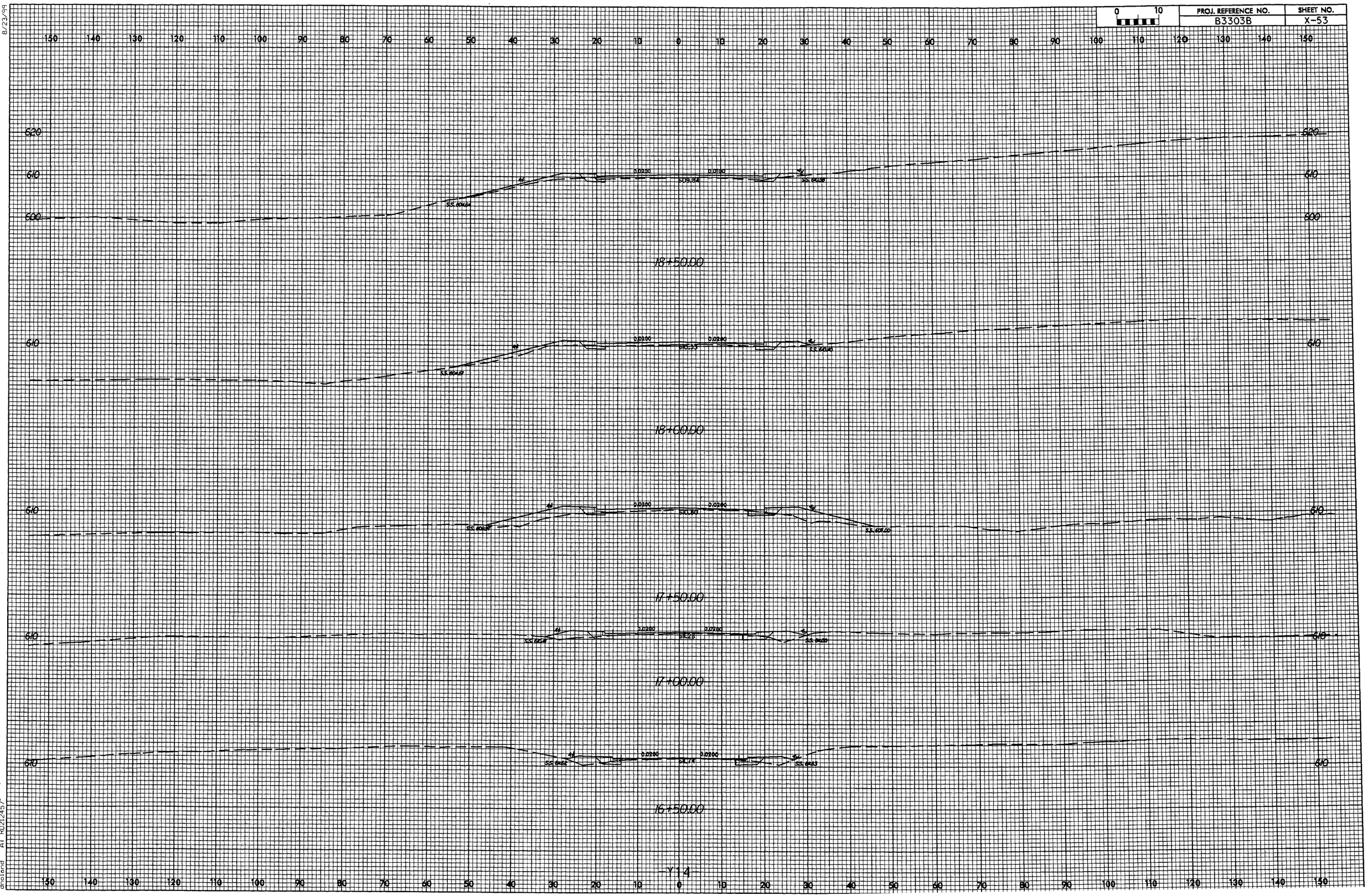

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8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
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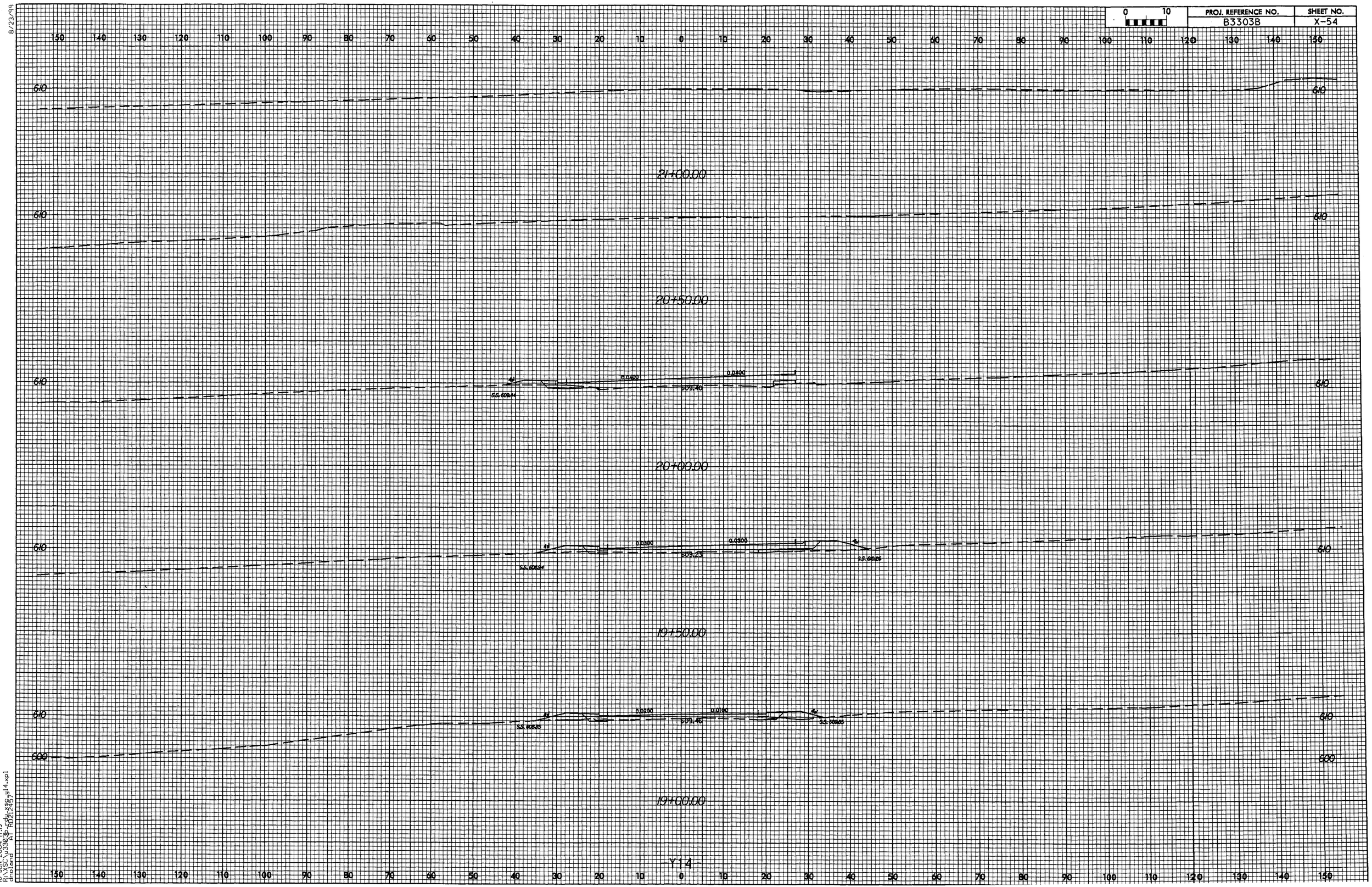

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8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
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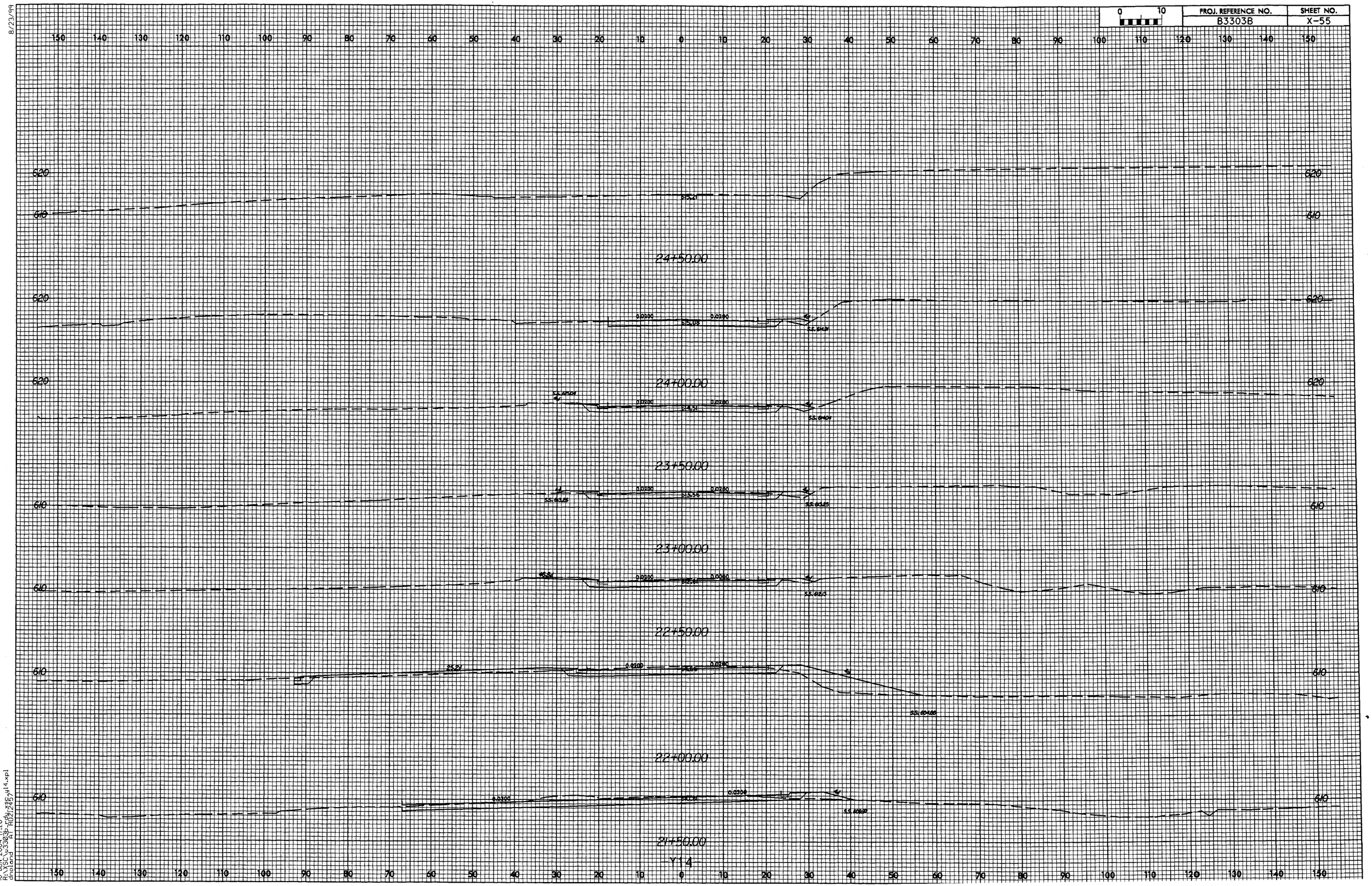

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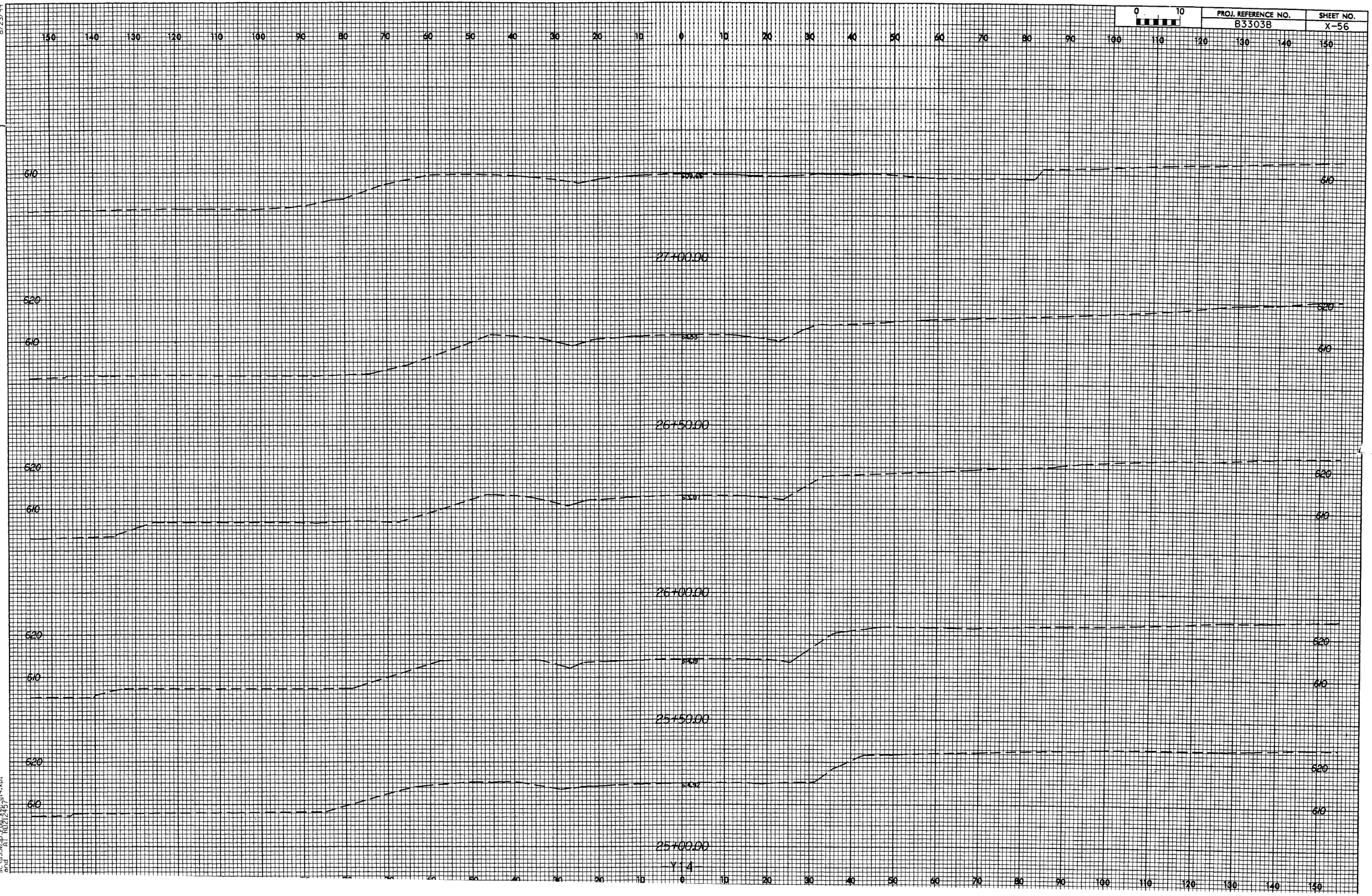
8/23/99

PROJ. REFERENCE NO.	SHEET NO.
B3303B	X-56



IN-2004 17:20
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