



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI
SECRETARY

April 19, 2011

U.S. Army Corps of Engineers
Regulatory Field Office
PO Box 1000
Washington, NC 27889-1000

ATTENTION: Tom Steffens
NCDOT Coordinator

Dear Sir:

Subject: Application for Section 404 General Permit 31, Section 401 Water Quality Certification, and Tar-Pamlico Riparian Buffer Authorization for the proposed replacement of Bridge No. 1 on SR 1670 over Stoney Creek, Nash County. TIP No. B-4588; Federal Aid Project No. BRZ-1670(1); State Project No. 8.2323001; Debit \$240.00 from WBS 33788.1.1.

Please find enclosed the PCN form, jurisdictional determination, USFWS concurrence letter, permit drawings, and half-size plan sheets for the above referenced project. A Programmatic Categorical Exclusion (PCE) was completed for this project in June 2008, and distributed shortly thereafter. Additional copies will be made available upon request. The North Carolina Department of Transportation (NCDOT) proposes to replace existing Bridge No. 1 on SR 1670 (N. 1st St.) over Stoney Creek in Nash County. The project involves replacement of the existing 144-foot structure with a 150-foot long bridge in approximately the same location. There will be 0.09 acre of permanent impacts to riparian wetlands resulting from fill and mechanized clearing in wetlands on this project, as well as 9,381 sq. ft. of riparian buffer impacts.

The let date for this project is January 17, 2012, with a review date of November 29, 2011; however, the let date may advance as additional funds become 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 771.115(b). The NCDOT requests that these activities be authorized by a General Permit 31.

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

TELEPHONE: 919-707-6100
FAX: 919-212-5785

WEBSITE: WWW.NCDOT.ORG

LOCATION:
Century Center Building B
1020 Birch Ridge Dr.
Raleigh, NC 27610

Section 401 Water Quality Certification: We anticipate 401 General Certification number 3820 will apply to this project. All general conditions of the Water Quality Certifications will be met. NCDOT is providing five copies of this application to the NCDWQ for their review and approval. Authorization to debit the \$240 Permit Application Fee from WBS Element 33788.1.1 is hereby given.

Tar-Pamlico Riparian Buffer Authorization: NCDOT requests that the NC Division of Water Quality review this application and issue a written approval for a Tar-Pamlico Riparian Buffer Authorization.

A copy of this permit application and its distribution list will be posted on the NCDOT website at <http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html>

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

Sincerely,



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

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: _____ or General Permit (GP) number: 31		
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 checked="" type="checkbox"/> Riparian Buffer Authorization		
1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	For the record only for Corps Permit: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

2. Project Information

2a. Name of project:	Replacement of Bridge no. 1 over Stoney Creek on SR 1670 (N. 1 st St.)
2b. County:	Nash
2c. Nearest municipality / town:	Nashville
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P or state project no:	B-4588

3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	<i>not applicable</i>
3c. Responsible Party (for LLC if applicable):	<i>not applicable</i>
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 707-6129
3g. Fax no.:	(919) 212-5785
3h. Email address:	aejames@ncdot.gov

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

B. Project Information and Prior Project History	
1. Property Identification	
1a. Property identification no. (tax PIN or parcel ID):	<i>not applicable</i>
1b. Site coordinates (in decimal degrees):	Latitude: 35.980151 (DD.DDDDDD) Longitude: - 77.949511 (-DD.DDDDDD)
1c. Property size:	2.0 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Stoney Creek
2b. Water Quality Classification of nearest receiving water:	C;NSW
2c. River basin:	Tar-Pamlico
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: Natural communities found on site include mixed hardwood and mixed pine-hardwood forest; the main land uses in the project vicinity include residential development and agriculture.	
3b. List the total estimated acreage of all existing wetlands on the property: 0.23 acre	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 318 linear feet	
3d. Explain the purpose of the proposed project: Example: 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 144-foot bridge with a 150-foot, 2-span box-beam bridge on the existing alignment with an off-site detour. Utility relocations will also occur, though no jurisdictional resources will be impacted. 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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	<input type="checkbox"/> Preliminary <input checked="" type="checkbox"/> Final
4c. If yes, who delineated the jurisdictional areas? Name (if known): Steven Busbee & Rhett Baggett	Agency/Consultant Company: STV/Ralph Whitehead and Associates, Inc.
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. 10/21/2008	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown
5b. If yes, explain in detail according to "help file" instructions.	
6. Future Project Plans	
6a. Is this a phased project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6b. If yes, explain.	

C. Proposed Impacts Inventory						
1. Impacts Summary						
1a. Which sections were completed below for your project (check all that apply):						
<input checked="" type="checkbox"/> Wetlands		<input checked="" type="checkbox"/> Streams - tributaries		<input checked="" type="checkbox"/> Buffers		
<input type="checkbox"/> Open Waters		<input type="checkbox"/> Pond Construction				
2. Wetland Impacts						
If there are wetland impacts proposed on the site, then complete this question for each wetland area impacted.						
2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	2f. Area of impact (acres)	
Site 1 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	Fill	PFO1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.01	
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Clearing	PFO1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.01	
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Fill	PFO1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.03	
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Clearing	PFO1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.02	
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Clearing	PFO1	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.03	
2g. Total wetland impacts					0.09 Permanent 0.01 Temporary	
2h. Comments: Considered as one site on the impact summary sheet. There will be 0.07 acre of hand clearing on this project, none of which will require any temporary fill 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 checked="" type="checkbox"/> T	Temporary Workpad	Stoney Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	15 ft	95 lf
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					0.0 Perm 95 lf Temp	
3i. Comments: <0.01 acre of permanent surface water impacts for three drilled piers at the interior bent; temporary linear impacts equate to 0.03 acre of temporary surface water impacts.						

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?

Yes 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 checked="" 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 checked="" type="checkbox"/> P <input type="checkbox"/> T	Road Crossing	Stoney Creek	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1,139	230
B2 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Bridge	Stoney Creek	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6,143	1,603
B3 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Road Crossing	Stoney Creek	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	0	266
6h. Total buffer impacts				7,282	2,099
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 6 feet longer than the existing bridge; the proposed bridge will be at approximately the same grade as the existing structure; 3:1 fill slopes where practicable; and the implementation of Design Standards in Sensitive Watersheds.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. NCDOT Best Management Practices for Bridge Demolition, Removal and Construction will be followed, as well as those for Sedimentation and Erosion Control; the utilization of an off-site detour; and temporary wetland fill impacts will be re-graded and re-vegetated.		
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: Due to minimal impacts, NCDOT is not proposing compensatory mitigation	
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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1b. If yes, then is a diffuse flow plan included? If no, explain why Comments: see attached permit drawings.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2. Stormwater Management Plan	
2a. What is the overall percent imperviousness of this project?	N/A
2b. Does this project require a Stormwater Management Plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2c. If this project DOES NOT require a Stormwater Management Plan, explain why:	
2d. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan: See attached permit drawings.	
2e. Who will be responsible for the review of the Stormwater Management Plan?	<input type="checkbox"/> Certified Local Government <input type="checkbox"/> DWQ Stormwater Program <input checked="" type="checkbox"/> DWQ 401 Unit
3. Certified Local Government Stormwater Review	
3a. In which local government's jurisdiction is this project?	not applicable
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Phase II <input type="checkbox"/> NSW <input type="checkbox"/> USMP <input type="checkbox"/> Water Supply Watershed <input type="checkbox"/> Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Coastal counties <input type="checkbox"/> HQW <input type="checkbox"/> ORW <input type="checkbox"/> Session Law 2006-246 <input type="checkbox"/> Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input 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? See attached concurrence letter		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? 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		
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.)	4.19.11 Date

**U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT**

Action Id. SAW-2008-00520

County Nash

U.S.G.S. Quad: NC-Nashville



NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner/Agent: North Carolina Department of Transportation c/o Pamela Williams
Address: 2728 Capital Boulevard, Suite 167
Raleigh, North Carolina
27604
Telephone No.: 919-715-5507

Property description:

Size (acres)	<u>7.02 Acres</u>	Nearest Town	<u>Nashville, NC</u>
Nearest Waterway	<u>Stoney Creek</u>	River Basin	<u>Upper Neuse River</u>
USGS HUC	<u>03020201</u>	Coordinates	N <u>35.9799</u> W <u>-77.9496</u>

Location description The project area is located on and around SR 1670, over Stoney Creek (B-4588), North of US Highway 64, Northeast of Nashville, in Nash County, North Carolina.

Indicate Which of the Following Apply:

A. Preliminary Determination

- Based on preliminary information, there may be wetlands on the above described property. We strongly suggest you have this property inspected to determine the extent of Department of the Army (DA) jurisdiction. To be considered final, a jurisdictional determination must be verified by the Corps. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331).

B. Approved Determination

- There are Navigable Waters of the United States within the above described property subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- There are waters of the U.S. including wetlands on the above described project area subject to the permit requirements of Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
 - We strongly suggest you have the wetlands on your property delineated. Due to the size of your property and/or our present workload, the Corps may not be able to accomplish this wetland delineation in a timely manner. For a more timely delineation, you may wish to obtain a consultant. To be considered final, any delineation must be verified by the Corps.
 - The waters of the U.S. including wetland on your project area have been delineated and the delineation has been verified by the Corps. We strongly suggest you have this delineation surveyed. Upon completion, this survey should be reviewed and verified by the Corps. Once verified, this survey will provide an accurate depiction of all areas subject to CWA jurisdiction on your property which, provided there is no change in the law or our published regulations, may be relied upon for a period not to exceed five years.
 - The wetlands have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on _____. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
 - There are no waters of the U.S., to include wetlands, present on the above described property which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
 - The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in Washington, NC, at (252) 946-6481 to determine their requirements.

Action Id. SAW-2008-00520

Placement of dredged or fill material within waters of the US and/or wetlands without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). If you have any questions regarding this determination and/or the Corps regulatory program, please contact Emily Jernigan at 252-975-1616 ext 28.

C. Basis For Determination

This site exhibits wetland criteria as described in the 1987 Corps Wetland Delineation Manual, is hydrologically connected to, and abuts the main channel of Stoney Creek, a tributary of the Neuse River.

D. Remarks

E. Appeals Information (This information applies only to approved jurisdictional determinations as indicated in B. above)

This correspondence constitutes an approved jurisdictional determination for the above described site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

District Engineer, Wilmington Regulatory Division
Attn:Emily Jernigan, Project Manager,
Washington Regulatory Field Office
Post Office Box 1000
Washington, North Carolina 27889

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the District Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by 12/21/2008.

It is not necessary to submit an RFA form to the District Office if you do not object to the determination in this correspondence.

Corps Regulatory Official: Emily N. Jernigan
Date 10/21/2008 Expiration Date 10/21/2013

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at our website at <http://regulatory.usacesurvey.com/> to complete the survey online.

Copy furnished:
Steven Busbee

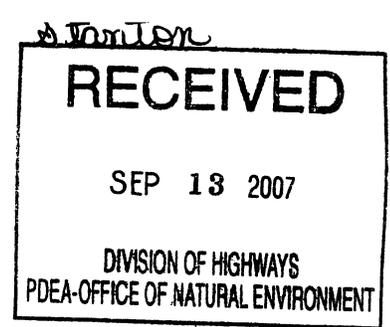
CC: L Williams



United States Department of the Interior

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

September 11, 2007



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 August 28, 2007 which provided the U.S. Fish and Wildlife Service (Service) with the biological determination of the North Carolina Department of Transportation that the replacement of Bridge No. 1 on SR 1670 over Stony Creek in Nash County (TIP No. B-4588) may affect, but is not likely to adversely affect the federally endangered dwarf wedgemussel (*Alasmidonta heterodon*) and Tar River spiny mussel (*Elliptio steinstansana*). 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, a mussel survey was conducted at the project site on July 6, 2007. The survey extended 100 meters upstream and 400 meters downstream of SR 1670. Although many specimens of the common *Elliptio complanata* were observed, no specimens of dwarf wedgemussel or Tar River spiny mussels were observed. It is noted that Stony Creek is on the NC Division of Water Quality 303d list of degraded streams.

Based on the survey results and other information available, the Service concurs with your determination that the proposed project may affect, but is not likely to adversely affect the dwarf wedgemussel and Tar River spiny mussel. 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: William Wescott, USACE, Washington, NC
Rob Ridings, NCDWQ, Raleigh, NC
Travis Wilson, NCWRC, Creedmoor, NC
Chris Militscher, USEPA, Raleigh, NC
John Sullivan, FHWA, Raleigh, NC
David Harris, NCDOT, Raleigh, NC

STORMWATER MANAGEMENT PLAN

Project: 33788.1.1

TIP: B-4588

County: Nash

Hydraulics Project Engineers: W. Henry Wells, Jr., P.E. (Sungate Design Group);
Dan Duffield, P.E. (NCDOT Hydraulics Unit)

ROADWAY DESCRIPTION

The project involves the replacement of Bridge No. 1 on SR 1670 over Stoney Creek. The overall length of the project with approach work is approximately 850 feet. The proposed bridge will consist of 1 @ 65' and 1 @ 85' box beams. The project drainage systems consist of the bridge and an associated bridge end drain. No side ditches are proposed.

ENVIRONMENTAL DESCRIPTION

The project is located in the Tar-Pamlico River Basin. Buffer rules are in effect for this river basin. The project will have one (1) crossing of a jurisdictional stream that will impact Stoney Creek. Stoney Creek is classified as Class C and NSW. Stoney Creek is not listed on NCDWQ's 303d list. Wetlands will be impacted by the proposed project.

BEST MANAGEMENT PRACTICES AND MAJOR STRUCTURES

The primary goal of Best Management Practices (BMPs) is to prevent degradation of the states surface waters as a result of the location, construction and operation of the highway system. BMPs are activities, practices and procedures taken to prevent or reduce stormwater pollution. There are no BMPs used on this project.

At all the sites, stormwater will be treated and non-erosive velocities will be achieved where practicable.

MINIMIZATION OF IMPACTS

Several design elements provided for minimization of wetland impacts. The bridge end drain has been located outside of buffers and wetland areas. Also, side slopes have been steepened to 2:1 (H:V) to reduce wetland and buffer impacts.

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NASH COUNTY

LOCATION: BRIDGE NO.1 OVER STONEY CREEK ON SR 1670

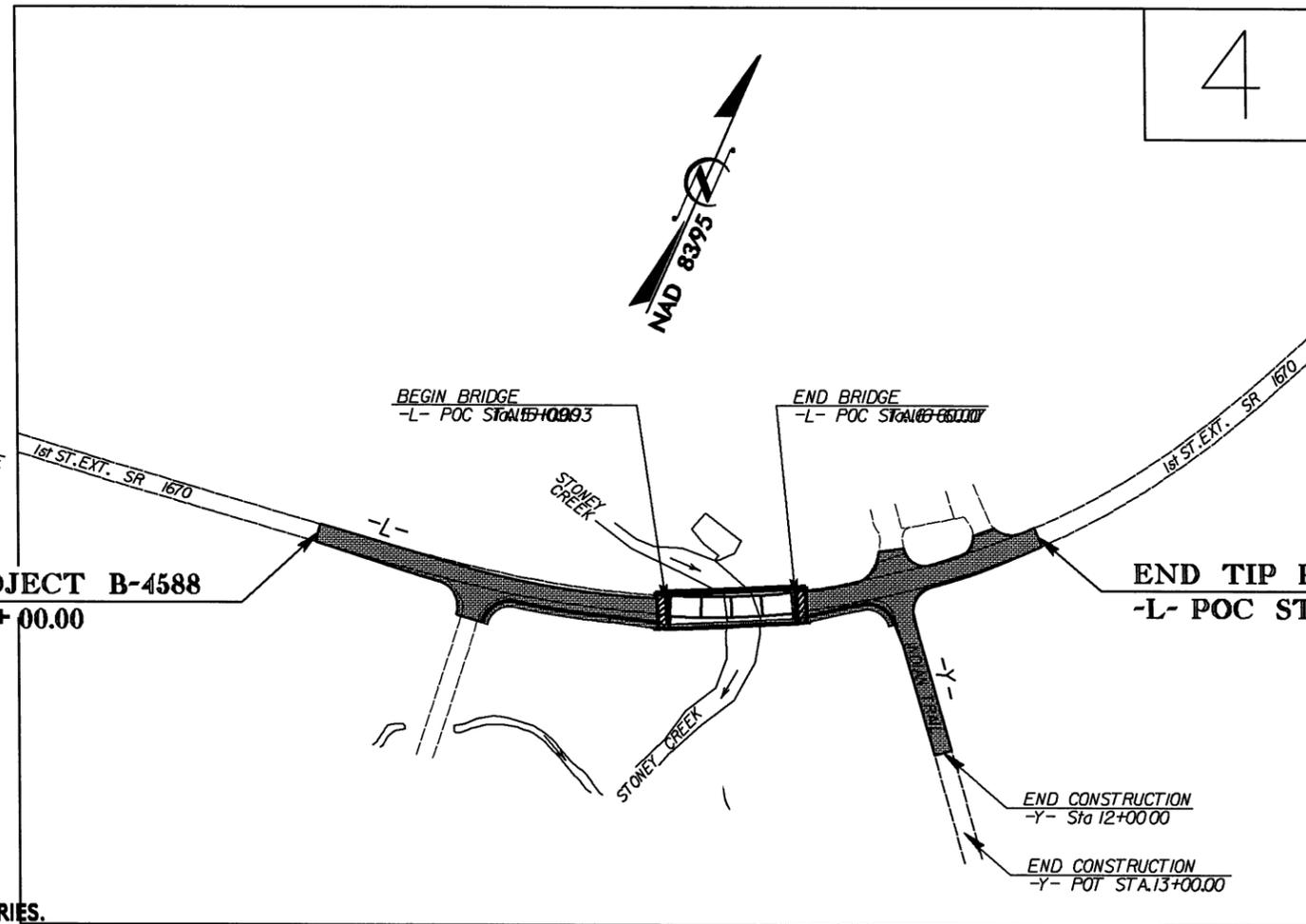
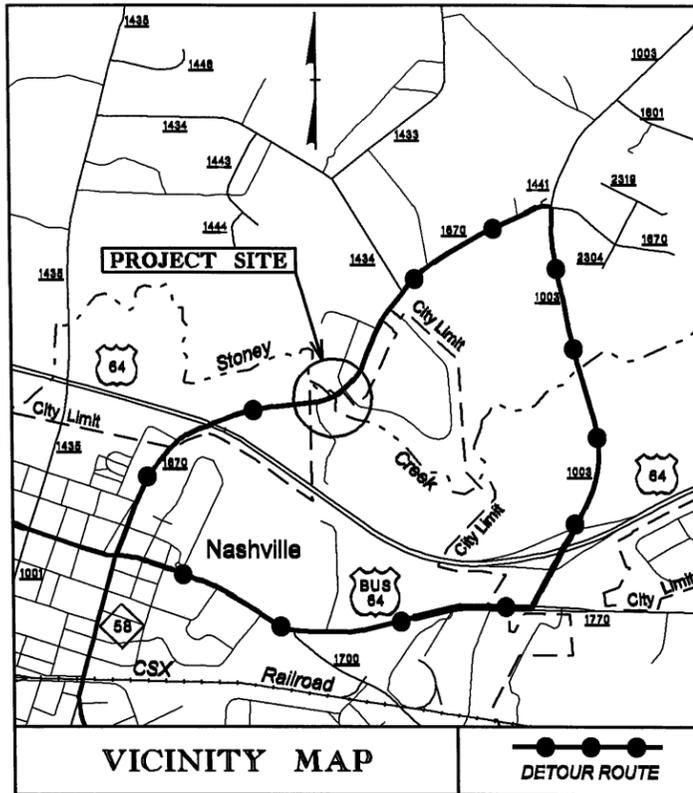
TYPE OF WORK: GRADING, DRAINAGE, PAVING, & STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4588	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33788.1.1	BRZ-1670(1)	PE	
33788.2.1	BRZ-1670(1)	R/W & UTIL.	



TIP PROJECT: B-4588

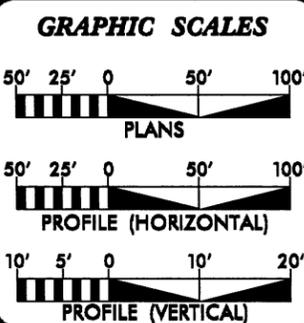
CONTRACT: C202749



WETLAND/STREAM IMPACTS

Permit Drawing Sheet 1 of 8

- NOTES:
 (1) THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
 (2) CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.



DESIGN DATA

ADT 2012 =	4,400
ADT 2032 =	6845
DHV =	10 %
D =	60 %
T =	3 % *
V =	50 MPH
FUNC. CLASS. =	LOCAL
* TTST 1 %	DUAL 2 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4588 =	0.133 MI.
LENGTH STRUCTURE TIP PROJECT B-4588 =	0.028 MI.
TOTAL LENGTH OF TIP PROJECT B-4588 =	0.161 MI.

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

2004 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JANUARY 4, 2011

LETTING DATE:
JANUARY 17, 2012

REKHA PATEL, P.E.
PROJECT ENGINEER

MICHAEL W. LITTLE, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

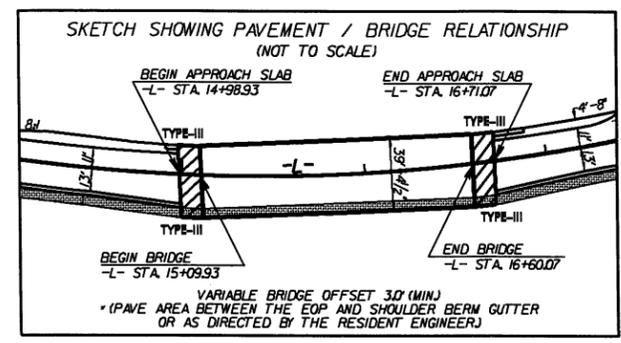
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

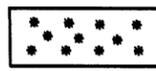
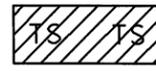
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

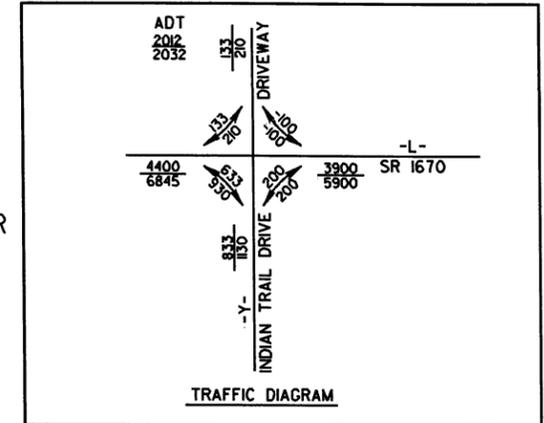
**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER

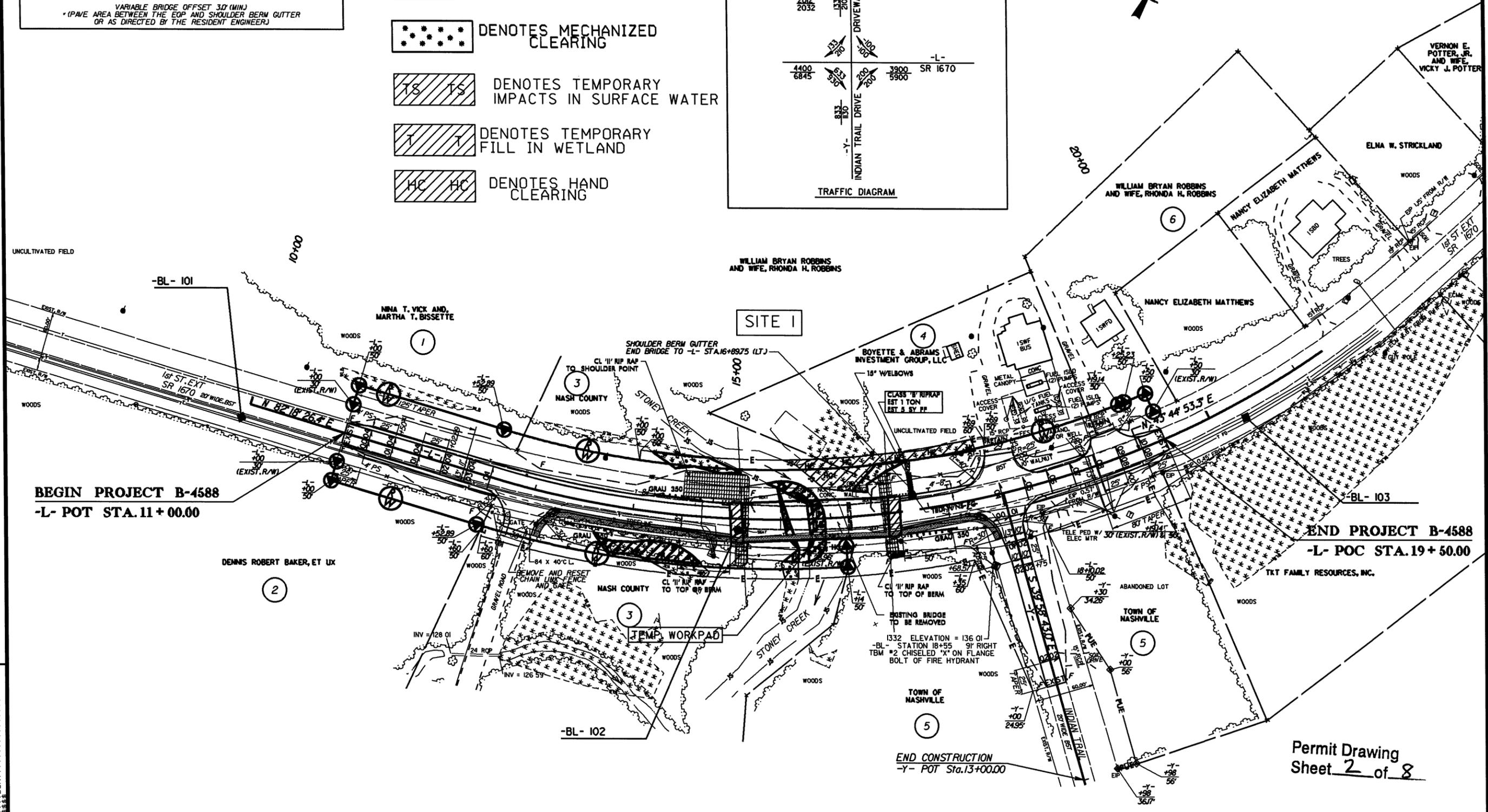
PROJECT REFERENCE NO. B-4588	SHEET NO. 4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY FILL IN WETLAND
-  DENOTES HAND CLEARING



REVISIONS

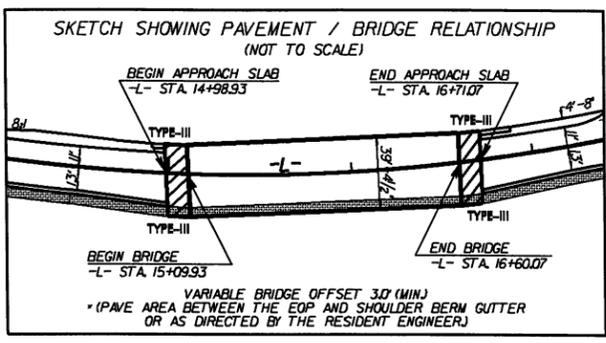


Permit Drawing
Sheet 2 of 8

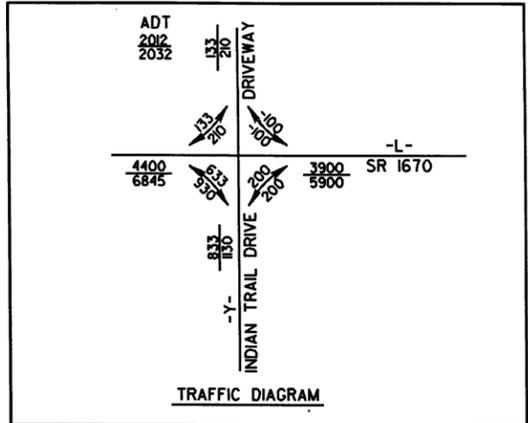
NOTES: (1) SEE SHEET 5 FOR -L- & -Y- PROFILES
(2) SEE SHEETS S-1 TO S- FOR STRUCTURE DETAILS

ENGLISH

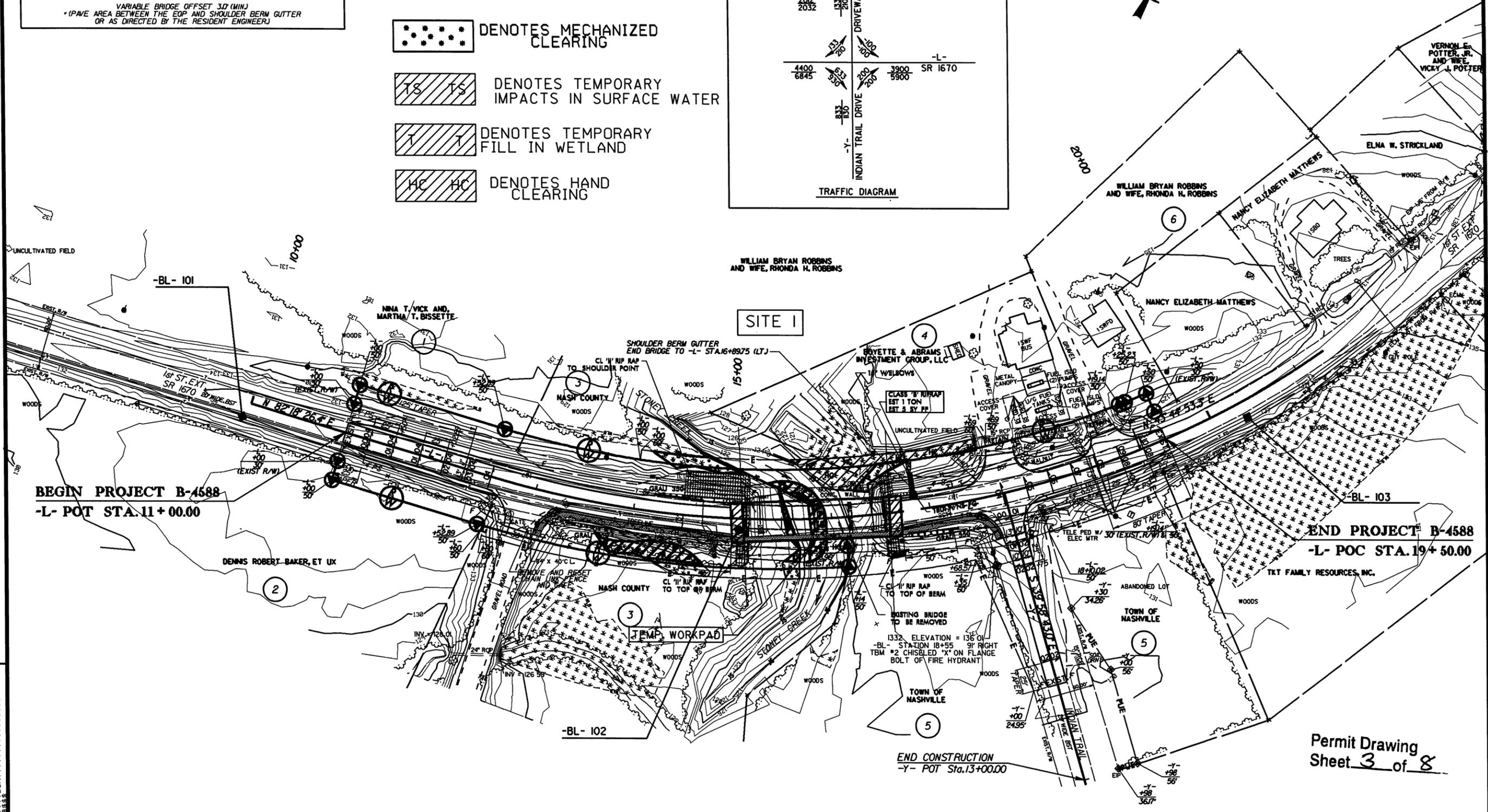
PROJECT REFERENCE NO. B-4588	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES HAND CLEARING



REVISIONS



BEGIN PROJECT B-4588
-L- POT STA. 11+00.00

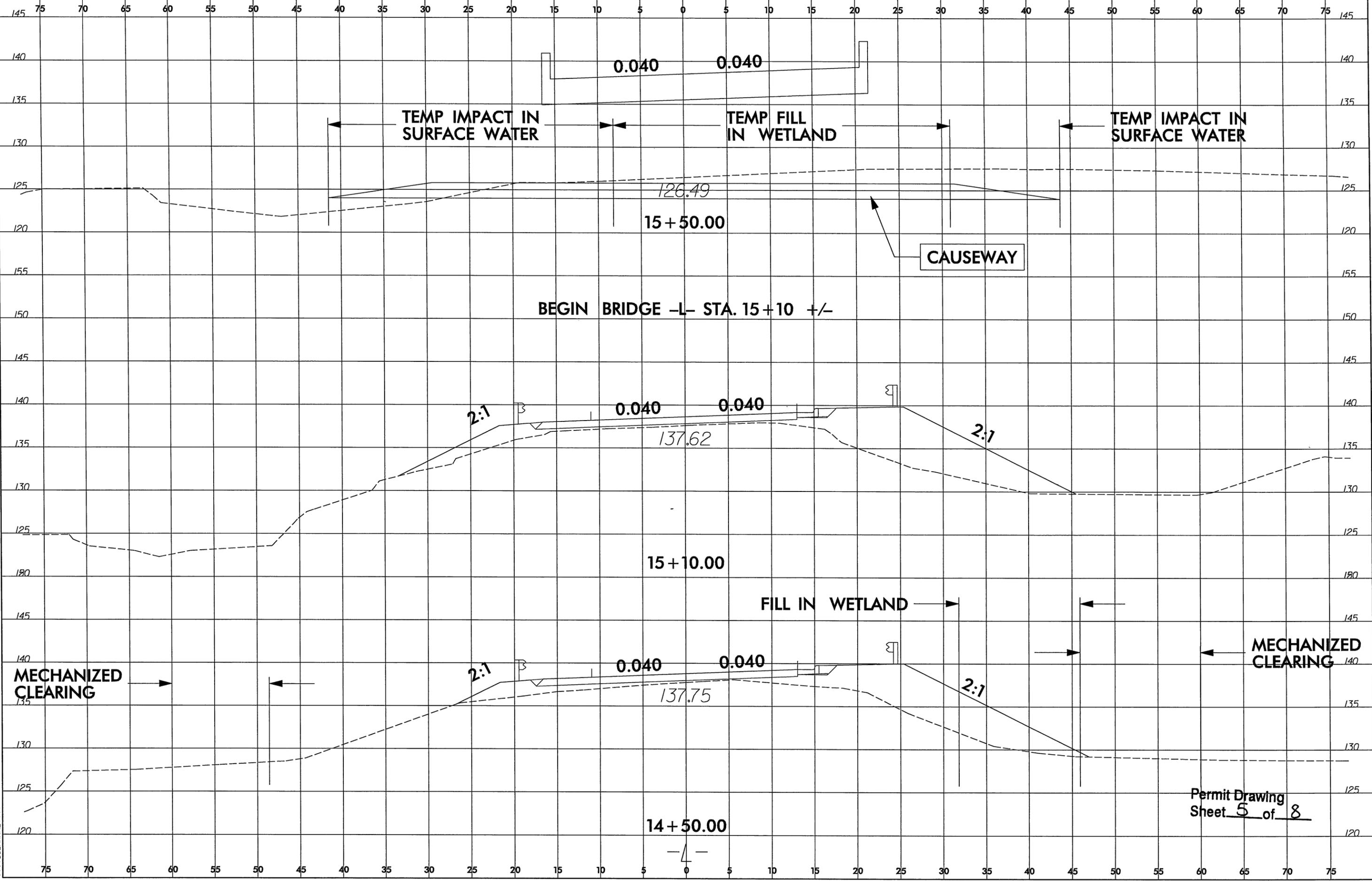
END PROJECT B-4588
-L- POC STA. 19+50.00

END CONSTRUCTION
-Y- POT Sta. 13+00.00

Permit Drawing
Sheet 3 of 8

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

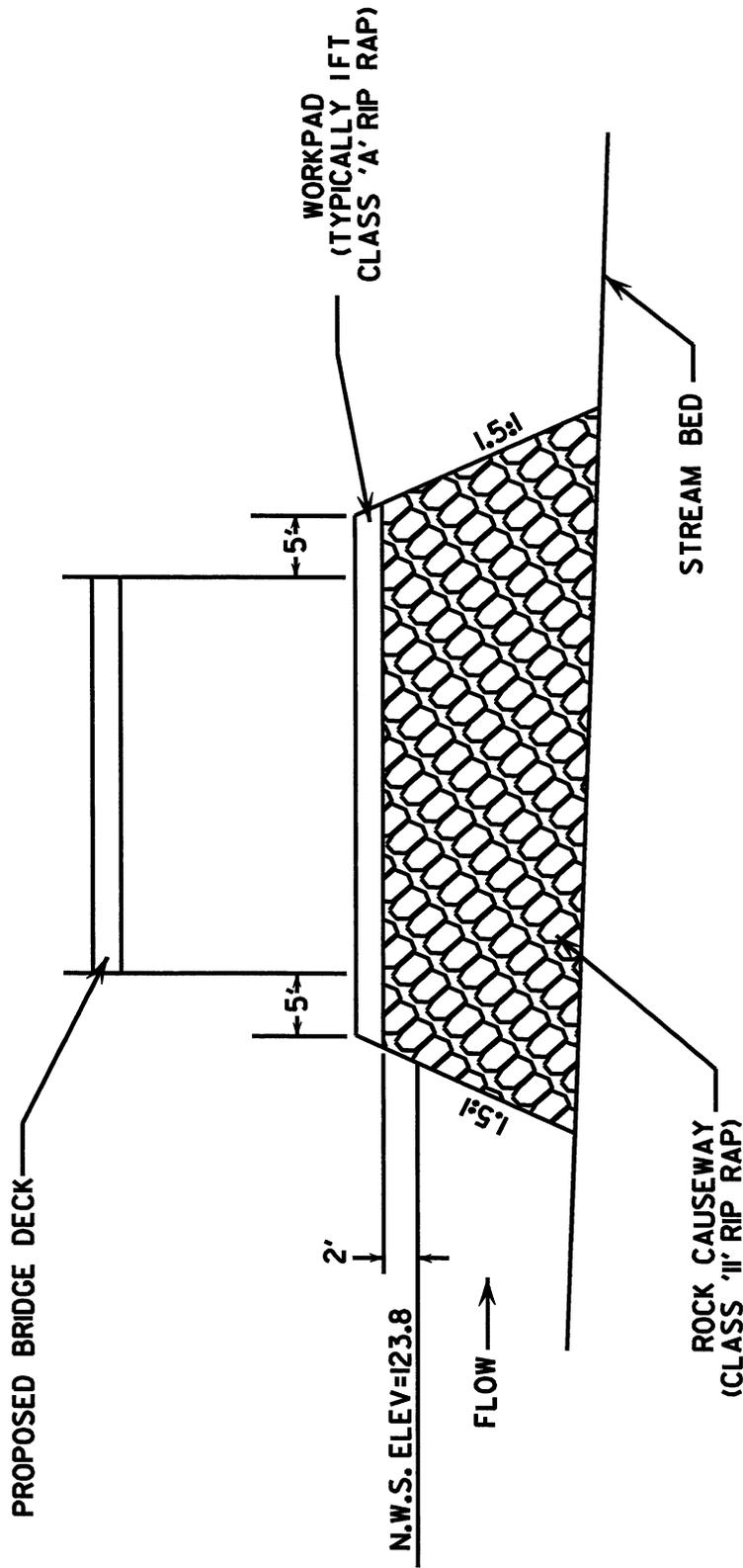
8/23/99



Permit Drawing
Sheet 5 of 8

SYSTEM
IDON
NAME

WORKPAD DETAIL (NOT TO SCALE)



QUANTITIES OF ESTIMATES

VOLUME OF CLASS II RIP RAP= 110 yds³
 AREA OF CLASS II RIP RAP= 0.134 ac
 Estimate 160 Tons Class 'II' Rip Rap
 Estimate 100 Tons Class 'A' Rip Rap

N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS

NASH COUNTY

PROJECT: 33788.1.1 (B-4588)
 BRIDGE NO. 1
 OVER STONEY CREEK
 ON SR 1670

SHEET 6 OF 8

1/12/10

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	15+34 to 15+96 -L-	Temp. Workpad		0.01		0.01					0.03		95	
1	13+64 to 14+80 -L- RT	Fill	0.03			0.02								
1	14+12 to 15+08 -L- LT	Clearing				0.02								
1	15+56 to 17+56 -L- LT	Clearing				0.01	0.07							
			0.03	0.01		0.06	0.07			0.03		95		
TOTALS.														

<0.01 acre of permanent surface water impacts for three drilled piers at the interior bent

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

NASH COUNTY
WBS - 33788 1 1 (B-4588)

SHEET **7 of 8** 3/14/2011

PROPERTY OWNERS
NAMES AND ADDRESSES

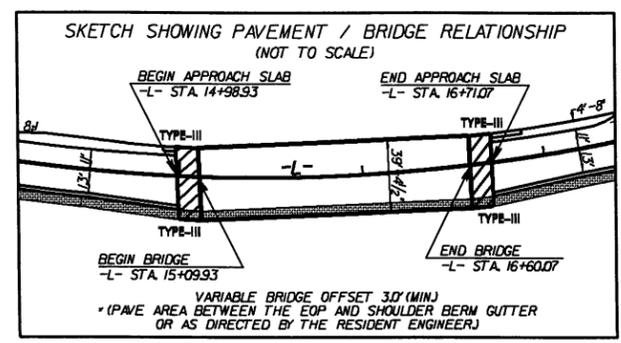
PARCEL NO.	NAMES	ADDRESSES
3	NASH COUNTY	120 WASHINGTON ST NASHVILLE, NC 27856
4	BOYETTE AND ABRAMS INVESTMENT GROUP, LLC	4633 DEWFIELD DR WILSON, NC 27893

**WETLAND/STREAM
IMPACTS**

NCDOT
DIVISION OF HIGHWAYS
NASH COUNTY
PROJECT: 33788.1.1 (B-4588)
BRIDGE #1 OVER STONEY
CREEK ON SR 1670

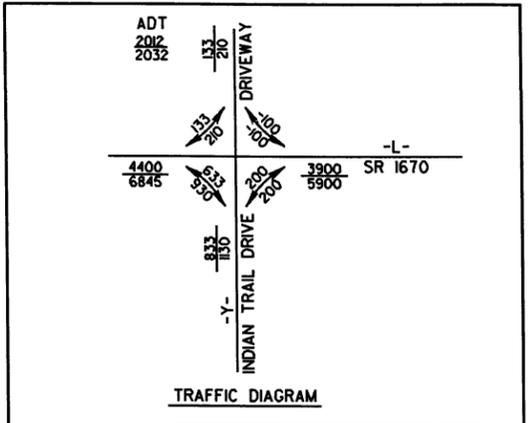
SHEET 8 OF 8 **1/12/10**

PROJECT REFERENCE NO. B-4588	SHEET NO. 4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-L- CURVE DATA

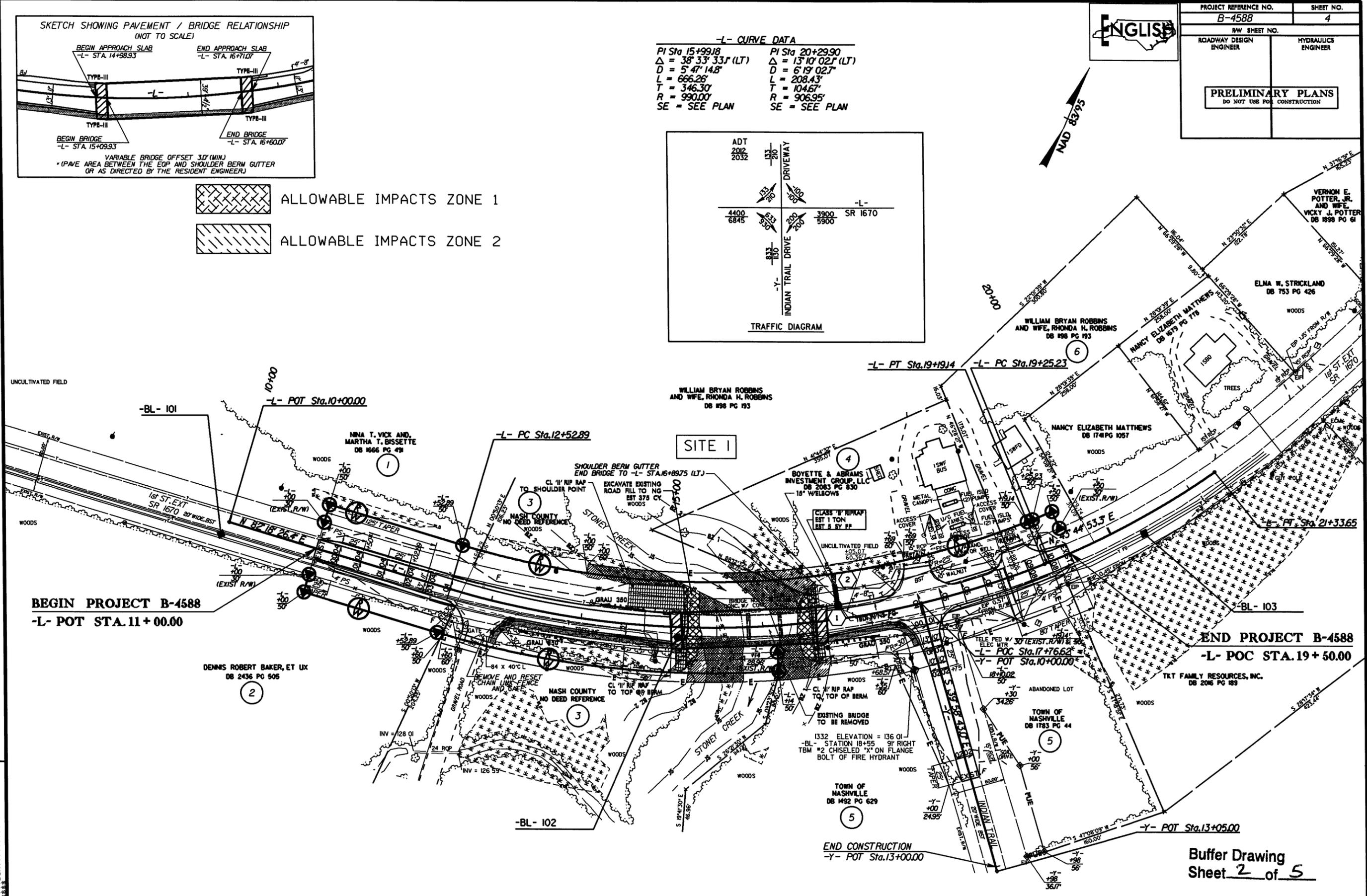
PI Sta 15+99.18	PI Sta 20+29.90
$\Delta = 38^{\circ} 33' 33.3''$ (LT)	$\Delta = 13^{\circ} 10' 02.7''$ (LT)
D = 5' 47' 14.8"	D = 6' 19' 02.7"
L = 666.26'	L = 208.43'
T = 346.30'	T = 104.67'
R = 990.00'	R = 906.95'
SE = SEE PLAN	SE = SEE PLAN



ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

REVISIONS



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

Buffer Drawing
Sheet 2 of 5

WETLANDS IN BUFFER IMPACTS SUMMARY

SITE NO	STATION (FROM/TO)	WETLANDS IN BUFFERS	
		ZONE 1 (ft ²)	ZONE 2 (ft ²)
	14+12 to 15+08 -L- LT	750	0
	15+34 to 15+96 -L-	475	0
	15+56 to 16+60 -L- LT	1560	706
TOTAL:		2785	706

N C DEPT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 NASH COUNTY
 PROJECT: 33788 1 1 (B-4588)

3/1/2010
 SHEET **4** OF **5**

PROPERTY OWNERS
NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
3	NASH COUNTY	120 WASHINGTON ST NASHVILLE, NC 27856
4	BOYETTE AND ABRAMS INVESTMENT GROUP, LLC	4633 DEWFIELD DR WILSON, NC 27893
5	TOWN OF NASHVILLE	P.O. BOX 987 NASHVILLE, NC 27856

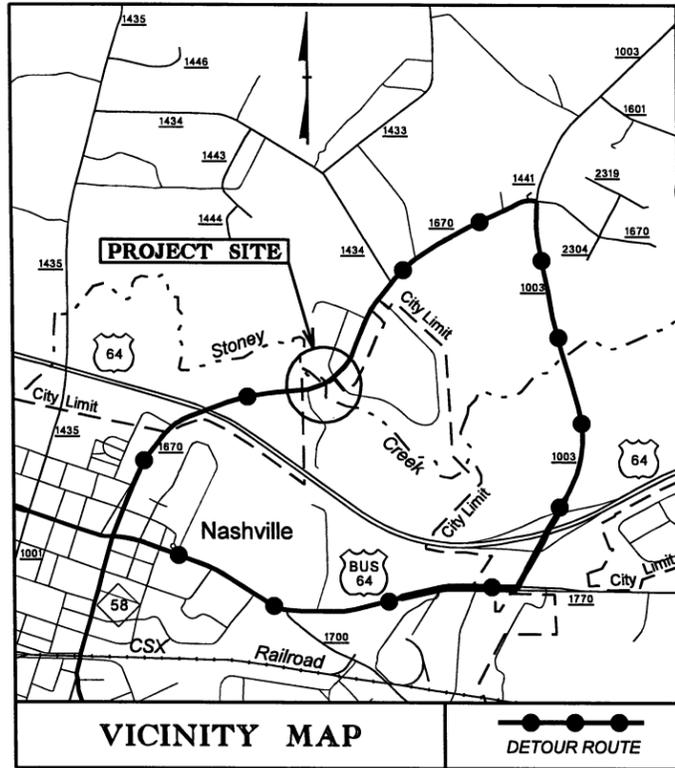
**BUFFER
IMPACTS**

NCDOT
DIVISION OF HIGHWAYS
NASH COUNTY
PROJECT: 33788.1.1 (B-4588)
BRIDGE #1 OVER STONEY
CREEK ON SR 1670

SHEET 5 OF 5 **1/12/10**

TIP PROJECT: B-4588

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



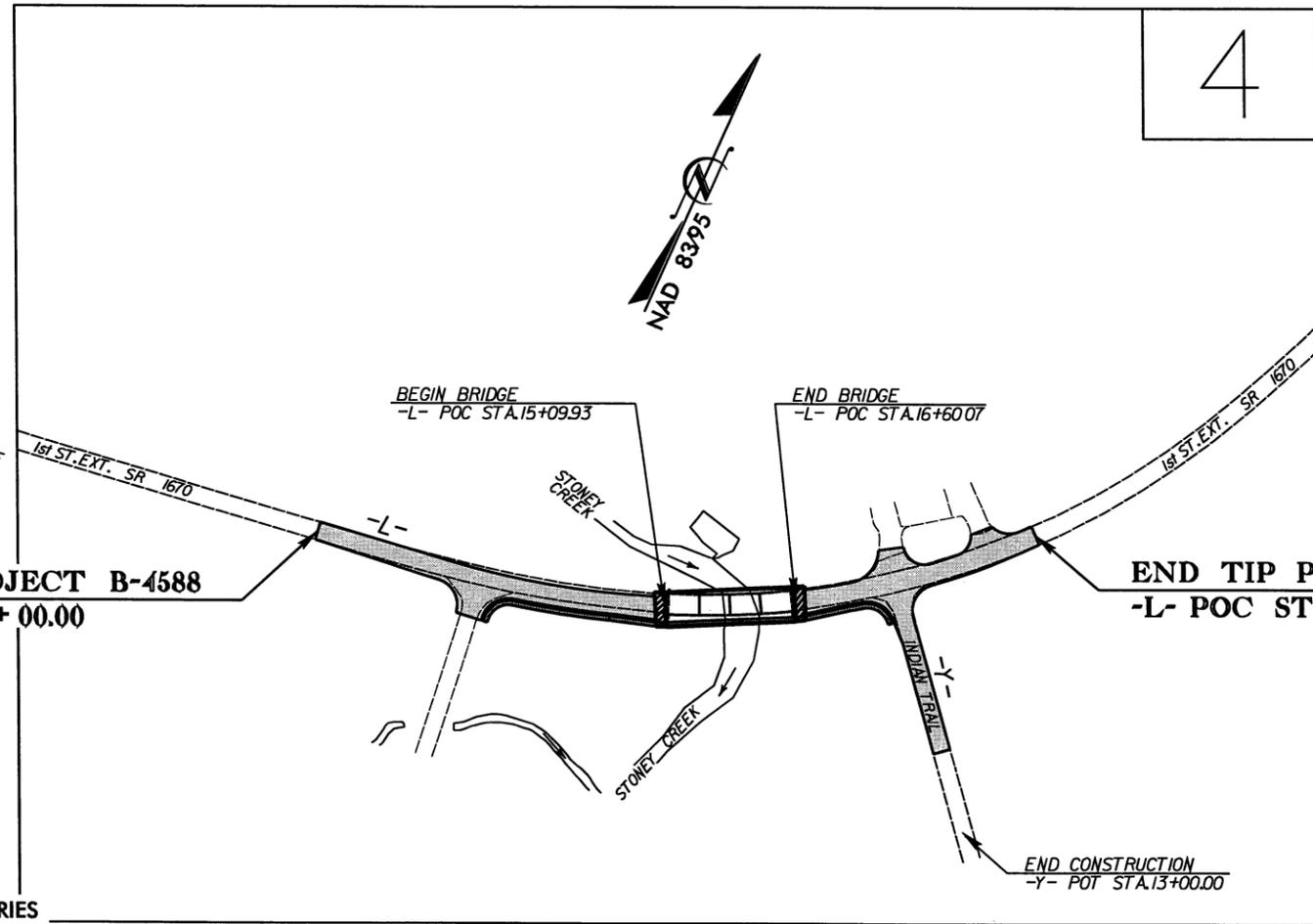
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NASH COUNTY

LOCATION: BRIDGE NO.1 OVER STONEY CREEK ON SR 1670

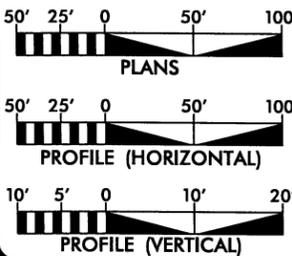
TYPE OF WORK: GRADING, DRAINAGE, PAVING, & STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4588	1	
STATE PROJ. NO.	R.A. PROJ. NO.	DESCRIPTION	
33788.1.1	BRZ-1670(1)	PE	
33788.2.1	BRZ-1670(1)	RW & UTIL.	



- NOTES:
 (1) THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES
 (2) CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

GRAPHIC SCALES



DESIGN DATA

ADT 2012 = 4,400
 ADT 2032 = 6845
 DHV = 10 %
 D = 60 %
 T = 3 % *
 V = 50 MPH
 FUNC CLASS = LOCAL
 * TTST 1 % DUAL 2 %

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4588 = 0.133 MI
 LENGTH STRUCTURE TIP PROJECT B-4588 = 0.028 MI
 TOTAL LENGTH OF TIP PROJECT B-4588 = 0.161 MI

Prepared In the Office of:
DIVISION OF HIGHWAYS

1000 Birch Ridge Dr
Raleigh, NC 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JANUARY 4, 2011

LETTING DATE:
JANUARY 17, 2012

REKHA PATEL, P.E.
PROJECT ENGINEER

MICHAEL W. LITTLE, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN
ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SIGNATURE: _____ P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**



STATE HIGHWAY DESIGN ENGINEER

31-JAN-2011 08:28 \\s\h4\F588_rdy_tsh.dgn

CONTRACT:

3/15/06

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-4588	1-A

09/08/05

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○
Property Corner	⊠
Property Monument	⊠
Parcel/Sequence Number	Ⓜ
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	⊠
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-w-w-
Proposed Wetland Boundary	-w-w-
Existing Endangered Animal Boundary	-e-a-
Existing Endangered Plant Boundary	-e-p-

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	⊠
Jurisdictional Stream	-js-
Buffer Zone 1	-bz 1-
Buffer Zone 2	-bz 2-
Flow Arrow	←
Disappearing Stream	→
Spring	Ⓞ
Wetland	-w-w-
Proposed Lateral, Tail, Head Ditch	-----
False Sump	⊠

RAILROADS:

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

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite Marker	-----
Existing Control of Access	⊠
Proposed Control of Access	⊠
Existing Easement Line	-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	-PUJ-
Proposed Temporary Utility Easement	-TUE-
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 Wheel Chair Ramp	Ⓜ
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊠
Pavement Removal	⊠

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	⊠
Paved Ditch Gutter	-----
Storm Sewer Manhole	Ⓞ
Storm Sewer	-----

UTILITIES:

POWER:	
Existing Power Pole	Ⓞ
Proposed Power Pole	Ⓞ
Existing Joint Use Pole	Ⓞ
Proposed Joint Use Pole	Ⓞ
Power Manhole	Ⓞ
Power Line Tower	⊠
Power Transformer	⊠
U/G Power Cable Hand Hole	Ⓜ
H-Frame Pole	Ⓞ
Recorded U/G Power Line	-----
Designated U/G Power Line (S U E *)	-----

TELEPHONE:

Existing Telephone Pole	Ⓞ
Proposed Telephone Pole	Ⓞ
Telephone Manhole	Ⓞ
Telephone Booth	⊠
Telephone Pedestal	⊠
Telephone Cell Tower	Ⓞ
U/G Telephone Cable Hand Hole	Ⓜ
Recorded U/G Telephone Cable	-----
Designated U/G Telephone Cable (S U E *)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S U E *)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S U E *)	-----

WATER:

Water Manhole	Ⓞ
Water Meter	Ⓞ
Water Valve	Ⓞ
Water Hydrant	Ⓞ
Recorded U/G Water Line	-----
Designated U/G Water Line (S U E *)	-----
Above Ground Water Line	-----

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

Utility Pole	Ⓞ
Utility Pole with Base	⊠
Utility Located Object	Ⓞ
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	⊠
A/G Tank; Water, Gas, Oil	⊠
U/G Test Hole (S U E *)	Ⓞ
Abandoned According to Utility Records	AATUR
End of Information	E O I

6/2/99

SURVEY CONTROL SHEET B-4588

PROJECT REFERENCE NO.	SHEET NO.
B-4588	I-C
Location and Surveys	
PRELIMINARY	

BENCHMARK DATA

.....
 1159 ELEVATION = 134.33
 N 813032 E 2309712
 L STATION 10+00
 S 77° 08' 05" W DIST 560.41
 TBM 1 SET RAILROAD SPIKE IN BASE OF 18"
 TWIN ELM TREE

.....
 1332 ELEVATION = 136.01
 N 813320 E 2311010
 L STATION 17+53.70 RIGHT
 TBM 2 CHISELED "X" IN TOP FLANGE BOLT
 OF FIRE HYDRANT

.....
 1331 ELEVATION = 158.78
 N 814319 E 2311478
 L STATION 21+34
 N 21° 06' 27.3" E DIST 711.20
 TBM 3 SET 8" GALVANIZED NAIL IN BASE OF
 28" PINE TREE

BASELINE DATA

BL POINT	DESC	NORTH	EAST	ELEVATION	L STATION	OFFSET
100	-BL- 100	813090.6930	2309662.4440	135.94	OUTSIDE PROJECT LIMITS	
101	-BL- 101	813139.1300	2310255.6260	134.81	OUTSIDE PROJECT LIMITS	
102	-BL- 102	813243.6460	2310758.4730	137.47	15+06.78	12.04 RT
103	-BL- 103	813562.1830	2311179.3270	136.74	20+33.13	16.65 RT
104	-BL- 104	814257.6870	2311461.6410	155.99	OUTSIDE PROJECT LIMITS	

TEMPORARY CONSTRUCTION EASEMENT

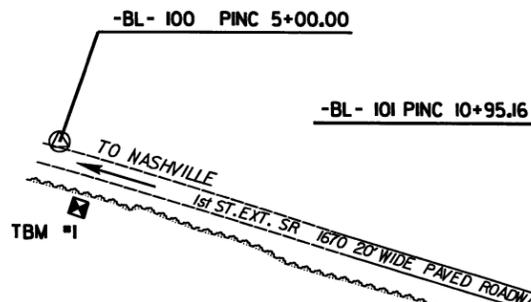
ALIGN	STATION	OFFSET	NORTH	EAST
Y	12+00.00	24.95	813220.7873	2311095.7751
ALIGN	STATION	OFFSET	NORTH	EAST
L	12+60.00	50.00	813140.5552	2310523.4579
L	12+60.00	60.00	813130.6550	2310524.8677
L	19+19.14	50.00	813451.0194	2311128.1236
L	19+19.14	29.99	813464.8534	2311113.6715
L	17+69.00	-50.00	813425.0413	2310949.8909
L	17+69.00	-60.00	813432.9682	2310943.7947
L	14+00.00	-60.00	813277.1263	2310636.4099
L	14+00.00	-50.00	813267.5237	2310639.2009
L	17+35.00	60.00	813316.3572	2310987.9932
L	18+10.02	50.00	813372.7392	2311044.4542

PERMANENT UTILITY EASEMENT

ALIGN	STATION	OFFSET	NORTH	EAST
Y	11+30.00	-34.26	813312.4678	2311096.1694
Y	12+00.00	-56.00	813272.7987	2311157.8070
Y	12+98.00	-56.00	813197.7029	2311220.7721
Y	12+98.00	-36.17	813184.9608	2311205.5753

ROW MARKER CONCRETE OR GRANITE-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+00.00	50.00	813119.0630	2310364.5455
L	11+00.00	30.00	813138.8830	2310361.8683
L	12+52.89	50.00	813139.5282	2310516.0553
L	16+14.00	50.00	813256.9965	2310874.5533
L	16+14.00	28.96	813275.4730	2310864.4830
L	11+00.00	-30.00	813198.3430	2310353.8367
L	11+00.00	-50.00	813218.1630	2310351.1595
L	12+52.89	-50.00	813238.6282	2310502.6694
L	19+50.00	-50.00	813541.6928	2311076.0463
L	19+50.00	-30.00	813528.2628	2311090.8663
L	19+25.23	-50.00	813524.5638	2311060.0924
L	19+19.14	-50.00	813520.1683	2311055.8850



DESIGN ALIGNMENTS

TYPE	STATION	NORTH	EAST
POT	10+00.00	813155.2271	2310258.7525
PC	12+52.89	813189.0782	2310509.3624
PT	19+19.14	813485.5938	2311092.0043
PC	19+25.23	813489.9893	2311096.2118
PT	21+33.65	813655.7207	2311221.8470

TYPE	STATION	NORTH	EAST
POT	10+00.00	813390.0755	2310986.3948
POT	13+05.00	813156.3588	2311182.3577

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B-4588 GPS-1" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 812698.063 (FT) EASTING: 2308504.149 (FT) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99995124 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B-4588 GPS-1" TO L- STATION 10+00.00 IS N 75° 25' 14" E 181298 FT ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

-BL- 102 PINC 16+08.75

-BL- 104 PINC 28+87.18 TBM #3 TO RED OAK

-BL- 103 PINC 21+36.56

NOTES:

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

THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4588_LS_CONTROL_081031.TXT

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT

⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING USER SERVICE (OPUS)

NOTE DRAWING NOT TO SCALE

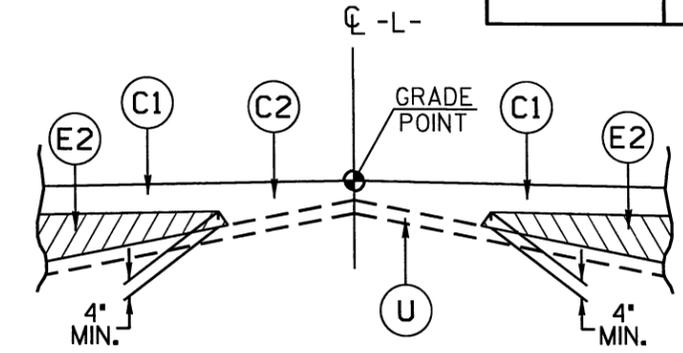
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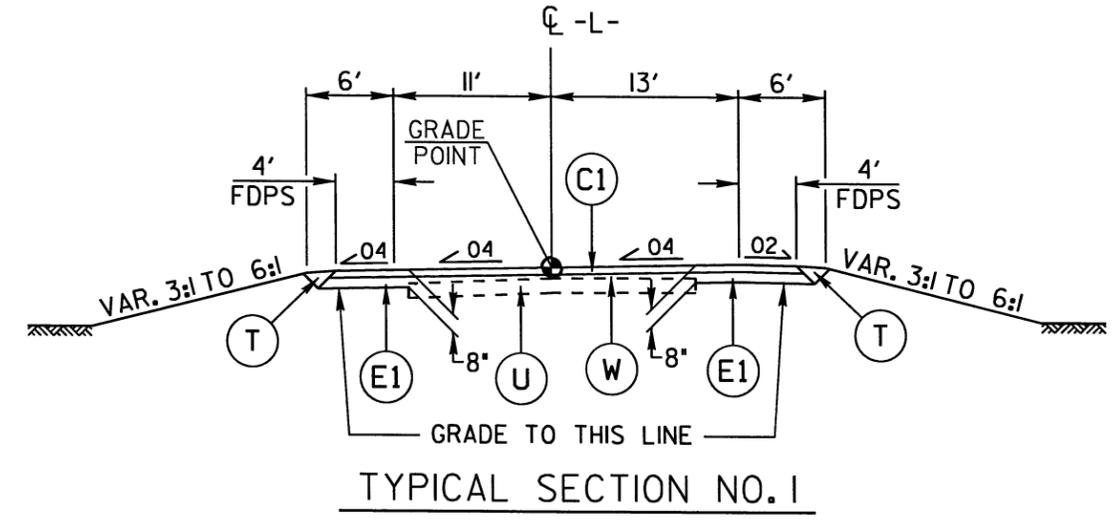
PROJECT REFERENCE NO. B-4588	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)			
C1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	R2	SHOULDER BERM GUTTER
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 1 1/2" IN DEPTH.	S	4" CONCRETE SIDEWALK
E1	PROP. APPROX. 5 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.	T	EARTH MATERIAL
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 4" OR GREATER THAN 5 1/2" IN DEPTH.	U	EXISTING PAVEMENT
R1	2'-6" CONCRETE CURB AND GUTTER	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL).

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



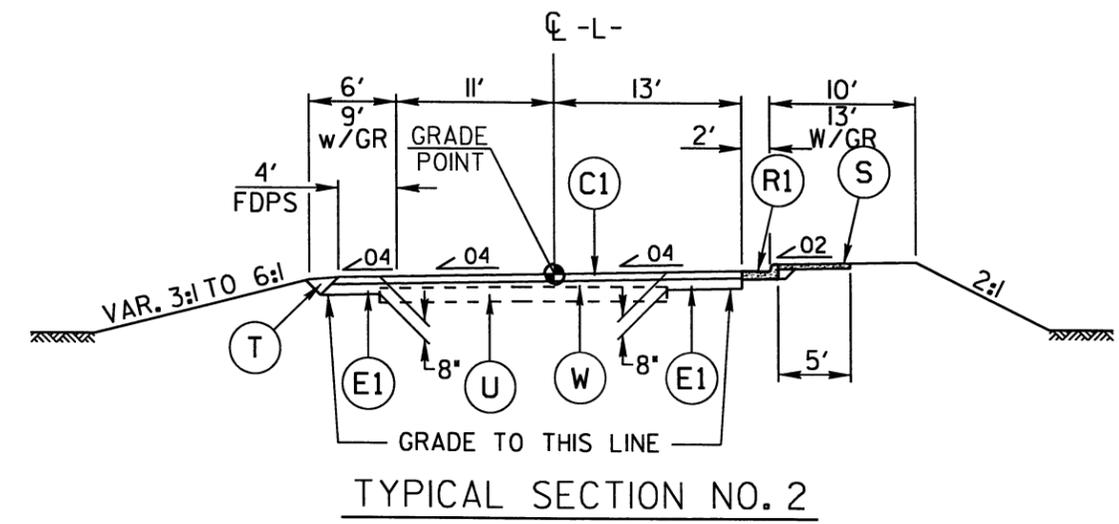
DETAIL SHOWING METHOD OF WEDGING



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 FOR:
 -L- STA. 12+25.00 TO -L- STA. 13+25.00
 -L- STA. 17+60.00 TO -L- STA. 18+70.00

NOTES:
 TRANSITION FROM EXISTING TO T.S. NO. 1
 -L- STA. 11+00.00 TO -L- STA. 12+25.00
 TRANSITION FROM T.S. NO. 1 TO EXISTING
 -L- STA. 18+70.00 TO -L- STA. 19+50.00



TYPICAL SECTION NO. 2

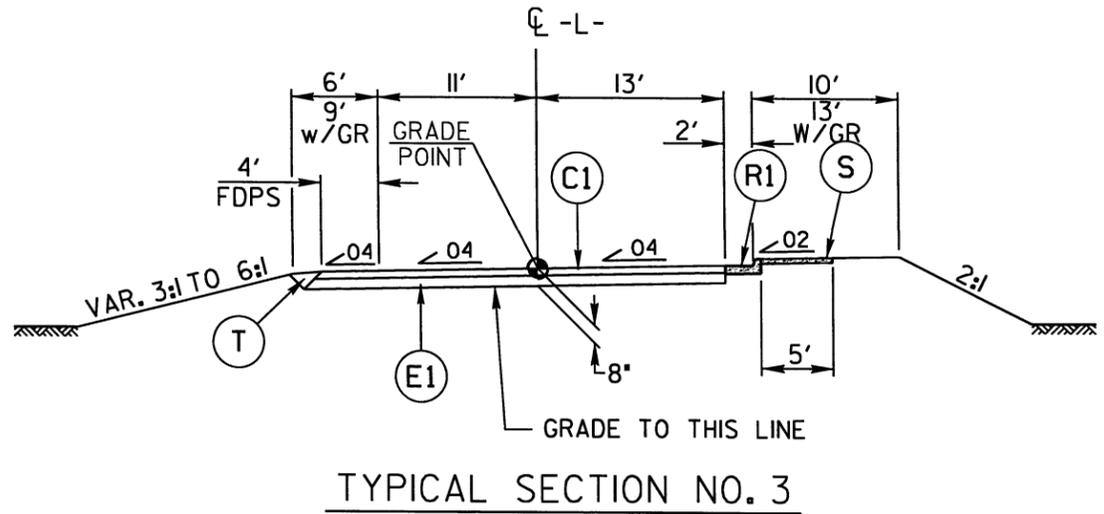
USE TYPICAL SECTION NO. 2 FOR:
 -L- STA. 13+25.00 TO -L- STA. 13+50.00
 -L- STA. 17+20.00 TO -L- STA. 17+60.00

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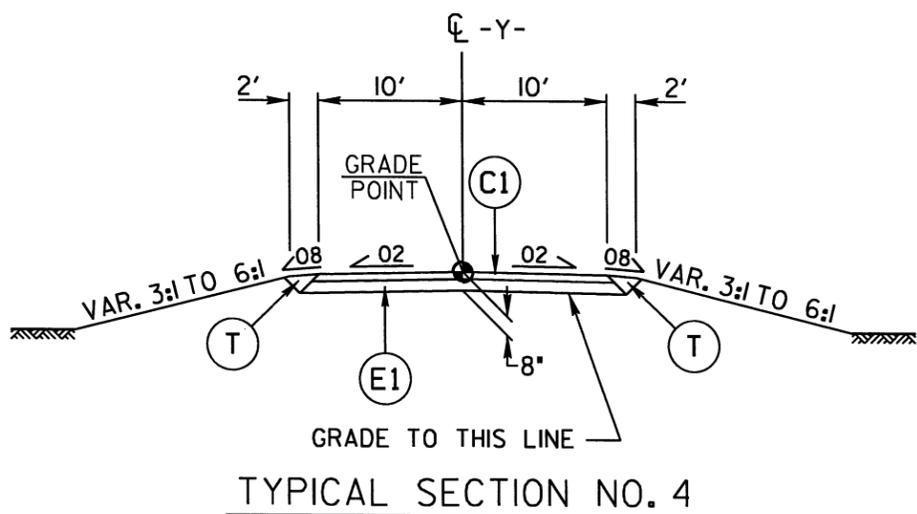
6/2/99

C1	2 1/2" ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A
C2	VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A
E1	5 1/2" ASPHALT CONC. BASE COURSE, TYPE B25.0B
E2	VAR. DEPTH ASPHALT CONC. BASE COURSE, TYPE B25.0B
R1	2'-6" CONC. CURB AND GUTTER
R2	SHOULDER BERM GUTTER
S	4' CONCRETE SIDEWALK
T	EARTH MATERIAL

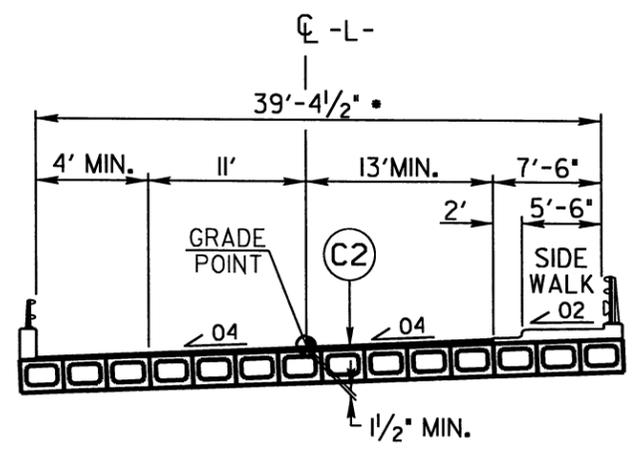
PROJECT REFERENCE NO. B-4588	SHEET NO. 2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



USE TYPICAL SECTION NO. 3 FOR:
 -L- STA. 13+50.00 TO -L- STA. 15+09.93 (BEGIN BRIDGE)
 -L- STA. 16+60.07 (END BRIDGE) TO -L- STA. 17+20.00

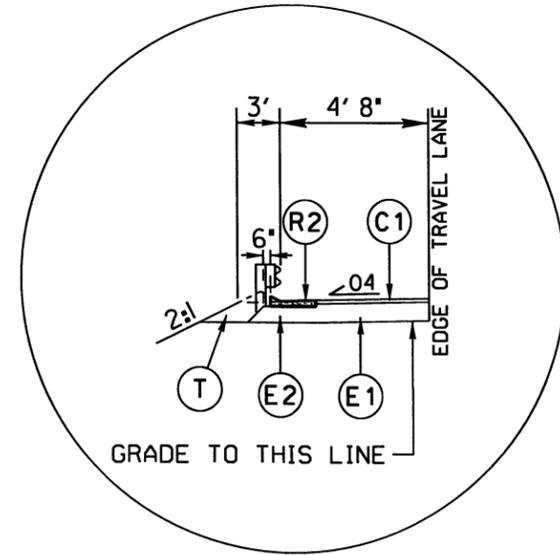


USE TYPICAL SECTION NO. 4 FOR:
 -Y- STA. 10+68.57 TO -Y- STA. 11+75.00
 NOTE:
 TRANSITION FROM T.S. NO.4 TO EXISTING
 -Y- STA. 11+75.00 TO -Y- STA. 12+00.00



NOTE:
 BICYCLE SAFE RAIL REQUIRED ACROSS BRIDGE

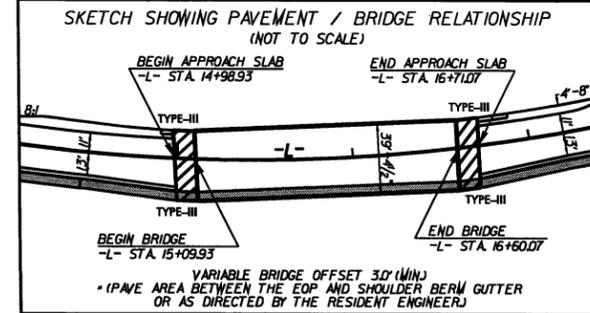
DETAIL SHOWING ASPHALT WEARING SURFACE ON BOX BEAM BRIDGE
 -L- STA. 15+09.93 TO -L- STA. 16+60.07
 *EXTRA WIDTH REQUIRED TO ACCOMODATE CURVE ON BRIDGE
 SEE STRUCTURE PLANS



Use with Typical Section No. 3
USE INSET NO. 1 AT THE FOLLOWING LOCATIONS:
 -L- STA. 14+91.00 (LT.) TO -L- STA. 14+97.75 (LT.)
 -L- STA. 16+72.25 (LT.) TO -L- STA. 16+89.75 (LT.)

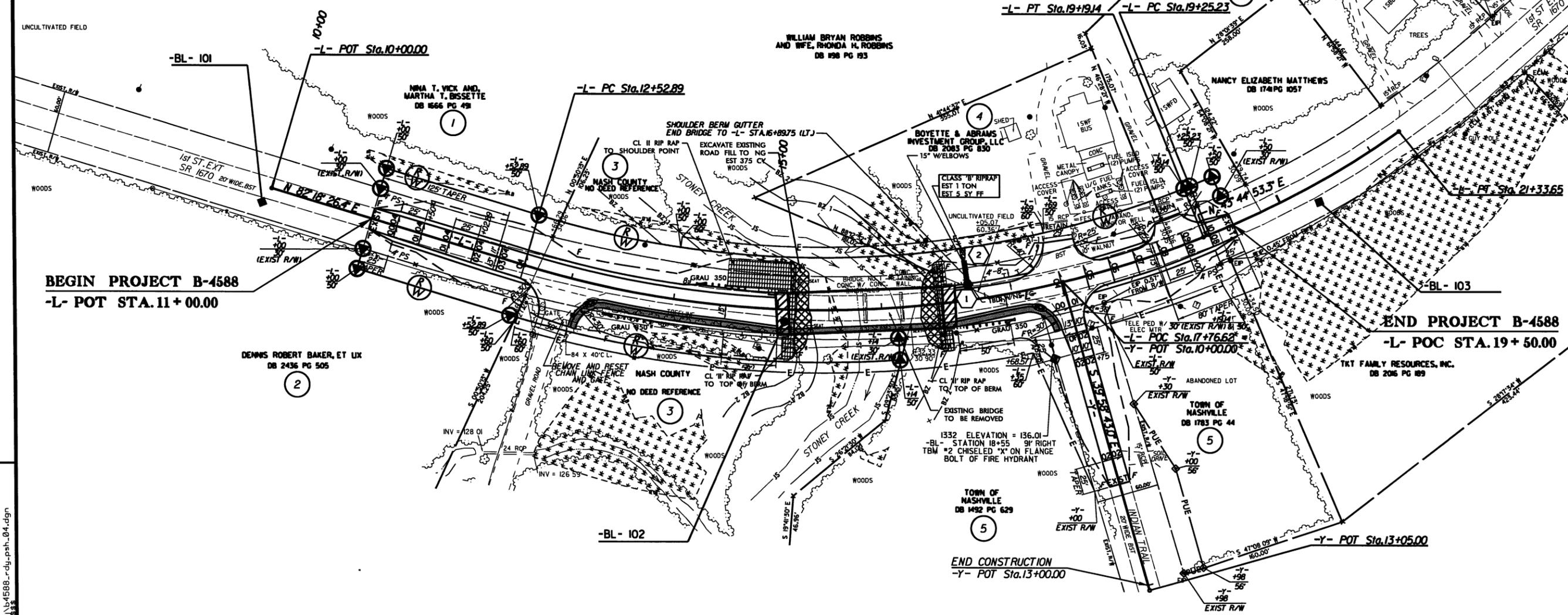
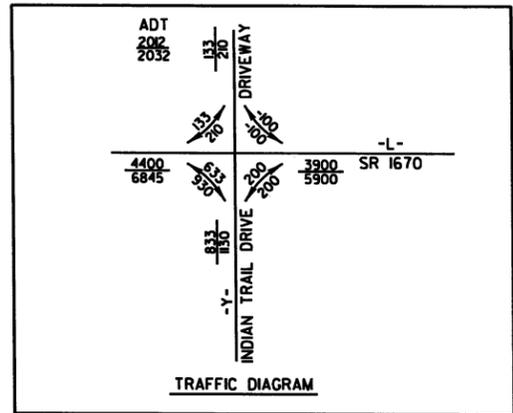
21-VAN-20110828
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PROJECT REFERENCE NO. B-4588		SHEET NO. 4	
RAW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			



-L- CURVE DATA

PI Sta 15+99.18	PI Sta 20+29.90
$\Delta = 38^\circ 33' 33.1''$ (LT)	$\Delta = 13^\circ 10' 02.7''$ (LT)
$D = 5^\circ 47' 14.8''$	$D = 6^\circ 19' 02.7''$
$L = 666.26'$	$L = 208.43'$
$T = 346.30'$	$T = 104.67'$
$R = 990.00'$	$R = 906.95'$
SE = SEE PLAN	SE = SEE PLAN



REVISIONS

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

BM #1 EL = 134.33
 SET RAILROAD SPIKE IN
 BASE OF 18" TWIN ELM TREE
 -BL- STA.5+45 (63' RT)
 -L- STA.10+00 S 77°16'08.5" W DIST 560.4'

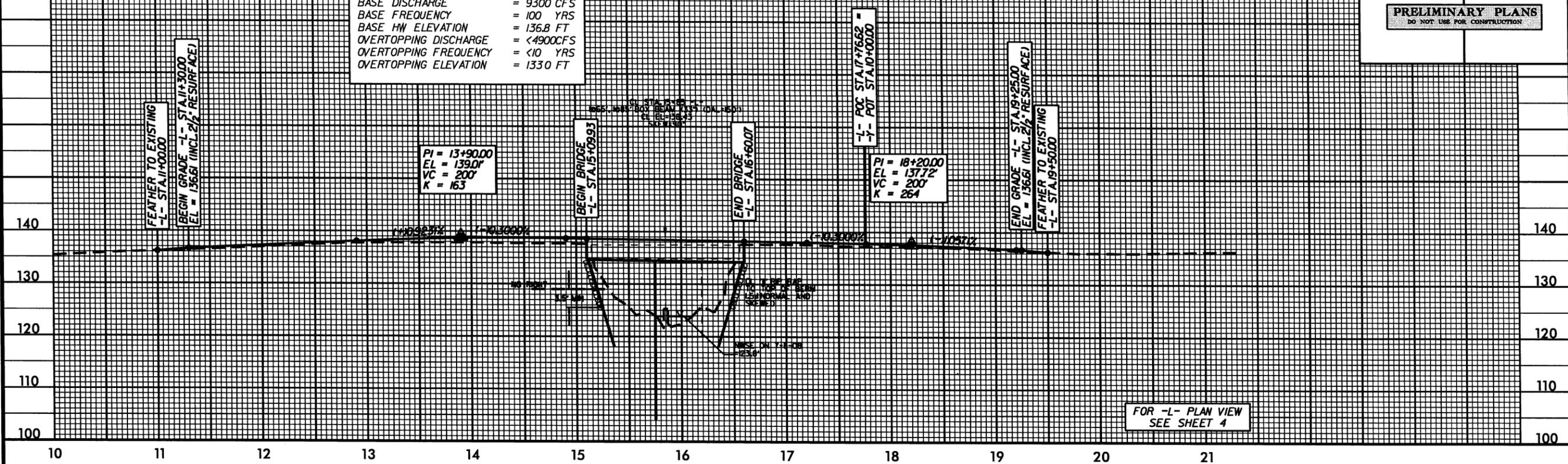
STRUCTURE HYDRAULIC DATA
 DESIGN DISCHARGE = 6500 CFS
 DESIGN FREQUENCY = 25 YRS
 DESIGN HW ELEVATION = 1360 FT
 BASE DISCHARGE = 9300 CFS
 BASE FREQUENCY = 100 YRS
 BASE HW ELEVATION = 136.8 FT
 OVERTOPPING DISCHARGE = <4900 CFS
 OVERTOPPING FREQUENCY = <10 YRS
 OVERTOPPING ELEVATION = 1330 FT

-L-

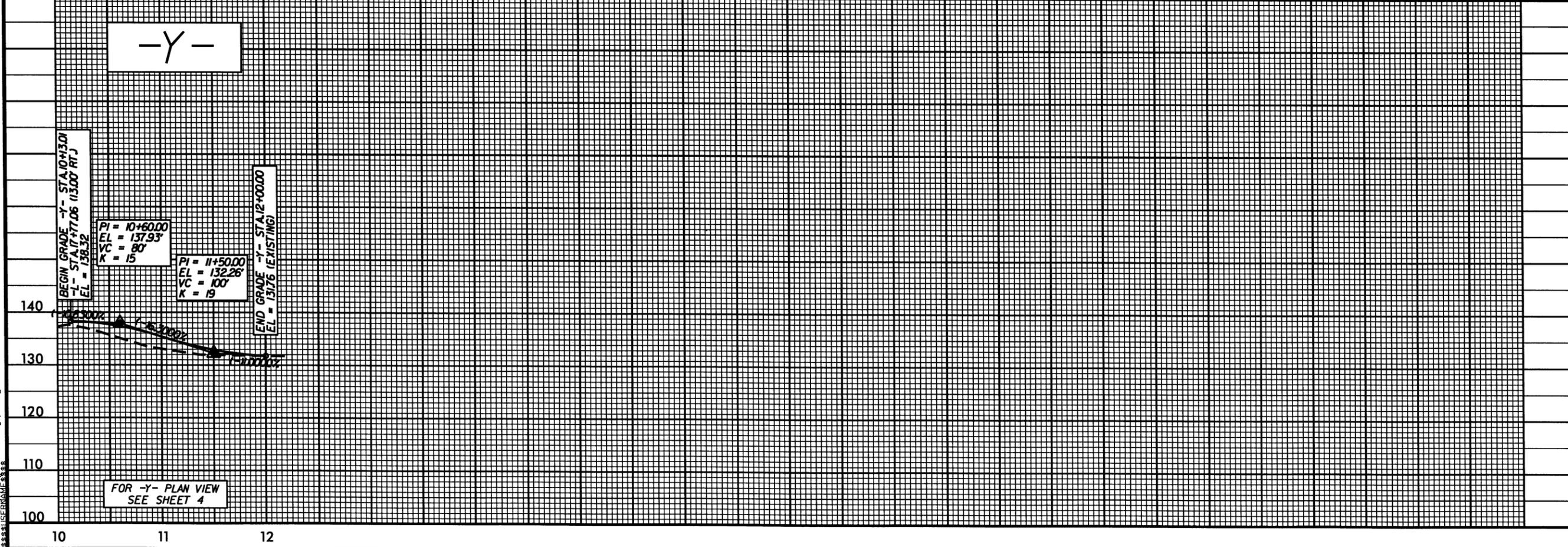
BM #2 EL = 136.01
 CHISELED "X" IN TOP FLANGE
 BOLT OF FIRE HYDRANT
 -BL- STA.18+55 (9' RT)
 -L- STA.17+53 (70' RT)

BM #3 EL = 158.78
 SET 8" GALVANIZED NAIL
 IN BASE OF 28" PINE TREE
 -BL- STA.28+87 N 14°51'39.4" E DIST 63.64'
 -L- STA.21+34 N 21°06'27.3" E DIST 711.20'

PROJECT REFERENCE NO. B-4588	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-Y-



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