



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J.R. "JOEY" HOPKINS
SECRETARY

May 19, 2025

MEMORANDUM TO: Becca Gallas, P.E.
Division 5 Engineer

FROM: Patrick Norman, P.E.
NCTA Chief Engineer

SUBJECT: Triangle Expressway Southeast Extension (Complete 540) from NC 55 Bypass in Apex to US 64/264 (I-87) in Knightdale, Wake and Johnston Counties; Federal Aid No. STP-0540(19), STP-0540(20), and STP-0540(21); WBS Nos. 37673.1.TA1, 35516.1.TA1, and 35517.1.TA1; STIP Project Nos. R-2721, R-2828, and R-2829

DocuSigned by:

Patrick D. Norman

34F914AC31694A5...

Attached are the modified US Army Corps of Engineers (USACE) Phased Section 404 Individual Permit, NC Division of Water Resources (NCDWR) Section 401 Individual Water Quality Certification, Neuse Riparian Buffer Authorization, and Non-404 Jurisdictional Wetlands and Waters Permit for the construction of the Triangle Expressway Southeast Extension (Complete 540) from NC 55 Bypass in Apex to US 64/264 (I-87) in Knightdale, Wake and Johnston Counties. STIP Nos. R- 2721, R-2828, and R-2829. **The changes are based on the May 14, 2025 revision submittal for the R-2829A section of the project.** Subject to any requisite permit modifications, all environmental permits have been received for the construction of the final design sections of this project.

A copy of this permit package is posted on the NCDOT website at:
<https://xfer.services.ncdot.gov/pdea/PermIssued>

cc: w/o attachment (see website for attachments)
Mr. Ron Davenport, P.E. Contracts Management
Mr. Clarence Coleman, P.E., FHWA
Mrs. Heather Montague, Division 5
Mr. Mark Craig, P.E., Division 5
Mr. Boyd Tharrington, P.E., Deputy Chief Engineer
Mr. Bill Martin, P.E., Programming and TIP
Mr. Timothy Ritacco, Utilities Unit
Mr. Matt Lauffer, P.E., Hydraulics Unit
Mr. David Snoke, P.E., Structures Management Unit
Mr. Mark Staley, Roadside Environmental
Mr. John Jamison, Environmental Policy Unit
Ms. Beth Harmon, NCDMS
Ms. Deanna Riffey, Natural Environment Unit-Environmental Coordination & Permitting

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
TURNPIKE AUTHORITY
1599 MAIL SERVICE CENTER
RALEIGH, NC 27699-1599

Telephone: (919) 707-2700
Fax: (919) 715-5511
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location:
2501 AERIAL CENTER PARKWAY
SUITE 200
MORRISVILLE, NC 27560

From: [Alsmeyer, Eric C CIV USARMY CESAW \(USA\)](#)
To: [Norman, Patrick A](#); [Harris \(HNTB\), Jennifer H](#)
Cc: [Norman, Patrick A](#); [Mccollum, Ron](#); [Shapiro, Alan W](#); [Riffey, Deanna](#); [Roy Bruce](#); [Fleming, Jenny](#); [Jordan, Gary](#); [Wilson, Travis W.](#); [Clarence Coleman](#); [Brew, Donnie \(FHWA\)](#); [Privette, Dale \(FHWA\)](#); [Harmon, Beth](#); [Somerville.Amanetta@epa.gov](#); [ken.riley@noaa.gov](#); [rachel.sweeney@noaa.gov](#); [Turchy, Michael A](#); [Carpenter,Kristi](#); [Richards \(WSP\), Cameron](#); [Scuffham, Bruce W](#); [Duprey \(Sage Group\), Nicole J](#); [nduprey@sageecological.com](#); [Montague, Heather W](#); [Jennifer Harris](#); [Travis Feltes](#); [Feltes \(HNTB\), Travis J](#); [Gray, Jared S](#); [White \(WSP\), Kadin L](#)
Subject: [External] Mod RE: R-2721, R-2828, R-2829 (Complete 540 in Wake and Johnston Counties) Individual Permit Modification Submittal for R-2829A
Date: Monday, May 19, 2025 8:50:46 AM
Attachments: [image001.png](#)
[250515_Mod_permit_drawings_R-2829A_Complete540_Wake_Johnston.pdf](#)

CAUTION: External email. Do not click links or open attachments unless verified. Report suspicious emails with the Report Message button located on your Outlook menu bar on the Home tab.

Mr. Norman:

Reference the Department of the Army permit issued to the North Carolina Department of Transportation (NCDOT) on October 24, 2019, and subsequently modified, to authorize the discharge of fill material into waters of the United States, for construction of the Triangle Expressway Southeast Extension (Complete 540) from NC 55 Bypass in Apex to US 64/264 (1-87) in Knightdale, Wake and Johnston Counties. Sections included within this permit are R-2721, R-2828, and R-2829. R-2828 and R-2829A&B have since completed final design and were authorized by modification of the permit.

Also, please reference your May 14, 2025 letter, requesting modification of the permit to authorize proposed changes to jurisdictional resource impacts for R-2829, Section A, for temporary excavation necessary for stream diversion channels.

The proposed modifications are for six sites in R-2829A, Sites 3, 15, 23, 25, 29A, and 33. The proposed modified impacts change a total of 0.065 acre of wetland loss or mechanized cleared areas to temporary excavation.

The Corps has completed the evaluation of your request and has determined that it is appropriate and reasonable, and that no public notice is required for this modification. Therefore, the permit is modified as requested and as shown on the enclosed R-2829A Mod Permit Drawings, Sheets 10, 11, 12, 44, 45, 59, 60, 67, 68, 69, 83, 84, 93, and 94, revised on 5/9/2025, and WETLAND AND SURFACE WATER IMPACTS SUMMARY, Sheets 99 – 103, Revised Submittal May 14, 2025.

No additional compensatory mitigation is required. The special conditions for the permit are also enclosed, and have not changed from the original Special Conditions with the exceptions of Special Condition 9, which is revised to indicate the September 30, 2024

Addendum to the US Fish and Wildlife Service BIOLOGICAL/CONFERENCE OPINION, and Added Special Condition 30. Boater Safety Plan. The permit expiration date was previously extended to December 31, 2029.

Please reply or call if you have any questions or if I may serve you in any other way.

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at <https://regulatory.ops.usace.army.mil/customer-service-survey/>.

Eric

Eric Alsmeyer

Project Manager

Work Cell: 919.817.1570

Regulatory - WRDA / Transportation Branch

US Army Corps of Engineers, Wilmington District

3331 Heritage Trade Drive, Suite 105, Wake Forest, NC 27587

Regulatory

Homepage: <http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram.aspx>



NORTH CAROLINA
Environmental Quality

JOSH STEIN
Governor

D. REID WILSON
Secretary

RICHARD E. ROGERS, JR.
Director

May 16, 2025

Patrick Norman, P.E., Chief Engineer
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699
pnorman@ncdot.gov

Subject: MODIFICATION of 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for Proposed construction of the Triangle Expressway Southeast Extension (NC 540) in Wake & Johnston Counties, Federal Aid Project No. 050047, State Project No. 35517.3.TA1, TIP Nos, R-2721, R-2828, & R-2829. (TIP R-2829A for This Modification)
NCDWR Project No. 20181249 version 21.

Dear Mr. Norman:

Attached hereto is a copy of Modification to Certification No. 4179 issued to The North Carolina Department of Transportation (NCDOT), Turnpike Authority, originally dated February 15, 2019 and most recent modification dated May 16, 2025

This approval is for the purpose and design described in your application. The plans and specifications for this project are incorporated by reference as part of this Water Quality Certification. If you change your project, you must notify the Division and you may be required to submit a new application package with the appropriate fee. If the property is sold, the new owner must be given a copy of this Certification and is responsible for complying with all conditions. [15A NCAC 02H .0507(d)(2)]. This Certification does not relieve the permittee of the responsibility to obtain all other required Federal, State, or Local approvals before proceeding with the project, including those required by, but not limited to, Sediment and Erosion Control, Non-Discharge, and Water Supply Watershed regulations.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

Signed by:

Susan Locklear

375CAE2BB9F540C...

Richard E. Rogers Jr, Director
Division of Water Resources

Attachments

Cc: Eric Alsmeyer, US Corps of Engineers, Raleigh Field Office (Eric.C.Alsmeier@usace.army.mil)
Jennifer Harris, PE, NC Turnpike Authority (ext-jharris1@ncdot.gov)
Deanna Riffey, NCDOT Environmental Analysis (driffey@ncdot.gov)
File Copy



MODIFICATION to 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS

THIS MODIFIED CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500. This certification modification authorizes the NC Turnpike Authority to impact 8.758 acres of jurisdictional wetlands and 10517 linear feet of jurisdictional streams in Wake County for section **R-2829A** of the Complete 540 project. The project shall be constructed pursuant to the modification application received May 15, 2025. The authorized modified impacts for this modification are as described below:

**R-2829A Wetland Impact Modifications in the Neuse River Basin:
All impacts in this Modification are Previously-approved Mechanized Clearing Impacts changed to
Excavation Impacts.**

Site	Decrease in Mechanized Clearing (ac)	Increase in Excavation (ac)	Net Total Change +/- (ac)
3	-0.01	+0.01	0
15	-0.01	+0.01	0
23	-0.032	+0.032	0
25	-0.007	+0.007	0
29A	-0.005	+0.005	0
33	-0.001	+0.001	0

Total: No increase in total impacts for R-2829A

The application provides adequate assurance that the discharge of fill material into the waters of the Neuse River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your modification application received November 14, 2024. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7).

For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

This Water Quality Certification neither grants nor affirms any property right, license, or privilege in any lands or waters, or any right of use in any waters. This Water Quality Certification does not authorize any person to interfere with the riparian rights, littoral rights, or water use rights of any other person and does not create any prescriptive right or any right of priority regarding any usage of water. This Water Quality Certification shall not be interposed as a defense in any action respecting the determination of riparian or littoral rights or other rights to water



use. No consumptive user is deemed by virtue of this Water Quality Certification to possess any prescriptive or other right of priority with respect to any other consumptive user regardless of the quantity of the withdrawal or the date on which the withdrawal was initiated or expanded. Upon the presentation of proper credentials, the Division may inspect the property.

Condition of Certification:

1. All conditions in the Water Quality Certification for this project dated December 10, 2024, and all previous versions thereof, are still applicable to this approval.

This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit. Please be aware that impacting waters without first applying for and securing the issuance of a 401 Water Quality Certification violates Title 15A of the North Carolina Administrative Code (NCAC) 2H .0500. Title 15A NCAC 2H .0500 requires certifications pursuant to Section 401 of the Clean Water Act whenever construction or operation of facilities will result in a discharge into navigable waters, including wetlands, as described in 33 Code of Federal Regulations (CFR) Part 323. It also states any person desiring issuance of the State certification or coverage under a general certification required by Section 401 of the Federal Water Pollution Control Act shall file with the Director of the North Carolina Division of Water Quality. Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. Pursuant to G.S. 143-215.6A, these violations and any future violations are subject to a civil penalty assessment of up to a maximum of \$25,000.00 per day for each violation.

This approval and its conditions are final and binding unless contested [G.S. 143-215.5]. Please be aware that impacting waters without first applying for and securing the issuance of a 401 Water Quality Certification violates Title 15A of the North Carolina Administrative Code (NCAC) 2H .0500. Title 15A NCAC 2H .0500 requires certifications pursuant to Section 401 of the Clean Water Act whenever construction or operation of facilities will result in a discharge into navigable waters, including wetlands, as described in 33 Code of Federal Regulations (CFR) Part 323. It also states any person desiring issuance of the State certification or coverage under a general certification required by Section 401 of the Federal Water Pollution Control Act shall file with the Director of the North Carolina Division of Water Quality. Pursuant to G.S. 143-215.6A, these violations and any future violations are subject to a civil penalty assessment of up to a maximum of \$25,000.00 per day for each violation.

This Certification can be contested as provided in Chapter 150B of the North Carolina General Statutes by filing a Petition for a Contested Case Hearing (Petition) with the North Carolina Office of Administrative Hearings (OAH) **within sixty (60) calendar days**. Requirements for filing a Petition are set forth in Chapter 150B of the North Carolina General Statutes and Title 26 of the North Carolina Administrative Code. Additional information regarding requirements for filing a Petition and Petition forms may be accessed at <http://www.ncoah.com/> or by calling the OAH Clerk's Office at (919) 431-3000.

A party filing a Petition must serve a copy of the Petition on:
William F. Lane, General Counsel
Department of Environmental Quality
1601 Mail Service Center
Raleigh, NC 27699-1601



If the party filing the Petition is not the permittee, then the party must also serve the recipient of the Certification in accordance with N.C.G.S 150B-23(a).

This the 16th day of May 2025

DIVISION OF WATER RESOURCES

Signed by:
Susan Locklear
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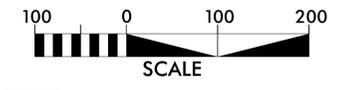
Richard E. Rogers, Jr, Director

WQC No. 4179



NO.	REVISIONS

MARY WHITE, ISABELL WARD, & ADRIA WALKER
 BM 2012 PG 1326
 DB 4163 PG 369



- | | | | |
|--|---------------------------------|--|--------------------------------|
| | SURFACE WATER IMPACTS | | TEMPORARY FILL IN WETLAND |
| | TEMPORARY SURFACE WATER IMPACTS | | MECHANIZED CLEARING (GRUBBING) |
| | HAND CLEARING (NON-GRUBBING) | | WETLAND EXCAVATION |
| | | | FILL IN WETLAND |

DB 19569 PG 1693
 DB 19569 PG 1681

PROJECT REFERENCE NO. P-2822A	SHEET NO. 7
REVISED 5/9/25	
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PERMIT DRAWING SHEET 10 OF 103	



MATCHLINE - L- STA. 965+50 SEE SHEET 6

MATCHLINE - L- STA. 00+289.00 SEE SHEET 8

SITE 2

SITE 3

SEE INSET A
SHEET 12 OF 103

SEW

SEY

SITE 3

WFN(1)

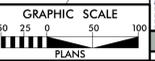
SEY

WFW

WFX

NCDOT
 (FORMERLY
 JOHN AMAN)
 DB 19569 PG 1693
 DB 19569 PG 1681

FOR SITE 5 BRIDGE PLANS
 SEE SHTS 551-1 THRU 551-49
 AND 558-1 THRU 558-49

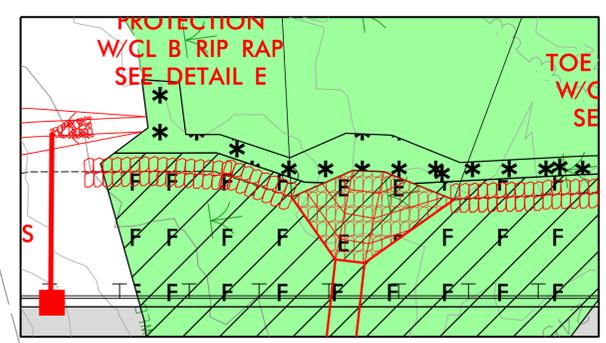


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REVISED 5/9/2025

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PERMIT DRAWING SHEET 45 OF 103



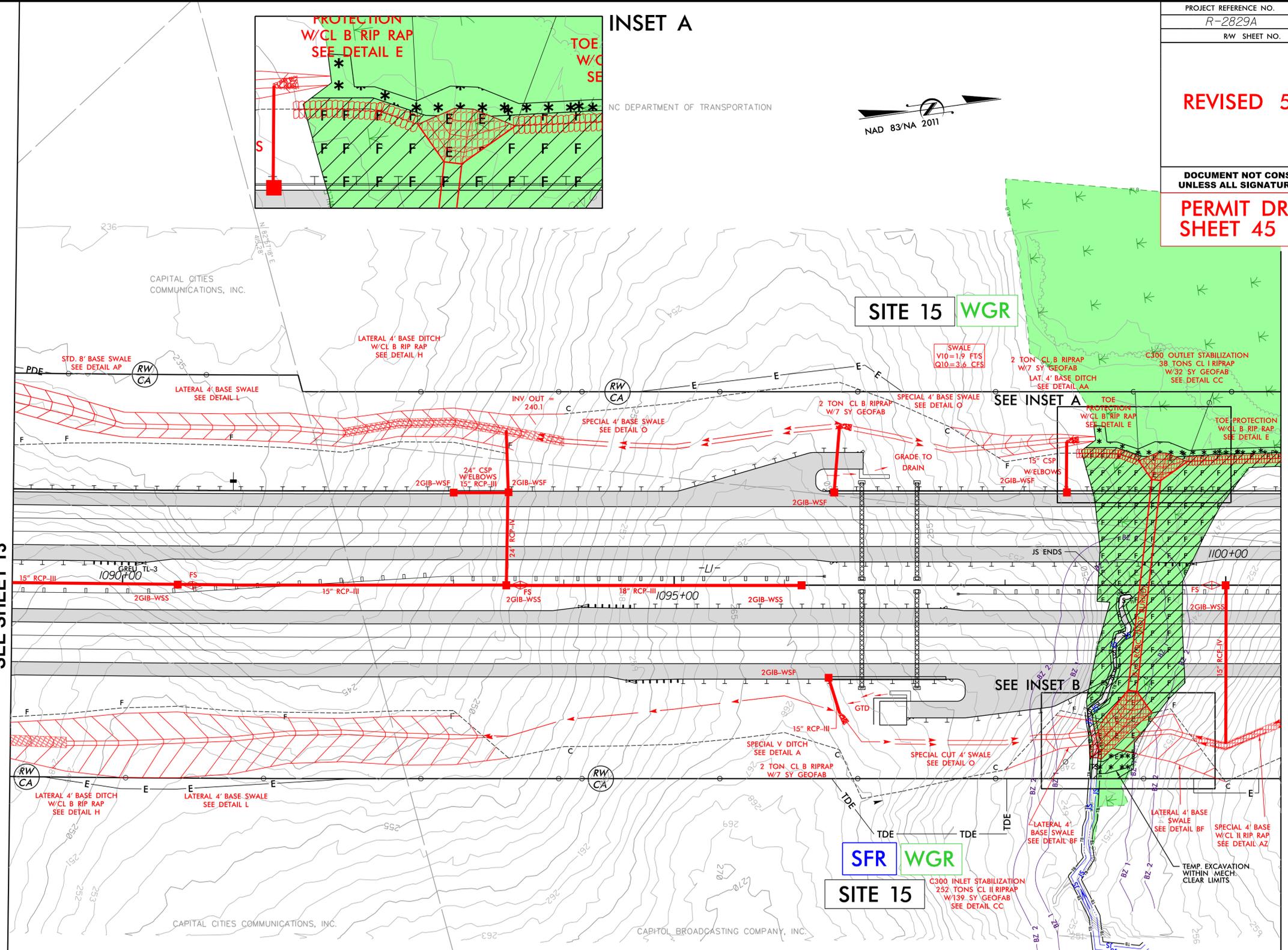
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NC DEPARTMENT OF TRANSPORTATION

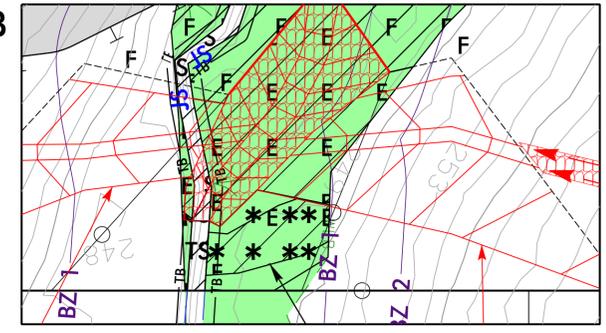


MATCHLINE -L1- STA. 1089+00 SEE SHEET 13

MATCHLINE -L1- STA. 1100+50 SEE SHEET 15



INSET B



ENGLISH

	SURFACE WATER IMPACTS
	TEMPORARY SURFACE WATER IMPACTS
	WETLAND EXCAVATION
	FILL IN WETLAND
	MECHANIZED CLEARING (GRUBBING)

50 0 50 100
SCALE

25 0 25 50
SCALE FOR INSET

stv STV Engineers, Inc.
P: (704) 372-1885
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

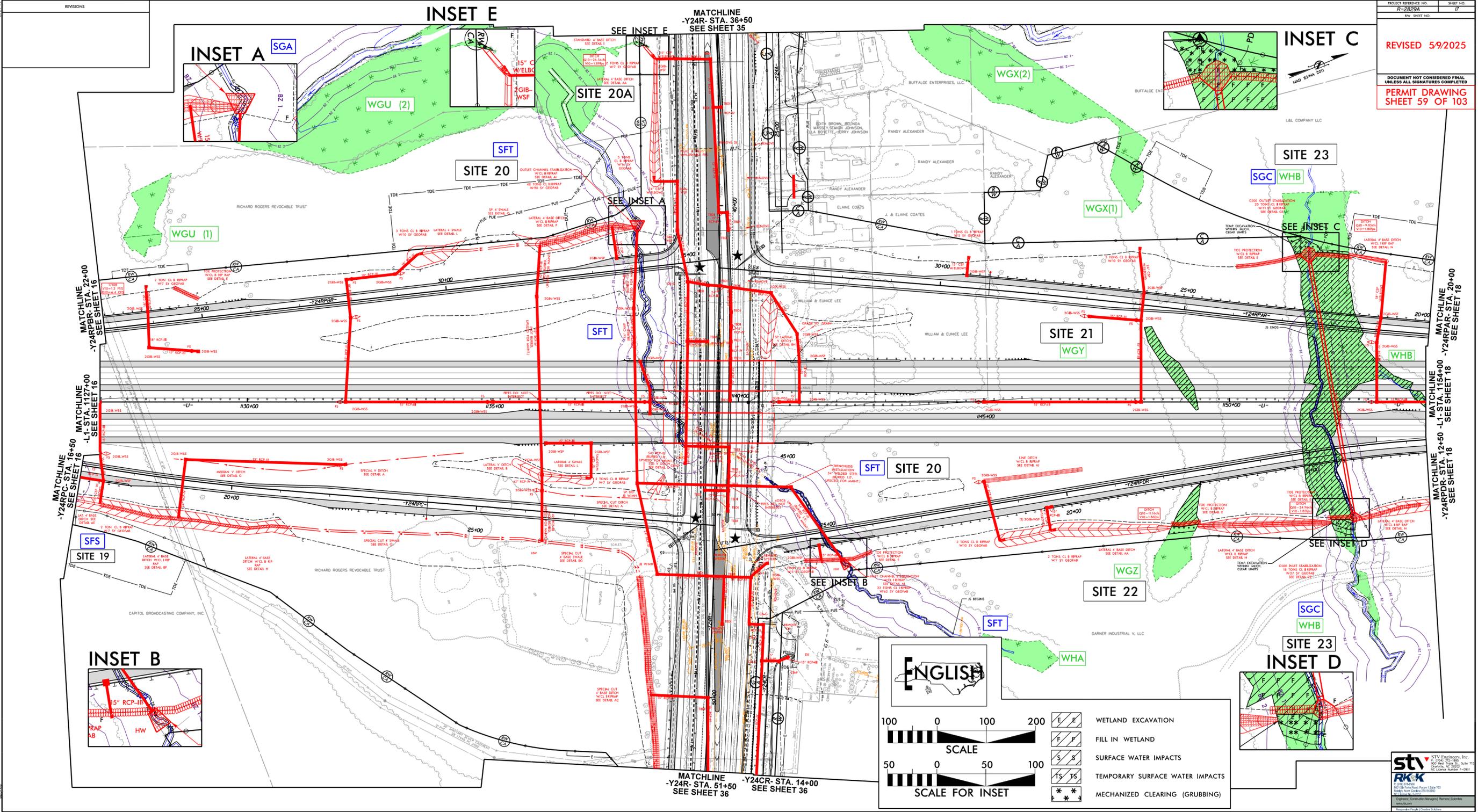
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Raleigh, North Carolina 27615-3960
NC License No. F-0112

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REVISIONS

PROJECT REFERENCE NO. **P-2829A** SHEET NO. **17**
 REVISED **5/9/2025**
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 PERMIT DRAWING SHEET **59** OF **103**



ENGLISH

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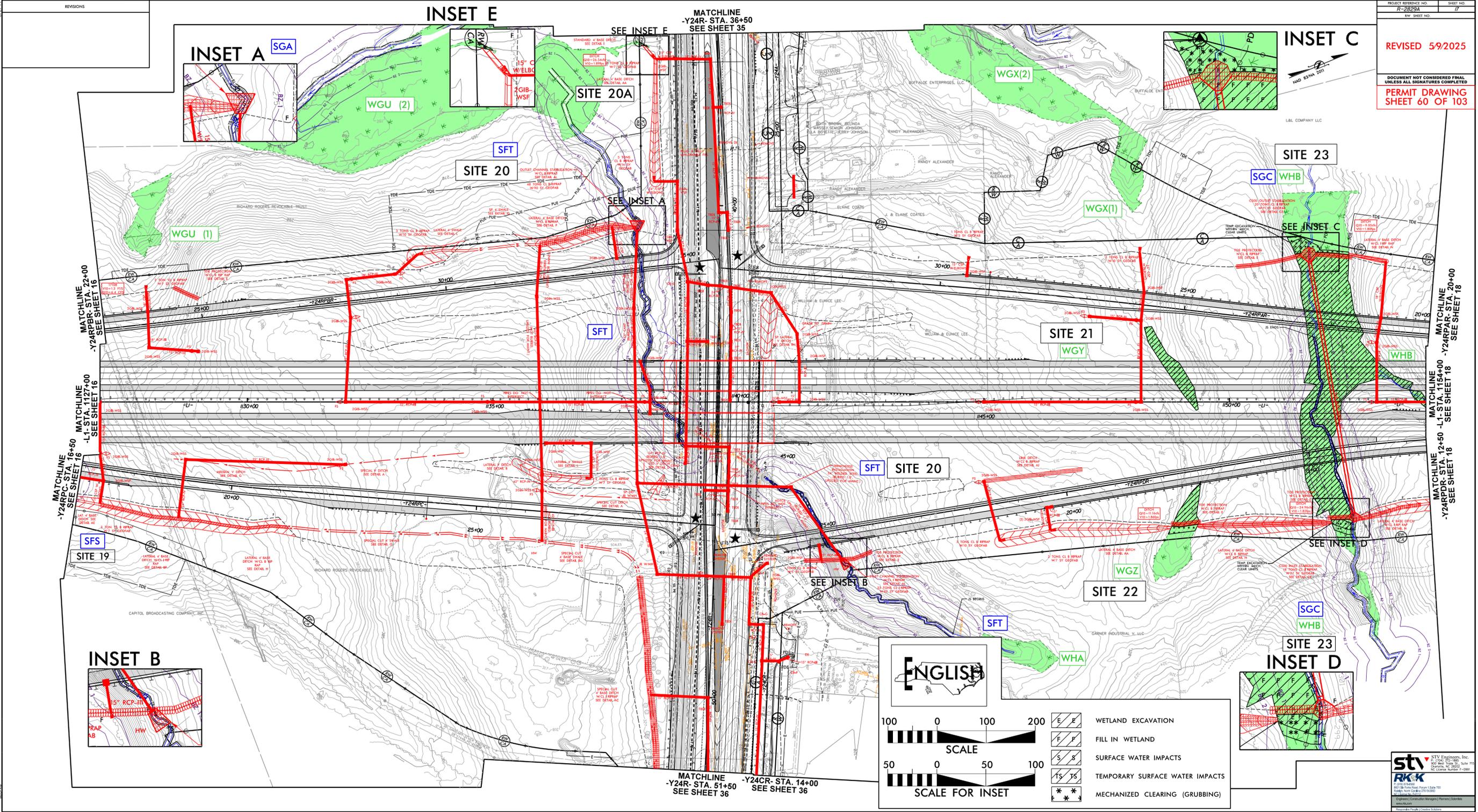
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	WETLAND EXCAVATION
	FILL IN WETLAND
	SURFACE WATER IMPACTS
	TEMPORARY SURFACE WATER IMPACTS
	MECHANIZED CLEARING (GRUBBING)

STV STV Engineers, Inc.
RK&K R.K. & K. Engineers, Inc.
 2025 St. Paul Street, Suite 100
 St. Paul, MN 55102
 License Number: 0000000000
 License Number: 0000000000

NO.	REVISIONS

PROJECT REFERENCE NO.	R-2825A
SHEET NO.	17
REVISED	5/9/2025
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PERMIT DRAWING SHEET 60 OF 103	



ENGLISH

SCALE

SCALE FOR INSET

	WETLAND EXCAVATION
	FILL IN WETLAND
	SURFACE WATER IMPACTS
	TEMPORARY SURFACE WATER IMPACTS
	MECHANIZED CLEARING (GRUBBING)

STV STV Engineers, Inc.
RK&K R.K. & K. Engineers, Inc.
 2025 State Street, Suite 100
 Raleigh, North Carolina 27601
 License Number: E-0091

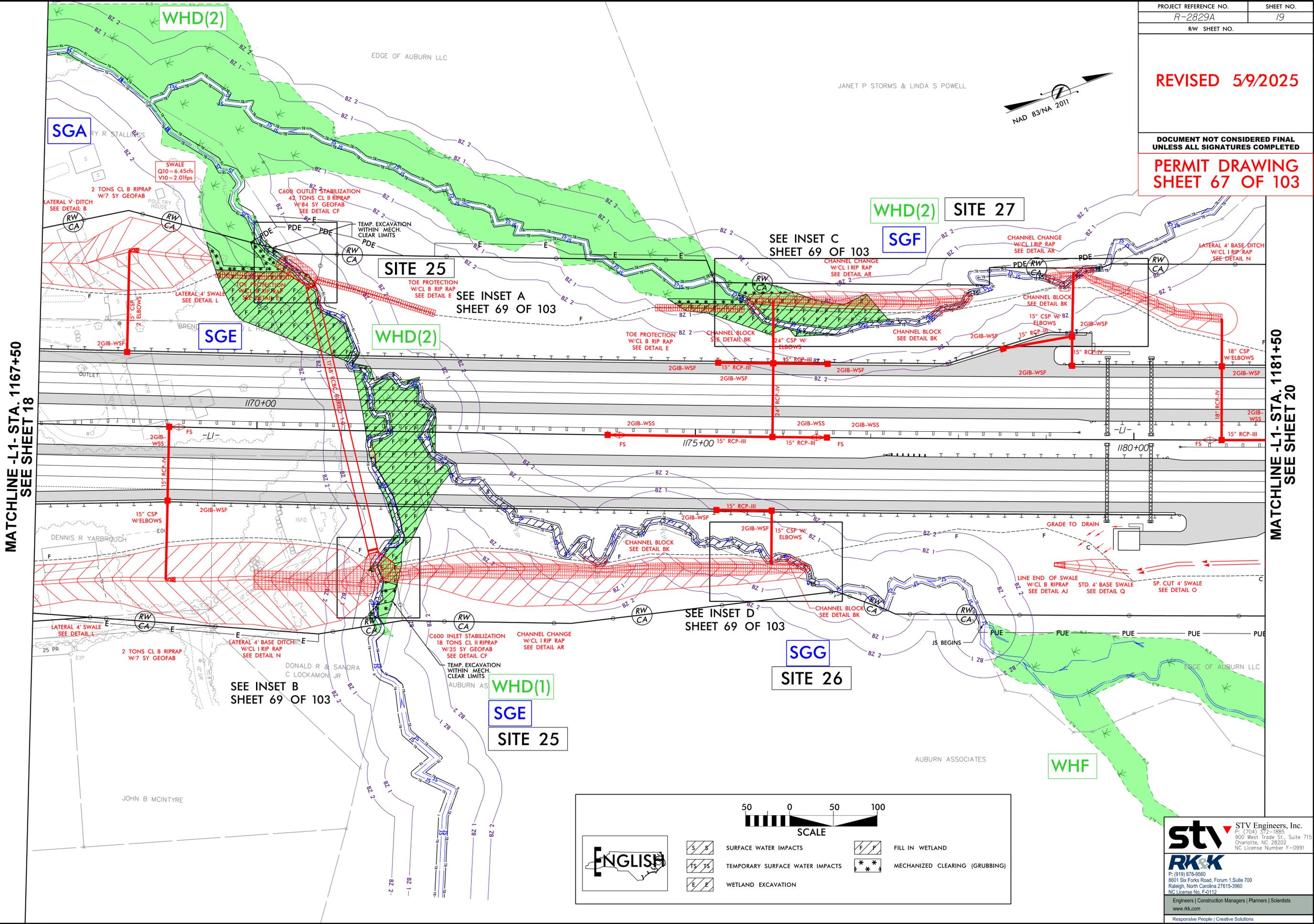
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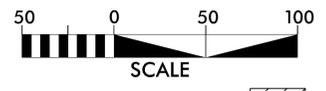


JANET P STORMS & LINDA S POWELL



MATCHLINE -L1- STA. 1167+50
SEE SHEET 18

MATCHLINE -L1- STA. 1181+50
SEE SHEET 20



ENGLISH

	SURFACE WATER IMPACTS		FILL IN WETLAND
	TEMPORARY SURFACE WATER IMPACTS		MECHANIZED CLEARING (GRUBBING)
	WETLAND EXCAVATION		

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8601 Six Forks Road, Forum 1, Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112

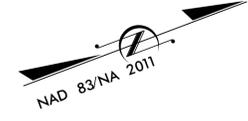
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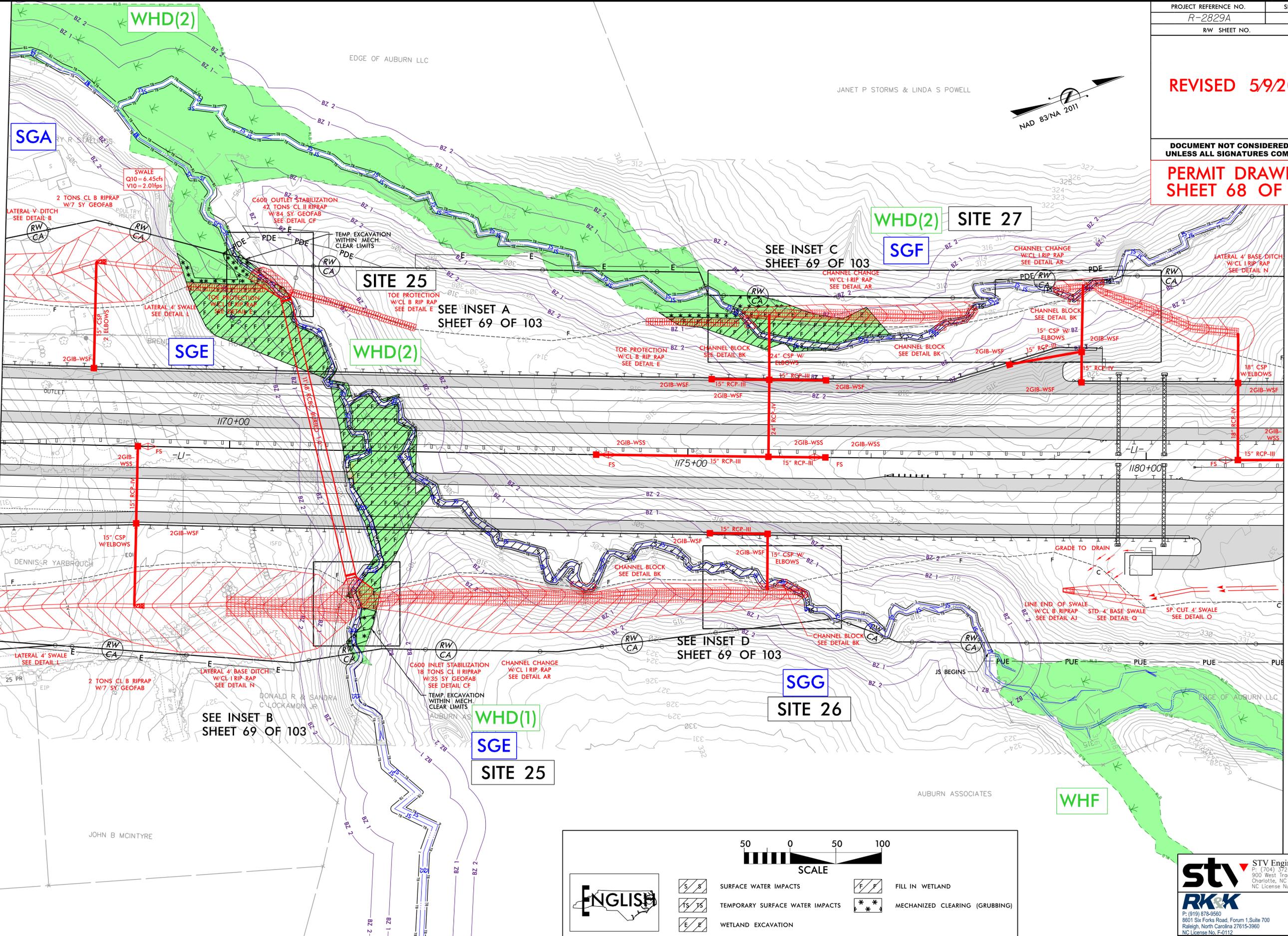
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UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 68 OF 103



JANET P STORMS & LINDA S POWELL



MATCHLINE -L1- STA. 1167+50
SEE SHEET 18

MATCHLINE -L1- STA. 1181+50
SEE SHEET 20

50 0 50 100

SCALE

SURFACE WATER IMPACTS

TEMPORARY SURFACE WATER IMPACTS

WETLAND EXCAVATION

FILL IN WETLAND

MECHANIZED CLEARING (GRUBBING)

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8/17/19
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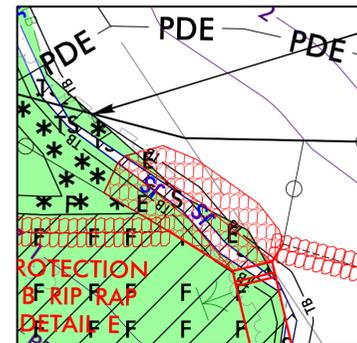
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SHEET 69 OF 103

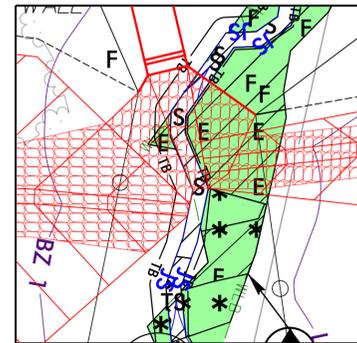


INSET A



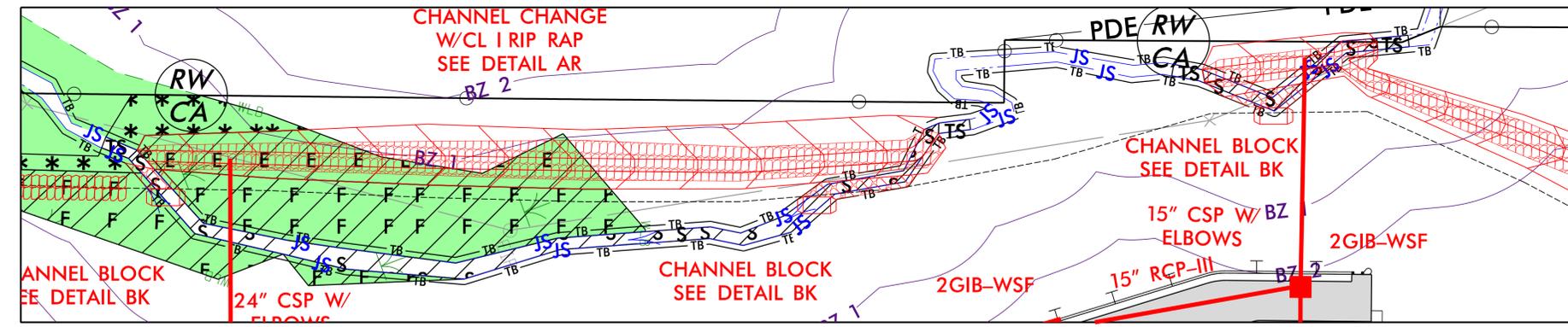
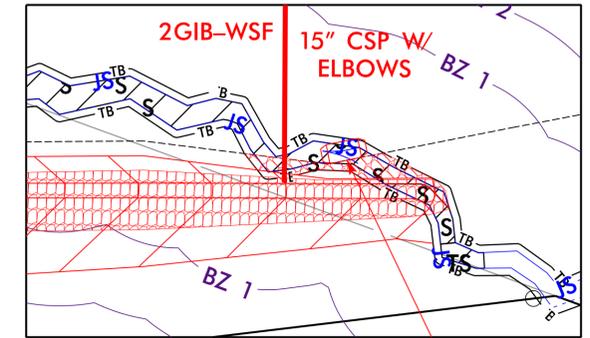
TEMP. EXCAVATION
WITHIN MECH.
CLEAR LIMITS

INSET B



TEMP. EXCAVATION
WITHIN MECH.
CLEAR LIMITS

INSET D



INSET C



SCALE FOR INSET

	SURFACE WATER IMPACTS		FILL IN WETLAND
	TEMPORARY SURFACE WATER IMPACTS		MECHANIZED CLEARING (GRUBBING)
	WETLAND EXCAVATION		

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Raleigh, North Carolina 27615-3960
NC License No. F-0112

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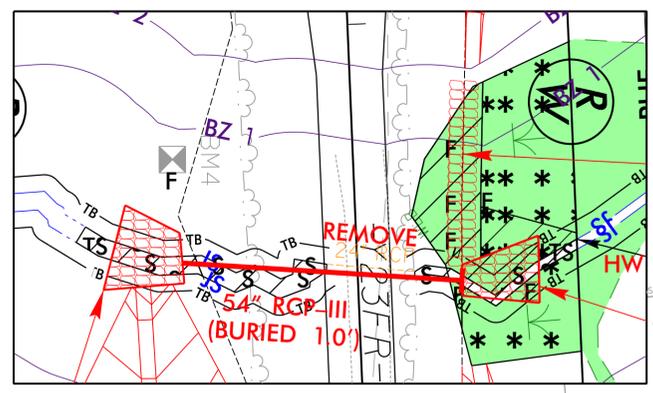
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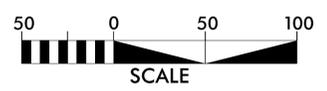
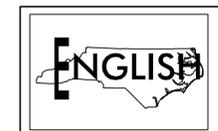
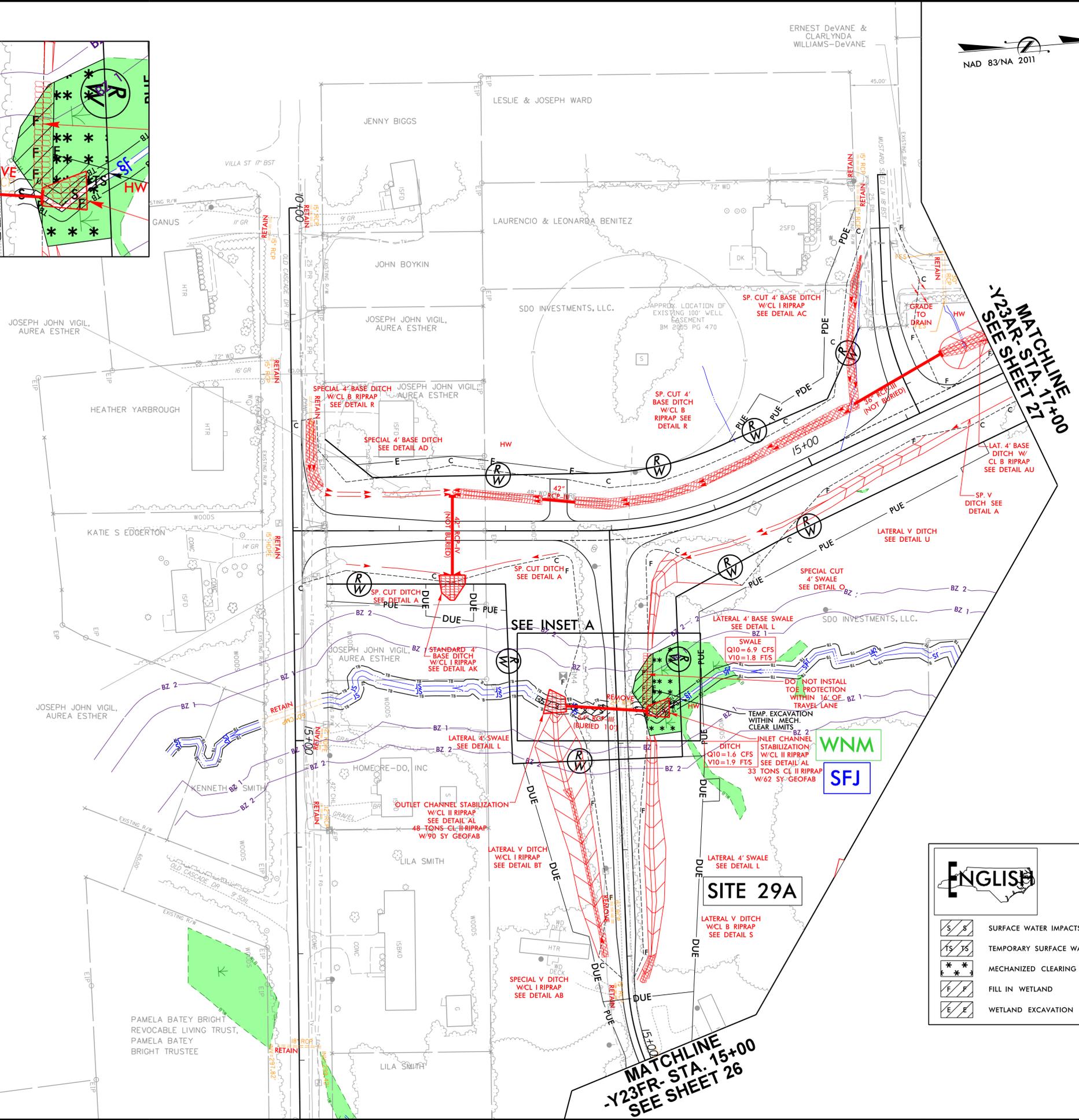
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PERMIT DRAWING
SHEET 83 OF 103



INSET A



- SURFACE WATER IMPACTS
- TEMPORARY SURFACE WATER IMPACTS
- MECHANIZED CLEARING (GRUBBING)
- FILL IN WETLAND
- WETLAND EXCAVATION

SITE 29A

MATCHLINE
-Y23FR- STA. 15+00
SEE SHEET 26

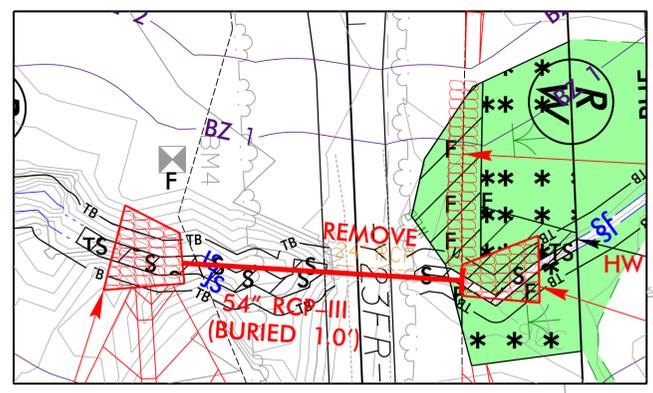
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-Y23FR- STA. 17+00
SEE SHEET 27

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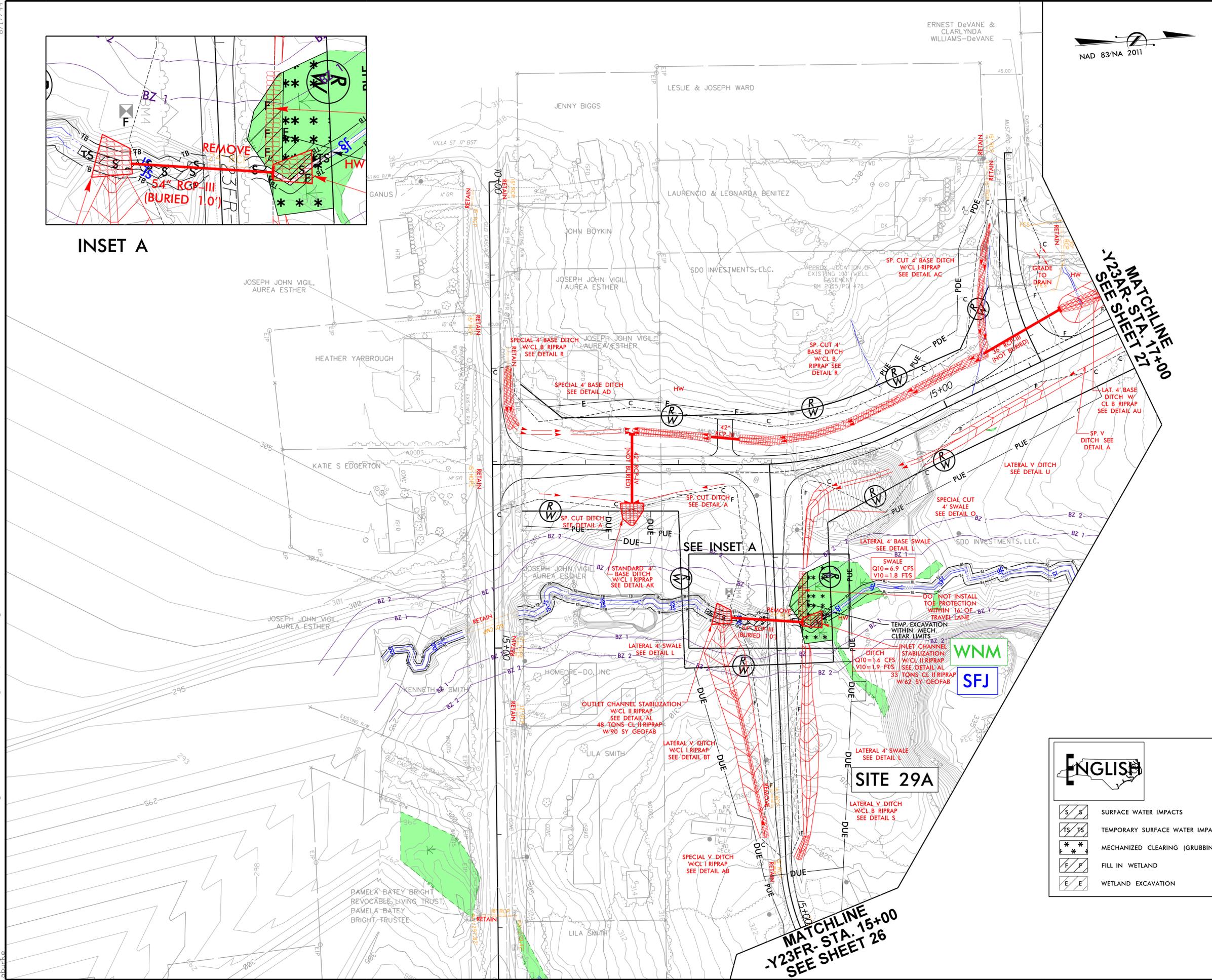
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SHEET 84 OF 103



INSET A



ENGLISH

SCALE

SCALE FOR INSET

	SURFACE WATER IMPACTS
	TEMPORARY SURFACE WATER IMPACTS
	MECHANIZED CLEARING (GRUBBING)
	FILL IN WETLAND
	WETLAND EXCAVATION

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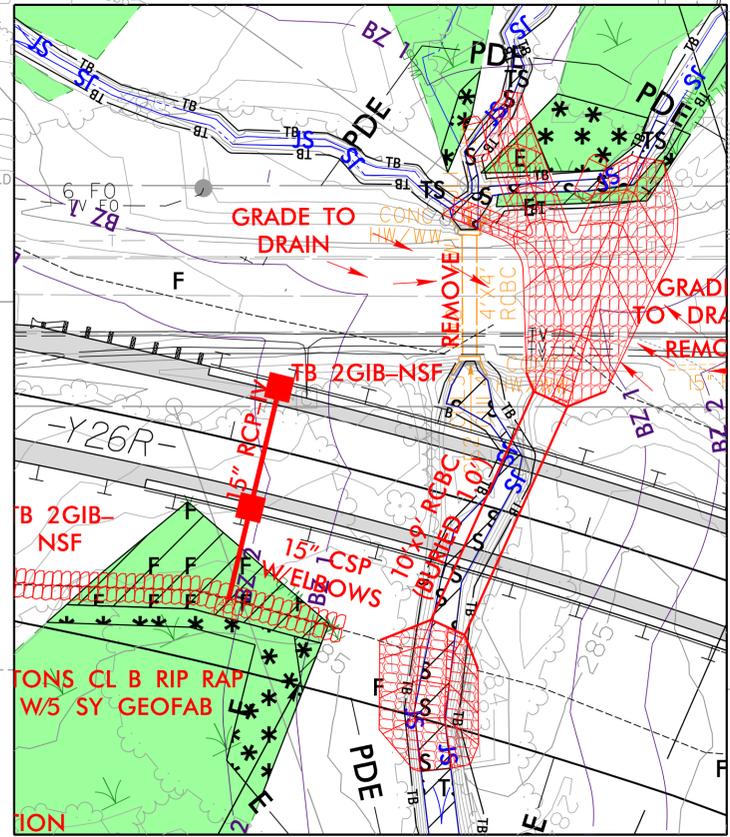
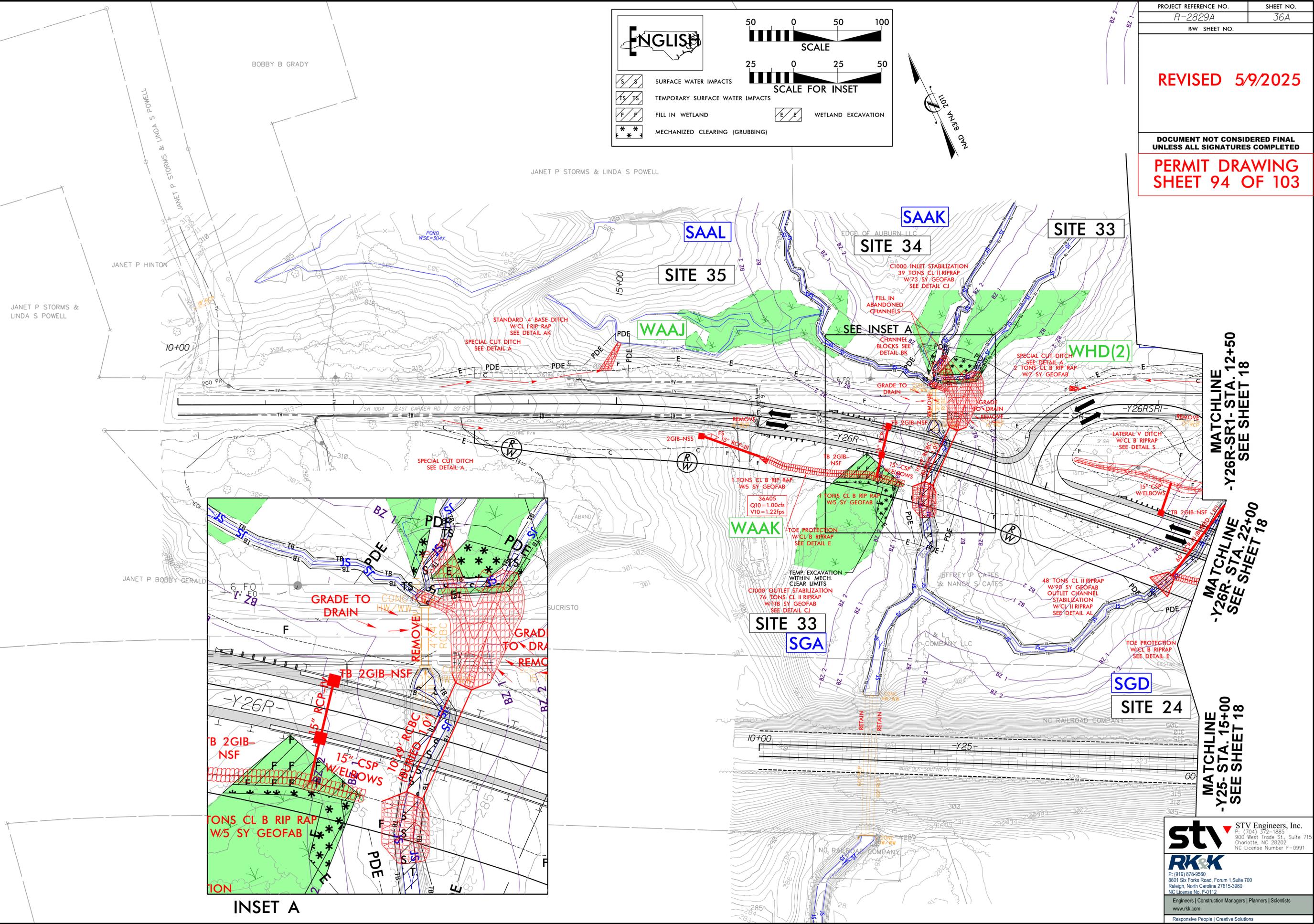
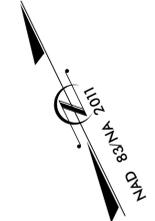
PERMIT DRAWING
SHEET 94 OF 103

ENGLISH

50 0 50 100
SCALE

25 0 25 50
SCALE FOR INSET

	SURFACE WATER IMPACTS		WETLAND EXCAVATION
	TEMPORARY SURFACE WATER IMPACTS		
	FILL IN WETLAND		
	MECHANIZED CLEARING (GRUBBING)		



INSET A

MATCHLINE
-Y26R-SR1- STA. 12+50
SEE SHEET 18

MATCHLINE
-Y26R- STA. 22+00
SEE SHEET 18

MATCHLINE
-Y25- STA. 15+00
SEE SHEET 18

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WETLAND AND SURFACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-Y22RPAFLY_REV- 28+00 - 29+58 LT	Roadway Fill: WFG	0.055									
2	-L- 967+04 - 968+83 LT	Roadway Fill: WFJ	0.098		0.023							
3	-L- 972+77 - 979+44 LT	Bridge: SEW						0.031		319		
		WFN(2)	0.176	0.716	0.018	0.034	0.660					
	-L- 976+61 - 978+80 RT	Roadway Fill: SEY						0.002	0.023	15	174	
		WFN(1)	0.257	0.049	0.001	0.098	0.037					
4	-L- 1001+92 - 1004+65 RT	48" RCP: WFY	0.449			0.034						
5	-L1- 1008+79	9'x8' RCBC, SFH						0.042	0.010	384	96	
		Structure Stabilization						0.007		63		
6	-L1- 1013+72	12'x8' RCBC, SFF						0.070	0.009	533	60	
		Structure Stabilization						0.012		86		
7	-L1- 1012+26 LT - 1018+49 RT	Roadway Fill: SFE						0.060	0.002	759	21	
		WFZ	0.113		0.015	0.010						
8	-L1- 1022+67 LT - 1025+03 RT	42" RCP: SFB						0.017		222		
		Structure Stabilization						0.001	0.001	24	10	
		WGD	0.021			0.001						
		WGC	0.013									
		WGB	0.079									
SHEET TOTALS*:			1.261	0.765	0.057	0.177	0.697	0.242	0.045	2405	361	0

*Rounded totals are sum of actual impacts

NOTES:

Site 3: 4 interior bents with 4 @ 3.5' diameter columns per bent= total 154.4sq ft (0.004ac) permanent wetland impact (included above)

Site 3: WFN(1) piece above SEW is a total take in summary above; hatching outside construction impacts is not shown.

Temporary Excavation (~0.01ac) within the permanently impacted wetland footprint limits due to an erosion control clean water diversion channel

Site 7: WFZ is a total take in summary above; hatching outside construction impacts is not shown

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 Wake County
 R-2829A

WETLAND AND SURFACE WATER IMPACTS SUMMARY												
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
9	-L1- 1035+14 - 1037+70 LT	48" RCP: SFA							0.008		124	
		WGF	0.016									
		WGG	0.156									
		WAAE	0.092									
		WAAF				0.010						
	-L1- 1033+83 - 1038+36 LT	PAD						2.695				
10	-Y23RPB- 27+59 - 28+23 LT	Roadway Fill: WGJ	0.013			0.010						
11	-L1- 1060+75 - 1062+35 CL	Roadway Fill: SFD						0.009		71		
		WGM	0.023									
12	-L1- 1062+62 LT - 1063+75 RT	Roadway Fill: SFC						0.038		479		
		Structure Stabilization						0.002	0.001	22	12	
		WGN	0.001			0.005						
13	-L1- 1066+33 - 1067+40 RT	Roadway Fill: WGO	0.028			0.004						
14	-L1- 1084+46 RT - 1086+92 LT	Bank Stabilization: Ditches; SFV (White Oak Creek)						0.017	0.080	70	185	
15	-L1- 1098+69 - 1104+74 LT	8'x7' RCBC, SFR						0.014	0.002	164	19	
		Structure Stabilization						0.001		5		
		WGR	0.760		0.061	0.112						
SHEET TOTALS*:			1.089	0.000	0.061	0.141	0.000	2.784	0.083	935	216	0

*Rounded totals are sum of actual impacts

NOTES:

Site 15: WGR is a total take in summary above; hatching outside construction impacts is not shown

Site 15: Temporary Excavation (~0.01ac) shown within the mechanized clearing limits due to an erosion control temporary construction channel

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WETLAND AND SURFACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
16	-L1- 1110+56 LT - 1116+24 RT	Roadway Fill, 7'x7' RCBC: SFN						0.041		413		
		WGR	1.387			0.088						
		WGT			0.008	0.018						
17	-L1- 1113+08 - 1114+68 RT	Roadway Fill: WGS	0.237			0.009						
18	-L1- 1114+82 LT - 1119+07 RT	Roadway Fill: SFQ						0.048	0.001	571	8	
		Structure Stabilization						0.002		34		
19	-L1- 1124+16 LT - 1126+26 RT	60" RCP: SFS						0.031		445		
		Structure Stabilization						0.003	0.002	21	10	
		WGR	0.202			0.020						
20	-L1- 1137+84 LT - 1142+30 RT	54" RCP/WSP/CAAP: SFT						0.054		757		
		Structure Stabilization						0.004	0.002	47	25	
20A	-Y24R- 36+70 RT	Ditch: WGU(2)				0.001						
21	-L1- 1148+27 LT - 1149+37 RT	Roadway Fill: WGY	0.099									
22	-L1- 1148+75 - 1149+39 RT	Roadway Fill: WGZ	0.059			0.016						
23	-L1- 1151+32 LT - 1154+50 RT	6'x8' RCBC, SGC						0.026	0.002	398	25	
		Structure Stabilization						0.001		20		
		WHB	1.178		0.002	0.061						
SHEET TOTALS*:			3.162	0.000	0.010	0.213	0.000	0.210	0.007	2706	68	0

*Rounded totals are sum of actual impacts

NOTES:

Site 23: Temporary Excavation (~0.032ac) shown within the mechanized clearing limits due to an erosion control temporary construction channel

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WETLAND AND SURFACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
24	-L1- 1159+88 LT - 1162+99 RT	54" CAAP / 60" RCP: SGD						0.034		387		
		Structure Stabilization						0.007	0.003	92	25	
	-L1- 1161+00 - 1161+40 LT	Bank Stabilization						0.010		71		
25	-L1- 1169+38 LT - 1172+22 RT	11'x8' RCBC: SGE						0.036	0.002	443	23	
		Structure Stabilization						0.003	0.002	46	33	
		WHD(1)	0.255		0.015	0.027						
		WHD(2)	0.195		0.009	0.013						
26	-L1- 1171+28 LT - 1178+18 RT	Roadway Fill: SGG						0.084	0.001	723	11	
		Structure Stabilization						0.002		21		
27	-L1- 1174+66 - 1179+63 LT	Roadway Fill: SGF						0.030	0.004	309	40	
		Structure Stabilization						0.003		37		
		WHD(2)	0.108		0.037	0.023						
28	-Y22CR- 13+50 LT - 14+26 RT	2 @ 12'x8' RCBC: SKR						0.036	0.011	117	44	
		Structure Stabilization						0.016		75		
29	-Y23R- 61+16 LT	36" RCP: SFJ						0.008		64		
		Structure Stabilization						0.002	0.001	20	10	
29A	-Y23FR- 11+07 - 12+01 LT	54" RCP: SFJ						0.007	0.001	78	12	
		Structure Stabilization						0.003	0.001	24	10	
		WNM	0.021			0.044						
SHEET TOTALS*:			0.579	0.000	0.061	0.107	0.000	0.281	0.026	2507	208	0

*Rounded totals are sum of actual impacts

NOTES:

Site 25: Temporary Excavation (~0.007ac) shown within the mechanized clearing limits due to an erosion control temporary construction channel
 Site 29A: Temporary Excavation (~0.005ac) shown within the mechanized clearing limits due to an erosion control temporary construction channel

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WETLAND AND SURFACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
30	-Y23DR- 23+90 LT - 25+00 RT	42" RCP: SHT						0.011		225		
	-Y23DR- 23+59 - 25+53 LT	PAO						0.792				
31	-Y24R- 19+06 LT - 21+74 RT	5'x6' RCBC Ext / 72" WSP: SFY						0.001		6		
		Structure Stabilization						0.005	0.002	34	10	
		WGW	0.023		0.004	0.019						
		WGV(1)	0.055		0.010	0.021						
32	-Y24R- 34+65 CT	6'x8'9" RCBC Ext / 72" WSP: SGA						0.064	0.001	270	7	
		Structure Stabilization						0.007	0.003	30	12	
33	-Y26R- 18+73 CT	10'x9' RCBC: SGA						0.016	0.001	137	11	
		Structure Stabilization						0.007	0.006	40	37	
		WHD(2)			0.007	0.014						
		WAAK	0.026			0.020						
34	-Y26R- 18+50 LT	10'x9' RCBC: SAAK						0.002	0.001	31	11	
35	-Y26R- 18+35 LT	10'x9' RCBC: SAAL							0.001		10	
36	-Y22RPE_REV- 45+95 - 46+14 RT	Ditch: WFK				0.005						
SHEET TOTALS*:			0.104	0.000	0.021	0.079	0.000	0.905	0.015	773	98	0
PROJECT TOTALS*:			6.195	0.765	0.210	0.717	0.697	4.422	0.176	9326	951	0

*Rounded totals are sum of actual impacts

NOTES:

Site 33: Temporary Excavation (~0.001ac) shown within the mechanized clearing limits due to an erosion control temporary construction channel

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