



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

April 13, 2012

EUGENE A. CONTI, JR.
SECRETARY

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

ATTN: Ms. Sarah Elizabeth Hair
NCDOT Coordinator

Dear Madam:

Subject: **Application for Section 404 General Permit No. 31 and Section 401 Water Quality Certification for the proposed replacement Bridge 118 over Lanes Creek on SR 1937 (Old Pageland- Marshville Rd) in Union County, Federal Aid No. BRZ-1937(2); Division 10; TIP B-4652; Debit \$240 for processing to WBS 33818.1.1.**

The North Carolina Department of Transportation (NCDOT) proposes to replace the 3-span, 121 foot Bridge No. 118 over Lanes Creek on SR 1937, with a 4-span, 177 foot long bridge. There will be 83 feet of permanent stream impacts to Lanes Creek, 74 feet are due to excavation at the edge of Lanes Creek to install slope reinforcement, and 9 feet due to bank stabilization where a v-ditch will enter Lanes Creek. This activity will also require the temporary dewatering of 0.01 acre (74 feet) so the above mentioned activity can be constructed in dry conditions.

Please see enclosed copies of the Pre-Construction Notification (PCN), permit drawings, stormwater management plan, and design plans for the above referenced project. The Categorical Exclusion (CE) was completed in November 2007, and a Right of Way Consultation was completed in June 2011. Documents were distributed shortly thereafter. Additional copies are available upon request.

This project calls for a letting date of November 20, 2012 and a review date of October 2, 2011. The project schedule may be advanced if funding becomes available.

A copy of this permit application and its distribution list will be posted at the NCDOT Website at: <http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html>. If you have any questions or need additional information, please contact Michael Turchy at maturchy@ncdot.gov or (919) 707-6157.

Sincerely,

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

"cc" List: NCDOT Permit Application Standard Distribution List

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

TELEPHONE: 919-707-6000
FAX: 919-250-4224

WEBSITE: WWW.NCDOT.GOV/DOH/PRECONSTRUCT/PE/

LOCATION:
CENTURY CENTER, BUILDING A
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610



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: 198200031		
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 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. 118 over Lanes Creek on SR 1937.
2b. County:	Union
2c. Nearest municipality / town:	Pageland, SC
2d. Subdivision name:	not applicable
2e. NCDOT only, T.I.P. or state project no.:	B-4652

3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	not applicable
3c. Responsible Party (for LLC if applicable):	not applicable
3d. Street address:	1 South Wilmington Street
3e. City, state, zip:	Raleigh, NC 27601
3f. Telephone no.:	(919) 707-6157
3g. Fax no.:	(919) 250-4224
3h. Email address:	maturchy@ncdot.gov

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

B. Project Information and Prior Project History	
1. Property Identification	
1a. Property identification no. (tax PIN or parcel ID):	not applicable
1b. Site coordinates (in decimal degrees):	Latitude: 34.872647 (DD.DDDDDD) Longitude: - 80.403429 (-DD.DDDDDD)
1c. Property size:	2 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Lanes
2b. Water Quality Classification of nearest receiving water:	C
2c. River basin:	Yadkin-Pee Dee
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: Forested & Rural low density residential	
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: 105	
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: Replacement of bridge number 118, a three span, 121' structure, with a four span 177' structure, over Lanes Creek on SR 1937 (Old Pageland-Marshville Road). Cranes, backhoes, excavators 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): Lund, Steven	Agency/Consultant Company: EcoScience Corp. Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. November 21, 2005. JD Expired in 2010, therefore the NCDOT is requesting a "final approved" JD.	
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)
W1 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
W2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
W3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
W4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
W5 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
2g. Total wetland impacts					

2h. Comments:

3. Stream Impacts

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

3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
S1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Bank Stabilization	Lanes Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	20-25	9
S2 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	Temporary Fill	Lanes Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	20-25	74
S3 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Excavation for Installation of reinforcement	Lanes Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	20-25	74
S4 <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

157
83 Perm
74 Temp

3i. Comments:

4. Open Water Impacts

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

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

4g. Comments:

5. Pond or Lake Construction

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

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

5g. Comments:

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

6. Buffer Impacts (for DWQ)

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

6a. Project is in which protected basin?			<input type="checkbox"/> Neuse <input type="checkbox"/> Tar-Pamlico <input type="checkbox"/> Other: <input type="checkbox"/> Catawba <input type="checkbox"/> Randleman		
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
B1 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
B2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
B3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
6h. Total buffer impacts					
6i. Comments:					

D. Impact Justification and Mitigation		
1. Avoidance and Minimization		
1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project. The new bridge will be 56 feet longer than the existing structure and will completely span Lanes Creek. The bridge will also be replaced in place utilizing an off-site detour.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. The work along the bank will be isolated so that work can be commenced under dry conditions.		
2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State		
2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
2b. If yes, mitigation is required by (check all that apply):	<input type="checkbox"/> DWQ <input type="checkbox"/> Corps	
2c. If yes, which mitigation option will be used for this project?	<input type="checkbox"/> Mitigation bank <input type="checkbox"/> Payment to in-lieu fee program <input type="checkbox"/> Permittee Responsible Mitigation	
3. Complete if Using a Mitigation Bank		
3a. Name of Mitigation Bank: not applicable		
3b. Credits Purchased (attach receipt and letter)	Type	Quantity
3c. Comments:		
4. Complete if Making a Payment to In-lieu Fee Program		
4a. Approval letter from in-lieu fee program is attached.	<input type="checkbox"/> Yes	
4b. Stream mitigation requested:	0 linear feet The NCDOT does not propose mitigation for stream bank stabilization activities. Stabilizing the bank of a stream does not require fill in the stream bed and, therefore, under Section 404 of the Clean Water Act, does not constitute Loss of Waters of the U.S. and is not subject to compensatory mitigation. Furthermore, the proposed bank stabilization activities are necessary to prevent erosion and sedimentation, i.e. preventing bank destabilization and minimizing impacts to the environment.	
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):	n/a square feet	
4e. Riparian wetland mitigation requested:	0 acres	
4f. Non-riparian wetland mitigation requested:	0 acres	
4g. Coastal (tidal) wetland mitigation requested:	0 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:	<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 Stormwater Management Plan.	
2e. Who will be responsible for the review of the Stormwater Management Plan?	<input type="checkbox"/> Certified Local Government <input type="checkbox"/> DWQ Stormwater Program <input checked="" type="checkbox"/> DWQ 401 Unit
3. Certified Local Government Stormwater Review	
3a. In which local government's jurisdiction is this project?	not applicable
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Phase II <input type="checkbox"/> NSW <input type="checkbox"/> USMP <input type="checkbox"/> Water Supply Watershed <input type="checkbox"/> Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Coastal counties <input type="checkbox"/> HQW <input type="checkbox"/> ORW <input type="checkbox"/> Session Law 2006-246 <input type="checkbox"/> Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	<input 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	

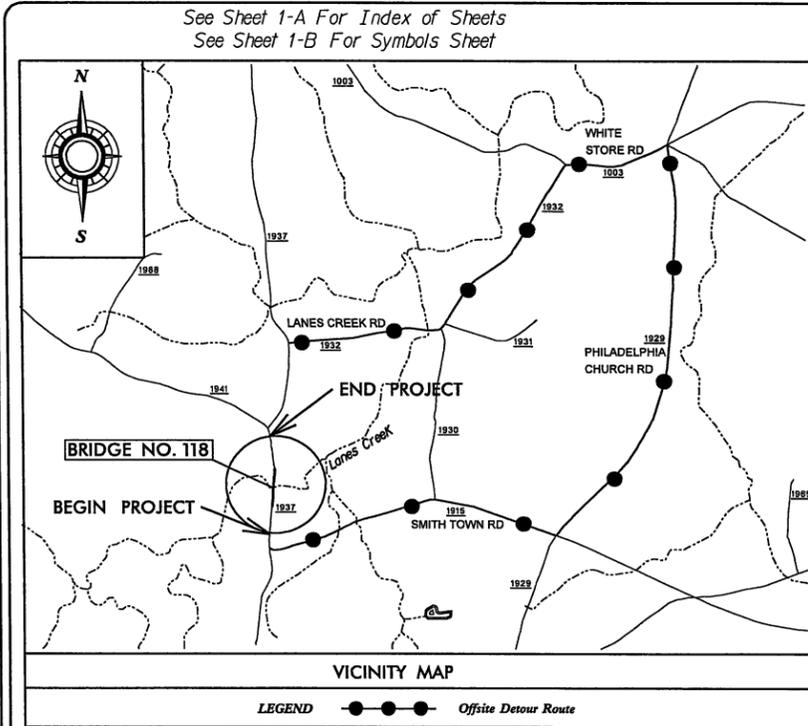
5. Endangered Species and Designated Critical Habitat (Corps Requirement)		
5a. Will this project occur in or near an area with federally protected species or habitat?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	<input 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? Field Surveys for protected species indicated poor habitat for the Carolina Heelsplitter. Previous surveys have been conducted by WRC at this crossing in 1987, 1989, 1993, 2002, and 2007, and the Heelsplitter has never been found at this location. Suitable habitat for Michaux's sumac and Schweinitz's sunflower does exist in the project area. No individuals were found in the study area.		
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?		
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? NC SHPO. Documentation can be found in the project's Categorical Exclusion.		
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 coordination with FEMA		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		
Gregory J. Thorne, PhD Applicant/Agent's Printed Name	 _____ Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	4.12.12 Date

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4652	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33818.1.1	BRZ-1937(2)	PE	
33818.2.1	BRZ-1937(2)	R /W & UTIL.	

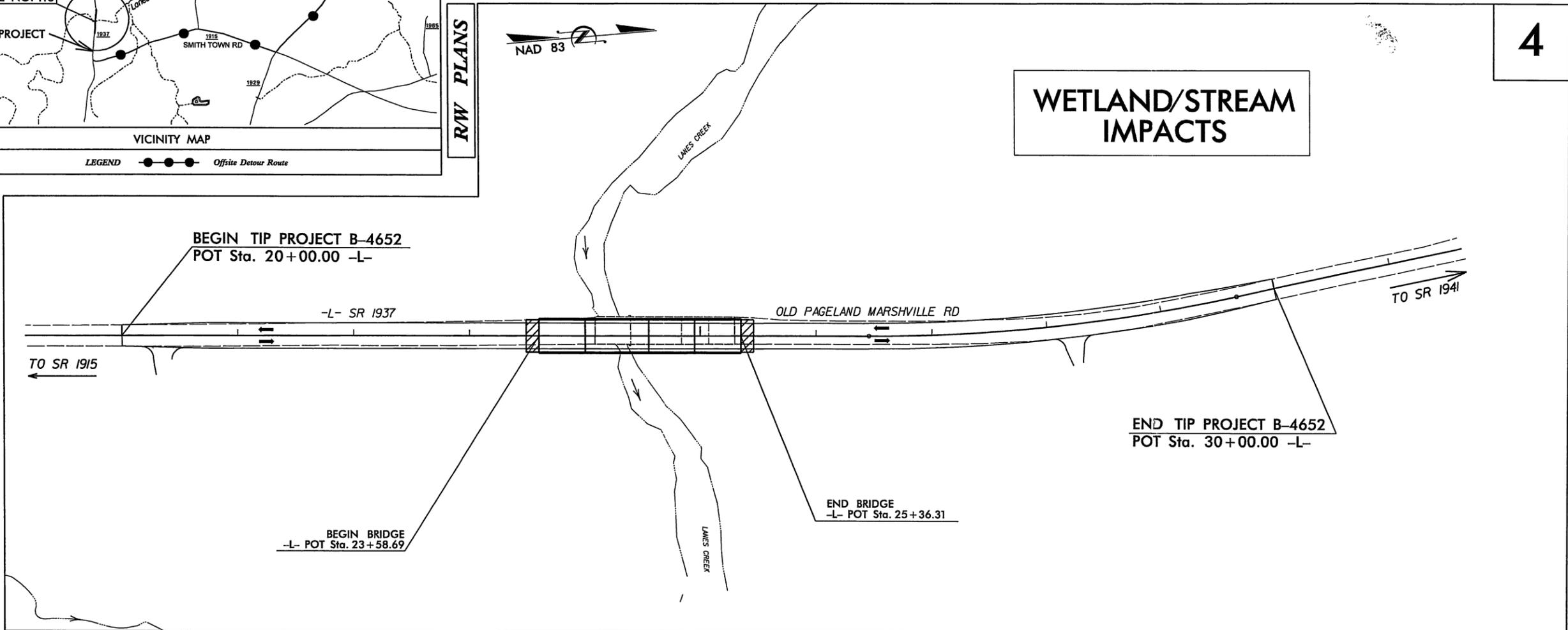
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
UNION COUNTY

LOCATION: BRIDGE NO. 118 OVER LANES CREEK ON SR 1937
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

Permit Drawing
Sheet 1 of 8



RW PLANS



THIS PROJECT IS NOT WITHIN MUNICIPAL BOUNDARIES.

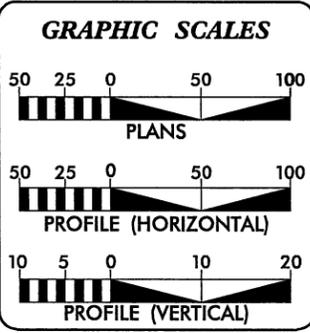
NCDOT CONTACT: BRENDA MOORE, P.E., PROJECT ENGINEER - ROADWAY DESIGN

"CLEARING ON THIS PROJECT SHALL BE ESTABLISHED BY METHOD III."

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TIP PROJECT: B-4652

CONTRACT:



DESIGN DATA

ADT 2012 =	1248
ADT 2032 =	2198
DHV =	10 %
D =	60 %
T =	3 % *
V =	50 MPH
*(TTST 1% + DUAL 2%)	
FUNC CLASS =	RURAL LOCAL
SUBREGIONAL TIER	

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-4652	=	0.156 mi.
LENGTH OF STRUCTURE TIP PROJECT B-4652	=	0.033 mi.
TOTAL LENGTH OF TIP PROJECT B-4652	=	0.189 mi.

Prepared In the Office of:
WANG ENGINEERING COMPANY, INC.
CARY, N.C.
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: NOVEMBER 18, 2011
LETTING DATE: NOVEMBER 20, 2012

JOSEPH C. OGDEN, P.E.
PROJECT ENGINEER

JAMES S. WANG, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

09/08/09 \$\$\$\$SYTIME\$\$\$\$ \$\$\$\$DGN\$\$\$\$ \$\$\$\$USERNAME\$\$\$\$

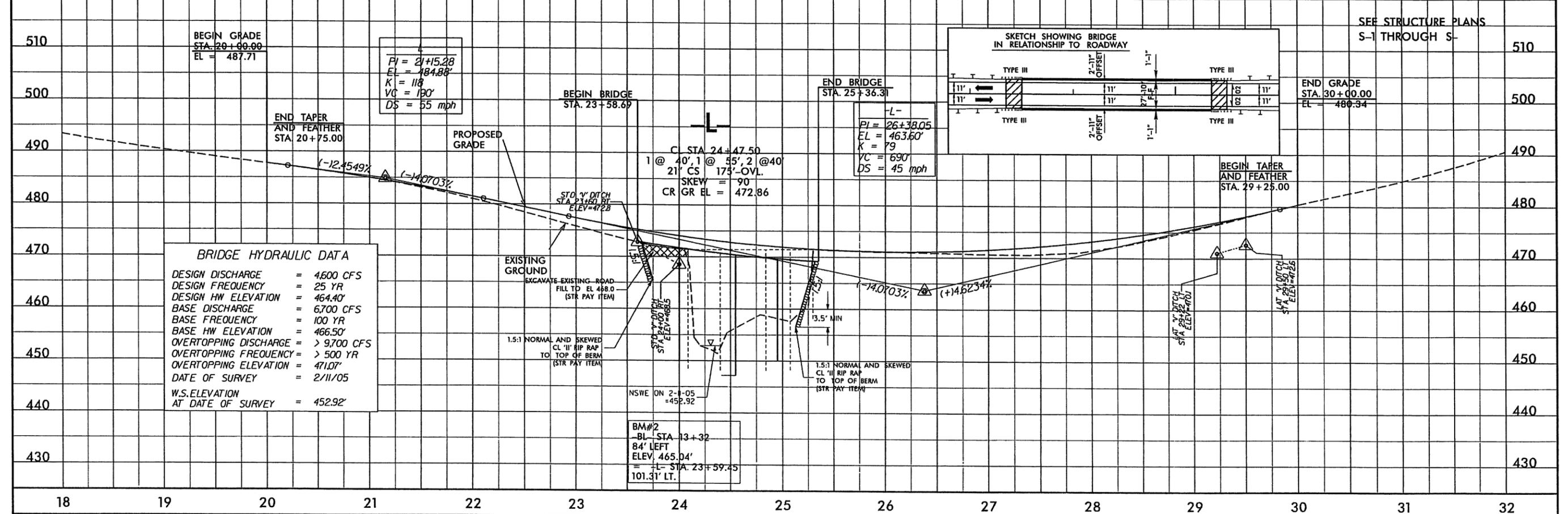
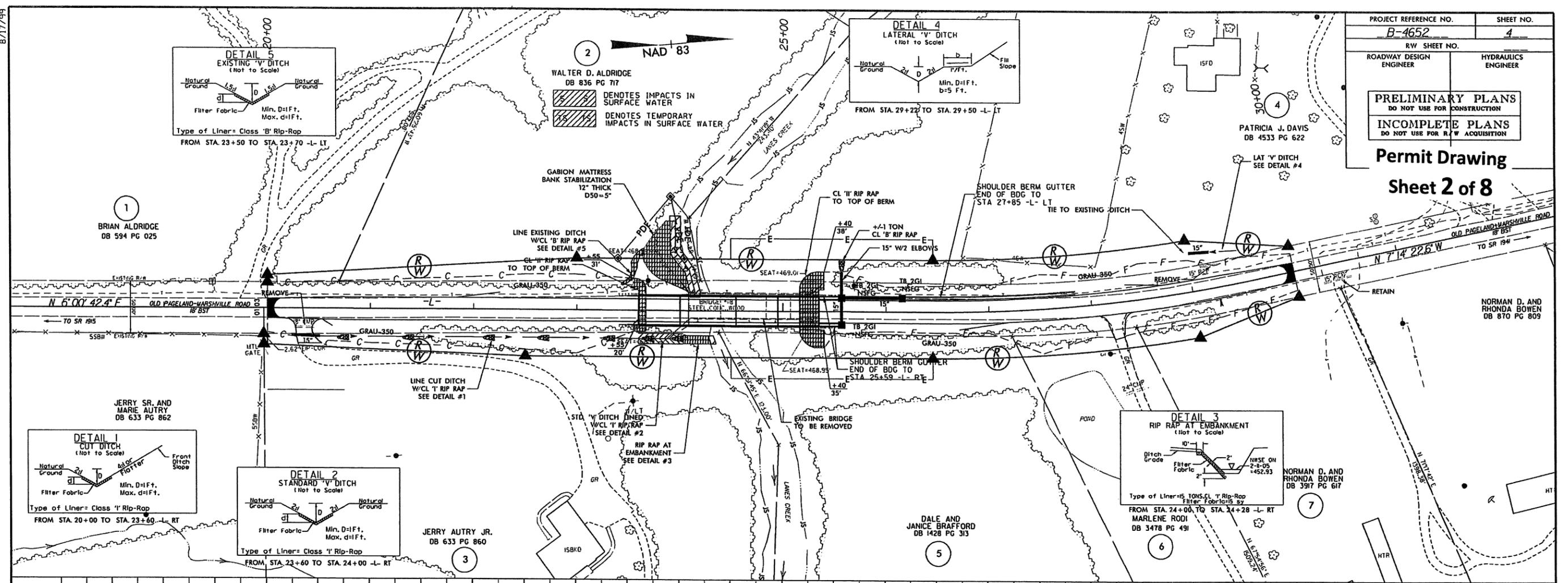
B.17/99

PROJECT REFERENCE NO. B-4652	SHEET NO. 4
ROADWAY DESIGN ENGINEER BRIAN ALDRIDGE DB 594 PG 025	HYDRAULICS ENGINEER PATRICIA J. DAVIS DB 4533 PG 622

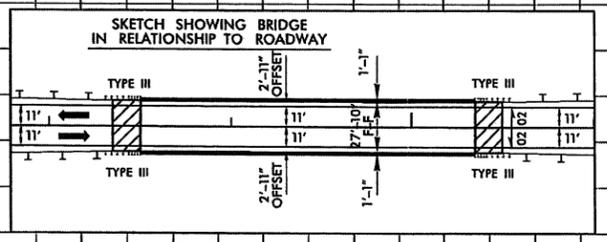
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Permit Drawing
Sheet 2 of 8



SEE STRUCTURE PLANS
S-1 THROUGH S-



BM#2
BL STA. 13+32
84' LEFT
ELEV. 465.04'
= L- STA. 23+59.45
101.31' LT.

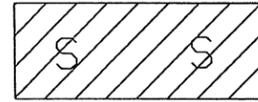
5/14/99

PROJECT REFERENCE NO. B-4652	SHEET NO. 4 BLOW UP
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing
Sheet 4 of 8



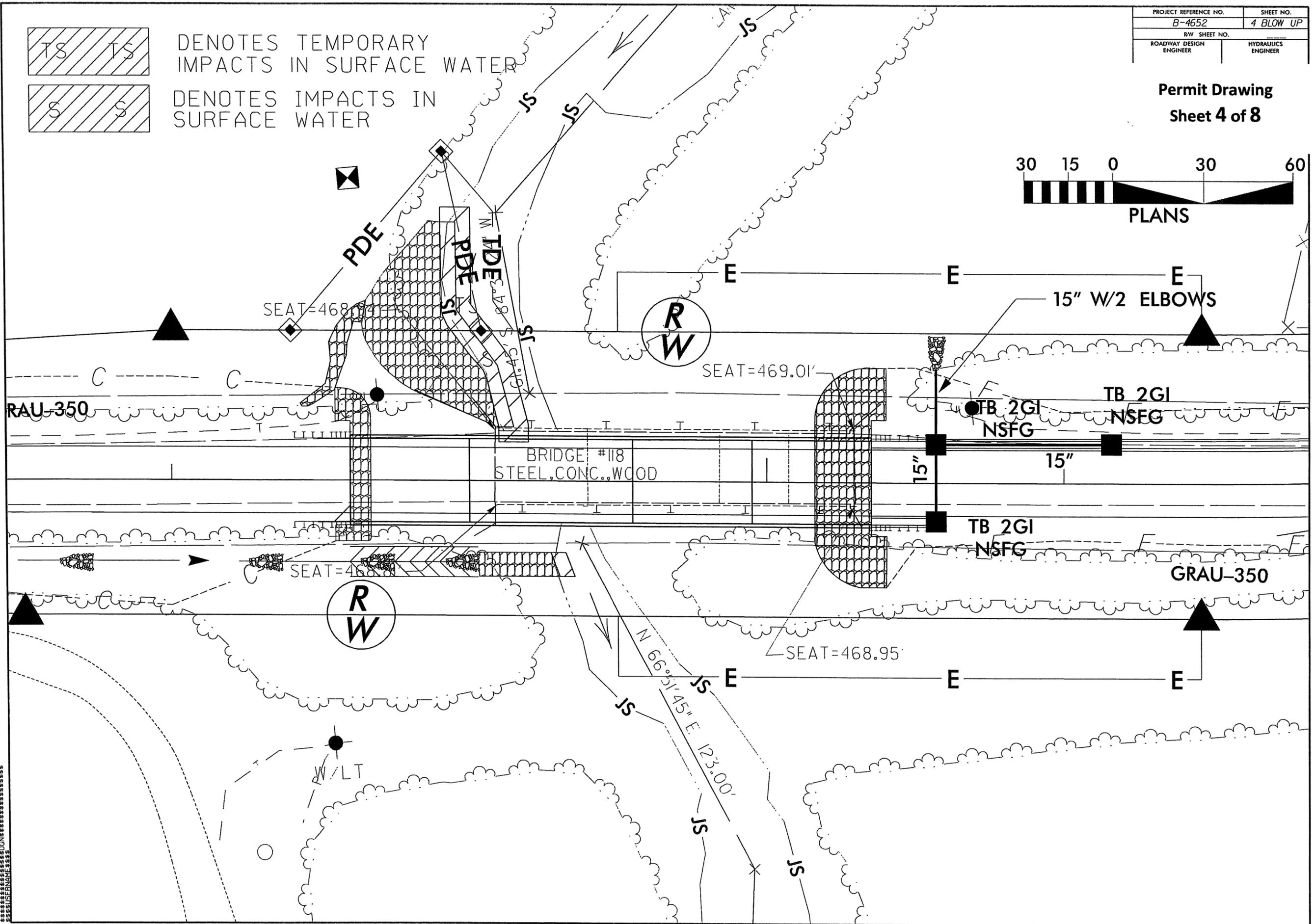
DENOTES TEMPORARY IMPACTS IN SURFACE WATER



DENOTES IMPACTS IN SURFACE WATER

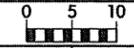


PLANS

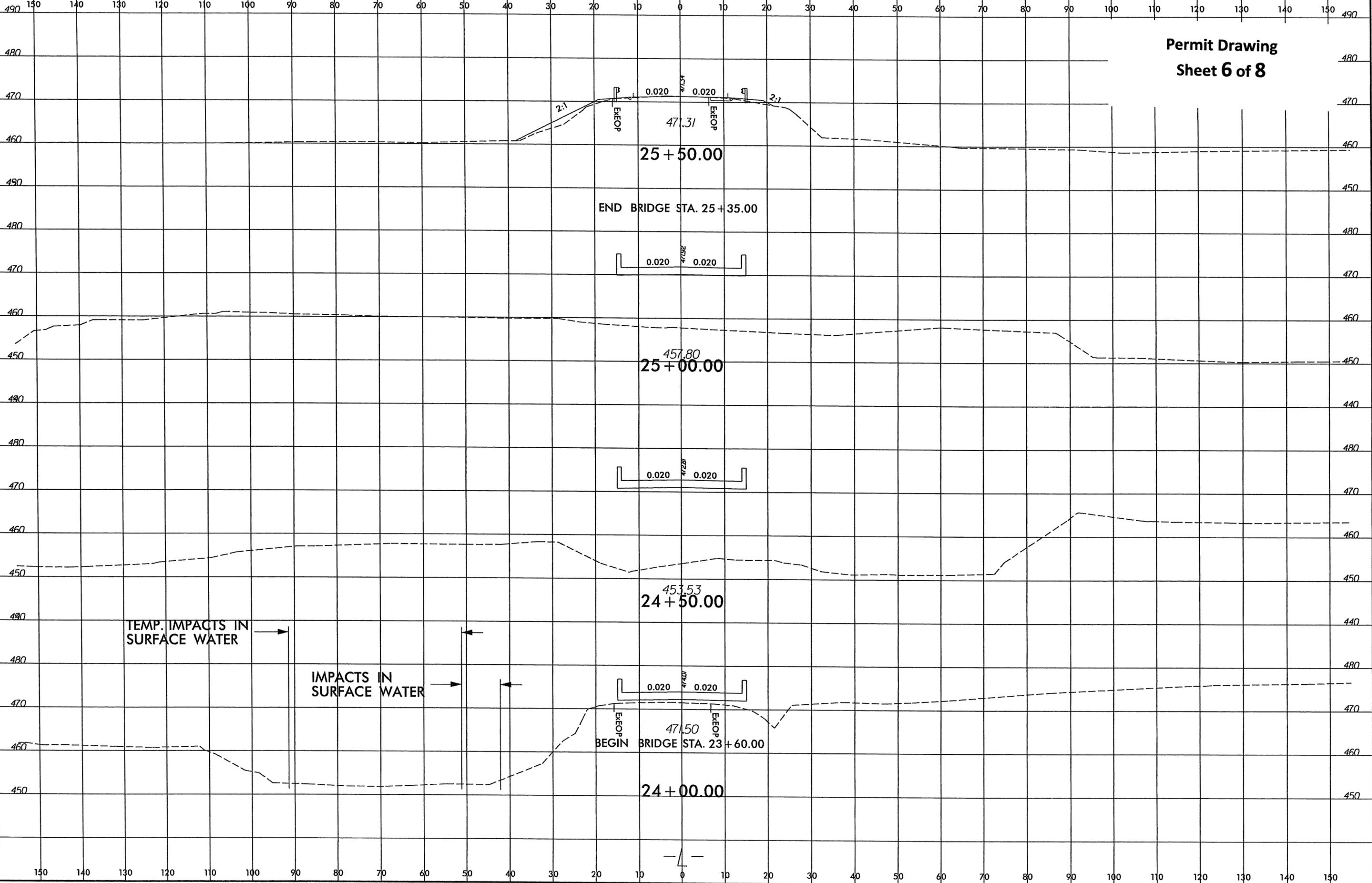


SYSTEMS TIME SYSTEMS
CONSTRUCTION
CONSTRUCTION

8/23/99



PROJ. REFERENCE NO.	SHEET NO.
B-4652	X-4

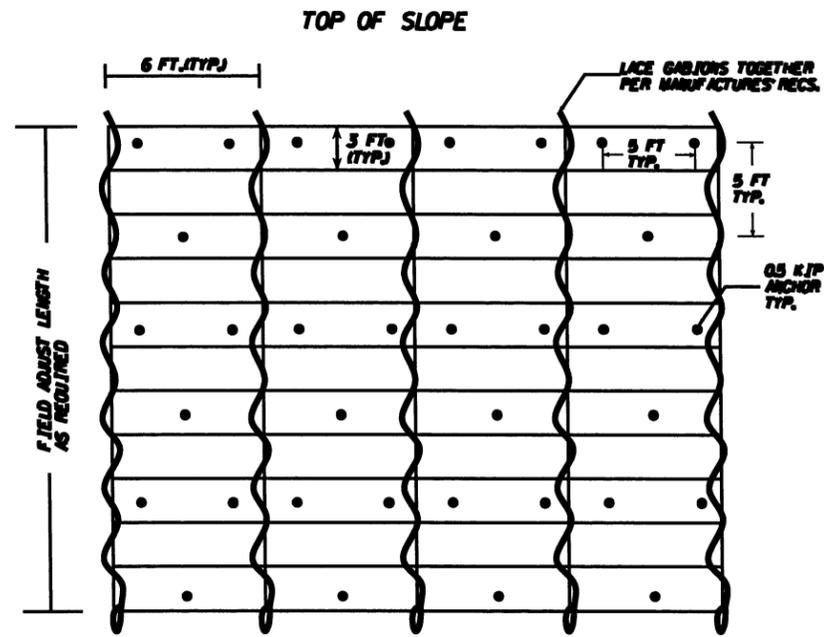


**Permit Drawing
Sheet 6 of 8**

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DATE\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

PROJECT REFERENCE NO.		SHEET	
B-4652 (33818.1.1)		-	
GEOTECHNICAL ENGINEER		ENGINEER	
SIGNATURE	DATE	SIGNATURE	DATE

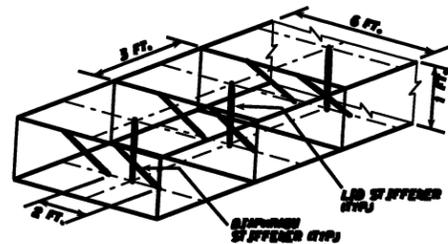
Permit Drawing
Sheet 7 of 8



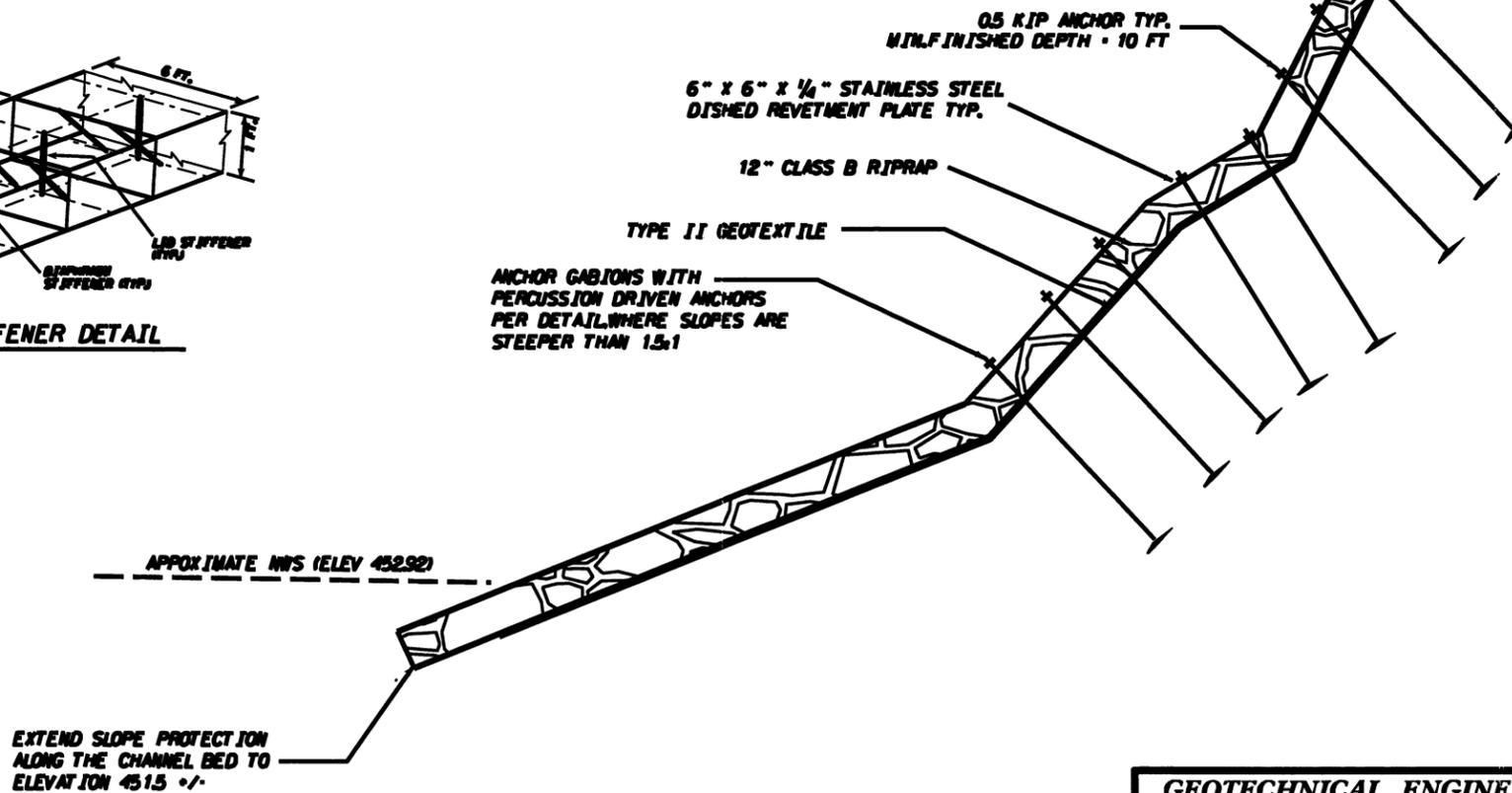
ANCHORED FACE DETAIL

NOTES AND SEQUENCE OF WORK

1. FOR SLOPE STABILIZATION, SEE SLOPE STABILIZATION SPECIAL PROVISION.
2. CLEAN AND GRADE THE SLOPE OF LOOSE MATERIAL AS REQUIRED BY THE CONTRACT. ARRANGE EMPTY GABIONS ON THE SLOPE AND FASTEN COMPONENTS PER MANUFACTURER'S RECOMMENDATIONS OR EVERY 3 INCHES ALONG ALL EDGES OR AS DIRECTED.
3. PLACE TYPE II GEOTEXTILE DOWN SLOPE FACE AN ANCHOR AS REQUIRED.
4. INSTALL ANCHORS INTO THE SLOPE TO A SUFFICIENT DEPTH TO ACHIEVE A MINIMUM FINISHED DEPTH OF 10 FEET AND THE REQUIRED LOAD. SET ANCHORS AND LEAVE TAILS INTACT. WHERE TAILS EXTEND THROUGH GABION MATS, PROTECT TENDONS WITH 1/2" DIA. SCH. 40 PVC TUBING.
5. CAREFULLY PLACE CLASS B RIPRAP INTO LOWEST GABION CELLS, FILLING DOWNSLOPE HALF, USING DOUBLE STRANDS OF LACING WIRE. INSTALL DIAPHRAGM STIFFENERS AND TIE LTD STIFFENER TO BOTTOM CENTER OF CELL SLIGHTLY OVERFILL REMAINDER OF CELL. CLOSE CELL LTD AND TIE STIFFENER. FASTEN ALL EDGES PER MANUFACTURER'S RECOMMENDATIONS OR EVERY 3 INCHES WITH GABION RINGS. REPEAT WORKING FROM BOTTOM TO CREST. WHEN AN ANCHOR TAIL IS ENCOUNTERED, EXTEND IT THROUGH THE FACE OF SLOPE.
6. WORK ACROSS THE SLOPE 1 ROW OF ANCHORS AT A TIME FROM TOP TO BOTTOM FOR EACH PANEL OF CHAIN LINK FABRIC. INSTALL ANCHOR HEAD COMPONENT AND SLOWLY LOAD EACH ANCHOR TO 0.5 KIP AND LOCK-OFF THE ANCHORS.
7. CUT OFF ANCHOR CABLES/BARS LEAVING A 2 INCH TAIL BEYOND THE SWEDGE LOCK



STIFFENER DETAIL



ESTIMATED
QUANTITIES

SLOPE STABILIZATION	250 SQ. YDS.
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EXTEND SLOPE PROTECTION
ALONG THE CHANNEL BED TO
ELEVATION 451.5 +/-

APPROXIMATE MWS (ELEV 452.92)

PREPARED BY: SCC	DATE: 2/10/12
REVIEWED BY: SCC	DATE: 2/18/12

GEOTECHNICAL ENGINEERING UNIT

EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE
 CONTRACT OFFICE

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ANCHORED SLOPE
PROTECTION

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1	-	-	3	-	-
2	-	-	4	-	-

WETLAND PERMIT IMPACT SUMMARY												
WETLAND IMPACTS					SURFACE WATER IMPACTS							
Site No.	Station (From/To)	Structure Size / Type	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)
	24+30 -L- RT	Embankment Rip Rap						<0.01		9		
	23+90 to 24+20 -L- LT	Gabion Mattress						0.01	0.01	74	74	
								0.01		83	74	
TOTALS:								0.01		83	74	

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
UNION COUNTY
WBS - 33818.1.1 (B-4652)
3/20/2012

ATN Revised 3/3/05

PROPERTY OWNERS
NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	BRIAN ALDRIDGE	4834 OLD PAGELAND MARSHVILLE RD MONROE, NC 28112
2	WALTER D. ALDRIDGE	2415 HARGETT RD MONROE, NC 28112
3	JERRY AUTRY JR.	4717 OLD PAGELAND MARSHVILLE RD MONROE, NC 28112
4	PATRICIA J. DAVIS	4702 OLD PAGELAND MARSHVILLE RD MONROE, NC 28112
5	DALE AND JANICE BRAFFORD	3218 OLD MONROE MARSHVILLE RD WINGATE, NC 28174
6	MARLENE RODI	4705 OLD PAGELAND MARSHVILLE RD MONROE, NC 28112
7	NORMAN D. AND RHONDA BOWEN	4703 OLD PAGELAND MARSHVILLE RD MONROE, NC 28112

WETLAND / STREAM IMPACTS

NCDOT
DIVISION OF HIGHWAYS
UNION COUNTY
PROJECT: 33818.1.1 (B-4652)
BRIDGE NO. 118 OVER LANES CREEK
ON SR 1937 (OLD PAGELAND RD.)
BETWEEN SR 1915 AND SR 1941



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

(Version 1.2, Released September, 2011)

Project/TIP No.: B-4652		County(ies): Union		Project Type: Bridge Replacement		Date: 3/20/2012	
Project No.: B-4652		Contractor / Designer: Wang Engineering Company, INC		Address: 15200 Weston Parkway, Suite 101 Cary, NC 27513			
NCDOT Contact:		Phone: 919-677-9544		Email: info@wang-engineering.com			
City/Town: Marshville		County(ies): Union		Union			
River Basin(s): Yadkin-Pee Dee		CAMA County? No		NCDWQ Stream Index No.: 13-17-40-(1)			
Primary Receiving Water: Lanes Creek		Water Supply V (WS-V) None					
NCDWQ Surface Water Classification for Primary Receiving Water		Primary:		Supplemental:			
		None		biological impairment		turbidity	
Other Stream Classification:							
303(d) Impairments:							
Buffer Rules in Effect		N/A					
Project Length (lin. Miles or feet):		1000 ft		Surrounding Land Use: Rural, Agriculture		Existing Site	
Project Built-Upon Area (ac.)		0.64		0.47		ac.	
Typical Cross Section Description:		11' Lanes Normal Crown with Shoulder Section		10' Lanes Normal Crown			
Average Daily Traffic (veh/hr/day):		2198		Existing:		1248	
General Project Narrative:		Bridge replacement project B-4652 consists of removal and replacement of existing bridge #118 and it's approaches. To minimize stormwater pollution, deck drains will not be placed directly over the stream. Also, 2:1 fill slopes have been utilized to reduce the footprint of the project and minimize impacts to surrounding property.					
References							

09/08/09

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

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

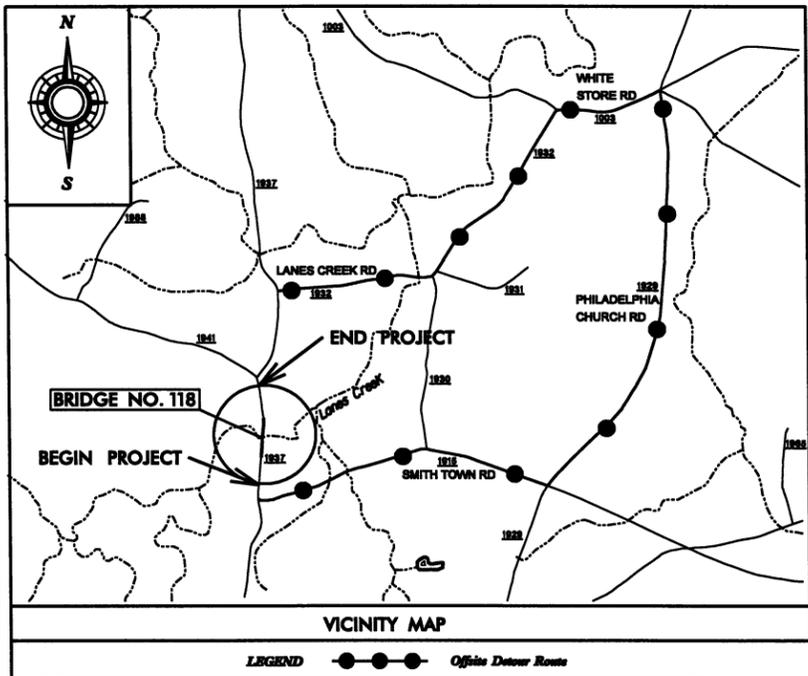
UNION COUNTY

LOCATION: BRIDGE NO. 118 OVER LANES CREEK ON SR 1937

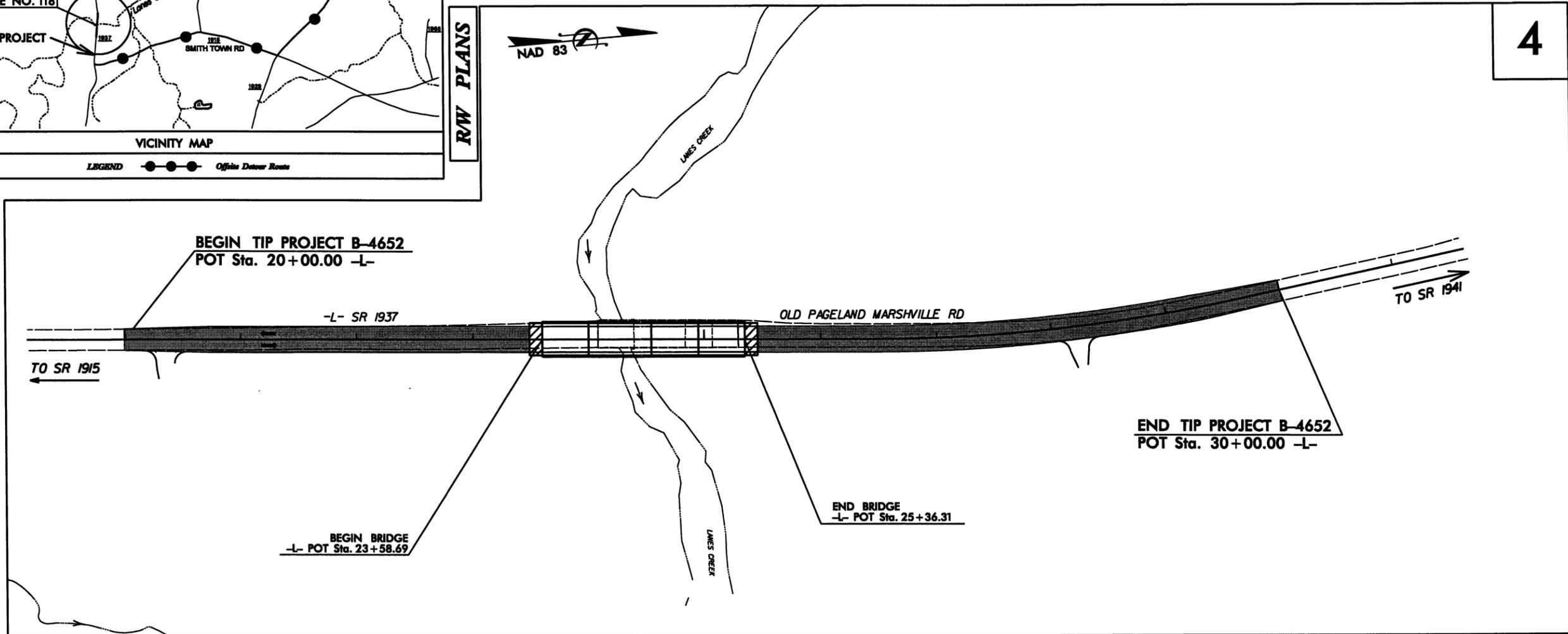
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4652	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33818.1.1	BRZ-1937(2)	PE	
33818.2.1	BRZ-1937(2)	R /W & UTIL.	

TIP PROJECT: B-4652



RW PLANS



4

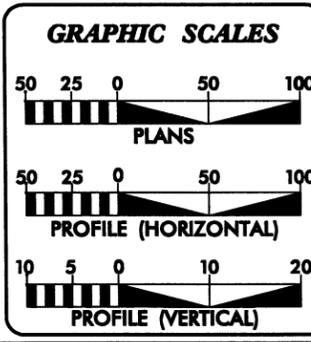
THIS PROJECT IS NOT WITHIN MUNICIPAL BOUNDARIES.

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

"CLEARING ON THIS PROJECT SHALL BE ESTABLISHED BY METHOD III."

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA	
ADT 2012 =	1248
ADT 2032 =	2198
DHV =	10 %
D =	60 %
T =	3 % *
V =	50 MPH
*(TTST 1% + DUAL 2%)	
FUNC CLASS =	RURAL LOCAL
SUBREGIONAL TIER	

PROJECT LENGTH	
LENGTH OF ROADWAY TIP PROJECT B-4652	= 0.156 mi.
LENGTH OF STRUCTURE TIP PROJECT B-4652	= 0.033 mi.
TOTAL LENGTH OF TIP PROJECT B-4652	= 0.189 mi.

Prepared in the Office of:
WANG ENGINEERING COMPANY, INC.
CARY, N.C.
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: **NOVEMBER 18, 2011**

LETTING DATE: **NOVEMBER 20, 2012**

PROJECT ENGINEER: **JOSEPH C. OGDEN, P.E.**

PROJECT DESIGN ENGINEER: **JAMES S. WANG, P.E.**

HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

\$\$\$SYTIME\$\$\$
\$\$\$DGN\$\$\$
\$\$\$USERNAME\$\$\$

01/20/11

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	○ EP
Property Corner	_____
Property Monument	□ EOM
Parcel/Sequence Number	①23
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-HLB-
Proposed Wetland Boundary	HLB
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○ S
Well	○ W
Small Mine	⊗
Foundation	□
Area Outline	□
Cemetery	□ †
Building	□
School	□ S
Church	□ C
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	_____
Proposed Lateral, Tail, Head Ditch	_____
False Sump	_____

RAILROADS:

Standard Gauge	_____
RR Signal Milepost	○ CSX TRANSPORTATION MILEPOST 35
Switch	□ SWITCH
RR Abandoned	_____
RR Dismantled	_____

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	_____
Existing Curb	_____
Proposed Slope Stakes Cut	-C-
Proposed Slope Stakes Fill	-F-
Proposed Wheel Chair Ramp	WCR
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	□ CB
Paved Ditch Gutter	_____
Storm Sewer Manhole	⊕
Storm Sewer	_____

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊕
Power Line Tower	⊗
Power Transformer	⊗
U/G Power Cable Hand Hole	_____
H-Frame Pole	●
Recorded U/G Power Line	_____
Designated U/G Power Line (S.U.E.*)	_____

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Booth	□
Telephone Pedestal	□
Telephone Cell Tower	_____
U/G Telephone Cable Hand Hole	_____
Recorded U/G Telephone Cable	_____
Designated U/G Telephone Cable (S.U.E.*)	_____
Recorded U/G Telephone Conduit	_____
Designated U/G Telephone Conduit (S.U.E.*)	_____
Recorded U/G Fiber Optics Cable	_____
Designated U/G Fiber Optics Cable (S.U.E.*)	_____

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded U/G Water Line	_____
Designated U/G Water Line (S.U.E.*)	_____
Above Ground Water Line	_____

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	_____

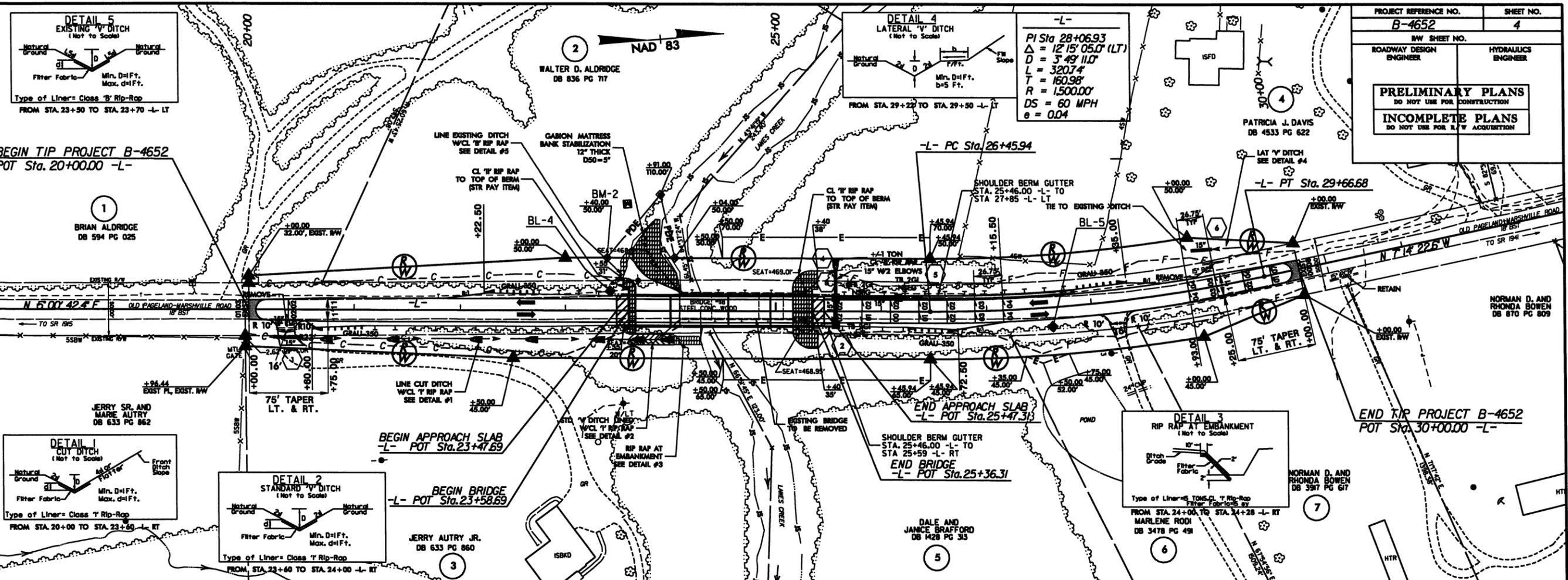
SANITARY SEWER:

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	□
AG Tank; Water, Gas, Oil	□
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

8/17/99



PROJECT REFERENCE NO. B-4652	SHEET NO. 4
RDW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R.F.V. ACQUISITION	

