

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 Information

Before submitting this form please ensure you have submitted the Pre-Filing Meeting Request Form as we will not be able to accept your application without this important first step. The Pre-Filing Meeting Request Form is used in accordance with 40 C.F.R. Section 121.4(a) "At least 30 days prior to submitting a certification request, the project proponent shall request a pre-filing meeting with the certifying agency" and in accordance with 40 C.F.R. Section 121.5(b)(7), and (c)(5) all certification requests shall include documentation that a pre-filing meeting request was submitted to the certifying authority at least 30 days prior to submitting the certification request. Click [here](#) to read more information on when this form is needed prior to application submission or [here](#) to view the form.

Attach documentation of Pre-Filing Meeting Request here: * 20190992

Ver 4_Pre-
Filing 1.08M..
Acknowled...
Email_202...

Date for Meeting Request * 1/6/2021

ID# 20190992 **Version** 4

Project Contact Information

Name: Jason Dilday
Who is submitting the information?

Email Address: * jldilday@ncdot.gov

Project Information

Existing ID #: *

20190992
20170001 (no dashes)

Existing Version: *

4
1

Project Name: * Widening of I-440 from Wade Avenue to Walnut Street

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#:

U-2719

WBS#:

35869.1.2

(Applies to DOT projects only)

County (ies) *

Wake

Please upload all files that need to be submitted.

Click the upload button or drag and drop files here to attach document

U-2719 General Modification Wake April 23,
2021.pdf

11.36MB

Only pdf or kmz files are accepted.

Describe the attachments or add comments:

Attached is the permit modification request for the dam breach and draining of White Oak Lake.

* ☒ 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: *



Submittal Date:

Is filled in automatically once submitted.

Strickland, Bev

From: laserfiche@ncdenr.gov
Sent: Wednesday, January 6, 2021 11:00 AM
To: Dilday, Jason L
Cc: Ridings, Rob
Subject: Pre-Filing Meeting Request Acknowledgement - U-2719 (Widening of I-440 from Wade Avenue to Walnut Street) - 20190992 Ver 4
Attachments: DWR Pre-Filing Meeting Request Form.pdf

The North Carolina Division of Water Resources has received the Pre-Filing Meeting Request Form for U-2719 (Widening of I-440 from Wade Avenue to Walnut Street) that you submitted on (date). The ID number for that project is 20190992, Version 4.

Reviewer Contact Information:

Reviewer: Robert Ridings

Reviewer Email: rob.ridings@ncdenr.gov

Reviewing Office: Central Office - (919) 707-9000

When you submit your application please upload a copy of the attached document in this email.

This email was automatically generated by Laserfiche workflow. Please do not respond to this email address, as responses are not monitored.



DWR Pre-Filing Meeting Request Form

ID#* 20190992 **Version*** 4

Regional Office* Central Office - (919) 707-9000

Reviewer List* Rob Ridings

Pre-Filing Meeting Request submitted 1/4/2021

Contact Name* Jason Dilday

Contact Email Address* jldilday@ncdot.gov

Project Name* U-2719 (Widening of I-440 from Wade Avenue to Walnut Street)

Project Owner* NCDOT

Project County* Wake

Owner Address:

Street Address

1000 Birch Ridge Drive

Address Line 2

City

Raleigh

Postal / Zip Code

27610

State / Province / Region

NC

Country

USA

Is this a transportation project?* ☒ Yes ☐ No

Type(s) of approval sought from the DWR:

- ☒ 401 Water Quality Certification - Regular ☐ 401 Water Quality Certification - Express
☐ Individual Permit ☐ Modification
☐ Shoreline Stabilization

Does this project have an existing project ID#?*

☒ Yes ☐ No

Please list all existing project ID's associated with this projects.*

20190992v2

Do you know the name of the staff member you would like to request a meeting with?

Rob Ridings

Please give a brief project description below.*

Meeting not required. Project has already been permitted. Prefiling submitted in case future modifications are needed.

Please give a couple of dates you are available for a meeting.

1/11/2021

Please attach the documentation you would like to have the meeting about.

pdf only

By digitally signing below, I certify that I have read and understood that per the Federal Clean Water Act Section 401 Certification Rule the following statements:

- This form completes the requirement of the Pre-Filing Meeting Request in the Clean Water Act Section 401 Certification Rule.
- I understand by signing this form that I cannot submit my application until 30 calendar days after this pre-filing meeting request.
- I also understand that DWR is not required to respond or grant the meeting request.

Your project's thirty-day clock started upon receipt of this application. You will receive notification regarding meeting location and time if a meeting is necessary. You will receive notification when the thirty-day clock has expired, and you can submit an application.

Signature

A digital signature of Jason Dilday, rendered in a cursive script, is displayed within a light gray rectangular box.

Submittal Date

1/4/2021



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

April 23, 2021

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

ATTN: Mr. Eric Alsmeyer, NCDOT Regulatory Coordinator

Subject: **Request for Modification to the Regional General Permit Number 198200031, Section 401 Water Quality Certification, and Neuse Buffer Authorization for U-2719 – Improve Existing I-440 Beltline, from south of SR 1313 (Walnut Street) to north of SR 1728 (Wade Avenue). Debit WBS 35869.1.2**

Reference: Regional General Permit Number 31 Verification (Action ID: SAW-2012-01414) dated August 21, 2019 and modified on July 17, 2020

401 Water Quality Certification and Neuse Buffer Authorization (DWR Project No. 20190992) dated August 26, 2019; Modification to the Neuse Buffer Authorization (DWR Project No. 20190992 ver 2) dated May 12, 2020 and modified on July 15, 2020 (DWR Project No. 20190992 ver 3)

Dear Sir:

The North Carolina Department of Transportation (NCDOT) requests modification to the existing Section 404 Regional General Permit Number 31, Section 401 Water Quality Certification, and Riparian Buffer Authorization for the widening and improving of I-440/US 1 from SR 1313 to SR 1728 (TIP Project U-2719) in Wake County. This project is currently under construction.

This modification request is a result of the NCDOT left with no choice but to breach the dam of White Oak Lake (Lake Cramer) located northeast of the Jones Franklin Interchange with I-440. The North Carolina Department of Environmental Quality – Dam Safety issued a notice to the owners of the dam, including the NCDOT, that the dam is deficient and has been categorized as high hazard. Based on feedback from NCDEQ, the condition of the dam and spillway is such that there is no feasible repair and replacement of the dam and spillway would likely be necessary. The NCDOT, as a policy, does not allow dams for private lakes or ponds to be located within the highway right of way as it constitutes an unnecessary risk to NCDOT facilities and presents an unacceptable cost to maintain. It should be noted that the City of Raleigh had plans to reconstruct this dam and spillway outside of NCDOT right of way as part of their multi-phased project to reduce flooding and improve water quality in the Simmons Branch watershed. However, the City encountered obstacles and was unable to complete the project. An alternative to reconstruction of the dam and spillway would be to breach the dam, thereby draining White Oak Lake.

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

Telephone: (919) 707-6000
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

Because the NCDOT project clips a corner of the dam due to the road widening it has fallen on NCDOT to work with Dam Safety on breaching the dam. Breaching the dam and draining the lake is a requirement in the short term for safety for all downstream properties. This modification is a result of additional impacts due to breaching the dam and stabilizing the area.

The modification results in 2.69 acres(ac) of additional wetland impact, 445 linear feet (lf) of additional permanent stream impacts, a reduction of 28 lf of temporary stream impacts, and an increase of 25,984 square feet (sq ft) of riparian buffer impacts in Zone 1 and an increase of 11,666 sq ft in Zone 2. The total project impacts for U-2719 include 2.73 ac of permanent wetland impacts, no temporary wetland impacts, no hand clearing in wetlands, 2,000 lf of permanent stream impacts, 660 lf of temporary stream impacts, and 163,081 sq ft of buffer impacts (110,006 sq ft in Zone 1 and 53,075 sq ft in Zone 2).

Please see the enclosed revised permit drawings and updated impact summary sheets which reflect the changes in impacts as well as the following updated tables and explanation.

Explanation of Permit Impact Site Modifications Being Requested

The USACE shared with NCDOT staff that the City of Raleigh had a jurisdictional determination (JD) on their proposed project. NCDOT was able to obtain the wetland and stream files approved by the USACE which is now incorporated into the NCDOT plan set and permit impact sheets. A few of the impact changes detailed in this modification are due to the recently obtained JD and are noted below.

Site 6 (Sheet 14) – Site 6 has an increase of 0.04 ac of wetland impacts due to mechanized clearing. This impact is a result of the additional rock stabilization needed along the roadway fill slope and access for breaching the dam. The impact at Site 6 is now 0.01 ac of permanent fill and 0.05 ac of mechanized clearing.

Site 7 (Sheet 14) – Site 7 has an increase in permanent stream impacts and buffer impacts due in part to the new delineation as well as the extended impacts related to the dam breach. The increase in permanent stream impacts is due to relocation and stabilization of the stream once the dam is breached. The new stream impact for Site 7 is 298 lf of permanent stream impact from the dam breach to the inlet, 97 lf of outlet protection, and 22 lf of temporary stream impact. This is an increase in permanent stream impact by 360 lf and a reduction of 28 lf of temporary impact for Site 7.

Buffer Site 7 (Sheet 14) – Site 7 buffers have changed as they will now be impacted by the White Oak Lake dam breach and access requirements. The total impact in Zone 1 is 14,399 sq ft and Zone 2 is 6,548 sq ft for Site 7. This is an increase in Zone 1 impact by 12,939 sq ft and 5,677 sq feet in Zone 2. Site 7 buffer impacts on the outlet side were reviewed and it was determined that those have been previously cleared and are no longer illustrated as an impact.

Site 7A (Sheet 14/14B) – Site 7A has been added due to the need for extended outlet stabilization in Simmons Branch and access. The wetland will have a small amount of fill (<0.01 ac) due to the rock stabilization and the remaining portion (<0.01 ac) is shown as mechanized clearing. The wetland is within the maintained utility easement and has already been cleared through ongoing utility maintenance.

Site 9 (Sheet 14/14A) – Site 9 was slightly different based on the old JD files in the original permit application. This channel has been updated with the new JD files as described above which extends the channel approximately 85 lf. This reach was also previously impacted due to bank stabilization; however, with the changes in design at this location it was determined that the entire channel would require rock armoring to stabilize the area. This is now shown as a permanent fill/stabilization impact on the summary impact table. There is an 85 lf increase in impact due to the new JD file. The new impact is 147 lf which is shown as permanent fill/stabilization impact.

Buffer Site 9 (Sheet 14/14A) – Site 9 buffers have also changed as a result of the new JD file. Site 9 buffer impacts have increased in Zone 1 by 2,708 sq ft to 6,639 sq ft. Zone 2 buffers have increased by 1,392 to 2,738 sq ft. No additional buffer mitigation is proposed for the additional buffers associated with the new JD file, as redesign and impacts are linked to the dam breach impacts which were previously considered non-mitigable by NCDWR.

Site 10 and Site 11 (Sheet 14/14A) – Previous wetland Sites 10 (WJ) and 11 (WI) have been removed due to the most recent JD files discussed above. The area that was previously illustrated as wetland is part of stream SU-I in the revised delineation. This results in a reduction in wetland impact by <0.01 ac of excavation and <0.01 ac of mechanized clearing for Site 10 and <0.01 ac of excavation and <0.01 ac of mechanized clearing for Site 11.

Buffer Site 10 (Sheet 14/14A) – Previously there were no impacts illustrated with the buffers around White Oak Lake due to the City of Raleigh project. The buffer impacts illustrated at Site 10 are associated with construction and access for the dam breach at White Oak Lake. This results in 10,337 sq feet of Zone 1 impacts and 4,597 sq ft of Zone 2 impacts.

Site 22 (Sheet 14/14A/29A) – Site 22 was added to illustrate the open water impacts associated with breaching the dam of White Oak Lake. The open water impact associated with the breach is 5.10 ac. This site also includes impacts to the fringe wetlands around the lake due to the drawdown of the lake. This area has been hatched on the attached plan sheets and the 2.65 ac of wetland fringe has been noted at the bottom of the summary impact table since it does not match any of the wetland impact types illustrated on the summary table.

Revised Permit Impact Tables

The following tables illustrate the updates to the impacts that were previously provided in the electronic PCN and Modification Request.

Revised U-2719 Jurisdictional Resources Impacts Table

Impact Type	Riparian Wetland Temp./ Perm. (ac)	Non-Riparian Wetland Temp./ Perm. (ac)	Isolated Wetlands (ac)	Ponds (ac)	Stream (lf)		Riparian Buffer (sq. ft.) Zone 1/2
					Perm.	Temp.	
Neuse River Basin (HUC 03020201)	0.0/ 2.73	0.0	0.0	6.35	2,000	660	110,006/ 53,075

Bolded impact amounts represent a change from the 404 (SAW-2012-01414) issued on August 21, 2019 and modified July 16, 2020, 401 WQC (20190992) issued August 26, 2019 and modified July 15, 2020, and Riparian Buffer Authorization issued August 26, 2019 and modified May 12, 2020 and July 15, 2020.

U-2719 Wetland Impacts (Revised)

The total permanent wetland impact for U-2719 increased from 0.04 ac in the most recent 404/401 Authorizations to 2.73 ac due to this modification. Most of the increase is due to impacts to the fringe wetlands around White Oak Lake. The other changes are necessary due to construction access, a result of the additional stabilization required due to the dam breach, or a result of the new delineation file. See the revised stream impact table below.

Revised U-2719 Wetland Impacts Table

Permit Drawing Site Number	NRTR Label	Impact Type	Wetland Type	Permanent Impacts (ac.)	Temporary Impacts (ac.)
2	WK	Mechanized Clearing	Riparian	0.01	-
6	WF	Fill	Riparian	0.01	-
6	WF	Mechanized Clearing	Riparian	0.05	-
7A	WH	Fill	Riparian	<0.01	-
7A	WH	Mechanized Clearing	Riparian	<0.01	-
22	WZAA	Lake Drawdown	Riparian	2.65	-
Total Impacts				2.73	-

Bolded impact amounts represent a change from the 404 (SAW-2012-01414) issued on August 21, 2019 and modified July 16, 2020, 401 WQC (20190992) issued August 26, 2019 and modified July 15, 2020, and Riparian Buffer Authorization issued August 26, 2019 and modified May 12, 2020 and July 15, 2020.

U-2719 Open Water (Ponds) Impacts (Revised)

The amount of open water impacts increased by 5.10 ac due to the draining of White Oak Lake. The new open water impact is 6.35 ac.

Revised U-2719 Open Water Impacts Table

Permit Drawing Site Number	NRTR Label	Impact Type	Permanent Surface Water Impacts (Ponds) (ac)
5	OWD	Draining/Fill Pond	1.25
22	OWC	Dam Breach	5.10
Total Impacts			6.35

Bolded impact amounts represent a change from the 404 (SAW-2012-01414) issued on August 21, 2019 and modified July 16, 2020, 401 WQC (20190992) issued August 26, 2019 and modified July 15, 2020, and Riparian Buffer Authorization issued August 26, 2019 and modified May 12, 2020 and July 15, 2020.

U-2719 Stream Impacts (Revised)

The total permanent stream impact for U-2719 increased from 1,555 lf in the most recent 404/401 Authorizations to 2,000 lf. This modification results in 445 lf of additional permanent stream impact from stabilization required and a reduction of 28 lf of temporary stream impact due to changes at Permit Sites 7 and 9. See the revised stream impact table below.

Revised U-2719 Stream Impacts Table

Permit Site No.	Stream Name	Perennial (P) or Intermittent (I)	Type of Jurisdiction	Type of Impact	Average Stream Width (feet)	Impact Type	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temporary (ft)
1	SAK	I	Both	Rip Rap at 18" Outlet	3	P/T	7	10
3	SX	P	Both	Culvert Clean Out	13	P/T	9	41
				Bank Stabilization			93	97
4	SW	P	Both	Rip Rap in Stream	10	T	0	112
7	ST	P	Both	Outlet Stabilization	13	P/T	97	22

Permit Site No.	Stream Name	Perennial (P) or Intermittent (I)	Type of Jurisdiction	Type of Impact	Average Stream Width (feet)	Impact Type	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temporary (ft)
7	ST	P	Both	Inlet Stabilization	13	P	298	0
8	SV	I	Both	Bank Stabilization	4	P	244	0
9	SU	I	Both	Fill/Stabilization	4	P	147	0
12	SS	P	Both	Channel Improvement/Bank Stabilization	5	P/T	34	65
13	SR	P	Both	Fill/Outlet Stabilization	18	P/T	117	50
14	SO	P	Both	Roadway Fill/Outlet Stabilization	6	P/T	388	40
				Bank Stabilization			85	70
				Utility-Bank Stabilization			35	0
15	SP	P	Both	30” CSP	8	P	56	10
16	SN	I	Both	36” WSP and 36” CSP	13	P/T	70	24
17	SC	P	Both	8’ x 8’ Culvert Extension/Stab.	8	P/T	97	40
18	SAN	P	Both	Lateral Ditch	8	P/T	31	39
19	SE	I	Both	48” RCP Extension	4	P/T	29	22
20	SW	P	Both	14’ x 7’ RCBC	10	P	98	0
				Bank Stabilization		P/T	65	18
Total Jurisdictional Ditch Impact in Square Feet							0	
Total Permanent Stream Impacts							2,000	
Total Temporary Stream Impacts							660	
Total Stream and Ditch Impacts							2,660	

Bolded impact amounts represent a change from the 404 (SAW-2012-01414) issued on August 21, 2019 and modified July 16, 2020, 401 WQC (20190992) issued August 26, 2019 and modified July 15, 2020, and Riparian Buffer Authorization issued August 26, 2019 and modified May 12, 2020 and July 15, 2020.

U-2719 Riparian Buffer Impacts (Revised)

The riparian buffer impacts for U-2719 increased overall from 125,431 sq ft to 163,081 sq ft. There is a 35,473 sq ft increase in allowable buffer impacts from 71,187 sq ft documented in the most recent buffer modification to 106,660 sq ft. There is an increase in mitigable buffers resulting from changes related to the new jurisdictional file provided by the City which changed SU-I. The most recent mitigable buffer impact for U-2719 was 54,244 sq ft. The new mitigable buffer impact for the project is 56,421 sq ft, an increase of 2,177 sq ft. See the revised riparian buffer impact table below.

Revised U-2719 Riparian Buffer Impacts Table

Site No.	Impact Type	Per or Temp	Stream name	Buffer mitigation required?	Zone 1 impact (ft2)	Zone 2 impact (ft2)
1	Rip Rap at 18" Outlet, allowable	P	SAK	No	1,272	0
3	Culvert Clean Out, allowable	P	SX	No	1,753	212
3	Bank Stabilization, allowable	P	SX	No	3,612	1,923
4	Rip Rap in Stream, allowable	P	SW	No	5,604	4,248
4	Rip Rap in Stream, allowable w/ mitigation	P	SW	Yes	3,711	0
7	White Oak Lake dam breach, allowable	P	ST	No	14,399	6,548
9	Channel Stabilization, allowable w/ mitigation	P	SU	Yes	3,391	1,346
9	Channel Stabilization, allowable	P	SU	No	2,708	1,392
10	White Oak Lake dam breach, allowable	P	OWC	No	10,337	4,597
12	Channel Imp./Bank Stab., allowable	P	SS	No	6,199	3,968
13	Roadway Fill/Outlet Stabilization, allowable w/ mitigation	P	SR	Yes	7,989	6,169
14	Roadway Fill, allowable	P	SO	No	6,846	1,384
14	Roadway Fill, allowable w/ mitigation	P	SO	Yes	14,827	7,423
14	Utility, allowable	P	SO	No	4,075	1,396
15	30" CSP, allowable	P	SP	No	3,767	3,730
16	36" WSP & 36" CSP, allowable	P	SN	No	3,379	367
16	36" WSP & 36" CSP, allowable w/ mitigation	P	SN	Yes	775	206
17	8'x8' Culvert Extension/Stab., allowable	P	SC	No	3,660	1,592
18	2' Base Lateral Ditch, allowable w/ mitigation	P	SAN	Yes	3,035	2,070
19	48" RCP Extension, allowable	P	SE	No	2,179	926
20	14' x 7' RCBC, allowable	P	SW	No	5,515	3,172
21	Bank Stabilization, allowable w/ mitigation	P	SC	Yes	433	406
Total Allowable Buffer Impact					72,597	34,063
Total Mitigable Buffer Impact					37,409	19,012
TOTAL COMBINED BUFFER IMPACT					110,006	53,075

Bolded impact amounts represent a change from the 404 (SAW-2012-01414) issued on August 21, 2019 and modified July 16, 2020, 401 WQC (20190992) issued August 26, 2019 and modified July 15, 2020, and Riparian Buffer Authorization issued August 26, 2019 and modified May 12, 2020 and July 15, 2020.

Compensatory Mitigation

NCDOT evaluated options to mitigate for losses due to the dam breach on White Oak Lake but there were a number of factors that led to the determination that onsite mitigation was not feasible. The following bullet list includes several of the reasons:

- NCDOT does not own the property and will have no access to the site once the noise wall is installed. Additionally the property is not for sale nor would it be affordable if it were available for purchase. The easement settlement price alone was approximately \$95,000.
- The Attorney General approved letters to property owners which presents the current design and the promise that the Dam Safety notice requiring breaching of the existing dam will not prevent White Oak Lake, Inc., the City of Raleigh, or other entities from rebuilding a new dam outside of the NCDOT right of way at any time in the future. Onsite mitigation would directly go against that letter.
- Right of way negotiations or design and construction beyond what is currently designed would be timely and NCDOT must meet the Dam Safety deadline requirement of July 2021.

Please see the revised N.C. Division of Mitigation Services acceptance letter to cover the additional impacts of this modification. During recent discussions with the USACE, it was determined that mitigation would not be required for the additional stream impacts but the additional wetland impacts would require mitigation at a 1:1 ratio. The NCDWR also stated that this modification would not require additional mitigation for the buffer impacts associated with the dam breach. The following table illustrates the revised compensatory mitigation needs.

Revised U-2719 Proposed Compensatory Mitigation Table

Mitigation Type	Riparian Wetland (ac)	Non-Riparian Wetland (ac)	Isolated Wetlands (ac)	Stream (lf)	Riparian Buffer Calculation (sq. ft.)		Riparian Buffer Total (sq. ft.)
					Zone 1	Zone 2	
Neuse River Basin (HUC 03020201)	2.73	0.0	0.0	841	35,753 x 3.0 = 107,259	18,491 x 1.5 = 27,737	134,996

Bolded impact amounts represent a change from the 404 (SAW-2012-01414) issued on August 21, 2019 and modified July 16, 2020, 401 WQC (20190992) issued August 26, 2019 and modified July 15, 2020, and Riparian Buffer Authorization issued August 26, 2019 and modified May 12, 2020 and July 15, 2020.

Regulatory Approvals

All other proposed impacts remain the same as in our PCN submitted on July 23, 2019 unless approved via the previous modification issued by the NC Division of Water Resources. The Department requests that these revised impacts and the remainder of the previously permitted impacts be issued under the recently approved RGP 31 (effective May 26, 2020).

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Jason Dilday at either jldilday@ncdot.gov or (919) 707-6111.

Sincerely,

DocuSigned by:

Mack C. Rivenbark III

AAAD1248B309416...

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

for

ROY COOPER
Governor
DIONNE DELLI-GATTI
Secretary
TIM BAUMGARTNER
Director



April 15, 2021

Mr. Philip S. Harris, P.E., CPM
Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

Subject: DMS Mitigation Acceptance Letter for Additional Impacts:

U-2719, Raleigh – I-440 / US 1 Widening from South of SR 1313 (Walnut Street) to North of SR 1728 (Wade Avenue) in Raleigh, Wake County

References: USACE 404 GP 31 issued August 21, 2019 and modification issued July 16, 2020 (USACE Action ID 2012-01414)

NCDWR 401 Water Quality Certification issued August 26, 2019 and modification issued July 15, 2020 (ID 2019-0992)

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the wetland mitigation for the subject project. Based on the information supplied by you on April 14, 2021, the impacts are located in CU 03020201 of the Neuse River basin in the Central Piedmont (CP) Eco-Region, and are as follows:

Table 1 – Additional Impacts (feet / acres)

Neuse 03020201 CP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0.000	0.000	0.000	2.730	0.000	0.000	0.000	0.000

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

This additional impact and associated mitigation needs were not projected by the NCDOT in the 2021 impact data. DMS is currently providing stream and buffer mitigation for the impacts associated with this project located in cataloging unit 03020201 of the Neuse River basin as required by the 404 and 401 permits issued in 2019 and 2020, as shown in the below table (in mitigation credits)



North Carolina Department of Environmental Quality | Division of Mitigation Services
217 West Jones Street | 1652 Mail Service Center | Raleigh, North Carolina 27699-1652
919.707.8976

Table 2 – Current Permitted Impacts and Associated Mitigation Requirements provided by DMS (based on issued permits) and Revised Anticipated Impacts (based on mitigation request)

Impact Type	Total Permitted Impacts (feet / acre / sq ft)	Mitigation Provided by DMS per Issued Permits (Credits)	Additional Impact (for approval)	Revised Total Impacts*
Stream (warm)	841.000	1,682.000	0.000	841.000
Riparian	0.000	0.000	2.730	2.730
Buffer – Zone 1	35,753.000	107,259.000	0.000	35.753.000
Buffer – Zone 2	18,491.000	27,737.000	0.000	18,491.000

*Some of the additional impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details.
DMS will provide the amount of mitigation as determined by the regulatory agencies.

This mitigation acceptance letter replaces the mitigation acceptance letter issued on July 3, 2019. DMS commits to implementing sufficient wetland mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies using the delivery timeline listed in Section F.3.c.iii of the In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from DMS.

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

Sincerely,



James B. Stanfill
DMS Asset Management Supervisor

cc: Mr. Monte Matthews, USACE – Raleigh Regulatory Field Office
Ms. Amy Chapman, Division of Water Resources, Wetlands/401 Unit
File: U-2719 Additional 2



Submitted 4/23/2021

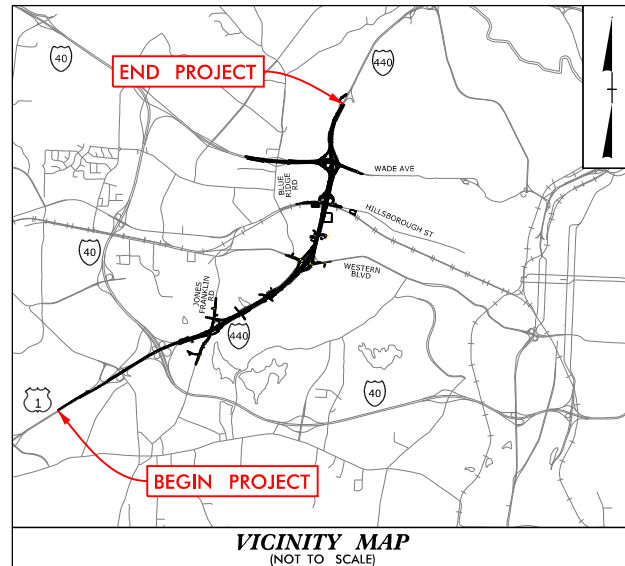
09/08/99

TIP PROJECT: U-2719 /U-4437

CONTRACT: C204157

PLOT DRIVER: NCDOT_plt_color_eng_100.plt
USER: NWOMACK
PENTABLE: NCDOT_TSH.tbl
DATE: 4/5/2021
TIME: 12:12:31 PM
FILE: Lane_Construction_Corp\Lane_I-440_Widening\6.0_CAD_BIM\6.2_WIP\U-2719\Hydraulics\PERMITS_Environmental\Drawings\U2719_PRM_WET_TSH.dgn

See Sheet 1A-1 For Sheet Symbology



VICINITY MAP
(NOT TO SCALE)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAKE COUNTY

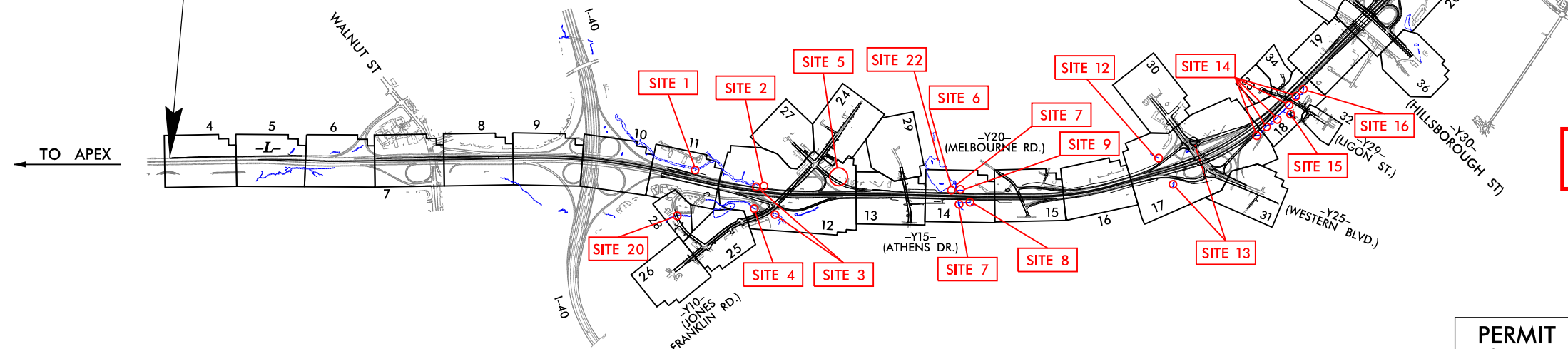
LOCATION: I-440 /US 1 FROM SOUTH OF SR 1313 (WALNUT STREET)
TO NORTH OF SR 1728 (WADE AVENUE)

TYPE OF WORK: DESIGN-BUILD AS SPECIFIED IN THE SCOPE OF WORK
CONTAINED IN THE REQUEST FOR PROPOSALS

WETLAND & STREAM IMPACTS
PERMIT MODIFICATION
04/02/2021

BEGIN TIP PROJECT U-2719
BEGIN CONSTRUCTION
-L- STA. 124 + 52.06

END TIP PROJ. U-2719
END CONSTRUCTION
-L- STA. 460 + 21.69



Permit Modification Drawing
Revised on (04-02-2021)

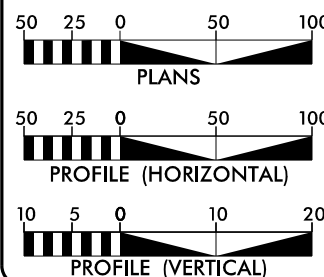
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St., Suite 900 Raleigh, NC 27601
N.C.B.E.L.S. License Number: F-0116

PERMIT DRAWING
SHEET 1 OF 48

LANE

GRAPHIC SCALES



DESIGN DATA

ADT 2018 = 144,810
ADT 2040 = 183,700
K = 10 %
D = 55 %
T = 9 % *
V = 70 MPH
* TTST = 5% DUAL = 4%
FUNC CLASS =
INTERSTATE
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-2719 /U-4437 = 6.087 MILES
LENGTH STRUCTURES TIP PROJECT U-2719 /U-4437 = 0.162 MILES
TOTAL LENGTH TIP PROJECT U-2719 /U-4437 = 6.249 MILES

NCDOT CONTACT: DAVID HERING, PE
DESIGN-BUILD UNIT - PROJECT ENGINEER

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

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
OCTOBER 2, 2018

LETTING DATE:
OCTOBER 2, 2018

PAUL MEEHAN, PE
PROJECT ENGINEER

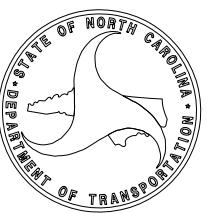
ERSKINE BROOKS, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN
ENGINEER

SIGNATURE: P.E.



LEGEND

- TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- MECH DENOTES MECHANIZED CLEARING
- F F DENOTES FILL IN WETLAND
- S S DENOTES IMPACTS IN SURFACE WATER
- E E DENOTES EXCAVATION IN WETLAND
- LAKE DENOTES IMPACTS DUE TO LAKE DRAWDOWN

LANE

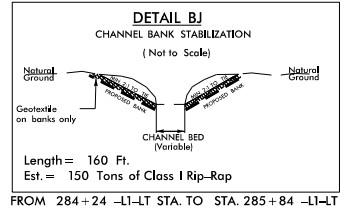
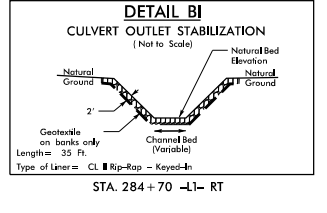
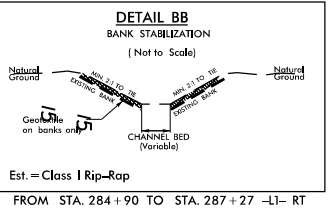
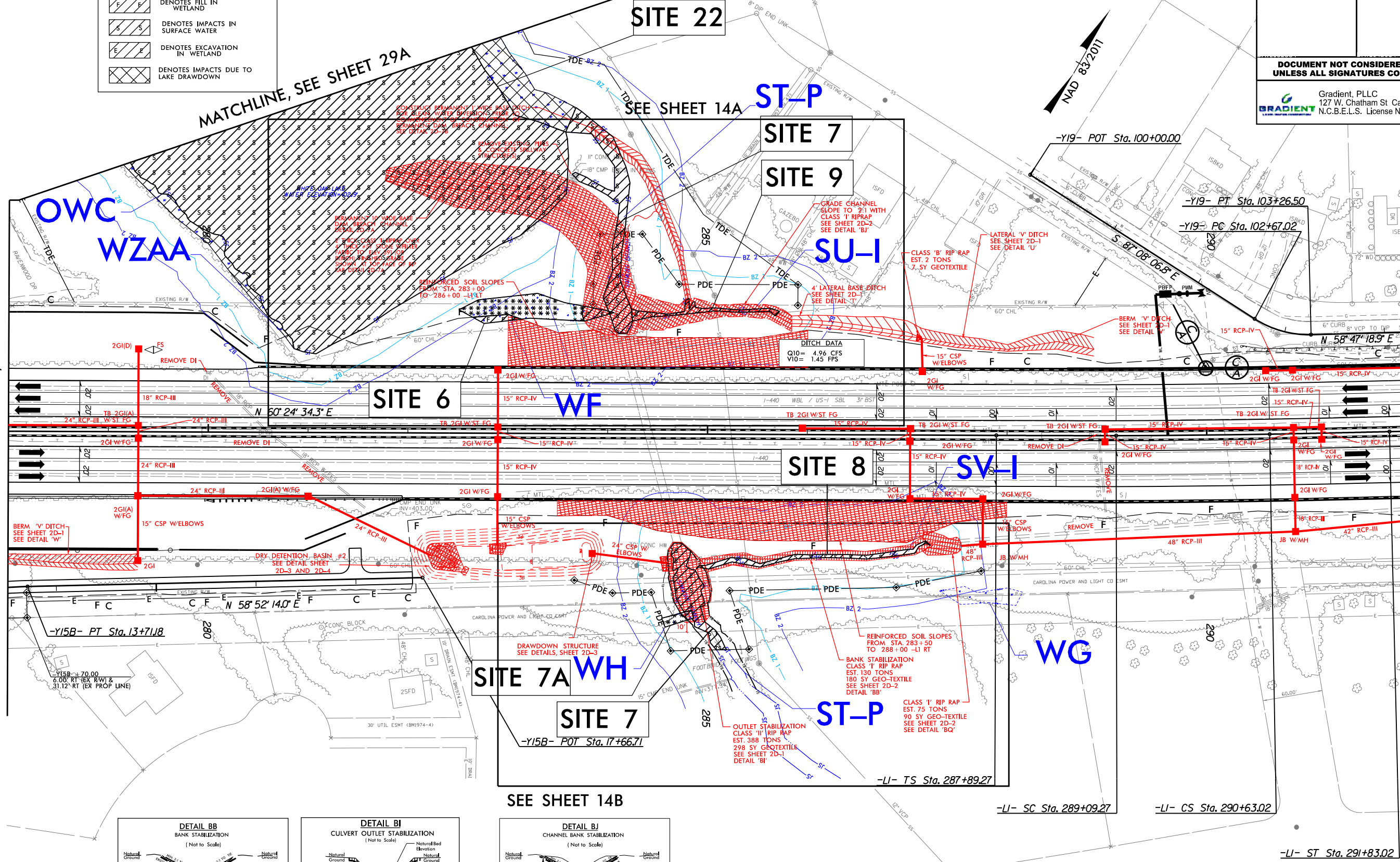


HDR Engineering, Inc. of the Carolinas
555 Fayetteville St. Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
U-2719	14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Gradient, PLLC 127 W. Chatham St. Cary, NC 27511 N.C.B.E.L.S. License Number: P-1875	

MATCHLINE -L- STA. 278+00, SEE SHEET 13

MATCHLINE -L- STA. 292+00, SEE SHEET 15



Permit Modification Drawing
Revised on (04-02-2021)

PERMIT DRAWING
SHEET 16 OF 48

LEGEND

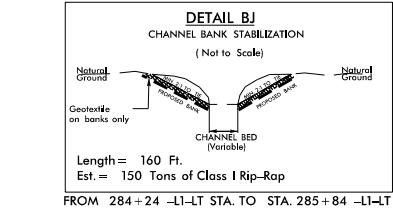
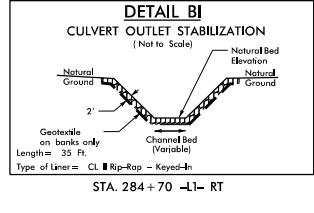
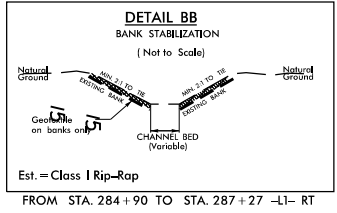
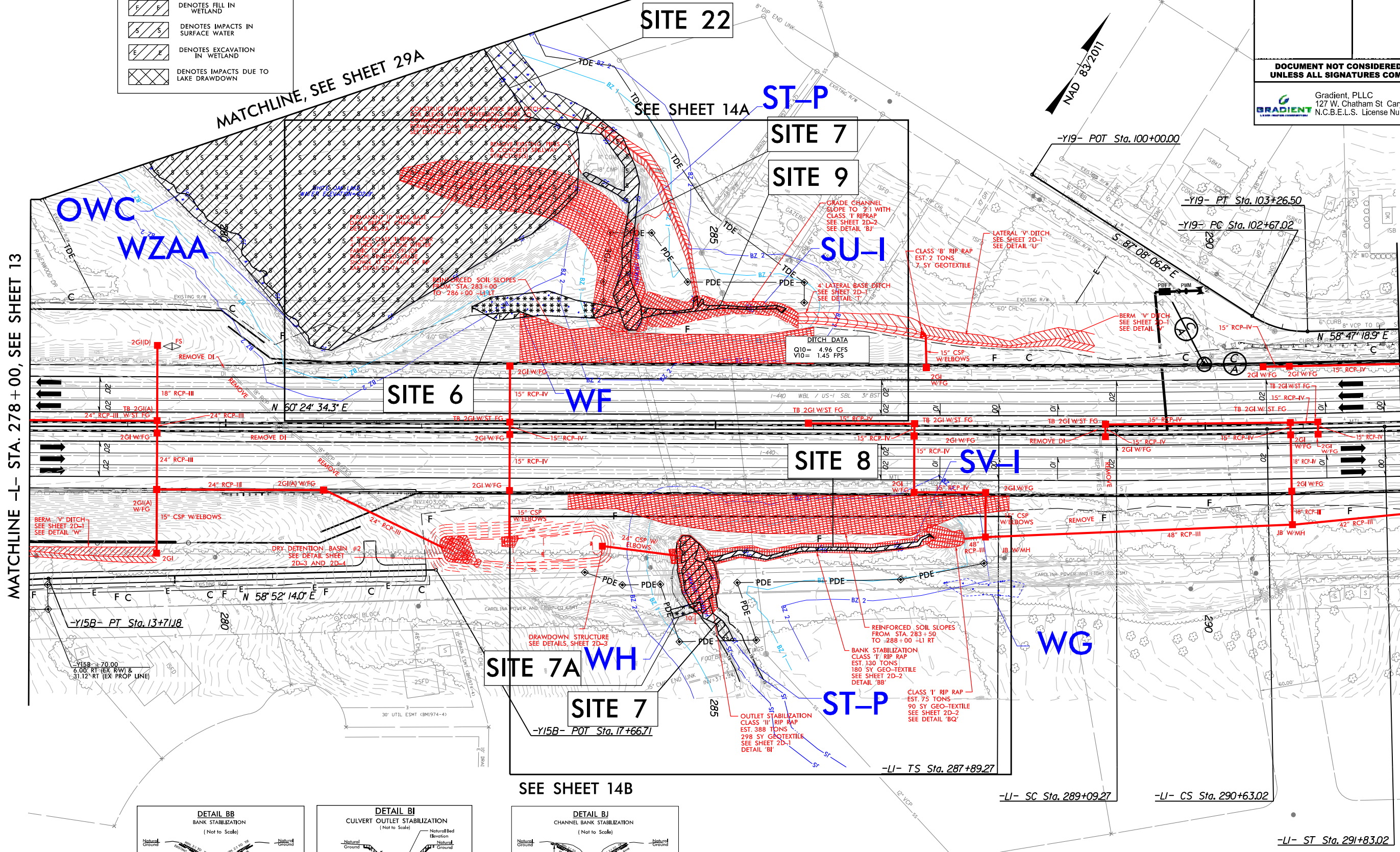
- TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- MECH DENOTES MECHANIZED CLEARING
- F F DENOTES FILL IN WETLAND
- S S DENOTES IMPACTS IN SURFACE WATER
- E E DENOTES EXCAVATION IN WETLAND
- LAKE DENOTES IMPACTS DUE TO LAKE DRAWDOWN

LANE



HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
U-2719	14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Gradient, PLLC 127 W. Chatham St Cary, NC 27511 N.C.B.E.L.S. License Number: P-1875	




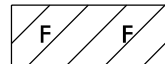
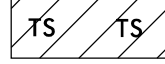
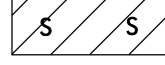
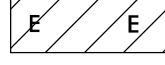

Permit Modification Drawing
Revised on (04-02-2021)

PERMIT DRAWING
SHEET 17 OF 48

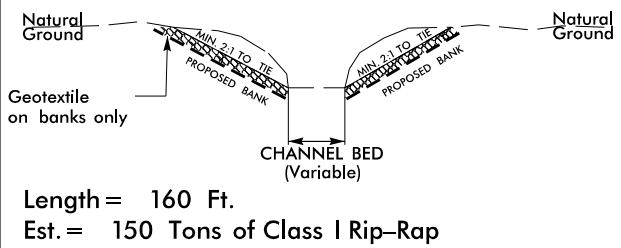
PLOT DRIVER: NCDOT_pdf_color_eng_100.plt
USER: CMYERS
DATE: 4/5/2021
TIME: 12:22:27 PM
FILE: Lane_Construction_Corplane_I-440_Widening_6.0_CAD.BTM 6.2 WTP-U-2719-Hydraulics-PERMITTS_Envr-onmental-Drawings-U2719-U4437_PRR_PSH.dgn

REVISIONS

LEGEND


-  DENOTES MECHANIZED CLEARING
-  DENOTES FILL IN WETLAND
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES EXCAVATION IN WETLAND
-  DENOTES IMPACTS DUE TO LAKE DRAWDOWN

DETAIL BJ CHANNEL BANK STABILIZATION (Not to Scale)



FROM 284+24 -L1-LT STA. TO STA. 285+84 -L1-LT



PROJECT REFERENCE NO. U-2719		SHEET NO. 14A	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
		HDR Engineering, Inc. of the Carolinas 555 Fayetteville St., Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	

LANE

SITE 7

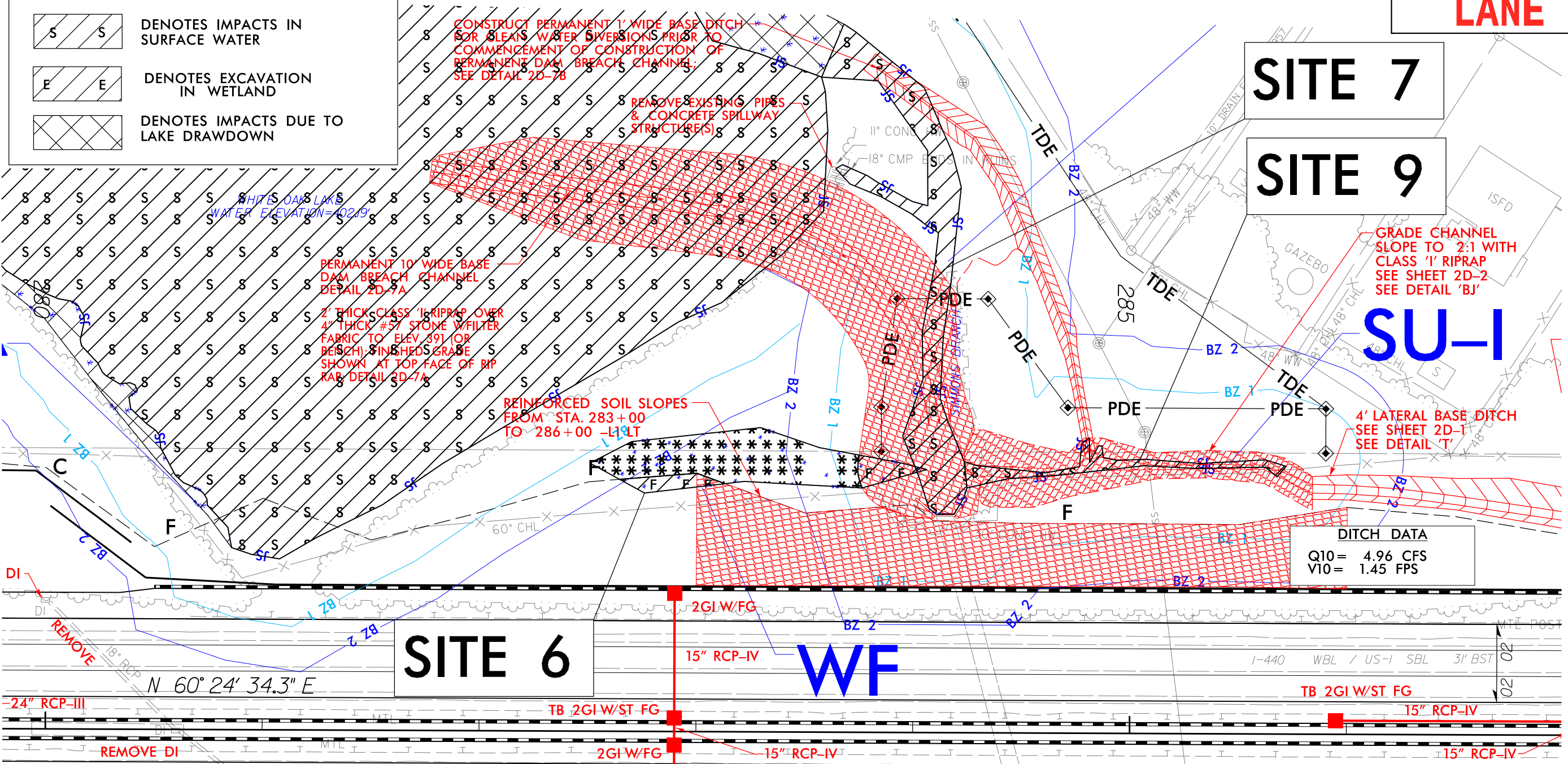
SITE 9

SU-I

WF

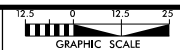
SITE 6



DITCH DATA
Q10= 4.96 CFS
V10= 1.45 FPS



Permit Modification Drawing
Revised on (04-02-2021)

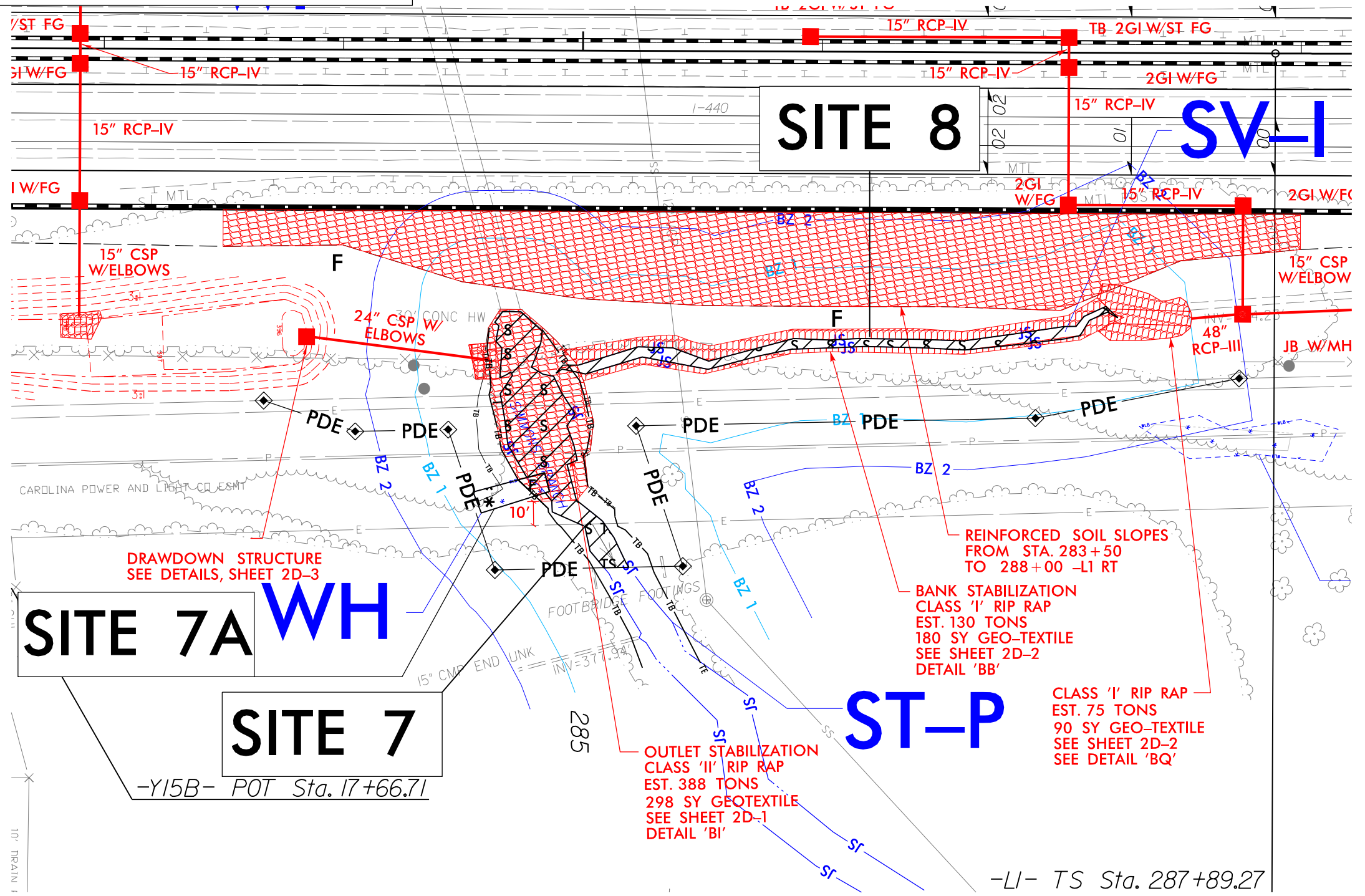
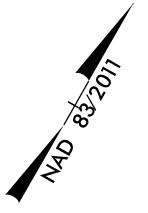
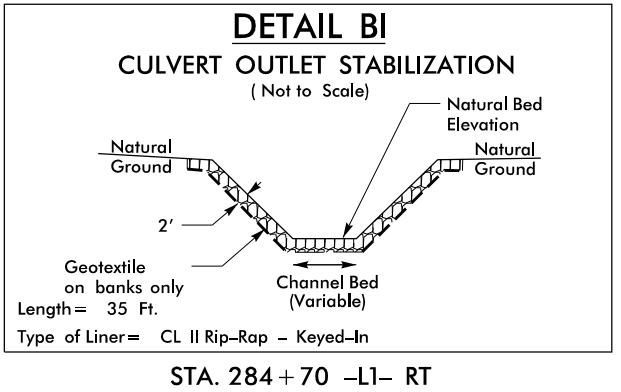
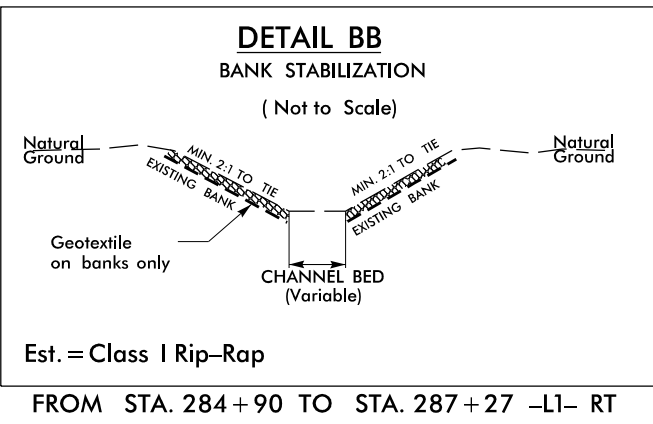
PERMIT DRAWING
SHEET 18 OF 48



PROJECT REFERENCE NO.		SHEET NO.	
U-2719		14B	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
 HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116			
			

LEGEND

- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING




PLOT DRIVER: NCDOT_color_eng-100.plt
USER: CMYERS
FILE: Lane_Construction_Corp\Lane_I-440_Widening\6.0_CAD\BIM\6.2_WIP\U-2719\Hydraulics\PERMITS\Environmental\Drawings\U2719-U4437_PRM_PSH.dgn
PENTABLE: NCDOT_permits.NCON.tbl
TIME: 2:45:12 PM
DATE: 3/22/2021
REVISIONS

LANE

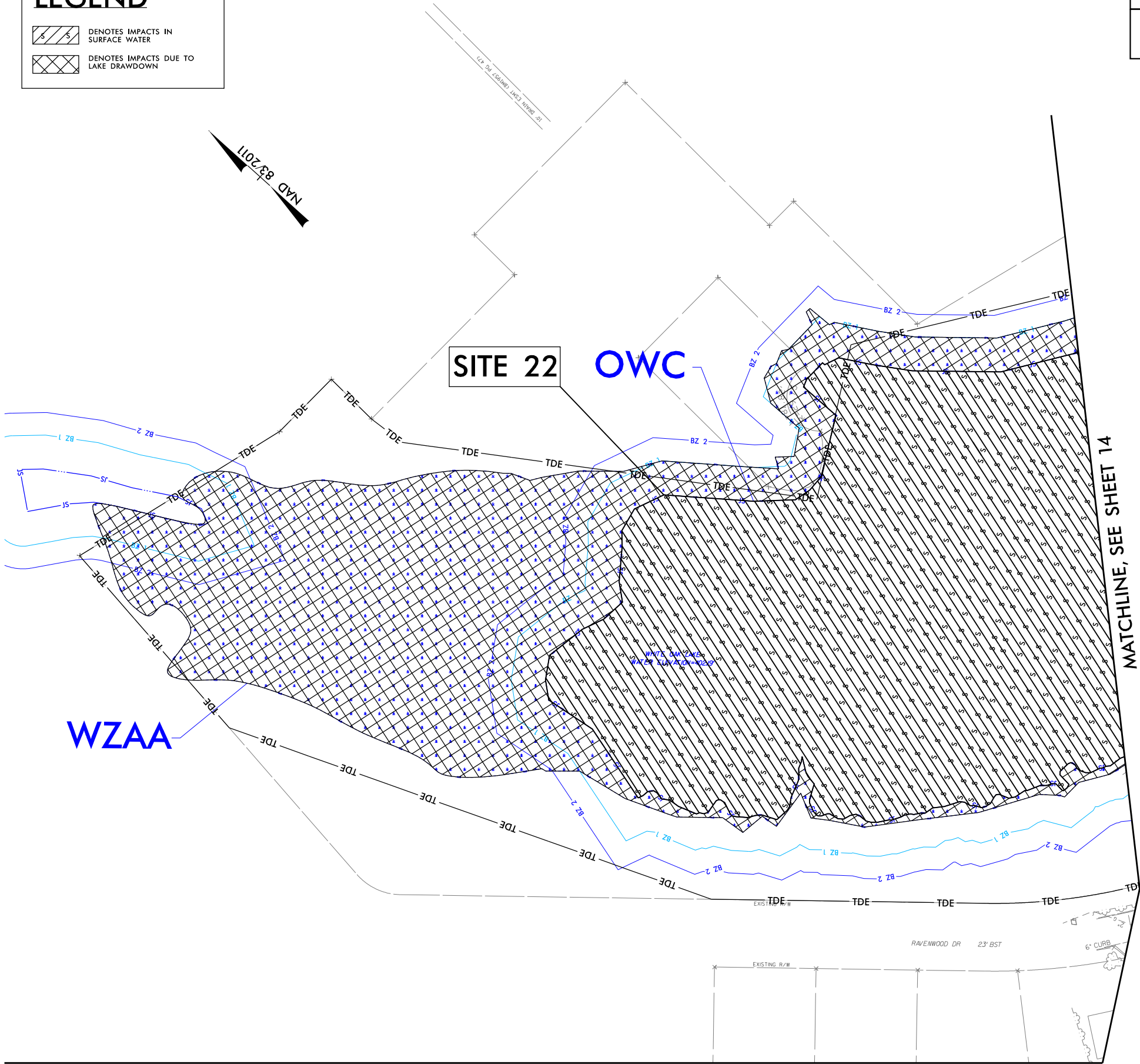


HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.		SHEET NO.	
U-2719		29A	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
Gradient, PLLC 127 W. Chatham St Cary, NC 27511 N.C.B.E.L.S. License Number: P-1875			
<div>25 12.5 0 25 50</div> <div></div> <div>GRAPHIC SCALE</div>			

LEGEND

- DENOTES IMPACTS IN SURFACE WATER
- DENOTES IMPACTS DUE TO LAKE DRAWDOWN



MATCHLINE, SEE SHEET 29

MATCHLINE, SEE SHEET 14

Permit Modification Drawing
Revised on (04-02-2021)

PERMIT DRAWING
SHEET 17A OF 48

SEE SHEET NO. 71 FOR -Y15A- PROFILE

PLOT DRIVER: NCDOT_color_eng-100.plt
USER: CMYERS
FILE: Lone_Construction_Corp\Lane_I-440_Widen\ng\6.0_CAD\BIM\6.2_WTP\U-2719\Hydraulics\PERMITS_Environmental\Drawings\U2719-U4437_PRM_PSH.dgn

REVISIONS

REV 001 - 10/27/2020: NEW SHEET; ADDED TDE ON PARCEL 71 AROUND WHITE OAK LAKE.
REV 002 - 02/17/2021: REVISED TDE ON PARCEL 71 AROUND WHITE OAK LAKE.

Submitted 4/23/2021

LEGEND



DENOTES IMPACTS IN
SURFACE WATER

DENOTES IMPACTS DUE TO
LAKE DRAWDOWN

LANE



HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.

SHEET NO.

U-2719

29A

RW SHEET NO.

**ROADWAY DESIGN
ENGINEER**

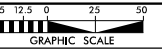
HYDRAULICS
ENGINEER

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



GRADIENT
L & SON / WALTON / CHANNAY-EN-BOIS

Gradient, PLLC
127 W. Chatham St Cary, NC 27511
N.C.B.E.L.S. License Number: P-1875



SITE 22

OWC

WZAA

MATCHLINE, SEE SHEET 14

MATCHLINE, SEE SHEET 29

Permit Modification Drawing
Revised on (04-02-2021)

PERMIT DRAWING
SHEET 17B OF 48

SEE SHEET NO. 71 FOR -Y15A- PROFILE

PLOT DRIVER: NC00T_pdf_color_eng.100.plt
PENTABLE: NC00T_permits_CON.tbl
USER: CMYERS
DATE: 4/13/2021
TIME: 2:21:32 PM
FILE: L:\one.Construction_Corp\Lane_I-440_Widening\6.0_CAD_BTW\6.2_WTP_Ur-2719\Hydraulics\PERMITS_Environmental\Drawings\U2719-U4437_PRM_PSH.dgn

REVISIONS

REV 001 - 10/27/2020: NEW SHEET; ADDED TDE ON PARCEL 71 AROUND WHITE OAK LAKE.
REV 002 - 02/17/2021: REVISED TDE ON PARCEL 71 AROUND WHITE OAK LAKE.

WETLAND AND SURACE WATER IMPACTS SUMMARY												
			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	SAK - 230+75 -L1A- Lt	Rip Rap at 18" Outlet						< 0.01	< 0.01	7	10	
2	WK - 244+95 -L1A- Lt	Lateral Ditch				0.01						
3	SX - 245+72 -L1A-	Culvert Clean Out						< 0.01	0.03	9	41	
3	SX - 245+72 -L1A-	Bank Stabilization						0.03	0.09	93	97	
4	SW - 41+85 -Y10- Rt	Rip Rap in Stream							0.03		112	
5	OWD - 21+50 -Y10RPA-	Draining/Filling Pond						1.25				
6	WF - 282+90 -L1- Lt	Roadway Fill	0.01			0.05						
7	ST - 284+75 -L1- Rt	Outlet Stabilization						0.04	< 0.01	97	22	
7	ST- 584+75 -L1- Lt	Inlet Stablization						0.08		298		
7A	WH-284+75 -L1- RT	Outlet Stabilization	< 0.01			< 0.01						
8	***SV - 286+00 -L1- Rt	Bank Stabilization						0.02		244		
9	SU - 284+50 -L1- Lt	Fill/Stabilization						0.01		147		
12	SS - 17+50 -Y25RB- Lt	Channel Imp./Bank Stab.						0.01	0.01	34	65	
13	SR -16+20 -Y25RC- Rt	Roadway Fill/Outlet Stab.						0.04	0.01	117	50	
14	**SO - 15+79 -Y25RD-	Roadway Fill/Outlet Stab.						0.05	< 0.01	388	40	
14	to 364+68 -L2RT- Rt	Bank Stabilization						0.01	< 0.01	85	70	
14	Utilities	Bank Stabilization						< 0.01		35		
15	SP - 11+90 -Y29E-	30" CSP						< 0.01	< 0.01	56	10	
16	SN - 365+75 -L3- Rt	36" WSP & 36" CSP						0.01	< 0.01	70	24	
17	SC - 433+33 -L3-	8' x 8' Culvert Extension/Stab.						0.04	< 0.01	97	40	
18	SAN - 433+00 -L3- Rt	Lateral Ditch						0.01	< 0.01	31	39	
19	SE - 466+00 -L3-	48" RCP Extension						< 0.01	< 0.01	29	22	
SHEET TOTALS*:			0.01			0.07		1.62	0.21	1837	642	0

*Rounded totals are sum of actual impacts

NOTES:

**Stream SO is being daylighted for approx. 825 LF that was previously being piped through a 66" RCP.

***Streams SV banks are being stabilized due to existing stream erosion along the banks.

Site 10 and 11 removed due to revised delineation.

Permit Modification
Revised on (04-02-2021)

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
04-02-2021
Wake County
U-2719
35869.3.1

WETLAND AND SURACE WATER IMPACTS 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)
20	SW - 18+75 -Y9-	14x7 RCBC						0.02		98		
20	SW - 18+75 -Y9-	Bank Stabilization						0.02	< 0.01	65	18	
22	OWC- 280+00 -284+00 -L1- RT	Pond Dam Breach						5.10				
		TOTAL SHEET 1	0.01			0.07		1.62	0.21	1837	642	
PROJECT TOTALS*:			0.01			0.07		6.76	0.22	2000.00	660.00	

*Rounded totals are sum of actual impacts

NOTES:

Site 22 wetland WZAA along OWC are shown as impacted due to lake drawdown. Impact area is 2.65 ac.

Permit Modification
Revised on (04-02-2021)

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
4-02-2021
Wake County
U-2719
35869.3.1

Submitted 4/23/2021

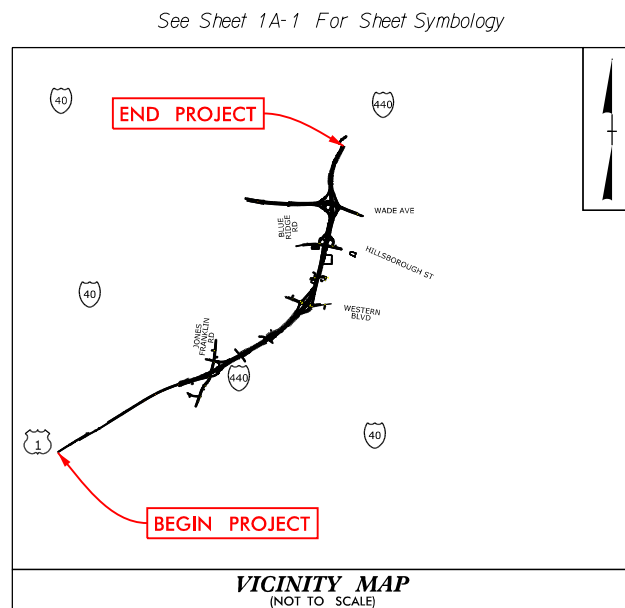
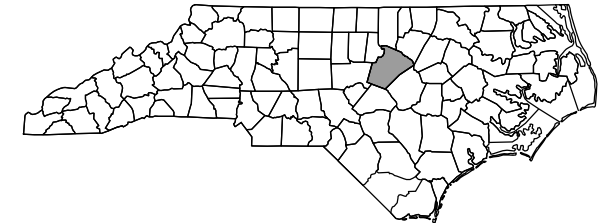
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAKE COUNTY

LOCATION: I-440 /US 1 FROM SOUTH OF SR 1313 (WALNUT STREET)
TO NORTH OF SR 1728 (WADE AVENUE)

TYPE OF WORK: DESIGN-BUILD AS SPECIFIED IN THE SCOPE OF WORK
CONTAINED IN THE REQUEST FOR PROPOSALS

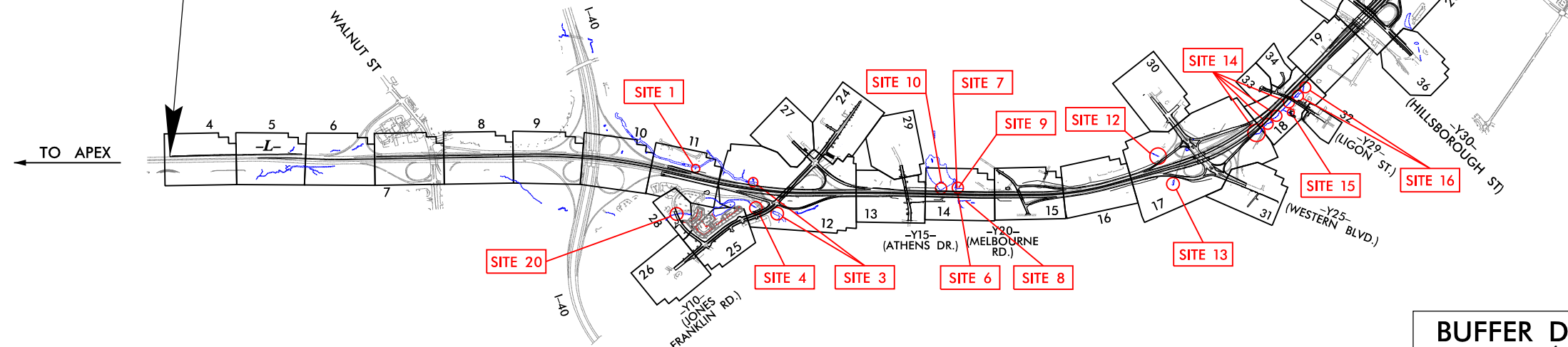
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2719	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
35869.3.1	IMSNHS-0440(10)	PE, ROW, UTILITIES	
35868.3.4	STBG-0054(030)	& CONSTR.	



**BUFFER IMPACTS
PERMIT MODIFICATION
04/02/2021**

BEGIN TIP PROJECT U-2719
BEGIN CONSTRUCTION
-L- STA. 124 + 52.06

END TIP PROJ. U-2719
END CONSTRUCTION
-L- STA. 460 + 21.69



Permit Modification Drawing
Revised on (04-02-2021)

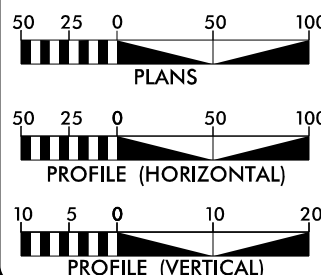
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St., Suite 900 Raleigh, NC 27601
N.C.B.E.L.S. License Number: F-0116

LANE

BUFFER DRAWING
SHEET 1 OF 23

GRAPHIC SCALES



DESIGN DATA

ADT 2018 = 144,810
ADT 2040 = 183,700
K = 10 %
D = 55 %
T = 9 % *
V = 70 MPH
* TTST = 5% DUAL = 4%
FUNC CLASS =
INTERSTATE
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-2719 /U-4437 = 6.087 MILES
LENGTH STRUCTURES TIP PROJECT U-2719 /U-4437 = 0.162 MILES
TOTAL LENGTH TIP PROJECT U-2719 /U-4437 = 6.249 MILES

NCDOT CONTACT: DAVID HERING, PE
DESIGN-BUILD UNIT - PROJECT ENGINEER

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

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
OCTOBER 2, 2018

LETTING DATE:
OCTOBER 2, 2018

PAUL MEEHAN, PE
PROJECT ENGINEER

ERSKINE BROOKS, PE
PROJECT DESIGN ENGINEER

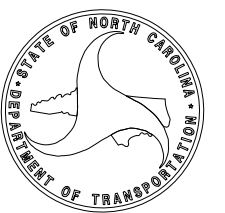
HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN
ENGINEER

SIGNATURE: P.E.

23



TIP PROJECT: U-2719 /U-4437

CONTRACT: C204157

PLOT DRIVER: NCDOT_pdf_color_eng.100.plt
USER: NWOMACK
DATE: 4/5/2021
TIME: 12:14:57 PM
FILE: Lane_Construction_Corp_Lane_I-440_Widening_V6.0_CAD_BIM_V6.2_WTP_U-2719_Hydraulics_PERMITS_EnvironmentalDrawings\Buffers\U2719_PPM_BUF_TSH.dgn

LEGEND

- MITIGABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 2
- ALLOWABLE IMPACTS ZONE 2
- ALLOWABLE IMPACTS ZONE 1
- EXISTING TRANSPORTATION FACILITY

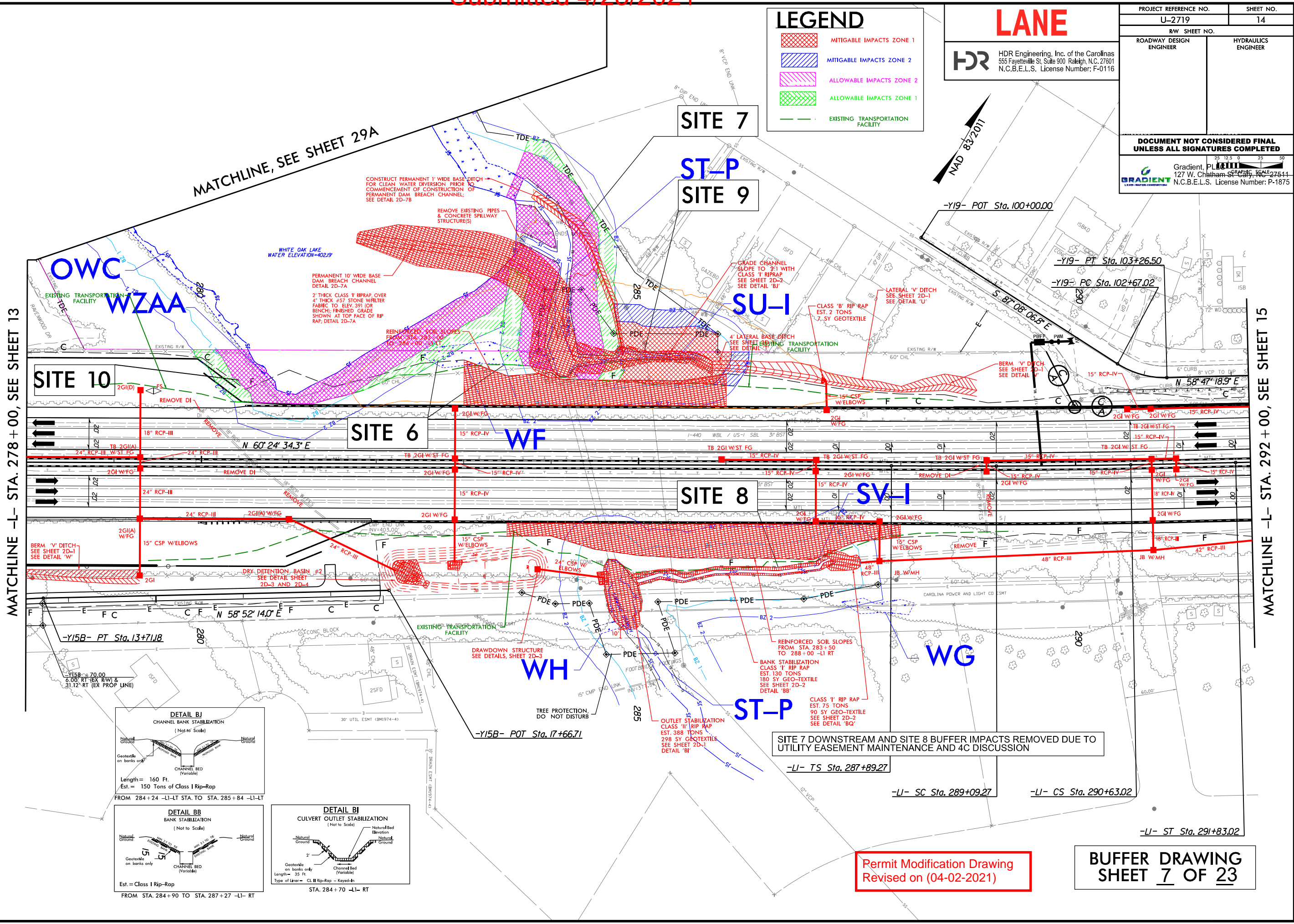
LANE

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
U-2719	14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

Gradient, PLLC
127 W. Chatham St., Cary, NC 27513
N.C.B.E.L.S. License Number: P-1875



DETAIL BJ
CHANNEL BANK STABILIZATION
(Not to Scale)

Length = 160 Ft.
Est. = 150 Tons of Class I Rip-Rap

FROM STA. 284+24 -LI-LT STA. TO STA. 285+84 -LI-LT

DETAIL BB
BANK STABILIZATION
(Not to Scale)

Length = 35 Ft.
Est. = Class I Rip-Rap

FROM STA. 284+90 TO STA. 287+27 -LI- RT

DETAIL BI
CULVERT OUTLET STABILIZATION
(Not to Scale)

Length = 35 Ft.
Type of Liner = CL II Rip-Rap - Keyed-In

STA. 284+70 -LI- RT

SITE 7 DOWNSTREAM AND SITE 8 BUFFER IMPACTS REMOVED DUE TO UTILITY EASEMENT MAINTENANCE AND 4C DISCUSSION

Permit Modification Drawing
Revised on (04-02-2021)

**BUFFER DRAWING
SHEET 7 OF 23**

PLOT DRIVER: NCDOT_permit.dwg, eng_100.plt
USER: CMYERS
DATE: 4/15/2021
TIME: 12:50:30 PM
FILE: Lane_Construction_CorplLane_I-440_Widening_6.2_WTPU-2719_Hydraulics_PERMITS_Environmental_Drawings_Buffer_s_U2719-U4437_BUF_PSH.dgn

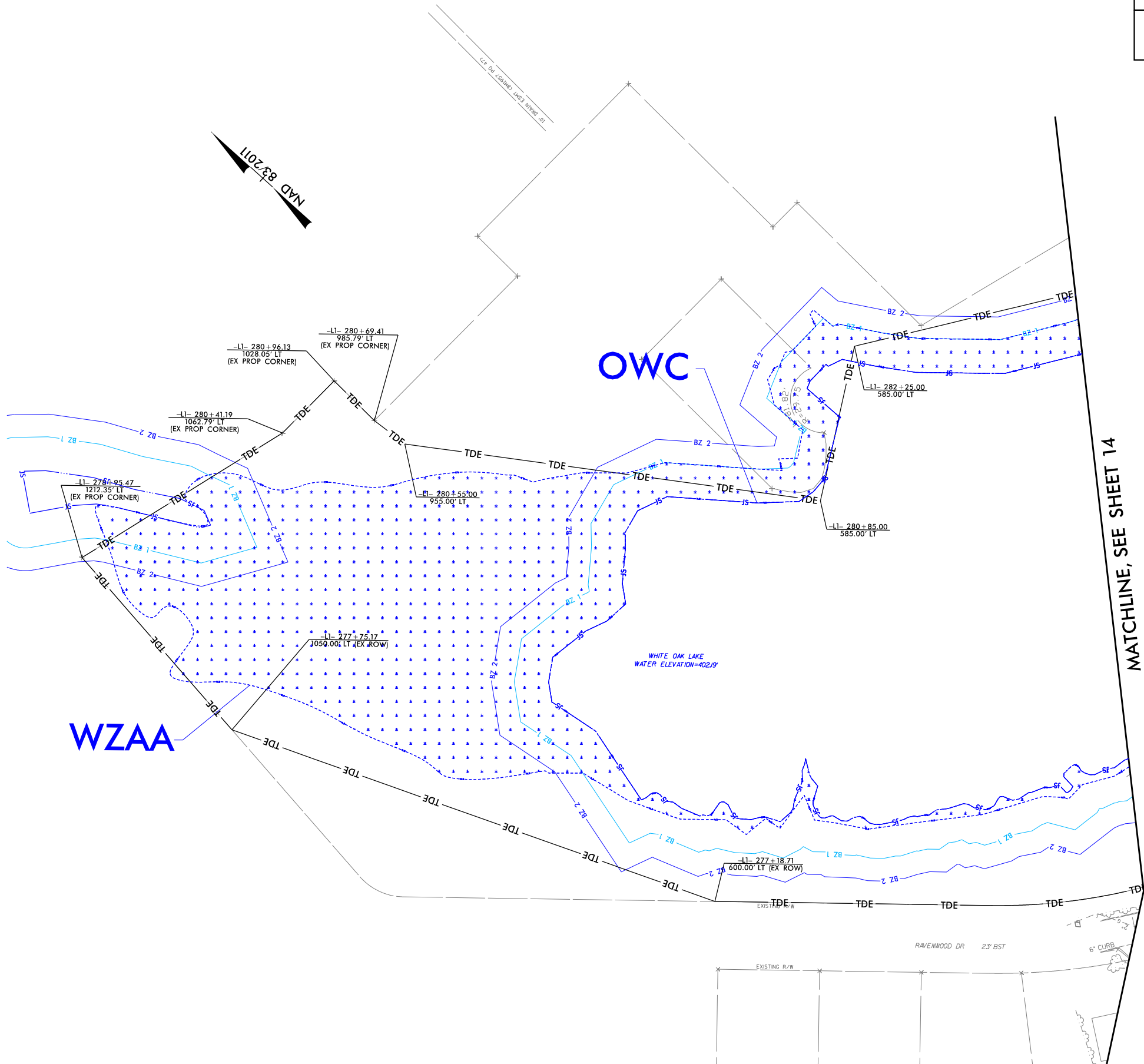
REVISIONS

LANE



HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.		SHEET NO.	
U-2719		29A	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



MATCHLINE, SEE SHEET 29

MATCHLINE, SEE SHEET 14

BUFFER DRAWING
SHEET 7A OF 23

PLOT DRIVER: NCDOT_color_eng-100.plt
USER: CMYERS
FILE: Lone_Construction_Corp\Lane_I-440_Widen\6.0_CAD_BIM\6.2_WIP\U-2719\Hydraulics\PERMITS_Environmental\Drawings\Buffer's\U2719-U4437-BUF_PSH.dgn

REVISIONS

REV 001 - 10/27/2020: NEW SHEET; ADDED TDE ON PARCEL 71 AROUND WHITE OAK LAKE.
REV 002 - 02/17/2021: REVISED TDE ON PARCEL 71 AROUND WHITE OAK LAKE.

PENTABLE: NCDOT_permits.NCON.tbl
TIME: 3:02:40 PM

DATE: 3/19/2021

RIPARIAN BUFFER IMPACTS SUMMARY													
			IMPACTS									BUFFER REPLACEMENT	
Site No.	Station (From/To)	Structure Size / Type	TYPE			ALLOWABLE			MITIGABLE				
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft²)	ZONE 2 (ft²)	TOTAL (ft²)	ZONE 1 (ft²)	ZONE 2 (ft²)	TOTAL (ft²)	ZONE 1 (ft²)	ZONE 2 (ft²)
1	SAK - 230+75 -L1A- Lt	Rip Rap at 18" Outlet	X			1272		1272					
3	SX - 245+72 -L1A-	Culvert Clean Out	X			1753	212	1965					
		Bank Stabilization	X			3612	1923	5535					
4	SW - 41+85 -Y10- Rt	Rip Rap in Stream			X	5604	4248	9852	3711		3711		
6	WF				X								
7	ST - 284+75 -L1- Lt	Inlet Stabilization	X			14399	6548	20947					
8**	SV - 286+00 -L1- Rt												
9	SU - 284+50 -L1- Lt	Fill/ Stabilization			X				6639	2738	9377		
10	OWC- 280+00 -284+00 -L1- Lt	Pond Dam Breach			X	10337	4597	14934					
12	SS - 17+50 -Y25RB- Lt	Channel Imp./Bank Stab.	X			6199	3968	10167					
13	SR -16+20 -Y25RC- Rt	Roadway Fill/Outlet Stabilization	X						7989	6169	14158		
14	SO - 15+79 -Y25RD-	Roadway Fill	X		X	6846	1384	8230	14827	7423	22250		
	SO - 360+64 -L2RT-	8" SS				4075	1396	5471					
15	SP - 11+90 -Y29E-	30" CSP	X			3767	3730	7497					
16	SN - 365+75 -L3- Rt	36" WSP & 36" CSP			X	3379	367	3746	775	206	981		
17	SC - 433+33 -L3-	8' x 8' Culvert Extension/Stab.	X			3660	1592	5252					
18	SAN - 433+00 -L3- Rt	2' Base Lateral Ditch			X				3035	2070	5105		
19	SE - 466+00 -L3-	48" RCP Extension	X			2179	926	3105					
20	SW - 18+75 -Y9-	14' x 7' RCBC	X			5515	3172	8687					
21	SC - 38+70 -Y35RA- Rt	Bank Stabilization			X				433	406	839		
TOTALS*:						72597	34063	106660	37409	19012	56421	0	0

NOTES:

** SITE 7 DOWNSTREAM SITE 8 BUFFER IMPACTS REMOVED DUE TO UTILITY EASEMENT MAINTENANCE AND 4C DISCUSSION

Permit Modification
Revised on (04-02-2021)

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
04/02/2021
WAKE COUNTY
U-2719
35869.3.1
SHEET 22 OF 23

WETLANDS IN BUFFER IMPACTS SUMMARY				
			WETLANDS IN BUFFERS	
SITE NO.	STATION (FROM/TO)		ZONE 1 (ft²)	ZONE 2 (ft²)
6	WF		392	876
10	WZAA		348	
TOTAL:			740	876

Permit Modification
Revised on (04-02-2021)

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
04/02/2021
WAKE COUNTY
U-2719
35869.3.1

SHEET 23 OF 23

Revised 2018 Feb