

PERMIT DRAWING SHEET 3 OF 7

HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA



ROADWAY DESIGN UNIT

PREPARED BY



NC FIRM LICENSE No: C-1506  
301 Fayetteville Street,  
Suite 1500  
Raleigh, NC 27601  
(919) 882-7839



INCOMPLETE PLANS

DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS

DO NOT USE FOR CONSTRUCTION

SITE ENLARGEMENT

SITE 1

SITE 2

CAMA JURISDICTIONAL WETLAND

HARLOWE CANAL

HARLOWE CANAL

WOODED

SCALE:  
1" = 20'

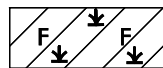
WOODED



DENOTES IMPACTS IN SURFACE WATER



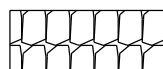
DENOTES TEMPORARY IMPACTS IN SURFACE WATER



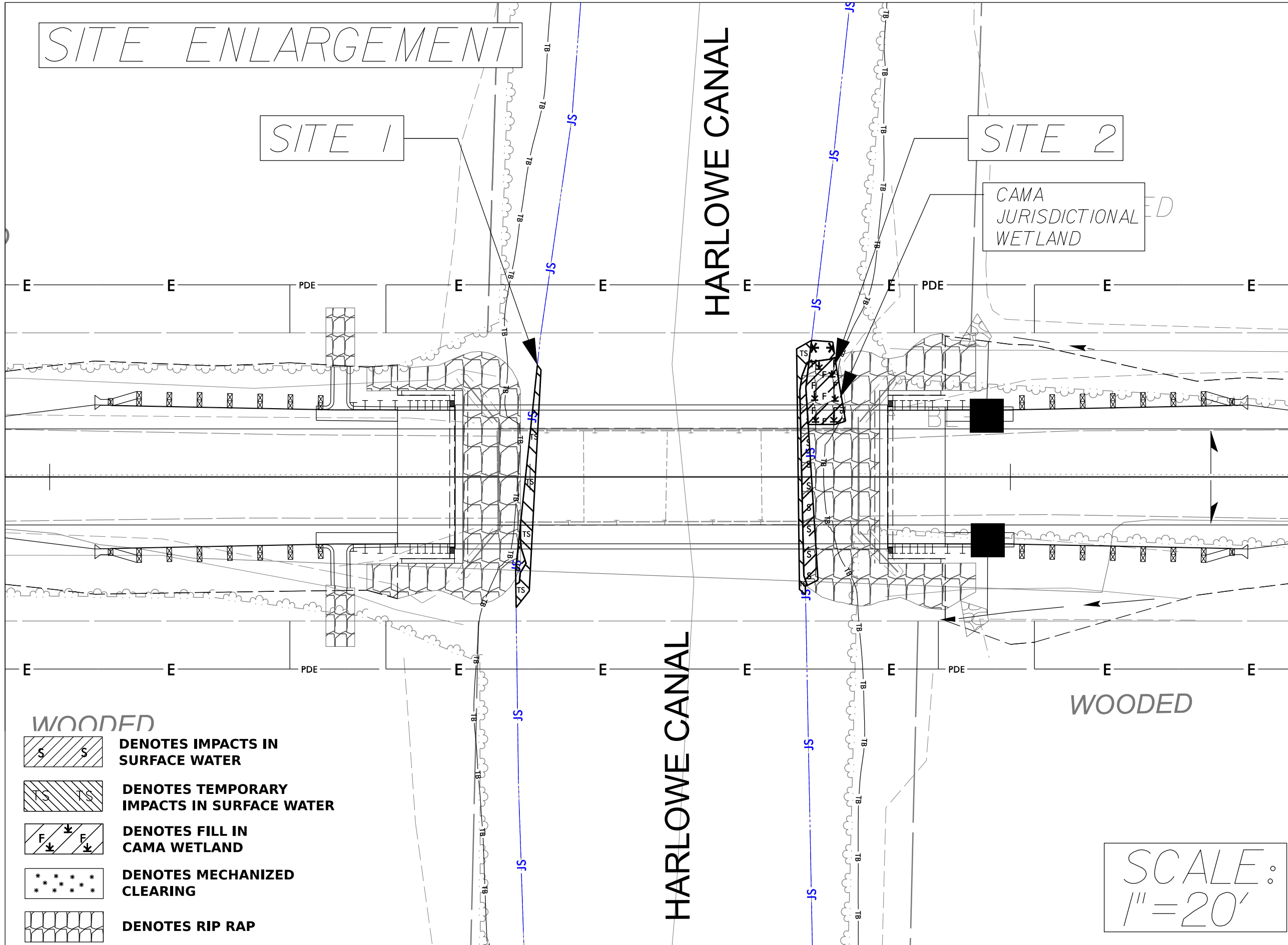
DENOTES FILL IN CAMA WETLAND

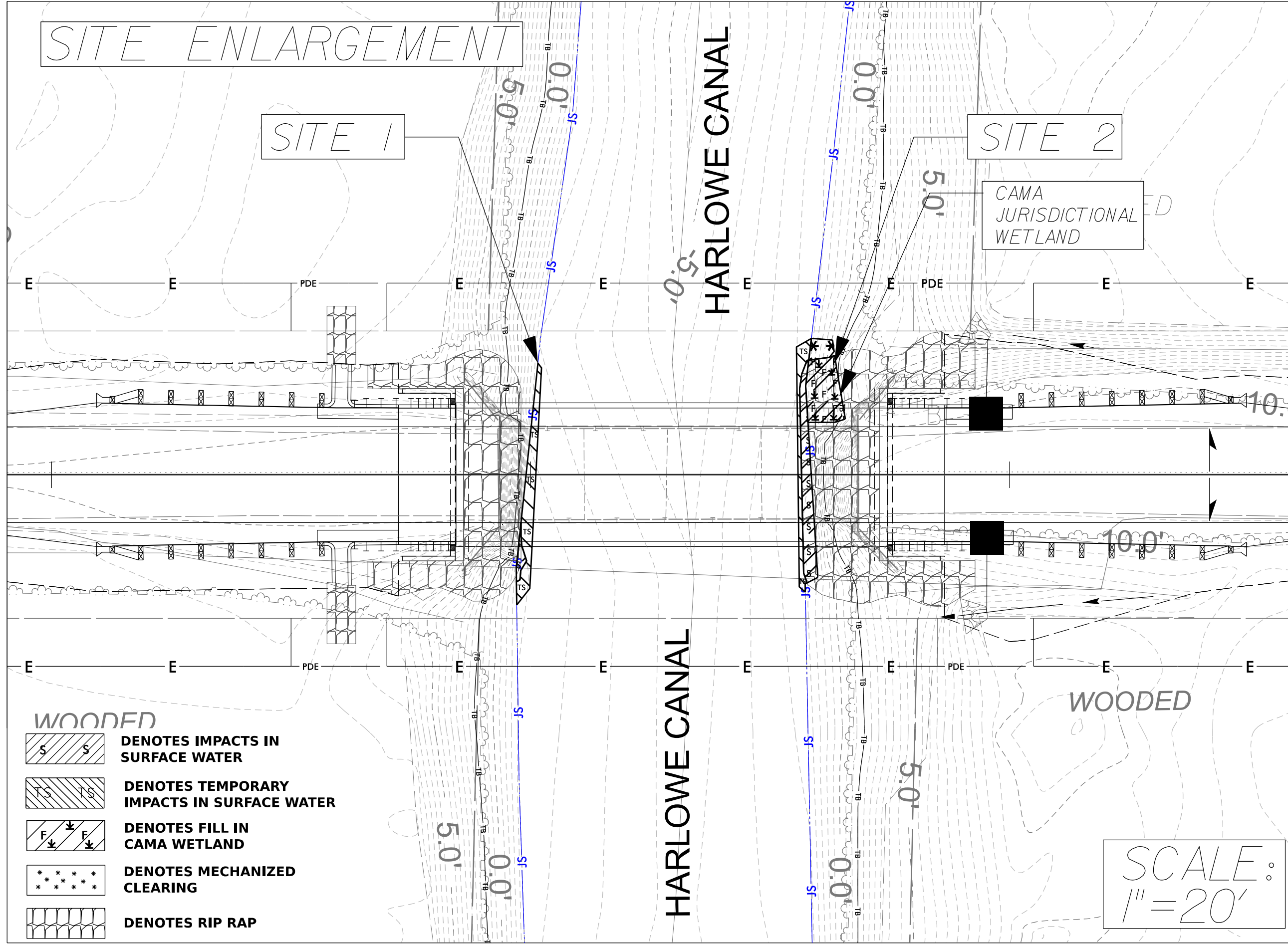


DENOTES MECHANIZED CLEARING



DENOTES RIP RAP





HYDRAULICS  
ENGINEER

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED  
STATE OF NORTH CAROLINA



ROADWAY DESIGN UNIT

PREPARED BY  
**KCA**  
KESINGER CAMPO  
& ASSOCIATES

NC FIRM LICENSE No: C-1506  
301 Fayetteville Street,  
Suite 1500  
Raleigh, NC 27601  
(919) 882-7859



INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION  
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

SCALE:  
1" = 20'



North Carolina Department of Transportation

Highway Stormwater Program  
**STORMWATER MANAGEMENT PLAN**  
 FOR NCDOT PROJECTS



(Version 2.08; Released April 2018)

WBS Element: **TIP No.:** BP2.R005.1 **County(ies):** Carteret **Page** 1 **of** 1

**General Project Information**

<b>WBS Element:</b>		<b>TIP Number:</b>	BP2.R005.1	<b>Project Type:</b>	Bridge Replacement	<b>Date:</b>	7/26/2021
<b>NCDOT Contact:</b>	Casey Whitley, PE, PLS			<b>Contractor / Designer:</b>	Kisinger Campo & Associates		
<b>Address:</b>	1037 W.H. Smith Blvd. Greenville, NC 27835			<b>Address:</b>	301 Fayetteville St., Suite 1500 Raleigh, NC 27601		
<b>Phone:</b>	(252) 439-2811			<b>Phone:</b>	(919) 822-7839		
<b>Email:</b>	ckwhitley@ncdot.gov			<b>Email:</b>	nking@kcaeng.com		
<b>City/Town:</b>	Harlowe			<b>County(ies):</b>	Carteret		
<b>River Basin(s):</b>	White Oak			<b>CAMA County?</b>	Yes		
<b>Wetlands within Project Limits?</b>	Yes						

**Project Description**

<b>Project Length (lin. miles or feet):</b>	480 ft	<b>Surrounding Land Use:</b>	Mostly agricultural, with sparse residential buildings around the area					
	<b>Proposed Project</b>			<b>Existing Site</b>				
<b>Project Built-Upon Area (ac.)</b>	0.5	ac.	0.5	ac.				
<b>Typical Cross Section Description:</b>	The proposed typical section on either side of the bridge will be normal crown with cross slope of 0.020, and consist of two 10' lanes with 4' un-paved shoulders. The bridge typical section will be 0.020 normal crown, and consist of two 10' lanes with 3'-11" shoulders.			Existing roadways consists of two 10' lanes, with 3' unpaved shoulders.				
<b>Annual Avg Daily Traffic (veh/hr/day):</b>	<b>Design/Future:</b>	150	<b>Year:</b>	2019	<b>Existing:</b>	200	<b>Year:</b>	2035
<b>General Project Narrative: (Description of Minimization of Water Quality Impacts)</b>	<p>State project BP2.R005.1 will consist of replacing the structurally deficient NCDOT bridge #150057 between NC 101 and SR 1392 over Harlowe Canal. The proposed replacement structure is a 1-span (1@90') 33" Box Beam, with 4.0' caps, and an out-to-out deck width of 30' which will replace the existing 4-span (1@18'3", 1@17', 1@20'1", 1@20'5"). Roadway fill slopes throughout the project will vary between 2:1 and 6:1. Stormwater runoff from the bridge and roadway will be collected by either traffic bearing grated inlets or modified concrete flumes, then outlet to dissipator rip rap pads. Dissipator rip rap pads are used to minimize the velocity of the water. All proposed ditches for this project will be used to maintain existing drainage patterns.</p> <p>No deck drains will be used for this project.</p>							

**Waterbody Information**

<b>Surface Water Body (1):</b>	Harlowe Canal		<b>NCDWR Stream Index No.:</b>	21-22-1				
<b>NCDWR Surface Water Classification for Water Body</b>	<b>Primary Classification:</b>		Class SA					
	<b>Supplemental Classification:</b>		High Quality Waters (HQW)		None			
<b>Other Stream Classification:</b>								
<b>Impairments:</b>	None							
<b>Aquatic T&amp;E Species?</b>	Yes	<b>Comments:</b> Shortnose Sturgeon and West Indian Manatee. Biological conclusion for both is "May affect, not likely to adversely affect." (See NRTR)						
<b>NRTR Stream ID:</b>	N/A				<b>Buffer Rules in Effect:</b>	N/A		
<b>Project Includes Bridge Spanning Water Body?</b>	Yes	<b>Deck Drains Discharge Over Buffer?</b>	No	<b>Dissipator Pads Provided in Buffer?</b>				No
<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)							

09/08/09

TIP PROJECT: BP2.R005.1

CONTRACT: TBD

# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PERMIT DRAWING  
SHEET 1 OF 7

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP2.R005.1	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
BP2.R005.1		PE	
BP2.R005.2		RW, UTILITIES	
BP2.R005.3		CONSTRUCTION	

## CARTERET COUNTY

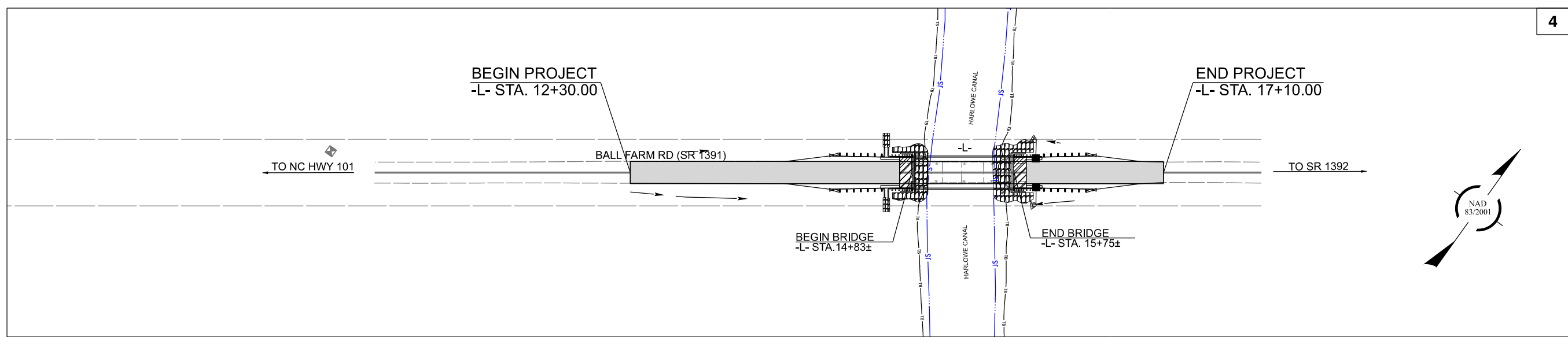
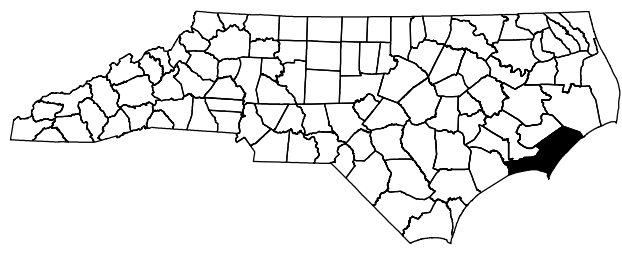
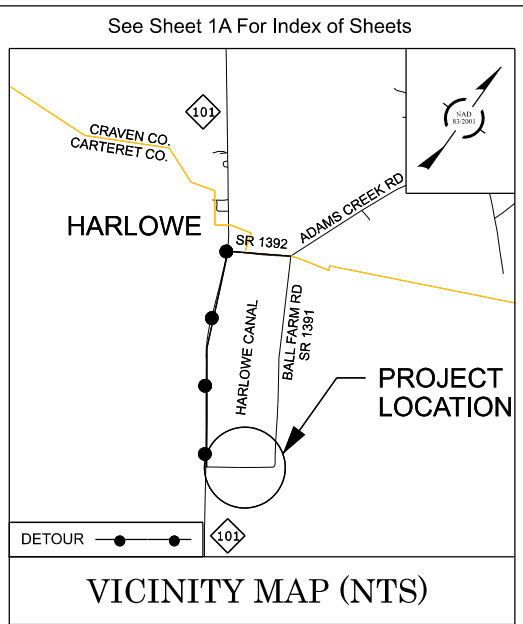
LOCATION: *BRIDGE NO. 150057 ON SR 1391 (BALL FARM RD) OVER HARLOWE CANAL* WETLAND & STREAM IMPACTS

TYPE OF WORK: *GRADING, DRAINAGE, PAVING AND STRUCTURE*

Plans Developed with  
**OpenRoads**  
8 / 12 / 2021

NOTE TO REVIEWER:

PRINT STYLE AND PSET DEVELOPMENT IS STILL IN PROGRESS BY NCDOT FOR ORD DEVELOPED SHEETS AND CROSS SECTIONS. PLOTTING IN THIS SET IS ACCOMPLISHED USING NCDOT'S DEVELOPMENTAL STANDARDS FOR PLAN-ELEVATION AND CROSS SECTION SHEETS. ALL OTHER SHEETS UTILIZE THE FORMER V8I PRINT SYTLE AS NOT ALL SHEET TYPES HAVE DEVELOPMENTAL STANDARD PLOT STYLES YET.

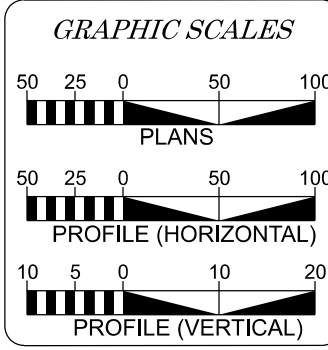


CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II. THIS PROJECT IS NOT LOCATED WITHIN MUNICIPAL BOUNDARIES. THIS IS NOT A CONTROL OF ACCESS PROJECT.

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

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

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



**DESIGN DATA**

ADT 2019 = 150  
ADT 2035 = 200

K = N/A %  
D = N/A %  
T = 6% \*  
V = 55 MPH

\* TTST = 3% DUAL = 3%  
FUNC CLASS = LOCAL

SUB-REGIONAL TIER

**PROJECT LENGTH**

LENGTHS FOR TIP PROJECT BP2.R005.1

LENGTH ROADWAY	=	0.074 MILES
LENGTH STRUCTURES	=	0.017 MILES
TOTAL LENGTH	=	0.091 MILES

NCDOT Contact: CASEY WHITLEY, P.E., P.L.S.

Prepared in the Office of: **KCA**  
KISINGER CAMPO & ASSOCIATES

NC FIRM LICENSE No: C-1506  
301 Fayetteville St., Suite 1500  
Raleigh, NC 27601  
(919)882-7839

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: 08/03/2021

LETTING DATE: 04/12/2022

JOHN P. MAZERES, P.E.  
PROJECT ENGINEER

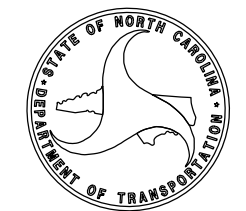
JASON DEBONE  
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER






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

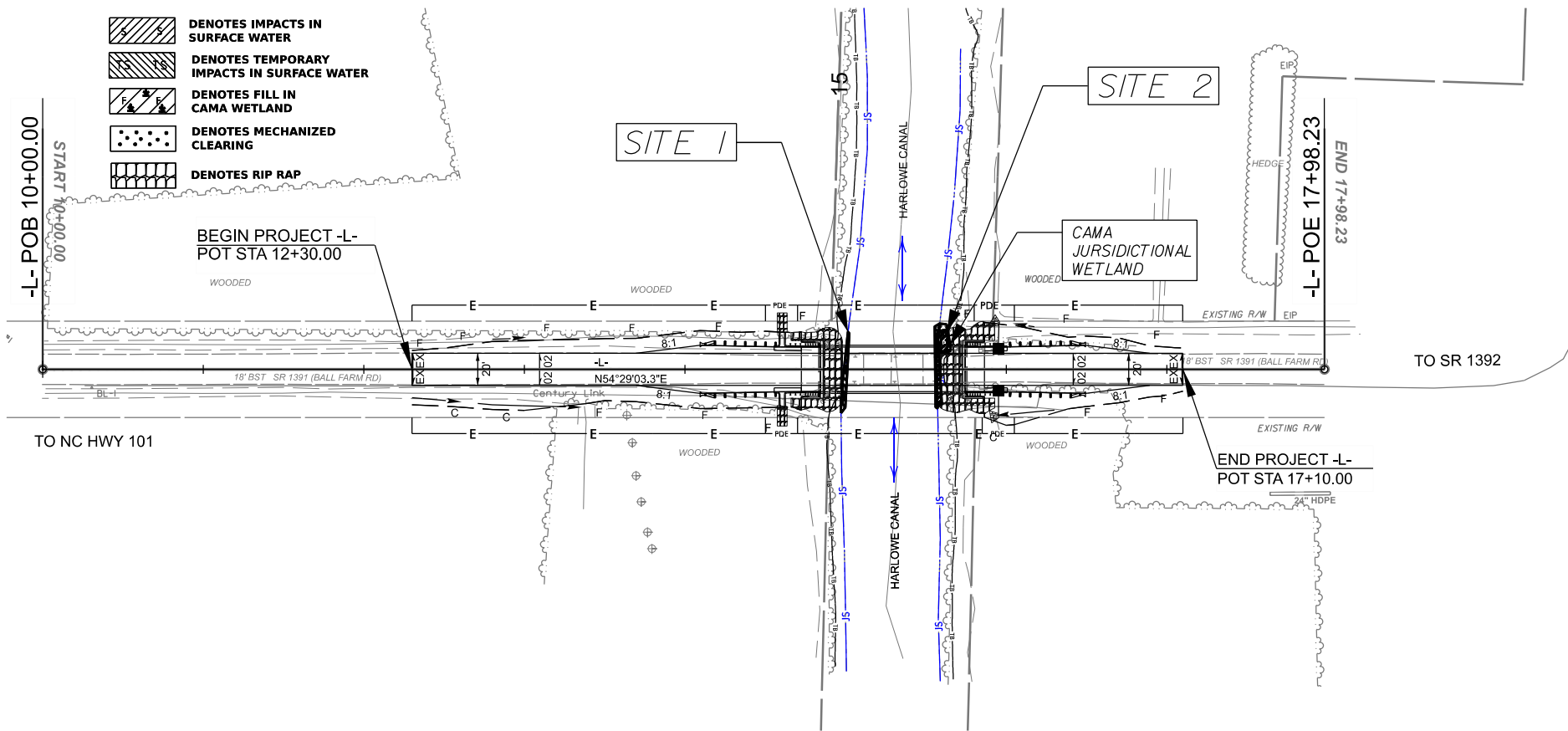
ROADWAY DESIGN ENGINEER

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





-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-  DENOTES FILL IN CAMA WETLAND
-  DENOTES MECHANIZED CLEARING
-  DENOTES RIP RAP



PERMIT DRAWING SHEET 2 OF 7

BP2.R005.1  
3ENI 004

STATE OF NORTH CAROLINA



HIGHWAY DIVISION 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

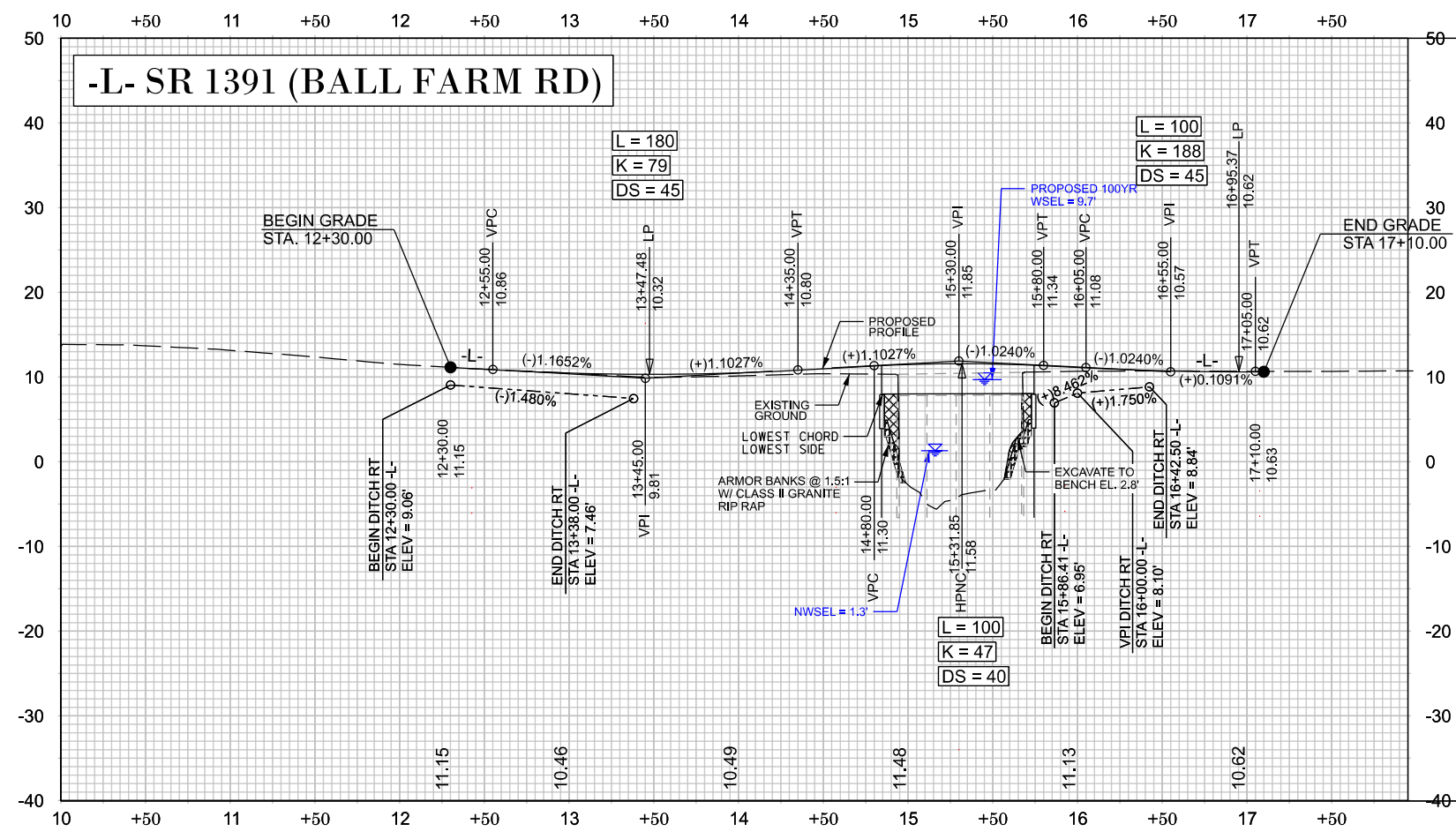
PREPARED BY



NC FIRM LICENSE No: C-1506  
301 Fayetteville Street,  
Suite 1500  
Raleigh, NC 27601  
(919) 862-7839



INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION  
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= INDETERMINATE
DESIGN FREQUENCY	= N/A YRS
DESIGN HW ELEVATION	= N/A FT
BASE DISCHARGE	= 4000 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 9.70 FT
OVERTOPPING DISCHARGE	= 4500 CFS
OVERTOPPING FREQUENCY	= 100+ YRS
OVERTOPPING ELEVATION	= 10.30 FT

FOR STRUCTURES PLANS, SEE SHEETS S-? THRU S-??

PERMIT DRAWING SHEET 3 OF 7

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA



ROADWAY DESIGN UNIT

PREPARED BY



NC FIRM LICENSE No: C-1506  
301 Fayetteville Street,  
Suite 1500  
Raleigh, NC 27601  
(919) 882-7839



INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION  
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

SITE ENLARGEMENT

SITE 1

SITE 2

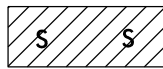

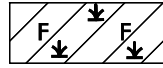
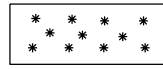
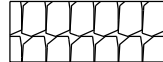
CAMA JURISDICTIONAL WETLAND

HARLOWE CANAL

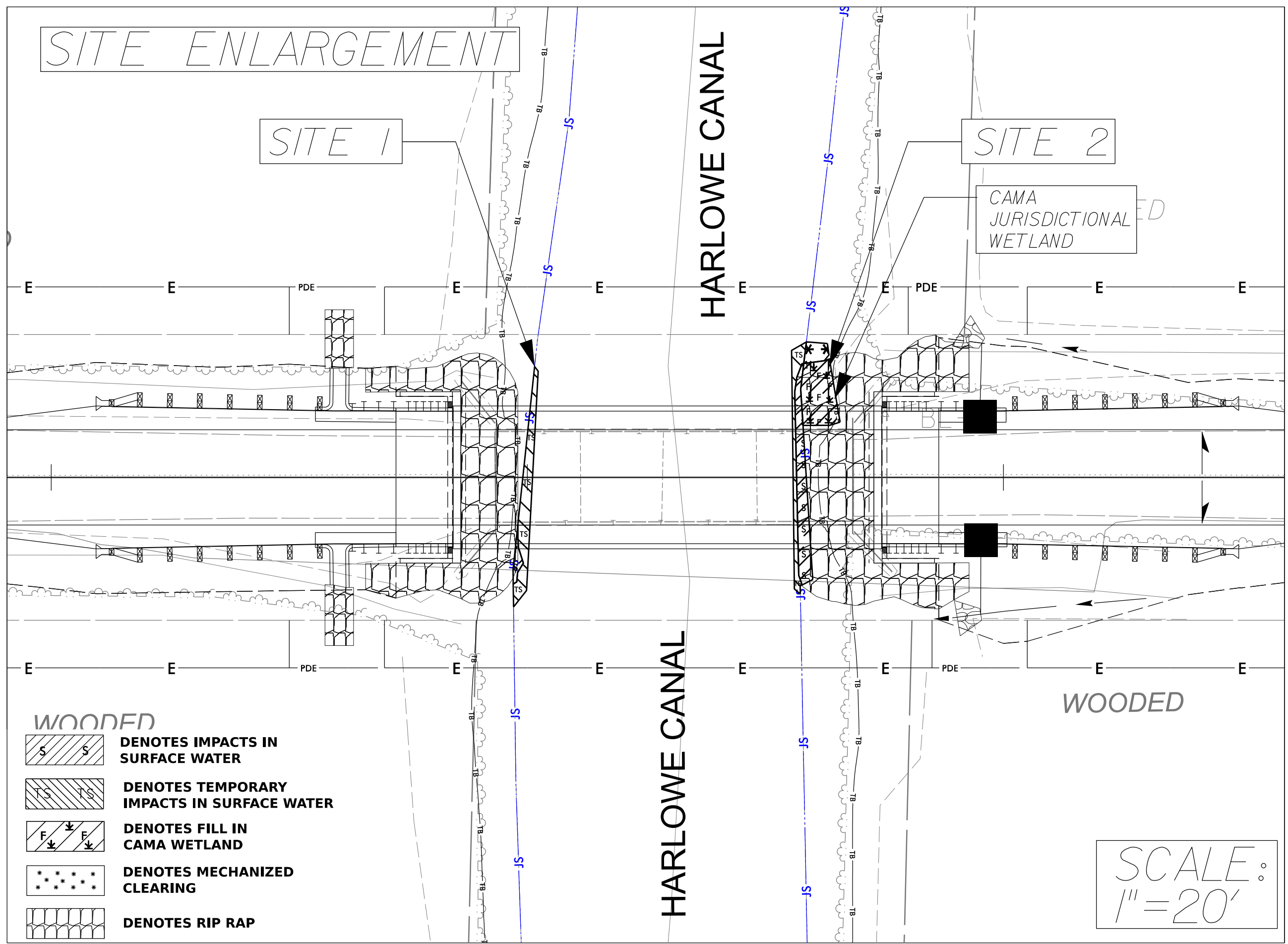
HARLOWE CANAL






WOODED

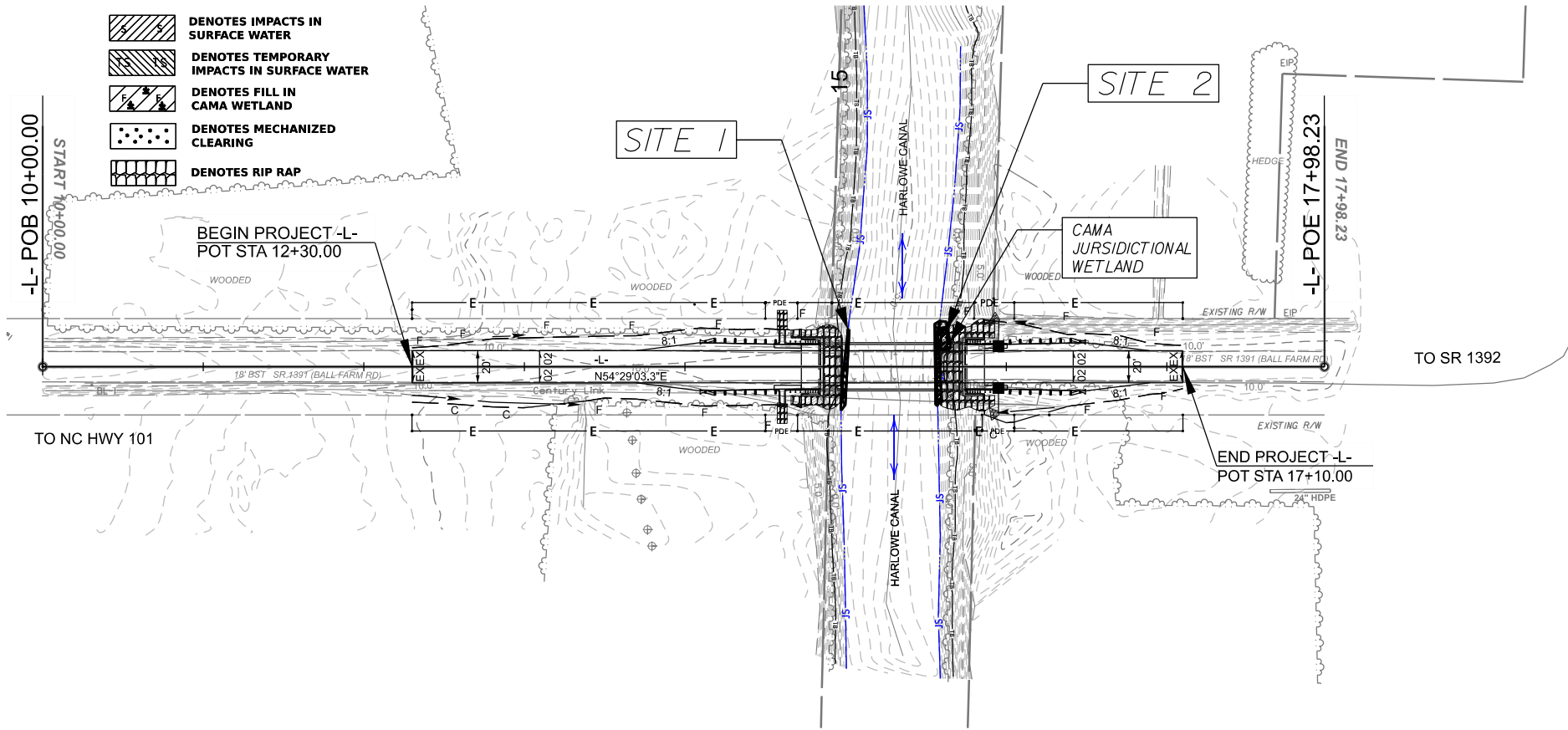
WOODED

-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-  DENOTES FILL IN CAMA WETLAND
-  DENOTES MECHANIZED CLEARING
-  DENOTES RIP RAP

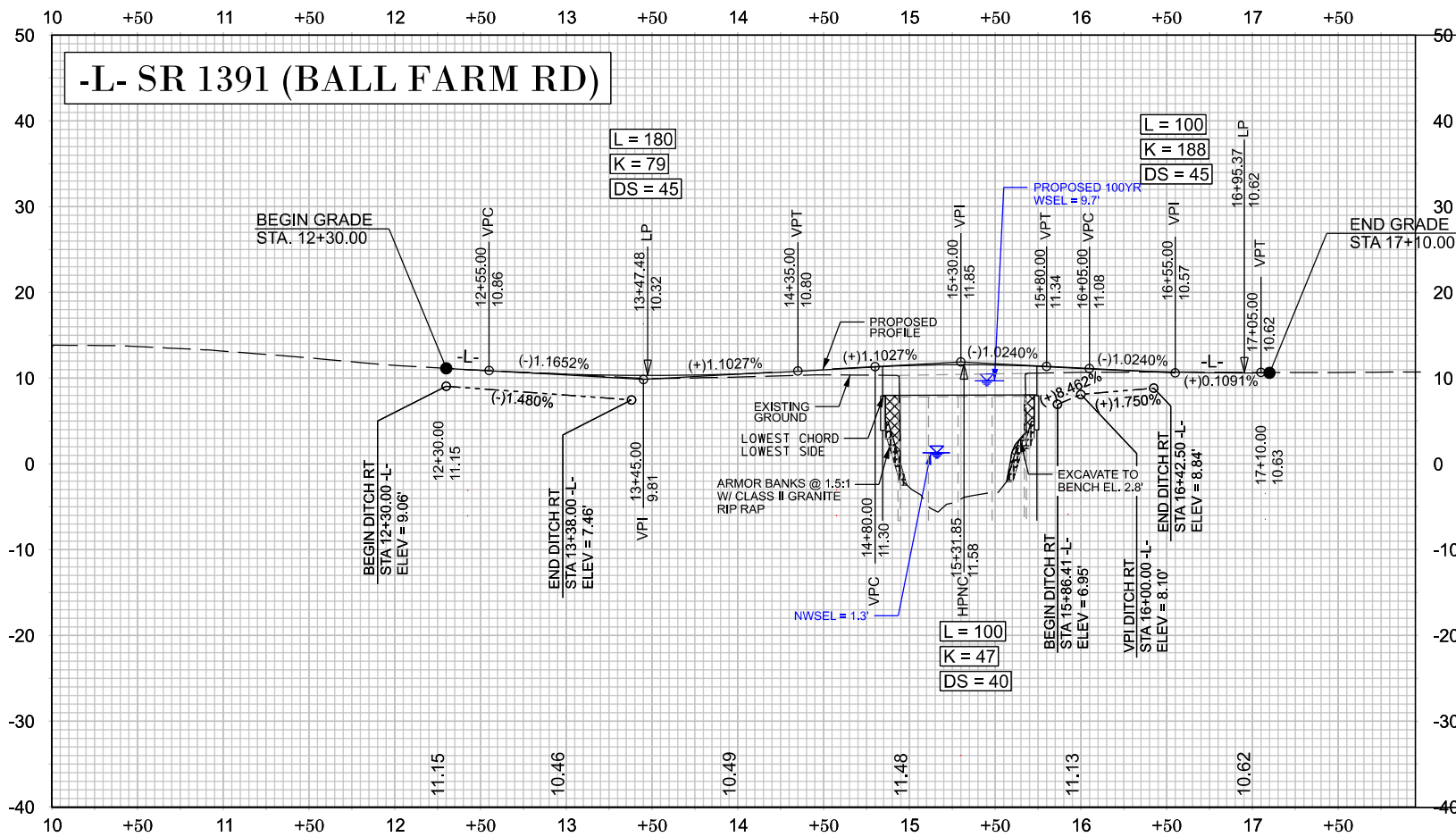
SCALE:  
1" = 20'



-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-  DENOTES FILL IN CAMA WETLAND
-  DENOTES MECHANIZED CLEARING
-  DENOTES RIP RAP



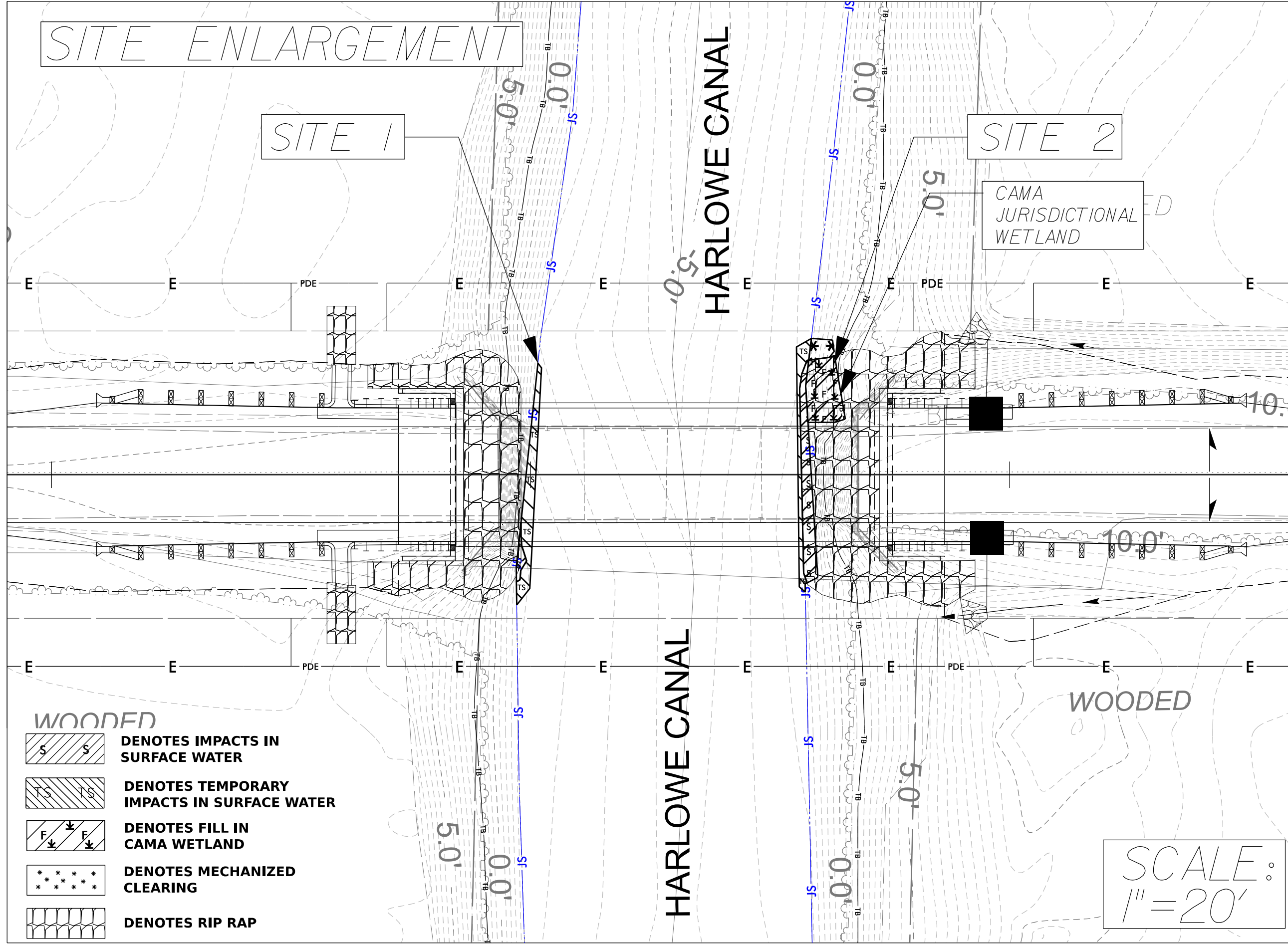
PERMIT DRAWING SHEET 4 OF 7



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= INDETERMINATE
DESIGN FREQUENCY	= N/A YRS
DESIGN HW ELEVATION	= N/A FT
BASE DISCHARGE	= 4000 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 9.70 FT
OVERTOPPING DISCHARGE	= 4500 CFS
OVERTOPPING FREQUENCY	= 100+ YRS
OVERTOPPING ELEVATION	= 10.30 FT

FOR STRUCTURES PLANS, SEE SHEETS S-? THRU S-??



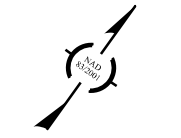
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



STATE OF NORTH CAROLINA  
ROADWAY DESIGN UNIT

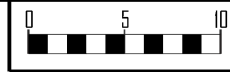
PREPARED BY  
**KCA**  
KESINGER CAMPO  
& ASSOCIATES

NC FIRM LICENSE No: C-1506  
301 Fayetteville Street,  
Suite 1500  
Raleigh, NC 27601  
(919) 882-7859

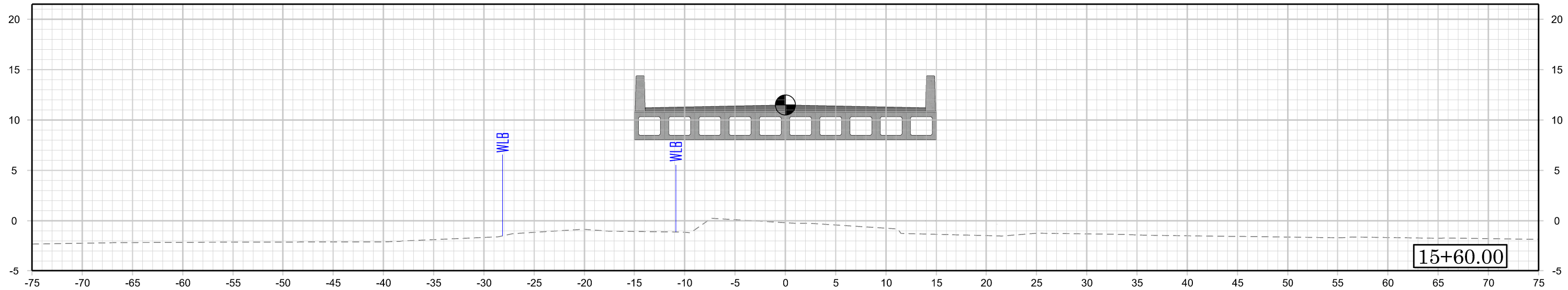


INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION  
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION





PERMIT DRAWING  
SHEET 6 OF 7



**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+96 / 15+02	Proposed (Begin Bridge) End Bent						< 0.01	< 0.01	14	50	
2	15+55 / 15+65	Proposed (End Bridge) End Bent	< 0.01			< 0.01		< 0.01	< 0.01	46	53	
<b>TOTALS*:</b>			< 0.01			< 0.01		< 0.01	< 0.01	60	103	0

\*Rounded totals are sum of actual impacts

NOTES:  
 Site 1:  
 Permanent SW Impacts (sq ft): 9  
 Temp SW Impacts (sq ft): 87

Site 2:  
 Permanent Fill in Wetlands (sq ft): 87  
 Mechanized Clearing in Wetlands (sq ft): 17.5  
 Permanent SW Impacts (sq ft): 91.5  
 Temp SW Impacts (sq ft): 52.3

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 7/26/2021  
 Carteret  
 BP2.R005.1  
 -  
 SHEET 7 OF 7