



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

October 24, 2006

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

ATTN: Mr. Richard Spencer
NCDOT Coordinator

SUBJECT: **Clean Water Act Section 404 Regional General Permit No. 198200031**
Application for replacement of Bridge Nos. 61 and 62 over Gum Swamp Creek at Lytch's pond (X-Way pond) on SR 1108 (X-Way Road) in Scotland County. Federal Aid Project No. BRSTP-1108 (4), State Project No. 8.2590401, \$475.00 Debit Work Order 8.2590401, WBS Element No. 33021.1.1. Division 8, TIP No.B-3373.

References: Wetland Restoration Plan dated 10/11/06.
X-Way Pond Dam Breach Installation Plans
Figure 1. Aerial Photography
NCDENR Certificate of Approval letter dated 9/1/06

Bridge No. 61 was constructed in 1977 and is 53 feet long. It is a single span superstructure composed of a steel plank deck on I-beams supported by end bents composed of steel cap on steel piles. Currently no water flows beneath Bridge No. 61.

Bridge No. 62 was constructed in 1975 and is 110 feet long and 28 feet in width providing for two travel lanes. It is a three span superstructure composed of a steel plank deck on I-beams supported by timber caps and concrete piles encased at the spillway.

The replacement of Bridge No. 62 (TIP B-3373) is scheduled to be let in September 2008. Due to the rapid deterioration of the concrete spillway under Bridge No. 62 in Scotland County and the deterioration of the bridge substructure itself, the North Carolina Department of Transportation (NCDOT) was forced to close X-Way Road (SR 1108) to avoid the serious injury and potential loss of life that would result from a bridge failure.

X-Way Road (SR 1108) has an estimated Average Daily Traffic (ADT) of 4,000 vehicles per day and this route is a significant thoroughfare in the Laurinburg/ Scotland County area. Currently,

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

TELEPHONE: 919-715-1334
FAX: 919-715-5501
WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD., SUITE 240
RALEIGH NC 27604

traffic that would normally travel SR 1108 is being detoured approximately 7 miles. This creates significant additional road-user costs for the travelling public.

NCDOT proposes to breach the existing dam first and then replace Bridge No. 62 at the scheduled letting in September 2008. A breach of the existing dam will facilitate the construction of a temporary bridge. The temporary bridge will have a length of 100 feet, clear roadway width of 28 feet and overall width of 40 feet. Repairs to Bridge No. 62 will then be conducted "in the dry" so that traffic may be restored on SR 1108. The significant amount of planning, environmental studies and design work that must be completed prior to a normal T.I.P. letting make it impossible to accelerate the original project and perform all of the required work in one stage.

Please see the enclosed Pre-Construction notice (PCN), permit drawings, design plans and wetland restoration plan for the subject project. A Categorical Exclusion (CE) for this project was completed in 01/98 and a Categorical Exclusion (CE) Addendum will be completed in 10/06. A copy of the CE addendum will be forwarded to the appropriate agencies upon completion.

Bridge No. 62 is located over an active concrete spillway. Bridge No. 61 (approximately 650 feet northeast of Bridge No. 62) is located near an abandoned turbine house. Lytch's pond is located upstream of the two existing bridges. The current off-site detour will be used during project construction.

The project will be constructed in two phases. During Phase I (Permit drawing Site 1A, Sheet 4 of 12), the dam will be breached and the water drained to original stream boundaries. A temporary bridge will be constructed above the dam breach at the natural stream channel. Bridge No. 62 will be repaired and the road opened to traffic.

During Phase II Bridge Nos. 61 and 62 will be removed (Permit drawing Site 1B, Sheet 9 of 12) and the area filled with earthen material. The road will be closed to traffic temporarily and an off-site detour utilized while the temporary bridge is removed and the proposed permanent bridge constructed over the breach area.

Phase I (November 21, 2006)- Proposed Plan of Action for Breach of Lytch's pond and Bridge No. 62 repairs:

The breach plan is completed and enclosed with this application (X-Way Pond Dam Breach Installation Plans) and shown on Site 1A (Permit drawing Sheet 4 of 12). Dam Safety (North Carolina Department of Environment and Natural Resources or NCDENR) has approved the breach plans in a letter dated 09/01/06 (Please see enclosed NCDENR Certificate of Approval letter). According to the breach plan, the water level will be lowered permanently from a normal pool elevation of 172 feet to a new elevation of 164 feet restoring the water level to the original stream boundaries. The water level will be lowered gradually, at a rate of no greater than 1-foot a day according to the breach plan. The following are steps involved in the breach.

1. Maintain Traffic on the current offsite detour.
2. Install temporary sheeting on both upstream and downstream sides of breach location.
3. Dewater area within temporary sheeting
4. Construct proposed rip rapped breach

5. Construct 100-foot temporary bridge over the breach
6. Gradually lower pond water level (controlled with sheeting elevation)
7. Make necessary repairs to Bridge No. 62
8. Open X-Way Road (SR-1108) to traffic

Sediment Control: Prior to allowing water to overtop the weir shown on Drawing XW-203, Sheet 4 of 4 (X-Way Pond Dam Breach Installation Plans), the Contractor will excavate any sediment located within 20 feet of the centerline of the breach from Station 0+60 to Station 0+80 (Breach Channel Stations). The sediment will be excavated down to at least elevation 160 feet and relocated to the designated Temporary Stockpile Area (Drawing No. XW-205, Sheet 1 of 1, X-Way Pond Dam Breach Installation Plans). The cofferdam shown downstream of the breach (Drawing XW-203, Sheet 1 of 4 of the X-Way Pond Dam Breach Installation Plans) will remain in place during the lowering of the water level to act as a sediment basin. Sediment will be removed as necessary and in such a way as to avoid damage to or removal of the sheet piling and/or rip rap used for the breach.

Repairs on Bridge No. 62 will be completed after the dam breach and the water level is lowered. No jurisdictional impacts to surface waters are anticipated from bridge repair.

Phase II (September 2008) –Removal of Bridge Nos. 61 and 62, widening of existing approaches, and replacement of the temporary bridge over the breach with a permanent 84 foot bridge (Permit Drawing Site 1B, Sheet 9 of 12):

Bridges No. 61 and 62 will be removed and filled in during Phase II. No jurisdictional impacts are anticipated from bridge removal or fill placement. The existing approaches will be widened to current standards.

The temporary bridge over the breach will be removed and the proposed permanent 84-foot bridge will be constructed over the dam breach and stream channel. Road closure is proposed and an off-site detour will be utilized.

IMPACTS TO WATERS OF THE UNITED STATES

The project is located in the Lumber River subbasin 03-07-55. The Division of Water Quality (DWQ) best usage classification of Gum Swamp Creek (DWQ) Index No.14-32-(2) is B Sw. There are no ORW, HQW, WS-I or WS-II identified waters within a mile of the study area. Gum Swamp Creek is not listed on the NC 2006 Section 303(d) list.

At present, the spillway (below Bridge No. 62) carries the entire pond outflow. There is no other water outlet. The spillway is approximately 90 feet wide. The water depth flowing over the spillway ranges during the year from 6 inches to 12 inches. Water depth of Lytch's pond ranges from several inches at the edges to over 6 feet at the original stream channel. The water of Lytch's pond is cloudy and dark colored from tannins. The substrate consists of fine to course silt and sand sediments.

Permanent wetland and surface water impacts from the drainage of Lytch's pond have been *estimated* using 1998 infra-red, 2003 aeriels, LIDAR contours (2 feet, 5 feet and 10 feet), a study

by Schnable Engineering that extended approximately 400 feet from the roadway, and field truthing (See attached Wetland Restoration Plan).

Wetland and surface water impacts from the dam breach, Bridge Nos. 61 and 62 removal, temporary bridge construction and permanent bridge construction were *calculated* and are shown on the Impact Summary sheet (Permit drawing, Sheet 3 of 12).

Permanent Impacts at Breach site (Phase I): There will be surface water impacts from the installation of the rip-rap for the dam breach. These impacts are shown on Sheet 4 of 12 (Permit drawing) and summarized on the Impact Summary Sheet (Permit drawing, Sheet 3 of 12). The fill in surface waters will be 0.33 acres. There will be no wetland impacts from construction for the dam breach.

Permanent Impacts as a result of the Breach: The drainage of Lytchs Pond will impact approximately 18.57 acres of wetlands and 32.22 acres of open water (see Figure 1 and attached Wetland Restoration Plan).

Permanent Impacts from Permanent Bridge Construction (Phase II): The permanent proposed bridge over Gum Swamp Creek at the breach site will be 84 feet long. Wetland impacts associated with construction of the permanent bridge over Gum Swamp Creek are due to approach work as shown on Sheet 9 of 12 (Permit drawing Site 1B) and are summarized on the Impact Summary Sheet (Permit drawing Sheet 3 of 12). Fill in wetlands will be 0.22 acre and impacts from erosion control are 0.07 acre. These estimates are preliminary. A permit modification application will be submitted when final design is completed for the September 2008 letting.

Temporary Impacts from Breach: Temporary surface water impacts from the dam breach total 0.09 acres (Permit drawings, Impact Summary Sheet, Sheets 3 and 4 of 12). Temporary surface water impacts are for dewatering.

Utility Impacts: A Progress Energy power pole is located in the southeast quadrant of the dam breach (shown on top of the rip rap in the dam breach Permit drawing Sheet 9 of 12). This power pole will be moved south approximately 15 feet and re-attached to the aerial line that traverses the earthen dam.

BellSouth has an underground telephone line along the west side of the bridge. The underground line will be abandoned and a new line will be attached to the Progress Energy power poles to make an aerial line for this section.

A cable TV line is attached below the Progress Energy line on the power pole. The cable TV line will reconnect to the relocated Progress Energy power pole.

According to the Scotland County Water Department there are no public water or sewer lines in the vicinity of the project.

No jurisdictional impacts will occur from the above utility pole relocations.

FEDERALLY PROTECTED SPECIES

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE) and Proposed Threatened (PT) are protected under the provisions of the Endangered Species Act of 1973, as amended.

As of April 27, 2006 the US Fish and Wildlife Service (USFWS) lists six federally protected species for Scotland County (Table 1). No species have been added or deleted from this list since the 1998 CE and preparation of the 2006 CE addendum. The USFWS Threatened and Endangered Species in North Carolina website list checked for updates on 8/21/06. Biological conclusions of each species are shown in Table 1.

The “No Effect” Biological Conclusion was reached for red-cockaded woodpecker, rough-leaved loosestrife and American chaffseed based on lack of suitable habitat. The biological conclusions for these three species remain valid because the current study area lacks suitable habitat. Recent surveys for Canby’s dropwort (August 24, 2006) and Michaux’s sumac (July 20, 2006) were conducted and no specimens of either species were found. Biological Conclusions of No Effect are given for these species.

Table 1. Federally Protected Species for Scotland County

Common Name	Scientific Name	Status	Suitable Habitat in the study area	Biological Conclusion
Red-cockaded Woodpecker	<i>Picoides borealis</i>	E	No	No Effect
Michaux’s sumac	<i>Rhus michauxii</i>	E	Yes	No Effect
Canby’s dropwort	<i>Oxypolis canbyii</i>	E	Yes	No Effect
American alligator	<i>Alligator mississippiensis</i>	T(S/A)	Yes	N/A
American chaffseed	<i>Schwalbea americana</i>	E	No	No Effect
Rough-leaved loosestrife	<i>Lysimachia asperulaefolia</i>	E	No	No Effect

AVOIDANCE, MINIMIZATION and MITIGATION

Avoidance and Minimization:

Avoidance examines all appropriate and practicable possibilities of averting impacts to “Waters of the US”. The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts and to minimize impacts as part of the project design. Practical means to minimize impacts to surface waters temporarily impacted by the project include:

Project Specific Measures-

- Sediment Wedge: Prior to allowing water to overtop the weir shown on Drawing XW-203, Sheet 4 of 4 (X-Way Pond Dam Breach Installation Plans), the Contractor shall excavate any sediment located within 20 feet of the centerline of the breach from Station 0+60 to Station 0+80 (Breach Channel Stations). The sediment should be excavated down to at least elevation 160.0 feet and relocated to the designated Temporary Stockpile Area (Drawing No. XW-205, Sheet 1 of 1 of the X-Way Pond Dam Breach Installation Plans).
- The cofferdam shown downstream of the breach (X-Way Pond Dam Breach Installation Plans, Drawing XW-203, Sheet 1 of 4) will remain in place during the lowering of the water level to act as a sediment basin. Sediment will be removed as necessary and in such a way as to avoid damage to or removal of the sheet piling and rip rap for the breach.
- During construction road closure is planned and traffic will be diverted to an off-site detour.
- The project is to be constructed on existing alignment.
- The permanent bridge will be constructed at the original stream channel boundary.
- The project design was developed to keep the footprint of the proposed project away from the wetlands in the northern (pond side) quadrant. The approach fill slopes are 2:1 in wetlands (Permit Drawings Sheet 8 and 12 of 12).
- The permanent 84-foot bridge will be a single span box beam structure. No interior bents are proposed.
- No end bents from temporary bridge construction are to be placed in surface waters of Gum Swamp Creek.
- Temporary workpad(s) will be placed in uplands (on the causeway) away from the stream channel.

Standard Measures-

- Best Management Practices will be followed for this project as outlined in "NCDOT's Best Management Practices for Construction and Maintenance Activities".

Mitigation: On-site wetland mitigation is proposed because of wetland impacts associated with pond drainage. The proposed wetland mitigation site will be approximately 54.52 acres consisting of 18.57 acres of upland (drained wetland) and 32.22 acres of wetland (drained surface water) restoration. A permanent conservation easement will be placed on the mitigation site. The mitigation design will be determined and finalized after the pond has been drained. The mitigation design will be included in the permit modification application that will be submitted for the September 2008 letting.

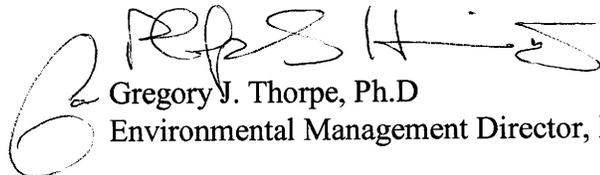
REGULATORY APPROVALS

Section 404 Permit: It is anticipated that the impacts (permanent and temporary) from the dam breach, dewatering, temporary construction and repairs, bridge removal and construction will be authorized under a Section 404 Regional General Permit No. 198200031 based on an on-site meeting with Richard Spencer on August 29, 2006. We are therefore requesting the issuance of a Regional General Permit No. 198200031 for the impacts associated from project construction.

Section 401 Permit: We anticipate 401 General Certification number 3404 will be applicable to this project. In compliance with Section 143-215.3D(e) of the NCAA we have provided a method of debiting \$475, as noted in the subject line of this application, as payment for processing the Section 401 Water Quality Certification modification application. We are providing 5 copies of this application to the North Carolina Department of Environment and Natural Resources, Division of Water Quality for their use.

Thank you for your time and assistance with this project. A copy of this permit application will be posted on the NCDOT website at <http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html>. Please contact Susan Thebert at (919) 715-1461 or sthebert@dot.state.nc.us if you have any questions or need any additional information.

Sincerely,



Gregory J. Thorpe, Ph.D
Environmental Management Director, PDEA

w/attachment

- Mr. John Hennessy, NCDWQ (5 Copies)
- Mr. Travis Wilson, NCWRC
- Mr. Clarence W. Coleman, P.E., FHWA
- Mr. Gary Jordan, USFWS
- Dr. David Chang, P.E., Hydraulics
- Mr. Mark Staley, Roadside Environmental
- Mr. Greg Perfetti, P.E., Structure Design
- Mr. Tim Johnson, P.E., Division 8 Engineer
- Mr. Art King, Division 8 Environmental Officer

w/o attachment

- Mr. Jay Bennett, P.E., Roadway Design
- Mr. Majed Alghandour, P. E., Programming and TIP
- Mr. Art McMillan, P.E., Highway Design
- Mr. Scott McLendon, USACE, Wilmington
- Mr. Tracy Walter, PDEA Project Planning Engineer
- Mr. Carl Goode, PE, Human Environment Unit Head

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: 198200031
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

Telephone Number: (919) 733-3141 Fax Number: (919) 733-9794
E-mail Address: _____

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

Name: _____
Company Affiliation: _____
Mailing Address: _____

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

III. Project Information

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

1. Name of project: Bridge No. 62 replacement and breach of earthen dam impounding Lytch's pond of GumSwamp Creek on SR 1108 X-way Road
2. T.I.P. Project Number or State Project Number (NCDOT Only): B-3373
3. Property Identification Number (Tax PIN): N/A
4. Location
County: Scotland Nearest Town: Laurinburg
Subdivision name (include phase/lot number): N/A
Directions to site (include road numbers/names, landmarks, etc.): Travel south on US 15, 401, 501 bypass of Laurinburg. Turn right (west) on West Boulevard (SR 1108). Bridge is approximately 3 miles.
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): 34o 44' 36" °N 79o31'44" °W
6. Property size (acres): N/A
7. Name of nearest receiving body of water: Gum Swamp Creek
8. River Basin: Lumber
(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: SR 1108 is located on an earthen dam of Lytch's pond.

which is an impoundment of Gum Swamp Creek west of the roadway. Bridge No. 62 spans the spillway of the pond, which allows Gum Swamp Creek to continue to flow downstream east of the bridge. Wetlands are located around the pond and in areas downstream of the spillway. Land use is primarily agricultural and residential with a several businesses.

10. Describe the overall project in detail, including the type of equipment to be used: _____
The project will be handled in a two phase method. Phase I will involve breaching of the dam and construction of a temporary bridge to reopen the road for travel. Phase II of the project will be constructing the permanent bridge over the breach and removal of the existing structures.

11. Explain the purpose of the proposed work: The existing bridge was constructed in 1975. To improve safety by Bridge replacment and spillway repairs.

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. 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: Surface water impacts from Dam breach and temporary bridge placement. Wetland impacts from permanent bridge construction. Temporary impacts from dewatering.

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)
1B	Fill	Forested	yes	0	0.22
1B	Erosion Control	Forested	yes	0	0.07
Figure 1 (Aerial)	permanent drainage	Forested	yes	0	18.57
Total Wetland Impact (acres)					

3. List the total acreage (estimated) of all existing wetlands on the property: 18.86

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 1A	Gum Swamp Cr.	Fill	Perennial	Millpond	N/A	0.33

Total Stream Impact (by length and acreage)		0.33
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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)
Figure 1 (Aerial)	Lytch's pond	permanent drainage	pond	32.22
Total Open Water Impact (acres)				32.22

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

Stream Impact (acres):	0.33
Wetland Impact (acres):	18.86
Open Water Impact (acres):	32.22
Total Impact to Waters of the U.S. (acres)	51.41
Total Stream Impact (linear feet):	N/A

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. During construction road closure is planned and traffic will be diverted to an off-site detour. Project construction is on existing alignment. Permanent bridge is to be located at the site of the original stream channel boundary.

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.

Please see attached sheet

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

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

IX. Environmental Documentation (required by DWQ)

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

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

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

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

2. If “yes”, identify the square feet and acreage of impact to each zone of the riparian buffers. If buffer mitigation is required calculate the required amount of mitigation by applying the buffer multipliers.

Zone*	Impact (square feet)	Multiplier	Required Mitigation
1		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. N/A
-
-

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. N/A

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

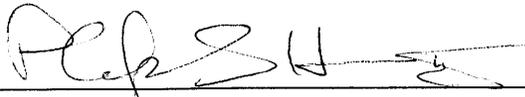
If yes, please submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent North Carolina Division of Water Quality policy posted on our website at <http://h2o.enr.state.nc.us/newetlands>. If no, please provide a short narrative description: _____

Project construction consists of construction on existing alignment. X-way road will remain a 2 lane facility, no widening is proposed. No construction on new location is proposed.

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).

Road is now closed to traffic due to safety issues. Completion of Phase I construction will allow the road to reopen to traffic. Anticipated let date for phase one is November 21, 2006. Notification by Permit modification application will be submitted for the September 2008 letting of the permanent bridge over the breach and removal of Bridges Nos. 62 and 61.



10/24/06

Applicant/Agent's Signature

Date

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

**Gum Swamp Wetland Restoration Plan
At the X-Way Dam of Lytchs Pond
On SR 1108 (X-Way Road)
Scotland County**

**Reference TIP B-3373
Federal-Aid Project BRSTP-1108(4)
WBS No. 33021.1.1**

October 11, 2006

The North Carolina Department of Transportation (NCDOT) will perform on-site mitigation for wetland impacts at the SR 1108 bridge replacement. This mitigation occurs adjacent to Transportation Improvement Program (TIP) B-3373. Due to safety concerns with the spillway of Bridge No. 62 and the associated closing of X-Way Road the project will consist of a two-phase process. The first phase will begin in November 2006 with the breach of the X-Way Dam and controlled drainage of Lytchs Pond. This will facilitate repairs to Bridge No.62 and construction of a temporary structure over the breach area in order to re-open X-Way Rd. The second phase is the bridge replacement TIP B-3373, which is currently scheduled for letting in September 2008.

The present total mitigation site is approximately 54.52 acres. The adjacent wetlands that will be impacted by the drainage of Lytchs Pond total approximately 18.57 acres. NCDOT proposes to restore approximately 32.22 acres of wetland as on-site mitigation for TIP B-3373. This calculation has been produced using 1998 infra-red aerial photography; 2003 aerial photography; 2-foot, 5-foot, and 10-foot LIDAR contours; a sediment thickness study by Schnabel Engineering that extended approximately 400' from the roadway; and limited field truthing.

Existing Conditions

The project is located in a rural area of Scotland County approximately 4.0 miles southwest of Laurinburg and just north of the South Carolina State Line on SR 1108 as it crosses the X-Way Dam in Gum Swamp.

The Categorical Exclusion (CE) for TIP B-3373, dated January 1998, provides further details concerning existing natural resources and roadway conditions.

X-Way Dam is an old, earthen dam of Lytchs Pond, which is an approximately 54.52 acre impoundment of Gum Swamp Creek, on the west side of the roadway. The existing site contains 35.95 acres of open water and 18.57 acres of adjacent wetland. A Cypress-Gum Swamp community occurs throughout this area. Vegetation within the swamp includes pond cypress, black gum, red maple, sweet gum, and loblolly pine. The inundated soils of the mitigation site are designated in the CE by the Scotland County Soils Survey as Swamp, which is listed as a hydric soil.

Bridge No. 62 spans the spillway of the pond, which allows for downstream flow east of the bridge. The concrete spillway under Bridge No. 62 has been undermined by water flow traveling beneath the structure. These circumstances created safety concerns with the structural integrity of the bridge and have resulted in the closing of SR 1108 through Gum Swamp.

Proposed Conditions

Design

The proposed wetland mitigation site will be approximately 54.52 acres consisting of 18.57 acres of upland (impacted wetland), 3.73 acres of open water, and 32.22 acres of wetland restoration. Restoration will involve a planned breaching of the X-Way Dam and controlled drainage of Lytchs Pond to design elevations. A permanent conservation easement will be placed on the mitigation site with the stipulation that any state, federal, or land conservation entity may build a dam upstream of the X-Way project to restore Lytchs Pond. The conservation easement will work to protect the site in perpetuity, regardless of dam replacement.

The Breach Plan for the X-way Dam provides further details concerning the controlled drainage of Lytchs Pond.

The Natural Environment Unit will provide construction oversight to ensure the wetland mitigation area is constructed properly.

Vegetation Planting

The natural seed bank that resides in the substrate beneath Lytchs Pond, once exposed to aerobic conditions, should provide a substantial source of native species. Planting of native species will be performed within the restoration area by the NCDOT at the density rate of 680 seedlings per acre, which equates to a planting space of about 8 feet on center.

Monitoring

Upon the successful completion of the controlled drainage, the following monitoring strategy is proposed for the mitigation site. NCDOT will document monitoring activities on the site in an annual report distributed to the regulatory agencies for a minimum period of five years or until the site is considered successful.

Hydrologic Monitoring

Ground water gauges will be installed along transects of the pond and adjacent wetland. Gauges will be placed in both areas of existing wetland and proposed wetland, and monitoring will begin post-pond drainage.

Vegetation Success Criteria

NCDOT shall monitor the restoration site by visual observation and photo points for survival and aerial coverage of vegetation. Monitoring will be initiated upon the completion of planting.



North Carolina Department of Environment and Natural Resources
Division of Land Resources

P. 02/03
RECEIVED

SEP 07 2006

**DIVISION OF HIGHWAYS
HYDRAULICS UNIT**

James D. Simons, PG, PE
Director and State Geologist

Michael F. Easley, Governor
William G. Ross Jr., Secretary

Certificate of Approval

September 1, 2006

RECEIVED
OCT 16 2006
DIVISION OF HIGHWAYS
PDEA-OFFICE OF ENVIRONMENT

Mr. Max Price, PE
NCDOT Hydraulics Unit
1590 Mail Service Center
Raleigh, North Carolina 27699-1590

Mr. Wade S. Dunbar, III
816 West Covington Street
Laurinburg, North Carolina 28352

RE: Approval to Breach
X Way Millpond Dam
State I.D. SCOTL-017

Dear Sirs:

This is in response to your submission received on August 8, 2006 of plans, specifications and design data to breach the subject dam in compliance with the Dam Safety Law of 1967. These documents were prepared under the supervision of Mr. Donald L. Basinger, PE, with Schnabel Engineering. This letter constitutes approval of your proposal to breach the subject dam according to the plans and specifications received by this Division on August 8, 2006 with the following stipulations:

1. Project construction shall be supervised by a qualified professional engineer.
2. During construction, the Division of Land Resources may require such progress reports as are deemed necessary.
3. Upon completion of the project, a qualified professional engineer shall inspect the completed work and upon finding (a) that the work has been done as specified and (b) that the breach has been sufficiently stabilized to restrain accelerated erosion, and (c) the remains of the dam are safe, shall file with the Division of Land Resources two sets of record drawings and a certificate stating that the work has been completed in accordance with the approved plans and other requirements.

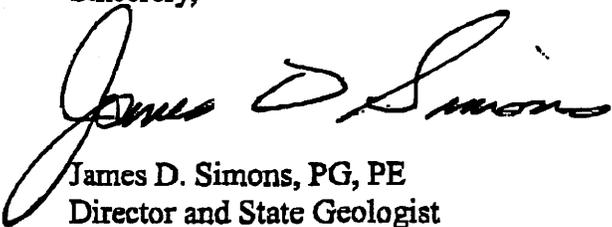
X Way Millpond Dam
September 1, 2006
Page 2 of 2

4. You must notify Mr. Doug Jones, PE, Regional Engineer, Land Quality Section, 225 Green Street, Fayetteville, North Carolina 28301, telephone number (910) 433-3300 ten days before the start of construction.

The Army Corps of Engineers and the Water Quality Section of this Department should be contacted to determine if additional permits are required. Also, the erosion and sediment control program having jurisdiction should be contacted to determine permit requirements. In any case, sediment must be prevented from entering the waters of the state or flowing onto neighboring property.

Construction must begin within three years of the date of this approval or the approval is void. For assistance, you may contact Mr. Doug Jones, PE, Regional Engineer at (910) 433-3300 or a member of the Central Office dam safety staff at (919) 733-4574.

Sincerely,



James D. Simons, PG, PE
Director and State Geologist

MRF/

cc: Mr. Donald L. Basinger, PE, Schnabel Engineering
Ms. Belinda Henson, Surface Water Protection Regional Supervisor
Mr. Doug Jones, PE, Land Quality Regional Engineer
Mr. Richard K. Spencer, US Army Corps of Engineers

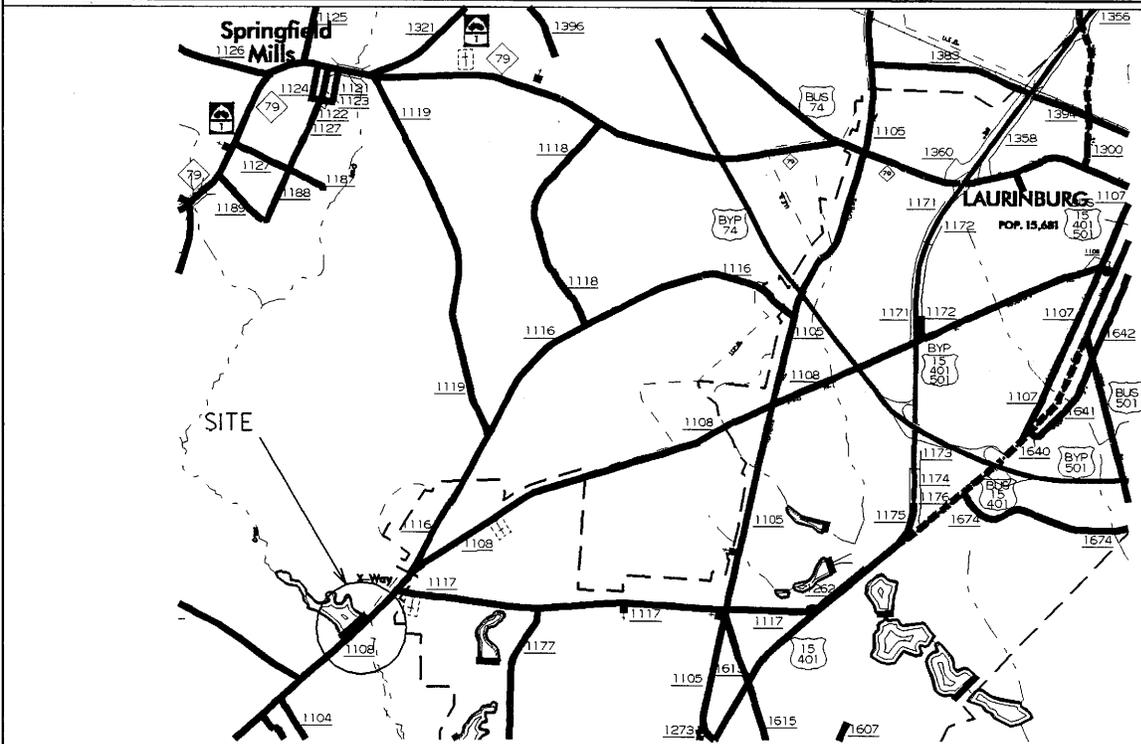
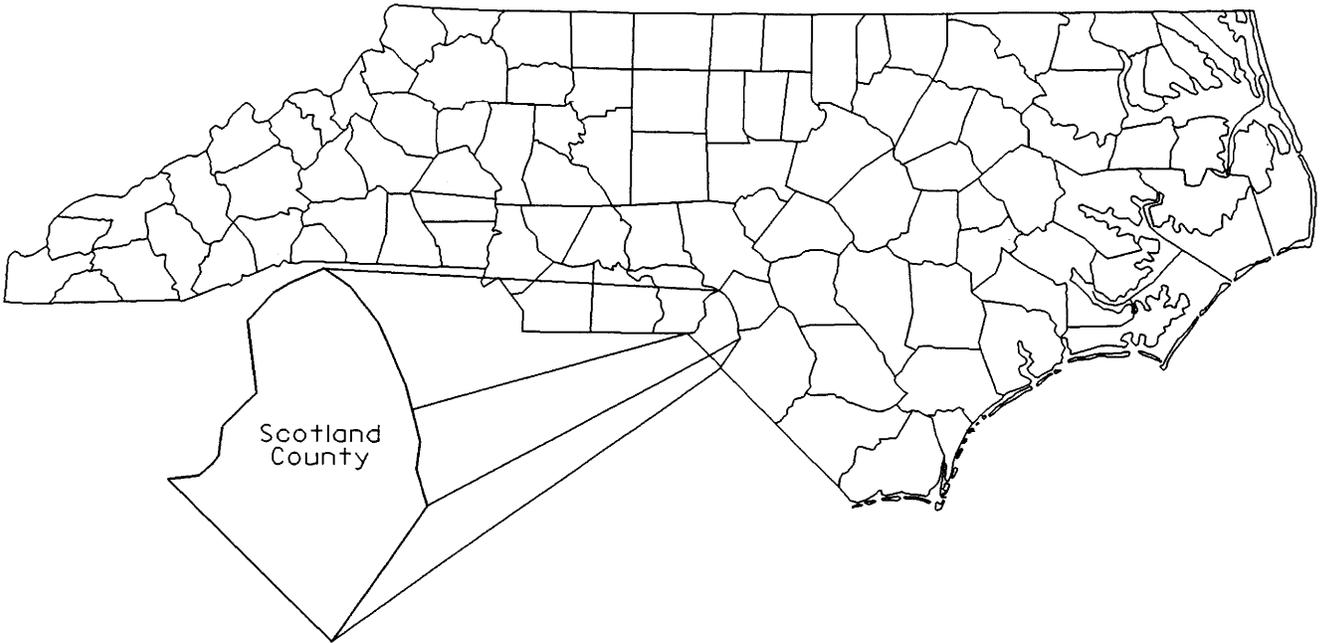


B-3373
Bridge 62 over Gum Swamp Ck Spillway

Figure 1

photos.dgn 10/18/2006 03:05:41 PM

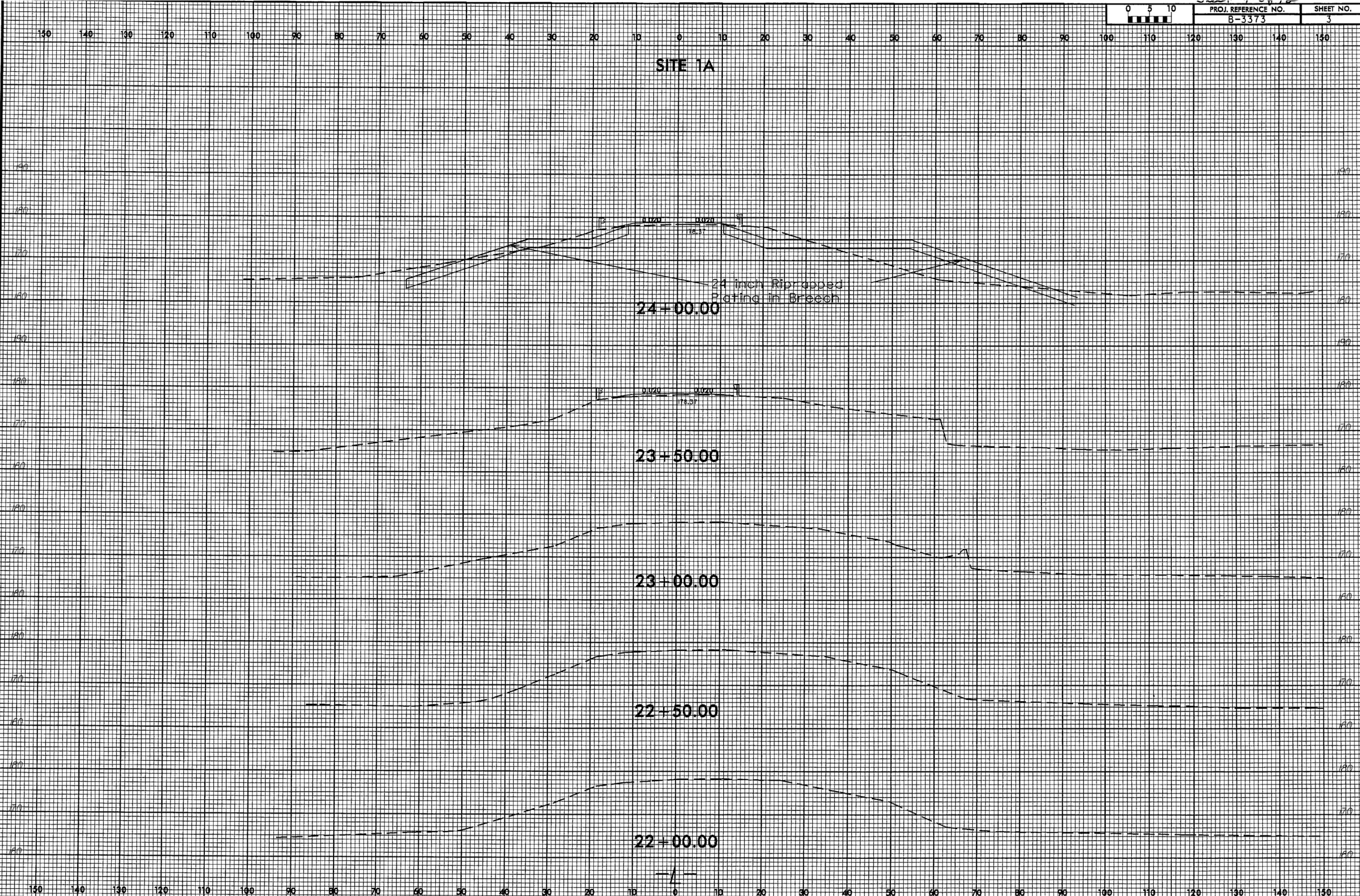
NORTH CAROLINA



VICINITY MAPS

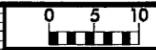
NCDOT
DIVISION OF HIGHWAYS
SCOTLAND COUNTY
PROJECT: 8.2590401 (B-3373)
**BRIDGE NO.62 OVER GUM SWAMP
CREEK SPILLWAY ON SR 1108**

SITE 1A

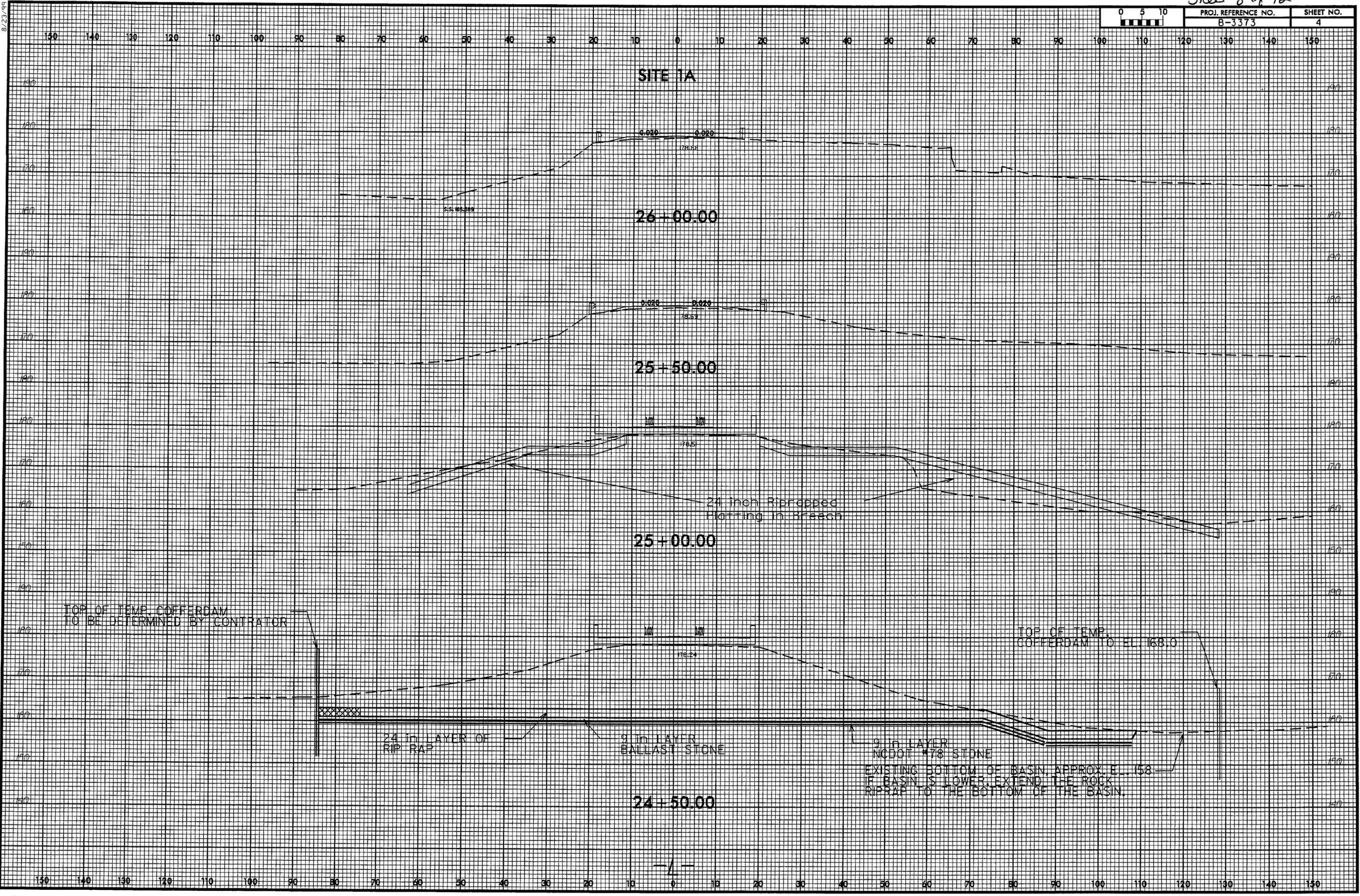


12-OCT-2006 11:01
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B/23/9c



PROJ. REFERENCE NO. B-3373	SHEET NO. 4
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 A:\HY22152

PROJECT REFERENCE NO. B-3733	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Sheet 10 of 12
SEE SHEET 6 FOR PROFILE OF -L-

SITE 1B



NOTE: END RESURFACING -L- STA. 29+00.00
TIE PROPOSED RE-SURFACING TO EXISTING
FROM -L- STA. 29+00.00 TO -L- STA. 29+50.00

20

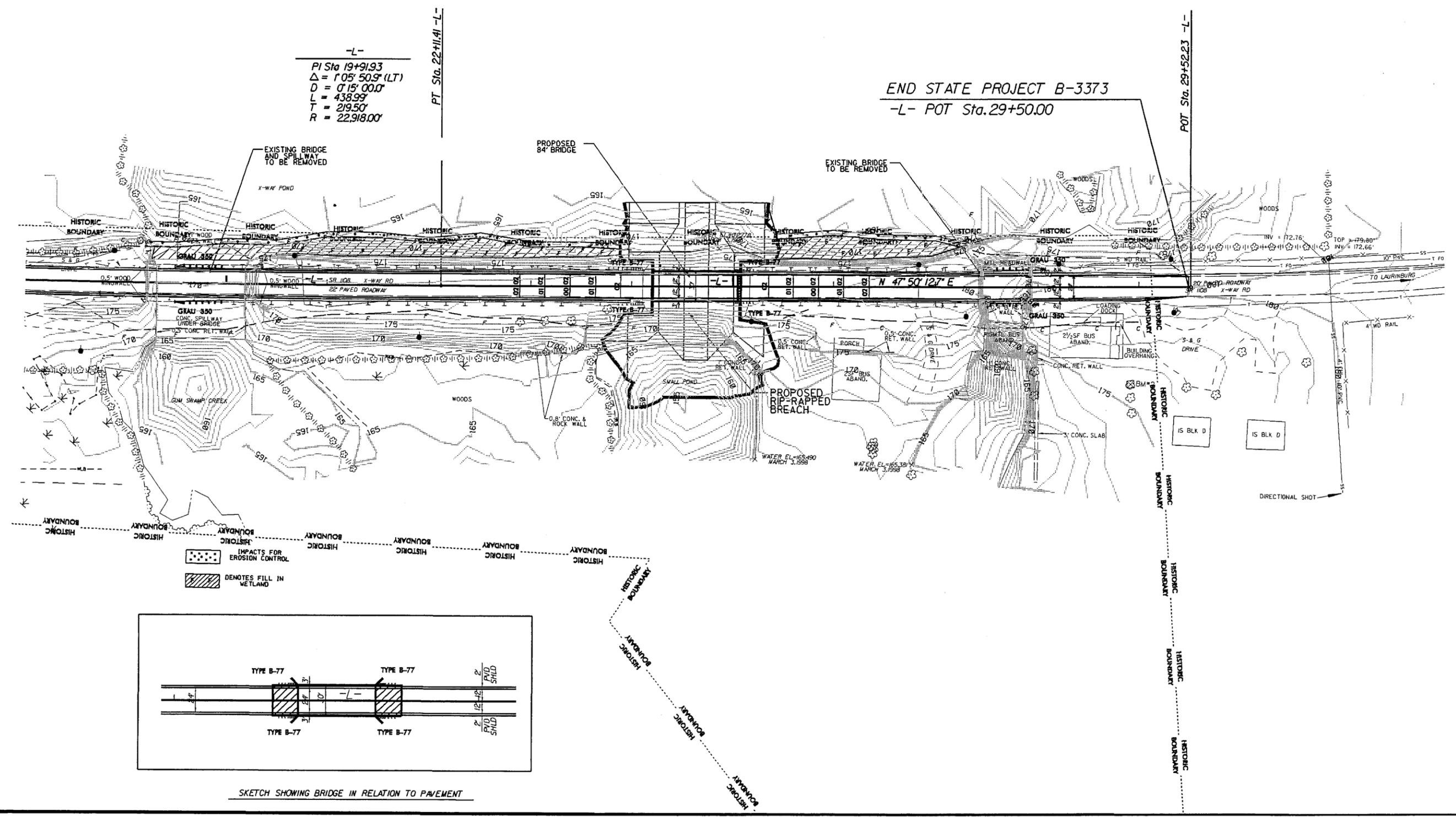
25

-L-
PI Sta 19+91.93
 $\Delta = 105^{\circ} 50.9' (LT)$
 $D = 0' 15' 00.0"$
 $L = 438.99'$
 $T = 219.50'$
 $R = 22,918.00'$

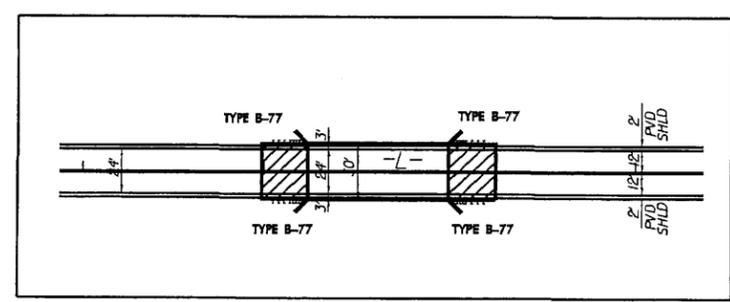
PT Sta. 22+11.41 -L-

END STATE PROJECT B-3373
-L- POT Sta. 29+50.00

POT Sta. 29+52.23 -L-



- IMPACTS FOR EROSION CONTROL
- DENOTES FILL IN WETLAND



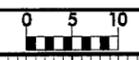
SKETCH SHOWING BRIDGE IN RELATION TO PAVEMENT

REVISIONS

13-OCT-2006 09:17
r:\hydr-sulph\prelim_permit\B3373_hyd_pr\l_vet_impacts_lbpsb5.dgn

8/17/99

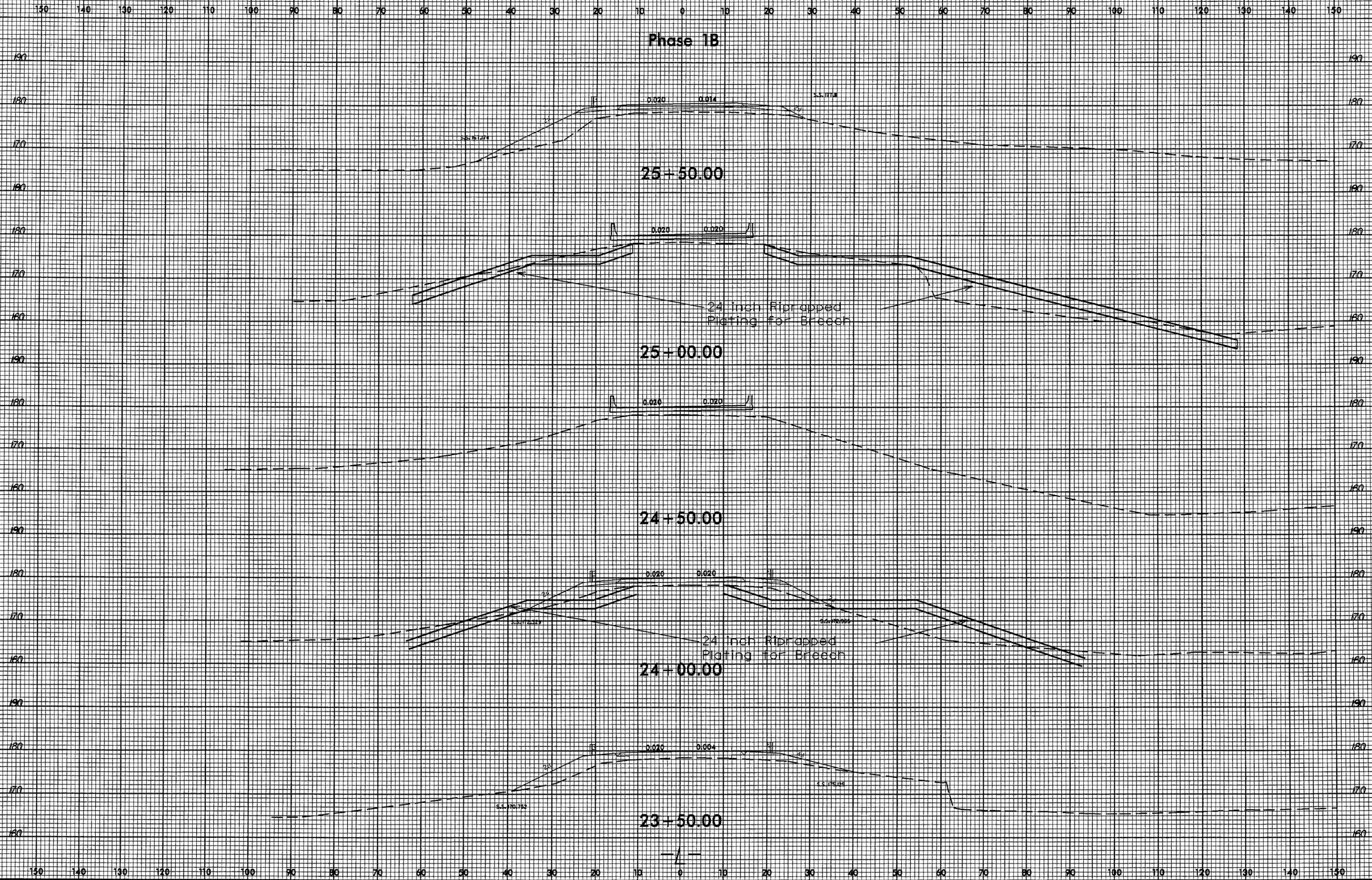
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PROJ. REFERENCE NO.
B-3373

SHEET NO.
4

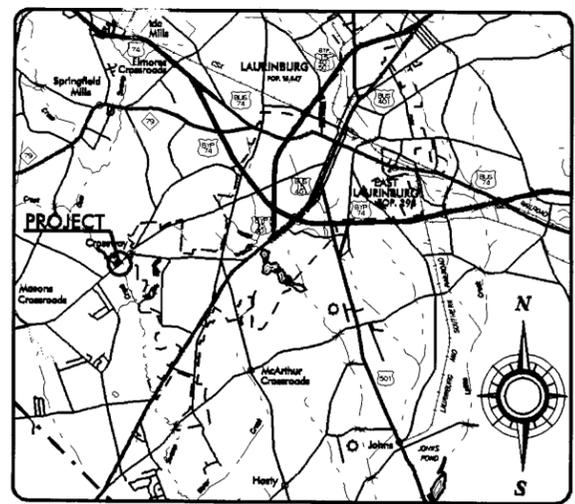
Phase 1B



12-OCT-2006 10:46
c:\hydro\ulgs\999\p3373_hyd_xpl_phase2.dgn
salam
AT:HY22152

CONTRACT: C000000 TIP PROJECT: B-3373

See Sheet I-A For Index of Sheets



VICINITY MAP

THIS PROJECT IS NOT WITHIN THE MUNICIPAL BOUNDRIES OF LAURINBURG

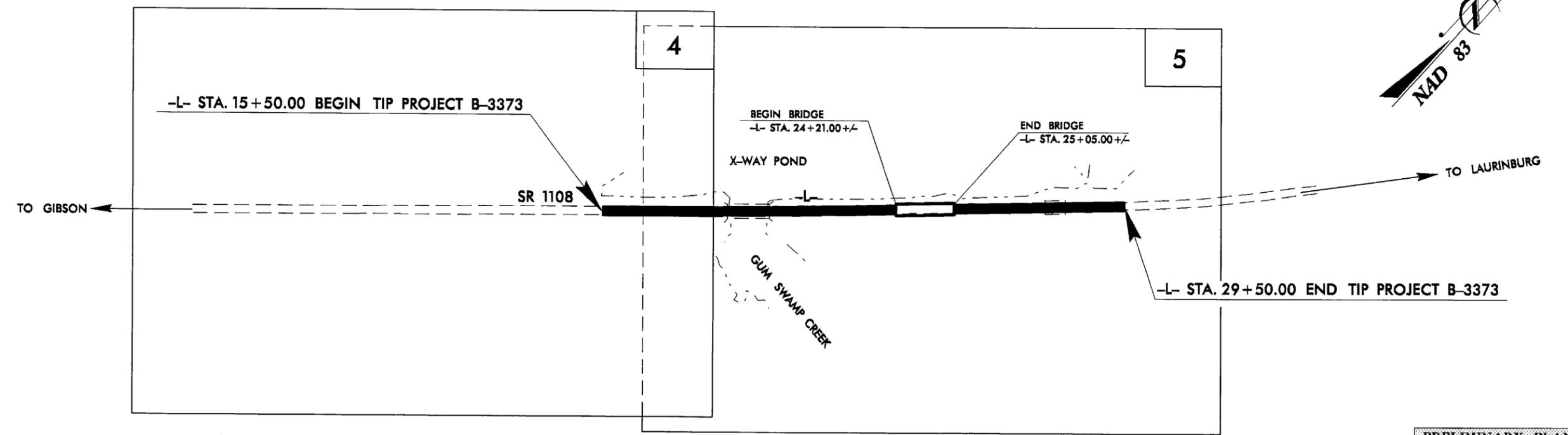
STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

SCOTLAND COUNTY

**LOCATION: BRIDGE NO. 62 ON SR 1108 AND APPROACHES
 OVER GUM SWAMP CREEK SPILLWAY**

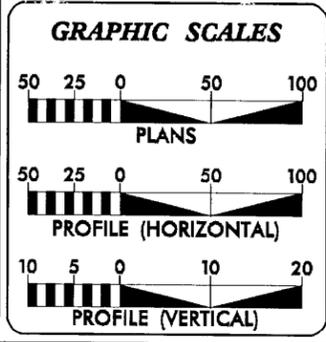
**TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURE,
 AND GUARDRAIL.**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3373	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33021.1.1	BRSTP-1108(4)	PE	



PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III



DESIGN DATA

ADT 2006 = 3300
ADT 2030 = 7200
DHV = 9 %
D = 60 %
T = 3 % *
V = 60 MPH
* TTST 1 % DUAL 2 %
FUNC CLASS = RURAL MAJOR COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3373	= 0.251 MILE
LENGTH STRUCTURE TIP PROJECT B-3373	= 0.014 MILE
TOTAL LENGTH TIP PROJECT B-3373	= 0.265 MILE

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

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
SEPTEMBER 21, 2007

LETTING DATE:
SEPTEMBER 16, 2008

G. E. BREW, PE
 PROJECT ENGINEER

D. WILLIAMS
 PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER
DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION

APPROVED _____ DATE _____
 DIVISION ADMINISTRATOR

16-OCT-2006 11:46
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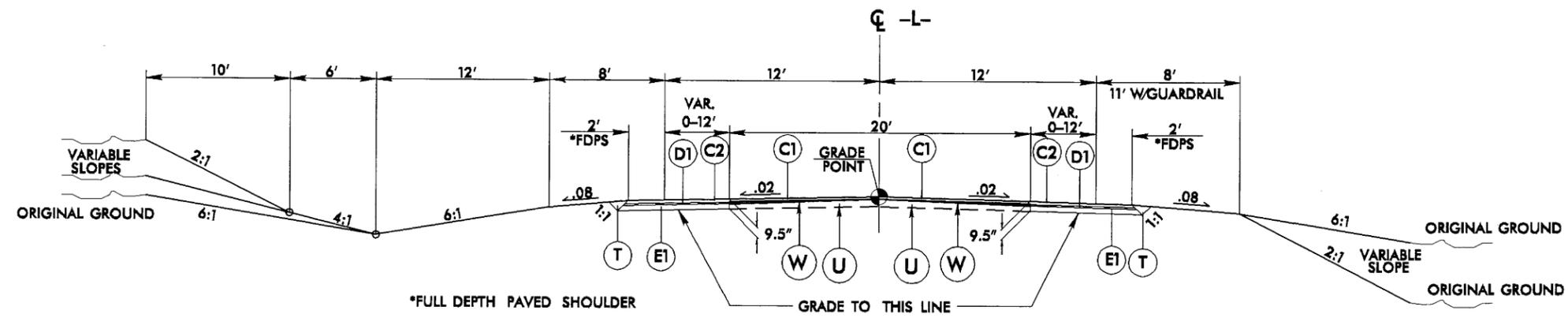
6/2/99

PROJECT REFERENCE NO. B-3373	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 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.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	J	PROP. 6" AGGREGATE BASE COURSE.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.	T	EARTH MATERIAL.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/4" IN DEPTH OR GREATER THAN 4" IN DEPTH.	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.		

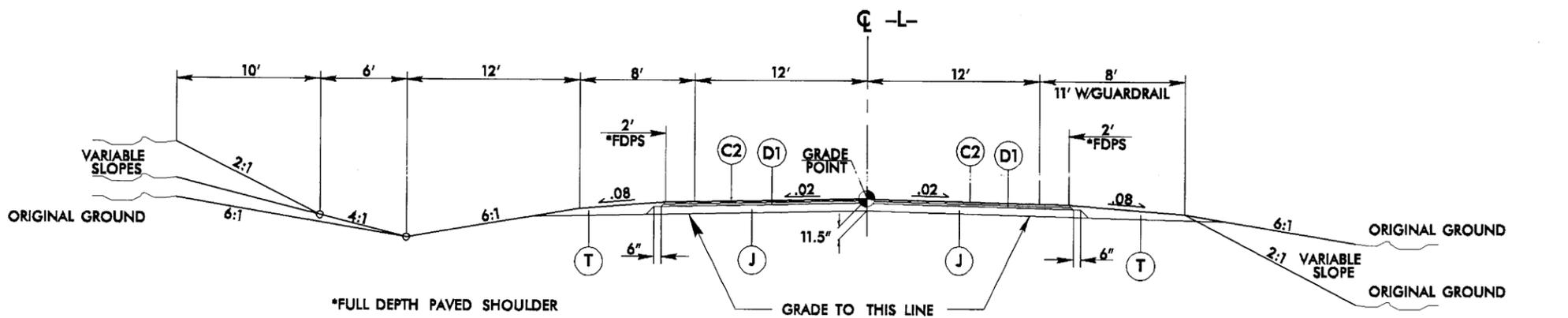
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION NO. 1

NOTE:
TIE PROPOSED RE-SURFACING TO EXISTING
-L- STA. 15+50.00 TO -L- STA. 16+00.00
-L- STA. 29+00.00 TO -L- STA. 29+50.00

USE TYPICAL SECTION NO. 1
-L- STA. 16+00.00 TO 19+15.00
-L- STA. 20+35.00 TO 23+74.00
-L- STA. 25+50.00 TO 27+30.00
-L- STA. 28+30.00 TO 29+00.00



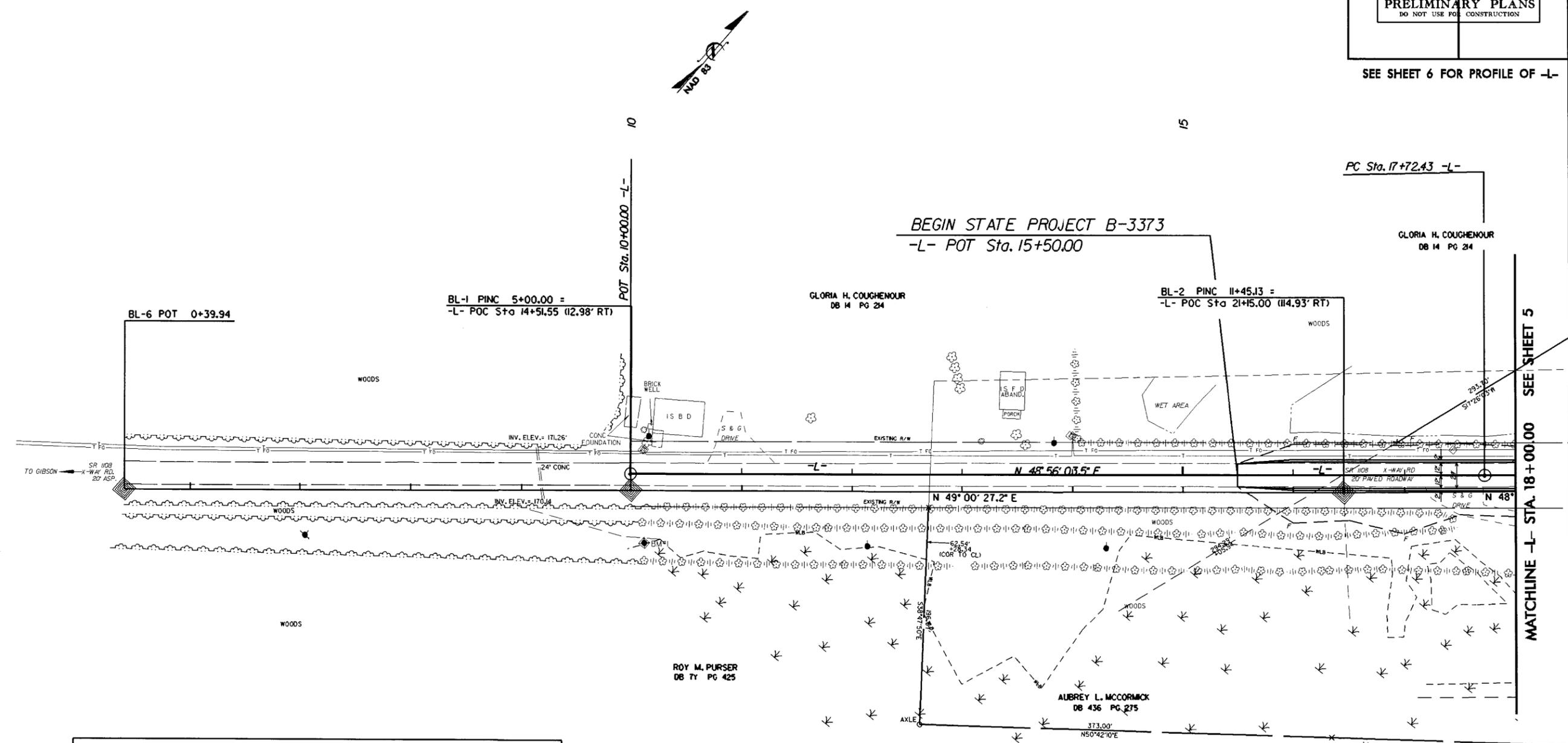
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
-L- STA. 19+15.00 TO 20+35.00
-L- STA. 23+74.00 TO 24+21 +/- (BEGIN BRIDGE)
-L- STA. 25+05 +/- (END BRIDGE) TO 25+50.00
-L- STA. 27+30.00 TO 28+30.00

16-OCT-2006 11:46 b-3373-r.dwg -typ.dgn

PROJECT REFERENCE NO. B-3733	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SEE SHEET 6 FOR PROFILE OF -L-



REVISIONS

MATCHLINE -L- STA. 18+00.00 SEE SHEET 5

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B3375-1" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 360468.833(ft) EASTING: 1859420.658(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: .99990824 THE N.C. LAMBERT GRID BEARING LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B3375-1" TO -L- STATION 10+00.00 IS N 46 49° 54.7011" E DISTANCE 828.8959'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

NOTE: BEGIN PROPOSED RE-SURFACING -L- STA.16+00.00 TIE PROPOSED RE-SURFACING TO EXISTING FROM -L- STA.15+50.00 TO -L- STA.16+00.00

16-OCT-2006 15:49 P:\roadway\proj\B-3733-rdy_psh4.dgn 8/17/99

5/28/99

BM#1 LOCATED: N 1840416.843 E 361293.376
DESCRIPTION: RAILROAD SPIKE SET IN THE BASE
OF A POWER POLE (#6AV64)
ELEVATION = 174.640

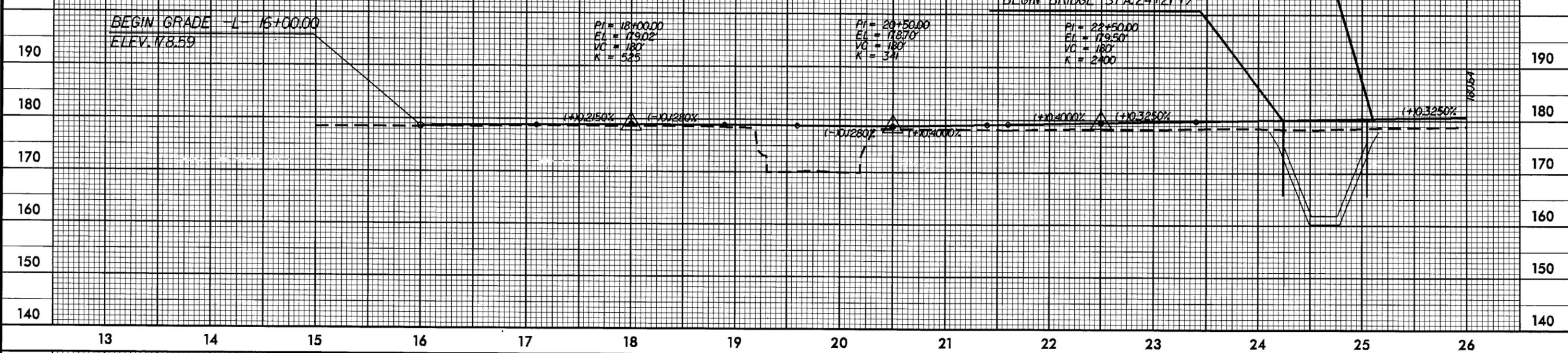
-L-

PROJECT REFERENCE NO. B-3373	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

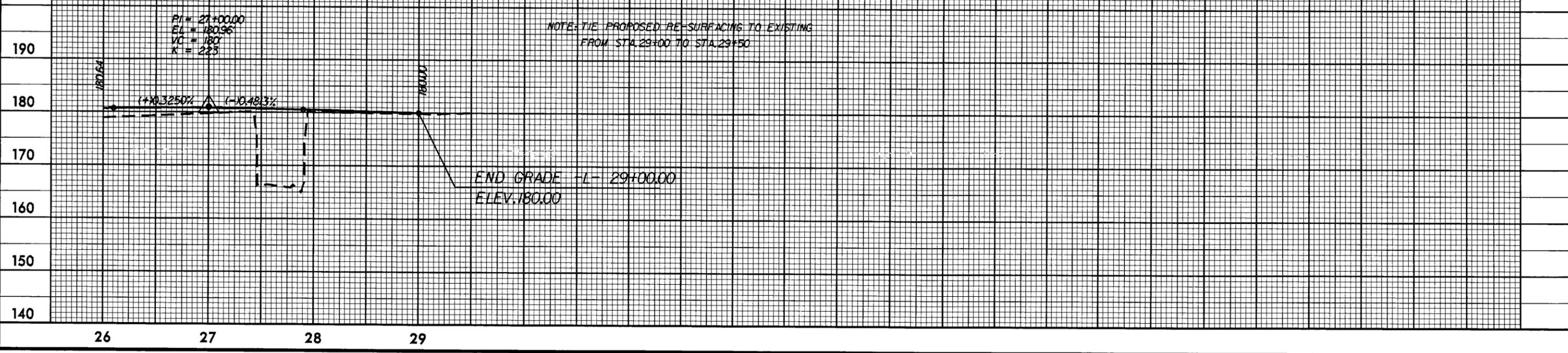
NOTE: TIE PROPOSED RE-SURFACING TO EXISTING
FROM STA. 15+50 TO STA. 16+00

END BRIDGE STA. 25+05 +/-

SEE SHEETS 4 & 5 FOR PLAN OF -L- LINE



-L-

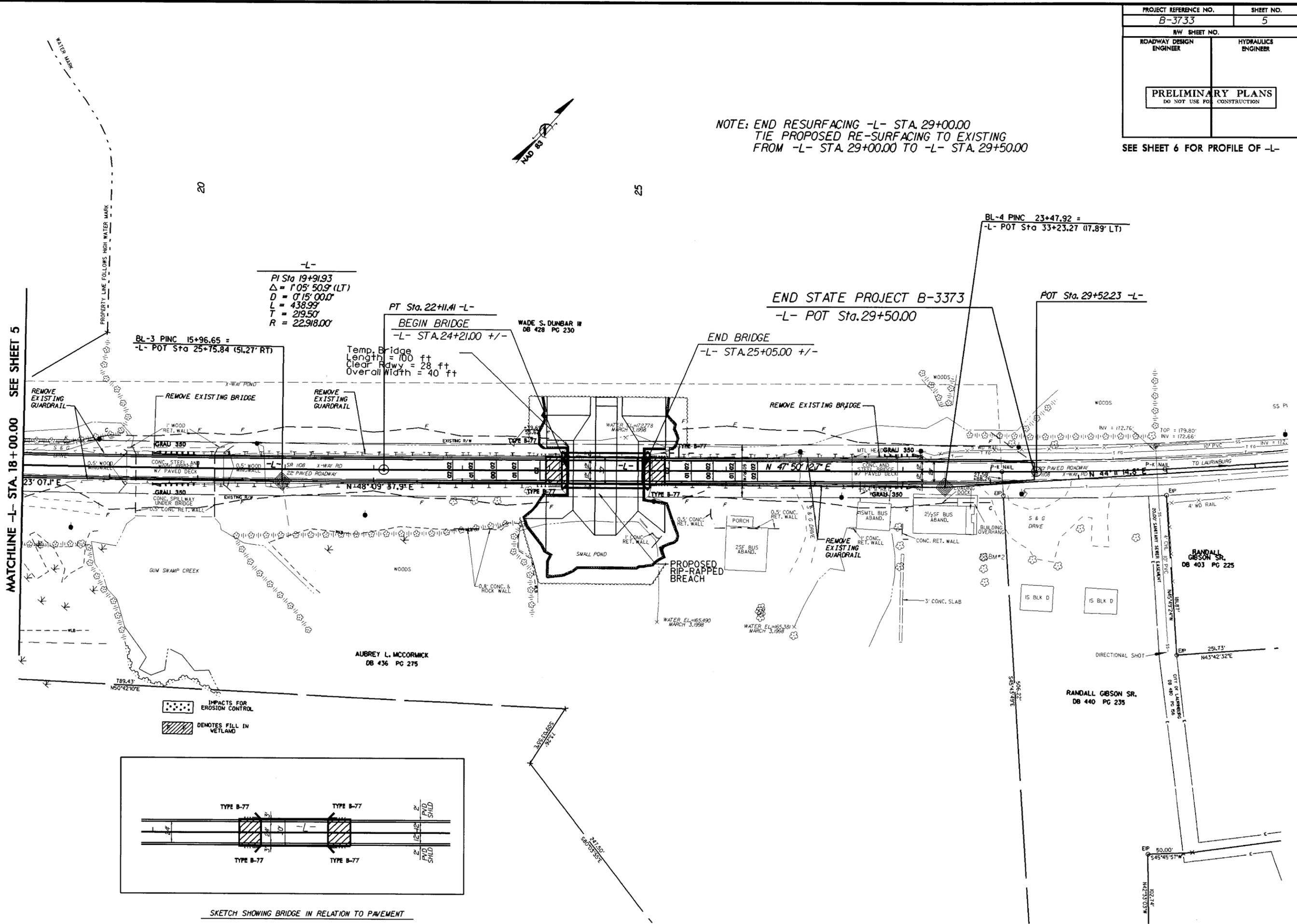


16-OCT-2006 14:20
L-3373-rdy-pl.dgn

PROJECT REFERENCE NO. B-3733		SHEET NO. 5	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

SEE SHEET 6 FOR PROFILE OF -L-

NOTE: END RESURFACING -L- STA. 29+00.00
TIE PROPOSED RE-SURFACING TO EXISTING
FROM -L- STA. 29+00.00 TO -L- STA. 29+50.00



-L-
PI Sta 19+91.93
 $\Delta = 1'05''50.9$ (LT)
D = 0'15''00.0
L = 438.99'
T = 219.50'
R = 22,918.00'

PT Sta. 22+11.41 -L-
BEGIN BRIDGE
-L- STA. 24+21.00 +/-
Temp. Bridge
Length = 100 ft
Clear Rdwy = 28 ft
Overall Width = 40 ft

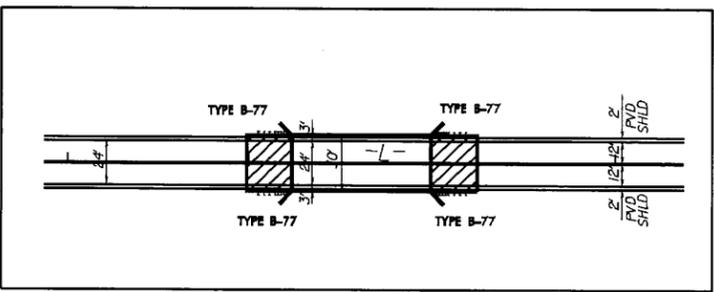
END STATE PROJECT B-3373
-L- POT Sta. 29+50.00

BL-4 PINC 23+47.92 =
-L- POT Sta 33+23.27 (17.89' LT)

POT Sta. 29+52.23 -L-

MATCHLINE -L- STA. 18+00.00 SEE SHEET 5

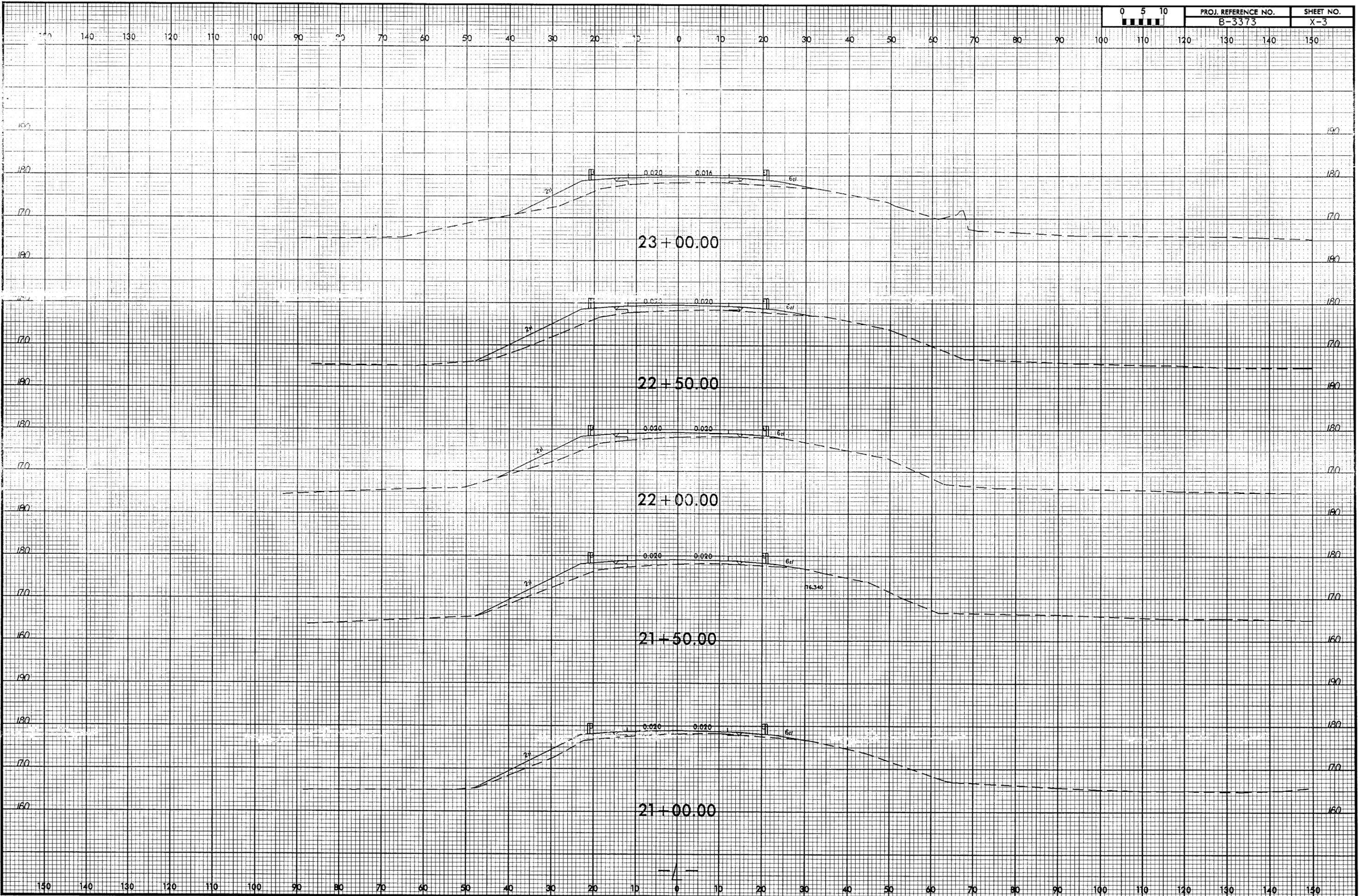
IMPACTS FOR EROSION CONTROL
DENOTES FILL IN WETLAND



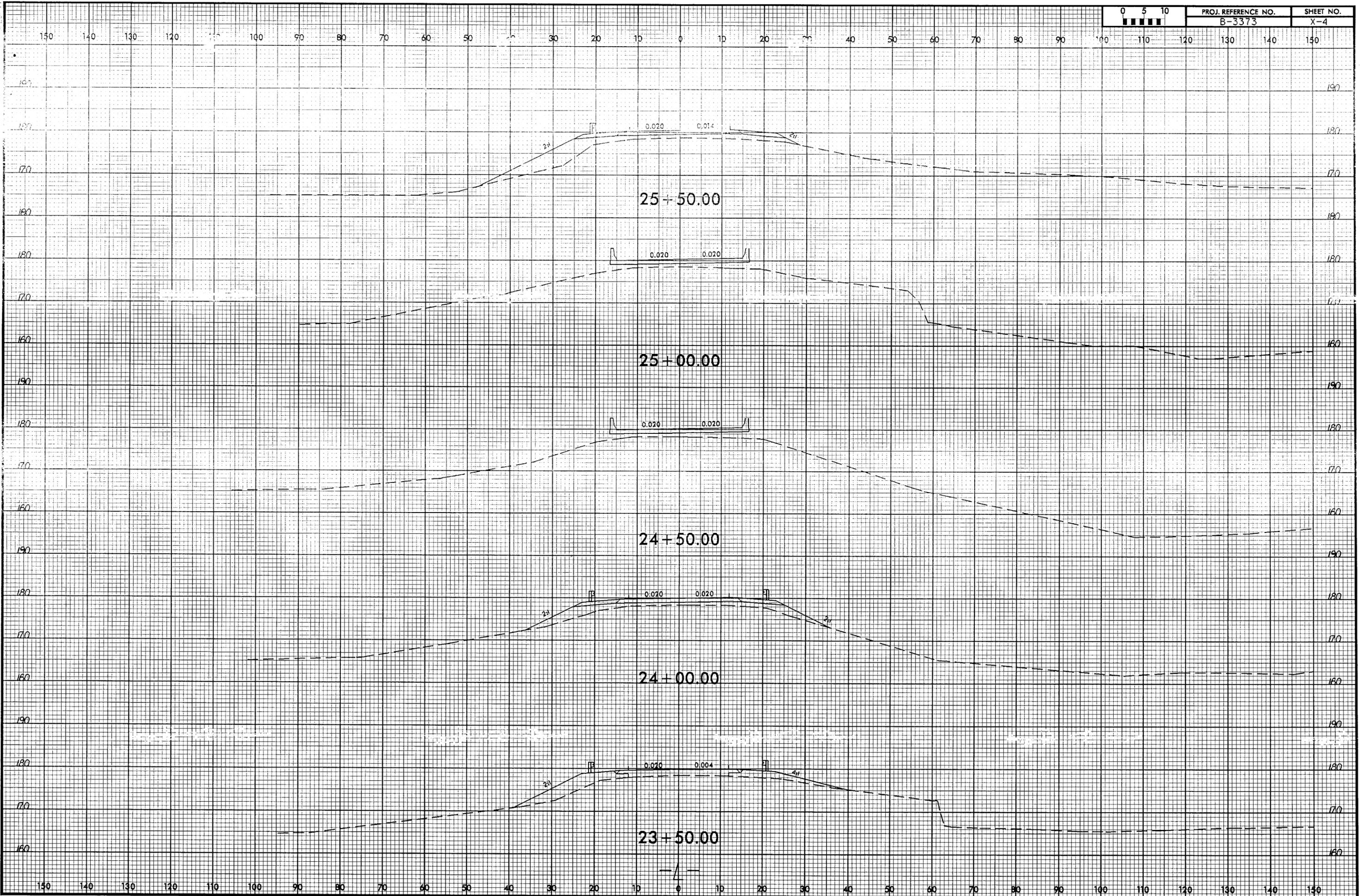
SKETCH SHOWING BRIDGE IN RELATION TO PAVEMENT

REVISIONS

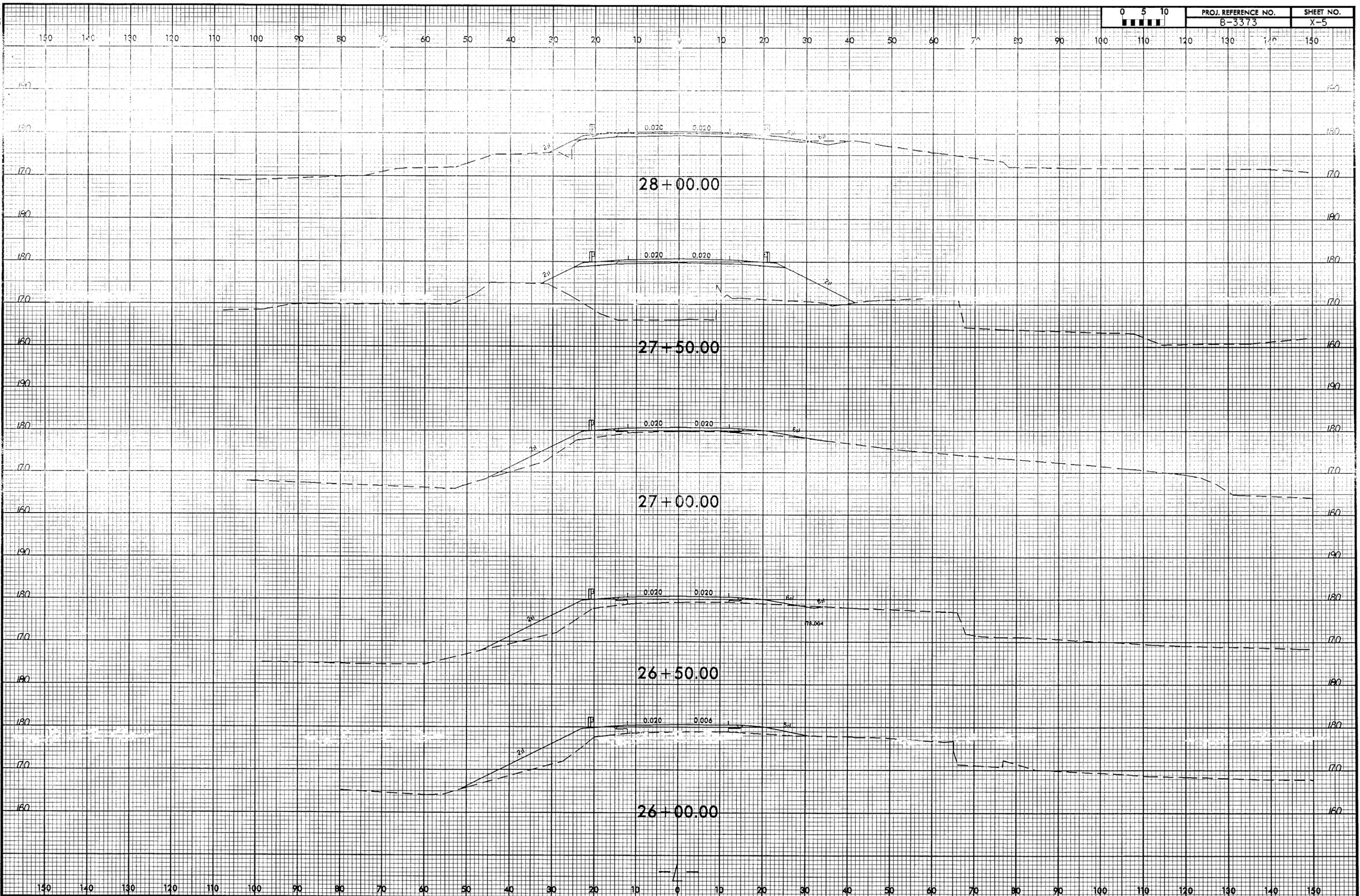
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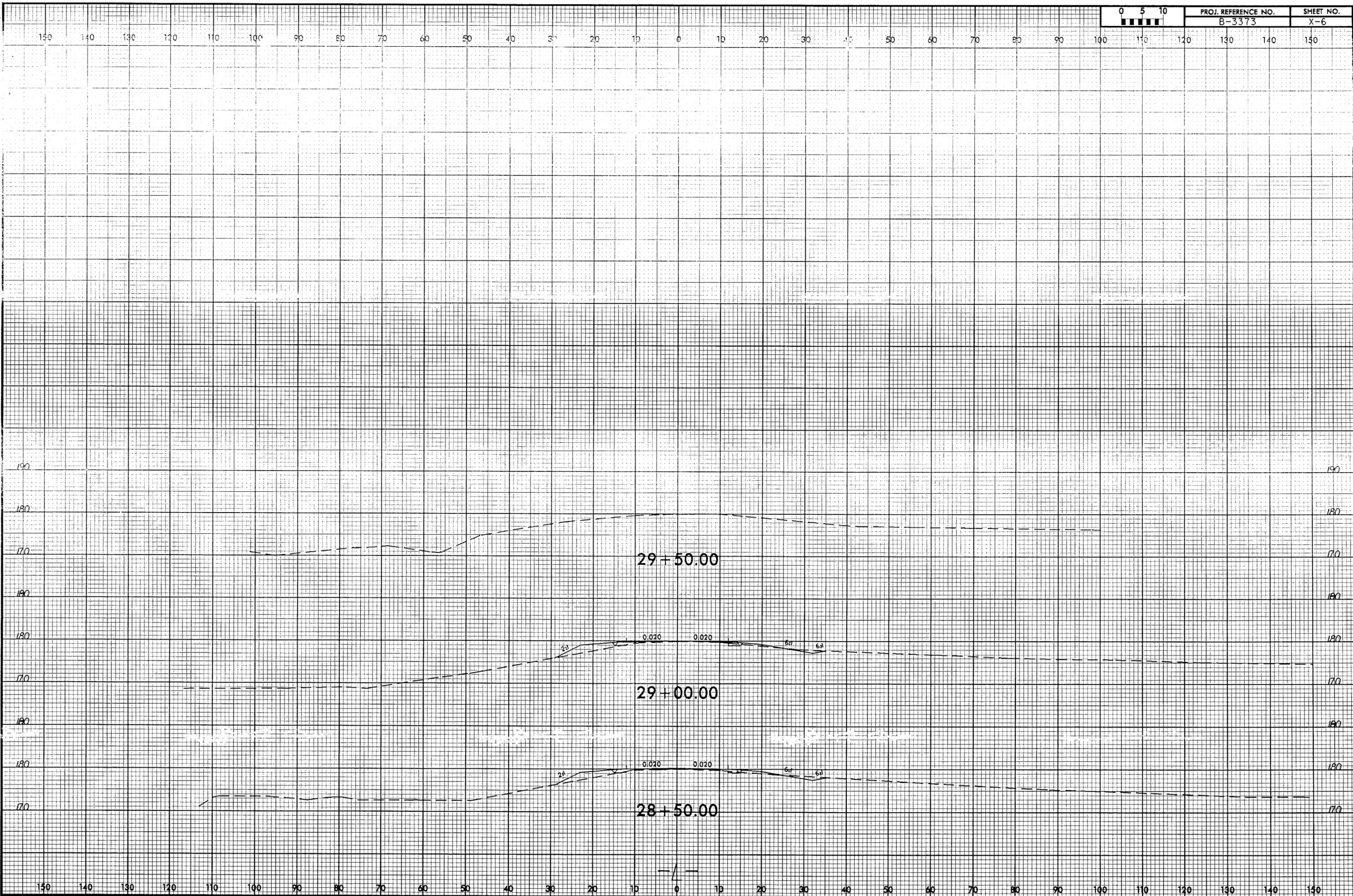


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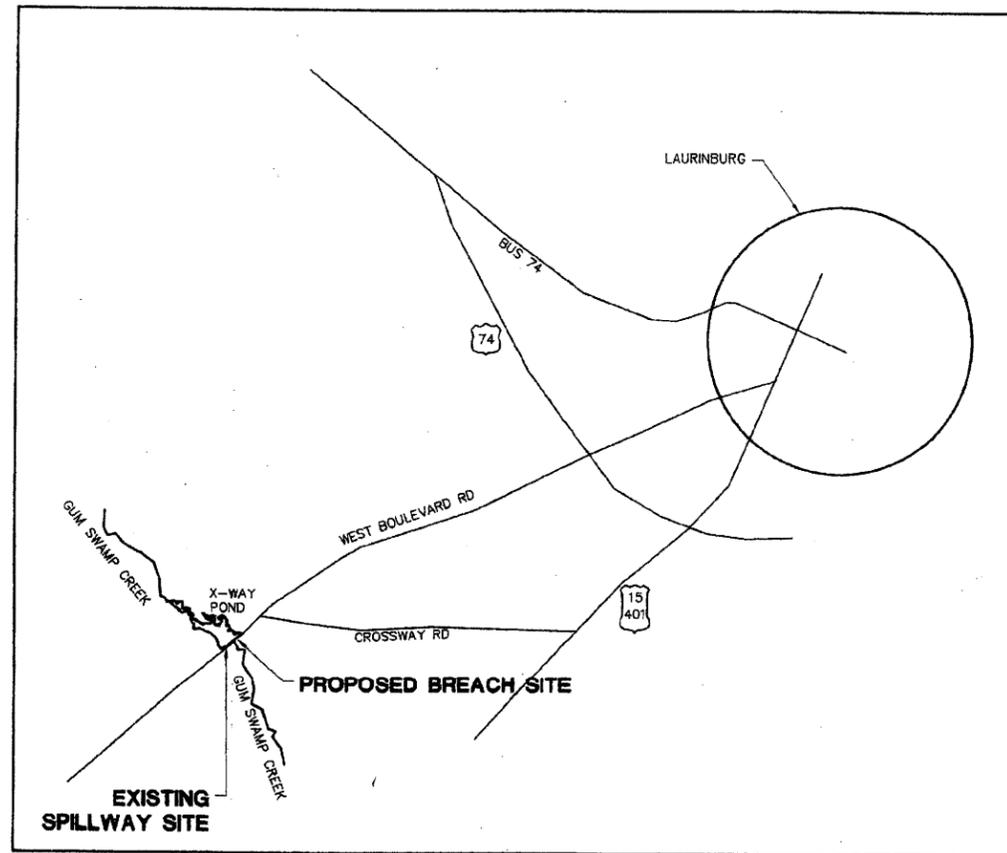
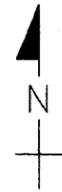


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X-WAY POND DAM BREACH INSTALLATION SCOTLAND COUNTY, NORTH CAROLINA

PREPARED FOR
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
BY
SCHNABEL ENGINEERING

REC'D
AUG 07 2006
DIVISION OF HIGHWAYS
HYDRAULICS UNIT



SITE LOCATION MAP

PROJECT DESCRIPTION

THIS PROJECT IS FOR THE INSTALLATION OF A PERMANENT BREACH IN THE X-WAY POND DAM IN SCOTLAND COUNTY, NORTH CAROLINA. THE WORK INCLUDES THE INSTALLATION OF TEMPORARY STEEL SHEETPIILING (OR OTHER TYPE) COFFERDAM UPSTREAM AND DOWNSTREAM OF THE PLANNED BREACH AREA, INSTALLATION OF A PERMANENT STEEL SHEETPIILING WEIR AT THE UPSTREAM END OF THE BREACH CHANNEL, EXCAVATION OF A SECTION OF THE EARTHFILL DAM, AND INSTALLATION OF LAYERS OF MCDOT #78 STONE, BALLAST STONE AND CLASS I ROCK RIPRAP. THE COMPLETED WORK WILL INCLUDE A 24-FOOT BOTTOM WIDTH CHANNEL AND THE UPSTREAM 10 FEET OF THE CHANNEL ROCK RIPRAP LINING WILL BE GROUTED.

INDEX OF DRAWINGS

XW-201	COVER SHEET
XW-202	(SHT. 1 OF 2)	SITE MAP
XW-202	(SHT. 2 OF 2)	PLAN VIEW OF BREACH
XW-203	(SHT. 1 OF 4)	CROSS SECTION OF BREACH AND CENTERLINE PROFILE OF BREACH CHANNEL
XW-203	(SHT. 2 OF 4)	SECTIONS B AND D
XW-203	(SHT. 3 OF 4)	SECTIONS E AND F
XW-203	(SHT. 4 OF 4)	SECTIONS G, H, AND J
XW-204	EXCAVATION PLAN
XW-205	TEMPORARY STOCKPILE AND EROSION CONTROL DETAILS

SITE VICINITY MAP

1" = APPROXIMATELY 3000'

This drawing to be considered "NOT FOR CONSTRUCTION" unless it bears			

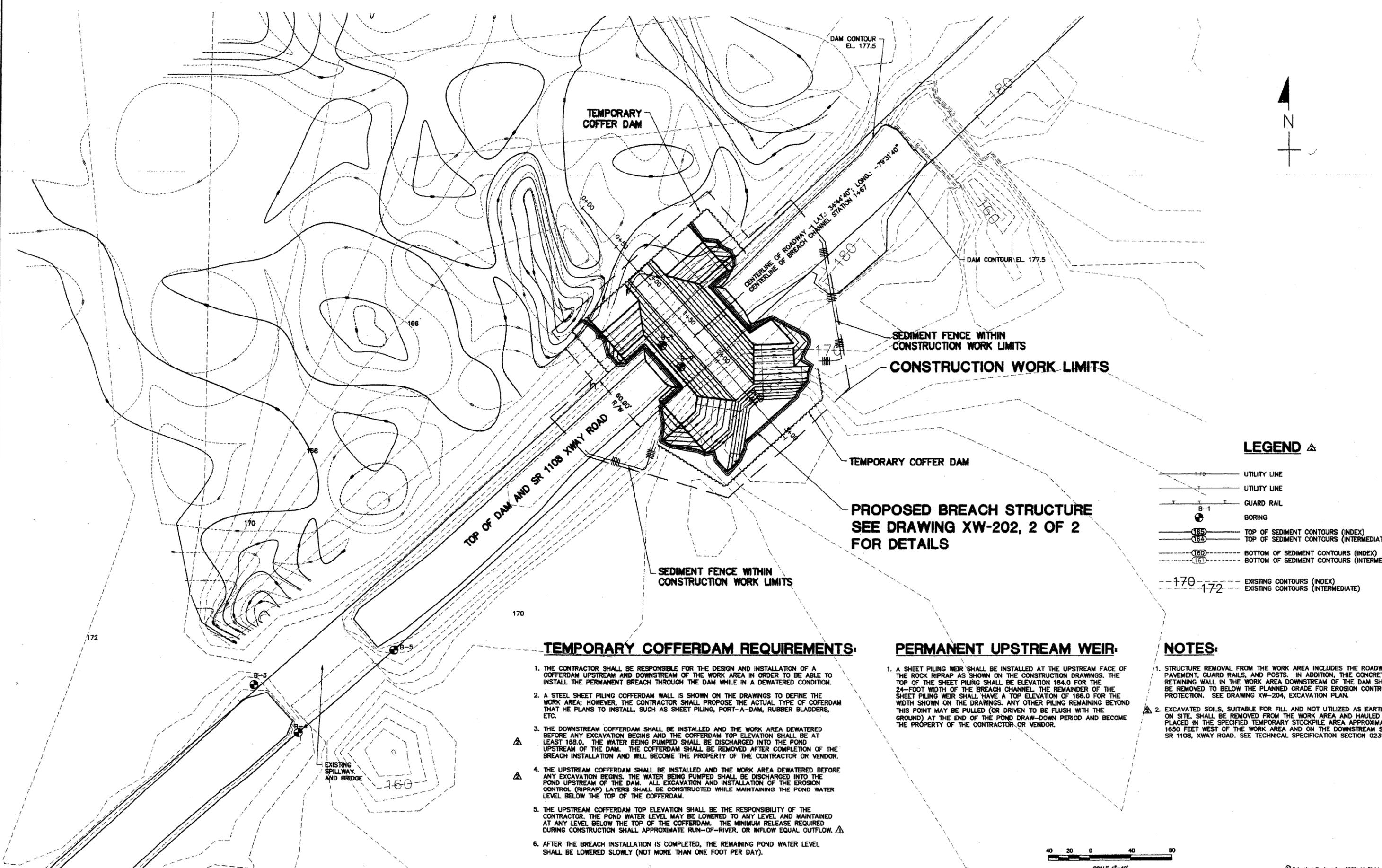


DESIGNED BY: DONALD L. BASINGER, P.E.
DRAWN BY: CDR/TK
CHECKED BY: DLB/TM



X-WAY POND BREACH DESIGN

COVER SHEET



LEGEND

- UTILITY LINE
- UTILITY LINE
- GUARD RAIL
- ⊕ BORING
- TOP OF SEDIMENT CONTOURS (INDEX)
- TOP OF SEDIMENT CONTOURS (INTERMEDIATE)
- BOTTOM OF SEDIMENT CONTOURS (INDEX)
- BOTTOM OF SEDIMENT CONTOURS (INTERMEDIATE)
- 170 --- EXISTING CONTOURS (INDEX)
- 172 --- EXISTING CONTOURS (INTERMEDIATE)

TEMPORARY COFFERDAM REQUIREMENTS:

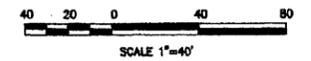
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF A COFFERDAM UPSTREAM AND DOWNSTREAM OF THE WORK AREA IN ORDER TO BE ABLE TO INSTALL THE PERMANENT BREACH THROUGH THE DAM WHILE IN A DEWATERED CONDITION.
2. A STEEL SHEET PILING COFFERDAM WALL IS SHOWN ON THE DRAWINGS TO DEFINE THE WORK AREA; HOWEVER, THE CONTRACTOR SHALL PROPOSE THE ACTUAL TYPE OF COFFERDAM THAT HE PLANS TO INSTALL, SUCH AS SHEET PILING, PORT-A-DAM, RUBBER BLADDERS, ETC.
3. THE DOWNSTREAM COFFERDAM SHALL BE INSTALLED AND THE WORK AREA DEWATERED BEFORE ANY EXCAVATION BEGINS AND THE COFFERDAM TOP ELEVATION SHALL BE AT LEAST 168.0. THE WATER BEING PUMPED SHALL BE DISCHARGED INTO THE POND UPSTREAM OF THE DAM. THE COFFERDAM SHALL BE REMOVED AFTER COMPLETION OF THE BREACH INSTALLATION AND WILL BECOME THE PROPERTY OF THE CONTRACTOR OR VENDOR.
4. THE UPSTREAM COFFERDAM SHALL BE INSTALLED AND THE WORK AREA DEWATERED BEFORE ANY EXCAVATION BEGINS. THE WATER BEING PUMPED SHALL BE DISCHARGED INTO THE POND UPSTREAM OF THE DAM. ALL EXCAVATION AND INSTALLATION OF THE EROSION CONTROL (RIPRAP) LAYERS SHALL BE CONSTRUCTED WHILE MAINTAINING THE POND WATER LEVEL BELOW THE TOP OF THE COFFERDAM.
5. THE UPSTREAM COFFERDAM TOP ELEVATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE POND WATER LEVEL MAY BE LOWERED TO ANY LEVEL AND MAINTAINED AT ANY LEVEL BELOW THE TOP OF THE COFFERDAM. THE MINIMUM RELEASE REQUIRED DURING CONSTRUCTION SHALL APPROXIMATE RUN-OF-RIVER, OR INFLOW EQUAL OUTFLOW.
6. AFTER THE BREACH INSTALLATION IS COMPLETED, THE REMAINING POND WATER LEVEL SHALL BE LOWERED SLOWLY (NOT MORE THAN ONE FOOT PER DAY).

PERMANENT UPSTREAM WEIR:

1. A SHEET PILING WEIR SHALL BE INSTALLED AT THE UPSTREAM FACE OF THE ROCK RIPRAP AS SHOWN ON THE CONSTRUCTION DRAWINGS. THE TOP OF THE SHEET PILING SHALL BE ELEVATION 164.0 FOR THE 24-FOOT WIDTH OF THE BREACH CHANNEL. THE REMAINDER OF THE SHEET PILING WEIR SHALL HAVE A TOP ELEVATION OF 166.0 FOR THE WIDTH SHOWN ON THE DRAWINGS. ANY OTHER PILING REMAINING BEYOND THIS POINT MAY BE PULLED (OR DRIVEN TO BE FLUSH WITH THE GROUND) AT THE END OF THE POND DRAW-DOWN PERIOD AND BECOME THE PROPERTY OF THE CONTRACTOR OR VENDOR.

NOTES:

1. STRUCTURE REMOVAL FROM THE WORK AREA INCLUDES THE ROADWAY PAVEMENT, GUARD RAILS, AND POSTS. IN ADDITION, THE CONCRETE RETAINING WALL IN THE WORK AREA DOWNSTREAM OF THE DAM SHALL BE REMOVED TO BELOW THE PLANNED GRADE FOR EROSION CONTROL PROTECTION. SEE DRAWING XW-204, EXCAVATION PLAN.
2. EXCAVATED SOILS, SUITABLE FOR FILL AND NOT UTILIZED AS EARTH FILL ON SITE, SHALL BE REMOVED FROM THE WORK AREA AND HAULED AND PLACED IN THE SPECIFIED TEMPORARY STOCKPILE AREA APPROXIMATELY 1650 FEET WEST OF THE WORK AREA AND ON THE DOWNSTREAM SIDE OF SR 1108, XWAY ROAD. SEE TECHNICAL SPECIFICATION SECTION 02315.



This drawing to be considered "NOT FOR CONSTRUCTION"			
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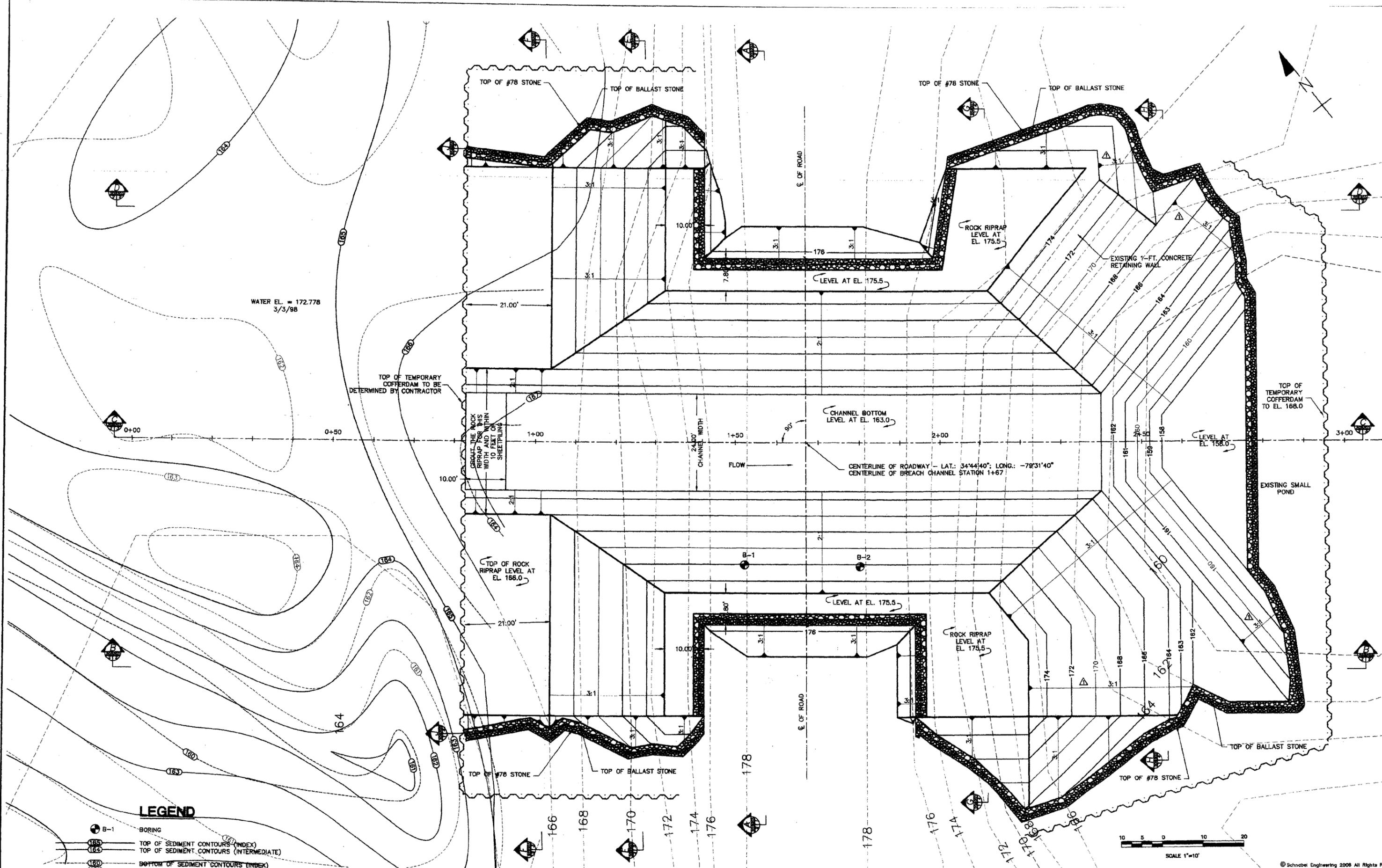


DESIGNED BY: TD/DLB	DRAWN BY: GDH/PK	CHECKED BY: DLB/TM
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X-WAY POND BREACH DESIGN
SCOTLAND COUNTY, NORTH CAROLINA

XW-202 1 of 2
DAM BREACH SITE MAP



WATER EL. = 172.778
3/3/98

TOP OF TEMPORARY COFFERDAM TO BE DETERMINED BY CONTRACTOR

GRADE THE ROCK RIPRAP FOR THIS WIDTH AND WITHIN 10 FEET OF SHEET PILING

CHANNEL BOTTOM LEVEL AT EL. 163.0

CENTERLINE OF ROADWAY - LAT.: 34°44'40" LONG.: -79°31'40"
CENTERLINE OF BREACH CHANNEL STATION 1+67'

LEVEL AT EL. 158.0

TOP OF TEMPORARY COFFERDAM TO EL. 168.0

EXISTING SMALL POND

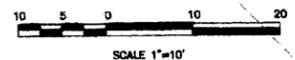
TOP OF ROCK RIPRAP LEVEL AT EL. 166.0

ROCK RIPRAP LEVEL AT EL. 175.5

TOP OF BALLAST STONE

LEGEND

- ⊙ B-1 BORING
- 165 --- TOP OF SEDIMENT CONTOURS (INDEX)
- 164 --- TOP OF SEDIMENT CONTOURS (INTERMEDIATE)
- 160 --- BOTTOM OF SEDIMENT CONTOURS (INDEX)
- 161 --- BOTTOM OF SEDIMENT CONTOURS (INTERMEDIATE)
- 170 --- EXISTING CONTOURS (INDEX)
- 172 --- EXISTING CONTOURS (INTERMEDIATE)



This drawing to be considered "NOT FOR CONSTRUCTION" unless it bears the seal AND signature of the

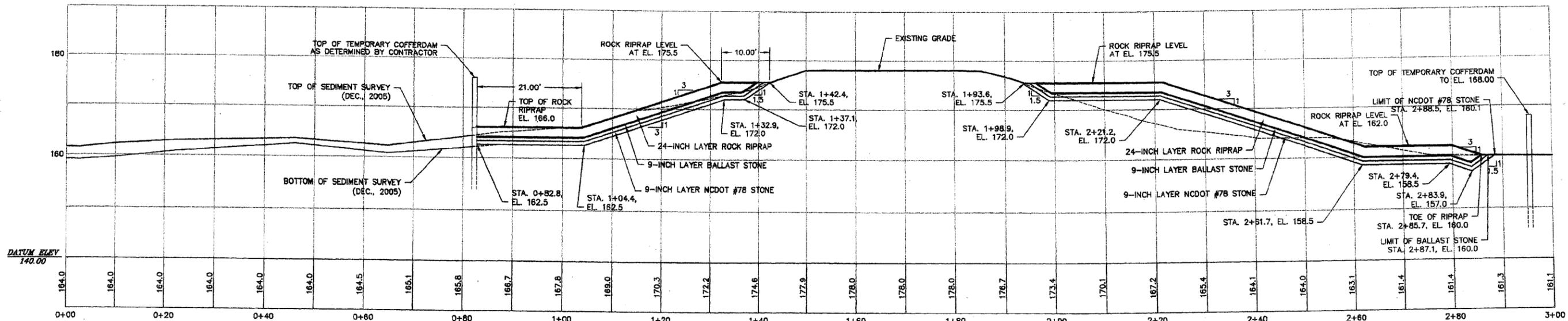
DESIGNED BY:	DONALD L. BASINGER, P.E.
DRAWN BY:	CDH/PK
CHECKED BY:	DLB/TM



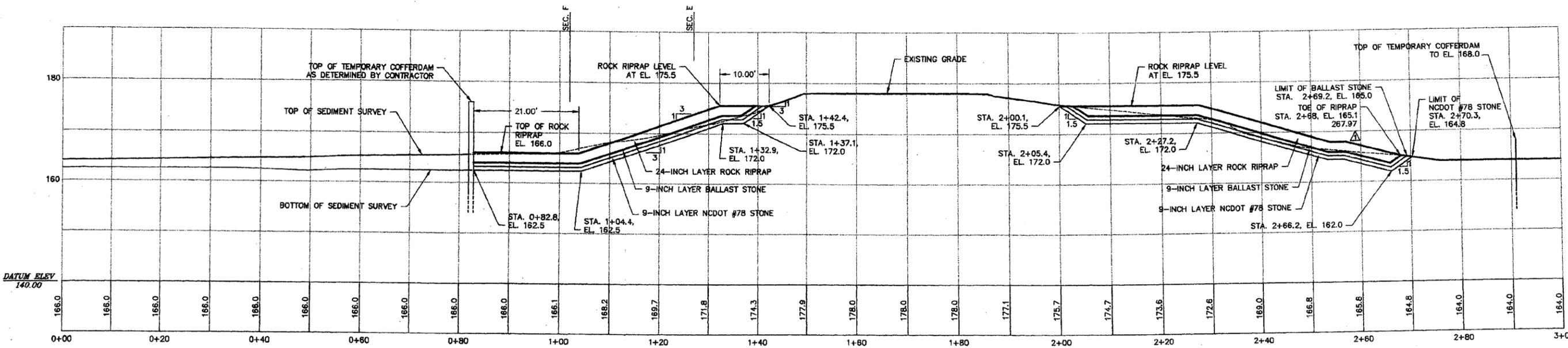
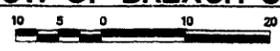
DESIGNED BY: DONALD L. BASINGER, P.E.
DRAWN BY: CDH/PK
CHECKED BY: DLB/TM



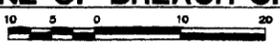
X-WAY POND BREACH DESIGN
SCOTLAND COUNTY, NORTH CAROLINA



SECTION B 56' SW OF BREACH CHANNEL CL
SCALE 1"=10'



SECTION D 56' NE OF BREACH CHANNEL CL
SCALE 1"=10'



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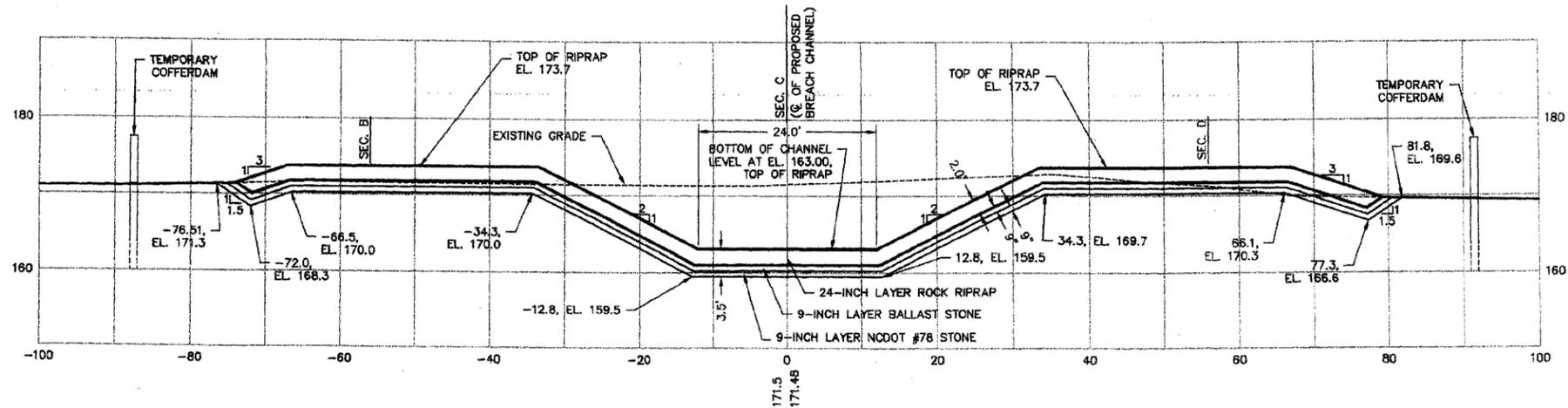


DESIGNED BY: T6/DLS
DRAWN BY: CMH/PK
CHECKED BY: DLS/TM
DONALD L. BASINGER, P.E.



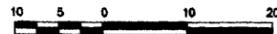
X-WAY POND BREACH DESIGN
SCOTLAND COUNTY, NORTH CAROLINA

BREACH CHANNEL STATION 1+27

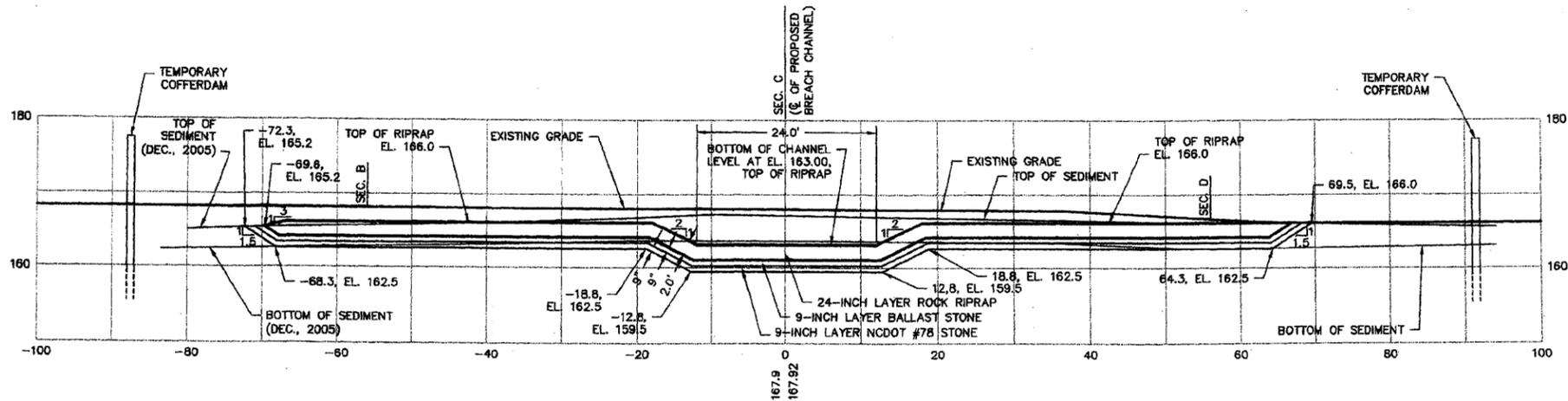


SECTION E (LOOKING UPSTREAM)

SCALE 1"=10'



BREACH CHANNEL STATION 1+02



SECTION F (LOOKING UPSTREAM)

SCALE 1"=10'



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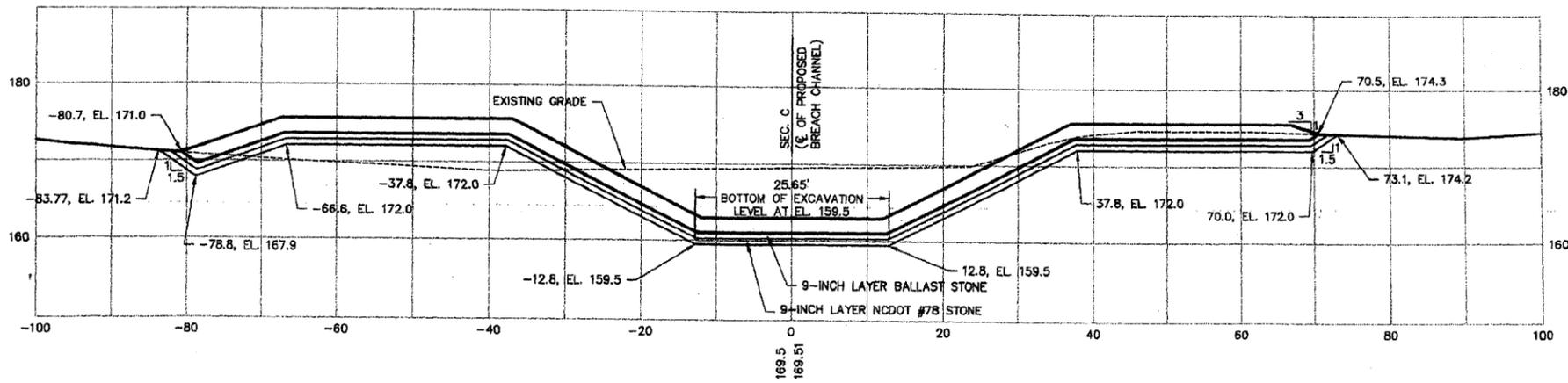


DESIGNED BY: TOY/BLB
 DRAWN BY: GCH/PR
 CHECKED BY: DUB/SM
 DONALD L. BASINGER, P.E.



X-WAY POND BREACH DESIGN

BREACH CHANNEL STATION 2+11.50

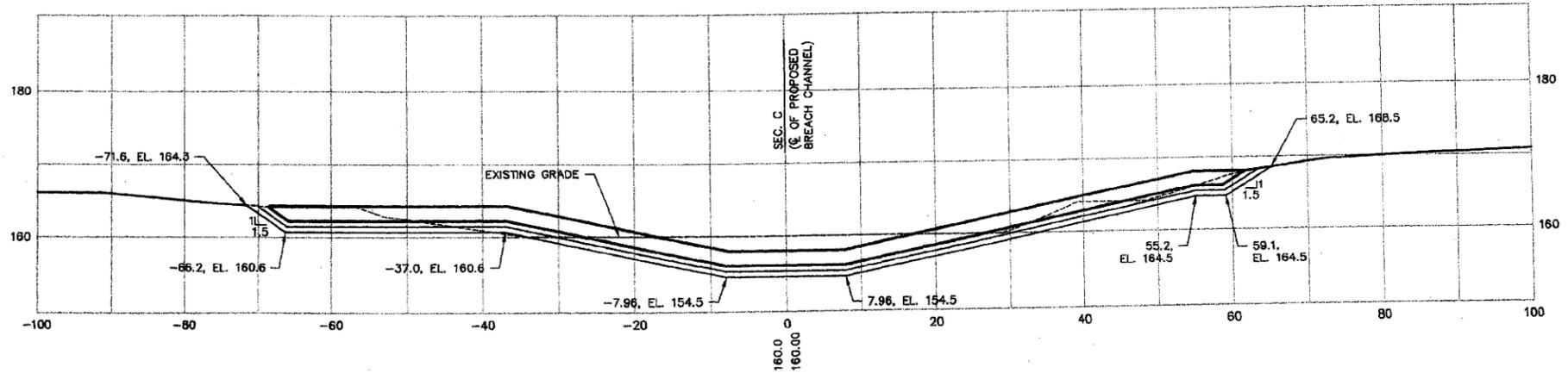


SECTION G (LOOKING UPSTREAM)

SCALE 1"=10'



BREACH CHANNEL STATION 2+55.8

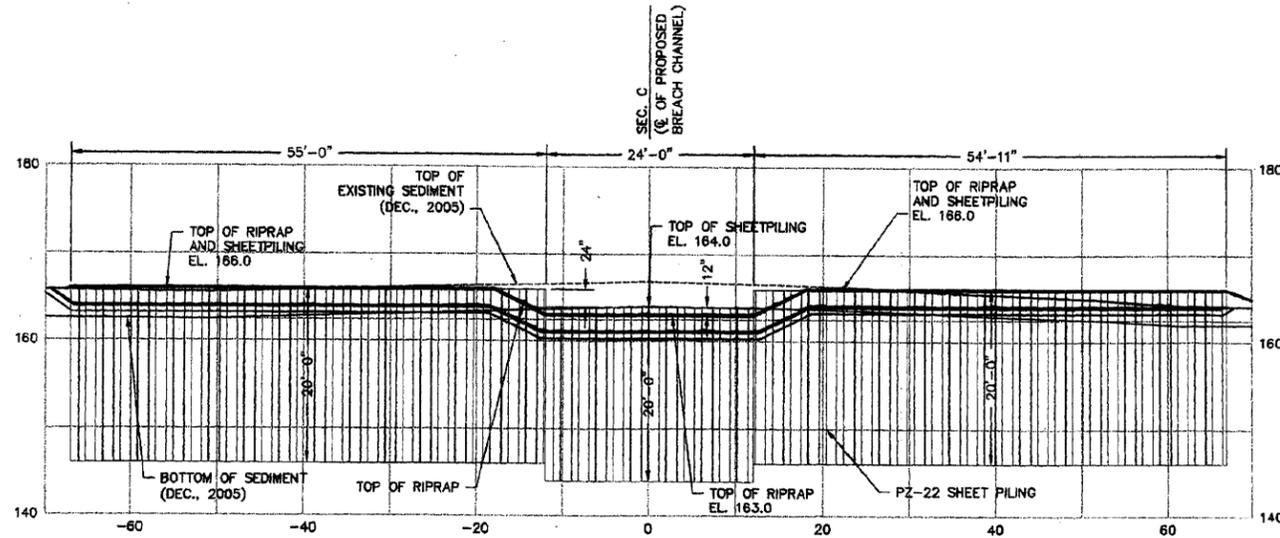


SECTION H (LOOKING UPSTREAM)

SCALE 1"=10'



BREACH CHANNEL STATION 0+83.8



NOTE: THE SHEET PILING WEIR SHALL BE PZ-22, 20 FEET IN LENGTH, EXCEPT THAT THE SHEET PILING WEIR MAY BE THE MODIFIED COFFER DAM IF THE CONTRACTOR USES STEEL SHEET PILING FOR THE TEMPORARY COFFER DAM.

SECTION J ALONG SHEET PILING WEIR (LOOKING UPSTREAM)

SCALE 1"=10'



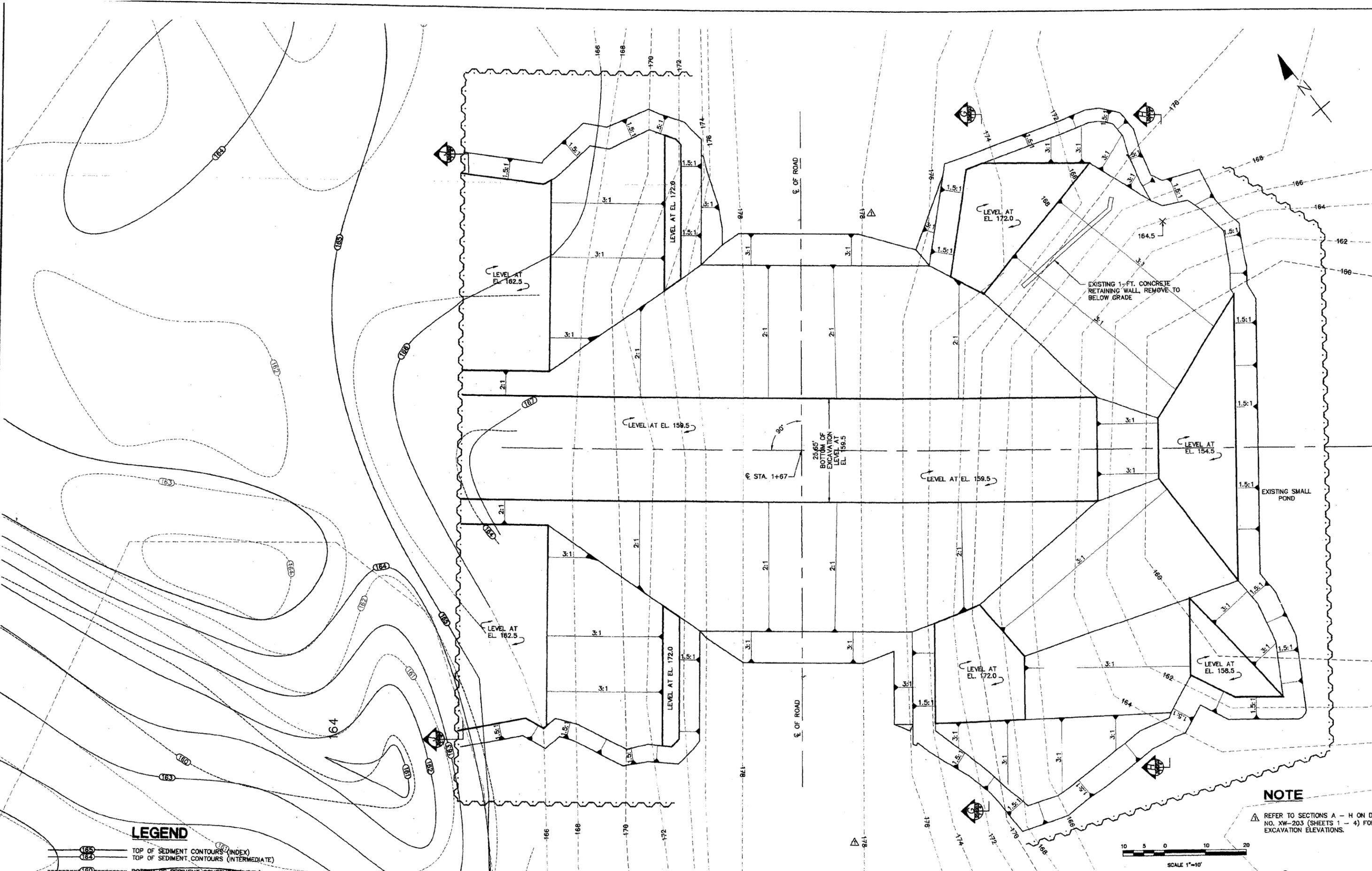
This drawing to be considered "NOT FOR CONSTRUCTION" unless it bears



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 DRAWN BY: CHECKED BY:



X-WAY POND BREACH DESIGN



LEGEND

- TOP OF SEDIMENT CONTOURS (INDEX)
- TOP OF SEDIMENT CONTOURS (INTERMEDIATE)
- BOTTOM OF SEDIMENT CONTOURS (INDEX)
- BOTTOM OF SEDIMENT CONTOURS (INTERMEDIATE)
- EXISTING CONTOURS (INDEX)
- EXISTING CONTOURS (INTERMEDIATE)

This drawing to be considered "NOT FOR CONSTRUCTION" unless it bears the seal of a Professional Engineer.

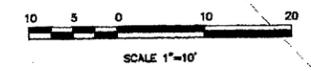


DESIGNED BY: TO/DLB
 DRAWN BY: CPH/PH
 CHECKED BY: DLB/TH
 DONALD L. BASINGER, P.E.

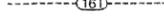
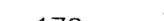


X-WAY POND BREACH DESIGN

NOTE
 REFER TO SECTIONS A - H ON DRAWING NO. XW-203 (SHEETS 1 - 4) FOR EXCAVATION ELEVATIONS.



LEGEND

-  UTILITY LINE
-  UTILITY LINE
-  GUARD RAIL
-  BORING
-  TOP OF SEDIMENT CONTOURS (INDEX)
-  TOP OF SEDIMENT CONTOURS (INTERMEDIATE)
-  BOTTOM OF SEDIMENT CONTOURS (INDEX)
-  BOTTOM OF SEDIMENT CONTOURS (INTERMEDIATE)
-  EXISTING CONTOURS (INDEX)
-  EXISTING CONTOURS (INTERMEDIATE)

SEDIMENT FENCE CONSTRUCTION SPECIFICATIONS

MATERIALS

1. USE A SYNTHETIC FILTER FABRIC OR A PERVIOUS SHEET OF POLYPROPYLENE, NYLON, POLYESTER, OR POLYETHYLENE YARN, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS SHOWN IN THE TABLE BELOW.

PHYSICAL PROPERTY	REQUIREMENTS
FILTERING EFFICIENCY	85% (MIN)
TENSILE STRENGTH AT 20% (MAX)	STAINL. STRENGTH-30 LB/LIN IN (MIN)
ELONGATION	EX. STRENGTH-50LB/LIN IN (MIN)
SLURRY FLOW RATE	0.3 GAL/SQ FT/MIN (MIN)

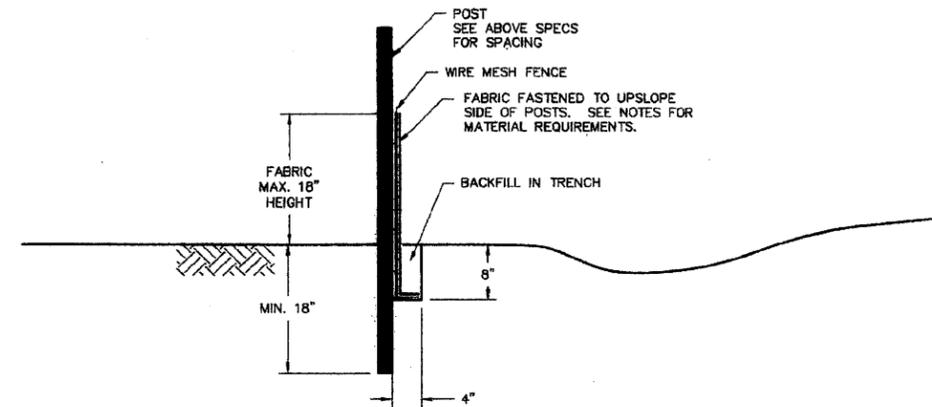
2. POSTS FOR SEDIMENT FENCES SHALL BE 4 INCH DIAMETER PINE, 2 INCH DIAMETER OAK, OR 1.33 LB/LINEAR FT STEEL WITH A MINIMUM LENGTH OF 4 FT. POSTS SHALL HAVE PROJECTIONS TO FACILITATE FASTENING THE FABRIC.
 3. FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE FENCE WITH A MINIMUM 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES. EXTRA STRENGTH FILTER FABRIC DOES NOT REQUIRE THE USE OF WIRE FENCE.

CONSTRUCTION

1. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS.
2. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 18 INCHES ABOVE THE GROUND SURFACE.
3. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH OVERLAP TO THE NEXT POST.
4. SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG, OR TIE WIRES. EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH.
5. SPACE POSTS A MAXIMUM OF 8 FT APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND TO A MINIMUM OF 18 INCHES.
6. EXCAVATE A TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
7. BACKFILL THE TRENCH WITH COMPACTED SOIL OR GRAVEL PLACED OVER THE FILTER FABRIC.

SEDIMENT FENCE MAINTENANCE

1. INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE.
4. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT. REFER TO CONSTRUCTION SPECIFICATIONS SECTION 01585, POLLUTION CONTROL FOR EROSION CONTROL DEVICE MAINTENANCE.



SILT FENCE DETAIL

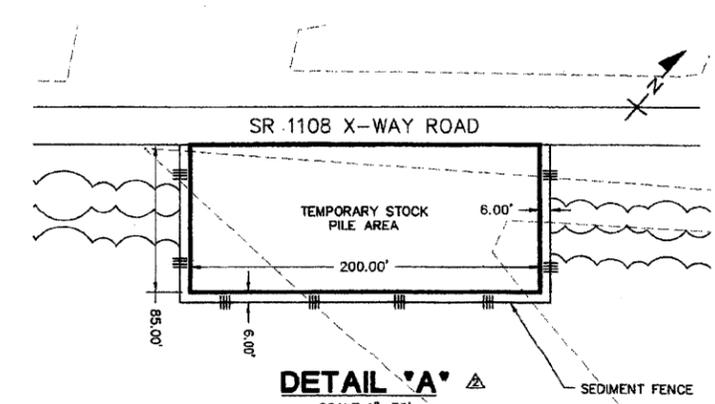
SCALE: 1" = 1'

TEMPORARY SEEDING

TEMPORARY SEEDING WILL BE PLACED ON ANY CLEARED, VEGETATED, OR SPARSELY, VEGETATED SOIL SURFACE WHERE VEGETATIVE COVER IS NEEDED FOR LESS THAN 1 YEAR, INCLUDING THE TEMPORARY STOCKPILE AND STOCKPILES. SEE TECHNICAL SPECIFICATION SECTION 02936.

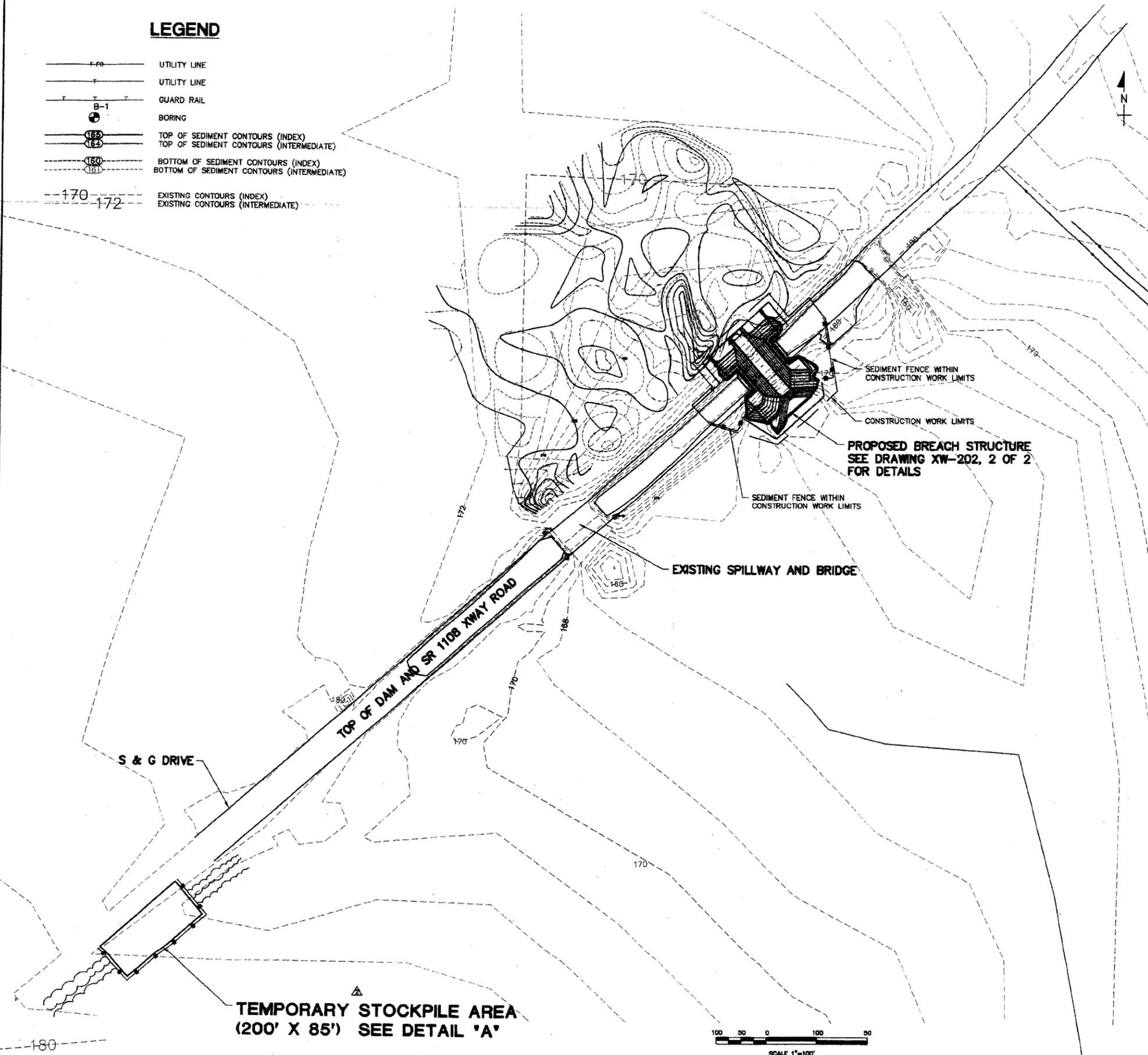
PERMANENT SEEDING

ALL DISTURBED AREAS WILL BE SEEDED WITH COMMON BERMUDA GRASS DURING APRIL - JULY. SEE TECHNICAL SPECIFICATION 02936.



DETAIL 'A'

SCALE 1"=50'



TEMPORARY STOCKPILE AREA (200' X 85') SEE DETAIL 'A'



This drawing to be considered "NOT FOR CONSTRUCTION" unless it bears the seal AND			
	ADDITION OF TEMP STOCKPILE AREA AND		



DESIGNED BY: TG/DLB
 DRAWN BY: CDH/PK
 CHECKED BY: DLB/TM
DONALD L. BASINGER, P.E.



X-WAY POND BREACH DESIGN
 SCOTLAND COUNTY, NORTH CAROLINA

XW-205 1 OF 1
TEMPORARY STOCKPILE LOCATION AND EROSION CONTROL DETAIL

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 13-A-04211028 (NC DOT) X-Way Pond\Drawings\13-XW-Eros.dwg 8-01-08