STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT L. MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

June 20, 2013

U. S. Army Corps of Engineers
Regulatory Field Office
3331 Heritage Trade Drive
Suite 105
Wake Forest, NC 27587

ATTN: Mr. Monte Matthews
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permits 13, 23 & 33 and Section 401 Water Quality Certification** for the Replacement of Bridge#6 on US 321A over Little Gunpowder Creek in Caldwell County, Federal Aid Project No.BRSTP-321A(3); Division 11; TIP No B-5138 $240.00 Debit Work Order WBS Element 42299.1.1.

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 6 over Little Gunpowder Creek on US 321A with a triple barrel 120-foot 12 x 12 reinforced concrete box culvert (RCBC) on the existing alignment. There will be a total of 151 linear feet of permanent impacts to surface waters which includes 31 feet of bank stabilization. In addition, 10 feet of temporary impacts to surface waters will result from dewatering during culvert and bank stabilization installation.

Please see enclosed copies of the Pre-Construction Notification (PCN), EEP Acceptance Letter, stormwater management plan, permit drawings, and design plans for the above-referenced project. The Programmatic Categorical Exclusion (PCE) was completed in February 2012 and was distributed shortly thereafter. Additional copies are available upon request.

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

TELEPHONE: 919-707-6000
FAX: 919-212-5785

WEBSITE:NCDOT.GOV

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

Correspondence from the North Carolina Wildlife Resources Commission (NCWRC) dated April 15, 2009 offers no moratoriums for the project. By copy of this letter and attachment, NCDOT herby requests NCWRC review and forward for any updated comments for this project to the Army Corps of Engineers and the NCDOT within 30 calendar days of receipt of this application. This project calls for a letting date of January 21, 2014 and a review date of December 3, 2013; however, the let date may advance as additional funding becomes available.

A copy of this permit application and its distribution list will be posted on the NCDOT website at: https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx. If you have any questions or need additional information, please e-mail Jeff Hemphill at jhemphill@ncdot.gov.

Sincerely,

E. L. Lush

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

Cc: NCDOT Permit Application Standard Distribution List
File

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

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	☒ Section 404 Permit ☐ Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 13 23 33 or General Permit (GP) number:	
1c. Has the N WP or GP number been verified by the Corps?	☐ Yes ☒ No
1d. Type(s) of approval sought from the DWQ (check all that apply): ☒ 401 Water Quality Certification – Regular ☐ Non-404 Jurisdictional General Permit ☐ 401 Water Quality Certification – Express ☐ Riparian Buffer Authorization	
1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: ☐ Yes ☒ No / For the record only for Corps Permit: ☐ Yes ☒ No
1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.	☒ Yes ☐ No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	☐ Yes ☒ No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	☐ Yes ☒ No

2. Project Information

2a. Name of project:	Replacement of Bridge 6 on US 321A over Little Gunpowder Creek
2b. County:	Caldwell
2c. Nearest municipality / town:	Sawmills
2d. Subdivision name:	*not applicable*
2e. NCDOT only, T.I.P. or state project no:	B-5138

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 i f applicable):	*not applicable*
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 707-6126
3g. Fax no.:	(919) 212-5785
3h. Email address:	jhemphill@ncdot.gov

4. Applicant Information (if different from owner)	
4a. Applicant is:	☐ Agent ☐ 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: 35.8367 (DD.DDDDDD) Longitude: - 81.4810 (-DD.DDDDDD)
1c. Property size:	6.9 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Gunpowder Creek
2b. Water Quality Classification of nearest receiving water:	WS-IV
2c. River basin:	Catawba
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: Forestland interspersed with commercial and residential development	
3b. List the total estimated acreage of all existing wetlands on the property: 0.35	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 290	
3d. Explain the purpose of the proposed project: To replace a structurally deficient (and/ or) functionally obsolete bridge.	
3e. Describe the overall project in detail, including the type of equipment to be used: Replace existing 42' x 47' single span concrete girder bridge with a triple barrel 120-foot 12 x 12 reinforced concrete box culvert (RCBC) on the existing alignment. 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:	☐ Yes ☒ No ☐ Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	☐ Preliminary ☐ Final
4c. If yes, who delineated the jurisdictional areas? Name (if known):	Agency/Consultant Company: NCDOT Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation.	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	☐ Yes ☒ No ☐ Unknown
5b. If yes, explain in detail according to "help file" instructions.	
6. Future Project Plans	
6a. Is this a phased project?	☐ Yes ☒ No
6b. If yes, explain.	

C. Proposed Impacts Inventory

1. Impacts Summary

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

☐ Wetlands ☒ Streams - tributaries ☐ Buffers

☐ Open Waters ☐ Pond Construction

2. Wetland Impacts

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

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

2h. Comments: The t wo wetlands onsite will not be impacted by the project.

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 ☒ P ☐ T	Fill	Little Gunpowder Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	15	120
Site 1 ☒ P ☐ T	Bank Stabilization	Little Gunpowder Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	15	31
Site 1 ☐ P ☒ T	Dewatering	Little Gunpowder Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	15	10
Site 4 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 5 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 6 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
					3h. **Total stream and tributary impacts**	151 Perm 10 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 ☐ P ☐ T				
O2 ☐ P ☐ T				
O3 ☐ P ☐ T				
O4 ☐ P ☐ 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?	☐ 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?			☐ Neuse ☒ Catawba	☐ Tar-Pamlico ☐ Randleman	☐ 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 ☐ P ☐ T			☐ Yes ☐ No		
B2 ☐ P ☐ T			☐ Yes ☐ No		
B3 ☐ P ☐ T			☐ Yes ☐ No		
			6h. **Total buffer impacts**		

6i. Comments: Project is not on the main stem of the Catawba

D. Impact Justification and Mitigation

1. Avoidance and Minimization

1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project.

2.5 foot low flow sills will be placed in the outer barrels and floodplain benches will be installed at the inlet and outlet to maintain stream depth. The culvert will be aligned with the natural stream to avoid sharp bends up and downstream of the culvert.

1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques.

Existing grass lined ditches will be maintained for stormwater runoff treatment.

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?	☒ Yes ☐ No If no, explain:
2b. If yes, mitigation is required by (check all that apply):	☐ DWQ ☒ Corps
2c. If yes, which mitigat ion option will be used for this project?	☐ Mitigation bank ☒ Payment to in-lieu fee program ☐ 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.	☒ Yes
4b. Stream mitigation requested:	151 linear feet
4c. If using stream mitigation, stream temperature:	☐ warm ☐ cool ☒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?	☐ Yes ☒ No
1b. If yes, then is a diffuse flow plan included? If not, explain why. Comments: If required from 1a, see attached buffer permit drawings.	☐ Yes ☐ 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?	☒ Yes ☐ 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?	☐ Certified Local Government ☐ DWQ Stormwater Program ☒ 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):	☐ Phase II ☐ NSW ☐ USMP ☐ Water Supply Watershed ☐ Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	☐ Coastal counties ☐ HQW ☐ ORW ☐ Session Law 2006-246 ☐ Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	☐ Yes ☐ No N/A
5b. Have all of the 401 Unit submittal requirements been met?	☐ Yes ☐ 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?	☒ Yes ☐ 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)?	☒ Yes ☐ 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:	☒ Yes ☐ 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)?	☐ Yes ☒ No
2b. Is this an after-the-fact permit application?	☐ Yes ☒ 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?	☐ Yes ☒ 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?	☒ Yes ☐ No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	☐ Yes ☒ No
5c. If yes, ind icate the USFWS Field Office you have contacted.	☐ Raleigh ☐ Asheville
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? A survey was conducted by NCDOT biologists on April 22, 2009 for dwarf-flowered heartleaf with no specimens found, Habitat – No Effect. A habitat assessment for Virginia big-eared bats was conducted on March 11, 2009 by NCDOT biologists with a determination of No Habitat – No Effect.	
6. Essential Fish Habitat (Corps Requirement)	
6a. Will this project occur in or near an area designated as essential fish habitat?	☐ Yes ☒ 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)?	☐ Yes ☒ 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?	☒ Yes ☐ 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	E. L. Lusk Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	6·18·13 Date

Ecosystem
PROGRAM

June 18, 2013

Mr. Gregory J. Thorpe, Ph.D.
Manager, Project Development and Environmental Analysis Unit
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

B-5138, Replace Bridge Number 6 over Gunpowder Creek on US 321A, Caldwell County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream mitigation for the subject project. Based on the information supplied by you on June 13, 2013, the impacts are located in CU 03050101 of the Catawba River basin in the Northern Mountains (NM) Eco-Region, and are as follows:

Catawba 03050101 NM	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	151.0	0	0	0	0	0	0	0

*Some of the stream and wetland impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details.

This impact and associated mitigation need were under projected by the NCDOT in the 2013 impact data. EEP will commit to implement sufficient compensatory stream mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies using the delivery timeline listed in Section F.3.c.iii of the N.C. Department of Environment and Natural Resources' Ecosystem Enhancement Program In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-707-8420.

Sincerely,

James B. Stanfill

James B. Stanfill
EEP Asset Management Supervisor

cc: Mr. Monte Matthews, USACE – Raleigh Regulatory Field Office
Ms. Amy Chapman, Division of Water Quality, Wetlands/401 Unit
File: B-5138

Restoring... Enhancing... Protecting Our State

NCDENR

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR LINEAR ROADWAY PROJECTS

(Version 1.2; Released July 2012)

Project/TIP No.: B-5138 **County(ies):** Caldwell

General Project Information

Project No.:	B-5138	**Project Type:**	Bridge Replacement	**Date:**	3/5/2013
NCDOT Contact:		**Contractor / Designer:**	Steve Bondor, P.E. Greenhorne & O'Mara, now Stantec		
Address:		**Address:**	5565 Centerview Dr Suite 107 Raleigh NC 27606		
Phone:		**Phone:**	919-859-1919		
Email:		**Email:**	steve.bondor@stantec.com		
City/Town:	Town of Sawmills and Town of Hudson	**County(ies):**	Caldwell		
River Basin(s):	Catawba	**CAMA County?**	No		
Primary Receiving Water:	Little Gunpowder Creek	**NCDWQ Stream Index No.:**	11-55-2-(2)		
NCDWQ Surface Water Classification for Primary Receiving Water	**Primary:**	Water Supply IV (WS-IV)			
	Supplemental:	None			
Other Stream Classification:	None				
303(d) Impairments:	None				
Buffer Rules in Effect	N/A				

Project Description

Project Length (lin. Miles or feet):	0.038 miles	**Surrounding Land Use:**	rural residential

	Proposed Project	**Existing Site**
Project Built-Upon Area (ac.)	0.12 ac.	0.10 ac.
Typical Cross Section Description:	Normal Crown at 0.02 slope, 12' travel lanes and 8' shoulders	Normal Crown at 0.02 slope, 11' travel lanes and 4' shoulders
Average Daily Traffic (veh/hr/day):	Design/Future: 2035 / 8000 VPD	Existing: 2010 / 6654 VPD
General Project Narrative:	Maintain existing roadway grass ditches, add riprap and PSRM toe protection along new emabnkment fill, replace existing 15" driveway pipe with 18" driveway pipe.	

References

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5138	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
42299.2.1	BRSTP-321A (3)	R/W,UTL

PERMIT DRAWING
SHEET 1 OF 6

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

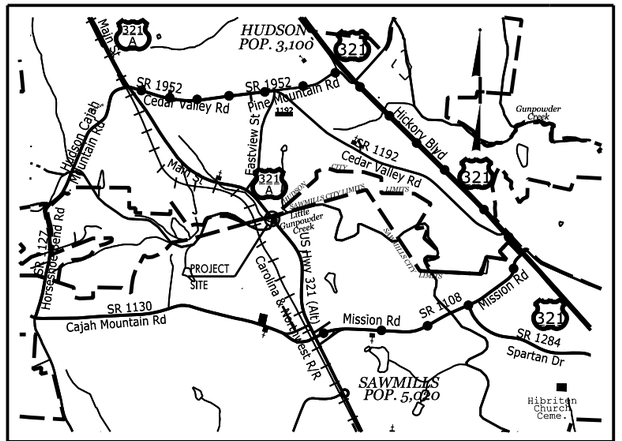
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CALDWELL COUNTY

LOCATION: BRIDGE NO. 6 OVER LITTLE GUNPOWDER CREEK AND APPROACHES ON US 321A

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND CULVERT

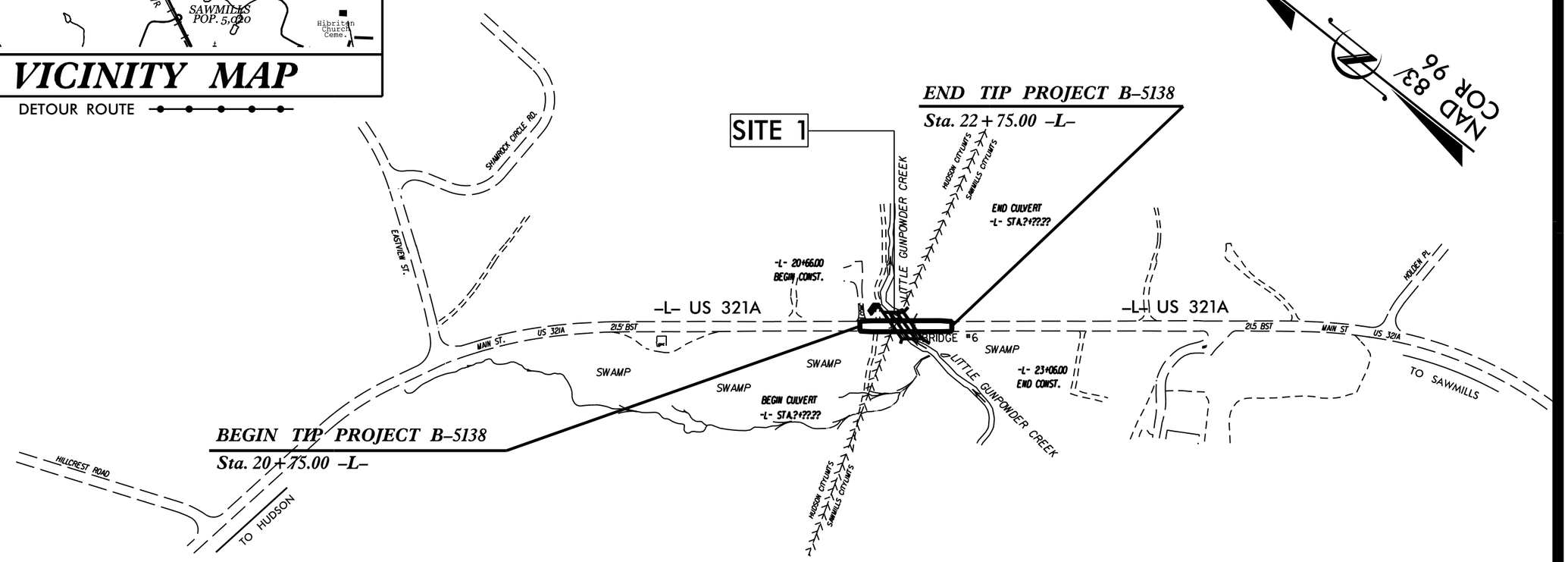
WETLAND AND STREAM IMPACTS



VICINITY MAP

DETOUR ROUTE

NAD 83/ COR 96



CLEARING ON THIS PROJECT SHALL BE PREFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

THIS PROJECT IS PARTIALLY WITHIN THE MUNICIPAL BOUNDARIES OF HUDSON AND SAWMILLS.

THIS IS NOT A CONTROLLED ACCESS PROJECT.

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2010 = 6,654 VPD
ADT 2035 = 8,000 VPD
DHV = 11 %
D = 55 %
T = 6 % *
V = 50 MPH
*(TTST=2% + DUAL=4%)
FUNC CLASS =
RURAL COLLECTOR
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5138	=	0.030 MILE
LENGTH STRUCTURE TIP PROJECT B-5138	=	0.008 MILE
TOTAL LENGTH OF PROJECT B-5138	=	0.038 MILE

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
DECEMBER 21, 2012

LETTING DATE:
JANUARY 21, 2014

JASON MOORE, PE
PROJECT ENGINEER

NYA K. BOAYUE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

TIP PROJECT: B-5138

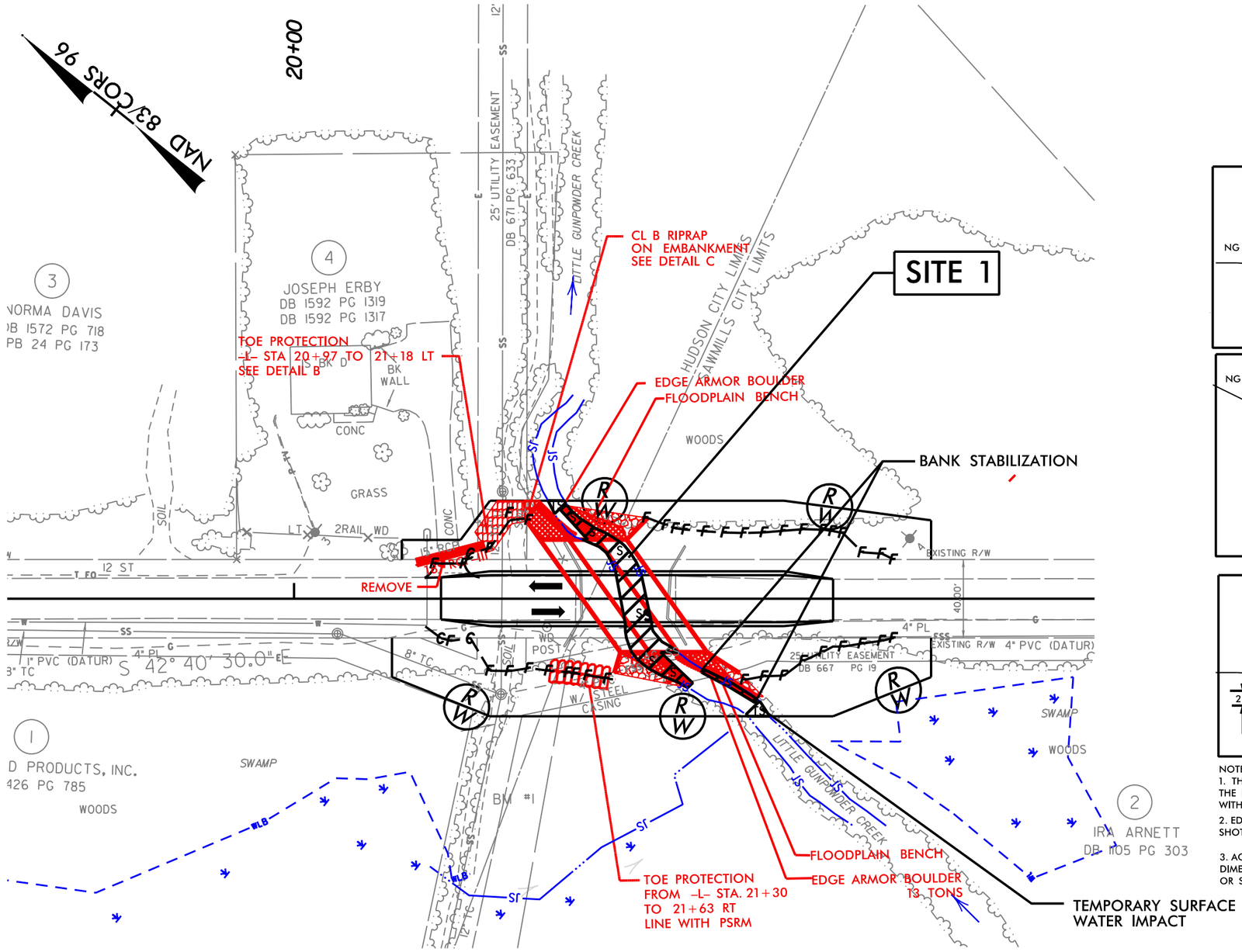
CONTRACT: C203301

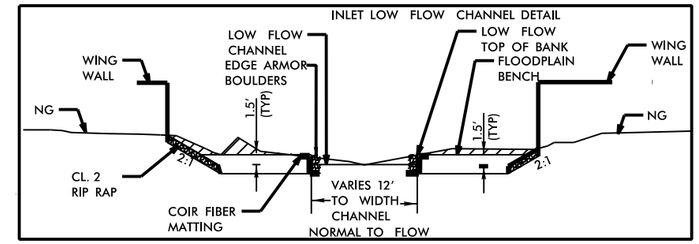
03/05/2013
STANTEC
B-5138_PERMIT PACKAGE_03/05/2013

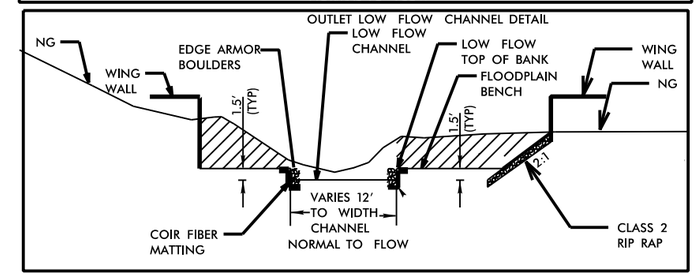
PROJECT REFERENCE NO.	SHEET NO.
B-5138	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

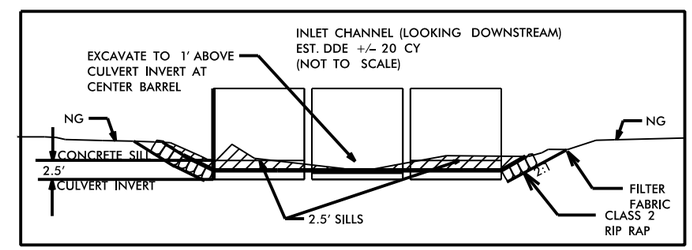
0 30 60

PERMIT DRAWING
SHEET 2 OF 6









NOTES:

1. THE EDGE OF THE LOW FLOW CHANNEL SHALL BE ARMORED WITH BOULDERS. THE DEPTH OF ARMOR PROTECTION SHOULD EXTEND 1.5' BELOW THE STREAM BED LINED WITH COIR FIBER MATTING.

2. EDGE ARMOR CAN BE NATURAL STREAM BOULDERS OR EXTRACTED FROM CLASS II RIP RAP OR SHOT ROCK MATERIAL AND CAN BE CUBICAL OR RECTANGULAR IN NATURE.

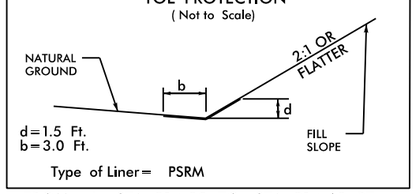
3. ACCEPTABLE BOULDERS FOR THE EDGE ARMOR SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS; 3'X2'X1'. UNSUITABLE EDGE ARMOR MATERIAL THAT REMAINS FROM CLASS II RIP RAP OR SHOT ROCK STORES, MAY BE USED IN BACK FILL OF THE OVER BANK AREA OR DISCARDED.

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

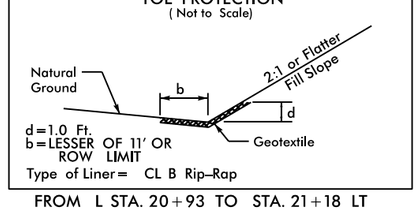
DIVERT STREAM TO ALLOW CONSTRUCTION OF CENTER AND LEFT BARREL, DIVERT STREAM TO CENTER BARREL FOR CONSTRUCTION OF RIGHT BARREL

DETAIL A
TOE PROTECTION
(Not to Scale)



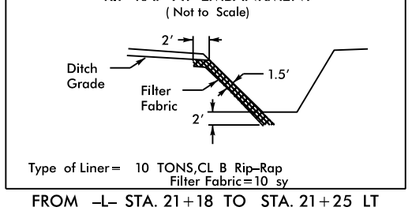
FROM -L- STA. 21+30 TO STA. 21+63 RT

DETAIL B
TOE PROTECTION
(Not to Scale)



FROM L STA. 20+93 TO STA. 21+18 LT

DETAIL C
RIP RAP AT EMBANKMENT
(Not to Scale)



FROM -L- STA. 21+18 TO STA. 21+25 LT

03/05/2013
STANTEC
B-5138_PERMIT PACKAGE_03/05/2013

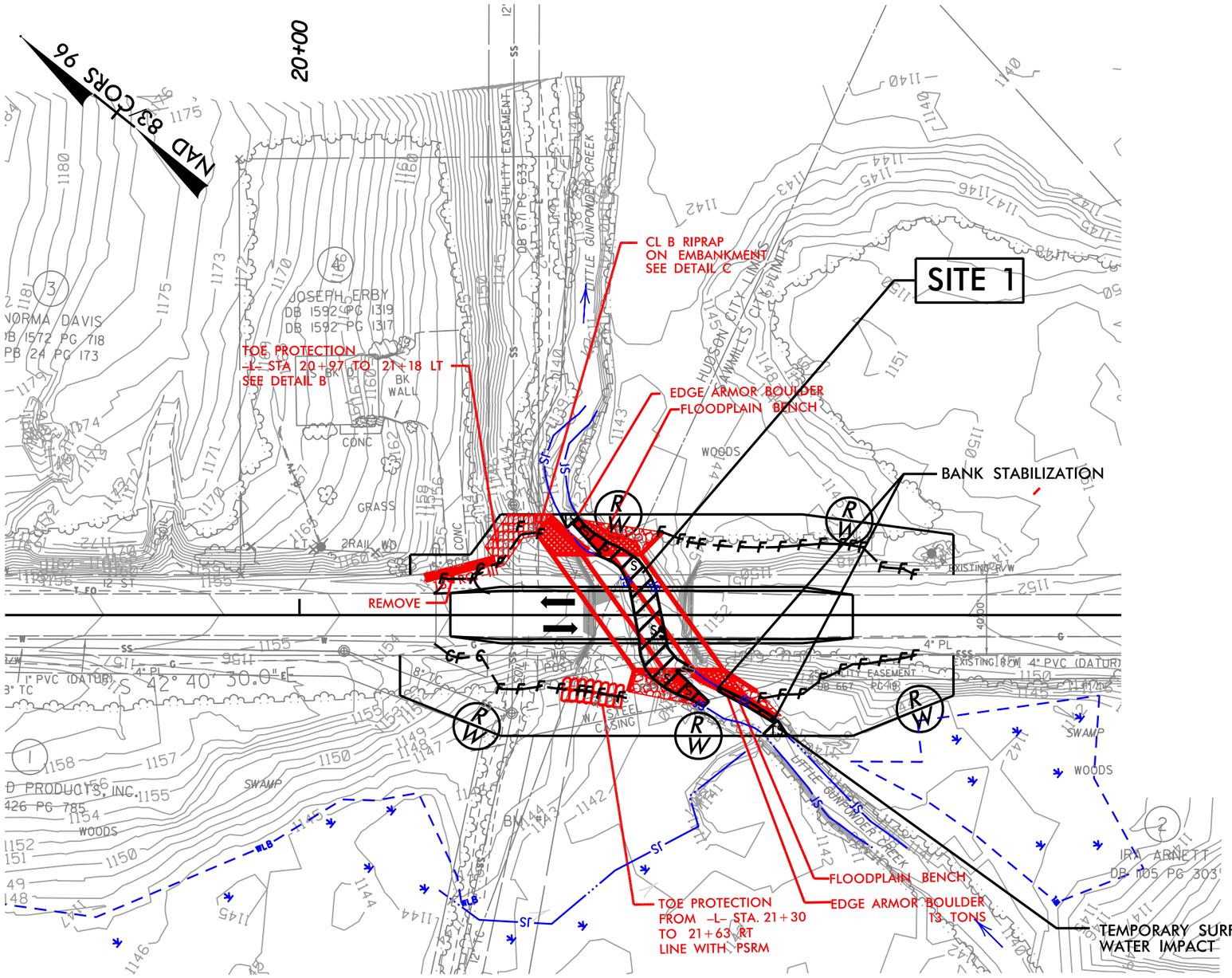
8/17/99

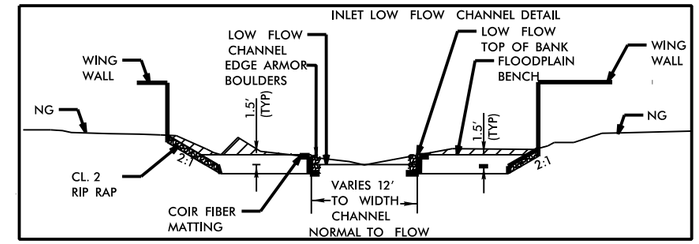
8/17/99

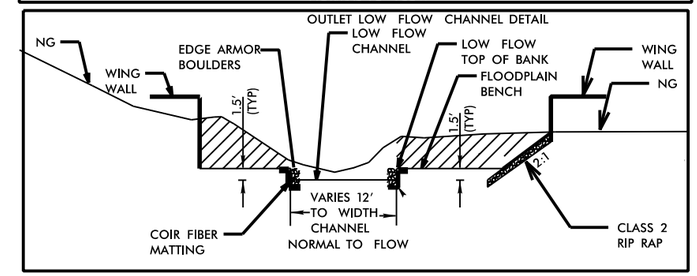
PROJECT REFERENCE NO.	SHEET NO.
B-5138	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

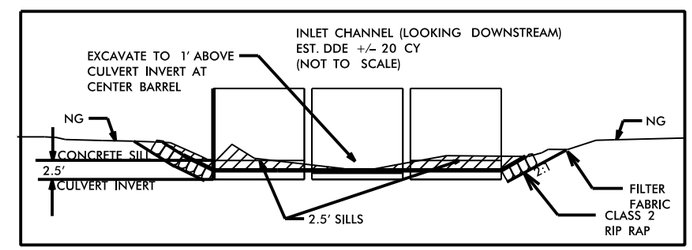
0 30 60

PERMIT DRAWING SHEET 3 OF 6









NOTES:

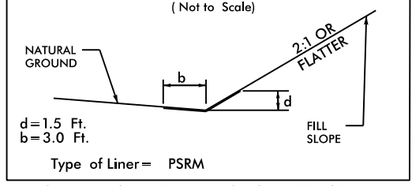
1. THE EDGE OF THE LOW FLOW CHANNEL SHALL BE ARMORED WITH BOULDERS. THE DEPTH OF ARMOR PROTECTION SHOULD EXTEND 1.5' BELOW THE STREAM BED LINED WITH COIR FIBER MATTING.
2. EDGE ARMOR CAN BE NATURAL STREAM BOULDERS OR EXTRACTED FROM CLASS II RIP RAP OR SHOT ROCK MATERIAL AND CAN BE CUBICAL OR RECTANGULAR IN NATURE.
3. ACCEPTABLE BOULDERS FOR THE EDGE ARMOR SHALL HAVE THE FOLLOWING MINIMUM DIMENSIONS; 3'X2'X1'. UNSUITABLE EDGE ARMOR MATERIAL THAT REMAINS FROM CLASS II RIP RAP OR SHOT ROCK STORES, MAY BE USED IN BACK FILL OF THE OVER BANK AREA OR DISCARDED.

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

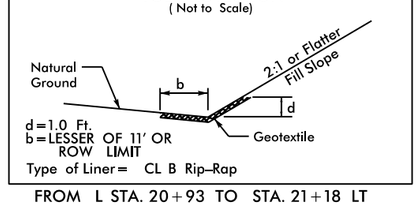
DIVERT STREAM TO ALLOW CONSTRUCTION OF CENTER AND LEFT BARREL, DIVERT STREAM TO CENTER BARREL FOR CONSTRUCTION OF RIGHT BARREL

DETAIL A
TOE PROTECTION
(Not to Scale)



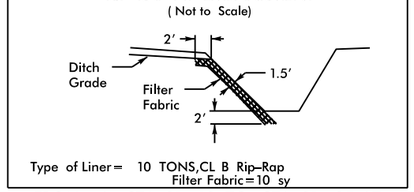
FROM -L- STA. 21+30 TO STA. 21+63 RT

DETAIL B
TOE PROTECTION
(Not to Scale)



FROM L STA. 20+93 TO STA. 21+18 LT

DETAIL C
RIP RAP AT EMBANKMENT
(Not to Scale)

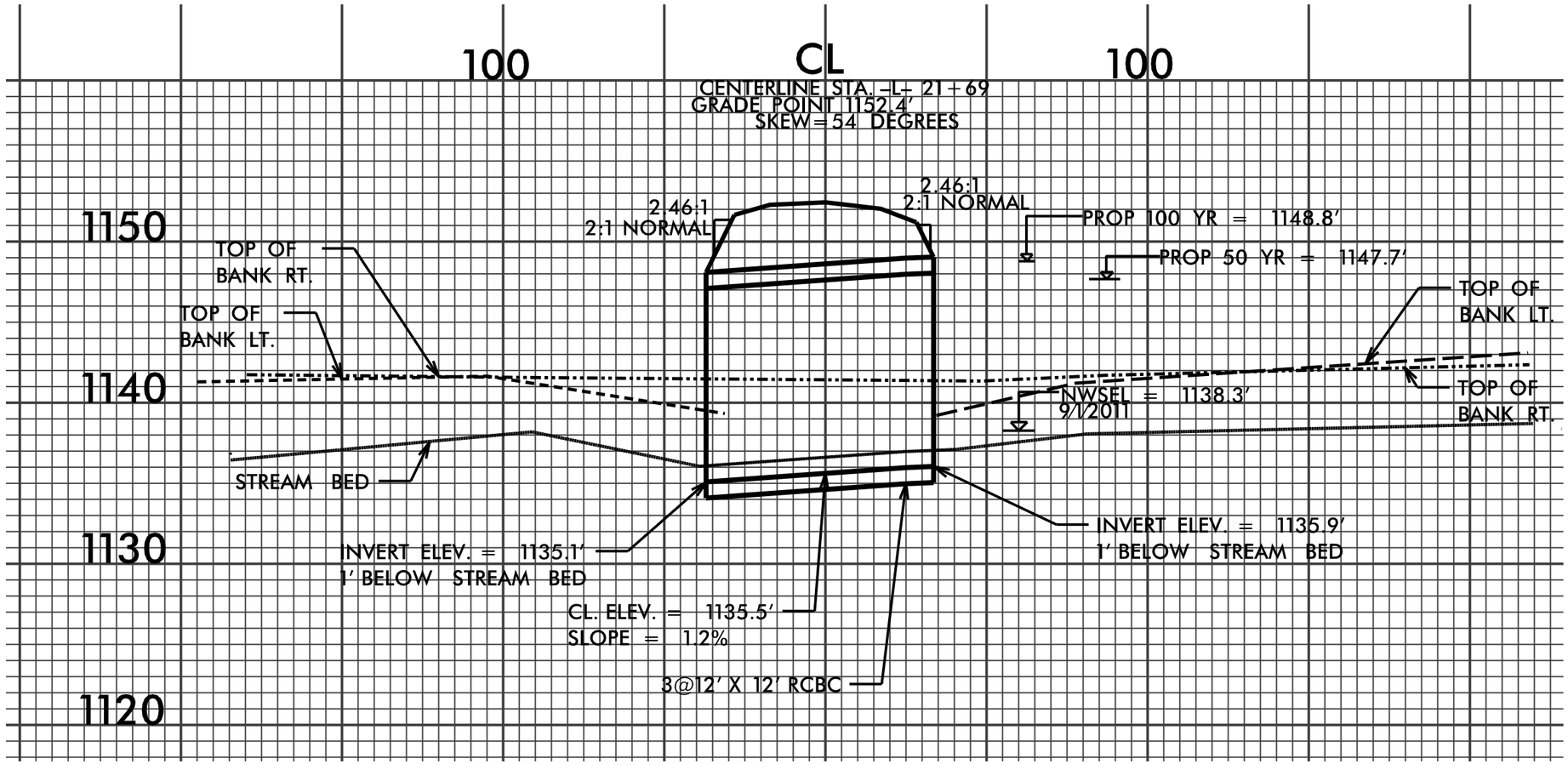


FROM -L- STA. 21+18 TO STA. 21+25 LT

03/05/2013
STANTEC
B-5138_PERMIT PACKAGE_03/05/2013

PROJECT REFERENCE NO.	SHEET NO.
B-5138	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 4 OF 6



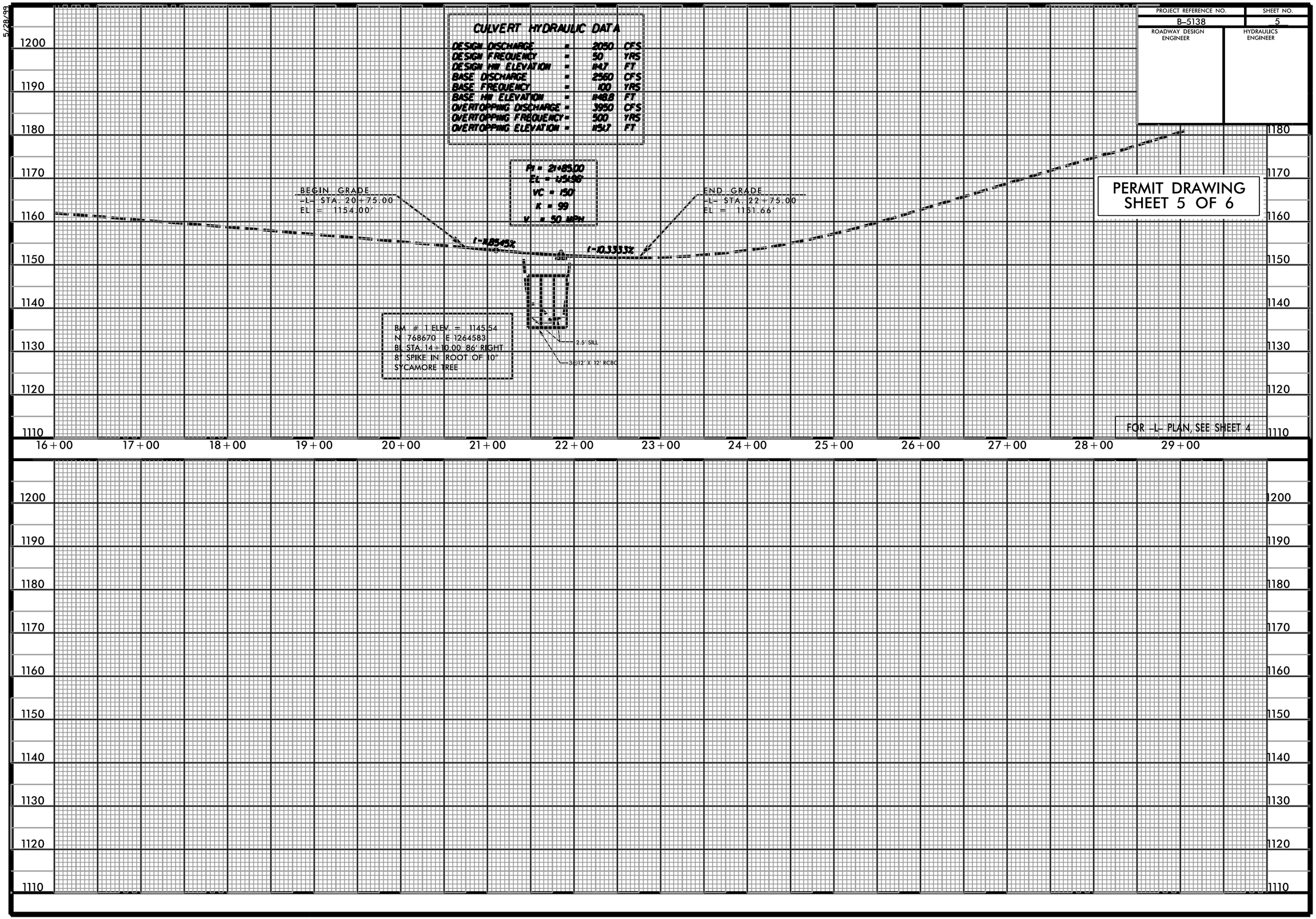
8/17/99

05/03/2012
STANTEC
B-5138_PERMIT PACKAGE_05/03/2013

B-5138_Rdy_PSH_5B scale.dgn 3/5/2013 12:48:34 PM

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-5138	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



05/03/2013
STANTEC
B-51338_PERMIT PACKAGE_05/03/2013

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)
1	21+20 LT TO 22+37 R	3-12' x 12' RCBC / Fill / Culv.						0.03	< 0.01	120	10	
1	22+09 RT to 22+36 RT	Bank Stablization								31		
TOTALS*:								0.03	< 0.01	151	10	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
41381
MADISON COUNTY
BRIDGE 6 ON US 321A
OVER LITTLE GUNPOWDER CREEK
SHEET 6 OF 6

ATN Revised 3/12/13

09/08/99

TIP PROJECT: B-5138

CONTRACT:

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

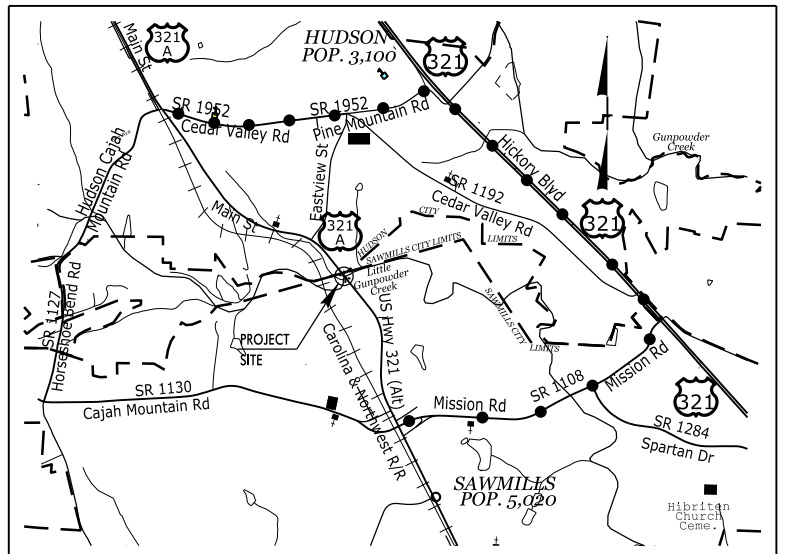
CALDWELL COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5138	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
42299.1.1	BRSTP-321A(3)	P.E.
42299.2.1	BRSTP-321A(3)	R/W, UTIL

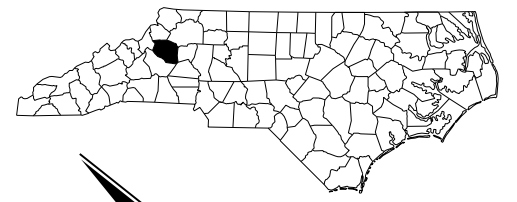
LOCATION: BRIDGE NO. 6 OVER LITTLE GUNPOWDER CREEK AND APPROACHES ON US 321A

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND CULVERT

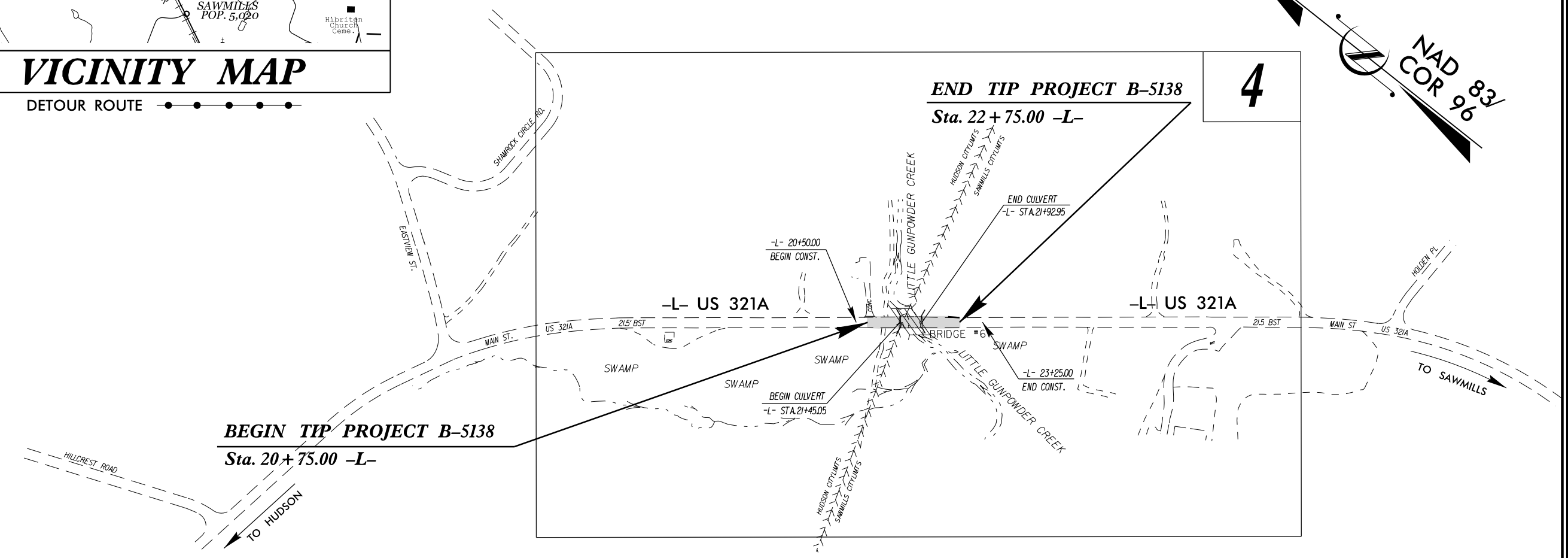


VICINITY MAP

DETOUR ROUTE



NAD 83/ COR 96



CLEARING ON THIS PROJECT SHALL BE PREFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

THIS PROJECT IS PARTIALLY WITHIN THE MUNICIPAL BOUNDARIES OF HUDSON AND SAWMILLS.

THIS IS NOT A CONTROLLED ACCESS PROJECT.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2010 = 6,654 VPD
ADT 2035 = 8,000 VPD
DHV = 11 %
D = 55 %
T = 6 % *
V = 50 MPH
* (TTST = 2% + DUAL = 4%)
FUNC CLASS =
RURAL COLLECTOR
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5138	=	0.030 MILE
LENGTH STRUCTURE TIP PROJECT B-5138	=	0.008 MILE
TOTAL LENGTH OF PROJECT B-5138	=	0.038 MILE

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
DECEMBER 13, 2012

LETTING DATE:
JANUARY 21, 2014

JASON MOORE, PE
PROJECT ENGINEER

NYA K. BOAYUE, PE
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 P.E.

13-DEC-2012 13:55
R:\Roadway\Proj\B-5138_RDY_TSH.dgn
$$$$USERNAME$$$$

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
2	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
3	SUMMARY OF QUANTITIES
3A	SUMMARY OF DRAINAGE QUANTITIES SUMMARY OF GUARDRAIL, EARTHWORK SUMMARY, AND ASPHALT PAVEMENT REMOVAL SUMMARY
4	PLAN AND PROFILE SHEET
TCP-1 THRU TCP-	TRAFFIC CONTROL PLANS
PM-1 THRU PM-	PAVEMENT MARKING PLANS
L-1 THRU L-	LANDSCAPE PLANS
RF-1 THRU RF-	REFORESTATION PLANS
EC-1 THRU EC-	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-	SIGNING PLANS
U-1 THRU U-	UTILITIES PLANS
X-1 THRU X-	CROSS-SECTIONS
C-1 THRU C-	CULVERT PLANS

LIST OF STANDARDS

GENERAL NOTES

01/20/11

PROJECT REFERENCE NO.	SHEET NO.
B-5138	1-B

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 — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — 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
- 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
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — 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 — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite Marker — RW
- Existing Control of Access — CA
- Proposed Control of Access — CA
- 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 — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line
- Designated U/G Water Line (S.U.E.*)
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

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

SANITARY SEWER:

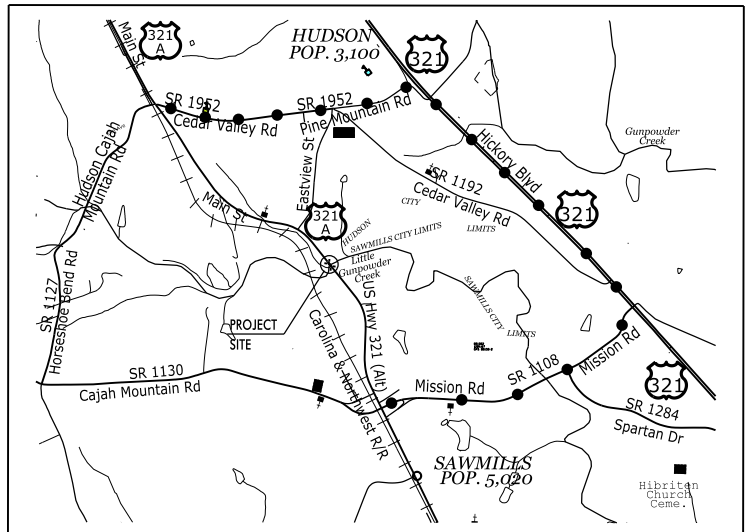
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- 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.

PROJECT REFERENCE NO.	SHEET NO.
B-5138	1-C
Location and Surveys	

SURVEY CONTROL SHEET B-5138

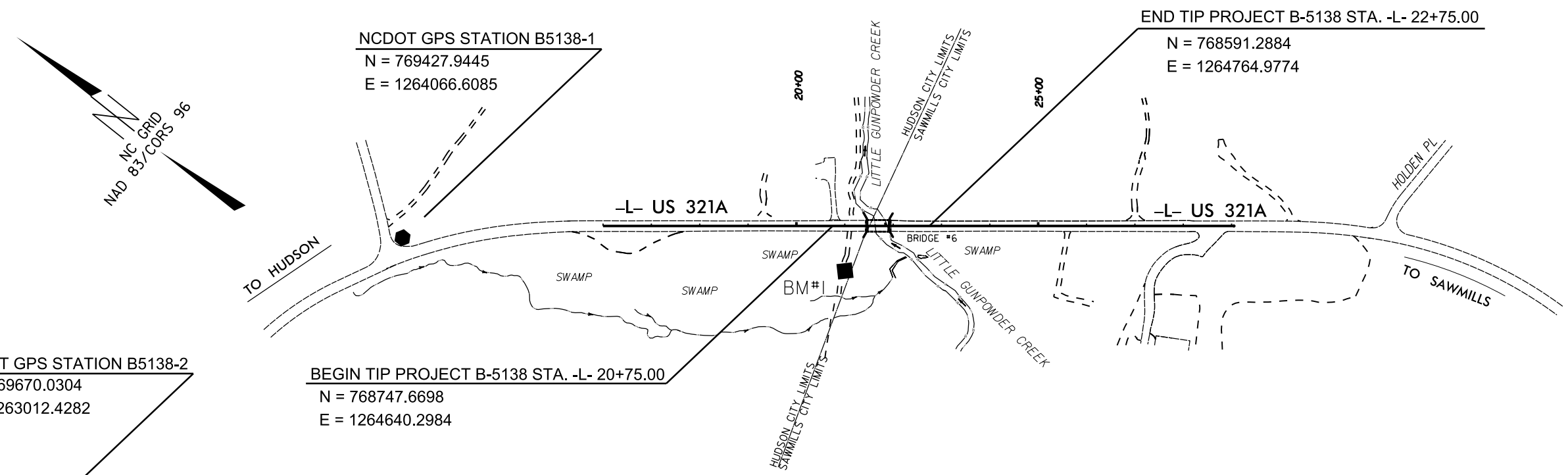


VICINITY MAP

DETOUR ROUTE

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
BL51381	GPS B5138-1	769427.9445	1264066.6085	1167.85	OUTSIDE PROJECT LIMITS	
BL3	BL-3	768939.4790	1264451.5061	1160.93	18+07.33	28.05 RT
BL4	BL-4	768490.5195	1264865.4315	1152.69	24+16.41	15.73 LT
BL5	BL-5	768175.5162	1265128.9962	1177.26	28+27.02	25.44 LT

****
BM1 ELEVATION = 1145.54
N 768670. E 1264583.
L STATION 21+00.00 93' RIGHT
8" SPIKE IN ROOT OF 10" SYCAMORE TREE
****



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B5138-1"
WITH NAD 83/CORS 96 STATE PLANE GRID COORDINATES OF
NORTHING: 769427.9445(ft) EASTING: 1264066.6085(ft)
ELEVATION: 1167.85(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998734860
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5138-1" TO -L- STATION 20+75 IS
S 40°08'30" E 889.88
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

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/

   THE FILES TO BE FOUND ARE AS FOLLOWS:
   B5138_LS_CONTROL.TXT

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

⬢ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)
SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

6/2/99
13-DEC-2012 13:55
R:\Roadway\Proj\B5138_ls_1-c.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-5138	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

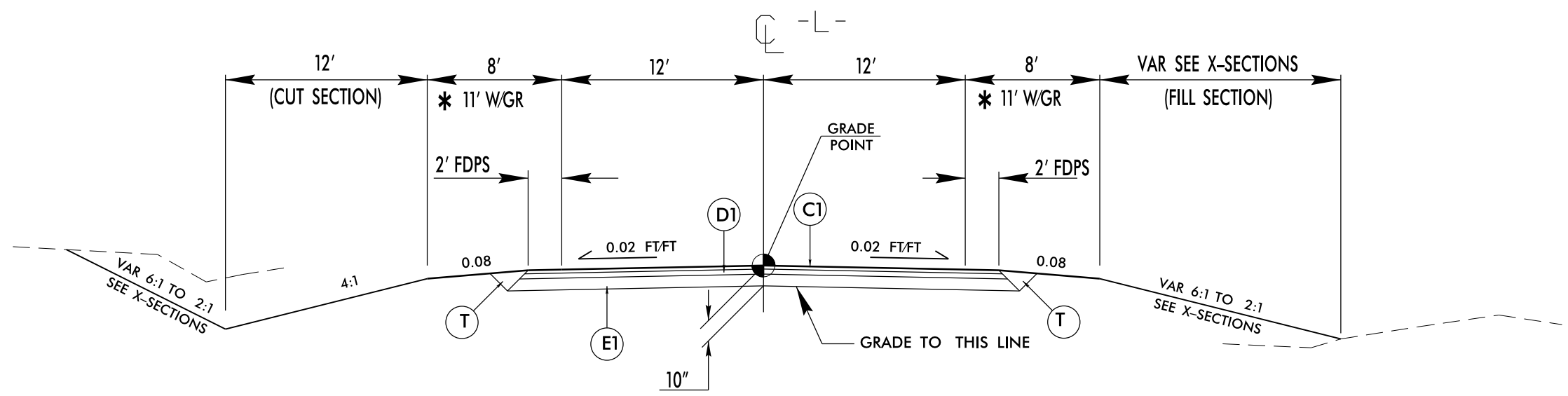
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 2½ " ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
E1	PROP. APPROX. 4½ " ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
T	EARTH MATERIAL.

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



TYPICAL SECTION NO. 1

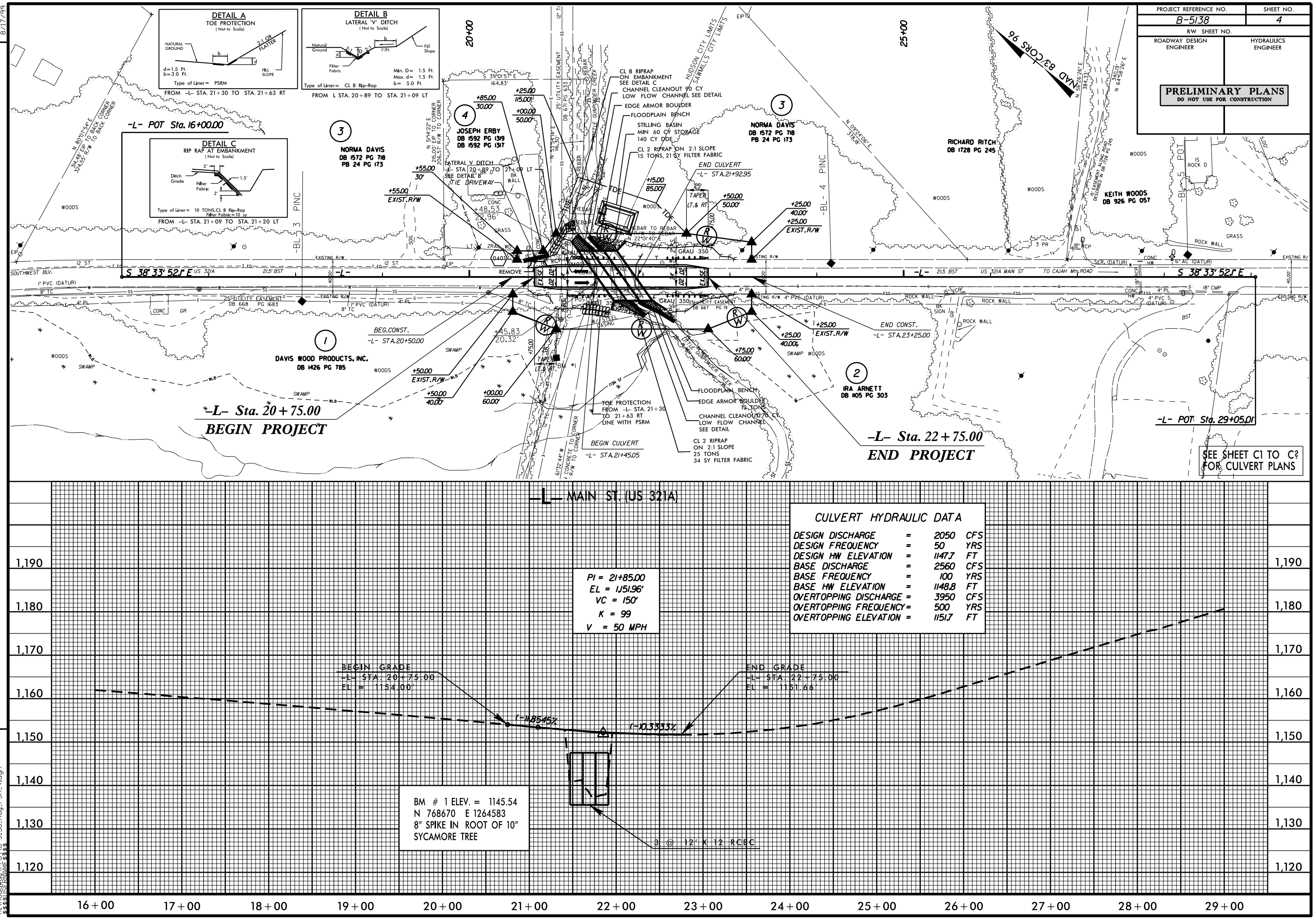
USE TYPICAL SECTION NO. 1
-L- STA. 20+75.00 TO 22+75.00

* NOTE: SHOULDER CONSTRUCTION FOR GUARDRAIL PLACEMENT
-L- STA. 20+66.00 TO 20+75.00
-L- STA. 27+75.00 TO 23+06.00

6/2/99
13-DEC-2012 13:55
R:\Roadway\Proj\B-5138_RDY_TYP.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-5138	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



8/17/99

REVISIONS

13-DEC-2012 13:55
R:\Roadway\Proj\B-5138_Rdy_PSH_4.dgn
$$$$USERNAME$$$$