



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

June 15, 2018

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

ATTN: Mr. Steve Kichefski, NCDOT Regulatory Coordinator

Subject: **Request for Modification to the Section 404 Individual Permit and Section 401 Water Quality Certification** for the proposed US 221 Widening from US 421 to US 221 Business/NC 88 in Jefferson in Watauga and Ashe Counties. Federal Aid Project No. STP-0221(13), Division 11, TIP No. R-2915, WBS 34518.1.1.

Reference: USACE Individual Permit Action ID SAW-2012-00882, January 7, 2015.
USACE Individual Permit Modification Action ID SAW-2012-00882, August 31, 2016.
NCDWR Project No. 20140762, Certification No. 4001, September 8, 2014.
NCDWR Project No. 20140764_v2, Certification No. 4001, August 23, 2016.
NCDWR Project No. 20140762_v3, Certification No. 4001, April 28, 2017.

Dear Sir:

The purpose of this letter is to request a modification to the United States Army Corps of Engineers (USACE) Section 404 Individual Permit and North Carolina Division of Water Resources Section 401 Certification for the above referenced project. The original 2014 permit application and subsequent 2016 and 2017 modifications (referenced above) presented final impacts for R-2915A, R-2915B, R-2915C, and R-2915D. This modification presents changes to one permit site in the B Section needed as a result of a wing wall modification at the outlet of the new culvert at Site 1B to prevent the wing wall from extending into Gap Creek. The angle of one wing wall has been changed to better tie it into the existing stream bank, resulting in 20 linear feet of additional bank stabilization along Gap Creek to prevent the culvert wing from being undermined during high water events.

All changes in impacts due to the additional bank stabilization at Site 1B in the B Section are in **red italics**. Please see the enclosed revised permit drawings for Section B.

Summary of R-2915 Jurisdictional Impacts:

The preliminary projected impacts for the overall (Sections A-E) project will be approximately 3.11 acres of permanent wetland impacts, 0.15 acre of temporary wetland impacts, **8,176 linear feet of permanent stream impacts** (6,983 linear feet of fill and **1,193 linear feet of bank stabilization**), and 0.34 acre of temporary stream impacts (see Tables 1 and 2 for a breakdown of impacts by Section).

Table 1 – Summary of Wetland Impacts for R-2915

Section	Design Stage	Wetland Impact Type	Wetland Impact Area (ac)	Wetland Impacts Requiring Mitigation (ac)
R-2915A	Final	Perm. Wetland Fill	0.48	0.57*
		Excavation in Wetlands	0.01	
		Mechanized Clearing in Wetlands	0.08	
		Hand Clearing in Wetlands	0.05†	
R-2915B	Final	Perm. Wetland Fill	0.32	0.43*
		Excavation in Wetlands	0.04	
		Mechanized Clearing in Wetlands	0.06	
		Temporary Fill in Wetlands	0.15	
R-2915C	Final	Perm. Wetland Fill	0.22	0.27*
		Excavation in Wetlands	--	
		Mechanized Clearing in Wetlands	0.05	
R-2915D	Final	Perm. Wetland Fill	1.01	1.32
		Excavation in Wetlands	0.01	
		Mechanized Clearing in Wetlands	0.30	
R-2915E	Preliminary	Perm. Wetland Fill	0.43	0.52
		Excavation in Wetlands	--	
		Mechanized Clearing in Wetlands	0.09	
Total				3.11

†Additionally, 0.01 acre of temporary fill in wetlands will occur in the hand clearing areas for erosion control measures

* Values are based on rounding, due to calculating totals with actual numbers to the thousandths

Table 2 – Summary of Stream Impacts for R-2915

Section	Design Stage	Stream Impact Type	Impact Length (lf)	Temporary Impacts (ac)	Stream Impacts Requiring Mitigation (lf)
R-2915A	Final	Permanent Fill	1,119	--	1,119
		Bank Stabilization	402	--	
		Temporary	--	0.05	
R-2915B	Final	Permanent Fill	493	--	493*
		Bank Stabilization	431	--	
		Temporary	--	0.15	
R-2915C	Final	Permanent Fill	2,339	--	2,339
		Bank Stabilization	234	--	
		Temporary	--	0.09	
R-2915D	Final	Permanent Fill	2,627	--	2,627
		Bank Stabilization	126	--	
		Temporary	--	0.05	
R-2915E	Preliminary	Permanent Fill	405	--	405
		Temporary	--	<0.01	
Total			8,176	0.34	6,983

* See Table 4

Tables 3 and 4 summarize the impacts to jurisdictional water resources for the final design of R-2915B. Site numbers correspond with the permit (hydraulic) drawings included in this application. The stream and wetland numbers correspond to the NRTR. A brief description of the impact sites that have changed since the 2014 permit application the will follow the tables.

Table 3 – R-2915B Wetland Impacts*

Site	Wetland Number	Wetland Size (ac)	Permanent Fill in Wetlands (ac)	Excavation (ac)	Mechanized Clearing (ac)	Temporary Fill in Wetlands (ac)	Impacts Requiring Mitigation (ac)
4	W11	0.26	<0.01	--	<0.01	0.15	<0.01
5	W11	0.26	<0.01	--	--	--	<0.01
6	W11	0.26	<0.01	--	--	--	<0.01
7	W11	0.26	0.05	0.03	--	--	0.08
8	W12	0.05	<0.01	--	<0.01	--	<0.01
11	W14	0.02	<0.01	--	<0.01	--	<0.01
12	W15**	0.12	0.12	--	<0.01	--	0.12
14	W16	0.04	--	0.01	<0.01	--	0.02
15	W126**	0.19	0.14	--	0.05	--	0.19
Total Impacts:			0.32	0.04	0.06	0.15	0.43***

* All wetlands impacted are riparian

** Total take of wetland

*** Values are based on rounding, due to calculating totals with actual numbers to the thousandths

Table 4 – R-2915B Stream Impacts

Site	Stream Name & Intermittent (I) or Perennial (P) ¹	Stream Number	Impact Type	Impact Length (linear feet)	Temporary Impacts (acres)	Mitigation Requirement ² (linear feet)
1A	UT to Gap Creek (P)	S32	Perm. Fill	170	--	USACE & DWR
			Bank Stabilization	44	--	DWR
			Temp Fill	--	<0.01	--
1B	Gap Creek (P)	S1	Perm. Fill	15	--	USACE & DWR
			Bank Stabilization	55	--	DWR (only 35')
			Temp Fill	--	<0.01	--
2	UT to Gap Creek (P)	S35	Perm. Fill	34	--	USACE
			Bank Stabilization	--	--	--
			Temp Fill	--	--	--
3	UT to Gap Creek (P)	S35	Perm. Fill	71	--	USACE
			Bank Stabilization	--	--	--
			Temp Fill	--	--	--
4	N/A (wetland only)	--	--	--	--	--
5	N/A (wetland only)	--	--	--	--	--
6	N/A (wetland only)	--	--	--	--	--
7	N/A (wetland only)	--	--	--	--	--
8	N/A (wetland only)	--	--	--	--	--

Table 4 continued – R-2915B Stream Impacts

Site	Stream Name & Intermittent (I) or Perennial (P) ¹	Stream Number	Impact Type	Impact Length (linear feet)	Temporary Impacts (acres)	Mitigation Requirement ² (linear feet)
9	UT to Gap Creek (P)	S36	Perm. Fill	124	--	USACE
			Bank Stabilization	23	--	--
			Temp. Fill	--	--	--
10	Gap Creek (P)	S1	Perm. Fill	--	--	--
			Bank Stabilization	154	--	DWR
			Temp. Fill	--	0.02	--
11	N/A (wetland only)	--	--	--	--	--
12	N/A (wetland only)	--	--	--	--	--
13	UT to Gap Creek (P)	S40	Perm. Fill	52	--	USACE
			Bank Stabilization	--	--	--
			Temp. Fill	--	<0.01	--
14	N/A (wetland only)	--	--	--	--	--
15	N/A (wetland only)	--	--	--	--	--
16	UT to Gap Creek (P)	S42	Perm. Fill	27	--	USACE
			Bank Stabilization	9	--	--
			Temp. Fill	--	--	--
17	Gap Creek (P)	S1	Perm. Fill	--	--	--
			Bank Stabilization	54	--	DWR
			Temp. Fill	--	--	--
18	Gap Creek (P)	S1	Perm. Fill	--	--	--
			Bank Stabilization	53	--	DWR
			Temp. Fill	--	--	--
19	South Fork New River (P)	S43	Perm. Fill	--	--	--
			Bank Stabilization	---	--	--
			Temp. Fill	--	0.12	--
20	South Fork New River (P)	S43	Perm. Fill	--	--	--
			Bank Stabilization	19	--	--
			Temp. Fill	--	--	--
21	South Fork New River (P)	S43	Perm. Fill	--	--	--
			Bank Stabilization	20	--	--
			Temp. Fill	--	--	--
Total Temporary Impacts:				--	0.15³	--
Total Permanent Impacts (Perm. Fill + Bank Stabilization):				924	--	--
Permanent Impacts Requiring DWR Mitigation:				525	--	--
Permanent Impacts Requiring USACE Mitigation:				493	--	--
Total Impacts Requiring Mitigation:				493	--	†

1 – All streams are Class C; Tr+ waters except S43 (South Fork New River), which is WS-V; HQW

2 – Mitigation for bank stabilization impacts req'd by DWR – not req'd by USACE, add'1 20' at Site 1B not subject

3 – Values are based on rounding, due to some of the individual impacts being <0.01 acre

† – Final mitigation requirement will be up to the USACE and DWR

Permit Site 1B: As a result of the culvert replacement and extension, there will be 15 lf of permanent impact to Gap Creek (S1). Additionally there will *55 lf of bank stabilization* and <0.01 acre (6 lf) of temporary impacts to Gap Creek at the outlet of the culvert carrying S32.

MITIGATION

At this time, DMS is providing compensatory mitigation for Sections A, B, C, and D impacts. Table 5 summarizes the total mitigation needs as 2.59 acres of wetlands impacts and 6,578 linear feet of stream impacts. *No additional mitigation is required due to the added stream bank stabilization at Site 1B in the B Section as it does not constitute a loss of water.* Compensatory mitigation for Section E will be provided accordingly during the subsequent permit modification. This modification will occur when final design on the remaining Section has been completed.

Table 5 – Summary of Mitigation Requested from DMS

Section	Design Stage	Wetland Impacts Requiring Mitigation (ac)	Stream Impacts Requiring Mitigation (lf)
R-2915A	Final	0.57	1,119
R-2915B	Final	0.43	493
R-2915C	Final	0.27	2,339
R-2915D	Final	1.32	2,627
Total		2.59	6,578

REGULATORY APPROVALS

Section 404: Application is hereby made for a modification to the USACE Individual 404 Permit as required for the above-described activities.



Section 401: We are hereby requesting a modification to the 401 Water Quality Certification from the N.C. Division of Water Resources.

A copy of this application and distribution list will also be posted on the NCDOT website at: <http://connect.ncdot.gov/resources/Environmental>. If you have any questions or need additional information, please contact Erin Cheely at ekcheely@ncdot.gov or (919) 707-6108.

Sincerely,



Philip S. Harris III, P.E., C.P.M.
Environmental Analysis Unit Head

PROJECT REFERENCE NO.	SHEET NO.
R-2915B	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



See new sheet 5A of 31 for updated wing wall location at Site 1B

PERMIT DRAWING SHEET 4 OF 31

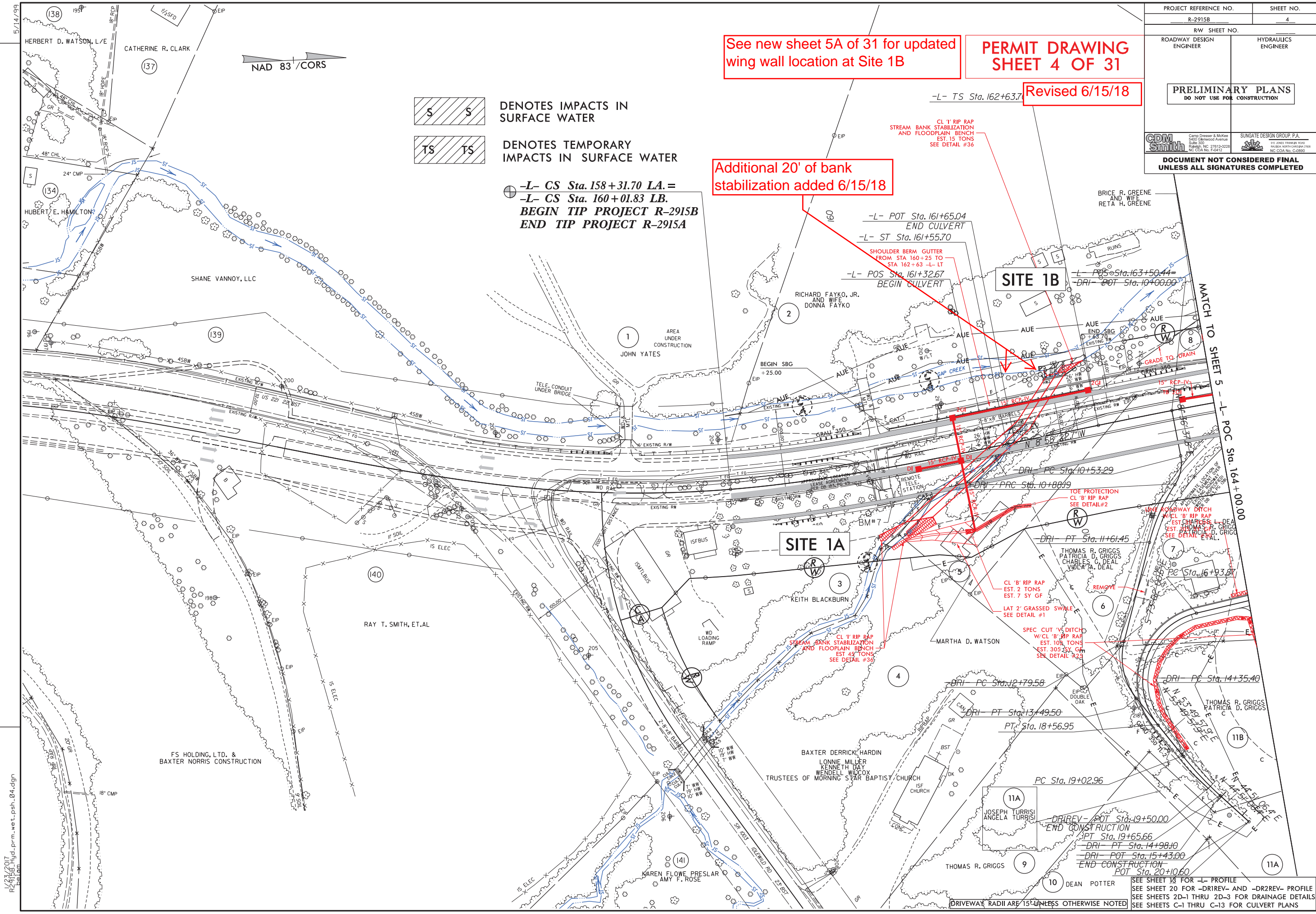
Revised 6/15/18

Additional 20' of bank stabilization added 6/15/18

-L- CS Sta. 158+31.70 LA. =
-L- CS Sta. 160+01.83 LB.
BEGIN TIP PROJECT R-2915B
END TIP PROJECT R-2915A

 DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

REVISIONS



SEE SHEET 13 FOR -L- PROFILE
SEE SHEET 20 FOR -DR1REV- AND -DR2REV- PROFILE
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
SEE SHEETS C-1 THRU C-13 FOR CULVERT PLANS

R:\2915\01\hyd\p.m.\e.t.\psh_04.dgn
10/1/18

PROJECT REFERENCE NO. R-2915B		SHEET NO. 4	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
GDM Smith Camp Dresser & McKee 5401 Glenwood Avenue Suite 300 Raleigh, NC 27612-3238 NC CCA No. F-0412		SUNGATE DESIGN GROUP, P.A. 111 JONES PARKWAY HALES BROOK-CAROLINA, NC NC CCA No. C-0890	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

**PERMIT DRAWING
SHEET 5 OF 31**

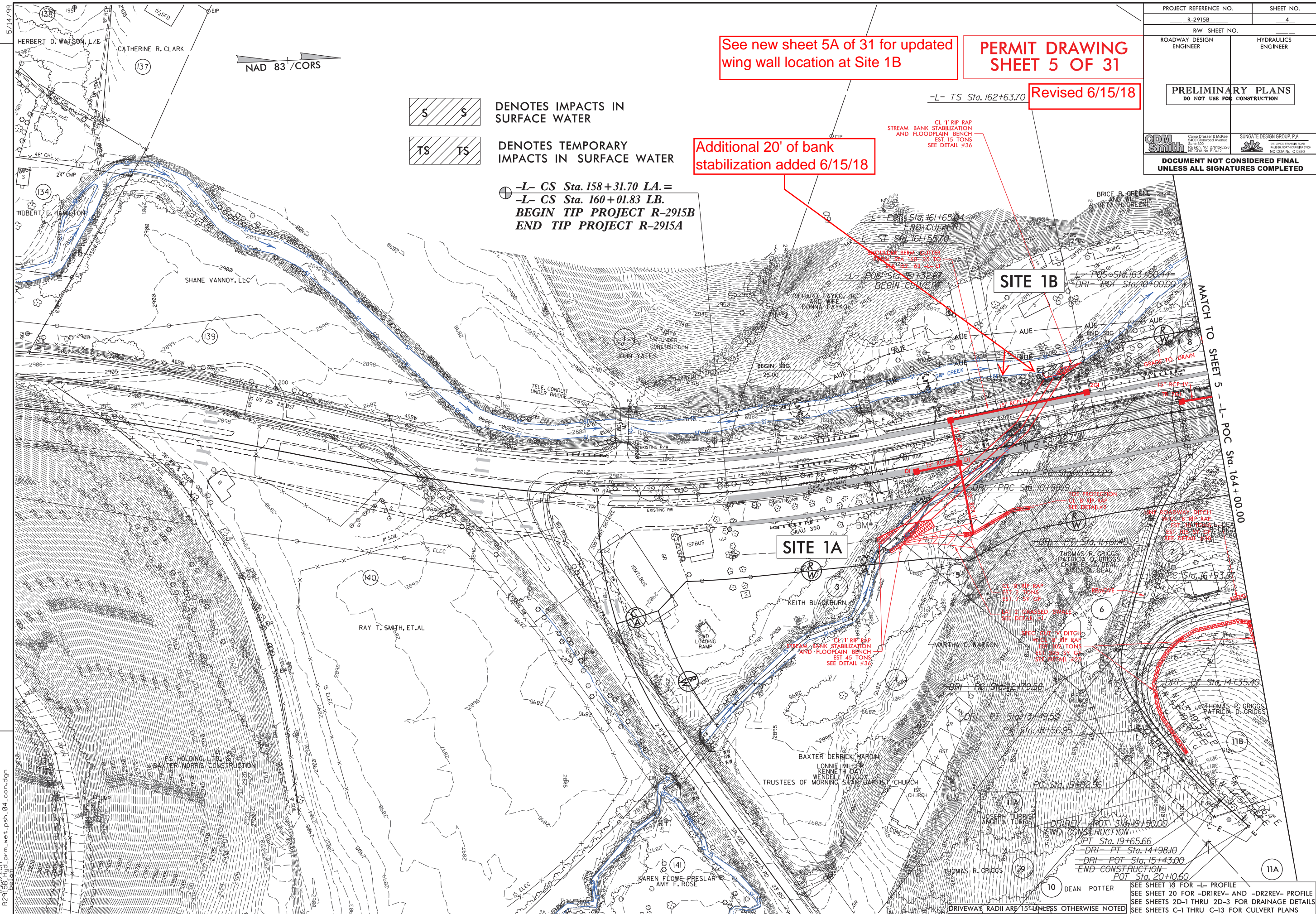
Revised 6/15/18

See new sheet 5A of 31 for updated wing wall location at Site 1B

Additional 20' of bank stabilization added 6/15/18

-L- CS Sta. 158+31.70 LA. =
-L- CS Sta. 160+01.83 LB.
**BEGIN TIP PROJECT R-2915B
END TIP PROJECT R-2915A**

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



REVISIONS

R2915B/2017/04.dwg
R2915B/2017/04.prm
R2915B/2017/04.con.dgn
R2915B/2017/04.psh
R2915B/2017/04.con.dgn

SEE SHEET 13 FOR -L- PROFILE
SEE SHEET 20 FOR -DR1REV- AND -DR2REV- PROFILE
SEE SHEETS 2D-1 THRU 2D-3 FOR DRAINAGE DETAILS
SEE SHEETS C-1 THRU C-13 FOR CULVERT PLANS

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.
 DESIGN FILL = 11.29 (MIN.), 11.68 (MAX.)
 FOR OTHER DESIGN DATA AND NOTES, SEE STANDARD NOTES SHEET.
 AFTER SERVING AS A TEMPORARY STRUCTURE THE EXISTING DOUBLE BARREL 8 FT. X 8 FT. REINFORCED CONCRETE BOX CULVERT LOCATED AT THE SAME LOCATION AS THE PROPOSED CULVERT SHALL BE REMOVED.
 3" Ø WEEP HOLES INDICATED ARE TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.
 CONCRETE IN THE CULVERT TO BE POURED IN THE FOLLOWING ORDER:
 STAGE I
 1. WING FOOTINGS FOR WING 1 AND WING 2, FLOOR SLAB AND EDGE BEAM INCLUDING 4" VERTICAL WALLS TO THE CONSTRUCTION JOINT FOR STAGE I.
 2. REMAINING PORTIONS OF WALLS FULL HEIGHT, WING 1 AND WING 2 FULL HEIGHT FOLLOWED BY CONCRETE SILLS AND ROOF SLAB WITH EDGE BEAM TO THE STAGE I CONSTRUCTION JOINT.
 STAGE II
 1. REMOVE EXISTING CULVERT.
 2. WING 3 FOOTING AND FLOOR SLAB INCLUDING 4" OF ALL VERTICAL WALLS, EDGE BEAM AND CURTAIN WALL TO STAGE II CONSTRUCTION JOINTS.
 3. REMAINING PORTIONS OF WALLS FULL HEIGHT AND WING 3 FULL HEIGHT, CONCRETE SILLS.
 STAGE III
 1. WING 4 FOOTING AND REMAINING FLOOR SLAB WITH EDGE BEAM INCLUDING 4" OF EXTERIOR VERTICAL WALL AND REMAINING CURTAIN WALL.
 2. REMAINING PORTIONS OF WALLS FULL HEIGHT, WING 4 FULL HEIGHT AND CONCRETE SILLS.
 3. ROOF SLAB FOR STAGES II & III, HEADWALL AND EDGE BEAM.

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.
 A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINT.
 AT THE CONTRACTOR'S OPTION HE MAY SUBMIT, TO THE ENGINEER FOR APPROVAL, DESIGN AND DETAIL DRAWINGS FOR A PRECAST REINFORCED CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE CULVERT SHOWN ON THE PLANS. THE DESIGN SHALL PROVIDE THE SAME SIZE AND NUMBER OF BARRELS AS USED ON THE CAST-IN-PLACE DESIGN. FOR OPTIONAL PRECAST REINFORCED CONCRETE BOX CULVERT, SEE SPECIAL PROVISIONS. THE CONTRACTOR ATTENTION NEEDS TO BE DRAWN TO THE FACT THAT THE OUTLET END OF THE CULVERT WILL HAVE TO BE SKEWED TO KEEP FROM INTERFERING WITH THE STREAM FLOW.
 FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
 FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
 FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
 FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
 THE REINFORCED CONCRETE BOX CULVERT SHALL BE PLACED ON THE STANDARD 1.0 FOOT BLANKET OF FOUNDATION CONDITIONING MATERIAL. SEE SECTION 414 OF THE STANDARD SPECIFICATIONS.
 THE REQUIRED BEARING CAPACITY AT THE BASE OF THE CULVERT IS 1 TSF. THE REQUIRED BEARING CAPACITY SHALL BE VERIFIED.
 FOR CONSTRUCTION SEQUENCE, SEE EROSION CONTROL PLANS.
 FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
 FOR TRAFFIC PHASING, SEE TRAFFIC CONTROL PLANS.
 AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL AND BOTH FACES OF INTERIOR WALLS ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE AS PROVIDED IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.
 TEMPORARY SHORING WILL BE REQUIRED IN THE AREA INDICATED IN THE LOCATION SKETCH.
 FOR LIMITS OF TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS, FOR PAY ITEM FOR TEMPORARY SHORING FOR MAINTENANCE OF TRAFFIC, SEE ROADWAY PLANS.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF THE CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.
 STEEL IN THE BOTTOM SLAB OF STAGE I ONLY MAY BE SPLICED AT THE PERMITTED CONSTRUCTION JOINT AT THE CONTRACTOR'S OPTION. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES WILL BE PAID FOR BY THE CONTRACTOR.
 TRANSVERSE CONSTRUCTION JOINTS SHALL BE USED IN THE BARREL, SPACED TO LIMIT THE POURS TO A MAXIMUM OF 70 FEET. LOCATION OF JOINTS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

ROADWAY DATA

GRADE POINT ELEV. @ STA 161+48.90-L = 2905.10
 BED ELEV. @ STA. 161+48.90-L = 2885.70
 ROADWAY SLOPES = 2:1

HYDRAULIC DATA

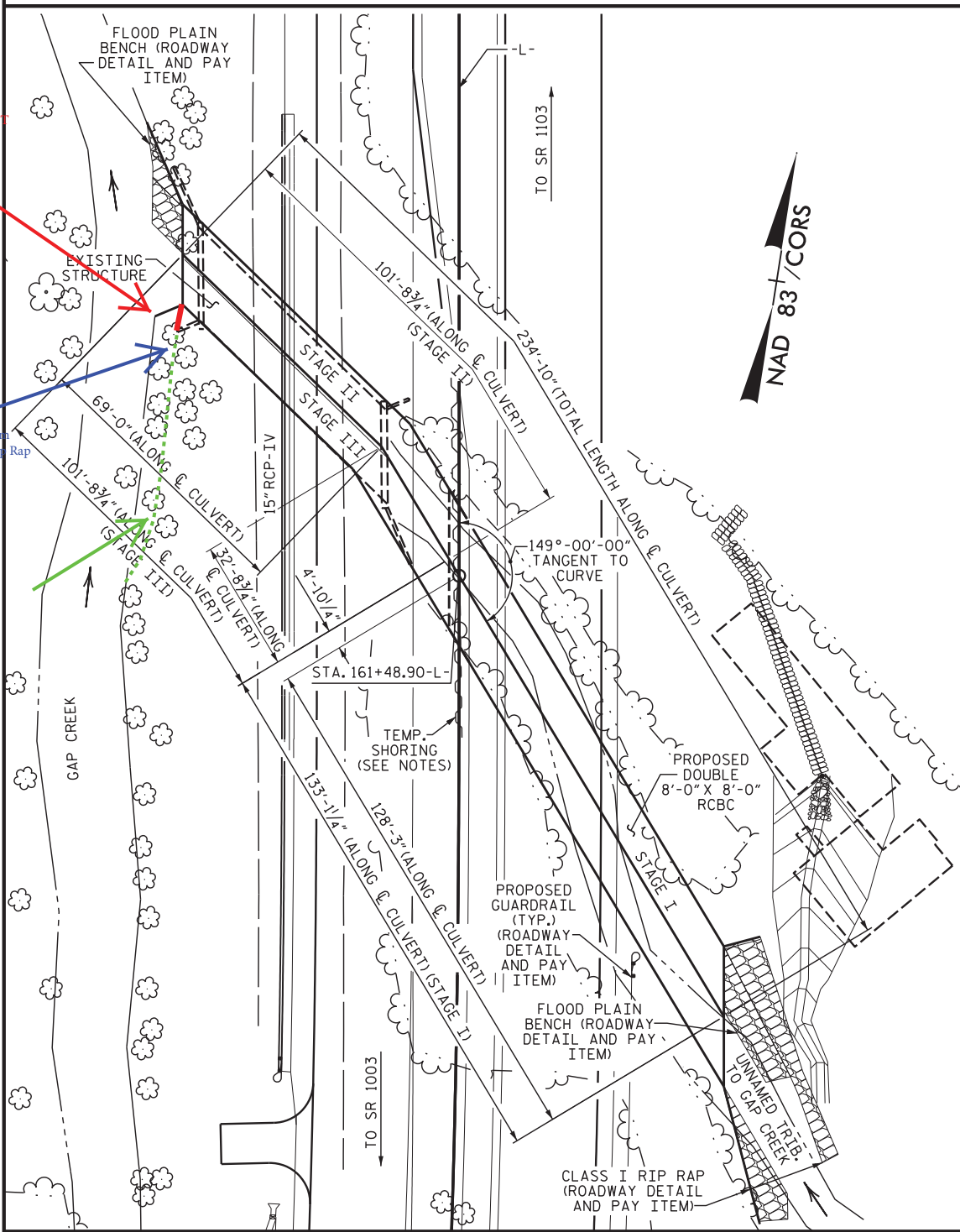
DESIGN DISCHARGE = 550 CFS
 FREQUENCY OF DESIGN FLOOD = 50 YR.
 DESIGN HIGH WATER ELEV. = 2893.00
 DRAINAGE AREA = 1.2 SQ MI.
 BASE DISCHARGE (Q100) = 650 CFS
 BASE HIGH WATER ELEV. = 2893.43

OVERTOPPING FLOOD DATA

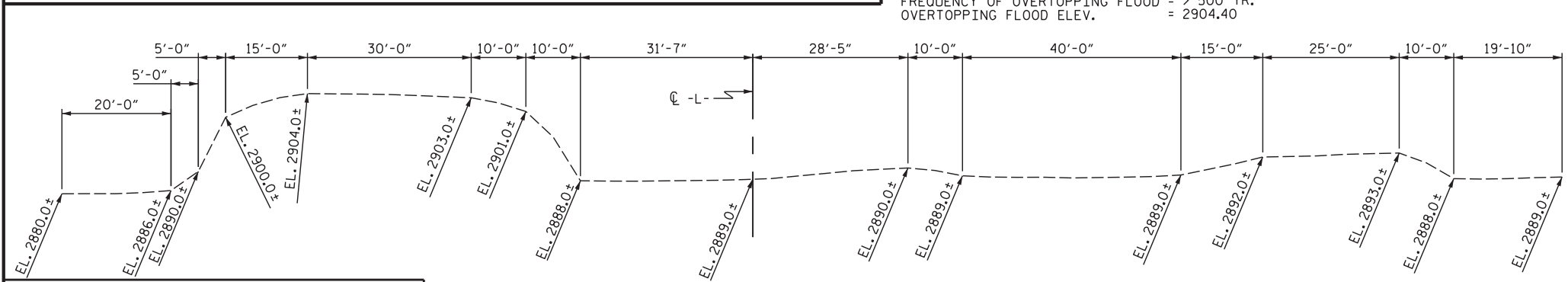
OVERTOPPING DISCHARGE = > 900 CFS
 FREQUENCY OF OVERTOPPING FLOOD = > 500 YR.
 OVERTOPPING FLOOD ELEV. = 2904.40

CULVERT EXCAVATION	LUMP SUM
REMOVAL OF EXISTING STRUCTURE	LUMP SUM
FOUNDATION CONDITIONING MATERIAL	
STAGE I	207 TONS
STAGE II & III	158 TONS
TOTAL	365 TONS

TOTAL STRUCTURE QUANTITIES			
STAGE I		STAGE I	
CLASS A CONCRETE		REINFORCING STEEL	
BARREL @ 1.823 C.Y./FT.	242.6 C.Y.	BARREL	32681 LBS.
WINGS, ETC.	27.7 C.Y.	WINGS, ETC.	2662 LBS.
TOTAL	270.3 C.Y.	TOTAL	35343 LBS.
STAGE II & III		STAGE II & III	
CLASS A CONCRETE		REINFORCING STEEL	
BARREL @ 1.823 C.Y./FT.	185.5 C.Y.	BARREL	26626 LBS.
WINGS, ETC.	19.7 C.Y.	WINGS, ETC.	941 LBS.
TOTAL	205.2 C.Y.	TOTAL	27567 LBS.
TOTAL CLASS A CONCRETE	475.5 C.Y.	TOTAL REINFORCING STEEL	62910 LBS.



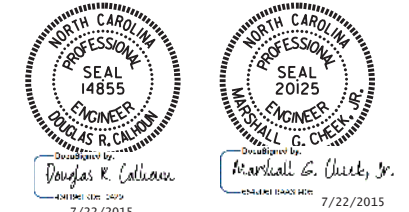
LOCATION SKETCH



PROFILE ALONG CULVERT

DRAWN BY: H. T. BARBOUR DATE: 4-11-14
 CHECKED BY: S. B. WILLIAMS DATE: 5-14
 DESIGN ENGINEER OF RECORD: B. A. DUKE DATE: 4-15

PERMIT DRAWING
SHEET 5A of 31
added 6/15/18



PROJECT NO. R-2915B
 ASHE COUNTY
 STATION: 161+48.90 -L-

SHEET 1 OF 13 CULVERT No. 542

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

DOUBLE
 8 FT. X 8 FT.
 CONCRETE BOX CULVERT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	C06-1
1			3			TOTAL SHEETS
2			4			13

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)
1A	159+80 / 160+40 -L- RT	BANK STABILIZATION (TRIB.)						0.01	< 0.01	44	21	
	160+40 / 161+80 -L-	CULVERT (TRIB.)						0.05		170		
1B	162+15 / 162+30 -L- LT	CULVERT (GAP CREEK)						< 0.01	< 0.01	15	6	
	162+15 / 162+65 -L- LT	BANK STABILIZATION (GAP CREEK)						< 0.01		55		
2	165+73 -L-	BDO / 30" RCP						< 0.01		5		
	166+00 -L- LT	TAIL DITCH						< 0.01		29		
3	15+32 / 15+00 -DR1REV-	24" PIPE						< 0.01		71		
4	172+58 / 172+85 -L- LT	12" RCP	< 0.01	0.15		< 0.01						
5	174+00 -L- LT	30" CSP	< 0.01									
6	178+50 -L- LT	24" CSP	< 0.01									
7	180+00 / 182+00 -L- LT	ROAD FILL	0.05		0.03							
8	186+21 / 186+43 -L- LT	ROAD FILL	< 0.01			< 0.01						
9	187+63 / 189+15 -L-	36" RCP						0.01		124		
	189+35 / 189+45 -L- LT	BANK STABILIZATION						< 0.01		23		
10	197+20 / 198+90 -L-	BANK STABILIZATION						0.02		154		
	198+80 / 198+90 -L-	WORKPAD / CULVERT REMOVAL							0.02		57	
11	207+00 / 207+05 -L- RT	ROAD FILL	< 0.01			< 0.01						
12	208+72 / 209+51 -L- RT	ROAD FILL	0.12			< 0.01						
13	209+23 -L- LT	24" Pipe						< 0.01	< 0.01	52	8	
14	210+01 / 210+36 -L- LT	ROAD FILL			0.01	< 0.01						
15	215+54 / 217+43 -L- RT	ROAD FILL	0.14			0.05						
16	217+48 -L- LT	60" RCP						< 0.01		27		
	217+45 -L- LT	BANK STABILIZATION						< 0.01		9		
SUBTOTALS*:			0.32	0.15	0.04	0.06		0.12	0.03	778	92	

*Rounded totals are sum of actual impacts

NOTES:

Site 10: Total Permanent Pier Impacts = 25.1 SF = 0.0006 AC

Site 15: Fill Impacts = 0.14 ac, Mechanized Clearing Impacts=0.013, Total Take Impacts=0.036

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 4-4-2017
 R-2915B ASHE COUNTY
 ON US 221 FROM SR 1003 (IDLEWILD RD)
 TO NORTH OF SOUTH FORK NEW RIVER

Revised 6/15/18

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)
17	217+22 / 217+75 -L- RT	BANK STABILIZATION						< 0.01		54		
18	222+55 / 222+83 -L- RT	BANK STABILIZATION						< 0.01		53		
19	241+75 / 243+25 -L-	WORK PAD							0.12		115	
20	242+41 / 242+54 -L- RT	BANK STABILIZATION						< 0.01		19		
21	243+31 / 243+46 -L- LT	BANK STABILIZATION						< 0.01		20		
SUBTOTALS*:								0.02	0.12	146	115	
SUBTOTALS FROM PAGE 1*:			0.32	0.15	0.04	0.06		0.12	0.03	778	92	
TOTALS*:			0.32	0.15	0.04	0.06		0.14	0.15	924	207	

*Rounded totals are sum of actual impacts

NOTES:
 Site 19: Total Permanent Pier Impacts = 150.8 SF = 0.003 AC

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