



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

March 25, 2010

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

ATTN: Mr. Liz Hair
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permits 23 and 33** for the proposed replacement of Bridge No. 3 over the Nantahala River on US 19-74 in Swain County, Federal Aid Project No. BRNHF-0019(7); Division 14; TIP No. B-4286; WBS 33625.1.1

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace a 128-foot Bridge No. 3 over the Nantahala River on US 19-74, with a three span 160-foot bridge with pre-stressed concrete girders. There will be <0.01 acre of permanent stream impacts due to two bridge bents. There will also be 80 feet of temporary impacts due to a temporary causeway.

Please see enclosed copies of the Pre-Construction Notification (PCN) Form, Stormwater Management Plan, USFWS consultation letter, State Historic Preservation memo and Permit drawings. The Categorical Exclusion (CE) was completed on July 13, 2009, documents were distributed shortly thereafter. Additional copies are available upon request.

In a memo dated May 16, 2002 the Wildlife Resource Commission implemented a trout moratorium. Instream construction and construction within the 25-foot buffer is prohibited during the trout-spawning period of October 15 to April 15.

This project calls for a letting date of September 21, 2010 and a review date of August 3, 2010; however the let date may advance as additional funding becomes available.

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 Jennifer Harrod at (919) 431-6672.

Sincerely,



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

w/attachment

Mr. Brian Wrenn, NCDWQ (2 copies)
Ms. Marla Chambers, NCWRC
Ms. Marella Buncick, USFWS
Dr. Charles Nicholson, TVA

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. Setzer, P.E., Division 14 Engineer
Mr. Mark Davis, Division 14 Environmental Officer
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
Ms. Brenna Poole, Project Planning Engineer
Cc: File



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 33	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 3 over the Nantahala River on US 19-74
2b. County:	Swain
2c. Nearest municipality / town:	Hewitt
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no:	B-4286

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) 431-6672
3g. Fax no.:	(919) 431-2002
3h. Email address:	jwharrod@ncdot.gov

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

B. Project Information and Prior Project History	
1. Property Identification	
1a. Property identification no. (tax PIN or parcel ID):	<i>not applicable</i>
1b. Site coordinates (in decimal degrees):	Latitude: 35.30 (DD.DDDDDD) Longitude: - 83.65 (-DD.DDDDDD)
1c. Property size:	1,000.00'L x 100.00' W = 100,000 sq. ft. (100,000) / (43,650) = 2.29 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Nantahala River
2b. Water Quality Classification of nearest receiving water:	B;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: Forest Land - Rich cove and Urban Disturbed lands	
3b. List the total estimated acreage of all existing wetlands on the property: 0	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 152.11	
3d. Explain the purpose of the proposed project: To replace a structurally deficient bridge.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing a 128-foot bridge with a 160-foot, 3-span bridge on the existing alignment with an on-site detour. Standard road building equipment, such as trucks, dozers, and cranes will be used.	
4. Jurisdictional Determinations	
4a. Have jurisdictional wetland or stream determinations by the Corps or State been requested or obtained for this property / project (including all prior phases) in the past? Comments:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	<input type="checkbox"/> Preliminary <input type="checkbox"/> Final
4c. If yes, who delineated the jurisdictional areas? Name (if known):	Agency/Consultant Company: Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation.	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown
5b. If yes, explain in detail according to "help file" instructions.	
6. Future Project Plans	
6a. Is this a phased project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6b. If yes, explain.	

C. Proposed Impacts Inventory

1. Impacts Summary

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

- Wetlands Streams - tributaries Buffers
 Open Waters Pond Construction

2. Wetland Impacts

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

2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	2f. Area of impact (acres)
Site 1 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site 2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site 3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site 4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site 5 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site 6 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
2g. Total wetland impacts					X Permanent X Temporary

2h. Comments:

3. Stream Impacts

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

3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Bridge Bents	Nantahala River	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	100	<0.01
Site 2 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	Temp. Causeway	Nantahala River	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	100	80
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						<0.01 Perm 80 Temp

3i. Comments:

4. Open Water Impacts

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

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

4g. Comments:

5. Pond or Lake Construction

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

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

5g. Comments:

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

6. Buffer Impacts (for DWQ)

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

6a. Project is in which protected basin?			<input type="checkbox"/> Neuse <input type="checkbox"/> Catawba	<input type="checkbox"/> Tar-Pamlico <input type="checkbox"/> Randleman	<input 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 32 feet longer than the existing bridge; the proposed bridge will be at approximately the same grade as the existing structure; an on-site detour will be used, Run-off will be directed off the ends of the bridge into open roadway ditches, Approximately 285' of the - Y- line (Hillard Road) will be paved, and the shoulders grassed thus reducing erosion runoff.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. The two causeways will not be in place at the same time keeping the Nantahala River at least 50% open at all times. There is a trout moratorium from October 15 - April 15 and a Bat moratorium for tree cutting from April 15 - October 15. Design Standards in Sensitive Watersheds will also be impletmented for this project.		
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:	
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? Yes No

6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation. Calculate the amount of mitigation required.

Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1			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).

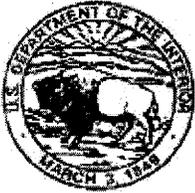
6h. Comments:

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: if yes, see attached permit drawings.	<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.	
2e. Who will be responsible for the review of the Stormwater Management Plan?	<input type="checkbox"/> Certified Local Government <input type="checkbox"/> DWQ Stormwater Program <input type="checkbox"/> DWQ 401 Unit
3. Certified Local Government Stormwater Review	
3a. In which local government's jurisdiction is this project?	not applicable
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Phase II <input type="checkbox"/> NSW <input type="checkbox"/> USMP <input type="checkbox"/> Water Supply Watershed <input type="checkbox"/> Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Coastal counties <input type="checkbox"/> HQW <input type="checkbox"/> ORW <input type="checkbox"/> Session Law 2006-246 <input type="checkbox"/> Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5b. Have all of the 401 Unit submittal requirements been met?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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

5. Endangered Species and Designated Critical Habitat (Corps Requirement)		
5a. Will this project occur in or near an area with federally protected species or habitat?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	<input 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? See attached USFWS Section 7 concurrence letter, dated December 18, 2008.		
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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation - see attached memo from NC SHPO, dated March 12, 2009.		
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		
Dr. Gregory J. Thorpe, Ph D Applicant/Agent's Printed Name	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	3.25.10 Date

FILE



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Asheville Field Office
160 Zillicoa Street
Asheville, North Carolina 28801

December 18 2008

Dr. Gregory J. Thorpe, Manager
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

Subject: Endangered Species Concurrence and Recommendations for the Replacement of Bridge No. 3 on U.S. Highway 19/17 over the Nantahala River, Swain County, North Carolina (TIP No. B-4286)

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*) and gray bat (*Myotis grisescens*). Our comments are provided in accordance with the National Environmental Policy Act (42 U.S.C. 4332(2)(c)); the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e); section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (Act); and the Migratory Bird Treaty Act (16 U.S.C. 703, et seq.) (MBTA).

Federally Listed Species –Mist-net surveys for the federally endangered Indiana bat (*Myotis sodalis*) and gray bat (*Myotis grisescens*) were conducted within the project area in 2002 and 2004 by BHE, Environmental Inc.; no rare bats were captured. Because suitable roosting habitat occurs within the project area, seasonal cutting restrictions are necessary in order to avoid take. Results from mist-net surveys for bats are only valid for 2 years. Therefore, another survey for these species should be conducted if any trees are to be removed for this project outside of the seasonal cutting restriction dates (October 15 through April 15). If these seasonal cutting restrictions are followed, we do not believe this project will have any effect on the Indiana bat or gray bat. Thus, the requirements under section 7(c) of the Act are fulfilled. 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 Nantahala River. 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. To provide for terrestrial wildlife passage, the new bridge design should span beyond the waterway so that unsubmerged land is also bridged. If bank stabilization is necessary, we recommend that the use of riprap be minimized and that a riprap-free buffer zone be maintained under the bridge to allow for wildlife movement. 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 areas.

Measures to control erosion and sediment should be in place prior to any ground-disturbing activities. Wet concrete should never be allowed to come into contact with the water. Equipment should be inspected daily to ensure that there are no equipment leaks that could enter the river. Construction material should not enter the water during demolition of the existing bridge and construction of the new bridge. In most cases we prefer that a bridge be replaced in place by constructing the new bridge through staged construction or by detouring traffic to existing off-site routes.

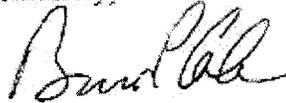
When reseeding/revegetating disturbed areas, we strongly recommend that only native plant species be used or, if an adequate seed source cannot be found, that noninvasive species (such as annual rye) be used until native plants can reestablish themselves. While many of the exotic plant species typically 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 Sericca 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 MBTA (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 (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. 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 Mr. Troy Wilson of our staff at 828/258-3939, Ext. 226. In any future correspondence concerning this project, please reference our Log Number 4-2-09-038.

Sincerely,



Brian P. Cole
Field Supervisor

cc:

- Mr. David Baker, Asheville Regulatory Field Office, U.S. Army Corps of Engineers, 151 Patton Avenue, Room 208, Asheville, NC 28801-5006
- Ms. Marla J. Chambers, Western NCDOT Permit Coordinator, North Carolina Wildlife Resources Commission, 12275 Swift Road, Oakboro, NC 28129
- Mr. David Harris, Roadside Environmental Unit, North Carolina Department of Transportation, 1557 Mail Service Center, Raleigh, NC 27699-1557
- Mr. Brian Wrenn, North Carolina Division of Water Quality, Central Office, 2321 Crabtree Boulevard, Suite 250, Raleigh, NC 27604
- Ms. Christy Wright, Project Development - Bridge Unit, North Carolina Department of Transportation, 1551 Mail Service Center, Raleigh, NC 27699-1551



North Carolina Department of Cultural Resources
State Historic Preservation Office

Peter B. Sandbeck, Administrator

Beverly Eaves Perdue, Governor
Linda A. Carlisle, Secretary
Jeffrey J. Crow, Deputy Secretary

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

March 12, 2009

MEMORANDUM

TO: Matt Wilkerson
Office of Human Environment
NCDOT Division of Highways

FROM: Peter Sandbeck *PS for Peter Sandbeck*

SUBJECT: Bridge 3 on US 17/74 over the Nantahala River, B-4286, Swain County, ER 02-8535

Thank you for your letter of February 6, 2009, transmitting the archaeological survey report by TRC Environmental Corporation for the above project. The report meets our guidelines and those of the Secretary of the Interior.

During the course of the investigation, one site, 31SW577, was located within the project area. For purposes of compliance with Section 106 of the National Historic Preservation Act, we concur that the following property is eligible for listing in the National Register of Historic Places under criterion D:

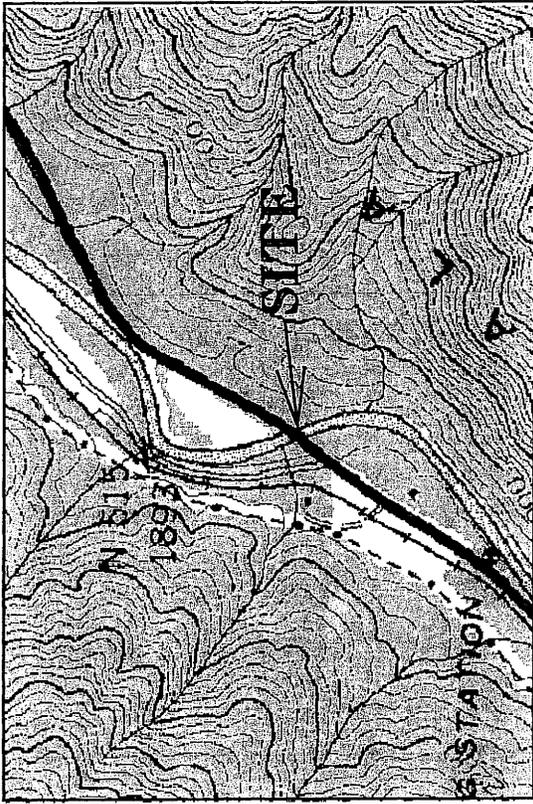
31SW577 31SW577 contains intact buried cultural remains dating to the Middle to Late Archaic period, which have the potential to provide significant data concerning local and regional prehistory.

Because of the depth of the deposits at 31SW577, and the relatively shallow and temporary construction proposed at this location in association with the replacement of Bridge 3, we concur that the project will have no effect on 31SW577, and with the recommendation that the site be preserved in place. TRC recommends that no further archaeological investigation be undertaken in connection with this project as long as project plans entail a temporary road and bridge with minimal subsurface impact (50 cm or less) for their construction and removal. We concur with this recommendation as well.

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 919/807-6579. In all future communication concerning this project, please cite the above referenced tracking number.

cc: Paul Webb and Tasha Benyshek, TRC



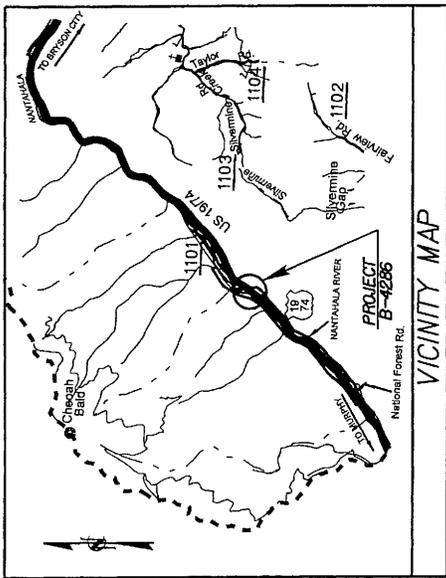
HEWITT QUAD



NCDOT

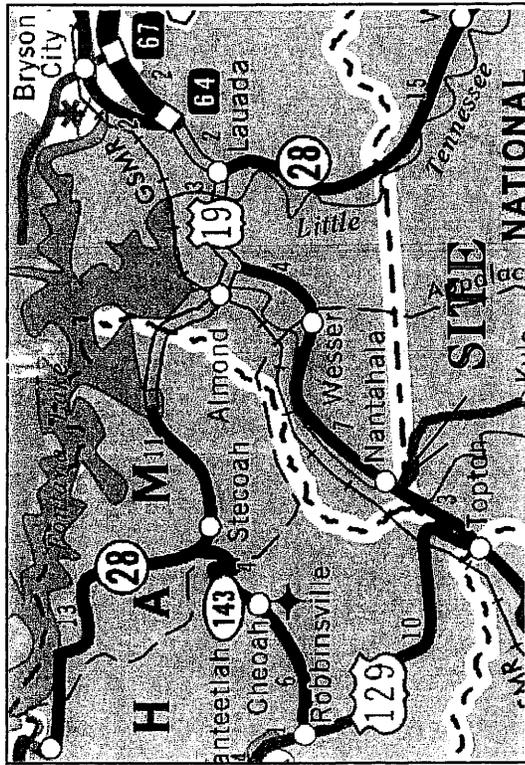
DIVISION OF HIGHWAYS
 SWAIN COUNTY
 PROJECT: 33625.1.1 (B-4286)
 BRIDGE NO. 3 OVER
 THE NANTAHALA RIVER
 ON US 19-74

SHEET OF Permit Drawing 12/30/09
 Sheet 1 of 8



VICINITY MAP

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES



VICINITY MAPS

PROPERTY OWNERS
NAMES AND ADDRESSES

Kevin and Julie Coffee 1337 Avacodo Isle Ft. Lauderdale FL 33315

US Forestry Service 160 Zillicoa Street, Suite A, Asheville, NC 28801

NCDOT
DIVISION OF HIGHWAYS
SWAIN COUNTY
PROJECT: 33625.1.1 (B-4286)
BRIDGE NO. 3 OVER
THE NANTAHALA RIVER
ON US 19-74

SHEET OF 12 / 30 / 09

Permit Drawing
Sheet 2 of 8

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS							
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)			
1	16 to 17	Temp. Causeway						0.13						80	
1	16 to 17	Bridge bents								<0.01					
TOTALS:															80

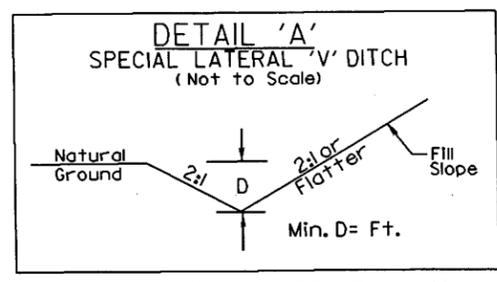
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SWAIN COUNTY
WBS - 33625.1.1 (B-4286)

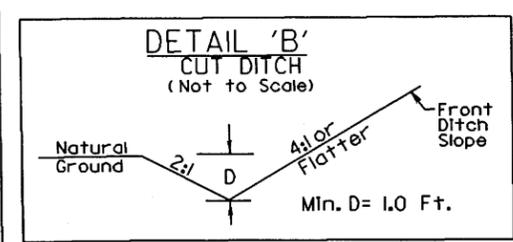
1/4/2010

ATN Revised 3/31/05

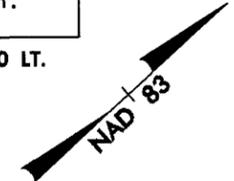
PROJECT REFERENCE NO. B-4286	SHEET NO. 4
Roadway Design Engineer	Hydraulic Engineer
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



FROM -DET- STA. 17+57 TO STA. 19+92 RT.



FROM -L- STA. 19+51 TO STA. 19+90 LT.

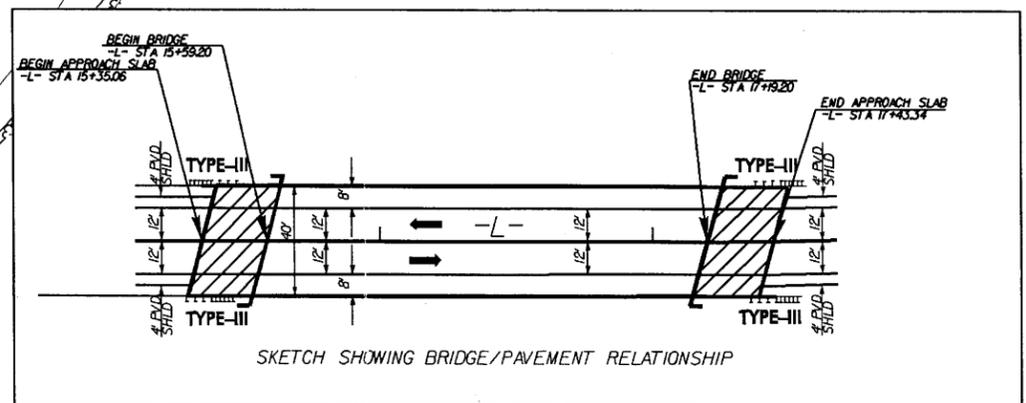
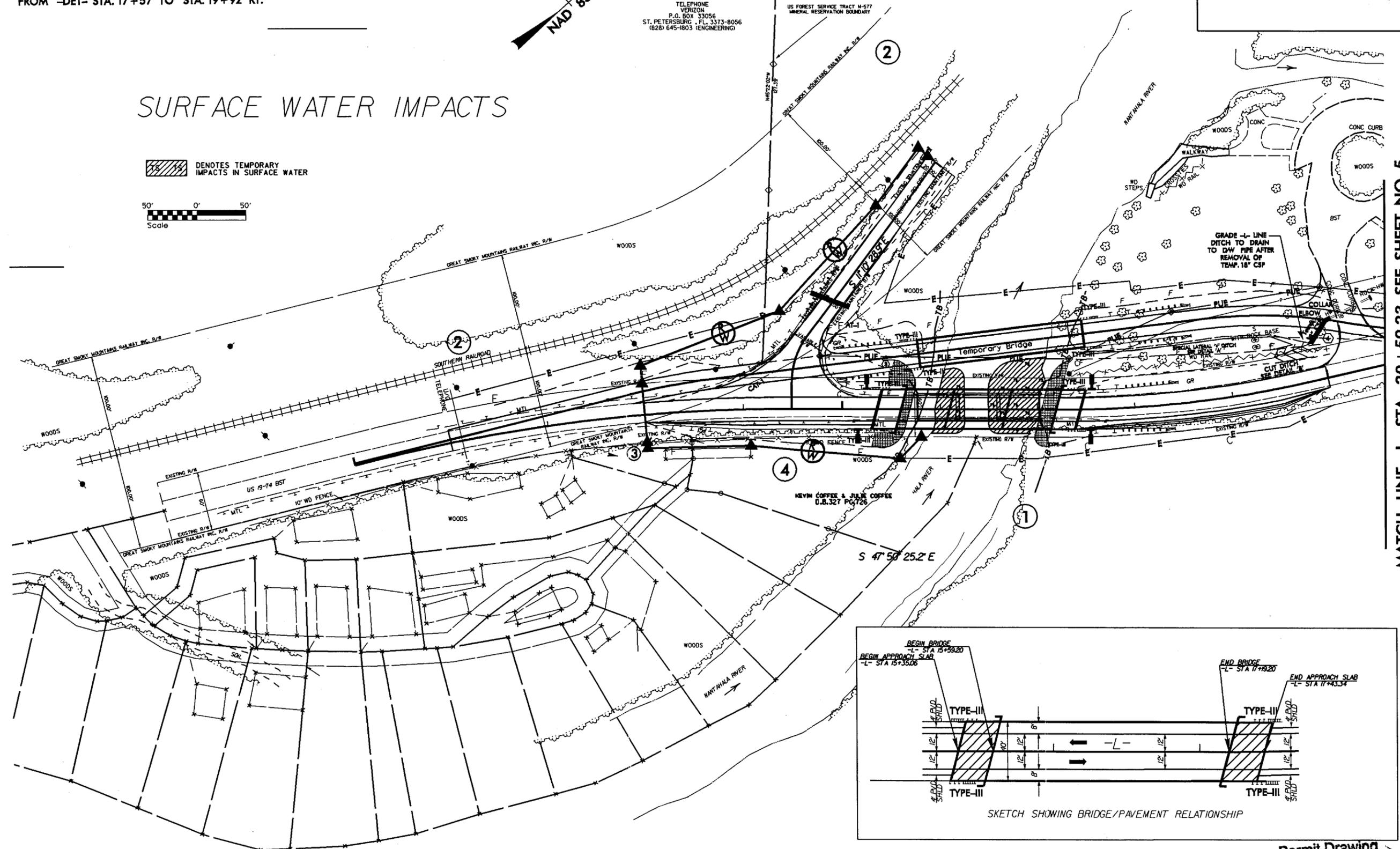
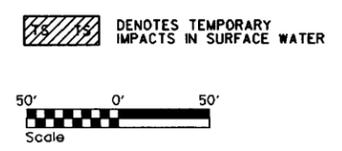


POWER
DUKE POWER
43 EVERETT ST.
BRYSON CITY N.C. 28713
(828) 488-216

TELEPHONE
VERIZON
P.O. BOX 33056
ST. PETERSBURG, FL 33713-8056
(828) 645-1803 (ENGINEERING)

FOR PROFILES SEE SHEET 6

SURFACE WATER IMPACTS



REVISIONS
NOTE: Added Permanent Utility Easement and revised Temporary Construction Easement along west side of the detour bridge. 1-14-10 MJJ

8/17/99
22 JAN-2010 08:22 PM T:\Projects\Environmental\Drawings\4286_hyd_perm_psh4.dgn
At:Hyd.audica\1111111111

MATCH LINE -L- STA. 20+59.23 SEE SHEET NO. 5

1,910

1,910

1,900

1,900

1,890

1,890

1,880

1,880

14

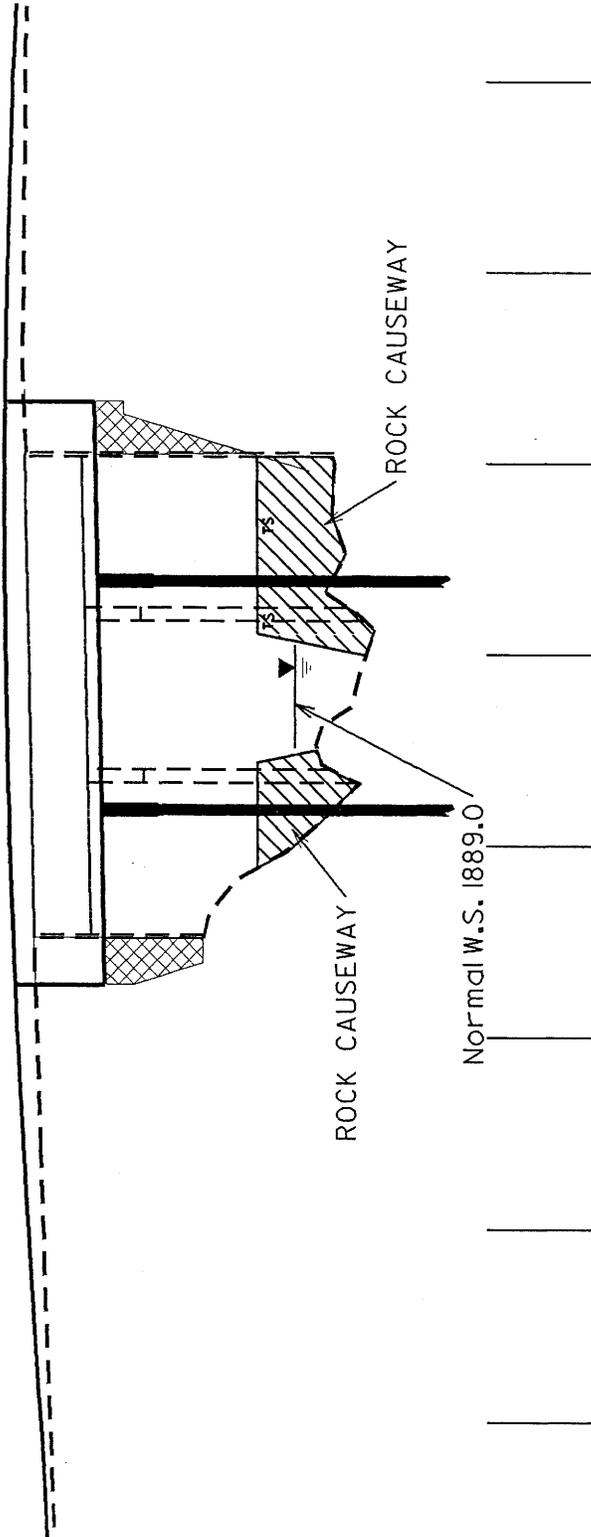
15

16

17

18

Station 16+39.2
3-Span 160' Concrete Girder Bridge



PROFILE

NCDOT

DIVISION OF HIGHWAYS

SWAIN COUNTY

PROJECT: 33625.1.1 (B-4286)

BRIDGE NO. 3 OVER

THE NANTAHALA RIVER

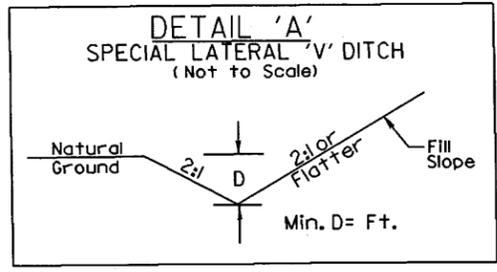
ON US 19-74

SHEET

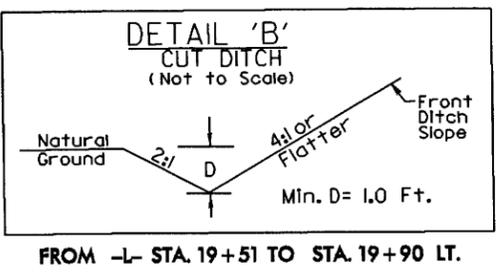
OF

12 / 30 / 09

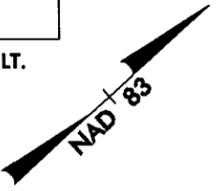
PROJECT REFERENCE NO. B-4286	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



FROM -DET- STA. 17+57 TO STA. 19+92 RT.



FROM -L- STA. 19+51 TO STA. 19+90 LT.



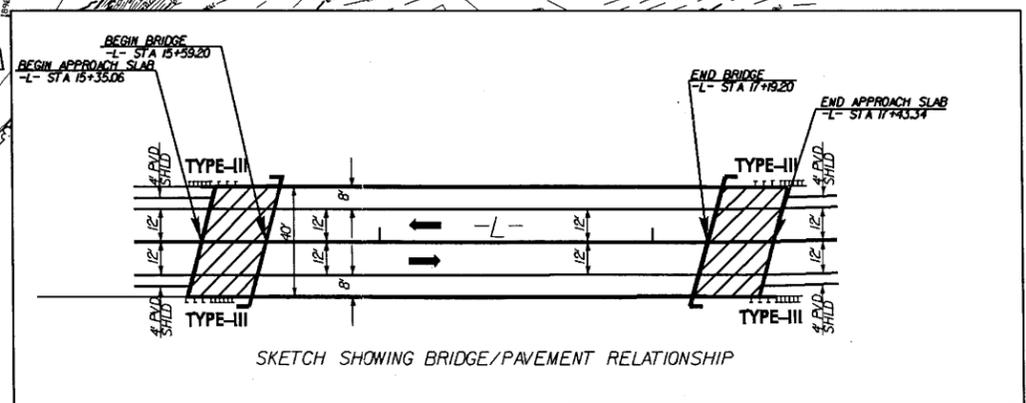
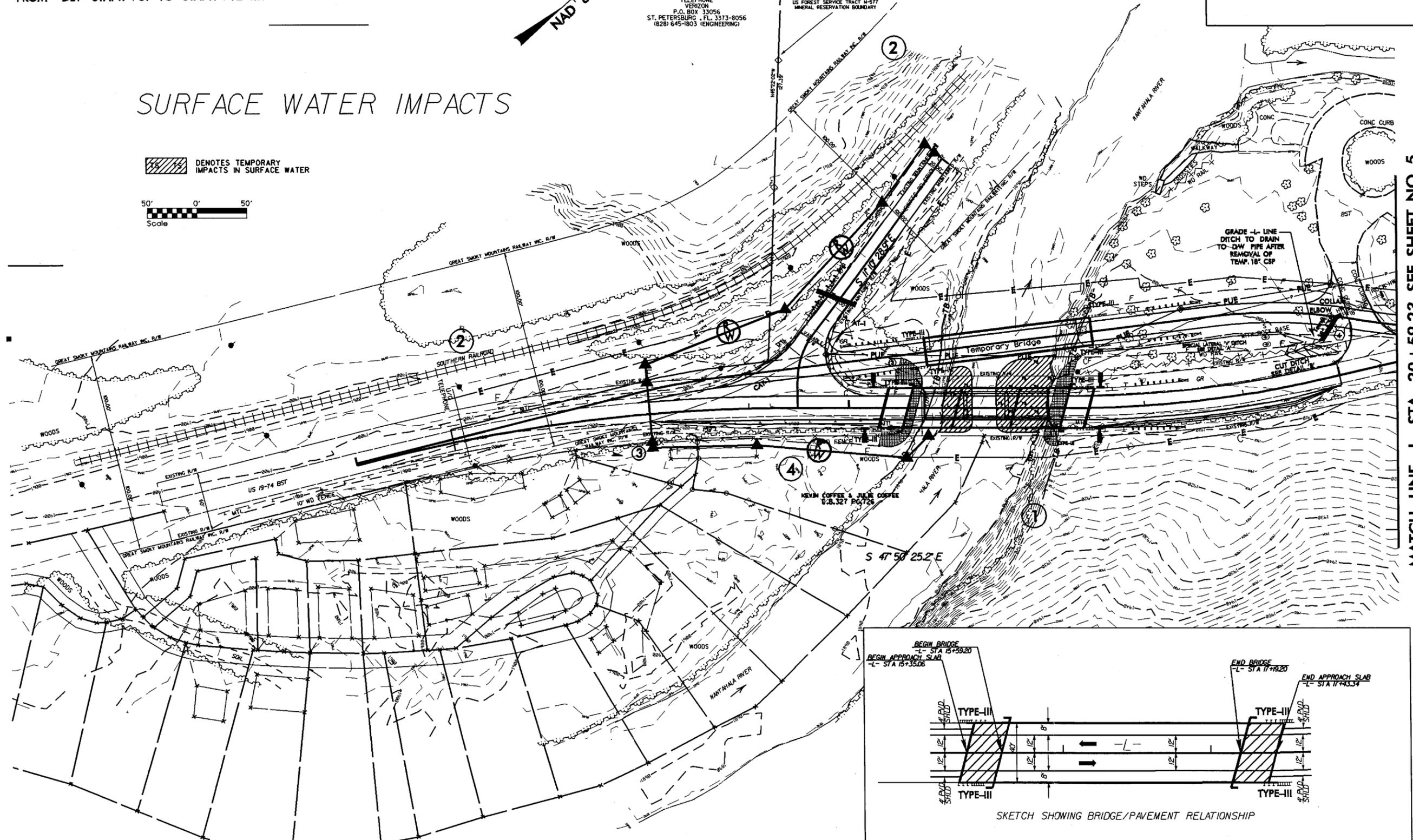
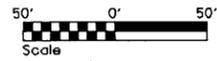
POWER
DUKE POWER
43 EVERETT ST.
BRYSON CITY, N.C. 28713
(828) 488-216

TELEPHONE
VERIZON
P.O. BOX 33056
ST. PETERSBURG, FL 33713-8056
(828) 645-1803 (ENGINEERING)

FOR PROFILES SEE SHEET 6

SURFACE WATER IMPACTS

DENOTES TEMPORARY IMPACTS IN SURFACE WATER



REVISIONS
NOTE: Added Permanent Utility Easement and revised Temporary Construction Easement along west side of the detour bridge. 1-14-10 MJJ

MATCH LINE -L- STA. 20+59.23 SEE SHEET NO. 5

5/28/99

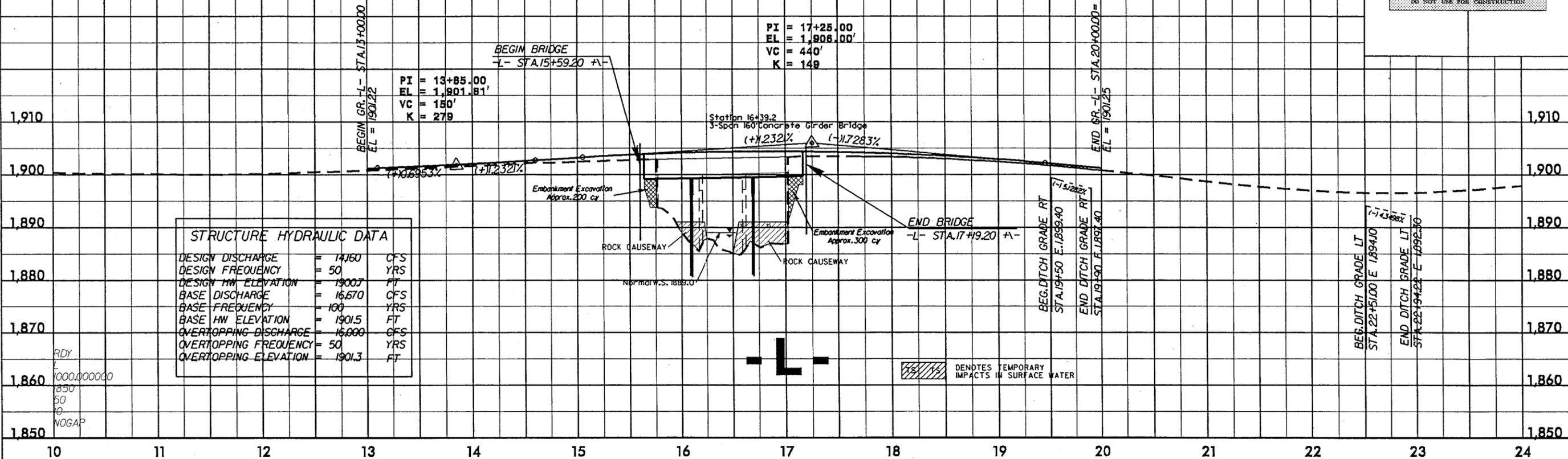
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BM#1 8" SPIKE IN BASE OF 48" POPLAR
-BL- STA.5+57.73
OFFSET 81.39' LT. ELEV. = 1897.51'
LOCATED N23°03'18"W 99.78' FROM (BL1)

BM#2 8" SPIKE IN BASE OF 10" WHITE PINE
-BL- STA.12+09.23
OFFSET 46.87' RT. ELEV. = 1907.45'
LOCATED S31°33'59"E 47.86' FROM (BL3)

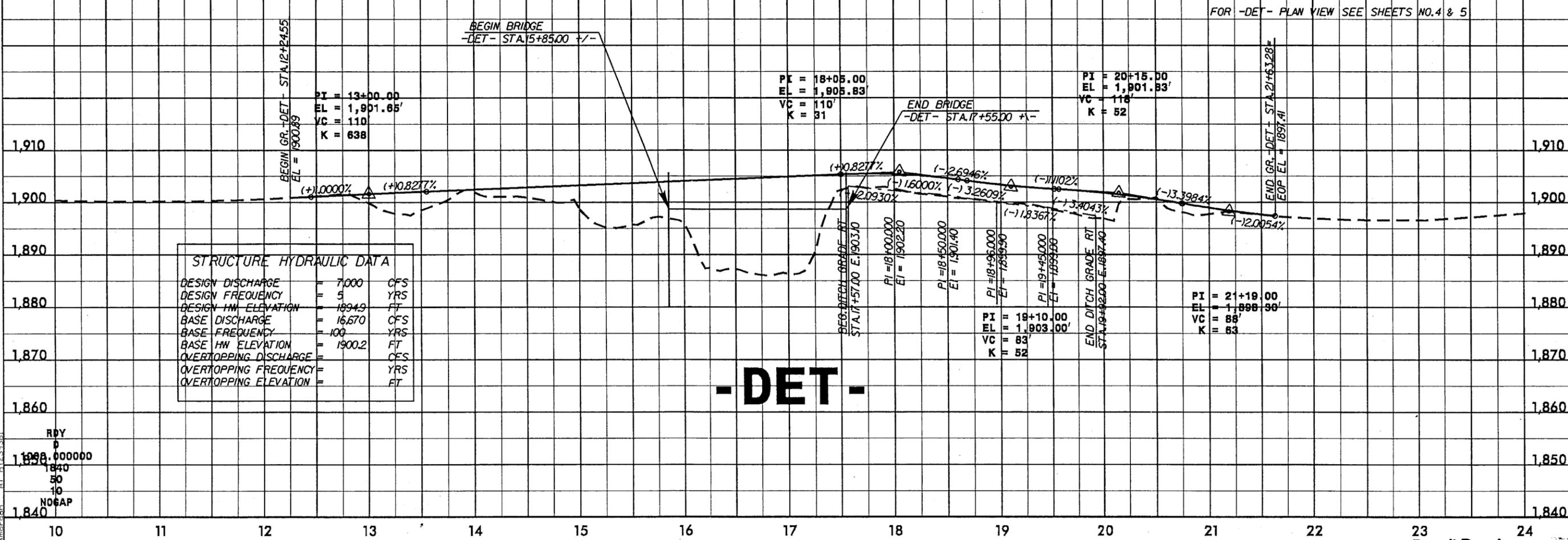
BM#3 8" SPIKE IN BASE OF 24" POPLAR
ELEV. = 1905.63'
LOCATED N18°02'02"E 36.16' FROM (BL5)

FOR -L- PLAN VIEW SEE SHEETS NO.4 & 5



DESIGN DISCHARGE	= 14160	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 1900.7	FT
BASE DISCHARGE	= 16,670	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1901.5	FT
OVERTOPPING DISCHARGE	= 16,000	CFS
OVERTOPPING FREQUENCY	= 50	YRS
OVERTOPPING ELEVATION	= 1901.3	FT

FOR -DET- PLAN VIEW SEE SHEETS NO.4 & 5



DESIGN DISCHARGE	= 7,000	CFS
DESIGN FREQUENCY	= 5	YRS
DESIGN HW ELEVATION	= 1894.9	FT
BASE DISCHARGE	= 16,670	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1900.2	FT
OVERTOPPING DISCHARGE	=	CFS
OVERTOPPING FREQUENCY	=	YRS
OVERTOPPING ELEVATION	=	FT

-DET-

06-JAN-2010 14:28
 r:\hydraulic\p\m\13\environmental\drawings\b4286_hyd_prm_pfl.dgn
 AT HY2333381

STORMWATER MANAGEMENT PLAN

NCDOT Project 33625.1.1 (B-4286)

Date: 01/05/10

Swain County

Bridge No. 3 on US 19-74 over the Nantahala River

Hydraulics Project Manager: Andrew Nottingham, PE

PROJECT DESCRIPTION

The NC Department of Transportation proposes to replace bridge no. 3 with a bridge. The existing structure is a three span bridge 128 feet long with a clear roadway width of 24'. The proposed structure will be a three span bridge with pre-stressed concrete girders totaling 160 feet and a clear roadway width of 40'. US 19-74 is a rural major collector route with a 20' pavement width and variable width grassed shoulders. The proposed typical roadway will have a 24' pavement width and 8' grassed shoulders, 4' of which will be paved. Traffic will be detoured on-site during construction along a 170' temporary bridge just north and downstream of the existing bridge. Roadway improvements will result in an additional impervious area of approximately 4670 square feet (0.11 acre).

ENVIRONMENTAL DESCRIPTION

The project is located in the Little Tennessee River Basin in the mountainous physiographic province. The normal depth of South Fork New River at the site is 4 feet at the deepest point. Flows in the river are regulated in part by releases from Nantahala Lake upstream of the project. The best usage classification is B, Trout. The surrounding area is generally mountainous, with natural ground elevations of approximately 1900. The land usage is primarily forest. This portion of the river is popular for outdoor recreation such as rafting, canoeing, and fishing.

BEST MANAGEMENT PRACTICES

Best management practices are non-structural, and are designed to limit impacts and direct storm-water runoff away from receiving streams.

- The roadway typical section will match the existing roadway section, which consists of grassed shoulders, fill slopes and grass lined roadway ditches.
- The new bridge will not drain directly to the river through the deck. Run-off will be directed off the ends of the bridge into open roadway ditches.
- Approximately 285' of the -Y- line (Hillard Road) will be paved, and the shoulders grassed. This will reduce erosion runoff from this portion of the road. The addition of impervious area was not included above for the -Y- line due to the existing hard-pack gravel surface.

09/08/09

See Sheet 1-A For Index of Sheets

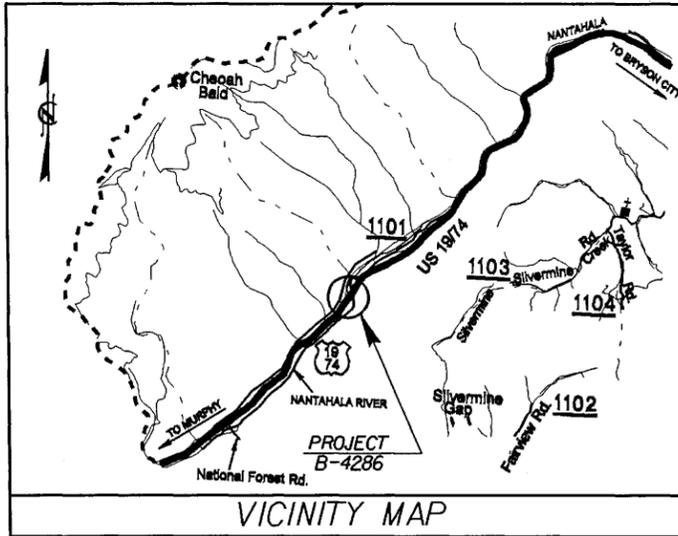
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SWAIN COUNTY

**LOCATION: BRIDGE NO. 3 ON US 1974 OVER THE
NANTAHALA RIVER**

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

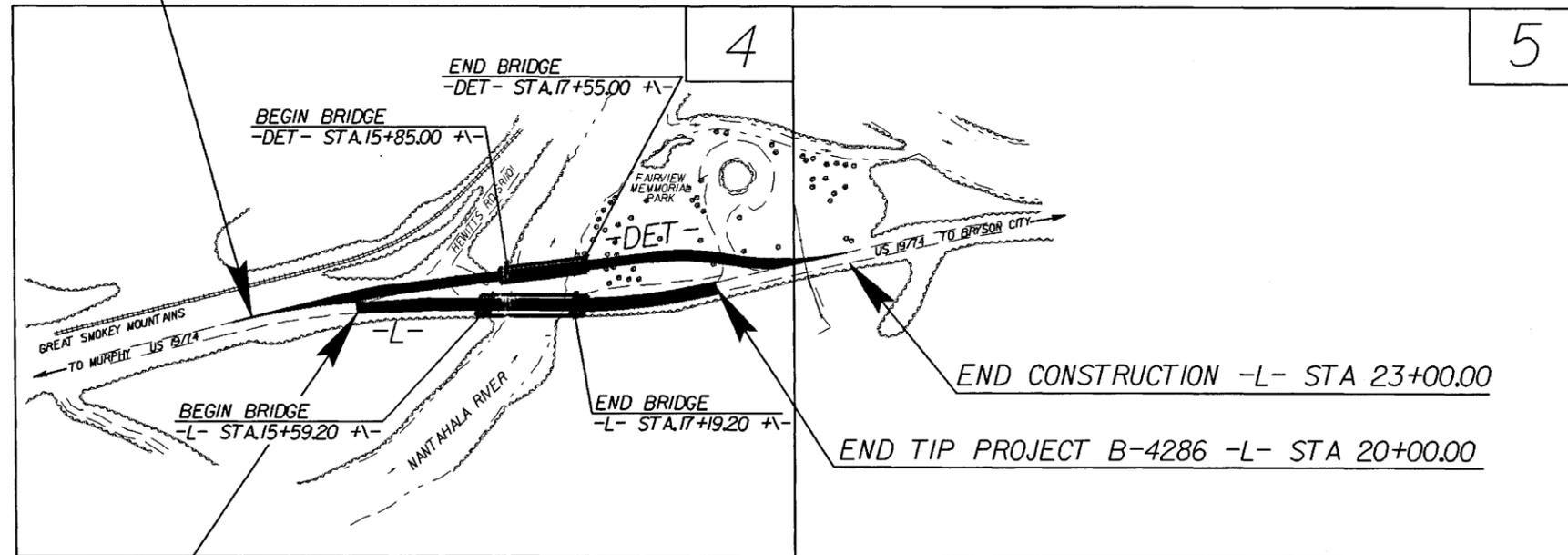
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4286	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33625.1.1	BRNH-19(7)	P.E.	
33625.2.1	BRNH-19(7)	RAW, UTIL.	



THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES



BEGIN CONSTRUCTION -L- STA.11+00.00

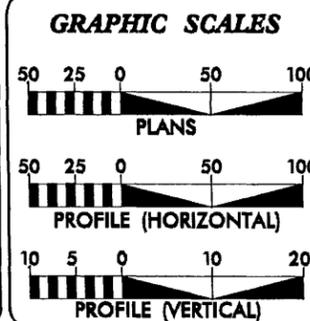


BEGIN TIP PROJECT B-4286 -L- STA 13+00.00

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2007 =	5,400
ADT 2027 =	8,733
DHV =	10 %
D =	60 %
T =	13 % *
V =	50 MPH
FUNC CLASS =	ARTERIAL
* TTST 8% DUAL 5%	

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-4286	=	0.103 MILES
LENGTH OF STRUCTURE TIP PROJECT B-4286	=	0.030 MILES
TOTAL LENGTH OF TIP PROJECT B-4286	=	0.133 MILES

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

2002 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: SEPTEMBER 02, 2009	G.E. BREW, PE PROJECT ENGINEER
LETTING DATE: SEPTEMBER 21, 2010	D. WILLIAMS PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE DESIGN ENGINEER: _____ P.E.

**DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION**

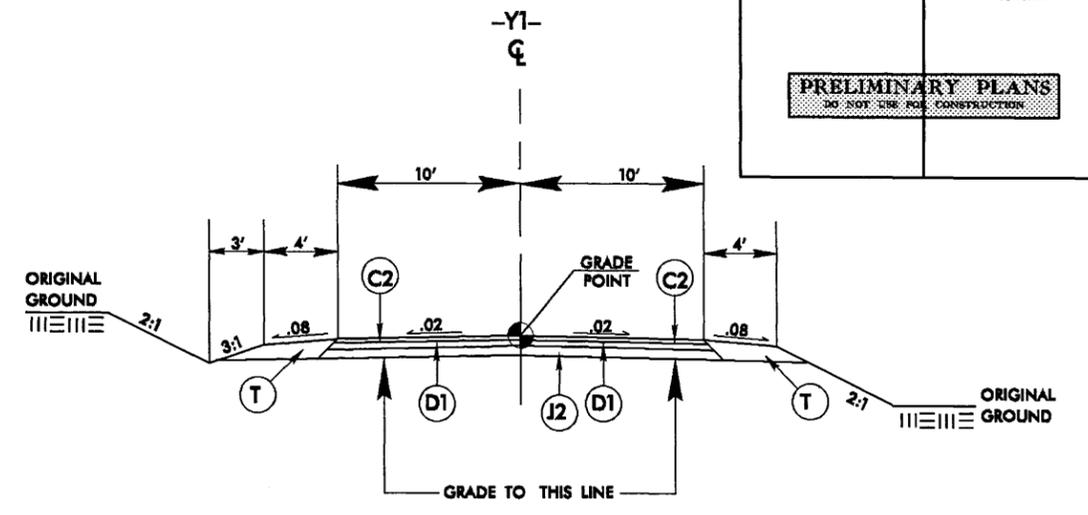
APPROVED: _____ DATE: _____

F:\JAN-2010_0850
V:\PROJECTS\104286.rdy_tsh.dgn
USER:ERNAME

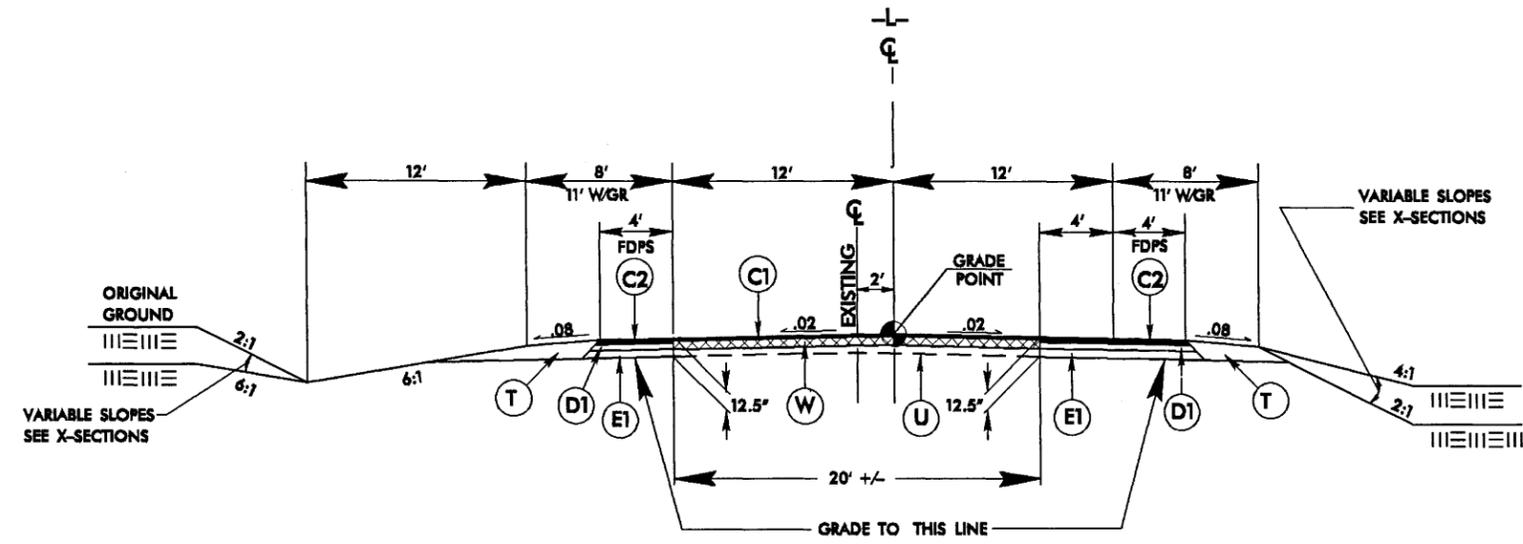
FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.	E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 6 1/2" IN DEPTH.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	J1	PROP. 10" AGGREGATE BASE COURSE.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.	J2	PROP. 8" AGGREGATE BASE COURSE.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/4" IN DEPTH OR GREATER THAN 4" IN DEPTH.	T	EARTH MATERIAL.
E1	PROP. APPROX. 5.5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 827 LBS. PER SQ. YD.	U	EXISTING PAVEMENT.
		W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET NO. 2A)

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE
NOTE: FDPS = FULL DEPTH PAVED SHOULDER

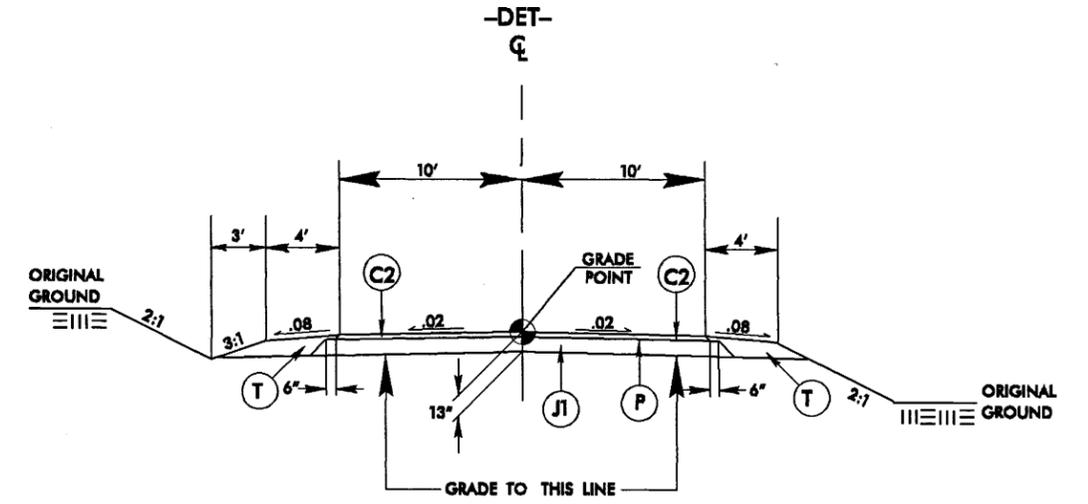


TYPICAL SECTION NO. 4



TYPICAL SECTION NO. 1

-L- STA. 13+00.00 TO STA. 15+10.00
-L- STA. 17+70.00 TO STA. 20+00.00



TYPICAL SECTION NO. 2

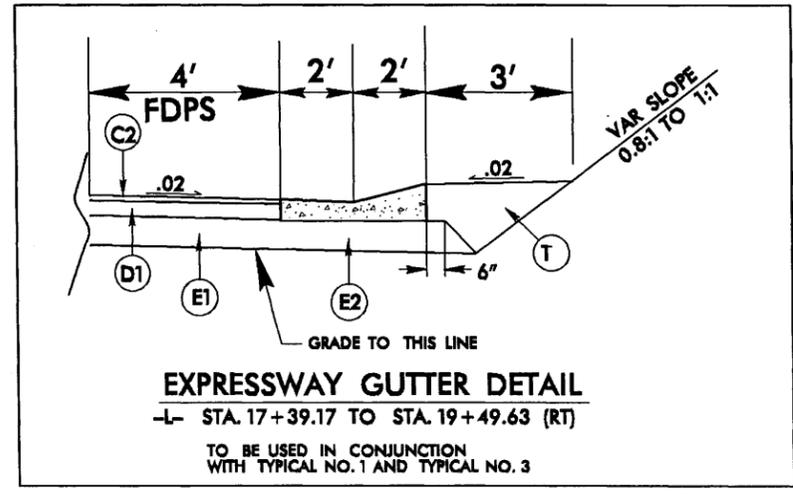
TRANSITION FROM EXISTING TO T.S. NO. 2: -DET- 11+00.00 TO 12+90.00

USE TYPICAL SECTION NO. 2 AS FOLLOWS

-DET- 12+90.00 TO 15+85.00 +/- (BEGIN BRIDGE)

-DET- 17+55.00 +/- (END BRIDGE) TO 21+61.38

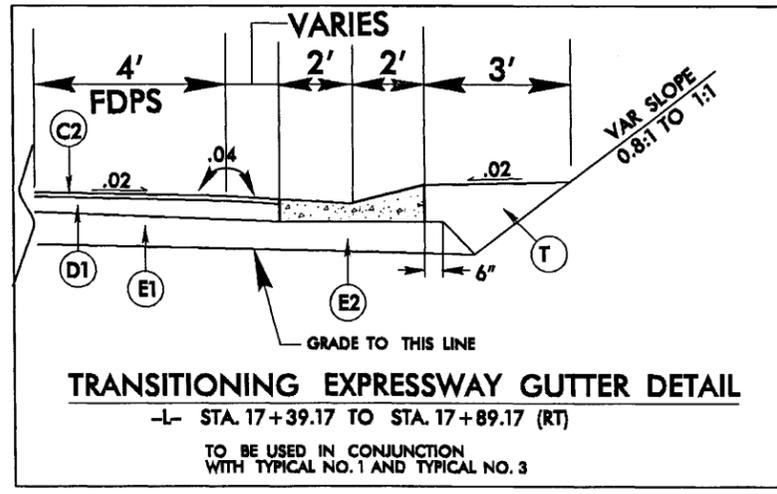
TRANSITION FROM T.S. NO. 2 TO EXISTING: -DET- 21+61.38 TO 22+60.00



EXPRESSWAY GUTTER DETAIL

-L- STA. 17+39.17 TO STA. 19+49.63 (RT)

TO BE USED IN CONJUNCTION WITH TYPICAL NO. 1 AND TYPICAL NO. 3



TRANSITIONING EXPRESSWAY GUTTER DETAIL

-L- STA. 17+39.17 TO STA. 17+89.17 (RT)

TO BE USED IN CONJUNCTION WITH TYPICAL NO. 1 AND TYPICAL NO. 3

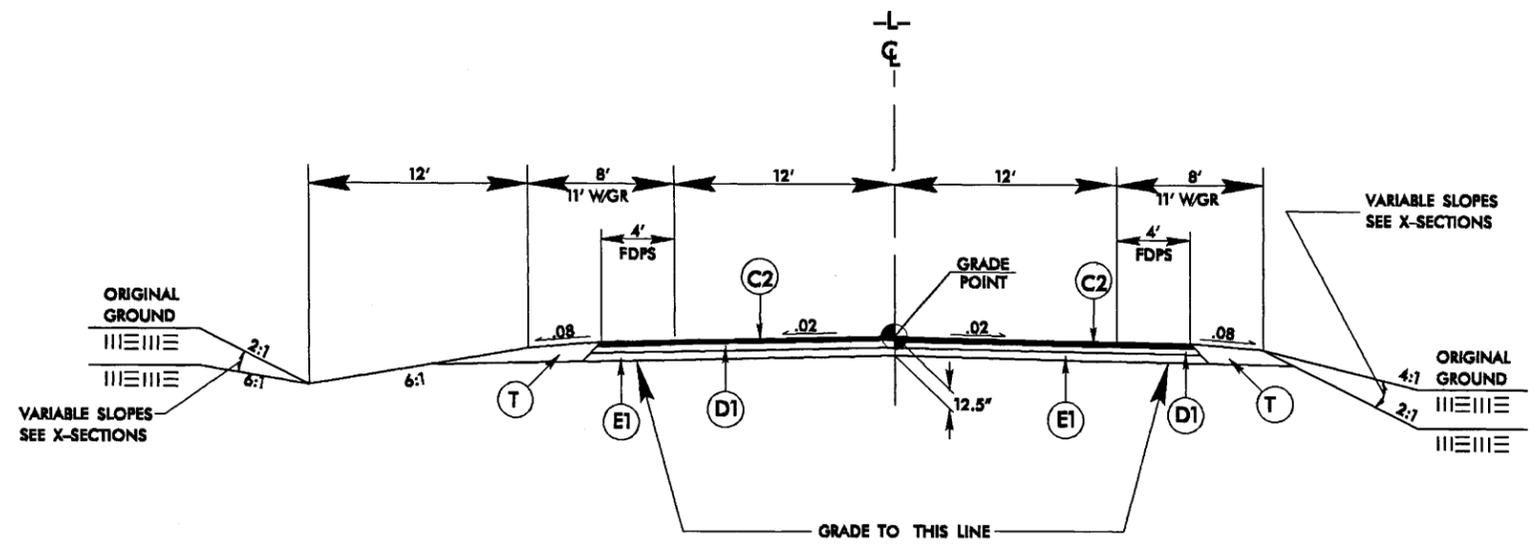
6/2/99
5:IAN-2010_08451
3:Roadway\Projects\B4286_rdy_tup.dgn
1:USER\NAME

6/2/99

PROJECT REFERENCE NO. B-4286	SHEET NO. 2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	

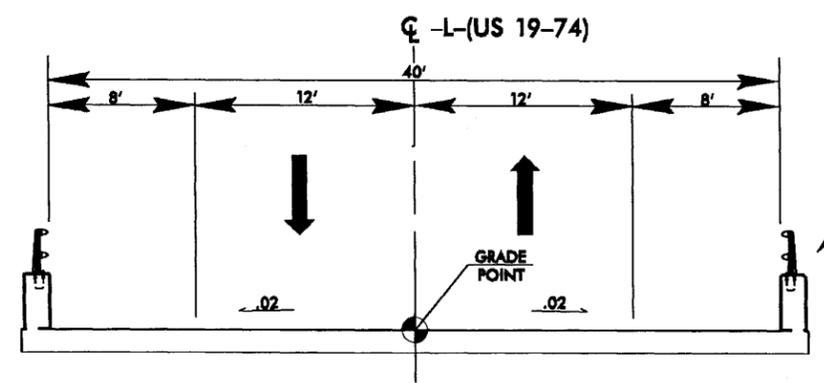
FINAL PAVEMENT DESIGN	
C1	1.5" TYPE S9.5B,
C2	3" TYPE S9.5B,
C3	VAR. DEPTH TYPE S9.5B,
D1	4" TYPE I19.0B
D2	VAR. DEPTH TYPE I19.0B
E1	5.5" TYPE B25.0B,
E2	VAR. DEPTH TYPE B25.0B
J1	10" ABC
P	PRIME COAT
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE
 NOTE: FDPS = FULL DEPTH PAVED SHOULDER



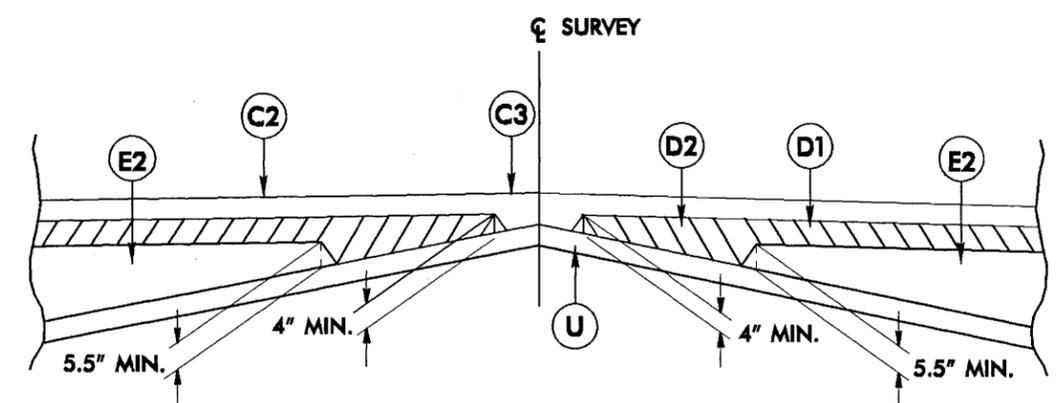
TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AS FOLLOWS
 - STA. 15+10.00 TO STA. 15+59.20+/- (BEGIN BRIDGE)
 - STA. 17+19.20+/- (END BRIDGE) TO STA. 17+70.00



TYPICAL SECTION ON STRUCTURE
 - STA. 15+59.20 (BEGIN BRIDGE) TO - STA. 17+19.20 (END BRIDGE)

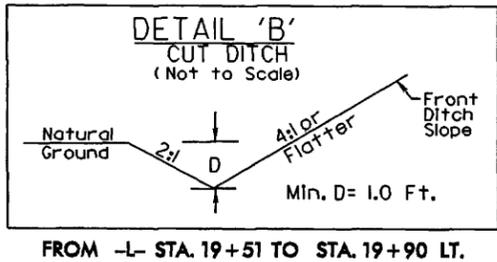
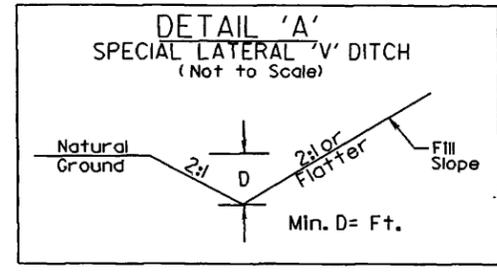
SPECIAL RAIL WITH SIMULATED STONE FACE AS NEGOTIATED W/USFS



Detail Showing Method of Wedging

I:\AN-200_08451\Roadway\p4286_rdy_typ.dgn
 \$USER\$

PROJECT REFERENCE NO. B-4286		SHEET NO. 4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			



FROM -DET- STA. 17+57 TO STA. 19+92 RT.

-DET-	-L-	-L-	-DET-
PI Sta 13+34.65	PI Sta 12+37.05	PI Sta 18+52.50	PI Sta 19+70.03
$\Delta = 7^{\circ}00'00.0"$ (RT)	$\Delta = 14^{\circ}02'16.80"$ (RT)	$\Delta = 12^{\circ}50'31.2"$ (LT)	$\Delta = 14^{\circ}11'12.3"$ (RT)
$D = 7^{\circ}50'55.5"$	$D = 3^{\circ}23'39.48"$	$D = 5^{\circ}03'41.27"$	$D = 7^{\circ}50'55.5"$
$L = 89.19'$	$L = 413.58'$	$L = 253.72'$	$L = 180.75'$
$T = 44.65'$	$T = 207.83'$	$T = 127.39'$	$T = 90.84'$
$R = 730.00'$	$R = 1688.00'$	$R = 1132.00'$	$R = 730.00'$

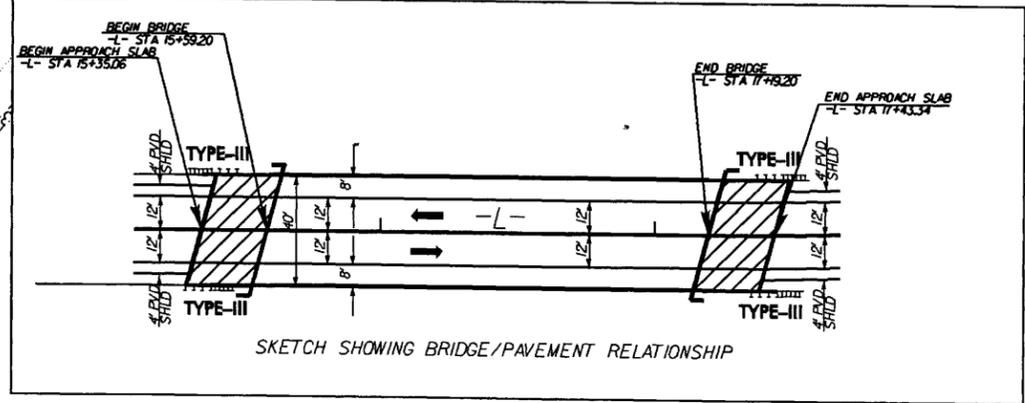
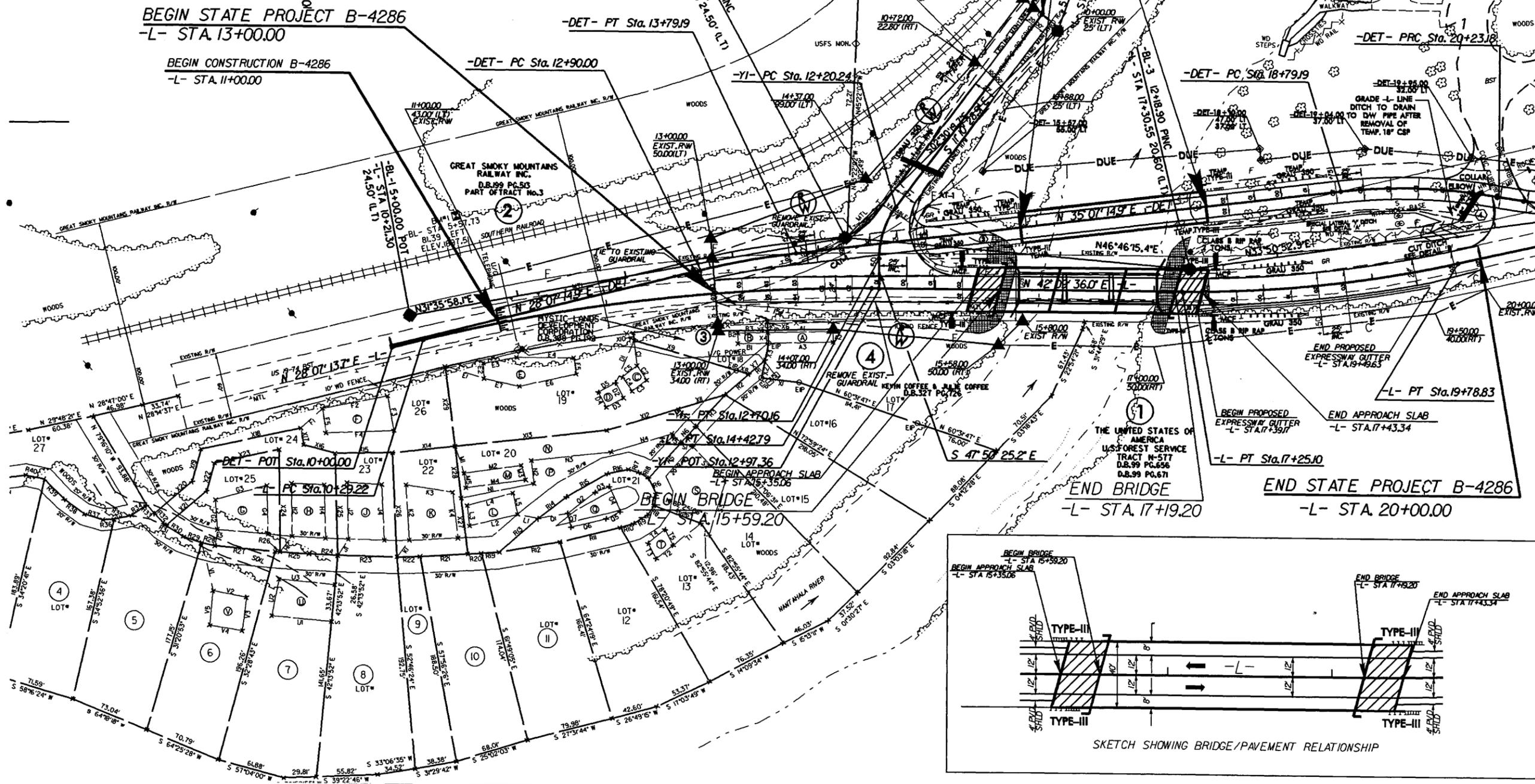
① THE UNITED STATES OF AMERICA
U.S. FOREST SERVICE
TRACT N-577
D.B.99 PG.656
D.B.99 PG.671

POWER
DUKE POWER
43 EVERETT ST.
BRYSON CITY N.C. 28715
(828) 488-216

TELEPHONE
VERIZON
P.O. BOX 33056
ST. PETERSBURG FL 33733-8056
(828) 645-1803 (ENGINEERING)

① THE UNITED STATES OF AMERICA
U.S. FOREST SERVICE
TRACT N-577 MINERAL RESERVATION
D.B.99 PG.656
D.B.99 PG.671

FOR PROFILES SEE SHEET 6



REVISIONS
NOTE: Added Permanent Utility Easement and Revised Temporary Construction Easement along west side of the detour bridge. 1-14-10 MJJ

MATCH LINE -L- STA. 20 + 59.23 SEE SHEET NO. 5

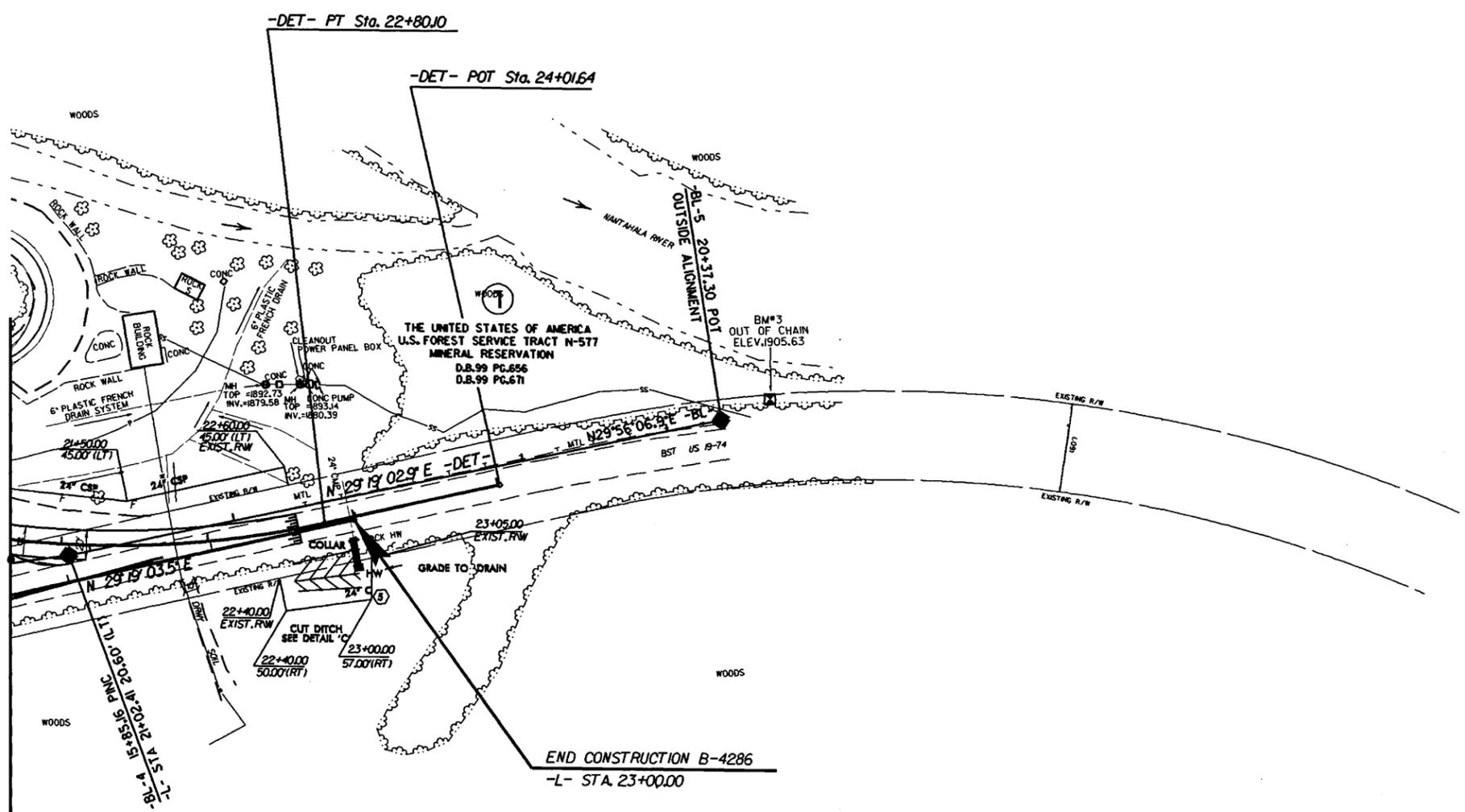
5-JAN-2010 08:52
S:\PROJECTS\4286\4286.dwg -psd-sh-4.dgn
8/17/99

8/17/99

PROJECT REFERENCE NO. B-4286	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

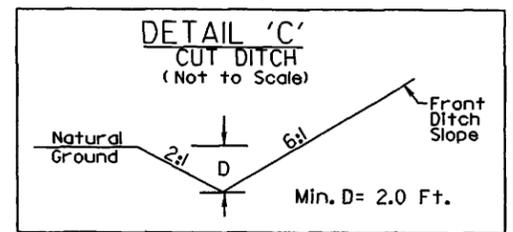
FOR PROFILES SEE SHEET 6

MATCH LINE -L- STA. 20+59.23 SEE SHEET NO. 4



REVISIONS

-DET-
 PI Sta 21+88.59
 $\Delta = 19^{\circ} 59' 24.3" (LT)$
 $D = 7^{\circ} 50' 55.5"$
 $L = 254.69'$
 $T = 128.65'$
 $R = 730.00'$



FROM -L- STA. 22+51.00 TO STA. 22+94.22 RT.

15-JAN-2010 08:52
 R:\VCS\BVA\PROJECTS\B-4286-rdy-psh5.dgn
 DISFRANCHISE

5/28/99

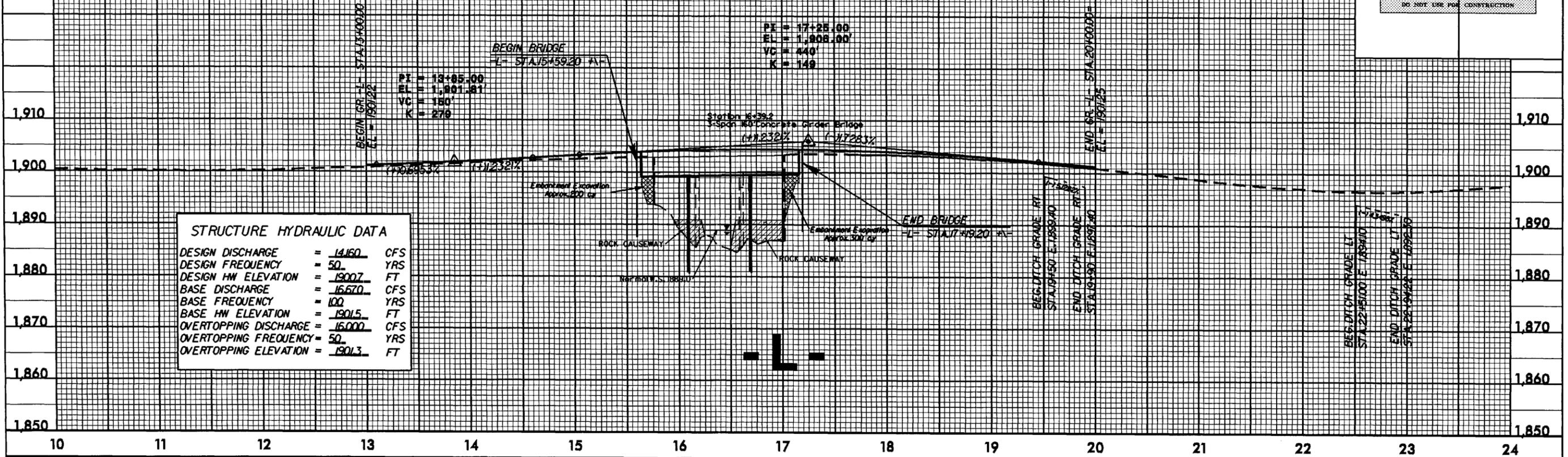
BM#1 8" SPIKE IN BASE OF 48" POPLAR
-BL- STA.5+57.73
OFFSET 81.39' LT. ELEV. = 1897.51'
LOCATED N23°03'18"W 997.8' FROM (BL1)

BM#2 8" SPIKE IN BASE OF 10" WHITE PINE
-BL- STA.12+09.23
OFFSET 46.87' RT. ELEV. = 1907.45'
LOCATED S31°33'59"E 47.86' FROM (BL3)

BM#3 8" SPIKE IN BASE OF 24" POPLAR
ELEV. = 1905.63'
LOCATED N18°02'02"E 361.6' FROM (BL5)

FOR -L- PLAN VIEW SEE SHEETS NO.4 & 5

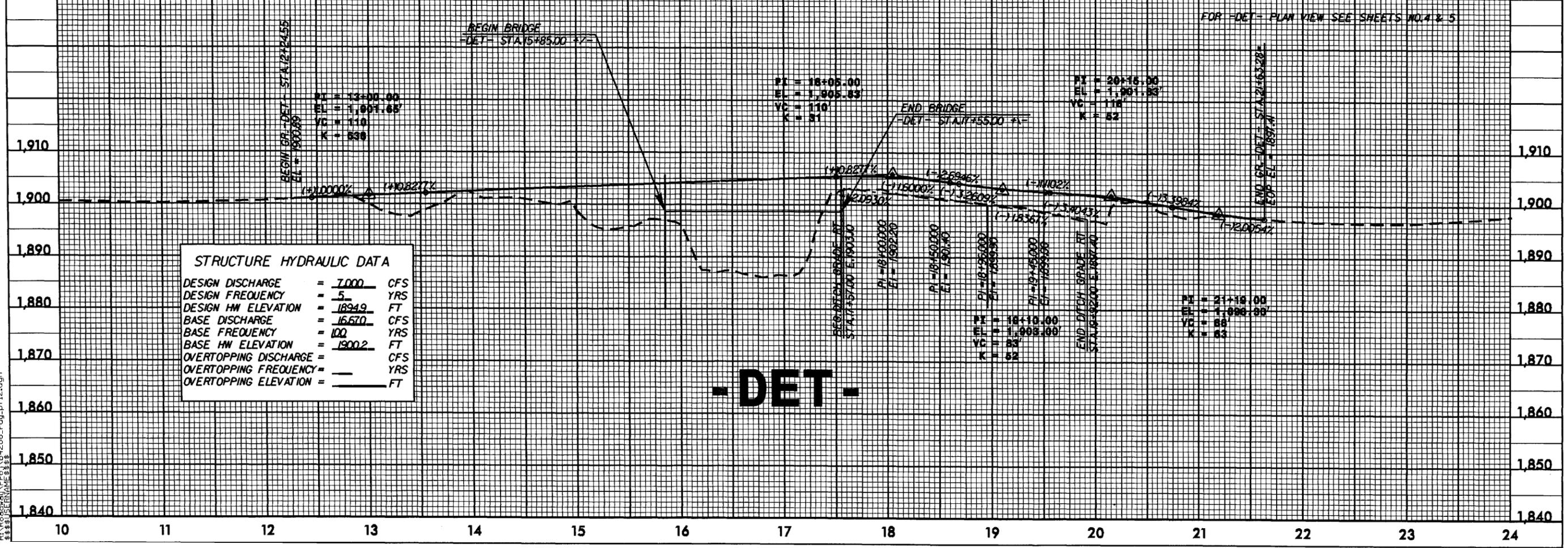
PROJECT REFERENCE NO. B-4286	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



DESIGN DISCHARGE	=	14160	CFS
DESIGN FREQUENCY	=	50	YRS
DESIGN HW ELEVATION	=	1900.7	FT
BASE DISCHARGE	=	16670	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	1901.5	FT
OVERTOPPING DISCHARGE	=	16000	CFS
OVERTOPPING FREQUENCY	=	50	YRS
OVERTOPPING ELEVATION	=	1901.3	FT

-L-

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F:\Roadway\Proje\4286_rdy_pf12.dgn
SUBSTRATE



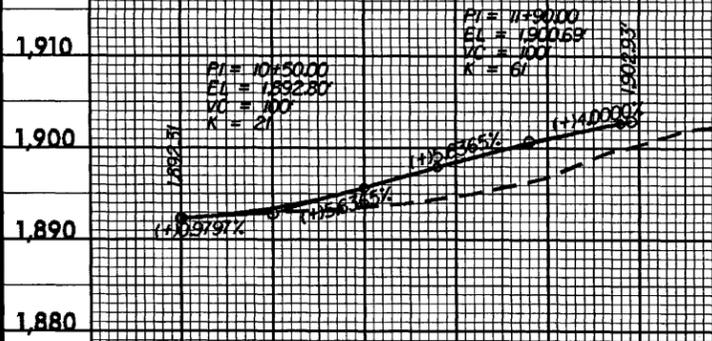
DESIGN DISCHARGE	=	7000	CFS
DESIGN FREQUENCY	=	5	YRS
DESIGN HW ELEVATION	=	1894.9	FT
BASE DISCHARGE	=	16670	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	1900.2	FT
OVERTOPPING DISCHARGE	=		CFS
OVERTOPPING FREQUENCY	=		YRS
OVERTOPPING ELEVATION	=		FT

-DET-

FOR -DET- PLAN VIEW SEE SHEETS NO.4 & 5

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -Y1- PLAN VIEW SEE SHEETS NO.4



-Y1 WITH DET-

10

11

12