



PAT McCRORY
Governor

NICHOLAS J. TENNYSON
Secretary

December 18, 2015

N.C. Dept of Environmental Quality
Division of Water Resources
1617 Mail Service Center
Raleigh NC, 27699-1617

ATTN: Mr. Rob Ridings
NCDOT Coordinator

Dear Sir:

Subject: **Application for a Section 401 Water Quality Certification and Tar-Pamlico Riparian Buffer Authorization, and Notice of Use of Section 404 Nationwide 3 and** for the proposed replacement of Bridge No. 109 over Town Creek on SR 1002. TIP No. B-5313; Federal Aid Project No. BRZ-1002(40); Debit \$240 from WBS No. 46027.1.1

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 109, a 91-foot, 5-span Bridge with a 137-foot, 2-span bridge on the existing alignment. This bridge will be replaced on the existing alignment while traffic will be shifted to an off-site detour. Permanent impacts to riparian wetlands include <0.01 acre due to fill and excavation.

Please see enclosed copies of the Pre-Construction Notification (PCN), stormwater management plan, permit drawings, buffer drawings, and design plans for the above referenced project. The Programmatic Categorical Exclusion (PCE) was completed in June 2015 and distributed shortly thereafter.

This project calls for a letting date of June 21, 2016 and a review date of May 3, 2016. The project schedule may be advanced if funding becomes available.

Regulatory Approvals

Section 404 Permit: The NCDOT anticipates that the project be authorized by NW 3 for bridge construction and will adhere to the general conditions.


Section 401 Permit: NCDOT is requesting written concurrence from the North Carolina Department of Environmental and Natural Resources, Division of Water Resources.

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



A copy of this permit application will be posted on the NCDOT Website at <https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx>, under *Quick Links > Permit Applications*. A copy of the PCE is also available at the above website address under *Quick Links > Environmental Documents*. Thank you for your assistance with this project. If you have any questions or need additional information, please contact John Merritt at jsmerritt@ncdot.gov or (919) 707-6140.

Sincerely,


for 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 1.3 Dec 10 2008

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	<input type="checkbox"/> Section 404 Permit	<input type="checkbox"/> Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 3 or General Permit (GP) number:		
1c. Has the NWP or GP number been verified by the Corps?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
1d. Type(s) of approval sought from the DWQ (check all that apply):		
<input checked="" type="checkbox"/> 401 Water Quality Certification – Regular <input type="checkbox"/> Non-404 Jurisdictional General Permit <input type="checkbox"/> 401 Water Quality Certification – Express <input type="checkbox"/> Riparian Buffer Authorization		
1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	For the record only for Corps Permit: <input checked="" type="checkbox"/> Yes <input 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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

2. Project Information

2a. Name of project:	Replace Bridge No. 109 on SR 1002 (Town Creek Road) over Town Creek
2b. County:	Wilson
2c. Nearest municipality / town:	Macclesfield
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no.:	B-5313

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) 707-6140
3g. Fax no.:	(919) 250-4224
3h. Email address:	jsmerritt@ncdot.gov

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

C. Proposed Impacts Inventory						
1. Impacts Summary						
1a. Which sections were completed below for your project (check all that apply):						
<input checked="" type="checkbox"/> Wetlands		<input checked="" type="checkbox"/> Streams - tributaries		<input checked="" type="checkbox"/> Buffers		
<input type="checkbox"/> Open Waters		<input type="checkbox"/> Pond Construction				
2. Wetland Impacts						
If there are wetland impacts proposed on the site, then complete this question for each wetland area impacted.						
2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	2f. Area of impact (acres)	
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Fill	Riverine	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	<0.01	
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Excavation	Riverine	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	<0.01	
Site 1 <input type="checkbox"/> P <input checked="" type="checkbox"/> T	Fill	Riverine	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	<0.01	
Site 4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 5 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 6 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
2g. Total wetland impacts					<0.01 Perm <0.01 Temp	
2h. Comments:						
3. Stream Impacts						
If there are perennial or intermittent stream impacts (including temporary impacts) proposed on the site, then complete this question for all stream sites impacted.						
3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Fill	Town Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	60	0.04
Site 2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
3h. Total stream and tributary impacts					0 Perm 0.04 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				
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				
4f. Total open water impacts				X Permanent X Temporary

4g. Comments:

5. Pond or Lake Construction

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

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

5g. Comments:

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

6. Buffer Impacts (for DWQ)

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

6a. Project is in which protected basin?		<input type="checkbox"/> Neuse <input checked="" 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 checked="" type="checkbox"/> P <input type="checkbox"/> T	Bridge	Town Creek	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2,772	1,360
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				2,772	1,360
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 46 feet longer than the existing bridge. The removal of existing road fill for longer bridge and increasing bridge openings will improve hydrological conveyance and wildlife passage, and reduce bridge opening velocities.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. Construction will be top-down. Best Management Practices for the Protection of Surface Waters, as well as, Best Management Practices for Construction and Maintenance Activities will be implemented.		
2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State		
2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If no, explain: Compensatory mitigation is not proposed due to minimal impacts.	
2b. If yes, mitigation is required by (check all that apply):	<input type="checkbox"/> DWQ <input type="checkbox"/> Corps	
2c. If yes, which mitigation option will be used for this project?	<input type="checkbox"/> Mitigation bank <input type="checkbox"/> Payment to in-lieu fee program <input type="checkbox"/> Permittee Responsible Mitigation	
3. Complete if Using a Mitigation Bank		
3a. Name of Mitigation Bank: not applicable		
3b. Credits Purchased (attach receipt and letter)	Type	Quantity
3c. Comments:		
4. Complete if Making a Payment to In-lieu Fee Program		
4a. Approval letter from in-lieu fee program is attached.	<input type="checkbox"/> Yes	
4b. Stream mitigation requested:	linear feet	
4c. If using stream mitigation, stream temperature:	<input type="checkbox"/> warm <input type="checkbox"/> cool <input type="checkbox"/> cold	
4d. Buffer mitigation requested (DWQ only):	square feet	
4e. Riparian wetland mitigation requested:	acres	
4f. Non-riparian wetland mitigation requested:	acres	
4g. Coastal (tidal) wetland mitigation requested:	acres	
4h. Comments: EEP acceptance letter forthcoming (request letter attached)		
5. Complete if Using a Permittee Responsible Mitigation Plan		
5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.		

6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ

6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?

Yes No

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

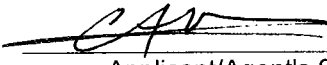
Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1			3 (2 for Catawba)	
Zone 2			1.5	
6f. Total buffer mitigation required:				

6g. If buffer mitigation is required, discuss what type of mitigation is proposed (e.g., payment to private mitigation bank, permittee responsible riparian buffer restoration, payment into an approved in-lieu fee fund).

6h. Comments:

E. Stormwater Management and Diffuse Flow Plan (required by DWQ)	
1. Diffuse Flow Plan	
1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1b. If yes, then is a diffuse flow plan included? If not, explain why. Comments:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2. Stormwater Management Plan	
2a. What is the overall percent imperviousness of this project?	N/A
2b. Does this project require a Stormwater Management Plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2c. If this project DOES NOT require a Stormwater Management Plan, explain why:	
2d. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan: See attached permit drawings and 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 N/A
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No N/A
5b. Have all of the 401 Unit submittal requirements been met?	<input checked="" 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 type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	<input type="checkbox"/> Raleigh <input type="checkbox"/> Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? NCNHP, USFWS website, field surveys		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index		
7. Historic or Prehistoric Cultural Resources (Corps Requirement)		
7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation		
8. Flood Zone Designation (Corps Requirement)		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
8b. If yes, explain how project meets FEMA requirements: NCDOT Hydraulics Unit coordination with FEMA		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		
<i>AW</i> Richard W. Hancock, P.E. Applicant/Agent's Printed Name	 Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	12-18-2015 Date



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS



(Version 2.02; Released April 2015)

WBS Element: 46027.1.1 TIP No.: B-5313 County(ies): Wilson Page 1 of 1

General Project Information

WBS Element:	46027.1.1	TIP Number:	B-5313	Project Type:	Bridge Replacement	Date:	9/15/2015
NCDOT Contact:	Jonathan L. Moore, PE		Contractor / Designer:				
Address:	1020 Birch Ridge Dr. Raleigh, NC 27610		Address:				
	Phone:	919-707-6700		Phone:			
	Email:	jlmoores@ncdot.gov		Email:			
City/Town:	Town Creek		County(ies):	Wilson			
River Basin(s):	Tar-Pamlico		CAMA County?	No			
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	0.145 miles	Surrounding Land Use:	Wooded/Agricultural				
Project Built-Upon Area (ac.)		Proposed Project		Existing Site			
Typical Cross Section Description:		0.5 ac.		0.4 ac.			
Two 11' lanes with 6' shoulders.				Two 10' lanes with grassed shoulders.			

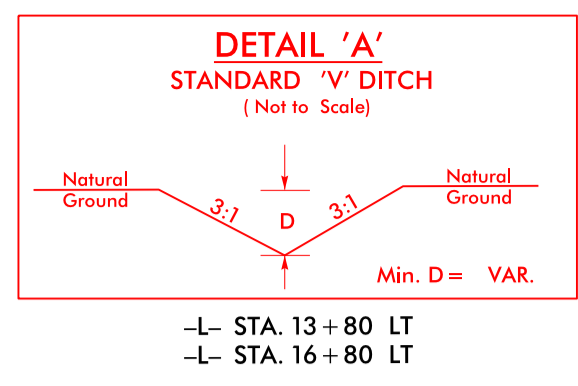
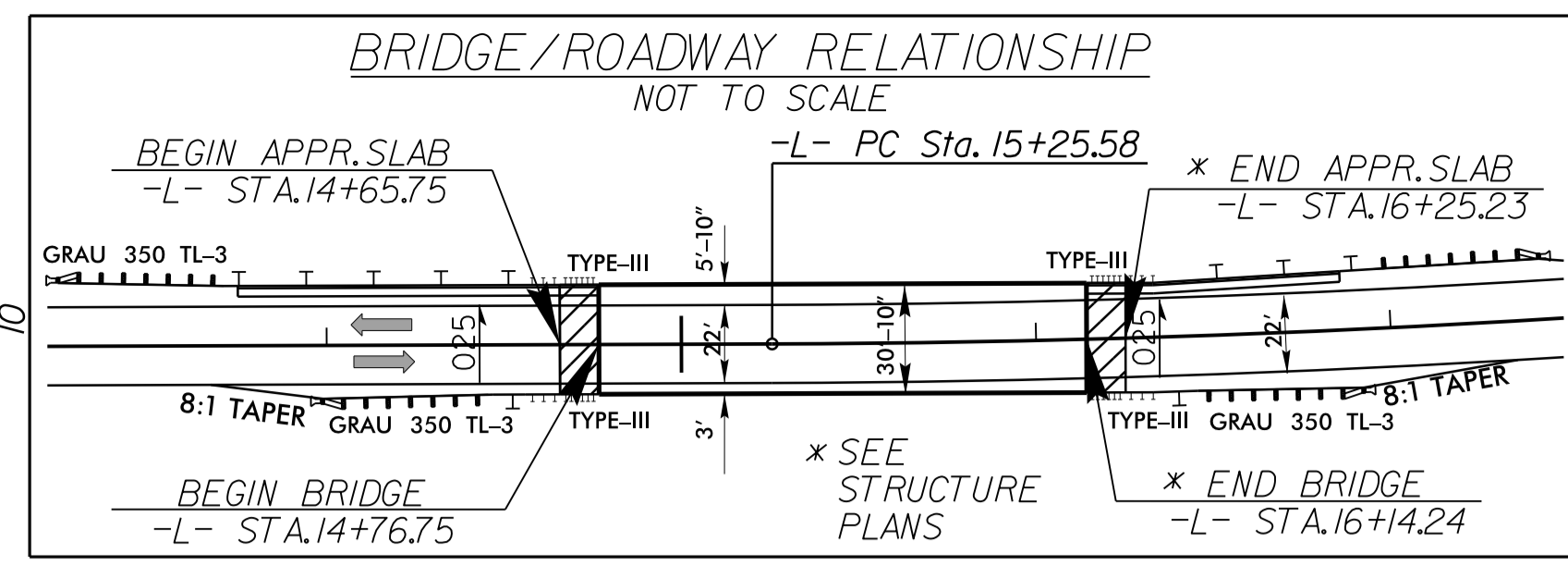
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	913	Year:	2036	Existing:	653	Year:	2016
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General Project Narrative:
(Description of Minimization of Water Quality Impacts)

The existing roadway consists of 2-10' lanes and grassed shoulders. Existing bridge #109 is 91.5' long with a clear roadway of 23'. The existing bridge has deck drains on 6'-8' centers on both sides along the entire length of the structure. The proposed roadway typical consists of 2-11' lanes and 6' grassed shoulders. Proposed structure #109 is a 135' long bridge with 11' lanes and variable shoulders. There will be no direct discharge into the stream. Runoff along the roadway is to be treated by grass shoulders. 0.13 acres of runoff that is to be collected from the bridge will be discharged onto a rip rapped pad 20' outside of Buffer Zone 2 in the southwest quadrant. Another 0.09 acres of runoff from the bridge will be discharged onto a rip rapped pad 14' outside of Buffer Zone 2 in the northwest quadrant.

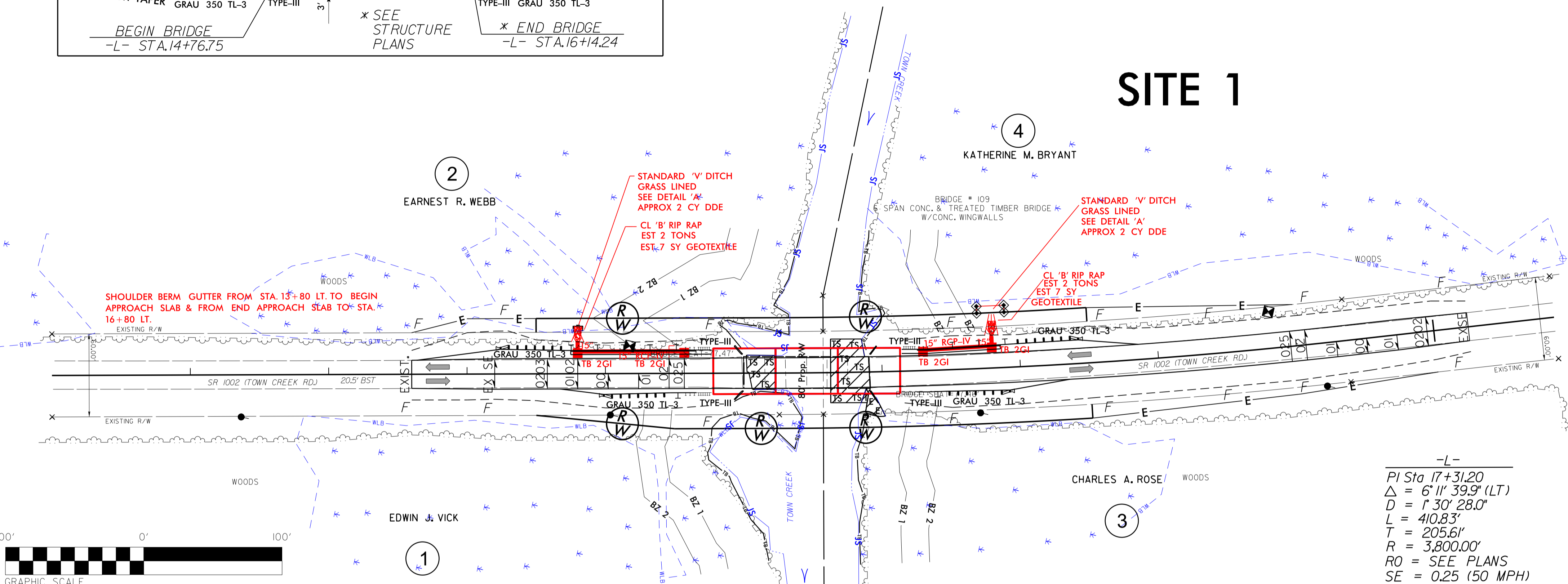
Waterbody Information

Surface Water Body (1):	Town Creek		NCDWR Stream Index No.:	28-83b			
NCDWR Surface Water Classification for Water Body	Primary Classification:		Class C				
	Supplemental Classification:		Nutrient Sensitive Waters (NSW)				
Other Stream Classification:							
Impairments:	None						
Aquatic T&E Species?	Yes	Comments: No Dwarf Wedgemussels were found during a survey conducted on June 12, 2012. (biological conclusion is "No Effect")					
NRTR Stream ID:				Buffer Rules in Effect:	Tar-Pamlico		
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	No	Dissipator Pads Provided in Buffer?	No		
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)							



PERMIT DRAWING SHEET 2 OF 6

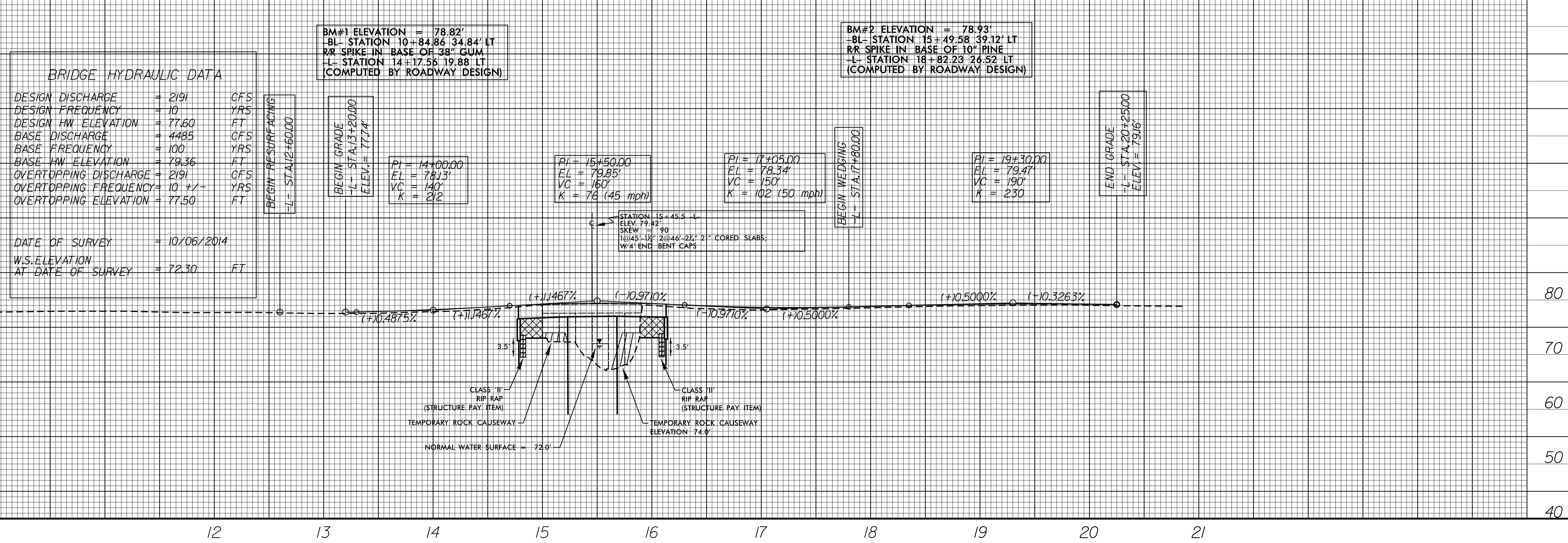
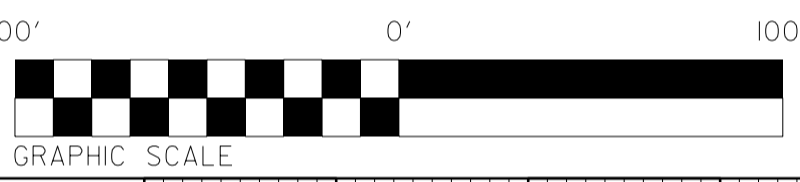
SITE 1



- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

-L-
 PI Sta 17+31.20
 $\Delta = 6' 11'' 39.9''$ (LT)
 $D = 1' 30'' 28.0''$
 $L = 410.83'$
 $T = 205.61'$
 $R = 3,800.00'$
 $RO = \text{SEE PLANS}$
 $SE = 0.25$ (50 MPH)

BRIDGE APPROACH SLAB
 FOR STRUCTURE PLANS, SEE SHEET S-? THRU S-??



BRIDGE HYDRAULIC DATA		
DESIGN DISCHARGE	= 219	CFS
DESIGN FREQUENCY	= 10	YRS
DESIGN HW ELEVATION	= 77.60	FT
BASE DISCHARGE	= 4485	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 79.36	FT
OVERTOPPING DISCHARGE	= 219	CFS
OVERTOPPING FREQUENCY	= 10 +/-	YRS
OVERTOPPING ELEVATION	= 77.50	FT

DATE OF SURVEY = 10/06/2014
 W.S. ELEVATION AT DATE OF SURVEY = 72.30 FT

BM#1 ELEVATION = 78.82'
 -BL- STATION 10+84.86 34.84' LT
 RR SPIKE IN BASE OF 38" GUM
 -L- STATION 14+17.56 19.88 LT
 (COMPUTED BY ROADWAY DESIGN)

BM#2 ELEVATION = 78.93'
 -BL- STATION 15+49.58 39.12' LT
 RR SPIKE IN BASE OF 10" PINE
 -L- STATION 18+82.23 24.52 LT
 (COMPUTED BY ROADWAY DESIGN)

BEGIN RE SURFACING
 -L- STA. 12+60.00

BEGIN GRADE
 -L- STA. 13+20.00
 ELEV. = 77.74'

PI = 14+00.00
 EL = 78.13'
 VC = 140'
 K = 212

PI = 15+50.00
 EL = 79.85'
 VC = 160'
 K = 76 (45 mph)

PI = 17+05.00
 EL = 78.34'
 VC = 150'
 K = 102 (50 mph)

PI = 19+30.00
 EL = 79.47'
 VC = 190'
 K = 230

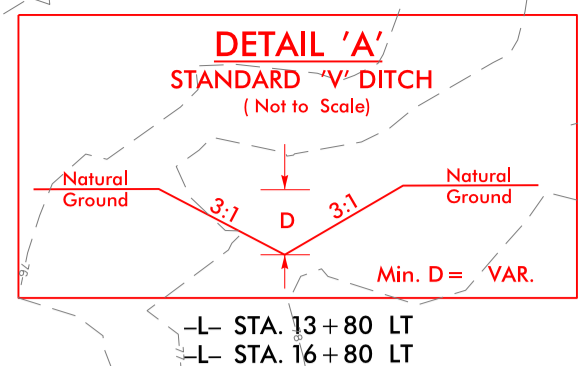
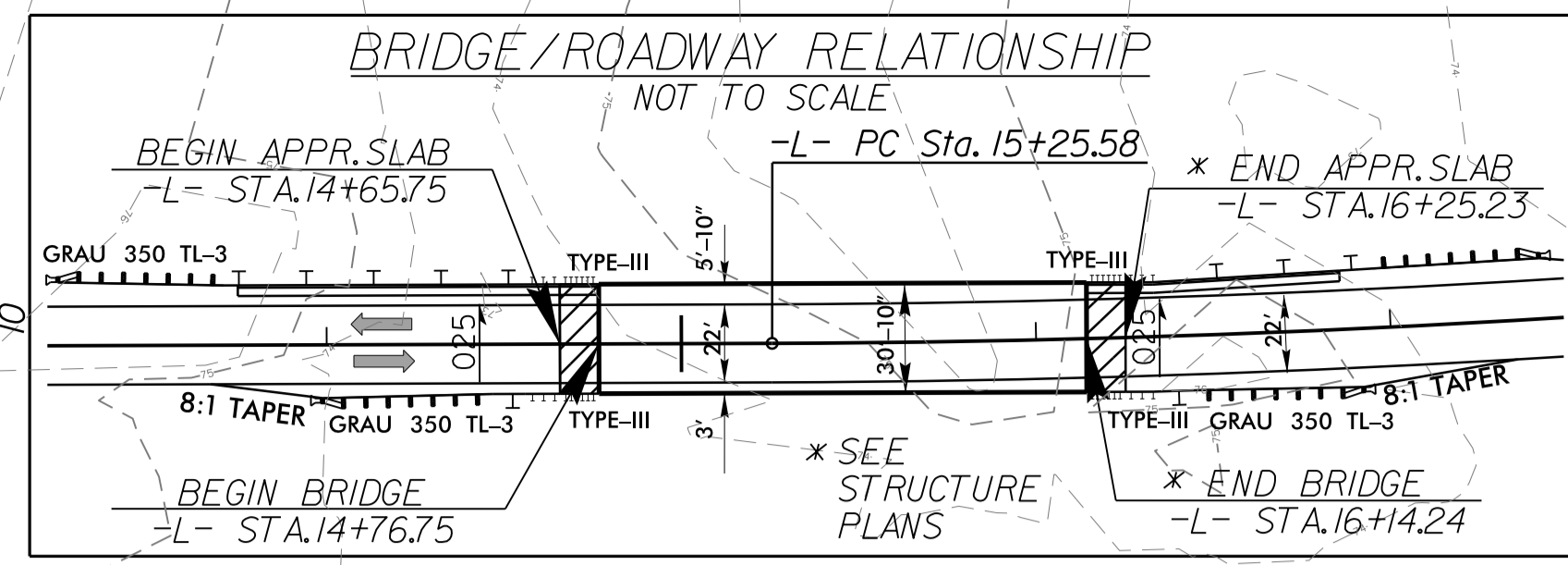
END GRADE
 -L- STA. 20+25.00
 ELEV. = 79.16'

STATION 15+45.5 -L-
 ELEV. 79.42'
 SKEW 90
 1 @ 45'-1/2" 2 @ 46'-2 1/4" 2" CORED SLABS;
 W/4" END BENT CAPS

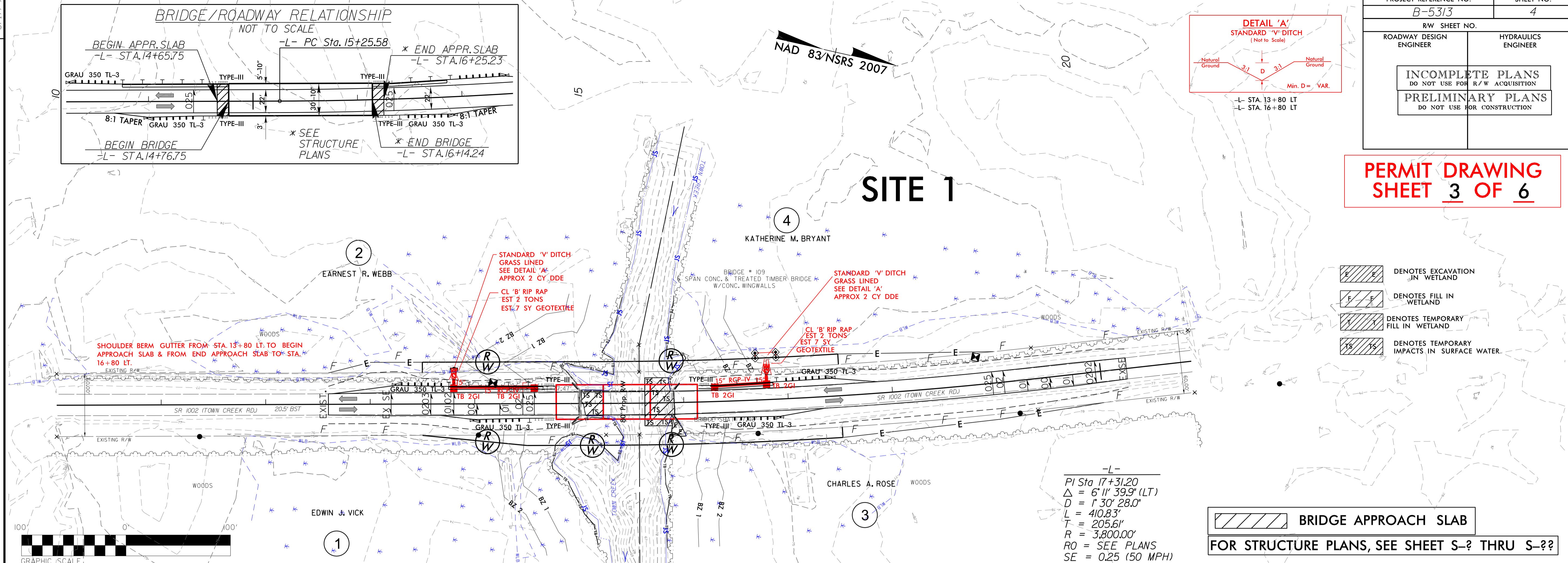
CLASS 'II' RIP RAP (STRUCTURE PAY ITEM)
 CLASS 'III' RIP RAP (STRUCTURE PAY ITEM)
 TEMPORARY ROCK CAUSEWAY
 TEMPORARY ROCK CAUSEWAY ELEVATION 74.0'
 NORMAL WATER SURFACE = 72.0'

REVISIONS

PERMIT DRAWING SHEET 3 OF 6



SITE 1



- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

BRIDGE APPROACH SLAB
FOR STRUCTURE PLANS, SEE SHEET S-? THRU S-??

-L-
PI Sta 17+31.20
Δ = 6' 11" 39.9" (LT)
D = 1' 30" 28.0"
L = 410.83'
T = 205.61'
R = 3,800.00'
RO = SEE PLANS
SE = 0.25 (50 MPH)

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 2191	CFS
DESIGN FREQUENCY	= 10	YRS
DESIGN HW ELEVATION	= 77.60	FT
BASE DISCHARGE	= 4485	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 79.36	FT
OVERTOPPING DISCHARGE	= 2191	CFS
OVERTOPPING FREQUENCY	= 10 +/-	YRS
OVERTOPPING ELEVATION	= 77.50	FT

BM#1 ELEVATION = 78.82'
-BL- STATION 10+84.86 34.84' LT
R/R SPIKE IN BASE OF 38" GUM
-L- STATION 14+17.56 19.88 LT
(COMPUTED BY ROADWAY DESIGN)

BM#2 ELEVATION = 78.93'
-BL- STATION 15+49.58 39.12' LT
R/R SPIKE IN BASE OF 10" PINE
-L- STATION 18+82.23 24.52 LT
(COMPUTED BY ROADWAY DESIGN)

DATE OF SURVEY = 10/06/2014
W.S. ELEVATION AT DATE OF SURVEY = 72.30 FT

BEGIN RE SURFACING
-L- STA. 12+60.00

BEGIN GRADE
-L- STA. 13+20.00
ELEV. = 77.74'

PI = 14+00.00
EL = 78.13'
VC = 140'
K = 212

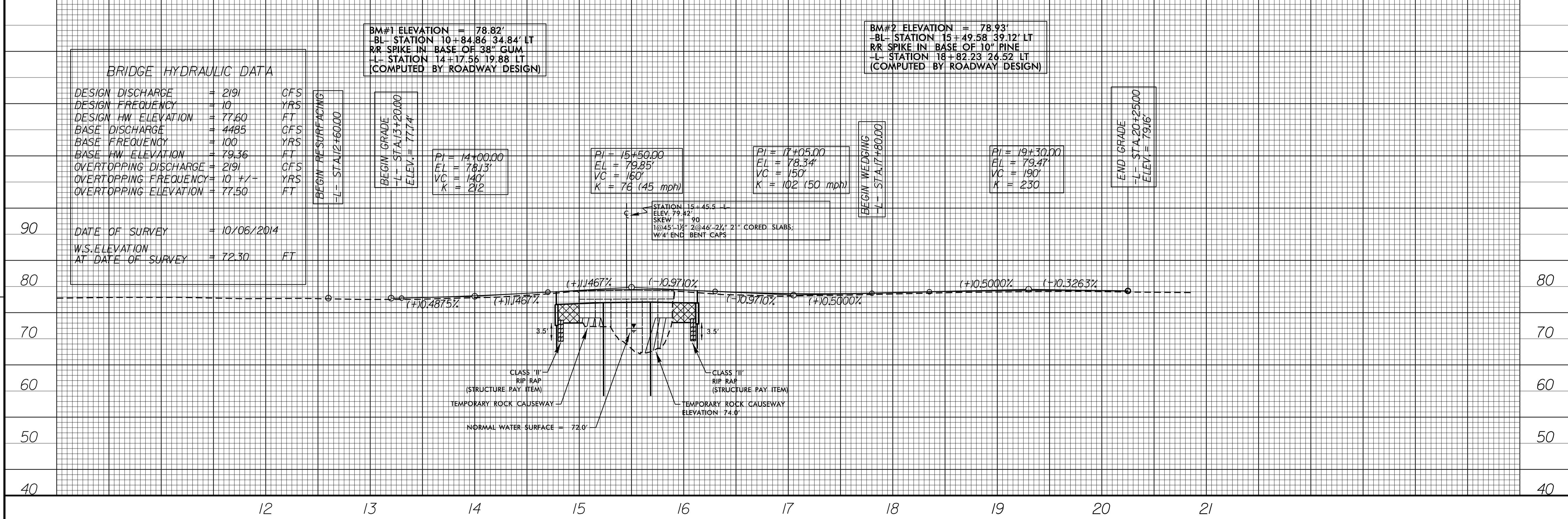
PI = 15+50.00
EL = 79.85'
VC = 160'
K = 76 (45 mph)

PI = 17+05.00
EL = 78.34'
VC = 150'
K = 102 (50 mph)

PI = 19+30.00
EL = 79.47'
VC = 190'
K = 230

END GRADE
-L- STA. 20+25.00
ELEV. = 79.16'

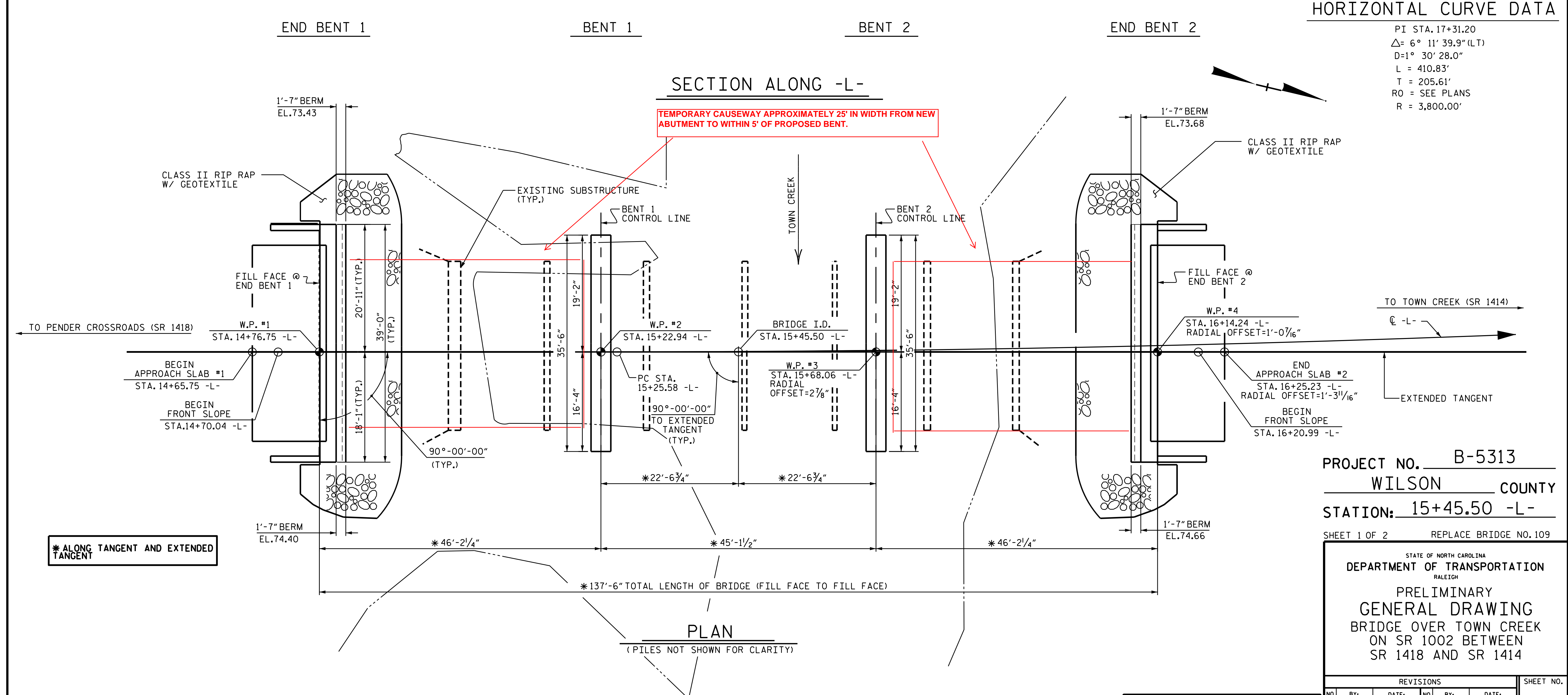
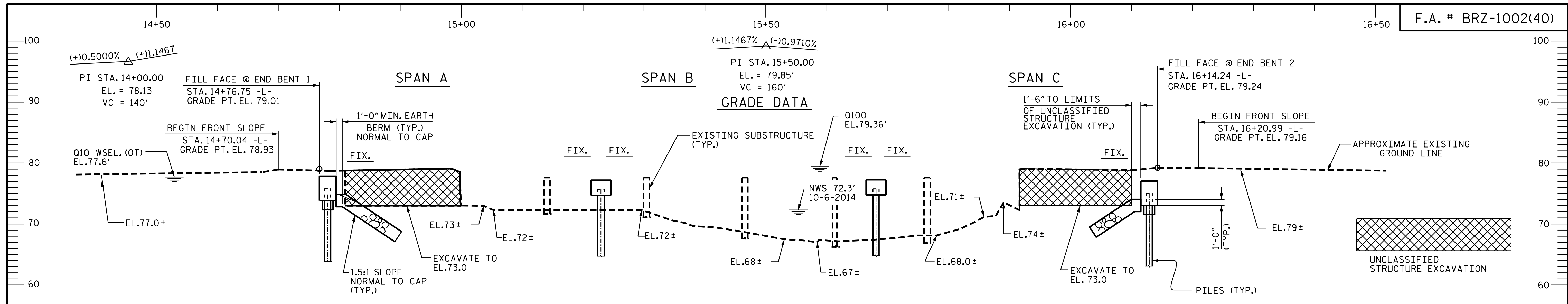
STATION 15+45.5 -L-
ELEV. 79.42'
SKEW = 90
1 @ 45" - 1/2" 2 @ 46" - 2/4" 2" CORED SLABS;
W/4" END BENT CAPS



REVISIONS

8/17/99

9/28/2015
ifmc066
R:\Hydraulics\PERMITS_Environmental\Revised Drawings\B-5313_Hyd_PSH -Contours.dgn



DRAWN BY: REZA KOUCHEKI DATE: 3/5/15
 CHECKED BY: N. Ruffin DATE: 3/10/15

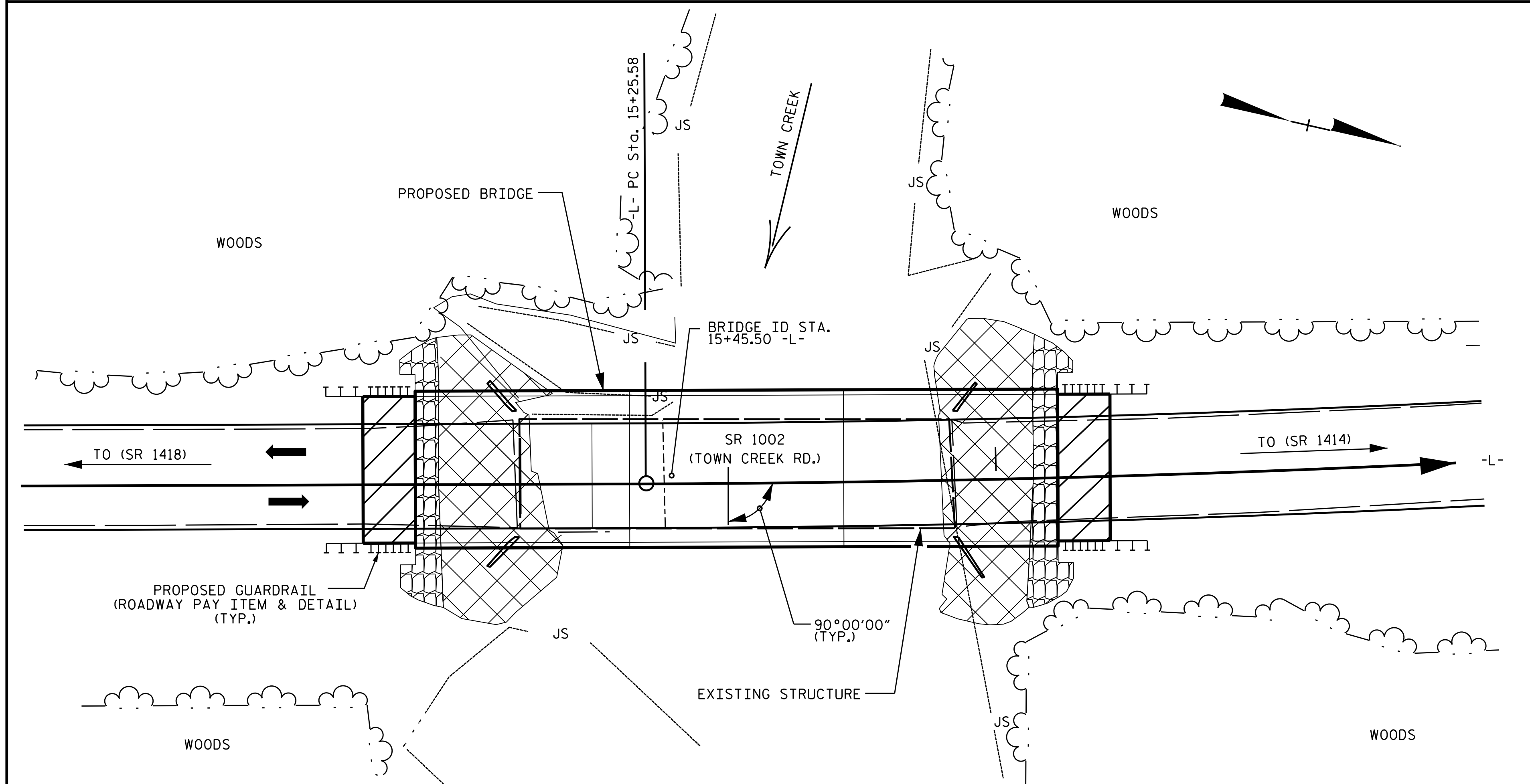
**PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION**

PROJECT NO. B-5313
 WILSON COUNTY
 STATION: 15+45.50 -L-
 SHEET 1 OF 2 REPLACE BRIDGE NO. 109

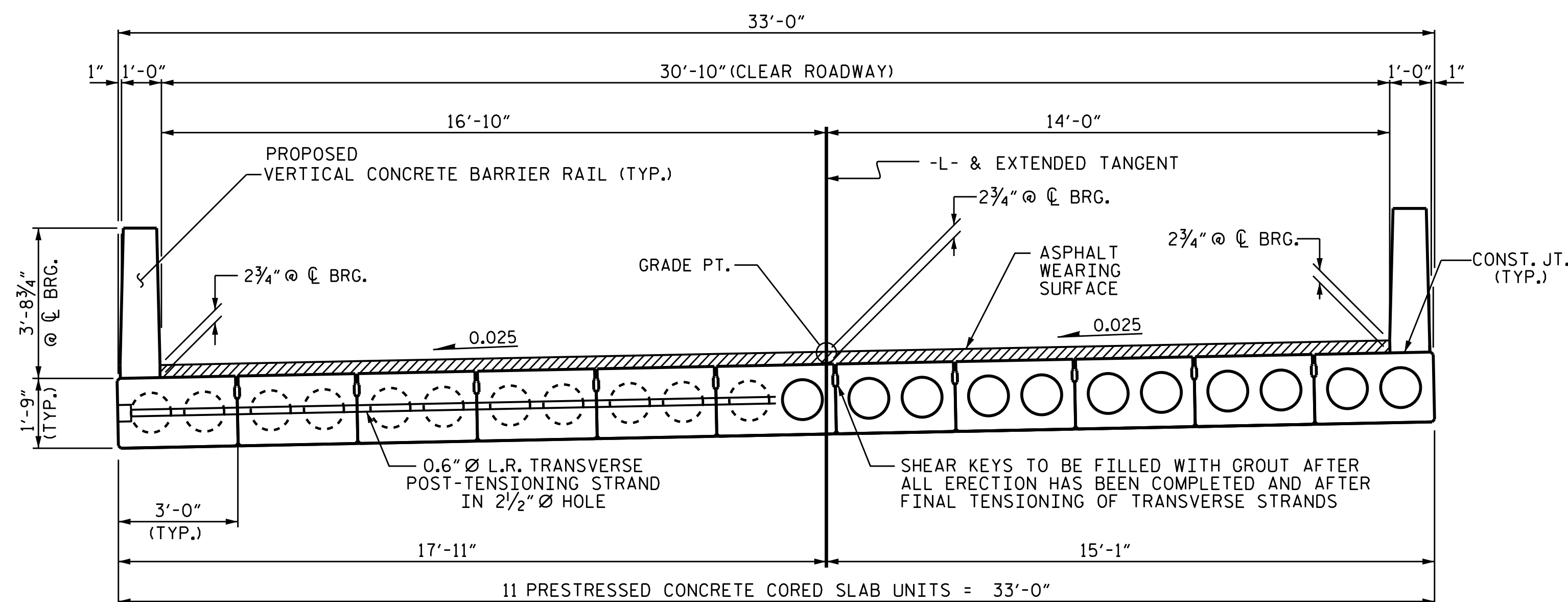
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRELIMINARY
 GENERAL DRAWING
 BRIDGE OVER TOWN CREEK
 ON SR 1002 BETWEEN
 SR 1418 AND SR 1414

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			
2			4			

B.M.#1 = RR SPIKE IN BASE OF 38" GUM; STA. 14+17.56 -L-, 19.88' LEFT, ELEV.78.82



LOCATION SKETCH



HALF SECTION AT INTERMEDIATE DIAPHRAGMS

HALF SECTION THROUGH VOIDS

TYPICAL SECTION

THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT WEARING SURFACE THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT WEARING SURFACE THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE.

NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

THIS BRIDGE IS LOCATED IN SESMIC ZONE 1.

HYDRAULIC DATA

DESIGN DISCHARGE	= 2191 CFS
FREQUENCY OF DESIGN FLOOD	= 10 YRS
DESIGN HIGH WATER ELEVATION	= 77.60
DRAINAGE AREA	= 52.9 SQ. MI.
BASE DISCHARGE (Q100)	= 4485 CFS
BASE HIGH WATER ELEVATION	= 79.36

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 2191 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 10± YRS
OVERTOPPING FLOOD ELEVATION	= 77.5
	(APPROX. STA. 12+90.0 -L-)

PROJECT NO. B-5313
WILSON COUNTY
 STATION: 15+45.50 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 PRELIMINARY
 GENERAL DRAWING
 BRIDGE OVER TOWN CREEK
 ON SR 1002 BETWEEN
 SR 1418 AND SR 1414

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			
2			4			

DRAWN BY : REZA KOUCHEKI DATE : 3/5/15
 CHECKED BY : M. Ruffin DATE : 3/10/15

WETLAND PERMIT IMPACT SUMMARY

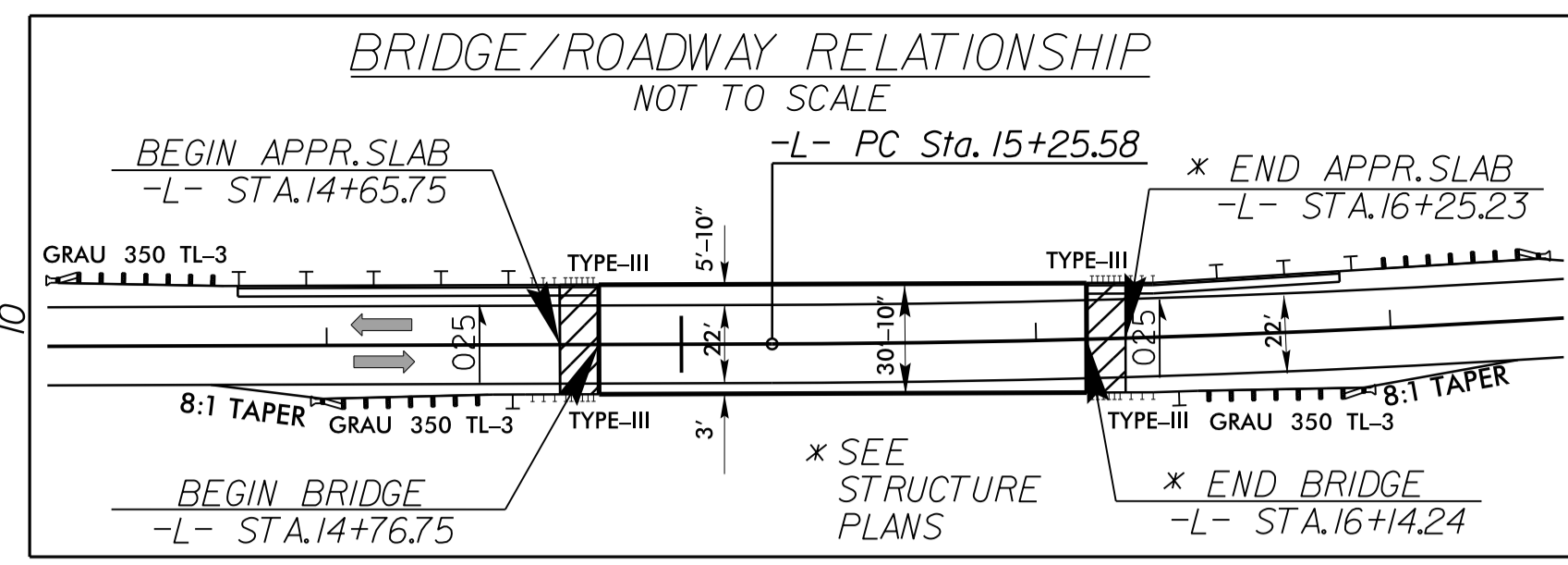
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	13+75 to 16+00 -L-	Bridge and Roadway Fill	< 0.01	< 0.01	< 0.01			0.04				
TOTALS*:			< 0.01	< 0.01	< 0.01			0.04	0	0	0	

*Rounded totals are sum of actual impacts

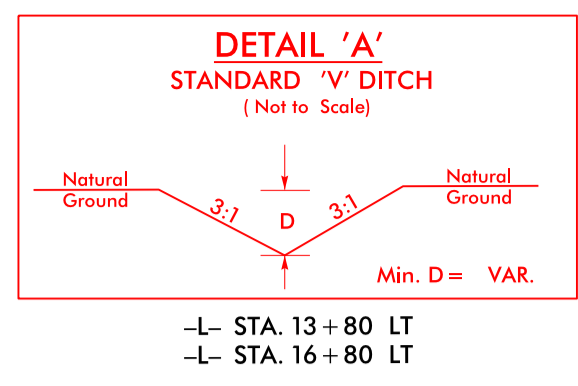
NOTES:
There will be approximately 21.78 sq. ft. of piles in the water.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
09/15/15
Wilson County
B-5313
46027.1.1
SHEET 6 OF 6

8/17/99



NAD 83/NSRS 2007

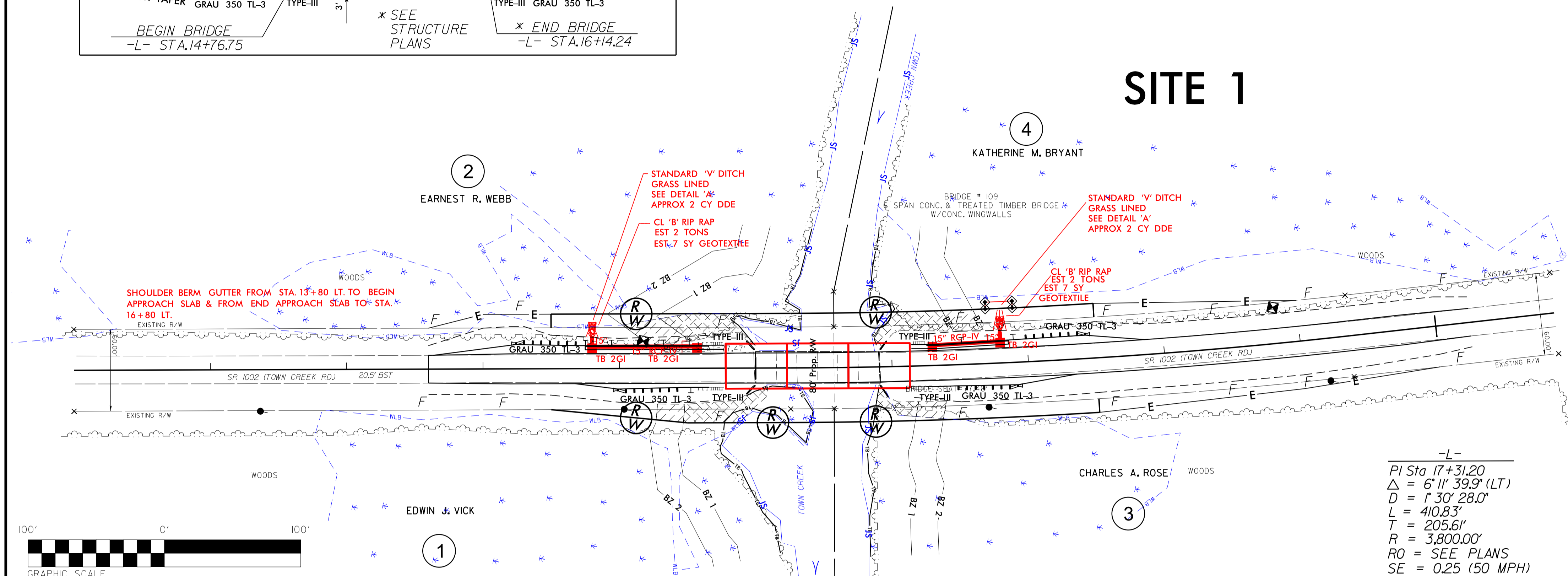


PROJECT REFERENCE NO.	B-5313	SHEET NO.	4
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

PERMIT DRAWING SHEET 2 OF 4

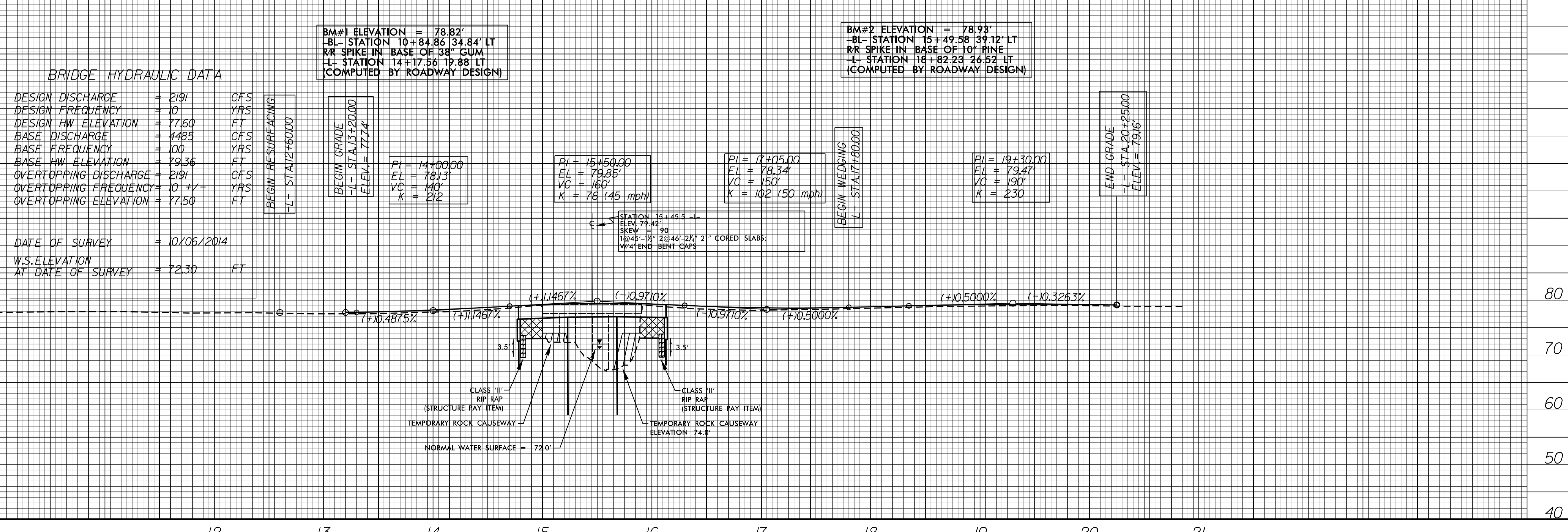
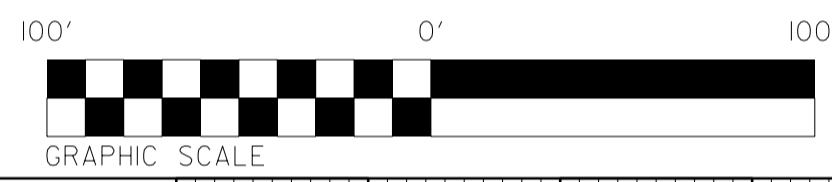
ALLOWABLE IMPACTS ZONE 1
 ALLOWABLE IMPACTS ZONE 2

SITE 1



-L-
 PI Sta 17+31.20
 $\Delta = 6' 11'' 39.9''$ (LT)
 $D = 1' 30'' 28.0''$
 $L = 410.83'$
 $T = 205.61'$
 $R = 3,800.00'$
 $RO = \text{SEE PLANS}$
 $SE = 0.25$ (50 MPH)

BRIDGE APPROACH SLAB
 FOR STRUCTURE PLANS, SEE SHEET S-? THRU S-??



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 2191	CFS
DESIGN FREQUENCY	= 10	YRS
DESIGN HW ELEVATION	= 77.60	FT
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BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 79.36	FT
OVERTOPPING DISCHARGE	= 2191	CFS
OVERTOPPING FREQUENCY	= 10 +/-	YRS
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BEGIN RE-SURFACING
 -L- STA. 12+60.00

BM#1 ELEVATION = 78.82'
 -BL- STATION 10+84.86 34.84' LT
 RR SPIKE IN BASE OF 38" GUM
 -L- STATION 14+17.56 19.88 LT
 (COMPUTED BY ROADWAY DESIGN)

BEGIN GRADE
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 ELEV. = 77.74'

PI = 14+00.00
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 VC = 140'
 K = 212

PI = 15+50.00
 EL = 79.85'
 VC = 160'
 K = 76 (45 mph)

PI = 17+05.00
 EL = 78.34'
 VC = 150'
 K = 102 (50 mph)

PI = 19+30.00
 EL = 79.47'
 VC = 190'
 K = 230

END GRADE
 -L- STA. 20+25.00
 ELEV. = 79.16'

DATE OF SURVEY = 10/06/2014
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STATION 15+45.5 -L-
 ELEV. 79.42'
 SKEW = 90
 1 @ 45'-1/2" 2 @ 46'-2 1/4" 2" CORED SLABS;
 W/ 4" END BENT CAPS

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 CLASS 'III' RIP RAP (STRUCTURE PAY ITEM)
 TEMPORARY ROCK CAUSEWAY
 TEMPORARY ROCK CAUSEWAY ELEVATION = 74.0'
 NORMAL WATER SURFACE = 72.0'

REVISIONS

9/28/2015
 jlmccr6
 R:Hydraulics (PERMITS, Environmental) Revised Drawings B-5313_Hyd_Buffer.dgn

BUFFER IMPACTS SUMMARY

			IMPACT									BUFFER REPLACEMENT	
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	TYPE			ALLOWABLE			MITIGABLE			ZONE 1 (ft ²)	ZONE 2 (ft ²)
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft ²)	ZONE 2 (ft ²)	TOTAL (ft ²)	ZONE 1 (ft ²)	ZONE 2 (ft ²)	TOTAL (ft ²)		
1	Bridge	14+00 to 16+70 -L-		X		2771.9	1359.5	4131.4					
TOTAL:						2771.9	1359.5	4131.4	0.0	0.0	0.0		

N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS

 WILSON COUNTY
 PROJECT: 46027.1.1 (B-5313)

 9/15/2015
 SHEET 3 OF 4

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

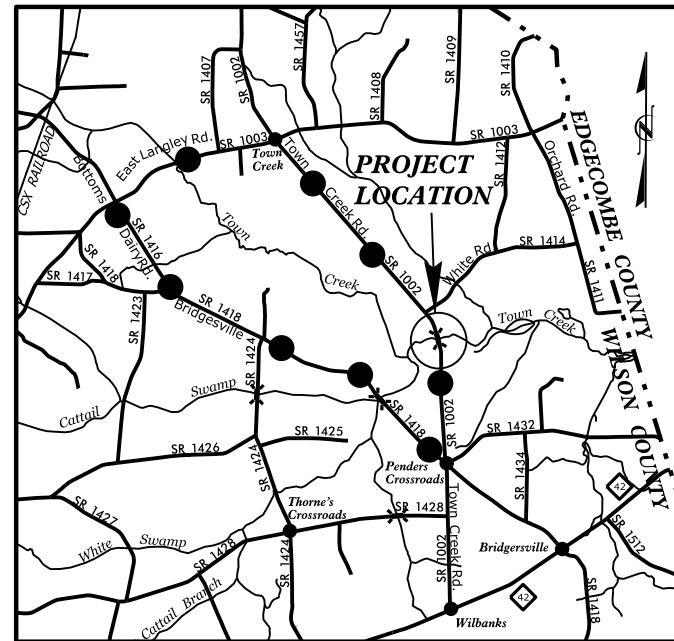
WILSON COUNTY

LOCATION: BRIDGE NO. 109 OVER TOWN CREEK
ON SR 1002 (TOWN CREEK ROAD)

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

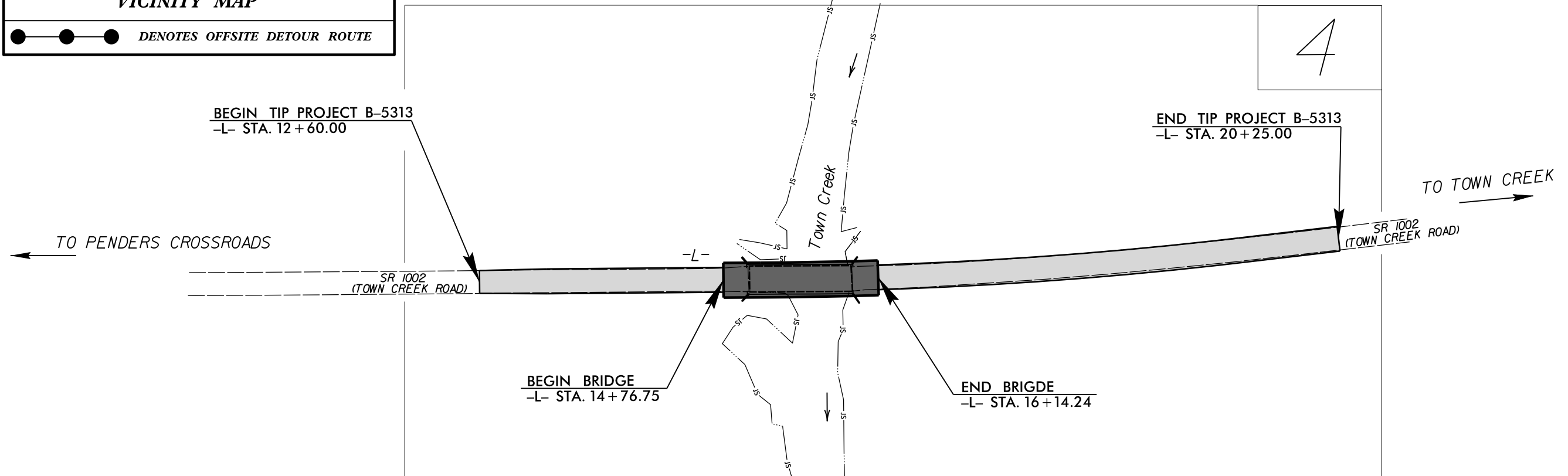
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5313	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46027.1.1	BRZ-1002(40)	P.E.	
46027.2.1	N/A	RW & UTIL	

TIP PROJECT: B-5313



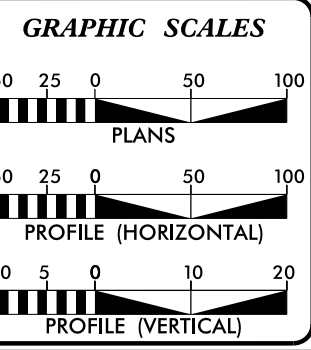
VICINITY MAP

●—●—●—● DENOTES OFFSITE DETOUR ROUTE



THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2016 =	653
ADT 2036 =	913
K =	11 %
D =	65 %
T =	10 % *
V =	60 MPH
* TTST =	2% + DUAL=8%
FUNC CLASS =	MINOR COLLECTOR
	SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5313 =	0.119 MILE
LENGTH STRUCTURE TIP PROJECT B-5313 =	0.026 MILE
TOTAL LENGTH TIP PROJECT B-5313 =	0.145 MILE

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

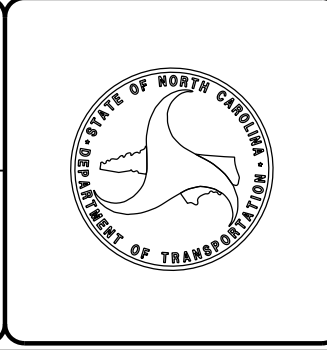
2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: NOVEMBER 20, 2015	REKHA PATEL, PE PROJECT ENGINEER
LETTING DATE: JUNE 21, 2016	SAMUEL L. ST. CLAIR PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



23-NOV-2015 09:29
R:\Roadway\Proj\B-5313_Rdy_tsh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

CONTRACT:

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale *S.U.E. = Subsurface Utility Engineering

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	-----
Existing Historic Property Boundary	-----

Known Contamination Area: Soil	-----
Potential Contamination Area: Soil	-----
Known Contamination Area: Water	-----
Potential Contamination Area: Water	-----
Contaminated Site: Known or Potential	-----

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 R/W 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	-----
U/G Power Line LOS B (S.U.E.*)	-----
U/G Power Line LOS C (S.U.E.*)	-----
U/G Power Line LOS D (S.U.E.*)	-----

TELEPHONE:

Existing Telephone Pole	-----
Proposed Telephone Pole	-----
Telephone Manhole	-----
Telephone Pedestal	-----
Telephone Cell Tower	-----
U/G Telephone Cable Hand Hole	-----
U/G Telephone Cable LOS B (S.U.E.*)	-----
U/G Telephone Cable LOS C (S.U.E.*)	-----
U/G Telephone Cable LOS D (S.U.E.*)	-----
U/G Telephone Conduit LOS B (S.U.E.*)	-----
U/G Telephone Conduit LOS C (S.U.E.*)	-----
U/G Telephone Conduit LOS D (S.U.E.*)	-----
U/G Fiber Optics Cable LOS B (S.U.E.*)	-----
U/G Fiber Optics Cable LOS C (S.U.E.*)	-----
U/G Fiber Optics Cable LOS D (S.U.E.*)	-----

WATER:

Water Manhole	-----
Water Meter	-----
Water Valve	-----
Water Hydrant	-----
U/G Water Line LOS B (S.U.E.*)	-----
U/G Water Line LOS C (S.U.E.*)	-----
U/G Water Line LOS D (S.U.E.*)	-----
Above Ground Water Line	-----

TV:

TV Pedestal	-----
TV Tower	-----
U/G TV Cable Hand Hole	-----
U/G TV Cable LOS B (S.U.E.*)	-----
U/G TV Cable LOS C (S.U.E.*)	-----
U/G TV Cable LOS D (S.U.E.*)	-----
U/G Fiber Optic Cable LOS B (S.U.E.*)	-----
U/G Fiber Optic Cable LOS C (S.U.E.*)	-----
U/G Fiber Optic Cable LOS D (S.U.E.*)	-----

GAS:

Gas Valve	-----
Gas Meter	-----
U/G Gas Line LOS B (S.U.E.*)	-----
U/G Gas Line LOS C (S.U.E.*)	-----
U/G Gas Line LOS D (S.U.E.*)	-----
Above Ground Gas Line	-----

SANITARY SEWER:

Sanitary Sewer Manhole	-----
Sanitary Sewer Cleanout	-----
U/G Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
SS Forced Main Line LOS B (S.U.E.*)	-----
SS Forced Main Line LOS C (S.U.E.*)	-----
SS Forced Main Line LOS D (S.U.E.*)	-----

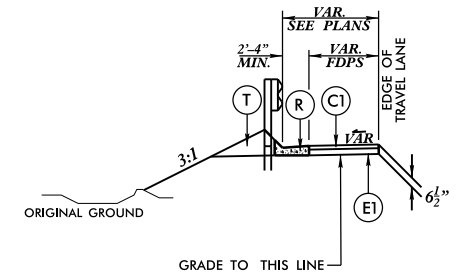
MISCELLANEOUS:

Utility Pole	-----
Utility Pole with Base	-----
Utility Located Object	-----
Utility Traffic Signal Box	-----
Utility Unknown U/G Line LOS B (S.U.E.*)	-----
U/G Tank; Water, Gas, Oil	-----
Underground Storage Tank, Approx. Loc.	-----
A/G Tank; Water, Gas, Oil	-----
Geoenvironmental Boring	-----
U/G Test Hole LOS A (S.U.E.*)	-----
Abandoned According to Utility Records	-----
End of Information	-----

6/2/99

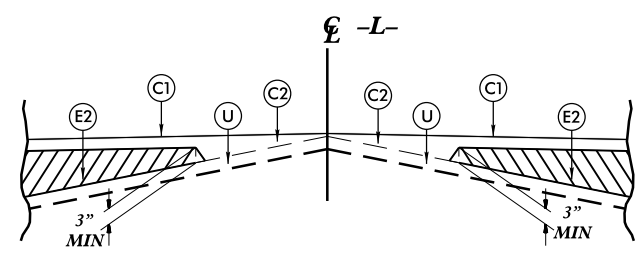
PAVEMENT SCHEDULE	
FINAL PAVEMENT DESIGN	
C1	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R	SHOULDER BERM GUTTER. (SEE SPECIAL DETAIL 2C-?)
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL).

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

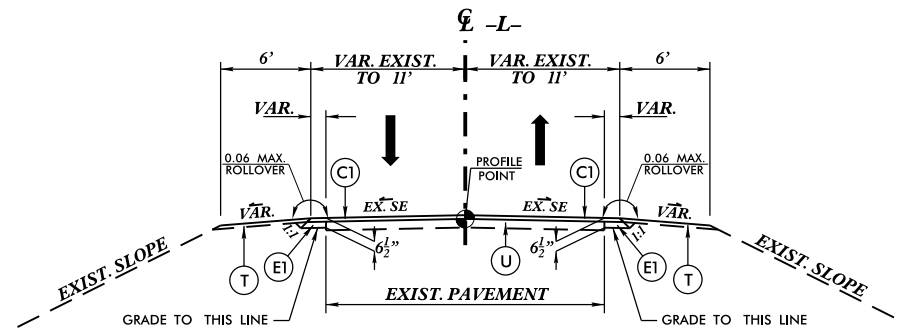


DETAIL SHOWING SHOULDER BERM GUTTER (SBG)

-L- STA. 13+80.00 (LT) TO "BEGIN APPROACH SLAB" (LT)
 "END APPROACH SLAB" (LT) TO -L- STA. 16+80.00 (LT)

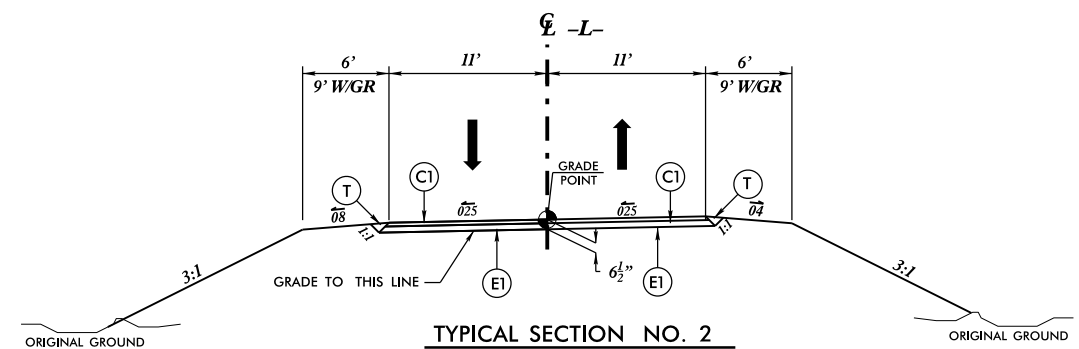


DETAIL SHOWING METHOD OF WEDGING



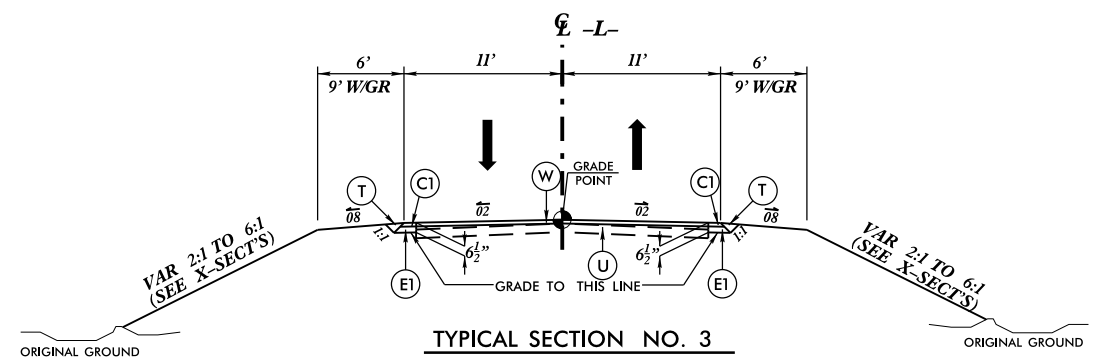
TYPICAL SECTION NO. 1

FROM -L- STA. 12+60.00 TO -L- STA. 13+20.00



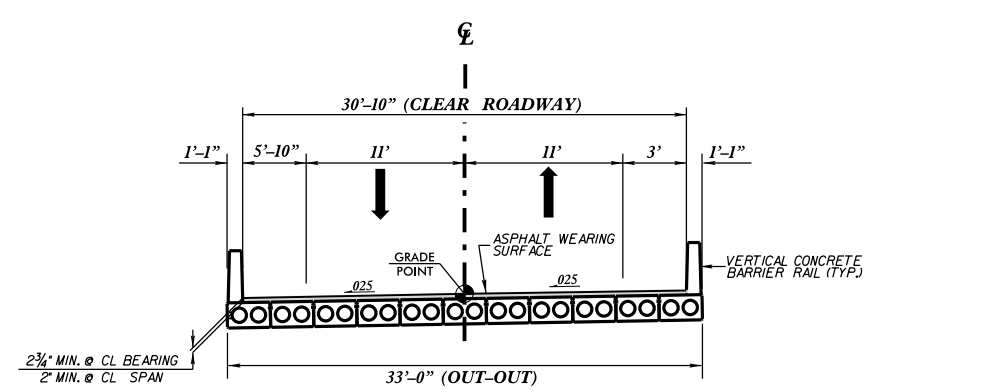
TYPICAL SECTION NO. 2

FROM -L- STA. 13+20.00 TO -L- STA. 14+76.75 (BEGIN BRIDGE)
 FROM -L- STA. 16+14.24 (END BRIDGE) TO -L- STA. 17+80.00



TYPICAL SECTION NO. 3

FROM -L- STA. 17+80.00 TO -L- STA. 20+25.00



BRIDGE TYPICAL SECTION

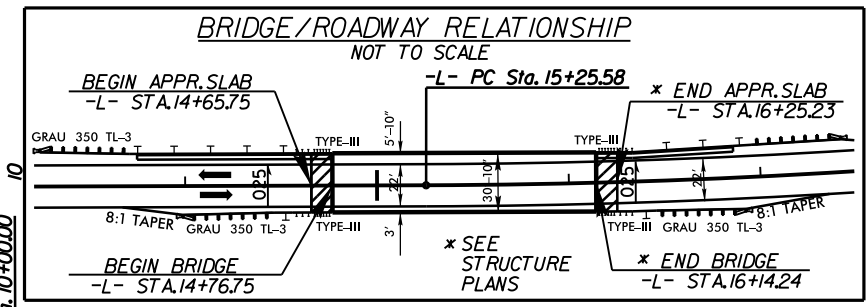
(SEE STRUCTURE PLANS)

FROM -L- STA. 14+76.75 TO -L- STA. 16+14.24

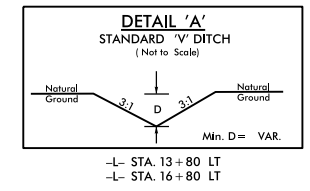
PROJECT REFERENCE NO.	SHEET NO.
B-5313	2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

23-NOV-2015 09:29
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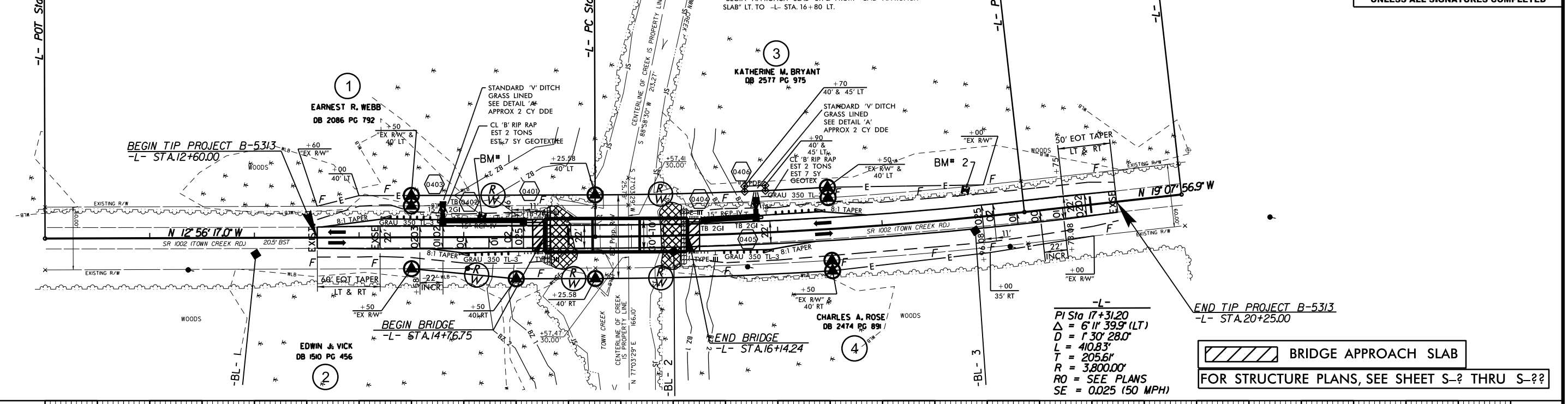
8/17/99



NAD 83/NSRS 2007



PROJECT REFERENCE NO.	B-5313	SHEET NO.	4
RAW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



BRIDGE APPROACH SLAB
FOR STRUCTURE PLANS, SEE SHEET S-? THRU S-??

BRIDGE HYDRAULIC DATA	
DESIGN DISCHARGE	= 2191 CFS
DESIGN FREQUENCY	= 10 YRS
DESIGN HW ELEVATION	= 77.60 FT
BASE DISCHARGE	= 4485 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 79.36 FT
OVERTOPPING DISCHARGE	= 2191 CFS
OVERTOPPING FREQUENCY	= 10 +/- YRS
OVERTOPPING ELEVATION	= 77.50 FT
DATE OF SURVEY	= 10/06/2014
W.S. ELEVATION AT DATE OF SURVEY	= 72.30 FT

BM#1 ELEVATION = 78.82'
-BL- STATION 10+84.86 34.84' LT
RR SPIKE IN BASE OF 38" GUM

BM#2 ELEVATION = 78.93'
-BL- STATION 15+49.58 39.12' LT
RR SPIKE IN BASE OF 10" PINE

BEGIN RESURFACING
-L- STA. 12+60.00

BEGIN GRADE
-L- STA. 13+20.00
ELEV. = 77.74'

PI = 14+00.00
EL = 78.13'
VC = 140'
K = 212

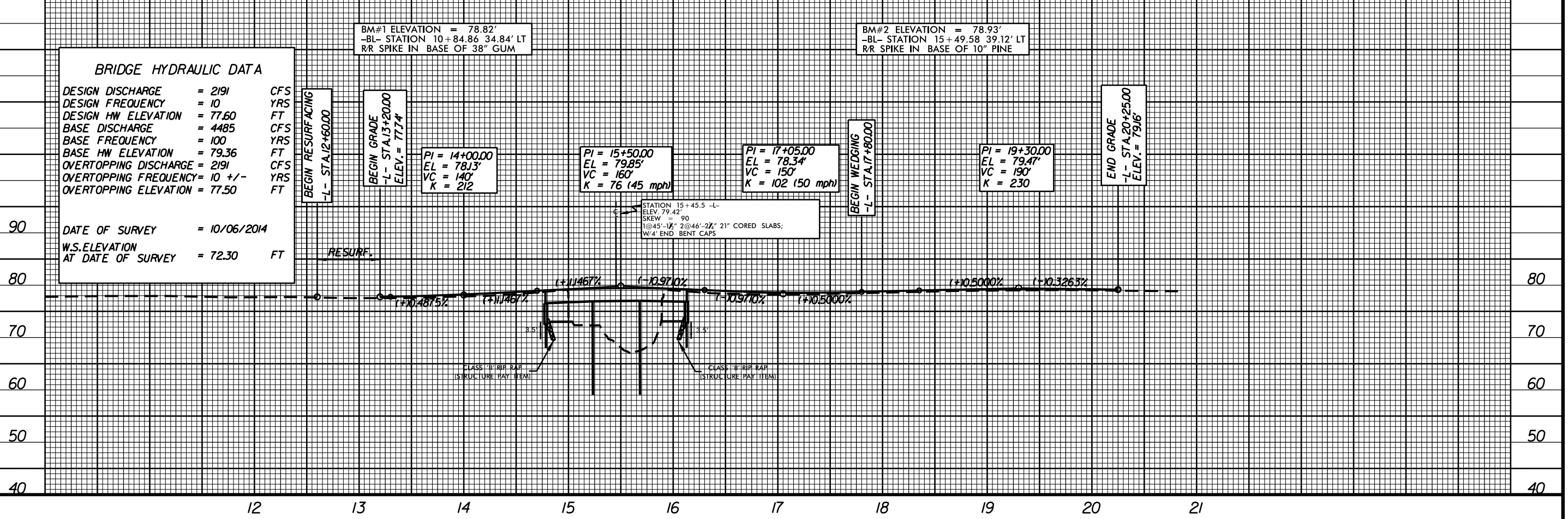
PI = 15+50.00
EL = 79.85'
VC = 160'
K = 76 (45 mph)

PI = 17+05.00
EL = 78.34'
VC = 150'
K = 102 (50 mph)

BEGIN WEDGING
-L- STA. 17+80.00

PI = 19+30.00
EL = 79.47'
VC = 190'
K = 230

END GRADE
-L- STA. 20+25.00
ELEV. = 79.16'



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