



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY PERDUE
GOVERNOR

GENE CONTI
SECRETARY

April 29, 2009

U. S. Army Corps of Engineers
Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, NC 28801-5006

ATTN: Lori Beckwith
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permits 23, 33, and Section 401 Water Quality Certification** for the proposed replacement of Bridge No. 117 over West Buffalo Creek on SR 1123 (Huffman Creek Road) in Graham County, Federal Aid Project No. BRZ-1123(9); Division 14; TIP No. B-4123 \$240.00 debit WBS 33476.1.1

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 117 over West Buffalo Creek on SR 1123. There will be 66 feet of temporary surface water impacts and 51 feet of permanent surface water impacts.

Please see enclosed copies of the Pre-Construction Notification (PCN), Stormwater Management Plan, USFWS concurrence letter, permit drawings and design plans. The Categorical Exclusion (CE) was completed in February 2007 and the Right-of-Way Consultation was completed in July 2008. Documents were distributed shortly thereafter. Additional copies are available upon request.

This project calls for a letting date of December 15, 2009 and a review date of October 27, 2009.

Comments from the North Carolina Wildlife Resources Commission (NCWRC) will be required prior to authorization by the Corps of Engineers. By copy of this letter and attachments, NCDOT hereby requests NCWRC review. NCDOT requests that NCWRC forward their comments to the Corps of Engineers and the NCDOT within 30 calendar days of receipt of this application.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-431-6680
FAX: 919-431-2002
WEBSITE: WWW.NCDOT.ORG

LOCATION:
ENVIRONMENTAL RESOURCE CENTER
4701 ATLANTIC AVENUE, SUITE 116
RALEIGH NC 27604

A copy of this permit application will be posted on the NCDOT Website at:
<http://www.ncdot.org/doh/preconstruct/pe/>. If you have any questions or need additional information, please call Jeremy Leamer at (919) 431-6680.

Sincerely,



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

w/attachment

Mr. Brian Wrenn, NCDWQ (5 copies)
Ms. Marla Chambers, NCWRC
Ms. Marella Buncick, USFWS
Mr. Dave Baker, USACE

w/o attachment (see permit website for attachments)

Dr. David Chang, P.E., Hydraulics
Mr. Mark Staley, Roadside Environmental
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Greg Perfetti, P.E., Structure Design
Mr. J. B. (Joel) Setzer, P.E., Division Engineer
Mr. Mark Davis, DEO
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Mr. Pam Williams, PDEA
Ms. Beth Harmon, EEP
Mr. Todd Jones, NCDOT External Audit Branch



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

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:

Section 404 Permit Section 10 Permit

1b. Specify Nationwide Permit (NWP) number: 23 33 or General Permit (GP) number:

1c. Has the NWP or GP number been verified by the Corps? Yes No

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

401 Water Quality Certification – Regular Non-404 Jurisdictional General Permit
 401 Water Quality Certification – Express Riparian Buffer Authorization

1e. Is this notification solely for the record because written approval is not required?

For the record only for DWQ 401 Certification:
 Yes No

For the record only for Corps Permit:
 Yes No

1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.

Yes No

1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.

Yes No

1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?

Yes No

2. Project Information

2a. Name of project: Bridge No. 117 on SR 1123 (Huffman Creek Road) over West Buffalo Creek

2b. County: Graham

2c. Nearest municipality / town: Santeetlah

2d. Subdivision name: not applicable

2e. NCDOT only, T.I.P. or state project no: B-4123

3. Owner Information

3a. Name(s) on Recorded Deed: North Carolina Department of Transportation

3b. Deed Book and Page No.

3c. Responsible Party (for LLC if applicable): not applicable

3d. Street address: 1 South Wilmington Street

3e. City, state, zip: Raleigh, NC 27601

3f. Telephone no.: (919) 431-6680

3g. Fax no.: (919) 431-2002

3h. Email address: jtlearmer@ncdot.gov

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

B. Project Information and Prior Project History	
1. Property Identification	
1a. Property identification no. (tax PIN or parcel ID):	N/A
1b. Site coordinates (in decimal degrees):	Latitude: 35.34944 (DD.DDDDDD) Longitude: - 83.86056 (-DD.DDDDDD)
1c. Property size:	1.84 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	West Buffalo Creek
2b. Water Quality Classification of nearest receiving water:	C - Tr
2c. River basin:	Little Tennessee
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: Bridge No. 117 is located on SR 1123 over West Buffalo Creek in Graham County. The bridge has deteriorated beyond rehabilitation and must be replaced. The surrounding land is mixed wooded and agricultural in a rural setting.	
3b. List the total estimated acreage of all existing wetlands on the property: N/A	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 550	
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: Bridge replacement project involving heavy construction equipment and manual labor to install a culvert.	
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):						
<input type="checkbox"/> Wetlands		<input checked="" type="checkbox"/> Streams - tributaries		<input 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)	
W1 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
W2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
W3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
W4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
W5 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
W6 <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						
2h. Comments:						
3. Stream Impacts						
If there are perennial or intermittent stream impacts (including temporary impacts) proposed on the site, then complete this question for all stream sites impacted.						
3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
S1 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	Bottomless culvert	West Buffalo Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	20	46
S2 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Bottomless culvert	West Buffalo Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		34
S3 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	30" RCP install	UT	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		20
S4 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	30" RCP (pipe)	UT	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		17
S5 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
S6 <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						117
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				

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 checked="" 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 type="checkbox"/> Other: <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 type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
B2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
B3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
6h. Total buffer impacts					

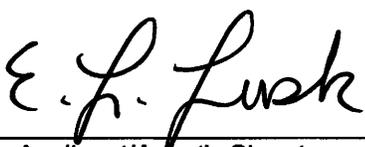
6i. Comments:

D. Impact Justification and Mitigation		
1. Avoidance and Minimization		
1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project. Replacing the bridge with a bottomless culvert downstream was chosen rather than the traditional culvert b/c it had the least environmental impacts and lower construction costs. Other alternatives would impact Hooper Mill Creek, which empties into West Buffalo Creek 50' upstream of the existing bridge. The "do-nothing" alternative was not considered due to the resulting elimination of the use of SR 1123 and closing or removing the bridge. A moratorium for in-stream work to protect trout is in effect from October 15 to April 15.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. Impacts will be minimized by constructing a bottomless culvert and surficial bridge runoff will not be directed into West Buffalo Creek via deck drains		
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	
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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1b. If yes, then is a diffuse flow plan included? If no, explain why. Comments:	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. Stormwater Management Plan	
2a. What is the overall percent imperviousness of this project?	See attached Stormwater Management Plan %
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 Stormwater Management Plan	
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.	
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 type="checkbox"/> Raleigh <input checked="" type="checkbox"/> Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? Habitat assessment and survey by NCDOT biologists and concurrence with USFWS, NHP, see attached concurrence letter.		
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? NHP records		
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 type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
8b. If yes, explain how project meets FEMA requirements:		
8c. What source(s) did you use to make the floodplain determination?		
E. L. Lusk Applicant/Agent's Printed Name	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	4.29.09 Date

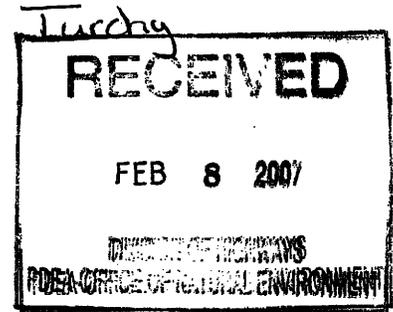


United States Department of the Interior

FISH AND WILDLIFE SERVICE

Asheville Field Office
160 Zillicoa Street
Asheville, North Carolina 28801

February 7, 2007



Mr. Michael Turchy
Office of Natural Environment
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Turchy:

Subject: Endangered Species Concurrence Request for the Replacement of Bridge No. 117 on SR 1123 over West Buffalo Creek, Graham County, North Carolina (TIP No. B-4123)

As requested by the North Carolina Department of Transportation (NCDOT), we have reviewed the survey report describing the habitat analysis and survey that was conducted for the federally endangered Indiana bat (*Myotis sodalis*). Our comments are provided in accordance with the provisions of section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (Act), and the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e), and the Migratory Bird Treaty Act (16 U.S.C. 703, et seq.) (MBTA).

Federally Listed Species – The listed species concurrence request we received was for the NCDOT's determination that the subject project is not likely to adversely affect the federally endangered Indiana bat (*Myotis sodalis*). It was determined that the project would have no effect on the Carolina northern flying squirrel (*Glaucomys sabrinus coloratus*), Appalachian elktoe (*Alasmidonta raveneliana*), or Virginia spiraea (*Spiraea virginiana*) that also occur in Graham County.

A mist-net survey, following the U.S. Fish and Wildlife Service's Indiana bat mist-netting protocol, was conducted within the project area on July 6 and 7, 2006, by Appalachian Technical Services, Inc.; the species captured were the little brown bat (*Myotis lucifugus*), the eastern red bat (*Lasiurus borealis*), the big brown bat (*Eptesicus fuscus*), the hoary bat (*Lasiurus cinereus*), and the eastern pipistrelle (*Pipistrellus subflavus*). Given that no Indiana bats were captured and if construction of the project takes place before the 2.5-year valid survey window time period, we do not believe this project will have any effect on the Indiana bat. Therefore, the requirements under section 7(c) of the Act are fulfilled for the Indiana bat. If the project does not take place within the 2.5-year window, another survey for the Indiana bat should be

conducted. Also, please note that obligations under section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered, (2) this action is subsequently modified in a manner that was not considered in this review, or (3) a new species is listed or critical habitat is determined that may be affected by the identified action.

Fish and Wildlife Resources – We strongly recommend that the new bridge design include provisions for the roadbed and deck drainage to flow through a vegetated buffer prior to reaching the affected stream. This buffer should be large enough to alleviate any potential effects from the runoff of storm water and pollutants. The bridge design should not alter the natural stream or the stream-bank morphology or impede fish passage. Any piers or bents should be placed outside the bank-full width of the stream. The bridge and approaches should be designed to avoid any fill that will result in the damming or constriction of the channel or floodplain. If spanning the floodplain is not feasible, culverts should be installed in the floodplain portion of the approaches in order to restore some of the hydrological functions of the floodplain and reduce high velocities of floodwaters within the affected area. Construction material should not enter the water during demolition of the existing bridge and construction of the new bridge.

When reseeding/revegetating disturbed areas, we recommend that only native plant species be used or, if an adequate seed source cannot be found, that noninvasive species (such as annual rye) be used until native plants can reestablish themselves. While many of the exotic plant species typically used in erosion-control and reclamation efforts have proven beneficial to some wildlife species, we now know that the invasive nature of these species outweighs any short-term erosion-control or wildlife benefits they may provide. Exotic species, including tall fescue (native to Eurasia), Korean and Sericea lespedeza (eastern Asia species), redtop (a Eurasian species), Sudan grass and Bermuda grass (native to Africa), and Kentucky bluegrass (native to Eurasia and northern Canada), choke out native vegetation and often result in monocultures that prove to be of little benefit to wildlife and can be very detrimental to the ecosystem as a whole.

Migratory Birds – The Migratory Bird Treaty Act (16 U.S.C. 703-712) prohibits the taking, killing, possession, transportation, and importation of migratory birds (including the bald eagle), their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. To avoid impacts to migratory birds, we recommend conducting a visual inspection of the bridge and any other migratory bird nesting habitat within the project area during the migratory bird nesting season from March through September. If migratory birds are discovered nesting in the project impact area, including on the existing bridge, the NCDOT should avoid impacting the nests during the migratory bird nesting season (March through September). If birds are discovered nesting on the bridge during years prior to the proposed construction date, the NCDOT, in consultation with us, should develop measures to discourage birds from establishing nests on the bridge by means that will not result in the take of the birds or eggs, or the NCDOT should avoid construction and demolition activities during the nesting period.

If you have questions about these comments, please contact Ms. Denise Moldenhauer of our staff at 828/258-3939, Ext. 226. In any future correspondence concerning this project, please reference our Log Number 4-2-07-007.

Sincerely,


for Brian P. Cole
Field Supervisor

cc:

Mr. Dave Baker, Asheville Regulatory Field Office, U.S. Army Corps of Engineers, 151 Patton Avenue, Room 208, Asheville, North Carolina 28801-5006

Ms. Pam Williams, Project Planning Engineer, Project Development Bridge Unit, 1551 Mail Service Center, Raleigh, NC 27699-1551

09/08/09

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Symbology

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

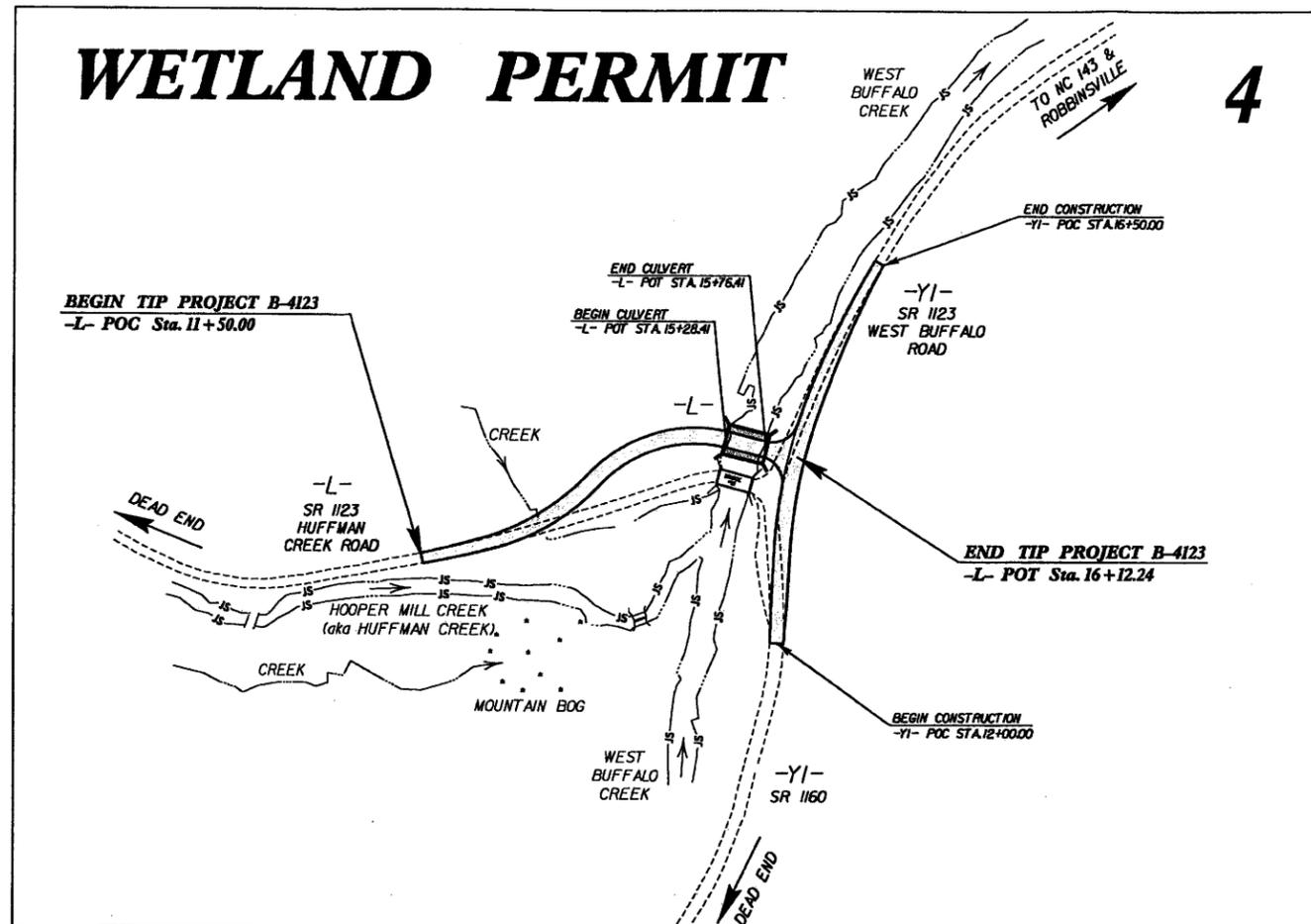
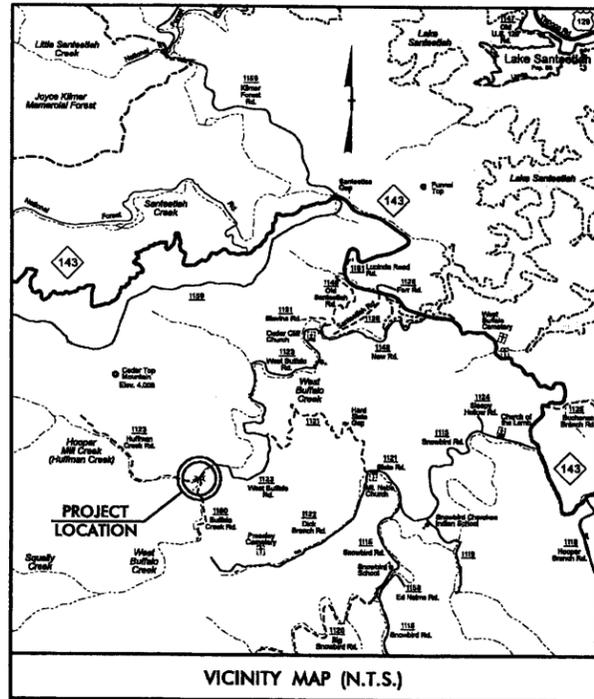
GRAHAM COUNTY

LOCATION: BRIDGE NO. 117 OVER WEST BUFFALO CREEK ON SR 1123 (HUFFMAN CREEK RD.)

TYPE OF WORK: GRADING, DRAINAGE, AND CULVERT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4123	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33476.1.1	BRZ-1123 (9)	PE	
33476.3.1	BRZ-1123 (9)	R/W, UTILITIES	

TIP PROJECT: B-4123



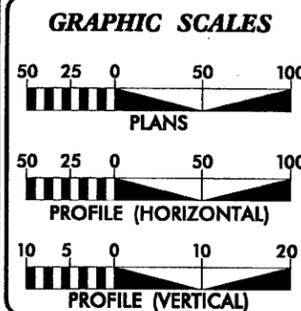
Permit Drawing
Sheet 3 of 5

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NCDOT CONTACT:
MR. DOUG TAYLOR, PE - ENGINEERING COORDINATION - PROJECT ENGINEER - ROADWAY DESIGN UNIT

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

CONTRACT:



DESIGN DATA	
ADT 2009 =	135
ADT 2029 =	220
DHV =	10 %
D =	60 %
T =	3 % *
V =	25 MPH
* (TTST 1% + DUAL 2%)	
FUNC. CLASS =	RURAL LOCAL

PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT B-4123	= 0.079 mile
LENGTH STRUCTURES TIP PROJECT B-4123	= 0.009 mile
TOTAL LENGTH TIP PROJECT B-4123	= 0.088 mile

Prepared For: DIVISION OF HIGHWAYS 1000 Birch Ridge Dr., Raleigh NC, 27610 By: MA ENGINEERING CONSULTANTS, INC. 598 EAST CHATHAM STREET, SUITE 137 CARY, NORTH CAROLINA 27511 (919) 297-0220	
2006 STANDARD SPECIFICATIONS	RIGHT OF WAY DATE: DECEMBER 19, 2008
LETTING DATE: DECEMBER 15, 2009	ROBERT W. PORTER, JR. PE PROJECT ENGINEER
	KEVIN S. HUTCHENS PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER	
SIGNATURE:	
ROADWAY DESIGN ENGINEER	
SIGNATURE:	

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA
STATE HIGHWAY DESIGN ENGINEER

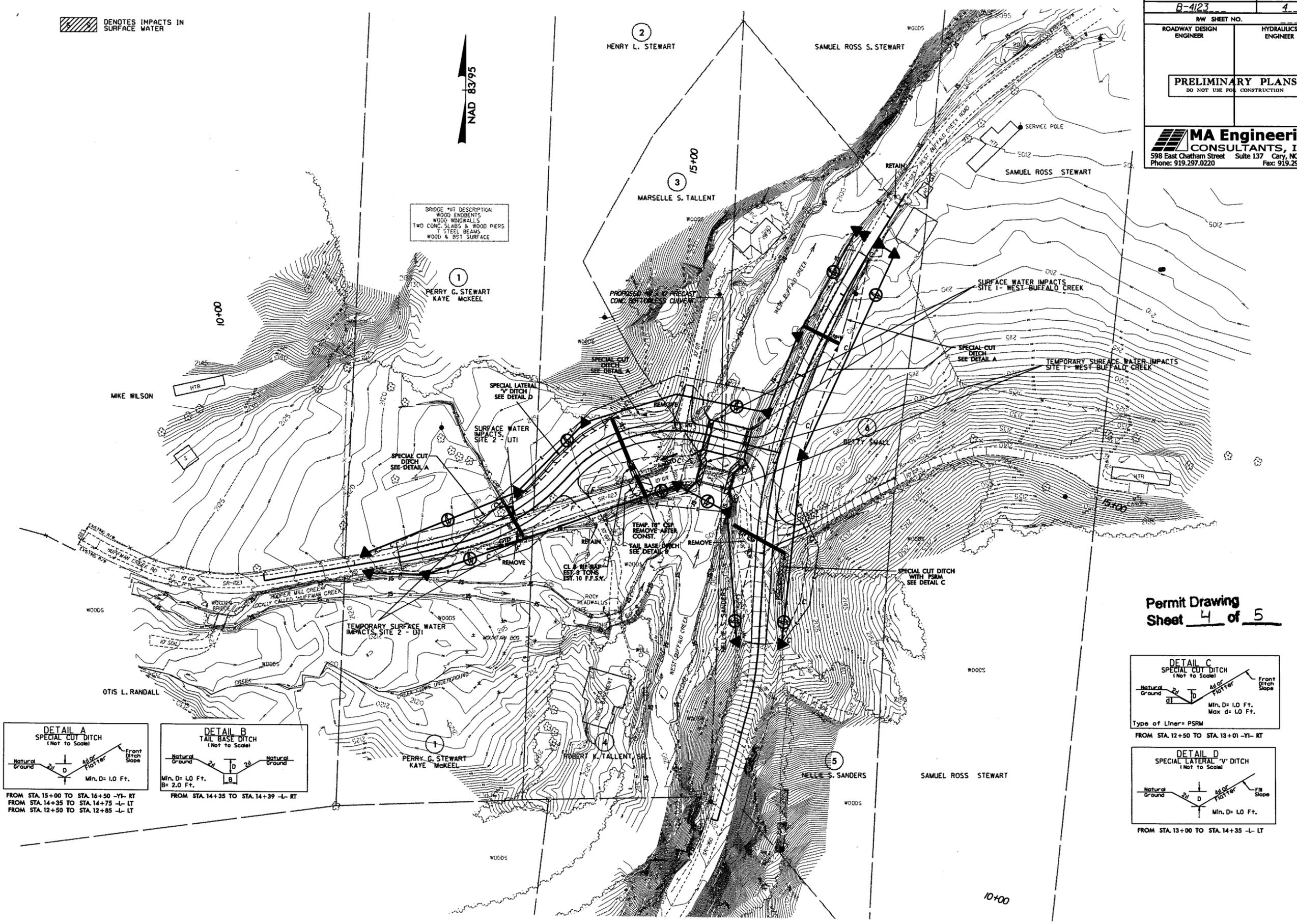
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8/17/99

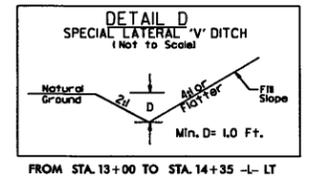
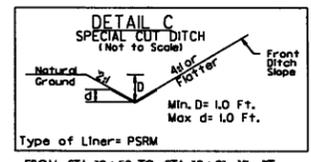
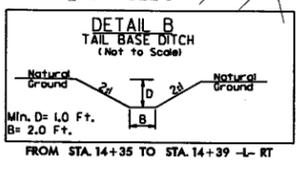
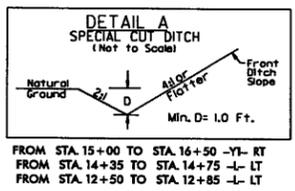
5 DENOTES IMPACTS IN SURFACE WATER

NAD 83/95

PROJECT REFERENCE NO. B-4123	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
MA Engineering CONSULTANTS, INC. 598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	



BRIDGE #17 DESCRIPTION
WOOD ENDMENTS
WOOD WINDRILLS
TWO CONC. SLABS & WOOD PIERS
7 STEEL BEAMS
WOOD & BST SURFACE



Permit Drawing Sheet 4 of 5

REVISIONS

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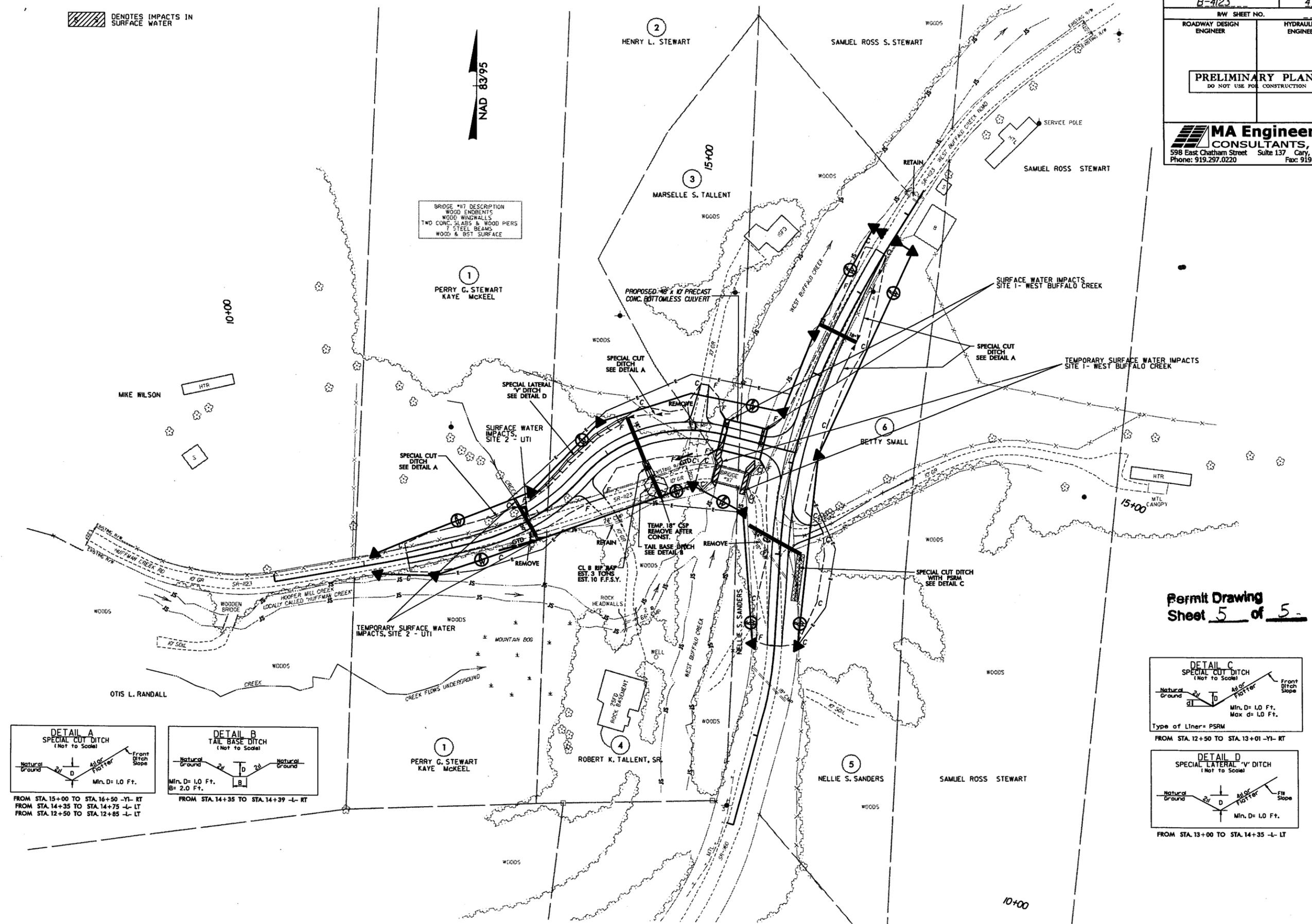
8/17/95

/// DENOTES IMPACTS IN SURFACE WATER

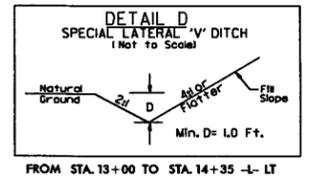
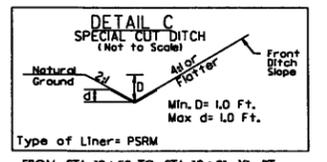
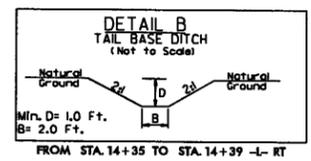
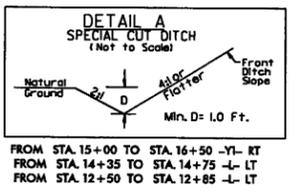
NAD 83/95

PROJECT REFERENCE NO. B-4123	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
MA Engineering CONSULTANTS, INC. 598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	

REVISIONS



BRIDGE #117 DESCRIPTION
WOOD ENDBREASTS
WOOD WINGWALLS
TWO CONC. SLABS & WOOD PIERS
7\"/>



Permit Drawing Sheet 5 of 5

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STORMWATER MANAGEMENT PLAN

Project: 33476.1.1

TIP No. B-4123

Graham County

03/23/2009

Hydraulics Project Manager: Roger Weadon, P.E. (MA Engineering),
Marshal Clawson, P.E. (NCDOT Hydraulics Unit)

ROADWAY DESCRIPTION

The project B-4123 consists of constructing a 48' wide by 10' high bottomless culvert, which is 34' long to replace the existing bridge #117 in Graham County on SR-1123 over West Buffalo Creek. The total project length is 0.069 miles. The project creates impacts to West Buffalo Creek and a small unnamed tributary, which are located in the Little Tennessee River Basin. The project drainage systems consist of roadside ditches and cross pipes culverts.

Jurisdiction Stream: West Buffalo Creek and UT to Buffalo Creek

ENVIRONMENTAL DESCRIPTION

The project is located within the Little Tennessee River Basin in Graham County. The stream is a trout stream and is classified as C-Tr. West buffalo Creek and the unnamed tributary will be impacted by the proposed project however impacts have been minimized by using a bottomless culvert that spans the stream width; shifting the roadway alignment to avoid stream impacts; and burying the cross pipe culvert that impacts the small unnamed tributary

BEST MANAGEMENT PRACTICES AND MAJOR STRUCTURES

The primary goal of Best Management Practices (BMPs) is to prevent degradation of the states surface waters by the location, construction and operation of the highway system. The BMPs are activities, practices and procedures taken to prevent or reduce stormwater pollution. The BMP measures used on this project to reduce stormwater impacts are:

- Bury 30" cross pipe 6" at the unnamed tributary.
- Use of Bottomless culvert structure over West Buffalo Creek.

Property Owners

Parcel Number	Names	Addresses	
1	Perry G. Stewart & Kaye McKeel	283 Stancil Rd. Rossville, GA 30741	
2	Herny L. Stewart	12 Huffman Creek Road, Robbinsville, NC 28771	
3	Marselle S. Tallent	3615 Colver Hill Mill Rd. Maryville, TN 37801	
4	Robert K. Tallent Sr.	4704 Wheeler Rd. Louisville, TN 37777	
6	Betty Small	978 Cliffwood Dr. Pleasant, SC 29464	Mt.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Graham COUNTY
WBS - 33476.1.1 (B-4123)

SHEET

1/14/2009

Permit Drawing
Sheet 1 of 5

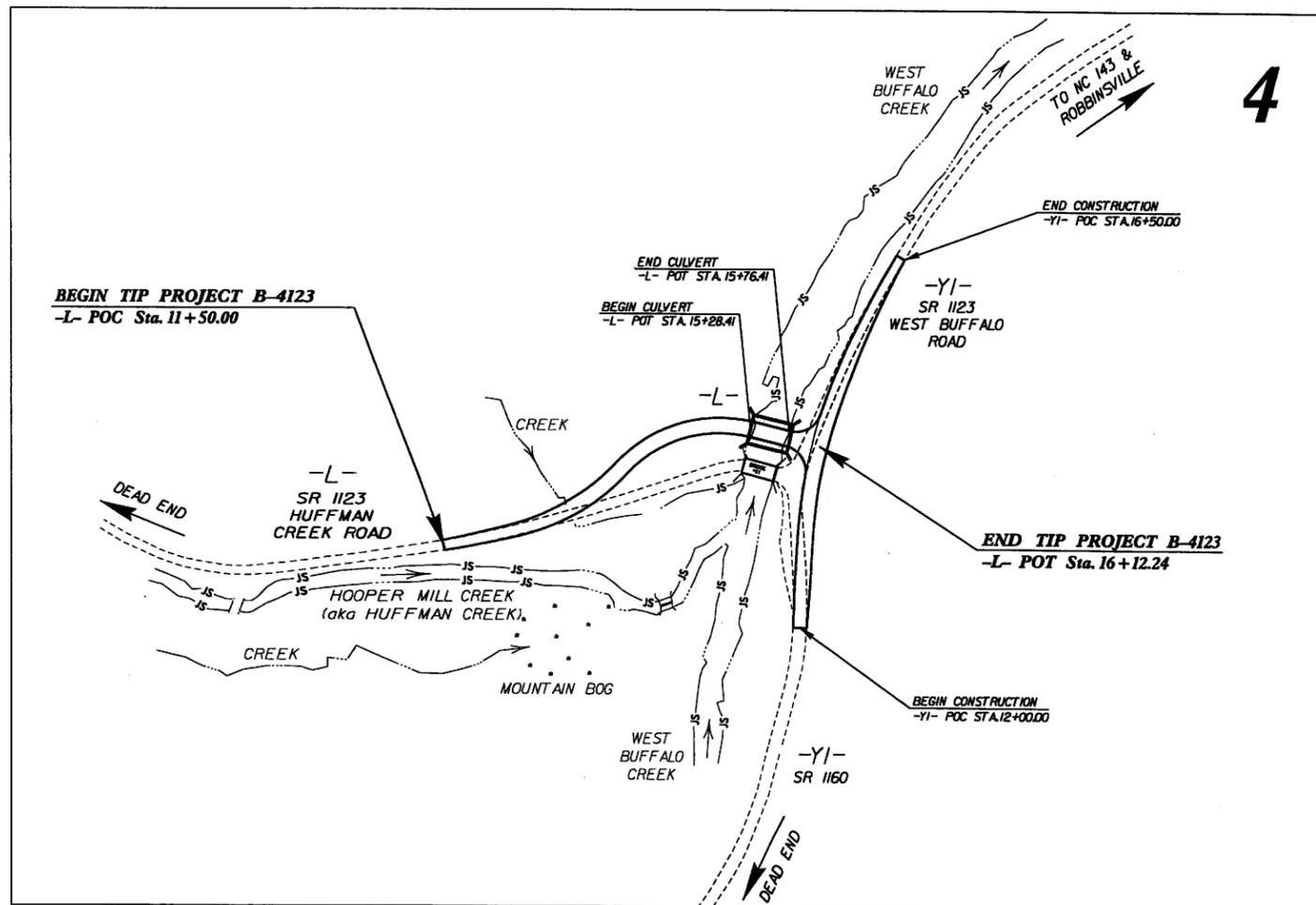
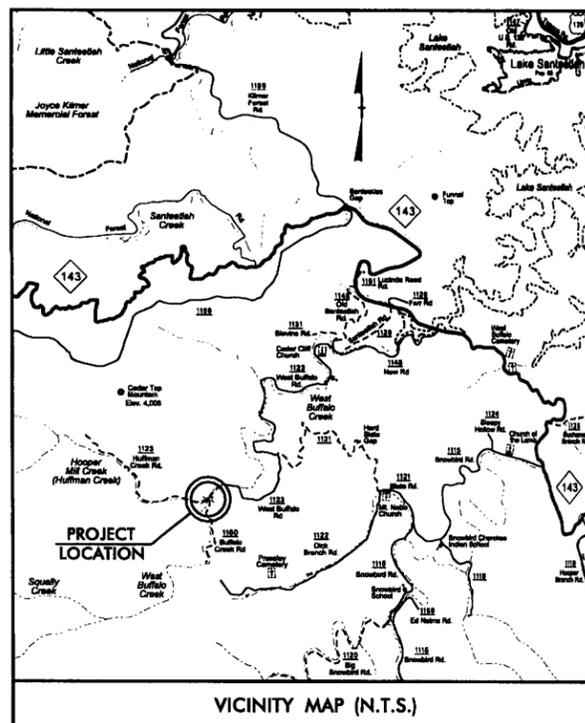
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4123	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33476.1.1	BRZ-1123 (9)	PE	
33476.3.1	BRZ-1123 (9)	R/W, UTILITIES	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GRAHAM COUNTY

LOCATION: BRIDGE NO. 117 OVER WEST BUFFALO CREEK ON SR 1123 (HUFFMAN CREEK RD.)

TYPE OF WORK: GRADING, DRAINAGE, AND CULVERT



NAD 8395
NC GRID

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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

NCDOT CONTACT:
MR. DOUG TAYLOR, PE - ENGINEERING COORDINATION - PROJECT ENGINEER - ROADWAY DESIGN UNIT

<p>GRAPHIC SCALES</p> <p>50 25 0 50 100 PLANS</p> <p>50 25 0 50 100 PROFILE (HORIZONTAL)</p> <p>10 5 0 10 20 PROFILE (VERTICAL)</p>	<p>DESIGN DATA</p> <p>ADT 2009 = 135</p> <p>ADT 2029 = 220</p> <p>DHV = 10 %</p> <p>D = 60 %</p> <p>T = 3 % *</p> <p>V = 25 MPH</p> <p>* (TTST 1% + DUAL 2%)</p> <p>FUNC. CLASS = RURAL LOCAL</p>
--	--

PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT B-4123	= 0.079 mile
LENGTH STRUCTURES TIP PROJECT B-4123	= 0.009 mile
TOTAL LENGTH TIP PROJECT B-4123	= 0.088 mile

<p>Prepared For: DIVISION OF HIGHWAYS 1000 Birch Ridge Dr., Raleigh NC, 27610 By: MA ENGINEERING CONSULTANTS INC. 598 EAST CHATHAM STREET, SUITE 137 CARY, NORTH CAROLINA 27511 (919) 297-0220</p>	
<p>2006 STANDARD SPECIFICATIONS</p> <p>RIGHT OF WAY DATE: DECEMBER 19, 2008</p> <p>LETTING DATE: DECEMBER 15, 2009</p>	<p>ROBERT W. PORTER, JR PE PROJECT ENGINEER</p> <p>KEVIN S. HUTCHENS PROJECT DESIGN ENGINEER</p>

<p>HYDRAULICS ENGINEER</p> <p>SIGNATURE: _____ P.E.</p>	<p>ROADWAY DESIGN ENGINEER</p> <p>SIGNATURE: _____ P.E.</p>
---	---

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

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CONTRACT: TIP PROJECT: B-4123

CONTRACT:

09/08/09

3/15/06

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

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 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 Utility Easement

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement, Existing Curb, Proposed Slope Stakes Cut, Proposed Slope Stakes Fill, Proposed Wheel Chair Ramp, Proposed Wheel Chair Ramp Curb Cut, Curb Cut for Future Wheel Chair Ramp, Existing Metal Guardrail, Proposed Guardrail, Existing Cable Guiderail, Proposed Cable Guiderail, Equality Symbol, Pavement Removal

VEGETATION:

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

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, A/G Tank; Water, Gas, Oil, U/G Test Hole (S.U.E.*), Abandoned According to Utility Records, End of Information

SURVEY CONTROL SHEET B-4123

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
BL1	BL-1	603830.8280	534413.0910	2124.70	OUTSIDE PROJECT LIMITS	
BL2	BL-2	603877.3190	534755.9020	2114.89	12+50.72	12.49 RT
BL3	BL-3	603976.9470	535047.3050	2113.02	15+86.78	8.90 RT
BL4	BL-4	604255.3970	535192.1930	2103.81	OUTSIDE PROJECT LIMITS	
BL5	BL-5	604441.9190	535371.1430	2100.46	OUTSIDE PROJECT LIMITS	

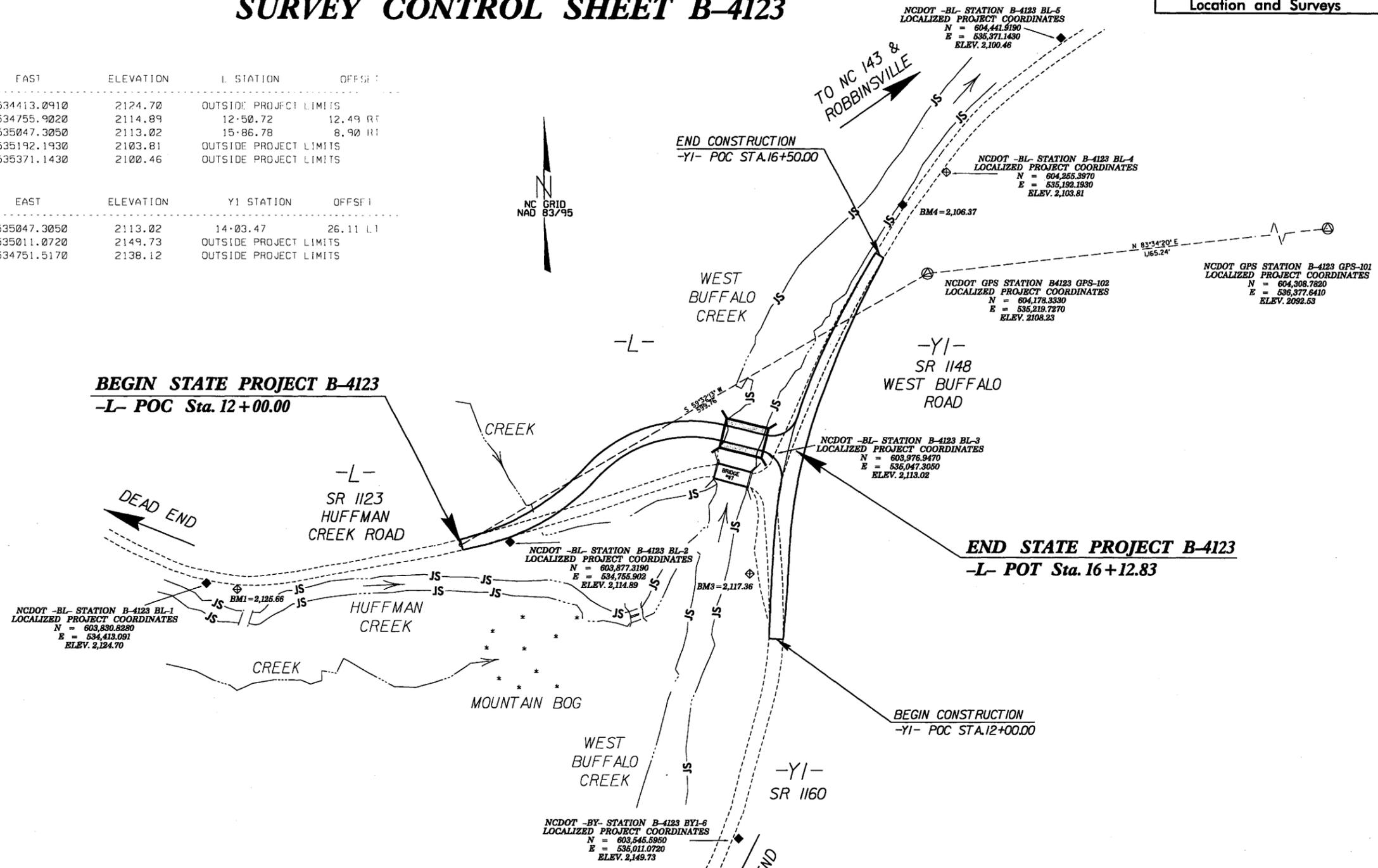
BY1 POINT	DESC.	NORTH	EAST	ELEVATION	Y1 STATION	OFFSET
BY133	BL-3	603976.9470	535047.3050	2113.02	14+03.47	26.11 LT
BY16	BY1-6	603545.5950	535011.0720	2149.73	OUTSIDE PROJECT LIMITS	
BY17	BY1-7	603210.4960	534751.5170	2138.12	OUTSIDE PROJECT LIMITS	

.....
 BM1 ELEVATION = 2125.66
 N 603824 E 534448
 L STATION 10+00
 S 77° 54' 55.4" W DIST 59.73
 8 INCH SPIKE SET IN 30 INCH PINE

.....
 BM2 ELEVATION = 2140.54
 N 603335 E 534763
 L STATION 11+50 539 RIGHT
 8 INCH SPIKE SET IN 30 INCH HEMLOCK

.....
 BM3 ELEVATION = 2117.36
 N 603842 E 535023
 Y1 STATION 12+71 34 LEFT
 8 INCH SPIKE SET IN 20 INCH POPLAR

.....
 BM4 ELEVATION = 2106.37
 N 604292 E 535241
 Y1 STATION 17+32
 N 45° 16' 53.7" E DIST 37.39
 8 INCH SPIKE SET IN 36 INCH RED OAK



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B-4123 "GPS-102" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 604,178.3330(ft) EASTING: 535,219.7270(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99978044 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B-4123 "GPS-102" TO -L- STATION 12+00.00 IS S 59°32'13" W 599.76'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.ncdot.org/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/)

THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4123_LS_CONTROL_080807.TXT
 B4123_LS_IC_080807.DGN

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

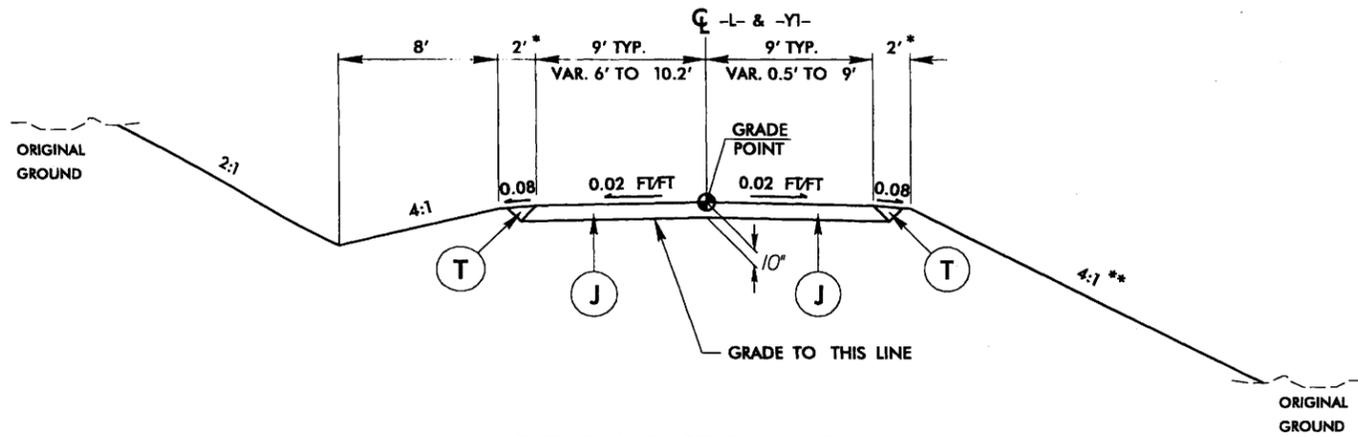
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8/2/99

PAVEMENT SCHEDULE	
J	PROPOSED 10" AGGREGATE BASE COURSE
T	EARTH MATERIAL

PAVEMENT EDGE SLOPES AND TRENCH SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PROJECT REFERENCE NO. B-4123	SHEET NO. 2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
598 East Chatham Street Suite 137 Cary, NC 27511 Phone: 919.297.0220 Fax: 919.297.0221	



TYPICAL SECTION NO. 1

FROM -L- STA. 11+50.00 TO STA. 16+03.24

FROM -YI- STA. 12+00.00 TO STA. 16+50.00

NOTES

- * - 7' WITH GUARDRAIL (FACE GR MIN. 4' FROM EOP)
- ** - TYPICAL (SEE CROSS SECTIONS FOR VAR. 2:1 TO 6:1 SLOPE LOCATIONS)

SUMMARY OF EARTHWORK
IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+15%	BORROW	WASTE
-L- 11+50.00 TO 16+03.83	175		1,245	1,070	0
-YI- 12+00.00 TO 16+50.00	980		118	0	862
SUBTOTAL	1,155		1,363	1,070	862
WASTE TO REPLACE BORROW				-862	-862
TOTAL	1,155		1,363	208	0
EST. LOSS DUE TO CLEARING AND GRUBBING	-40			40	
PROJECT TOTAL	1,115		1,363	248	0
EST. 5% TO REPLACE TOPSOIL ON BORROW PIT				12	
GRAND TOTAL	1,115		1,363	260	0
SAY	1,200			300	

EST. SELECT GRANULAR MATERIAL (CL II or III) = 100 CY
 EST. GRADE POINTS UNDERCUT = 20 CY
 EST. UNDERCUT = 100 CY
 EST. CLASS IV SUBGRADE STABILIZATION = 100 TONS

THESE CONTINGENCY ITEMS & QUANTITIES ARE PER THE 'GEOTECHNICAL REPORT - DESIGN RECOMMENDATIONS' LETTER DATED AUGUST 29, 2008.

APPROXIMATE QUANTITIES ONLY. CLEARING AND GRUBBING, UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING, AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".

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5/28/99

BM#1
8" SPIKE SET IN 30" PINE
-BL- STA. 5+33.67 (11.46' RT)
ELEV. 2,125.66'

PROJECT REFERENCE NO. B-4123	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-L-

CULVERT HYDRAULIC DATA	
DESIGN DISCHARGE	= 47 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 2112.2 FT
BASE DISCHARGE	= 57 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2112.3 FT
OVERTOPPING DISCHARGE	= 155 CFS
OVERTOPPING FREQUENCY	= 100+ YRS
OVERTOPPING ELEVATION	= 2114.7 FT

-L- STA. 16+12.24
-Y- STA. 14+12.00
EL. 2,114.01'

END GRADE
-L- STA. 16+03.24
-Y- STA. 14+12.00 (9' LT)
EL. 2,114.37'

BEGIN GRADE
-L- STA. 11+50.00
EL. 2,117.90'

PI = 12+10.00
EL = 2,115.65'
VC = 120'
K = 27
V = 25 mph

PI = 13+35.00
EL = 2,116.50'
VC = 130'
K = 44
V = 30 mph

PI = 14+65.00
EL = 2,118.50'
VC = 130'
K = 26
V = 35 mph

PI = 15+55.00
EL = 2,115.85'
VC = 50'
K = 10
V = STOP COND.

CULVERT HYDRAULIC DATA	
DESIGN DISCHARGE	= 14.6 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 2115.0 FT
BASE DISCHARGE	= 23.2 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2116.0 FT
OVERTOPPING DISCHARGE	= 25.0 CFS
OVERTOPPING FREQUENCY	= 100+ YRS
OVERTOPPING ELEVATION	= 2116.4 FT

CULVERT HYDRAULIC DATA	
DESIGN DISCHARGE	= 2.360 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 2112.1 FT
BASE DISCHARGE	= 3.520 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2114.4 FT
OVERTOPPING DISCHARGE	= 3.500 CFS
OVERTOPPING FREQUENCY	= 100 YRS
OVERTOPPING ELEVATION	= 2114.3 FT

2,130
2,120
2,110
2,100
2,090
2,080

2,130
2,120
2,110
2,100
2,090
2,080

10 11 12 13 14 15 16

BM#2
8" SPIKE SET IN 30" HEMLOCK
-BY- STA. 12+51.27 (67.16' RT)
ELEV. 2,140.54'

BM#3
8" SPIKE SET IN 20" POPLAR
-Y- STA. 12+71.31 (33.66' LT)
ELEV. 2,117.36'

-YI-

BM#4
8" SPIKE SET IN 36" RED OAK
-BL- STA. 15+28.00 (9.88' RT)
ELEV. 2,106.37'

BEGIN GRADE
-YI- STA. 12+00.00
EL. 2,124.65'

-YI- STA. 14+12.00
-L- STA. 16+12.24
EL. 2,114.01'

END GRADE
-YI- STA. 16+50.00
EL. 2,105.00'

PI = 12+12.00
EL = 2,123.45'
VC = 24'
K = 6
V = <15 mph

PI = 13+00.00
EL = 2,118.00'
VC = 140'
K = 51
V = 35 mph

PI = 14+20.00
EL = 2,113.85'
VC = 1100'
K = 79
V = 55 mph

PI = 15+70.00
EL = 2,106.76'
VC = 150'
K = 59
V = 35 mph

CULVERT HYDRAULIC DATA	
DESIGN DISCHARGE	= 15.3 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 2117.1 FT
BASE DISCHARGE	= 18.5 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2117.5 FT
OVERTOPPING DISCHARGE	= 30.0 CFS
OVERTOPPING FREQUENCY	= 100+ YRS
OVERTOPPING ELEVATION	= 2119.3 FT

CULVERT HYDRAULIC DATA	
DESIGN DISCHARGE	= 4.4 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 2107.5 FT
BASE DISCHARGE	= 5.3 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2108.8 FT
OVERTOPPING DISCHARGE	= 4.7 CFS
OVERTOPPING FREQUENCY	= 50 YRS
OVERTOPPING ELEVATION	= 2108.2 FT

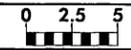
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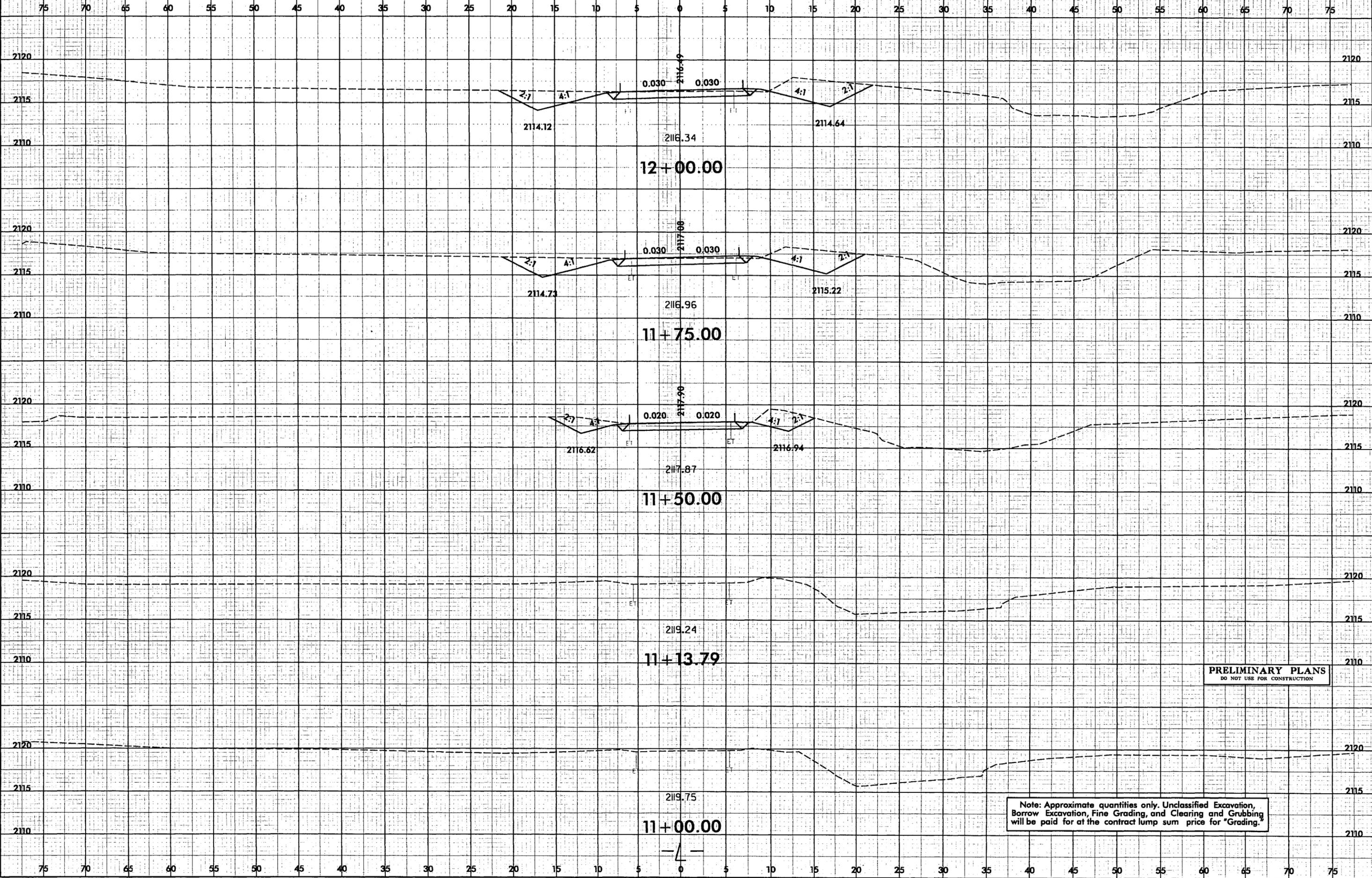
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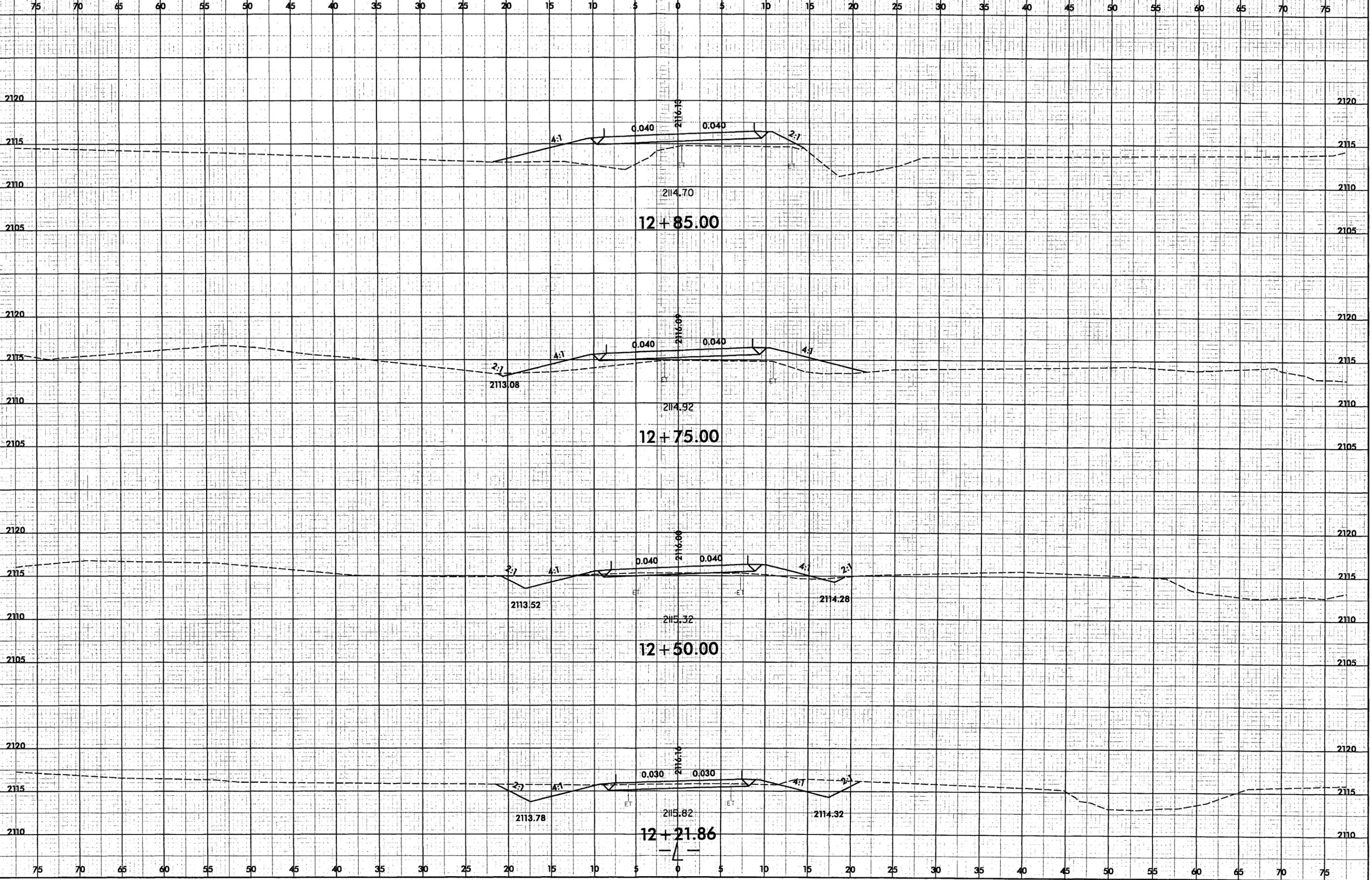
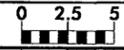
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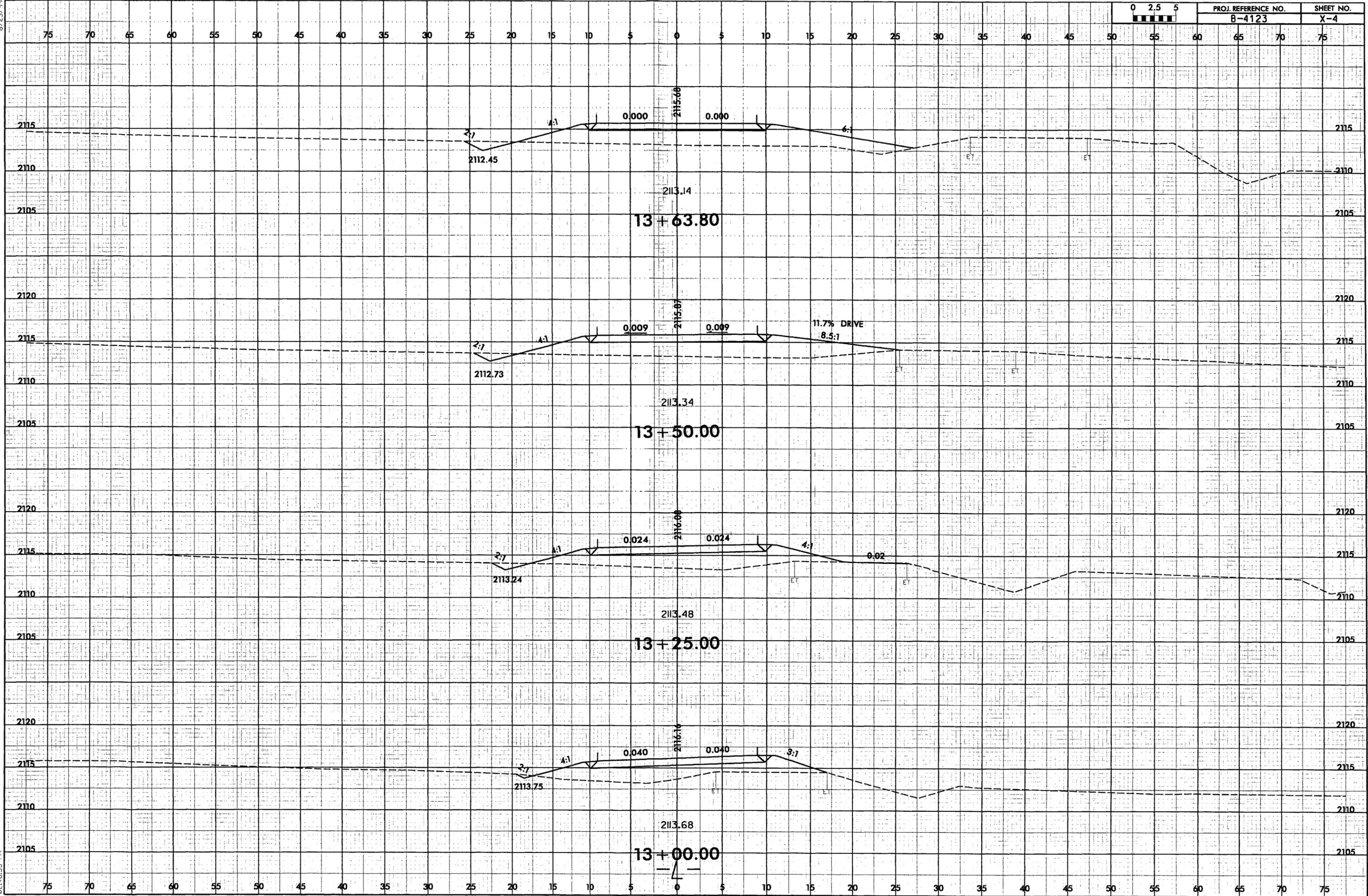
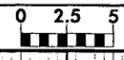


PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

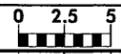
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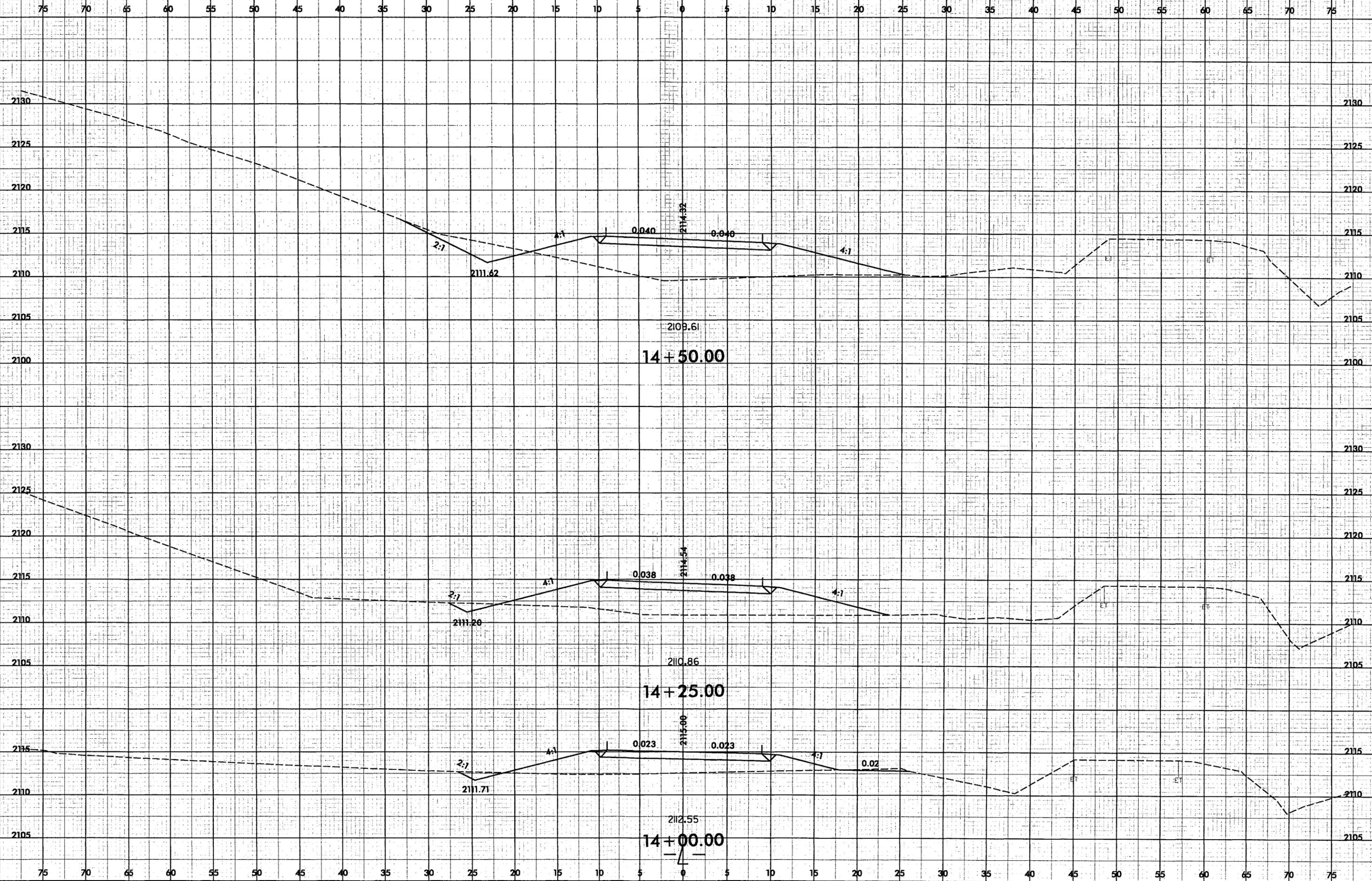




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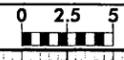


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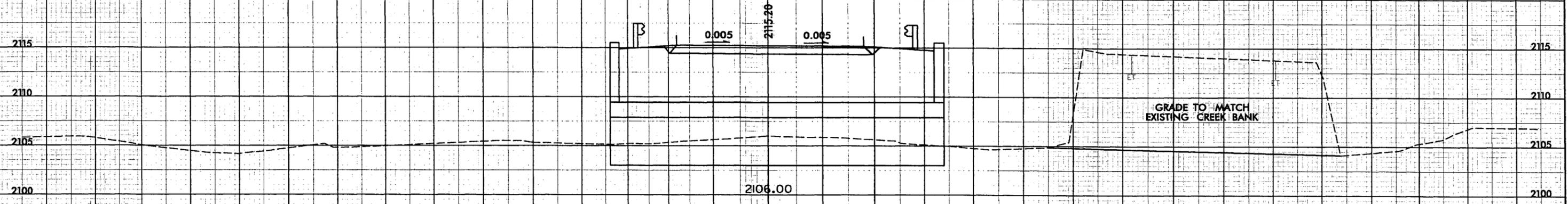
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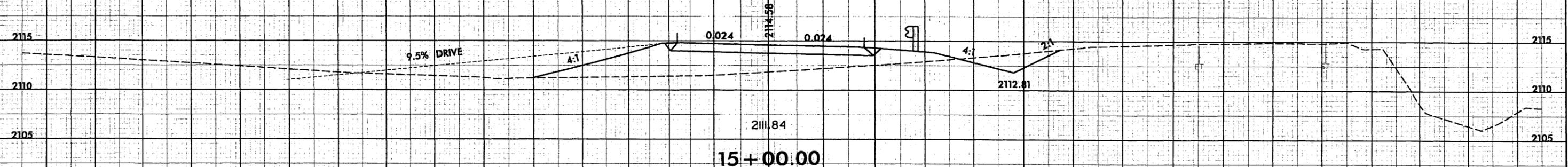
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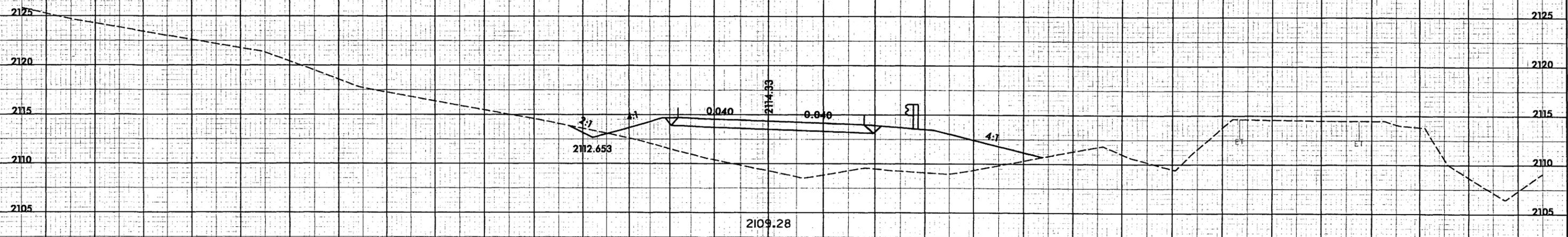
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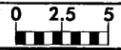


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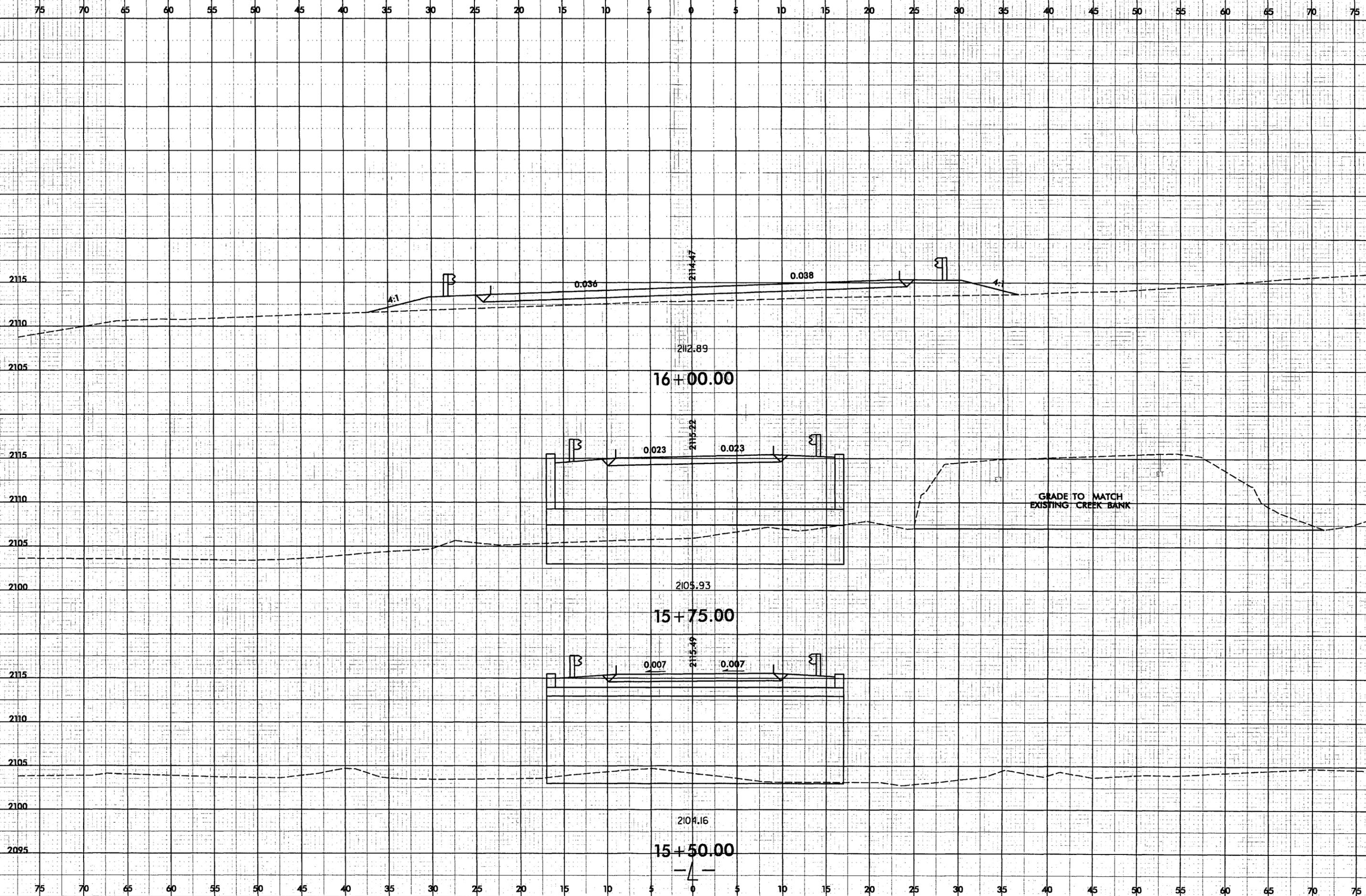
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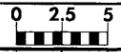
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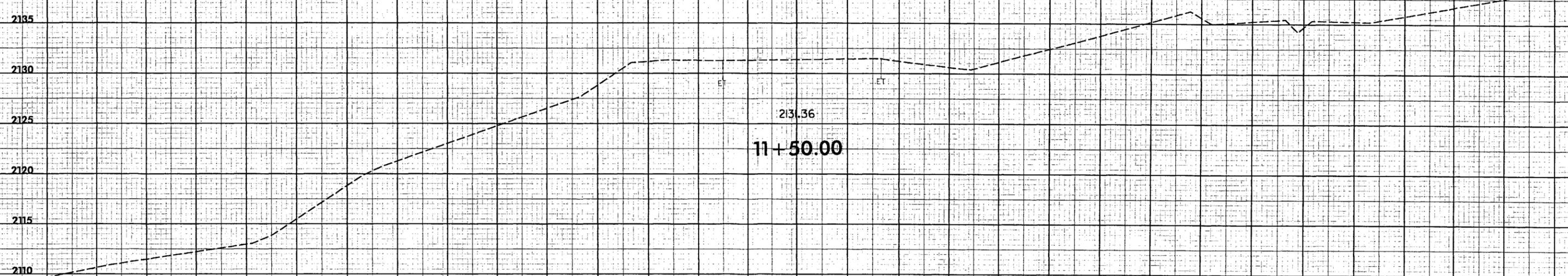
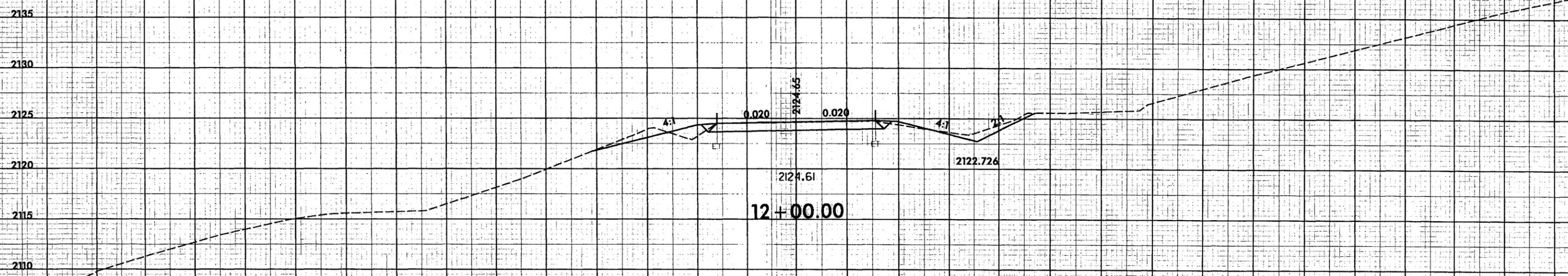
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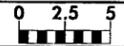
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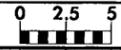
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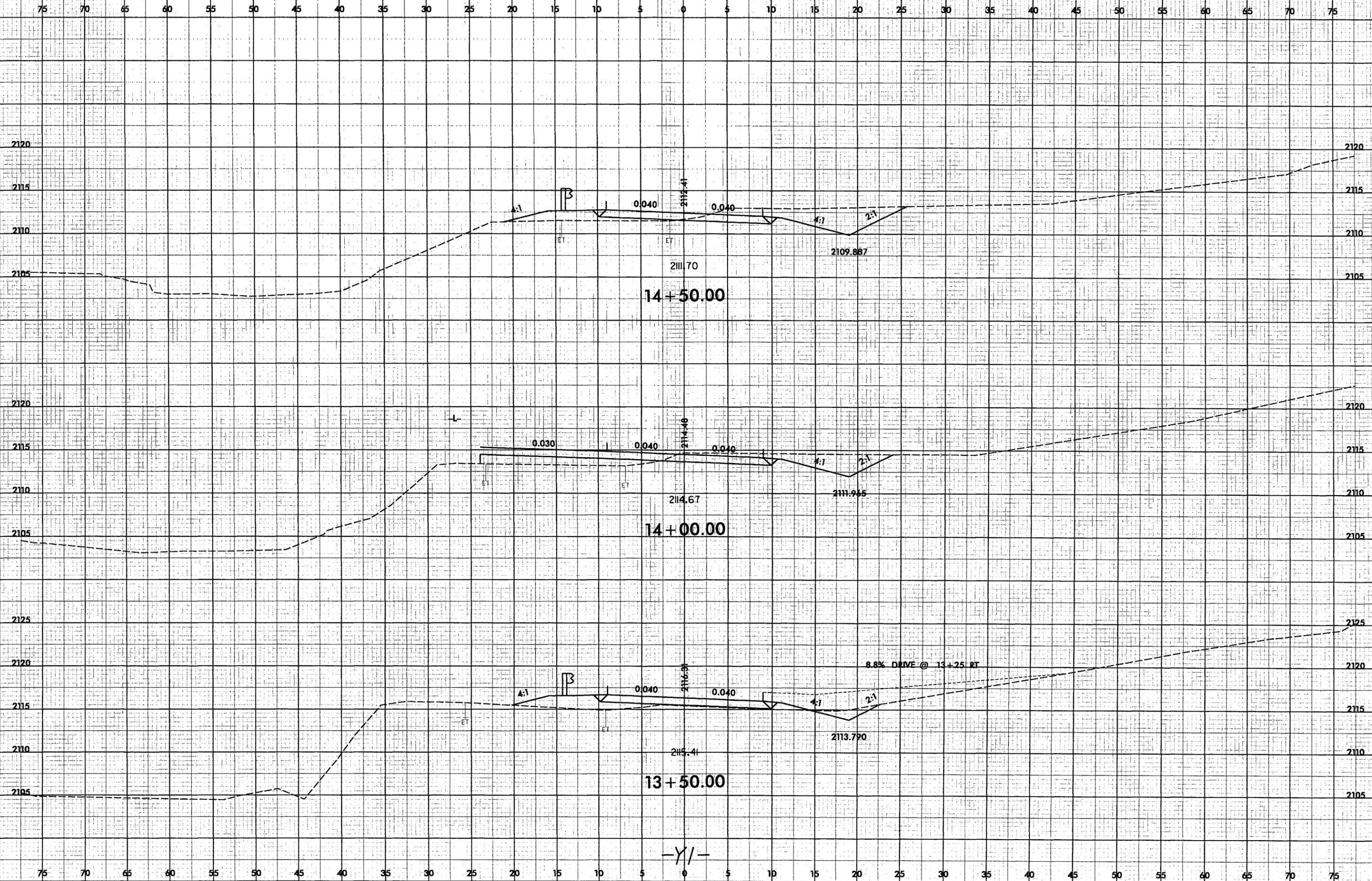
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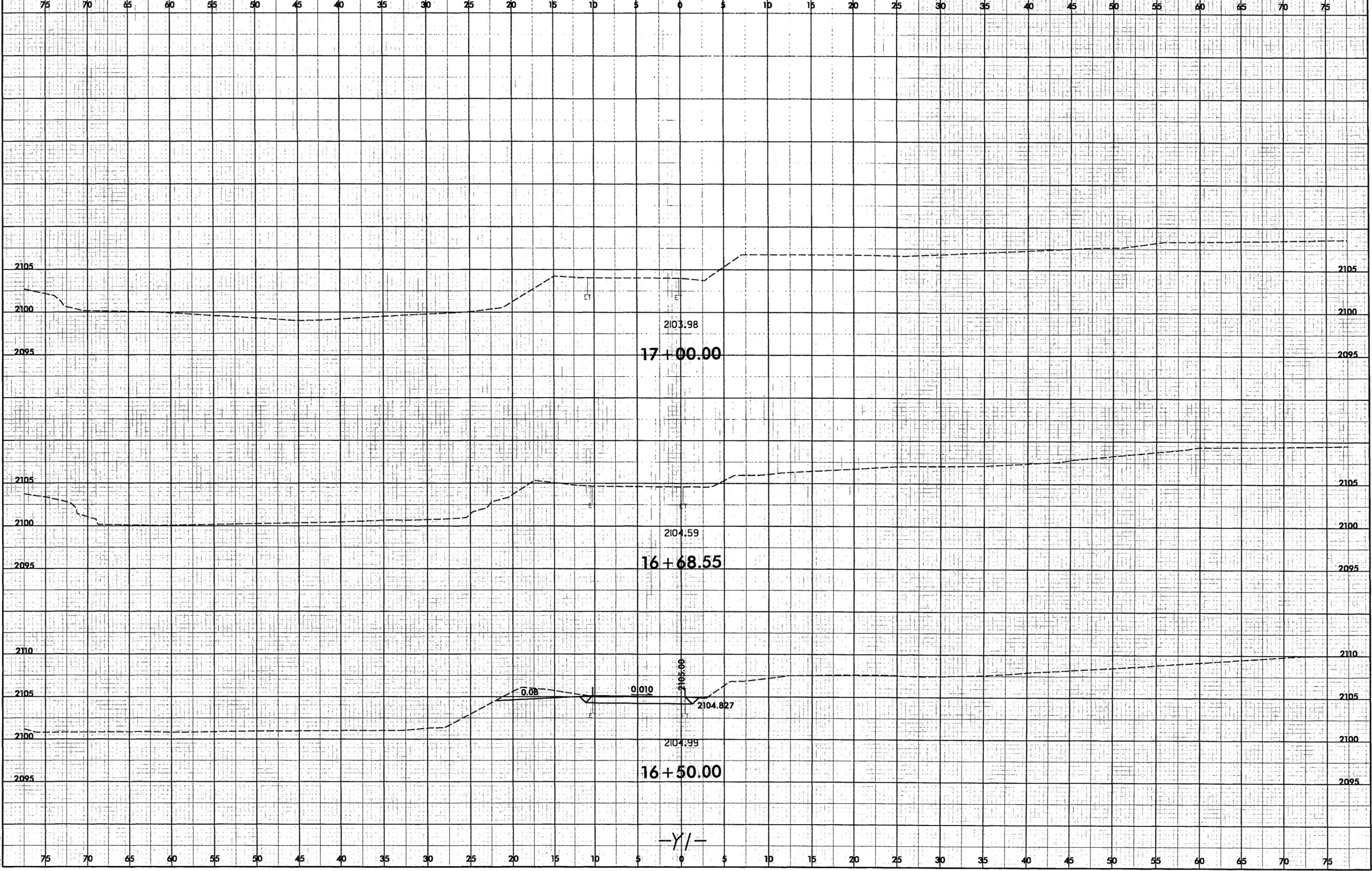
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Graham County
Bridge No. 117 on SR 1123 (Huffman Creek Road)
over West Buffalo Creek
W.B.S. No. 33476.1.1
Federal-Aid Project No. BRZ-1123 (9)
State Project No. 8.2930701
T.I.P. Project No. B-4123

CATEGORICAL EXCLUSION
UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

APPROVED:

2/14/07
DATE

for William T. Hedding
Gregory J. Thorpe, PhD.
Environmental Management Director
Project Development & Environmental Analysis Branch,
North Carolina Department of Transportation

2/14/07
DATE

for Thomas D. Ross
John F. Sullivan, III PE
Division Administrator
Federal Highway Administration

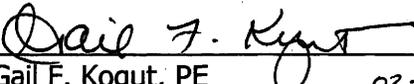
**Graham County
Bridge No. 117 on SR 1123 (Huffman Creek Road)
over West Buffalo Creek
Federal-Aid Project No. BRZ-1123 (9)
State Project No. 8.2930701
WBS No. 33476.1.1
T.I.P. Project No. B-4123**

CATEGORICAL EXCLUSION

February 2007

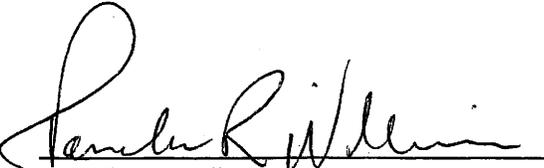
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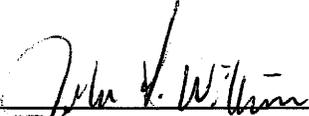
MA Engineering Consultants, Inc.
598 East Chatham Street, Suite 137
Cary, NC 27511-6956


Gail F. Kogut, PE
Project Manager
02-13-07



For the North Carolina Department of Transportation:


Pamela R. Williams
Bridge Project Planning Engineer


John L. Williams, PE
Bridge Project Engineer
Project Development & Environmental Analysis Branch

Graham County
Bridge No. 117 on SR 1123 (Huffman Creek Road)
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W.B.S. No. 33476.1.1
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PROJECT COMMITMENTS

The following special commitments have been agreed to by NCDOT:

Sensitive Watershed Commitment

Roadside Environmental Unit, Division Resident Engineer - Sensitive Watersheds

West Buffalo Creek is a Hatchery-supported Designated Public Mountain Trout Water and will be subject to all Design Standards for Sensitive Watersheds.

Trout Issues

Division Resident Engineer

North Carolina Wildlife Resource Commission (NCWRC) has commented that West Buffalo Creek is a NCWRC Hatchery Supported Trout Stream. The following will be implemented to minimize impacts to their habitat:

- In-stream work and land disturbance within the 25-foot buffer zone are prohibited during the trout spawning season of October 15 through April 15
- Where concrete is used, work will be accomplished so that wet concrete does not contact the stream water.
- Grading and back filling should be minimized. Tree and shrub growth should be retained if possible to ensure long term availability of shoreline cover for game fish and wildlife.
- Under no circumstances should rock, sand, or other materials be dredged from the stream channel except as required for the construction of the culvert footings.
- Temporary or permanent herbaceous vegetations should be planted on all bare soil within 15 days of completion of ground disturbing activities to provide long-term erosion control.
- Guidelines for Construction Adjacent to Trout Waters will be applied to this project.

Hydraulics Unit, Structure Design Unit, and PDEA

If hydraulically possible, Bridge No. 117 will be replaced with a bottomless culvert.

Bridge Demolition

Project Development & Environmental Analysis Branch (PDEA)- Natural Environment Unit (NEU)

The superstructure is constructed of timber and steel. The superstructure and the substructure timber caps, posts, and sills will be removed without dropping into West Buffalo Creek. Removal of the concrete footings may create a disturbance in the streambed.

Tennessee Valley Authority

Hydraulics Unit, Structure Design Unit, and PDEA

This project will be reviewed under Section 26a of the Tennessee Valley Authority (TVA) Act. The environmental planning document, final bridge plans, hydraulic analysis of the effects of the replacement structure on the 100-year flood elevation, and notice of compliance with the Historic Act of 1966 will be forwarded to TVA for approval.

PDEA - Human Environment Unit (HEU)

TVA has requested to be a signatory on the Memorandum of Agreement (MOA) between NCDOT and the Eastern Band of Cherokee Indians Tribal Historic Preservation Office (THPO) regarding archaeological site 3GH457/457**, if one is executed.

Archaeological Site

Hydraulic Unit and Roadway Design Unit

PDEA - Human Environment Unit, Archaeology Group will review of the design plans to determine the effects of the design and construction activities on archaeological site 3GH457/457**.

Roadway Design Unit/ PDEA - HEU/ Division Resident Engineer

The NCDOT will avoid archeological site 3GH457/457** located along and to the east of SR 1160. If the site cannot be avoided, data recovery will be performed before construction commences. Data recovery investigation will be facilitated by the drafting of a data recovery plan and MOA in consultation with the North Carolina Historic Preservation Office (NC HPO). A minimum of six months following the right-of-way acquisition of the pertinent tract(s) shall be granted for the completion of data recovery field investigations.

PDEA - HEU

A copy of the environmental planning document will be submitted to the Eastern Band of Cherokee Indians Tribal THPO.

Indiana Bat

Project Development & Environmental Analysis Branch (PDEA)- Natural Environment Unit (NEU)

If the construction is completed within the 2.5 year survey window, an additional survey for the Indiana bat will be conducted.

Graham County
Bridge No. 117 on SR 1123 (Huffman Creek Road)
over West Buffalo Creek
W.B.S. No. 33476.1.1
Federal-Aid Project No. BRZ-1123 (9)
State Project No. 8.2930701
T.I.P. Project No. B-4123

INTRODUCTION: The replacement of Bridge No. 117 is included in the 2006-2012 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program and in the Federal-Aid Bridge Replacement Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion".

I. PURPOSE AND NEED STATEMENT

Bridge Maintenance Unit records indicated the bridge has a sufficiency rating of 44.8 out of a possible 100 for a new structure. The bridge is considered functionally obsolete due to the fact that the structural evaluation and deck geometry are rated 2 and 3, respectively, out of 9. Also, since the structural evaluation is rated less than or equal to 2, Bridge No. 117 is considered structurally deficient. The posted weight limit on the bridge is down to 14 tons for single vehicles (SV) and 17 tons for truck-tractor semi-trailers (TTST). By comparison, a new bridge would be designed for 25 tons SV and 45 tons TTST.

Components of the primarily timber substructure have experienced an increasing degree of deterioration that can no longer be addressed by maintenance activities. The bridge deck is timber which typically has a life expectancy between 40 to 50 years due to the natural deterioration rate of wood. The bridge is approaching the end of its useful life.

In addition, the substandard deck width is becoming increasingly unacceptable and replacement of the bridge will result in safer traffic operations.

II. EXISTING CONDITIONS

Bridge No. 117 is located on SR 1123 (Huffman Creek Road) in Graham County over West Buffalo Creek. SR 1123 is classified as a Rural Local Route. At present, SR 1123 provides access for fewer than 20 full/part-time residences. Although a 300-acre site will be developed as single-family residential community near this area in the next few years, it is not anticipated that this development will impact the bridge area.

Bridge No. 117 was constructed in 1961. The existing structure is a one-lane, single span bridge with an overall length of 40.5 feet and a clear roadway width of 15.9 feet. The bridge consists of a timber deck on I-beams supported on timber caps with timber

posts and struts on concrete footings. Bridge No. 117 currently has posted weight limits of 14 tons for single vehicle (SV) and 17 tons for truck-tractor semi trailer (TTST).

The creek bed to roadway crown point height is 12 feet and the normal depth of West Buffalo Creek is 1 foot.

The approach roadway for Bridge No. 117 is a narrow unpaved 12-foot wide dead-end road. The bridge is located immediately adjacent to a T-intersection with SR 1160 (West Buffalo Road). There is no posted speed limit on this bridge.

West Buffalo Creek is managed by the North Carolina Wildlife Resources Commission as a Hatchery Supported Trout Stream.

There are no utilities on or adjacent to the bridge.

The 2007 estimated average daily traffic (ADT) volume is 125 vehicles per day (vpd). The projected ADT is expected to increase to 220 vpd by the design year 2030. The percentages of truck traffic are 2% Duals and 1% TTST.

No accidents were reported in the vicinity of the bridge during the period from June 1, 2000 to May 31, 2005.

No school buses cross Bridge No. 117.

Bridge No. 117 serves as the only access that can accommodate vehicular traffic for a small community in the Huffman's Creek area.

III. ALTERNATIVES

A. Project Description

The approach roadway will consist of two 9-foot travel lanes with 2-foot shoulders on each side.

Based on field reconnaissance of the site and a preliminary hydraulic analysis, the existing structure could be replaced with a culvert. The existing roadway elevation would be maintained. The length and opening size of the proposed bridge may increase or decrease as necessary to accommodate peak flows as determined from a more detailed hydraulic analysis to be performed during the final design phase of the project.

B. Build Alternatives

Four alternatives are considered.

Alternative 1 (see Figure 2A) proposes to construct the culvert at the upstream side and maintain traffic on the existing bridge.

Alternative 2A proposes to construct the culvert at downstream side and maintain traffic on the existing bridge. The floodplain and stream width at the crossing location is very wide. Refer to Figure 2B

Alternative 2B has a similar roadway alignment to Alternative 2A. In Alternative 2B, the proposed structure is a bridge which spans the creek. Refer to Figure 2C.

Alternative 3 (see Figure 2D) proposes to construct the culvert at the existing location and maintain traffic on an on-site detour with a temporary bridge located at downstream side of the existing bridge to avoid the impacts to Hooper Mill Creek. A driveway is located in the northwest quadrant of the bridge. A portion of this driveway can be utilized as part of the on-site detour. The temporary bridge would be constructed between tops of bank and would be approximately 50'.

The estimated structure requirements are based on the historic performances of the existing structure and field observations of the site. There are no buildings in the floodplain. The proposed replacement would not adversely affect the floodplain. The structure requirements may be adjusted during final hydrologic study and hydraulic design as determined appropriate to accommodate design flows. The proposed alternative would not modify flow characteristics and would have minimal impact on floodplains due to roadway encroachment. Floodway modification is not required. Existing drainage patterns and groundwater would not be affected. The project may require a 401 Water Quality Certification and a 404 Clean Water Act permit.

There are no gaging stations on West Buffalo Creek. NCDOT Best Management Practices for Protection of Surface Waters would be used and maintained to eliminate siltation of adjacent areas and streams.

C. Alternatives Eliminated from Further Study

The "do-nothing" alternative will eventually necessitate closure and/or removal of the bridge effectively removing this section of SR 1123 from traffic service.

Investigation of the existing structure by the NCDOT Bridge Maintenance Unit indicates that rehabilitation of the old bridge is not feasible due to its age and deteriorated condition.

D. Preferred Alternative

Alternative 2A, replacing the existing bridge with a culvert downstream of the existing location is the preferred alternative. Alternative 2A was selected because it would result in the least environmental impacts and a lower construction cost. During final design, the use of a bottomless culvert will be investigated.

Hooper Mill Creek empties into West Buffalo Creek only 50' upstream of the existing bridge. Alternative 1 would impact Hooper Mill Creek near the confluence with West Buffalo Creek. Significant lateral encroachment into floodplain of Hooper Mill Creek is

expected. Roadway encroachment would severely impact the floodplain of West Buffalo Creek.

Alternative 2B, utilizing a bridge rather than a culvert with a similar alignment to Alternative 2A, was eliminated since a bridge would have a greater impact to the archaeological resource located in the north-eastern portion of the project. In addition, Alternative 2A has a lower construction cost than Alternative 2B since culverts are usually less expensive and easier to construct than a bridge. In the long term, culverts typically have a longer life expectancy with less maintenance compared to a bridge. The proposed culvert will have equal or greater conveyance than the existing bridge. In addition, the two immediate downstream structures are reinforced concrete box culverts.

Alternative 3 was eliminated because it would have environmental impacts similar to Alternative 2A but at a higher construction cost.

IV. ESTIMATED COSTS

The estimated costs for each alternative, based on 2006 prices, are shown in Table 1.

Table 1: Estimated Costs

	Alternative 1	Alternative 2a	Alternative 2b	Alternative 3
Structure Removal (existing)	12,900	12,900	12,900	12,900
Structure (proposed)	124,026	124,026	273,600	124,026
Detours Structure and Approaches	0	0	0	49,500
Roadway Approaches	213,600	235,400	233,300	284,380
Miscellaneous and Mobilization	116,474	126,674	147,200	155,194
Engineering and Contingencies	83,000	76,000	108,000	99,000
Archeological Data Recovery	60,600	61,700	277,700	61,200
ROW/Const. Easements/Utilities*	36,000	36,000	36,000	36,000
TOTAL	\$ 646,600	\$ 672,700	\$ 1,088,700	\$ 822,200

* The right-of-way cost was determined for Alternative 2a only. The right-of-way cost for the other alternatives would be similar or higher than shown since equal or greater amounts of right-of-way would need to be purchased than in the proposed alternative (Alternative 2a).

The total estimated cost of the project, as shown in the 2006-2012 Transportation Improvement Program, is \$700,000 including \$600,000 for construction and \$25,000 for right-of-way.

V. NATURAL RESOURCES

Natural resources within the project study area were evaluated to provide: 1) an assessment of existing vegetation; 2) an evaluation of probable impacts resulting from construction; and 3) a preliminary determination of permit needs.

Field investigations along the project study area were conducted by qualified biologists during July 2001 and again in May of 2003. Pedestrian surveys were undertaken to determine natural resource conditions and to document natural communities, wildlife, and the presence of protected species or their habitats.

A. Water Resources

A.1. Water Impacted

The project study area is located approximately 3½ miles upstream and southwest of Santeetlah Lake. It is situated in NCDWQ Subbasin 04-04-04 and the USGS sub-basin 06010204. West Buffalo Creek is identified by the NCDWQ Stream Index # 2-190-12, and Hooper Mill Creek is identified by the Stream Index #2-190-12-3.

A.2. Water Resources Characteristics

Streams, creeks, and tributaries within the project region are part of the Little Tennessee River Basin. The basin originates in Georgia and encompasses approximately 1,800 square miles. It flows northwestward from North Carolina into Tennessee, where it converges with the Tennessee River. Waters associated with this basin eventually empty into the Gulf of Mexico, via the Mississippi River. Nearly half of the land within the basin is federally owned and consists predominantly of undeveloped forested land. Most of the remaining privately owned lands are forested lands as well.

West Buffalo Creek and Hooper Mill Creek account for the surface waters in the project area. Hooper Mill Creek empties into West Buffalo Creek approximately 50 feet upstream of the existing bridge. The North Carolina Division of Water Quality (NCDWQ) classifies surface waters of the state based on their intended best uses. West Buffalo Creek and a few of its tributaries are classified as "C-Tr" waters; however, Hooper Mill Creek and all of its tributaries are classified as "C" waters. Class C denotes waters suitable for all general uses including aquatic life propagation and survival, fishing, wildlife, secondary recreation, and agriculture. "Tr" denotes trout waters which are suitable for natural trout propagation and the maintenance of stocked trout. This additional classification affects wastewater discharge, although there are no watershed development restrictions except stream buffer zone requirements of the North Carolina Division of Land Resources.

No High Quality Waters (HQW), Water Supplies (WS-I or WS-II), or Outstanding Resource Waters (ORW) occur within the project vicinity. However, the portion of Snowbird Creek from its source downstream to Polecat Branch, located approximately two miles south of the project area, is classified as HQW. HQW are waters that are rated as excellent based on biological and physical/chemical characteristics through division monitoring or special studies, native and special trout waters, primary nursery areas, critical habitat areas, water supply watersheds classified as WS-I or WS-II, and all Class SA waters.

Point source dischargers located throughout North Carolina are regulated through the National Pollutant Discharge Elimination System (NPDES) program. Dischargers are required by law to register for a permit. According to NCDWQ (1997), there are seven permitted NPDES dischargers in the subbasin, all minor dischargers (<1.0 MGD). Three of the dischargers are upstream of the project area and are all located along West Buffalo Creek approximately 2 to 6 miles upstream of the project site. The dischargers are identified as Riverbend Trout Farm, Glennwood Trout Farm, and Hemlock Trout Farm. There are no other NPDES regulated dischargers within the West Buffalo Creek watershed.

A.3. Anticipated Impacts to Water Resources

Cut and fill activities associated with bridge approaches and/or relocated road will impact soils due to removal, relocation, and compaction.

The primary sources of water-quality degradation in rural areas are agricultural operations and construction. Precautions should be taken to minimize impacts to water resources in the project area during construction. Aquatic organisms are very sensitive to discharges and inputs resulting from construction. Appropriate measures must be taken to avoid spillage and control runoff. Potential impacts associated with construction of the proposed project include: increased sedimentation, scouring of the streambed, soil compaction, and loss of shading due to vegetation removal. Increased sedimentation from lateral flows is also expected. Measures to minimize these potential impacts include the formulation of an erosion and sedimentation control plan, provisions for waste materials and storage, stormwater management measures, and appropriate road maintenance measures. NCDOT's "*Best Management Practices for Protection of Surface Waters and Sedimentation Control*" (BMP-PSW) guidelines should be strictly enforced during the construction stages of the project.

West Buffalo Creek in the project area are classified as C-Tr, and Graham County is located in one of the 25 mountain counties designated by the North Carolina Wildlife Resources Commission (NCWRC) as containing Mountain Trout Waters (MTWs). Therefore, NCDOT will coordinate with NCDWQ and strictly adhere to North Carolina regulation entitled, "*Design Standards in Sensitive Watersheds*" (15A NCAC 04B .0024) throughout design and construction of the project. NCWRC has requested a construction moratorium on in-stream activities and construction activities within the 25-foot buffer to limit the effects on fishery resources. West Buffalo Creek is a Designated Public Mountain Trout Waters further classified as Hatchery Supported (HS) from the confluence of Hooper Mill Creek and Little Buffalo Creek to Santeetlah Reservoir.

West Buffalo Creek is designated as "C-Tr" waters. Because of this designation and the potential trout species present, Mr. Scott Loftis (NCWRC District 9 Biologist) requests a moratorium on in-stream and adjacent buffer area activities between October 15 and April 15. In order to minimize potential impacts to water resources in the project study area, NCDOT's BMP-PSW should be strictly enforced during the construction phase of the project. Limiting in-stream activities and revegetating stream banks immediately following the completion of grading can further reduce impacts.

A.4. Impacts Related to Bridge Demolition and Removal

In order to protect the water quality and aquatic life in the area affected by this project, the NCDOT and all contractors will follow appropriate guidelines for bridge demolition and removal. These guidelines are presented in three NCDOT documents entitled: *Pre-Construction Guidelines for Bridge Demolition and Removal*, *Policy: Bridge Demolition and Removal in Waters of the United States*, and *Best Management Practices for Bridge Demolition and Removal*. The bridge will be removed without dropping components into Waters of the United States.

B. Special Topic

B.1. Waters of the United States

Section 404 of the Clean Water Act requires regulation of discharges into "Waters of the United States." The U.S. Environmental Protection Agency (USEPA) is the principal administrative agency of the Clean Water Act; however, the U.S. Army Corps of Engineers (USACE) has the responsibility for implementation, permitting, and enforcement of the provisions of the Act. The USACE regulatory program is defined in 33 CFR 320-330.

Surface Waters

The NCDWQ defines a perennial stream as a clearly defined channel that contains water for the majority of the year. These channels usually have some or all of the following characteristics: distinctive stream bed and bank, aquatic life, and groundwater flow or discharge. Two perennial streams were identified in the project area, West Buffalo Creek and Hooper Mill Creek. At the time of the site visit, West Buffalo Creek had a stream depth of 1 to 2 feet, a bank height of 8 to 10 feet, and was approximately 30 feet wide. The streambed was comprised of parent material ranging in size from silt to boulders, and the stream maintained a moderate flow. Hooper Mill Creek near the confluence with West Buffalo Creek had a stream depth of 0.5 to 1 foot, a bank height of 3 to 4 feet, and was approximately 10 feet wide. The bed substrate was comprised of parent material ranging in size from sand to cobbles, and a relatively fast flow was observed.

West Buffalo Creek and Hooper Mill Creek are both classified as jurisdictional waters.

Directly south of Hooper Mill Creek, well out of the project study area, lies another jurisdictional stream. This small, first order stream flows in a west to east direction and appears to flow underground prior to merging with West Buffalo Creek.

Jurisdictional Wetlands

No jurisdictional wetland areas were observed within the study area. However, one small area located south of Hooper Mill Creek and west of West Buffalo Creek exhibits characteristics similar to a mountain bog. This potential wetland area lies well south of Hooper Mill Creek. Construction activities associated with replacement of Bridge No. 117 pose no threat to this system.

B.2. Impacts to Waters of the United States

Some impacts to West Buffalo Creek and Hooper Mill Creek may be anticipated for bridge abutments and associated channel stabilization. There are no jurisdictional wetlands in the project area; thus, there are no impacts to jurisdictional wetlands associated with this bridge replacement.

The existing structure consists of a timber deck on I-beams. The substructure consists of timber caps and interior bents consisting of timber posts and sills on concrete footings. The bridge will be removed without dropping into West Buffalo Creek. Removal of the concrete sills may create a disturbance in the streambed.

B.3. Permits

Impacts to "Waters of the United States" come under the jurisdiction of the USACE. The Nationwide Permit #23 (Approved Categorical Exclusions) should cover the impacts to jurisdictional streams in the project area. A Nationwide 33 Permit may be required for the removal of the existing concrete footings and installation of the new culvert along with the temporary construction access. The applicability of a Section 401 General Water Quality Certification will be evaluated by the Department of Environment and Natural Resources (NCDENR), Division of Water Quality.

A Section 401 General Water Quality Certification is also required for any activity which may result in a discharge into "Waters of the United States" or for which an issuance of a federal permit or license is issued. Certifications are administered through the NCDWQ.

Final determination of permit applicability lies with the USACE. NCDOT will coordinate with the USACE after the completion of final design to obtain the necessary permits.

Graham County is listed by the NCWRC as a county with Mountain Trout Waters (MTWs). No discharge activities will be authorized by Nationwide Permits within MTW counties without a letter of approval from the NCWRC and written concurrence from the Wilmington District Engineer.

C. Federally-Protected Species

Plants and animals with a federal designation of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. The USFWS lists five federally-protected species for Graham County as of the

April 27, 2006 listing. The NCNHP database, updated January 2004, provides the State status for each of these federally-protected species.

Bog Turtle (*Clemmys muhlenbergii*)

Federal Status: THREATENED (SIMILAR APPEARANCE)

State Status: THREATENED

Biological Conclusion: No Effect

Suitable habitat for the bog turtle is not present in the project study area. NCNHP has no records of any known populations of the bog turtle within a one-mile radius of the project area. This species will not be impacted as a result of project construction.

Carolina northern flying squirrel (*Glaucomys sabrinus coloratus*)

Federal Status: ENDANGERED

State Status: ENDANGERED

Biological Conclusion: No Effect

Suitable habitat for the Carolina northern flying squirrel is not present in the project study area, since it is considerably lower than preferred habitat elevation. NCNHP has no records of any known populations of the Carolina northern flying squirrel within a one-mile radius of the project area. Therefore, this species will not be impacted as a result of project construction.

Indiana bat (*Myotis sodalis*)

Federal Status: ENDANGERED

State Status: ENDANGERED

Biological Conclusion: May Affect / Not Likely to Adversely Affect

Suitable foraging and roosting habitats for the Indiana bat consisting of riparian forest and bottomland hardwood forests are present within the study area along West Buffalo Creek and Hooper Mill Creek. The NCNHP has no records of any known populations of the Indiana bat within a one-mile radius of the project area. A survey for Indiana bats was conducted from July 5th through the 7th of 2006. No Indiana bats were captured. USFWS concurred with this biological conclusion as stated in the attached memorandum.

Appalachian Elktoe (*Alasmidonta raveneliana*)

Federal Status: ENDANGERED

State Status: ENDANGERED

Biological Conclusion: No Effect

NCNHP has no records of any known populations of the Appalachian elktoe within a one-mile radius of the project area. Prescreening by mussel specialists from WRC, USFWS, and a consulting firm determined that the high stream gradient at the project site would preclude the presence of mussels. Subsequent to the prescreening, a mussel survey was performed by qualified NCDOT biologists. No

specimens were found. Furthermore, the host fish that carry the Appalachian elktoe glochidia were not observed.

Virginia spiraea (*Spiraea virginiana*)

Federal Status: THREATENED

State Status: ENDANGERED

Biological Conclusion: No Effect

Minimal habitat needed to support the Virginia spiraea is present within the project area along West Buffalo Creek immediately surrounding the existing bridge. Biologists conducted plant-by-plant surveys for Virginia spiraea during the flowering season in the project area. No individuals were observed. To determine the probable occurrence of species considered Threatened or Endangered (T&E) the site was re-surveyed during the optimal survey window for North Carolina's Federally Threatened and Endangered plant species (Dale Suiter 2001). The project study area was re-surveyed during May 2003. The timing of the survey coincided with the initiation of the flowering period for Virginia spiraea. While the project study area does include two stream reaches exhibiting some of the habitat characteristics required for Virginia spiraea, overall there is only minimal habitat found along both West Buffalo Creek and Hooper Mill Creek. Again no specimens of Virginia spiraea were observed in the project study area. NCNHP does not list any known occurrences of the species within two miles of the project area. No impacts are expected to any population of Virginia spiraea from the proposed project.

Rock Gnome Lichen (*Gymnoderma lineare*)

Federal Status: ENDANGERED

State Status: THREATENED

Biological Conclusion: No Effect

Suitable habitat for the rock gnome lichen is not present in the project study area due to the relatively low elevation and lack of rock outcroppings in the study area. NCNHP has no records of any known populations of the rock gnome lichen within a one-mile radius of the project area. Therefore, this species will not be impacted as a result of project construction.

VI. CULTURAL RESOURCES

A. Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at 36 CFR Part 800. Section 106 requires federal agencies to take into account the effects of their undertakings (federally funded, licensed, or permitted projects) on properties listed in or eligible for the National Register of Historic Places and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment.

B. Historic Architecture

A field survey of the Area of Potential Effects (APE) was conducted on October 10, 2002. All structures within the APE were photographed, and later reviewed by NCDOT architectural historians and staff of the State Historic Preservation Office (HPO). In a concurrence form dated July 8, 2003, the NCDOT, FHWA, and HPO concurred that there are no historic architectural resources either listed in or eligible for listing in the National Register of Historic Places within the APE. A copy of the concurrence form and the memorandum are included in the Appendix.

C. Archaeology

An intensive archaeological survey was conducted in the fall of 2003. A previously unrecorded archaeological site 3GH457/457** was identified during the investigation. Site 3GH457/457** is believed to have the potential to yield significant archaeological data pertaining to prehistory. The site has been recommended as eligible for inclusion on the National Register. If the site cannot be avoided, data recovery will be performed before construction commences. Data recovery investigation will be facilitated by the drafting of a data recovery plan and MOA in consultation with the North Carolina Historic Preservation Office (NC HPO). A copy of the SHPO memorandum is included in the Appendix.

VII. ENVIRONMENTAL EFFECTS

The project is expected to have an overall positive impact. Replacement of an inadequate bridge will result in safer traffic operations.

The project is a Federal "Categorical Exclusion" due to its limited scope and lack of significant environmental consequences.

The bridge replacement will not have an adverse effect on the quality of the human or natural environment with the use of current NCDOT standards and specifications.

The project is not in conflict with any plan, existing land use, or zoning regulation. No significant change in land use is expected to result from construction of the project.

No adverse impact on families or communities is anticipated. Right of way acquisition will be limited. No relocatees are expected with implementation of the proposed alternative.

No adverse effect on public facilities or services is anticipated. The project is not expected to adversely affect social, economic, or religious opportunities in the area.

There are no publicly owned recreational facilities, or wildlife and waterfowl refuges of national, state, or local significance in the vicinity of the project.

No vertical or horizontal control monuments will be impacted during construction of this project.

The project will not have a disproportionately high and adverse human health and environmental effect on any minority or low-income population.

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impacts to prime and important farmland soils by all land acquisition and construction projects. Prime and important farmland soils are defined by the Natural Resources Conservation Service (NRCS). Since the soil survey information is unavailable for Graham County the NRCS could not evaluate the importance of the lands in the immediate vicinity of the proposed bridge.

This project is an air quality neutral project in accordance with 40 CFR 93.126. It is not required to be included in the regional emissions analysis (if applicable) and project level CO or PM2.5 analyses are not required. This project will not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. Therefore, FHWA has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special MSAT concerns. Consequently, this effort is exempt from analysis for MSATs. Any burning of vegetation shall be performed in accordance with applicable local laws and regulations of the North Carolina State Implementation Plan (SIP) for air quality compliance with 15 NCAC 2D.0520.

Noise levels may increase during project construction; however, these impacts are not expected to be substantial considering the relatively short-term nature of construction noise and the limitation of construction to daytime hours. The transmission loss characteristics of nearby natural elements and man-made structures are believed to be sufficient to moderate the effects of intrusive construction noise.

An examination of records at the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section and the North Carolina Department of Human Resources, Solid Waste Management Section revealed no hazardous waste sites in the project area.

A field investigation and examination of records reveal that no underground storage tanks exist in the project study area.

Graham County is a participant in the National Flood Insurance Regular Program. This site on West Buffalo Creek is not included in a detailed FEMA flood study. Attached is a copy of the Flood Insurance Rate Map, on which are shown the approximate limits of the 100-year flood plain in the vicinity of the project.

On the basis of the above discussion, it is concluded that no significant adverse environmental effects will result from implementation of the project.

VIII. PUBLIC INVOLVEMENT

Efforts were undertaken early in the planning process to contact local officials to involve them in the project development with scoping letters. For this bridge replacement study, all of the alternatives will provide for the maintenance of traffic on-site during construction of the replacement structure. There are no anticipated relocations and minimal impacts to surrounding properties. Therefore, no formal public involvement program was initiated.

IX. AGENCY COMMENTS

Agency comments are summarized below.

1. United States Department of the Interior Fish & Wildlife Service (USFWS)

Comment: "unresolved for listed species, Indiana Bat, close coordination with USFWS, high quality stream."

Response: Although suitable habits occur for the Indiana Bat, no individuals were found during the endangered species survey. No individuals of any federally protected species were found in the project study area. No high quality waters are present in the project vicinity.

2. North Carolina Wildlife Resource Commission, Habitat Conservation Program

Concerns:

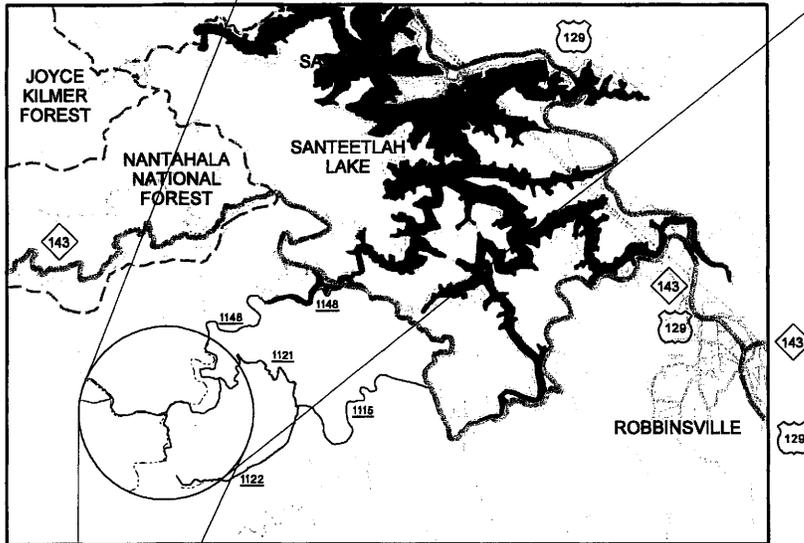
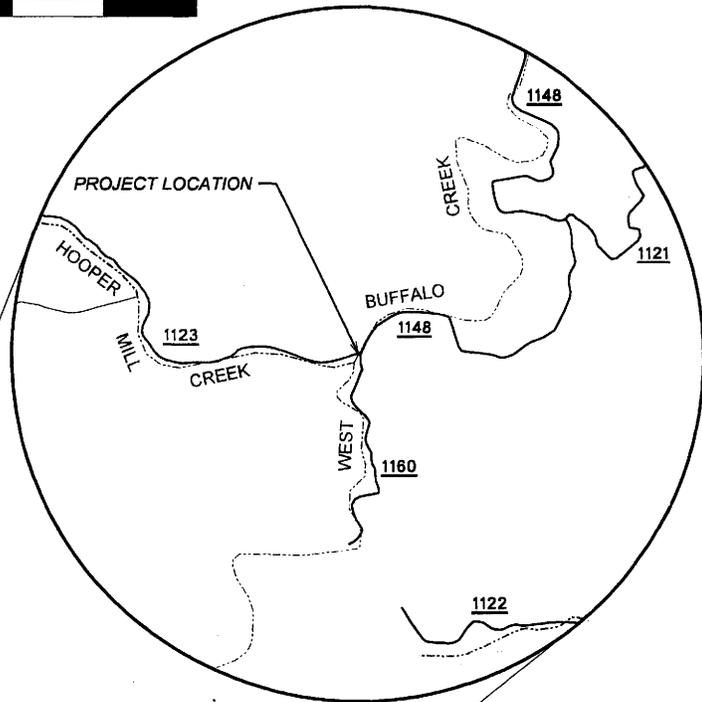
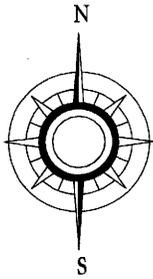
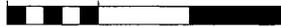
- Replacement of the existing bridge with a culvert, thus leading to the potential loss of trout habitat in this stretch of the creek
- Effects to Hooper Mill Creek

Response: Replacement of the existing bridge with another bridge would cause substantial impacts to the archaeological resource in the eastern portion of the project. The preferred alternative will relocate the structure over West Buffalo Creek downstream from its existing location, further away from the confluence with Hooper Mill Creek. If hydraulically possible, the preferred structure is a bottomless culvert.

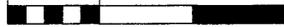
FIGURES

<i>Figure 1</i>	<i>Vicinity Map</i>
<i>Figure 2A</i>	<i>Plan View Alternative 1</i>
<i>Figure 2B</i>	<i>Plan View Alternative 2A</i>
<i>Figure 2C</i>	<i>Plan View Alternative 2B</i>
<i>Figure 2D</i>	<i>Plan View Alternative 3</i>
<i>Figure 3A</i>	<i>Photographs</i>
<i>Figure 3B</i>	<i>Photographs</i>

0.25 0 0.25 0.5 MILES



1 0 1 2 MILES



**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH**

GRAHAM COUNTY TIP NO. B-4123

**BRIDGE NO. 117 ON SR 1123
OVER WEST BUFFALO CREEK**

VICINITY MAP

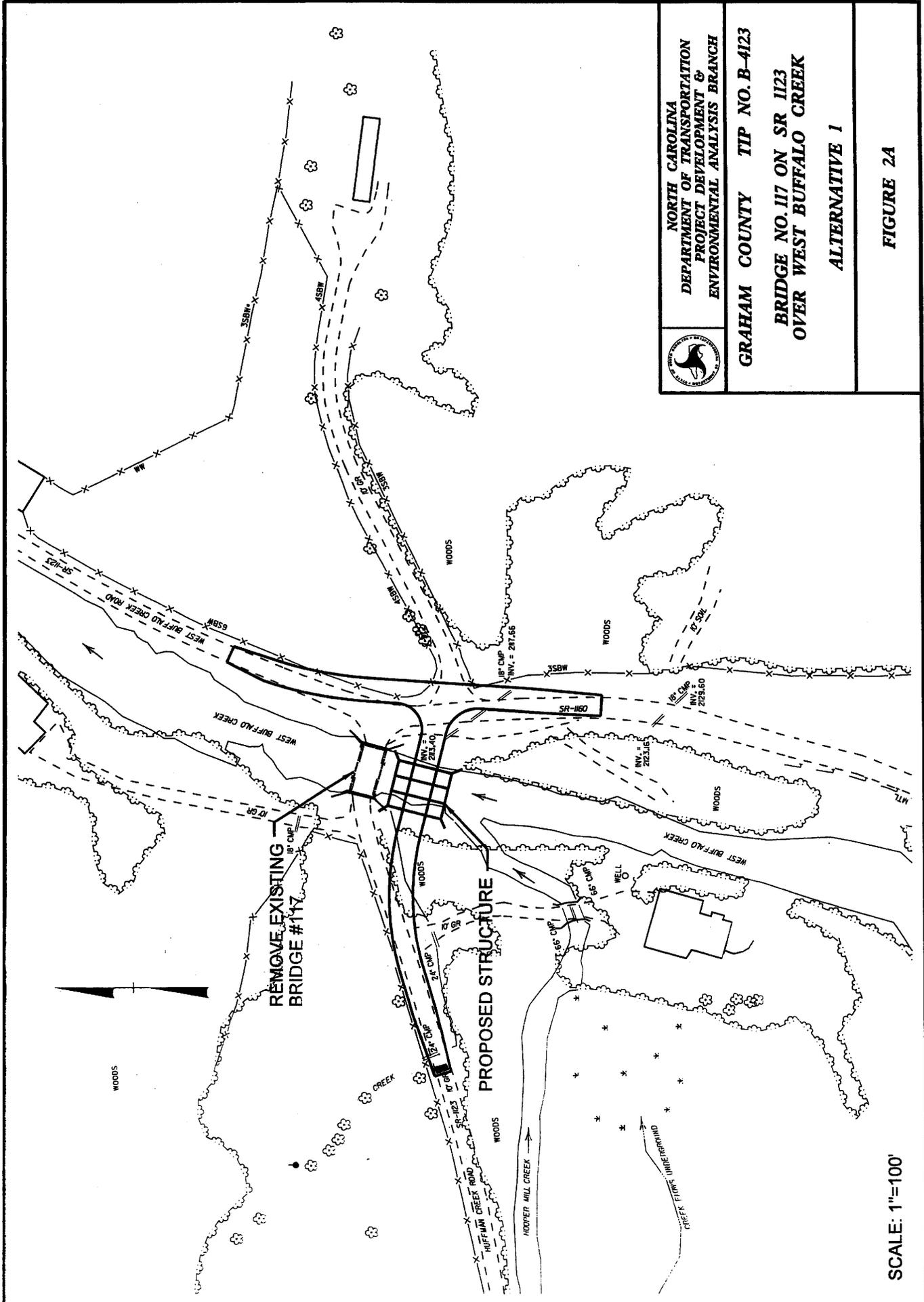
FIGURE 1



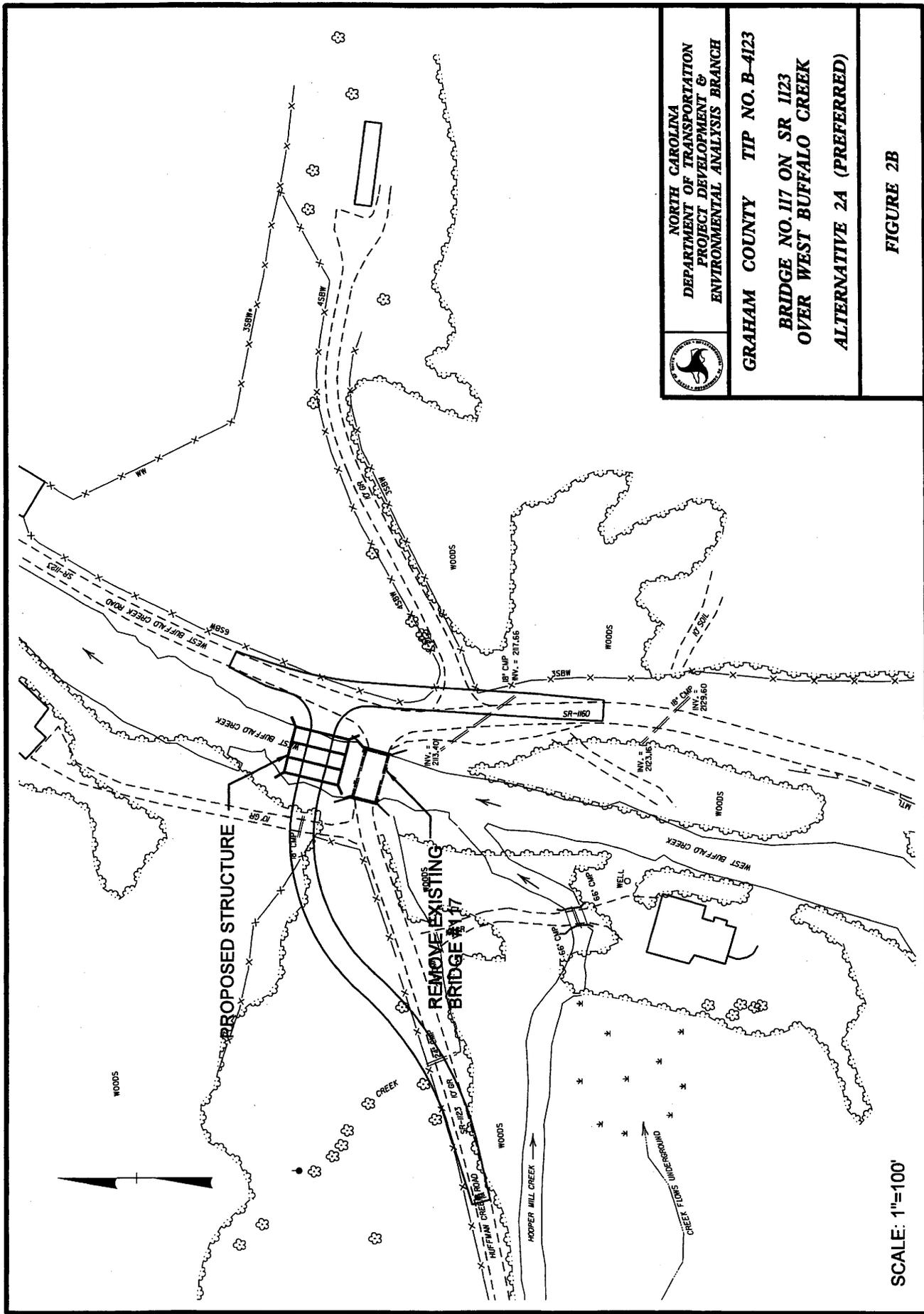
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

GRAHAM COUNTY TIP NO. B-4123
BRIDGE NO. 117 ON SR 1123
OVER WEST BUFFALO CREEK
ALTERNATIVE 1

FIGURE 2A



SCALE: 1"=100'



NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 PROJECT DEVELOPMENT &
 ENVIRONMENTAL ANALYSIS BRANCH

GRAHAM COUNTY TIP NO. B-4123

BRIDGE NO. 117 ON SR 1123
 OVER WEST BUFFALO CREEK
 ALTERNATIVE 2A (PREFERRED)

FIGURE 2B

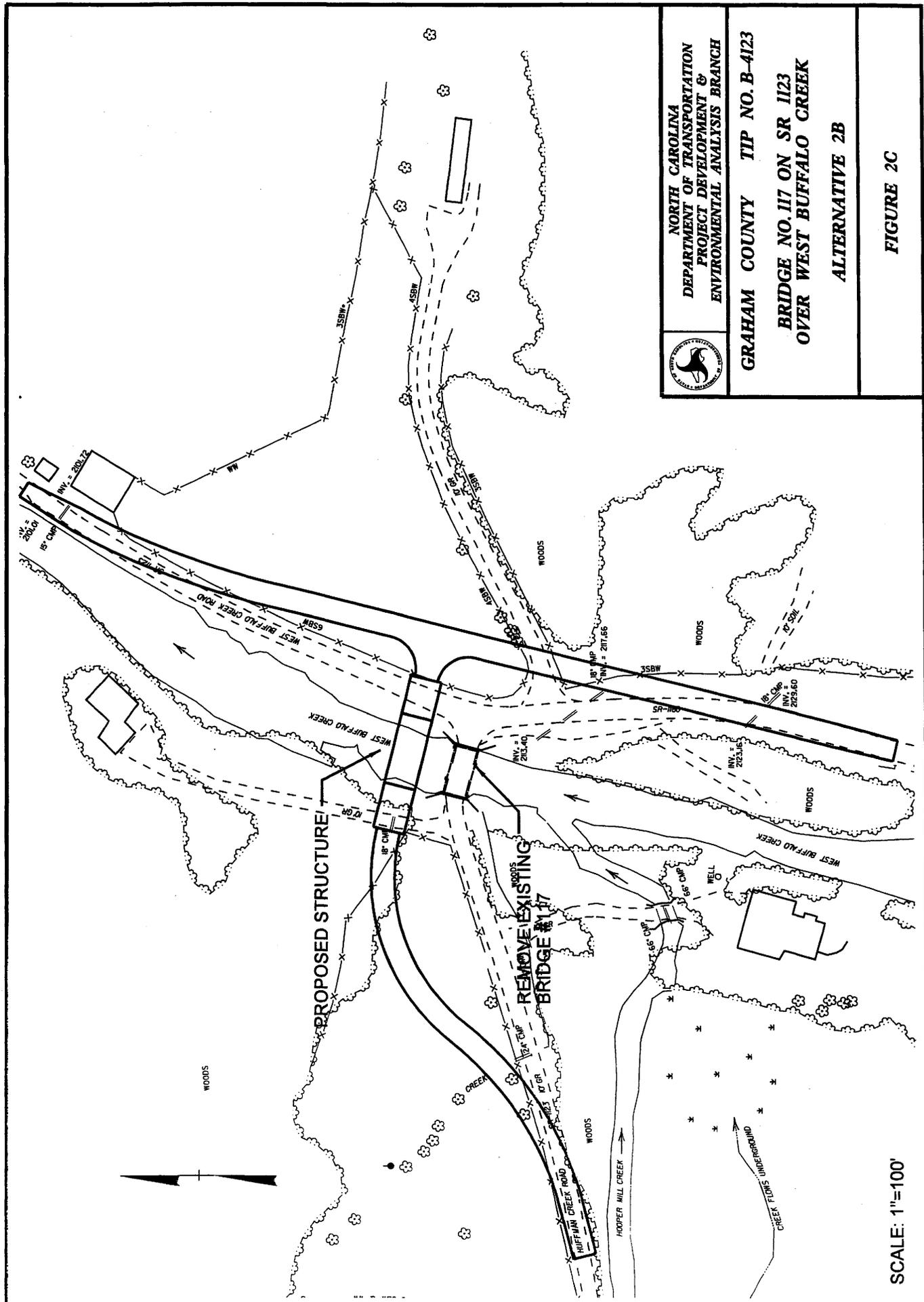
SCALE: 1"=100'



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

GRAHAM COUNTY TIP NO. B-4123
BRIDGE NO. 117 ON SR 1123
OVER WEST BUFFALO CREEK
ALTERNATIVE 2B

FIGURE 2C



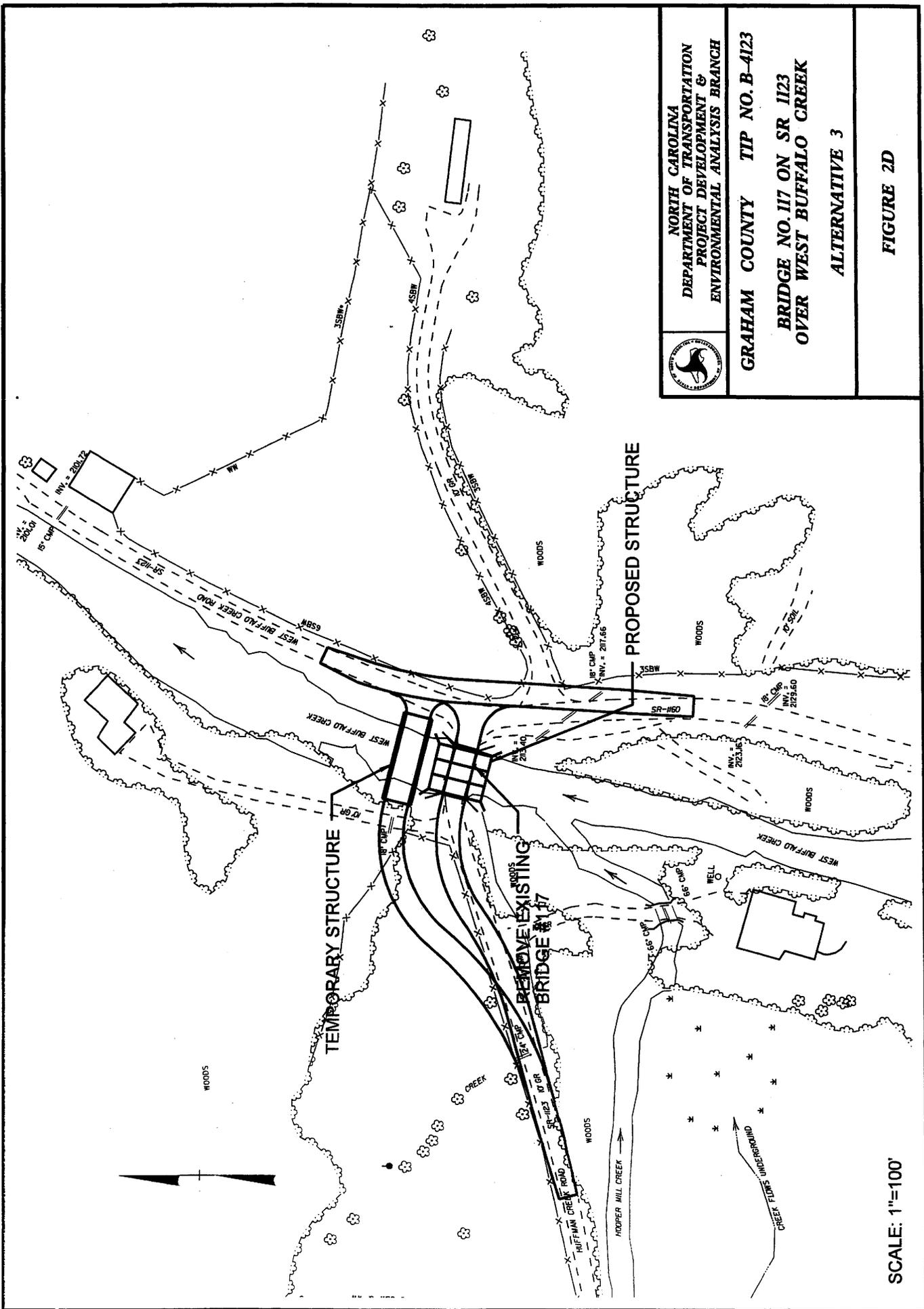
SCALE: 1"=100'



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

GRAHAM COUNTY TIP NO. B-4123
BRIDGE NO. 117 ON SR 1123
OVER WEST BUFFALO CREEK
ALTERNATIVE 3

FIGURE 2D



SCALE: 1"=100'



DOWNSTREAM
VIEW FROM
BRIDGE



VIEW OF
DOWNSTREAM
SIDE OF
BRIDGE



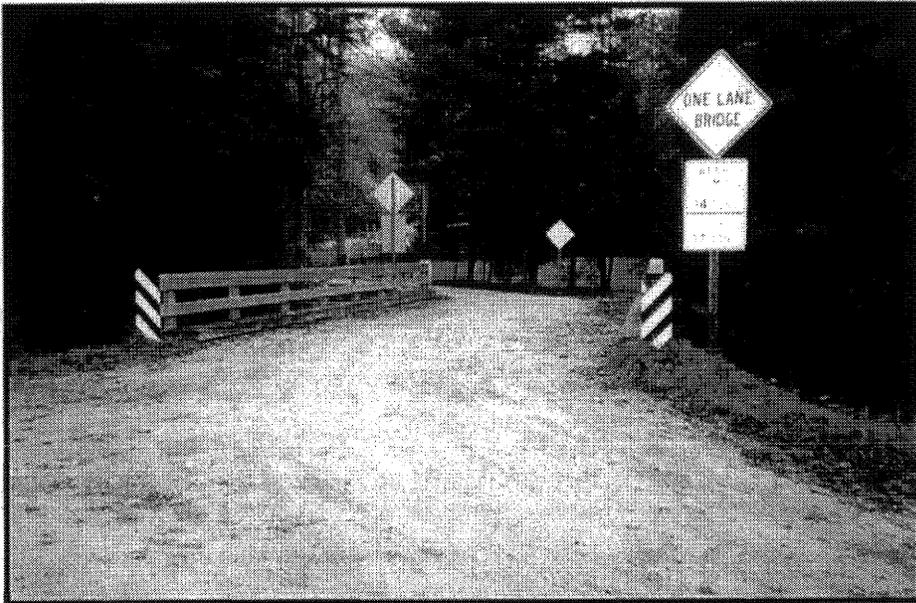
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS

GRAHAM COUNTY TIP NO. B-4123

REPLACEMENT BRIDGE NO. 117 OVER
WEST BUFFALO CREEK ON SR 1123

PHOTOGRAPHS

Figure 3A



VIEW OF
WESTERN
APPROACH



VIEW OF
EASTERN
APPROACH



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS

GRAHAM COUNTY TIP NO. B-4123

**REPLACEMENT BRIDGE NO. 117 OVER
WEST BUFFALO CREEK ON SR 1123**

PHOTOGRAPHS

Figure 3B



North Carolina Department of Cultural Resources
State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

October 7, 2004

MEMORANDUM

TO: Matt Wilkerson, Archaeology Supervisor
Division of Highways
Department of Transportation

FROM: Peter Sandbeck *PS for Peter Sandbeck*

SUBJECT: Bridge No. 117 on SR 1123, TIP B-4123, Graham County, ER 02-8512

Thank you for your letter of August 2, 2004 transmitting the archaeological survey report by Tasha Benyshek and Paul Webb for the above project. The report meets our office's guidelines and those of the Secretary of the Interior.

During the course of the survey, one archaeological site was located within the project area. The report authors have recommended that additional investigations be conducted at 31GH457/457** if the site cannot be avoided during bridge construction. We concur with this recommendation.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800. The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

cc: Tasha Benyshek and Paul Webb, TRC

Federal Aid # BRZ-1123(9)

TIP# B-4123

County: Graham

**CONCURRENCE FORM FOR PROPERTIES NOT ELIGIBLE FOR
THE NATIONAL REGISTER OF HISTORIC PLACES**

Project Description: Replace Bridge No. 117 on SR 1123 over West Buffalo Creek

On July 8, 2003 representatives of the

- North Carolina Department of Transportation (NCDOT)
- Federal Highway Administration (FHWA)
- North Carolina State Historic Preservation Office (HPO)
- Other

Reviewed the subject project at

- Scoping meeting
- Historic architectural resources photograph review session/consultation
- Other

All parties present agreed

- There are no properties over fifty years old within the project's area of potential effects.
- There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.
- There are properties over fifty years old within the project's Area of Potential Effects (APE), but based on the historical information available and the photographs of each property, the property/ies identified as _____ is/are considered not eligible for the National Register and no further evaluation of it/them is/are necessary.
- There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- All properties greater than 50 years of age located in the APE have been considered at this consultation, and based upon the above concurrence, all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- There are no historic properties affected by this project. (*Attach any notes or documents as needed*)

Signed:

Mary Pope July 8, 2003
 Representative, NCDOT Date

[Signature] 7/14/03
 FHWA, for the Division Administrator, or other Federal Agency Date

[Signature] July 8, 03
 Representative, HPO Date

David Hook 7/15/03
 State Historic Preservation Officer Date



North Carolina Department of Cultural Resources

State Historic Preservation Office

David L. S. Brook, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

January 23, 2002

MEMORANDUM

TO: William D. Gilmore, Manager
Project Development and Environmental Analysis Branch
Division of Highways
Department of Transportation

FROM: David Brook *David Brook*

370117

SUBJECT: Bridge 117 on SR 1123 Replacement, TIP B-4123, Graham County, ER 02-8512

Thank you for your letter of September 25, 2001, concerning the above project.

There are no recorded archaeological sites within the project area. If the replacement is to be located along the existing alignment, it is unlikely that significant archaeological resources will be affected and no investigations recommended. If, however, the replacement is to be in a new location, please forward a map to this office indicating the location of the new alignment so we may evaluate the potential effects of the replacement upon archaeological resources.

Because the architectural survey for the area of potential effect is more than ten years old, we recommend that a Department of Transportation architectural historian identify and evaluate any structures over fifty years old and report the findings to us.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

DB:kgc



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Asheville Field Office
160 Zillicoa Street
Asheville, North Carolina 28801

February 7, 2007

Mr. Michael Turchy
Office of Natural Environment
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Turchy:

Subject: Endangered Species Concurrence Request for the Replacement of Bridge No. 117 on SR 1123 over West Buffalo Creek, Graham County, North Carolina (TIP No. B-4123)

As requested by the North Carolina Department of Transportation (NCDOT), we have reviewed the survey report describing the habitat analysis and survey that was conducted for the federally endangered Indiana bat (*Myotis sodalis*). Our comments are provided in accordance with the provisions of section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (Act), and the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e), and the Migratory Bird Treaty Act (16 U.S.C. 703, et seq.) (MBTA).

Federally Listed Species – The listed species concurrence request we received was for the NCDOT's determination that the subject project is not likely to adversely affect the federally endangered Indiana bat (*Myotis sodalis*). It was determined that the project would have no effect on the Carolina northern flying squirrel (*Glaucomys sabrinus coloratus*), Appalachian elktoe (*Alasmidonta raveneliana*), or Virginia spiraea (*Spiraea virginiana*) that also occur in Graham County.

A mist-net survey, following the U.S. Fish and Wildlife Service's Indiana bat mist-netting protocol, was conducted within the project area on July 6 and 7, 2006, by Appalachian Technical Services, Inc.; the species captured were the little brown bat (*Myotis lucifugus*), the eastern red bat (*Lasiurus borealis*), the big brown bat (*Eptesicus fuscus*), the hoary bat (*Lasiurus cinereus*), and the eastern pipistrelle (*Pipistrellus subflavus*). Given that no Indiana bats were captured and if construction of the project takes place before the 2.5-year valid survey window time period, we do not believe this project will have any effect on the Indiana bat. Therefore, the requirements under section 7(c) of the Act are fulfilled for the Indiana bat. If the project does not take place within the 2.5-year window, another survey for the Indiana bat should be

conducted. Also, please note that obligations under section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered, (2) this action is subsequently modified in a manner that was not considered in this review, or (3) a new species is listed or critical habitat is determined that may be affected by the identified action.

Fish and Wildlife Resources – We strongly recommend that the new bridge design include provisions for the roadbed and deck drainage to flow through a vegetated buffer prior to reaching the affected stream. This buffer should be large enough to alleviate any potential effects from the runoff of storm water and pollutants. The bridge design should not alter the natural stream or the stream-bank morphology or impede fish passage. Any piers or bents should be placed outside the bank-full width of the stream. The bridge and approaches should be designed to avoid any fill that will result in the damming or constriction of the channel or floodplain. If spanning the floodplain is not feasible, culverts should be installed in the floodplain portion of the approaches in order to restore some of the hydrological functions of the floodplain and reduce high velocities of floodwaters within the affected area. Construction material should not enter the water during demolition of the existing bridge and construction of the new bridge.

When reseeding/revegetating disturbed areas, we recommend that only native plant species be used or, if an adequate seed source cannot be found, that noninvasive species (such as annual rye) be used until native plants can reestablish themselves. While many of the exotic plant species typically used in erosion-control and reclamation efforts have proven beneficial to some wildlife species, we now know that the invasive nature of these species outweighs any short-term erosion-control or wildlife benefits they may provide. Exotic species, including tall fescue (native to Eurasia), Korean and Sericea lespedeza (eastern Asia species), redtop (a Eurasian species), Sudan grass and Bermuda grass (native to Africa), and Kentucky bluegrass (native to Eurasia and northern Canada), choke out native vegetation and often result in monocultures that prove to be of little benefit to wildlife and can be very detrimental to the ecosystem as a whole.

Migratory Birds – The Migratory Bird Treaty Act (16 U.S.C. 703-712) prohibits the taking, killing, possession, transportation, and importation of migratory birds (including the bald eagle), their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. To avoid impacts to migratory birds, we recommend conducting a visual inspection of the bridge and any other migratory bird nesting habitat within the project area during the migratory bird nesting season from March through September. If migratory birds are discovered nesting in the project impact area, including on the existing bridge, the NCDOT should avoid impacting the nests during the migratory bird nesting season (March through September). If birds are discovered nesting on the bridge during years prior to the proposed construction date, the NCDOT, in consultation with us, should develop measures to discourage birds from establishing nests on the bridge by means that will not result in the take of the birds or eggs, or the NCDOT should avoid construction and demolition activities during the nesting period.

If you have questions about these comments, please contact Ms. Denise Moldenhauer of our staff at 828/258-3939, Ext. 226. In any future correspondence concerning this project, please reference our Log Number 4-2-07-007.

Sincerely,


for Brian P. Cole
Field Supervisor

cc:

Mr. Dave Baker, Asheville Regulatory Field Office, U.S. Army Corps of Engineers, 151 Patton Avenue, Room 208, Asheville, North Carolina 28801-5006

Ms. Pam Williams, Project Planning Engineer, Project Development Bridge Unit, 1551 Mail Service Center, Raleigh, NC 27699-1551