STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

October 5, 2012

U. S. Army Corps of Engineers
3331 Heritage Trade Drive
Wake Forest, NC 27587

ATTN: Mr. Andy Williams
NCDOT Coordinator

SUBJECT: **Application for Section 404 Nationwide Permits 13, 23, and 33, Section 401 Water Quality Certification, and Randleman Lake Riparian Buffer Authorization** for the proposed replacement of Bridge No. 77 over U.S. 29/U.S. 70/I-85 Business on SR 4053 (Surrett Drive), Guilford County, Division 7; Federal Aid Project No. BRZ-4053 (1), TIP No. B-4760.

Debit $240.00 from WBS Element 38532.1.1

REFERENCE: U.S. Army Corp of Engineers General Permit (Regional and Nationwide) Verification, Action ID No. SAW-2008-02204, issued January 20, 2012

N.C. Division of Water Quality Approval of 401 Water Quality Certification and Randleman Buffer Authorization with Additional Conditions, NCDWQ Project No. 20110971, issued December 22, 2011

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 77 over U.S. 29/U.S. 70/I-85 Business on SR 4053 (Surrett Drive). A U.S. Army Corps of Engineers (USACE) Nationwide Permit for permit nos. 13, 23, and 33 was initially issued for this project on January 20, 2012, while a N.C. Division of Water Quality (NCDWQ) water quality certification and buffer authorization was issued on December 22, 2011. However, both permits expired on March 18, 2012. Permitted work associated with the project cannot be completed in the time frame allotted by these permits; therefore, NCDOT is re-submitting its Section 404 and Section 401 permit application in order to obtain valid permits. The project let date was July17, 2012.

As stated in the original permit application, there will be 108 linear feet of permanent jurisdictional stream impacts, 14 linear feet of bank stabilization impacts, and 24 linear feet of temporary jurisdictional stream impacts to an Unnamed Tributary of Richland Creek.

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

TELEPHONE: 919-707-6000
FAX: 919-212-5785

WEBSITE: WWW.NCDOT.ORG

LOCATION:
CENTURY CENTER B
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610-4328

Please see enclosed copies of the Pre-Construction Notification (PCN), Notice of Jurisdictional Determination from the USACE, On-Site Determination for Applicability to the Randleman Buffer Rules and Mitigation Rules from NCDWQ, North Carolina Ecosystem Enhancement Program (EEP) Mitigation Acceptance Letter, Stormwater Management Plan, permit drawings, buffer drawings, and roadway design plans for the above-referenced project. These attachments were also provided with the initial permit application. The Programmatic Categorical Exclusion (PCE) was completed May 2011 and distributed shortly thereafter. Additional copies are available upon request.

A copy of this permit application will be posted on the NCDOT Website at: https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx. If you have any questions or need additional information, please contact Jim Mason at (919) 707-6136 or jsmason@ncdot.gov.

Sincerely,

Gregory J. Thorpe, Ph.D., Manager
Project Development and Environmental Analysis Unit

Cc: NCDOT Standard Permit Application Distribution List

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: 13 23 33 or General Permit (GP) number:		
1c. Has the NWP or GP number been verified by the Corps?	☒ Yes	☐ No

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

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

☐ 401 Water Quality Certification – Express ☒ Riparian Buffer Authorization

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

2. Project Information

2a. Name of project:	Replacement of Bridge No. 77 over U.S. 29/U.S. 70/I-85 Bus. on SR 4053 (Surrett Dr.)
2b. County:	Guilford
2c. Nearest municipality / town:	High Point
2d. Subdivision name:	*not applicable*
2e. NCDOT only, T.I.P. or state project no:	B-4760

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) 707-6136
3g. Fax no.:	(919) 212-5785
3h. Email address:	jsmason@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: 35.9300 (DD.DDDDDD)	Longitude: - 80.1431 (-DD.DDDDDD)
1c. Property size:	2.3 acres	
2. Surface Waters		
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Richland Creek	
2b. Water Quality Classification of nearest receiving water:	WS-IV	
2c. River basin:	Cape Fear	
3. Project Description		
3a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: The project area is mainly commercially developed with some areas being forested.		
3b. List the total estimated acreage of all existing wetlands on the property: 0		
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 222		
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 4-span,180-foot bridge with a 2-span,196-foot bridge to the east of the existing alignment with traffic remaining on existing structure during construction. Improvements to the new approaches will require the extension of a existing box culvert. 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:	☒ 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): NCDOT biologists, Sara Easterly and Ashley Cox	Agency/Consultant Company: Other:	
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. Final Jurisdictional Determination approved by Andy Williams, USACE, on July 28, 2008, expires July 28,2013. Action ID SAW -2008-02204		
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. A USACE Nationwide Permit for permit nos. 13, 23, and 33 (Action ID SAW-2008-02204) was initially issued for this project on January 20, 2012, while an NCDWQ water quality certification and buffer authorization (NCDWQ Project No. 20110971) was issued on December 22, 2011. However, both permits expired on March 18, 2012. Permitted work associated with the project cannot be completed in the time frame allotted by these permits; therefore, NCDOT is re-submitting its Section 404 and Section 401 permit application in order to obtain valid permits.		

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			☐ Yes ☐ No	☐ Corps ☐ DWQ	
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	
Site 6 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
				2g. **Total wetland impacts**	0 Permanent 0 Temporary

2h. Comments:

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	UT of Richland Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	108 Perm 24 temp
Site 2 ☒ P ☐ T	Bank Stabilization	UT of Richland Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	4	14 Perm
Site 3 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 4 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 5 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 6 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
					3h. **Total stream and tributary impacts**	122 Perm 24 Temp

3i. Comments:

4. Open Water Impacts

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

4a. Open water impact number – Permanent (P) or Temporary (T)	4b. Name of waterbody (if applicable)	4c. Type of impact	4d. Waterbody type	4e. Area of impact (acres)
O1 ☐ P ☐ T				
O2 ☐ P ☐ T				
O3 ☐ P ☐ T				
O4 ☐ P ☐ T				
			4f. Total open water impacts	0 Permanent 0 Temporary

4g. Comments:

5. Pond or Lake Construction

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

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

5g. Comments:

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

6. Buffer Impacts (for DWQ)

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

6a. Project is in which protected basin?			☐ Neuse ☐ Catawba	☐ Tar-Pamlico ☒ Randleman	☐ Other:
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
B1 ☒ P ☐ T	Road Crossing	UT of Richland Creek	☒ Yes ☐ No	8,236	5,400
B2 ☐ P ☐ T			☐ Yes ☐ No		
B3 ☐ P ☐ T			☐ Yes ☐ No		
			6h. **Total buffer impacts**	8,236	5,400
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 16 feet longer than the existing bridge; traffic will be maintained on the existing structure during construction; roadway runoff is being treated using a grass swale before discharge through buffers.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. Best Management Practices will be in place during construction. Design Standards in Sensitive Watersheds will be used.		
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: NCDOT proposes 2:1 mitigation for the 108 feet of permanent stream fill and no mitigation for the bank stabilization	
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:	216 linear feet	
4c. If using stream mitigation, stream temperature:	☒ warm ☐ cool ☐ cold	
4d. Buffer mitigation requested (DWQ only):	32,808 square feet	
4e. Riparian wetland mitigation requested:	0 acres	
4f. Non-riparian wetland mitigation requested:	0 acres	
4g. Coastal (tidal) wetland mitigation requested:	0 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 impacts greater than 150 ft	8,236	3 (2 for Catawba)	24,708
Zone 2	Road Crossing impacts greater than 150 ft	5,400	1.5	8,100
		6f. **Total buffer mitigation required:**		32,808
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). Mitigation to EEP				
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 not, explain why. Comments: see attached buffer 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.	
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 N/A
5b. Have all of the 401 Unit submittal requirements been met?	☐ Yes ☐ No N/A

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? Survey for small whorled pogonia completed in May 2008. Note from Gary Jordan from USFWS to NCDOT biologist states that survey is valid until 2013.		
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	Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	10/5/12 Date

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. SAW-2008-02204 County: Guilford U.S.G.S. Quad: High Point West

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner/Agent: North Carolina Department of Transportation--Attn: Deanna Riffey
Address: Project Development and Environmental Analysis, Natural Environment Unit
1598 Mail Service Center
Raleigh, North Carolina 27699-1598
Telephone No.: 919-715-1334

Property description:
Size (acres) 18 acres (approximately) Nearest Town High Point
Nearest Waterway Richland Creek River Basin Deep River
USGS HUC 03030003 Coordinates N 35.9301 W -80.0002
Location description NCDOT right-of-way and immediate vicinity at the Surrett Drive, US29/US70/I-85 Business intersection in Guilford County, North Carolina. Jurisdictional Waters include one unamed tributary to Richland Creek labeled SA and one contiguous wetland area labeled as WA on the maps received on June 2, 2008.

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.

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 Andrew Williams at 919-554-4884 ext. 26.

C. Basis For Determination

The unnamed tributary (SA) is a relatively permanent water (RPW) and a tributary to Richland Creek, an RPW. Richland Creek flows to the Deep River, a traditionally navigable water (TNW). The Deep River flows to the Cape Fear River, a navigable water of the United States. The Ordinary High Water Mark (OHWM) of the unnamed tributary was indicated by the following physical characteristics: clear natural line impressed on the bank, shelving, and the destruction of terrestrial vegetation. The wetlands meet the hydrophytic vegetation, wetland hydrology, and hydric soil criteria of the 1987 Corps of Engineers Wetland Delineation Manual and are contiguous with the unnamed tributary to Richland Creek.

D. Remarks

Compensatory Mitigation ratio for the stream labeled as SA is 2:1. Features SB and SC were determined to be non-jurisdictional features caused by erosion.

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 following address:

District Engineer, Wilmington Regulatory Division
Attn:Andrew Williams, Project Manager,
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587

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 District 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 September 25, 2008.

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

Corps Regulatory Official: Andrew Williams

Date July 28, 2008 Expiration Date July 28, 2013

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at our website at http://regulatory.usacesurvey.com/ to complete the survey online.

Copy furnished:
Amy Euliss
NC DENR Winston-Salem Regional Office
Division of Water Quality
585 Waughtown Street
Winston-Salem, NC 27107

Michael F. Easley, Governor

William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

Coleen H. Sullins, Director
Division of Water Quality

August 5, 2008

Easterly

Ms. Deanna Riffey
North Carolina Department of Transportation
Natural Environment Unit
1598 Mail Service Center
Raleigh, NC 27699-1598

Subject: NCDOT TIP # B-4760, Guilford County
UTs to Richland Creek [Cape Fear, 17-7-(0.5) WSIV, *] and a wetland.

On-Site Determination for Applicability to the Randleman Buffer Rules (15A NCAC 2B .0251)
On-Site Determination for Applicability to the Mitigation Rules (15A NCAC 2H .0506(h)

Dear Ms. Riffey:

On July 24, 2008 at your request and in your attendance, Andy Williams, USACOE, and Amy Euliss, Division of Water Quality (DWQ) staff, conducted an on-site determination to review drainage features located in the B-4760 project corridor for applicability to the mitigation rules (15A NCAC 2H .0506(h)) and to the Randleman Buffer Rules (15A NCAC 2B .0251). The drainage features are approximated on the attached map initialed and dated August 5, 2008.

Feature ID	Stream/ Wetland Name	Site Visited	Stream/Wetland Type	Buffers
1	UT 1 to Richland Creek	Yes	Perennial	Yes
2	UT 2 to Richland Creek	Yes	Natural Ephemeral	No
3	UT 3 to Richland Creek	Yes	Natural Ephemeral	No
4	Wetland A	No	Wetland	No

Please note that the wetland site was not visited, but was confirmed by the USACOE during the site visit.

This letter only addresses the applicability to the mitigation rules and the buffer rules and does not approve any activity within the buffer, Waters of the United States, or Waters of the State. Any impacts to wetlands, streams and buffers must comply with the 404/401 regulations, water supply regulations (15A NCAC 2B .0216), and any other required federal, state and local regulations.

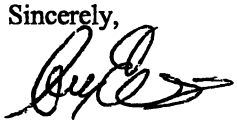
The owner (or future owners) or permittee should notify the DWQ (and other relevant agencies) of this decision in any future correspondences concerning this property and/or project. This on-site determination shall expire five (5) years from the date of this letter.

Landowners or affected parties that dispute a determination made by the DWQ or Delegated Local Authority that a

surface water exists and that it is subject to the mitigation rules may request a determination by the Director. A request for a determination by the Director shall be referred to the Director in writing c/o Brian Wrenn, DWQ Wetlands/401 Unit, 1650 Mail Service Center, Raleigh, NC 27699-1650. Individuals that dispute a determination by the DWQ or Delegated Local Authority that "exempts" a surface water from the mitigation rules may ask for an adjudicatory hearing. You must act within 60 days of the date that you receive this letter. Applicants are hereby notified that the 60-day statutory appeal time does not start until the affected party (including downstream and adjacent landowners) is notified of this decision. DWQ recommends that the applicant conduct this notification in order to be certain that third party appeals are made in a timely manner. To ask for a hearing, send a written petition, which conforms to Chapter 150B of the North Carolina General Statutes to the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699-6714. This determination is final and binding unless you ask for a hearing within 60 days.

If you have any additional questions or require additional information please call Amy Euliss at 336-771-4959 or at amy.euliss@ncmail.net.

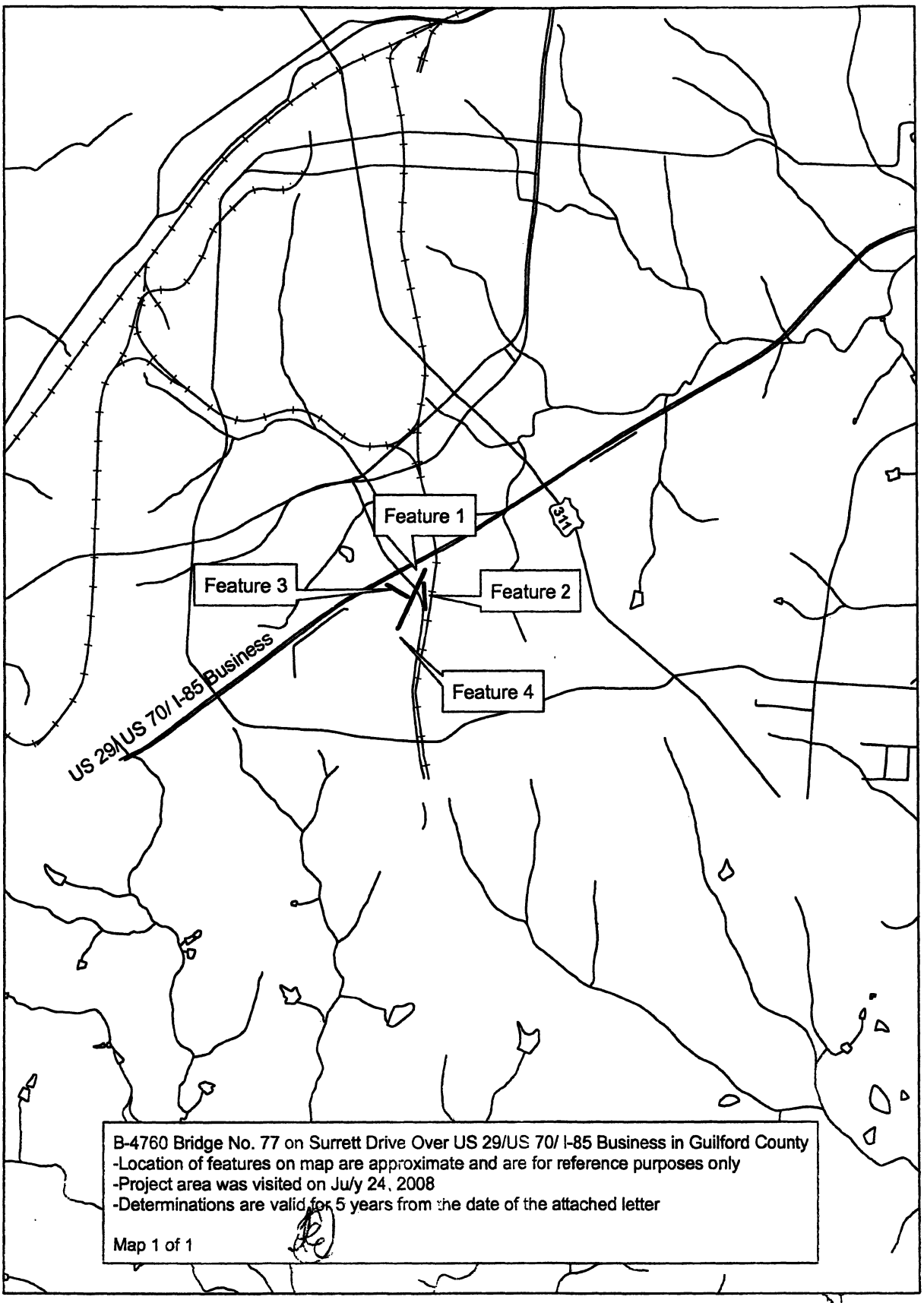
Sincerely,



Amy Euliss

Attachments: Signed Location Map

cc: Andy Williams, US Army Corps of Engineers – Raleigh Regulatory Field Office
DWQ Wetlands 401 Transportation Unit
DWQ Winston-Salem Regional Office File Copy


Feature 1
Feature 2
Feature 3
Feature 4
311
US 29/US 70/ I-85 Business
B-4760 Bridge No. 77 on Surrett Drive Over US 29/US 70/ I-85 Business in Guilford County
-Location of features on map are approximate and are for reference purposes only
-Project area was visited on Ju/y 24, 2008
-Determinations are valid for 5 years from the date of the attached letter
Map 1 of 1
N
0
0.3
0.6
1.2 Miles

Ecosystem Enhancement PROGRAM

October 25, 2011

Mr. Gregory J. Thorpe, Ph.D.
Environmental Management Director
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

B-4760, Replace Bridge Number 77 over US 29 / US 70 / I-85 Business on SR 4053 (Surrett Drive), Guilford County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the stream mitigation and buffer mitigation for the subject project. Based on the information supplied by you on October 19, 2011, the stream impacts are located in CU 03030003 of the Cape Fear River basin in the Central Piedmont (CP) Eco-Region, and are as follows:

Stream and Wetlands	River Basin	CU Location	Eco-Region	Stream			Wetlands		
				Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh
Impacts	Cape Fear	03030003	CP	0	0	108	0	0	0

All buffer mitigation requests and approvals are administrated through the Riparian Restoration Buffer Fund. The NCDOT will be responsible to ensure that appropriate compensation for the additional buffer mitigation will be provided in the agreed upon method of fund transfer. Upon receipt of the NCDWQ's Buffer Authorization Certification, EEP will transfer funds from MOA Fund into the Riparian Restoration Buffer Fund. Upon completion of transfer payment, NCDOT will have completed its additional riparian buffer mitigation responsibility for B-4760. Subsequently, EEP will conduct a review of current MOA mitigation projects in the river basin to determine if available buffer mitigation credits exist. If there are buffer mitigation credits available, then the Riparian Restoration Buffer Fund will purchase the appropriate amount of buffer mitigation credits from MOA Fund. The buffer impacts and anticipated buffer mitigation credits needed are as follows:

Buffer	River Basin	CU Location	Eco-Region	Buffer		
				Zone 1	Zone 2	TOTAL
Impacts	Cape Fear	03030003	CP	8,236	5,400	13,636

EEP commits to implementing sufficient compensatory stream mitigation credits to offset the impacts associated with this project in accordance with the N.C. Department of Environment and Natural Resources' Ecosystem Enhancement Program In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

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

Sincerely,

James B. Stanfill for

Michael Ellison
EEP Deputy Director

Cc: Mr. Andy Williams, USACE – Raleigh Regulatory Field Office
Mr. Brian Wrenn, NC Division of Water Quality
File: B-4760

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR LINEAR ROADWAY PROJECTS

(Version 1.2, Released August 2011)

Project/TIP No.: B-4760	County(ies): Guilford	Page 1 of 5

General Project Information

Project No.:	B-4760		**Project Type:**	Bridge Replacement		**Date:**	8/4/2011
NCDOT Contact:			**Contractor / Designer:**				
	Address:			**Address:**			
	Phone:			**Phone:**			
	Email:			**Email:**			
City/Town:			**County(ies):**	Guilford			
River Basin(s):			**CAMA County?**	No			
Primary Receiving Water:	Richland Creek		**NCDWQ Stream Index No.:**	17-7-(0.5)			
NCDWQ Surface Water Classification for Primary Receiving Water		**Primary:**	Water Supply IV (WS-IV)				
		Supplemental:					
Other Stream Classification:	None						
303(d) Impairments:	biological impairment	fecal coliform					
Buffer Rules in Effect	Randleman Lake						

Project Description

Project Length (lin. miles/feet):	0.388 miles		**Total Project Area (ac):**	approx. 6 acres
Surrounding Land Use:	Interstate and Industrial - Highly Urbanized			
	Proposed Project		**Existing Site**	
Project Built-Upon Area (ac.)	2.25	ac.	1.35	ac.
Typical Cross Section Description:	3 lane section with curb and gutter on one side and 8 ft. paved shoulder on the opposite side		2 lane section with grassed shoulders	
Average Daily Traffic (veh/hr/day):	Design/Future:	17,600 (2035)	Existing:	12,500 (2012)
General Project Narrative:	Replace Bridge No. 77 over US 29/US 70/I-85 Bus. On Surrett Dr. (SR 4053) in High Point. This bridge is at a grade separation. The stream impact is due to the extension (105 ft. +/-) of an existing 5' X 6' RCBC with a 5'X7' RCBC with the invert buried one foot. The roadway runoff is being treated using a grassed swale before being discharge through the buffer.			

References

North Carolina Department of Transportation
Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR LINEAR ROADWAY PROJECTS

(Version 1.2, Released August 2011)

Project/TIP No.: B-4760 County(ies): Guilford

Project Environmental Summary

Surface Water Impacts

Sheet No.	Station (From / To)	Northing / Easting	Feature Impacted	Water / Wetland / Buffer Type	Receiving Surface Water Name	NRTR Map ID	NCDWQ Stream Index	NCDWQ Surface Water Classification	303(d) Impairments	Type of Impact	Existing SCM	Proposed SCM
5	25+50 -L-		Stream	Perennial	UT to Richland Cr.	SA	17-7-(0.5)	WS-IV	biological impairment	Culvert		Swale

* List all stream and surface water impact locations regardless of jurisdiction or size.
Equalizer Pipes to be noted as a minimization of impacts.
All proposed SCMs listed must also be listed under Swales, Preformed Sour Holes and other Energy Dissipators, or Other Stormwater Control Measures.

Description of Minimization of Impacts or Mitigation

References

North Carolina Department of Transportation
Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR LINEAR ROADWAY PROJECTS

(Version 1.2: Released August 2011)

Project/TIP No.: B-4760 County(ies): Guilford

Swales

Sheet No.	Station (From / To)	Downstream Northing / Easting	Stream Crossing Station	Base Width (ft)	Front Slope (H:V)	Back Slope (H:V)	Drainage Area (ac)	Recommended Treatment Length (ft)	Actual Length (ft)	Longitudinal Slope (%)	Q2 (cfs)	V2 (fps)	Q10 (cfs)	V10 (fps)	Rock Checks Used
5	25+50 -L- 26+40 -L-		25+50 -L-	2.0	3.0	3.0	1.64	164	225	0.40%	6.0	1.5	7.0	1.6	No
5	27+10 -L- 28+00 -L-		25+50 -L-	2.0	3.00	3.0	1.43	143		1.00%	5.0	2.0	6.4	2.2	No
								0							
								0							
								0							
								0							
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								0							
								0							

☑ YES ☐ NO Have minimum design criteria, as presented in the NCDOT Best Management Practices Toolbox, Version 1 (March 2008), been met and verified? If No, provide further explanantion of why design criteria was not met.

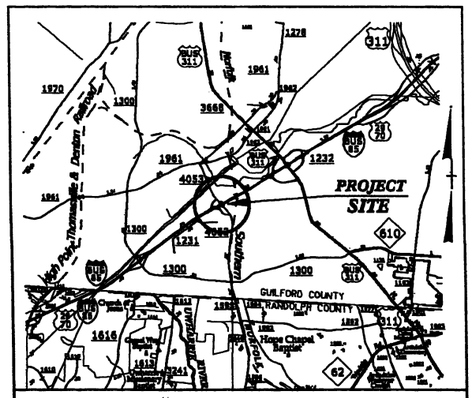
Additional Comments

Swale #2 flows into Swale #1 with a total length of 225 ft. for 1.64 Ac. Of drainage area.

09/08/99

TIP PROJECT: B-4760

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GUILFORD COUNTY

LOCATION: REPLACEMENT OF BRIDGE 77 ON SR 4053
OVER US 29 /US 70 /I-85 BUS

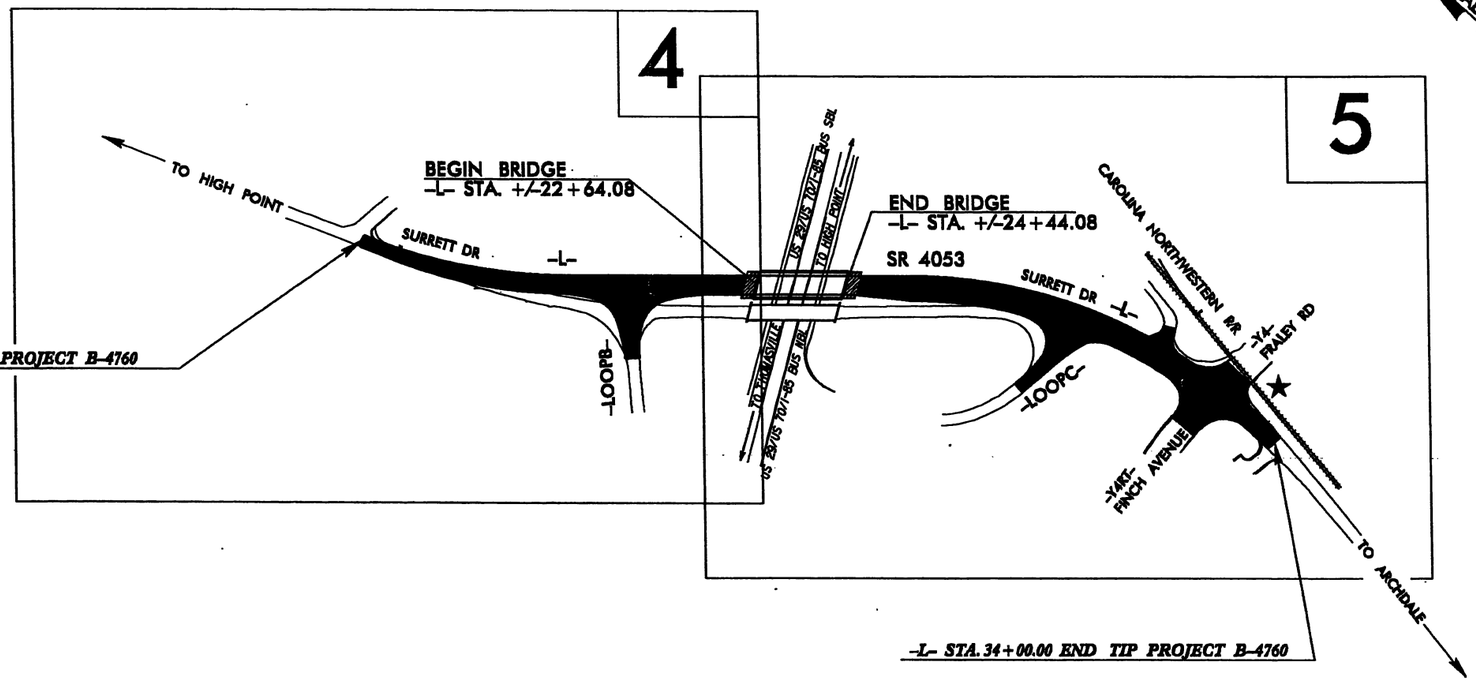
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE
AND SIGNAL

WETLAND AND STREAM IMPACTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4760	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
38532.1.1	BRZ-4053(1)	PE
38532.2.1	BRZ-4053(1)	R/W & UTIL.

Permit Drawing
Sheet 1 of 7



★ ***TRAFFIC SIGNAL***

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARY OF HIGH POINT

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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 2012 = 12,500
ADT 2035 = 17,600
DHV = 12 %
D = 55 %
T = 8 % *
V = 40 MPH
* TTST =3% DUAL 5%
FUNC CLASS = COLLECTOR
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4760 =	0.335 MILES
LENGTH STRUCTURE TIP PROJECT B-4760 =	0.034 MILES
TOTAL LENGTH TIP PROJECT B-4760 =	0.369 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 7, 2011

LETTING DATE:
JULY 17, 2012

G.E. BREW, P.E.
PROJECT ENGINEER

I.T. YOUNIS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

CONTRACT:

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

PROJECT REFERENCE NO.	SHEET NO.
B-4760	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

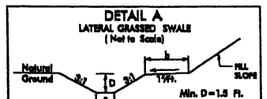
Permit Drawing
Sheet 2 of 7

8/17/99

REVISIONS

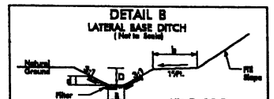
SYSTIME
USERNAME

DETAIL A
LATERAL GRASSED SWALE
(Not to Scale)



FROM STA.36+00-L- TO STA.36+40-L- LT.
FROM STA.37+10-L- TO STA.38+00-L- LT.

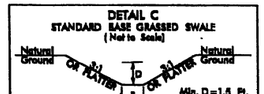
DETAIL B
LATERAL BASE DITCH
(Not to Scale)



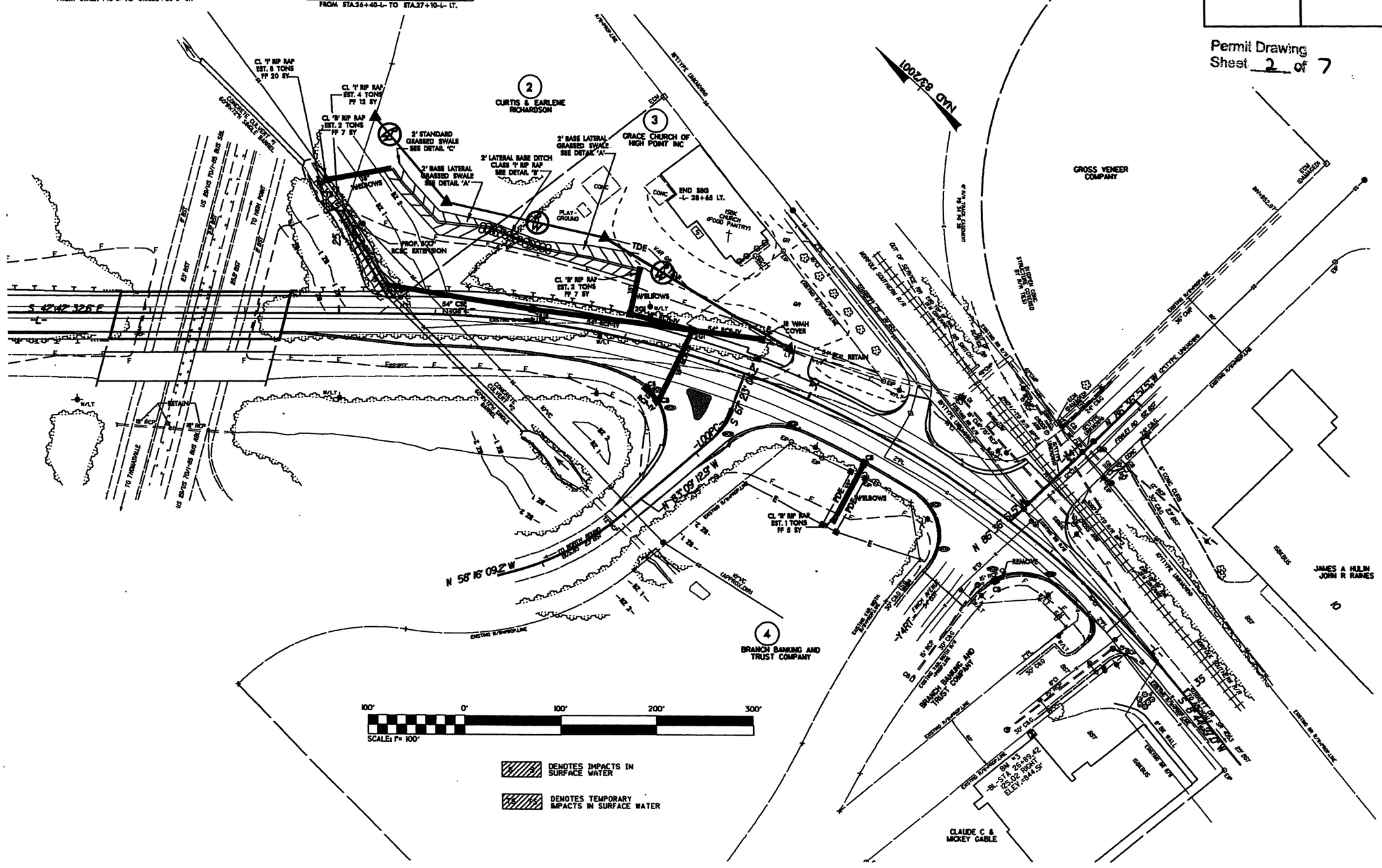
*When S is < 4.0'
Type of Liner= CLASS I Rip-Rap

FROM STA.36+40-L- TO STA.37+10-L- LT.

DETAIL C
STANDARD BASE GRASSED SWALE
(Not to Scale)



*NOTES:
1) LONGITUDINAL SLOPES BETWEEN 0.5% AND 4.0%.
2) MODIFICATIONS MAY BE MADE AS APPROVED BY ENGINEER.


NAD 83/2001
2
CURTIS & EARLENE RICHARDSON
3
GRACE CHURCH OF HIGH POINT INC
4
BRANCH BANKING AND TRUST COMPANY
GROSS VENEER COMPANY
JAMES A HULIN
JOHN R RAINES
CLAUDE C & MICKEY GABLE
CL 'F' RIP RAP EST. 8 TONS FF 20 SY
CL 'F' RIP RAP EST. 4 TONS FF 12 SY
CL 'B' RIP RAP EST. 2 TONS FF 7 SY
CL 'B' RIP RAP EST. 1 TONS FF 5 SY
2' STANDARD GRASSED SWALE SEE DETAIL 'C'
2' BASE LATERAL GRASSED SWALE SEE DETAIL 'A'
2' LATERAL BASE DITCH CLASS 'F' RIP RAP SEE DETAIL 'B'
PROP. 300' RCBC EXTENSION
END SBG -L- 28+65 LT.
TDE-VIR
S 42°42'32"E
N 58°16'09.2"W
N 85°05'12"W
S 61°25'00"W
N 85°36'
S 84°24'20"W
CONCRETE COLLAR AT GORMAN'S SMALL CULVERT
TO THOMASVILLE
US 64/70 TO I-85 BUS 85
TO HIGH POINT
RETAIN
PLAY-GROUND
FIRE CHURCH (FOOD PANTRY)
REMOVE
CONC
RCP
SBG
SBT
EXISTING R/W/PROP LINE
EXISTING UNKNOWN
EXISTING 36" CMP
EXISTING 30" CMP
EXISTING 24" CMP
EXISTING 18" CMP
EXISTING 15" CMP
EXISTING 12" CMP
EXISTING 8" CMP
EXISTING 6" CMP
EXISTING 4" CMP
EXISTING 2" CMP
EXISTING 18" RCP
EXISTING 24" RCP
EXISTING 30" RCP
EXISTING 36" RCP
EXISTING 42" RCP
EXISTING 48" RCP
EXISTING 54" RCP
EXISTING 60" RCP
EXISTING 72" RCP
EXISTING 84" RCP
EXISTING 96" RCP
EXISTING 108" RCP
EXISTING 120" RCP
EXISTING 132" RCP
EXISTING 144" RCP
EXISTING 156" RCP
EXISTING 168" RCP
EXISTING 180" RCP
EXISTING 192" RCP
EXISTING 204" RCP
EXISTING

8/17/99

REVISIONS

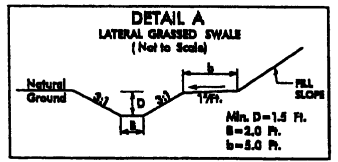
PROJECT REFERENCE NO.	SHEET NO.
B-4760	5

R/W SHEET NO.

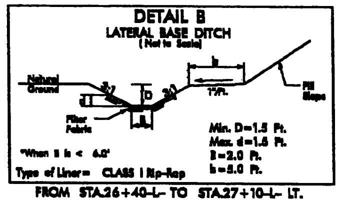
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

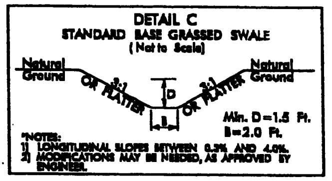
Permit Drawing
Sheet 3 of 7

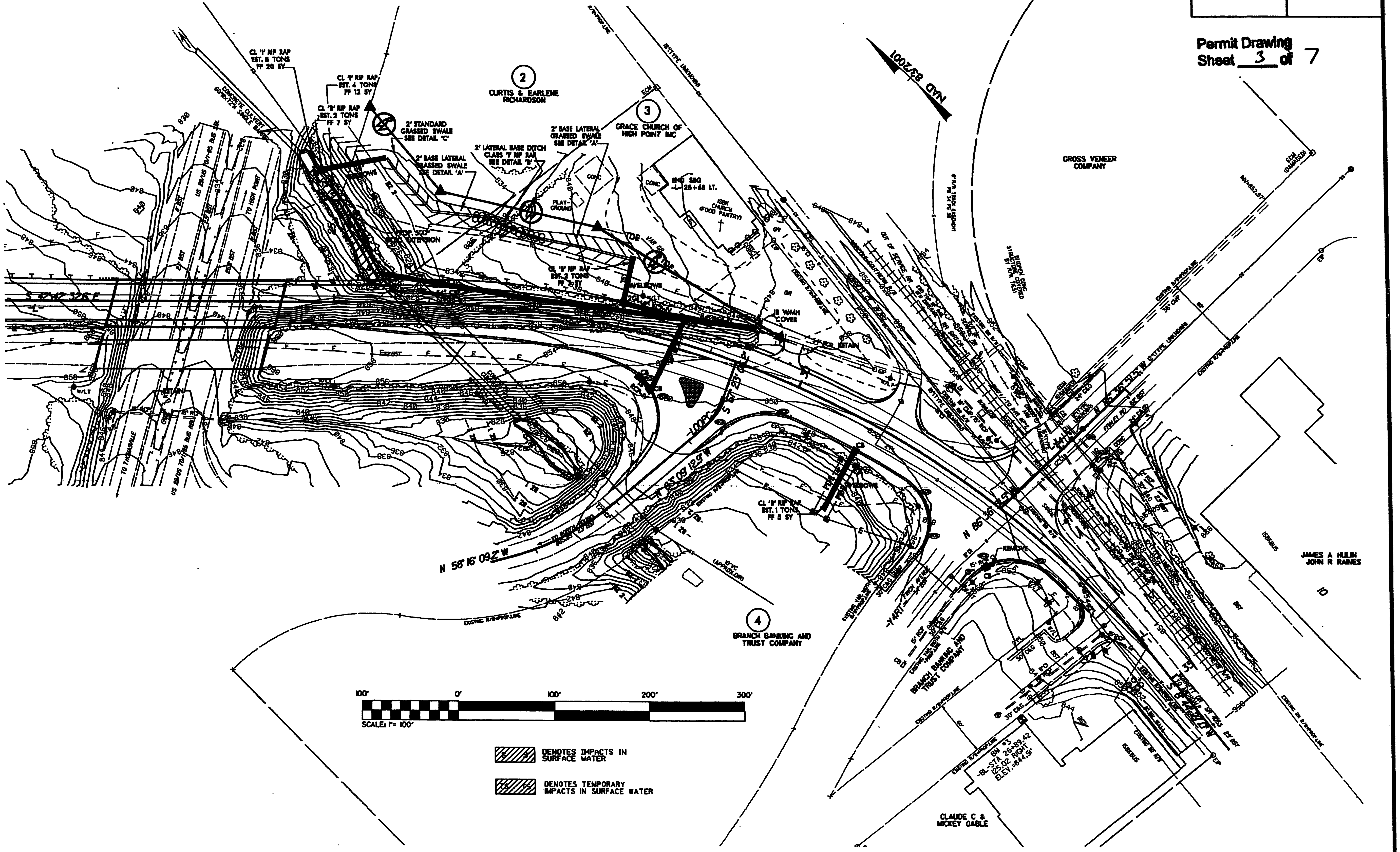


FROM STA.26+00-L- TO STA.26+40-L- LT.
FROM STA.27+10-L- TO STA.28+00-L- LT.



FROM STA.26+40-L- TO STA.27+10-L- LT.





▨ DENOTES IMPACTS IN SURFACE WATER

▨ DENOTES TEMPORARY IMPACTS IN SURFACE WATER

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

PROJECT REFERENCE NO.	SHEET NO.
B-4760	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 4 of 7

8/17/99

REVISIONS

EST. 4 TONS FF 12 SY

CL 'B' RIP RAP EST. 2 TONS FF 7 SY

2' STANDARD GRASSED SWALE SEE DETAIL 'C'

2' BASE LATERAL GRASSED SWALE SEE DETAIL 'A'

2' LATERAL BASE DITCH CLASS 'I' RIP RAP SEE DETAIL 'B'

2' BASE LATERAL GRASSED SWALE SEE DETAIL 'A'

CURTIS & EARLENE RICHARDSON

GRACE CHURCH OF HIGH POINT INC

3

CONCRETE CULVERT #1 60"W x 72"H SINGLE BARREL

US 29/US 70/I-85 BUS SBL

TO HIGH POINT

18" W/ELBOWS

PROP. 5'X7' RCBC EXTENSION

EXISTING R/W-PROP. LINE

PLAY-GROUND

CONC

END SBG -L- 28+65 LT.

ISBK CHURCH (FOOD PANTRY)

TDE VAR GR

RTDE

CL 'B' RIP RAP EST. 2 TONS FF 7 SY

15" W/ELBOWS

54" CSP 14Ga 4

TRIB

54" RCP-IV

JB W/MH COVER

54" RCP RETAIN

15" RCP-IV

CB (WCR)

CONCRETE CULVERT #2 60"W x 72"H SINGLE BARREL

10"VC

18" RCP

I-85 BUS NBL

72" RCP

TO NORTH BOUND BUS.85

PDE 15"

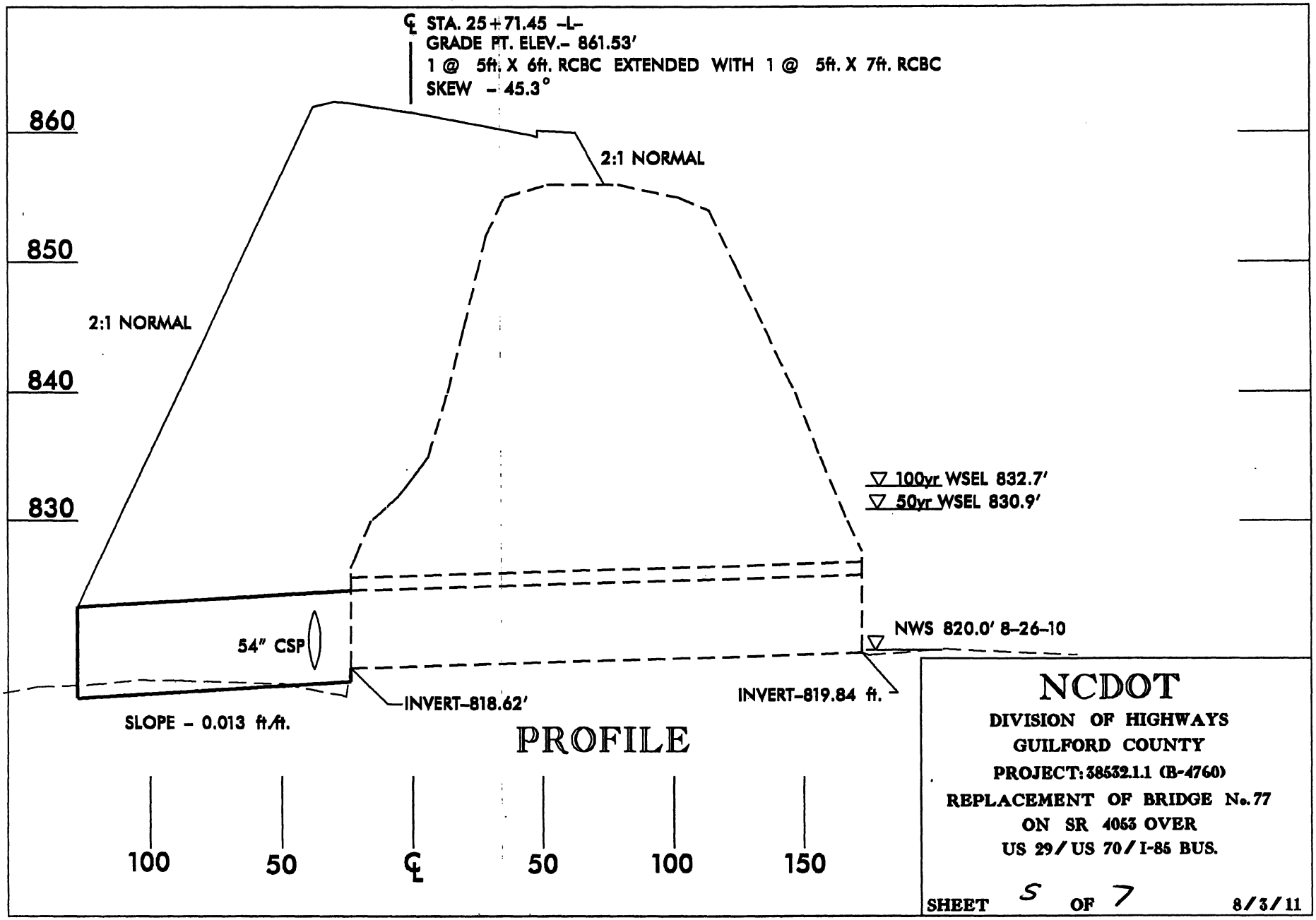
CL 'B' RIP RAP EST. 1 TONS FF 5 SY

NAD 83/2001

SCALE: 1"= 50'

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER



NCDOT

DIVISION OF HIGHWAYS
GUILFORD COUNTY
PROJECT: 38532.1.1 (B-4760)
REPLACEMENT OF BRIDGE No. 77
ON SR 4053 OVER
US 29 / US 70 / I-85 BUS.

SHEET 5 OF 7 8/3/11

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
2	CURTIS & EARLENE RICHARDSON	4215 BRAMBLETYE Dr. GREENSBORO, NC 27407

NCDOT

DIVISION OF HIGHWAYS

GUILFORD COUNTY

PROJECT: 38532.1.1 (B-4760)

REPLACEMENT OF BRIDGE No. 77

ON SR 4053 OVER

US 29 / US 70 / I-85 BUS.

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)
	25+50 -L- Lt.	5'X7' RCBC						0.03	<0.01	108	24	
	BANK STABILIZATION									14		
TOTALS:								0.03	<0.01	122	24	

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY
WBS - 38532.1.1 (B-4760)

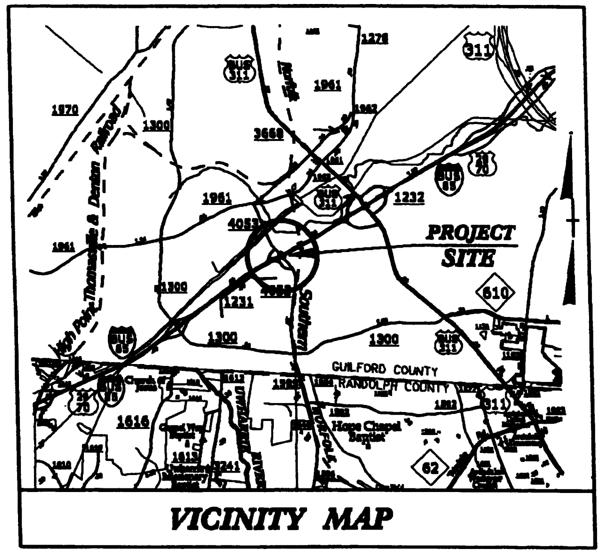
SHEET 2 of 7 8/3/2011

ATN Revised 3/31/05

09/08/99

TIP PROJECT: B-4760

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GUILFORD COUNTY

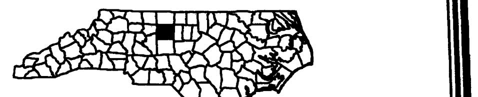
LOCATION: REPLACEMENT OF BRIDGE 77 ON SR 4053
OVER US 29 /US 70 /I-85 BUS

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

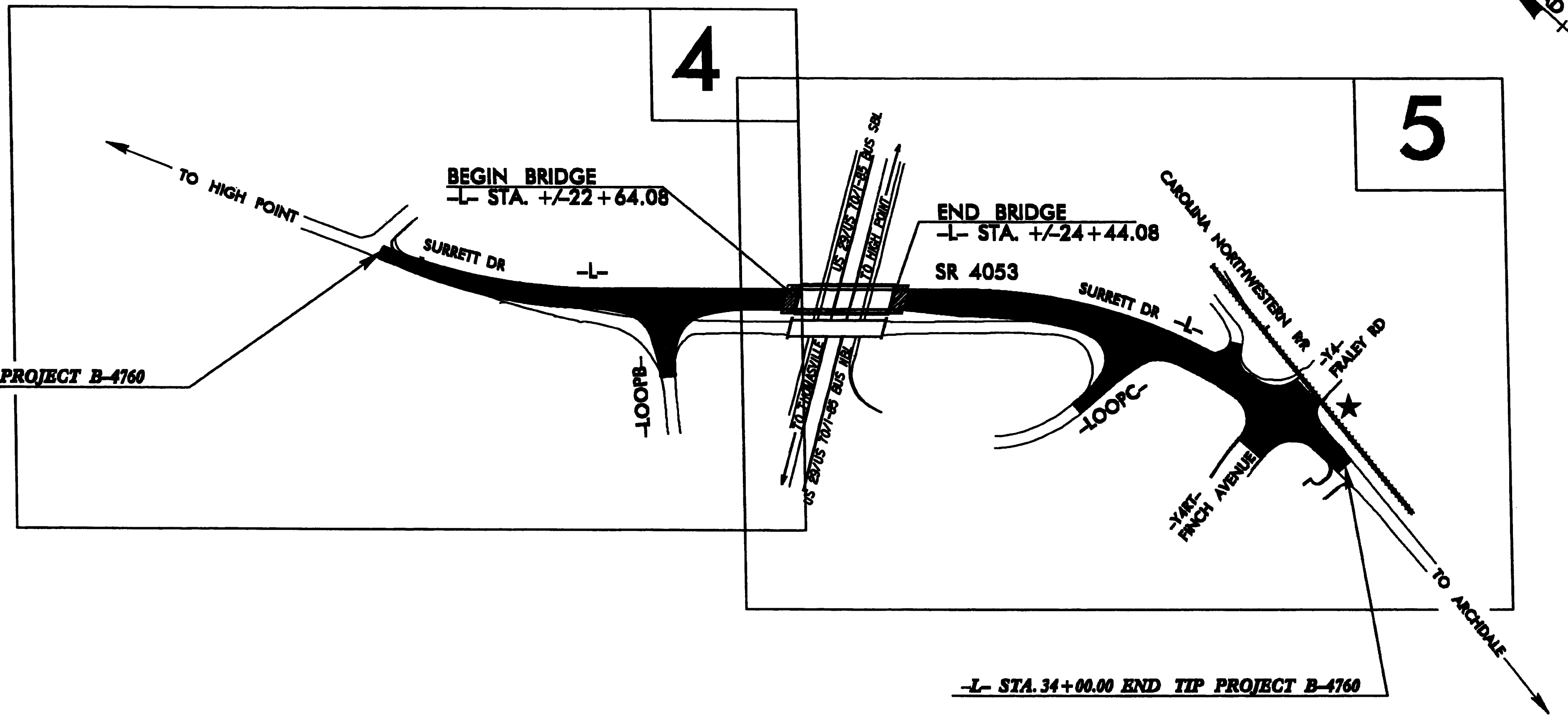
BUFFER IMPACTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4760	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
38532.1.1	BRZ-4053(1)	PE
38532.2.1	BRZ-4053(1)	R/W & UTIL.



Buffer Drawing
Sheet 1 of 6



★ *TRAFFIC SIGNAL*

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARY OF HIGH POINT

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:

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

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 2012 = 12,500
ADT 2035 = 17,600
DHV = 12 %
D = 55 %
T = 8 % *
V = 40 MPH
* TTST =3% DUAL 5%
FUNC CLASS = COLLECTOR
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4760 =	0.335 MILES
LENGTH STRUCTURE TIP PROJECT B-4760 =	0.034 MILES
TOTAL LENGTH TIP PROJECT B-4760 =	0.369 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 7, 2011

LETTING DATE:
JULY 17, 2012

G.E. BREW, P.E.
PROJECT ENGINEER

I.T. YOUNIS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

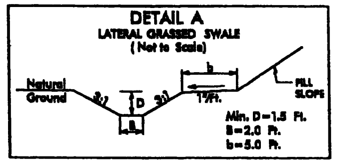
PROJECT REFERENCE NO.	SHEET NO.
B-4760	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Buffer Drawing
Sheet 2 of 6

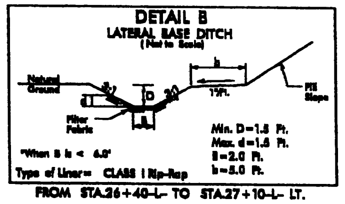
8/17/99

REVISIONS



DETAIL A
LATERAL GRASSED SWALE
(Not to Scale)

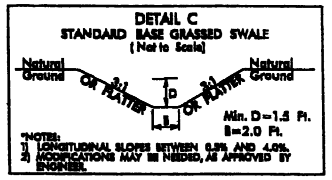
FROM STA.26+00-L- TO STA.26+40-L- LT.
FROM STA.27+10-L- TO STA.28+00-L- LT.



DETAIL B
LATERAL BASE DITCH
(Not to Scale)

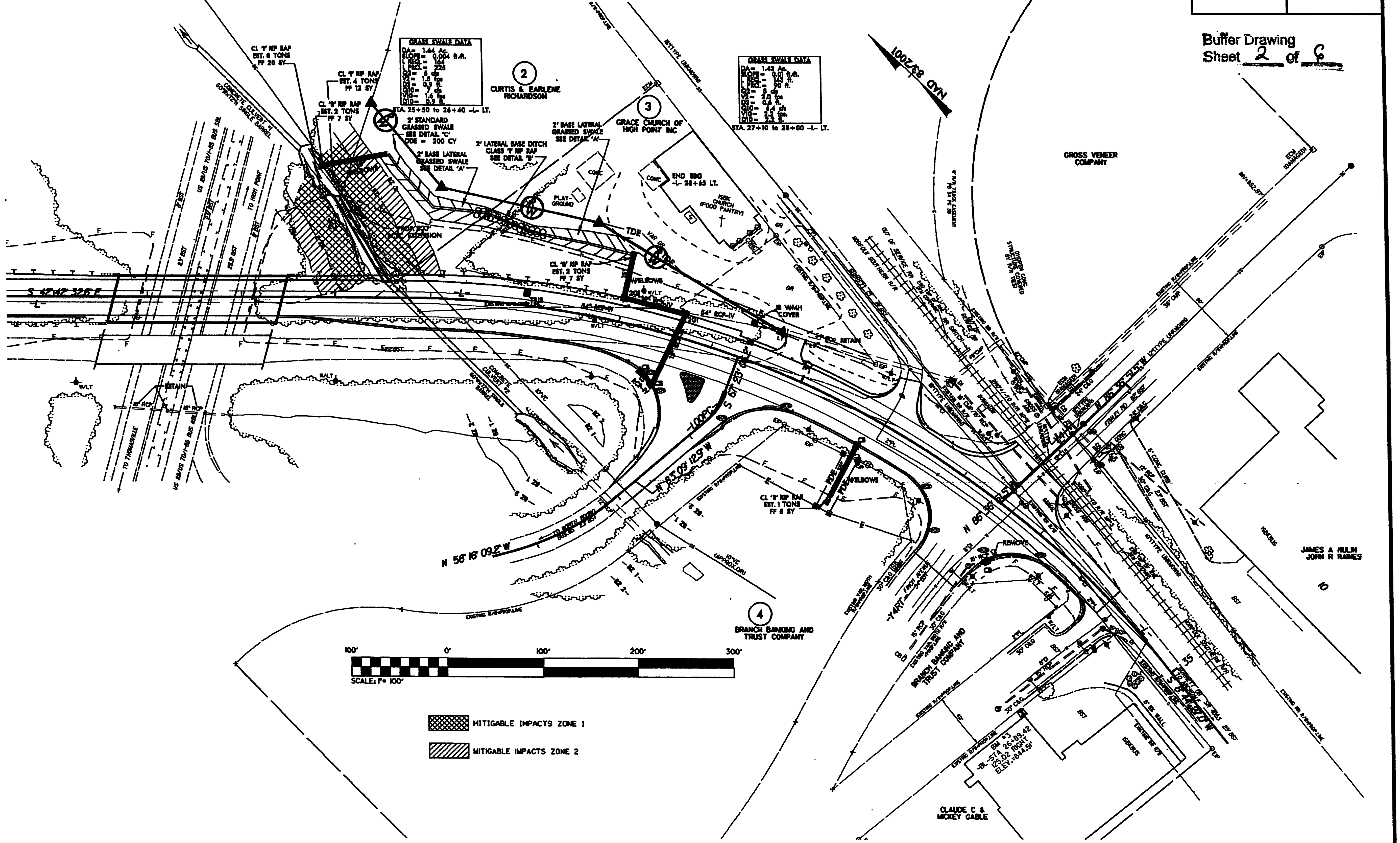
*When B is < 6.0'
Type of Liner= CLASS I Rip-Rap

FROM STA.26+40-L- TO STA.27+10-L- LT.



DETAIL C
STANDARD BASE GRASSED SWALE
(Not to Scale)

*NOTES:
1) LONGITUDINAL SLOPES BETWEEN 0.3% AND 4.0%.
2) MODIFICATIONS MAY BE NEEDED, AS APPROVED BY ENGINEER.



GRASS SWALE DATA
DA= 1.64 Ac.
SLOPE= 0.004 ft./ft.
L REQ.= 164
L PRO.= 225
Q2= 6 cfs
V2= 1.5 fps
D2= 0.9 ft.
Q10= 7 cfs
V10= 1.6 fps
D10= 0.9 ft.
STA. 25+50 to 26+40 -L- LT.

GRASS SWALE DATA
DA= 1.43 Ac.
SLOPE= 0.01 ft./ft.
L REQ.= 143 ft.
L PRO.= 90 ft.
Q2= 5 cfs
V2= 2.0 fps
D2= 0.6 ft.
Q10= 6.4 cfs
V10= 2.2 fps.
D10= 2.2 ft.
STA. 27+10 to 28+00 -L- LT.

▩ MITIGABLE IMPACTS ZONE 1

▨ MITIGABLE IMPACTS ZONE 2

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

PROJECT REFERENCE NO.	SHEET NO.
B-4760	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

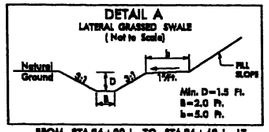
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Buffer Drawing
Sheet 3 of 6

REVISIONS

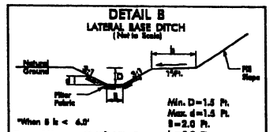
8/17/18

DETAIL A
LATERAL GRASSED SWALE
(Not to Scale)



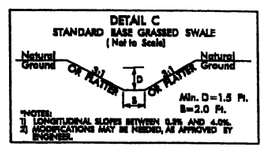
FROM STA.26+90-L- TO STA.26+40-L- LT.
FROM STA.27+10-L- TO STA.28+00-L- LT.

DETAIL B
LATERAL BASE DITCH
(Not to Scale)

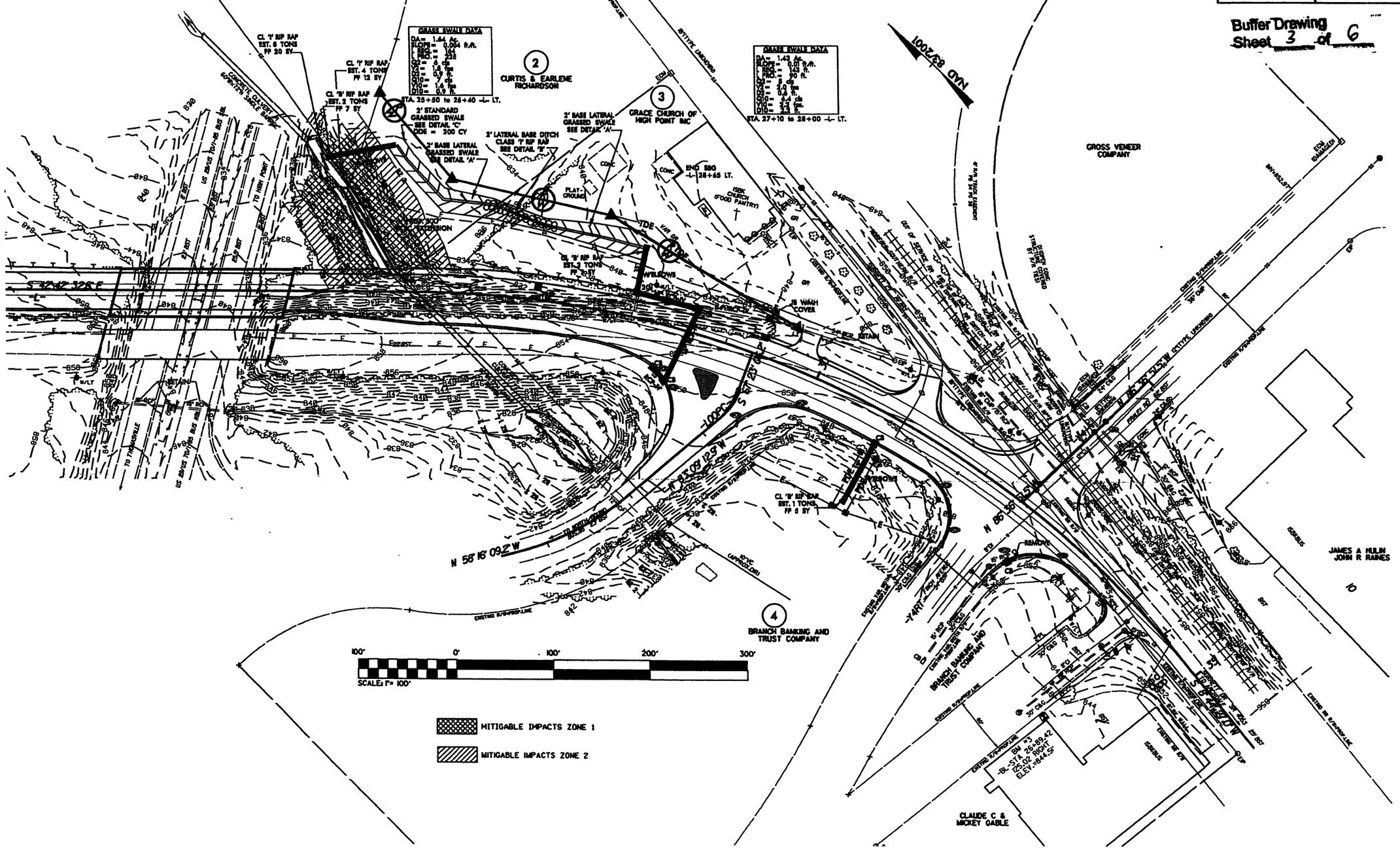


*When b is < 4.0'
Type of Liner= CLASS I Rip-Rap
FROM STA.26+40-L- TO STA.27+10-L- LT.

DETAIL C
STANDARD BASE GRASSED SWALE
(Not to Scale)



*NOTES:
1) LONGITUDINAL SLOPES BETWEEN 0.5% AND 4.0%.
2) MODIFICATIONS MAY BE NEEDED, AS APPROVED BY ENGINEER.



PROJECT REFERENCE NO.	SHEET NO.
B-4760	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Buffer Drawing Sheet 4 of 6

8/17/99

REVISIONS

SYSTIME
DGN

GRASS SWALE DATA
DA= 1.64 Ac.
SLOPE= 0.004 ft./ft.
L REQ.= 164
L PRO.= 225
Q2= 6 cfs
V2= 1.5 fps
D2= 0.9 ft.
Q10= 7 cfs
V10= 1.6 fps
D10= 0.9 ft.
STA. 25+50 to 26+40 -L- LT.

GRASS SWALE DATA
DA= 1.43 Ac.
SLOPE= 0.01 ft./ft.
L REQ.= 143 ft.
L PRO.= 90 ft.
Q2= 5 cfs
V2= 2.0 fps
D2= 0.6 ft.
Q10= 6.4 cfs
V10= 2.2 fps.
D10= 2.2 ft.
STA. 27+10 to 28+00 -L- LT.

2 CURTIS & EARLENE RICHARDSON

3 GRACE CHURCH OF HIGH POINT INC

CL 'I' RIP RAP EST. 8 TONS FF 20 SY

CL 'I' RIP RAP EST. 4 TONS FF 12 SY

CL 'B' RIP RAP EST. 2 TONS FF 7 SY

2' STANDARD GRASSED SWALE SEE DETAIL 'C' DDE = 200 CY

2' BASE LATERAL GRASSED SWALE SEE DETAIL 'A'

2' LATERAL BASE DITCH CLASS 'I' RIP RAP SEE DETAIL 'B'

2' BASE LATERAL GRASSED SWALE SEE DETAIL 'A'

CONCRETE CULVERT #1 60"W x 72"H SINGLE BARREL

US 29/US 70/I-85 BUS SBL

TO HIGH POINT

8' BST

25' BST

23' BST

25.5' BST

8' BST

18" W/ELBOWS

BZ 2

BZ 1

EXIST. TWIN 8'x8' RCBC

PROP. 5'X7' RCBC EXTENSION

PLAY-GROUND

CONC

CONC

END SBG -L- 28+65 LT.

ISBK CHURCH (FOOD PANTRY)

JP-LINE

18" TYPE UNKNOWN SS

ECM

NAD 83/2001

TDE VAR GR RTDE

CL 'B' RIP RAP EST. 2 TONS FF 7 SY

151'

W/ELBOWS

2GI W/LT

15" RCP-IV

54" RCP-IV

TB 1B

EXISTING R/W-RR/P LINE

54" RCP-IV

W/LT

2GI

JB W/MH COVER

15" RCP-IV

CB WCR

15" RCP-IV CB WCR

LOOPC S 67° 23' 06.2" W

30

SS

24"CT

16"CT

GR

EXISTING R/W

EIP

WCR

EIP

EIP

F

F 22' BST

W/LT

RETAIN

P

18" RCP

I-85 BUS NBL

CONCRETE CULVERT #2 60"W x 72"H SINGLE BARREL

10"VC

BZ 2

BZ 1

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

100' 0' 100'

SCALE: 1"= 50'

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
2	CURTIS & EARLENE RICHARDSON	4215 BRAMBLETYE Dr. GREENSBORO, NC 27407
3	GRACE CHURCH OF HIGH POINT INC.	1141 ENTERPRISE Dr. HIGH POINT, NC 27260

NCDOT

DIVISION OF HIGHWAYS
GUILFORD COUNTY
PROJECT: 38532.1.1 (B-4760)
REPLACEMENT OF BRIDGE No. 77
ON SR 4053 OVER
US 29 / US 70 / I-85 BUS.

BUFFER IMPACTS SUMMARY

			IMPACT									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	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)
	5'X7' RCBC	25+50 -L- Lt.							8236	5400	13636		
TOTALS:									8236	5400	13636		

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

GUILFORD COUNTY
PROJECT: 38532.1.1 (B-4760)

9/26/2011
SHEET 6 OF 6

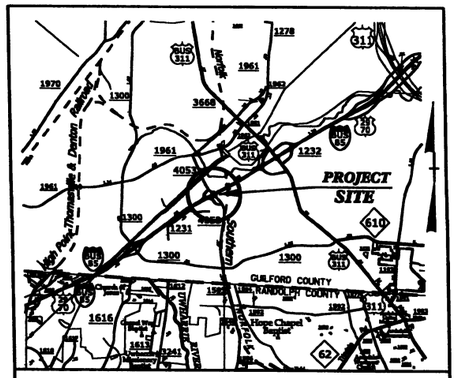
Rev. May 2006

05/08/59

TIP PROJECT: B-4760

CONTRACT:

See Sheet 1-A For Index of Sheets



6/8/2023

PROJECT REFERENCE NO.	SHEET NO.
B-4760	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 — IP
- Property Corner
- Property Monument — MON
- Parcel/Sequence Number — 23
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — EWB
- Proposed Wetland Boundary — PWB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — PRO
- 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 — PCA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage / Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

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

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 — PT
- 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 — T
- 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 — TV
- 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 — SS
- 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

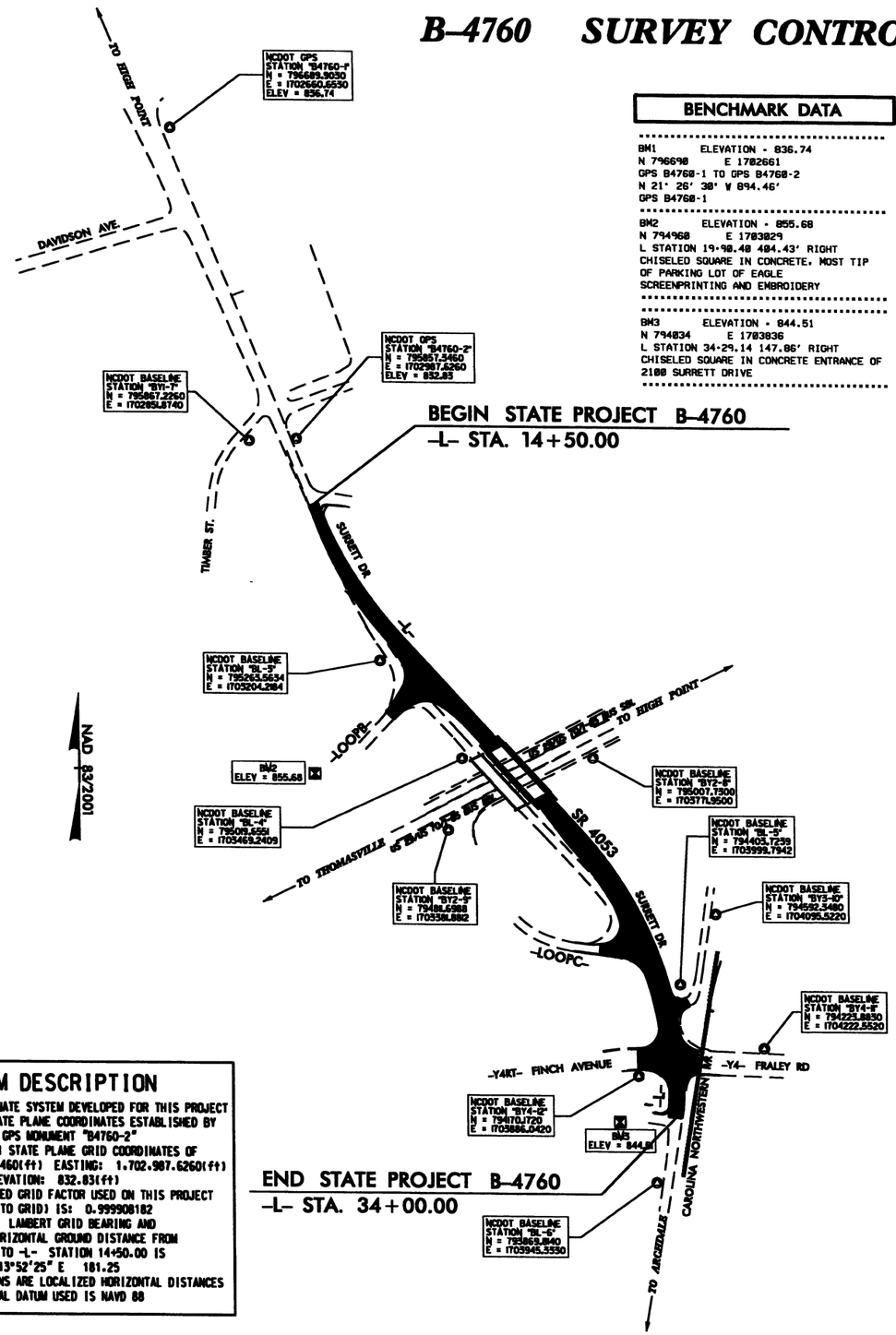
MISCELLANEOUS:

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

12/01/2005

B-4760 SURVEY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
B-4760	1-C
Location and Surveys	



BENCHMARK DATA

BM1 ELEVATION = 836.74
N 796698 E 1702661
GPS B4760-1 TO GPS B4760-2
N 21° 26' 30" W 894.46'
GPS B4760-1

BM2 ELEVATION = 855.68
N 794968 E 1703829
L STATION 19+98.48 484.43' RIGHT
CHISELED SQUARE IN CONCRETE, MOST TIP OF PARKING LOT OF EAGLE SCREENPRINTING AND EMBROIDERY

BM3 ELEVATION = 844.51
N 794834 E 1703836
L STATION 34+29.14 147.86' RIGHT
CHISELED SQUARE IN CONCRETE ENTRANCE OF 2100 SURRETT DRIVE

BASELINE DATA

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
2	GPS B4760-2	795857.3460	1702987.6260	832.83	12+78.52	25.27 LT
3	BL-3	795263.5634	1703204.2184	852.42	18+86.33	69.44 RT
4	BL-4	795019.6551	1703469.2409	868.26	22+45.31	48.13 RT
A100		794736.9488	1703712.7596	UNKNOWN	26+28.48	52.86 RT
5	BL-5	794403.7239	1703999.7942	850.21	30+53.31	48.51 LT
6	BL-6	793869.8140	1703945.3330	854.29	35+81.84	16.16 RT

BY1

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
102		795857.3460	1702987.6260	832.83	12+78.52	25.27 LT
7	BY1-7	795867.2260	1702851.8740	839.35	12+18.74	97.81 RT

BY2

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
8	BY2-8	795867.7300	1703771.9500	829.28	24+59.48	174.21 LT
A4		795819.6551	1703469.2409	868.26	22+45.31	48.13 RT
9	BY2-9	794811.6988	1703381.0812	848.22	23+38.87	245.38 RT

BY3

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
10	BY3-10	794592.3480	1704095.5220	848.22	29+22.79	281.28 LT
105	BL-5	794403.7239	1703999.7942	850.21	30+53.31	48.51 LT

BY4

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
11	BY4-11	794223.8830	1704222.5520	856.24	32+42.44	237.43 LT
A5		794403.7239	1703999.7942	850.21	30+53.31	48.51 LT
12	BY4-12	794170.1720	1703886.0420	851.06	32+72.81	181.91 RT

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT GPS MONUMENT "B4760-2"
WITH NAD 83/2001 STATE PLANE GRID COORDINATES OF
NORTHING: 795,857.3460(ft) EASTING: 1,702,987.6260(ft)
ELEVATION: 832.83(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999908182
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4760-2" TO -L- STATION 14+50.00 IS
S 13°52'25" E 181.25
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES

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

THE FILES TO BE FOUND ARE AS FOLLOWS:
b4760_ls_control.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.

NOTE: DRAWING NOT TO SCALE

20-JUN-2011 09:58
R:\Projects\B4760\Ls\b4760_ls_lo.dgn

6/2/99

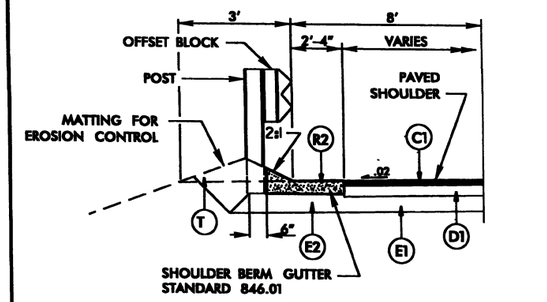
PROJECT REFERENCE NO.	SHEET NO.
B-4760	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

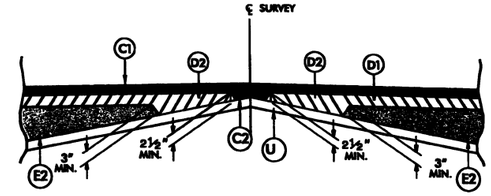
FINAL PAVEMENT SCHEDULE

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.
C3	PROP. APPROX. 3"ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
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 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
D3	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B,AT AN AVERAGE RATE OF 627 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 5½" IN DEPTH.
E3	PROP. APPROX. 11" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C,AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
R1	2'-6" CONCRETE CURB AND GUTTER.
R2	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL).

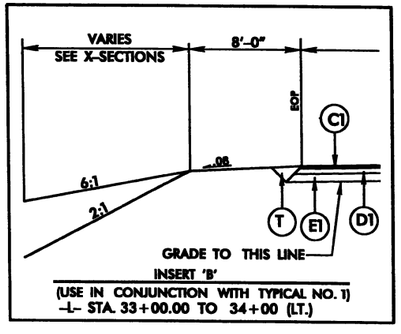
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



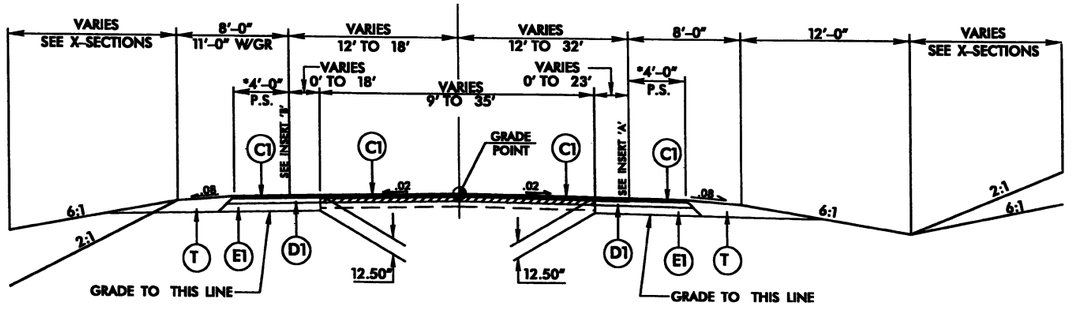
DETAIL SHOWING SHOULDER BERM GUTTER
(USE IN CONJUNCTION WITH TYPICAL NO. 1,3)
SEE PLANS FOR LOCATIONS



Detail Showing Method of Wedging
(USE WITH TYPICAL SECTION 1 & 3)



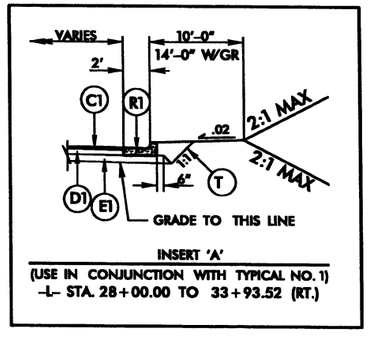
INSERT 'B'
(USE IN CONJUNCTION WITH TYPICAL NO. 1)
-L- STA. 33+00.00 TO 34+00 (LT.)



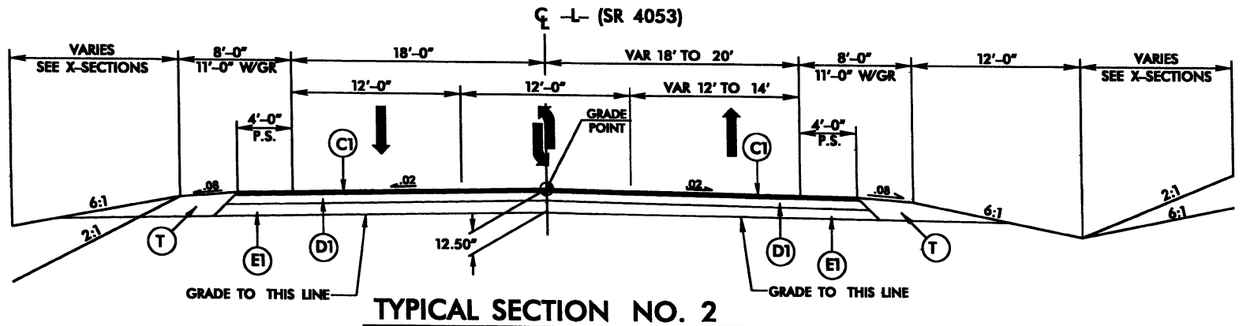
TYPICAL SECTION NO. 1

-L- STA. 14+50.00 TO 17+75.00
-L- STA. 28+00.00 TO 33+31.35

-L- STA. 33+33.83 TO 34+00, TRANSITION FROM T.S. 1 TO EXISTING

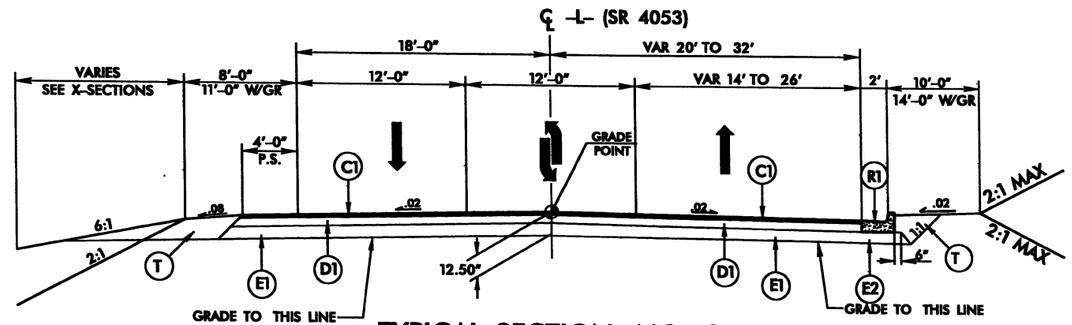


INSERT 'A'
(USE IN CONJUNCTION WITH TYPICAL NO. 1)
-L- STA. 28+00.00 TO 33+93.52 (RT.)



TYPICAL SECTION NO. 2

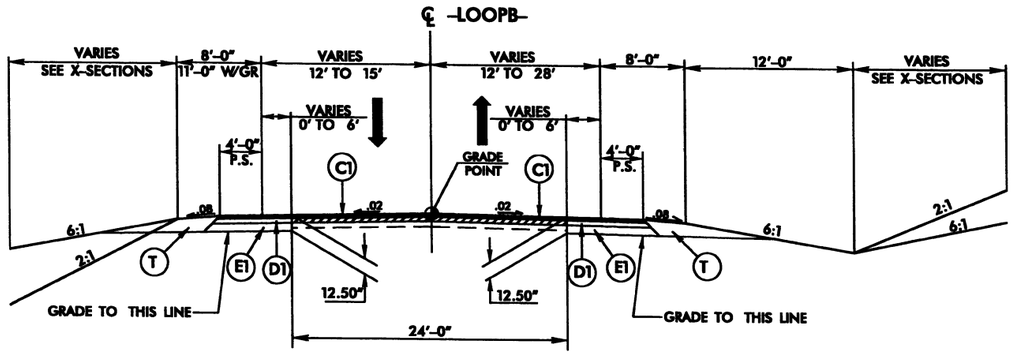
–L– STA. 17+75.00 TO 20+50.00



TYPICAL SECTION NO. 3

–L– STA. 20+50.00 TO 22+64.08+/– (BEGIN BRIDGE)

–L– STA. 24+44.08+/– (END BRIDGE) TO 28+00.00



TYPICAL SECTION NO. 4

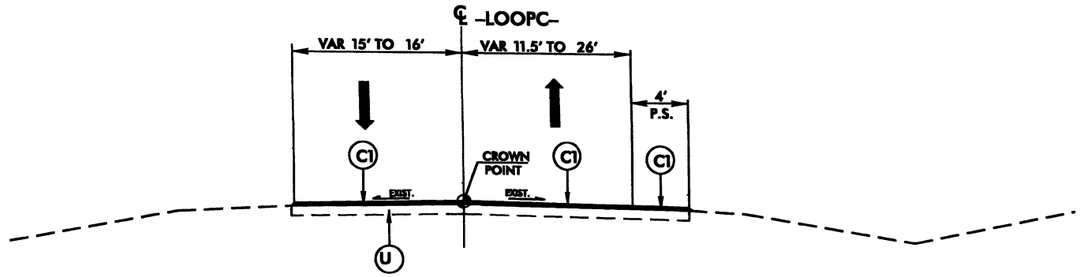
–LOOPB– STA. 11+09.48 TO 11+25.00

–LOOPB– STA. 11+25.00 TO 11+50.00
TRANSITION FROM T.S. 4 TO EXISTING

PROJECT REFERENCE NO.	SHEET NO.
B-4760	2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

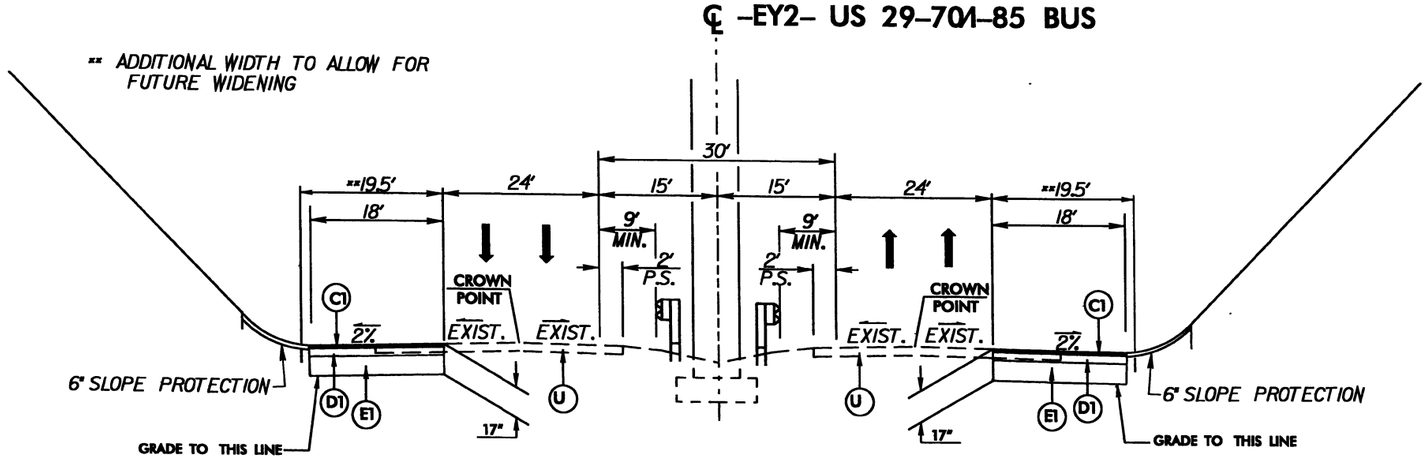
FINAL PAVEMENT DESIGN	
C1	3.0" S9.5B
C2	VAR. S9.5B
D1	4.0" I19.0B
D2	VAR. I19.0B
E1	5.5" B25.0B
E2	VAR. B25.0B
R1	2'-6" CONC C&G
T	EARTH MATERIAL
U	EXIST PAVEMENT
W	WEDGING



TYPICAL SECTION NO. 5

-LOOPC- STA. 11+20.51 TO 11+50.00

-LOOPC- STA. 11+50.00 TO 12+00.00, TRANSITION FROM T.S. 4 TO EXISTING



TYPICAL SECTION NO. 6

-EY2- STA. 12+09 TO 11+58.00
(UNDER PROPOSED BRIDGE)

PROJECT REFERENCE NO.	SHEET NO.
B-4760	2-B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FINAL PAVEMENT DESIGN	
C1	3.0" S9.5B
C2	VAR. S9.5B
C3	3.0" S9.5C
D1	4.0" I19.0B
D2	VAR. I19.0B
D3	3.0" I19.0C
E1	5.5" B25.0B
E2	VAR. B25.0B
E3	11" B25.0C
R1	2'-6" CONC C&G
T	EARTH MATERIAL
U	EXIST PAVEMENT
W	WEDGING

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-4760	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
NO RIGHT WAY OR CONSTRUCTION

SEE SHEET 6 FOR PROFILE OF -L-
SEE SHEET 7 FOR PROFILE OF -LOOPB-

8/17/99

REVISIONS

DETAIL D
SPECIAL CUT DITCH
(Not to Scale)
Min. D=1.5 Ft.
FROM -L- STA. 17+50 TO STA. 18+50 LT.

B4760-2 (GPS) POT 5+00.00 = -BYI- POT 5+00.00

POT STA 0+00.00

BEGIN TIP PROJECT B-4760
-L- POT STA 14+50.00

-L- PC 15+0.29

-L-
PI Sta 16+94.02
Δ = 20°49'18.0" (LT)
D = 5°43'46.5"
L = 363.4'
T = 183.73'
R = 1,000.00'
e = SEE PLANS

-L- PT 18+73.70

-L- POT 20+01.60
-LOOPB- POT 10+00

-LOOPB-
PI Sta 13+15.16
Δ = 15°31'48.3" (LT)
D = 14°19'26.2"
L = 115.40'
T = 58.10'
R = 400.00'
e = SEE PLANS

-LOOPB- PC 12+57.06

-LOOPB- STA 11+50
END CONST.

BL-3 PINC 11+32.05

PT Sta 13+72.46

-L- STA 20+56
BEG SBG LT.

MATCH LINE -L- STA 21+50 SEE SHEET 5

BM #2
-BL- STA 12+08.52
342.34 RIGHT
ELEV.=855.68'

HM REAL ESTATE COMPANY
DB 4511 PG 26

DAWS FAMILY LEASING, LLC
DB 4515 PG 309
PB 14 PG 47
PB 23 PG 6

JAMES A KILLIN & JOHN R RAMEY
DB 3852 PG 71

NCS PROPERTIES, LLC
DB 4669 PG 52

RUBY LOUISE BRADLEY & CECIL EDWARD BRADLEY JR
DB 4669 PG 652
PB 23 PG 6

NAD 83/2001

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PROJECT REFERENCE NO.	SHEET NO.
B-4760	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SEE SHEET S-1 THRU S-8 FOR STRUCTURE PLANS

SEE SHEET 6 FOR PROFILE OF -L-

SEE SHEET 7 FOR PROFILES OF -LOOPC-, -Y4- & -Y4RT-

DETAIL A
LATERAL GRASSED SWALE
(Not to Scale)

Min. D=1.5 Ft.
B=2.0 Ft.
b=5.0 Ft.

FROM STA.26+00-L- TO STA.26+40-L- LT.
FROM STA.27+10-L- TO STA.28+00-L- LT.

DETAIL B
LATERAL BASE DITCH
(Not to Scale)

*When h is < 6.0'
Type of Liner= CLASS I Rip-Rap

Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=2.0 Ft.
b=5.0 Ft.

FROM STA.26+40-L- TO STA.27+10-L- LT.

DETAIL C
STANDARD BASE GRASSED SWALE
(Not to Scale)

*NOTE:
LONGITUDINAL SLOPES BETWEEN 0.3% AND 4.0%. MODIFICATIONS MAY BE NEEDED, AS APPROVED BY ENGINEER.

Min. D=1.5 Ft.
B=2.0 Ft.

DETAIL SHOWING BRIDGE IN RELATION TO PAVEMENT
NTS

BRIDGE APPROACH SLAB
TYPE B-77
TYPE III
(NOT TO SCALE)
2'-6" CBG

-L-
PI Sta 30+59.12
Δ = 5° 26' 59.7" (RT)
D = 5° 43' 46.5"
L = 897.91'
T = 449.80'
R = 1000.00'
e = SEE PLANS

-L- POC 29+29.14
-LOOPC- POT 10+00
BY3-10 POT 5+00.00

BY2-8 POT 5+00.00
-EY2- POT 10+00.00
REMOVE & REPLACE EXISTING GUARDRAIL
-L- POT 23+52.74
-EY2- POT 11+80.52
Δ = 105° 05' 58.3"
BEGIN BRIDGE
-L- POT 22+64.08 +/-
END BRG @ BEGIN BRG LT.
BEGIN APP. SLAB
-L- POT 22+39.08 +/-
TIE TO EXIST. GUARDRAIL
CONC & STEEL BRIDGE *77
-L- PC 25+77.31
END APP. SLAB
-L- POT 24+69.08 +/-
END BRIDGE
-L- POT 24+44.08 +/-
REMOVE EXSITING BRIDGE
-LOOPC- PC 11+97.88
-LOOPC- POC STA 12+00
END CONSTRUCTION
BY2-9 POT 10+28.50
-LOOPC- PT 13+27.77
-EY2- POT 13+84.09
-LOOPC- POT Sta. 13+48.95
-BY2- PINC 8+02.94
BL-4 PINC 14+92.23 =
BL-5 PINC 23+05.16=
-BY3- PINC 7+11.53=
-BY4- PINC 7+86.29
-LOOPC- PT 10+79.84
-LOOPC- PC 10+48.27
BY4-11 POT 5+00.00
-Y4- POT 11+82.61
-Y4RT- POT 10+00
-L- POC 32+47.58
-Y4RT- PC 10+18.61
-Y4RT- PT 11+46.75
-Y4RT- POC STA 11+00.00
END CONST.
BY4-12
POT 10+46.07
POT Sta. 10+00.00
-Y4- POT STA 11+25.00
BEGIN CONST.
-L- PT 34+75.28
END TIP PROJECT B-4760
-L- POC STA 34+00.00
BL-6 POT 28+41.84

PI Sta 12+63.67
Δ = 24° 53' 03.3" (RT)
D = 15° 05' 54.9"
L = 130.29'
T = 66.19'
R = 300.00'
e = SEE PLANS

PI Sta 18+60.99
Δ = 25° 27' 40.9" (RT)
D = 76° 23' 39.7"
L = 38.56'
T = 19.72'
R = 75.00'
e = SEE PLANS

-Y4RT-
PI Sta 10+82.77
Δ = 7° 41' 16.9" (LT)
D = 5° 59' 58.4"
L = 128.14'
T = 64.11'
R = 955.00'

-EY2- US 20 /US 70 /I-85 BUS
2012 ADT IN HUNDREDS
2035 ADT IN HUNDREDS
-EY2- US 20 / US 70 /I-85 BUS

-Y4- FRALEY RD
2012 ADT IN HUNDREDS
2035 ADT IN HUNDREDS
-Y4RT- FINCH AVE

MATCH LINE -L- STA 21+50 SEE SHEET 4

NAD 83/2001

REVISIONS

8/17/99

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-4760	6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-

BM # 1 ELEVATION = 836.74'
N = 796690 E = 1702661
-BL- STATION 5+00.00 (GPS-2) TO BM1
N 21°28'30"W Dist. 894.46'
GPS B4760-1

PI = 15+40.00
EL = 841.5'
VC = 130'
K = 316

PI = 17+20.00
EL = 846.84'
VC = 170'
K = 107

PI = 20+00.00
EL = 859.60'
VC = 225'
K = 93

PI = 23+60.00
EL = 867.27'
VC = 420'
K = 82

BEGIN LT DITCH
STA 17+50.00
EL 842.49

END LT DITCH
STA 21+50.00
EL 860.07

BM # 2 ELEVATION = 855.68'
N = 794850 E = 1703299
-L- STATION 19+90.40 (404.43') RIGHT
CHISLED SQUARE IN CONCRETE IN
SOUTHERN MOST TIP OF PARKING LOT OF
EAGLE SCREENPRINTING AND EMBROIDERY

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 360	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 830.9	FT
BASE DISCHARGE	= 420	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 832.7	FT
OVERTOPPING DISCHARGE	= 650	CFS
OVERTOPPING FREQUENCY	= +500	YRS
OVERTOPPING ELEVATION	= 842.5	FT

PI = 28+00.00
EL = 854.00'
VC = 220'
K = 127

PI = 30+95.00
EL = 850.21'
VC = 260'
K = 93

END GRADE
STA 34+29.14
EL 844.45

BEGIN LT DITCH
STA 25+50.00
EL 850.21

END LT DITCH
STA 27+50.00
EL 849.01

BM # 3 ELEVATION = 844.51'
N = 794034 E = 1703836
-L- STATION 34+29.14 (147.87') RIGHT
CHISLED SQUARE IN CONCRETE ENTRANCE
OF 2100 SURRETT DRIVE

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-4760	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-LOOPB-

BM # 2 ELEVATION = 855.68'
N = 794950 E = 1703029
-L- STATION 19+90.10 (404.43) RIGHT
CHISLED SQUARE IN CONCRETE IN
SOUTHERN MOST TIP OF PARKING LOT OF
EAGLE SCREENPRINTING AND EMBROIDERY

BEGIN GRADE
-LOOPB- STA.10+18.05
ELEV. 858.65

PI = 10+85.00
EL = 856.41'
VC = 130'
K = 32

END GRADE
-LOOPB- STA.11+50.00
ELEV. 856.902

860
850
840
830
820
810
10
11
12

-LOOPC-

BEGIN GRADE
-LOOPC- STA.10+32.00
ELEV.851.3804

PI = 10+80.00
EL = 849.95'
VC = 95'
K = 122

END GRADE
-LOOPC- STA.11+30.00
ELEV.848.07'11

860
850
840
830
820
810
10
11
12
13

-Y4-

BM # 3 ELEVATION = 844.51'
N = 794034 E = 1703836
-L- STATION 34+29.14 (147.87') RIGHT
CHISLED SQUARE IN CONCRETE ENTRANCE
OF 2100 SURRETT DRIVE

BEGIN GRADE
-Y4- STA.11+25.00
ELEV.852.824

PI = 11+35.00
EL = 852.7'
VC = 20'
K = 8

END GRADE
-Y4- STA.11+64.45
ELEV.853.11

860
850
840
830
820
810
10
11

-Y4RT-

860
850
840
830
820
810
10
11

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9/23/99

PROJ. REFERENCE NO. B-4760

SHEET NO. X-1

0 5 10

838.96

0.035 0.010

14+50.00

837.64

14+00.00

836.33

13+50.00

835.10

13+00.00

833.94

12+50.00

832.90

12+00.00

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4760	X-2

845.91

17+00.00

844.40

16+50.00

842.91

16+00.00

841.60

15+50.00

840.24

15+00.00

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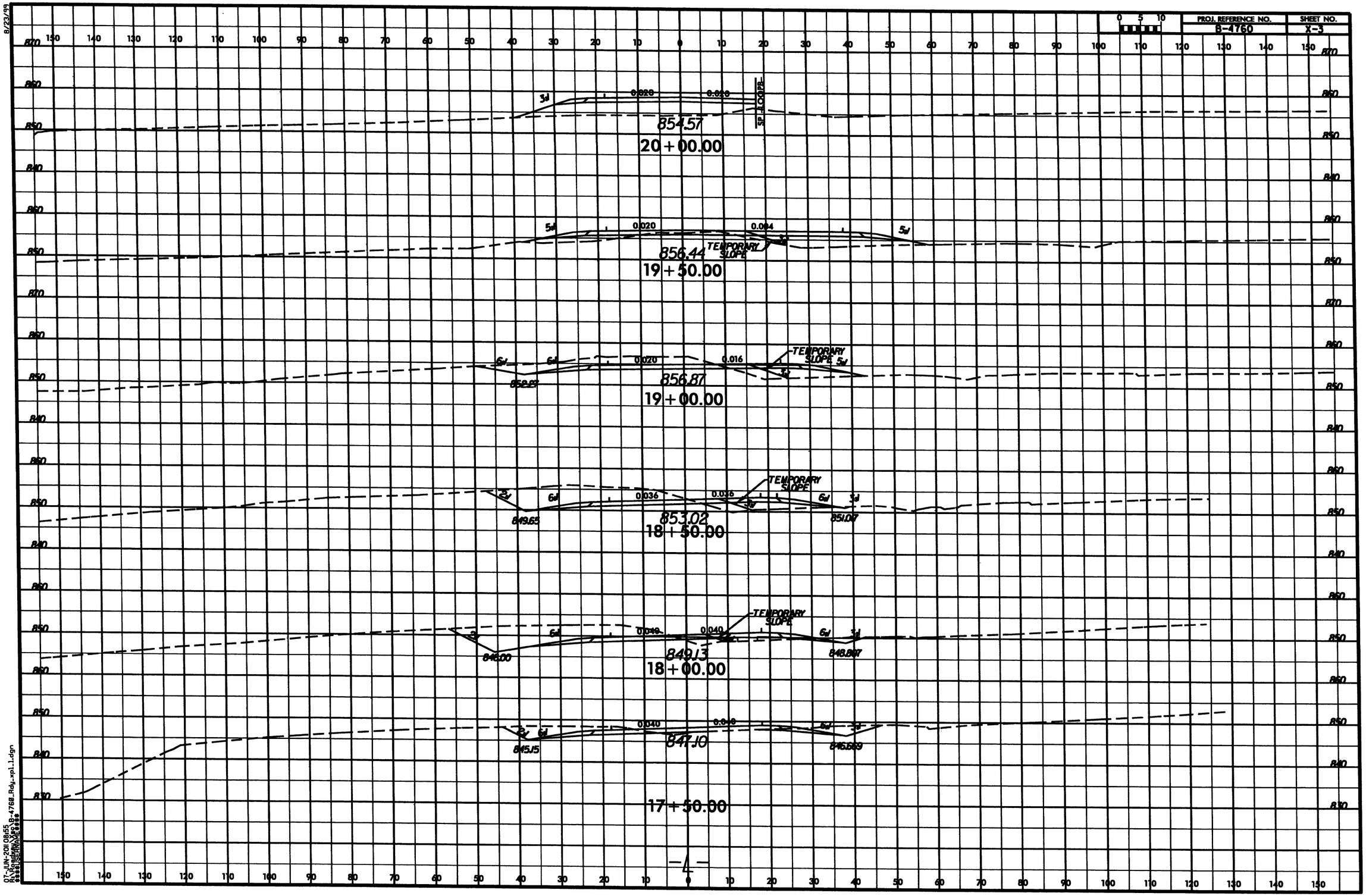
PROJ. REFERENCE NO.	SHEET NO.
B-4760	X-3

0 5 10



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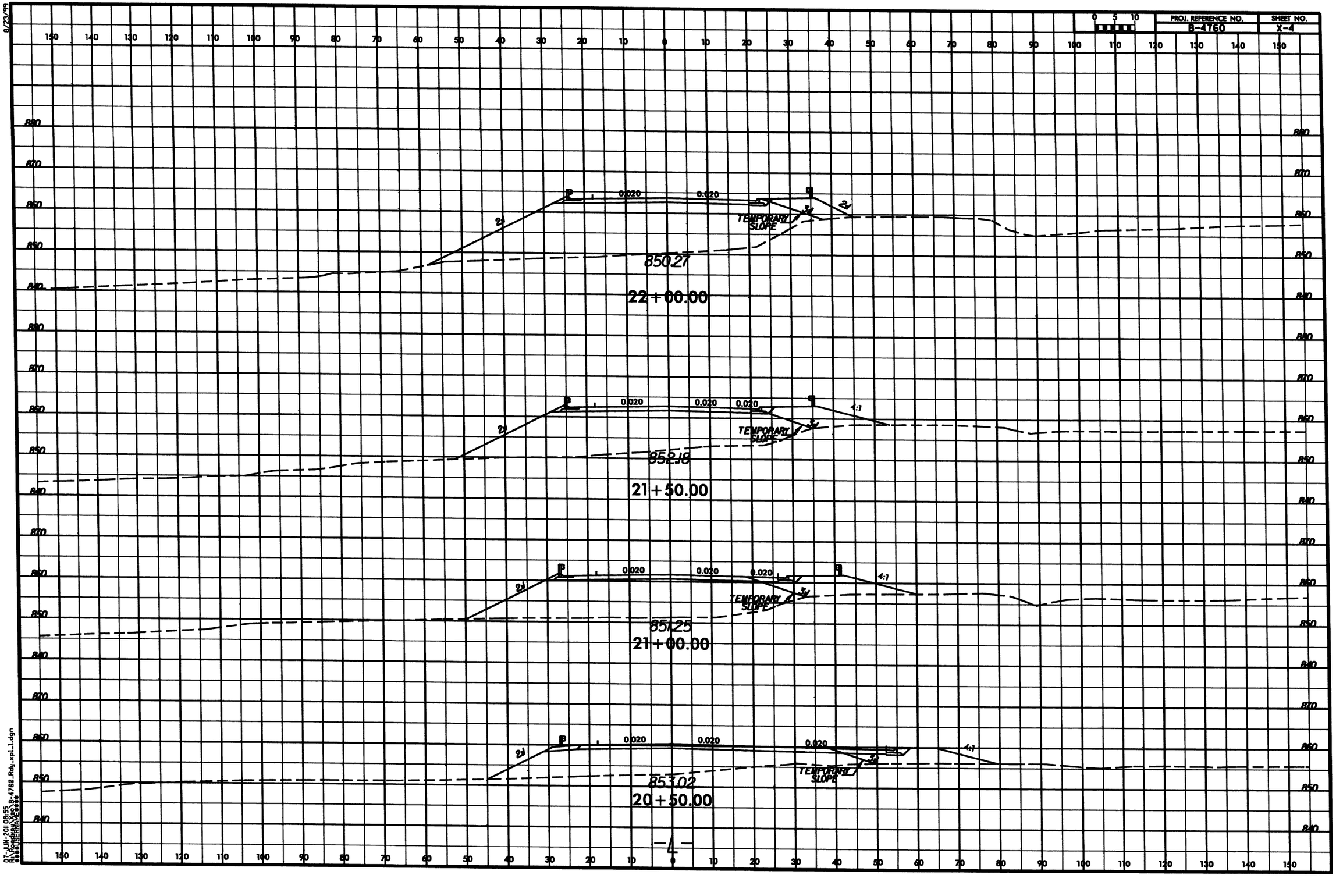
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4760	X-4



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4760	X-5

0.020 0.020

838.34
24+00.00

0.020 0.020

837.58
23+50.00

0.020 0.020

838.67
23+00.00

0.020 0.020

TEMPORARY SLOPE

347.54
22+50.00

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4760	X-6

0.009

0.020

4:1

3:1

TEMPORARY SLOPE

836.79

25+50.00

0.011

0.020

4:1

3:1

TEMPORARY SLOPE

838.58

25+00.00

0.020

0.020

4:1

3:1

TEMPORARY SLOPE

836.57

24+50.00

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User:jhamm
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PROJ. REFERENCE NO.	SHEET NO.
B-4760	X-7

0 5 10

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870 860 850 840 830 820

TEMPORARY SLOPE 4:1

0.030 0.030

3v 3v

836

840.73

27+00.00

TEMPORARY SLOPE 4:1

0.030 0.030

3v 3v

836.00

837.59

26+50.00

TEMPORARY SLOPE 4:1

0.029 0.029

3v 3v

830.80

833.46

26+00.00

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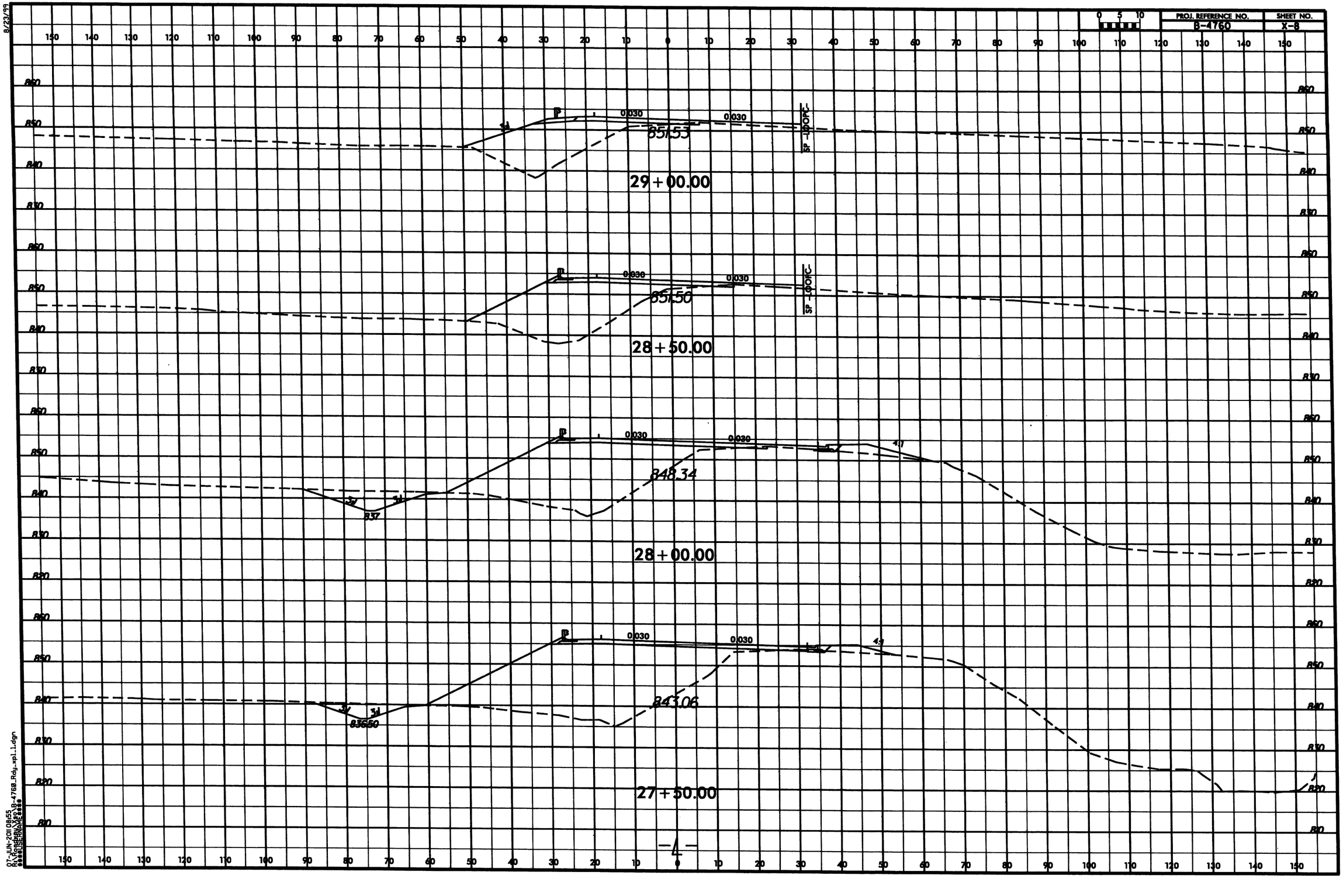
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4760	X-8



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4760	X-9

31+00.00

6d 6d 0.030 0.030 3d

849.27 850.44

30+50.00

6d 6d 0.030 0.030 3d

849.32 850.42

30+00.00

6d 6d 0.030 0.030 3d

849.64 850.97

29+50.00

4d 0.030 0.030 15P-100PC

851.69

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PROJ. REFERENCE NO.	SHEET NO.
B-4760	X-10

0 5 10

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

870 860 850 840 830

0.000 0.030 4:1

853.76

33+50.00

3.6d 0.020 0.030 3.13:1

852.84

33+00.00

SP-Y4L 0.030 0.030 SP-Y4RT

851.97

32+50.00

6d 6d 0.030 0.030 SP-Y4RT

849.98 851.45

32+00.00

6d 6d 0.030 0.030 4:1

849.49 850.91

31+50.00

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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4760	X-11

855.28

35+50.00

855.17

35+00.00

854.96

34+50.00

EXIST EXIST

854.55

34+00.00

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USERNAME

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4760	X-12

856.92
11+75.00

0.025 0.020
856.69
11+50.00

6d 6d 0.020 0.020 6d 6d
854.14 854.06
856.51
11+25.00

6d 6d 0.010 0.020 6d 6d
854.35 854.08
856.10
11+00.00

6d 6d 0.000 0.020 6d 6d
854.82 854.27
855.50
10+75.00

5d 0.010 0.020
854.97
10+50.00

855.68
10+25.00

854.54
10+00.00

-LOOPB-

07-JUN-2011 08:55
R:\...\B-4768_Rdy_xpl_loopb.dgn
USERNAME

8/23/99

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
B-4760	X-13

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860
850

857.72
12+50.00

857.48
12+25.00

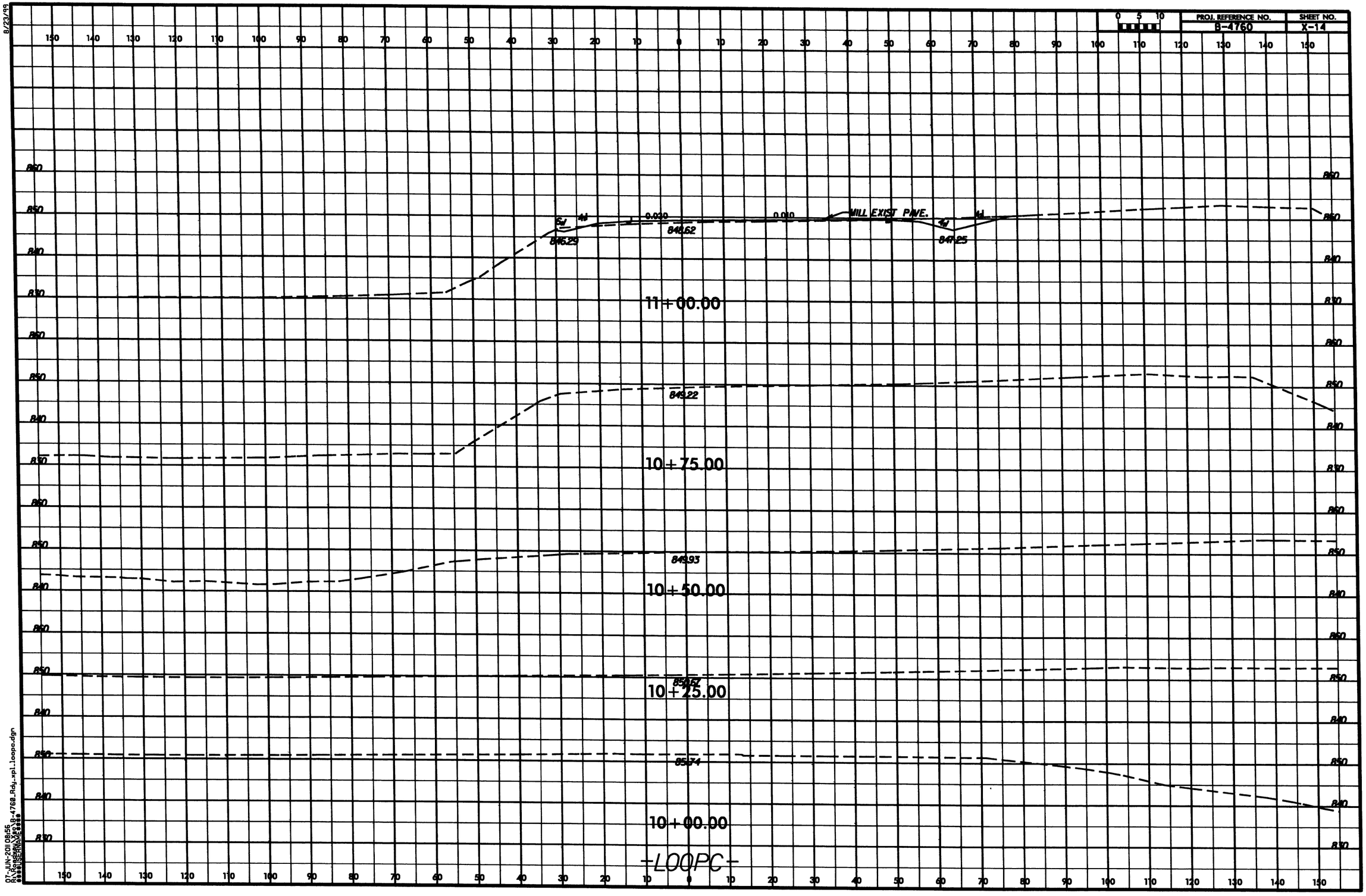
857.21
12+00.00

-LOOPB-

07-JUN-2011 08:56
V:\PROJ\B-4760\Rdy_xpl_loopb.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4760	X-14



07-JUN-2011 09:55
R:\...\B-4760_Rdy_xpl_loopc.dgn
USER:
PENTABLE

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4760	X-15

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

860 850 840 830 820

846.36

11+75.00

847.11

11+50.00

6d 4d 0.020 0.015 3d 5d

845.19 841.69 845.99

11+30.00

6d 4d 0.020 0.013 3d 5d

845.38 841.86 845.16

11+25.00

-LOOPC-

07-JUN-2011 08:55
R:\Projects\B-4760_Rdy_xpl_loopc.dgn
USER:mbeam
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4760	X-16

843.38

13+00.00

843.67

12+75.00

844.10

12+50.00

844.72

12+25.00

845.49

12+00.00

-LOOPC-

07-JUN-2011 08:56
R:\roadway\projects\B-4760_Rdy_xpl_loopa.dgn
$$$$USERNAME$$$$

8/23/99

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
B-47601	X-17

13+25.00

-LOOPC-

845.28

07-JUN-2011 08:56
$(LOOPC_PROFILE)
$(LOOPC_PROFILE)