STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

June 4, 2009

Ms. Kim Garvey
U. S. Army Corps of Engineers
Regulatory Field Office
Post Office Box 1890
Wilmington, NC 28402-1890

Dear Madam:

Subject: **Application for Nationwide Permits 23 & 33** for the Replacement of Bridge Nos. 29 & 53 over Mingo Swamp on NC 55 in Harnett & Sampson Counties; TIP Project B-3654; Federal Aid Project No. BRSTP-55(14); State Project No.8.1451501; Debit $240.00 from WBS 33200.1.1.

Please find enclosed PCN, permit drawings, roadway plans, and EEP acceptance letter for the above referenced project proposed by the North Carolina Department of Transportation (NCDOT). A Categorical Exclusion (CE) was completed for this project on August 30, 2001 and an Addendum was completed on January 22, 2008, and distributed shortly thereafter. Additional copies are available upon request. The NCDOT proposes to replace existing Bridge Nos. 29 & 53 over Mingo Swamp on NC 55 in Harnett & Sampson Counties. The project involves replacement of the existing functionally obsolete and structurally deficient 61-foot bridges and approaches with a new 106-foot bridge (# 29) and a new 110-foot bridge (#53) and approaches. The new bridges will feature two 12-foot lanes with 6-foot offsets. The west approaches will be approximately 293 (# 29) & 355 (# 53) feet long and the east approaches will be approximately 351 (# 29) & 365 (# 53) feet long. Proposed permanent impacts are 0.46 acre of riparian wetland impacts for fill. Traffic will be detoured on-site during construction.

Regulatory Approvals

Section 404 Permit: All aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). The NCDOT requests that these activities be authorized by Nationwide Permit 23. We are also requesting the issuance of a Nationwide Permit 33 for the temporary fill due to the installation of on-site detour bridges. (72 CFR; 11092-11198, March 12, 2007).

Section 401 Permit: We anticipate 401 General Certification numbers 3701 and 3688 will apply to this project. The NCDOT is requesting written concurrence from the North Carolina Department of Environmental and Natural Resources, Division of Water Quality. Therefore, in accordance with 15A NCAC 2H, Section .0500(a), we are providing five copies of this application to the NCDWQ for their review and approval. Authorization to debit the $240 Permit Application Fee from WBS Element 33200.1.1 is hereby given.

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

TELEPHONE: 919-431-2000

FAX: 919-431-2001

WEBSITE: WWW.NCDOT.ORG

LOCATION:
ENVIRONMENTAL RESOURCES CENTER
4701 ATLANTIC AVENUE, STE. 116
RALEIGH, NC 27604

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

If you have any questions or need additional information, please contact Chris Underwood at (919) 431-6662.

Sincerely,

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

w/attachment
Mr. Brian Wrenn, NCDWQ (5 copies)

W/o attachment (see website for attachments)
Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Mark Staley, Roadside Environmental
Mr. Terry Gibson, P.E, Division 6 Engineer
Mr. Jim Rerko, Division 6 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. Scott McLendon, USACE, Wilmington
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Ms. Anne Deaton, NCDMF
Mr. Ron Sechler, NMFS
Mr. Ahmad Al-Sharawneh
Ms. Beth Harmon, EEP
Mr. Todd Jones, NCDOT External Audit Branch

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

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	☒ Section 404 Permit ☐ Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 23 33	or General Permit (GP) number:
1c. Has the NWP or GP number been verified by the Corps?	☐ Yes ☒ No
1d. Type(s) of approval sought from the DWQ (check all that apply):	☒ 401 Water Quality Certification – Regular ☐ Non-404 Jurisdictional General Permit ☐ 401 Water Quality Certification – Express ☐ Riparian Buffer Authorization
1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: ☐ Yes ☒ No For the record only for Corps Permit: ☐ Yes ☒ No
1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.	☒ Yes ☐ No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	☐ Yes ☒ No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	☐ Yes ☒ No

2. Project Information

2a. Name of project:	Replacement of Bridges 29 & 53 over Mingo Swamp on NC 55
2b. County:	Harnett & Sampson
2c. Nearest municipality / town:	Dunn
2d. Subdivision name:	*not applicable*
2e. NCDOT only, T.I.P. or state project no:	B-3654

3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	*not applicable*
3c. Responsible Party (for LLC if applicable):	*not applicable*
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 431-6662
3g. Fax no.:	(919) 431-2002
3h. Email address:	csunderwood@ncdot.gov

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

B. Project Information and Prior Project History	
1. Property Identification	
1a. Property identification no. (tax PIN or parcel ID):	*not applicable*
1b. Site coordinates (in decimal degrees):	Latitude: 35.2982 (DD.DDDDDD) Longitude: - 78.5749 (-DD.DDDDDD)
1c. Property size:	3 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Mingo Swamp
2b. Water Quality Classification of nearest receiving water:	C sw
2c. River basin:	Cape Fear
3. Project Description	
3a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: Wetlands & some upland; there is a business on the upland & forest everywhere else.	
3b. List the total estimated acreage of all existing wetlands on the property: 3 acres	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 300 feet	
3d. Explain the purpose of the proposed project: To replace two structurally deficient and functionally obsolete bridges.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing two 61-foot bridges with two 110-foot, 2-span bridges on the existing alignment with an on-site detour. Standard road building equipment, such as trucks, dozers, and cranes will be used.	
4. Jurisdictional Determinations	
4a. Have jurisdictional wetland or stream determinations by the Corps or State been requested or obtained for this property / project (including all prior phases) in the past? Comments: Requesting reverification; please reference the JD package dated 9/24/07 sent to Richard Spencer by Ko and Associates.	☒ Yes ☐ No ☐ Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	☐ Preliminary ☒ Final
4c. If yes, who delineated the jurisdictional areas? Name (if known): Matt Cusack	Agency/Consultant Company: EcoScience Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. January 16, 2003	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	☐ Yes ☒ No ☐ Unknown
5b. If yes, explain in detail according to "help file" instructions.	
6. Future Project Plans	
6a. Is this a phased project?	☐ Yes ☒ No
6b. If yes, explain.	

C. Proposed Impacts Inventory

1. Impacts Summary

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

☒ Wetlands ☐ Streams - tributaries ☐ Buffers

☐ Open Waters ☐ Pond Construction

2. Wetland Impacts

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

2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	2f. Area of impact (acres)
Site 1 ☒ P ☒ T	fill	riparian	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.31/0.35
Site 2 ☒ P ☒ T	fill	riparian	☐ Yes ☒ No	☒ Corps ☐ DWQ	0.15/0.30
Site 3 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 4 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 5 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 6 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
				2g. **Total wetland impacts**	0.46 Permanent 0.65 Temporary

2h. Comments: Utilities impacts: 2 sq. ft. permanent wetland impact, 22 sq. ft. temporary wetland impact, & 0.34 acre hand clearing. There will be 0.08 acre of temporary fill in the hand clearing for erosion control.

3. Stream Impacts

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

3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site 1 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 2 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 3 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 4 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 5 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 6 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
					3h. **Total stream and tributary impacts**	X Perm X Temp

3i. Comments:

4. Open Water Impacts

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

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

4g. Comments:

5. Pond or Lake Construction

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

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

5g. Comments:

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

6. Buffer Impacts (for DWQ)

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

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

6i. Comments:

D. Impact Justification and Mitigation		
1. Avoidance and Minimization		
1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project. The proposed bridges are 44 feet longer than the existing bridges & 3:1 fill slopes where practicable.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. The temporary detours will be removed, graded back to natural contours, and replanted with native vegetation. A monitoring plan is not proposed due to loamy soils in the project area.		
2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State		
2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	☒ Yes ☐ No	
2b. If yes, mitigation is required by (check all that apply):	☐ DWQ ☒ Corps	
2c. If yes, which mitigation option will be used for this project?	☐ Mitigation bank ☒ Payment to in-lieu fee program ☐ Permittee Responsible Mitigation	
3. Complete if Using a Mitigation Bank		
3a. Name of Mitigation Bank: not applicable		
3b. Credits Purchased (attach receipt and letter)	Type	Quantity
3c. Comments:		
4. Complete if Making a Payment to In-lieu Fee Program		
4a. Approval letter from in-lieu fee program is attached.	☒ Yes	
4b. Stream mitigation requested:	linear feet	
4c. If using stream mitigation, stream temperature:	☐ warm ☐ cool ☐cold	
4d. Buffer mitigation requested (DWQ only):	square feet	
4e. Riparian wetland mitigation requested:	0.46 acres	
4f. Non-riparian wetland mitigation requested:	acres	
4g. Coastal (tidal) wetland mitigation requested:	acres	
4h. Comments:		
5. Complete if Using a Permittee Responsible Mitigation Plan		
5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.		

6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ	
6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?	☐ Yes ☒ No

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

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

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

6h. Comments:

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

F. Supplementary Information	
1. Environmental Documentation (DWQ Requirement)	
1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land?	☒ Yes ☐ No
1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)?	☒ Yes ☐ No
1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) Comments:	☒ Yes ☐ No
2. Violations (DWQ Requirement)	
2a. Is the site in violation of DWQ Wetland Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), DWQ Surface Water or Wetland Standards, or Riparian Buffer Rules (15A NCAC 2B .0200)?	☐ Yes ☒ No
2b. Is this an after-the-fact permit application?	☐ Yes ☒ No
2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):	
3. Cumulative Impacts (DWQ Requirement)	
3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality?	☐ Yes ☒ No
3b. If you answered "yes" to the above, submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent DWQ policy. If you answered "no," provide a short narrative description.	
4. Sewage Disposal (DWQ Requirement)	
4a. Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility. not applicable	

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

Dr. Gregory J. Thorpe, Ph D Applicant/Agent's Printed Name	Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	6/4/09 Date

RB

U.S. ARMY CORPS OF ENGINEERS
Wilmington District

Action ID: 200300152 **County:** Harnett

Notification of Jurisdictional Determination

Requestor:
Mr. Gregory J. Thorpe, Ph.D.
Environmental Management Director
Project Development & Environmental Analysis
1548 Mail Service Center
Raleigh, N.C. 27699-1548

Authorized Agent:
Mr. Alexander P. Smith
Senior Project Manager
EcoScience
1101 Haynes Street, Suite 101
Raleigh, N.C. 27604

Size and Location of Project (waterbody, Highway name/number, town, etc.): TIP Project No. B-3654, Replacement of bridges #29 and #53 on NC 55 in Harnett County, North Carolina.

Basis for Determination: Type 328.3(a)(7) wetlands based on positive identification of hydric soils (Bibb), dominant hydrophytic vegetation (Greater than 50% FAC) and hydrology (numerous primary indicators) and Type 328.3(a)(5) waters of the United States. Mingo Swamp, Cape Fear River.

On **December 18, 2002** the undersigned inspected the Section 404 jurisdictional boundaries as field delineated by the NCDOT and/or its representatives for the subject NCDOT project/corridor. The project site was inspected and the delineated jurisdictional boundaries as identified on the attached plan were found to accurately reflect the limits of Corps jurisdiction. The field delineated jurisdictional limits, as shown on the attached plans dated December 18, 2002, can be relied on for project planning and impact assessment. This verification is valid for five (5) years from the date of this letter.

Any placement of dredged or fill material within the delineated jurisdictional limits will require Department of the Army authorization pursuant to Section 404 of the Clean Water Act, as amended (33 USC 1344). Any un-authorized placement of dredged or fill material within the delineated jurisdictional limits would be a violation of Section 301 of the Clean Water Act (33 USC 1311) and subject to enforcement action. If you have any questions regarding this verification or the Corps of Engineers' regulatory program, please contact Mr. Richard K. Spencer at 910-251-4172.

Project Manager Signature Richard K. Spencer
Richard K. Spencer

Date January 16, 2003 **Expiration Date** January 16, 2008

CF: Jim Rerko, DEO, Div. 6 NCDOT

Ecosystem Enhancement PROGRAM

May 18, 2009

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:

B-3654, Replace Bridge Numbers 29 and 53 over Mingo Swamp on NC 55, Harnett and Sampson Counties

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the riparian wetland mitigation for the subject project. Based on the information supplied by you dated May 13, 2009, the impacts are located in CU 03030006 of the Cape Fear River Basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Riparian Wetland: 0.46 acre

EEP commits to implementing sufficient compensatory riparian wetland 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.

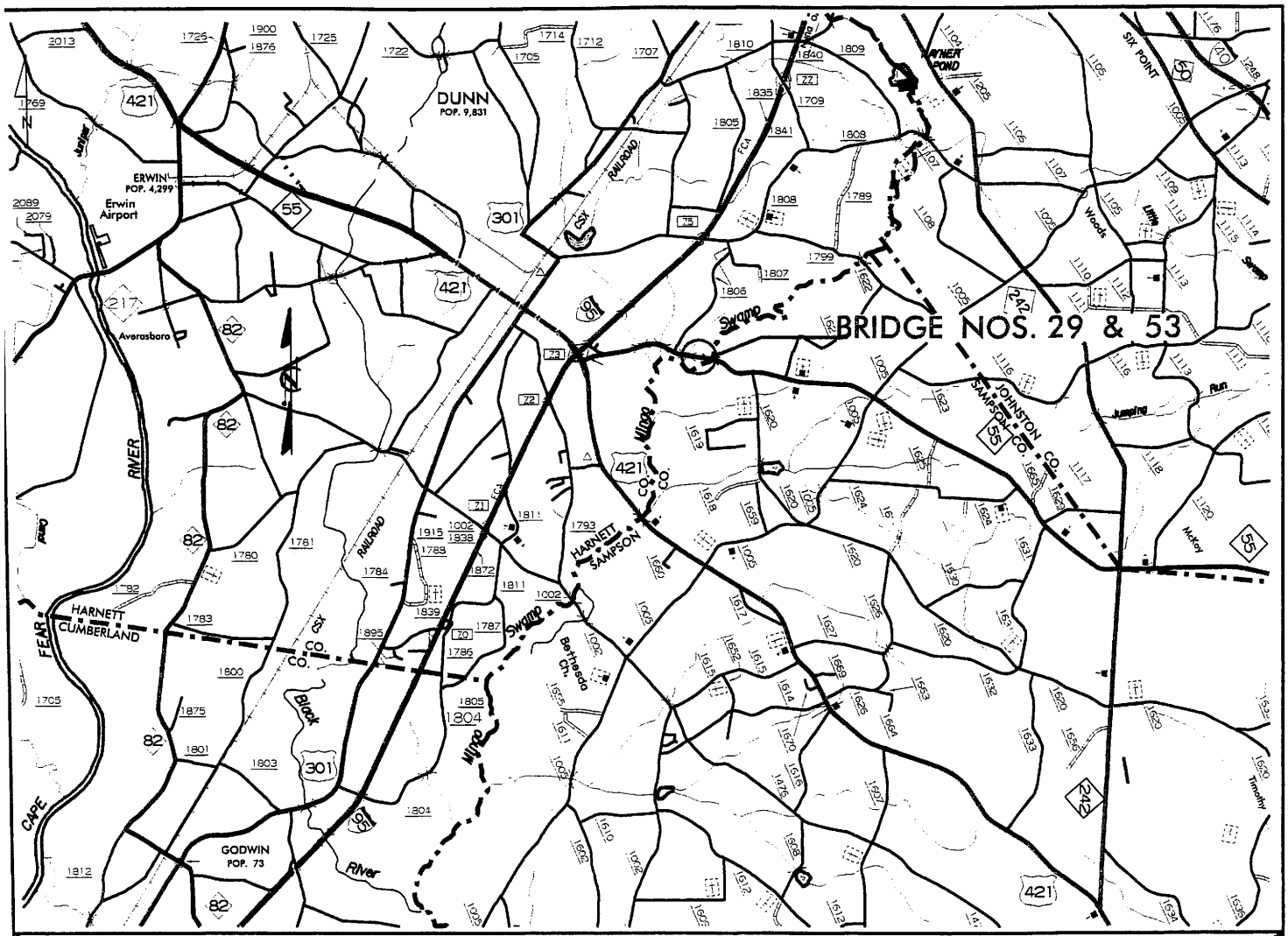
If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-715-1929.

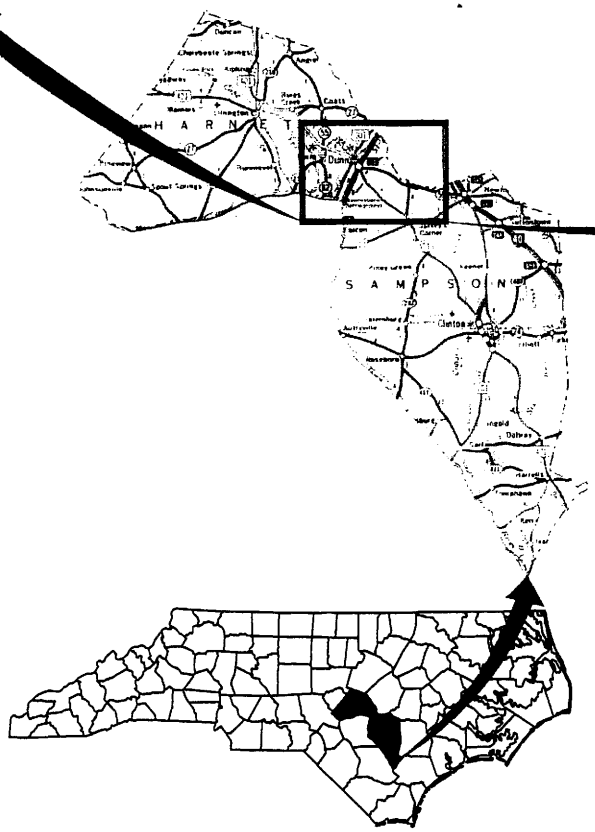
Sincerely,

James B. Stanfill for

William D. Gilmore, P.E.
EEP Director

cc: Mr. Richard Spencer, USACE – Wilmington Regulatory Field Office
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: B-3654





NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND
ENVIROMENTAL ANALYSIS BRANCH

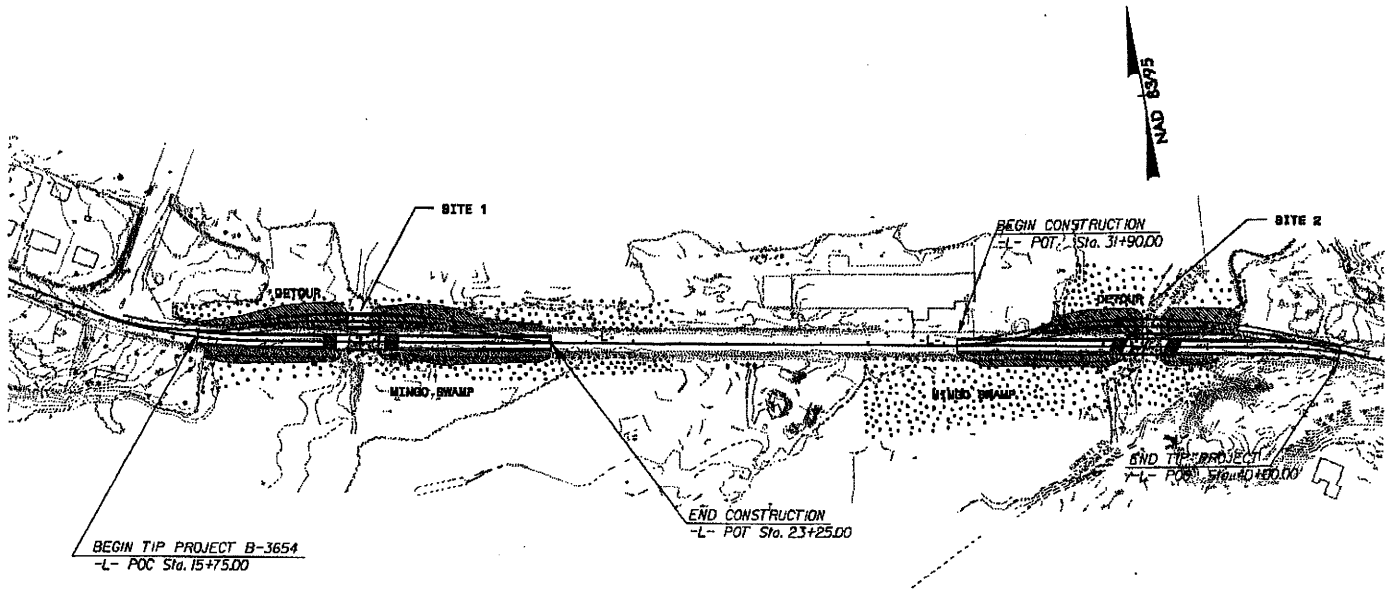
BRIDGE NOS. 29 & 53
NC 55 OVER MINGO SWAMP
HARNETT/SAMPSON COUNTY
B-3654

VICINITY MAP

0 1 2 3
GRAPHIC SCALE (MILES)

FIGURE 1

Permit Drawing
Sheet 1 of 11



200 0 200 400 600

GRAPHIC SCALE

SITE LOCATION MAP

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
HARNETT / SAMPSON COUNTY

PROJECT: 33200.1.1 (B-3654)

BRIDGE NO. 29 AND NO. 53 OVER
MINGO SWAMP ON N.C. 55

SHEET 2 OF 13 01 / 05 / 09

Permit Drawing
Sheet 2 of 11

WETLAND LEGEND

WLB — WETLAND BOUNDARY

WLB WLB — WETLAND

F F — DENOTES FILL IN WETLAND

S S — DENOTES FILL IN SURFACE WATER

P P — DENOTES FILL IN SURFACE WATER (POND)

T T — DENOTES TEMPORARY FILL IN WETLAND

E E — DENOTES EXCAVATION IN WETLAND

TS TS — DENOTES TEMPORARY SURFACE WATER IMPACTS

S S — DENOTES PERMANENT SURFACE WATER IMPACTS

DENOTES MECHANIZED CLEARING

HC HC — DENOTES HAND CLEARING

FLOW DIRECTION

TB — TOP OF BANK

WE — EDGE OF WATER

C — PROP. LIMIT OF CUT

F — PROP. LIMIT OF FILL

PROP. RIGHT OF WAY

NG — NATURAL GROUND

PL — PROPERTY LINE

TDE — TEMP. DRAINAGE EASEMENT

PDE — PERMANENT DRAINAGE EASEMENT

EAB — EXIST. ENDANGERED ANIMAL BOUNDARY

EPB — EXIST. ENDANGERED PLANT BOUNDARY

WATER SURFACE

LIVE STAKES

BOULDER

CORE FIBER ROLLS

PROPOSED BRIDGE

PROPOSED BOX CULVERT

PROPOSED PIPE CULVERT

(DASHED LINES DENOTE EXISTNG STRUCTURES)

12"-48" PIPES

54" PIPES & ABOVE

SINGLE TREE

WOODS LINE

DRAINAGE INLET

ROOTWAD

RIP RAP

5 — ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE

PREFORMED SCOUR HOLE (PSH)

LEVEL SPREADER (LS)

GRASS SWALE

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
HARTNETT / SAMPSON COUNTY

PROJECT: 33200.1.1 (B-3654)

BRIDGES NO. 29 AND NO. 53 OVER MINGO SWAMP ON N.C. 55

SHEET 3 OF 13 01 / 05 / 09

Permit Drawing
Sheet 3 of 11

PROPERTY OWNERS

PARCEL	OWNER NAME	ADDRESS
2	DOROTHY J. GODWIN	230 DORMAN ROAD, DUNN, NC 28334
4	JOE H. GODWIN	9850 GREEN PATH ROAD, DUNN, NC 28334
5	DALE R. LUCAS JR.	100 EAST C STREET, ERWIN, NC 28339
6	ELIZABETH NICOLE B. OVERTON	13339 HARNETT-DUNN HWY, DUNN, NC 27334
1	DOUGLAS PARKER	11702 HARNETT-DUNN HWY, DUNN, NC 28334
7	BONNIE BLAKE BAREFOOT SPEEGLE	2504 SOUTH EDGE WATER DRIVE, FAYETTEVILLE, NC 28303
3	THERESA JOHNSON TART	90 SURPLUS RD, BENSON, NC 27504

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

HARNETT / SAMPSON COUNTY
PROJECT: 33200.1.1 (B-3654)

BRIDGES NO. 29 AND NO. 53 OVER
MINGO SWAMP ON N.C. 55

SHEET 4 OF 13 01 / 05 / 09

Permit Drawing
Sheet 4 of 11

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	-L-15+50 TO 23+25	Roadway Fill	0.31				0.15					
1	-DET29- 12+40 to 19+10	Roadway Fill		0.35			0.08					
2	-L-31+90 TO 37+50	Roadway Fill	0.15				0.08					
2	-DET53- 12+00 to 16+12	Roadway Fill		0.30			0.05					
TOTALS:			0.46	0.65	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.00

Note: 0.08 AC of temporary fill in wetlands in the hand clearing areas for erosion control measures

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
HARNETT / SAMPSON COUNTY
PROJECT 33200.1.1 (B-3654)
BRIDGES NO. 29 AND 53
OVER MINGO SWAMP ON NC 55
SHEET 5 OF 13 5/12/2009

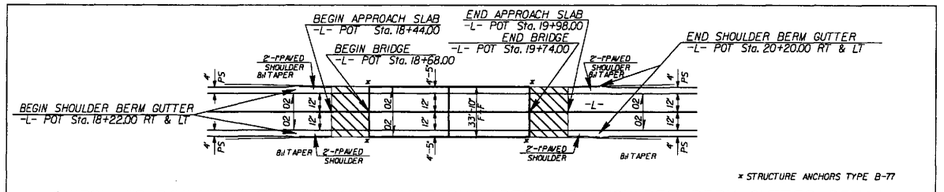
ATN Revised 3/31/05

Permit Drawing
Sheet 5 of 11

PROJECT REFERENCE NO.	SHEET NO.
B-3654	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 6 of 11



BRIDGE TO PAVEMENT SKETCH AND PAVED SHOULDER AND SHOULDER BERM GUTTER DETAIL

-DET29- CURVE DATA

PI Sta 11+99.36	PI Sta 14+54.54	PI Sta 17+66.84	PI Sta 19+47.78
Δ = 31° 09' 32.5" (LT)	Δ = 10° 30' 00.0" (RT)	Δ = 14° 30' 00.0" (RT)	Δ = 14° 30' 00.0" (LT)
D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"
L = 388.84'	L = 131.03'	L = 180.95'	L = 180.95'
T = 199.36'	T = 65.70'	T = 90.96'	T = 90.96'
R = 715.00'	R = 715.00'	R = 715.00'	R = 715.00'
SE = 0.04	SE = 0.04	SE = 0.04	SE = 0.04
RO = 92'	RO = 92'	RO = 92'	RO = 92'
V = 45 MPH	V = 45 MPH	V = 45 MPH	V = 45 MPH

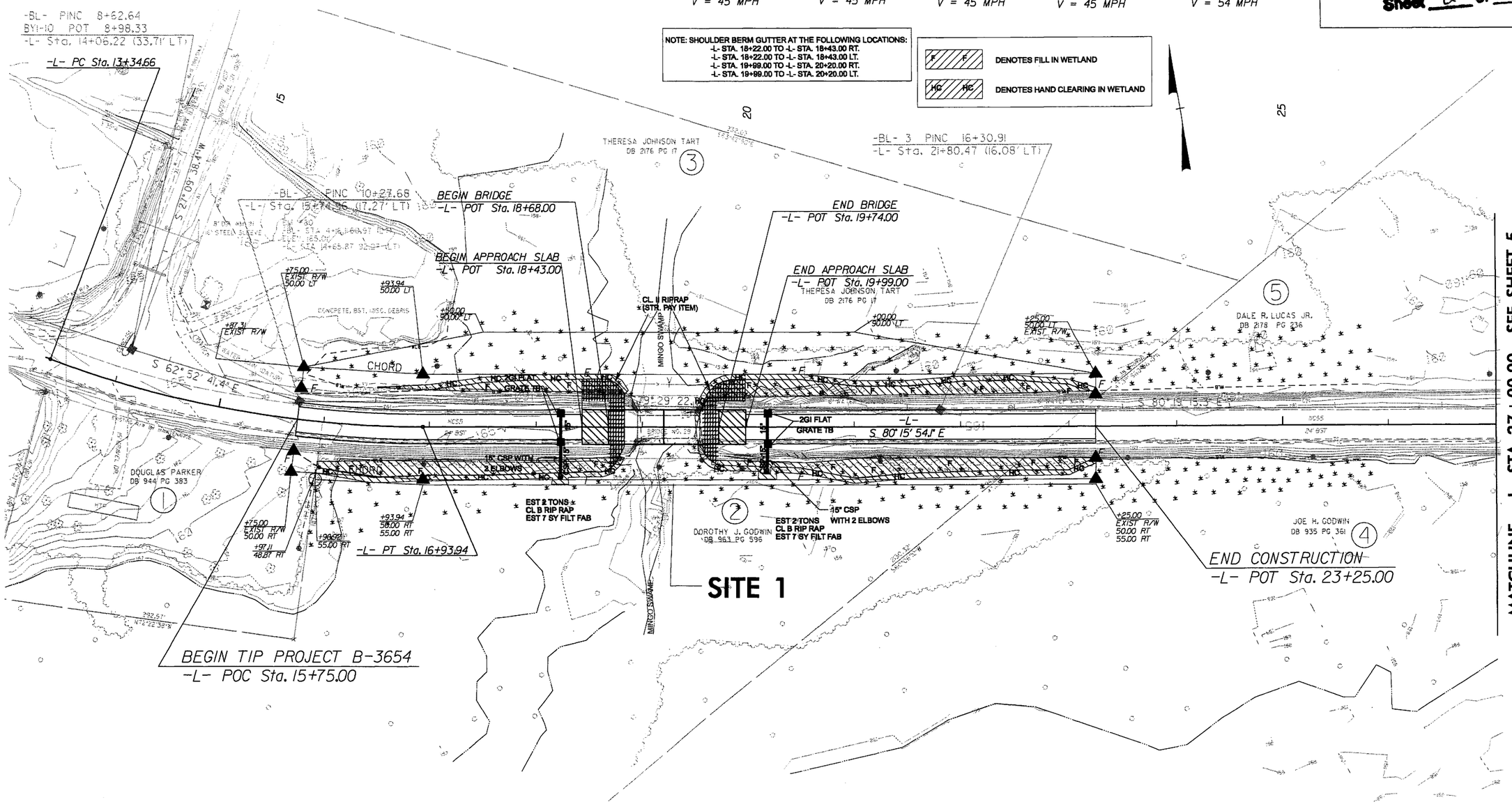
-L- CURVE DATA

PI Sta 15+16.27
Δ = 20° 39' 32.5" (LT)
D = 5° 45' 00.0"
L = 359.29'
T = 181.62'
R = 996.45'
SE = 0.06
RO = 162'
V = 54 MPH

NOTE: SHOULDER BERM GUTTER AT THE FOLLOWING LOCATIONS:
-L- STA. 18+22.00 TO -L- STA. 18+43.00 RT.
-L- STA. 18+22.00 TO -L- STA. 18+43.00 LT.
-L- STA. 19+98.00 TO -L- STA. 20+20.00 RT.
-L- STA. 19+89.00 TO -L- STA. 20+20.00 LT.

F — DENOTES FILL IN WETLAND

HC — DENOTES HAND CLEARING IN WETLAND



*DESIGN EXCEPTION REQUIRED FOR THE DESIGN SPEED FROM 60 MPH TO 50 MPH.

BRIDGE APPROACH SLAB
SEE SHEET 6 FOR -L- PROFILE
FOR STRUCTURE PLANS, SEE SHEET S-? THRU S-??

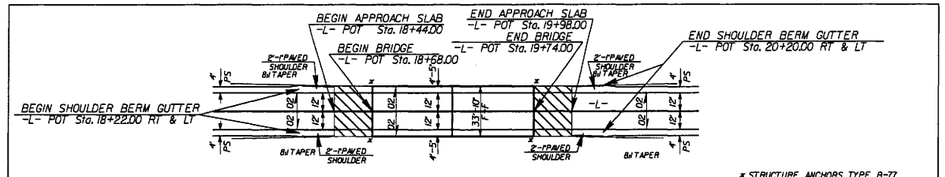
REVISIONS

8/17/

PROJECT REFERENCE NO.	SHEET NO.
B-3654	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 7 of 11



BRIDGE TO PAVEMENT SKETCH AND PAVED SHOULDER AND SHOULDER BERM GUTTER DETAIL

-DET29- CURVE DATA

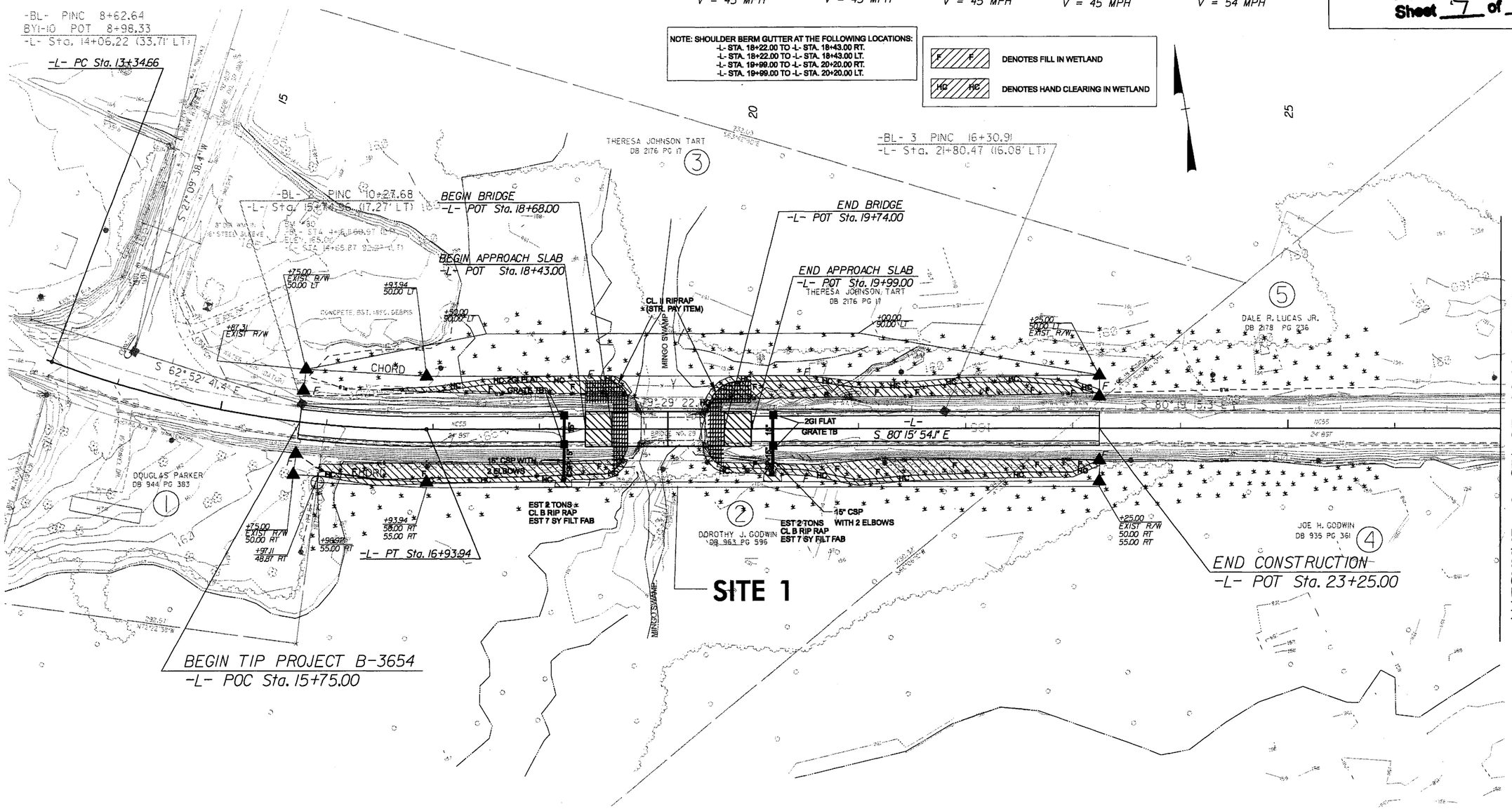
PI Sta 11+99.36	PI Sta 14+54.54	PI Sta 17+66.84	PI Sta 19+47.78
Δ = 31° 09' 32.5" (LT)	Δ = 10° 30' 00.0" (RT)	Δ = 14° 30' 00.0" (RT)	Δ = 14° 30' 00.0" (LT)
D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"
L = 388.84'	L = 131.03'	L = 180.95'	L = 180.95'
T = 199.36'	T = 65.70'	T = 90.96'	T = 90.96'
R = 715.00'	R = 715.00'	R = 715.00'	R = 715.00'
SE = 0.04	SE = 0.04	SE = 0.04	SE = 0.04
RO = 92'	RO = 92'	RO = 92'	RO = 92'
V = 45 MPH	V = 45 MPH	V = 45 MPH	V = 45 MPH

-L- CURVE DATA

PI Sta 15+16.27
Δ = 20° 39' 32.5" (LT)
D = 5° 45' 00.0"
L = 359.29'
T = 181.62'
R = 996.45'
SE = 0.06
RO = 162'
V = 54 MPH

NOTE: SHOULDER BERM GUTTER AT THE FOLLOWING LOCATIONS:
-L- STA. 18+22.00 TO -L- STA. 18+43.00 RT.
-L- STA. 18+22.00 TO -L- STA. 18+43.00 LT.
-L- STA. 19+99.00 TO -L- STA. 20+20.00 RT.
-L- STA. 19+99.00 TO -L- STA. 20+20.00 LT.

F — DENOTES FILL IN WETLAND
HC — DENOTES HAND CLEARING IN WETLAND



*DESIGN EXCEPTION REQUIRED FOR THE DESIGN SPEED FROM 60 MPH TO 50 MPH.

BRIDGE APPROACH SLAB
SEE SHEET 6 FOR -L- PROFILE
FOR STRUCTURE PLANS, SEE SHEET S-? THRU S-??

REVISIONS

8/17/99

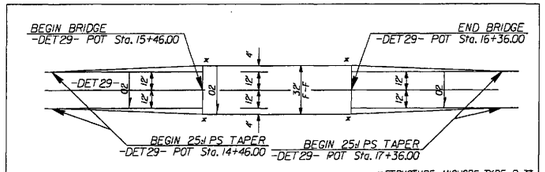
$$$$$$$SYSTIME$$$$$$
$$$$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-3654	2-A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 8 of 11



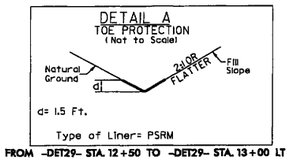
PAVEMENT - BRIDGE RELATIONSHIP SKETCH

-DET29- CURVE DATA

PI Sta 11+99.36	PI Sta 14+54.54	PI Sta 17+66.84	PI Sta 19+47.78
Δ = 31° 09' 32.5" (LT)	Δ = 10° 30' 00.0" (RT)	Δ = 14° 30' 00.0" (RT)	Δ = 14° 30' 00.0" (LT)
D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"
L = 388.84'	L = 131.03'	L = 180.95'	L = 180.95'
T = 199.36'	T = 65.70'	T = 90.96'	T = 90.96'
R = 715.00'	R = 715.00'	R = 715.00'	R = 715.00'
SE = 0.04	SE = 0.04	SE = 0.04	SE = 0.04
RO = 92'	RO = 92'	RO = 92'	RO = 92'
V = 45 MPH	V = 45 MPH	V = 45 MPH	V = 45 MPH

-L- CURVE DATA

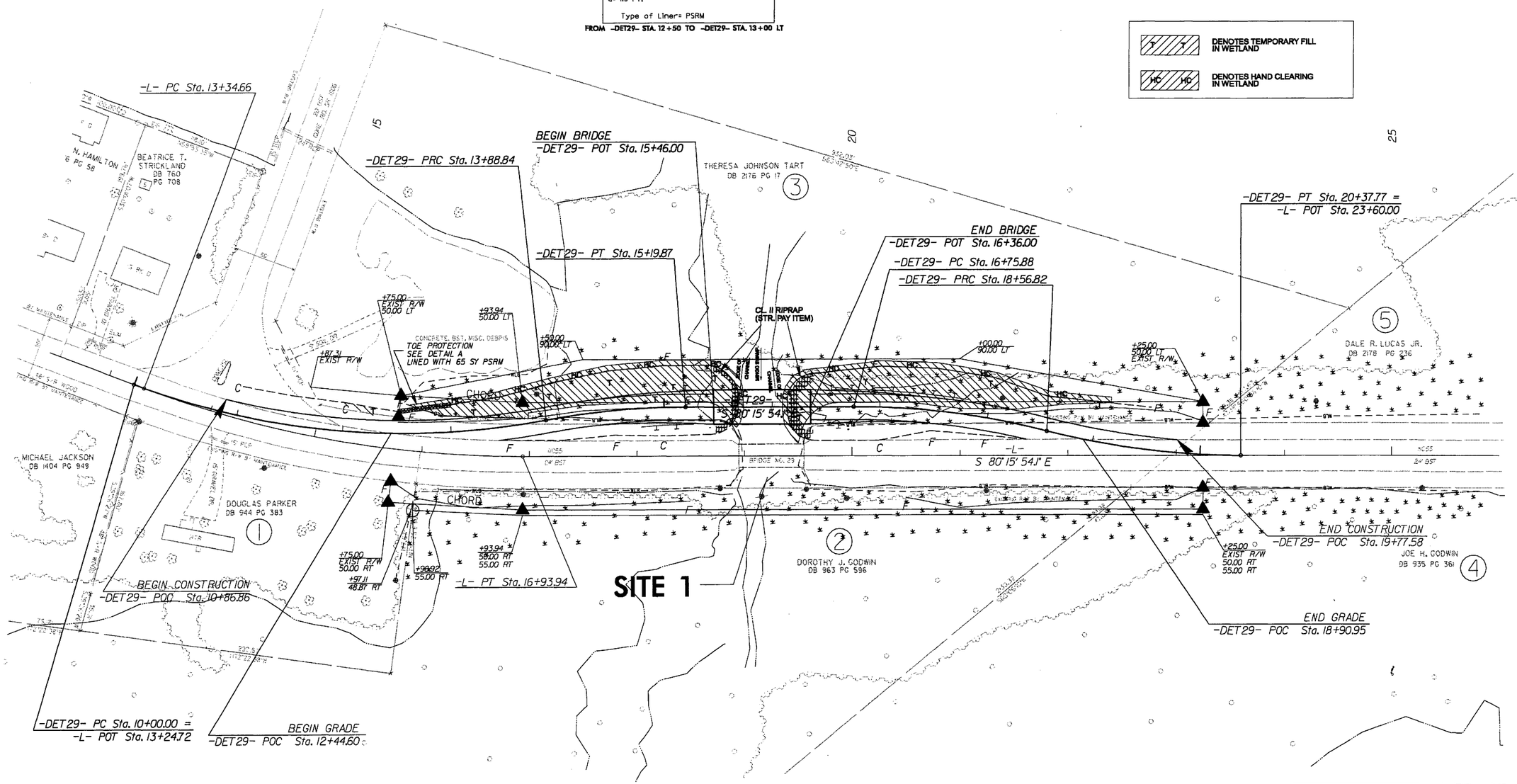
PI Sta 15+16.27
Δ = 20° 39' 32.5" (LT)
D = 5° 45' 00.0"
L = 359.29'
T = 181.62'
R = 996.45'
SE = 0.06
RO = 162'
V = 54 MPH



FROM -DET29- STA. 12+50 TO -DET29- STA. 13+00 LT

T T DENOTES TEMPORARY FILL IN WETLAND

HC HC DENOTES HAND CLEARING IN WETLAND



SEE SHEET 6 FOR -L- & -DET29- PROFILES
FOR STRUCTURE PLANS, SEE SHEET S-? THRU S-??

REVISIONS

8/17/99

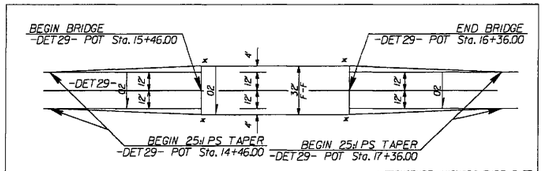
$$$$$$SYSTIME$$$$$$
$$$$$$SYSDATE$$$$$$
$$$$$$USERNAME$$$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-3654	2-A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 9 of 11



PAVEMENT - BRIDGE RELATIONSHIP SKETCH

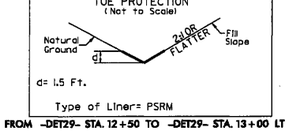
-DET29- CURVE DATA

PI Sta 11+99.36	PI Sta 14+54.54	PI Sta 17+66.84	PI Sta 19+47.78
Δ = 31° 09' 32.5" (LT)	Δ = 10° 30' 00.0" (RT)	Δ = 14° 30' 00.0" (RT)	Δ = 14° 30' 00.0" (LT)
D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"
L = 388.84'	L = 131.03'	L = 180.95'	L = 180.95'
T = 199.36'	T = 65.70'	T = 90.96'	T = 90.96'
R = 715.00'	R = 715.00'	R = 715.00'	R = 715.00'
SE = 0.04	SE = 0.04	SE = 0.04	SE = 0.04
RO = 92'	RO = 92'	RO = 92'	RO = 92'
V = 45 MPH	V = 45 MPH	V = 45 MPH	V = 45 MPH

-L- CURVE DATA

PI Sta 15+16.27
Δ = 20° 39' 32.5" (LT)
D = 5° 45' 00.0"
L = 359.29'
T = 181.62'
R = 996.45'
SE = 0.06
RO = 162'
V = 54 MPH

DETAIL A
TOE PROTECTION
(Not to Scale)



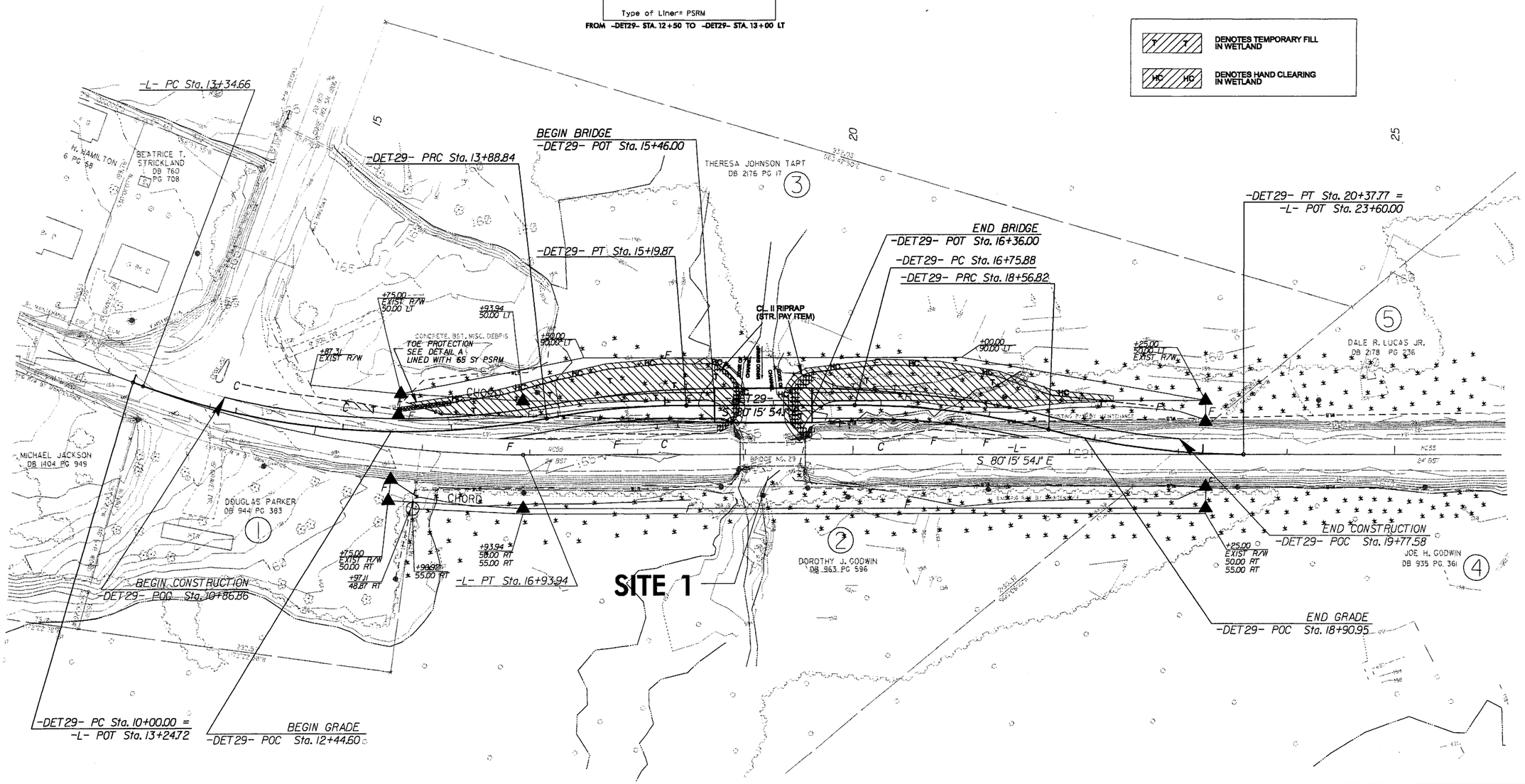
d= 1.5 Ft.

Type of Liner= PSRM

FROM -DET29- STA. 12+50 TO -DET29- STA. 13+00 LT

DENOTES TEMPORARY FILL IN WETLAND

DENOTES HAND CLEARING IN WETLAND



SEE SHEET 6 FOR -L- & -DET29- PROFILES
FOR STRUCTURE PLANS, SEE SHEET S-? THRU S-??

REVISIONS

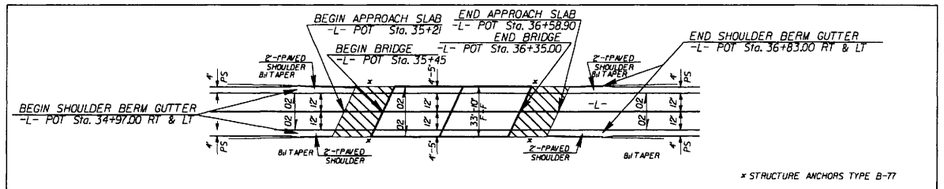
8/17/99

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

PROJECT REFERENCE NO.	SHEET NO.
B-3654	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing Sheet 10 of 11



BRIDGE TO PAVEMENT SKETCH AND PAVED SHOULDER AND SHOULDER BERM GUTTER DETAIL

-DET53- CURVE DATA

PI Sta 10+89.90	PI Sta 12+68.77	PI Sta 16+11.04
Δ = 14° 20' 00.0" (LT)	Δ = 14° 20' 00.0" (RT)	Δ = 12° 30' 00.0" (RT)
D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"
L = 178.87'	L = 178.87'	L = 155.99'
T = 89.90'	T = 89.90'	T = 78.31'
R = 715.00'	R = 715.00'	R = 715.00'
SE = 0.04	SE = 0.04	SE = 0.04
RO = 92'	RO = 92'	RO = 92'
V = 45 MPH	V = 45 MPH	V = 45 MPH

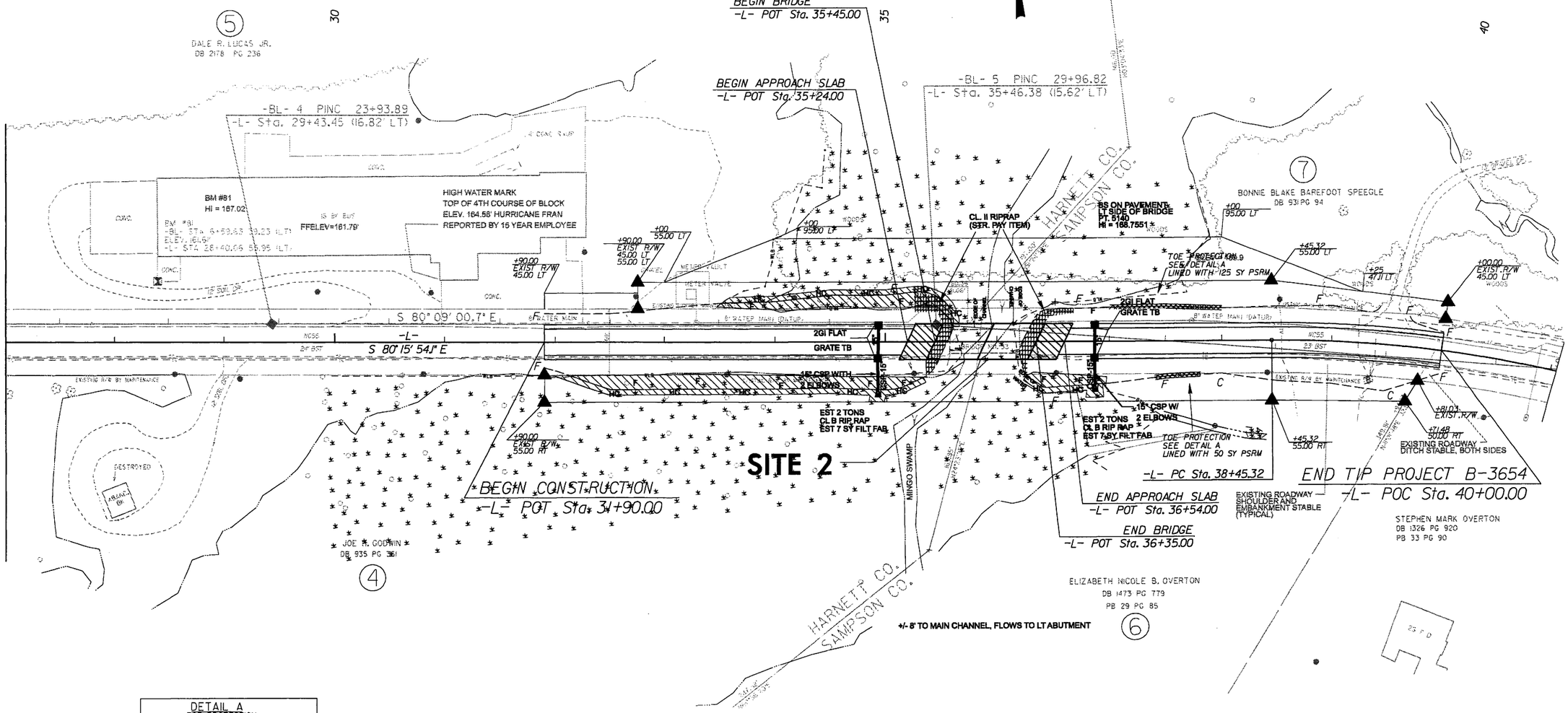
-L- CURVE DATA

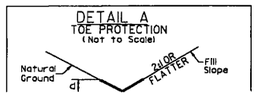
PI Sta 41+69.69
Δ = 31° 36' 34.5" (RT)
D = 5° 00' 00.0"
L = 632.19'
T = 324.37'
R = 1145.92'
SE = 0.06
RO = 162'
V = 57 MPH

F F — DENOTES FILL IN WETLAND

HC HC — DENOTES HAND CLEARING IN WETLAND

NOTE: SHOULDER BERM GUTTER AT THE FOLLOWING LOCATIONS:
-L- STA. 34+97.00 TO -L- STA. 35+12.60 RT.
-L- STA. 34+97.00 TO -L- STA. 35+27.41 LT.
-L- STA. 36+52.59 TO -L- STA. 36+83.00 RT.
-L- STA. 36+67.40 TO -L- STA. 36+83.00 LT.





*DESIGN EXCEPTION REQUIRED FOR THE DESIGN SPEED FROM 60 MPH TO 50 MPH.

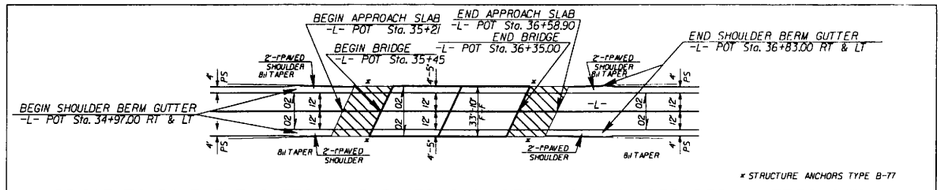
BRIDGE APPROACH SLAB
SEE SHEET 7 FOR -L- PROFILE
FOR STRUCTURE PLANS, SEE SHEET S-1 THRU S-??

$$$

PROJECT REFERENCE NO.	SHEET NO.
B-3654	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 11 of 11



BRIDGE TO PAVEMENT SKETCH AND PAVED SHOULDER AND SHOULDER BERM GUTTER DETAIL

-DET53- CURVE DATA

PI Sta 10+89.90	PI Sta 12+68.77	PI Sta 16+11.04
Δ = 14° 20' 00.0" (LT)	Δ = 14° 20' 00.0" (RT)	Δ = 12° 30' 00.0" (RT)
D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"
L = 178.87'	L = 178.87'	L = 155.99'
T = 89.90'	T = 89.90'	T = 78.31'
R = 715.00'	R = 715.00'	R = 715.00'
SE = 0.04	SE = 0.04	SE = 0.04
RO = 92'	RO = 92'	RO = 92'
V = 45 MPH	V = 45 MPH	V = 45 MPH

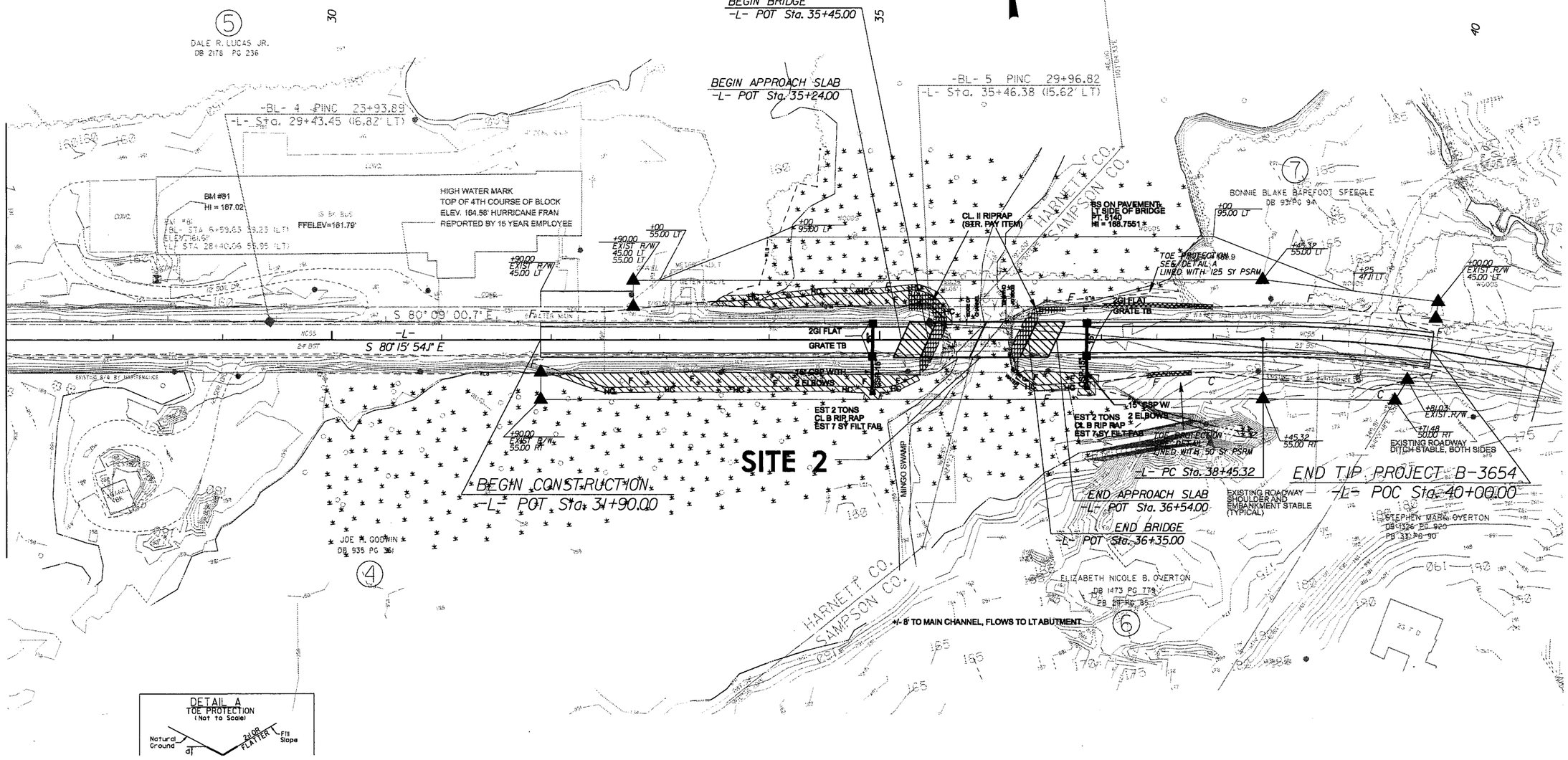
-L- CURVE DATA

PI Sta 41+69.69
Δ = 31° 36' 34.5" (RT)
D = 5° 00' 00.0"
L = 632.19'
T = 324.37'
R = 1145.92'
SE = 0.06
RO = 162'
V = 57 MPH

F/F — DENOTES FILL IN WETLAND

HC/HC — DENOTES HAND CLEARING IN WETLAND

NOTE: SHOULDER BERM GUTTER AT THE FOLLOWING LOCATIONS:
-L- STA. 34+97.00 TO -L- STA. 35+12.60 RT.
-L- STA. 34+97.00 TO -L- STA. 35+27.41 LT.
-L- STA. 36+52.59 TO -L- STA. 36+83.00 RT.
-L- STA. 36+67.40 TO -L- STA. 36+83.00 LT.



*DESIGN EXCEPTION REQUIRED FOR THE DESIGN SPEED FROM 60 MPH TO 50 MPH.

BRIDGE APPROACH SLAB
SEE SHEET 7 FOR -L- PROFILE
FOR STRUCTURE PLANS, SEE SHEET S-? THRU S-??

REVISIONS

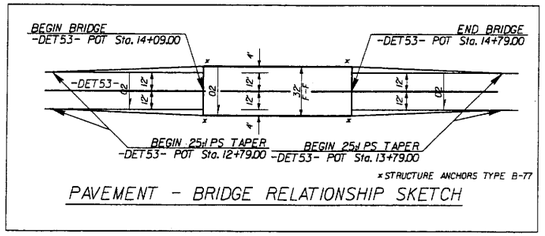
8/17/95

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

PROJECT REFERENCE NO.	SHEET NO.
B-3654	2-B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



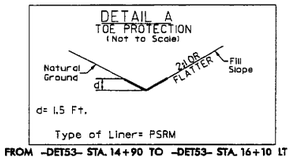
PAVEMENT - BRIDGE RELATIONSHIP SKETCH

-DET53- CURVE DATA

PI Sta 10+89.90	PI Sta 12+68.77	PI Sta 16+11.04
Δ = 14° 20' 00.0" (LT)	Δ = 14° 20' 00.0" (RT)	Δ = 12° 30' 00.0" (RT)
D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"
L = 178.87'	L = 178.87'	L = 155.99'
T = 89.90'	T = 89.90'	T = 78.31'
R = 715.00'	R = 715.00'	R = 715.00'
SE = 0.04	SE = 0.04	SE = 0.04
RO = 92'	RO = 92'	RO = 92'
V = 45 MPH	V = 45 MPH	V = 45 MPH

-L- CURVE DATA

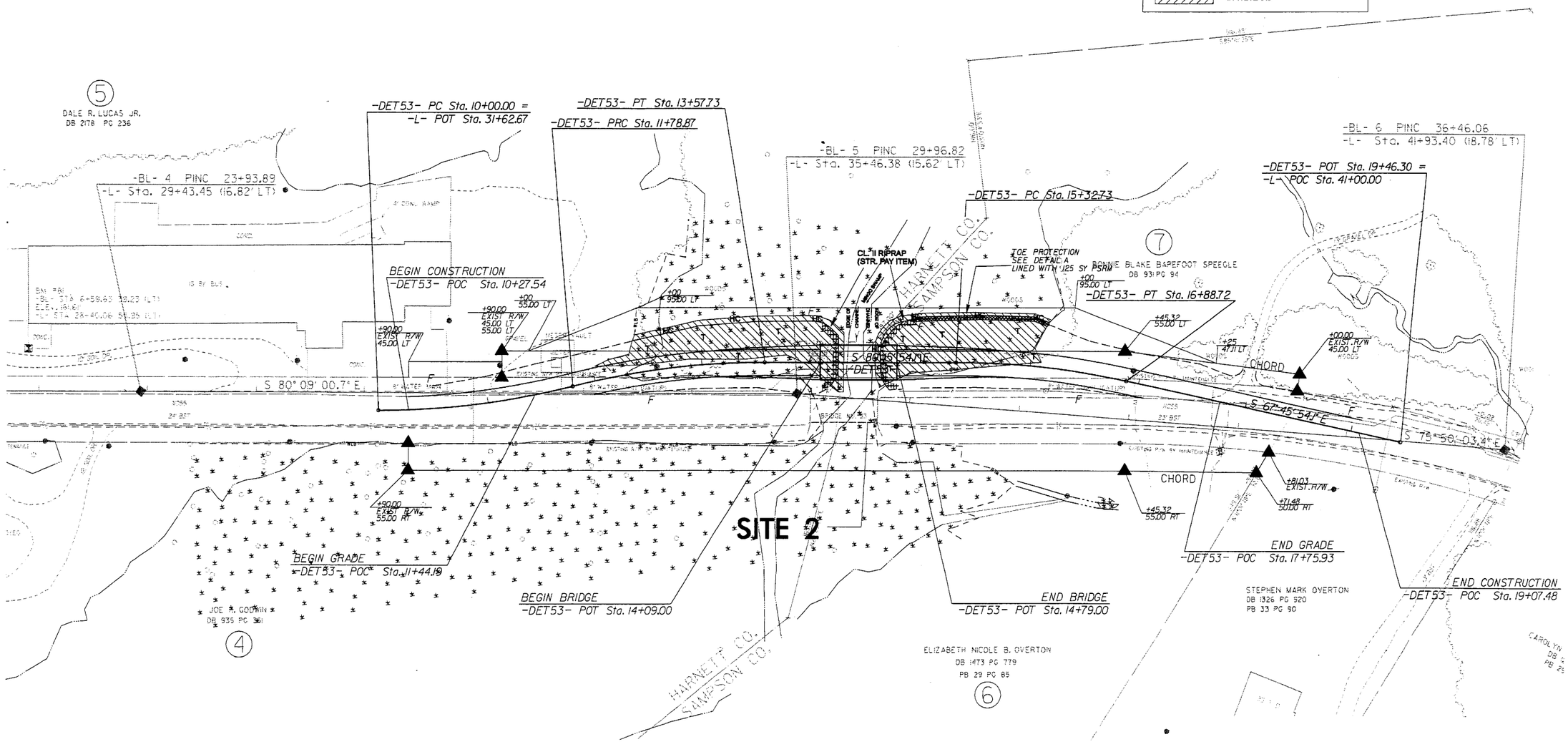
PI Sta 41+69.69
Δ = 31° 36' 34.5" (RT)
D = 5° 00' 00.0"
L = 632.19'
T = 324.37'
R = 1,145.92'
SE = 0.06
RO = 162'
V = 57 MPH



FROM -DET53- STA. 14+90 TO -DET53- STA. 16+10 LT

T T DENOTES TEMPORARY FILL IN WETLAND

HC HC DENOTES HAND CLEARING IN WETLAND



REVISIONS

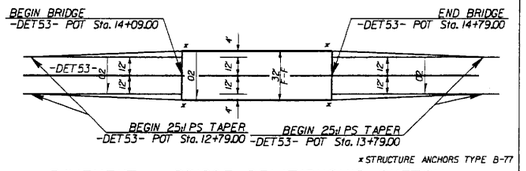
8/17/99

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

PROJECT REFERENCE NO.	SHEET NO.
B-3654	2-B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



x STRUCTURE ANCHORS TYPE B-77

PAVEMENT - BRIDGE RELATIONSHIP SKETCH

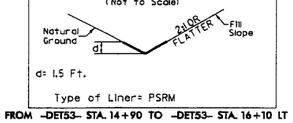
-DET53- CURVE DATA

PI Sta 10+89.90	PI Sta 12+68.77	PI Sta 16+11.04
Δ = 14° 20' 00.0" (LT)	Δ = 14° 20' 00.0" (RT)	Δ = 12° 30' 00.0" (RT)
D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"
L = 178.87'	L = 178.87'	L = 155.99'
T = 89.90'	T = 89.90'	T = 78.31'
R = 715.00'	R = 715.00'	R = 715.00'
SE = 0.04	SE = 0.04	SE = 0.04
RO = 92'	RO = 92'	RO = 92'
V = 45 MPH	V = 45 MPH	V = 45 MPH

-L- CURVE DATA

PI Sta 41+69.69
Δ = 31° 36' 34.5" (RT)
D = 5° 00' 00.0"
L = 632.19'
T = 324.37'
R = 1,145.92'
SE = 0.06
RO = 162'
V = 57 MPH

DETAIL A
TOE PROTECTION
(Not to Scale)



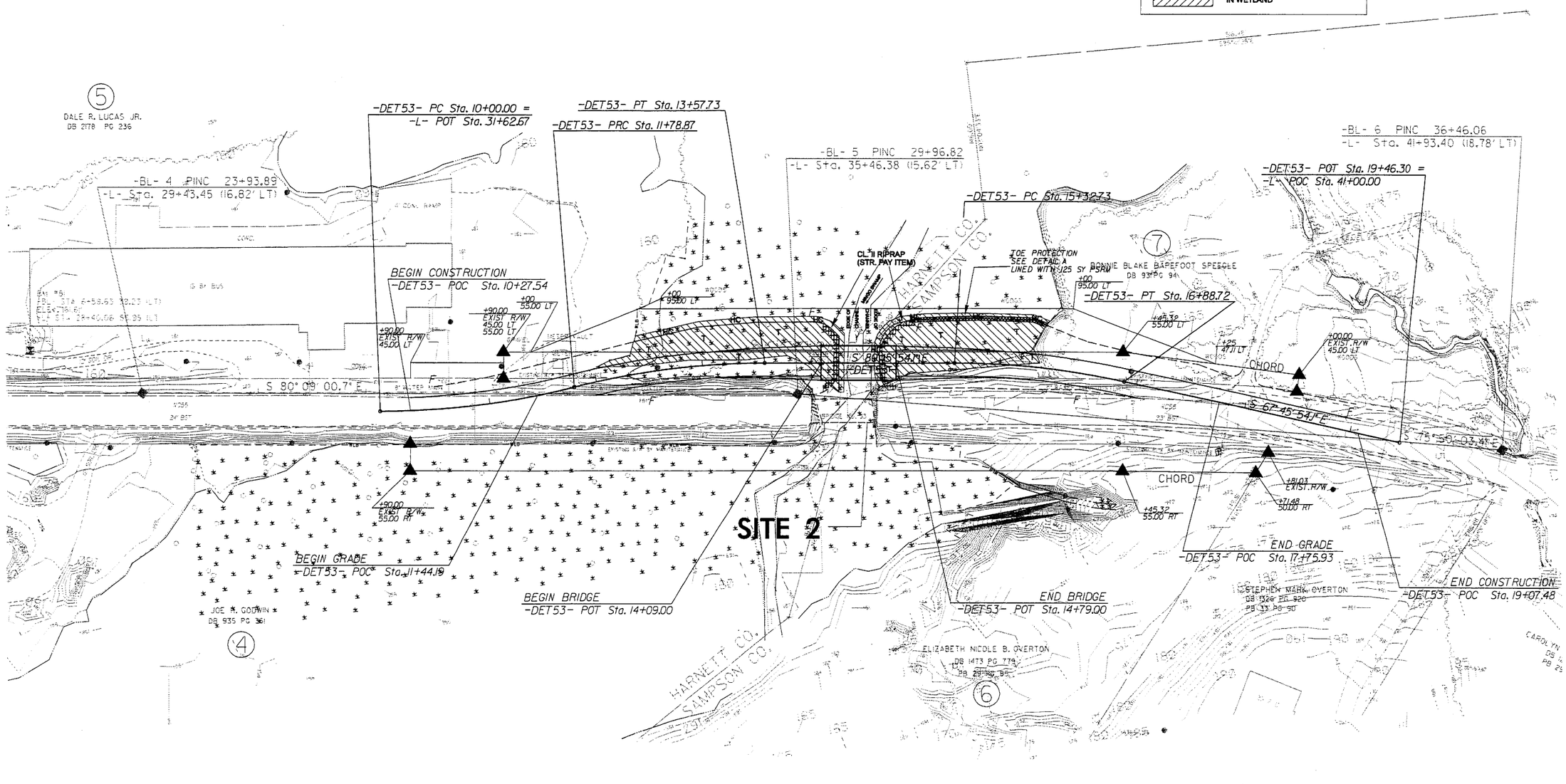
d= 1.5 Ft.

Type of Liner= PSRM

FROM -DET53- STA. 14+90 TO -DET53- STA. 16+10 LT

T T DENOTES TEMPORARY FILL IN WETLAND

HC HC DENOTES HAND CLEARING IN WETLAND



REVISIONS

8/17/99

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

09/08/99

TIP PROJECT: B-3654

CONTRACT: C202260

See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

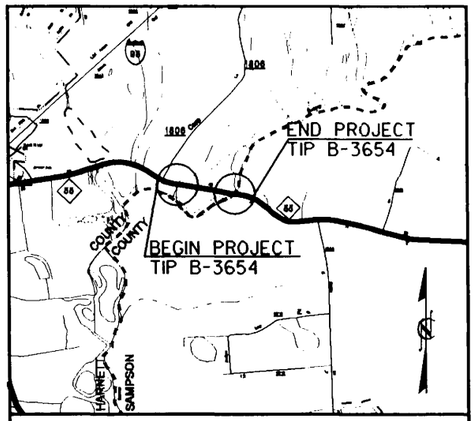
HARNETT & SAMPSON COUNTIES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3654	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
33200.1.1	BRSTP-55(14)	P.E.
33200.2.2	BRSTP-0055(14)	R/W, UTIL.

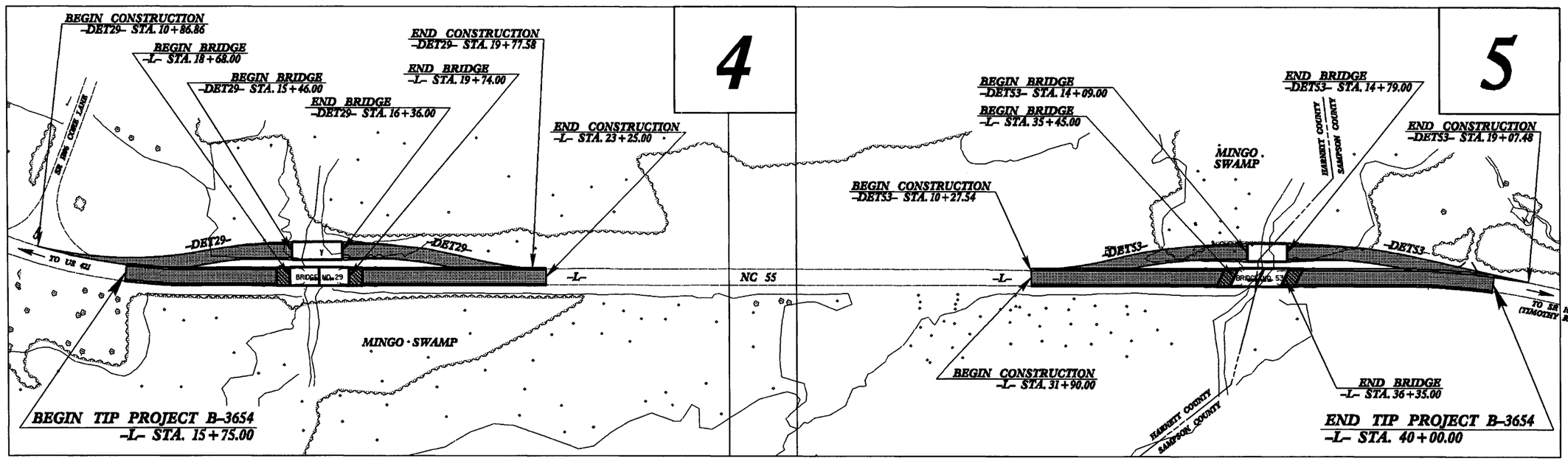
LOCATION: BRIDGES No. 29 AND 53 OVER MINGO SWAMP ON NC 55

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURES



VICINITY MAP

NAD 83



THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II EXCEPT BY PERMIT.
**DESIGN EXCEPTION REQUIRED FOR THE DESIGN SPEED FROM 60 MPH TO 50 MPH.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 0 50 100
PLANS

50 0 50 100
PROFILE (HORIZONTAL)

10 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2008 = 5,975
ADT 2028 = 10,295
DHV = 10 %
D = 60 %
T = 8 % *
**V = 60 MPH
* TTST 4% DUAL 4%
RURAL MAJOR COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3654	=	0.260 MI.
LENGTH STRUCTURE TIP PROJECT B-3654	=	0.035 MI.
TOTAL LENGTH OF TIP PROJECT B-3654	=	0.295 MI.

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
DECEMBER 19, 2008

LETTING DATE:
DECEMBER 15, 2009

TONY HOUSER, PE
PROJECT ENGINEER

JASON TALLEY, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE:

ROADWAY DESIGN ENGINEER

SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

12-MAY-2009 11:29
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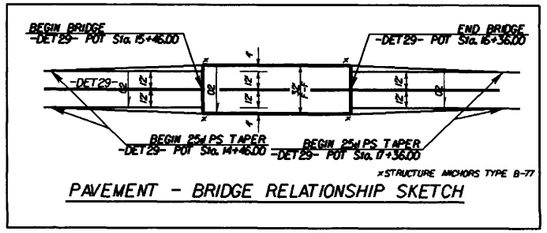
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-3654	2-A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PAVEMENT - BRIDGE RELATIONSHIP SKETCH

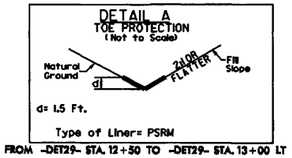
-DET29- CURVE DATA

PI Sta 11+99.36	PI Sta 14+54.54	PI Sta 17+66.84	PI Sta 19+47.78
Δ = 31° 09' 32.5" (LT)	Δ = 10° 30' 00.0" (RT)	Δ = 14° 30' 00.0" (RT)	Δ = 14° 30' 00.0" (LT)
D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"
L = 388.84'	L = 131.03'	L = 180.95'	L = 180.95'
T = 199.36'	T = 65.70'	T = 90.96'	T = 90.96'
R = 715.00'	R = 715.00'	R = 715.00'	R = 715.00'
SE = 0.04	SE = 0.04	SE = 0.04	SE = 0.04
RO = 92'	RO = 92'	RO = 92'	RO = 92'
V = 45 MPH	V = 45 MPH	V = 45 MPH	V = 45 MPH

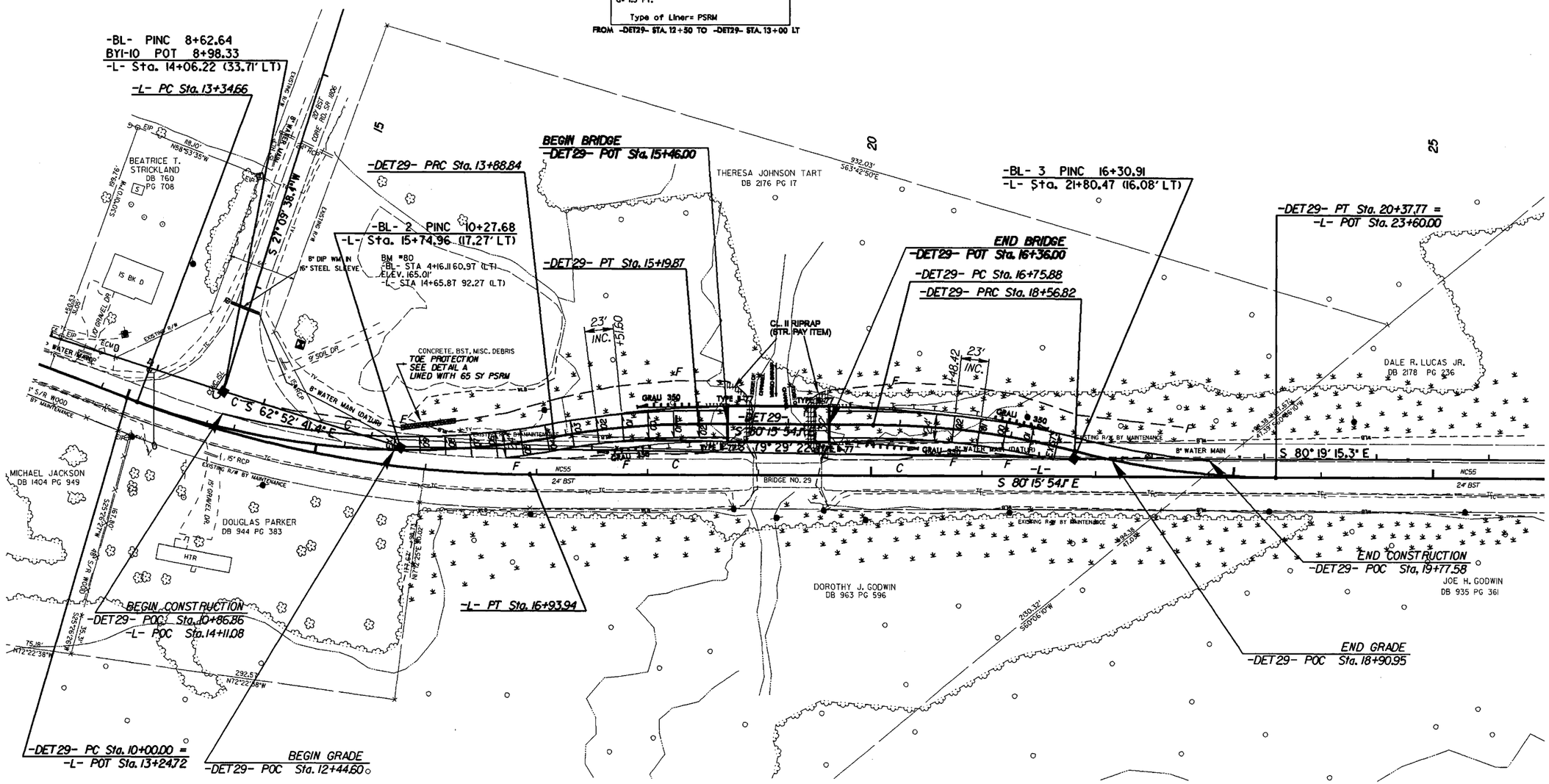
-L- CURVE DATA

PI Sta 15+16.27
Δ = 20° 39' 32.5" (LT)
D = 5° 45' 00.0"
L = 359.29'
T = 181.62'
R = 996.45'
SE = 0.06
RO = 162'
V = 54 MPH

DETAIL A
TOE PROTECTION
(Not to Scale)



FROM -DET29- STA. 12+50 TO -DET29- STA. 13+00 LT



SEE SHEET 6 FOR -L- & -DET29- PROFILES
FOR STRUCTURE PLANS, SEE SHEET S-1 THRU S-11

REVISIONS

8/17/99

12-MAY-2009 11:29
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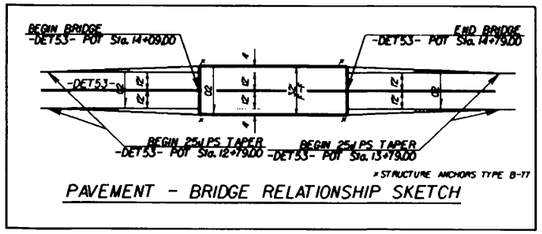
PROJECT REFERENCE NO.	SHEET NO.
B-3654	2-B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



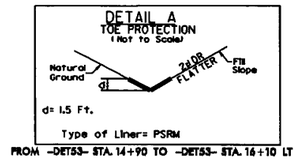
PAVEMENT - BRIDGE RELATIONSHIP SKETCH

-DET53- CURVE DATA

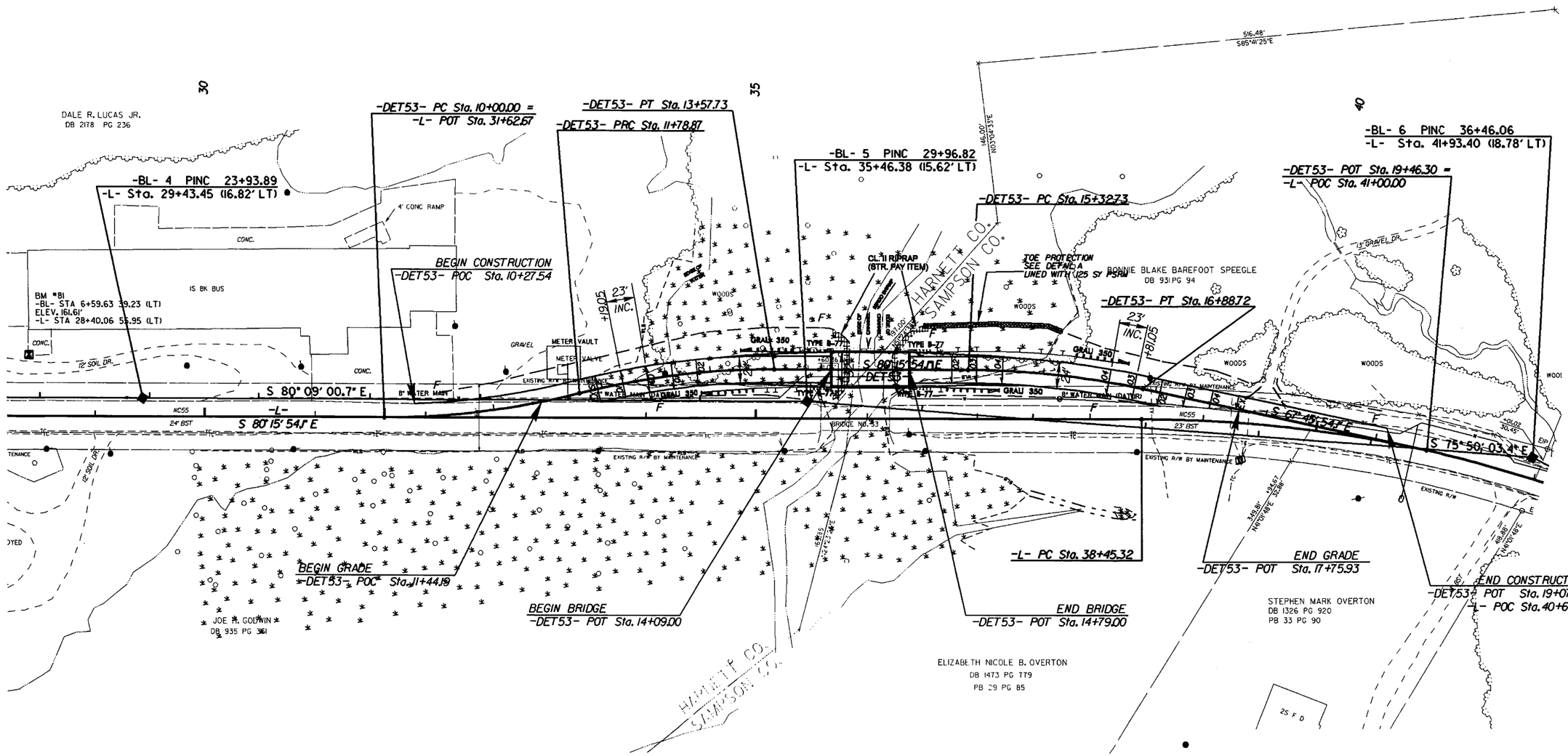
PI Sta 10+89.90	PI Sta 12+68.77	PI Sta 16+11.04
Δ = 14° 20' 00.0" (LT)	Δ = 14° 20' 00.0" (RT)	Δ = 12° 30' 00.0" (RT)
D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"
L = 178.87'	L = 178.87'	L = 155.99'
T = 89.90'	T = 89.90'	T = 78.31'
R = 715.00'	R = 715.00'	R = 715.00'
SE = 0.04	SE = 0.04	SE = 0.04
RO = 92'	RO = 92'	RO = 92'
V = 45 MPH	V = 45 MPH	V = 45 MPH

-L- CURVE DATA

PI Sta 41+69.69
Δ = 31° 36' 34.5" (RT)
D = 5° 00' 00.0"
L = 632.19'
T = 324.37'
R = 1,145.92'
SE = 0.06
RO = 162'
V = 57 MPH



FROM -DET53- STA. 14+90 TO -DET53- STA. 16+10 LT



SEE SHEET 7 FOR -L- & -DET53- PROFILES
FOR STRUCTURE PLANS, SEE SHEET S-1 THRU S-11

REVISIONS

8/17/99

12-MAY-2009 11:29
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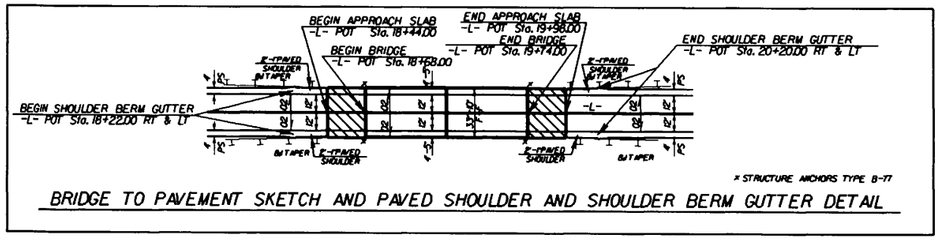
PROJECT REFERENCE NO.	SHEET NO.
B-3654	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



BRIDGE TO PAVEMENT SKETCH AND PAVED SHOULDER AND SHOULDER BERM GUTTER DETAIL

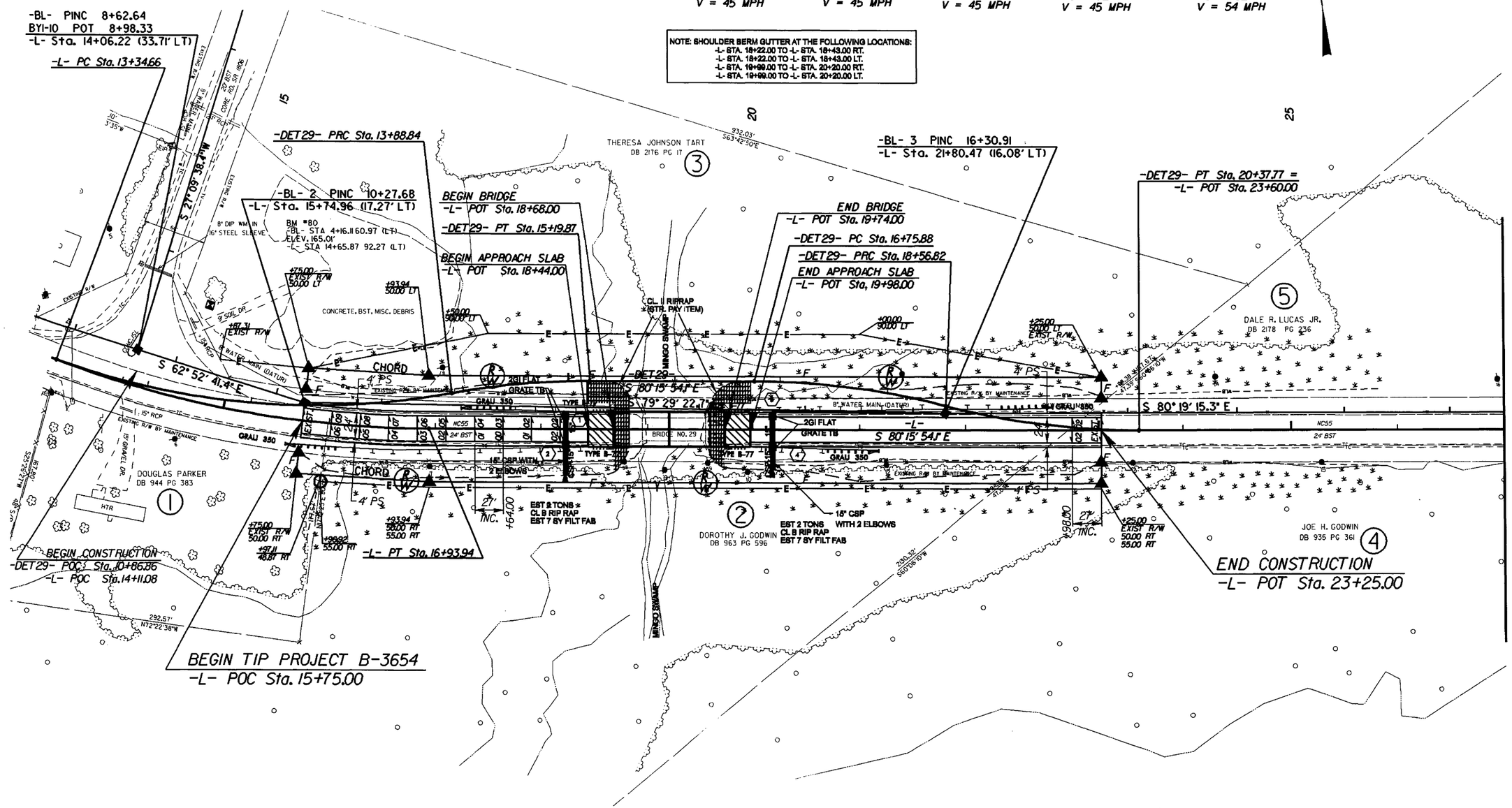
-DET29- CURVE DATA

PI Sta 11+99.36	PI Sta 14+54.54	PI Sta 17+66.84	PI Sta 19+47.78
Δ = 31° 09' 32.5" (LT)	Δ = 10° 30' 00.0" (RT)	Δ = 14° 30' 00.0" (RT)	Δ = 14° 30' 00.0" (LT)
D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"
L = 388.84'	L = 131.03'	L = 180.95'	L = 180.95'
T = 199.36'	T = 65.70'	T = 90.96'	T = 90.96'
R = 715.00'	R = 715.00'	R = 715.00'	R = 715.00'
SE = 0.04	SE = 0.04	SE = 0.04	SE = 0.04
RO = 92'	RO = 92'	RO = 92'	RO = 92'
V = 45 MPH	V = 45 MPH	V = 45 MPH	V = 45 MPH

-L- CURVE DATA

PI Sta 15+16.27
Δ = 20° 39' 32.5" (LT)
D = 5° 45' 00.0"
L = 359.29'
T = 181.62'
R = 996.45'
SE = 0.06
RO = 162'
V = 54 MPH

NOTE: SHOULDER BERM GUTTER AT THE FOLLOWING LOCATIONS:
-L- STA. 18+22.00 TO -L- STA. 18+43.00 RT.
-L- STA. 18+22.00 TO -L- STA. 18+43.00 LT.
-L- STA. 19+99.00 TO -L- STA. 20+20.00 RT.
-L- STA. 19+99.00 TO -L- STA. 20+20.00 LT.



*DESIGN EXCEPTION REQUIRED FOR THE DESIGN SPEED FROM 60 MPH TO 50 MPH.

BRIDGE APPROACH SLAB
SEE SHEET 6 FOR -L- PROFILE
FOR STRUCTURE PLANS, SEE SHEET S-1 THRU S-11

REVISIONS

8/17/99

12-MAY-2009 11:29
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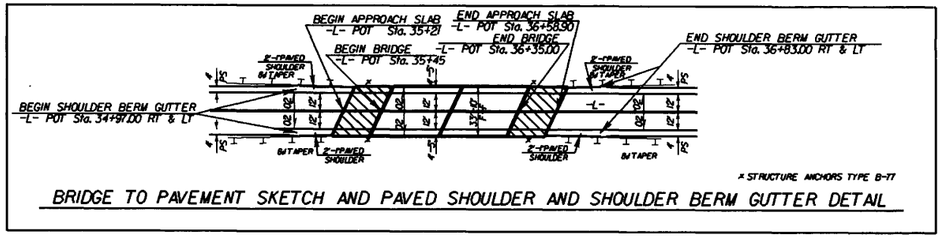
PROJECT REFERENCE NO.	SHEET NO.
B-3654	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



BRIDGE TO PAVEMENT SKETCH AND PAVED SHOULDER AND SHOULDER BERM GUTTER DETAIL

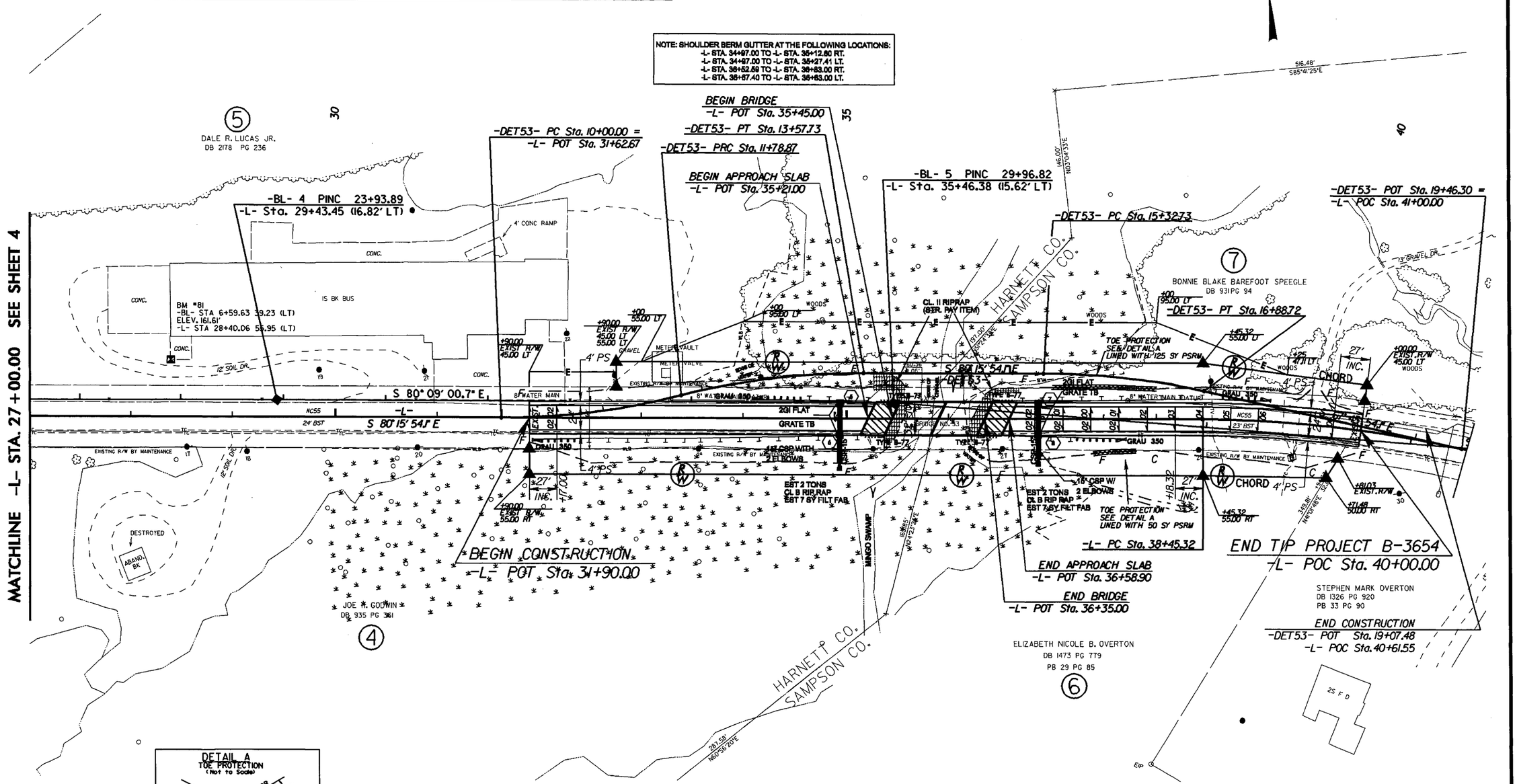
-DET53- CURVE DATA

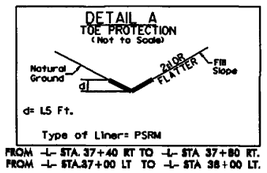
PI Sta 10+89.90	PI Sta 12+68.77	PI Sta 16+11.04
Δ = 14° 20' 00.0" (LT)	Δ = 14° 20' 00.0" (RT)	Δ = 12° 30' 00.0" (RT)
D = 8° 00' 48.2"	D = 8° 00' 48.2"	D = 8° 00' 48.2"
L = 178.87'	L = 178.87'	L = 155.99'
T = 89.90'	T = 89.90'	T = 78.31'
R = 715.00'	R = 715.00'	R = 715.00'
SE = 0.04	SE = 0.04	SE = 0.04
RO = 92'	RO = 92'	RO = 92'
V = 45 MPH	V = 45 MPH	V = 45 MPH

-L- CURVE DATA

PI Sta 41+69.69
Δ = 31° 36' 34.5" (RT)
D = 5° 00' 00.0"
L = 632.19'
T = 324.37'
R = 1,145.92'
SE = 0.06
RO = 162'
V = 57 MPH

NOTE: SHOULDER BERM GUTTER AT THE FOLLOWING LOCATIONS:
-L- STA. 34+97.00 TO -L- STA. 35+12.60 RT.
-L- STA. 34+97.00 TO -L- STA. 35+27.41 LT.
-L- STA. 36+52.59 TO -L- STA. 36+83.00 RT.
-L- STA. 36+57.40 TO -L- STA. 36+83.00 LT.





*DESIGN EXCEPTION REQUIRED FOR THE DESIGN SPEED FROM 60 MPH TO 50 MPH.

BRIDGE APPROACH SLAB
SEE SHEET 7 FOR -L- PROFILE

FOR STRUCTURE PLANS, SEE SHEET S-1 THRU S-11

8/17/99

REVISIONS

12-MAY-2009 14:29
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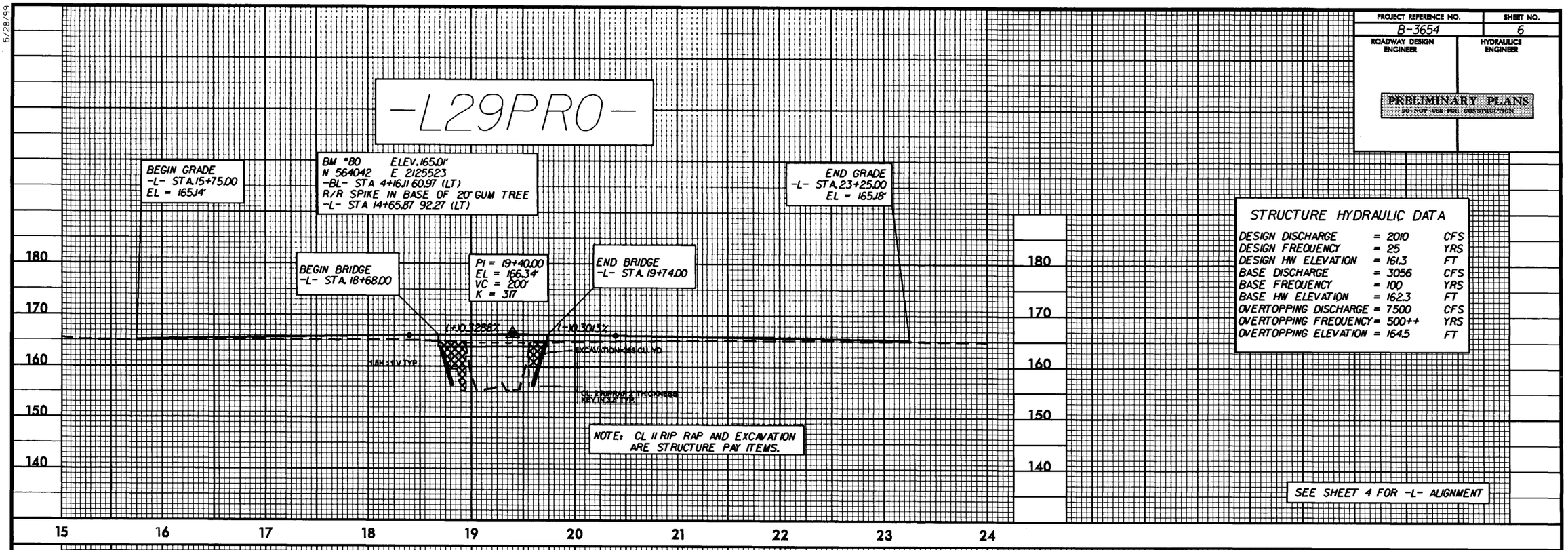
$$$$USERNAME$$$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-3654	6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

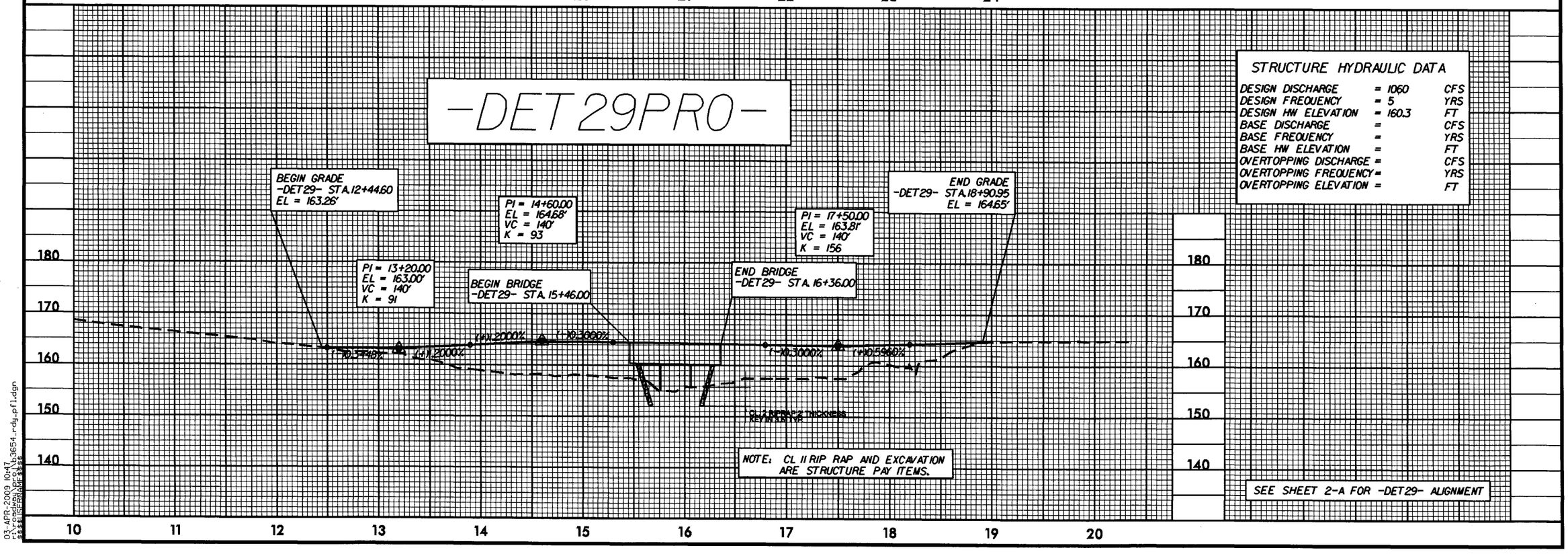
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 2010	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 161.3	FT
BASE DISCHARGE	= 3056	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 162.3	FT
OVERTOPPING DISCHARGE	= 7500	CFS
OVERTOPPING FREQUENCY	= 500++	YRS
OVERTOPPING ELEVATION	= 164.5	FT

SEE SHEET 4 FOR -L- ALIGNMENT



STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 1060	CFS
DESIGN FREQUENCY	= 5	YRS
DESIGN HW ELEVATION	= 160.3	FT
BASE DISCHARGE	=	CFS
BASE FREQUENCY	=	YRS
BASE HW ELEVATION	=	FT
OVERTOPPING DISCHARGE	=	CFS
OVERTOPPING FREQUENCY	=	YRS
OVERTOPPING ELEVATION	=	FT

SEE SHEET 2-A FOR -DET29- ALIGNMENT

03-APR-2009 10:47
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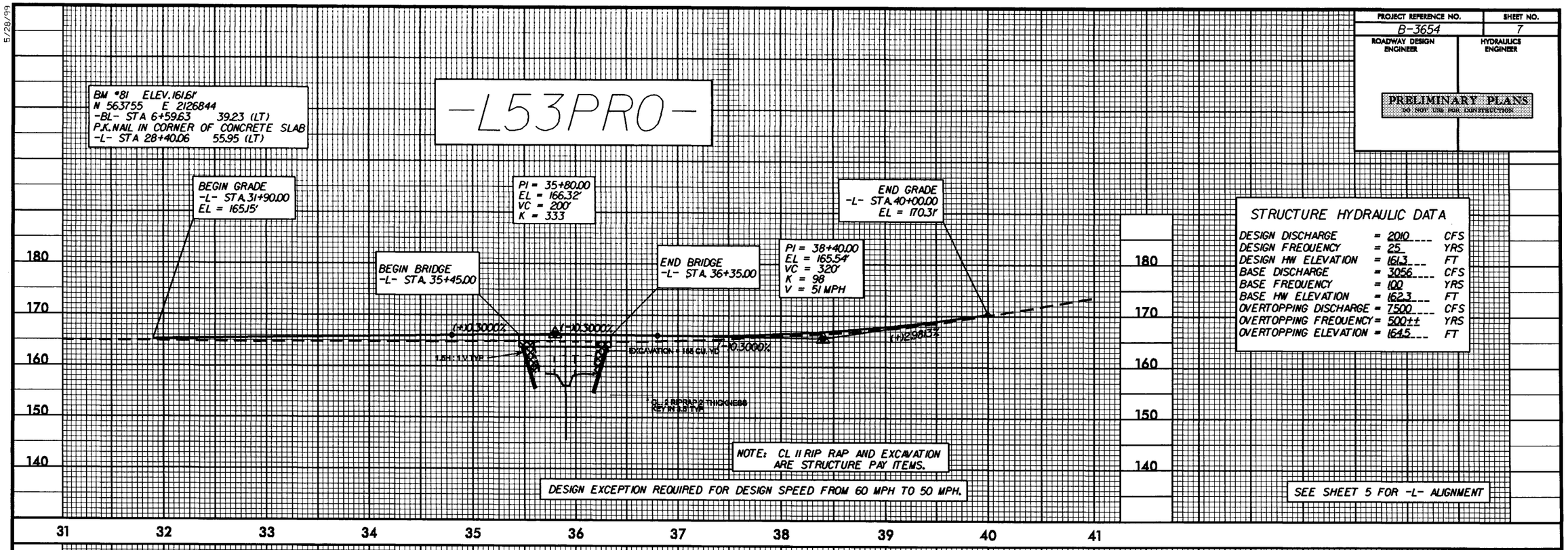
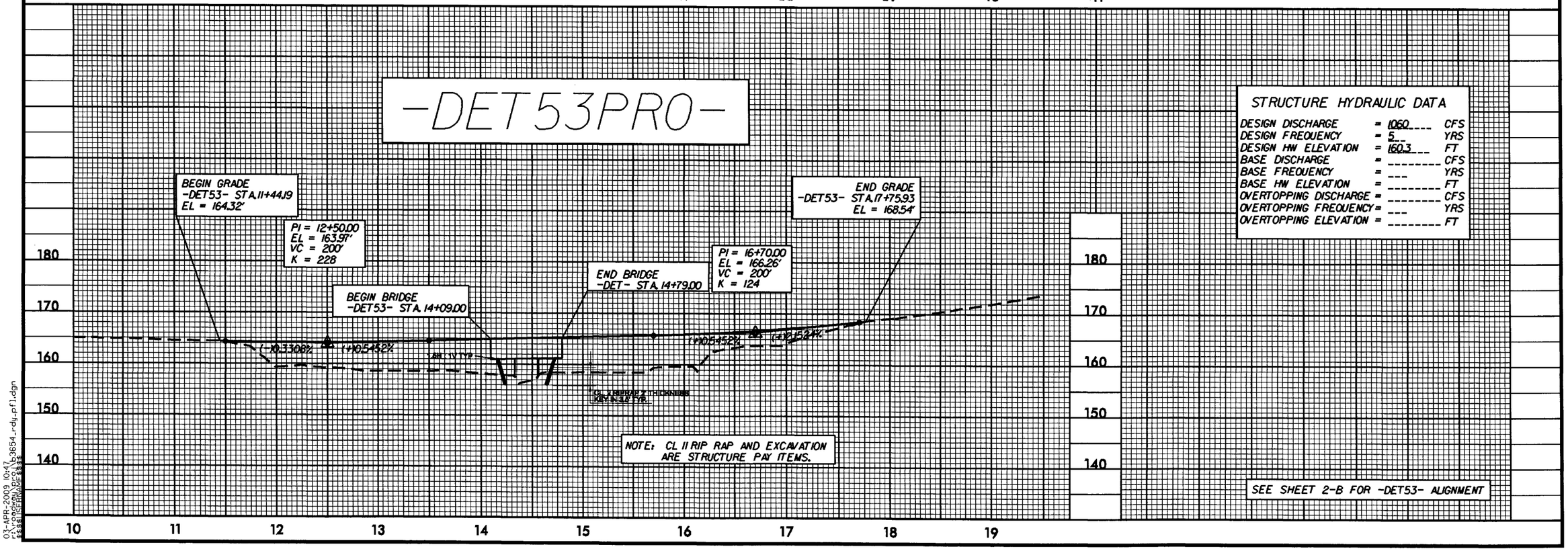
PROJECT REFERENCE NO.	SHEET NO.
B-3654	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





5/28/99

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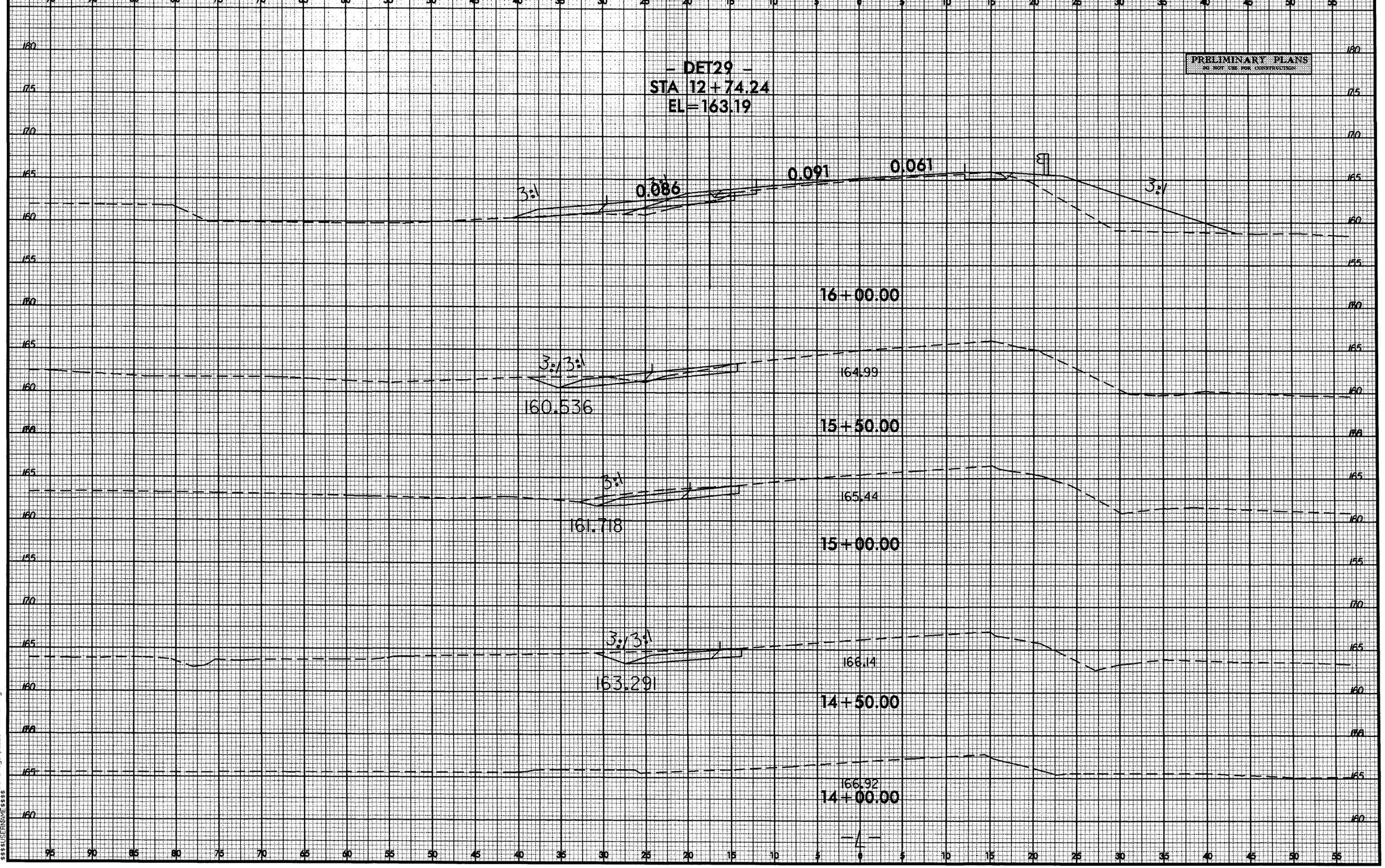
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-3654	X-1

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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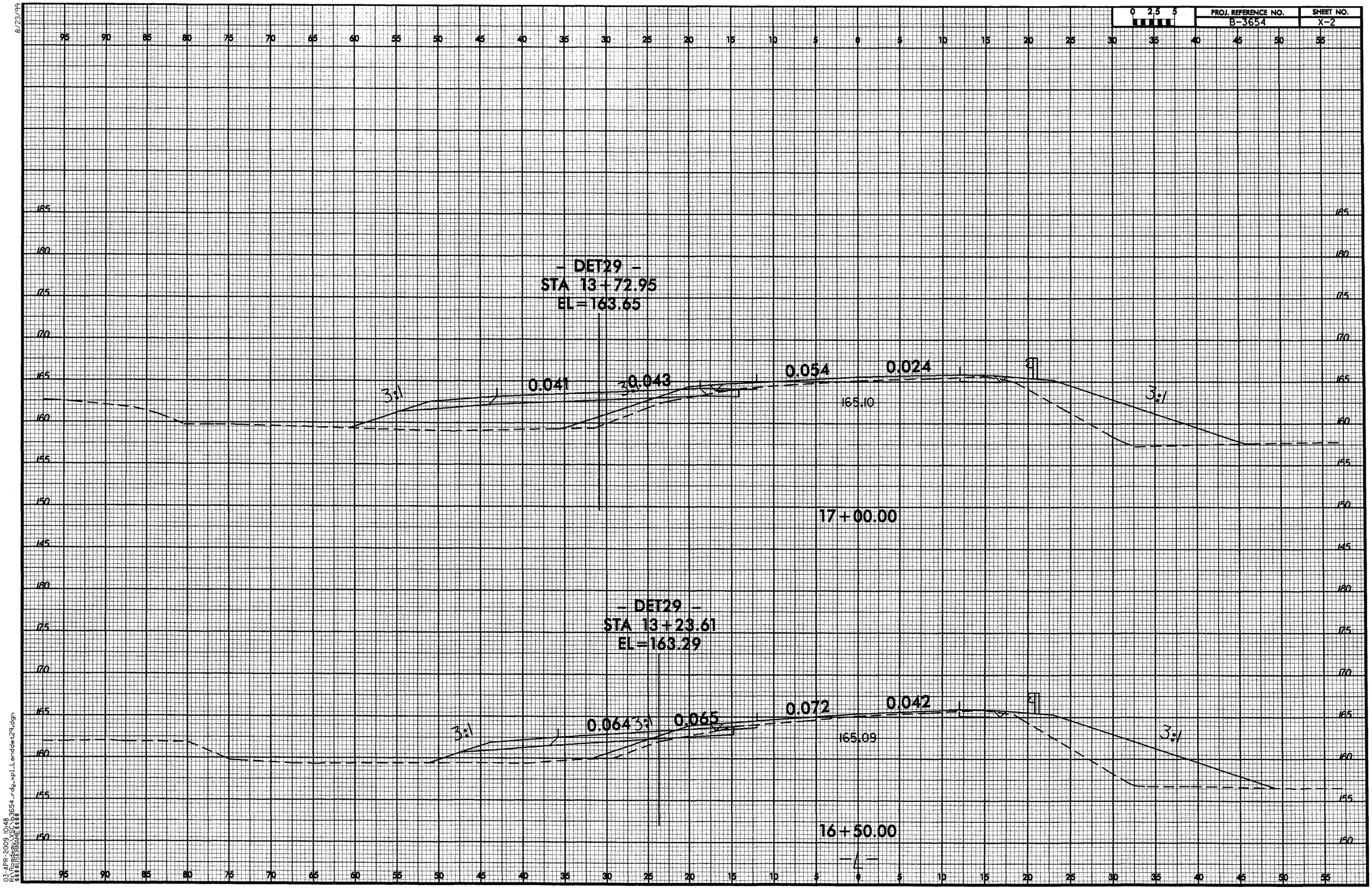

8/23/99

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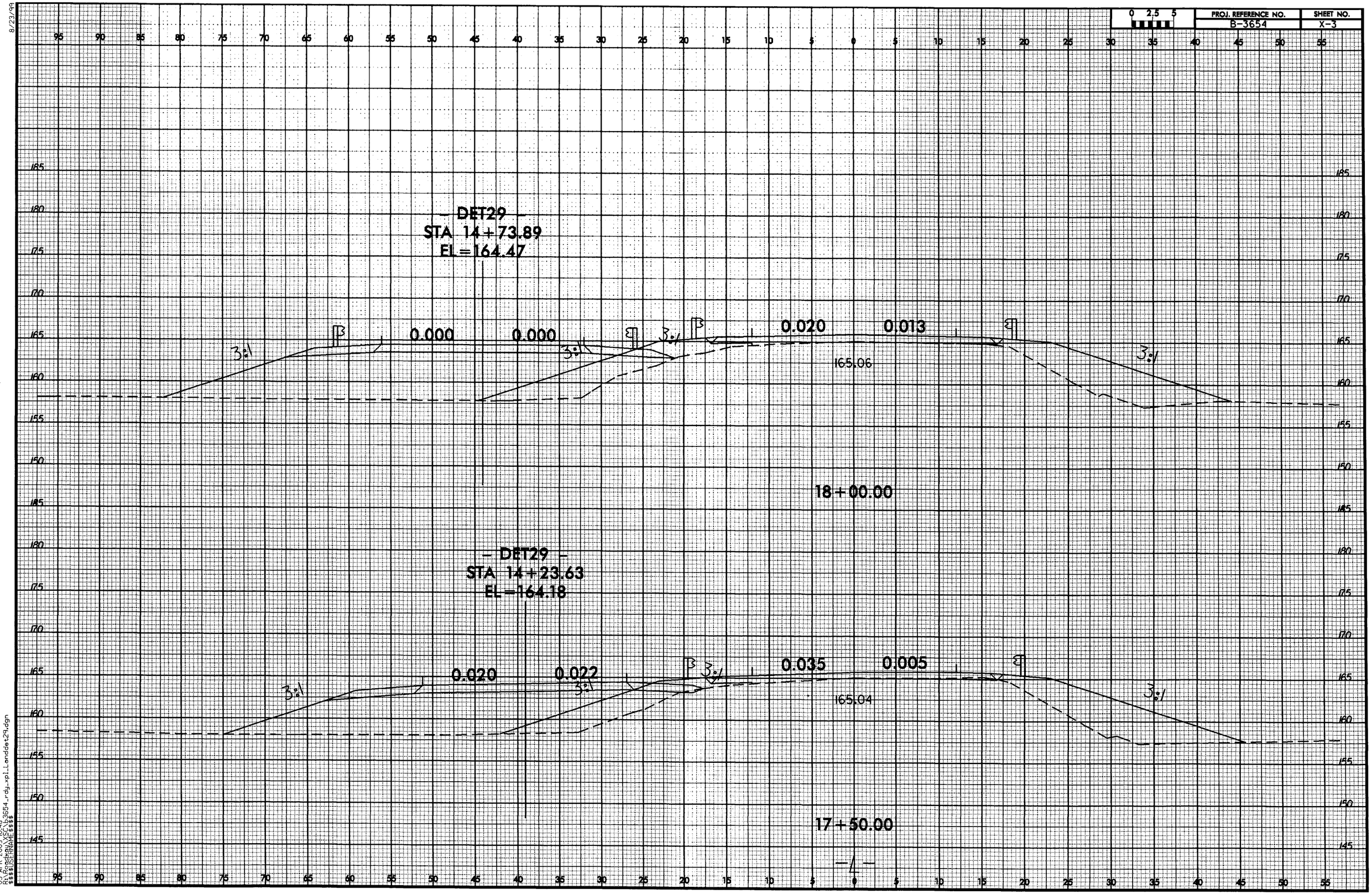
8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-3654	X-3



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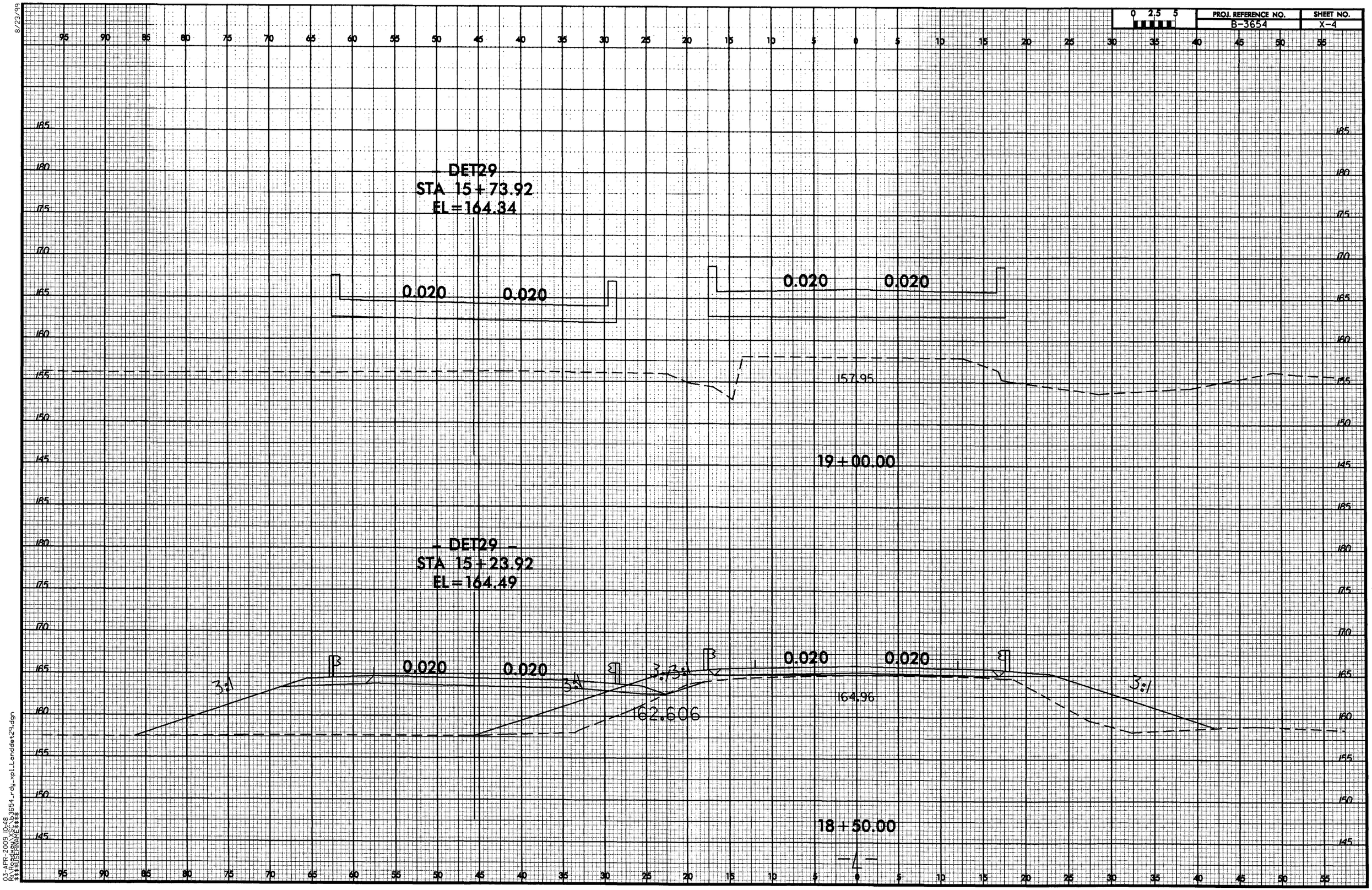

8/23/99

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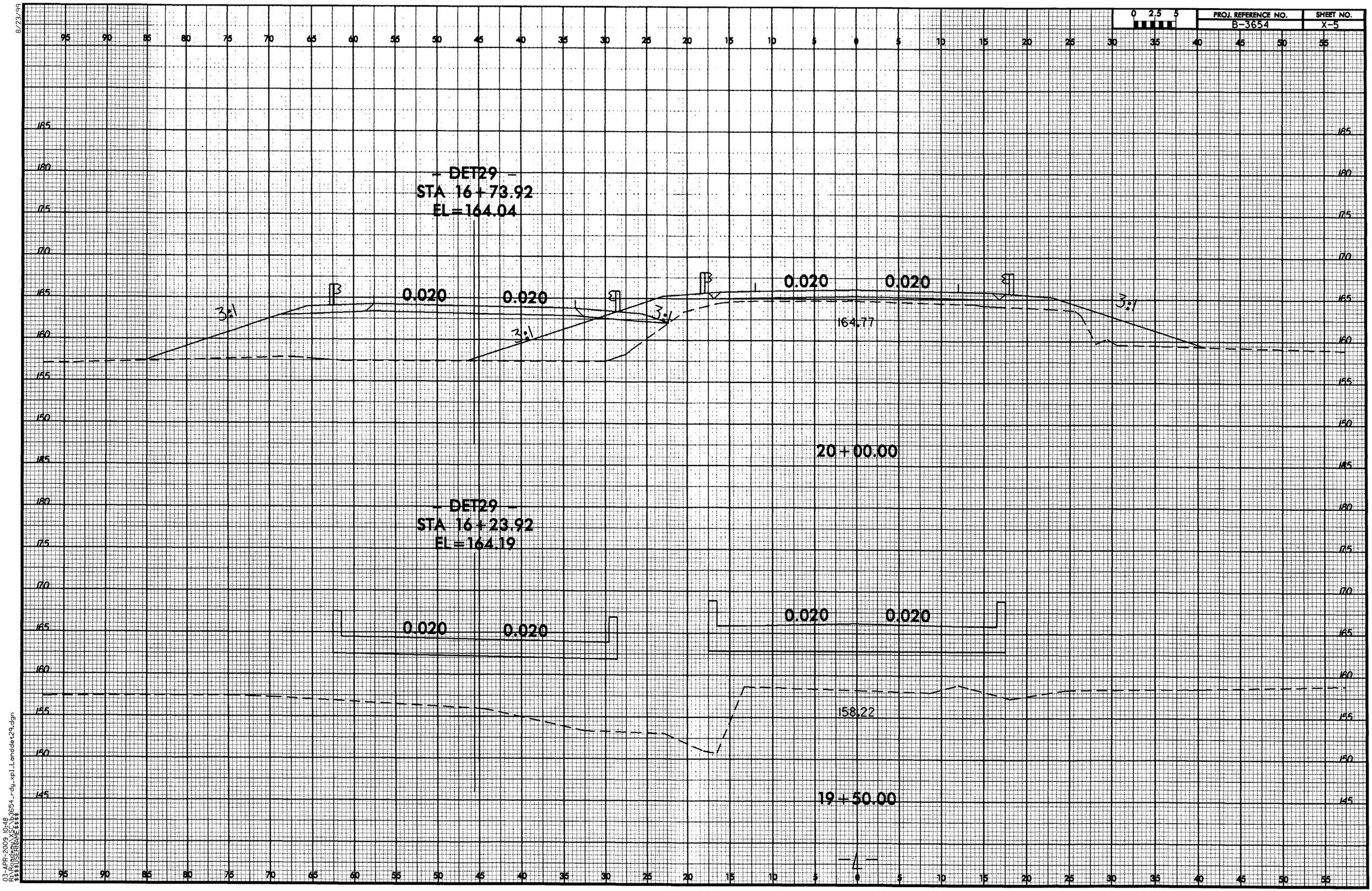

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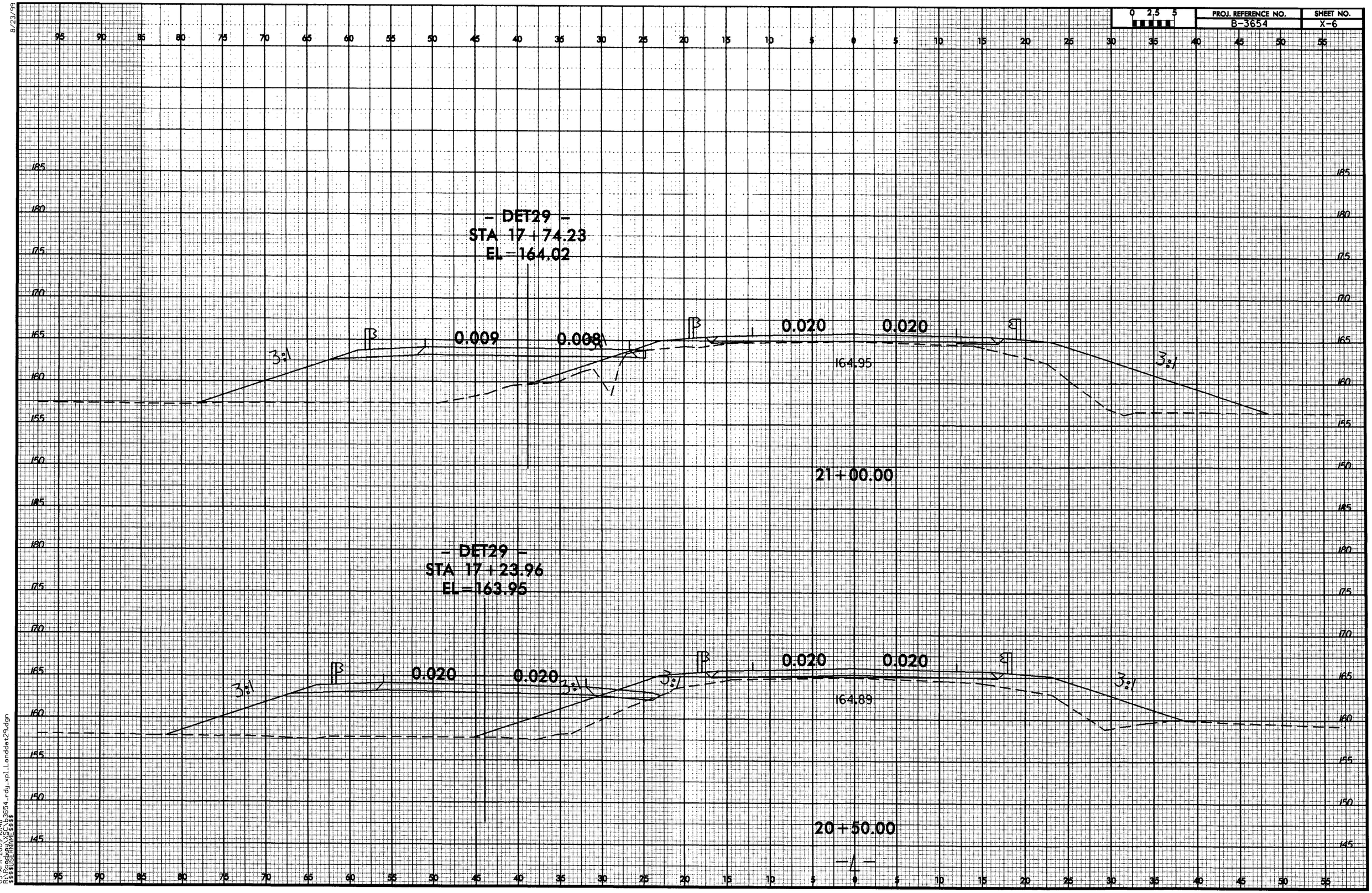

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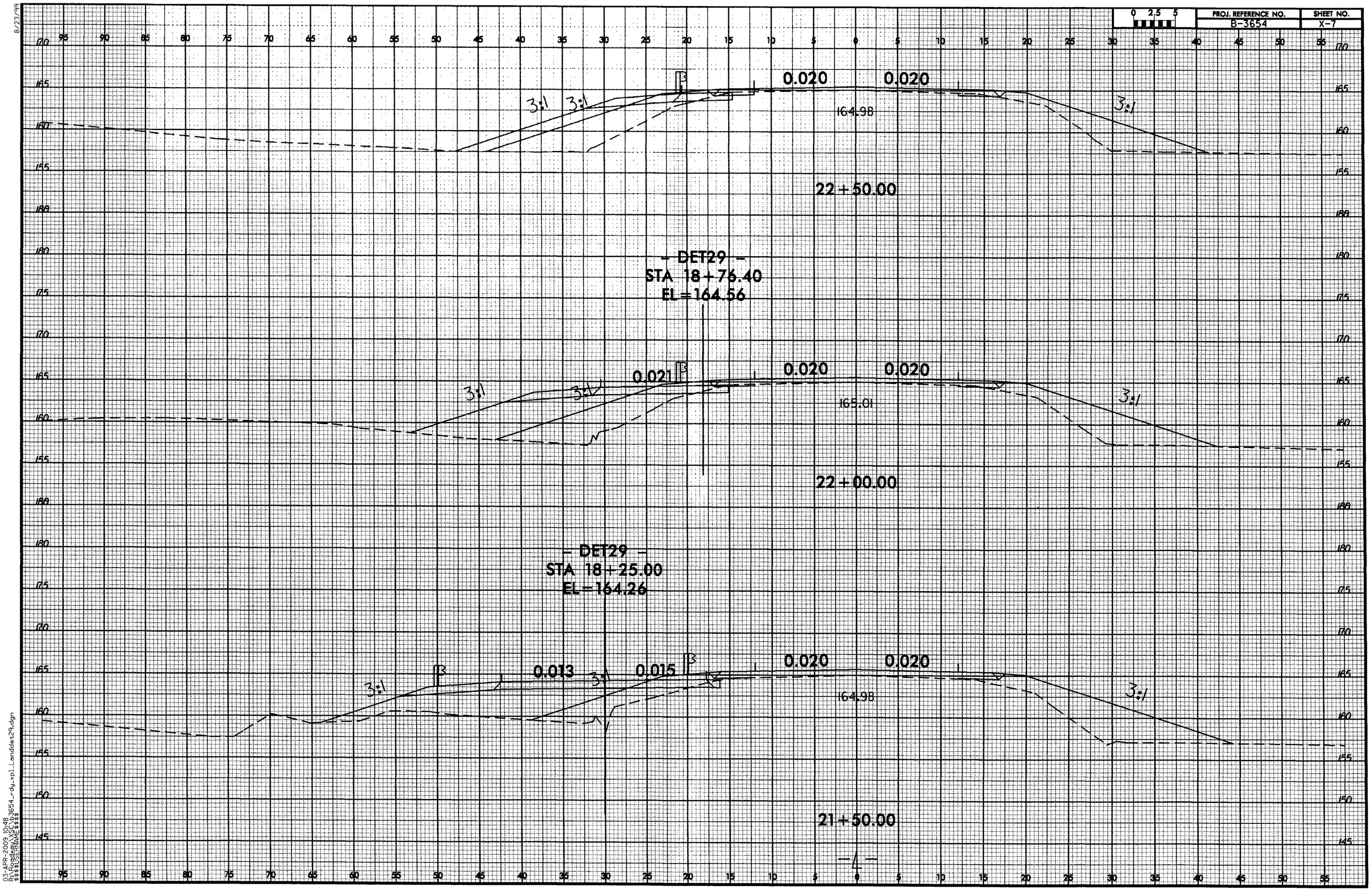

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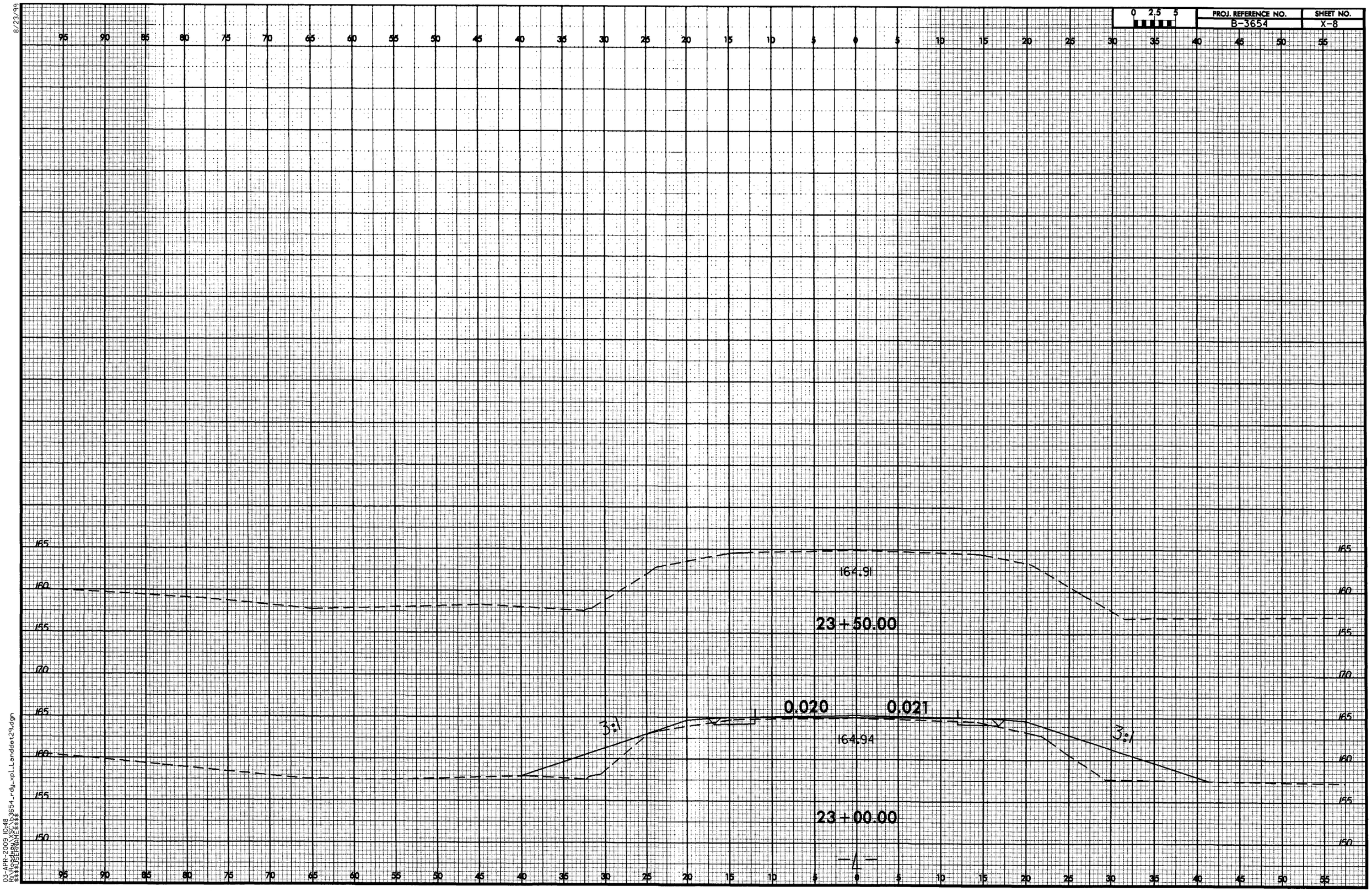

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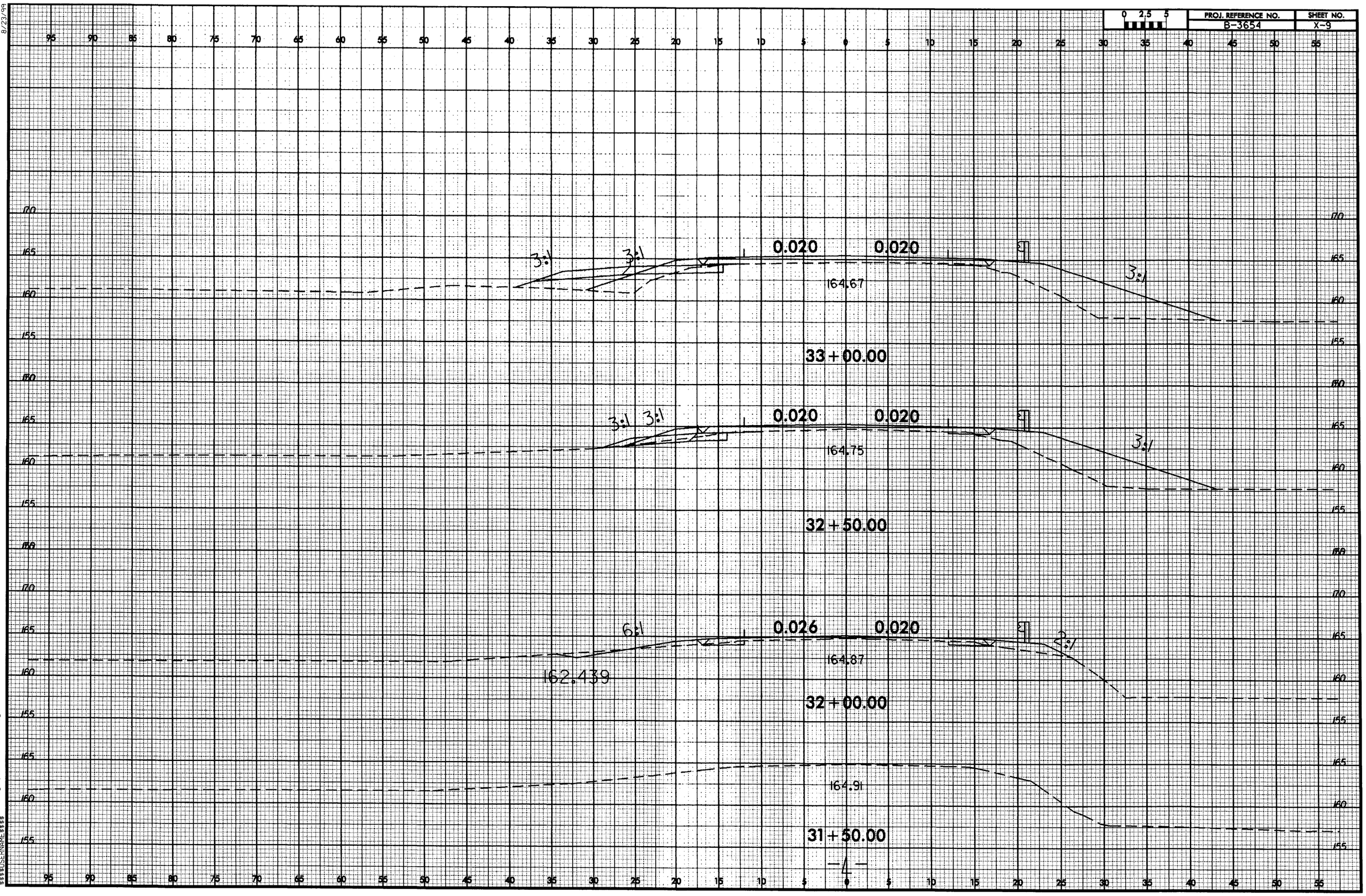

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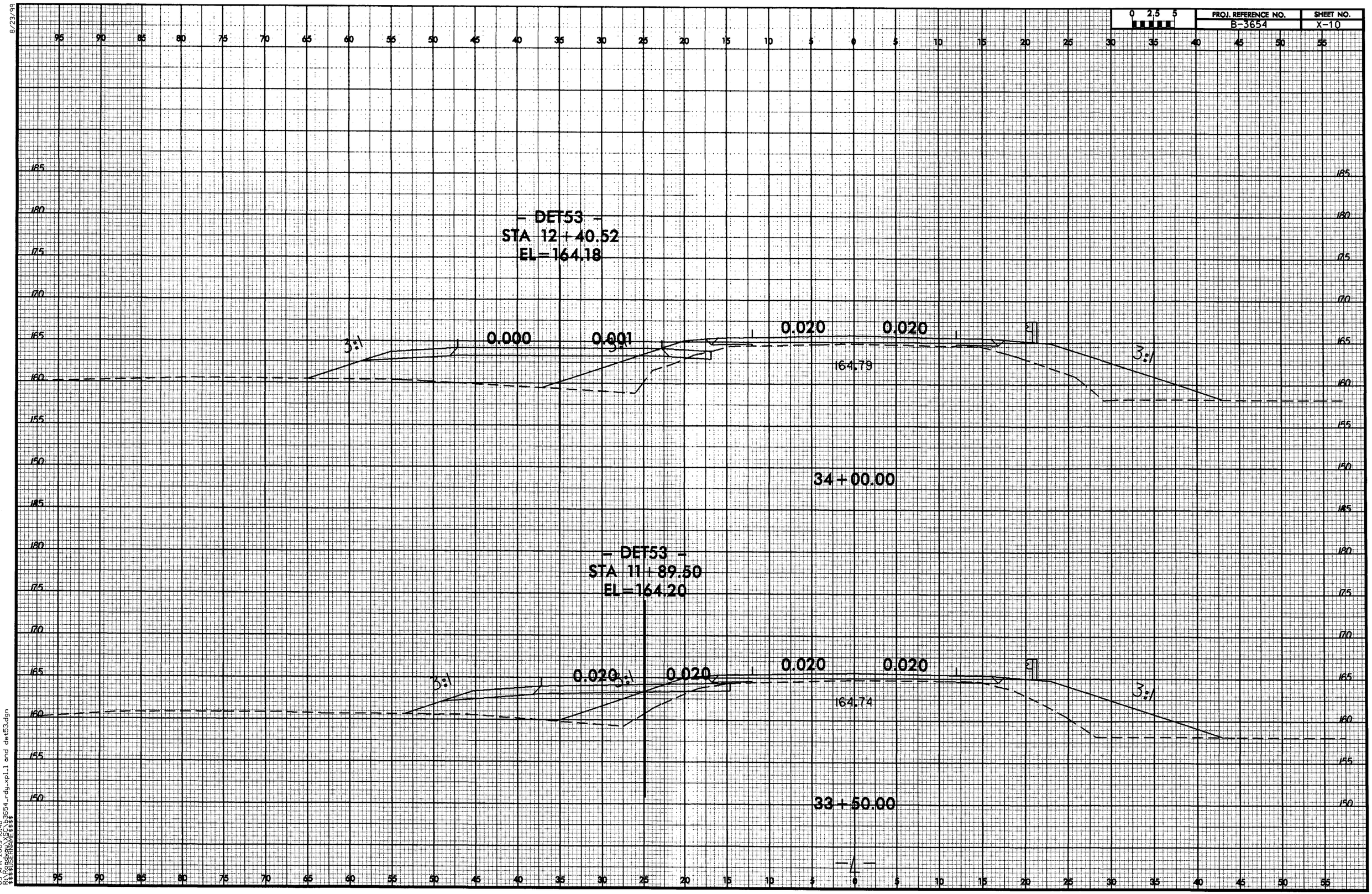

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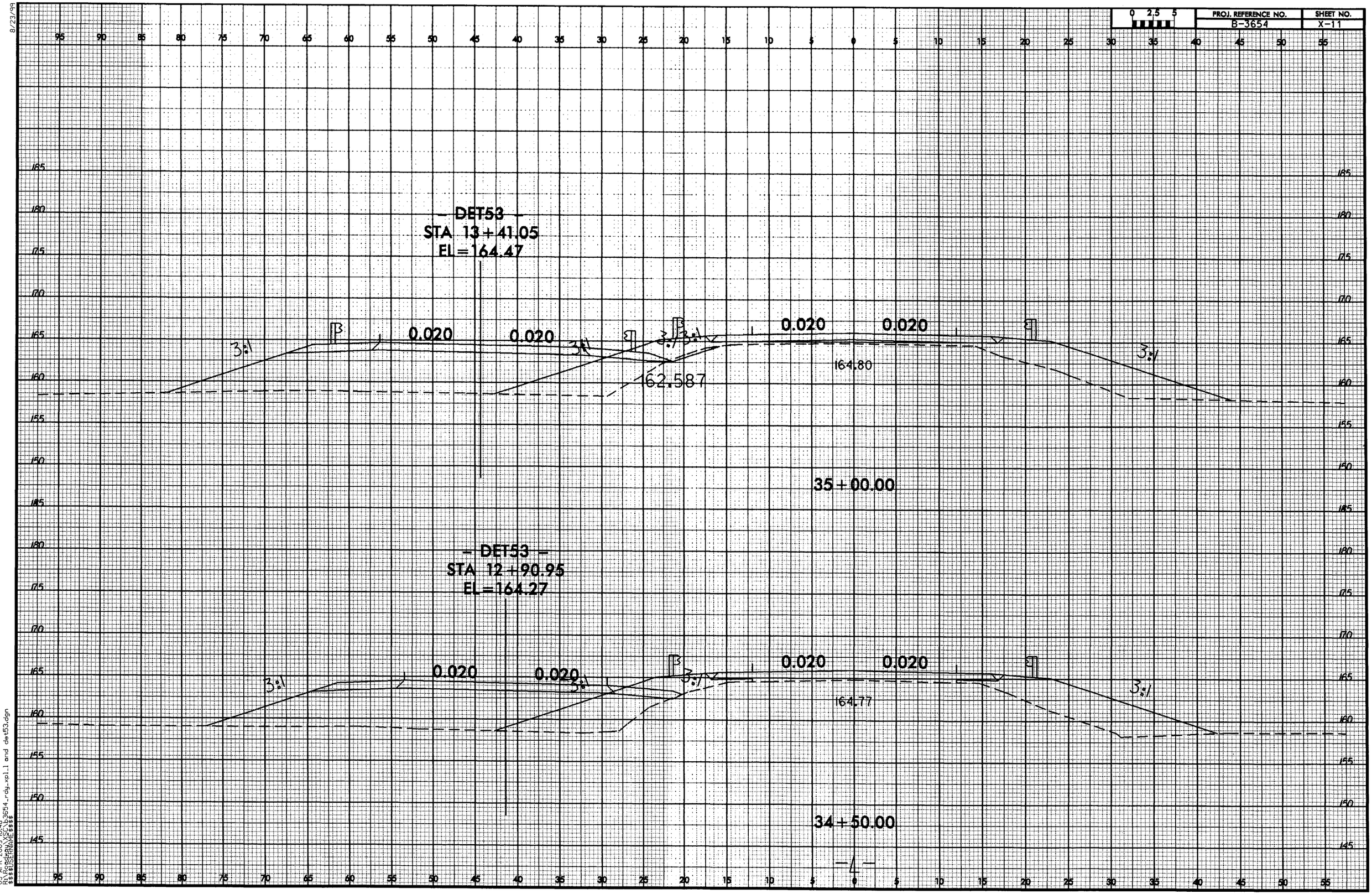

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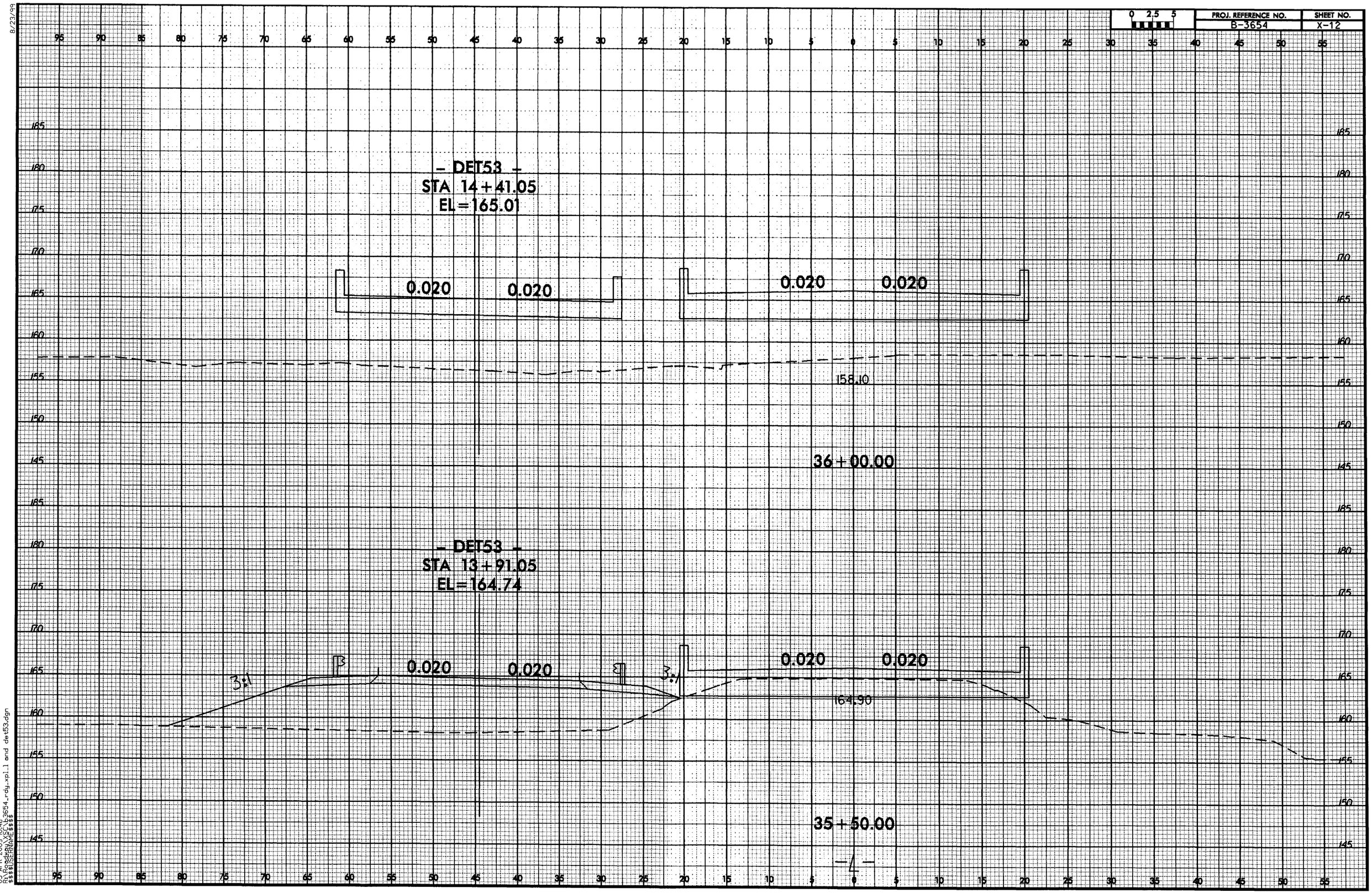

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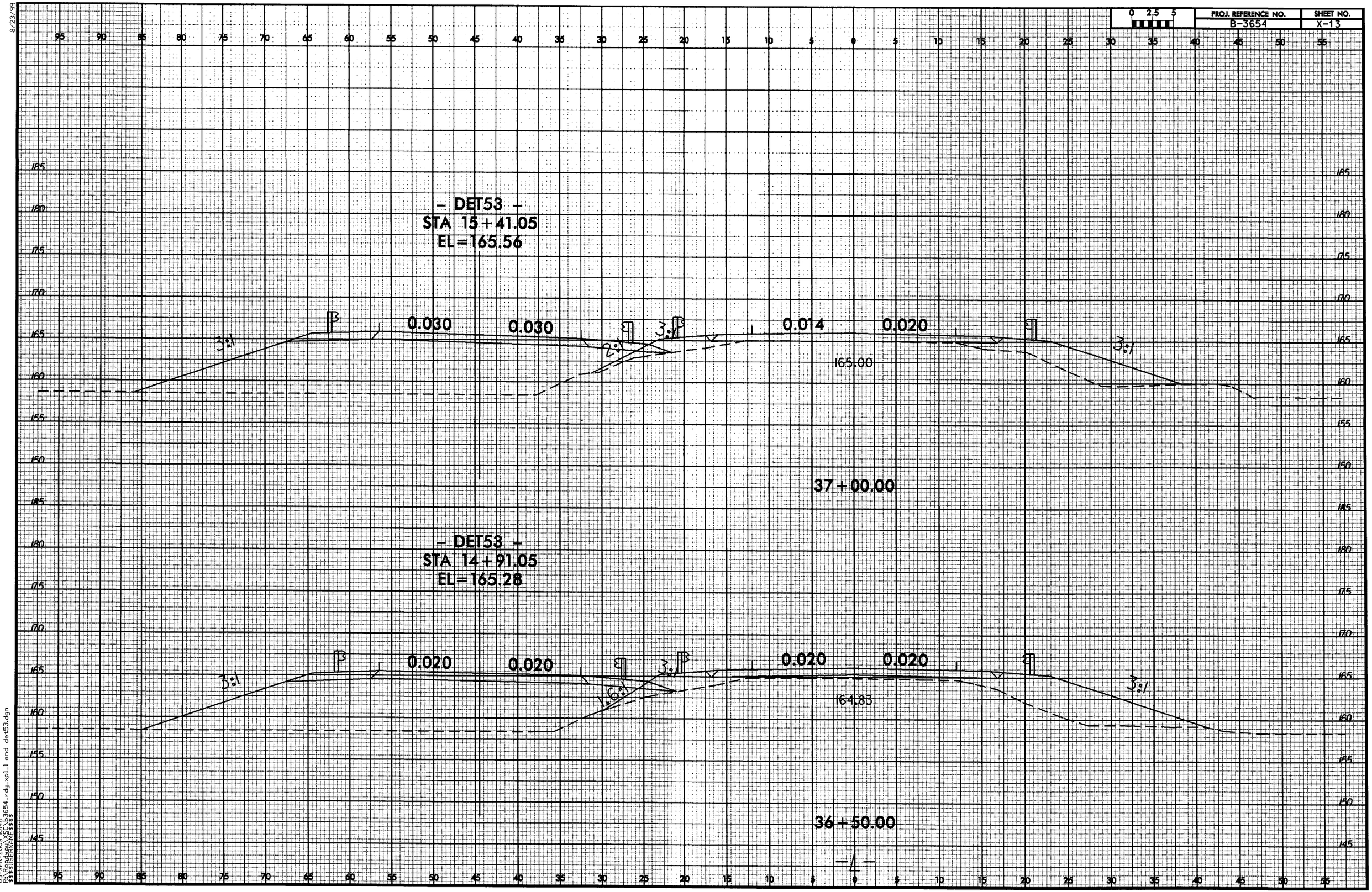

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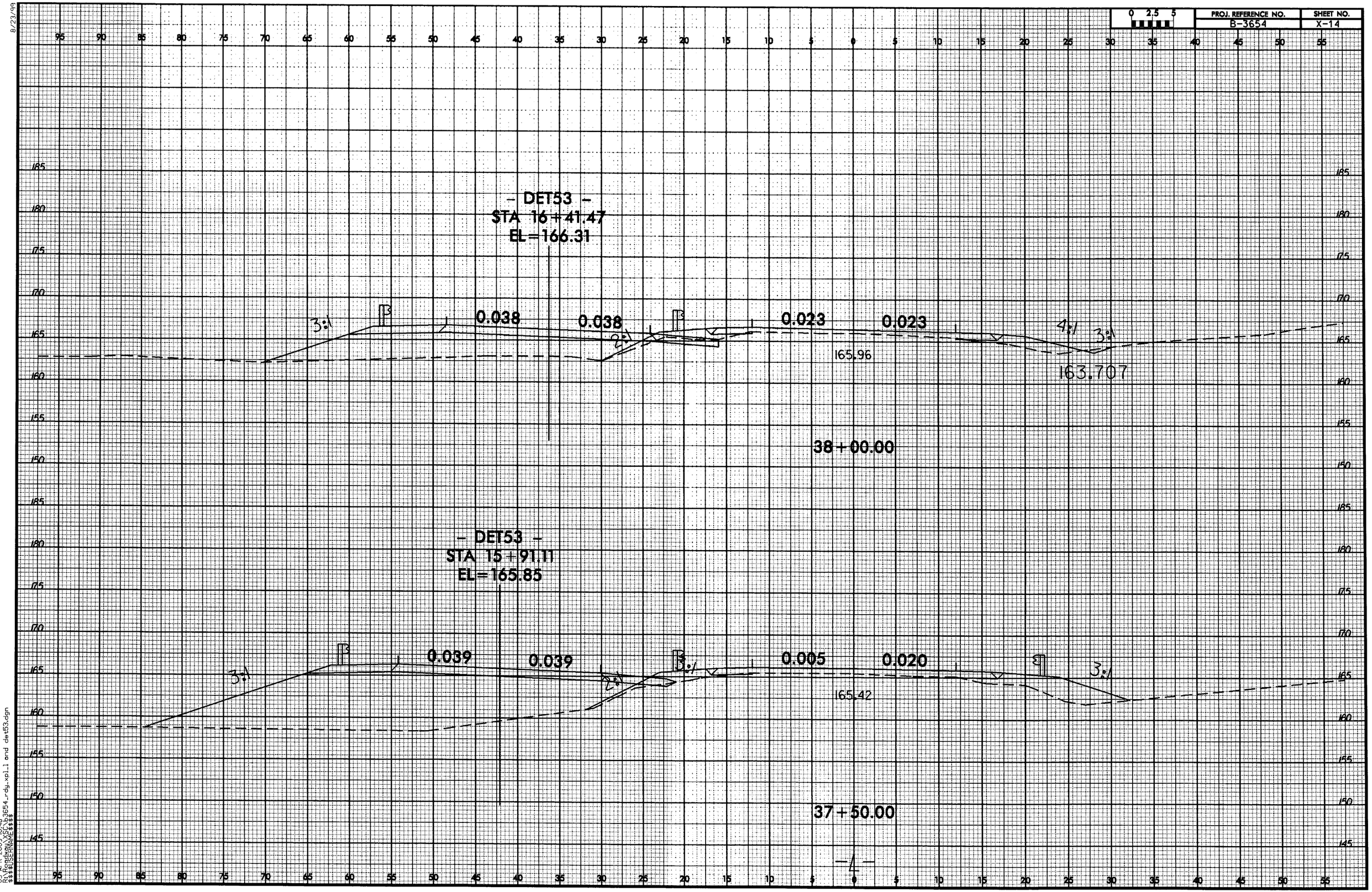

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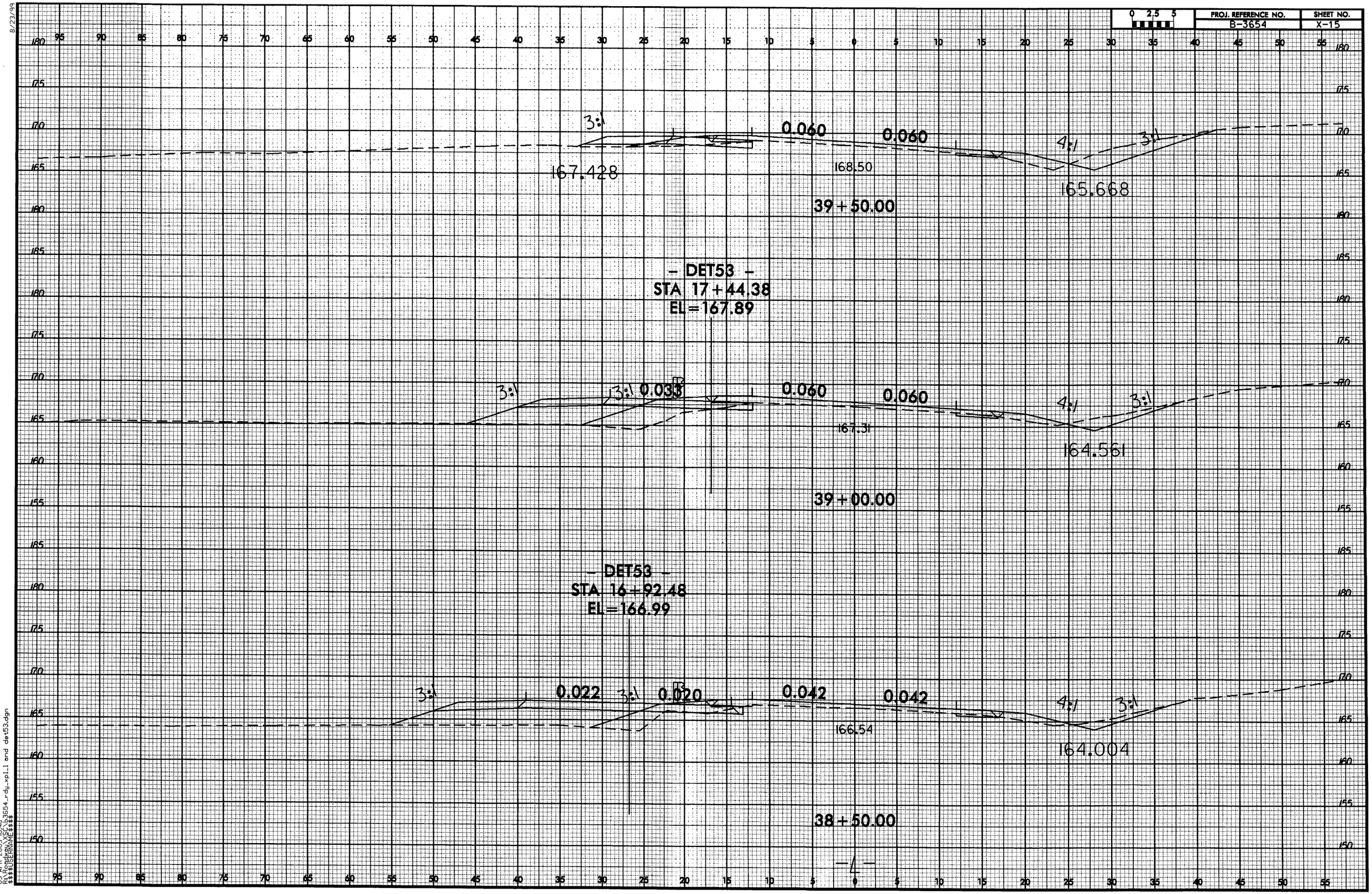

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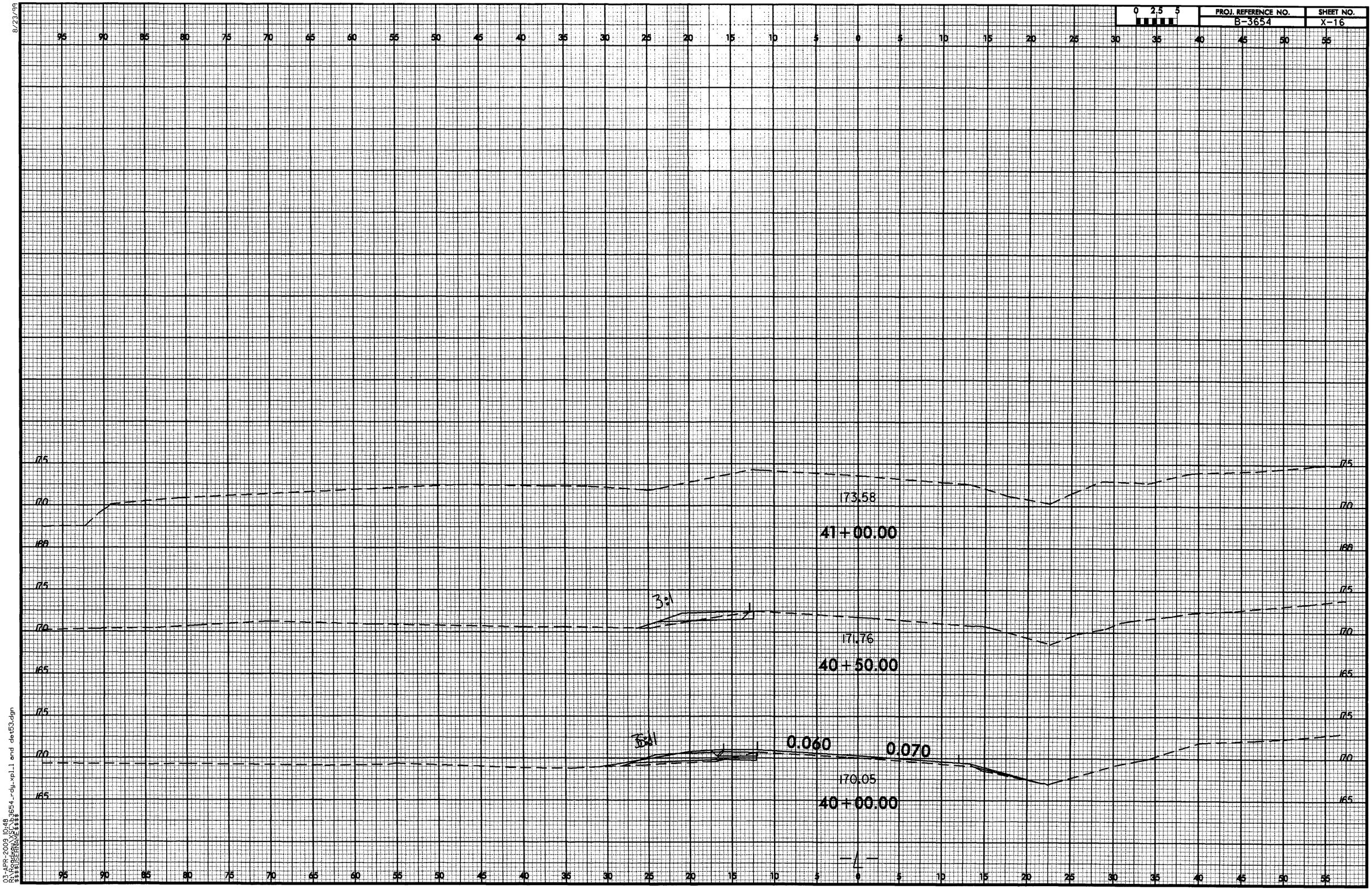

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