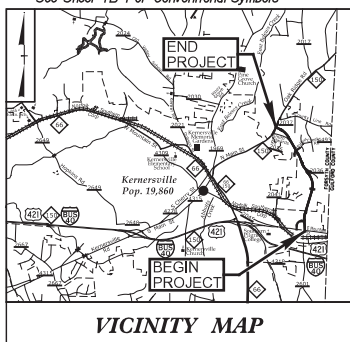


TIP PROJECT: U-4734

CONTRACT:

See Sheet 1A For Index of Sheets  
See Sheet 1B For Conventional Symbols



VICINITY MAP

ROW PLANS

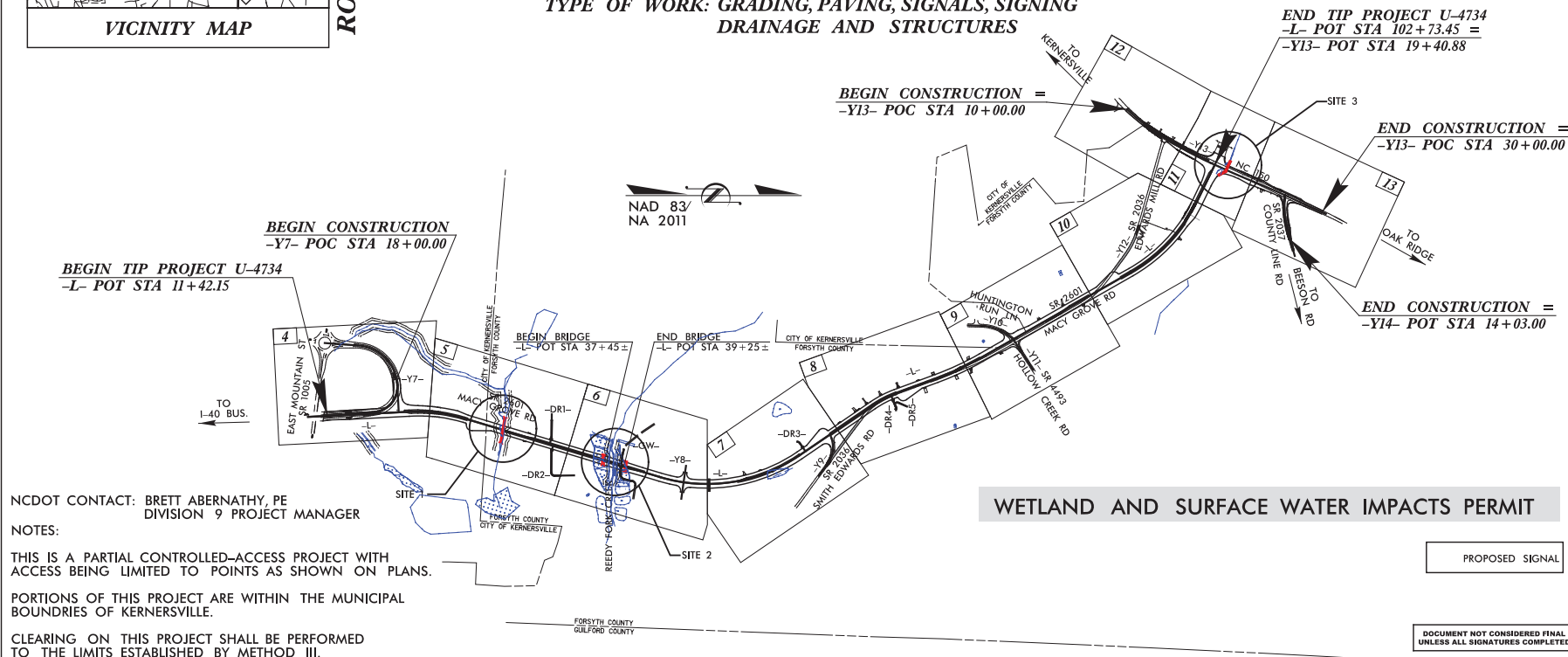
# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS FORSYTH COUNTY

LOCATION: KERNERSVILLE - SR 2601 (MACY GROVE RD) EXTENSION  
FROM NORTH OF SR 1005 (EAST MOUNTAIN ST) TO FUTURE NC 150  
(NORTH MAIN ST)

TYPE OF WORK: GRADING, PAVING, SIGNALS, SIGNING  
DRAINAGE AND STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4734	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
36600.1.2	STP-2601(3)	PE	
36600.2.1	STP-2601(3)	RW	
36600.3.1	STP-2601(3)	CONST	

PERMIT DRAWING  
SHEET 1 OF 19



NCDOT CONTACT: BRETT ABERNATHY, PE  
DIVISION 9 PROJECT MANAGER

NOTES:

THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH  
ACCESS BEING LIMITED TO POINTS AS SHOWN ON PLANS.

PORTIONS OF THIS PROJECT ARE WITHIN THE MUNICIPAL  
BOUNDRIES OF KERNERSVILLE.

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

WETLAND AND SURFACE WATER IMPACTS PERMIT

PROPOSED SIGNAL

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

## GRAPHIC SCALES



## DESIGN DATA

ADT (2018) = 7,400  
ADT (2038) = 10,300  
K = 11 %  
D = 55 %  
T = 6 % \*  
V = 50 MPH  
\* TTST = 2% DUAL 4%  
FUNC CLASS = COLLECTOR  
REGIONAL TIER

## PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4734 = 1.695 MILES  
LENGTH STRUCTURES TIP PROJECT U-4734 = 0.034 MILES  
TOTAL LENGTH TIP PROJECT U-4734 = 1.729 MILES

Prepared for the  
North Carolina Department  
of Transportation  
In the Office of:



ICA Engineering, Inc.  
5121 Kingdom Way,  
Suite 100  
Raleigh, NC 27607  
NC License No. T-0258

302 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

JAN 20, 2017

LETTING DATE:

JUNE 19, 2018

DENA C. SNEAD, PE  
PROJECT ENGINEER

JORDAN BOND  
PROJECT DESIGN ENGINEER

HYDRAULICS  
ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN  
ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS

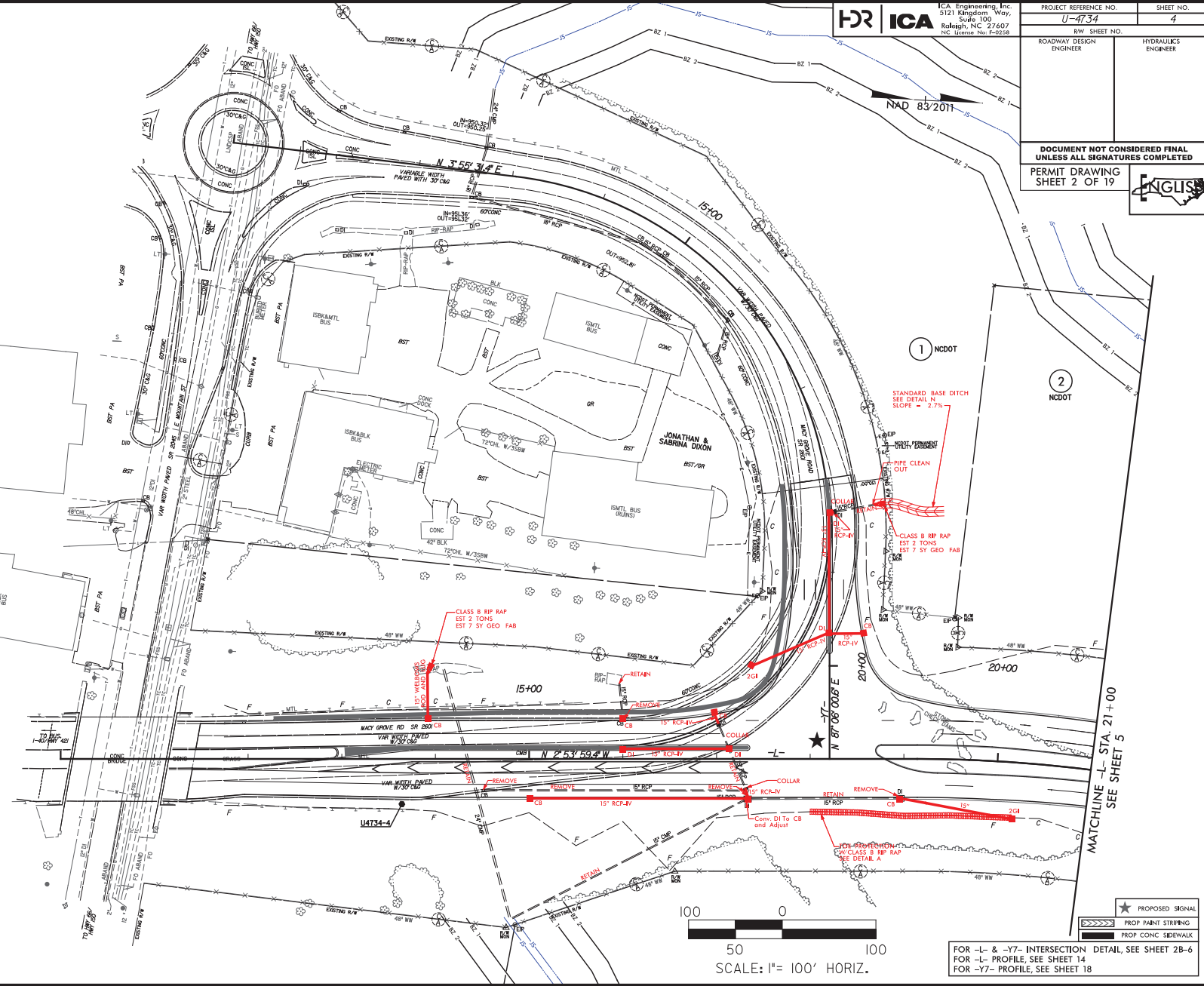
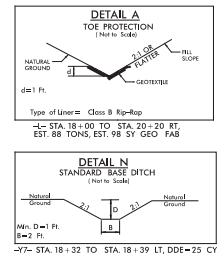


STATE OF NORTH CAROLINA

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5121 Kingdom Way,  
Suite 100  
Raleigh, NC 27607  
NC License No. F-02258

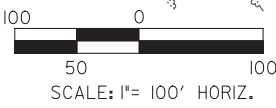
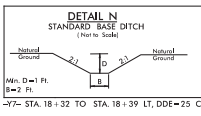
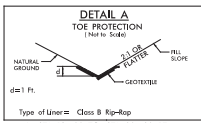
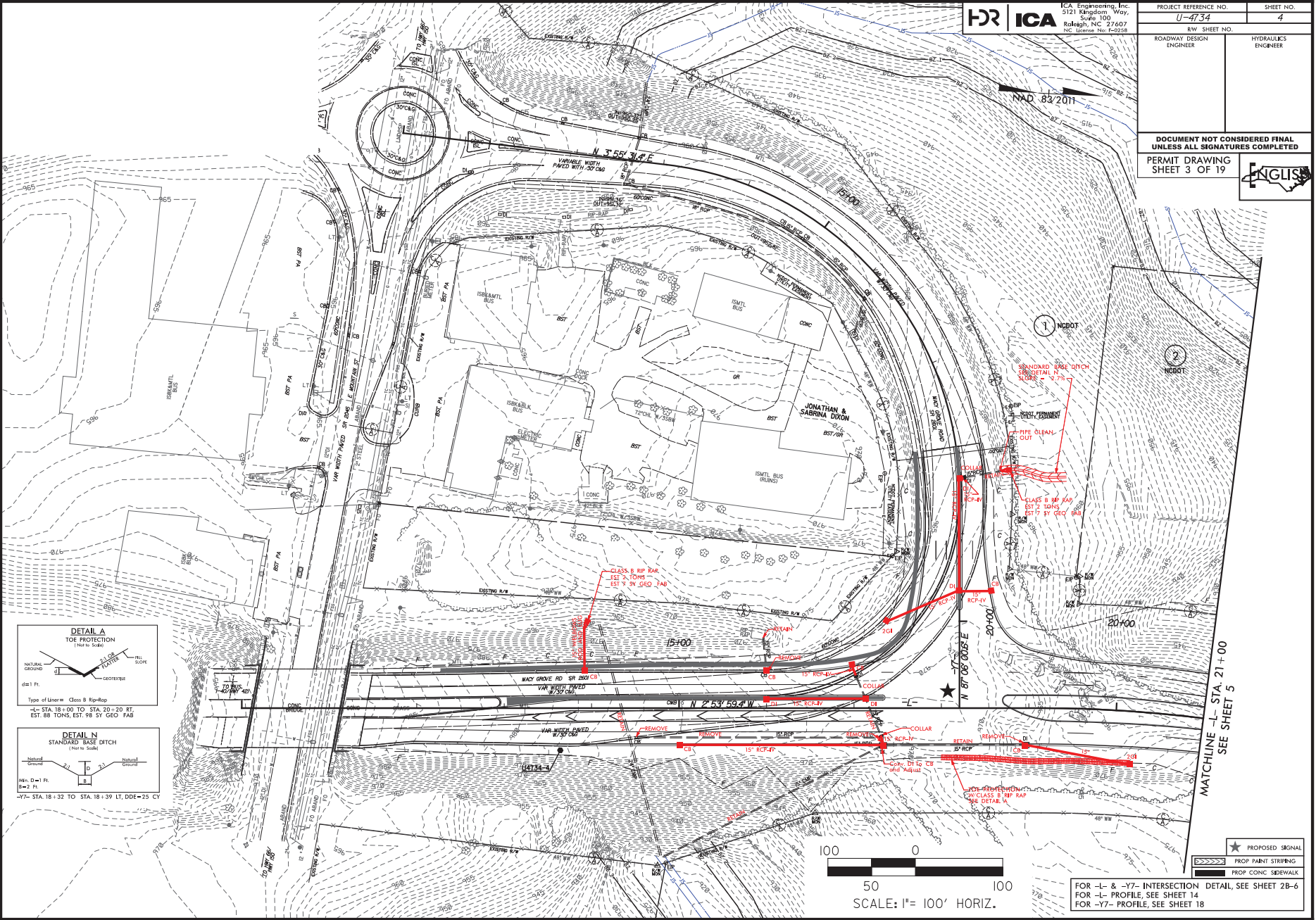
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U-4734	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PERMIT DRAWING SHEET 2 OF 19	



★ PROPOSED SIGNAL  
■■■■■■ PROPOSED PAINT STRIPING  
■■■■■■ PROPOSED CONC. SIDEWALK

FOR -L- & -Y7- INTERSECTION DETAIL, SEE SHEET 2B-6  
FOR -L- PROFILE, SEE SHEET 14  
FOR -Y7- PROFILE, SEE SHEET 18


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ICA ENGINEERING, INC.  
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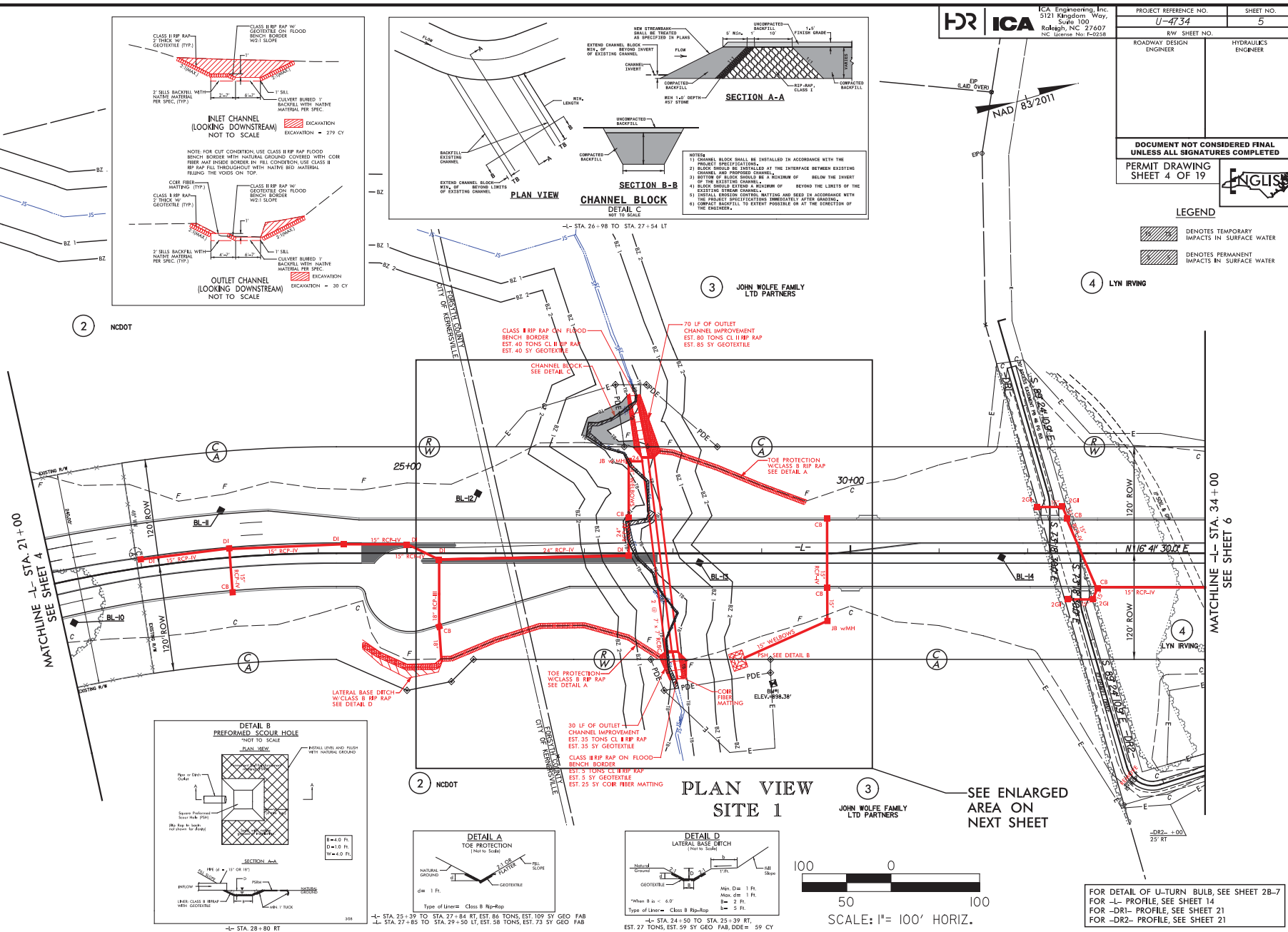
FOR -L- & -Y7- INTERSECTION DETAIL, SEE SHEET 28-6  
FOR -L- PROFILE, SEE SHEET 14  
FOR -Y7- PROFILE, SEE SHEET 18



ICA Engineering, Inc.  
5121 Kingdom Way,  
Suite 100  
Raleigh, NC 27607  
NC License No. F-00259

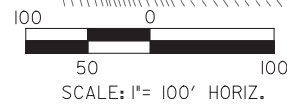
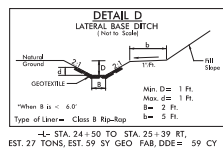
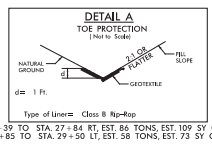
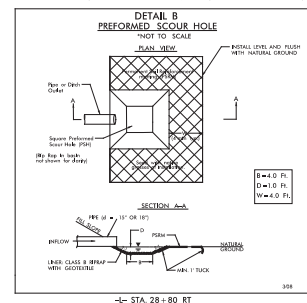
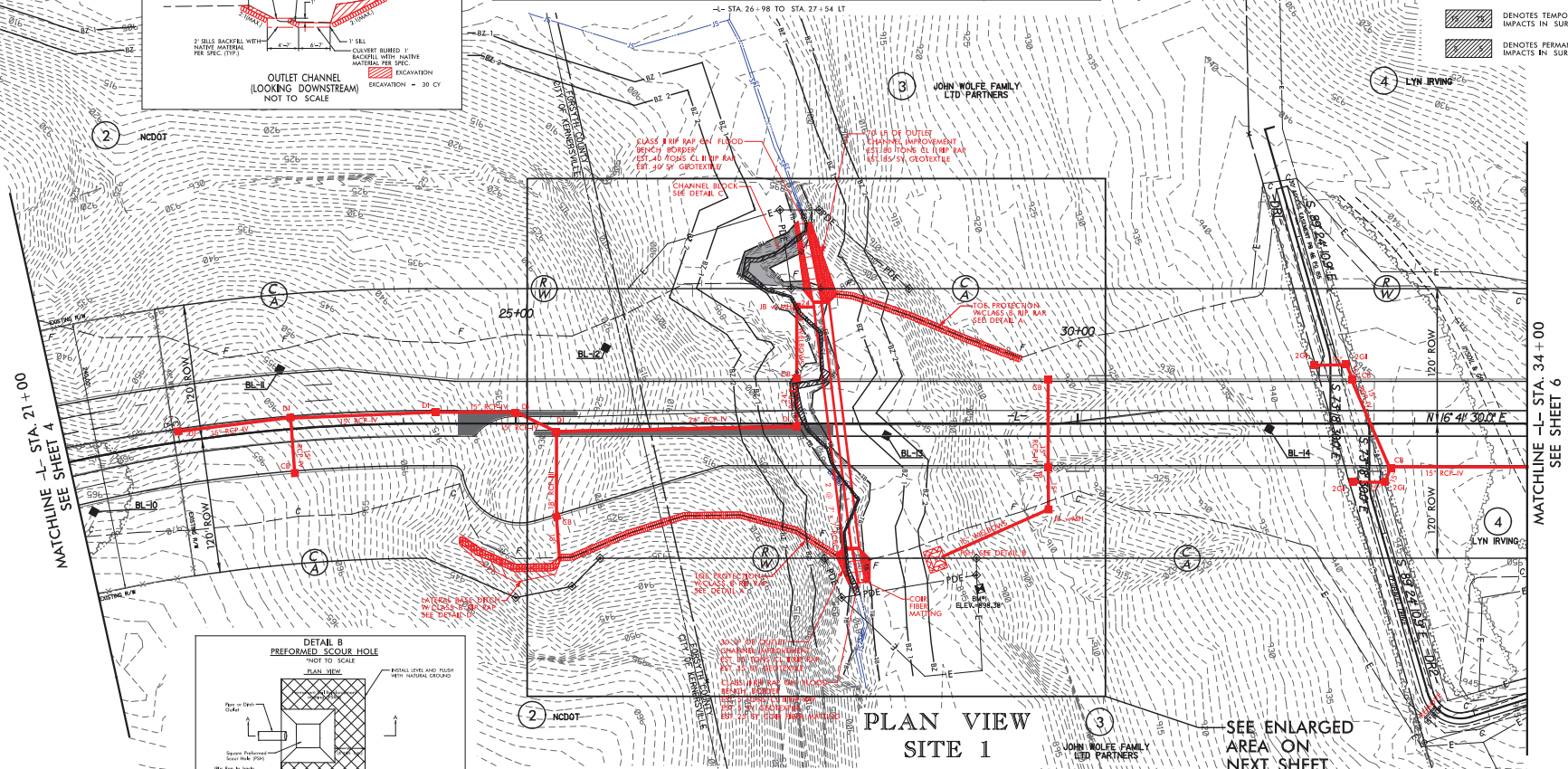
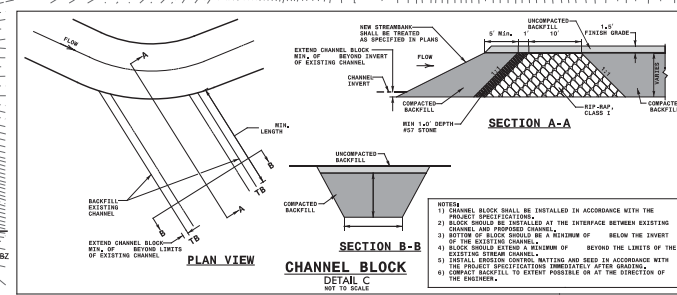
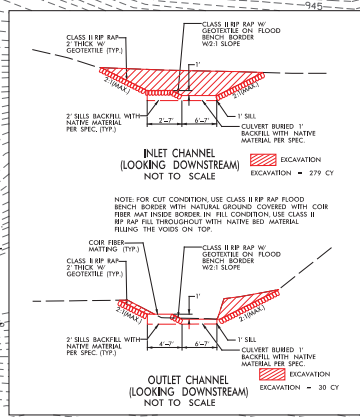
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RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>			
PERMIT DRAWING SHEET 3 OF 19			

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ICA Engineering, Inc.  
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- LEGEND**
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
  - DENOTES PERMANENT IMPACTS IN SURFACE WATER




FOR DETAIL OF U-TURN BULB, SEE SHEET 28-7  
FOR -L- PROFILE, SEE SHEET 14  
FOR -DR1- PROFILE, SEE SHEET 21  
FOR -DR2- PROFILE, SEE SHEET 21


MATCHLINE -L- STA. 21+00  
SEE SHEET 4

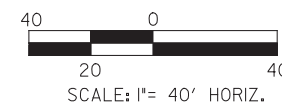
MATCHLINE -L- STA. 34+00  
SEE SHEET 6



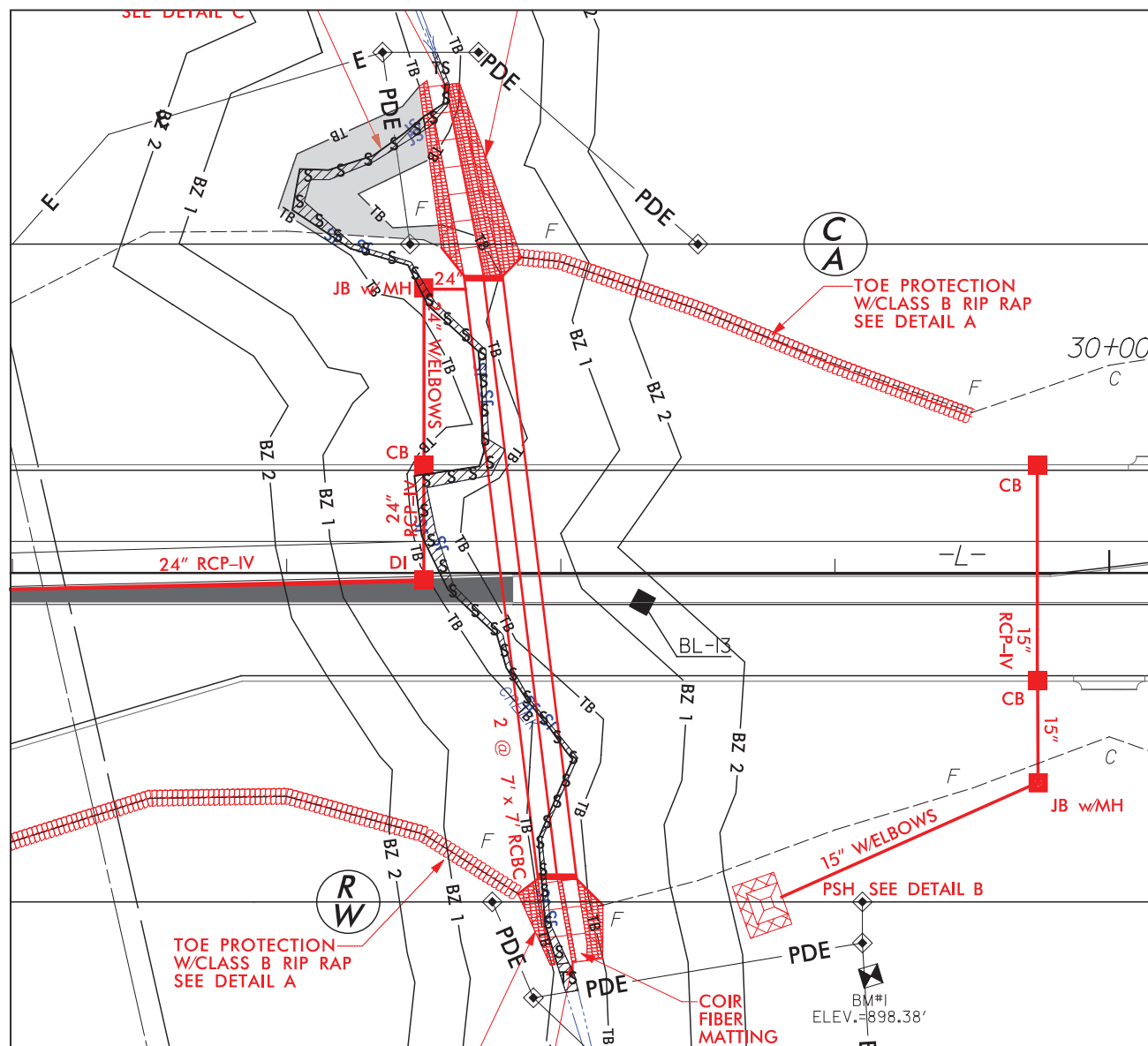
## LEGEND

 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

 DENOTES PERMANENT IMPACTS IN SURFACE WATER





FOR DETAIL OF U-TURN BULB, SEE SHEET 2B-7  
FOR -L- PROFILE, SEE SHEET 14  
FOR -DR1- PROFILE, SEE SHEET 21  
FOR -DR2- PROFILE, SEE SHEET 21

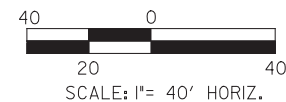


DETAIL SHEET FOR  
SITE 1

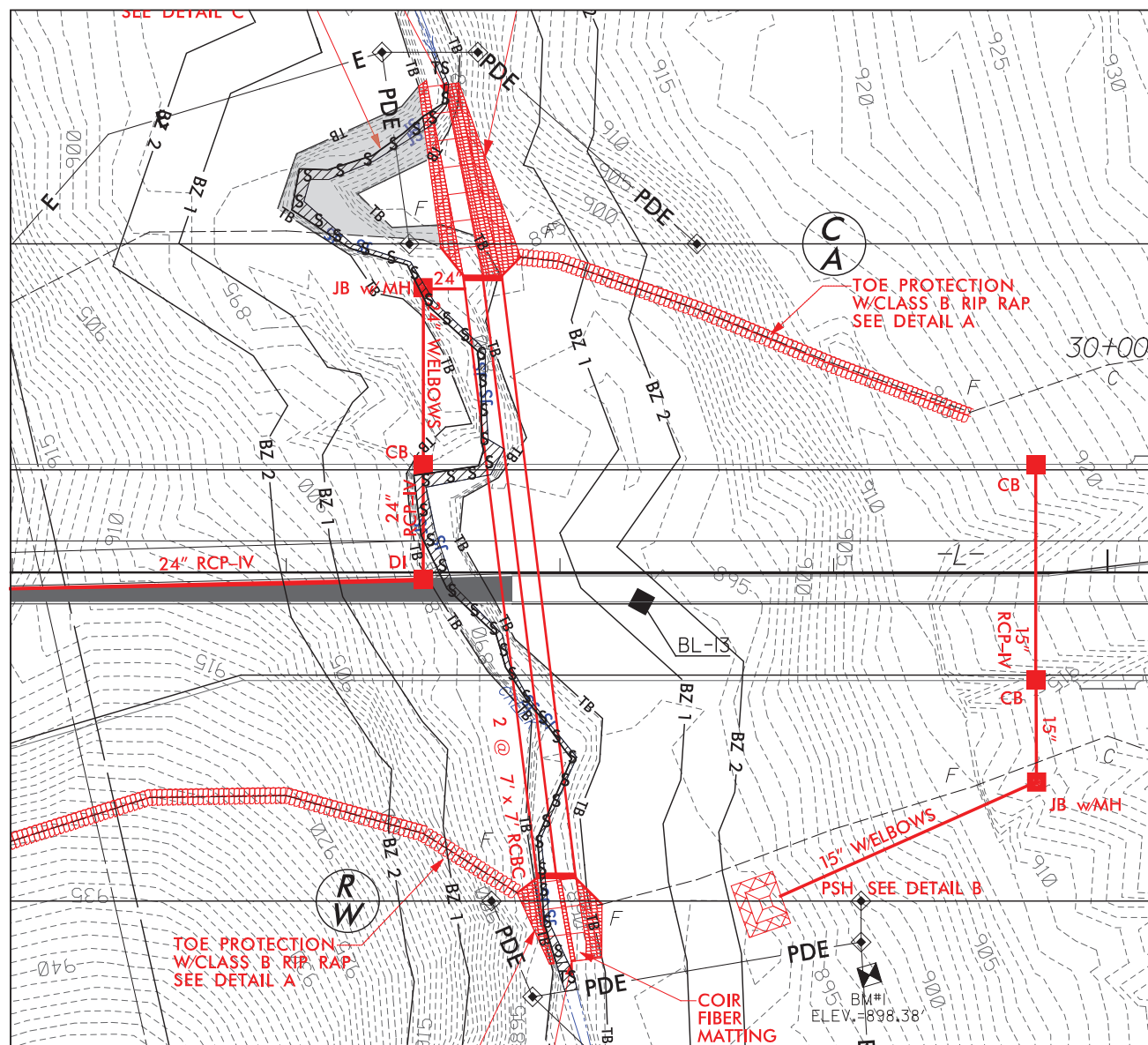
### LEGEND

 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

 DENOTES PERMANENT IMPACTS IN SURFACE WATER



FOR DETAIL OF U-TURN BULB, SEE SHEET 2B-7  
FOR -L- PROFILE, SEE SHEET 14  
FOR -DR1- PROFILE, SEE SHEET 21  
FOR -DR2- PROFILE, SEE SHEET 21



# DETAIL SHEET FOR SITE 1

6/23/16



PROJ. REFERENCE NO. SHEET NO.

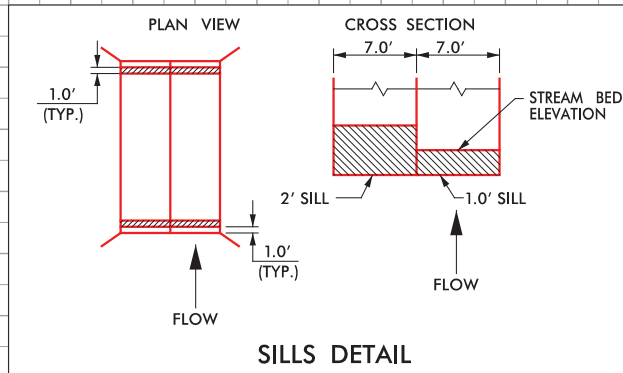
PERMIT DRAWING  
SHEET 8 OF 19



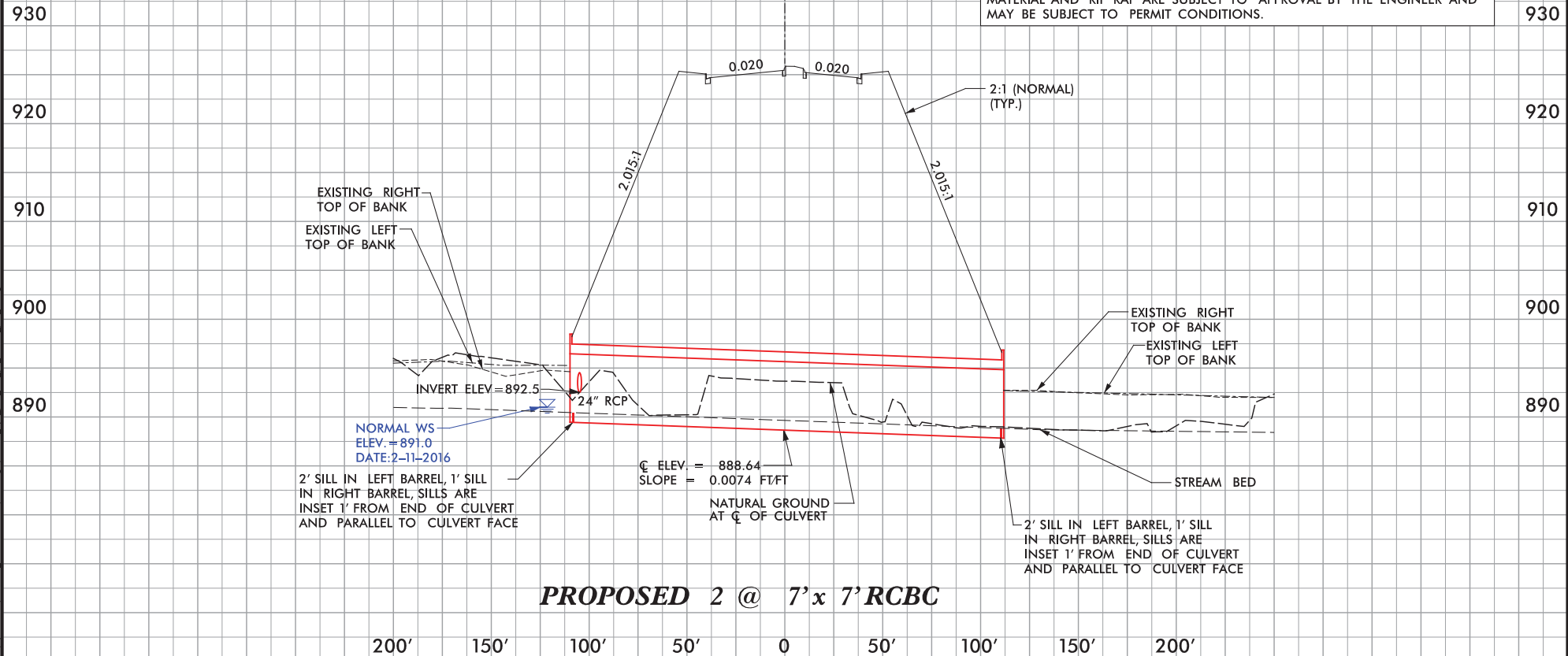
NOTE: FOR CUT CONDITION, USE CLASS II RIP RAP FLOODPLAIN BENCH BORDER WITH NATURAL GROUND COVERED WITH COIR FIBER MAT INSIDE BORDER. IN FILL CONDITION, USE CLASS II RIP RAP FILL THROUGHOUT WITH NATIVE BED MATERIAL FILLING THE VOIDS ON TOP.

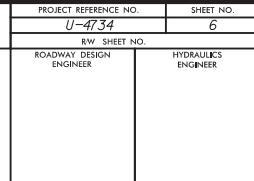
NOTE: NATIVE BED MATERIAL SHALL BE PLACED BETWEEN THE SILLS IN THE LOW FLOW CULVERT. NATIVE MATERIALS CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED OR FLOODPLAIN AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. RIP RAP MAY BE USED TO SUPPLEMENT THE NATIVE MATERIAL. IF RIP RAP IS USED, THE NATIVE MATERIAL SHOULD BE PLACED ON TOP TO FACILITATE ANIMAL PASSAGE. THE TOP SURFACE OF THE NATURAL STREAM BED MATERIAL SHALL BE PLACED AND LEVELED TO A FLAT SURFACE TO ALLOW FOR ANIMAL PASSAGE. THE HIGH FLOW BARRELS SHALL BE BACK FILLED WITH NATIVE MATERIAL AND/OR RIP RAP. NATIVE MATERIAL AND RIP RAP ARE SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.

# **SITE 1** **-L- 27+85**



CL STA. 27+85 -L-  
2 @ 7' x 7' RCBC  
SKEW 83 DEGREES  
GP ELEV. = 925.43






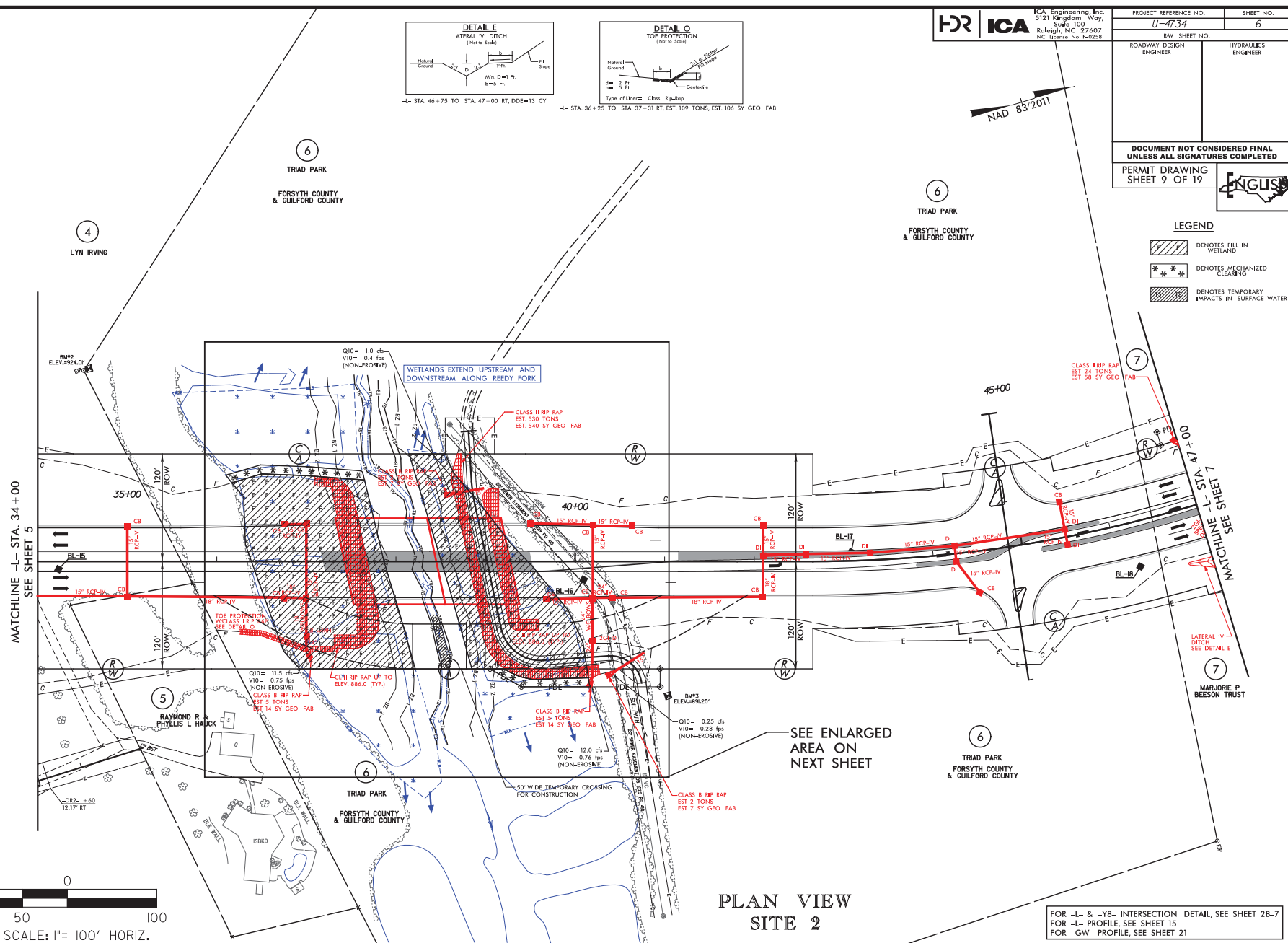


DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING  
SHEET 9 OF 19



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



PLAN VIEW  
SITE 2

FOR -L- & -Y8- INTERSECTION DETAIL, SEE SHEET 2B-7  
FOR -L- PROFILE, SEE SHEET 15  
FOR -GW- PROFILE, SEE SHEET 21

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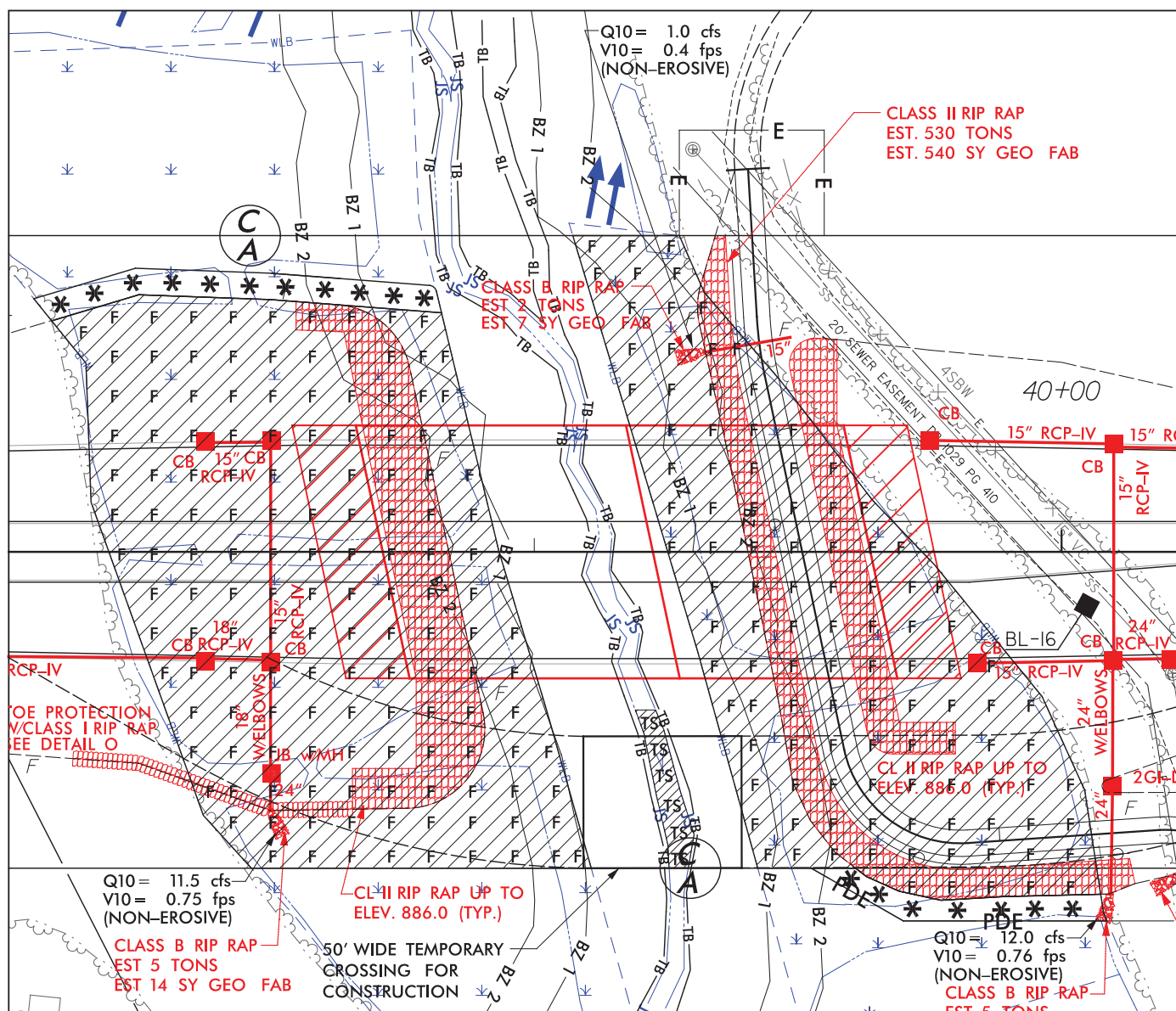
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R/W SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PERMIT DRAWING SHEET 11 OF 19	



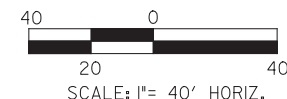
NAD 83/2011

### LEGEND

-  **F** DENOTES FILL IN WETLAND
-  **\*\*\*** DENOTES MECHANIZED CLEARING
-  **TS** DENOTES TEMPORARY IMPACTS IN SURFACE WATER



**DETAIL SHEET FOR  
SITE 2**



FOR -L- & -Y8- INTERSECTION DETAIL, SEE SHEET 28-7  
FOR -L- PROFILE, SEE SHEET 15  
FOR -GW- PROFILE, SEE SHEET 21

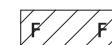
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ICA ENGINEERING, INC.  
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PROJECT REFERENCE NO. <b>U-4734</b>	SHEET NO. <b>6A</b>
R/W SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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PERMIT DRAWING SHEET 12 OF 19	



NAD 83/2011

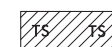
### LEGEND



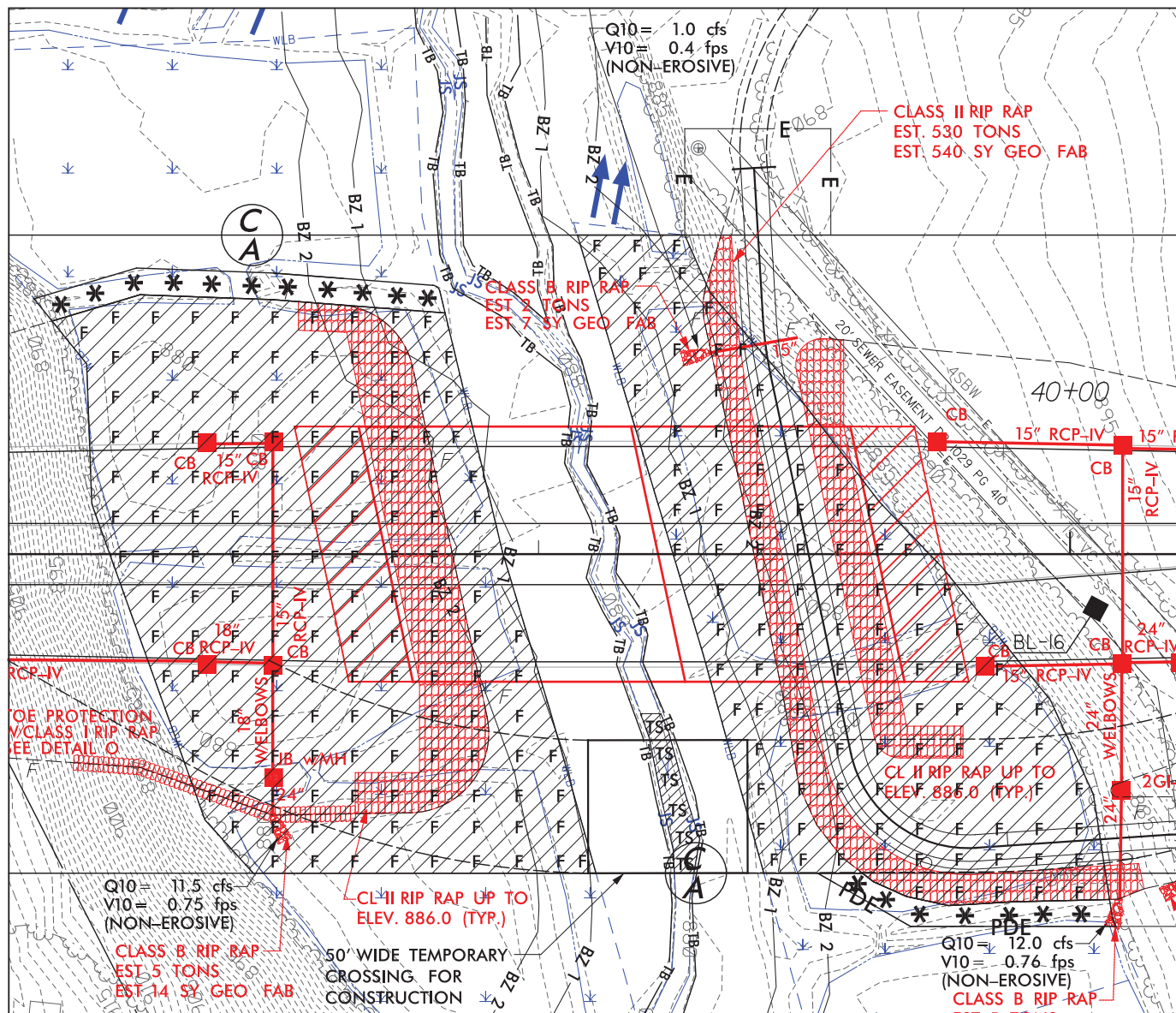
Denotes FILL IN WETLAND



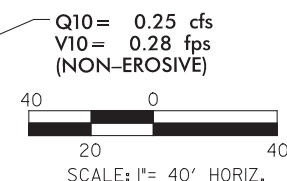
Denotes MECHANIZED CLEARING



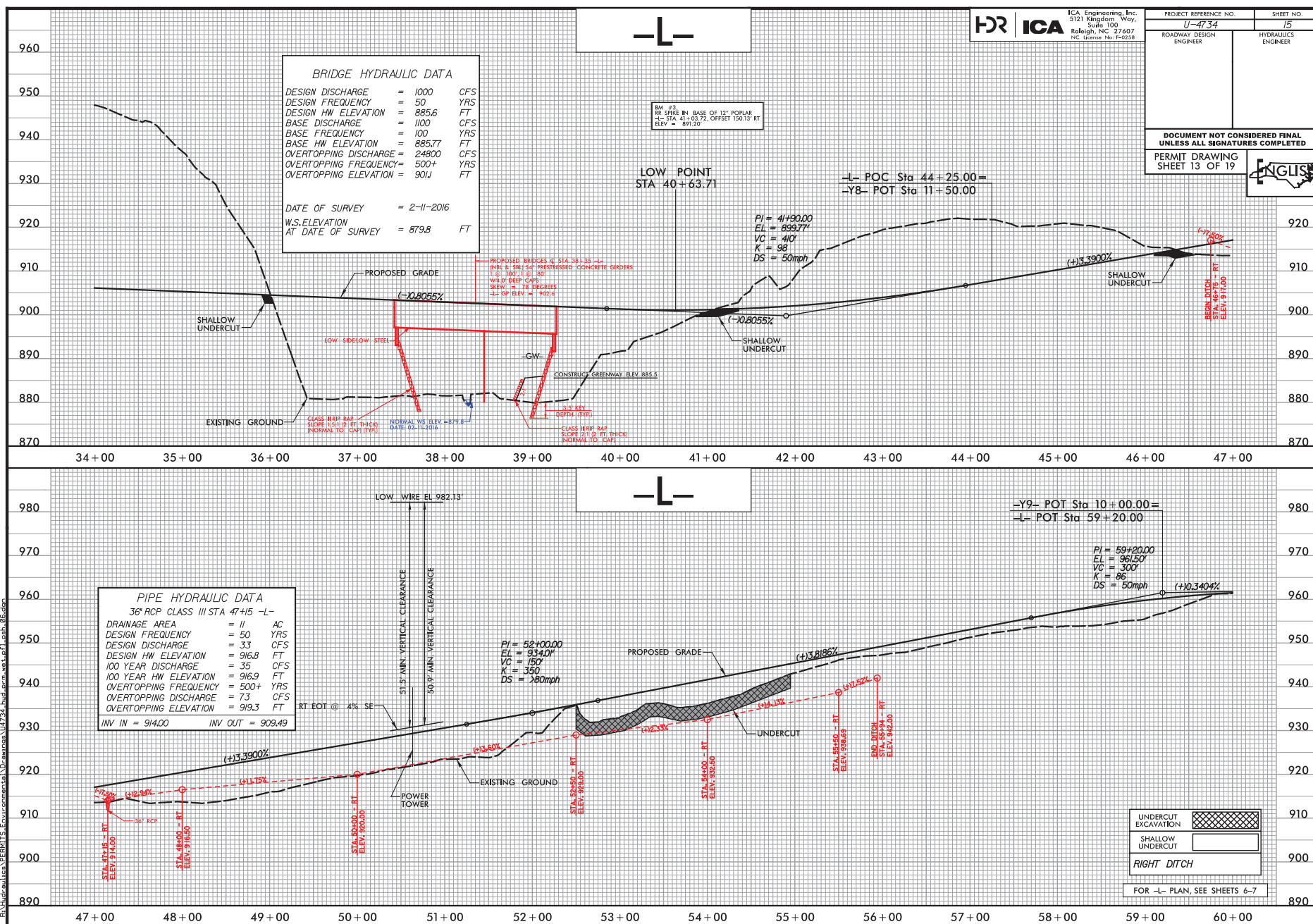
Denotes TEMPORARY IMPACTS IN SURFACE WATER



**DETAIL SHEET FOR  
SITE 2**

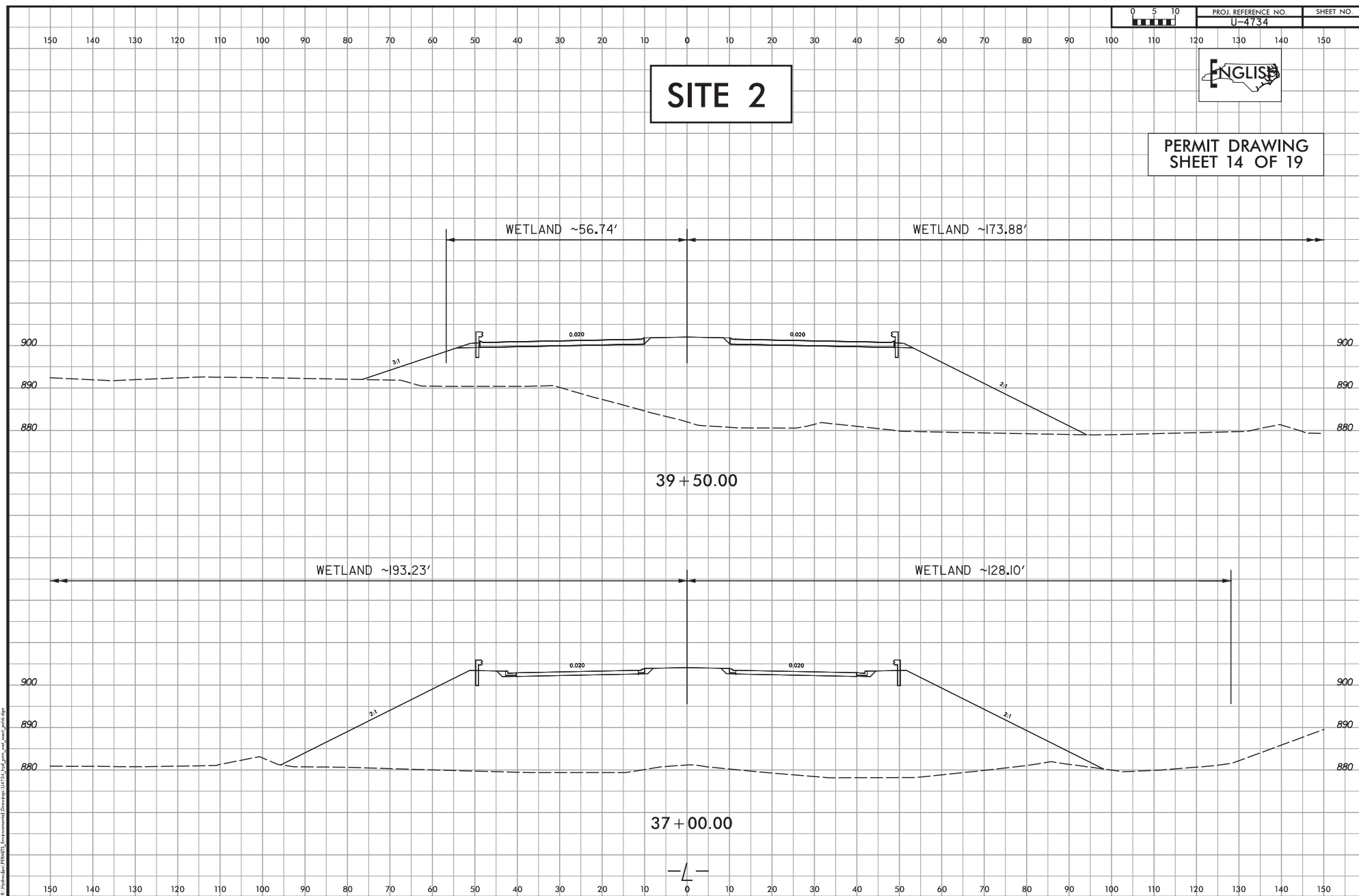


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FOR -L- PROFILE, SEE SHEET 15  
FOR -GW- PROFILE, SEE SHEET 21



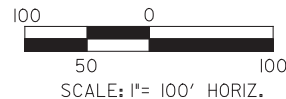
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ICA ENGINEERING, INC.  
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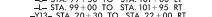
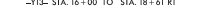
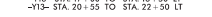


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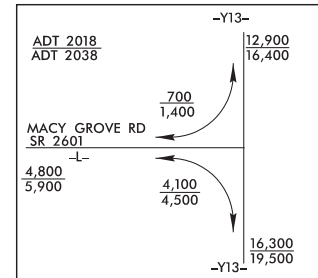
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER  
 DENOTES PERMANENT IMPACTS IN SURFACE WATER



PLAN VIEW  
SITE 3



—SEE ENLARGED  
AREA ON  
NEXT SHEET



FOR -L- & -Y13- INTERSECTION DETAIL, SEE SHEET 2B-10  
FOR -L- PROFILE, SEE SHEET 17  
FOR -Y13- PROFILE, SEE SHEET 20

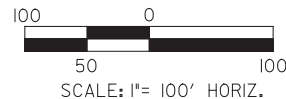
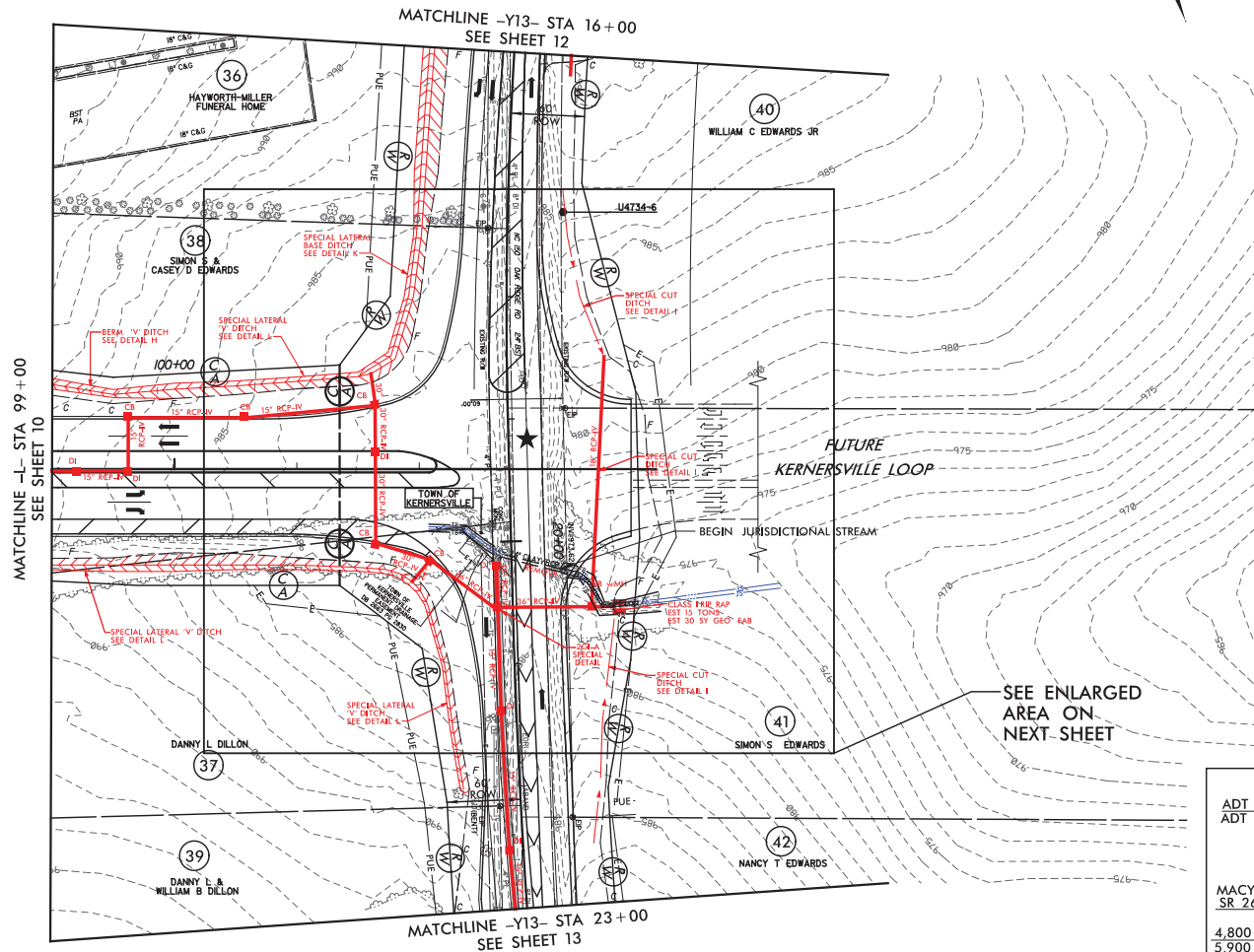
10/19/2017  
ICA ENGINEERING, INC.  
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5121 Kingdom Way,  
Suite 100  
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NC License No. F-50258

PROJECT REFERENCE NO. <b>U-4734</b>	SHEET NO. <b>11</b>
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
PERMIT DRAWING SHEET 16 OF 19	

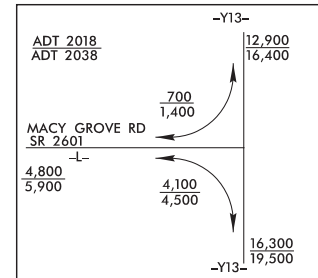
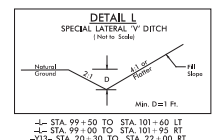
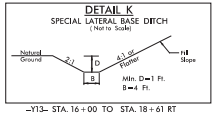
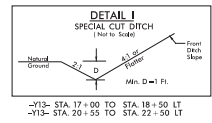
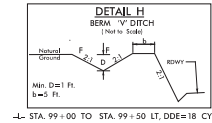
# LEGEND

- DEMOTES TEMPORARY IMPACTS IN SURFACE WATER
- DEMOTES PERMANENT IMPACTS IN SURFACE WATER

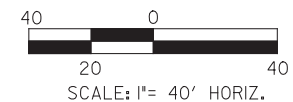
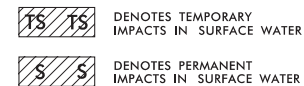


- ★ PROPOSED SIGNAL
- ▨ PROP PAINT STRIPING

## PLAN VIEW SITE 3



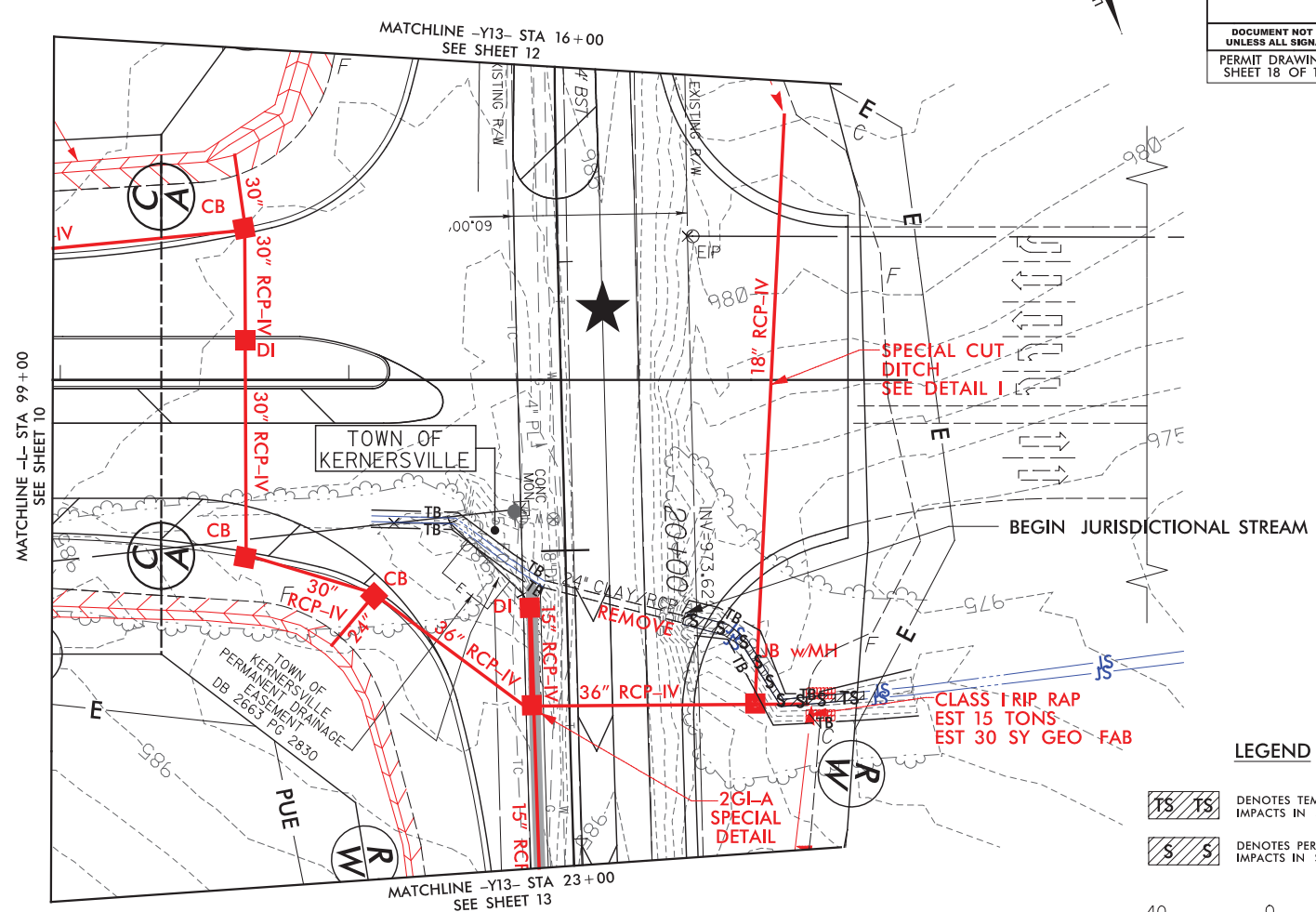
FOR -L & -Y13- INTERSECTION DETAIL, SEE SHEET 28-10  
FOR -L- PROFILE, SEE SHEET 17  
FOR -Y13- PROFILE, SEE SHEET 20



FOR -L- & -Y13- INTERSECTION DETAIL, SEE SHEET 2B-10  
FOR -L- PROFILE, SEE SHEET 17  
FOR -Y13- PROFILE, SEE SHEET 20

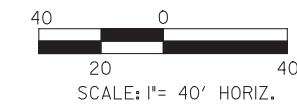
DETAIL SHEET FOR  
SITE 3

0/19/2017  
CA ENGINEERING, INC.  
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LEGEND

- TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- S S DENOTES PERMANENT IMPACTS IN SURFACE WATER



FOR -L- & -Y13- INTERSECTION DETAIL, SEE SHEET 2B-10  
FOR -L- PROFILE, SEE SHEET 17  
FOR -Y13- PROFILE, SEE SHEET 20

- PROPOSED SIGNAL
- PROP PAINT STRIPING

DETAIL SHEET FOR  
SITE 3

10/19/2017  
ICA ENGINEERING, INC.  
C:\Users\jca\Documents\Environmental\Drawings\4734\_bud\cam\set\_cob\_11A.dgn

WETLAND PERMIT IMPACT 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	FROM 27+02 TO 28+06 -L-	2 @ 7' X 7' RCBC						0.02		389		
1	FROM 27+50 TO 28+06 -L-	BANK STABILIZATION						< 0.01	< 0.01	48	24	
2	FROM 36+17 TO 40+15 -L-	BRIDGE CONSTRUCTION	1.24						0.01		60	
2	FROM 36+10 TO 40+17 -L-	MECHANIZED CLEARING				0.06						
3	FROM 102+08 TO 103+79 -L-	ROAD CROSSING						< 0.01	< 0.01	56	10	
3	FROM 103+58 TO 103+69 -L-	BANK STABILIZATION						< 0.01		10		
TOTALS*:			1.24			0.06		0.03	0.01	503	94	0

\*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

OCTOBER 19, 2017

FORSYTH

U-4734

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