



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

NICHOLAS J. TENNYSON
SECRETARY

October 14, 2015

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

ATTN: Mr. Steven Kichefski
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permits 13 & 33 and Section 401 Water Quality Certification** for the proposed replacement of Bridge No. 39 over Mitchell River on SR 1328 (Haystack Road) in Surry County; Federal Aid Project No. BRZ-1328(6); WBS 42330.1.1; Division 11; TIP No. B-5173.

Dear Mr. Kichefski:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 39 over Mitchell River on SR 1328 (a 78-foot bridge) with a 100-foot box beam bridge. The bridge will be located on new alignment, approximately 34 feet downstream, and will span Mitchell River. The project will utilize the existing bridge to maintain traffic while the new bridge is under construction.

There will be a total of 68 linear feet (lf) of permanent stream impacts from the placement of bank stabilization, along with 32 lf of temporary impacts associated with the bank stabilization.

Please see enclosed copies of the Pre-Construction Notification (PCN), USFWS Section 7 concurrence letter, stormwater management plan, permit drawings and design plans for the above-referenced project. The Categorical Exclusion (CE) was completed in December 2014 and distributed shortly thereafter. Additional copies are available upon request.

This project calls for a letting date of February 16, 2016 and a review date of December 29, 2015; however, the let date may advance as additional funding becomes available.

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

TELEPHONE: 919-707-6100
FAX: 919-212-5785
WEBSITE: WWW.NCDOT.GOV

LOCATION:
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610

A copy of this permit application and its distribution list will be posted on the NCDOT Website at: <http://connect.ncdot.gov/resources/Environmental>. If you have any questions or need additional information, please call Bill Barrett at (919) 707-6103.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Hancock', with a long horizontal flourish extending to the right.

R Richard W. Hancock, P.E., Manager
Project Development and Environmental Analysis Unit

cc:
NCDOT Permit Application Standard Distribution List



Office Use Only:
Corps action ID no. _____
DWQ project no. _____
Form Version 1.4 January 2009

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 or General Permit (GP) number:		
1c. Has the NWP 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 number 39 on SR 1328 (Haystack Rd.) over Mitchell River.
2b. County:	Surry
2c. Nearest municipality / town:	Devotion, NC (unincorporated community); Mount Airy, NC
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no:	B-5173

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) 707-6103
3g. Fax no.:	(919) 212-5785
3h. Email address:	wabarrett@ncdot.gov

4. Applicant Information (if different from owner)	
4a. Applicant is:	☐ Agent ☐ 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: 36.434040 (DD.DDDDDD) Longitude: - 80.916492 (-DD.DDDDDD)
1c. Property size:	0.4 acre
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Mitchell River
2b. Water Quality Classification of nearest receiving water:	B;Tr,ORW
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: Rural area; the development in the area is primarily rural agriculture.	
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: 285 within project ROW.	
3d. Explain the purpose of the proposed project: To replace a structurally deficient and functionally obsolete bridge.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing a 78-foot bridge with a 100-foot, single-span bridge on new alignment, approximately 34 feet downstream, utilizing the existing structure to maintain traffic while the new bridge is constructed. 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: 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	2f. Area of impact (acres)	
Site 1 ☐ P ☐ T		Choose One	☐ Yes ☐ No	☐ Corps ☐ DWQ		
Site 2 ☐ P ☐ T		Choose One	☐ Yes ☐ No	☐ Corps ☐ DWQ		
Site 3 ☐ P ☐ T		Choose One	☐ Yes ☐ No	☐ Corps ☐ DWQ		
Site 4 ☐ P ☐ T		Choose One	☐ Yes ☐ No	☐ Corps ☐ DWQ		
Site 5 ☐ P ☐ T		Choose One	☐ Yes ☐ No	☐ Corps ☐ DWQ		
Site 6 ☐ P ☐ T		Choose One	☐ Yes ☐ No	☐ Corps ☐ DWQ		
2g. Total wetland impacts					X Permanent X Temporary	
2h. Comments:						
3. Stream Impacts						
If there are perennial or intermittent stream impacts (including temporary impacts) proposed on the site, then complete this question for all stream sites impacted.						
3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site 1 ☒ P ☐ T	bank stabilization	Mitchell River	☒ PER ☐ INT	☒ Corps ☒ DWQ	30	68
Site 1 ☐ P ☒ T	Bank stabilization	Mitchell River	☒ PER ☐ INT	☒ Corps ☒ DWQ	30	32
Site 3 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
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						68 Perm 32 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						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	Flo ode d	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:							

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 22 feet longer than the existing bridge; the proposed bridge will be at approximately the same grade as the existing structure; the existing bridge will be used to maintain traffic while the new bridge is constructed; 3:1 fill slopes where practicable.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. Best Management Practices via the promotion of sheet flow and infiltration with grassed shoulders; Storm drain in SE quadrant outlets to a riprap pad; the ditch in the SW quadrant outlets to riprap embankment to prevent erosion; and cross pipe outlets to pre-formed scour hole (PSH). Additionally, erosion and sedimentation control will adhere to the Design Standards in Sensitive Watersheds.		
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: NCDOT does not propose mitigation for the 68 lf of permanent bank stabilization impact at Site 1, as it 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 is necessary to prevent erosion and sedimentation by preventing bank destabilization and thereby minimizing impacts to the environment.	
2b. If yes, mitigation is required by (check all that apply):	☐ DWQ ☐ Corps	
2c. If yes, which mitigation 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:	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 n/a
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, indicate 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? USFWS and NHP websites, and on-site surveys. Of the three species listed for Surry County, there is habitat for Schweinitz's sunflower. The most recent survey was conducted October 28, 2013; and no individuals of this species were identified. Additionally, there is no NHP listing of this species within one mile of the project. Concurrence from USFWS for NLEB was received on September 17, 2015 (letter attached).		
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		
for <u>Richard W. Hancock, P.E.</u> Applicant/Agent's Printed Name	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	<u>10-14-15</u> Date



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Asheville Field Office
160 Zillicoa Street
Asheville, North Carolina 28801

September 17, 2015

Mr. Richard W. Hancock
North Carolina Department of Transportation
Project Development and Environmental Analysis Unit
1598 Mail Service Center
Raleigh, NC 27699-1598

Subject: Endangered Species Concurrence for the Proposed Replacement of Bridge No. 39 on SR 1328 over the Mitchell River, Surry County, North Carolina. TIP B-5173, WBS No. 42330.1.1.

Dear Richard:

We have reviewed your concurrence request and supporting documentation regarding impacts to the federally listed threatened northern long-eared bat (NLEB) (*Myotis septentrionalis*) for the subject project. We provide the following comments in accordance with the provisions of section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (Act).

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No 39 over the Mitchell River. Some habitat for the NLEB exists in the vicinity of the project and has been evaluated for potential impacts from project implementation. According to the information provided, a search for mines and caves was conducted in the project footprint and within a quarter mile of the project and none were found. The existing bridge was checked for bat use and none was observed. Potential summer roosting habitat clearing is estimated at 0.2 acres.

Based on the absence of wintering habitat, no evidence of bat use on the existing structure, and NCDOT's commitment to restrict tree cutting to the time from August 15 to April 15 (of any year) we agree that implementation of this project is "not likely to adversely affect" NLEB in the project area. In view of this, we believe the requirements under Section 7(c) of the Act are fulfilled. However, obligations under Section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered, (2) this action is subsequently modified in a manner that was not considered in this review, or (3) a new species is listed or critical habitat is determined that may be affected by the identified action.

If you have questions about these comments, please contact Ms. Marella Buncick of our staff at 828/258-3939, Ext. 237. In any future correspondence concerning this project, please reference our Log No. 4-2-15-403.

Sincerely,
-- *original signed* --
Janet Mizzi
Field Supervisor



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS

(Version 2.01; Released December 2014)

WBS Element: 42330.1.1 TIP No.: B-5173 County(ies): Surry Page 1 of 2

General Project Information

WBS Element:		42330.1.1	TIP Number:		B-5173	Project Type:		Bridge Replacement	Date:		5/27/2015
NCDOT Contact:		Galen Cail, PE				Contractor / Designer:		Galen Cail, PE/Craig Lee, PE			
	Address:	1020 Birch Ridge Dr. Raleigh, N.C. 27610					Address:	1020 Birch Ridge Dr. Raleigh, N.C. 27610			
	Phone:	919.707.6711					Phone:	919.707.6711/919.707.6708			
	Email:	gcail@ncdot.gov					Email:	gcail@ncdot.gov/cjlee@ncdot.gov			
City/Town:		Devotion, NC				County(ies):		Surry			
River Basin(s):		Yadkin-Pee Dee				CAMA County?		No			
Wetlands within Project Limits?		No									

Project Description

Project Length (lin. miles or feet):	0.16	Surrounding Land Use:	Fields				
	Proposed Project			Existing Site			
Project Built-Up Area (ac.)	0.4 ac.			0.3 ac.			
Typical Cross Section Description:	9' Travel Lanes, 4' Grass Shoulders. 2:1-4:1 Side Slopes			9' Travel Lanes, 2' Grassed Shoulders, 2:1-4:1 Side Slopes			
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	254	Year: 2036	Existing:	174	Year:	2016
General Project Narrative: (Description of Minimization of Water Quality Impacts)	The project consists of replacing Bridge# 39 on SR 1328 (Haystack Road) over Mitchell River. The approach work will consist of providing grass shoulders and guardrail. Bridge #39 existing single span structure (77.5' total length) will be replaced with 1 @ 100' - 39" Box Beam. Best Mgmt. Practices: -Promotion of sheet flow and infiltration with grassed shoulders. -Storm Drain in SE quad outlets to rip rap pad. -Ditch in SW quad outlets to rip rap on embankment to prevent erosion. -Cross pipe outlets to preformed scour hole						

Waterbody Information

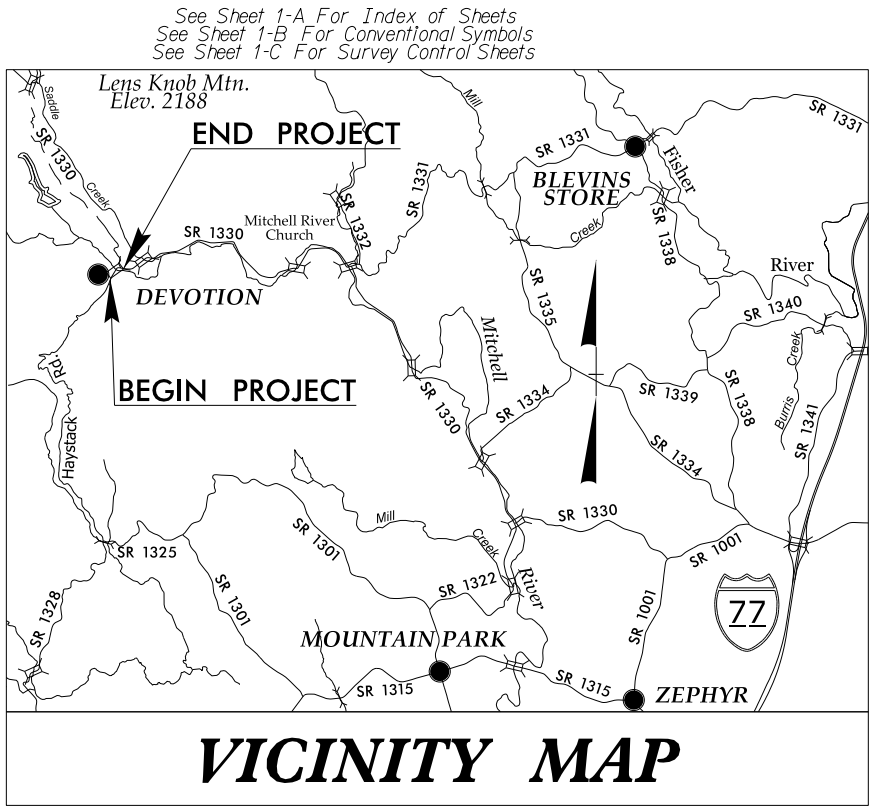
Surface Water Body (1):		Mitchell River		NCDWR Stream Index No.:		12-62-(1)		
NCDWR Surface Water Classification for Water Body			Primary Classification:	Class B				
			Supplemental Classification:	(ORW)		Trout Waters (Tr)		
Other Stream Classification:								
Impairments:		None						
Threatened/Endangered Species?		No	Comments:					
NRTR Stream ID:		Mitchell River				Buffer Rules in Effect:		N/A
Project Includes Bridge Spanning Water Body?		Yes	Deck Drains Discharge Over Buffer?		N/A	Dissipator Pads Provided in Buffer?		N/A
Deck Drains Discharge Over Water Body?		No	(If yes, provide justification in the General Project Narrative)			(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
		(If yes, provide justification in the General Project Narrative)						

(Version 2.01; Released December 2014)

09/08/99

TIP PROJECT: B-5173

CONTRACT: C203668



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

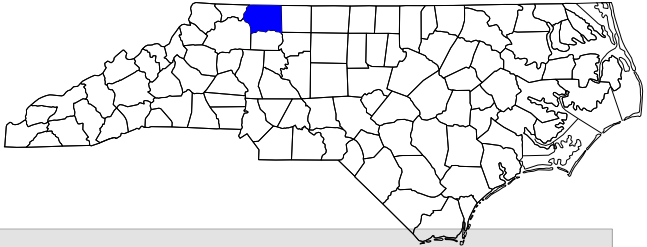
SURRY COUNTY

LOCATION: BRIDGE No. 39 ON SR 1328 (HAYSTACK RD) OVER MITCHELL RIVER

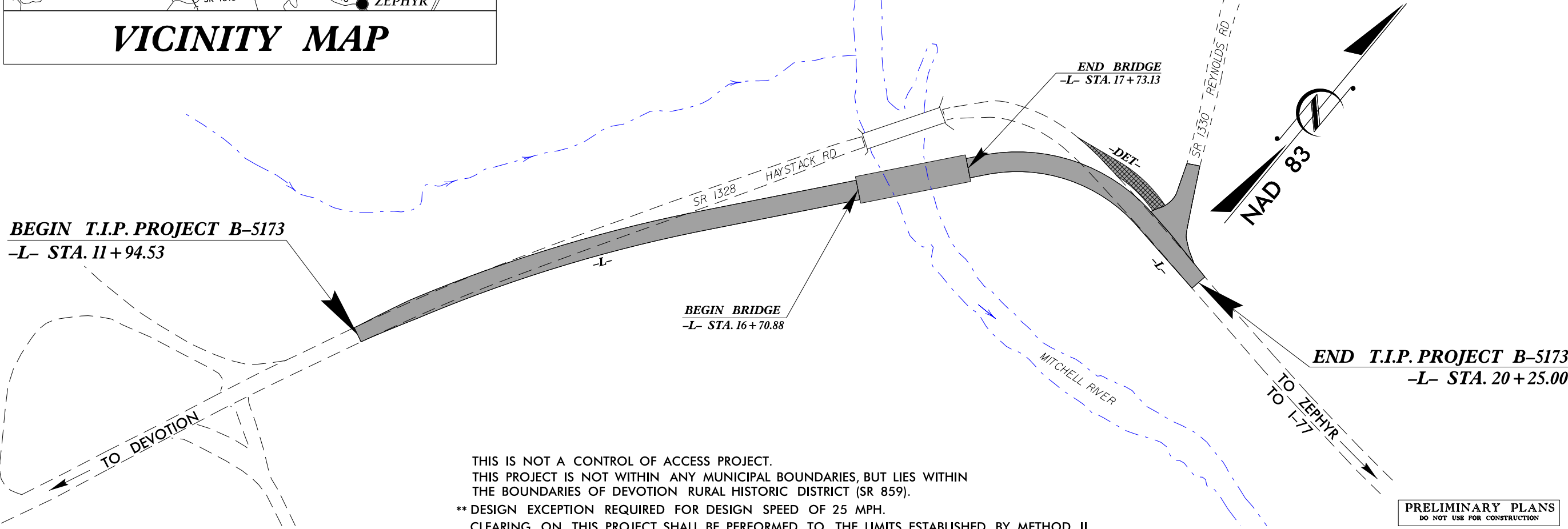
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE

**PERMIT DRAWING
SHEET 1 OF 6**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5173	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
42330.1.1	BRZ-1328(6)	PE	
42330.FD1	BZR-1328(6)	R/W	
42330.FDU1	BRZ-1328(6)	UTIL	

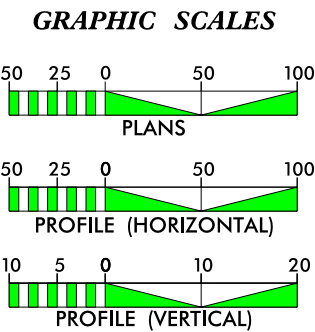


WETLAND AND SURFACE WATER IMPACTS PERMIT



THIS IS NOT A CONTROL OF ACCESS PROJECT.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES, BUT LIES WITHIN THE BOUNDARIES OF DEVOTION RURAL HISTORIC DISTRICT (SR 859).
** DESIGN EXCEPTION REQUIRED FOR DESIGN SPEED OF 25 MPH.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2016	=	174
ADT 2036	=	254
DHV	=	10 %
D	=	60 %
T	=	5 % *
** V	=	55 MPH
* TTST	=	2% DUAL 3%
FUNC CLASS	=	RURAL LOCAL
SUB REGIONAL TIER		

PROJECT LENGTH

LENGTH ROADWAY T.I.P. PROJECT B-5173	=	0.138 MI
LENGTH STRUCTURE T.I.P. PROJECT B-5173	=	0.019 MI
TOTAL LENGTH OF T.I.P. PROJECT B-5173	=	0.157 MI

Prepared in the Office of:

DIVISION OF HIGHWAYS

1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	JASON MOORE, PE PROJECT ENGINEER
FEBRUARY 27, 2015	
LETTING DATE:	NYA K. BOAYUE, PE PROJECT DESIGN ENGINEER
FEBRUARY 16, 2016	

HYDRAULICS ENGINEER

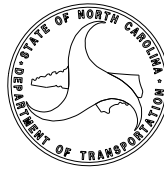
SIGNATURE: _____

P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____

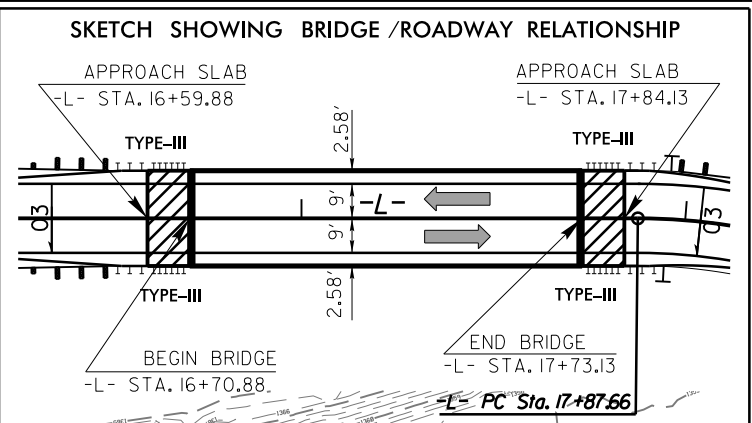
P.E.



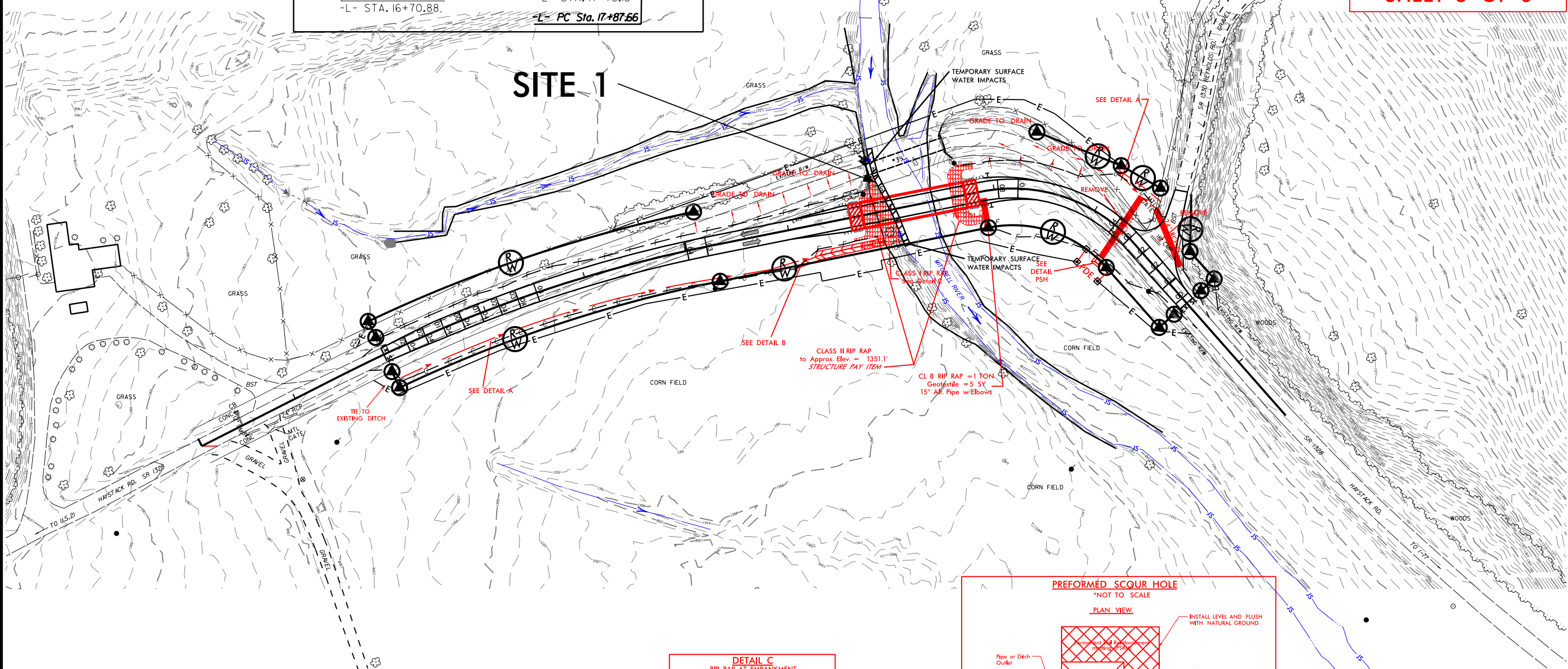
8/2015
file

PROJECT REFERENCE NO.	SHEET NO.
B-5173	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

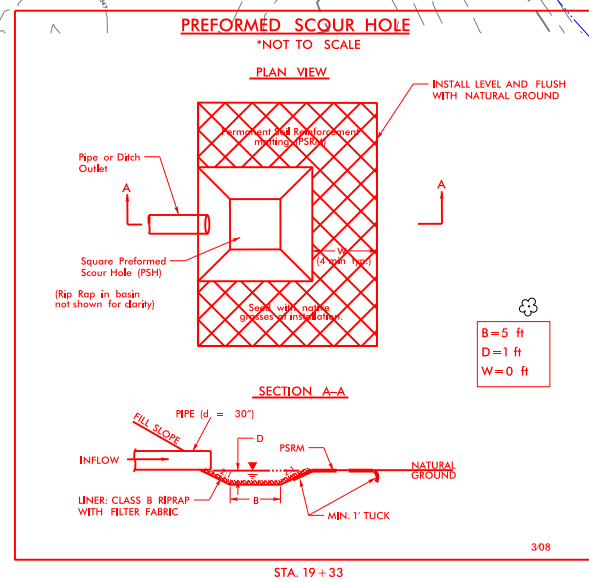
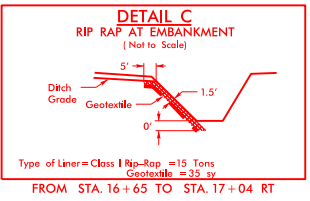
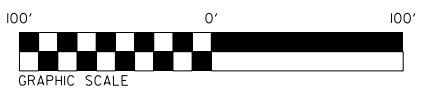
PERMIT DRAWING
SHEET 3 OF 6



SITE 1



- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

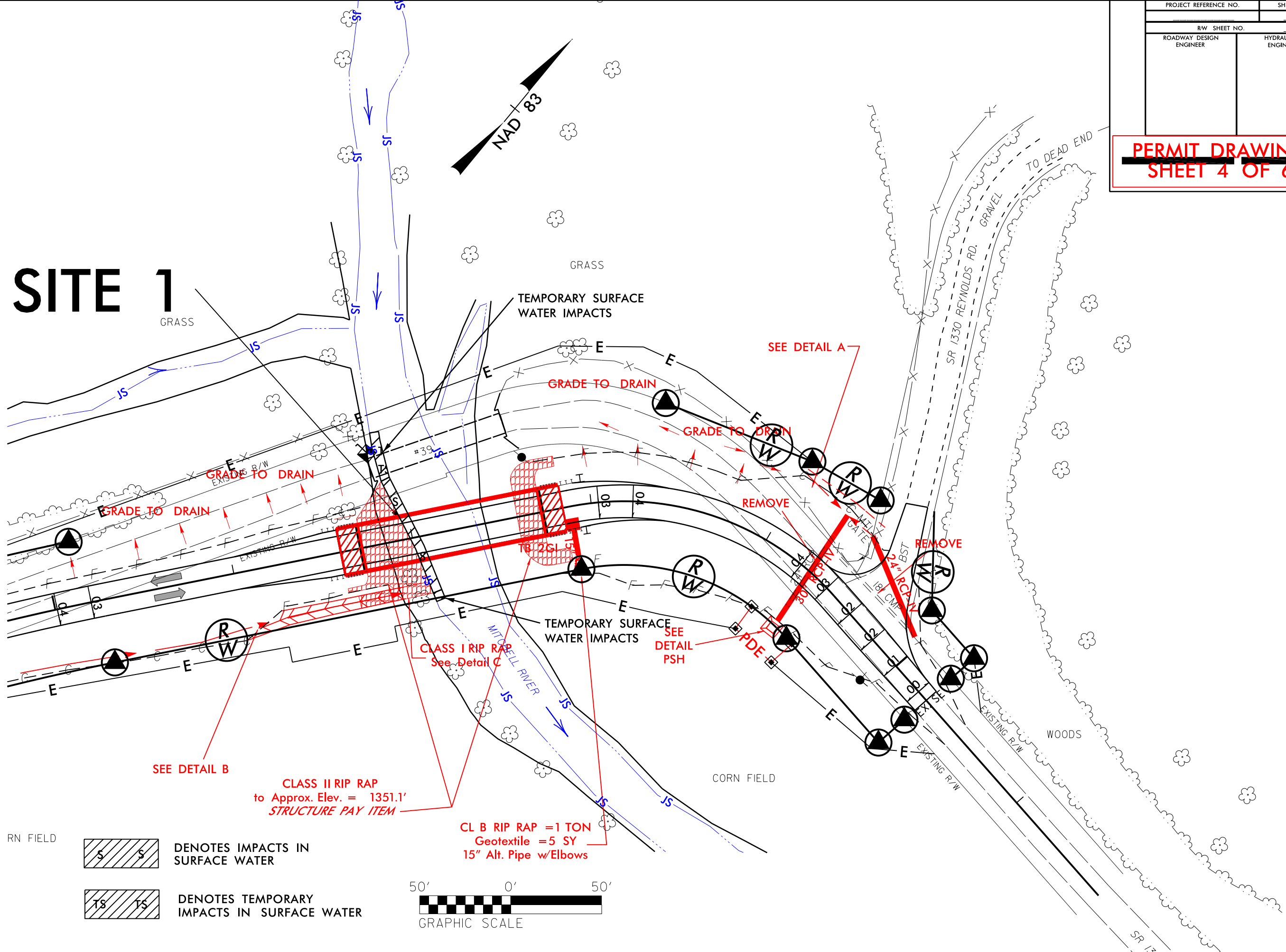


PAVEMENT REMOVAL
SEE SHEET 6 FOR PROFILE

REVISIONS
R/W REVISION :6/5/15 REVISED PROPOSED R/W,TCE,DEED BOOK & PROP.W/W FENCE ON PARCEL #1 ne

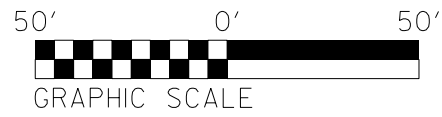
4/8/2015
B:\Hydraulics\PERMITS\Environmental Drawings\B-5173_Hyd_perm_wet_Sheet 2&3.dgn
\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$UNUS\$\$\$\$\$
\$\$\$\$\$\$\$\$\$\$

SITE 1



SS DENOTES IMPACTS IN SURFACE WATER

TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER



* DESIGN EXCEPTION REQUIRED FOR VERTICAL CURVE K-VALUES AND ASSOCIATED SSD.

$PI = 19+75.00$
 $EL = 1.35101'$
 $VC = 100'$
 $K = 28^+$
 $V = 25$

END GRADE
~~L~~ STA 20+25.00
 ELEV. = 1,351.13'

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	2,400	CFS
DESIGN FLOW FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	1350.1	FT
BASE DISCHARGE	=	3,479	CFS
BASE FLOW FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	1350.78	FT
OVERTOPPING DISCHARGE	=	N/A	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	N/A	FT
	=		FT
DATE OF SURVEY	=	AUGUST 9, 2009	
W.S. ELEVATION			
AT DATE OF SURVEY	=	1344.5	FT

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	-L- 16+90-17+10	Bank Stabilization						< 0.01	< 0.01	68	32	
TOTALS*:								< 0.01	< 0.01	68	32	0

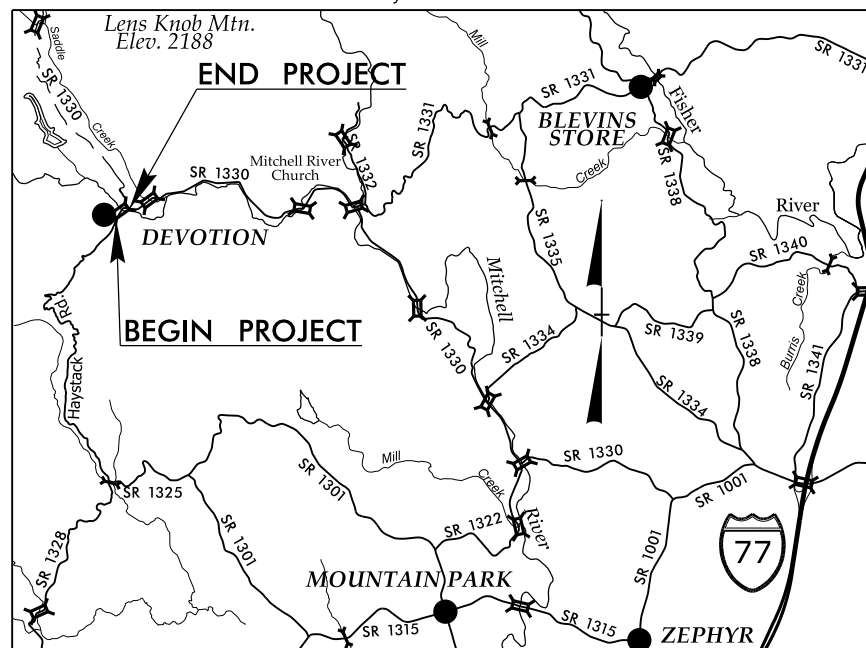
NOTES:

Revised 2013 10 24

TIP PROJECT: B-5173

CONTRACT: C203668

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



VICINITY MAP

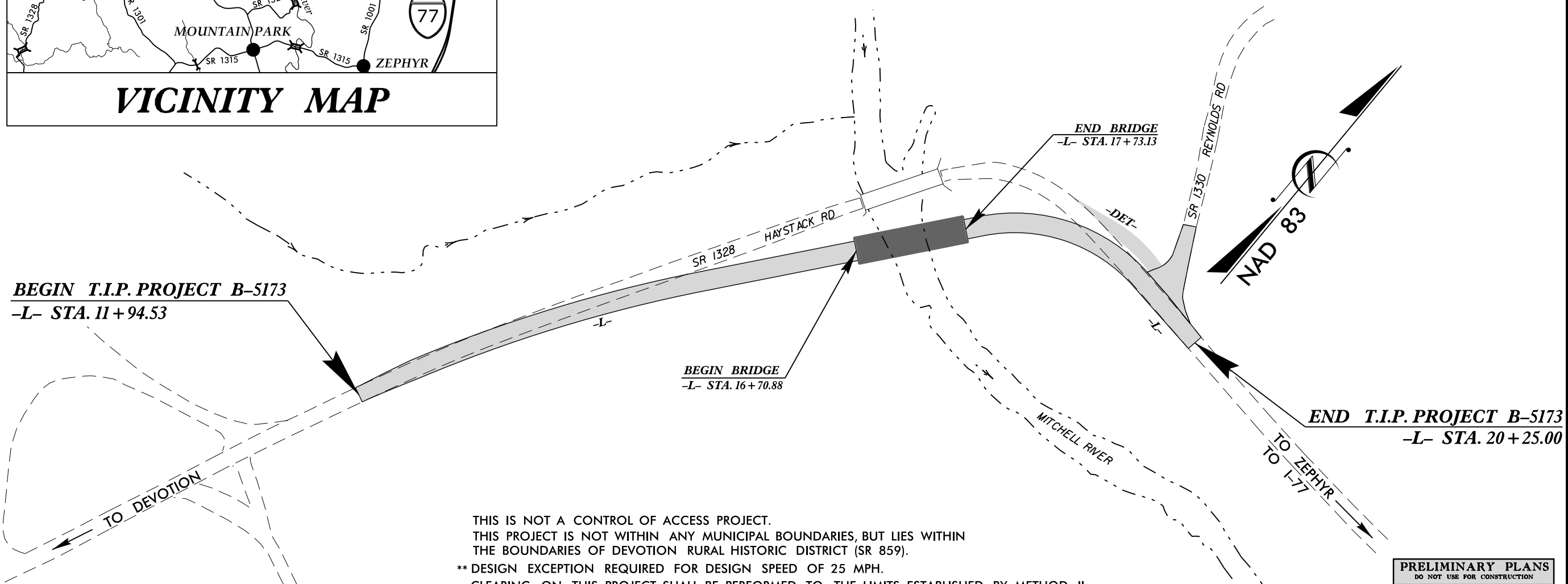
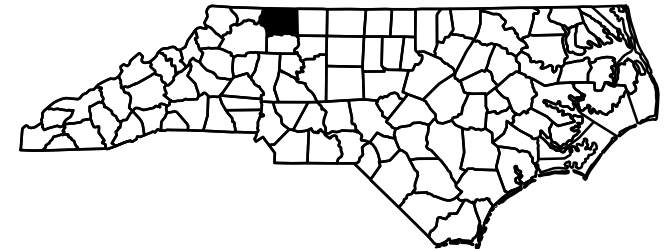
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

SURRY COUNTY

LOCATION: BRIDGE No. 39 ON SR 1328 (HAYSTACK RD) OVER MITCHELL RIVER

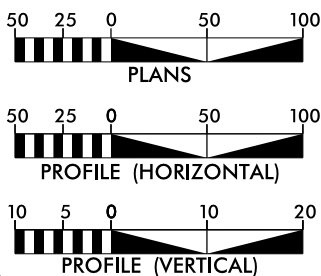
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5173	1	
STATE PROJ.NO.	F.A.PROJ.NO.	DESCRIPTION	
42330.1.1	BRZ-1328(6)	PE	
42330.FD1	BZR-1328(6)	R/W	
42330.FDU1	BRZ-1328(6)	UTIL	



THIS IS NOT A CONTROL OF ACCESS PROJECT.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES, BUT LIES WITHIN
THE BOUNDARIES OF DEVOTION RURAL HISTORIC DISTRICT (SR 859).
** DESIGN EXCEPTION REQUIRED FOR DESIGN SPEED OF 25 MPH.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

GRAPHIC SCALES



DESIGN DATA

ADT 2016 = 174
ADT 2036 = 254
DHV = 10 %
D = 60 %
T = 5 % *
** V = 55 MPH
* TTST = 2% DUAL 3%
FUNC CLASS = RURAL LOCAL
SUB REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY T.I.P. PROJECT B-5173 = 0.138 MI

LENGTH STRUCTURE T.I.P. PROJECT B-5173 = 0.019 MI

TOTAL LENGTH OF T.I.P. PROJECT B-5173 = 0.157 MI

Prepared in the Office of:

DIVISION OF HIGHWAYS

1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 27, 2015

LETTING DATE:
FEBRURAY 16, 2016

JASON MOORE, PE
PROJECT ENGINEER

NYA K. BOAYUE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

**ROADWAY DESIGN
ENGINEER**

P.E.
SIGNATURE: _____



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	
Proposed Woven Wire Fence	
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wetland Boundary	
Proposed Wetland Boundary	
Existing Endangered Animal Boundary	
Existing Endangered Plant Boundary	
Known Soil Contamination: Area or Site	
Potential Soil Contamination: Area or Site	

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

Stream or Body of Water	
Hydro, Pool or Reservoir	
Jurisdictional Stream	
Buffer Zone 1	
Buffer Zone 2	
Flow Arrow	
Disappearing Stream	
Spring	
Wetland	
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 RW Marker	
Proposed Control of Access Line with Concrete C/A Marker	
Existing Control of Access	
Proposed Control of Access	
Existing Easement Line	
Proposed Temporary Construction Easement	
Proposed Temporary Drainage Easement	
Proposed Permanent Drainage Easement	
Proposed Permanent Drainage / Utility Easement	
Proposed Permanent Utility Easement	
Proposed Temporary Utility Easement	
Proposed Aerial Utility Easement	

Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Curb 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	

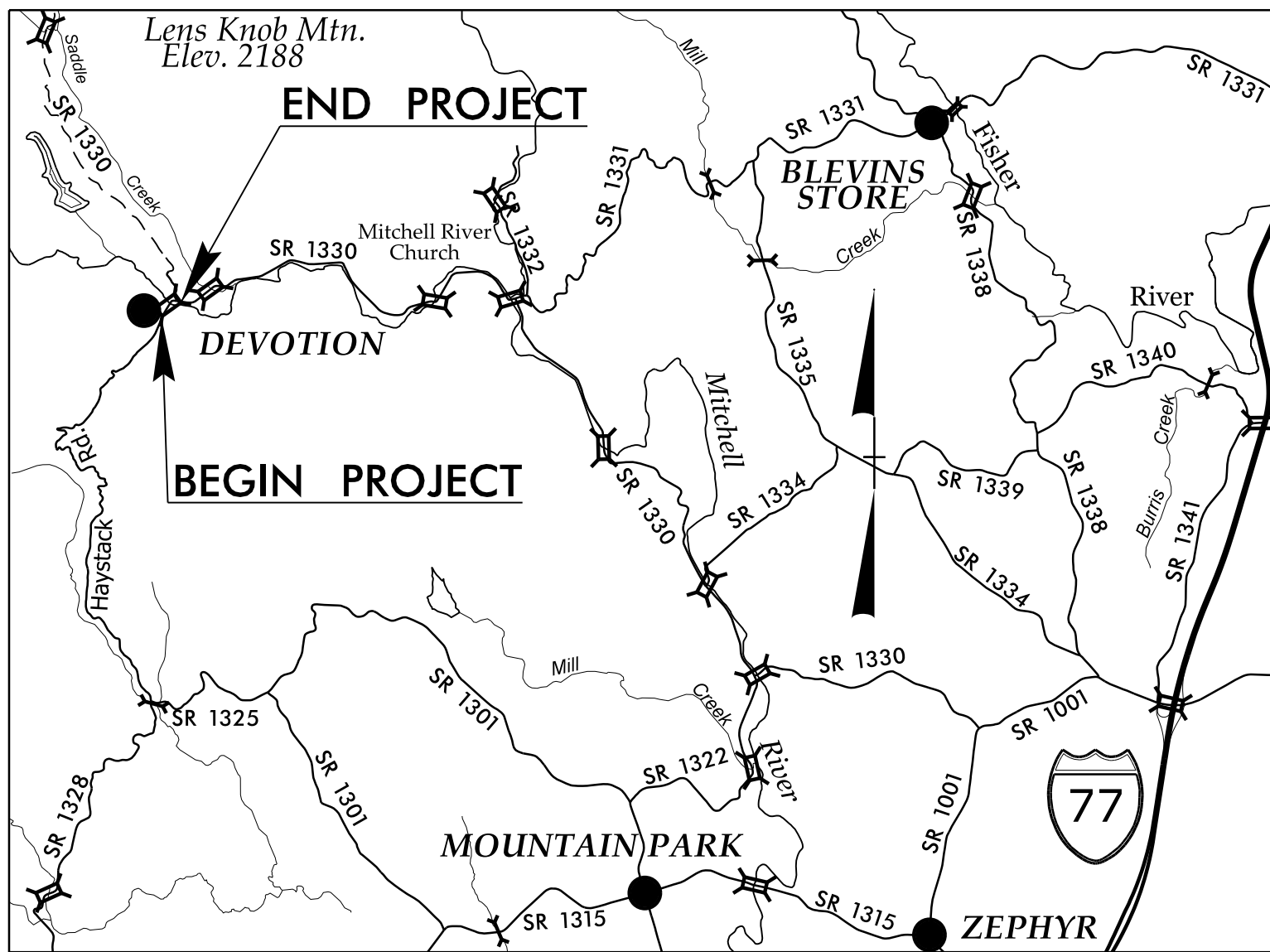
SANITARY SEWER:

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	
Underground Storage Tank, Approx. Loc.	
A/G Tank; Water, Gas, Oil	
Geoenvironmental Boring	
U/G Test Hole (S.U.E.*)	
Abandoned According to Utility Records	
End of Information	

6/2/99



VICINITY MAP

SURVEY CONTROL SHEET B-5173

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
BL 4	(BL - 4)		981747.0533	1435840.7144	1363.38	OUTSIDE PROJECT LIMITS	
BL 5	(BL - 5)		982442.5894	1436220.7860	1355.34	17+83.59	61.83 LT
BL 6	(BL - 6)		982407.7715	1436692.1013	1352.19	OUTSIDE PROJECT LIMITS	

.....
BM*1 ELEVATION = 1355.13'
N 982359. E 1436167.
L STATION 16+85.00 50' LEFT
DISK IN HEADWALL 145 HLZ 1969
.....

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:
B5173_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.

BEGIN T.I.P. PROJECT B-5173
-L- STA. 11+94.53

N= 981923.7136
E= 1435930.3882

END BRIDGE
-L- STA. 17+73.13

END T.I.P. PROJECT B-5173
-L- STA. 20+25.00

N= 982449.5538
E= 1436490.3520

BEGIN BRIDGE
-L- STA. 16+70.88

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B3911-2"

WITH NAD 83 STATE PLANE GRID COORDINATES OF
NORTHING: 983048.524(±) EASTING: 1437903.644(±)
ELEVATION: 1331.092 (±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.99997301

THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"B3911-2" TO -L- STATION 11+94.53 IS
S 60°18'56" W 2271.33'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD88

NC DOT GPS STATION B3911-1
LOCALIZED PROJECT COORDINATES

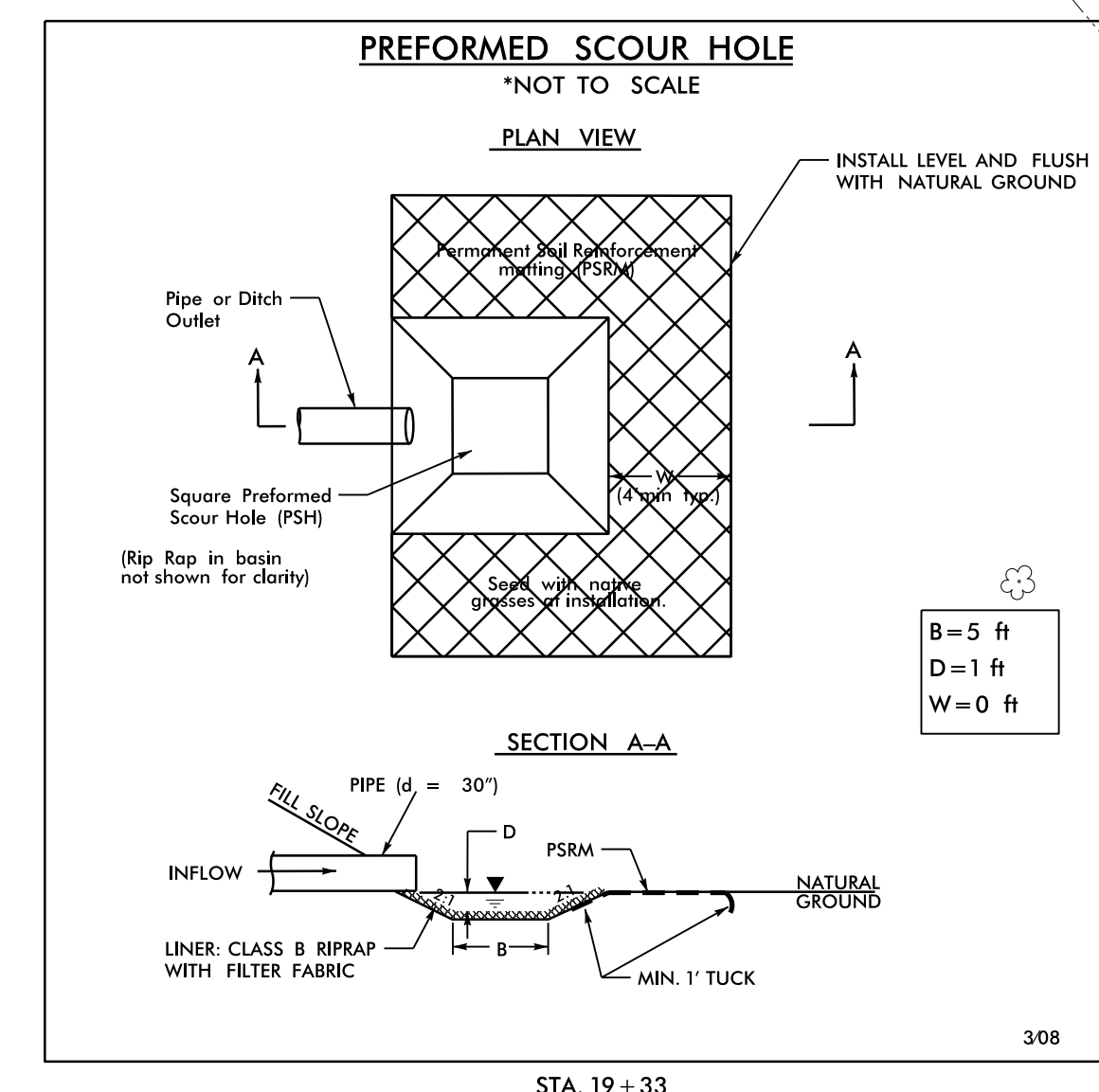
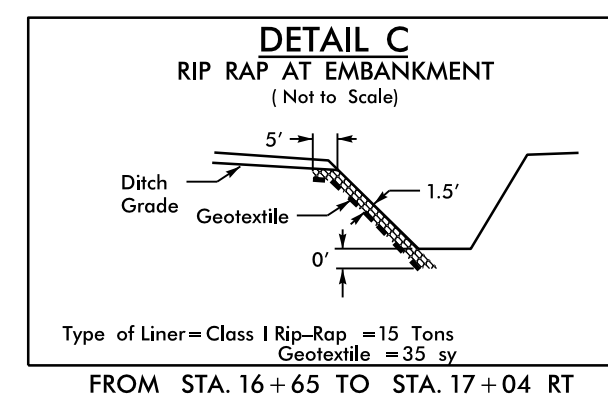
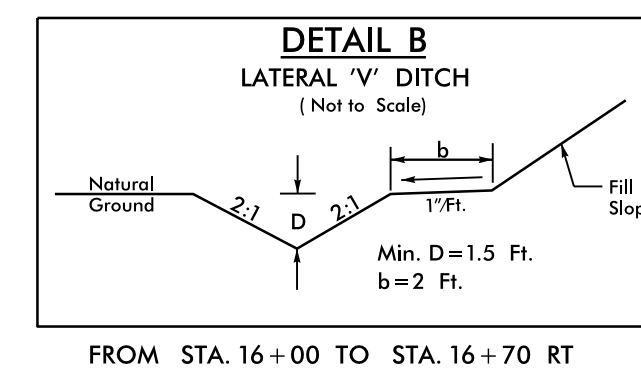
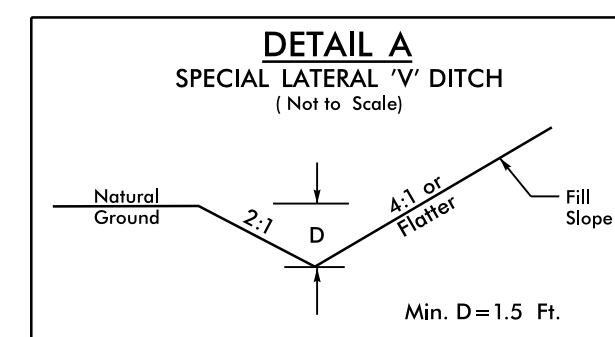
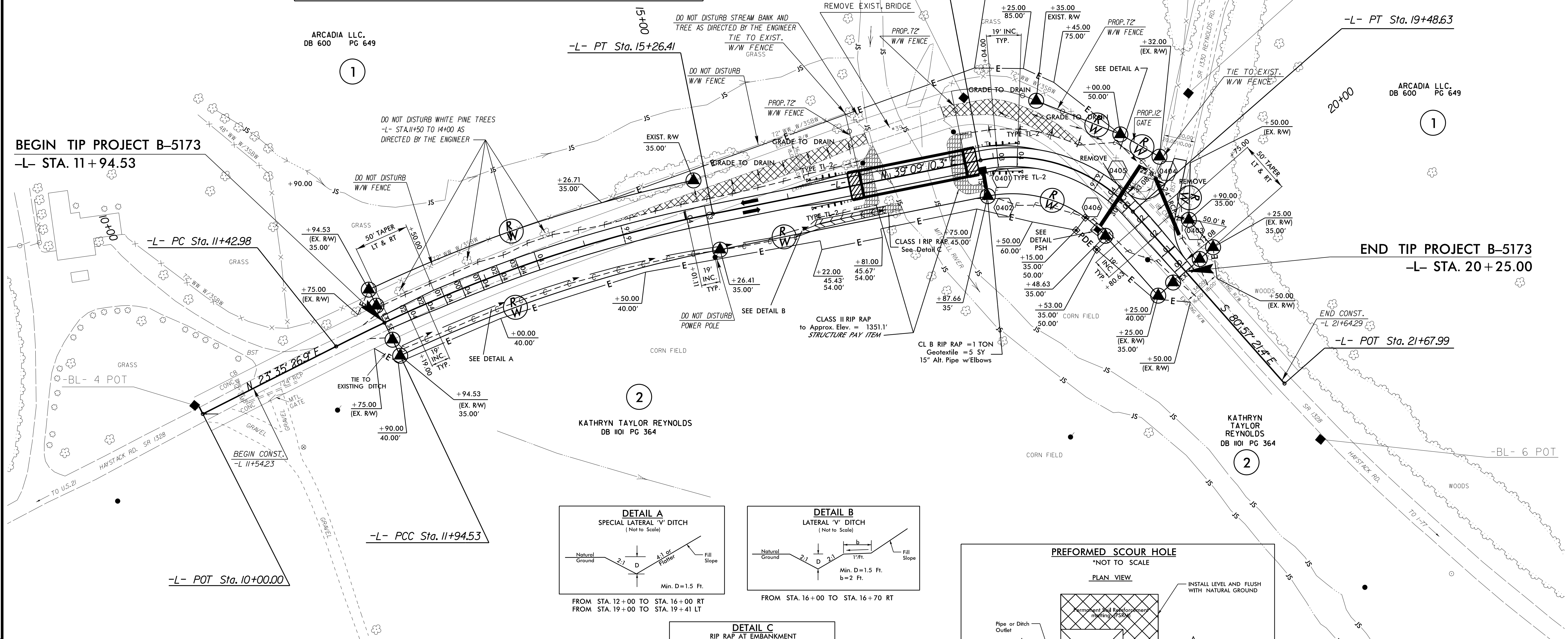
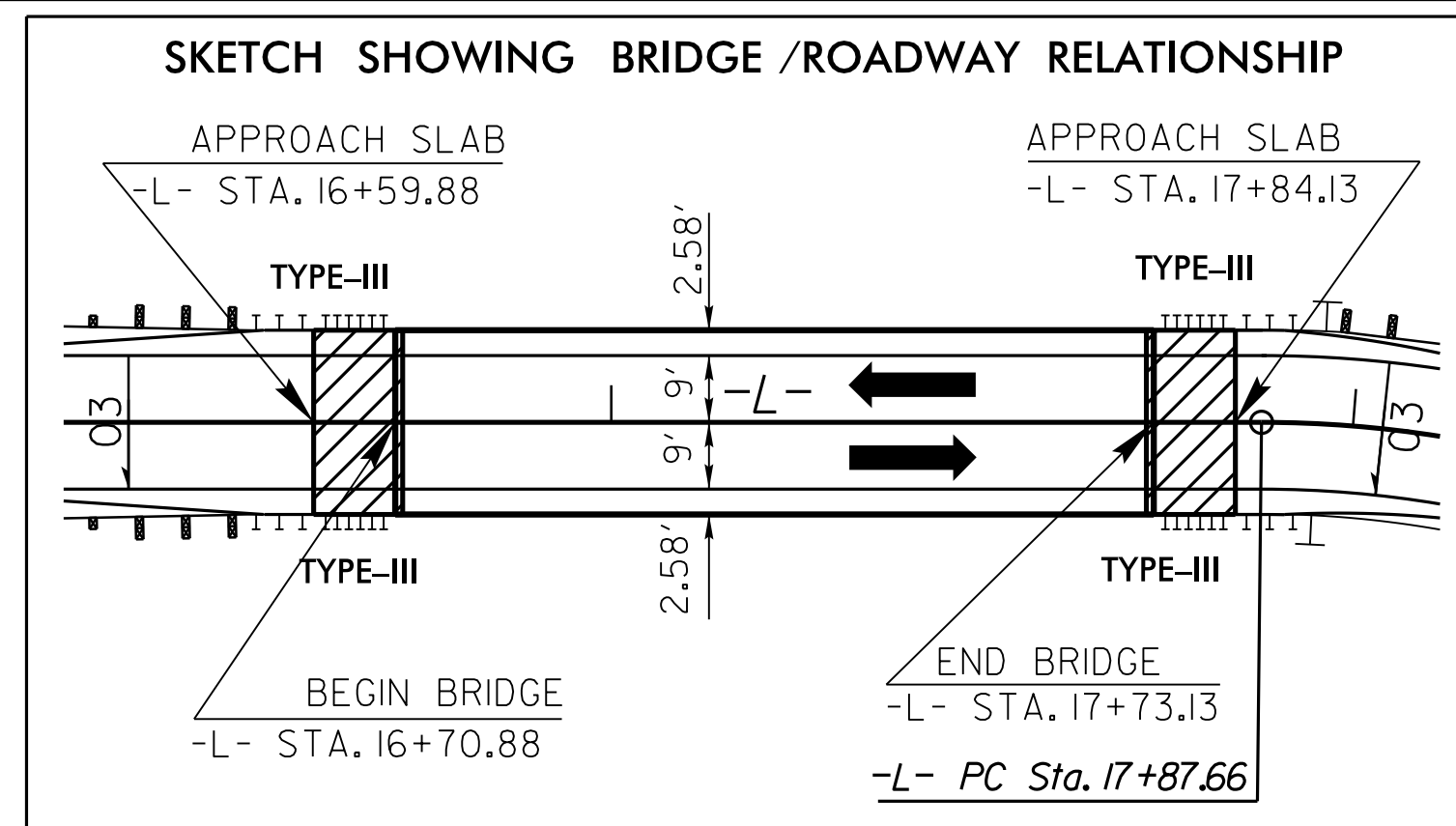
N= 982398.7585
E= 1437063.7887

NC DOT GPS STATION B3911-2
LOCALIZED PROJECT COORDINATES

N= 983048.5240
E= 1437903.6440

NOTE: DRAWING NOT TO SCALE

02-MAR-2015 09:21:05 B5173.LS.LC.dgn
1436692.1013

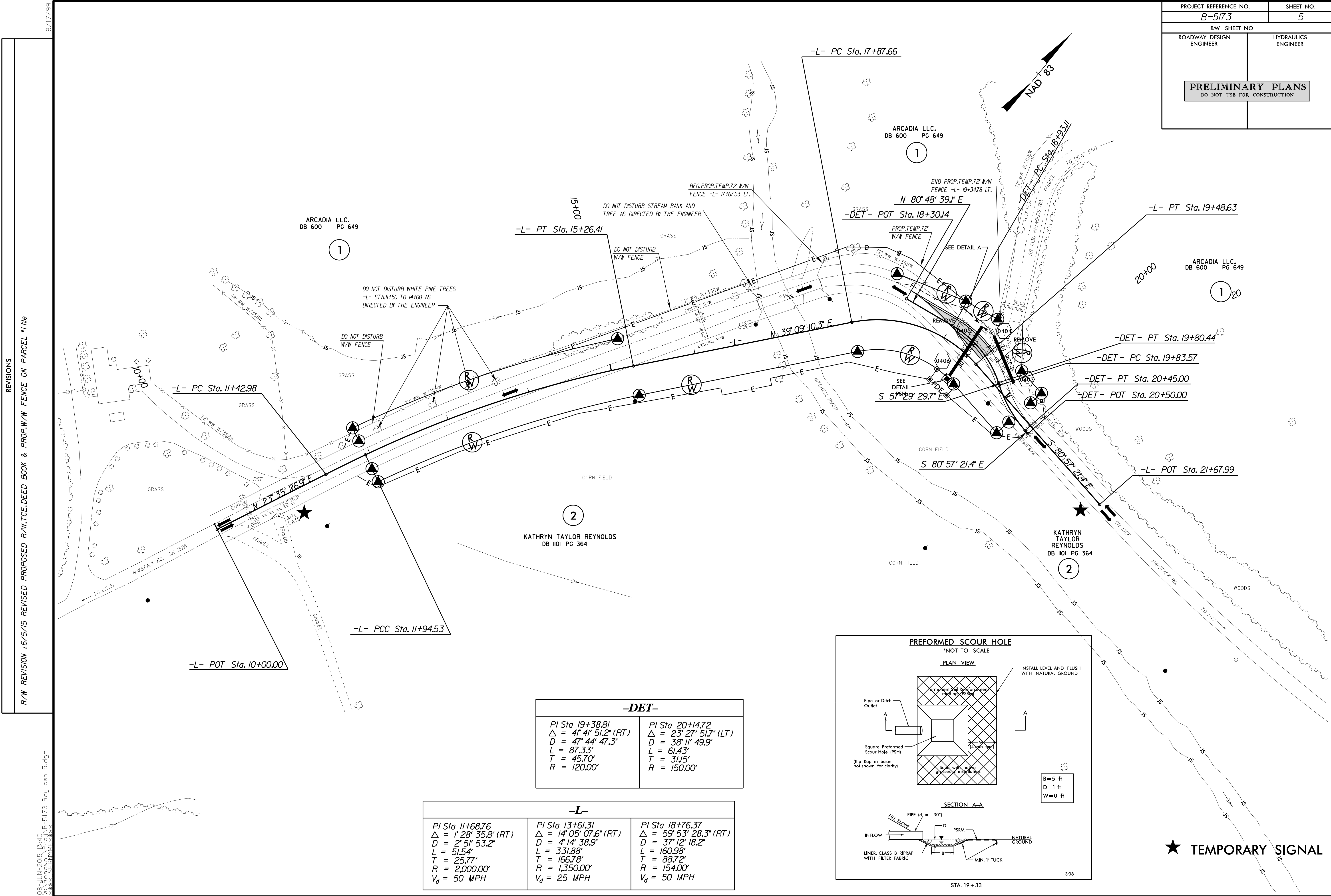


<i>-L-</i>		
<i>PI Sta 11+68.76</i>	<i>PI Sta 13+61.31</i>	<i>PI Sta 18+76.37</i>
$\Delta = 1^{\circ} 28' 35.8" (RT)$	$\Delta = 14^{\circ} 05' 07.6" (RT)$	$\Delta = 59^{\circ} 53' 28.3" (RT)$
<i>D = 2' 51" 53.2"</i>	<i>D = 4' 14" 38.9"</i>	<i>D = 37' 12" 18.2"</i>
<i>L = 51.54'</i>	<i>L = 331.88'</i>	<i>L = 160.98'</i>
<i>T = 25.77'</i>	<i>T = 166.78'</i>	<i>T = 88.72'</i>
<i>R = 2,000.00'</i>	<i>R = 1,350.00'</i>	<i>R = 154.00'</i>
<i>V_d = 50 MPH</i>	<i>V_d = 50 MPH</i>	<i>V_d = 25 MPH</i>

PAVEMENT REMOVAL
SEE SHEET 6 FOR PROFILE

REVISIONS
R/W REVISION: 6/5/15 REVISED PROPOSED R/W TCE DEED BOOK & PROP.W/W EFFECE ON PARCELS 11e

08-JUN-2015 13:40
R:\Roadway\Proj\B-5173-Rdy-psh-4.dgn



5/28/99

-L- SR 1328 HAYSTACK RD.

*DESIGN EXCEPTION REQUIRED FOR VERTICAL CURVE K-VALUES AND ASSOCIATED SSD.

PROJECT REFERENCE NO.
B-5173

SHEET NO.
6

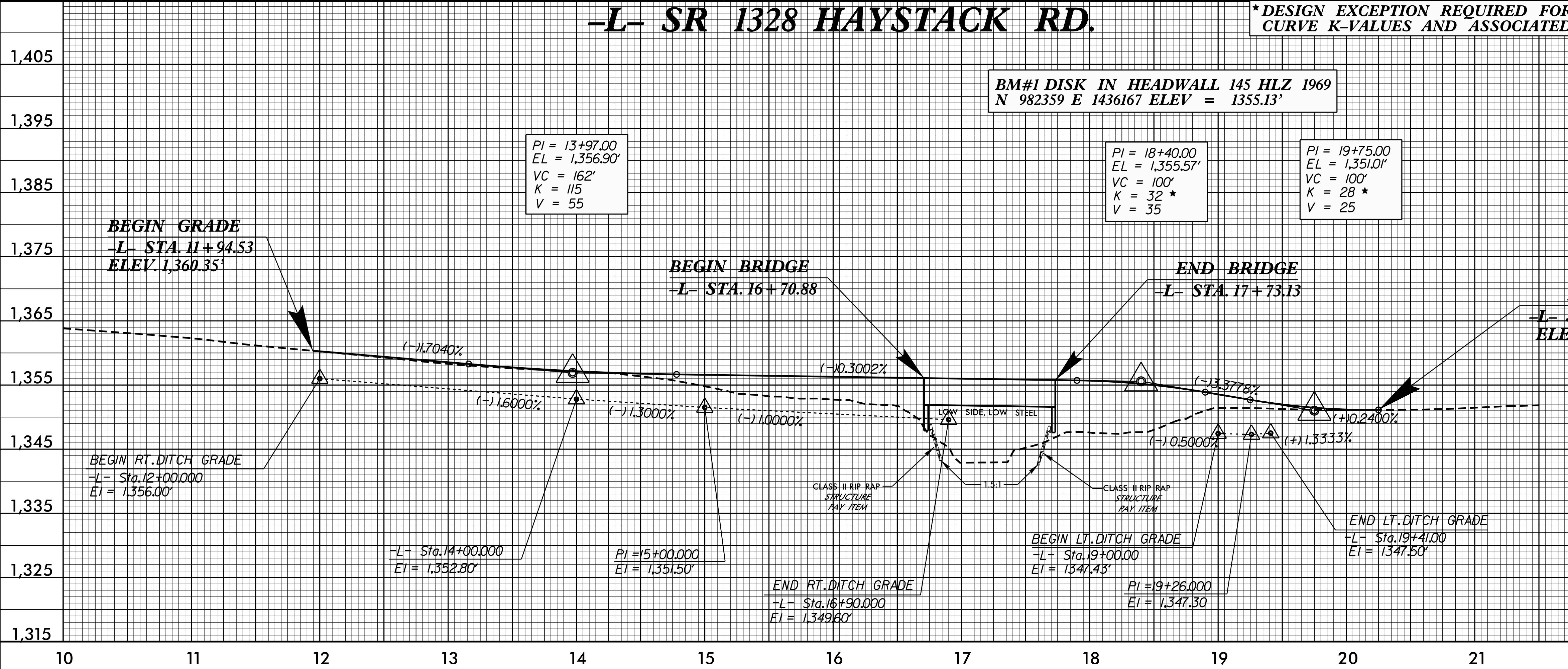
ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

RIGHT DITCH

LEFT DITCH



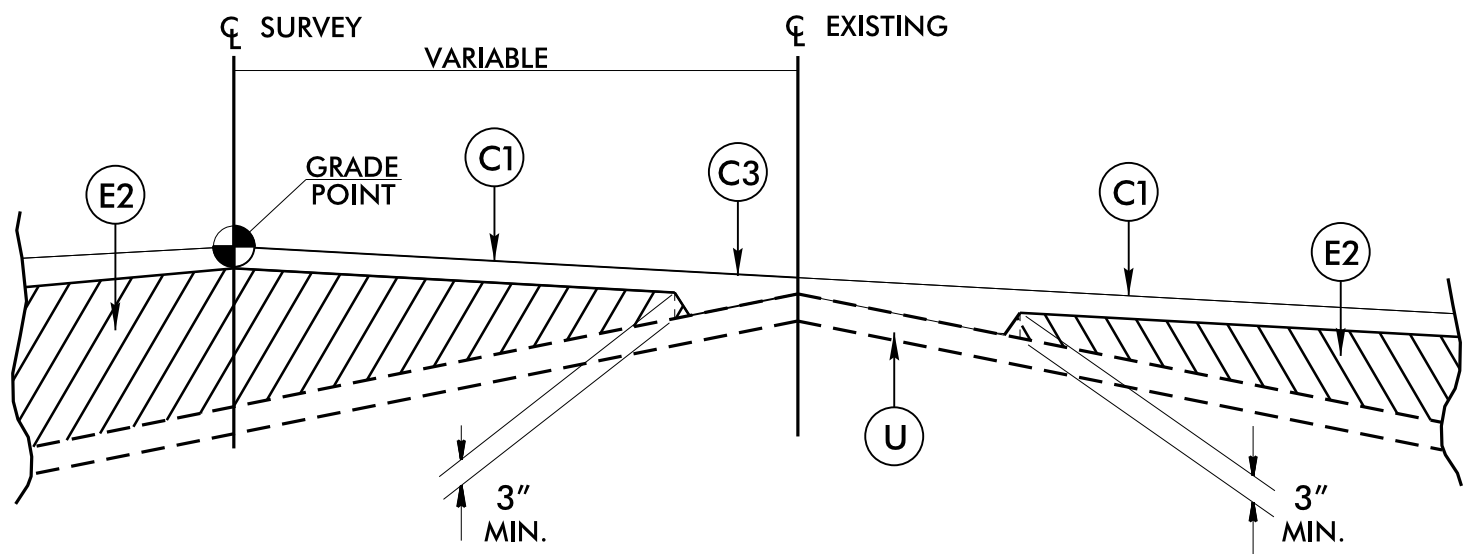
BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 2,400	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 1350.1	FT
BASE DISCHARGE	= 3,479	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1350.78	FT
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= N/A	FT
	=	FT
DATE OF SURVEY	= AUGUST 9, 2009	
W.S. ELEVATION AT DATE OF SURVEY	= 1344.5	FT

6/2/99

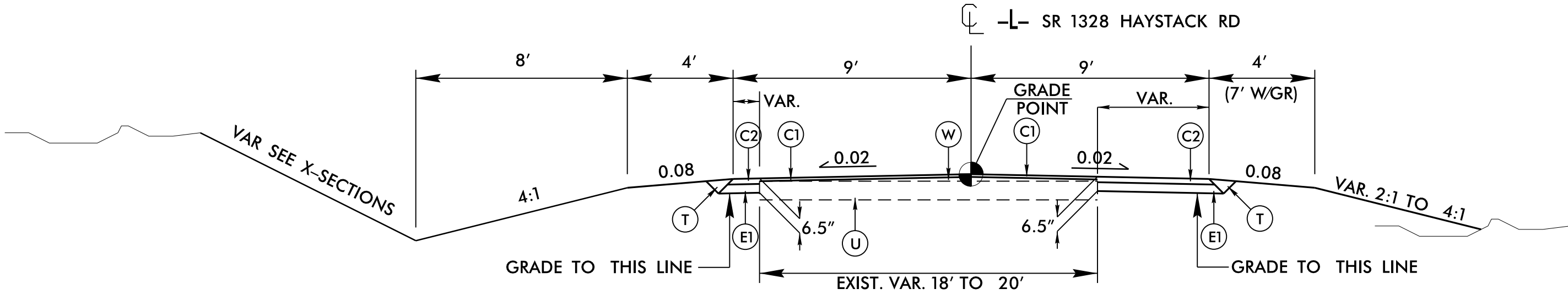
02-MAR-2015 09:21
B-5173-Rdy-typos.dgn
B-5173-Rdy-typos.dgn

PAVEMENT SCHEDULE			
FINAL PAVEMENT DESIGN			
C1	PROP. APPROX. 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137½ LBS. PER SQ. YD.	E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
C2	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 275 LBS. PER SQ. YD.	T	EARTH MATERIAL.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.	U	EXISTING PAVEMENT.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	W	WEDGING (SEE DETAIL 1)

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



Detail 1



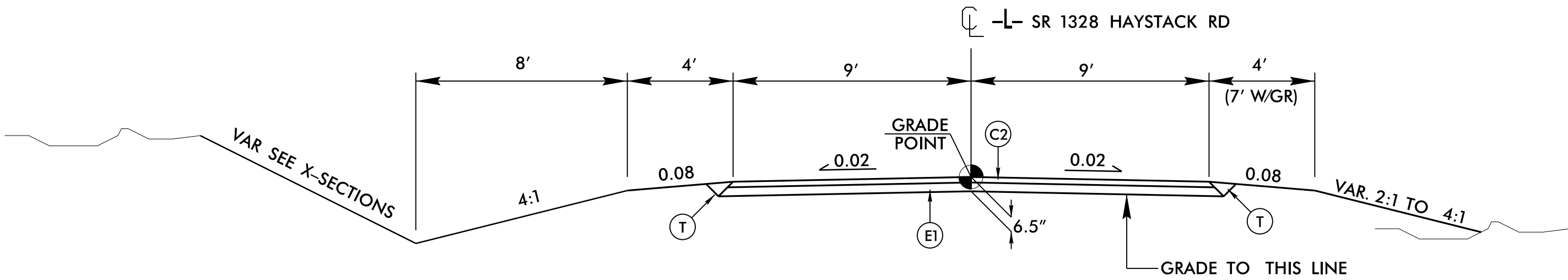
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

-L- STA. 11+94.53 TO 14+00.00
-L- STA. 19+37.00 TO 20+25.00

NOTE: USE DITCH DETAIL A IN CONJUNCTION WITH

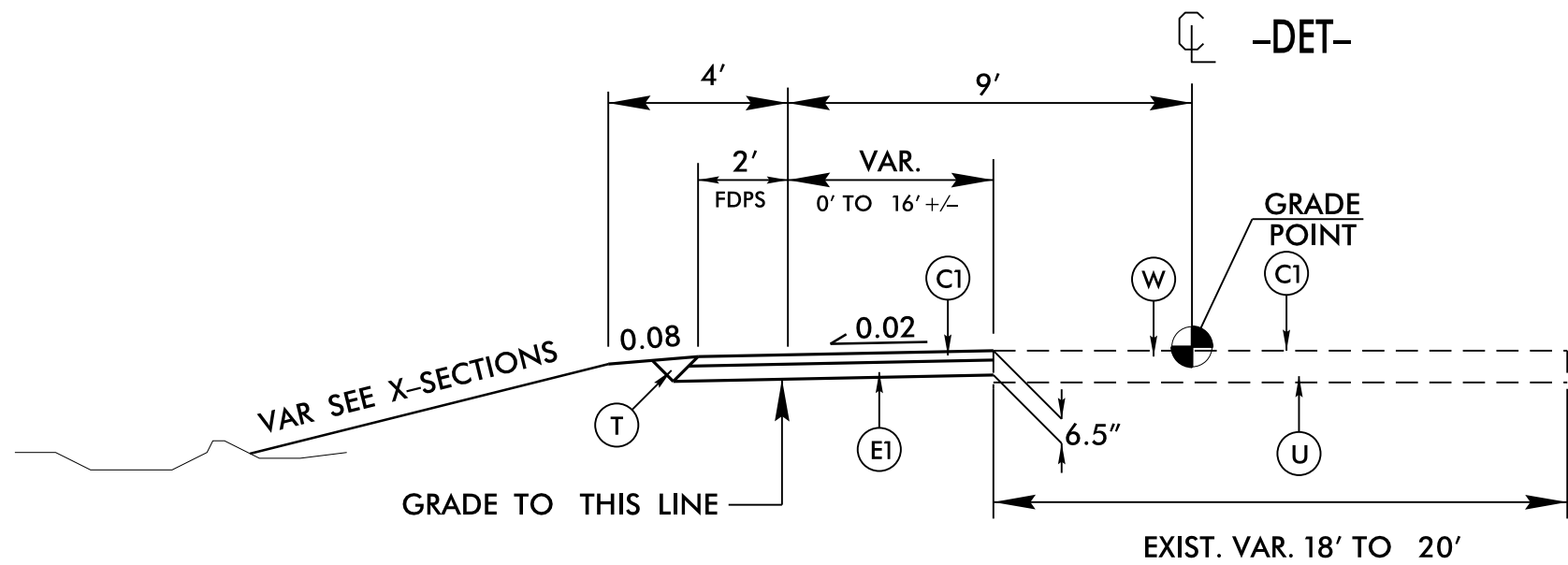
T.S. # 1 -L- STA. 12+00.00 TO 14+00.00 (RIGHT)
T.S. # 2 -L- STA. 14+00.00 TO 16+00.00 (RIGHT)
T.S. # 2 -L- STA. 19+00.00 TO 19+41.00 (LEFT)



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

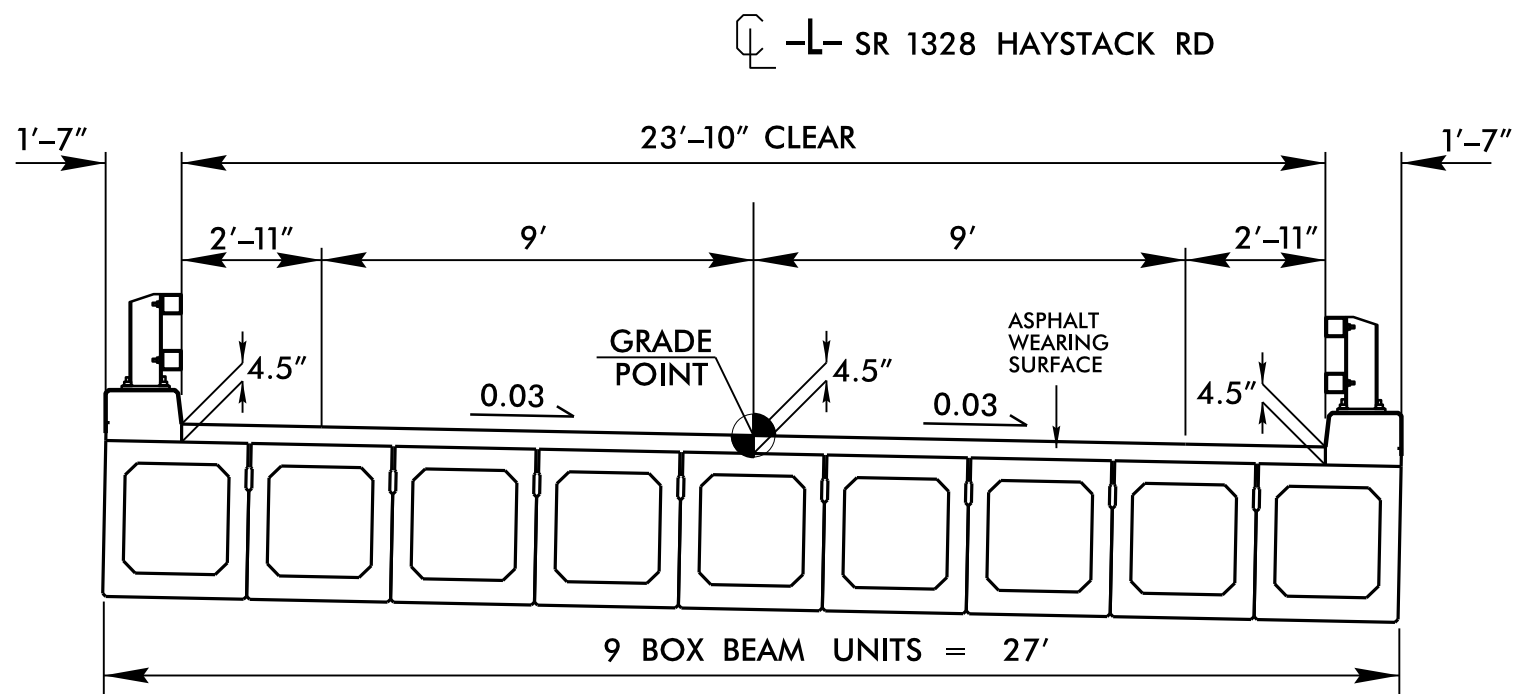
-L- STA. 14+00.00 TO 16+70.88 (BRIDGE)
17+73.13 (BRIDGE) TO -L- STA. 19+37.00



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-DET- STA. 18+30.14 TO 20+50.00



TYPICAL SECTION ON STRUCTURE

BEG. BRIDGE -L- STA. 16+70.88 TO END BRIDGE -L- STA. 17+73.13