



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PATRICK LLOYD MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

January 9, 2013

U. S. Army Corps of Engineers
Regulatory Field Office
3331 Heritage Trade Drive Suite 105
Wake Forest, NC 27587

ATTN: Mr. Andy Williams
NCDOT Coordinator

Dear Sir:

Subject: **Application for Section 404 Nationwide Permit 23, Section 401 Water Quality Certification, and Jordan Lake Water Supply Watershed Buffer Certification** for the Replacement of Bridge No. 120 on SR 2128 (Bunch Rd.) over Reedy Fork Creek in Guilford County, North Carolina. TIP No. B-4756. Federal Aid Project No. BRZ-2128(1).

Debit \$240.00 from WBS Element 38528.1.1.

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 120 over Reedy Fork Creek on SR 2128 (Bunch Rd.) in Guilford County. There will be 0.03 acre of permanent riparian wetland impacts due to fill and 4,325 square feet of riparian buffer impacts on this project.

Please find enclosed the Pre-Construction Notification (PCN) form, stormwater management plan, permit drawings, and design plans for the above referenced project. A Programmatic Categorical Exclusion (PCE) was completed for this project on September 26, 2012 and distributed shortly thereafter. Additional copies are available upon request.

The proposed let date for the project is November 19, 2013 with a review date of October 1, 2013. However, the let date may advance as additional funds become available.

A copy of this permit application will be posted on the NCDOT Website at:
<https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx>

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Amy James at aejames@ncdot.gov or (919) 707-6129.

Sincerely,

for 

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 checked="" type="checkbox"/> Section 404 Permit	<input type="checkbox"/> Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 23 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 checked="" type="checkbox"/> 401 Water Quality Certification – Regular		
<input type="checkbox"/> 401 Water Quality Certification – Express		
<input type="checkbox"/> Non-404 Jurisdictional General Permit		
<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 checked="" 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 type="checkbox"/> Yes	<input checked="" 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 120 over Reedy Fork Creek on SR 2128 (Bunch Rd.)
2b. County:	Guilford
2c. Nearest municipality / town:	Summerfield
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no:	B-4756

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) 707-6129
3g. Fax no.:	(919) 212-5785
3h. Email address:	aejames@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: 35.317822 (DD.DDDDDD) Longitude: - 79.974461 (-DD.DDDDDD)
1c. Property size:	2.9 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Reedy Fork Creek
2b. Water Quality Classification of nearest receiving water:	WS-III; 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: Land use in the project vicinity consists primarily of agriculture, interspersed with residential development along roadways and forestland along stream corridors,	
3b. List the total estimated acreage of all existing wetlands on the property: 1.0	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 425	
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 106-foot bridge with a 120-foot, 45" cored slab 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: Andy Williams conducted a site visit on May 15, 2009, but no paper JD was received.	<input checked="" type="checkbox"/> Yes <input 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): Jeremy Schmid	Agency/Consultant Company: PBS&J (now Atkins) 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):						
<input checked="" type="checkbox"/> Wetlands		<input type="checkbox"/> Streams - tributaries		<input checked="" type="checkbox"/> Buffers		
<input type="checkbox"/> Open Waters		<input type="checkbox"/> 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 checked="" type="checkbox"/> P <input type="checkbox"/> T	Fill	Bottomland Hardwood Forest	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.03	
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					0.03 Permanent 0.0 Temporary	
2h. Comments: There will also be <0.01 acre of temporary fill in wetlands in hand-clearing areas for erosion control measures.						
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						X Perm X 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 <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						X Permanent X 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"/> Catawba	<input type="checkbox"/> Tar-Pamlico <input type="checkbox"/> Randleman	<input checked="" type="checkbox"/> Other: Jordan
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	Reedy Fork Creek	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2,321	594
B2 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Road crossing	Reedy Fork Creek	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	0.0	1,410
B3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
6h. Total buffer impacts				2,321	2,004
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 14 feet longer than the existing bridge and will be at approximately the same grade and alignment; no deck drains on bridge; and the implementation of Design Standards in Sensitive Watersheds.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. NCDOT Best Management Practices for Bridge Demolition, Removal and Construction will be followed, as well as those for Sedimentation and Erosion Control; and the utilization of an off-site detour.		
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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, explain: Wetland impacts will occur on the edge of a much larger system and as such should not cause any change in wetland quality or function. Therefore, no compensatory mitigation is proposed.	
2b. If yes, mitigation is required by (check all that apply):	<input type="checkbox"/> DWQ <input type="checkbox"/> Corps	
2c. If yes, which mitigation option will be used for this project?	<input type="checkbox"/> Mitigation bank <input type="checkbox"/> Payment to in-lieu fee program <input type="checkbox"/> 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 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):	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 type="checkbox"/> Yes	<input checked="" 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			3 (2 for Catawba)		
Zone 2			1.5		
			6f. Total buffer mitigation required:		
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).					
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 not, explain why. Comments: see attached buffer 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 checked="" 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 checked="" type="checkbox"/> No
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No N/A
5b. Have all of the 401 Unit submittal requirements been met?	<input type="checkbox"/> Yes <input type="checkbox"/> 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?	<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 type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	<input 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? USFWS county list, 2009 field surveys		
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>1-3-13</u> Date



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



(Version 1.2; Released July 2012)

Project No.:	B-4756	Project Type:	Bridge Replacement	Date:	8/10/2012
NC DOT Contact:	Bill Zerman	Contractor / Designer:	Kimley-Horn and Associates		
Address:	NCDOT - Hydraulics Design Unit 1020 Birch Ridge Road Raleigh, NC 27610				
Phone:	919-707-6755	Address:	3001 Weston Parkway Cary, NC 27513		
Email:	bzerman@ncdot.gov	Phone:	919-677-2000		
City/Town:	Greensboro	Email:	jason.lawing@kimley-horn.com		
River Basin(s):	Cape Fear	County(ies):	Guilford		
Primary Receiving Water:	Reedy Fork Creek	CAMA County?	No		
NCDWQ Surface Water Classification for Primary Receiving Water		NCDWQ Stream Index No.:	16-11-(1)		
Other Stream Classification:	None	Water Supply III (WS-III)			
303(d) Impairments:	biological impairment	Nutrient Sensitive Waters (NSW)			
Buffer Rules in Effect	Jordan Lake	Primary:			
		Supplemental:	fish advisory		

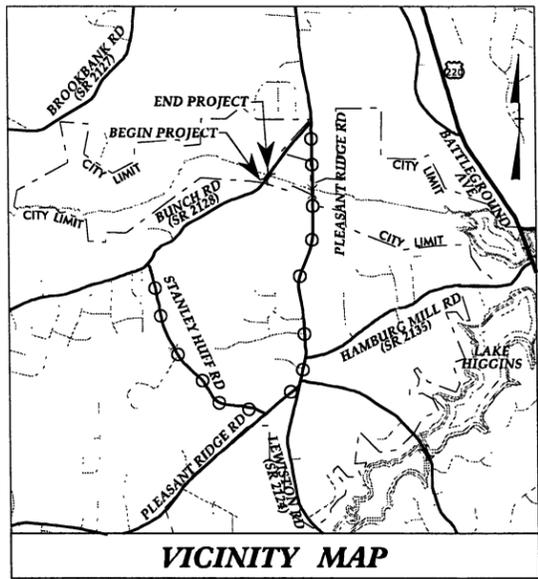
Project Length (lin. Miles or feet):	639 FT	Surrounding Land Use:	Rural
Project Built-Upon Area (ac.)	0.48	Proposed Project	
Typical Cross Section Description:	2 @ 11' lanes with typical 4' wide paved shoulders and side slopes that vary from 2:1 to 4:1.	Existing Site	0.31 ac.

Average Daily Traffic (veh/hr/day): Design/Future: 1700
General Project Narrative: Replacement of Bridge #120 on SR 2128 (Bunch Rd.) over Reedy Fork Creek in Guilford County. The bridge will be replaced with a 120' long x 45' wide cored slab structure.

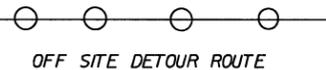
References

TIP PROJECT: B-4756

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP



PRE-ROW PLANS

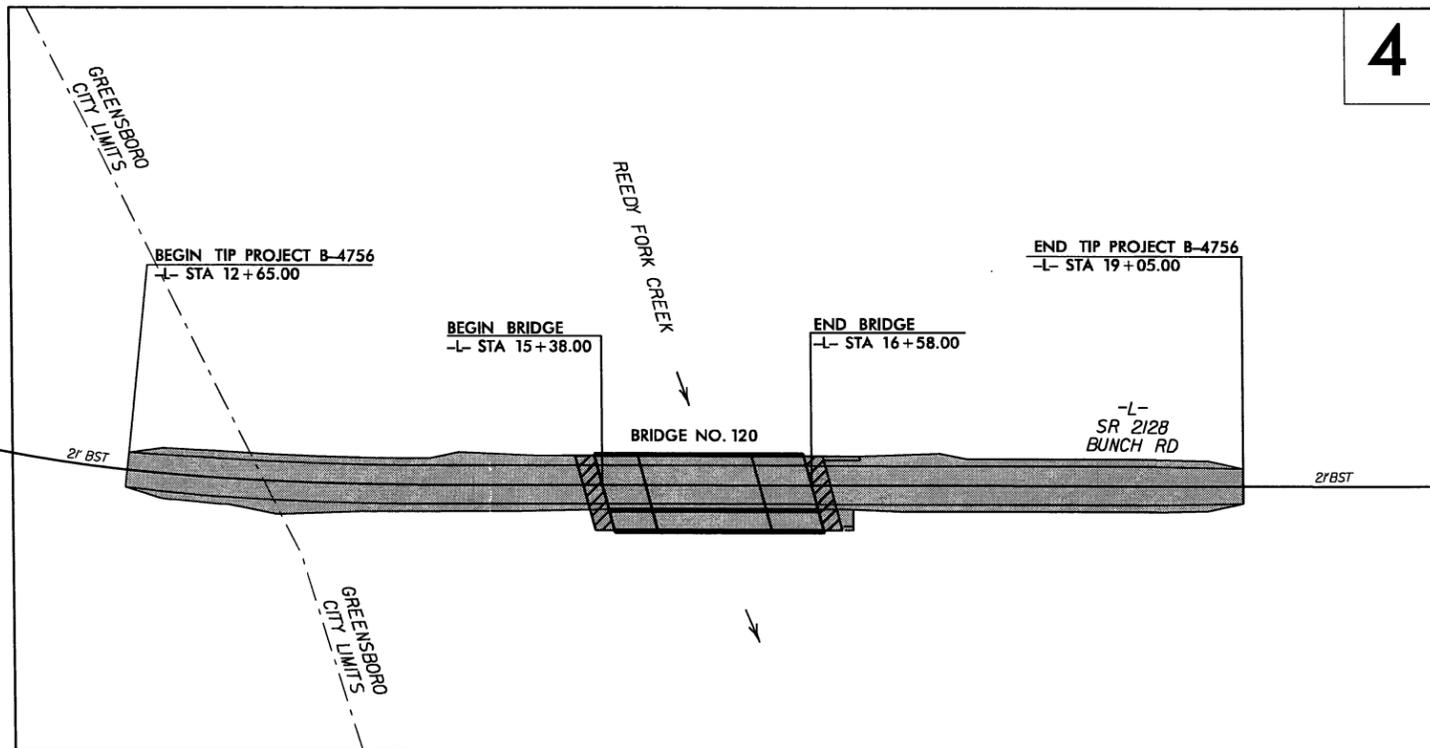
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
GUILFORD COUNTY

LOCATION: BRIDGE NO. 120 OVER REEDY FORK CREEK ON SR 2128 (BUNCH ROAD)

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

WETLAND AND STREAM IMPACT PACKAGE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4756	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
38528.1.1	BRZ-2128(1)	P.E.	
38528.2.1	BRZ-2128(2)	RIGHT-OF-WAY	
38528.3.1	BRZ-2128(3)	UTILITIES	



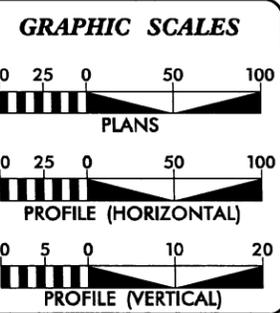
4

NCDOT CONTACT:
BRENDA MOORE, P.E.
PROJECT ENGINEER
ROADWAY DESIGN UNIT

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II
THIS PROJECT IS IN THE MUNICIPAL BOUNDARIES OF GREENSBORO

Permit Drawing
Sheet 1 of 6

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2013 =	1100 VPD
ADT 2035 =	1700 VPD
DHV =	12%
D =	60%
T =	8% *
V =	50 MPH
* (TTST 1% + DUAL 7%)	
FUNC CLASS =	LOCAL RURAL
SUB-REGIONAL TIER	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4756 =	0.098 MILES
LENGTH STRUCTURE TIP PROJECT B-4756 =	0.023 MILES
TOTAL LENGTH OF TIP PROJECT B-4756 =	0.121 MILES

PLANS PREPARED FOR THE NCDOT BY:

© 2012 Kimley-Horn and Associates, Inc.
Post Office Box 23046
Raleigh, North Carolina 27616
FE NO. F-0102

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
SEPTEMBER 21, 2012

LETTING DATE:
MAY 21, 2013

JEFFREY W. MOORE, P.E.
PROJECT ENGINEER

J. JASON PACE, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.
ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



8/10/2012 K:\RAL_Roadway\01036185 - B-4756\Hydraulics\PERMITS_Environmental\Drawings\B4756_hyd_prm_wet_1st.dgn

CONTRACT:

50 0 100



N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY

PROJECT: 38528.11 (B-4756)
 BRIDGE NO. 120 ON SR 2128
 (BUNCH ROAD) OVER
 REEDY FORK CREEK

DATE: 07/24/2012

PI Sta 11+41.1
 $\Delta = 19^{\circ} 11' 00.2''$ (LT)
 $D = 6^{\circ} 51' 42.4''$
 $L = 279.57'$
 $T = 141.1'$
 $R = 835.00'$
 $DS = 50$ MPH
 $SE = EXIST$
 $RO = EXIST$

PI Sta 13+55.41
 $\Delta = 5^{\circ} 06' 30.5''$ (LT)
 $D = 3^{\circ} 22' 13.2''$
 $L = 151.57'$
 $T = 75.84'$
 $R = 1700.00'$
 $DS = 50$ MPH
 $SE = 0.05$
 $RO = 120'$

Kimley-Horn
 and Associates, Inc.

P.O. BOX 33068
 RALEIGH, N.C. 27636-3068

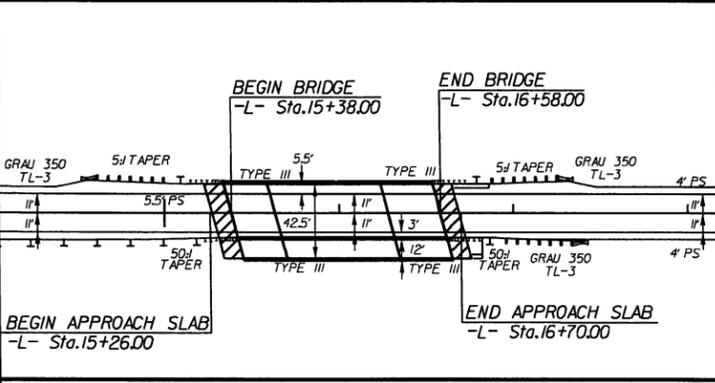
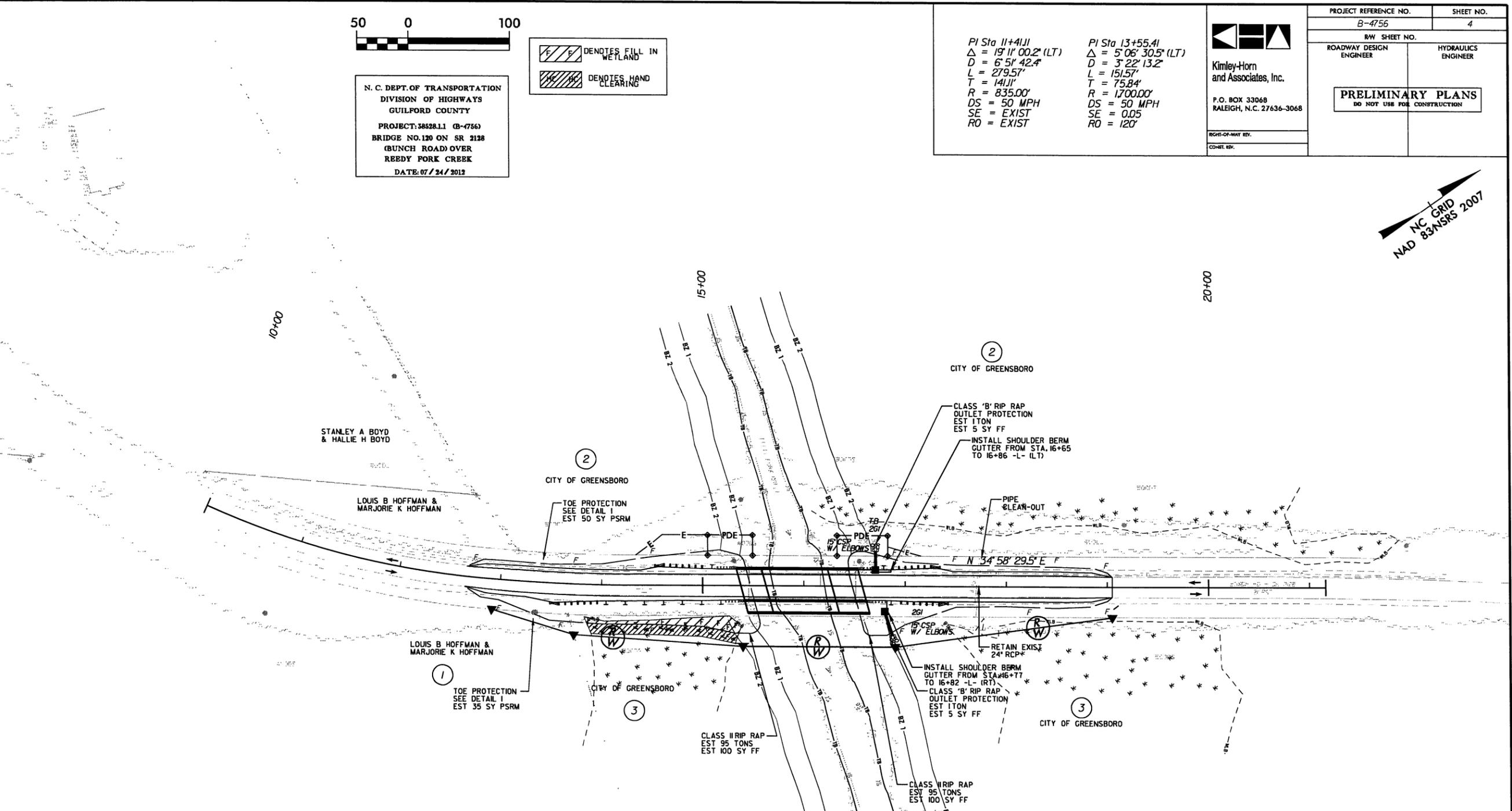
RIGHT-OF-WAY REV.
 CONST. REV.

PROJECT REFERENCE NO. B-4756	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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8/10/2012

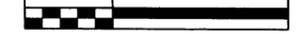


SKETCH SHOWING RELATIONSHIP OF BRIDGE TO PAVEMENT AND SHOULDERS

Permit Drawing
 Sheet 2 of 6

SEE SHEET NO.5 FOR -L- PROFILE

50 0 100



Denotes Fill in Wetland
Denotes Hand Clearing

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
GUILFORD COUNTY
PROJECT: 38528.11 (B-4756)
BRIDGE NO. 120 ON SR 2128
(BUNCH ROAD) OVER
REEDY FORK CREEK
DATE: 07/24/2012

PI Sta 11+41.11 Δ = 19' 11" 00.2" (LT)
D = 6' 51" 42.4"
L = 279.57'
T = 141.11'
R = 835.00'
DS = 50 MPH
SE = EXIST
RO = EXIST

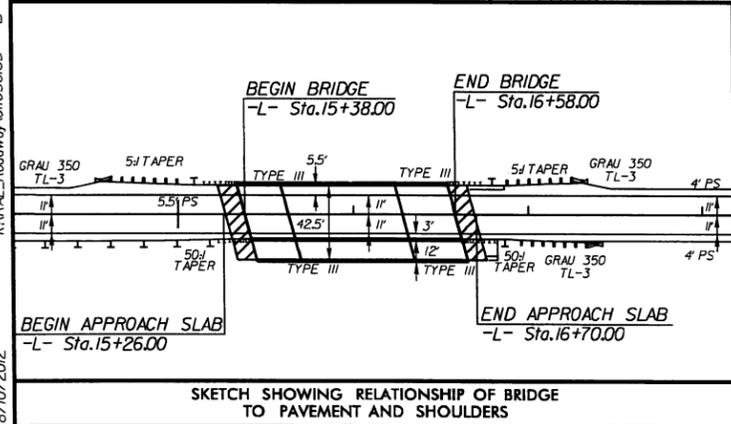
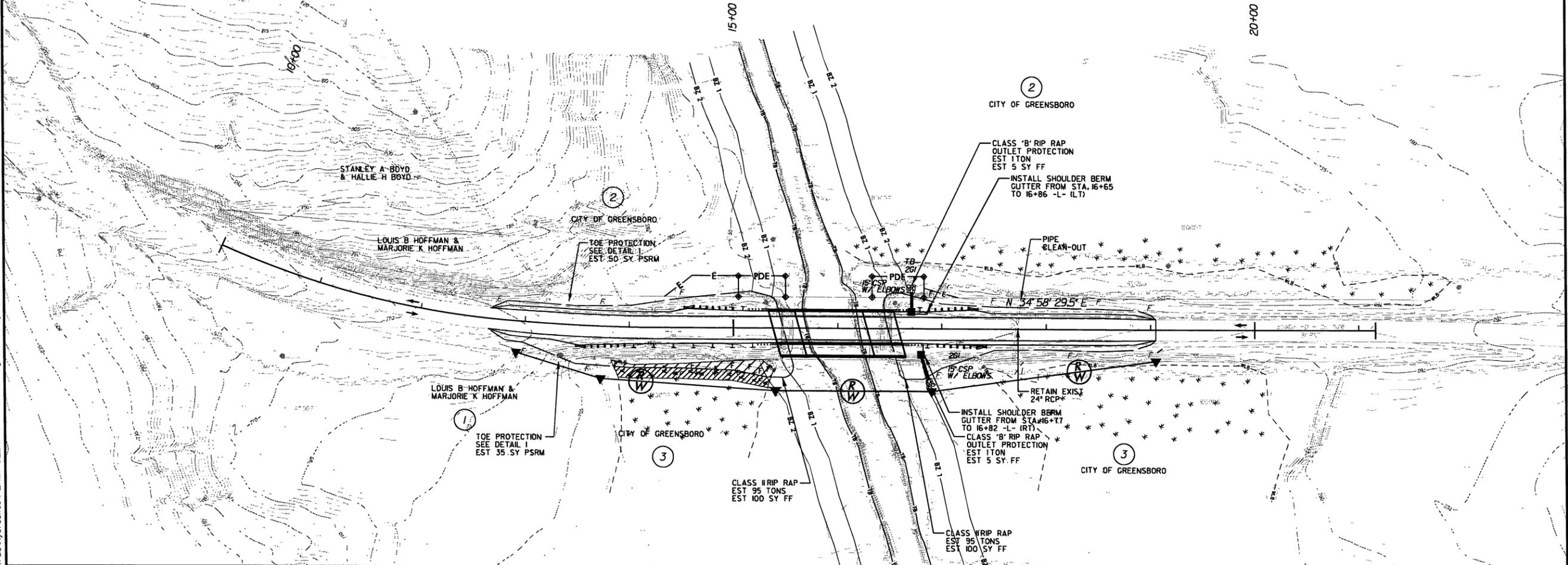
PI Sta 13+55.41 Δ = 5' 06' 30.5" (LT)
D = 3' 22' 13.2"
L = 151.57'
T = 75.84'
R = 1700.00'
DS = 50 MPH
SE = 0.05
RO = 120'

Kimley-Horn
and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

PROJECT REFERENCE NO. B-4756	SHEET NO. 4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

NC GRID
NAD 83/NRS 2007

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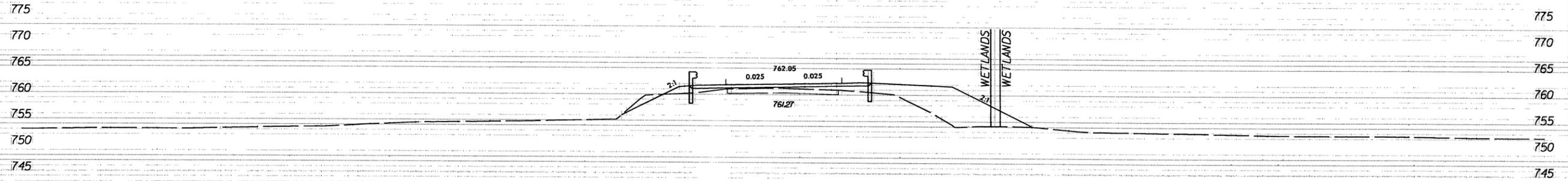


Permit Drawing
Sheet 3 of 6

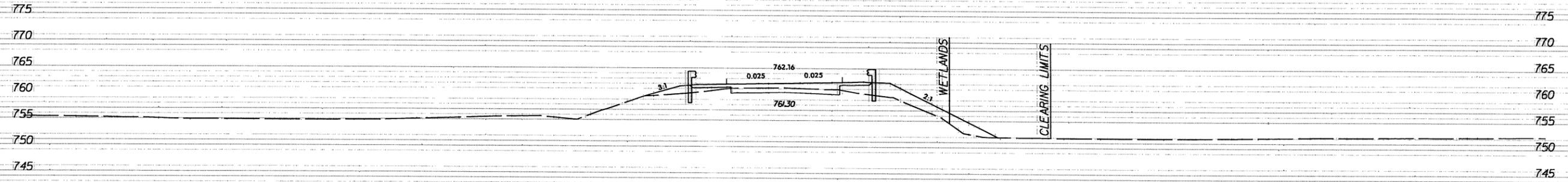
SEE SHEET NO. 5 FOR -L- PROFILE



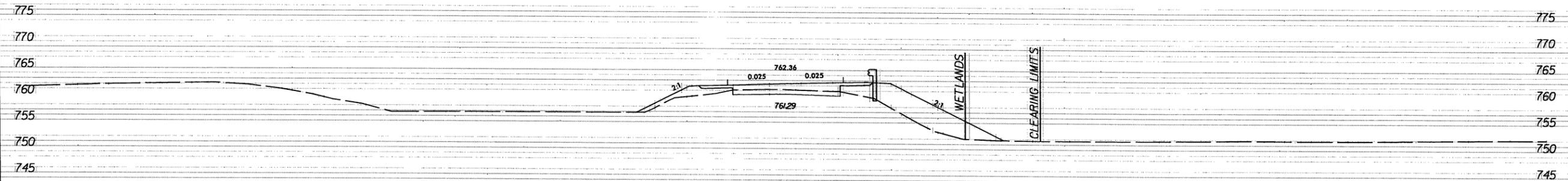
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B-4756	X-2



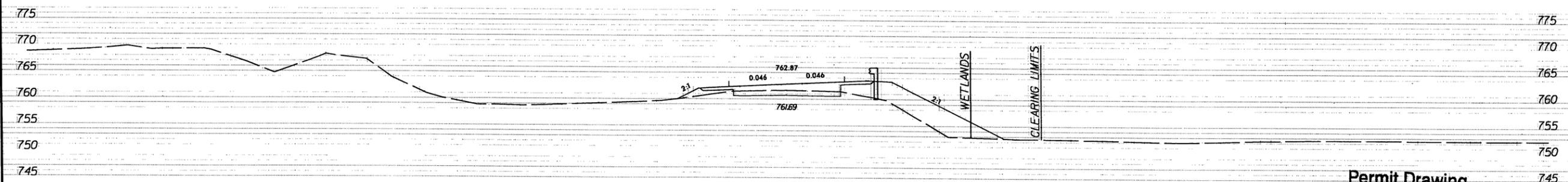
15+38.00



15+00.00



14+50.00



14+00.00

-L- BUNCH RD (SR 2128)

Permit Drawing
Sheet 4 of 6

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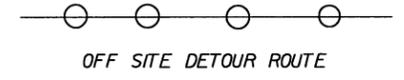
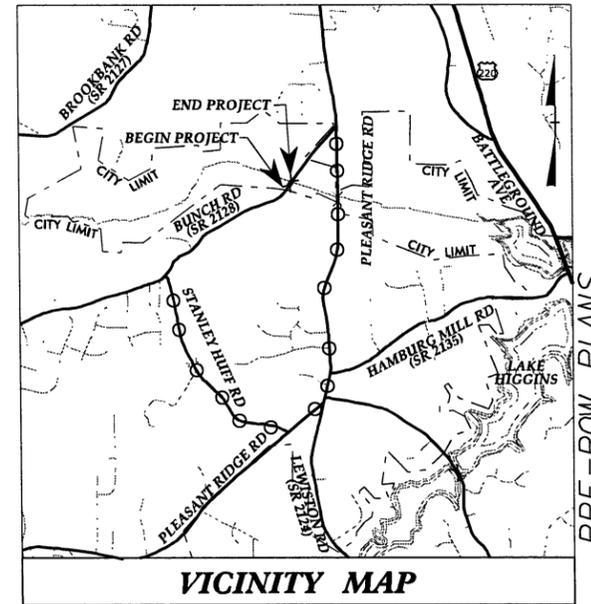


TIP PROJECT: B-4756

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
GUILFORD COUNTY

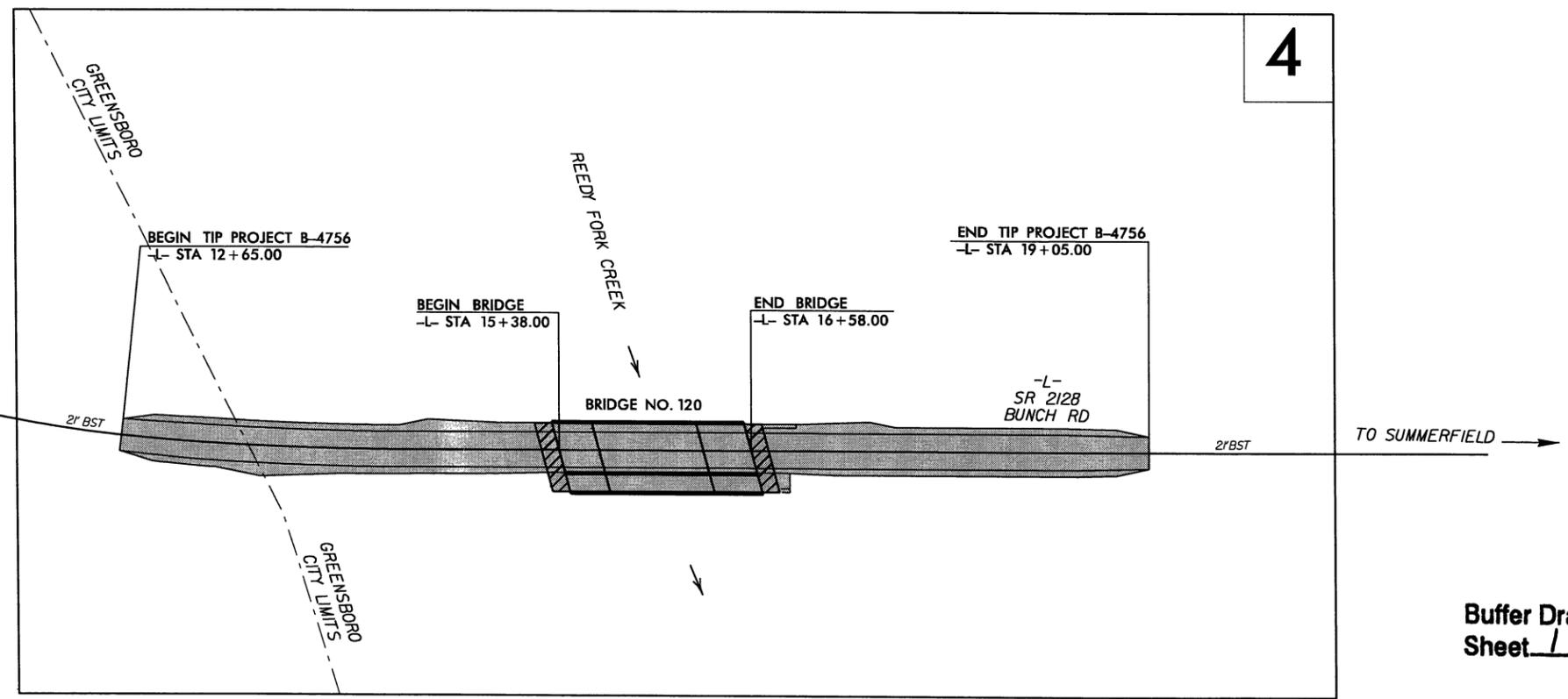
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4756	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38528.1.1	BRZ-2128(1)	P.E.	
38528.2.1	BRZ-2128(2)	RIGHT-OF-WAY	
38528.3.1	BRZ-2128(3)	UTILITIES	



LOCATION: BRIDGE NO. 120 OVER REEDY FORK CREEK ON SR 2128 (BUNCH ROAD)

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

BUFFER IMPACT PACKAGE



4

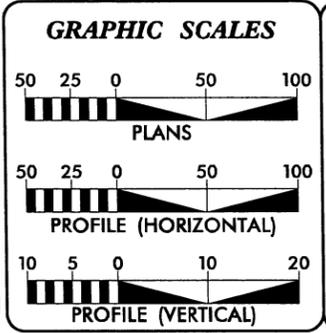
NCDOT CONTACT:
BRENDA MOORE, P.E.
PROJECT ENGINEER
ROADWAY DESIGN UNIT

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II
THIS PROJECT IS IN THE MUNICIPAL BOUNDARIES OF GREENSBORO

Buffer Drawing
Sheet 1 of 6

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2013 =	1100 VPD
ADT 2035 =	1700 VPD
DHV =	12%
D =	60%
T =	8% *
V =	50 MPH
* (TTST 1% + DUAL 7%)	
FUNC CLASS =	LOCAL RURAL
SUB-REGIONAL TIER	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4756 =	0.098 MILES
LENGTH STRUCTURE TIP PROJECT B-4756 =	0.023 MILES
TOTAL LENGTH OF TIP PROJECT B-4756 =	0.121 MILES

PLANS PREPARED FOR THE NCDOT BY:

2012 STANDARD SPECIFICATIONS	Kimley-Horn and Associates, Inc. © 2012 Post Office Box 33048 Raleigh, North Carolina 27636 PE NO. F-0102
	JEFFREY W. MOORE, P.E. PROJECT ENGINEER
RIGHT OF WAY DATE: <u>SEPTEMBER 21, 2012</u>	
LETTING DATE: <u>MAY 21, 2013</u>	J. JASON PACE, P.E. PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ ROADWAY DESIGN ENGINEER
SIGNATURE: _____ P.E.



K:\RAL_Roadway\010236185 - B-4756\Hydraulics\PERMITS_Environmental\Drawings\B4756_hyd_prm_buf_1.rsdgn
8/10/2012



N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GUILFORD COUNTY
 PROJECT: 38528.11 (B-4756)
 BRIDGE NO. 120 ON SR 2128
 (BUNCH ROAD) OVER
 REEDY FORK CREEK
 DATE: 07/24/2012

ALLOWABLE IMPACTS ZONE 1
 ALLOWABLE IMPACTS ZONE 2

PI Sta. 11+41.11
 $\Delta = 19^{\circ} 11' 00.2''$ (LT)
 $D = 6^{\circ} 51' 42.4''$
 $L = 279.57'$
 $T = 141.11'$
 $R = 835.00'$
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 $RO = 120'$



Kimley-Horn
 and Associates, Inc.

P.O. BOX 33068
 RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.
 CONST. REV.

PROJECT REFERENCE NO. SHEET NO.

B-4756 4

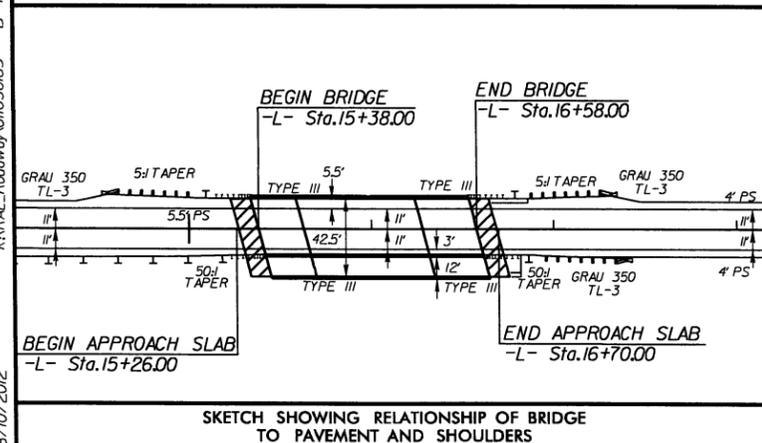
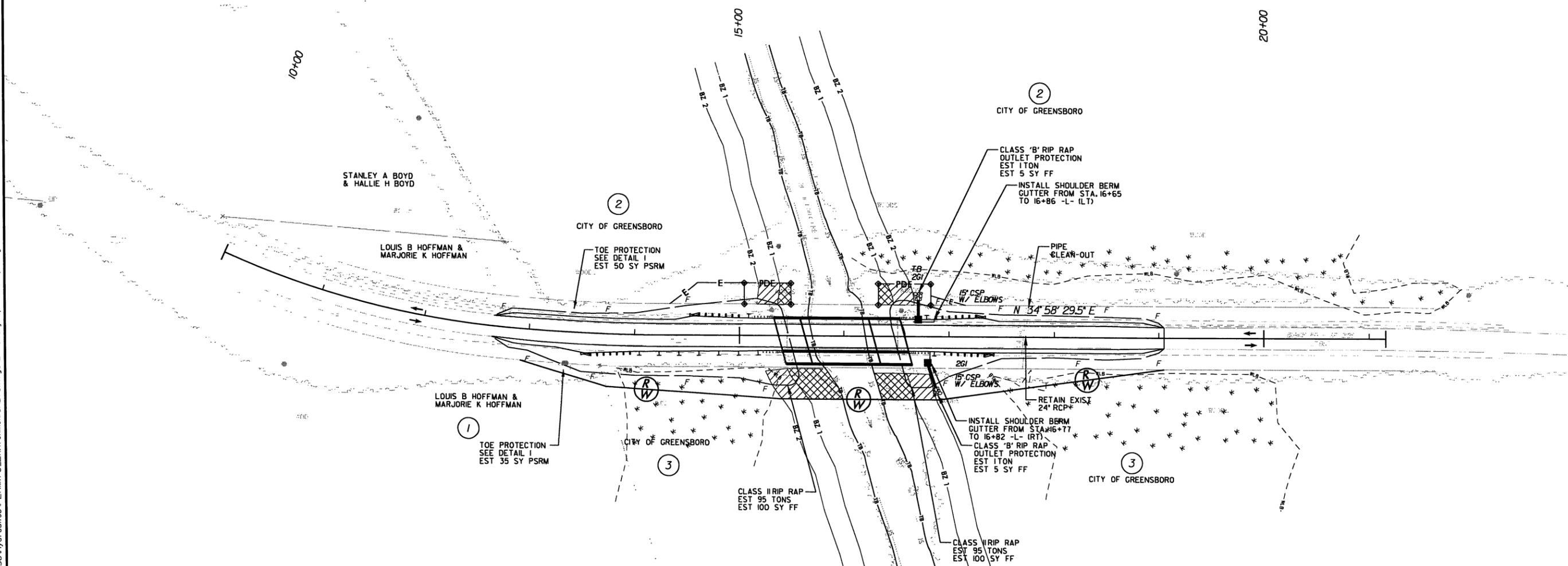
R/W SHEET NO.

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

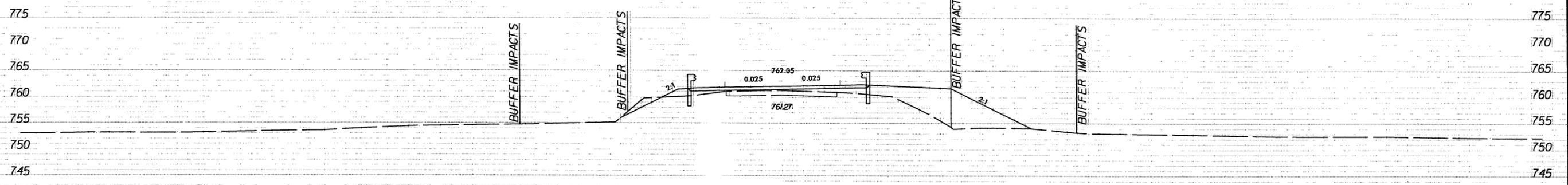
NC GRID
 NAD 83/NRS 2007

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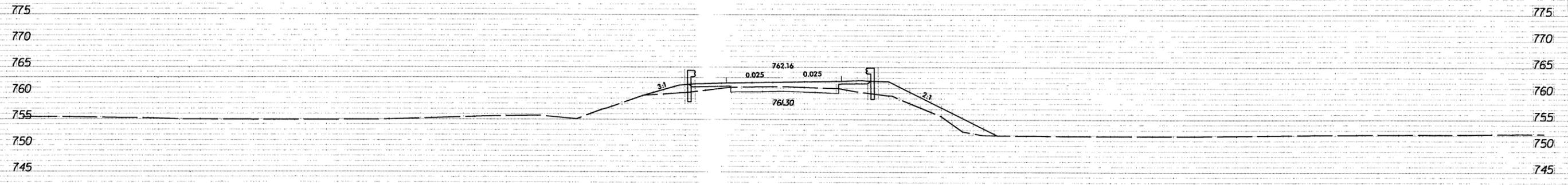


Buffer Drawing
 Sheet 2 of 6

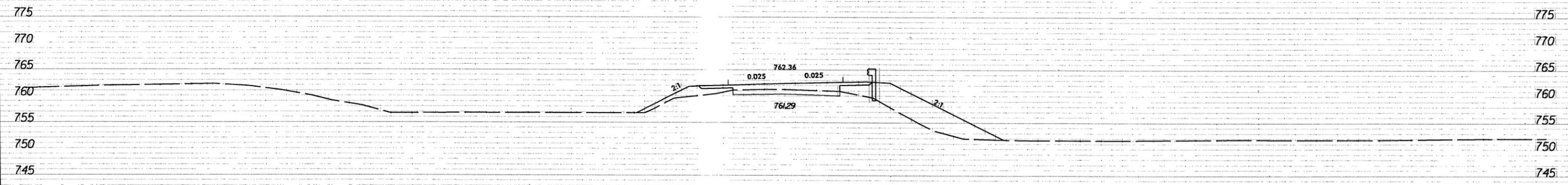
SEE SHEET NO.5 FOR -L- PROFILE



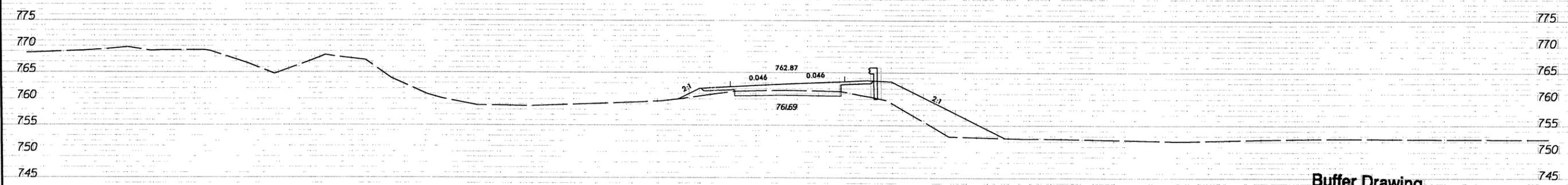
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15 + 00.00



14 + 50.00



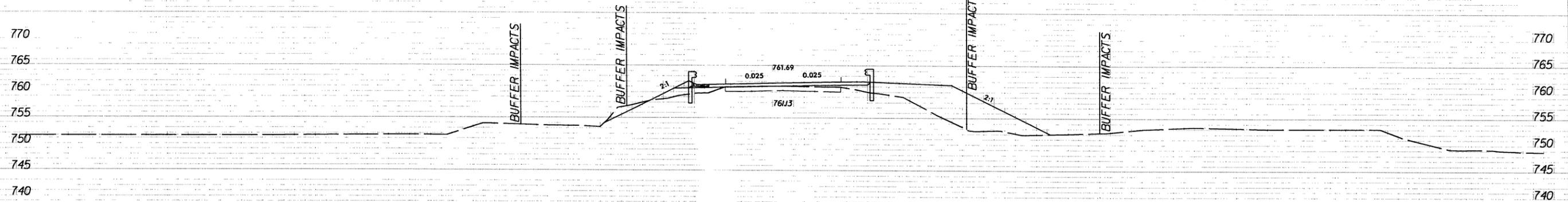
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-L- BUNCH RD (SR 2128)

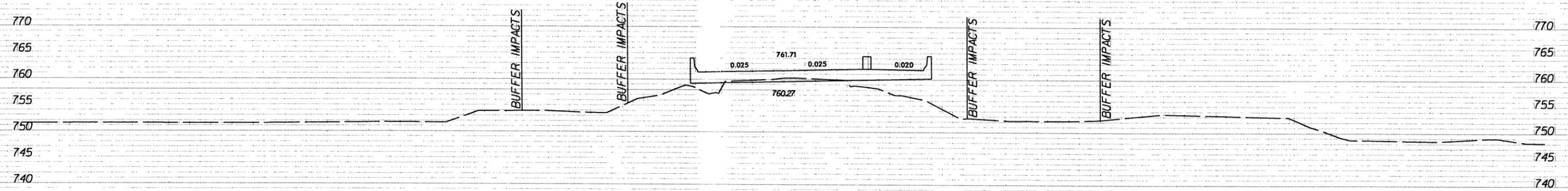
Buffer Drawing
Sheet 3 of 6

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B/10/2012

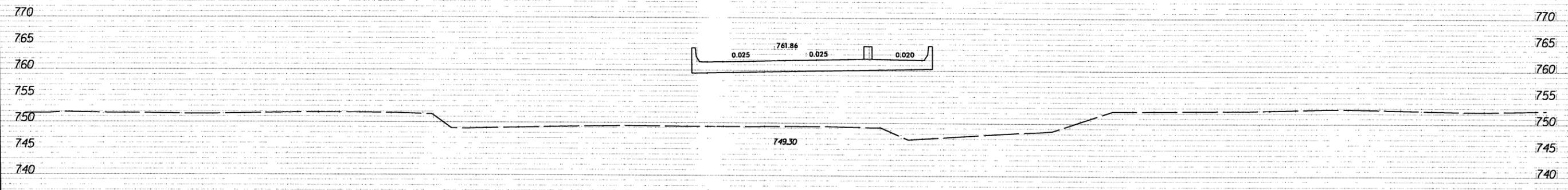
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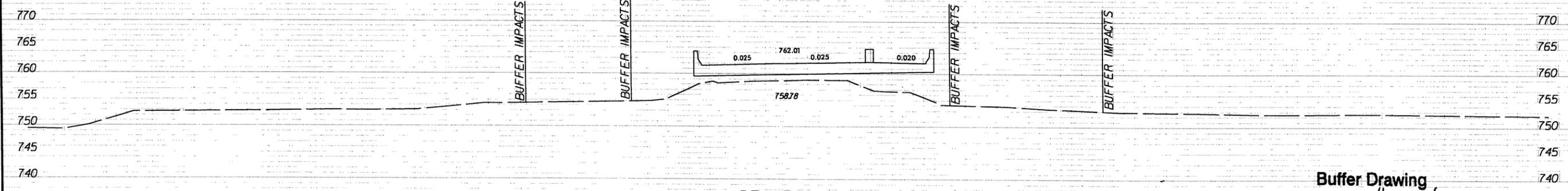
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16 + 50.00



16 + 00.00



15 + 50.00

Buffer Drawing
Sheet 4 of 6

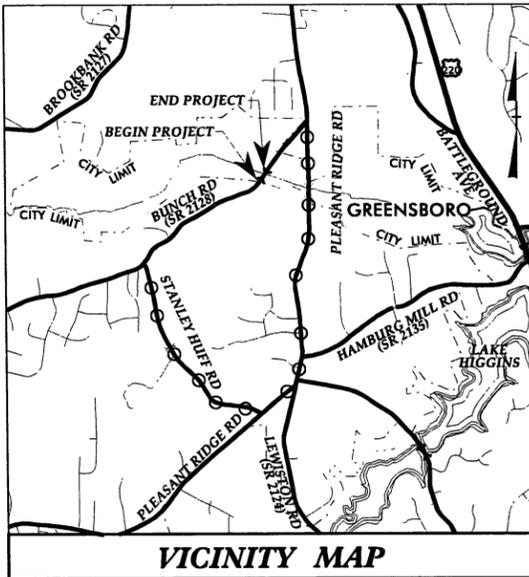
-L- BUNCH RD (SR 2128)



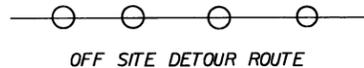
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B/10/2012

TIP PROJECT: B-4756

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP

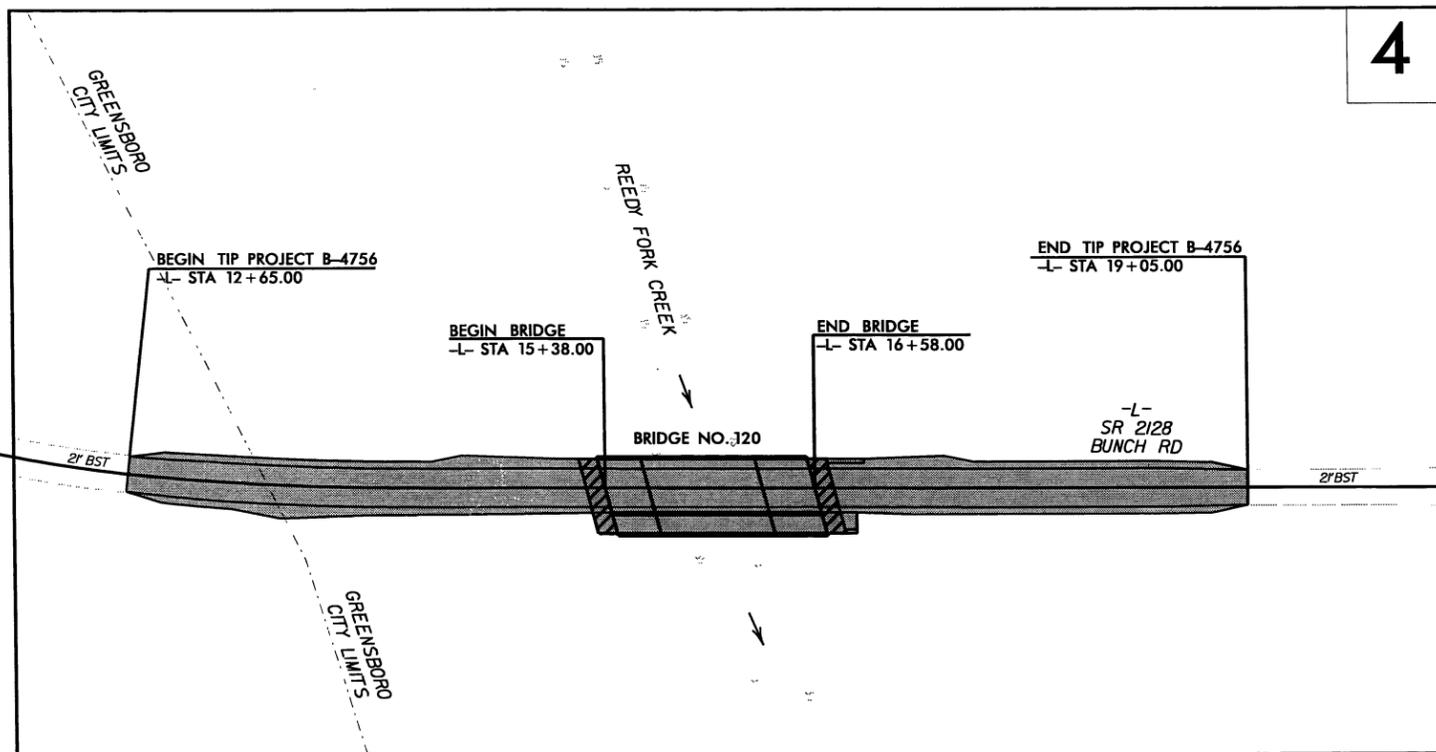


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
GUILFORD COUNTY

LOCATION: BRIDGE NO. 120 OVER REEDY FORK CREEK ON SR 2128 (BUNCH ROAD)

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4756	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38528.1.1	BRZ-2128(1)	P.E.	
38528.2.1	BRZ-2128(1)	ROW/UTIL	

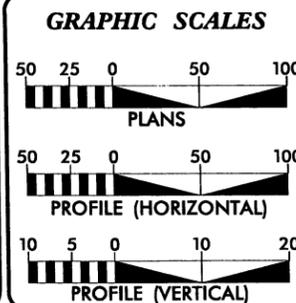


NCDOT CONTACT:
BRENDA MOORE, P.E.
PROJECT ENGINEER
ROADWAY DESIGN UNIT

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II
THIS PROJECT IS IN THE MUNICIPAL BOUNDARIES OF GREENSBORO

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2013 =	1100
ADT 2035 =	1700
DHV =	12%
D =	60%
T =	8% *
V =	50 MPH
* (TTST 1% + DUAL 7%)	
FUNC CLASS =	LOCAL RURAL
SUB-REGIONAL TIER	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4756 =	0.098 MILES
LENGTH STRUCTURE TIP PROJECT B-4756 =	0.023 MILES
TOTAL LENGTH OF TIP PROJECT B-4756 =	0.121 MILES

PLANS PREPARED FOR THE NCDOT BY:

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: **OCTOBER 19, 2012**

LETTING DATE: **NOVEMBER 19, 2013**

JEFFREY W. MOORE, P.E.
PROJECT ENGINEER

J. JASON PACE, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.
ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



K:\RAL_Roadway\01036185 - B-4756\Roadway\Proj\B4756_rdy_1shdgn 10/22/2012

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	⊙
Property Corner	-----
Property Monument	⊙
Parcel/Sequence Number	⊙
Existing Fence Line	-----
Proposed Woven Wire Fence	-----
Proposed Chain Link Fence	-----
Proposed Barbed Wire Fence	-----
Existing Wetland Boundary	-----
Proposed Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----
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	-----
Buffer Zone 1	-----
Buffer Zone 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 RW Marker	-----
Proposed Control of Access Line with Concrete CA Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Drainage / Utility Easement	-----
Proposed Permanent Utility Easement	-----
Proposed Temporary Utility Easement	-----
Proposed Aerial Utility Easement	-----
Proposed Permanent Easement with Iron Pin and Cap Marker	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Curb Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	-----
Pavement Removal	-----

VEGETATION:

Single Tree	-----
Single Shrub	-----
Hedge	-----

Orchard	-----
Vineyard	-----

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	-----
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	-----
U/G Power Cable Hand Hole	-----
H-Frame Pole	-----
Recorded U/G Power Line	-----
Designated U/G Power Line (S.U.E.*)	-----

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	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

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	-----

TV:

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

GAS:

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

SANITARY SEWER:

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

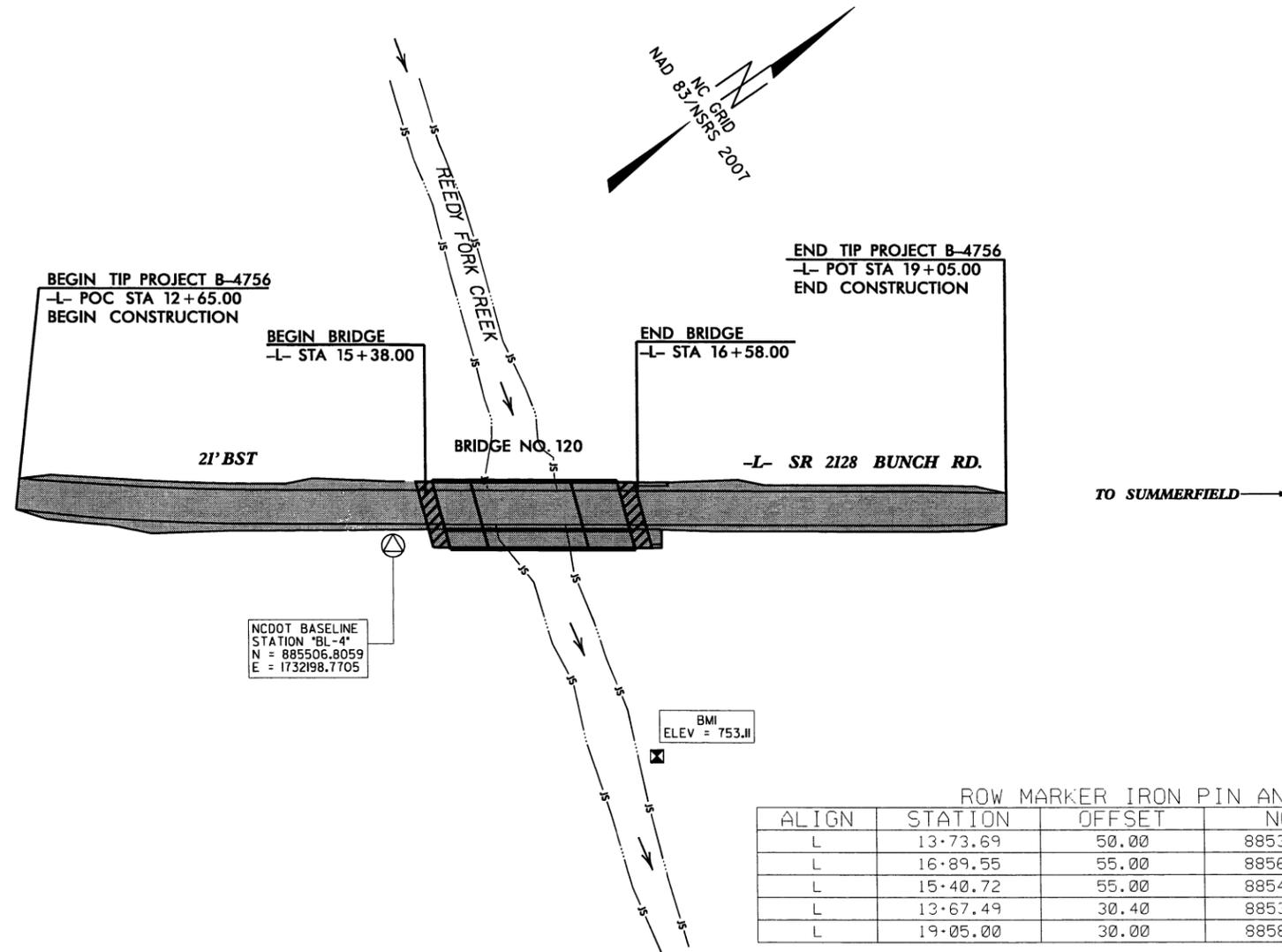
MISCELLANEOUS:

Utility Pole	-----
Utility Pole with Base	-----
Utility Located Object	-----
Utility Traffic Signal Box	-----
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	-----
Underground Storage Tank, Approx. Loc.	-----
AG Tank; Water, Gas, Oil	-----
Geoenvironmental Boring	-----
U/G Test Hole (S.U.E.*)	-----
Abandoned According to Utility Records	-----
End of Information	-----

K:\RAL_Roadway\01036185 - B-4756Roadway\Proj\B4756_rdy_1st.dgn 10/22/2012

B-4756 SURVEY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
B-4756	I-C
Location and Surveys	



NCDOT BASELINE
STATION "BL-3"
N = 885110.9198
E = 1731822.8155

DATUM DESCRIPTION
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B4756-1" WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF NORTHING: 887061.6750(±) EASTING: 1733475.3110(±) ELEVATION: 812.96'(±) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999971050 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4756-1" TO -L- STATION 12+65 IS S 39°31'41.18" 2,280.96' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NCDOT BASELINE
STATION "BL-4"
N = 885506.8059
E = 1732198.7705

BMI
ELEV = 753.11

BM2
ELEV = 768.32

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+73.69	50.00	885357.0252	1732131.6111
L	16+89.55	55.00	885613.7814	1732318.5476
L	15+40.72	55.00	885491.8307	1732233.2364
L	13+67.49	30.40	885363.7601	1732112.1461
L	19+05.00	30.00	885804.6528	1732421.5624

BASELINE DATA

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
3	BL-3		885110.9198	1731822.8155	780.36	OUTSIDE PROJECT LIMITS	
4	BL-4		885506.8059	1732198.7705	760.30	15+33.24	18.17 RT
1	B4756-1		887061.6750	1733475.3110	812.96	OUTSIDE PROJECT LIMITS	
2	B4756-2		888132.3070	1733389.8090	828.75	OUTSIDE PROJECT LIMITS	

BENCHMARK DATA

.....
 BM1 ELEVATION = 753.11
 N 885544 E 1732381
 BL STATION 11+81.00 128 RIGHT
 RR SPIKE IN 15' BIRCH

 BM2 ELEVATION = 768.32
 N 886076 E 1732637
 BL STATION 5+00.00
 N 40°10'11.13" E DIST 1262.92
 RR SPIKE IN 28' PINE

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:
 b4756_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.
 NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

NOTE: DRAWING NOT TO SCALE

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and Associates, Inc.

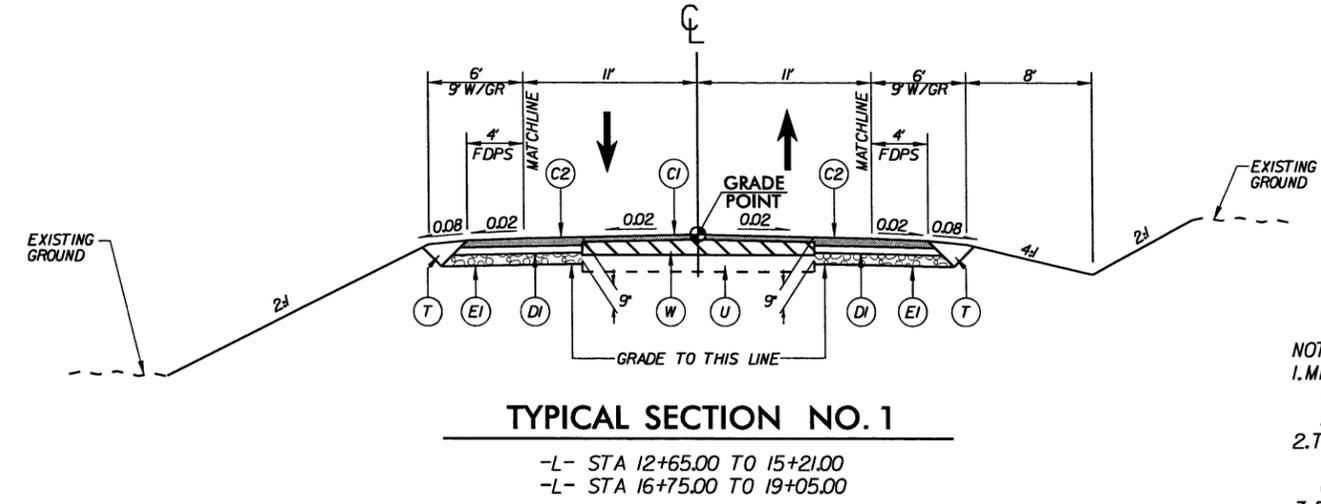
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

PROJECT REFERENCE NO. B-4756	SHEET NO. 2
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

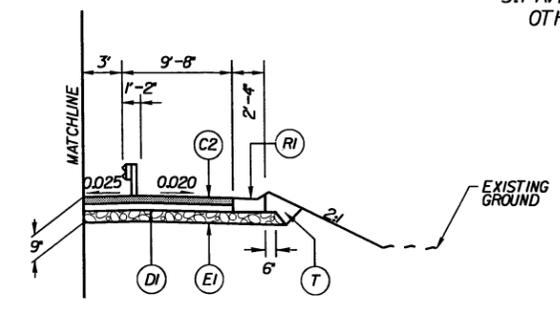
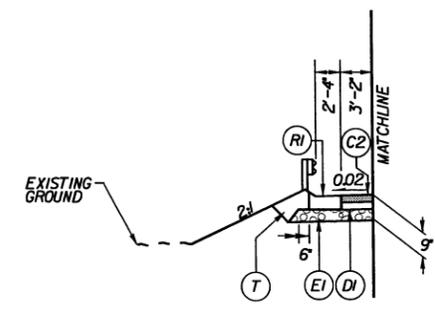
PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A AT AN AVERAGE RATE OF 138 LBS. PER SQ. YD.
C2	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A AT AN AVERAGE RATE OF 138 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 15" IN DEPTH.
D1	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE TYPE I19.0B, AT AN AVERAGE RATE OF 285 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 2.5" OR GREATER THAN 4" DEPTH
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE TYPE B25.0B, AT AN AVERAGE RATE OF 456 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" OR GREATER THAN 5.5" DEPTH
RI	PROPOSED SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL W)

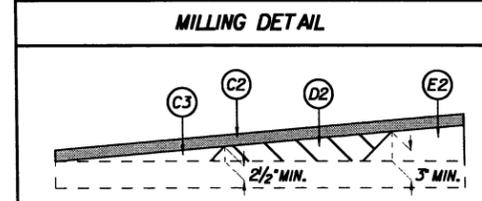
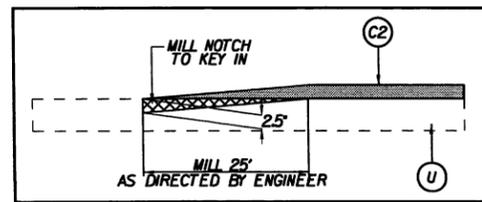
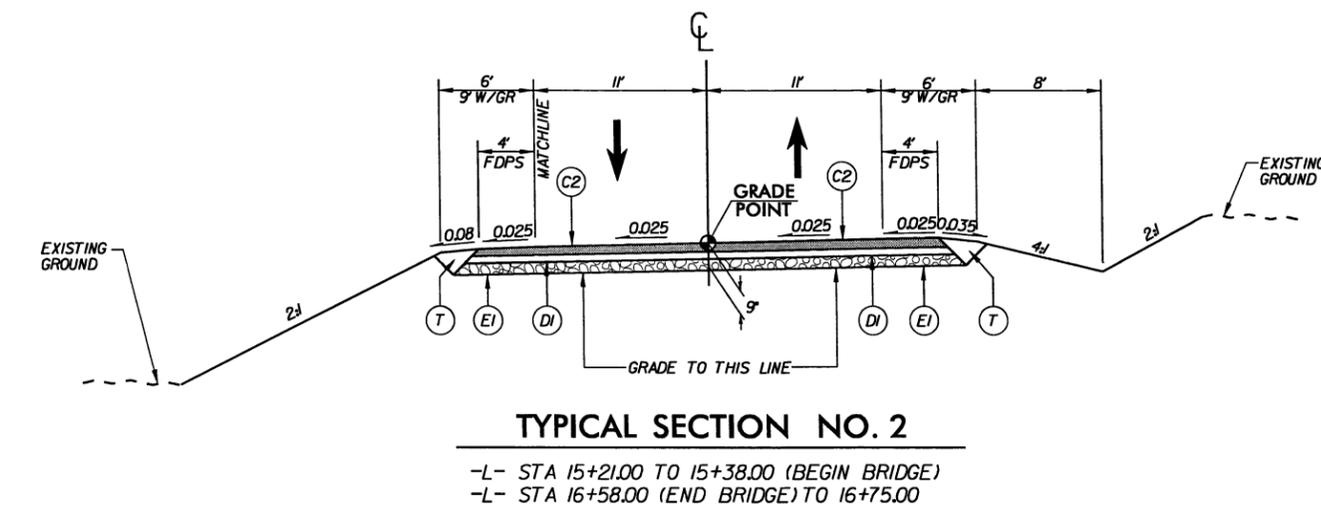
-L- SR 2128 (BUNCH ROAD)



- NOTES**
- MILL NOTCH TO KEY-IN SF9.5A FROM
 -L- STA 12+65.00 TO STA 12+90.00
 AND -L- STA 18+80.00 TO STA 19+05.00
 - TIE TO EXISTING SHOULDER POINT
 -L- STA 17+50.00 TO 19+05.00 RT
 (SEE CROSS-SECTIONS)
 - PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE INDICATED



-L- SR 2128 (BUNCH ROAD)



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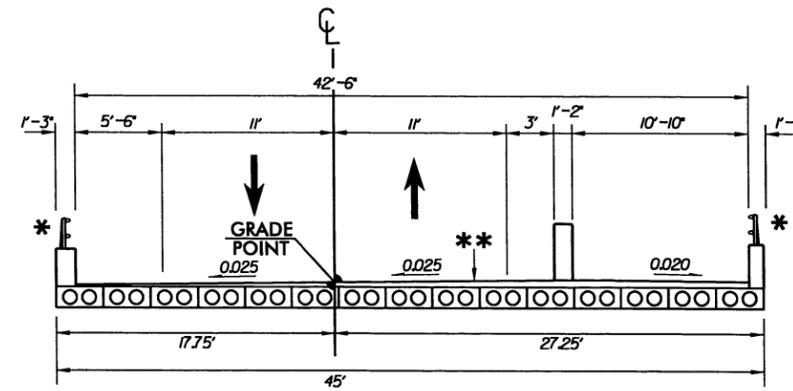
PROJECT REFERENCE NO. SHEET NO.

B-4756 2-A

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L- SR 2128 (BUNCH ROAD)



BRIDGE TYPICAL SECTION NO. 1

-L- STA 15+38.00 TO 16+58.00

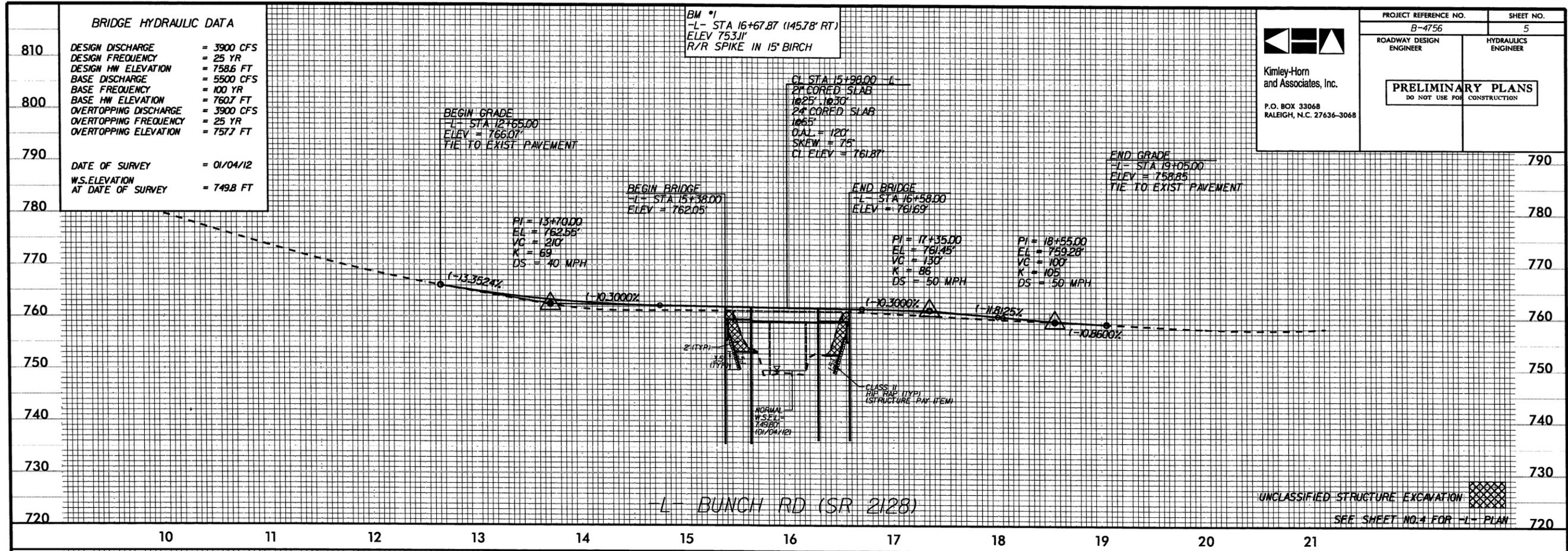
- * MINIMUM 54" BRIDGE RAIL TO BE DESIGNED BY STRUCTURE DESIGN UNIT
- ** SEE STRUCTURE PLANS FOR ASPHALT OVERLAY

BRIDGE HYDRAULIC DATA

810	DESIGN DISCHARGE = 3900 CFS
	DESIGN FREQUENCY = 25 YR
	DESIGN HW ELEVATION = 758.6 FT
	BASE DISCHARGE = 5500 CFS
800	BASE FREQUENCY = 100 YR
	BASE HW ELEVATION = 760.7 FT
	OVERTOPPING DISCHARGE = 3900 CFS
	OVERTOPPING FREQUENCY = 25 YR
	OVERTOPPING ELEVATION = 757.7 FT
790	DATE OF SURVEY = 01/04/12
	W.S. ELEVATION AT DATE OF SURVEY = 749.8 FT

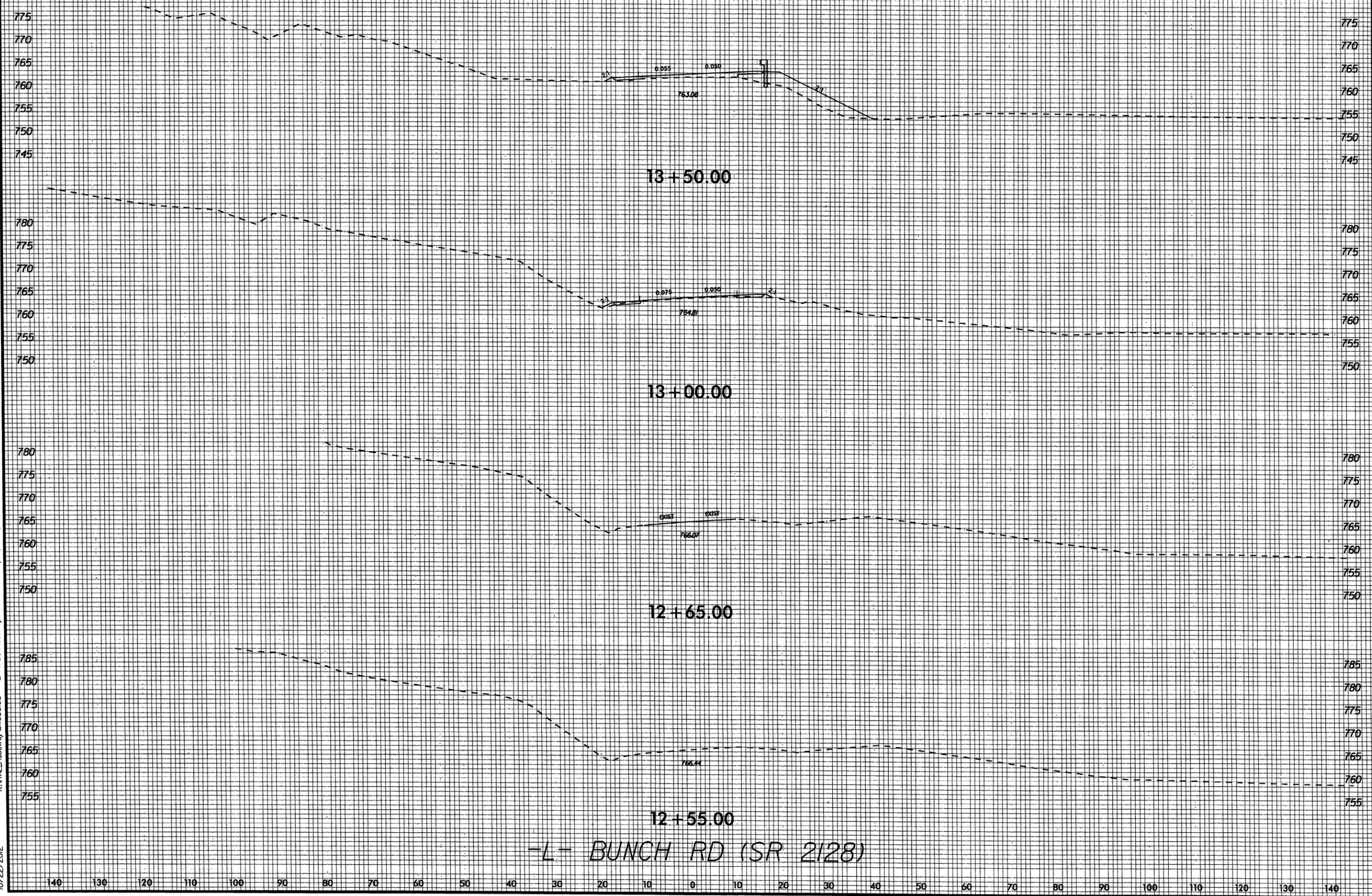
BM #1
 -L- STA 16+67.87 (145.78' RT)
 ELEV 753.1'
 R/R SPIKE IN 15' BIRCH

PROJECT REFERENCE NO. B-4756	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
Kimley-Horn and Associates, Inc. P.O. BOX 33068 RALEIGH, N.C. 27636-3068	



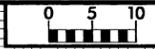
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10/22/2012

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



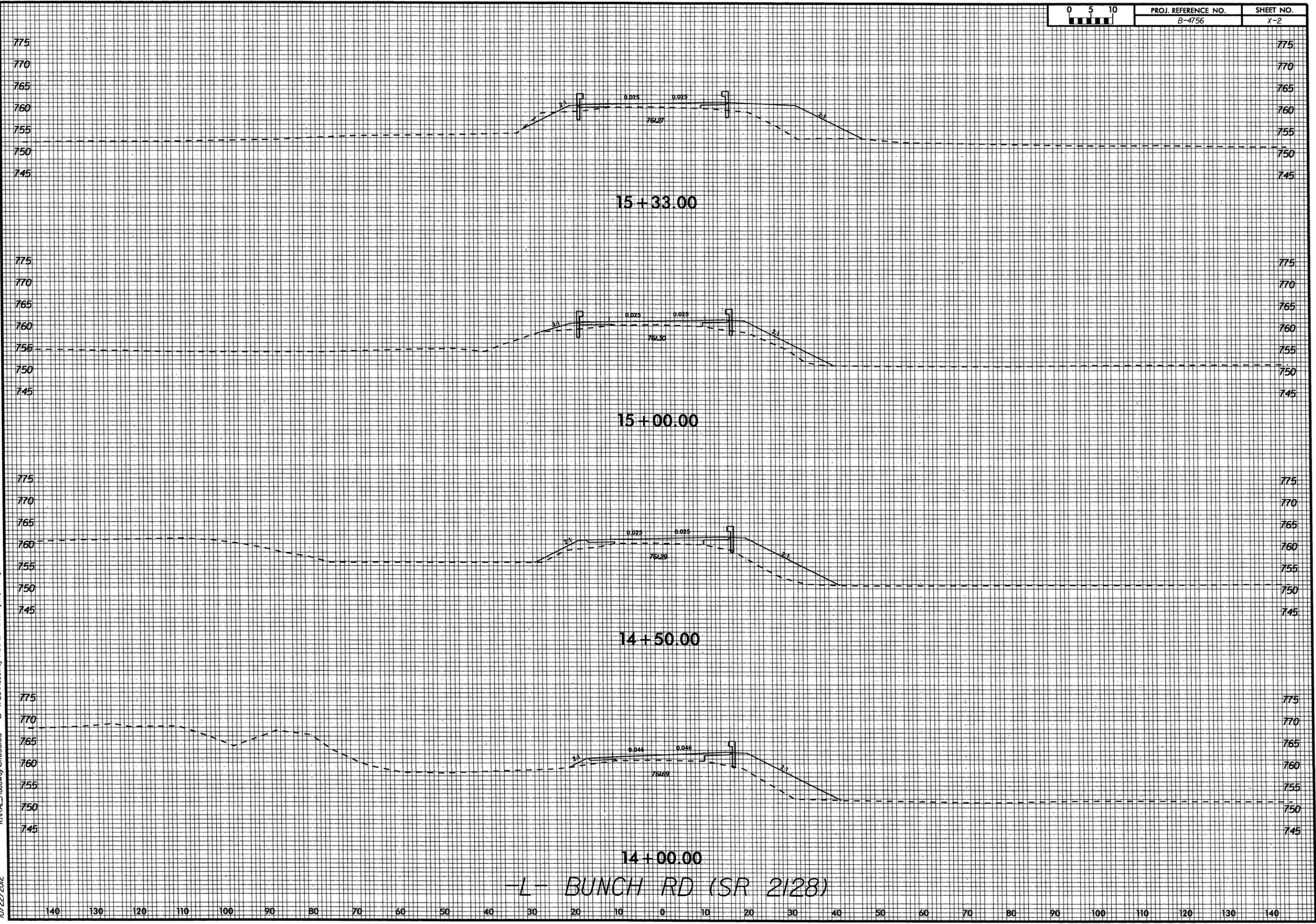
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-L- BUNCH RD (SR 2128)

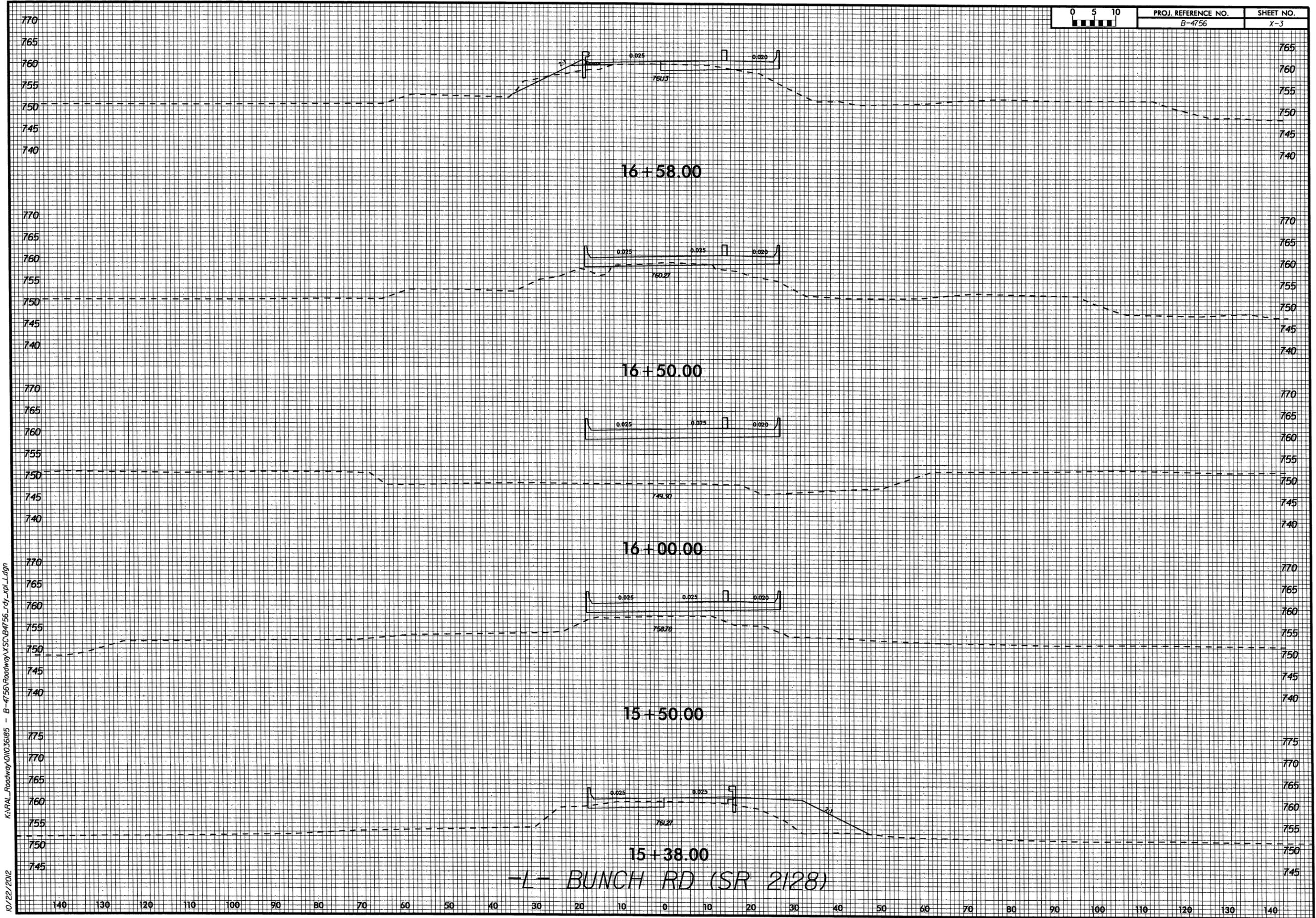


PROJ. REFERENCE NO.
B-4756

SHEET NO.
X-2

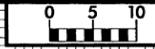


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10/22/2012



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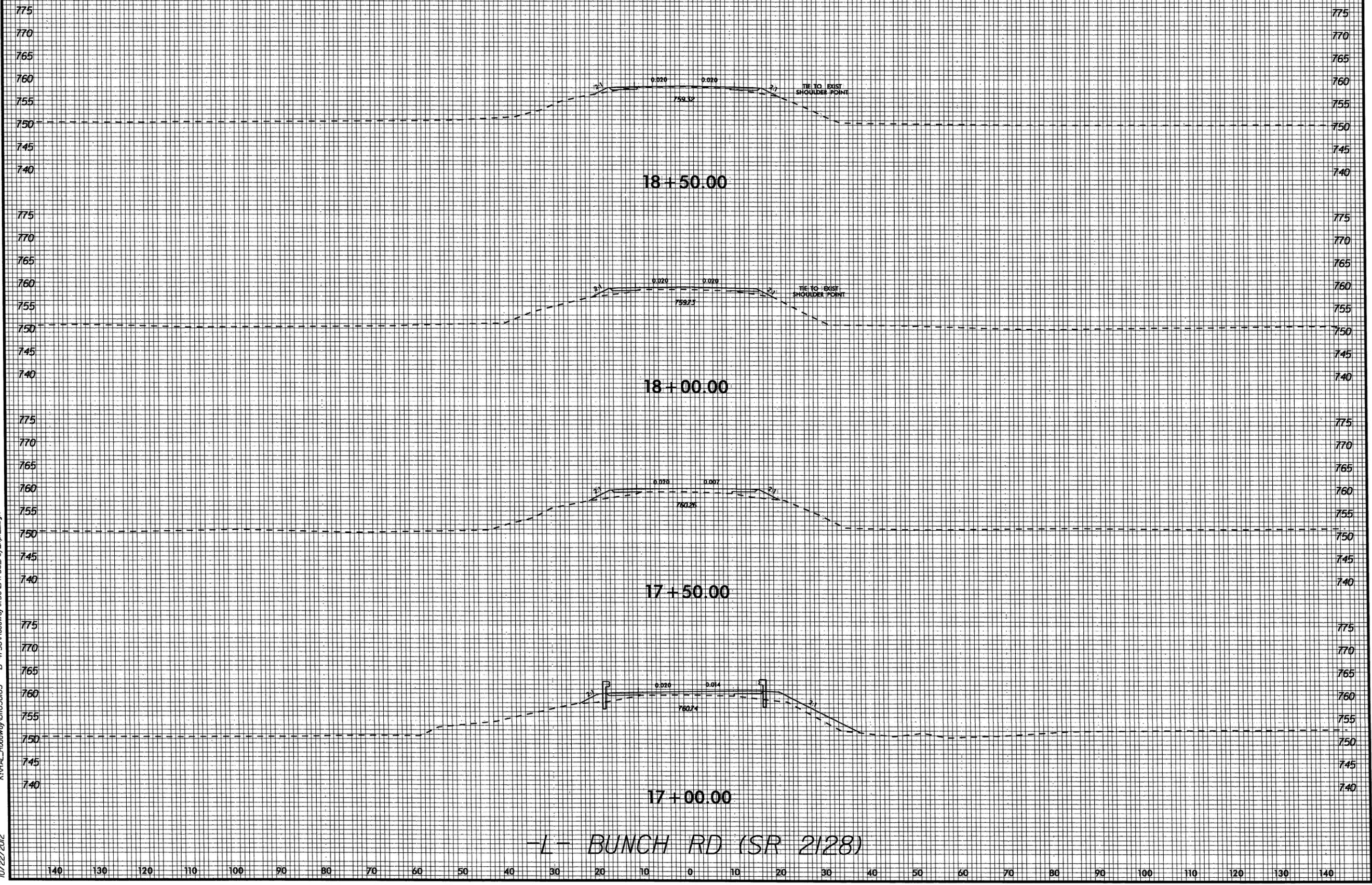
-L- BUNCH RD (SR 2128)

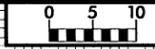


PROJ. REFERENCE NO.
B-4756

SHEET NO.
X-4

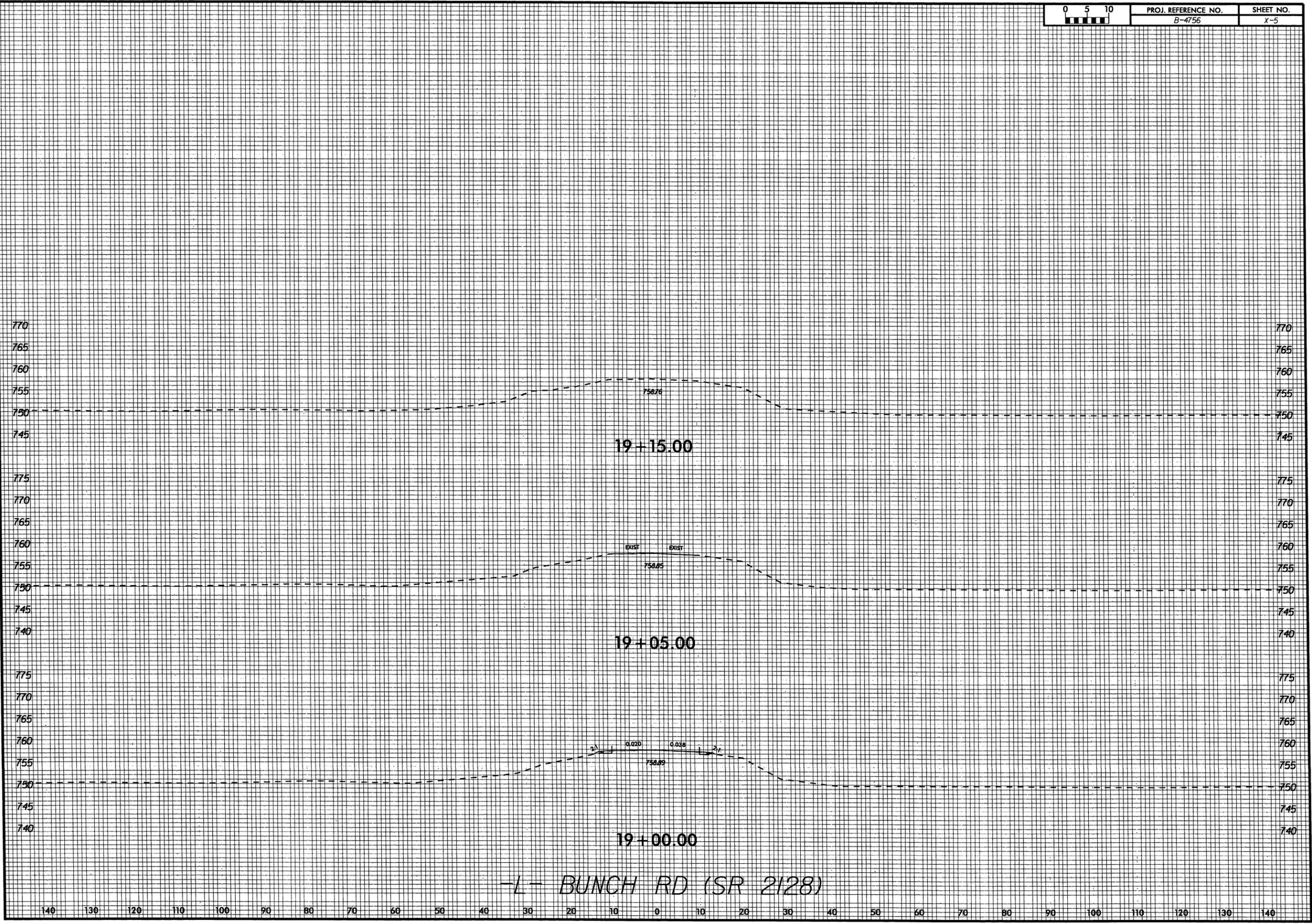
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10/22/2012





PROJ. REFERENCE NO.	SHEET NO.
B-4756	X-5

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10/22/2012



-L- BUNCH RD (SR 2128)

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