



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

July 2, 2013

North Carolina Division of Water Quality
585 Waughtown Street
Winston-Salem, NC 27107

ATTN: Ms. Amy Euliss
NCDOT Project Coordinator

SUBJECT: **Application for Jordan Lake Riparian Buffer Authorization** for the proposed replacement of Bridge No. 159 over North Buffalo Creek on SR 2824 (Creekview Road), Guilford County, Division 7., F.A. Project No. BRZ-2824(5), T.I.P. Project No. B-4758.

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 159 over North Buffalo Creek on SR 2824 (Creekview Road). Total impacts to the Jordan Lake riparian buffers will result in 6,320 square feet of impact to the buffers. Of this, 3,720 square feet are due to bridge and road crossing impacts and are considered allowable. The remaining 2,600 square feet are considered a parallel buffer impact to an unnamed tributary to North Buffalo Creek. Mitigation for the parallel impact will be derived from the use of the North Carolina Ecosystem Enhancement Program. Due to the placement of an interior bent, 50 square feet of impact will occur to North Buffalo Creek. No mitigation is required for this impact.

Please see the enclosed copies of the Pre-Construction Notification (PCN), EEP acceptance letter, stormwater management plan, buffer impact drawings, and roadway design plans for the subject project. A Programmatic Categorical Exclusion (PCE) was completed for this project in February 2012 and distributed shortly after completion. Additional copies are available upon request.

This project calls for a letting date of March 18, 2014 and a review date of January 28, 2014; however, the let date may advance as additional funding becomes available.

A copy of this notice 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 Jason Dilday at either (919) 707-6111 or jldilday@ncdot.gov.

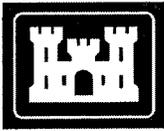
Sincerely,

A handwritten signature in blue ink, appearing to read "G. J. Thorpe".

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

CC:

NCDOT Permit Application Standard 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:	<input type="checkbox"/> Section 404 Permit <input type="checkbox"/> Section 10 Permit	
1b. Specify Nationwide Permit (NWP) number: _____ or General Permit (GP) number: _____		
1c. Has the NWP or GP number been verified by the Corps?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1d. Type(s) of approval sought from the DWQ (check all that apply):		
<input type="checkbox"/> 401 Water Quality Certification – Regular <input type="checkbox"/> Non-404 Jurisdictional General Permit <input type="checkbox"/> 401 Water Quality Certification – Express <input checked="" type="checkbox"/> 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: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	For the record only for Corps Permit: <input type="checkbox"/> Yes <input type="checkbox"/> 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.		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2. Project Information		
2a. Name of project:	Replacement of Bridge 159 over North Buffalo Creek on SR 2824 (Creekview Road)	
2b. County:	Guilford	
2c. Nearest municipality / town:	Greensboro	
2d. Subdivision name:	<i>not applicable</i>	
2e. NCDOT only, T.I.P. or state project no.:	B-4758	
3. Owner Information		
3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation	
3b. Deed Book and Page No.	<i>not applicable</i>	
3c. Responsible Party (for LLC if applicable):	<i>not applicable</i>	
3d. Street address:	1598 Mail Service Center	
3e. City, state, zip:	Raleigh, NC 27699-1598	
3f. Telephone no.:	(919) 707-6111	
3g. Fax no.:	(919) 212-5785	
3h. Email address:	jldilday@ncdot.gov	

4. Applicant Information (if different from owner)	
4a. Applicant is:	<input type="checkbox"/> Agent <input type="checkbox"/> Other, specify:
4b. Name:	<i>not applicable</i>
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:	<i>not applicable</i>
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):	<i>not applicable</i>
1b. Site coordinates (in decimal degrees):	Latitude: 36.126493 (DD.DDDDDD) Longitude: -79.679063 (-DD.DDDDDD)
1c. Property size:	1.0 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	North Buffalo Creek
2b. Water Quality Classification of nearest receiving water:	C; NSW
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: SR 2824 is a rural local route. Land use within the project vicinity consists primarily of agricultural lands with interspersed residential development.	
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: 500	
3d. Explain the purpose of the proposed project: To replace a structurally deficient bridge.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing a four span, 95-foot bridge with a two span, 110-foot 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:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	<input type="checkbox"/> Preliminary <input type="checkbox"/> Final
4c. If yes, who delineated the jurisdictional areas? Name (if known):	Agency/Consultant Company: Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation.	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown
5b. If yes, explain in detail according to "help file" instructions.	
6. Future Project Plans	
6a. Is this a phased project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site 2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site 3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site 4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site 5 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site 6 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
2g. Total wetland impacts					0 Permanent 0 Temporary

2h. Comments: There are no wetland impacts associated with this project.

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 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 5 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 6 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		

3h. Total stream and tributary impacts

3i. Comments: 50 square feet of impact will occur due to an interior bent.

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 <input type="checkbox"/> P <input type="checkbox"/> T				
O2 <input type="checkbox"/> P <input type="checkbox"/> T				
O3 <input type="checkbox"/> P <input type="checkbox"/> T				
O4 <input type="checkbox"/> P <input type="checkbox"/> 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?	<input type="checkbox"/> Yes <input type="checkbox"/> 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?		<input type="checkbox"/> Neuse <input type="checkbox"/> Tar-Pamlico <input checked="" type="checkbox"/> Other: Jordan <input type="checkbox"/> Catawba <input type="checkbox"/> Randleman			
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 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Bridge Impact	North Buffalo Creek	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1599	
B2 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Road Crossing Impact	North Buffalo Creek	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	623	1498
B3 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Parallel Impact	UT to North Buffalo Creek	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2132	468
6h. Total buffer impacts				4354	1966
6i. Comments: Buffer impacts will occur due to fill slopes and construction access.					

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 15 feet longer than the existing bridge; the replacement bridge is two spans, replacing a four span structure meaning fewer bents in water; the proposed bridge will be at approximately the same grade and alignment as the existing structure; the new bridge will have no deck drains or direct discharge to North Buffalo Creek. Stormwater control devices are located outside buffers and are designed to diffuse flow before entering buffers. An off-site detour will be used during construction.

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

NCDOT Best Management Practices for Bridge Demolition and Removal will be implemented during the removal of the existing bridge; Best Management Practices for the Protection of Surface Waters will be employed; Design Standards in Sensitive Watersheds will be employed.

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

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.		<input checked="" type="checkbox"/> Yes		
4b. Stream mitigation requested:		linear feet		
4c. If using stream mitigation, stream temperature:		<input type="checkbox"/> warm <input type="checkbox"/> cool <input type="checkbox"/> cold		
4d. Buffer mitigation requested (DWQ only):		7,098 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?			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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	Parallel	2132	3 (2 for Catawba)	6396
Zone 2	Parallel	468	1.5	702
6f. Total buffer mitigation required:				7098
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 will be paid by use of NCEEP				
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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1b. If yes, then is a diffuse flow plan included? If no, explain why. Comments: See attached permit drawings.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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?	<input type="checkbox"/> Certified Local Government <input type="checkbox"/> DWQ Stormwater Program <input type="checkbox"/> 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):	<input type="checkbox"/> Phase II <input type="checkbox"/> NSW <input type="checkbox"/> USMP <input type="checkbox"/> Water Supply Watershed <input type="checkbox"/> Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Coastal counties <input type="checkbox"/> HQW <input type="checkbox"/> ORW <input type="checkbox"/> Session Law 2006-246 <input type="checkbox"/> Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5b. Have all of the 401 Unit submittal requirements been met?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2b. Is this an after-the-fact permit application?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	<input checked="" type="checkbox"/> Raleigh	<input type="checkbox"/> Asheville
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? N.C. Natural Heritage Program database; USFWS-Raleigh Field Office website; biological surveys for protected species listed for Guilford County, which includes small-whorled pogonia. The species received a Biological Conclusion of "No Effect". Habitat for small-whorled pogonia is found within the study area. A survey for the species on June 6, 2012 resulted in no specimens being found.		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> 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		
<u>Dr. Gregory J. Thorpe, Ph D</u> Applicant/Agent's Printed Name	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	<u>6-20-13</u> Date



PROGRAM

June 18, 2013

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

B-4758, Replace Bridge Number 159 over North Prong Buffalo Creek on SR 2824
(Creekview Road), Guilford County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the buffer mitigation for the subject project. Based on the information supplied by you on June 17, 2013, the buffer impacts are located in CU 03030002 of the Cape Fear River basin (Haw Arm) in the Central Piedmont (CP) Eco-Region and are as follows:

Buffer	River Basin	CU Location	Eco-Region	Buffer Impacts (in square feet)		
				Zone 1	Zone 2	TOTAL
Impacts	Cape Fear – Haw Arm	03030002	CP	2,132.0	468.0	2,600.0

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 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 the NCDOT 2984 Fund into the Riparian Restoration Buffer Fund. Upon completion of transfer payment, NCDOT will have completed its riparian buffer mitigation responsibility for TIP number B-4758. Subsequently, EEP will conduct a review of current NCDOT ILF Program 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 NCDOT ILF Program.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-707-3420.

Sincerely,

James B. Stanfill
EEP Asset Manager Supervisor

Cc: Mr. Andy Williams, USACE – Raleigh Regulatory Field Office
Ms. Amy Chapman, NC Division of Water Quality
File: B-4758

Restoring... Enhancing... Protecting Our State





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



(Version 1.2; Released July 2012)

Project/TIP No.: B-4758

County(ies): Guilford

Page 1 of 3

General Project Information

Project No.:		B-4758		Project Type:				Date:		6/4/2013	
NCDOT Contact:		Karen Gullede		Contractor / Designer:							
	Address:				Address:						
	Phone:	919-707-6723			Phone:						
	Email:	khgullede@ncdot.gov			Email:						
City/Town:				County(ies):		Guilford					
River Basin(s):		Cape Fear		CAMA County?		No					
Primary Receiving Water:		North Buffalo Creek		NCDWQ Stream Index No.:							
NCDWQ Surface Water Classification for Primary Receiving Water		Primary:		Class C							
		Supplemental:		Nutrient Sensitive Waters (NSW)							
Other Stream Classification:		None									
303(d) Impairments:		biological impairment		ammonia (NH3)							
Buffer Rules in Effect		Jordan Lake									

Project Description

Project Length (lin. Miles or feet):	0.09 mi	Surrounding Land Use:	
		Proposed Project	Existing Site
Project Built-Upon Area (ac.)	ac.		ac.
Typical Cross Section Description:			
Average Daily Traffic (veh/hr/day):	Design/Future:		Existing:

General Project Narrative:

ROADWAY DESCRIPTION
 The project B-4758 consists of constructing a new bridge 110 feet long to replace the existing bridge No. 159 on SR 2824 (Creekview Road) over North Buffalo Creek. The total project length is 0.090 miles. Creekview Road is a 2-lane road, with existing grassed shoulders and ditches. Current ADT (2012) is 2900 and predicted ADT (2030) is 7200.
 Jurisdictional Stream: North Buffalo Creek

ENVIRONMENTAL DESCRIPTION
 The surrounding community consists primarily of agricultural, interspersed with residential development along roadways and forestland along stream corridors. The area is also mostly wooded with a few open areas, which consist of tall grass and weeds. North Buffalo Creek and the Unnamed Tributary are subject to the Jordan Lake Buffer Rules. North Buffalo Creek is classified as Class C; NSW waters, and there are no ORW or HQW waters present. North Buffalo Creek is also on the 303(d) list due to impaired biological integrity and historical listing of ammonia. No wetlands are present within the proposed project limits. Impacts to the buffers have been minimized by discharging any storm water drainage outside of the buffers.

BEST MANAGEMENT PRACTICES
 The primary goal of Best Management Practices (BMP's) is an effort to reduce sedimentation and erosion and to prevent degradation of the state's surface waters by the location, construction, and operation of the highway system. The BMP measures used on this project to reduce storm water impacts on this project include grassed shoulders and open ditches; there are no direct discharges to North Buffalo Creek; small drainage system directs storm water away from the receiving waters and discharges into a rip rapped pad located outside the buffer areas.

BMP's:
 -L- Station 17+75 Rt. - rip rapped pad

References

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Plan Sheet Symbols
See Sheet 1-C For Survey Control Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BUFFER IMPACTS PERMIT

GUILFORD COUNTY

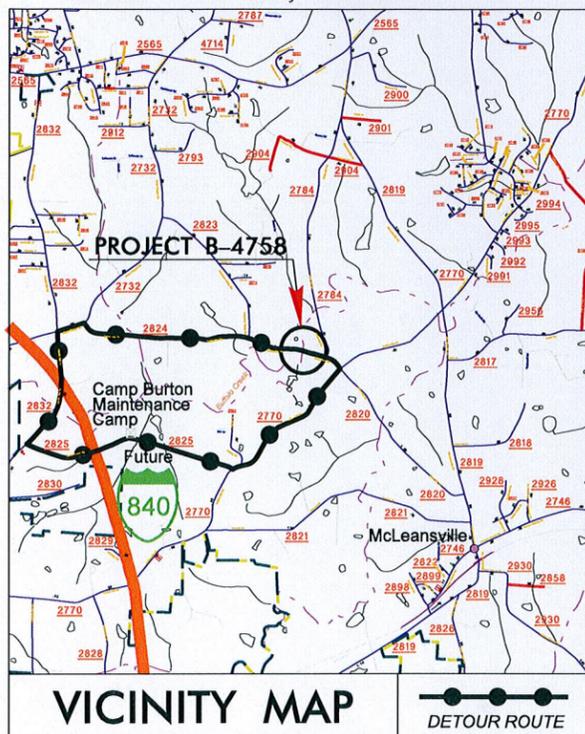
BUFFER IMPACTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4758	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
38530.1.1	BRZ-2824(5)	PE	
38530.2.1	BRZ-2824(5)	RAW & UTILITIES	

**BUFFER DRAWING
SHEET 1 OF 5**

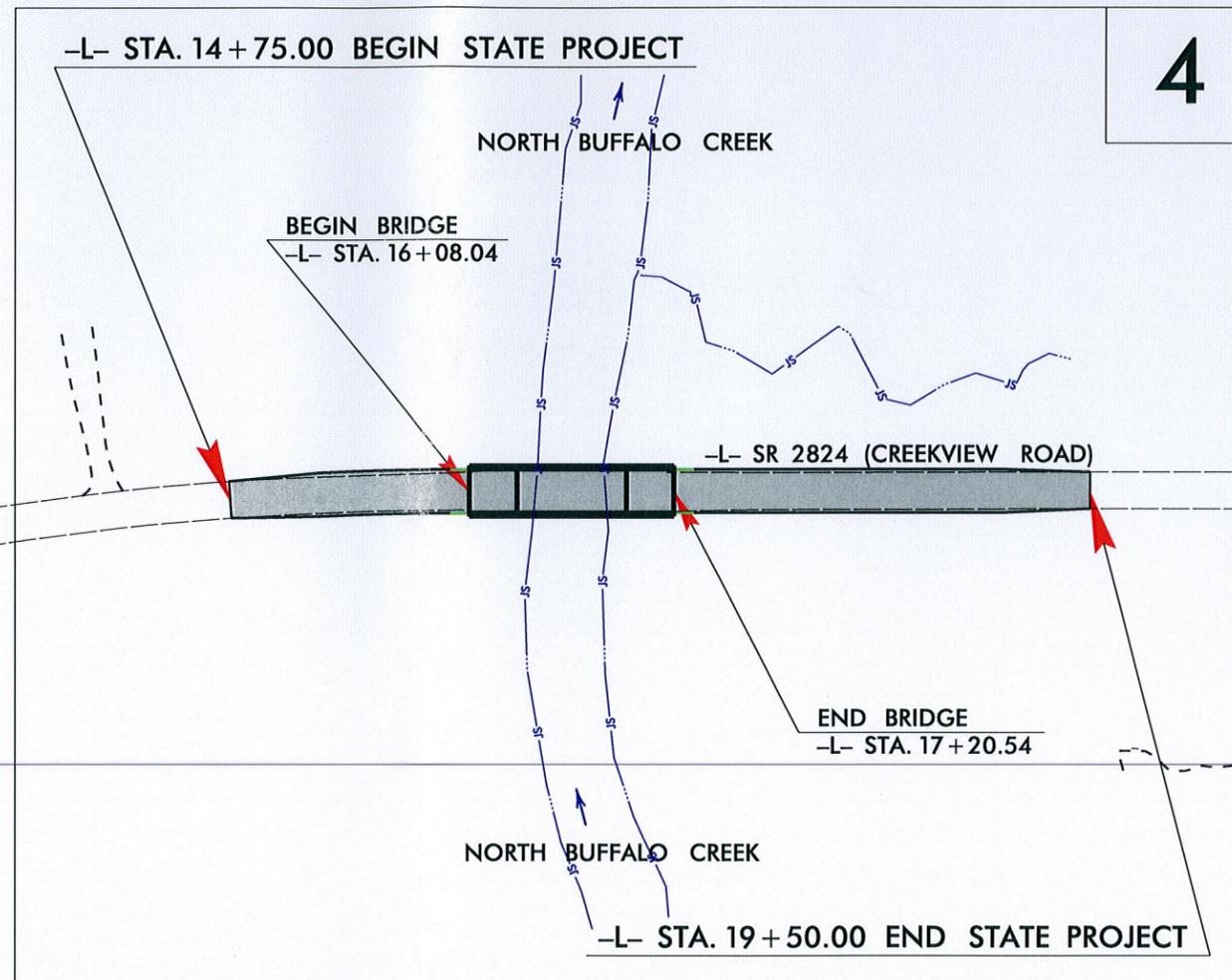


TIP PROJECT: B-4758



VICINITY MAP

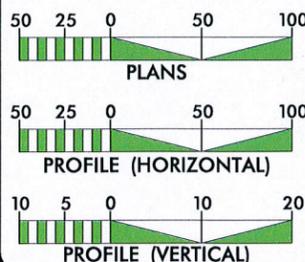
DETOUR ROUTE



THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
DESIGN EXCEPTION FOR SAG VERTICAL CURVE AND ASSOCIATED NIGHTTIME STOPPING SIGHT DISTANCE.
CLEARING ON THIS PROJECT SHALL BE PREPARED TO THE LIMITS ESTABLISHED BY METHOD II.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



DESIGN DATA

ADT 2014 = 3375
ADT 2030 = 7200
DHV = 11 %
D = 55 %
T = 16 % *
V = 50 MPH
* TTST 3% DUAL 13%
FUNC. CLASS. = RURAL LOCAL
"SUB-REGIONAL TIER"

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4758 = 0.069 MILES
LENGTH STRUCTURE TIP PROJECT B-4758 = 0.021 MILES
TOTAL LENGTH OF TIP PROJECT B-4758 = 0.090 MILES

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MARCH 1, 2013

LETTING DATE:
MARCH 18, 2014

JAMES A. SPEER, PE
PROJECT ENGINEER

DANIEL W. GARDNER JR., PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN
ENGINEER

SIGNATURE: _____ P.E.



\$SYTIME\$\$\$\$DGN\$\$\$\$USRNAME\$\$\$\$\$

CONTRACT: C203363

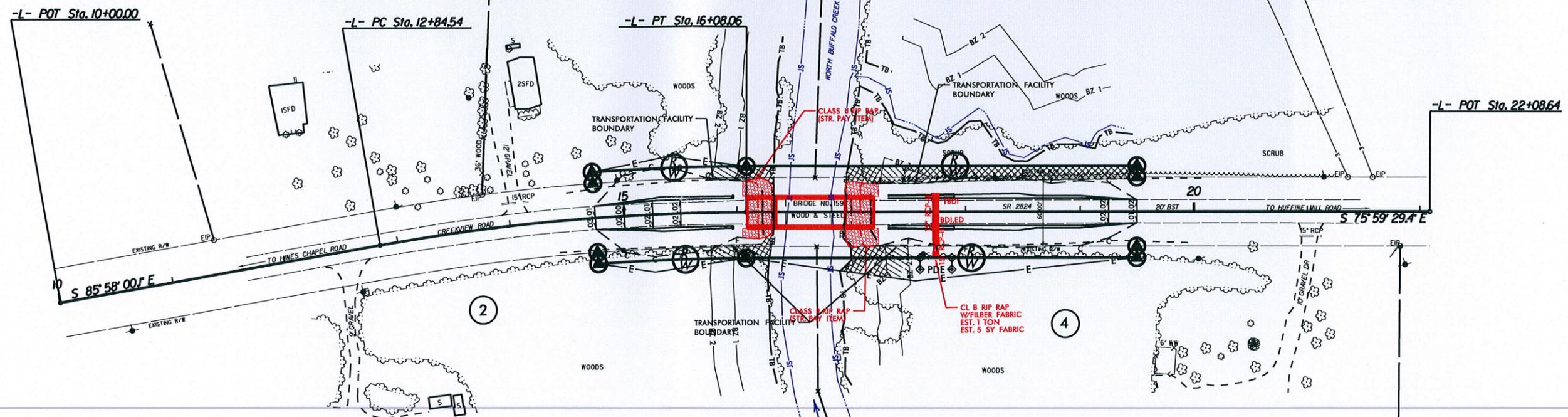
8/17/99

BUFFER IMPACTS PERMIT

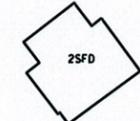
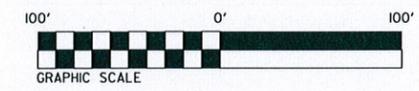
PROJECT REFERENCE NO. B-4758	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PERMIT DRAWING SHEET 2 OF 5

NAD 83/NSRS 2007



-  ALLOWABLE IMPACTS ZONE 1
-  ALLOWABLE IMPACTS ZONE 2
-  MITIGABLE IMPACTS ZONE 1
-  MITIGABLE IMPACTS ZONE 2



REVISIONS

SYSTIMATIC CONSULTANTS

8/17/99

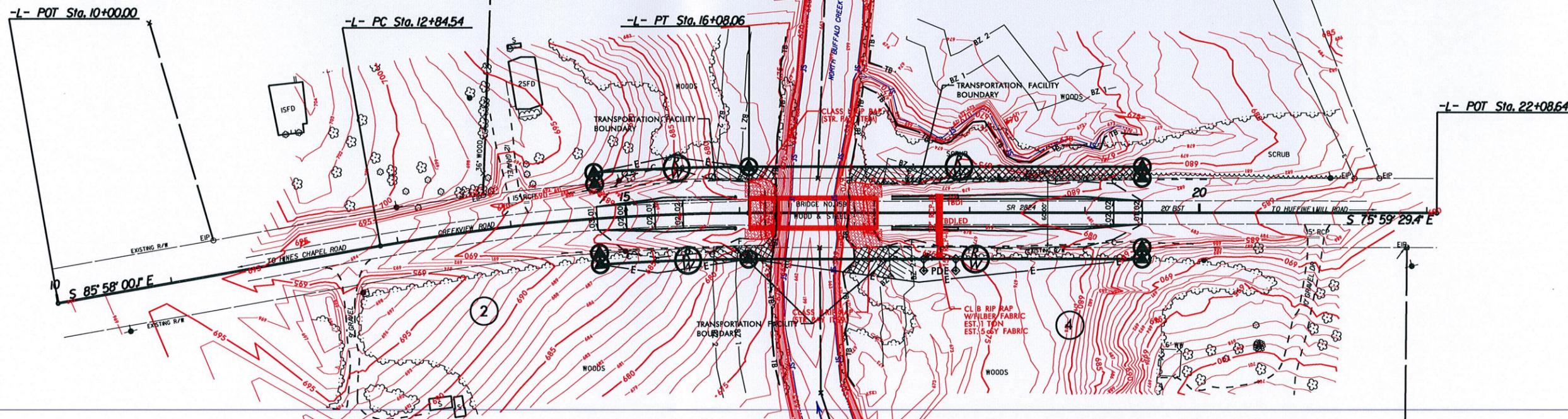
BUFFER IMPACTS PERMIT

PROJECT REFERENCE NO. B-4758	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

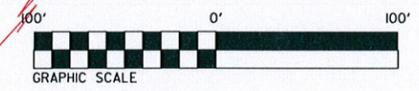
PERMIT DRAWING SHEET 3 OF 5

NAD 83/NRS 2007

REVISIONS



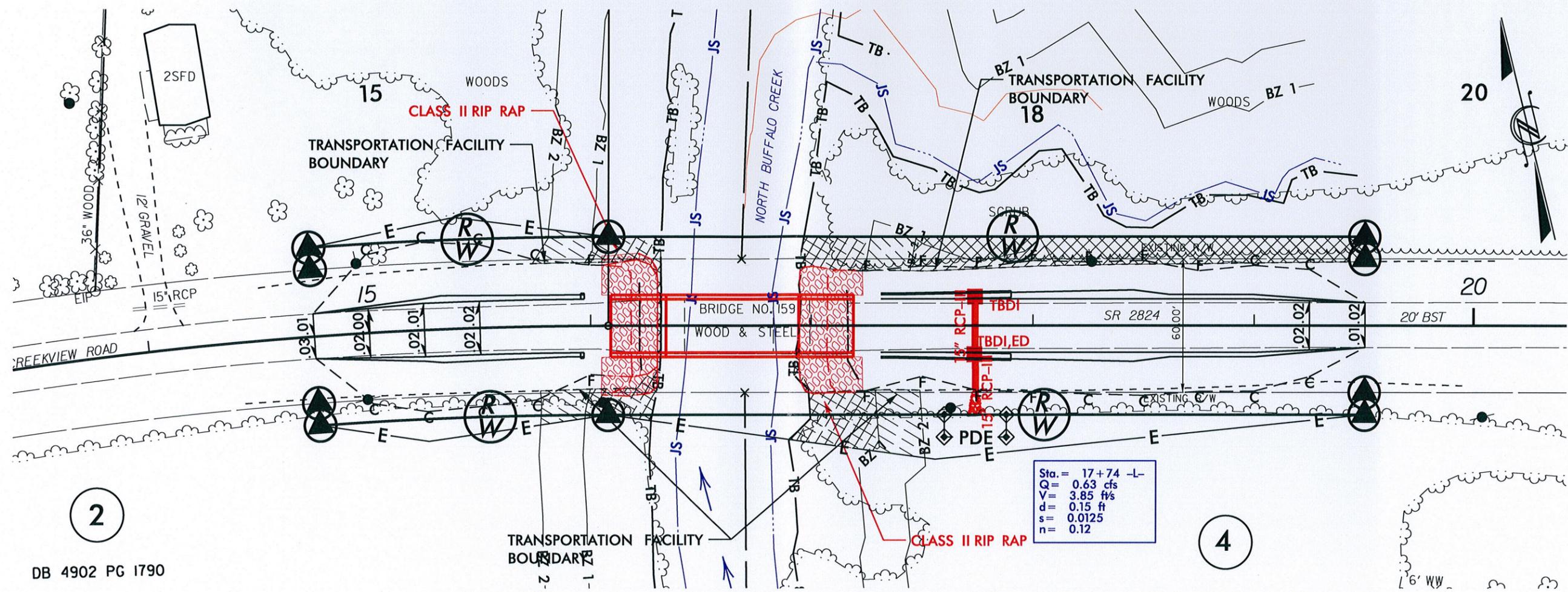
-  ALLOWABLE IMPACTS ZONE 1
-  ALLOWABLE IMPACTS ZONE 2
-  MITIGABLE IMPACTS ZONE 1
-  MITIGABLE IMPACTS ZONE 2



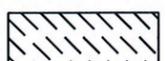
8/17/99

ENLARGEMENT - BUFFER IMPACTS

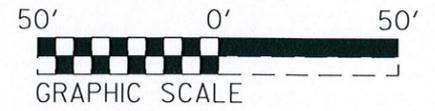
PERMIT DRAWING
SHEET 4 OF 5



DB 4902 PG 1790

-  MITIGABLE IMPACTS ZONE 1
-  MITIGABLE IMPACTS ZONE 2
-  ALLOWABLE IMPACTS ZONE 1
-  ALLOWABLE IMPACTS ZONE 2

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY
WBS NO.: 38530.1.1 (B-4758)
REPLACEMENT OF BRIDGE NO. 159
ON SR2824 (CREEKVIEW RD.)
OVER NORTH BUFFALO CREEK



BUFFER IMPACTS SUMMARY

SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	IMPACT									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE			ZONE 1 (ft ²)	ZONE 2 (ft ²)
			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)		
1	110' CSU 3-span Bridge	16+09 to 17+19 -L-		X		1599		1599					
	110' CSU 3-span Bridge	16+09 to 17+19 -L-	X			623	1498	2121					
2	Roadway Fill	17+45 to 19+50 Lt. -L-	X						2132	468	2600.1		
TOTALS:						2222	1498	3720	2132	468	2600		

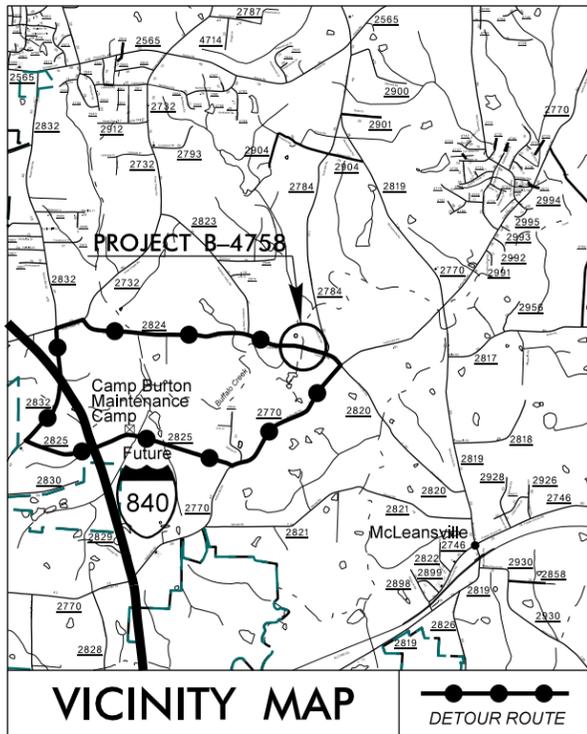
N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS

 GUILFORD COUNTY
 PROJECT: 38530.1.1 (B-4758)

 6/10/2013
 SHEET 5 OF 5

09/08/99

See Sheet 1-A For Index of Sheets
 See Sheet 1-B For Conventional Plan Sheet Symbols
 See Sheet 1-C For Survey Control Sheets



STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

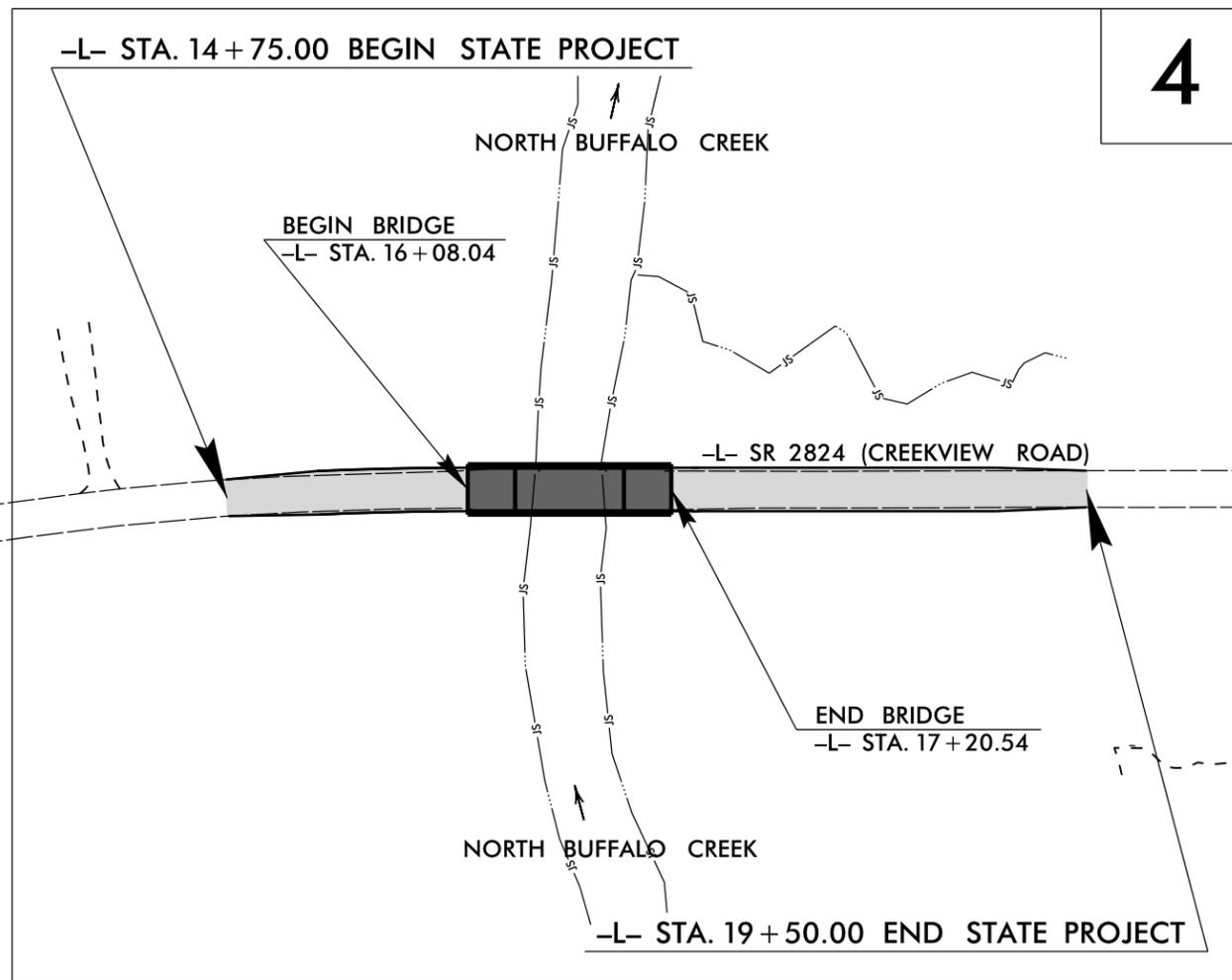
GUILFORD COUNTY

**LOCATION: BRIDGE NO. 159 OVER NORTH BUFFALO CREEK
 ON SR 2824 (CREEKVIEW ROAD)**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4758	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38530.1.1	BRZ-2824(5)	PE	
38530.2.1	BRZ-2824(5)	RW & UTILITIES	

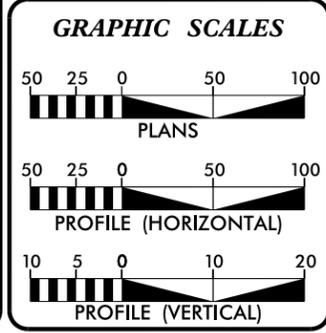
TIP PROJECT: B-4758



THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
 DESIGN EXCEPTION FOR SAG VERTICAL CURVE AND ASSOCIATED NIGHTTIME STOPPING SIGHT DISTANCE.
 CLEARING ON THIS PROJECT SHALL BE PREPARED TO THE LIMITS ESTABLISHED BY METHOD II.

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2014 =	3375
ADT 2030 =	7200
DHV =	11 %
D =	55 %
T =	16 % *
V =	50 MPH
* TTST 3%	DUAL 13%
FUNC. CLASS. = RURAL LOCAL "SUB-REGIONAL TIER"	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4758 =	0.069 MILES
LENGTH STRUCTURE TIP PROJECT B-4758 =	0.021 MILES
TOTAL LENGTH OF TIP PROJECT B-4758 =	0.090 MILES

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

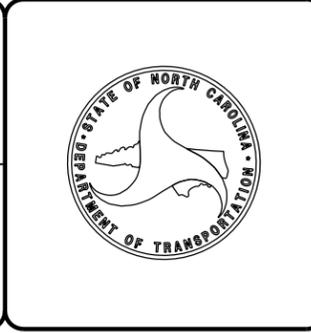
2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	MARCH 1, 2013
LETTING DATE:	MARCH 18, 2014
	JAMES A. SPEER, PE PROJECT ENGINEER
	DANIEL W. GARDNER JR., PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



28-FEB-2013 15:03 R:\Roadway\Proj\B4758_rdy_tsh.dgn \$\$\$USERNAME\$\$\$

04/16/11

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. B-4758
SHEET NO. I-B

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EP
Property Corner	-----
Property Monument	□ ECM
Parcel/Sequence Number	① 23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	----- MLB
Proposed Wetland Boundary	----- MLB
Existing Endangered Animal Boundary	----- EAB
Existing Endangered Plant Boundary	----- EPB
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	☠ ?

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	○
Proposed Right of Way Line with Concrete or Granite R/W Marker	○
Proposed Control of Access Line with Concrete CA Marker	○
Existing Control of Access	○
Proposed Control of Access	○
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 Aerial Utility Easement	----- AUE
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 Curb Ramp	○ CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----
Single Tree	☼
Single Shrub	☼
Hedge	-----
Woods Line	-----

VEGETATION:

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	○
Storm Sewer	-----

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊠
Power Transformer	⊠
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	⊕
Telephone Booth	□
Telephone Pedestal	□
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	□
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	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	----- A/G Water

TV:

TV Satellite Dish	☼
TV Pedestal	□
TV Tower	⊗
U/G TV Cable Hand Hole	□
Recorded U/G TV Cable	----- 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	□
Utility Unknown U/G Line	----- TUL
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

B-4758 SURVEY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
B-4758	1-C
Location and Surveys	

-L- STA. 14+75.00 BEGIN STATE PROJECT

BEGIN BRIDGE
-L- STA. 16+08.04

-L- STA. 19+50.00 END STATE PROJECT

NCDOT BASELINE
STATION "BL-3"
N = 865638.7360
E = 1799032.2740

NCDOT BASELINE
STATION "BL-4"
N = 865583.7860
E = 1799445.4400

BM2
ELEV = 686.25

NCDOT BASELINE
STATION "BL-5"
N = 865346.6910
E = 1800408.3100

BM1
ELEV = 681.90

-L- SR 2824 (CREEKVIEW ROAD)

20' PAVED RD.

END BRIDGE
-L- STA. 17+20.54

BASELINE DATA						
BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
3	BL-3	865638.7360	1799032.2740	694.85	11+99.01	14.96 LT
4	BL-4	865583.7860	1799445.4400	679.18	16+13.52	18.52 LT
5	BL-5	865346.6910	1800408.3100	709.89	OUTSIDE PROJECT LIMITS	
1	B4758-1R	865000.3000	1800871.9190	737.94	OUTSIDE PROJECT LIMITS	

BENCHMARK DATA			
BM1	ELEVATION = 681.90	BM2	ELEVATION = 686.25
N 865481	E 1799321	N 865548	E 1799999
L STATION 15+12.00 109 RIGHT		L STATION 21+60.00 117 LEFT	
R/R SPIKE IN ROOT OF 18" BEECH		R/R SPIKE IN ROOT OF 36" POPLAR	

ROW MARKER IRON PIN AND CAP-E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	14+75.00	-30.00	865624.2490	1799310.6737
L	14+75.00	-40.00	865634.0999	1799312.3940
L	14+75.00	30.00	865565.1435	1799300.3518
L	14+75.00	40.00	865555.2926	1799298.6315
L	16+08.06	40.00	865528.3251	1799425.9706
L	16+08.06	-40.00	865605.9459	1799445.3359
L	19+50.00	-40.00	865523.1729	1799777.1108
L	19+50.00	-30.00	865513.4703	1799774.6901
L	19+50.00	40.00	865445.5519	1799757.7462
L	19+50.00	30.00	865455.2545	1799760.1669

PDE MARKER IRON PIN AND CAP				
ALIGN	STATION	OFFSET	NORTH	EAST
L	17+60.00	50.00	865481.8419	1799570.9758
L	17+60.00	40.00	865491.5445	1799573.3965
L	17+88.00	40.00	865484.7667	1799600.5638
L	17+88.00	50.00	865475.0641	1799598.1431

L			
TYPE	STATION	NORTH	EAST
POT	10+00.00	865637.8108	1798832.7076
PC	12+84.54	865617.7977	1799116.5380
PT	16+08.06	865567.1355	1799435.6533
POT	22+08.64	865421.7555	1800018.3724

NOTES

- 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/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)
THE FILES TO BE FOUND ARE AS FOLLOWS:
B4758.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 FROM EXISTING NCGS MONUMENTATION.

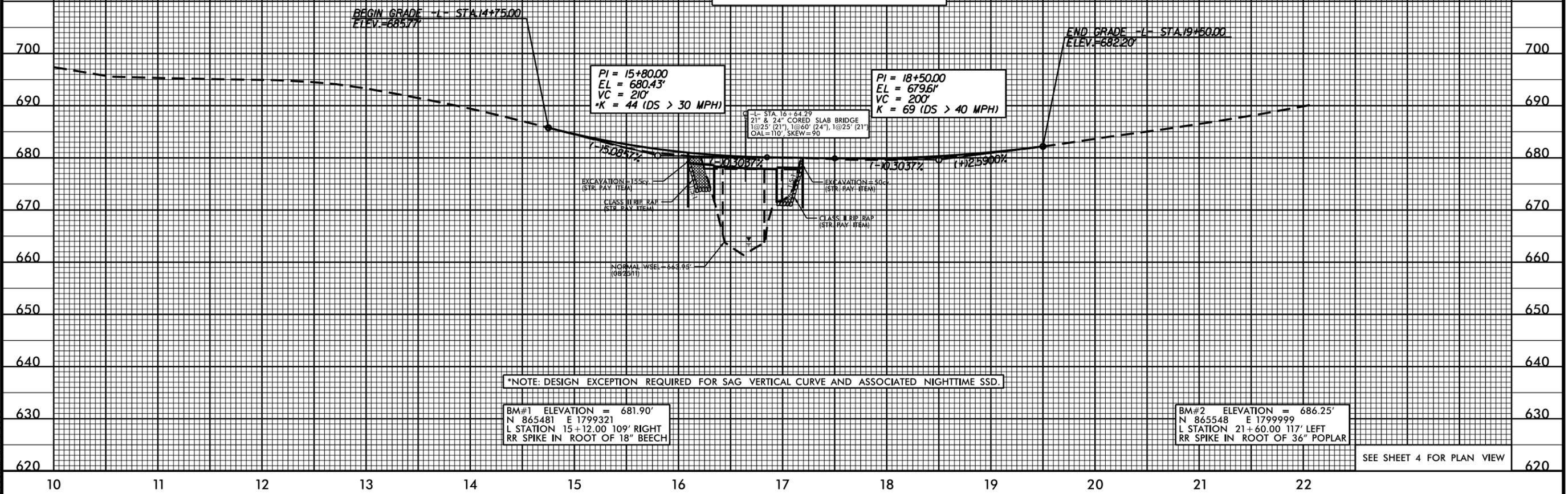
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4758-1R"
WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
NORTHING: 865000.300(ft) EASTING: 1800871.919(ft)
ELEVATION: 737.94(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9999581663
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4758-1R" TO -L- STATION 14+75.00 IS
N 69° 13' 12" W 1.675.39'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

5/14/99



BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 5900	CFS
DESIGN FREQUENCY	= 10	YRS
DESIGN HW ELEVATION	= 679.3	FT
BASE DISCHARGE	= 7000	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 683.7	FT
OVERTOPPING DISCHARGE	= 5408	CFS
OVERTOPPING FREQUENCY	= 10+	YRS
OVERTOPPING ELEVATION	= 679.6	FT
DATE OF SURVEY = 8/25/11		
W.S. ELEVATION AT DATE OF SURVEY = 663.95 FT		



BEGIN GRADE -L- STA. 14+75.00
ELEV. = 685.77'

END GRADE -L- STA. 19+50.00
ELEV. = 682.20'

PI = 15+80.00
EL = 680.43'
VC = 210'
*K = 44 (DS > 30 MPH)

PI = 18+50.00
EL = 679.61'
VC = 200'
K = 69 (DS > 40 MPH)

STA. 16+62.29
21' x 24' CORED SLAB BRIDGE
1@25' (21'), 1@60' (24'), 1@25' (21')
OAL=110' SKEW=90

-15.0857%

EXCAVATION = 155c
(STR. PAY ITEM)

CLASS II RIP RAP
(STR. PAY ITEM)

NORMAL WSEL = 663.95'
(8/25/11)

-10.3087%

EXCAVATION = 50c
(STR. PAY ITEM)

CLASS II RIP RAP
(STR. PAY ITEM)

-10.3037%

+2.5900%

*NOTE: DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE AND ASSOCIATED NIGHTTIME SSD.

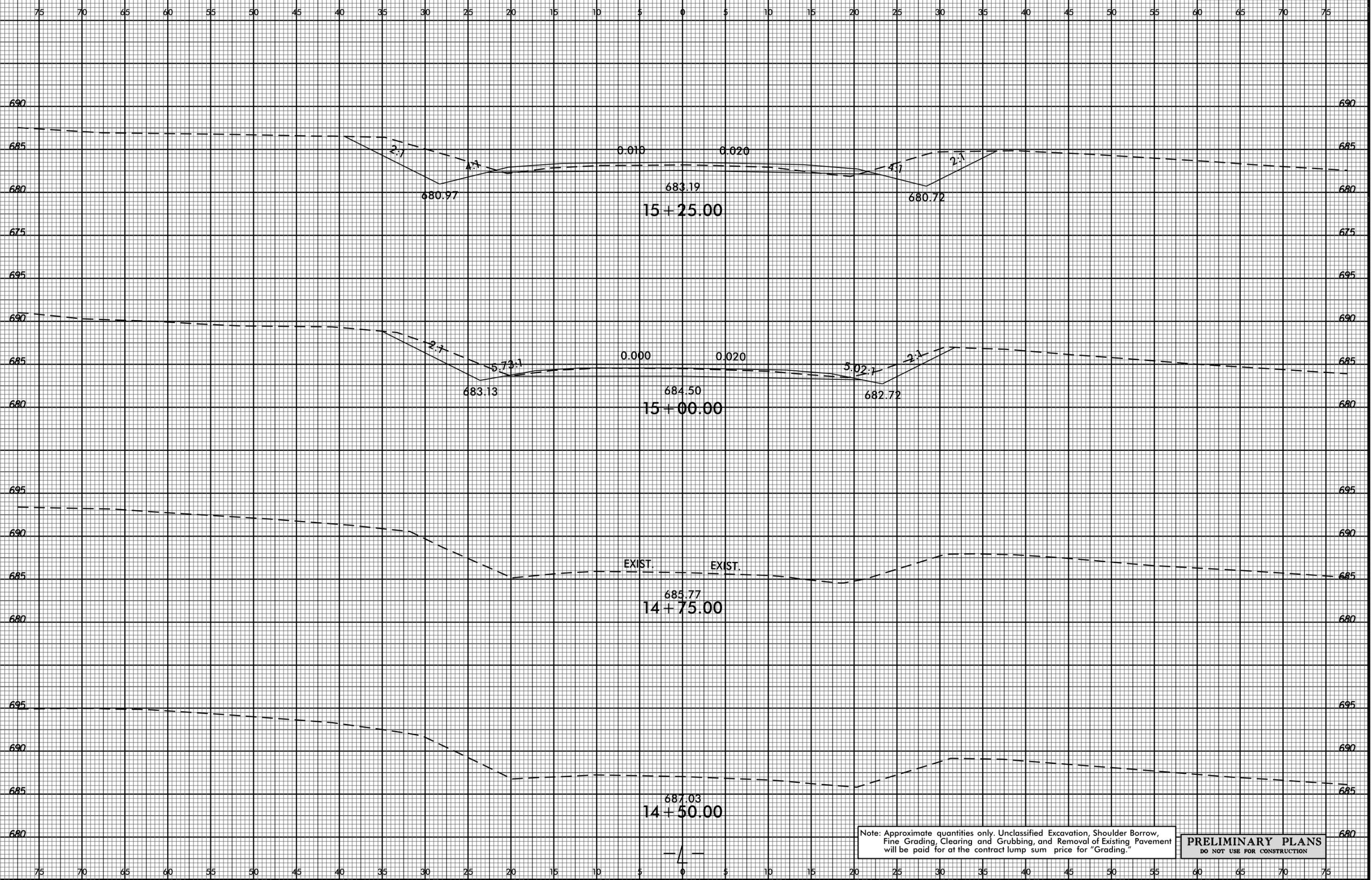
BM#1 ELEVATION = 681.90'
N 865481 E 1799321
L STATION 15+12.00 109' RIGHT
RR SPIKE IN ROOT OF 18" BEECH

BM#2 ELEVATION = 686.25'
N 865548 E 1799999
L STATION 21+60.00 117' LEFT
RR SPIKE IN ROOT OF 36" POPLAR

SEE SHEET 4 FOR PLAN VIEW

28-FEB-2013 15:03
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\$\$\$\$\$

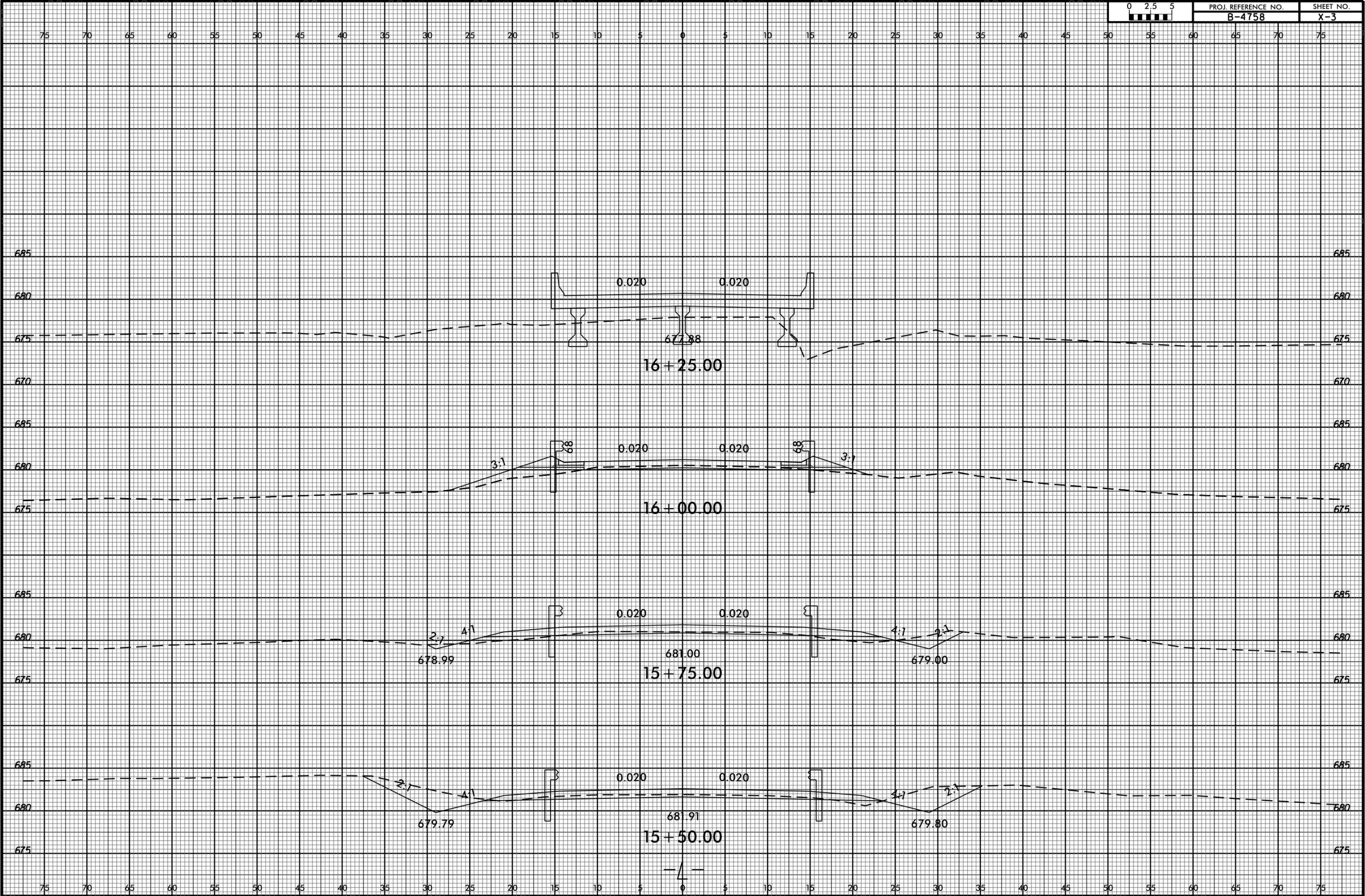
8/23/99



Note: Approximate quantities only. Unclassified Excavation, Shoulder Borrow, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

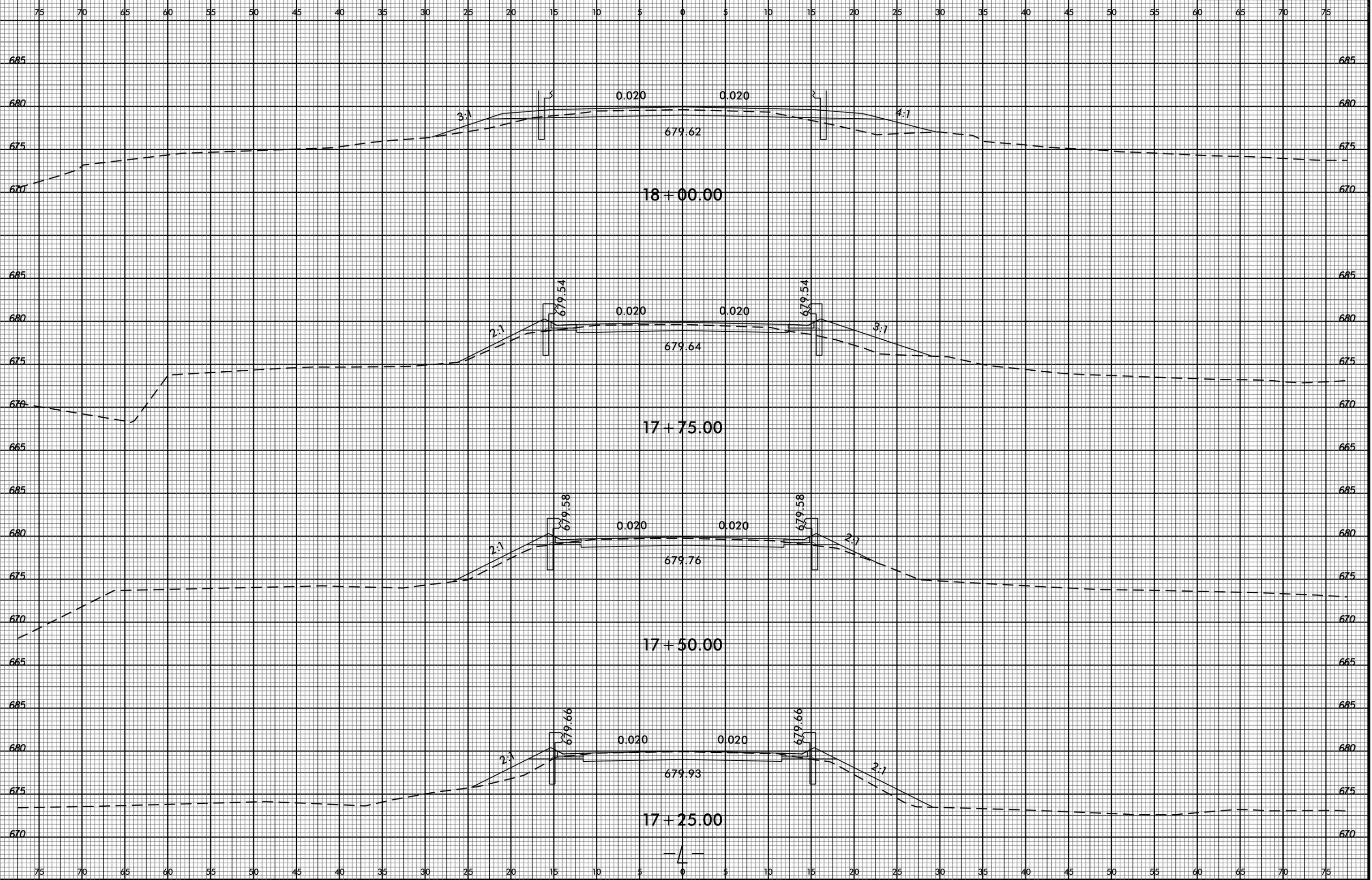
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8/23/99



PROJ. REFERENCE NO. B-4758 SHEET NO. X-5



28-FEB-2013 15:03
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\$\$\$\$\$USERNAME\$\$\$\$\$

