



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

December 22, 2004

U. S. Army Corps of Engineers
Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, NC 28801-5006

ATTN: Ms. Angie Pennock
NCDOT Coordinator

Dear Madam:

SUBJECT: **Nationwide 23 and 33 Permit Application** for the replacement of Bridge No. 323 over Clear Creek on SR 1611, Macon County. Federal Aid Project No. BRZ-1611(2), State Project No. 8.2970901, TIP Project No. B-4180.

The NC Department of Transportation (NCDOT) proposes to replace Bridge No. 323 over Clear Creek on SR 1611, with a new bridge at approximately the same location and roadway elevation as the existing structure. The new bridge will be approximately 55 feet in length and 26 feet in width. A travelway of 22 feet will be accommodated, with an offset of 2 feet on each side of the bridge. The approach roadway will consist of two 11-foot travel lanes and shoulder widths of at least 4 feet. The shoulder widths will be increased by at least 3 feet where guardrail is warranted. Traffic will be detoured off-site, along surrounding roads during construction. Total project length will be approximately 1100 feet.

IMPACTS TO WATERS OF THE UNITED STATES

No permanent impacts to Waters of the United States, in the form of wetlands or surface waters, are anticipated as a result of project construction. There will be temporary impacts of 0.01 acres, due to the construction of the workpad, in Clear Creek. Clear Creek is located in the Savannah River Basin, subbasin 03-13-01, DWQ classification is B Tr, and DWQ index of 3-10-2-3.

BRIDGE DEMOLITION

The superstructure of Bridge No. 323 consists of a timber floor with an asphalt-wearing surface. The end bents are composed of timber caps, posts, and sills with a concrete footing. Therefore, this bridge will be removed without dropping components into Waters of the United States during demolition.

BRIDGE CONSTRUCTION

Bridge No. 323 will be a two span spill through slope bridge. The substructure will include drilled piers for the bents, which causes the need for a temporary workpad during construction.

AVOIDANCE & MINIMIZATION

The construction of this project has minimized the extent of the built-upon area by using the existing alignment for the bridge replacement. Traffic will be maintained using an off-site detour. Best management practices (BMP's) will be utilized to minimize water quality impacts. In compliance with 15A NCAC 02B.0104(m) we have incorporated the use of BMP's in the design of the project.

TEMPORARY WORKPAD

There will be 0.01 acres of temporary impacts in Clear Creek from the construction of a temporary workpad. The workpad is required for the drilling equipment that will be used for the drilled piers. It will extend 5 feet out into the channel, using Class II Rip Rap covered by 2 feet of Class B Rip Rap.

No permanent fill will result from the subject activity. The materials used as temporary fill in the construction of the rock workpad, will be completely removed. The entire workpad footprint shall be returned to the original contours and elevations after the purpose of the workpad has been served. After the workpad is no longer needed, the contractor will use excavating equipment to remove all materials. All workpad material will become the property of the contractor. The contractor will be required to submit a reclamation plan for removal of and disposal of all materials off-site.

FEDERALLY-PROTECTED SPECIES

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered, and Proposed Threatened are protected under Endangered Species Act §§7 and 9. As of January 29, 2003, the US Fish and Wildlife Service (USFWS) lists 7 federally protected species for Macon County (Table 1). The biological conclusion of "No Effect", was reached for all federally protected species for this county at this site, and currently remain valid.

Table 1. Federally Protected Species for Macon County

SCIENTIFIC NAME	COMMON NAME	STATUS	BIOLOGICAL CONCLUSION
<i>Clemys muhlenbergii</i>	Bog turtle	T(S/A)	No Effect
<i>Erimonax monachus</i>	Spotfin chub	T	No Effect
<i>Myotis sodalis</i>	Indiana bat	E	No Effect
<i>Alasmidonta raveneliana</i>	Appalachian elktoe	E	No Effect
<i>Pegias fabula</i>	Littlewing pearl mussel	E	No Effect
<i>Isotria medeoloides</i>	Small whorled pogonia	T	No Effect
<i>Spiraea virginiana</i>	Virginia spiraea	T	No Effect

KEY:

STATUS:

- “E” Denotes Endangered (a species that is in danger of extinction throughout all or a significant portion of its range).
- “T” Denotes Threatened (a species that is likely to become endangered species within the foreseeable future throughout all or a significant portion of its range).
- “T(S/A)” Denotes Threatened due to similarity of appearance (a species that is threatened due to similarity of appearance with other rare species and is listed for its protection).

REGULATORY APPROVALS

Section 404 Permit: It is anticipated that the construction of the temporary workpad will be authorized under Section 404 Nationwide Permit 33 (Temporary Construction Access and Dewatering). We are, therefore, requesting the issuance of a Nationwide Permit 33 authorizing construction of the causeway. All other aspects of this project are being processed by the Federal Highway Administration as a “Categorical Exclusion” in accordance with 23 CFR § 771.115(b). The NCDOT requests that these activities be authorized by a Nationwide Permit 23 (FR number 10, pages 2020-2095; January 15, 2002).

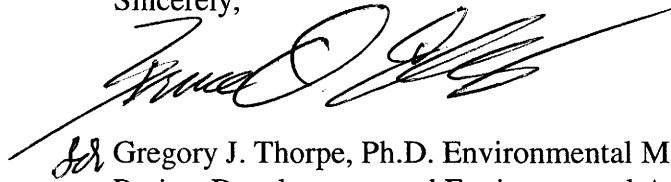
Section 401 Permit: We anticipate 401 General Certifications number 3403 and 3366 will apply to this project. In accordance with 15A NCAC 2H .0501(a) we are providing two copies of this application to the North Carolina Department of Environment and Natural Resources, Division of Water Quality, for their records.

We anticipate that the Corps of Engineers will request comments from the North Carolina Wildlife Resources Commission (NCWRC) prior to authorization. By copy of this letter and attachment, NCDOT hereby requests NCWRC review. NCDOT requests that NCWRC forward their comments to the Corps of Engineers.

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

If you have any questions or need additional information, please contact Mr. Chris Manley at (919) 715-1487 or cdmanley@dot.state.nc.us.

Sincerely,



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

The "cc" List:

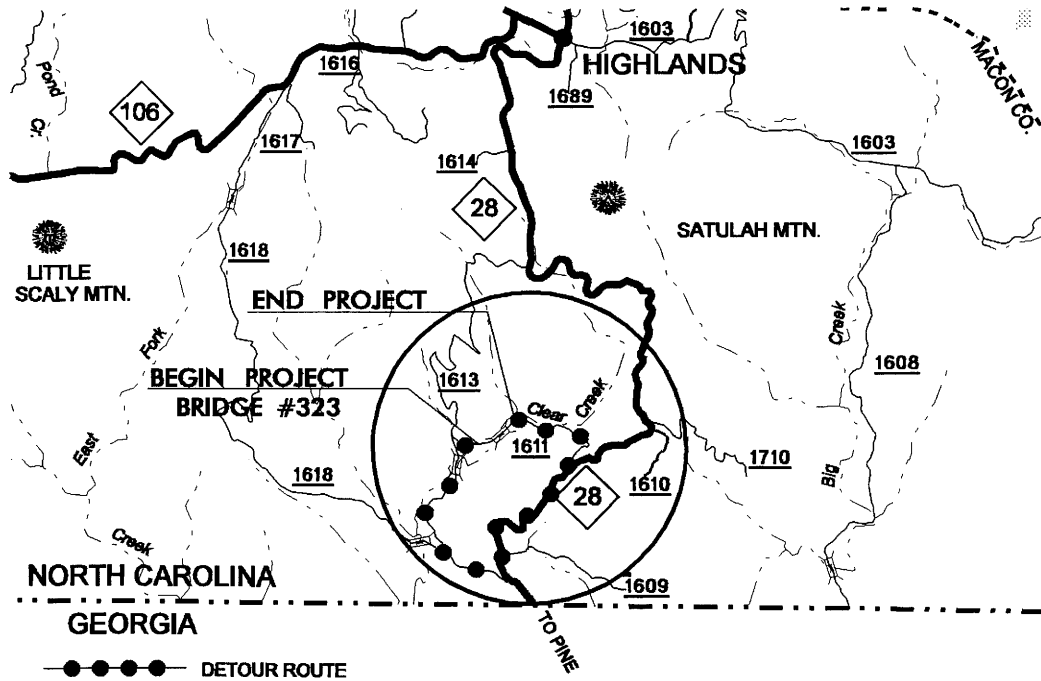
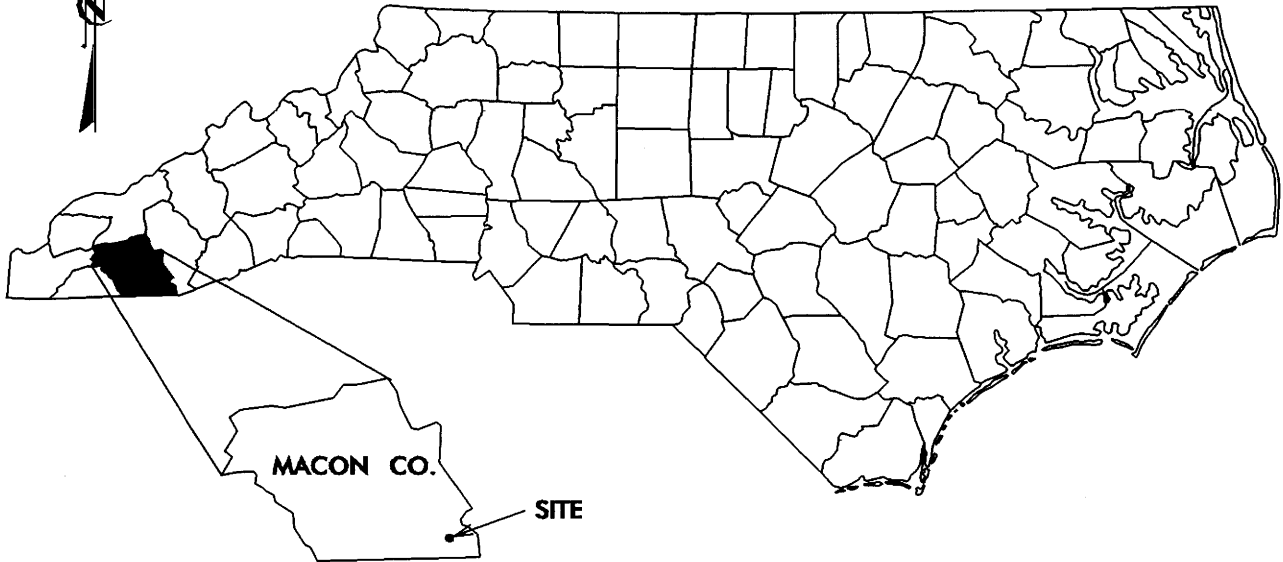
W/attachment

Mr. John Hennessy, Division of Water Quality (7 copies)
Ms. Marella Buncick, USFWS
Ms. Marla Chambers, NCWRC
Mr. Harold Draper, TVA
Mr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. J. B. Setzer, P.E., Division Engineer
Mr. Mark Davis, DEO

W/o attachment

Mr. Jay Bennett, P.E., Roadway Design
Mr. Omar Sultan, Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Mark Staley, Roadside Environmental
Mr. David Franklin, USACE, Wilmington (Cover Letter Only)
Ms. Robin Y. Hancock, P.E., Project Planning Engineer

NORTH CAROLINA



VICINITY MAPS

NCDOT

DIVISION OF HIGHWAYS

MACON COUNTY

PROJECT: 33527.1.1 (B-4180)

REPLACEMENT OF BRIDGE NO. 323
ON SR1611 OVER CLEAR CREEK

SHEET

1

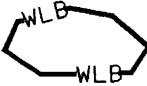
OF

7

11/16/04

LEGEND

 WETLAND BOUNDARY

 WETLAND

 DENOTES FILL IN WETLAND

 DENOTES FILL IN SURFACE WATER

 DENOTES FILL IN SURFACE WATER (POND)

 DENOTES TEMPORARY FILL IN WETLAND

 DENOTES EXCAVATION IN WETLAND

 DENOTES TEMPORARY FILL IN SURFACE WATER

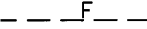
 DENOTES MECHANIZED CLEARING


 FLOW DIRECTION

 TOP OF BANK

 EDGE OF WATER

 PROP. LIMIT OF CUT

 PROP. LIMIT OF FILL

 PROP. RIGHT OF WAY

 NATURAL GROUND

 PROPERTY LINE

 TEMP. DRAINAGE EASEMENT


 PERMANENT DRAINAGE EASEMENT

 EXIST. ENDANGERED ANIMAL BOUNDARY

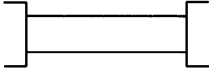
 EXIST. ENDANGERED PLANT BOUNDARY

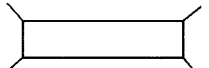
 WATER SURFACE


 LIVE STAKES

 BOULDER


 COIR FIBER ROLLS

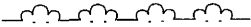
 PROPOSED BRIDGE

 PROPOSED BOX CULVERT

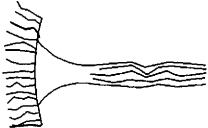
 PROPOSED PIPE CULVERT
12"-48" PIPES
54" PIPES & ABOVE

(DASHED LINES DENOTE EXISTING STRUCTURES)


 SINGLE TREE

 WOODS LINE

 DRAINAGE INLET

 ROOTWAD

 RIP RAP

 ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE

 PREFORMED SCOUR HOLE

 LEVEL SPREADER (LS)

 DITCH / GRASS SWALE

NCDOT

DIVISION OF HIGHWAYS

MACON COUNTY

PROJECT: 33527.1.1 (B-4180)

REPLACEMENT OF BRIDGE NO. 323
ON SR1611 OVER CLEAR CREEK

SHEET 2 OF 7

11/16/04

16+00

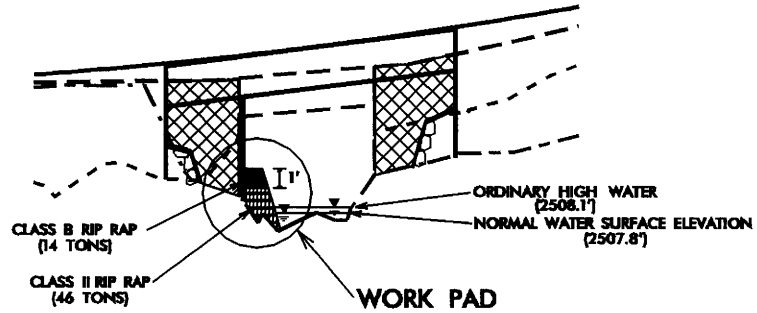
17+00

18+00

2520

2510

2500



 DENOTES EXCAVATION

WORK PAD PROFILE VIEW

NCDOT

DIVISION OF HIGHWAYS

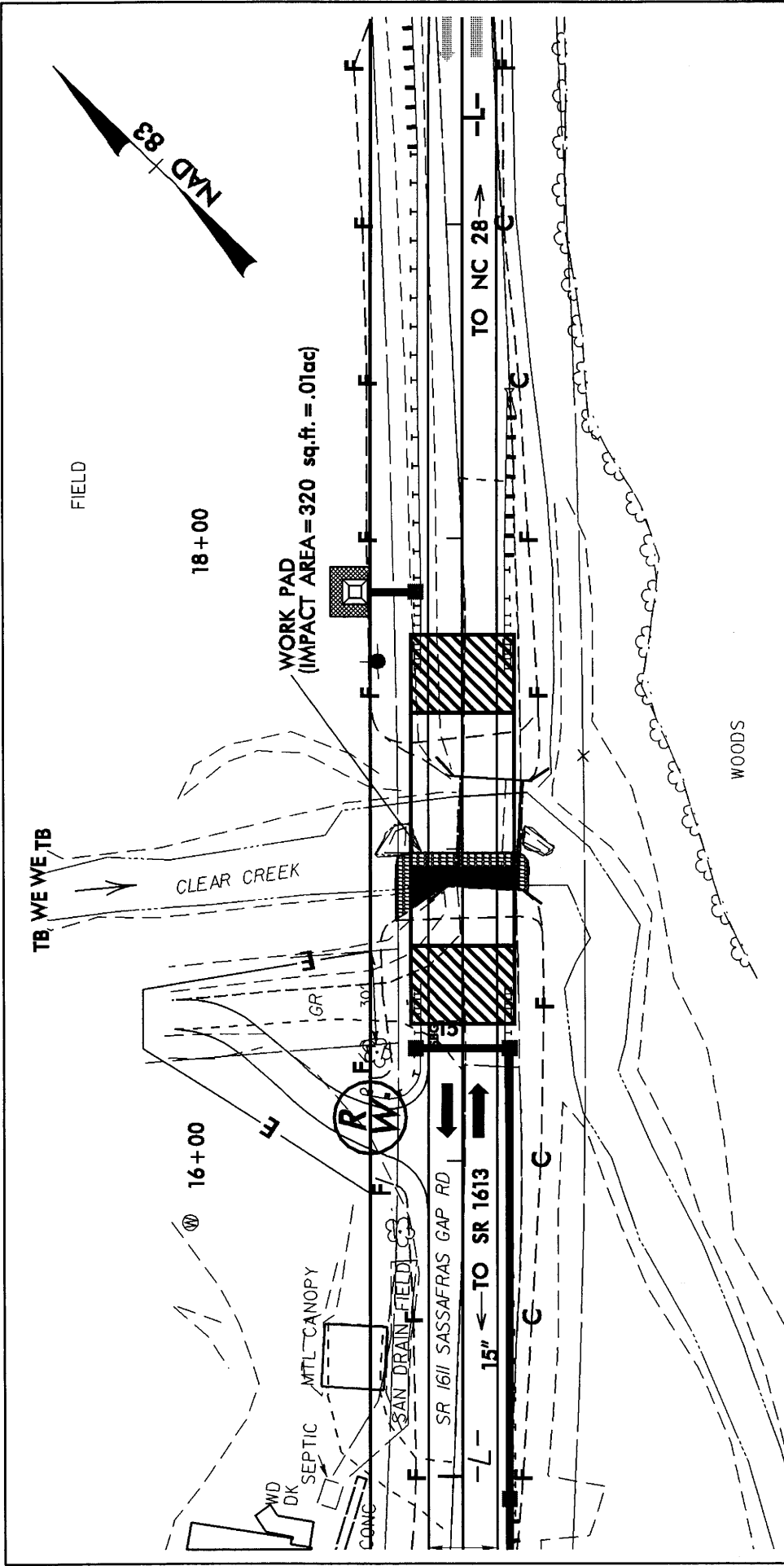
MACON COUNTY

PROJECT: 33527.1.1 (B-4180)

**REPLACEMENT OF BRIDGE NO. 323
ON SR1611 OVER CLEAR CREEK**

SHEET 3 OF 7

11/16/04

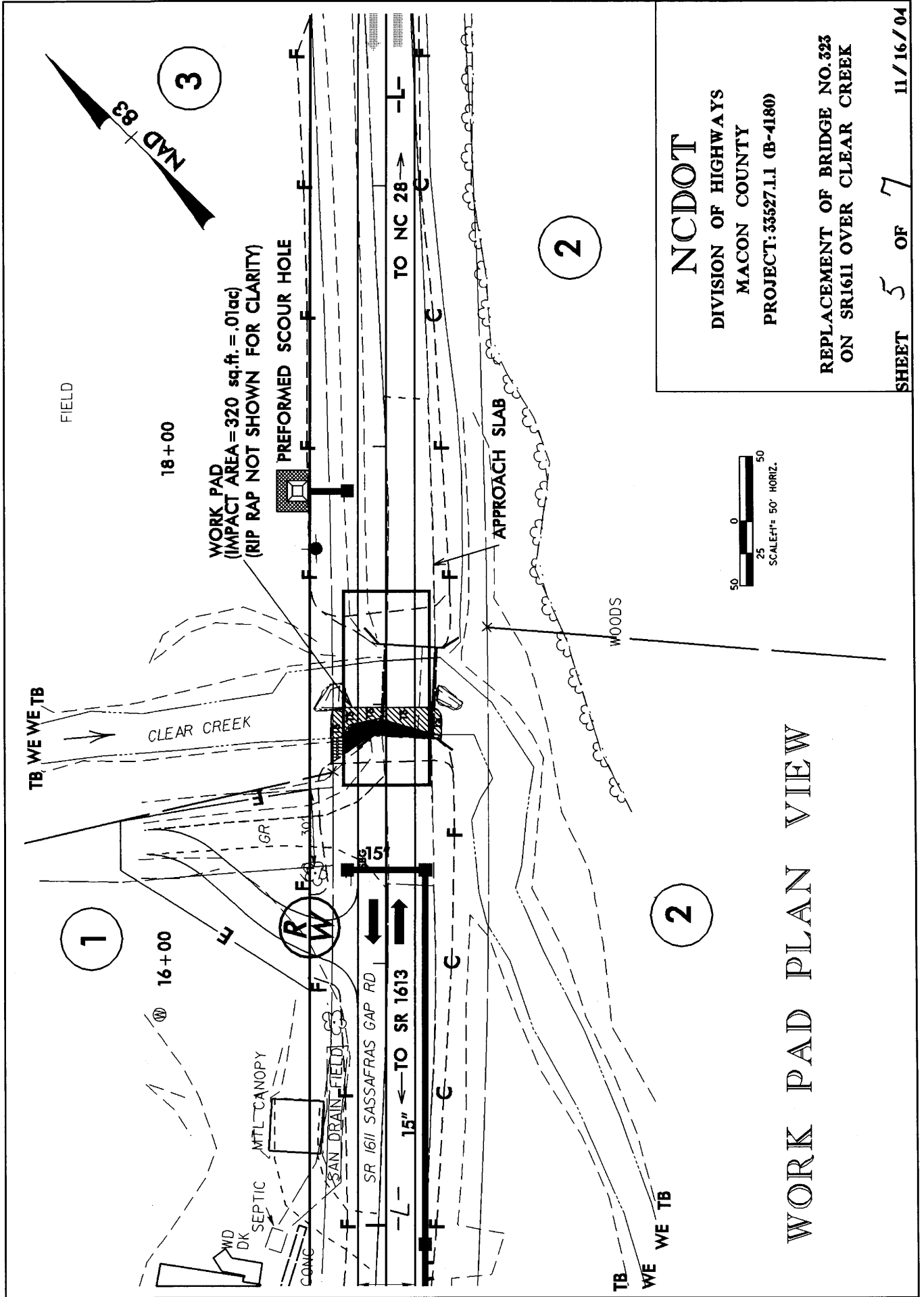


NCDOT
 DIVISION OF HIGHWAYS
 MACON COUNTY
 PROJECT: 33527.1.1 (B-4180)

REPLACEMENT OF BRIDGE NO. 523
 ON SR1611 OVER CLEAR CREEK

SHEET 4 OF 7
 11/16/04

WORK PAD PLAN VIEW



NCDOT
 DIVISION OF HIGHWAYS
 MACON COUNTY
 PROJECT: 33527.1.1 (B-4180)
 REPLACEMENT OF BRIDGE NO. 323
 ON SR1611 OVER CLEAR CREEK
 SHEET 5 OF 7 11/16/04

WORK PAD PLAN VIEW

PROPERTY OWNERS
NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	GLADYS N. NIX	1021 SASSAFRAS GAP RD HIGHLANDS, NC 28741
2	DALE A. & JANE L. STICKA	P.O. BOX 2515 HIGHLANDS, NC 28741
3	HUGH A. & CAROLE C. WESTBROOK	P.O. BOX 113440 HIGHLANDS, NC 28741

DIVISION OF HIGHWAYS
MACON COUNTY
PROJECT: 33527.1.1 (B-4180)

REPLACEMENT OF BRIDGE NO. 323
ON SR1611 OVER CLEAR CREEK

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS				Natural Stream Design (ft)	
			Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation In Wetlands (ac)	Mechanized Clearing (Method III) (ac)	Fill In SW (Natural) (ac)	Fill In SW (Pond) (ac)	Temp. Fill In SW (ac)	Existing Channel Impacted (ft)		
1	16+93-L- +/-	WORK PAD								0.01		
TOTALS:			0	0	0	0	0	0	0	0.01	0	0

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 MACON COUNTY
 PROJECT: 33527.1.1 (B-4180)
 SHEET **7** OF **7** 11/16/2004

USACE Action ID No. _____ DWQ No. _____

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

I. Processing

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

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

2. Nationwide, Regional or General Permit Number(s) Requested: 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 Wetlands Restoration Program (NCWRP) is proposed for mitigation of impacts (verify availability with NCWRP prior to submittal of PCN), complete section VIII and check here:

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

II. Applicant Information

1. Owner/Applicant Information

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

Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794
 E-mail Address: cdmanley@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: Bridge No. 323 Replacement
2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4180
3. Property Identification Number (Tax PIN): _____
4. Location
County: Macon Nearest Town: Highlands
Subdivision name (include phase/lot number): _____
Directions to site (include road numbers, landmarks, etc.): Bridge No. 323 over Clear Creek on SR 1611

5. Site coordinates, if available (UTM or Lat/Long): 83.203 Long. 35.015 Lat.
(Note – If project is linear, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
6. Property size (acres): _____
7. Nearest body of water (stream/river/sound/ocean/lake): Clear Creek
8. River Basin: Savannah
(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: Bridge No.323 has a sufficiency rating of 44.1 out of 100. The deck is 19.2 feet wide and the structure is composed mainly of timber.

10. Describe the overall project in detail, including the type of equipment to be used: Replacement of existing bridge at existing location with a two span spill through slope bridge. Cranes and earth moving equipment will be used.

11. Explain the purpose of the proposed work: To replace a deficient bridge.

IV. Prior Project History

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

N/A

V. Future Project Plans

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

N/A

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

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to wetlands, open water, and stream channels associated with the project. The applicant must also provide justification for these impacts in Section VII below. All proposed impacts, permanent and temporary, must be listed herein, and must be clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) must be shown on a delineation map, whether or not impacts are proposed to these systems. Wetland and stream

evaluation and delineation forms should be included as appropriate. Photographs may be included at the applicant's discretion. If this proposed impact is strictly for wetland or stream mitigation, list and describe the impact in Section VIII below. If additional space is needed for listing or description, please attach a separate sheet.

1. Provide a written description of the proposed impacts: 0.01 temporary impacts to surface waters _____

2. Individually list wetland impacts below:

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

* List each impact separately and identify temporary impacts. Impacts include, but are not limited to: mechanized clearing, grading, fill, excavation, flooding, ditching/drainage, etc. For dams, separately list impacts due to both structure and flooding.

** 100-Year floodplains are identified through the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRM), or FEMA-approved local floodplain maps. Maps are available through the FEMA Map Service Center at 1-800-358-9616, or online at <http://www.fema.gov>.

*** List a wetland type that best describes wetland to be impacted (e.g., freshwater/saltwater marsh, forested wetland, beaver pond, Carolina Bay, bog, etc.) Indicate if wetland is isolated (determination of isolation to be made by USACE only).

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

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

Stream Impact Site Number (indicate on map)	Type of Impact*	Length of Impact (linear feet)	Stream Name**	Average Width of Stream Before Impact	Perennial or Intermittent? (please specify)
N/A					

* List each impact separately and identify temporary impacts. Impacts include, but are not limited to: culverts and associated rip-rap, dams (separately list impacts due to both structure and flooding), relocation (include linear feet before and after, and net loss/gain), stabilization activities (cement wall, rip-rap, crib wall, gabions, etc.), excavation, ditching/straightening, etc. If stream relocation is proposed, plans and profiles showing the linear footprint for both the original and relocated streams must be included.

** Stream names can be found on USGS topographic maps. If a stream has no name, list as UT (unnamed tributary) to the nearest downstream named stream into which it flows. USGS maps are available through the USGS at 1-800-358-9616, or online at www.usgs.gov. Several internet sites also allow direct download and printing of USGS maps (e.g., www.topozone.com, www.mapquest.com, etc.).

Cumulative impacts (linear distance in feet) to all streams on site: 0

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

Open Water Impact Site Number (indicate on map)	Type of Impact*	Area of Impact (acres)	Name of Waterbody (if applicable)	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)
1	temporary	0.01	Clear Creek	stream

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

5. Pond Creation

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

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

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

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

VII. Impact Justification (Avoidance and Minimization)

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

In order to minimize impacts to water resources, NCDOT "Best Management Practices for the Protection of Surface Waters" will be strickly enforced during the entire life of the project.

VIII. Mitigation

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

USACE – In accordance with the Final Notice of Issuance and Modification of Nationwide Permits, published in the Federal Register on March 9, 2000, mitigation will be required when necessary to ensure that adverse effects to the aquatic environment are minimal. Factors including size and type of proposed impact and function and relative value of the impacted aquatic resource will be considered in determining acceptability of appropriate and practicable mitigation as proposed. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland and/or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferable in the same watershed.

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

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

N/A

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

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

IX. Environmental Documentation (required by DWQ)

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

Yes No

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

Yes No

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

Yes No

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

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

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

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

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

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

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

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

XI. Stormwater (required by DWQ)

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

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.

XIII. Violations (required by DWQ)

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

Yes No

Is this an after-the-fact permit application?

Yes No

XIV. Other Circumstances (Optional):

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



Applicant/Agent's Signature

12/28/09

Date

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

CATEGORICAL EXCLUSION ACTION CLASSIFICATION FORM

TIP Project No.	<u>B-4180</u>
State Project No.	<u>8.2970901</u>
Federal Project No.	<u>BRZ-1611 (2)</u>

A. Project Description:

Bridge No. 323 will be replaced with a new bridge at approximately the same location and roadway elevation of the existing structure. The new bridge will be approximately 55 feet (17 meters) in length and 26 feet (7.8 meters) in width. A travelway of 22 feet (6.6 meters) will be accommodated, with an offset of 2 feet (0.6 meters) on each side of the bridge. The approach roadway will consist of two 11-foot (3.3-meter) travel lanes and shoulder widths of at least 4 feet (1.2 meters). The shoulder widths will be increased by at least 3 feet (1 meter) where guardrail is warranted. Traffic will be detoured off-site, along surrounding roads during construction. Total project length will be approximately 1100 feet (336 meters).

B. Purpose and Need:

Bridge No. 323 has a sufficiency rating of 44.1 out of 100. The deck is only 19.2 feet (5.9 meters) wide and the structure is composed mainly of timber. For these reasons, Bridge No. 323 needs to be replaced.

C. Proposed Improvements:

The following Type II improvements which apply to the project are circled:

1. Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction, adding shoulders, or adding auxiliary lanes (e.g., parking, weaving, turning, climbing).
 - a. Restoring, Resurfacing, Rehabilitating, and Reconstructing pavement (3R and 4R improvements)
 - b. Widening roadway and shoulders without adding through lanes
 - c. Modernizing gore treatments
 - d. Constructing lane improvements (merges, auxiliary, and turn lanes)
 - e. Adding shoulder drains
 - f. Replacing and rehabilitating culverts, inlets, and drainage pipes, including safety treatments
 - g. Providing driveway pipes
 - h. Performing minor bridge widening (less than one through lane)
2. Highway safety or traffic operations improvement projects including the installation of ramp metering control devices and lighting.
 - a. Installing ramp metering devices
 - b. Installing lights
 - c. Adding or upgrading guardrail

- d. Installing safety barriers including Jersey type barriers and pier protection
- e. Installing or replacing impact attenuators
- f. Upgrading medians including adding or upgrading median barriers
- g. Improving intersections including relocation and/or realignment
- h. Making minor roadway realignment
- i. Channelizing traffic
- j. Performing clear zone safety improvements including removing hazards and flattening slopes
- k. Implementing traffic aid systems, signals, and motorist aid
- l. Installing bridge safety hardware including bridge rail retrofit

3.

Bridge rehabilitation, reconstruction, or replacement or the construction of grade separation to replace existing at-grade railroad crossings.

- a. Rehabilitating, reconstructing, or replacing bridge approach slabs
- b. Rehabilitating or replacing bridge decks
- c. Rehabilitating bridges including painting (no red lead paint) scour repair, fender systems, and minor structural improvements
- d. Replacing a bridge (structure and/or fill)

- 4. Transportation corridor fringe parking facilities.
- 5. Construction of new truck weigh stations or rest areas.
- 6. Approvals for disposal of excess right-of-way or for joint or limited use of right-of-way, where the proposed use does not have significant adverse impacts.
- 7. Approvals for changes in access control.
- 8. Construction of new bus storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and located on or near a street with adequate capacity to handle anticipated bus and support vehicle traffic.
- 9. Rehabilitation or reconstruction of existing rail and bus buildings and ancillary facilities where only minor amounts of additional land are required and there is not a substantial increase in the number of users.
- 10. Construction of bus transfer facilities (an open area consisting of passenger shelters, boarding areas, kiosks, and related street improvements) when located in a commercial area or other high activity center in which there is adequate street capacity for projected bus traffic.
- 11. Construction of rail storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and where there is no significant noise impact on the surrounding community.
- 12. Acquisition of land for hardship or protective purposes, advance land acquisition loans under section 3(b) of the UMT Act. Hardship and protective buying will be permitted only for a particular parcel or a limited number of parcels. These types of land acquisition qualify for a CE only where the acquisition will not limit the evaluation of alternatives, including shifts in alignment for planned construction

projects, which may be required in the NEPA process. No project development on such land may proceed until the NEPA process has been completed.

D. Special Project Information:

Estimated Costs:

Total Construction	\$ 375,000
Right of Way	\$ 48,000
Total	\$ 423,000

Estimated Traffic:

Current	-	100 vpd
Year 2025	-	200 vpd
TTST	-	1%
Dual	-	2%

Proposed Typical Cross Section:

The approach roadway will consist of two 11-foot (3.3-meter) travel lanes and shoulder widths of at least 4 feet (1.2 meters). The shoulder widths will be increased by at least 3 feet (1 meter) where guardrail is warranted.

Design Speed:

60 mph (100 kmh)

Functional Classification:

SR 1611 is classified as a Rural Local Route in the Statewide Functional Classification system.

Division Office Comments:

The Division 14 Construction Engineer supports the chosen alternate and proposed method for detouring traffic during construction.

Bridge Demolition:

The superstructure of Bridge No. 323 consists of a timber floor with an asphalt-wearing surface. The end bents are composed of timber caps, posts, and sills with a concrete footing. Therefore, Bridge No. 323 will be removed without dropping components into Waters of the United States during construction.

E. Threshold Criteria

The following evaluation of threshold criteria must be completed for Type II actions

<u>ECOLOGICAL</u>	<u>YES</u>	<u>NO</u>
(1) Will the project have a substantial impact on any unique or important natural resource?	<input type="checkbox"/>	<u>X</u>
(2) Does the project involve habitat where federally listed endangered or threatened species may occur?	<input type="checkbox"/>	<u>X</u>
(3) Will the project affect anadromous fish?	<input type="checkbox"/>	<u>X</u>
(4) If the project involves wetlands, is the amount of permanent and/or temporary wetland taking less than one-third (1/3) of an acre and have all practicable measures to avoid and minimize wetland takings been evaluated?	<u>X</u>	<input type="checkbox"/>
(5) Will the project require the use of U. S. Forest Service lands?	<input type="checkbox"/>	<u>X</u>
(6) Will the quality of adjacent water resources be adversely impacted by proposed construction activities?	<input type="checkbox"/>	<u>X</u>
(7) Does the project involve waters classified as Outstanding Water Resources (OWR) and/or High Quality Waters (HQW)?	<input type="checkbox"/>	<u>X</u>
(8) Will the project require fill in waters of the United States in any of the designated mountain trout counties?	<u>X</u>	<input type="checkbox"/>
(9) Does the project involve any known underground storage tanks (UST's) or hazardous material sites?	<input type="checkbox"/>	<u>X</u>
 <u>PERMITS AND COORDINATION</u>		
(10) If the project is located within a CAMA county, will the project significantly affect the coastal zone and/or any "Area of Environmental Concern" (AEC)?	<input type="checkbox"/>	<u>X</u>
(11) Does the project involve Coastal Barrier Resources Act resources?	<input type="checkbox"/>	<u>X</u>
(12) Will a U. S. Coast Guard permit be required?	<input type="checkbox"/>	<u>X</u>

(13) Will the project result in the modification of any existing regulatory floodway? X

(14) Will the project require any stream relocations or channel changes? X

SOCIAL, ECONOMIC, AND CULTURAL RESOURCES

YES

NO

(15) Will the project induce substantial impacts to planned growth or land use for the area? X

(16) Will the project require the relocation of any family or business? X

(17) Will the project have a disproportionately high and adverse human health and environmental effect on any minority or low-income population? X

(18) If the project involves the acquisition of right of way, is the amount of right of way acquisition considered minor? X

(19) Will the project involve any changes in access control? X

(20) Will the project substantially alter the usefulness and/or land use of adjacent property? X

(21) Will the project have an adverse effect on permanent local traffic patterns or community cohesiveness? X

(22) Is the project included in an approved thoroughfare plan and/or Transportation Improvement Program (and is, therefore, in conformance with the Clean Air Act of 1990)? X

(23) Is the project anticipated to cause an increase in traffic volumes? X

(24) Will traffic be maintained during construction using existing roads, staged construction, or on-site detours? X

(25) If the project is a bridge replacement project, will the bridge be replaced at its existing location (along the existing facility) and will all construction proposed in association with the bridge replacement project be contained on the existing facility? X

(26) Is there substantial controversy on social, economic, or environmental grounds concerning the project? X

- | | | | |
|------|---|--------------------------|--------------------------|
| (27) | Is the project consistent with all Federal, State, and local laws relating to the environmental aspects of the project? | <u> X </u> | <input type="checkbox"/> |
| (28) | Will the project have an "effect" on structures/properties eligible for or listed on the National Register of Historic Places? | <input type="checkbox"/> | <u> X </u> |
| (29) | Will the project affect any archaeological remains, which are important to history or pre-history? | <input type="checkbox"/> | <u> X </u> |
| (30) | Will the project require the use of Section 4(f) resources (public parks, recreation lands, wildlife and waterfowl refuges, historic sites, or historic bridges, as defined in Section 4(f) of the U. S. Department of Transportation Act of 1966)? | <input type="checkbox"/> | <u> X </u> |
| (31) | Will the project result in any conversion of assisted public recreation sites or facilities to non-recreation uses, as defined by Section 6(f) of the Land and Water Conservation Act of 1965, as amended? | <input type="checkbox"/> | <u> X </u> |
| (32) | Will the project involve construction in, across, or adjacent to a river designated as a component of or proposed for inclusion in the Natural System of Wild and Scenic Rivers? | <input type="checkbox"/> | <u> X </u> |

F. Additional Documentation Required for Unfavorable Responses in Part E
 (Discussion regarding all unfavorable responses in Part E should be provided below. Additional supporting documentation may be attached, as necessary.)

Item (8) Designated Trout County

Clear Creek does support trout and the project could result in adverse impacts to wild trout populations. As stated on the Green Sheet, instream construction and construction within the 25-foot buffer is prohibited during the trout-spawning period of October 15 – April 15 to avoid impacts on trout reproduction.

G. CE Approval

TIP Project No. B-4180
State Project No. 8.2970901
Federal-Aid Project No. BRZ-1611 (2)

Project Description:

Bridge No. 323 will be replaced with a new bridge at approximately the same location and roadway elevation of the existing structure. The new bridge will be approximately 55 feet (17 meters) in length and 26 feet (7.8 meters) in width. A travelway of 22 feet (6.6 meters) will be accommodated, with an offset of 2 feet (0.6 meters) on each side of the bridge. The approach roadway will consist of two 11-foot (3.3-meter) travel lanes and shoulder widths of at least 4 feet (1.2 meters). The shoulder widths will be increased by at least 3 feet (1 meter) where guardrail is warranted. Traffic will be detoured off-site, along surrounding roads during construction. Total project length will be approximately 1100 feet (336 meters).

Categorical Exclusion Action Classification:

 TYPE II(A)
 X TYPE II(B)

Approved:

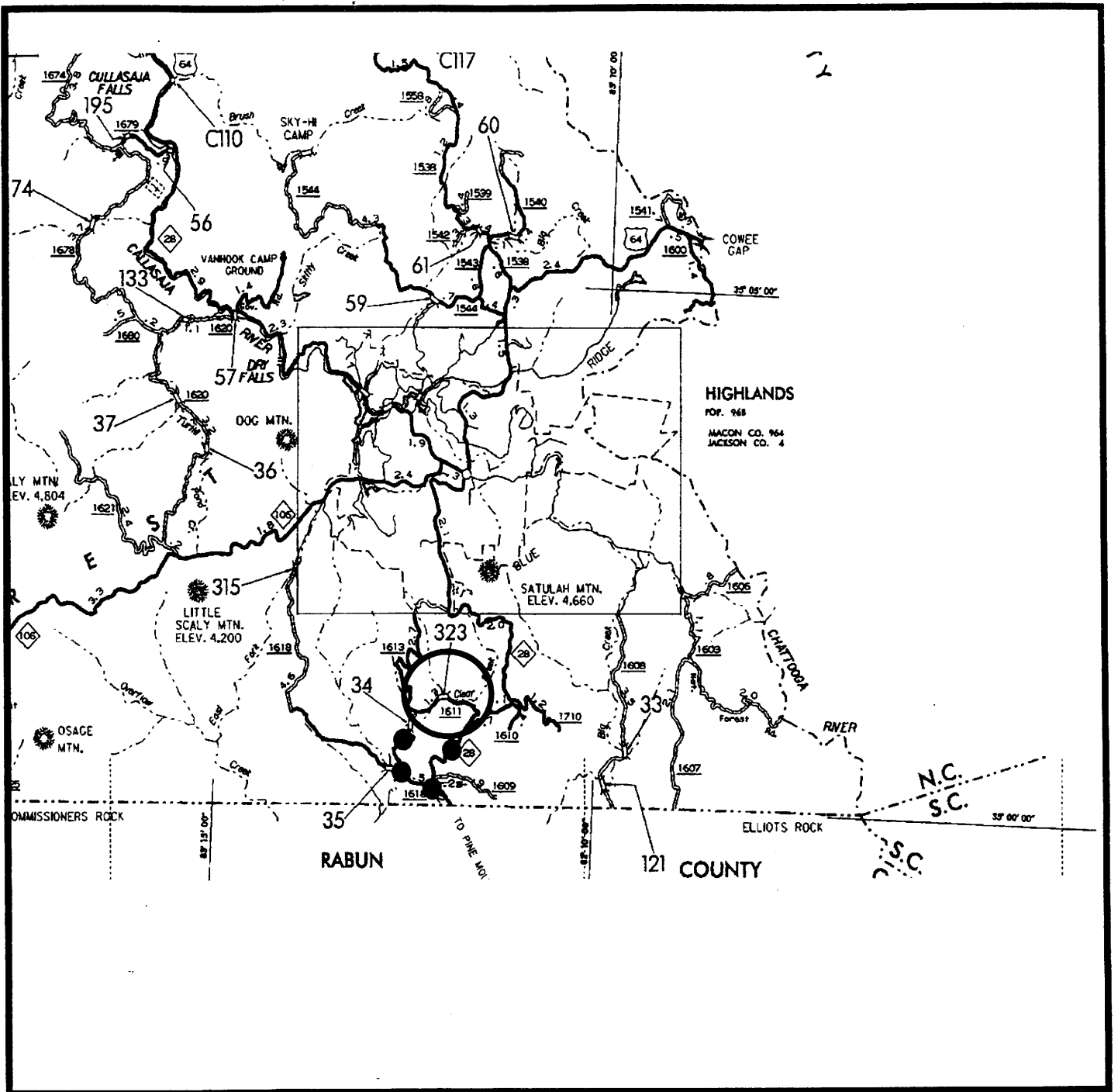
2-19-03
Date for William T. Goodwin, Jr.
Assistant Manager
Project Development & Environmental Analysis Branch

2-19-03
Date William T. Goodwin, Jr.
Project Planning Unit Head, William T. Goodwin, Jr., PE
Project Development & Environmental Analysis Branch

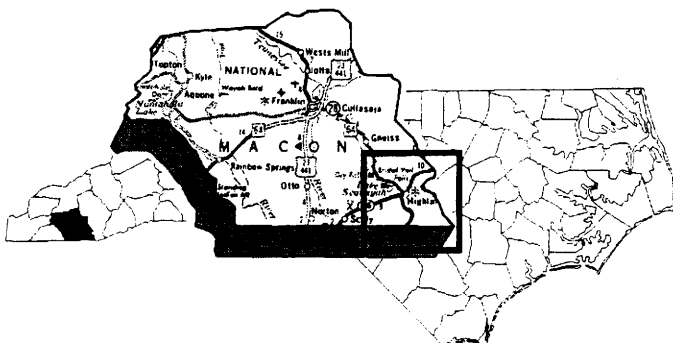
2-19-03
Date Rob C Young
Project Development Engineer, Robin C. Young
Project Development & Environmental Analysis Branch

For Type II(B) projects only:

2/20/03
Date for Clarence D. Coleman, Jr.
Donald J. Voelker, Acting Division Administrator
Federal Highway Administration



Detour Route ●—●—●—●—●



	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH</p>
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**MACON COUNTY
REPLACE BRIDGE NO. 323 ON SR 1611
OVER CLEAR CREEK
B-4180**

Figure 1



**North Carolina Department of Cultural Resources
State Historic Preservation Office**

David L. S. Brook, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary
Office of Archives and History

Division of Historical Resources
David J. Olson, Director

January 23, 2002

MEMORANDUM

TO: William D. Gilmore, Manager
Project Development and Environmental Analysis Branch
Division of Highways
Department of Transportation

FROM: David Brook *David L. S. Brook*

SUBJECT: Replace Bridge No. 323 on SR 1611 over Clear Creek, B-4180, Macon County, ER 02-8516

Thank you for your letter of September 25, 2001, concerning the above project.

We have conducted a search of our files and are aware of no structures of historical or architectural importance located within the planning area.

There are no known archaeological sites within the project area. Based on our present knowledge of the area, it is unlikely that any archaeological resources which may be eligible for listing in the National Register of Historic Places will be affected by the project construction. We, therefore, recommend that no archaeological investigation be conducted in connection with this project.

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.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, 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.

DB:kgc

cc: Mary Pope Furr, NCDOT
Matt Wilkerson, NCDOT

	Location	Mailing Address	Telephone/Fax
Administration	507 N. Blount St, Raleigh, NC	4617 Mail Service Center, Raleigh 27699-4617	(919) 733-4763 • 733-8653
Restoration	515 N. Blount St, Raleigh, NC	4613 Mail Service Center, Raleigh 27699-4613	(919) 733-6547 • 715-4801
Survey & Planning	515 N. Blount St, Raleigh, NC	4618 Mail Service Center, Raleigh 27699-4618	(919) 733-4763 • 715-4801



North Carolina Wildlife Resources Commission

Charles R. Fullwood, Executive Director

MEMORANDUM

TO: William T. Goodwin, P.E., Unit Head
Bridge Replacement Planning Unit
Project Development and Environmental Analysis Branch, NCDOT

FROM: Owen F. Anderson, *Owen F. Anderson*
Mountain Region Coordinator
Habitat Conservation Program

DATE: June 12, 2002

SUBJECT: Scoping and Natural Resources Technical Report, Replace Bridge No.323 on SR
1611 Over Clear Creek, Macon County, TIP No. B-4180
Fish and Wildlife Project Status: GREEN to YELLOW

Biologists with the North Carolina Wildlife Resources Commission familiar with the project area have reviewed the technical report for the subject project to assess the potential for adverse impacts to fish and wildlife resources. Our comments are provided in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat 401, as amended; 16 U.S.C. 661-667d).

The proposed work involves the replacement of bridge number 323 on SR 1611 over Clear Creek. Construction impacts on fish and wildlife resources will depend on the extent of disturbance in the streambed and surrounding floodplain areas. The riparian corridor within the project area is characterized as montane alluvial forest. Forested riparian buffers are important travel corridors for wildlife and should be considered good quality wildlife habitat.

The Division of Water Quality classifies this reach of Clear Creek as B trout. Additionally, reaches on public lands in the area are designated as wild trout water by the NCWRC. Unidentified trout were observed during the fieldwork for the technical report. The unidentified trout may have been brook trout. It is the opinion of biologists with the NCWRC that this stream through the project area does support trout and the project could result in adverse impacts to wild trout populations.

Surveys are proposed for the Indiana bat (*Myotis sodalis*) and the small whorled pogonia (*Isotria medeoloides*). The findings of these surveys will need to be considered in the alternatives analysis and design of the project.

We prefer bridge designs that do not alter the natural stream morphology or impede fish passage. Efforts should be made during design to place bridge supports outside of the bankfull channel. Bridge designs should also include provisions for the deck drainage to flow through a vegetated upland buffer prior to reaching the subject surface waters. Correction of altered stream morphology at the road crossing should be considered during design. Waste rock and dirt from

bridge construction and road realignments should be disposed of in upland areas that are outside of riparian area and above the 100-year floodplain.

Streams and riparian zones provide connectivity of the landscape; and thus, are natural movement corridors for terrestrial wildlife species. Bridge designs should consider leaving sufficient corridors under the bridge to encourage movement of wildlife under the bridge rather than across the highway. The movement of animals, especially larger animals (e.g., deer and bear), under the bridge may reduce automobile crashes involving wildlife. Where feasible, increasing the riparian corridor width under the bridge is recommended.

In most cases, we prefer the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed down to the natural ground elevation. The area should be stabilized with native herbaceous species and planted with native tree species. If the area that is reclaimed was previously wetlands, NCDOT should restore the area to wetlands. If successful, the site may be used as wetland mitigation for the subject project or other projects in the watershed.

Listed below are our standard recommendations on this project. Because the Corps of Engineers (COE) recognizes the project county as a "trout water county", the NCWRC will review any nationwide or general 404 permits for the proposed projects and will likely request the following as conditions of the 404 permit.

1. This bridge should be replaced with another spanning structure
2. Bridge deck drains should not discharge directly into the stream.
3. Live concrete should not be allowed to contact the water in or entering into the stream. Water that has inadvertently come in contact with live concrete should not be discharged to surface waters but should be disposed in an upland area.
4. If possible, bridge supports (bents) should not be placed in the stream.
5. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project. Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, when using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to revegetate naturally and minimizes disturbed soil.
6. A clear bank (riprap free) area of at least 10 feet should remain on each side of the stream underneath the bridge.
7. Sedimentation and erosion control measures sufficient to protect sensitive waters must be implemented prior to any ground disturbing activities. Structures should be maintained regularly, especially following rainfall events.
8. Temporary or permanent herbaceous vegetation should be planted on all bare soil within 15 days of ground disturbing activities to provide long-term erosion control.

9. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.
10. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into surface waters.
11. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.
12. During subsurface investigations, equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.
13. Wastewater from drilling operations should not be discharged to surface waters but should be pumped to upland areas.
14. Discharge of materials into surface waters from demolition of the old bridge should be avoided as much as practicable. Any materials that inadvertently reach surface waters should be removed.
15. **Instream construction and construction within the 25-foot buffer is prohibited during the trout-spawning period of October 15 to April 15 to avoid impacts on trout reproduction.**
16. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is strictly prohibited.

Thank you for the opportunity to review and comment during the early stages of these projects. If you have any questions regarding these comments, please contact me at (828) 452-2546.

cc: - Mr. John Hendrix, NCDOT Coordinator, COE, Asheville
Ms. Marella Buncick, Biologist, USFWS Asheville
Ms. Cynthia Van Der Wiele, Highway Coordinator, Division of Water Quality

PROJECT COMMITMENTS

**Macon County
Bridge No. 323 on SR 1611
Over Clear Creek
Federal Project BRZ-1611 (2)
State Project 8.2970901
TIP No. B-4180**

Commitments Developed Through Project Development and Design

Roadside Environmental Unit, Division 14 Construction, Structure Design Unit

Bridge Demolition: Best Management Practices for Bridge Demolition & Removal will be implemented. The superstructure consists of a timber floor with an asphalt-wearing surface. The end bents are composed of timber caps, posts, and sills with a concrete footing. Therefore, Bridge No. 323 will be removed without dropping components into Waters of the United States during construction.

Division 14 Construction

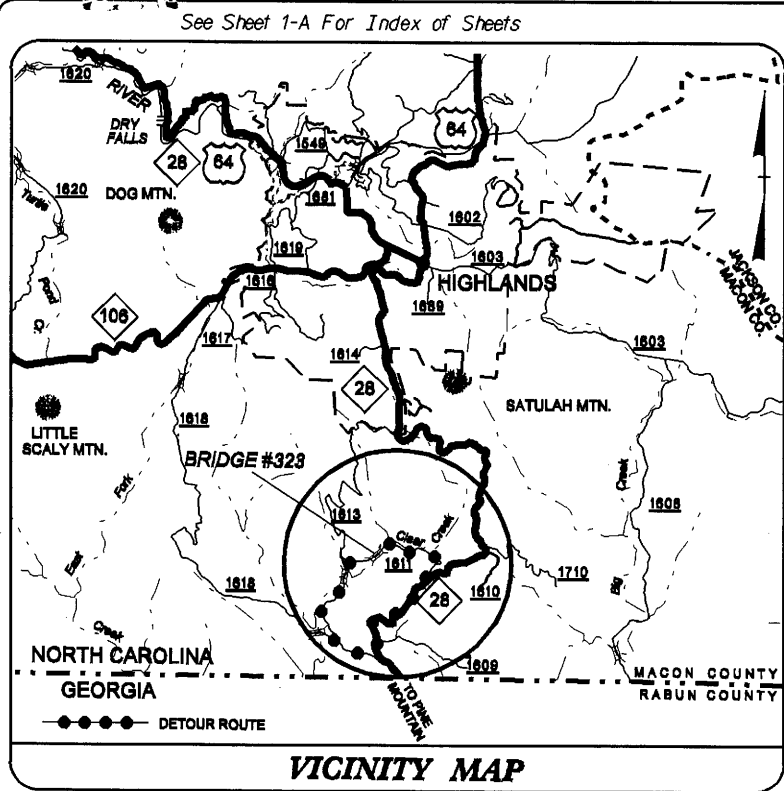
In order to allow Emergency Management Services (EMS) time to prepare for road closure, the NCDOT Resident Engineer will notify Warren Cabe with Macon County EMS at (828) 349-2067 of the bridge removal 30 days prior to road closure.

Division 14 Construction, Roadside Environmental Unit, Hydraulics Unit

Instream construction and construction within the 25-foot buffer is prohibited during the trout-spawning period of October 15 – April 15 to avoid impacts on trout reproduction.

09/08/99

TIP PROJECT: B-4180



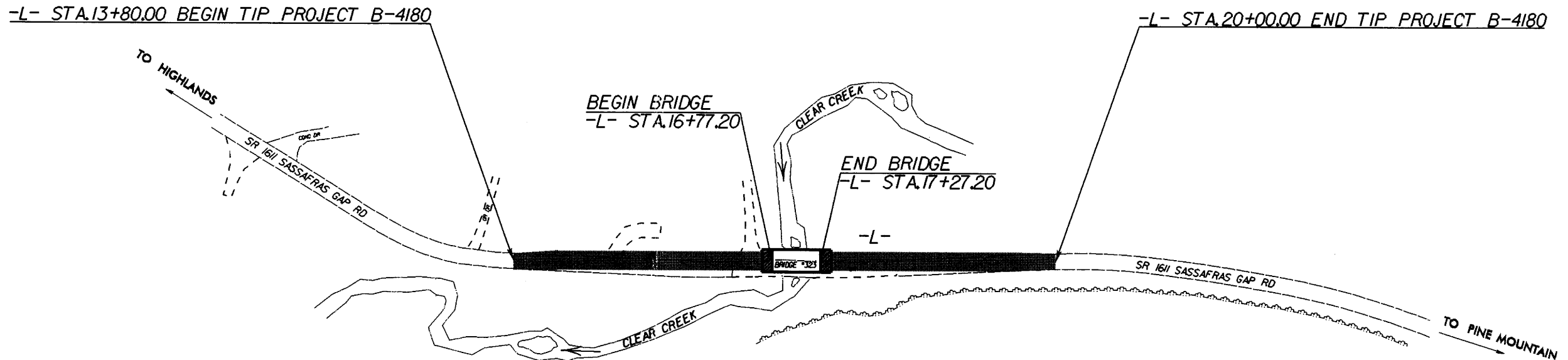
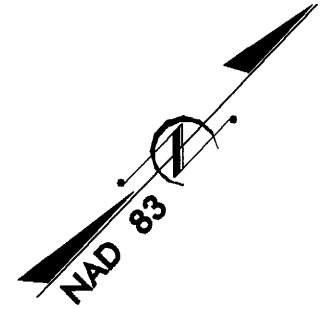
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MACON COUNTY

**LOCATION: REPLACEMENT OF BRIDGE NO. 323 ON SR 1611
(SASSAFRAS GAP RD.) OVER CLEAR CREEK**

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

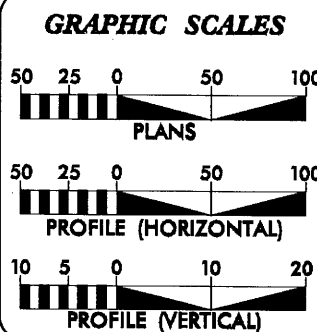
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N.C.	B-4180	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33527.1.1	BRZ-1611(2)	P.E.	
33527.2.1	BRZ-1611(2)	R/W	



NOTE: THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES
CLEARING ON THIS PROJECT SHALL BE PERFORMED BY THE LIMITS ESTABLISHED BY METHOD III

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2004 =	105
ADT 2025 =	200
DHV =	10 %
D =	60 %
T =	3 % *
V =	60 MPH
* TTST 1% DUAL 2%	
FUNC CLASS =	LOCAL

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-4180	= 0.108 mi.
LENGTH OF STRUCTURE TIP PROJECT B-4180	= 0.009 mi.
TOTAL LENGTH OF TIP PROJECT B-4180	= 0.117 mi.

Prepared In the Office of:

DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	JIMMY GOODNIGHT, P.E. PROJECT ENGINEER
FEBRUARY 6, 2004	
LETTING DATE:	JASON MOORE, P.E. PROJECT DESIGN ENGINEER
FEBRUARY 15, 2005	

HYDRAULICS ENGINEER

P.E.

ROADWAY DESIGN ENGINEER

P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.

STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

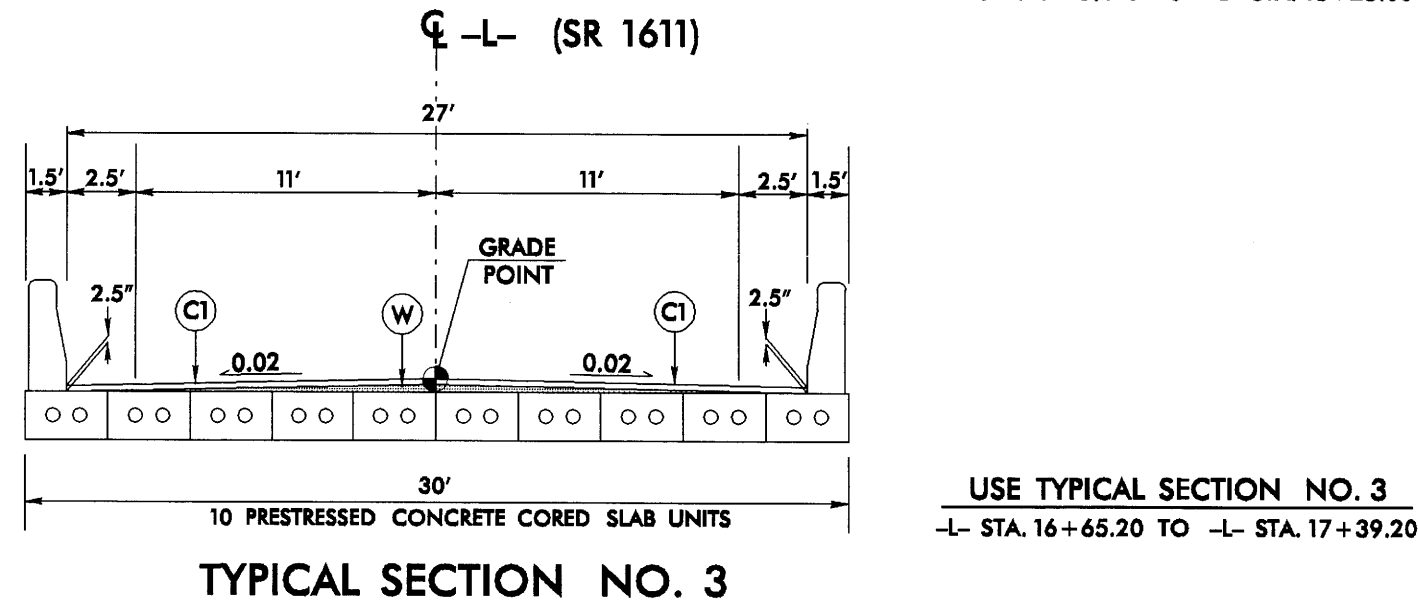
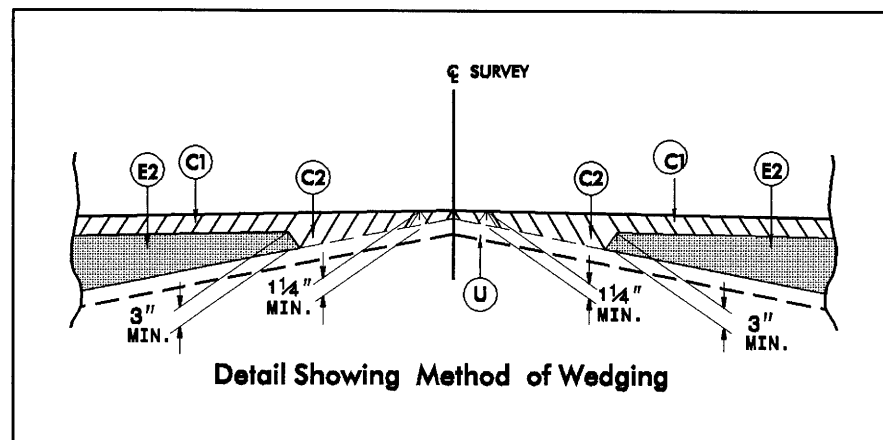
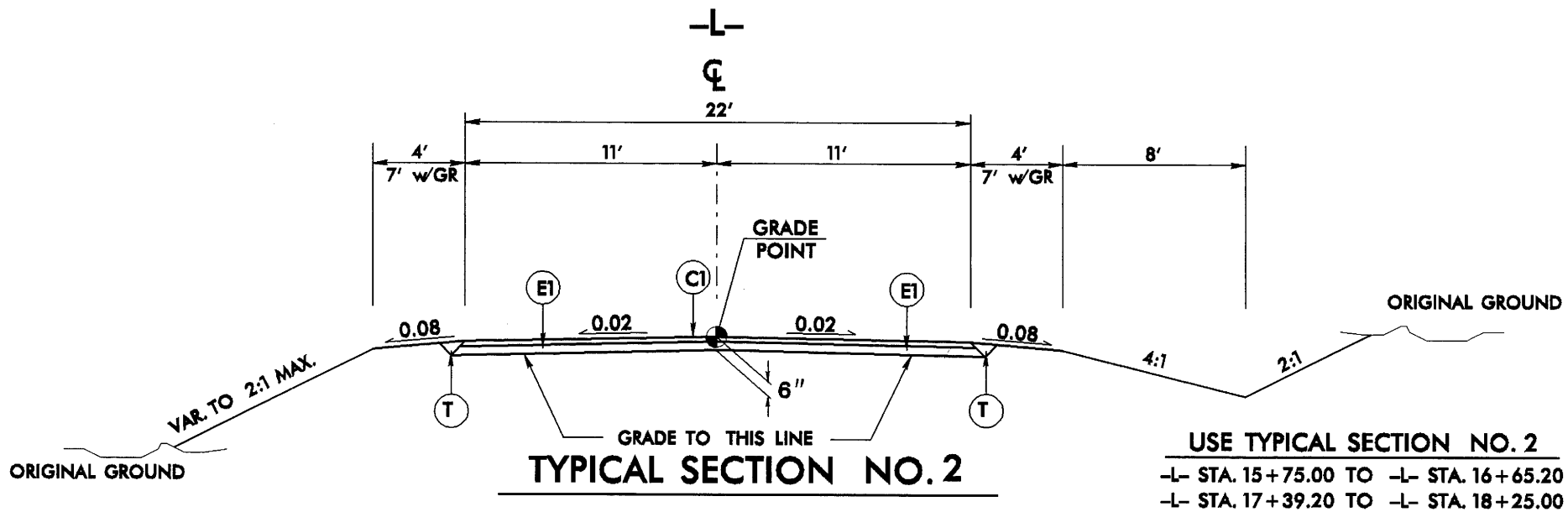
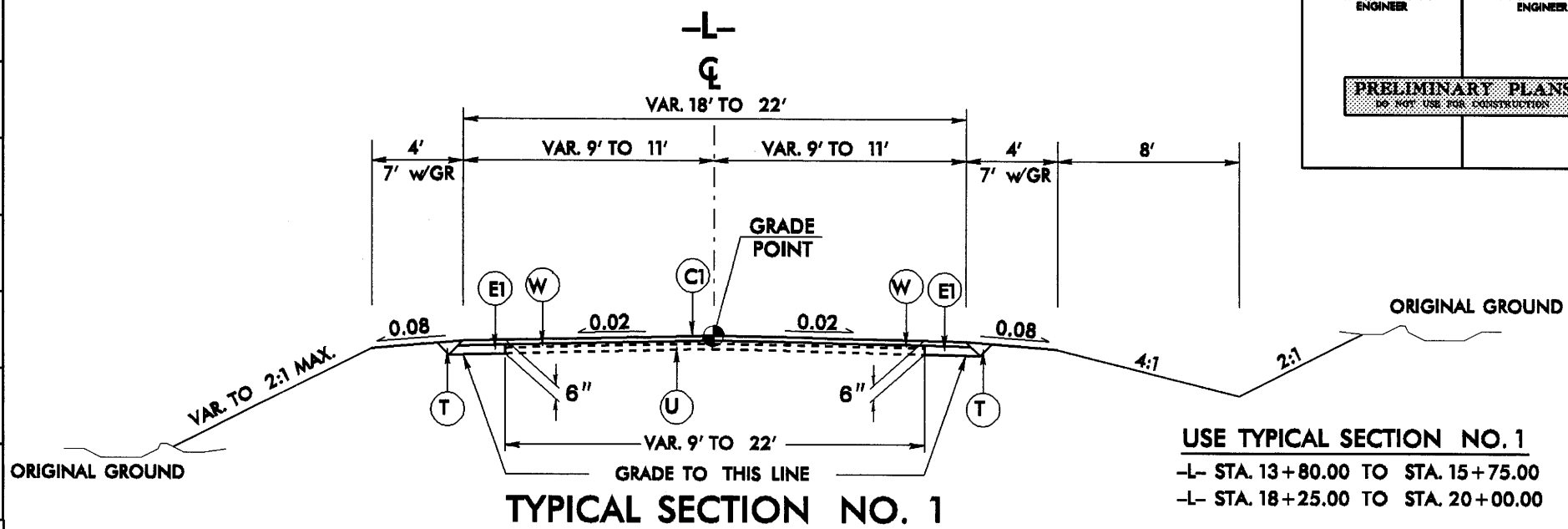
APPROVED _____
DIVISION ADMINISTRATOR

DATE _____

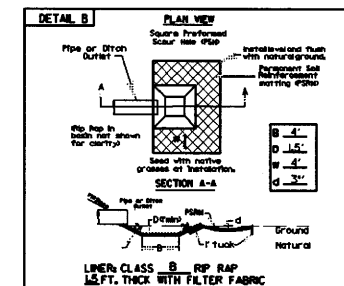
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AJMoore AT RB15.dwg

PROJECT REFERENCE NO. B-4180	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	

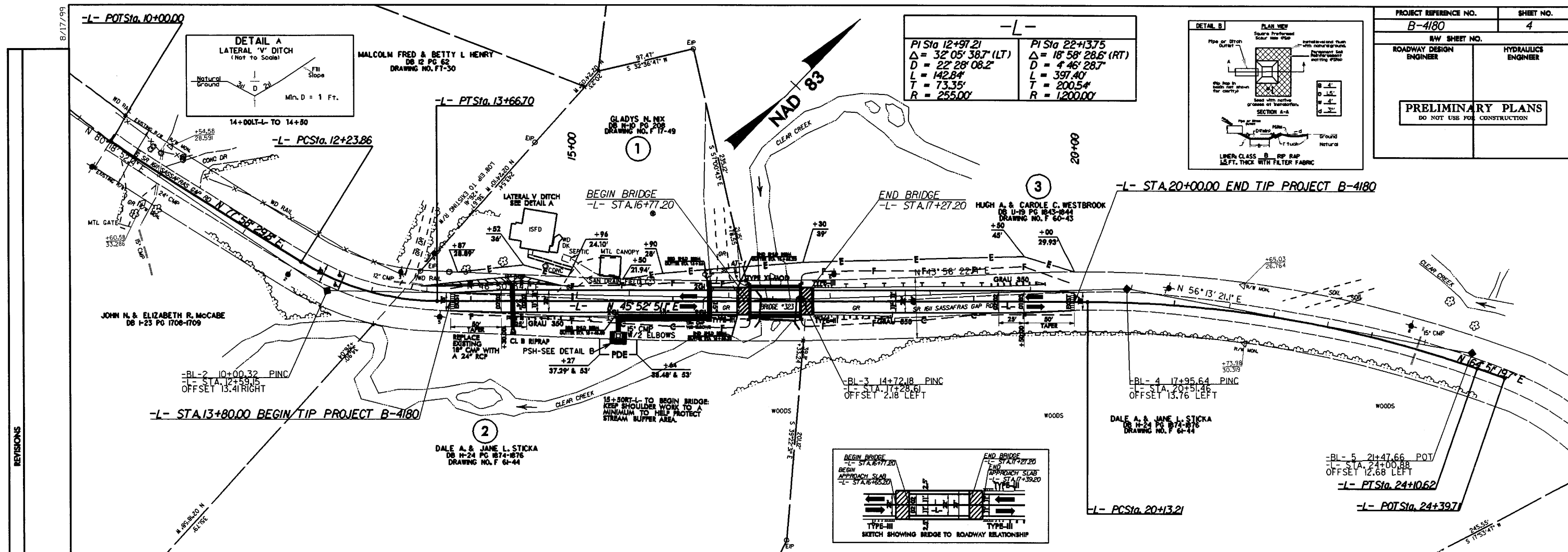
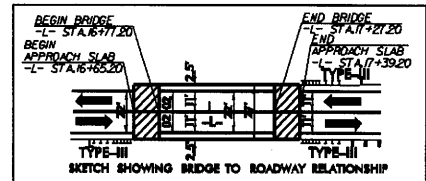
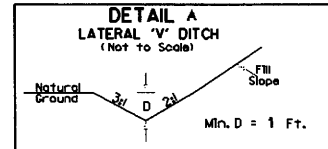
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 89.5A, AT AN AVERAGE RATE OF 140 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE 89.5A, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
E1	PROP. APPROX. 3 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET No. 2)



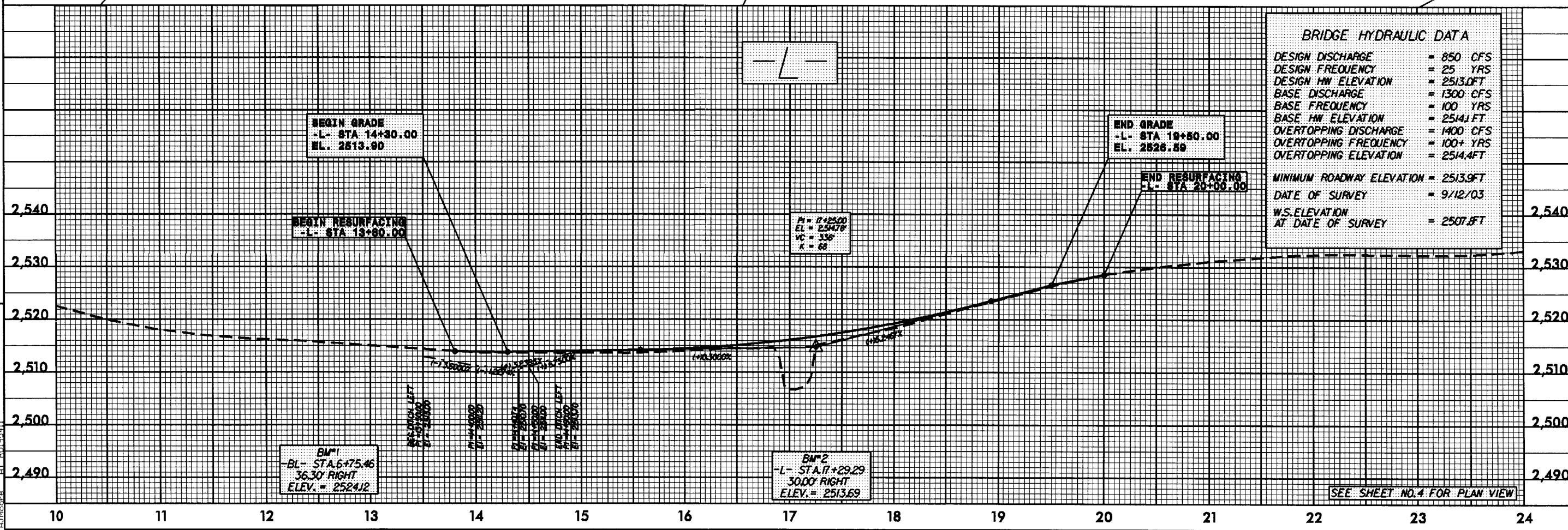
PROJECT REFERENCE NO. B-4180	SHEET NO. 4
RDW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



PI Sta 12+97.21 $\Delta = 32^{\circ} 05' 38.7''$ (LT) $D = 22^{\circ} 28' 08.2''$ $L = 142.84'$ $T = 73.35'$ $R = 255.00'$	PI Sta 22+13.75 $\Delta = 18^{\circ} 58' 28.6''$ (RT) $D = 4^{\circ} 46' 28.7''$ $L = 397.40'$ $T = 200.54'$ $R = 1200.00'$
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BRIDGE HYDRAULIC DATA	
DESIGN DISCHARGE	= 850 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 2513.0FT
BASE DISCHARGE	= 1300 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2514.1FT
OVERTOPPING DISCHARGE	= 1400 CFS
OVERTOPPING FREQUENCY	= 100+ YRS
OVERTOPPING ELEVATION	= 2514.4FT
MINIMUM ROADWAY ELEVATION	= 2513.9FT
DATE OF SURVEY	= 9/12/03
W.S. ELEVATION AT DATE OF SURVEY	= 2507.8FT



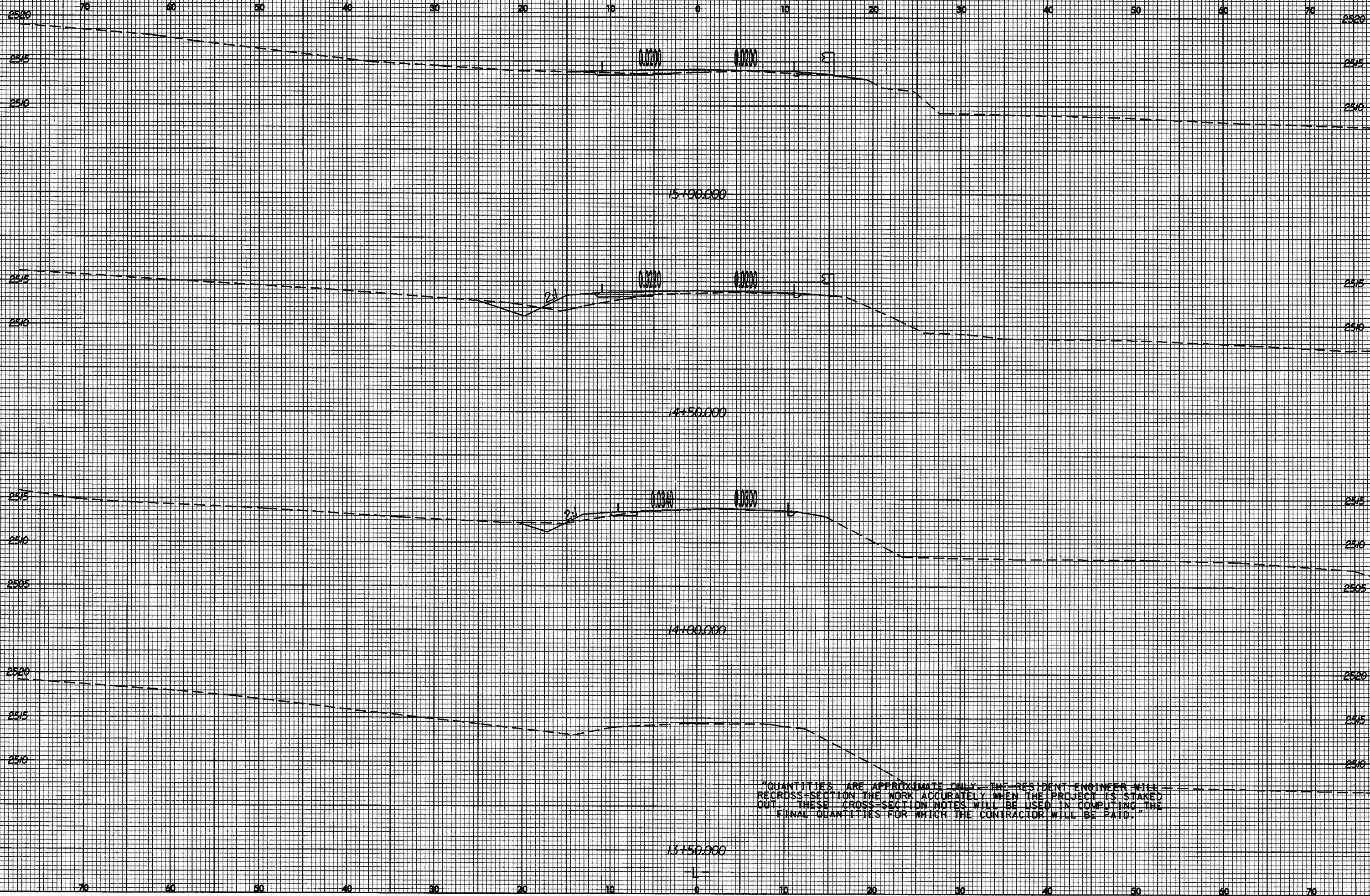
8.17.09
 REVISIONS
 10-MAR-2004 09:09
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 Al Moore

8/23/99



PROJ. REFERENCE NO.
B-4180

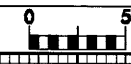
SHEET NO.
X-1



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

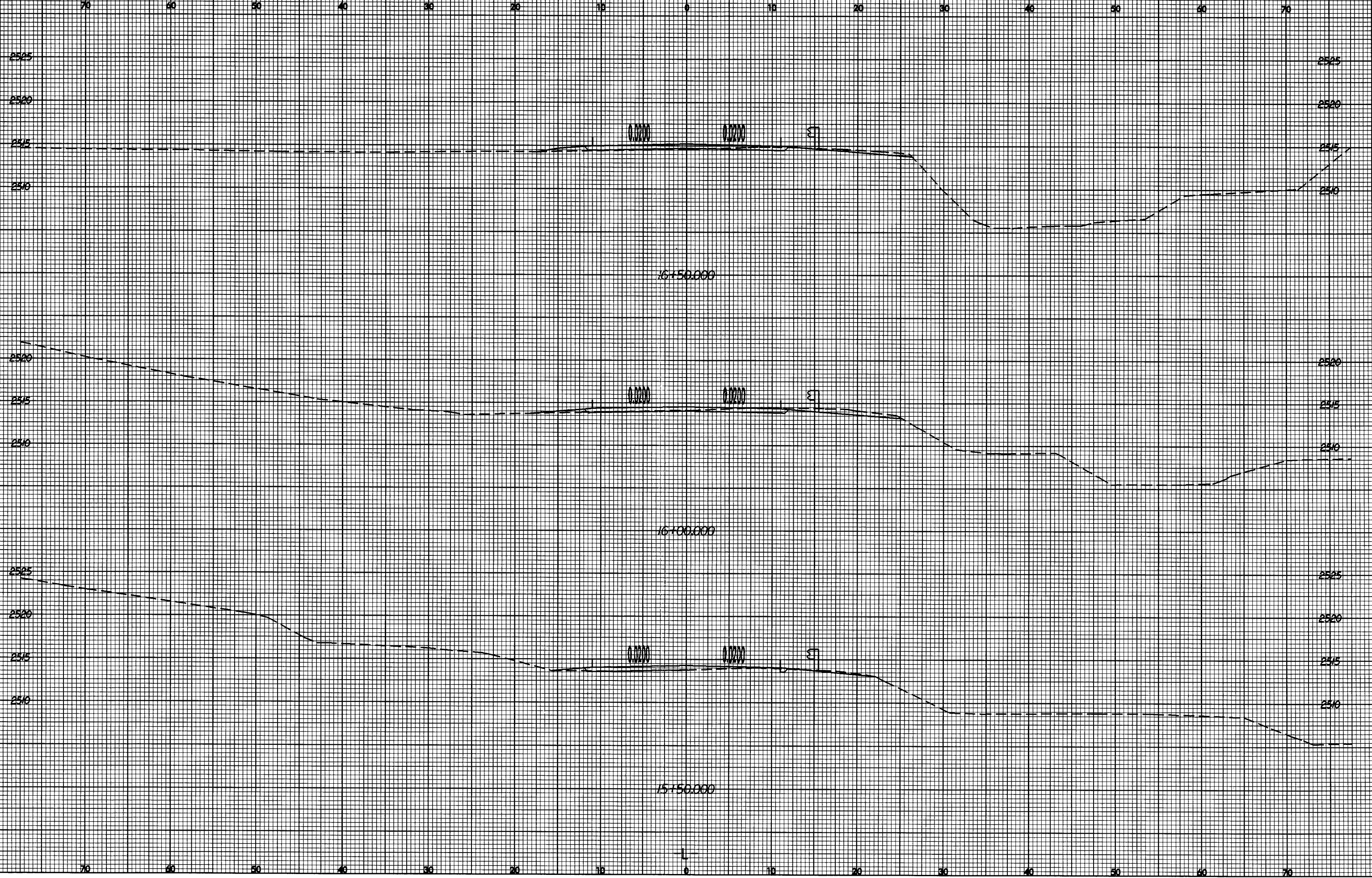
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AUMore At RJ13541

8/23/99



PROJ. REFERENCE NO.
B-4180

SHEET NO.
X-2



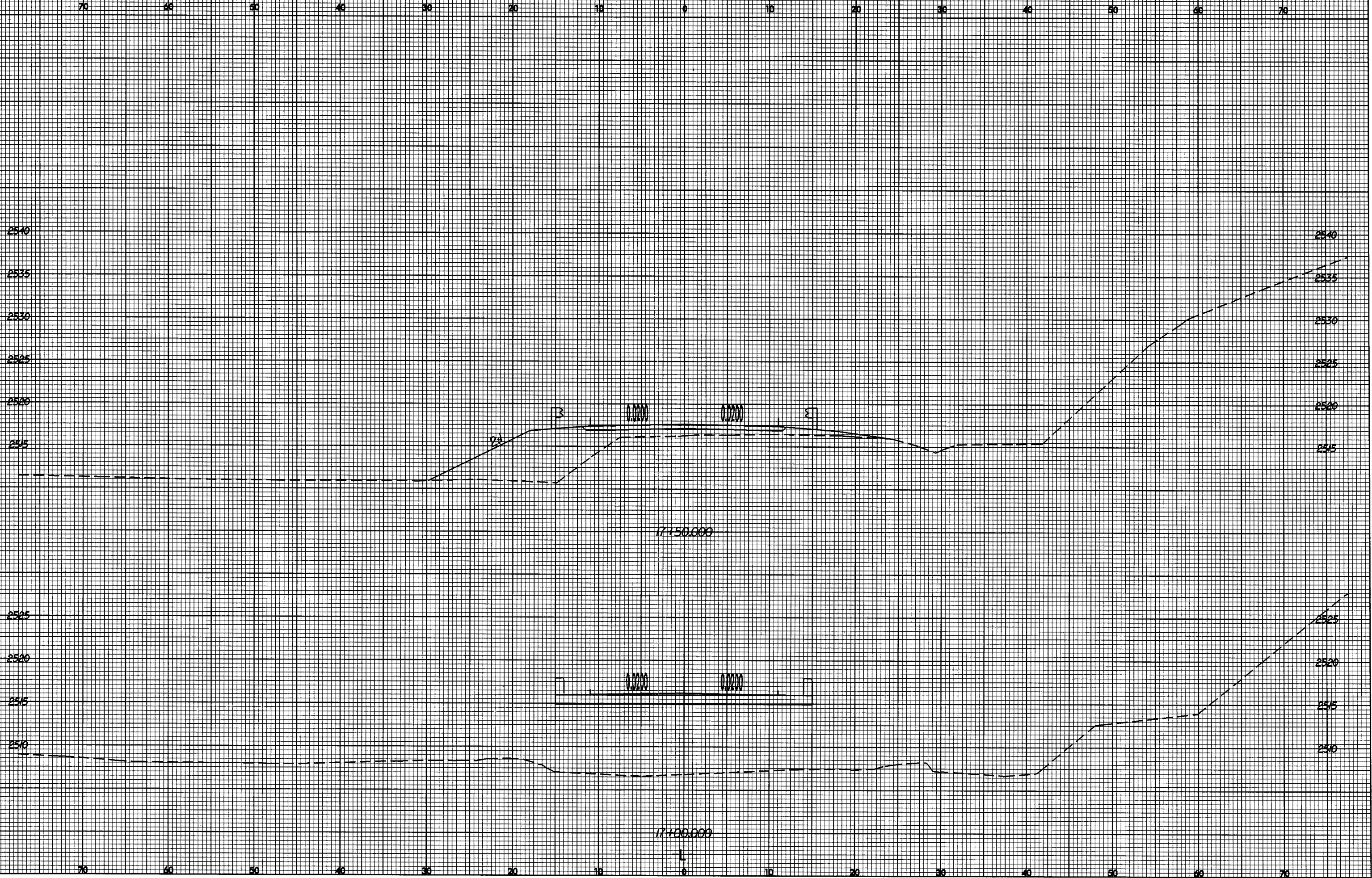
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8/23/99



PROJ. REFERENCE NO.
B-4180

SHEET NO.
X-3



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A:\Moore

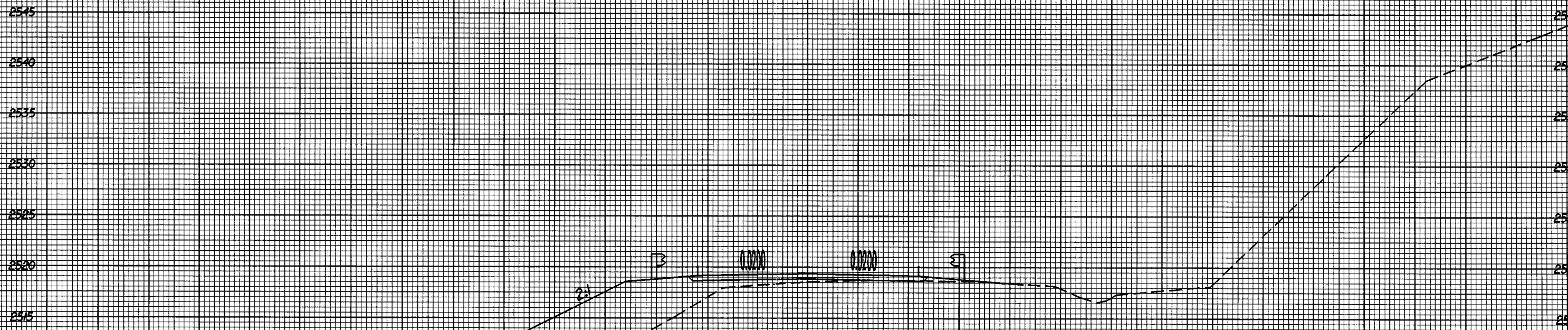
8/23/99



PROJ. REFERENCE NO.
B-4180

SHEET NO.
X-4

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18+00.000

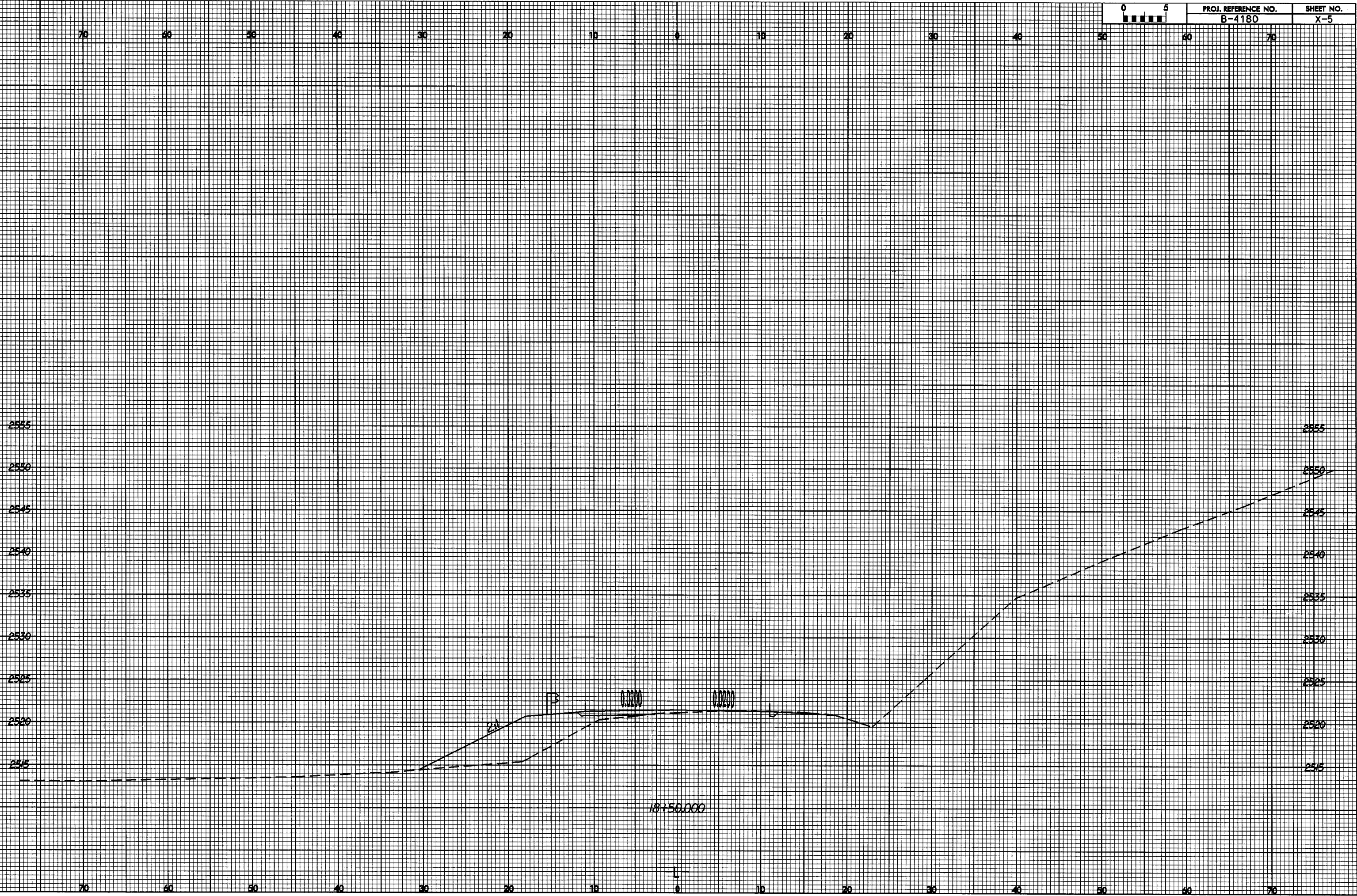
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8/23/99



PROJ. REFERENCE NO. B-4180	SHEET NO. X-5
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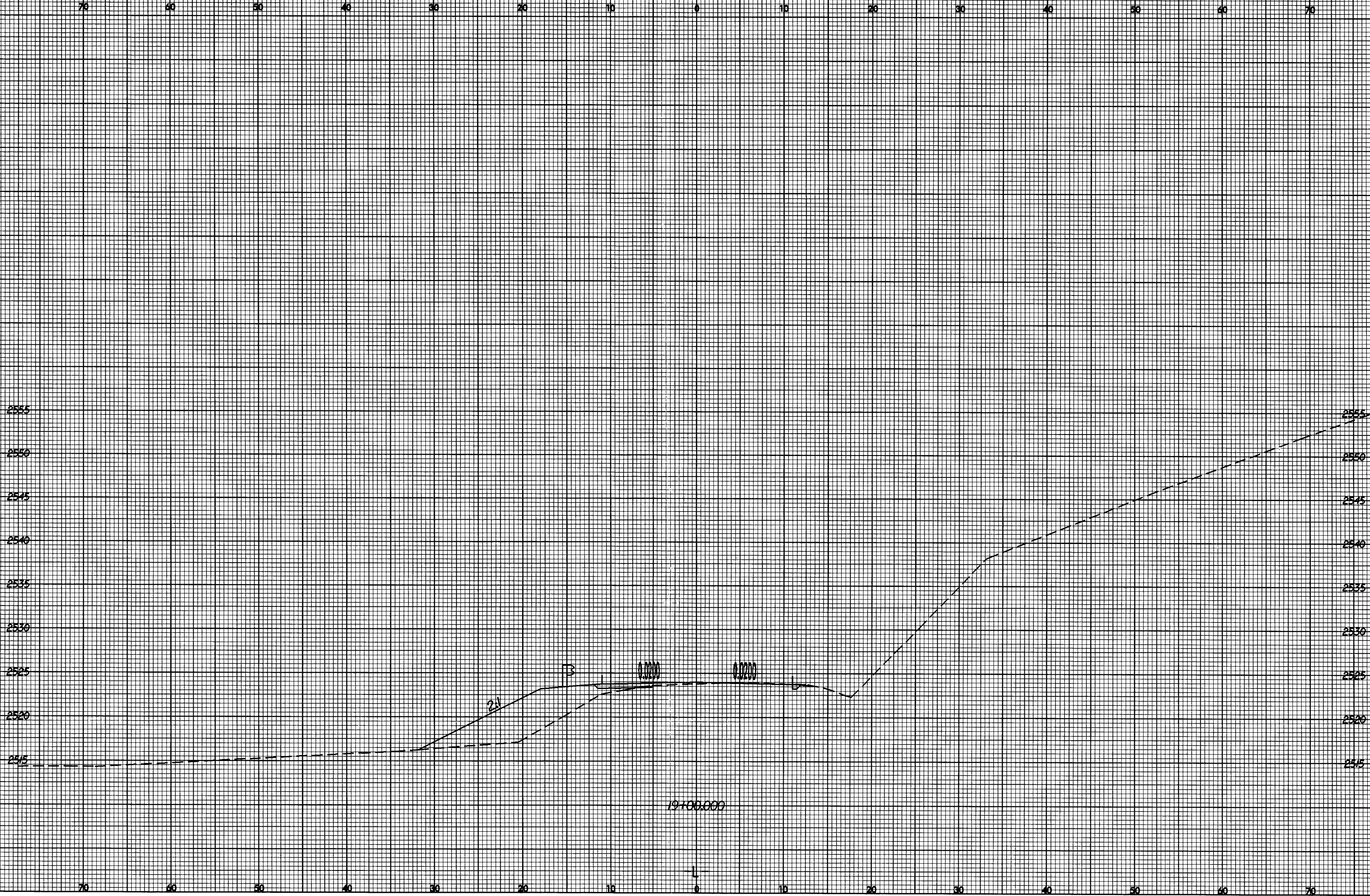
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8/23/99



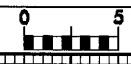
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B-4180

SHEET NO.
X-6

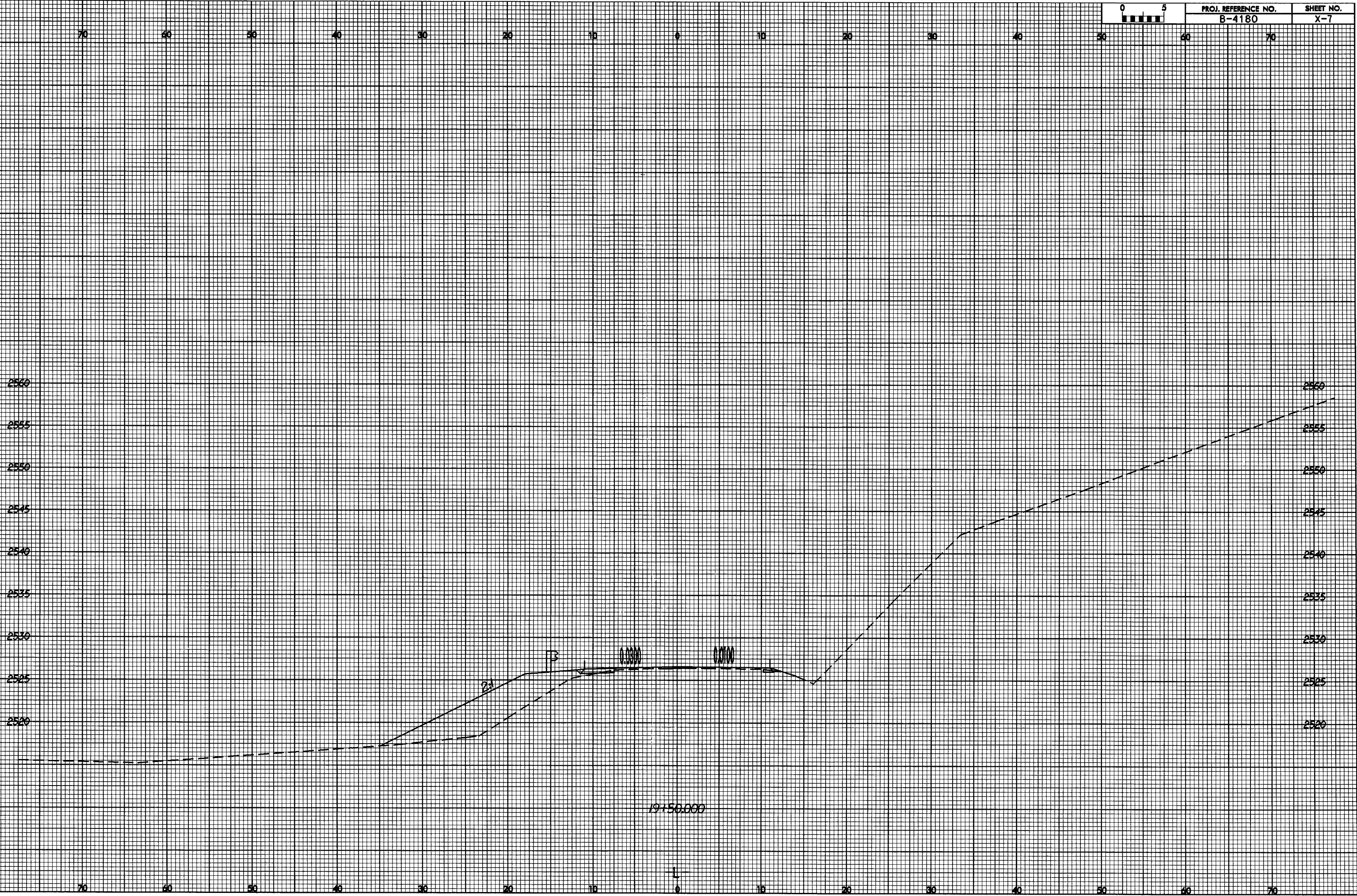


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AUMore At R013641

8/23/99

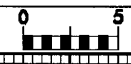


PROJ. REFERENCE NO.	SHEET NO.
B-4180	X-7

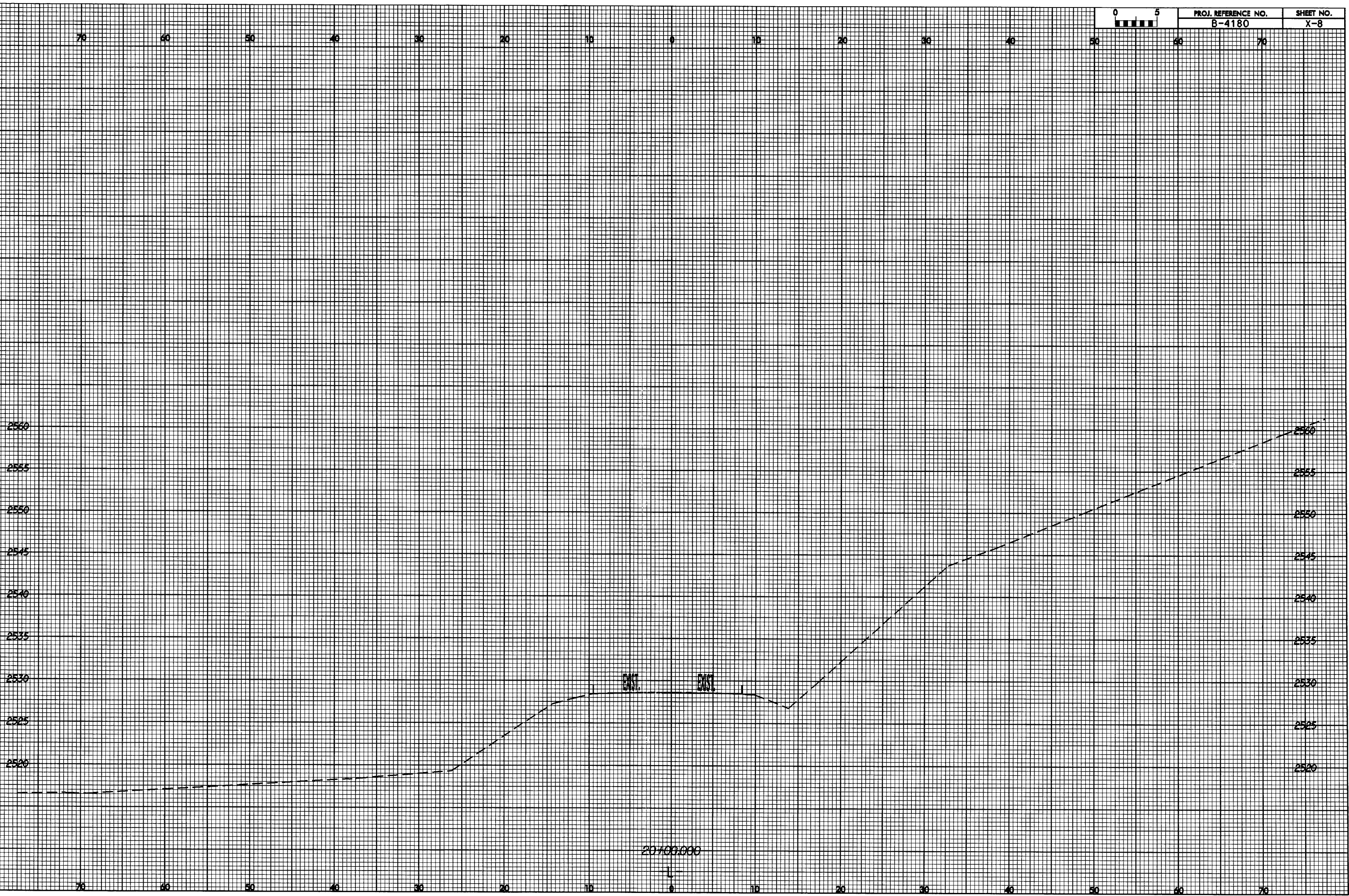


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PROJ. REFERENCE NO.	SHEET NO.
B-4180	X-8



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 AJMoore AT RD15641

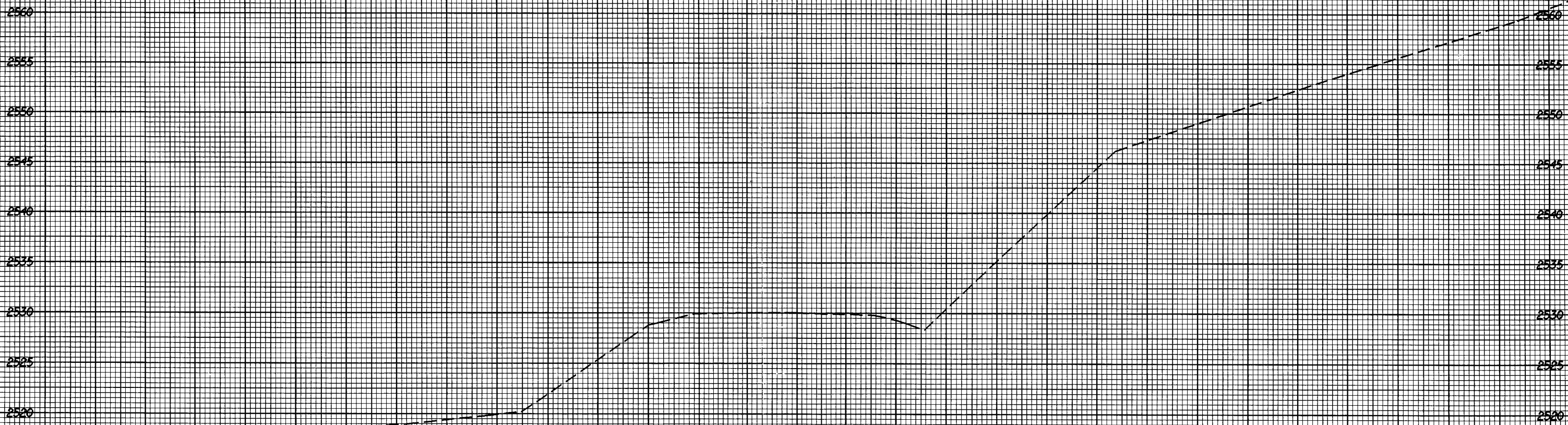
20' = 1"



PROJ. REFERENCE NO.
B-4180

SHEET NO.
X-9

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20:150:000

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