



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

October 18, 2022

U.S. Army Corps of Engineers
3331 Heritage Trade Drive, Suite 105
Wake Forest, NC 27587-4346

ATTN: Ms. Loretta Beckwith
NCDOT Coordinator

Subject: Request for Modification to Section 404 Individual Permit and Section 401 Water Quality Certification for the I-26 Widening from NC 225 (US 25 Connector) in Henderson County to I-40 in Buncombe County, Federal Aid Nos. NHF-26-1(62)23 / I(MNHF-026-1(86)9, TIP Project Nos. I-4400/ I-4700; Divisions 14 / 13. Debit \$570 from WBS No. 34232.1.6

References: 1) USACE Section 404 Individual Permit, Action ID No. SAW-2013-01833, issued June 21, 2019; Phased Modification, dated September 16, 2019, and Modification, dated March 25, 2021
2) NCDWR Project No. 20181645 (Mod. 2), 401 WQC, dated June 19, 2019; In-Field Minor Modification, dated March 22, 2021.

Dear Madam:

The purpose of this letter is to request a modification to the United States Army Corps of Engineers (USACE) Section 404 Individual Permit and associated North Carolina Division of Water Resources (NCDWR) Section 401 Water Quality Certification for the above referenced project. This request pertains to the modification of two (2) sites (Sites 30 and 31) within the I-4700 A&B phases of the project that was permitted, via the referenced Phased Modification, dated September 16, 2021, to retain and line a 66" corrugated metal pipe (CMP).

Site 30 is located within the bifurcated section of I-26, between -WBL- STA 1114+00 and 1121+00 and carries stream SDX from the bifurcated section under westbound I-26 to its outfall (Site 31) east of the interstate. The existing 66" CMP has corrosion in the pipe and scour holes at the outlets; and is a concern of Biltmore Estate, located downstream of the outfall.

Site 30 was originally permitted (May 2019) for a proposed 66" welded steel pipe (WSP) with 66" reinforced concrete pipe (RCP) extension to replace the adjacent 66" CMP that was to be abandoned. This was modified and permitted in September 2019 to retain and line the existing 66" CMP. This eliminated the trenchless installation of the 66" WSP. In July 2022, Fluor United, the construction contractor of record, proposed a change to the maintenance of traffic that provides the opportunity for open cutting of westbound I-26. The opportunity allows for the proposed design

change to replace the existing 66" CMP with a 1 @ 9'x7' reinforced concrete box culvert (RCBC) buried 1 foot.

The existing 66" CMP is deteriorating and requires more and more frequent maintenance. In addition to the existing corrosion of the pipe, a scour hole has formed at the pipe outlet, and the shape of the pipe itself contributes to the increased flow during rain events. In taking the opportunity to replace the CMP with the 9'x7' RCBC, NCDOT anticipates the RCBC will:

- Provide live bed loading through sill and baffle placement to promote aquatic organism passage,
- Provide wildlife passage through the RCBC, which will reduce conflicts with motor vehicles;
- Promote more long-term stream stability;
- Eliminate the need for a channel change of the stream by any future projects; and
- Mitigate existing and future scour with embedded riprap at the outlet.

Further, the slope of the crossing is over 3 percent. The RCBC will provide a much larger hydraulic opening resulting in decreased velocity and less pressure head during higher flow events. Adding bank stabilization to the inlet of the culvert will further provide stream and channel stability over the existing condition.

Previously permitted stream impacts for I-4700A&B included 2,903 total linear feet (lf) of permanent impacts (2,611 lf mitigable impacts) and 1,565 total lf of temporary impacts, per referenced September 2019 Modification. The revised stream impacts for I-4700A&B total 2,926 linear feet of permanent impacts (2,609 lf mitigable impacts) and 1,545 linear feet of temporary impacts (see Table 1).

This modification will result in a net 23 linear feet of additional permanent stream impacts, with a net reduction of 2 linear feet of mitigable permanent stream impacts. Additionally, there will be a reduction of 20 linear feet of temporary impacts.

Table 1 – I-4700A & I-4700B Summary of changes to impacts*

Impact Type	Previously Permitted Impacts / Mitigable (Sept 2019 Mod)	Proposed Permit Modification Impacts / Mitigable (2022)	Net Change in Impacts	Change in Mitigable Impacts
Permanent Stream Impacts	2,903 / 2,611	2,926 / 2,609	+23	-2
Temporary Stream Impacts	1,565	1,545	-20	N/A

*Stream impacts are in linear feet.

Please see the enclosed DWR Pre-Filing Meeting Request Form, revised permit drawings showing changes to permitted impacts at Site 30 and Site 31. These changes are summarized below.

Summary of Impacts to Waters of the U.S.

Table 2 summarizes the permitted and revised impacts to jurisdictional streams for the project. There are no changes in impacts to jurisdictional wetlands. Changes to permitted stream impacts are shown with a strikethrough, and revisions are shown in red text. A narrative describing the revisions made to the two permit impact sites are presented in the following section.

Table 2 – I-4700A&B Stream Impacts

Permit Site	Stream Name / ID	Stream Status / Class	Permanent Channel Impacts (lf)			Temp. Channel Impacts (lf)			Impact Description
			Permitted	Revised	Change	Permitted	Revised	Change	
30	UT to French Broad River / SDX	P / B	9	9	0	20	20	0	(No Change) Channel Change at Outlet of 24" CSP and Conc. Energy Dissipator
			9	9	0	20	20	0	(No Change) Channel Change at Outlet of Proposed 15" CSP and Conc. Energy Dissipator
			9	9	0	20	10	-10	(Revision) Channel Change at Outlet of Proposed 15" CSP and Conc. Energy Dissipator
			70 ^{1/}	78	+8	10	0	-10	Existing 66" CMP to be retained and lined, extension with 66" RCP due to Roadway Widening
			--	25 ^{2/}	+25 ^{2/}	--	--	--	(Revision) Proposed 1 @ 9'x7' RCBC (inlet end) due to Roadway Widening (New) Bank Stabilization at Inlet of Proposed ² 1 @ 9'x7' RCBC
31	UT to French Broad River / SDX	P / B	38	8	-30	10	0	-10	Existing 66" CMP extension with 66" RCP due to Roadway Widening
			--	20	+20	--	10	+10	(Revision) Proposed 1 @ 9'x7' RCBC (outlet end) due to Roadway Widening (New) Channel Change (with embedded riprap) at Outlet of 1 @ 9'x7' RCBC
Total: Sites 30 and 31			135	158	23	80	60	-20	

^{1/} revised, per I-4400 BB_C and I-4700 A&B Phased Modification, dated July 26, 2019 (see Reference)

^{2/} bank stabilization impacts are not considered loss of waters and therefore do not require mitigation.

Permit Impact Site Modifications (shown in revised permit drawings):

Site 30 (Permit Drawing Sheet 59) – This site has been updated to replace the existing 66” RCP with a 9’x7’ RCBC. This will include riprap bank stabilization along stream SDX. Changing the pipe to a box culvert will reduce temporary impacts upstream at the outlet of the proposed 15” Corrugated Steel Pipe (CSP). The replacement of the 66” RCP with the 9’x7’ RCBC will result in an increase in permanent impacts to the stream from 70’ to 78’. A net total increase of 8’. Riprap is proposed at the inlet of the RCBC for bank stabilization. The additional bank stabilization is a new permanent impact of 25 feet.

Site 31 (Permit Drawing Sheet 59) – This site has been updated to reflect the proposed replacement of the existing 66” RCP with the 9’x7’ RCBC. The new RCBC will result in 8 feet of permanent stream impacts compared with the original 38 feet, and zero (0) temporary impacts, reduced from 10 feet. This results in a decrease of 30 feet in permanent impacts and 10 feet in temporary impacts. However, the new channel change (with embedded riprap) as a result of the proposed RCBC will result in 20 feet of new permanent impacts and 10 feet of new temporary impacts.

Revised Compensatory Mitigation

The North Carolina Division of Mitigation Services (NCDMS) previously provided compensatory mitigation for 2,674 linear feet of permanent stream impacts, per a Compensatory Mitigation Responsibility Transfer Form, signed in July 2019.

Of the revised net increase of 23 lf of permanent stream impacts at Sites 30 and 31 of I-4700A&B, 25 lf are the result of bank stabilization and are not considered loss of waters and therefore do not require mitigation from USACE or NCDWR. As such, permanent stream impacts that require mitigation from USACE for this ~~project~~ modification have decreased by 2 linear feet, thus no additional mitigation will be needed from DMS.

Table 3 summarizes the permitted preliminary impacts, permitted final impacts, permitted final temporary impacts, and the mitigation requirements for streams in all sections of the I-4400/I-4700 project, with revised values for I-4700A&B shown in red text.

Table 3. Summary of Stream Impacts and Mitigation Requirements for each section of I-4400/I-4700

Section	Design Stage	Permanent Stream Impact (lf)		Temporary Stream Impact (lf)		Impacts Requiring ACOE Mitigation (lf)	
		Preliminary	Final	Preliminary	Final		
I-4400A	Prelim	5,068	--	X	--	N/A	
I-4400BA	Prelim	185	--	X	--	185	
I-4400BB	Final	2,354	1,637	X	343	716	
I-4400C	Final	4,268	3,559	X	178	2,952	
I-4700A	Final	1,404	1,404	121	99	1,158	2,609
I-4700B	Final	1,552	1,522	1,480	1,446	1,451	

NCDOT requests to modify the permit for this project. Application is hereby made for modification of the USACE Section 404 permit and the Section 401 WQC from NCDWR as required for the above-described activities. We have provided a method of debiting \$570.00 to be submitted to the

NCDWR for processing the WQC modification for I-4700A&B, as noted in the subject line of this application.

A copy of this permit application and its distribution list will be posted in the NCDOT website at <http://connect.ncdot.gov/resources/Environmental>. Thank you for your assistance with this project. If you have any questions or need additional information, please contact Bill Barrett at either wabarrett@ncdot.gov or (919) 707-6103.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Turchy". The signature is fluid and cursive, with a long horizontal stroke at the end.

Michael Turchy
Environmental Coordination and Permitting Group Leader

cc:
NCDOT Permit Application Standard Distribution List

Project Submittal Interim Form



Updated September 4, 2020

*Please note: fields marked with a red asterisk * below are required. You will not be able to submit the form until all mandatory questions are answered.*

Project Type: *

- ☐ For the Record Only (Courtesy Copy)
- ☐ New Project
- ☒ Modification/New Project with Existing ID
- ☐ More Information Response
- ☐ Other Agency Comments
- ☐ Pre-Application Submittal
- ☐ Re-Issuance/Renewal Request
- ☐ Stream or Buffer Appeal

Pre-Filing Meeting Date Request was submitted on:

3/22/2021

Project Contact Information

Name:

Bill Barrett

Who is submitting the information?

Email Address: *

wabarrett@ncdot.gov

Project Information

Existing ID #: *

20181645

20170001 (no dashes)

Existing Version: *

2

1

Project Name: *

I-4400/I-4700 I-26 Widening in Buncombe and Henderson Counties

Is this a public transportation project? *

- ☒ Yes
- ☐ No

Is this a DOT project? *

- ☒ Yes
- ☐ No

Is the project located within a NC DCM Area of Environmental Concern (AEC)? *

- ☐ Yes
- ☒ No
- ☐ Unknown

TIP#:

I-4400/I-4700

WBS#:

34232.1.6

(Applies to DOT projects only)

County (ies) *

Buncombe

Henderson

Please upload all files that need to be submitted.

[Click the upload button or drag and drop files here to attach document](#)

I-4700 A and B Modification October 2022.pdf

7.87MB

[Only pdf or kmz files are accepted.](#)

Describe the attachments or add comments:

* ☒ By checking the box and signing box below, I certify that:

- I, the project proponent, hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief.
- I, the project proponent, hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.
- I agree that submission of this online form is a "transaction" subject to Chapter 66, Article 40 of the NC General Statutes (the "Uniform Electronic Transactions Act");
- I agree to conduct this transaction by electronic means pursuant to Chapter 66, Article 40 of the NC General Statutes (the "Uniform Electronic Transactions Act");
- I understand that an electronic signature has the same legal effect and can be enforced in the same way as a written signature; AND
- I intend to electronically sign and submit the online form.

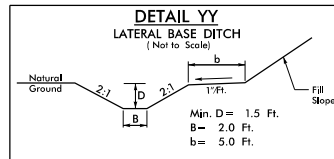
Signature: *

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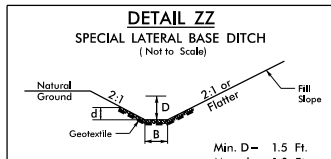
Submittal Date:

[Is filled in automatically once submitted.](#)

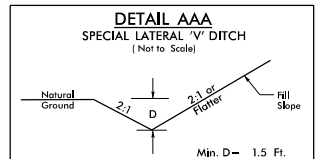
DRAINAGE DITCH DETAILS

REVISED 10/13/2022
**PERMIT DRAWING
SHEET 2A OF 97**


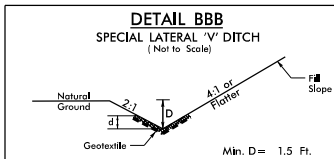
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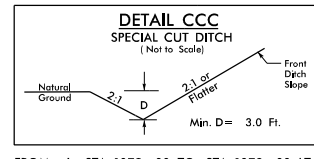
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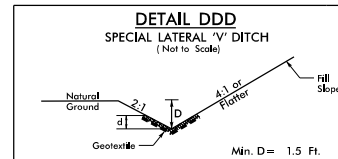
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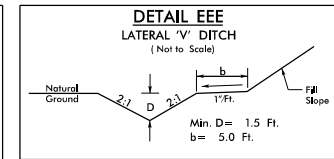
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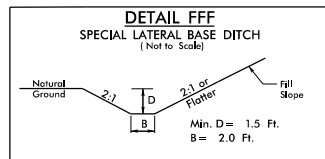
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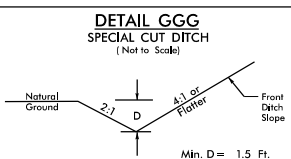
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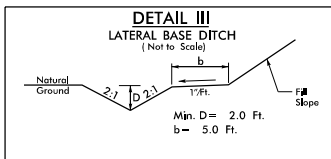
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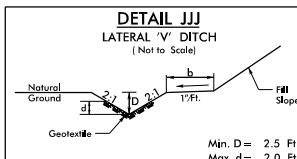
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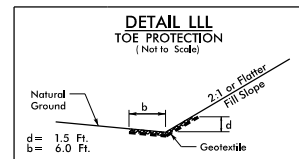
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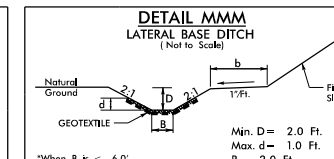
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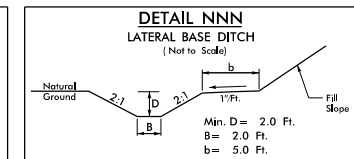
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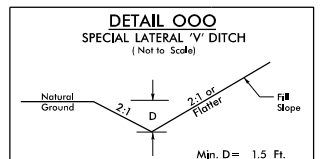
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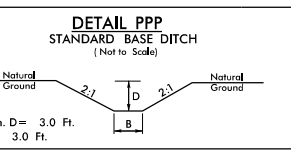
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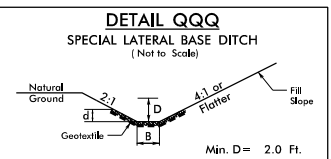
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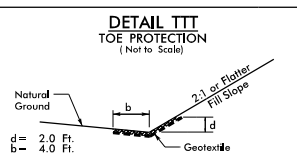
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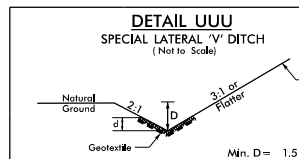
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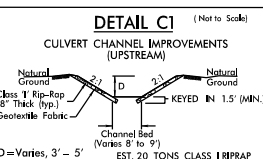


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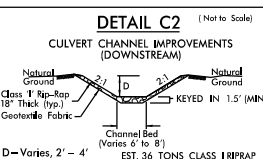


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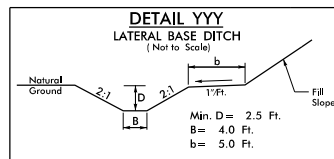
BANK STABILIZATION



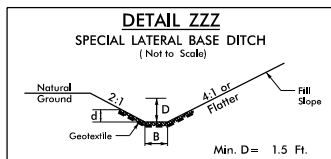
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Channel Bed
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(KEYED IN)
EST. 44 SY GEOTEXTILE FABRIC



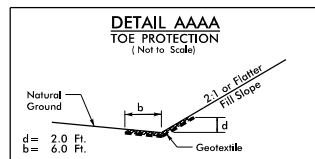
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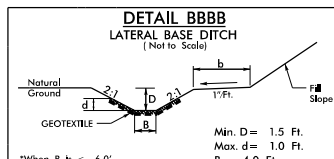
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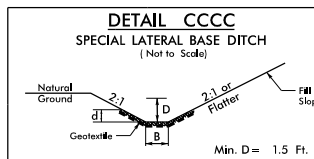
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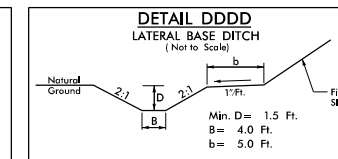
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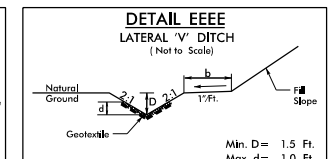
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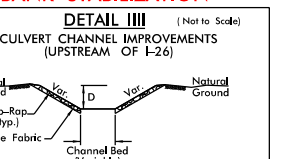


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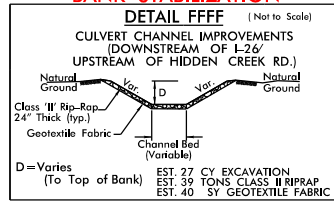
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BANK STABILIZATION



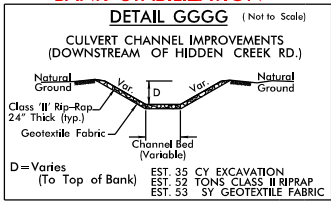
Class 'I' Rip-Rap
24" Thick (typ.)
Geotextile Fabric
Channel Bed
(Variable)
D=Varies
(To Top of Bank)
EST. 37 CY EXCAVATION
EST. 35 TONS CLASS II RIPRAP
EST. 56 SY GEOTEXTILE FABRIC

BANK STABILIZATION



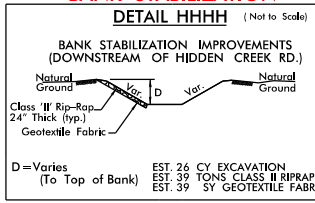
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(Variable)
D=Varies
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BANK STABILIZATION



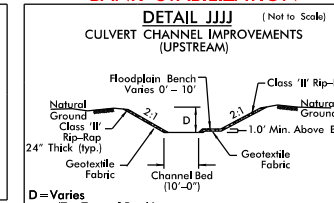
Class 'I' Rip-Rap
24" Thick (typ.)
Geotextile Fabric
Channel Bed
(Variable)
D=Varies
(To Top of Bank)
EST. 35 CY EXCAVATION
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EST. 53 SY GEOTEXTILE FABRIC

BANK STABILIZATION



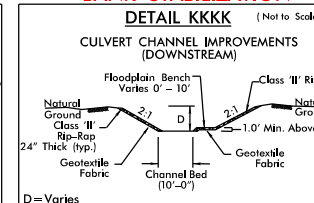
Class 'I' Rip-Rap
24" Thick (typ.)
Geotextile Fabric
Channel Bed
(Variable)
D=Varies
(To Top of Bank)
EST. 26 CY EXCAVATION
EST. 39 TONS CLASS II RIPRAP
EST. 39 SY GEOTEXTILE FABRIC

BANK STABILIZATION



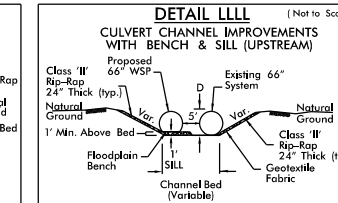
Floodplain Bench
Varies 0' - 10'
Class 'I' Rip-Rap
24" Thick (typ.)
Geotextile Fabric
Channel Bed
(10'-0")
D=Varies
(To Top of Bank)
EST. 98 CY EXCAVATION
EST. 146 TONS CLASS II RIPRAP
EST. 147 SY GEOTEXTILE FABRIC

BANK STABILIZATION



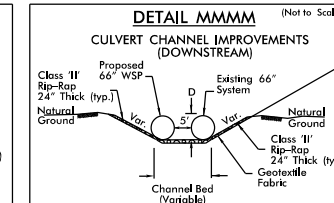
Floodplain Bench
Varies 0' - 10'
Class 'I' Rip-Rap
24" Thick (typ.)
Geotextile Fabric
Channel Bed
(10'-0")
D=Varies
(To Top of Bank)
EST. 201 CY EXCAVATION
EST. 299 TONS CLASS II RIPRAP
EST. 302 SY GEOTEXTILE FABRIC

BANK STABILIZATION



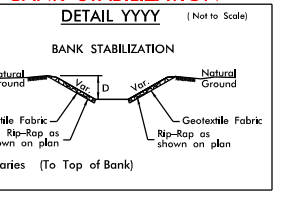
Class 'I' Rip-Rap
24" Thick (typ.)
Geotextile Fabric
Channel Bed
(Variable)
D=Varies
(To Top of Bank)
EST. 68 CY EXCAVATION
EST. 100 TONS CLASS II RIPRAP
EST. 101 SY GEOTEXTILE FABRIC

BANK STABILIZATION

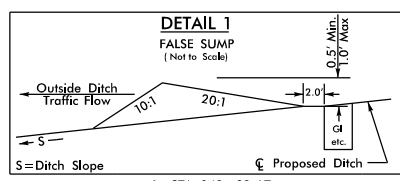


Class 'I' Rip-Rap
24" Thick (typ.)
Geotextile Fabric
Channel Bed
(Variable)
D=Varies
(To Top of Bank)
EST. 55 CY EXCAVATION
EST. 82 TONS CLASS II RIPRAP
EST. 83 SY GEOTEXTILE FABRIC

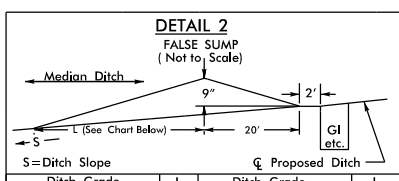
BANK STABILIZATION



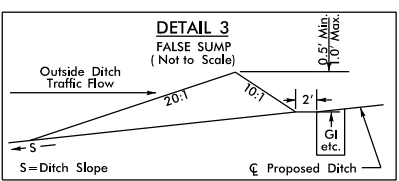
Geotextile Fabric
Rip-Rap as shown on plan
D=Varies
(To Top of Bank)



-L- STA. 849+02 LT
-WBL- STA. 931+10 RT
-WBL- STA. 994+51 RT
-WBL- STA. 996+06 RT
-Y13RDP- STA. 18+61 LT
-WBL- 1097+15 LT

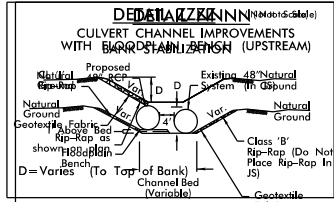


-EBL- STA. 902+53 RT
-EBL- STA. 905+22 RT
-EBL- STA. 907+54 RT
-EBL- STA. 909+71 RT
-EBL- STA. 911+56 RT
-EBL- STA. 912+68 RT
-EBL- STA. 916+83 RT
-EBL- STA. 923+67 RT
-EBL- STA. 931+86 RT



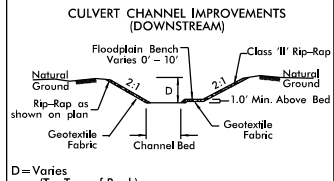
-Y13RCP- STA. 10+07 RT
-L- STA. 850+34 RT
-L- STA. 854+53 RT
-WBL- STA. 895+60 RT
-EBL- STA. 911+57 LT
-EBL- STA. 914+55 LT
-EBL- STA. 916+85 LT
-L- STA. 1037+28 RT
FROM STA. 1082+00 TO STA. 1085+00, RT.
-EBL- STA. 1109+15 LT
-EBL- STA. 1113+15 LT
-EBL- STA. 1114+70 LT
-EBL- STA. 1119+22 LT

BANK STABILIZATION



Class 'I' Rip-Rap
24" Thick (typ.)
Geotextile Fabric
Channel Bed
(Variable)
D=Varies
(To Top of Bank)
EST. 201 CY EXCAVATION
EST. 299 TONS CLASS II RIPRAP
EST. 302 SY GEOTEXTILE FABRIC

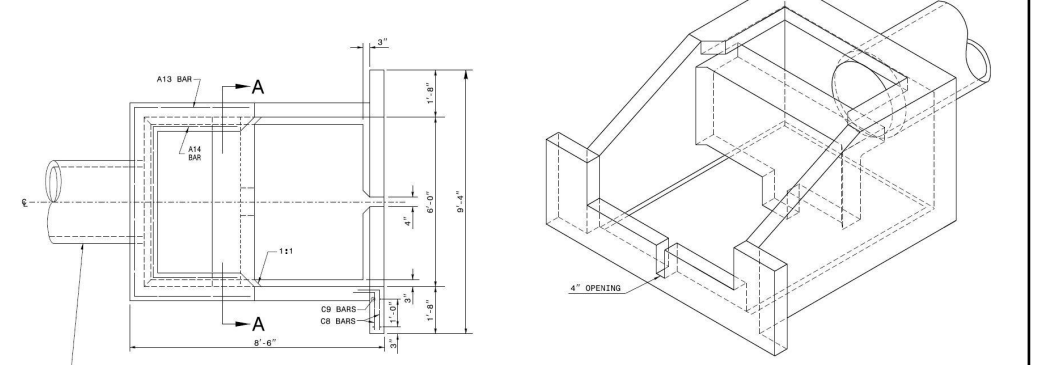
BANK STABILIZATION



Floodplain Bench
Varies 0' - 10'
Class 'I' Rip-Rap
24" Thick (typ.)
Geotextile Fabric
Channel Bed
(Variable)
D=Varies
(To Top of Bank)

SPECIAL DETAIL CONCRETE ENERGY DISSIPATOR

USE THIS STRUCTURE FOR PIPE SIZES
15" THROUGH 36". THE PIPE MAY BE
CSP OR RCP.



PLAN

SEE PLANS
FOR PIPE SIZE

7/19/2017

10/13/2022 HYD_PRL_PSH_25.dgn

REVISED 10/13/2022

WETLAND & STREAM IMPACTS

HNTB



PROJECT REFERENCE NO.		SHEET NO.
I-4700		25
RW SHEET NO.		I-4700B-35
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 59 OF 97

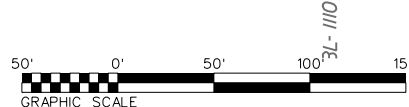
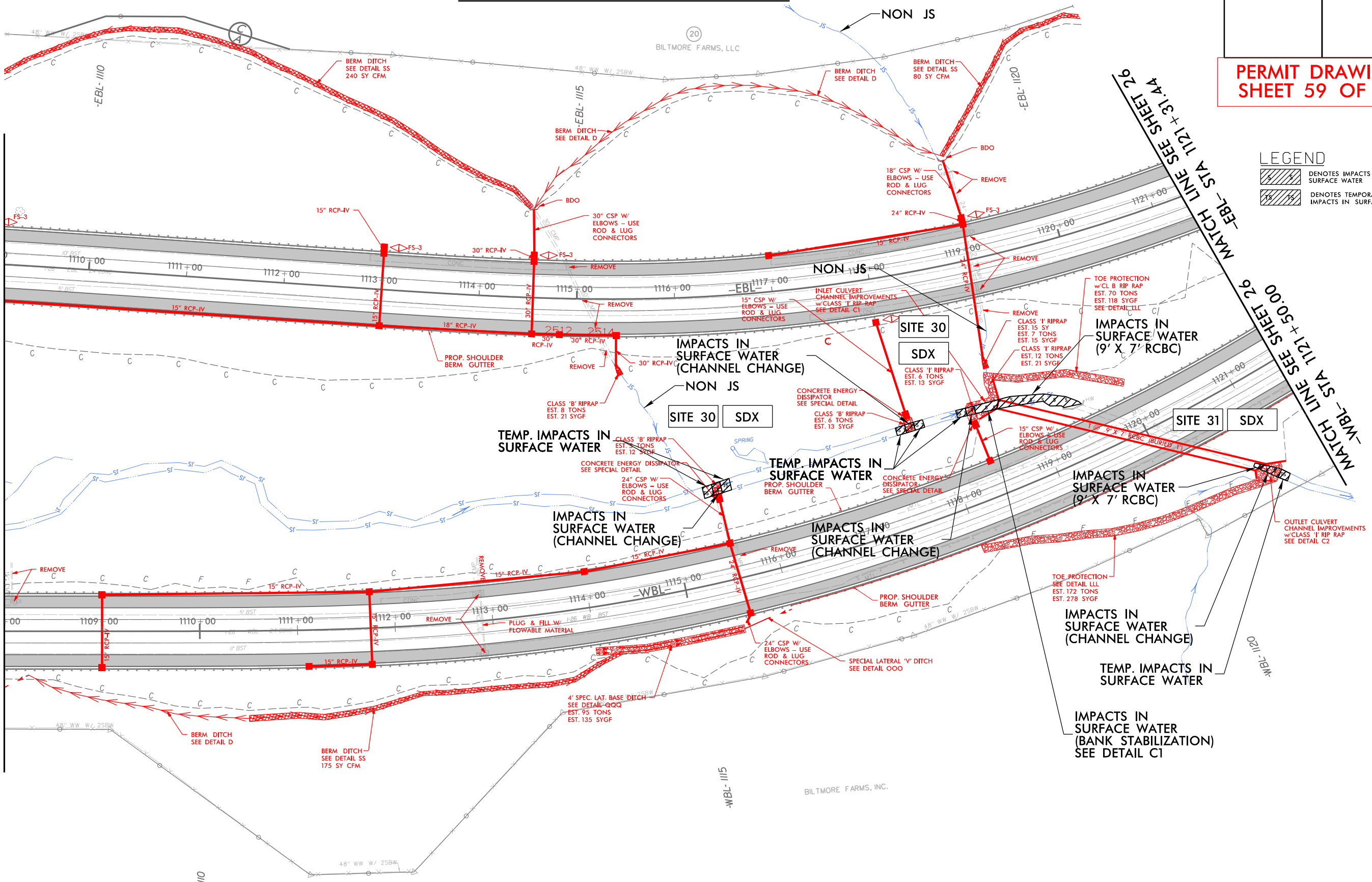
LEGEND	
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

MATCH LINE SEE SHEET 24
-EBL- STA 1109+13.21

MATCH LINE SEE SHEET 24
-WBL- STA 1108+00.00

MATCH LINE SEE SHEET 26
-EBL- STA 1121+31.44

MATCH LINE SEE SHEET 26
-WBL- STA 1121+50.00



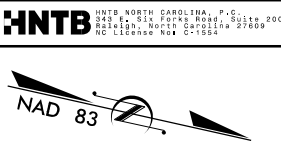
FOR -WBL- & -EBL- PROFILES, SEE SHEETS 53 & 54

7/19/2017

10/13/2022 HYD_PRL_PSH_25.dgn

REVISED 10/13/2022

WETLAND & STREAM IMPACTS



PROJECT REFERENCE NO.	SHEET NO.
I-4700	25
RW SHEET NO.	I-4700B-35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 60 OF 97

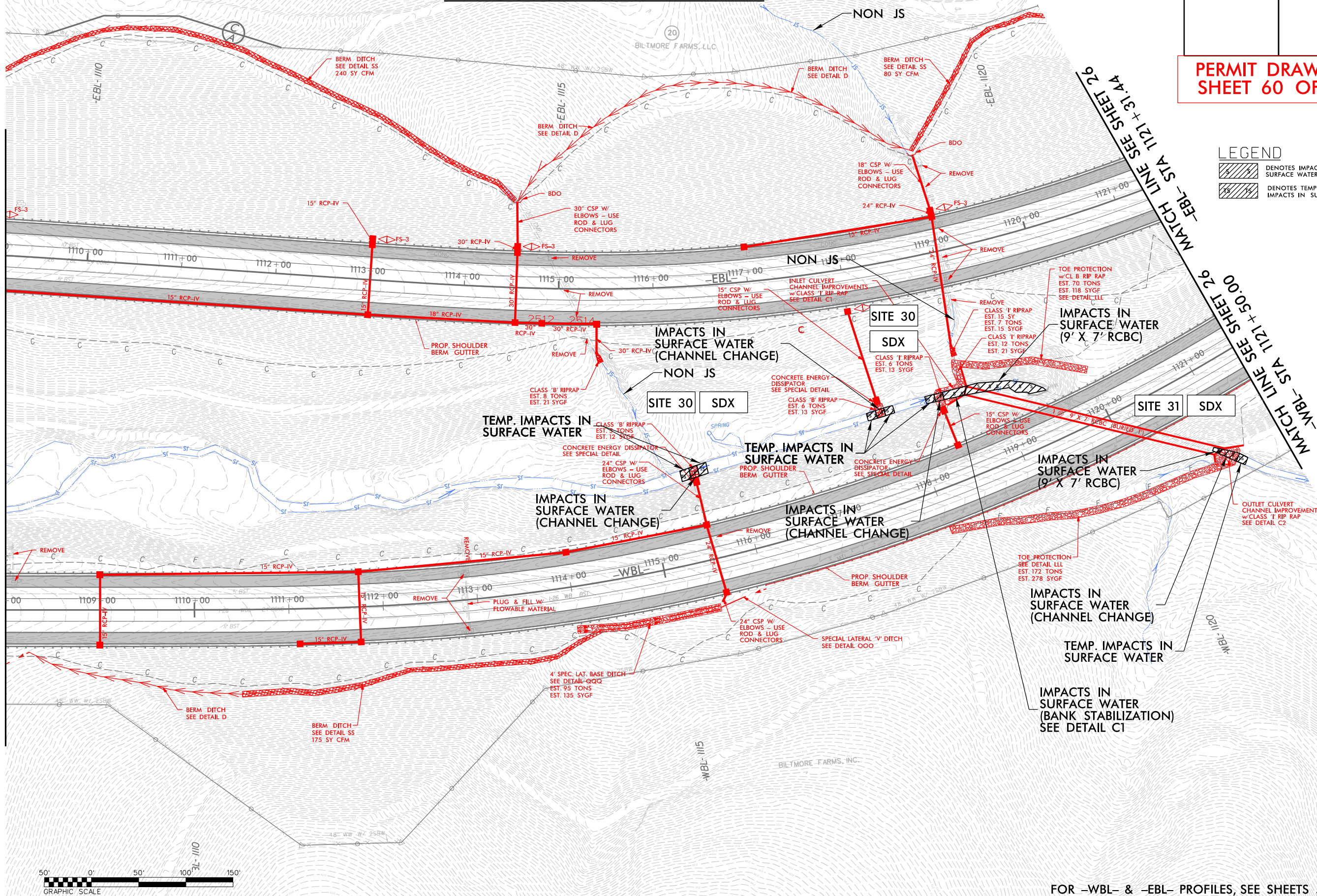
LEGEND	
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

MATCH LINE SEE SHEET 24
-EBL- STA 1109 + 13.21

MATCH LINE SEE SHEET 24
-WBL- STA 1108 + 00.00

MATCH LINE SEE SHEET 26
-EBL- STA 1121 + 31.44

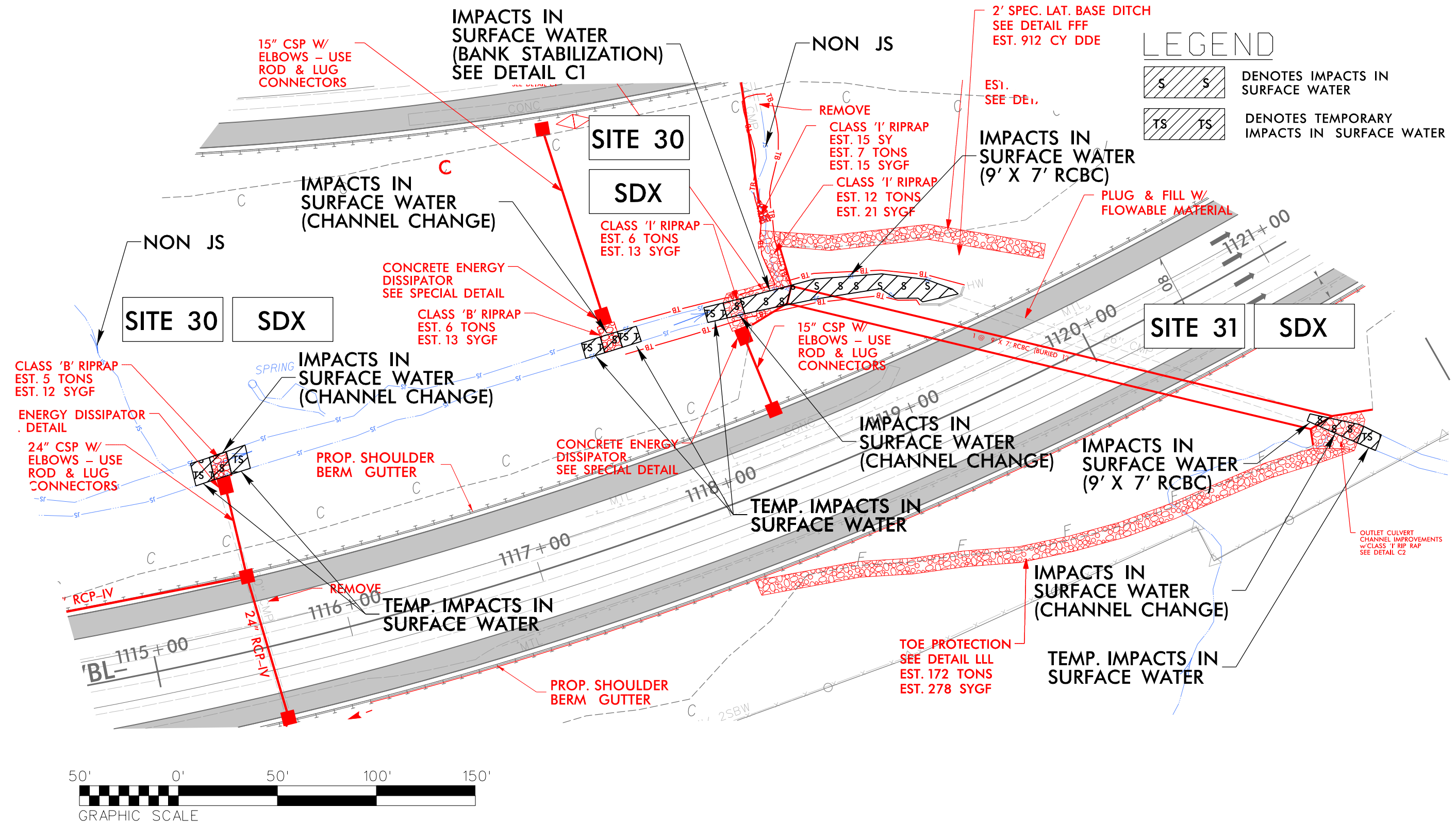
MATCH LINE SEE SHEET 26
-WBL- STA 1121 + 50.00



FOR -WBL- & -EBL- PROFILES, SEE SHEETS 53 & 54

HNTB HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite
Raleigh, North Carolina 27609
NC License No: C-1554

PERMIT DRAWING
SHEET 61 OF 97



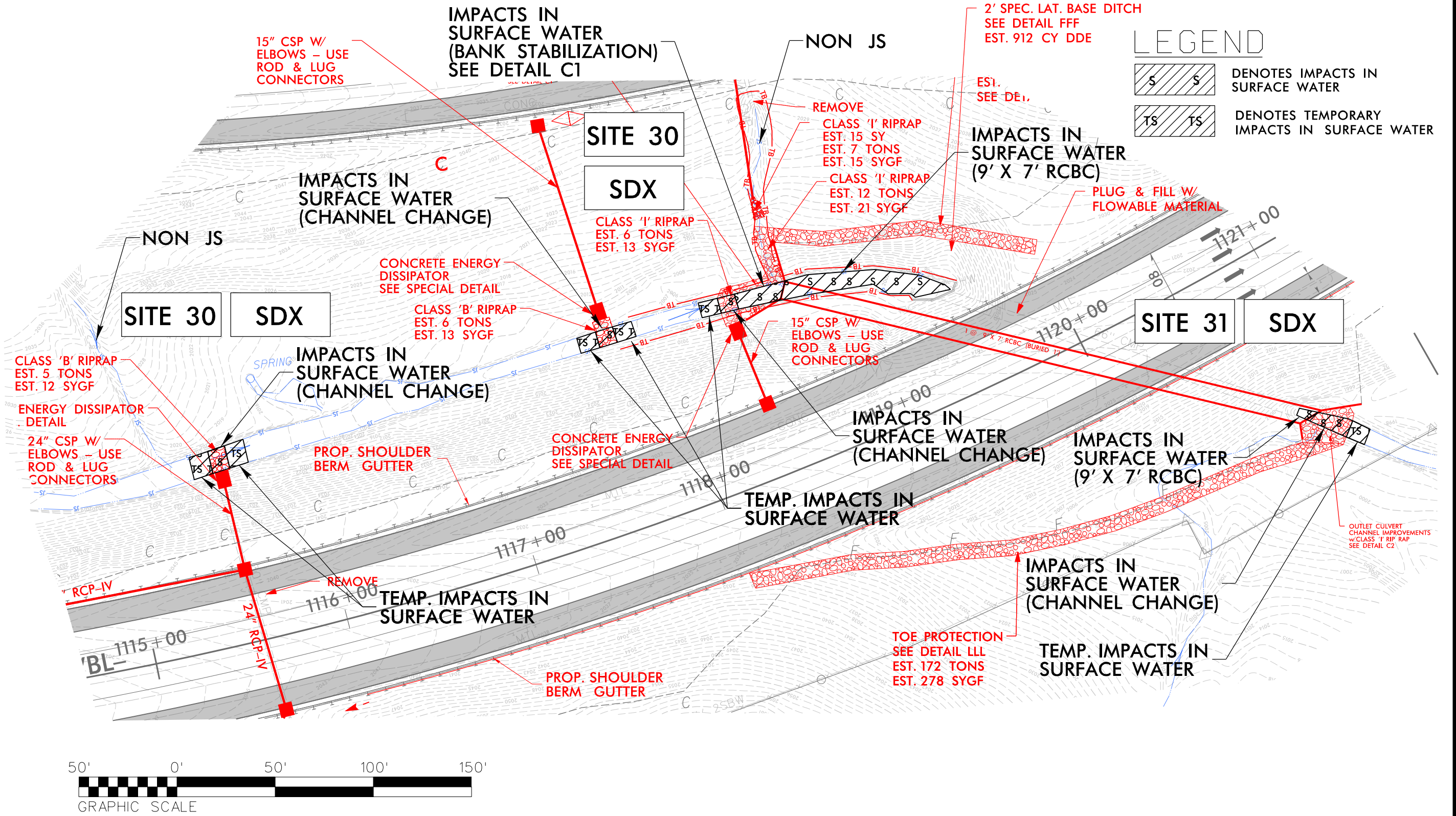
REVISED 10/13/2022

HNTB HNTB NORTH CAROLINA, P.C.
300 S. S. PARKWAY, SUITE 200
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. E-1554



PROJECT REFERENCE NO.		SHEET NO.
I-4700		25
RW SHEET NO.		I-4700B-35
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 62 OF 97



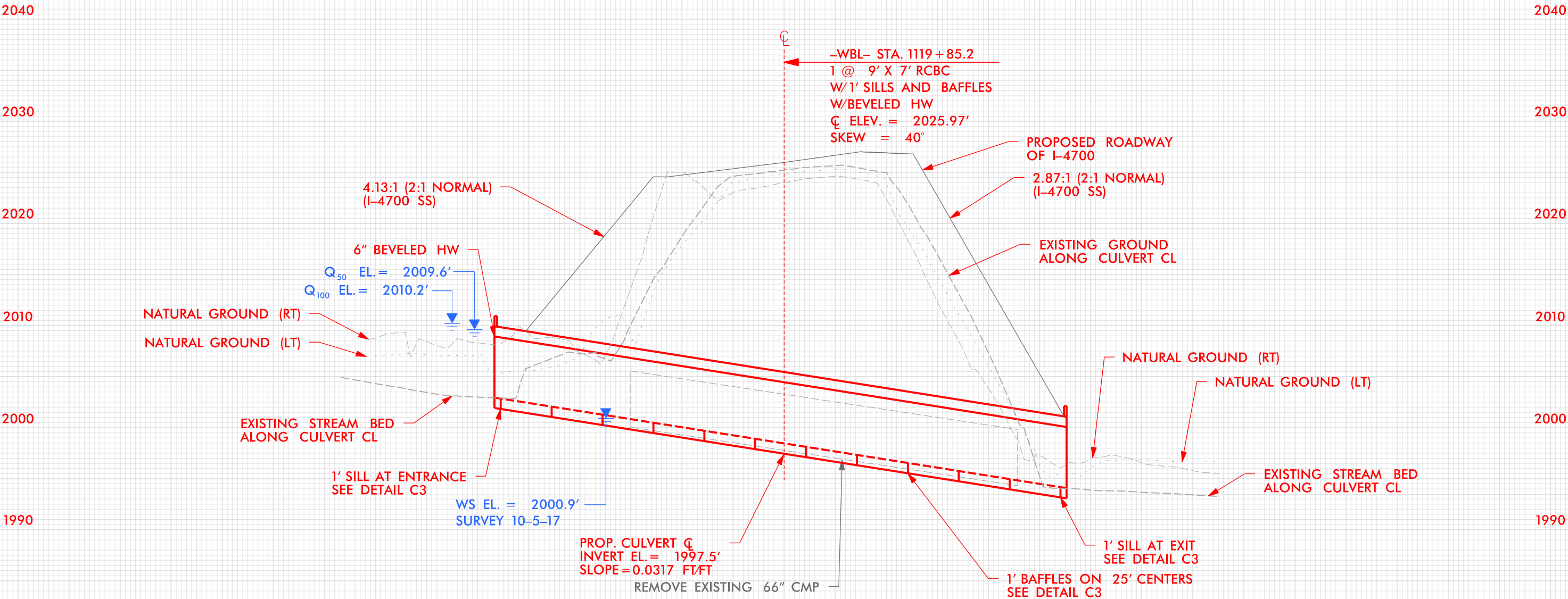
6/23/16

9/6/2022
11:15
I:\16\4700B-HYD-PRM_PSH_25B-PFL.dgn

PROJ. REFERENCE NO.	SHEET NO.
I-4700	

PERMIT DRAWING
SHEET 63 OF 97

REVISED 10/13/2022



BUNCOMBE & HENDERSON COUNTY
PROJECT: I-4700
I-26
FROM 0.3 MI EAST OF NC 280 (AIRPORT RD.)
TO 0.5 MI EAST OF NC 191 (BREVARD RD.)

WETLAND AND SURFACE WATER IMPACTS SUMMARY														
Site No.	Stream Name Stream ID	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	UT to French Broad River / SDI	Y13RPB 11+26 to 15+64 LT	Stream relocated to Proposed Roadside ditch Due to Roadway Widening									342		
1A	UT to French Broad River / SDD	WBL 881+50 to 886+10 RT	Stream relocated to Toe Protection due to Roadway Widening									452	10	
2	UT to French Broad River / SDC	WBL 887+41 to 887+62 RT	6' x 6' RCBC Culvert Extension Due to Roadway Widening									25		
2	UT to French Broad River / SDC	WBL 887+20 to 887+45 RT	Bank Stabilization at inlet of 6' X 6' RCBC									22	10	
3	UT to French Broad River / SDC	EBL 888+63 to 889+10 LT	Channel change*1 at upstream and downstream of Existing Culvert									45		
3	UT to French Broad River / SDC	EBL 889+04 to 889+30 LT	Bank Stabilization at outlet of Existing Culvert									44	3	
4	UT to French Broad River / SDE	WBL 914+14 to 914+38 RT	66" RCP between Existing 66" RCP and 66" CMP in the WBL									55		
4	UT to French Broad River / SDE	WBL 913+64 to 913+93 RT	Bank Stabilization at inlet of 66" RCP									34	10	
5	UT to French Broad River / SDE	EBL 914+15 to 914+22 Median	66" RCP between Existing 66" CMP and 66" CMP in the Median									28		
6	UT to French Broad River / SDE	EBL 914+20 to 914+30 LT	Channel Change*1 between outlet of Existing 66" CMP and proposed 66" WSP and Existing 48" CMP									29		
7	UT to French Broad River / SDF	WBL 932+16 to 932+22 RT	Temp. Impact for Constructing Tapered Inlet with Head Wall										5	
8	UT to French Broad River / SDF	EBL 931+83 to 931+95 Median	54" CSP between two Existing 54" RCP in the Median									38		
9	UT to French Broad River / SDF	EBL 932+08 to 932+17 LT	54" RCP Extension Due to Roadway Widening and Conc.									20		
9	UT to French Broad River / SDF	EBL 932+12 to 932+23 LT	Bank Stabilization at the outlet of Proposed 54" RCP Extension									22	11	
10	WBR	WBL 936+68 to 938+29 RT	Special Cut Ditches on both side of Inlet of Proposed 24" WSP and Existing 66" RCP	0.03		0.03	0.03							
11	WBV	EBL 938+81 to 952+45 LT	RipRap Outlet Protection of Proposed 24" CSP and Existing 66" RCP	0.15		< 0.01	0.37							
12	UT to French Broad River / SFX / WBU	WBL 942+31 to 943+22 RT	30" RCP Extension Due to Roadway Widening			0.01	0.02					20	10	
13	UT to French Broad River / SDK / WBW	WBL 952+88 to 954+00 RT	66" RCP Extension Due to Roadway Widening / Fill and Excavation in wetland Due to Roadway Widening	0.07		0.02	< 0.01					40	10	
14	UT to French Broad River / SDK	EBL 952+66 to 952+77 LT	66" CSP Extension Due to Roadway Widening									14		
14	UT to French Broad River / SDK	EBL 952+72 to 952+80 LT	Channel Change*1 at downstream of 66" CSP Extension									22	7	
15	Powell Creek / SDN	WBL 983+40 to 983+73 RT	Bank Stabilization at inlet of Proposed 2@ 10' X 10' RCBC									42	10	
15	Powell Creek / SDN	WBL 983+67 to 983+80 RT	Existing 10' X10' RCBC Extension Due to Roadway Widening									12		
16	Powell Creek / SDN	EBL 984+63 to 984+90 LT	Existing 10' X10' RCBC Extension Due to Roadway Widening									16		
16	Powell Creek / SDN	EBL 984+69 to 985+07 LT	Bank Stabilization at outlet of Proposed 2@ 10' X 10' RCBC									82	13	
17	UT to French Broad River / SDU	L 1027+43 to 1027+51 RT	Existing 48" RCP Extension Due to Roadway Widening									16		
17	UT to French Broad River / SDU	L 1027+47 to 1027+ 58 RT	Bank Stabilization at inlet of 2 @ 48" RCP									10	10	
18	UT to French Broad River / SDU	L 1026+47 to 1026+68 LT	Channel Change*1 at outlet of Existing and Proposed 48" CMP and WSP									22	10	
18 A	French Broad River	L 1019+98 to 1020+50 LT	Channel Change*1 at outlet of Existing 8' X 8' Conc. Box Culvert									10	10	
19	WCH	L 1031+14 to 1035+27 LT	Fill in Wetlands Due to Roadway Widening	< 0.01			0.06							
20	UT to French Broad River / SDV	L 1042+57 to 1042+72 RT	Bank Stabilization at outlet of proposed 42" RCP due to Existing 42" CMP Extension and Proposed 42" WSP									18	10	
20	UT to French Broad River / SDV	L 1042+69 to 1042+91 RT	Existing 42" CMP Extension Due to Roadway Widening and Proposed 42" WSP									33		
21	UT to French Broad River / SDW	L 1048+84 to 1049+00 RT	Existing 60" CMP Extension with a 60" RCP Due to Roadway Widening									27		
21	UT to French Broad River / SDW	L 1048+93 to 1049+20 RT	Channel Change*1 at inlet of Proposed 60" CMP Extension with a 60" RCP									24	12	
22	WCH	L 1047+74 to 1047+84	Excavation in Wetland Due to Roadway Widening			< 0.01	0.01							
TOTALS*:				0.26		0.07	0.50					1564	151	

*Rounded totals are sum of actual impacts

NOTES:

*1: Emedding Riprap

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
10/13/2022
Buncombe & Henderson County
I-4700

SHEET96OF97

Revised 2018 Feb

WETLAND AND SURFACE WATER IMPACTS SUMMARY															
				WETLAND IMPACTS					SURFACE WATER IMPACTS						
Site No.	Stream Name Stream ID	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)		
23	UT to French Broad River / SDX	WBL 1082+23 to 1085+46 RT	Stream relocated to Proposed Lateral 'V' ditch due to Roadway Widening								312	10			
23	UT to French Broad River / SDX	WBL 1090+35 to 1090+65 RT	Channel change*1 at the Outlet of Proposed 30" CSP and Conc. Energy Dissipator								9	20			
23	UT to French Broad River / SDX	WBL 1091+37 to 1092+04 RT	Proposed 42" CMP Extension with a 42" RCP due to Roadway Widening								59	10			
24	UT to French Broad River / SDX	WBL 1094+12 to 1094+46 median	Channel Change*1 at Outlet of Existing 42" CMP								27	10			
24A	UT to French Broad River / SDX	EBL 1097+18 to 1097+46 median	Channel Change*1 at Outlet of Proposed 30" WSP with 30" RCP Extension								7	20			
25	UT to French Broad River / SEU	EBL 1097+19 to 1097+34 LT	Proposed 30" WSP with 30" RCP Extension								15	4			
26	UT to French Broad River / SDX	EBL 1105+45 to 1105+52 RT	Channel Change*1 at Outlet of Existing 30" CMP								7	10			
27	UT to French Broad River / SDY / WCV	WBL 1104+37 to 1104+51 RT	Existing 30" CMP with 30" RCP Extension			< 0.01					19	13			
28	UT to French Broad River / SDY	WBL 1104+88 to 1105+14 LT	Channel Change*1 at Outlet of Proposed 24" CSP and Conc. Energy Dissipator								9	18			
29	UT to French Broad River / SDX	EBL 1106+74 to 1107+07 RT	Temp. Impact for Constructing Standard Base Ditch									30			
30	UT to French Broad River / SDX	WBL 1115+40 to 1115+70 LT	Channel Change*1 at Outlet of 24" CSP and Conc. Energy Dissipator								9	20			
30	UT to French Broad River / SDX	EBL 1118+02 to 1118+30 RT	Channel Change*1 at Outlet of Proposed 15" CSP and Conc. Energy Dissipator								9	20			
30	UT to French Broad River / SDX	WBL 1118+25 to 1118+45 LT	Channel Change*1 at Outlet of 15" CSP and Conc. Energy Dissipator								9	10			
30	UT to French Broad River / SDX	WBL 1118+45 to 1118+73 LT	Bank Stabilization at Inlet of Proposed 1@ 9' X 7' RCBC								25				
30	UT to French Broad River / SDX	WBL 1118+65 to 1119+51 LT	Proposed 1 @ 9' X 7' RCBC due to Roadway Widening								78				
31	UT to French Broad River / SDX	WBL 1120+78 to 1120+88 RT	Proposed 1 @ 9' X 7' RCBC due to Roadway Widening								8				
31	UT to French Broad River / SDX	WBL 1120+81 to 1121+06 RT	Channel Change*1 at Outlet of 1 @ 9' x 7' RCBC								20	10			
32	WCW	WBL 1123+76 to L 1137+2 RT	Fill in Wetland Due to Roadway Widening	0.37			0.30								
32	UT to French Broad River / SEQ	WBL 1131+60 to 1131+94 RT	Existing 54" CMP Extension with a 54" RCP Due to Roadway Widening								57	7			
33	UT to French Broad River / SEQ	EBL 1131+02 to 1131+11 LT	Stream relocated to Existing 54" CMP with a 54" RCP Extension								24	10			
33	UT to French Broad River / SEQ	EBL 1131+00 to 1131+12 LT	Existing 54" CMP Extension with a 54" RCP Due to Roadway Widening								30				
34	UT to French Broad River / SED	L 1138+18 to 1138+32 LT	Stream relocated to Standard Base Ditch at the Outlet of Proposed 36" RCP								30	12			
34	UT to French Broad River / SED	L 1138+29 to 1138+47 LT	Existing 36" CMP Extension with a 36" RCP Due to Roadway Widening								25				
35	WCZ	L 1138+55 to 1139+39 RT	Fill in Wetland Due to Roadway Widening	0.02											
36	UT to French Broad River / SEF	L 1147+02 to 1147+09 LT	Channel Change*1 at Outlet of Proposed 42" RCP								8	10			
36	UT to French Broad River / SEF	L 1146+98 to 1147+07 LT	Existing 42" CMP Extension with a 42" RCP Due to Roadway Widening								28				
37	UT to French Broad River / SEF	L 1148+35 to 1148+64 RT	Channel Change*1 at the Outlet of Proposed 15" CSP and Conc. Energy Dissipator								9	20			
37	UT to French Broad River / SEF	L 1149+17 to 1151+55 RT	Stream relocated to Proposed 4' Lateral Base Ditch due to Roadway Widening								356	10			
38	UT to French Broad River / SEE	L 1153+90 to 1154+10 RT	Stream relocated to Proposed 4' Lateral Base Ditch due to Roadway Widening								18	10			
38	UT to French Broad River / SEE	L 1155+35 to 1155+64 RT	Bank Stabilization at outlet of Proposed 15" CSP and Conc. Energy Dissipator								9	20			
38	UT to French Broad River / SEE	L 1156+95 to 1158+01 RT	Temp. Pipe for Access Road									106			
38	UT to French Broad River / SEE	L 1157+29 to 1157+38 RT	Channel Change*1 at Outlet of Proposed 30" CSP and Conc. Energy Dissipator								9				
39	WFG	L 1153+55 to 1153+89 LT	Fill in Wetland Due to Roadway Widening	< 0.01		< 0.01									
39	UT to French Broad River / SEE	L 1153+56 to 1153+67 LT	Proposed 24" RCP								33				
39	UT to French Broad River / SEE	L 1153+63 to 1153+77 LT	Stream relocated to Retaining Wall Gutter								22	10			
40	French Broad River	L 1161+33 to 1165+06	Bridge									245			
41	UT to French Broad River / SFG	L 1164+95 to 1171+67 RT	Temporary Pipe Due to Acess Road									662			
41	UT to French Broad River / SFG	L 1172+85 to 1173+15 RT	Channel Change*1 at Outlet of Proposed 15" CSP and Conc. Energy Dissipator								9	20			
42	UT to French Broad River / SFO	L 1169+93 to 1170+02 LT	Temporary Pipe Due to Acess Road									9			
43	WDZ	L 1179+54 to 1180+29 RT	Fill in Wetland Due to Roadway Widening	0.02			0.02								
44	UT to French Broad River / SFG	L 1196+58 to 1196+84 RT	Channel Change*1 at Outlet of Existing 48" CMP								15	20			
45	UT to French Broad River / SFR	L 1196+68 to 1196+73 LT	Temp. Impact for Constructing Tapered Inlet with Head Wall									5			
46	UT to French Broad River / SFQ	L 1214+30 to 1214+64 RT	Existing 42" CMP Extension with a 42" RCP Due to Roadway Widening								29				
47	UT to French Broad River / SFQ	L 1216+09 to 1216+19 LT	Existing 42" CMP Extension with a 42" RCP Due to Roadway Widening								12				
47	UT to French Broad River / SFQ	L 1216+15 to 1216+22 LT	Bank Stabilization at end of Toe Protection								9				
47	UT to French Broad River / SFQ	L 1216+18 to 1216+26 LT	Stream relocated to Proposed 4' Lateral Base Ditch due to Roadway Widening								8	13			
TOTALS*:				0.41		< 0.01	0.32				1362	1394			
TOTALS FOR I-4700:				0.67		0.07	0.82				2926	1545			
NOTES: Site 40: Impacts of interior bents are 400 SF *1: Emedding Riprap												NC DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS 10/13/2022 Buncombe & Henderson County I-4700			
Revised 2018 Feb												SHEET	97	OF	97