



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

April 26, 2017

Regulatory Division

Action ID. SAW-2008-01413
NC DOT TIP No.: U-2519 CA

Mr. Philip S. Harris, III, P.E., CPM
Natural Environment Section Head, PDEA
N.C. Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

Reference the Department of the Army (DA) permit issued on October 23, 2008, and subsequent modifications dated December 21, 2010, and June 24, 2014, for the discharge of fill material into waters and wetlands adjacent to various creeks and their tributaries in order to construct the Fayetteville Outer Loop, TIP Nos. X-0002 B & C, and U-2519 AA, AB, BA, BB, CA, CB, DA, & E in Cumberland County, North Carolina. Reference is also made to your Section CA permit modification request dated March 10, 2017, submitted to provide final design and impact calculations for this section of the Fayetteville Outer Loop project.

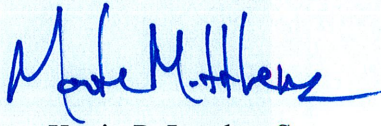
Permanent impacts to waters of the U.S. associated with Section CA total 3.98 acres of wetlands and 1,038 linear feet of stream channel. I have determined that the proposed project modifications described above are not contrary to the public interest and consistent with the 404(b)(1) Guidelines, and therefore the DA permit is hereby modified for construction of U-2519 Section CA with one condition addressing mitigation needs.

Additional Special Condition:

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

It is understood that all other conditions of the original permit and previous modifications remain applicable, including the permit expiration date of December 31, 2019. This approved modification should be attached to the original permit and will be utilized for future compliance of the project. If you have questions, please contact Liz Hair of the Wilmington Regulatory Field Office, at telephone (910) 251-4049.

Sincerely,


 Kevin P. Landers Sr.
Colonel, U. S. Army
District Commander

Enclosures:

- 1) 401 Water Quality Certification Modification dated March 29, 2017
- 2) Roadway Permit Drawings revisions dated February 21, 2017
- 3) Mitigation Responsibility Transfer Form dated April 25, 2017

Copies Furnished (electronic):

Ms. Joanne Steenhuis, NCDEQ-DWR
Mr. Chris Rivenbark, NCDOT
Mr. Jim Rerko, NCDOT
Ms. Cynthia Van Der Wiele, EPA
Mr. Gary Jordan, USFWS
Mr. Travis Wilson, NCWRC

Copies Furnished w/Mitigation Transfer Form (electronic):

Mr. Todd Tugwell, USACE
Ms. Cindy Corbett, USACE



ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

S. JAY ZIMMERMAN
Director

May 5, 2017

Mr. Philip S. Harris, III, P.E., CPM
Natural Environment Section Head
Project Development and Environmental Analysis
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598

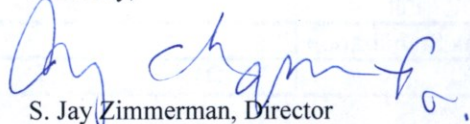
Subject: Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for Proposed improvements to the Fayetteville Outer Loop from I-95 South of Fayetteville to NC 24-87 in Cumberland, Hoke and Robeson Counties, Federal Aid Project No.NHP-0620(031), State Project No. 34817.3.13, TIP Nos. X-0002 B & C, and U-2519 AA, AB, BA, BB, CA, CB, DA, & E.
NCDWR Project No.20080737 v. 6

Dear Mr. Harris:

This Certification rescinds and replaces the certification dated March 29, 2017. Attached hereto is a modification of Certification No. 3758 issued to The North Carolina Department of Transportation (NCDOT) dated October 6, 2008 and modifications dated June 3, 2010, December 16, 2010, May 22, 2014, June 24, 2014, January 19, 2017 and March 29, 2017. This modification is for U-2519 CA from south of US 401 (Raeford Road) and extends 3.2 miles to south of SR 1400 (Cliffdale Road).

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

Sincerely,


S. Jay Zimmerman, Director
Division of Water Resources

Attachments

Electronic copy only distribution:

Liz Hair, US Army Corps of Engineers, Wilmington Field Office
Jim Rerko, Division 6 Environmental Officer
Tyler Stanton, NC DOT Natural Environment Section
Dr. Cynthia Van Der Wiele, US Environmental Protection Agency
Travis Wilson, NC Wildlife Resources Commission
Joanne Steenhuis, DWR WiRO
File Copy



State of North Carolina | Environmental Quality
1617 Mail Service Center | Raleigh, North Carolina 27699-1617

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

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to impact an additional 3.98 acres of jurisdictional wetlands, 0.244 acres of open waters, and 1,038 linear feet of jurisdictional streams in Cumberland County. The project shall be constructed pursuant to the modification dated received March 13, 2017. The authorized impacts are as described below:

Stream Impacts in the Cape Fear River Basin

Site		Permanent Fill in Intermittent Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear feet)	Stream Impacts Requiring Mitigation (linear ft)
1	587+63/ 598+50 L Temporary Work Bridge				5	5	0
1b	588+00-L-LT 4' Base Ditch			10	26	36	0
2	608+87/621+81 -L Bridge/Roadway			12		12	0
2a	Temporary Work Bridge				12	12	0
5	666+28/670+08-L 54" RCP	541	12			553	0
7	715+96-L 54" RCP buried 1'			318	10	328	318
7a	Bank Stabilization			23		23	23
10	19+00/24+51- Y1 RCBC/Roadway Fill			82	109	191	0
10a	Bank Stabilization			52		52	0
TOTAL:		541	12	497	162	1,212	341

Total Stream Impact for U-2519 CA: 1,212 linear feet

Wetland Impacts in the Cape Fear River Basin

Site	Station	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Total Wetland Impact (ac)	Impacts Requiring Mitigation (ac)
1	587+63/598+50-L Bridge	0.006				1.594	1.600	0.006
1a	Temporary Work Bridge		0.002				0.002	0.000
1b	588+00-L-LT 4' Base Ditch			0.013		0.017	0.030	0.013
1c	Roadway Fill	1.444			0.170		1.615	1.615
1d	591+88-L-RT 4' Base Ditch					0.008	0.008	0.000
2	608+87/621+81-L	0.493				4.461	4.954	0.493
	Temporary Work Bridge		0.007				0.007	0.000
2a	621+65/621+81-L 30" Sewer Relocation			0.009(T)*			0.000	0.000
3	625+97/629+35-L Roadway Fill	0.625			0.082		0.707	0.707
3a	25+39/25+69-Y1 30" sewer Relocation			0.091(T)*			0.000	0.000
4	651+14/652+83-L Bridge	0.002				0.427	0.429	0.002
5	666+28/670+08-L 54" RCP	0.451		0.019	0.006		0.475	0.475
6	685+82/687+53-L 66" RCP/Roadway Fill	0.167			0.013		0.179	0.179
8	721+22/721+78-L Roadway Fill	0.058			0.013		0.071	0.071
9	740+30/741+03-L Roadway Fill	0.027			0.016		0.042	0.042
10	19+00/24+51-Y1 RCBC/Roadway Fill	0.240		0.026	0.115	0.020	0.400	0.380
Total		3.512	0.009	0.058	0.413	6.527	10.519	3.983

(T)* Temporary impacts for sewer relocation

Total Wetland Impact for U-2519 CA:10.62 acres

Open Water Impacts in the Cape Fear River Basin

Site	Location	Permanent Fill in Open Waters (ac)	Temporary Fill in Open Waters (ac)	Total Fill in Open Waters (ac)
1b	588+00-L-LT 4' Base Ditch	0.001	0.003	0.004
2	608+87/621+81-L Bridge/Roadway	0.001		0.001
5	666+28/670+08-L	0.127	0.009	0.136
7	715+96-L 54" RCP (Buried 1')	0.052	0.001	0.053
	Bank Stabilization	0.002		0.002
10	19+00/24+51- Y1 RCBC/Roadway Fill	0.050	0.087	0.137
	Bank Stabilization	0.011		0.011
TOTAL		0.244	0.100	0.344

Total Open Water Impact for U-2519 CA: 0.344 acres.

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

This approval is only valid for the purpose and design that you submitted in your modified application dated received on March 13, 2017. All the authorized activities and conditions of certification associated with the original Water Quality Certification dated October 6, 2008 and modifications dated June 3, 2010, December 16, 2010, May 22, 2014 and January 19, 2017 still apply except where superseded by this certification. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Condition(s) of Certification:

1. This modification is applicable only to the proposed modified reduced jurisdictional impacts. All of the remaining authorized activities and conditions of certification associated with the original Water Quality Certification dated October 6, 2008 and subsequent modifications dated June 3, 2010, December 16, 2010, May 22, 2014, and January 19, 2017 still apply except where superseded by this certification.
2. For all utility lines constructed within wetlands, an anti-seep collar shall be placed at the downstream (utility line gradient) wetland boundary and every 150 feet up the gradient until the utility exits the wetland. Anti-seep collars may be constructed with class B concrete, compacted clay, PVC pipe, or metal collars. Wetland crossings that are directionally drilled, and perpendicular wetland crossings that are open cut and less than 150 feet long do not require anti-seep collars. The compacted clay shall have a specific infiltration of 1×10^{-5} cm/sec or less. {15A NCAC 02H .506(b)(4) and (c) (4)}

The following specifications shall apply to class B concrete:

- a. Minimum cement content, sacks per cubic yard with rounded coarse aggregate 5.0
 - b. Minimum cement content, sacks per cubic yard with angular coarse aggregate 5.5
 - c. Maximum water-cement ratio gallons per sack 6.8.
 - d. Slump range 2" to 4"
 - e. Minimum strength -28 day psi 2,500
3. The applicant shall have a specific plan for restoring wetland contours. Any excess material will be removed to a high ground disposal area. {15A NCAC 02H .0506 (b)(2) and (c)(2)}

The mixing of topsoil and subsoils within the wetlands along utility corridors shall be minimized to the greatest extent practical. During excavation, the soils shall be placed on fabric to minimize impacts whenever possible. Topsoil excavated from utility trenches will be piled separately from subsoils and will be backfilled into the trench only after the subsoils have been placed and compacted.

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

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

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

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

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

Mr. Sam M. Hayes, General Counsel
Department of Environmental Quality
1601 Mail Service Center
Raleigh, NC 27699

This the 5th day of May 2017

DIVISION OF WATER RESOURCES


S. Jay Zimmerman, Director

WQC No3758



ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

S. JAY ZIMMERMAN
Director

NCDWR Project No.: 20080737 v. 6

County: Cumberland

Applicant: NC DOT Division 6

Project Name: U-2519 CA for Fayetteville Outer Loop

Date of Issuance of 401 Water Quality Certification: May 5, 2017

Certificate of Completion

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

Applicant's Certification

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

Signature: _____ Date: _____

Agent's Certification

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

Signature: _____ Date: _____

Engineer's Certification

_____ Partial _____ Final

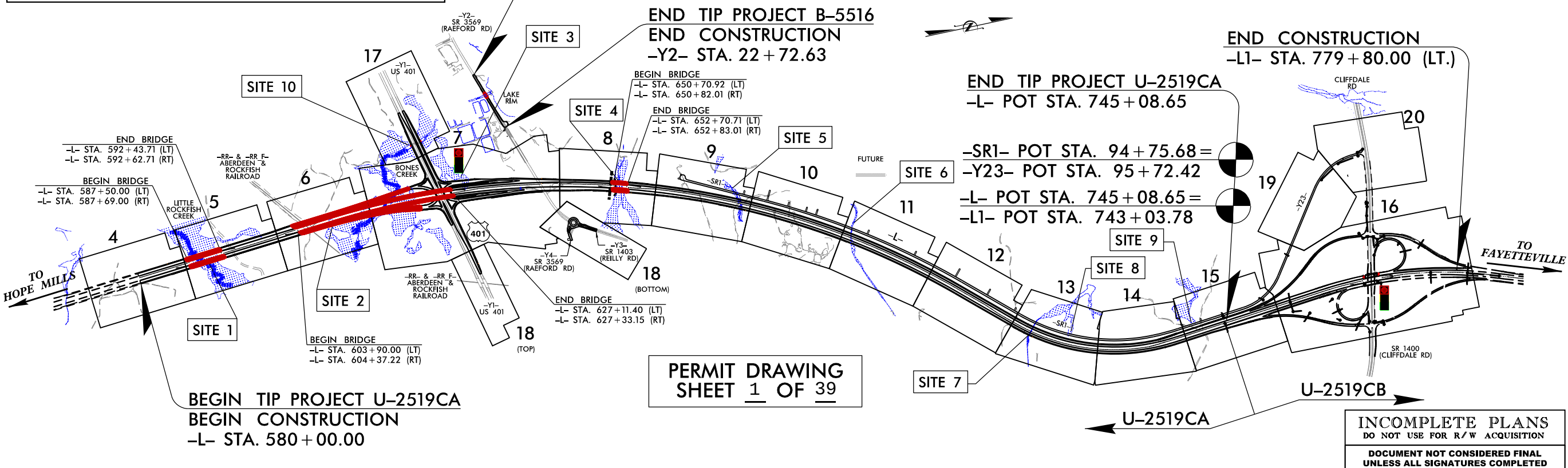
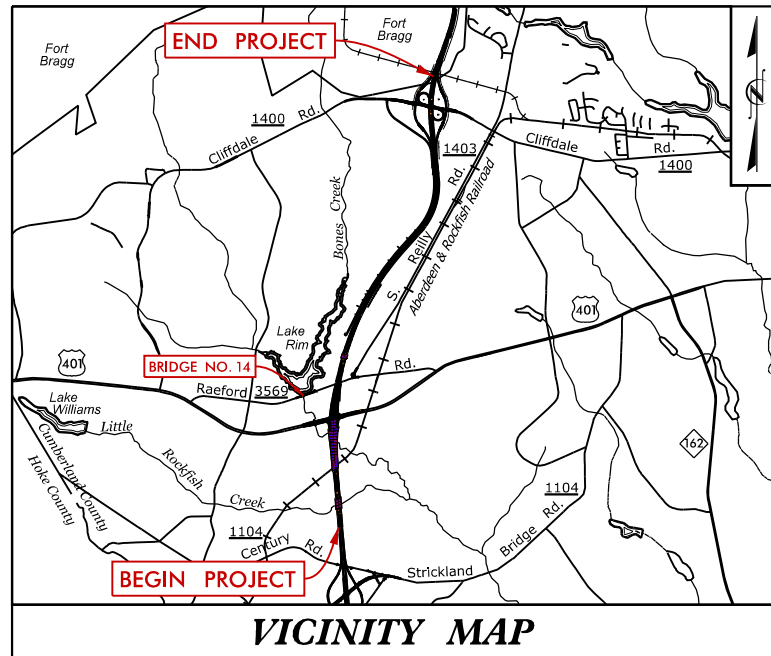
I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation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

Signature _____ Registration No. _____ Date _____

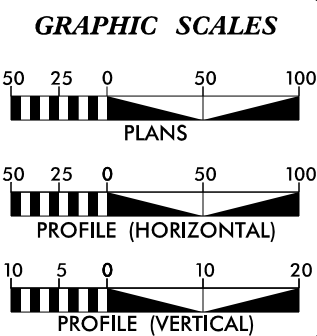


State of North Carolina | Environmental Quality
1617 Mail Service Center | Raleigh, North Carolina 27699-1617

CONTRACT: C203759
TIP PROJECT: U-2519CA & B-5516



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
A PORTION OF THIS PROJECT IS LOCATED WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF FAYETTEVILLE

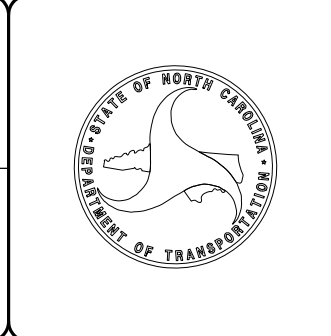


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ADT 2040 =	47,700
DHV =	8%
D =	55%
*T =	12%
V =	70 MPH
*(TTST 4% + DUALS 8%)	
FUNC CLASS = FREEWAY/INTERSTATE STATEWIDE TIER	

PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT U-2519CA =	2.562 MILES
LENGTH STRUCTURE TIP PROJECT U-2519CA =	0.565 MILE
TOTAL LENGTH TIP PROJECT U-2519CA =	3.127 MILES
LENGTH ROADWAY TIP PROJECT B-5516 =	0.157 MILE
LENGTH STRUCTURE TIP PROJECT B-5516 =	0.013 MILE
TOTAL LENGTH TIP PROJECT B-5516 =	0.170 MILE
NCDOT CONTACT: K. ZAK HAMIDI, PE DESIGN-BUILD UNIT - PROJECT ENGINEER	

Prepared for the Office of: DIVISION OF HIGHWAYS 1000 Birch Ridge Dr., Raleigh NC, 27610	
2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: JUNE 21, 2016	PAUL A. MEEHAN, PE PROJECT ENGINEER
LETTING DATE: JUNE 21, 2016	PHILLIP E. ROGERS, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER JAMES A. RICE, PE	ROADWAY DESIGN ENGINEER ANTHONY G. THOMPSON, PE
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STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS CUMBERLAND COUNTY

LOCATION: FUTURE I-295 - FAYETTEVILLE OUTER LOOP FROM SOUTH OF US 401 TO SOUTH OF SR 1400 (CLIFFDALE ROAD).
TYPE OF WORK: GRADING, PAVING, DRAINAGE, RETAINING WALLS, STRUCTURES & SIGNALS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2519CA & B-5516	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34817.3.13	NHP-0620(031)		



Wetland & Stream Impacts

BEGIN TIP PROJECT B-5516
BEGIN CONSTRUCTION
-Y2- STA. 13 + 75.00

END TIP PROJECT B-5516
END CONSTRUCTION
-Y2- STA. 22 + 72.63

END CONSTRUCTION
-L1- STA. 779 + 80.00 (LT.)

END TIP PROJECT U-2519CA
-L- POT STA. 745 + 08.65

-SR1- POT STA. 94 + 75.68 =
-Y23- POT STA. 95 + 72.42
-L- POT STA. 745 + 08.65 =
-L1- POT STA. 743 + 03.78

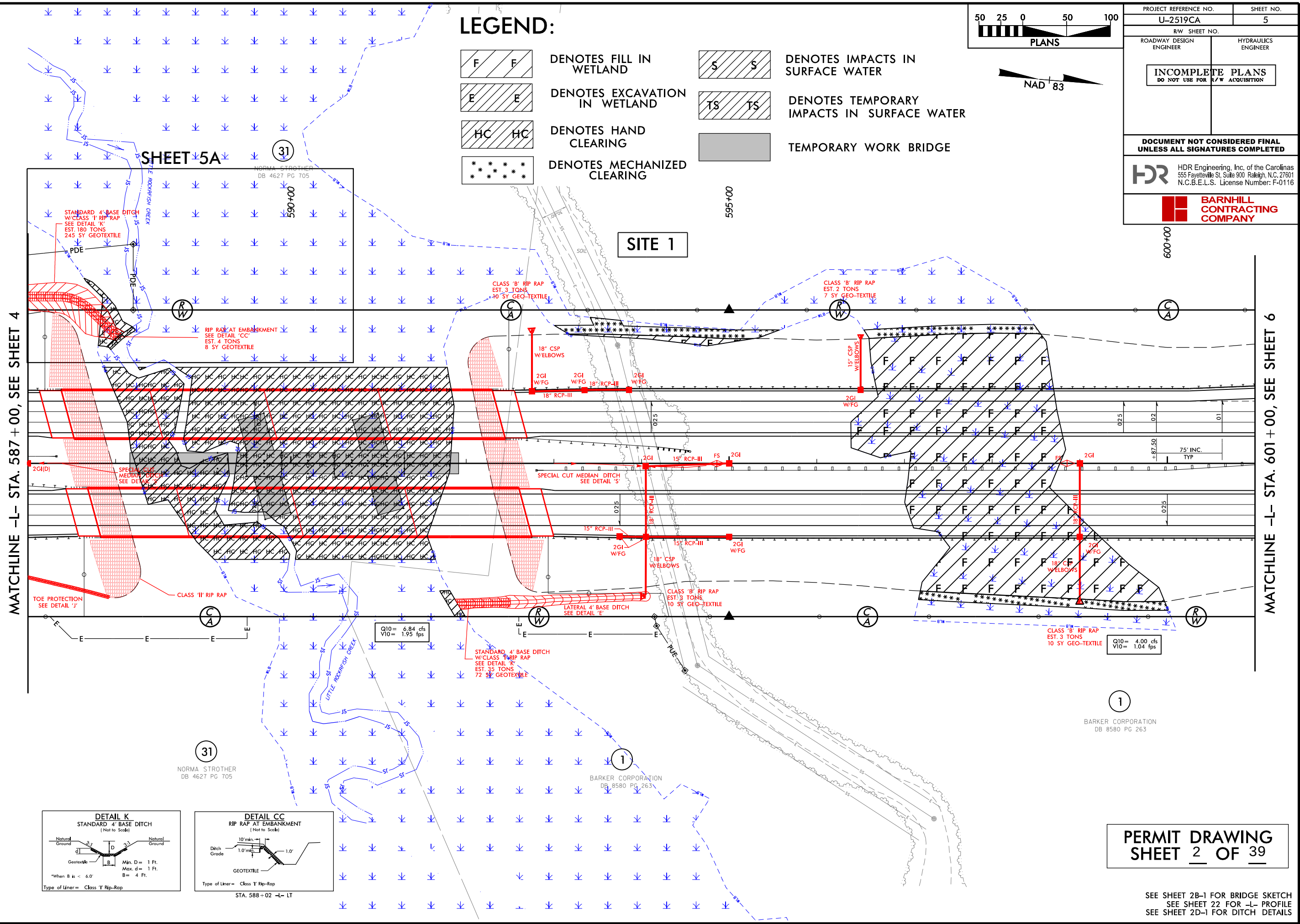
PERMIT DRAWING
SHEET 1 OF 39

PROPOSED TRAFFIC SIGNAL

BARNHILL CONTRACTING COMPANY

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

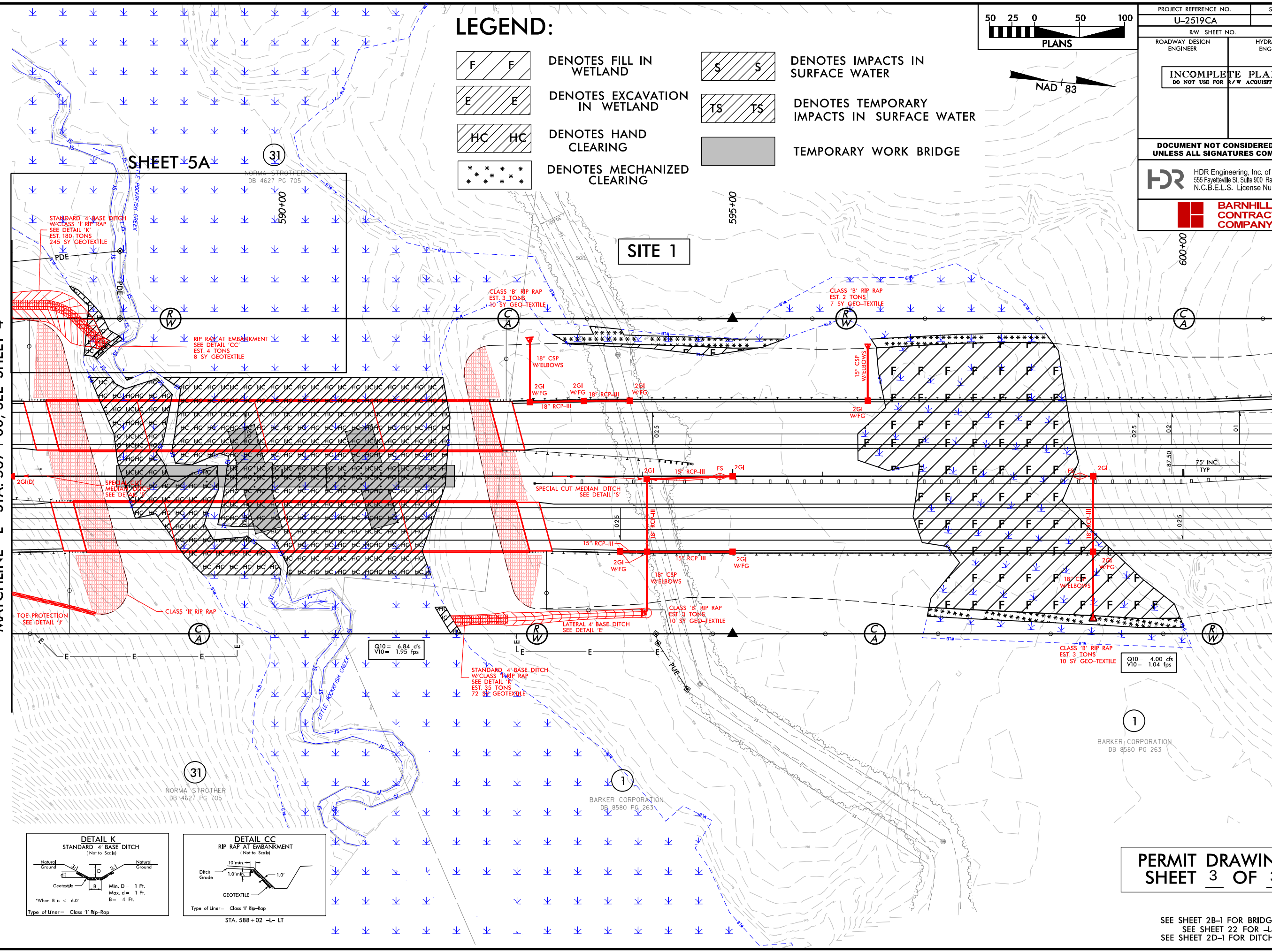


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REVISIONS

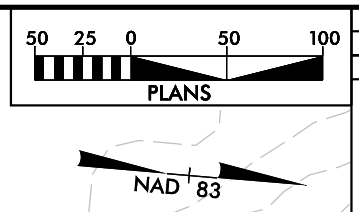
MATCHLINE -L- STA. 587 + 00, SEE SHEET 4

MATCHLINE -L- STA. 601 + 00, SEE SHEET 6

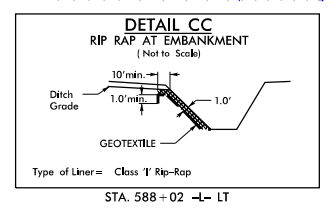
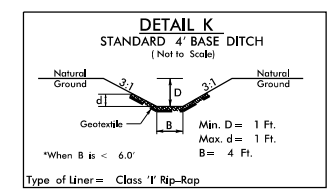


LEGEND:

- | | | | |
|--|-------------------------------|--|--|
| | DENOTES FILL IN WETLAND | | DENOTES IMPACTS IN SURFACE WATER |
| | DENOTES EXCAVATION IN WETLAND | | DENOTES TEMPORARY IMPACTS IN SURFACE WATER |
| | DENOTES HAND CLEARING | | TEMPORARY WORK BRIDGE |
| | DENOTES MECHANIZED CLEARING | | |



PROJECT REFERENCE NO. U-2519CA		SHEET NO. 5	
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			
HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116			
BARNHILL CONTRACTING COMPANY			

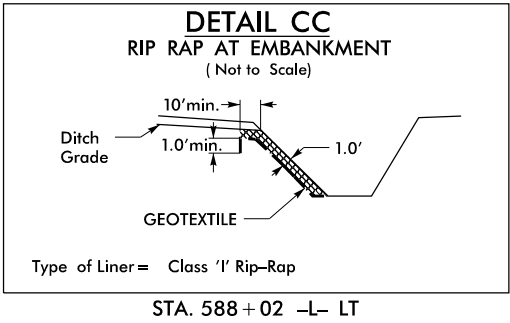


PERMIT DRAWING
SHEET 3 OF 39

SEE SHEET 2B-1 FOR BRIDGE SKETCH
SEE SHEET 22 FOR -L- PROFILE
SEE SHEET 2D-1 FOR DITCH DETAILS

PLOT DRIVER: NCDOT_pdf_color_eng-100.plt
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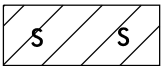
REVISIONS



LEGEND:



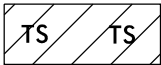
DENOTES EXCAVATION
IN WETLAND



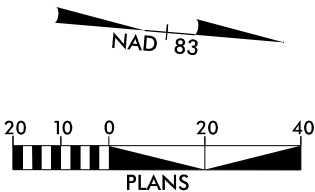
DENOTES IMPACTS IN
SURFACE WATER



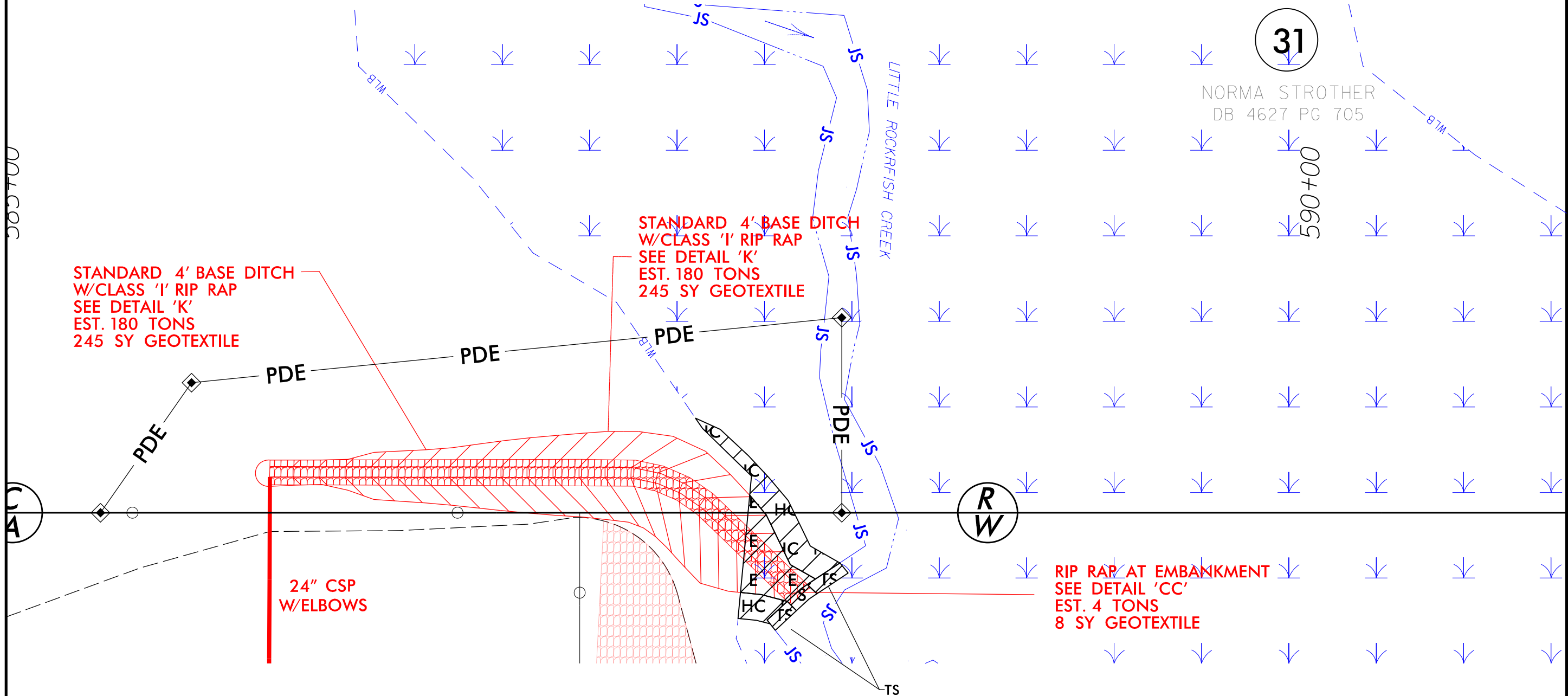
DENOTES HAND
CLEARING



DENOTES TEMPORARY
IMPACTS IN SURFACE WATER



PROJECT REFERENCE NO.		SHEET NO.	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
 HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116			
		BARNHILL CONTRACTING COMPANY	



DO NOT USE FOR

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

587+00	588+00	589+00	590+00	591+00	592+00	593+00	594+00
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SBL BRIDGE ID STATION: 589+97.72 -LLT- ELEV. = 175.04'
4 SPANS: 1@102'0", 2@103'3", 1@131'8.5"
72" MODIFIED BULB TEE PRESTRESSED CONCRETE GIRDER
CAP DEPTH = 4'-0"
SKEW = 75°

140

PROPOSED -LLT-
ROAD GRADE -

(-11.7395%

(-11.7395%

EXISTING GROUND LINE
AT CENTERLINE

1.5:1 SLOPE NORMAL TO CAP (TYP.)
CLASS II RIP RAP (TYP.)

(10/2016)
NWSEL
EL=140.0'

1.5:1 SLOPE NORMAL TO CAP (TYP.)
CLASS II RIP RAP (TYP.)

3.5'
(BOTH SIDES)

GRADEPOINT PROFILE (LLT) – PROPOSED BRIDGE

587+00	588+00	589+00	590+00	591+00	592+00	593+00	594+00
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PERMIT SHEET 5 OF 39

5/14/99

REVISIONS

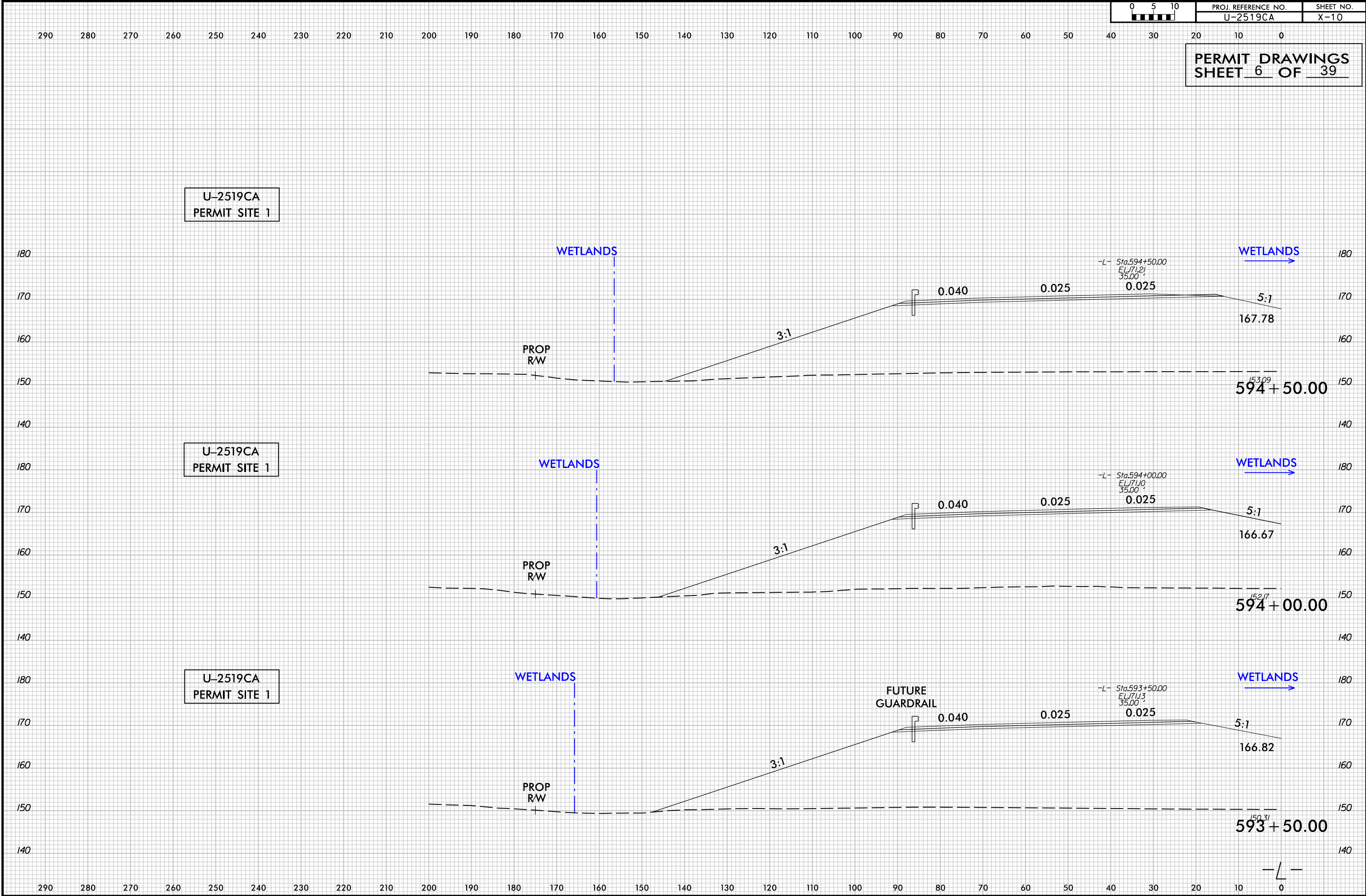
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8/23/99

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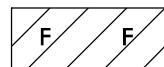
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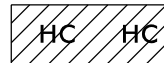
REVISIONS

MATCHLINE -L- STA. 601+00, SEE SHEET 5

LEGEND:



DENOTES FILL IN
WETLAND



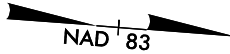
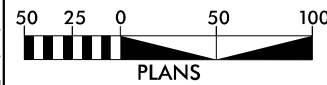
DENOTES HAND
CLEARING



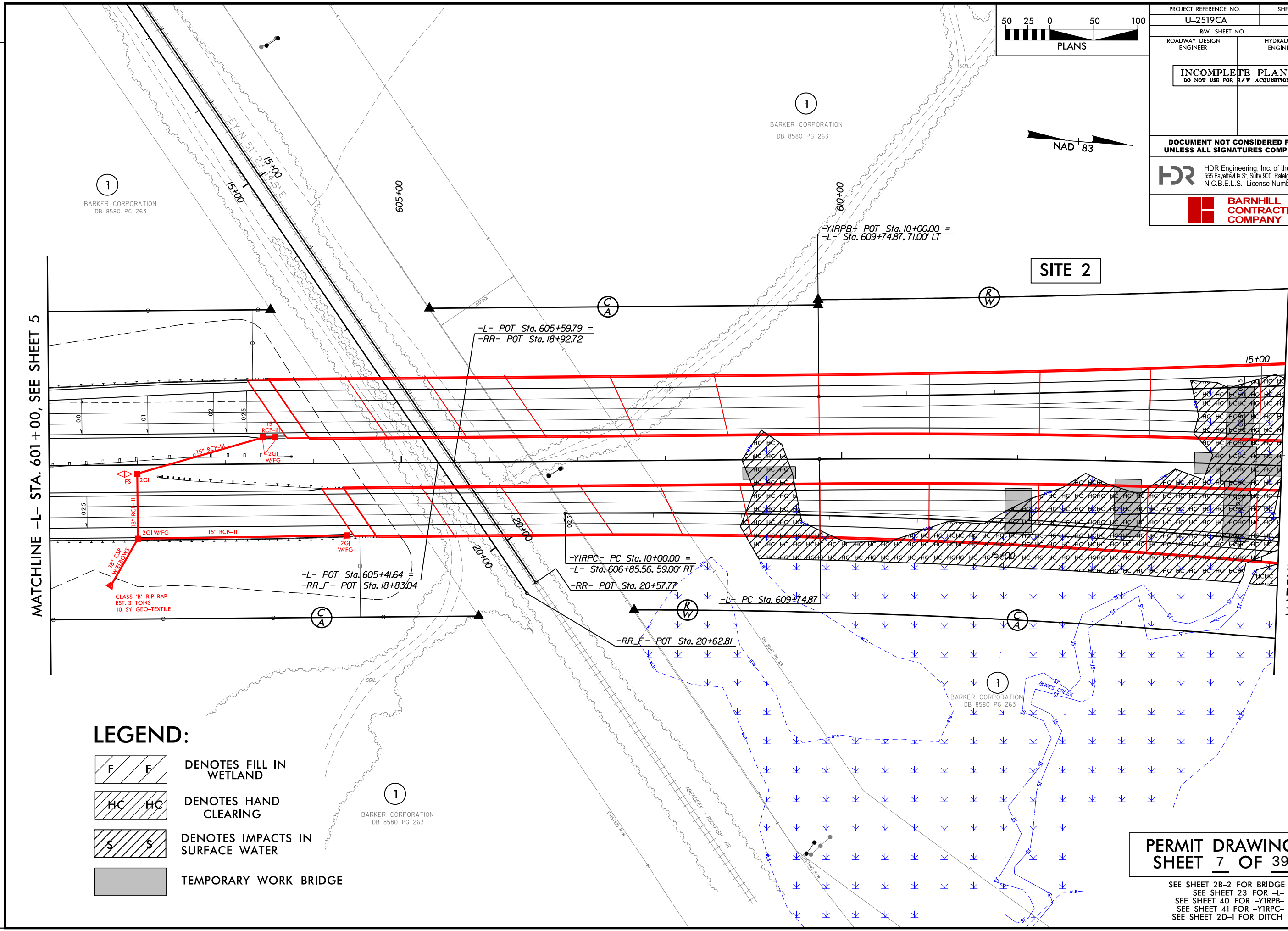
DENOTES IMPACTS IN
SURFACE WATER



TEMPORARY WORK BRIDGE

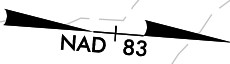
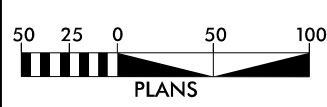
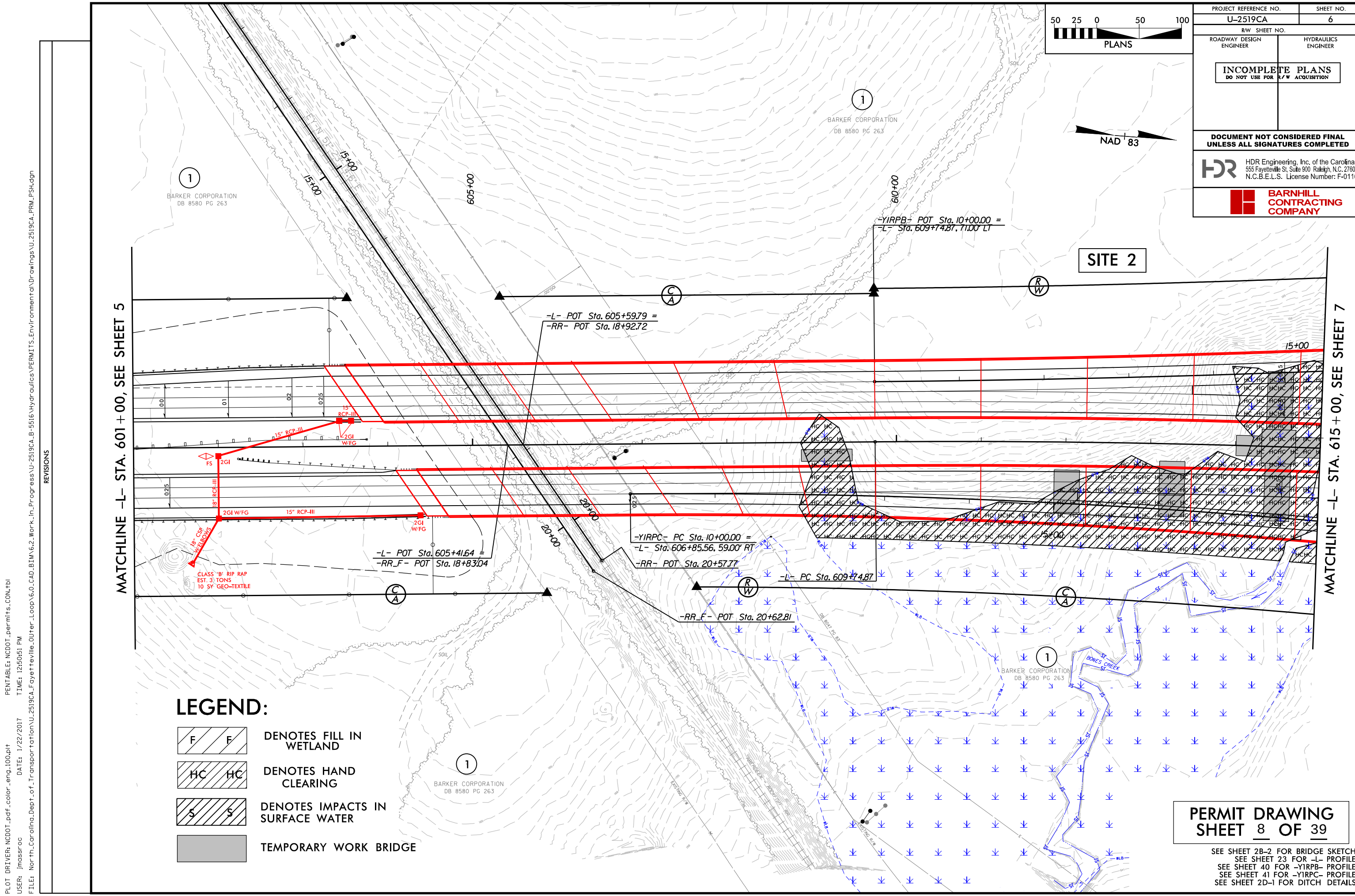


PROJECT REFERENCE NO.		SHEET NO.	
U-2519CA		6	
RW		SHEET NO.	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
		HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	
		BARNHILL CONTRACTING COMPANY	



PERMIT DRAWING
SHEET 7 OF 39

SEE SHEET 2B-2 FOR BRIDGE SKETCH
SEE SHEET 23 FOR -L- PROFILE
SEE SHEET 40 FOR -YIRPB- PROFILE
SEE SHEET 41 FOR -YIRPC- PROFILE
SEE SHEET 2D-1 FOR DITCH DETAILS



PROJECT REFERENCE NO. U-2519CA		SHEET NO. 6	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
 HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116			
 BARNHILL CONTRACTING COMPANY			

MATCHLINE -L- STA. 601 + 00, SEE SHEET 5

MATCHLINE -L- STA. 615 + 00, SEE SHEET 7

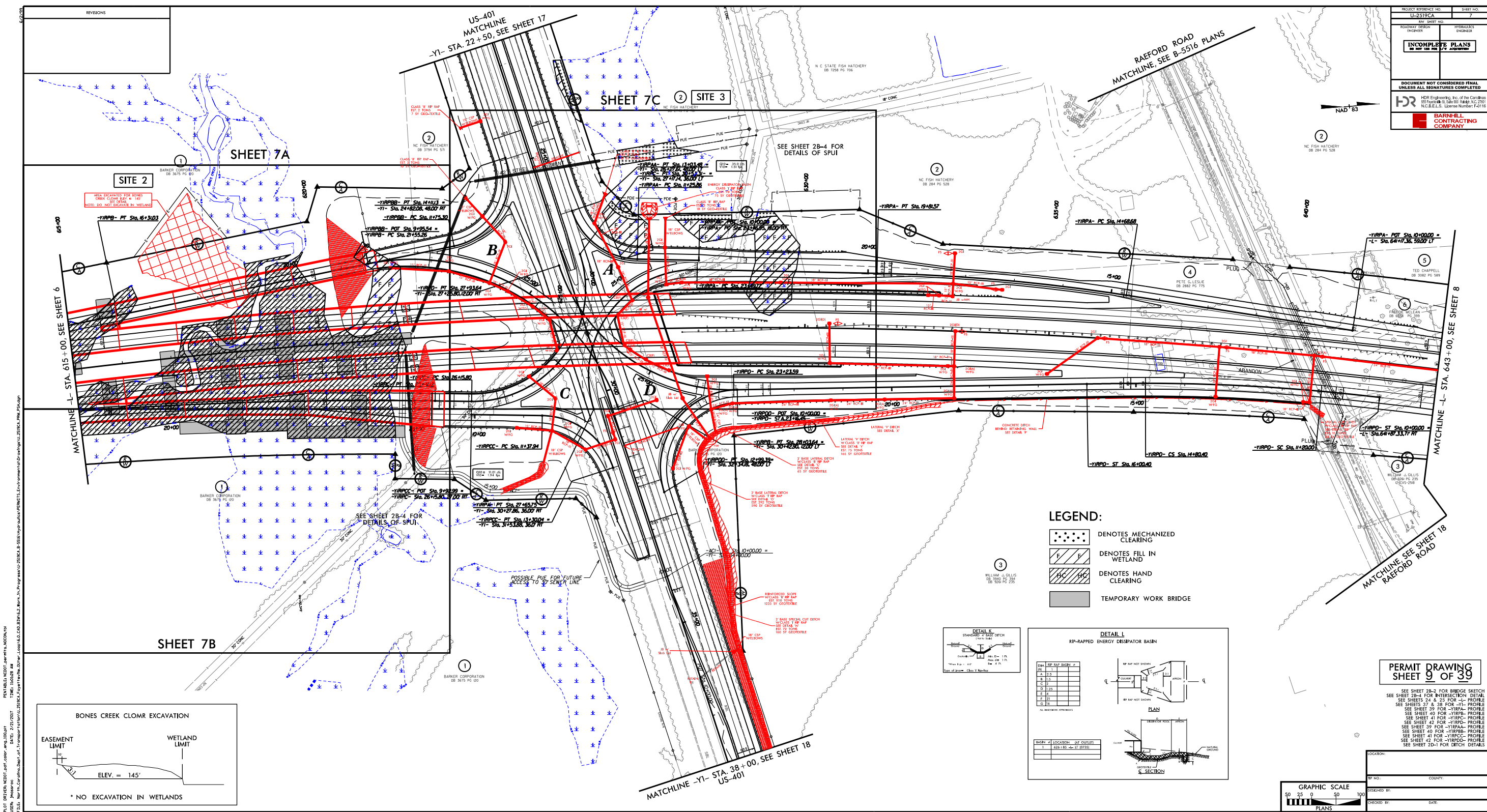
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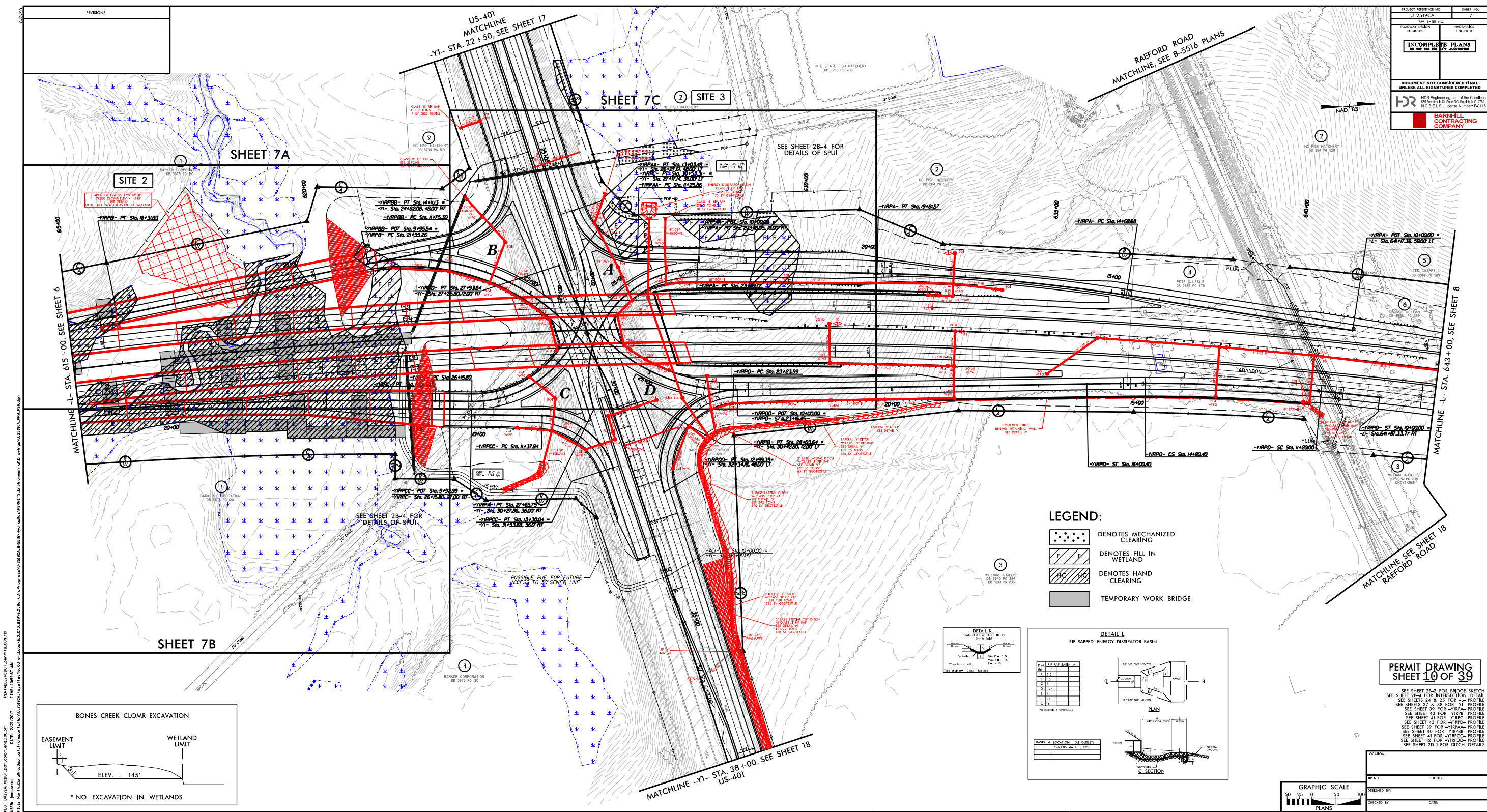
-  DENOTES FILL IN WETLAND
-  DENOTES HAND CLEARING
-  DENOTES IMPACTS IN SURFACE WATER
-  TEMPORARY WORK BRIDGE

PERMIT DRAWING
SHEET 8 OF 39

SEE SHEET 2B-2 FOR BRIDGE SKETCH
SEE SHEET 23 FOR -L- PROFILE
SEE SHEET 40 FOR -YIRPB- PROFILE
SEE SHEET 41 FOR -YIRPC- PROFILE
SEE SHEET 2D-1 FOR DITCH DETAILS

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TIME: 11:08:42 AM
DATE: 2/21/2017

REVISIONS

LEGEND:

- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING
- TEMPORARY WORK BRIDGE

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

**BARNHILL
CONTRACTING
COMPANY**

PROJECT REFERENCE NO.
U-2519CA

SHEET NO.
7B

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

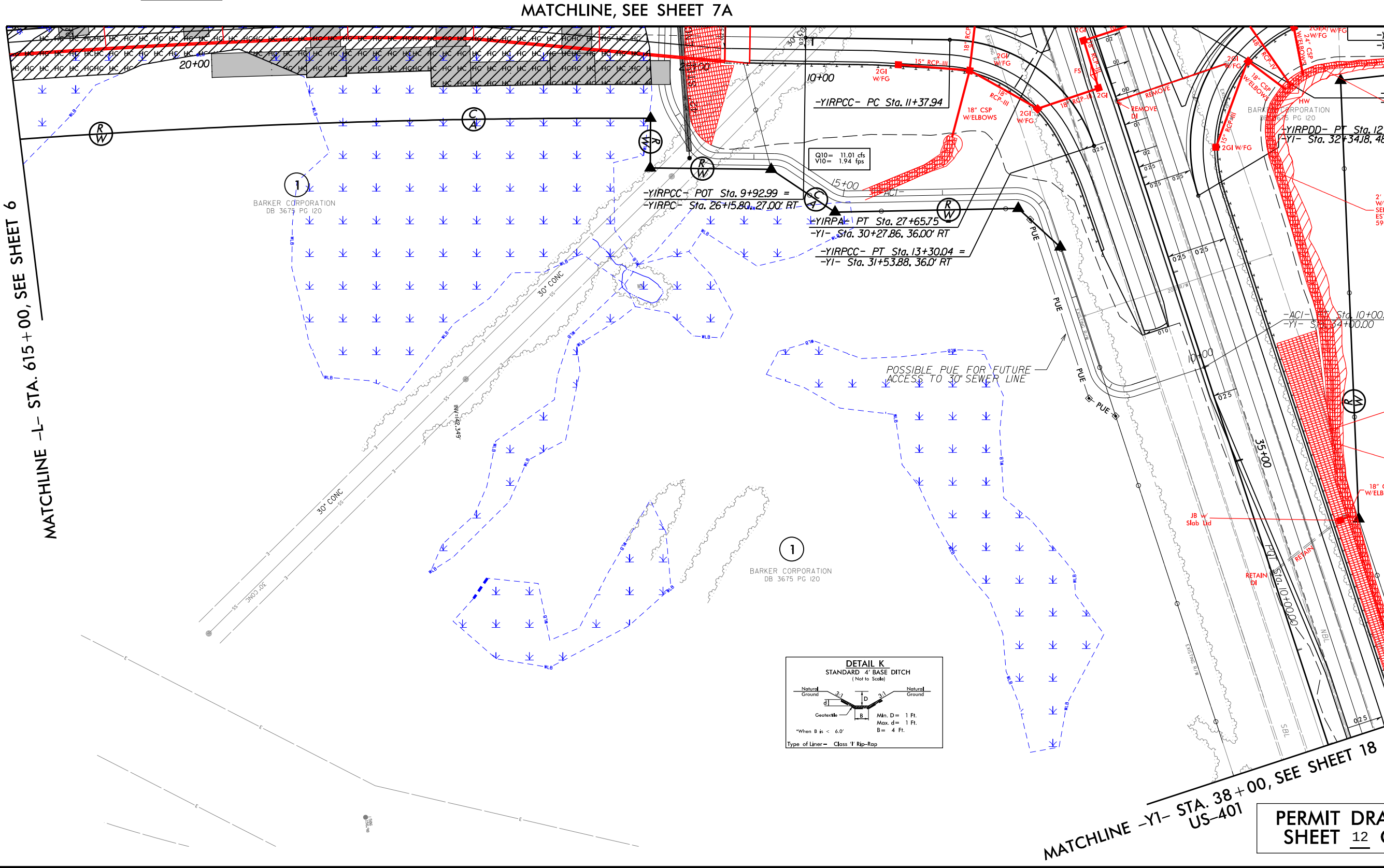
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NAD 83

50 25 0 50 100

PLANS

MATCHLINE -L- STA. 615 + 00, SEE SHEET 6

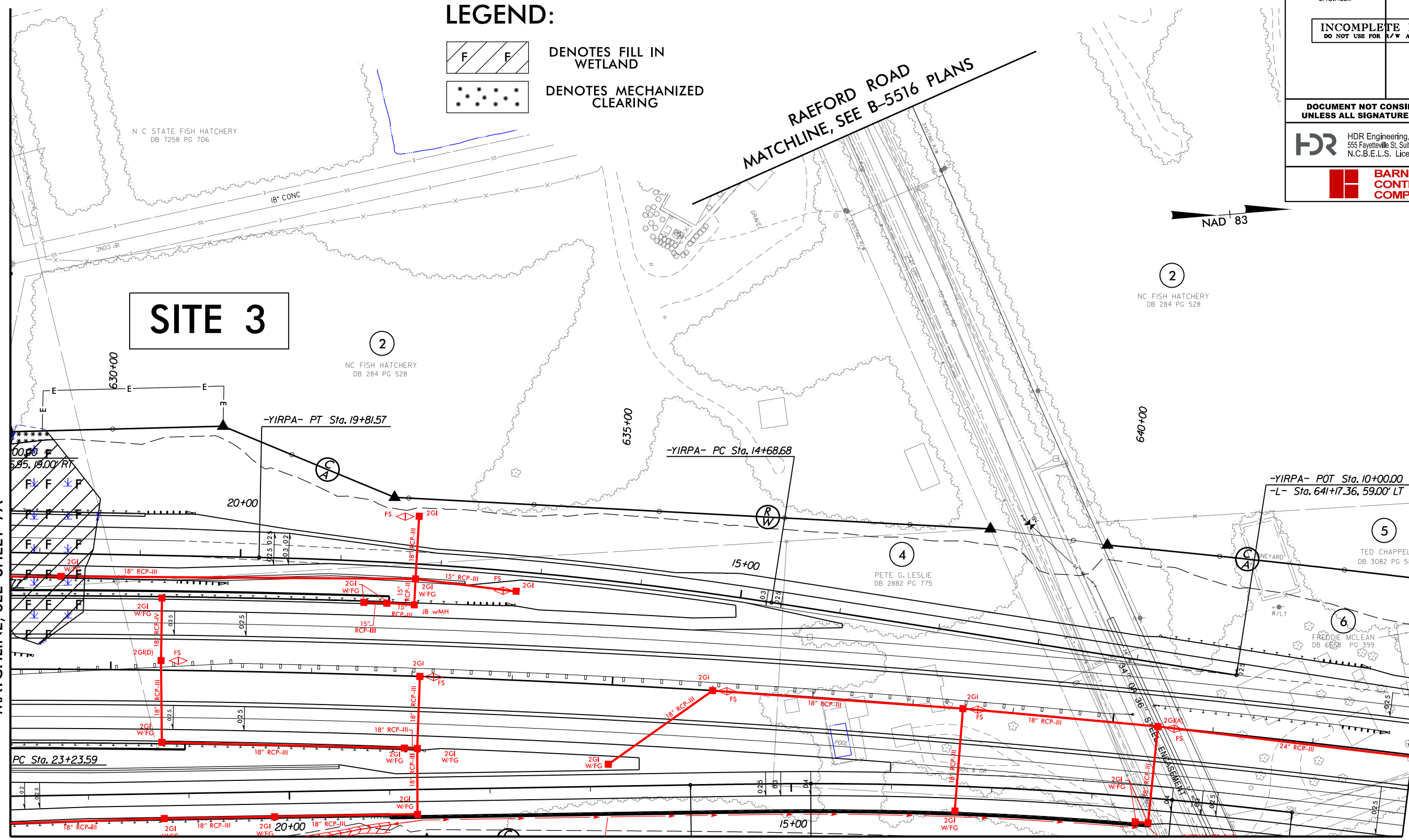


MATCHLINE, SEE SHEET 7

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TIME: 12/08/24 PM
DATE: 1/22/2017

REVISIONS

MATCHLINE, SEE SHEET 7A

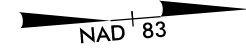
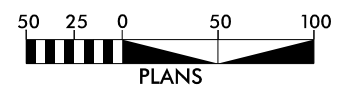


MATCHLINE, SEE SHEET 7

MATCHLINE -L- STA. 643+00, SEE SHEET 8

LEGEND:

- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING



PROJECT REFERENCE NO.		SHEET NO.	
U-2519CA		7C	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
 HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116			
		BARNHILL CONTRACTING COMPANY	

SITE 3

PERMIT DRAWING
SHEET 13 OF 39

REVISIONS

5/14/99



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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.
U-2519CA

SHEET NO.

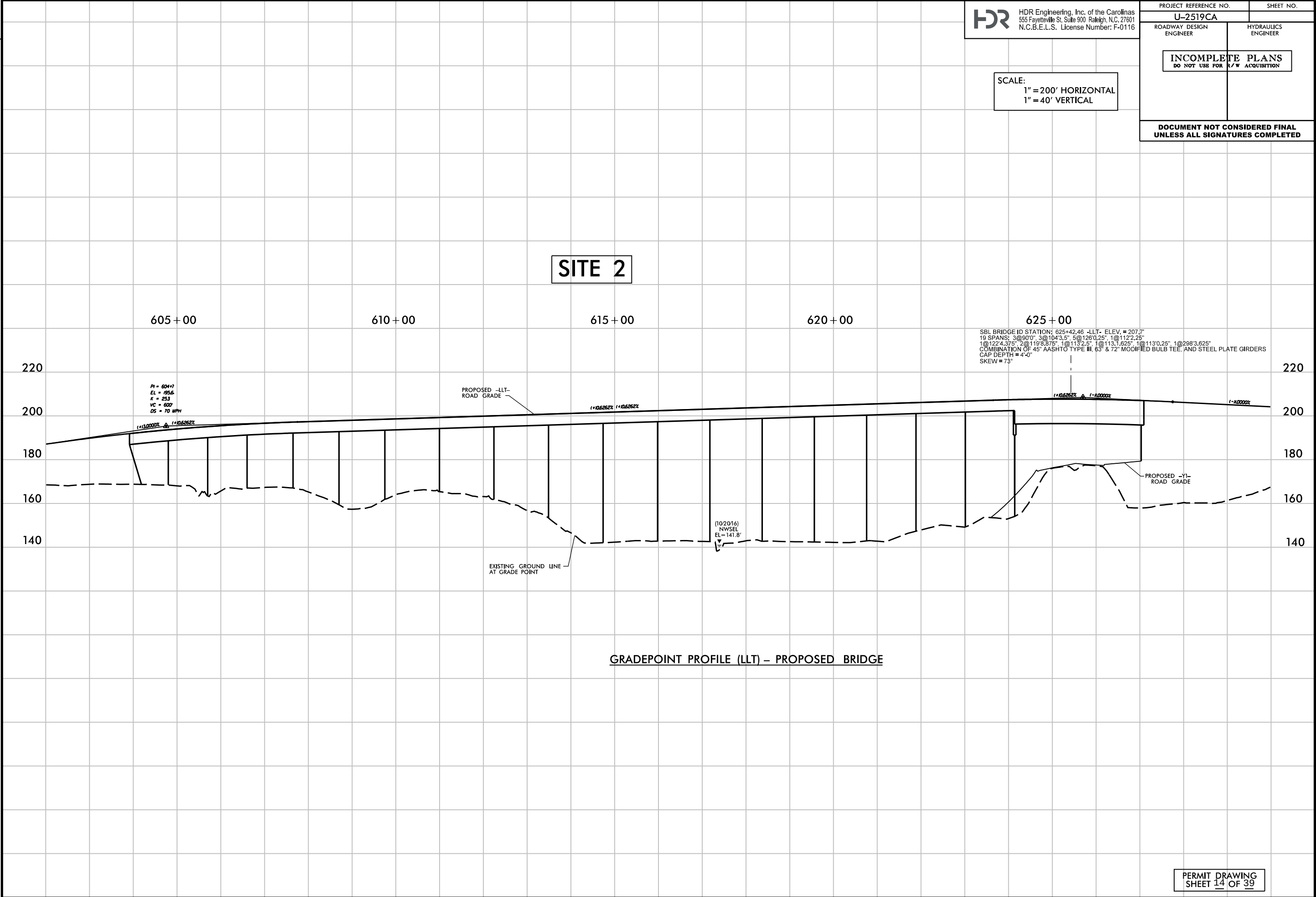
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

SCALE:
1" = 200' HORIZONTAL
1" = 40' VERTICAL



8/23/99

05	PROJ. REFERENCE NO.	SHEET NO.
0 5 10	U-2519CA	X-40

PERMIT DRAWINGS
SHEET 16 OF 39

U-2519CA
PERMIT SITE 3

WETLANDS

WETLANDS

MSE
WALL

-YIRPA- Sta.23+29.46
EL.174.52
118.80' LT

-L- Sta.628+00.00
EL.206.43
35.00' LT

PROP RW

3:1

173.79

0.04

0.025

0.025

0.025

0.04

173.68

6:1

0.035

0.025

0.025

6:1

204.35

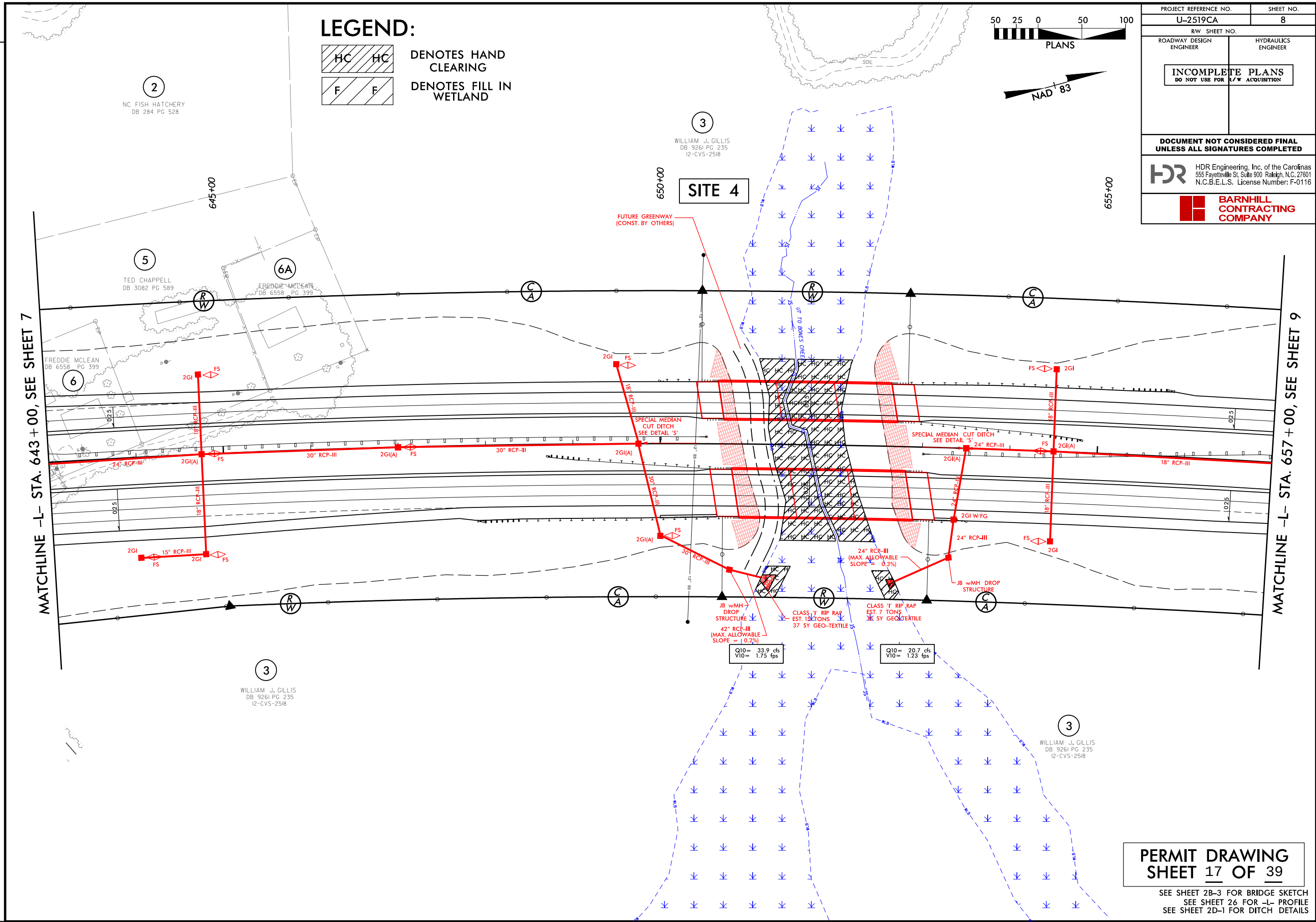
628+00.00

-L-

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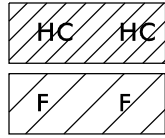
REVISIONS



MATCHLINE -L- STA. 643+00, SEE SHEET 7

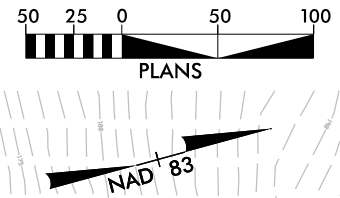
MATCHLINE -L- STA. 657+00, SEE SHEET 9

LEGEND:



DENOTES HAND
CLEARING

DENOTES FILL IN
WETLAND



PROJECT REFERENCE NO.	SHEET NO.
U-2519CA	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
HDR HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	
 BARNHILL CONTRACTING COMPANY	

PERMIT DRAWING
SHEET 18 OF 39

SEE SHEET 2B-3 FOR BRIDGE SKETCH
SEE SHEET 26 FOR -L- PROFILE
SEE SHEET 2D-1 FOR DITCH DETAILS

REVISIONS

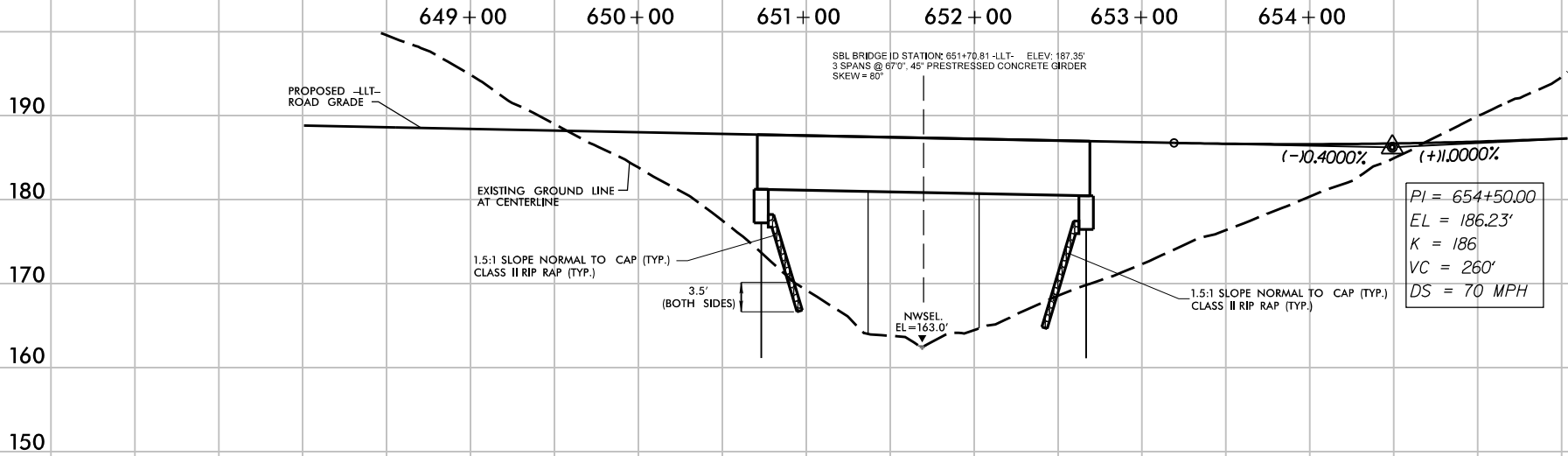


HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

SCALE:
1" = 100' HORIZONTAL
1" = 20' VERTICAL

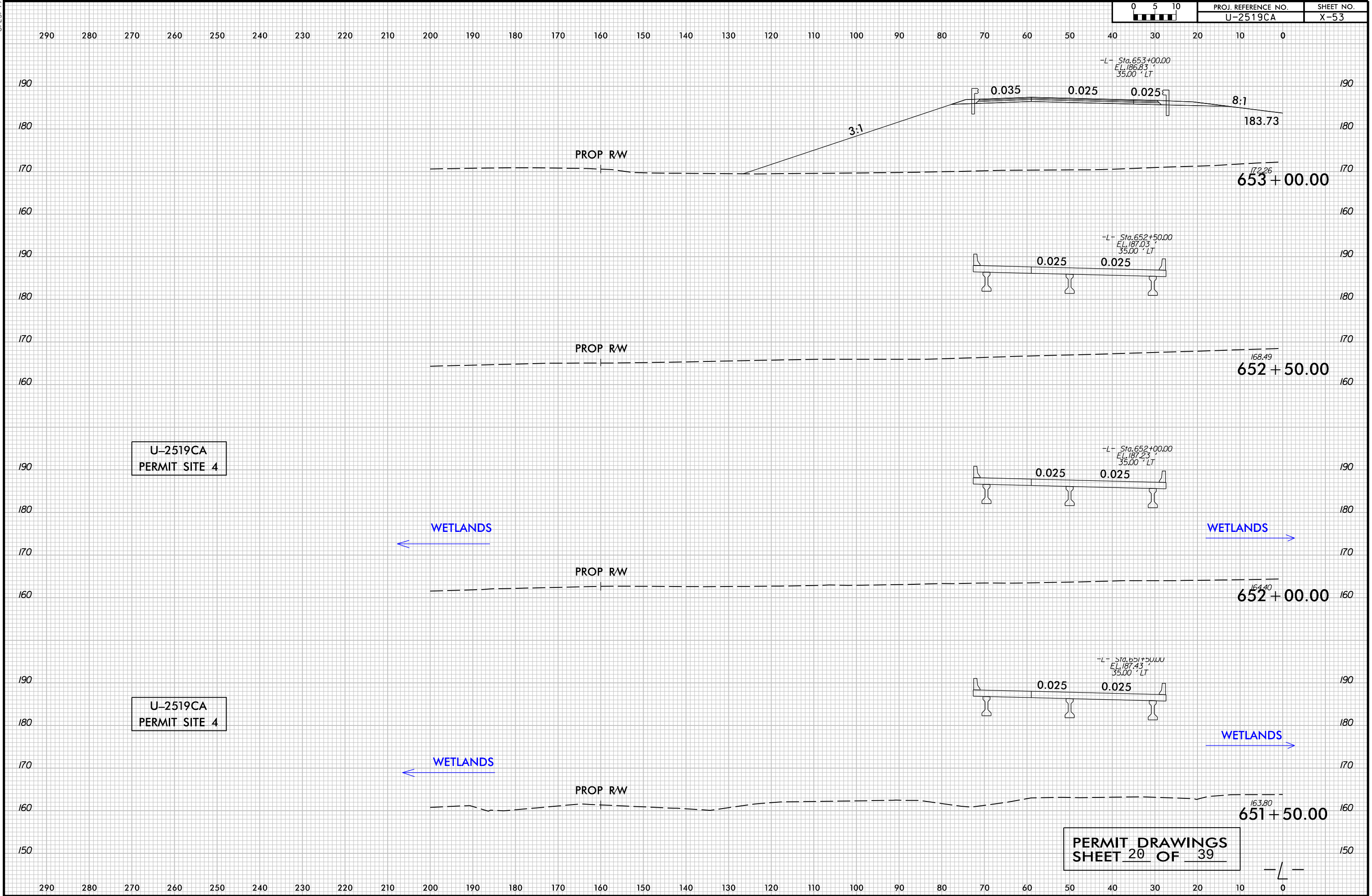
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ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

SITE 4

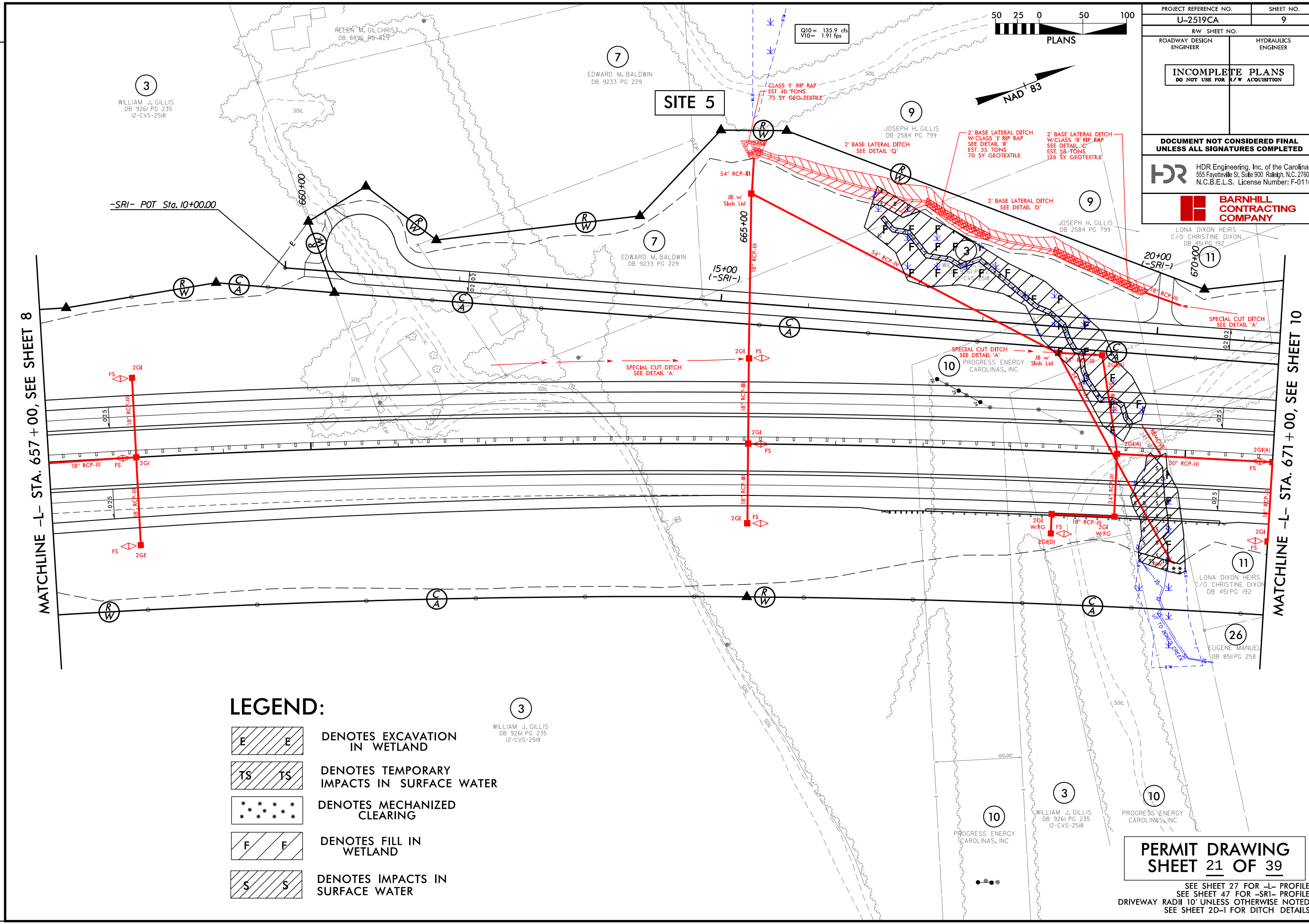


GRADEPOINT PROFILE (LLT) - PROPOSED BRIDGE

649+00 650+00 651+00 652+00 653+00 654+00



REVISIONS



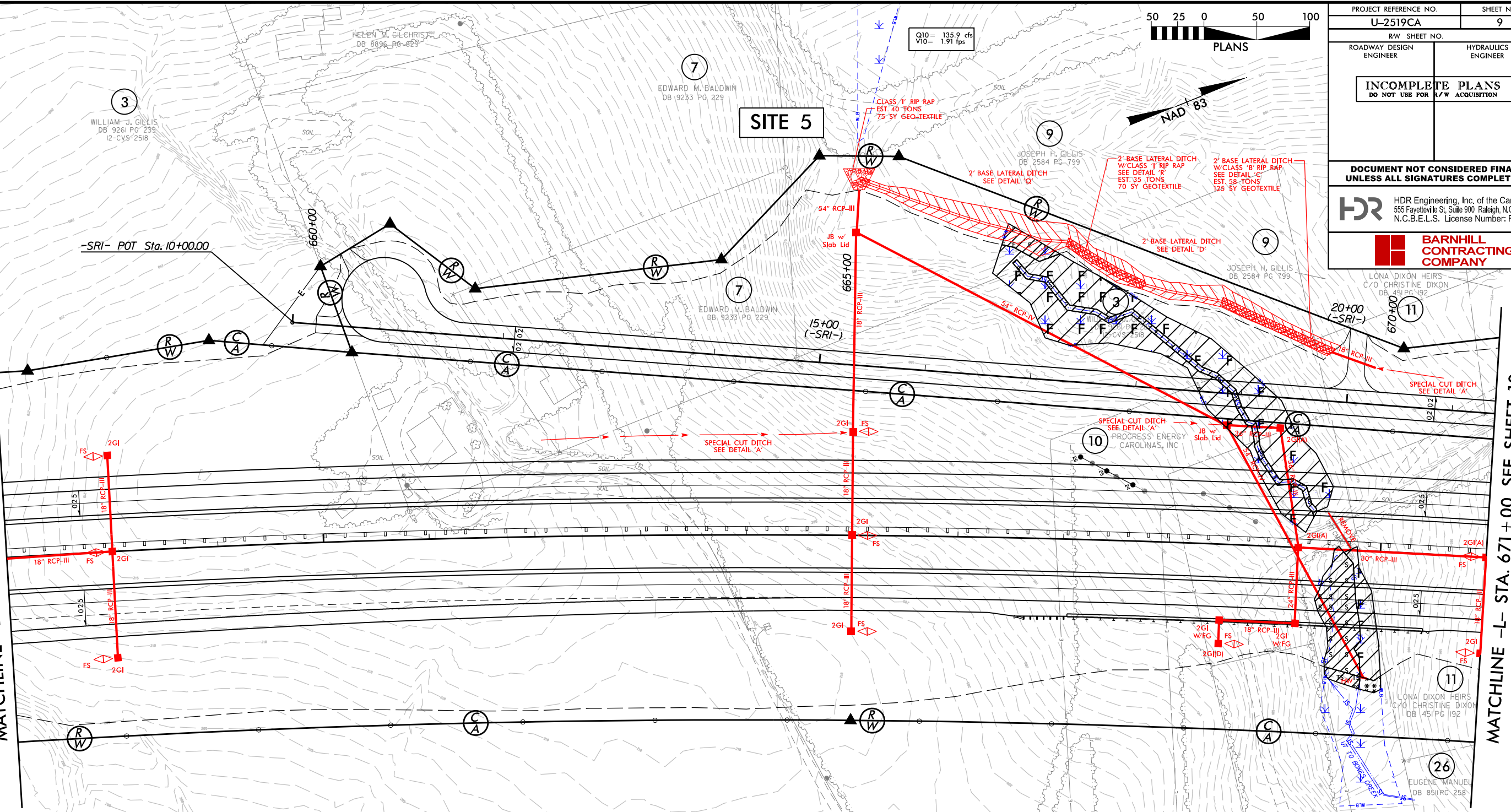
LEGEND:

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

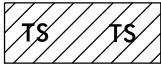
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RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116			
BARNHILL CONTRACTING COMPANY			
LONA DIXON HEIRS C/O CHRISTINE DIXON DB 451 PG 192			

REVISIONS

MATCHLINE -L- STA. 657+00, SEE SHEET 8



LEGEND:

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

PERMIT DRAWING
SHEET 22 OF 39

SEE SHEET 27 FOR -L- PROFILE
SEE SHEET 47 FOR -SRI- PROFILE
DRIVEWAY RADII 10' UNLESS OTHERWISE NOTED
SEE SHEET 2D-1 FOR DITCH DETAILS

PROJECT REFERENCE NO. U-2519CA		SHEET NO. 9	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116			
 BARNHILL CONTRACTING COMPANY			



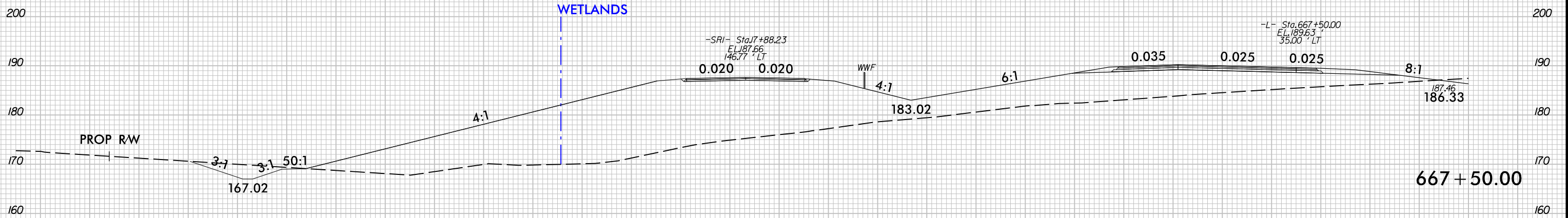
8/23/99

PERMIT DRAWINGS

SHEET 23 OF 39

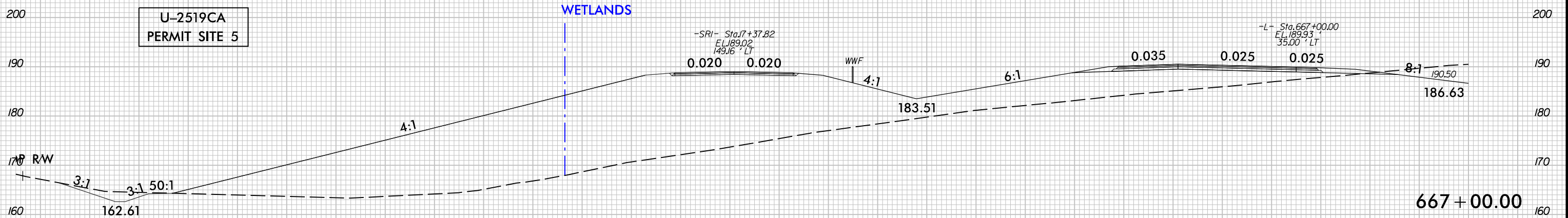
U-2519CA

PERMIT SITE 5



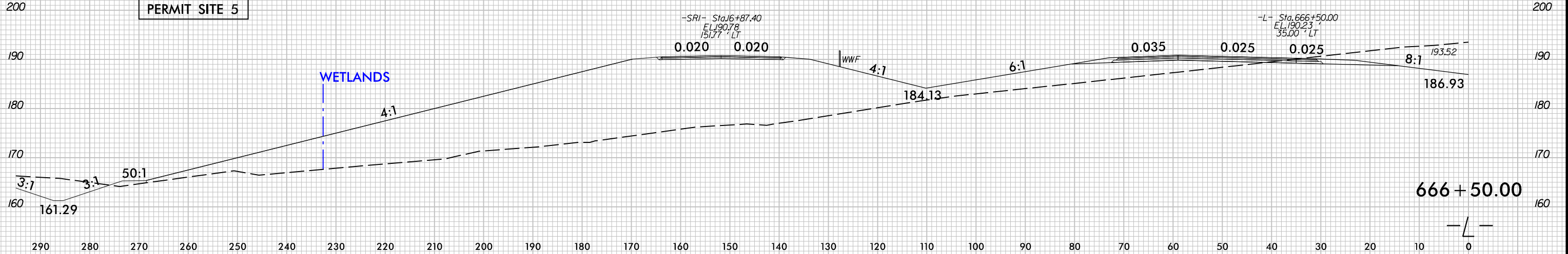
U-2519CA

PERMIT SITE 5



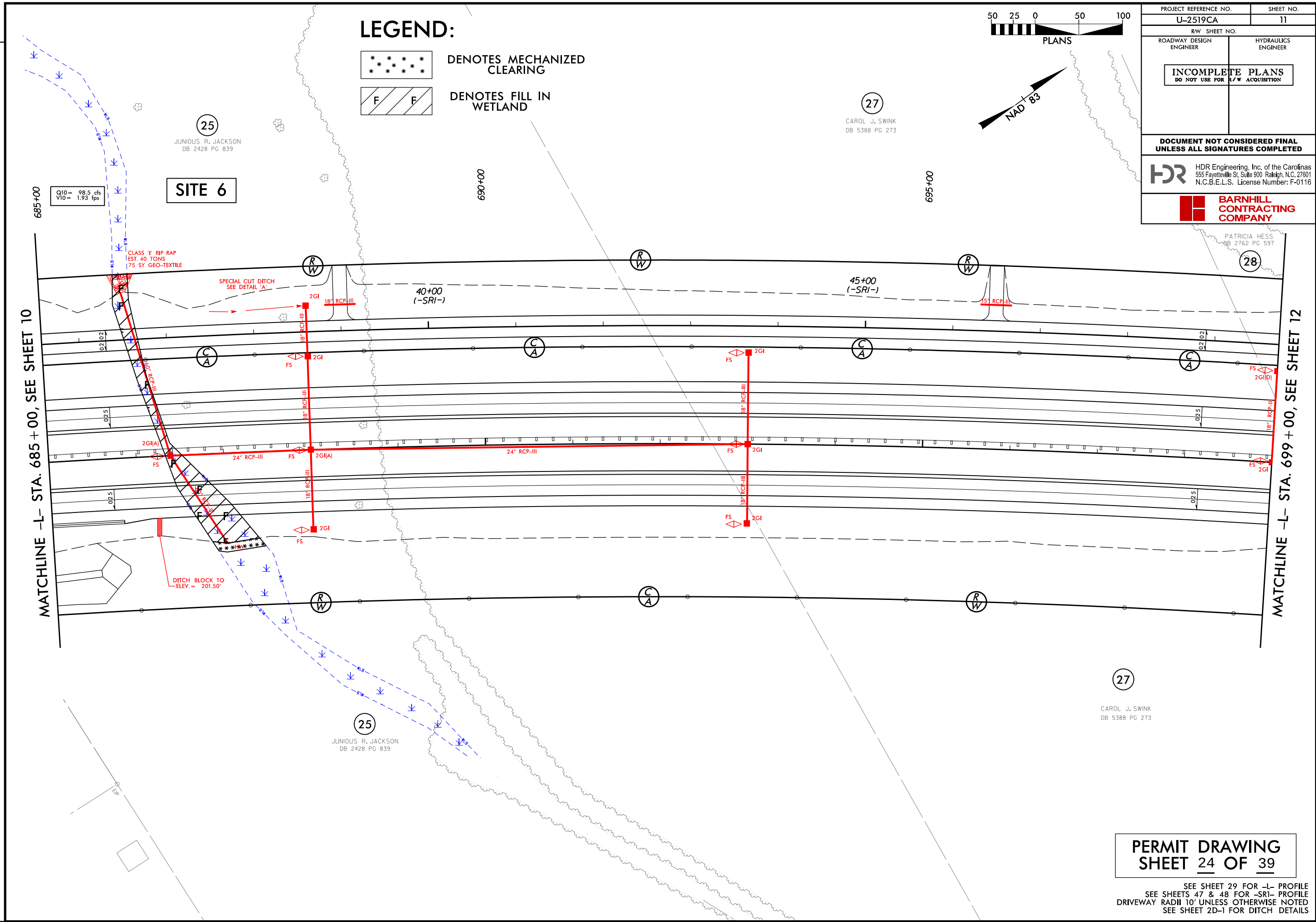
U-2519CA

PERMIT SITE 5



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REVISIONS



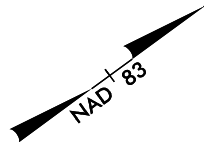
LEGEND:



DENOTES MECHANIZED
CLEARING



DENOTES FILL IN
WETLAND

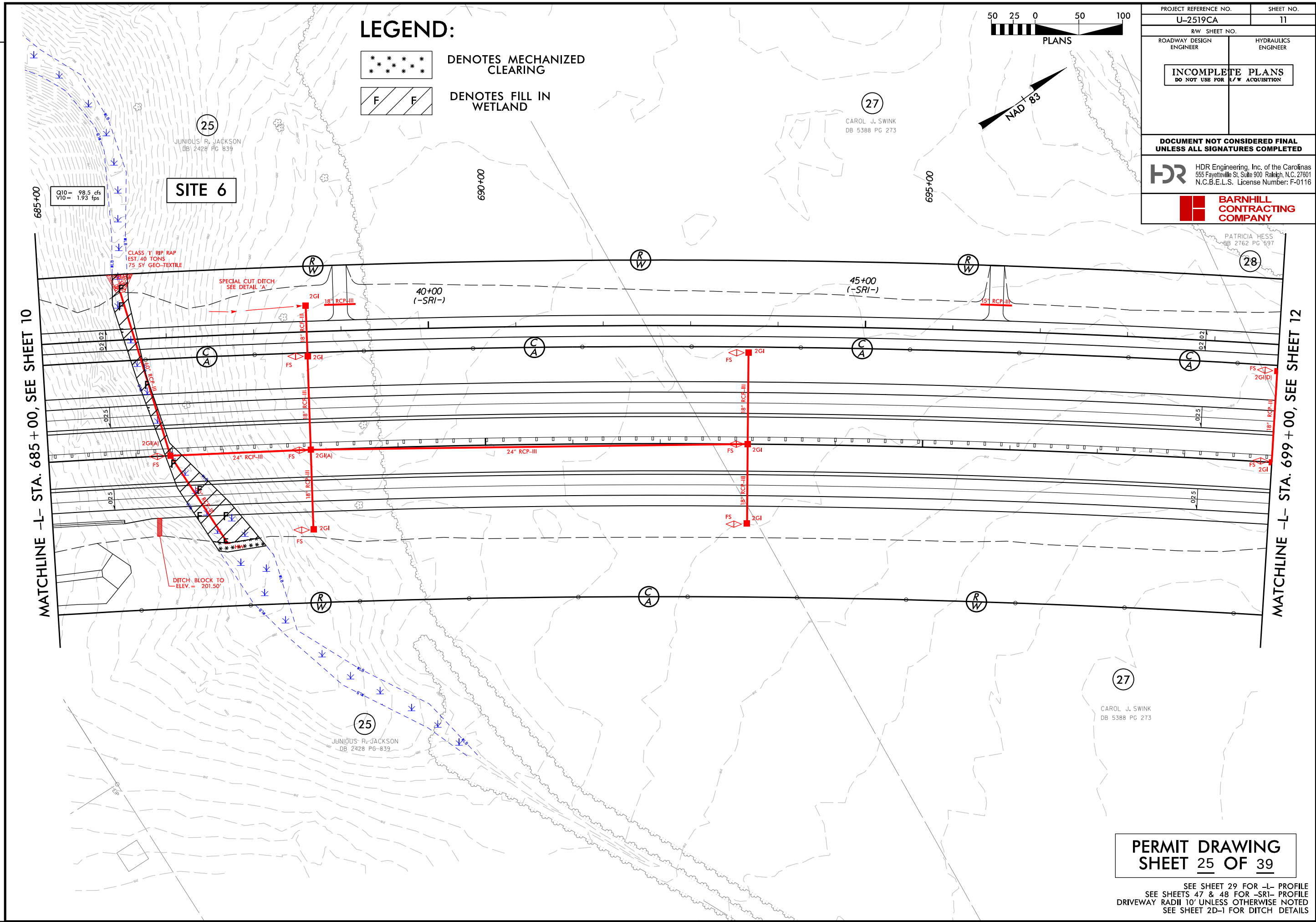


PROJECT REFERENCE NO.		SHEET NO.	
U-2519CA		11	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
		HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	
		BARNHILL CONTRACTING COMPANY	

PERMIT DRAWING
SHEET 24 OF 39

SEE SHEET 29 FOR -L- PROFILE
SEE SHEETS 47 & 48 FOR -SRI- PROFILE
DRIVEWAY RADII 10' UNLESS OTHERWISE NOTED
SEE SHEET 2D-1 FOR DITCH DETAILS

REVISIONS



LEGEND:

-  DENOTES MECHANIZED CLEARING
-  DENOTES FILL IN WETLAND



PROJECT REFERENCE NO.		SHEET NO.	
U-2519CA		11	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
		HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	
		BARNHILL CONTRACTING COMPANY	

PERMIT DRAWING
SHEET 25 OF 39

SEE SHEET 29 FOR -L- PROFILE
SEE SHEETS 47 & 48 FOR -SRI- PROFILE
DRIVEWAY RADII 10' UNLESS OTHERWISE NOTED
SEE SHEET 2D-1 FOR DITCH DETAILS

REVISIONS

5/14/99

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

PROJECT REFERENCE NO. SHEET NO.

U-2519CA

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

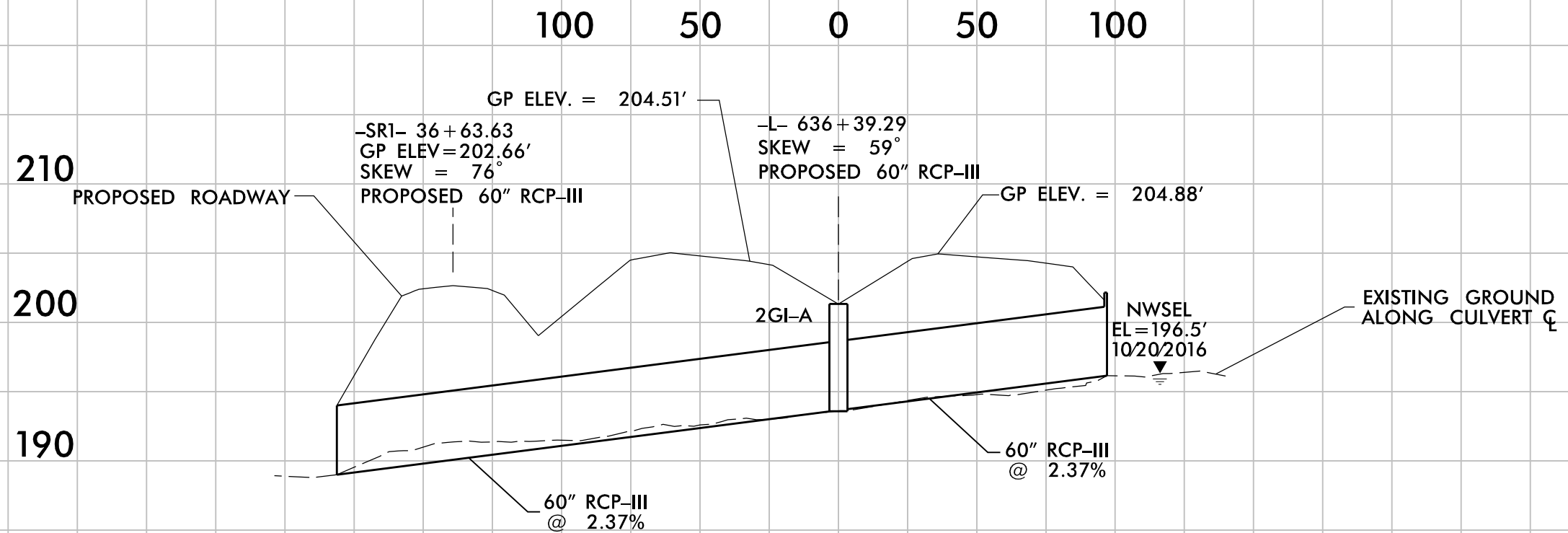
INCOMPLETE PLANS

DO NOT USE FOR R/W ACQUISITION

SCALE:
1" = 25' HORIZONTAL
1" = 5' VERTICAL

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

SITE 6

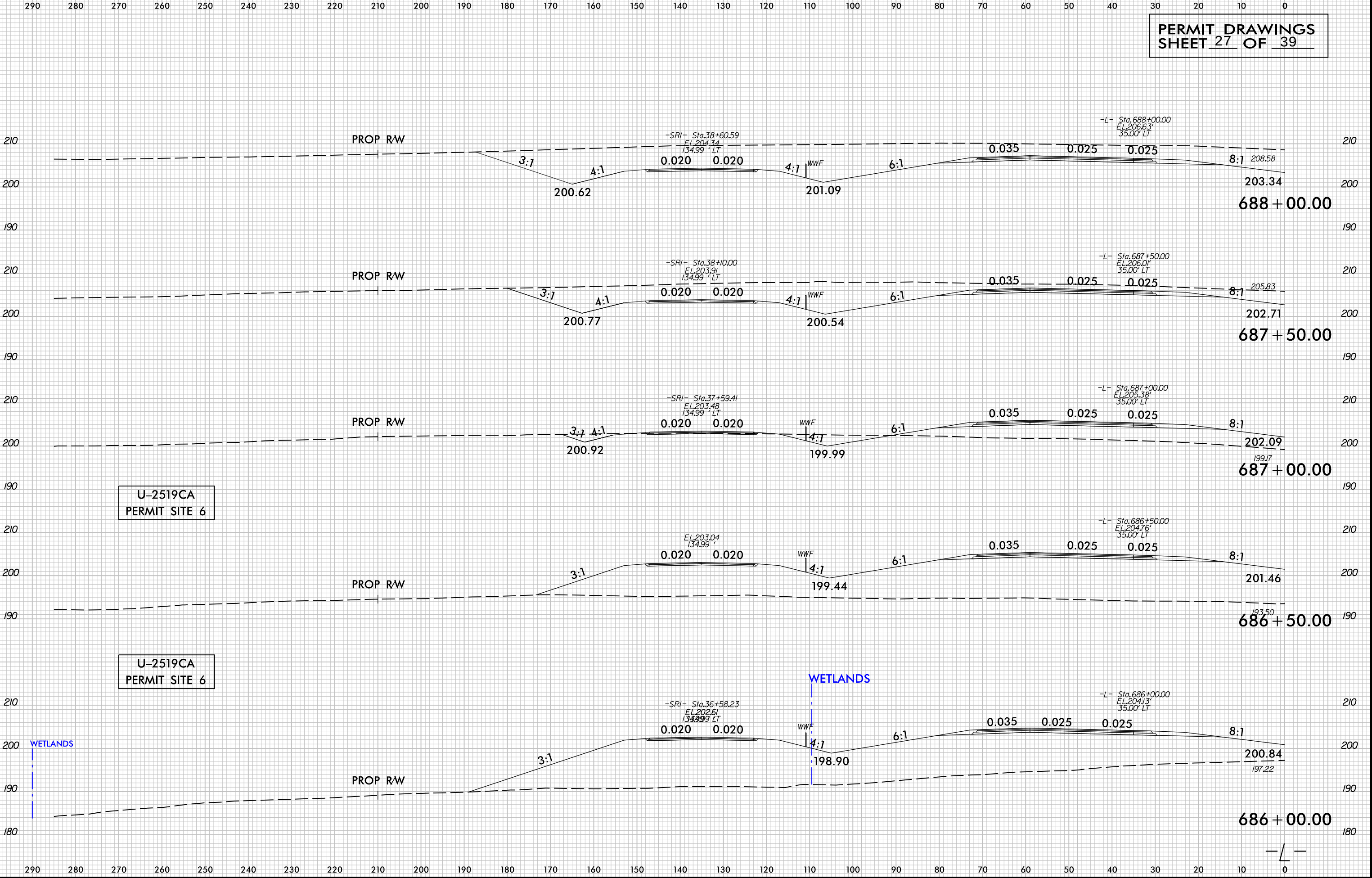


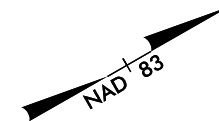
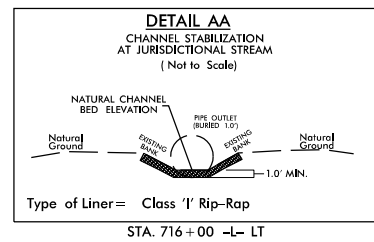
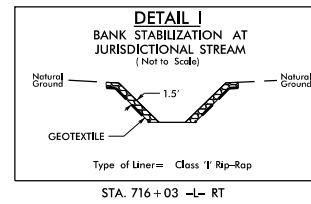
PROFILE ALONG ζ OF PROPOSED 60" RCP-III

**PERMIT DRAWING
SHEET 26 OF 39**

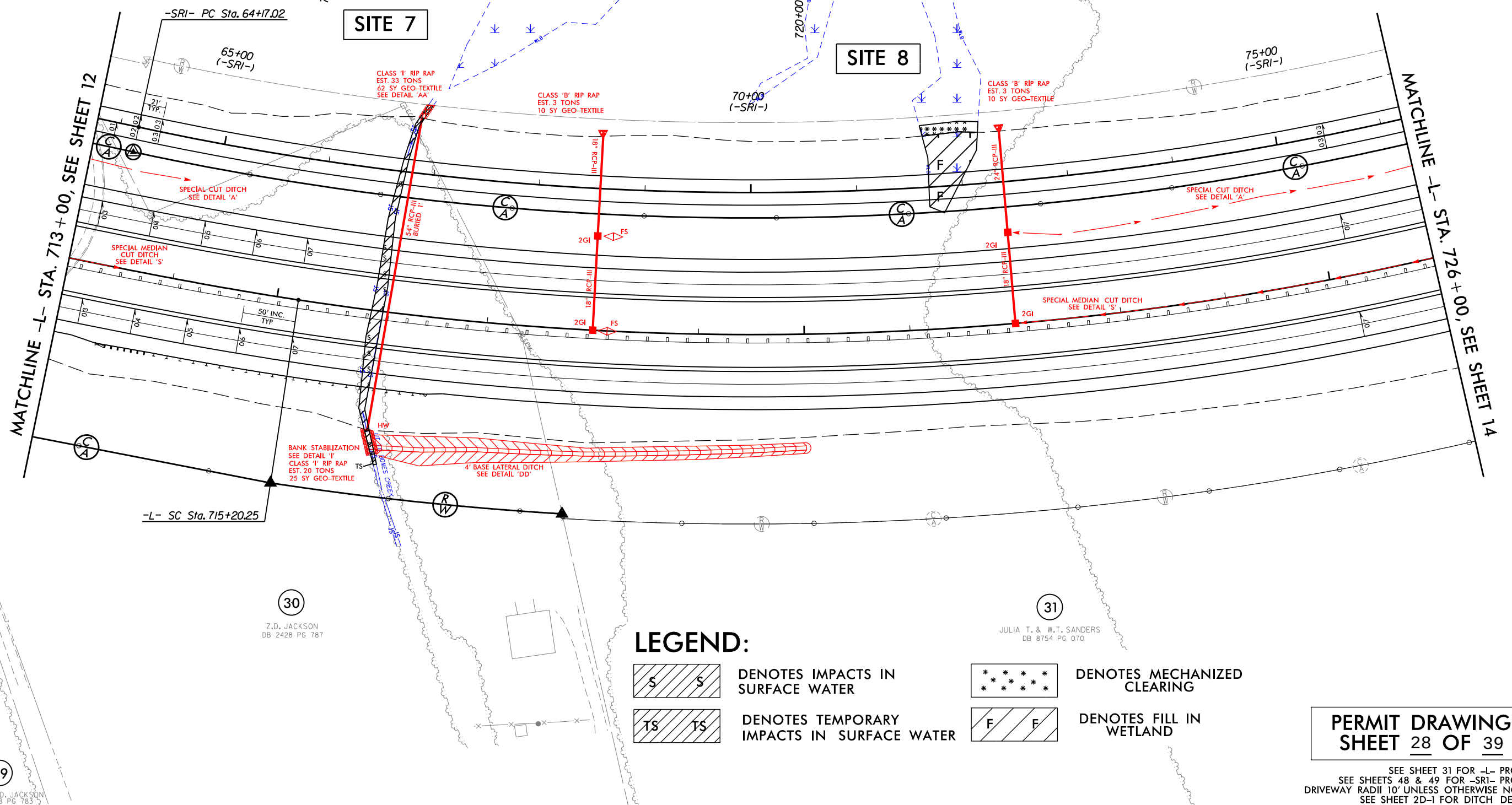
8/23/99

PERMIT DRAWINGS
SHEET 27 OF 39





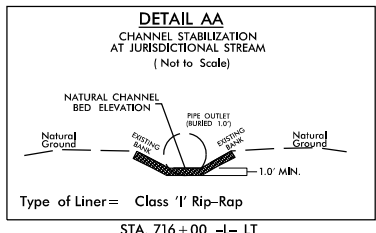
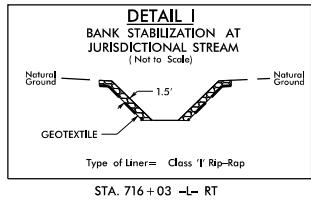
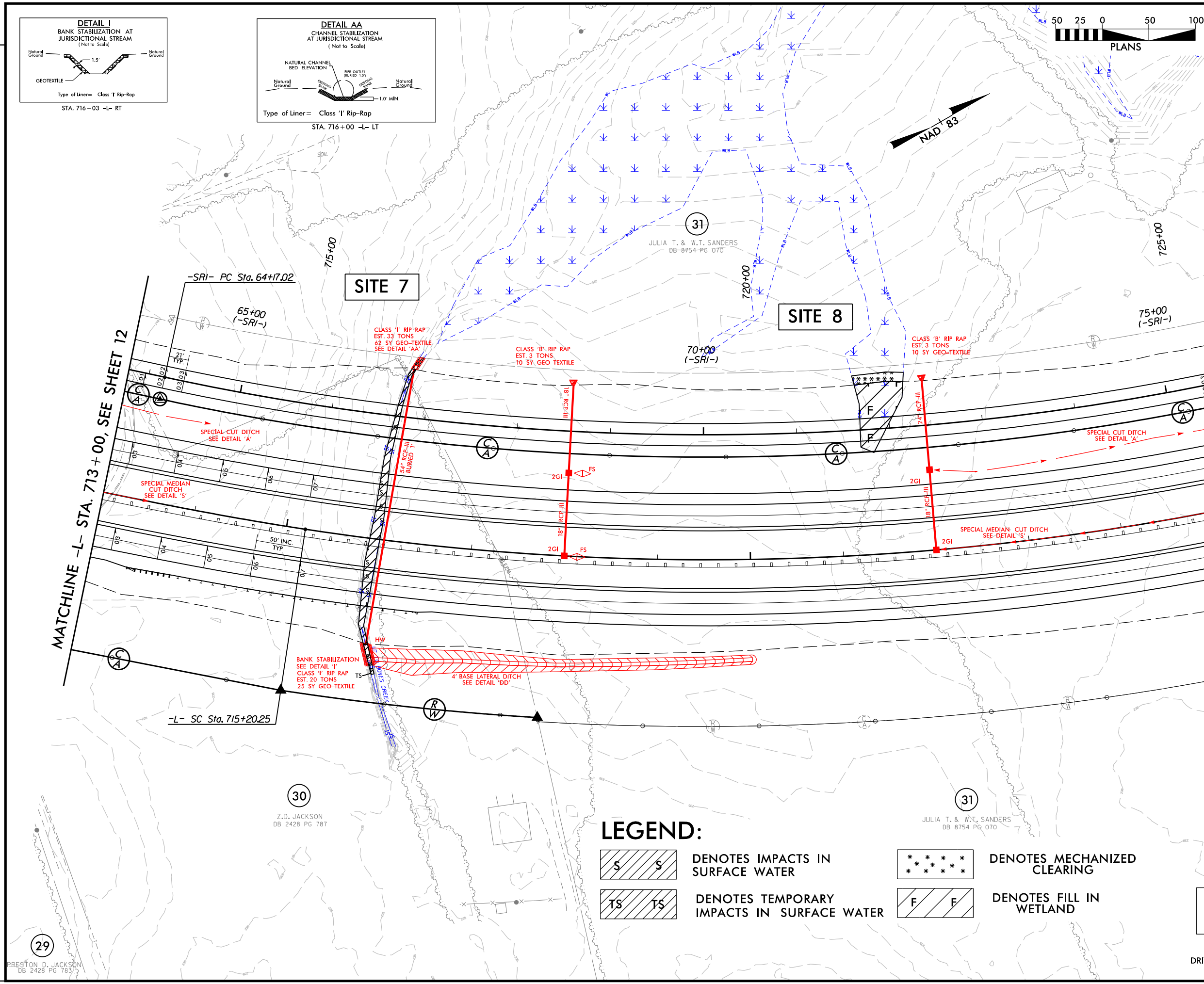
PROJECT REFERENCE NO.	SHEET NO.
U-2519CA	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
	HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116
	BARNHILL CONTRACTING COMPANY



PLOT DRIVER: NCDOT_color_eng_100.plt
USER: jmassroc
FILE: North.Carolina.Dept.of.Transportation\U.2519CA_Fayetteville.00*er.Loop\6.0.CAD.BTM\6.2.Work.In.Progress\U-2519CA_B-5516.Hydraulics\PERMITS.Environmental\Drawings\U.2519CA.PRM.PSH.dgn

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REVISIONS



PROJECT REFERENCE NO. U-2519CA		SHEET NO. 13	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116			
BARNHILL CONTRACTING COMPANY			

LEGEND:

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

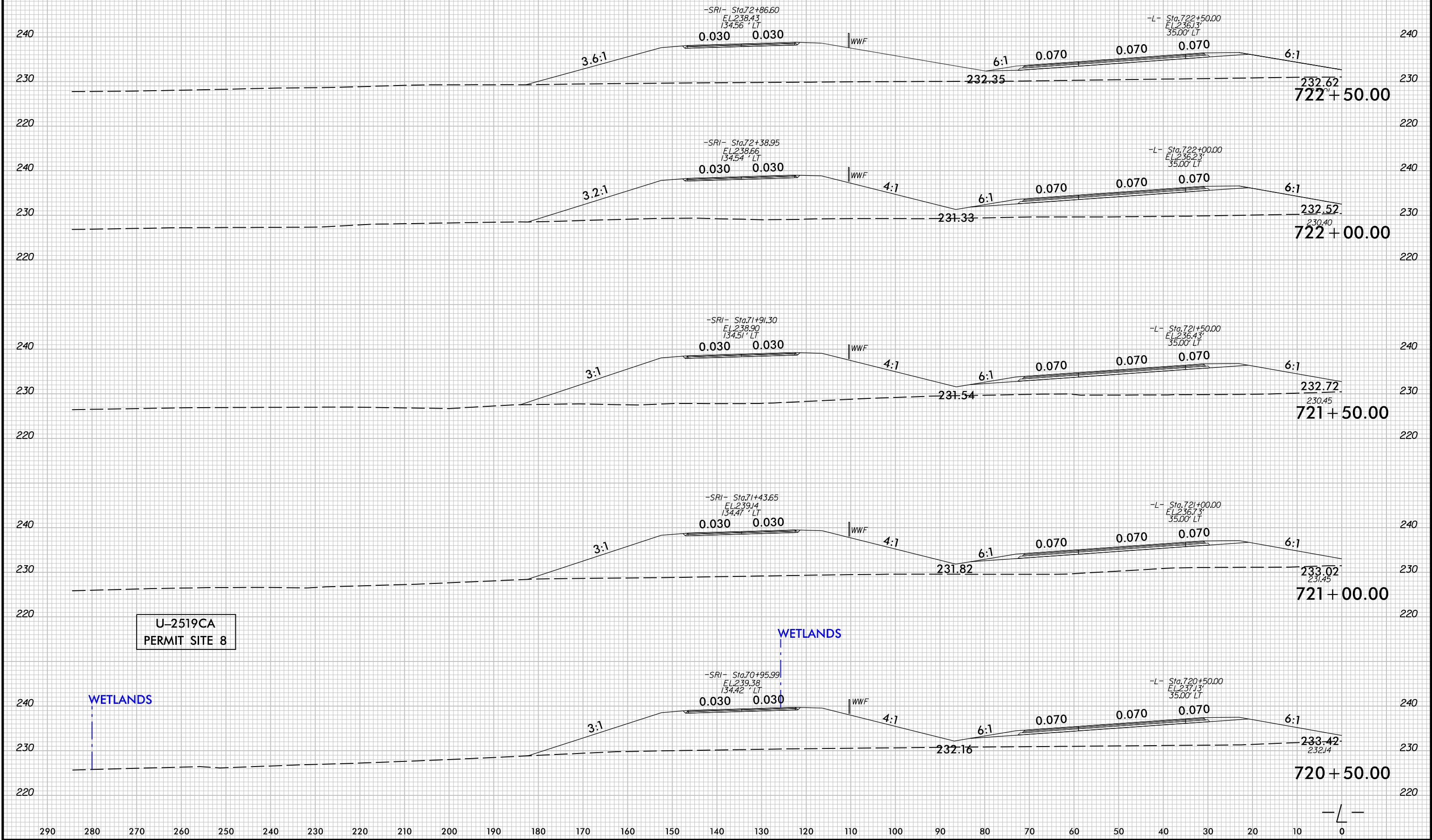
PERMIT DRAWING
SHEET 29 OF 39

SEE SHEET 31 FOR -L- PROFILE
SEE SHEETS 48 & 49 FOR -SRI- PROFILE
DRIVEWAY RADII 10' UNLESS OTHERWISE NOTED
SEE SHEET 2D-1 FOR DITCH DETAILS

8/23/99

0510	PROJ. REFERENCE NO.	SHEET NO.
	U-2519CA	X-83

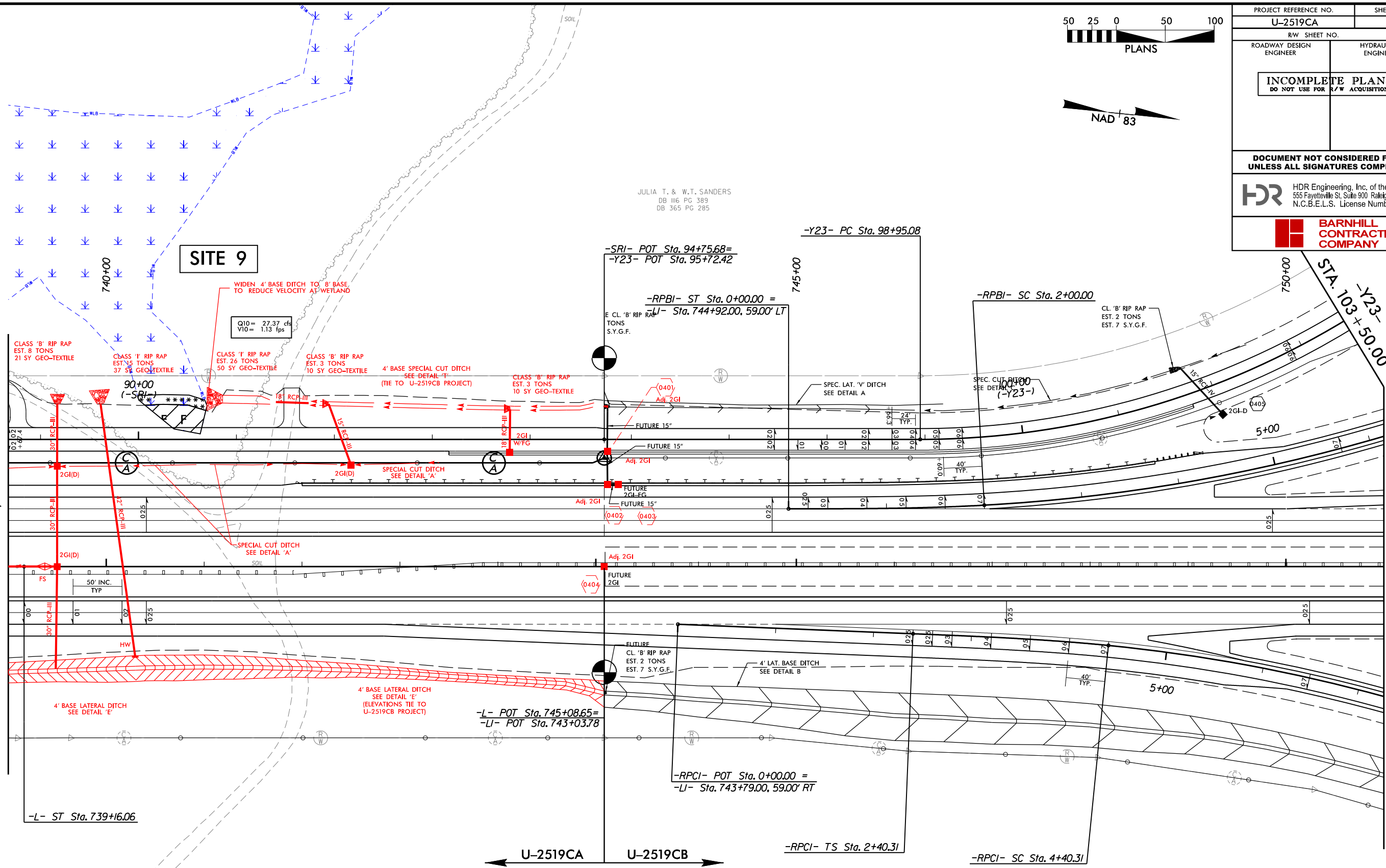
PERMIT DRAWINGS
SHEET 30 OF 39



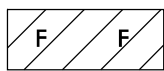
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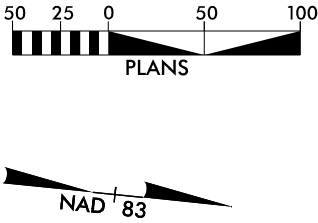
REVISIONS

MATCHLINE -L- STA. 739 + 00, SEE SHEET 14



LEGEND:

-  DENOTES MECHANIZED CLEARING
-  DENOTES FILL IN WETLAND



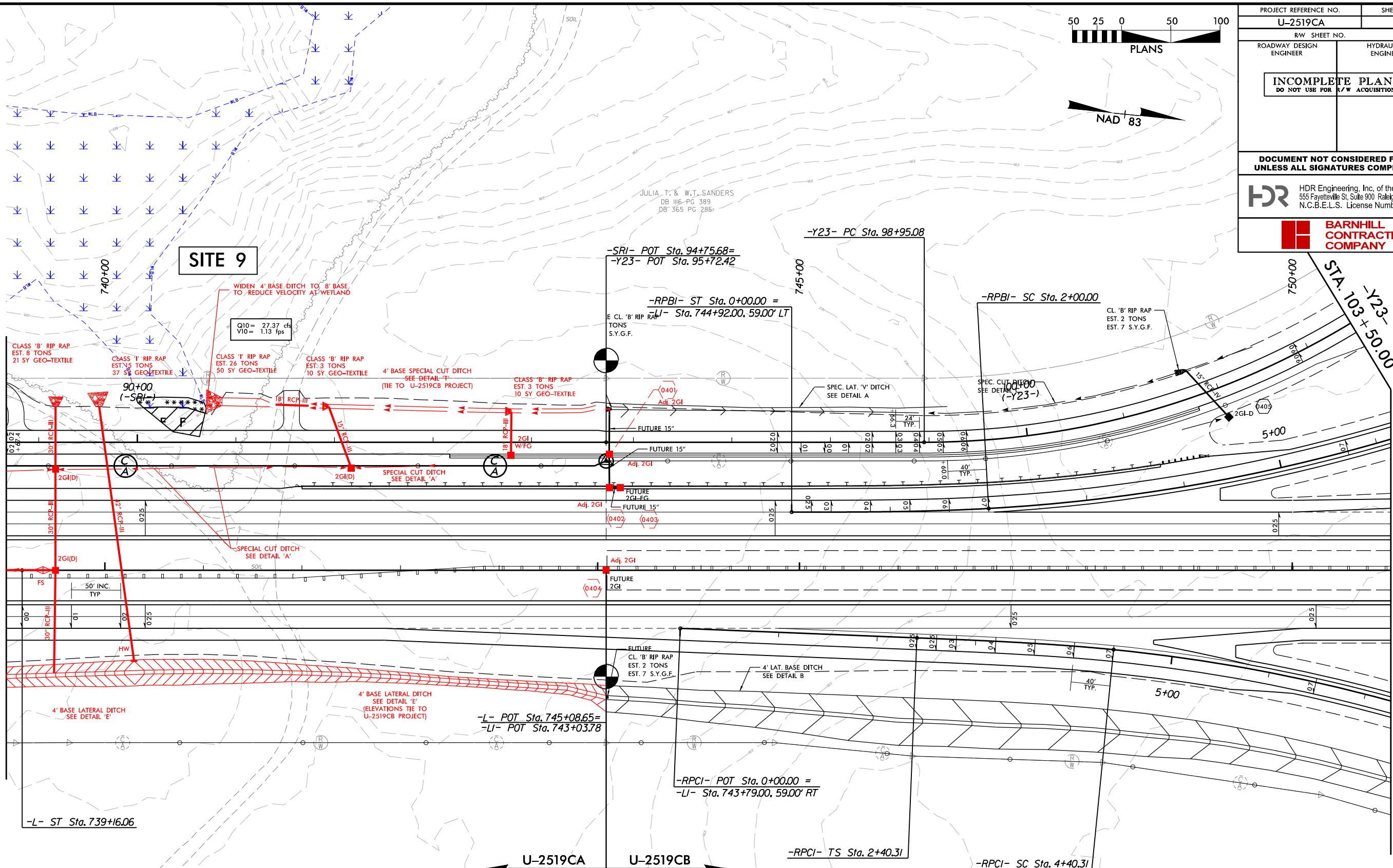
PROJECT REFERENCE NO.		SHEET NO.
U-2519CA		15
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		
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 BARNHILL CONTRACTING COMPANY		

PERMIT DRAWING
SHEET 31 OF 39

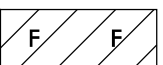
SEE SHEET 33 FOR -L- PROFILE
SEE SHEET 45 FOR -RPB1- PROFILE
SEE SHEET 46 FOR -RPC1- PROFILE
SEE SHEETS 49 & 50 FOR -SRI- PROFILE
SEE SHEET 50 FOR -Y23- PROFILE
DRIVEWAY RADII 10' UNLESS OTHERWISE NOTED
SEE SHEET 2D-1 FOR DITCH DETAILS

REVISIONS

MATCHLINE -L- STA. 739 + 00, SEE SHEET 14

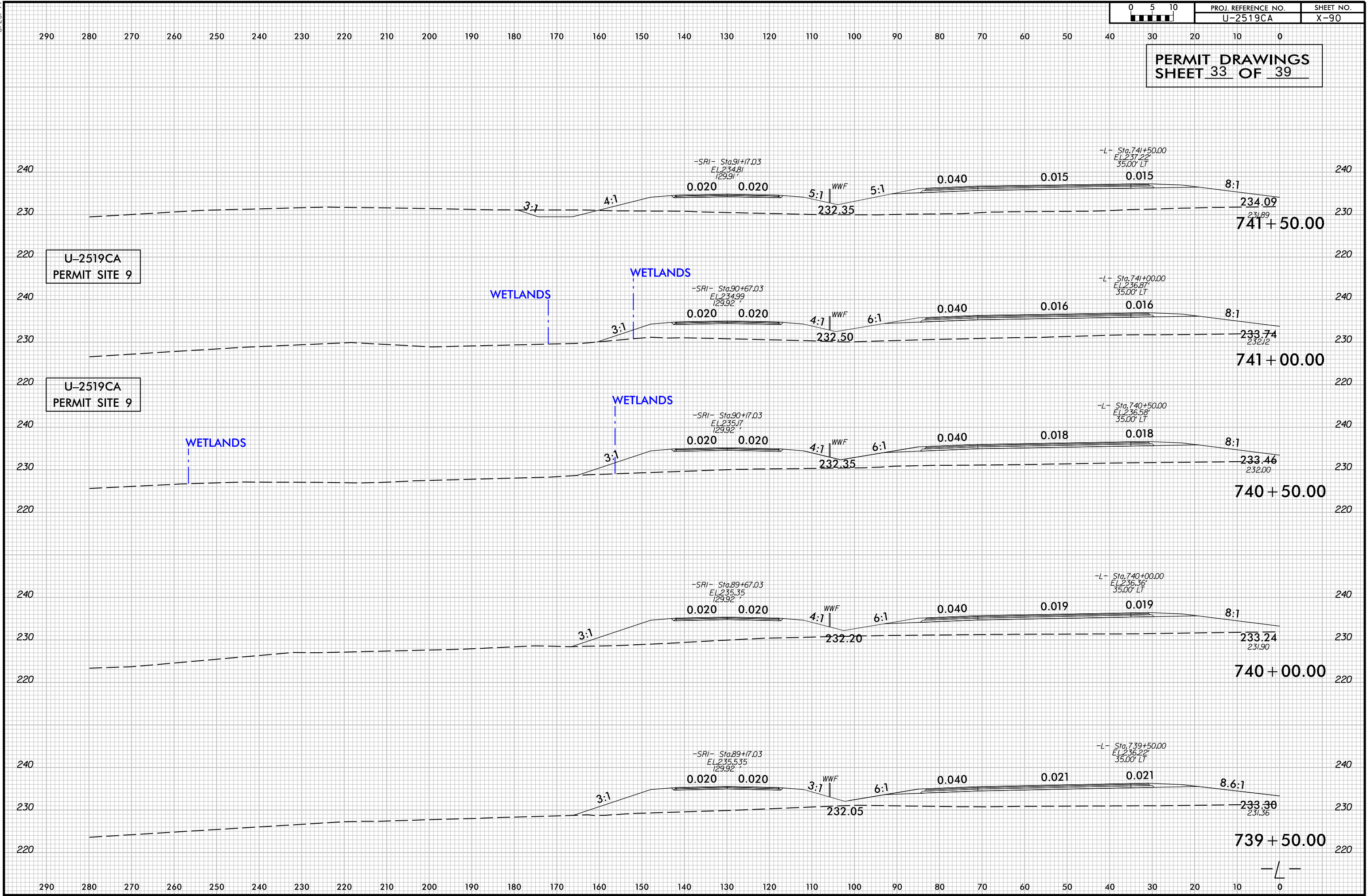


LEGEND:

-  DENOTES MECHANIZED CLEARING
-  DENOTES FILL IN WETLAND

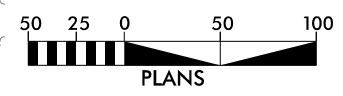
PERMIT DRAWING
SHEET 32 OF 39

SEE SHEET 33 FOR -L- PROFILE
SEE SHEET 45 FOR -RPB1- PROFILE
SEE SHEET 46 FOR -RPCI- PROFILE
SEE SHEETS 49 & 50 FOR -SRI- PROFILE
SEE SHEET 50 FOR -Y23- PROFILE
DRIVEWAY RADII 10' UNLESS OTHERWISE NOTED
SEE SHEET 2D-1 FOR DITCH DETAILS

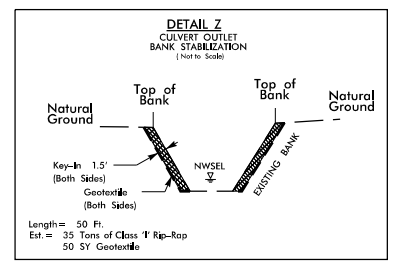
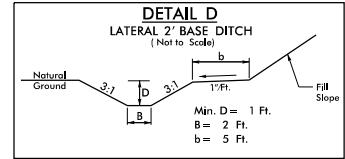
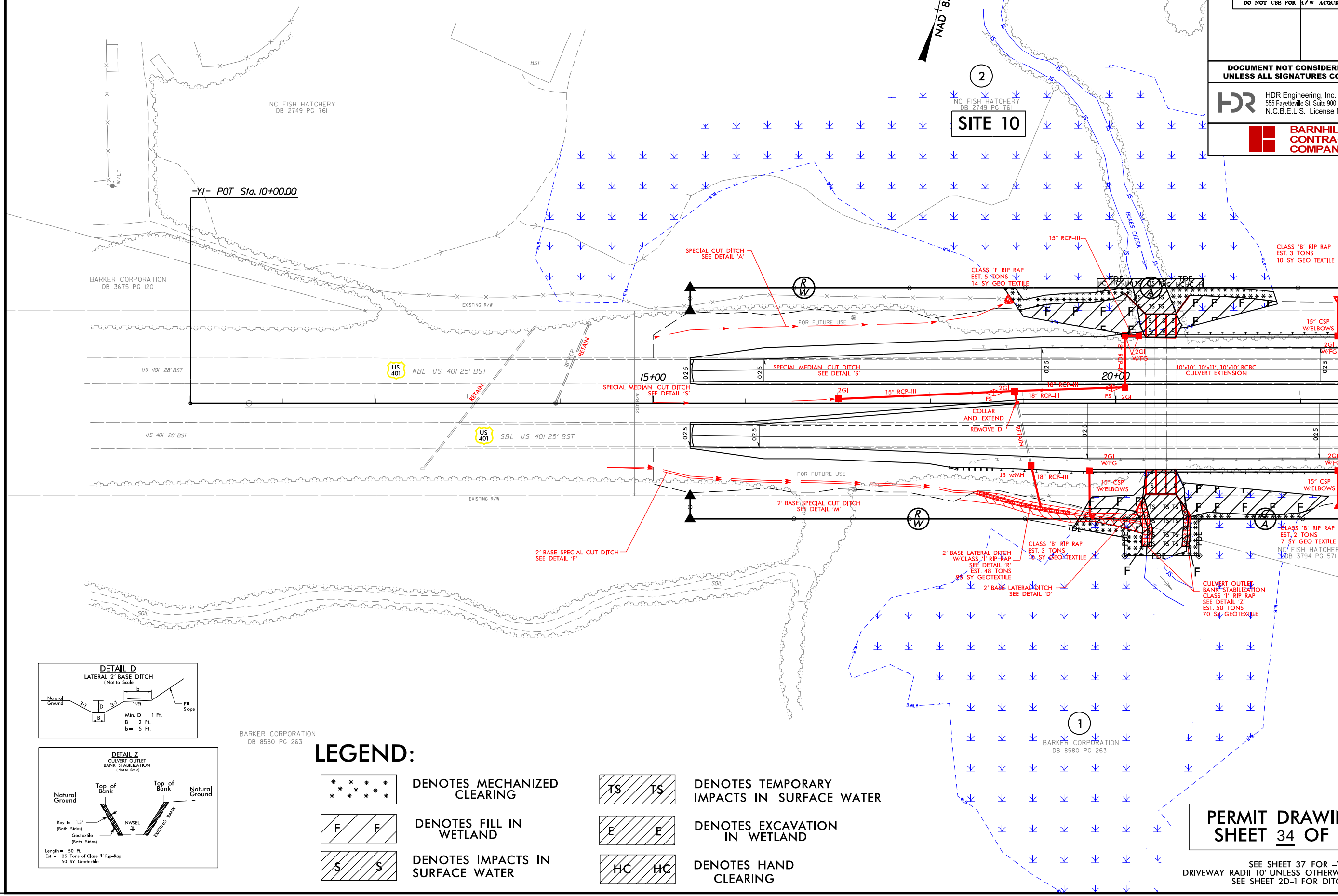


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REVISIONS



PROJECT REFERENCE NO. U-2519CA		SHEET NO. 17	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116			
BARNHILL CONTRACTING COMPANY			



BARKER CORPORATION
DB 8580 PG 263

LEGEND:

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

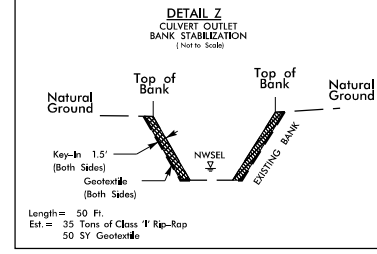
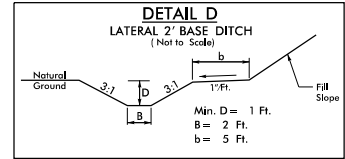
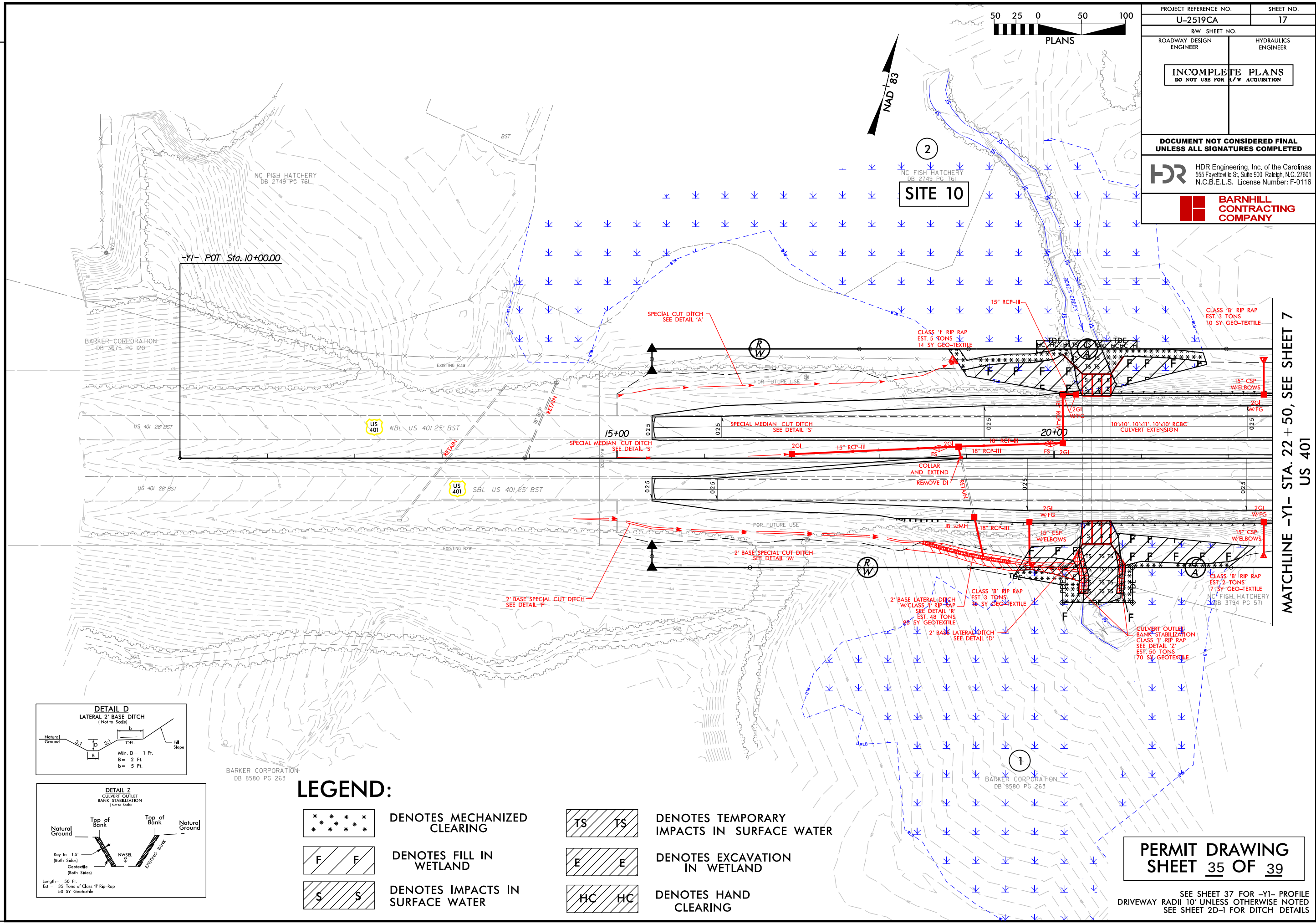
PERMIT DRAWING
SHEET 34 OF 39

SEE SHEET 37 FOR -Y1- PROFILE
DRIVEWAY RADII 10' UNLESS OTHERWISE NOTED
SEE SHEET 2D-1 FOR DITCH DETAILS

MATCHLINE -Y1- STA. 22 + 50, SEE SHEET 7
US 401

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REVISIONS



LEGEND:

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

PERMIT DRAWING
SHEET 35 OF 39

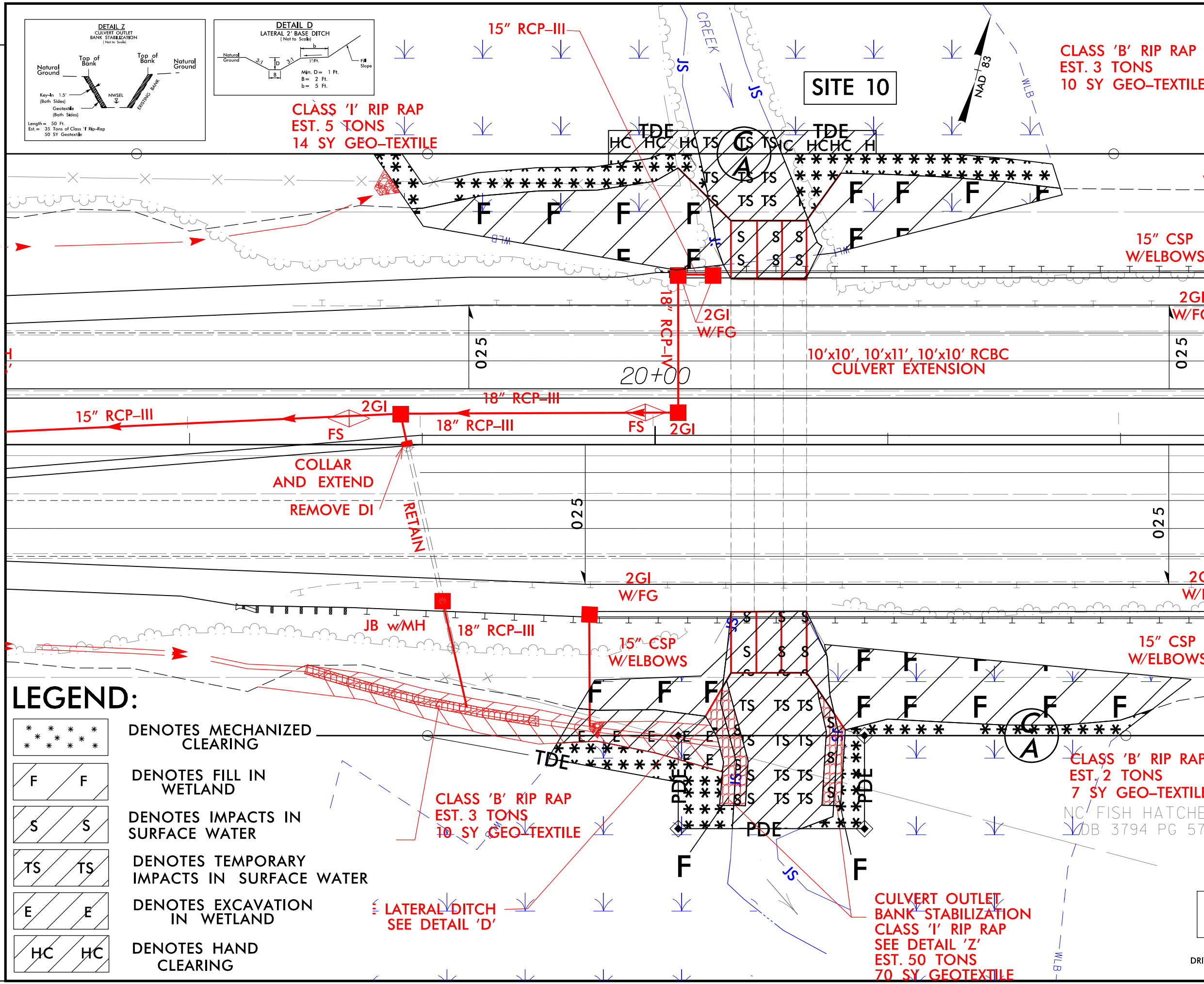
SEE SHEET 37 FOR -Y1- PROFILE
DRIVEWAY RADII 10' UNLESS OTHERWISE NOTED
SEE SHEET 2D-1 FOR DITCH DETAILS

PROJECT REFERENCE NO. U-2519CA		SHEET NO. 17	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
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BARNHILL CONTRACTING COMPANY			

MATCHLINE -Y1- STA. 22 + 50, SEE SHEET 7
US 401

PLOT DRIVER: NCDOT_pdf_color_eng_100.plt
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REVISIONS



LEGEND:

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

PROJECT REFERENCE NO. U-2519CA		SHEET NO. 17A	
RW SHEET NO. ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
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BARNHILL CONTRACTING COMPANY			

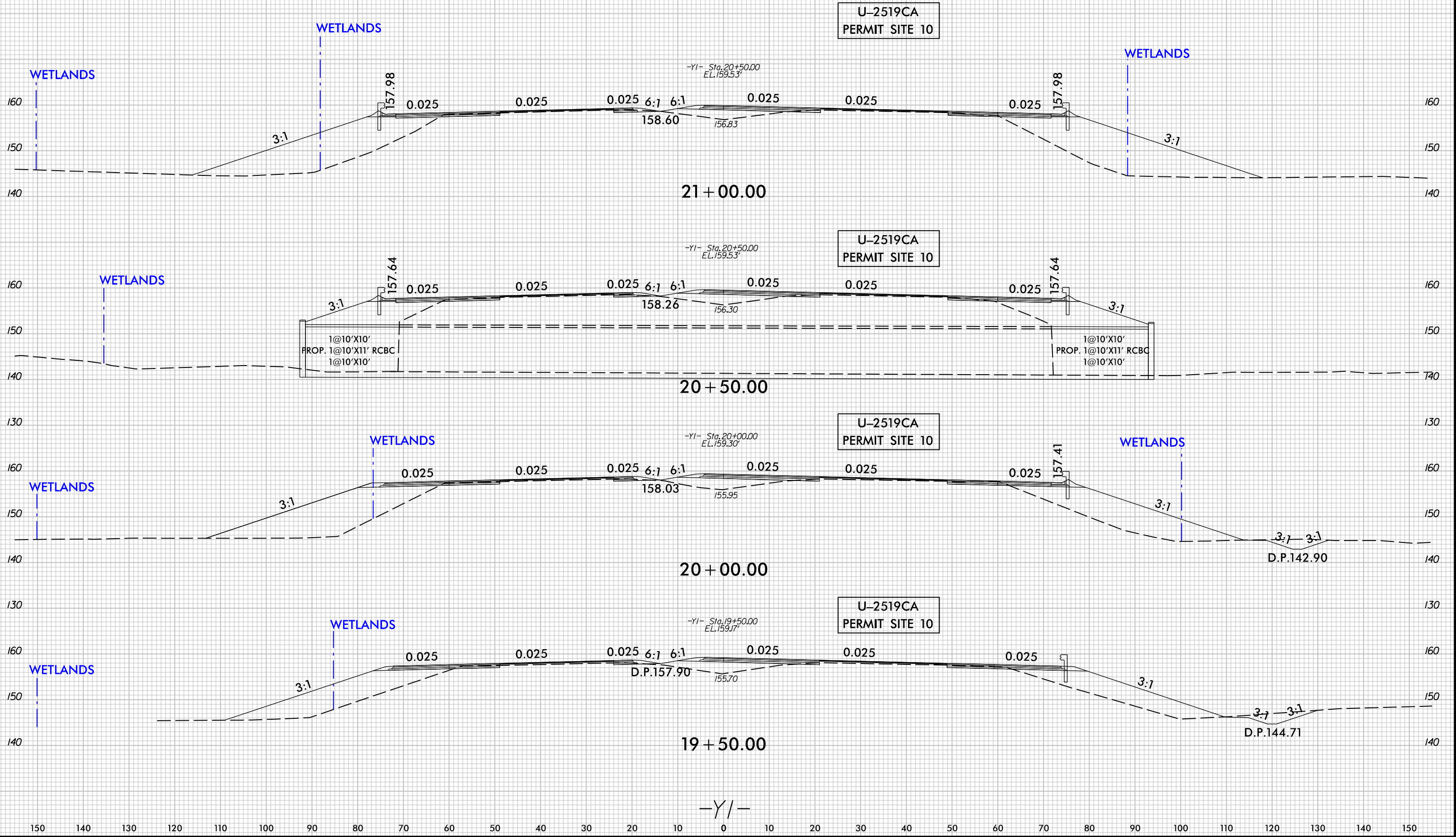
PLANS

PERMIT DRAWING
SHEET 36 OF 39

SEE SHEET 37 FOR -Y1- PROFILE
DRIVEWAY RADII 10' UNLESS OTHERWISE NOTED
SEE SHEET 2D-1 FOR DITCH DETAILS

8/23/99

PERMIT DRAWINGS
SHEET 37 OF 39



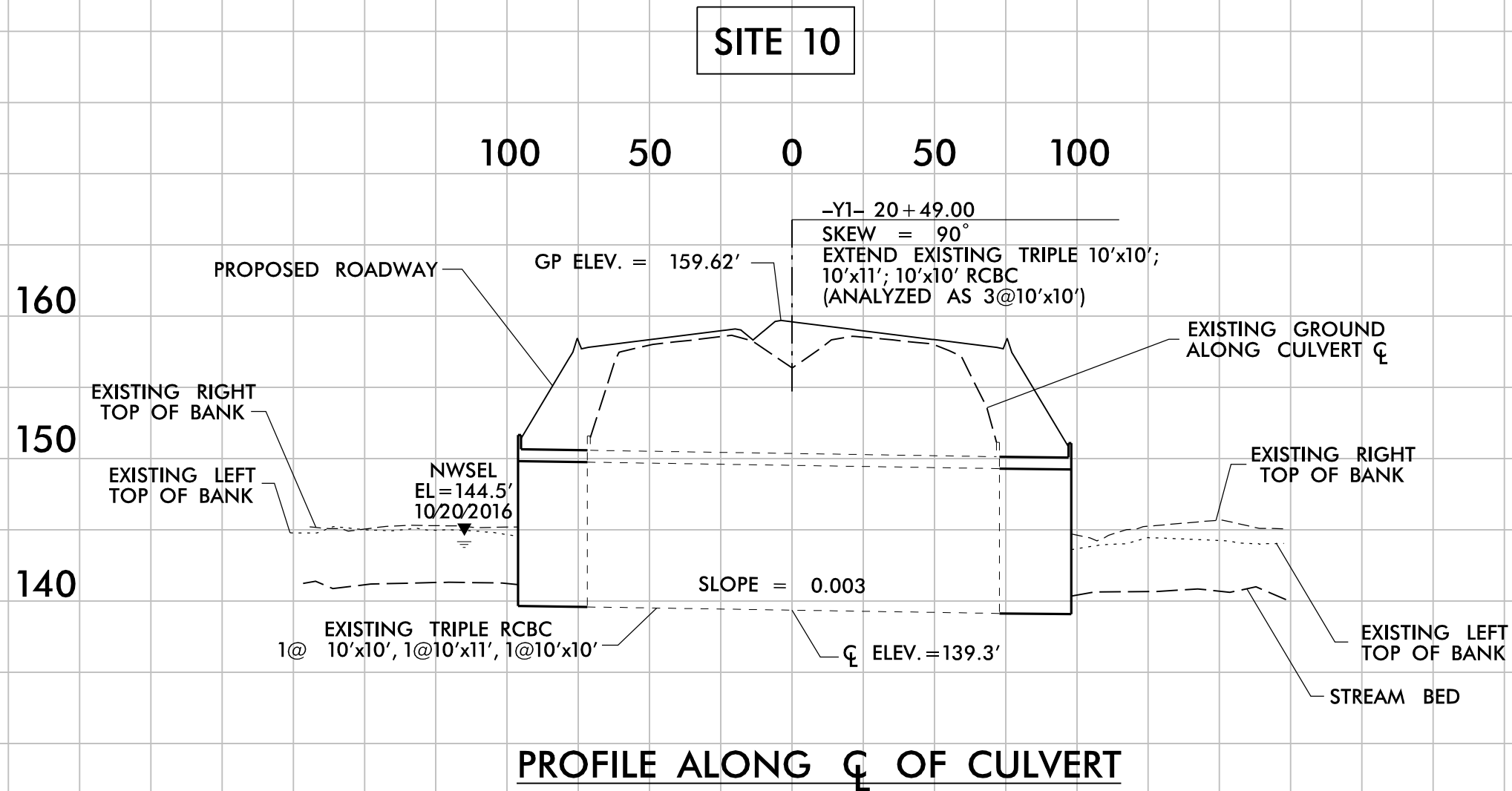
REVISIONS

5/14/99

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

SCALE:
1" = 50' HORIZONTAL
1" = 10' VERTICAL

PROJECT REFERENCE NO.		SHEET NO.	
U-2519CA			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



PERMIT DRAWING
SHEET 38 OF 39

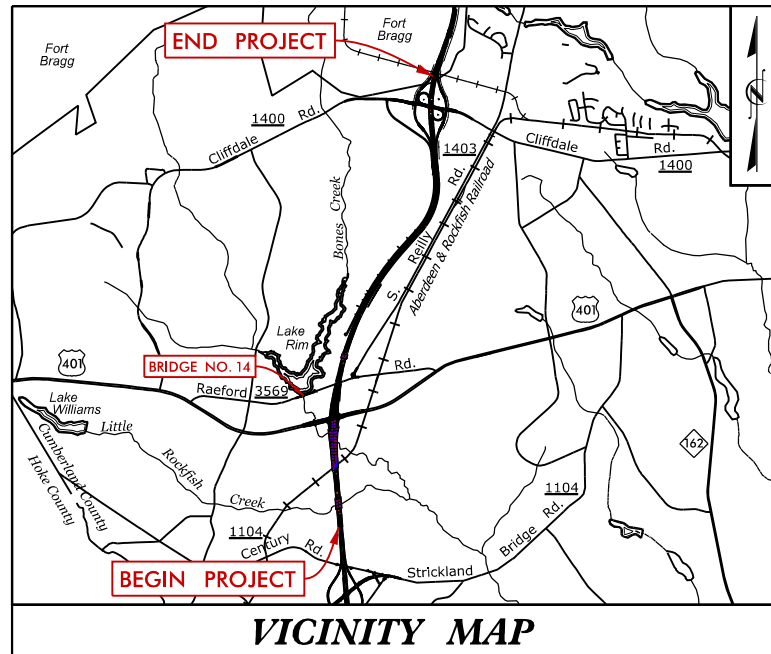
WETLAND AND SURACE WATER IMPACTS SUMMARY												
			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	587+63/598+50 -L-	Bridge	< 0.01				1.59					
		Temporary Work Bridge		< 0.01					< 0.01		5	
		4' Base Ditch (588+00 -L- LT)			0.01		0.02	< 0.01	< 0.01	10	26	
		Roadway Fill	1.44			0.17						
		4' Base Ditch (591+88 -L- RT)					< 0.01					
2	608+87/621+81 -L-	Bridge/Roadway	0.49				4.46	< 0.01		12		
		Temporary Work Bridge		< 0.01					< 0.01		12	
3	625+97/629+35 -L-	Roadway Fill	0.63			0.08						
4	651+14/652+83 -L-	Bridge	< 0.01				0.43					
5	666+28/670+08 -L-	54" RCP	0.45		0.02	< 0.01		0.13	< 0.01	541	12	
6	685+82/687+53 -L-	66" RCP/Roadway Fill	0.17			0.01						
7	715+96 -L-	54" RCP (Buried 1')						0.05	< 0.01	318	10	
		Bank Stabilization						< 0.01		23		
8	721+22/721+78 -L-	Roadway Fill	0.06			0.01						
9	740+30/741+03 -L-	Roadway Fill	0.03			0.02						
10	19+00/24+51 -Y1-	RCBC/Roadway Fill	0.24		0.03	0.11	0.02	0.05	0.09	82	109	
		Bank Stabilization						0.01		52		
TOTALS*:			3.51	< 0.01	0.06	0.41	6.53	0.24	0.10	1038	174	0

*Rounded totals are sum of actual impacts

NOTES:

- Work bridge impacts were calculated from the sum of the individual H-piles that are being installed for the work bridge substructure. The H-piles have been conservatively estimated as one square foot per pile.
- Site 1: Permanent impacts due to bents in wetlands: 265 sf (0.0061 ac.). Impacts are included in the total impacts above.
- Site 2: Permanent impacts due to bents in wetlands: 21471 sf (0.4929 ac.) Impacts are included in the total impacts above.
- Site 4: Permanent impacts due to bents in wetlands: 64 sf (0.0015 ac.) Impacts are included in the total impacts above.

CONTRACT: C203759



STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

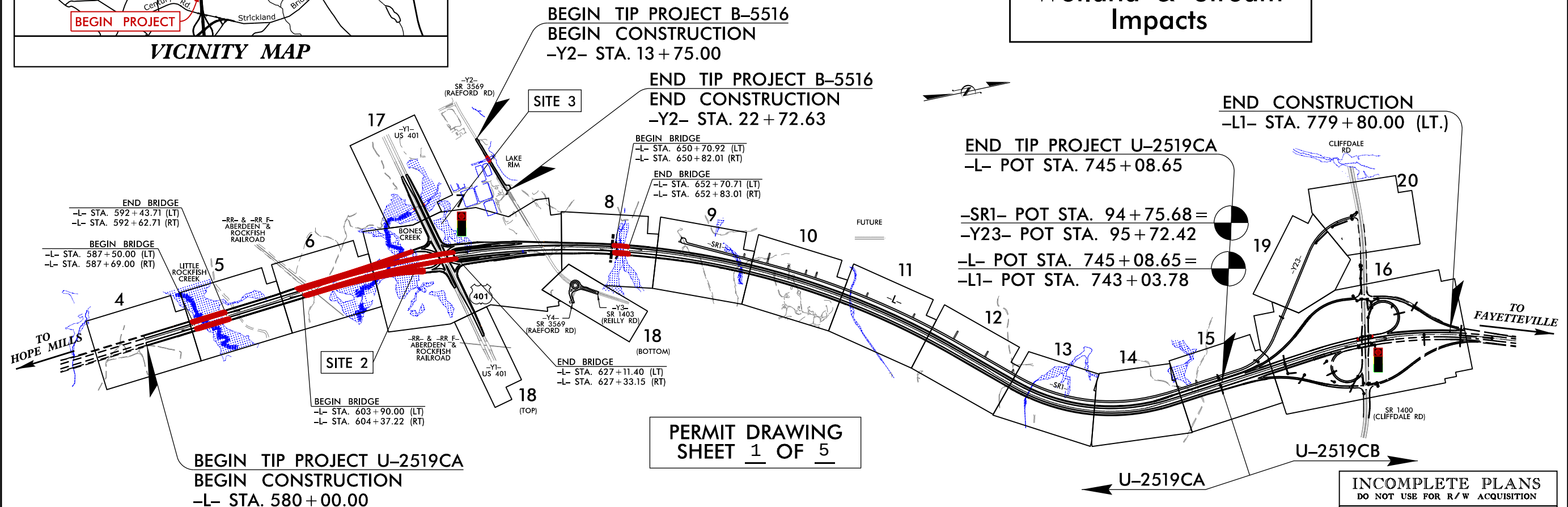
CUMBERLAND COUNTY

LOCATION: FUTURE I-295 – FAYETTEVILLE OUTER LOOP FROM SOUTH OF US 401 TO SOUTH OF SR 1400 (CLIFFDALE ROAD).

**TYPE OF WORK: GRADING, PAVING, DRAINAGE, RETAINING WALLS,
STRUCTURES & SIGNALS**

[illegible]

Utility Wetland & Stream Impacts



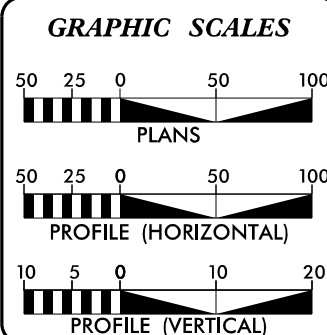
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
A PORTION OF THIS PROJECT IS LOCATED WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF FAYETTEVILLE

**PROPOSED TRAFFIC SIGNAL**

**BARNHILL
CONTRACTING
COMPANY**



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



DESIGN DATA

ADT 2015 = 36,000
ADT 2040 = 47,700
DHV = 8%
D = 55%
*T = 12%
V = 70 MPH
*(TTST 4% + DUALS 8%)

FUNC CLASS = FREEWAY INTERSTATE
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-2519CA = 2.562 MILES

LENGTH STRUCTURE TIP PROJECT U-2519CA = 0.565 MILE

TOTAL LENGTH TIP PROJECT U-2519CA = 3.127 MILES

LENGTH ROADWAY TIP PROJECT B-5516 = 0.157 MILE

LENGTH STRUCTURE TIP PROJECT B-5516 = 0.013 MILE

TOTAL LENGTH TIP PROJECT B-5516 = 0.170 MILE

NCDOT CONTACT: K. ZAK HAMIDI, PE
DESIGN-BUILD UNIT – PROJECT ENGINEER

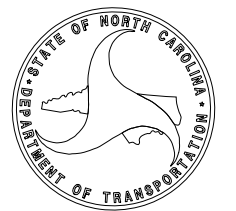
Prepared for the Office of: <i>DIVISION OF HIGHWAYS</i> <i>1000 Birch Ridge Dr., Raleigh NC, 27610</i>	
<i>2012 STANDARD SPECIFICATIONS</i>	<i>RIGHT OF WAY DATE:</i> <i>JUNE 21, 2016</i> <i>LETTING DATE:</i> <i>JUNE 21, 2016</i>
<i>PAUL A. MEEHAN, PE</i> <i>PROJECT ENGINEER</i> <i>PHILLIP E. ROGERS, PE</i> <i>PROJECT DESIGN ENGINEER</i>	

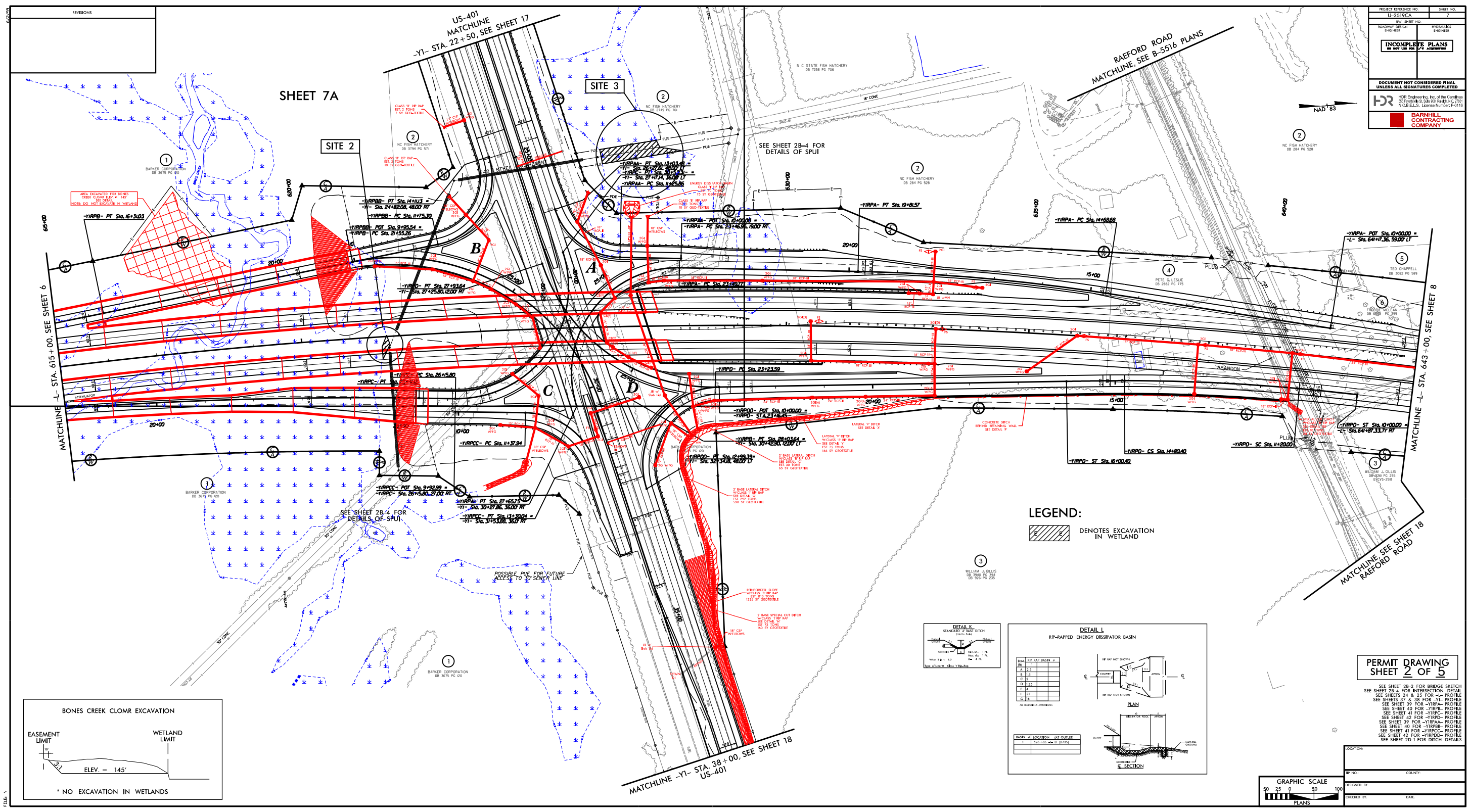
HYDRAULICS ENGINEER

JAMES A. RICE, PE

*ROADWAY DESIGN
ENGINEER*

ANTHONY G. THOMPSON, PE





PROJECT REFERENCE NO. SHEET NO.
U-2519CA 7

ROADWAY DESIGN INVOICES

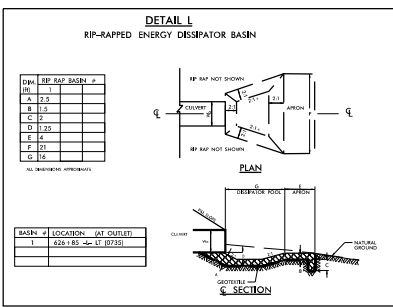
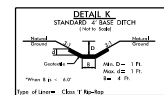
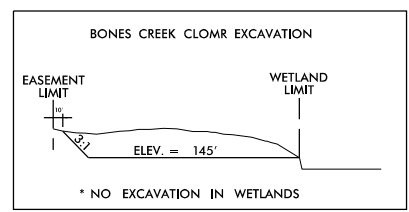
INCOMPLETE PLANS
NO PART OF THIS SET TO BE CONSIDERED

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

HDR Engineering, Inc. of the Carolinas
2501 South Blvd., Suite 100, Raleigh, NC 27606
N.C. E.E.L.S. License Number: F-21116

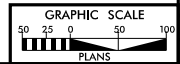
BARNHILL CONTRACTING COMPANY

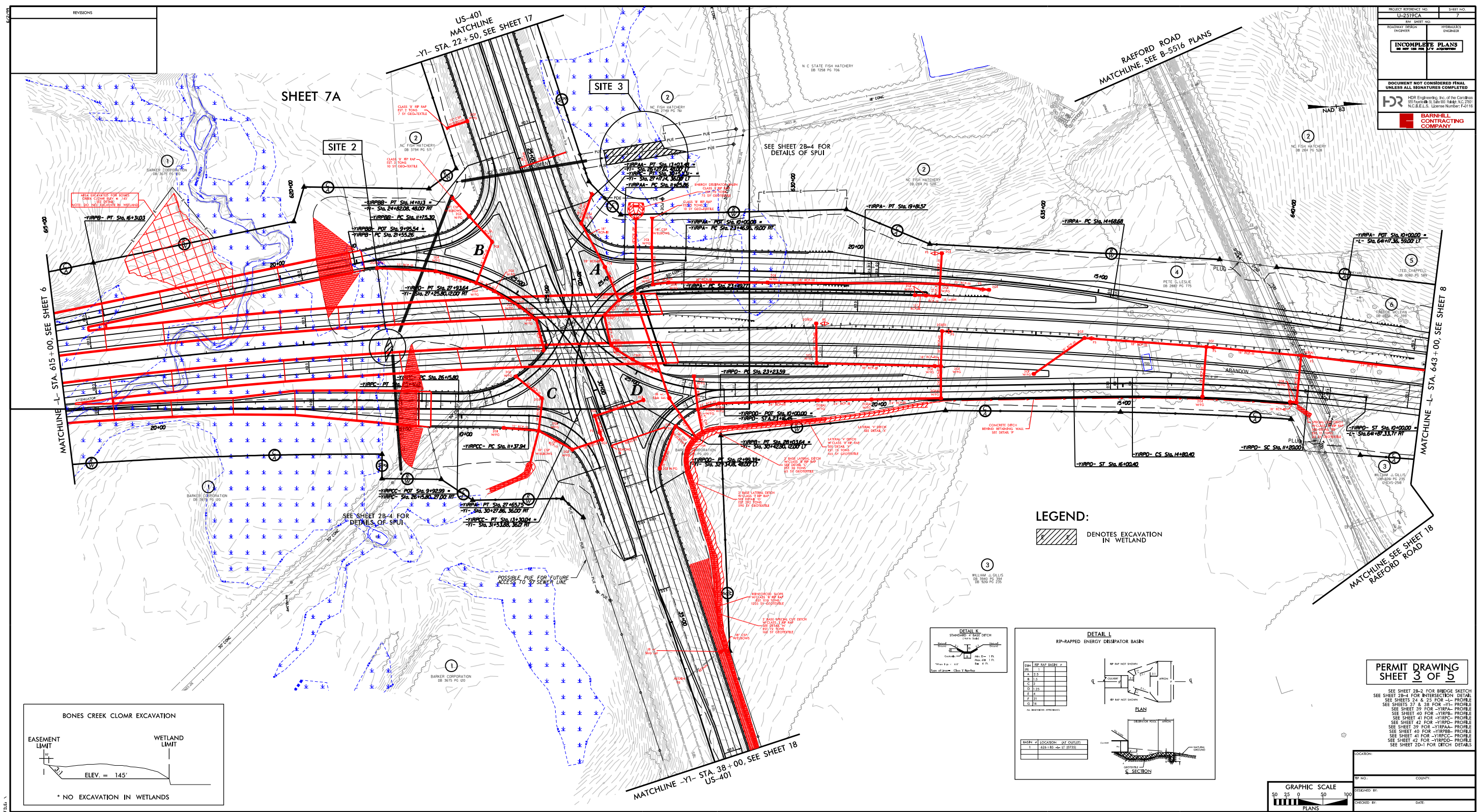
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DATE: 3/1/2017
TIME: 10:01 AM



PERMIT DRAWING
SHEET 2 OF 5

SEE SHEET 2B-2 FOR BRIDGE SKETCH
SEE SHEET 2B-4 FOR INTERSECTION DETAIL
SEE SHEETS 24 & 25 FOR L-PROFILE
SEE SHEETS 27 & 28 FOR -Y1- PROFILE
SEE SHEET 39 FOR -YIRPA- PROFILE
SEE SHEET 40 FOR -YIRPB- PROFILE
SEE SHEET 41 FOR -YIRPC- PROFILE
SEE SHEET 42 FOR -YIRPD- PROFILE
SEE SHEET 43 FOR -YIRPE- PROFILE
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SEE SHEET 97 FOR -YIRPP- PROFILE
SEE SHEET 98 FOR -YIRPP- PROFILE
SEE SHEET 99 FOR -YIRPP- PROFILE
SEE SHEET 100 FOR -YIRPP- PROFILE





PROJECT REFERENCE NO. SHEET NO.
U-2519CA 7

ROADWAY DESIGN INVOICES

INCOMPLETE PLANS
NO PART OF THIS SET TO BE USED

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

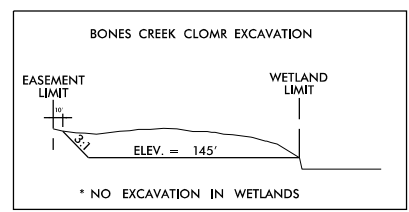
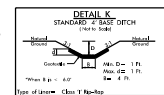
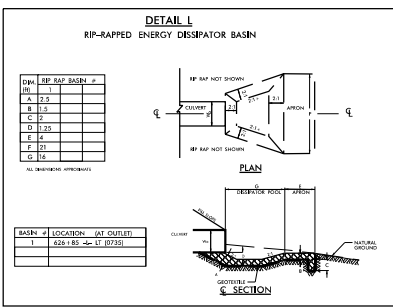
BARNHILL CONTRACTING COMPANY

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2501 South Blvd., Suite 100, Raleigh, NC 27606
N.C. E.E.L.S. License Number: F-21116

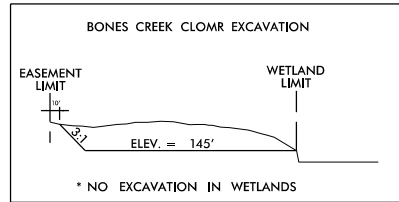
PERMIT DRAWING
SHEET 3 OF 5

SEE SHEET 2B-2 FOR BRIDGE SKETCH
SEE SHEET 2B-4 FOR INTERSECTION DETAIL
SEE SHEETS 24 & 25 FOR -L- PROFILE
SEE SHEETS 27 & 28 FOR -YI- PROFILE
SEE SHEET 39 FOR -YIRPA- PROFILE
SEE SHEET 40 FOR -YIRPC- PROFILE
SEE SHEET 41 FOR -YIRPA- PROFILE
SEE SHEET 42 FOR -YIRPC- PROFILE
SEE SHEET 43 FOR -YIRPD- PROFILE
SEE SHEET 44 FOR -YIRPD- PROFILE
SEE SHEET 20-1 FOR DITCH DETAILS

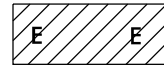
LOCATION:	
TP NO.:	
COUNTY:	
DESIGNED BY:	
CHECKED BY:	
DATE:	



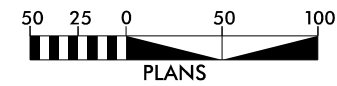
REVISIONS



LEGEND:

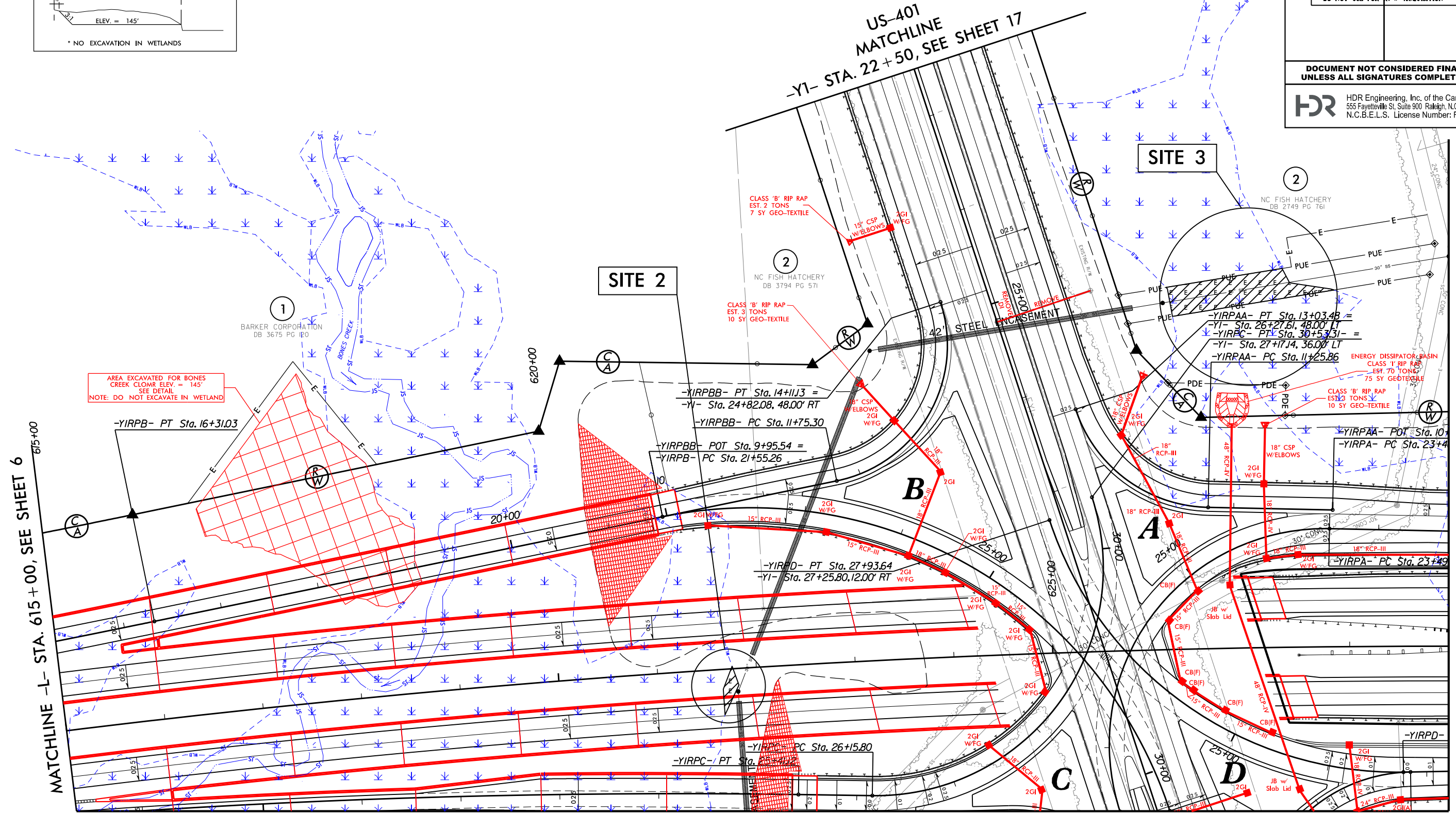


DENOTES EXCAVATION
IN WETLAND



NAD 83

PROJECT REFERENCE NO.		SHEET NO.	
U-2519CA		7A	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
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MATCHLINE, SEE SHEET 7B

PERMIT DRAWING
SHEET 4 OF 5

