



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

February 21, 2008

U. S. Army Corps of Engineers
Regulatory Field Office
6508 Falls of the Neuse Road
Raleigh, NC 27615

ATTN: Mr. Monte Matthews
NCDOT Coordinator

SUBJECT: **Nationwide 23 and 33 Permit Application** for the proposed replacement of Bridge No. 190 over Johns River on SR 1328. Caldwell County, Federal Aid Project No. BRZ-1328(4), Division 11, T.I.P. No. B-3624, Debit \$240 from WBS Element 33172.1.1.

Dear Mr. Matthews:

Please find enclosed the Preconstruction Notification, permit drawings, and half-size design plans for the above-mentioned project. A Categorical Exclusion (CE) was completed for this project in September 2006 and distributed shortly thereafter. Additional copies of the CE are available upon request. The North Carolina Department of Transportation (NCDOT) plans to replace the existing 88-foot long, 11-foot wide bridge, with a new 135-foot long, 30-foot wide structure to the north of the existing structure. Traffic will use the existing structure during construction. Project impacts total <0.01 acre of permanent fill in the Johns River and 0.05 acre of temporary fill in the Johns River.

IMPACTS TO WATERS OF THE UNITED STATES

General Description: The project is located in the Catawba River Basin (HUC 03050101) and will impact the Johns River. The Johns River (Index # 11-38-(28)) is assigned a best usage classification of C, by the N.C. Division of Water Quality (DWQ). The Johns River is not designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River, nor is it listed on the 2006 Final 303(d) list. The project does not drain to a 303(d) stream within one mile of the project limits. No designated Outstanding Resource Waters (ORW), High Quality Waters (HQW), Water Supply I (WS-I), or Water Supply II (WS-II) waters occur within 1.0 mile of the project. The Johns River is not classified as a trout river by the NC Wildlife Resources Commission (WRC). No wetlands occur on the project.

Permanent Impacts: Permanent stream impacts will occur, and total <0.01 acre. Impacts occur from the placement of two bridge piers in the channel of the Johns River.

Temporary Impacts: Temporary impacts of 0.05 acres of fill are expected from the placement of two temporary rock causeways in the Johns River. The temporary rock

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-715-1334
FAX: 919-715-5501

WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD
SUITE 240
RALEIGH, NC 27604

causeways will be required for the construction of the proposed structure and removal of the existing structure. No more than 50% of the river will be blocked by the causeway at one time.

Utility Impacts: No impacts will occur due to utility relocations.

Bridge Demolition: The superstructure of bridge No. 190 consists of a timber floor on I-beams. The substructure is composed of abutments and piers constructed of timber. Neither the superstructure nor the substructure will create any temporary fill in the Johns River. Best Management Practices for Bridge Demolition and Removal will be implemented.

FEDERALLY-PROTECTED SPECIES

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE) and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 16, 2008, the U.S. Fish and Wildlife Service (FWS) lists six federally protected species in Caldwell County (Table 1).

The Carolina northern flying squirrel has been added to the list of federally protected species known to occur within Caldwell County since the completion of the CE document. No Habitat is available in the project area for the Carolina northern flying squirrel.

Table 1: Federally Protected Species of Caldwell County

Scientific Name	Common Name	Federal Status	Biological Conclusion	Habitat Present
<i>Clemmys muhlenbergii</i>	Southern bog turtle	T (S/A)	Not Required	No
<i>Glaucomys sabrinus coloratus</i>	Carolina northern flying squirrel	E	No Effect	No
<i>Corynorhinus townsendii virginianus</i>	Virginia big eared bat	E	No Effect	No
<i>Microhexura montivaga</i>	Spruce-fir moss spider	E	No Effect	No
<i>Hexastylis naniflora</i>	Dwarf flowered heartleaf	T	No Effect	No
<i>Liatris helleri</i>	Heller's blazing star	T	No Effect	No

AVOIDANCE AND MINIMIZATION

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 and NEPA compliance stages; minimization measures were incorporated as part of the project design and include:

- The new bridge will be longer than the current bridge.
- The project will adhere to Design Standards in Sensitive Watersheds.
- Best Management Practices for Bridge Demolition and Removal will be followed.
- Best Management Practices for the Protection of Surface Waters will be followed.
- The existing concrete slab, which protrudes into the James River will be removed.

MITIGATION

No mitigation will be required because permanent stream impacts are minimal.

PROJECT SCHEDULE

The project is scheduled to let September 16, 2008 and has a review date of July 29, 2008.

REGULATORY APPROVALS

Section 404 Permit: This project has been processed by the Federal Highway Administration as a "Categorical Exclusion." NCDOT hereby requests that the construction be authorized under Clean Water Act Section 404 Nationwide Permits 23 and 33.

Section 401 Permit: We anticipate 401 General Certification numbers 3701 and 3688 will apply to this project. The NCDOT is asking that approval of the stormwater design be included in the Section 401 Certification for TIP B-3624. The NCDOT will adhere to all general conditions of the Water Quality Certifications. In accordance with 15A NCAC 2H, Section .0500(a), we are providing five copies of this application to the DWQ for their records.

This project is located in a trout county, therefore comments from the WRC will be required prior to authorization by the Corps of Engineers. By copy of this letter and attachment, NCDOT hereby requests WRC Review. NCDOT requests that WRC forward their comments to the Corps of Engineers and the NCDOT within 30 calendar days of receipt of this application.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Brett Feulner at bmfeulner@dot.state.nc.us or (919) 715-1488.

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

Sincerely,



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

cc: w/attachment

Mr. Brian Wrenn, NCDWQ (5 Copies)

Ms. Marla Chambers, NCWRC

Ms. Marella Buncick, USFWS

w/o attachment (see website for attachments)

Dr. David Chang, P.E., Hydraulics

Mr. Victor Barbour, P.E., Project Services

Mr. Mark Staley, Roadside Environmental

Mr. Greg Perfetti, P.E., Structure Design

Mr. Jay Bennett, P.E., Roadway Design

Mr. Majed Alghandour, P. E., Programming and TIP

Mr. Michael A. Pettyjohn, P.E. Div 11 Engineer

Mr. Art McMillan, P.E., Highway Design

Mr. Scott McLendon, USACE, Wilmington

Ms. Natalie Lockhart, PDEA

Mr. Heath Slaughter, Div 11 DEO

Office Use Only:

Form Version March 05

USACE Action ID No. _____ **DWQ No.** _____

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

I. Processing

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

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

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

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

4. If payment into the North Carolina Ecosystem Enhancement Program (NCEEP) is proposed for mitigation of impacts, attach the acceptance letter from NCEEP, complete section VIII, and check here:

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

II. Applicant Information

1. Owner/Applicant Information

Name: Gregory J. Thorpe, Ph.D., Environmental Management Director
Mailing Address: 1598 Mail Service Center
Raleigh, NC 27699

Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794
E-mail Address: gthorpe@dot.state.nc.us

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

Name: _____
Company Affiliation: _____
Mailing Address: _____

Telephone Number: _____ Fax Number: _____
E-mail Address: _____

III. Project Information

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

1. Name of project: Replacement of Bridge No. 190 over The Johns River
2. T.I.P. Project Number or State Project Number (NCDOT Only): B-3624
3. Property Identification Number (Tax PIN): N/A
4. Location
County: Caldwell Nearest Town: Collettsville
Subdivision name (include phase/lot number): N/A
Directions to site (include road numbers/names, landmarks, etc.): The site is located at the crossing of SR 1328 over the Johns River
5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
Decimal Degrees (6 digits minimum): 35.8846°N, 81.7040°W
6. Property size (acres): N/A
7. Name of nearest receiving body of water: Johns River
8. River Basin: Catawba River
(Note – this must be one of North Carolina's seventeen designated major river basins. The River Basin map is available at <http://h2o.enr.state.nc.us/admin/maps/>.)
9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application: Forestland

10. Describe the overall project in detail, including the type of equipment to be used: _____
Standard DOT construction equipment.

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

IV. Prior Project History

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

V. Future Project Plans

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

No

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

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to wetlands, open water, and stream channels associated with the project. Each impact must be listed separately in the tables below (e.g., culvert installation should be listed separately from riprap dissipater pads). Be sure to indicate if an impact is temporary. All proposed impacts, permanent and temporary, must be listed, and must be labeled and clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) should be shown on a delineation map, whether or not impacts are proposed to these systems. Wetland and stream evaluation and delineation forms should be included as appropriate. Photographs may be included at the applicant's discretion. If this proposed impact is strictly for wetland or stream mitigation, list and describe the impact in Section VIII below. If additional space is needed for listing or description, please attach a separate sheet.

1. Provide a written description of the proposed impacts: The project impacts are as follows, <0.01 acre of permanent impacts in the Johns River and 0.05 acre of temporary impacts in the Johns River

2. Individually list wetland impacts. Types of impacts include, but are not limited to mechanized clearing, grading, fill, excavation, flooding, ditching/drainage, etc. For dams, separately list impacts due to both structure and flooding.

Wetland Impact Site Number (indicate on map)	Type of Impact	Type of Wetland (e.g., forested, marsh, herbaceous, bog, etc.)	Located within 100-year Floodplain (yes/no)	Distance to Nearest Stream (linear feet)	Area of Impact (acres)
Total Wetland Impact (acres)					

3. List the total acreage (estimated) of all existing wetlands on the property: 0

4. Individually list all intermittent and perennial stream impacts. Be sure to identify temporary impacts. Stream impacts include, but are not limited to placement of fill or culverts, dam construction, flooding, relocation, stabilization activities (e.g., cement walls, rip-rap, crib walls, gabions, etc.), excavation, ditching/straightening, etc. If stream relocation is proposed, plans and profiles showing the linear footprint for both the original and relocated streams must be included. To calculate acreage, multiply length X width, then divide by 43,560.

Stream Impact Number (indicate on map)	Stream Name	Type of Impact	Perennial or Intermittent?	Average Stream Width Before Impact	Impact Length (linear feet)	Area of Impact (acres)
Site 1	Johns River	Permanent	Perennial	80	-	<0.01
Site 1	Johns River	Temporary	Perennial	80	-	0.05
Total Stream Impact (by length and acreage)						0.05

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

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

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

Stream Impact (acres):	0.05
Wetland Impact (acres):	0
Open Water Impact (acres):	0
Total Impact to Waters of the U.S. (acres)	0.05
Total Stream Impact (linear feet):	0

7. Isolated Waters

Do any isolated waters exist on the property? Yes No

Describe all impacts to isolated waters, and include the type of water (wetland or stream) and the size of the proposed impact (acres or linear feet). Please note that this section only applies to waters that have specifically been determined to be isolated by the USACE.

8. Pond Creation

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

Pond to be created in (check all that apply): uplands stream wetlands

Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.): _____

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

Current land use in the vicinity of the pond: _____

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

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. Best Management Practices for the Protection of Surface Waters and BMP's for Bridge Demolition and Removal will be used, new bridge will be longer than the existing bridge

VIII. Mitigation

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

USACE – In accordance with the Final Notice of Issuance and Modification of Nationwide Permits, published in the Federal Register on January 15, 2002, mitigation will be required when necessary to ensure that adverse effects to the aquatic environment are minimal. Factors including size and type of proposed impact and function and relative value of the impacted aquatic resource will be considered in determining acceptability of appropriate and practicable mitigation as proposed. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland and/or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferable in the same watershed.

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

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

No mitigation proposed

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

Amount of stream mitigation requested (linear feet): _____

Amount of buffer mitigation requested (square feet): _____

Amount of Riparian wetland mitigation requested (acres): _____

Amount of Non-riparian wetland mitigation requested (acres): _____

Amount of Coastal wetland mitigation requested (acres): _____

IX. Environmental Documentation (required by DWQ)

1. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? Yes No
2. If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)?
Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation.
Yes No
3. If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter. Yes No

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

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

1. Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 02B .0243 (Catawba) 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify _____)? Yes No
2. If "yes", identify the square feet and acreage of impact to each zone of the riparian buffers. If buffer mitigation is required calculate the required amount of mitigation by applying the buffer multipliers.

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

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

3. If buffer mitigation is required, please discuss what type of mitigation is proposed (i.e., Donation of Property, Riparian Buffer Restoration / Enhancement, or Payment into the Riparian Buffer Restoration Fund). Please attach all appropriate information as identified within 15A NCAC 2B .0242 or .0244, or .0260. _____

XI. Stormwater (required by DWQ)

Describe impervious acreage (existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property. If percent impervious surface exceeds 20%, please provide calculations demonstrating total proposed impervious level. Approximately the same as current conditions

XII. Sewage Disposal (required by DWQ)

Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility.

N/A

XIII. Violations (required by DWQ)

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

Yes No

Is this an after-the-fact permit application? Yes No

XIV. Cumulative Impacts (required by DWQ)

Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? Yes No

If yes, please submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent North Carolina Division of Water Quality policy posted on our website at <http://h2o.enr.state.nc.us/ncwetlands>. If no, please provide a short narrative description: _____

Replacement of an existing structure

XV. Other Circumstances (Optional):

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



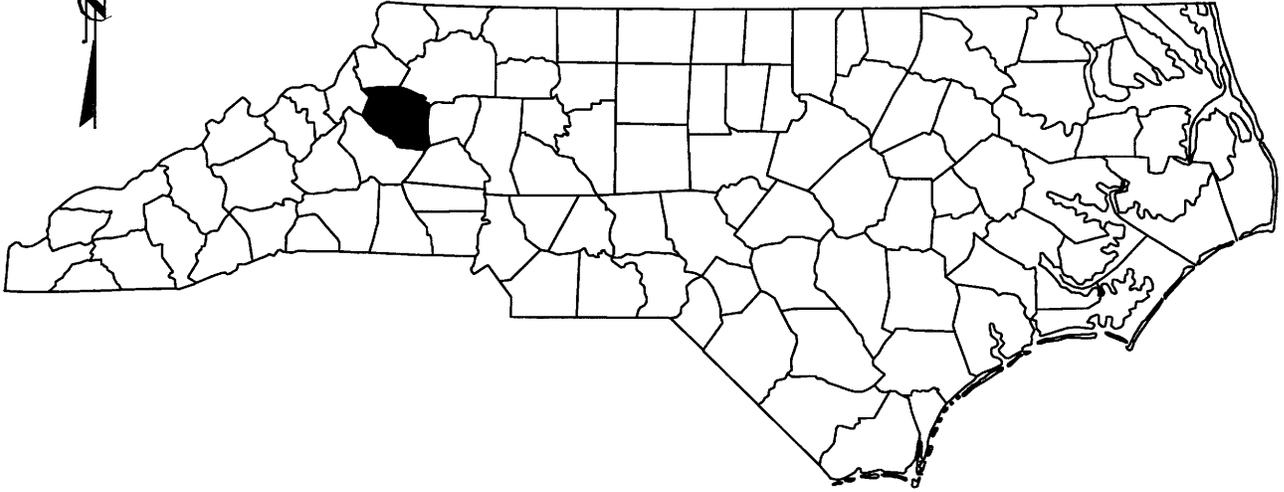
Applicant/Agent's Signature

801212

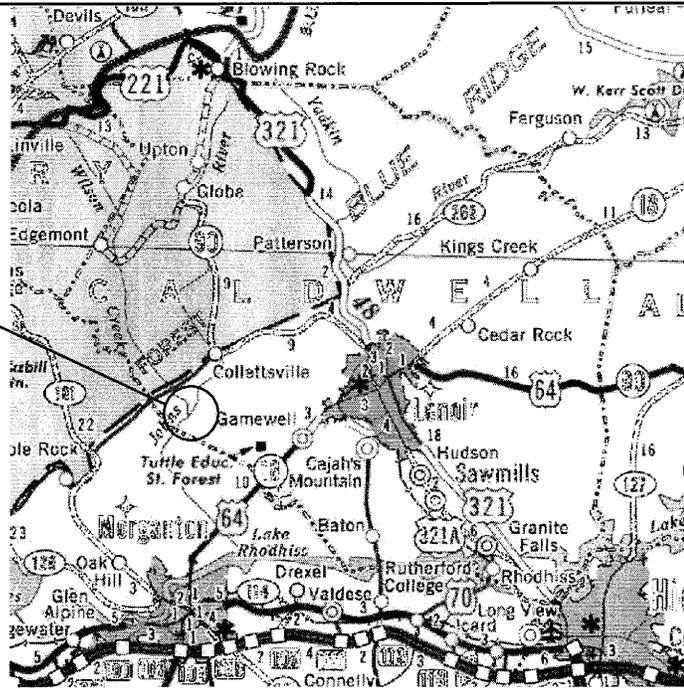
Date

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

NORTH CAROLINA



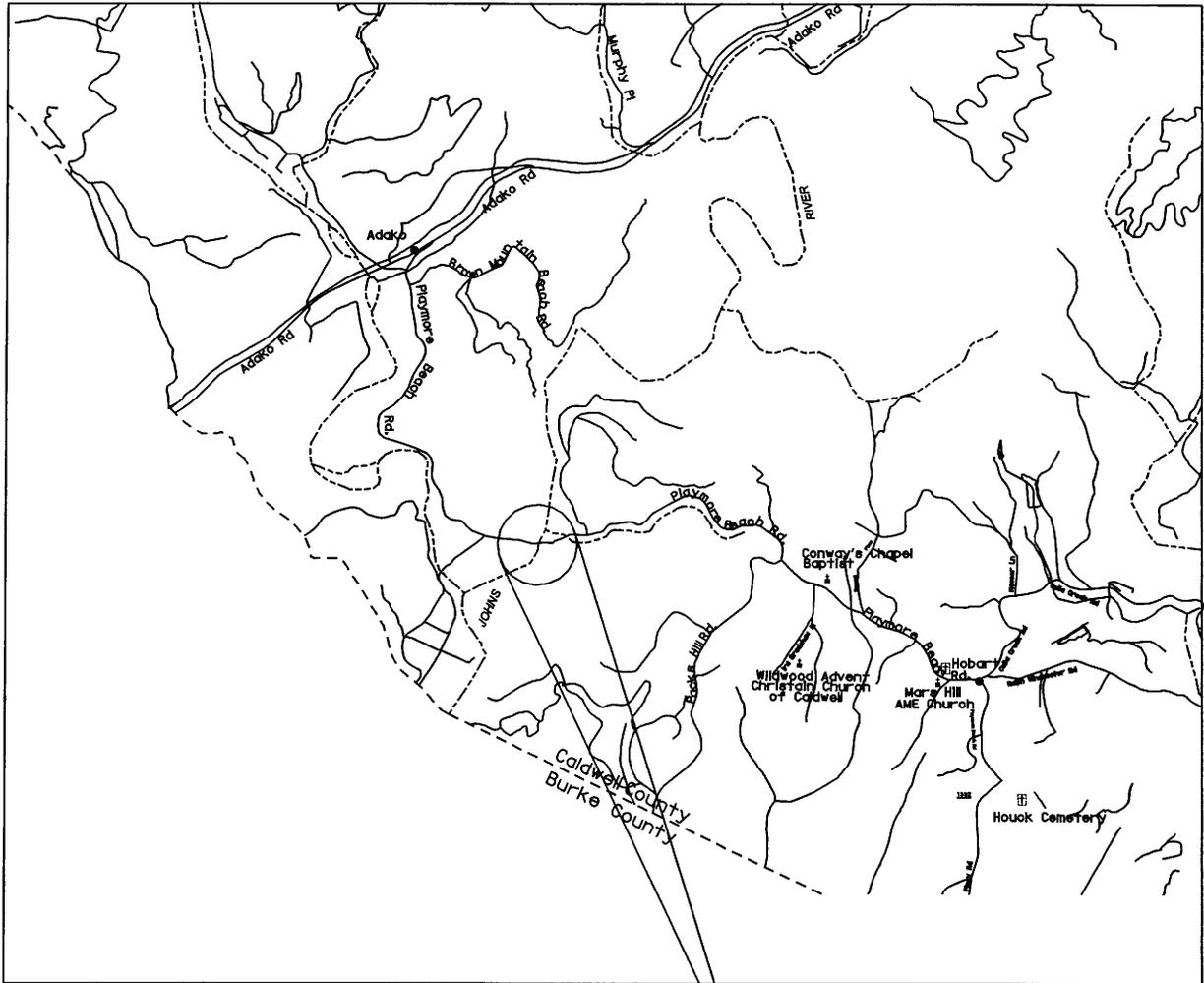
PROJECT
SITE



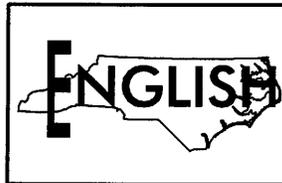
VICINITY MAP

NCDOT
DIVISION OF HIGHWAYS
CALDWELL COUNTY
PROJECT: 33172.1.1 (B-3624)
BRIDGE NO.190 OVER
JOHNS RIVER
ON SR 1328

SITE MAP

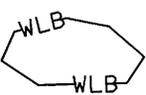
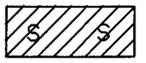
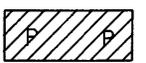
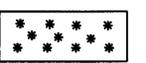
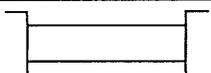
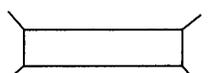
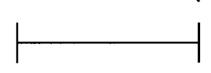
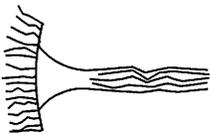
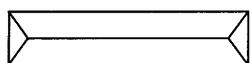
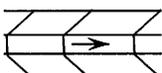


SITE



NCDOT
DIVISION OF HIGHWAYS
CALDWELL COUNTY
PROJECT: 33172.1.1 (B-3624)
BRIDGE NO.190 OVER
JOHNS RIVER
ON SR 1328

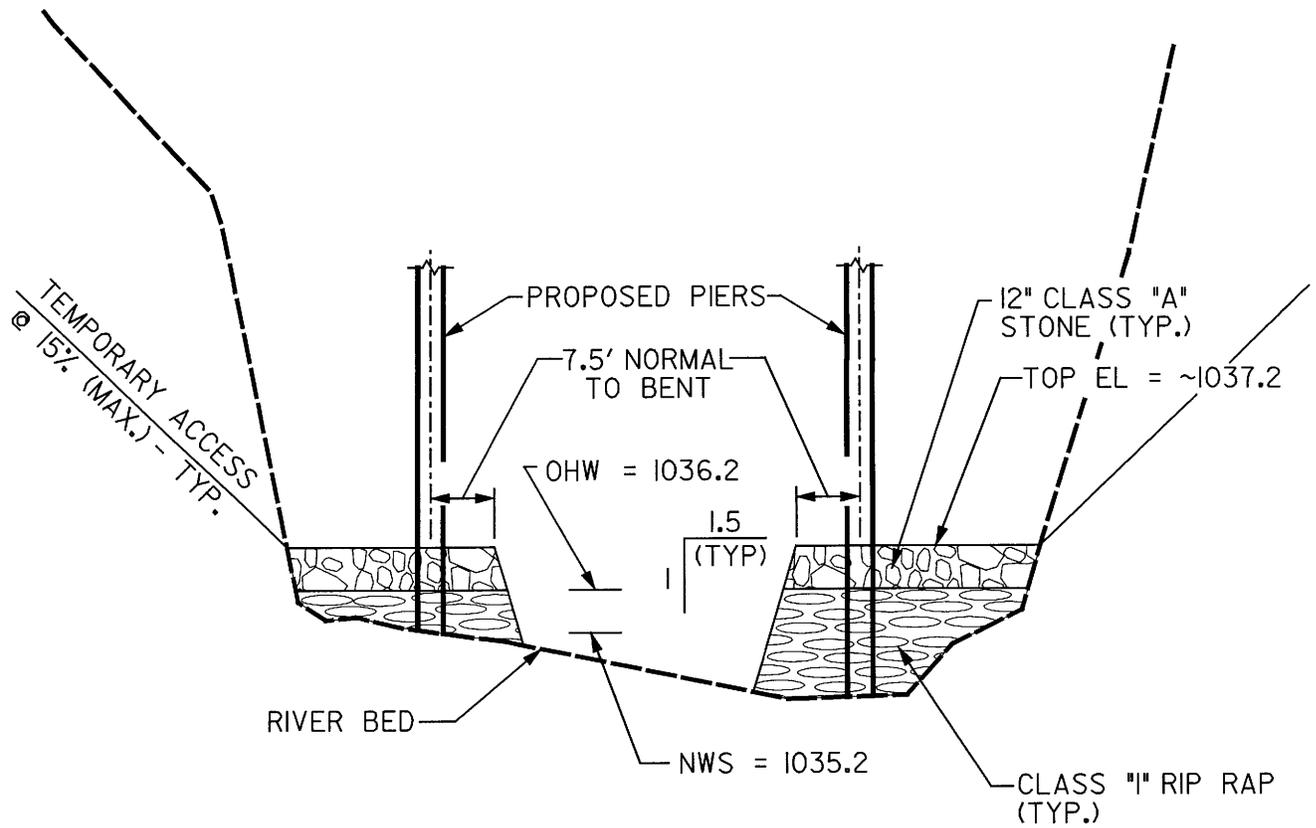
WETLAND LEGEND

<p>— WLB — WETLAND BOUNDARY</p> <p> WETLAND</p> <p> DENOTES FILL IN WETLAND</p> <p> DENOTES PERMANENT SURFACE WATER IMPACT</p> <p> DENOTES PERMANENT SURFACE WATER IMPACT (POND)</p> <p> DENOTES TEMPORARY FILL IN WETLAND</p> <p> DENOTES EXCAVATION IN WETLAND</p> <p> DENOTES TEMPORARY SURFACE WATER IMPACT</p> <p> DENOTES MECHANIZED CLEARING</p> <p>→ → FLOW DIRECTION</p> <p>— TB — TOP OF BANK</p> <p>— WE — EDGE OF WATER</p> <p>— C — PROP. LIMIT OF CUT</p> <p>— F — PROP. LIMIT OF FILL</p> <p>▲ PROP. RIGHT OF WAY</p> <p>— NG — NATURAL GROUND</p> <p>— PL — PROPERTY LINE</p> <p>— TDE — TEMP. DRAINAGE EASEMENT</p> <p>— PDE — PERMANENT DRAINAGE EASEMENT</p> <p>— EAB — EXIST. ENDANGERED ANIMAL BOUNDARY</p> <p>— EPB — EXIST. ENDANGERED PLANT BOUNDARY</p> <p>▽ WATER SURFACE</p> <p>x x x x x x x x x x x x x x x LIVE STAKES</p> <p> BOULDER</p> <p>--- COIR FIBER ROLLS</p>	<p> PROPOSED BRIDGE</p> <p> PROPOSED BOX CULVERT</p> <p> PROPOSED PIPE CULVERT 12"-48" PIPES 54" PIPES & ABOVE</p> <p>(DASHED LINES DENOTE EXISTING STRUCTURES)</p> <p> SINGLE TREE</p> <p>— WOODS LINE</p> <p>■ DRAINAGE INLET</p> <p> ROOTWAD</p> <p>— RIP RAP</p> <p> ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE</p> <p> PREFORMED SCOUR HOLE</p> <p> LEVEL SPREADER (LS)</p> <p> DITCH / GRASS SWALE</p>
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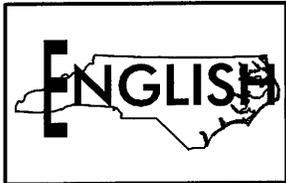
NCDOT
DIVISION OF HIGHWAYS
CALDWELL COUNTY
PROJECT: 33172.1.1 (B-3624)
BRIDGE NO. 190 OVER
JOHNS RIVER
ON SR 1328

10/31/2007 10:06:51 AM
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DETAIL OF CAUSEWAY FOR PROPOSED BRIDGE



VOLUME AND AREA OF TEMPORARY FILL (CLASS "I" RIP RAP) BELOW OHW
AREA = 0.05 Ac VOLUME = 120 CY



NCDOT
DIVISION OF HIGHWAYS
CALDWELL COUNTY
PROJECT: 33172.1.1 (B-3624)
BRIDGE 190 OVER
JOHNS RIVER
ON SR 1328

SHEET 5 OF 9 **10 / 31 / 07**

10/31/2007 11:42:33 AM R:\hydrofiles\dgn\permits\surface water\B3624_hyd\prj-tempcov.dgn

Caldwell County
Bridge No. 190 on SR 1328 (Playmore Beach Rd.)
over Johns River
Federal Aid Project No. BRZ-1328(4)
W.B.S. No. 33172.1.1.1
State Project No. 8.2733601
T.I.P. No. B-3624

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

9/12/06
DATE

Gregory J. Thorpe, PhD
for Gregory J. Thorpe, PhD,
Environmental Management Director, PDEA

9/13/06
DATE

John F. Sullivan, III
for John F. Sullivan, III, Division Administrator
Federal Highway Administration

Caldwell County
Bridge No. 190 on SR 1328 (Playmore Beach Rd.)
over Johns River
Federal Aid Project No. BRZ-1328(4)
W.B.S. No. 33172.1.1.1
State Project No. 8.2733601
T.I.P. No. B-3624

CATEGORICAL EXCLUSION

Documentation Prepared in
Project Development and Environmental Analysis Branch By:

9/11/06
DATE

Natalie Lockhart
Natalie Lockhart
Project Planning Engineer
Bridge Project Development Unit

9/11/06
DATE

John L. Williams
John L. Williams, PE
Project Engineer
Bridge Project Development Unit

PROJECT COMMITMENTS:

**Caldwell County
Bridge No. 190 on SR 1328
Over Johns River
Federal Aid Project No. BRZ-1328(4)
State Project No. 8.2733601
W.B.S. No. 33172.1.1
T.I.P. No. B-3624**

Natural Environment Unit – Bridge Demolition

The entire bridge is constructed of timber and steel. Therefore, Bridge No. 190 will be removed without dropping any components into Waters of the United States.

All Design Groups/Division 11 Resident Construction Engineer – Trout Issues

NCWRC has identified Caldwell County as a “trout” county, but Johns River is not a trout stream and requires no special commitments.

All Design Groups/Division 11 Resident Construction Engineer- Areas to avoid

There is a nearby abandoned asbestos mine cliff in the southeast quadrant that will not be affected by the current design of this bridge replacement project. If design should change, Roadway Design will coordinate with Project Development and Environmental Analysis Branch.

Caldwell County
Bridge No. 190 on SR 1328 (Playmore Beach Rd.)
over Johns River
Federal Aid Project No. BRZ-1328(4)
W.B.S. No. 33172.1.1.1
State Project No. 8.2733601
T.I.P. No. B-3624

INTRODUCTION: Bridge No. 190 is included in the latest approved North Carolina Department of Transportation (NCDOT) Transportation Improvement Program and is eligible for the Federal-Aid Bridge Replacement Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion".

I. PURPOSE AND NEED STATEMENT

NCDOT Bridge Maintenance Unit records indicate Bridge No. 190 has a sufficiency rating of 22.0 out of a possible 100 for a new structure. The bridge is considered functionally obsolete due to deck geometry of 2 out of 9 according to Federal Highway Administration (FHWA) standards and therefore eligible for FHWA's Bridge Replacement Program.

Bridge No. 190 has a timber substructure with a typical life expectancy between 40 to 50 years due to the natural deterioration rate of wood. Rehabilitation of a timber structure is generally practical only when a few members are damaged or prematurely deteriorated. This bridge was rehabilitated in 1981 for repairs to the substructure and deck. Many timber posts and caps are misalign and not providing full bearing. There have been numerous repairs made to the substructure in the last 10-15 years. However, past a certain degree of deterioration, timber structures become impractical to maintain and upon eligibility are programmed for replacement. Bridge No. 190 is approaching the end of its useful life.

Bridge No. 190 carries 120 vehicles per day with 240 vehicles per day projected for the future. The substandard deck width is becoming increasingly unacceptable and replacement of the bridge will result in safer traffic operations.

II. EXISTING CONDITIONS

The project is located in southwestern Caldwell County, about 10 miles west of Lenoir, NC (see Figure 1). Development in the area is forestland with scattered residences and farmland.

SR 1328 is classified as a rural local route in the Statewide Functional Classification System and it is not a National Highway System Route. This route is not a designated bicycle route and there is no indication that an unusual number of bicyclists use this roadway.

In the vicinity of the bridge, SR 1328 has an 11-foot pavement width with no shoulders (see Figure 3). The roadway grade is in a sag vertical curve through the project area. The existing bridge is on a tangent. The roadway is situated approximately 11.0 feet above the creek bed.

Bridge No. 190 is a three-span structure that consists of timber floor on I-beams. Both the end and interior bents consist of reinforced concrete caps on timber piles. The existing bridge (see Figure 3) was rehabilitated in 1981. The original date of construction is unknown. The overall length of the structure is 88 feet. The clear roadway width is 11.6 feet. The posted weight limit on this bridge is 15 tons for single vehicles and 20 tons for TTST's.

There are no utilities attached to the existing structure. Utility impacts are anticipated to be low.

The current traffic volume of 120 vehicles per day (VPD) is expected to increase to 240 VPD by the year 2025. The projected volume includes one percent truck-tractor semi-trailer (TTST) and two percent dual-tired vehicles (DT). The speed limit is not posted, regulatory speed limit is 55 miles per hour in the project area. There are no school buses that cross the bridge due to the low weight posted for single vehicles and TTST's.

There was one accident reported in the vicinity of Bridge No. 190 during a recent three-year period. This involved a vehicle moving to the shoulder to avoid an oncoming dual axle truck. The soft shoulder gave way, overturning the stopped vehicle; property damage only resulted.

III. ALTERNATIVES

A. Project Description

The bridge length is based on preliminary design information and is set by hydraulic requirements. The bridge will be of sufficient width to provide for two 10-foot lanes with 2-foot offset to the south and a 5-foot offset to the north to accommodate hydraulic spread on the bridge. The roadway grade of the new structure will be slightly higher than the existing grade.

The existing roadway will be widened to a 20-foot pavement width to provide two 10-foot lanes. Six-foot grass shoulders will be provided on each side. This roadway will be designed as a rural local route.

B. Reasonable and Feasible Alternatives

Two alternatives for replacing Bridge No. 190 that were studied in detail are described below.

Alternate 1(Preferred)

Alternate 1 involves replacement of the structure with another bridge at the upstream side of the existing location. The bridge will be at a slightly higher elevation to accommodate a 2-year flood. The replacement structure will consist of a bridge approximately 135 feet long.

Improvements to the approach roadways will be required for a distance of approximately 504 feet to the west and 461 feet to the east of the new structure. Because this project follows the 3R guidelines a design exception is not required. Traffic will be maintained onsite using the existing road (see Figure 1) during the construction period.

Alternate 2

Alternate 2 involves replacement of the structure with a spill-through abutment bridge at the upstream side of the existing location at an elevation to accommodate a 25 year flood. The replacement structure would be a bridge 150 feet long with low steel at approximately 21 feet over the river bed (see Figure 2B). There are no design exceptions for this alternative.

C. Alternatives Eliminated From Further Consideration

The “do-nothing” alternative will eventually necessitate closure of the bridge. This is not acceptable due to the traffic service provided by SR 1328.

“Rehabilitation” of the old bridge is not practical due to its age and deteriorated condition.

NCDOT Guidelines for Evaluation of Offsite Detours for Bridge Replacement Projects considers multiple project variables beginning with the additional time traveled by the average road user resulting from the offsite detour. The majority of traffic on the road is through traffic. The detour for the average road user would result in 45 minutes additional travel time. Up to a 15-month duration of construction is expected on this project.

Based on the Guidelines, the criteria above indicate that a delay of 45 minutes over 15 months is unacceptable. Caldwell County Emergency Services has also indicated that an offsite detour is unacceptable. While project costs and environmental impacts will be higher, maintenance of traffic onsite during construction is mandatory.

Staged Construction is not feasible for this bridge because the 11-foot deck width and beam configuration will not support removal of a portion and maintenance of traffic on the remaining portion.

D. Preferred Alternative

Bridge No. 190 will be replaced upstream as shown by Alternative 1 in Figure 2A. Alternate 1 is the preferred alternative because of lower costs. Concerns regarding public safety warrant the maintenance of traffic onsite.

NCDOT Division 11 concurs with the selection of Alternative 1 as the preferred alternative.

IV. ESTIMATED COSTS

The estimated costs, based on 2005 prices, are as follows:

	Alternative 1 Preferred	Alternative 2
Structure	\$ 290,000	\$ 357,000
Roadway Approaches	\$ 241,500	\$ 558,300
Structure Removal	\$ 13,200	\$ 13,200
Misc. & Mob.	\$ 155,000	\$ 307,000
Eng. & Contingencies	\$ 125,000	\$ 165,000
Total Construction Cost	\$ 825,000	\$ 1,400,000
Right-of-way Costs	\$ 9,000	\$ 9,000
Total Project Cost	\$ 834,000	\$ 1,409,000

V. NATURAL ENVIRONMENT

Physical Characteristics

Water Resources

Water resources located within the project study area lie in sub-basin 030831 of the Catawba River Basin (HUC 03050101). Within the study area for this project, there are no wetlands and two jurisdictional streams, the Johns River and an Unnamed Tributary (UT) to the Johns River.

The best usage classification of the Johns River and UT [Index number 11-38-(28)] is *Class C* (NCDENR 2003b). No water resources classified as High Quality Water, Water Supplies (WS-I or WS-II), or Outstanding Resource Waters are located within 1.0 mile of the project study area.

The Johns River and the UT are not considered estuarine water; therefore there will be no impacts to Essential Fish Habitat associated with the proposed project.

There are no water resources described that are designated as biologically impaired water bodies regulated under the provisions of Clean Water Act (CWA) §303(d).

Biotic Resources

Three terrestrial communities were identified within the project area: maintained areas, low mountain alluvial forest, and a mixed pine hardwood forest. The following table shows the relative abundance of each community type in the project study area.

Table 1: Estimated Area of Terrestrial Communities in Project Study Area

Area of Impact in Acres	
Community	
Maintained Areas	8 acres
Low Mountain Alluvial Forest	8 acres
Mixed Pine Hardwood Forest	24 acres
Total Impact	40 acres

Jurisdictional Topics

Surface Waters and Wetlands

The Johns River is considered a jurisdictional surface water under Section 404 of the CWA. Based upon the results of the field investigation, the project area does not contain jurisdictional wetlands.

The existing bridge over Johns River was rehabilitated in 1981. The superstructure consists of a timber floor on I-beams. The substructure consists of abutments and piers constructed of timber. No fill is expected from bridge demolition.

Permits

Construction is likely to be authorized by Nationwide Permits (NWP) No. 23 (Categorical Exclusion) and 33 (Temporary Construction, Access and Dewatering), as promulgated under 67 FR 2020, 2092; January 15, 2002. This project will also require a 401 Water Quality Certification No. 3361, from the Department of Environment and Natural Resources (DENR) prior to issuance of the NWP 23

Federally Protected Species

Plants and animals with a federal classification of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. The USFWS lists 4 species under federal protection for Caldwell County as of April 27, 2006 (USFWS 2003). The following table lists each species, and its status.

***Microhexura montivaga* (Spruce-fir moss spider)**

Endangered

Biological Conclusion

No Effect

No habitat exists in the project area for the spruce-fir moss spider. There are no well-shaded areas of mature Fraser fir and red spruce forest near the bridge. A search of the NHP database on November 10, 2003 found no occurrence of this species in the project vicinity. It can be concluded that the project will not impact this endangered species.

***Hexastylis naniflora* (Dwarf-flowered heartleaf)**

Threatened

Biological Conclusion

No Effect

The majority of the project area was overgrown with shrubby understory that did not provide enough sunlight for the dwarf flowered heartleaf. Pacelot series soils are found in the project study area. Surveys for the dwarf flowered heartleaf were conducted on June 2, 2004 and no individuals were observed. A search of the NHP database on November 10, 2003 found no occurrence of this species in the project vicinity.

***Liatris helleri* (Heller's blazing star)**

Threatened

Biological Conclusion

No Effect

No Habitat exists in the project area for Heller's blazing star. Habitat for Heller's blazing star includes ledges of rock outcrops above 3,500 feet. The elevation in the project area is 1,000 feet. Additionally a search of the NHP database on November 10, 2003 found no occurrence of Heller's blazing star in the project vicinity. It can be concluded that the project will have no impact on the Heller's blazing star.

***Corynorhinus townsendii virginianus* (Virginia big-eared bat)**

Endangered

Biological Conclusion

No Effect

A habitat assessment was conducted on August 23, 2006 by NCDOT biologists. No habitat exists in the project area for the Virginia big-eared bat. No caves or mines were detected in the project area. The waterway does provide good foraging habitat, as it is slow moving and clear. The bridge geight and construction materials make this bridge not the type preferred by bats.

VI. HUMAN ENVIRONMENT

Section 106 Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at Title 36 CFR Part

800. Section 106 requires Federal agencies to take into account the effect of their undertakings (federally funded, licensed, or permitted) on properties included in or eligible for inclusion in the National Register of Historic Places and afford the Advisory Council a reasonable opportunity to comment on such undertakings.

Historic Architecture

The Historic Preservation Office (HPO) reviewed the subject project and determined that no surveys are required (see letter dated August 12, 2004).

Archaeology

The Historic Preservation Office (HPO) reviewed the subject project. There are no known archaeological sites within the proposed project area, and no archaeological investigation needed to be conducted (see letter dated August 12, 2004).

Community Impacts

No adverse impact on families or communities is anticipated. right-of-way acquisition will be limited. No relocatees are expected with implementation of the proposed alternative.

No adverse effect on public facilities or services is expected. The project is not expected to adversely affect social, economic, or religious opportunities in the area.

The project is not in conflict with any plan, existing land use, or zoning regulation. No change in land use is expected to result from the construction of the project.

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impact to prime farmland of all land acquisition and construction projects. All construction will take place adjacent to the existing alignment. There are no soils classified as prime, unique, or having state or local importance in the vicinity of the project. Therefore, the project will not involve the direct conversion of farmland acreage within these classifications.

The project will not have a disproportionately high and adverse human health and environmental effect on any minority or low-income population.

Noise & Air Quality

This project is an air quality “neutral” project, so it is not required to be included in the regional emissions analysis and a project level CO analysis is not required. If vegetation is disposed of by burning, all burning shall be done in accordance with applicable local laws and regulations of the North Carolina State Implementation Plan (SIP) for air quality in compliance with 15 NCAC 2D.0520. Noise levels could increase during construction but will

be temporary. This evaluation completes the assessment requirements for highway traffic noise of Title 23, Code of Federal Regulation (CFR), Part 772 and for air quality (1990 Clean Air Act Amendments and the National Environmental Policy Act) and no additional reports are required.

VII. GENERAL ENVIRONMENTAL EFFECTS

The project is expected to have an overall positive impact. Replacement of an inadequate bridge will result in safer traffic operations.

The bridge replacement will not have an adverse effect on the quality of the human or natural environment with the use of the current North Carolina Department of Transportation standards and specifications.

The proposed project will not require right-of-way acquisition or easement from any land protected under Section 4(f) of the Department of Transportation Act of 1966.

An examination of records at the North Carolina Department of Environment and Natural Resources, Division of Environmental Management, Groundwater Section and the North Carolina Department of Human Resources, Solid Waste Management Section revealed no underground storage tanks or hazardous waste sites in the project area.

Caldwell County is a participant in the National Flood Insurance Program. There are no practical alternatives to crossing the floodplain area. Any shift in alignment will result in an impact area of about the same magnitude. The proposed project is not anticipated to increase the 100 year flood.

VIII. COORDINATION & AGENCY COMMENTS

NCDOT has sought input from the following agencies as a part of the project development: NC Department of Natural Resources, U.S. Fish & Wildlife Service, N.C Wildlife Resource Commission, North Carolina State Historic Preservation Office.

The **N.C. Wildlife Resource Commission** and **U.S. Fish & Wildlife Service** in standardized letters provided a request that they prefer any replacement structure to be a spanning structure.

Response: The hydraulics unit recommends replacing the bridge with a bridge.

The **N.C. Division of Water Quality** and the **Army Corps of Engineers** had no special concerns for this project.

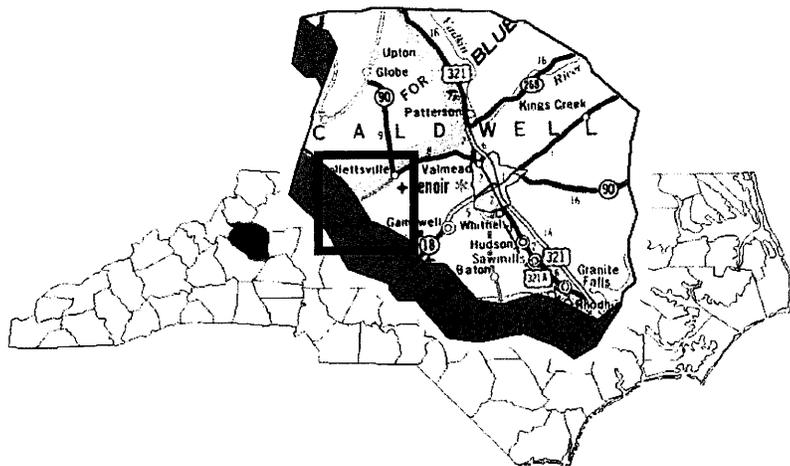
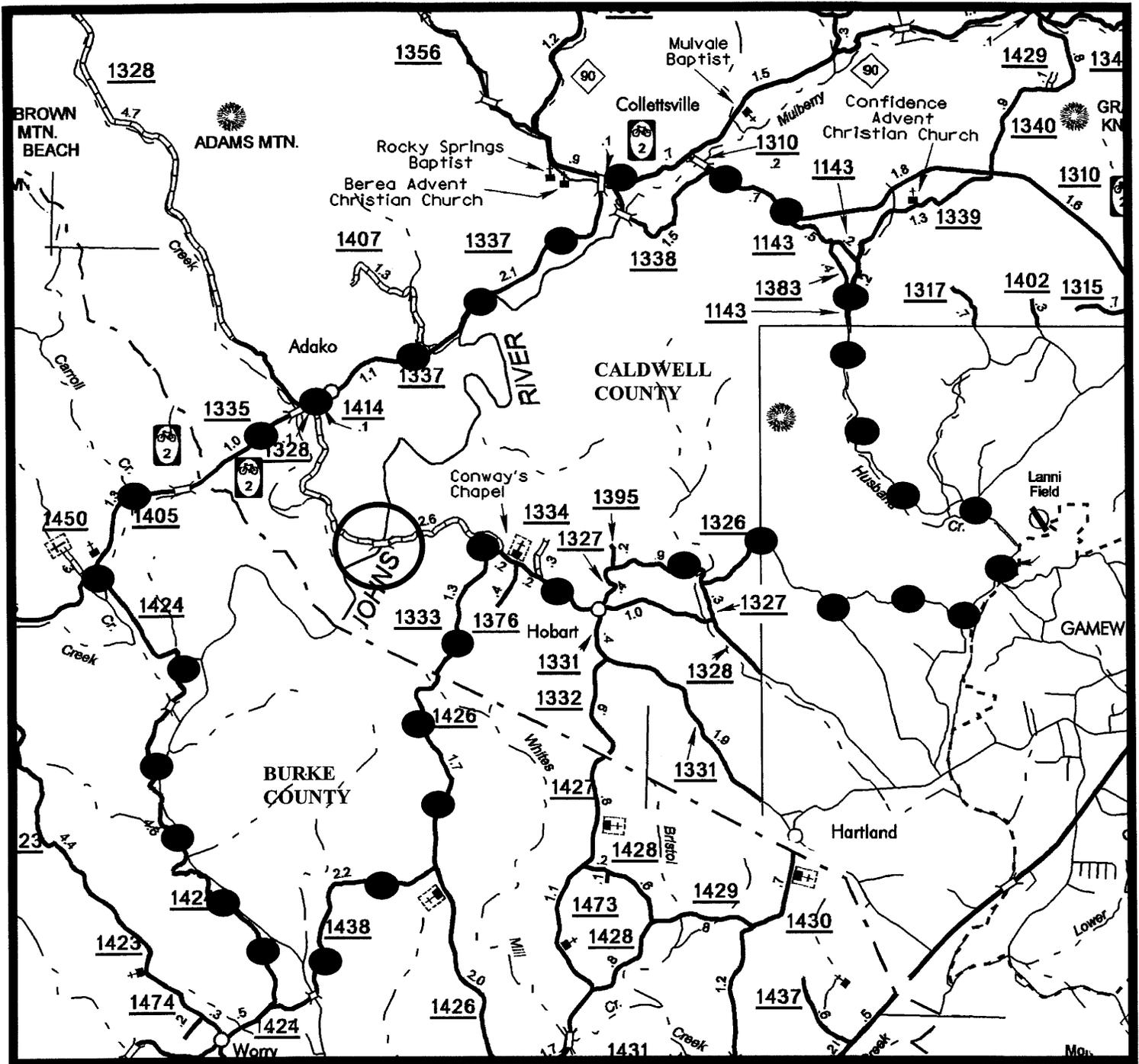
IX. PUBLIC INVOLVEMENT

A letter was sent by the Location & Surveys Unit to all property owners affected directly by this project. Property owners were invited to comment. No comments have been received to date.

There is not substantial controversy on social, economic, or environmental grounds concerning the project.

X. CONCLUSION

On the basis of the above discussion, it is concluded that no substantial adverse environmental impacts will result from implementation of the project. The project is therefore considered to be a federal "Categorical Exclusion" due to its limited scope and lack of substantial environmental consequences.



STUDIED DETOUR ROUTE —●—●—●—



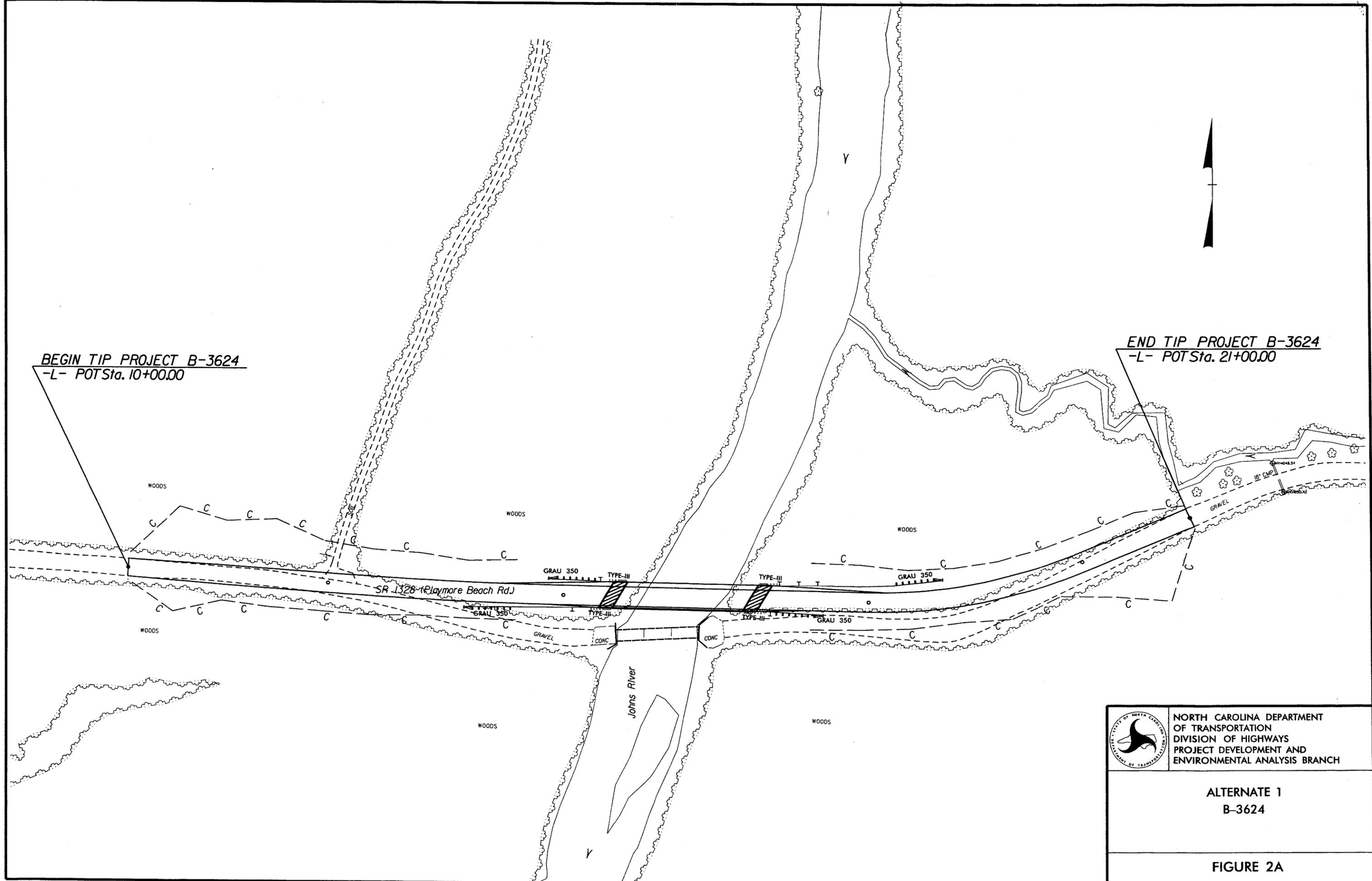
NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

**CALDWELL COUNTY
REPLACE BRIDGE NO. 190 ON SR 1328
OVER JOHNS RIVER
B-3624**

Figure 1

BEGIN TIP PROJECT B-3624
-L- POT Sta. 10+00.00

END TIP PROJECT B-3624
-L- POT Sta. 21+00.00



NORTH CAROLINA DEPARTMENT
OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS BRANCH

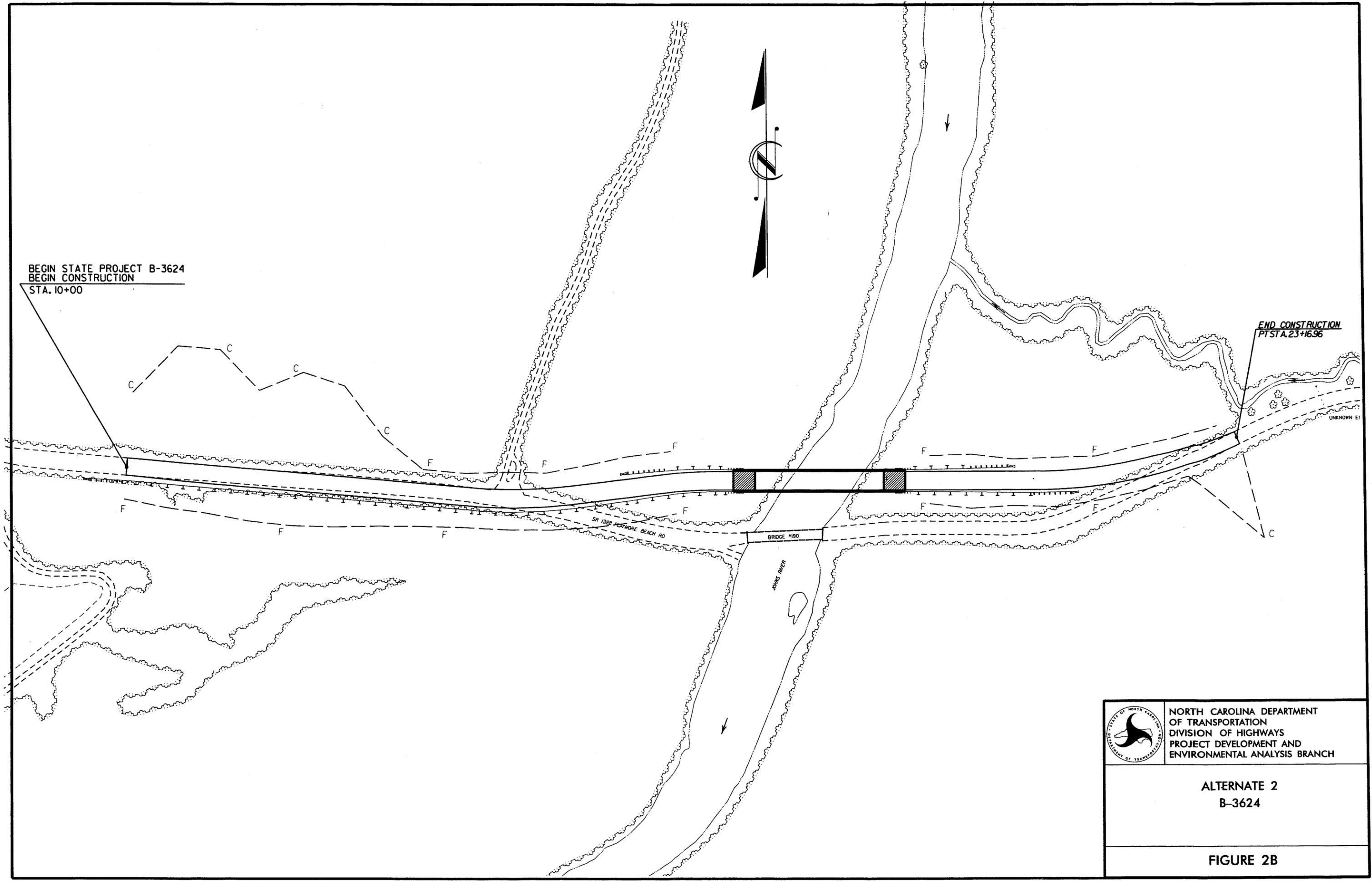
ALTERNATE 1
B-3624

FIGURE 2A

BEGIN STATE PROJECT B-3624
BEGIN CONSTRUCTION
STA. 10+00



END CONSTRUCTION
PT STA. 23+16.96



	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH
ALTERNATE 2 B-3624	
FIGURE 2B	

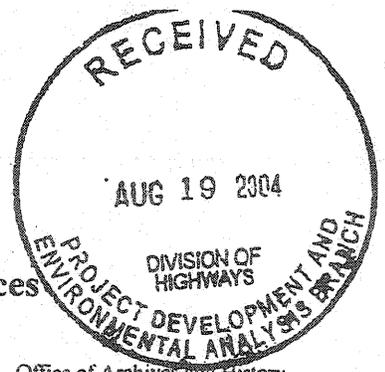


Looking East



Looking South

Figure 3



North Carolina Department of Cultural Resources
State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

August 12, 2004

MEMORANDUM

B-3624

TO: Gregory Thorpe, Ph.D., Director
Project Development and Environmental Analysis Branch
NCDOT Division of Highways

FROM: Peter B. Sandbeck *PBS for Peter Sandbeck*

SUBJECT: 2004 Bridge Projects, including B-3492, B-4408, B-4409, B-4410, B-4446, B-4466, B4469, B-4518, B-4545, B-4573, B-4631, B-4423, B-4424, B-4454, B-4520, B-4538, B-4540, B-4548, B-4549, B-4567, B-4578, B-4648, B-4664, B-4665, B-4504, B-4560, B-4587, B-4618, B-4644, B-4649, B-4651, B-4658, B-4671, B-3624, B-3819, B-3911, B-4404, B-4552, B-4613, B-4646, B-4675, B-3169, B-3606, B-3802, B-3803, B-3804, B-4523, B-4524, B-4525, B-4526, Multi-county, ER 04-1280-ER 04-1330

On July 28, 2004, Sarah McBride, our preservation specialist for transportation projects, met with the North Carolina Department of Transportation (NCDOT) staff for a meeting of the minds concerning the above projects. We reported on our available information on historic architectural and archaeological surveys and resources along with our recommendations. NCDOT provided project descriptions, area photographs, and aerial photographs at the meeting.

Based on our review of the photographs and the information discussed at the meeting, we have included our comments for each bridge project on a spreadsheet attached to this letter. These comments are provided for each project as proposed.

If an archaeological survey is requested on the spreadsheet, a separate memorandum from the Office of State Archaeology, explaining whether a general survey is required or if the survey is predicated upon an off-site detour or new location, is attached.

Having provided this information, we look forward to receipt of either a Categorical Exclusion or Environmental Assessment which indicates how NCDOT addressed our comments.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount Street, Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-4763/733-8653
RESTORATION	515 N. Blount Street, Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-6547/715-4801
SURVEY & PLANNING	515 N. Blount Street, Raleigh, NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-6545/715-4801

Thank you for your cooperation and considerations. If you have any questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above referenced tracking number.

PBS:w

Attachments

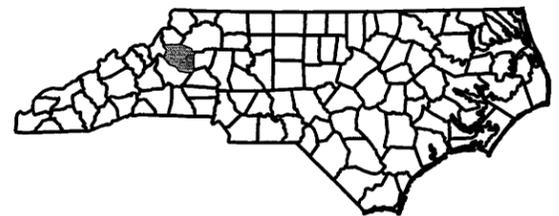
1 Spreadsheet

16 Memos

cc: Matt Wilkerson, NCDOT
Mary Pope Furr

	TIP	BRIDGE	COUNTY	DIVISION	BUILT	PDE	Architecture	Archaeology	
ER04	1314	B-3492	580056	McDOWELL	13	1962	Hancock	Yes	No
ER04	1285	B-4408	030265	ANSON	10	1961	Hancock	No	No
ER04	1286	B-4409	030308	ANSON	10	1922	Hancock	No	No
ER04	1287	B-4410	030307	ANSON	10	1931	Hancock	Yes	No
ER04	1301	B-4446	100227	BUNCOMBE	13	1956	Hancock	No	No
ER04	1290	B-4466	210004	CLAY	14	1952	Hancock	No	No
ER04	1297	B-4469	220219	CLEVELAND	12	1952	Hancock	No	No
ER04	1287	B-4518	350110	GASTON	12	1962	Hancock	No	No
ER04	1307	B-4545	440072	HENDERSON	14	1963	Hancock	No	No
ER04	1300	B-4573	540183	LINCOLN	12	1965	Hancock	No	No
ER04	1306	B-4631	800526	RUTHERFORD	13	1970	Hancock	No	No
ER04	1329	B-4423	060067	BEAUFORT	2	1965	Capps	No	No
ER04	1320	B-4424	060068	BEAUFORT	2	1966	Capps	No	No
ER04	1302	B-4454	150043	CARTERET	2	1963	Capps	No	No
ER04	1292	B-4520	360032	GATES	1	1952	Capps	Yes	No
ER04	1280	B-4538	410025	HALIFAX	4	1965	Capps	No	No
ER04	1281	B-4540	410142	HALIFAX	4	1962	Capps	Yes	Yes
ER04	1308	B-4548	450002	HERTFORD	1	1960	Capps	No	Yes
ER04	1309	B-4549	450042	HERTFORD	1	1960	Capps	Yes	Yes
ER04	1294	B-4567	530069	LENOIR	2	1971	Capps	Yes	Yes
ER04	1298	B-4578	570008	MARTIN	1	1974	Capps	No	No
ER04	1325	B-4648	880017	TYRRELL	1	1977	Capps	No	No
ER04	1317	B-4664	920025	WARREN	5	1957	Capps	Yes	Yes
ER04	1318	B-4665	920036	WARREN	5	1955	Capps	No	Yes
ER04	1305	B-4504	320052	EDGEcombe	4	1964	Johnson	No	Yes
ER04	1312	B-4560	500102	JOHNSTON	4	1956	Johnson	Yes	Yes
ER04	1297	B-4587	630082	NASH	4	1961	Johnson	No	Yes
ER04	1325	B-4618	770445	ROBESON	6	1955	Johnson	Yes	No
ER04	1284	B-4644	830057	STANLY	10	1961	Johnson	No	No
ER04	1324	B-4649	890377	UNION	10	1962	Johnson	No	No
ER04	1323	B-4651	890251	UNION	10	1957	Johnson	No	No
ER04	1315	B-4658	910345	WAKE	5	1960	Johnson	No	No
ER04	1313	B-4671	950035	WAYNE	4	1961	Johnson	No	Yes
ER04	1327	B-3624	130190	CALDWELL	11	1981	Pipkin B-3624	No	No
ER04	1328	B-3819	130184	CALDWELL	11	1962	Pipkin	No	No
ER04	1326	B-3911	850038	SURRY	11	1923	Pipkin	Yes	No
ER04	1285	B-4404	000102	ALAMANCE	7	1968	Pipkin	Yes	No
ER04	1310	B-4552	480100	IREDELL	12	1963	Pipkin	Yes	No
ER04	1295	B-4613	750415	RANDOLPH	8	1959	Pipkin	No	Yes
ER04	1294	B-4646	850132	SURRY	11	1962	Pipkin	Yes	No
ER04	1311	B-4675	960034	WILKES	11	1960	Pipkin	No	No
ER04	1293	B-3169	310158	DURHAM	5	1960	Williams	Yes	No
ER04	1303	B-3606	040070	ASHE	11	1963	Williams	Yes	No
ER04	1282	B-3802	040229	ASHE	11	1960	Williams	No	No
ER04	1304	B-3803	040334	ASHE	11	1966	Williams	Yes	No
ER04	1283	B-3804	040296	ASHE	11	1964	Williams	Yes	No
ER04	1319	B-4523	380164	GRANVILLE	5	1955	Williams	No	Yes
ER04	1320	B-4524	380193	GRANVILLE	5	1956	Williams	No	Yes
ER04	1321	B-4525	380133	GRANVILLE	5	1960	Williams	No	Yes
ER04	1322	B-4526	380200	GRANVILLE	5	1957	Williams	No	Yes

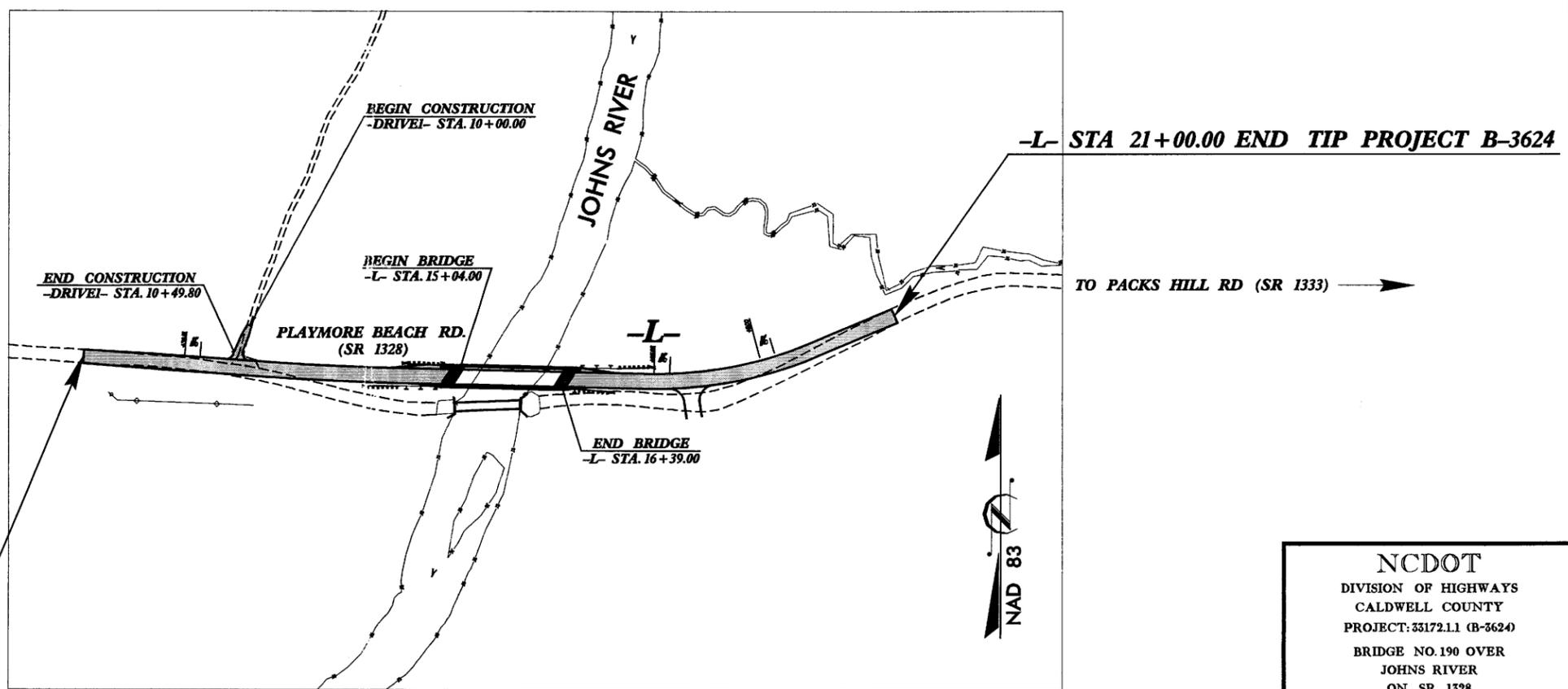
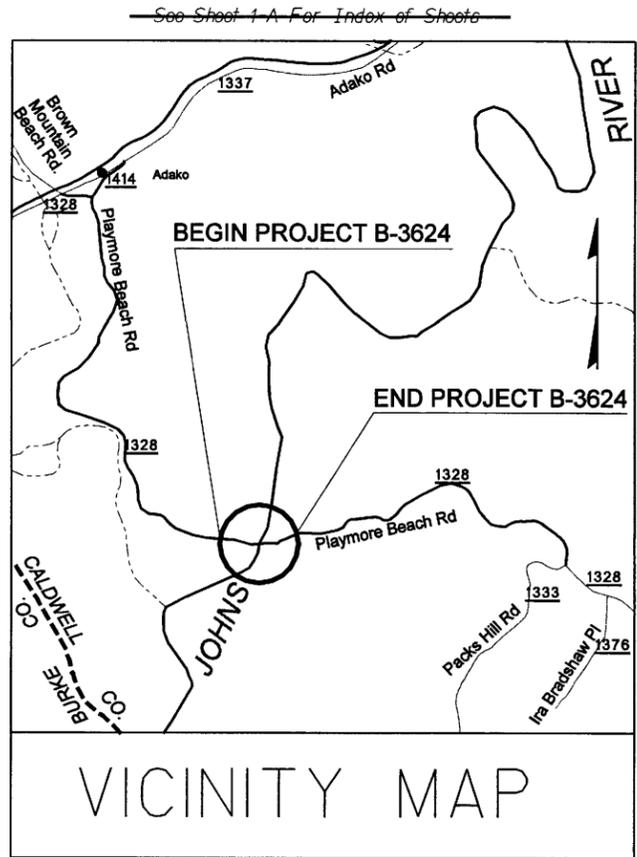
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3624	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33172.1.1	BRZ-1328(4)	P.E.	
33172.2.1	BRZ-1328(4)	RW, UTIL	



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
CALDWELL COUNTY

LOCATION: BRIDGE No. 190 OVER JOHNS RIVER ON SR 1328

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



-L- STA 10+00.00 BEGIN TIP PROJECT B-3624

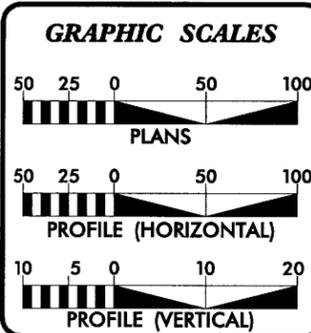
-L- STA 21+00.00 END TIP PROJECT B-3624

NCDOT
DIVISION OF HIGHWAYS
CALDWELL COUNTY
PROJECT: 33172.1.1 (B-3624)
BRIDGE NO. 190 OVER
JOHNS RIVER
ON SR 1328
SHEET 7 OF 9 10/31/07

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.
THIS PROJECT IS NOT WITHIN MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHOULD BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT: TIP PROJECT: B-3624



DESIGN DATA

ADT 2008 =	277
ADT 2028 =	662
DHV =	12 %
D =	60 %
T =	3 % *
V =	40 MPH
FUNC CLASS =	LOCAL
* TTST 1	DUAL 2

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-3624 =	0.182 MILES
LENGTH OF STRUCTURE TIP PROJECT B-3624 =	0.026 MILES
TOTAL LENGTH OF TIP PROJECT B-3624 =	0.208 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
SEPTEMBER 21, 2007

LETTING DATE:
SEPTEMBER 16, 2008

TONY HOUSER, PE
PROJECT ENGINEER

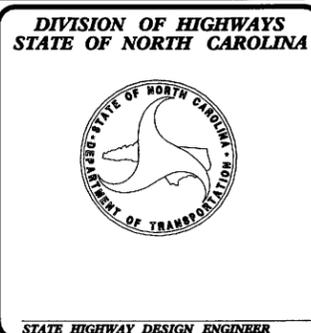
JASON TALLEY, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

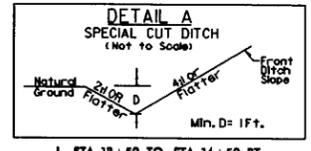
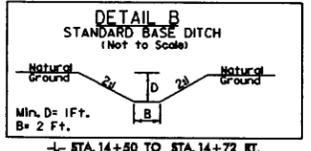
SIGNATURE: _____

SIGNATURE: _____

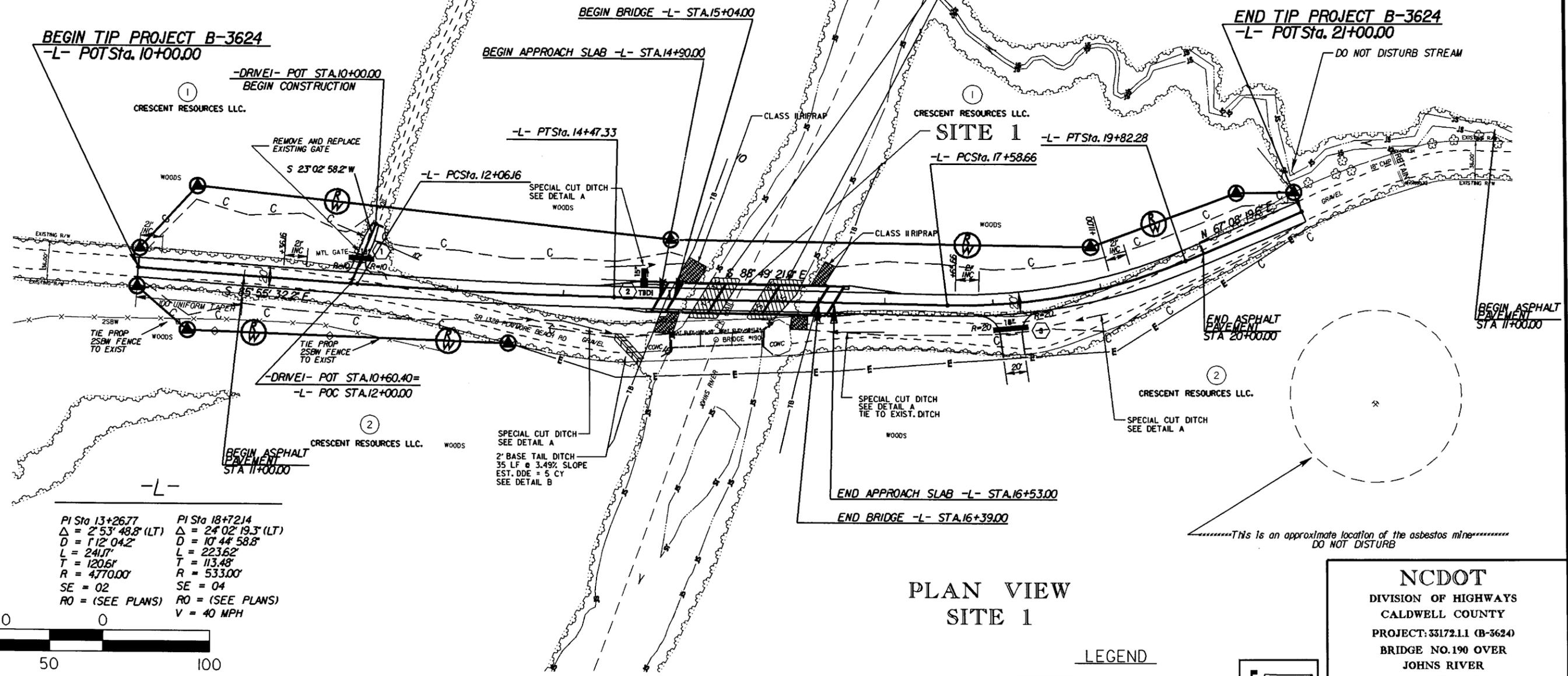
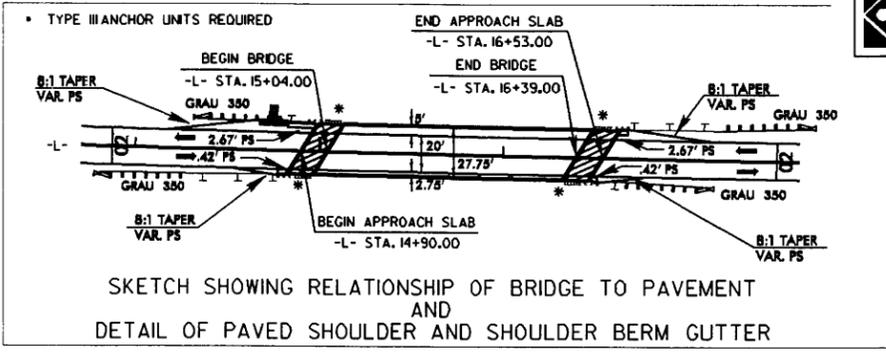


10/31/2007 R:\Hydraulics\dgn\permits\surface water\b3624_hyd_prm_tsh.dgn Ko & Associates, P.C.

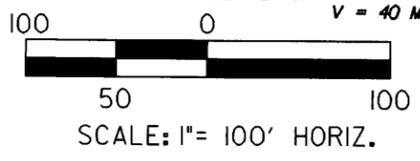
PROJECT REFERENCE NO. B-3624	SHEET NO. 4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



USE SHOULDER BERM GUTTER AT THE FOLLOWING LOCATIONS:
 -L- STA. 14+77.89 TO -L- STA. 14+84.14 RT
 -L- STA. 14+82.50 TO -L- STA. 15+00.38 LT
 -L- STA. 16+44.14 TO -L- STA. 16+50.39 RT
 -L- STA. 16+60.16 TO -L- STA. 16+66.41 LT



PI Sta 13+26.77	PI Sta 18+72.14
$\Delta = 2' 53" 48.8" (LT)$	$\Delta = 2' 02" 19.3" (LT)$
$D = 1' 12" 04.2"$	$D = 10' 44" 58.8"$
$L = 241.7'$	$L = 223.62'$
$T = 120.6'$	$T = 113.48'$
$R = 4770.00'$	$R = 533.00'$
$SE = 02$	$SE = 04$
$RO = (SEE PLANS)$	$RO = (SEE PLANS)$
	$V = 40 MPH$



**PLAN VIEW
SITE 1**

LEGEND
 DENOTES TEMPORARY SURFACE WATER IMPACT

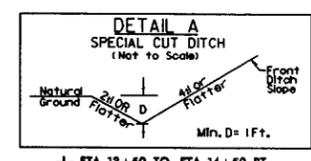
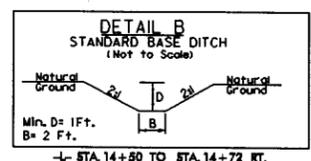


NC DOT
 DIVISION OF HIGHWAYS
 CALDWELL COUNTY
 PROJECT: 33172.1.1 (B-3624)
 BRIDGE NO. 190 OVER
 JOHNS RIVER
 ON SR 1528

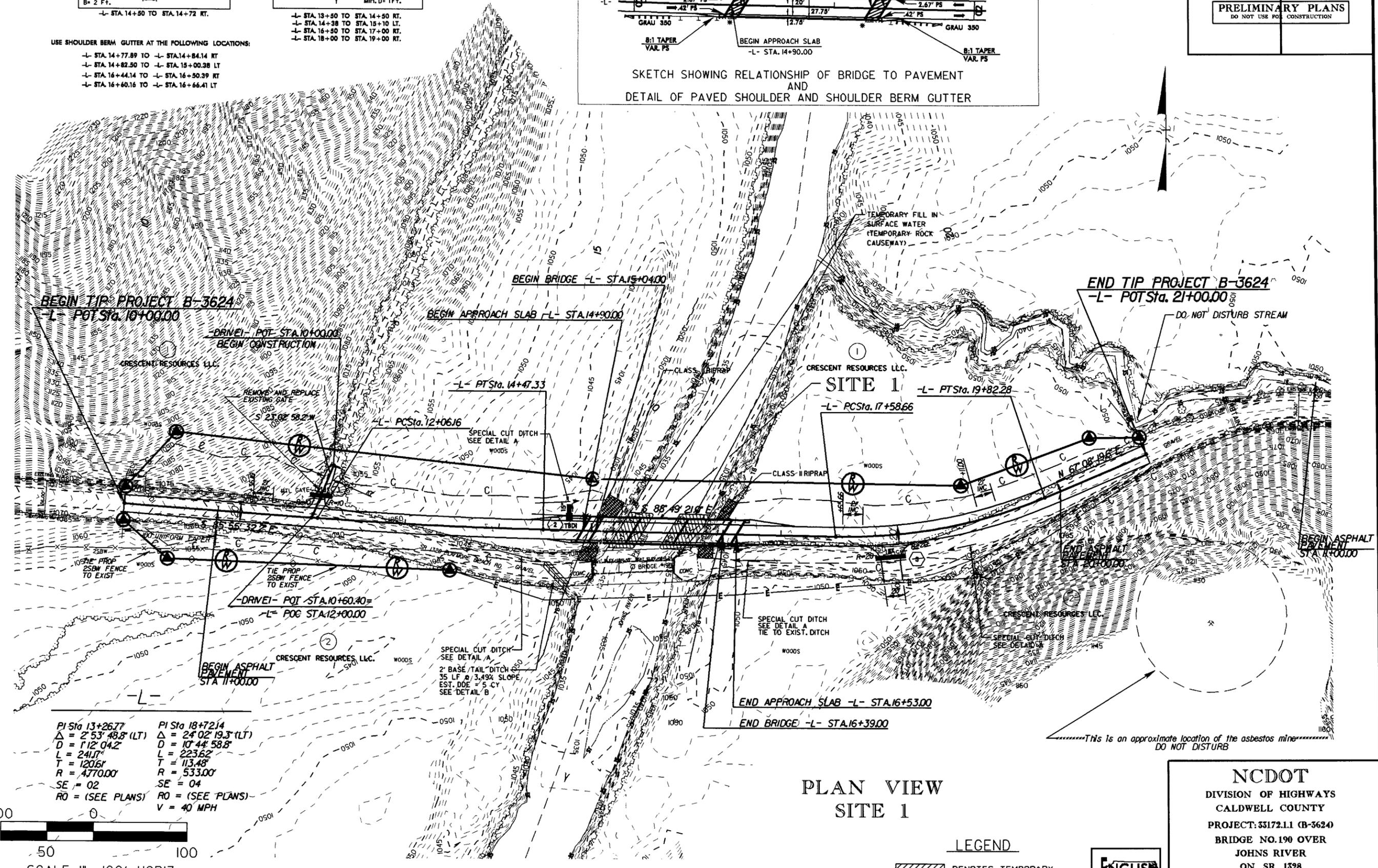
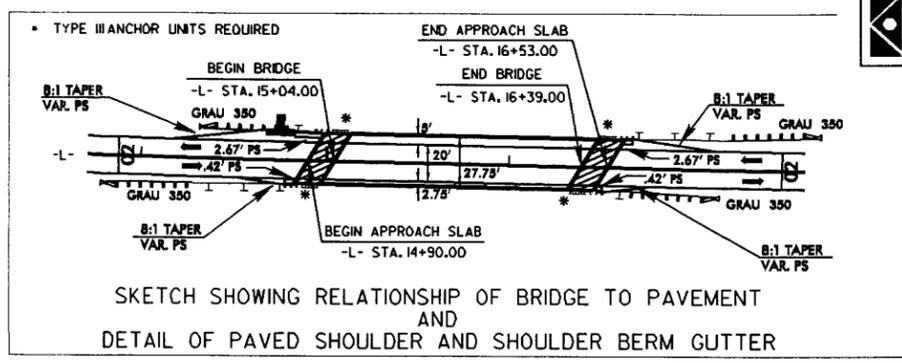
REVISIONS

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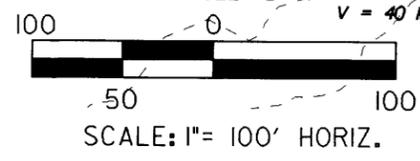
PROJECT REFERENCE NO. B-3624	SHEET NO. 4
Roadway Design Engineer	Hydraulics Engineer
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



USE SHOULDER BERM GUTTER AT THE FOLLOWING LOCATIONS:
 -L- STA. 14+77.89 TO -L- STA. 14+84.14 RT
 -L- STA. 14+82.50 TO -L- STA. 15+00.38 LT
 -L- STA. 16+44.14 TO -L- STA. 16+50.39 RT
 -L- STA. 16+60.16 TO -L- STA. 16+66.41 LT



PI Sta 13+2677	PI Sta 18+7214
$\Delta = 2' 53'' 48.8''$ (LT)	$\Delta = 2' 40'' 19.3''$ (LT)
$D = 1' 12'' 04.2''$	$D = 10' 44'' 58.8''$
$L = 241.7'$	$L = 223.62'$
$T = 120.6'$	$T = 113.48'$
$R = 4770.00'$	$R = 533.00'$
$SE = 02$	$SE = 04$
$RO =$ (SEE PLANS)	$RO =$ (SEE PLANS)
	$V = 40$ MPH



**PLAN VIEW
SITE 1**

LEGEND
 DENOTES TEMPORARY SURFACE WATER IMPACT

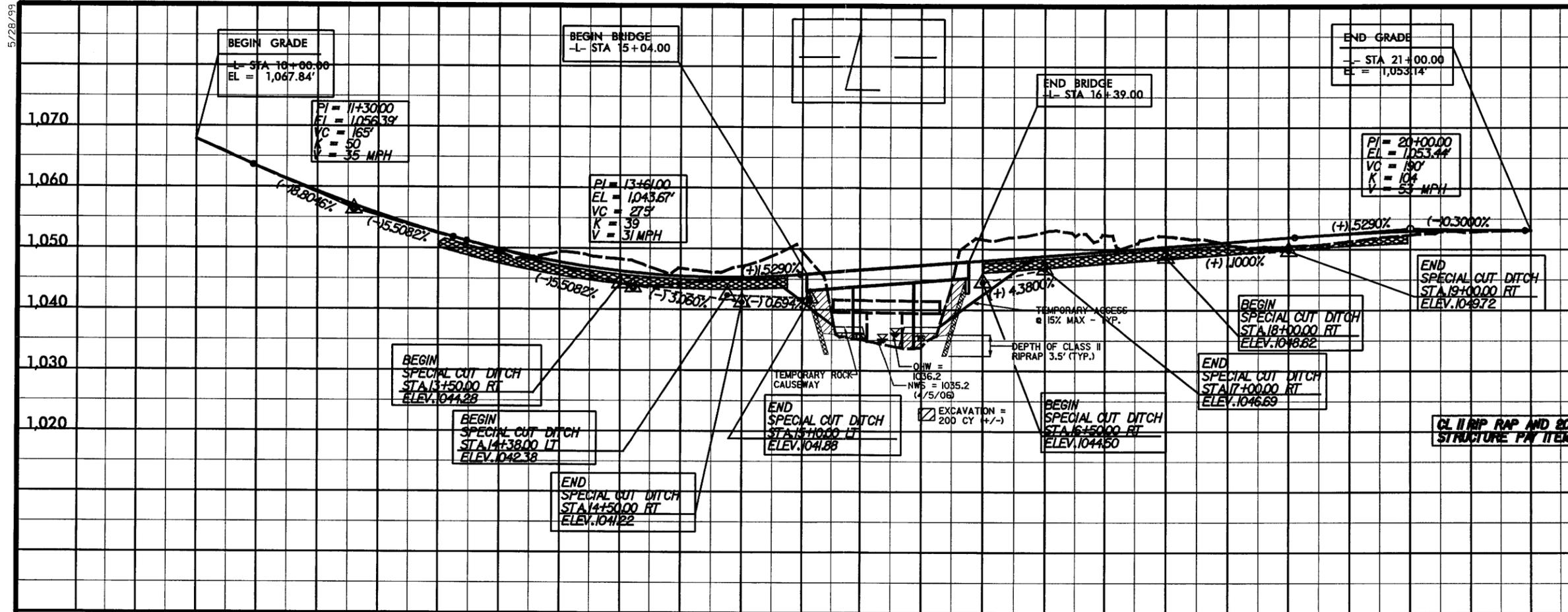


NCDOT
 DIVISION OF HIGHWAYS
 CALDWELL COUNTY
 PROJECT: 53172.11 (B-3624)
 BRIDGE NO. 190 OVER
 JOHNS RIVER
 ON SR 1528

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 8/17/09



5/28/09



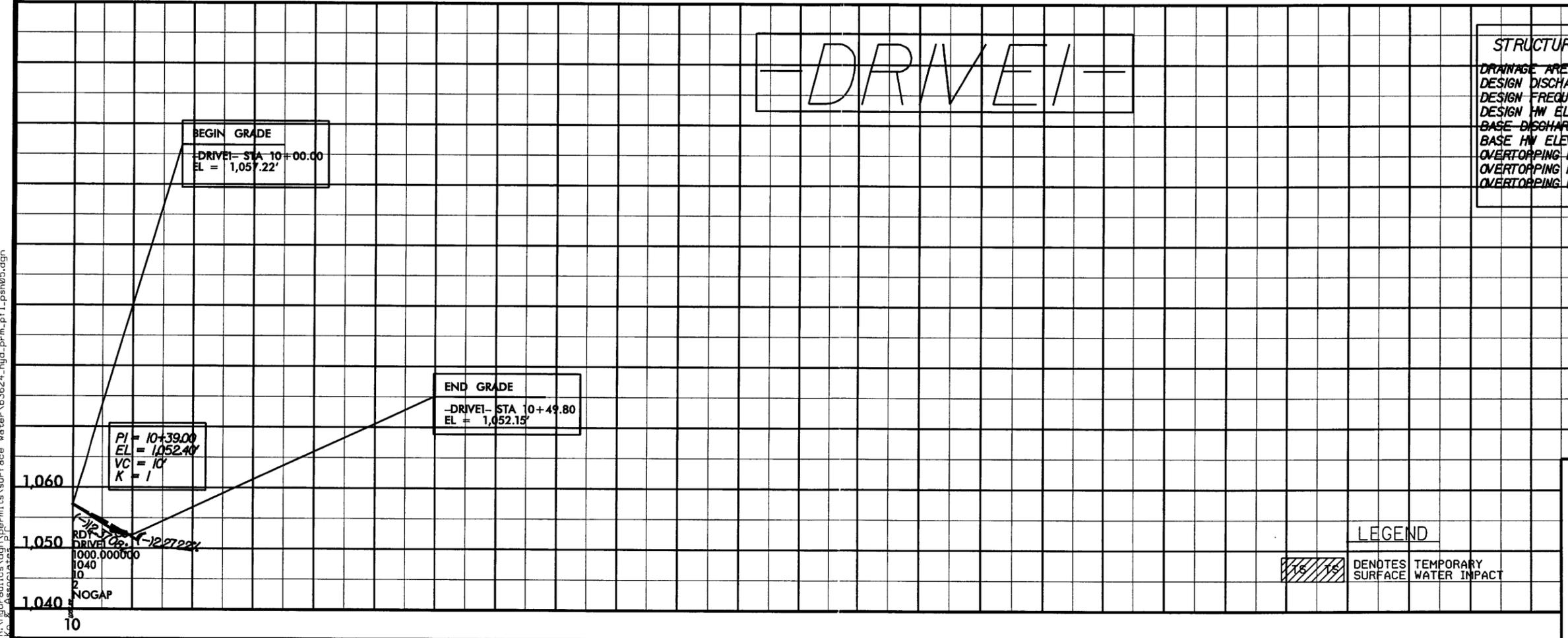
DITCH LEGEND

LEFT DITCH	---
RIGHT DITCH	---
UNDERCUT	▨

DRIVEI

STRUCTURE HYDRAULIC DATA

DRAINAGE AREA	= 114	SQ MI
DESIGN DISCHARGE	= 3900	CFS
DESIGN FREQUENCY	= 2	YRS
DESIGN HW ELEVATION	= 1044.0	FT
BASE DISCHARGE	= 18000	CFS
BASE HW ELEVATION	= 1055.5	FT
OVERTOPPING DISCHARGE	= 67.21	CFS
OVERTOPPING FREQUENCY	= 5+	YRS
OVERTOPPING ELEVATION	= 1046.0	FT



LEGEND

▨	DENOTES TEMPORARY SURFACE WATER IMPACT
---	--

NCDOT
 DIVISION OF HIGHWAYS
 CALDWELL COUNTY
 PROJECT: 33172.11 (B-3624)
 BRIDGE NO. 190 OVER
 JOHNS RIVER
 ON SR 1328

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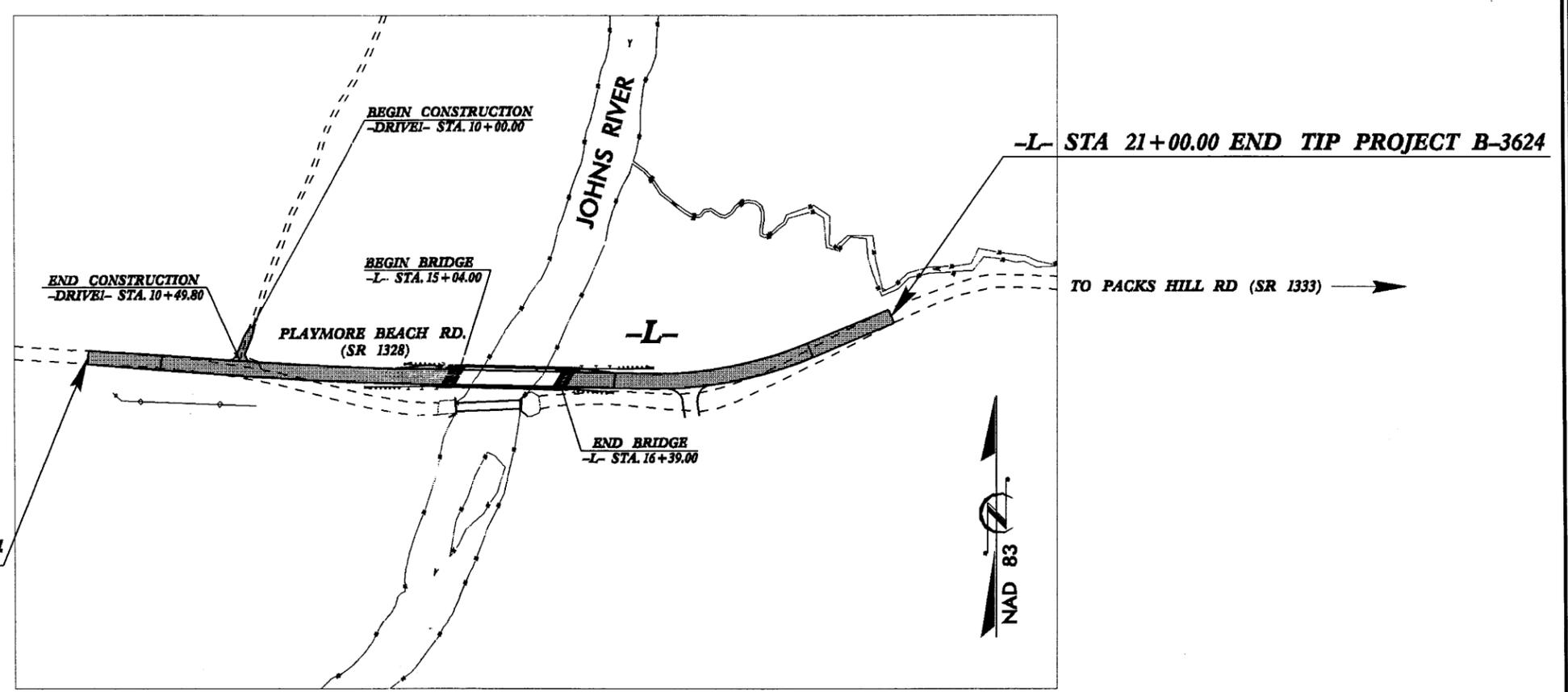
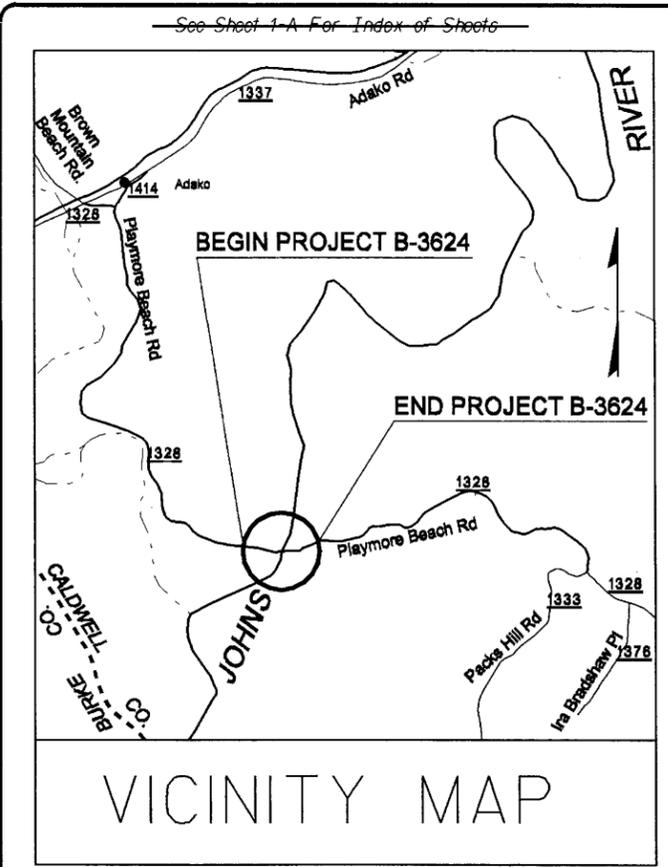
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3624	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33172.1.1	BRZ-1328(4)	P.E.	
33172.2.1	BRZ-1328(4)	RW, UTIL	



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
CALDWELL COUNTY

LOCATION: BRIDGE No. 190 OVER JOHNS RIVER ON SR 1328

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



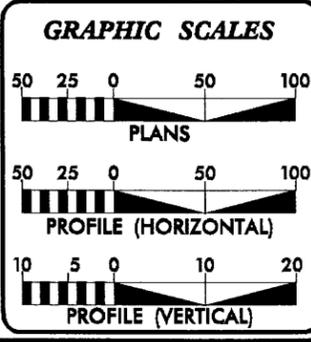
-L- STA 10+00.00 BEGIN TIP PROJECT B-3624

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.
THIS PROJECT IS NOT WITHIN MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHOULD BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TIP PROJECT: B-3624

CONTRACT:



DESIGN DATA

ADT 2008 =	277
ADT 2028 =	662
DHV =	12 %
D =	60 %
T =	3 % *
V =	40 MPH
FUNC CLASS =	LOCAL
* TTST 1	DUAL 2

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-3624 =	0.182 MILES
LENGTH OF STRUCTURE TIP PROJECT B-3624 =	0.026 MILES
TOTAL LENGTH OF TIP PROJECT B-3624 =	0.208 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: SEPTEMBER 21, 2007	TONY HOUSER, PE PROJECT ENGINEER
LETTING DATE: SEPTEMBER 16, 2008	JASON TALLEY, PE PROJECT DESIGN ENGINEER

SIGNATURE: _____	HYDRAULICS ENGINEER
SIGNATURE: _____	ROADWAY DESIGN ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

13-NOV-2007 14:28
P:\p00dway\proj\B3624_rdy_l.tsh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

3/15/06

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○
Property Corner	⊗
Property Monument	□
Parcel/Sequence Number	23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-----
Proposed Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	○
Small Mine	⊗
Foundation	□
Area Outline	□
Cemetery	⊕
Building	□
School	□
Church	□
Dam	▬

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	□
Jurisdictional Stream	JS
Buffer Zone 1	BZ 1
Buffer Zone 2	BZ 2
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	▬
Proposed Lateral, Tail, Head Ditch	▬
False Sump	▽

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite Marker	-----
Existing Control of Access	⊕
Proposed Control of Access	⊕
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Utility Easement	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	C
Proposed Slope Stakes Fill	F
Proposed Wheel Chair Ramp	WCR
Proposed Wheel Chair Ramp Curb Cut	WCC
Curb Cut for Future Wheel Chair Ramp	CCFR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	▨

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊕
Storm Sewer	-----

UTILITIES:

POWER:	
Existing Power Pole	⊕
Proposed Power Pole	⊕
Existing Joint Use Pole	⊕
Proposed Joint Use Pole	⊕
Power Manhole	⊕
Power Line Tower	⊕
Power Transformer	⊕
U/G Power Cable Hand Hole	⊕
H-Frame Pole	⊕
Recorded U/G Power Line	-----
Designated U/G Power Line (S.U.E.*)	-----

TELEPHONE:

Existing Telephone Pole	⊕
Proposed Telephone Pole	⊕
Telephone Manhole	⊕
Telephone Booth	⊕
Telephone Pedestal	⊕
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	⊕
Recorded U/G Telephone Cable	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

WATER:

Water Manhole	⊕
Water Meter	⊕
Water Valve	⊕
Water Hydrant	⊕
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	A/G Water

TV:

TV Satellite Dish	⊕
TV Pedestal	⊕
TV Tower	⊕
U/G TV Cable Hand Hole	⊕
Recorded U/G TV Cable	-----
Designated U/G TV Cable (S.U.E.*)	-----
Recorded U/G Fiber Optic Cable	-----
Designated U/G Fiber Optic Cable (S.U.E.*)	-----

GAS:

Gas Valve	⊕
Gas Meter	⊕
Recorded U/G Gas Line	-----
Designated U/G Gas Line (S.U.E.*)	-----
Above Ground Gas Line	A/G Gas

SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	A/G Sanitary Sewer
Recorded SS Forced Main Line	-----
Designated SS Forced Main Line (S.U.E.*)	-----

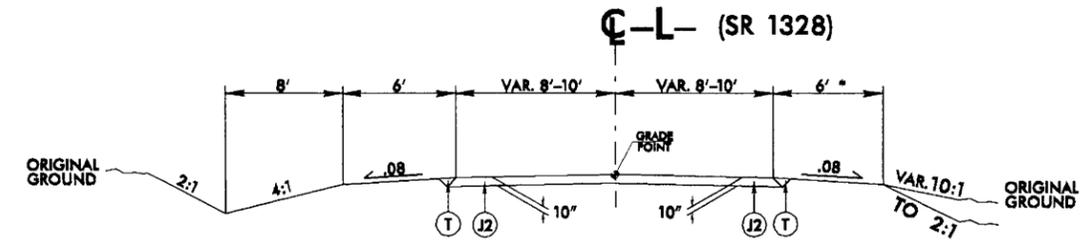
MISCELLANEOUS:

Utility Pole	⊕
Utility Pole with Base	⊕
Utility Located Object	⊕
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	□
A/G Tank; Water, Gas, Oil	□
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

6/2/99

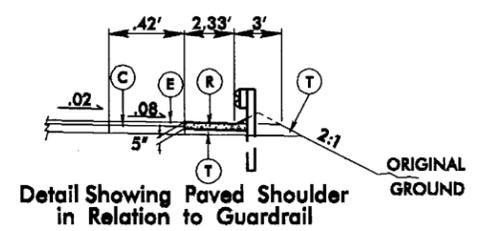
PROJECT REFERENCE NO. B-3624	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PAVEMENT SCHEDULE	
A	PROP. APPROX. 3" PORTLAND CEMENT CONCRETE PAVEMENT NOTE: STRUCTURE PAY ITEM
C	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 275 LBS. PER SQ. YD.
E	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B26.0B, AT AN AVERAGE RATE OF 458 LBS. PER SQ. YD.
J1	PROP. 6" AGGREGATE BASE COURSE
J2	PROP. 10" AGGREGATE BASE COURSE
R	SHOULDER BERM GUTTER.
T	EARTH MATERIAL

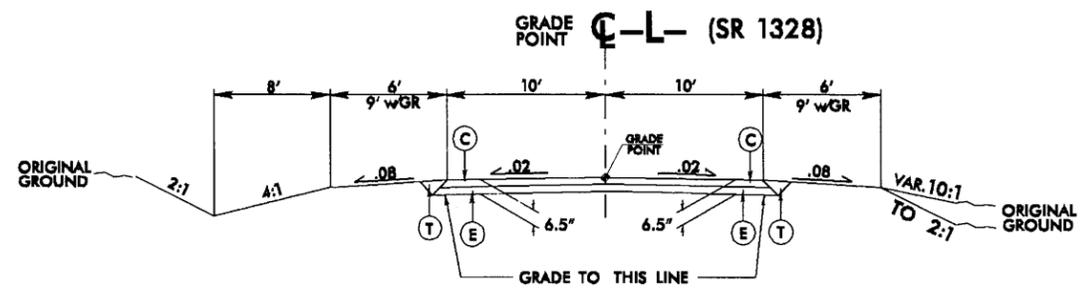


TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 FOR THE FOLLOWING:
 -L- STA. 10+00.00 TO -L- STA. 11+00.00
 -L- STA. 20+00.00 TO -L- STA. 21+00.00
 * NOTE: 4.5' SHOULDER AT -L- STA. 20+50.00

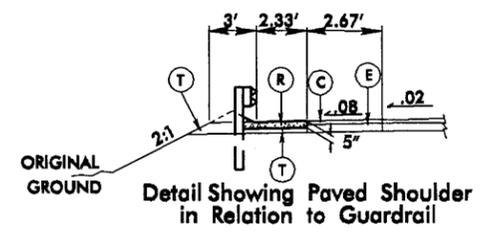


USE SHOULDER BERM GUTTER FOR THE FOLLOWING:
 -L- STA. 14+77.89 TO -L- STA. 14+84.14 RT
 -L- STA. 16+44.14 TO -L- STA. 16+50.39 RT

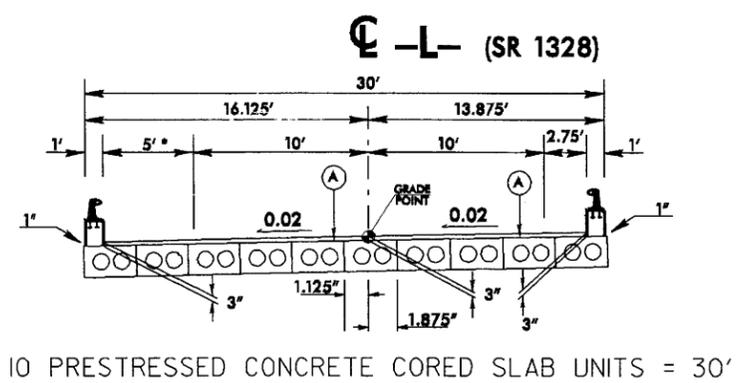


TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 FOR THE FOLLOWING:
 -L- STA. 11+00.00 TO -L- STA. 15+04.00 (BEGIN BRIDGE)
 -L- STA. 16+39.00 (END BRIDGE) TO -L- STA. 20+00.00

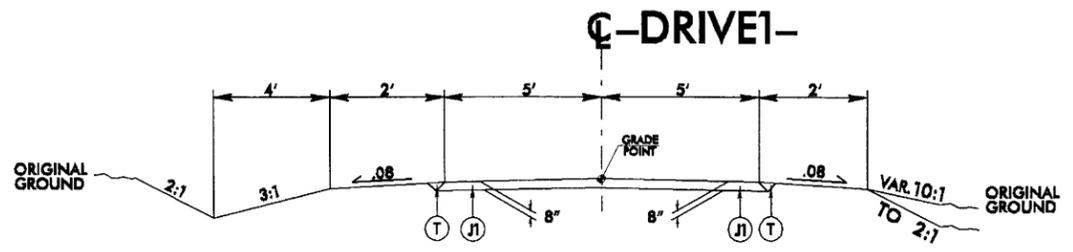


USE SHOULDER BERM GUTTER FOR THE FOLLOWING:
 -L- STA. 14+82.50 TO -L- STA. 15+00.38 LT
 -L- STA. 16+60.16 TO -L- STA. 16+66.41 LT



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 FOR THE FOLLOWING:
 -L- STA. 15+04.00 TO -L- STA. 16+39.00
 * USED 5' OFFSET ON LEFT DUE TO HYDRAULIC SPREAD
 SEE STRUCTURE PLANS FOR DETAIL OF BRIDGE RAIL FOR LOW-WATER BRIDGE



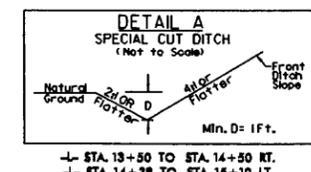
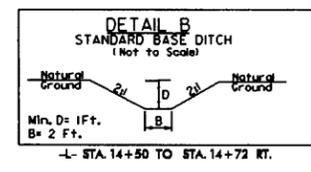
TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 3 FOR THE FOLLOWING:
 -DRIVE1- STA. 10+00.00 TO -DRIVE1- STA. 10+49.80

I:\NOV-2007\1429
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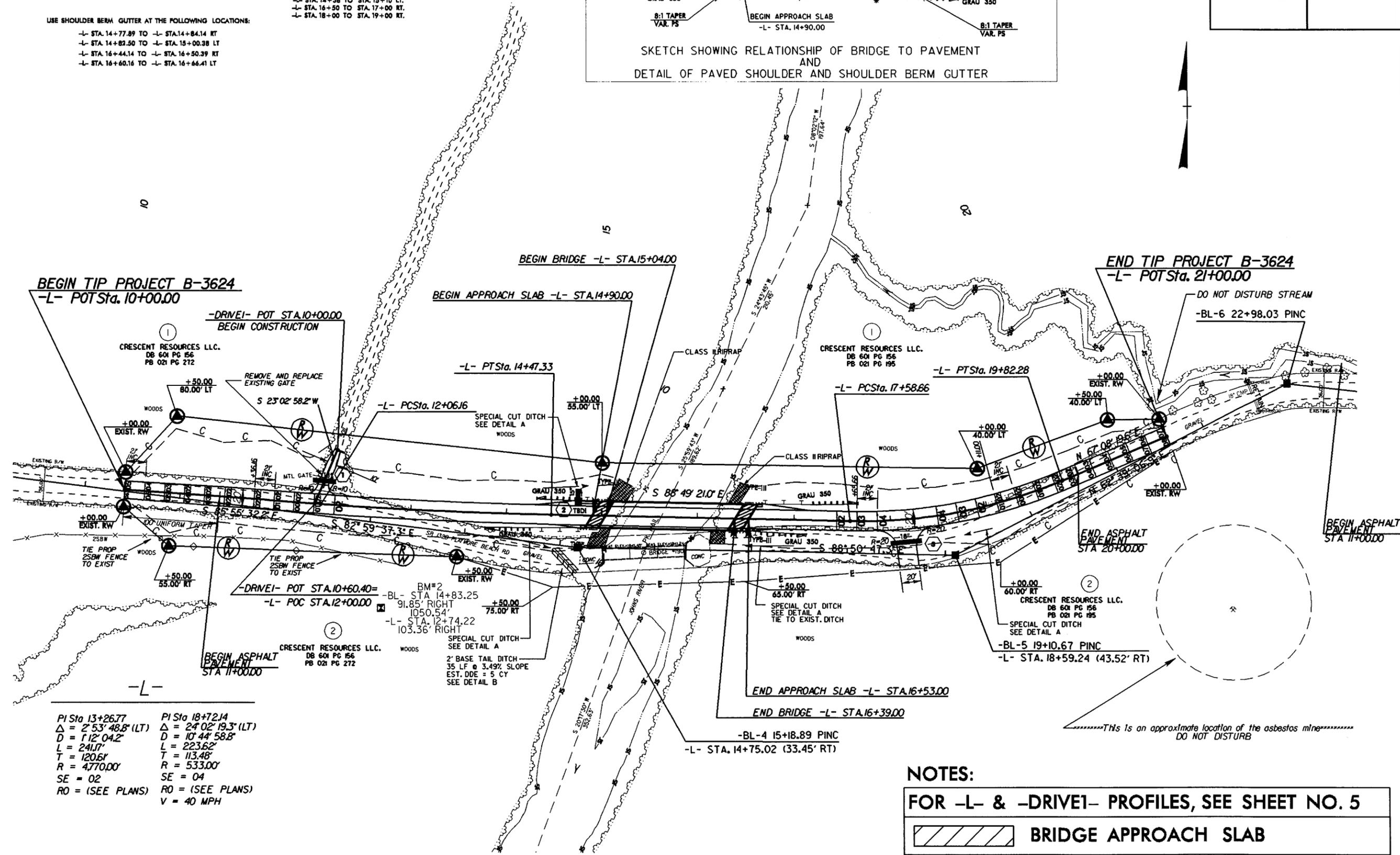
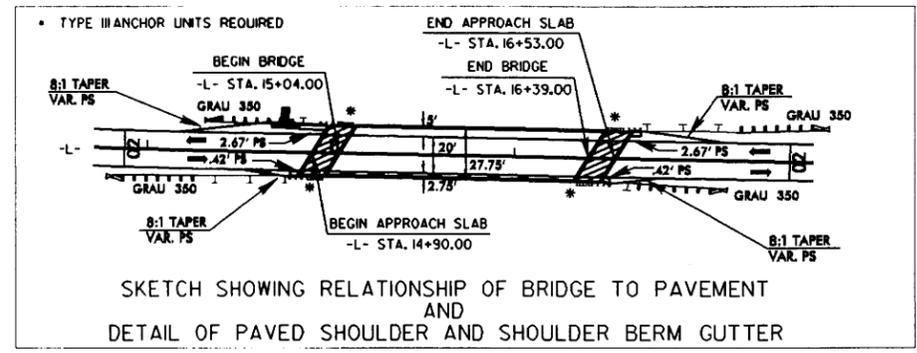
8/17/99

PROJECT REFERENCE NO. B-3624	SHEET NO. 4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



USE SHOULDER BERM GUTTER AT THE FOLLOWING LOCATIONS:

- L- STA. 14+77.89 TO -L- STA. 14+84.14 RT
- L- STA. 14+82.50 TO -L- STA. 15+00.38 LT
- L- STA. 16+44.14 TO -L- STA. 16+50.39 RT
- L- STA. 16+60.16 TO -L- STA. 16+66.41 LT



PI Sta 13+26.77	PI Sta 18+72.14
$\Delta = 2' 53'' 48.8''$ (LT)	$\Delta = 2' 02'' 19.3''$ (LT)
$D = 1' 12'' 04.2''$	$D = 10' 44'' 58.8''$
$L = 241.17'$	$L = 223.62'$
$T = 120.61'$	$T = 113.48'$
$R = 4770.00'$	$R = 533.00'$
$SE = 02$	$SE = 04$
$RO = (SEE PLANS)$	$RO = (SEE PLANS)$
	$V = 40$ MPH

NOTES:

FOR -L- & -DRIVE1- PROFILES, SEE SHEET NO. 5

BRIDGE APPROACH SLAB

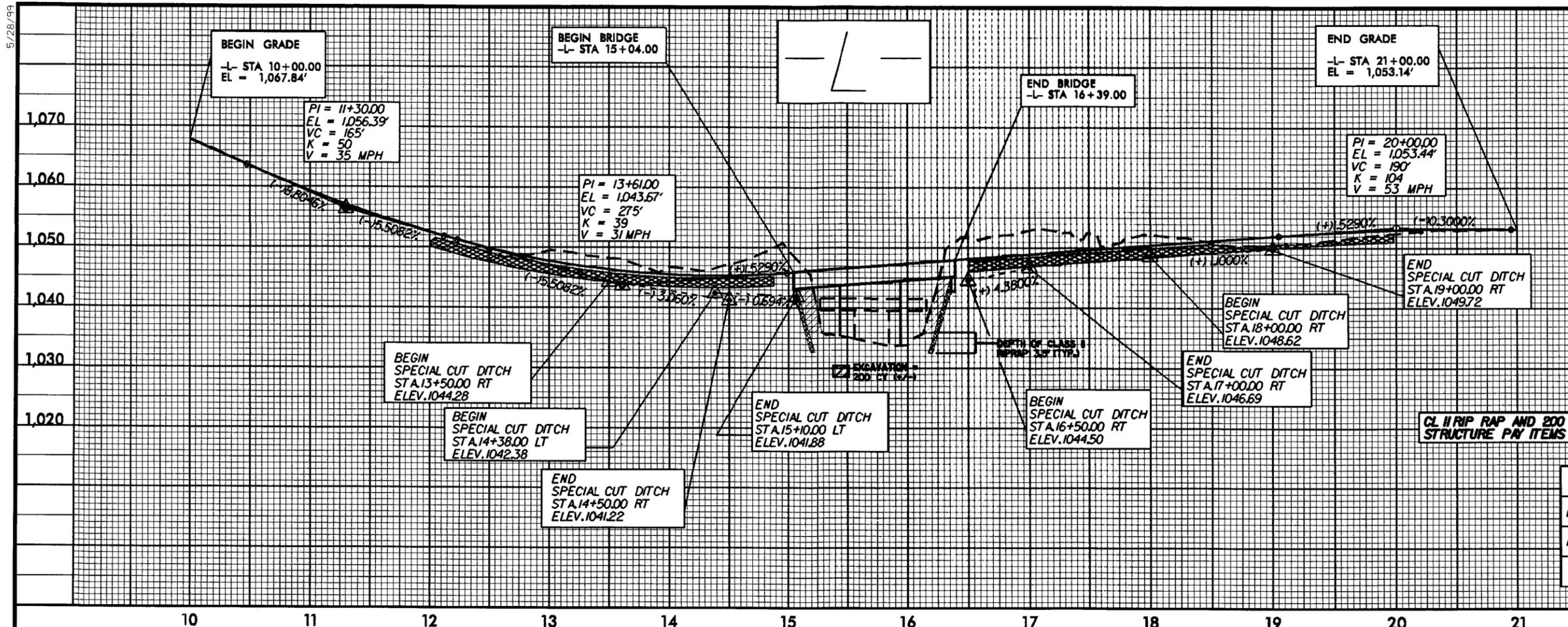
FOR STRUCTURE PLANS, SEE SHEET S-? THRU S-??

REVISIONS

13-NOV-2007 14:49 b3624_rdy1.psd04.dgn

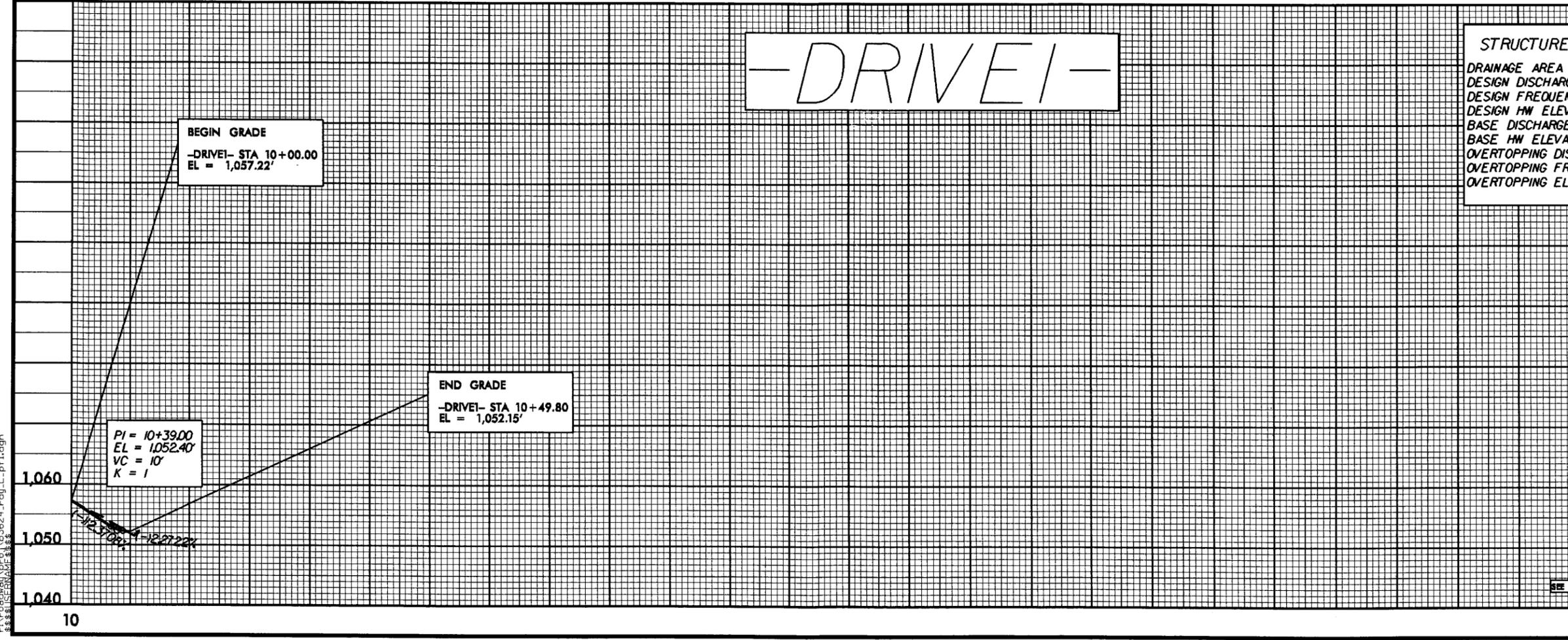
5/28/99

PROJECT REFERENCE NO. B-3624	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



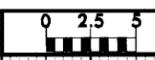
-DRIVE1-

STRUCTURE HYDRAULIC DATA		
DRAINAGE AREA	= 114	SQ MI
DESIGN DISCHARGE	= 3900	CFS
DESIGN FREQUENCY	= 2	YRS
DESIGN HW ELEVATION	= 1044.0	FT
BASE DISCHARGE	= 18000	CFS
BASE HW ELEVATION	= 1055.5	FT
OVERTOPPING DISCHARGE	= 6721	CFS
OVERTOPPING FREQUENCY	= 5+	YRS
OVERTOPPING ELEVATION	= 1046.0	FT



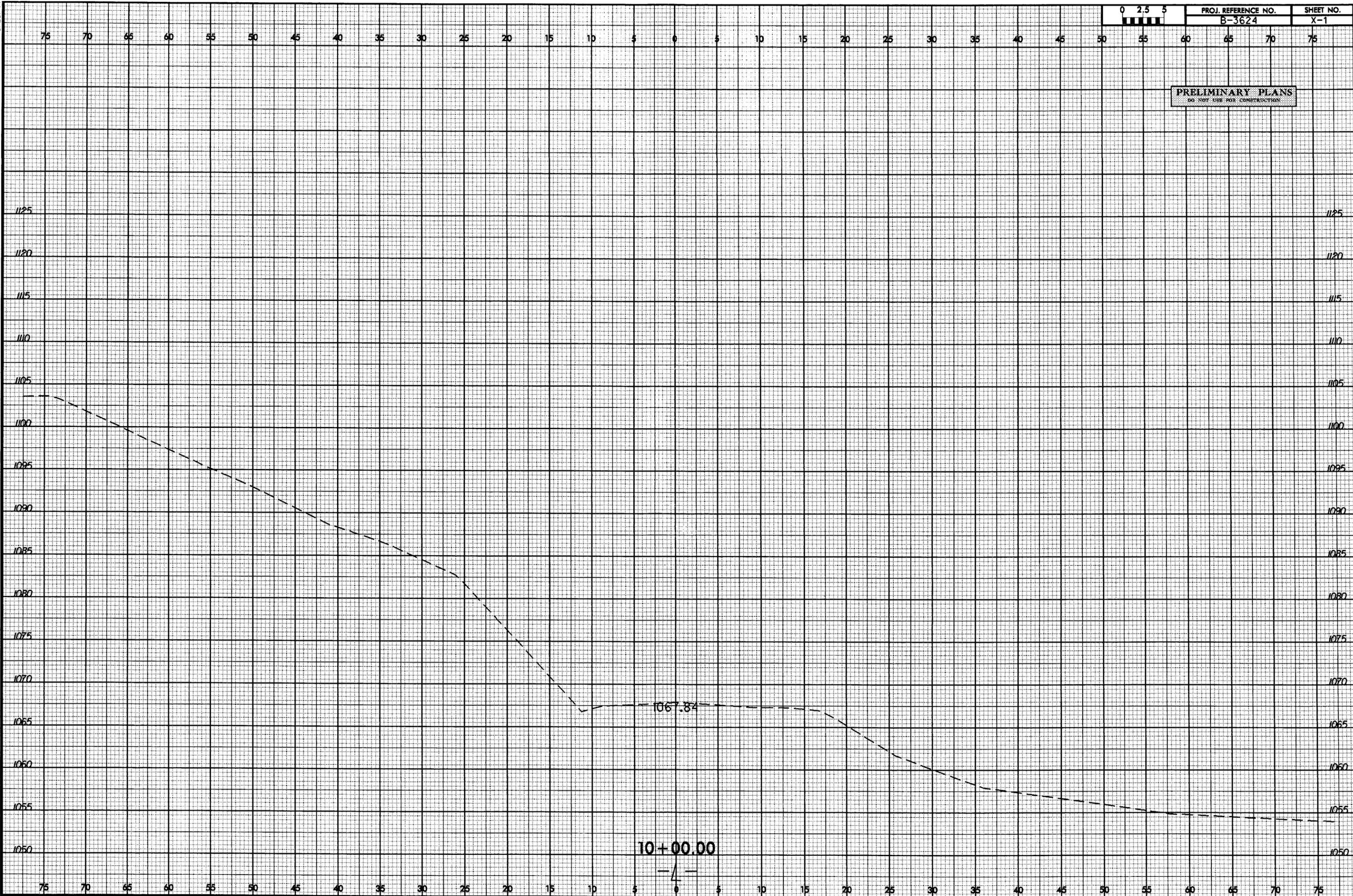
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8/23/99



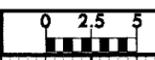
PROJ. REFERENCE NO.	SHEET NO.
B-3624	X-1

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



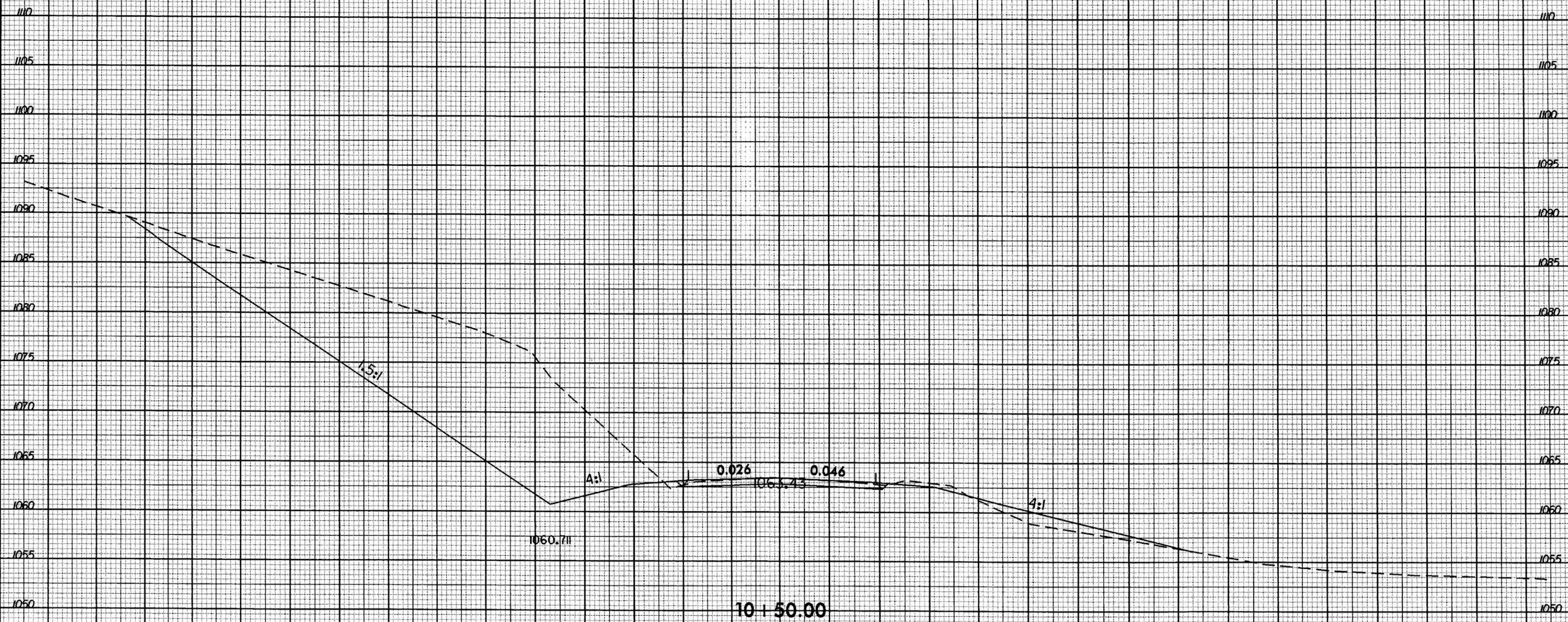
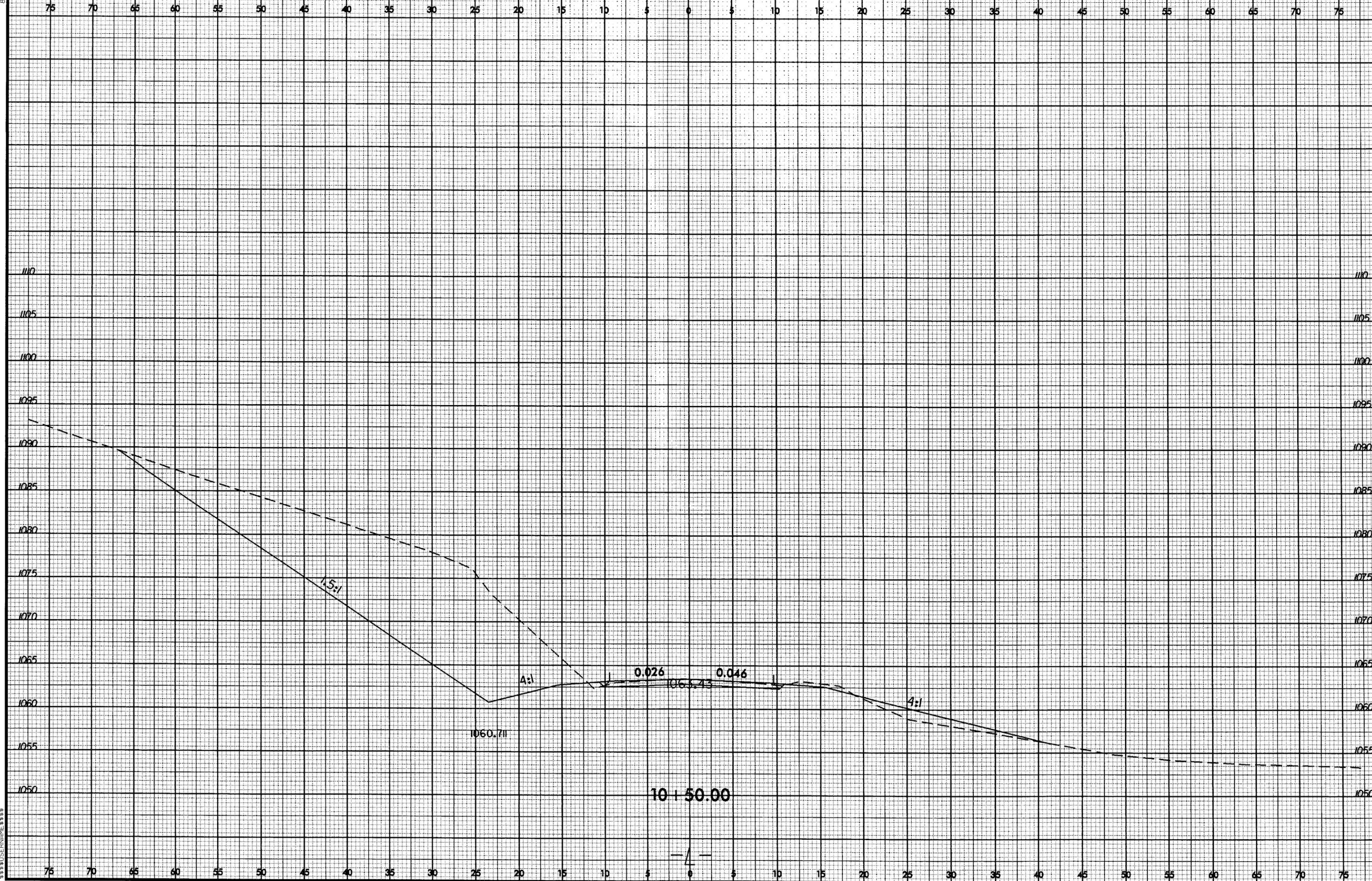
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PROJ. REFERENCE NO.
B-3624

SHEET NO.
X-2



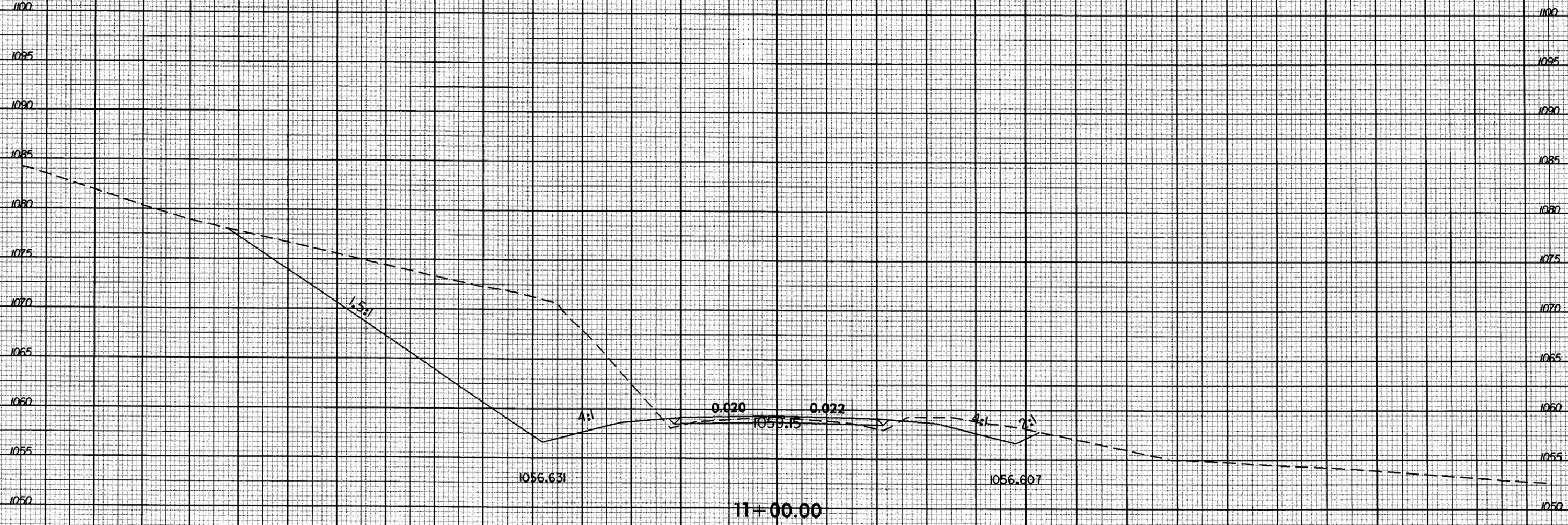
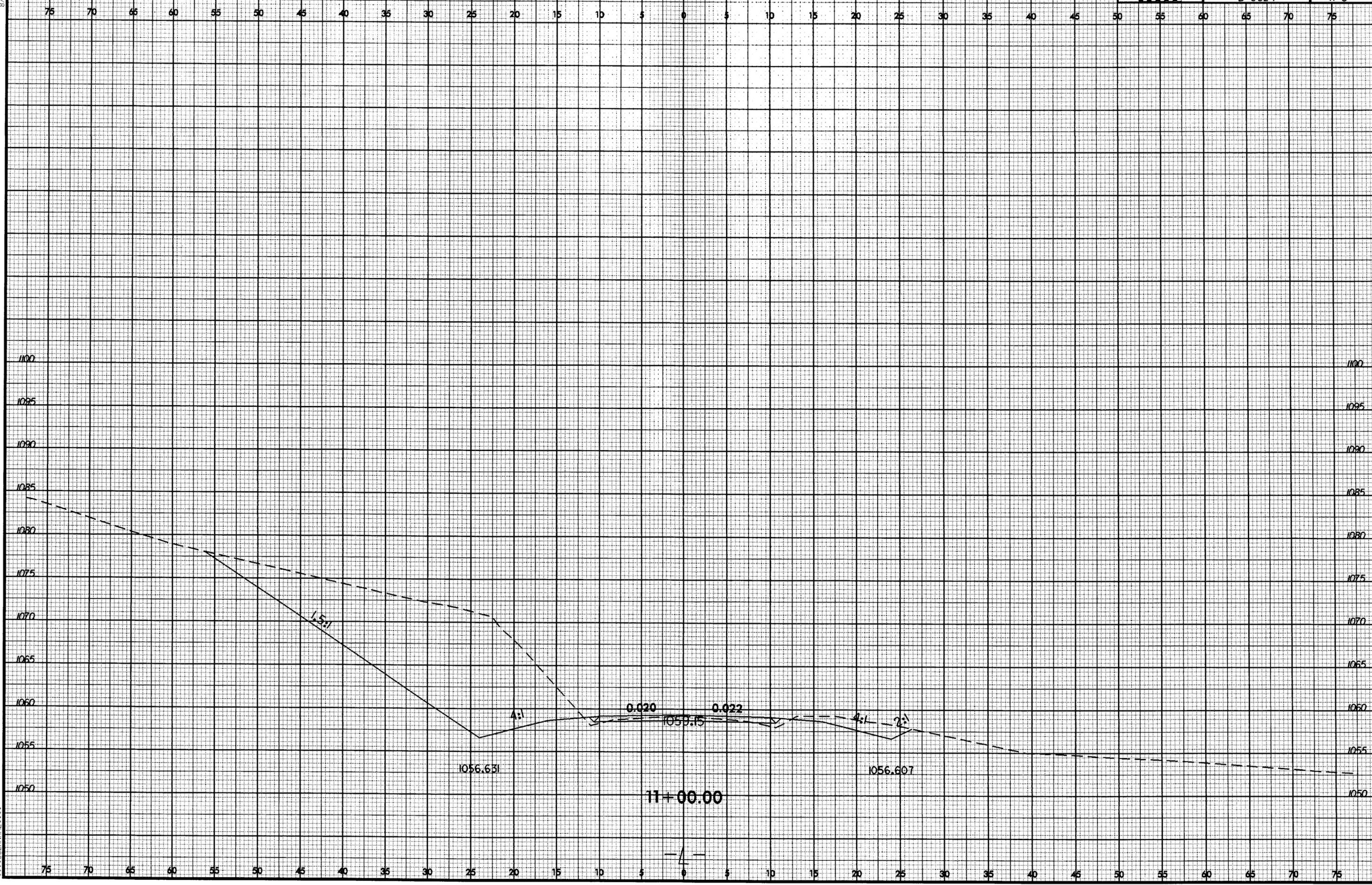
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8/23/99



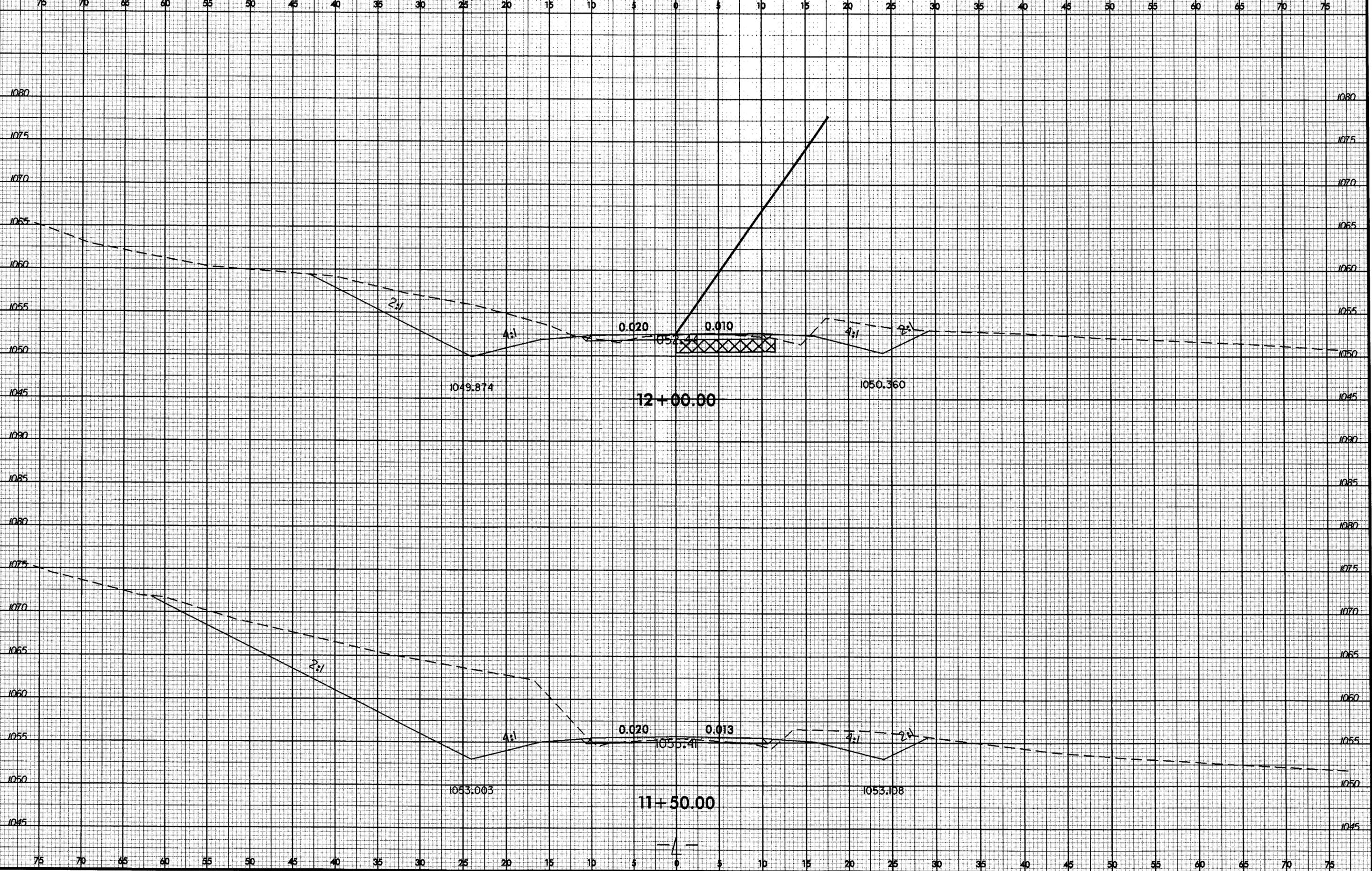
PROJ. REFERENCE NO.
B-3624

SHEET NO.
X-3



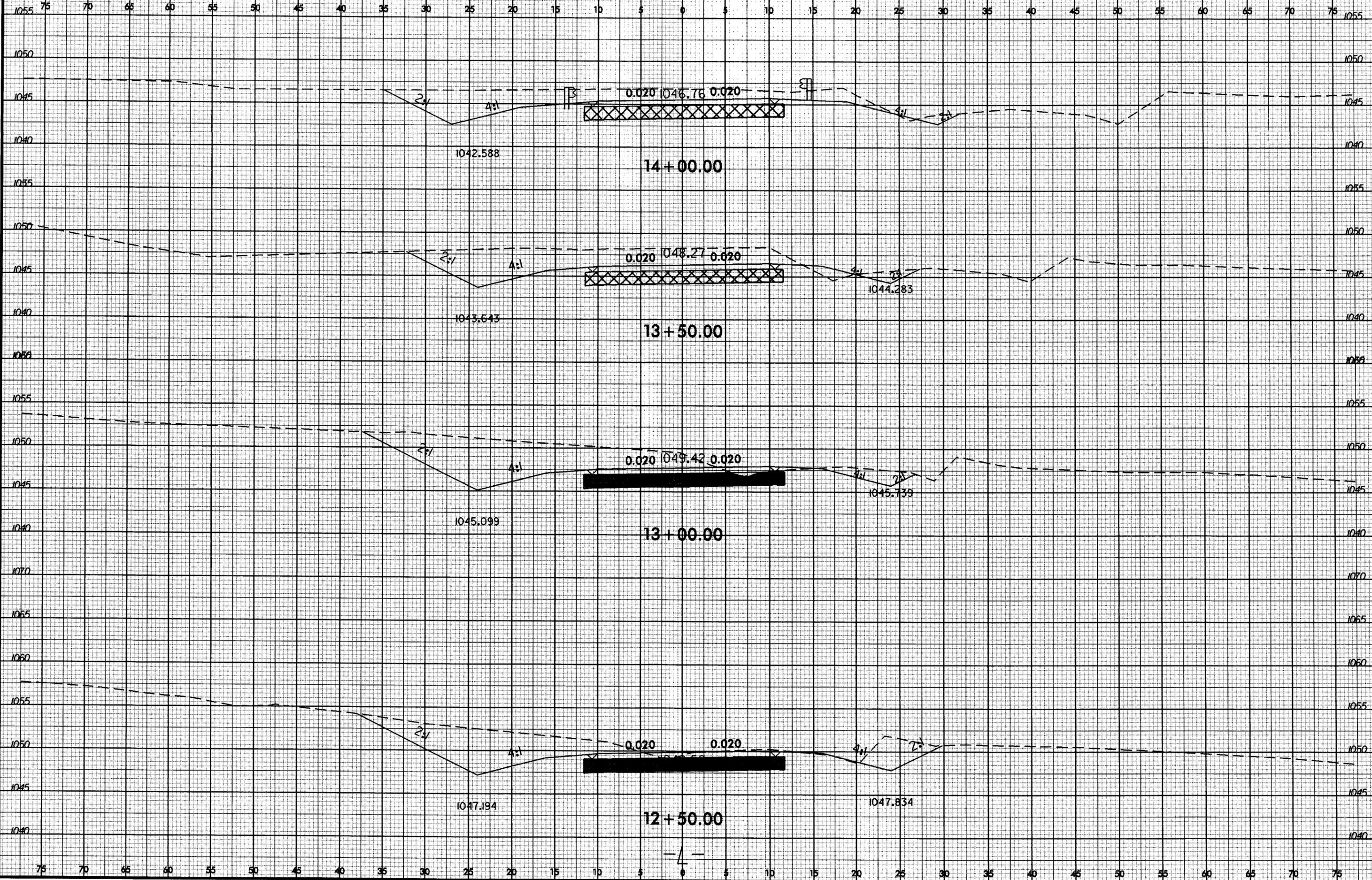
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3:36:36 PM 11/26/07

8/23/99



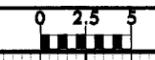
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8/23/99

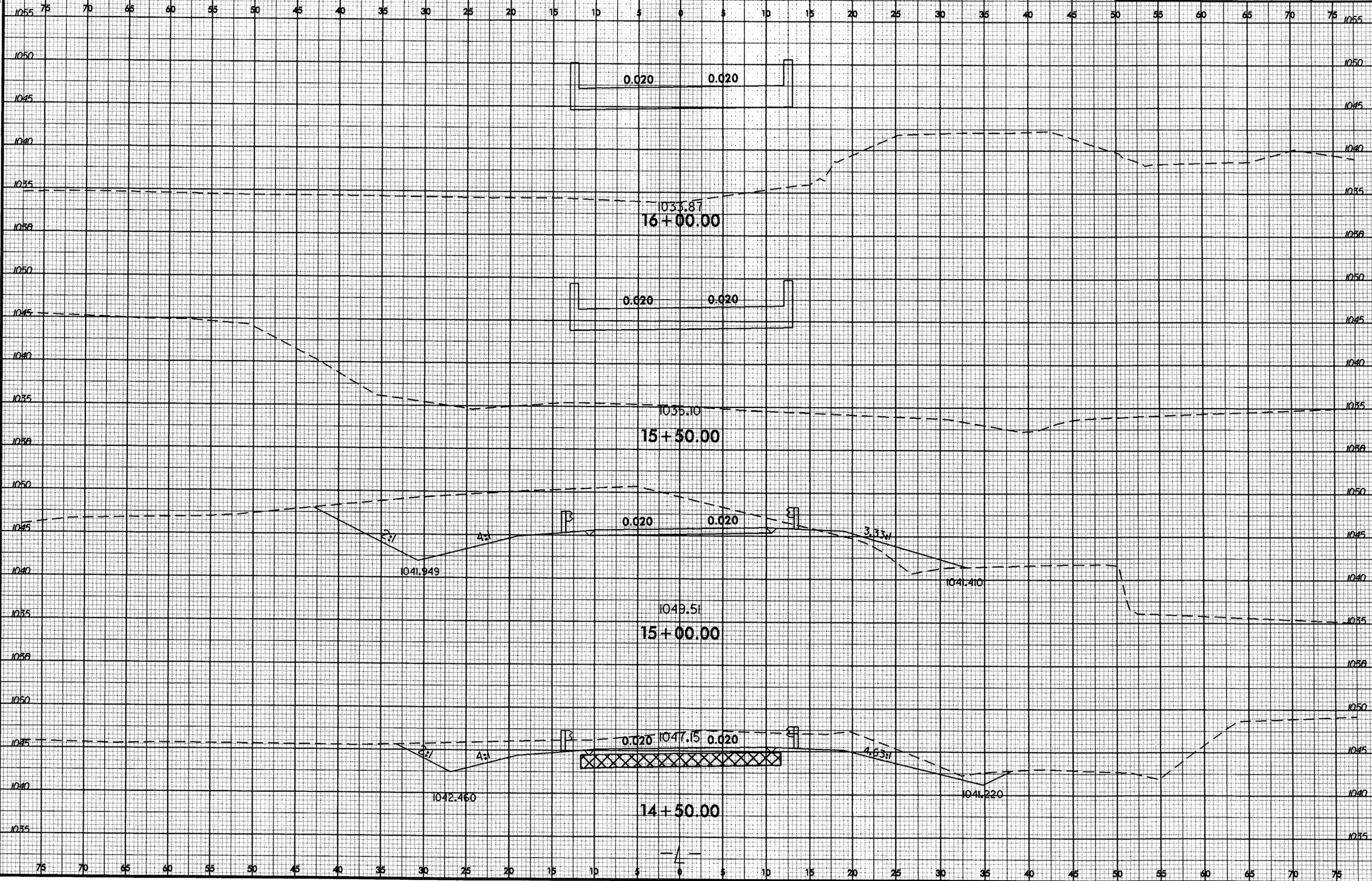


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8/23/99

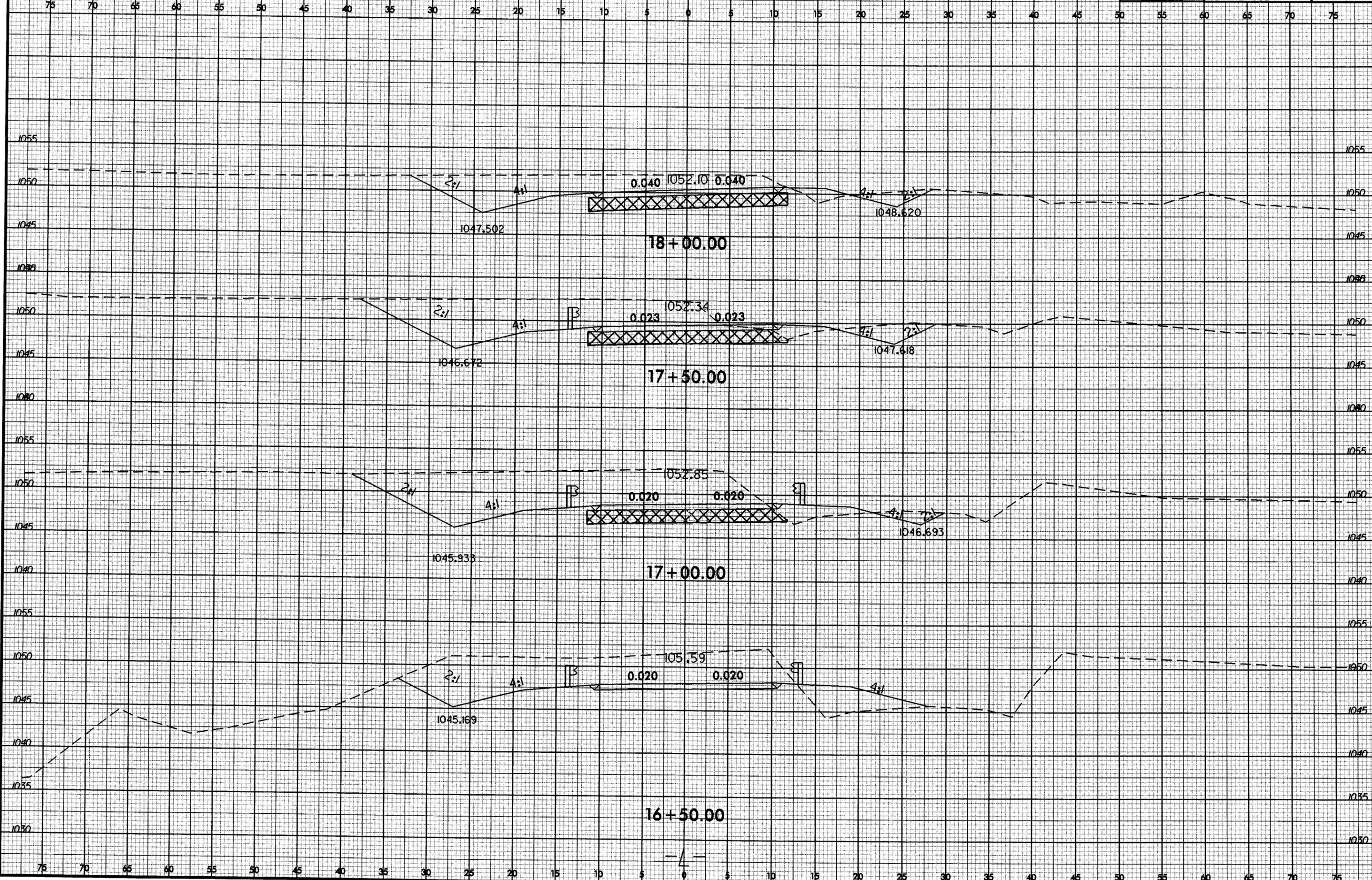


PROJ. REFERENCE NO. B-3624 SHEET NO. X-6



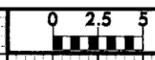
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8/23/09

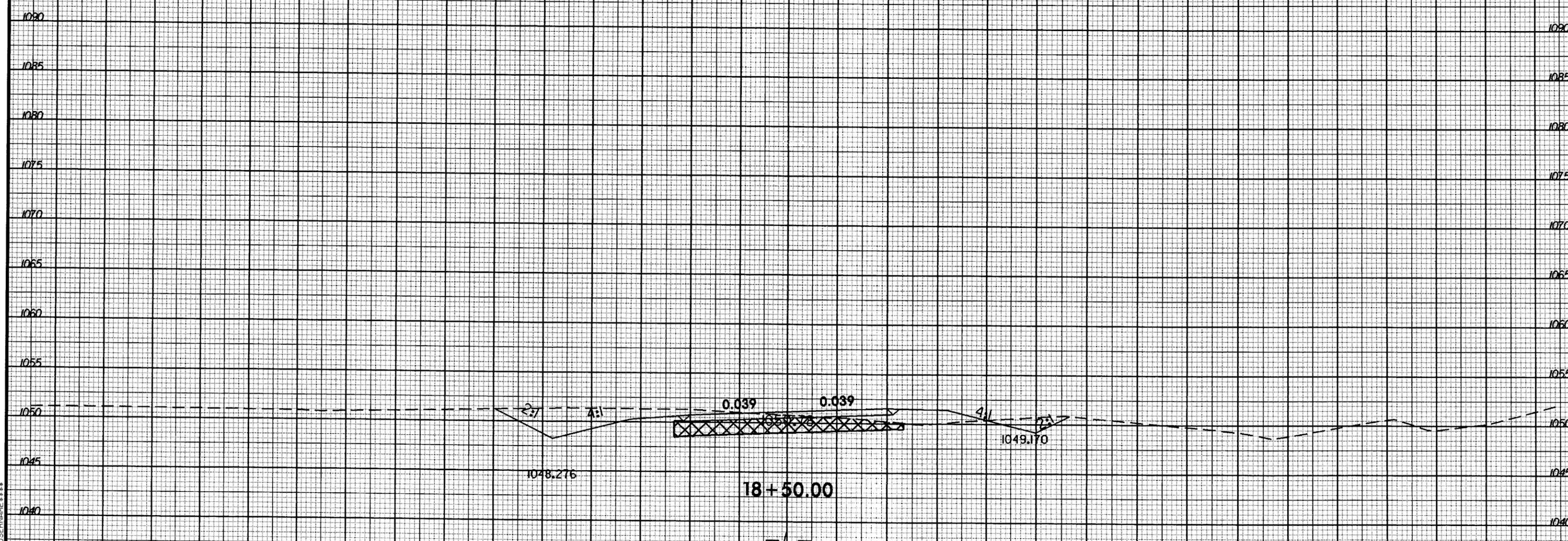
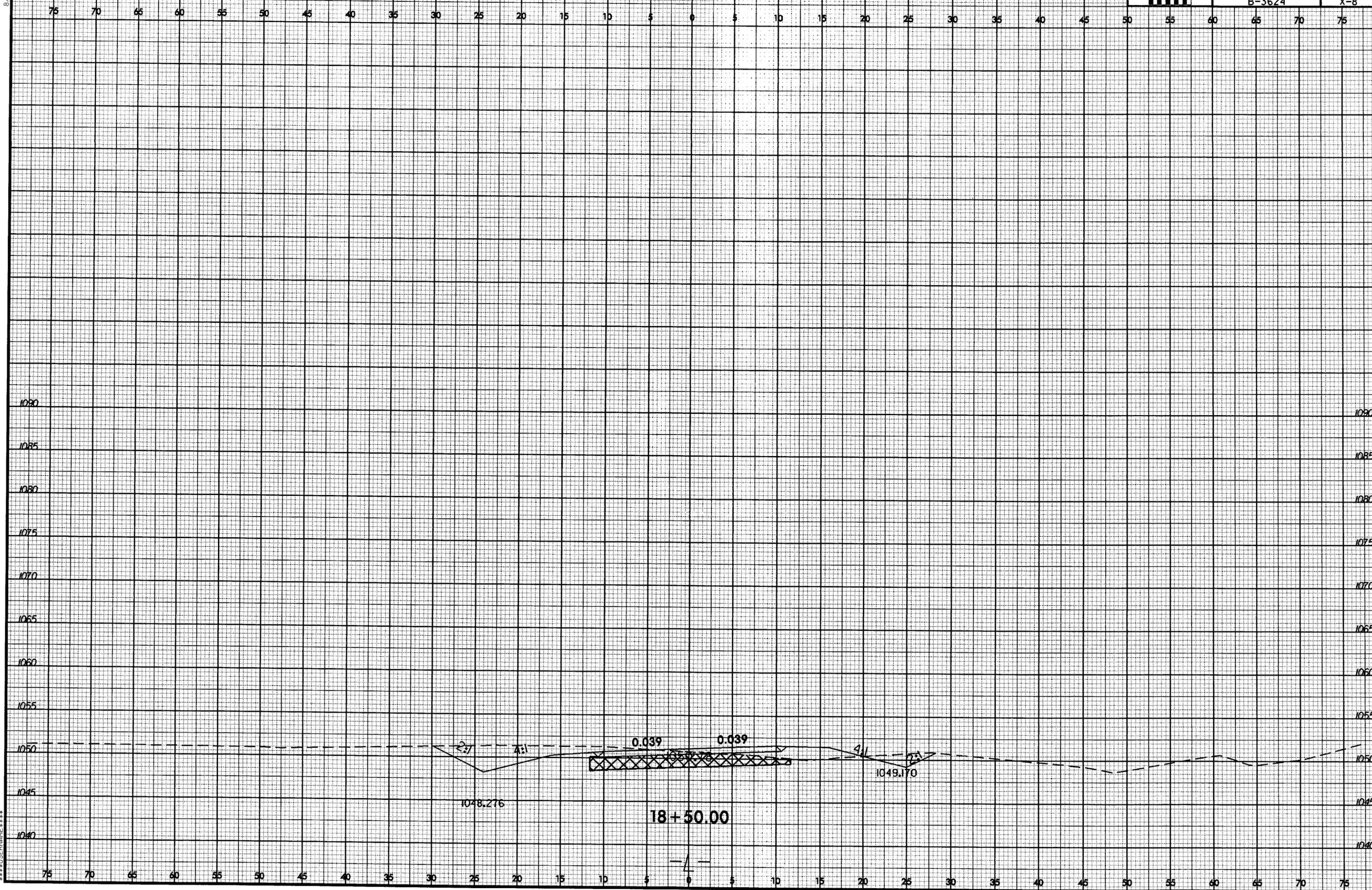


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8/23/99

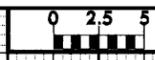


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B-3624	X-8

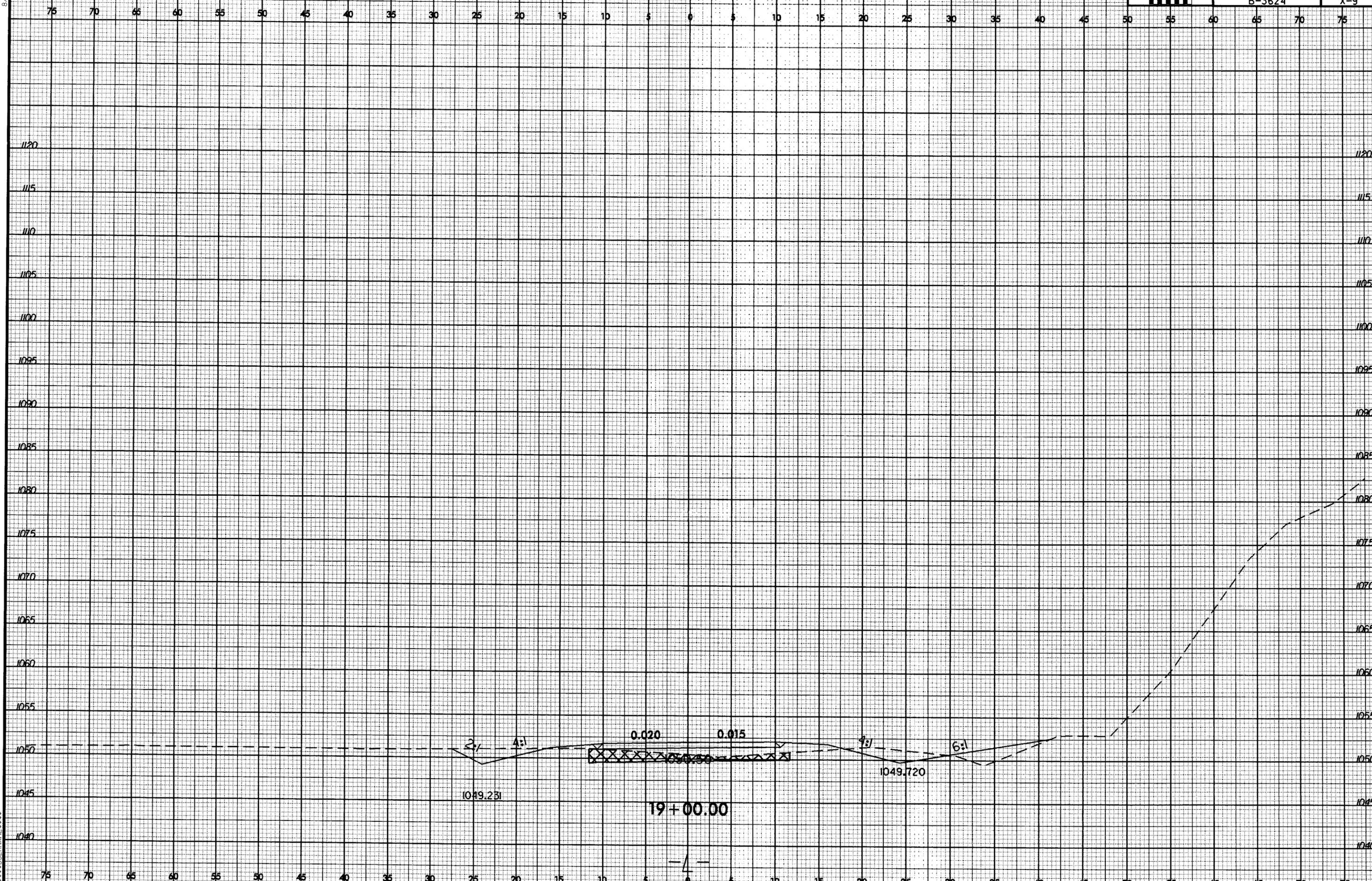


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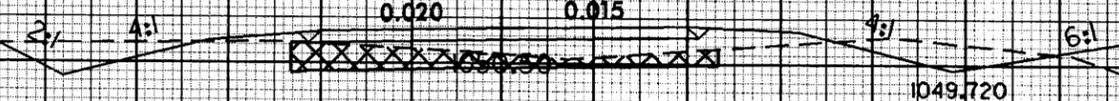
8/23/99



PROJ. REFERENCE NO.	SHEET NO.
B-3624	X-9



15 NOV 2007 14:28
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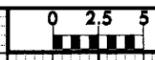
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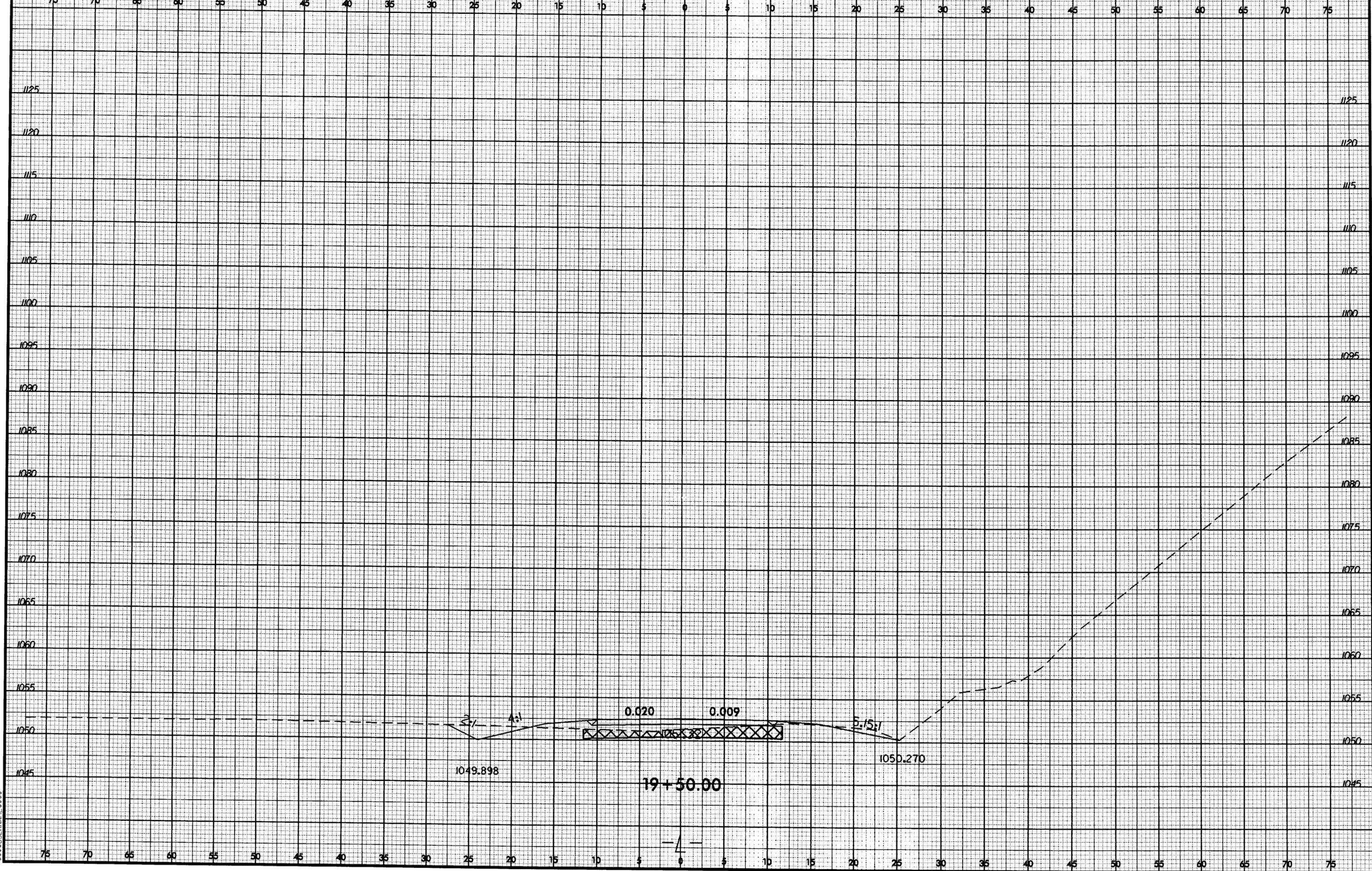
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B-3624	X-10



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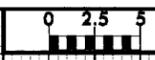
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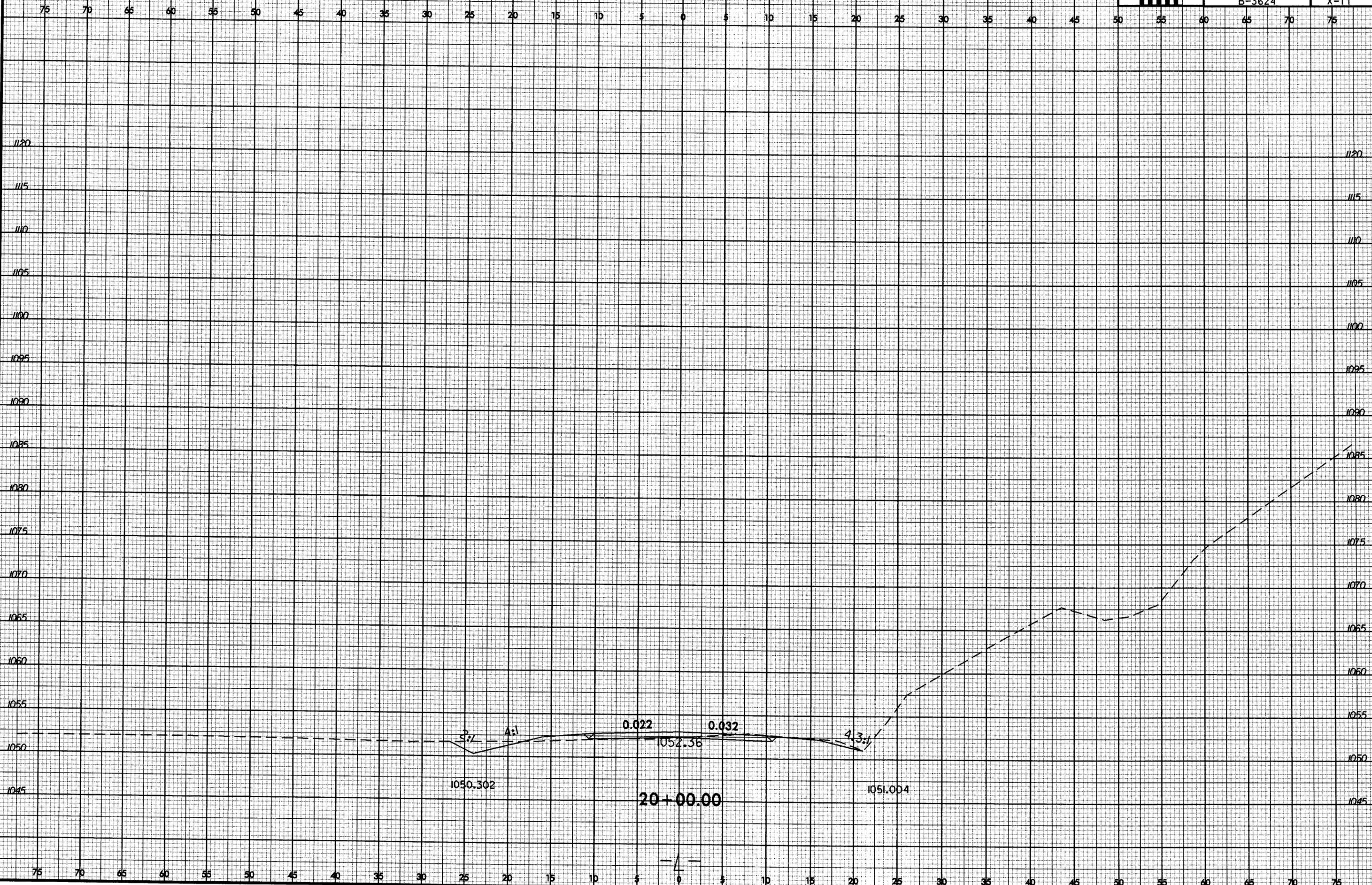
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8/23/99

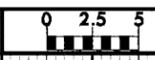


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B-3624	X-11

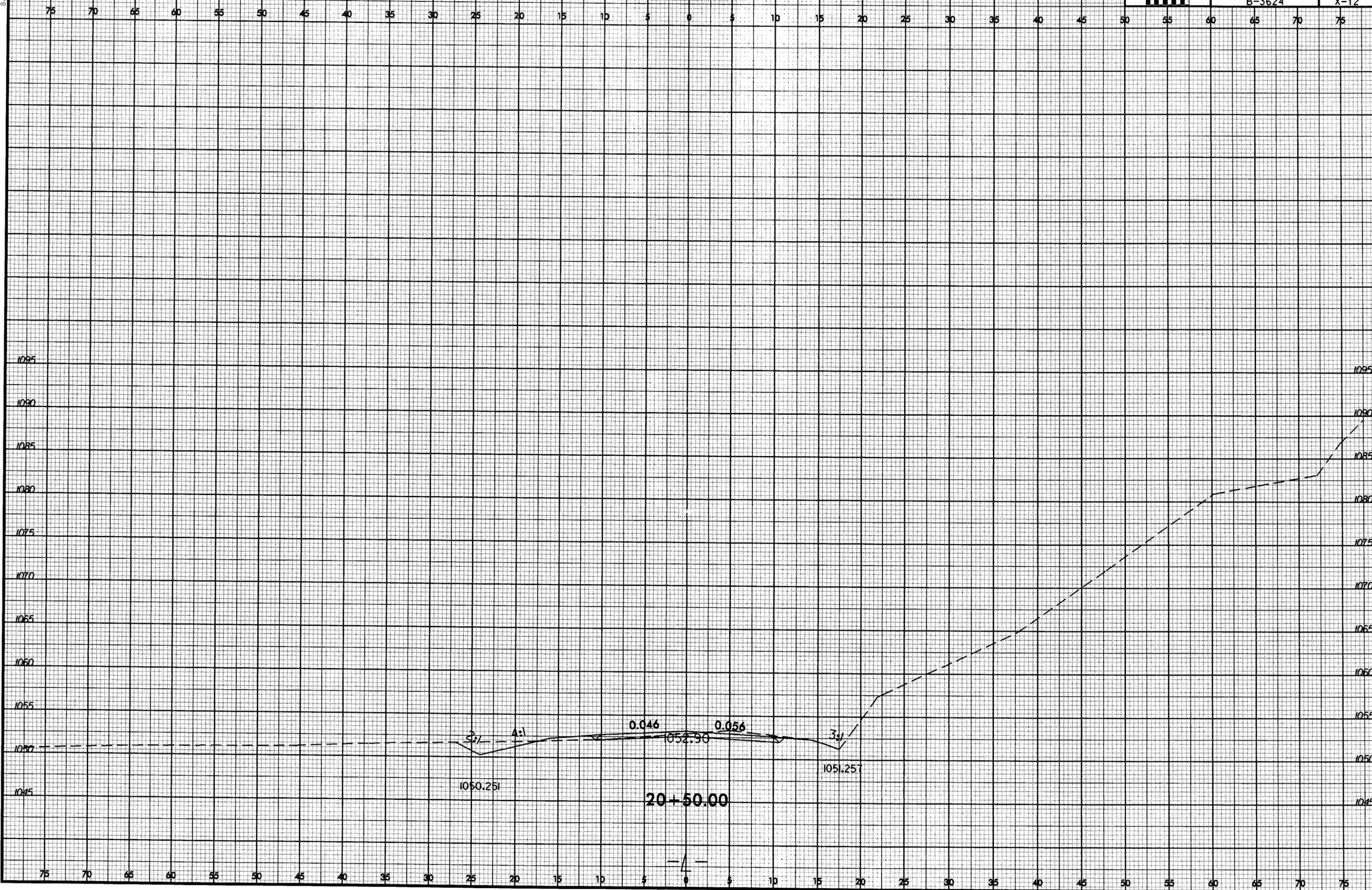


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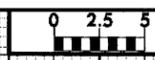


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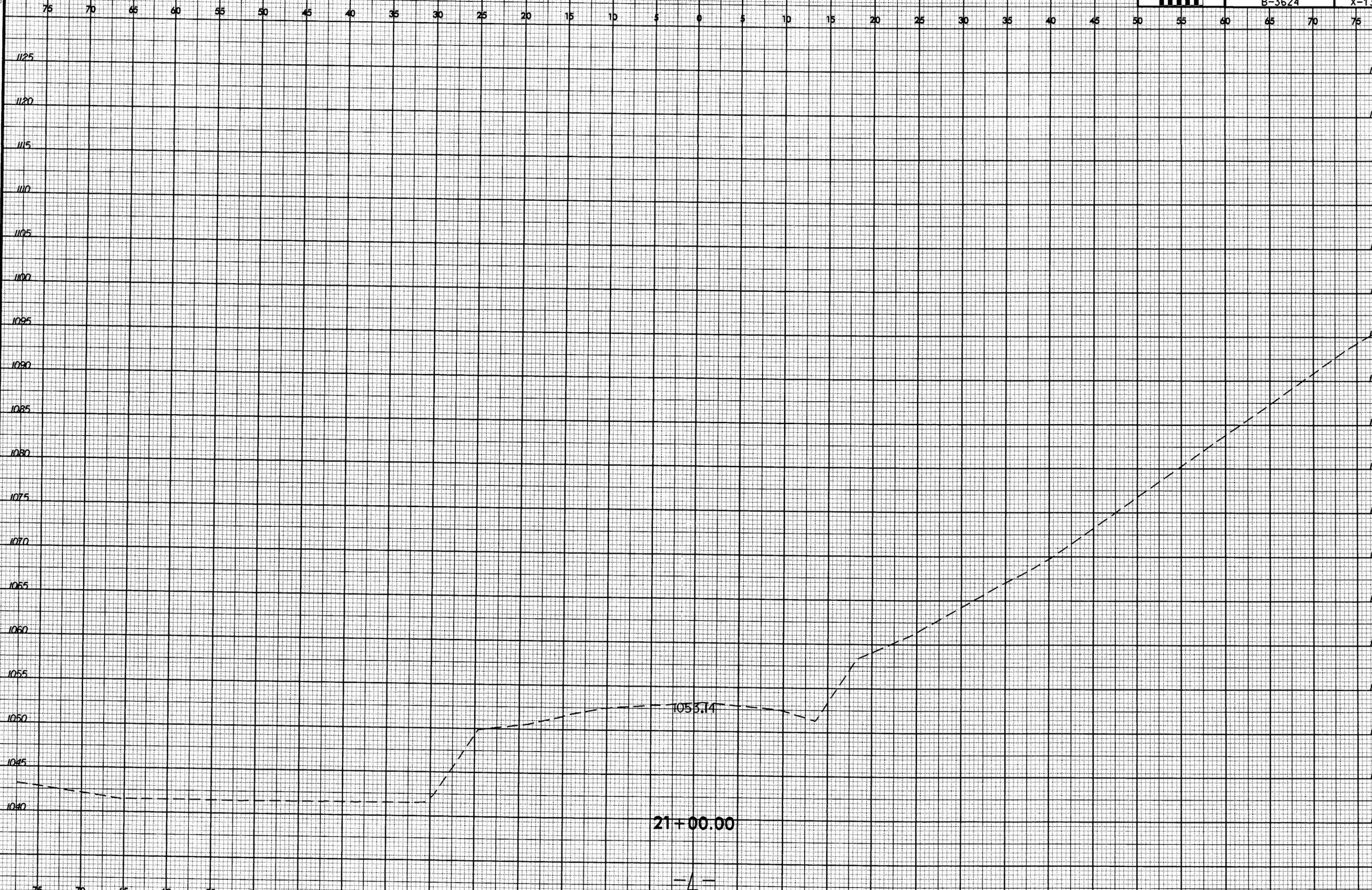


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8/23/99

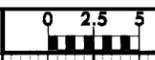


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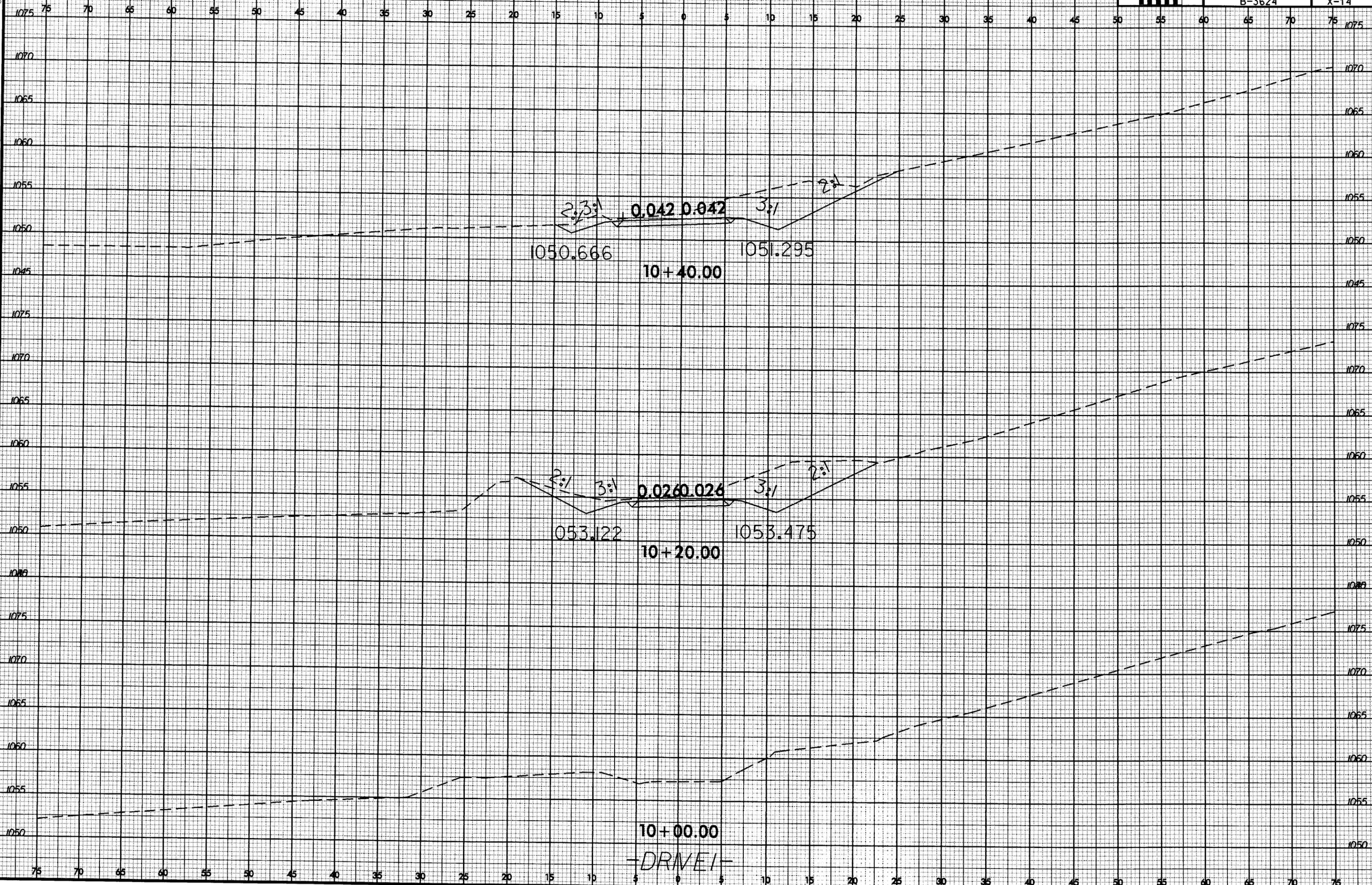


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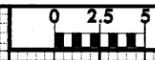


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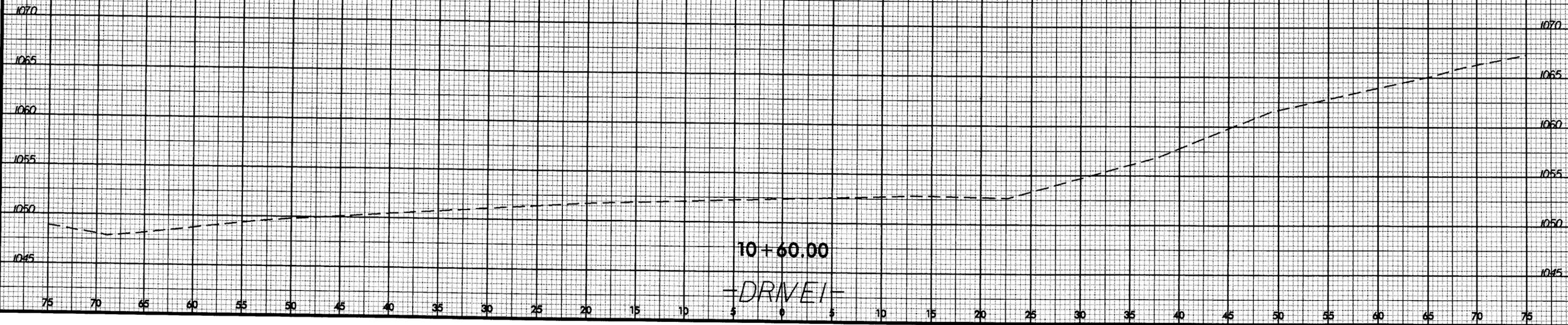
8/23/96

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PROJ. REFERENCE NO.
B-3624

SHEET NO.
X-15



13-NOV-2007 14:27
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