PROJECT COMMITMENTS

T.I.P Project No. I-3819B
Proposed I-40/I-77 Interchange Area Improvements
Iredell County
WBS Element 34192.1.2

COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

In addition to the Section 404 Conditions, Regional Conditions, State Consistency, North Carolina Department of Transportation's (NCDOT) Guidance for Best Management Practices for the Protection of Surface Waters, General Certification Conditions, and Section 401 Conditions for Certification, State Stormwater Permit, NCDOT has agreed to the following special commitments:

Roadway Design Unit

Wetlands: Additional area of wetlands in the southwest quadrant of the I-40/I-77 interchange will be bridged to minimize impacts. Fill slopes will not encroach into the jurisdictional wetland boundaries any more than practicable as shown in the preliminary design.

Structures over Fourth Creek will accommodate the existing Museum Greenway path: The new and widened structures at SR 1934 (Hillside Lane) extension, I-40 and I-77, and their associated ramps shall be designed to span the existing greenway that follows Fourth Creek.

Retaining walls at Pressly Elementary School and Northview Elementary School: In order to minimize the impact to the grounds of these schools, a retaining wall along the proposed shoulder of I-40 and I-77 shall be constructed in accordance with NCDOT construction standards.
The retaining wall for Northview Elementary School was constructed as part of the I-3819A project.

Noise Mitigation:
A final design noise report will be performed based on the results of the planning noise study. Noise mitigation will be provided as required in accordance with the NCDOT Noise Abatement Policy.

COMMITMENTS FROM PERMITTING

See 404 Permit and 401 Certification for special conditions developed during permitting.

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343

February 25, 2021

Regulatory Division

DA No. SAW-2018-01504

Philip S. Harris III, P.E., C.P.M.
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, NC, 27699-1598

Dear Mr. Harris:

Reference the Department of the Army (DA) individual permit issued on January 21, 2020, to the North Carolina Department of Transportation (NCDOT), for impacts associated with the I-40/I-77 interchange improvements project (TIP Nos. I-3819B/U-6039), including I-40 from west of SR 2003 (Radio Road) to SR 2158 (Old Mocksville Road) and I-77 from south of SR 2321 (East Broad Street) to south of SR 2171 (Jane Sowers Road), in Iredell County, North Carolina.

On November 24, 2020, the U.S. Army Corps of Engineers (Corps) received your request to modify the standard permit for the I-3819B/U-6039 project. The request included a variance request for specific cross-pipes that will not be embedded, revisions to the drainage design, minor modifications to permitted impacts, and a revised mitigation proposal. The total waters of the U.S. impacts, including utilities, for I-3819B/U-6039 modified design are: 1.55 acres of permanent wetland impacts (including 0.33 acre mechanized clearing), 2.66 acres of temporary wetland impacts, 3,213 linear feet of permanent stream impacts, of which 1,047 linear feet are bank stabilization, and 471 linear feet of temporary stream impacts. Non-404 wetland impacts are less than 0.01 acre of hand clearing.

The Corps has completed the evaluation of your request and has determined that it is appropriate and reasonable, and no public notice is required for this modification. Therefore, the permit is modified as requested, including requested exemptions from pipe burial and revised mitigation (revised Mitigation Responsibility Transfer form is enclosed), and as shown on the revised PERMIT DRAWINGS, Sheets 1 through 67 (I-3819B/U-6039), Rev. 11/02/2020, and UTILITY PERMIT DRAWINGS, Sheets 1 through 8 (I-3819B/U-6039), Rev. 11/02/2020.

For your information, the following special conditions from the original authorization have been updated to include the new compensatory mitigation requirements (enclosed), and the new modified permit drawings:

Special Conditions

1. Work Limits: All work authorized by this permit shall be performed in strict compliance with the following sets of plans: PERMIT DRAWINGS, Sheets 1 through 67 (I-3819B/U-6039), Rev. 11/02/2020, and UTILITY PERMIT DRAWINGS, Sheets 1 through 8 (I-3819B/U-6039), Rev. 11/02/2020; which are part of this permit. The Permittee shall ensure the construction design plans for this project do not deviate from the specified permit drawings. Any modification to the attached permit plans must be approved by the U.S. Army Corps of Engineers prior to any active construction in waters or wetlands.

14. In order to compensate for impacts associated with this permit, mitigation shall be provided in accordance with the provisions outlined on the most recent version of the attached Compensatory Mitigation Responsibility Transfer Form. The requirements of this form, including any special conditions listed on this form, are hereby incorporated as special conditions of this permit.

15. You must comply with the following conditions specified in the February 12, 2021 water quality certification:

Condition(s) of Certification

1. Exemption for pipe burial at Permitted Sites 16, 17, 18, 19, 21, 22, 24, 25, and 27 are granted as requested based on the condition of the existing pipe. The existing pipes are perched and meeting burial requirements will be impossible within current right of way lines. However, the permittee will be expected to incorporate acceptable stream structures, such as rock ladders, at these sites to restore aquatic passage to the maximum extent practicable.

2. This modification is applicable only to the additional proposed activities. All of the authorized activities and conditions of certification associated with the original Water Quality Certification dated November 19, 2019 and subsequent modification dated January 30, 2020 still apply except where superseded by this certification.

All other conditions of the permit, including the permit expiration date of December 31, 2025, remain in effect as written. Should you have any questions, contact Mr. Eric Alsmeyer, via email at Eric.C.Alsmeyer@usace.army.mil or by telephone at (919) 554-4884, extension 23.

FOR THE COMMANDER

Monte Matthews Date: 2021.02.25 15:00:57 -05'00'

Monte Matthews
Lead Project Manager
Wilmington District

Enclosures

Electronic Copies Furnished with Enclosures:

Ms. Beth Harmon
NC Division of Mitigation Services
beth.harmon@ncdenr.gov

Ms. Erin Cheely
NCDOT
ekcheely@ncdot.gov

U.S. ARMY CORPS OF ENGINEERS
Wilmington District
Compensatory Mitigation Responsibility Transfer Form

Permittee: NCDOT **Action ID:** SAW-2018-01504
Project Name: TIPs I-3819B/U-6039_I-77_I-40 Interchange_Div12 (Mod01) **County:** Iredell

Instructions to Permittee: The Permittee must provide a copy of this form to the Mitigation Sponsor, either an approved Mitigation Bank or the North Carolina Division of Mitigation Services (NCDMS), who will then sign the form to verify the transfer of the mitigation responsibility. Once the Sponsor has signed this form, it is the Permittee's responsibility to ensure that to the U.S. Army Corps of Engineers (USACE) Project Manager identified on page two is in receipt of a signed copy of this form before conducting authorized impacts, unless otherwise specified below. If more than one mitigation Sponsor will be used to provide the mitigation associated with the permit, or if the impacts and/or the mitigation will occur in more than one 8-digit Hydrologic Unit Code (HUC), multiple forms will be attached to the permit, and the separate forms for each Sponsor and/or HUC must be provided to the appropriate mitigation Sponsors.

Instructions to Sponsor: The Sponsor must verify that the mitigation requirements (credits) shown below are available at the identified site. By signing below, the Sponsor is accepting full responsibility for the identified mitigation, regardless of whether or not they have received payment from the Permittee. Once the form is signed, the Sponsor must update the bank ledger and provide a copy of the signed form and the updated bank ledger to the Permittee, the USACE Project Manager, and the Wilmington District Mitigation Office (see contact information on page 2). The Sponsor must also comply with all reporting requirements established in their authorizing instrument.

Permitted Impacts and Compensatory Mitigation Requirements

Permitted Impacts Requiring Mitigation*: **8-digit HUC and Basin:** Choose the 8-digit HUC

Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
2,166				1.55		

*If more than one mitigation sponsor will be used for the permit, only include impacts to be mitigated by this sponsor.

Compensatory Mitigation Requirements: **8-digit HUC and Basin:** Choose the 8-digit HUC

Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
4,332				3.10		

Mitigation Site Debited:_____
(List the name of the bank to be debited. For umbrella banks, also list the specific site. For NCDMS, list NCDMS. If the NCDMS acceptance letter identifies a specific site, also list the specific site to be debited).

Section to be completed by the Mitigation Sponsor

Statement of Mitigation Liability Acceptance: I, the undersigned, verify that I am authorized to approve mitigation transactions for the Mitigation Sponsor shown below, and I certify that the Sponsor agrees to accept full responsibility for providing the mitigation identified in this document (see the table above), associated with the USACE Permittee and Action ID number shown. I also verify that released credits (and/or advance credits for NCDMS), as approved by the USACE, are currently available at the mitigation site identified above. Further, I understand that if the Sponsor fails to provide the required compensatory mitigation, the USACE Wilmington District Engineer may pursue measures against the Sponsor to ensure compliance associated with the mitigation requirements.

Mitigation Sponsor Name:_____

Name of Sponsor's Authorized Representative:_____

_____ _____
Signature of Sponsor's Authorized Representative **Date of Signature**

USACE Wilmington District
Compensatory Mitigation Responsibility Transfer Form, Page 2

Conditions for Transfer of Compensatory Mitigation Credit:

- Once this document has been signed by the Mitigation Sponsor and the USACE is in receipt of the signed form, the Permittee is no longer responsible for providing the mitigation identified in this form, though the Permittee remains responsible for any other mitigation requirements stated in the permit conditions.
- Construction within jurisdictional areas authorized by the permit identified on page one of this form can begin only after the USACE is in receipt of a copy of this document signed by the Sponsor, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein. For authorized impacts conducted by the North Carolina Department of Transportation (NCDOT), construction within jurisdictional areas may proceed upon permit issuance; however, a copy of this form signed by the Sponsor must be provided to the USACE within 30 days of permit issuance. NCDOT remains fully responsible for the mitigation until the USACE has received this form, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein.
- Signed copies of this document must be retained by the Permittee, Mitigation Sponsor, and in the USACE administrative records for both the permit and the Bank/ILF Instrument. It is the Permittee's responsibility to ensure that the USACE Project Manager (address below) is provided with a signed copy of this form.
- If changes are proposed to the type, amount, or location of mitigation after this form has been signed and returned to the USACE, the Sponsor must obtain case-by-case approval from the USACE Project Manager and/or North Carolina Interagency Review Team (NCIRT). If approved, higher mitigation ratios may be applied, as per current District guidance and a new version of this form must be completed and included in the USACE administrative records for both the permit and the Bank/ILF Instrument.

Comments/Additional Conditions: This form replaces any previous forms for this project.

This form is not valid unless signed below by the USACE Project Manager and by the Mitigation Sponsor on Page 1. ***Once signed, the Sponsor should provide copies of this form along with an updated bank ledger to: 1) the Permittee, 2) the USACE Project Manager at the address below, and 3) the Wilmington District Mitigation Office, Attn: Todd Tugwell, 3331 Heritage Trade Drive, Suite 105, Wake Forest, NC 27587 (email: todd.tugwell@usace.army.mil)***. Questions regarding this form or any of the permit conditions may be directed to the USACE Project Manager below.

USACE Project Manager: Eric Alsmeyer
USACE Field Office: Raleigh Regulatory Field Office
US Army Corps of Engineers
3331 Heritage Trade Drive, Suite 105
Wake Forest, NC 27587
Email: **eric.c.alsmeyer@usace.army.mil**

Eric C. Alsmeyer

USACE Project Manager Signature

February 25, 2021

Date of Signature

Current Wilmington District mitigation guidance, including information on mitigation ratios, functional assessments, and mitigation bank location and availability, and credit classifications (including stream temperature and wetland groupings) is available at http://ribits.usace.army.mil.

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 our website at http://regulatory.usacesurvey.com/ to complete the survey online.

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NORTH CAROLINA
Environmental Quality

ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
S. DANIEL SMITH
Director

February 12, 2021

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

Subject: Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for Proposed improvements to the I-77 and I-40 interchange in Iredell County, including Broad Street improvements, TIP I-3819B, U-6039, WBS 34192.3.2. NCDWR Project No. 20191006 v.2

Dear Mr. Harris:

Attached hereto is a modification of Certification No. WQC004203 issued to The North Carolina Department of Transportation (NCDOT) dated November 19, 2019 and Addendum and Correction issued on January 20, 2020.

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

Sincerely,
DocuSigned by:
Amy Chapman
9C9886312DCD474...
S. Daniel Smith, Director
Division of Water Resources

Attachments

Electronic copy only distribution:
Eric Alsmeyer, US Army Corps of Engineers, Raleigh Field Office
Jeff Wyatt, Division 12 Environmental Officer
Michael Turchy, NC Department of Transportation
Amanetta Somerville, US Environmental Protection Agency
Janet Mizzi, US Fish and Wildlife Service
Marla Chambers, NC Wildlife Resources Commission
Donna Hood, NC Division of Water Resources Mooresville Regional Office
File Copy

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

THIS 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 authorizes the NCDOT to impact an additional **2.66 acres** of jurisdictional wetlands and **105 linear feet** of jurisdictional streams in Iredell County. The project shall be constructed pursuant to the modification dated received December 2, 2020. The authorized impacts are as described below:

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Site	Bank Stabilization (linear feet)	Permanent Fill in Intermittent Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
2 16+70-21+50YRPCA	42				20	62	
3 15+75-YRPC				206	10	216	
5 70+00-73+85 YRPAC					~~40~~ 77	~~40~~ 77	
6 121+50-Y-LT	12				20	32	
7 120+90-Y-RT	12				20	32	
9 28+50-34+00-YRPAC				747	10	757	747
9A					+50	50	
10 28+00-YRPAC	25				20	45	
12 149+00-150+00 L				10	54	64	
13 167+00 RT	44			17	10	71	17
14 28+50-Y		17	10			27	
15 33+75-Y	11		20			31	
16 35+90-37+20-Y		~~112~~ 113	10			~~122~~ 123	
17 37+70-38+50-Y				~~115~~ 114	14	~~129~~ 128	
18 47+50-Y				72	10	82	
19 46+00-Y				34		34	
20 68+50-Y				61	10	71	
21 69+20-70+20-Y				176	21	197	176
22 71+30-84+00-Y	~~873~~ 901			~~467~~ 455	10	1350	~~467~~ 455

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23 87+70-Y					33	33	
24 93+75-Y				49	10	59	
25 94+50				~~44~~ 31	~~32~~ 21	~~76~~ 52	
27 210+00-Y				48	10	58	
28				16	11	27	
Total	~~1019~~ 1047	~~129~~ 130	40	~~2046~~ 2036	~~354~~ 441	~~3588~~ 3678	~~1407~~ 1395

Total Stream Impact for Project: ~~3588 linear feet~~, 3778 linear feet
DWR Required Mitigation: ~~1407 linear feet,~~ 1395 linear feet
ACOE Mitigation: ~~2175 linear feet~~, 2166 linear feet

Wetland Impacts in the Yadkin-PeeDee River Basin

Site	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Area under Bridge (ac)	Total Wetland Impact (ac)
2 14+00-21+50 YRPCA	0.32			0.09			0.41
2 16+70-21+50YRPCA	0.02	0.62		0.02	~~0.62~~ 0		0.66
3 15+75-YRPC	<0.01			0.01			0.02
4 24+00-YRPC				0.02			0.02
5 70+00-76+25 YRPAC	0.03	2.04		0.05	~~1.94~~ 0		~~2.03~~ 2.12
8 19+00-YRPDB	<0.01			<0.01			0.01
9 28+50-34+00-YRPAC	0.40			0.08			0.47
11 26+50-26+50-YRPAC	0.19			0.02			0.21

26 116+70-120+10-Y	0.09			0.04			0.13
U-1 31+50-YRPD	0.02						0.02
U-2 75+00-YRPAC	<0.01	0.25		0.02			0.27
U-3 18+92 YRPDB					<0.01		0.01
U-4				0.14			0.14
Total	1.08	~~0.27~~ 2.93	0	~~0.37~~ 0.49	~~2.57~~ 0		~~1.41~~ 1.55

Total Wetland Impact for Project: ~~1.41 acres~~, 1.55 acres
Additional Wetland Impacts: +0.14

The application provides adequate assurance that the discharge of fill material into the waters of the Catawba 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 modified application dated received November 24, 2020. All the authorized activities and conditions of certification associated with the original Water Quality Certification dated November 19, 2019 and January 30, 2020 still apply except where superseded by this certification. 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.

Condition(s) of Certification:

1. Exemption for pipe burial at Permitted Sites 16, 17, 18, 19, 21, 22, 24, 25, and 27 are granted as requested based on the condition of the existing pipe. The existing pipes are perched and meeting burial requirements will be impossible within current right of way lines. However, the permittee will be expected to incorporate acceptable stream structures, such as rock ladders, at these sites to restore aquatic passage to the maximum extent practicable.

2. This modification is applicable only to the additional proposed activities. All of the authorized activities and conditions of certification associated with the original Water Quality Certification dated November 19, 2019 and subsequent modification dated January 30, 2020 still apply except where superseded by this certification.

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. 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

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expiration of the 404 or CAMA permit.

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission.
The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings
6714 Mail Service Center
Raleigh, NC 27699-6714
Telephone: (919) 431-3000, Facsimile: (919) 431-3100

A copy of the petition must also be served on DEQ as follows:

Mr. Bill F. Lane, General Counsel
Department of Environmental Quality
1601 Mail Service Center

This the 12th day of February 2021

DIVISION OF WATER RESOURCES

DocuSigned by:
Amy Chapman
9C9886312DCD474...

S. Daniel Smith, Director

WQC No. 004203

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NORTH CAROLINA
Environmental Quality

ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
S. DANIEL SMITH
Director

NCDWR Project No.: _____ **County:** _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion
Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Resources, 1617 Mail Service Center, Raleigh, NC, 27699-1617. This form may be returned to NCDWR by the applicant, the applicant's authorized agent, **or** the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Agent's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date:_____

Engineer's Certification

_____ Partial _____ Final

I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature _____ Registration No. _____
Date _____

Pre-Filing Time Clock has been reached for I-3819 B - 20191006 Ver 3

laserfiche@ncdenr.gov <laserfiche@ncdenr.gov>

Wed 4/14/2021 12:00 AM

To: Turchy, Michael A <maturchy@ncdot.gov>
Cc: Hood, Donna <donna.hood@ncdenr.gov>

1 attachments (52 KB)

DWR Pre-Filing Meeting Request Form.pdf;

The North Carolina Division of Water Resources has received the Pre-Filing Meeting Request Form for I-3819 B that you submitted on 3/14/2021. The ID number for that project is 20191006, Version 3.

Your Pre-Filing Meeting Request has now reached the 30 calendar days' requirement and your application can now be accepted.

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.

For internal use only: Transportation Project

DWR Pre-Filing Meeting Request Form

ID#* 20191006 **Version*** 3

Regional Office* Mooresville Regional Office - (704) 663-1699

Reviewer List* Donna Hood

Pre-Filing Meeting Request submitted 3/14/2021

Contact Name* Michael Turchy

Contact Email Address* maturchy@ncdot.gov

Project Name* I-3819 B

Project Owner* NCDOT

Project County* Iredell

Owner Address:

Street Address
1598 Mail Service Center
Address Line 2
City: Raleigh
State / Province / Region: NC
Postal / Zip Code: 27699
Country: US

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
- [x] Individual Permit
- [x] Modification
- [ ] Shoreline Stabilization

Does this project have an existing project ID#?*

(•) Yes ( ) No

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

20191006v2

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

No Meeting Requested

Please give a brief project description below and include location information.*

This is a future/anticipated modification request. No meeting is requested.

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

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

Michael Turchy

Submittal Date 3/14/2021

TIP PROJECT: I-3819B/U-6039

PROJECT: 34192.1.2

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-3819B/U-6039	1	

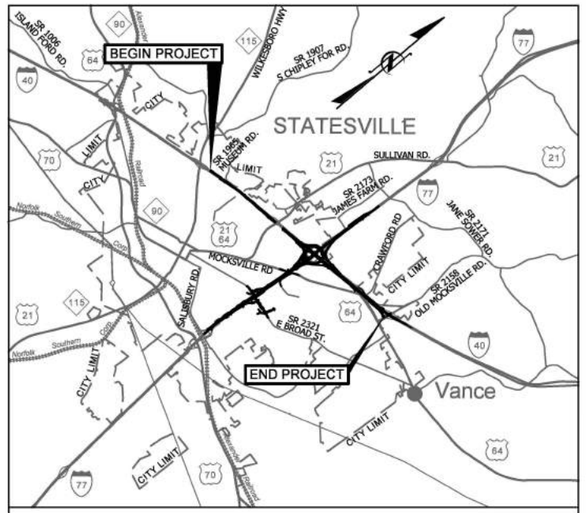
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34192.1.2	IMS-40-2(124)	P.E.
34192.3.2	N/A	DESIGN BUILD

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

IREDELL COUNTY

LOCATION: I-40/I-77 INTERCHANGE INCLUDING I-40 FROM WEST OF SR 2003 (RADIO RD.) TO SR 2158 (OLD MOCKSVILLE RD.) & I-77 FROM SOUTH OF SR 2321 (EAST BROAD ST.) TO SOUTH OF SR 2171 (JANE SOWERS RD.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES, RETAINING WALLS, NOISE WALLS, AND TRAFFIC CONTROL



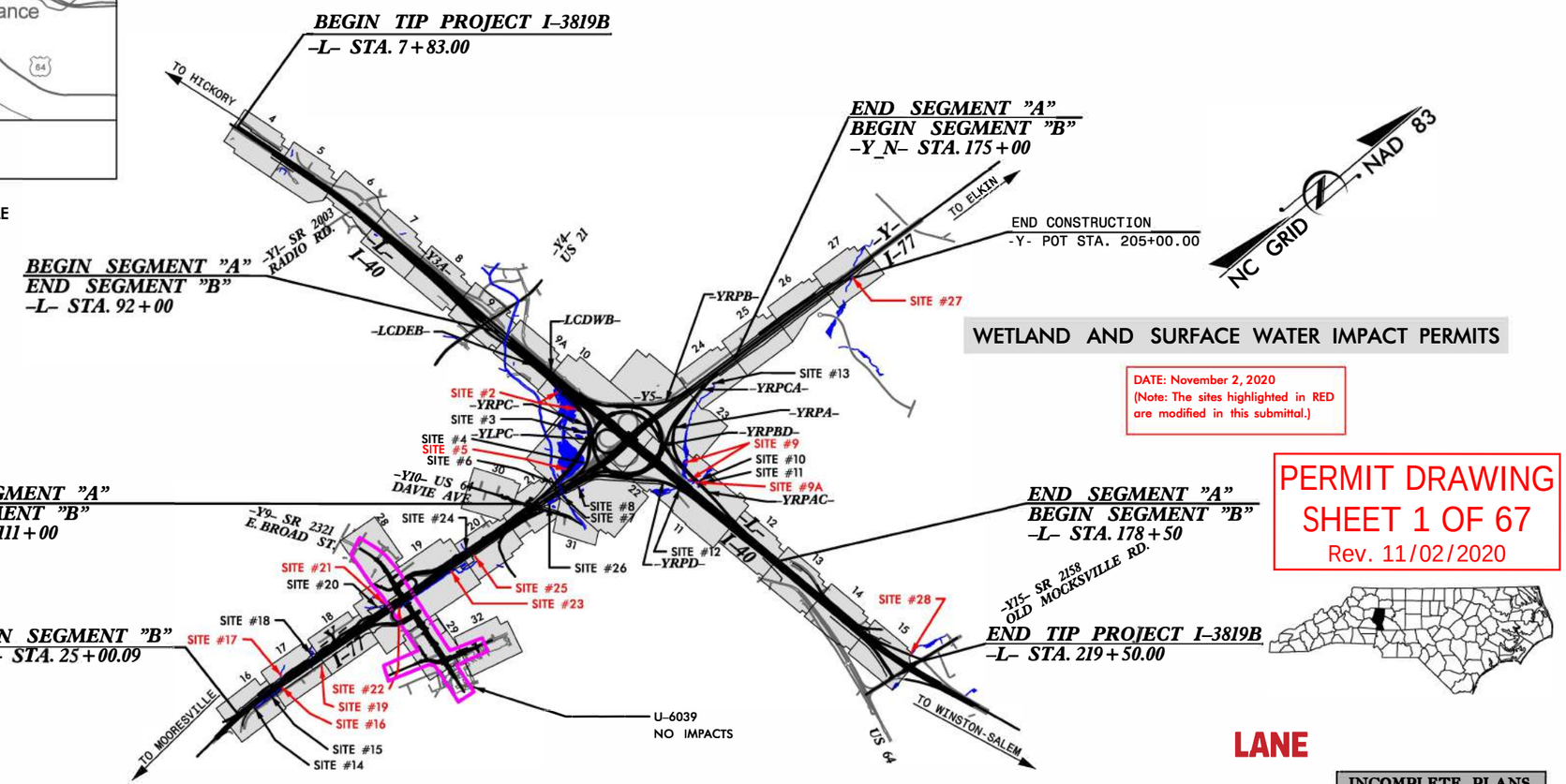
VICINITY MAP

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF STATESVILLE AND THE TOWNSHIP OF BETHANY

50 25 0 100 200
PLANS

100 50 0 200 400
OVERSIZED PLANS

SCALE VARIES
INSETS



WETLAND AND SURFACE WATER IMPACT PERMITS

DATE: November 2, 2020
(Note: The sites highlighted in RED are modified in this submittal.)

PERMIT DRAWING
SHEET 1 OF 67
Rev. 11/02/2020

LANE

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES

GRAPHIC SCALES

SEE ABOVE

DESIGN DATA

	I-40	I-77
ADT 2018 =	57,300	62,900
ADT 2040 =	72,500	77,500
DHV =	5,800	6,200
D =	55 %	55 %
T =	16 % *	19 % **
V =	60 MPH	60 MPH

* TTST 13 + DUAL 3 (I-40)
** TTST 16 + DUAL 3 (I-77)
CLASSIFICATION: INTERSTATE

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-3819B	=	3.885
LENGTH STRUCTURES TIP PROJECT I-3819B	=	0.124
TOTAL LENGTH OF TIP PROJECT I-3819B	=	4.009

Prepared In the Office of:
WSP
1001 Morehead Square Dr., Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: OCTOBER 30, 2018

LETTING DATE: OCTOBER 30, 2018

CHRISTOPHER D. DAVIS, P.E.
PROJECT ENGINEER

ERIC W. SECKINGER, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
STATE HIGHWAY DESIGN ENGINEER P.E.

11/2/2020
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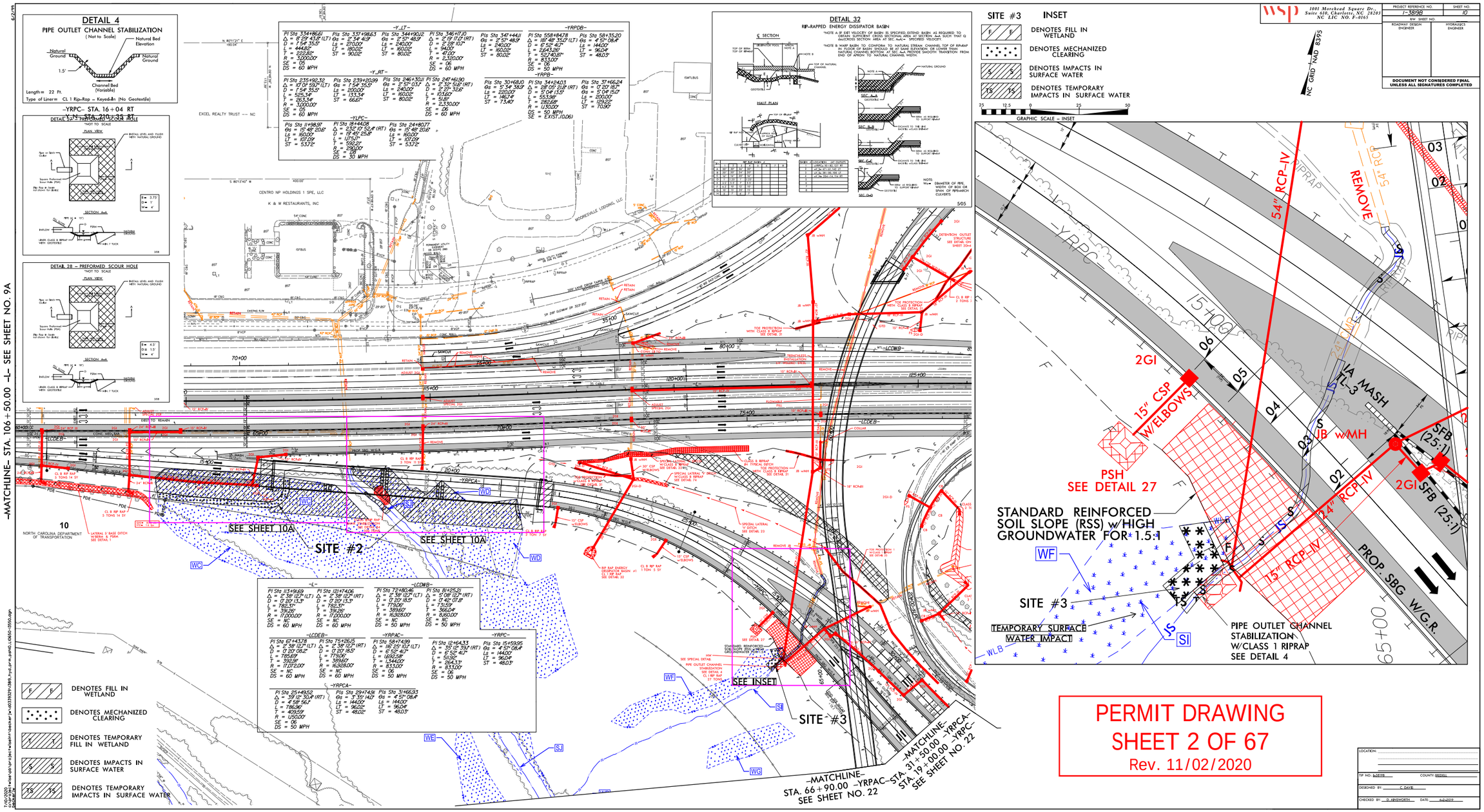
beckerjw

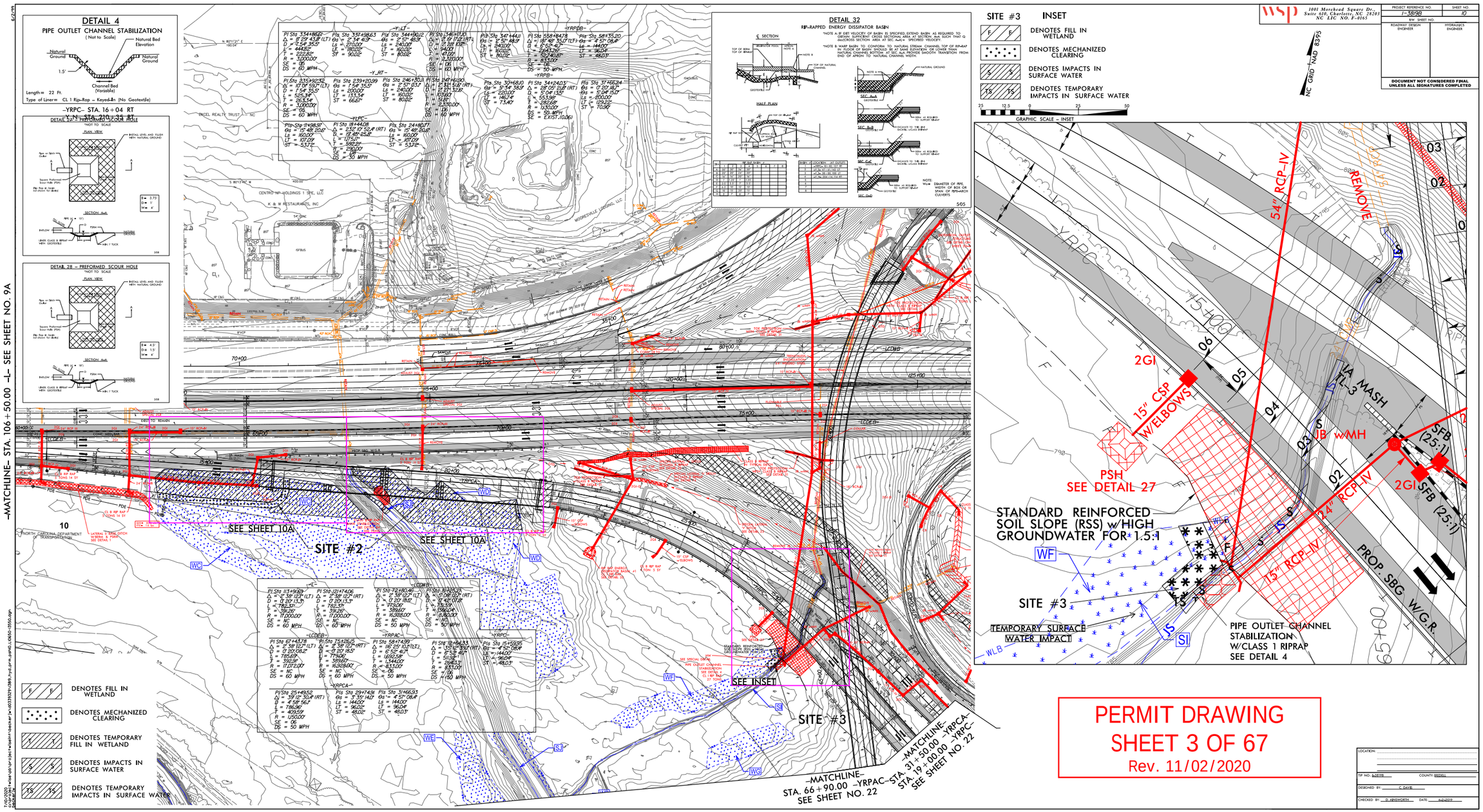


wsp
1001 Morehead Square Dr.
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-5898	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

LOCATION:
TIP NO.: I-5898 COUNTY: IREDELL
DESIGNED BY: C. DAVIS
CHECKED BY: D. ARMSWORTH DATE: 4-24-2020



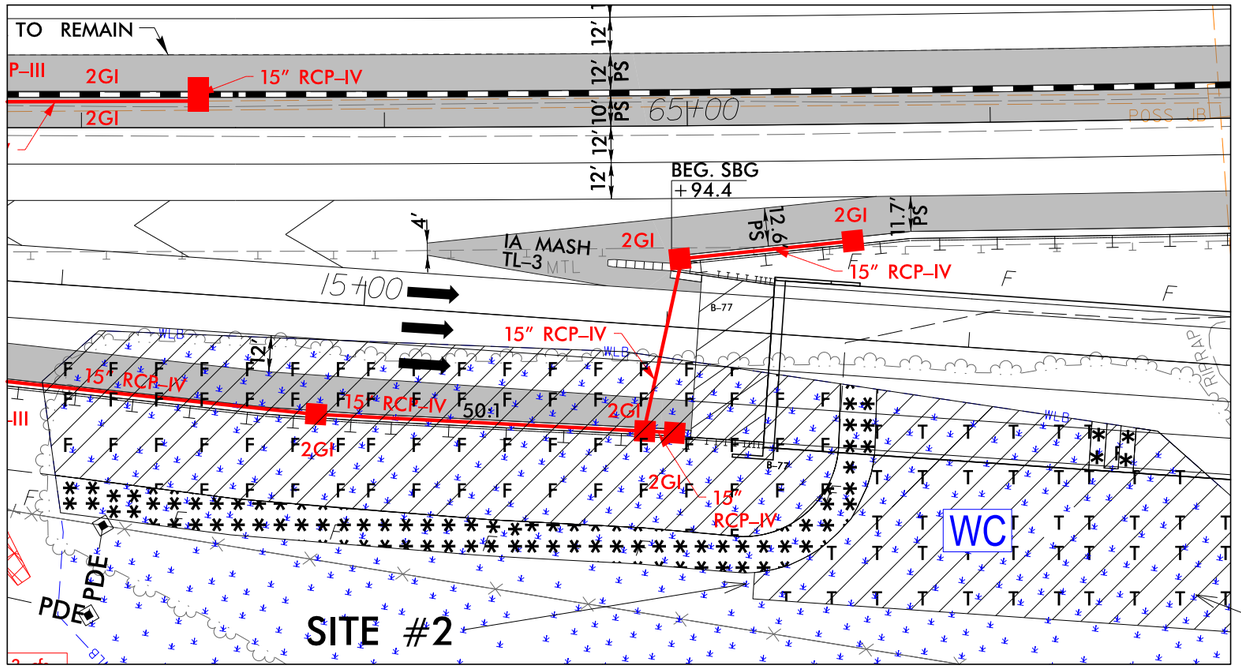
wsp
1001 Morehead Square Dr.
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-5898	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

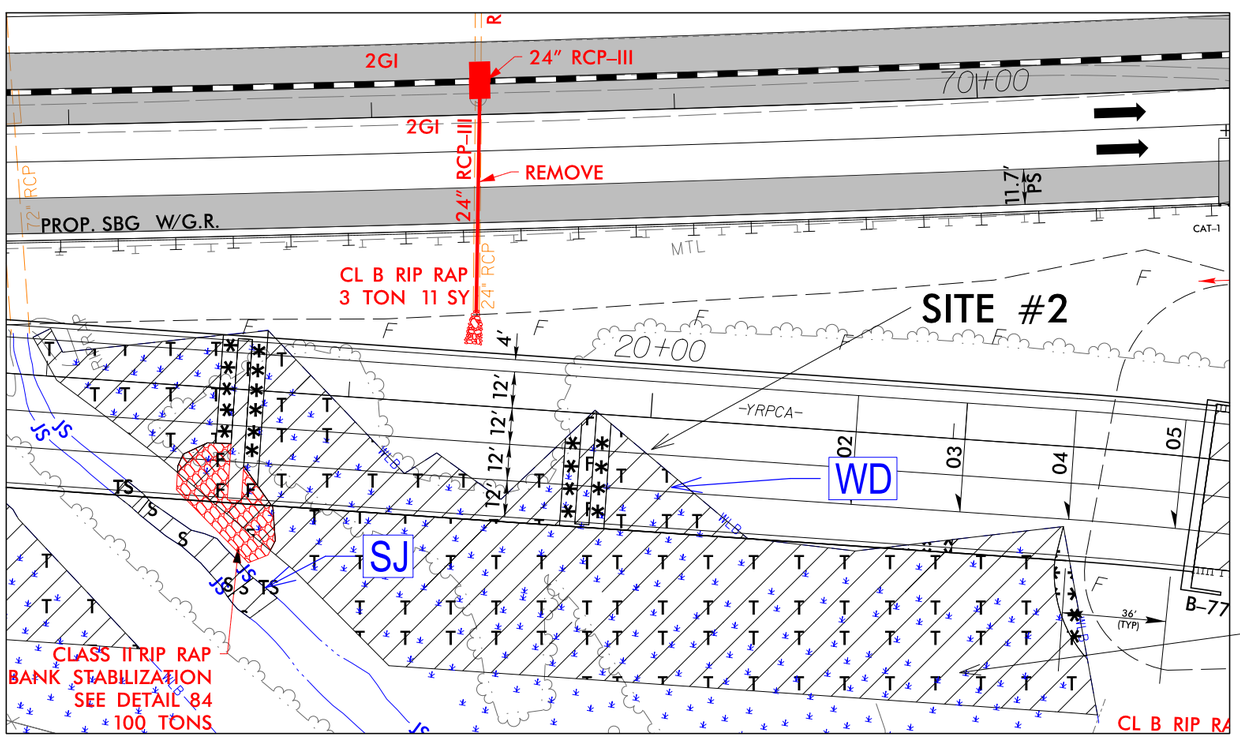
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

LOCATION:
TIP NO.: I-5898 COUNTY: IREDELL
DESIGNED BY: C. DAVIS
CHECKED BY: D. ARMSWORTH DATE: 4-24-2018

SITE #2



TEMPORARY FILL IN WETLAND (MATTING FOR CONSTRUCTION ACCESS – BRIDGE STRUCTURE #12)



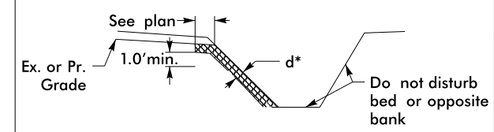
TEMPORARY FILL IN WETLAND (MATTING FOR CONSTRUCTION ACCESS – BRIDGE STRUCTURE #12)

wsp
1001 Morehead Square Dr., Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	10A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL 84
RIP RAP BANK STABILIZATION
(Not to Scale)



Type of Liner= CL 1 or CL 2 Rip Rap (see plan)
*d=18" for CL 1 and 30" for CL 2 (No Geotextile)

–YRPCA– STA. 18+65 RT
–YRPCA– STA. 77+00 RT

PERMIT DRAWING
SHEET 4 OF 67
Rev. 11/02/2020

F F DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
T T DENOTES TEMPORARY FILL IN WETLAND

NC GRID NAD 83/95

50 25 0 50 100
GRAPHIC SCALE – INSET

10/22/2020
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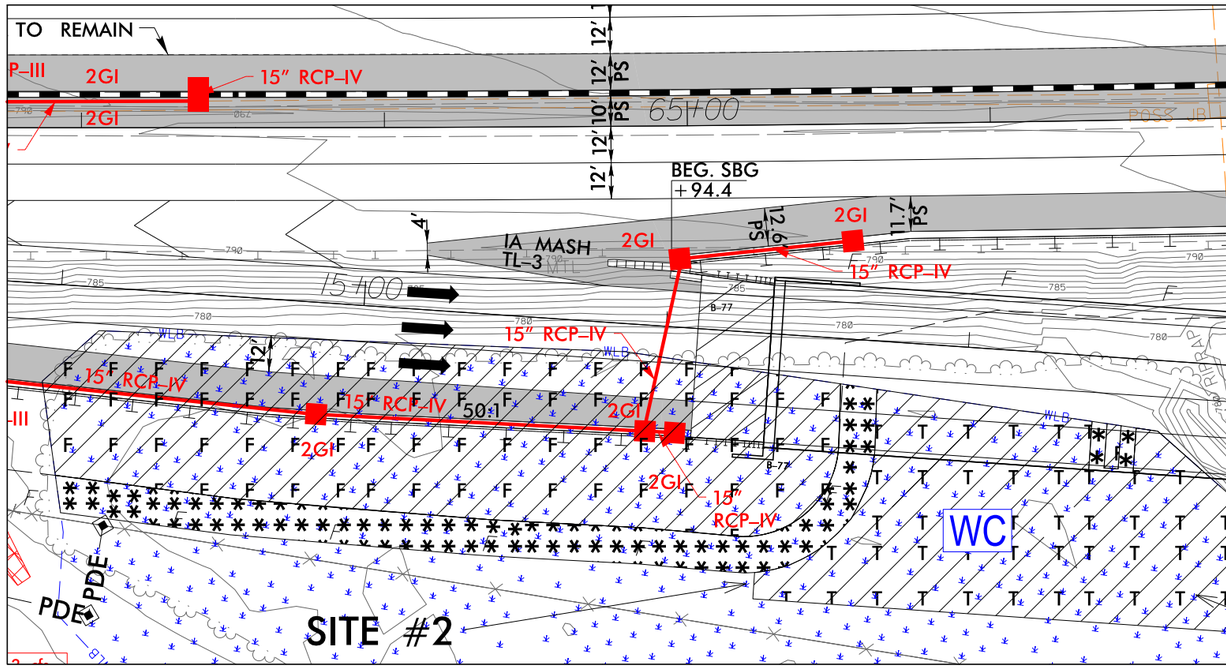
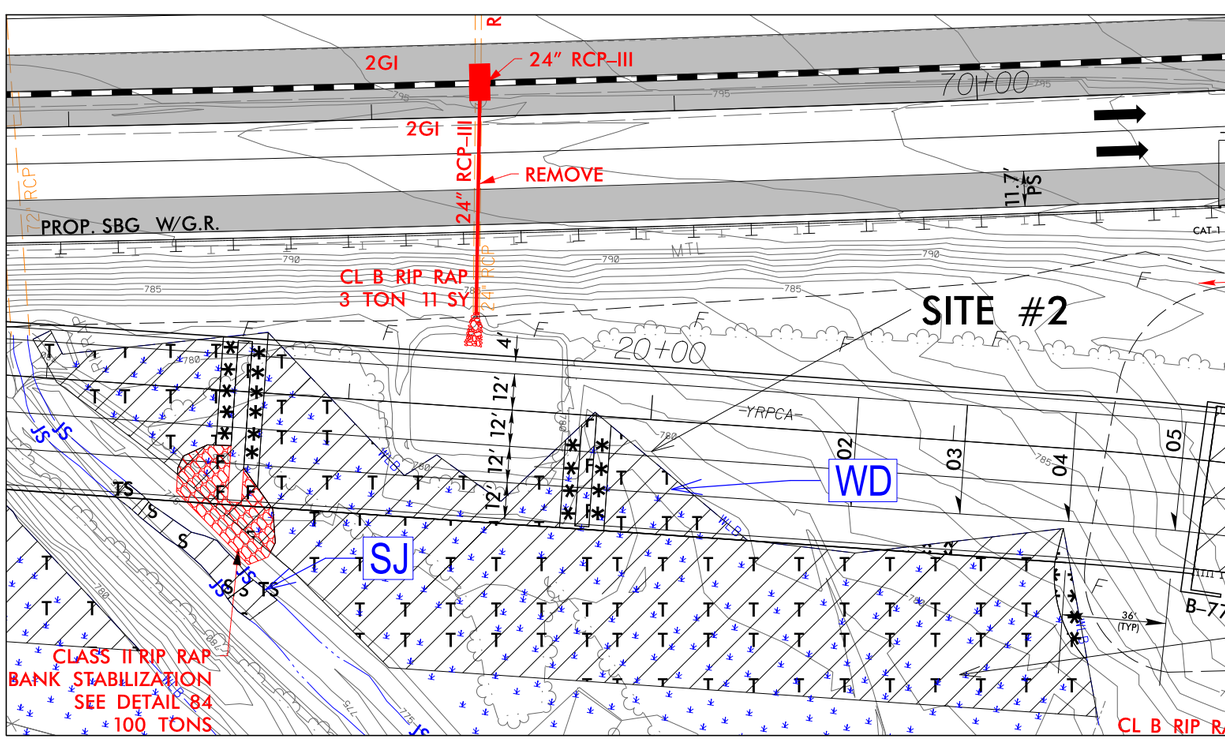
Becker, JW

SITE #2





TEMPORARY FILL IN WETLAND (MATTING FOR CONSTRUCTION ACCESS – BRIDGE STRUCTURE #12)

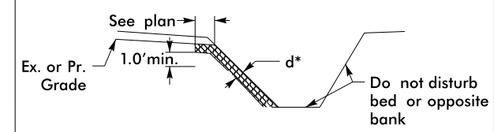
TEMPORARY FILL IN WETLAND (MATTING FOR CONSTRUCTION ACCESS – BRIDGE STRUCTURE #12)

wsp
1001 Morehead Square Dr., Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	10A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL 84
RIP RAP BANK STABILIZATION
(Not to Scale)



Type of Liner= CL 1 or CL 2 Rip Rap (see plan)
*d=18" for CL 1 and 30" for CL 2 (No Geotextile)

–YRPCA– STA. 18+65 RT
–YRPCA– STA. 77+00 RT

PERMIT DRAWING
SHEET 5 OF 67
Rev. 11/02/2020

F F DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
T T DENOTES TEMPORARY FILL IN WETLAND

NC GRID NAD 83/95

50 25 0 50 100
GRAPHIC SCALE – INSET

10/22/2020
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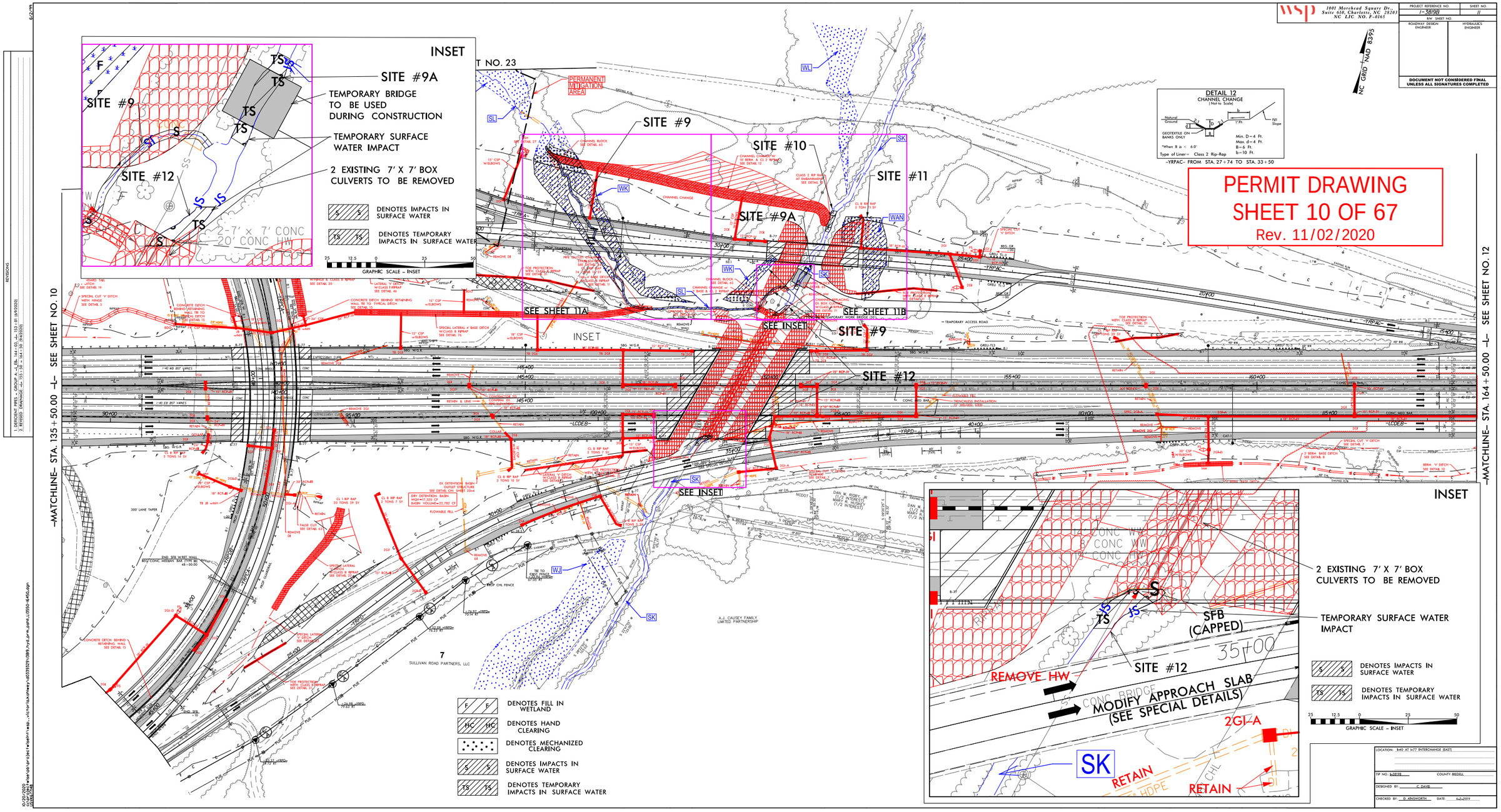
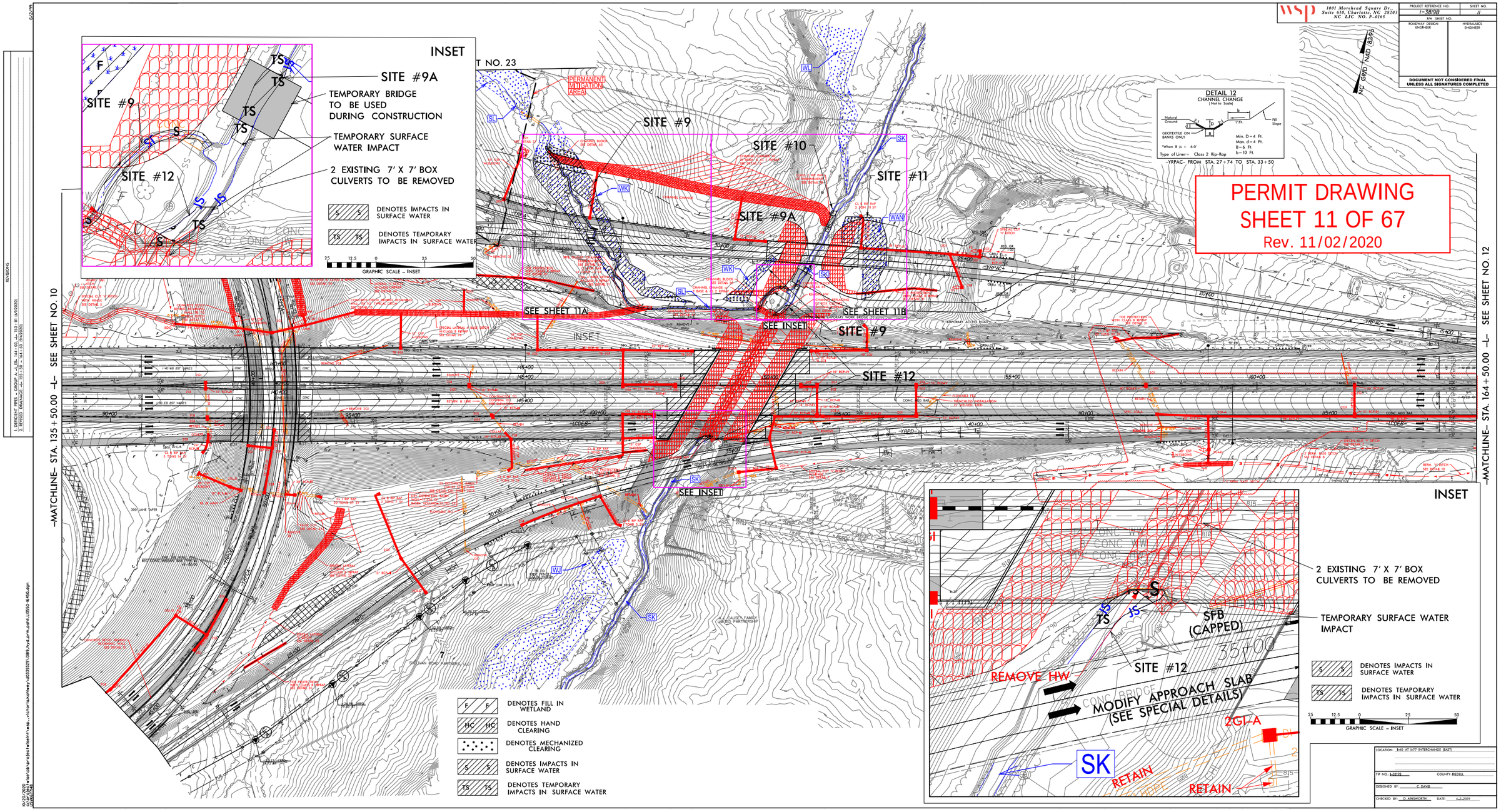
Becker, JW


INSET
SITE #9A
TEMPORARY BRIDGE TO BE USED DURING CONSTRUCTION
TEMPORARY SURFACE WATER IMPACT
2 EXISTING 7' X 7' BOX CULVERTS TO BE REMOVED
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
GRAPHIC SCALE - INSET
SITE #9
SITE #12
2-7' x 7' CONC
20' CONC HW
SITE #10
SITE #11
SITE #9A
SEE SHEET 11A
SEE SHEET 11B
SEE INSET
PERMANENT MITIGATION AREA
DETAIL 12
CHANNEL CHANGE
(Not to Scale)
Natural Ground
Fill Slope
GEOTEXTILE ON BANKS ONLY
*When B ≥ c: 6.0'
Type of Liner = Class 2 Rip-Rap
Min. D = 4 Ft.
Max. d = 4 Ft.
B = 6 Ft.
b = 10 Ft.
-YRPAC- FROM STA. 27+74 TO STA. 33+50
PERMIT DRAWING
SHEET 10 OF 67
Rev. 11/02/2020
NC GRID NAD 83/95
-MATCHLINE- STA. 135+50.00 -L- SEE SHEET NO. 10
-MATCHLINE- STA. 164+50.00 -L- SEE SHEET NO. 12
DENOTES FILL IN WETLAND
DENOTES HAND CLEARING
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
2 EXISTING 7' X 7' BOX CULVERTS TO BE REMOVED
TEMPORARY SURFACE WATER IMPACT
SFB (CAPPED)
SITE #12
REMOVE HW
MODIFY APPROACH SLAB (SEE SPECIAL DETAILS)
2GI-A
SK
RETAIN
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
GRAPHIC SCALE - INSET
1001 Morehead Square Dr., Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165
PROJECT REFERENCE NO. I-3819B
SHEET NO. 11
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
LOCATION: I-40 AT I-77 INTERCHANGE (EAST)
TIP NO. I-3819B
COUNTY: IREDELL
DESIGNED BY: C. DAVIS
CHECKED BY: D. ARNSWORTH
DATE: 6-2-2019

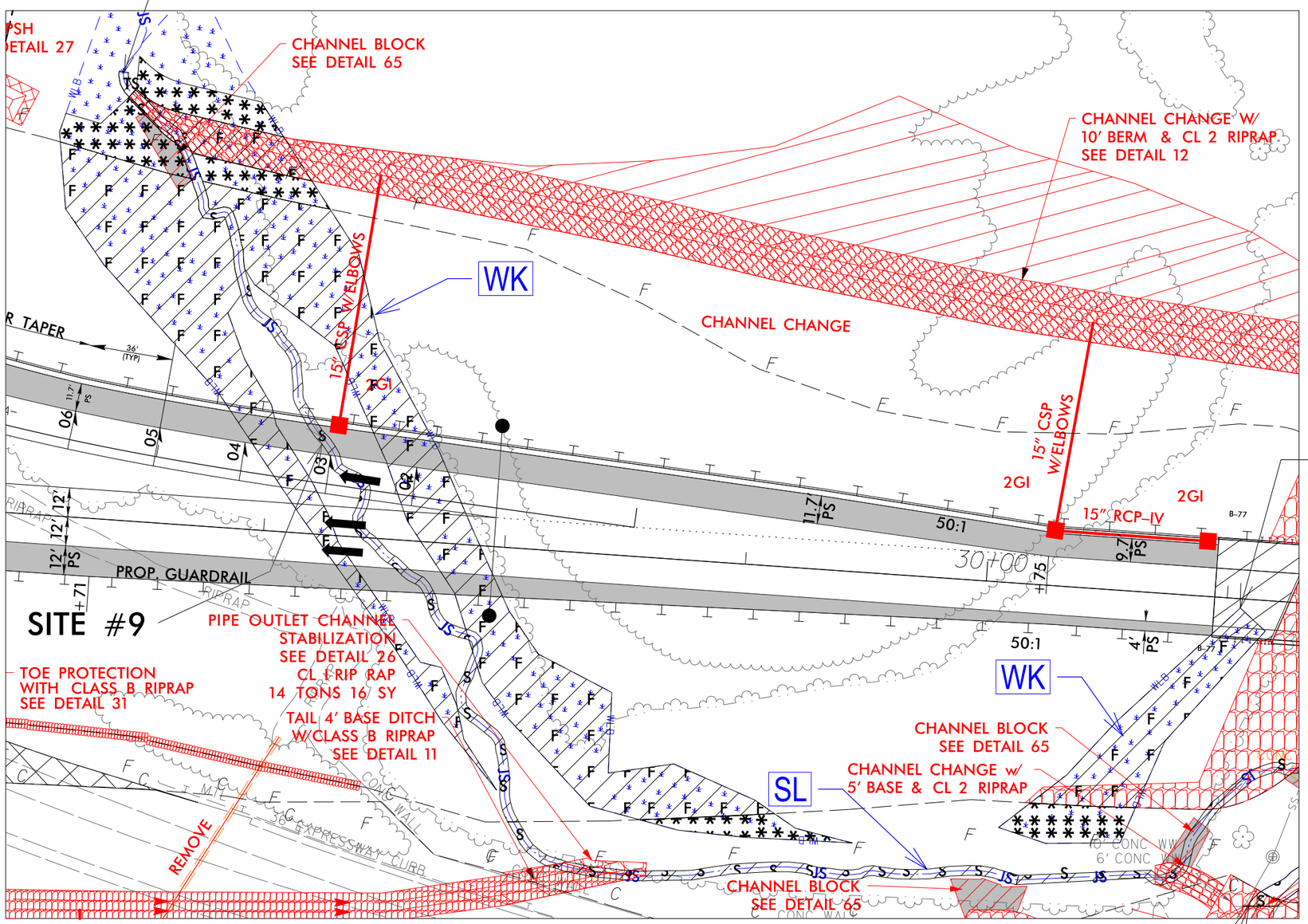

INSET
SITE #9A
TEMPORARY BRIDGE TO BE USED DURING CONSTRUCTION
TEMPORARY SURFACE WATER IMPACT
2 EXISTING 7' X 7' BOX CULVERTS TO BE REMOVED
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
GRAPHIC SCALE - INSET
SITE #9
SITE #12
PERMANENT MITIGATION AREA
SITE #10
SITE #11
SEE SHEET 11A
SEE SHEET 11B
SEE INSET
DETAIL 12
CHANNEL CHANGE
(Not to Scale)
Min. D = 4 Ft.
Max. d = 4 Ft.
B = 6 Ft.
b = 10 Ft.
Type of Liner = Class 2 Rip-Rap
-YRPAC- FROM STA. 27+74 TO STA. 33+50
PERMIT DRAWING
SHEET 11 OF 67
Rev. 11/02/2020
NC GRID NAD (8395)
-MATCHLINE- STA. 135+50.00 -L- SEE SHEET NO. 10
-MATCHLINE- STA. 164+50.00 -L- SEE SHEET NO. 12
DENOTES FILL IN WETLAND
DENOTES HAND CLEARING
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
REMOVE HW
MODIFY APPROACH SLAB (SEE SPECIAL DETAILS)
SFB (CAPPED)
2GI-A
RETAIN
SK
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
LOCATION: I-40 AT I-77 INTERCHANGE (EAST)
TIP NO. I-3819B
COUNTY: IREDELL
DESIGNED BY: C. DAVIS
CHECKED BY: D. ARNSWORTH
DATE: 4-2-2019

wsp
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	11A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 12 OF 67
Rev. 11/02/2020



S DENOTES IMPACTS IN SURFACE WATER

TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

50 25 0 50 100
GRAPHIC SCALE – INSETS

10/21/2020
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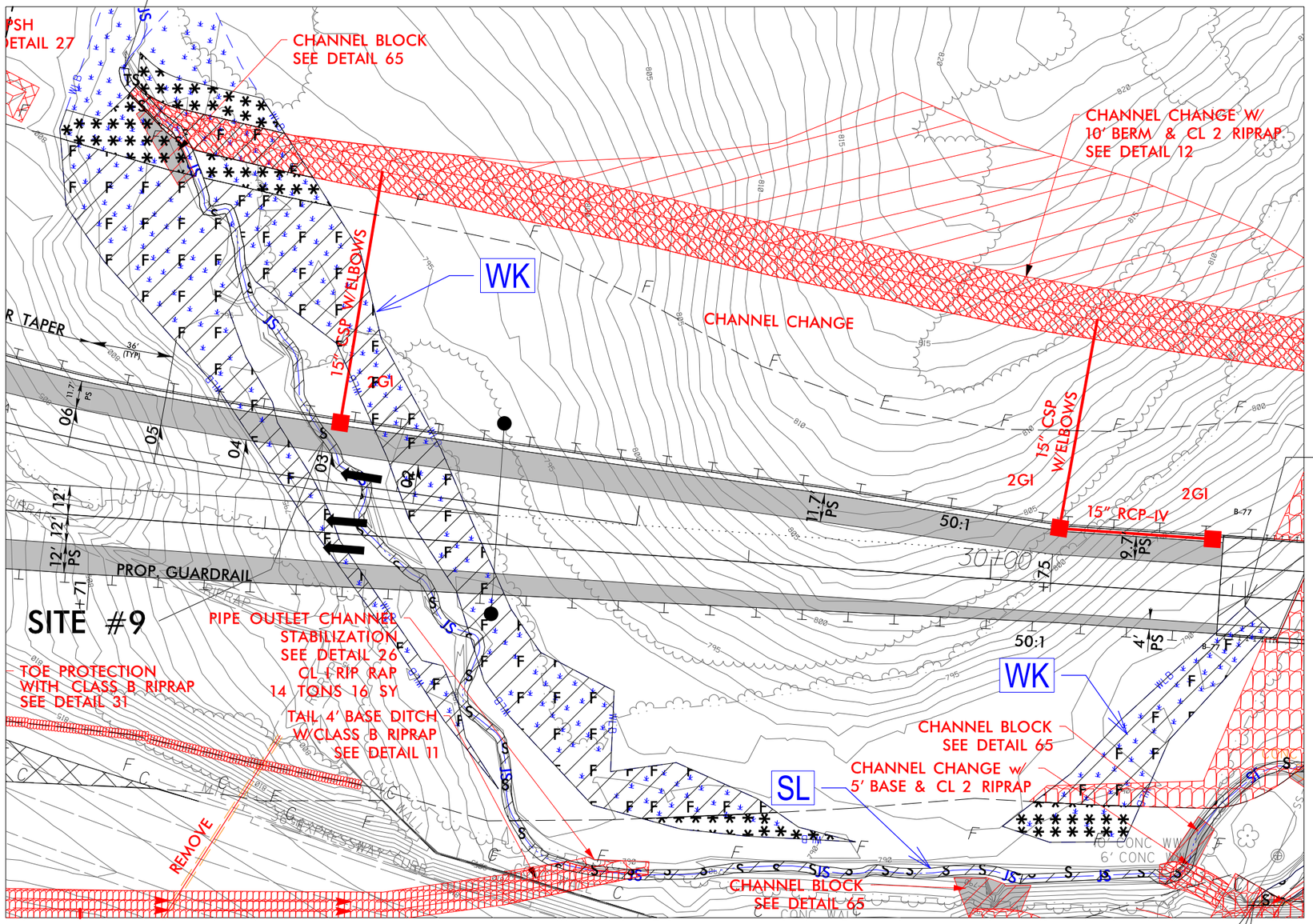
becker_jw

PERMIT DRAWING
SHEET 13 OF 67
Rev. 11/02/2020

wsp
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	11A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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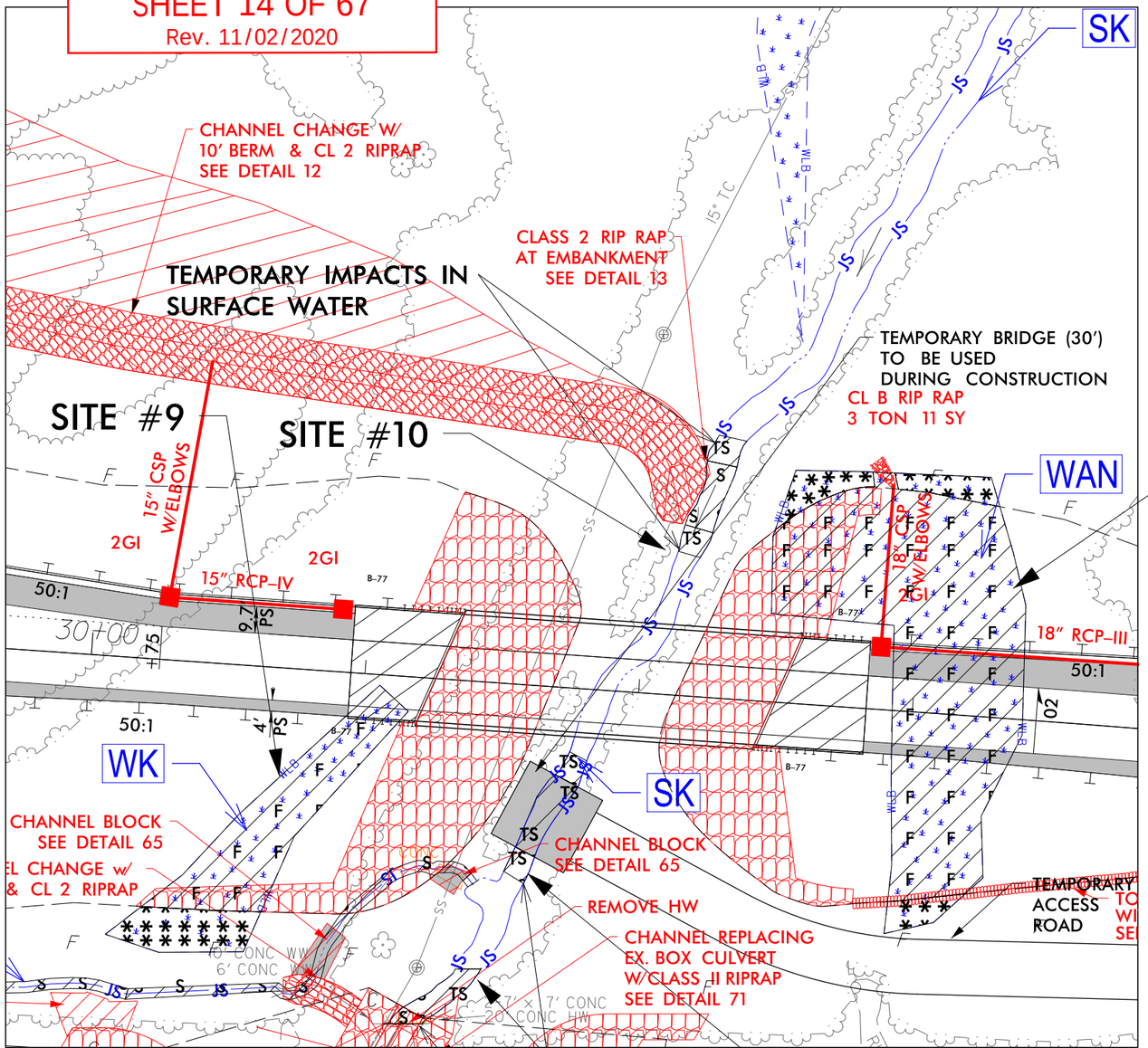
becker_jw

PERMIT DRAWING
SHEET 14 OF 67
Rev. 11/02/2020

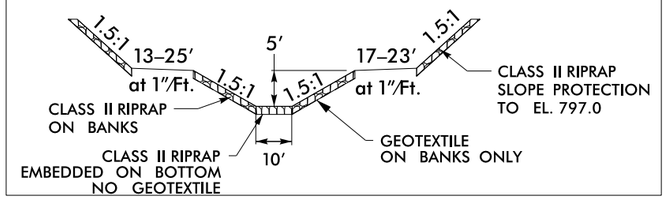
wsp
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	11B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



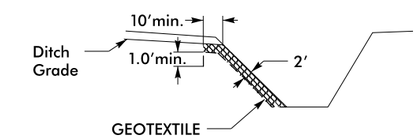
DETAIL 71
CHANNEL REPLACING EX. CULVERT
(Not to Scale)



–L– STA. 149+36

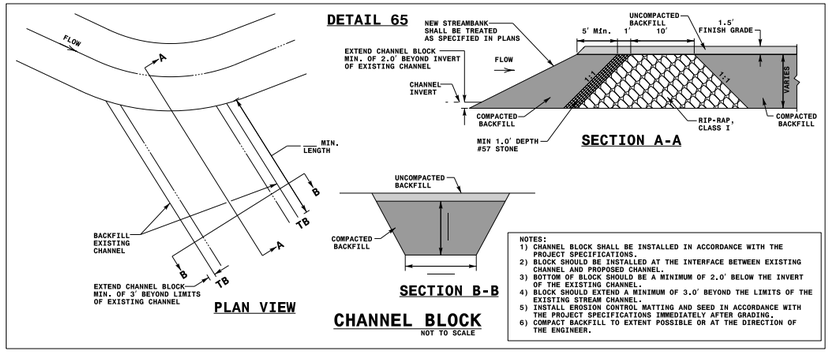
NC GRID NAD 83/95

DETAIL 13
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= Class 2 Rip-Rap

DETAIL 65



NOTES:
1) CHANNEL BLOCK SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
2) BLOCK SHOULD BE INSTALLED AT THE INTERFACE BETWEEN EXISTING CHANNEL AND PROPOSED CHANNEL.
3) BOTTOM OF BLOCK SHOULD BE A MINIMUM OF 2.0' BELOW THE INVERT OF THE EXISTING CHANNEL.
4) BLOCK SHOULD EXTEND A MINIMUM OF 3.0' BEYOND THE LIMITS OF THE EXISTING STREAM CHANNEL.
5) INSTALL EROSION CONTROL MATTING AND SEED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS IMMEDIATELY AFTER GRADING.
6) COMPACT BACKFILL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
F F	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING

50 25 0 50 100
GRAPHIC SCALE – INSETS

10/21/2020
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Becker_jw

PERMIT DRAWING
SHEET 15 OF 67
Rev. 11/02/2020

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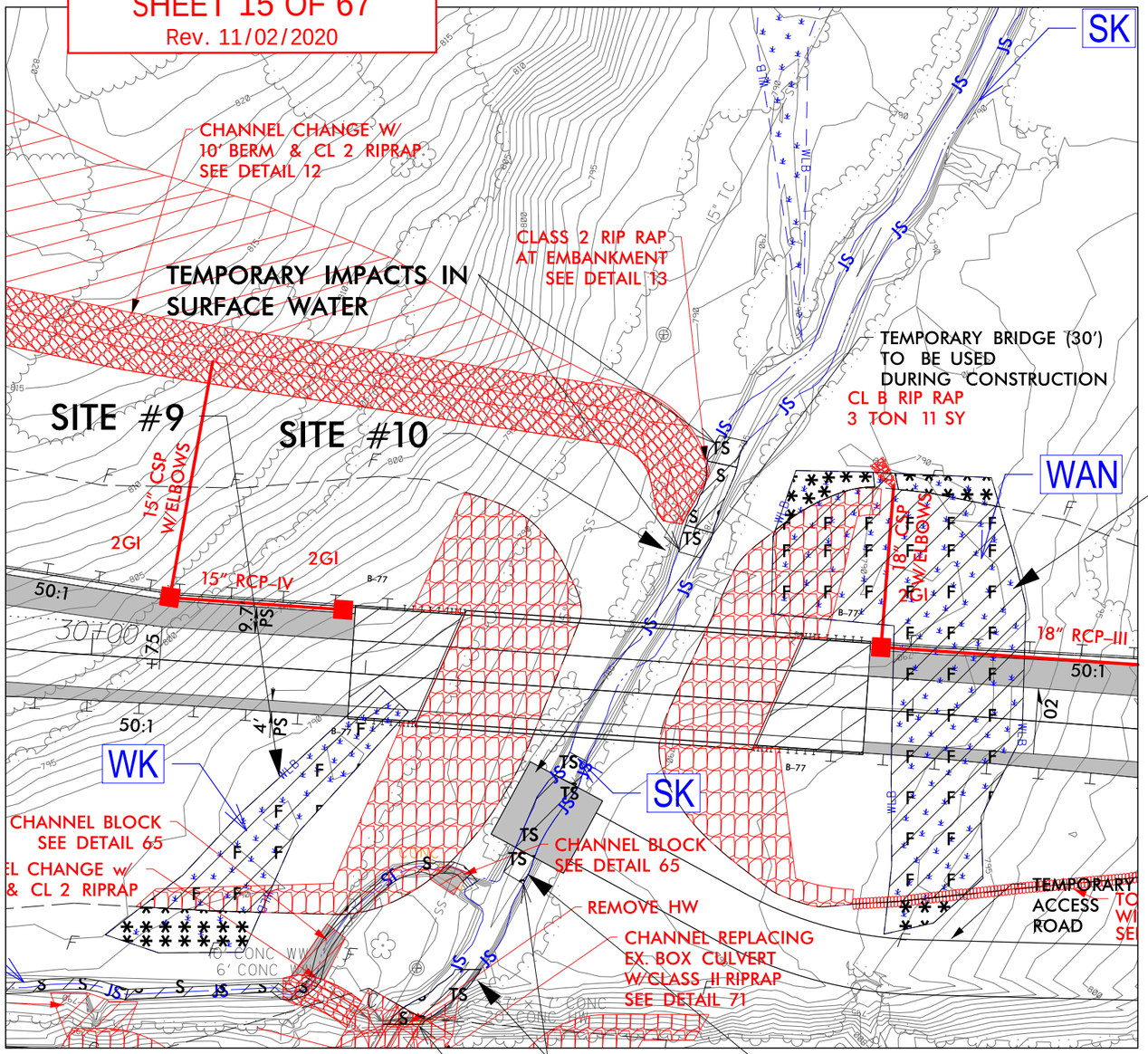
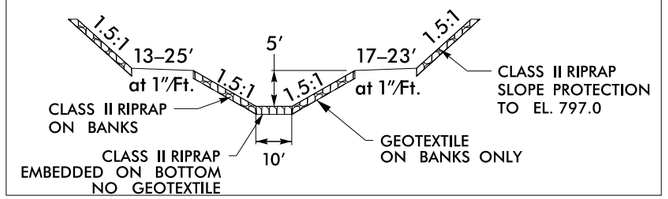
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	11B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



DETAIL 71
CHANNEL REPLACING EX. CULVERT
(Not to Scale)

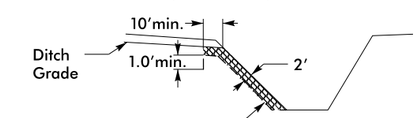


–L– STA. 149+36

SITE #11

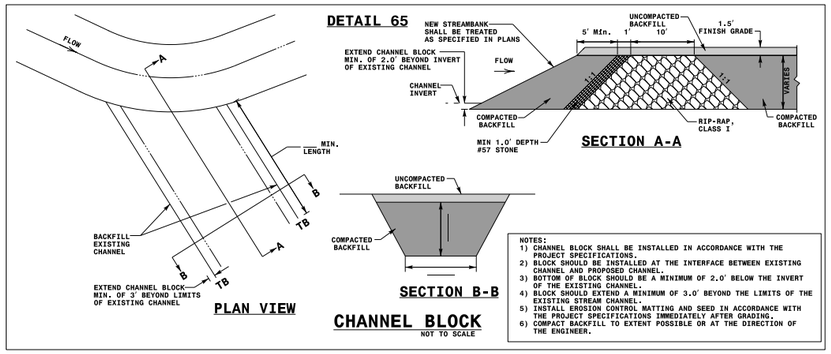
NC GRID NAD 83/95

DETAIL 13
RIP RAP AT EMBANKMENT
(Not to Scale)



Type of Liner= Class 2 Rip-Rap

DETAIL 65



CHANNEL BLOCK
NOT TO SCALE

NOTES:
1) CHANNEL BLOCK SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
2) BLOCK SHOULD BE INSTALLED AT THE INTERFACE BETWEEN EXISTING CHANNEL AND PROPOSED CHANNEL.
3) BOTTOM OF BLOCK SHOULD BE A MINIMUM OF 2.0' BELOW THE INVERT OF THE EXISTING CHANNEL.
4) BLOCK SHOULD EXTEND A MINIMUM OF 3.0' BEYOND THE LIMITS OF THE EXISTING STREAM CHANNEL.
5) INSTALL EROSION CONTROL MATTING AND SEED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS IMMEDIATELY AFTER GRADING.
6) COMPACT BACKFILL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.

S S — DENOTES IMPACTS IN SURFACE WATER

TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F — DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

50 25 0 50 100
GRAPHIC SCALE – INSETS

10/21/2020
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Becker JW

PERMIT DRAWING
SHEET 21a OF 67
Rev. 11/02/2020

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1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

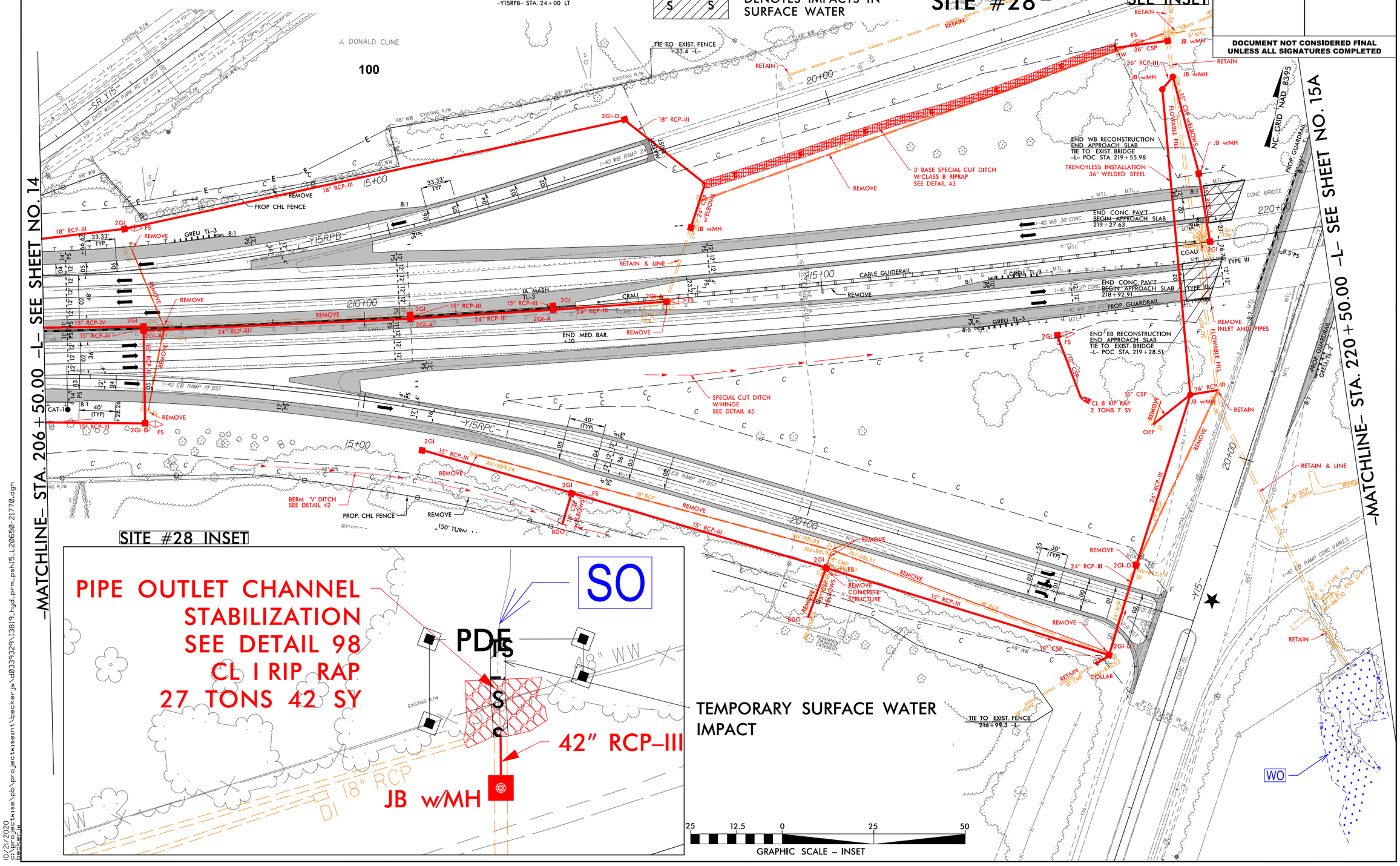
DETAIL 98
PIPE OUTLET CHANNEL STABILIZATION
(Not to Scale)
Natural Bed Elevation
Natural Ground
1.25'
Channel Bed (Variable)
Length= 14 Ft.
Type of Liner= CL I Rip-Rap - Keyed-In (No Geotextile)
-Y15RPB- STA. 24+00 LT

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

SITE #28

SEE INSET



10/21/2020
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Becker_jw

PERMIT DRAWING
SHEET 21b OF 67
Rev. 11/02/2020

wsp
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

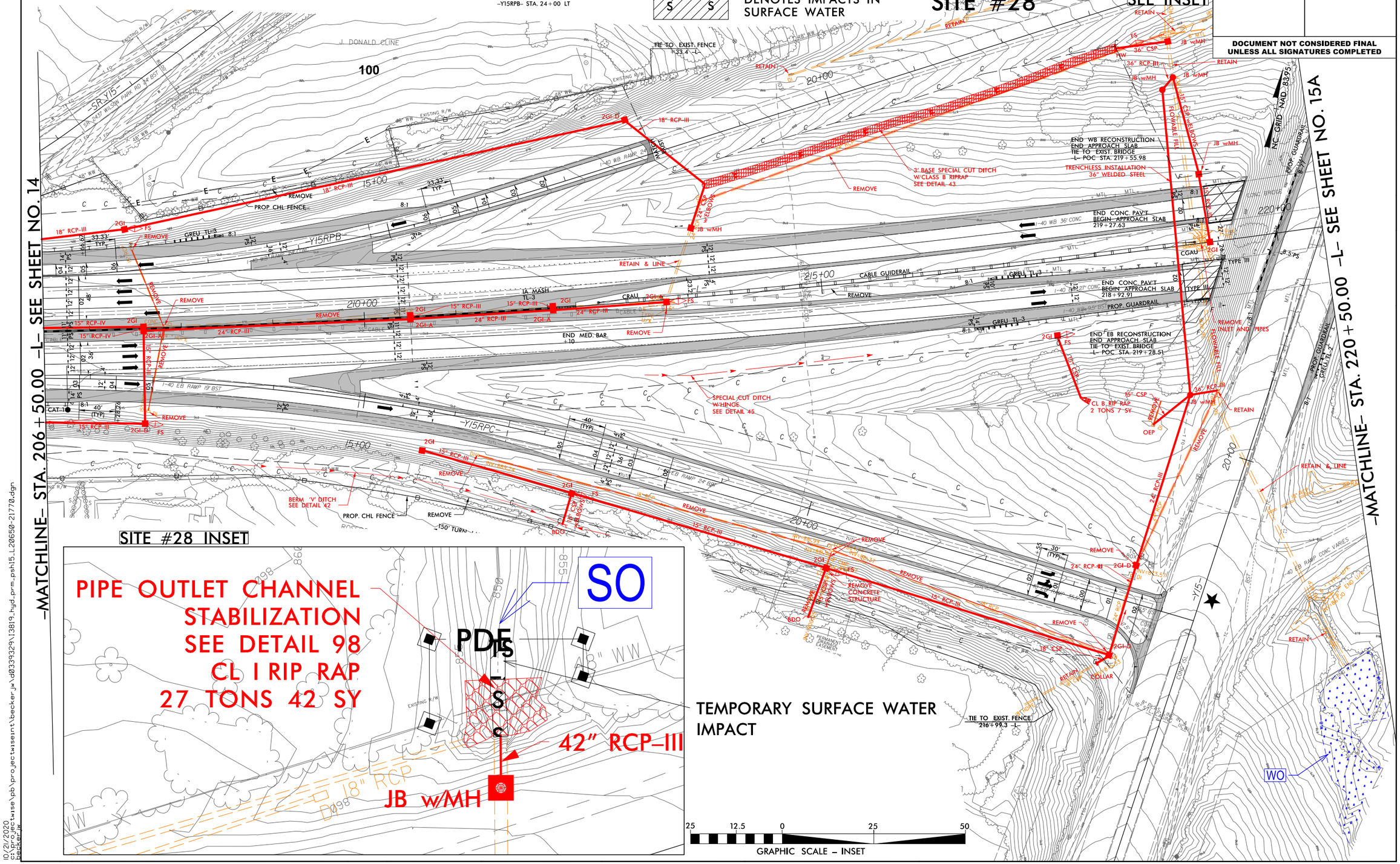
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL 98
PIPE OUTLET CHANNEL STABILIZATION
(Not to Scale)
Natural Bed Elevation
Natural Ground
1.25'
Channel Bed (Variable)
Length = 14 Ft.
Type of Liner = CL I Rip-Rap - Keyed-In (No Geotextile)

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

SITE #28 SEE INSET



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Becker, JW

wsp
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

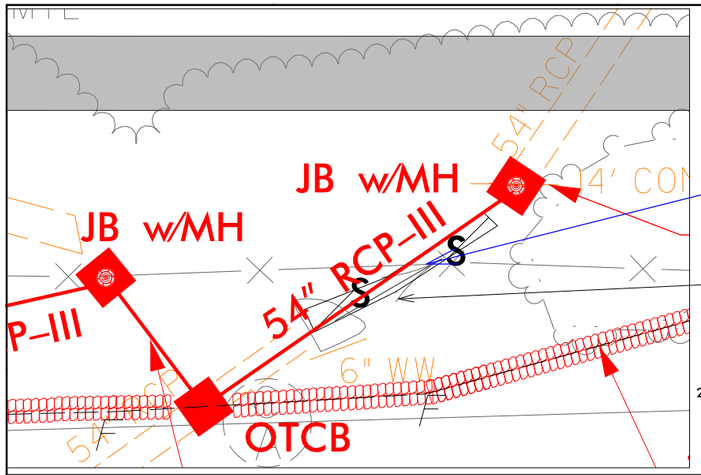
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

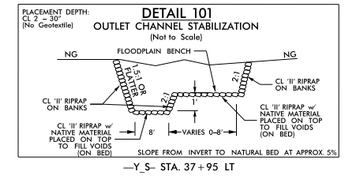
NC GRID NAD 83/95

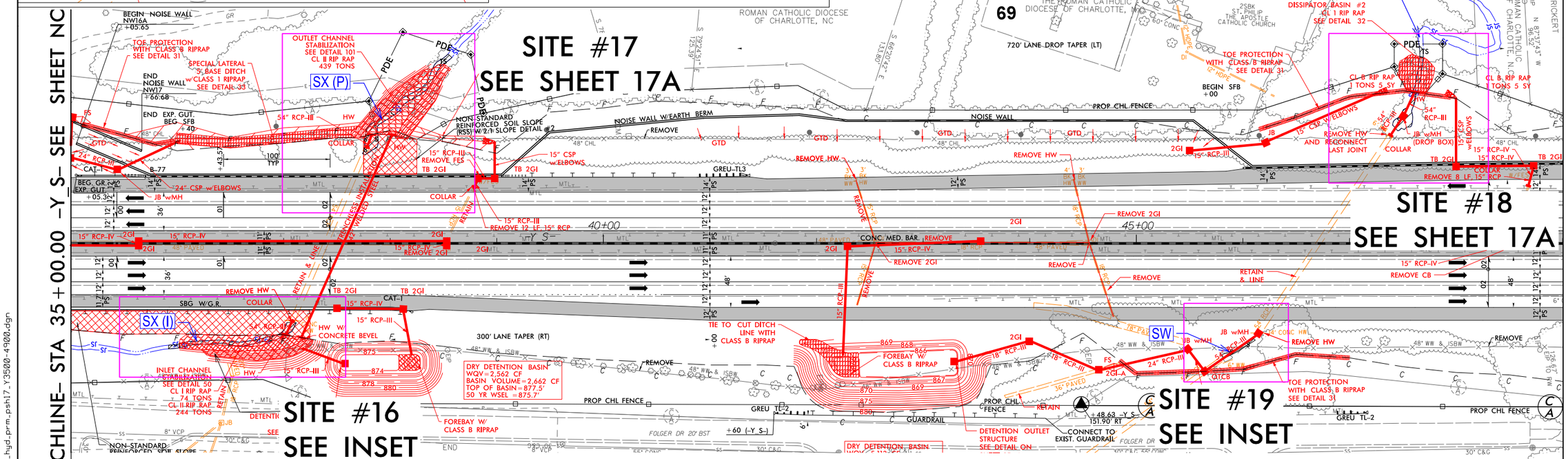
50 25 0 50 100
GRAPHIC SCALE

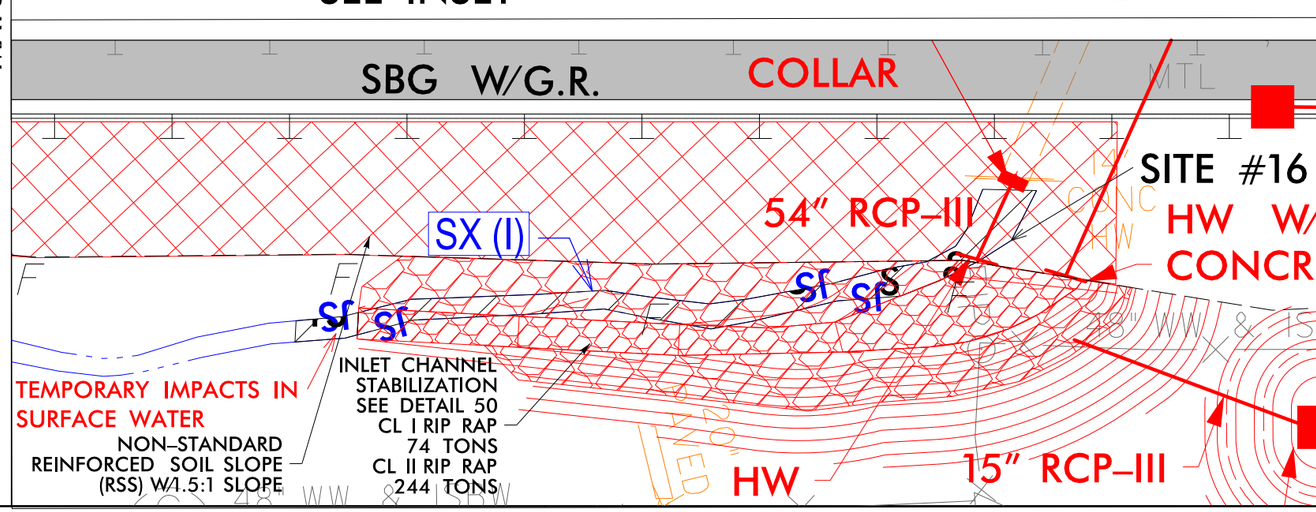
PERMIT DRAWING
SHEET 26 OF 67
Rev. 11/02/2020

INSET









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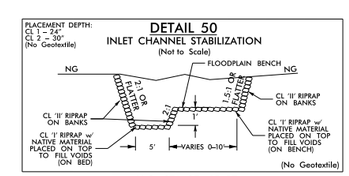

S S — DENOTES IMPACTS IN SURFACE WATER

TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

25 12.5 0 25 50
GRAPHIC SCALE – INSET

10/13/2020
05:16:27 PM
cwise\pb\projectwisent\wsp_victoriakohley\d0339329\13819_hyd_prm_psh17_Y3500-4900.dgn

wsp
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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SHEET 27 OF 67
Rev. 11/02/2020

NC GRID NAD 83/95

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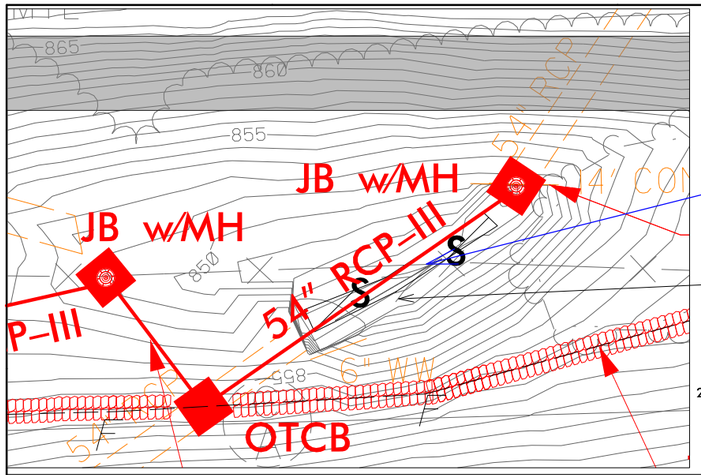
GRAPHIC SCALE

INSET



25 12.5 0 25 50
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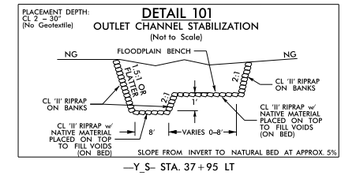

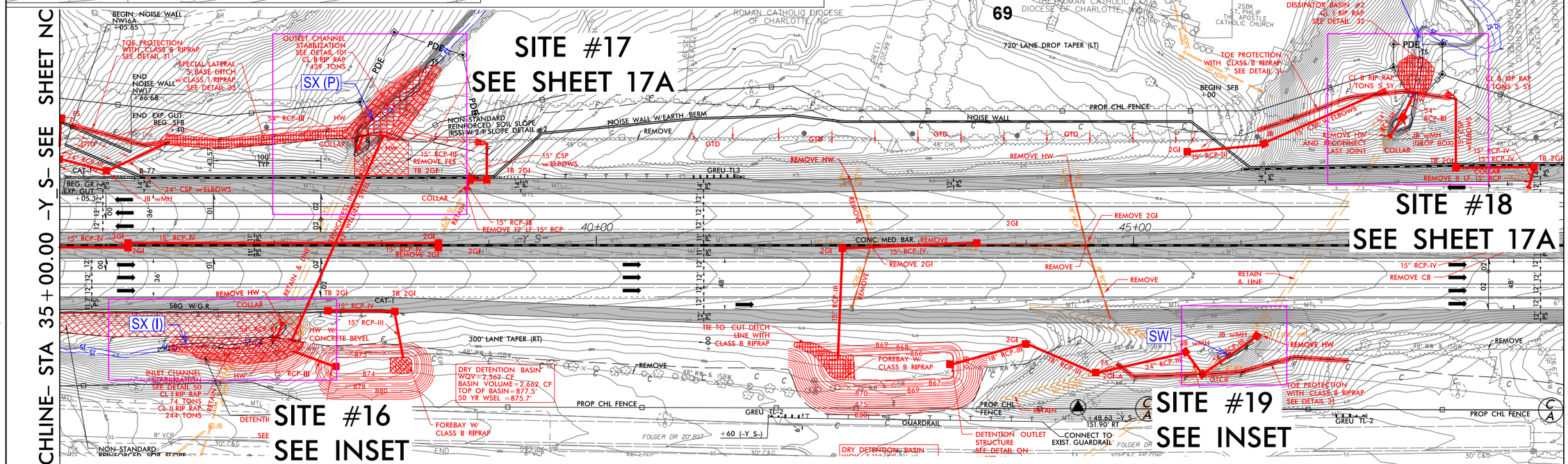

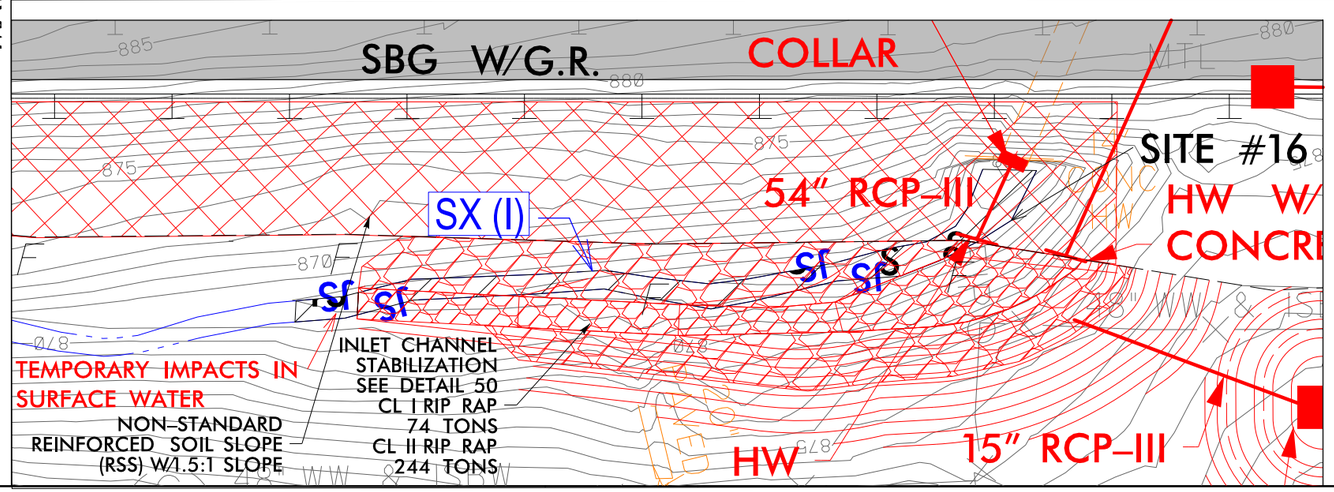

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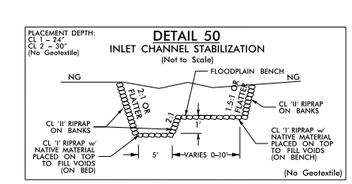
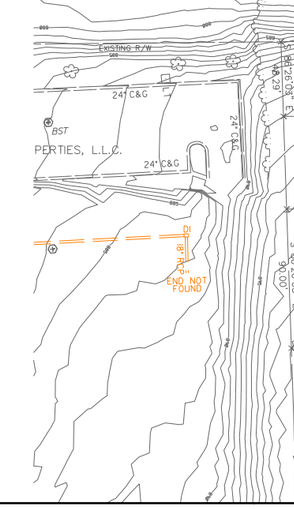


S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

25 12.5 0 25 50
GRAPHIC SCALE – INSET



10/13/2020
05:16:27 148

wsp
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	17A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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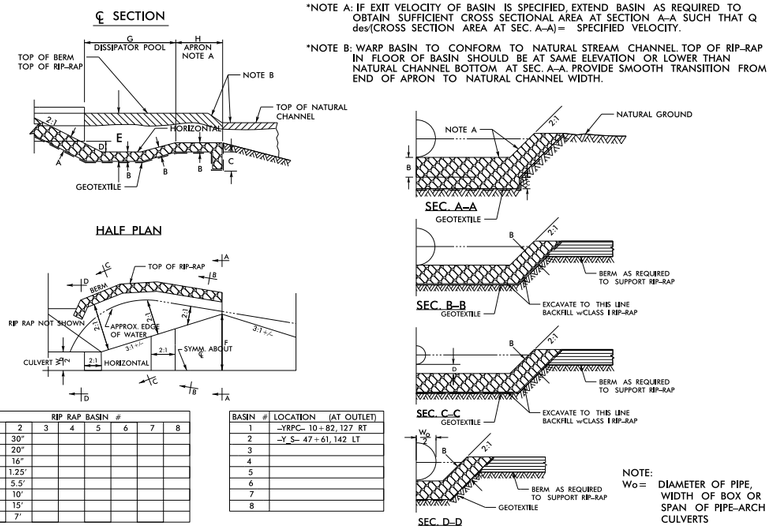
PERMIT DRAWING
SHEET 28 OF 67
Rev. 11/02/2020

DETAIL 32

RIP-RAPPED ENERGY DISSIPATOR BASIN

*NOTE A: IF EXIT VELOCITY OF BASIN IS SPECIFIED, EXTEND BASIN AS REQUIRED TO OBTAIN SUFFICIENT CROSS SECTIONAL AREA AT SECTION A–A SUCH THAT Q des/(CROSS SECTION AREA AT SEC. A–A)= SPECIFIED VELOCITY.

*NOTE B: WARP BASIN TO CONFORM TO NATURAL STREAM CHANNEL. TOP OF RIP-RAP IN FLOOR OF BASIN SHOULD BE AT SAME ELEVATION OR LOWER THAN NATURAL CHANNEL BOTTOM AT SEC. A–A. PROVIDE SMOOTH TRANSITION FROM END OF APRON TO NATURAL CHANNEL WIDTH.



DIM.	RIP RAP BASIN # 1	2	3	4	5	6	7	8
A	30"	30"						
B	20"	20"						
C	16"	16"						
D	1'	1.25'						
E	3.5'	5.5'						
F	6.3'	10'						
G	10'	15'						
H	5'	7'						

BASIN #	LOCATION (AT OUTLET)
1	–YRPC– 10+82, 127 RT
2	–Y_S– 47+61, 142 LT
3	
4	
5	
6	
7	
8	

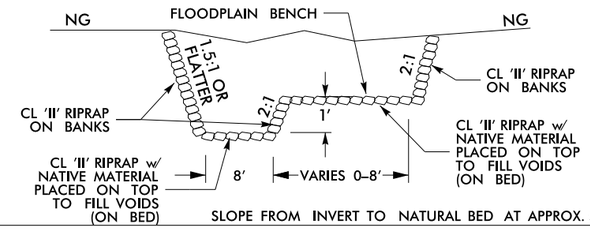
5/05

DETAIL 101

OUTLET CHANNEL STABILIZATION

(Not to Scale)

PLACEMENT DEPTH:
CL 2 – 30"
(No Geotextile)



—Y_S– STA. 37+95 LT

NC GRID NAD 83/95

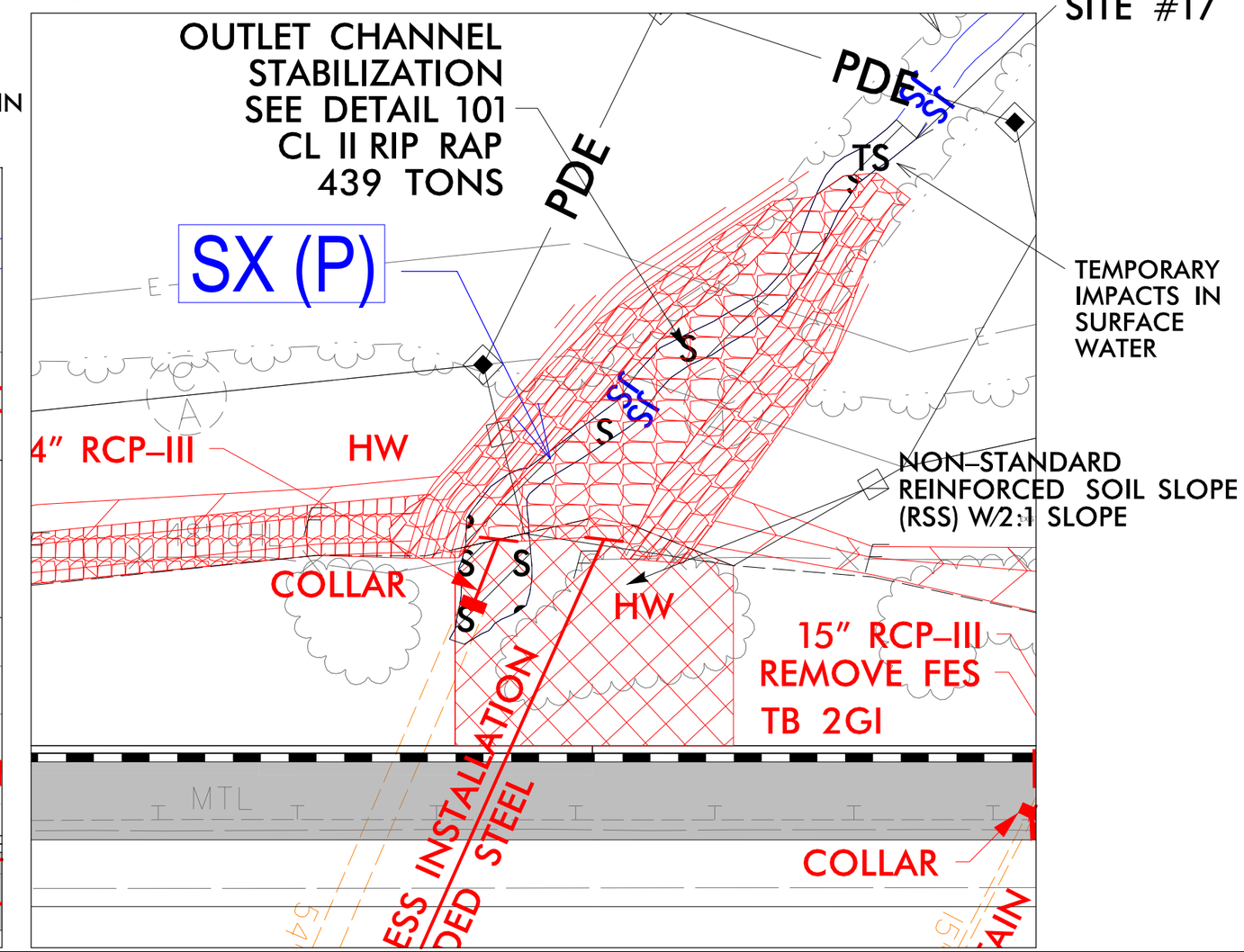
DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

25 12.5 0 25 50
GRAPHIC SCALE – INSETS

INSET

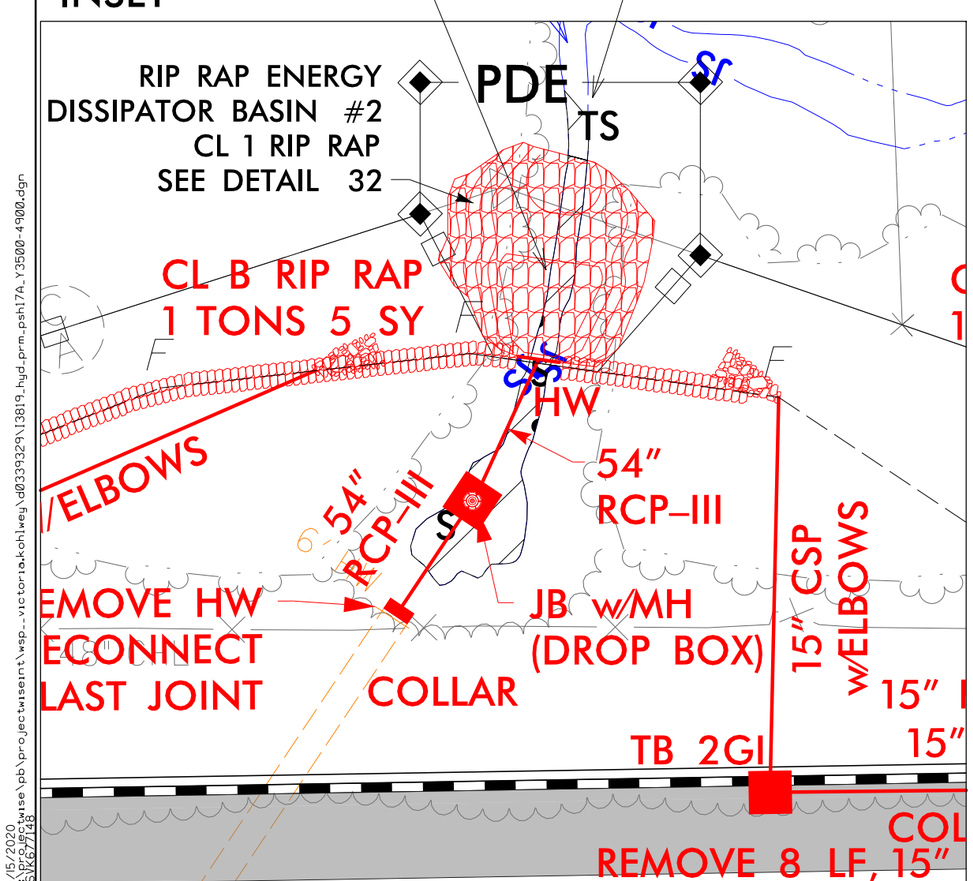
SITE #17



INSET

SITE #18

TEMPORARY IMPACTS IN SURFACE WATER



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wsp
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	17A
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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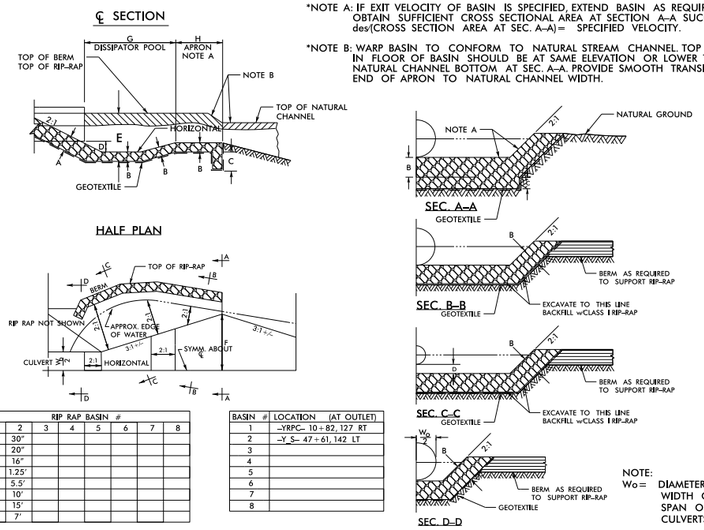
PERMIT DRAWING
SHEET 29 OF 67
Rev. 11/02/2020

DETAIL 32

RIP-RAPPED ENERGY DISSIPATOR BASIN

*NOTE A: IF EXIT VELOCITY OF BASIN IS SPECIFIED, EXTEND BASIN AS REQUIRED TO OBTAIN SUFFICIENT CROSS SECTIONAL AREA AT SECTION A–A SUCH THAT Q des/(CROSS SECTION AREA AT SEC. A–A)= SPECIFIED VELOCITY.

*NOTE B: WARP BASIN TO CONFORM TO NATURAL STREAM CHANNEL. TOP OF RIP-RAP IN FLOOR OF BASIN SHOULD BE AT SAME ELEVATION OR LOWER THAN NATURAL CHANNEL BOTTOM AT SEC. A–A. PROVIDE SMOOTH TRANSITION FROM END OF APRON TO NATURAL CHANNEL WIDTH.



DIM.	RIP RAP BASIN # 1	2	3	4	5	6	7	8
A	30"	30"						
B	20"	20"						
C	16"	16"						
D	1'	1.25'						
E	3.5'	5.5'						
F	6.3'	10'						
G	10'	15'						
H	5'	7'						

BASIN #	LOCATION (AT OUTLET)
1	–YRPC– 10+82, 127 RT
2	–Y_S– 47+61, 142 LT
3	
4	
5	
6	
7	
8	

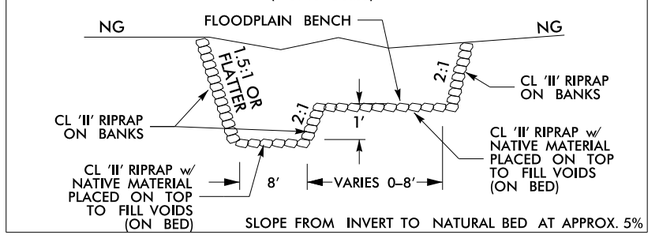
5/05

DETAIL 101

OUTLET CHANNEL STABILIZATION

(Not to Scale)

PLACEMENT DEPTH:
CL 2 – 30"
(No Geotextile)



—Y_S– STA. 37+95 LT

NC GRID NAD 83/95

S S DENOTES IMPACTS IN SURFACE WATER

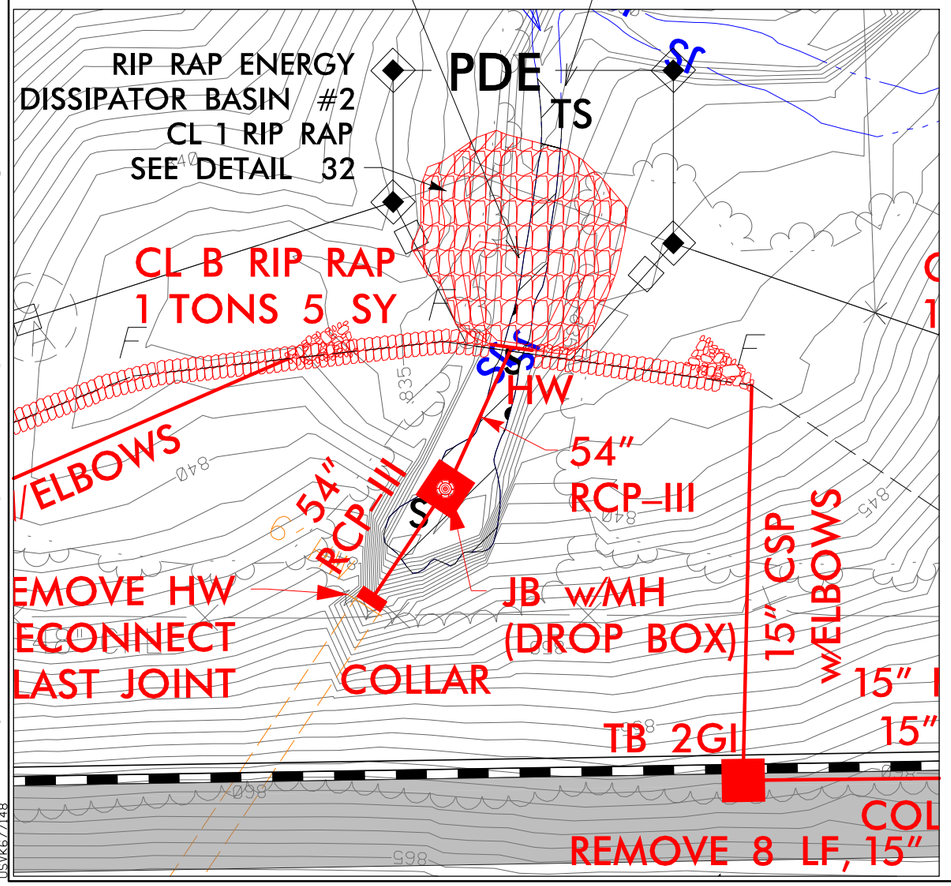
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

25 12.5 0 25 50
GRAPHIC SCALE – INSETS

INSET

SITE #18

TEMPORARY IMPACTS IN SURFACE WATER



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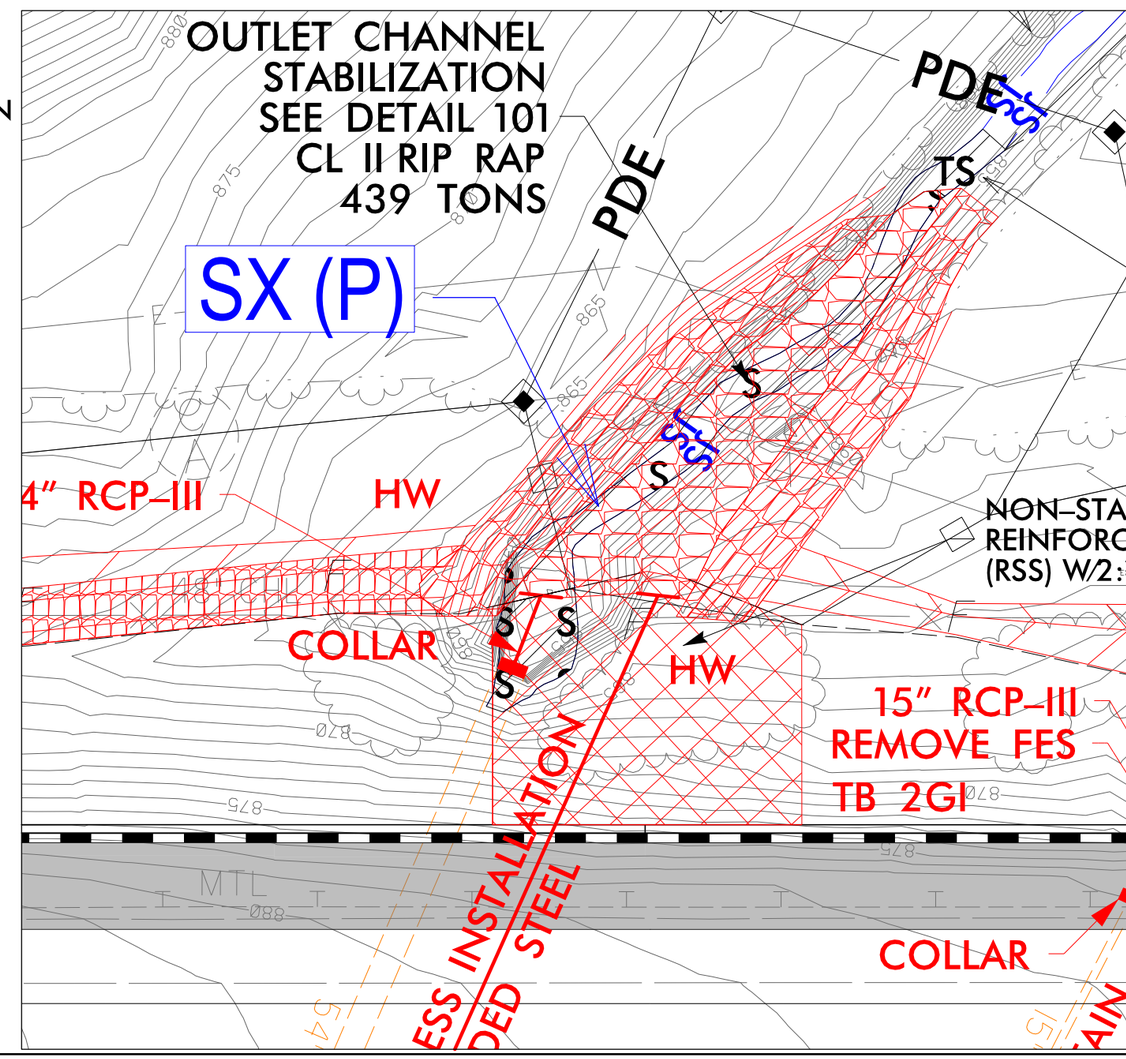
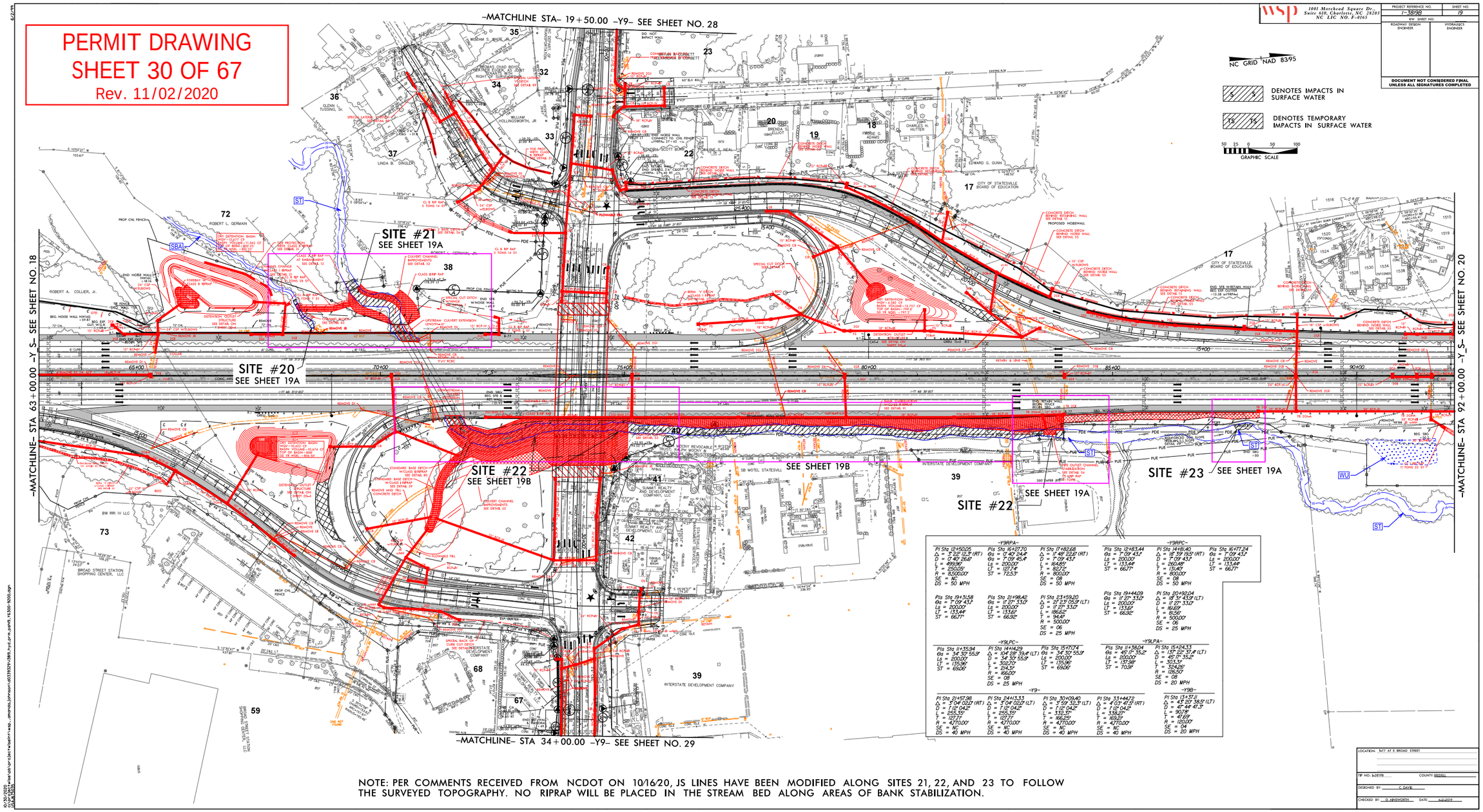
SITE #17



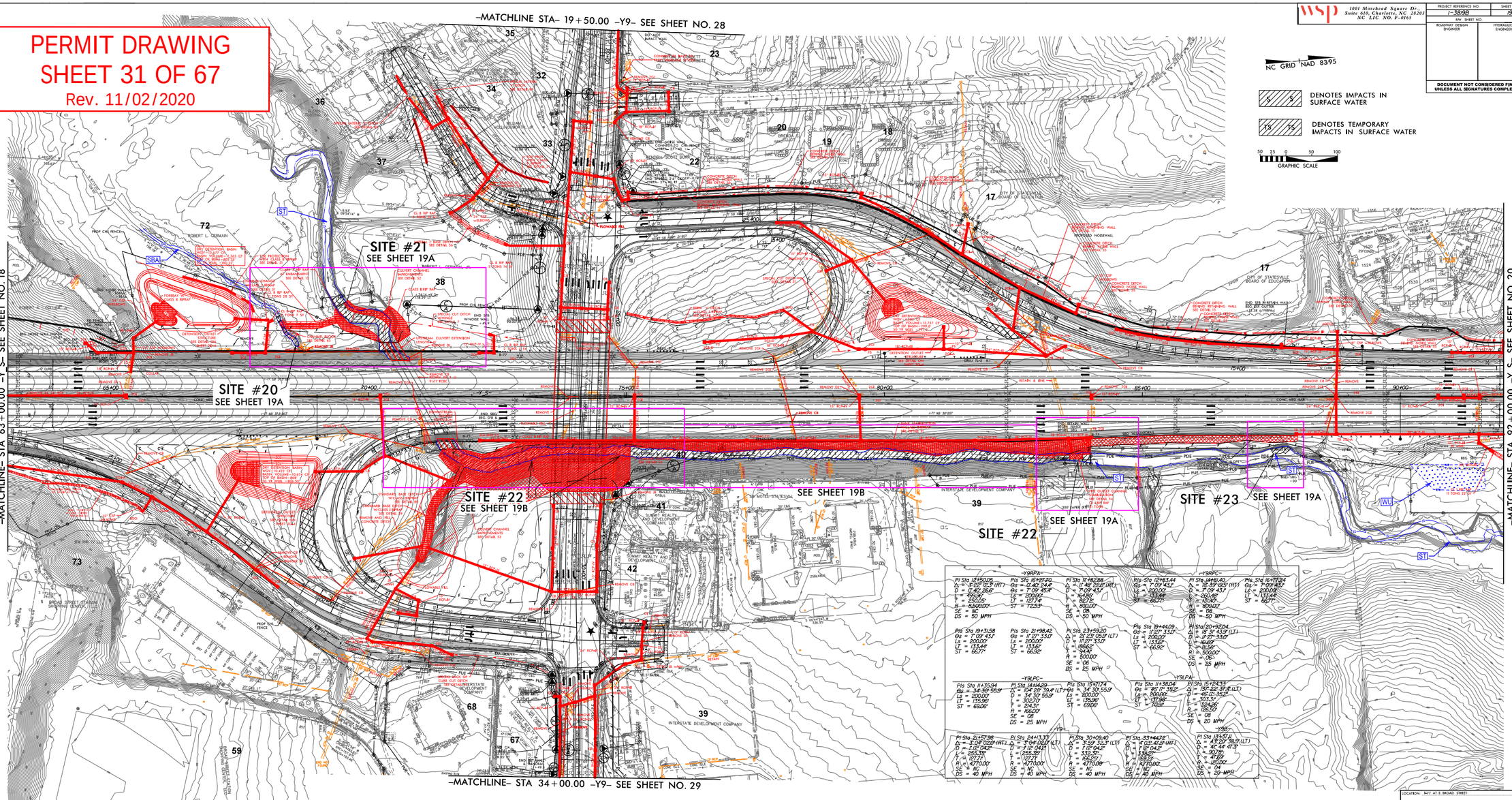
10/15/2020
GS2PRC
GS1K67148

PERMIT DRAWING
SHEET 30 OF 67
Rev. 11/02/2020



NOTE: PER COMMENTS RECEIVED FROM NCDOT ON 10/16/20, JS LINES HAVE BEEN MODIFIED ALONG SITES 21, 22, AND 23 TO FOLLOW THE SURVEYED TOPOGRAPHY. NO RIPRAP WILL BE PLACED IN THE STREAM BED ALONG AREAS OF BANK STABILIZATION.

PERMIT DRAWING
SHEET 31 OF 67
Rev. 11/02/2020



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wsp
1001 Morehead Square Dr., Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	19A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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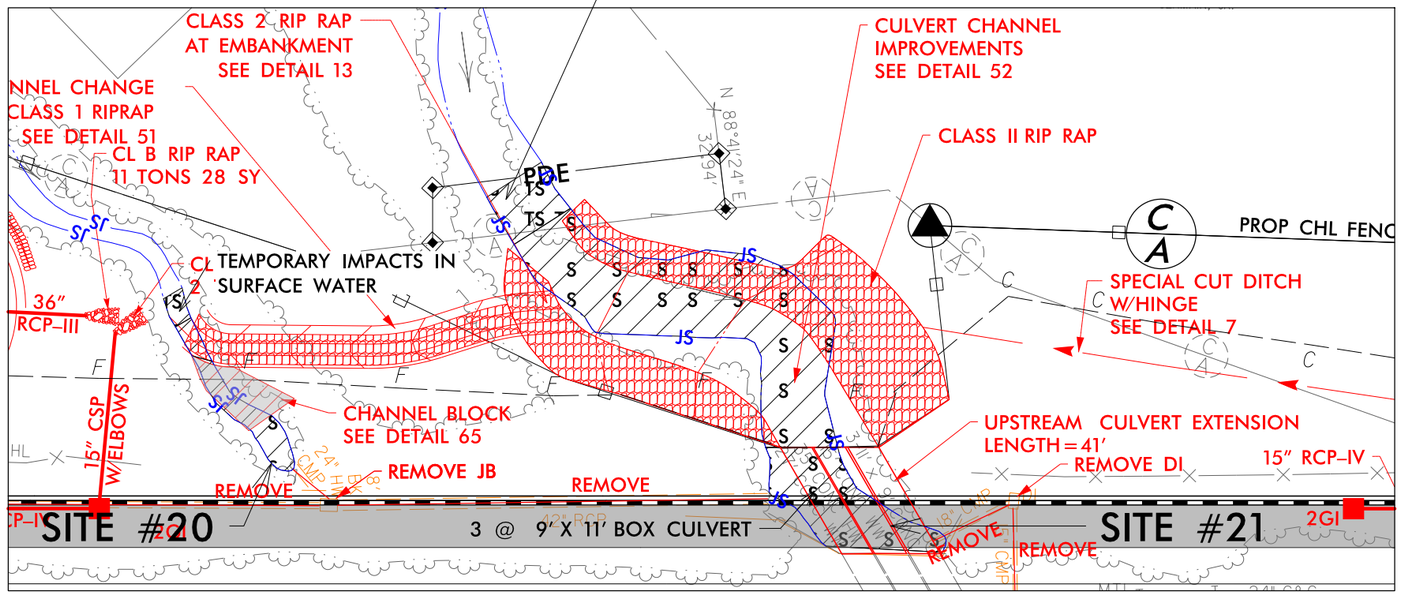
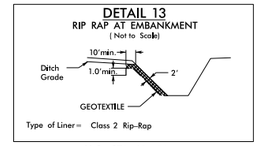
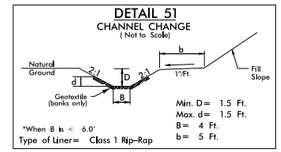
SHEET 32 OF 67
Rev. 11/02/2020

INSET

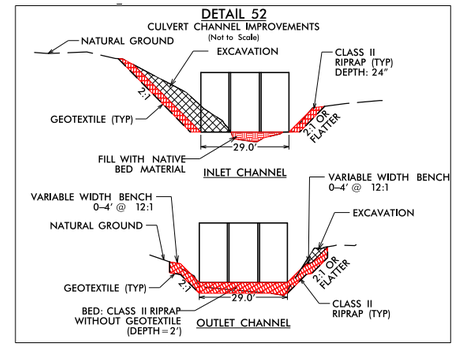




-Y_S- STA. 69+50 LT

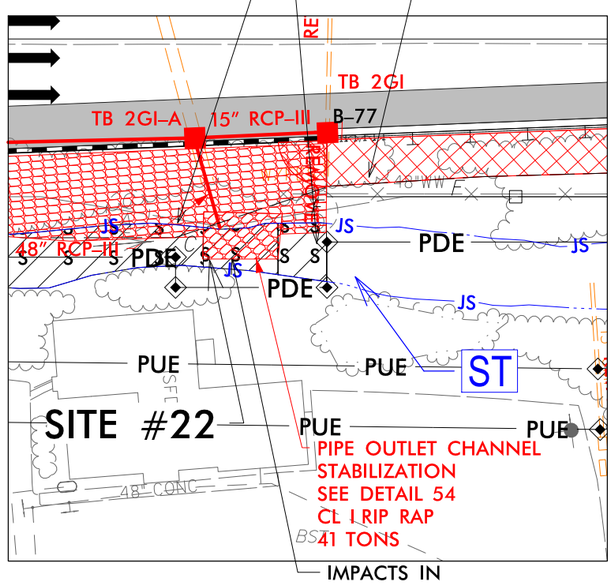


-Y_S- FROM STA. 68+38 TO STA. 69+50 LT

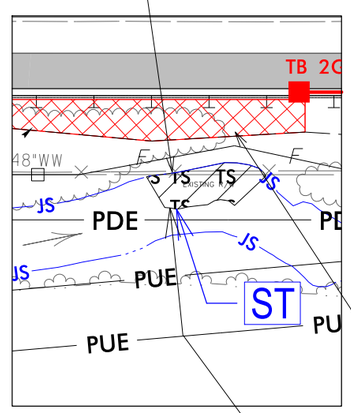


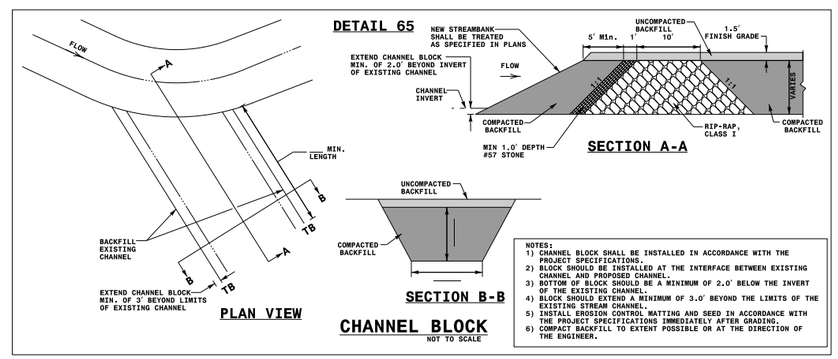
-Y_S- STA. 70+45 LT (INLET)
-Y_S- STA. 71+60 TO 73+25 RT (OUTLET)

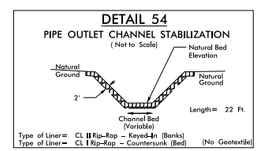
INSET



INSET







-Y_S- STA. 83+65 RT
-Y_S- STA. 94+40 RT

S S — DENOTES IMPACTS IN SURFACE WATER

TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NC GRID NAD 83/95

50 25 0 50 100
GRAPHIC SCALE - INSETS

10/30/2020
C:\Projectwise\pb\projectwisent\wsp...amanda.johnson\d0339329\I3819_hyd_prm_psh19A_Y2100-3500.dgn
USA\67505

NOTE: PER COMMENTS RECEIVED FROM NCDOT ON 10/16/20, JS LINES HAVE BEEN MODIFIED ALONG SITES 21, 22, AND 23 TO FOLLOW THE SURVEYED TOPOGRAPHY. NO RIPRAP WILL BE PLACED IN THE STREAM BED ALONG AREAS OF BANK STABILIZATION.

wsp
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NC LIC NO. F-0165

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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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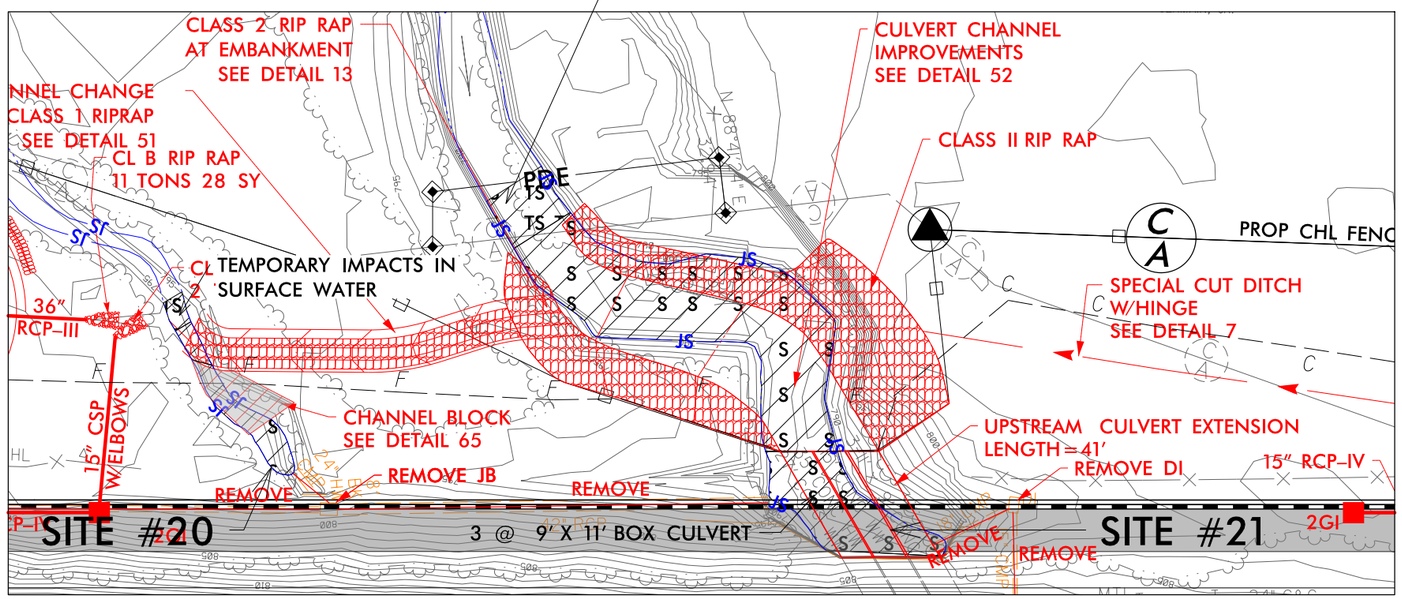
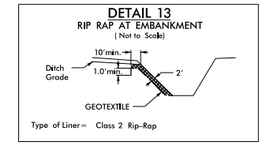
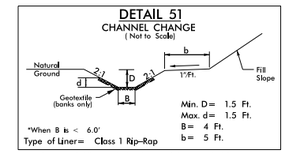
SHEET 33 OF 67
Rev. 11/02/2020

INSET

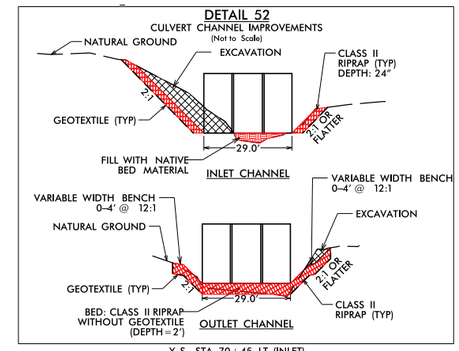




-Y_S- STA. 69+50 LT



-Y_S- FROM STA. 68+38 TO STA. 69+50 LT

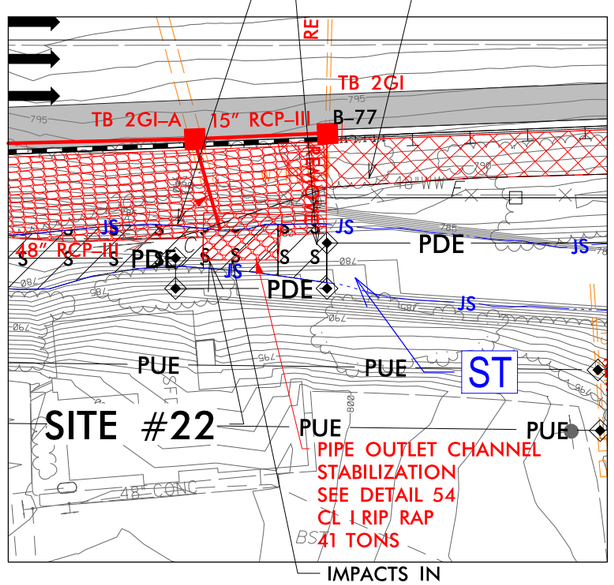


-Y_S- STA. 70+45 LT (INLET)
-Y_S- STA. 71+60 TO 73+25 RT (OUTLET)

IMPACTS IN SURFACE WATER (BANK STABILIZATION)

NON-STANDARD REINFORCED SOIL SLOPE (RSS) W/1.5:1 SLOPE

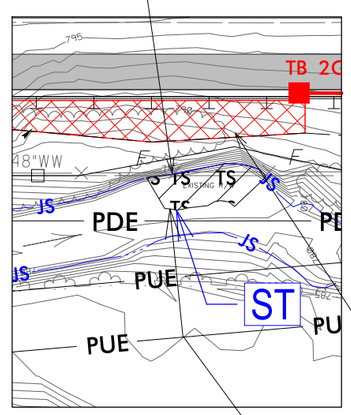
INSET



IMPACTS IN SURFACE WATER (BED STABILIZATION)

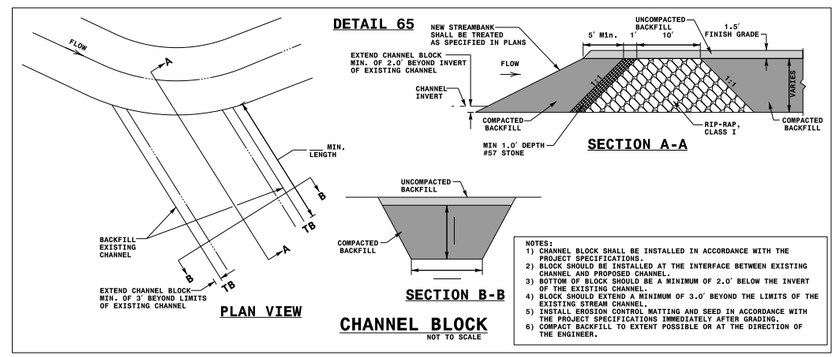
TEMPORARY IMPACTS IN SURFACE WATER

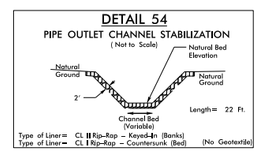
INSET



NON-STANDARD REINFORCED SOIL SLOPE (RSS) W/1.5:1 SLOPE

SITE #23





-Y_S- STA. 83+65 RT
-Y_S- STA. 94+40 RT

S S — DENOTES IMPACTS IN SURFACE WATER

TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NC GRID NAD 83/95

50 25 0 50 100
GRAPHIC SCALE - INSETS

10/30/2020
S:\projects\wise\pb\projectwisent\wsp...amanda.johnson\d0339329\I3819_hyd_prm_psh19A_Y2100-3500.dgn
USA67/2015

wsp
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

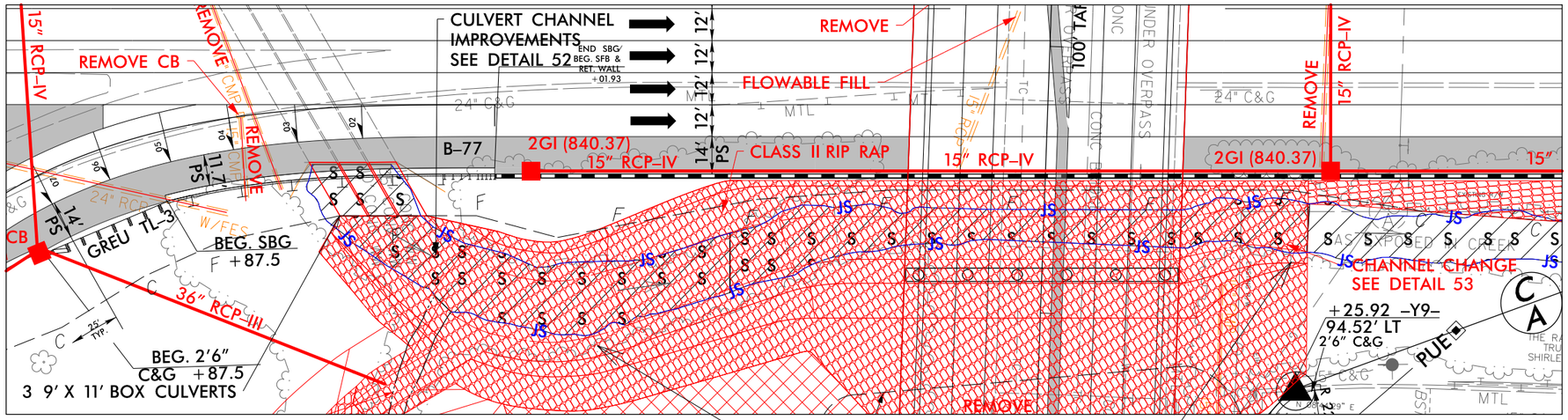
PROJECT REFERENCE NO.	SHEET NO.
I-3819B	19B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTE: PER COMMENTS RECEIVED FROM NCDOT ON 10/16/20, JS LINES HAVE BEEN MODIFIED ALONG SITES 21, 22, AND 23 TO FOLLOW THE SURVEYED TOPOGRAPHY. NO RIPRAP WILL BE PLACED IN THE STREAM BED ALONG AREAS OF BANK STABILIZATION.

PERMIT DRAWING
SHEET 34 OF 67
Rev. 11/02/2020

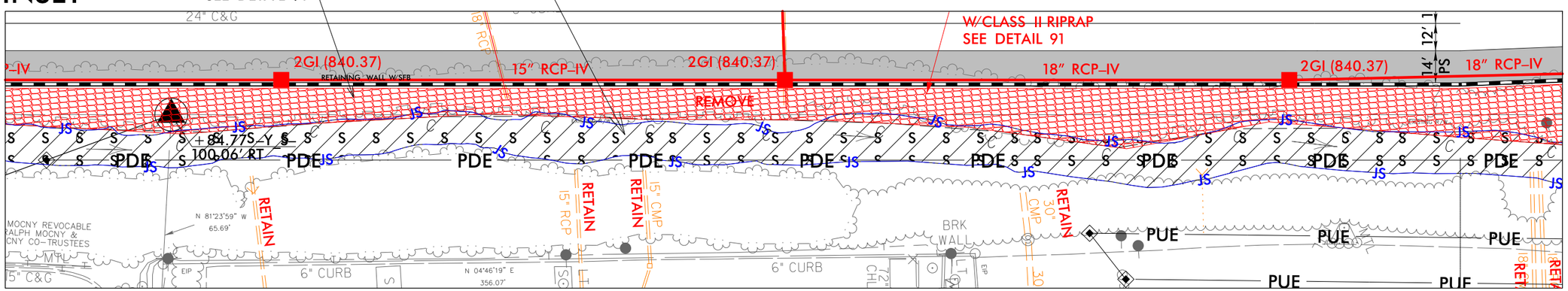
INSET

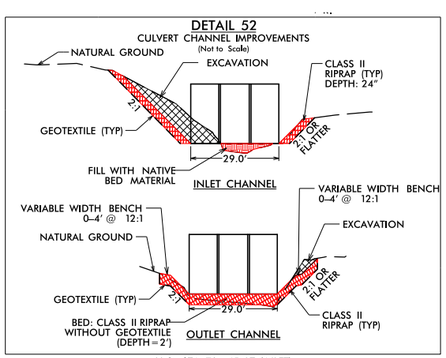


SITE #22

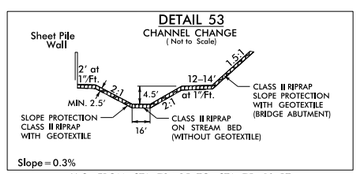
SITE #22

INSET

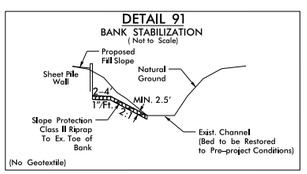




-Y_S- STA. 70+45 LT (INLET)
-Y_S- STA. 71+60 TO 73+25 RT (OUTLET)



-Y_S- FROM STA. 73+25 TO STA. 75+10 RT



-Y_S- FROM STA. 75+10 TO STA. 84+00 RT

NC GRID NAD 83/95

S S — DENOTES IMPACTS IN SURFACE WATER

TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

50 25 0 50 100
GRAPHIC SCALE – INSETS

10/30/2020
C:\Projects\se\pb\projectwisent\wsp--amanda.johnson\d0339329\I3819_hyd_prm_psh19B_Y2100-3500.dgn
USA\67.25.35

wsp
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

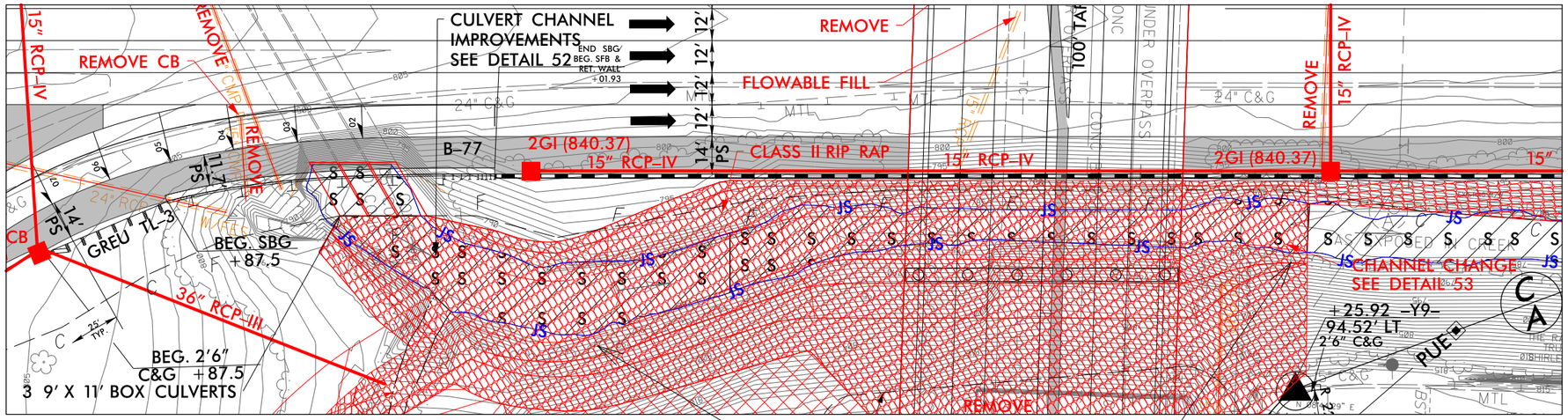
PROJECT REFERENCE NO.	SHEET NO.
I-3819B	19B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTE: PER COMMENTS RECEIVED FROM NCDOT ON 10/16/20, JS LINES HAVE BEEN MODIFIED ALONG SITES 21, 22, AND 23 TO FOLLOW THE SURVEYED TOPOGRAPHY. NO RIPRAP WILL BE PLACED IN THE STREAM BED ALONG AREAS OF BANK STABILIZATION.

PERMIT DRAWING
SHEET 35 OF 67
Rev. 11/02/2020

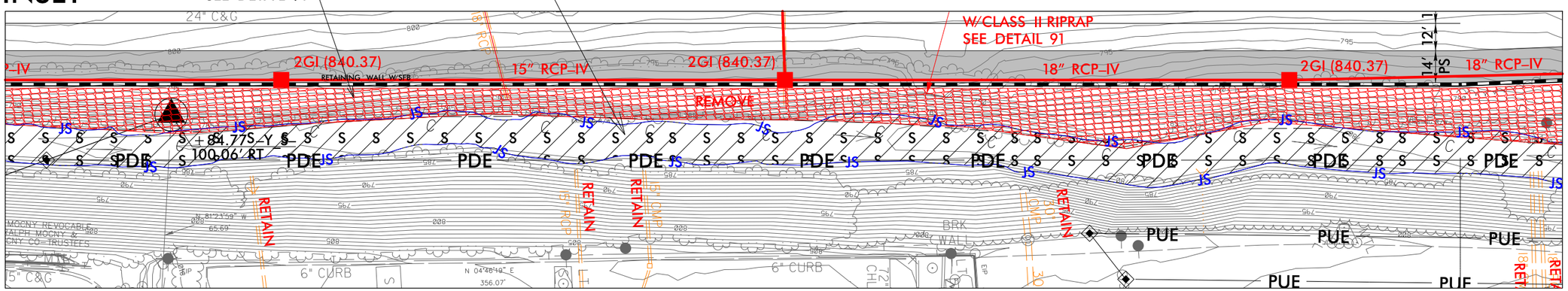
INSET

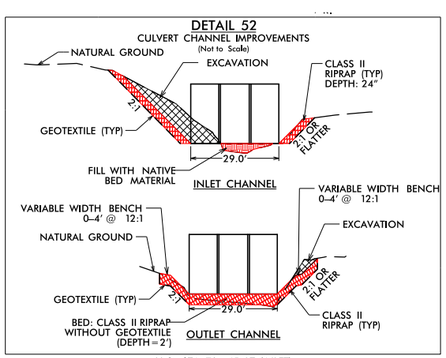


SITE #22

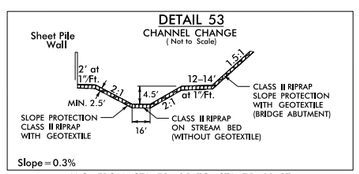
SITE #22

INSET

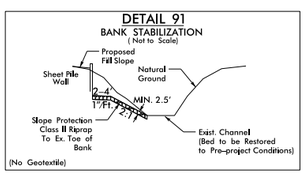




-Y_S- STA. 70+45 LT (INLET)
-Y_S- STA. 71+60 TO 73+25 RT (OUTLET)



-Y_S- FROM STA. 73+25 TO STA. 75+10 RT



-Y_S- FROM STA. 75+10 TO STA. 84+00 RT

NC GRID NAD 83/95

S S — DENOTES IMPACTS IN SURFACE WATER

TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

50 25 0 50 100
GRAPHIC SCALE – INSETS

10/30/2020
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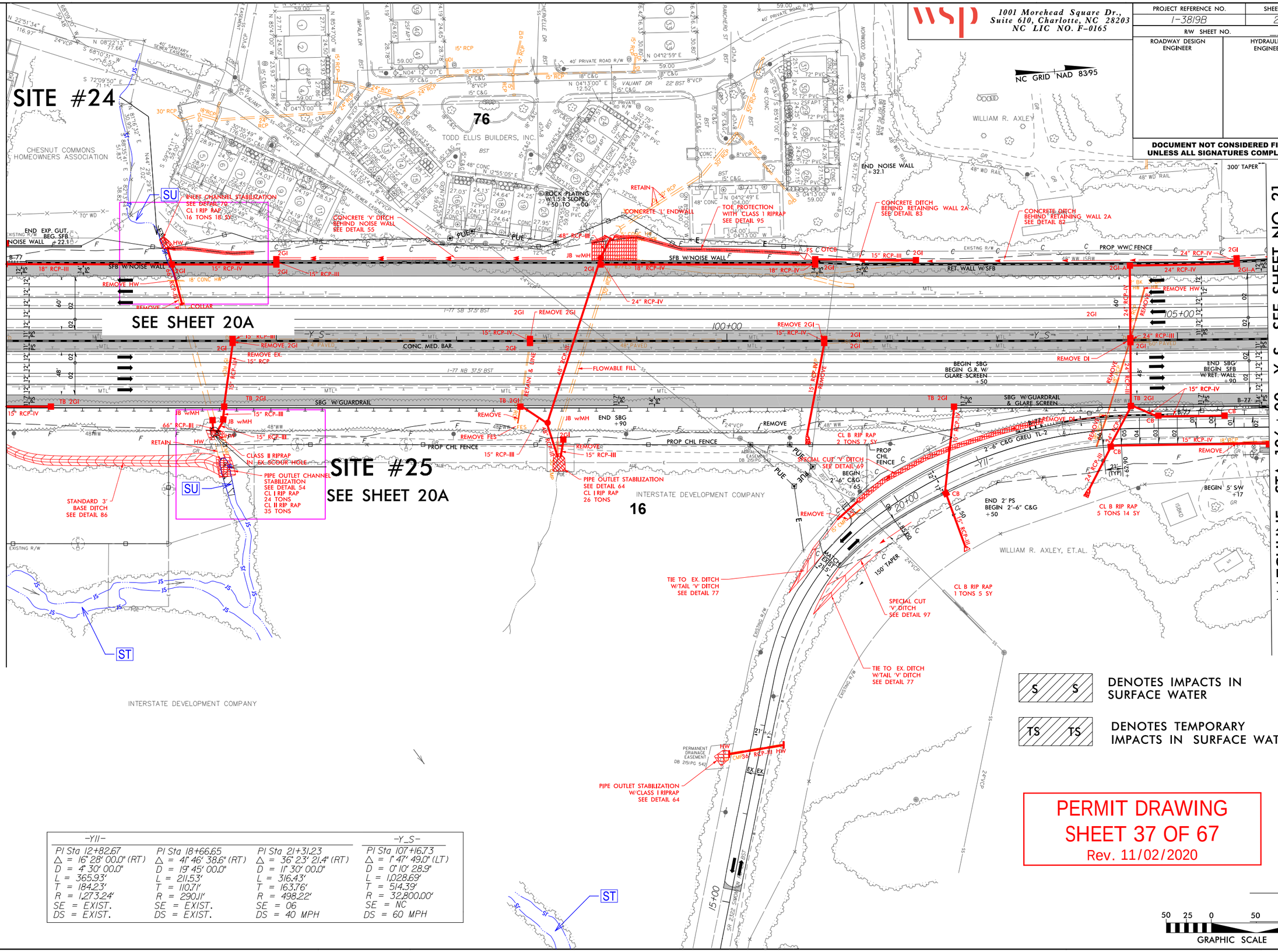
USER: PSAYLOR

wsp
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-Y11-			-Y_S-
PI Sta 12+82.67	PI Sta 18+66.65	PI Sta 21+31.23	PI Sta 107+16.73
△ = 16° 28' 00.0" (RT)	△ = 41° 46' 38.6" (RT)	△ = 36° 23' 21.4" (RT)	△ = 1° 47' 49.0" (LT)
D = 4° 30' 00.0"	D = 19° 45' 00.0"	D = 11° 30' 00.0"	D = 0° 10' 28.9"
L = 365.93'	L = 211.53'	L = 316.43'	L = 1,028.69'
T = 184.23'	T = 110.71'	T = 163.76'	T = 514.39'
R = 1,273.24'	R = 290.11'	R = 498.22'	R = 32,800.00'
SE = EXIST.	SE = EXIST.	SE = 06	SE = NC
DS = EXIST.	DS = EXIST.	DS = 40 MPH	DS = 60 MPH

PERMIT DRAWING
SHEET 37 OF 67
Rev. 11/02/2020

11/2/2020
12:29:08 pm
USA16-2035

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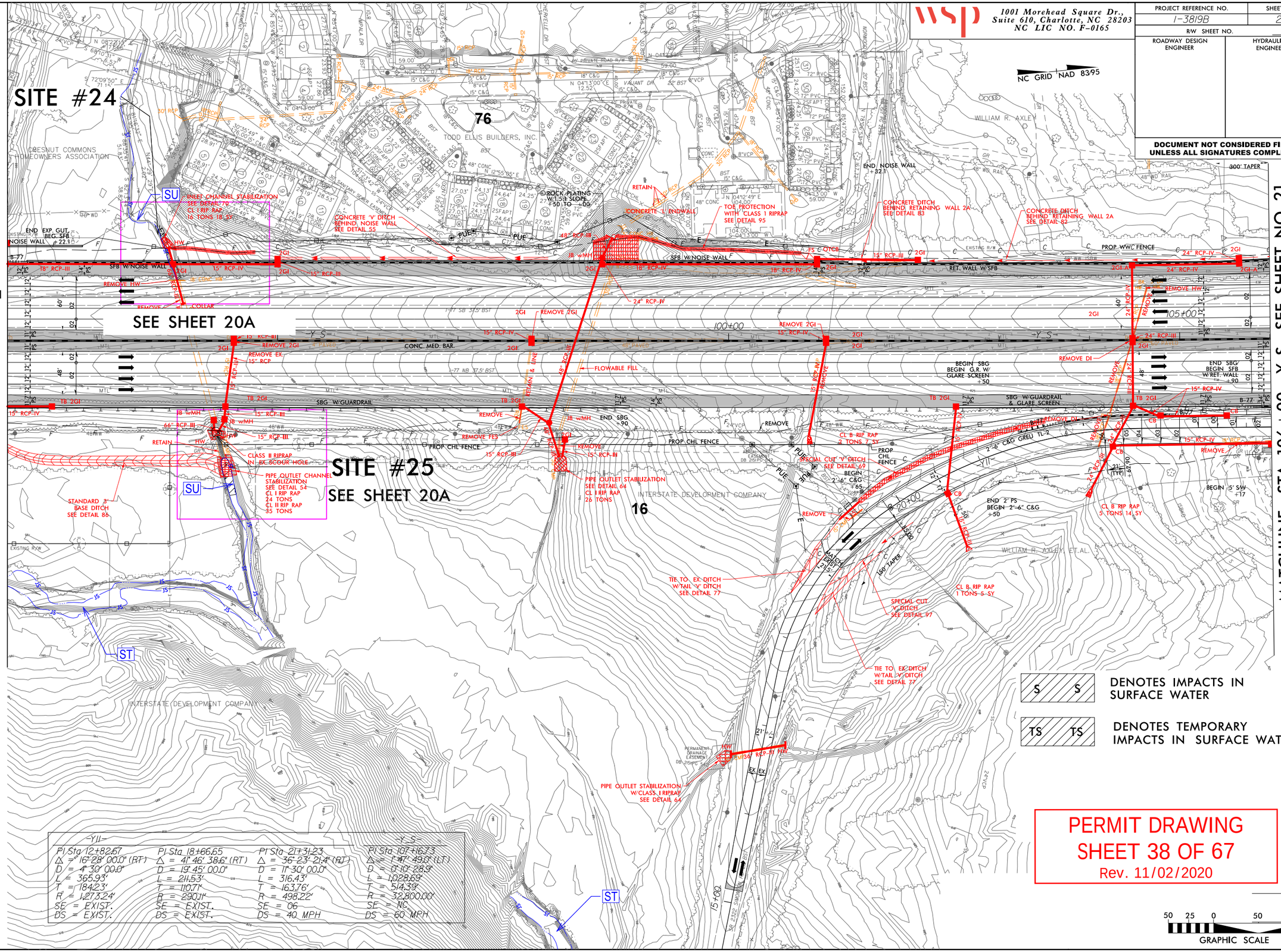
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-Y11-			-Y_S-
PI Sta 12+82.67	PI Sta 18+66.65	PI Sta 21+31.23	PI Sta 107+16.73
Δ = 16°28' 00.0" (RT)	Δ = 41° 46' 38.6" (RT)	Δ = 36°23' 21.4" (RT)	Δ = 1°47' 49.0" (LT)
D = 4° 30' 00.0"	D = 19° 45' 00.0"	D = 11° 30' 00.0"	D = 0°10' 28.9"
L = 365.93'	L = 211.53'	L = 316.43'	L = 1,028.69'
T = 184.23'	T = 110.71'	T = 163.76'	T = 514.39'
R = 1,273.24'	R = 290.11'	R = 498.22'	R = 32,800.00'
SE = EXIST.	SE = EXIST.	SE = 06	SE = NC
DS = EXIST.	DS = EXIST.	DS = 40 MPH	DS = 60 MPH

PERMIT DRAWING
SHEET 38 OF 67
Rev. 11/02/2020

11/2/2020
cs:\pw_pw\taise\pb\projectwisent\wsp__amanda.johnson\d0339329\I3819_hyd_prm_psh20_Y9200-10600.dgn
USER:F2035

wsp
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

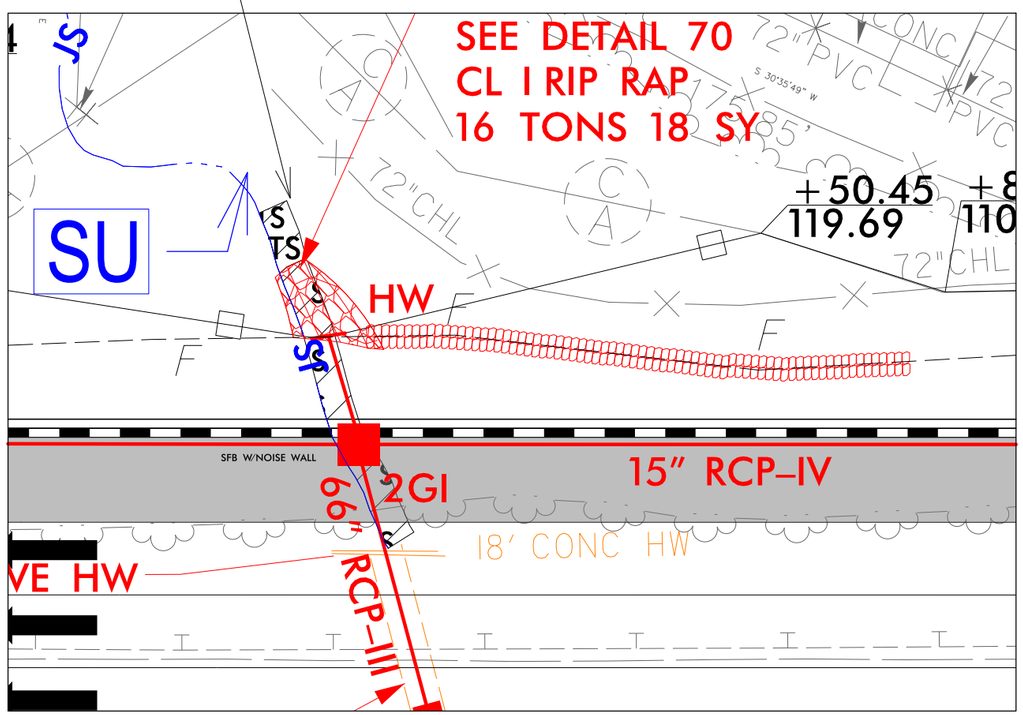
PROJECT REFERENCE NO.	SHEET NO.
I-3819B	20A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 39 OF 67
Rev. 11/02/2020

SITE #24

INSET



SITE #25

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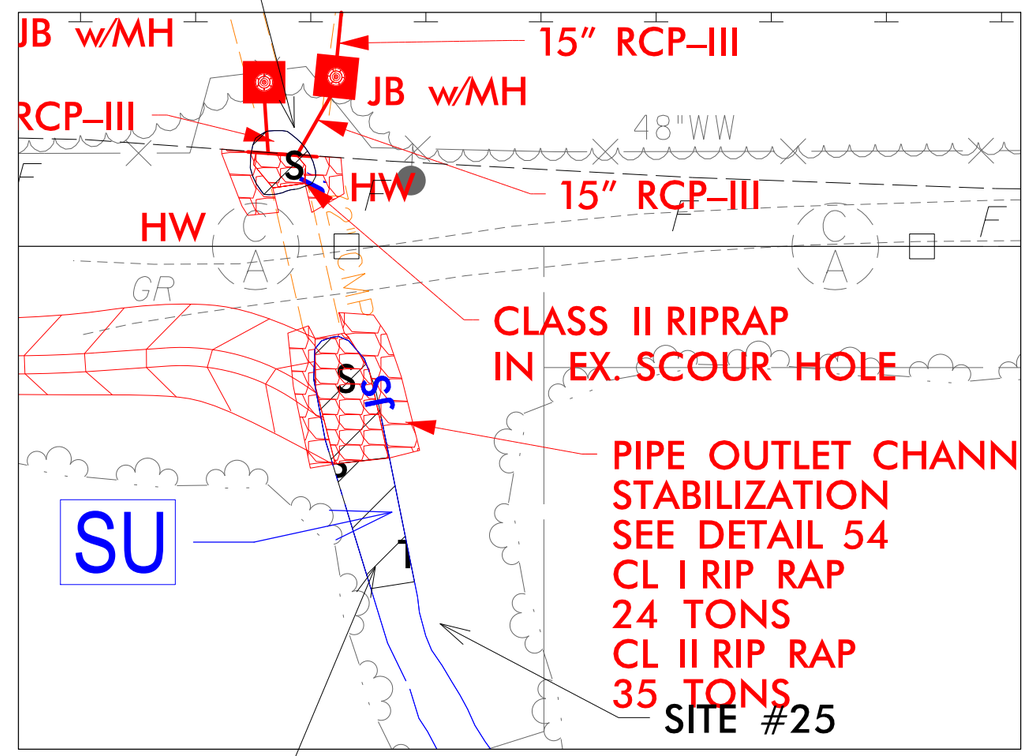
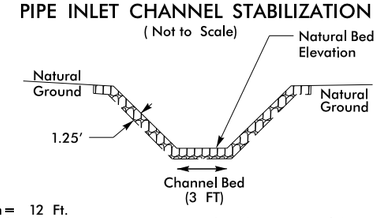


TEMPORARY IMPACTS
IN SURFACE WATER

DETAIL 70

PIPE INLET CHANNEL STABILIZATION

(Not to Scale)



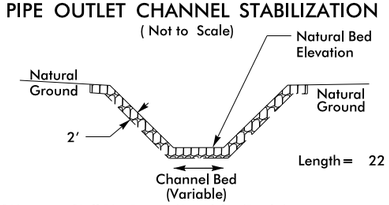
Length = 12 Ft.
Type of Liner = CL 1 Rip–Rap – Keyed–In (No Geotextile)

–Y_S– STA. 93+79 LT

DETAIL 54

PIPE OUTLET CHANNEL STABILIZATION

(Not to Scale)



Length = 22 Ft.
Type of Liner = CL II Rip–Rap – Keyed–In (Banks)
Type of Liner = CL I Rip–Rap – Countersunk (Bed) (No Geotextile)

NC GRID NAD 83/95

S S — DENOTES IMPACTS IN SURFACE WATER

TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER

25 12.5 0 25 50
GRAPHIC SCALE – INSETS

11/2/2020
C:\Projects\se\pb\projectwisent\wsp--amanda.johnson\d0339329\I3819_hyd_prm_psh20A_Y10600-12000.dgn
USER:AJ0435

wsp
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

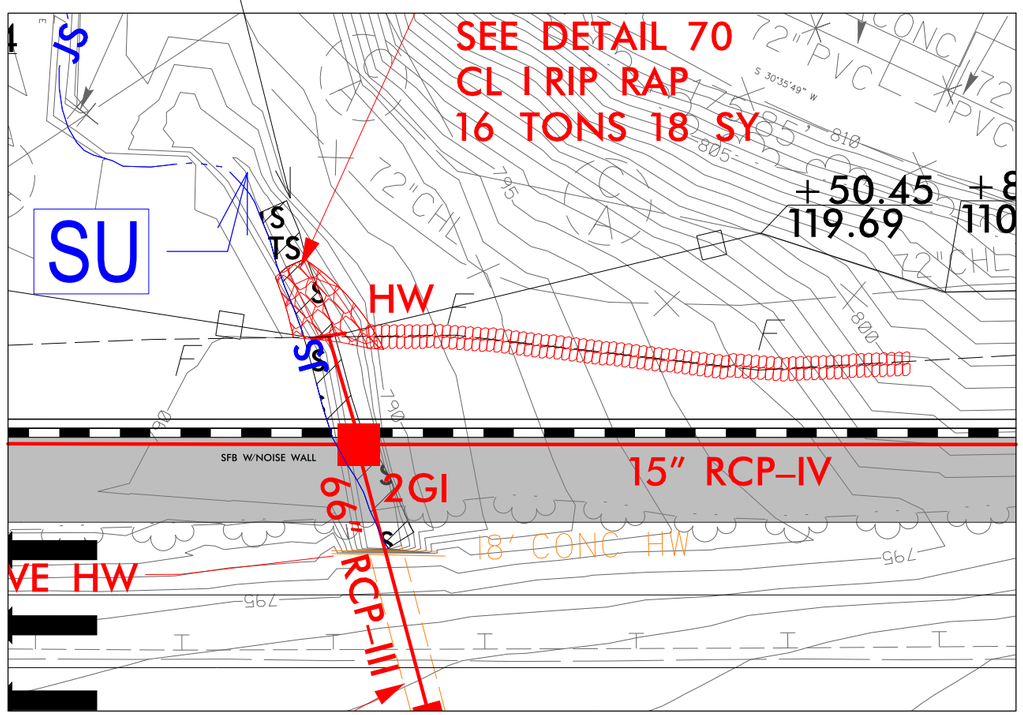
PROJECT REFERENCE NO.	SHEET NO.
I-3819B	20A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 40 OF 67
Rev. 11/02/2020

SITE #24

INSET



SITE #25

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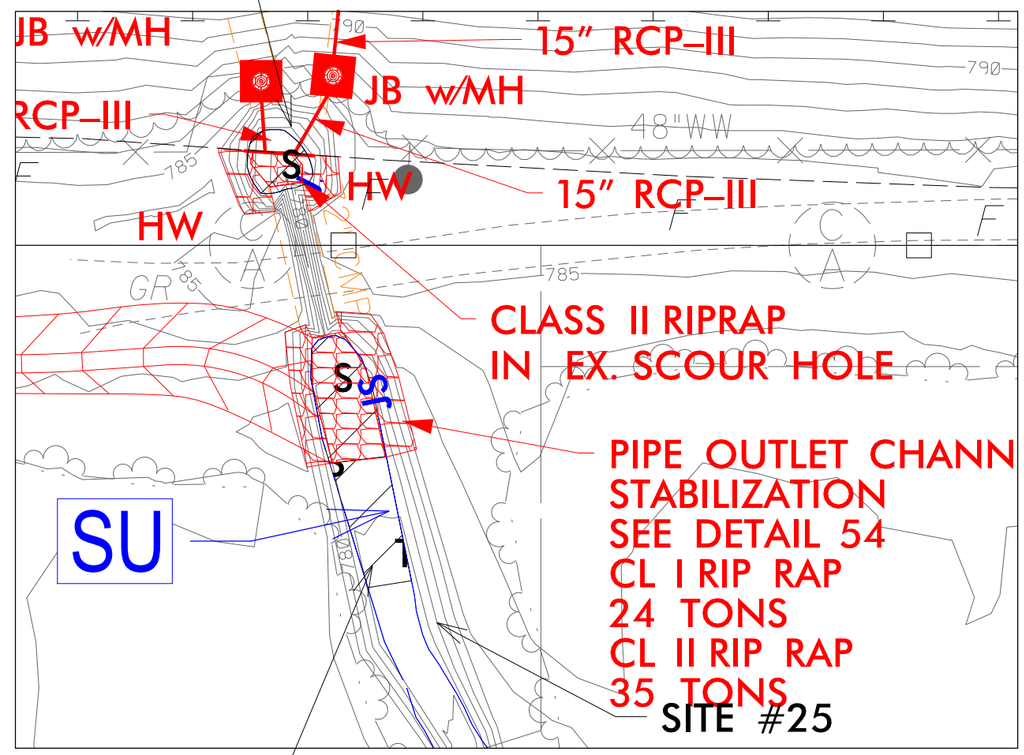
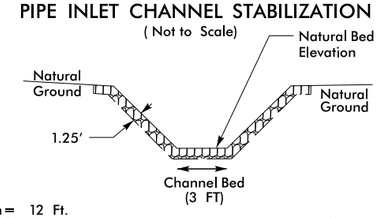


TEMPORARY IMPACTS
IN SURFACE WATER

DETAIL 70

PIPE INLET CHANNEL STABILIZATION

(Not to Scale)



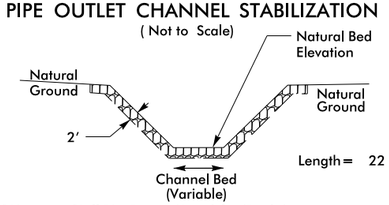
Length = 12 Ft.
Type of Liner = CL 1 Rip-Rap – Keyed-In (No Geotextile)

–Y_S– STA. 93+79 LT

DETAIL 54

PIPE OUTLET CHANNEL STABILIZATION

(Not to Scale)



Length = 22 Ft.
Type of Liner = CL II Rip-Rap – Keyed-In (Banks)
Type of Liner = CL I Rip-Rap – Countersunk (Bed) (No Geotextile)

NC GRID NAD 83/95

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

25 12.5 0 25 50
GRAPHIC SCALE – INSETS

11/2/2020
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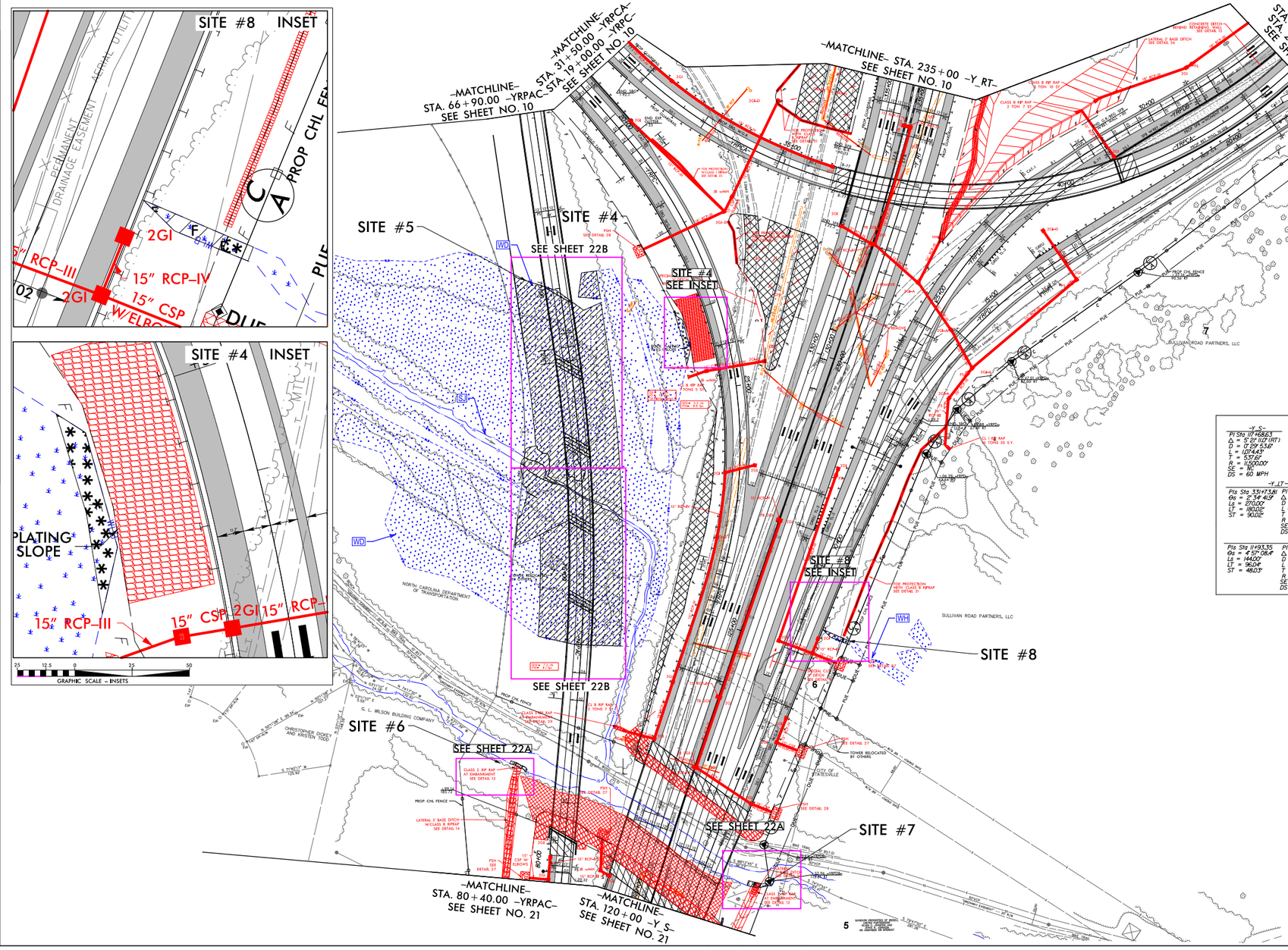


wsp
1001 Morehead Square Dr.
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-5898	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 46 OF 67
Rev. 11/02/2020

-Y_S-	-YRPAC-
PI Sta 11+58.63	PI Sta 74+00.12
Δ = 5° 21' 02" (RT)	Δ = 17° 01' 59.2" (RT)
D = 12° 29' 53.6"	D = 2° 14' 48.8"
L = 107.44'	L = 593.15'
T = 53.72'	T = 298.36'
R = 1,150.00'	R = 2,550.00'
SE = NC	SE = 04
DS = 60 MPH	DS = 50 MPH

-YRPDB-		
PI Sta 14+24.03	Pls Sta 23+74.30	PI Sta 26+43.97
Δ = 2° 30' 02.3" (RT)	Gs = 4° 52' 55.2"	Δ = 29° 24' 11.0" (RT)
D = 2° 38' 11.8"	Ls = 144.00'	D = 6° 46' 50.0"
L = 592.80'	LT = 96.04'	L = 433.64'
T = 296.43'	ST = 48.03'	T = 221.71'
R = 2,150.00'		R = 845.00'
SE = NC		SE = 06
DS = 50 MPH		DS = 50 MPH

Pls Sta 29+03.94	Pls Sta 30+95.94
Gs = 4° 52' 55.2"	Gs = 4° 51' 08.4"
Ls = 144.00'	Ls = 144.00'
LT = 96.04'	LT = 96.04'
ST = 48.03'	ST = 48.03'

-Y_LT-		
Pls Sta 33+17.38	PI Sta 33+48.61	PI Sta 33+86.61
Gs = 2° 34' 40.9"	Δ = 12° 29' 43.8" (LT)	Δ = 12° 29' 43.8" (LT)
Ls = 270.00'	D = 1° 54' 35.5"	D = 1° 54' 35.5"
LT = 180.02'	L = 444.82'	L = 444.82'
ST = 90.02'	T = 222.82'	T = 222.82'
	R = 3,000.00'	R = 3,000.00'
	SE = 05	SE = 05
	DS = 60 MPH	DS = 60 MPH

-Y_RT-		
Pls Sta 232+62.32	PI Sta 235+92.32	PI Sta 239+92.32
Gs = 1° 54' 35.5"	Δ = 17° 01' 59.2" (LT)	Δ = 17° 01' 59.2" (LT)
Ls = 200.00'	D = 1° 54' 35.5"	D = 1° 54' 35.5"
LT = 133.34'	L = 595.34'	L = 595.34'
ST = 66.67'	T = 263.34'	T = 263.34'
	R = 3,000.00'	R = 3,000.00'
	SE = 05	SE = 05
	DS = 60 MPH	DS = 60 MPH

-YRPC-		
Pls Sta 20+25.04	PI Sta 24+66.97	Pls Sta 28+57.03
Gs = 4° 51' 08.4"	Δ = 50° 37' 24.9" (RT)	Gs = 4° 51' 08.4"
Ls = 144.00'	D = 6° 52' 41.7"	Ls = 144.00'
LT = 96.04'	L = 736.00'	LT = 96.04'
ST = 48.03'	T = 393.91'	ST = 48.03'
	R = 833.00'	
	SE = 06	
	DS = 50 MPH	

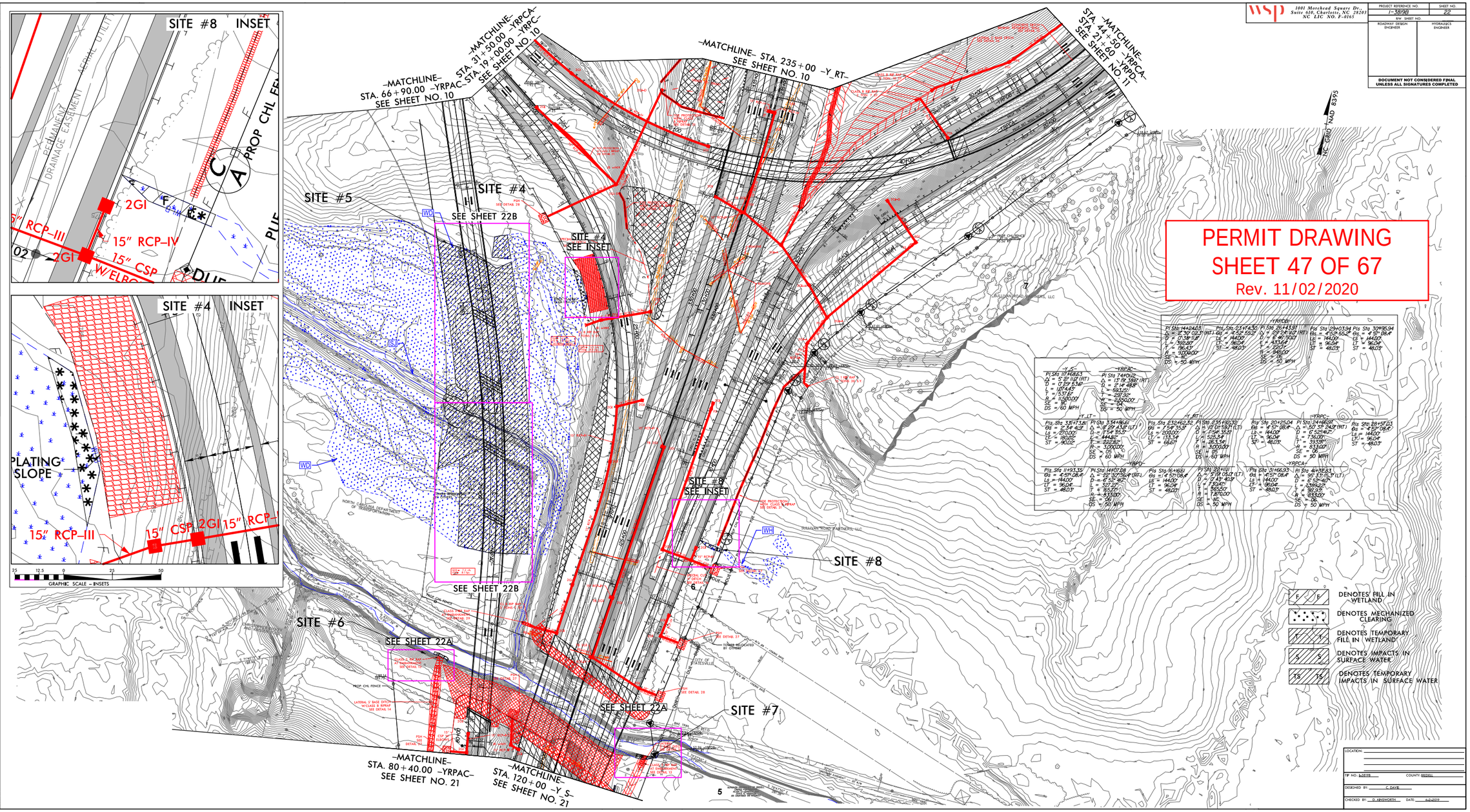
-YRPD-			
Pls Sta 11+93.35	PI Sta 14+07.08	Pls Sta 16+16.61	PI Sta 22+11.17
Gs = 4° 51' 08.4"	Δ = 22° 30' 36.4" (RT)	Gs = 4° 51' 08.4"	Δ = 5° 19' 05.0" (LT)
Ls = 144.00'	D = 6° 52' 41.7"	Ls = 144.00'	D = 0° 43' 40.9"
LT = 96.04'	L = 327.27'	LT = 96.04'	L = 7,304.61'
ST = 48.03'	T = 165.77'	ST = 48.03'	T = 365.50'
	R = 833.00'		R = 7,870.00'
	SE = 06		SE = NC
	DS = 50 MPH		DS = 50 MPH

-YRPCA-		
Pls Sta 31+66.93	PI Sta 41+32.83	
Gs = 4° 51' 08.4"	Δ = 95° 33' 15.3" (LT)	
Ls = 144.00'	D = 6° 52' 41.7"	
LT = 96.04'	L = 1,389.22'	
ST = 48.03'	T = 917.93'	
	R = 833.00'	
	SE = 06	
	DS = 50 MPH	

F/F DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
T/T DENOTES TEMPORARY FILL IN WETLAND
S/S DENOTES IMPACTS IN SURFACE WATER
TS/TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

LOCATION:
TIP NO.: I-5898 COUNTY: BRUNSWICK
DESIGNED BY: C. DAVIS
CHECKED BY: D. ARNSWORTH DATE: 4-24-2019

REVISIONS
7/10/2020
PLOTTED BY: Jeremiah Jones
DATE: 11/2/2020
FILE NAME: P:\Jones\Jobs\Jones Job Folders\Jones Job Folders\I-5898\Roadway\Plans\Sheets\I-5898_Roadway_Plan_Sheet_22.dgn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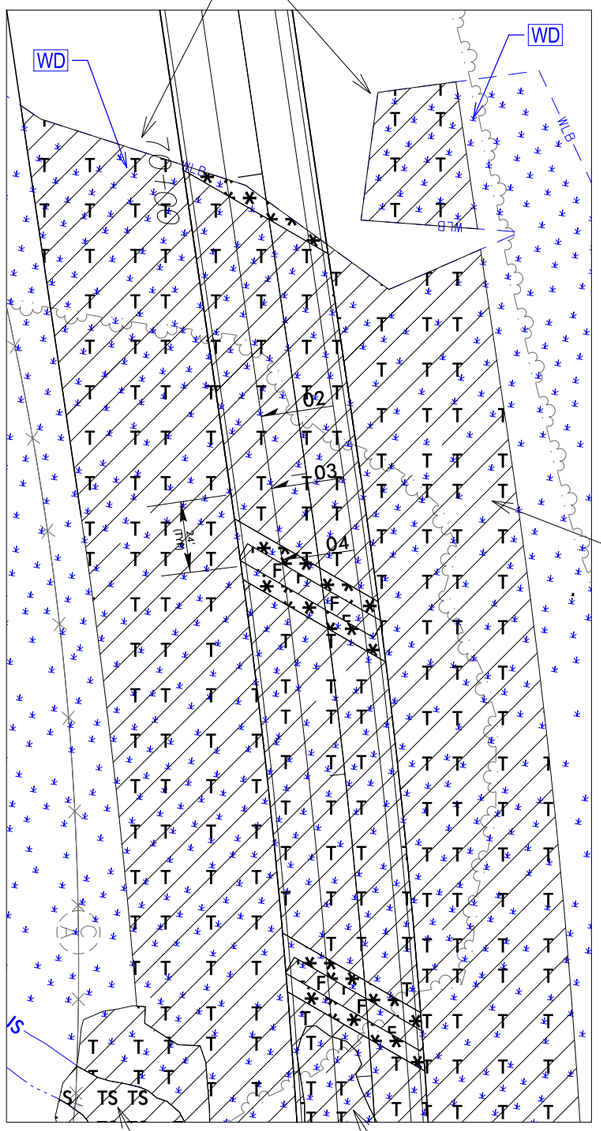
SITE #4 INSET
PERMIT DRAWING
SHEET 47 OF 67
Rev. 11/02/2020
-MATCHLINE- STA. 66+90.00 -YRPAC- SEE SHEET NO. 10
-MATCHLINE- STA. 31+50.00 -YRPCA- STA. 19+00.00 -YRPC- SEE SHEET NO. 10
-MATCHLINE- STA. 235+00 -Y_RT- SEE SHEET NO. 10
-MATCHLINE- STA. 44+50 -YRPCA- STA. 21+00 -YRPD- SEE SHEET NO. 11
-MATCHLINE- STA. 80+40.00 -YRPAC- SEE SHEET NO. 21
-MATCHLINE- STA. 120+00 -Y_S- SEE SHEET NO. 21
SITE #5
SITE #4
SEE SHEET 22B
SITE #4 SEE INSET
SITE #8 SEE INSET
SITE #8
SITE #6
SITE #7
SEE SHEET 22A
SEE SHEET 22B
SEE SHEET 22A
2GI
15" RCP-III
15" RCP-IV
15" CSP
PLATING SLOPE
15" CSP 2GI 15" RCP-I
GRAPHIC SCALE - INSETS
NC GRID NAD 83/95
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES TEMPORARY FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
PROJECT REFERENCE NO. I-5818B
SHEET NO. 22
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
LOCATION:
TIP NO. I-5818B
COUNTY: IREDELL
DESIGNED BY: C. DAVIS
CHECKED BY: D. ARNSWORTH
DATE: 4-2-2019

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	22B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

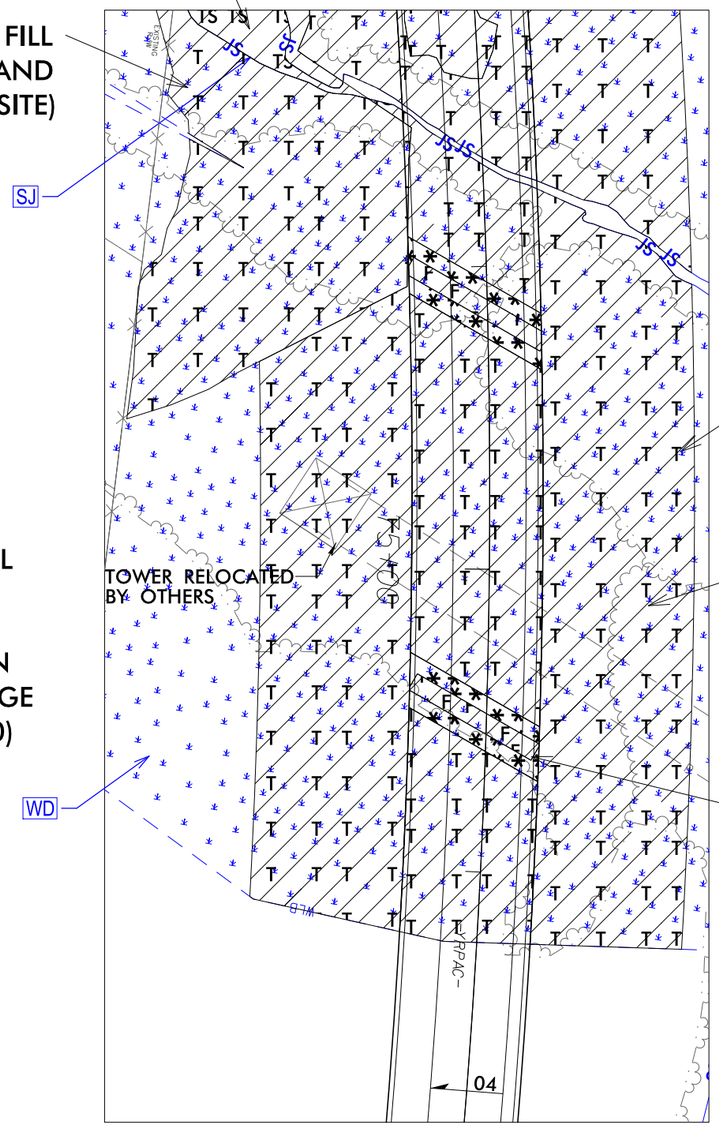
INSET



TEMPORARY FILL IN WETLAND (MATTING FOR CONSTRUCTION ACCESS – BRIDGE STRUCTURE #10)

TEMPORARY FILL IN WETLAND (RESTORATION SITE)

TEMPORARY IMPACTS IN SURFACE WATER



TEMPORARY IMPACTS IN SURFACE WATER

TEMPORARY FILL IN WETLAND (RESTORATION SITE)

SJ

SITE #5

TEMPORARY FILL IN WETLAND (MATTING FOR CONSTRUCTION ACCESS – BRIDGE STRUCTURE #10)

WD

PERMANENT FILL AND MECHANIZED CLEARING FOR PROPOSED BENT (TYP)

NC GRID NAD 83/95

TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
F F	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING
T T	DENOTES TEMPORARY FILL IN WETLAND

PERMIT DRAWING
SHEET 50 OF 67
Rev. 11/02/2020

50 25 0 50 100
GRAPHIC SCALE – INSETS

10/22/2020
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beckerjw

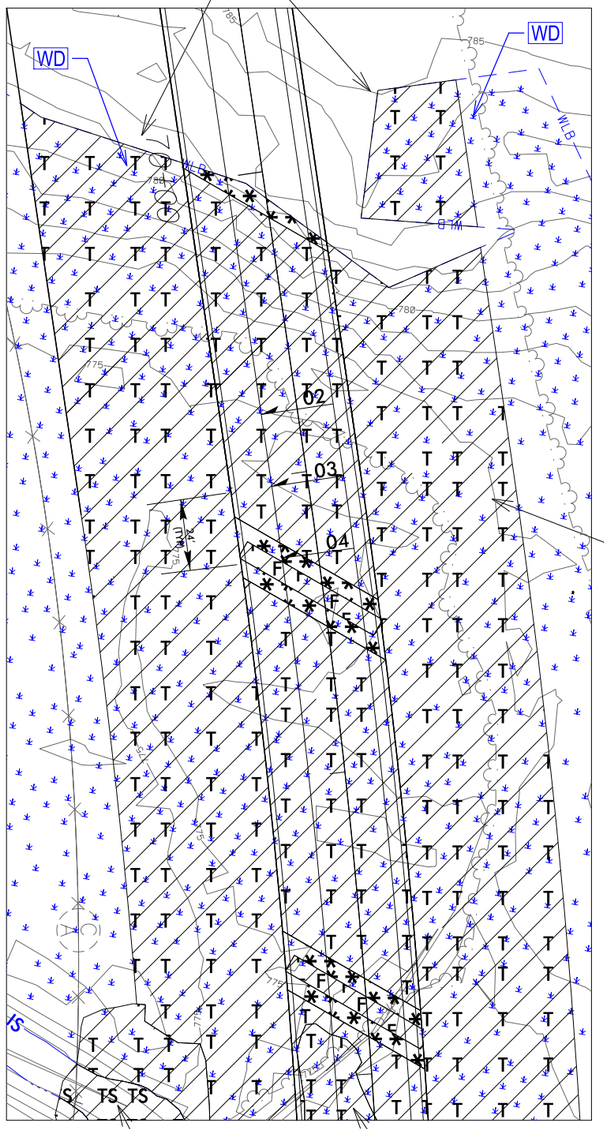
INSET

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	22B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID NAD 83/95

SITE #5



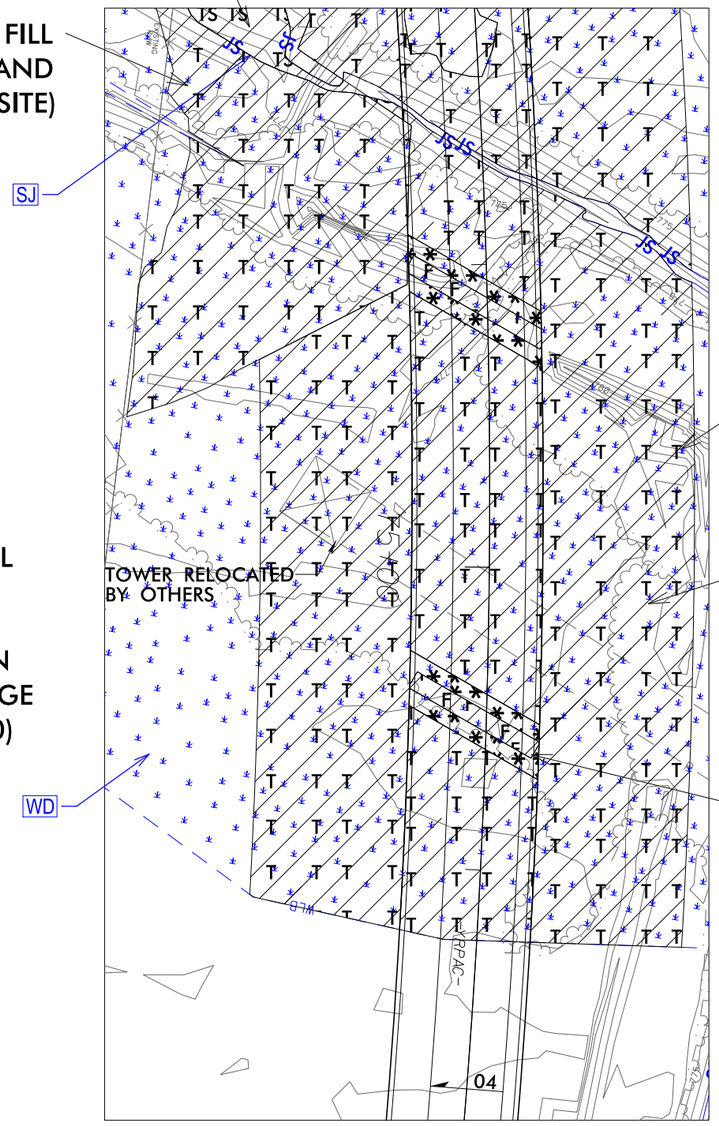
TEMPORARY FILL IN WETLAND (MATTING FOR CONSTRUCTION ACCESS – BRIDGE STRUCTURE #10)

TEMPORARY FILL IN WETLAND (RESTORATION SITE)

TEMPORARY IMPACTS IN SURFACE WATER

TEMPORARY IMPACTS IN SURFACE WATER

TEMPORARY FILL IN WETLAND (RESTORATION SITE)



SITE #5

TEMPORARY FILL IN WETLAND (MATTING FOR CONSTRUCTION ACCESS – BRIDGE STRUCTURE #10)

PERMANENT FILL AND MECHANIZED CLEARING FOR PROPOSED BENT (TYP)

TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
F F	DENOTES FILL IN WETLAND
	DENOTES MECHANIZED CLEARING
T T	DENOTES TEMPORARY FILL IN WETLAND

PERMIT DRAWING
SHEET 51 OF 67
Rev. 11/02/2020

50 25 0 50 100
GRAPHIC SCALE – INSETS

10/22/2020
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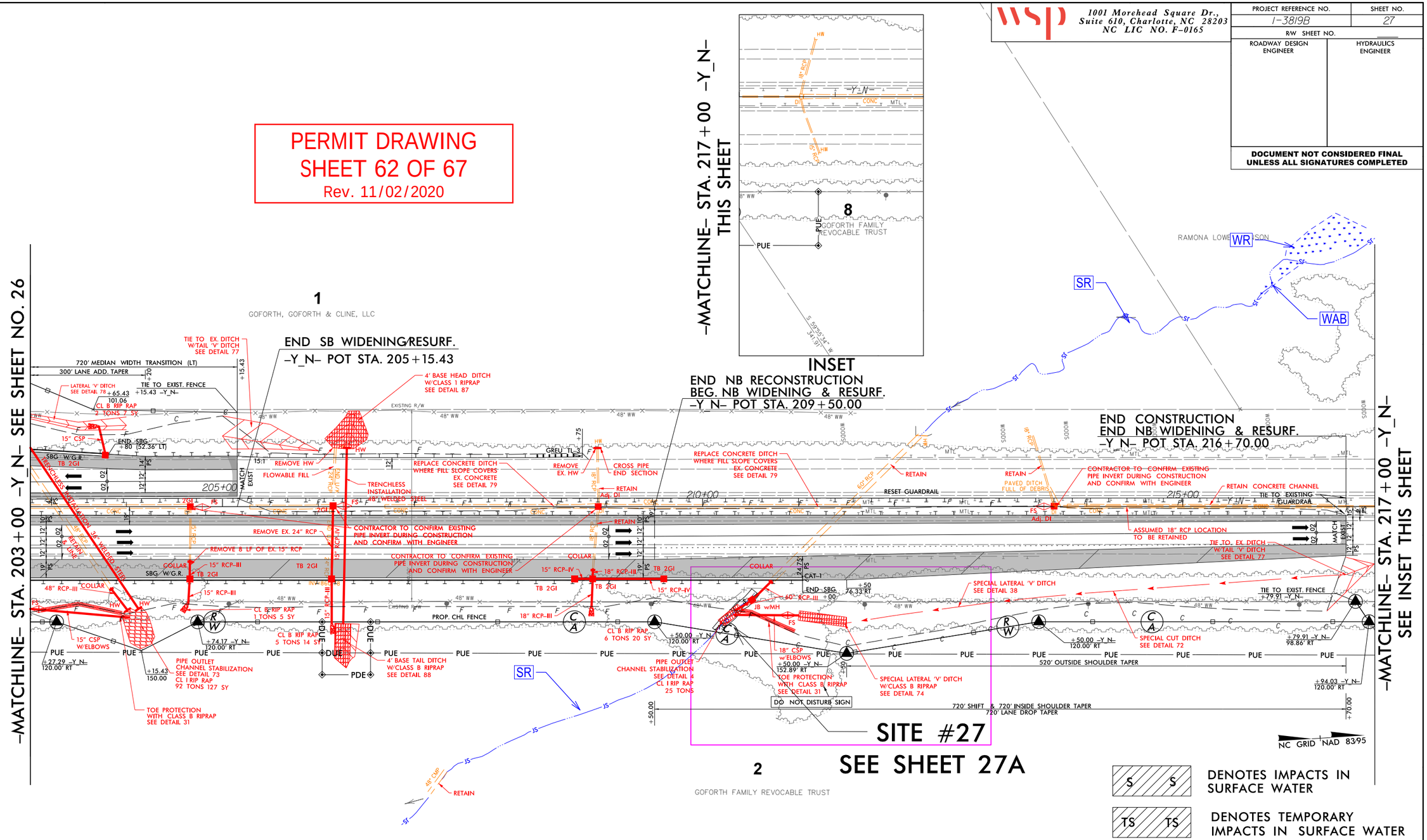
becker_jw

PERMIT DRAWING
SHEET 62 OF 67
Rev. 11/02/2020

wsp
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



10/21/2020
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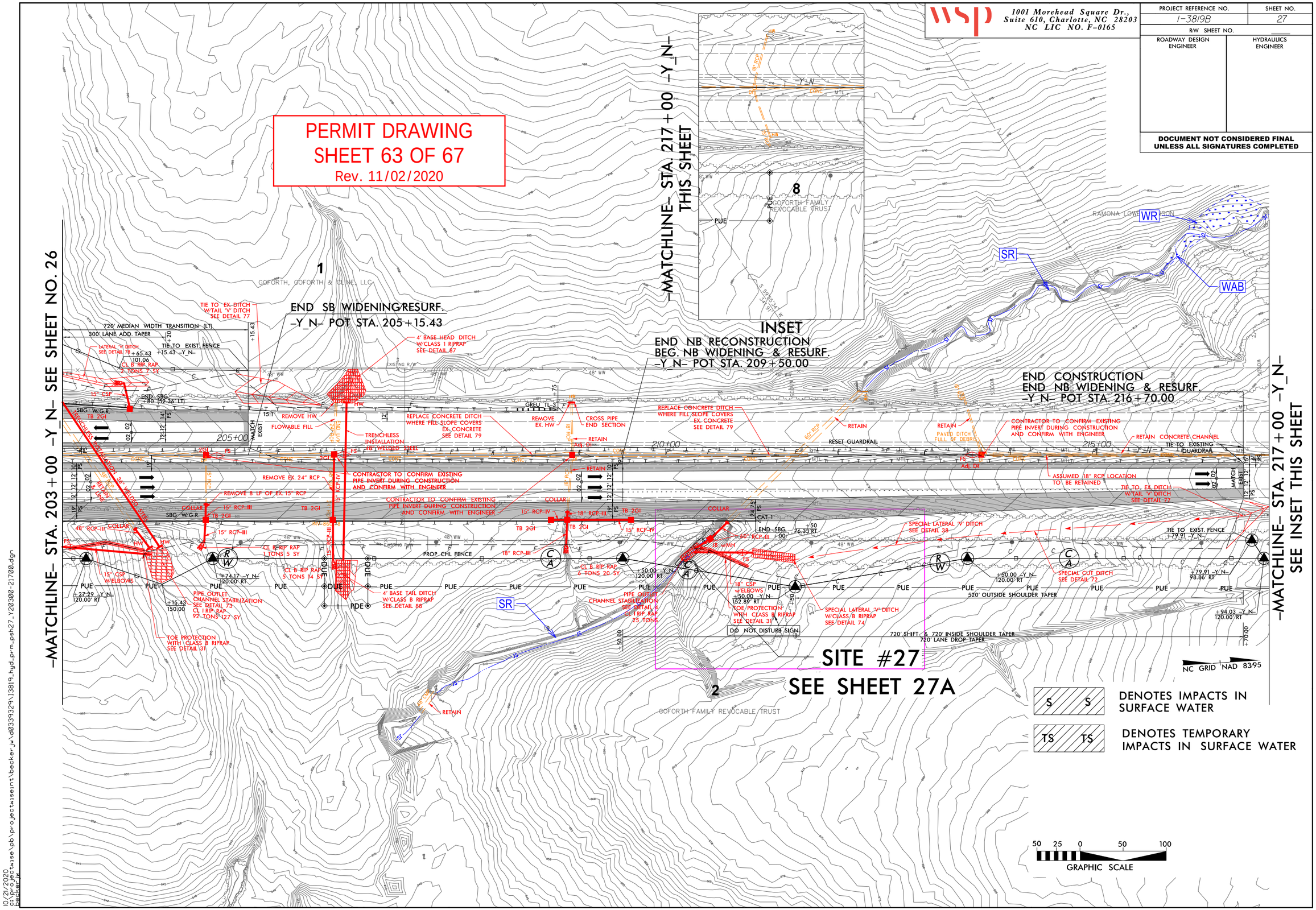
Becker_jw

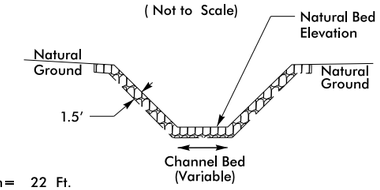

PERMIT DRAWING
SHEET 63 OF 67
Rev. 11/02/2020
1001 Morehead Square Dr., Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165
PROJECT REFERENCE NO.
1-3819B
SHEET NO.
27
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
-MATCHLINE- STA. 217+00 -Y_N- THIS SHEET
-MATCHLINE- STA. 203+00 -Y_N- SEE SHEET NO. 26
-MATCHLINE- STA. 217+00 -Y_N- SEE INSET THIS SHEET
INSET
8
GOFORTH FAMILY REVOCABLE TRUST
1
GOFORTH, GOFORTH & CLINE, LLC
2
GOFORTH FAMILY REVOCABLE TRUST
END SB WIDENING/RESURF.
-Y_N- POT STA. 205+15.43
END NB RECONSTRUCTION
BEG. NB WIDENING & RESURF.
-Y_N- POT STA. 209+50.00
END CONSTRUCTION
END NB WIDENING & RESURF.
-Y_N- POT STA. 216+70.00
SITE #27
SEE SHEET 27A
SR
WR
WAB
NC GRID NAD 83/95
GRAPHIC SCALE
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
10/21/2020
c:\projectwise\pb\projectwisent\becker_jw\d0339329\13819_hyd_prm_psh27_Y20300-21700.dgn
Becker_jw

wsp
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	27A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

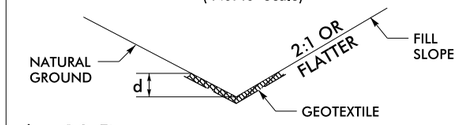
DETAIL 4
PIPE OUTLET CHANNEL STABILIZATION
(Not to Scale)



Length = 22 Ft.
Type of Liner = CL 1 Rip-Rap - Keyed-In (No Geotextile)

-YRPC- STA. 16+04 RT
-Y_N- STA. 210+35 RT

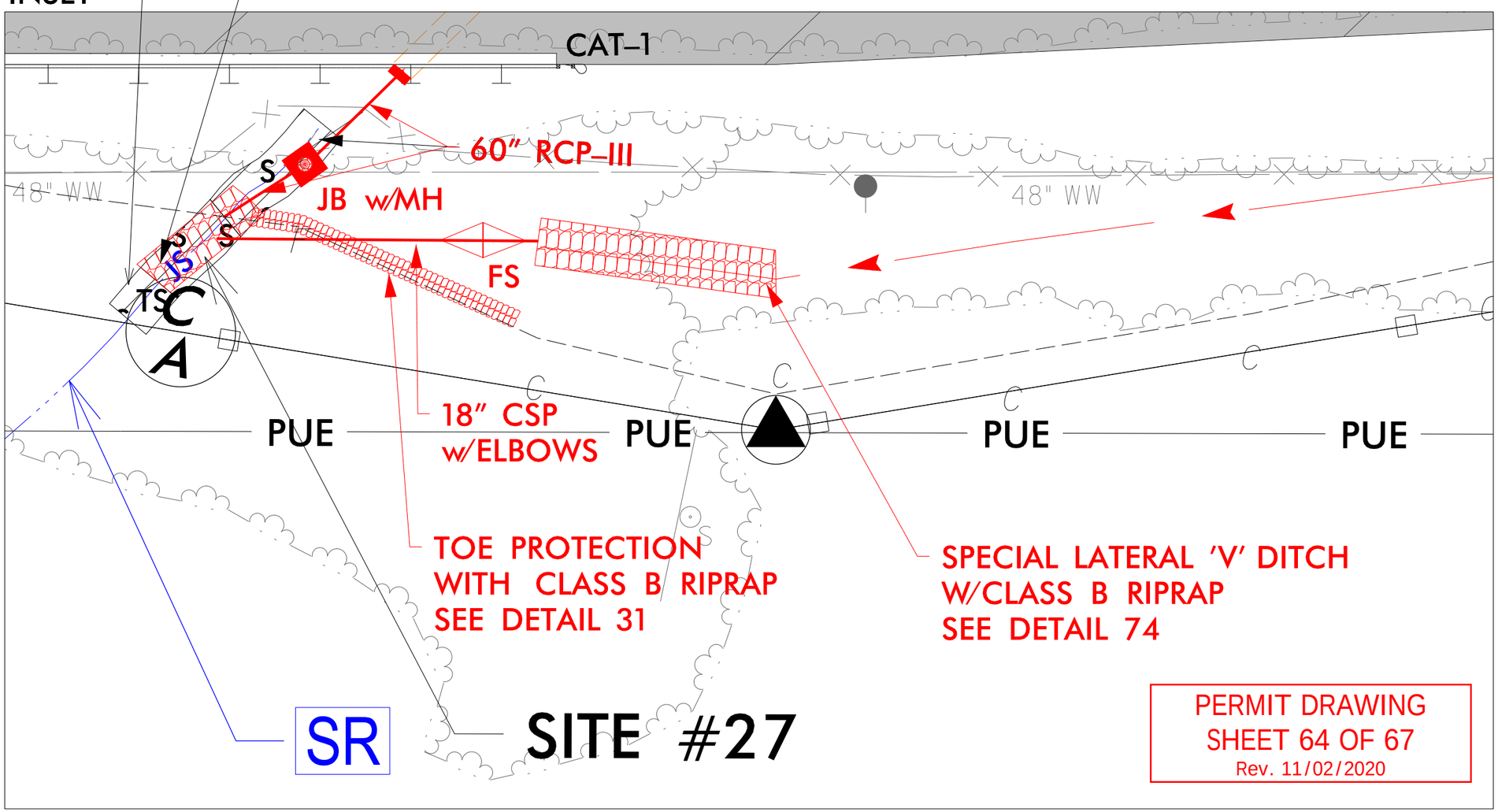
DETAIL 31
TOE PROTECTION
(Not to Scale)



d = 1.0 Ft.

Type of Liner = Class B Rip-Rap

INSET



PERMIT DRAWING
SHEET 64 OF 67
Rev. 11/02/2020

NC GRID NAD 83/95

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

25 12.5 0 25 50
GRAPHIC SCALE - INSETS

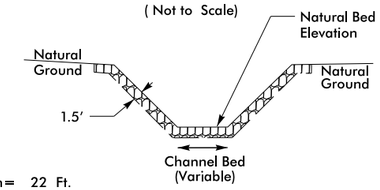
10/22/2020
c:\projectwise\pb\projectwiseint\becker_jw\d0339329\I3819_hyd_prm_psh27A_Y20300-21700.dgn
Becker, JW

wsp
1001 Morehead Square Dr.,
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	27A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

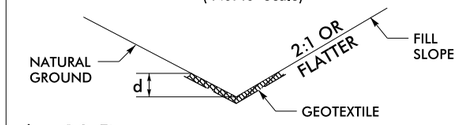
DETAIL 4
PIPE OUTLET CHANNEL STABILIZATION
(Not to Scale)



Length = 22 Ft.
Type of Liner = CL 1 Rip-Rap - Keyed-In (No Geotextile)

-YRPC- STA. 16+04 RT
-Y_N- STA. 210+35 RT

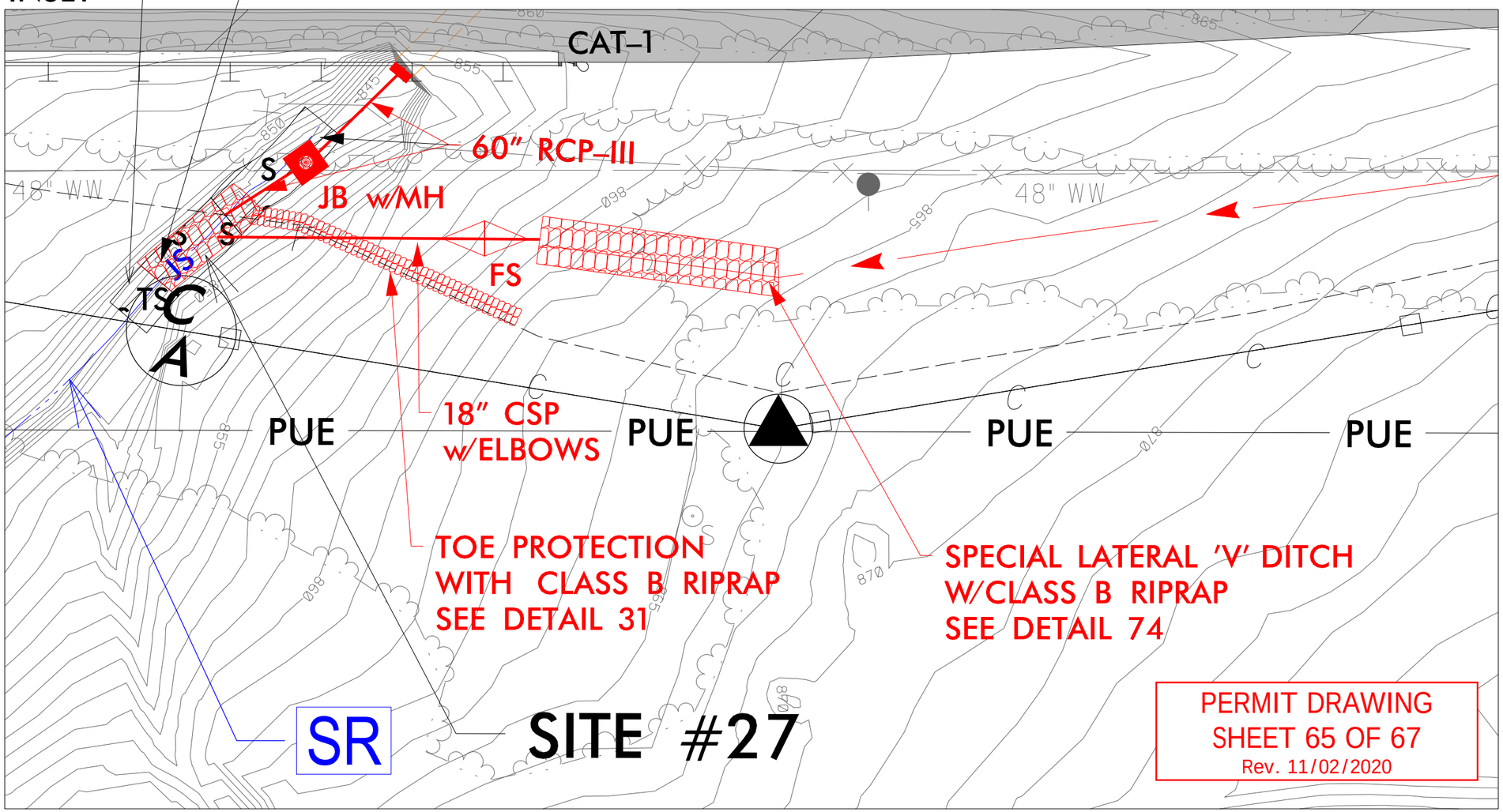
DETAIL 31
TOE PROTECTION
(Not to Scale)



d = 1.0 Ft.

Type of Liner = Class B Rip-Rap

INSET



PERMIT DRAWING
SHEET 65 OF 67
Rev. 11/02/2020

NC GRID NAD 83/95

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

25 12.5 0 25 50
GRAPHIC SCALE - INSETS

10/22/2020
c:\projectwise\pb\projectwiseint\becker_jw\d0339329\I3819_hyd_prm_psh27A_Y20300-21700.dgn
Becker, JW

WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND 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)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	Site 1 Eliminated											
2	14+00 -21+50-YRPCA-	Roadway Fill	0.32			0.09						
2	16+70 - 21+50-YRPCA-	Bridge/Stream Bank Stabilization**	0.02	0.62		0.02		< 0.01	< 0.01	42	20	
3	15+75-YRPC-	Roadway Fill	< 0.01			0.01		0.02	< 0.01	206	10	
4	24+00-YRPC-	Roadway Fill				0.02						
5	70+00 - 76+25 -YRPAC-	Bridge**	0.03	1.81		0.05						
5	72+70 - 74+50 -YRPAC-	Construction Access		0.23					0.02		77	
6	121+50-Y_LT-	Stream Bank Stabilization						< 0.01	< 0.01	12	20	
7	120+90-Y_RT-	Stream Bank Stabilization						< 0.01	< 0.01	12	20	
8	19+00-YRPDB-	Roadway Fill	< 0.01			< 0.01						
9	28+50 - 34+00-YRPAC-	Roadway Fill	0.40			0.08		0.07	< 0.01	747	10	
9A	28+10 - 28+30-YRPAC-	Construction Access							0.01		50	
10	28+00-YRPAC-	Stream Bank Stabilization						< 0.01	< 0.01	25	20	
11	27+50 - 26+50-YRPAC	Roadway Fill	0.19			0.02						
12	149+00-150+00-L-	Bridge						< 0.01	0.01	10	54	
13	167+00-Y_RT-	Stream Bed Stabilization						< 0.01		17		
13	167+00-Y_RT-	Stream Bank Stabilization						< 0.01	< 0.01	44	10	
14	28+50-Y-	Stream Bed Stabilization						< 0.01	< 0.01	17	10	
15	33+75-Y-	Stream Bank Stabilization						< 0.01	< 0.01	11	20	
16	37+10-37+20-Y-	54" RCP Extension						< 0.01		15		
16	35+90-37+10-Y-	Stream Bed Stabilization						< 0.01	< 0.01	98	10	
17	37+70-37+80-Y-	54" RCP Extension						< 0.01		20		
17	37+80-38+50-Y-	Stream Bed Stabilization						0.01	< 0.01	94	14	
18	47+50-Y-	54" RCP Extension						< 0.01		39		
SHEET 66 SUBTOTALS*:			0.97	2.66	0.00	0.29	0.00	0.16	0.07	1409	345	0.00

*Rounded totals are sum of actual impacts for sites listed on Sheet 66. See Sheet 67 for project total.

**Temporary fill in wetlands includes impacts previously classified as hand clearing, changed per NCDEQ comment (matting for construction access)

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
11/02/2020
IREDELL
TIP NO. I-3819B
WBS NO.

Revised 2018 Feb

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)
18	47+50-Y-	Stream Bed Stabilization						< 0.01	< 0.01	33	10	
19	46+00-Y-	Roadway Fill						< 0.01		34		
20	68+50-Y-	New Channel						< 0.01	< 0.01	13	10	
20	68+50-Y-	Roadway Fill						< 0.01		48		
21	70+20-Y-	3@9'X11" RCBC Extension						0.02		39		
21	69+20-70+20-Y-	Stream Bed Stabilization						0.08	< 0.01	137	21	
22	71+30-71+90-Y-	3@9'X11" RCBC Extension						0.02		45		
22	71+90-72+89-Y-	Stream Bed Stabilization						0.08		160		
22	72+89-75+10-Y-	New Channel						0.08		225		
22	75+10-84+00-Y-	Stream Bank Stabilization						0.34		901		
22	83+59-83+85-Y-	Stream Bed Stabilization						< 0.01		25		
23	87+70-Y-	Roadway Fill							< 0.01		33	
24	93+75-Y-	66" RCP Extension						< 0.01	< 0.01	49	10	
25	94+50-Y-	66" RCP Extension						< 0.01		10		
25	94+50-Y-	Stream Bed Stabilization						< 0.01	< 0.01	21	21	
26	116+70-120+10-Y-	Roadway Fill	0.09			0.04						
27	210+00-Y-	60" RCP Extension						< 0.01		29		
27	210+00-Y-	Stream Bed Stabilization						< 0.01	< 0.01	19	10	
28	24+00-Y15RPB-	Stream Bed Stabilization						< 0.01	< 0.01	16	11	
SHEET 66 SUBTOTAL			0.97	2.66	0.00	0.29	0.00	0.16	0.07	1409	345	0.00
SHEET 67 SUBTOTAL			0.09	0.00	0.00	0.04	0.00	0.67	0.03	1804	126	0.00
PROJECT TOTALS*:			1.06	2.66	0.00	0.33	0.00	0.83	0.10	3213	471	0.00

*Rounded totals are sum of actual impacts for entire project area

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
11/02/2020
IREDELL
TIP NO. I-3819B
WBS NO.

Revised 2018 Feb

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-3819B/U-6039	1	

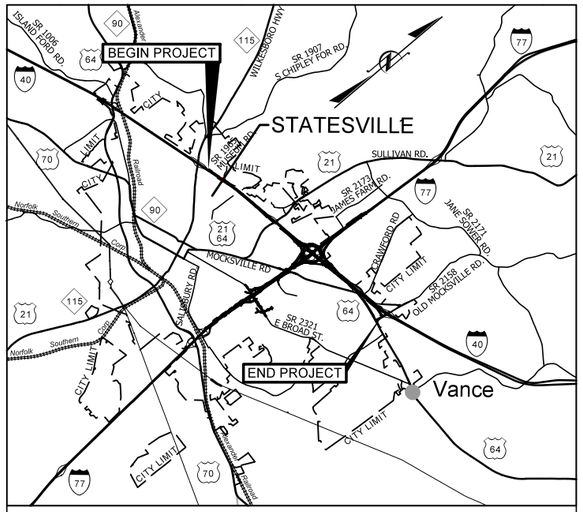
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34192.1.2	IMS-40-2(124)	P.E.
34192.3.2	N/A	DESIGN BUILD

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

IREDELL COUNTY

LOCATION: I-40/I-77 INTERCHANGE INCLUDING I-40 FROM WEST OF SR 2003 (RADIO RD.) TO SR 2158 (OLD MOCKSVILLE RD.) & I-77 FROM SOUTH OF SR 2321 (EAST BROAD ST.) TO SOUTH OF SR 2171 (JANE SOWERS RD.)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES, RETAINING WALLS, NOISE WALLS, AND TRAFFIC CONTROL



VICINITY MAP

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF STATESVILLE AND THE TOWNSHIP OF BETHANY

50 25 0 100 200
PLANS

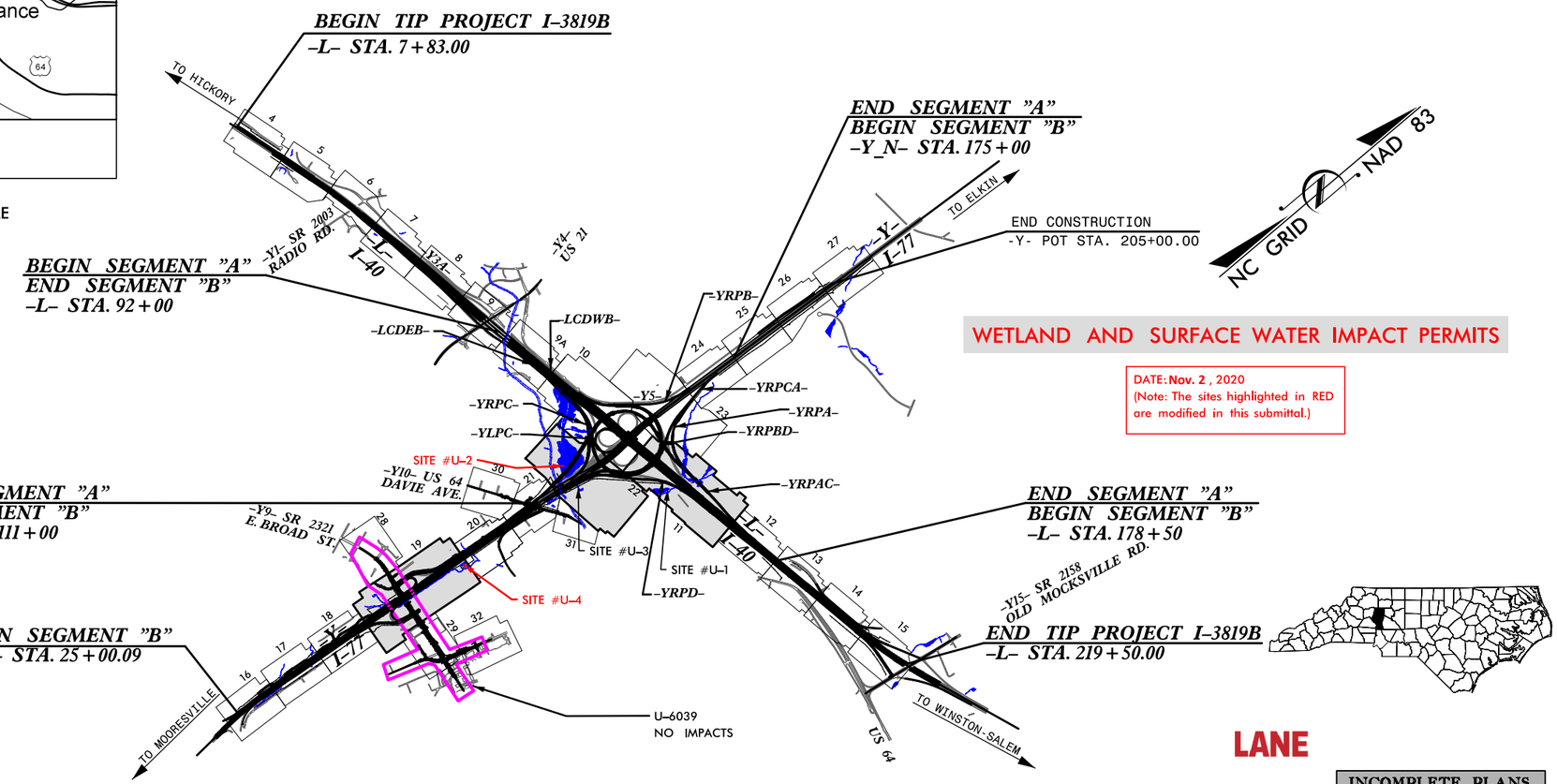
100 50 0 200 400
OVERSIZED PLANS

SCALE VARIES
INSETS

UTILITY PERMIT DRAWING
SHEET 1 OF 8
Rev. 11/02/2020

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES



WETLAND AND SURFACE WATER IMPACT PERMITS

DATE: Nov. 2 , 2020
(Note: The sites highlighted in RED are modified in this submittal.)

LANE

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

GRAPHIC SCALES

SEE ABOVE

DESIGN DATA

	I-40	I-77
ADT 2018 =	57,300	62,900
ADT 2040 =	72,500	77,500
DHV =	5,800	6,200
D =	55 %	55 %
T =	16 % *	19 % **
V =	60 MPH	60 MPH

* TTST 13 + DUAL 3 (I-40)
** TTST 16 + DUAL 3 (I-77)
CLASSIFICATION: INTERSTATE

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-3819B	=	3.885
LENGTH STRUCTURES TIP PROJECT I-3819B	=	0.124
TOTAL LENGTH OF TIP PROJECT I-3819B	=	4.009

Prepared In the Office of:
WSP
1001 Morehead Square Dr., Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: OCTOBER 30, 2018

LETTING DATE: OCTOBER 30, 2018

CHRISTOPHER D. DAVIS, P.E.
PROJECT ENGINEER

ERIC W. SECKINGER, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
P.E.
STATE HIGHWAY DESIGN ENGINEER

PROJECT: 34192.1.2
TIP PROJECT: I-3819B/U-6039

09/08/99

9/17/2020
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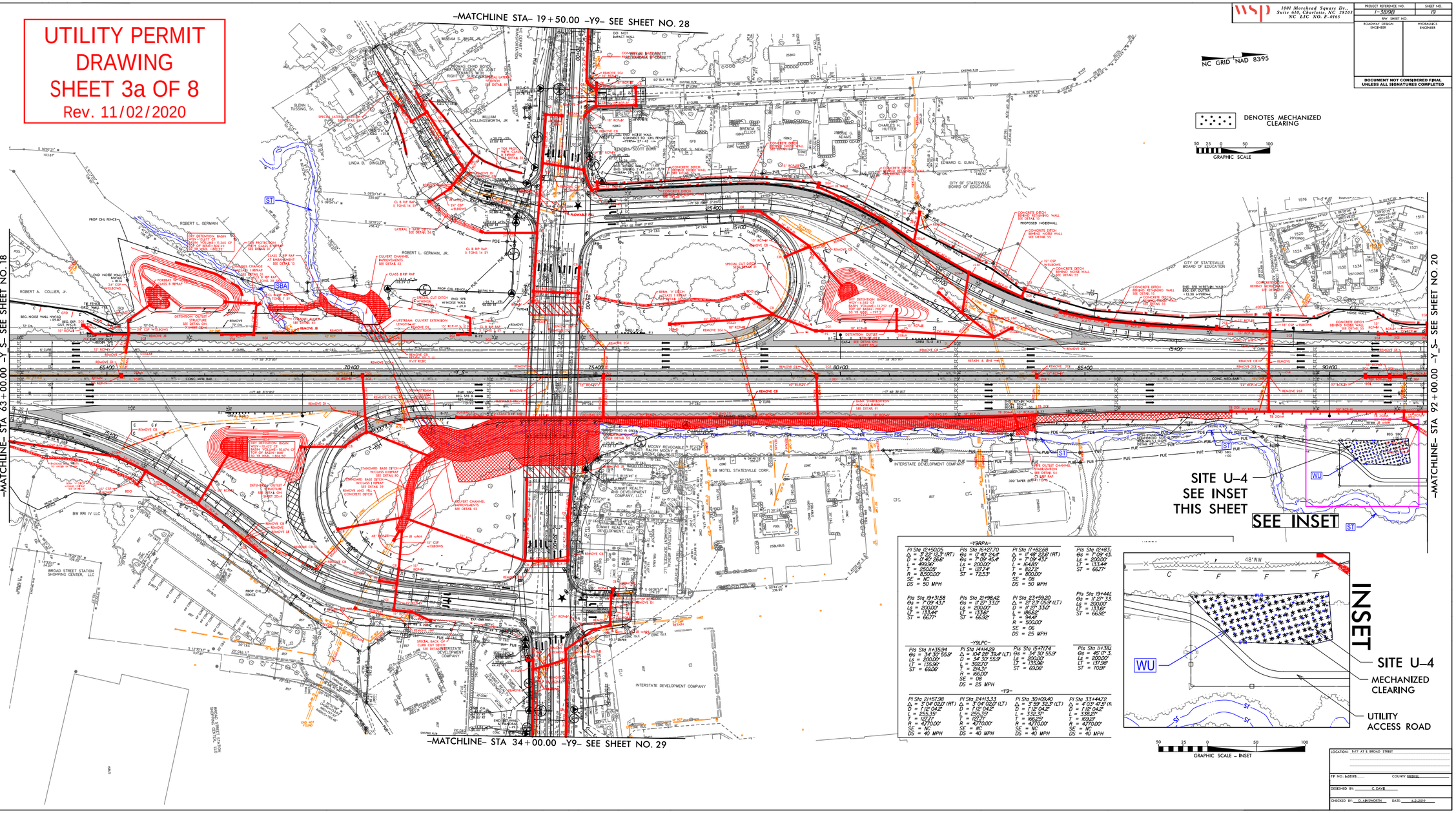
beckerjw

UTILITY PERMIT DRAWING
SHEET 3a OF 8
Rev. 11/02/2020

REVISIONS
1. ADDED PUE ON PARCEL 39 REVISED NOISE WALL LOCATION & ADJUSTED DRAINAGE ALONG NOISE WALLS (2-24-2020)
2. REVISED PUE/ICE ON PARCEL 39 DIFFERENT MYRS - GROUP A, -L- (11-2-2020)



wsp 1001 Morehead Square Dr. Suite 610, Charlotte, NC 28203 NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-5818B	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

LOCATION: I-77 AT E. BROAD STREET

TIP NO.: I-5818B COUNTY: IREDELL

DESIGNED BY: C. DAVIS

CHECKED BY: D. ARNSWORTH DATE: 4-2-2019

UTILITY PERMIT DRAWING
SHEET 3b OF 8
Rev. 11/02/2020

REVISIONS
1. ADDED PUE ON PARCEL 39 REVISED NOISE WALL LOCATION & ADJUSTED DRAINAGE ALONG NOISE WALLS (2-24-2020)
2. REVISED PUE/ICE ON PARCEL 39; DIFFERENT MVSS - GROUP A_C_E (11-25-2020)

wsp
1001 Morehead Square Dr.
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

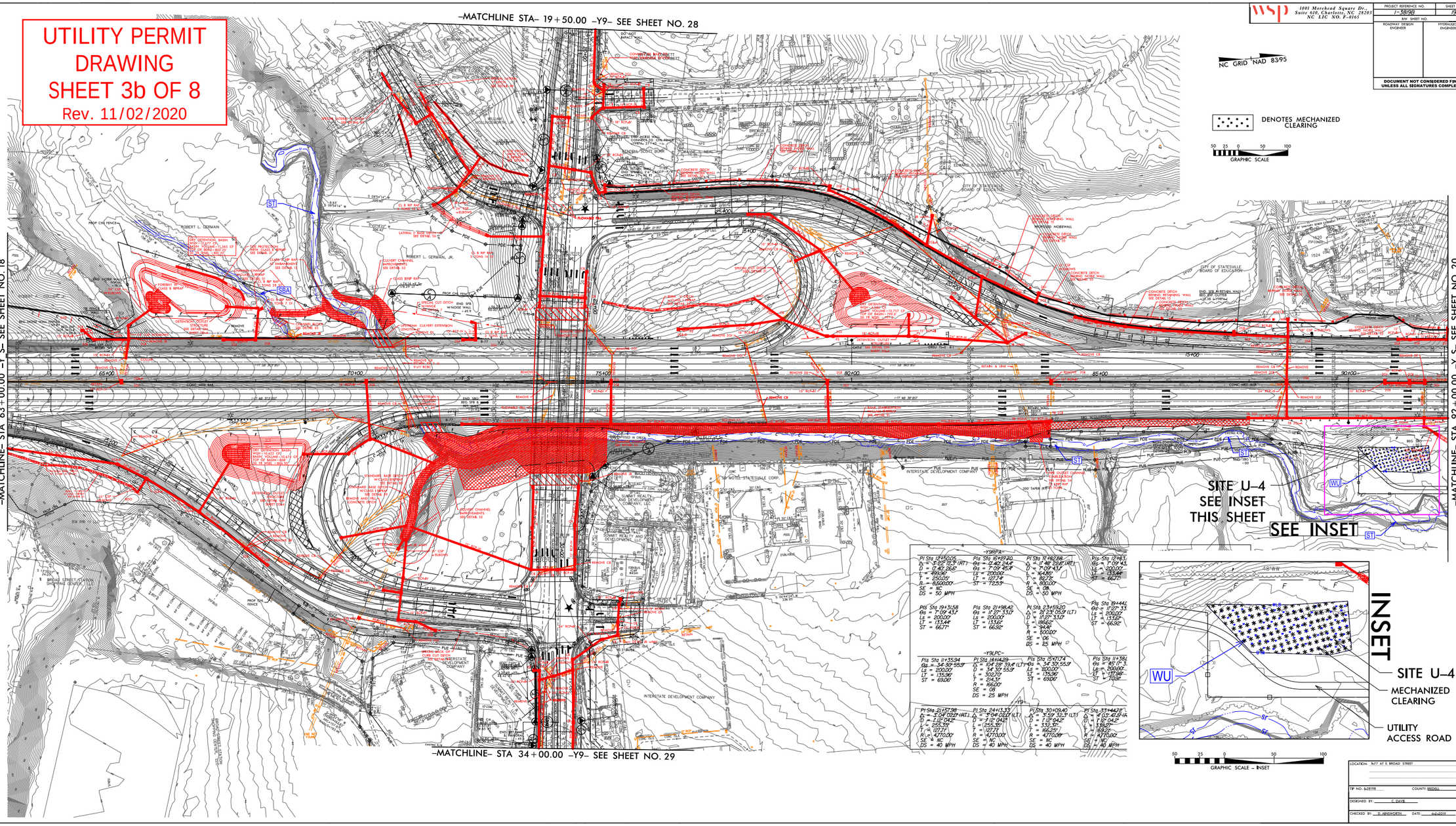
PROJECT REFERENCE NO.	SHEET NO.
I-5818B	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID NAD 8395

DENOTES MECHANIZED CLEARING

50 25 0 50 100
GRAPHIC SCALE



LOCATION: I-77 AT E. BROAD STREET

TIP NO.: I-5818B COUNTY: IREDELL

DESIGNED BY: C. DAVIS

CHECKED BY: D. ARNDWORTH DATE: 4-2-2019

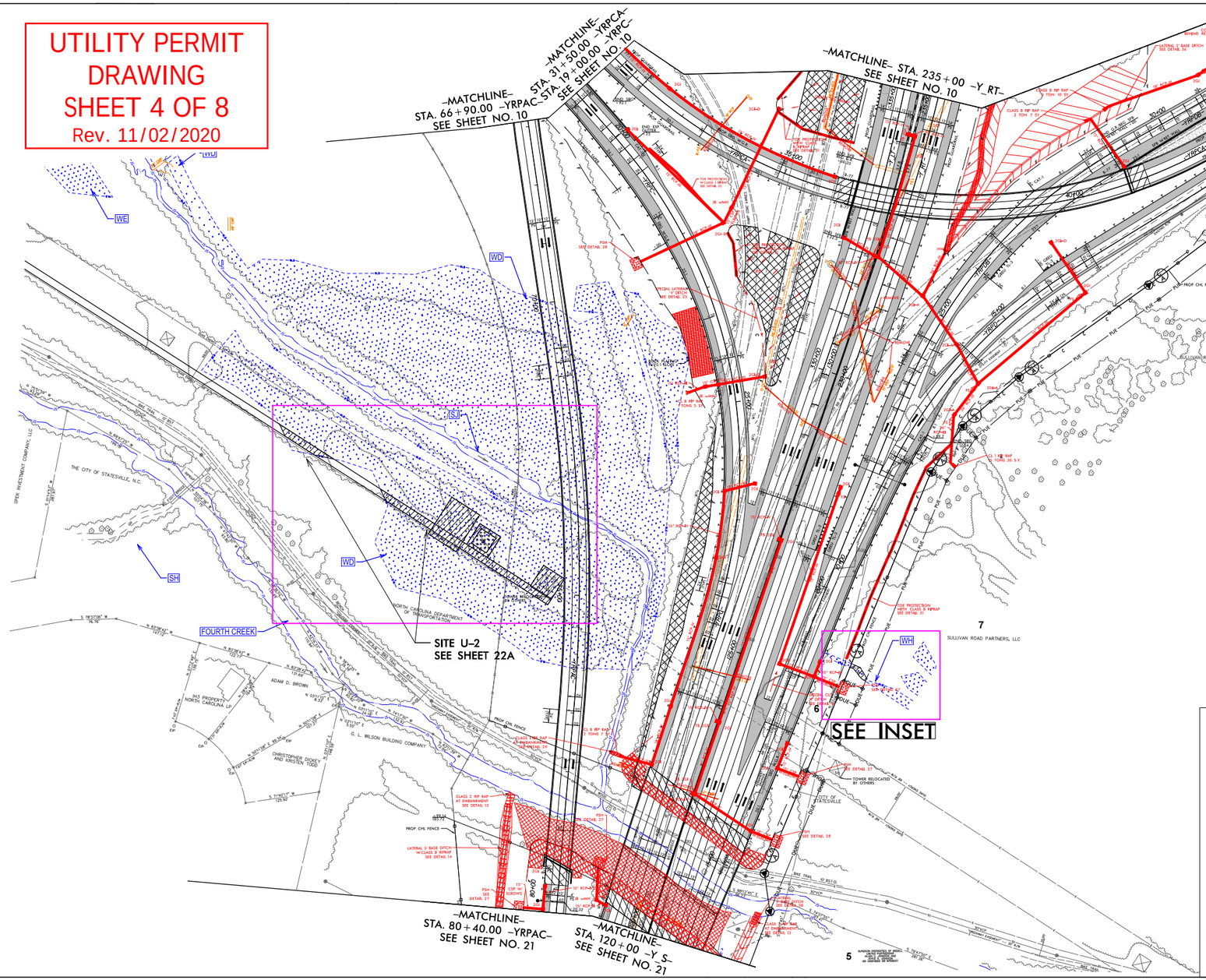
UTILITY PERMIT DRAWING
SHEET 4 OF 8
Rev. 11/02/2020

wsp
1001 Morehead Square Dr.
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-5898	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID NAD 83/95



-Y_S-	
PI Sta 11+58.63	
Δ = 5°21'02" (RT)	
D = 12°29'53.6"	
L = 107.46'	
T = 53.78'	
R = 1,150.00'	
SE = NC	
DS = 60 MPH	

-YRPAC-	
PI Sta 74+00.12	
Δ = 13°09'59.2" (RT)	
D = 2°14'48.8"	
L = 593.15'	
T = 298.36'	
R = 2,550.00'	
SE = 04	
DS = 50 MPH	

-YRPDB-		
PI Sta 14+24.03	PIs Sta 23+74.30	PI Sta 26+43.97
Δ = 2°30'02.3" (RT)	θs = 4°52'55.2"	Δ = 29°24'11.0" (RT)
D = 2°38'11.8"	Ls = 144.00'	D = 6°46'50.0"
L = 592.80'	LT = 96.04'	L = 433.64'
T = 296.43'	ST = 48.03'	T = 220.77'
R = 2,300.00'		R = 845.00'
SE = NC		SE = 06
DS = 50 MPH		DS = 50 MPH

-YRPDB-		
PIs Sta 29+03.94	PIs Sta 30+95.94	
θs = 4°52'55.2"	θs = 4°57'08.4"	
Ls = 144.00'	Ls = 144.00'	
LT = 96.04'	LT = 96.04'	
ST = 48.03'	ST = 48.03'	

-Y_LT-		
PIs Sta 33+17.38	PI Sta 33+48.66	
θs = 2°34'41.3"	Δ = 8°29'43.8" (LT)	
Ls = 270.00'	D = 1°54'35.0"	
LT = 180.02'	L = 444.82'	
ST = 90.02'	T = 222.82'	
	R = 3,000.00'	
	SE = 05	
	DS = 60 MPH	

-Y_RT-		
PIs Sta 232+62.32	PI Sta 235+92.32	
θs = 1°54'35.0"	Δ = 10°29'59.7" (LT)	
Ls = 200.00'	D = 1°54'35.0"	
LT = 133.34'	L = 525.34'	
ST = 66.67'	T = 263.34'	
	R = 3,000.00'	
	SE = 05	
	DS = 60 MPH	

-YRPC-		
PIs Sta 20+25.04	PI Sta 24+66.97	
θs = 4°57'08.4"	Δ = 57°37'24.9" (RT)	
Ls = 144.00'	D = 6°52'40.7"	
LT = 96.04'	L = 736.00'	
ST = 48.03'	T = 393.09'	
	R = 833.00'	
	SE = 06	
	DS = 50 MPH	

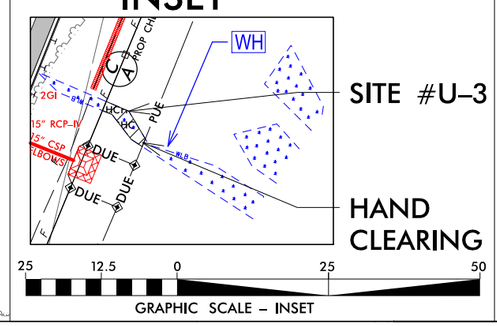
-YRPC-	
PIs Sta 28+57.03	
θs = 4°57'08.4"	
Ls = 144.00'	
LT = 96.04'	
ST = 48.03'	

-YRPCA-		
PIs Sta 11+93.35	PI Sta 14+07.08	
θs = 4°57'08.4"	Δ = 22°32'36.4" (RT)	
Ls = 144.00'	D = 6°52'40.7"	
LT = 96.04'	L = 327.27'	
ST = 48.03'	T = 165.77'	
	R = 833.00'	
	SE = 06	
	DS = 50 MPH	

-YRPD-		
PIs Sta 16+16.61	PI Sta 22+41.11	
θs = 4°57'08.4"	Δ = 5°19'05.0" (LT)	
Ls = 144.00'	D = 17°43'40.0"	
LT = 96.04'	L = 730.40'	
ST = 48.03'	T = 365.50'	
	R = 7,870.00'	
	SE = NC	
	DS = 50 MPH	

-YRPCA-		
PIs Sta 31+66.93	PI Sta 41+32.83	
θs = 4°57'08.4"	Δ = 95°33'15.3" (LT)	
Ls = 144.00'	D = 6°52'40.7"	
LT = 96.04'	L = 1,389.22'	
ST = 48.03'	T = 917.93'	
	R = 833.00'	
	SE = 06	
	DS = 50 MPH	

INSET



F F	DENOTES FILL IN WETLAND
T T	DENOTES TEMPORARY FILL IN WETLAND
	DENOTES MECHANIZED CLEARING
HC HC	DENOTES HAND CLEARING

LOCATION:

TIP NO.: I-5898 COUNTY: IREDELL

DESIGNED BY: C. DAVIS

CHECKED BY: D. ARNSWORTH DATE: 4-24-2019

7/15/2020
C:\Users\ad0_jarnsworth\Desktop\I-5898_Rev_Utility_Permit_Sheet22_U1_U2_U3.dgn
8:30:06 AM

UTILITY PERMIT DRAWING SHEET 5 OF 8

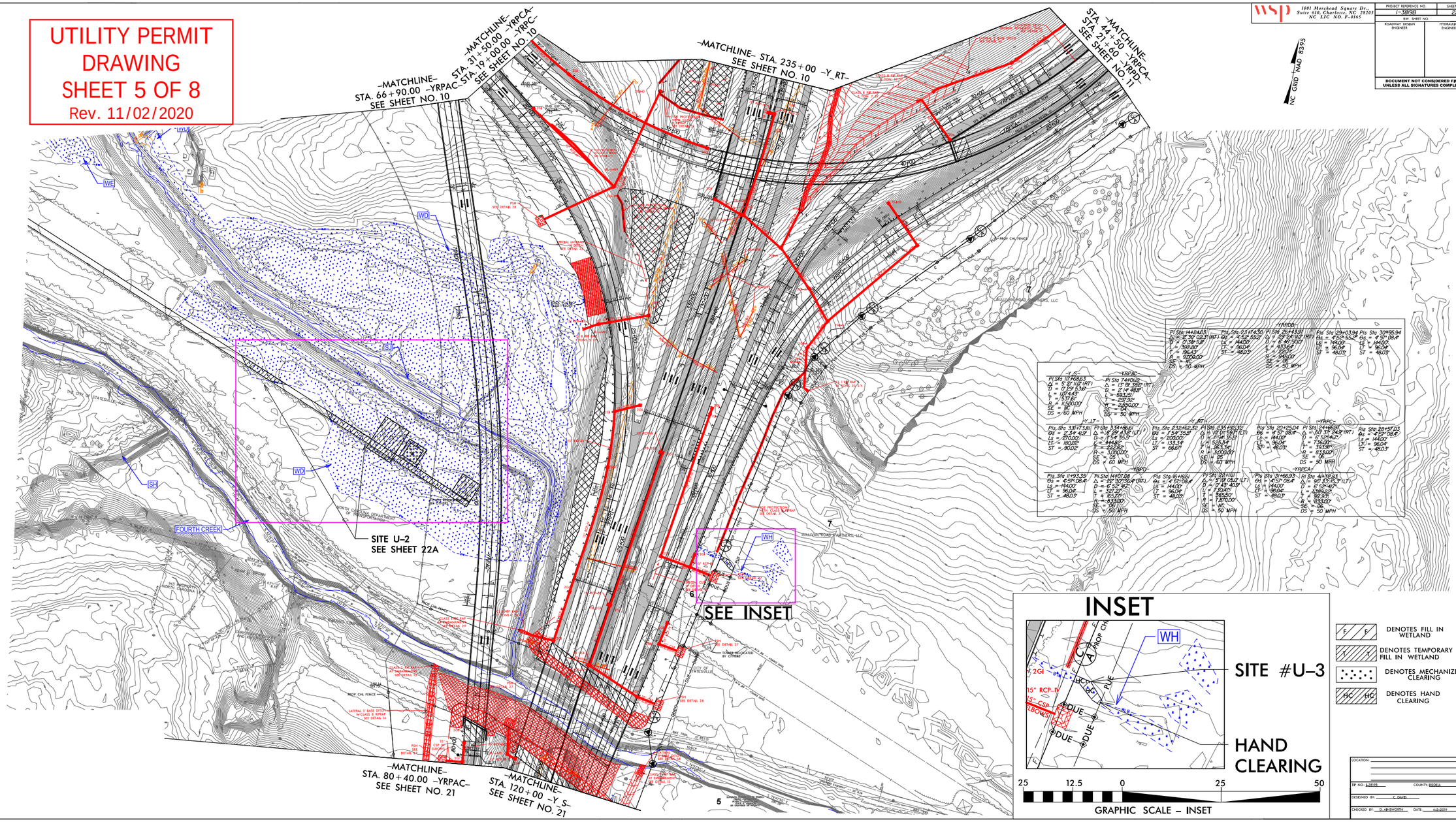
Rev. 11/02/2020

wsp
1001 Morehead Square Dr.
Suite 610, Charlotte, NC 28203
NC LIC NO. F-0165

PROJECT REFERENCE NO.	SHEET NO.
I-5898	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID NAD 83/95



LOCATION:

TIP NO. I-5898 COUNTY: IREDELL

DESIGNED BY: C. DAVIS

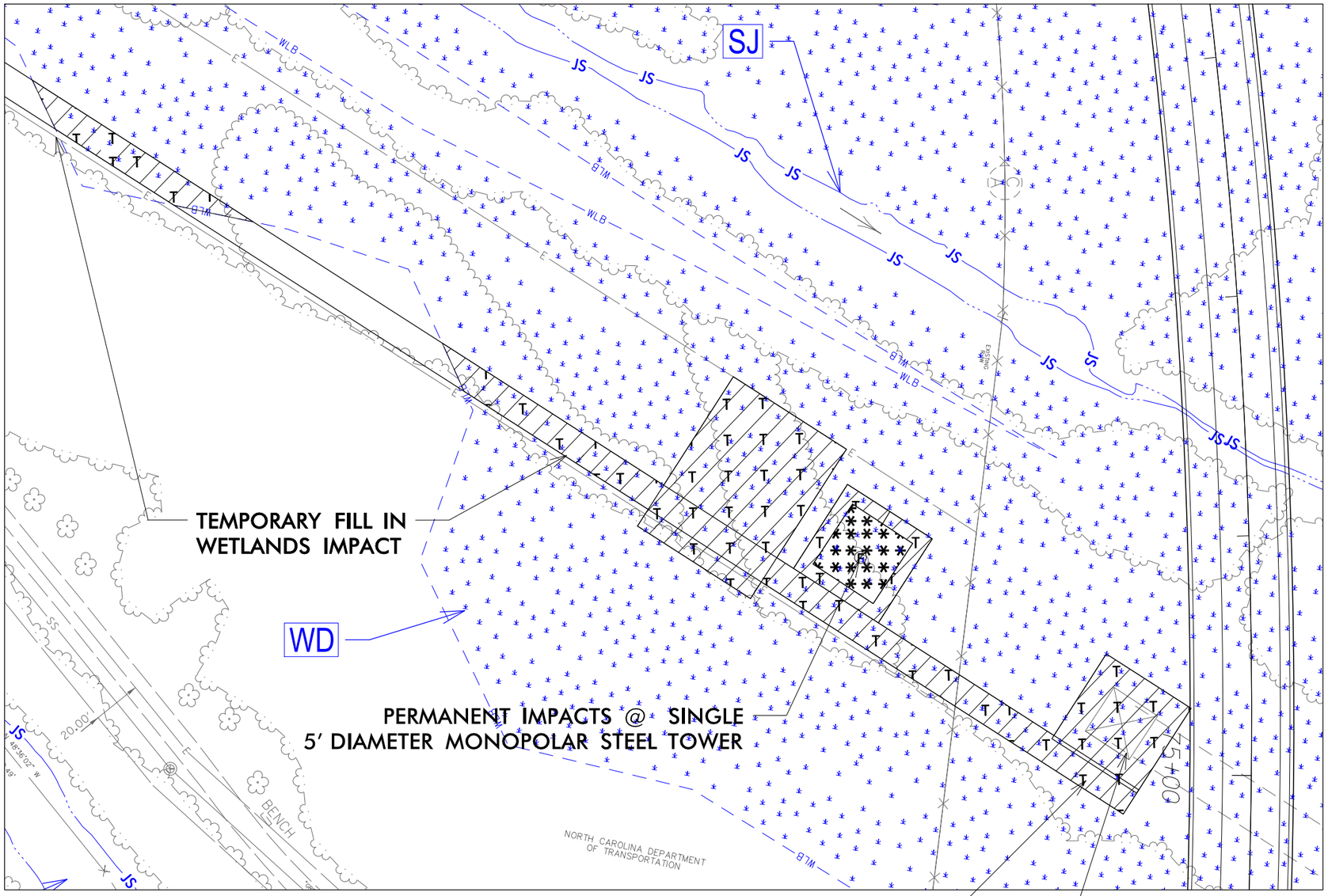
CHECKED BY: D. ARNSWORTH DATE: 4-2-2019

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	22A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

UTILITY PERMIT DRAWING
SHEET 6 OF 8
Rev. 11/02/2020

SITE U–2 INSET



NC GRID NAD 83/95

F F DENOTES FILL IN WETLAND

T T DENOTES TEMPORARY FILL IN WETLAND

DENOTES MECHANIZED CLEARING

50 25 0 25 50
GRAPHIC SCALE – INSETS

7/15/2020
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Becker, JW

PROJECT REFERENCE NO.	SHEET NO.
I-3819B	22A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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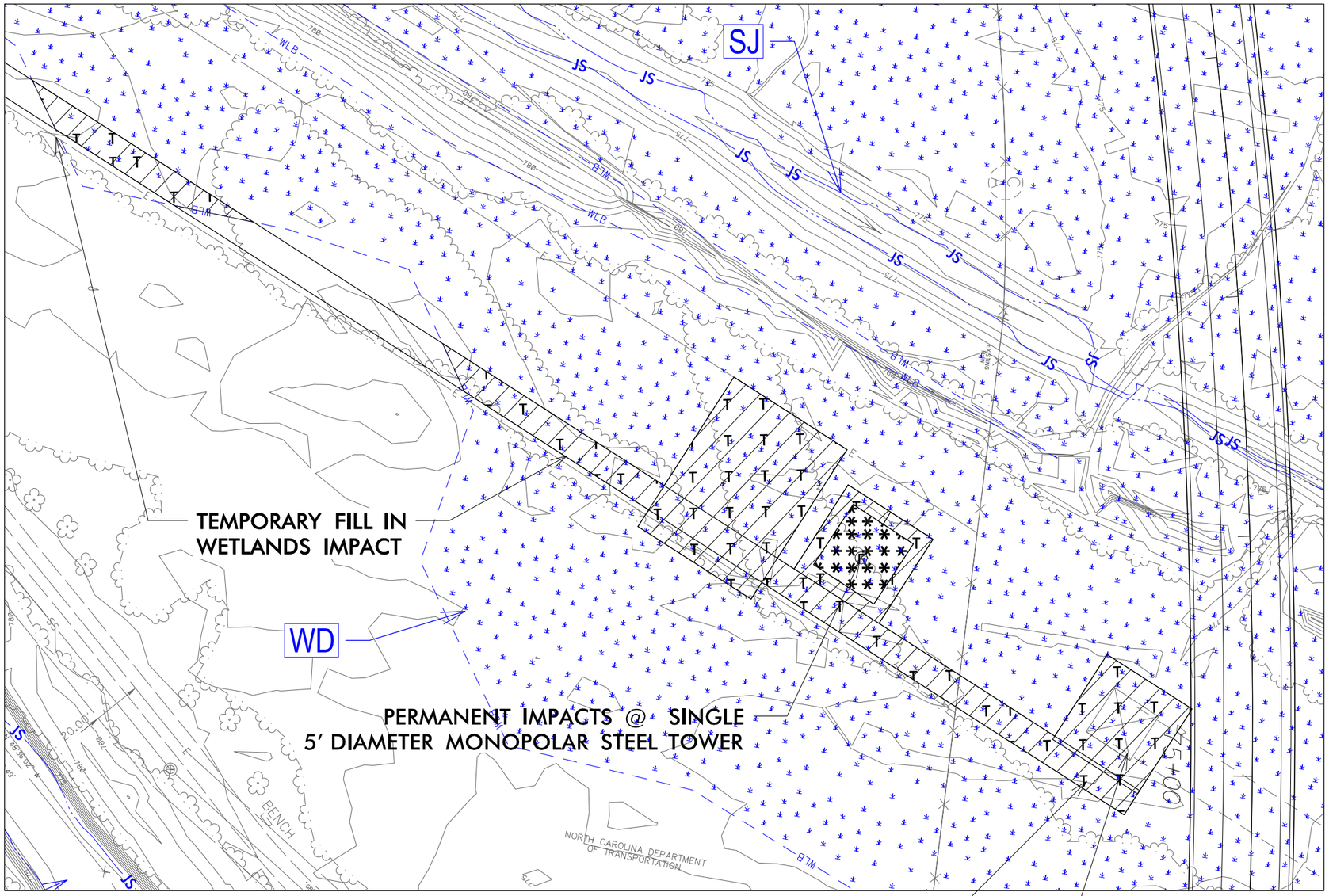
UTILITY PERMIT DRAWING
SHEET 7 OF 8
Rev. 11/02/2020

SITE U–2 INSET



AREA WITHIN 50′ OF BRIDGE ALSO COUNTED AS TEMPORARY FILL IMPACT IN ROADWAY & DRAINAGE PERMIT PLANS

EXISTING TOWER TO BE REMOVED

NC GRID NAD 83/95

F F DENOTES FILL IN WETLAND

T T DENOTES TEMPORARY FILL IN WETLAND

DENOTES MECHANIZED CLEARING

50 25 0 25 50
GRAPHIC SCALE – INSETS

7/15/2020
c:\projectwise\pb\projectwiseint\becker_jw\d0350035\13819_hyd_prm_psh22A_Utility.dgn
Becker, JW

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)
U-1	31+50-YRPD-	Utility		0.02								
U-2	75+00-YRPAC-**	Utility	< 0.01	0.25		0.02						
U-3	18+92-YRPDB-	Utility					< 0.01					
U-4	91+00-Y_S-	Utility				0.14						
TOTALS*:			< 0.01	0.27		0.16	< 0.01					

*Rounded totals are sum of actual impacts for entire project area

**Permanent Impact from a single 5 ft diameter monopole foundation for new transmission tower location.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
11/02/2020
IREDELL
TIP NO. I-3819B
WBS NO.

Revised 2018 Feb