



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

May 13, 2013

U.S. Army Corps of Engineers
69 Darlington Ave.
Wilmington, NC 28402-1890

Attention: Mr. Ronnie Smith
NCDOT Coordinator

Dear Sir:

Subject: **Application for Section 404 Nationwide Permit (NWP) 23, and Section 401 Water Quality Certification** for the replacement of Bridge No. 216 over Welches Creek on SR 1700 in Columbus County; TIP Project B-4478; Federal Aid Project No. BRZ-1700(9); WBS No. 38383.1.1.

Please find enclosed PCN, permit drawings, stormwater management plan, utility plans, FWS Concurrence letter and roadway plans for the above referenced project proposed by the North Carolina Department of Transportation (NCDOT). A Categorical Exclusion (CE) was completed for this project on February 29, 2012 and distributed shortly thereafter. Additional copies are available upon request. The NCDOT proposes to replace existing Bridge No. 216 over Welches Creek on SR 1700 in Columbus County. The project involves replacement of the existing structurally deficient bridge and approach with new structures. The existing Bridge No. 216 (a 4-span, 69'-10" long structure) will be replaced with a 3-span cored slab bridge 132'-6" in length. The approach work will consist of raising the existing roadway grade and providing grass shoulders and guardrails.

Proposed permanent impacts to riparian wetlands from bridge construction are 0.01 acre of fill and 0.03 acre of excavation. Utility relocations will involve no impacts to streams or wetlands. Traffic will be detoured off-site during construction.

This project calls for a letting date of January 21, 2014 and a review date of December 3, 2013; however, the let date may advance as additional funding becomes available.

Regulatory Approvals

Section 404 Permit: All aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR

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

TELEPHONE: 919-707-6000
FAX: 919-212-5785
WEBSITE: NCDOT.GOV

LOCATION:
CENTURY CENTER, BUILDING B
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610

771.115(b). The NCDOT requests that the project be authorized by NWP 23 for bridge construction.

Section 401 Permit: We anticipate 401 General Certification number 3891 will apply to this project. NCDOT will adhere to all of the general conditions of the Water Quality Certification and therefore we are not requesting written concurrence from the North Carolina Department of Environmental and Natural Resources, Division of Water Quality. We are providing this application to the NCDWQ for their review.

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

If you have any questions or need additional information, please contact Gordon Cashin at (919) 707-6107.

Sincerely,

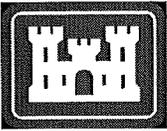


for

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

cc

NCDOT Permit Application Standard Distribution List.



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

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	<input checked="" type="checkbox"/> Section 404 Permit	<input type="checkbox"/> Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 23	or General Permit (GP) number:	
1c. Has the NWP or GP number been verified by the Corps?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
1d. Type(s) of approval sought from the DWQ (check all that apply):		
<input checked="" type="checkbox"/> 401 Water Quality Certification – Regular <input type="checkbox"/> Non-404 Jurisdictional General Permit <input type="checkbox"/> 401 Water Quality Certification – Express <input type="checkbox"/> Riparian Buffer Authorization		
1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	For the record only for Corps Permit: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

2. Project Information

2a. Name of project:	Replacement of Bridge 216 over Welches Creek on SR 1700
2b. County:	Columbus
2c. Nearest municipality / town:	Whiteville
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no.:	B-4478

3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	<i>not applicable</i>
3c. Responsible Party (for LLC if applicable):	<i>not applicable</i>
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 707-6107
3g. Fax no.:	(919) 250-4224
3h. Email address:	gcashin@ncdot.gov

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

B. Project Information and Prior Project History	
1. Property Identification	
1a. Property identification no. (tax PIN or parcel ID):	<i>not applicable</i>
1b. Site coordinates (in decimal degrees):	Latitude: 34.3749 (DD.DDDDDD) Longitude: - 78.6676 (-DD.DDDDDD)
1c. Property size:	21.01 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Welches Creek
2b. Water Quality Classification of nearest receiving water:	C; Sw
2c. River basin:	Lumber
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: Existing conditions at the site include maintained / disturbed roadside shoulder and agriculture in addition to forested wetlands. Land use in the project vicinity is predominantly medium- to low-residential with some agriculture.	
3b. List the total estimated acreage of all existing wetlands on the property: 7.59	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 181	
3d. Explain the purpose of the proposed project: To replace a structurally deficient and functionally obsolete bridge.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing a 69-foot 10-inch 4-span bridge with a 132-foot 6-inch, 3-span bridge on the existing alignment with an off-site detour. Standard road building equipment, such as trucks, dozers, and cranes will be used. New copper and fiber optic cables will be installed by directional drill methods north and south of existing SR 1700, with no impact to wetlands. Removal of telephone lines and poles will not impact wetlands.	
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: Requested 3/16/09 & 1/24/2010	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	<input checked="" type="checkbox"/> Preliminary <input type="checkbox"/> Final
4c. If yes, who delineated the jurisdictional areas? Name (if known): Lance P. Fontaine & Kevin Duerr	Agency/Consultant Company: NCDOT & Arcadis Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. On 1/20/2010, a jurisdictional determination field review meeting was held with Kim Garvey USACE attended by NCDOT and Arcadis. The JD was approved 1/24/2010 (copy attached).	
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? Yes No

6b. If yes, explain.

C. Proposed Impacts Inventory

1. Impacts Summary

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

- Wetlands Streams - tributaries Buffers
 Open Waters Pond Construction

2. Wetland Impacts

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

2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	2f. Area of impact (acres)
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Excavation, Fill	Riparian	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.03
Site 2 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Fill	Riparian	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.01
Site 3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
2g. Total wetland impacts					0.04 Permanent

2h. Comments: Hand clearing due to bridge construction = 0.07 ac. There will be 0.01 ac of temp fill in wetlands in the hand clearing areas for erosion control measures.

3. Stream Impacts

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

3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site 1 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 5 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 6 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
3h. Total stream and tributary impacts						Perm Temp

3i. Comments:

4. Open Water Impacts

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

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

4g. Comments: Impacts due to piers are 22 sq. ft. (< 0.01 ac.)

5. Pond or Lake Construction

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

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

5g. Comments:

5h. Is a dam high hazard permit required?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, permit ID no:
5i. Expected pond surface area (acres):	
5j. Size of pond watershed (acres):	
5k. Method of construction:	

6. Buffer Impacts (for DWQ)

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

6a. Project is in which protected basin?			<input type="checkbox"/> Neuse <input type="checkbox"/> Catawba	<input type="checkbox"/> Tar-Pamlico <input type="checkbox"/> Randleman	<input type="checkbox"/> Other:
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
B1 <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. The proposed bridge is over 63 feet longer than the existing bridge; an off site detour will be used, 2:1 fill slopes or steeper in the wetland area. No deck drains. Removal of existing road fill for longer bridge and increasing bridge opening will improve hydrological conveyance and reduce bridge opening velocities. Placement of stormwater control measures outside wetlands where practicable. Best Management Practices for the Protection of Surface Waters will be implemented.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. Directional bore methodology will be used for utility relocations.		
2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State		
2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, explain: No mitigation is proposed due to the minimal amount of impacts.	
2b. If yes, mitigation is required by (check all that apply):	<input type="checkbox"/> DWQ <input checked="" 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 not, 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?	N/A
2b. Does this project require a Stormwater Management Plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2c. If this project DOES NOT require a Stormwater Management Plan, explain why:	
2d. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan: See attached permit drawings and 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 checked="" type="checkbox"/> DWQ 401 Unit
3. Certified Local Government Stormwater Review	
3a. In which local government's jurisdiction is this project?	not applicable
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Phase II <input type="checkbox"/> NSW <input type="checkbox"/> USMP <input type="checkbox"/> Water Supply Watershed <input type="checkbox"/> Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Coastal counties <input type="checkbox"/> HQW <input type="checkbox"/> ORW <input type="checkbox"/> Session Law 2006-246 <input type="checkbox"/> Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No N/A
5b. Have all of the 401 Unit submittal requirements been met?	<input type="checkbox"/> Yes <input type="checkbox"/> No N/A

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

5. Endangered Species and Designated Critical Habitat (Corps Requirement)		
5a. Will this project occur in or near an area with federally protected species or habitat?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	<input checked="" type="checkbox"/> Raleigh <input type="checkbox"/> Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? NCNHP, USFWS, field surveys. See attached FWS 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? NMFS County Index		
7. Historic or Prehistoric Cultural Resources (Corps Requirement)		
7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation		
8. Flood Zone Designation (Corps Requirement)		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
8b. If yes, explain how project meets FEMA requirements: NCDOT Hydraulics Unit coordination with FEMA		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		
<u>Dr. Gregory J. Thorpe, Ph D</u> Applicant/Agent's Printed Name	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	5.13.13 Date

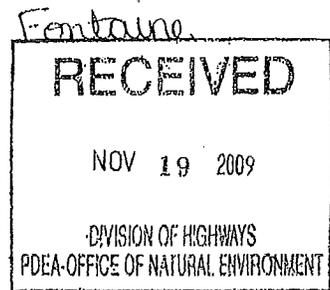


United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

November 16, 2009

CR-11-19-09
CC: L. Williams



Gregory J. Thorpe, Ph.D.
North Carolina Department of Transportation
Project Development and Environmental Analysis
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Dr. Thorpe:

This letter is in response to your letter of October 28, 2009 which provided the U.S. Fish and Wildlife Service (Service) with the biological determination of the North Carolina Department of Transportation (NCDOT) that the replacement of Bridge No. 216 on SR 1700 over Welches Creek in Columbus County (TIP No. B-4478) may affect, but is not likely to adversely affect the federally endangered wood stork (*Mycteria americana*). In addition, NCDOT has determined that the project will have no effect on all other federally listed species in Columbus County. These comments are provided in accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to information provided, surveys were conducted at the project site on June 30, 2009. Although suitable foraging habitat for wood storks was observed, no wood storks or wood stork nests were observed. Based on the survey results and other available information, the Service concurs with your determination that the proposed bridge replacement may affect, but is not likely to adversely affect the wood stork.

NCDOT also conducted a plant survey within suitable habitat for federally endangered Cooley's meadowrue (*Thalictrum cooleyi*). No specimens of Cooley's meadowrue were observed. Based on the survey results and other available information, the Service concurs with your determination that the project will have no effect on Cooley's meadowrue. Also, due to lack of habitat, the Service concurs with your determination that the project will have no effect on the federally listed red-cockaded woodpecker (*Picoides borealis*), Waccamaw silverside (*Menidia extensa*) and rough-leaved loosestrife (*Lysimachia asperulaefolia*). We believe that the requirements of Section 7(a)(2) of the ESA have been satisfied. We remind you that obligations under Section 7 consultation 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 in this review; (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 determined that may be affected by this identified action.

The Service appreciates the opportunity to review this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520 (Ext. 32).

Sincerely,


for Pete Benjamin
Field Supervisor

cc: Kim Garvey, USACE, Wilmington, NC
Travis Wilson, NCWRC, Creedmoor, NC
Chris Militscher, USEPA, Raleigh, NC
John Sullivan, FHWA, Raleigh, NC
David Harris, NCDOT, Raleigh, NC

RECEIVED

JAN 25 2010

REGULATORY
WILM.FLD.OFC.

Fontaine

ATTACHMENT

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): January 21, 2010

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
NC DOT – NEU, Lance Fontaine, Ph.D., 4701 Atlantic Ave, Suite 116, Raleigh, NC 27604

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: SAW-2010-00122
(NCDOT/ B-4478/ replace bridge no. 216 on Red Hill Road (SR 1700) near Whiteville in Columbus County/ Div. 6)

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: Bridge on SR 1700 (Red Hill Road) over Welch Creek near Whiteville, NC
(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: NC County/parish/borough: Columbus City: Whiteville
Center coordinates of site (lat/long in degree decimal format): Lat. 34.3749° N, Long. -78.6676° W. Universal Transverse Mercator:
Name of nearest waterbody: Welch Creek
8 digit HUC: 03040206

Identify (estimate) amount of waters in the review area:
Non-wetland waters: 200 linear feet: 30 width (ft) and/or acres.
Cowardin Class: Riverine
Stream Flow: Perennial
Wetlands: 7.59 acres.
Cowardin Class: Forested

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal:
Non-Tidal:

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- Office (Desk) Determination. Date:
- Field Determination. Date(s): January 20, 2010

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party

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DIVISION OF HIGHWAYS
AREA OFFICE OF NATURAL ENVIRONMENT

who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

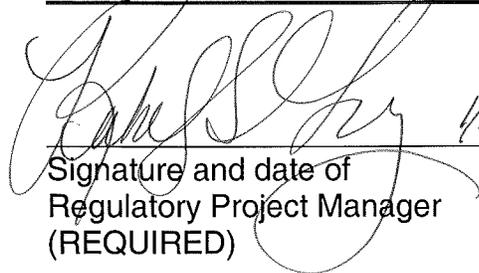
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply)

- checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Arcadis.
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: .
- Corps navigable waters' study: .
- U.S. Geological Survey Hydrologic Atlas:
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: Clarkton and Whiteville, NC.
- USDA Natural Resources Conservation Service Soil Survey. Citation: Soil Survey of Columbus County, NC (1990) National wetlands inventory map(s). Cite name: statewide NWI GIS data file from CGIA.
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps: statewide FEMA GIS data file from CGIA.
- 100-year Floodplain Elevation is: 62 (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): .
or Other (Name & Date): .
- Previous determination(s). File no. and date of response letter: .
- Other information (please specify): flows to Waccamaw River via White Marsh.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.


1/24/2010
Signature and date of
Regulatory Project Manager
(REQUIRED)


22 JAN 2010
Signature and date of
person requesting preliminary JD
(REQUIRED, unless obtaining
the signature is impracticable)

Site number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
Welch / Creek	34.3749	-78.6676	Riverine	200 linear feet	Perennial; non-tidal
UT to Welch Creek	34.3749	-78.6676	Riverine	150 linear feet	Perennial; non-tidal
Wetlands	34.3749	-78.6676	Riparian	8 acres	404 only

Copy Furnished:

Keven Duerr, Arcadis, 801 Corporate Center Drive, Suite 300, Raleigh, NC 27607



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

(Version 1.2; Released September 2011)

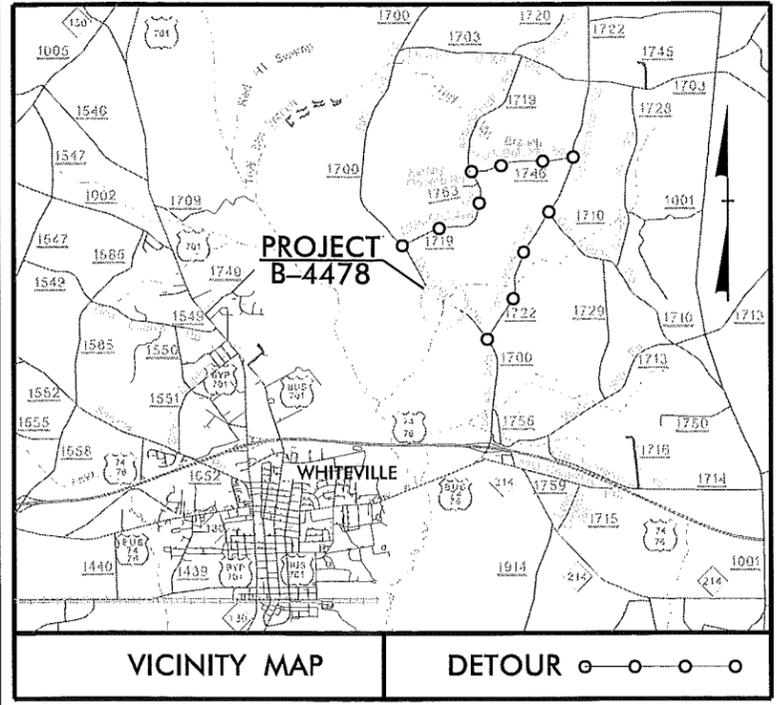
General Project Information	
Project No.:	38383.1.1 B-4478
NCDOT Contact:	Bill Elam Address: 1020 Birch Ridge Dr. Raleigh, NC 27610 Phone: 919.707.6718 Email: belam@ncdot.gov
City/Town:	Whiteville
River Basin(s):	Lumber
Primary Receiving Water:	White Marsh
NCDWQ Surface Water Classification for Primary Receiving Water	Primary: Class C Supplemental: Swamp Waters (Sw)
Other Stream Classification:	None
303(d) Impairments:	None
Buffer Rules in Effect	N/A
Project Description	
Project Length (lin. Miles or feet):	0.95 miles
Project Built-Up Area (ac.)	0.33 ac.
Typical Cross Section Description:	2 11' lanes with 6' shoulders (2' paved) Bridge will be 2 11' lanes with 4.5' shoulders
Average Daily Traffic (veh/hr/day):	Design/Future: 3355
General Project Narrative:	The project consists of replacing Bridge #216 on SR 1700 (Red Hill Rd.) over Welches Creek. The approach work will consist of raising the existing roadway grade and providing grass shoulders and guardrails. Bridge #216 existing 4 span structure (69'-10" total length) will be replaced with a 3 span (1 @ 40', 1 @ 50', 1 @ 40' 21" cored slab bridge) 130' total length. Best Management Practices: -Promotion of sheet flow and infiltration with grass shoulders. -Drainage systems outlet to rip rap pad. -Removal of existing road fill under bridge will improve bridge conveyance and reduce the bridge opening velocities.
Project Type:	Bridge Replacement
Contractor / Designer:	Address: Phone: Email: Columbus No
County(ies):	COLUMBUS
CAMA County?	No
NCDWQ Stream Index No.:	15-4-5
Surrounding Land Use:	Residential
Proposed Project	Existing Site
0.33 ac.	0.25 ac.
2 11' lanes with 6' shoulders (2' paved) Bridge will be 2 11' lanes with 4.5' shoulders	10' lane, 11' lane varies with various shoulder width. Bridge 9', 11' lanes with 1' shoulders.

References

TIP PROJECT: B-4478

CONTRACT: C203293

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



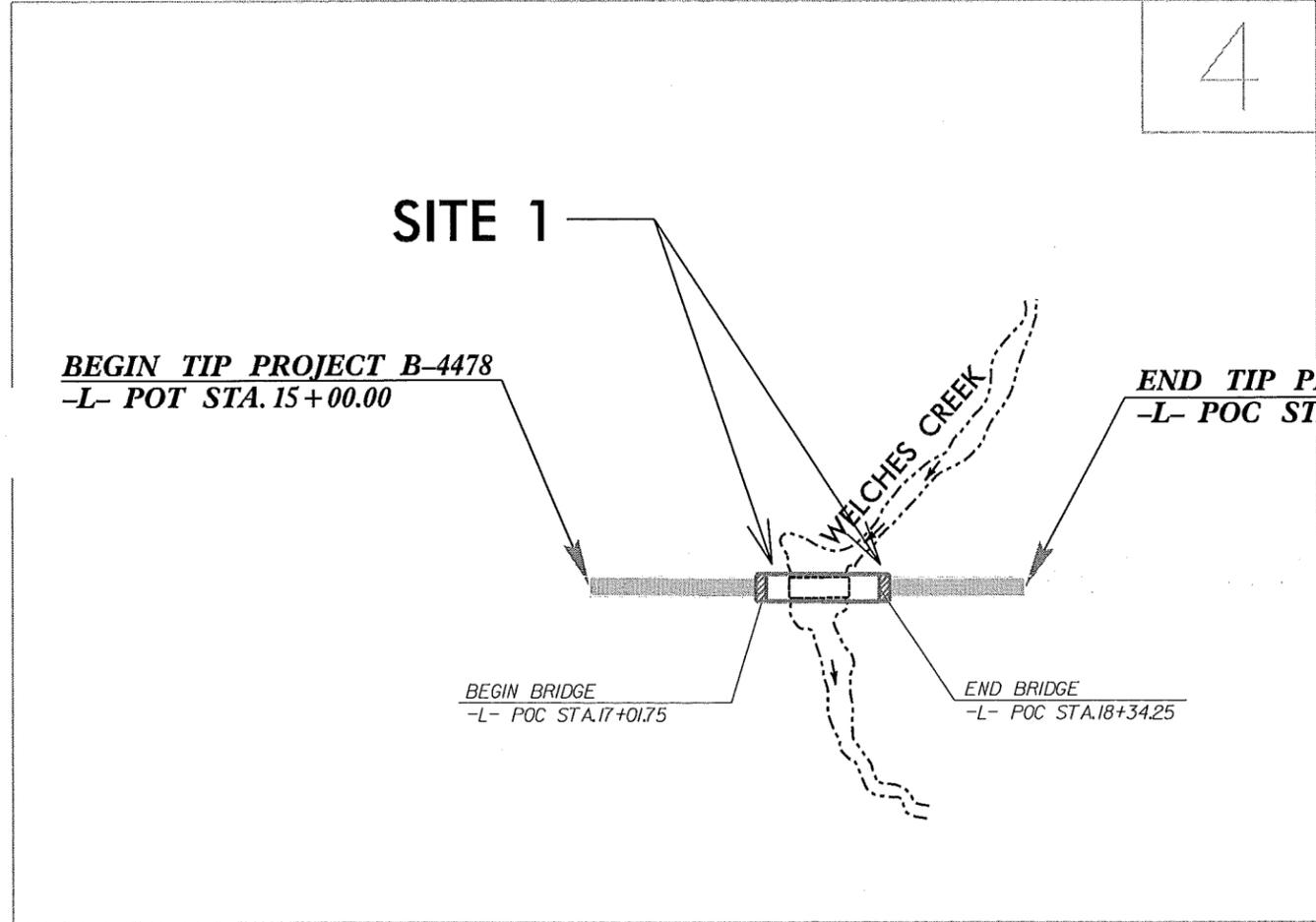
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

COLUMBUS COUNTY

LOCATION: BRIDGE NO. 216 OVER WELCHES CREEK ON SR 1700

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

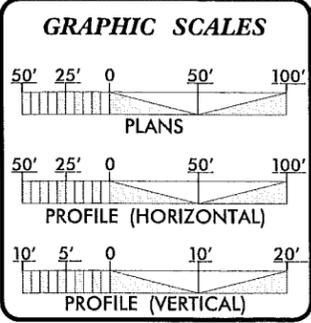
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N.C.	B-4478	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
38383.1.1	BRZ-1700(9)	PE	
38383.2.1	BRZ-1700(9)	RW & UTIL.	



WETLAND IMPACTS PERMIT

SHEET 1 OF 8

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2013 = 2,320
ADT 2033 = 3,355
DHV = 13 %
D = 55 %
T = 5 % *
V = 60 MPH

FUNC. CLASS. = LOCAL
* TTST = 2% DUAL = 3%
SUBREGIONAL TIER

PROJECT LENGTH

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

2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: JULY 3, 2012	REKHA PATEL, PE PROJECT ENGINEER
LETTING DATE: OCTOBER 15, 2013	MICHAEL W. LITTLE, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

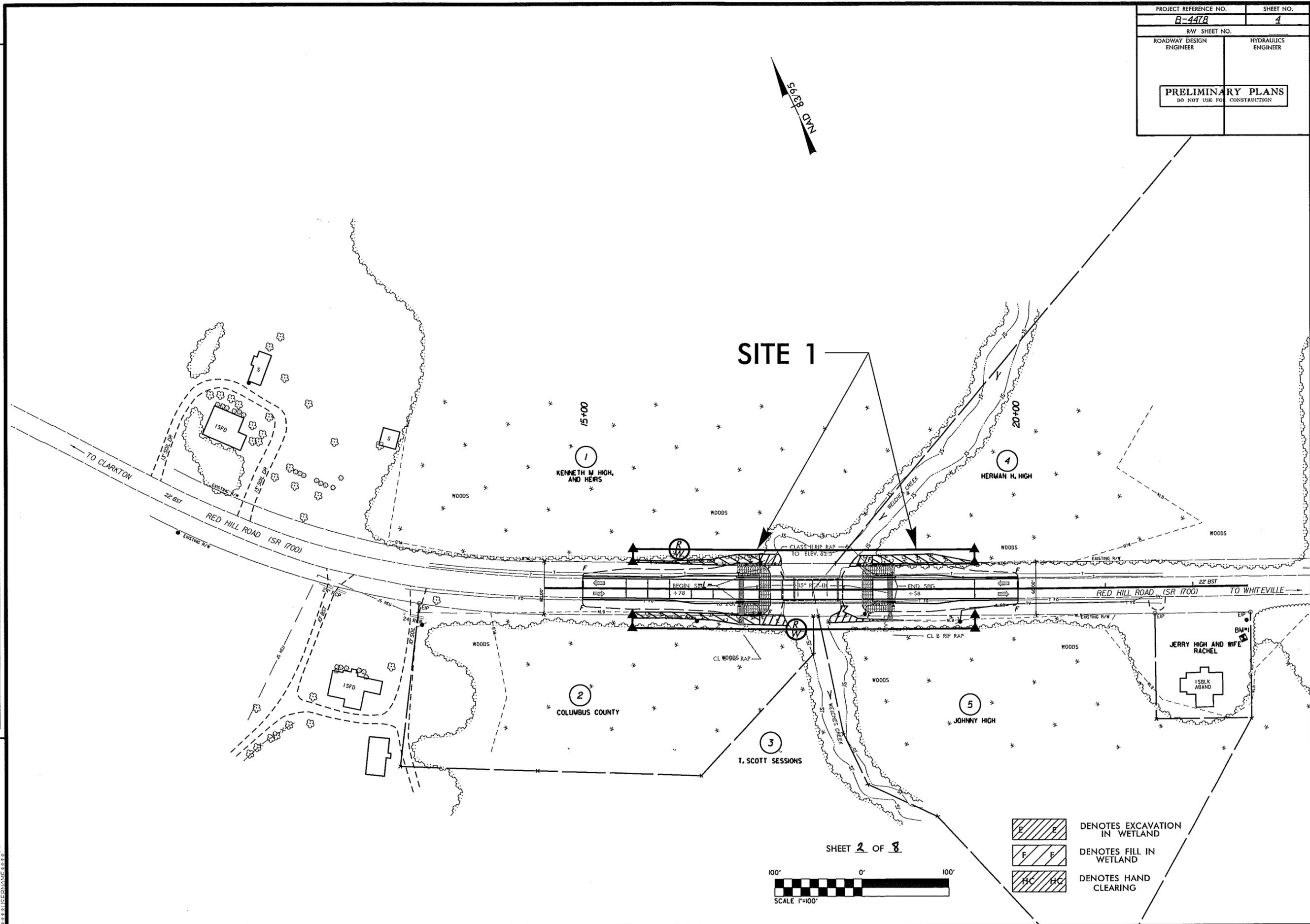
ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



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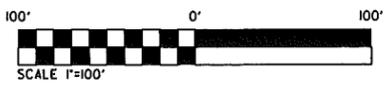
PROJECT REFERENCE NO. B-4478	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



REVISIONS

2/7/2013
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SHEET 2 OF 8



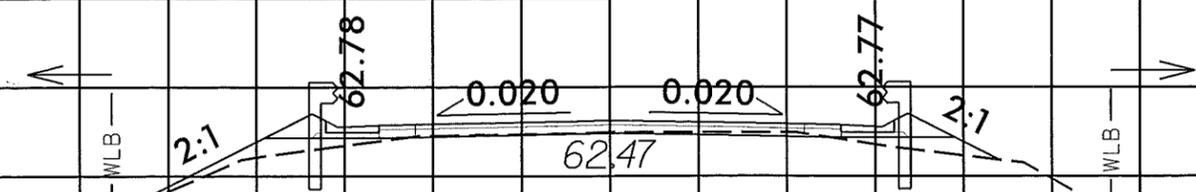
- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING

8/23/09

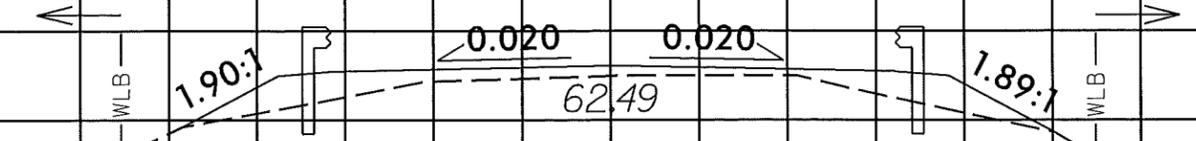
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

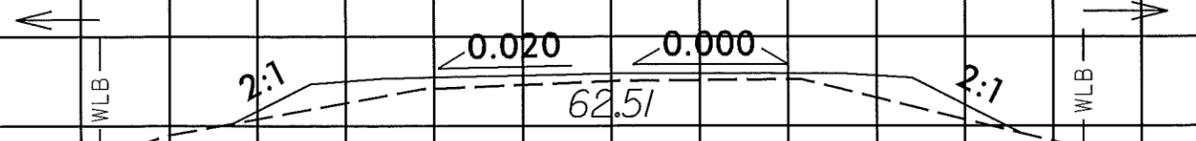
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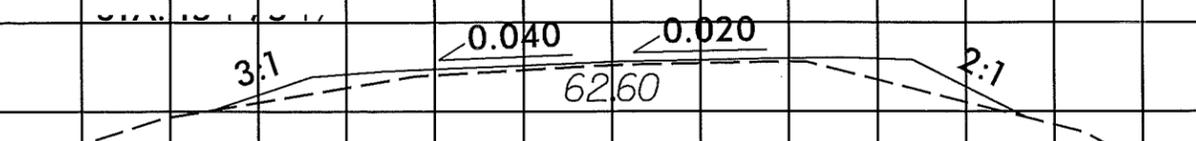
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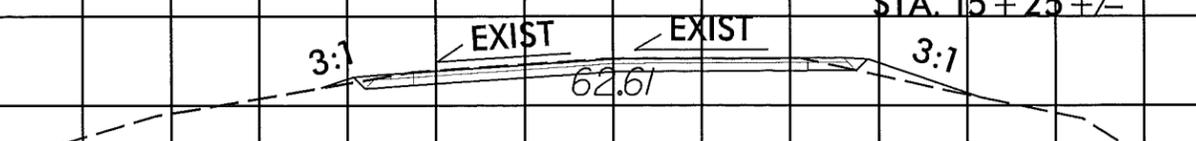
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16+00.00



15+50.00

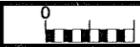


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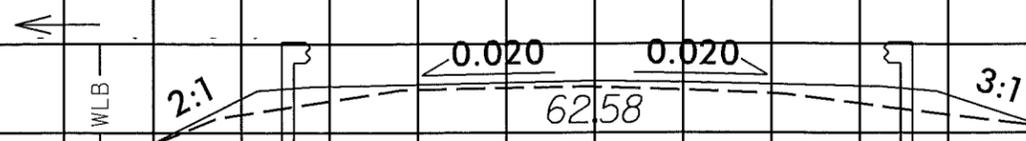
TRANSITION TO 2:1
SIDE SLOPE
STA. 15+25+/-

2/6/2013
cmkreuter
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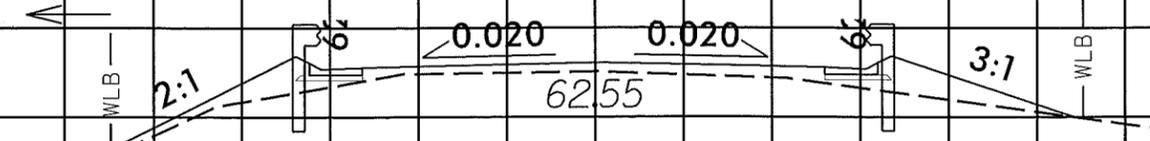
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PROJ. REFERENCE NO. SHEET NO.

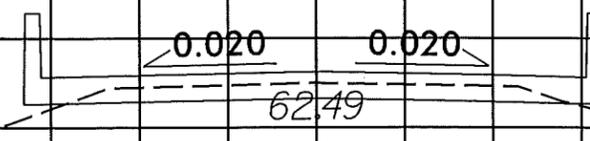


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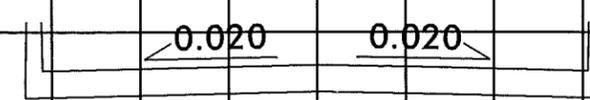


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18+00.00



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17+50.00

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09/08/99

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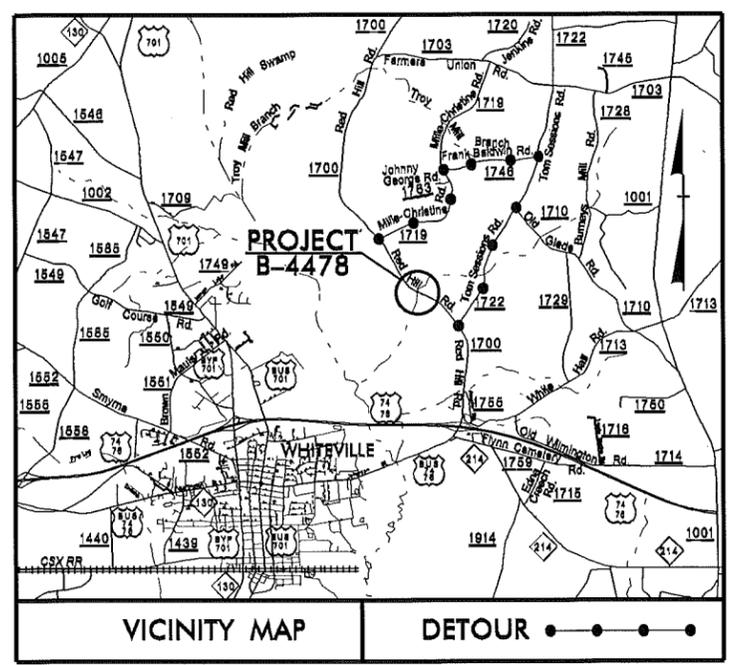
TIP PROJECT: B-4478

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

T.I.P. NO.	SHEET NO.
B-4478	UO-1

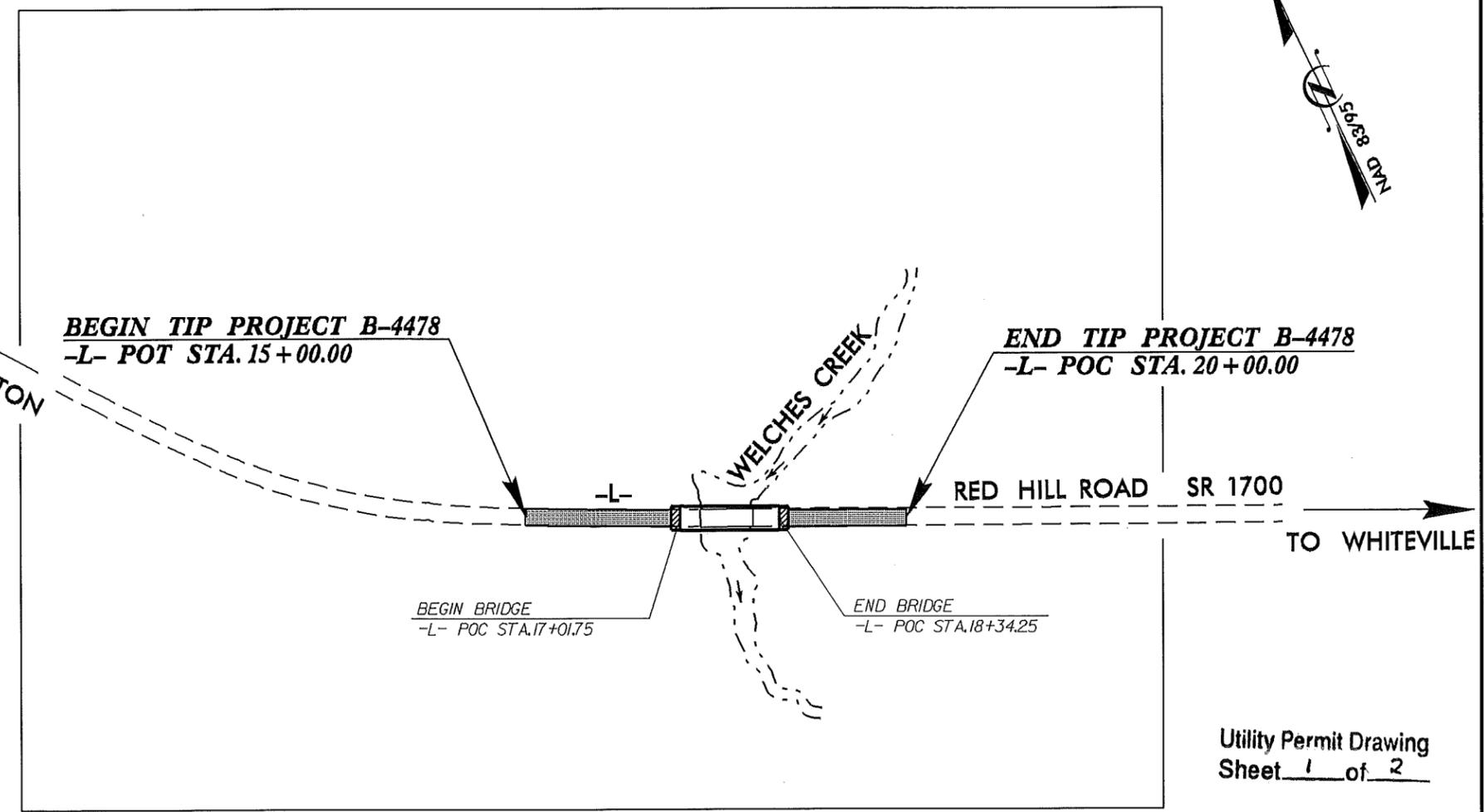
NEU UTILITY
RELOCATION PLANS

NEU UTILITY RELOCATION PLANS
COLUMBUS COUNTY

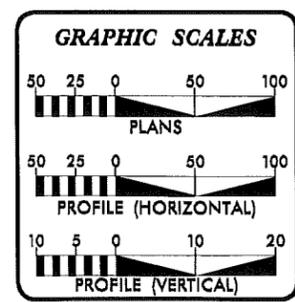


LOCATION: BRIDGE NO. 216 ON SR 1700
OVER WELCHES CREEK

TYPE OF WORK: UTILITY BY OTHERS RELOCATION



Utility Permit Drawing
Sheet 1 of 2



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	PLAN SHEET

UTILITY OWNERS ON PROJECT

- (1) POWER - BRUNSWICK EMC - RODNEY SCRUGGS - 910-457-9808
- (2) TELEPHONE - CENTURYLINK - ROD MEDLIN - 252-413-7711
- (3) TELEVISION - TIME WARNER CABLE - ROBERT JOHN - 910-772-5757

UTILITY DESIGN BY:

MA Engineering
CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919 297 0220 Fax: 919 297 0221

NC DOT PROJECT ENGINEER:
COREY BOUSQUET, P.E.
PREPARED FOR:
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
UTILITIES UNIT
RALEIGH, NC

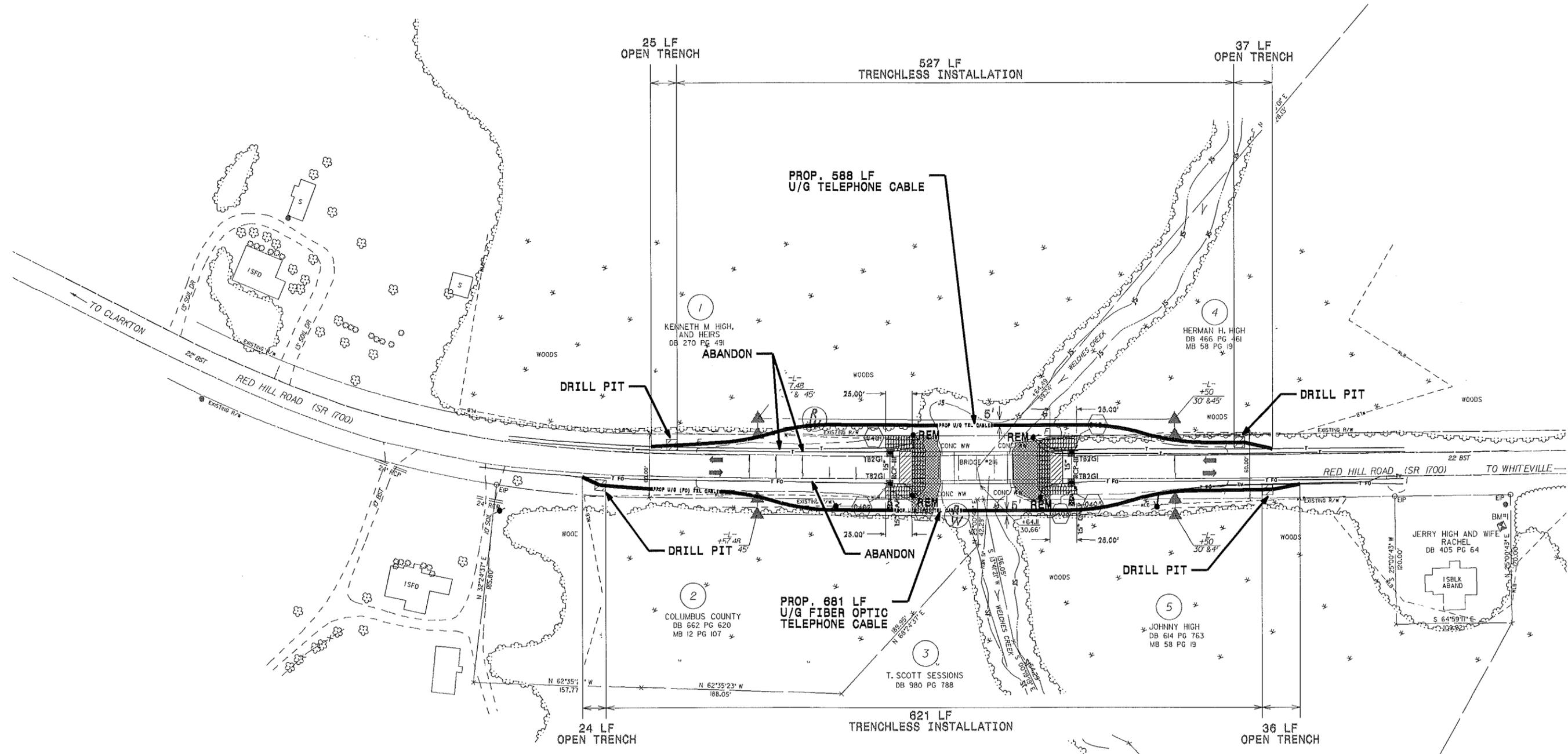
UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

MA Engineering CONSULTANTS, INC. 408 E. Chatham Street, Suite 107, Cary, N.C. 27511

NEU UTILITY RELOCATION PLANS

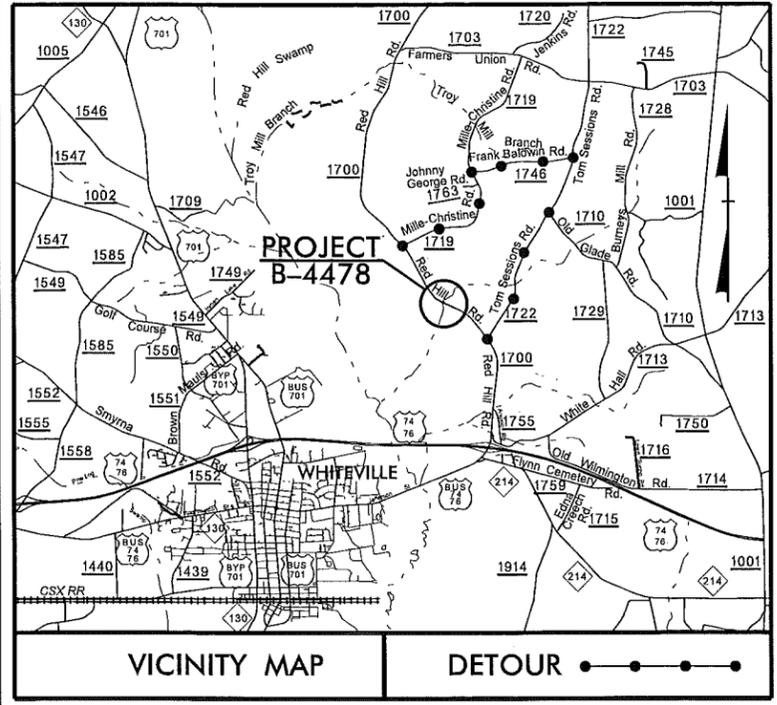
- NOTES:**
1. NO IMPACTS TO STREAM OR WETLANDS EXPECTED.
 2. AREAS INDICATED FOR DRILL PITS SHALL BE OUTSIDE WETLAND LIMITS.
 3. TELEPHONE COMPANY SHALL INSTALL LINES BY DIRECTIONAL DRILL.
 4. LINES INSTALLED BY DIRECTIONAL DRILL SHALL BE A MINIMUM 3 FEET BELOW THE 100 YEAR SCOUR ELEVATION.
 4. POWER COMPANY AND TELEVISION COMPANY LINES SHALL REMAIN IN PLACE.



5/14/99
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TIP PROJECT: B-4478

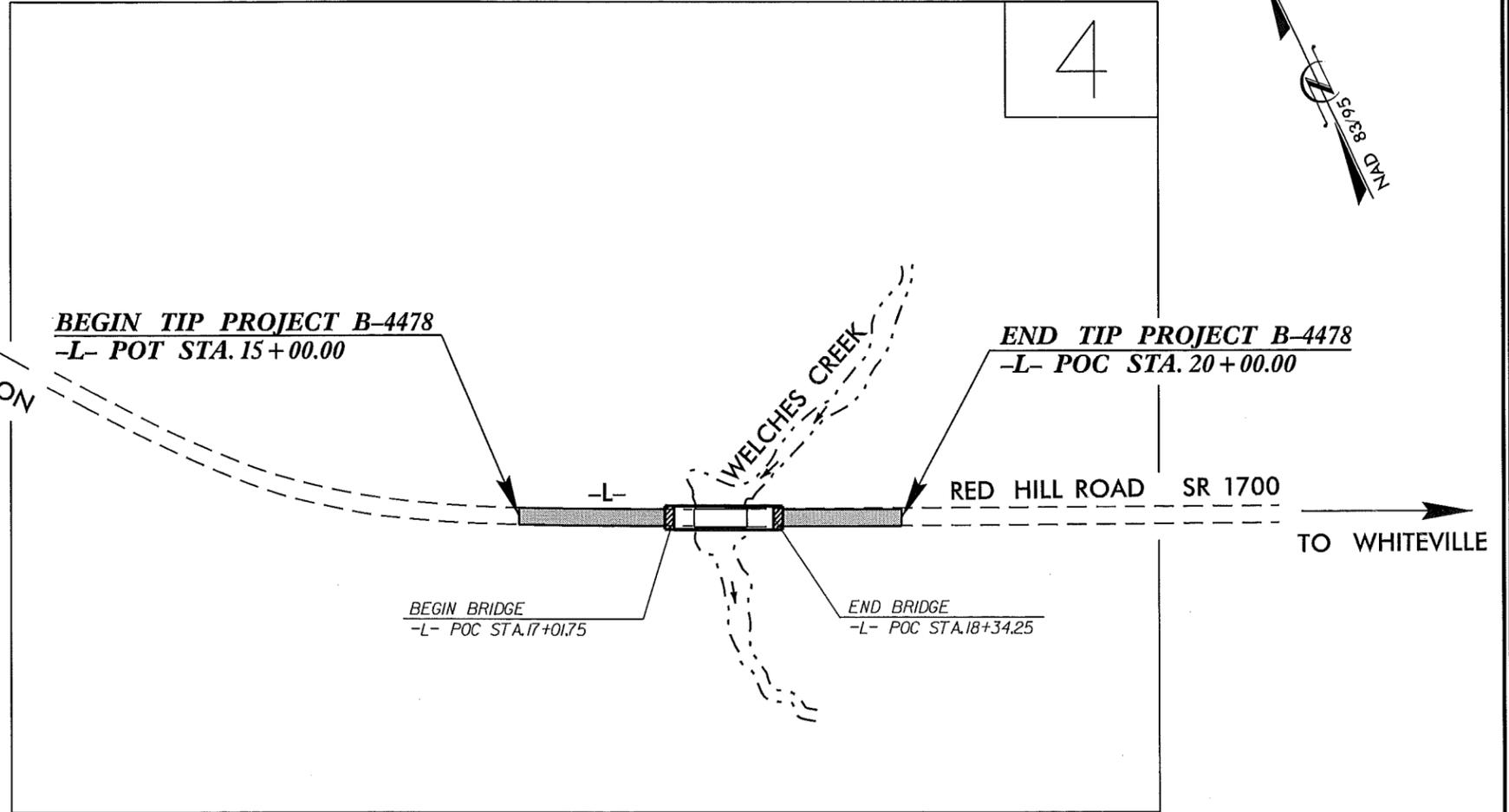
See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
COLUMBUS COUNTY

LOCATION: BRIDGE NO. 216 OVER WELCHES CREEK ON SR 1700
TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

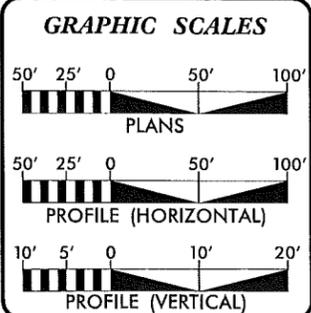
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4478	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38383.1.1	BRZ-1700(9)	PE	
38383.2.1	BRZ-1700(9)	R/W & UTIL.	



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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2013 =	2,320
ADT 2033 =	3,355
DHV =	13 %
D =	55 %
T =	5 % *
V =	60 MPH
FUNC. CLASS. =	LOCAL
* TTST =	2% DUAL = 3%
SUBREGIONAL TIER	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4478	=	0.070 MI.
LENGTH STRUCTURE TIP PROJECT B-4478	=	0.025 MI.
TOTAL LENGTH OF TIP PROJECT B-4478	=	0.095 MI.

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

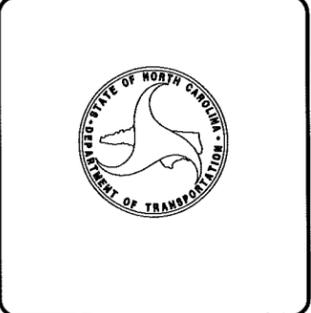
2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	REKHA PATEL, PE PROJECT ENGINEER
JULY 3, 2012	
LETTING DATE:	MICHAEL W. LITTLE, PE PROJECT DESIGN ENGINEER
OCTOBER 15, 2013	

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



06-JUL-2012 10:23
R:\Roadway\Proj\104478_rdy_tsh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

04/16/11

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. B-4478
SHEET NO. I-B

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite R/W Marker	-----
Proposed Control of Access Line with Concrete C/A Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
Existing Easement Line	E
Proposed Temporary Construction Easement	E
Proposed Temporary Drainage Easement	TDE
Proposed Permanent Drainage Easement	PDE
Proposed Permanent Drainage / Utility Easement	DUE
Proposed Permanent Utility Easement	PUE
Proposed Temporary Utility Easement	TUE
Proposed Aerial Utility Easement	AUE
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	C
Proposed Slope Stakes Fill	F
Proposed Curb Ramp	CR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	XXXX

VEGETATION:

Single Tree	○
Single Shrub	○
Hedge	-----
Woods Line	-----

Orchard	-----
Vineyard	Vineyard

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	CB
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊕
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	A/G Water

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	A/G Gas

SANITARY SEWER:

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

MISCELLANEOUS:

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

6/2/99

SURVEY CONTROL SHEET B-4478

PROJECT REFERENCE NO. B-4478	SHEET NO. 1-C
Location and Surveys	

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
3	B-4478 BL-3	227812.8753	2099889.0688	62.16	OUTSIDE PROJECT LIMITS	
2	B-4478 BL-2	227614.5672	2100260.1475	61.88	17+18.11	19.33 RT
1	B-4478 BL-1	227427.4877	2100655.3875	61.69	21+55.13	19.83 RT

ROW MARKER IRON PIN AND CAP-E				
ALIGN	STATION	OFFSET	NORTH	EAST
L	15+57.48	-30.00	227729.2155	2100137.3585
L	15+57.48	-45.00	227742.6790	2100143.9718
L	15+57.48	30.00	227675.3616	2100110.9055
L	15+57.48	45.00	227661.8982	2100104.2922
L	19+50.00	-45.00	227572.9838	2100497.0500
L	19+50.00	-30.00	227559.3952	2100490.6979
L	19+49.97	30.00	227505.1240	2100465.1117
L	19+50.00	45.00	227491.5354	2100458.7596

.....
 BM#1 ELEVATION = 62.08
 N 227348 E 2100731
 L STATION 22+58.00 59 RIGHT
 RR SPIKE IN BASE OF 24" OAK TREE

TYPE	STATION	NORTH	EAST
POT	14+55.86	227747.0930	2100032.9180
PC	15+57.48	227702.2886	2100124.1320
PT	20+20.66	227502.2978	2100541.8934
POT	22+63.64	227399.5991	2100762.1067



BEGIN PROJECT B-4478
-L- POT STA. 15+00.00

END PROJECT B-4478
-L- POC STA. 20+00.00

NCDOT BASELINE STATION (B4478 BL-3)
 LOCALIZED PROJECT COORDINATES
 N=227812.8753
 E=2099889.0688
 ELEV=62.16'

NCDOT BASELINE STATION (B4478 BL-1)
 LOCALIZED PROJECT COORDINATES
 N=227427.4877
 E=2100655.3875
 ELEV=61.69'



NCDOT BASELINE STATION (B4478 BL-2)
 LOCALIZED PROJECT COORDINATES
 N=227614.5672
 E=2100260.1475
 ELEV=61.88'



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4478-1" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 227009.592(ft) EASTING: 2101583.199(ft) ELEVATION: 77.55(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99999084 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4478-1" TO -L- 15+00.00 STATION IS N 64° 34' 39.2" W 1672.63' 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/PRECONSTRUCTION/LOCATION/PROJECT/B4478_LS_CONTROL.TXT](http://www.ncdot.org/doh/preconstruction/location/project/B4478_LS_CONTROL.TXT)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4478_LS_CONTROL.TXT
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- © INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION
 SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

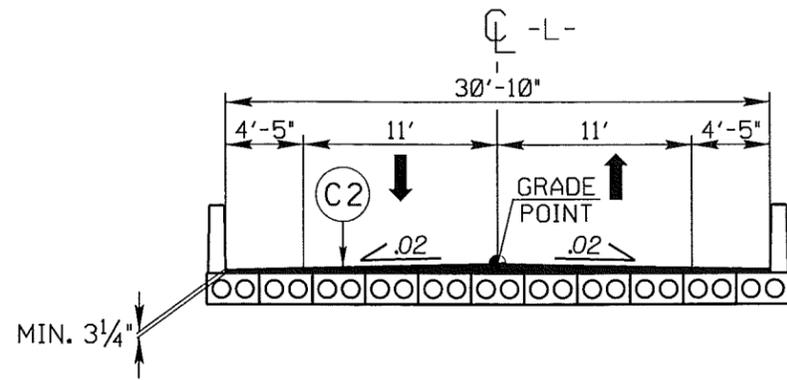
NOTE: DRAWING NOT TO SCALE

06-JUL-2012 10:24 AM b4478-r.dwg-lc.dgn

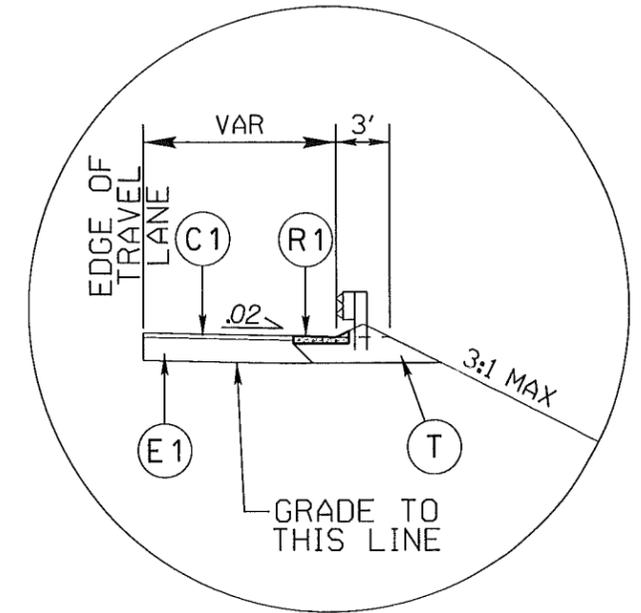
6/22/99

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF 2 LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
E1	PROP. APPROX. 5½" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL

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



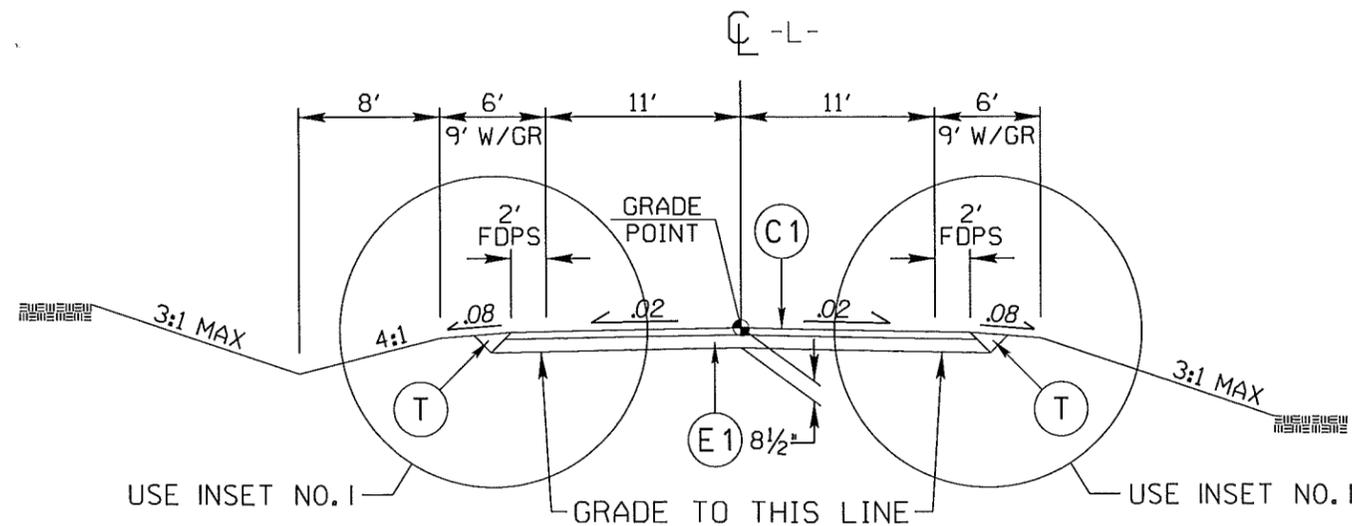
DETAIL SHOWING ASPHALT WEARING SURFACE ON CORED SLAB BRIDGE
-L- STA. 17+01.75 TO -L- STA. 18+34.25



INSET NO. 1

INSET NO. 1

Use with Typical Section No. 1



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

- L- STA. 15+50.00 TO -L- STA. 17+01.75 (BEGIN BRIDGE)
- L- STA. 18+34.25 (END BRIDGE) TO -L- STA. 19+50.00

USE INSET NO. 1 FOR:

- L- STA. 16+78.00 TO BEGIN OF APPROACH SLAB (RT.)
- L- STA. 16+78.00 TO BEGIN OF APPROACH SLAB (LT.) REVERSE
- END OF APPROACH SLAB TO -L- STA. 18+58.00 (RT.)
- END OF APPROACH SLAB TO -L- STA. 18+58.00 (LT.) REVERSE

NOTES:

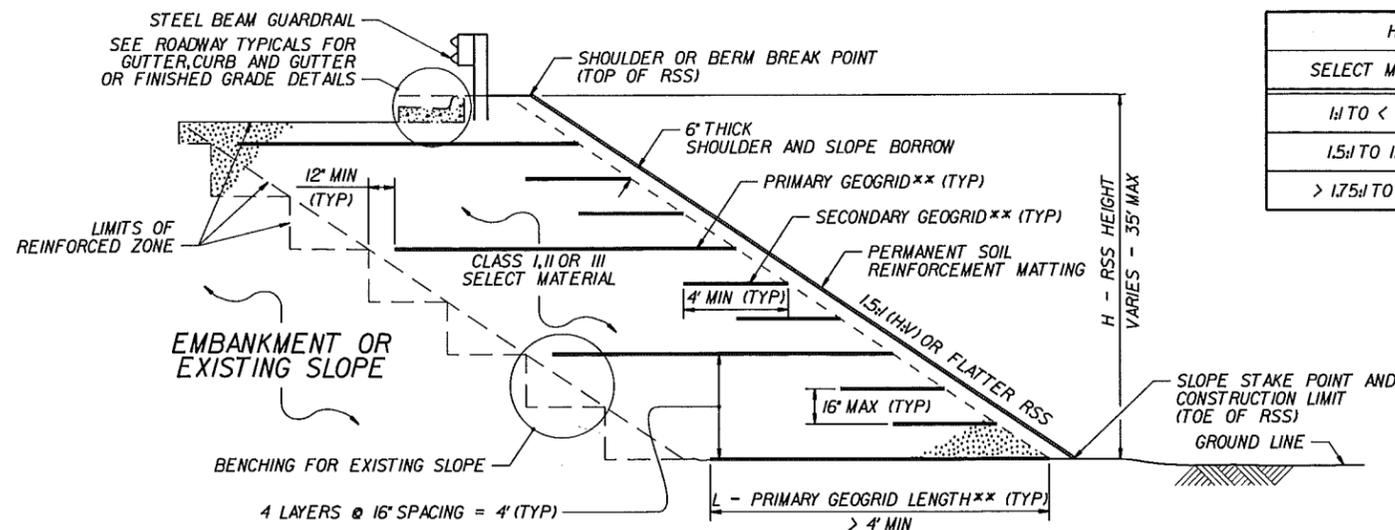
- (1) TRANSITION FROM EXISTING TO T.S. NO. 1
-L- STA. 15+00.00 TO -L- STA. 15+50.00
- (2) TRANSITION FROM T.S. NO. 1 TO EXISTING
-L- STA. 19+50.00 TO -L- STA. 20+00.00
- (3) USE 2:1 REINFORCED SOIL SLOPES (WITH SOD)
-L- STA. 15+75.00 TO -L- STA. 16+76.00 +/- LT.
-L- STA. 15+25.00 TO -L- STA. 16+76.00 +/- RT.
-L- STA. 18+34.00 TO -L- STA. 19+25.00 +/- LT.

PROJECT REFERENCE NO. B-4478	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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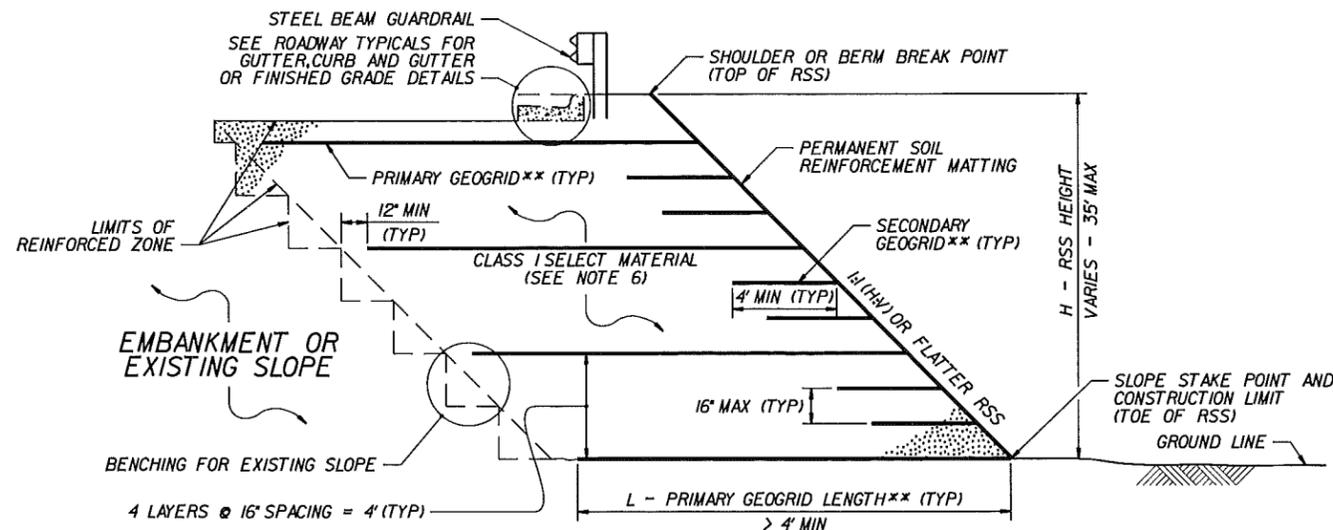
H (FT)	0 - < 10		10 - 20		> 20 - 35	
SELECT MATERIAL CLASS	I	II OR III	I	II OR III	I	II OR III
1:1 TO < 1.5:1 (HV) RSS	1.20	SEE NOTE 6	1.10	SEE NOTE 6	1.00	SEE NOTE 6
1.5:1 TO 1.75:1 (HV) RSS	1.15	1.00	1.05	0.95	0.95	0.90
> 1.75:1 TO < 2:1 (HV) RSS	1.10	0.75	1.00	0.70	0.90	0.65

L/H RATIO (L > 4' MIN)
 IF L ≤ 4', USE SECONDARY GEOGRID INSTEAD OF PRIMARY GEOGRID.



STANDARD RSS WITH SELECT MATERIAL THAT DOES NOT MEET ARTICLE 1019-2 OF THE STANDARD SPECIFICATIONS

**SEE TABLES AND GEOGRID PLACEMENT DETAILS.



STANDARD RSS WITH SELECT MATERIAL THAT MEETS ARTICLE 1019-2 OF THE STANDARD SPECIFICATIONS

**SEE TABLES AND GEOGRID PLACEMENT DETAILS.

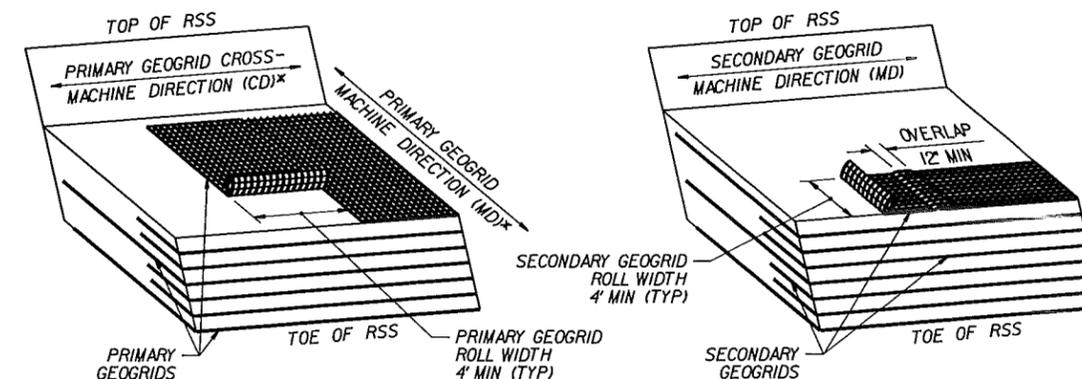
NOTES:

- SEE ROADWAY PLANS FOR REINFORCED SOIL SLOPE (RSS) LOCATIONS.
- FOR STANDARD REINFORCED SOIL SLOPES, SEE REINFORCED SOIL SLOPES PROVISION. FOR PERMANENT SOIL REINFORCEMENT MATTING, SEE PERMANENT SOIL REINFORCEMENT MAT PROVISION. FOR STEEL BEAM GUARDRAIL, SEE SECTION 862 OF THE STANDARD SPECIFICATIONS.
- STANDARD RSS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
 UNIT WEIGHT, $\gamma = 120$ LB/CF
 FRICTION ANGLE, $\phi = 30$ DEGREES
 COHESION, $c = 0$ LB/SF
- DO NOT USE STANDARD RSS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR GROUNDWATER IS ABOVE TOE OF RSS.
- DO NOT USE STANDARD RSS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW RSS.
- FOR 1:1 TO < 1.5:1 (HV) RSS, USE CLASS I SELECT MATERIAL IN THE REINFORCED ZONE THAT MEETS ARTICLE 1019-2 OF THE STANDARD SPECIFICATIONS EXCEPT FOR SELECT MATERIAL THAT MEETS AASHTO M 145 FOR SOIL CLASSIFICATIONS A-4 AND A-5. DO NOT USE A-4 OR A-5 SOIL OR CLASS II OR III SELECT MATERIAL FOR 1:1 TO < 1.5:1 (HV) RSS.
- EXCEPT FOR TENSAR UX GEOGRIDS, DO NOT SPLICE OR OVERLAP PRIMARY GEOGRIDS IN THE MACHINE DIRECTION (MD) SO SPLICES OR OVERLAPS ARE PARALLEL TO THE TOE OF RSS. TENSAR UX GEOGRIDS MAY BE SPLICED ONCE PER PRIMARY GEOGRID LENGTH IN ACCORDANCE WITH TENSAR'S BODKIN CONNECTION DETAIL. USE TENSAR UX GEOGRID PIECES AT LEAST 4' LONG.
- EXCEPT FOR TENSAR UX GEOGRIDS, PLACE PRIMARY GEOGRIDS SO GEOGRIDS ARE ADJACENT TO EACH OTHER IN THE CROSS-MACHINE DIRECTION (CD). TENSAR UX GEOGRIDS MAY BE PLACED WITH A MAXIMUM SPACING BETWEEN GEOGRIDS OF 16' IN THE CD. STAGGER TENSAR UX GEOGRIDS SO GEOGRIDS ARE CENTERED OVER GAPS IN THE PRIMARY GEOGRID LAYER BELOW.
- DO NOT PLACE PRIMARY GEOGRIDS UNTIL EXCAVATION DIMENSIONS AND IN-SITU MATERIAL ARE APPROVED.

H (FT)	0 - < 10		10 - 20		> 20 - 35	
SELECT MATERIAL CLASS	I	II OR III	I	II OR III	I	II OR III
PRIMARY GEOGRID (SUBSTITUTE SECONDARY GEOGRID FOR > 2:1 (HV) RSS)	1:1 TO < 1.5:1 (HV) RSS	SEE NOTE 6	3XT	SEE NOTE 6	5XT	SEE NOTE 6
			SG200		SG350	
			SF35		SF55	
			UX1400HS		UX1500HS	
1.5:1 TO 1.75:1 (HV) RSS	2XT	2XT	3XT	2XT	3XT	2XT
	SG150	SG150	SG200	SG150	SG200	SG150
	SF20	SF20	SF35	SF20	SF35	SF20
	UX1100HS	UX1100HS	UX1400HS	UX1100HS	UX1400HS	UX1100HS
> 1.75:1 TO < 2:1 (HV) RSS	2XT	2XT	2XT	2XT	2XT	2XT
	SG150	SG150	SG150	SG150	SG150	SG150
	SF20	SF20	SF20	SF20	SF20	SF20
	UX1100HS	UX1100HS	UX1100HS	UX1100HS	UX1100HS	UX1100HS
SECONDARY GEOGRID	1:1 (HV) OR FLATTER RSS		2XT			
			SG150			
			SF11			
			BX1100			

PRIMARY AND SECONDARY GEOGRIDS

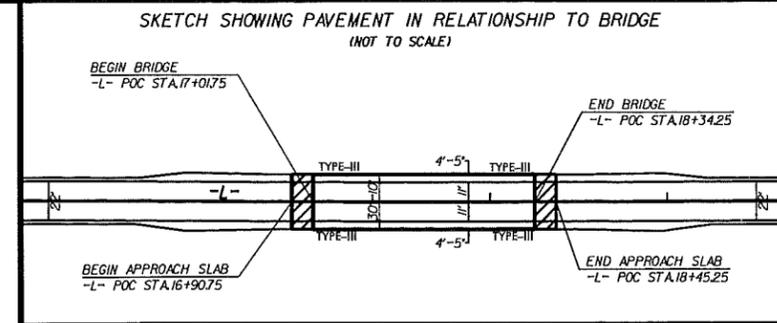
#XT REFERS TO MIRAFI SERIES GEOGRID.
 SG### REFERS TO STRATAGRID SERIES GEOGRID.
 SF## REFERS TO SYNTEEN SERIES GEOGRID.
 UX####HS AND BX#### REFER TO TENSAR SERIES GEOGRID.



GEOGRID PLACEMENT DETAILS

*SEE NOTES 7 AND 8.

PROJECT REFERENCE NO. B-4478	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

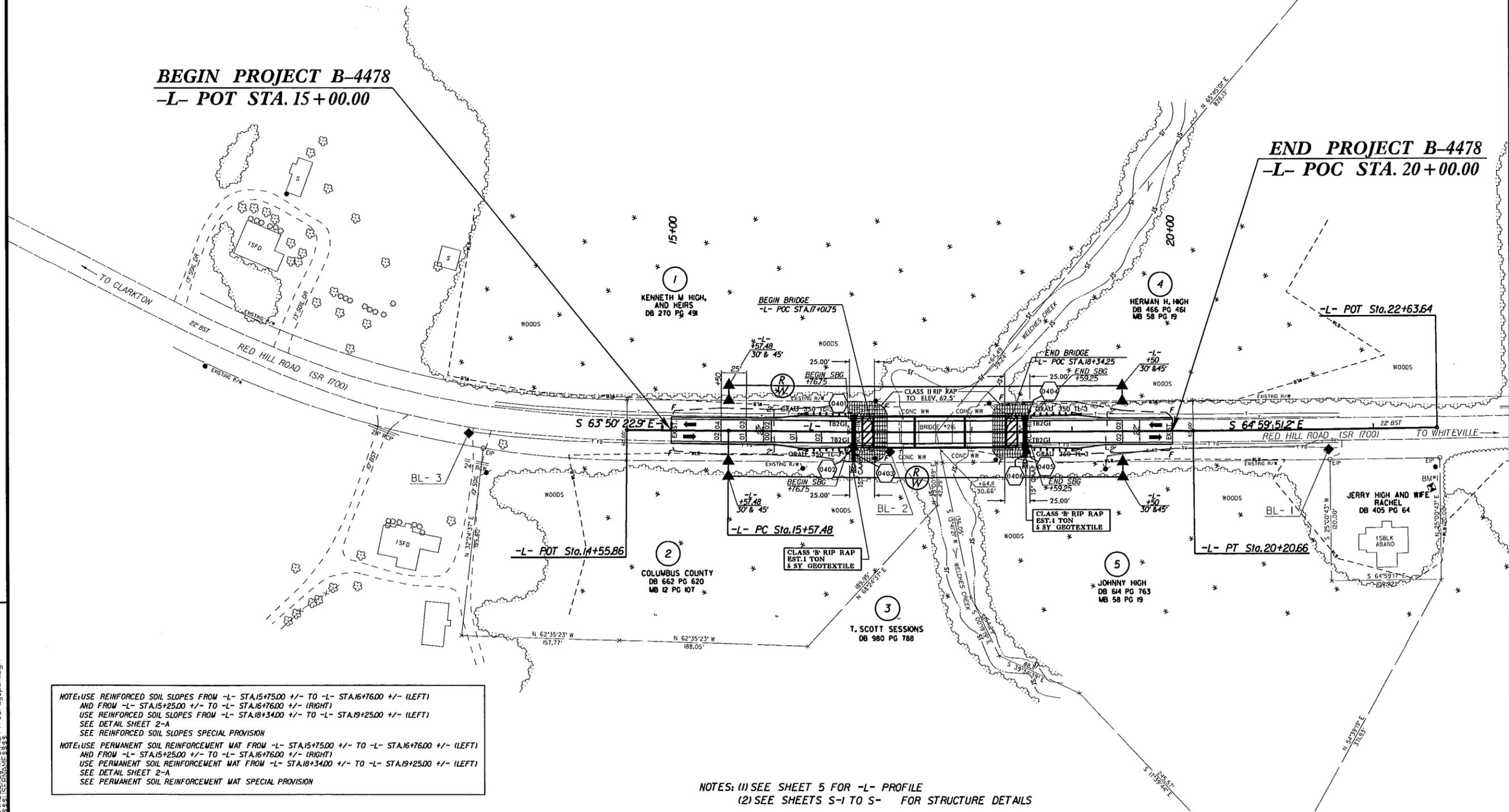


-L- CURVE DATA
 PI Sta 17+89.08
 $\Delta = 1^{\circ}09'28.2''$ (LT)
 $D = 0^{\circ}14'59.9''$
 $L = 463.17'$
 $T = 231.59'$
 $R = 22,920.00'$
 S.E. = SEE PLANS



BEGIN PROJECT B-4478
-L- POT STA. 15+00.00

END PROJECT B-4478
-L- POC STA. 20+00.00



NOTE: USE REINFORCED SOIL SLOPES FROM -L- STA.15+75.00 +/- TO -L- STA.16+76.00 +/- (LEFT) AND FROM -L- STA.15+25.00 +/- TO -L- STA.16+76.00 +/- (RIGHT)
 USE REINFORCED SOIL SLOPES FROM -L- STA.18+34.00 +/- TO -L- STA.19+25.00 +/- (LEFT)
 SEE DETAIL SHEET 2-A
 SEE REINFORCED SOIL SLOPES SPECIAL PROVISION

NOTE: USE PERMANENT SOIL REINFORCEMENT MAT FROM -L- STA.15+75.00 +/- TO -L- STA.16+76.00 +/- (LEFT) AND FROM -L- STA.15+25.00 +/- TO -L- STA.16+76.00 +/- (RIGHT)
 USE PERMANENT SOIL REINFORCEMENT MAT FROM -L- STA.18+34.00 +/- TO -L- STA.19+25.00 +/- (LEFT)
 SEE DETAIL SHEET 2-A
 SEE PERMANENT SOIL REINFORCEMENT MAT SPECIAL PROVISION

NOTES: (1) SEE SHEET 5 FOR -L- PROFILE
 (2) SEE SHEETS S-1 TO S- FOR STRUCTURE DETAILS

REVISIONS

06 JUL 2012 10:28 B-4478_rdl.psh.dgn

5/14/99

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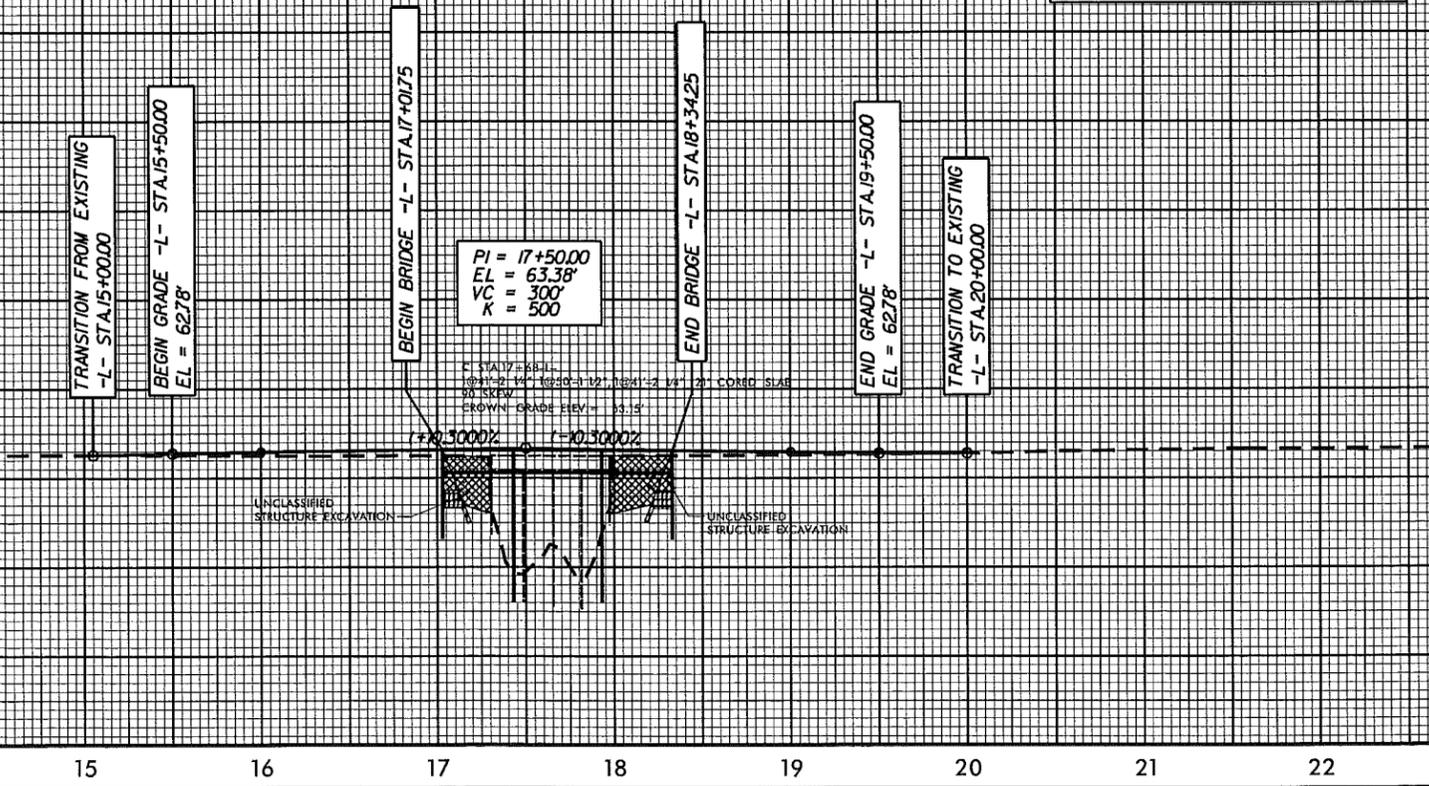
PROJECT REFERENCE NO. B-4478	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-L-

BRIDGE HYDRAULIC DATA

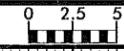
DESIGN DISCHARGE	= 900	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 60.7	FT
BASE DISCHARGE	= 1510	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 61.5	FT
OVERTOPPING DISCHARGE	= 2500	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 62.7	FT

BMI ELEVATION = 62.08'
 N 227348 E 2100731
 -BL- STATION 14+60 Dist 39' RIGHT =
 -L- STATION 22+57.51 Dist 59.34 RIGHT
 RR SPIKE IN BASE OF 24" OAK TREE



FOR -L- PLAN VIEW
SEE SHEET 4

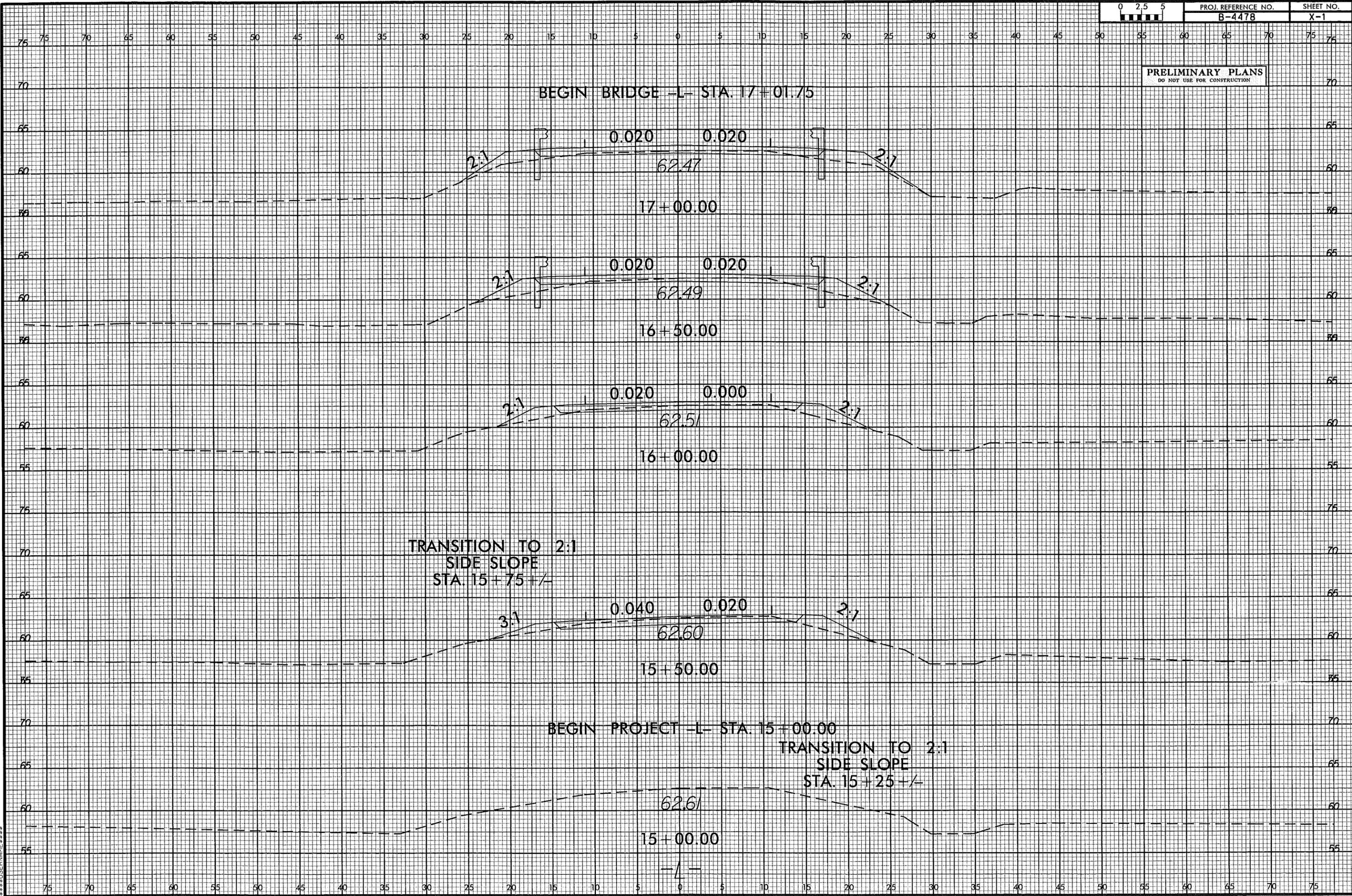
8/23/99



PROJ. REFERENCE NO.
B-4478

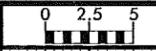
SHEET NO.
X-1

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

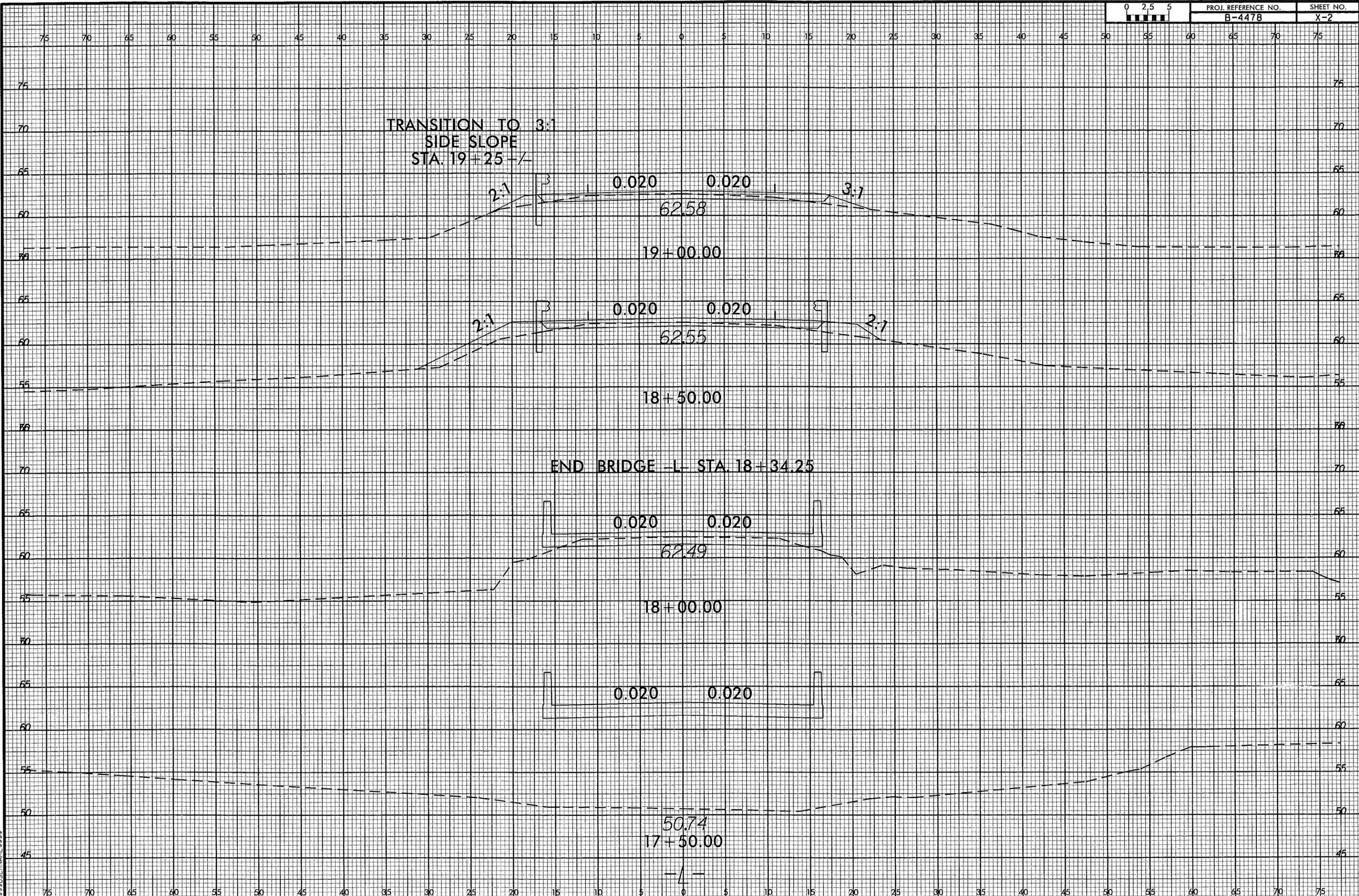


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PROJ. REFERENCE NO. B-4478 SHEET NO. X-2



TRANSITION TO 3:1
SIDE SLOPE
STA. 19+25 +/-

0.020 0.020

62.58

19+00.00

2:1

0.020 0.020

62.55

18+50.00

END BRIDGE -L- STA. 18+34.25

0.020 0.020

62.49

18+00.00

0.020 0.020

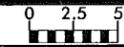
50.74

17+50.00

-/-

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\$\$\$\$\$USERNAME\$\$\$\$\$

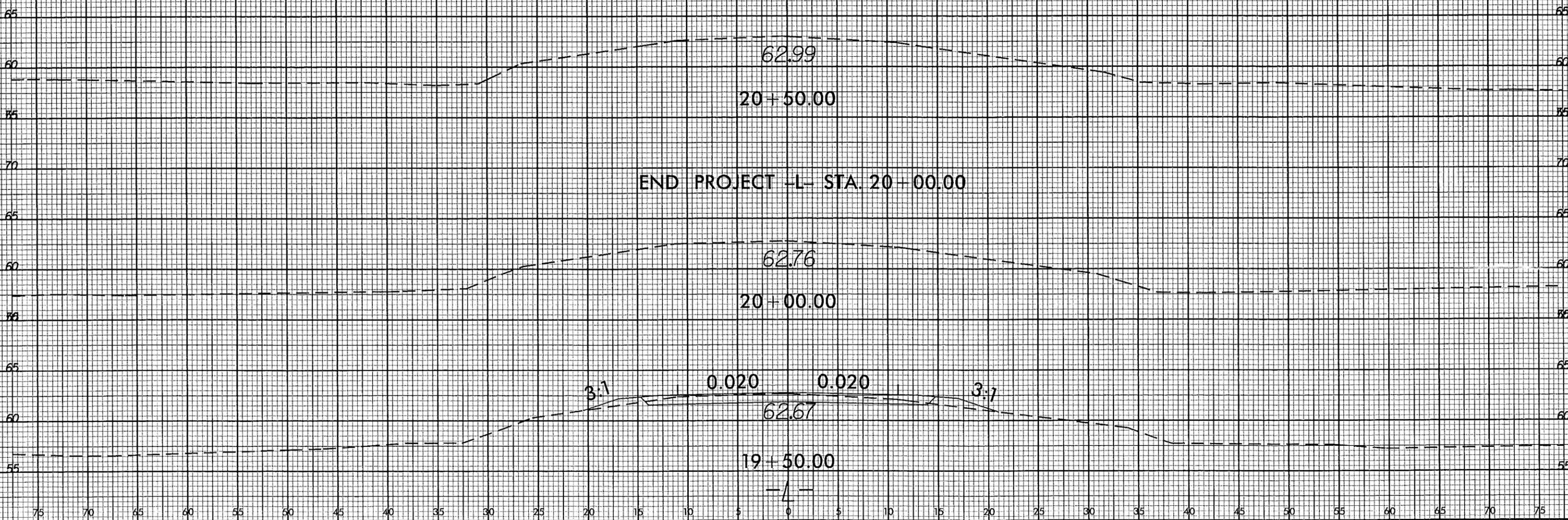
8/23/99



PROJ. REFERENCE NO.
B-4478

SHEET NO.
X-3

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



06 JUL 2002 06:23 4478.rdy xpl.dgn
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