STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

November 9, 2009

Mr. Tom Steffens
U. S. Army Corps of Engineers
Regulatory Field Office
Post Office Box 1000
Washington, NC 27889-1000

Dear Sir:

Subject: **Application for Nationwide Permits (NWP) 13 & 23, Section 401 Water Quality Certification and Tar-Pam Riparian Buffer Authorization Request** for the Replacement of Bridge No. 13 over Indian Well Swamp on SR 1753 in Pitt County; TIP Project B-4604; Federal Aid Project No. BRZ-1753(1); State Project No.8.2222401; Debit $240.00 from WBS 33793.1.1.

Please find enclosed PCN, permit drawings, roadway plans, and mitigation letter for the above referenced project proposed by the North Carolina Department of Transportation (NCDOT). A Categorical Exclusion (CE) was completed for this project on February 4, 2008 and distributed shortly thereafter. Additional copies are available upon request. The NCDOT proposes to replace existing Bridge No. 13 over Indian Well Swamp on SR 1753 in Pitt County. The project involves replacement of the existing functionally obsolete and structurally deficient 76-foot bridge and approaches with a new 100-foot bridge and approaches. The new bridge will feature two 11-foot lanes with 2-foot 11-inch offsets. The west approach will be approximately 200 feet long and the east approach will be approximately 150 feet long. Proposed permanent impacts are 0.02 acre of riparian wetland impacts for fill and <0.01 acre for mechanized clearing. Traffic will be detoured off-site during construction.

Please note that this project is an accelerated bridge project on NCDOT's Maintenance of Effort list. The NCDOT Administration has deemed these projects highest priority. This project calls for a letting date of March 16, 2010 and a review date of January 26, 2010; however, the let date may advance as additional funding becomes available.

Regulatory Approvals

Section 404 Permit: All aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). The NCDOT requests that these activities be authorized by Nationwide Permit 23. (72 CFR; 11092-11198, March 12, 2007).

Section 401 Permit: We anticipate 401 General Certification number 3701 will apply to this project. The NCDOT is requesting written concurrence from the North Carolina Department of Environmental and

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

TELEPHONE: 919-431-2000

FAX: 919-431-2001

WEBSITE: WWW.NCDOT.ORG

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

Natural Resources, Division of Water Quality. Therefore, in accordance with 15A NCAC 2H, Section .0500(a), we are providing five copies of this application to the NCDWQ for their review and approval. Authorization to debit the $240 Permit Application Fee from WBS Element 33793.1.1 is hereby given.

Tar-Pamlico Riparian Buffer: NCDOT requests that the NC Division of Water Quality review this application and issue a written approval for a Tar-Pamlico Riparian Buffer Authorization.

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

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

Sincerely,

E. L. Lusk

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

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

W/o attachment (see website for attachments)
Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Mark Staley, Roadside Environmental
Mr. Neil Lassiter, P.E, Division 2 Engineer
Mr. Jay Johnson, Division 2 Environmental Officer
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Ms. Anne Deaton, NCDMF
Mr. Ron Sechler, NMFS
Ms. Dianne Brown, PDEA

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

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	☒ Section 404 Permit	☐ Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 23,13	or General Permit (GP) number:	
1c. Has the NWP or GP number been verified by the Corps?	☐ Yes	☒ No

1d. Type(s) of approval sought from the DWQ (check all that apply):

☒ 401 Water Quality Certification – Regular ☐ Non-404 Jurisdictional General Permit

☐ 401 Water Quality Certification – Express ☒ Riparian Buffer Authorization

1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: ☐ Yes ☒ No	For the record only for Corps Permit: ☐ Yes ☒ No
1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.	☒ Yes	☐ No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	☐ Yes	☒ No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	☐ Yes	☒ No

2. Project Information

2a. Name of project:	Replacement of Bridge 13 over Indian Well Swamp on SR 1753
2b. County:	Pitt
2c. Nearest municipality / town:	Chicod
2d. Subdivision name:	*not applicable*
2e. NCDOT only, T.I.P. or state project no:	B-4604

3. Owner Information

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

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

B. Project Information and Prior Project History	
1. Property Identification	
1a. Property identification no. (tax PIN or parcel ID):	*not applicable*
1b. Site coordinates (in decimal degrees):	Latitude: 35.4593 (DD.DDDDDD) Longitude: - 77.2838 (-DD.DDDDDD)
1c. Property size:	~2 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Indian Well Swamp
2b. Water Quality Classification of nearest receiving water:	C; Sw, NSW
2c. River basin:	Neuse
3. Project Description	
3a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: Agriculture and forested.	
3b. List the total estimated acreage of all existing wetlands on the property: ~ 1 acre	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 100 feet	
3d. Explain the purpose of the proposed project: To replace a structurally deficient and functionally obsolete bridge.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing a 76-foot bridge with a 100-foot, 3-span bridge on the existing alignment with an off-site detour. Standard road building equipment, such as trucks, dozers, and cranes will be used.	
4. Jurisdictional Determinations	
4a. Have jurisdictional wetland or stream determinations by the Corps or State been requested or obtained for this property / project (including all prior phases) in the past? Comments: US AID 200610706	☒ Yes ☐ No ☐ Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	☐ Preliminary ☒ Final
4c. If yes, who delineated the jurisdictional areas? Name (if known): Lauren Cobb	Agency/Consultant Company: ESI Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. May 9, 2006	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	☐ Yes ☒ No ☐ Unknown
5b. If yes, explain in detail according to "help file" instructions.	
6. Future Project Plans	
6a. Is this a phased project?	☐ Yes ☒ No
6b. If yes, explain.	

C. Proposed Impacts Inventory

1. Impacts Summary

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

☒ Wetlands ☒ Streams - tributaries ☒ Buffers

☐ Open Waters ☐ Pond Construction

2. Wetland Impacts

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

2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	2f. Area of impact (acres)
Site 1 ☒ P ☐ T	fill	riparian	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.02
Site 1 ☒ P ☐ T	mechanized clearing	riparian	☒ Yes ☐ No	☒ Corps ☐ DWQ	<0.01
Site 2 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 3 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 4 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 5 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
				2g. **Total wetland impacts**	0.02 Permanent

2h. Comments: Note: Mechanized clearing impacts do not total more than 0.005 acre, therefore perm. impacts are 0.02 acre.

3. Stream Impacts

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

3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site 1 ☐ P ☒ T	fill	Indian Wells Swamp	☒ PER ☐ INT	☒ Corps ☐ DWQ	45	0.01 ac.
Site 1 ☒ P ☐ T	bank stabilization	Indian Wells Swamp	☒ PER ☐ INT	☒ Corps ☐ DWQ	45	12
Site 1 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 2 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 3 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 4 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
				3h. **Total stream and tributary impacts**		12 ft. (p) 0.01 ac (t)

3i. Comments: Permanent impacts to surface waters due to bents will be <0.01 ac.

4. Open Water Impacts

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

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

4g. Comments:

5. Pond or Lake Construction

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

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

5g. Comments:

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

6. Buffer Impacts (for DWQ)

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

6a. Project is in which protected basin?			☒ Neuse ☐ Catawba ☐ Tar-Pamlico ☐ Randleman ☐ Other:		
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
B1 ☒ P ☐ T	road crossing	Indian Well Swamp	☒ Yes ☐ No	821	1,206
B2 ☒ P ☐ T	bridge	Indian Well Swamp	☐ Yes ☒ No	3,796	0
B3 ☐ P ☐ T			☐ Yes ☐ No		
			6h. **Total buffer impacts**	4,617	1,206
6i. Comments:					

D. Impact Justification and Mitigation

1. Avoidance and Minimization

1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project.

The proposed bridge is 34 feet longer than the existing bridge; the proposed bridge will be at approximately the same grade as the existing structure; Design Standards in Sensitive Watersheds

1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques.

An off site detour will be used, 3:1 fill slopes where practicable.

2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State

2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	☐ Yes ☒ No If no, explain: Due to minimal permanent wetland impacts, NCDOT is not proposing compensatory mitigation.
2b. If yes, mitigation is required by (check all that apply):	☐ DWQ ☐ Corps
2c. If yes, which mitigation option will be used for this project?	☐ Mitigation bank ☐ Payment to in-lieu fee program ☐ Permittee Responsible Mitigation

3. Complete if Using a Mitigation Bank

3a. Name of Mitigation Bank: not applicable

3b. Credits Purchased (attach receipt and letter)	Type	Quantity

3c. Comments:

4. Complete if Making a Payment to In-lieu Fee Program

4a. Approval letter from in-lieu fee program is attached.	☐ Yes
4b. Stream mitigation requested:	linear feet
4c. If using stream mitigation, stream temperature:	☐ warm ☐ cool ☐ cold
4d. Buffer mitigation requested (DWQ only):	square feet
4e. Riparian wetland mitigation requested:	acres
4f. Non-riparian wetland mitigation requested:	acres
4g. Coastal (tidal) wetland mitigation requested:	acres

4h. Comments:

5. Complete if Using a Permittee Responsible Mitigation Plan

5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.

6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ

6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?	☒ Yes ☐ No

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

Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1	Road Crossing	688	3 (2 for Catawba)	2,064
Zone 2	Road Crossing	1,005	1.5	1,508
		6f. **Total buffer mitigation required:**		3,572

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

If buffer mitigation is not available through a NCDOT asset, mitigation will be requested from NCEEP. The source of the buffer mitigation will be provided once it has been determined.

6h. Comments:

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

F. Supplementary Information		
1. Environmental Documentation (DWQ Requirement)		
1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land?	☒ Yes	☐ No
1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)?	☒ Yes	☐ No
1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) Comments:	☒ Yes	☐ No
2. Violations (DWQ Requirement)		
2a. Is the site in violation of DWQ Wetland Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), DWQ Surface Water or Wetland Standards, or Riparian Buffer Rules (15A NCAC 2B .0200)?	☐ Yes	☒ No
2b. Is this an after-the-fact permit application?	☐ Yes	☒ No
2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):		
3. Cumulative Impacts (DWQ Requirement)		
3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality?	☐ Yes ☒ No	
3b. If you answered "yes" to the above, submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent DWQ policy. If you answered "no," provide a short narrative description. Due to the minimal transportation impact resulting from this bridge replacement, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect or cumulative effects study will not be necessary.		
4. Sewage Disposal (DWQ Requirement)		
4a. Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility. not applicable		

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

Dr. Gregory J. Thorpe, Ph D Applicant/Agent's Printed Name	E. J. Lusk Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	11-6-09 Date

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

COPY

Action Id. 200610706 County: Pitt U.S.G.S. Quad: Gardnerville

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner/Agent: North Carolina Department of Transportation
Address: Division 2 Environmental Officer
Post Office Box 1587
Greenville, NC 27835
Telephone No.: 252-830-3490

Property description:
Size (acres) corridor Nearest Town Chicod
Nearest Waterway Indian Well Swamp River Basin Neuse
USGS HUC 03020202 Coordinates N 35.4593 W 77.2838
Location description Bridge 13 on NCSR 1753 over Indian Well Swamp, west of Chicod, Pitt County, North Carolina. TIP # B-4604

Indicate Which of the Following Apply:

A. Preliminary Determination

_ Based on preliminary information, there may be wetlands on the above described property. We strongly suggest you have this property inspected to determine the extent of Department of the Army (DA) jurisdiction. To be considered final, a jurisdictional determination must be verified by the Corps. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331).

B. Approved Determination

_ There are Navigable Waters of the United States within the above described property subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

X There are waters of the U.S. including wetlands on the above described project area subject to the permit requirements of Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ We strongly suggest you have the wetlands on your property delineated. Due to the size of your property and/or our present workload, the Corps may not be able to accomplish this wetland delineation in a timely manner. For a more timely delineation, you may wish to obtain a consultant. To be considered final, any delineation must be verified by the Corps.

X The waters of the U.S. including wetland on your project area have been delineated and the delineation has been verified by the Corps. We strongly suggest you have this delineation surveyed. Upon completion, this survey should be reviewed and verified by the Corps. Once verified, this survey will provide an accurate depiction of all areas subject to CWA jurisdiction on your property which, provided there is no change in the law or our published regulations, may be relied upon for a period not to exceed five years.

_ The wetlands have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on _____. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ There are no waters of the U.S., to include wetlands, present on the above described property which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in Washington, NC, at (252) 946-6481 to determine their requirements.

Action ID: 200610706
Placement of dredged or fill material within waters of the US and/or wetlands without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). If you have any questions regarding this determination and/or the Corps regulatory program, please contact **William Wescott** at **252-975-1616 extension 31**.

C. Basis For Determination

Areas exhibit the three parameters specified in the 1987 USACE Wetland Delineation Manual and are adjacent to Indian Well Swamp. Indian Well Swamp connects to Clayroot Swamp which connects to Creeping Swamp which connects to Swift Creek which connects to the Neuse River.

D. Remarks

E. Appeals Information (This information applies only to approved jurisdictional determinations as indicated in B. above)

This correspondence constitutes an approved jurisdictional determination for the above described site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the South Atlantic Division, Division Office at the Following address:

Mr. Michael F. Bell, Administrative Appeal Review Officer
CESAD-ET-CO-R
U.S. Army Corps of Engineers, South Atlantic Division
60 Forsyth Street, Room 9M15
Atlanta, Georgia 30303-8801

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by **7/8/2006**.

It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this correspondence.

Corps Regulatory Official: William Wescott, P.W.S.

Date **05/09/2006** Expiration Date **05/09/2011**

Copy furnished:
Environmental Services, Inc. -- Lauren Cobb

JURISDICTIONAL DETERMINATION

U.S. Army Corps of Engineers

Revised 8/13/04

DISTRICT OFFICE: CESAW-RG-W
FILE NUMBER: 200610706

PROJECT LOCATION INFORMATION:

State: NC
County: Pitt
Center coordinates of site (latitude/longitude): 35.4593 N 77.2838 W
Approximate size of area (parcel) reviewed, including uplands: acres.
Name of nearest waterway: Indian Well Swamp
Name of watershed: Neuse River Basin

JURISDICTIONAL DETERMINATION

Completed: Desktop determination ☒ Date:
Site visit(s) ☒ Date(s): 2/8/2006

Jurisdictional Determination (JD):

☒ Preliminary JD - Based on available information, ☐ *there appear to be* (or) ☐ *there appear to be no* "waters of the United States" and/or "navigable waters of the United States" on the project site. A preliminary JD is not appealable (Reference 33 CFR part 331).

☒ Approved JD – An approved JD is an appealable action (Reference 33 CFR part 331).
Check all that apply:

☒ *There are* "navigable waters of the United States" (as defined by 33 CFR part 329 and associated guidance) within the reviewed area. Approximate size of jurisdictional area:

☒ *There are* "waters of the United States" (as defined by 33 CFR part 328 and associated guidance) within the reviewed area. Approximate size of jurisdictional area:

☒ *There are "isolated, non-navigable, intra-state* waters or wetlands" within the reviewed area.
☒ Decision supported by SWANCC/Migratory Bird Rule Information Sheet for Determination of No Jurisdiction.

BASIS OF JURISDICTIONAL DETERMINATION:

A. Waters defined under 33 CFR part 329 as "navigable waters of the United States":

☒ The presence of waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

B. Waters defined under 33 CFR part 328.3(a) as "waters of the United States":

☒ (1) The presence of waters, which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
☒ (2) The presence of interstate waters including interstate wetlands[1].
☒ (3) The presence of other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate commerce including any such waters (check all that apply):
☐ (i) which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ (ii) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ (iii) which are or could be used for industrial purposes by industries in interstate commerce.
☒ (4) Impoundments of waters otherwise defined as waters of the US.
☒ (5) The presence of a tributary to a water identified in (1) – (4) above.
☒ (6) The presence of territorial seas.
☒ (7) The presence of wetlands adjacent[2] to other waters of the US, except for those wetlands adjacent to other wetlands.

Rationale for the Basis of Jurisdictional Determination (applies to any boxes checked above). *If the jurisdictional water or wetland is not itself a navigable water of the United States, describe connection(s) to the downstream navigable waters. If B(1) or B(3) is used as the Basis of Jurisdiction, document navigability and/or interstate commerce connection (i.e., discuss site conditions, including why the waterbody is navigable and/or how the destruction of the waterbody could affect interstate or foreign commerce). If B(2, 4, 5 or 6) is used as the Basis of Jurisdiction, document the rationale used to make the determination. If B(7) is used as the Basis of Jurisdiction, document the rationale used to make adjacency determination:* Areas exhibit the three parameters specified in the 1987 USACE Wetland Delineation Manual and are adjacent to Indian Well Swamp. Indian Well Swamp connects to Clayroot Swamp which connects to Creeping Swamp which connects to Swift Creek which connects to the Neuse River.

Lateral Extent of Jurisdiction: (Reference: 33 CFR parts 328 and 329)

☒ Ordinary High Water Mark indicated by:
- ☒ clear, natural line impressed on the bank
- ☒ the presence of litter and debris
- ☒ changes in the character of soil
- ☒ destruction of terrestrial vegetation
- ☐ shelving
- ☐ other:

☒ High Tide Line indicated by:
- ☐ oil or scum line along shore objects
- ☐ fine shell or debris deposits (foreshore)
- ☐ physical markings/characteristics
- ☐ tidal gages
- ☐ other:

☒ Mean High Water Mark indicated by:
☐ survey to available datum; ☐ physical markings; ☐ vegetation lines/changes in vegetation types.

☒ Wetland boundaries, as shown on the attached wetland delineation map and/or in a delineation report prepared by: Environmental Services, Inc.

Basis For Not Asserting Jurisdiction:

☒ The reviewed area consists entirely of uplands.
☒ Unable to confirm the presence of waters in 33 CFR part 328(a)(1, 2, or 4-7).
☒ Headquarters declined to approve jurisdiction on the basis of 33 CFR part 328.3(a)(3).
☒ The Corps has made a case-specific determination that the following waters present on the site are not Waters of the United States:
- ☐ Waste treatment systems, including treatment ponds or lagoons, pursuant to 33 CFR part 328.3.
- ☐ Artificially irrigated areas, which would revert to upland if the irrigation ceased.
- ☐ Artificial lakes and ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing.
- ☐ Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons.
- ☒ Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States found at 33 CFR 328.3(a).
- ☐ Isolated, intrastate wetland with no nexus to interstate commerce.
- ☐ Prior converted cropland, as determined by the Natural Resources Conservation Service. Explain rationale:
- ☐ Non-tidal drainage or irrigation ditches excavated on dry land. Explain rationale:
- ☐ Other (explain):

DATA REVIEWED FOR JURSIDICTIONAL DETERMINATION (mark all that apply):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant.
☒ Data sheets prepared/submitted by or on behalf of the applicant.
- ☒ This office concurs with the delineation report, dated 3/22/2006, prepared by (company): Environmental Services, Inc.
- ☐ This office does not concur with the delineation report, dated , prepared by (company):

☒ Data sheets prepared by the Corps.
☒ Corps' navigable waters' studies:
☒ U.S. Geological Survey Hydrologic Atlas:
☒ U.S. Geological Survey 7.5 Minute Topographic maps: Gardnerville
☒ U.S. Geological Survey 7.5 Minute Historic quadrangles:
☒ U.S. Geological Survey 15 Minute Historic quadrangles:
☒ USDA Natural Resources Conservation Service Soil Survey:
☒ National wetlands inventory maps:
☒ State/Local wetland inventory maps:
☒ FEMA/FIRM maps (Map Name & Date):
☒ 100-year Floodplain Elevation is: (NGVD)
☒ Aerial Photographs (Name & Date): USGS 1998
☒ Other photographs (Date):
☒ Advanced Identification Wetland maps:
☒ Site visit/determination conducted on: 2/8/2006
☒ Applicable/supporting case law:
☒ Other information (please specify):

[1]Wetlands are identified and delineated using the methods and criteria established in the Corps Wetland Delineation Manual (87 Manual) (i.e., occurrence of hydrophytic vegetation, hydric soils and wetland hydrology).

[2]The term "adjacent" means bordering, contiguous, or neighboring. Wetlands separated from other waters of the U.S. by man-made dikes or barriers, natural river berms, beach dunes, and the like are also adjacent.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: NCDOT	File Number: 200610706	Date: 5/9/2006
Attached is:		See Section below
☐ INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
☐ PROFFERED PERMIT (Standard Permit or Letter of permission)		B
☐ PERMIT DENIAL		C
☒ APPROVED JURISDICTIONAL DETERMINATION		D
☐ PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I: The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION

If you have questions regarding this decision and/or the appeal process you may contact: US Army Corps of Engineers attn: William Wescott Post Office Box 1000 Washington, NC 27889	If you only have questions regarding the appeal process you may also contact: Mr. Michael F. Bell, Administrative Appeal Review Officer CESAD-ET-CO-R U.S. Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 9M15 Atlanta, Georgia 30303-8801

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

DIVISION ENGINEER:
Commander
U.S. Army Engineer Division, South Atlantic
60 Forsyth Street, Room 9M15
Atlanta, Georgia 30303-3490

STORMWATER MANAGEMENT PLAN

Project: 33793.1.1
TIP No. B-4604
Pitt County
Date: 10/27/2009

Hydraulics Project Manager: James R. Rice, P.E. (HDR),
Marshal Clawson, P.E. (NCDOT Hydraulics Unit)

ROADWAY DESCRIPTION

The project B-4604 consists of constructing a new bridge 100 feet long to replace the existing bridge #13 in Pitt County on SR 1753 over Indian Wells Swamp. The total project length is 0.085 miles. The project creates impacts to Indian Wells Swamp, which is located in the Neuse River Basin. The project drainage system consists only of deck drains.

Jurisdictional Stream: Indian Wells Swamp

ENVIRONMENTAL DESCRIPTION

The project is located within the Neuse River Basin and Pitt County which is not a CAMA county. Indian Wells Swamp has been classified as a jurisdictional stream and therefore riparian buffer rules apply. In order to maintain existing drainage patterns and accommodate the service road, special cut and tail ditches were required on the southeast and southwest corners. These ditches go through the buffers and tie directly into the channel.

On the south side of the existing bridge there is a service road that runs parallel to the stream near the top of bank. Due to the embankment for the soil road, water runs away from the stream on the south side of the soil road. Since water runs away from the stream, this area should not be counted as buffer even though it is within fifty feet of the top of bank. There will be no impacts to the buffers on the south side of the soil road.

There are wetland areas that will be impacted by the proposed project. Wetland impacts have been reduced to a minimum by keeping roadway fill slopes at 3:1 and utility access roads as close to the L line as possible. At the bridge, a single span will be utilized to eliminate the need for piers in the channel. The impacts to the Indian Wells Swamp surface waters will be the removal of the existing piers and the tie in of two tail ditches.

When the original embankment for the existing service road (-DR1-) was put in, a crosspipe was not placed to convey the drainage, which has created wetlands. In an attempt to provide relief for larger storms while not draining the wetlands, a pipe will be placed at the current wetland elevation.

The existing structure has deck drains that discharge directly into the surface water. Deck drains have been added to the proposed structure. The deck drains on the proposed structure will not discharge directly into the surface water, but they will discharge on the spill-through rip rap under the bridge. Deck drains were required due to the length of the structure, the structure profile's low gradient, and width of shoulder.

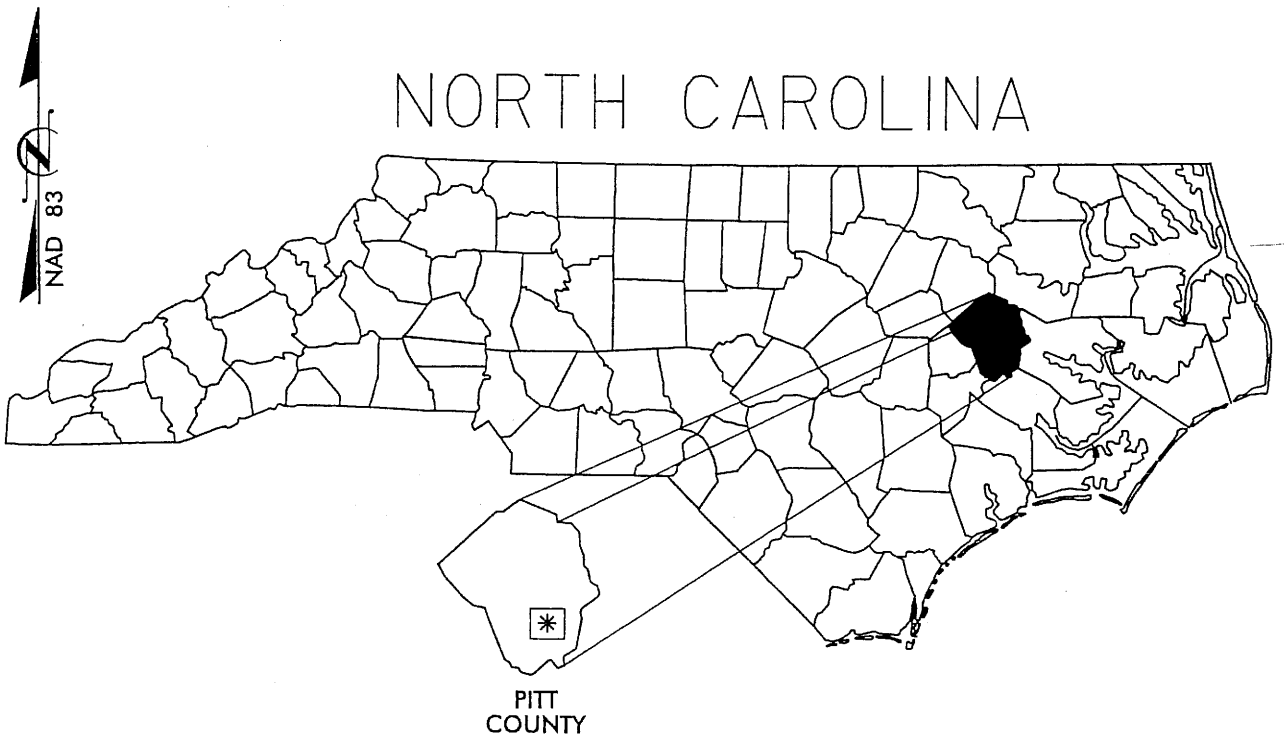
BEST MANAGEMENT PRACTICES AND MAJOR STRUCTURES

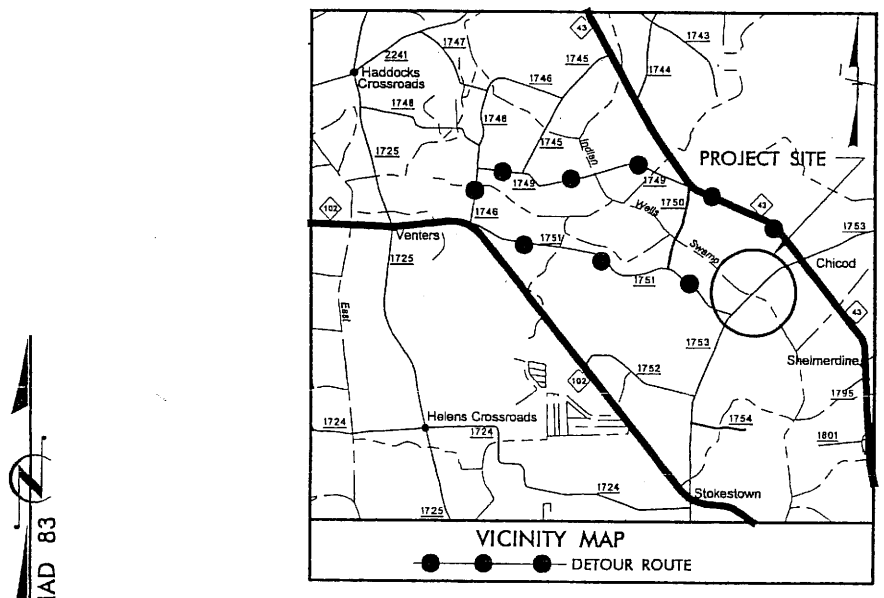
The primary goal of Best Management Practices (BMPs) is to prevent degradation of the states surface waters by the location, construction and operation of the highway system. The BMPs are activities, practices and procedures taken to prevent or reduce stormwater pollution and should be used whenever possible.

The BMP measures used on this project to reduce stormwater impacts are:

- Grass Swales (See attached ditch comps and grass swale comps)
- Bridge Deck Drains have been placed so they do not directly discharge into Indian Wells Swamp.

BMPs were not utilized on the south side due to the proximity of the soil road tie-ins. There is a ditch created between the -L- and -DR1- as well as -L- and –DR2-. In both cases the point at which the special ditch grade ties to natural ground is well inside buffer. Since the discharge will not have adequate distance through the buffer to provide treatment, and the channel banks are high and steep, we felt it was better to provide a stable access to the stream by ditching through the buffers and adding embankment rip rap. We did ensure that the roadway ditch met grass swale criteria, so the water that is being passed through the buffer has been treated by grass swales.





VICINITY MAPS

NORTH CAROLINA

DIVISION OF HIGHWAYS

PITT COUNTY

PROJECT: 33793.1.1 (B-4604)

REPLACEMENT OF BRIDGE #13

OVER INDIAN WELLS SWAMP

ON SR 1753

Permit Drawing

SHEET Sheet 1 of 7 10/09/09

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES	SITE NO.
1	LEONARD R. HIGNITE	26105 US 264 SWAN QUARTER, NC 27885	1

NORTH CAROLINA

DIVISION OF HIGHWAYS

PITT COUNTY

PROJECT: 33793.1.1 (B-4604)

REPLACEMENT OF BRIDGE #13

OVER INDIAN WELLS SWAMP

ON SR 1753

Permit Drawing

SHEET Sheet 2 of 7 10/09/09

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	17+07 To 18+07 (-L-)	Cored Slab - 100'	0.02	0.00	0.00	<0.01	0.00	< 0.01	0.01	0	0	0
	17+20 (-L-)	U/S Embank RR	0.00	0.00	0.00	0.00	0.00	<0.01	0.00	5	0	0
	18+65 (-L-)	D/S Embank RR	0.00	0.00	0.00	0.00	0.00	<0.01	0.00	7	0	0
TOTALS:			0.02	0.00	0.00	< 0.01	0.00	<0.01	0.01	12	0	0

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PITT COUNTY

WBS - 33793.1.1 (B-4604)

Permit Drawing
SHEET Sheet 3 of 7 10/27/2009

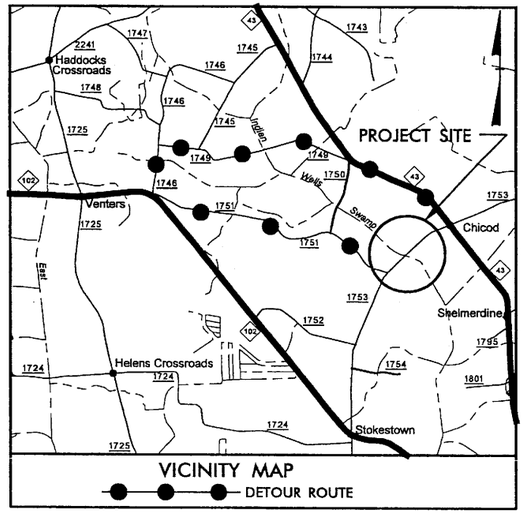
ATN Revised 3/31/05

09/08/99

TIP PROJECT: B-4604

CONTRACT:

See Sheet 1-A For Index of Sheets



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PITT COUNTY

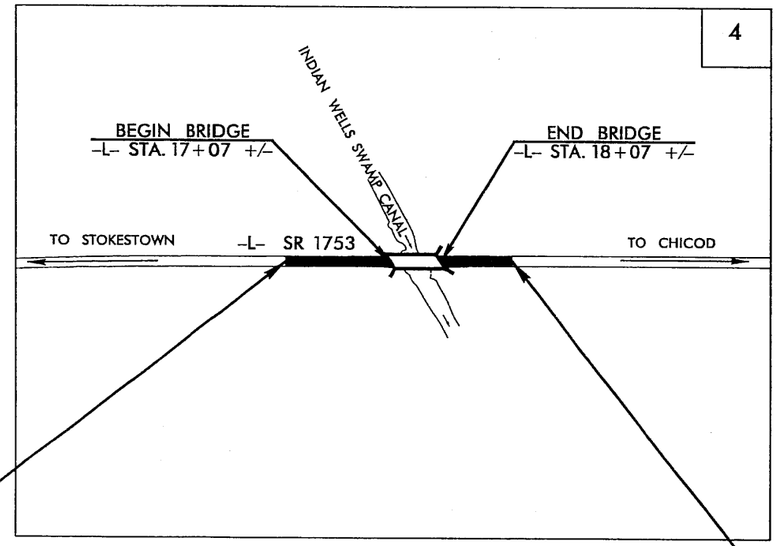
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4604	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33793.1.1	BRZ-1753(1)	PE	

Permit Drawing
Sheet 4 of 7

LOCATION: BRIDGE NO. 13 ON SR 1753 OVER INDIAN WELLS SWAMP

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

NAD 83/95



B-4604 WETLAND & STREAM IMPACTS

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ??

PERMIT SHEET

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

PLANS: 50 25 0 50 100
PROFILE (HORIZONTAL): 50 25 0 50 100
PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2011 = 2004
ADT 2031 = 3263
DHV = 10 %
D = 60 %
T = 8 % *
V = 60 MPH

* TTST 4% DUAL 4%
FUNC. CLASS. = LOCAL RURAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4604 = 0.066 MILE
LENGTH STRUCTURE TIP PROJECT B-4604 = 0.019 MILE
TOTAL LENGTH TIP PROJECT B-4604 = 0.085 MILE

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JANUARY 15, 2010

LETTING DATE: JANUARY 18, 2011

BRENDA MOORE, PE
PROJECT ENGINEER

REKHA PATEL, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

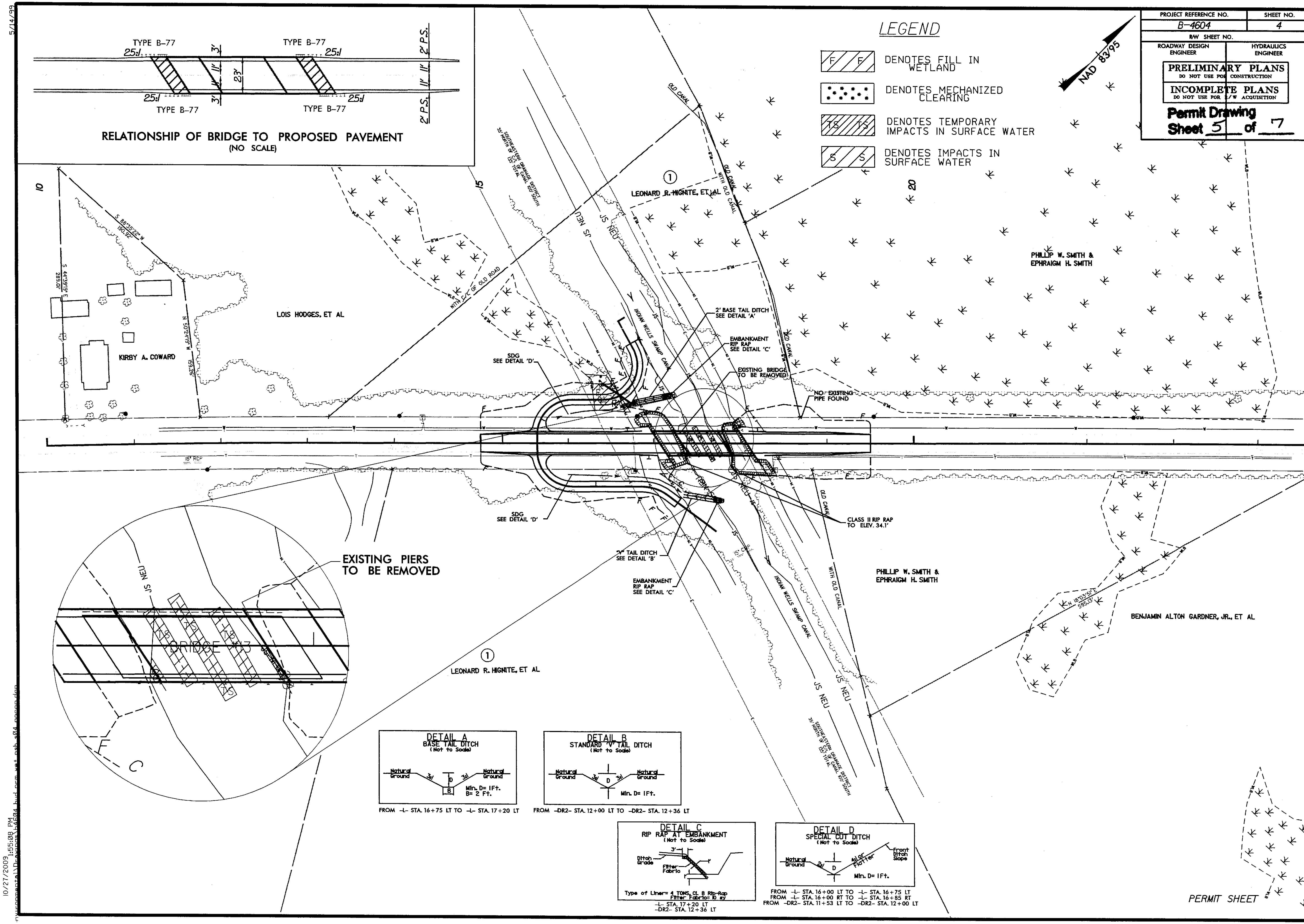
ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER P.E.

10/15/2009
12:05 PM
R:\ZBridge\B4604\Hydraulics\permits_environmental\Drawings\b4604_hyd_prm_wet_tsh.dgn


PROJECT REFERENCE NO.
B-4604
SHEET NO.
4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
Permit Drawing
Sheet 5 of 7
NAD 83/95
LEGEND
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
TYPE B-77
RELATIONSHIP OF BRIDGE TO PROPOSED PAVEMENT
(NO SCALE)
LOIS HODGES, ET AL
KIRBY A. COWARD
LEONARD R. HIGNITE, ET AL
PHILLIP W. SMITH &
EPHRAIGM H. SMITH
BENJAMIN ALTON GARDNER, JR., ET AL
INDIAN WELLS SWAMP CANAL
OLD CANAL
WITH OLD CANAL
JS NEU
2' BASE TAIL DITCH
SEE DETAIL 'A'
EMBANKMENT RIP RAP
SEE DETAIL 'C'
EXISTING BRIDGE TO BE REMOVED
NO EXISTING PIPE FOUND
SDG
SEE DETAIL 'D'
CLASS II RIP RAP TO ELEV. 34.1'
"V" TAIL DITCH
SEE DETAIL 'B'
EXISTING PIERS TO BE REMOVED
BRIDGE #13
DETAIL A
BASE TAIL DITCH
(Not to Scale)
Natural Ground
Min. D= 1Ft.
B= 2 Ft.
FROM -L- STA. 16+75 LT TO -L- STA. 17+20 LT
DETAIL B
STANDARD "V" TAIL DITCH
(Not to Scale)
Min. D= 1Ft.
FROM -DR2- STA. 12+00 LT TO -DR2- STA. 12+36 LT
DETAIL C
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
Filter Fabric
Type of Liner= 4 TONS, CL. B Rip-Rap
Filter Fabric= 10 SY
-L- STA. 17+20 LT
-DR2- STA. 12+36 LT
DETAIL D
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground
Min. D= 1Ft.
Front Ditch Slope
FROM -L- STA. 16+00 LT TO -L- STA. 16+75 LT
FROM -L- STA. 16+00 RT TO -L- STA. 16+85 RT
FROM -DR2- STA. 11+53 LT TO -DR2- STA. 12+00 LT
PERMIT SHEET
5/14/99
10/27/2009 1:55:08 PM

5/14/99

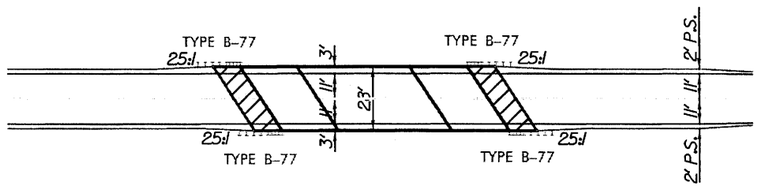
PROJECT REFERENCE NO.	SHEET NO.
B-4604	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Drawing Sheet 6 of 7

RELATIONSHIP OF BRIDGE TO PROPOSED PAVEMENT
(NO SCALE)



LEGEND

- F F — DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- S S — DENOTES IMPACTS IN SURFACE WATER

NAD 83/95

LEONARD R. HIGNITE, ET AL

LOIS HODGES, ET AL

KIRBY A. COWARD

PHILLIP W. SMITH & EPHRAIGM H. SMITH

BENJAMIN ALTON GARDNER, JR., ET AL

EXISTING BRIDGE TO BE REMOVED

EXISTING PIERS TO BE REMOVED

2' BASE TAIL DITCH SEE DETAIL 'A'

EMBANKMENT RIP RAP SEE DETAIL 'C'

SDG SEE DETAIL 'D'

NO. EXISTING PIPE FOUND

CLASS II RIP RAP TO ELEV. 34.1'

"V" TAIL DITCH SEE DETAIL 'B'

EMBANKMENT RIP RAP SEE DETAIL 'C'

SOUTHEASTERN DRAINAGE DISTRICT 35' WIDTH OF R/W 60' SOUTH

INDIAN WELLS SWAMP CANAL

WITH OLD CANAL

OLD CANAL

JS NEU

S 88°35'22" W 1860.92'

S 44°59'15" E 289.03'

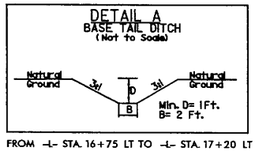
N 45°24'19" W 155.28'

WITH C/L OF OLD ROAD

18" RCP

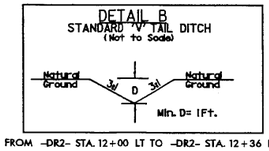
N 18°01'56" E 585.03'

DETAIL A
BASE TAIL DITCH
(Not to Scale)



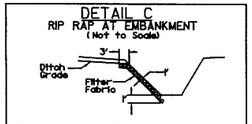
FROM -L- STA. 16+75 LT TO -L- STA. 17+20 LT

DETAIL B
STANDARD "V" TAIL DITCH
(Not to Scale)



FROM -DR2- STA. 12+00 LT TO -DR2- STA. 12+36 LT

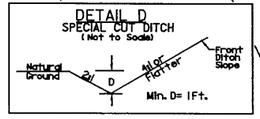
DETAIL C
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= 4 TONS, CL B Rip-Rap
Filter Fabric= 10 sy

-L- STA. 17+20 LT
-DR2- STA. 12+36 LT

DETAIL D
SPECIAL CUT DITCH
(Not to Scale)



FROM -L- STA. 16+00 LT TO -L- STA. 16+75 LT
FROM -L- STA. 16+00 RT TO -L- STA. 16+85 RT
FROM -DR2- STA. 11+53 LT TO -DR2- STA. 12+00 LT

PERMIT SHEET

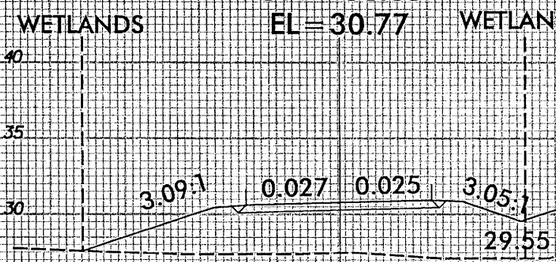
10/27/2009 1:55:25 PM
w:\roadway\all\Design\b4604 hyd prm sht.dgn s04 wilkerson dep

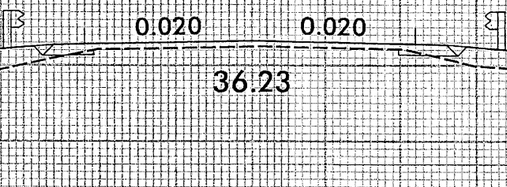
8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4604	X-3

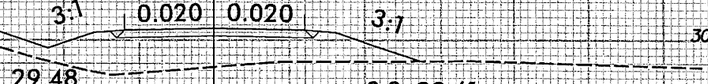
Permit Drawing
Sheet 7 of 7

— DR1 —
STA 11+10.72
OFF -50.85
EL=30.77



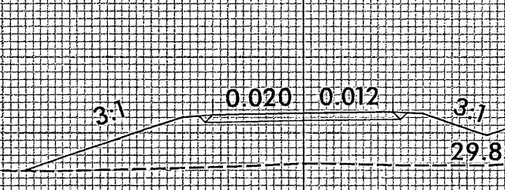


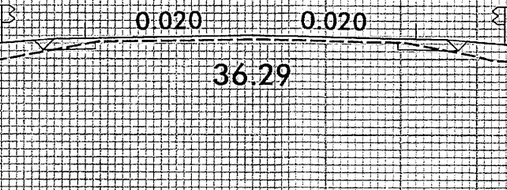
— DR2 —
STA 11+17.83
OFF 50.00
EL=30.78



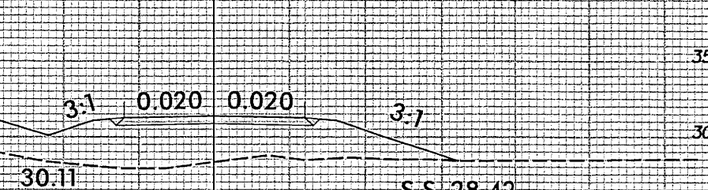
16+50.00

— DR1 —
STA 11+26.57
OFF -50.00
EL=31.31





DR2
STA 11+02.04
OFF 50.00
EL=31.39



16+34.21

PERMIT-SHEET

10/15/2009
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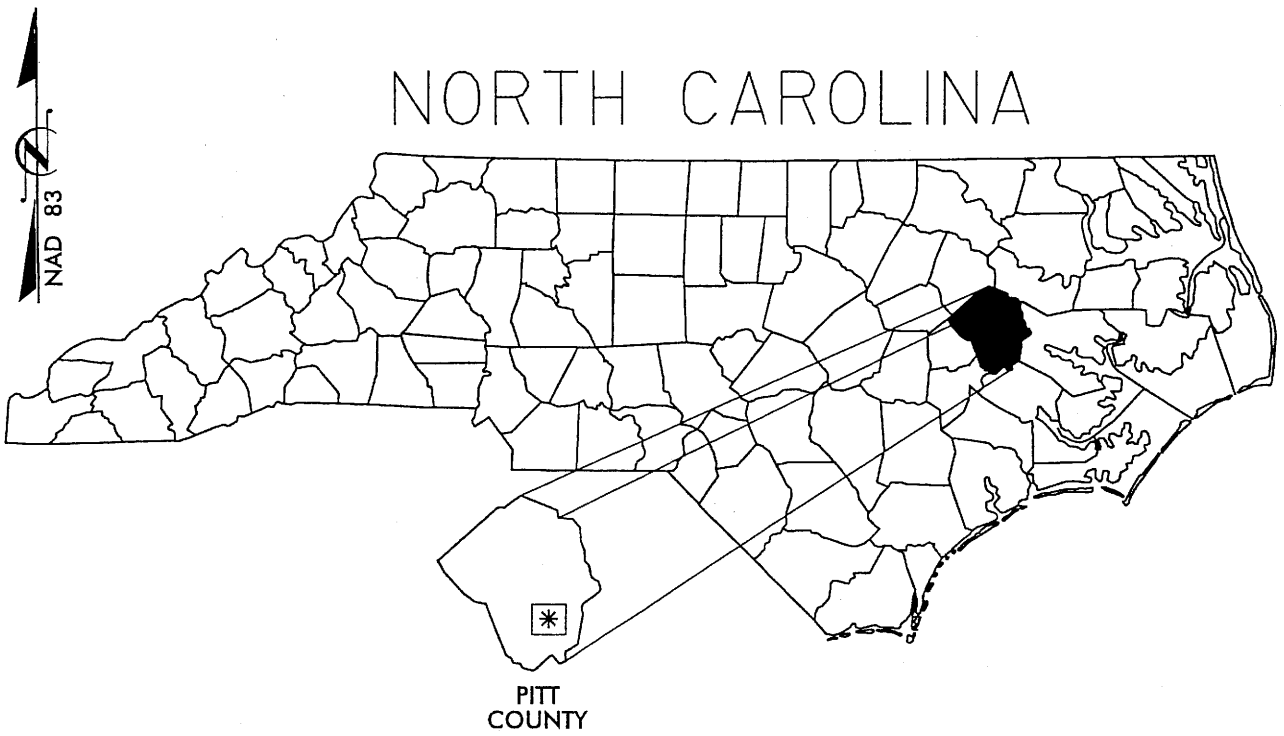
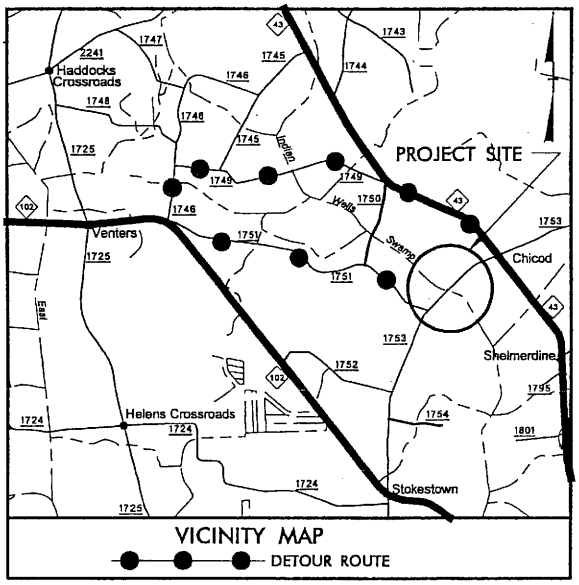
mssroe





VICINITY MAPS

NORTH CAROLINA

DIVISION OF HIGHWAYS

PITT COUNTY

PROJECT: 33793.1.1 (B-4604)

REPLACEMENT OF BRIDGE #13

OVER INDIAN WELLS SWAMP

ON SR 1753

Buffer Drawing

SHEET Sheet 1 of 7 10/09/09

BUFFER IMPACTS SUMMARY

SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	IMPACT									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	Road	17+05 To 17+07	X						688	1005	1693		
1	Cored Slab-100'	17+07 To 18+07		X		3796		3796					
1	Road	18+07 To 18+50	X						133	201	334		
TOTAL:						3796		3796	821	1206	2027		

** Impacts to the Neuse Buffers extend approximately 120 feet upstream and 74 feet downstream of the proposed centerline of SR 1753 for a total impact of 194 linear feet.

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

PITT COUNTY
PROJECT: 33793.1.1 (B-4604)

11/3/2009
SHEET

Rev. May 2006

Buffer Drawing
Sheet 2 of 7

WETLANDS IN BUFFER IMPACTS SUMMARY

SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	WETLANDS IN BUFFERS ZONE 1 (ft^2)	WETLANDS IN BUFFERS ZONE 2 (ft^2)
1	Cored Slab-100'	17+07 To 18+07	0	0
TOTAL:			0	0

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

PITT COUNTY
PROJECT: 33793.1.1 (B-4604)

10/27/2009
SHEET

Rev. Jan 2009

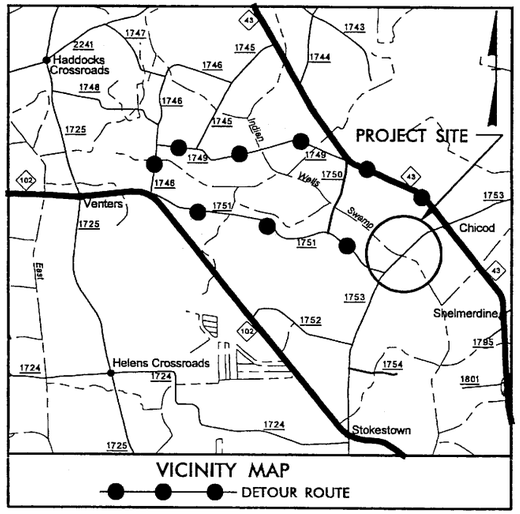
Buffer Drawing
Sheet 3 **of** 7

09/08/09

TIP PROJECT: B-4604

CONTRACT:

See Sheet 1-A For Index of Sheets



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PITT COUNTY

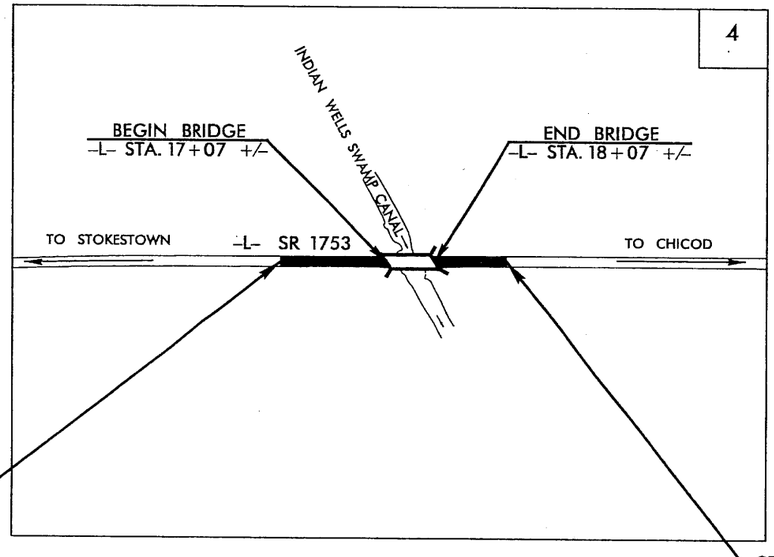
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4604	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
33793.1.1	BRZ-1753(1)	PE	

LOCATION: BRIDGE NO. 13 ON SR 1753 OVER INDIAN WELLS SWAMP

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

Buffer Drawing Sheet 4 of 7

NAD 83/95



B-4604 BUFFER IMPACTS

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ??

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

PLANS: 50 25 0 50 100
PROFILE (HORIZONTAL): 50 25 0 50 100
PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2011 = 2004
ADT 2031 = 3263
DHV = 10 %
D = 60 %
T = 8 % *
V = 60 MPH

* TTST 4% DUAL 4%
FUNC. CLASS. = LOCAL RURAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4604 = 0.066 MILE
LENGTH STRUCTURE TIP PROJECT B-4604 = 0.019 MILE
TOTAL LENGTH TIP PROJECT B-4604 = 0.085 MILE

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JANUARY 15, 2010

LETTING DATE: JANUARY 18, 2011

BRENDA MOORE, PE
PROJECT ENGINEER

REKHA PATEL, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

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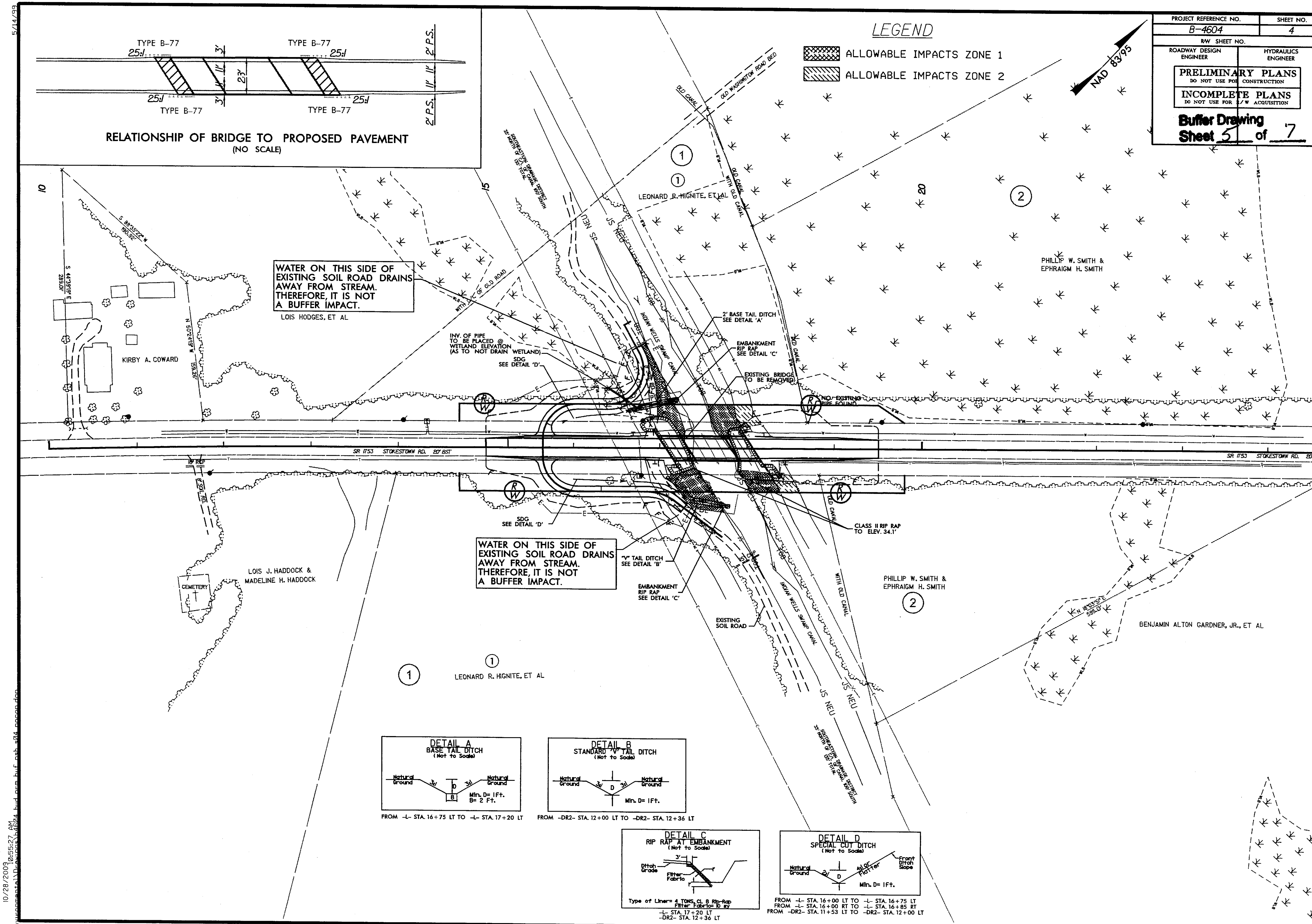
PROJECT REFERENCE NO. B-4604
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION
Buffer Drawing Sheet 5 of 7
LEGEND
ALLOWABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 2
NAD 83/95
TYPE B-77
25:1
3'
11'
23'
2' P.S.
RELATIONSHIP OF BRIDGE TO PROPOSED PAVEMENT
(NO SCALE)
WATER ON THIS SIDE OF EXISTING SOIL ROAD DRAINS AWAY FROM STREAM. THEREFORE, IT IS NOT A BUFFER IMPACT.
LOIS HODGES, ET AL
KIRBY A. COWARD
LEONARD R. HIGNITE, ET AL
PHILLIP W. SMITH & EPHRAIGM H. SMITH
LOIS J. HADDOCK & MADELINE H. HADDOCK
CEMETERY
BENJAMIN ALTON GARDNER, JR., ET AL
OLD WASHINGTON ROAD BED
OLD CANAL
WITH OLD CANAL
INDIAN WELLS SWAMP CANAL
JS NEU
SR 1753 STOKESTOWN RD. 80' BST
2' BASE TAIL DITCH SEE DETAIL 'A'
EMBANKMENT RIP RAP SEE DETAIL 'C'
EXISTING BRIDGE TO BE REMOVED
NO EXISTING PIPE FOUND
INV. OF PIPE TO BE PLACED @ WETLAND ELEVATION (AS TO NOT DRAIN WETLAND)
SDG SEE DETAIL 'D'
CLASS II RIP RAP TO ELEV. 34.1'
"V" TAIL DITCH SEE DETAIL 'B'
EXISTING SOIL ROAD
DETAIL A
BASE TAIL DITCH
(Not to Scale)
Natural Ground
Min. D= 1Ft. B= 2 Ft.
FROM -L- STA. 16+75 LT TO -L- STA. 17+20 LT
DETAIL B
STANDARD 'V' TAIL DITCH
(Not to Scale)
Min. D= 1Ft.
FROM -DR2- STA. 12+00 LT TO -DR2- STA. 12+36 LT
DETAIL C
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
Filter Fabric
Type of Liner= 4 TONS CL B Rip-Rap Filter Fabric= 10 sy
-L- STA. 17+20 LT
-DR2- STA. 12+36 LT
DETAIL D
SPECIAL CUT DITCH
(Not to Scale)
Front Ditch Slope
4:1 or Flatter
Min. D= 1Ft.
FROM -L- STA. 16+00 LT TO -L- STA. 16+75 LT
FROM -L- STA. 16+00 RT TO -L- STA. 16+85 RT
FROM -DR2- STA. 11+53 LT TO -DR2- STA. 12+00 LT
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PROJECT REFERENCE NO.	SHEET NO.
B-4604	4

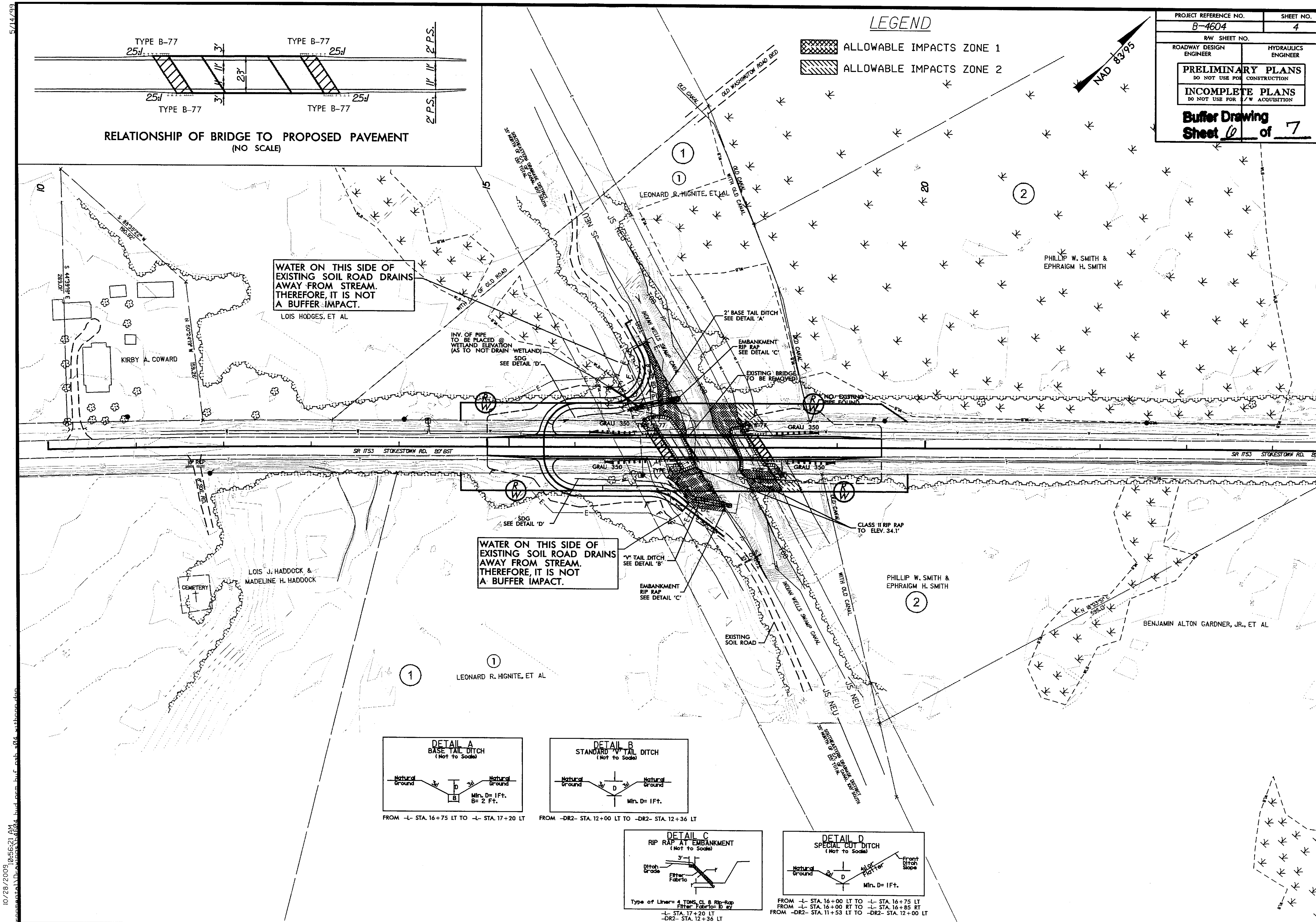
R/W SHEET NO.

ROADWAY DESIGN ENGINEER — HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Buffer Drawing Sheet 6 of 7



RELATIONSHIP OF BRIDGE TO PROPOSED PAVEMENT
(NO SCALE)
TYPE B-77
25:1
3'
11'
23'
2' P.S.
LEGEND
ALLOWABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 2
NAD 83/95
LEONARD R. HIGNITE, ET AL
PHILLIP W. SMITH &
EPHRAIGM H. SMITH
WATER ON THIS SIDE OF
EXISTING SOIL ROAD DRAINS
AWAY FROM STREAM.
THEREFORE, IT IS NOT
A BUFFER IMPACT.
LOIS HODGES, ET AL
KIRBY A. COWARD
INV. OF PIPE
TO BE PLACED @
WETLAND ELEVATION
(AS TO NOT DRAIN WETLAND)
SDG
SEE DETAIL 'D'
2' BASE TAIL DITCH
SEE DETAIL 'A'
EMBANKMENT
RIP RAP
SEE DETAIL 'C'
EXISTING BRIDGE
TO BE REMOVED
NO EXISTING
PIPE FOUND
GRAU 350
SR 1753 STOKESTOWN RD. 80' BST
CLASS II RIP RAP
TO ELEV. 34.1'
"V" TAIL DITCH
SEE DETAIL 'B'
INDIAN WELLS SWAMP CANAL
WITH OLD CANAL
OLD CANAL
OLD WASHINGTON ROAD BED
EXISTING
SOIL ROAD
LOIS J. HADDOCK &
MADELINE H. HADDOCK
CEMETERY
BENJAMIN ALTON GARDNER, JR., ET AL
DETAIL A
BASE TAIL DITCH
(Not to Scale)
Natural Ground
Min. D= 1Ft.
B= 2 Ft.
FROM -L- STA. 16+75 LT TO -L- STA. 17+20 LT
DETAIL B
STANDARD "V" TAIL DITCH
(Not to Scale)
Min. D= 1Ft.
FROM -DR2- STA. 12+00 LT TO -DR2- STA. 12+36 LT
DETAIL C
RIP RAP AT EMBANKMENT
(Not to Scale)
Ditch Grade
Filter Fabric
Type of Liner= 4 TONS, CL B Rip-Rap
Filter Fabric= 10 sy
-L- STA. 17+20 LT
-DR2- STA. 12+36 LT
DETAIL D
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground
Front Ditch Slope
Min. D= 1Ft.
FROM -L- STA. 16+00 LT TO -L- STA. 16+75 LT
FROM -L- STA. 16+00 RT TO -L- STA. 16+85 RT
FROM -DR2- STA. 11+53 LT TO -DR2- STA. 12+00 LT

5/14/99

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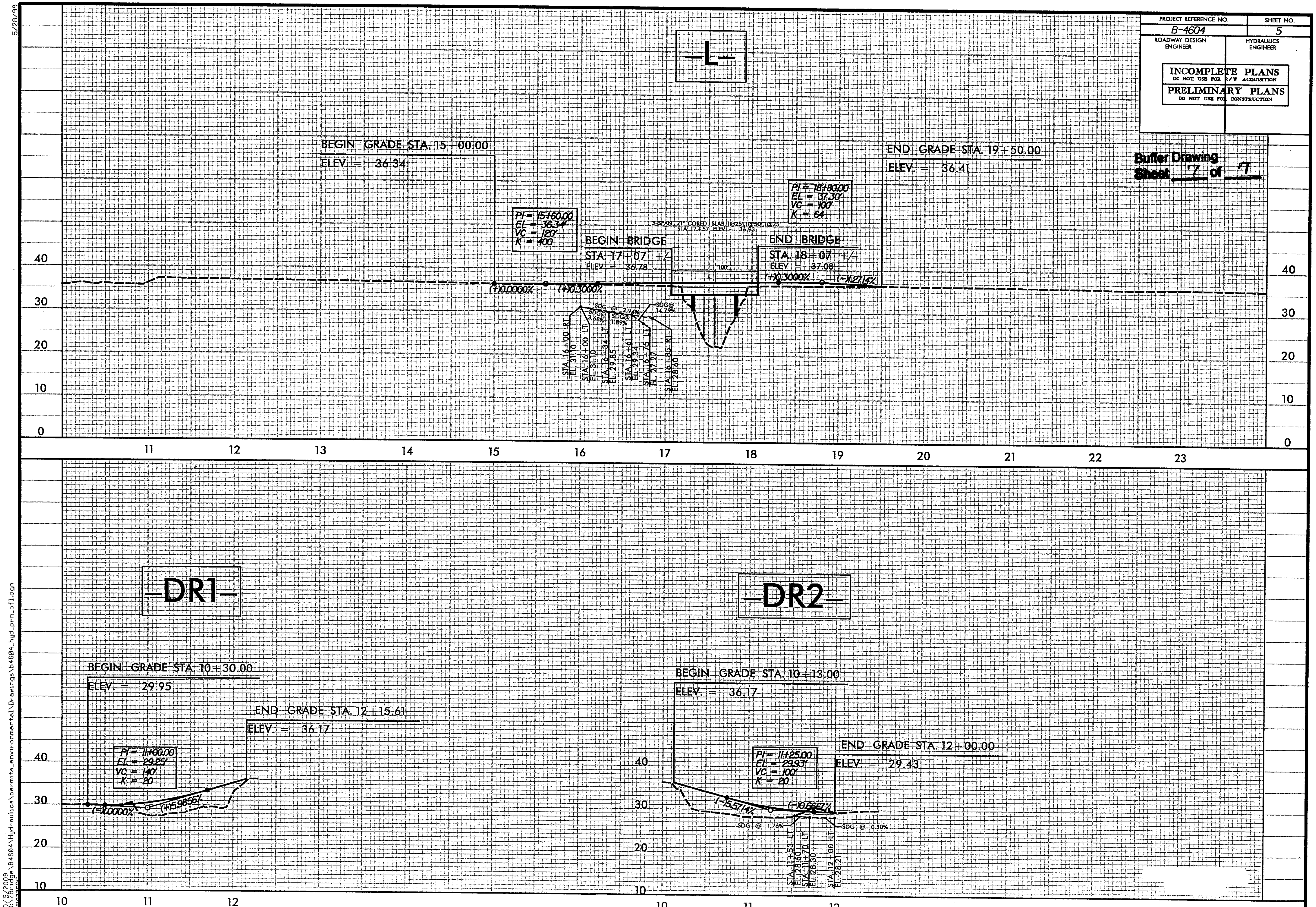
PROJECT REFERENCE NO.	SHEET NO.
B-4604	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Buffer Drawing
Sheet 7 of 7



5/28/99
-L-
BEGIN GRADE STA. 15+00.00
ELEV. = 36.34
END GRADE STA. 19+50.00
ELEV. = 36.41
PI = 15+60.00
EL = 36.34'
VC = 120'
K = 400
PI = 18+80.00
EL = 37.30'
VC = 100'
K = 64
3-SPAN 21" CORED SLAB 1@25',1@50',1@25'
STA. 17+57 ELEV. = 36.93
BEGIN BRIDGE
STA. 17+07 +/-
ELEV = 36.78
END BRIDGE
STA. 18+07 +/-
ELEV = 37.08
100'
(+)0.0000%
(+)0.3000%
(+)0.3000%
(-)1.2714%
SDG @ 2.94%
SDG@ 3.68%
SDG@ 1.89%
SDG@ 14.79%
STA. 16+00 RT
EL. 31.10
STA. 16+00 LT
EL. 31.10
STA. 16+34 LT
EL. 29.85
STA. 16+61 LT
EL. 29.34
STA. 16+75 LT
EL. 27.27
STA. 16+85 RT
EL. 28.60
0
10
20
30
40
11
12
13
14
15
16
17
18
19
20
21
22
23
-DR1-
BEGIN GRADE STA. 10+30.00
ELEV. = 29.95
END GRADE STA. 12+15.61
ELEV. = 36.17
PI = 11+00.00
EL = 29.25'
VC = 140'
K = 20
(-)1.0000%
(+)5.9856%
-DR2-
BEGIN GRADE STA. 10+13.00
ELEV. = 36.17
END GRADE STA. 12+00.00
ELEV. = 29.43
PI = 11+25.00
EL = 29.93'
VC = 100'
K = 20
(-)5.5714%
(-)0.6667%
SDG @ 1.76%
SDG @ 0.30%
STA. 11+53 LT
EL. 28.60
STA. 11+70 LT
EL. 28.30
STA. 12+00 LT
EL. 28.21
10
11
12
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09/08/99

TIP PROJECT: B-4604

CONTRACT:

See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

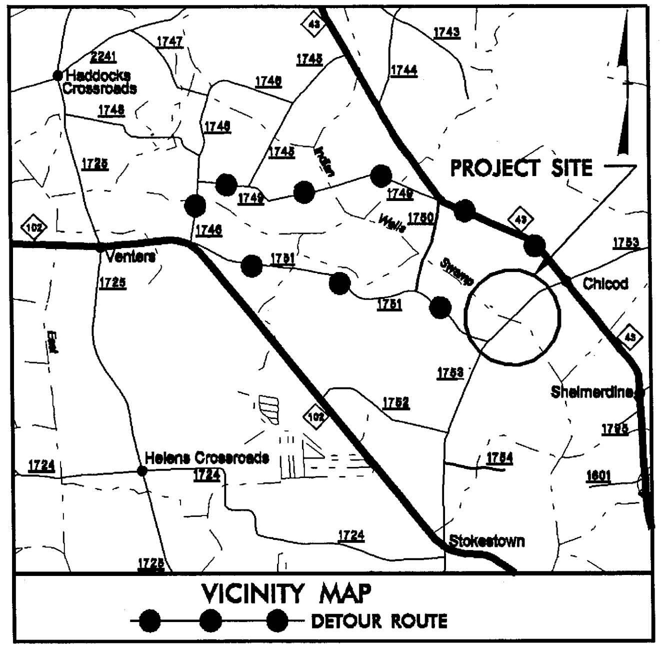
PITT COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4604	1	

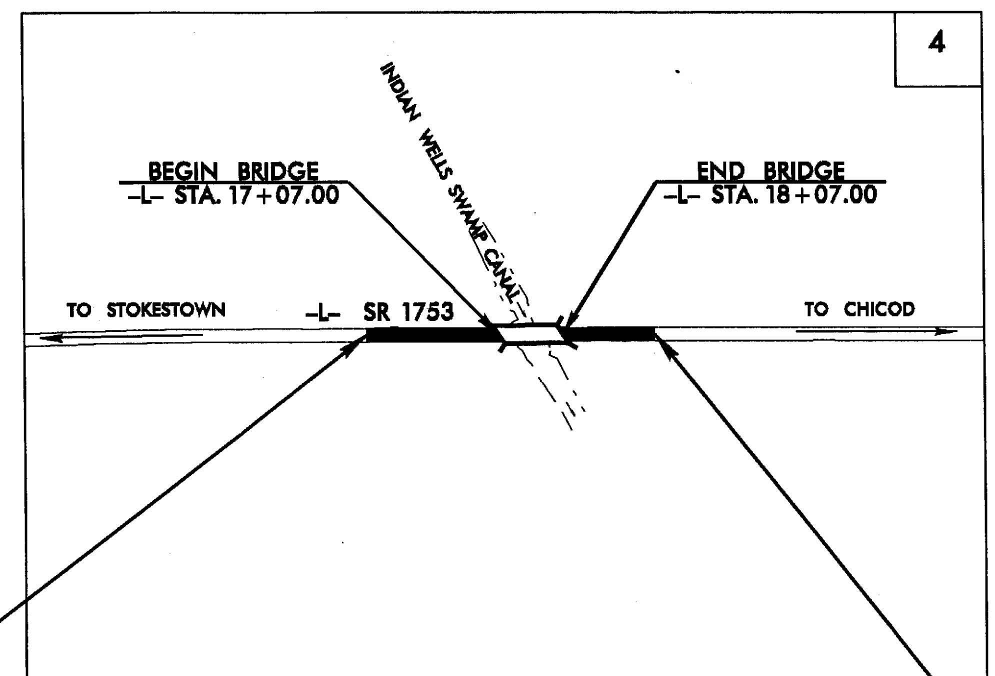
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33793.1.1	BRZ-1753(1)	PE
33793.2.1	BRZ-1753(1)	R/W, UTILITIES

LOCATION: BRIDGE NO. 13 ON SR 1753 OVER INDIAN WELLS SWAMP

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE



NAD 83/95



STA. 15+00.00 -L- BEGIN TIP PROJECT B-4604

STA. 19+50.00 -L- END TIP PROJECT B-4604

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

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2011 = 2004
ADT 2031 = 3263
DHV = 10 %
D = 60 %
T = 8 % *
V = 60 MPH
* TTST 4% DUAL 4%
FUNC. CLASS. = LOCAL RURAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4604	=	0.066 MILE
LENGTH STRUCTURE TIP PROJECT B-4604	=	0.019 MILE
TOTAL LENGTH TIP PROJECT B-4604	=	0.085 MILE

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 2, 2009

LETTING DATE:
MARCH 16, 2010

BRENDA MOORE, PE
PROJECT ENGINEER

REKHA PATEL, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

P.E.
STATE HIGHWAY DESIGN ENGINEER

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$$$$USERNAME$$$$

3/15/06

PROJECT REFERENCE NO.	SHEET NO.
B-4604	1-B

Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — EPM
- Parcel/Sequence Number — 23
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line
- Proposed Right of Way Line with Iron Pin and Cap Marker
- Proposed Right of Way Line with Concrete or Granite Marker
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Utility Easement — PUE

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Wheel Chair Ramp — WCR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

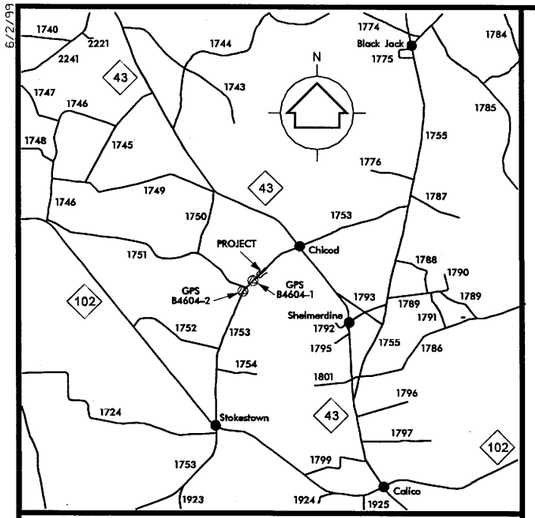
MISCELLANEOUS:

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

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-4604	1-C
Location and Surveys	

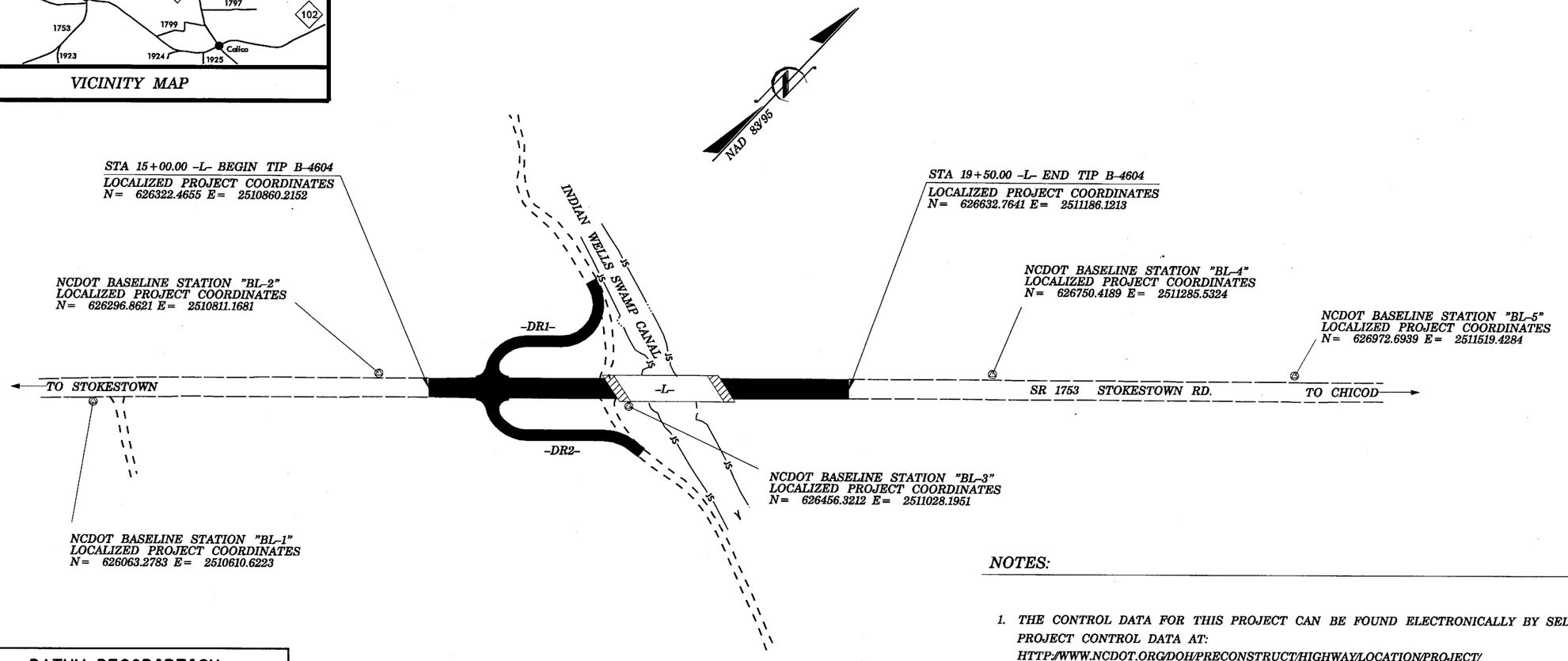
SURVEY CONTROL SHEET B-4604



VICINITY MAP

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1	BL-1	626063.2783	2510610.6223	35.98	11+40.31	14.41 RT
2	BL-2	626296.8621	2510811.1681	35.66	14+46.82	15.28 LT
3	BL-3	626456.3212	2511028.1951	34.97	17+13.96	18.89 RT
4	BL-4	626750.4189	2511285.5324	34.62	21+03.12	16.66 LT
5	BL-5	626972.6939	2511519.4284	34.42	24+25.70	17.51 LT



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS B4604-1" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 625944.204(ft) EASTING: 2510449.825(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99988301 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS B4604-1" TO -L- STATION 15+00.00 IS N 47°19'58.3" E 558.124 (ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

1. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
   HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   b4604_ls_control_081030.txt

   SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

◎ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

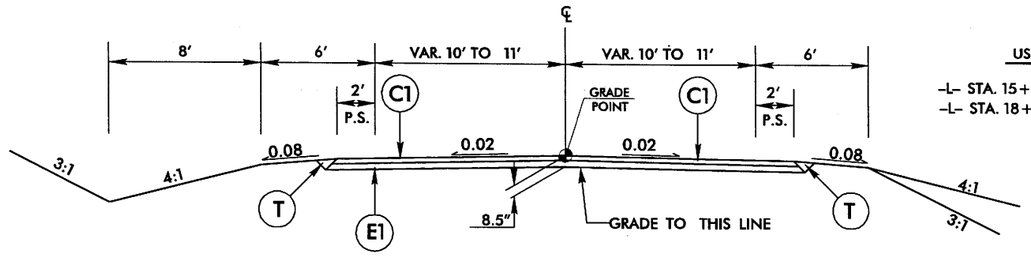
30-OCT-2009 08:22
R:\Roadway\Proj\b4604_ls_ic_081030.dgn
$$$$USERNAME$$$$

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-4604	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	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.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
J	PROP. 6" AGGREGATE BASE COURSE.
T	EARTH MATERIAL.

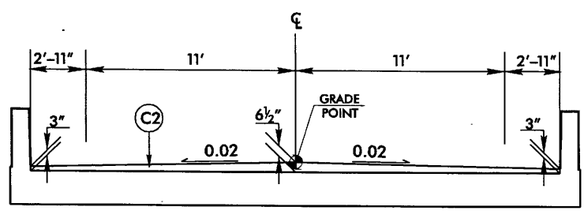
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

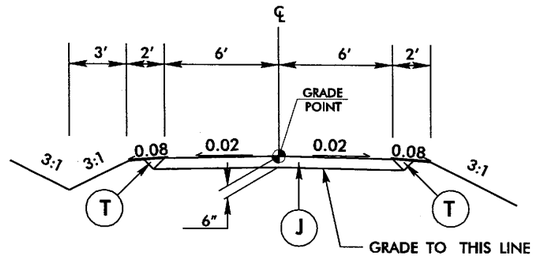
–L– STA. 15+00.00 TO STA. 17+07.00 (BRIDGE)
–L– STA. 18+07.00 (BRIDGE) TO STA. 19+50.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

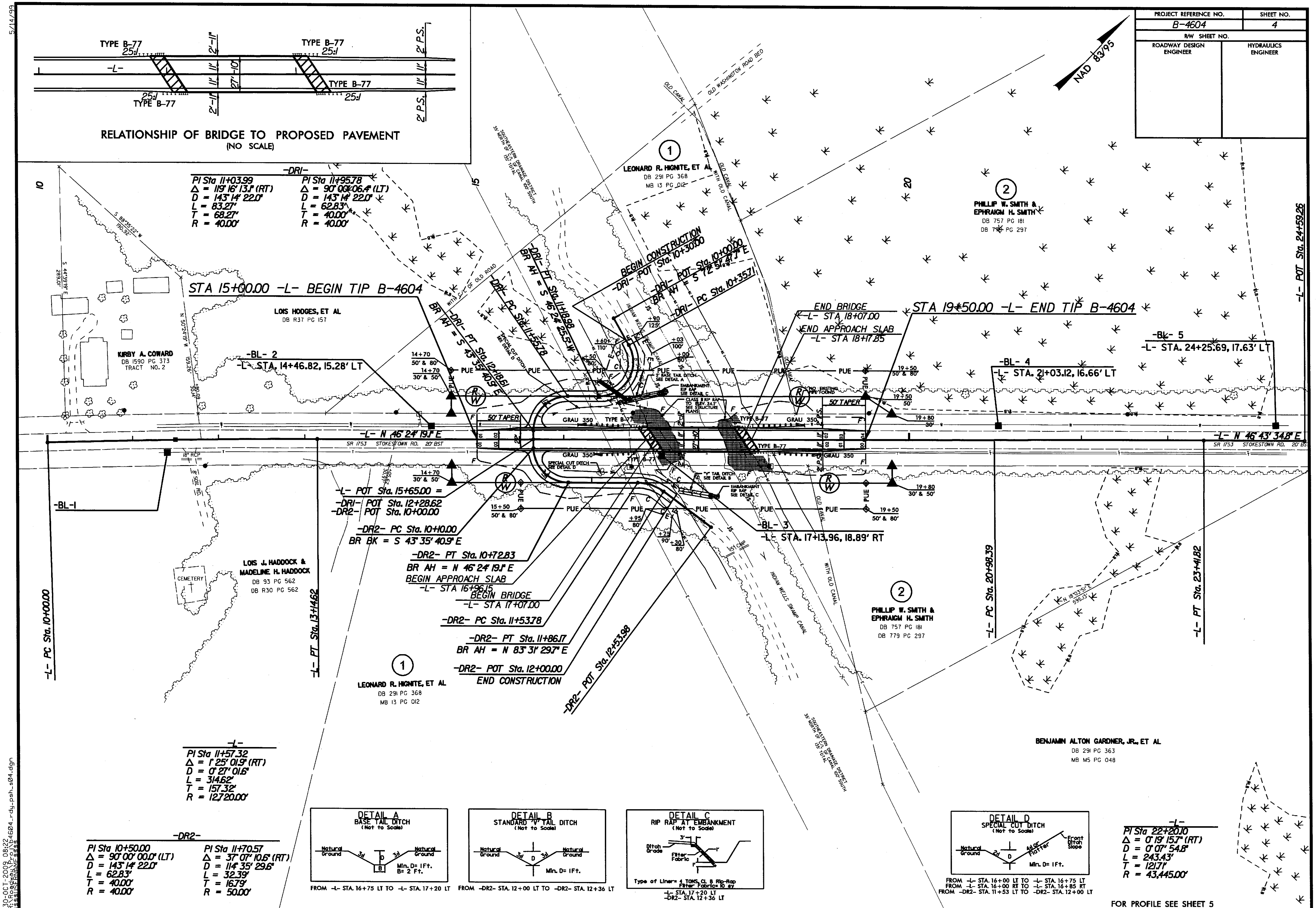
–L– STA. 17+07.00 (BRIDGE) TO STA. 18+07.00 (BRIDGE)



TYPICAL SECTION NO. 3

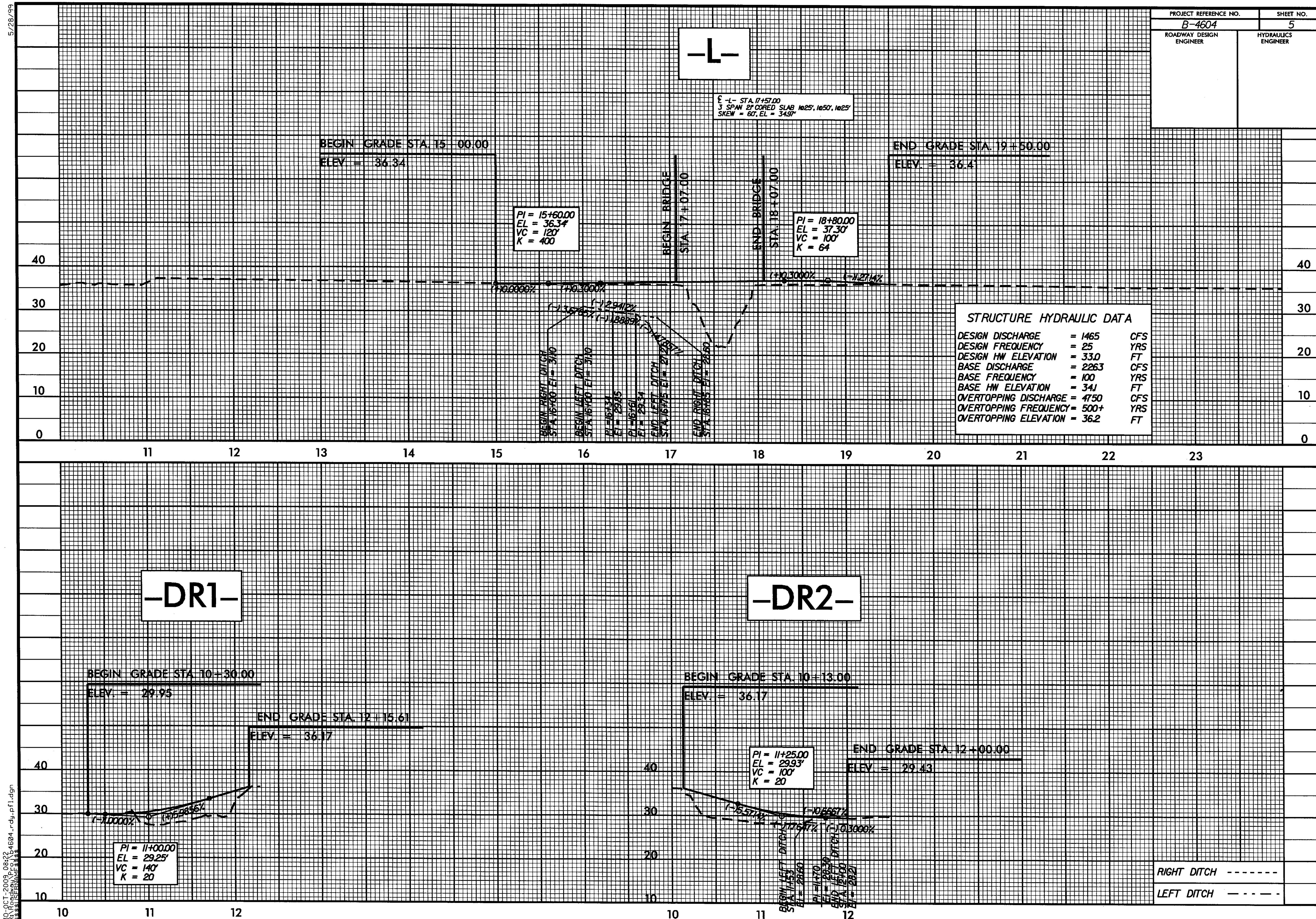
USE TYPICAL SECTION NO. 3

–DR1– STA. 11+00.00 TO STA. 12+15.61
–DR2– STA. 10+13.00 TO STA. 11+65.00



PROJECT REFERENCE NO. B-4604
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NAD 83/95
RELATIONSHIP OF BRIDGE TO PROPOSED PAVEMENT
(NO SCALE)
TYPE B-77
25:1
-L-
2'-11" 11' 11' 2'-11" 27'-10" 2' P.S.
-DR1-
PI Sta 11+03.99
Δ = 119° 16' 13.1" (RT)
D = 143° 14' 22.0"
L = 83.27'
T = 68.27'
R = 40.00'
PI Sta 11+95.78
Δ = 90° 00' 06.4" (LT)
D = 143° 14' 22.0"
L = 62.83'
T = 40.00'
R = 40.00'
STA 15+00.00 -L- BEGIN TIP B-4604
STA 19+50.00 -L- END TIP B-4604
BEGIN CONSTRUCTION -DR1- POT Sta. 10+30.00
-DR1- POT Sta. 10+00.00 BR AH = S 72° 51' 41.7" E
-DR1- PC Sta. 10+35.71
-DR1- PT Sta. 11+18.98 BR AH = S 46° 24' 25.5" W
-DR1- PC Sta. 11+55.78
-DR1- PT Sta. 12+18.61 BR AH = S 43° 35' 40.9" E
END BRIDGE -L- STA 18+07.00
END APPROACH SLAB -L- STA 18+17.85
-BL- 2 -L- STA. 14+46.82, 15.28' LT
-BL- 4 -L- STA. 21+03.12, 16.66' LT
-BL- 5 -L- STA. 24+25.69, 17.63' LT
-BL- 3 -L- STA. 17+13.96, 18.89' RT
-BL-1
-L- N 46° 24' 19.1" E
-L- N 46° 43' 34.8" E
SR 1753 STOKESTOWN RD. 20' BST
-L- POT Sta. 15+65.00 = -DR1- POT Sta. 12+28.62
-DR2- POT Sta. 10+00.00
-DR2- PC Sta. 10+10.00 BR BK = S 43° 35' 40.9" E
-DR2- PT Sta. 10+72.83 BR AH = N 46° 24' 19.1" E
BEGIN APPROACH SLAB -L- STA 16+96.15
BEGIN BRIDGE -L- STA 17+07.00
-DR2- PC Sta. 11+53.78
-DR2- PT Sta. 11+86.17 BR AH = N 83° 31' 29.7" E
-DR2- POT Sta. 12+00.00 END CONSTRUCTION
-DR2- POT Sta. 12+53.98
-L- PC Sta. 10+00.00
-L- PT Sta. 13+14.62
-L- PC Sta. 20+98.39
-L- PT Sta. 23+41.82
-L- POT Sta. 24+59.26
LEONARD R. HIGNITE, ET AL DB 291 PG 368 MB 13 PG 012
PHILLIP W. SMITH & EPHRAIGM H. SMITH DB 757 PG 181 DB 779 PG 297
LOIS HODGES, ET AL DB R37 PG 157
KIRBY A. COWARD DB 1590 PG 373 TRACT NO. 2
LOIS J. HADDOCK & MADELINE H. HADDOCK DB 93 PG 562 DB R30 PG 562
BENJAMIN ALTON GARDNER, JR., ET AL DB 291 PG 363 MB M5 PG 048
CEMETERY
INDIAN WELLS SWAMP CANAL
OLD CANAL
OLD WASHINGTON ROAD BED
-L-
PI Sta 11+57.32
Δ = 1° 25' 01.9" (RT)
D = 0° 27' 01.6"
L = 314.62'
T = 157.32'
R = 12,720.00'
-DR2-
PI Sta 10+50.00
Δ = 90° 00' 00.0" (LT)
D = 143° 14' 22.0"
L = 62.83'
T = 40.00'
R = 40.00'
PI Sta 11+70.57
Δ = 37° 07' 10.6" (RT)
D = 114° 35' 29.6"
L = 32.39'
T = 16.79'
R = 50.00'
-L-
PI Sta 22+20.10
Δ = 0° 19' 15.7" (RT)
D = 0° 07' 54.8"
L = 243.43'
T = 121.71'
R = 43,445.00'
DETAIL A BASE TAIL DITCH (Not to Scale)
Min. D= 1Ft. B= 2 Ft.
FROM -L- STA. 16+75 LT TO -L- STA. 17+20 LT
DETAIL B STANDARD 'V' TAIL DITCH (Not to Scale)
Min. D= 1Ft.
FROM -DR2- STA. 12+00 LT TO -DR2- STA. 12+36 LT
DETAIL C RIP RAP AT EMBANKMENT (Not to Scale)
Type of Liner= 4 TONS CL B Rip-Rap Filter Fabric= 10 sy
-L- STA. 17+20 LT -DR2- STA. 12+36 LT
DETAIL D SPECIAL CUT DITCH (Not to Scale)
Min. D= 1Ft.
FROM -L- STA. 16+00 LT TO -L- STA. 16+75 LT
FROM -L- STA. 16+00 RT TO -L- STA. 16+85 RT
FROM -DR2- STA. 11+53 LT TO -DR2- STA. 12+00 LT
FOR PROFILE SEE SHEET 5
5/14/99
30-OCT-2009 08:22

PROJECT REFERENCE NO.	SHEET NO.
B-4604	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



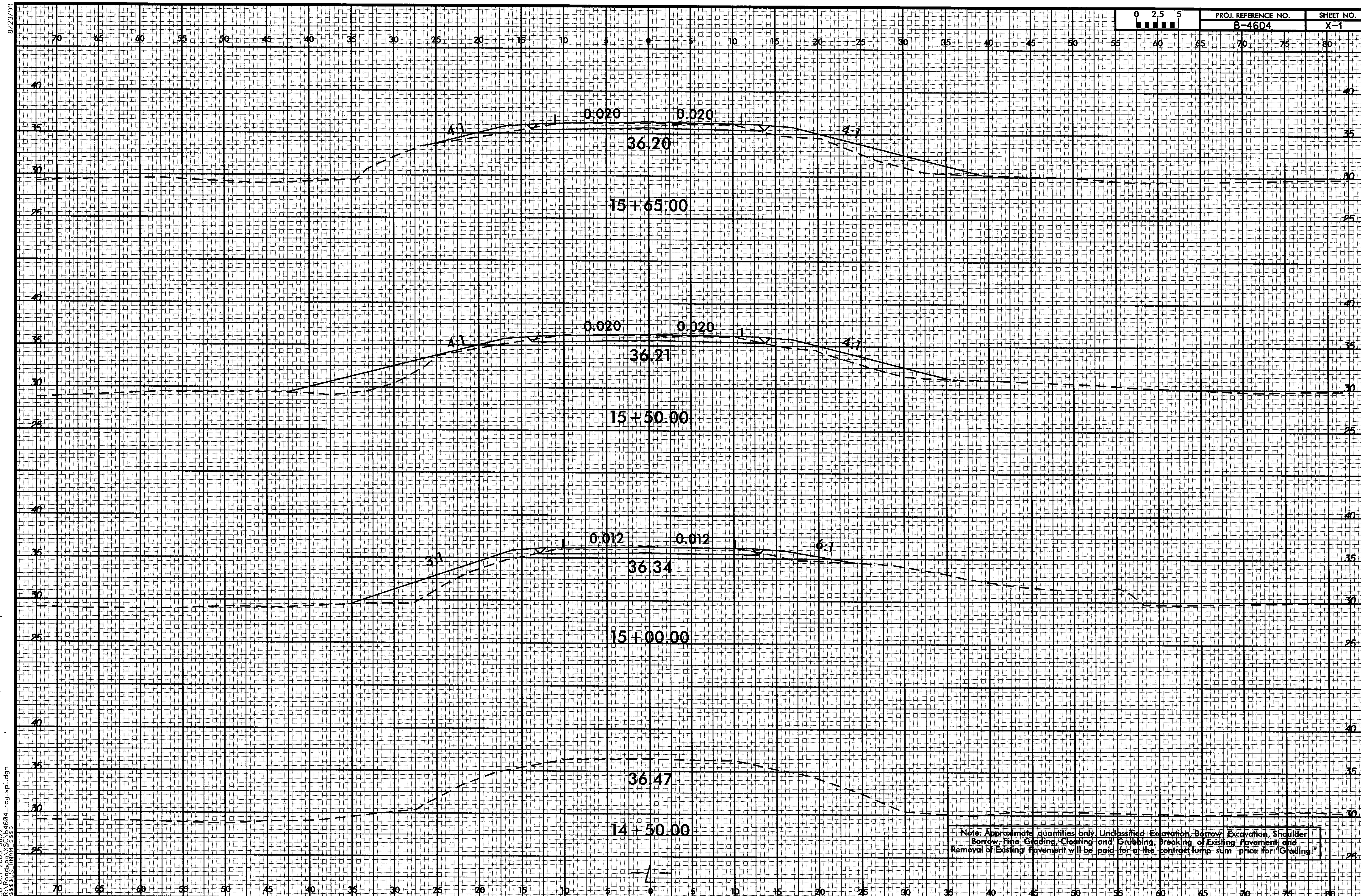
-L-
℄ -L- STA. 17+57.00
3 SPAN 21" CORED SLAB 1@25', 1@50', 1@25'
SKEW = 60°, EL = 34.97'
BEGIN GRADE STA. 15+00.00
ELEV = 36.34
END GRADE STA. 19+50.00
ELEV. = 36.4
PI = 15+60.00
EL = 36.34'
VC = 120'
K = 400
BEGIN BRIDGE STA. 17+07.00
END BRIDGE STA. 18+07.00
PI = 18+80.00
EL = 37.30'
VC = 100'
K = 64
(+)0.0000%
(+)0.3000%
(+)0.3000%
(-)1.2714%
(-)2.9412%
(-)1.8889%
BEGIN RIGHT DITCH STA. 16+00 El = 31.10
BEGIN LEFT DITCH STA. 16+00 El = 31.10
PI = 16+34 El = 29.85
PI = 16+61 El = 29.34
END LEFT DITCH STA. 16+75 El = 27.26
END RIGHT DITCH STA. 16+85 El = 28.60
-DR1-
BEGIN GRADE STA. 10+30.00
ELEV. = 29.95
END GRADE STA. 12+15.61
ELEV. = 36.17
PI = 11+00.00
EL = 29.25'
VC = 140'
K = 20
(-)1.0000%
-DR2-
BEGIN GRADE STA. 10+13.00
ELEV. = 36.17
END GRADE STA. 12+00.00
ELEV. = 29.43
PI = 11+25.00
EL = 29.93'
VC = 100'
K = 20
(-)5.5714%
(-)0.6667%
(-)0.3000%
BEGIN LEFT DITCH STA. 11+53 El = 28.60
PI = 11+70 El = 28.30
END LEFT DITCH STA. 12+00 El = 28.21
RIGHT DITCH
LEFT DITCH

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	=	1465	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	33.0	FT
BASE DISCHARGE	=	2263	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	34.1	FT
OVERTOPPING DISCHARGE	=	4750	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	36.2	FT

5/28/99

8/23/99


0 2.5 5
PROJ. REFERENCE NO.
B-4604
SHEET NO.
X-1
4:1
0.020
0.020
4:1
36.20
15+65.00
4:1
0.020
0.020
4:1
36.21
15+50.00
3:1
0.012
0.012
6:1
36.34
15+00.00
36.47
14+50.00
Note: Approximate quantities only. Unclassified Excavation, Borrow Excavation, Shoulder Borrow, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."
-4-

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PROJ. REFERENCE NO.	SHEET NO.
B-4604	X-2

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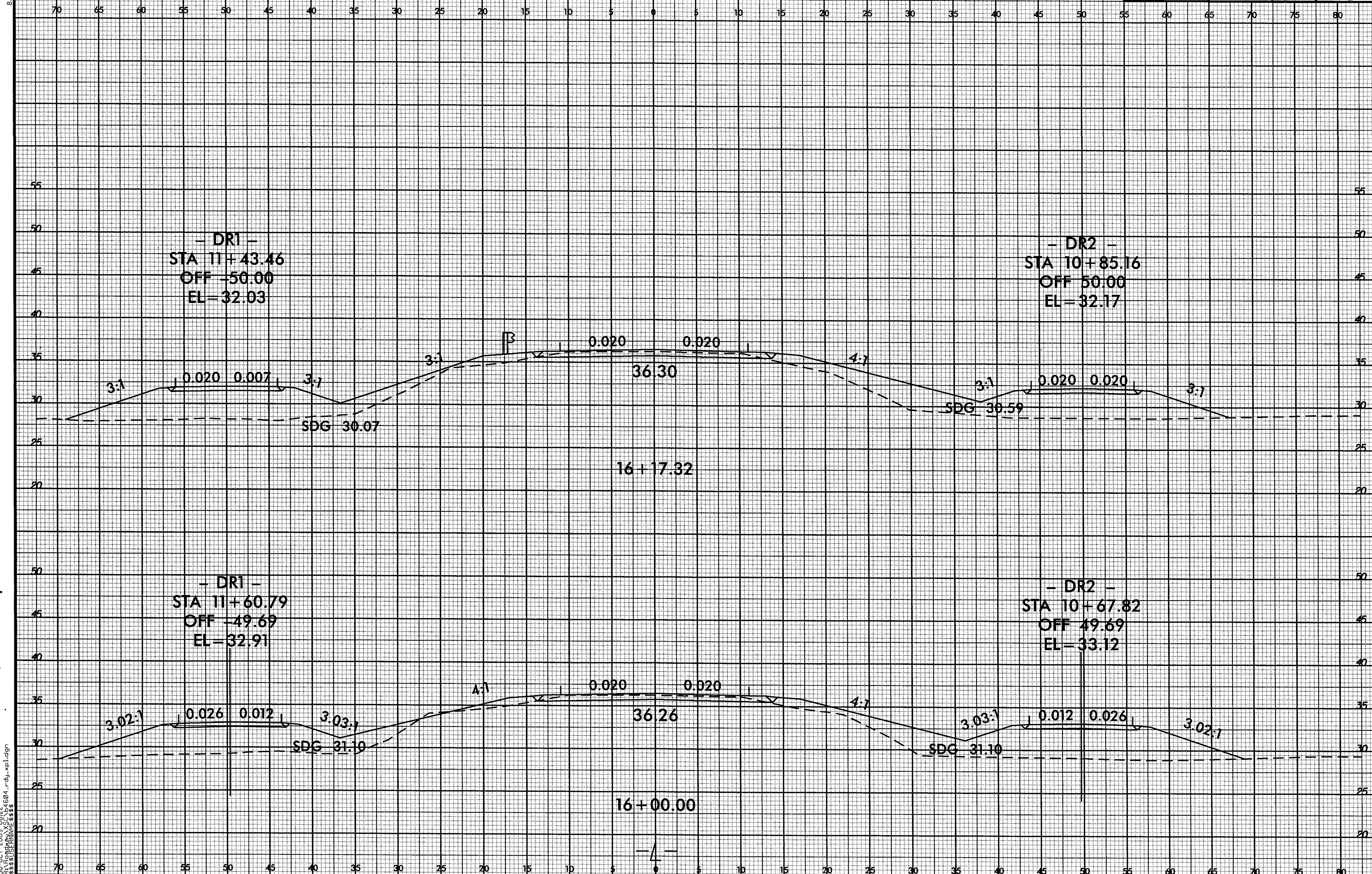

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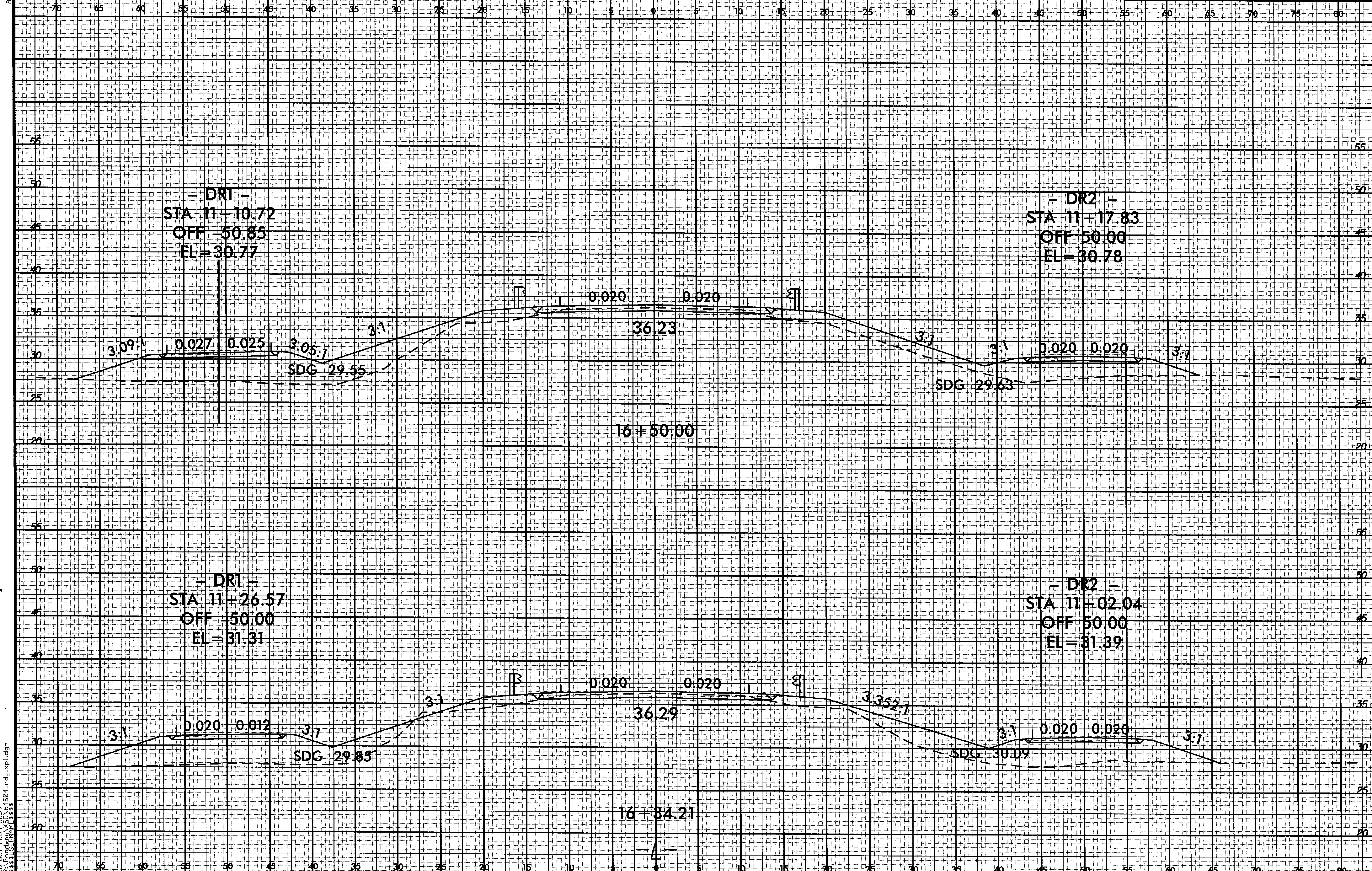
PROJ. REFERENCE NO.	SHEET NO.
B-4604	X-3



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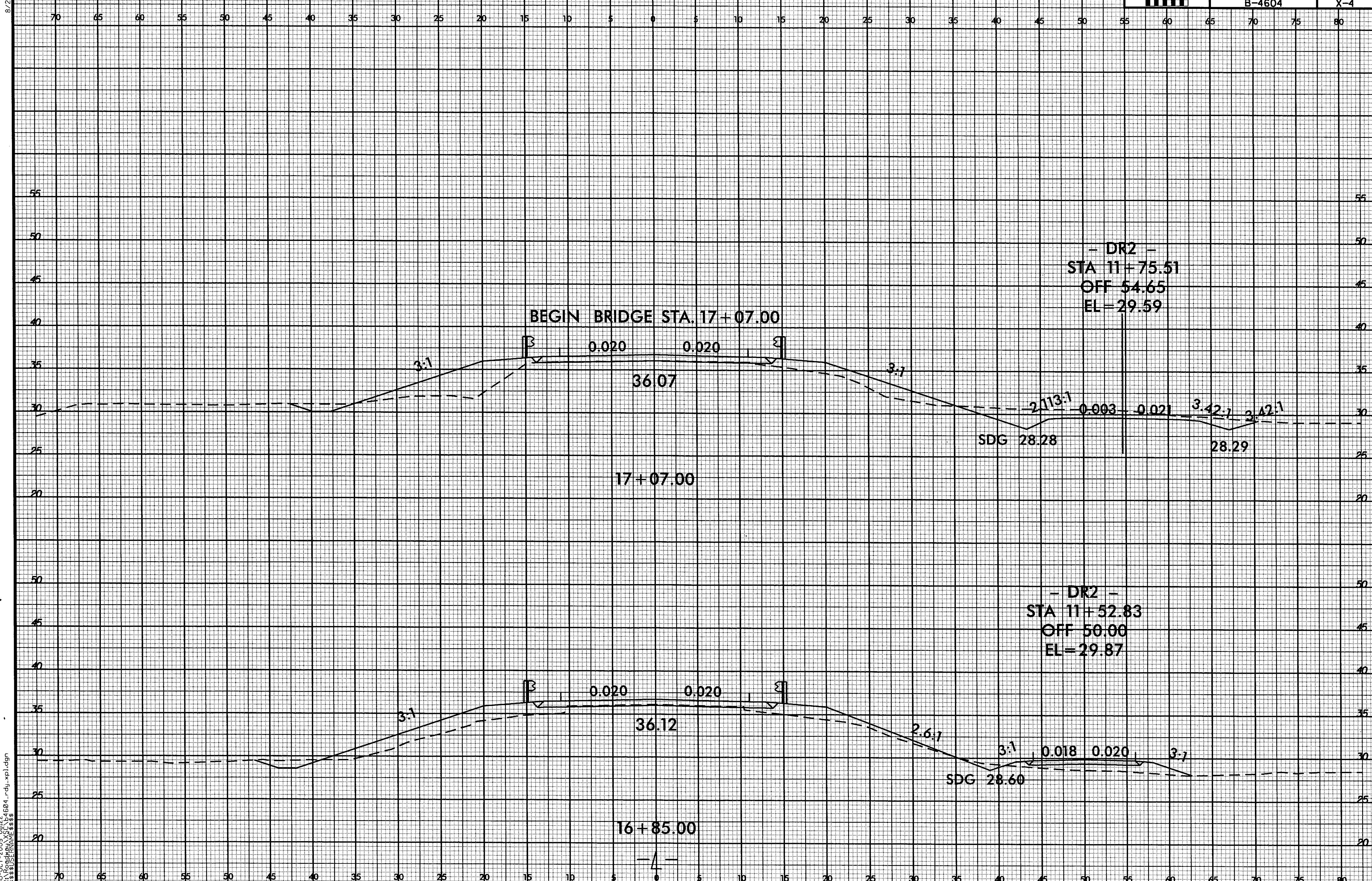
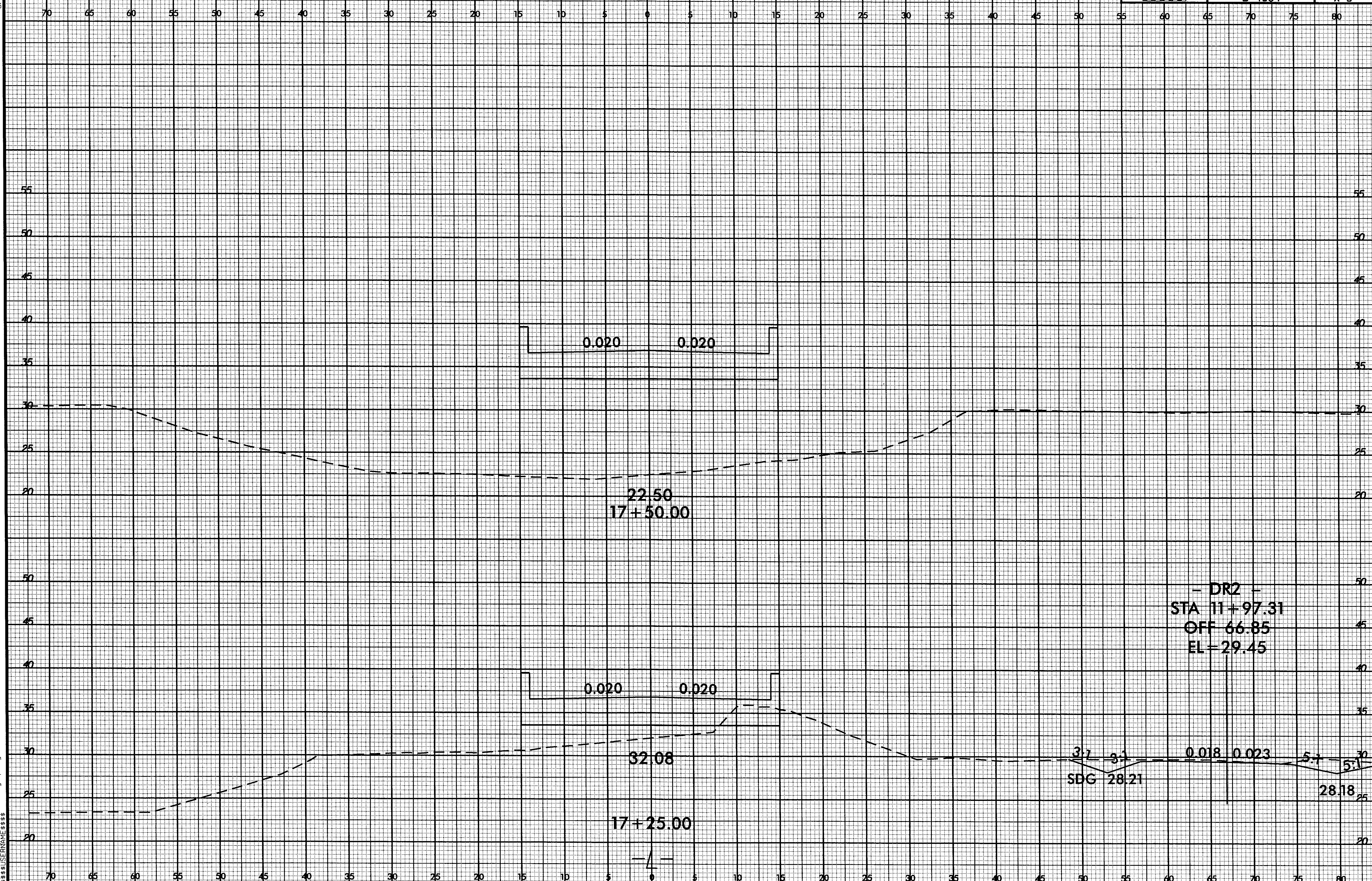
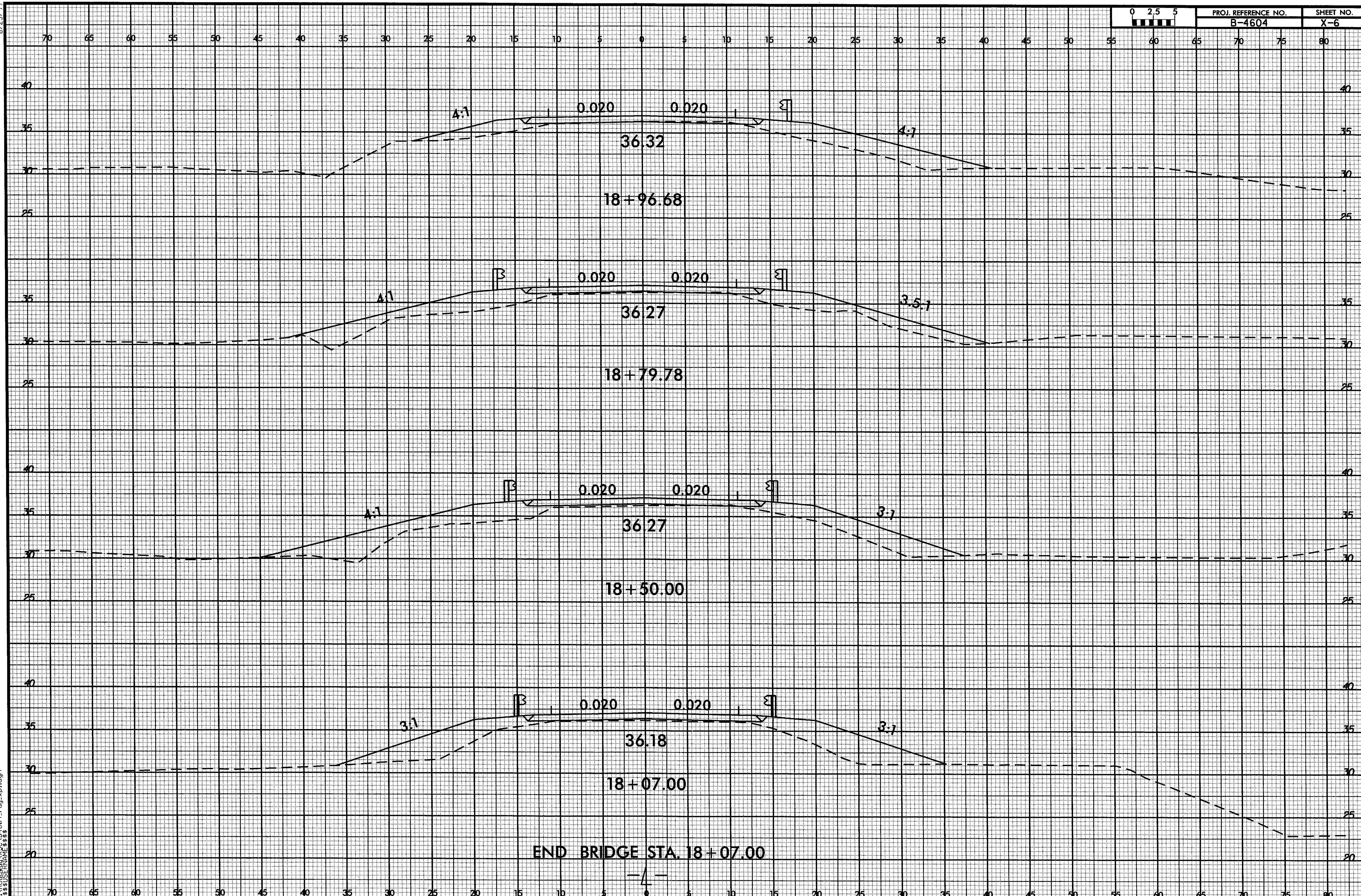
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4604	X-4



PROJ. REFERENCE NO.	SHEET NO.
B-4604	X-5



8/23/99



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8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4604	X-7

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80

40
35
30
25

36.20

21+00.00

35
30
25

36.29

20+50.00

40
35
30
25

36.29

20+00.00

40
35
30
25

5.2:1 0.040 0.000 4:1

36.41

19+50.00

—4—

70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80

30-OCT-2009 08:22
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