



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

JAMES H. TROGDON, III  
SECRETARY

February 11, 2020

Wilmington Regulatory Field Office  
US Army Corps of Engineers  
69 Darlington Avenue  
Wilmington, NC 28402-1890

Attention: Ms. Elizabeth Hair  
NCDOT Coordinator

Subject: Application for a Phased Section 404 Individual Permit and Section 401 Water Quality Certification for the proposed widening of US 701 Bypass from South of SR 1166 to North of US 74/76 in Whiteville, Columbus County. TIP Nos. R-5020B and R-5020A. Federal Aid Project No. NHS-701(15). Debit \$570 from WBS 41499.1.1

Dear Madam:

The North Carolina Department of Transportation (NCDOT) proposes to widen 5.3 miles of the US 701 Bypass from south of SR 1166 (Pleasant Plains Road) to north of US 74/76 Bypass in Whiteville, Columbus County (R-5020).

The purpose of this letter is to request approval for a Section 404 Individual Permit and Section 401 Water Quality Certification. In addition to this cover letter, this application package includes the following for R-5020: ENG Form 4345, USFWS concurrence letter, stormwater management plan, final permit drawings for Section B, preliminary permit drawings for Section A, DMS acceptance letters for both sections, 4B and 4C merger meeting minutes.

### **Purpose and Need**

The purpose of the proposed project is to increase the traffic carrying capacity and safety of US 701 Bypass within the project limits.

Improvements to US 701 Bypass are needed to provide adequate capacity for future traffic volumes in the project study area. With no improvements, US 701 Bypass is projected to operate at level of service (LOS) E along the two-lane segments under future (2035) conditions. The proposed four-lane median divided facility would improve the overall mainline operations on US 701 Bypass in the project study area to LOS C with 2035 traffic volumes.

Improvements to US 701 Bypass are also needed to provide increased safety on the roadway in the project study area. The current crash rates on US 701 Bypass exceed the statewide average and critical crash rates for similar facilities for every crash type analyzed, with the exception of the critical fatal crash rate. The

project improvements are expected to result in a safer facility for all roadway users, including vehicles, bicycles, and pedestrians

## **Project Description**

The project corridor is 5.3 miles long. This project has been broken into two sections:

### Section A

- US 701 Bypass from SR 1166 (Pleasant Plains Road) to SR 1437 (Virgil Avenue) (approximately 3.1 miles)

### Section B

- US 701 Bypass from SR 1437 (Virgil Avenue) to US 74/76 Bypass (approximately 2.2 miles)

## **Summary of Impacts**

### Section A (Preliminary)

Proposed preliminary impacts to jurisdictional areas total 1,207 linear feet of permanent impact and <0.01 acre of temporary impacts to jurisdictional streams. There are a proposed 7.95 acres of permanent impact to riparian wetlands, with an additional 0.39 acre of hand clearing. A permit modification request will be submitted when final plans are completed.

### Section B (Final)

Proposed impacts to jurisdictional areas total 55 linear feet of permanent impact and 31 linear feet of temporary impact to jurisdictional streams. There are a proposed 0.21 acre of permanent impact and 0.04 acre of temporary impact to riparian wetlands.

## **Summary of Mitigation**

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible. The Department has acquired the compensatory mitigation for these unavoidable impacts from the North Carolina Department of Environmental Quality (NCDEQ)-Division of Mitigation Services (DMS) for both the B section and the preliminary impacts presented for Section A.

## **Project Schedule**

Currently, R-5020B is scheduled to Let July 21, 2020, however this project may be accelerated if funding becomes available. R-5020A is scheduled to Let on July 18, 2023.

## **NEPA Document Status**

The Environmental Assessment (EA) was approved in June 2015. A Finding of No Significant Impact (FONSI) was completed in September 2016. These documents are available at <https://xfer.services.ncdot.gov/pdea/EnvironmentalDocs/Documents/>.

## NEPA Merger Process

A project scoping meeting was held in August 2012 to begin early coordination between federal, state and local agency project stakeholders. The NEPA Merger Process started with Concurrence Point (CP) 2, held in March 2015. CPs 3 and 4A was held in July 2016. CPs 4B and 4C was held in December 2019.

## Resource Status

The project is located in the Lumber River Basin and lies within Hydrologic Unit 03040206. Jurisdictional streams in the project area are rated as Class C;Sw, No streams impacted are listed in the Final 2018 303(d) report. This is within the coastal plain physiographic region.

A jurisdictional wetland and stream verification was conducted on July 30, 2013 with Ronnie Smith (USACE) and Mason Herndon (NCDWR). Written verification for an isolated wetland near the intersection of the US 701 Bypass and NC 130 was received on October 9, 2013 (SAW-2012-00758).

## Impacts to Jurisdictional Resources

### Wetlands

Wetland impacts occur in the Lumber River Basin in HUC 03040206. Wetland impacts for R-5020A/B total 8.16 acres. Tables 1 and 2 list the impacts to wetlands for this project. Impacts are based upon final design for R-5020B and preliminary impacts for R-5020A.

**Table 1. R-5020B Wetland Impacts (Final)**

Permit Drawing Site Number	EA Map Label	Type	Permanent Impacts (ac.)	Temporary Impact (ac.)
3	WN	Riparian	0.21	0.04
6	WDD	Riparian	<0.01	0
<b>Total:</b>			<b>0.21</b>	<b>0.04</b>

**Table 2. R-5020A Wetland Impacts (Preliminary)**

Permit Drawing Site Number	EA Map Label	Type	Permanent Impacts (ac.)
1	WA	Riparian	0.09
2	WZ	Riparian	0.22
3	WB	Riparian	0.01

Permit Drawing Site Number	EA Map Label	Type	Permanent Impacts (ac.)
4	WC	Riparian	0.08
8	WW	Riparian	0.05
10	WZZ	Riparian	<0.01
12	WH	Riparian	0.02
14	WI	Riparian	0.19
15	WJ	Riparian	0.25
16	WL	Riparian	6.95
<b>Total:</b>			<b>7.87</b>

There will also be 0.39 acre of hand clearing in wetlands at Sites 9 and 16. There will also be an additional 0.08 ac for total take of wetlands at Site 15.

### Streams

Surface water impacts occur in the Lumber River Basin in HUC 03040206. Permanent stream impacts for R-5020 totals 1,262 linear feet. Tables 3-6 list the site number, reference number, stream name and amount of impact.

**Table 3. R-5020B Streams Impacted and Description (Final)**

Permit Drawing Site Number	EA Map Label	Stream Name	Perennial/Intermittent
1	SU	UT to Mollie Branch	Intermittent
2	SU	UT to Mollie Branch	Intermittent
4	SU	UT to Mollie Branch	Intermittent
5	SU	UT to Mollie Branch	Intermittent

**Table 4. R-5020B Stream Impacts (Final)**

Permit Drawing Site Number	Impact Type	Permanent Stream Impacts (ft)	Temporary Stream Impacts (ft)
1	Outlet Protection	20	0
2	36" Pipe/Extension/Replacement	20	11
4	15" Pipe Outfall	6	10
5	15" Pipe Outfall	9	10
<b>Total</b>		<b>55</b>	<b>31</b>

**Table 5. R-5020A Streams Impacted and Description (Preliminary)**

Permit Drawing Site Number	EA Map Label	Stream Name	Perennial/Intermittent
1/2	SA	UT to Deep Branch	Perennial
5	SX	UT to Deep Branch	Intermittent
6	SY	UT to Deep Branch	Intermittent
7	SB	UT to Richardson Swamp	Intermittent
8	SD	UT to Richardson Swamp	Perennial
11	SV	UT to Richardson Swamp	Intermittent
13/18	SC	UT to Richardson Swamp	Perennial

**Table 6. R-5020A Stream Impacts (Preliminary)**

Permit Drawing Site Number	Impact Type	Permanent Stream Impacts (ft)	Temporary Stream Impacts (ft)
1	60" Pipe/Extend/Replace/Bank Stab.	46	8
2	60" Pipe/Extend/Replace/Bank Stab.	80	15
5	Fill	146	0
6	Fill/2@48" Pipes/Bank Stab.	461	25
7	Fill	76	15
8	54" Pipe/Extend/Replace	21	5
11	Drainage Inlet	0	7
13	Fill/Bank Stab.	139	12
18	Riprap channel	238	16
<b>Total</b>		<b>1,207</b>	<b>103</b>

***Open Water***

For the preliminary drawings for Section A, Site 17/17A was considered to be a tributary to Waters of the U.S. Preliminary impacts to this site are <0.01 acre.

**Protected Species**

As of April 15, 2019, the United State Fish and Wildlife Service (USFWS) lists seven (7) federally protected species for Columbus County (Table 7).

**Table 7. Federally protected species listed for Columbus County**

Common Name	Scientific Name	Federal Status	Habitat Presence	Biological Conclusion
American alligator	<i>Alligator mississippiensis</i>	Threatened (S/A)	Yes	Not required
Northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened	Yes	MALAA*
Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered	No	No Effect
Waccamaw silverside	<i>Menidia extensa</i>	Threatened	No	No Effect
Wood stork	<i>Mycteria americana</i>	Threatened	Yes	MANLAA**
Cooley's meadowrue	<i>Thalictrum cooleyi</i>	Endangered	Yes	No Effect
Rough-leaved loosestrife	<i>Lysimachia asperulaefolia</i>	Endangered	Yes	No Effect

\*MALAA- May Affect, Likely to Adversely Affect

\*\*MANLAA- May Affect, Not Likely to Adversely Affect

### **USFWS Concurrence**

Informal concurrence for biological conclusions of May Affect, Not Likely to Adversely Affect was requested for the wood stork from the USFWS on October 24, 2019. Concurrence was received on October 28, 2019 agreeing with NCDOT's biological conclusion (see attached).

The USFWS has developed a Programmatic Biological Opinion (PBO) in conjunction with the Federal Highway Administration (FHWA), USACE and NCDOT for the Northern long-eared bat (NLEB) in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT project and activities. The programmatic determination for NLEB for the NCDOT program is May Affect, Likely to Adversely Affect. The PBO provides incidental take coverage for NLEB and will ensure compliance with Section 7 of the Endangered Species Act for five years for all NCDOT projects with a federal nexus in Divisions 1 – 8, which includes Columbus County, where this project is located.

All other species listed for Columbus County received biological conclusions of No Effect and did not require concurrence. An updated survey for Cooley's meadowrue is required for the project. As a stipulation of the informal concurrence with USFWS, the survey will be completed prior to the project construction Let.

### **Bald and Golden Eagle Protection Act (BGPA)**

A desktop-GIS assessment of the project study area, as well as the area within a 1.13-mile radius (1.0 mile plus 660 feet) of the project limits, was performed on September 18, 2019. There were no waterbodies large enough and sufficiently open to be considered potential feeding source. A review of the NCNHP database updated October 2019 indicated no known occurrence of the bald eagle within five miles of the project.

### **Moratoria**

There are no proposed in-water work moratoria for this project.

## **Cultural Resources**

The proposed project involves widening the existing US 701 Bypass to the west in the vicinity of the Beth Israel/Whiteville Hebrew Center in order to minimize impacts to the historic property. A landscaping plan was developed to mitigate the minor encroachment to this property and a concurrence of “No Adverse Effect” was received from HPO on January 13, 2015. One other property, Williamson House, was determined to be an eligible historic property. Construction will not encroach upon this property and a concurrence of “No Effect” was rendered.

## **FEMA Compliance**

The project has been coordinated with appropriate state and local officials and the Federal Emergency Management Agency (FEMA) to assure compliance with FEMA, state, and local floodway regulations.

## **Indirect and Cumulative Effects**

R-5020 was reevaluated by the NCDOT Community Studies Group in September 2019 with regard to potential indirect and cumulative effects. Based on these evaluations, it was determined that the project will not alter travel patterns, reduce travel time, affect access to properties in the area, or open areas for development or redevelopment. Due to its minimal transportation impact-causing activities, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect and cumulative effects study will not be necessary.

## **Wild and Scenic Rivers**

There have been no waterbodies within the study area that have been designated under the National Wild and Scenic Rivers Act of 1968.

## **Mitigation Options**

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts, and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Avoidance measures were taken during planning and NEPA compliance stages; minimization measures were incorporated as part of the project design.

### ***Avoidance and Minimization***

All jurisdictional features were delineated, field verified and surveyed within the corridor for R-5020. Using these features, preliminary designs were adjusted to avoid and/or minimize impacts to jurisdictional areas. NCDOT employs many strategies to avoid and minimize impacts to jurisdictional areas in all of its designs. Many of these strategies have been incorporated into BMP documents that have been reviewed and approved by the resource agencies and which will be followed throughout construction. All wetland areas not affected by the project will be protected from unnecessary encroachment. Individual avoidance and minimization items are as follows:

- The proposed curb and gutter was extended to avoid impacts to a cemetery adjacent to the existing road, which also reduced impacts to wetlands in this area.
- At Wetland Site WL (Soules Swamp), existing US 701 Bypass will be widened to the east, this will reduce wetland impacts by approximately 0.9 acre.
- The use of 3:1 slopes in wetland areas to reduce wetland impacts.

- The preferred alternative would bridge the man-made ditch (i.e., unnamed tributary to Soules Swamp) parallel to Main Street and the railroad tracks, thereby not impacting this tributary to Waters of the U.S.

### ***Compensation***

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. The unavoidable permanent stream impacts of 1,262 linear feet and wetland impacts of 8.16 acre will be offset by compensatory mitigation provided by the North Carolina Department of Environmental Quality (NCDEQ)-Division of Mitigation Services (DMS). Acceptance letters from DMS are attached.

### **Regulatory Approvals**

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

Section 401: We are requesting a Section 401 Water Quality Certification from NCDWR. We are providing this application to NCDWR, for their approval. Authorization to debit the \$570 Permit Application Fee from WBS Element 45449.1.1 is hereby given.

A copy of this permit request and its distribution list will be posted on the NCDOT website at: <https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx>.

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

Sincerely,

DocuSigned by:

*Mack C. Rivenbark III*

AAAD1248B309416...

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

cc:

NCDOT Permit Application Standard Distribution List



**U.S. ARMY CORPS OF ENGINEERS  
APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT  
(33 CFR 325)**

OMB APPROVAL NO. 0710-0003  
EXPIRES: 31 AUGUST 2012

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

**PRIVACY ACT STATEMENT**

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

**(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)**

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE
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**(ITEMS BELOW TO BE FILLED BY APPLICANT)**

5. APPLICANT'S NAME First - Philip          Middle - S.          Last - Harris Company - NCDOT-EAU E-mail Address -		8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required) First -                          Middle -                          Last - Company - E-mail Address -	
6. APPLICANT'S ADDRESS: Address- City -                          State -                          Zip -                          Country -		9. AGENT'S ADDRESS: Address- City -                          State -                          Zip -                          Country -	
7. APPLICANT'S PHONE NOS. w/AREA CODE a. Residence          b. Business          c. Fax 919-707-6111		10. AGENTS PHONE NOS. w/AREA CODE a. Residence          b. Business          c. Fax	

**STATEMENT OF AUTHORIZATION**

11. I hereby authorize, \_\_\_\_\_ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

\_\_\_\_\_  
SIGNATURE OF APPLICANT

\_\_\_\_\_  
DATE

**NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY**

12. PROJECT NAME OR TITLE (see instructions) R-5020			
13. NAME OF WATERBODY, IF KNOWN (if applicable) Soules Swamp, Uts to Deep and Mollie Branch, Richardson Swamp		14. PROJECT STREET ADDRESS (if applicable) Address	
15. LOCATION OF PROJECT Latitude: °N 34.318553          Longitude: °W -78.708777		City -                          State-                          Zip-	
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) State Tax Parcel ID                          Municipality Section -                          Township -                          Range -			

17. DIRECTIONS TO THE SITE

Please see attached vicinity map and cover letter.

18. Nature of Activity (Description of project, include all features)

The proposed project involves widening US 701 Bypass in Whiteville to a multi-lane facility from south of SR 1166 to north of US 74/76 Bypass.

The proposed typical section is a four-lane median divided facility with curb and gutter and wide outside lanes to accommodate bicyclists. Existing sidewalks along US 701 Bypass disturbed by project construction will be replaced with new five-foot-wide sidewalks and new sidewalks can be provided in areas where none currently exist. The existing structure over Carolina Southern Railroad and Main Street will be replaced with two new bridges along the same alignment.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The purpose of the proposed project is to increase the traffic carrying capacity and safety of US 701 Bypass within the project limits.

**USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED**

20. Reason(s) for Discharge

Impacts will result from widening the roadway and shoulders.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type	Type	Type
Amount in Cubic Yards	Amount in Cubic Yards	Amount in Cubic Yards

See attached cover letter.

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres See attached cover letter.

or

Linear Feet See attached cover letter.

23. Description of Avoidance, Minimization, and Compensation (see instructions)

See attached cover letter.

24. Is Any Portion of the Work Already Complete?  Yes  No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- See list

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

\* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

DocuSigned by:

*Mack C. Rivenbark III* for Philip S. Harris, III, P.E., C.P.M 2/11/2020

AAAD1248B309410... SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.



NORTH CAROLINA  
Environmental Quality

ROY COOPER  
Governor

MICHAEL S. REGAN  
Secretary

TIM BAUMGARTNER  
Director

January 22, 2020

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

Dear Mr. Harris:

Subject: Mitigation Acceptance Letter:

**R-5020B**, US 701 Bypass (Madison Street – JK Powell Boulevard) from SR 1437 (Virgil Avenue) to US 74 / 76, Columbus County

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the compensatory stream and wetland mitigation for the subject project. Based on the information supplied by you on January 21, 2020, the impacts are located in CU 03040206 of the Lumber River basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Lumber 03040206 SICP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	55.0	0.21	0	0	0	0

\*Some of the stream and/or wetland impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details.

The impacts and associated mitigation needs were under projected by the NCDOT in the 2019 impact data. DMS will commit to implement sufficient compensatory stream and wetland mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies using the delivery timeline listed in Section F.3.c.iii of the In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from DMS.

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

Sincerely,

James B. Stanfill  
DMS Asset Management Supervisor

cc: Mr. Monte Matthews, USACE – Raleigh Regulatory Field Office  
Ms. Amy Chapman, NCDWR  
File: R-5020B





NORTH CAROLINA  
Environmental Quality

ROY COOPER  
Governor

MICHAEL S. REGAN  
Secretary

TIM BAUMGARTNER  
Director

February 11, 2020

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

Dear Mr. Harris:

Subject: Mitigation Acceptance Letter:

**R-5020A**, US 701 Bypass (Madison Street – JK Powell Boulevard) from south of SR 1166 (Pleasant Plains Road) to SR 1437 (Virgil Avenue), Columbus County

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the compensatory stream and wetland mitigation for the subject project. Based on the information supplied by you on February 11, 2020, the impacts are located in CU 03040206 of the Lumber River basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Lumber 03040206 SICP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	1,207.0	7.95	0	0	0	0

\*Some of the stream and/or wetland impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details.

**This mitigation acceptance letter replaces the mitigation acceptance letter issued on January 22, 2020.** The impacts and associated mitigation needs were under projected by the NCDOT in the 2019 impact data. DMS will commit to implement sufficient compensatory stream and wetland mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies using the delivery timeline listed in Section F.3.c.iii of the In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from DMS.

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

Sincerely,

James B. Stanfill  
DMS Asset Management Supervisor

cc: Mr. Monte Matthews, USACE – Raleigh Regulatory Field Office  
Ms. Amy Chapman, NCDWR  
File: R-5020A Revised





## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Raleigh ES Field Office  
Post Office Box 33726  
Raleigh, North Carolina 27636-3726  
October 28, 2019

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

Dear Mr. Harris:

This letter is in response to your letter of October 24, 2019 which provided the U.S. Fish and Wildlife Service (Service) with the biological conclusion of the North Carolina Department of Transportation (NCDOT) that the proposed widening of US 701 Bypass in Columbus County (STIP No. R-5020) may affect, but is not likely to adversely affect the federally threatened wood stork (*Mycteria americana*). The following response is provided in accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to information provided, a survey for wood storks was conducted at the project site on September 19, 2019. No wood storks or nests were observed. Based on the survey results and other available information, the Service concurs with your conclusion that the proposed action may affect, but is not likely to adversely affect the wood stork. We note that although the biological conclusion for Cooley's meadowrue (*Thalictrum cooleyi*) is "no effect", NCDOT has committed to conducting another survey for the species during the appropriate survey window in 2020. Also, we note that the northern long-eared bat has been previously addressed in a programmatic biological opinion.

We believe that the requirements of Section 7(a)(2) of the ESA have been satisfied. We remind you that obligations under Section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered in this review; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by this identified action.

The Service appreciates the opportunity to review this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520 (Ext. 32).

Sincerely,

  
for Pete Benjamin  
Field Supervisor

Electronic copy:

Jason Dilday, NCDOT, Raleigh, NC  
Liz Hair, USACE, Wilmington, NC  
Travis Wilson, NCWRC, Creedmoor, NC

**Minutes from the Interagency 4B/4C Hydraulic Design and Permit Review Meeting  
R-5020 - Columbus County  
NCDOT Structure Design Conf. Room C  
December 19, 2019**

**Team Members:**

Liz Hair, USACE (call in)  
Joanne Steenhuis, NCDWR (call in)  
Robert Patterson, NCDWR (present)  
Patrick Flanigan, Cape Fear RPO (present)

**Participants:**

Craig Freeman, NCDOT Division 6 Project Lead  
Steve Kendall, NCDOT Division 6  
Jim Rerko, NCDOT Division 6 DEO  
Rusty Marsh, NCDOT Division 6  
Greg Price, NCDOT Division 6  
Chris Rivenbark, NCDOT EAU  
Jason Dilday, NCDOT EAU  
Mark Staley, NCDOT REU  
Mike Sanderson, NCDOT EPU  
Charlie Flowe, KCI  
Barry Smith, KCI  
Josh Dalton, Sungate Design Group  
Randy Howard, Sungate Design Group

**Minutes:**

Craig Freeman opened the meeting and introductions were made by all in attendance.

The current project schedules have R-5020B Let Date as July 2020 with R-5020A Let Date as July 2023. Therefore, R-5020B will be a final permit while R-5020A will be a preliminary permit with a modification anticipated at a later date.

Josh Dalton proceeded through the project plan sheets:

**General**

- Joanne Steenhuis (NCDWR) requested showing impacts to the 0.001 acres. Chris Rivenbark stated the permit drawing impact summary will continue showing to the nearest 0.01 acre, however the spreadsheet which shows impacts to 0.001 acre will be provided.
- Update all sheet enlargement references to the correct total amount of pages. Several sheets show 37 as the total and should be 40 sheets.
- Joanne requested that mechanized clearing limits be shown on the cross sections.

**R-5020A**

**Plan Sheets 4 & 5:**

- Site 2 – Joanne asked if an endwall was proposed on the outlet end of the proposed 60” RCP. Josh Dalton stated that one was not proposed as that is not current NCDOT policy.

- Sites 1, 3, and 4 – No comments.

#### **Plan Sheet 6:**

- Site 5 & 6 - Josh noted that 2 @ 48” RCPs will replace 2 @ 24” RCPs. Pipe inverts will be buried. A floodplain bench is not proposed at the inlet or outlet. No comments.

#### **Plan Sheet 8:**

- Sites 7 & 8 – No comments.
- Site 9 – Is mechanized clearing necessary to tie the ditch in? Hand clearing can be used for erosion control measures.

#### **Plan Sheet 9:**

- Site 10 - No comments.

#### **Plan Sheet 11:**

- Site 11 & 12 – No comments.

#### **Plan Sheet 12:**

- Sites 13 & 14 – No comments.
- Site 15 – For total take sites, show only areas that will be impacted as fill or mechanized clearing. Keep the note that states “Total Take” on the permit drawings. Breakout impacts in a note on the impact summary sheet stating “Total Take”.

#### **Plan Sheets 14, 15, and 16:**

- Site 16 - Include 10’ of mechanized clearing impacts around bridge sloping abutments.
- Sites 17 & 17A – The stream at both impacts was verified by Jason Dilday as a non-mitigable stream after the meeting. No linear impacts will be included in the impact summary and a note will be added to the bottom of the impact summary. The linestyle in the permit drawings and plans will be updated to show JS\_NON\_MIT.

#### **Plan Sheet 17:**

- Site 18 - Existing 36” and 42” pipes will be replaced with a box culvert. This culvert size and layout has not been finalized. Stream impacts will be minimized to the extent practicable.



**Impact Summary Table:**

- Include Project Totals in summary.

**R-5020B**



**Plan Sheets 9 & 10:**



- Site 1 & 2 - No comments.

**Plan Sheet 12:**



- Site 3 – A portion of this wetland has previously been cleared by the property owner. In these areas, temporary impacts have been shown to allow for erosion control measures. No additional comments.

-Meeting Adjourned.

		North Carolina Department of Transportation Highway Stormwater Program <b>STORMWATER MANAGEMENT PLAN</b> FOR NCDOT PROJECTS					
(Version 2.08; Released April 2018)							
WBS Element: 41499.1.3		TIP No.: R-5020B	County(ies): Columbus		Page 1 of 2		
General Project Information							
WBS Element:	41499.1.3	TIP Number:	R-5020B	Project Type: Roadway Widening		Date: 3/25/2019	
NCDOT Contact:	Steven Kendall, PE		Contractor / Designer:	William M. Hines, PE			
	Address:	NCDOT Division 6 558 Gillespie Street (P.O. Box 1150) Fayetteville, NC 28302			Address:	Sungate Design Group, PA 905 Jones Franklin Road Raleigh, NC 27606	
	Phone:	(910) 364-0603			Phone:	(919) 859-2243	
	Email:	sdkendall@ncdot.gov			Email:	whines@sungatedesign.com	
City/Town:	Whiteville		County(ies):	Columbus			
River Basin(s):	Lumber		CAMA County?	No			
Wetlands within Project Limits?	Yes						
Project Description							
Project Length (lin. miles or feet):	2.183 Mi.	Surrounding Land Use:	Urban - Commercial and Residential				
	Proposed Project			Existing Site			
Project Built-Upon Area (ac.)	28.1	ac.	27.4	ac.			
Typical Cross Section Description:	-L- (US 701 Bypass): One 14' travel lane and one 12' travel lane in each direction (four travel lanes total) with 2'-6" curb and gutter drainage, sidewalk, and a 20' raised grass median.			-L- (US 701 Bypass): Two 12' travel lanes in each direction (four travel lanes total), plus a 12' center turn lane, with 2'-6" curb and gutter drainage and sidewalk.			
Annual Avg Daily Traffic (veh/hr/day):	Design/Future: 26,000	Year: 2040	Existing: 21,417	Year: 2020			
General Project Narrative: (Description of Minimization of Water Quality Impacts)	The R-5020B project involves replacing the existing US-701 Bypass within the Town of Whiteville and improving intersections along with other improvements to adjacent roadways. Rip rap dissipation has been incorporated at drainage pipe outlets and outfalls where applicable. 2:1 roadway fill slopes were used in the area of the jurisdictional stream in order to minimize impacts. In areas adjacent to the wetland, 3:1 roadway fill slopes were used to reduce wetland impacts.						
Waterbody Information							
Surface Water Body (1):	Soules Swamp		NCDWR Stream Index No.:	15-4-8			
NCDWR Surface Water Classification for Water Body	Primary Classification:	Class C					
	Supplemental Classification:	Swamp Waters (Sw)					
Other Stream Classification:							
Impairments:	None						
Aquatic T&E Species?	No	Comments:					
NRTR Stream ID:				Buffer Rules in Effect:	N/A		
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	No	Dissipator Pads Provided in Buffer?	N/A		
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)			
	(If yes, provide justification in the General Project Narrative)						

	North Carolina Department of Transportation Highway Stormwater Program <b>STORMWATER MANAGEMENT PLAN</b> FOR NCDOT PROJECTS			
(Version 2.08; Released April 2018)				
WBS Element: 41499.1.3	TIP No.: R-5020B	County(ies): Columbus		Page 2 of 2
<b>Additional Waterbody Information</b>				
Surface Water Body (2):	Mollie Branch		NCDWR Stream Index No.:	15-4-8-8
NCDWR Surface Water Classification for Water Body	Primary Classification:	Class C		
	Supplemental Classification:	Swamp Waters (Sw)		
Other Stream Classification:				
Impairments:	None			
Aquatic T&E Species?	Comments:			
NRTR Stream ID:				Buffer Rules in Effect:
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?		(If yes, provide justification in the General Project Narrative)	(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)			
Surface Water Body (3):	White Marsh		NCDWR Stream Index No.:	15-4
NCDWR Surface Water Classification for Water Body	Primary Classification:	Class C		
	Supplemental Classification:	Swamp Waters (Sw)		
Other Stream Classification:				
Impairments:	None			
Aquatic T&E Species?	Comments:			
NRTR Stream ID:				Buffer Rules in Effect:
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?		(If yes, provide justification in the General Project Narrative)	(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)			
Surface Water Body (4):			NCDWR Stream Index No.:	
NCDWR Surface Water Classification for Water Body	Primary Classification:			
	Supplemental Classification:			
Other Stream Classification:				
Impairments:				
Aquatic T&E Species?	Comments:			
NRTR Stream ID:				Buffer Rules in Effect:
Project Includes Bridge Spanning Water Body?		Deck Drains Discharge Over Buffer?	Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?		(If yes, provide justification in the General Project Narrative)	(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)			
Surface Water Body (5):			NCDWR Stream Index No.:	
NCDWR Surface Water Classification for Water Body	Primary Classification:			
	Supplemental Classification:			
Other Stream Classification:				
Impairments:				
Aquatic T&E Species?	Comments:			
NRTR Stream ID:				Buffer Rules in Effect:
Project Includes Bridge Spanning Water Body?		Deck Drains Discharge Over Buffer?	Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?		(If yes, provide justification in the General Project Narrative)	(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)	
	(If yes, provide justification in the General Project Narrative)			

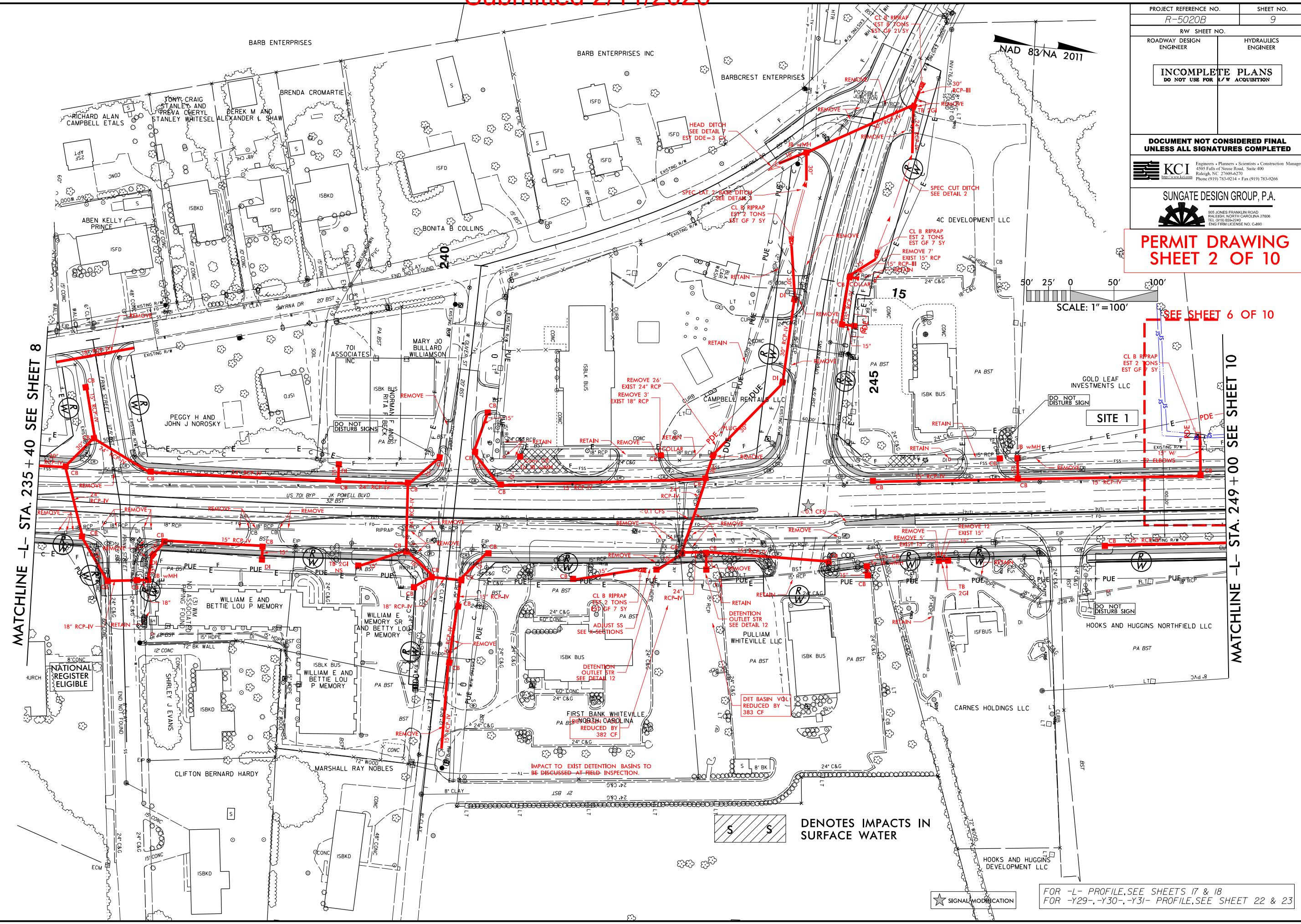


PROJECT REFERENCE NO. R-5020B	SHEET NO. 9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	
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 SUNGATE DESIGN GROUP, P.A. <small>805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL: (919) 858-2242 ENG. FIRM LICENSE NO. C-480</small>	

**PERMIT DRAWING**  
**SHEET 2 OF 10**

SEE SHEET 6 OF 10


8/17/19  
1/17/2020  
R-5020B-Hyd-prm-wet\_psh\_09.dgn



MATCHLINE -L- STA. 235 + 40 SEE SHEET 8

MATCHLINE -L- STA. 249 + 00 SEE SHEET 10

 DENOTES IMPACTS IN SURFACE WATER

 SIGNAL MODIFICATION

FOR -L- PROFILE, SEE SHEETS 17 & 18  
FOR -Y29-, -Y30-, -Y31- PROFILE, SEE SHEET 22 & 23

PROJECT REFERENCE NO. R-5020B	SHEET NO. 9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

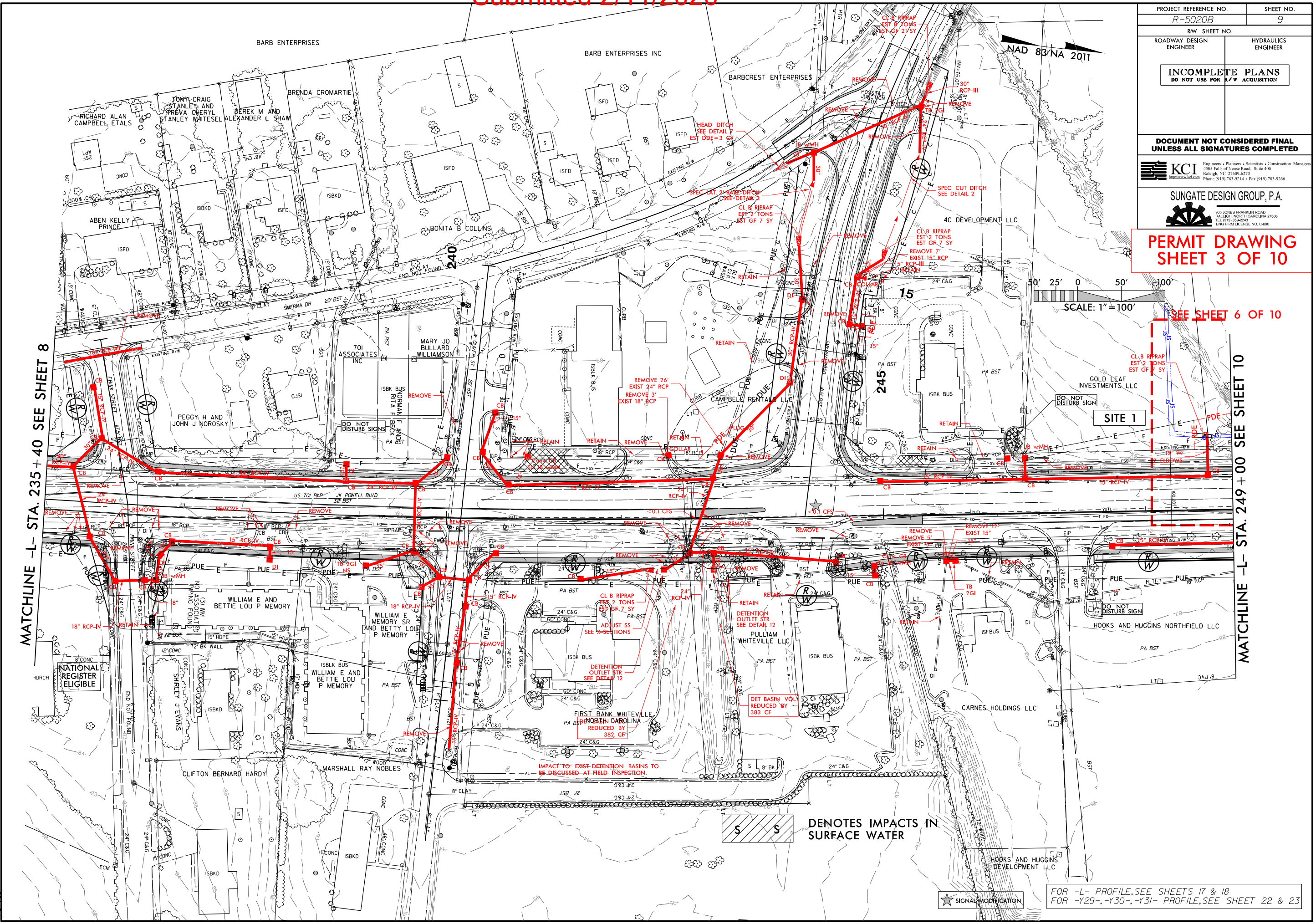
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**PERMIT DRAWING**  
**SHEET 3 OF 10**



MATCHLINE -L- STA. 235 + 40 SEE SHEET 8

MATCHLINE -L- STA. 249 + 00 SEE SHEET 10

SCALE: 1" = 100'

SEE SHEET 6 OF 10

⊠ DENOTES IMPACTS IN SURFACE WATER

★ SIGNAL MODIFICATION

FOR -L- PROFILE, SEE SHEETS 17 & 18  
FOR -Y29-, -Y30-, -Y31- PROFILE, SEE SHEET 22 & 23

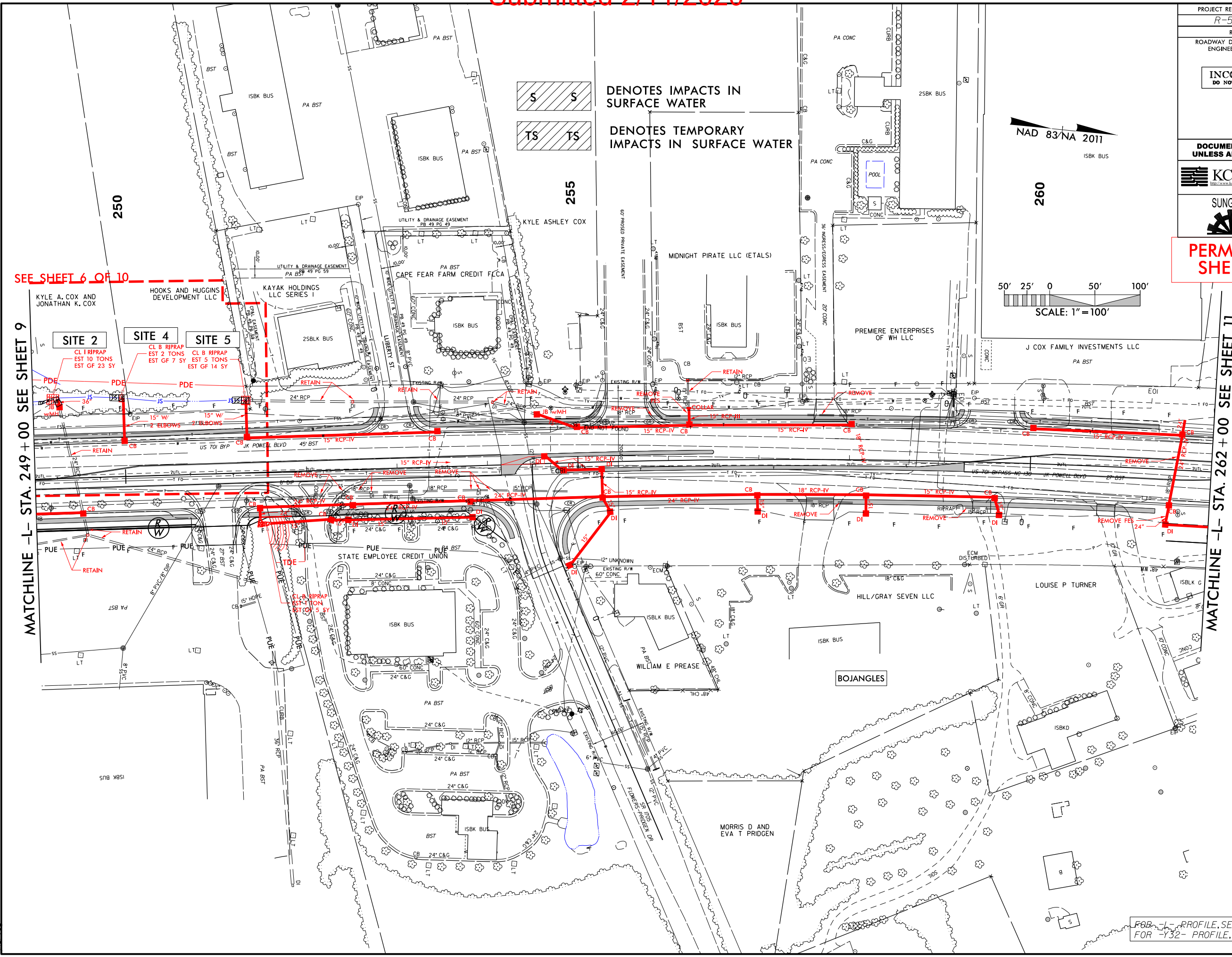
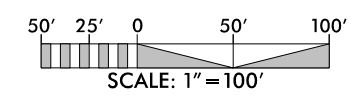
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**PERMIT DRAWING**  
**SHEET 4 OF 10**



SEE SHEET 6 OF 10

MATCHLINE -L- STA. 249 + 00 SEE SHEET 9

MATCHLINE -L- STA. 262 + 00 SEE SHEET 11

- SITE 2**  
CL B RIPRAP  
EST 10 TONS  
EST GF 23 SY
- SITE 4**  
CL B RIPRAP  
EST 2 TONS  
EST GF 7 SY
- SITE 5**  
CL B RIPRAP  
EST 5 TONS  
EST GF 14 SY

FOR -L- PROFILE, SEE SHEET 18  
FOR -Y32- PROFILE, SEE SHEET 23

8/17/99  
1/17/2020  
R-5020B-Hyd-prm-wet\_psh\_10.dgn

PROJECT REFERENCE NO. R-5020B	SHEET NO. 10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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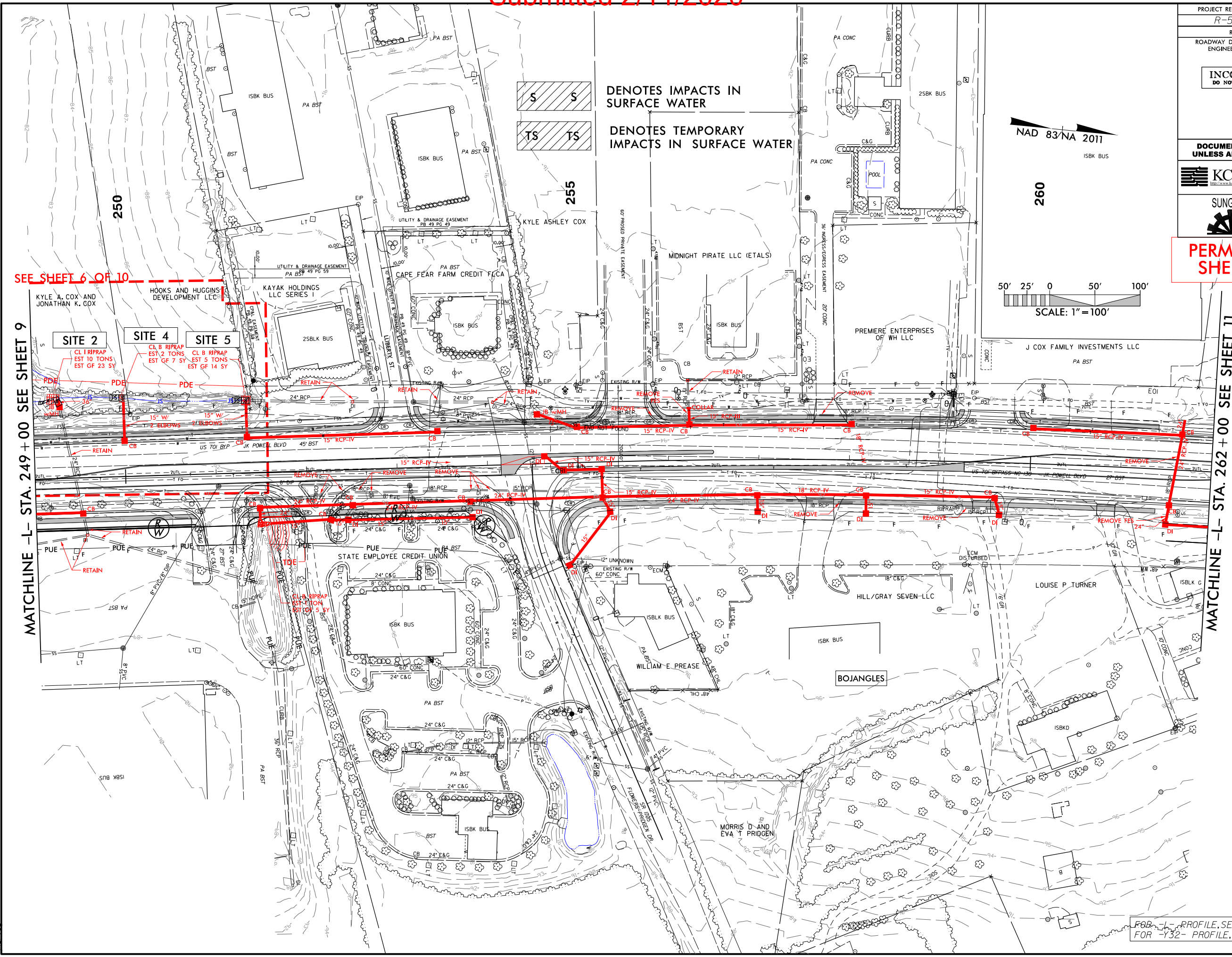
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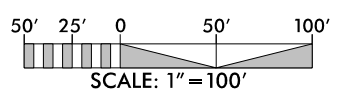
**PERMIT DRAWING**  
**SHEET 4 OF 10**



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**TS TS**

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER



SEE SHEET 6 OF 10

MATCHLINE -L- STA. 249 + 00 SEE SHEET 9

MATCHLINE -L- STA. 262 + 00 SEE SHEET 11

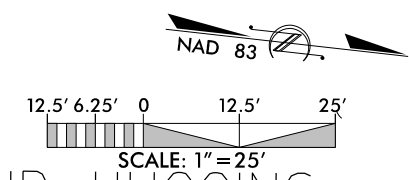
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FOR -L- PROFILE, SEE SHEET 18  
FOR -Y32- PROFILE, SEE SHEET 23





PROJECT REFERENCE NO. R-5020B	SHEET NO. 10B
RW SHEET NO.	
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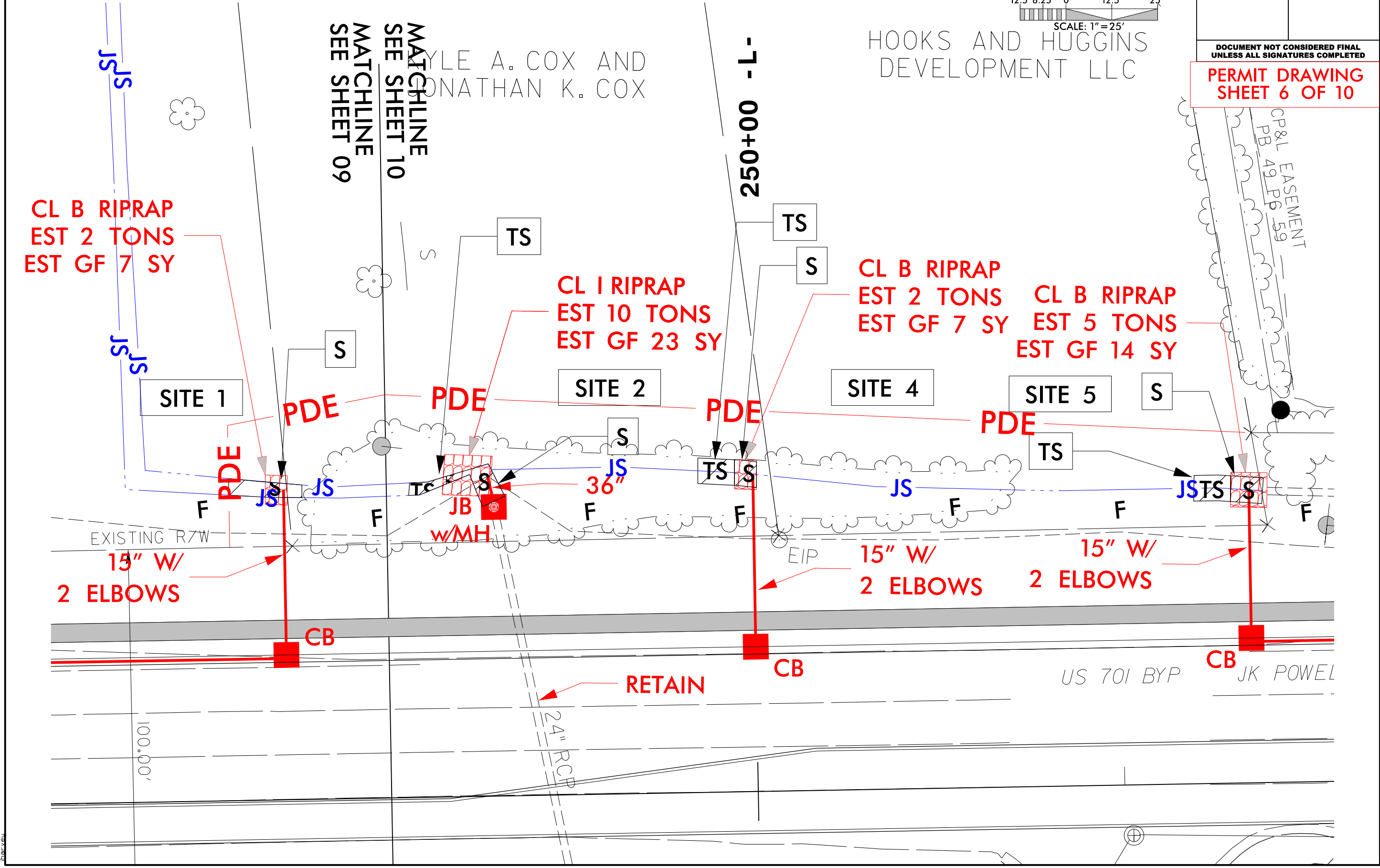


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**PERMIT DRAWING  
SHEET 6 OF 10**



 DENOTES IMPACTS IN SURFACE WATER

 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

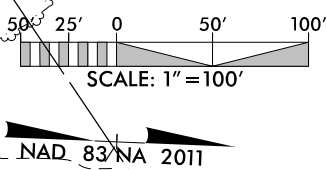
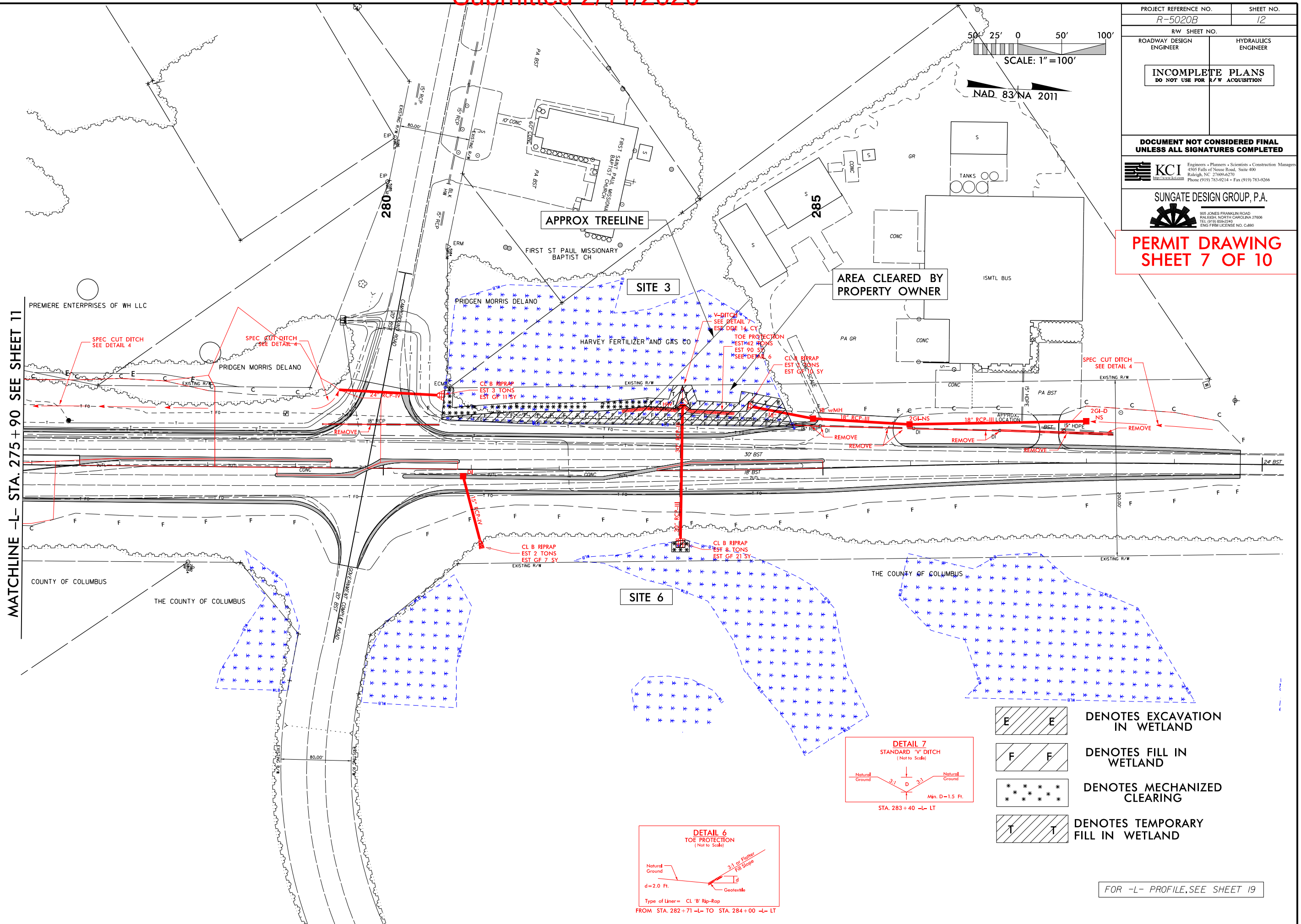



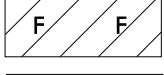

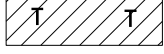
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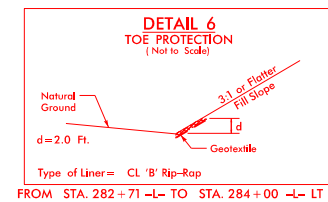
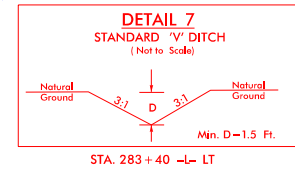
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10b.dwg

PROJECT REFERENCE NO. R-5020B	SHEET NO. 12
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
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**PERMIT DRAWING**  
**SHEET 7 OF 10**



-  DENOTES EXCAVATION IN WETLAND
-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING
-  DENOTES TEMPORARY FILL IN WETLAND



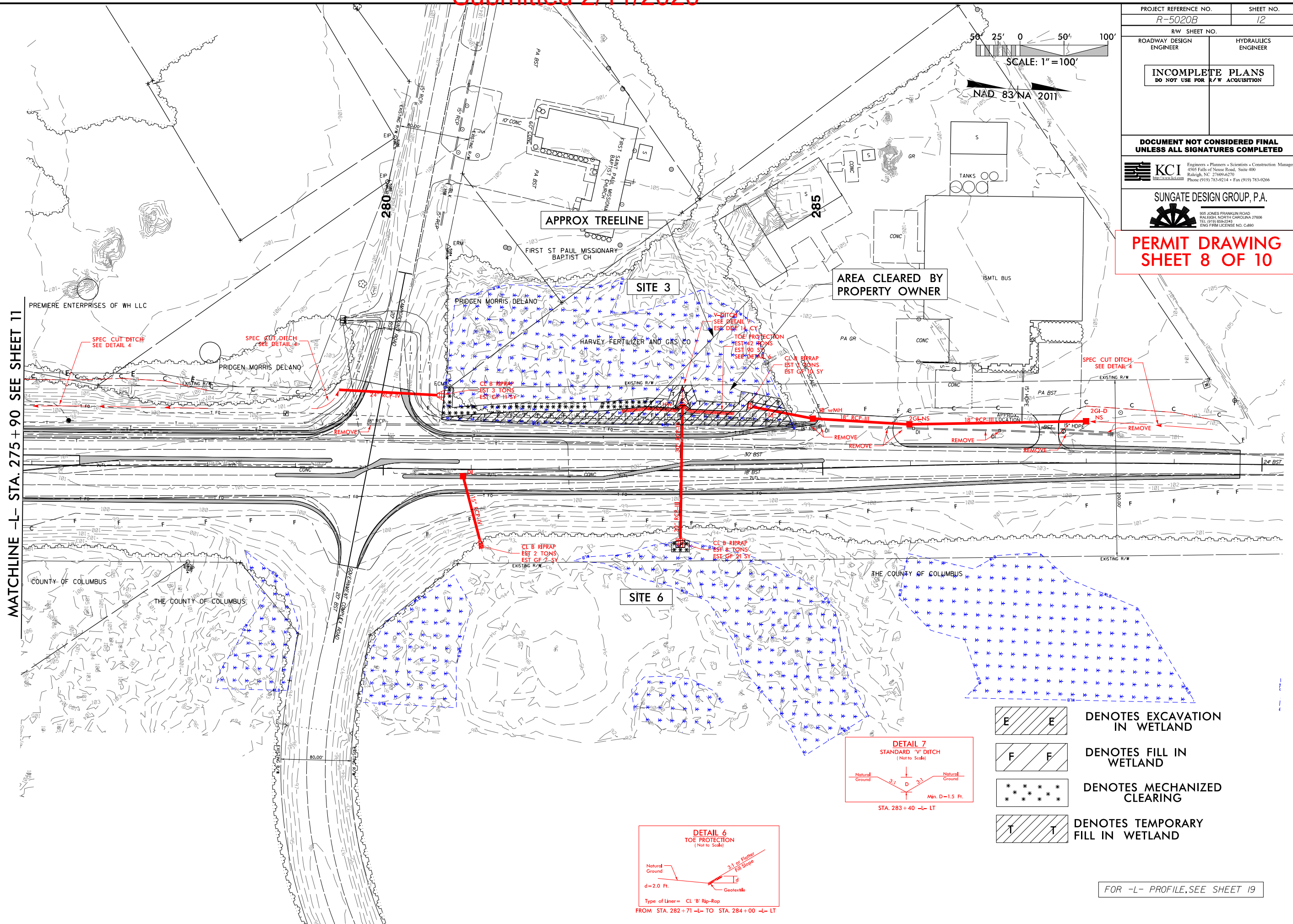
PROJECT REFERENCE NO. R-5020B	SHEET NO. 12
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	

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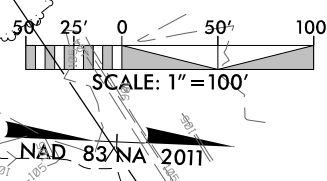
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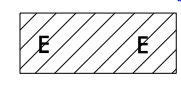
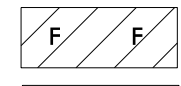

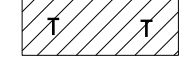
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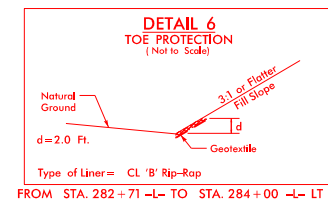
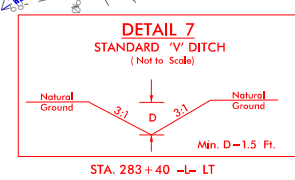
**PERMIT DRAWING**  
**SHEET 8 OF 10**



MATCHLINE -L- STA. 275 + 90 SEE SHEET 11

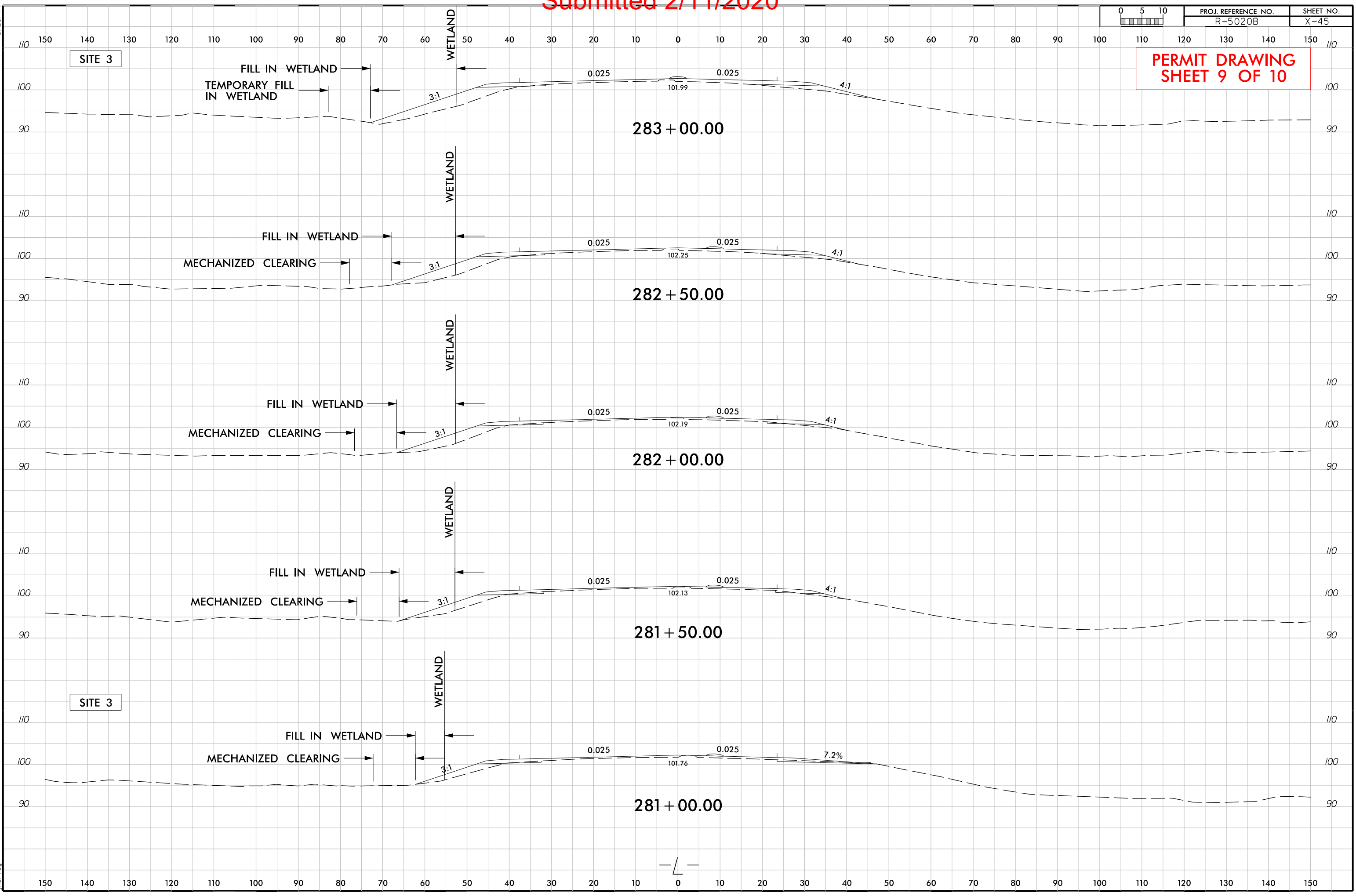


-  DENOTES EXCAVATION IN WETLAND
-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING
-  DENOTES TEMPORARY FILL IN WETLAND



FOR -L- PROFILE, SEE SHEET 19

8/23/99  
1/17/2020  
R5020B\_Hyd\_prm\_wet\_psh\_12\_xpl.dgn  
jharvey



PERMIT DRAWING  
SHEET 9 OF 10

SITE 3

SITE 3

WETLAND AND SURFACE WATER IMPACTS SUMMARY												
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	248+57 to 248+77-L-LT	OUTLET PROTECTION						< 0.01		20		
2	249+06 to 249+32-L-LT	36" PIPE						< 0.01	< 0.01	20	11	
3	280+66 to 284.68-L-LT	ROADWAY FILL	0.14	0.04	< 0.01	0.06						
4	249+85 to 250+01-L-LT	15" PIPE						< 0.01	< 0.01	6	10	
5	251+20 to 251+39 -L-LT	15" PIPE						< 0.01	< 0.01	9	10	
6	283+28 to 283+48-L-RT	30" PIPE	< 0.01			< 0.01						
TOTALS*:			0.15	0.04	< 0.01	0.06		< 0.01	< 0.01	55	31	0

\*Rounded totals are sum of actual impacts

NOTES:

Site #3: Due to clearing by property owner, mechanized clearing adjusted and temporary fill in wetland added.

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 01-17-2020  
 COLUMBUS  
 R-5020B  
 41499.1.3



**North Carolina Department of Transportation**

**Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN**

FOR NCDOT PROJECTS



(Version 2.08; Released April 2018)

**WBS Element:** 41499.1.2      **TIP No.:** R-5020A      **County(ies):** Columbus      **Page** 1 **of** 2

**General Project Information**

<b>WBS Element:</b>	41499.1.2	<b>TIP Number:</b>	R-5020A	<b>Project Type:</b>	Roadway Widening	<b>Date:</b>	3/12/2019
<b>NCDOT Contact:</b>	Steven Kendall, PE		<b>Contractor / Designer:</b>	Brad T. Smith, EI			
<b>Address:</b>	NCDOT Division 6 558 Gillespie Street (P.O. Box 1150) Fayetteville, NC 28302		<b>Address:</b>	Sungate Design Group, PA 905 Jones Franklin Road Raleigh, NC 27606			
	<b>Phone:</b>	(910) 364-0603		<b>Phone:</b>	(919) 859-2243		
	<b>Email:</b>	sdkendall@ncdot.gov		<b>Email:</b>	bsmith@sungatedesign.com		
<b>City/Town:</b>	Whiteville		<b>County(ies):</b>	Columbus			
<b>River Basin(s):</b>	Lumber		<b>CAMA County?</b>	No			
<b>Wetlands within Project Limits?</b>	Yes						

**Project Description**

<b>Project Length (lin. miles or feet):</b>	3.112 Mi.	<b>Surrounding Land Use:</b>	Medium and low density residential, business, and industrial.					
	<b>Proposed Project</b>		<b>Existing Site</b>					
<b>Project Built-Upon Area (ac.)</b>	38.5	<b>ac.</b>	21.6	<b>ac.</b>				
<b>Typical Cross Section Description:</b>	-L- (US 701): One 14' travel lane and one 12' travel lane in each direction (four travel lanes total) with 2'-6" curb and gutter drainage, sidewalk, and a concrete island.			-L- (US 701): Two 12' travel lanes with grass shoulders and grass roadway ditches on both sides.				
<b>Annual Avg Daily Traffic (veh/hr/day):</b>	<b>Design/Future:</b>	26,900	<b>Year:</b>	2040	<b>Existing:</b>	21,650	<b>Year:</b>	2020
<b>General Project Narrative: (Description of Minimization of Water Quality Impacts)</b>	<p>The R-5020A project involves widening existing US-701 south of Whiteville, improving intersections, and replacing bridges along with other improvements to adjacent roadways, including replacing an undersized culvert under US-701 Business. Curb and gutter drainage has replaced existing roadway ditches. Rip rap dissipation has been incorporated at drainage pipe outlets and outfalls where applicable. Proposed cross pipes in jurisdictional streams will be buried. In areas adjacent to wetlands, 3:1 roadway fill slopes were used to reduce wetland impacts. There are two existing major structures crossing waterways within the project limits that will be replaced. The first proposed structure is a 3 span (1@45', 1@55', 1@45') 36" girder bridge with 4' end bent caps over Soules Swamp. The proposed bridge will have spill-through abutments. In the area of the causeway and bridge, 10' of mechanized clearing will be provided to allow enough room for the contractor to successfully construct the proposed slopes. In the project limits, Soules Swamp is a FEMA detailed study area with non-encroachment widths established. The second proposed structure is a 9'x7' RCBC buried 1' on UT to Richardson Swamp, which is not in a FEMA study area. Both structures have been designed to have as little environmental and surface water impacts as is practicable.</p>							

**Waterbody Information**

<b>Surface Water Body (1):</b>	Deep Branch		<b>NCDWR Stream Index No.:</b>	15-4-8-6				
<b>NCDWR Surface Water Classification for Water Body</b>	<b>Primary Classification:</b>		Class C					
	<b>Supplemental Classification:</b>		Swamp Waters (Sw)					
<b>Other Stream Classification:</b>								
<b>Impairments:</b>	None							
<b>Aquatic T&amp;E Species?</b>	No	<b>Comments:</b>						
<b>NRTR Stream ID:</b>						<b>Buffer Rules in Effect:</b>	N/A	
<b>Project Includes Bridge Spanning Water Body?</b>	No	<b>Deck Drains Discharge Over Buffer?</b>	N/A	<b>Dissipator Pads Provided in Buffer?</b>				N/A
<b>Deck Drains Discharge Over Water Body?</b>	N/A	(If yes, provide justification in the General Project Narrative)			(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)			
(If yes, provide justification in the General Project Narrative)								



**North Carolina Department of Transportation**  
**Highway Stormwater Program**  
**STORMWATER MANAGEMENT PLAN**  
**FOR NCDOT PROJECTS**



(Version 2.08; Released April 2018)

<b>WBS Element:</b> 41499.1.2	<b>TIP No.:</b> R-5020A	<b>County(ies):</b> Columbus		<b>Page</b> 2 <b>of</b> 2
<b>Additional Waterbody Information</b>				
<b>Surface Water Body (2):</b>	Richardson Swamp		<b>NCDWR Stream Index No.:</b>	15-4-9
<b>NCDWR Surface Water Classification for Water Body</b>	<b>Primary Classification:</b>		Class C	
	<b>Supplemental Classification:</b>		Swamp Waters (Sw)	
<b>Other Stream Classification:</b>				
<b>Impairments:</b>	None			
<b>Aquatic T&amp;E Species?</b>	No	<b>Comments:</b>		
<b>NRTR Stream ID:</b>			<b>Buffer Rules in Effect:</b>	N/A
<b>Project Includes Bridge Spanning Water Body?</b>	No	<b>Deck Drains Discharge Over Buffer?</b>	N/A	<b>Dissipator Pads Provided in Buffer?</b>
<b>Deck Drains Discharge Over Water Body?</b>	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)
(If yes, provide justification in the General Project Narrative)				
<b>Surface Water Body (3):</b>	Soules Swamp		<b>NCDWR Stream Index No.:</b>	15-4-8
<b>NCDWR Surface Water Classification for Water Body</b>	<b>Primary Classification:</b>		Class C	
	<b>Supplemental Classification:</b>		Swamp Waters (Sw)	
<b>Other Stream Classification:</b>				
<b>Impairments:</b>	None			
<b>Aquatic T&amp;E Species?</b>	No	<b>Comments:</b>		
<b>NRTR Stream ID:</b>			<b>Buffer Rules in Effect:</b>	N/A
<b>Project Includes Bridge Spanning Water Body?</b>	Yes	<b>Deck Drains Discharge Over Buffer?</b>	N/A	<b>Dissipator Pads Provided in Buffer?</b>
<b>Deck Drains Discharge Over Water Body?</b>	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)
(If yes, provide justification in the General Project Narrative)				
<b>Surface Water Body (4):</b>			<b>NCDWR Stream Index No.:</b>	
<b>NCDWR Surface Water Classification for Water Body</b>	<b>Primary Classification:</b>			
	<b>Supplemental Classification:</b>			
<b>Other Stream Classification:</b>				
<b>Impairments:</b>				
<b>Aquatic T&amp;E Species?</b>	<b>Comments:</b>			
<b>NRTR Stream ID:</b>			<b>Buffer Rules in Effect:</b>	
<b>Project Includes Bridge Spanning Water Body?</b>		<b>Deck Drains Discharge Over Buffer?</b>		<b>Dissipator Pads Provided in Buffer?</b>
<b>Deck Drains Discharge Over Water Body?</b>		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)
(If yes, provide justification in the General Project Narrative)				
<b>Surface Water Body (5):</b>			<b>NCDWR Stream Index No.:</b>	
<b>NCDWR Surface Water Classification for Water Body</b>	<b>Primary Classification:</b>			
	<b>Supplemental Classification:</b>			
<b>Other Stream Classification:</b>				
<b>Impairments:</b>				
<b>Aquatic T&amp;E Species?</b>	<b>Comments:</b>			
<b>NRTR Stream ID:</b>			<b>Buffer Rules in Effect:</b>	
<b>Project Includes Bridge Spanning Water Body?</b>		<b>Deck Drains Discharge Over Buffer?</b>		<b>Dissipator Pads Provided in Buffer?</b>
<b>Deck Drains Discharge Over Water Body?</b>		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)
(If yes, provide justification in the General Project Narrative)				

Submitted 2/11/2020

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**COLUMBUS COUNTY**

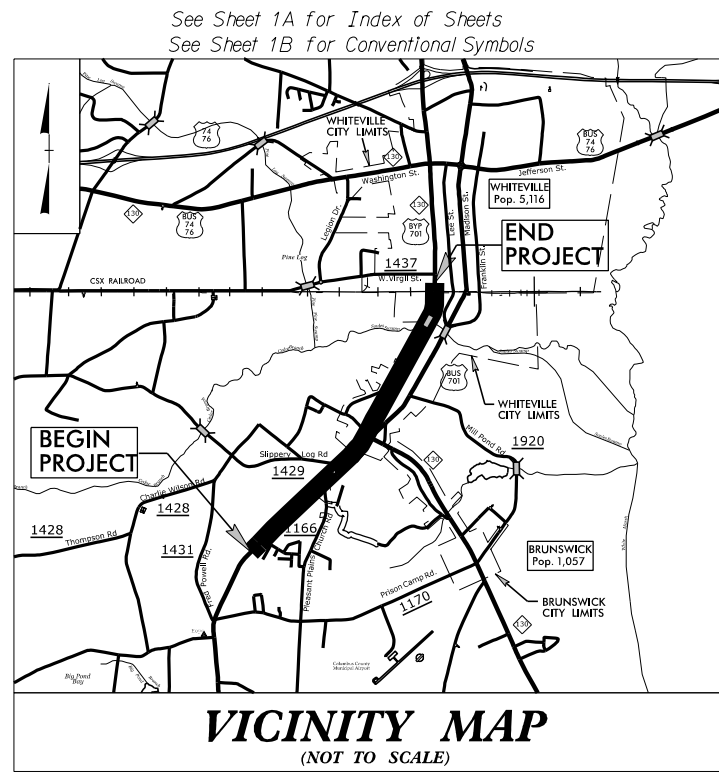
**LOCATION: US 701 BYPASS (MADISON STREET-JK POWELL BLVD.)  
FROM SOUTH OF SR 1166 (PLEASANT PLAINS CHURCH ROAD) TO SR 1437 (VIRGIL AVENUE)**  
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES, AND SIGNALS**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5020A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
41499.1.2	N.A.	P.E.	
41499.2.2	N.A.	RW	
41499.2.4	N.A.	UTIL.	
41499.3.2	N.A.	CONST.	

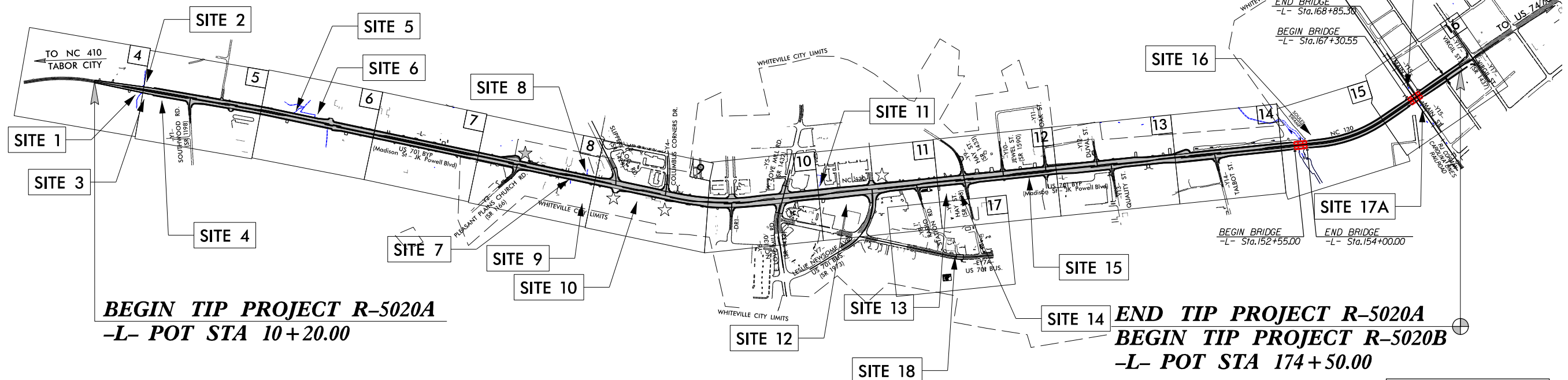
**90% REVIEW PLANS**

**PERMIT DRAWING SHEET 1 OF 40**

**WETLAND AND SURFACE WATER IMPACTS PERMIT**



**TIP PROJECT: R-5020A**



**BEGIN TIP PROJECT R-5020A**  
**-L- POT STA 10+20.00**

**END TIP PROJECT R-5020A**  
**BEGIN TIP PROJECT R-5020B**  
**-L- POT STA 174+50.00**

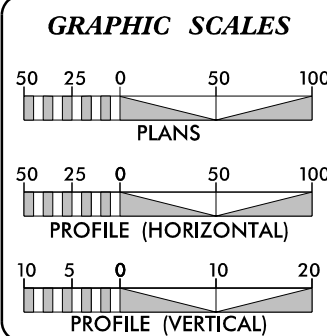
**NOTE:**  
1. THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION

- ☆ REVISED SIGNAL
- ★ PROPOSED SIGNAL



**CONTRACT:**



**DESIGN DATA**

ADT 2020 =	21,650
ADT 2040 =	26,900
K =	8 %
D =	3 %
T =	5 % *
V =	50 MPH
* (TTST = 2% + DUAL 3%)	
FUNC CLASS =	URBAN ARTERIAL REGIONAL TIER

**PROJECT LENGTH**

LENGTH OF ROADWAY TIP PROJECT R-5020A =	3.055 MILES
LENGTH OF STRUCTURE TIP PROJECT R-5020A =	0.057 MILES
TOTAL LENGTH OF TIP PROJECT R-5020A =	3.112 MILES

Prepared in the Office of:  
**KCI Associates of N.C., P.A.**  
4505 Falls of Neuse Road, Suite 400  
Raleigh, NC 27609  
Phone (919) 783-9214  
Fax (919) 783-9266

Plans Prepared For:  
**DIVISION OF HIGHWAYS**  
558 Gillespie St.  
Fayetteville NC, 28301

2018 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
FEBRUARY 16, 2018

**LETTING DATE:**  
FEBRUARY 18, 2020

**NCDOT CONTACT:** **CRAIG A. FREEMAN, P.E.**  
PROJECT ENGINEER - DIVISION 6

**CHARLES L. FLOWE, P.E.**  
PROJECT ENGINEER

**BARRY C. SMITH, P.E.**  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.


**ROADWAY DESIGN ENGINEER**

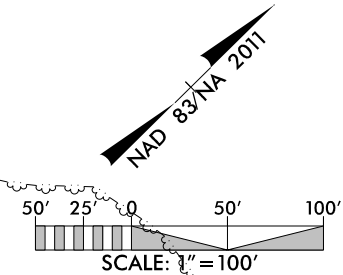
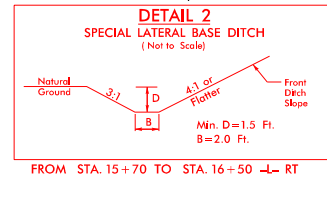
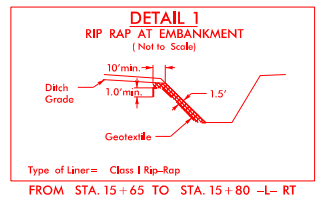
SIGNATURE: \_\_\_\_\_ P.E.

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

09.08/19  
12/27/2019  
R-5020A\_Hyd.prm\_wet\_psh\_01.dgn  
jnarvey



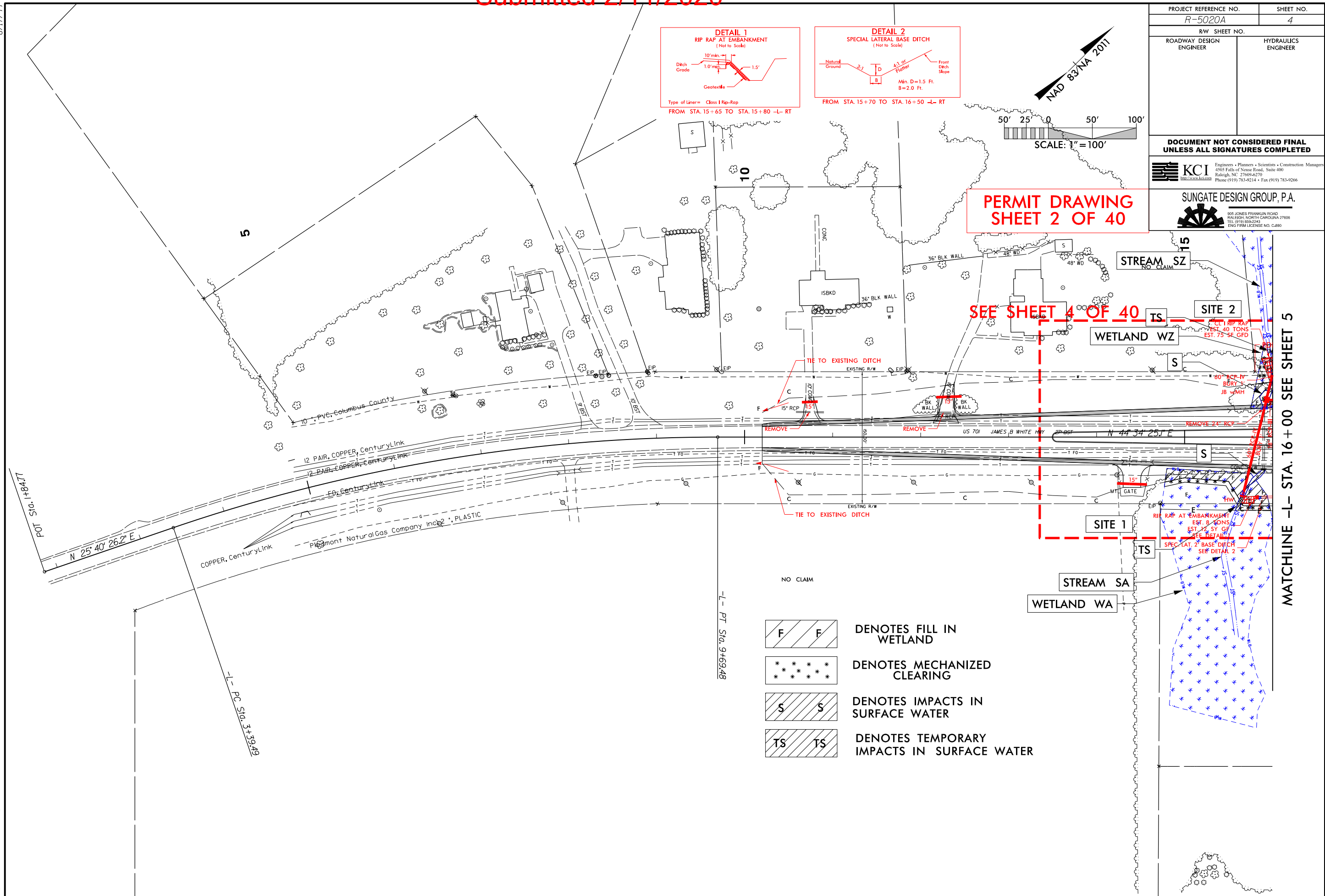
PROJECT REFERENCE NO. R-5020A		SHEET NO. 4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p>  <p><b>KCI</b> Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266</p> <p><b>SUNGATE DESIGN GROUP, P.A.</b> 805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27605 TEL (919) 858-2243 ENG FROM LICENSEE NO. C-690</p>			



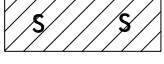
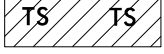


**PERMIT DRAWING SHEET 2 OF 40**

**SEE SHEET 4 OF 40**

MATCHLINE -L- STA. 16+00 SEE SHEET 5




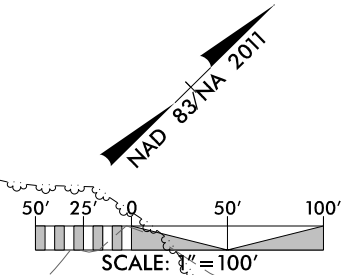
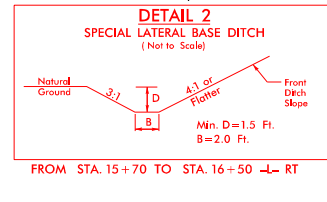
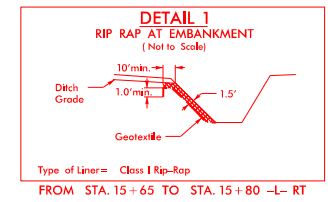
-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING
-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER

ROW REV.10 - 01/23/19 - Removed TCE from Parcel 2. (BCS)  
ROW REV.11 - 02/18/19 - Removed TCE from Parcel 1. (BCS)

12/27/2019  
R-5020A Hyd. prm. wet. psh. 04.dgn

FOR -L- PROFILE, SEE SHEET 18  
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-4

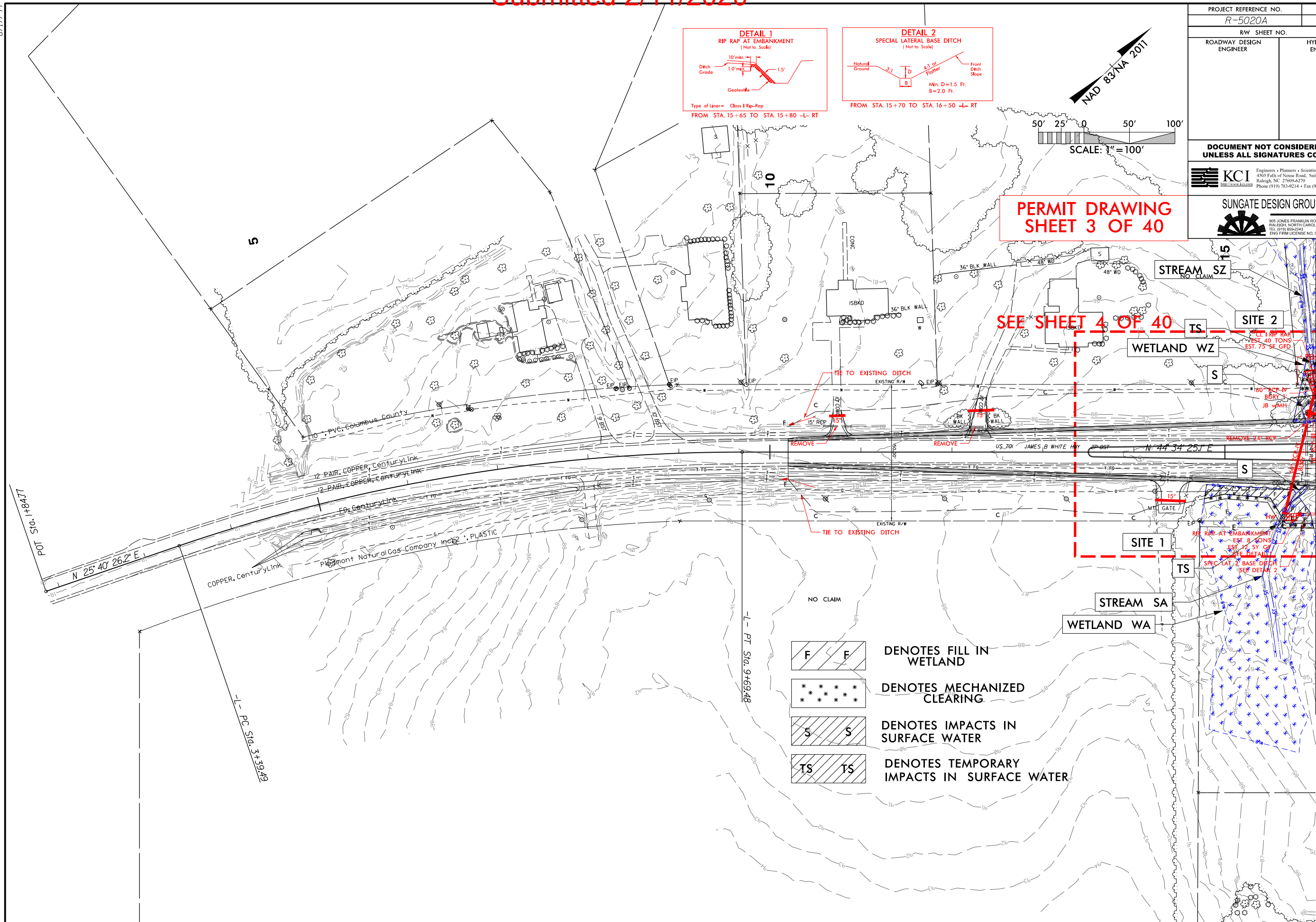
PROJECT REFERENCE NO. R-5020A		SHEET NO. 4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p>  <p><b>KCI</b> Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266</p> <p><b>SUNGATE DESIGN GROUP, P.A.</b> 805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27605 TEL (919) 858-2243 ENG. FIRM LICENSE NO. C-690</p>			




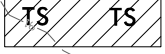


**PERMIT DRAWING SHEET 3 OF 40**

**SEE SHEET 4 OF 40**

MATCHLINE -L- STA. 16+00 SEE SHEET 5



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

FOR -L- PROFILE, SEE SHEET 18  
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-4

ROW REV.10 - 01/23/19 - Removed TCE from Parcel 2. (BCS)  
ROW REV.11 - 02/18/19 - Removed TCE from Parcel 1. (BCS)

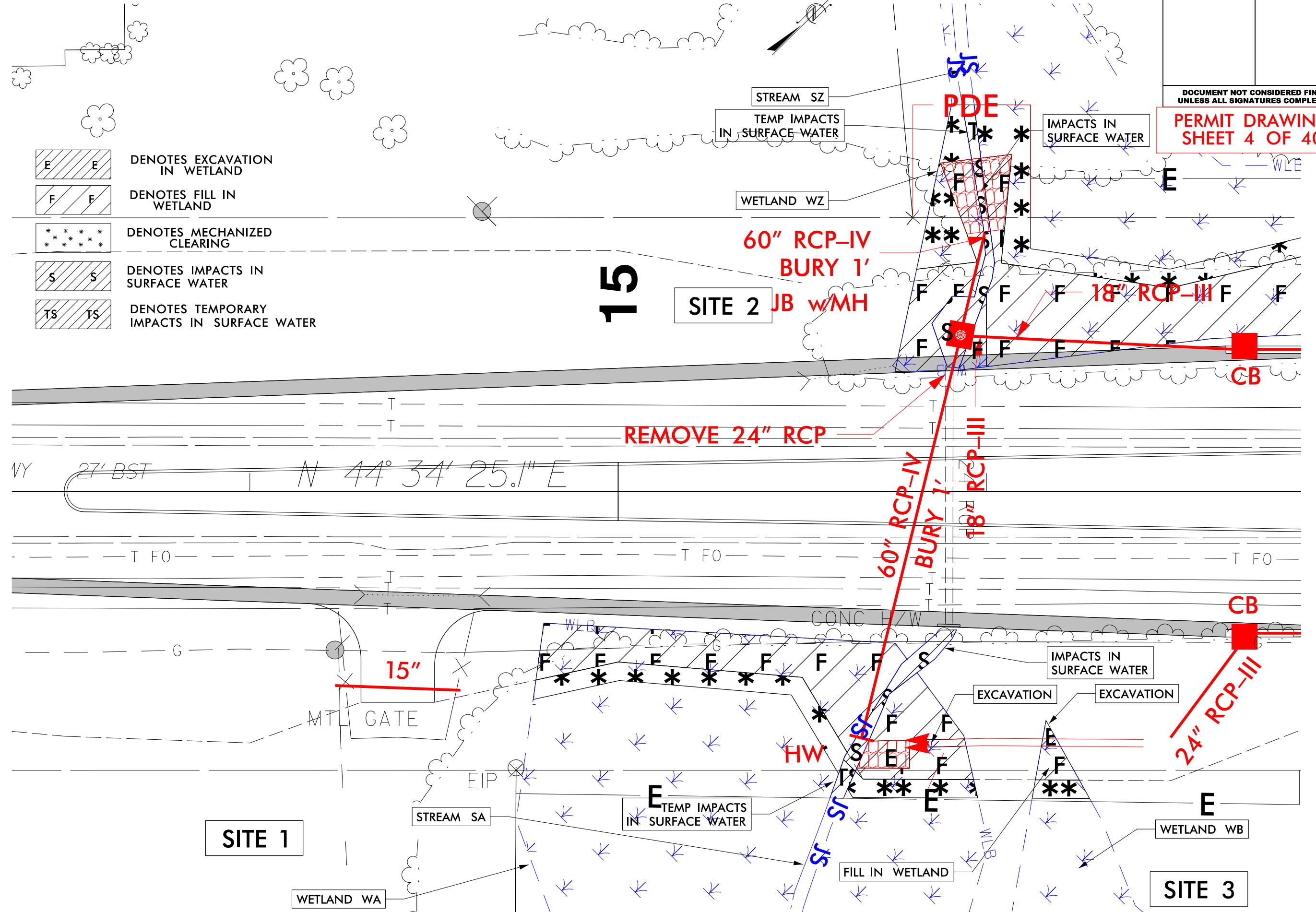
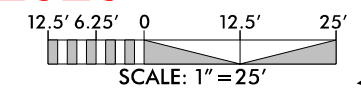
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R-5020A Hyd.prm...wet\_psh\_04A.dgn

8/17/99

PROJECT REFERENCE NO. R-5020A		SHEET NO.	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		

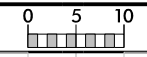
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED  
**PERMIT DRAWING SHEET 4 OF 40**

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



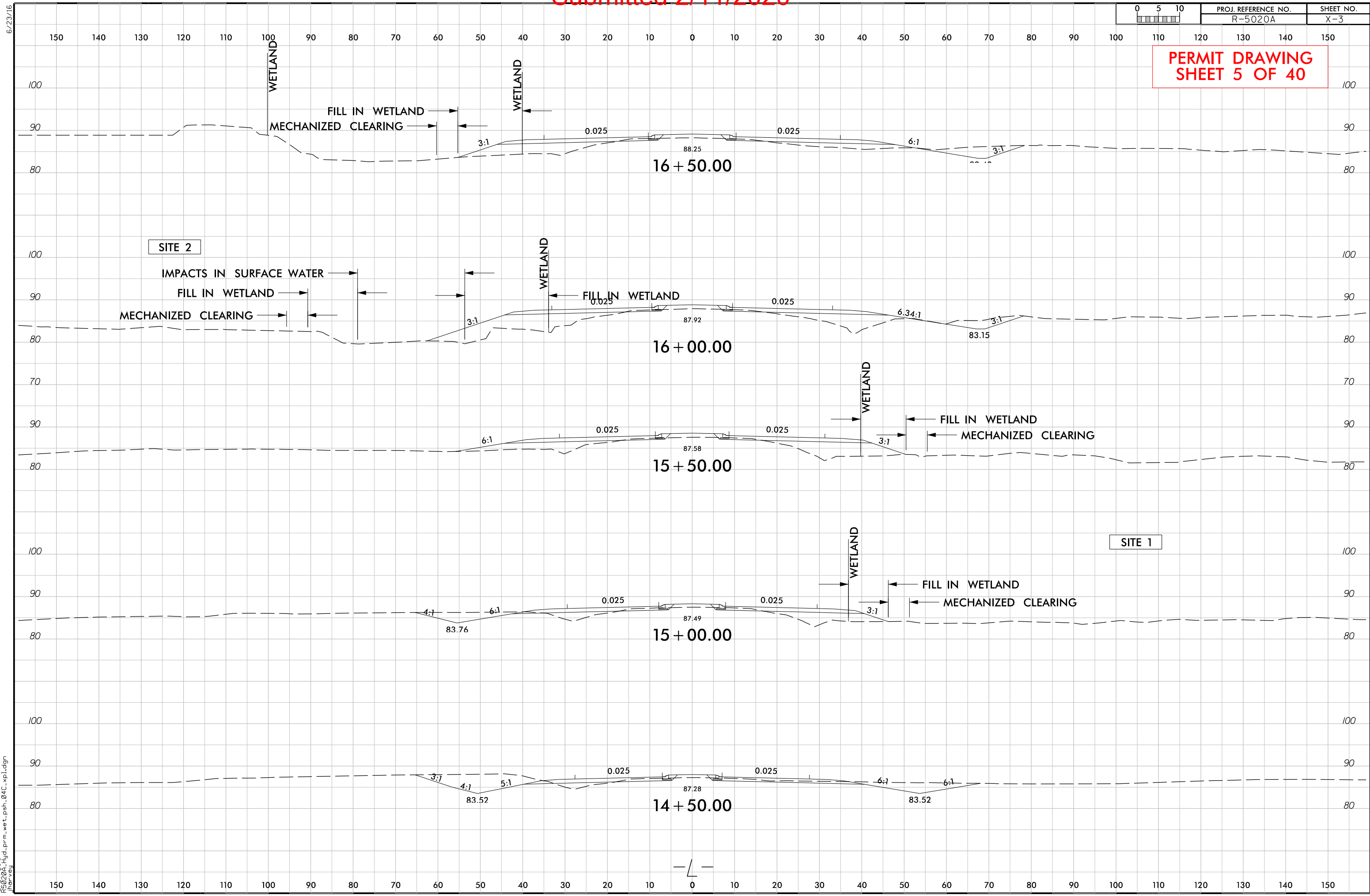
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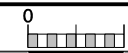


PROJ. REFERENCE NO.	SHEET NO.
R-5020A	X-3

PERMIT DRAWING  
SHEET 5 OF 40

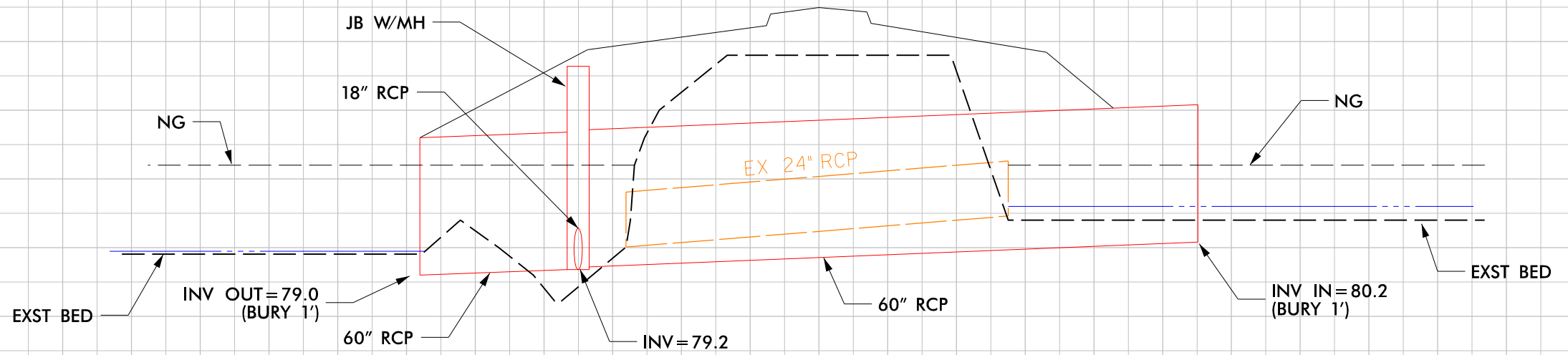


12/21/2019  
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jbarvey




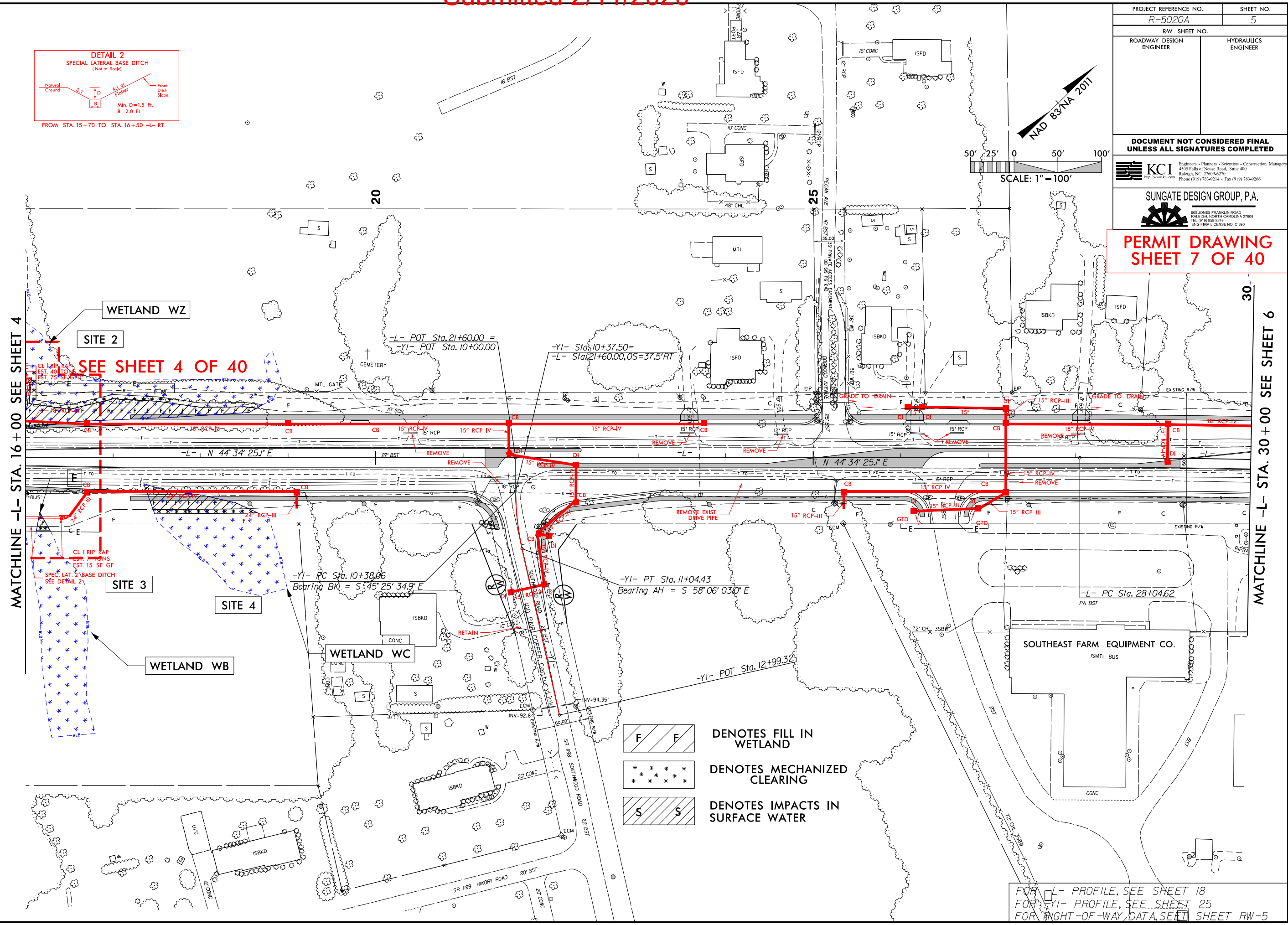
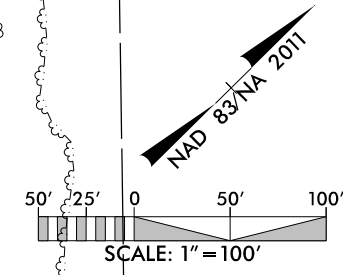
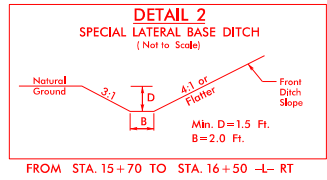
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60" RCP

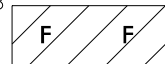

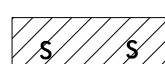
95  
90  
85  
80  
75



100 50 0 50 100

PROJECT REFERENCE NO. R-5020A	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p>  <p>KCI Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266</p> <p><b>SUNGATE DESIGN GROUP, P.A.</b> 805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 TEL (919) 868-2243 ENG. FIRM LICENSE NO. C-690</p>	



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

FOR L- PROFILE, SEE SHEET 18  
 FOR YI- PROFILE, SEE SHEET 25  
 FOR RIGHT-OF-WAY DATA, SEE SHEET RW-5

MATCHLINE -L- STA. 16+00 SEE SHEET 4

MATCHLINE -L- STA. 30+00 SEE SHEET 6

WETLAND WZ

SITE 2

SEE SHEET 4 OF 40

WETLAND WB

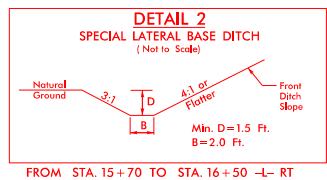
SITE 3

SITE 4

WETLAND WC

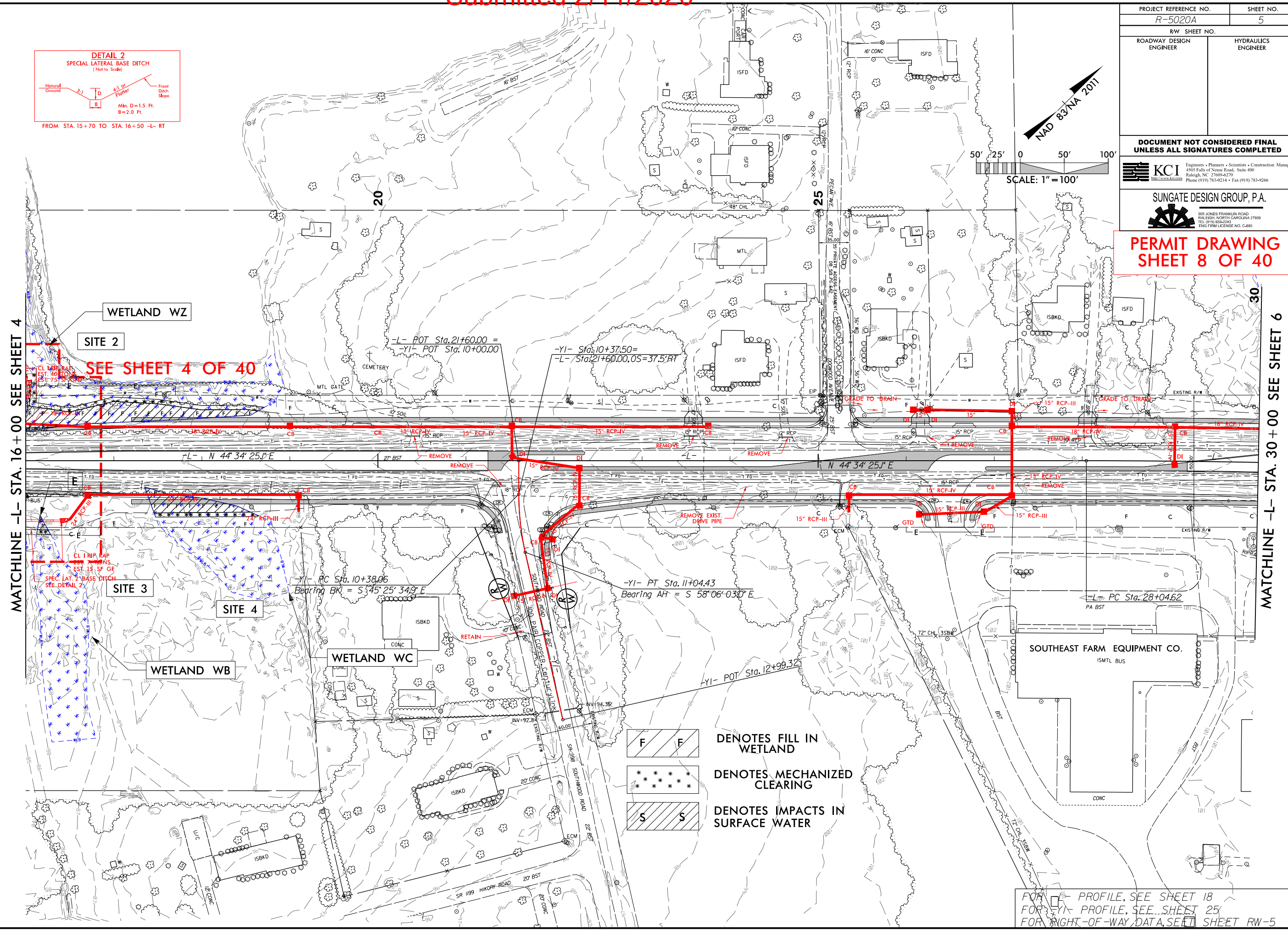
SOUTHEAST FARM EQUIPMENT CO.

R6620A Hyd.prm-wet-psh\_05.dgn



PROJECT REFERENCE NO. R-5020A	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p> <p>KCI Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266</p> <p><b>SUNGATE DESIGN GROUP, P.A.</b> 805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27605 TEL (919) 858-2243 ENG. FIRM LICENSE NO. C-690</p>	

**PERMIT DRAWING SHEET 8 OF 40**



MATCHLINE -L- STA. 16+00 SEE SHEET 4

MATCHLINE -L- STA. 30+00 SEE SHEET 6

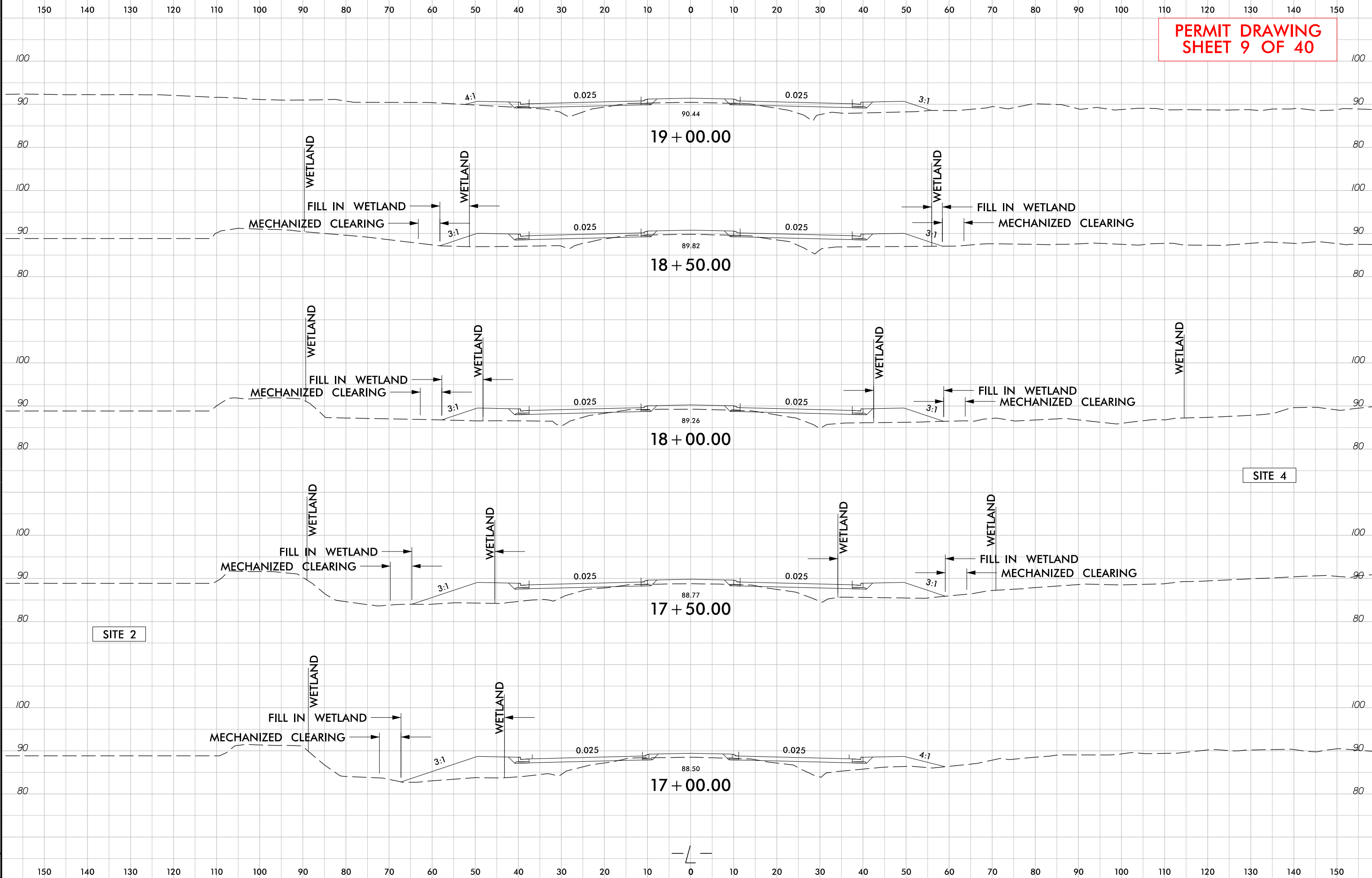
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES IMPACTS IN SURFACE WATER

FOR PROFILE, SEE SHEET 18  
FOR YI- PROFILE, SEE SHEET 25  
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-5





PROJ. REFERENCE NO.	SHEET NO.
R-5020A	X-4

PERMIT DRAWING  
SHEET 9 OF 40



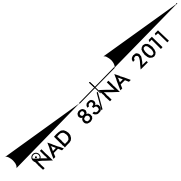
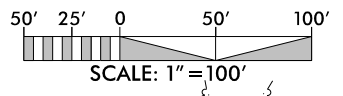
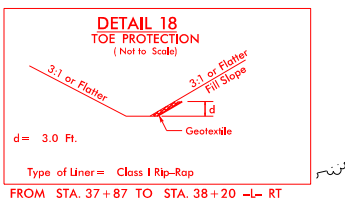
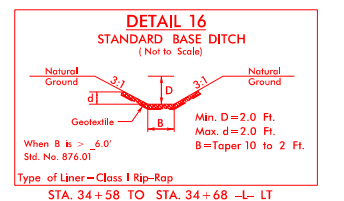
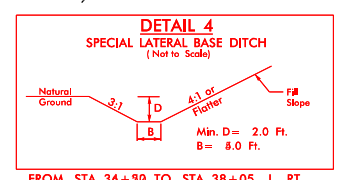
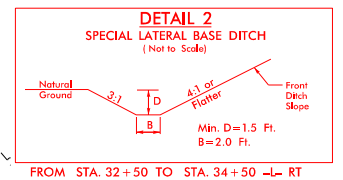
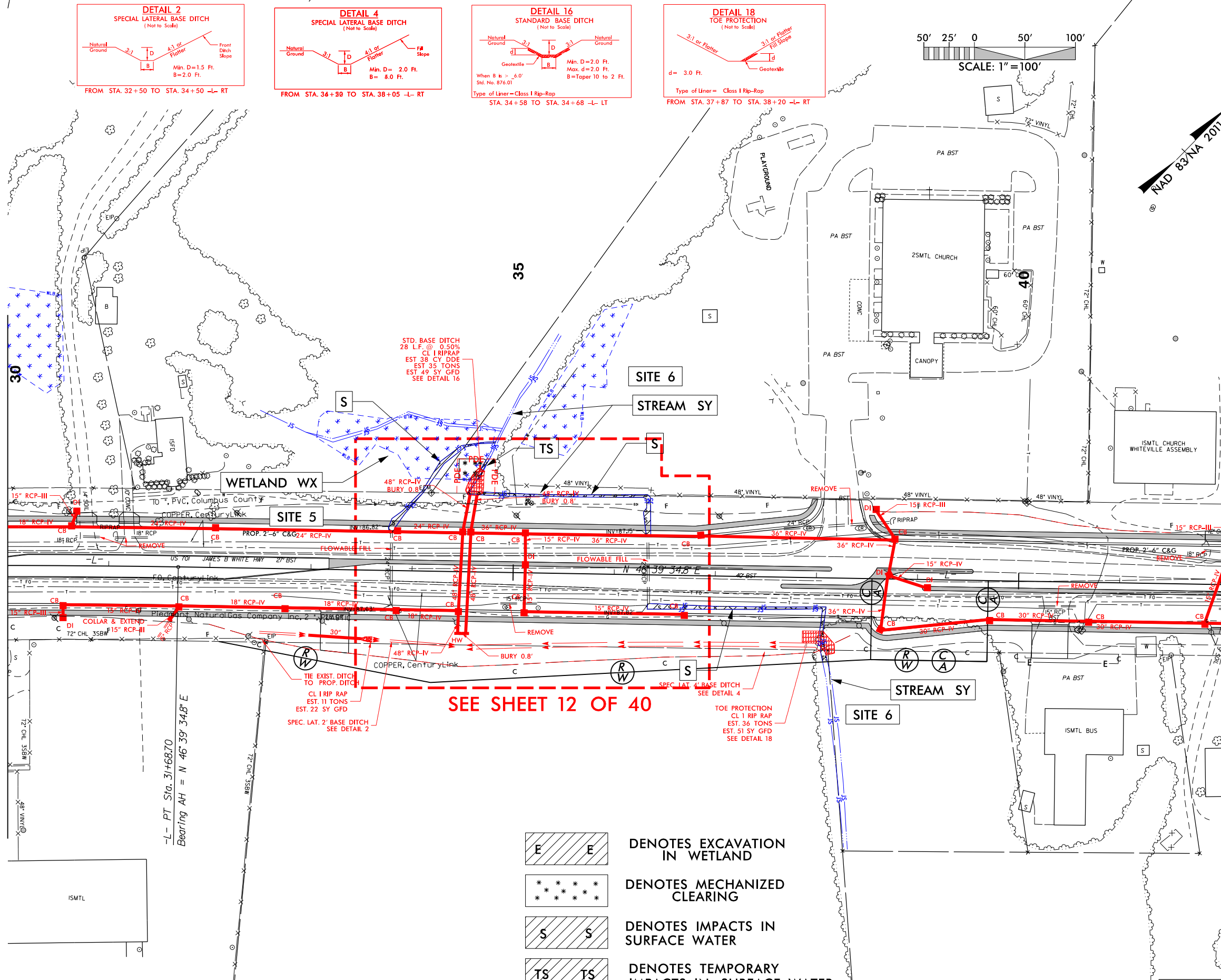






PROJECT REFERENCE NO. R-5020A	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p>  <p>KCI Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-4270 Phone (919) 783-9214 • Fax (919) 783-9256</p>  <p>SUNGATE DESIGN GROUP, P.A. 805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 TEL (919) 858-2748 ENG FIRM LICENSE NO. C-890</p>	

**PERMIT DRAWING SHEET 10 OF 40**

MATCHLINE -L- STA. 30 + 00 SEE SHEET 5

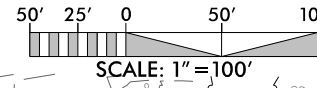
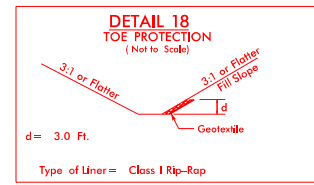
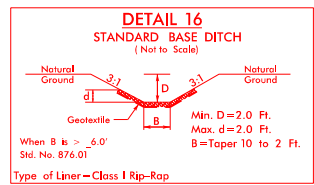
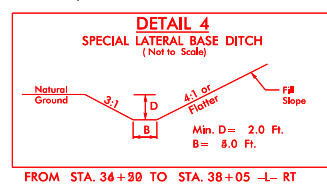
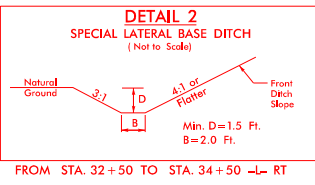
MATCHLINE -L- STA. 43 + 50 SEE SHEET 7



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

FOR -L- PROFILE, SEE SHEET 19  
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-6

R:\2020\018\102020\102020\hyd\_prm\_wet\_psh\_06.dgn



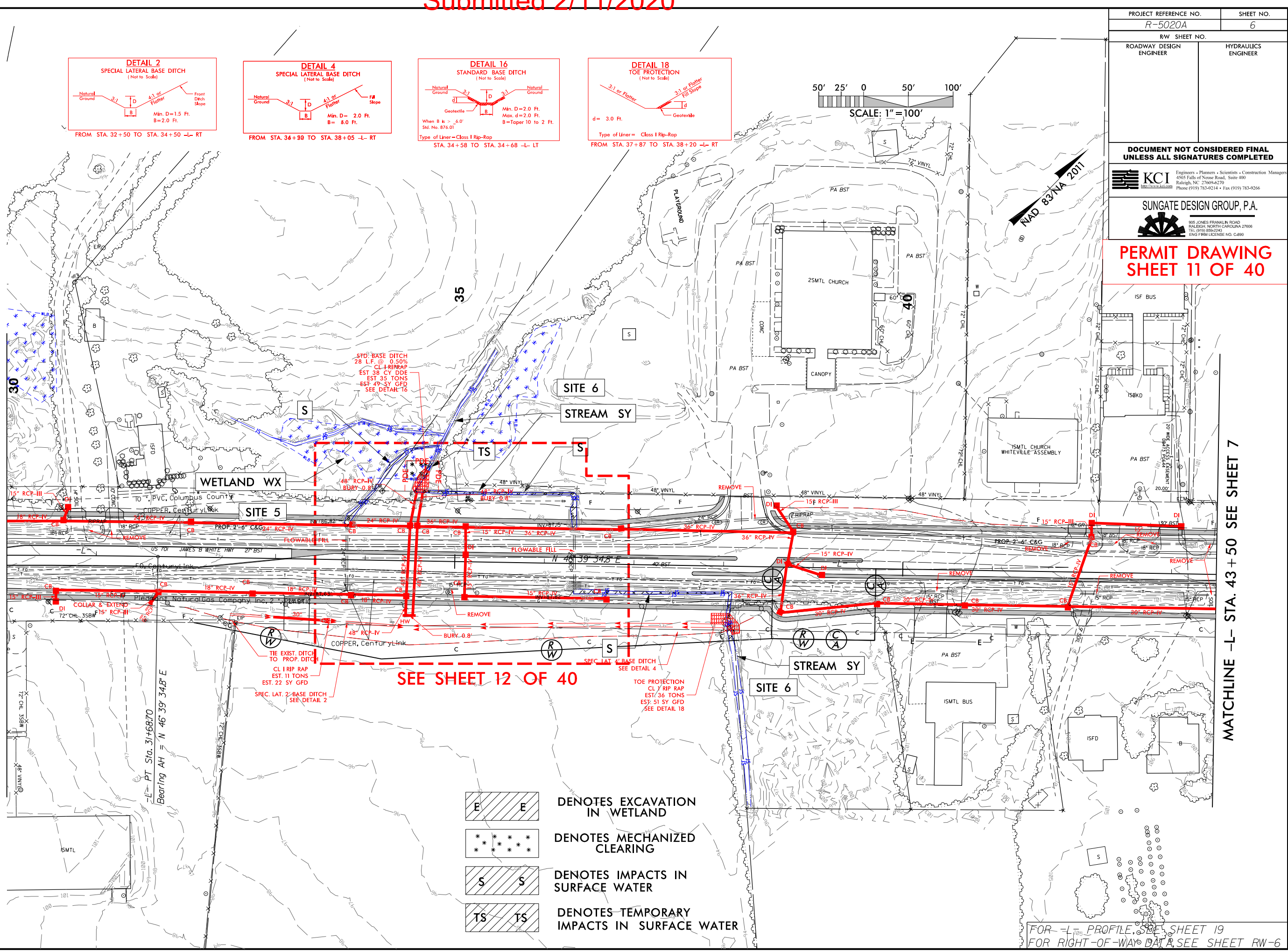
**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**

**PERMIT DRAWING SHEET 11 OF 40**

MATCHLINE -L- STA. 30+00 SEE SHEET 5

MATCHLINE -L- STA. 43+50 SEE SHEET 7

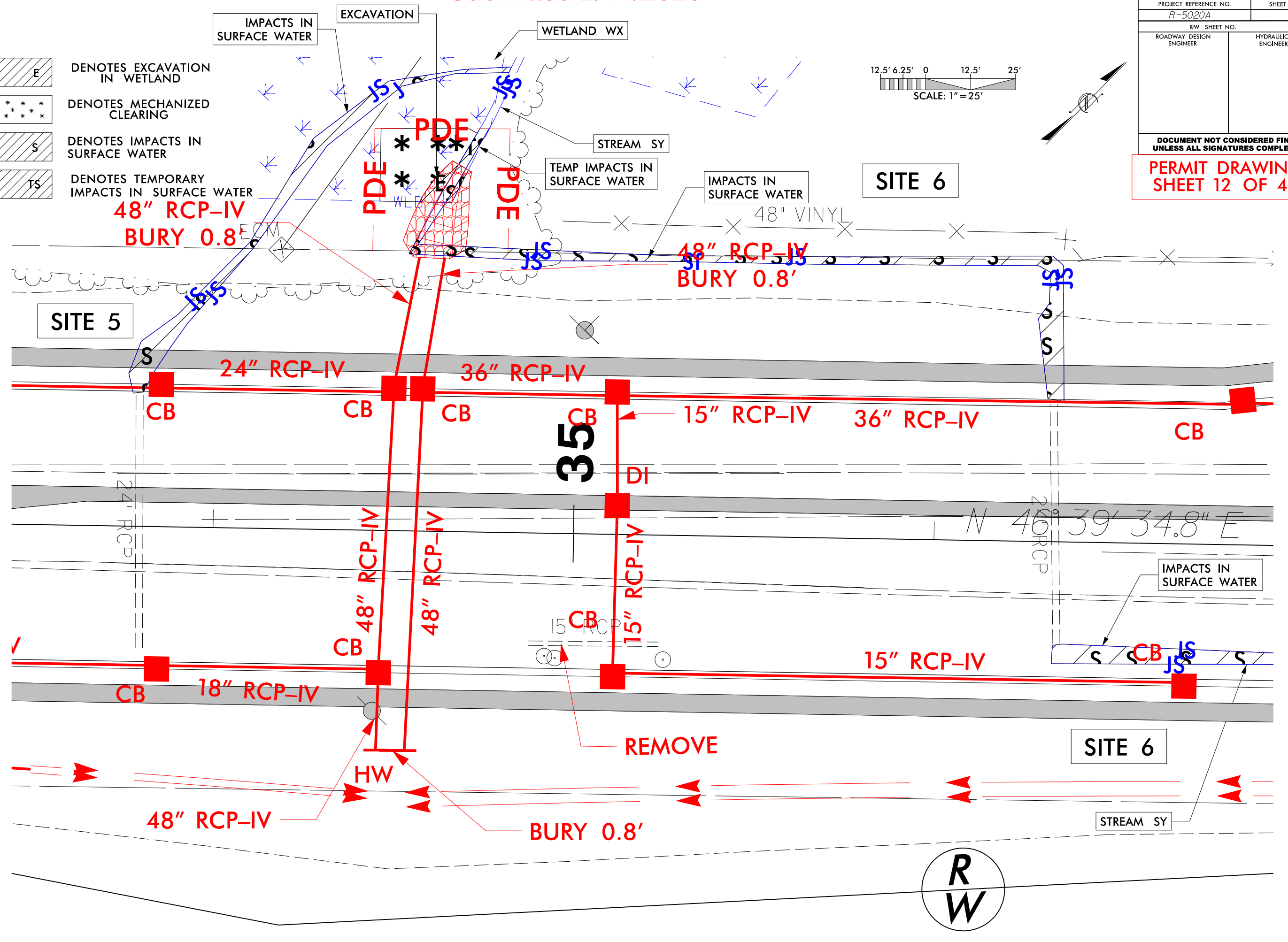
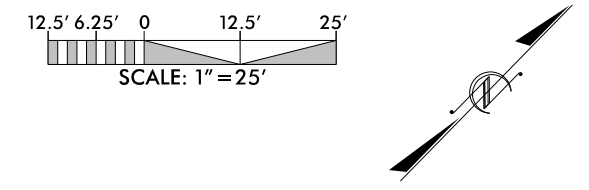


- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



FOR -L- PROFILE, SEE SHEET 19  
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-6

PROJECT REFERENCE NO. R-5020A	SHEET NO.
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

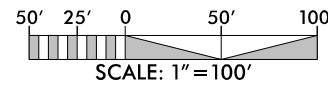
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



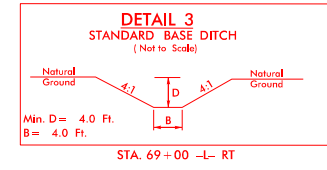
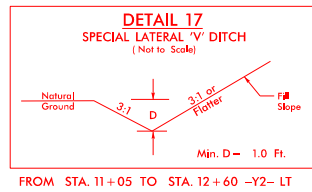
PERMIT DRAWING SHEET 12 OF 40

PROJECT REFERENCE NO. R-5020A	SHEET NO. 8
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 KCI <small>Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266</small>	
 SUNGATE DESIGN GROUP, P.A. <small>805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 TEL (919) 868-2243 ENG. FIRM LICENSE NO. C-690</small>	

PERMIT DRAWING SHEET 13 OF 40

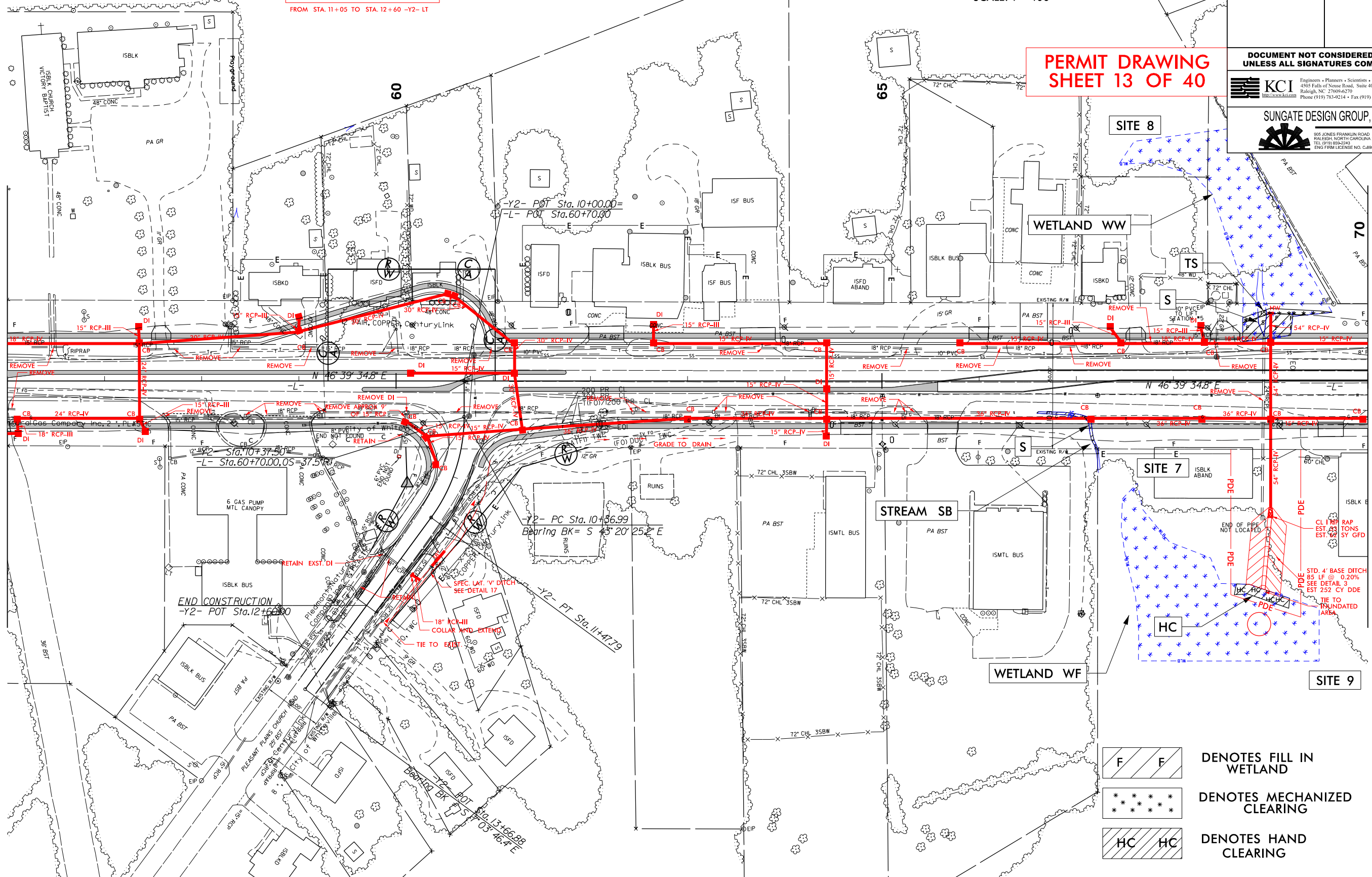




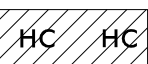
NAD 83/NA 2011



MATCHLINE -L- STA. 56+00 SEE SHEET 7

MATCHLINE -L- STA. 70+00 SEE SHEET 9



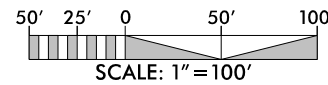
-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING
-  DENOTES HAND CLEARING

FOR -L- PROFILE, SEE SHEET 20  
 FOR -Y2- PROFILE, SEE SHEET 25  
 FOR RIGHT-OF-WAY DATA, SEE SHEET RW-8

8/17/99  
 R-5020A Hyd.prm.wet.psh.08.dgn  
 2/27/2018

PROJECT REFERENCE NO. R-5020A	SHEET NO. 8
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
KCI Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-4270 Phone (919) 783-9214 • Fax (919) 783-9266	
SUNGATE DESIGN GROUP, P.A. 805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 TEL (919) 868-2243 ENG. FIRM LICENSE NO. C-690	

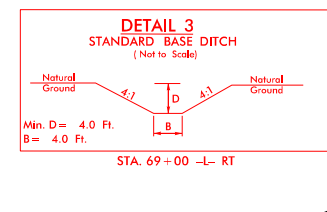
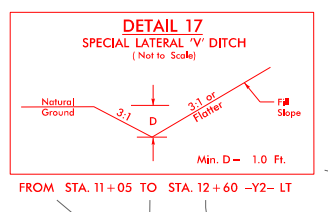
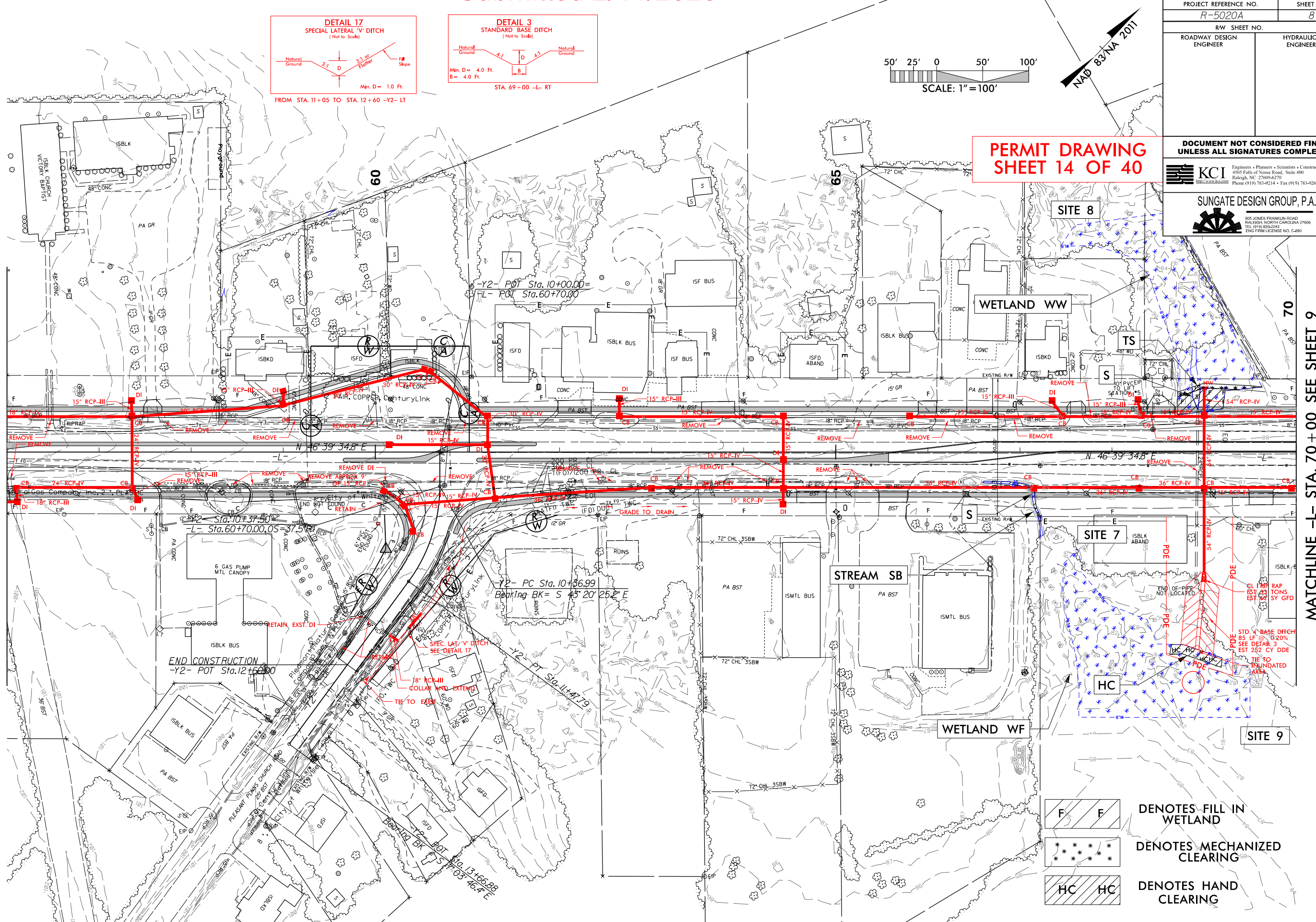
**PERMIT DRAWING  
SHEET 14 OF 40**



NAD 83/NA 2011

MATCHLINE -L- STA. 56+00 SEE SHEET 7

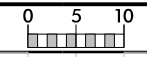
MATCHLINE -L- STA. 70+00 SEE SHEET 9



- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES HAND CLEARING

FOR -L- PROFILE, SEE SHEET 20  
FOR -Y2- PROFILE, SEE SHEET 25  
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-8

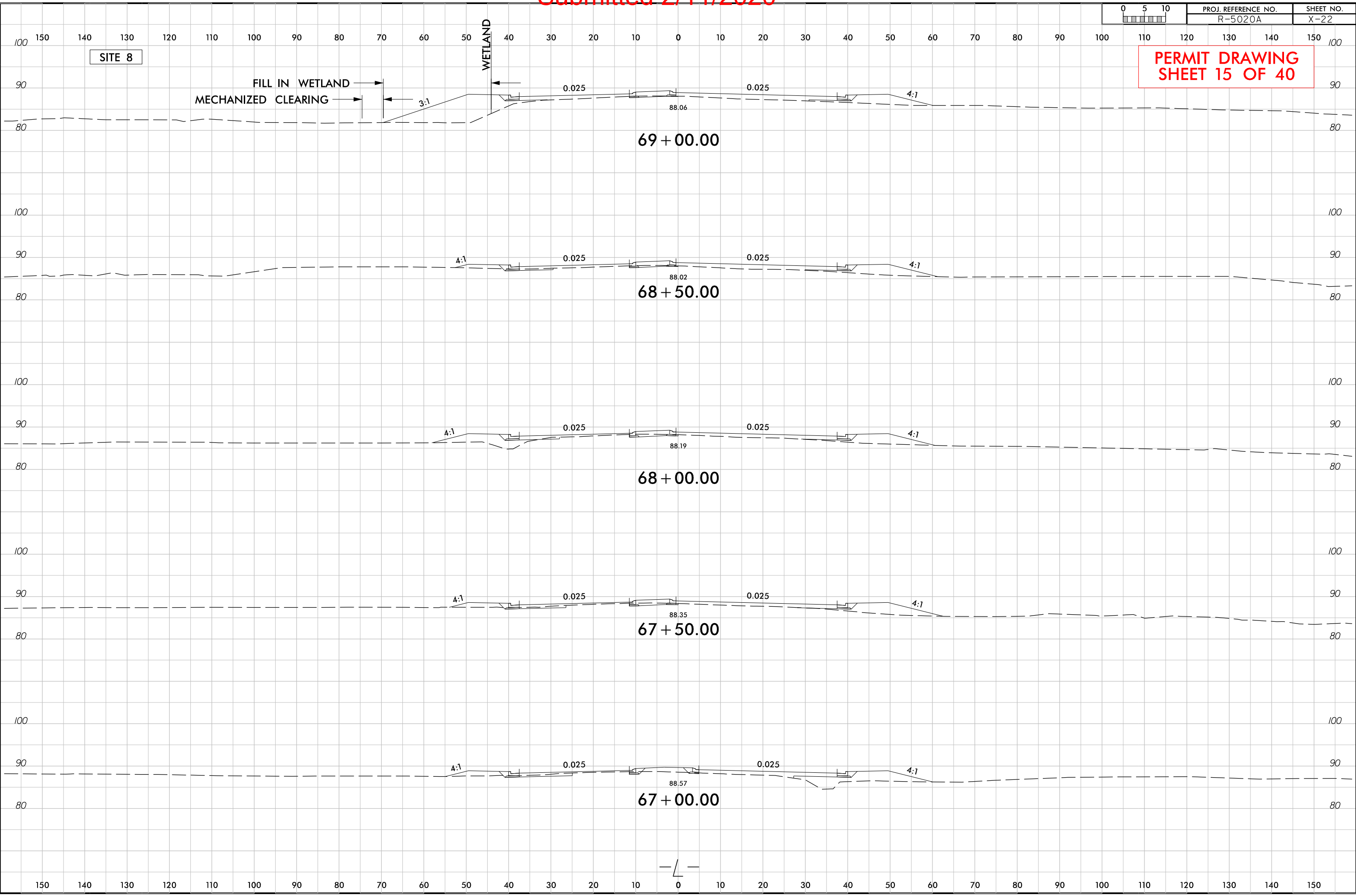
8/17/99  
R-5020A Hyd.prm...wet...08A.dgn



PROJ. REFERENCE NO.	SHEET NO.
R-5020A	X-22

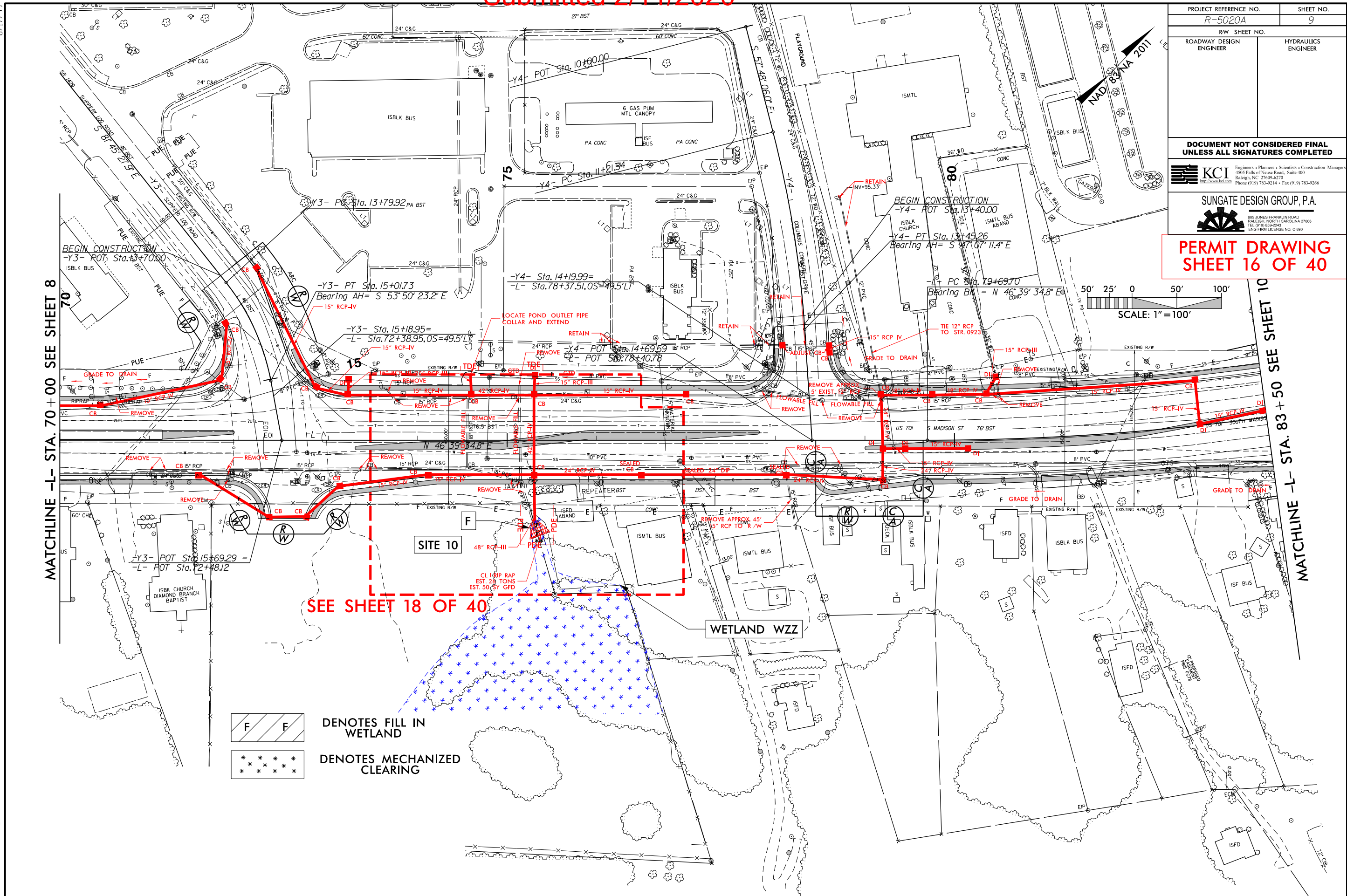
SITE 8

PERMIT DRAWING  
SHEET 15 OF 40



PROJECT REFERENCE NO. R-5020A	SHEET NO. 9
RW SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	
<p><b>KCI</b> Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-4270 Phone (919) 783-9214 • Fax (919) 783-9266</p>	
<p><b>SUNGATE DESIGN GROUP, P.A.</b> 805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27605 TEL (919) 868-2943 ENG FIRM LICENSE NO. C-690</p>	

**PERMIT DRAWING  
SHEET 16 OF 40**



MATCHLINE -L- STA. 70 + 00 SEE SHEET 8



MATCHLINE -L- STA. 83 + 50 SEE SHEET 10

**F F** DENOTES FILL IN WETLAND

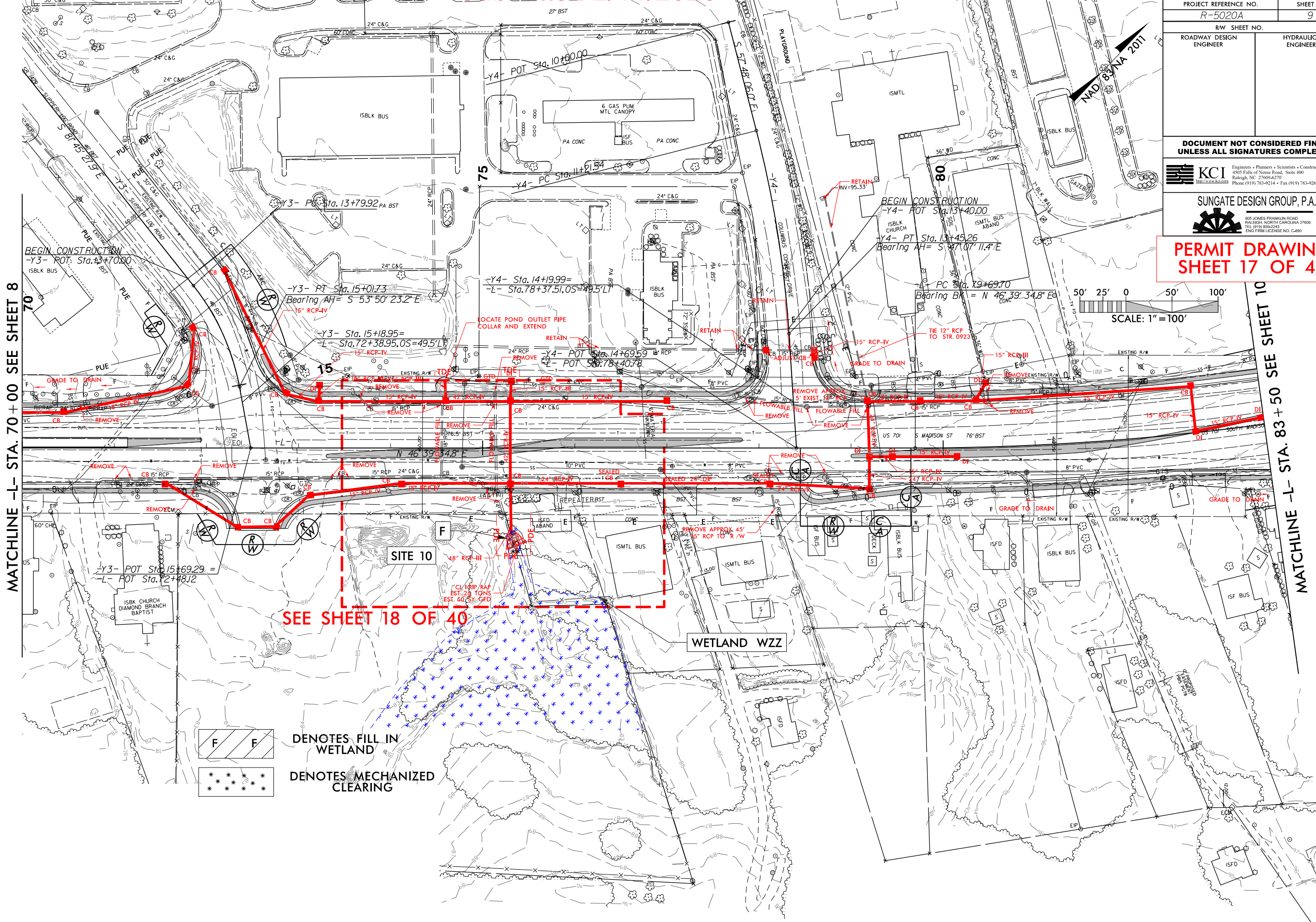
**\* \* \* \* \*** DENOTES MECHANIZED CLEARING

FOR -L- PROFILE, SEE SHEET 20  
 FOR -Y3-, -Y4- PROFILE, SEE SHEET 25  
 FOR RIGHT-OF-WAY DATA, SEE SHEET RW-9

16/27/2018 10:02:00 AM C:\Users\pash\_09\dgn

PROJECT REFERENCE NO. R-5020A	SHEET NO. 9
RW SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 KCI <small>Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-4270 Phone (919) 783-9214 • Fax (919) 783-9266</small>	
 SUNGATE DESIGN GROUP, P.A. <small>805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27605 TEL (919) 868-2943 ENG FIRM LICENSE NO. C-690</small>	

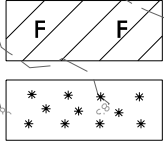
**PERMIT DRAWING  
SHEET 17 OF 40**



MATCHLINE -L- STA. 70 + 00 SEE SHEET 80

MATCHLINE -L- STA. 83 + 50 SEE SHEET 10

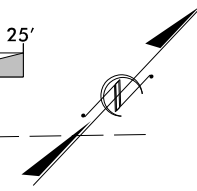
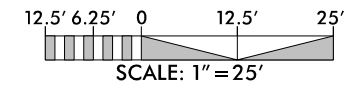
SEE SHEET 18 OF 40



FOR -L- PROFILE, SEE SHEET 20  
 FOR -Y3-, -Y4- PROFILE, SEE SHEET 25  
 FOR RIGHT-OF-WAY DATA, SEE SHEET RW-9

8/17/99  
 2/27/2018  
 R-5020A\_Hyd\_perm\_wet.psh\_09A.dgn

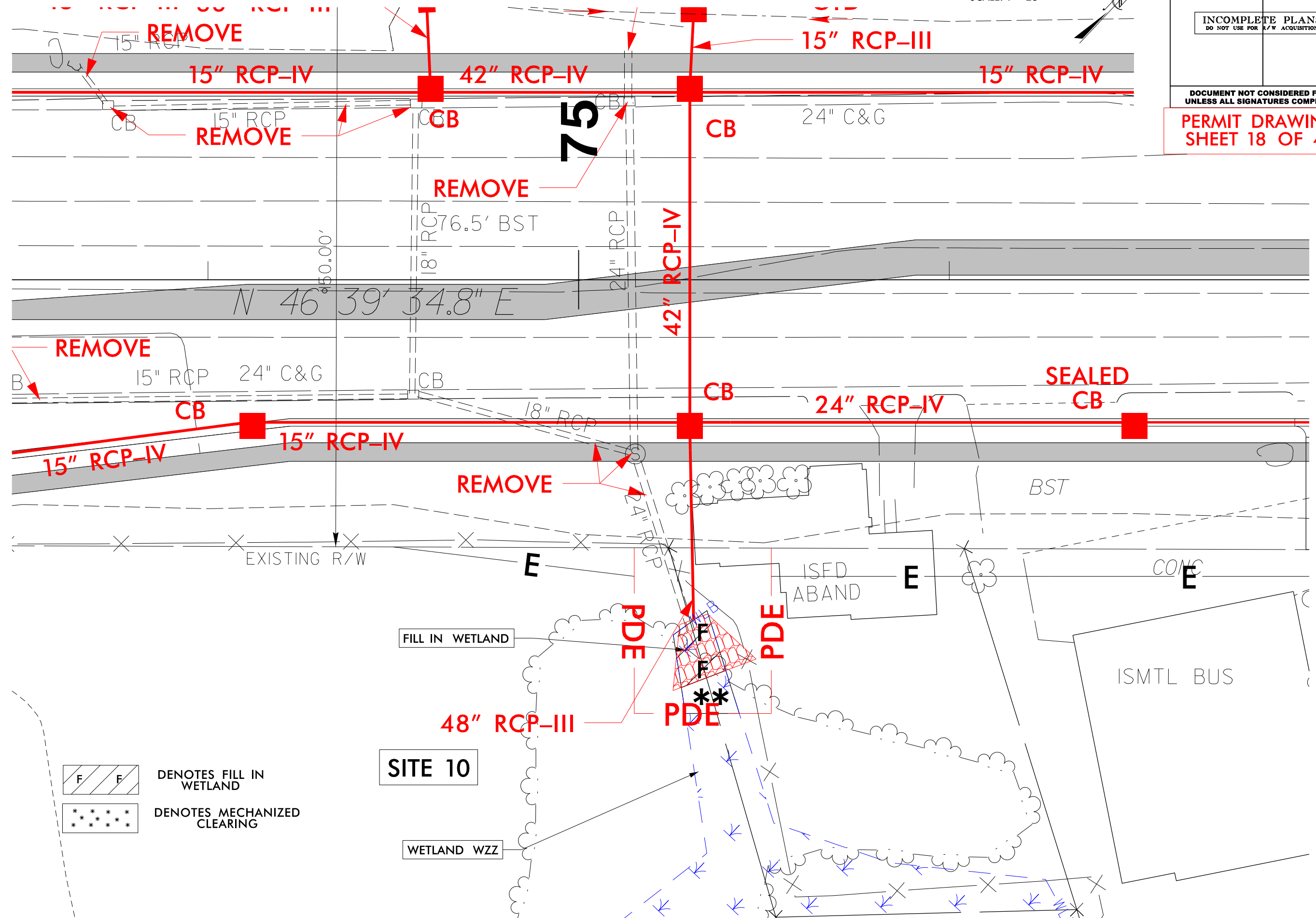




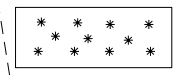
PROJECT REFERENCE NO. R-5020A	SHEET NO.
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED  
**PERMIT DRAWING  
SHEET 18 OF 40**



DENOTES FILL IN WETLAND



DENOTES MECHANIZED CLEARING

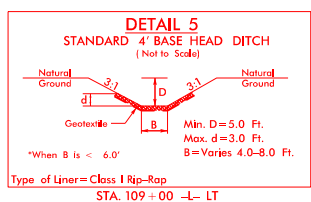
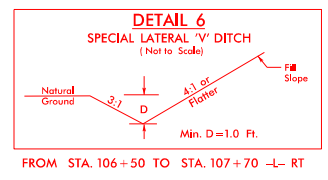
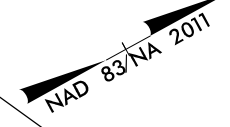
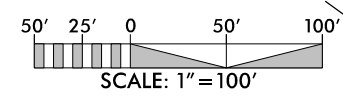
**SITE 10**

WETLAND WZZ

12/27/2018  
R-5020A Hyd.prm...wet.psh\_09B-View-1.in.dgn

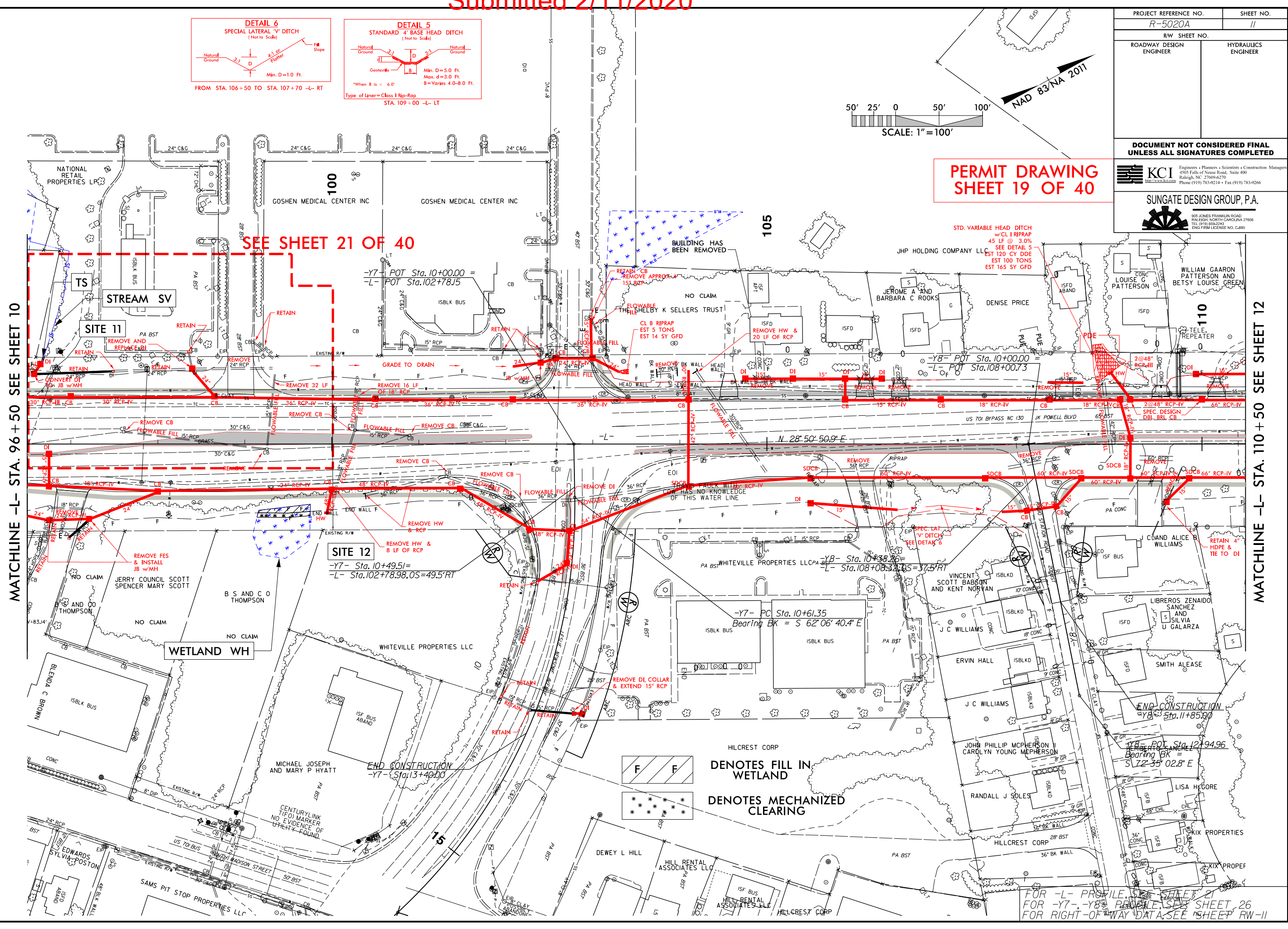
PROJECT REFERENCE NO. R-5020A		SHEET NO. 11	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<p><b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b></p> <p><b>KCI</b> Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266</p> <p><b>SUNGATE DESIGN GROUP, P.A.</b> 805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 TEL (919) 828-2243 ENG FIRM LICENSE NO. C-680</p>			

PERMIT DRAWING SHEET 19 OF 40



MATCHLINE -L- STA. 96+50 SEE SHEET 10

MATCHLINE -L- STA. 110+50 SEE SHEET 12





ROW REV.12 - 02/22/19 - Removed TCE from Parcel 98. (BCS)  
ROW REV.14 - 06/18/19 - Removed TCE from Parcel 47. (BCS)

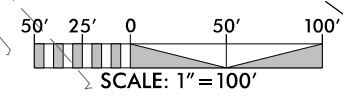
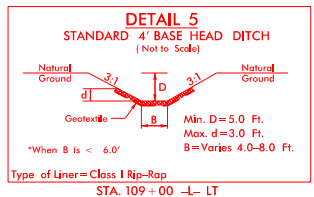
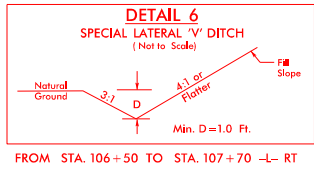
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DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

FOR -L- PROFILE, SEE SHEET 21  
FOR -Y7-, -Y8- PROFILES, SEE SHEET 26  
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-11

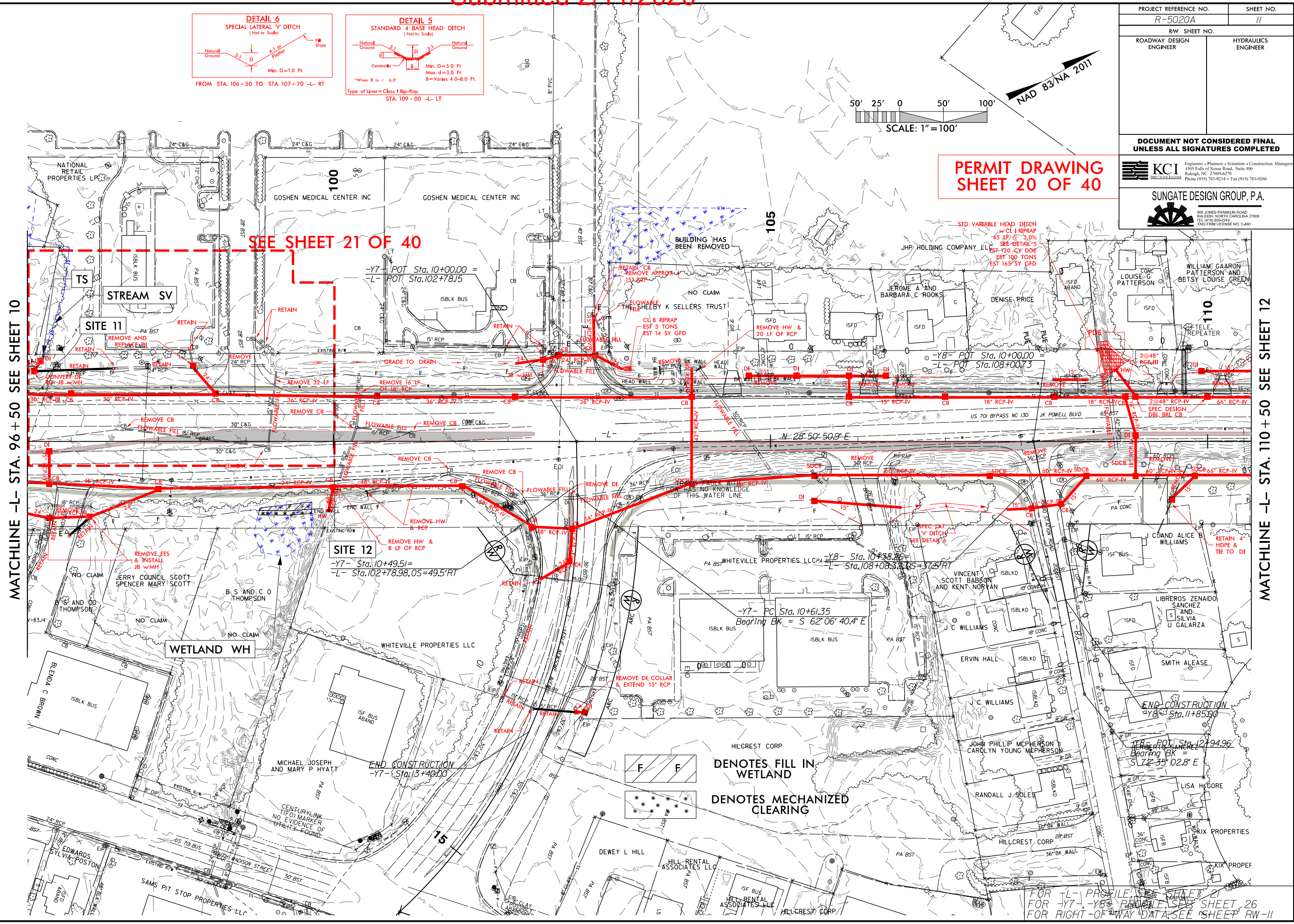
PROJECT REFERENCE NO. R-5020A		SHEET NO. 11	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>			
 KCI <small>Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266</small>		 SUNGATE DESIGN GROUP, P.A. <small>805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27605 TEL (919) 858-2243 ENG. FIRM LICENSE NO. C-690</small>	



**PERMIT DRAWING  
SHEET 20 OF 40**

MATCHLINE -L- STA. 96+50 SEE SHEET 10

MATCHLINE -L- STA. 110+50 SEE SHEET 12



ROW REV.12 - 02/22/19 - Removed TCE from Parcel 98, (BCS)  
ROW REV.14 - 06/18/19 - Removed TCE from Parcel 47, (BCS)

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11/14/2019 10:00 AM

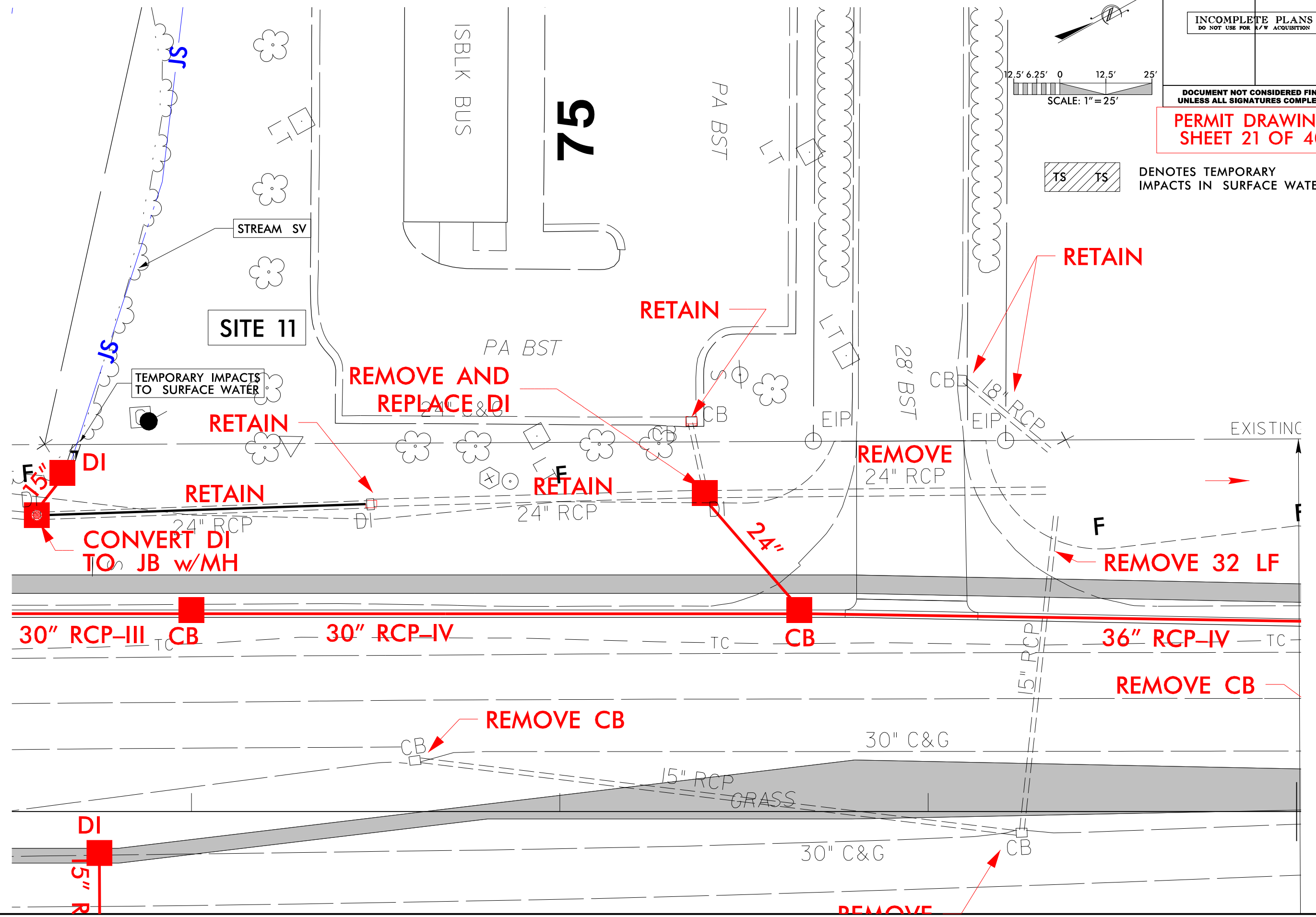
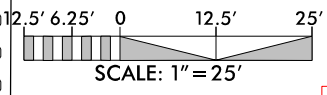
**F F**  
DENOTES FILL IN WETLAND  
**\***  
DENOTES MECHANIZED CLEARING

FOR TL-PROFILES SEE SHEET 21  
FOR -Y7-, -Y8- PROFILES SEE SHEET 26  
FOR RIGHT-OF-WAY DATA SEE SHEET RW-11

PROJECT REFERENCE NO. R-5020A	SHEET NO.
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	

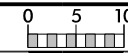
**PERMIT DRAWING SHEET 21 OF 40**

**TS TS** DENOTES TEMPORARY IMPACTS IN SURFACE WATER



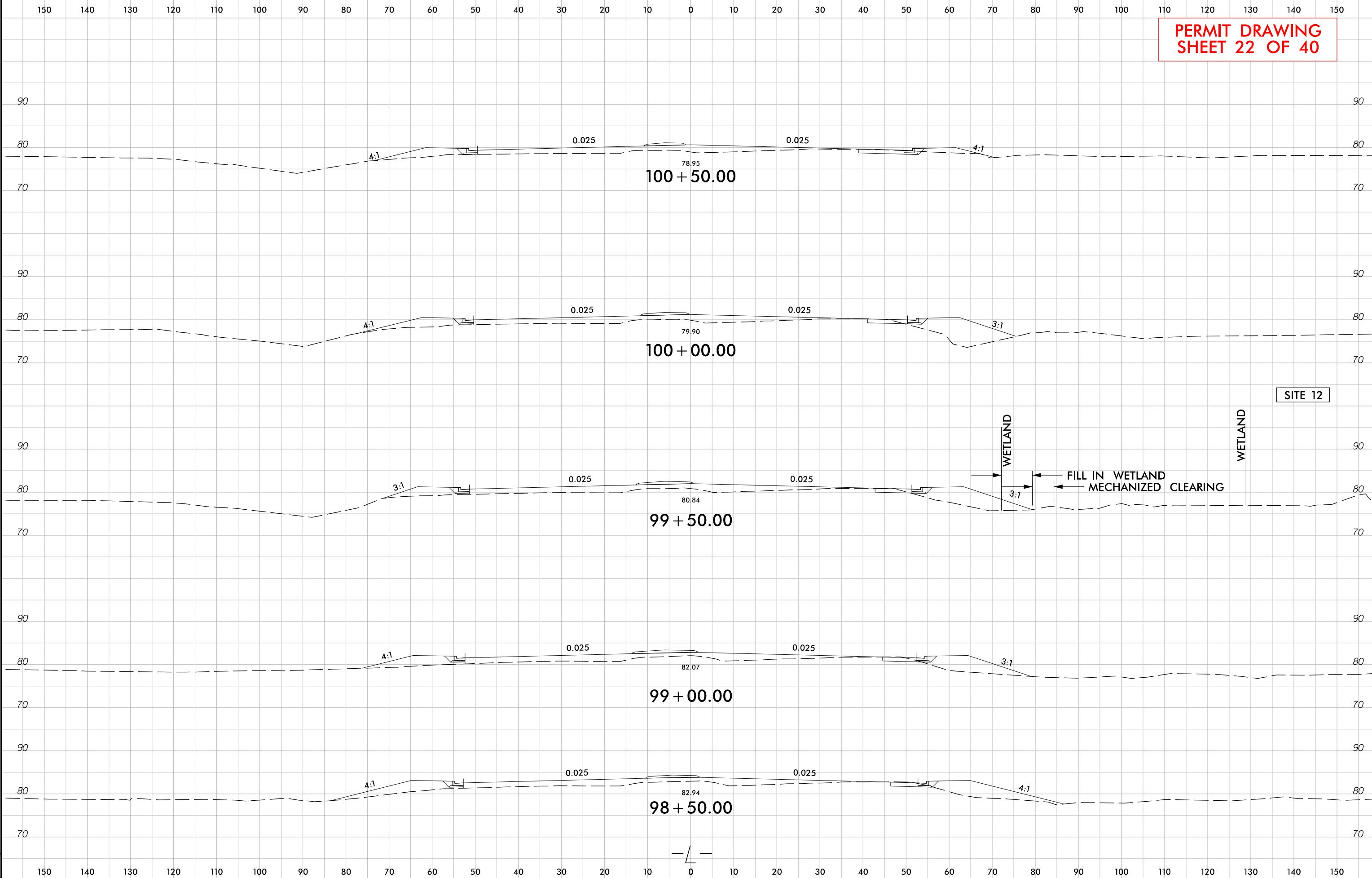
8/17/99

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PROJ. REFERENCE NO.	SHEET NO.
R-5020A	X-34

PERMIT DRAWING  
SHEET 22 OF 40



SITE 12

WETLAND

WETLAND

FILL IN WETLAND  
MECHANIZED CLEARING

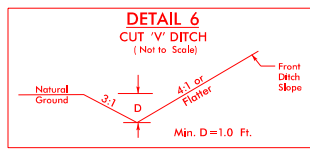


PROJECT REFERENCE NO. R-5020A	SHEET NO. 12
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

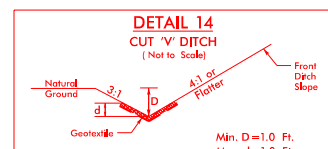
PERMIT DRAWING SHEET 24 OF 40

**KCI**  
Engineers • Planners • Scientists • Construction Managers  
4505 Falls of Neuse Road, Suite 400  
Raleigh, NC 27609-4270  
Phone (919) 783-9214 • Fax (919) 783-9266

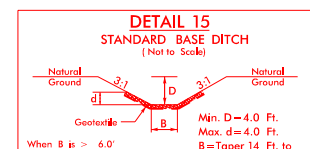
**SUNGATE DESIGN GROUP, P.A.**  
805 JONES FRANKLIN ROAD  
RALEIGH, NORTH CAROLINA 27605  
TEL (919) 858-9293  
ENG. FIRM LICENSE NO. C-690



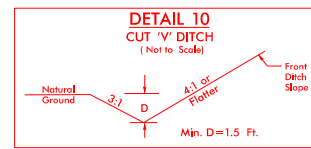
FROM STA. 13+50 TO STA. 14+40 -Y9- RT  
 FROM STA. 12+45 TO STA. 14+85 -Y9- LT  
 FROM STA. 114+30 TO STA. 114+85 -L- LT  
 FROM STA. 115+78 TO STA. 116+50 -L- LT  
 FROM STA. 115+00 TO STA. 118+00 -L- RT  
 FROM STA. 12+25 TO STA. 13+28 -Y10- LT  
 FROM STA. 118+75 TO STA. 120+00 -L- LT  
 FROM STA. 123+75 TO STA. 128+00 -L- RT



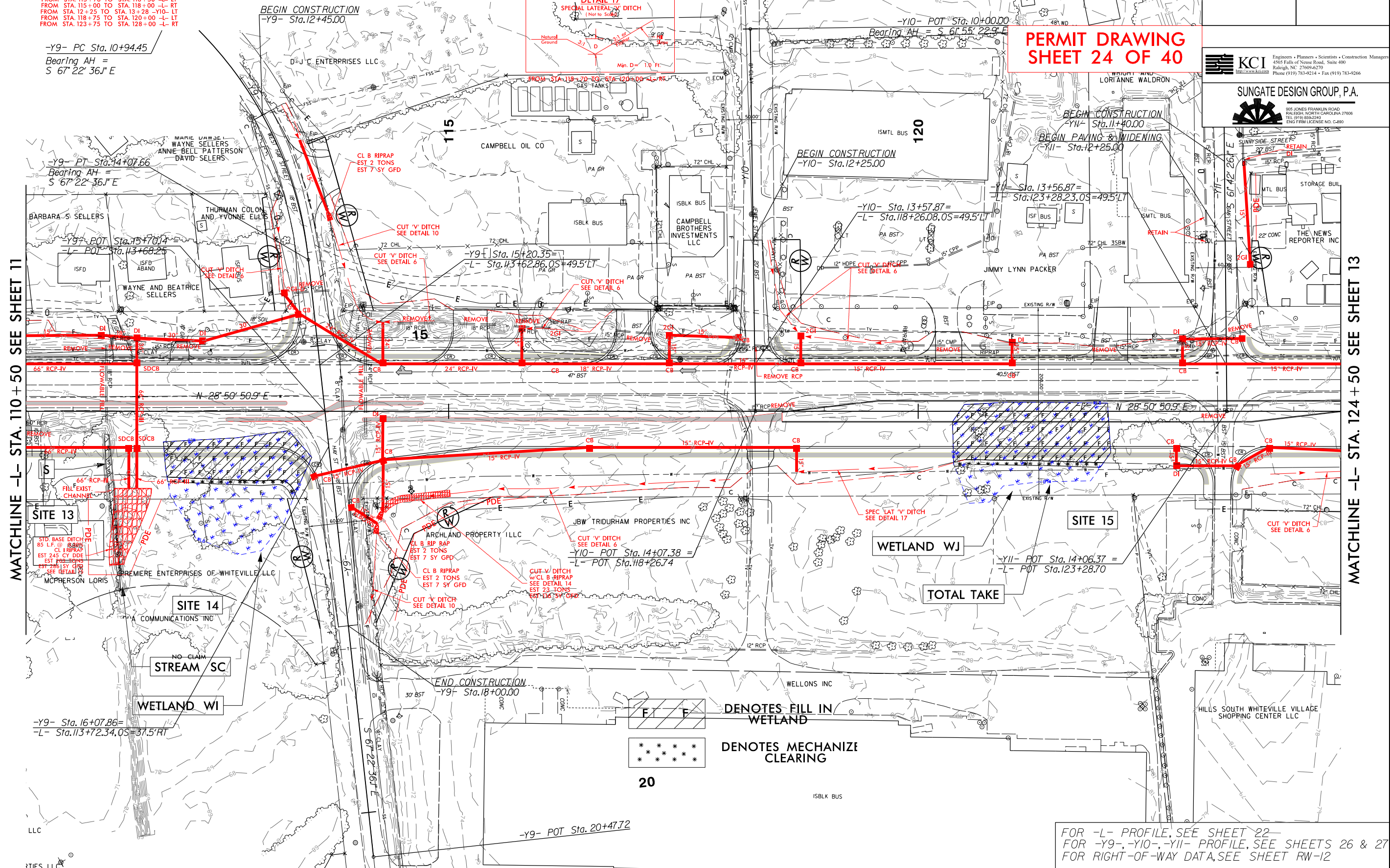
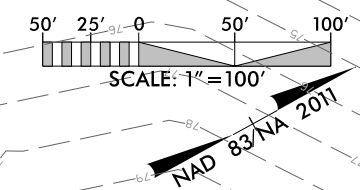
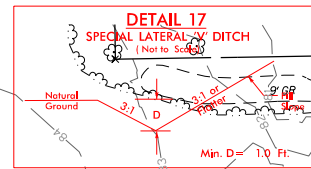
FROM STA. 114+30 TO STA. 115+00 -L- RT



FROM STA. 111+64 -L- RT



FROM STA. 16+80 TO STA. 18+00 -Y9- LT



-Y9- PC Sta. 10+94.45  
 Bearing AH = S 67° 22' 36.1" E

-Y9- PT Sta. 14+07.66  
 Bearing AH = S 67° 22' 36.1" E

-Y9- POT Sta. 15+70.14  
 Bearing AH = S 67° 22' 36.1" E

-Y9- Sta. 16+07.86 =  
 -L- Sta. 113+72.34, OS = 31.5' RT

-Y9- POT Sta. 20+47.72

20

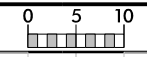
DENOTES FILL IN WETLAND

DENOTES MECHANIZE CLEARING

FOR -L- PROFILE, SEE SHEET 22  
 FOR -Y9-, -Y10-, -Y11- PROFILE, SEE SHEETS 26 & 27  
 FOR RIGHT-OF-WAY DATA, SEE SHEET RW-12

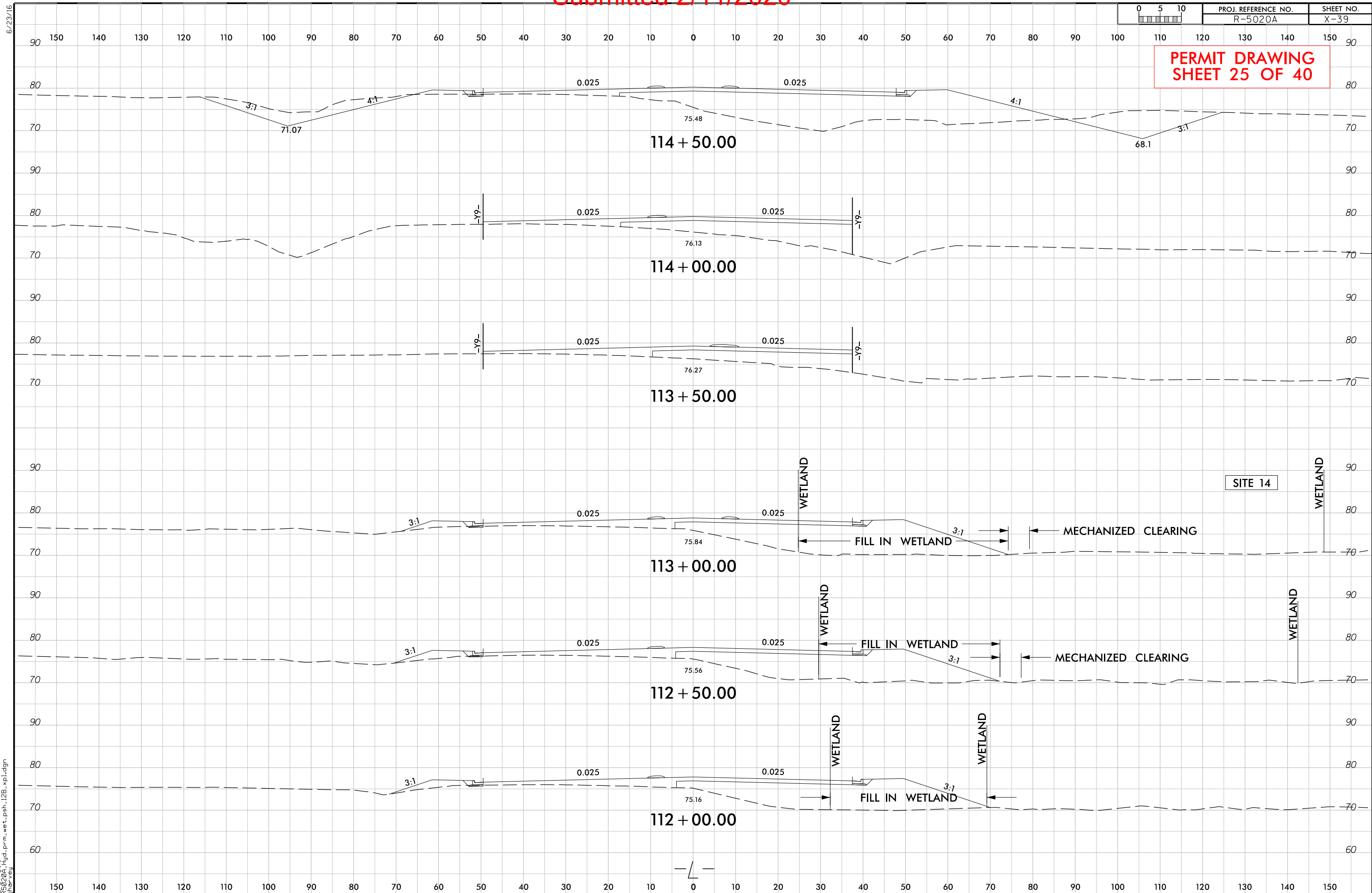
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12/27/2019  
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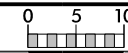
PROJ. REFERENCE NO.	SHEET NO.
R-5020A	X-39

PERMIT DRAWING  
SHEET 25 OF 40

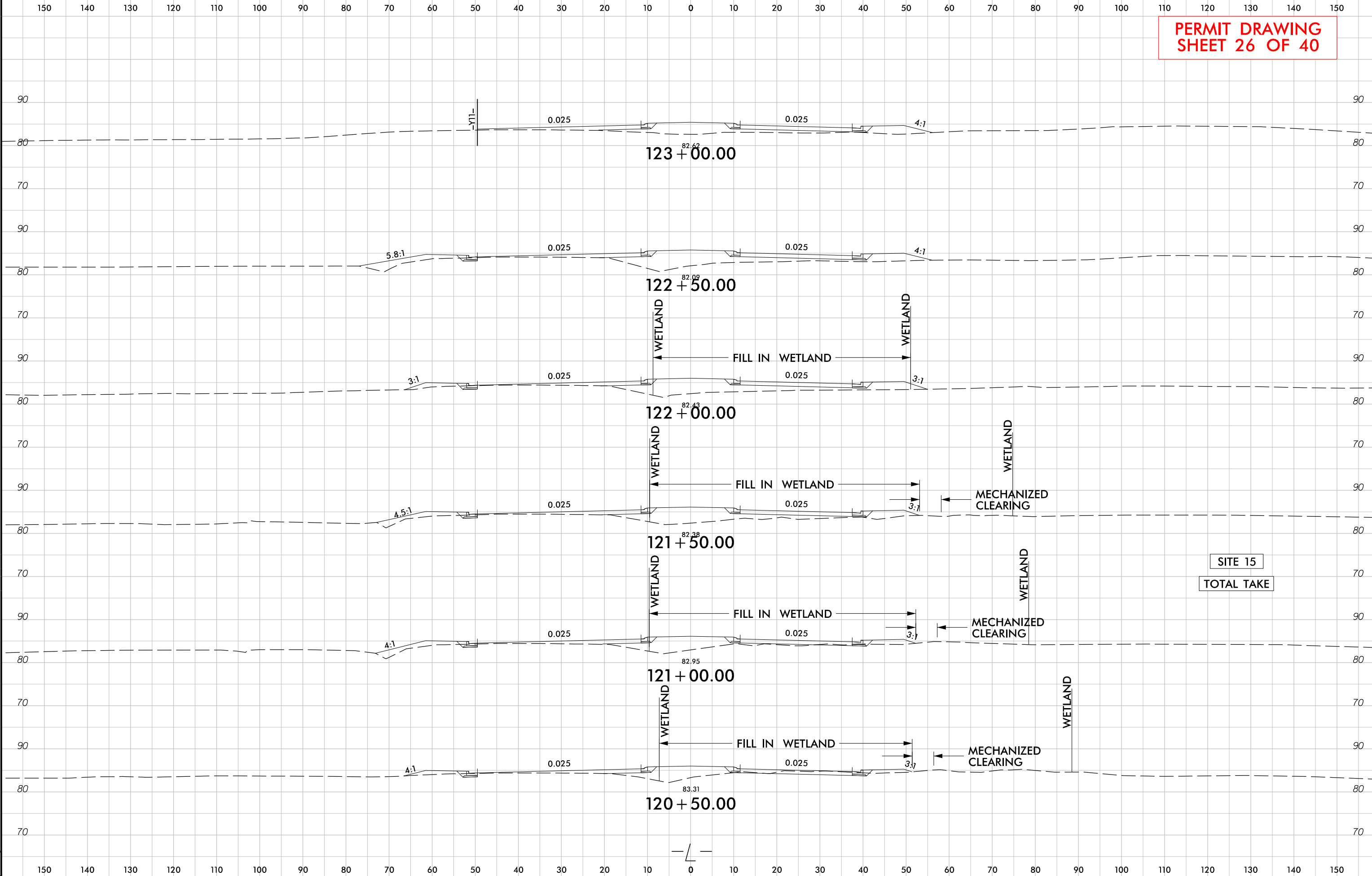


12/21/2019  
R5020A\_Hyd\_prm\_wet\_psh\_12B\_xpl.dgn  
jbarvey





PERMIT DRAWING  
SHEET 26 OF 40



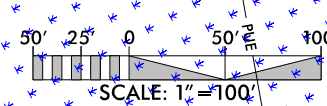
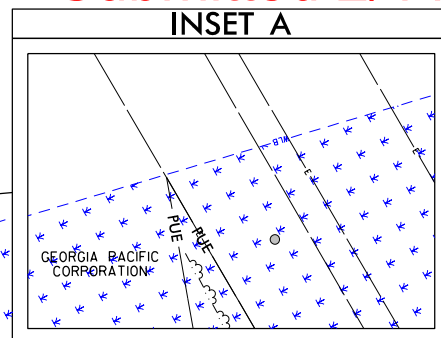
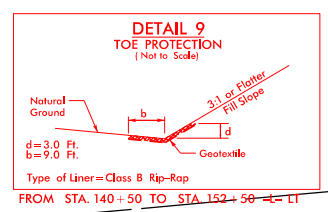
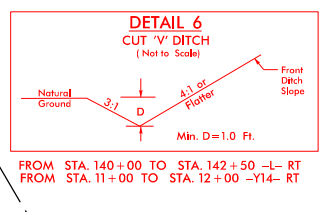
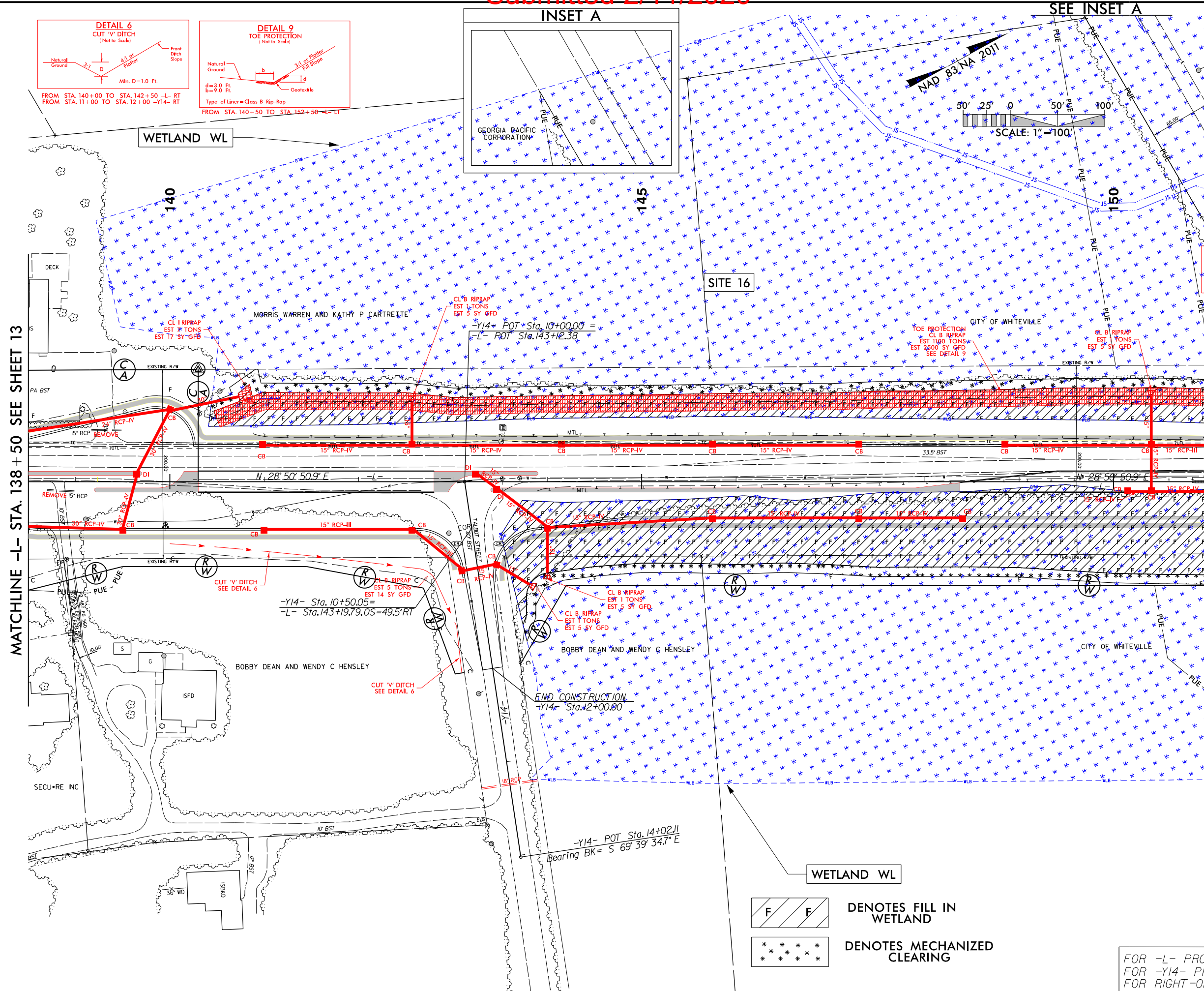
PROJECT REFERENCE NO. R-5020A	SHEET NO. 14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

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SUNGATE DESIGN GROUP, P.A.  
805 JONES FRANKLIN ROAD  
RALEIGH, NORTH CAROLINA 27605  
TEL (919) 858-2243  
ENG FIRM LICENSE NO. C-690

PERMIT DRAWING  
SHEET 27 OF 40



ROW REV.6 - 10/08/18 - Added CA on Parcel 72. (BCS)  
ROW REV.13 - 06/03/19 - Added Parcel 109. Added PUE on Parcels 75 and 109. (BCS)  
ROW REV.14 - 06/24/19 - Added PUE on Parcels 71 and 73. (BCS)

MATCHLINE -L- STA. 138+50 SEE SHEET 13

MATCHLINE -L- STA. 151+00 SEE SHEET 15

**WETLAND WL**

**F F** DENOTES FILL IN WETLAND

**\* \* \* \* \*** DENOTES MECHANIZED CLEARING

FOR -L- PROFILE, SEE SHEET 23  
FOR -Y14- PROFILE, SEE SHEET 27  
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-14

2/27/2020  
14.dgn  
14.dgn

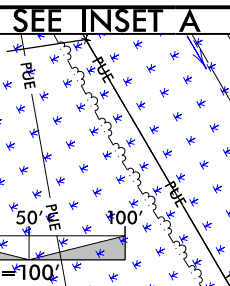
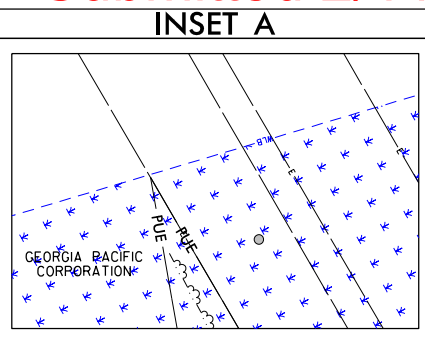
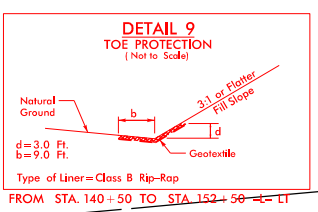
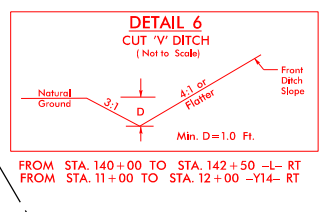
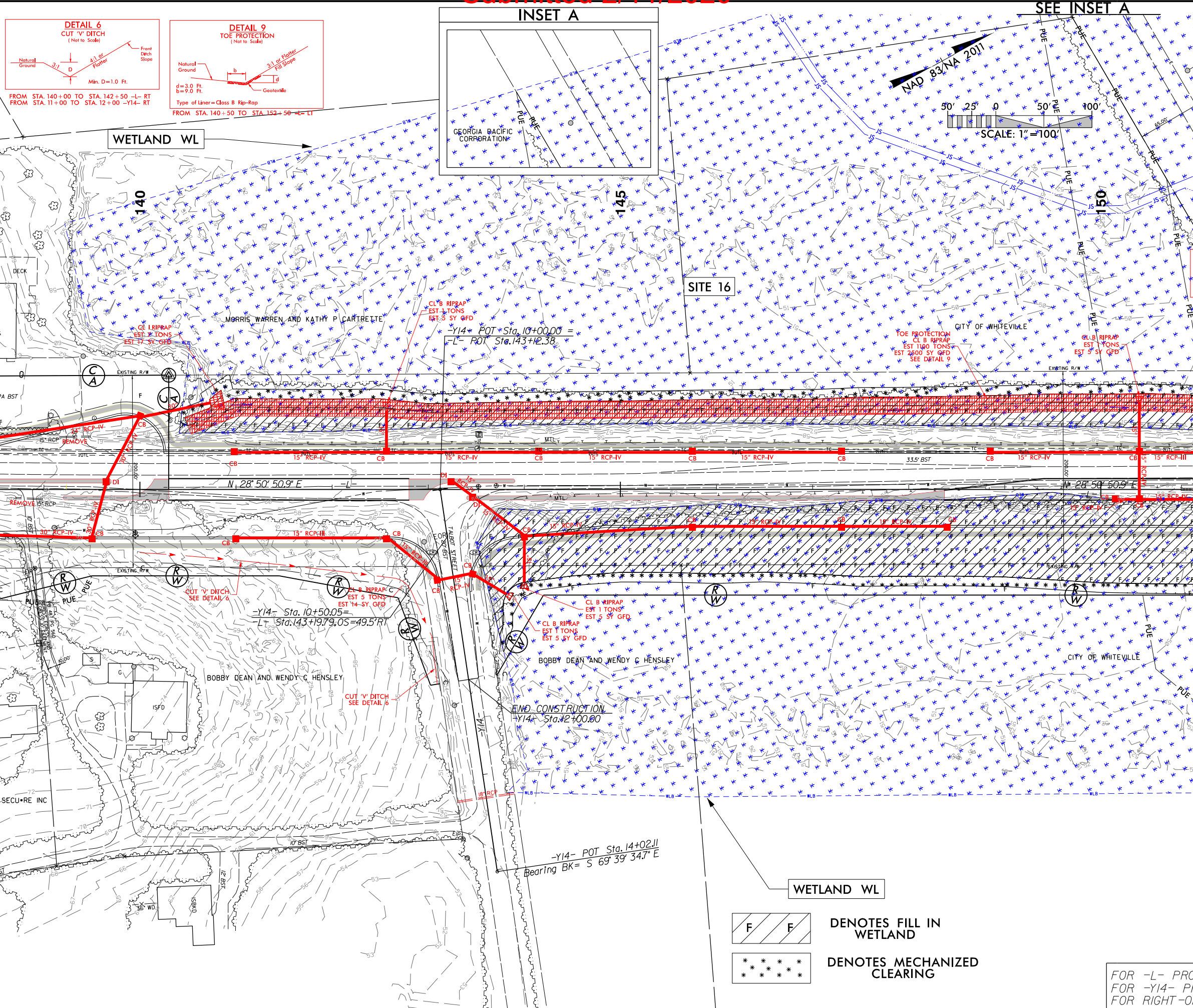
PROJECT REFERENCE NO. <i>R-5020A</i>	SHEET NO. <i>14</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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 RALEIGH, NORTH CAROLINA 27605  
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 ENG FIRM LICENSE NO. C-690

PERMIT DRAWING SHEET 28 OF 40



ROW REV. 6 - 10/08/18 - Added CA on Parcel 72. (BCS)  
 ROW REV. 13 - 06/03/19 - Added Parcel 109. Added PUE on Parcels 75 and 109. (BCS)  
 ROW REV. 14 - 06/24/19 - Added PUE on Parcels 71 and 73. (BCS)

12/27/2019  
 R5020A\_Hyd\_prm\_wet\_psh\_14A.dgn

**WETLAND WL**

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

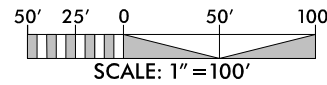
FOR -L- PROFILE, SEE SHEET 23  
 FOR -Y14- PROFILE, SEE SHEET 27  
 FOR RIGHT-OF-WAY DATA, SEE SHEET RW-14

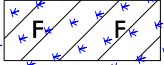
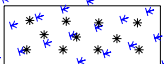

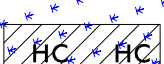
PROJECT REFERENCE NO. R-5020A		SHEET NO. 15	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

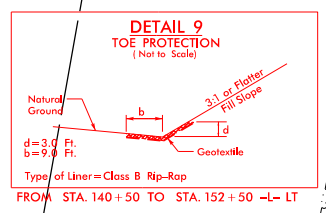
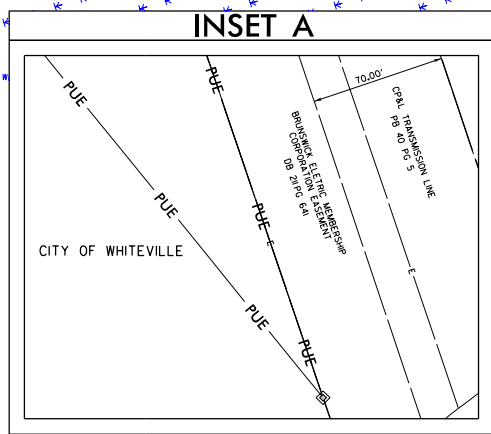
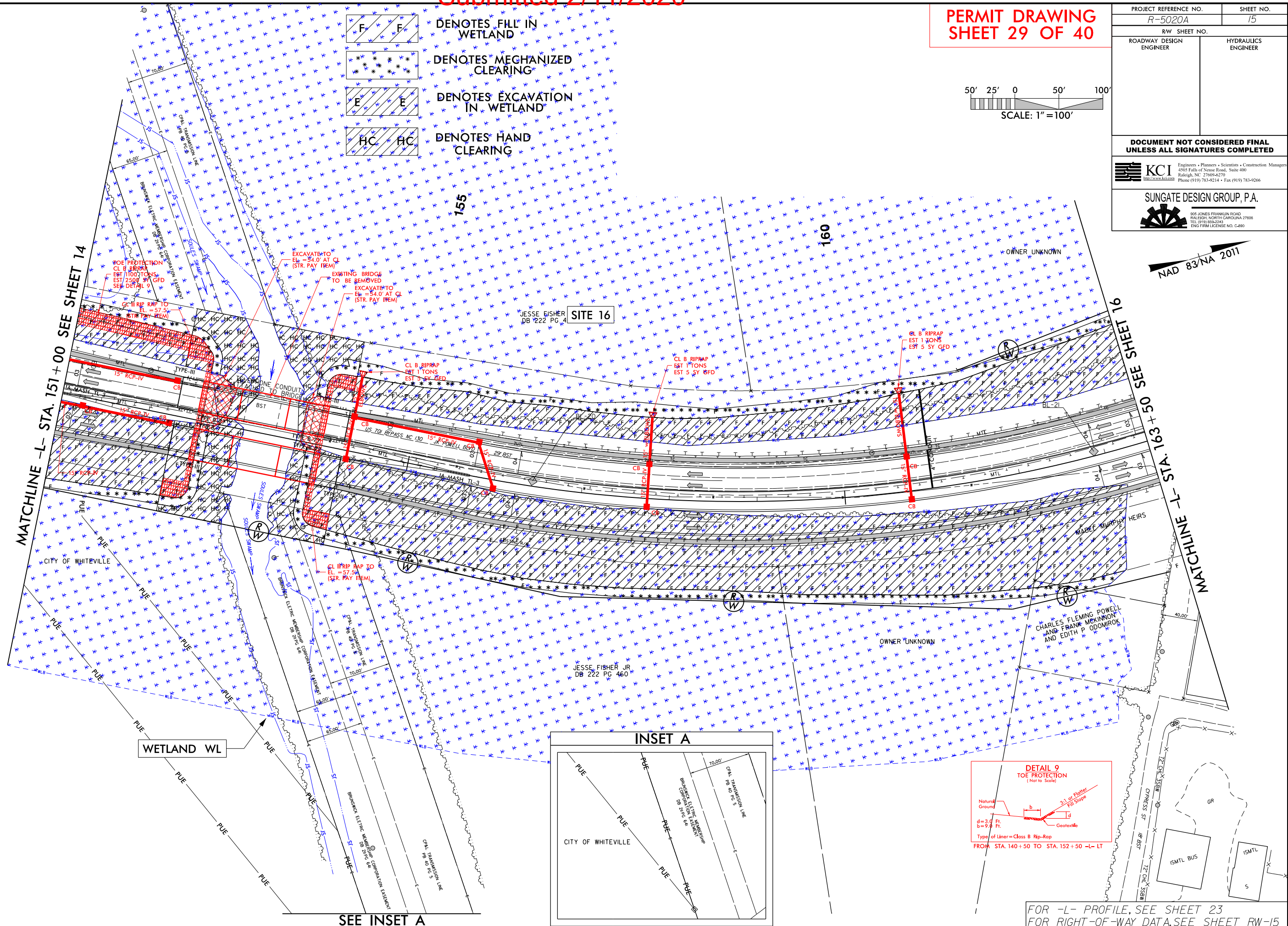
**DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**

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RALEIGH, NORTH CAROLINA 27605  
TEL. (919) 868-2943  
ENG. FIRM LICENSE NO. C-690





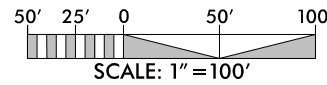
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-  DENOTES MECHANIZED CLEARING
-  DENOTES EXCAVATION IN WETLAND
-  DENOTES HAND CLEARING

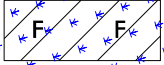
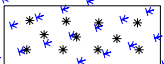

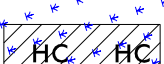


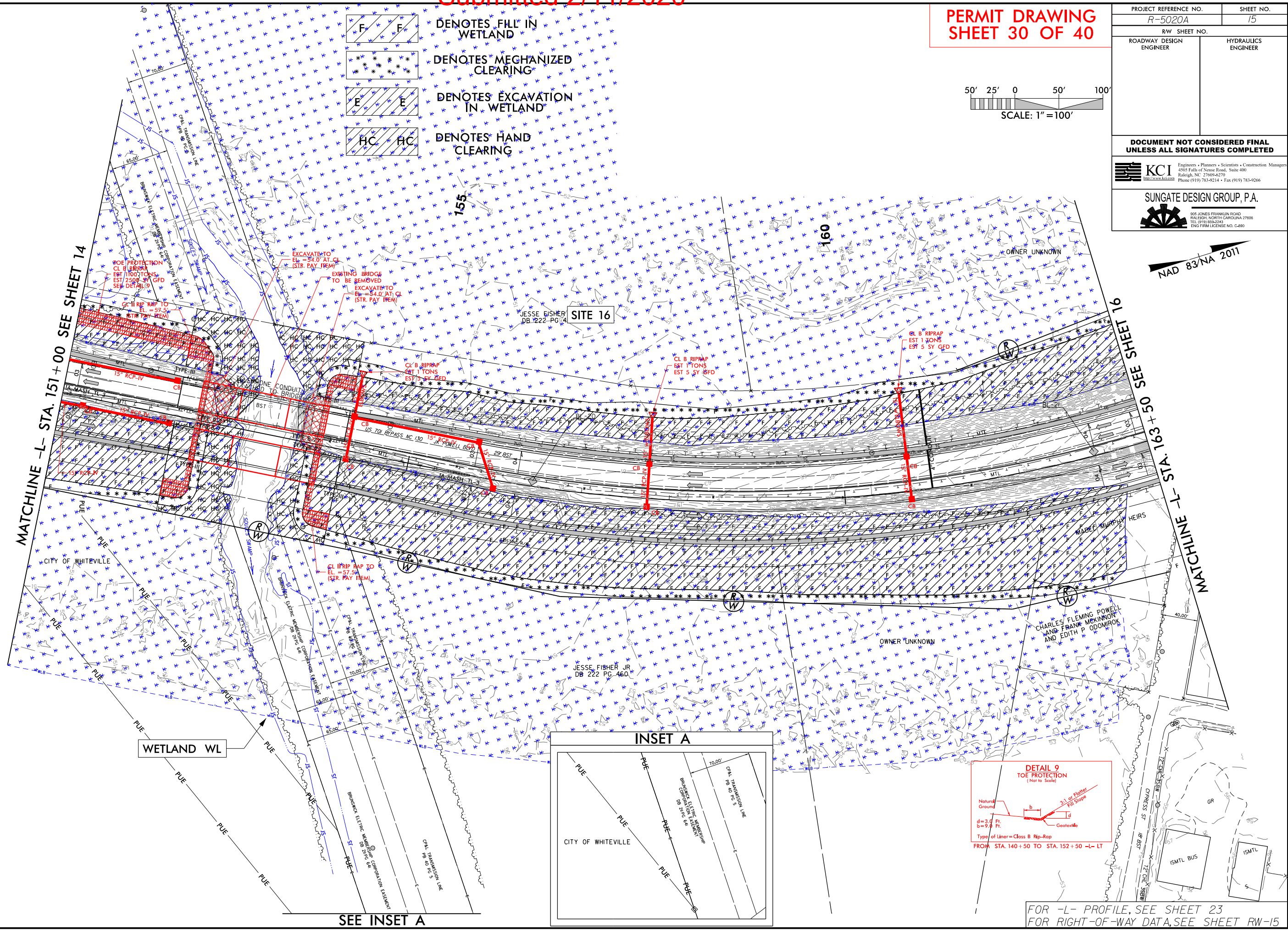
FOR -L- PROFILE, SEE SHEET 23  
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-15

8/17/99  
R-5020A Hyd.prm...wet\_psh\_15.dgn  
1/27/2019

PROJECT REFERENCE NO. R-5020A		SHEET NO. 15	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
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 KCI <small>Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266</small>			
 SUNGATE DESIGN GROUP, P.A. <small>805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27605 TEL (919) 868-2943 ENG FIRM LICENSE NO. C-690</small>			

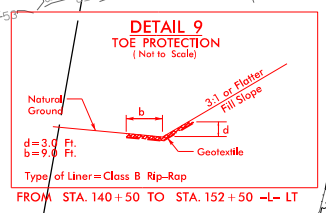
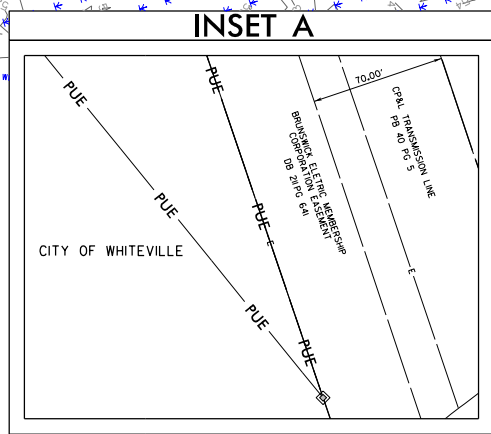


-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING
-  DENOTES EXCAVATION IN WETLAND
-  DENOTES HAND CLEARING



MATCHLINE -L- STA. 151+00 SEE SHEET 14

MATCHLINE -L- STA. 163+50 SEE SHEET 16



FOR -L- PROFILE, SEE SHEET 23  
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-15

8/17/99  
R-5020A Hyd.prm...wet\_psh\_15A.dgn

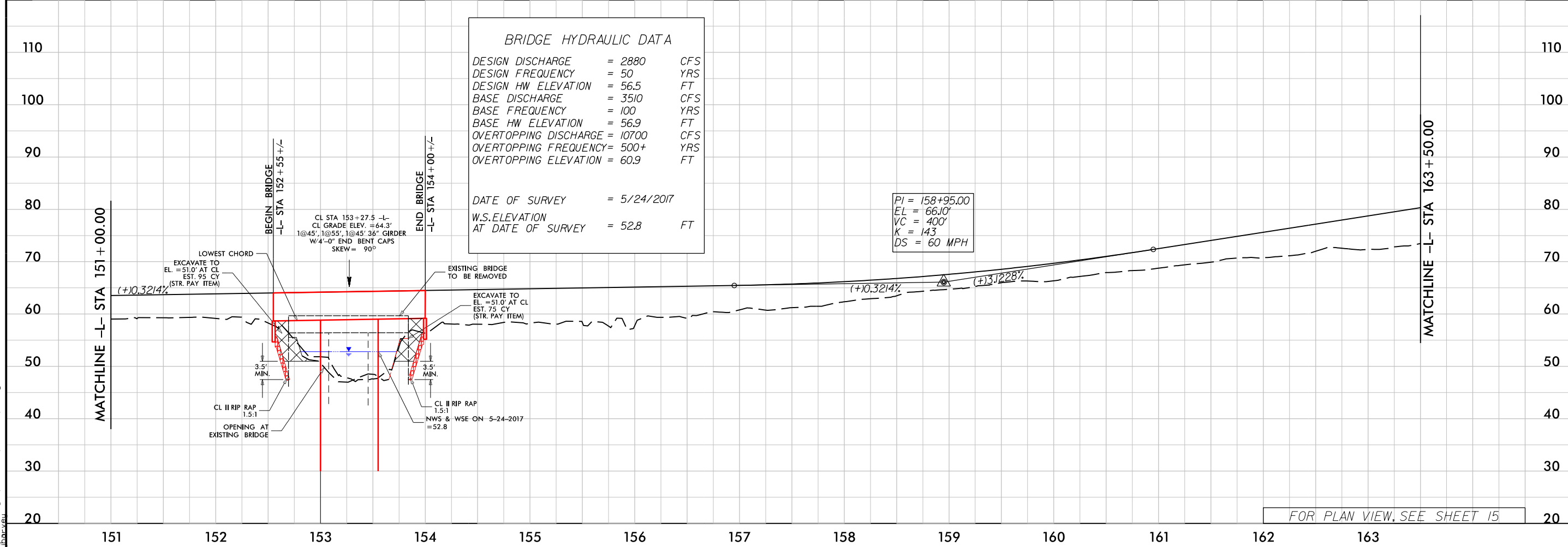
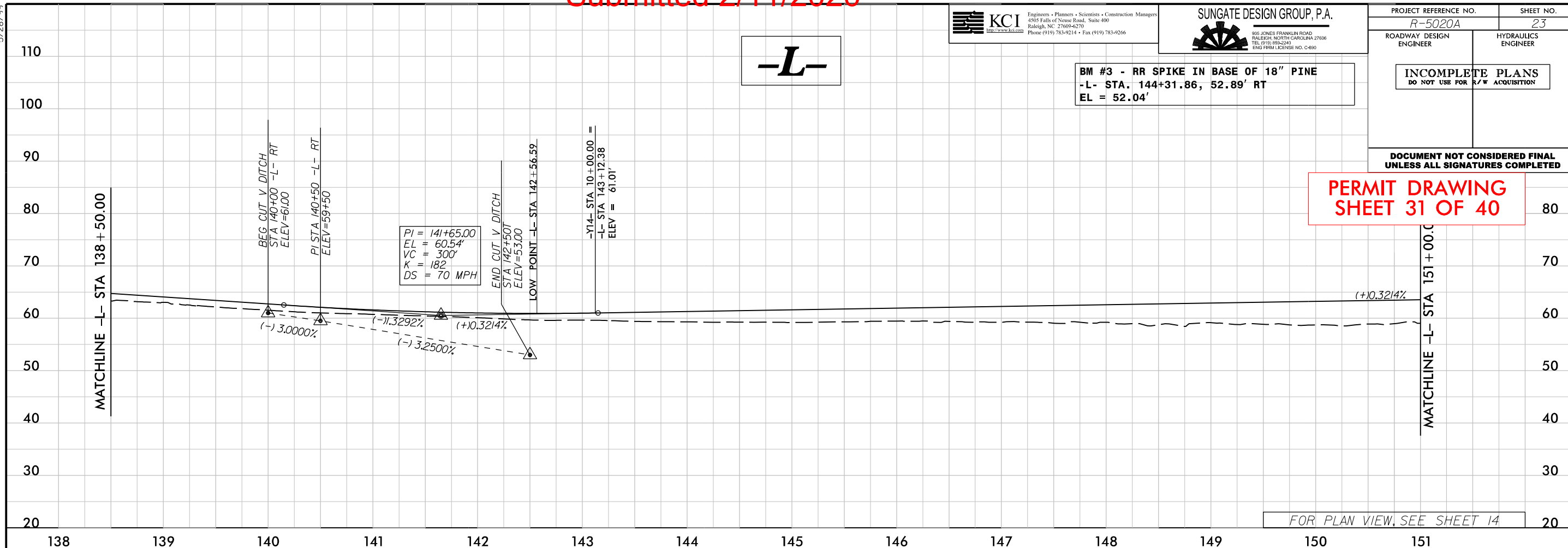
5/28/99

INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION

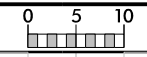
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

BM #3 - RR SPIKE IN BASE OF 18" PINE  
-L- STA. 144+31.86, 52.89' RT  
EL = 52.04'

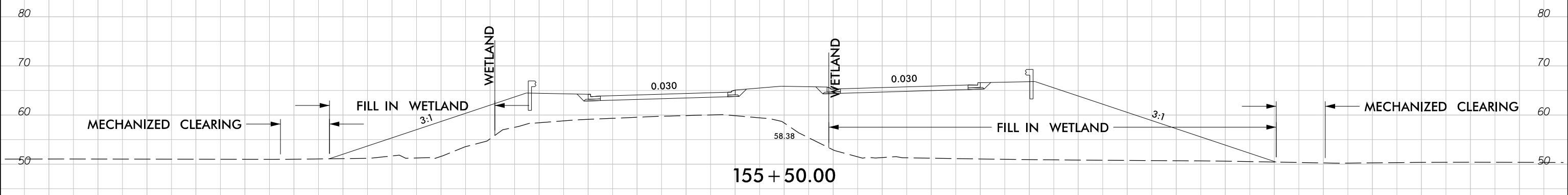
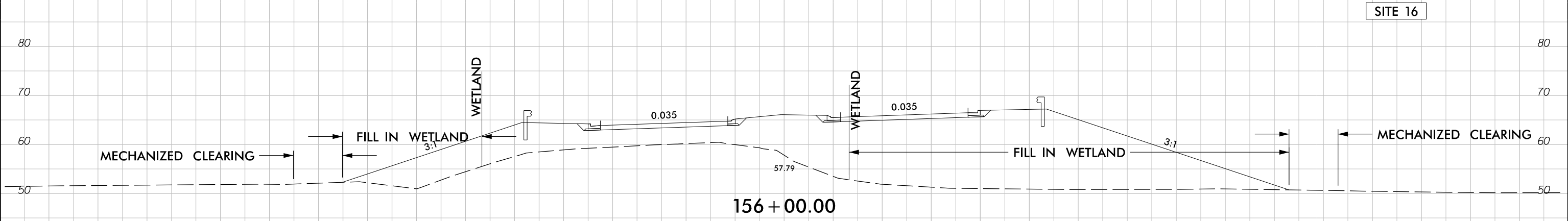
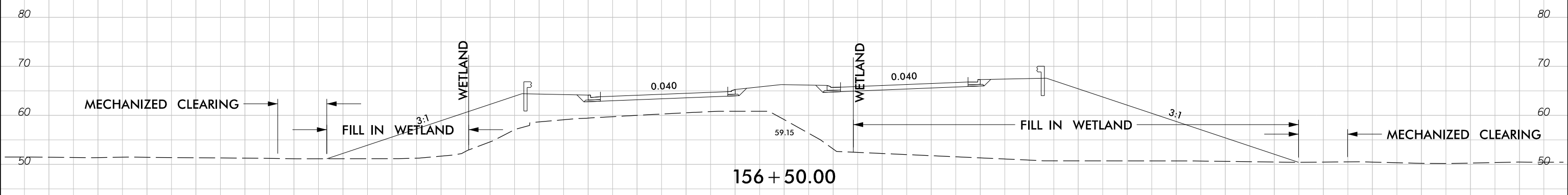
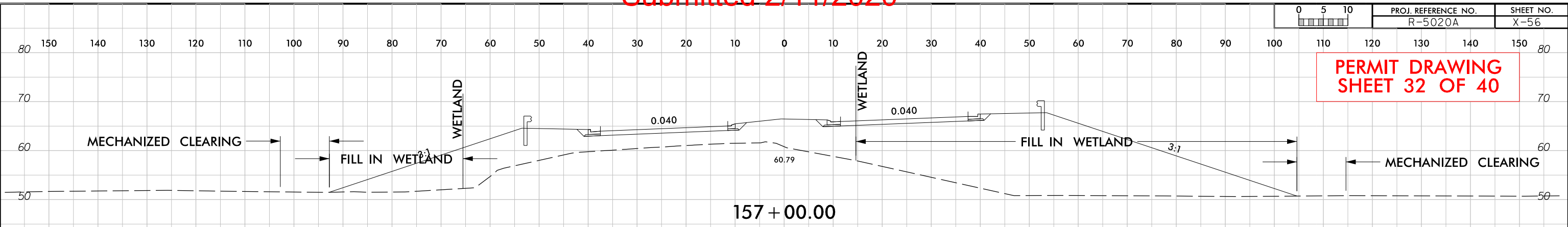
PERMIT DRAWING  
SHEET 31 OF 40



R:\2017\2017\018\15B\15B.psh\_15B.pfl.dgn



PERMIT DRAWING  
SHEET 32 OF 40



SITE 16

12/21/2019 15:02:00 Hyd\_prm\_wet\_psh\_15C\_xp1.dgn

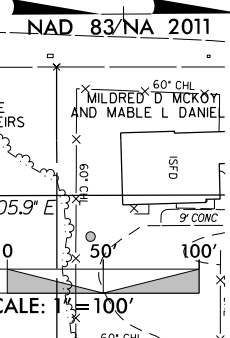
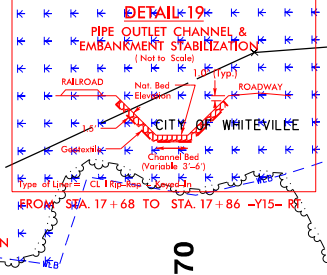
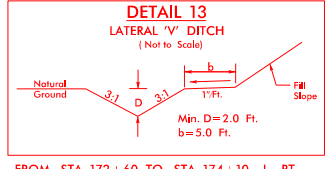
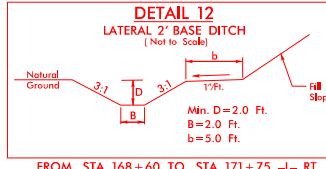
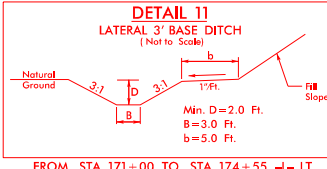
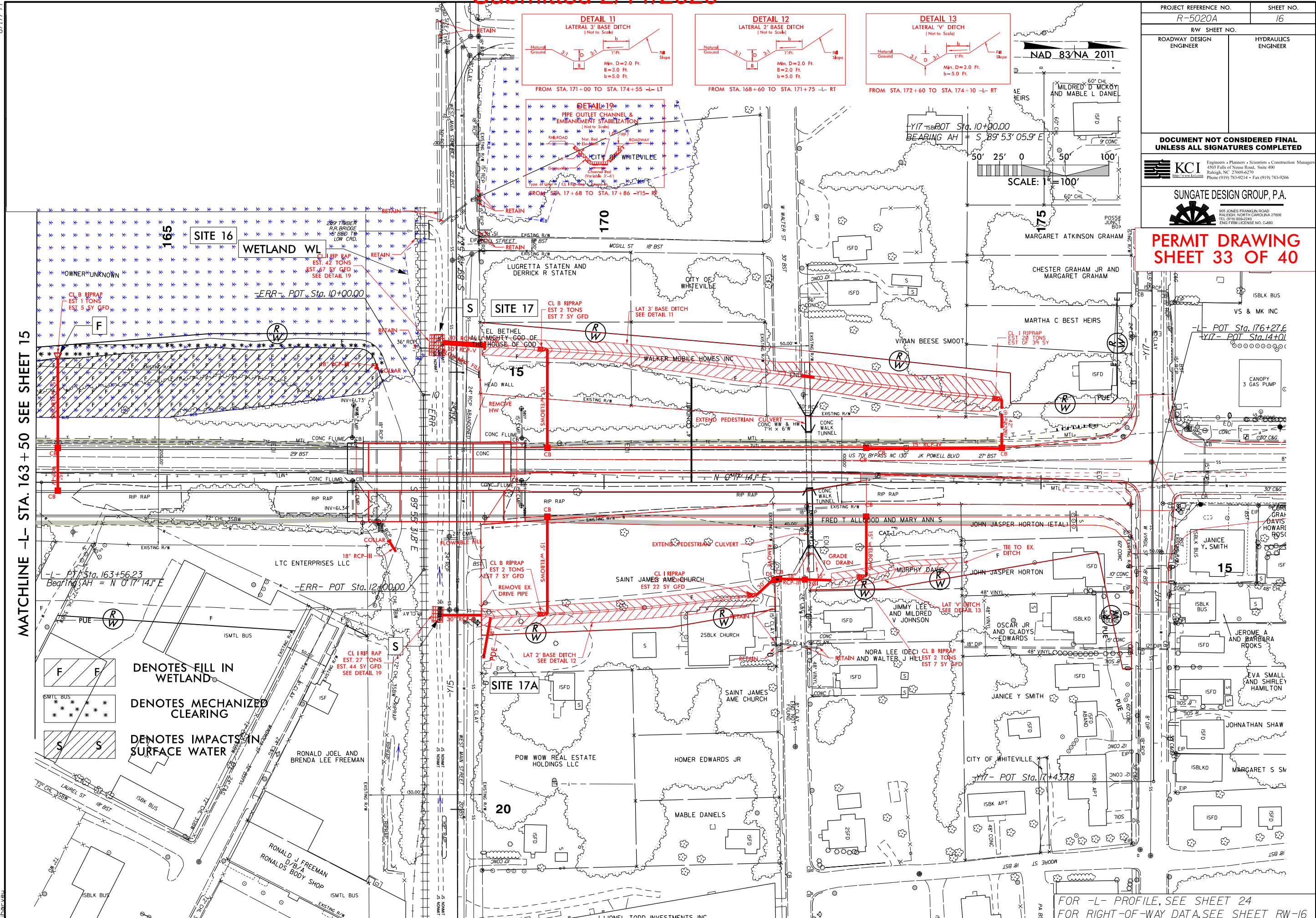
PROJECT REFERENCE NO. R-5020A	SHEET NO. 16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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**SUNGATE DESIGN GROUP, P.A.**  
805 JONES FRANKLIN ROAD  
RALEIGH, NORTH CAROLINA 27606  
TEL (919) 868-2943  
ENG. FIRM LICENSE NO. C-690

**PERMIT DRAWING SHEET 33 OF 40**





MATCHLINE -L- STA. 163+50 SEE SHEET 15

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

FOR -L- PROFILE, SEE SHEET 24  
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-16



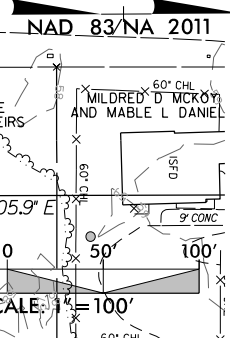
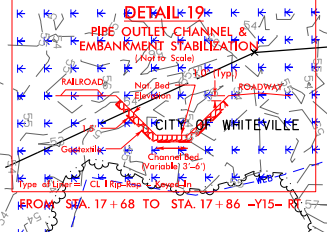
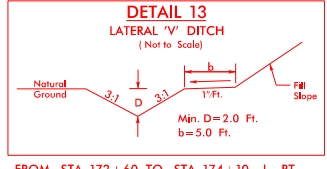
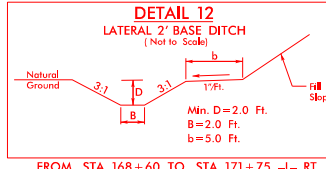
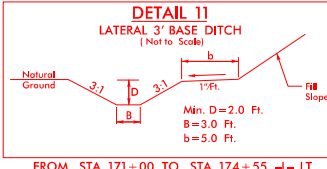
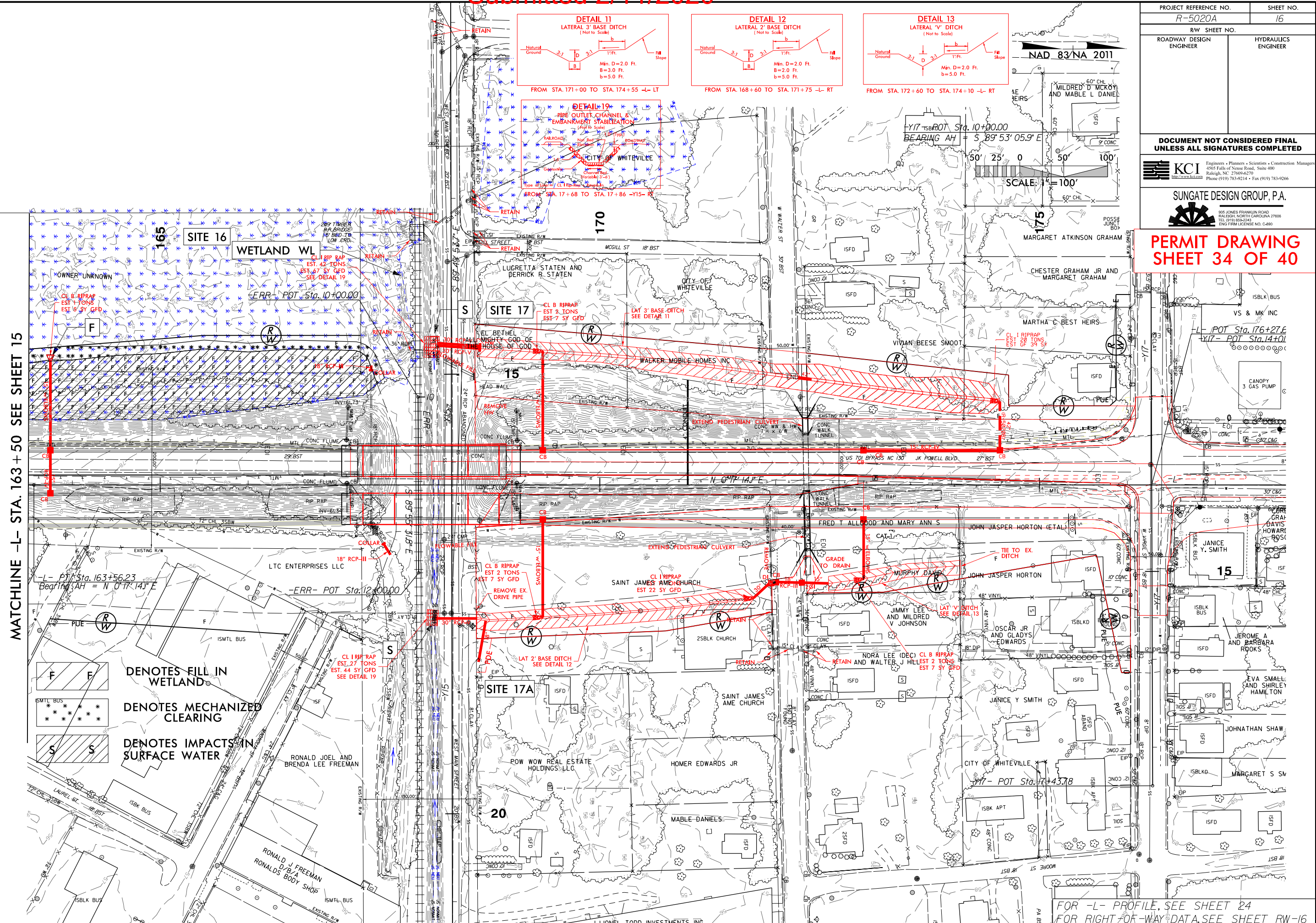
8.17/99




PROJECT REFERENCE NO. R-5020A	SHEET NO. 16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 KCI <small>Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-4270 Phone (919) 783-9214 • Fax (919) 783-9266</small>	
 SUNGATE DESIGN GROUP, P.A. <small>805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 TEL (919) 868-2243 ENG FIRM LICENSE NO. C-690</small>	

PERMIT DRAWING  
SHEET 34 OF 40

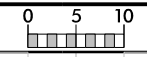
MATCHLINE -L- STA. 163+50 SEE SHEET 15

1/22/2020 14:56:00 hyd\_prm\_wet\_psh\_16A.dgn

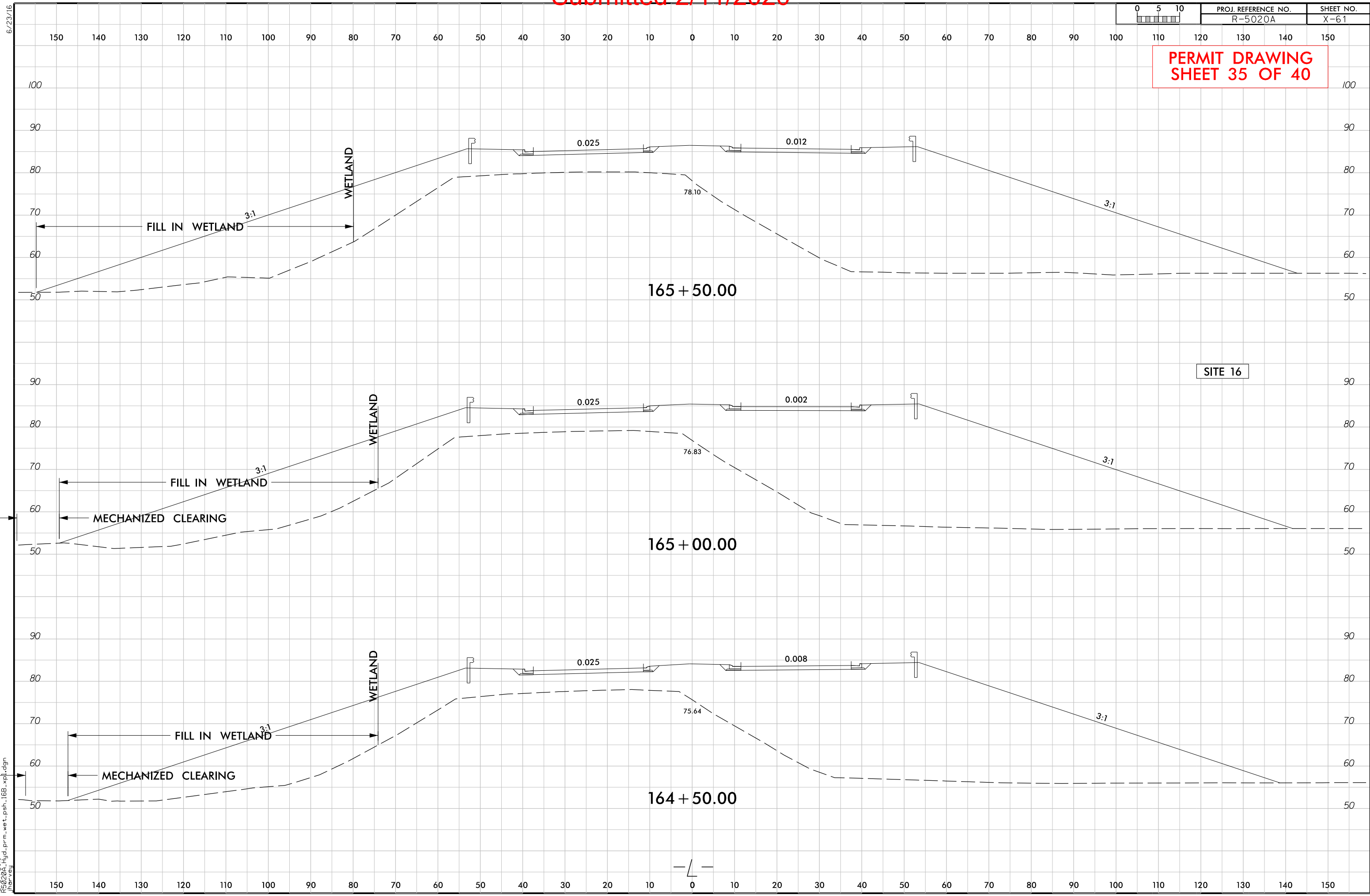


-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING
-  DENOTES IMPACTS IN SURFACE WATER

FOR -L- PROFILE, SEE SHEET 24  
FOR RIGHT OF WAY DATA, SEE SHEET RW-16

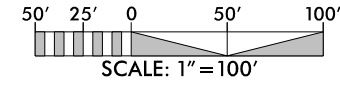


PERMIT DRAWING SHEET 35 OF 40



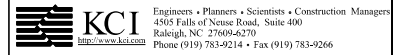
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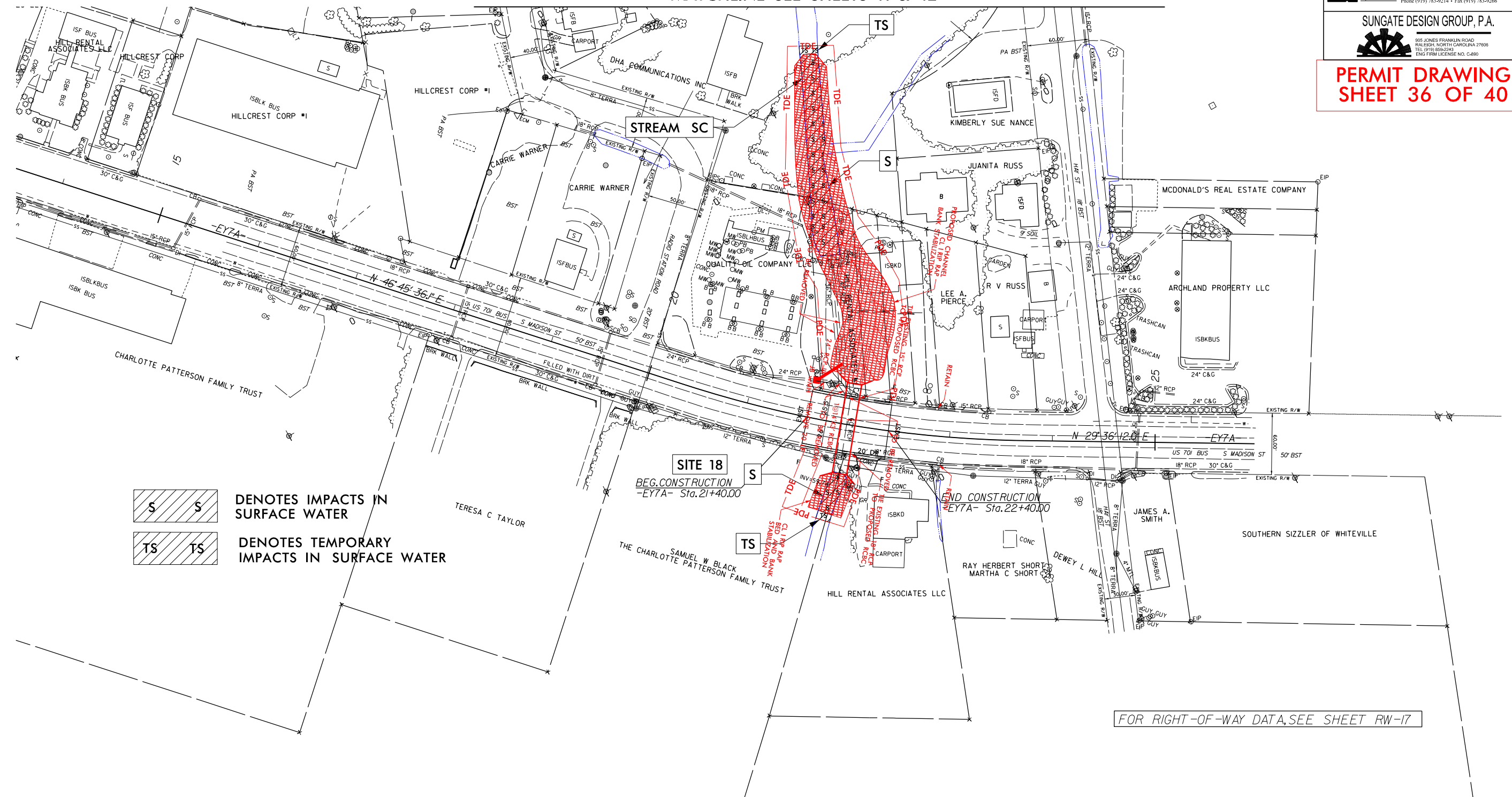
PROJECT REFERENCE NO. R-5020A	SHEET NO. 17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



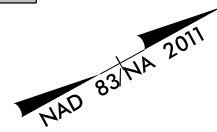
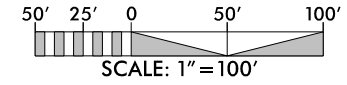
**PERMIT DRAWING  
SHEET 36 OF 40**

MATCHLINE SEE SHEETS 11 & 12



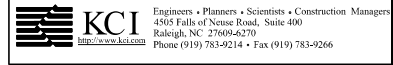
**S S** DENOTES IMPACTS IN SURFACE WATER  
**TS TS** DENOTES TEMPORARY IMPACTS IN SURFACE WATER

FOR RIGHT-OF-WAY DATA, SEE SHEET RW-17



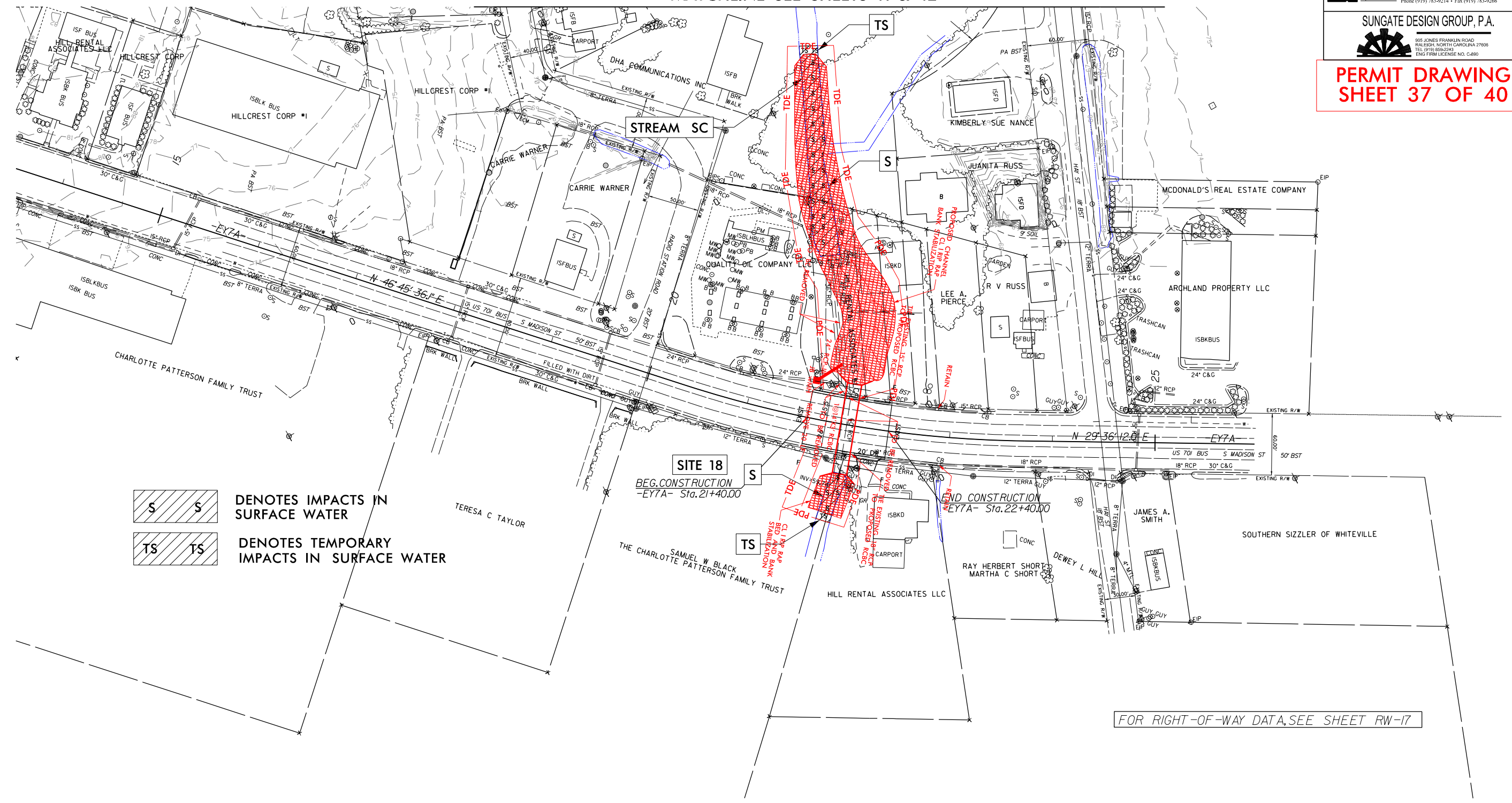
PROJECT REFERENCE NO. <i>R-5020A</i>	SHEET NO. <i>17</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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UNLESS ALL SIGNATURES COMPLETED**



**PERMIT DRAWING  
SHEET 37 OF 40**

MATCHLINE SEE SHEETS 11 & 12

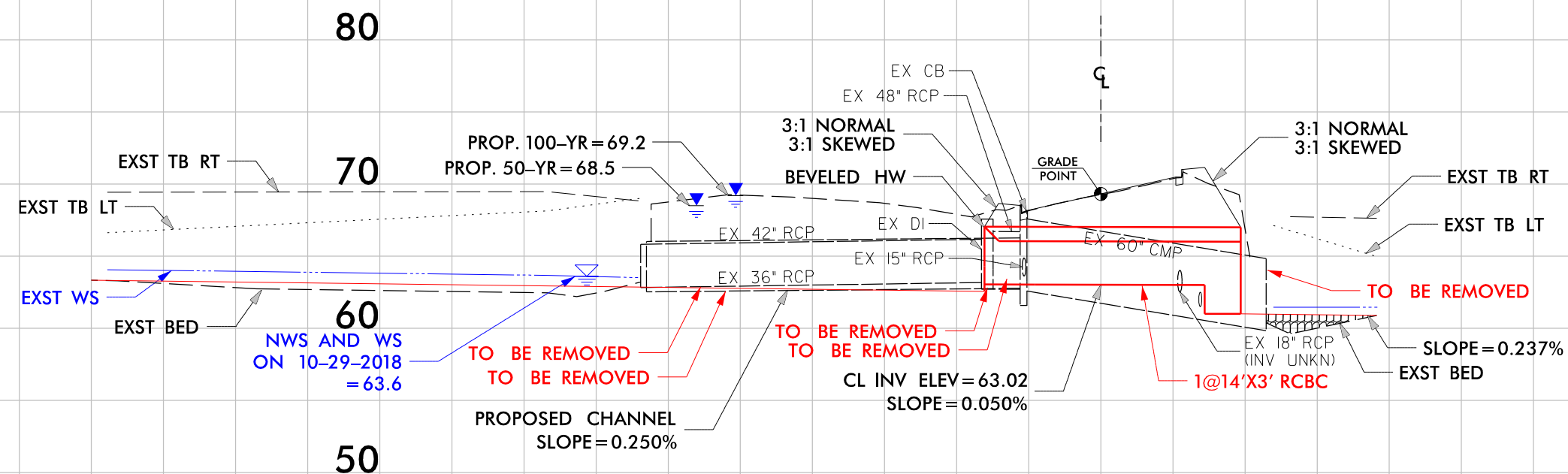


 DENOTES IMPACTS IN SURFACE WATER  
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

FOR RIGHT-OF-WAY DATA, SEE SHEET RW-17

200 100 0 100 200

CL STA 22+00 -EY7A-  
1@14'x3' RCBC  
SKEW= 90 DEG  
GP EL= 69.3



WETLAND AND SURFACE WATER IMPACTS SUMMARY												
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	14+75 to 15+97-L-RT	60" RCP	0.06		< 0.01	0.03		< 0.01	< 0.01	38	8	
	15+65 to 15+79 -L-RT	BANK STABILIZATION								8		
2	15+75 to 18+80-L-LT	ROADWAY FILL	0.15			0.07		< 0.01	< 0.01	60	15	
	15+88 to 16+08-L-LT	BANK STABILIZATION								20		
3	16+12 to 16+28-L-RT	ROADWAY FILL	< 0.01		< 0.01	< 0.01						
4	17+35 to 18+78-L-RT	ROADWAY FILL	0.05		0.03							
5	33+76 to 34+10-L-LT	ROADWAY FILL						0.01		146		
6	34+45 to 38+12-L-	2 AT 48" RCP						0.03	< 0.01	403	25	
	34+53 to 34+69-L-LT	BANK STABILIZATION								58		
7	66+69 to 67.23-L-RT	ROADWAY FILL						< 0.01	< 0.01	76	15	
8	68+71 to 69+63-L-LT	ROADWAY FILL	0.03			0.02		< 0.01	< 0.01	21	5	
9	68+63 to 69+20-L-RT	DITCH OUTLET					0.01					
10	75+26 to 75+43-L-RT	42" RCP	< 0.01			< 0.01						
11	96+66 to 96+70-L-LT	DRAINAGE INLET							< 0.01		7	
12	99+12 to 99+75-L-RT	ROADWAY FILL	0.01			0.01						
13	111+33 to 111+52-L-RT	ROADWAY FILL						0.01	< 0.01	81	12	
	111+42 to 111+50--L-RT	BANK STABILIZATION								58		
14	111+96 to 113+54-L-RT	ROADWAY FILL	0.16			0.03						
15	120+37 to 122+05-L-	ROADWAY FILL	0.23			0.02						
16	140+41 to 167+55-L-	ROADWAY FILL	5.66			1.03						
	152+31 to 154+24 -L-	BRIDGE	0.16		0.02	0.08	0.38					
17	14+52 to 14+79-Y15-RT	PIPE OUTLET						< 0.01				
17A	17+63 to 17+83-Y15RT	PIPE OUTLET						< 0.01				
TOTALS*:			6.51		0.06	1.30	0.39	0.07	< 0.01	969	87	0

\*Rounded totals are sum of actual impacts

NOTES:

Site 15: Will also include 0.078 ac for total take of wetlands

Site 16: Each bent has 5 piers of 24" Diam, 4 bents=20 piers=62.8 SF=0.001 AC

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 01-17-2020  
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 41499.1.2

<b>WETLAND AND SURFACE WATER IMPACTS SUMMARY</b>												
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
18	22+00 -EY7A-	14'x4' RCBC										
	20+43 to 21+57-EY7A-LT	INLET CHANNEL						0.09	< 0.01	197	8	
	21+86 to 22+07-EY7A-RT	OUTLET CHANNEL						0.01	< 0.01	41	8	
		TOTALS THIS SHEET						0.10	< 0.01	238	16	
		TOTALS SHEET 39	6.51		0.06	1.30	0.39	0.07	< 0.01	969	87	
TOTALS*:			6.51		0.06	1.30	0.39	0.17	0.02	1207	103	0

\*Rounded totals are sum of actual impacts

NOTES:

Site 15: Will also include 0.078 ac for total take of wetlands  
 Site 16: Each bent has 5 piers of 24" Diam, 4 bents=20 piers=62.8 SF=0.001 AC

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