



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 2.08; Released April 2018)

WBS Element: 40237.1.1 TIP No.: R-3300B County(ies): Pender Page 1 of 5

General Project Information

WBS Element:	40237.1.1	TIP Number:	R-3300B	Project Type:	New Location	Date:	3/29/2019
NCDOT Contact:	Mason Herndon		Contractor / Designer:	Joshua G. Dalton			
	Address:	Div 3 Environmental Program Supervisor 5501 Barbados Blvd. Castle Hayne, NC 28429		Address:	Sungate Design Group, PA 905 Jones Franklin Rd Raleigh, NC 27606		
	Phone:	910-341-2036		Phone:	919-859-2243		
	Email:	mherndon@ncdot.gov		Email:	jdalton@sungatedesign.com		
City/Town:	Hampsted		County(ies):	Pender			
River Basin(s):	Cape Fear	White Oak	CAMA County?	Yes			
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	6.916 miles	Surrounding Land Use:	Rural, Residentail, Commercial					
	Proposed Project			Existing Site				
Project Built-Upon Area (ac.)	89.6	ac.	12.6	ac.				
Typical Cross Section Description:	Two 12' travel lanes in each direction (4 total) with 10' paved shoulders and 34' wide grass median.			N/A, new location roadway.				
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	55400	Year:	2040	Existing:	N/A	Year:	2016
General Project Narrative: (Description of Minimization of Water Quality Impacts)	R-3300B is a new location roadway project for future NC 417 (Hampstead Bypass) from south of NC 210 to east of SR 1563 (Sloop Point Loop Road). Work will include grading, drainage, paving, structures, signals, and culverts. Wetland and stream impacts have been minimized using maximum 3:1 side slopes across jurisdictional streams and through wetland areas. Off-site and roadway drainage have been seperated to the maximum extent practical and roadway drainage discharged outside of wetlands areas, where possible. Toe protection at toe of fill slopes, in lieu of lateral ditches, have been propsoed in wetland areas to minmize impacts to wetlands, where possible. Culverts in jurisdiction streams will be buried to promote fish passage. A stormwater wet detention basin and dry detention basin have been designed at the northern most interchange to provide stormwater quality and quantity control.							

Waterbody Information

Surface Water Body (1):	UT to Old Topsail Creek		NCDWR Stream Index No.:	18-87-12			
NCDWR Surface Water Classification for Water Body	Primary Classification:	Class SA					
	Supplemental Classification:	High Quality Waters (HQW)					
Other Stream Classification:							
Impairments:							
Aquatic T&E Species?	Comments:						
NRTR Stream ID:	NSF		Buffer Rules in Effect:	N/A			
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A		
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)			
(If yes, provide justification in the General Project Narrative)							



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Additional Waterbody Information

Surface Water Body (2):		Winding Branch (Trib to Harrisons Creek)		NCDWR Stream Index No.:	18-74-49
NCDWR Surface Water Classification for Water Body		Primary Classification:		Class C	
		Supplemental Classification:		Swamp Waters (Sw)	
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:		LSB		Buffer Rules in Effect:	N/A
Project Includes Bridge Spanning Water Body?		No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?
Deck Drains Discharge Over Water Body?		N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)
		(If yes, provide justification in the General Project Narrative)			
Surface Water Body (3):		Harrisons Creek		NCDWR Stream Index No.:	18-74-49
NCDWR Surface Water Classification for Water Body		Primary Classification:		Class C	
		Supplemental Classification:		Swamp Waters (Sw)	
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:		LSC		Buffer Rules in Effect:	N/A
Project Includes Bridge Spanning Water Body?		No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?
Deck Drains Discharge Over Water Body?		N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)
		(If yes, provide justification in the General Project Narrative)			
Surface Water Body (4):		Godfrey Creek		NCDWR Stream Index No.:	18-74-49-1
NCDWR Surface Water Classification for Water Body		Primary Classification:		Class C	
		Supplemental Classification:		Swamp Waters (Sw)	
Other Stream Classification:					
Impairments:					
Aquatic T&E Species?		Comments:			
NRTR Stream ID:		LSD		Buffer Rules in Effect:	N/A
Project Includes Bridge Spanning Water Body?		No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?
Deck Drains Discharge Over Water Body?		N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)
		(If yes, provide justification in the General Project Narrative)			



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Preformed Scour Holes and Energy Dissipators

Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	Energy Dissipator Type	Riprap Type	Drainage Area (ac)	Conveyance Structure	Pipe/Structure Dimensions (in)	Q10 (cfs)	V10 (fps)	BMP Associated w/ Buffer Rules?
5	-Y30- 46+88 LT	(2)Winding Branch (Trib	Riprap Energy Dissipator Basin	Class I	48.0	Pipe	54	95.0	2.1	N/A
10	-L1- 677+37 RT	(3)Harrisons Creek	Riprap Energy Dissipator Basin	Class I	33.0	Pipe	54	65.0	1.9	N/A

Additional Comments

* Refer to the NCDOT Best Management Practices Toolbox (2014), NCDOT Standards, the Federal Highway Administration (FHWA) Hydraulic Engineering Circular No. 14 (HEC-14), Third Edition, Hydraulic Design of Energy Dissipators for Culverts and Channels (July 2006), as applicable, for design guidance and criteria.



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WBS Element: 40237.1.1 **TIP No.:** R-3300B **County(ies):** Pender **Page** 4 **of** 5

Level Spreaders, Hazardous Spill Basins, and Forebays

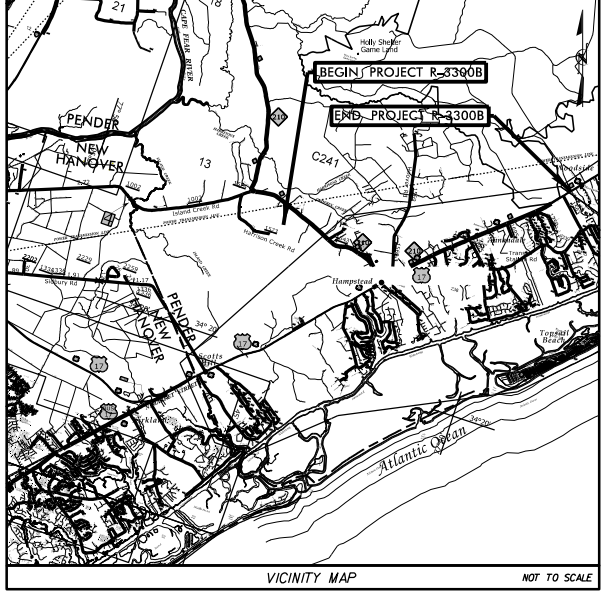
Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	Level Spreader, Hazardous Spill Basin, or Forebay?	Drainage Area (ac)	New Built- Upon Area (ac)	Required / Minimum Treatment			Treatment Achieved		BMP Associated w/ Buffer Rules?
23	-L1 N- 866+50 LT	(1)UT to Old Topsail Creek	Forebay	1.41	0.88	0.1 inches of runoff from NBUA	303.6	cf	1116.0	cf	No
23	-Y32- 39+75 RT	(1)UT to Old Topsail Creek	Forebay	2.89	0.23	0.1 inches of runoff from NBUA	79.4	cf	1300.2	cf	No

*Hazardous spill basins are pollution prevention measures designed for spill containment rather than stormwater treatment. Under Required / Minimum Treatment and Treatment Achieved, provide the minimum required volume and the actual HSB volume, respectively. Refer to the NCDOT Stormwater Best Management Practices Toolbox (2014) for design guidance.

Additional Comments

09/08/19

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



FDPI PLANS SUBMITTAL

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PENDER COUNTY

LOCATION: NC 417 (HAMPSTEAD BYPASS) FROM SOUTH OF NC 210 TO NORTH OF SR 1563 (SLOOP POINT LOOP ROAD).

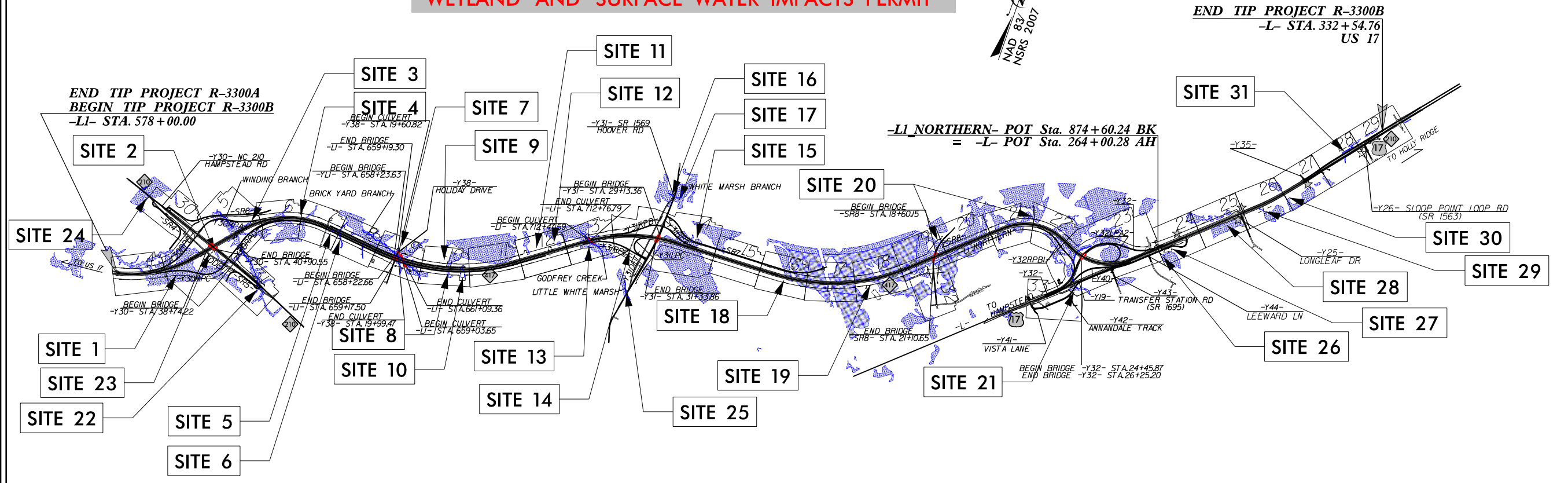
TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES, SIGNALS, AND CULVERTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3300B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
40237.1.1	N/A	PE	
40237.2.1	N/A	R/W	
40237.2.2	N/A	UTIL	

PERMIT DRAWING
SHEET 1 OF 124

TIP PROJECT: R-3300B

WETLAND AND SURFACE WATER IMPACTS PERMIT



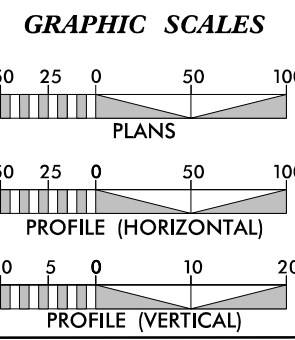
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RALEIGH, NORTH CAROLINA 27609
NC COA No. C-08950

Dewberry
2610 WYCLIFF ROAD
SUITE 110
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0929

☆ UPDATE EXISTING SIGNAL
☆ PROPOSED SIGNAL

-THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
-CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY MODIFIED METHOD III.

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DESIGN DATA

ADT 2016	= N/A
ADT 2040	= 55,400
DHV	= 8 %
D	= 60 %
T	= 6 % *
V	= 70 MPH

* (TTST 2% + DUALS 4%)
FUNC CLASS = FREEWAY
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3300B	= 6.893 MILES
LENGTH STRUCTURE TIP PROJECT R-3300B	= 0.023 MILES
TOTAL LENGTH TIP PROJECT R-3300B	= 6.916 MILES

PREPARED IN THE OFFICE OF:
Stantec CONSULTING
801 Jones Franklin Road | Suite 300 | Raleigh, NC 27606
Tel. (919) 851-6866 | Fax. (919) 851-7024 | www.stantec.com
License No. P-9672

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2018 STANDARD SPECIFICATIONS

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

LETTING DATE: **JULY 21, 2020**

MICHAEL D. LINDGREN, P.E.
PROJECT ENGINEER

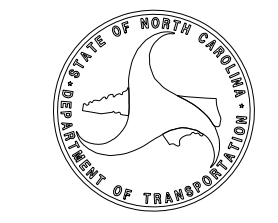
TRACE HOWELL, P.E.
NCDOT DIVISION 3 CONTACT

HYDRAULICS ENGINEERS

SIGNATURE: _____ P.E.

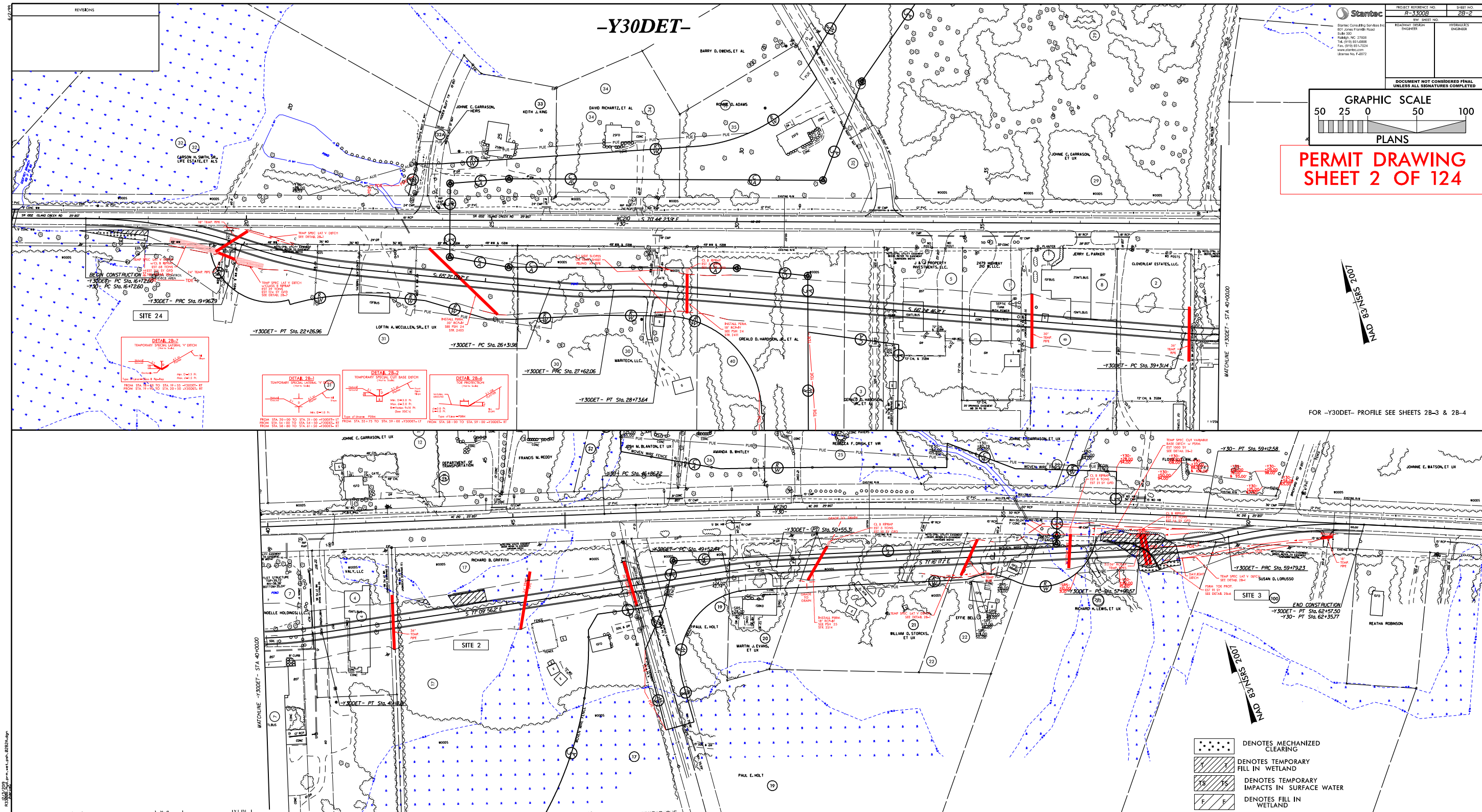
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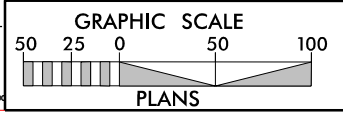
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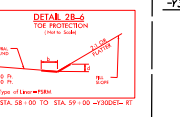
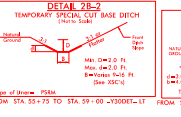
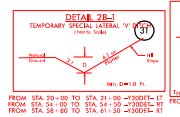
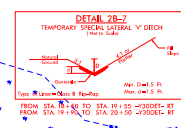
REVISIONS

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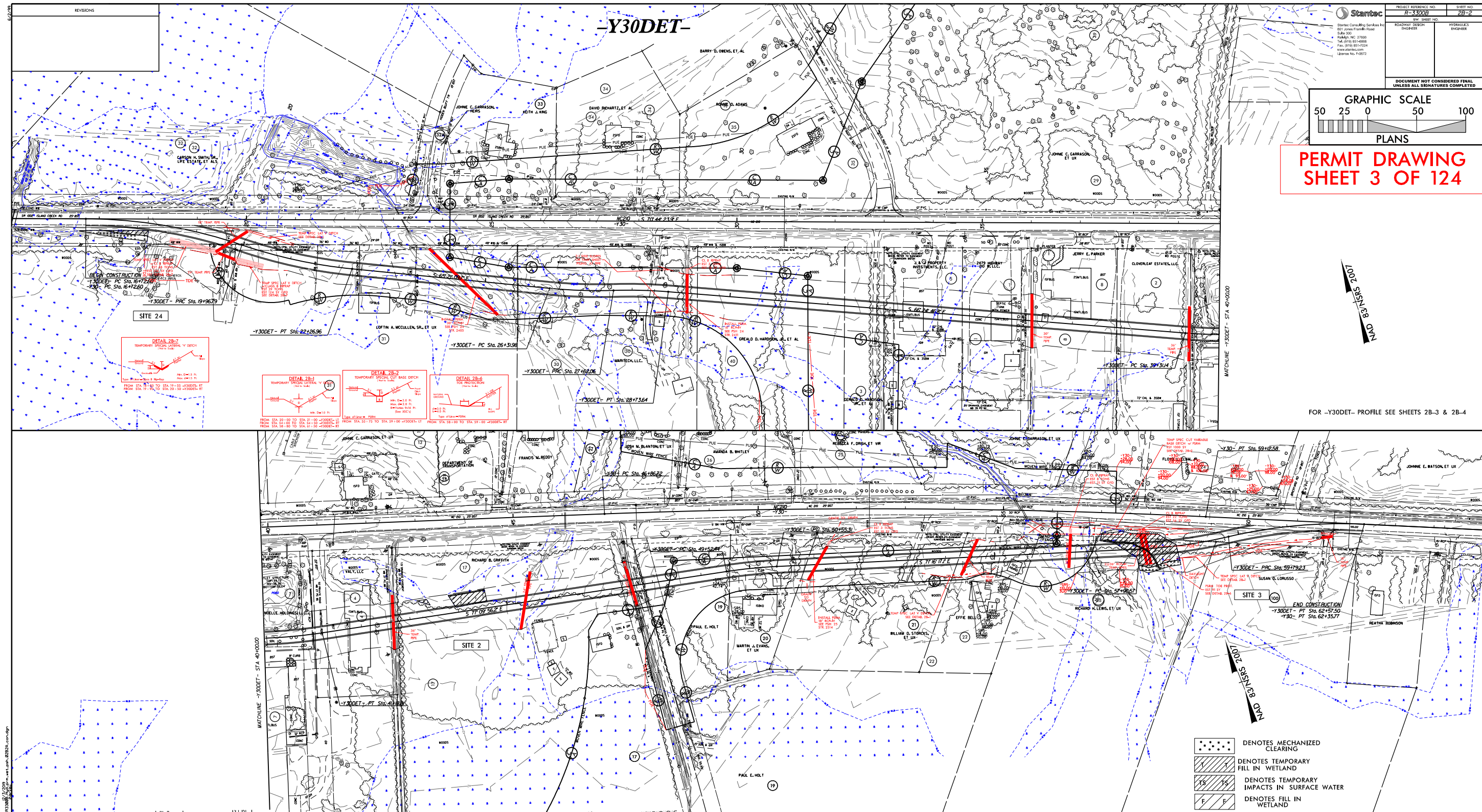


PERMIT DRAWING SHEET 2 OF 124



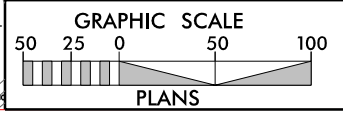
FOR -Y30DET- PROFILE SEE SHEETS 28-3 & 28-4

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



REVISIONS

Starbuck
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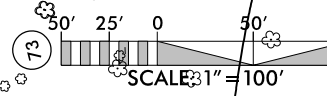
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 SHEET 3 OF 124**

FOR -Y30DET- PROFILE SEE SHEETS 28-3 & 28-4

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

-Y31DET-

NAD 83/NSRS 2007



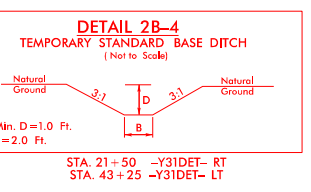
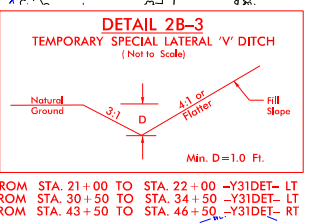
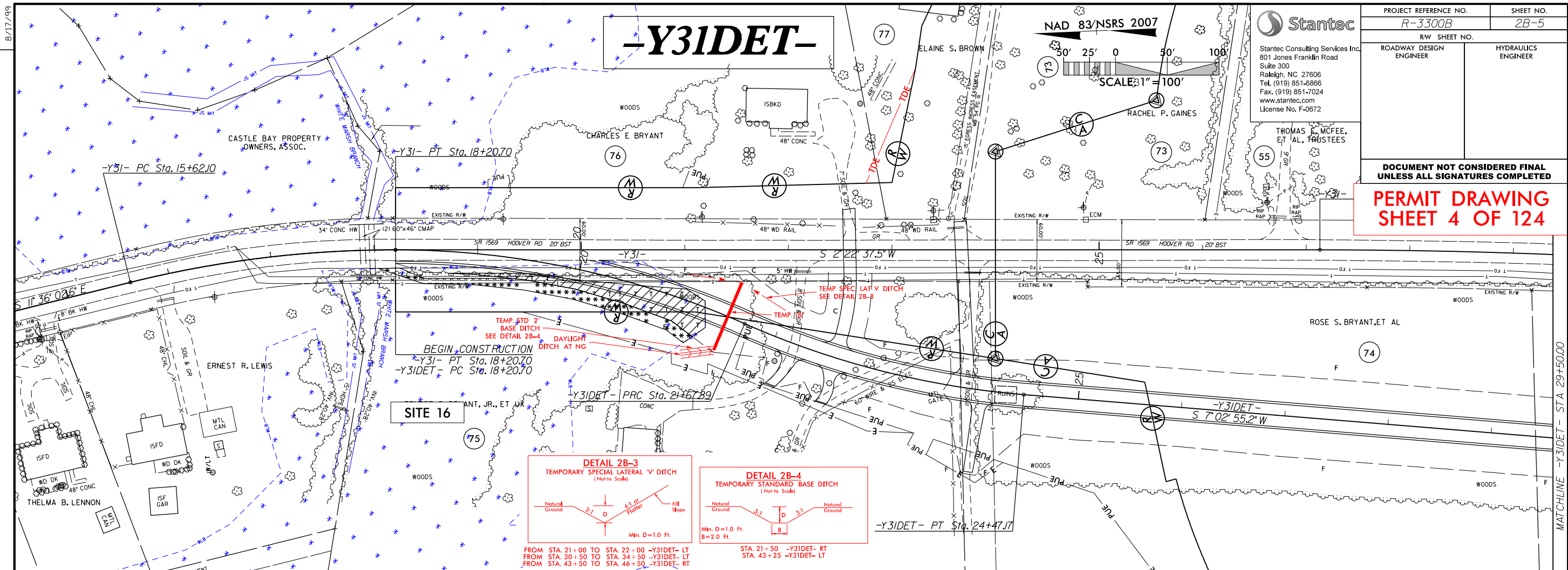
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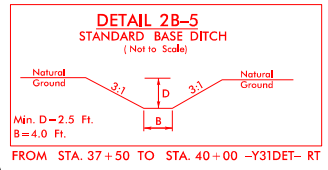
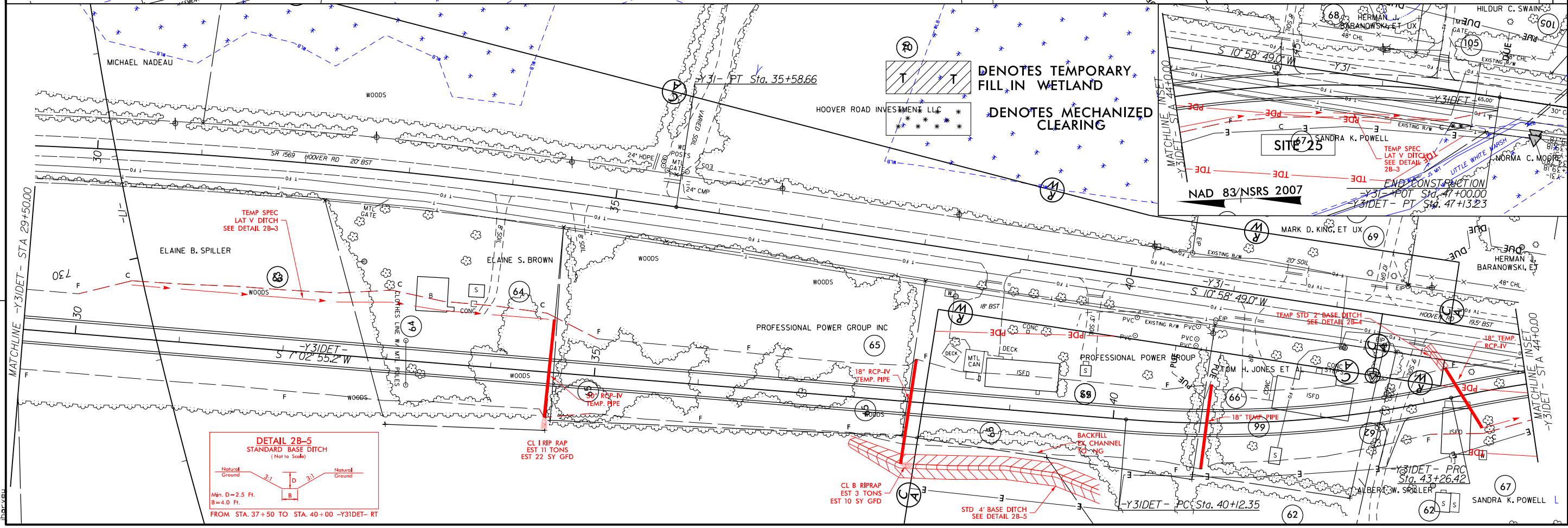
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**PERMIT DRAWING
SHEET 4 OF 124**

REVISIONS



DENOTES TEMPORARY FILL IN WETLAND
 DENOTES MECHANIZED CLEARING



CL 1 RIP RAP
EST 11 TONS
EST 22 SY GFD

CL B RIPRAP
EST 3 TONS
EST 10 SY GFD

STD. 4" BASE DITCH
SEE DETAIL 2B-5

R:\3300B_Hyd.prm_wet.psh_02B5A.dgn

8/17/99

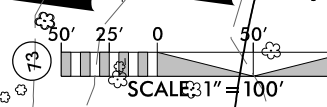
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MATCHLINE -Y31DET- STA 29+50.00

MATCHLINE INSET - STA 44+00.00

-Y31DET-

NAD 83/NSRS 2007



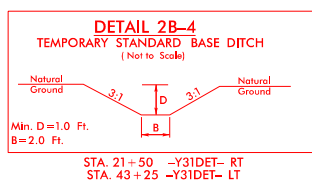
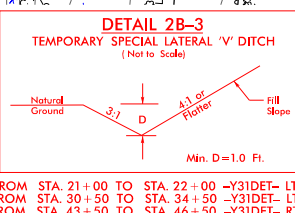
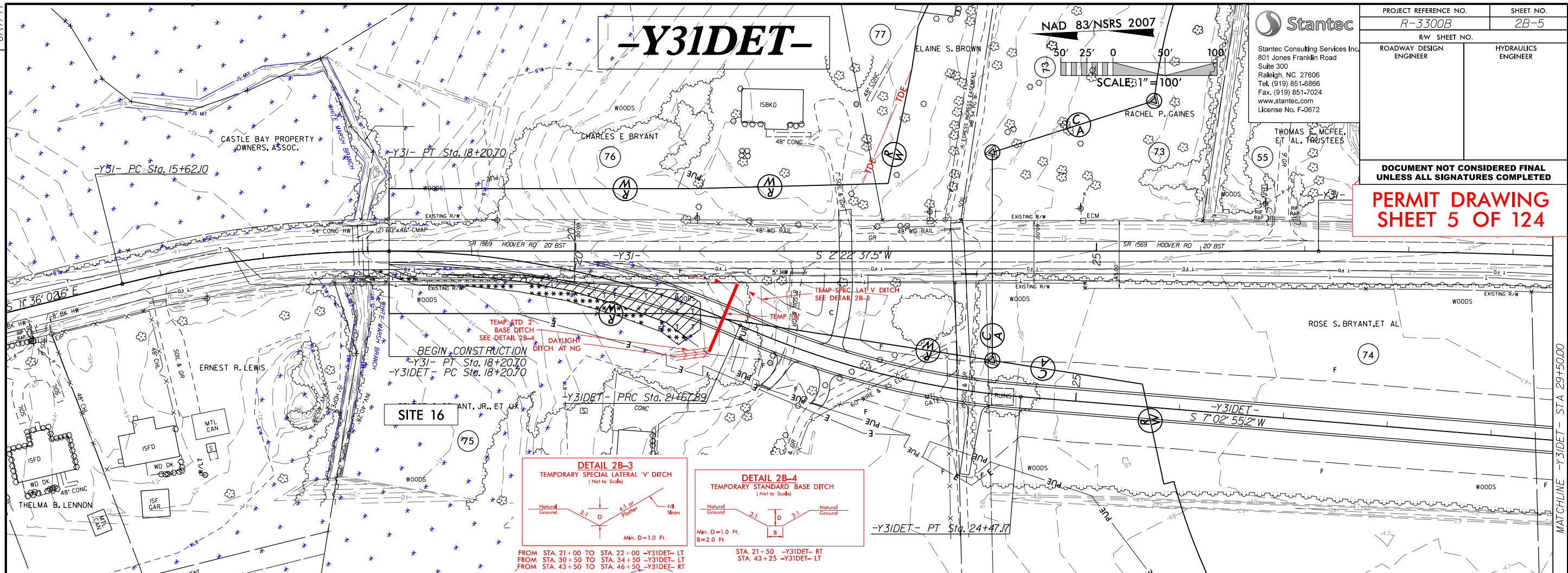
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RW SHEET NO.	
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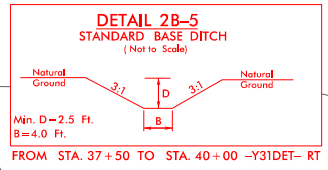
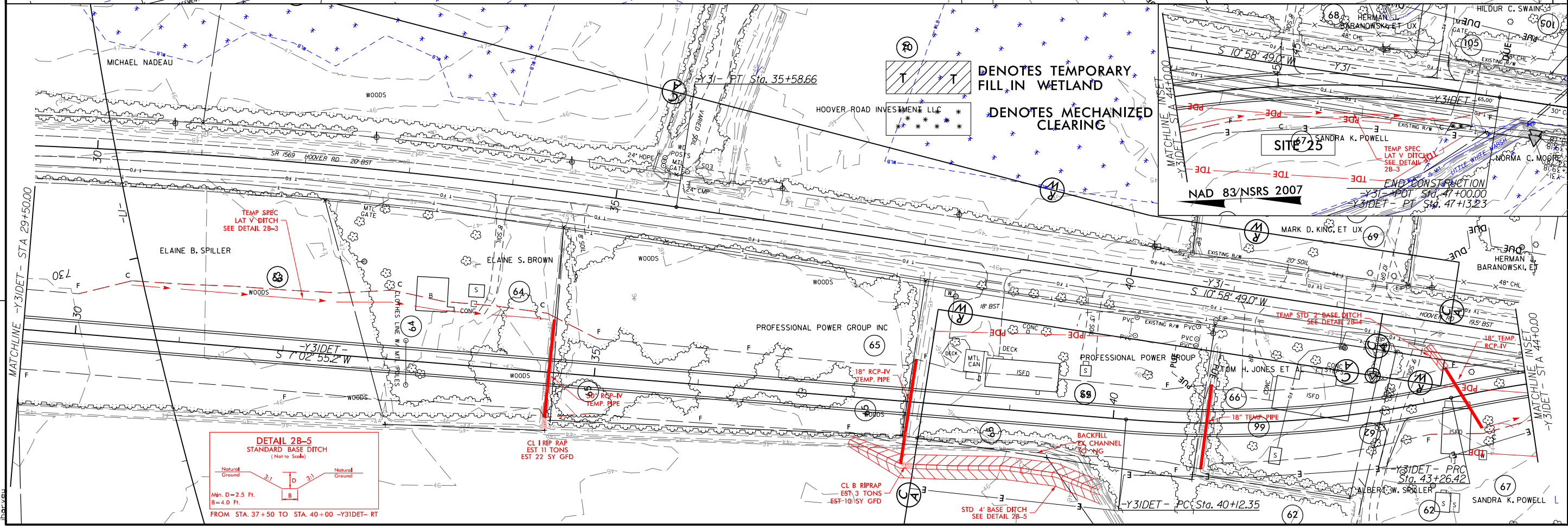
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**PERMIT DRAWING
SHEET 5 OF 124**



DENOTES TEMPORARY FILL IN WETLAND

DENOTES MECHANIZED CLEARING



CL 1 RIP RAP
EST. 11 TONS
EST. 22 SY GFD

CL 8 RIPRAP
EST. 3 TONS
EST. 10 SY GFD

STD. 4' BASE DITCH
SEE DETAIL 2B-5

REVISIONS

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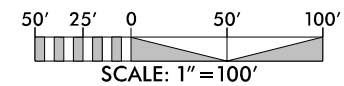
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MATCHLINE INSET -Y31DET- STA 44+00.00

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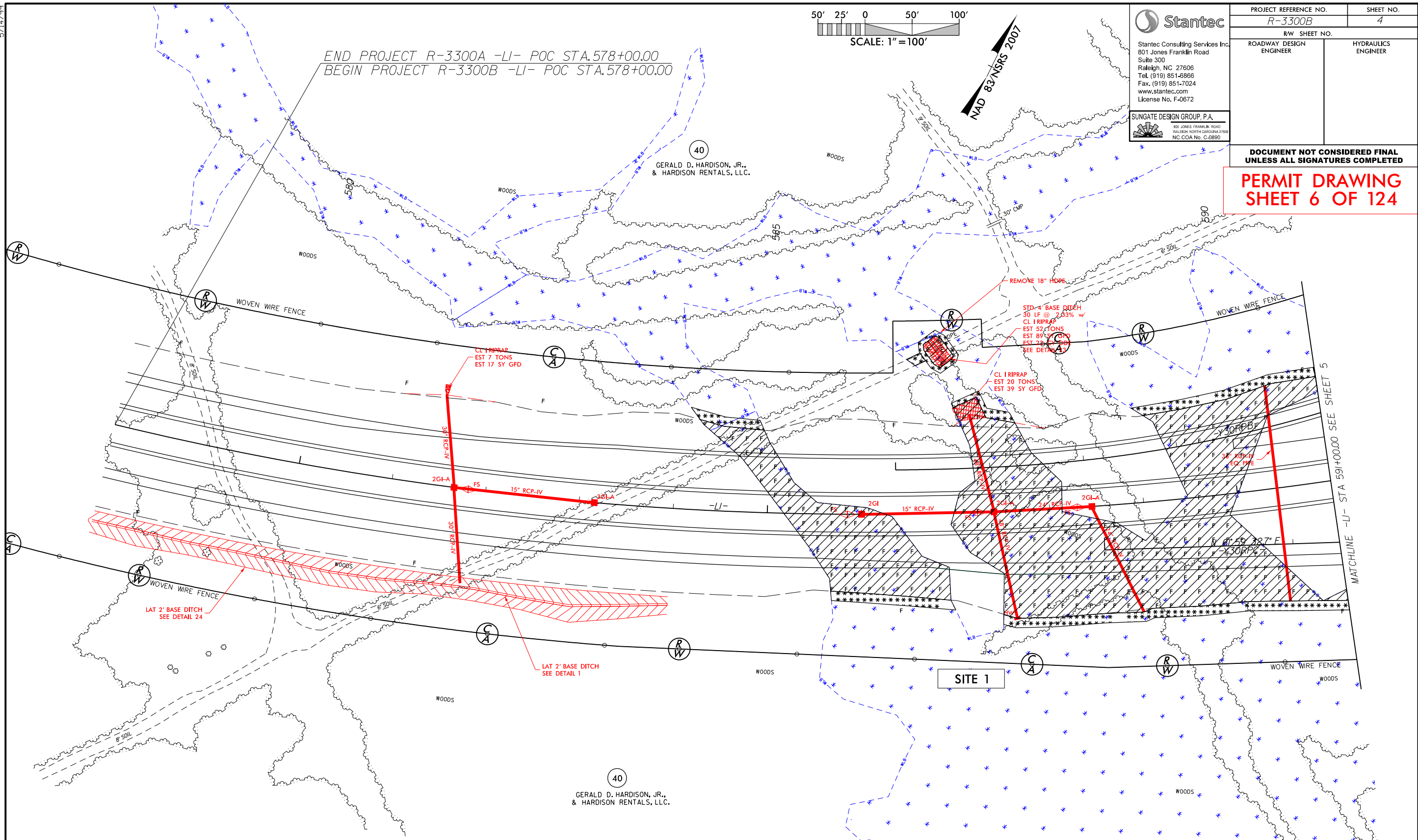
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**PERMIT DRAWING
SHEET 6 OF 124**

END PROJECT R-3300A -LI- POC STA.578+00.00
BEGIN PROJECT R-3300B -LI- POC STA.578+00.00

NAD 83 N/S/S 2007



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

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEET 34 FOR -LI- PROFILE
SEE SHEET 55 FOR -Y30RPB- PROFILE
SEE SHEET 56 FOR -Y30RPC- PROFILE

R-3300B-01.dwg - p.m. - wet - psh - 04.dgn

5/14/99



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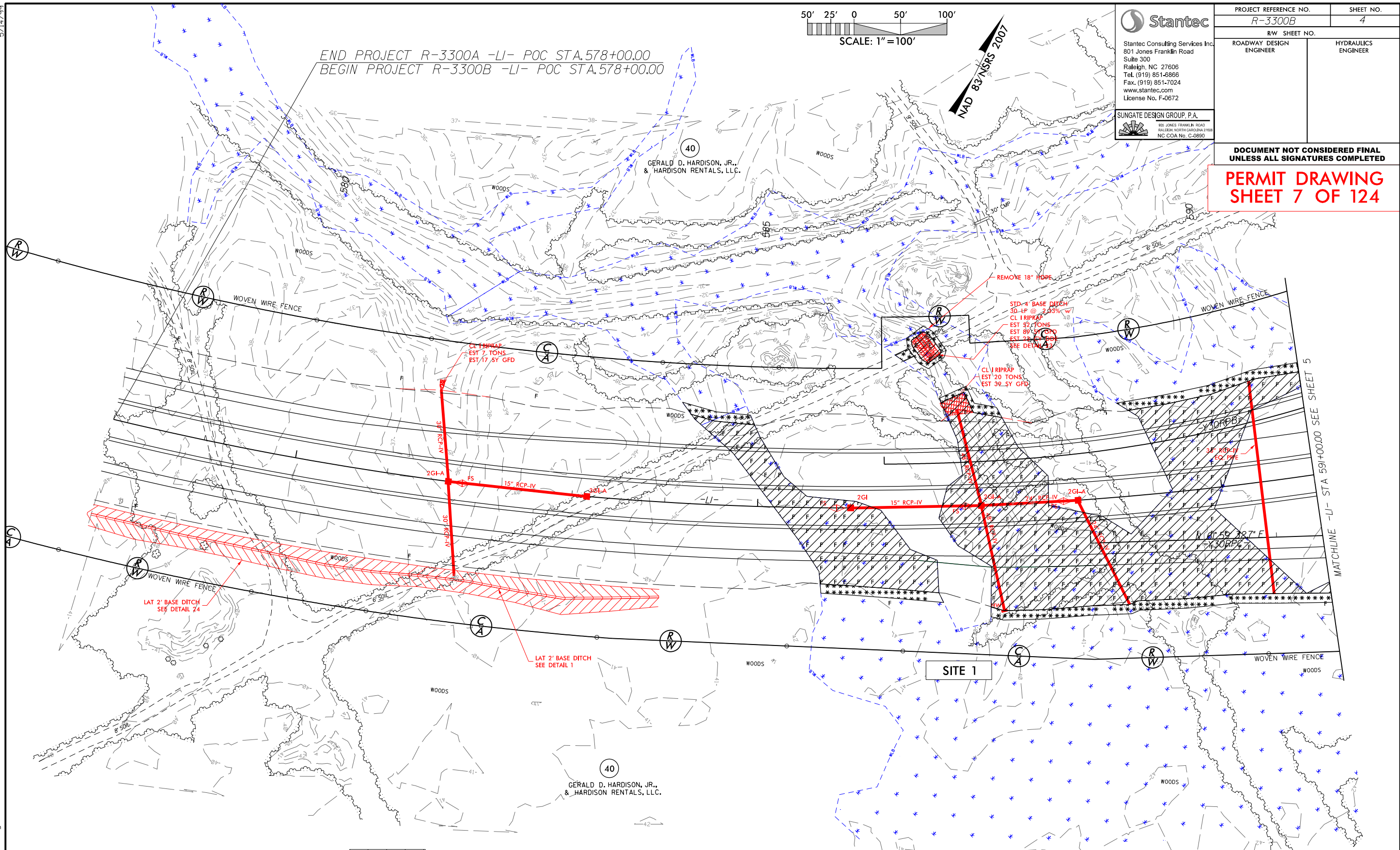
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 NC COA No. C-0890

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**PERMIT DRAWING
SHEET 7 OF 124**

END PROJECT R-3300A -LI- POC STA.578+00.00
 BEGIN PROJECT R-3300B -LI- POC STA.578+00.00

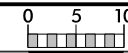


- DENOTES FILL IN WETLAND
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING

R3300B.dwg
10/13/2016
10:03 AM
p.m.-wet_psh_04a.com.dgn
pkw

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
 SEE SHEET 34 FOR -LI- PROFILE
 SEE SHEET 55 FOR -Y30RPB- PROFILE
 SEE SHEET 56 FOR -Y30RPC- PROFILE

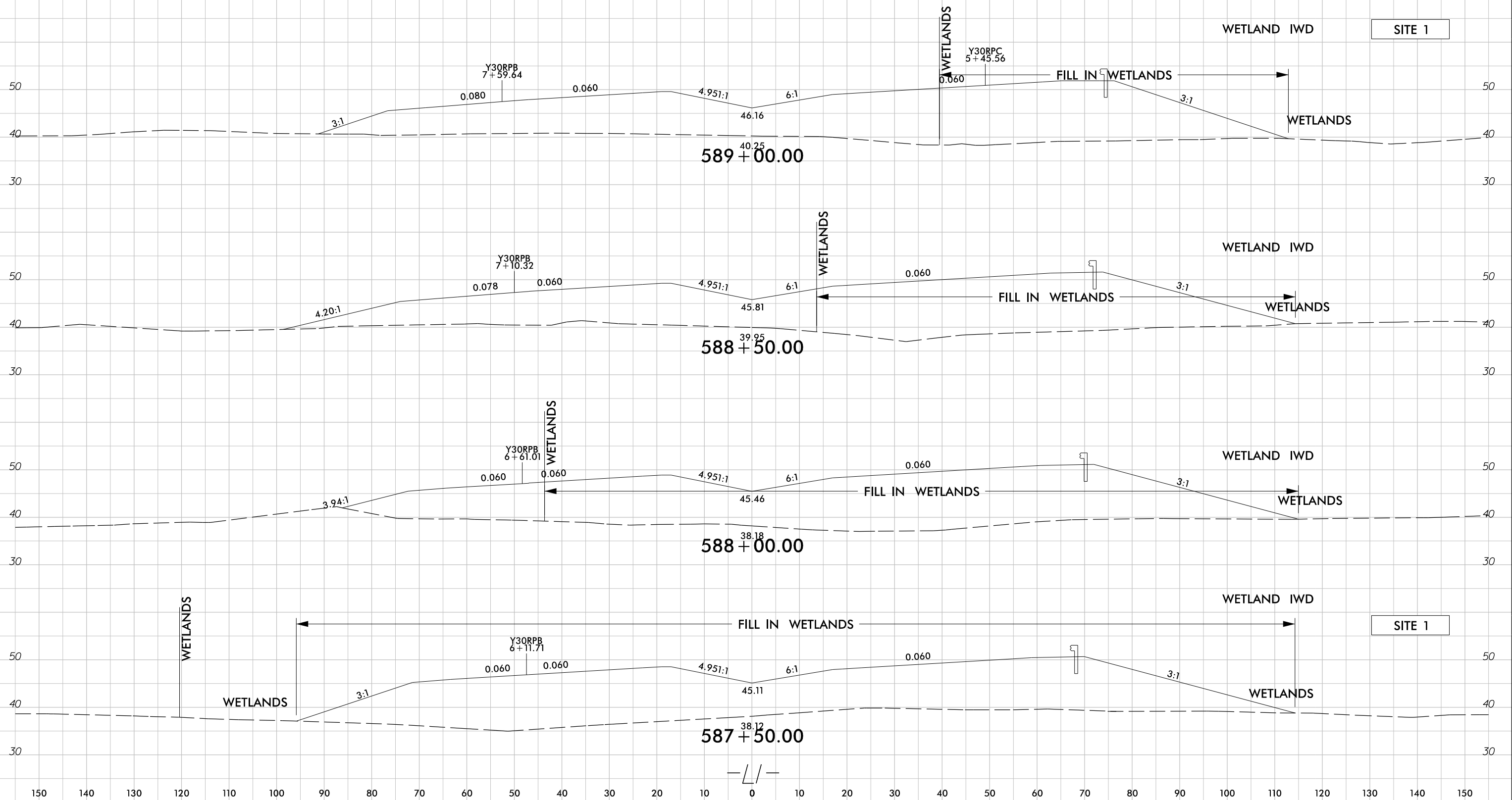
6/23/16



PROJ. REFERENCE NO.	SHEET NO.
R-3300B	X-5

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PERMIT DRAWING
SHEET 8 OF 124



12/3/2019
R3300B_Hyd_prm_wet_pah_04b_xpl.dgn
jbarvey

5/14/99



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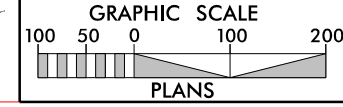
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 805 JONES FRANKLIN ROAD
 RALEIGH, NORTH CAROLINA 27609
 NC COA No. C-0890

PROJECT REFERENCE NO.	SHEET NO.
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R-3300B	5
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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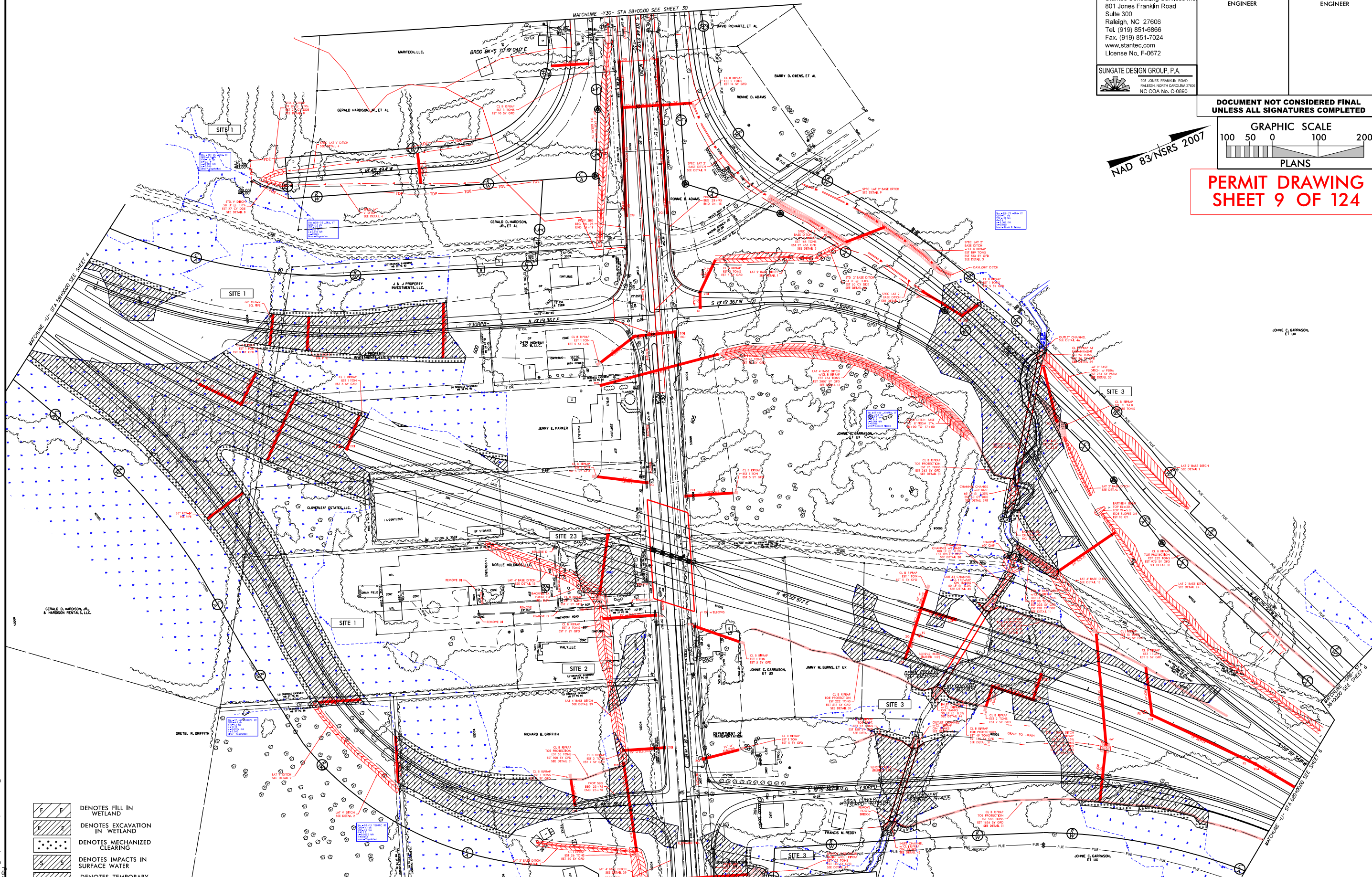
**DOCUMENT NOT CONSIDERED FINAL
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NAD 83/NSRS 2007

**PERMIT DRAWING
 SHEET 9 OF 124**

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 12/14/99



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

SEE SHEET 28-1 FOR HORIZONTAL CURVE DATA
 SEE SHEETS 34 & 35 FOR -1- PROFILE
 SEE SHEET 53 FOR -Y30- PROFILE
 SEE SHEETS 54 & 55 FOR -Y30RPA- PROFILE
 SEE SHEETS 55 & 56 FOR -Y30RPP- PROFILE
 SEE SHEETS 56 & 57 FOR -Y30RPC- PROFILE
 SEE SHEETS 57 & 58 FOR -Y30RDP- PROFILE
 SEE SHEETS 69 & 70 FOR -SRA- PROFILE

5/14/99

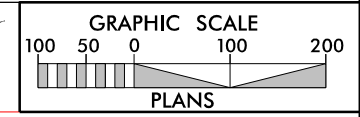


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Fax. (919) 851-7024
www.stantec.com
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SUNGATE DESIGN GROUP, P.A.
955 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27609
NC COA No. C-0890

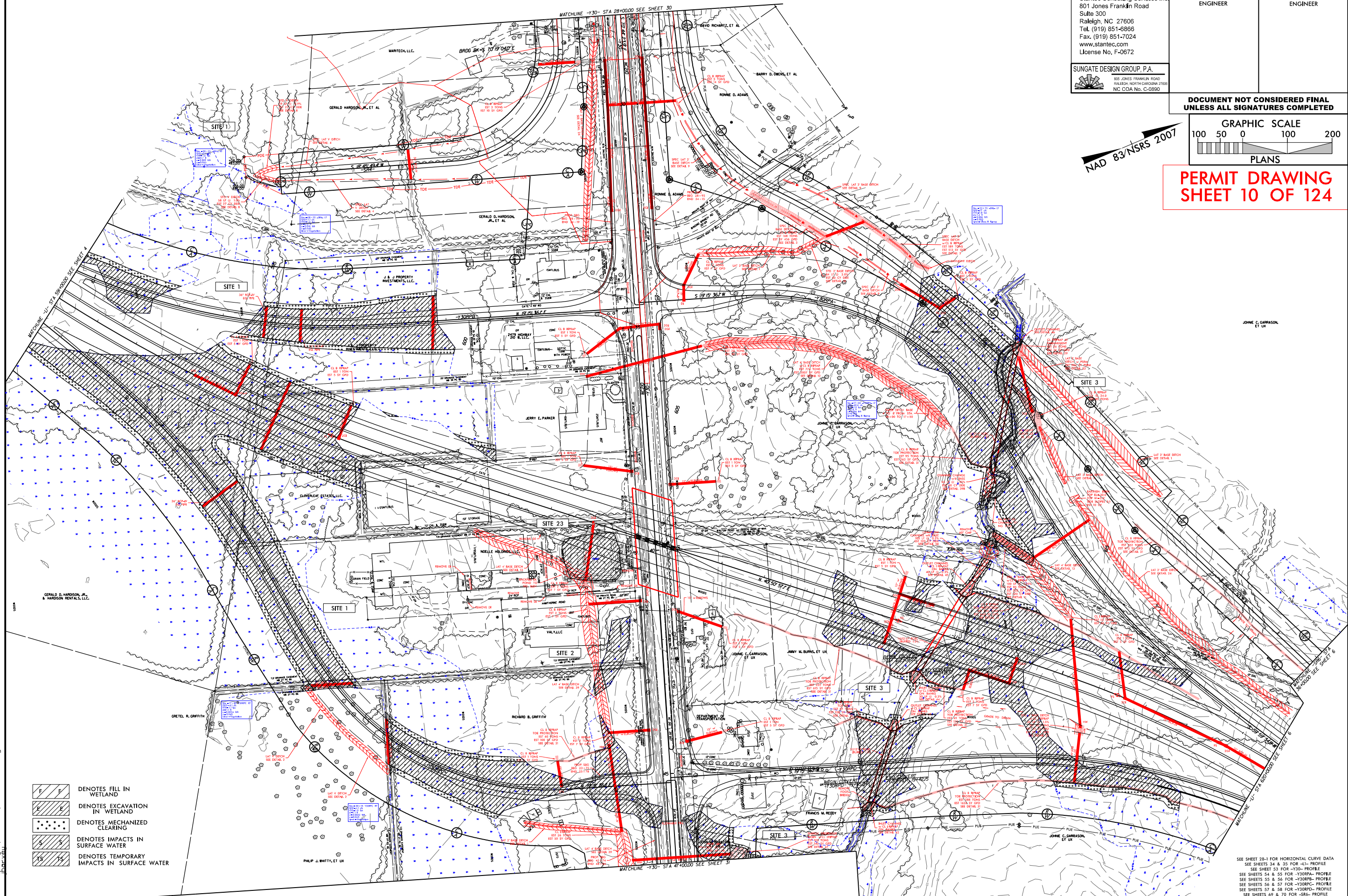
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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SHEET 10 OF 124



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

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SEE SHEET 28-1 FOR HORIZONTAL CURVE DATA
SEE SHEETS 34 & 35 FOR -Y30- PROFILE
SEE SHEET 53 FOR -Y30- PROFILE
SEE SHEETS 54 & 55 FOR -Y30RPA- PROFILE
SEE SHEETS 55 & 56 FOR -Y30RPP- PROFILE
SEE SHEETS 56 & 57 FOR -Y30RPC- PROFILE
SEE SHEETS 57 & 58 FOR -Y30RPO- PROFILE
SEE SHEETS 69 & 70 FOR -SRA- PROFILE

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PROJECT REFERENCE NO. SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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SHEET 11 OF 124

200 100 0 100 200

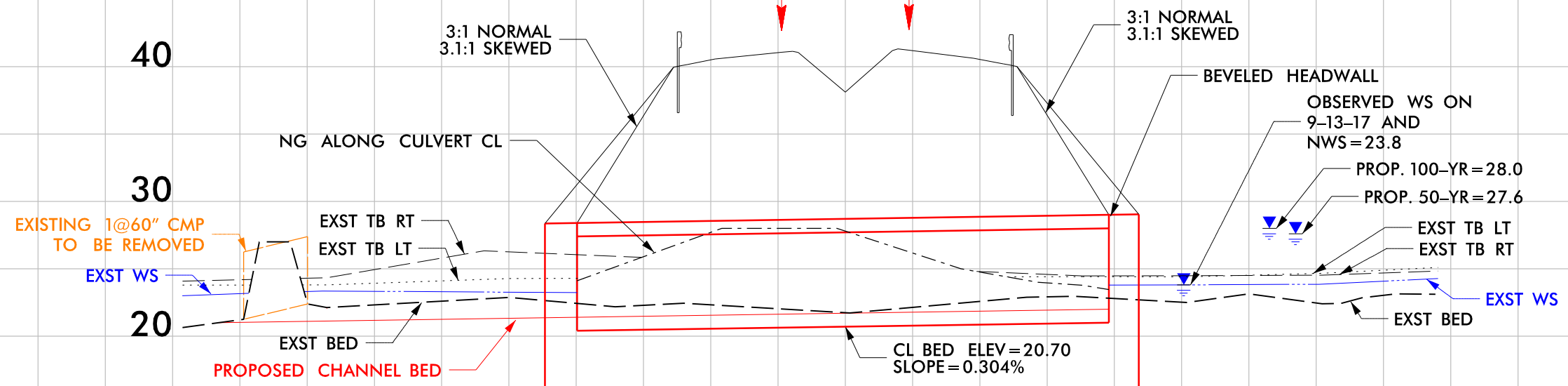
CL STA 612+13 -L1-
1@12'x7' RCBC
SKEW=104 DEG
GP EL=41.1

50

40

30

20



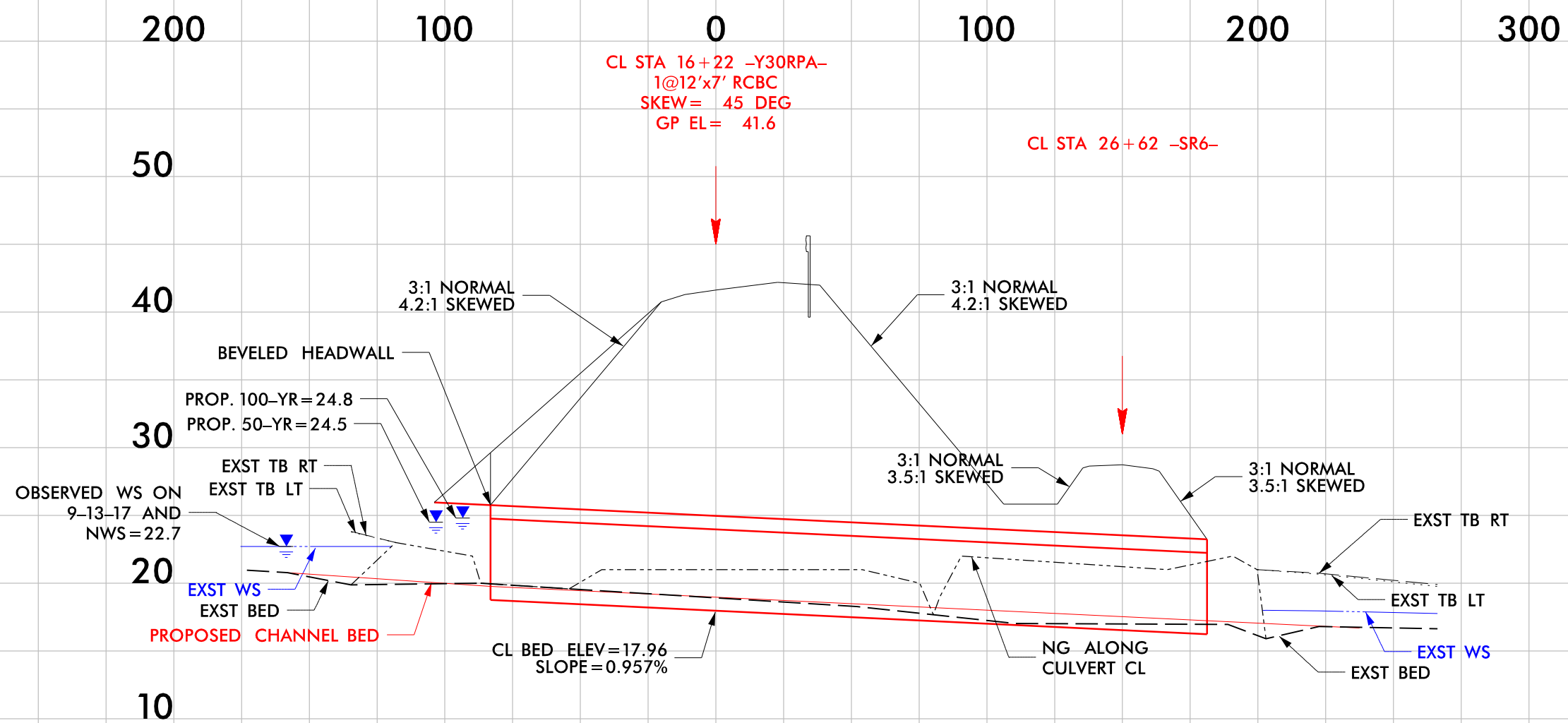
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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

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SHEET 12 OF 124**



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5/14/99

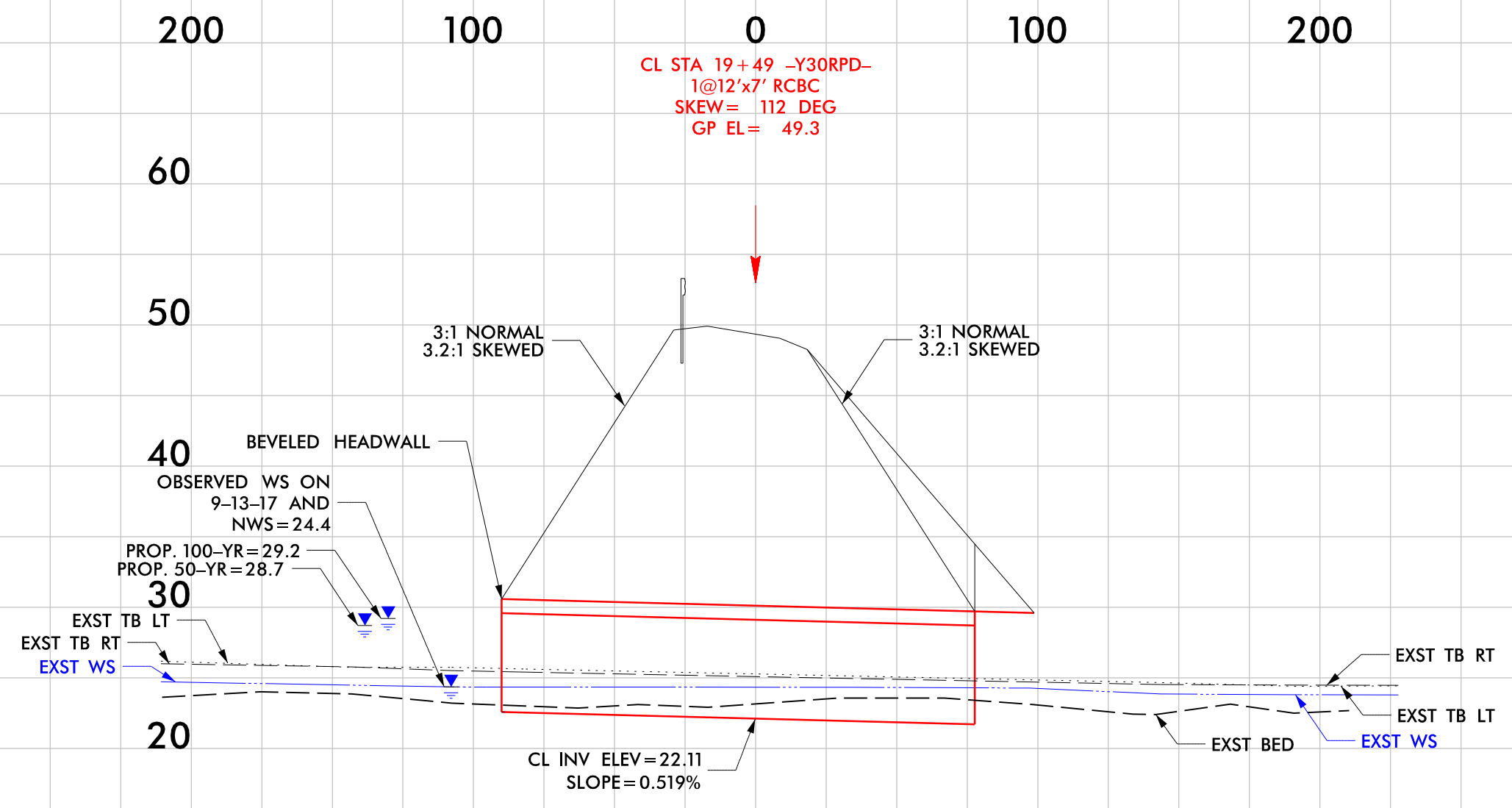
PROJECT REFERENCE NO. SHEET NO.

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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SHEET 13 OF 124



CL STA 19+49 -Y30RPD-
1@12'x7' RCBC
SKEW= 112 DEG
GP EL= 49.3

60

50

40

30

20

200

100

0

100

200

3:1 NORMAL
3.2:1 SKEWED

3:1 NORMAL
3.2:1 SKEWED

BEVELED HEADWALL

OBSERVED WS ON
9-13-17 AND
NWS= 24.4

PROP. 100-YR= 29.2
PROP. 50-YR= 28.7

EXST TB LT
EXST TB RT
EXST WS

EXST TB RT

EXST TB LT

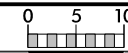
EXST BED

EXST WS

CL INV ELEV= 22.11
SLOPE= 0.519%

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6/23/16

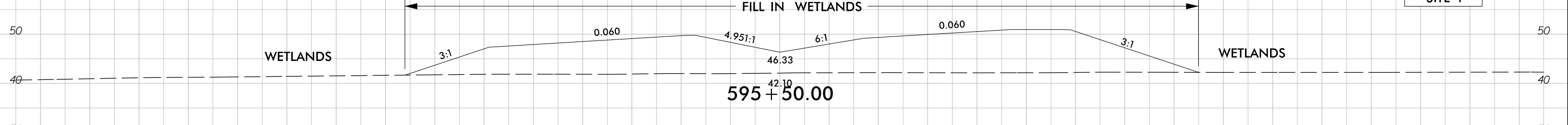
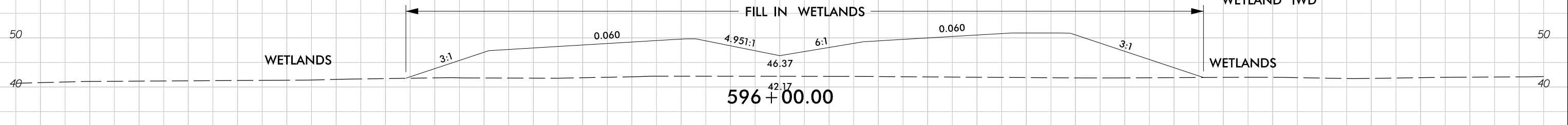
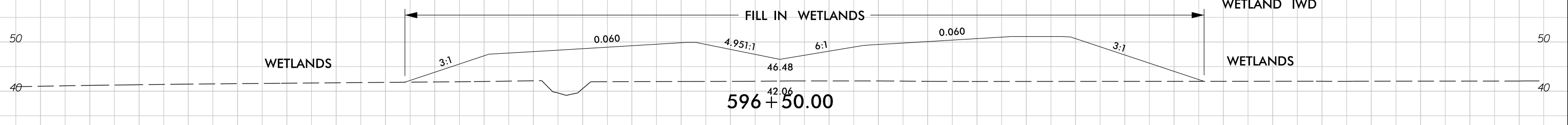
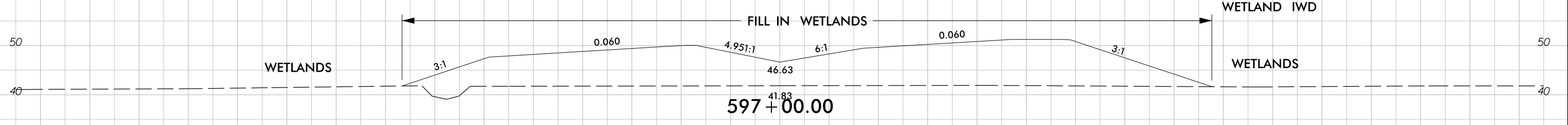
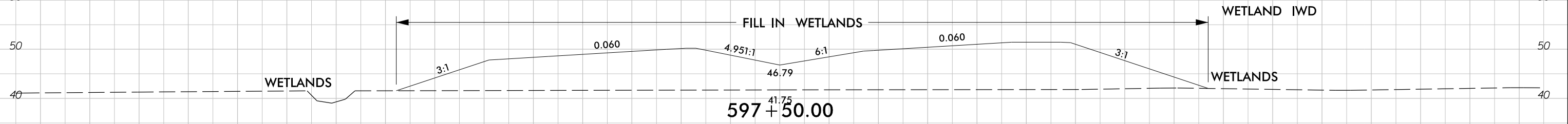
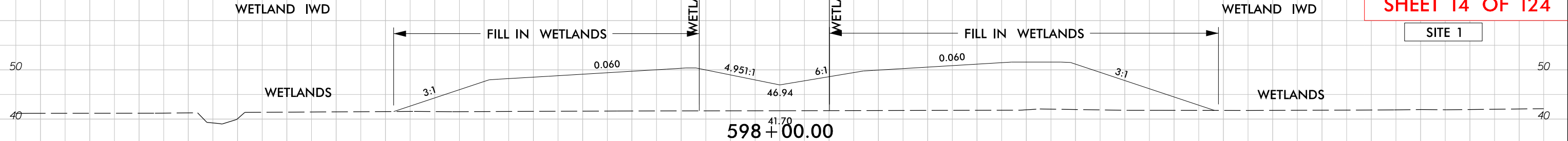


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R-3300B	X-11

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**PERMIT DRAWING
SHEET 14 OF 124**

SITE 1

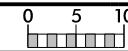


SITE 1

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6/23/16

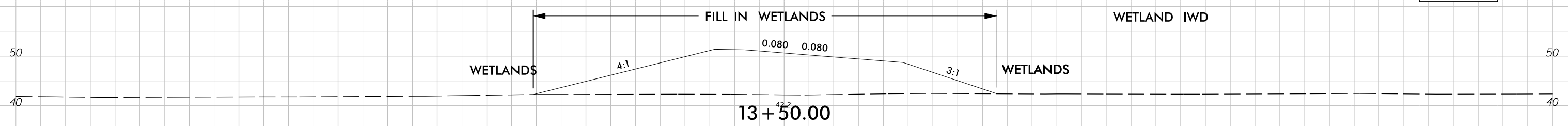
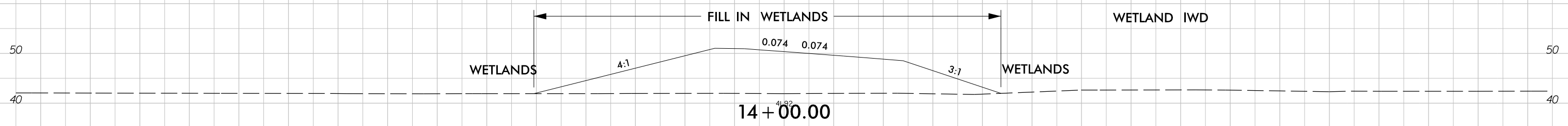
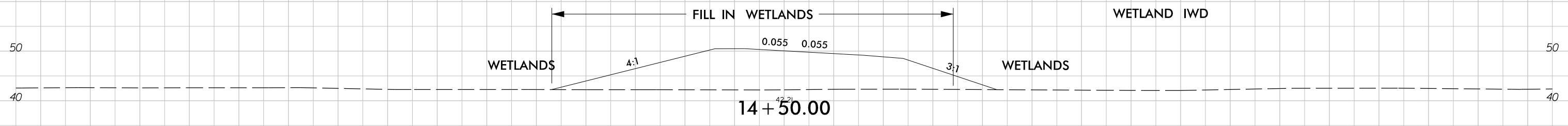
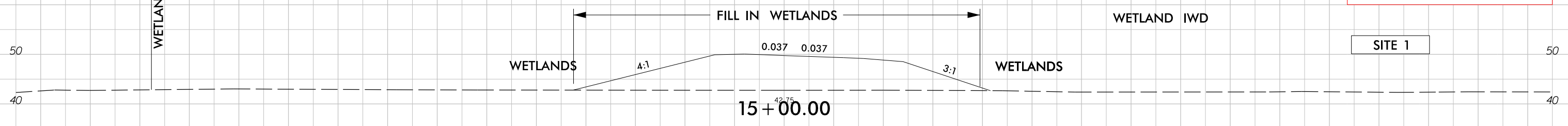


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**PERMIT DRAWING
SHEET 15 OF 124**

WETLANDS

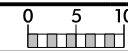


-Y30RPC-

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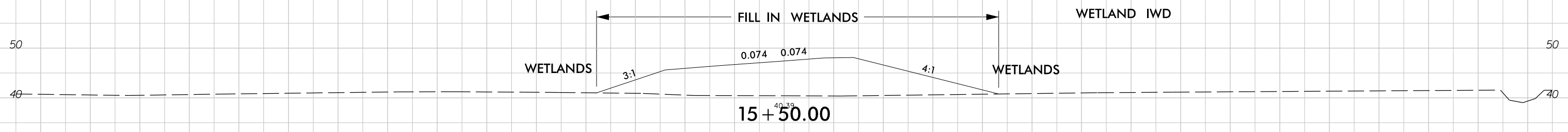
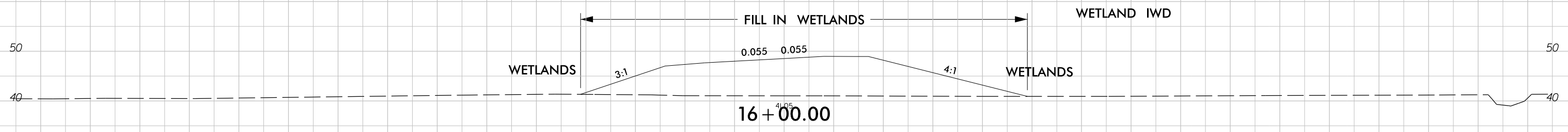
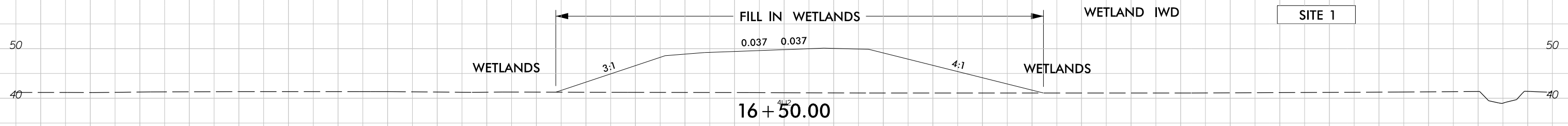
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SHEET 16 OF 124**

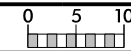


-Y30RPB-

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12/3/2019
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jbarvey

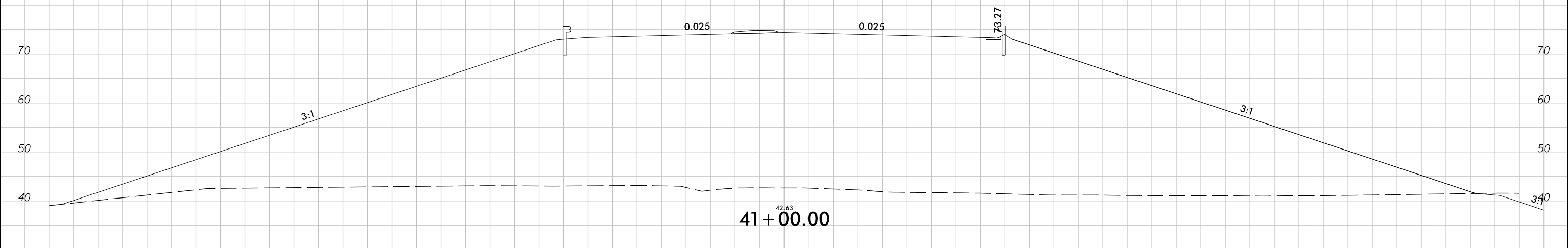
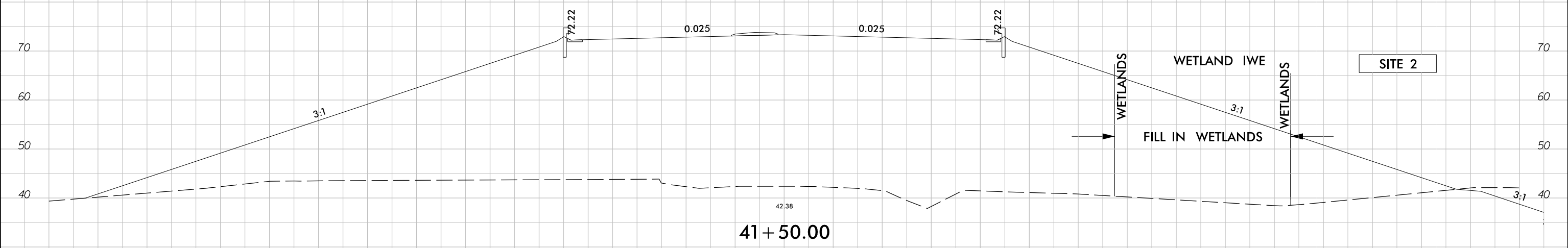
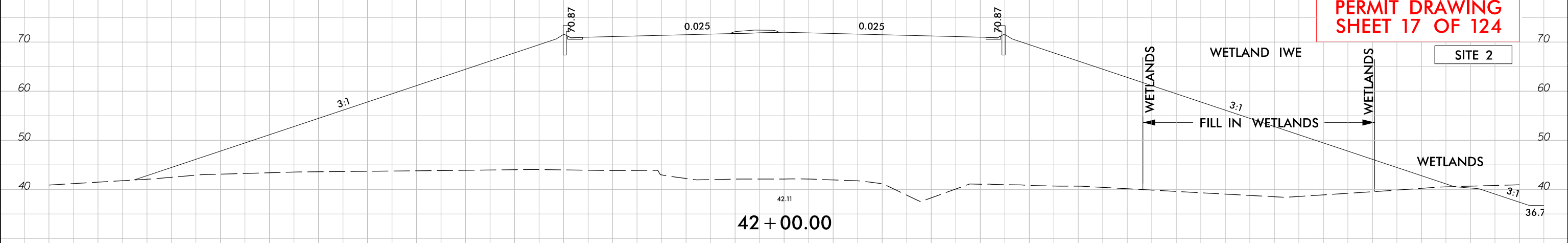
6/23/16



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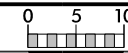
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-Y30-

12/3/2019
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jbarney

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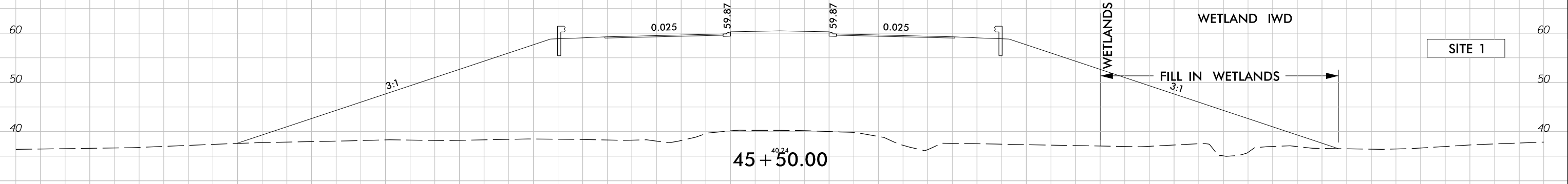
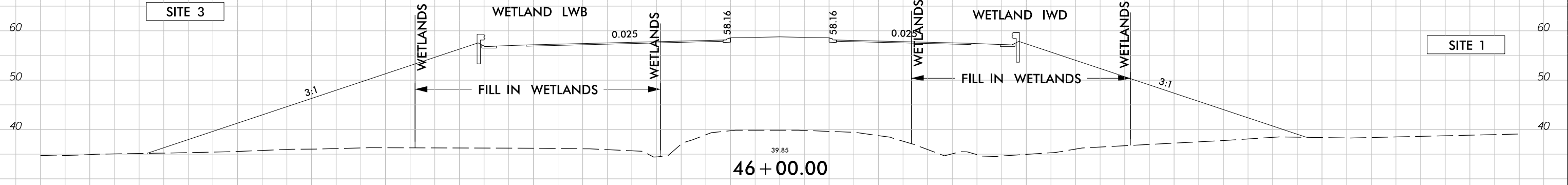
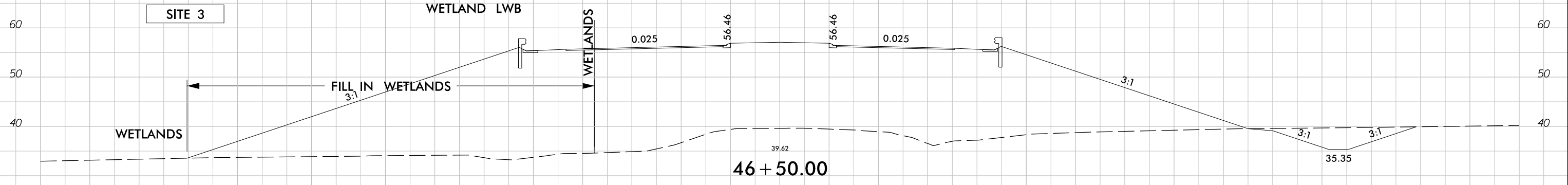


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R-3300B

SHEET NO.
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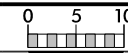
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SHEET 18 OF 124**



-Y30-

12/3/2019
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jbarvey

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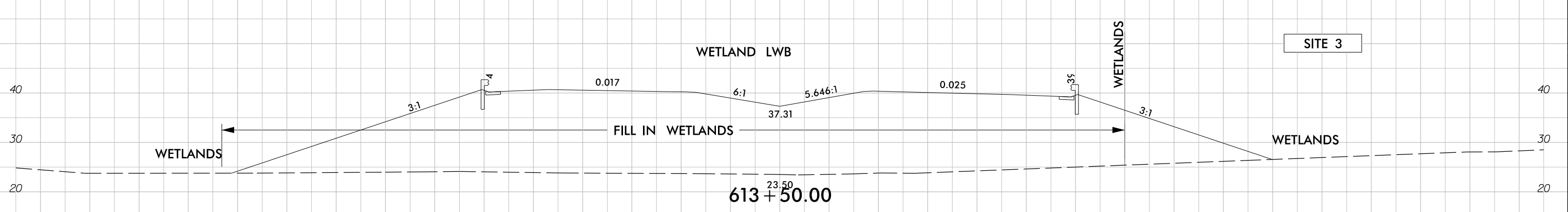
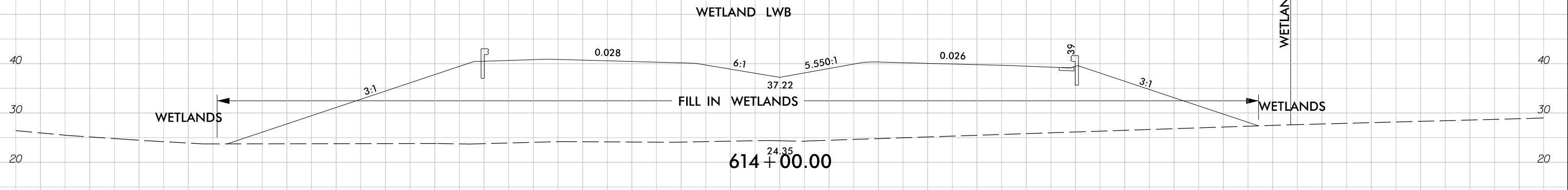
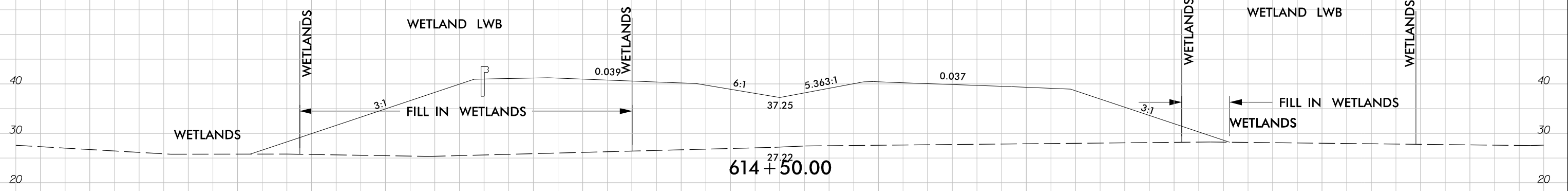
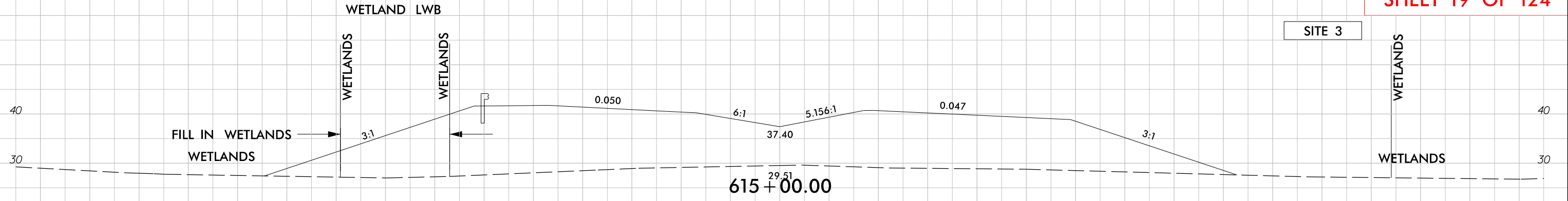


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PERMIT DRAWING
SHEET 19 OF 124

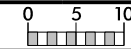
SITE 3



SITE 3

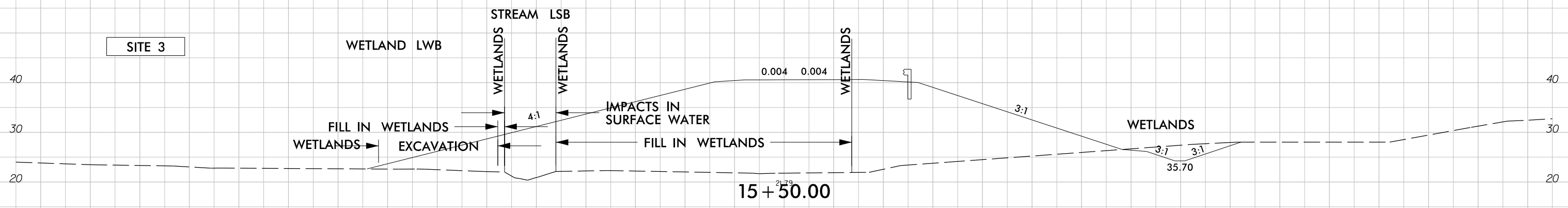
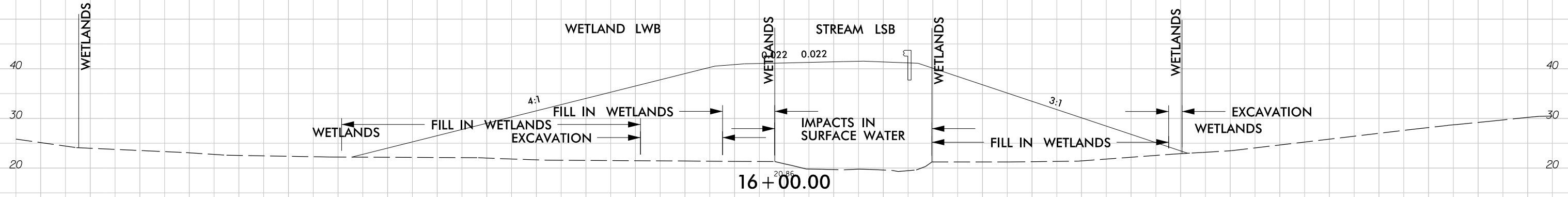
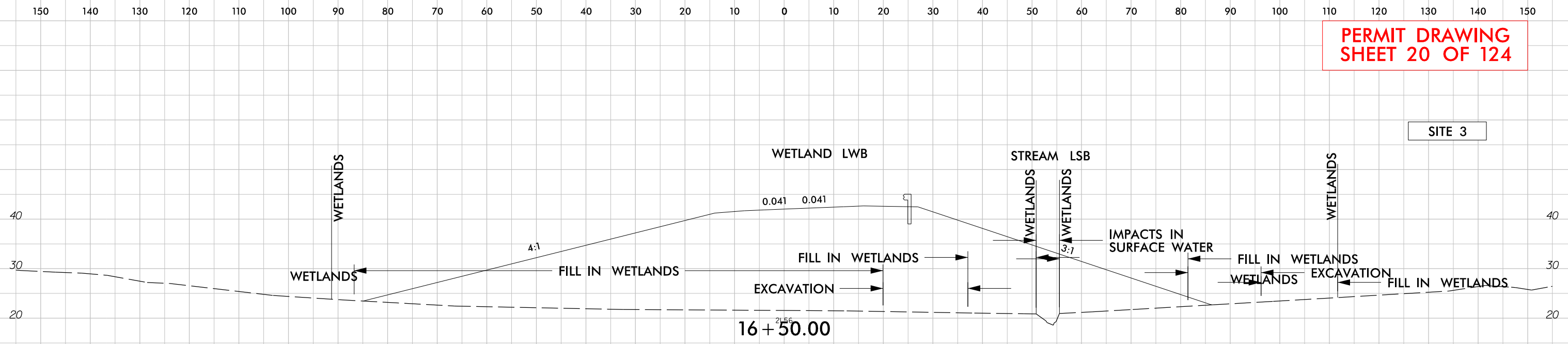
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jbarvey



PERMIT DRAWING SHEET 20 OF 124

SITE 3



-Y3ORPA-

5/14/99

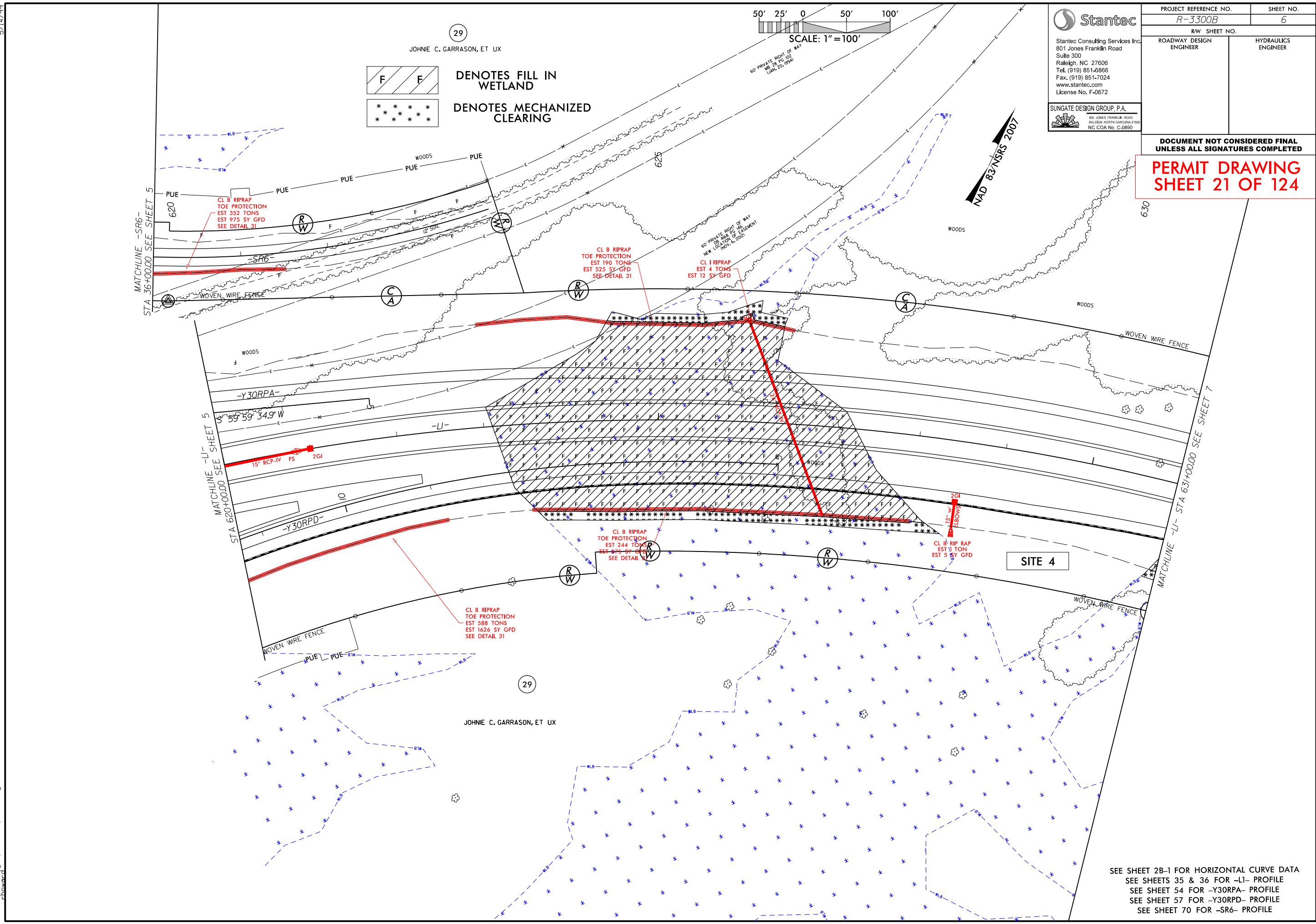
PROJECT REFERENCE NO. <i>R-3300B</i>		SHEET NO. 6
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	

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 Stantec Consulting Services Inc.
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 www.stantec.com
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**PERMIT DRAWING
 SHEET 21 OF 124**



F F
 DENOTES FILL IN WETLAND

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

50' 25' 0 50' 100'
 SCALE: 1" = 100'

NAD 83 NRS 2007

MATCHLINE -SR6-
 STA 36+00.00 SEE SHEET 5

MATCHLINE -L1-
 STA 620+00.00 SEE SHEET 5

MATCHLINE -L1- STA 637+00.00 SEE SHEET 7

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
 SEE SHEETS 35 & 36 FOR -L1- PROFILE
 SEE SHEET 54 FOR -Y30RPA- PROFILE
 SEE SHEET 57 FOR -Y30RPD- PROFILE
 SEE SHEET 70 FOR -SR6- PROFILE

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5/14/99



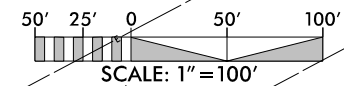
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Fax. (919) 851-7024
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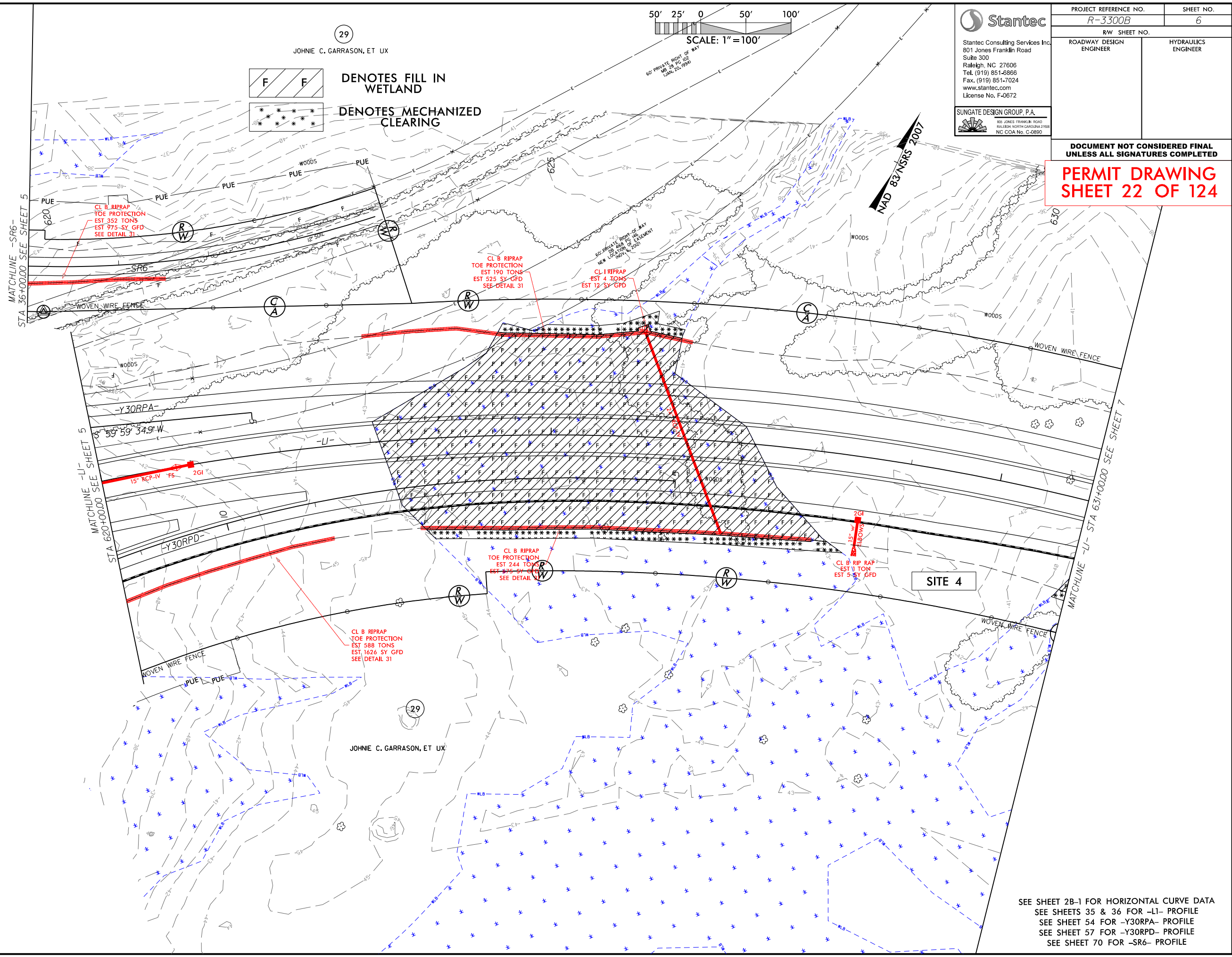
PROJECT REFERENCE NO. R-3300B	SHEET NO. 6
RW SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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SHEET 22 OF 124



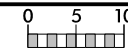
F F DENOTES FILL IN WETLAND
 DENOTES MECHANIZED CLEARING



SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
 SEE SHEETS 35 & 36 FOR -L1- PROFILE
 SEE SHEET 54 FOR -Y30RPA- PROFILE
 SEE SHEET 57 FOR -Y30RPD- PROFILE
 SEE SHEET 70 FOR -SR6- PROFILE

R330063 1/2019
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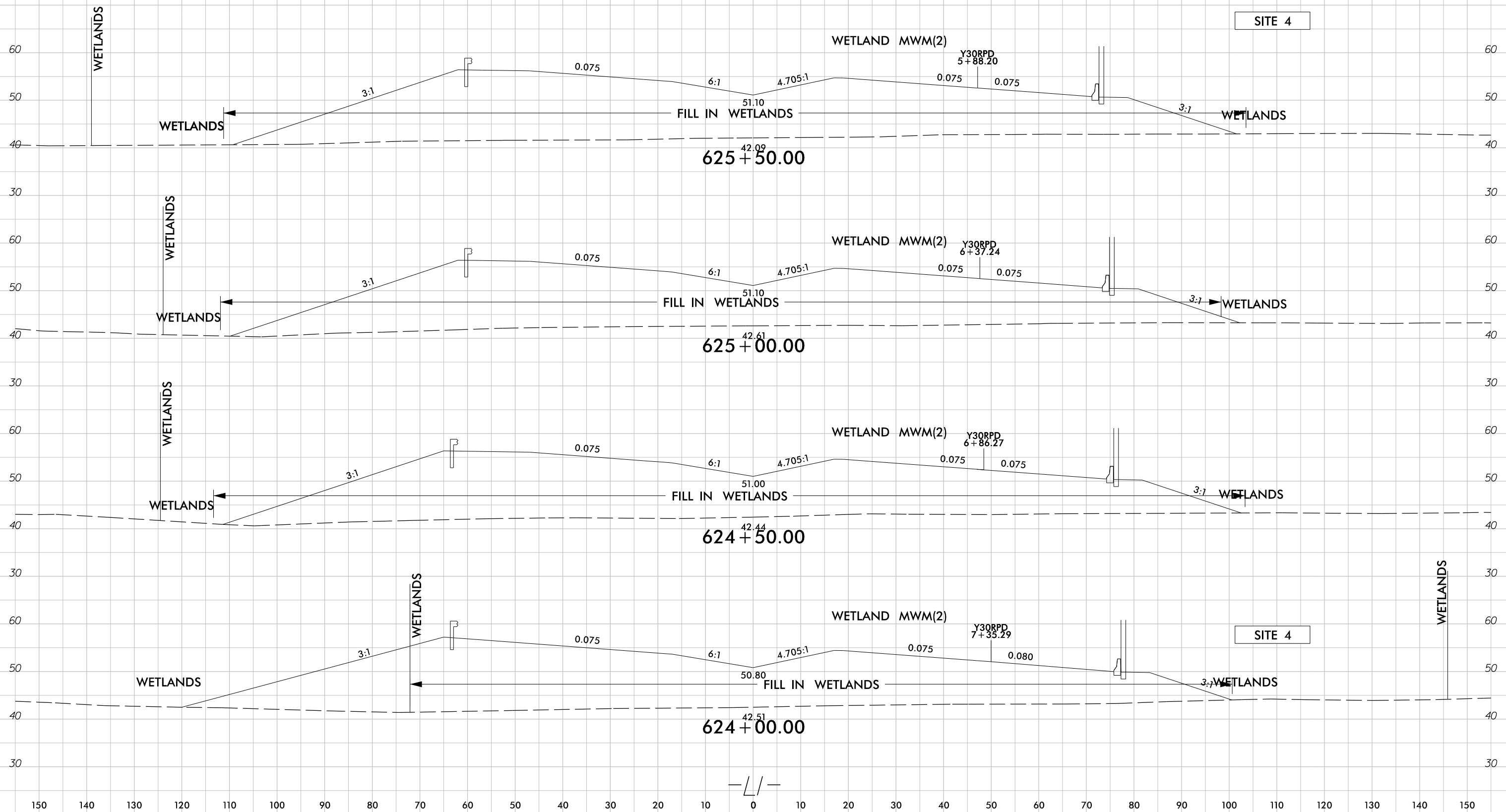
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PROJ. REFERENCE NO.	SHEET NO.
R-3300B	X-26

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PERMIT DRAWING
SHEET 23 OF 124



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jharvey

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RALEIGH, NORTH CAROLINA 27606
NC COA No. C-0880

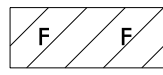
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RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
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**PERMIT DRAWING
SHEET 24 OF 124**

37

WILLIAM D. STORCKS, ET UX



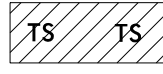
DENOTES FILL IN WETLAND



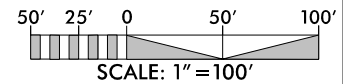
DENOTES MECHANIZED CLEARING



DENOTES IMPACTS IN SURFACE WATER



DENOTES TEMPORARY IMPACTS IN SURFACE WATER



38

MICHAEL D. VICKERY, ET UX

29

JOHNE C. GARRASON, ET UX

MATCHLINE -L/- STA 631+00.00 SEE SHEET 6

MATCHLINE -L/- STA 641+50.00 SEE SHEET 8

SITE 4

MECH CLRG

36

FRANK R. KRYNICK, ET UX

SITE 5

14

JUDY L. PRIDGEN, ET VIR

MICHAEL R. DESHAIRES

29

JOHNE C. GARRASON, ET UX

SUSANNE M. ROBBINS, ET VIR

41

KATIE POSTHUMA, ET AL

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEET 36 FOR -L/- PROFILE

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5/14/99



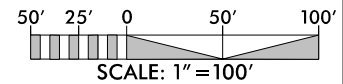
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NC COA No. C-0890

PROJECT REFERENCE NO. R-3300B	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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**PERMIT DRAWING
SHEET 25 OF 124**



NAD 83 NSRS 2007

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

WILLIAM D. STORCKS, ET UX

JOHNIE C. GARRASON, ET UX

MICHAEL D. VICKERY, ET UX

SITE 4

SITE 5

FRANK R. KRYNICK, ET UX

MICHAEL R. DESHAIRES

JUDY L. PRIDGEN, ET VIR

TRACY F. H. FESTA

JOHNIE C. GARRASON, ET UX

KATIE POSTHUMA, ET AL

SUSANNE M. ROBBINS, ET VIR

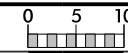
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MATCHLINE -L1- STA 641+50.00 SEE SHEET 8

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEET 36 FOR -L1- PROFILE

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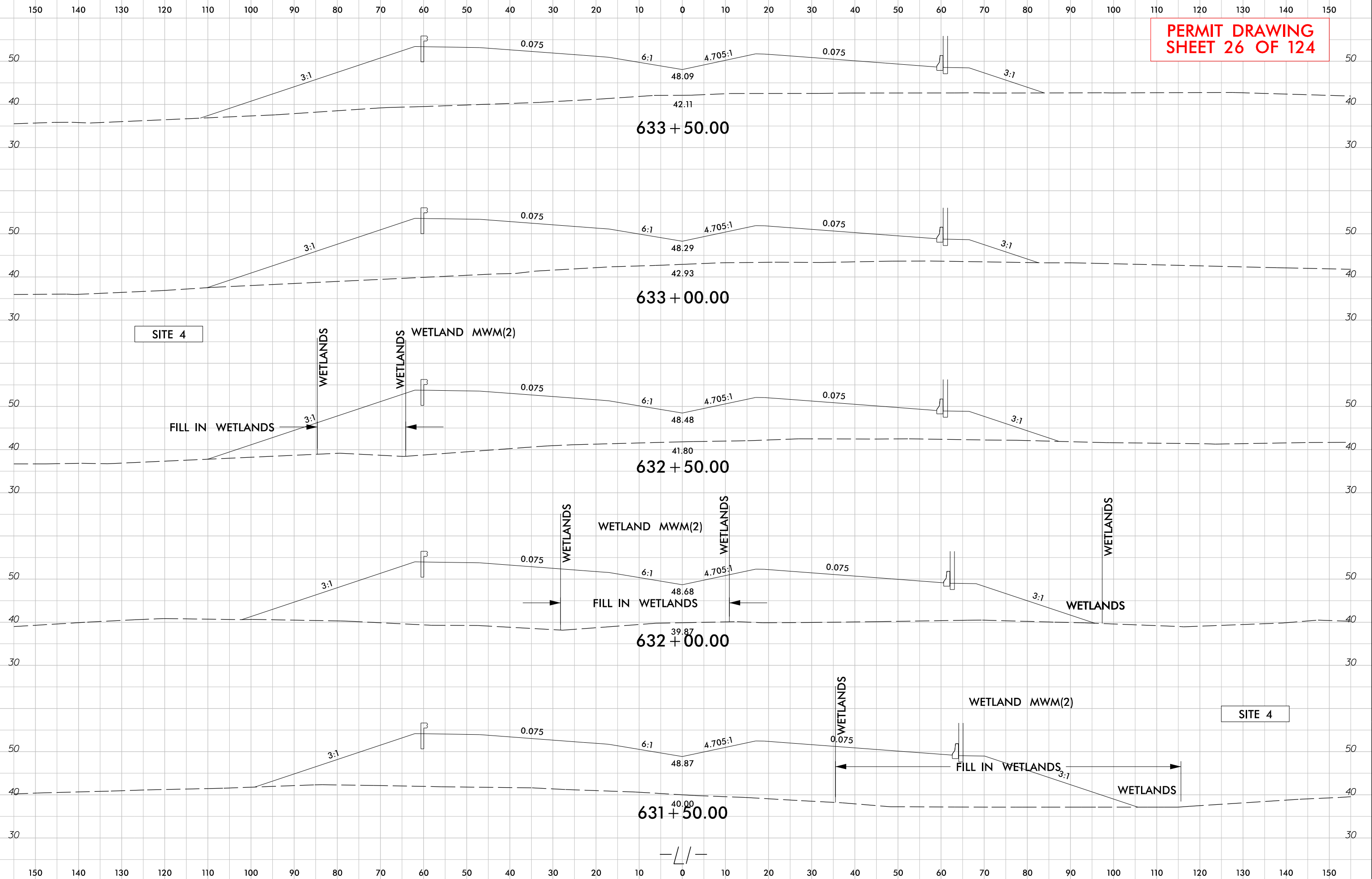
6/23/16



PROJ. REFERENCE NO.
R-3300B

SHEET NO.
X-29

**PERMIT DRAWING
SHEET 26 OF 124**



12/3/2019
R3300B_Hyd_prm_wet_pah_07b_xpl.dgn
jbarvey

6/23/16



PROJ. REFERENCE NO.	SHEET NO.
R-3300B	X-32

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SITE 5

PERMIT DRAWING
SHEET 27 OF 124

WETLANDS
FILL IN WETLANDS
IMPACTS IN SURFACE WATER

FILL IN WETLANDS

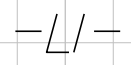
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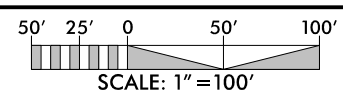
639 + 00.00



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jbarvey

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5/14/99
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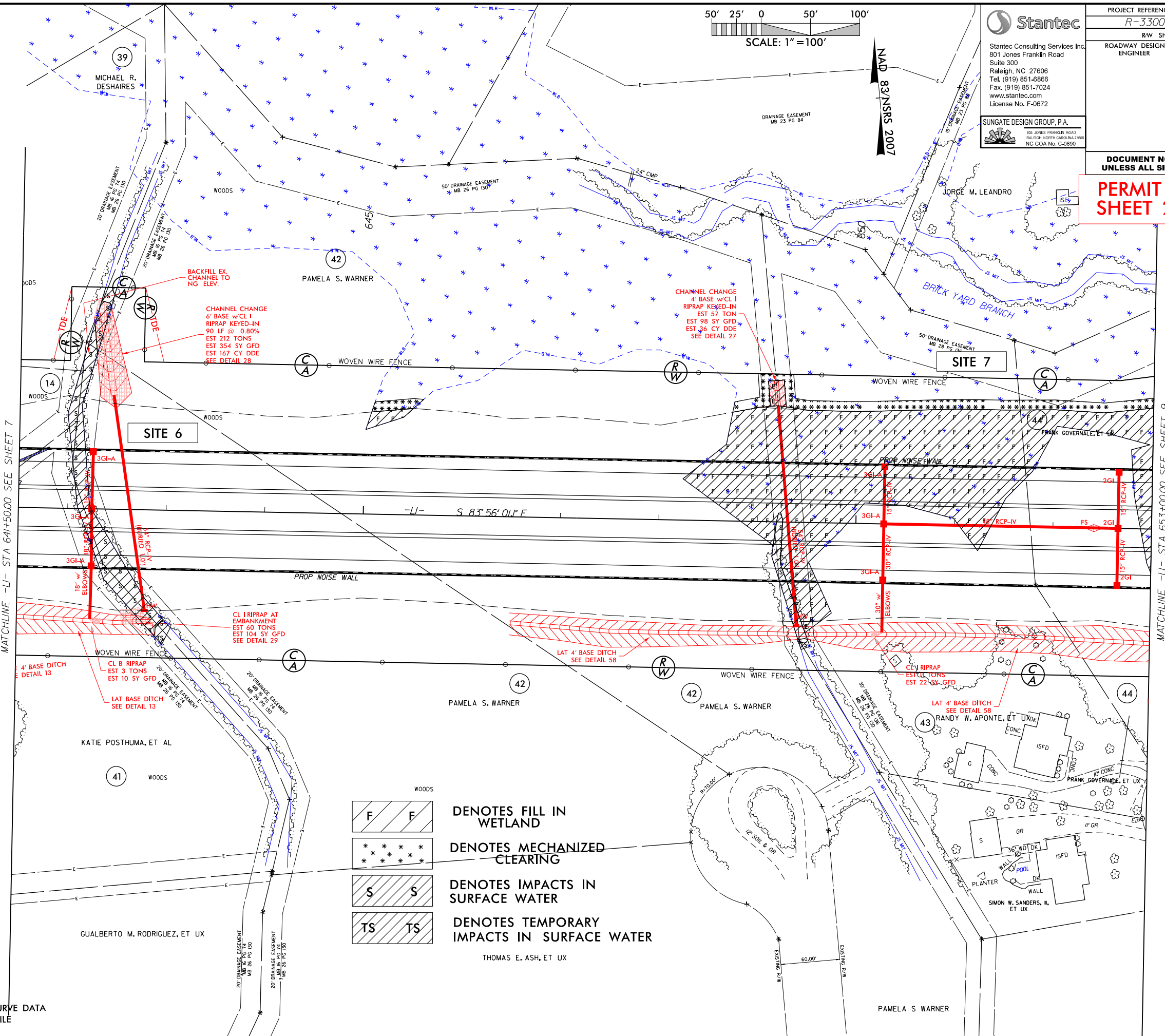


NAD 83/NSRS 2007

PROJECT REFERENCE NO. R-3300B		SHEET NO. 8
RW SHEET NO.		HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER		
Stantec Consulting Services Inc. 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-8866 Fax. (919) 851-7024 www.stantec.com License No. F-0672		
SUNGATE DESIGN GROUP, P.A. 800 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 NC COA No. C-0890		

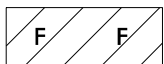



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**PERMIT DRAWING
SHEET 28 OF 124**



MATCHLINE -L1- STA 64+50.00 SEE SHEET 7

MATCHLINE -L1- STA 653+00.00 SEE SHEET 9

 DENOTES FILL IN WETLAND
 DENOTES MECHANIZED CLEARING
 DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 THOMAS E. ASH, ET UX

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEET 36 FOR -L1- PROFILE

5/14/99

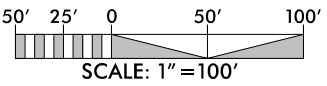
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Raleigh, NC 27606
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Fax. (919) 851-7024
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SUNGATE DESIGN GROUP, P.A.
800 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
NC COA No. C-0890

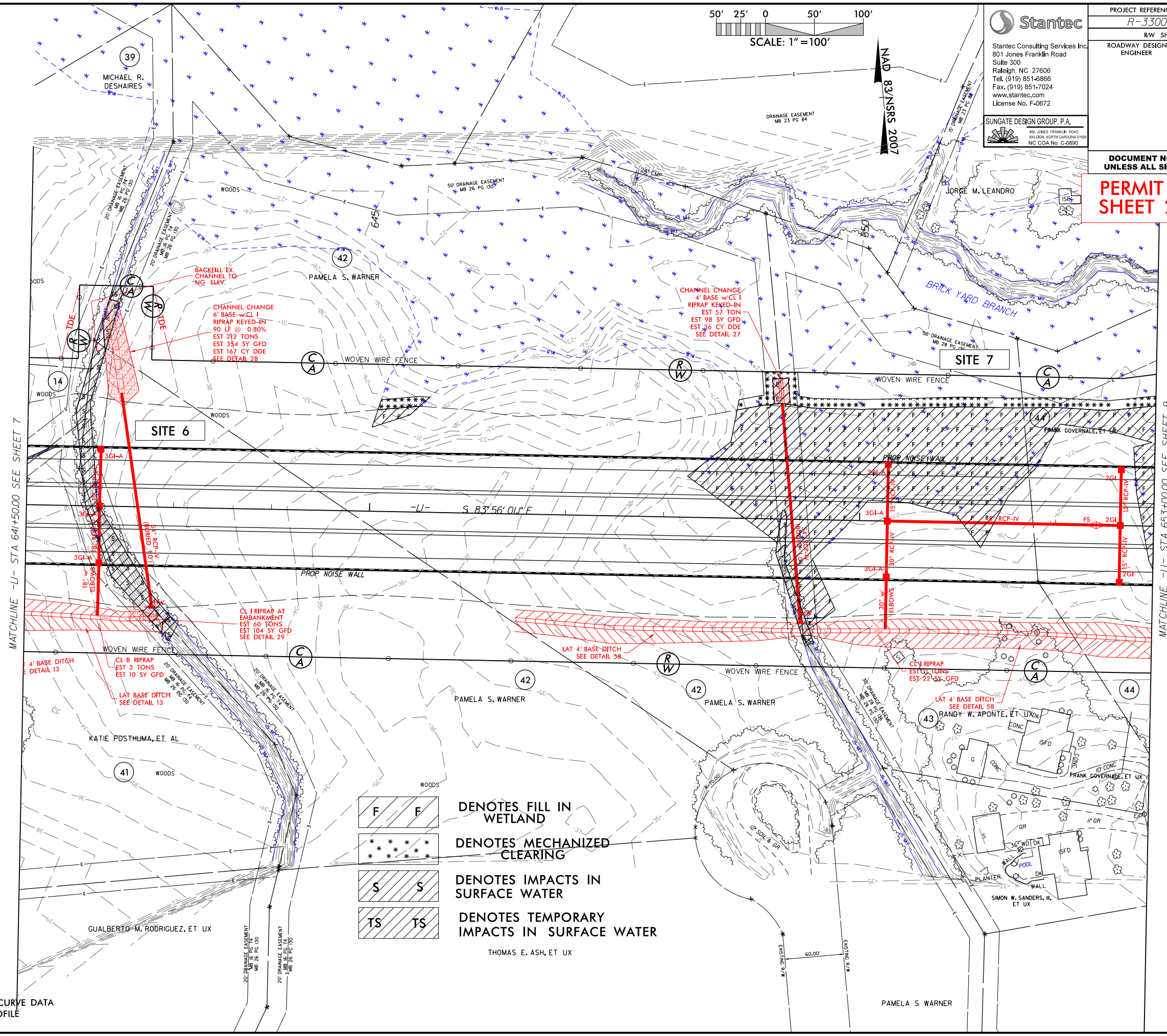
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RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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**PERMIT DRAWING
SHEET 29 OF 124**




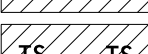


NAD 83/NSRS 2007



MATCHLINE -L1- STA 64+50.00 SEE SHEET 7

MATCHLINE -L1- STA 653+00.00 SEE SHEET 9

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

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEET 36 FOR -L1- PROFILE

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THOMAS E. ASH, ET UX

PAMELA S WARNER

6/23/16



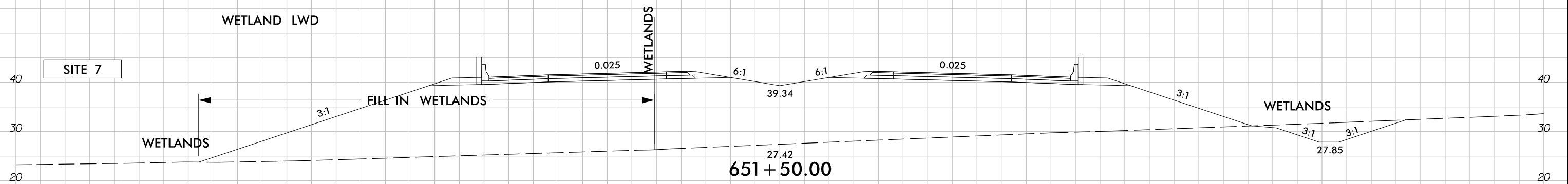
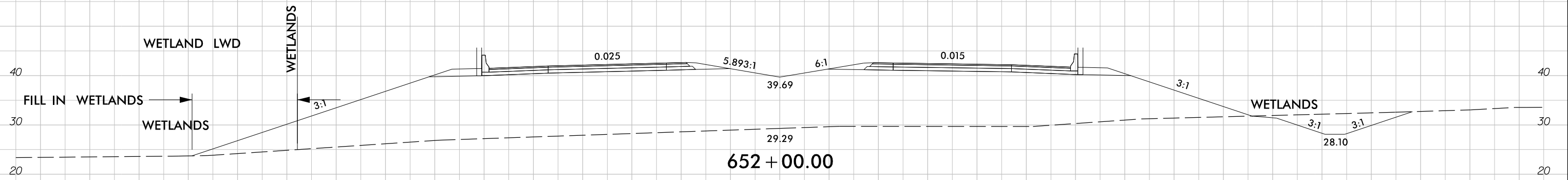
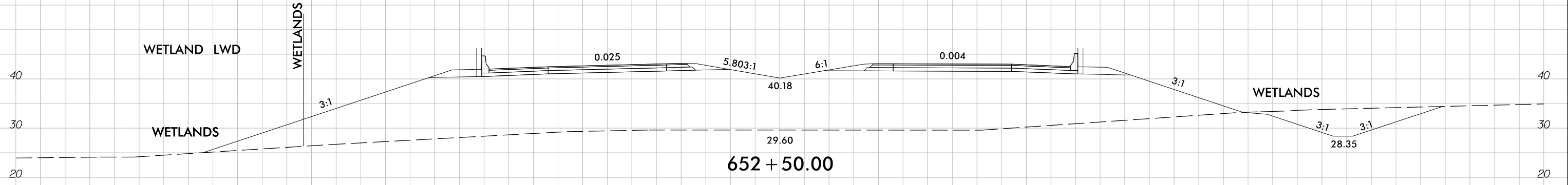
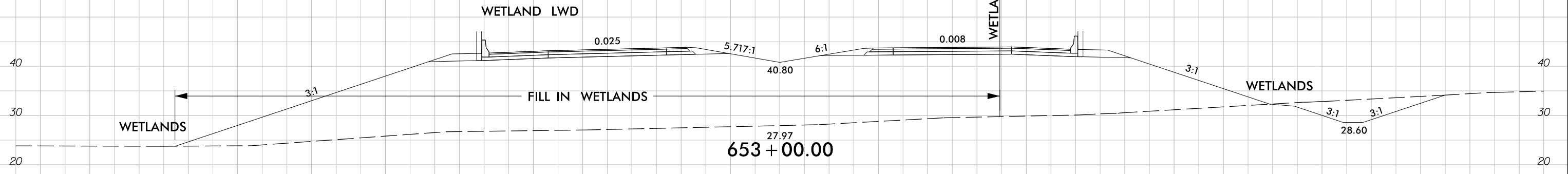
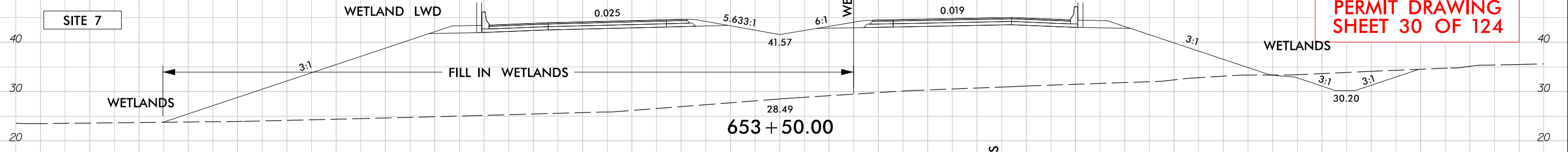
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SHEET NO.
X-37

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SITE 7

PERMIT DRAWING
SHEET 30 OF 124



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12/3/2019
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jbarvey

5/14/99



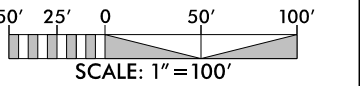
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Fax. (919) 851-7024
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800 JONES FRANKLIN ROAD
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NC COA No. C-0890

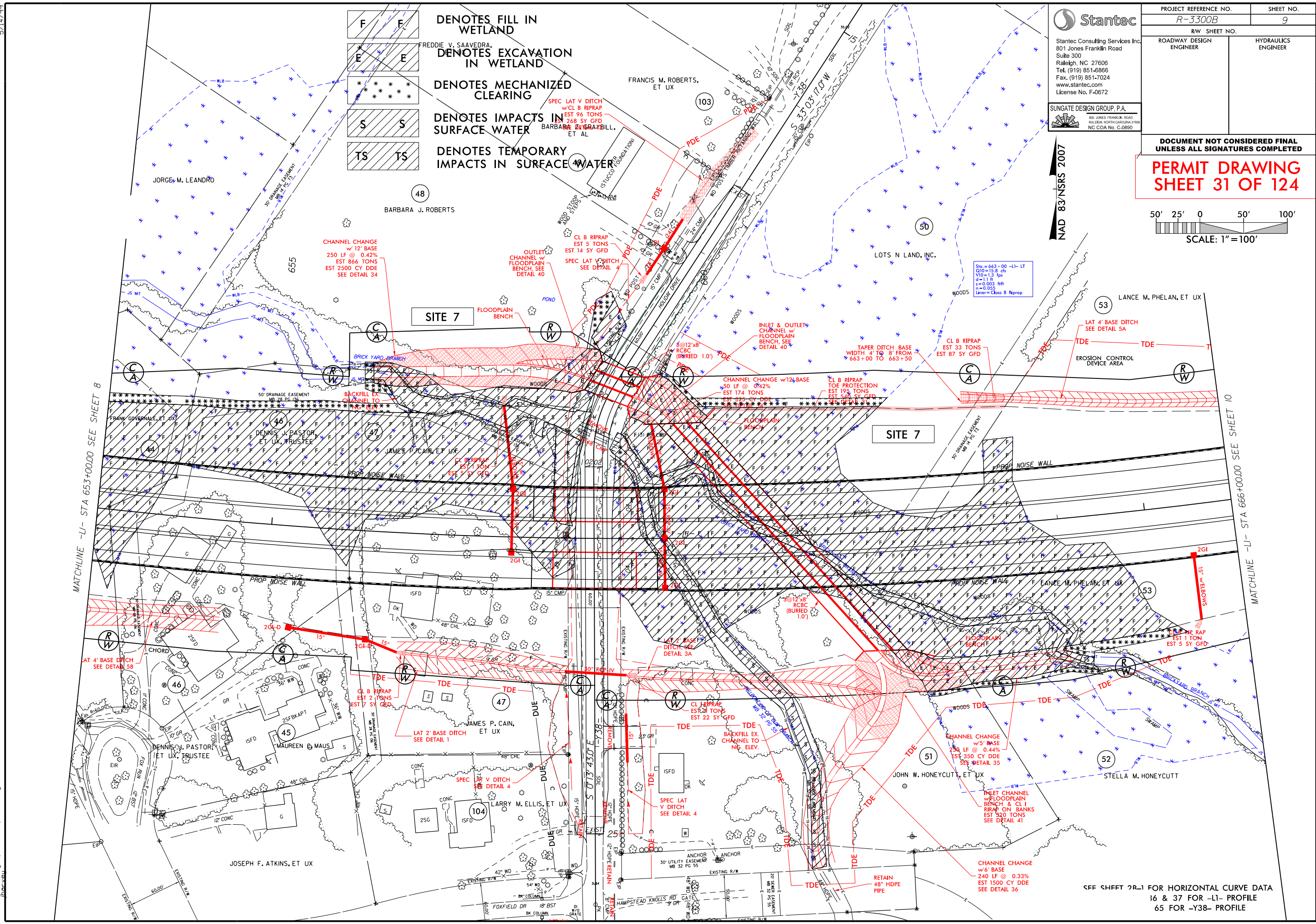
PROJECT REFERENCE NO. R-3300B	SHEET NO. 9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
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**PERMIT DRAWING
SHEET 31 OF 124**



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



MATCHLINE -L- STA 653+00.00 SEE SHEET 8

MATCHLINE -L- STA 666+00.00 SEE SHEET 10

SEE SHEET 2R-1 FOR HORIZONTAL CURVE DATA
16 & 37 FOR -L1- PROFILE
65 FOR -Y38- PROFILE

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5/14/99



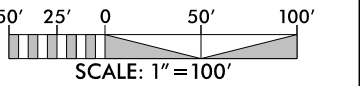
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RALEIGH, NORTH CAROLINA 27608
NC COA No. C-0890

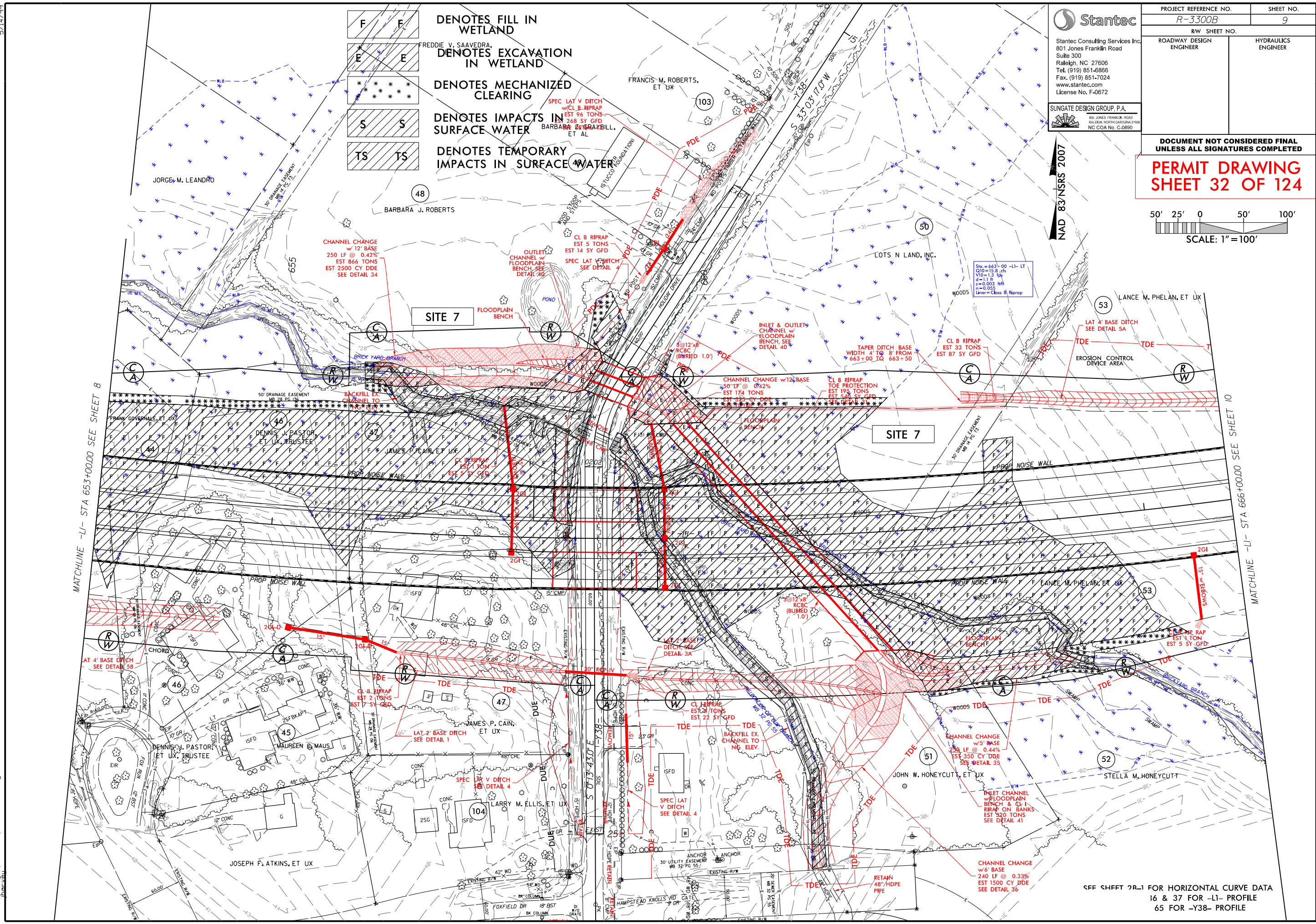
PROJECT REFERENCE NO. R-3300B	SHEET NO. 9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

**PERMIT DRAWING
SHEET 32 OF 124**



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



MATCHLINE -L- STA 653+00.00 SEE SHEET 8

MATCHLINE -L- STA 666+00.00 SEE SHEET 10

SEE SHEET 2R-1 FOR HORIZONTAL CURVE DATA
16 & 37 FOR -L1- PROFILE
65 FOR -Y38- PROFILE

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5/14/99

PROJECT REFERENCE NO. SHEET NO.

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 33 OF 124

300 200 100 0 100 200 300

CL STA 660+85 -L1-
GP EL=54.44'
3@12'x8' RCBC w/
SILLS & BEVELED HW
SKEW = 50°

60

50

40

30

20

EXISTING NG ALONG
CULVERT CENTERLINE

3 @ 12' x 8' RCBC
SEE CSR # 6 OF 8

3:1 NORMAL
3.92:1 SKEWED

3:1 NORMAL
3.92:1 SKEWED

WS OBS. ON
9-14-2017 =
NWS=23.4

PROP 50-YR
WSEL=28.9'

PROP 100-YR
WSEL=29.4'

EXISTING NG ALONG
CULVERT CENTERLINE

BEVELED
HW

PROP CHANNEL

SILLS
INSET 2'

CL INV EL=20.9'
SLOPE=0.40%

SILLS
INSET 2'

PROP CHANNEL

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5/14/99

PROJECT REFERENCE NO. SHEET NO.

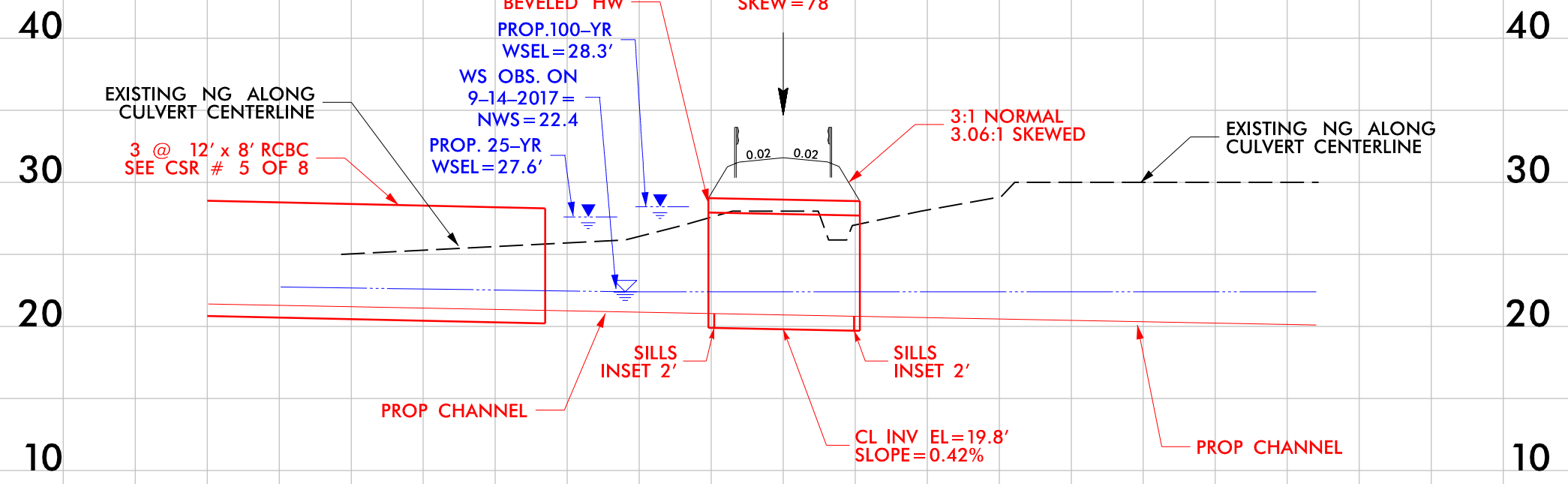
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INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

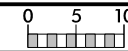
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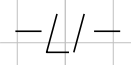
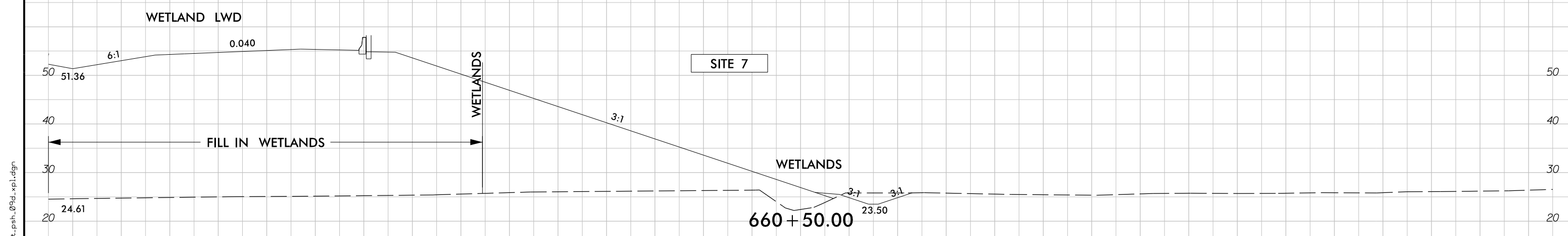
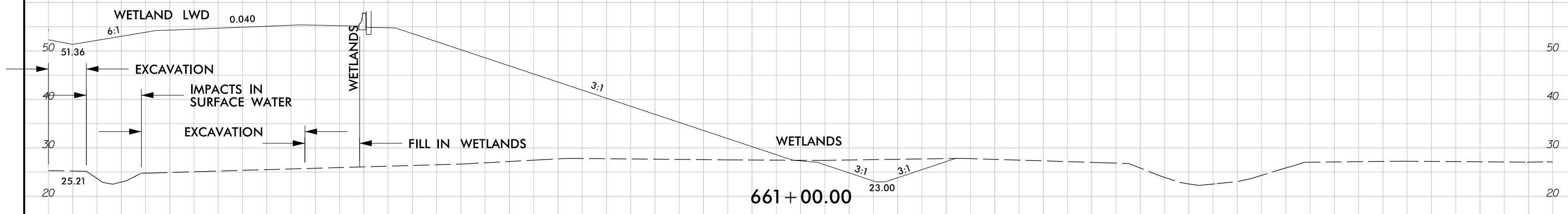
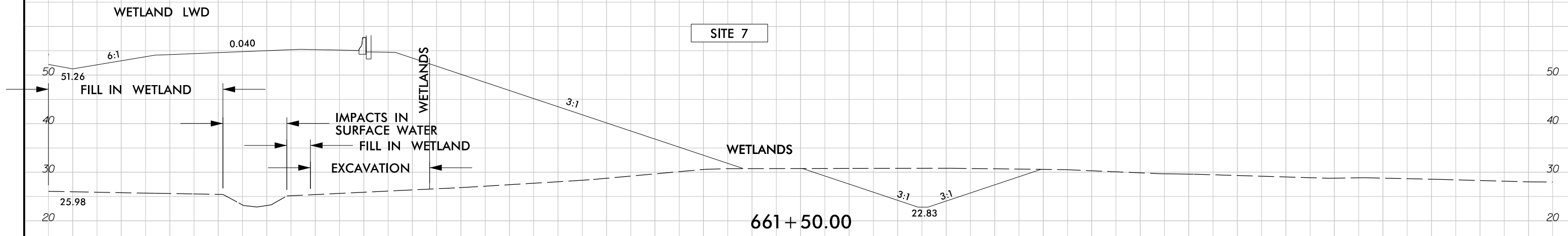
6/23/16



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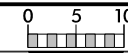
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**PERMIT DRAWING
SHEET 35 OF 124**



12/3/2019
R-3300B_Hyd_prm_wet_psh_09d_xpl.dgn
jbarvey

6/23/16

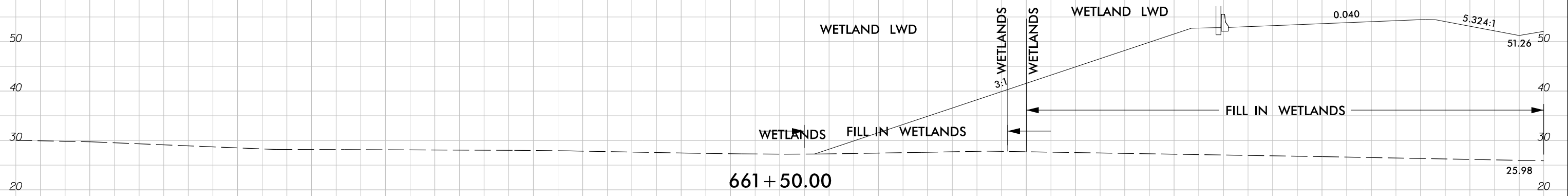
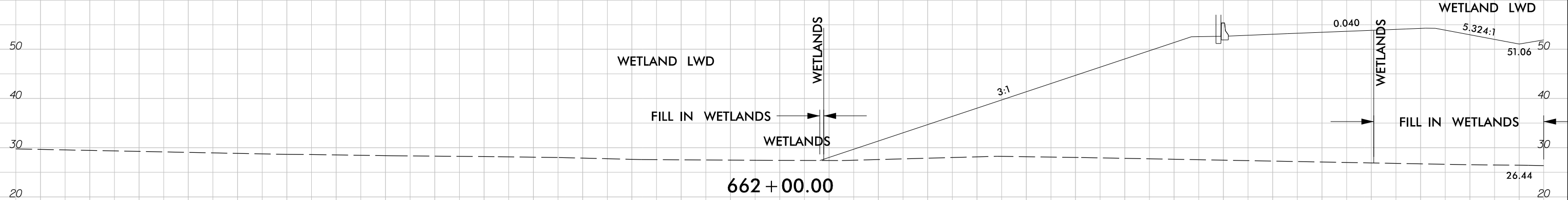


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R-3300B	X-48

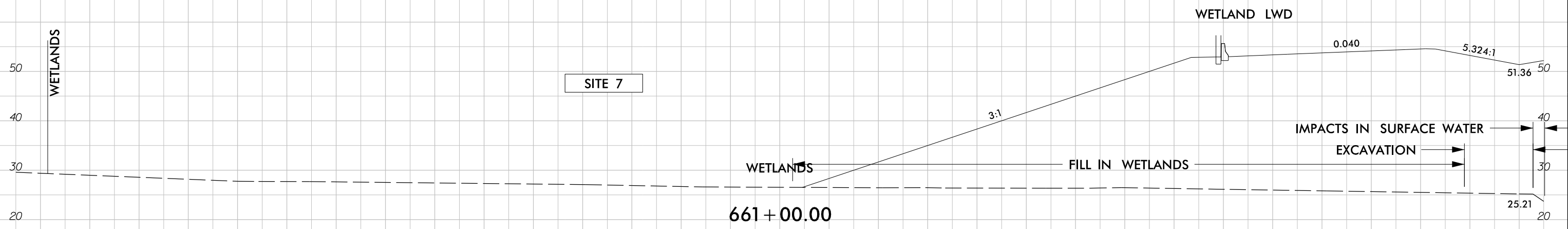
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**PERMIT DRAWING
SHEET 36 OF 124**

SITE 7



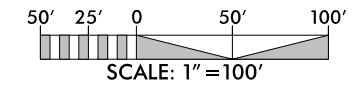
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12/3/2019
R3300B_Hyd_prm_wet_psh_09e_xpl.dgn
jbarvey

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

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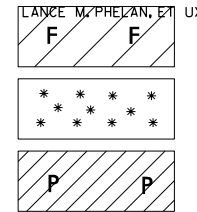
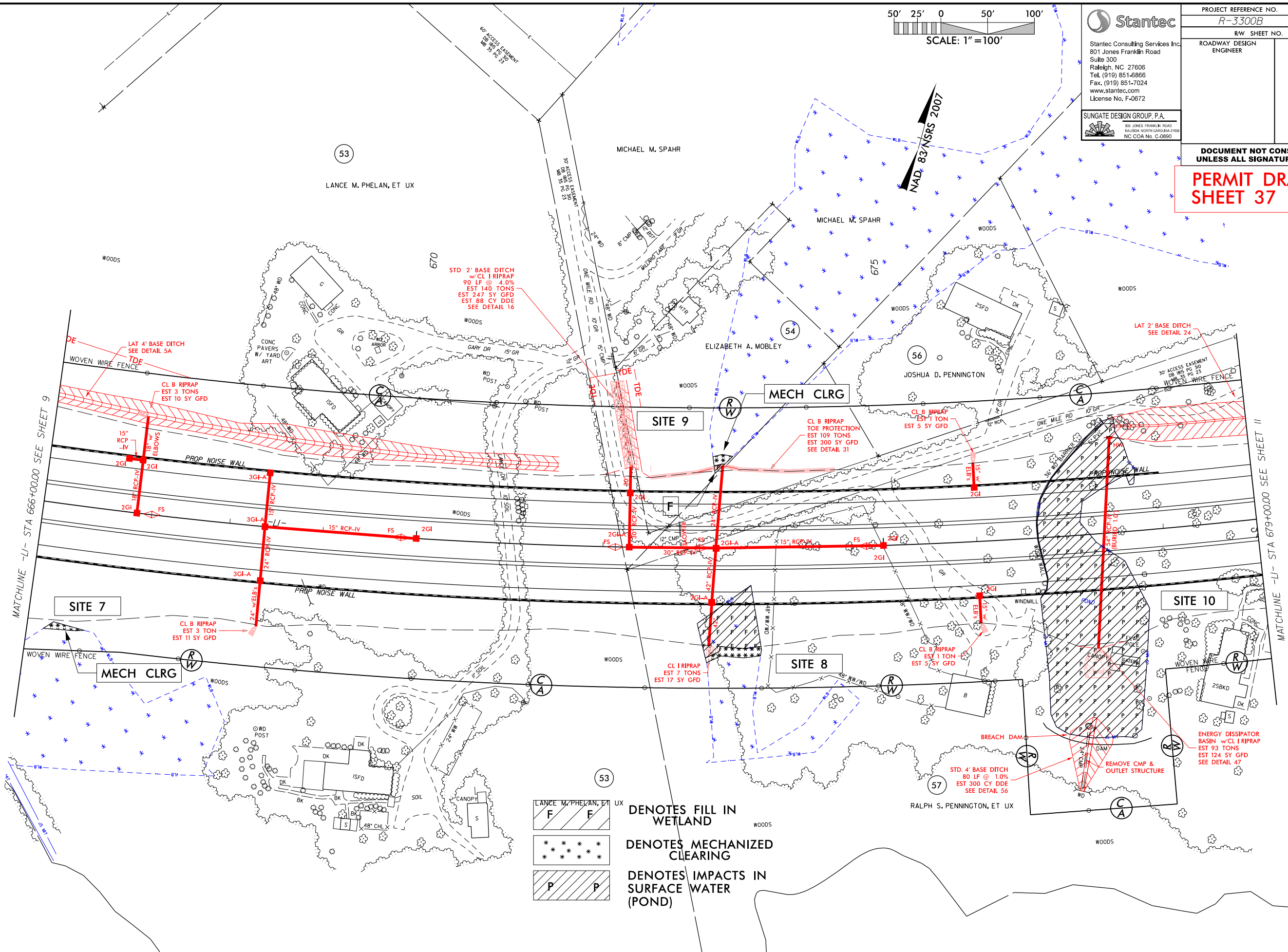


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RALEIGH, NORTH CAROLINA 27606
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PROJECT REFERENCE NO. R-3300B	SHEET NO. 10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
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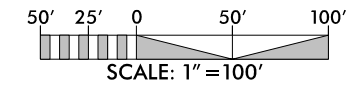
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SHEET 37 OF 124**



SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEETS 37 FOR -LI- PROFILE

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5/14/99



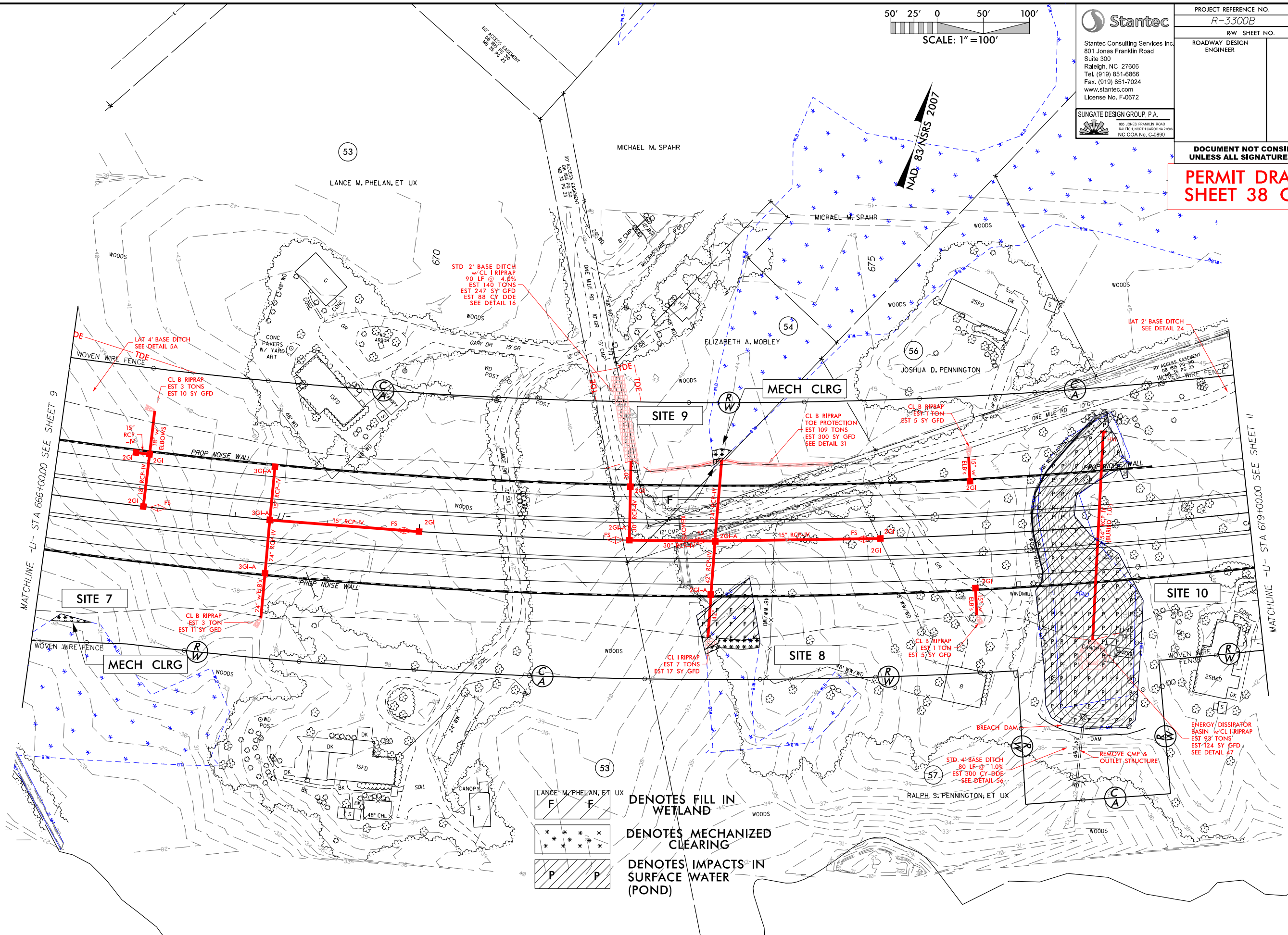
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RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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**PERMIT DRAWING
SHEET 38 OF 124**

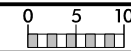


-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING
-  DENOTES IMPACTS IN SURFACE WATER (POND)

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEETS 37 FOR -L- PROFILE

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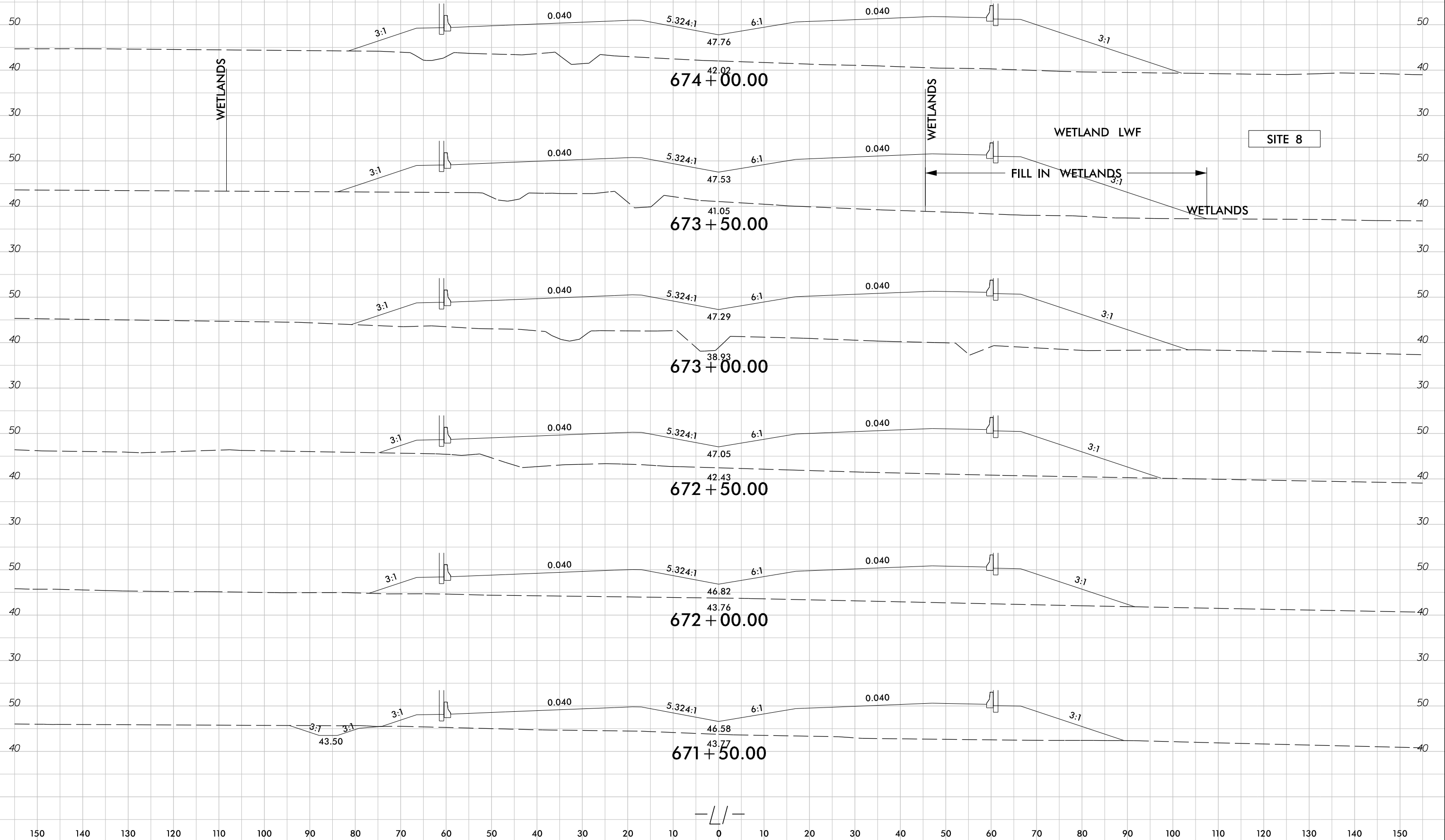
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PROJ. REFERENCE NO. R-3300B	SHEET NO. X-53
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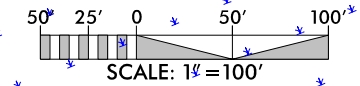
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**PERMIT DRAWING
SHEET 39 OF 124**



12/3/2019
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jbarvey

5/14/99



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 NC COA No. C-0890

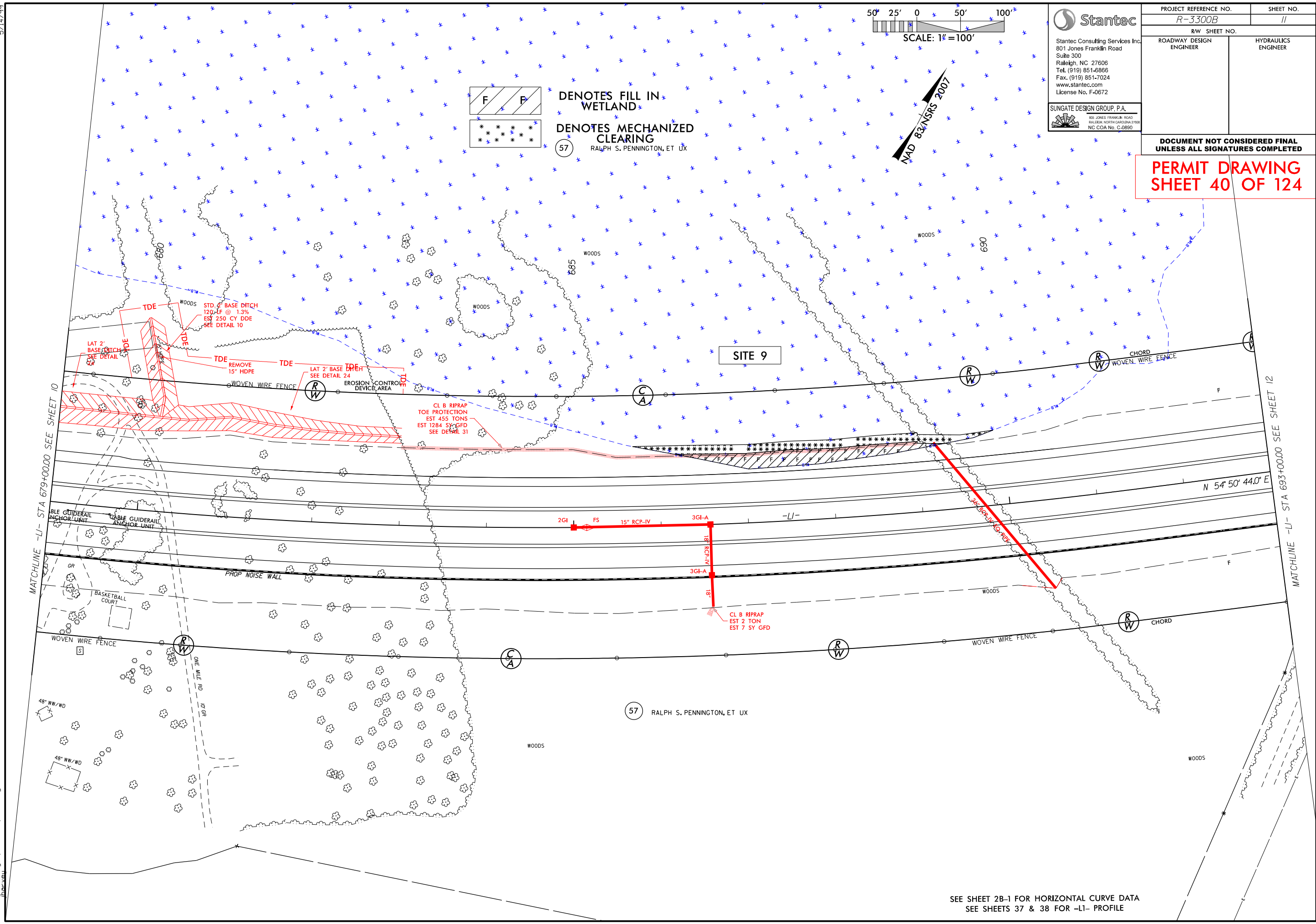
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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**PERMIT DRAWING
 SHEET 40 OF 124**

57
 DENOTES FILL IN WETLAND
 DENOTES MECHANIZED CLEARING
 RALPH S. PENNINGTON, ET UX

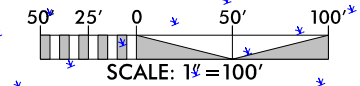
NAD 83 NSRS 2007



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SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
 SEE SHEETS 37 & 38 FOR -L1- PROFILE

5/14/99
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NAD 83 NSRS 2007

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NC COA No. C-0890

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>11</i>
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ROADWAY DESIGN ENGINEER	

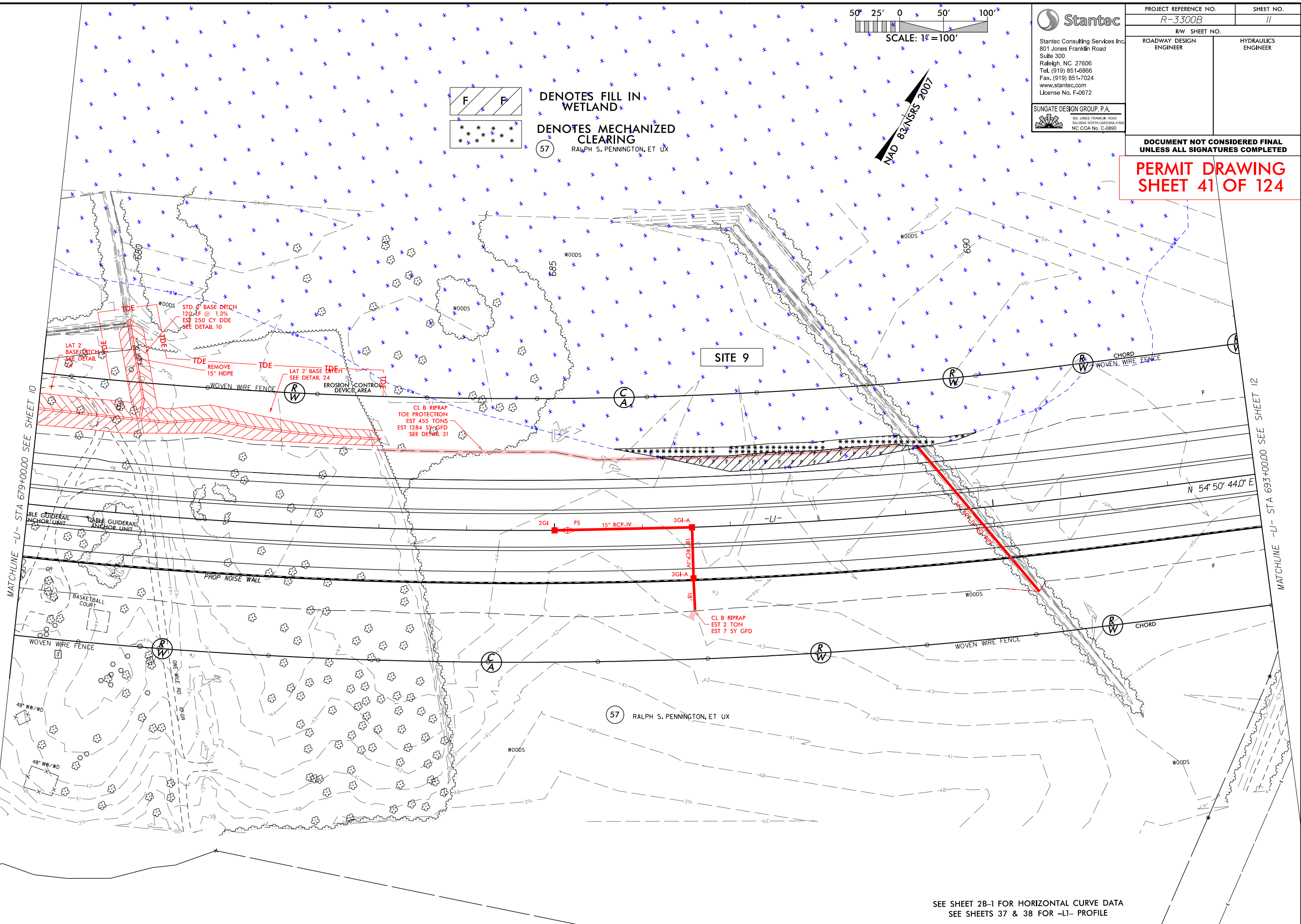
**DOCUMENT NOT CONSIDERED FINAL
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**PERMIT DRAWING
SHEET 41 OF 124**

 DENOTES FILL IN WETLAND

 DENOTES MECHANIZED CLEARING

57 RALPH S. PENNINGTON, ET UX



SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEETS 37 & 38 FOR -LI- PROFILE

6/23/16

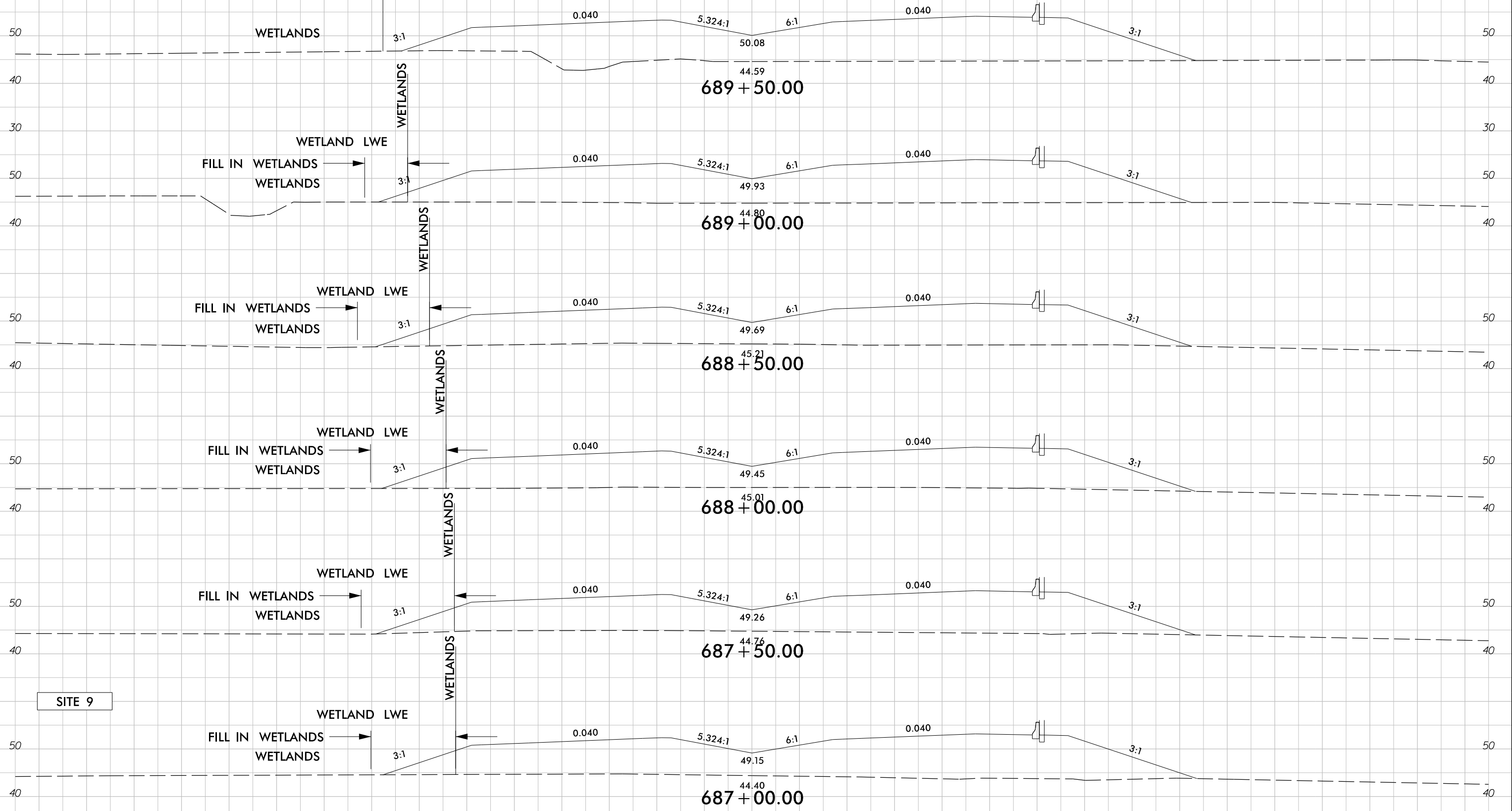


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R-3300B	X-59

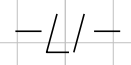
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SITE 9

PERMIT DRAWING SHEET 42 OF 124



SITE 9



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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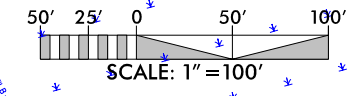
Stantec
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 Suite 300
 Raleigh, NC 27606
 Tel. (919) 851-8866
 Fax. (919) 851-7024
 www.stantec.com
 License No. F-0672

SUNGATE DESIGN GROUP, P.A.
 800 JONES FRANKLIN ROAD
 RALEIGH, NORTH CAROLINA 27606
 NC COA No. C-0890

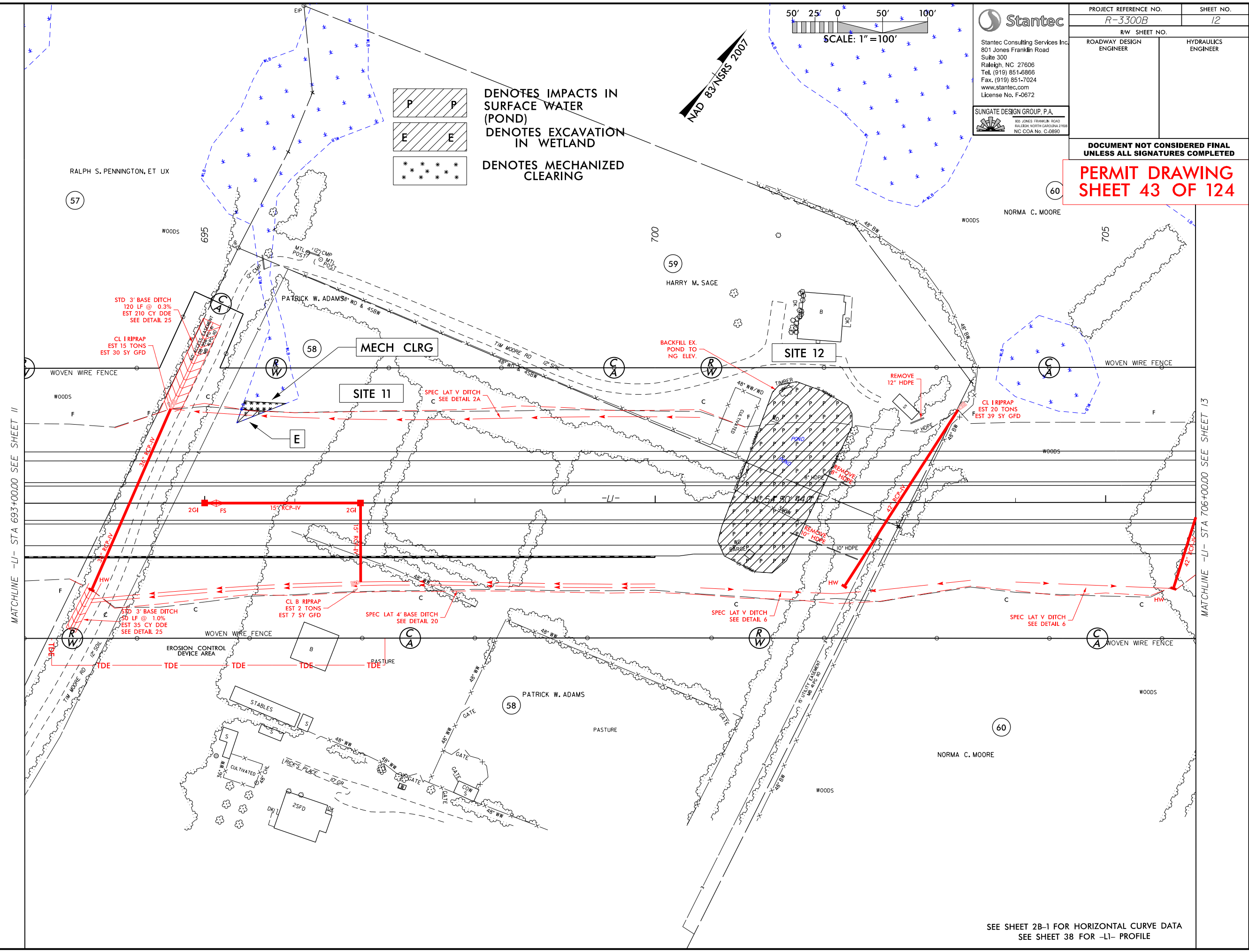
PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. 12
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

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

**PERMIT DRAWING
SHEET 43 OF 124**



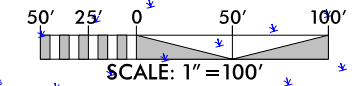
- DENOTES IMPACTS IN SURFACE WATER (POND)
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING



SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEET 38 FOR -LI- PROFILE

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PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. 12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

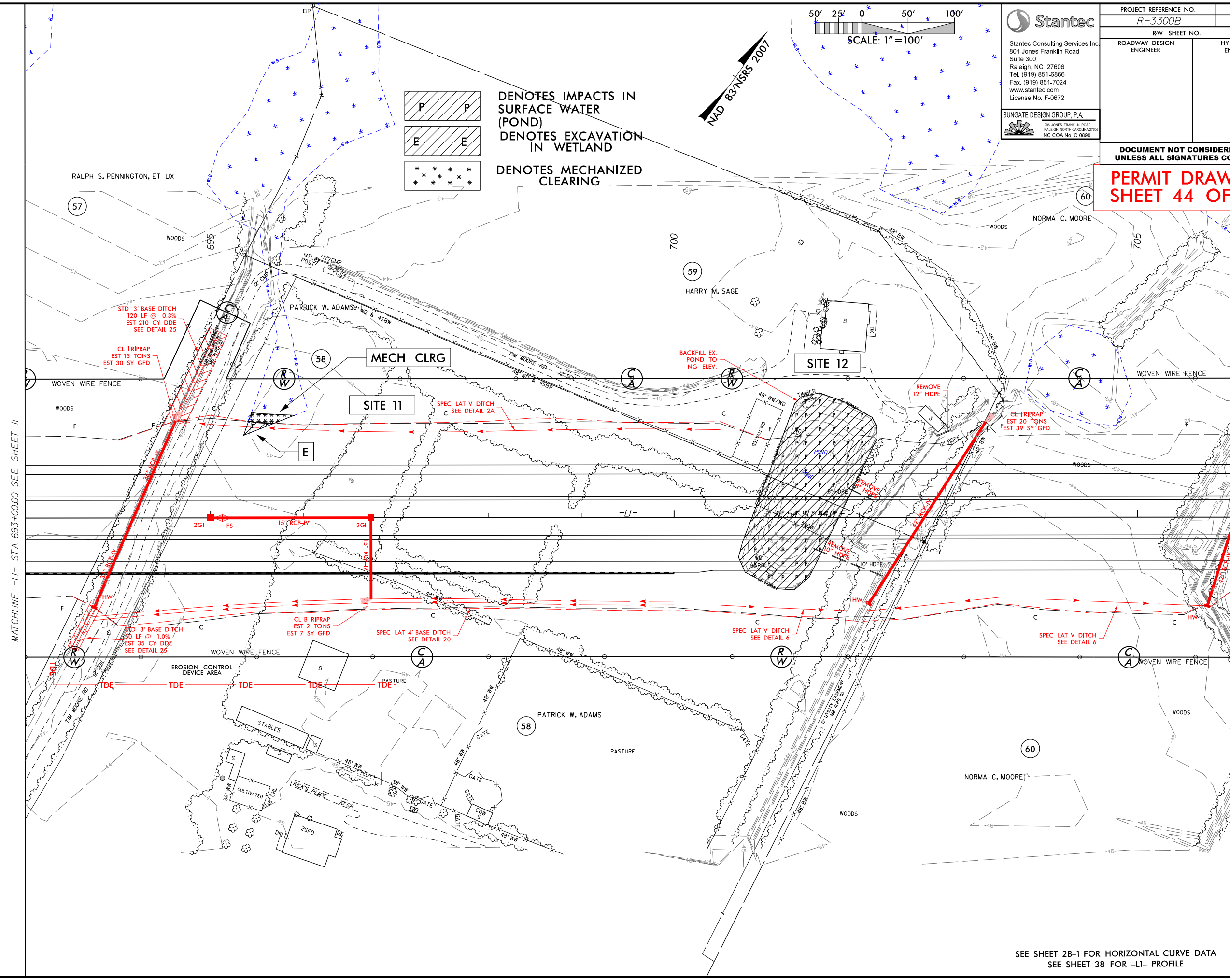
DOCUMENT NOT CONSIDERED FINAL
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**PERMIT DRAWING
SHEET 44 OF 124**

P P
DENOTES IMPACTS IN
SURFACE WATER
(POND)

E E
DENOTES EXCAVATION
IN WETLAND

*** * ***
DENOTES MECHANIZED
CLEARING



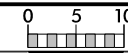
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MATCHLINE -L1- STA 706+00.00 SEE SHEET 13

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEET 38 FOR -L1- PROFILE

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6/23/16



PROJ. REFERENCE NO.	SHEET NO.
R-3300B	X-61

**PERMIT DRAWING
SHEET 45 OF 124**

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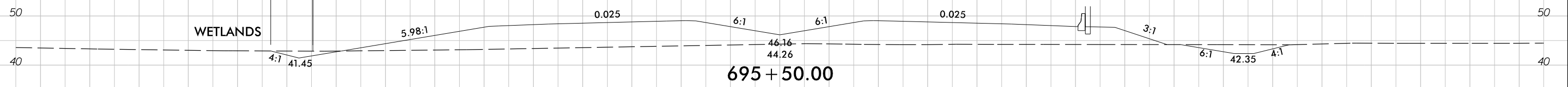
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WETLAND LWG

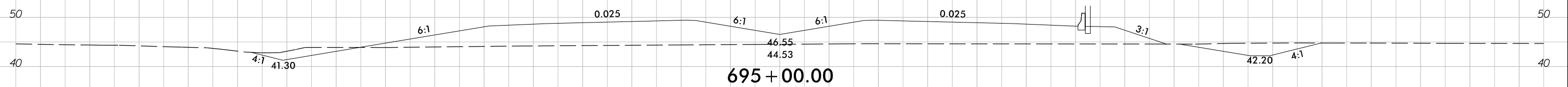
EXCAVATION

WETLANDS

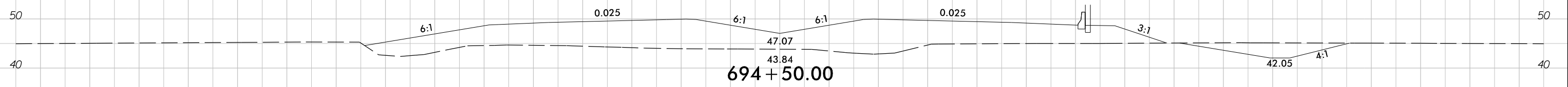
WETLANDS



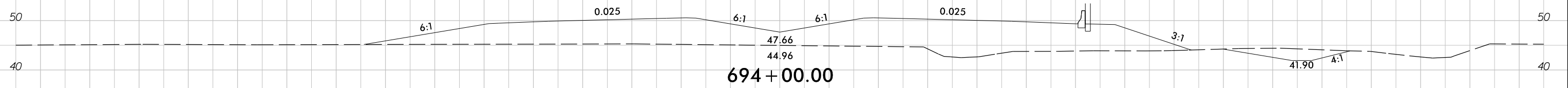
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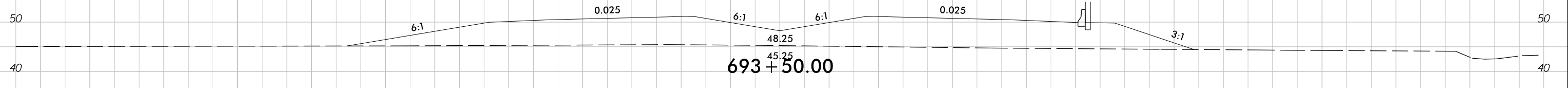
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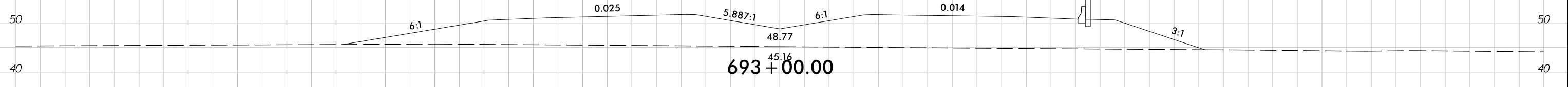
694 + 50.00



694 + 00.00



693 + 50.00



693 + 00.00

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jbarvey

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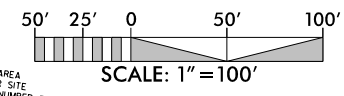
SUNGATE DESIGN GROUP, P.A.
800 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
NC COA No. C-0890

PROJECT REFERENCE NO. R-3300B	SHEET NO. 13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

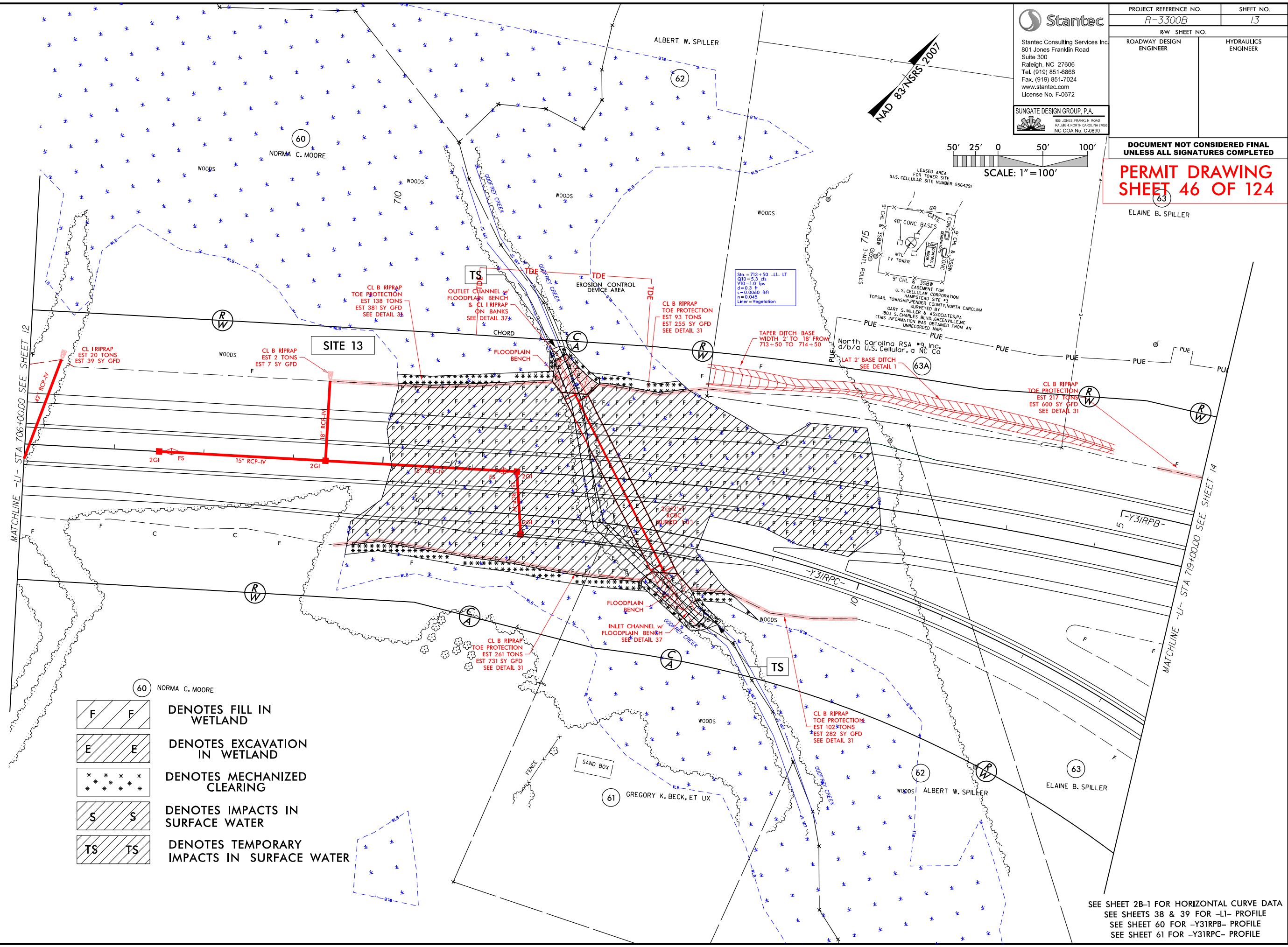
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 46 OF 124

ELAINE B. SPILLER



NAD 83 NSRS 2007



MATCHLINE -LI- STA 706+00.00 SEE SHEET 12

MATCHLINE -LI- STA 719+00.00 SEE SHEET 14

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

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEETS 38 & 39 FOR -LI- PROFILE
SEE SHEET 60 FOR -Y31RPB- PROFILE
SEE SHEET 61 FOR -Y31RPC- PROFILE

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R3300B (1) - 13 - wet - psh - 13a - com.dgn

PROJECT REFERENCE NO. R-3300B		SHEET NO. 13	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

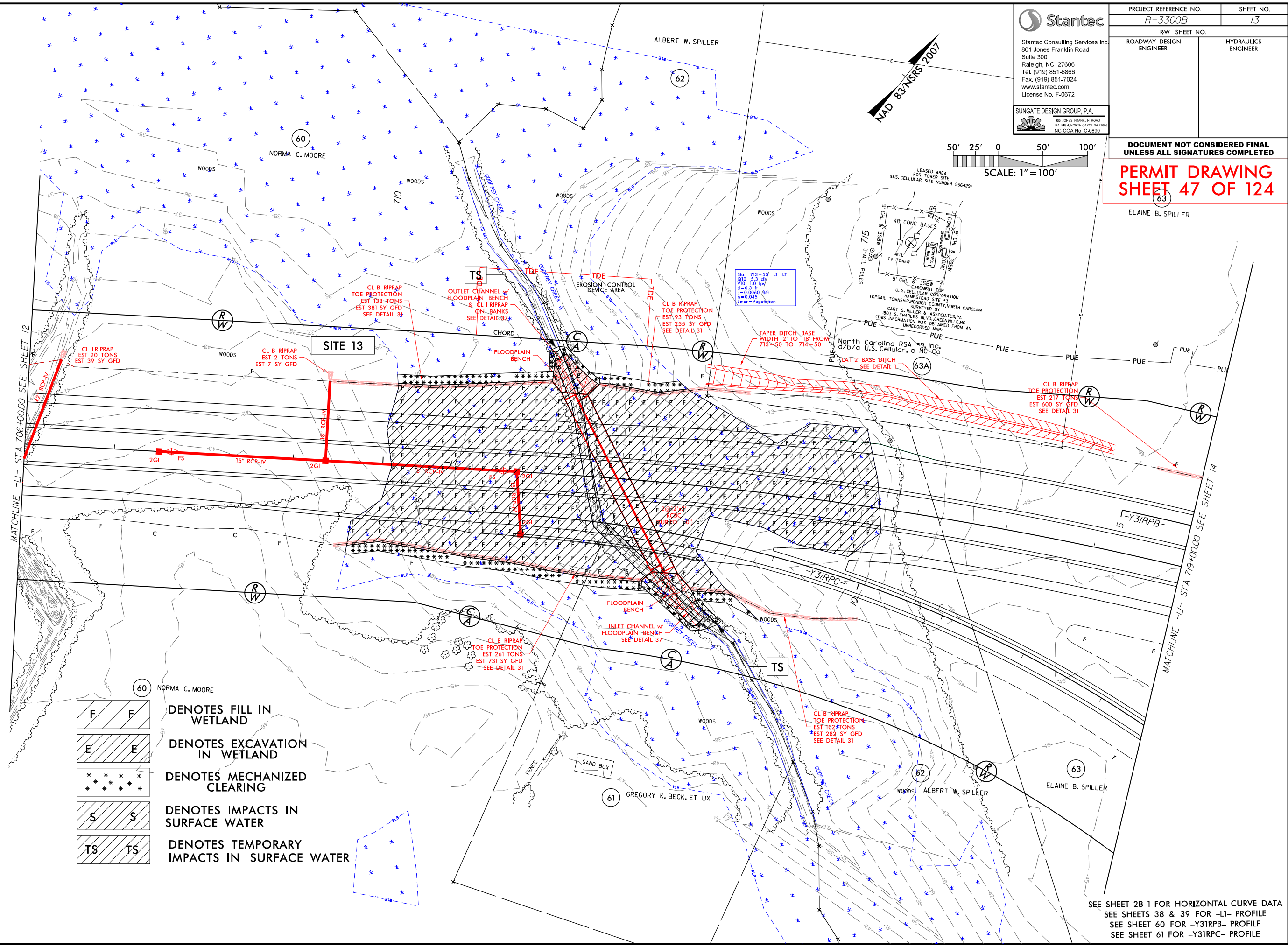
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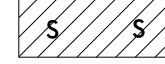
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PERMIT DRAWING SHEET 47 OF 124

ELAINE B. SPILLER



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

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEETS 38 & 39 FOR -L1- PROFILE
SEE SHEET 60 FOR -Y31RPB- PROFILE
SEE SHEET 61 FOR -Y31RPC- PROFILE

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PROJECT REFERENCE NO. SHEET NO.

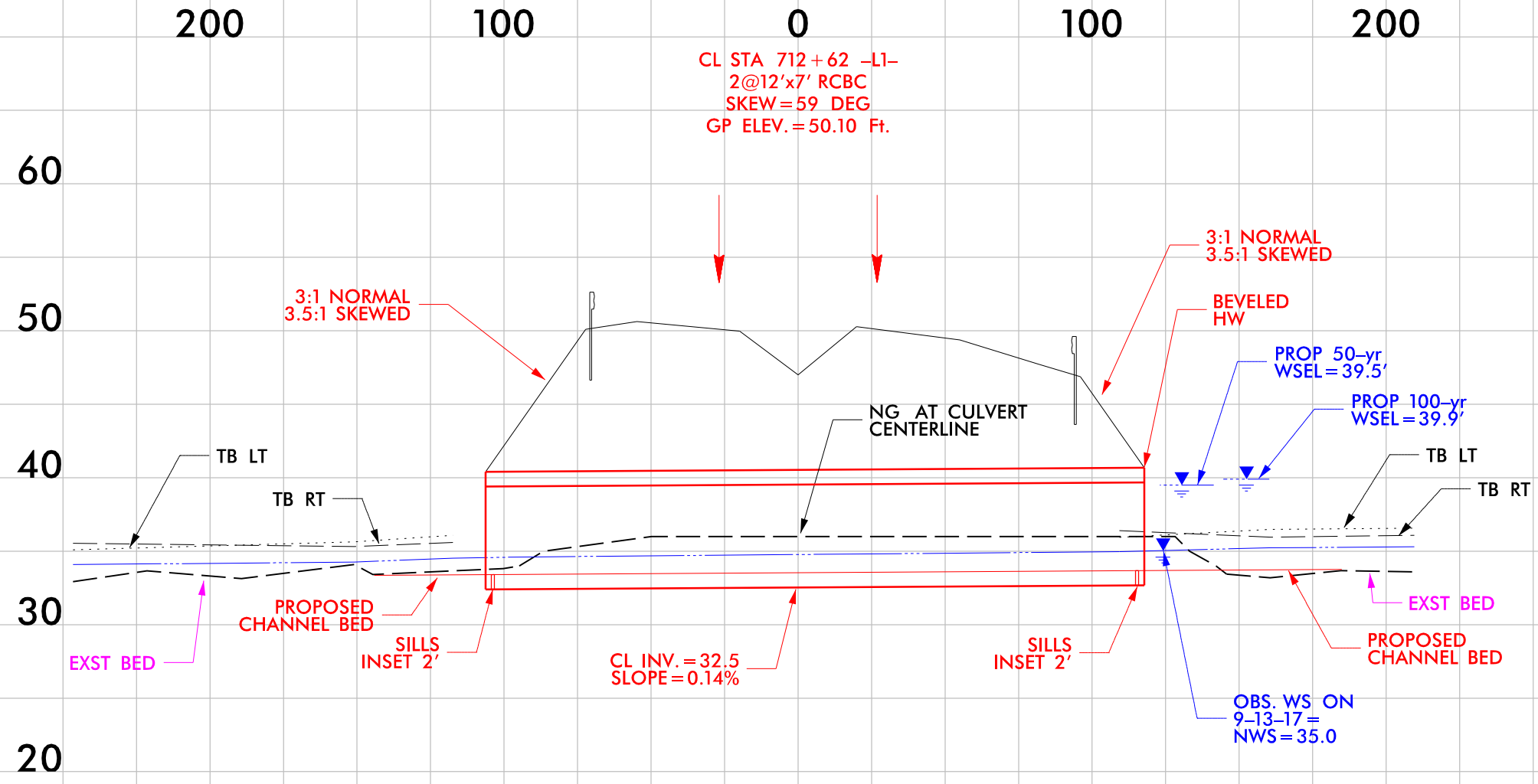
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

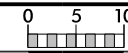
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DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 48 OF 124

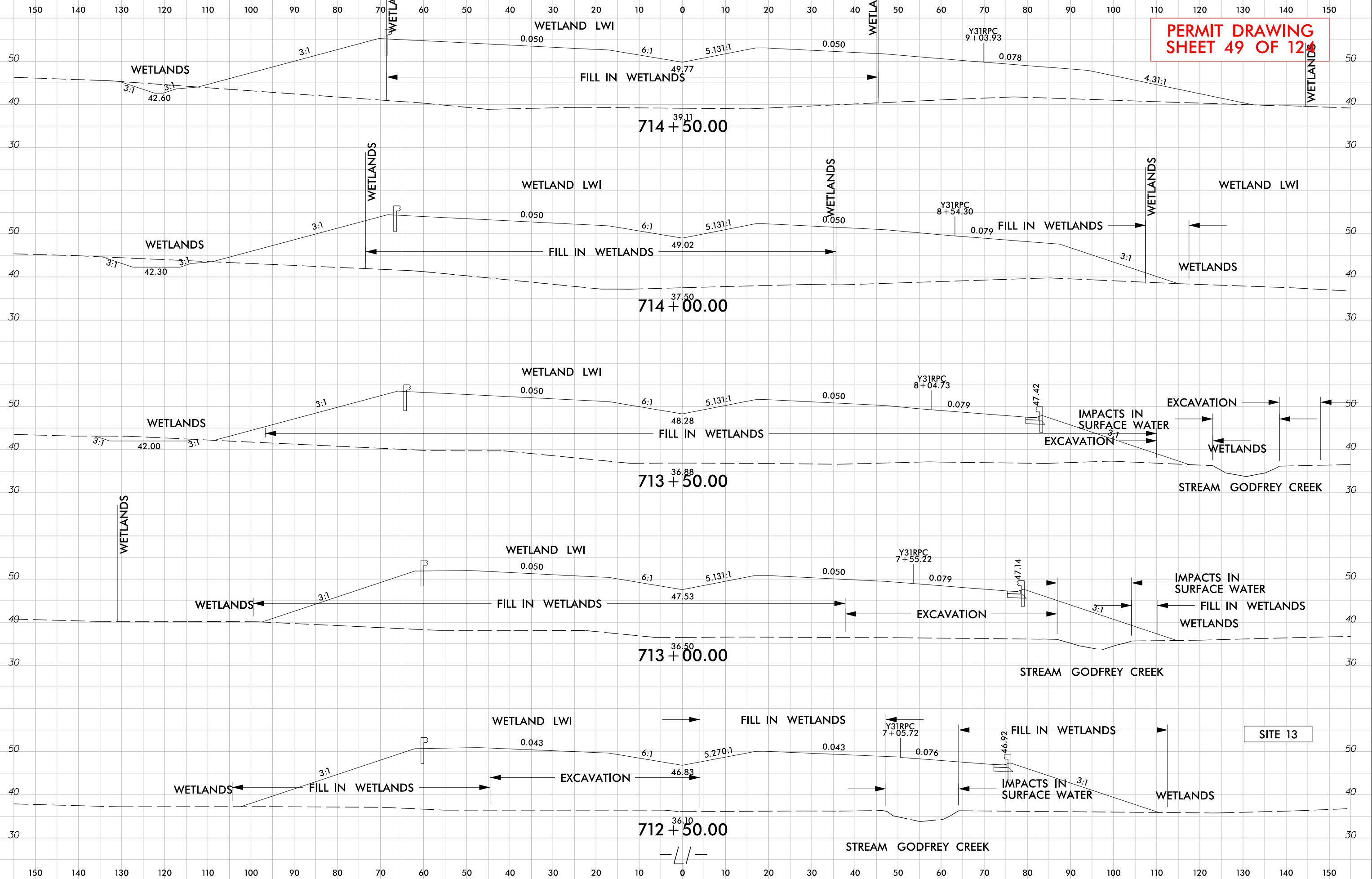


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SITE 13

PERMIT DRAWING
SHEET 49 OF 124



SITE 13

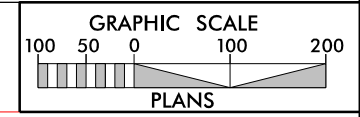
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 RALEIGH, NORTH CAROLINA 27609
 NC COA No. C-0890

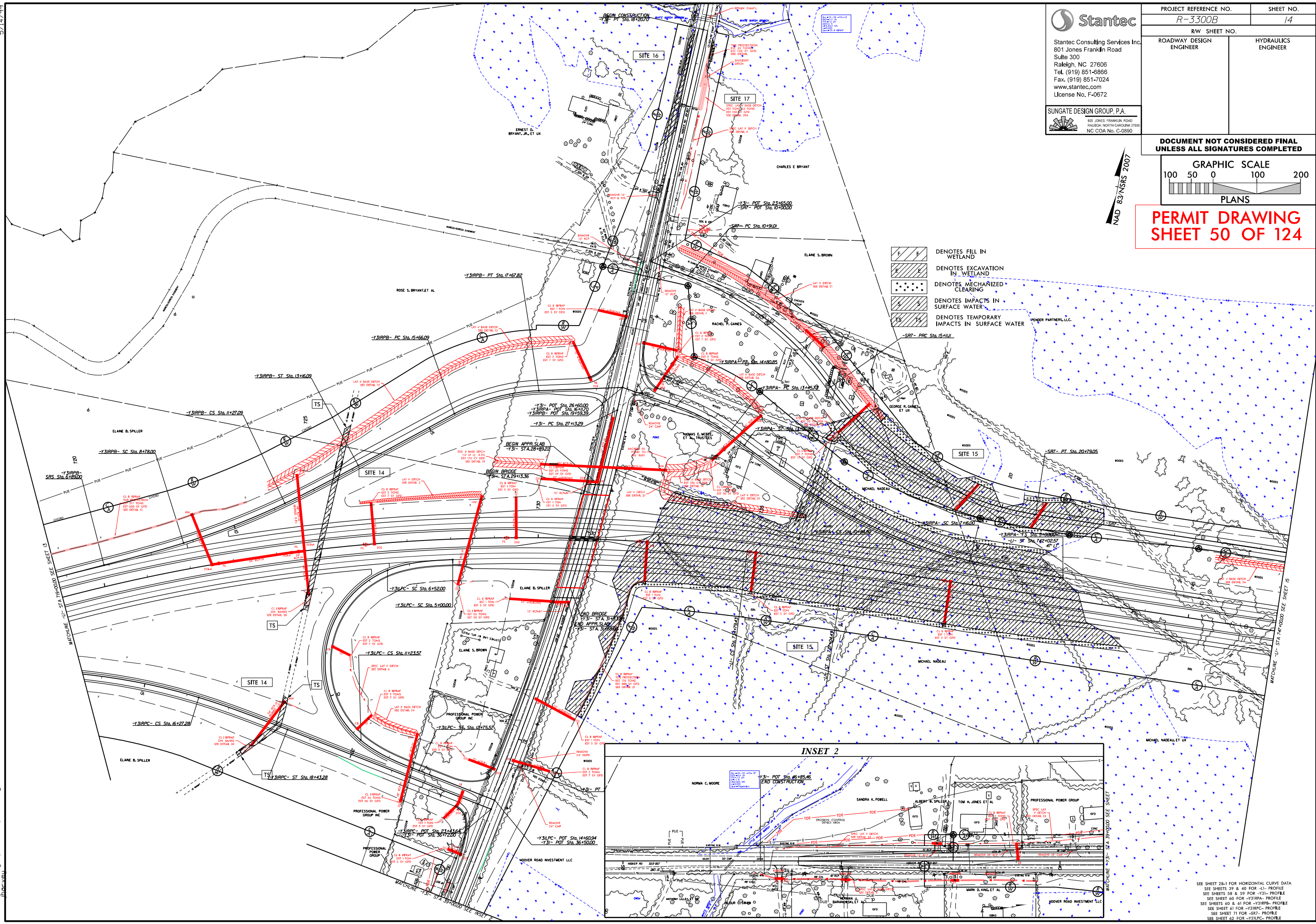
PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. 14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

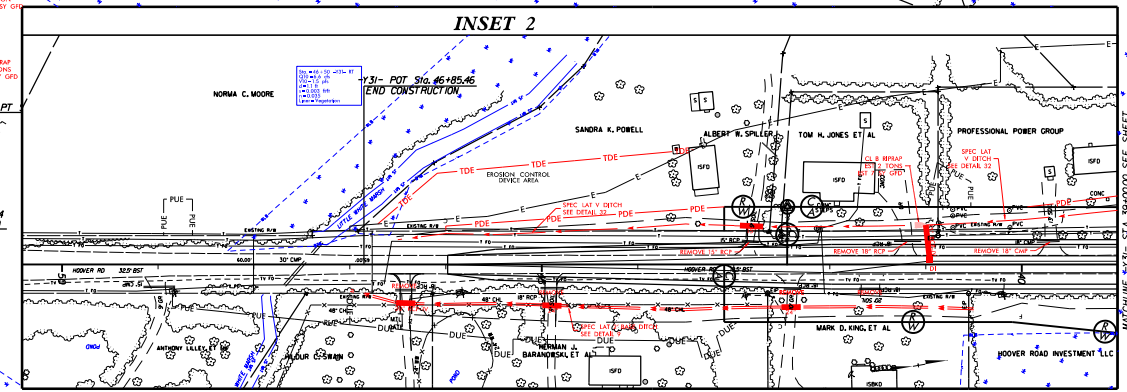


PERMIT DRAWING SHEET 50 OF 124

NAD 83 N/SRS 2007



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



SEE SHEET 28-1 FOR HORIZONTAL CURVE DATA
 SEE SHEETS 39 & 40 FOR -L1- PROFILE
 SEE SHEETS 58 & 59 FOR -Y3I- PROFILE
 SEE SHEET 60 FOR -Y3IRPB- PROFILE
 SEE SHEETS 60 & 61 FOR -Y3IRPC- PROFILE
 SEE SHEET 61 FOR -Y3IRPC- PROFILE
 SEE SHEET 71 FOR -SRT- PROFILE
 SEE SHEET 62 FOR -Y3ILPC- PROFILE

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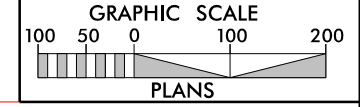
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 NC COA No. C-0890

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. 14
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

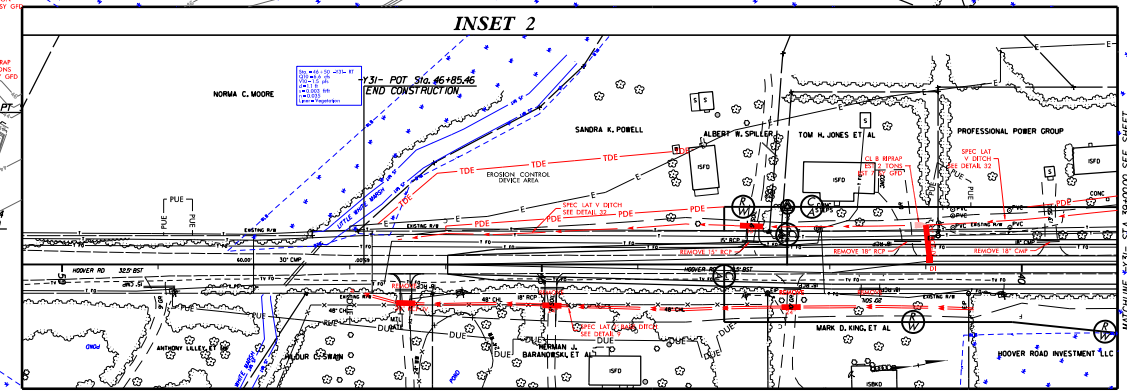
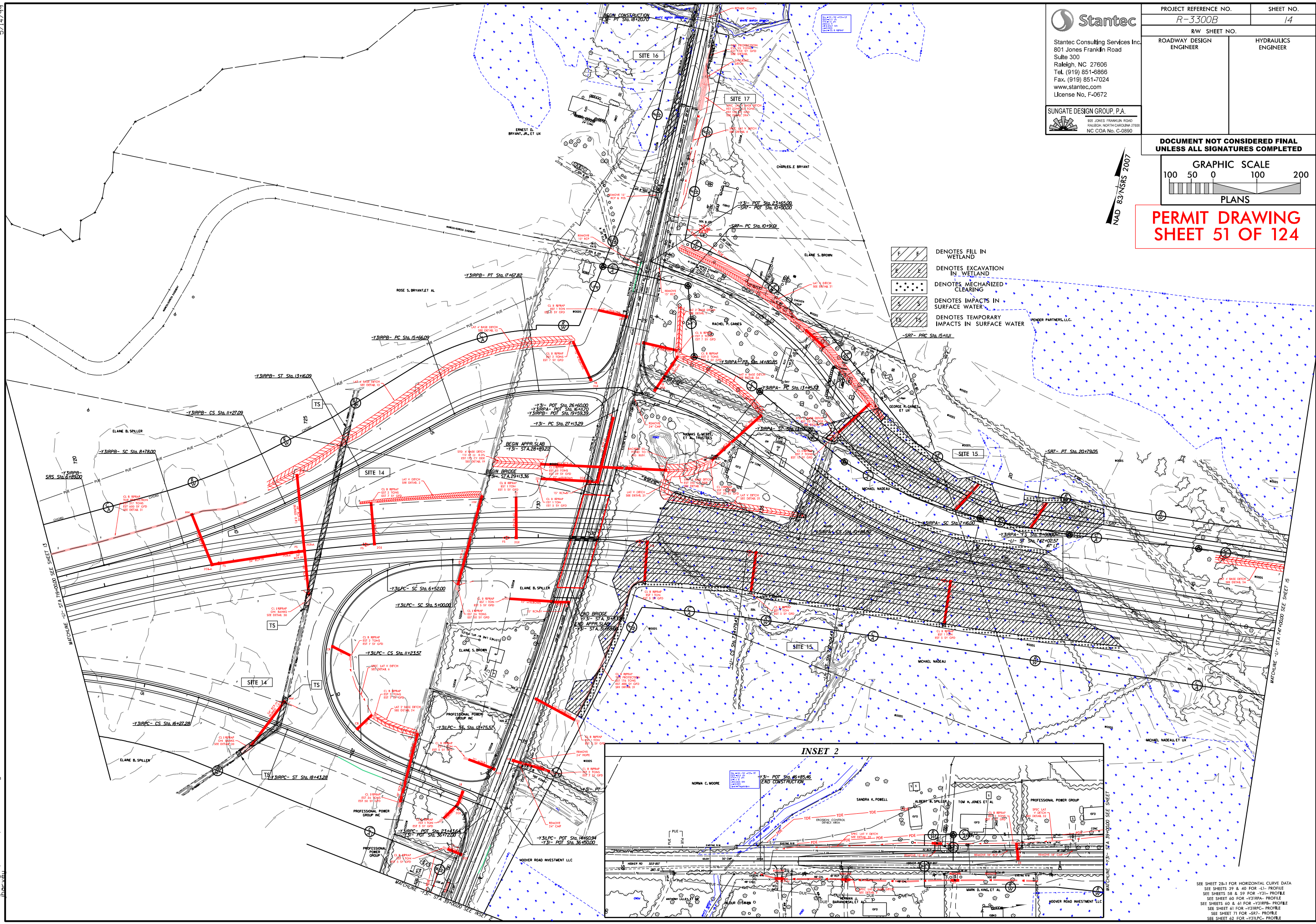
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PERMIT DRAWING SHEET 51 OF 124

NAD 83 N/SRS 2007

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



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SEE SHEET 28-1 FOR HORIZONTAL CURVE DATA
 SEE SHEETS 37 & 40 FOR -L1- PROFILE
 SEE SHEETS 58 & 59 FOR -Y31- PROFILE
 SEE SHEET 60 FOR -Y31RPPA- PROFILE
 SEE SHEETS 60 & 61 FOR -Y31RPPB- PROFILE
 SEE SHEET 61 FOR -Y31RPPC- PROFILE
 SEE SHEET 71 FOR -SRT- PROFILE
 SEE SHEET 62 FOR -Y31LPC- PROFILE

6/23/16

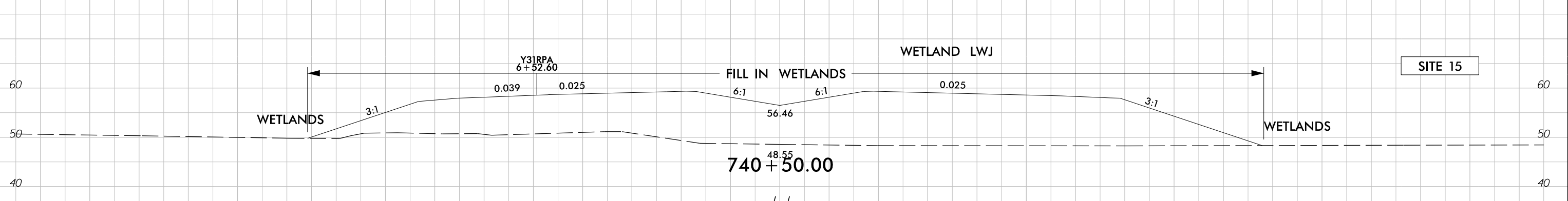
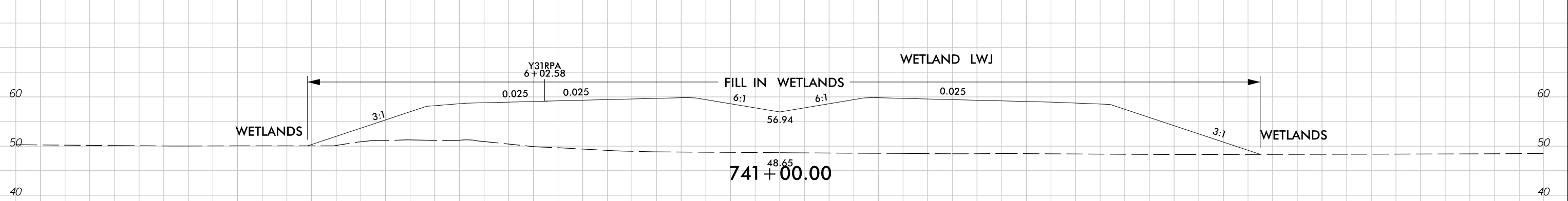
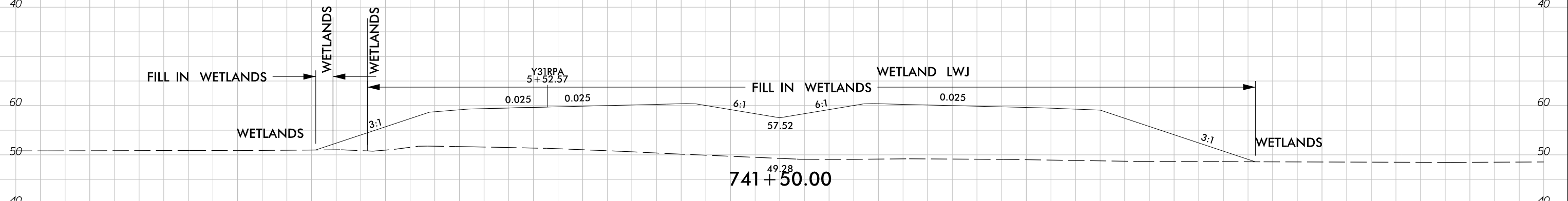
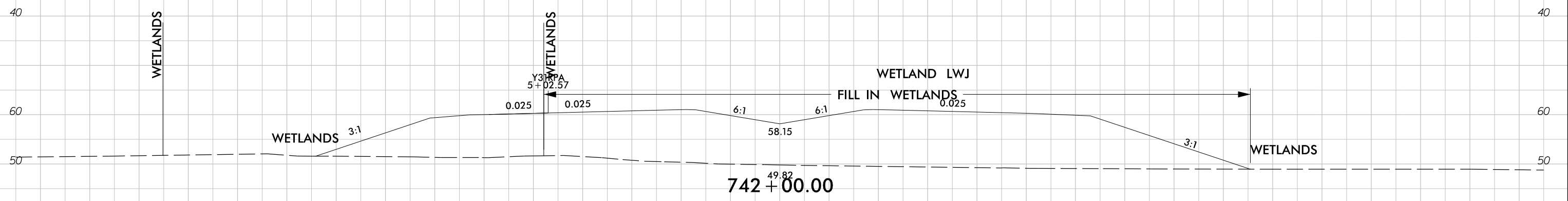
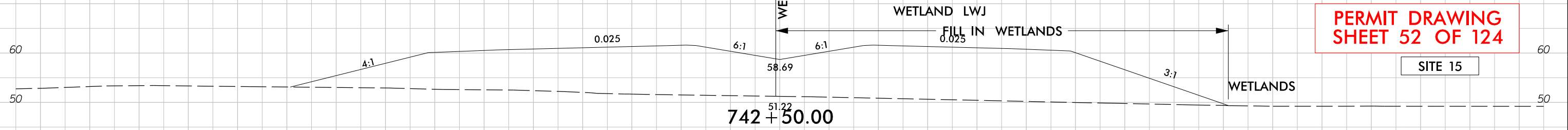


PROJ. REFERENCE NO.	SHEET NO.
R-3300B	X-84

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**PERMIT DRAWING
SHEET 52 OF 124**

SITE 15

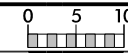


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jbarvey

6/23/16



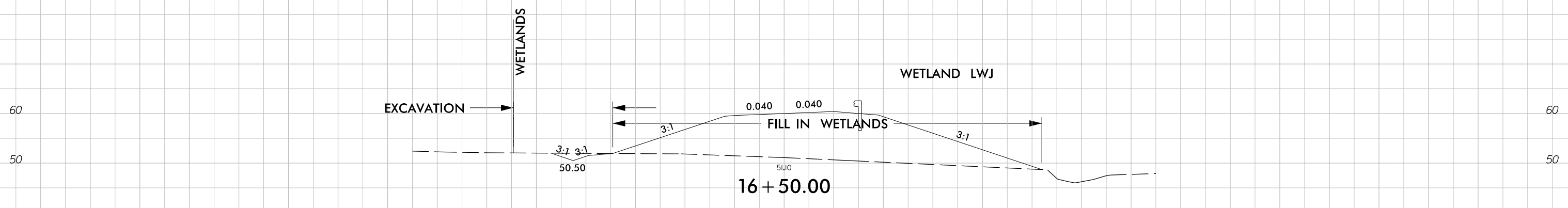
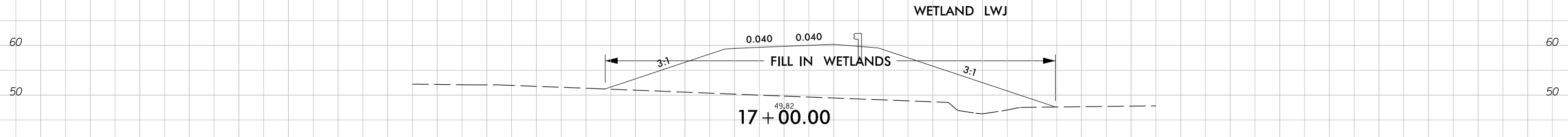
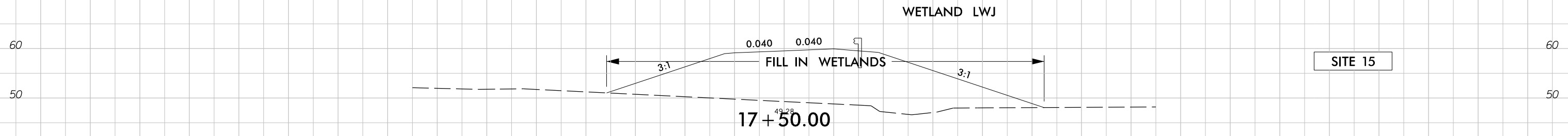
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R-3300B

SHEET NO.
X-410

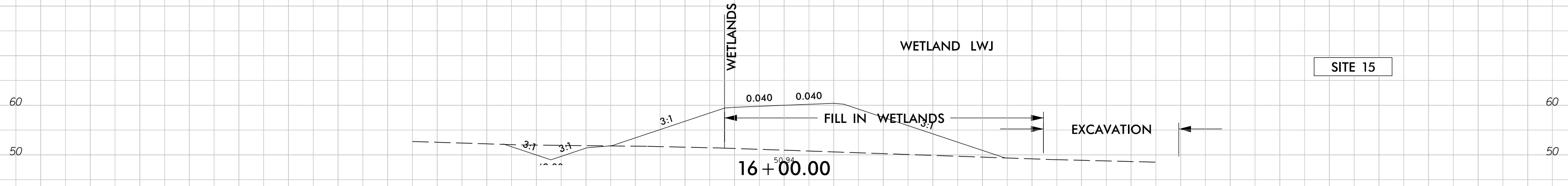
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**PERMIT DRAWING
SHEET 53 OF 124**

SITE 15



SITE 15

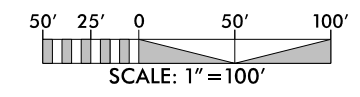


-SR7-

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 NC COA No. C-0890

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. 15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

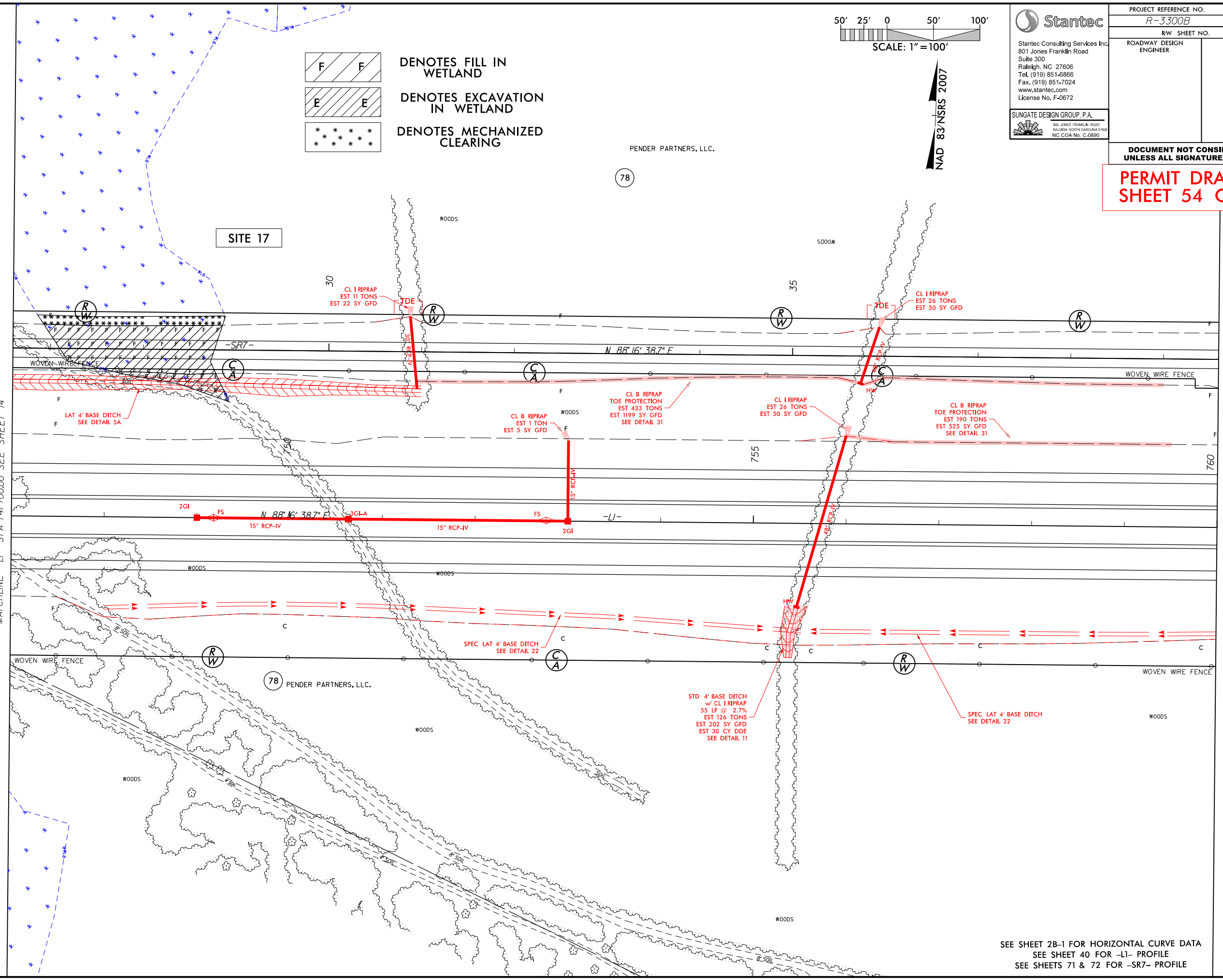
**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

**PERMIT DRAWING
 SHEET 54 OF 124**

PENDER PARTNERS, LLC.

78

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



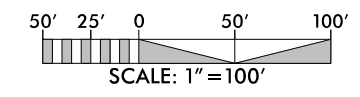
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MATCHLINE -LI- STA 760+00.00 SEE SHEET 16

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SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
 SEE SHEET 40 FOR -L1- PROFILE
 SEE SHEETS 71 & 72 FOR -SR7- PROFILE

5/14/99



NAD 83 NSRS 2007

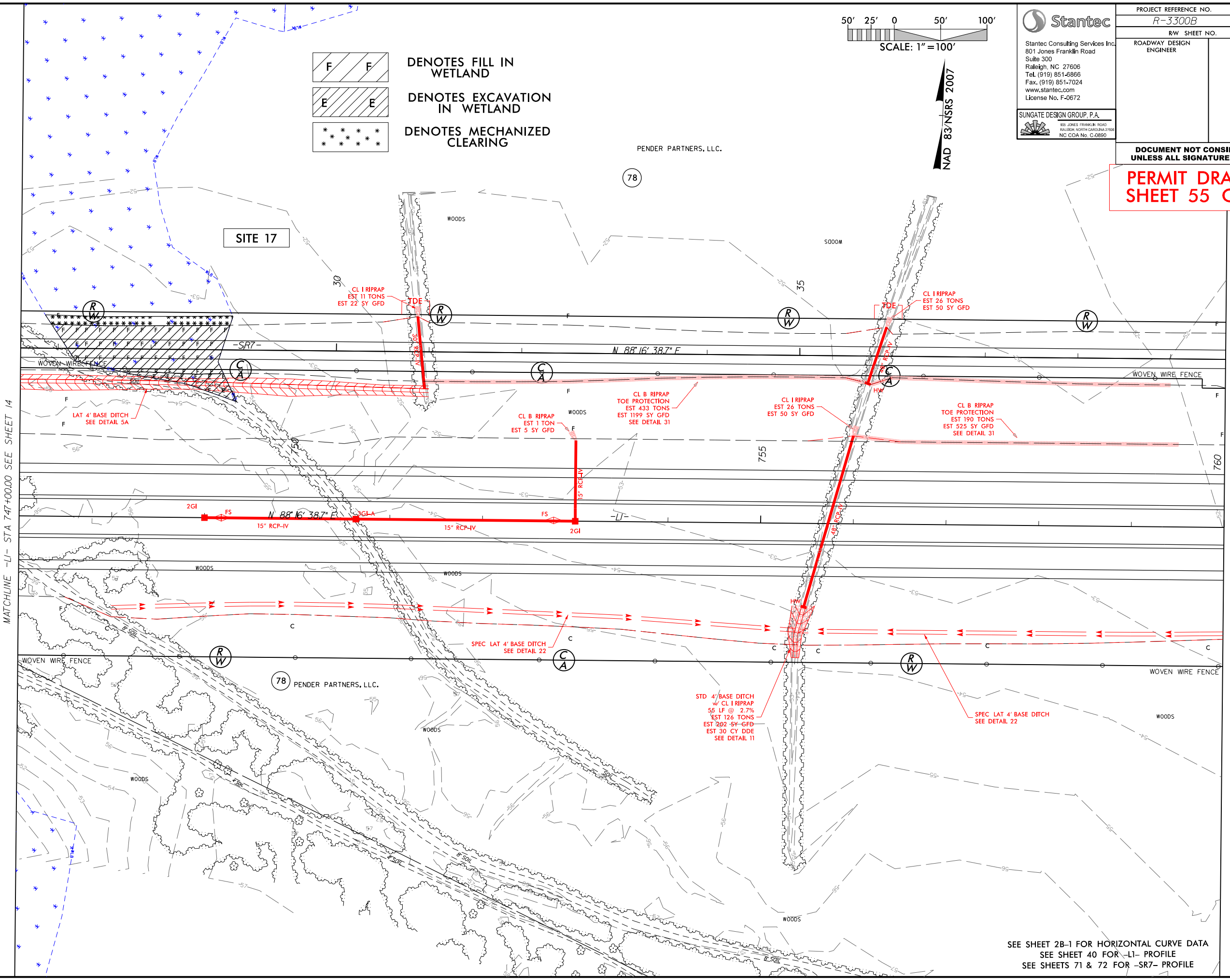
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NC COA No. C-0890

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. 15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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**PERMIT DRAWING
SHEET 55 OF 124**



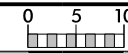
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MATCHLINE -L1- STA 760+00.00 SEE SHEET 16

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEET 40 FOR -L1- PROFILE
SEE SHEETS 71 & 72 FOR -SR7- PROFILE

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PROJ. REFERENCE NO.
R-3300B

SHEET NO.
X-415

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**PERMIT DRAWING
SHEET 56 OF 124**

60

60

WETLAND LWK

0.020 0.020

29 + 00.00



SITE 17

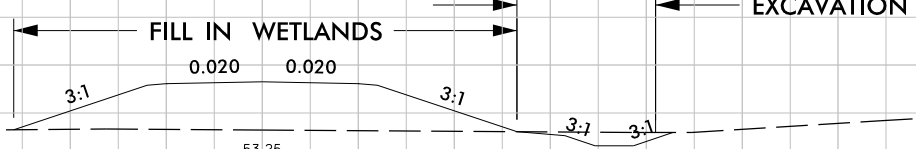
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WETLAND LWK

0.020 0.020

28 + 50.00



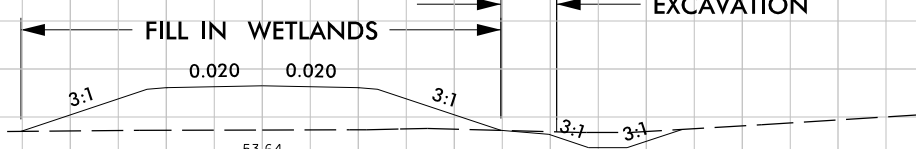
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WETLAND LWK

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28 + 00.00



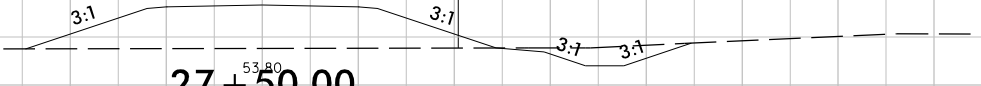
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WETLAND LWK

0.020 0.020

27 + 50.00



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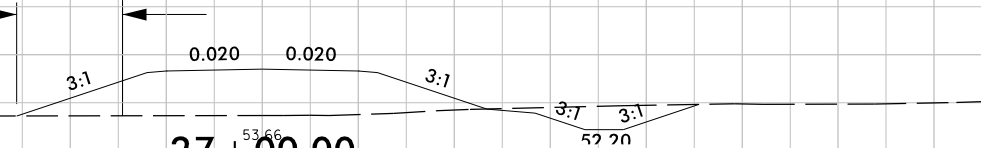
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SITE 17

WETLAND LWK

0.020 0.020

27 + 00.00



-SR7-

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5/14/99



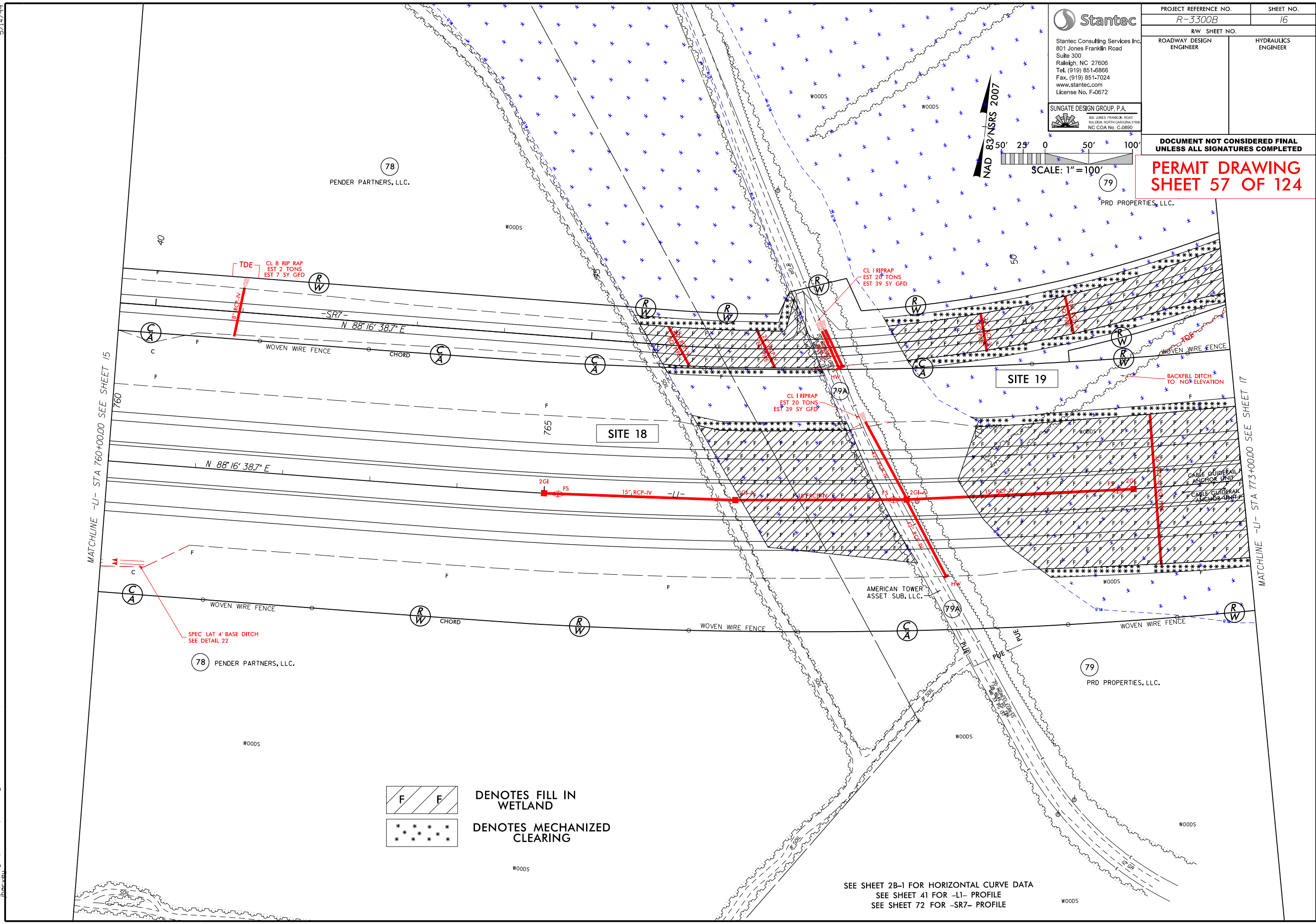
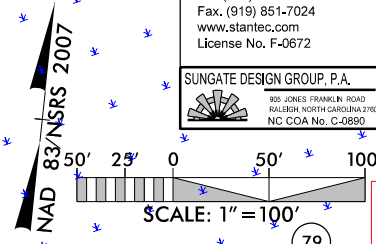
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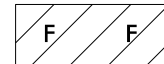
SUNGATE DESIGN GROUP, P.A.
800 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27608
NC COA No. C-0880


PROJECT REFERENCE NO. R-3300B	SHEET NO. 16
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

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UNLESS ALL SIGNATURES COMPLETED

**PERMIT DRAWING
SHEET 57 OF 124**



 DENOTES FILL IN WETLAND

 DENOTES MECHANIZED CLEARING

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEET 41 FOR -LI- PROFILE
SEE SHEET 72 FOR -SR7- PROFILE

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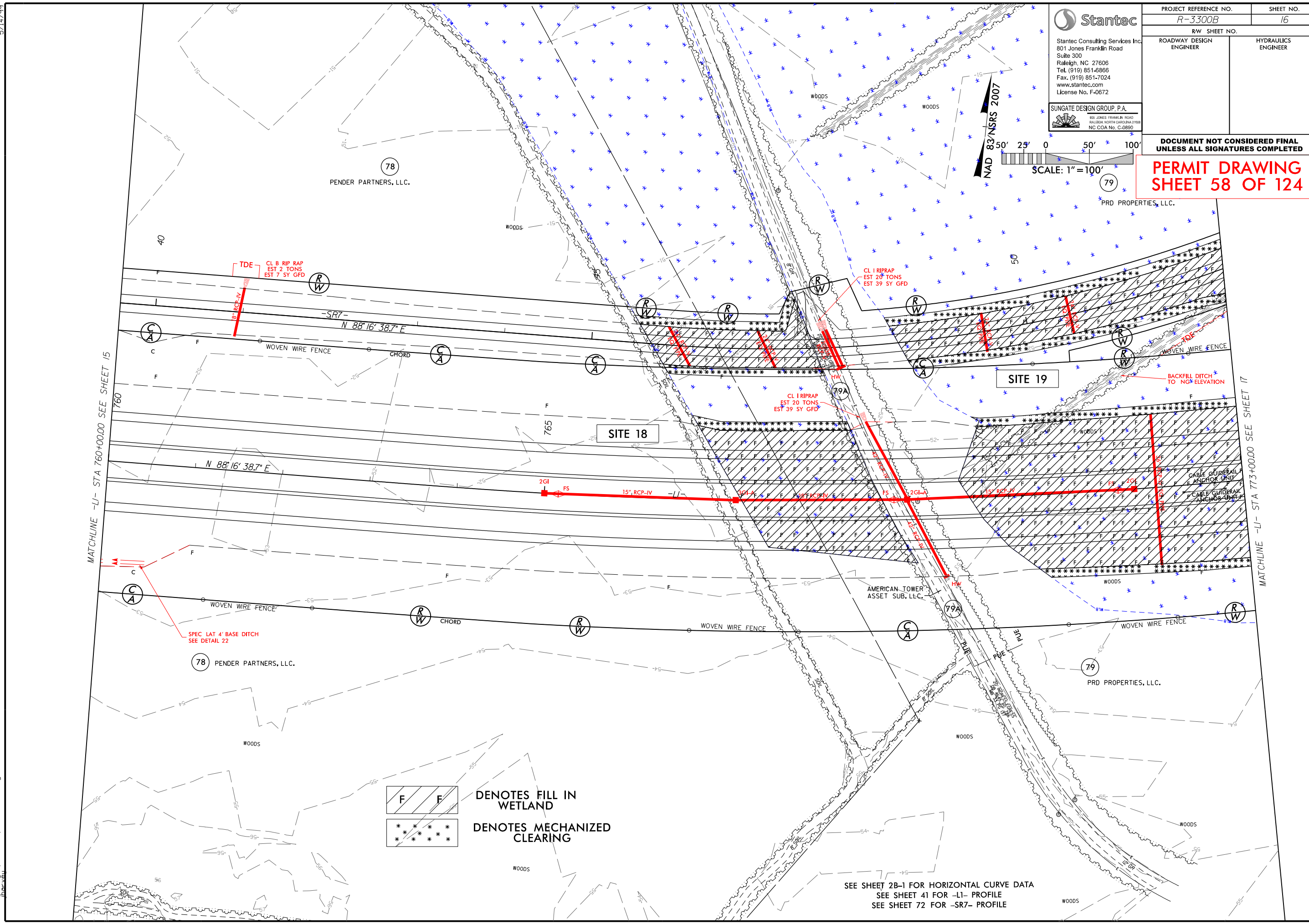
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PROJECT REFERENCE NO.	R-3300B
SHEET NO.	16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
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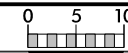
**PERMIT DRAWING
SHEET 58 OF 124**



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

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEET 41 FOR -L1- PROFILE
SEE SHEET 72 FOR -SR7- PROFILE

6/23/16

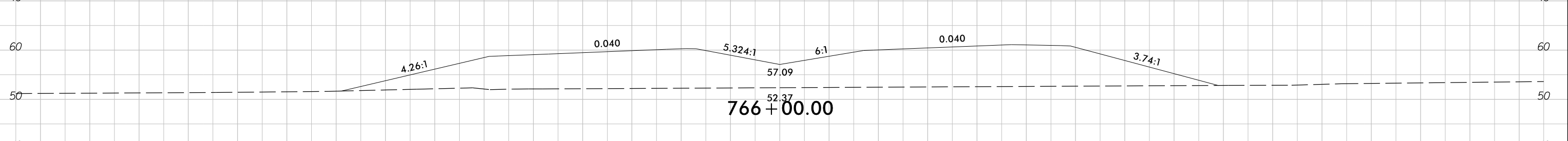
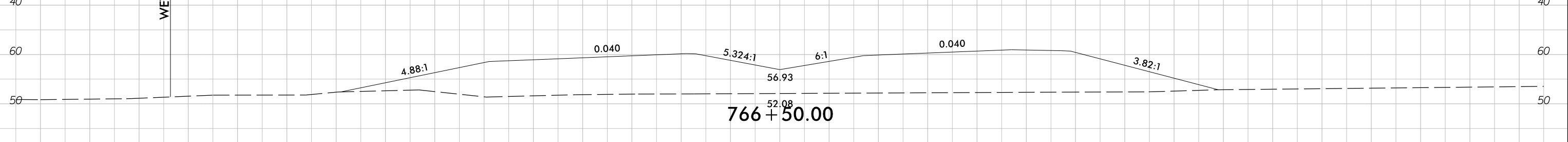
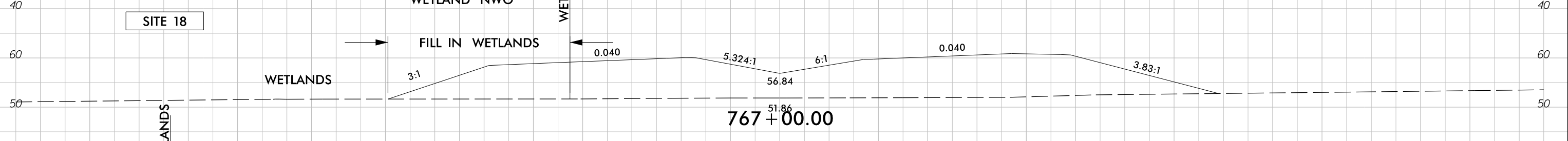
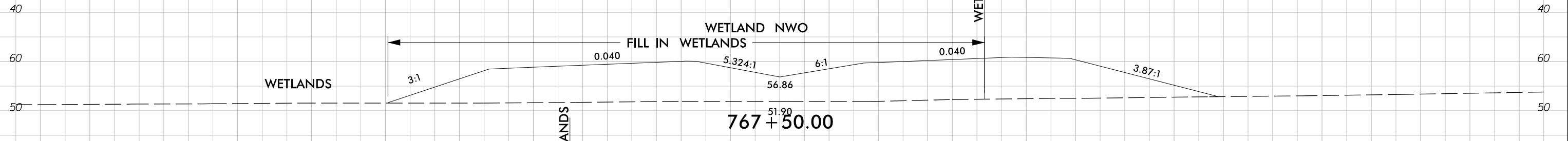
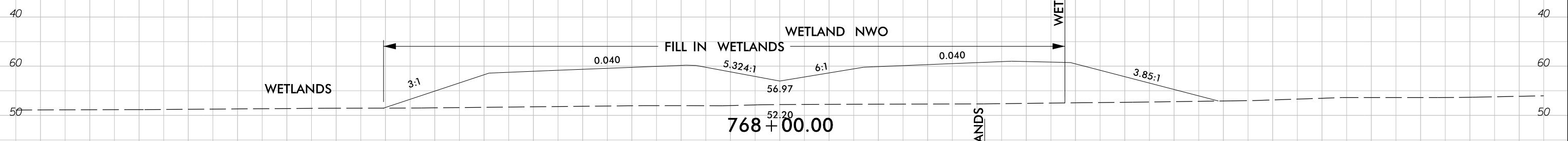
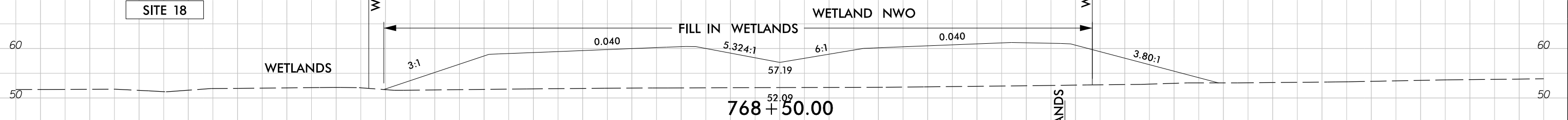


PROJ. REFERENCE NO.	SHEET NO.
R-3300B	X-93

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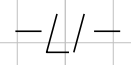
SITE 18

PERMIT DRAWING SHEET 59 OF 124

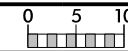


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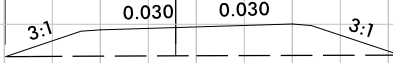
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R-3300B

SHEET NO.
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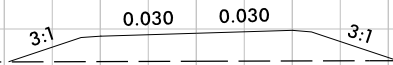
SITE 19

WETLAND NWP
FILL IN WETLANDS



48 + 50.00

PERMIT DRAWING
SHEET 60 OF 124

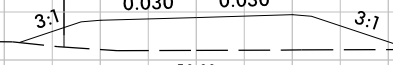


48 + 00.00

WETLANDS

WETLAND NWO

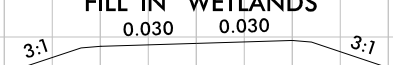
FILL IN WETLANDS



47 + 50.00

SITE 18

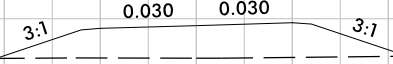
WETLAND NWO
FILL IN WETLANDS



47 + 00.00

WETLAND NWO

FILL IN WETLANDS



46 + 50.00

SITE 18

-SR7-

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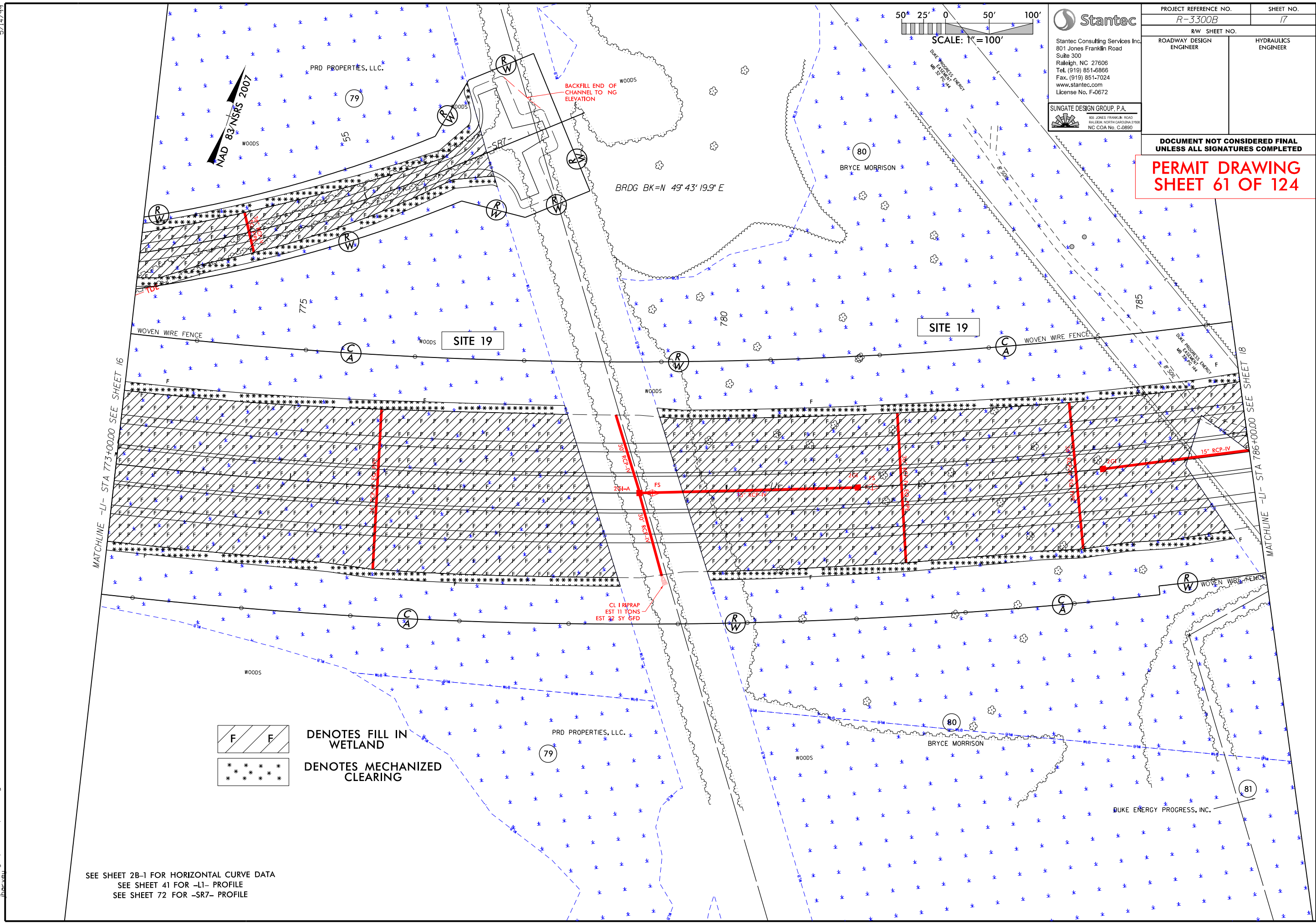
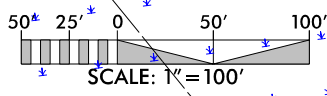
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NC COA No. C-0890

PROJECT REFERENCE NO. R-3300B	SHEET NO. 17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

**PERMIT DRAWING
SHEET 61 OF 124**



 DENOTES FILL IN WETLAND
 DENOTES MECHANIZED CLEARING

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
 SEE SHEET 41 FOR -L1- PROFILE
 SEE SHEET 72 FOR -SR7- PROFILE

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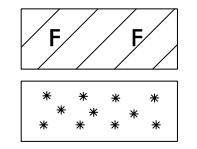
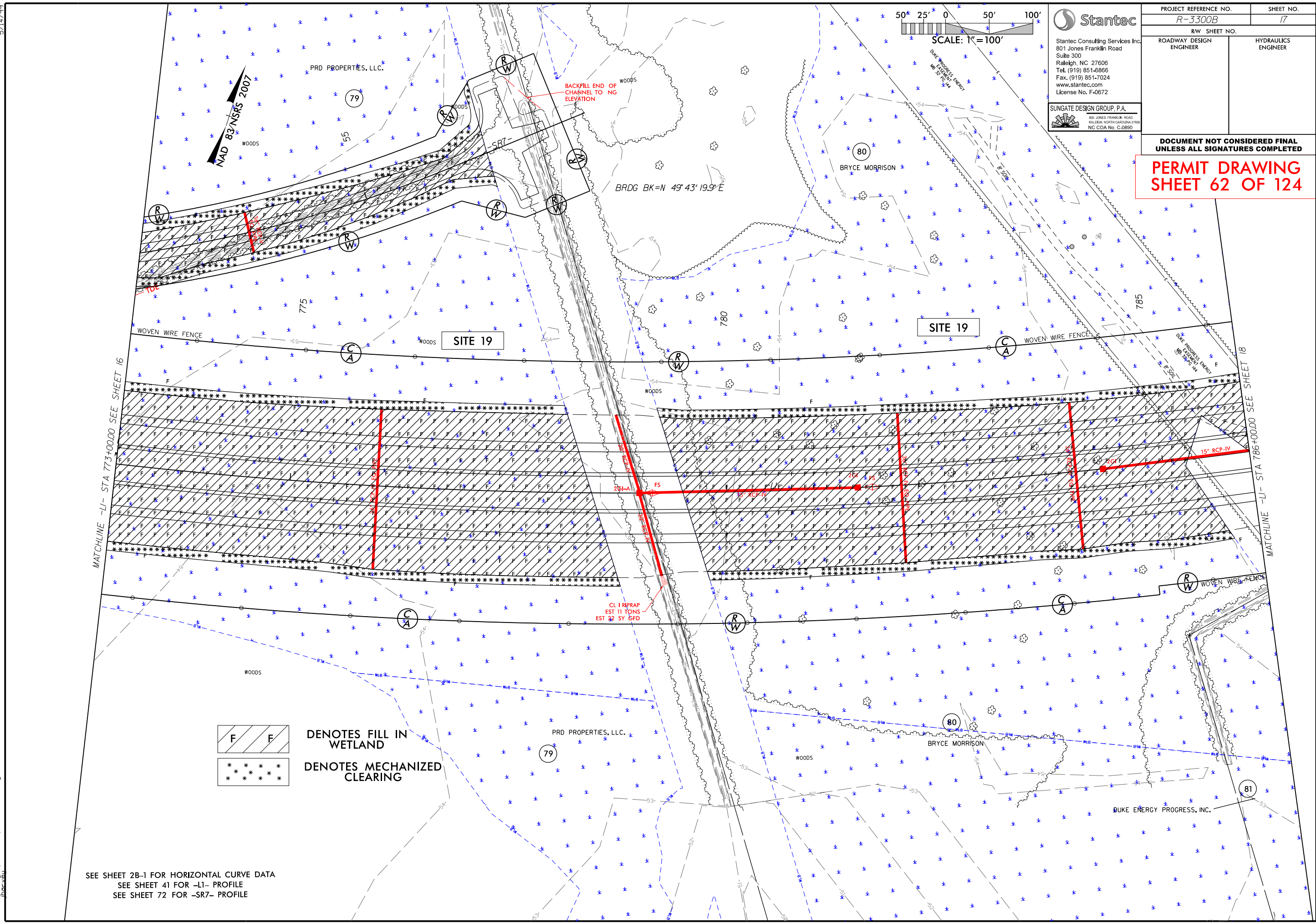
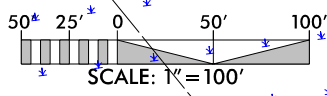
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PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. 17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

**PERMIT DRAWING
SHEET 62 OF 124**



SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEET 41 FOR -L1- PROFILE
SEE SHEET 72 FOR -SR7- PROFILE

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wet.psh
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6/23/16



PROJ. REFERENCE NO.
R-3300B

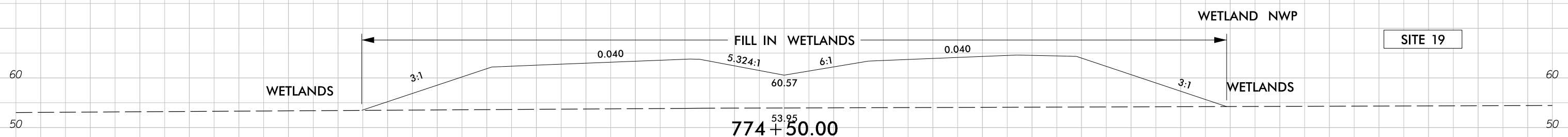
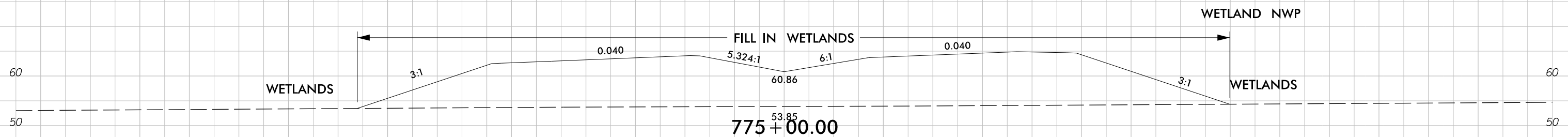
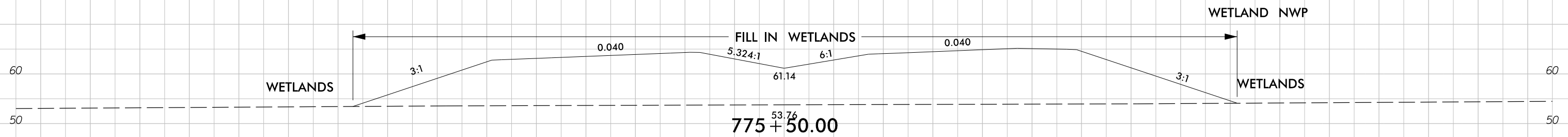
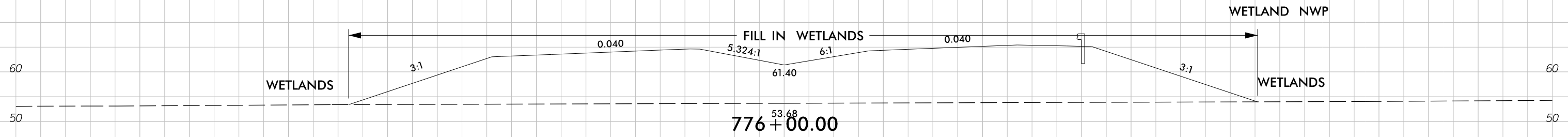
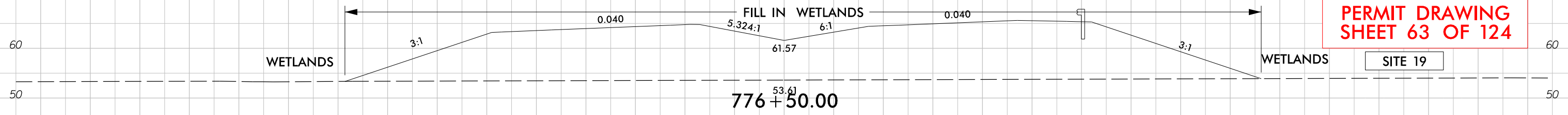
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WETLAND NWP

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**PERMIT DRAWING
SHEET 63 OF 124**

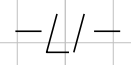
SITE 19



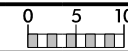
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jbarvey



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PROJ. REFERENCE NO.
R-3300B

SHEET NO.
X-427

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WETLAND NWP
FILL IN WETLANDS

SITE 19

PERMIT DRAWING
SHEET 64 OF 124

56 + 00.00

WETLAND NWP
FILL IN WETLANDS

55 + 50.00

WETLAND NWP
FILL IN WETLANDS

55 + 00.00

WETLAND NWP
FILL IN WETLANDS

54 + 50.00

WETLAND NWP
FILL IN WETLANDS

SITE 19

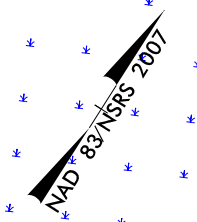
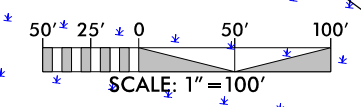
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-SR7-

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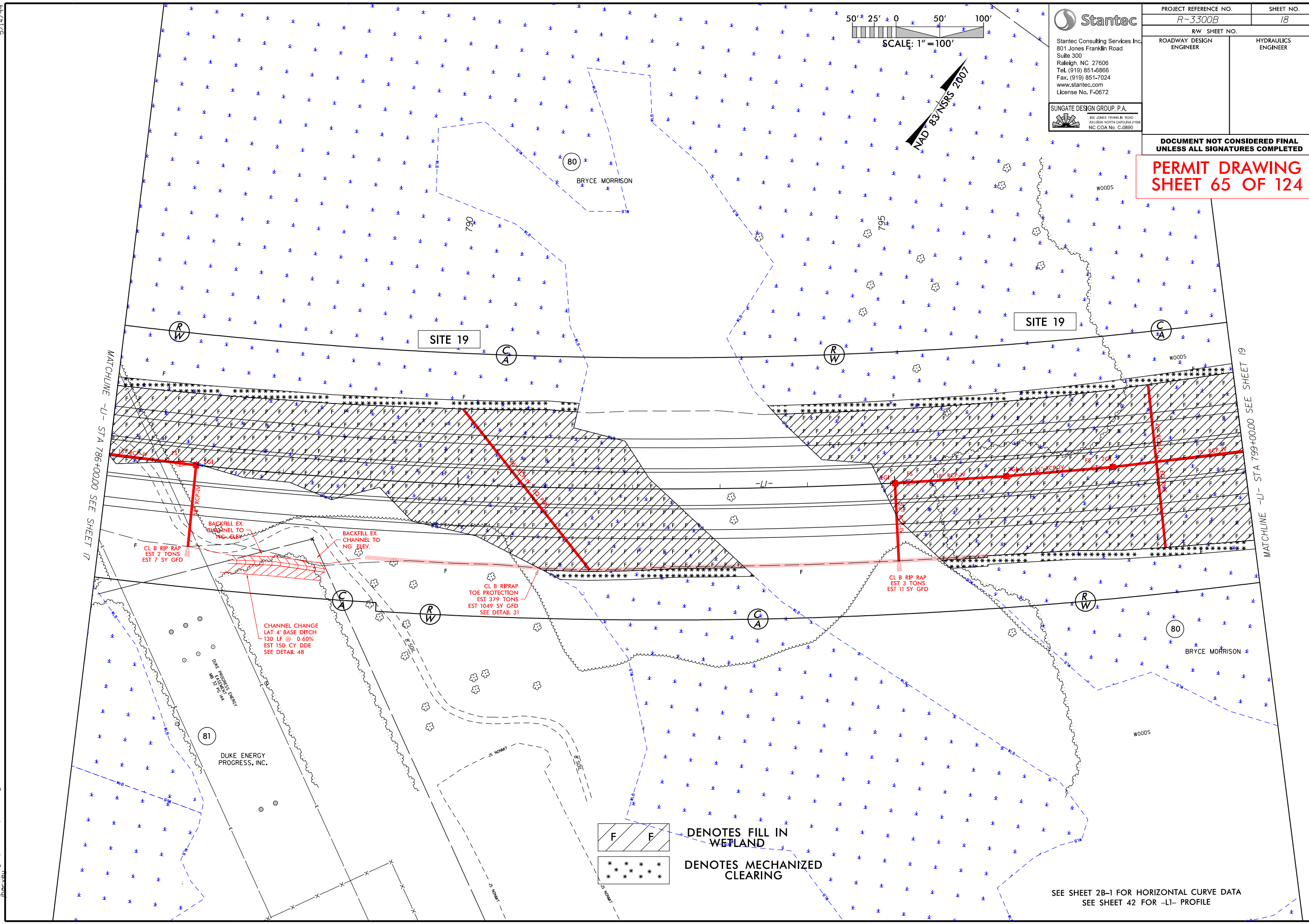
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NC COA No. C-0890

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>18</i>
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

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SHEET 65 OF 124**



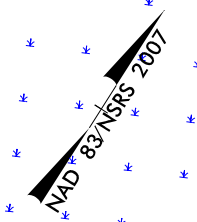
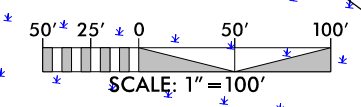
MATCHLINE -L- STA 786+00.00 SEE SHEET 17

MATCHLINE -L- STA 799+00.00 SEE SHEET 19

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

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEET 42 FOR -L- PROFILE

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R3300B (1) - pr.m. - wet.psh_18a.com.dgn



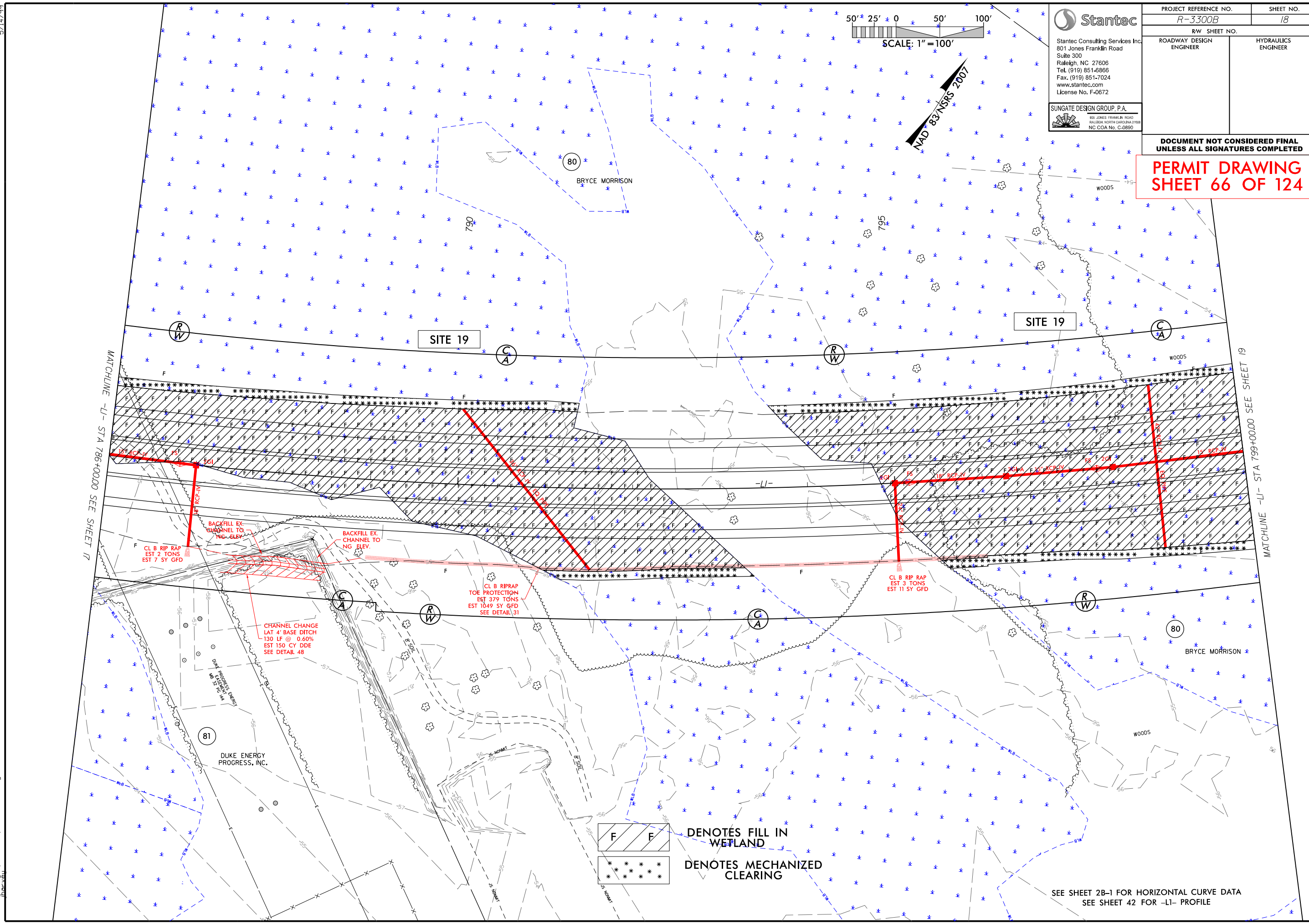
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PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>18</i>
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

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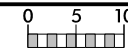
**PERMIT DRAWING
SHEET 66 OF 124**



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

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEET 42 FOR -LI- PROFILE

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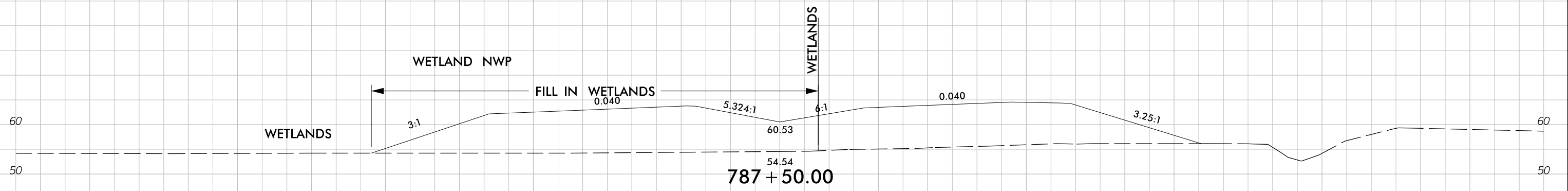
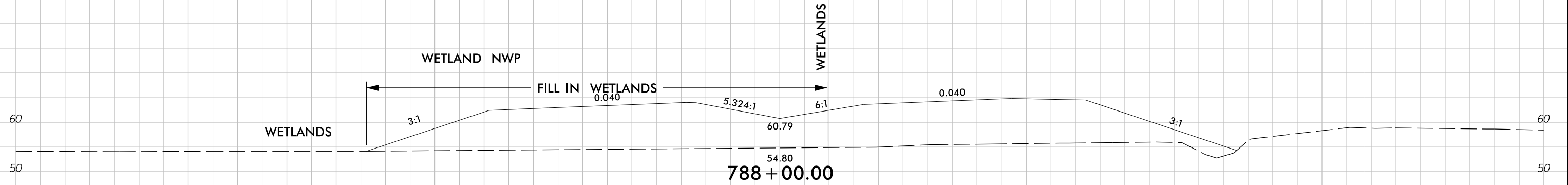
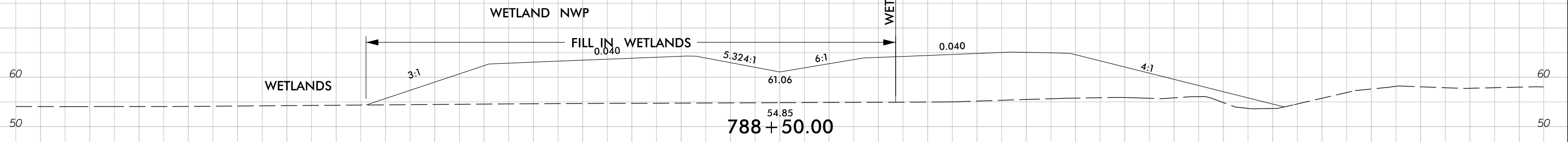
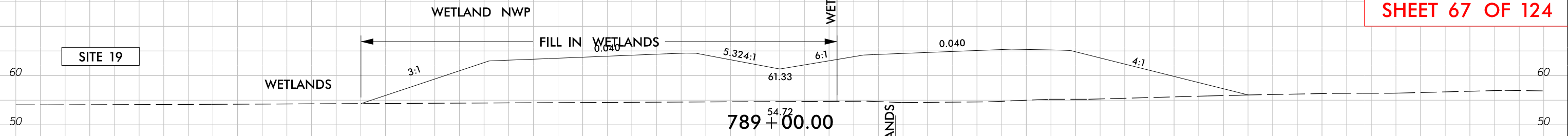


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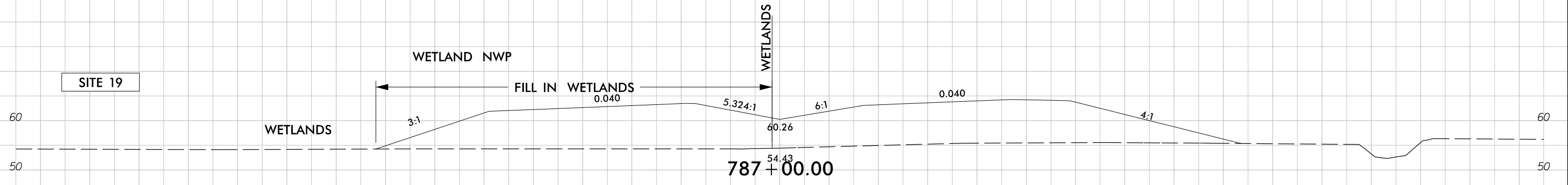
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PERMIT DRAWING SHEET 67 OF 124

SITE 19



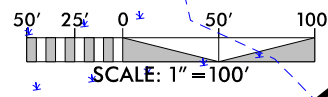
SITE 19



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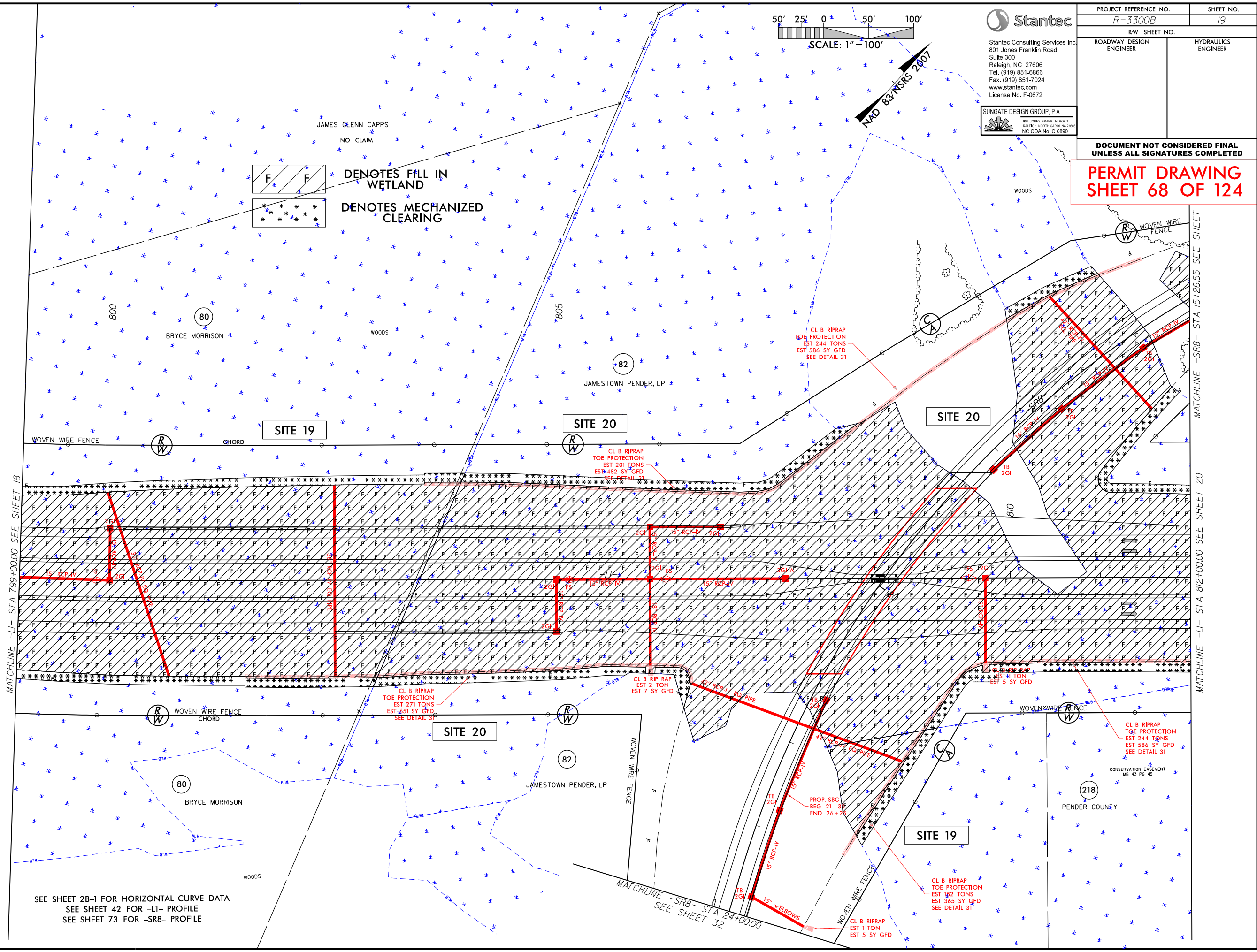


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PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. 19
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

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SHEET 68 OF 124**



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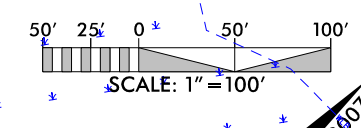
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SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEET 42 FOR -LI- PROFILE
SEE SHEET 73 FOR -SRB- PROFILE

MATCHLINE -SRB- STA 24+00.00
SEE SHEET 32

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019

5/14/99



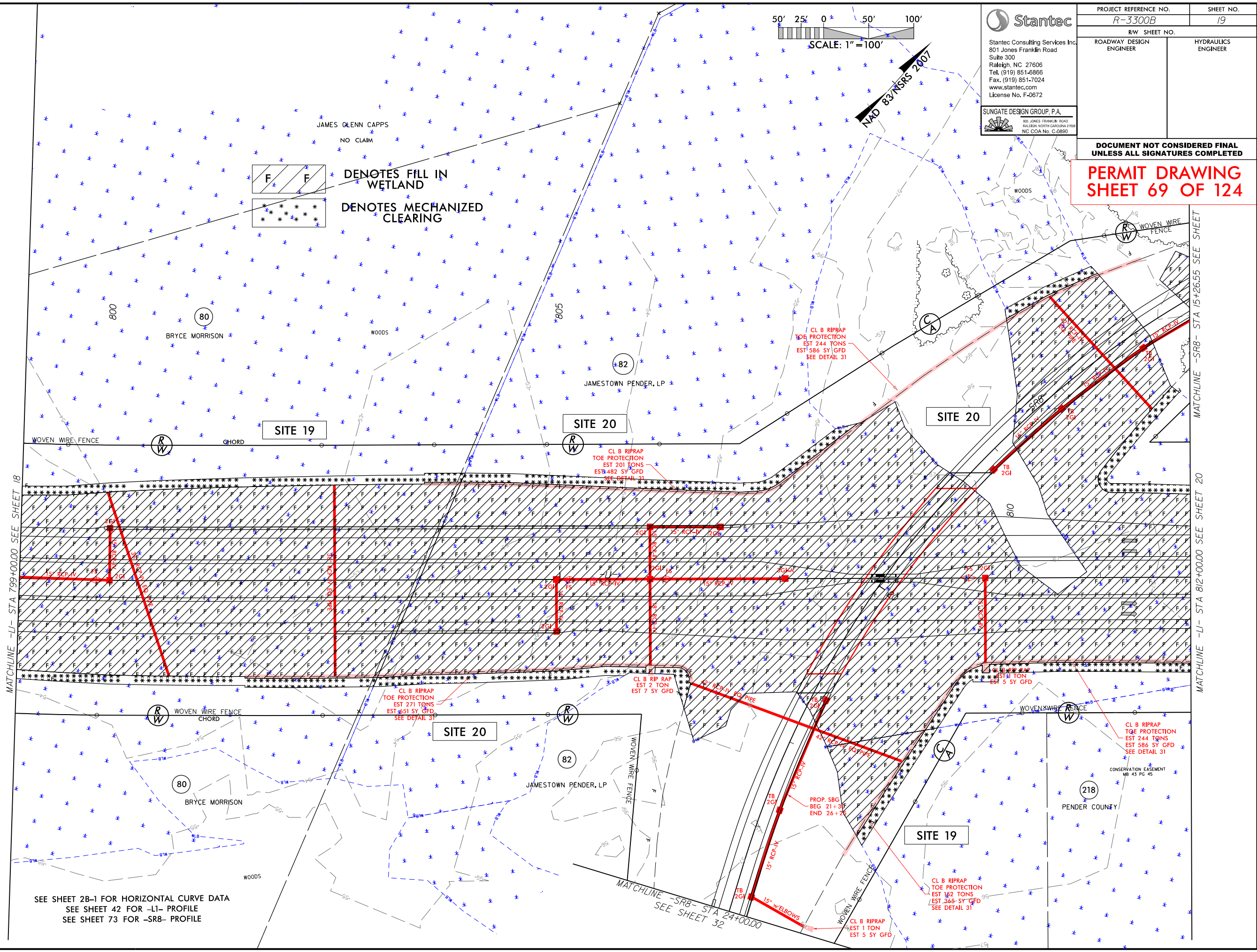
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PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. 19
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

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**PERMIT DRAWING
SHEET 69 OF 124**



MATCHLINE -LI- STA 799+00.00 SEE SHEET 18

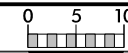
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MATCHLINE -LI- STA 812+00.00 SEE SHEET 20

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
 SEE SHEET 42 FOR -LI- PROFILE
 SEE SHEET 73 FOR -SR8- PROFILE

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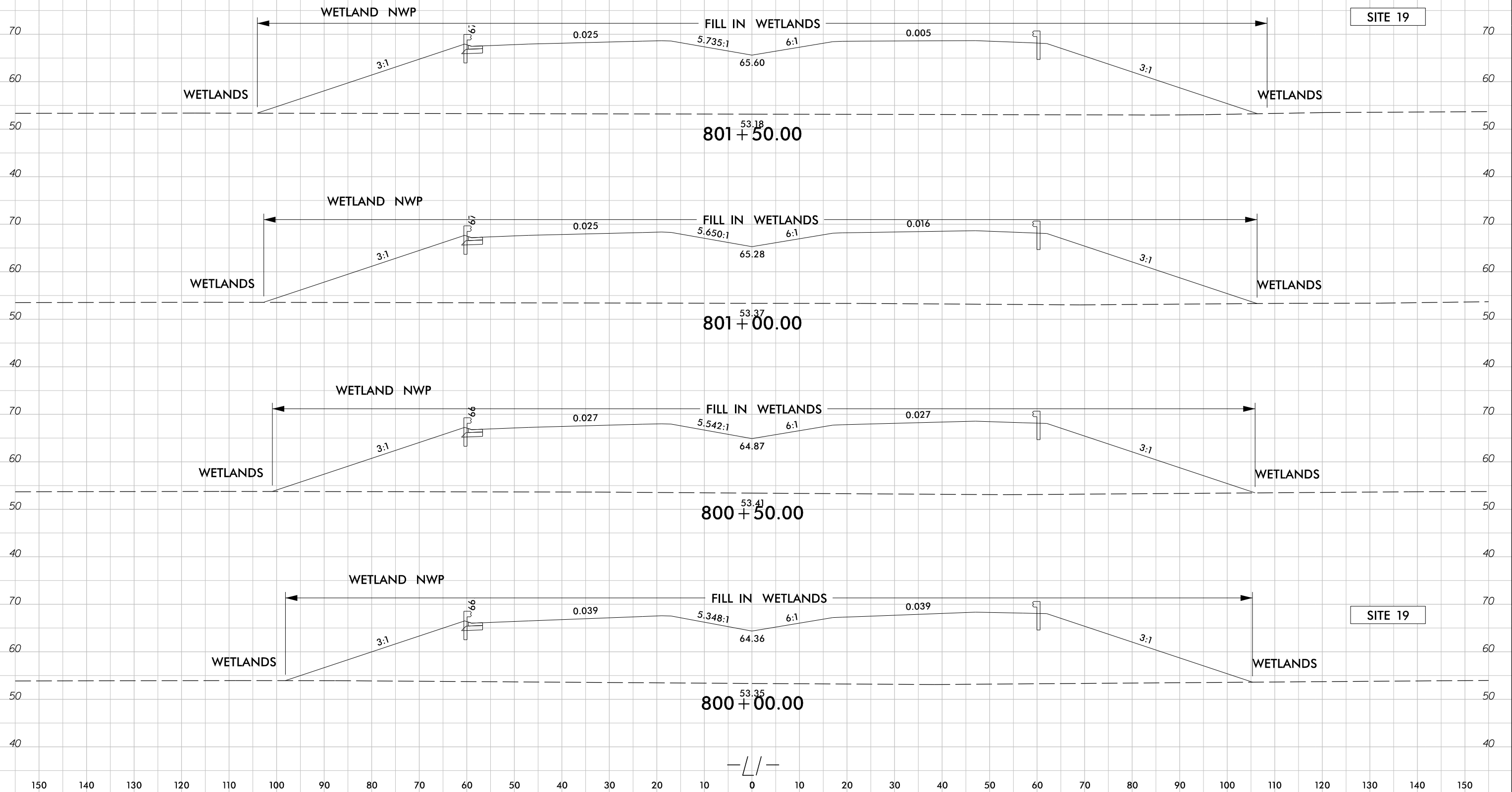
6/23/16



PROJ. REFERENCE NO.	SHEET NO.
R-3300B	X-106

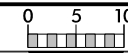
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**PERMIT DRAWING
SHEET 70 OF 124**



12/3/2019
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jbarney

6/23/16

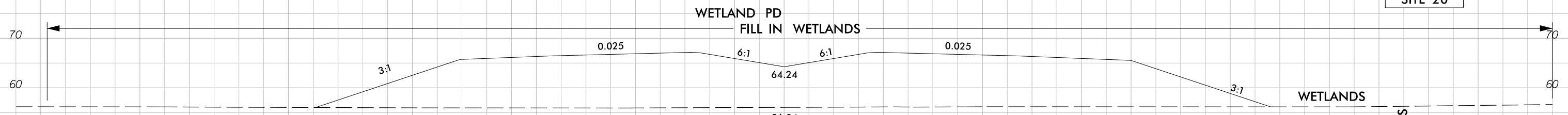


PROJ. REFERENCE NO.	SHEET NO.
R-3300B	X-109

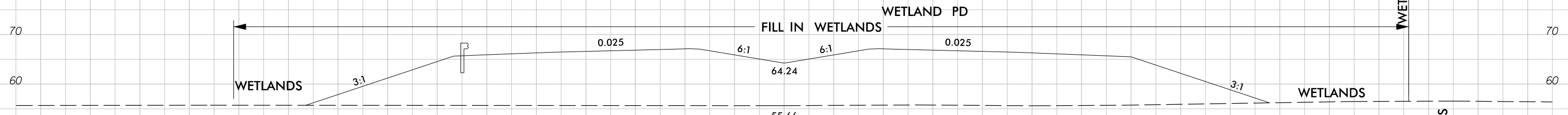
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**PERMIT DRAWING
SHEET 71 OF 124**

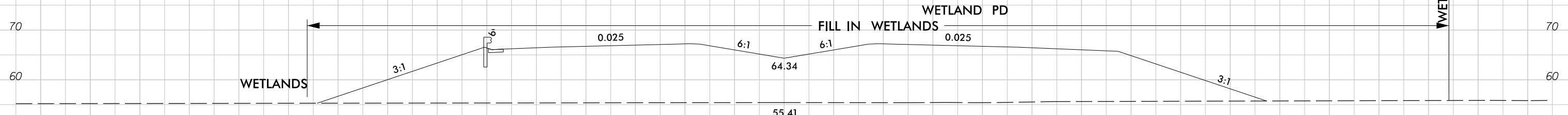
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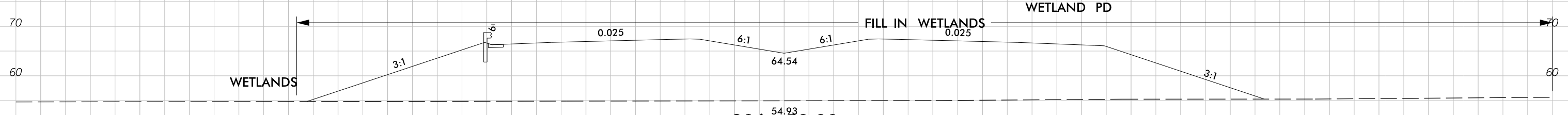
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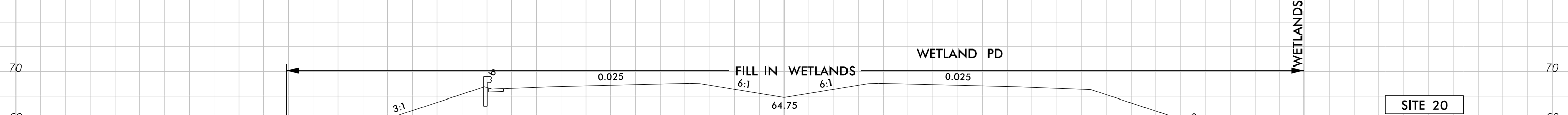
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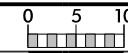
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12/3/2019
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jharvey

6/23/16



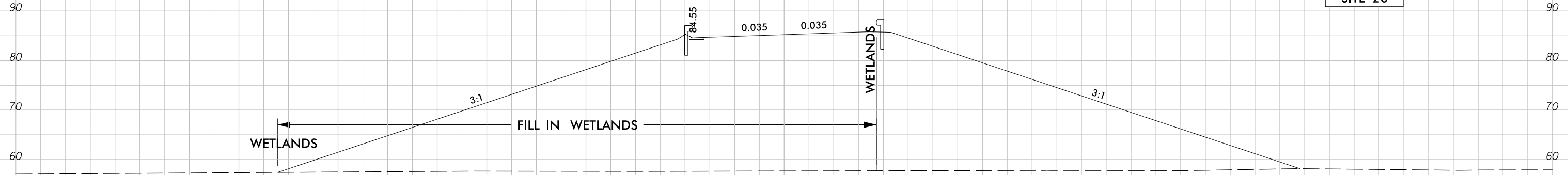
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R-3300B

SHEET NO.
X-431

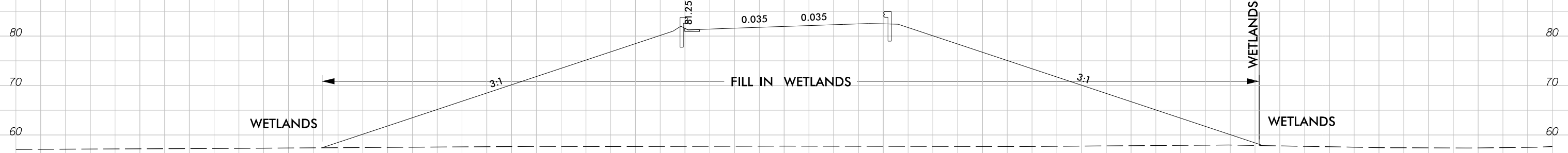
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SHEET 72 OF 124**

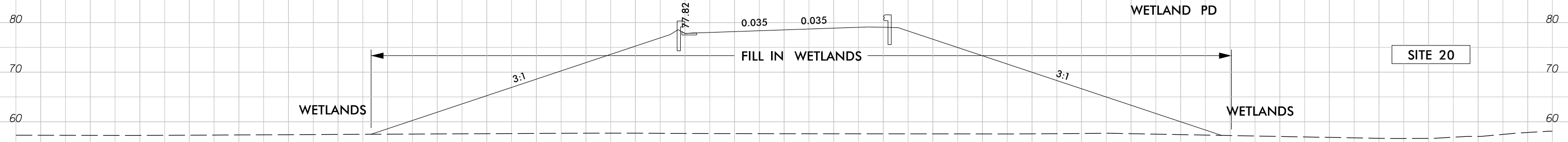
SITE 20



17 + 50.00



17 + 00.00



16 + 50.00

-SR8-

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12/3/2019
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jbarvey

5/14/99

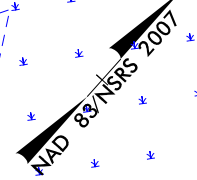
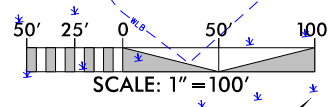
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 800 JONES FRANKLIN ROAD
 RALEIGH, NORTH CAROLINA 27606
 NC COA No. C-0890

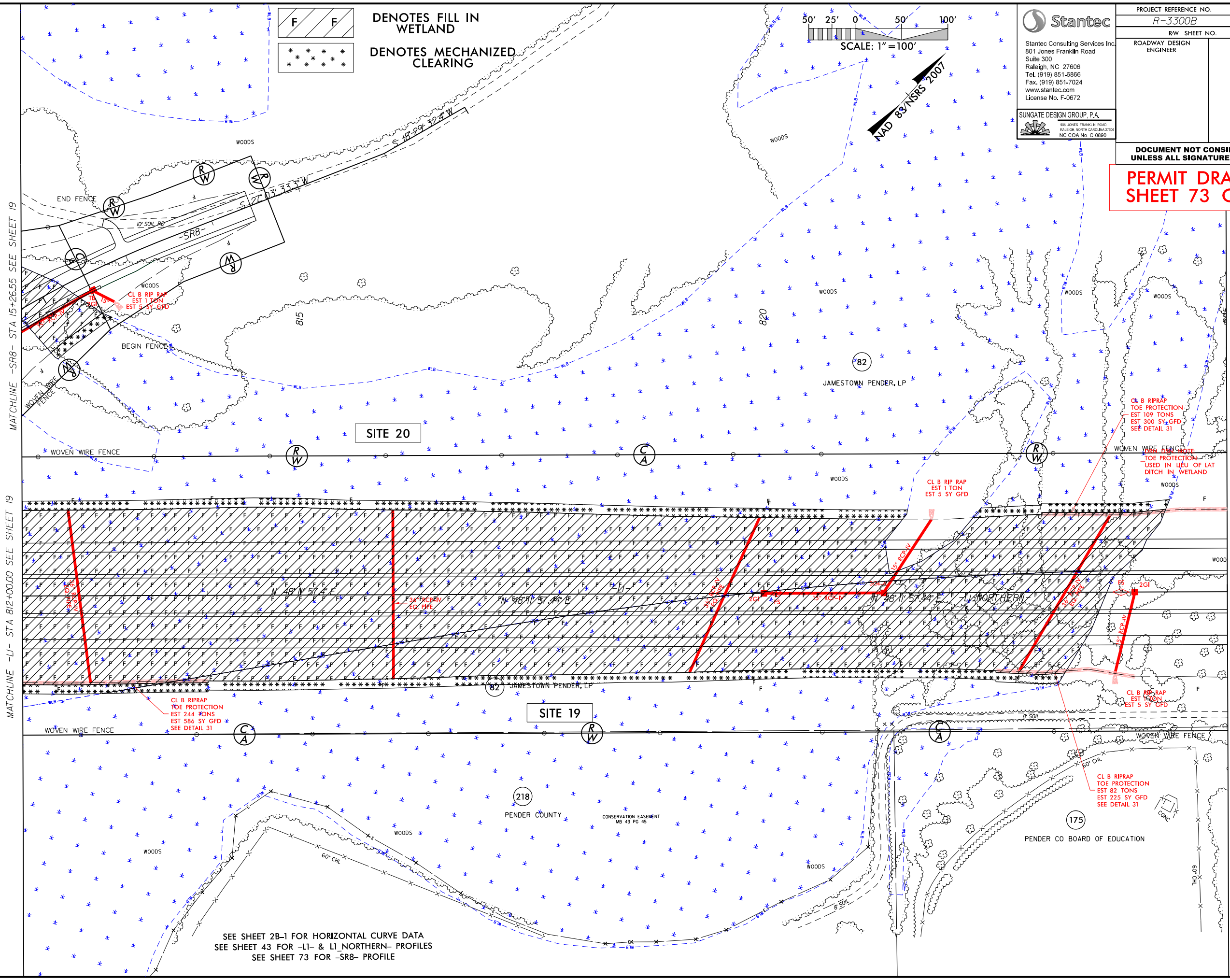
PROJECT REFERENCE NO. R-3300B	SHEET NO. 20
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

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

**PERMIT DRAWING
SHEET 73 OF 124**



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



MATCHLINE -SR8- STA 15+26.55 SEE SHEET 19

MATCHLINE -L1- STA 812+00.00 SEE SHEET 19

MATCHLINE -L1-NORTHERN- STA 825+00.00 SEE SHEET 21

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
 SEE SHEET 43 FOR -L1- & L1 NORTHERN- PROFILES
 SEE SHEET 73 FOR -SR8- PROFILE

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 12/17/08
 12:00

5/14/99

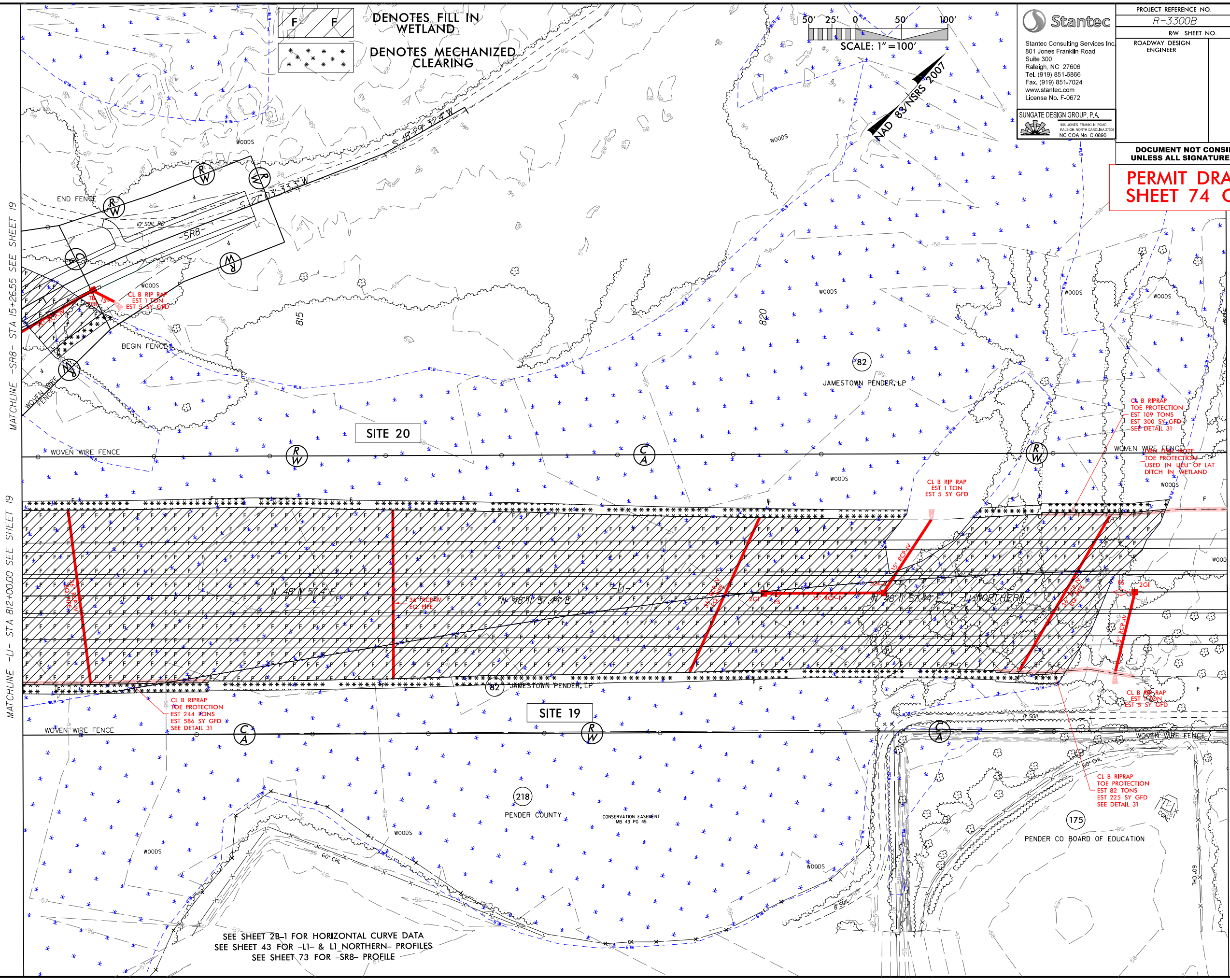
PROJECT REFERENCE NO. R-3300B		SHEET NO. 20
RW SHEET NO.		HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER		

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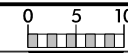
**PERMIT DRAWING
SHEET 74 OF 124**



SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
 SEE SHEET 43 FOR -LI- & LI NORTHERN- PROFILES
 SEE SHEET 73 FOR -SR8- PROFILE

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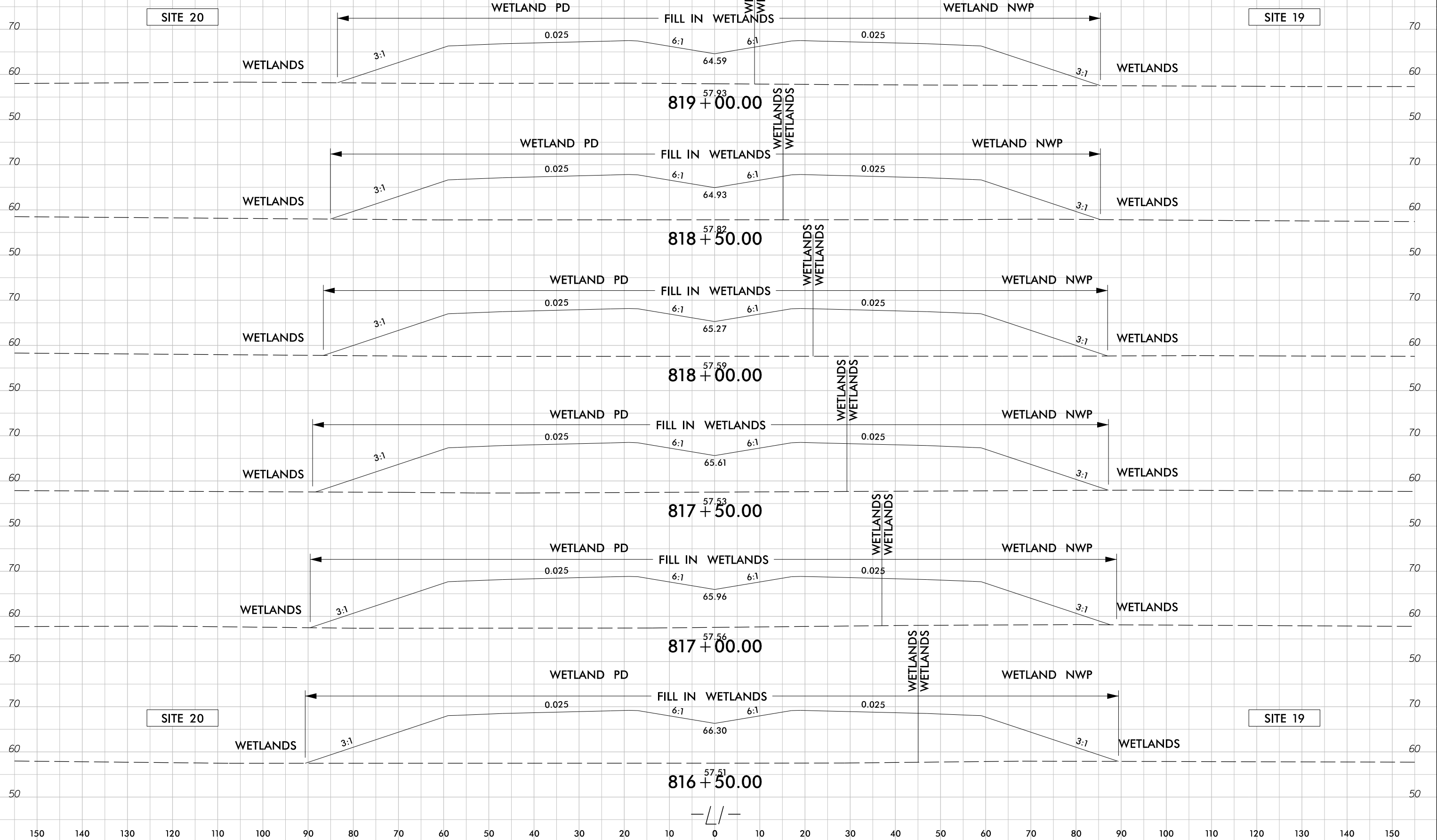
6/23/16



PROJ. REFERENCE NO.	SHEET NO.
R-3300B	X-113

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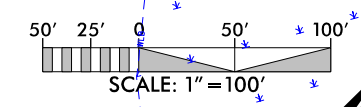
PERMIT DRAWING
SHEET 75 OF 124



12/3/2019
R3300B_Hyd_prm_wet_psh_20b_xpl.dgn
jbarvey

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

5/14/99
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MAD 83 NSRS 2007

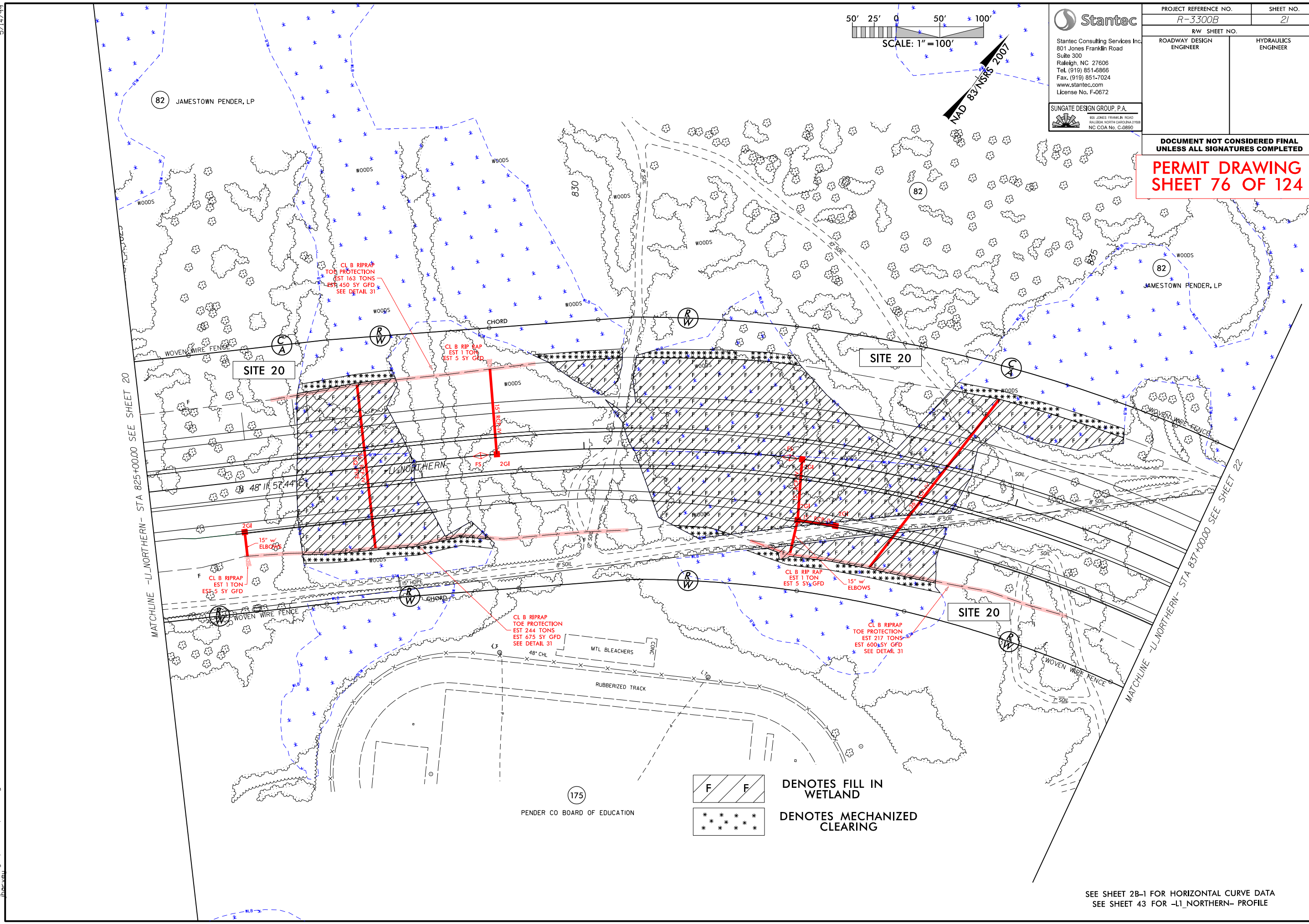
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PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>21</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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**PERMIT DRAWING
SHEET 76 OF 124**



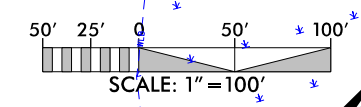
 DENOTES FILL IN WETLAND

 DENOTES MECHANIZED CLEARING

175
PENDER CO BOARD OF EDUCATION

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEET 43 FOR -L1 NORTHERN- PROFILE

5/14/99
 R3300B (1) - pr.m. - wet - psh. 21 s. com.dgn



NAD 83 NSRS 2007

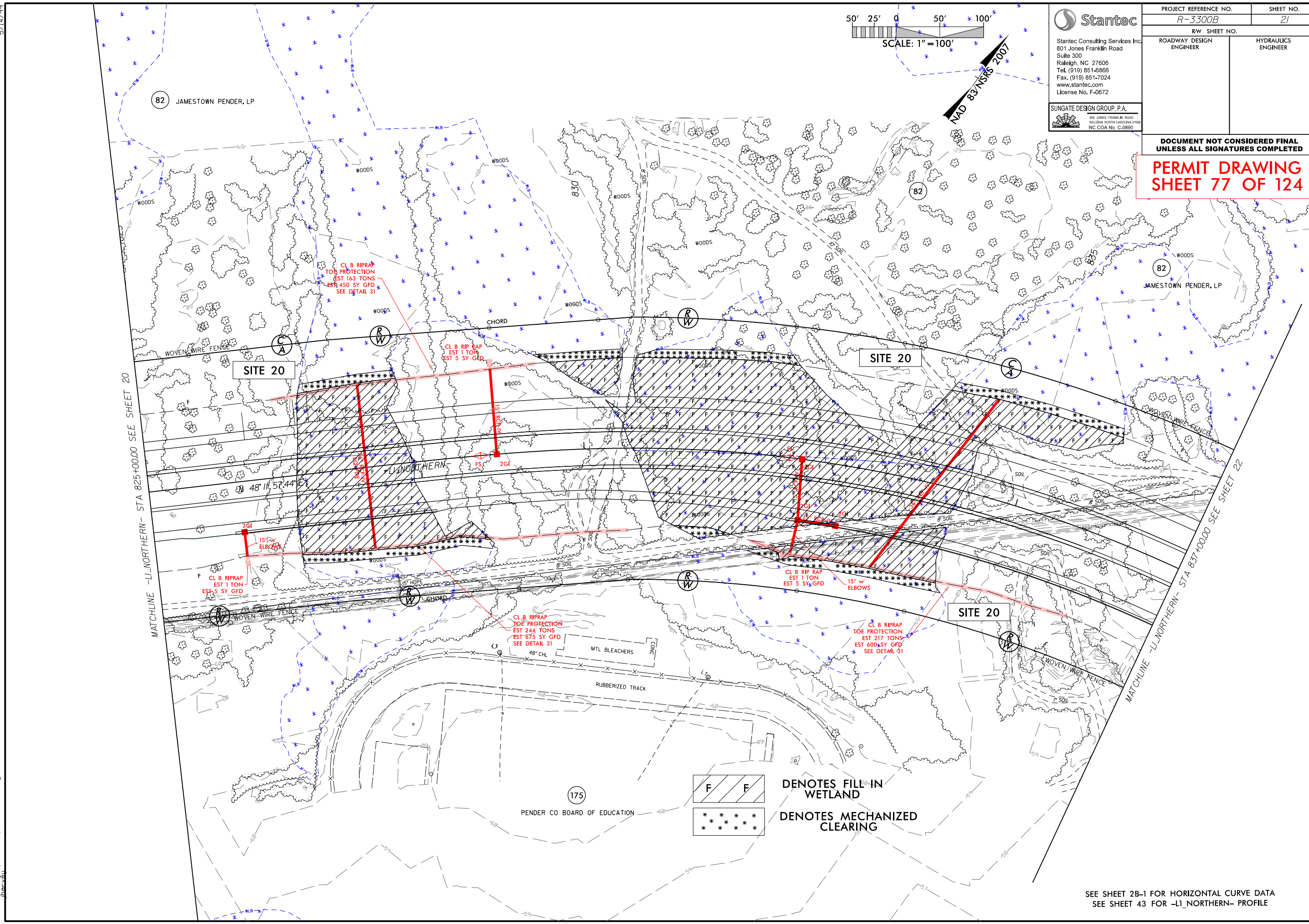
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 NC COA No. C-0880

PROJECT REFERENCE NO. R-3300B	SHEET NO. 21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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 UNLESS ALL SIGNATURES COMPLETED**

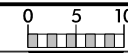
**PERMIT DRAWING
 SHEET 77 OF 124**



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

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
 SEE SHEET 43 FOR -L1 NORTHERN- PROFILE

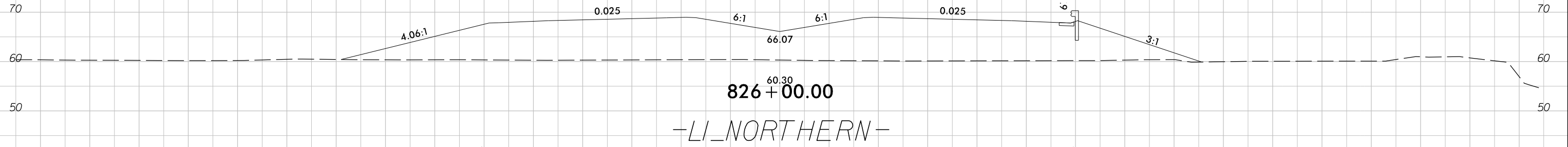
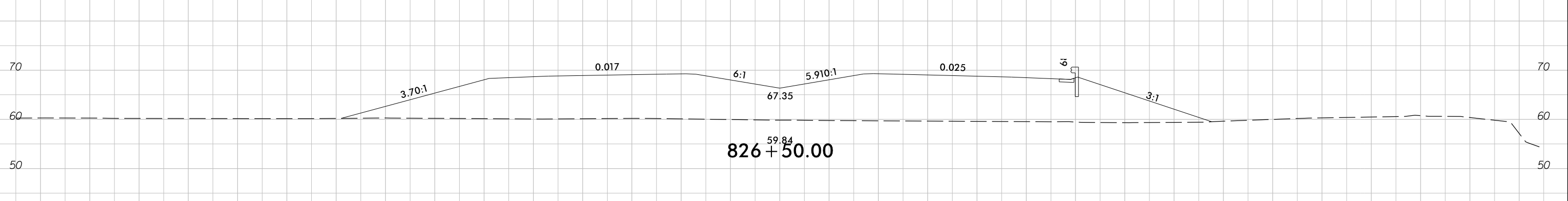
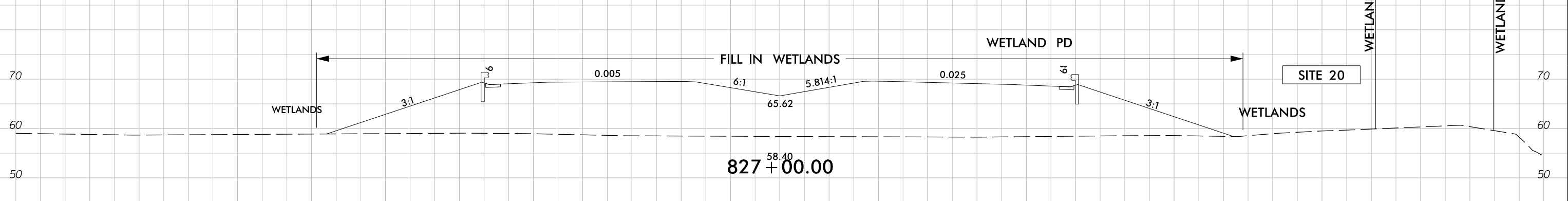
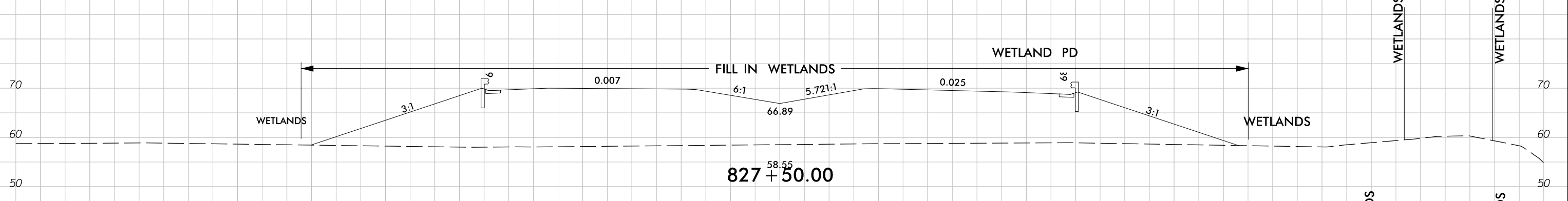
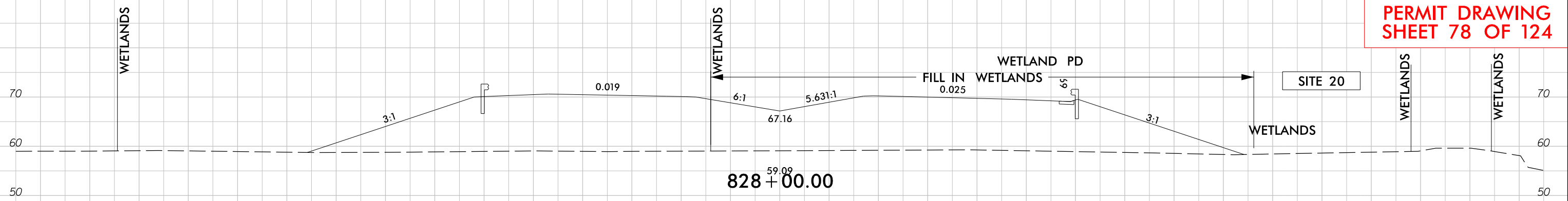
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PROJ. REFERENCE NO.	SHEET NO.
R-3300B	X-117

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**PERMIT DRAWING
SHEET 78 OF 124**



-LI_NORTHERN-

12/3/2019
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jbarney

6/23/16

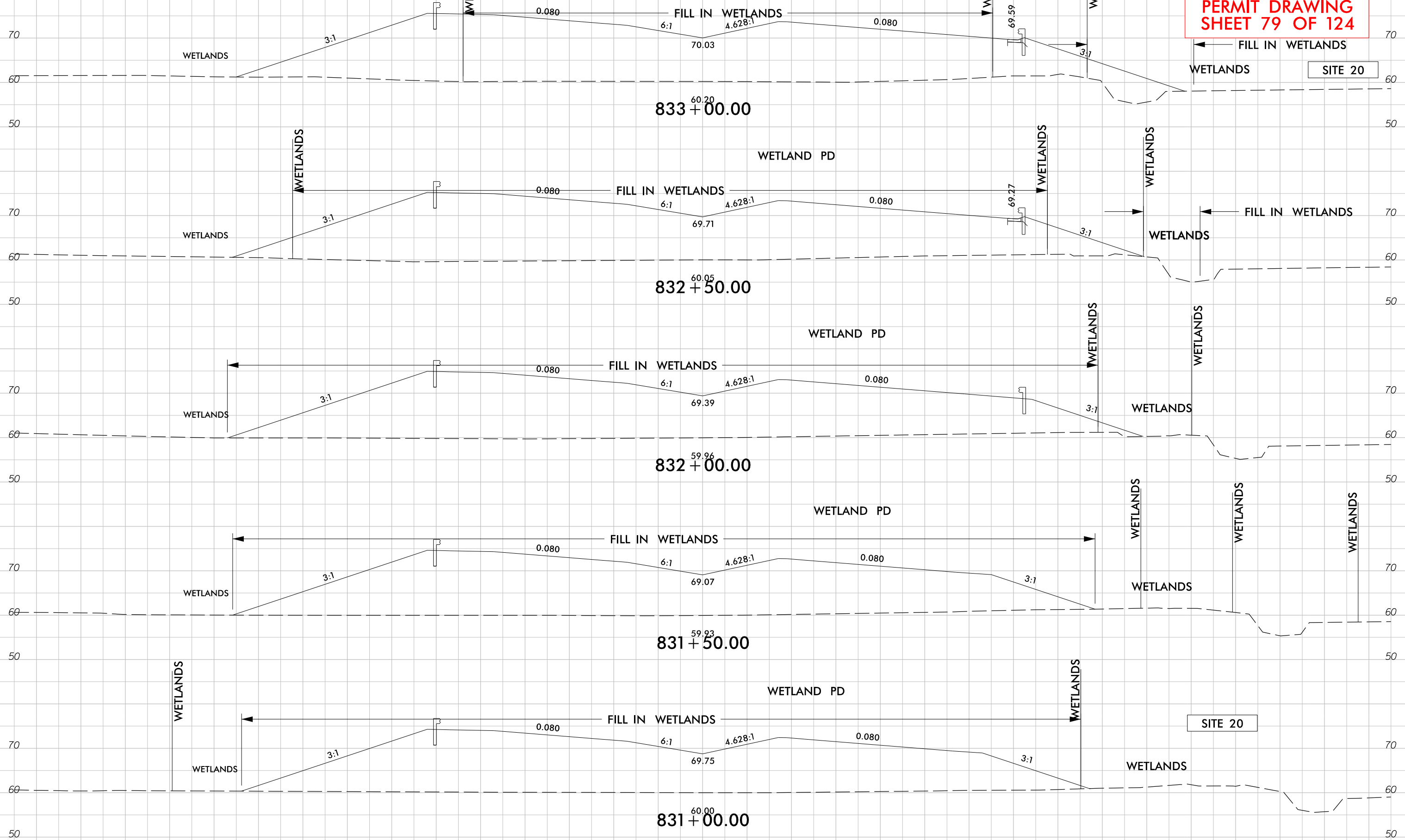


PROJ. REFERENCE NO.
R-3300B

SHEET NO.
X-119

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**PERMIT DRAWING
SHEET 79 OF 124**



-LI_NORTHERN-

12/3/2019
R3300B_Hyd_prm_wet_psh_21c_xpl.dgn
jbarney

5/14/99

NAD 83/SRS 2007

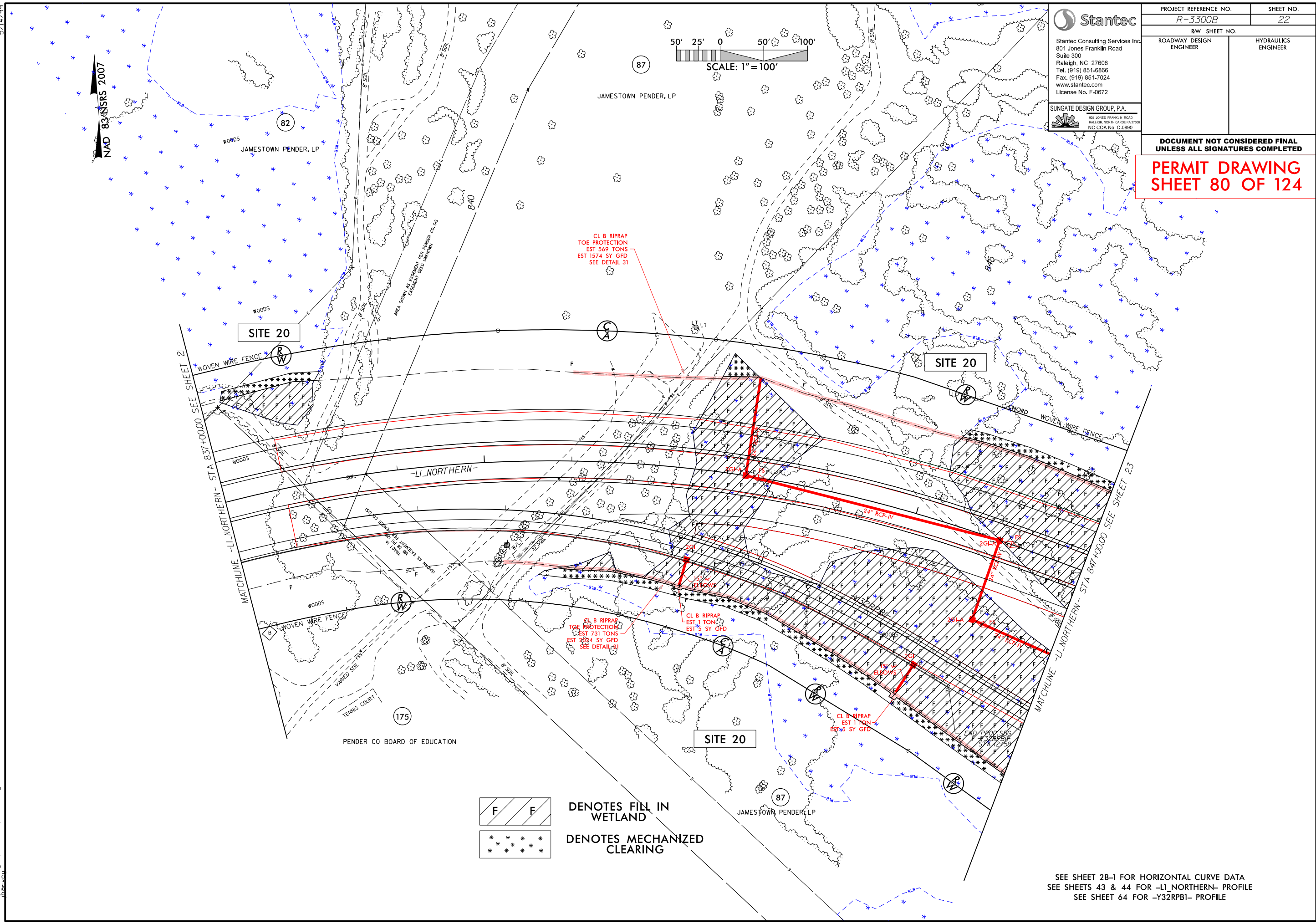
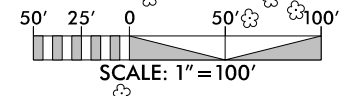
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 800 JONES FRANKLIN ROAD
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 NC COA No. C-0890

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. 22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 80 OF 124



CL B RIPRAP
 TOE PROTECTION
 EST 549 TONS
 EST 1574 SY GFD
 SEE DETAIL 31

CL B RIPRAP
 TOE PROTECTION
 EST 731 TONS
 EST 2024 SY GFD
 SEE DETAIL 31

CL B RIPRAP
 EST 1 TON
 EST 5 SY GFD

CL B RIPRAP
 EST 1 TON
 EST 5 SY GFD



DENOTES FILL IN WETLAND



DENOTES MECHANIZED CLEARING

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
 SEE SHEETS 43 & 44 FOR -L1_NORTHERN- PROFILE
 SEE SHEET 64 FOR -Y32RPB1- PROFILE

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5/14/99



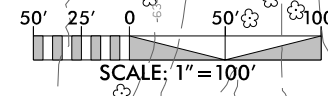
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800 JONES FRANKLIN ROAD
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NC COA No. C-0890

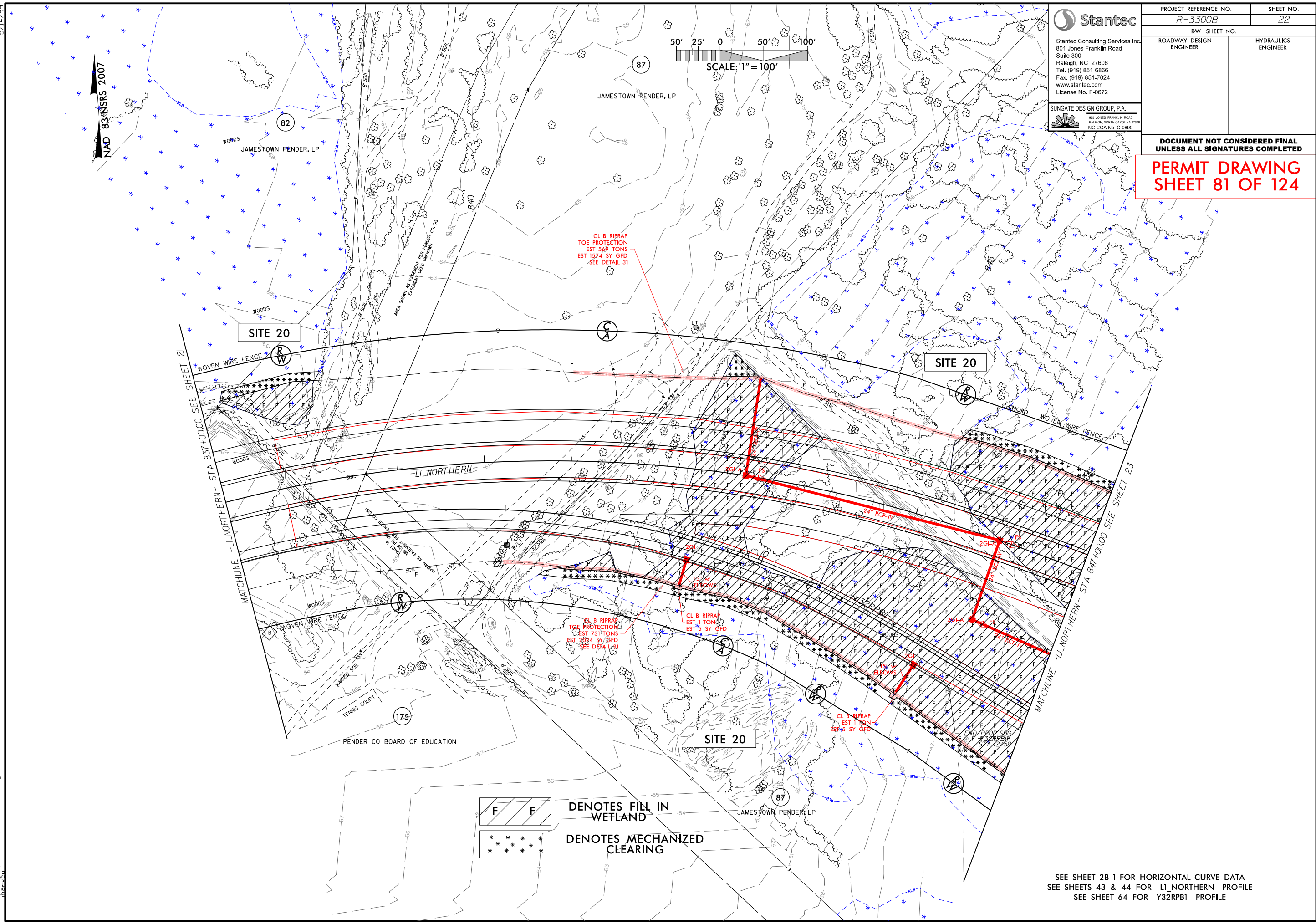
PROJECT REFERENCE NO. R-3300B	SHEET NO. 22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
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**PERMIT DRAWING
SHEET 81 OF 124**



NAD 83/SRS 2007

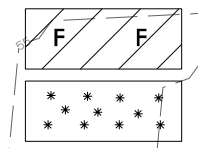


CL B RIPRAP
TOE PROTECTION
EST 549 TONS
EST 1574 SY GFD
SEE DETAIL 31

CL B RIPRAP
TOE PROTECTION
EST 731 TONS
EST 2024 SY GFD
SEE DETAIL 31

CL B RIPRAP
EST 1 TON
EST 5 SY GFD

CL B RIPRAP
EST 1 TON
EST 5 SY GFD



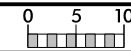
DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
SEE SHEETS 43 & 44 FOR -L1_NORTHERN- PROFILE
SEE SHEET 64 FOR -Y32RPB1- PROFILE

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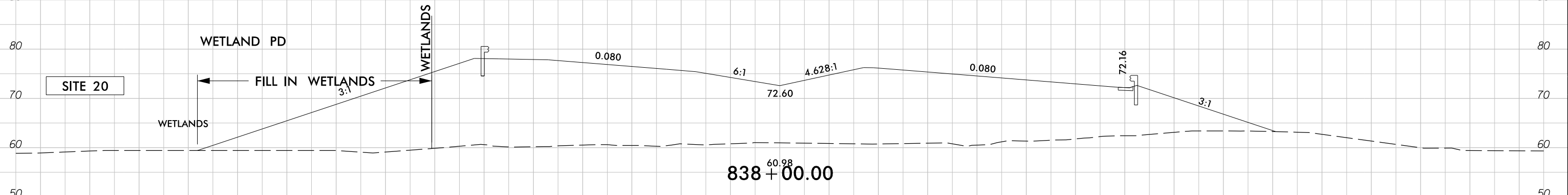
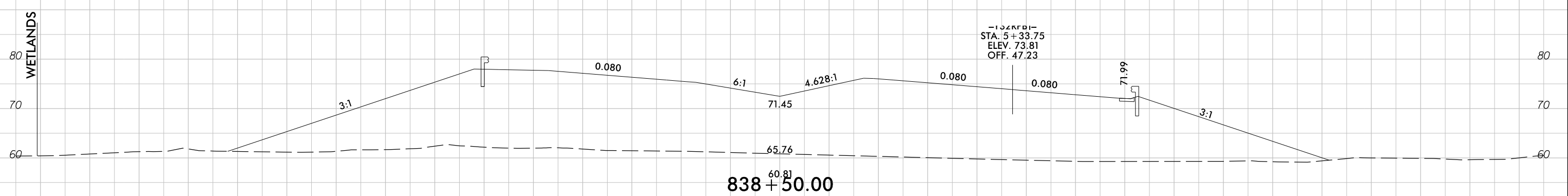
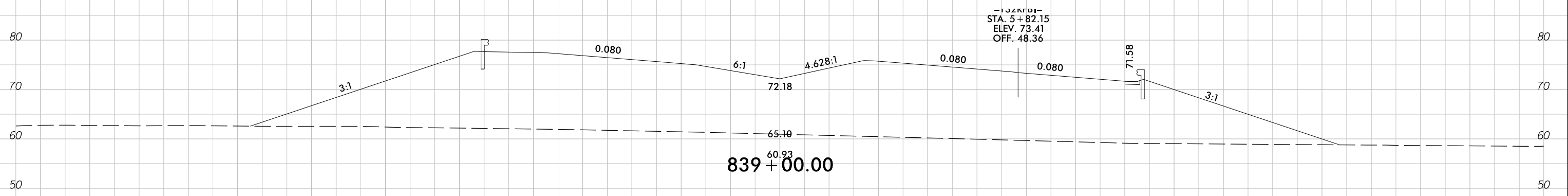
6/23/16



PROJ. REFERENCE NO.	SHEET NO.
R-3300B	X-122

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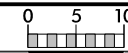
**PERMIT DRAWING
SHEET 82 OF 124**



-LI_NORTHERN-

12/3/2019
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jbarvey

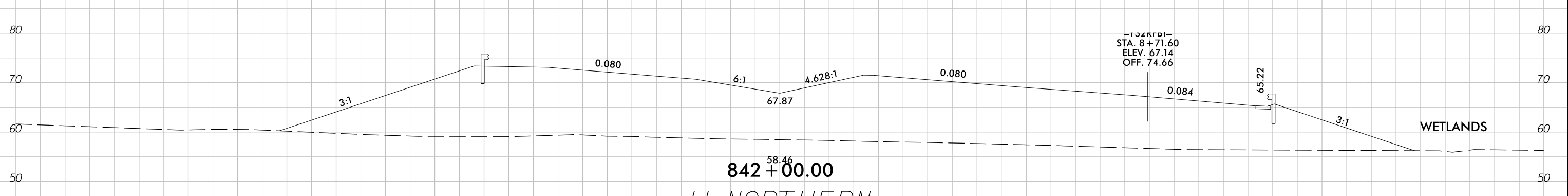
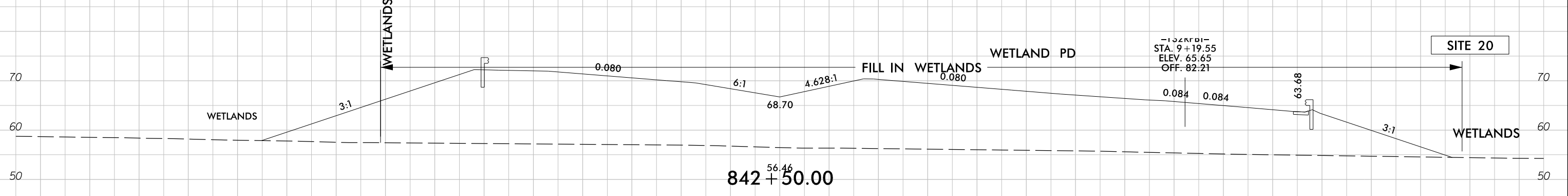
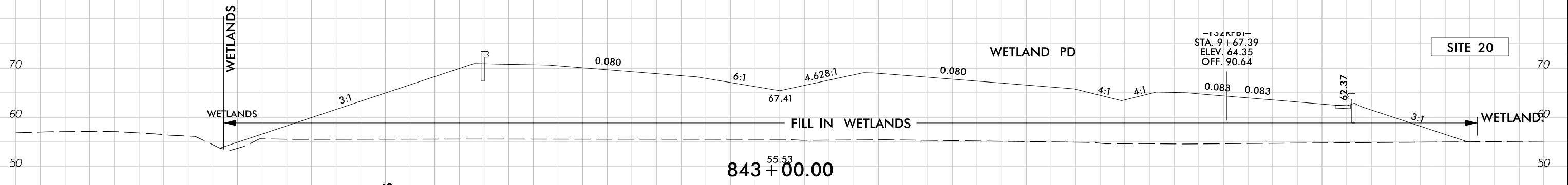
6/23/16



PROJ. REFERENCE NO.	SHEET NO.
R-3300B	X-124

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**PERMIT DRAWING
SHEET 83 OF 124**



-LI_NORTHERN-

12/3/2019
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jbarvey

6/23/16

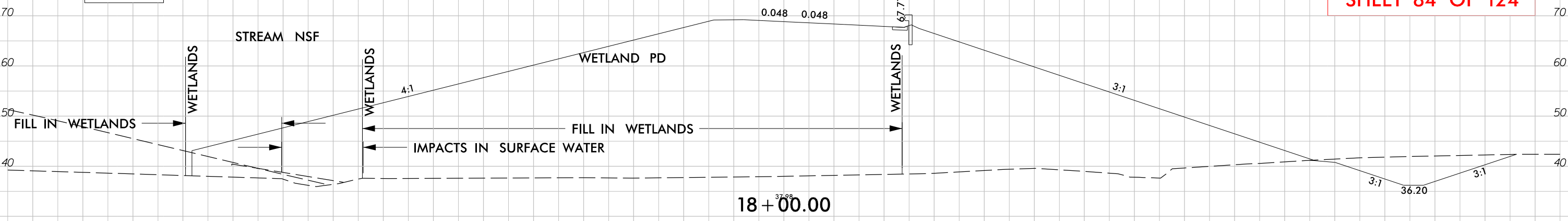


PROJ. REFERENCE NO.	SHEET NO.
R-3300B	X-352

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SITE 20

PERMIT DRAWING
SHEET 84 OF 124

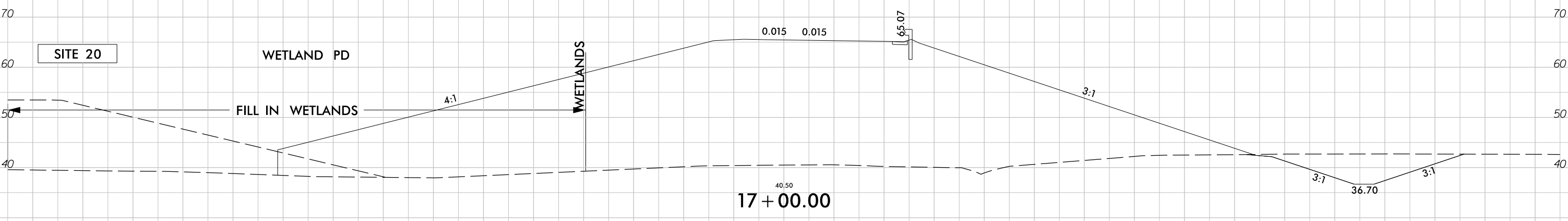


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17+50.00

SITE 20



17+00.00

-Y32RPBI-

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12/3/2019
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jbarvey

5/14/99

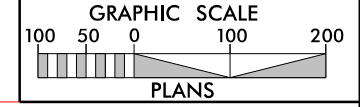


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955 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27609
NC COA No. C-0890

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>23</i>
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

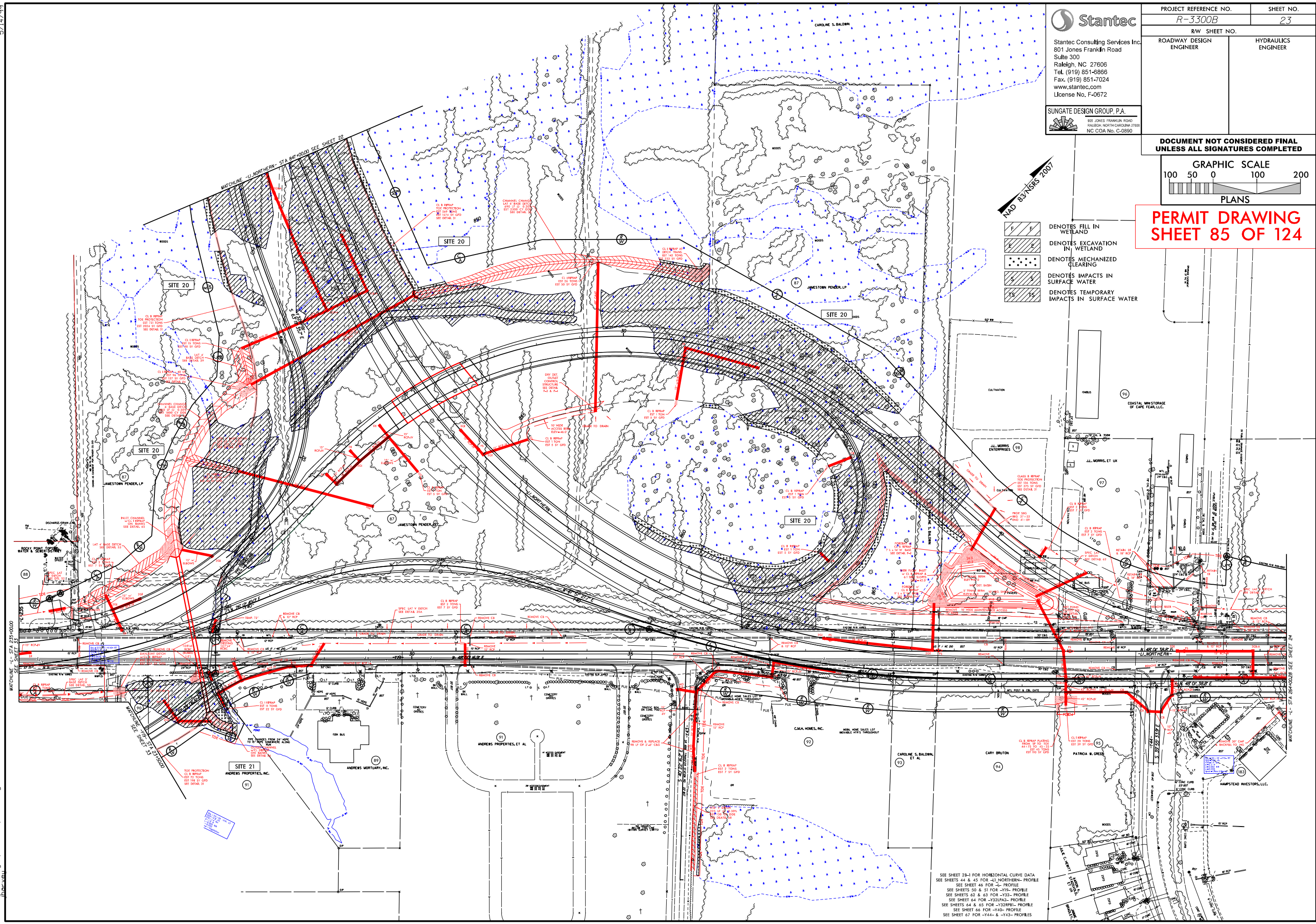
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



**PERMIT DRAWING
SHEET 85 OF 124**



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



SEE SHEET 20-1 FOR HORIZONTAL CURVE DATA
 SEE SHEETS 44 & 45 FOR -L1 NORTHERN- PROFILE
 SEE SHEET 46 FOR -L- PROFILE
 SEE SHEETS 50 & 51 FOR -Y10- PROFILE
 SEE SHEETS 62 & 63 FOR -Y32- PROFILE
 SEE SHEET 64 FOR -Y32PA2- PROFILE
 SEE SHEETS 64 & 65 FOR -Y32B1- PROFILE
 SEE SHEET 66 FOR -Y40- PROFILE
 SEE SHEET 67 FOR -Y44- & -Y43- PROFILES

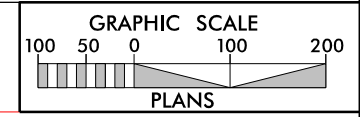
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DATE: 5/14/99

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NC COA No. C-0890

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>23</i>
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

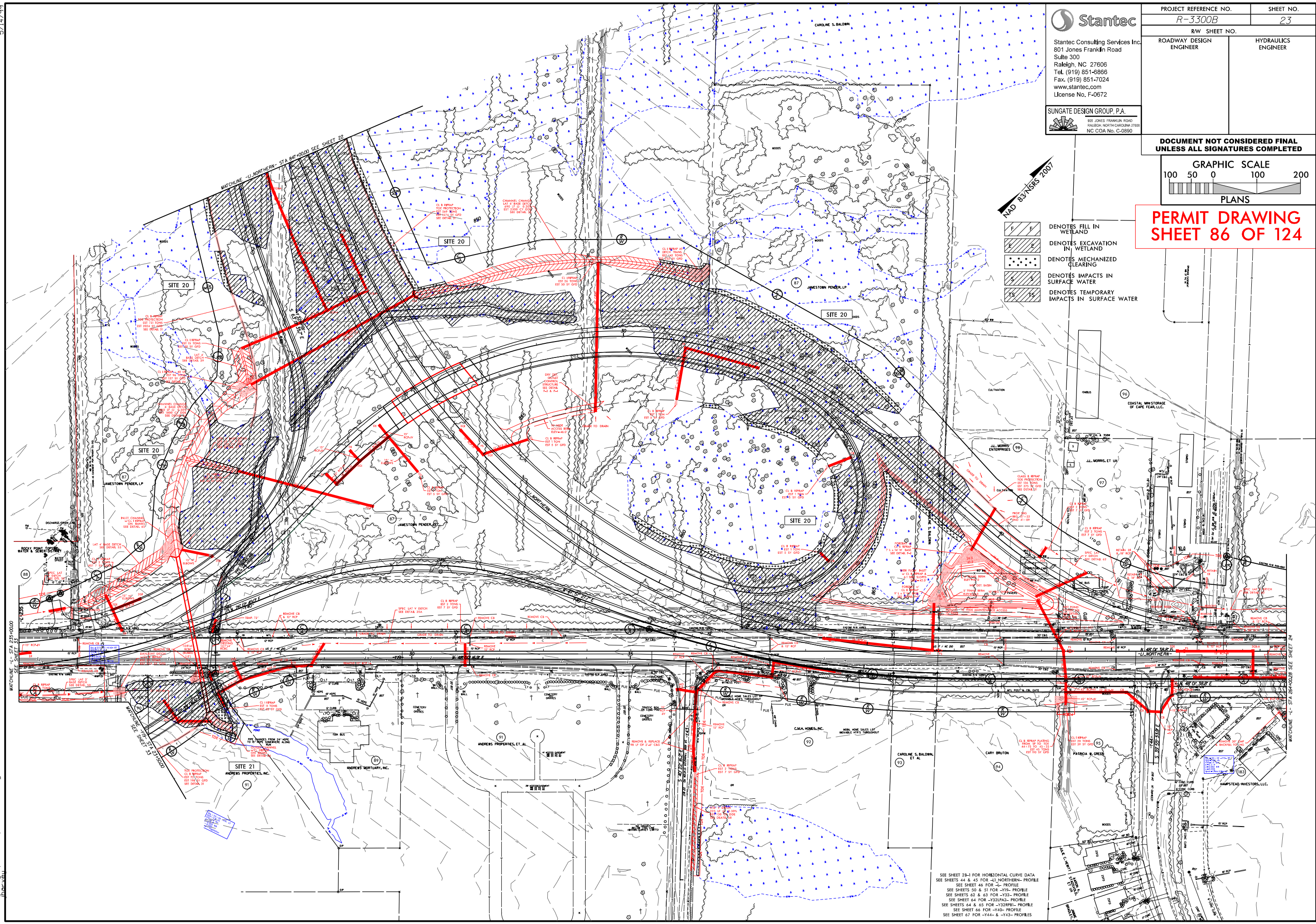
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UNLESS ALL SIGNATURES COMPLETED



**PERMIT DRAWING
SHEET 86 OF 124**



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



SEE SHEET 20-1 FOR HORIZONTAL CURVE DATA
SEE SHEETS 44 & 45 FOR -L1 NORTHERN- PROFILE
SEE SHEET 46 FOR -L- PROFILE
SEE SHEETS 50 & 51 FOR -Y10- PROFILE
SEE SHEETS 62 & 63 FOR -Y32- PROFILE
SEE SHEET 64 FOR -Y32PA2- PROFILE
SEE SHEETS 64 & 65 FOR -Y32BRI1- PROFILE
SEE SHEET 66 FOR -Y40- PROFILE
SEE SHEET 67 FOR -Y44- & -Y43- PROFILES

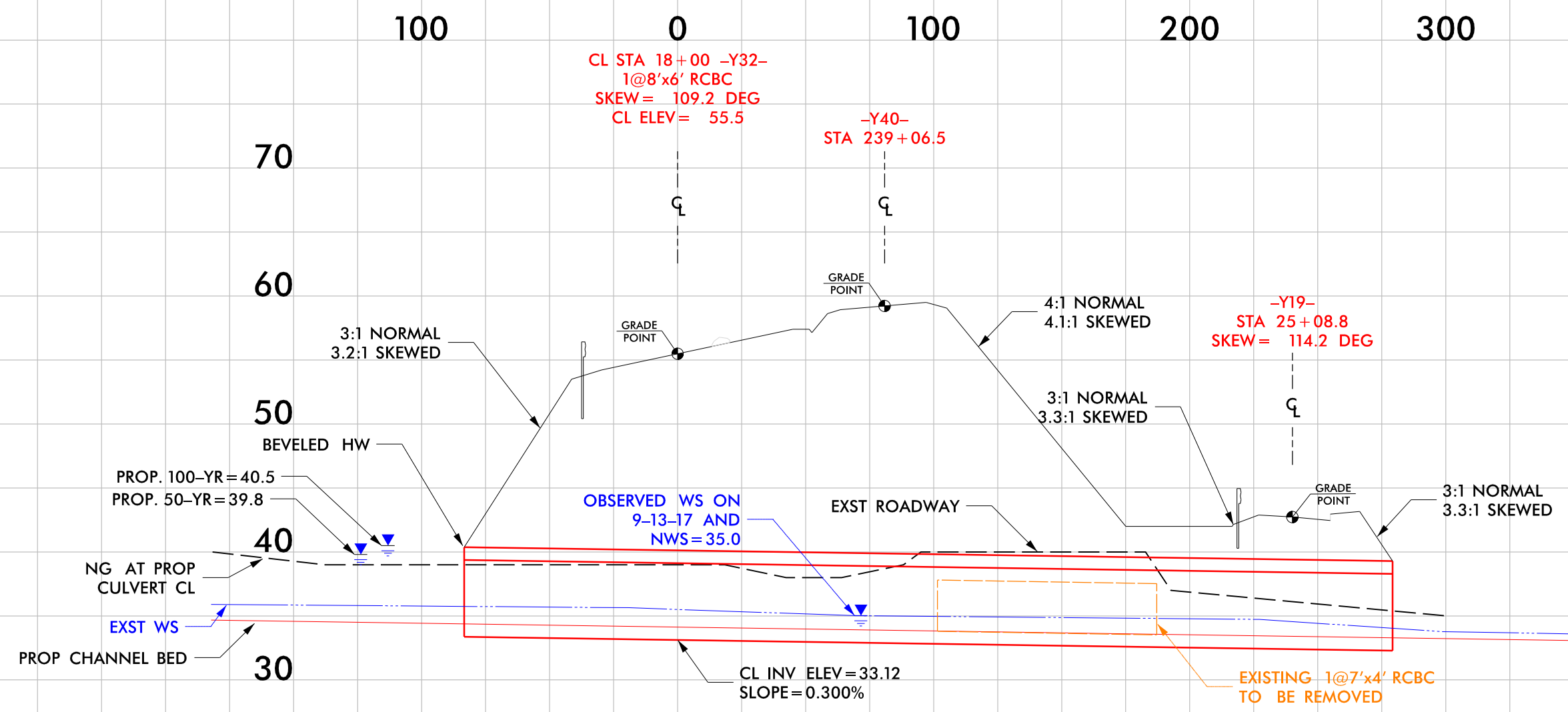
5/14/99

PROJECT REFERENCE NO. SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

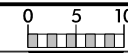
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 87 OF 124



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6/23/16



PROJ. REFERENCE NO.	SHEET NO.
R-3300B	X-131

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

**PERMIT DRAWING
SHEET 88 OF 124**

SITE 20

WETLAND PD

FILL IN WETLANDS

WETLANDS

3:1

0.05

5.147:1

48.95

850 + 00.00

41.16

WETLANDS

3:1

0.037

5.370:1

49.28

849 + 50.00

42.27

WETLAND PD

FILL IN WETLANDS

WETLANDS

3:1

0.025

5.580:1

50.81

849 + 00.00

42.72

SITE 20

WETLAND PD

FILL IN WETLANDS

WETLANDS

3:1

0.013

5.781:1

51.54

848 + 50.00

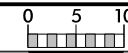
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-LI_NORTHERN-

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12/3/2019
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jbarvey

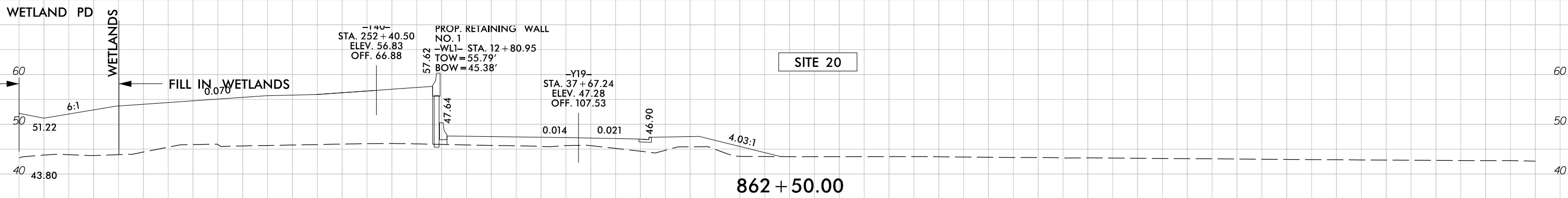
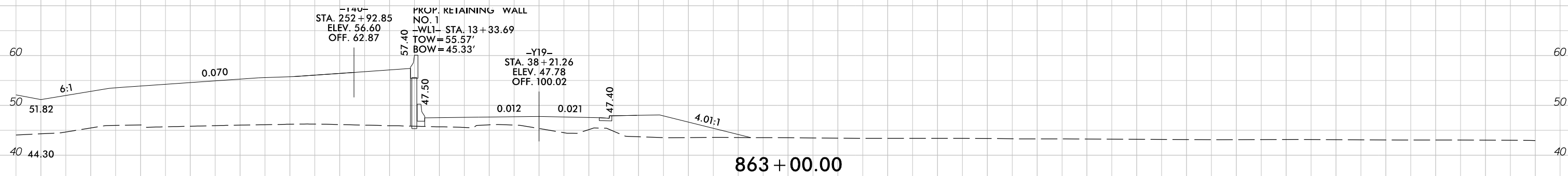
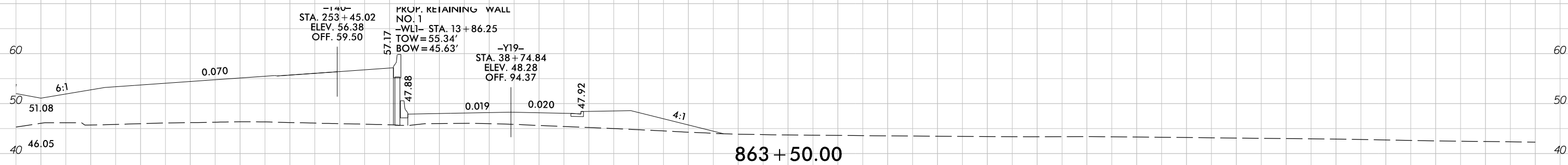
6/23/16



PROJ. REFERENCE NO.	SHEET NO.
R-3300B	X-140

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**PERMIT DRAWING
SHEET 89 OF 124**

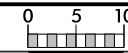


-LI_NORTHERN-

12/3/2019
R3300B_Hyd_prm_wet_psh_23d_xpl.dgn
jharvey

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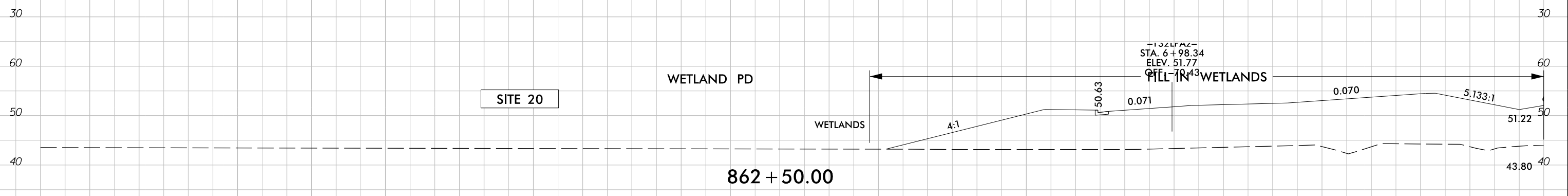
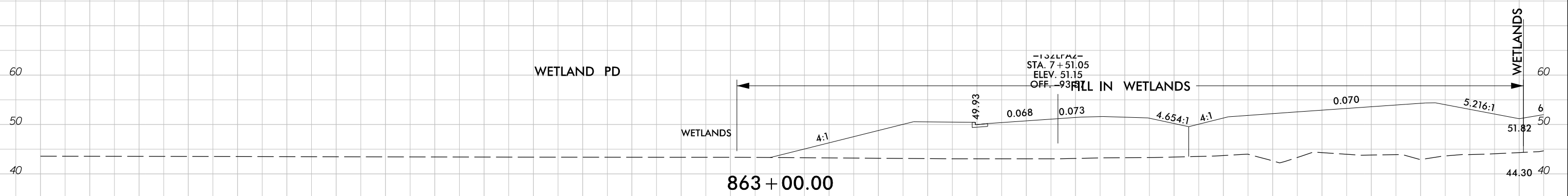
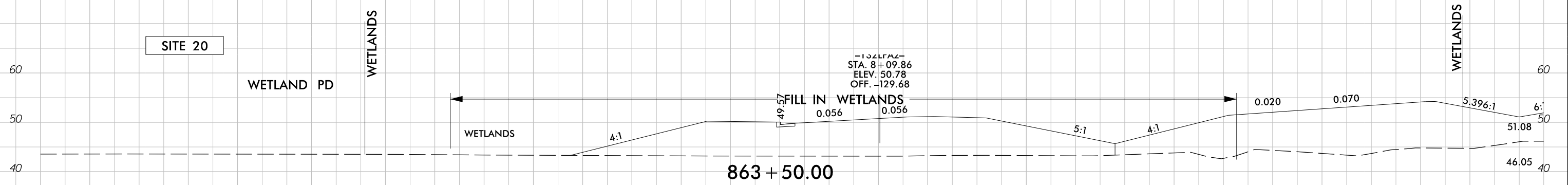
6/23/16



PROJ. REFERENCE NO.	SHEET NO.
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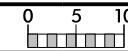
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SHEET 90 OF 124**



-LI_NORTHERN-

12/3/2019
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jbarvey

6/23/16

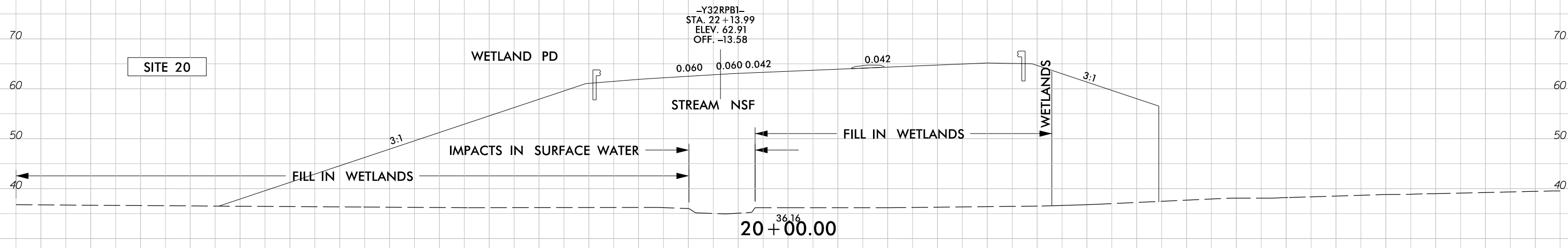
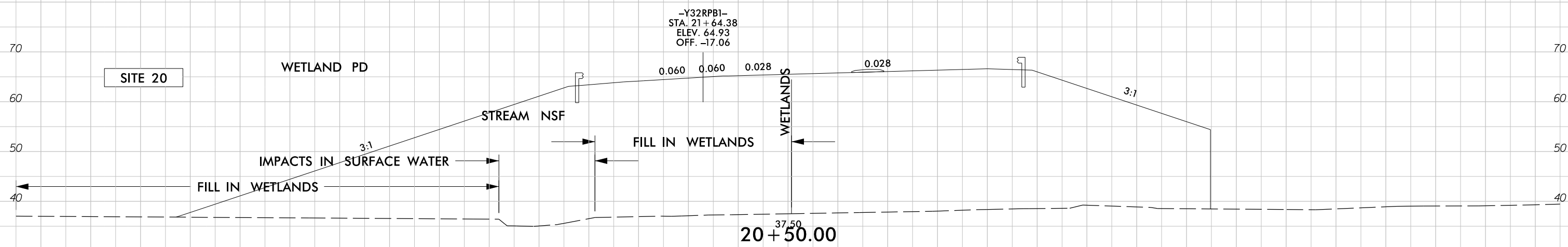


PROJ. REFERENCE NO.
R-3300B

SHEET NO.
X-325

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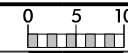
**PERMIT DRAWING
SHEET 91 OF 124**



-Y32-

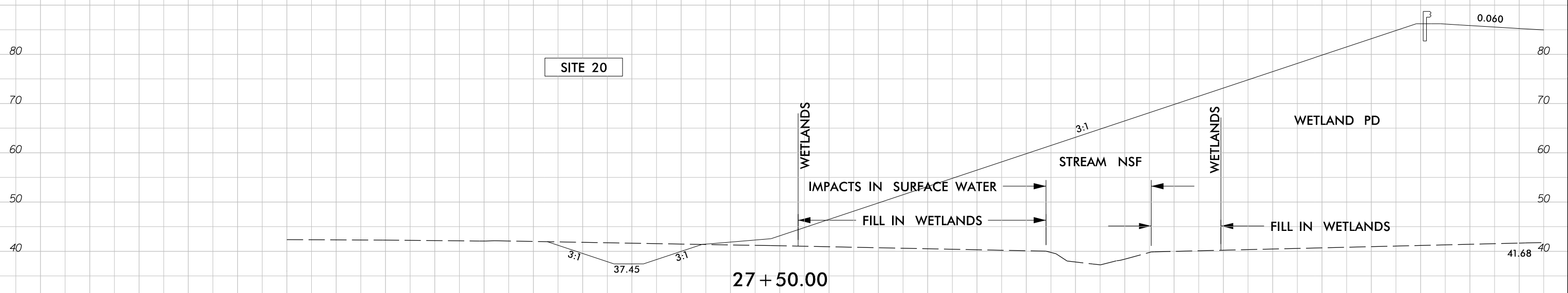
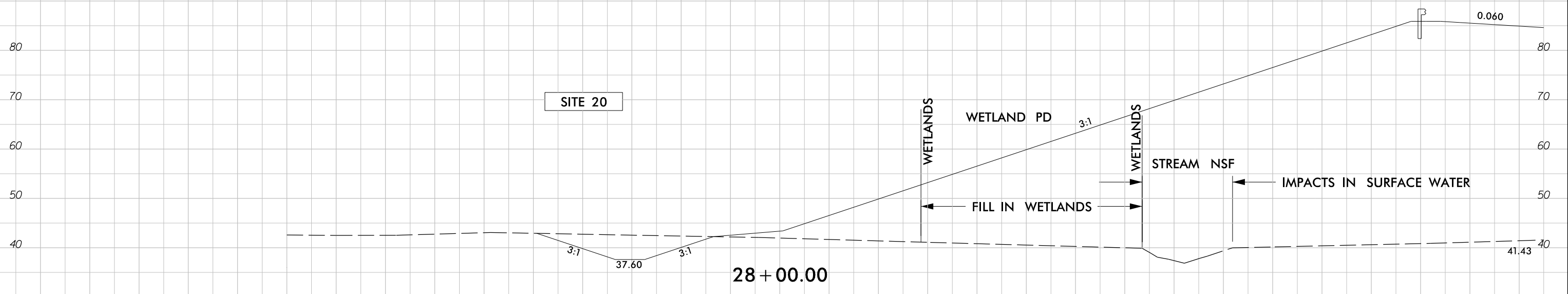
12/3/2019
R3300B_Hyd_prm_wet_psh_23T_xpl.dgn
jbarvey

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300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50

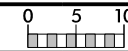
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SHEET 92 OF 124**



-Y32-

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6/23/16

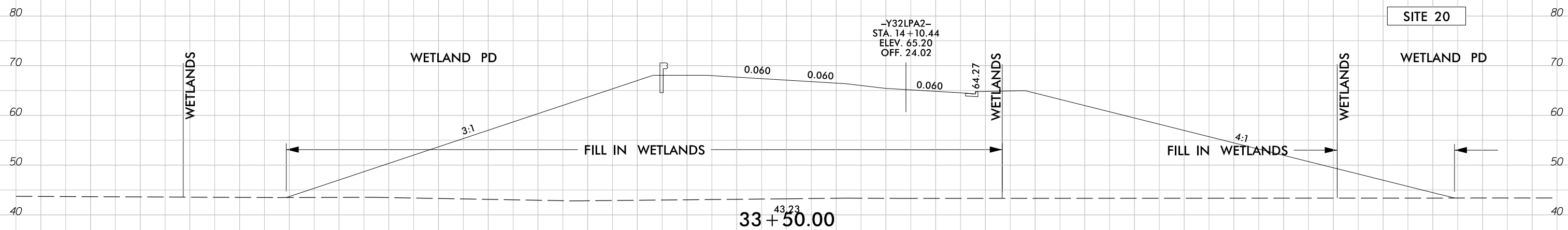
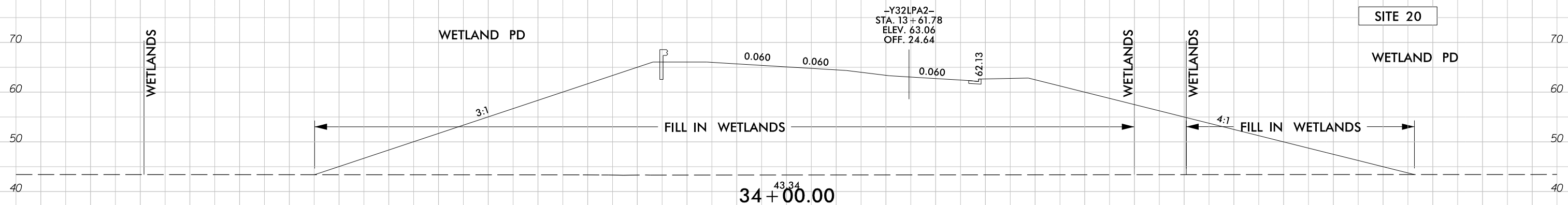


PROJ. REFERENCE NO.
R-3300B

SHEET NO.
X-344

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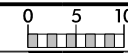
**PERMIT DRAWING
SHEET 93 OF 124**



-Y32-

12/3/2019
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jbarvey

6/23/16

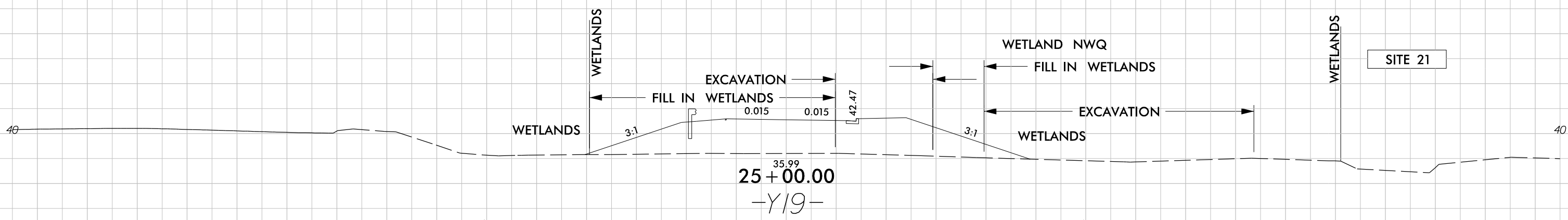
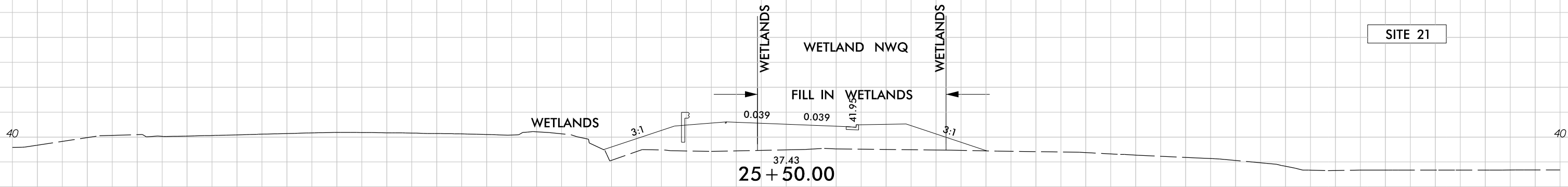
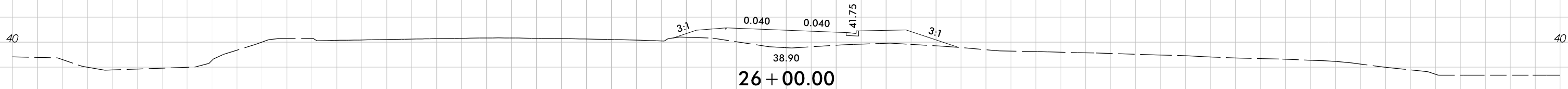
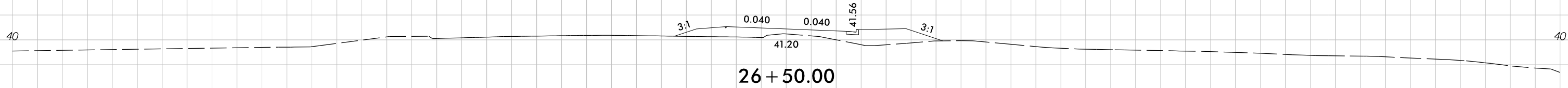
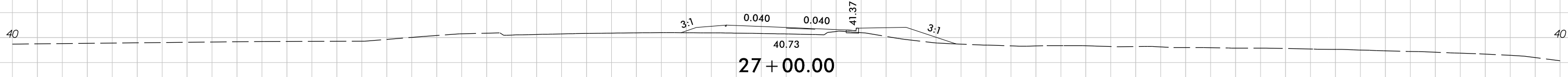


PROJ. REFERENCE NO.
R-3300B

SHEET NO.
X-177

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**PERMIT DRAWING
SHEET 94 OF 124**



SITE 21

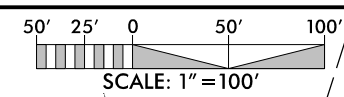
SITE 21

25+00.00

-Y19-

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jbarvey

5/14/99
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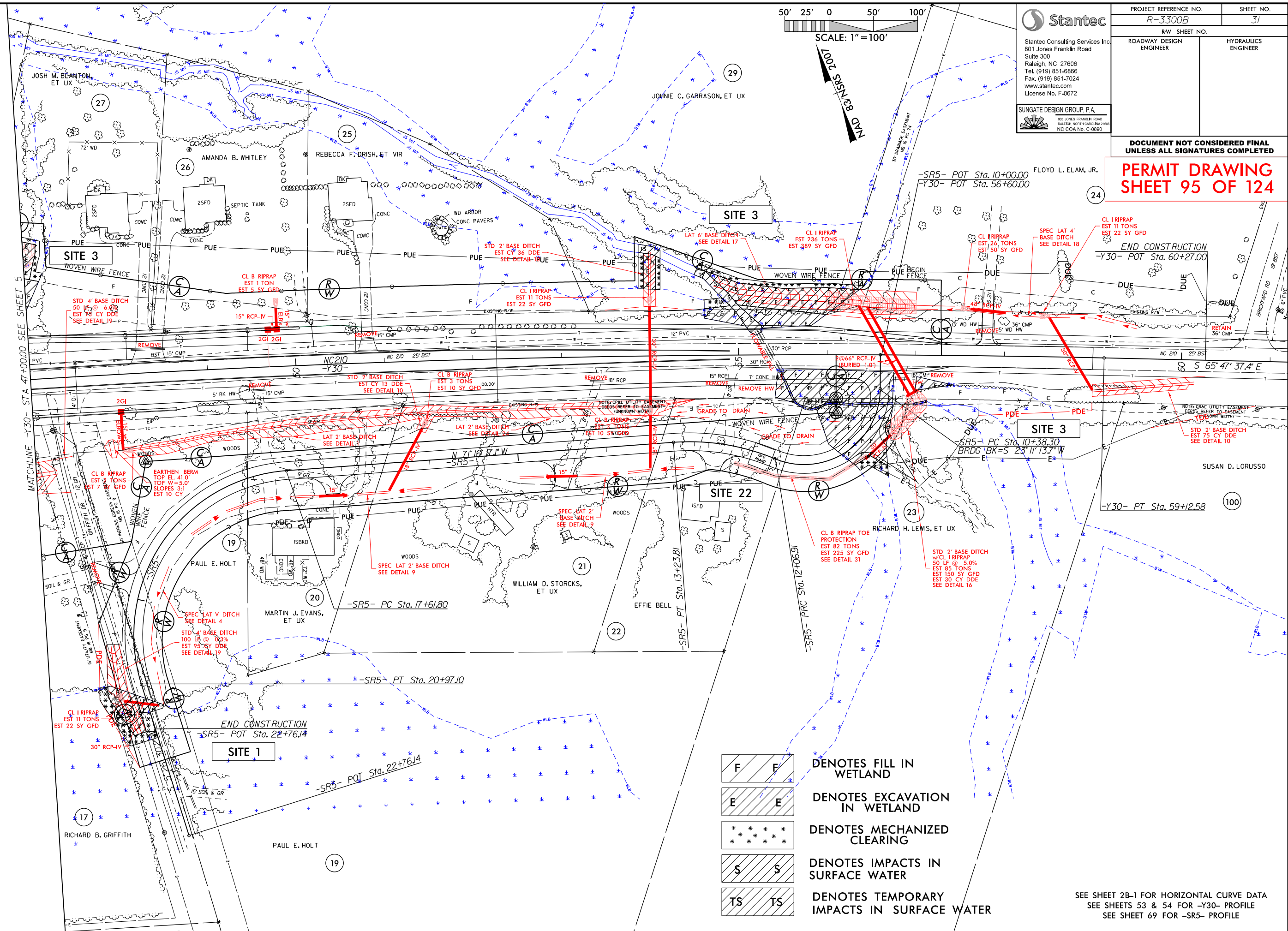
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 801 Jones Franklin Road
 Suite 300
 Raleigh, NC 27606
 Tel. (919) 851-8866
 Fax. (919) 851-7024
 www.stantec.com
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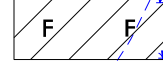
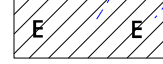

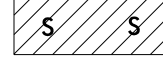
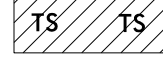
SUNGATE DESIGN GROUP, P.A.
 800 JONES FRANKLIN ROAD
 RALEIGH, NORTH CAROLINA 27606
 NC COA No. C-0890

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>31</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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UNLESS ALL SIGNATURES COMPLETED**

**PERMIT DRAWING
SHEET 95 OF 124**



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

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
 SEE SHEETS 53 & 54 FOR -Y30- PROFILE
 SEE SHEET 69 FOR -SR5- PROFILE

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PROJECT REFERENCE NO. SHEET NO.

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 97 OF 124

200 100 0 100 200

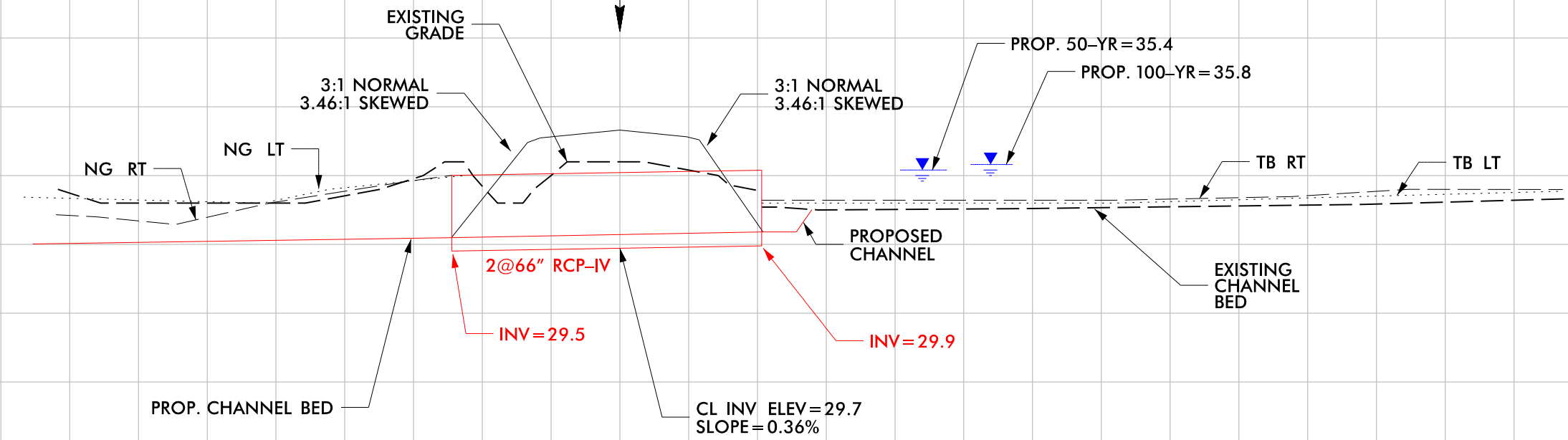
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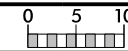
20

CL STA 56+71 -Y30-
GP EL=38.3
SKEW=60.1 DEGREES
2@66" RCP-IV



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6/23/16

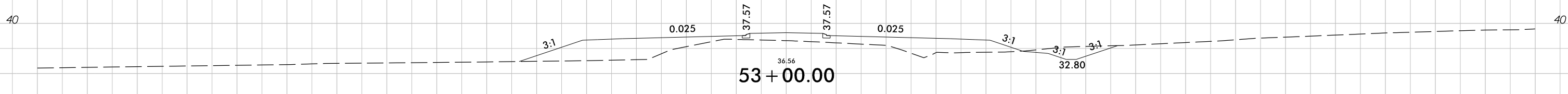
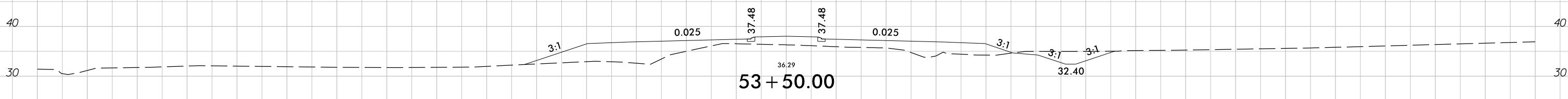
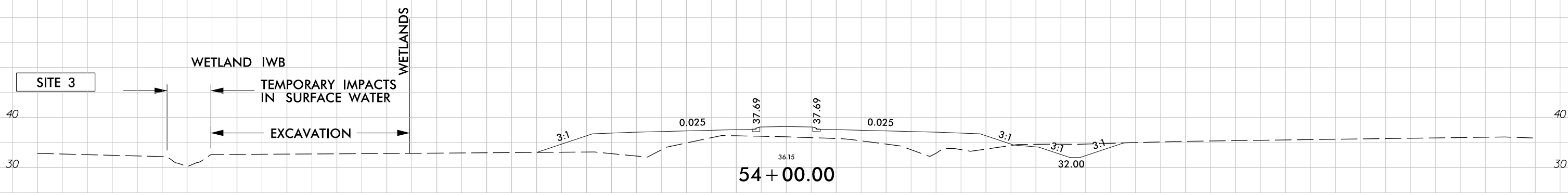
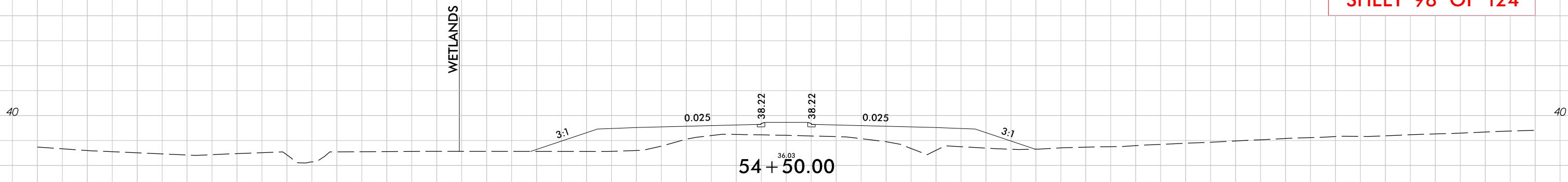


PROJ. REFERENCE NO.
R-3300B

SHEET NO.
X-214

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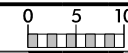
**PERMIT DRAWING
SHEET 98 OF 124**



-Y30-

12/3/2019
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Survey

6/23/16



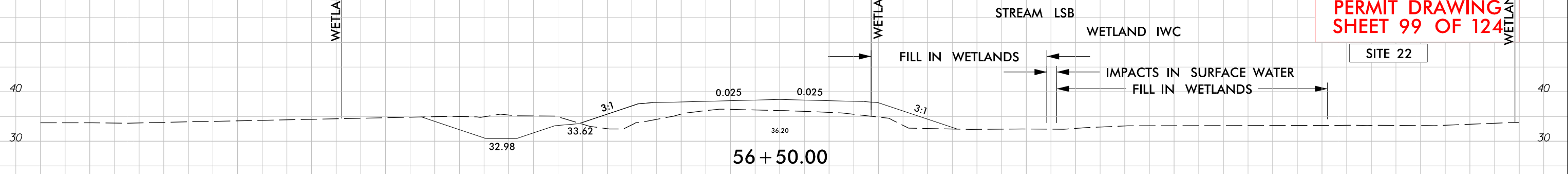
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R-3300B

SHEET NO.
X-215

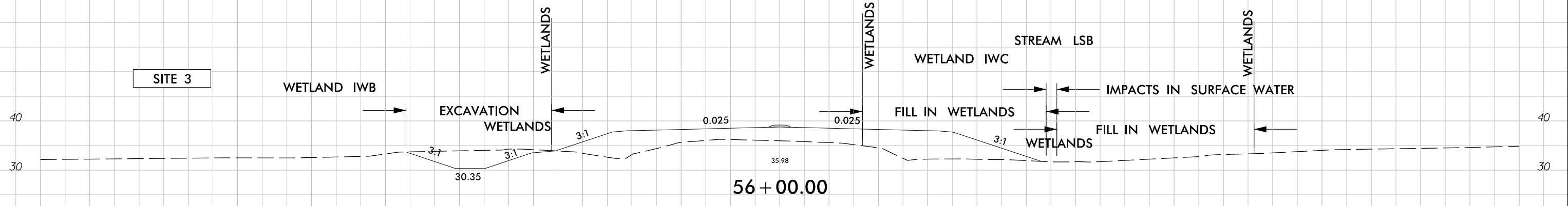
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**PERMIT DRAWING
SHEET 99 OF 124**

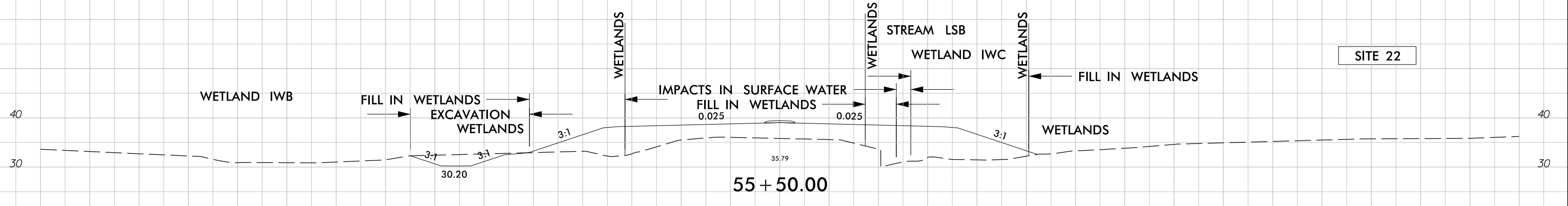
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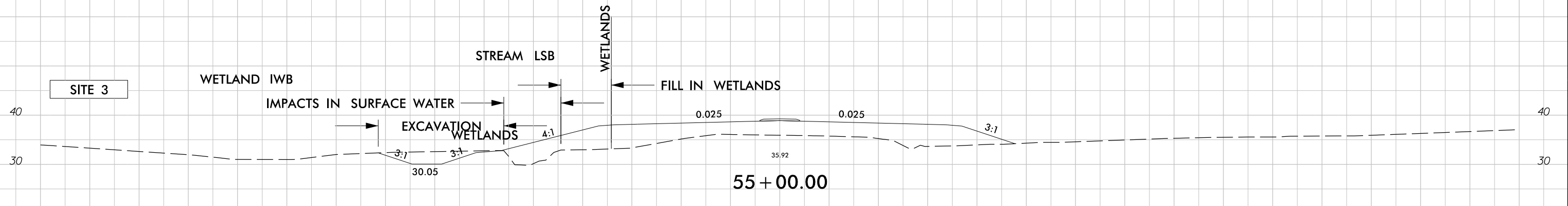
SITE 3



SITE 22



SITE 3



-Y30-

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12/3/2019
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jbarvey

6/23/16

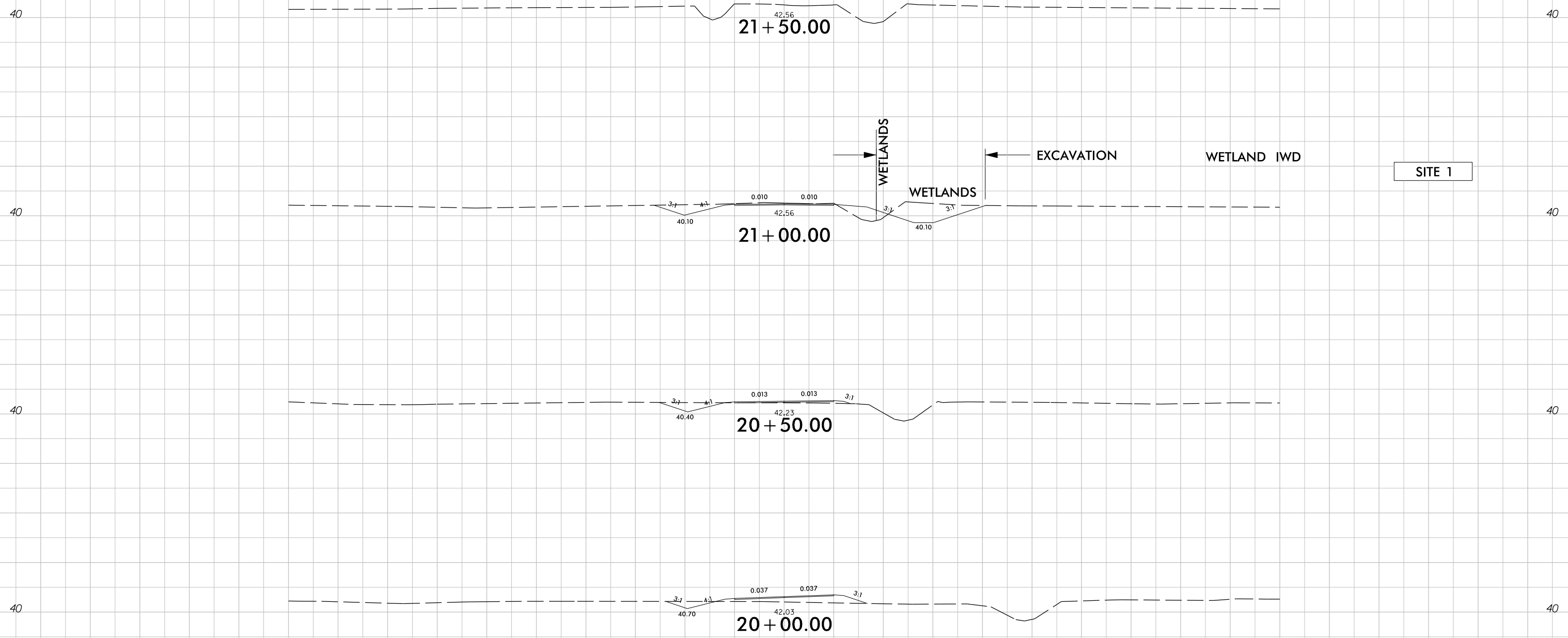


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R-3300B

SHEET NO.
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**PERMIT DRAWING
SHEET 100 OF 124**



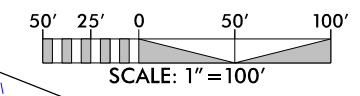
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-SR5-

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Survey

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5/14/99



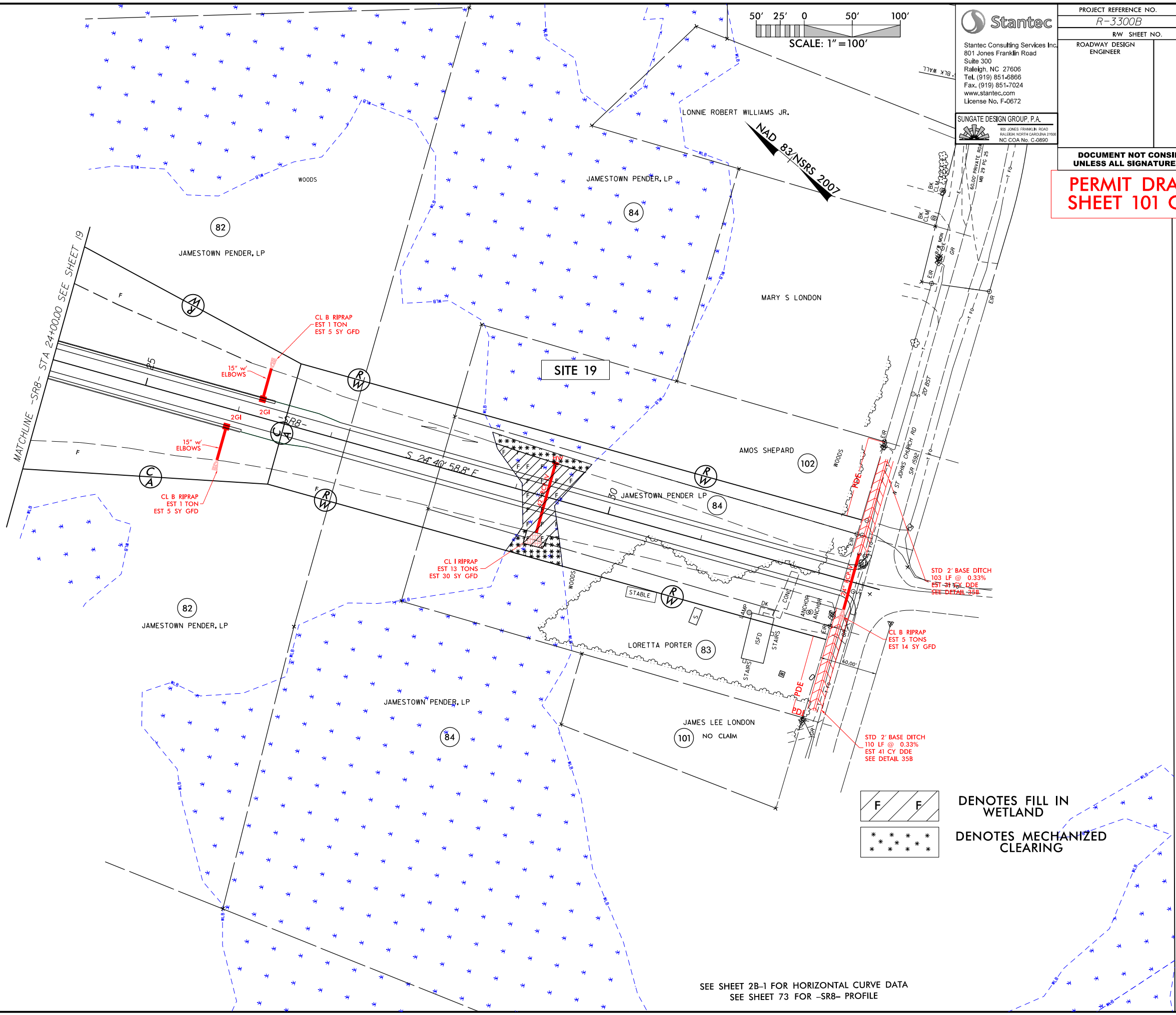
Stantec
 Stantec Consulting Services Inc.
 801 Jones Franklin Road
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 Raleigh, NC 27606
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 Fax. (919) 851-7024
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 800 JONES FRANKLIN ROAD
 RALEIGH, NORTH CAROLINA 27606
 NC COA No. C-0890

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. 32
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

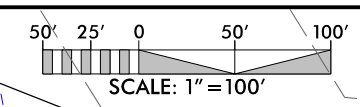
**PERMIT DRAWING
SHEET 101 OF 124**



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 5/14/99

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
 SEE SHEET 73 FOR -SR8- PROFILE

5/14/99



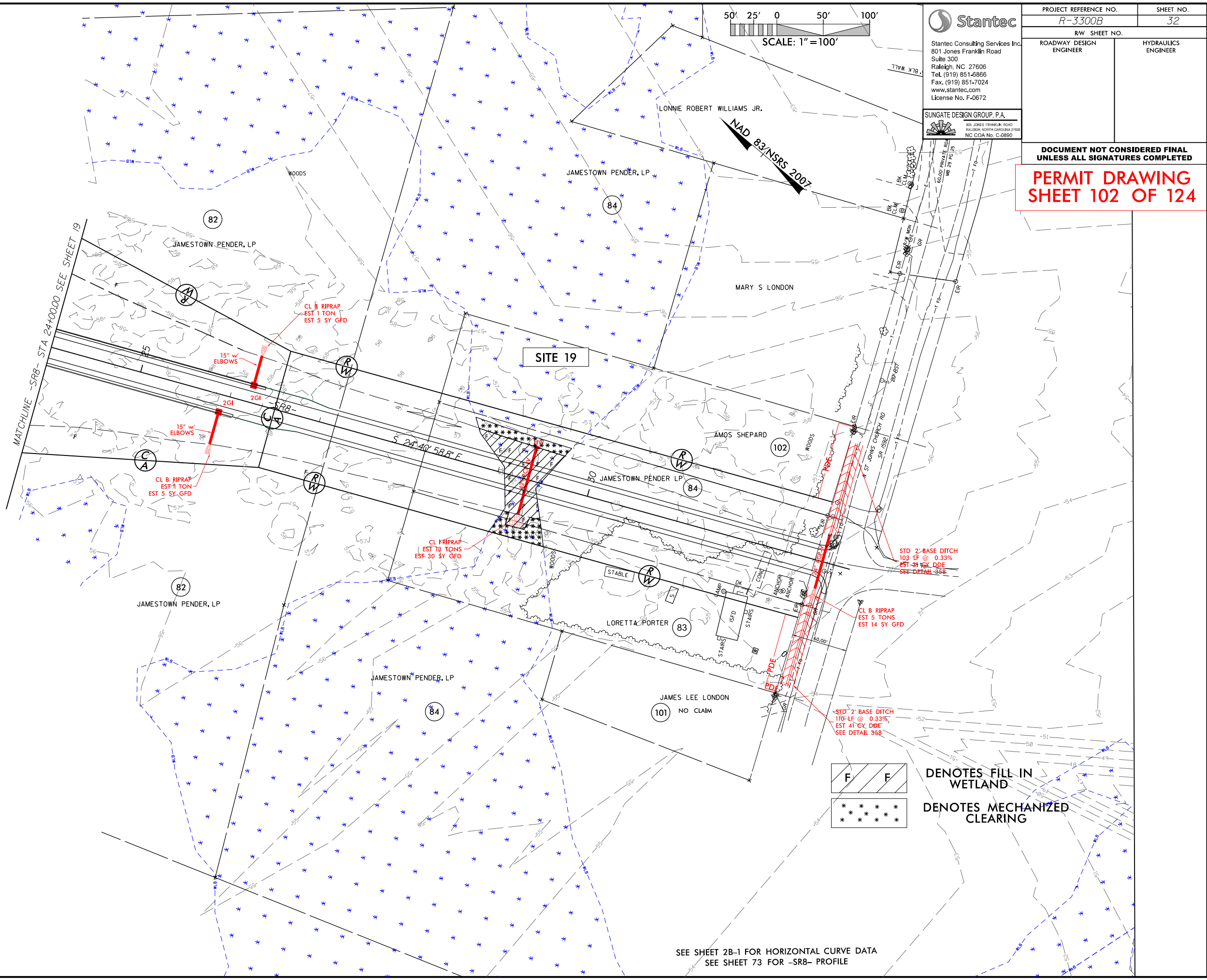
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 800 JONES FRANKLIN ROAD
 RALEIGH, NORTH CAROLINA 27606
 NC COA No. C-0890

PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. 32
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

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

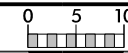
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SHEET 102 OF 124**



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 5/14/99
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SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA
 SEE SHEET 73 FOR -SR8- PROFILE

6/23/16

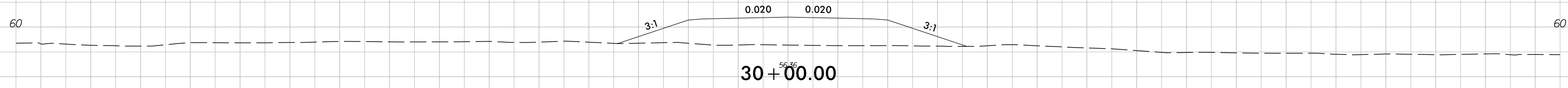


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R-3300B

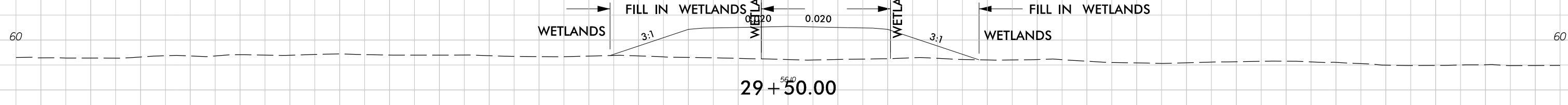
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X-439

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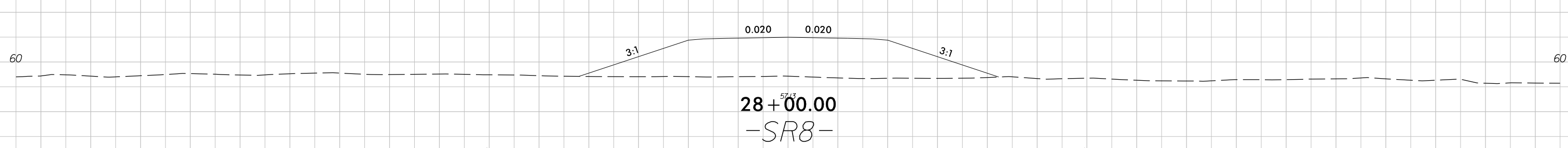
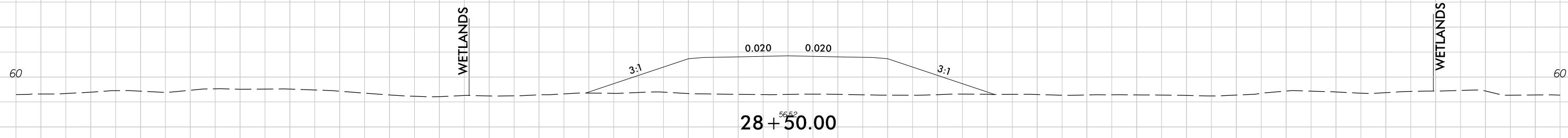
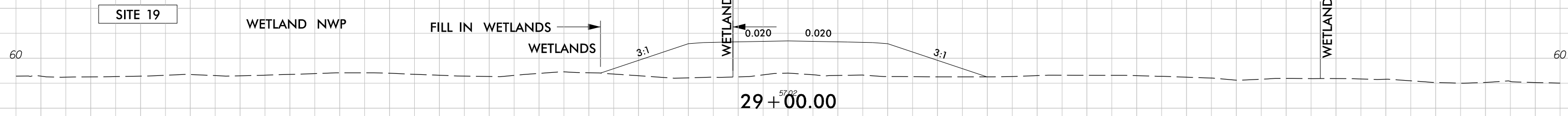
**PERMIT DRAWING
SHEET 103 OF 124**



SITE 19



SITE 19



12/3/2019
R3300B_Hyd_prm_wet_psh_32b_xpl.dgn
jbarvey

PERMIT DRAWING SHEET 104 OF 124

Dewberry
2630 WILLOW ROAD
SUITE 400
RALEIGH, NC 27607
PHONE: 919.883.9329
NC COA NO. F-4929

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Suite 300
Raleigh, NC 27606
Tel. (919) 851-8866
Fax. (919) 851-7024
www.stantec.com
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PROJECT REFERENCE NO. **R-3300B**
SHEET NO. **24**
FOR RW SEE U-5732 SHEET NO. **24**
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

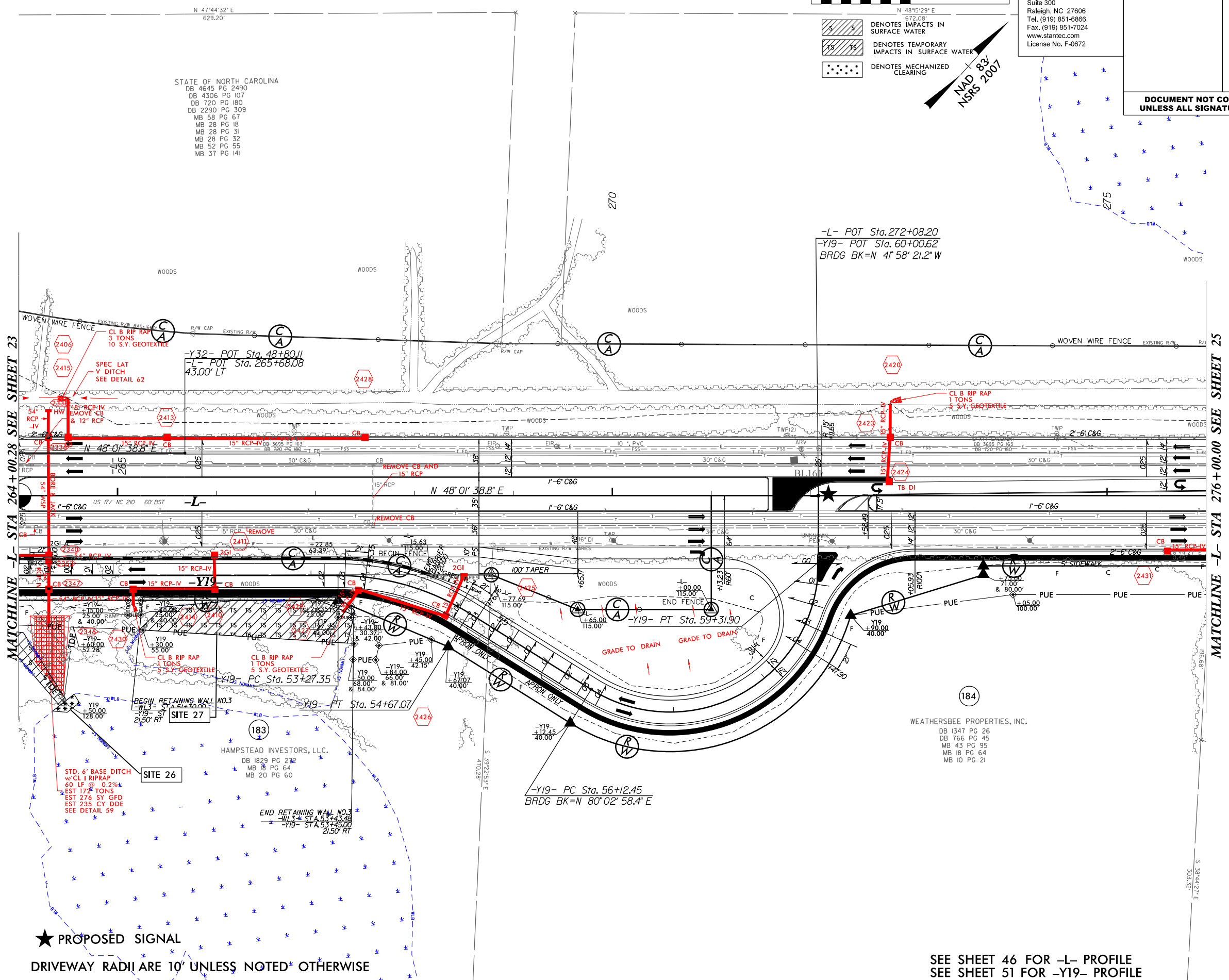
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
R-3300B	24
FOR RW SEE U-5732 SHEET NO.	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

5/14/99

REVISIONS
03/15/2019 - RW REVISION: ADDED ROW, DUE, PUE & TDE ON PARCEL 183, ADDED ROW & PUE ON PARCEL 184. - STANTEC

11/8/2019
DEWBERRY
R3300B_Permit Drawings_20191118.pdf



SEE SHEET 46 FOR -L- PROFILE
SEE SHEET 51 FOR -Y19- PROFILE

PERMIT DRAWING SHEET 105 OF 124

2630 WILLOW ROAD
SUITE 400
RALEIGH, NC 27607
PHONE: 919.883.9329
NC COA NO. F-4929

100' 0' 100'

N 48°15'29" E
672.08'

N 48°15'29" E
672.08'

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

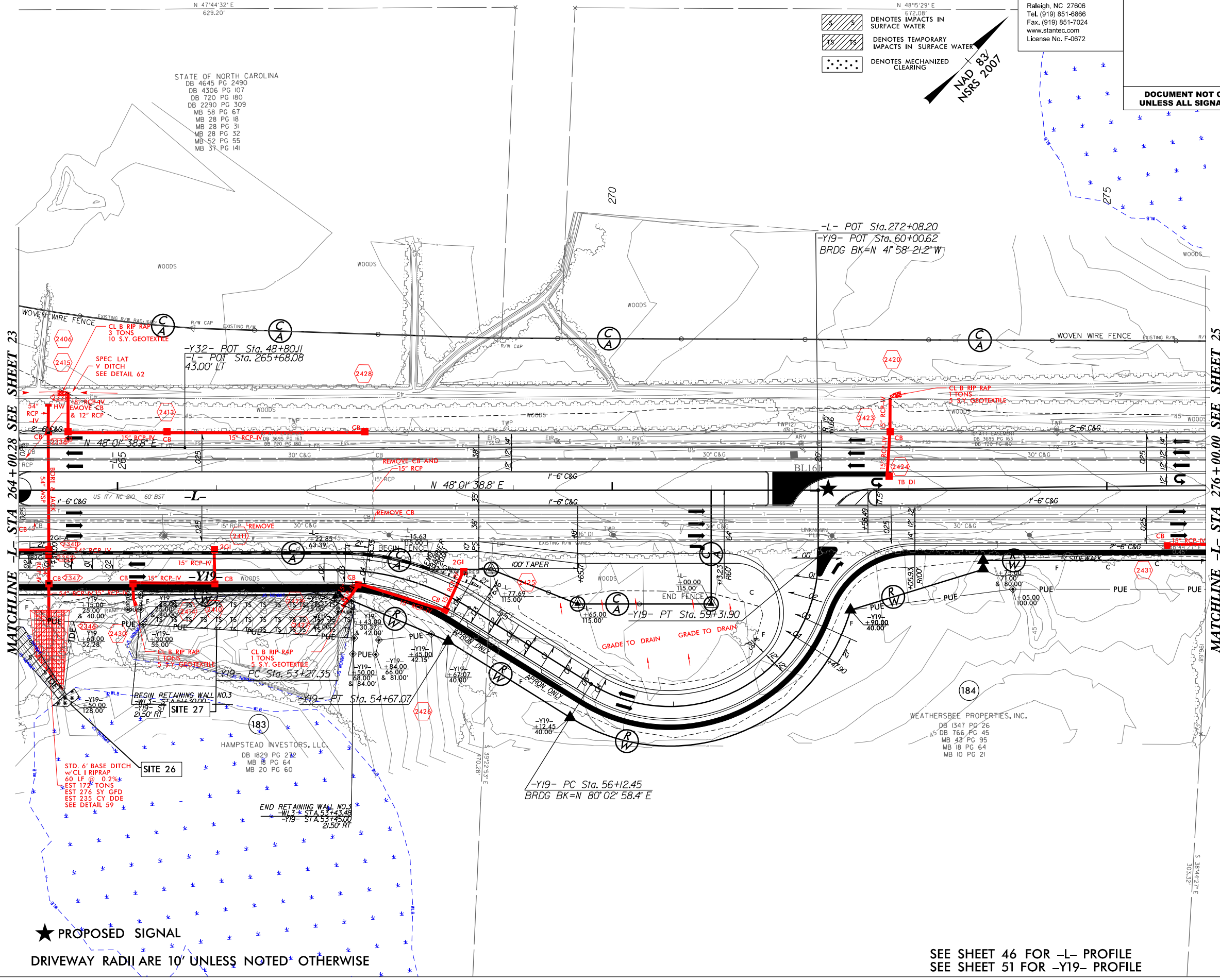
DENOTES MECHANIZED CLEARING

<p>PROJECT REFERENCE NO. <i>R-3300B</i></p> <p>FOR RW SEE U-5732 SHEET NO. <i>24</i></p> <p>ROADWAY DESIGN ENGINEER</p>	<p>SHEET NO. <i>24</i></p> <p>HYDRAULICS ENGINEER</p>
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

5/14/99

03/15/2019 - RW REVISION: ADDED ROW, DUE, PUE & TDE ON PARCEL 183; ADDED ROW & PUE ON PARCEL 184. - STANTEC

11/8/2019
DEWBERRY
R3300B_Permit Drawings_20191118.pdf



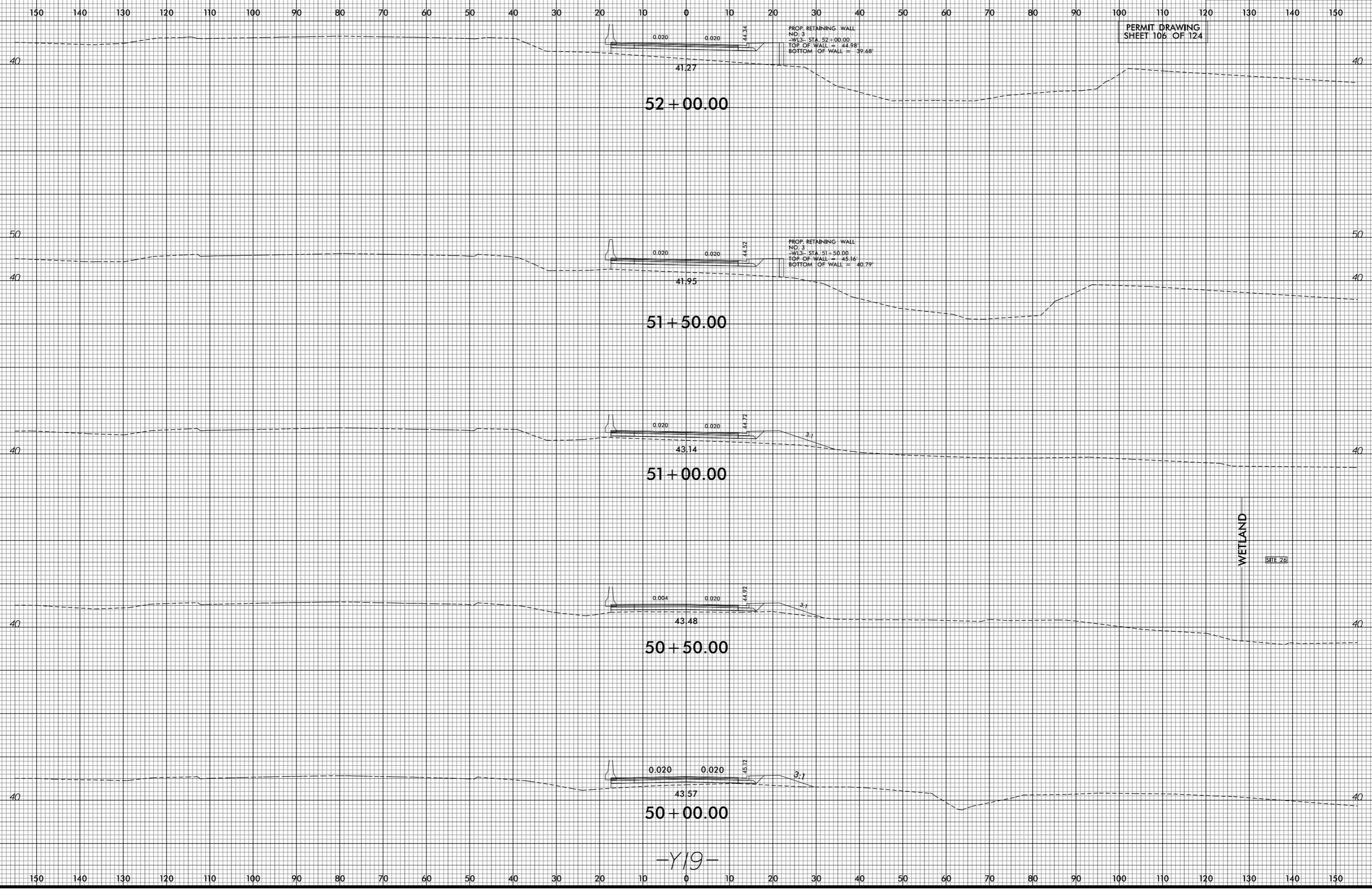
★ PROPOSED SIGNAL

DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 46 FOR -L- PROFILE
SEE SHEET 51 FOR -Y19- PROFILE

6/23/16

PERMIT DRAWING
SHEET 106 OF 124



WETLAND
SITE 26

-Y19-

1/18/2019
DEVBERY
R-3300B Permit Drawings 20191118.pdf

5/14/99

PERMIT DRAWING SHEET 107 OF 124



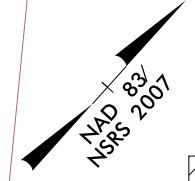
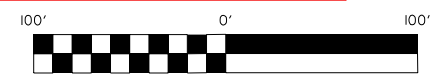
2410 WYCLIFF ROAD
SUITE 401
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. F-0929



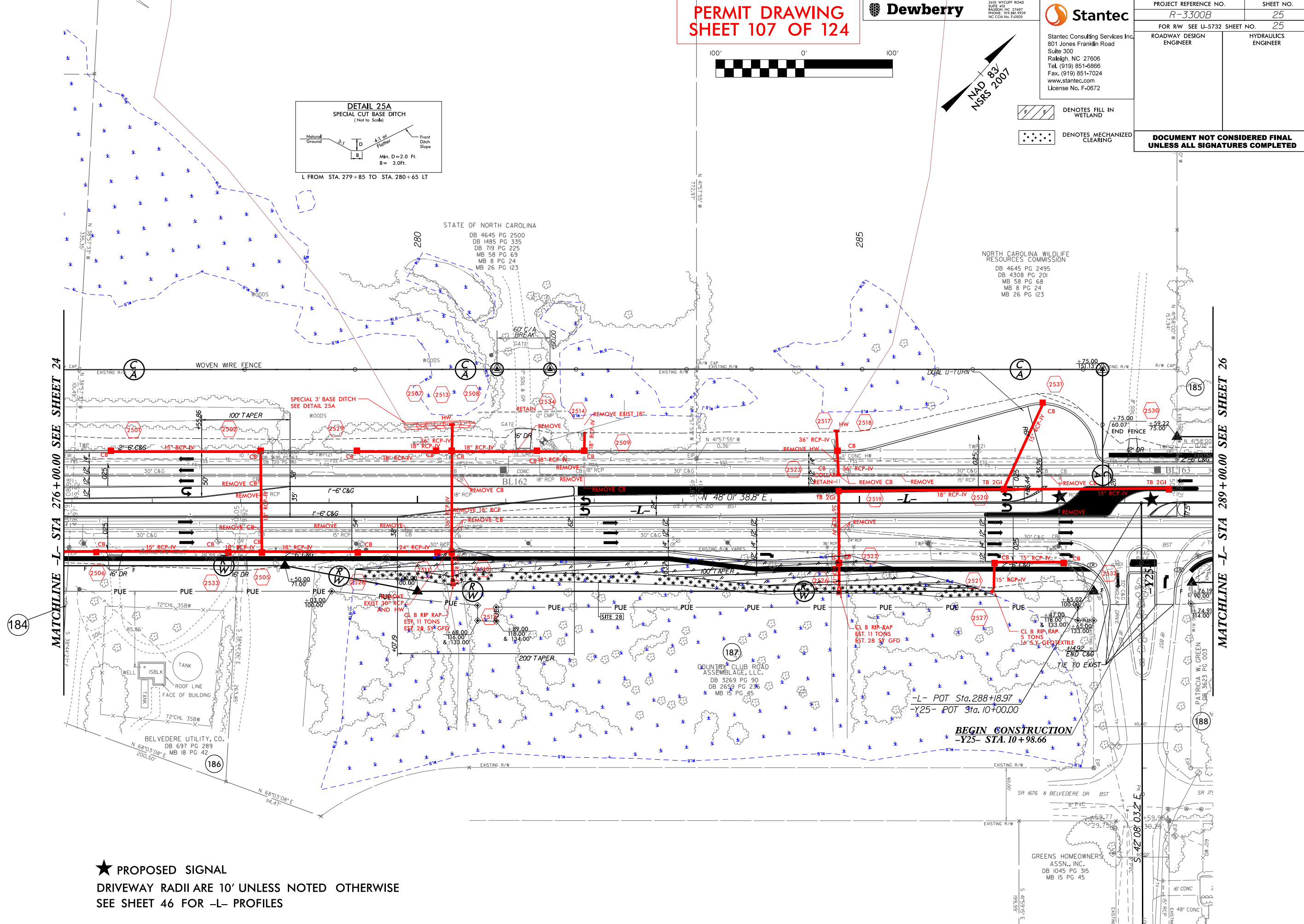
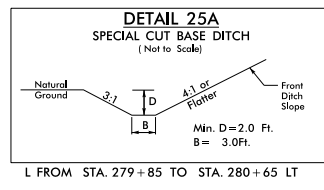
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Suite 300
Raleigh, NC 27606
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Fax. (919) 851-7024
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PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. 25
FOR RW SEE U-5732 SHEET NO.	25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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UNLESS ALL SIGNATURES COMPLETED**



- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING



★ PROPOSED SIGNAL
 DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE
 SEE SHEET 46 FOR -L- PROFILES

11/8/2019
 DEWBERRY
 R3300B_Permit Drawings_20191118.pdf

PERMIT DRAWING SHEET 108 OF 124



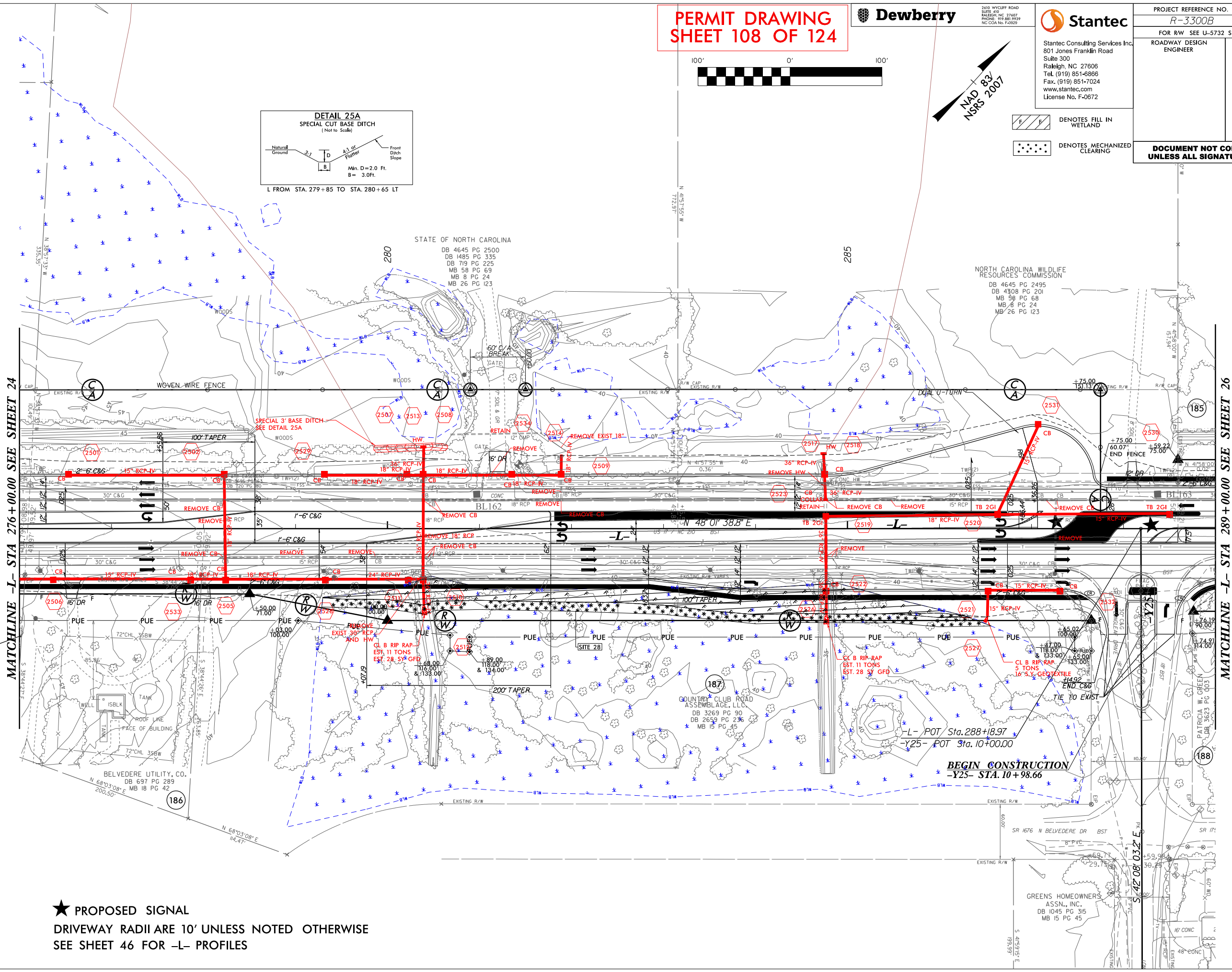
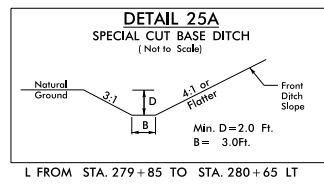
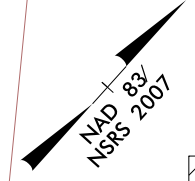
2410 WYCLIFF ROAD
SUITE 401
RALEIGH, NC 27607
PHONE: 919.881.9929
NC COA No. F-0929



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PROJECT REFERENCE NO.	SHEET NO.
R-3300B	25
FOR RW SEE U-5732 SHEET NO.	25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

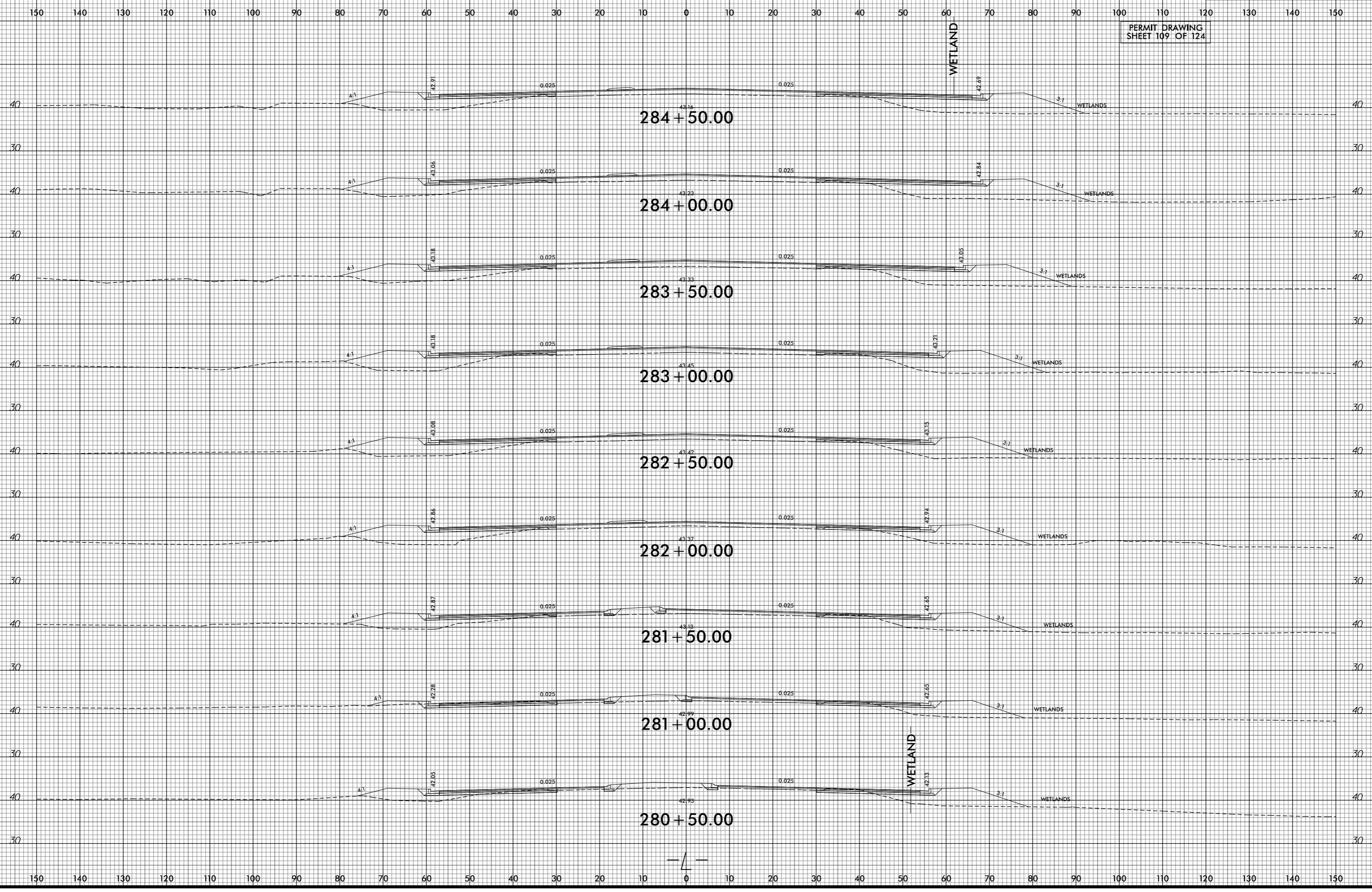
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



★ PROPOSED SIGNAL
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE
SEE SHEET 46 FOR -L- PROFILES

6/23/16

PERMIT DRAWING
SHEET 109 OF 124



1/16/2019 09:08:56 AM C:\3300B\Permit Drawings_20191118.pdf

5/14/99

PERMIT DRAWING SHEET 110 OF 124



Dewberry

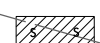
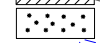
2630 WILLOW ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9759
NC CDA No. F-4929

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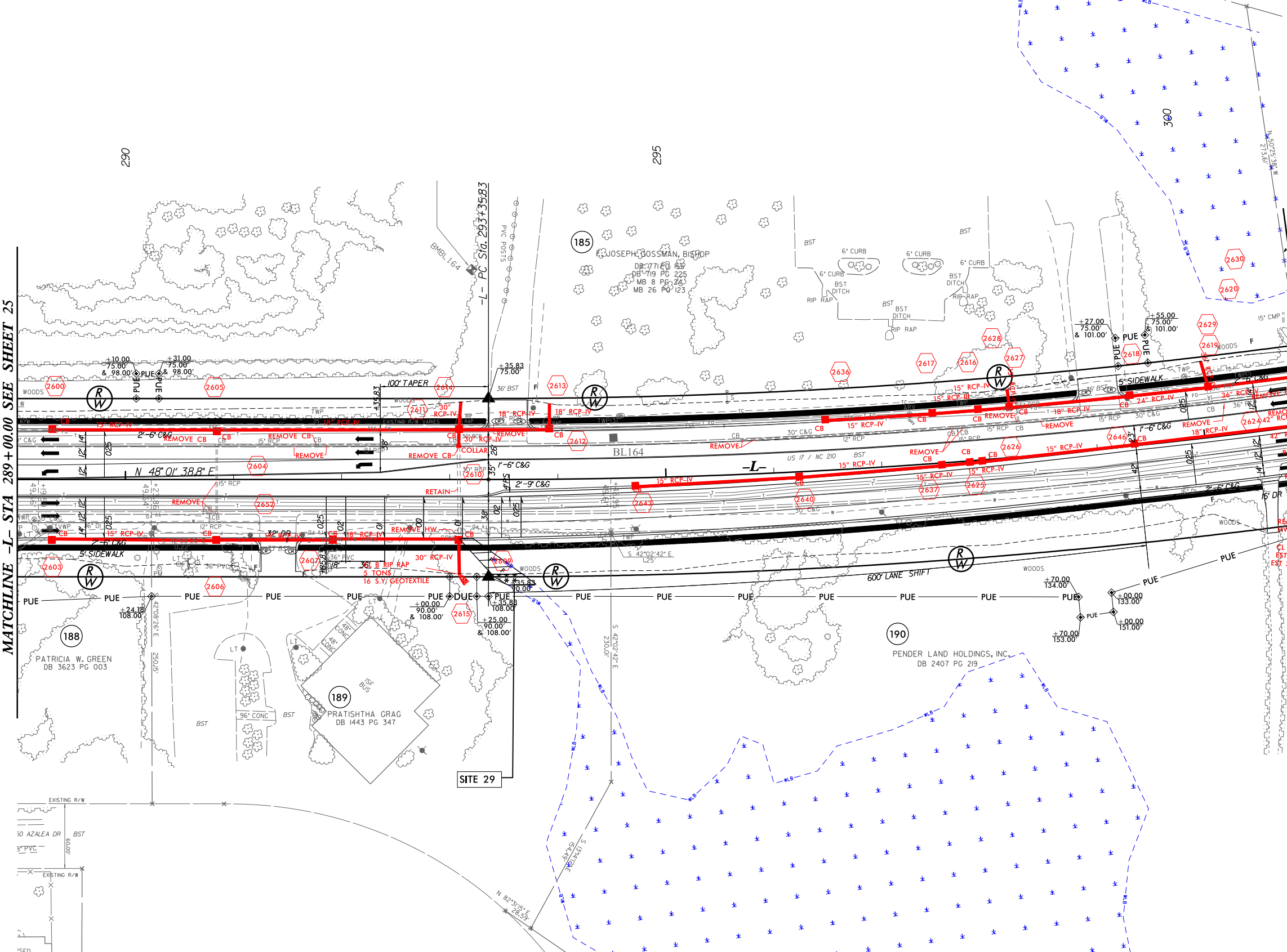
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FOR RW SEE U-5732 SHEET NO.	26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



 DENOTES IMPACTS IN SURFACE WATER
 DENOTES MECHANIZED CLEARING

MATCHLINE -L- STA 289+00.00 SEE SHEET 25

MATCHLINE -L- STA 301+00.00 SEE SHEET 27

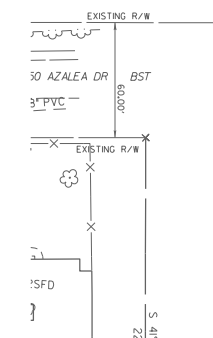


188 PATRICIA W. GREEN
 DB 3623 PG 003

189 PRATISHTHA GRAG
 DB 1443 PG 347

190 PENDER LAND HOLDINGS, INC.
 DB 2407 PG 219

185 JOSEPH BOSSMAN, BISHOP
 DB 2771 PG 153
 DB 719 PG 225
 MB 8 PG 244
 MB 26 PG 123



DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEETS 46 & 47 FOR -L- PROFILES

11/8/2015
R3300B_Permit Drawings_20191118.pdf

5/14/99

PERMIT DRAWING SHEET 111 OF 124



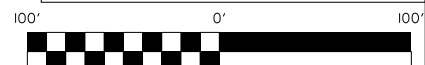
Dewberry

2630 WILLOW ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9759
NC COA NO. F-2929

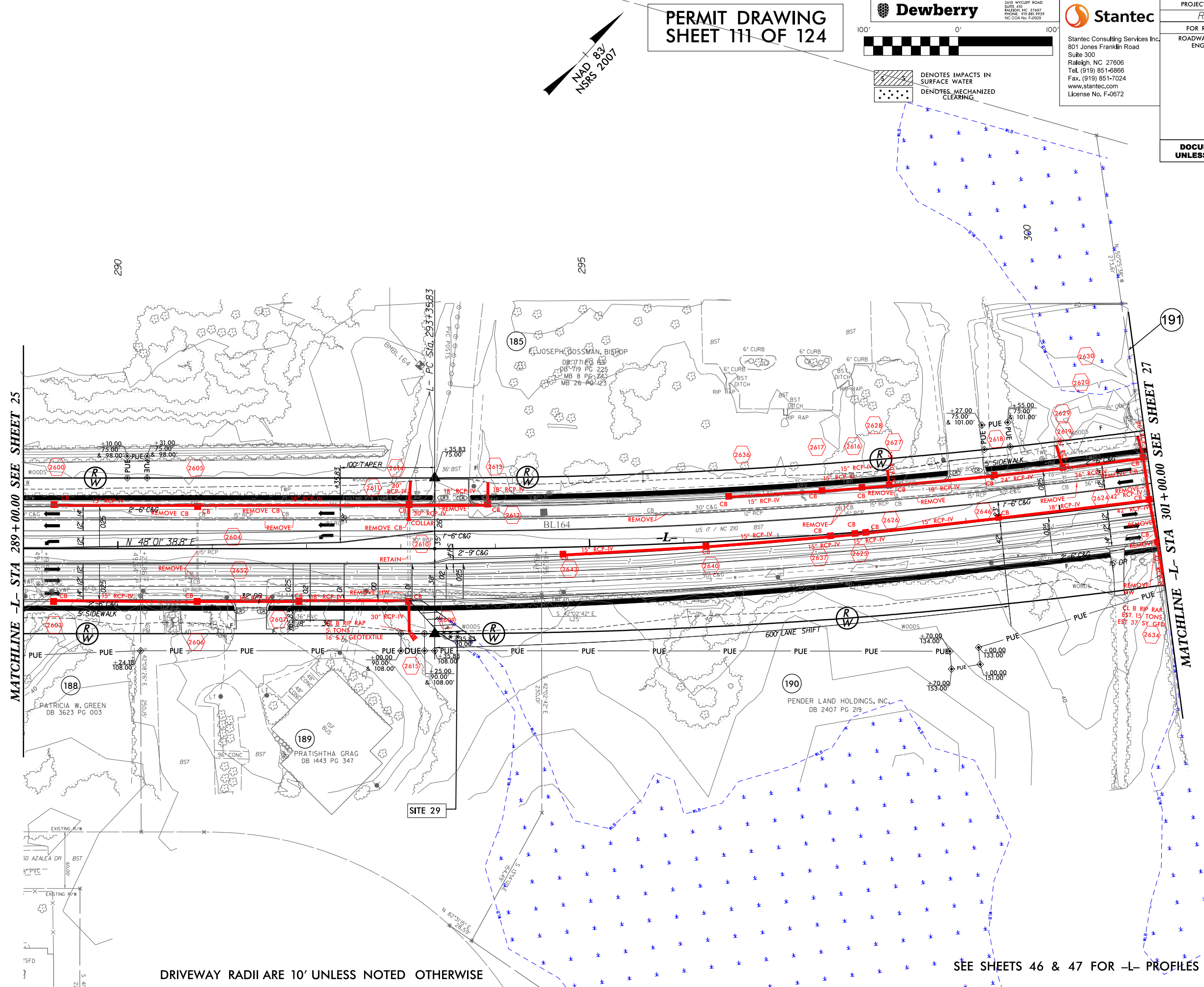
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PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. 26
FOR RW SEE U-5732 SHEET NO.	26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



- DENOTES IMPACTS IN SURFACE WATER
- DENOTES MECHANIZED CLEARING



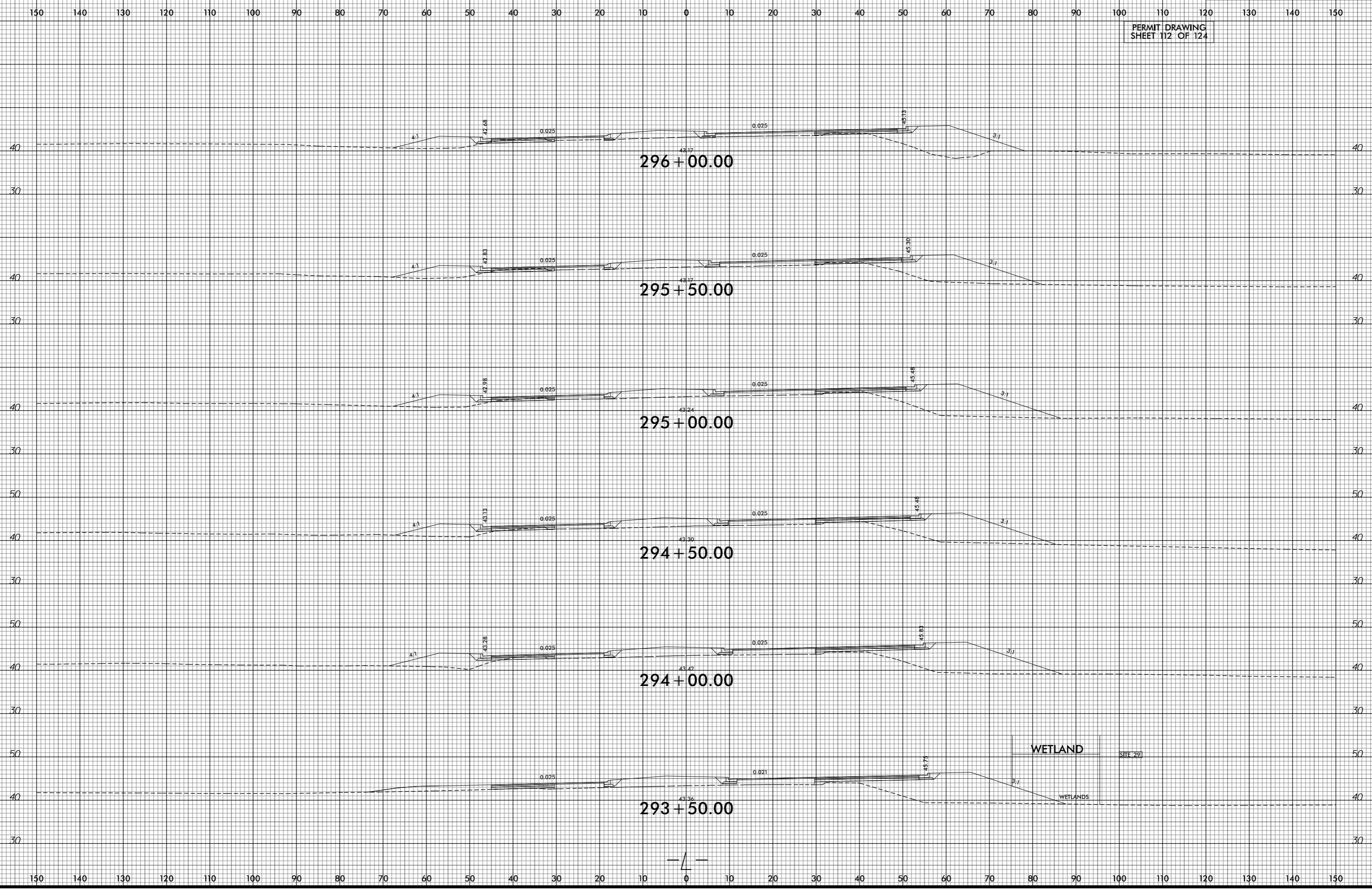
DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEETS 46 & 47 FOR -L- PROFILES

11/8/2015
R3300B_Permit Drawings_20191118.pdf

6/23/16

PERMIT DRAWING
SHEET 112 OF 124



11/8/2019
DEV BERRY
R-3300B_Permit Drawing_20191118.pdf

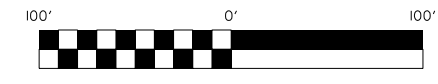
PERMIT DRAWING SHEET 113 OF 124

Dewberry
2410 WYCLIFF ROAD
SUITE 401
RALEIGH, NC 27607
PHONE: 919.881.9929
NC CDA No. F-0929

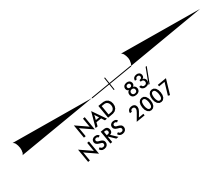
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PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. 27
FOR RW SEE U-5732 SHEET NO.	27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

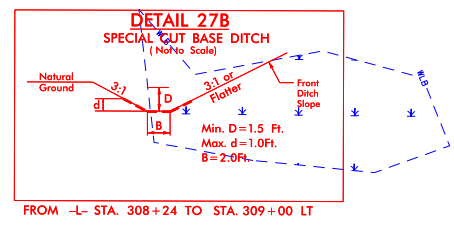
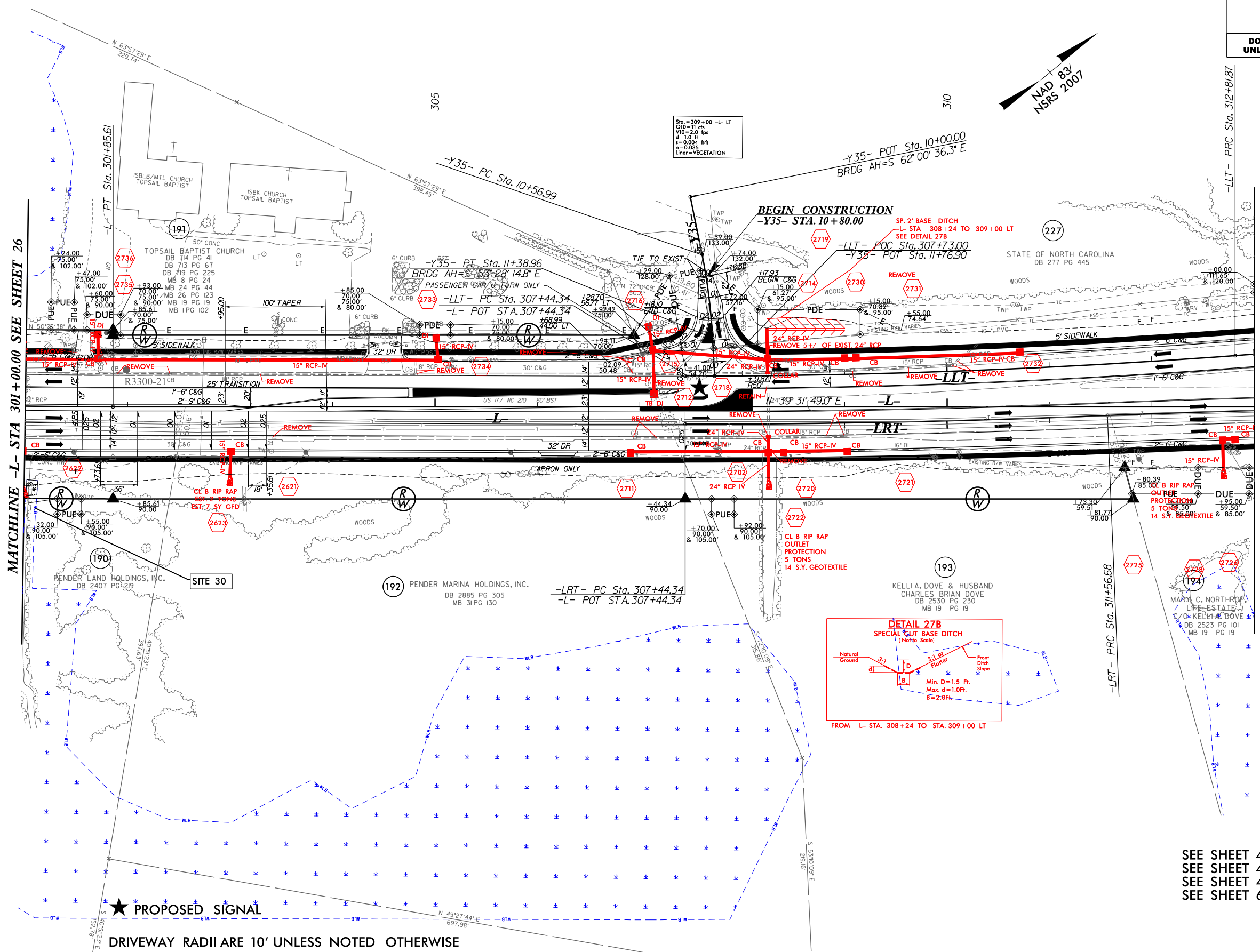
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



DENOTES FILL IN WETLAND
 DENOTES MECHANIZED CLEARING



Sta. = 309+00 -L- LT
 G10=11 c/s
 V10=2.0 f/s
 d=1.0 ft
 s=0.004 ft/s
 n=0.035
 Liner=VEGETATION



SEE SHEET 47 FOR -L- PROFILES
 SEE SHEET 48 FOR -LLT- PROFILE
 SEE SHEET 49 FOR -LRT- PROFILE
 SEE SHEET 65 FOR -Y35- PROFILE

REVISIONS
 11/28/2018 - RW REVISION: ADDED PARCEL NUMBER 227. - STANTEC

5/14/99
 11/8/2019
 DEWBERRY
 R3300B_Permit Drawings_20191118.pdf

★ PROPOSED SIGNAL
 DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

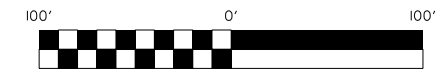
PERMIT DRAWING SHEET 114 OF 124

Dewberry
2410 WYCLIFF ROAD
SUITE 401
RALEIGH, NC 27607
PHONE: 919.881.9929
NC CDA No. F-0929

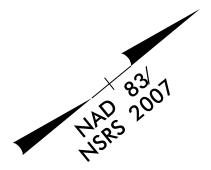
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PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. 27
FOR RW SEE U-5732 SHEET NO.	27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

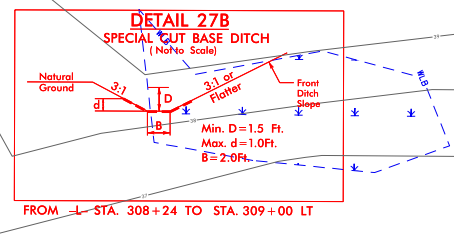
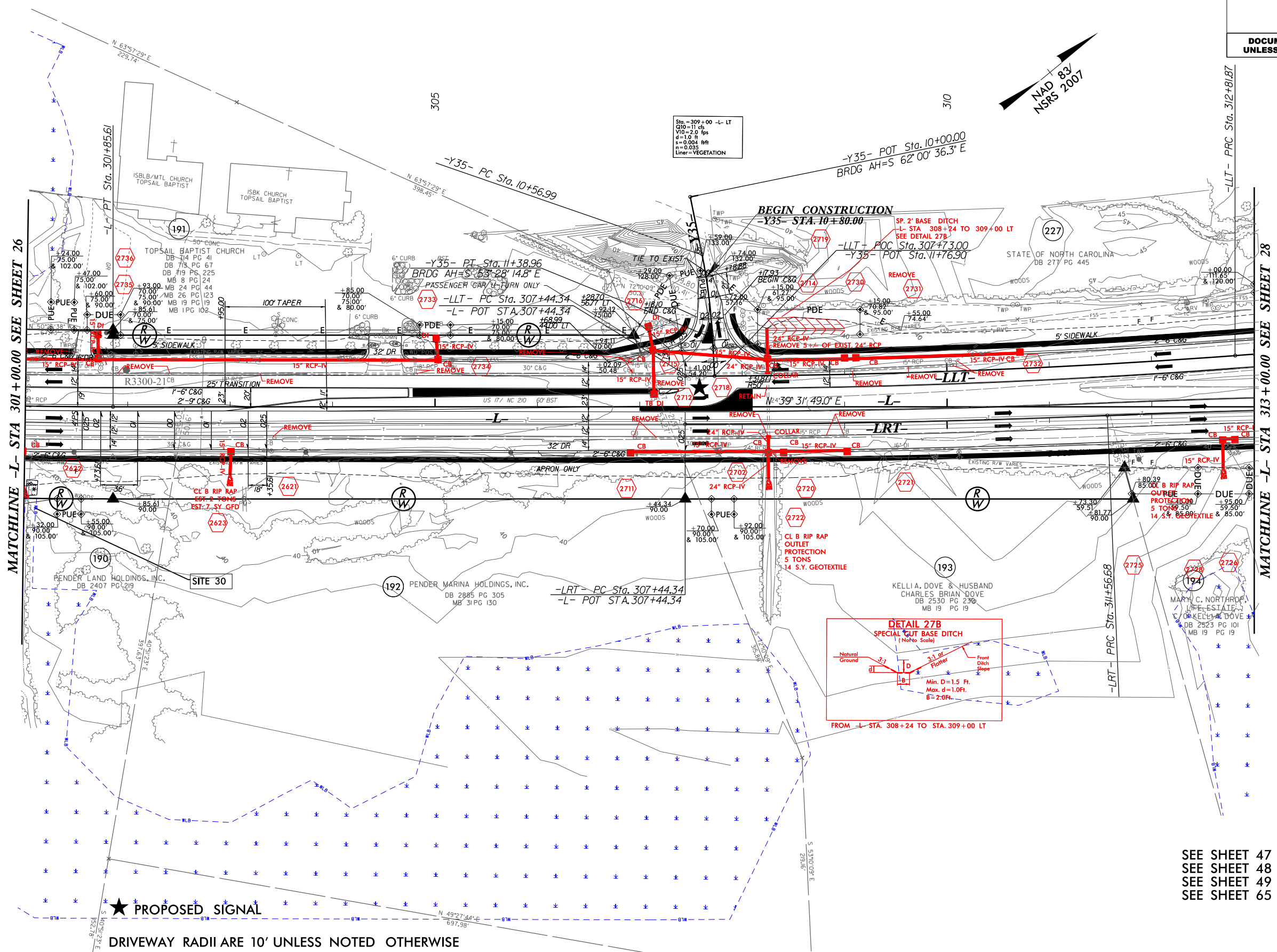
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



DENOTES FILL IN WETLAND
 DENOTES MECHANIZED CLEARING



Sta. = 309+00 -L- LT
 Q10 = 11 c/s
 V10 = 2.0 fps
 d = 1.0 ft
 s = 0.004 ft/s
 n = 0.035
 Liner = VEGETATION



REVISIONS
 11/28/2018 - RW REVISION: ADDED PARCEL NUMBER 227. - STANTEC

5/14/99
 11/8/2019
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MATCHLINE -L- STA 301+00.00 SEE SHEET 26

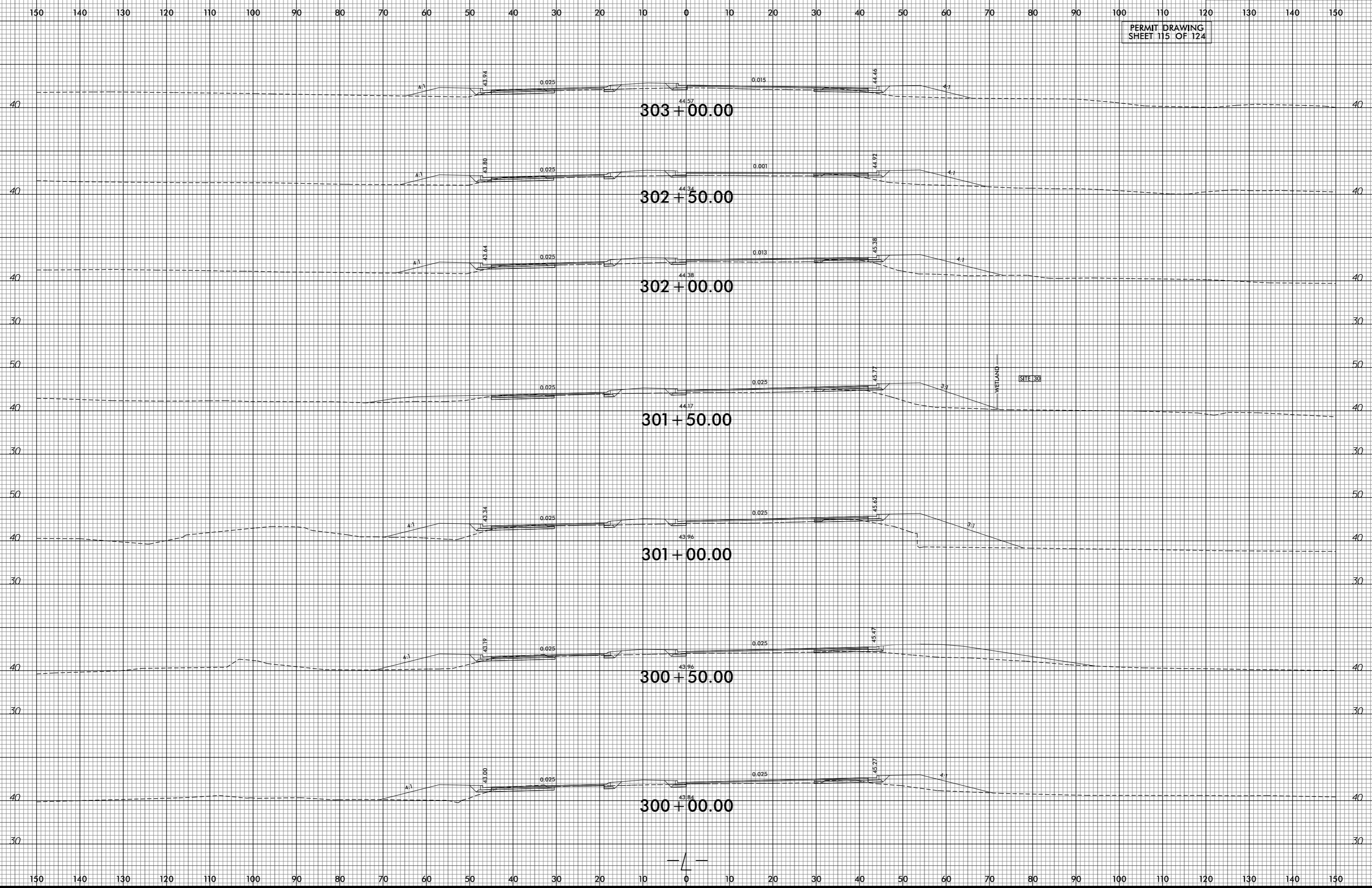
MATCHLINE -L- STA 313+00.00 SEE SHEET 28

SEE SHEET 47 FOR -L- PROFILES
 SEE SHEET 48 FOR -LLT- PROFILE
 SEE SHEET 49 FOR -LRT- PROFILE
 SEE SHEET 65 FOR -Y35- PROFILE

★ PROPOSED SIGNAL
 DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

6/23/16

PERMIT DRAWING
SHEET 115 OF 124



11/8/2016
DEV/BERK
R3300B_Permit Drawings_20171118.pdf

5/14/99

REVISIONS

11/28/2018 - RW REVISION: ADDED PARCEL NUMBER 227. - STANTEC

11/18/2019
DEWBERRY
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PERMIT DRAWING SHEET 116 OF 124



2410 WYCLIFF ROAD
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NC CDA No. F-0929

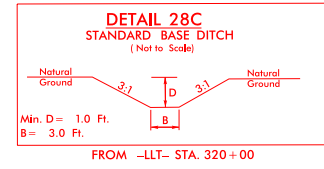
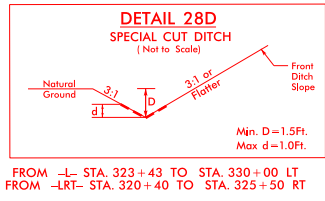
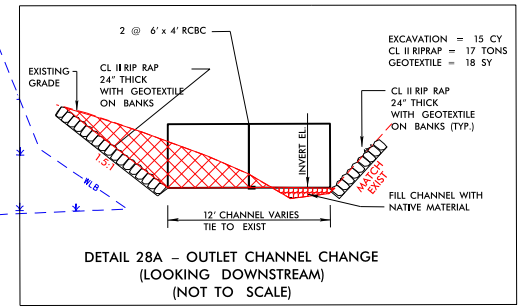
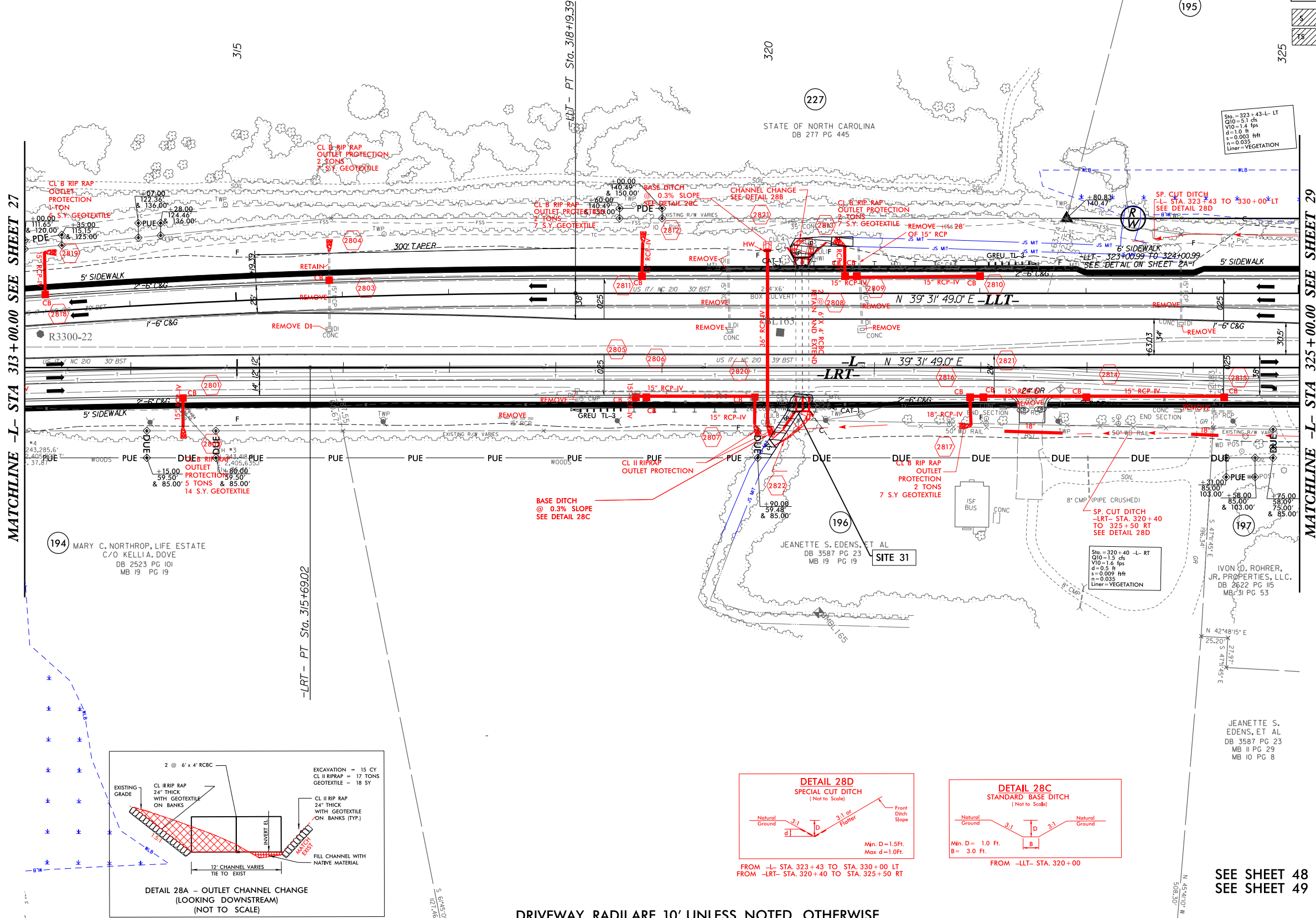
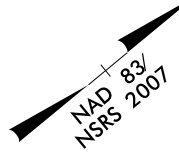
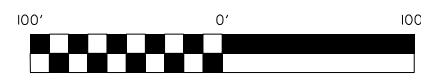
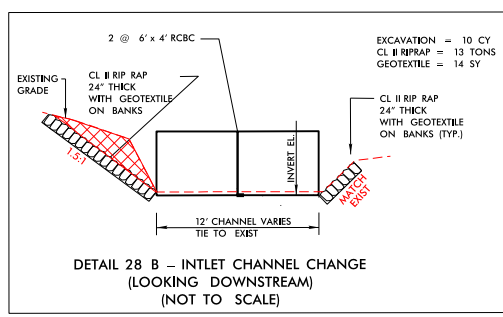


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PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. 28
FOR RW SEE U-5732 SHEET NO. 28	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER



DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE

SEE SHEET 48 FOR -LLT- PROFILE
SEE SHEET 49 FOR -LRT- PROFILE

5/14/99

REVISIONS

11/28/2018 - RW REVISION: ADDED PARCEL NUMBER 227. - STANTEC

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DEWBERRY
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PERMIT DRAWING SHEET 117 OF 124



2410 WYCLIFF ROAD
SUITE 401
RALEIGH, NC 27607
PHONE: 919.881.9929
NC CDA No. F-0929

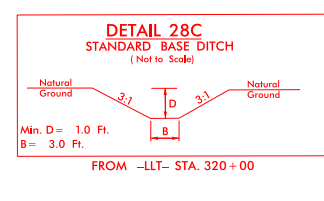
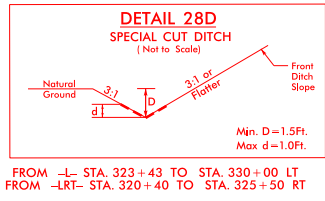
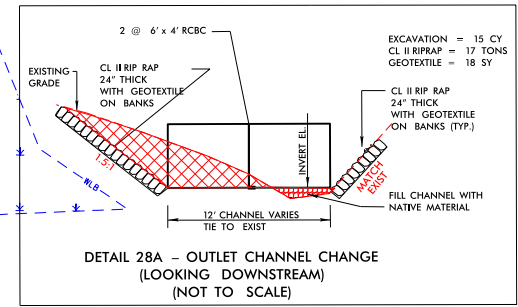
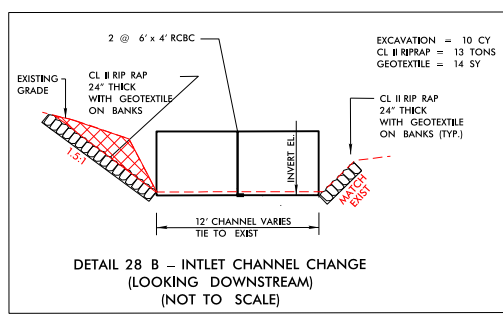
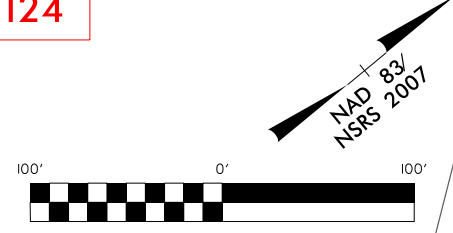


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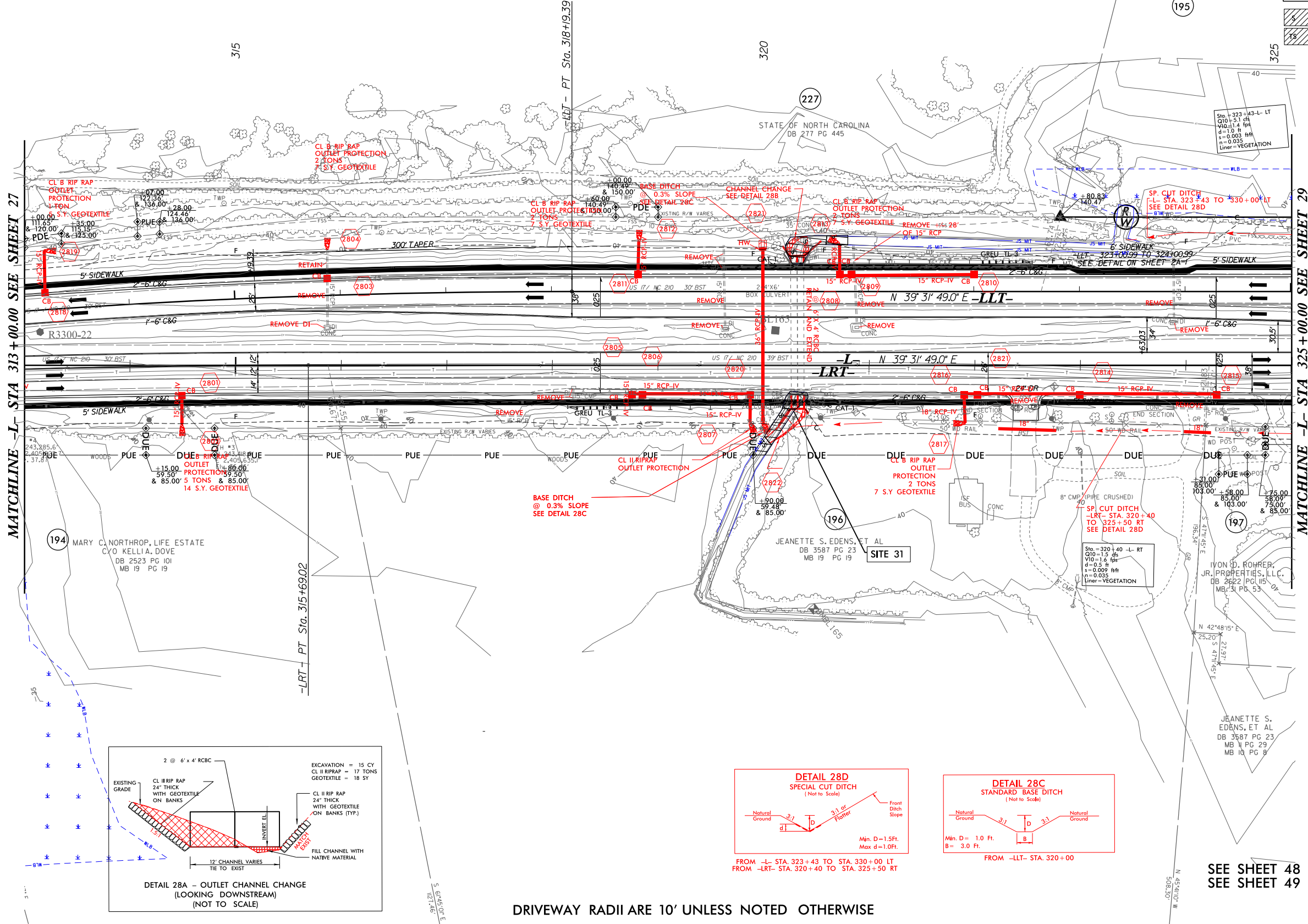
PROJECT REFERENCE NO. <i>R-3300B</i>	SHEET NO. <i>28</i>
FOR RW SEE U-5732 SHEET NO. <i>28</i>	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER



DRIVEWAY RADII ARE 10' UNLESS NOTED OTHERWISE



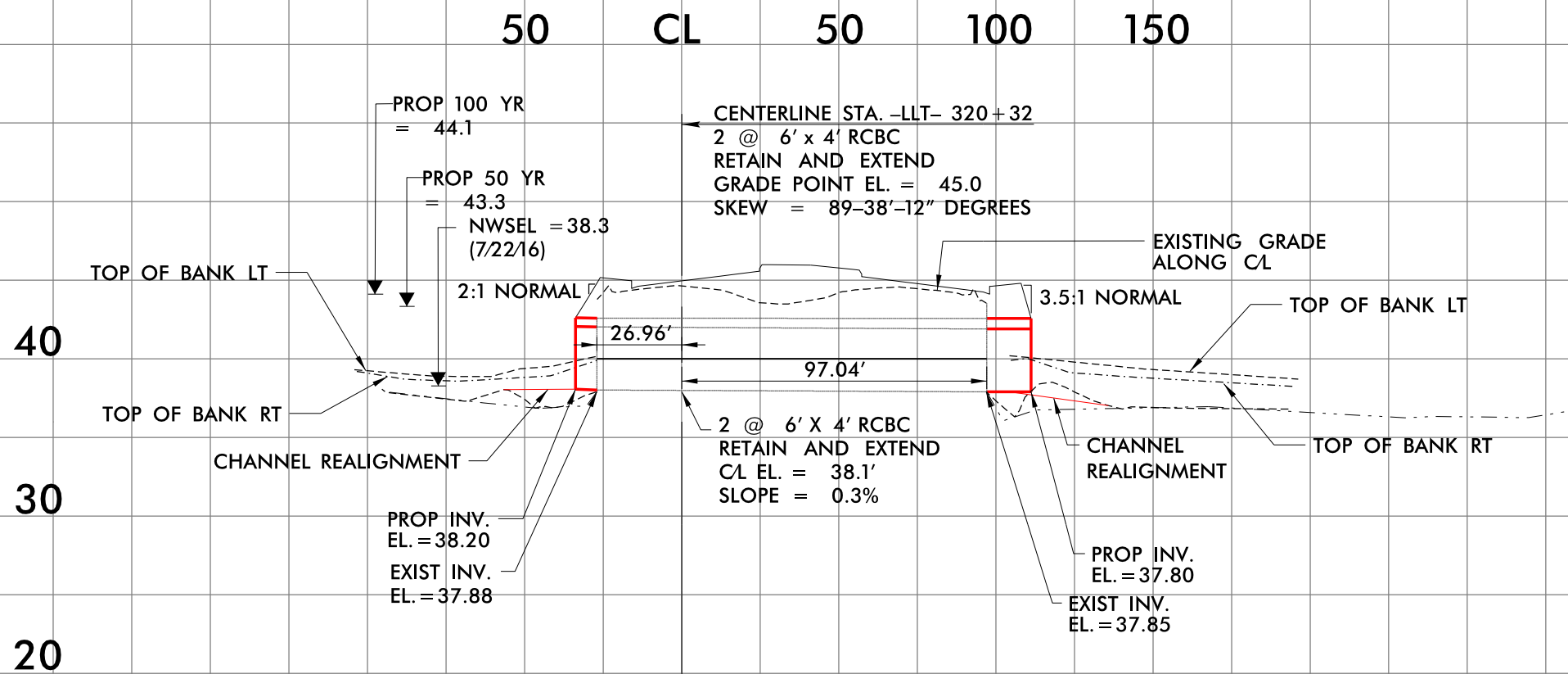
SEE SHEET 48 FOR -LLT- PROFILE
SEE SHEET 49 FOR -LRT- PROFILE

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

SITE 31

PERMIT DRAWING
SHEET 118 OF 124



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	584+13 to 586+92-L1-	ROADWAY FILL	0.34			0.05						
	583+95 to 598+87 -L1-		< 0.01		0.03	0.75						
	598+72 to 599+11 -L1-LT					< 0.01						
	600+41 to 601+51-L1-LT		0.02			0.02						
	13+22 to 18+16-Y30RPB-					0.02						
	19+23 to 26+02-Y30RPC-		1.19		0.03	0.14						
	27+65-SR4-					< 0.01						
	20+90 to 21+60-SR5-		< 0.01		0.03	0.03						
2	41+43 to 43+17-Y30-RT	ROADWAY FILL	0.14			0.02						
	43+21 to 44+49-Y30DET-LT		0.04			< 0.01						
3	610+93 to 618+58-L1-	ROADWAY FILL	2.03			0.17						
		2 at 12'x7' RCBC			0.02							
	611+78 to 612+02-L1-RT	INLET CHANNEL			0.01							
	612+24 to 612+73-L1-LT	OUTLET CHANNEL			0.03							
	611+21 to 611+79-L1-LT	ROADWAY FILL	0.05			0.01						
	45+87 to 47+20-Y30-LT	ROADWAY FILL	0.18		0.04	0.02						
	53+88 to 54+12-Y30-LT	OUTLET DITCH			0.01	< 0.01		< 0.01			25	
	54+51 to 56+42-Y30-LT	OUTLET DITCH			0.08			0.02	< 0.01	92	10	
	56+99 to 57+43-Y30-RT	ROADWAY FILL	< 0.01									
	57+15 to 58+74-Y30DET-	ROADWAY FILL		0.15		0.02		< 0.01		132		
	13+40 to 19+59-Y30RPA-	ROADWAY FILL	1.59		0.07	0.15		< 0.01	0.01	14	36	
		1 AT 12'x7' RCBC			0.06			0.08		408		
TOTALS*:			5.60	0.15	0.41	1.42		0.11	0.02	646	71	0

*Rounded totals are sum of actual impacts

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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)
3	14+94 to 15+73-Y30RPA-	INLET CHANNEL			0.03			< 0.01	< 0.01	29	11	
		OUTLET CHANNEL							< 0.01	15	14	
	18+22 to 20+14-Y30RPD-	ROADWAY FILL	0.42			0.07						
		1 AT 12'x7' RCBC			0.05							
	19+71 to 20+02-Y30RPD-LT	INLET CHANNEL			< 0.01							
	19+08 to 19+32-Y30RPD-RT	OUTLET CHANNEL			< 0.01							
	26+15 to 16+49-SR6-LT	1 AT 12'x7' RCBC OUTLET			< 0.01			< 0.01	< 0.01	15	14	
4	623+04 to 628+37-L1-	ROADWAY FILL	1.81			0.15						
	630+85 to 633+02-L1-	ROADWAY FILL	< 0.01		< 0.01	0.03						
	633+70 to 634+01-L1-LT	PIPE OUTLET				< 0.01						
5	639+22 to 641+53-L1-	ROADWAY FILL	0.04					0.02		320		
6	641+99 to 643+06-L1-	ROADWAY FILL						0.13	< 0.01	316	15	
	642+24 to 642+40-L1-LT	54" RCP OUTLET CHANNEL						< 0.01	< 0.01	38	16	
7	645+01 to 645+59-L1-LT	ROADWAY FILL	0.01			0.01		0.02	< 0.01	132	10	
	648+24 to 658+48-L1-	ROADWAY FILL	2.44		0.01	0.19		0.07	< 0.01	238	10	
	658+90 to 665+33-L1-	ROADWAY FILL	2.17			0.08						
	658+87 to 664+27-L1-	ROADWAY FILL						0.16	< 0.01	663	15	
	659+20 to 661+20-L1-	ROADWAY FILL						0.14		495		
	659+43 to 662+20-L1-	3 AT 12'x8' RCBC			0.23							
	662+02 to 664+34-L1-RT	INLET CHANNEL			0.14	0.02						
TOTALS*:			6.89		0.48	0.55		0.56	0.03	2261	105	0

*Rounded totals are sum of actual impacts

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			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)
7	666+17 to 666+60-L1-RT	ROADWAY FILL				< 0.01						
	18+94 to 20+52-Y38-	ROADWAY FILL	0.07		0.03	0.02		0.11		226		
	19+83-Y38-RT	3 AT 12'x8' RCBC			< 0.01							
	19+38 to 20+09-Y38-LT	INLET CHANNEL				< 0.01						
	19+57 to 20+40Y38-RT	OUTLET CHANNEL			0.06	< 0.01		0.01	< 0.01	32	10	
8	673+01 to 673+68-L1-RT	ROADWAY FILL	0.05			0.01						
9	673+17 to 617+39-L1-LT	ROADWAY FILL	< 0.01			< 0.01						
	685+69 to 689+89-L1-LT	ROADWAY FILL	0.09			0.08						
10	676+64 to 679+37-L1-	DRAIN POND						0.63				
11	695+36 to 695+90-L1-LT	ROADWAY FILL			< 0.01	< 0.01						
12	700+69 to 702+88-L1-	DRAIN POND						0.42				
13	709+63 to 715+63-L1-	ROADWAY FILL	2.05			0.15						
	712+62-L1-	2 at 12'x7' RCBC			0.12			0.06		228		
	712+99 to 713+91-L1-RT	INLET CHANNEL			0.02	0.02		0.02	< 0.01	78	14	
	711+78 to 712+35-L1-LT	OUTLET STABILIZATION			0.02	< 0.01		0.01	< 0.01	42	12	
14	724+44 to 725+96-L1-	ROADWAY FILL						0.10	< 0.01			
	724+48 to 724+73-L1-RT	OUTLET STABILIZATION						< 0.01				
TOTALS*:			2.26		0.26	0.32		1.37	0.02	606	36	0

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			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)
14	17+51 to 18+26-Y31RPC-	ROADWAY FILL						0.04	< 0.01			
	17+57 to 17+87-Y31RPC-	OUTLET STABILIZATION						< 0.01				
15	730+72 to 743+60-L1-	ROADWAY FILL	4.90		0.07	0.48						
	15+72 to 22+37-SR7-		1.06		0.01	0.26						
	15+91 to 16+09-SR7-RT	OUTLET CHANNEL			0.01							
16	18+25 to 21+09 -Y31-RT	ROADWAY FILL	0.07			< 0.01						
	18+04 to 21+34-Y31DET-			0.08		0.06						
17	18+38 to 19+04-Y31-LT	ROADWAY FILL	< 0.01			< 0.01						
	26+86 to 28+88-SR7-		0.19		0.03	0.05						
18	45+47 to 47+66-SR7-	ROADWAY FILL	0.19			0.09						
	766+74 to 769+26-L1-		0.53			0.04						
19	769+74 to 778+78-L1-	ROADWAY FILL	3.42			0.37						
	779+20 to 793+37-L1-	ROADWAY FILL	4.21			0.46						
	793+57 to 803+95-L1-	ROADWAY FILL	3.92			0.41						
	812+86 to 823+84-L1-	ROADWAY FILL	1.48			0.23						
	48+38 to 56+57-SR7-	ROADWAY FILL	0.79			0.37						
	21+06 to 22+80-SR8-LT	ROADWAY FILL	0.13			0.03						
	28+61 to 29+70-SR8-	ROADWAY FILL	0.10			0.05						
TOTALS*:			20.99	0.08	0.12	2.92		0.05	< 0.01	0	0	0

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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)
20	802+93 to 824+38-L1-	ROADWAY FILL	8.25			0.55						
	826+66 to 868+89-L1-	ROADWAY FILL	0.59			0.08						
	829+48 to 830+44-L1-LT	ROADWAY FILL	0.05			0.02						
	830+26 to 835+99-L1-	ROADWAY FILL	1.48			0.10						
	831+98 to 834+47-L1-RT	ROADWAY FILL	0.07			0.03						
	837+34 to 838+49-L1-LT	ROADWAY FILL	2.67			0.14						
	845+84 to 854+89-L1-	ROADWAY FILL	2.81		0.07	0.14		0.25		773		
	14+42 to 15+44-SR8-	ROADWAY FILL	0.13			0.02						
	7+45 to 15+93-Y32RPB1-	ROADWAY FILL	1.99			0.15						
	14+79 to 16+31-Y32RPB1-RT	ROADWAY FILL	0.08			0.02						
	18+01 to 22+37-Y32-	ROADWAY FILL	1.09		0.05	< 0.01		0.14		482		
	29+50 to 39+40-Y32-	ROADWAY FILL	4.46			0.44						
	21	22+66 to 25+54-Y19-	ROADWAY FILL	0.36			< 0.01		0.01		97	
25+09-Y19-		1 AT 8'x6' RCBC			0.01							
24+82 to 25+32-Y19-		OUTLET CHANNEL			0.03	0.03		< 0.01		10		
22	10+17 to 12+28-SR5-	ROADWAY FILL	0.21		< 0.01	< 0.01		< 0.01		163		
23	603+49 to 604+94-L1-RT	POND						0.28				
24	16+74 to 20+28-Y30DET-RT	ROADWAY FILL		0.01		0.03						
25	46+66 to 46+89-Y31DET-RT	ROADWAY FILL				< 0.01						
TOTALS*:			24.24	0.01	0.16	1.77		0.69	< 0.01	1515	10	0

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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)
26		Roadway Fill						< 0.01	0.16			
27		Roadway Fill	0.32			0.16						
28		Roadway Fill	0.02			< 0.01						
29		Roadway Fill	< 0.01			< 0.01						
30		6' X 4' RCBC Extension						< 0.01		26		
		Channel Realignment (LT)						0.01		39		
		CL. B Rip Rap Pad						< 0.01		20		
		Channel Realignment (RT)						< 0.01	< 0.01	37	16	
		TOTAL SHEET 124	0.34			0.17		0.04	0.16	122	16	
		TOTAL SHEET 119	5.60	0.15	0.41	1.42		0.11	0.02	646	71	
		TOTAL SHEET 120	6.89		0.48	0.55		0.56	0.03	2261	105	
		TOTAL SHEET 121	2.26		0.26	0.32		1.37	0.02	606	36	
		TOTAL SHEET 122	20.99	0.08	0.12	2.92		0.05	< 0.01			
		TOTAL SHEET 123	24.24	0.01	0.16	1.77		0.69	< 0.01	1515	10	
		TOTALS*:	60.68	0.24	1.44	7.32		2.85	0.40	5272	253	0

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