



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

May 26, 2017

US Army Corps of Engineers
69 Darlington Avenue
Wilmington, North Carolina 28403

Attention: Mr. Brad Shaver
NCDOT Coordinator

Dear Sir:

Subject: Revised Application for Section 404 Individual Permit and Section 401 Water Quality Certification for the proposed SR 1409 (Military Cutoff Road) extension and US 17 Hampstead Bypass in New Hanover and Pender Counties. TIP Nos. U-4751 & R-3300.

Reference: Permit Application dated December 21, 2016

Please reference the previously submitted application for the above referenced project. The tabulated non-riparian wetland impacts in the Wetland Permit Impact Summary Table have increased by 0.34 acre. This is due to lengthening of the ramps at the I-140 interchange for traffic safety and revisions to proposed mechanized clearing throughout the U-4751 project area per your request. Table 1 of the original cover letter has been updated below. Additionally, please replace the previously submitted permit drawings with the included revisions.

Table 1. U-4751 Wetland Impacts

Permit Drawing Site Number	FEIS Label	Type	Permanent Impacts (ac.)	Temporary Impacts (ac.)	Mitigation Required
1	BWD	Non-riparian	< 0.01	0	Yes
1	BWD	Non-riparian	1.21	0	Yes
2	BWC/BWB	Non-riparian	0.33	0	Yes
3	PD-04	Non-riparian	5.28	0	Yes
4	PD-03	Non-riparian	6.32	0	Yes
5	PD-01	Non-riparian	< 0.01	0	Yes
15	BWI	Non-riparian	0.09	0	Yes
16	CWA	Non-riparian	6.03	0	Yes
19	CWB	Non-riparian	0.52	0	Yes
21	CWB	Non-riparian	4.40	0	Yes
23	CWB/CSC	Non-riparian	6.85	0	Yes
24	CWB	Non-riparian	0.07	0	Yes
26	CWF	Non-riparian	11.99	0	Yes

Permit Drawing Site Number	FEIS Label	Type	Permanent Impacts (ac.)	Temporary Impacts (ac.)	Mitigation Required
28	CWD	Non-riparian	5.11	0	Yes
33	CWE	Non-riparian	6.18	0	Yes
37	CWE	Non-riparian	5.99	0	Yes
39	CWF	Non-riparian	0.13	0	Yes
41	ZWDD	Non-riparian	0.01	0	Yes
Total:			60.51	0	

The Department has acquired compensatory mitigation for the unavoidable impacts to non-riparian wetlands from the Northeast Cape Fear Mitigation Bank. The Northeast Cape Fear Mitigation Bank is located in Pender County within the USGS hydrologic unit 03030007 of the Cape Fear River. The bank is located immediately north of the intersection of NC Highway 21 and Shaw Highway (SR 1522) approximately 12 miles north of Wilmington, NC. It is situated between northeast Cape Fear River and the state protected Holly Shelter Game Lands in Pender County. NCDOT purchased 200 acres of non-riparian wetland credits from the bank in March 2016, of which the additional 0.34 acre will be debited from the NECFM Bank's ledger for U-4751 as shown below. In addition, NCDOT did not propose mitigation for the 0.18 acre of excavation in non-riparian wetlands since they are not in Section 10 waters; however, NCDWR has requested mitigation under their wetland standards. USACE has also requested we provide mitigation for 1.09 acres of hand clearing in overhead power rights-of-way, referenced in the December 21, 2016 application, at a 0.5:1 ratio.

Mitigation Type	Debit Amount (acers)	Site TIP	Notes
Non-Riparian Wetland Restoration	2.42	U-4751 (03020302)	Impacts were 1.21 acers calculated with a 2:1 ratio
Non-Riparian Wetland Restoration	119.15	U-4751 (03030007)	Impacts were 59.30 acres calculated with a 2:1 ratio and 1.09 at 0.5:1

Sincerely,



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

cc: NCDOT Standard Permit Application Distribution List

Revised 5/9/2017

 North Carolina Department of Transportation Highway Stormwater Program STORMWATER MANAGEMENT PLAN FOR NCDOT PROJECTS 									
(Version 2.04; Released November 2015)									
WBS Element: 40191.1.2		TIP No.: U-4751		County(ies): New Hanover			Page 1 of 5		
General Project Information									
WBS Element:		40191.1.2		TIP Number: U-4751		Project Type: New Location		Date: 5/9/2017	
NCDOT Contact:		Paul Atkinson, PE			Contractor / Designer:		Edward Vance, PE		
		Address: NCDOT Hydraulics Unit 1590 Mail Service Center Raleigh, NC 27699-1590					Address: STV, Inc. 900 West Trade Street, Suite 715 Charlotte, NC 28202		
		Phone: 919-707-6707					Phone: 704-816-2555		
		Email: patkinson@ncdot.gov					Email: edward.vance@stvinc.com		
City/Town:		Wilmington			County(ies):		New Hanover		
River Basin(s):		Cape Fear		Cape Fear		CAMA County?		Yes	
Wetlands within Project Limits?		Yes							
Project Description									
Project Length (lin. miles or feet):		4.156 miles		Surrounding Land Use:		Residential			
		Proposed Project				Existing Site			
Project Built-Up Area (ac.)		ac.				ac.			
Typical Cross Section Description:		First Half: The typical consists of 2-12' paved lanes, 1-14' paved lane and a 10' grass shoulder in each direction with a raised median, C&G and 3:1 fill slopes. Second Half: The typical consists of 3-12' paved lanes, a 14' paved shoulder and 2' grass shoulder in each direction with a median ditch (6:1 sides) and 3:1 fill slopes.				N/A			
Annual Avg Daily Traffic (veh/hr/day):		Design/Future: 47800		Year: 2036		Existing: 22600		Year: 2016	
General Project Narrative: (Description of Minimization of Water Quality Impacts)		A combination of grassed swales, median roadway ditches and riprap dissipators were used to minimize the Water Quality Impacts. There are two existing Wet Detention Basins located adjacent to the project (Plan Sheet 12 and 13) that will capture some of the stormwater runoff from the proposed roadway. Also, there is a proposed Wet Detention Basin with a Forebay (Plan Sheet 6) that will capture and treat 4.89 acres of new pavement area at the proposed interchange with US-17 Business (Market Street).							
Waterbody Information									
Surface Water Body (1):		UT 2 to Smith Creek			NCDWR Stream Index No.:		18-74-63		
NCDWR Surface Water Classification for Water Body			Primary Classification:		Class C				
			Supplemental Classification:		Swamp Waters (Sw)				
Other Stream Classification:		None							
Impairments:		None							
Aquatic T&E Species?		No		Comments:					
NRTR Stream ID:						Buffer Rules in Effect:		N/A	
Project Includes Bridge Spanning Water Body?		No		Deck Drains Discharge Over Buffer?		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)									



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS

(Version 2.04; Released November 2015)

WBS Element: 40191.1.2 TIP No.: U-4751 County(ies): New Hanover Page 2 of 5

Additional Waterbody Information

Surface Water Body (2):	UT to Smith Creek	NCDWR Stream Index No.:	18-74-63
NCDWR Surface Water Classification for Water Body	Primary Classification:	Class C	
	Supplemental Classification:	Swamp Waters (Sw)	
Other Stream Classification:	None		
Impairments:	None		
Aquatic T&E Species?	No	Comments:	
NRTR Stream ID:		Buffer Rules in Effect:	N/A
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)	Dissipator Pads Provided in Buffer?
(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)
Surface Water Body (3):	UT to Island Creek	NCDWR Stream Index No.:	18-74-50
NCDWR Surface Water Classification for Water Body	Primary Classification:	Class C	
	Supplemental Classification:	None	
Other Stream Classification:	None		
Impairments:	None		
Aquatic T&E Species?	No	Comments:	
NRTR Stream ID:		Buffer Rules in Effect:	N/A
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)	Dissipator Pads Provided in Buffer?
(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)
Surface Water Body (4):	UT to Howe Creek	NCDWR Stream Index No.:	18-87-23
NCDWR Surface Water Classification for Water Body	Primary Classification:	Class SA	
	Supplemental Classification:	(ORW)	
Other Stream Classification:	None		
Impairments:	chlorophyll a	pH	turbidity
Aquatic T&E Species?	No	Comments:	
NRTR Stream ID:		Buffer Rules in Effect:	N/A
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)	Dissipator Pads Provided in Buffer?
(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)
Surface Water Body (5):	Kings Grant Trib. To Smith Creek	NCDWR Stream Index No.:	18-74-63
NCDWR Surface Water Classification for Water Body	Primary Classification:	Class C	
	Supplemental Classification:	Swamp Waters (Sw)	
Other Stream Classification:	None		
Impairments:	None		
Aquatic T&E Species?	No	Comments:	
NRTR Stream ID:		Buffer Rules in Effect:	N/A
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)	Dissipator Pads Provided in Buffer?
(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)

Revised 5/9/2017



5

Swales

[illegible]

Additional Comments

Sheet 13: Please note that the longitudinal slope of the grass swales are less than 0.3% due to the topography.



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS



(Version 2.04; Released November 2015)

WBS Element: 40191.1.2

TIP No.: U-4751

County(ies): New Hanover

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?
6	-Y1- Sta. 45+00 to 49+00 34.26499 / -77.82560	(4)UT to Howe Creek	Forebay	24.00	4.89	0.1 inches of runoff from NBUA	1776.0	cf	3050.0	cf	N/A
Revised 5/9/2017											

*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



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



(Version 2.04; Released November 2015)

WBS Element: 40191.1.2

TIP No.: U-4751

County(ies): New Hanover

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Other Best Management Practices

Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	BMP Type	Drainage Area (ac)	New Built-Up Area (ac)	Volume Treated (ac-ft)	Precipitation Depth Treated over NBUA (in)	BMP Associated w/ Buffer Rules?
6	-Y1- Sta. 45+00 to 49+00 34.26499 / -77.82560	(4)UT to Howe Creek	Wet Detention Basin	24.0	4.9	8.35	21.56	No
Revised 5/9/2017								

Additional Comments

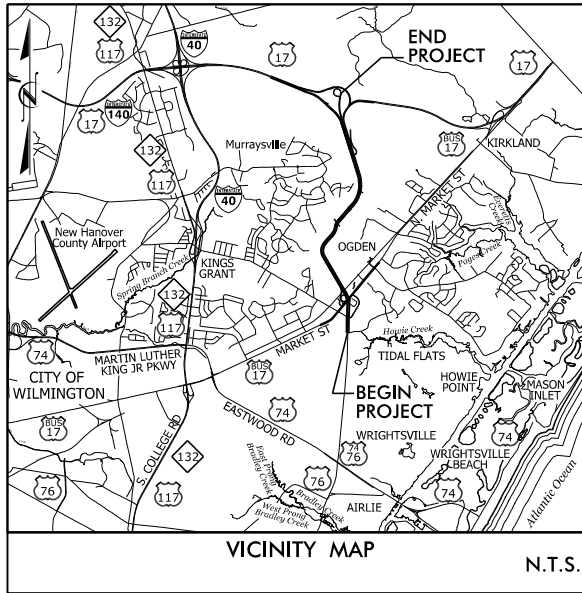
Revised 5/9/2017

09/08/99

TIP PROJECT: U-4751

CONTRACT:

See Sheet 1A For Index of Sheets
See Sheet 1B For Standard Symbology Sheet



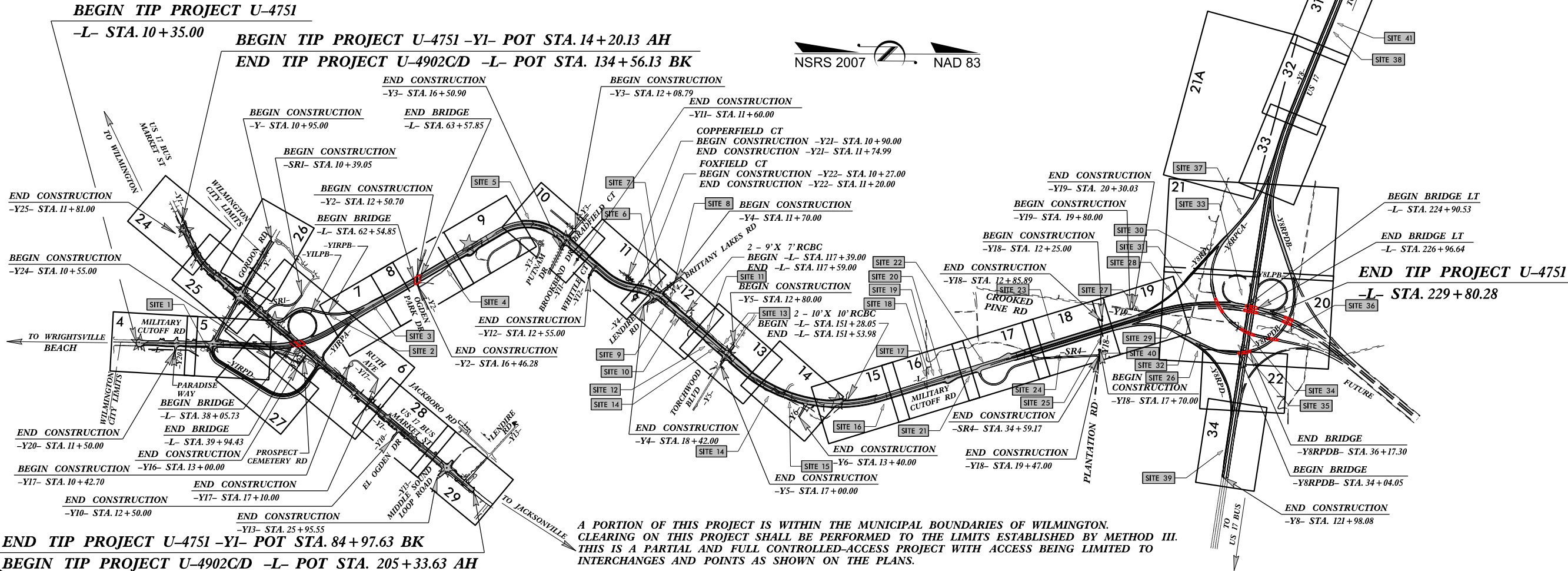
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PERMIT DRAWING
SHEET 1 OF 83

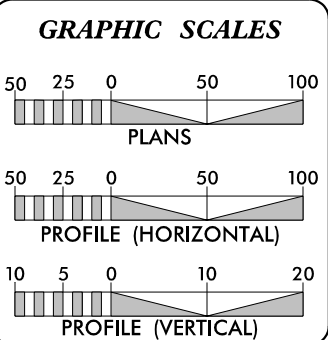
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4751	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
40191.1.2		PE	
40191.2.1		RW	

LOCATION: SR 1409 (MILITARY CUTOFF ROAD) TO US 17 IN WILMINGTON
TYPE OF WORK: GRADING, PAVING, DRAINAGE, RETAINING WALLS,
SIGNALS, STRUCTURES & CULVERTS

WETLAND AND SURFACE WATER IMPACTS PERMIT



A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF WILMINGTON.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
THIS IS A PARTIAL AND FULL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO
INTERCHANGES AND POINTS AS SHOWN ON THE PLANS.

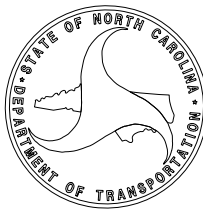


DESIGN DATA	
ADT 2017 =	23,900
ADT 2037 =	49,100
K =	12%
D =	60%
T =	7%*
V =	50 MPH
* (TTST = 3% + DUAL 4%)	
FUNC CLASS =	
ARTERIAL/FREEWAY	
STATEWIDE TIER	

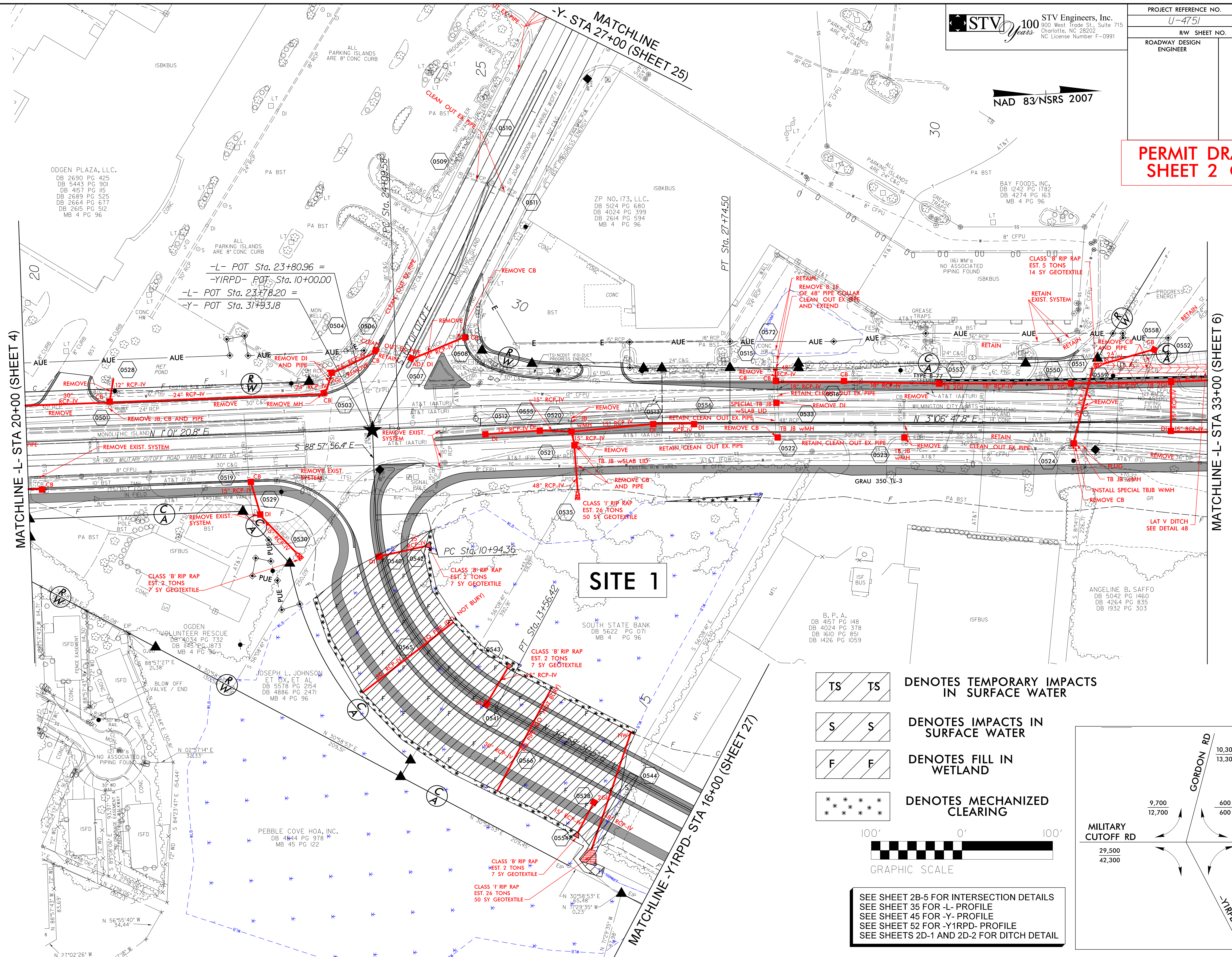
PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT U-4751 =	5.394 MILES
LENGTH STRUCTURE TIP PROJECT U-4751 =	0.103 MILES
TOTAL LENGTH OF TIP PROJECT U-4751 =	5.497 MILES

PLANS PREPARED FOR THE NCDOT BY:	
STV 100 Years	STV Engineers, Inc. 900 West Trade St., Suite 715 Charlotte, NC 28202 NC License Number F-0991
2012 STANDARD SPECIFICATIONS	JOHN N. JOHNSON, PE PROJECT ENGINEER
RIGHT OF WAY DATE: APRIL 17, 2015	SEAN C. STEPHENS, EI PROJECT DESIGNER
LETTING DATE: OCTOBER 17, 2017	GARY LOVERING, PE PROJECT ENGINEER NCDOT ROADWAY DESIGN

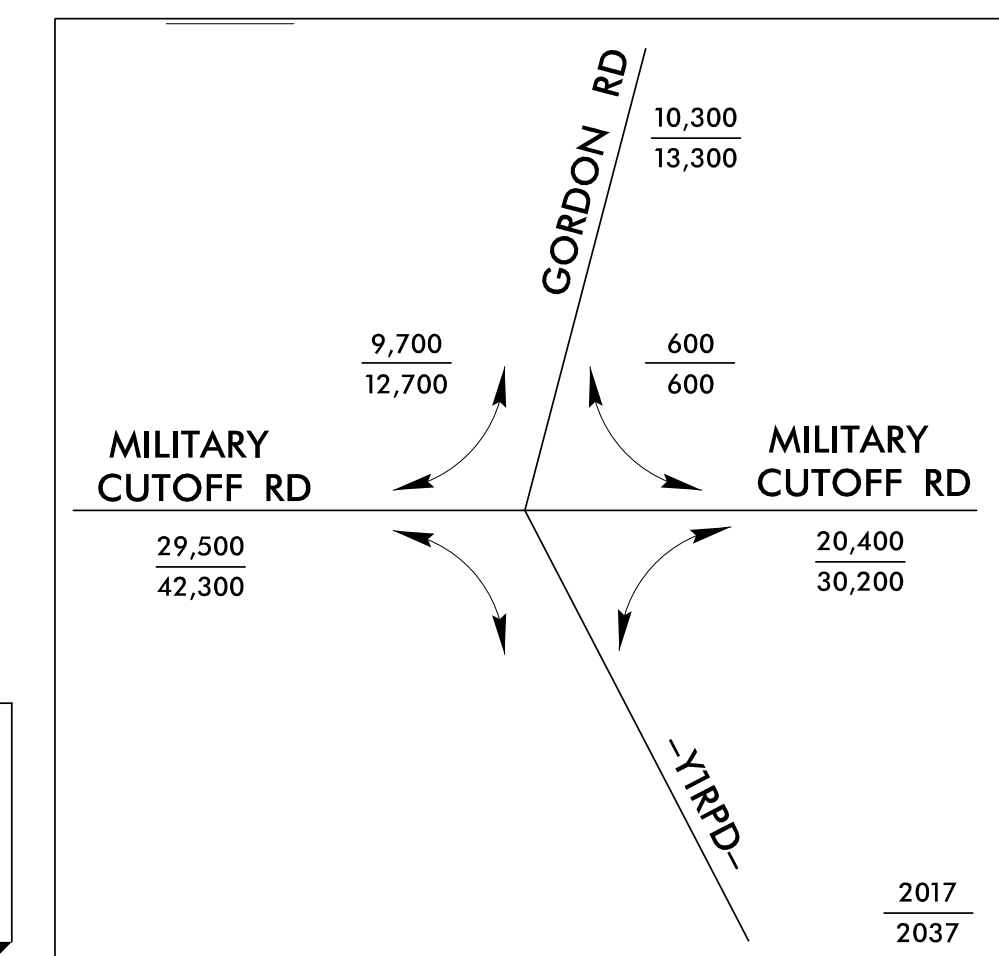
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SIGNATURE:	P.E.
ROADWAY DESIGN ENGINEER	
SIGNATURE:	P.E.



PERMIT DRAWING
SHEET 2 OF 83



SEE SHEET 2B-5 FOR INTERSECTION DETAILS
SEE SHEET 35 FOR -L- PROFILE
SEE SHEET 45 FOR -Y- PROFILE
SEE SHEET 52 FOR -Y1RPD- PROFILE
SEE SHEETS 2D-1 AND 2D-2 FOR DITCH DETAIL



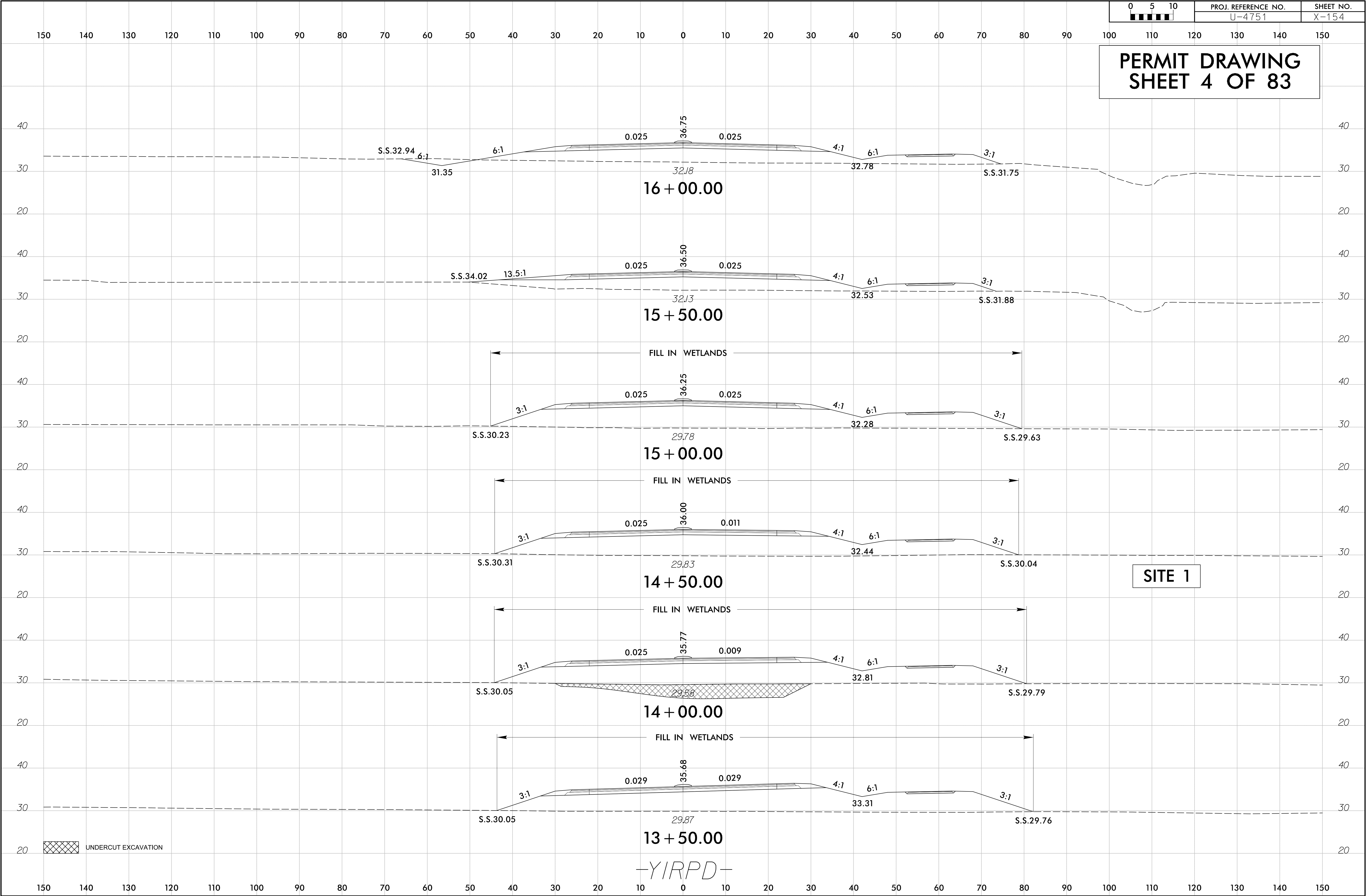
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SEE SHEET 2B-5 FOR INTERSECTION DETAILS
SEE SHEET 35 FOR -L- PROFILE
SEE SHEET 45 FOR -Y- PROFILE
SEE SHEET 52 FOR -Y1RPD- PROFILE
SEE SHEETS 2D-1 AND 2D-2 FOR DITCH DETAIL

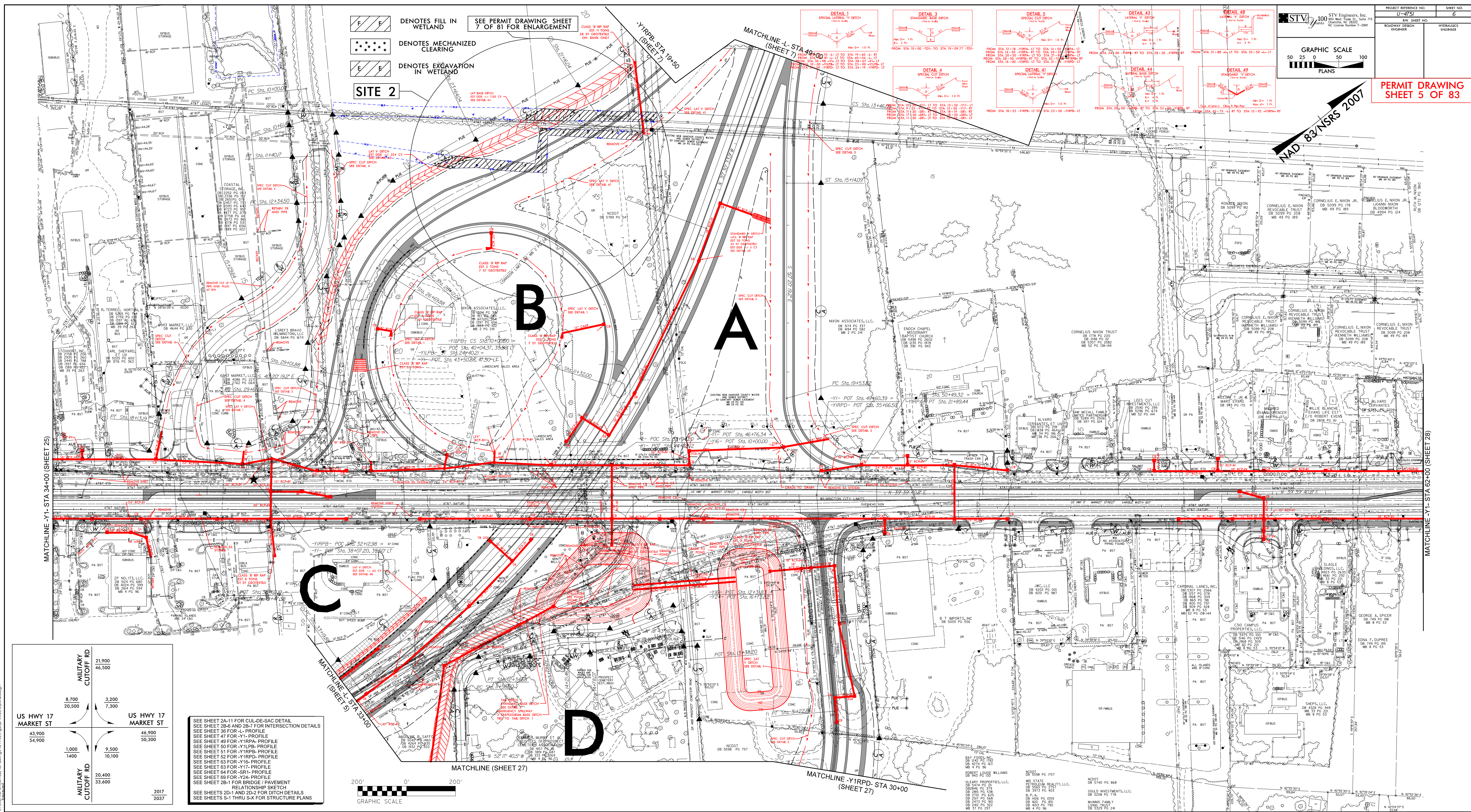
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Revised 5/9/2017

5/9/2017
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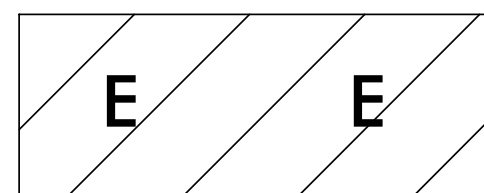
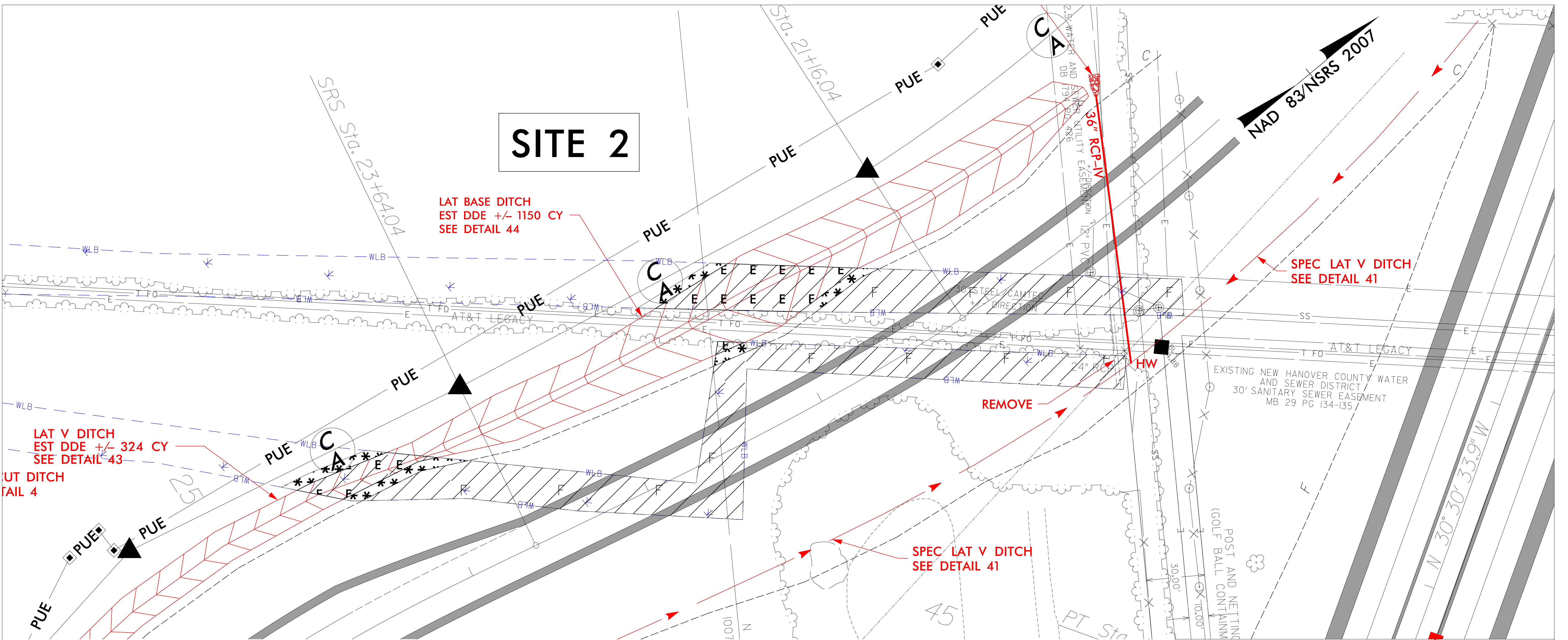
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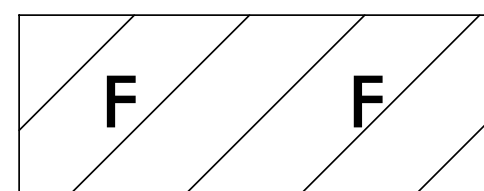
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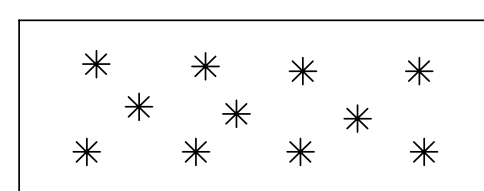
Revised 5/9/2017



DENOTES EXCAVATION IN
WETLAND

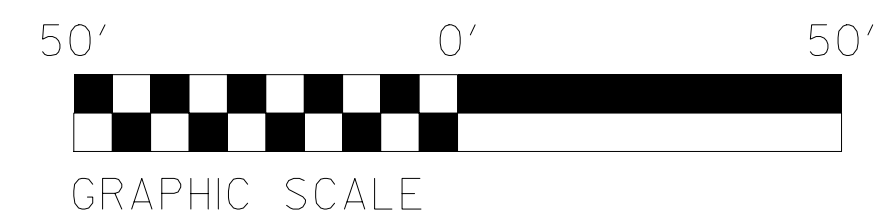


DENOTES FILL IN
WETLAND



DENOTES MECHANIZED
CLEARING

PLAN VIEW



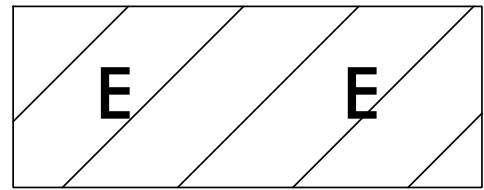
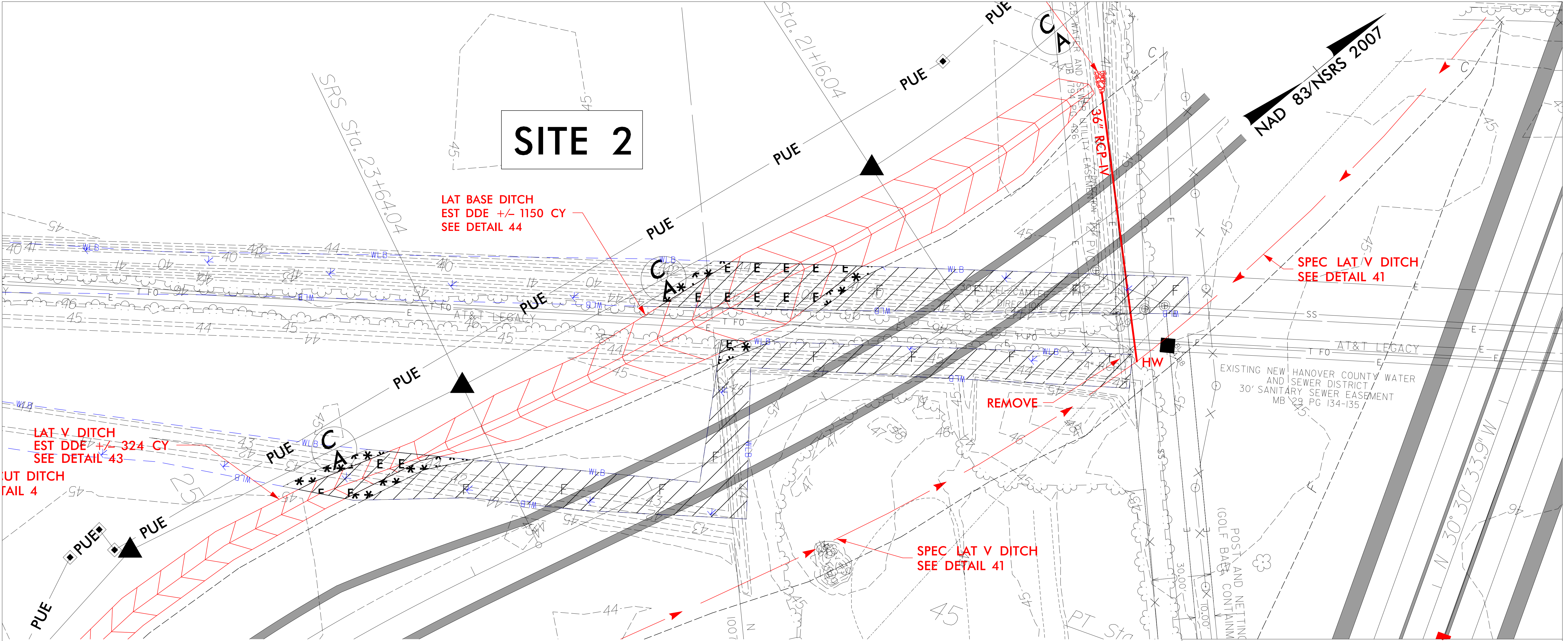
NCDOT

DIVISION OF HIGHWAYS
NEW HANOVER COUNTY
PROJECT: 40191.1.2 (U-4751)
SR 1409 (MILITARY CUTOFF
ROAD) TO US 17 IN
WILMINGTON

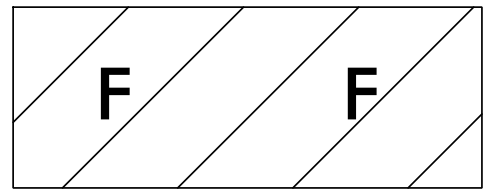
SHEET 7 OF 83

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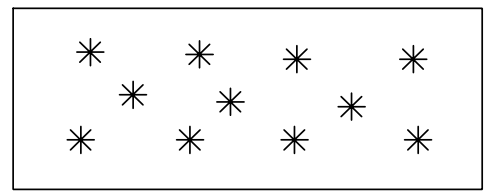
Revised 5/9/2017



DENOTES EXCAVATION IN
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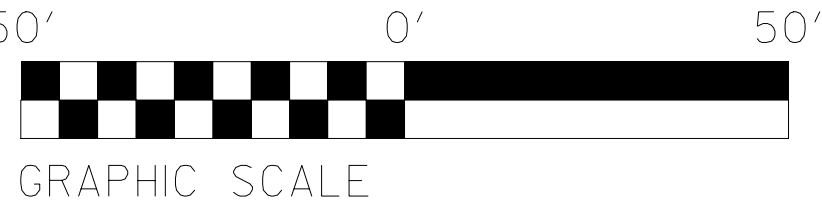


DENOTES FILL IN
WETLAND



DENOTES MECHANIZED
CLEARING

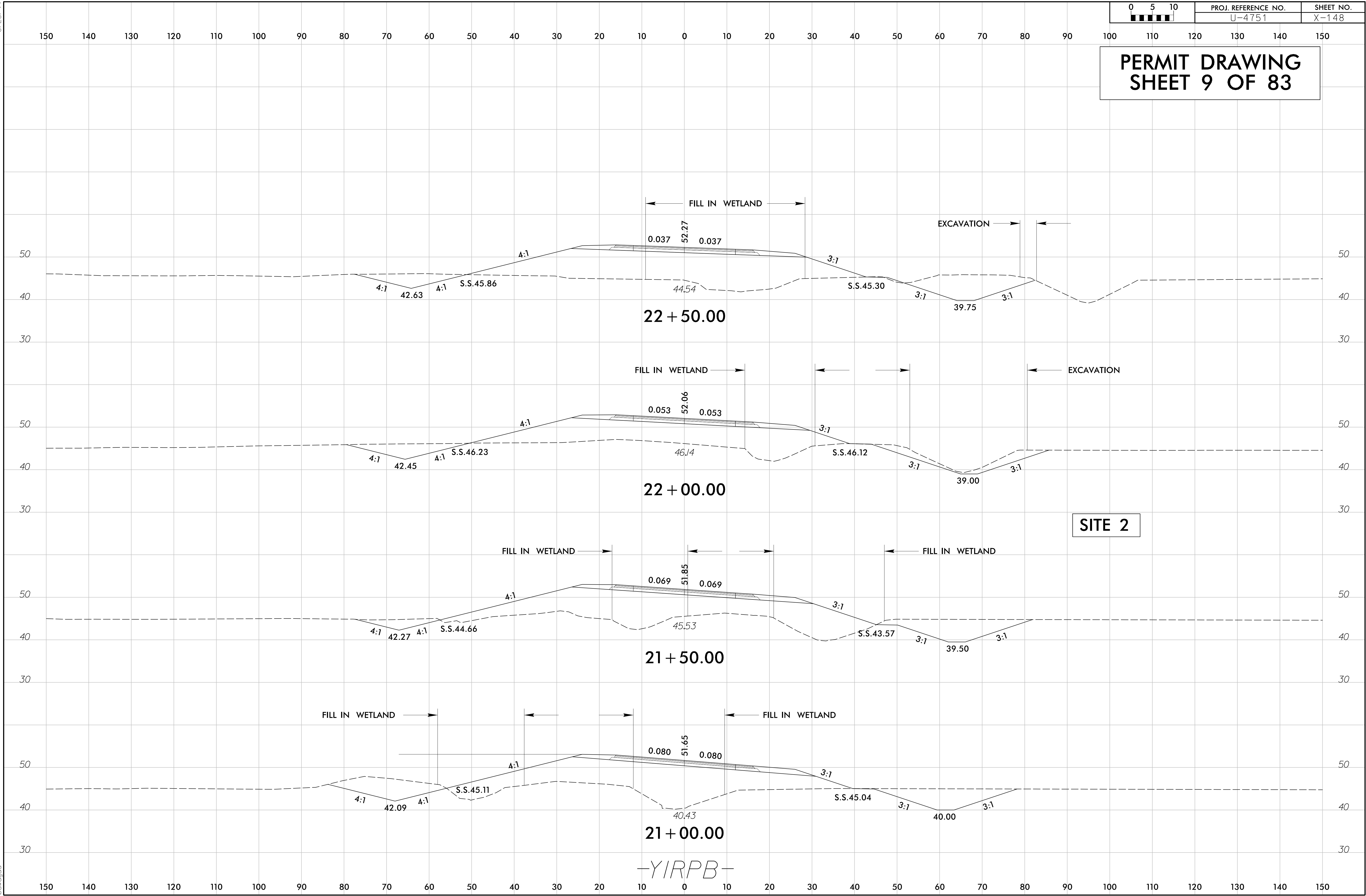
PLAN VIEW



NCDOT

DIVISION OF HIGHWAYS
NEW HANOVER COUNTY

PROJECT: 40191.1.2 (U-4751)
SR 1409 (MILITARY CUTOFF
ROAD) TO US 17 IN
WILMINGTON



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5/9/2017
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created

STV 100 Years
STV Engineers, Inc.
300 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.		SHEET NO.
U-4751		7
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 10 OF 83

NAD 83/NRS 2007

MATCHLINE -YIRPB- STA 19+50
(SHEET 6)

MATCHLINE -L- STA 49+00 (SHEET 6)

MATCHLINE -L- STA 58+00 (SHEET 8)

G&I VICAPE HARBOR LP
DB 5287 PG 2790
DB 1528 PG 459

NEW HANOVER COUNTY (PARKS & REC.)
DB 1655 PG 1123
DB 1502 PG 298
MB 25 PG 98
MB 2 PG 241

NIXON ASSOCIATES, LLC.
DB 3174 PG 337
DB 4194 PG 582
MB 25 PG 98
MB 2 PG 241

CAROLINA POWER AND LIGHT CO
DB 1438 PG 500
DB 9765 PG 1442
DB 5352 PG 201
(MAP) DB 1438 PG 502

NEW HANOVER COUNTY (PARKS & REC.)
DB 1655 PG 1123
DB 1502 PG 298
MB 25 PG 98
MB 2 PG 241

SITE 3

SITE 3

-YIRPB- POT Sta. 10+00.00 =
-L- POT Sta. 57+18.95, 35.50' LT
 $\Delta = 4' 07'' 00''$

-YIRPB- TS Sta. 10+00.00 =
-L- POT Sta. 51+62.32, 35.50' RT
 $\Delta = 0' 00'' 00''$

CLASS 'B' RIP RAP
EST. 8 TONS
21 SY GEOTEXTILE
ON BANK ONLY

CLASS 'B' RIP RAP
EST. 2 TONS
7 SY GEOTEXTILE

CLASS 'B' RIP RAP
EST. 2 TONS
7 SY GEOTEXTILE

CLASS 'B' RIP RAP
EST. 2 TONS
7 SY GEOTEXTILE

CLASS 'B' RIP RAP
EST. 2 TONS
7 SY GEOTEXTILE

100' 0' 100'
GRAPHIC SCALE

F F

DENOTES FILL IN
WETLAND

* * * * *

DENOTES MECHANIZED
CLEARING

SEE SHEET 36 FOR -L- PROFILE
SEE SHEET 49 FOR -YIRPB- PROFILE
SEE SHEET 51 FOR -YIRPB- PROFILE
SEE SHEETS 2D-1 AND 2D-2 FOR DITCH DETAIL

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5/9/2017
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cawood

STV 100 Years
STV Engineers, Inc.
300 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.

U-4751

SHEET NO.

7

RW SHEET NO.

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

**PERMIT DRAWING
SHEET 11 OF 83**

NAD 83/NRS 2007

MATCHLINE -YIRPB- STA 19+50
(SHEET 6)

MATCHLINE -L- STA 49+00 (SHEET 6)

MATCHLINE -L- STA 58+00 (SHEET 8)

G&I VICAPE HARBOR LP
DB 5287 PG 2790
DB 1528 PG 459

NEW HANOVER COUNTY (PARKS & REC.)
DB 1655 PG 1123
DB 1502 PG 298
MB 25 PG 98
MB 2 PG 241

NIXON ASSOCIATES, L.L.C.
DB 3174 PG 337
DB 4194 PG 582
MB 25 PG 48
MB 2 PG 241

SITE 3

SITE 3

-YIRPB- POT Sta. 10+00.00 =
-L- POT Sta. 57+18.95, 35.50' LT
 $\Delta = 4' 07'' 00''$

-YIRPB- TS Sta. 10+00.00 =
-L- POT Sta. 51+62.32, 35.50' RT
 $\Delta = 0' 00'' 00''$

NEW HANOVER COUNTY (PARKS & REC.)
DB 1655 PG 1123
DB 1502 PG 298
MB 25 PG 98
MB 2 PG 241

CAROLINA POWER AND LIGHT CO.
DB 1438 PG 500
DB 9765 PG 1442
DB 5352 PG 294
(MAP) DB 1438 PG 502

SPEC. CUT DITCH
SEE DETAIL 9

CLASS 'B' RIP RAP
EST. 8 TONS
21 SY GEOTEXTILE
ON BANK ONLY

CLASS 'B' RIP RAP
EST. 2 TONS
7 SY GEOTEXTILE

CLASS 'B' RIP RAP
EST. 2 TONS
7 SY GEOTEXTILE

CLASS 'B' RIP RAP
EST. 2 TONS
7 SY GEOTEXTILE

CLASS 'B' RIP RAP
EST. 2 TONS
7 SY GEOTEXTILE

100' 0' 100'
GRAPHIC SCALE

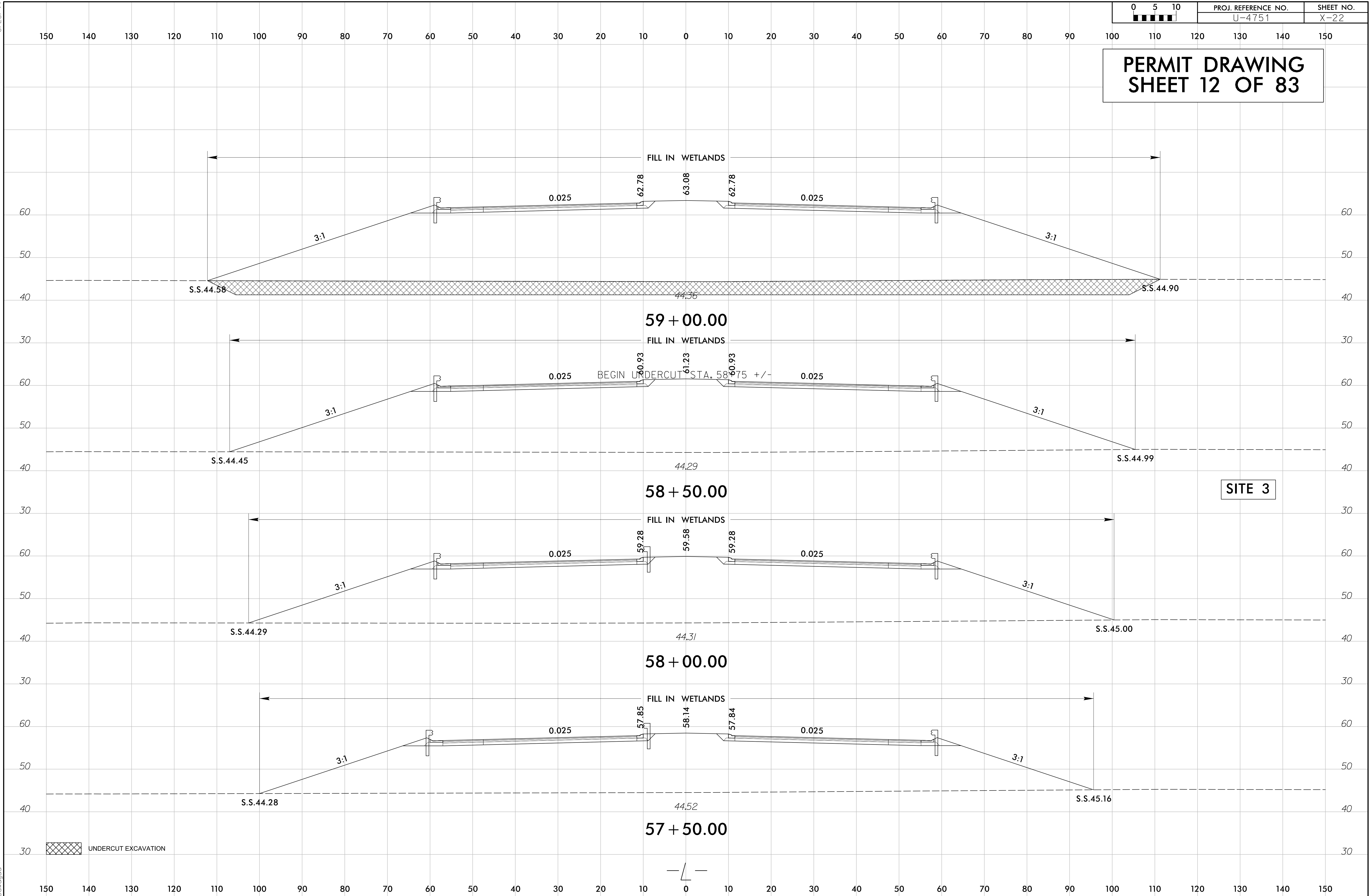
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DENOTES FILL IN
WETLAND

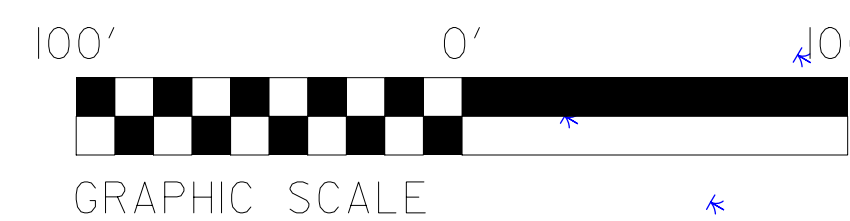
* * * * *

DENOTES MECHANIZED
CLEARING

SEE SHEET 36 FOR -L- PROFILE
SEE SHEET 49 FOR -YIRPB- PROFILE
SEE SHEET 51 FOR -YIRPB- PROFILE
SEE SHEETS 2D-1 AND 2D-2 FOR DITCH DETAIL



NAD 83/NSRS 2007



SEE SHEET 37 FOR -L- PROFILE
SEE SHEETS S-1 THRU S-X FOR STRUCTURE PLANS
SEE SHEET 2B-2 FOR BRIDGE / PAVEMENT RELATIONSHIP

83/NSRS 2007

5/9/2017
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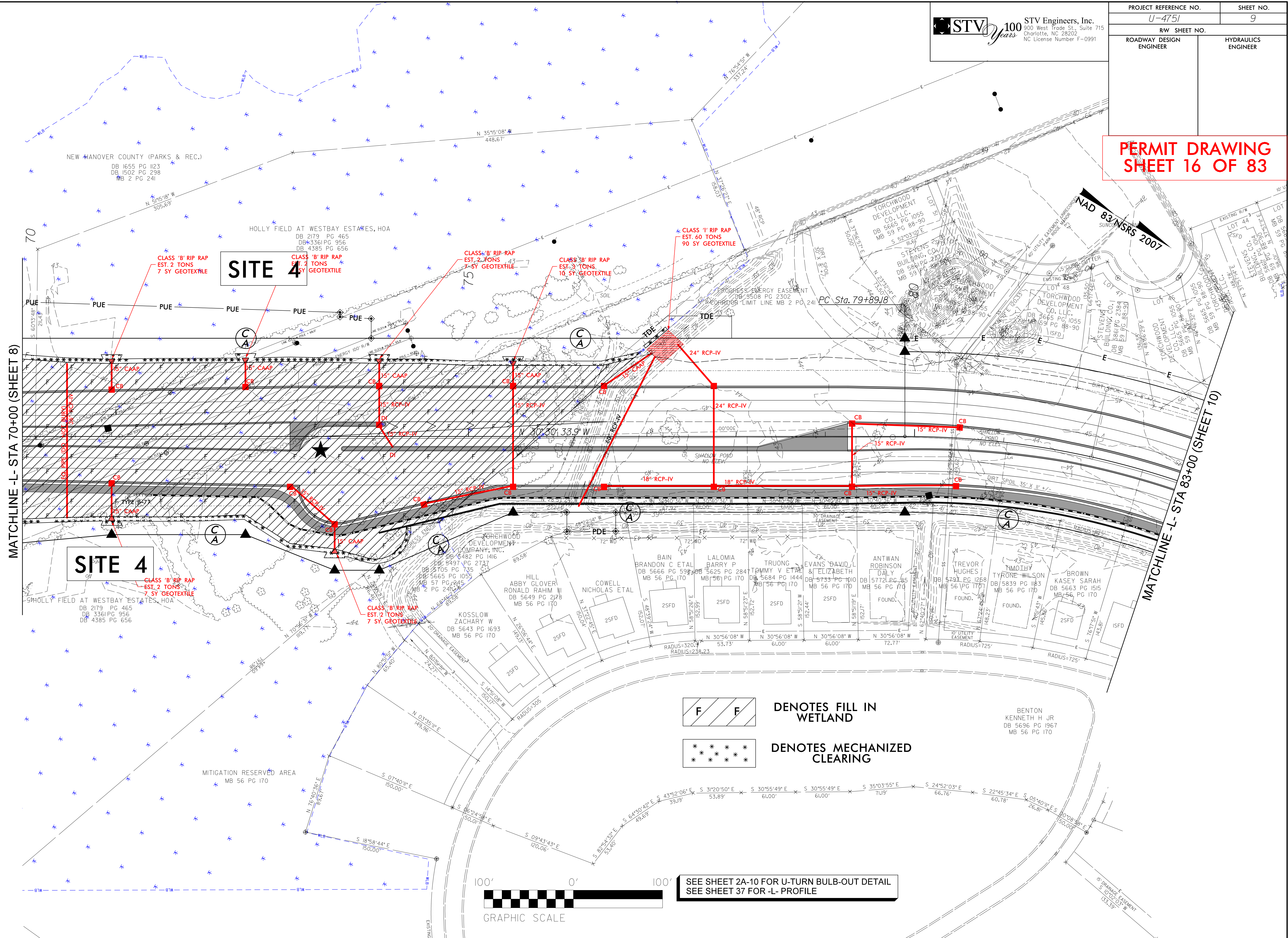
SEE SHEET 37 FOR 1- PROFILE
SEE SHEETS S-1 THRU S-X FOR STRUCTURE PLANS
SEE SHEET 2B-2 FOR BRIDGE / PAVEMENT RELATIONSHIP

Revised 5/9/2017



NAD 83/NSRS 2007

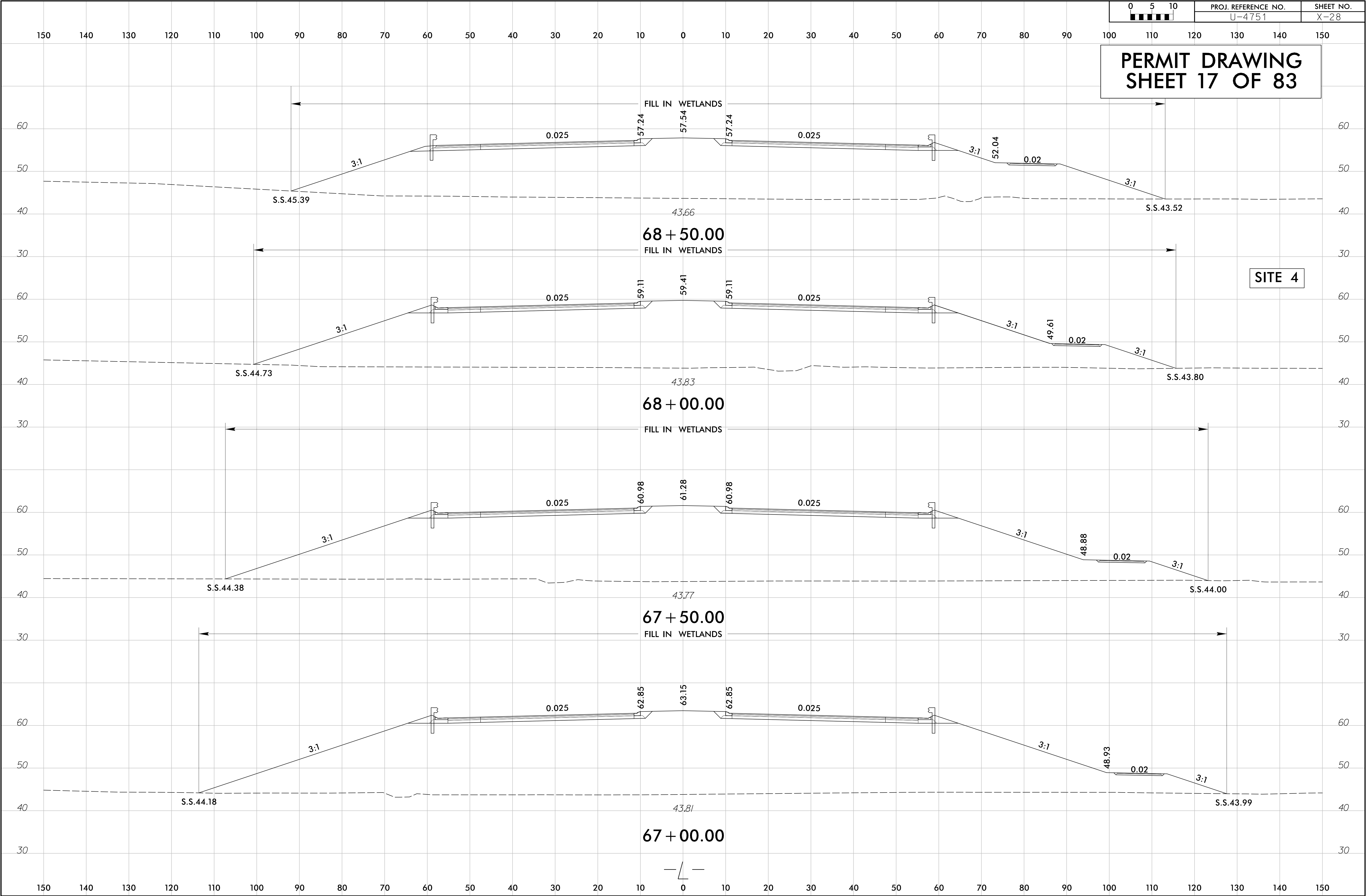
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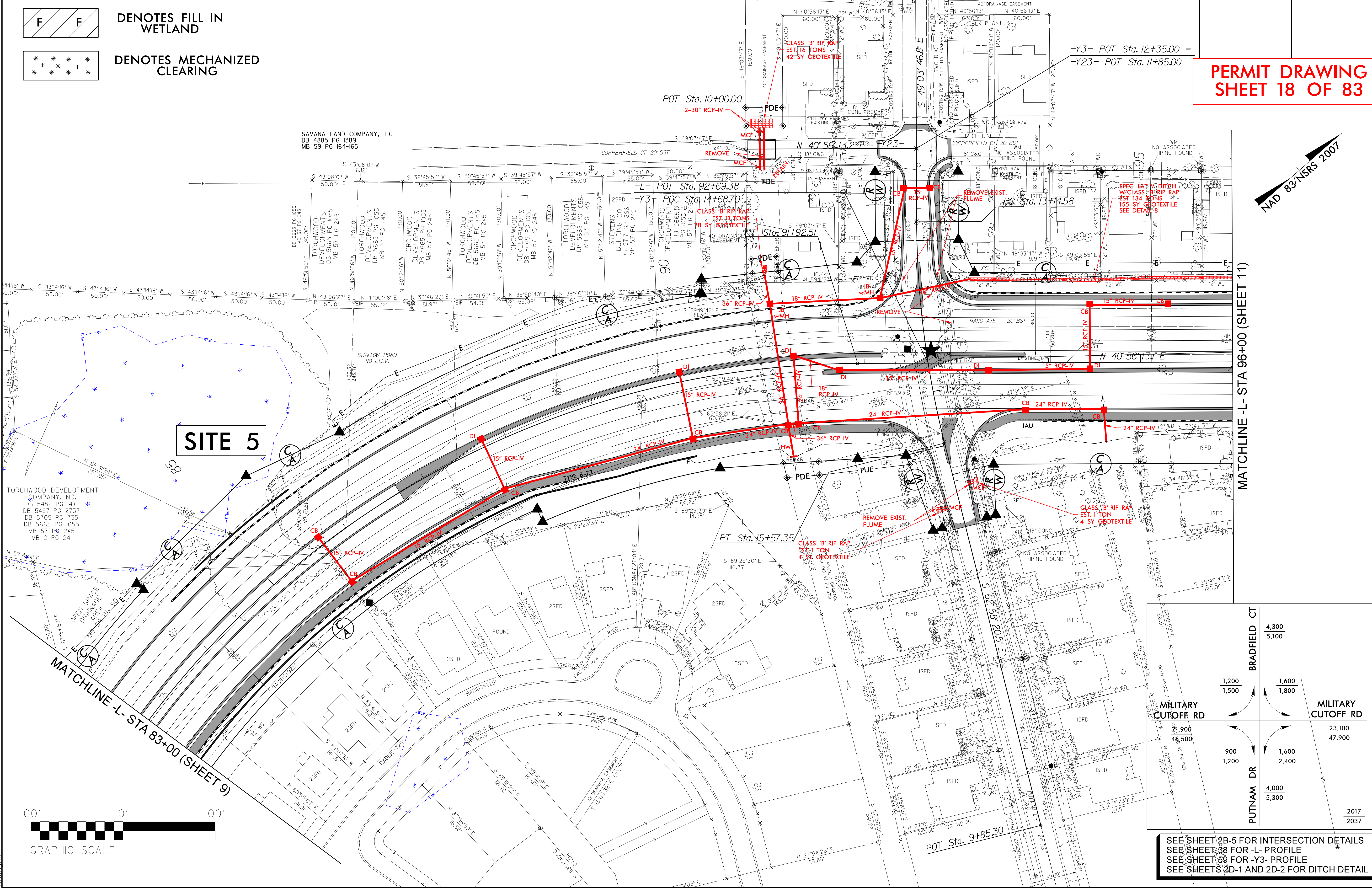


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Revised 5/9/2017

5/9/2017
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awadad





PROJECT REFERENCE NO.	SHEET NO.
U-4751	10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

QUADRANT DATA:

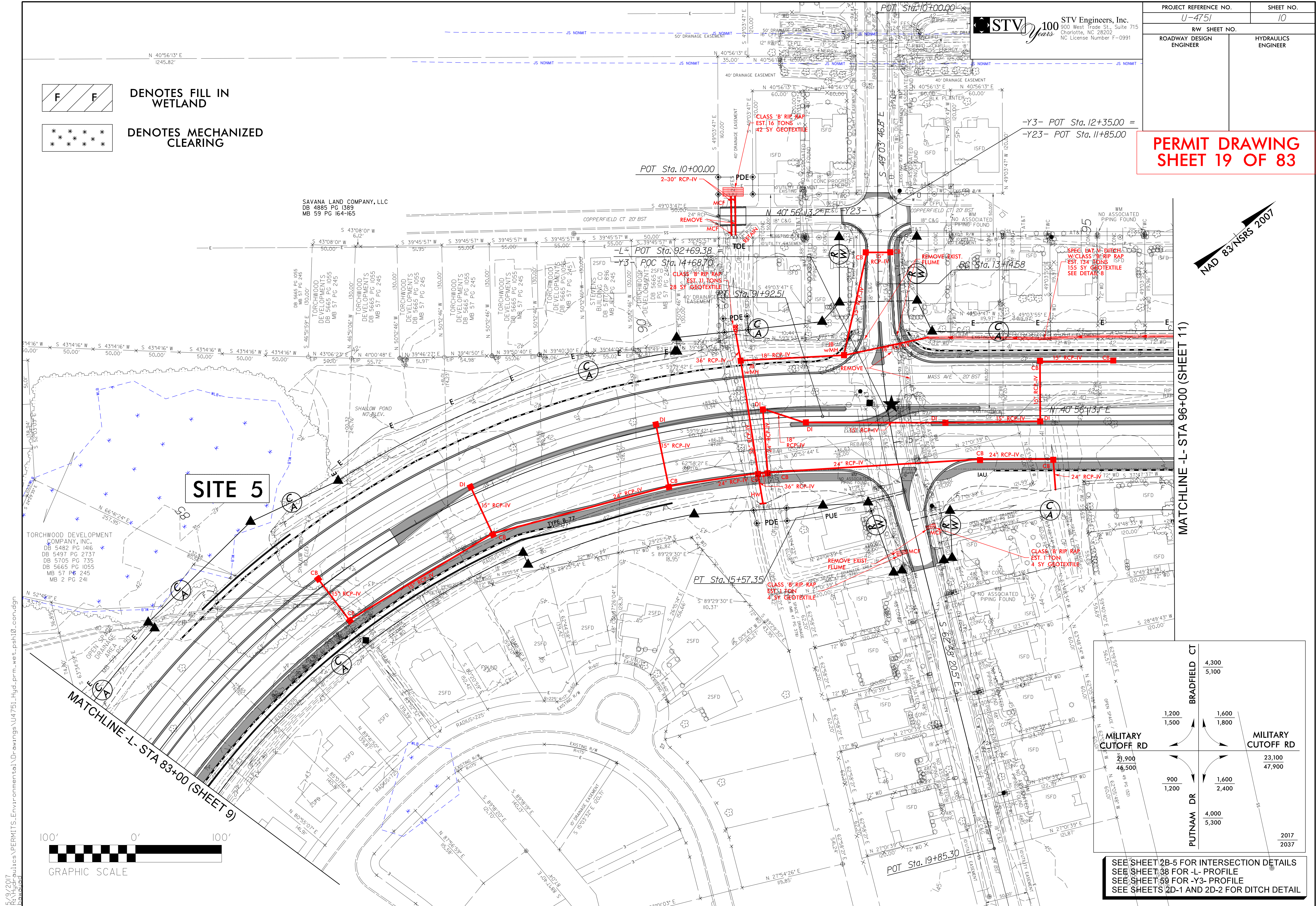
Quadrant	Top Boundary	Right Boundary	Bottom Boundary	Left Boundary	Area (Acres)
Top-Left	Military Cutoff Rd	Bradfield Ct	Putnam Dr	Military Cutoff Rd	25.00
Top-Right	Military Cutoff Rd	Bradfield Ct	Putnam Dr	Military Cutoff Rd	25.00
Bottom-Left	Military Cutoff Rd	Bradfield Ct	Putnam Dr	Military Cutoff Rd	25.00
Bottom-Right	Military Cutoff Rd	Bradfield Ct	Putnam Dr	Military Cutoff Rd	25.00

ADDITIONAL INFORMATION:

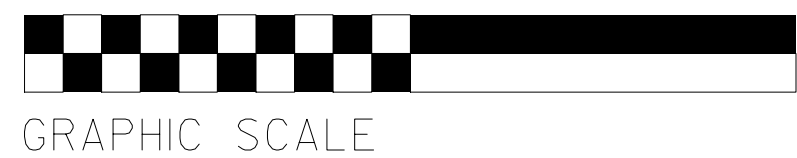
- Tract Location:** 100 Acres, Putnam County, Georgia.
- Adjacent Tracts:** 100 Acres, Putnam County, Georgia; 100 Acres, Putnam County, Georgia; 100 Acres, Putnam County, Georgia; 100 Acres, Putnam County, Georgia.
- Survey Data:** 100 Acres, Putnam County, Georgia; 100 Acres, Putnam County, Georgia; 100 Acres, Putnam County, Georgia; 100 Acres, Putnam County, Georgia.

SEE SHEET 2B-5 FOR INTERSECTION DETAILS
SEE SHEET 38 FOR -L- PROFILE
SEE SHEET 59 FOR -Y3- PROFILE
SEE SHEETS 2D-1 AND 2D-2 FOR DITCH DETAIL

Revised 5/9/2017

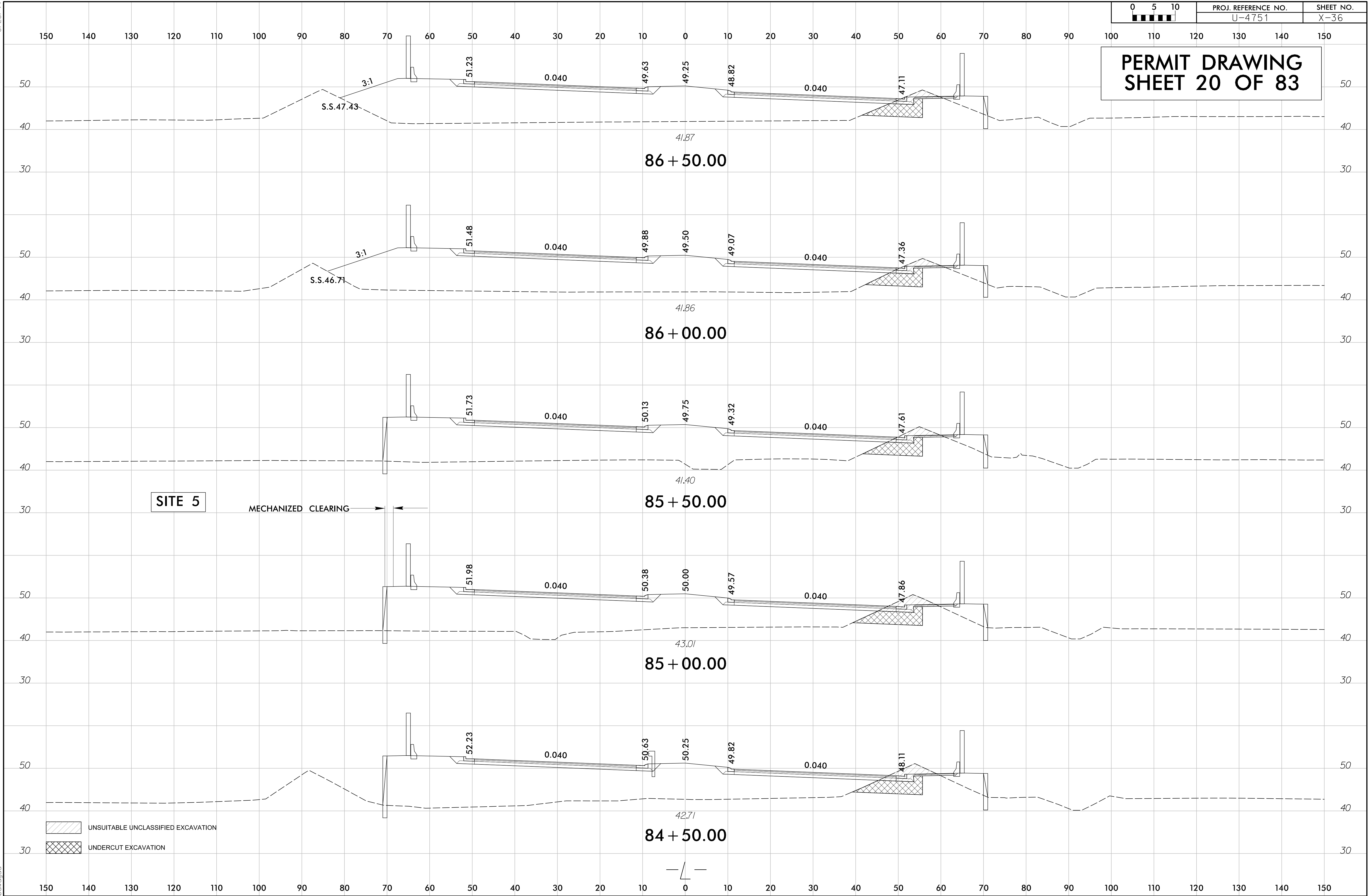


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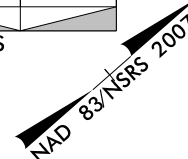
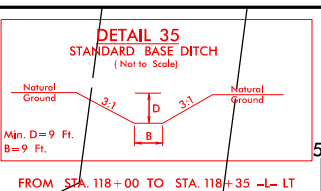
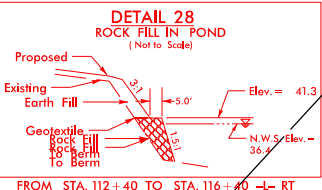


GRAPHIC SCALE

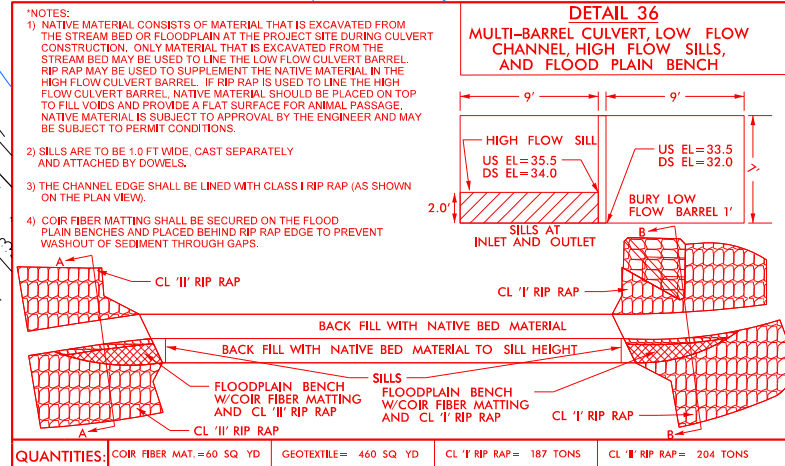
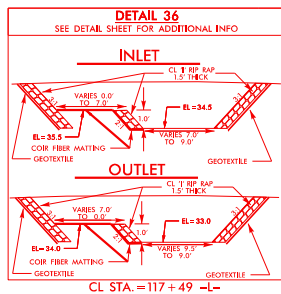
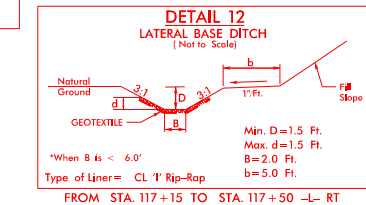
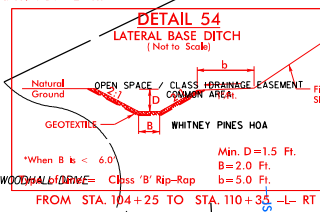
SEE SHEET 2B-5 FOR INTERSECTION DETAILS
SEE SHEET 38 FOR L- PROFILE
SEE SHEET 59 FOR Y-3- PROFILE
SEE SHEETS 2D-1 AND 2D-2 FOR DITCH DETAIL



5/8/2017
U4751-Hyd-prm_wet_psh_12.dgn
jharvey

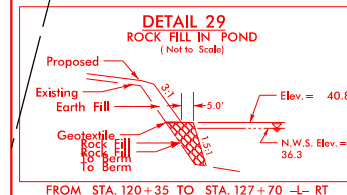


PERMIT DRAWING
SHEET 21 OF 83



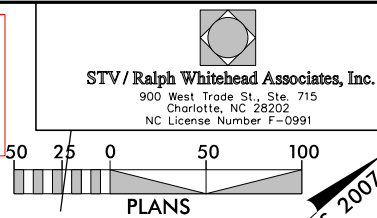
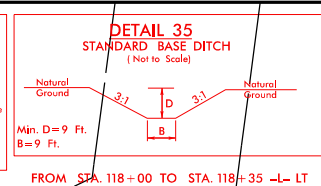
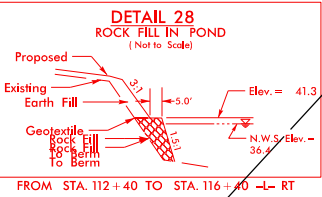
1) **NOTES:**

- 1) NATIVE MATERIAL CONSISTS OF MATERIAL THAT IS EXCAVATED FROM THE STREAM BED OR FLOODPLAIN AT THE PROJECT SITE DURING CULVERT CONSTRUCTION. ONLY MATERIAL THAT IS EXCAVATED FROM THE STREAM BED MAY BE USED TO LINE THE LOW FLOW CULVERT BARREL. RI P RAP MAY BE USED TO IMPLEMENT THE NATIVE MATERIAL IN THE HIGH FLOW CULVERT BARREL. IF RI P RAP IS USED TO LINE THE HIGH FLOW CULVERT BARREL, NATIVE MATERIAL SHOULD BE PLACED ON TOP OF THE RI P RAPS AND PROVIDE A FLAT SURFACE FOR ANIMAL PASSAGE. NATIVE MATERIAL IS SUBJECT TO APPROVAL BY THE ENGINEER AND MAY BE SUBJECT TO PERMIT CONDITIONS.
- 2) SILLS ARE TO BE 1.0 FT. WIDE, CAST SEPARATELY AND ATTACHED BY DOWELS.
- 3) THE CHANNEL EDGE SHALL BE LINED WITH CLASS 1 RI P RAP (AS SHOWN ON THE PLAN VIEW).
- 4) COIR FIBER MATTING SHALL BE SECURED ON THE FLOOD PLAIN BENCHES AND PLACED BEHIND RI P RAP EDGE TO PREVENT WASHOUT OF SEDIMENT.



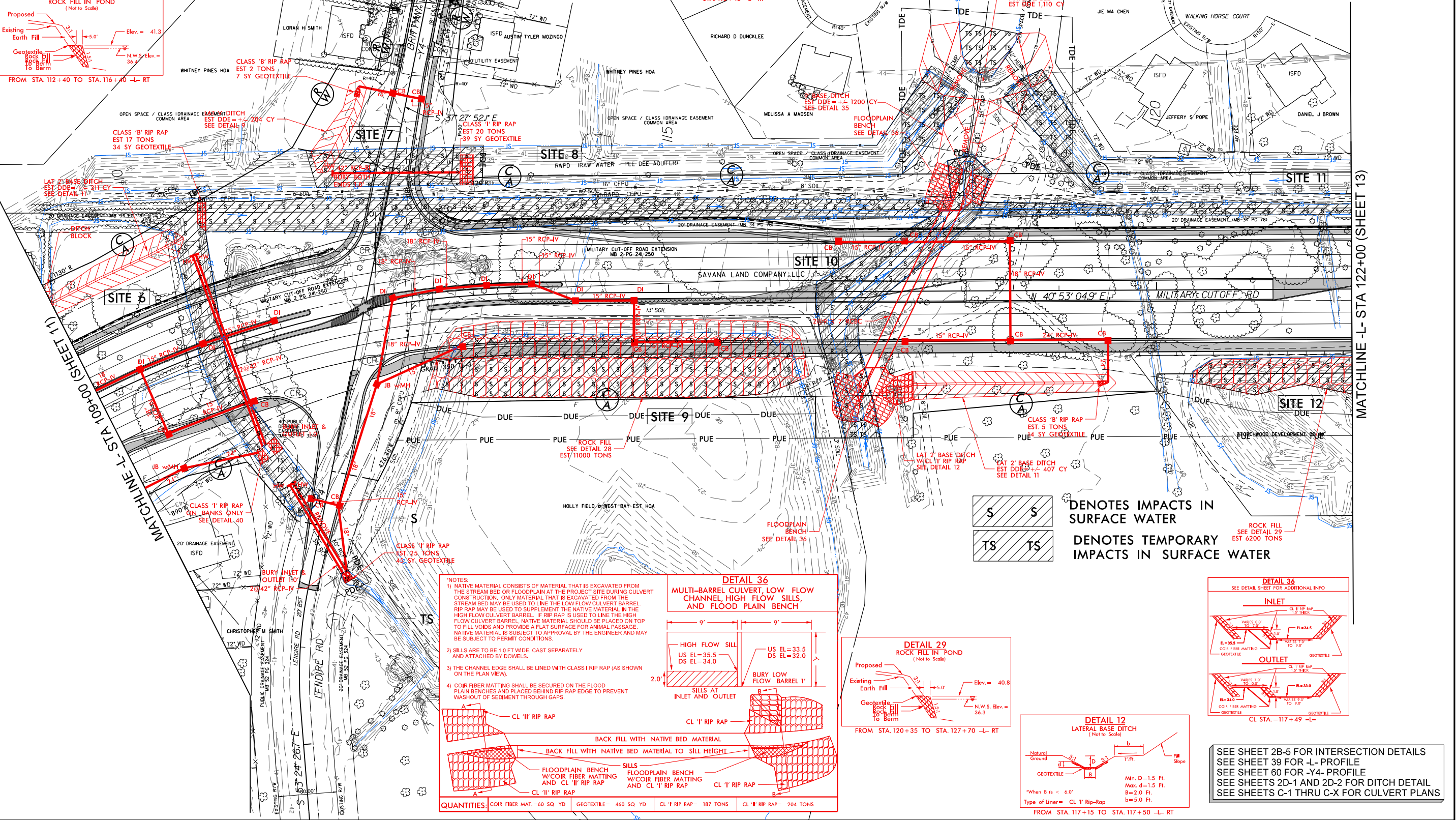
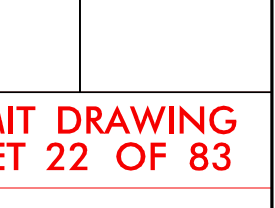
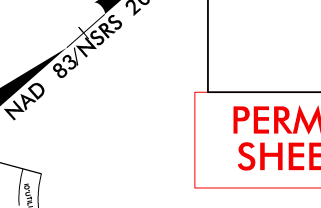
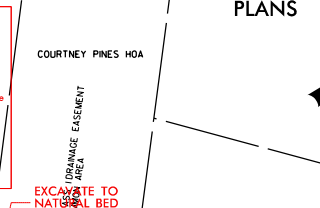
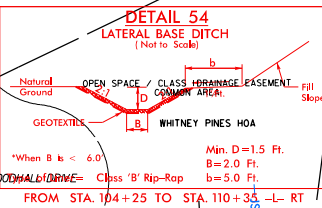
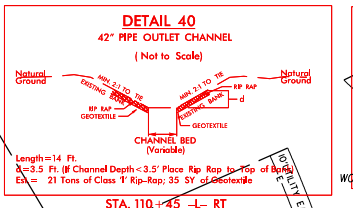
 DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

5/8/2017
U4751-Hyd-prm-wet.psh_12-con.dgn
iharvey



PROJECT REFERENCE NO.	SHEET NO.
U-4751	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	2 OF 5

PERMIT DRAWING
SHEET 22 OF 83



Revised 5/9/2017

5/14/99

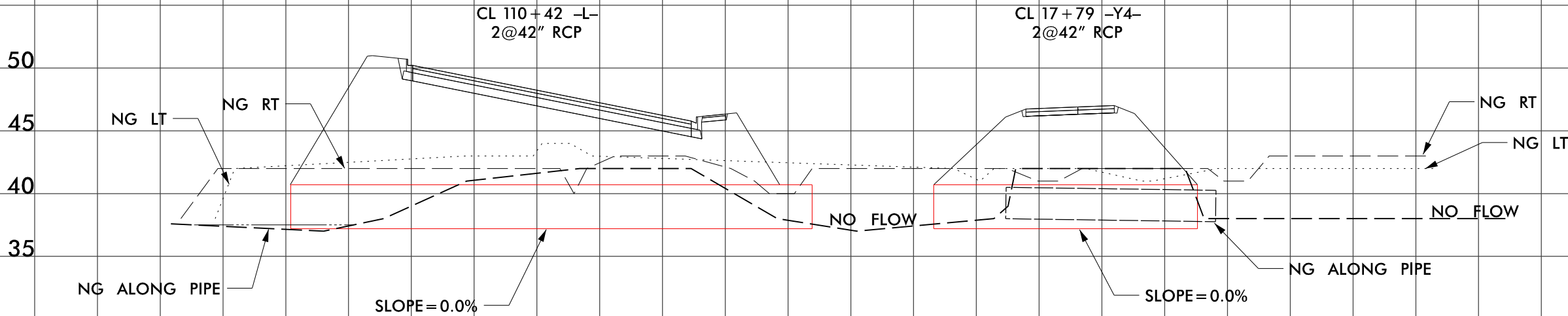
5/8/2017
04/61_Hyd-prm-wet_psh-12-4_xsc_06.dgn
Jharvey

PROJECT REFERENCE NO.		SHEET NO.
		12-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
	4 OF 5	



PERMIT DRAWING
SHEET 24 OF 83

SITE 6



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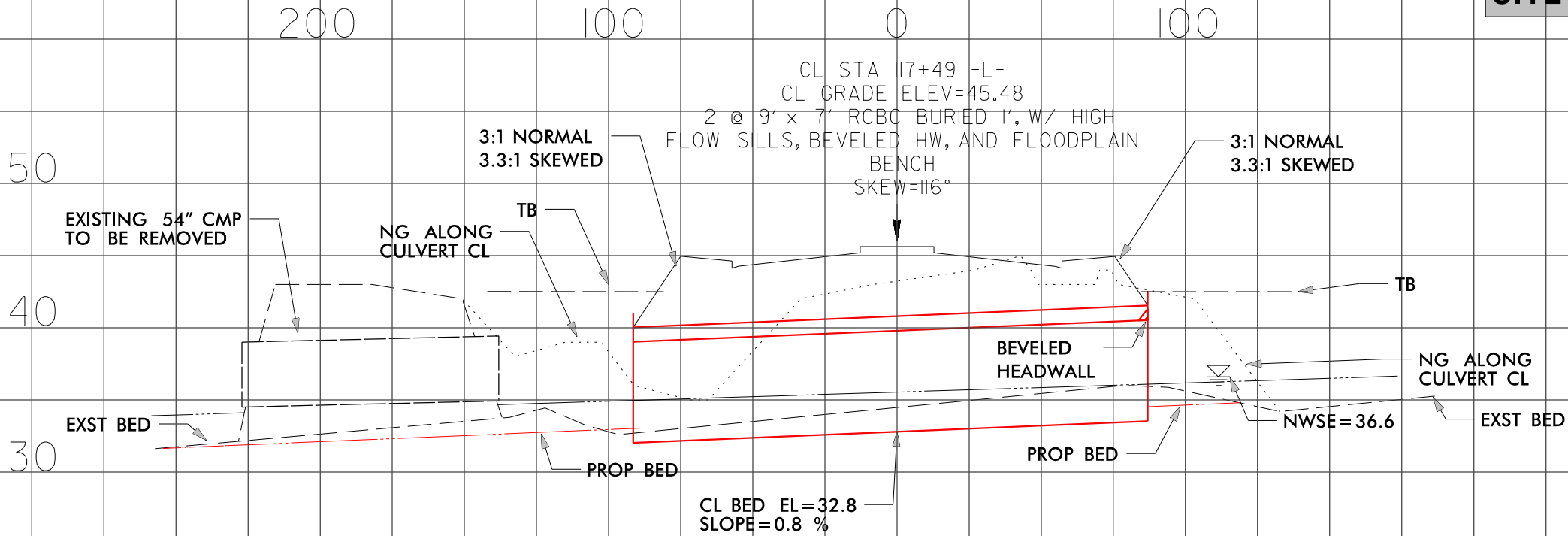
5/14/99
5/9/2017
1451 Hyd-prm-wet.psh.12-5-xsc.10.dgn
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PROJECT REFERENCE NO.		SHEET NO.
		12-4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
5 OF 5		

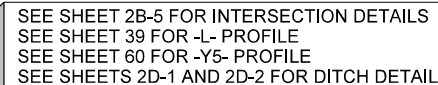
PERMIT DRAWING
SHEET 25 OF 83



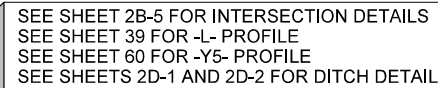
SITE 10



5/8/2017
U4751-Hyd-prm-wet_psh_13.dgn
jharvey



5/8/2017
U4/51-Hyd-prm_wet_psh_13-con.dgn
iharvey



5/8/2017
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jharvey

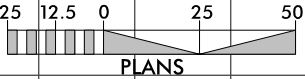


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jharvey



Revised 5/9/2017

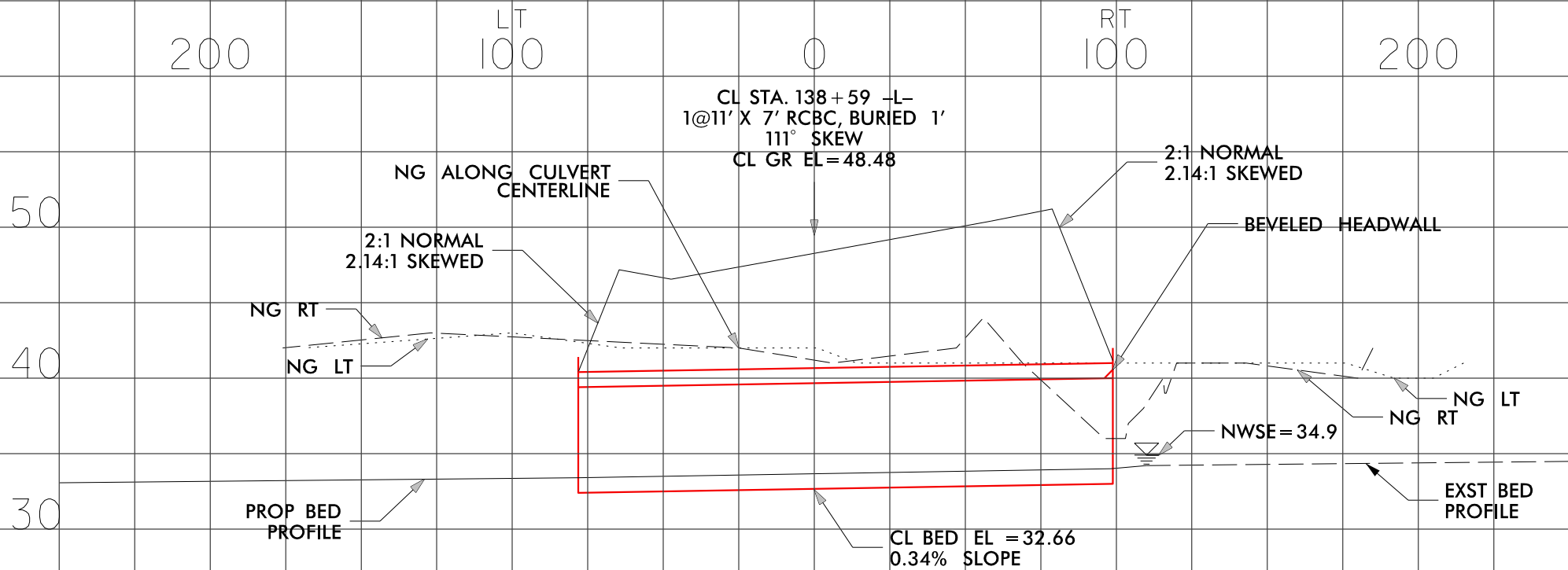
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5/9/2017
14351 Hyd-prm-wet.psh.14-3_xsc.14.dgn
lbar.vau



PROJECT REFERENCE NO.		SHEET NO.
		14-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
	3 OF 3	

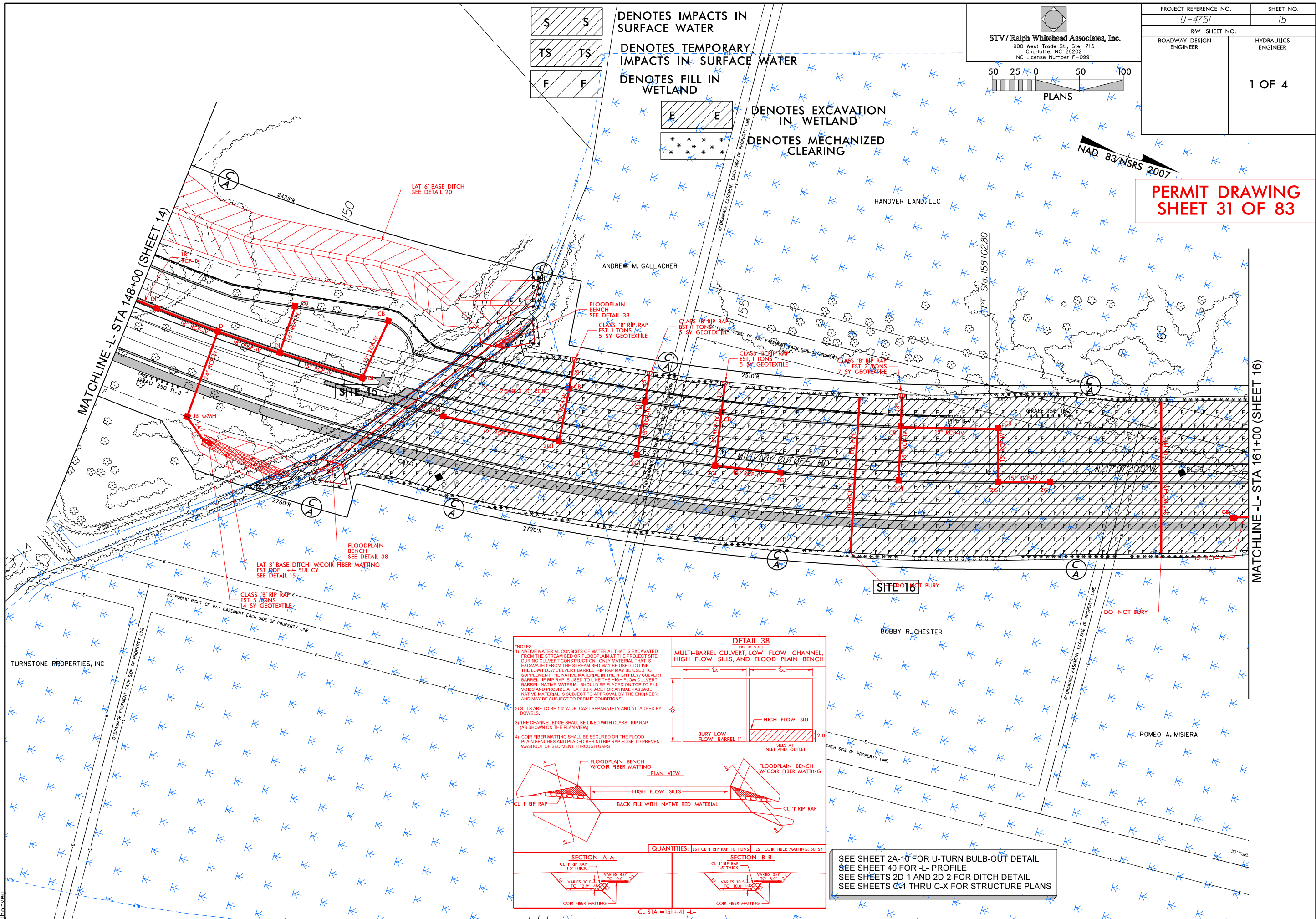
PERMIT DRAWING
SHEET 30 OF 83

SITE 11

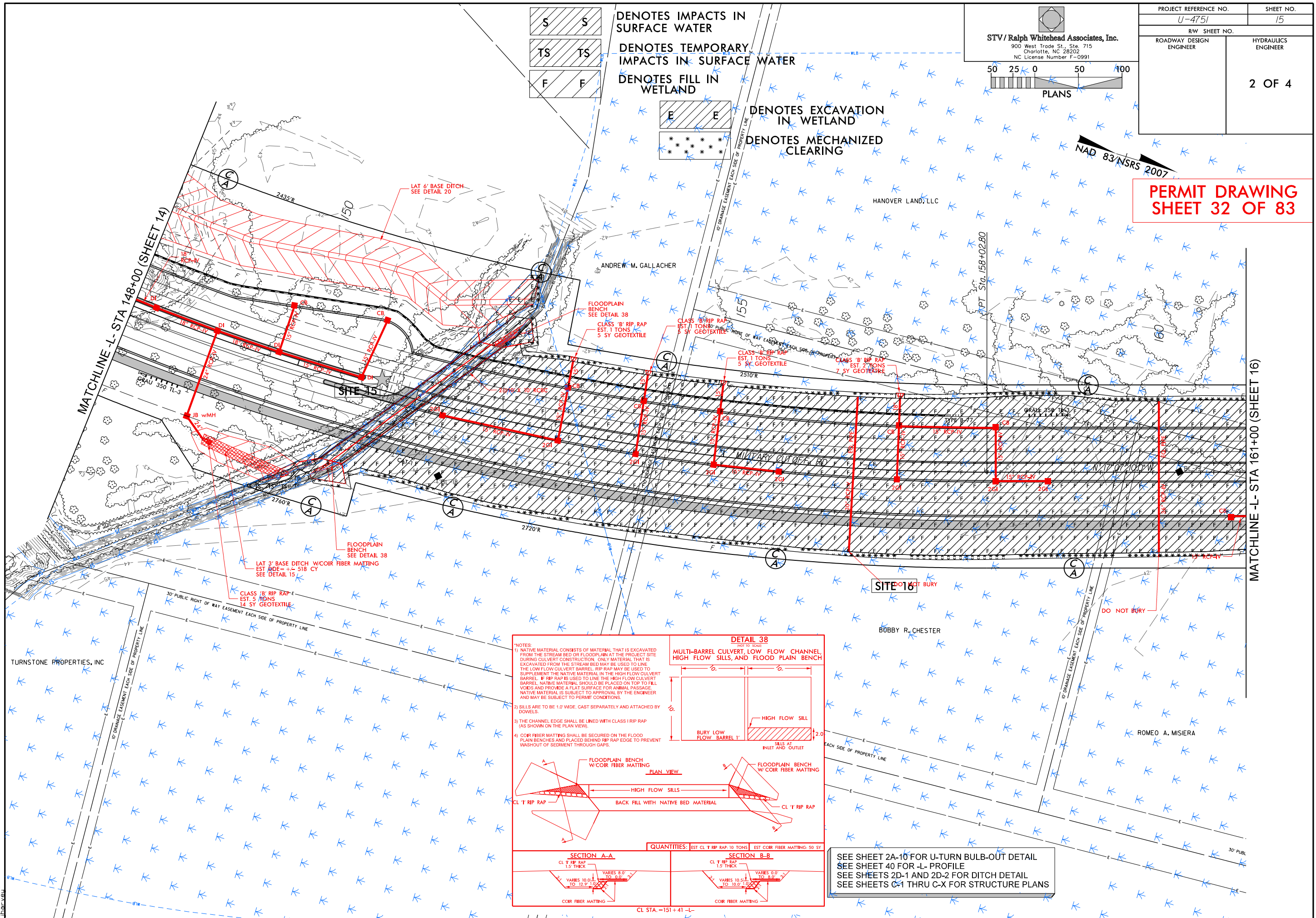


Revised 5/9/2017

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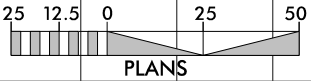


5/8/2017
U4751-Hyd-prm_wet_psh_15_con.dgn
iharvey



Revised 5/9/2017

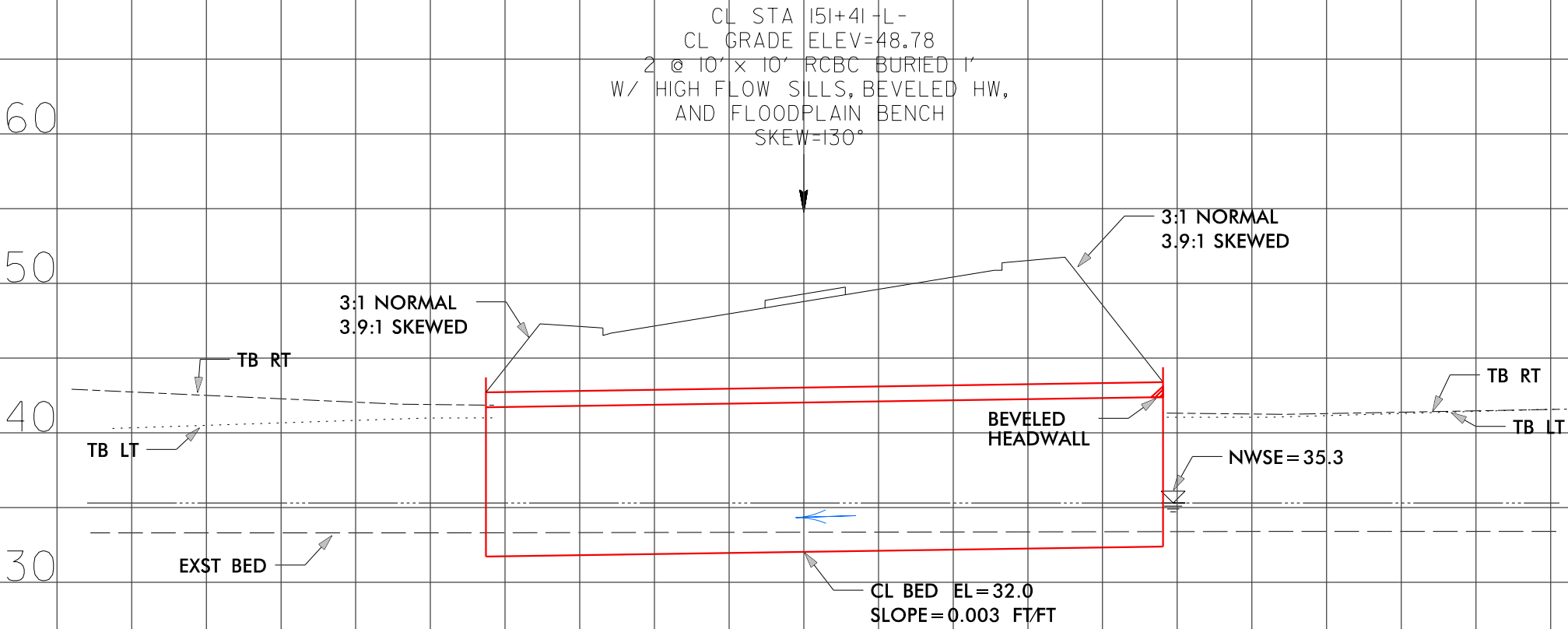
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5/9/2017
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jbarva



PROJECT REFERENCE NO.		SHEET NO.
		15-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
3 OF 4		

PERMIT DRAWING
SHEET 33 OF 83

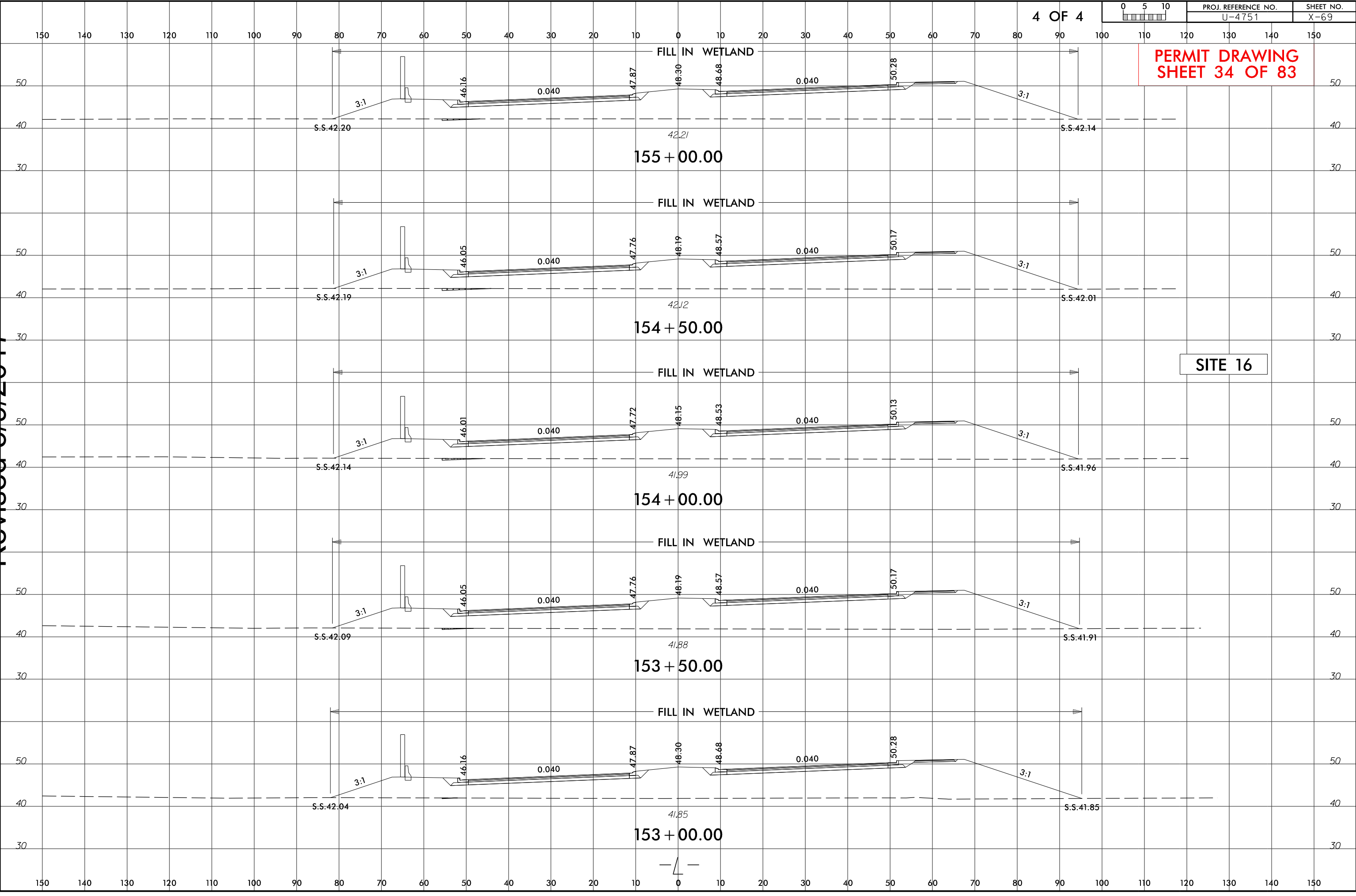
SITE 15



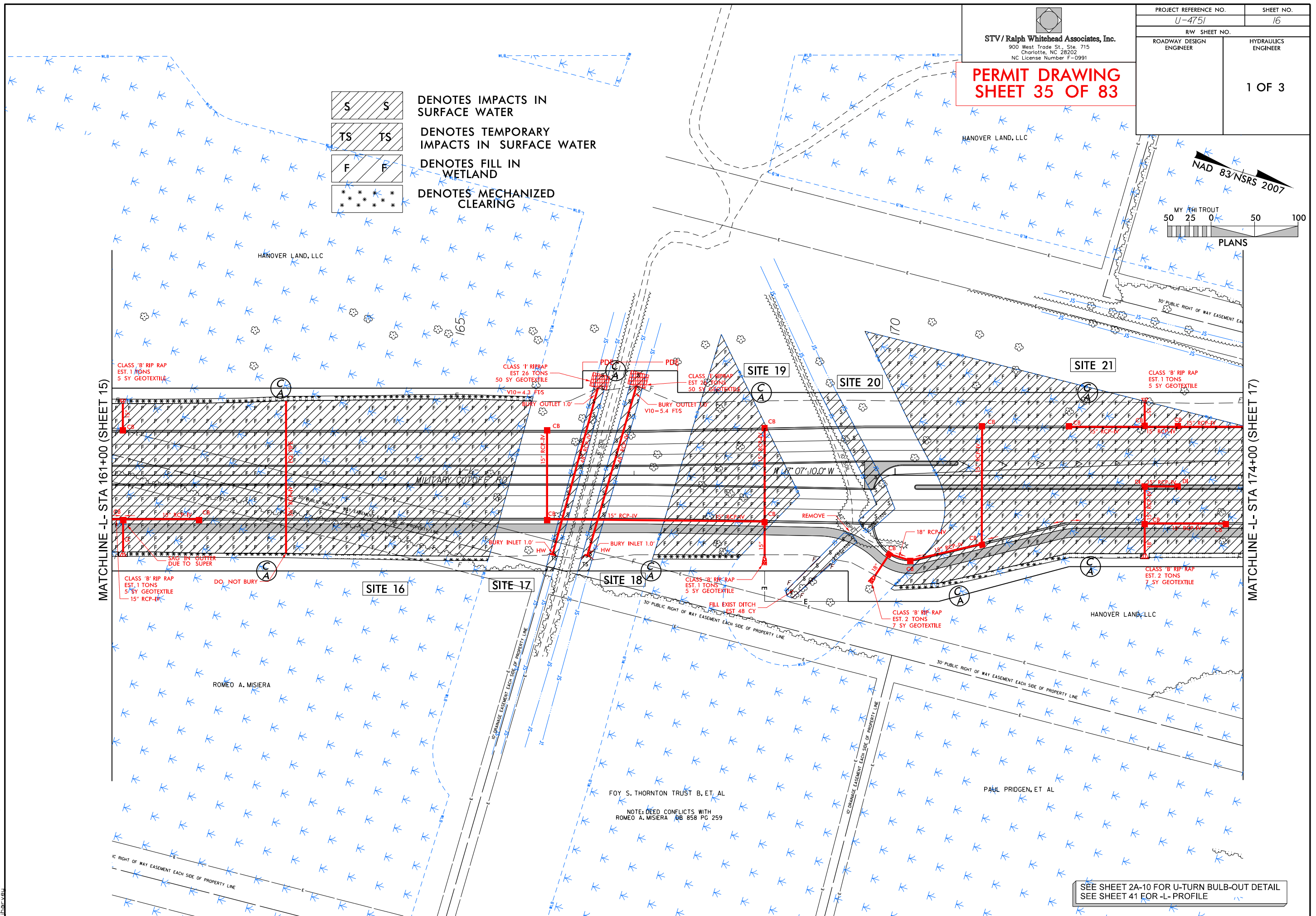
Revised 5/9/2017

5/8/2017
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jharvey

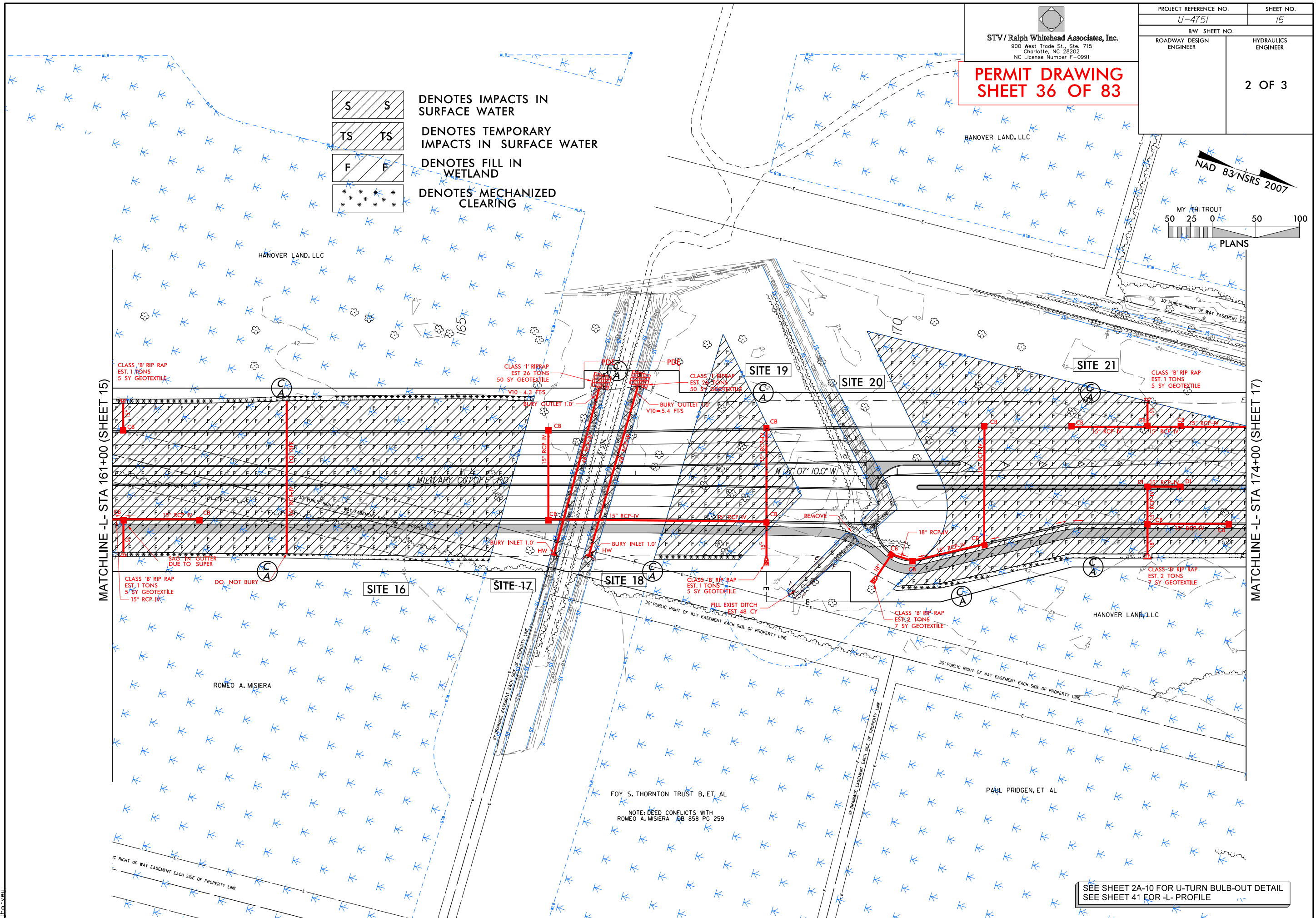
8/23/99



5/8/2017
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jharvey



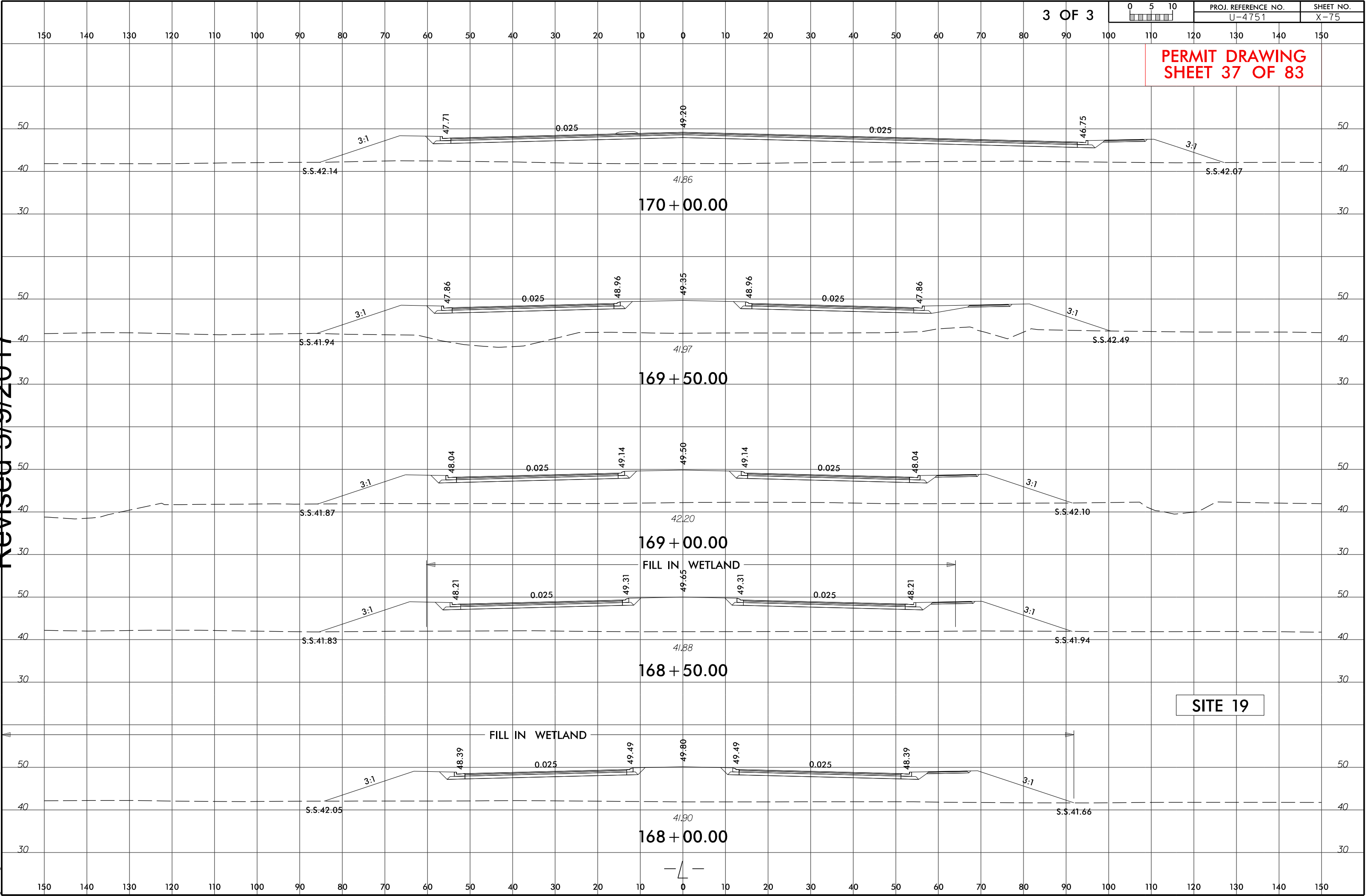
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jharvey



Revised 5/9/2017

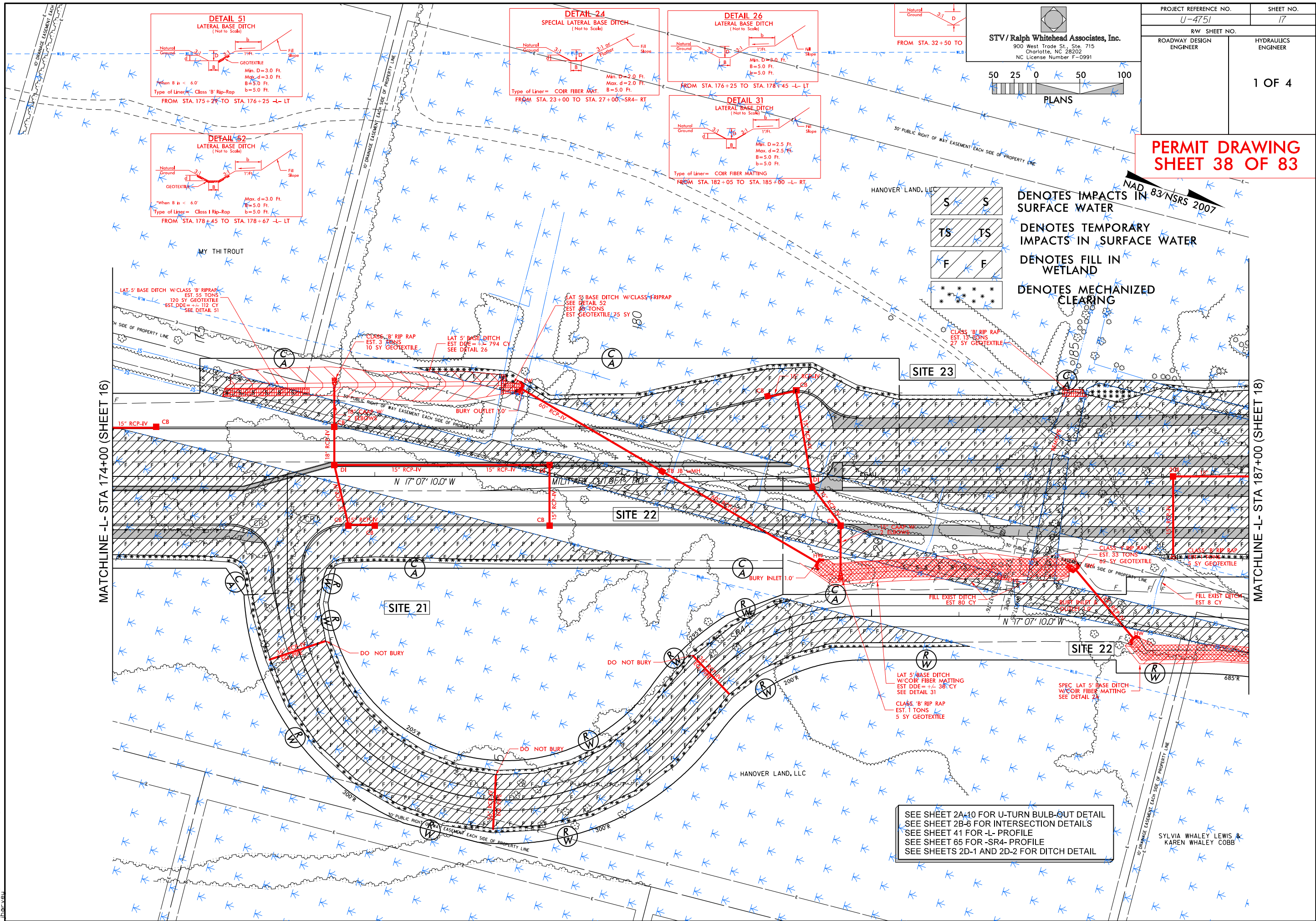
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jharvey

8/23/99



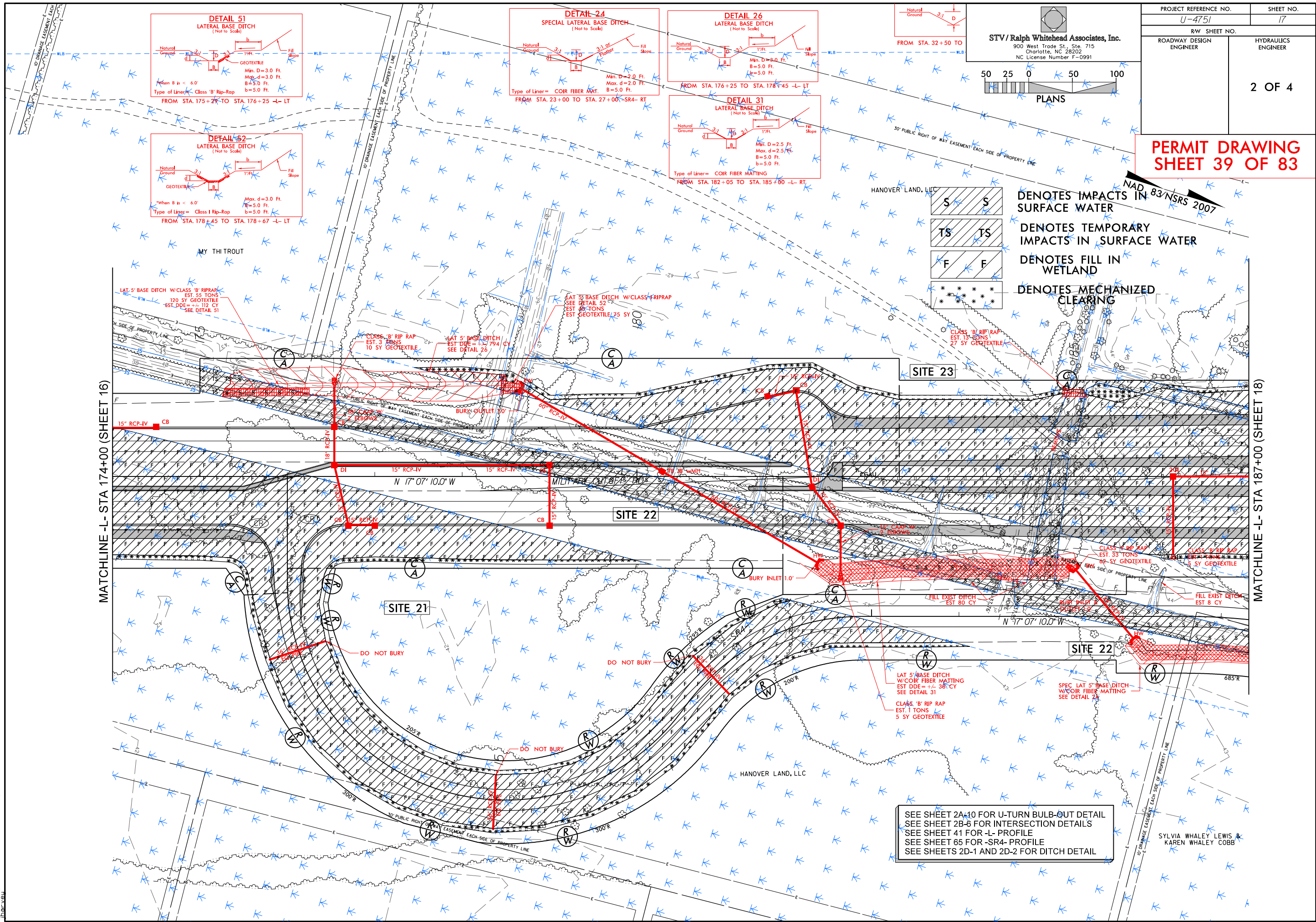
Revised 5/9/2017

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hanveu



Revised 5/9/2017

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hanveu



PERMIT DRAWING
SHEET 39 OF 83

SEE SHEET 2A-10 FOR U-TURN BULB-OUT DETAIL
SEE SHEET 2B-6 FOR INTERSECTION DETAILS
SEE SHEET 41 FOR -L- PROFILE
SEE SHEET 65 FOR -SR4- PROFILE
SEE SHEETS 2D-1 AND 2D-2 FOR DITCH DETAIL

SYLVIA WHALEY LEWIS
KAREN WHALEY COBB

Revised 5/9/2017

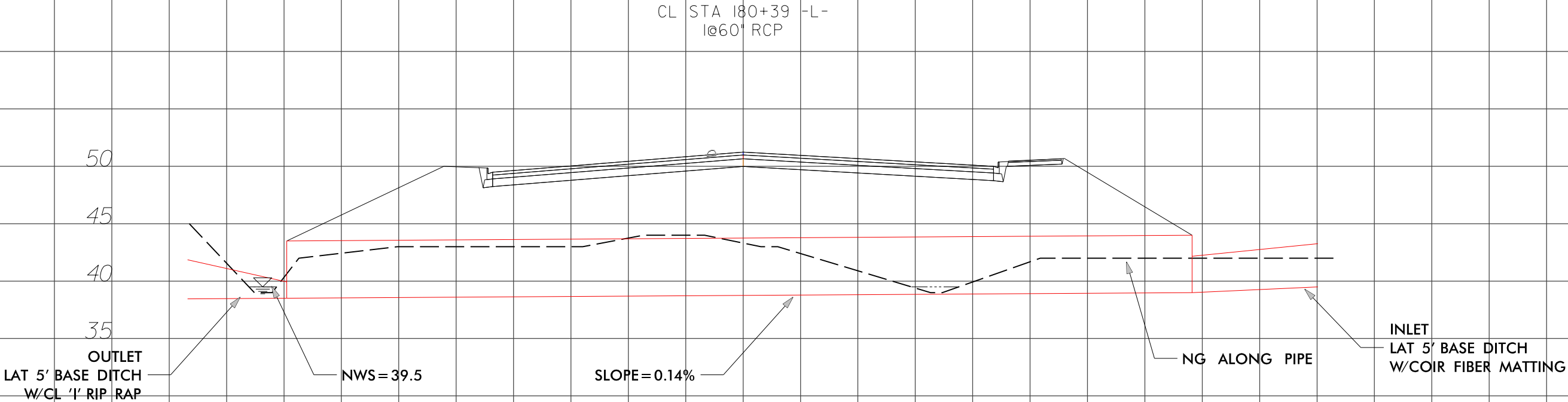
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5/8/2017
04/61_Hyd-prm-wet_psh-17-3_xsc-22.dgn
Jharvey

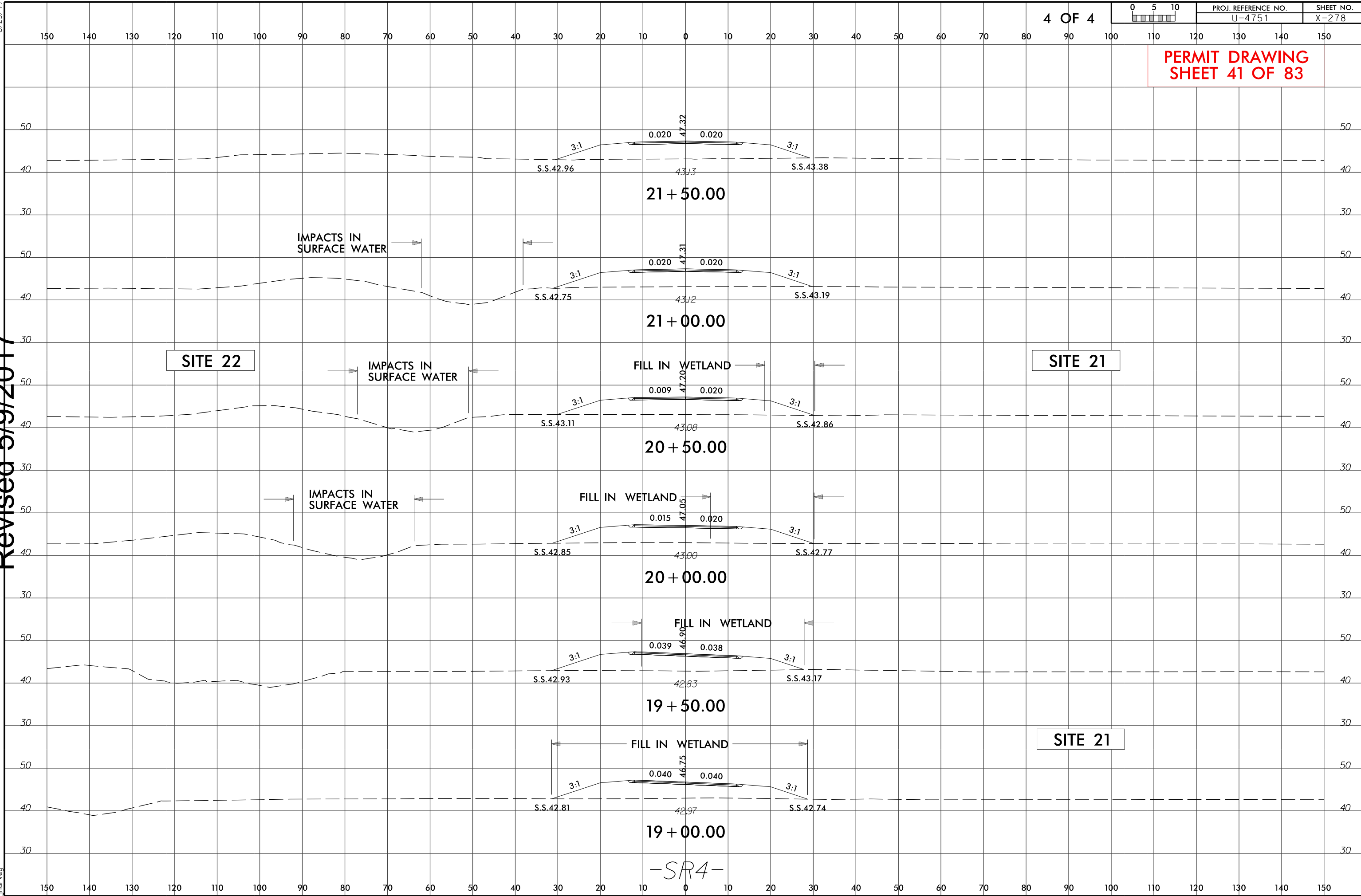
PROJECT REFERENCE NO.		SHEET NO.
		17-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
	3 OF 4	



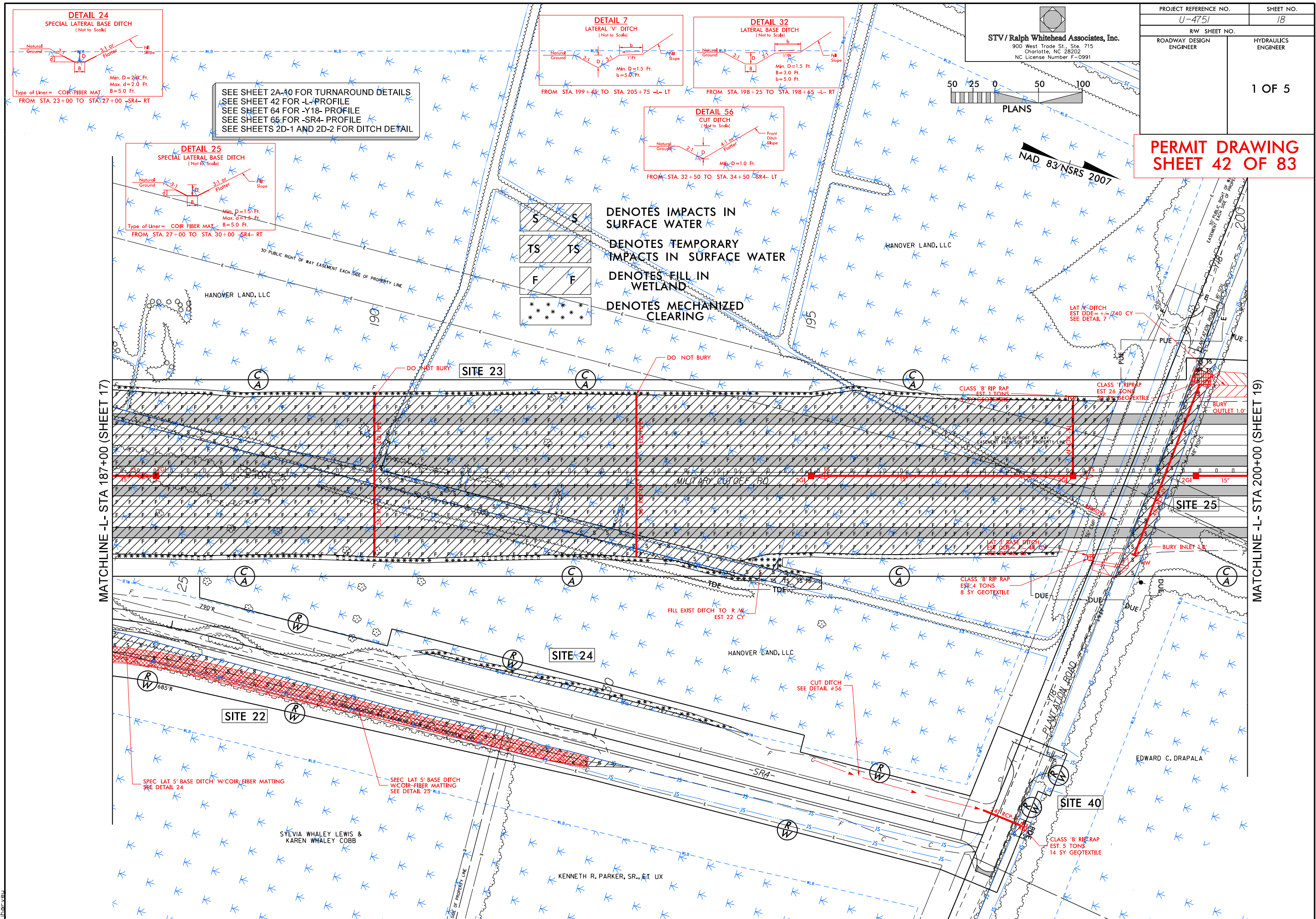
PERMIT DRAWING
SHEET 40 OF 83

SITE 22

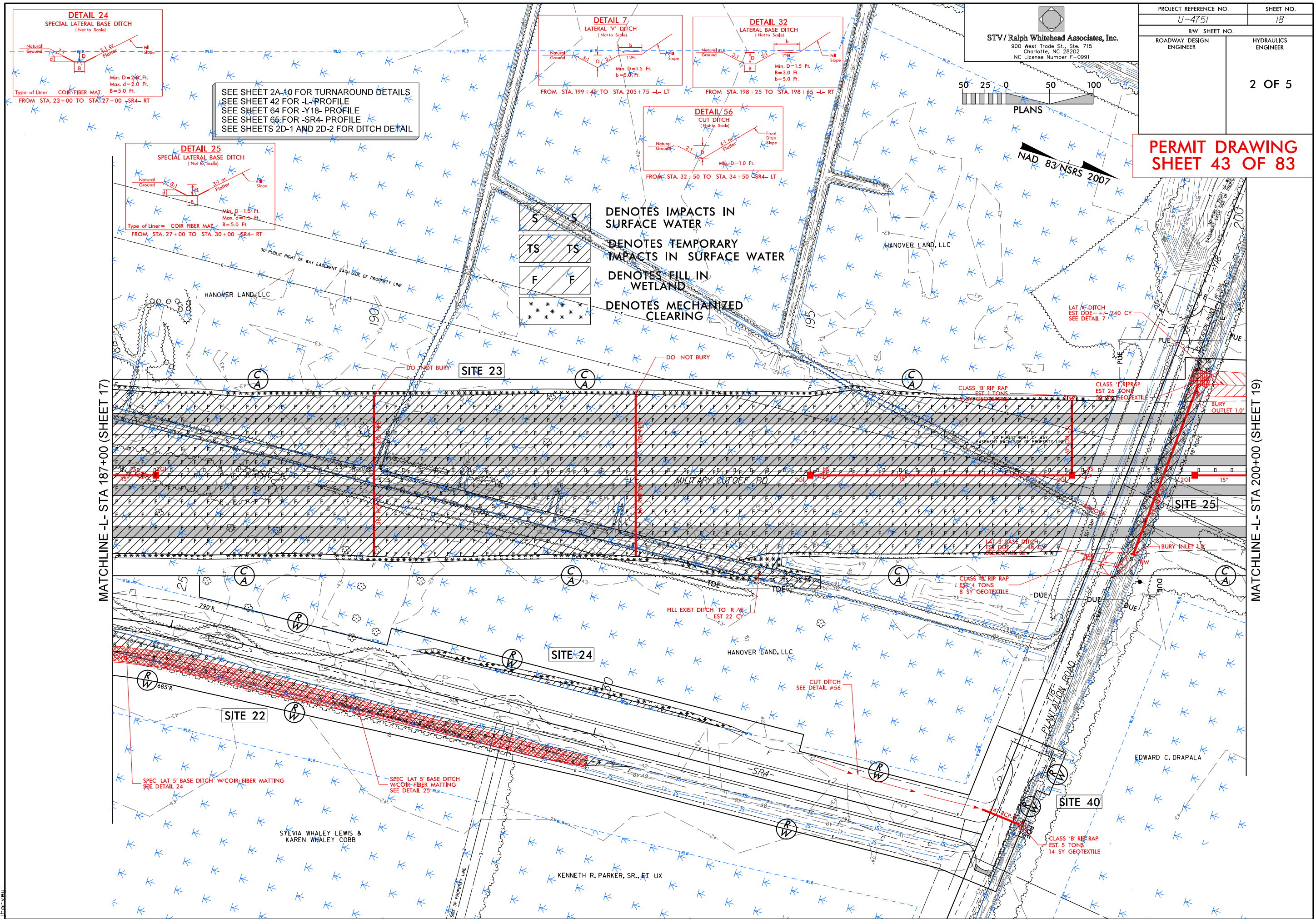


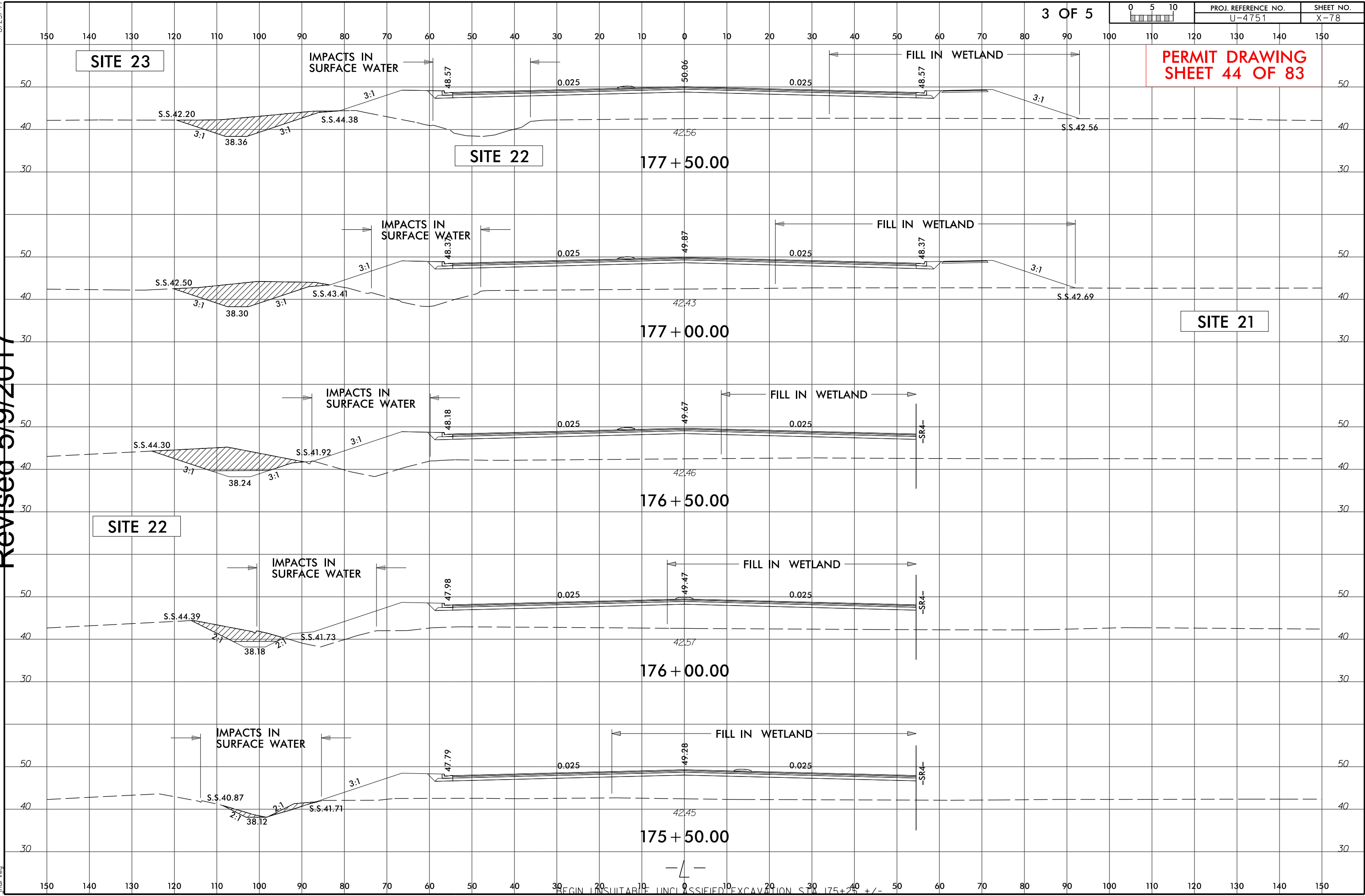


5/8/2017
U4751-Hyd-prm_wet_psh_18.dgn



5/8/2017
U4751-Hyd-prm-wet.psh_18_con.dgn
iharvey

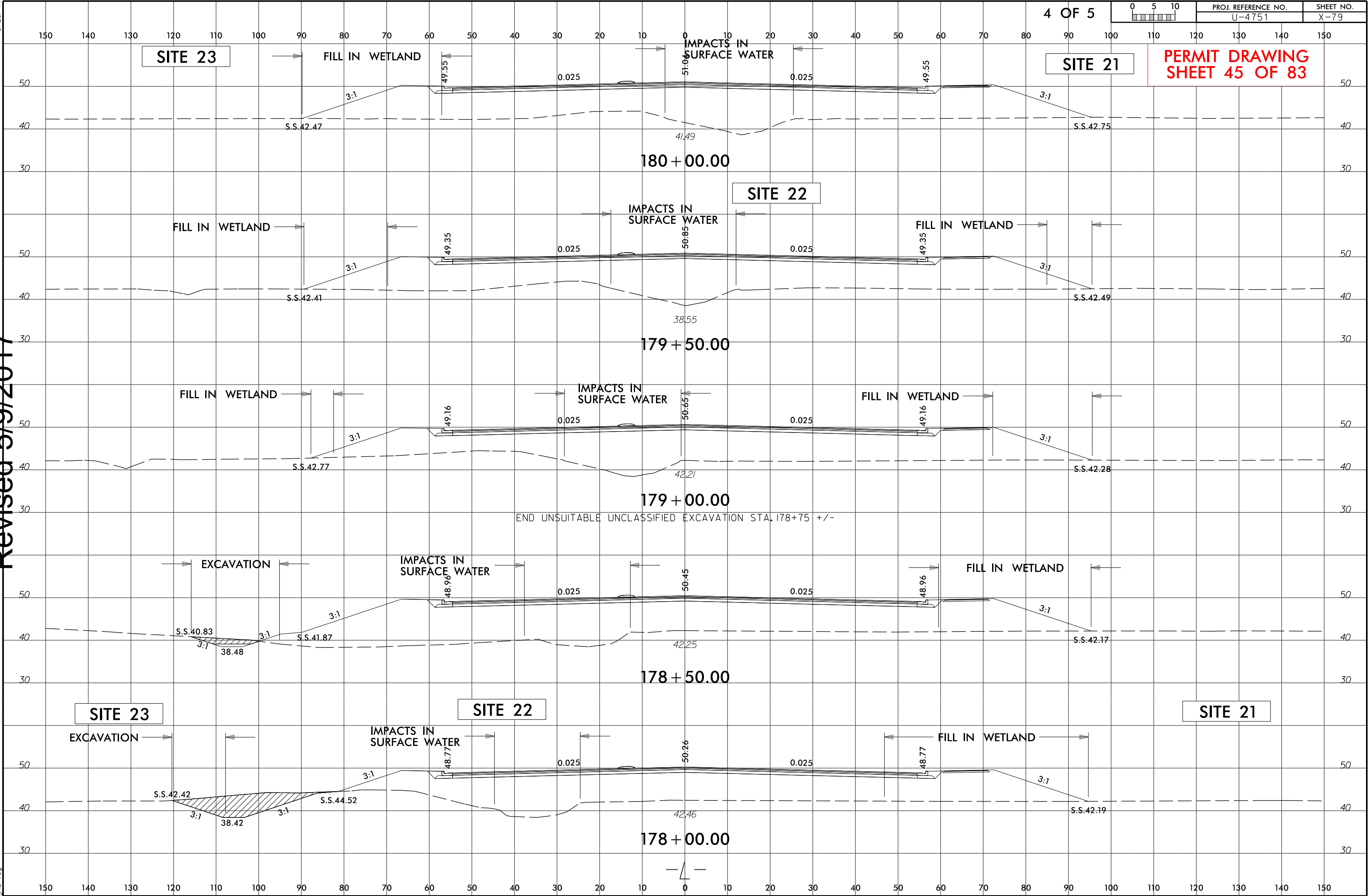




Revised 5/9/2017

8/23/99

5/8/2017
U4751 Hyd-prm.wet.18-4_xpl.079-L.dgn
jharvey

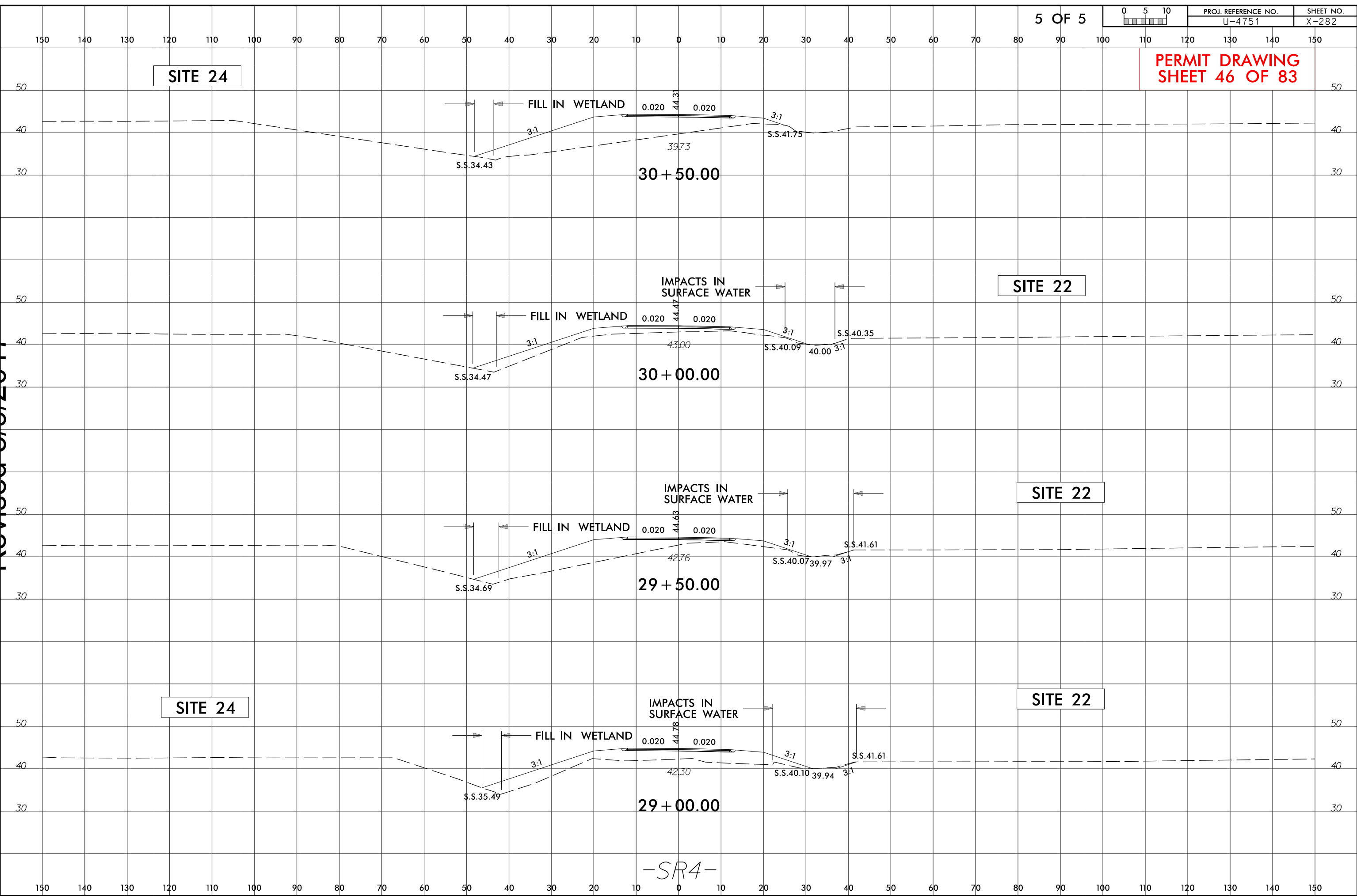


PERMIT DRAWING
SHEET 45 OF 83

Revised 5/9/2017

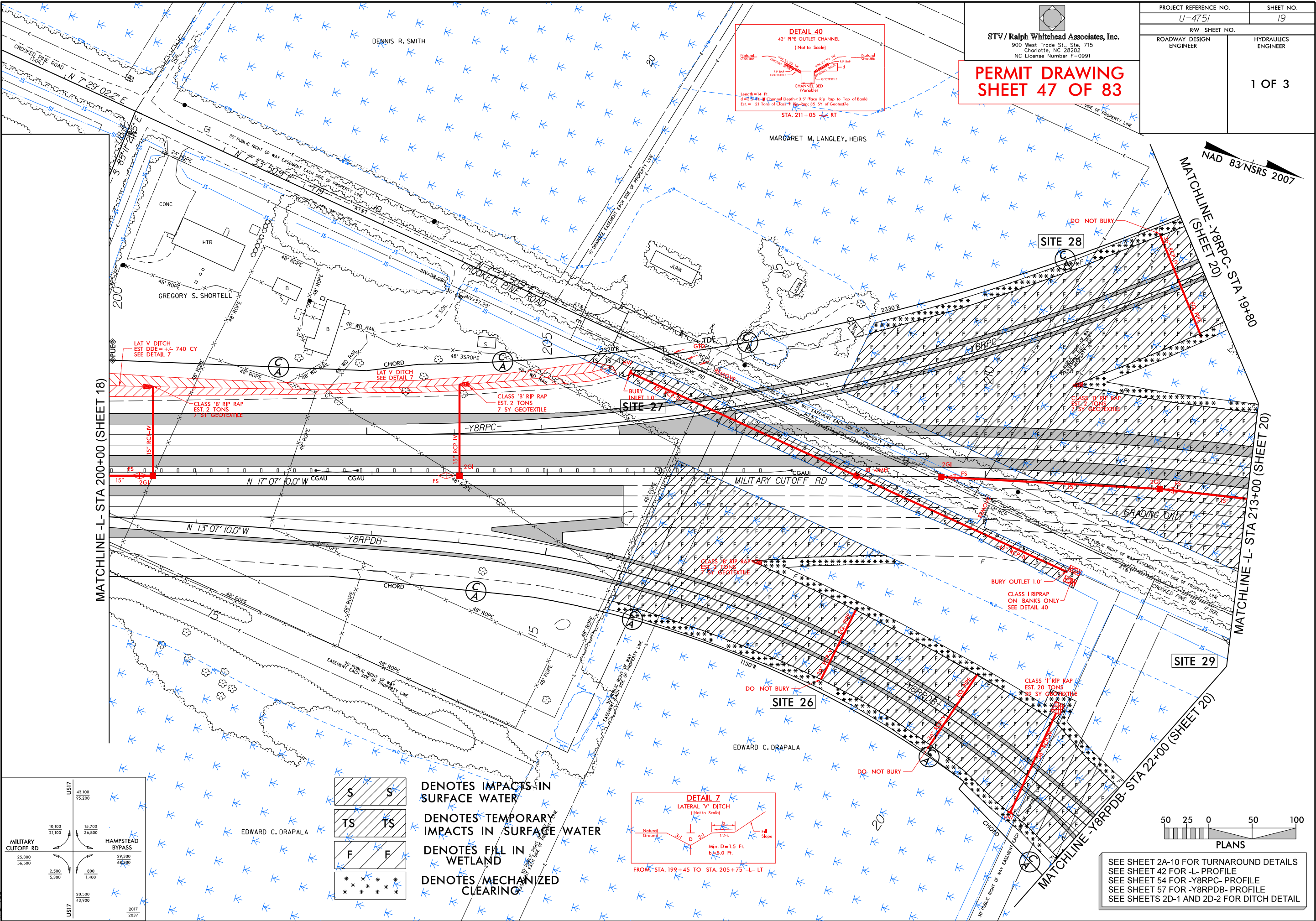
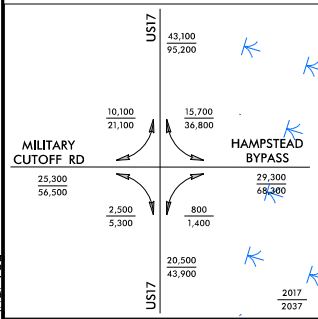
5/8/2017
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jharvey

8/23/99



Revised 5/9/2017

5/8/2017
U:\4751-Hyd-prm-wet_psh_19.dgn
19



STV/ Ralph Whitehead Associates, Inc.

900 West Trade St., Ste. 715

Charlotte, NC 28202

NC License Number F-0991

PERMIT DRAWING

SHEET 47 OF 83

PROJECT REFERENCE NO.		SHEET NO.
U-4751		19
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
		1 OF 3

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

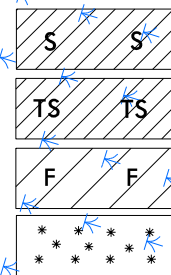
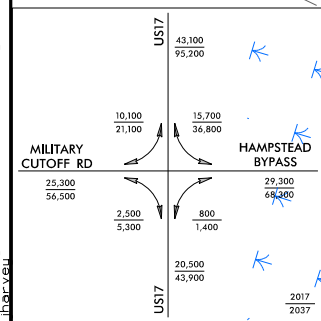
DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

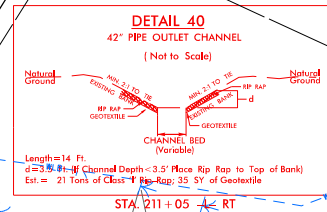
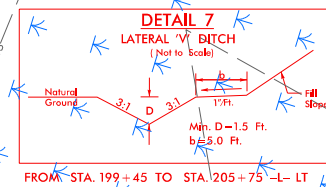
SEE SHEET 2A-10 FOR TURNAROUND DETAILS
SEE SHEET 42 FOR -L- PROFILE
SEE SHEET 54 FOR -Y8RPC- PROFILE
SEE SHEET 57 FOR -Y8RPDB- PROFILE
SEE SHEETS 2D-1 AND 2D-2 FOR DITCH DETAIL

Revised 5/9/2017

5/8/2017 14:51:14 Hyd_prm_wet_psh_19_con.dgn
barveu



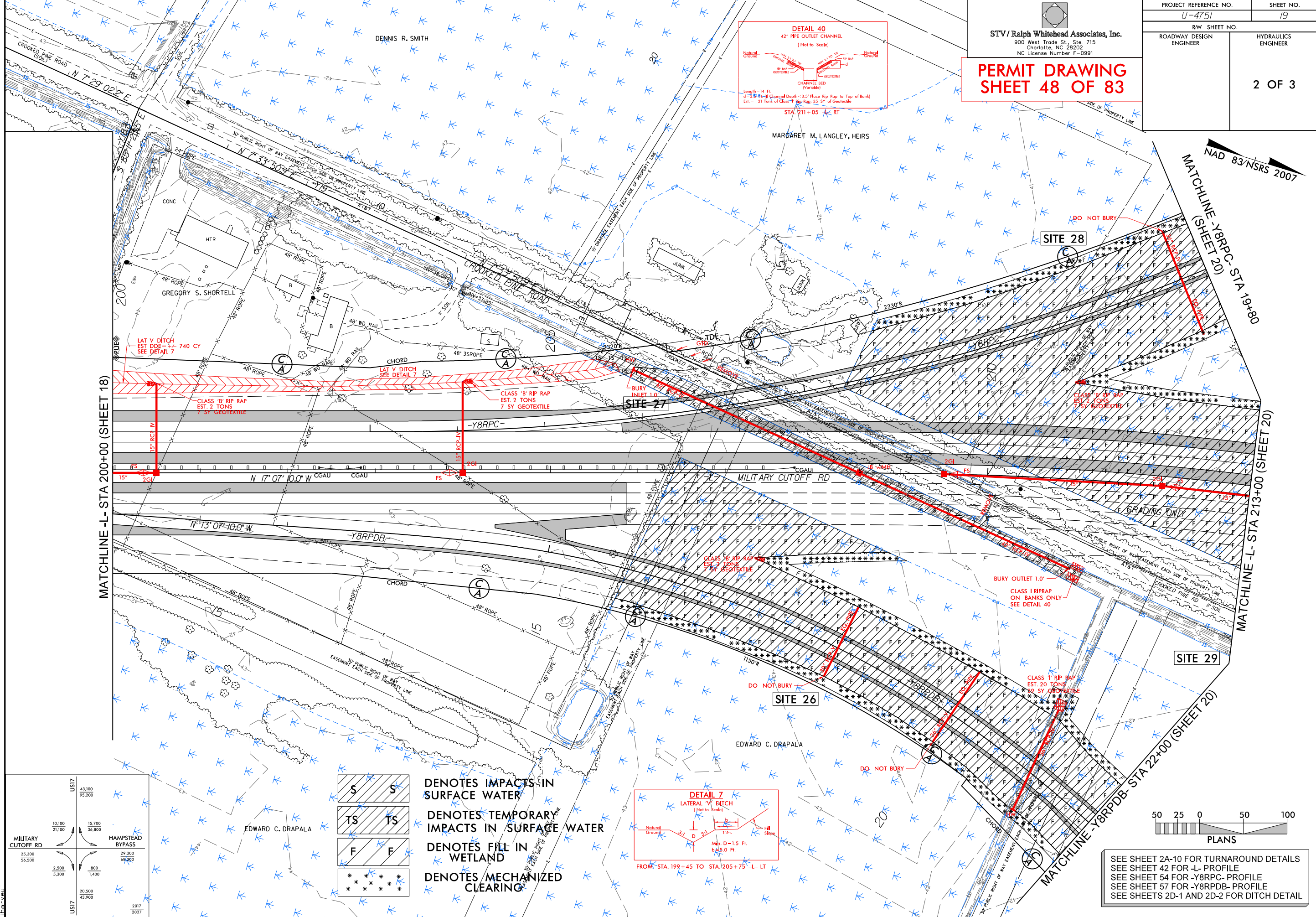
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING



STV / Ralph Whitehead Associates, Inc.
900 West Trade St., Ste. 715
Charlotte, NC 28202
NC License Number F-0991

**PERMIT DRAWING
SHEET 48 OF 83**

PROJECT REFERENCE NO. U-4751		SHEET NO. 19
RW SHEET NO.		HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	2 OF 3	



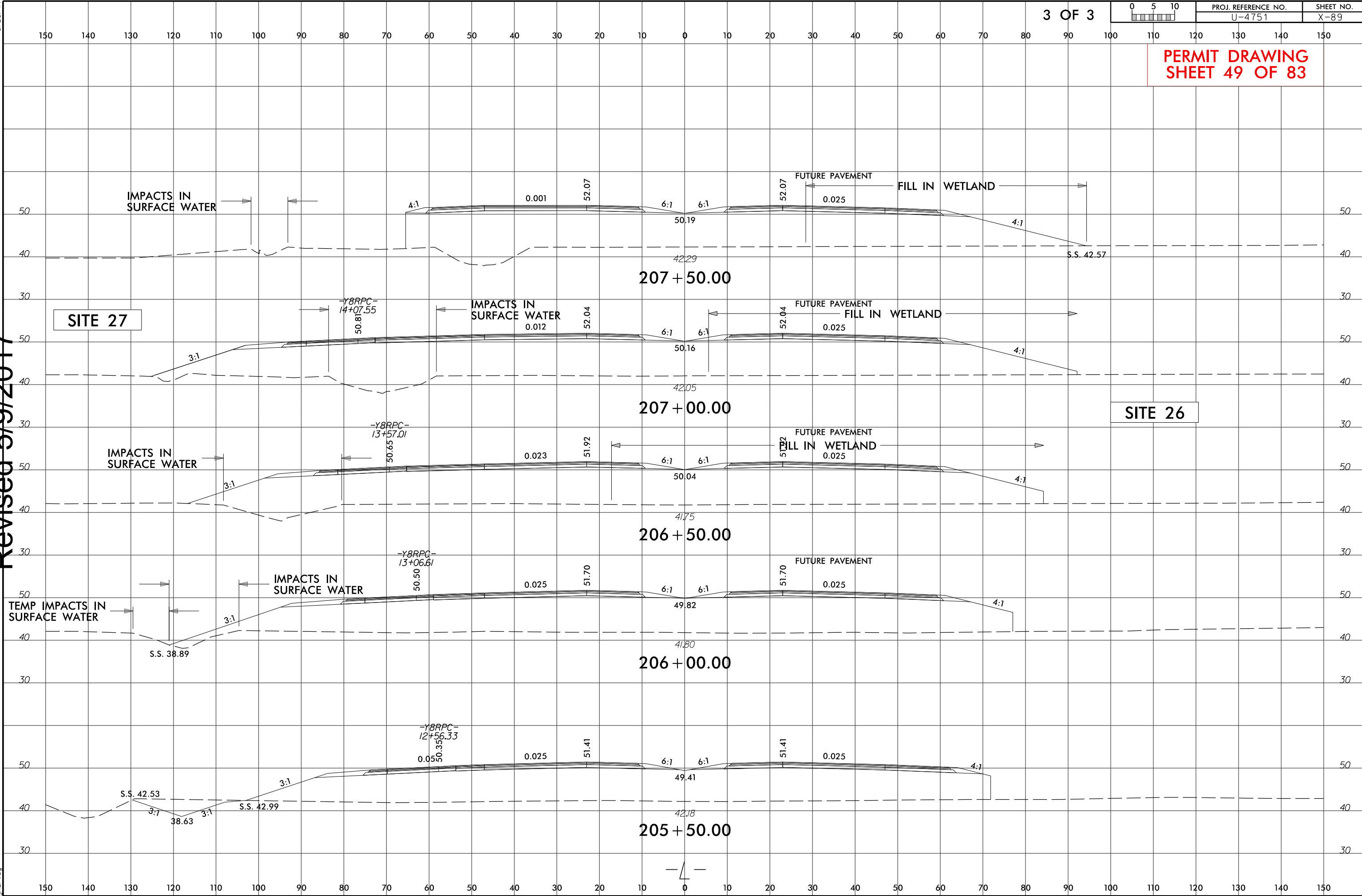
SEE SHEET 2A-10 FOR TURNAROUND DETAILS
SEE SHEET 42 FOR -L- PROFILE
SEE SHEET 54 FOR -Y8RPC- PROFILE
SEE SHEET 57 FOR -Y8RPDB- PROFILE
SEE SHEETS 2D-1 AND 2D-2 FOR DITCH DETAIL

8/23/99

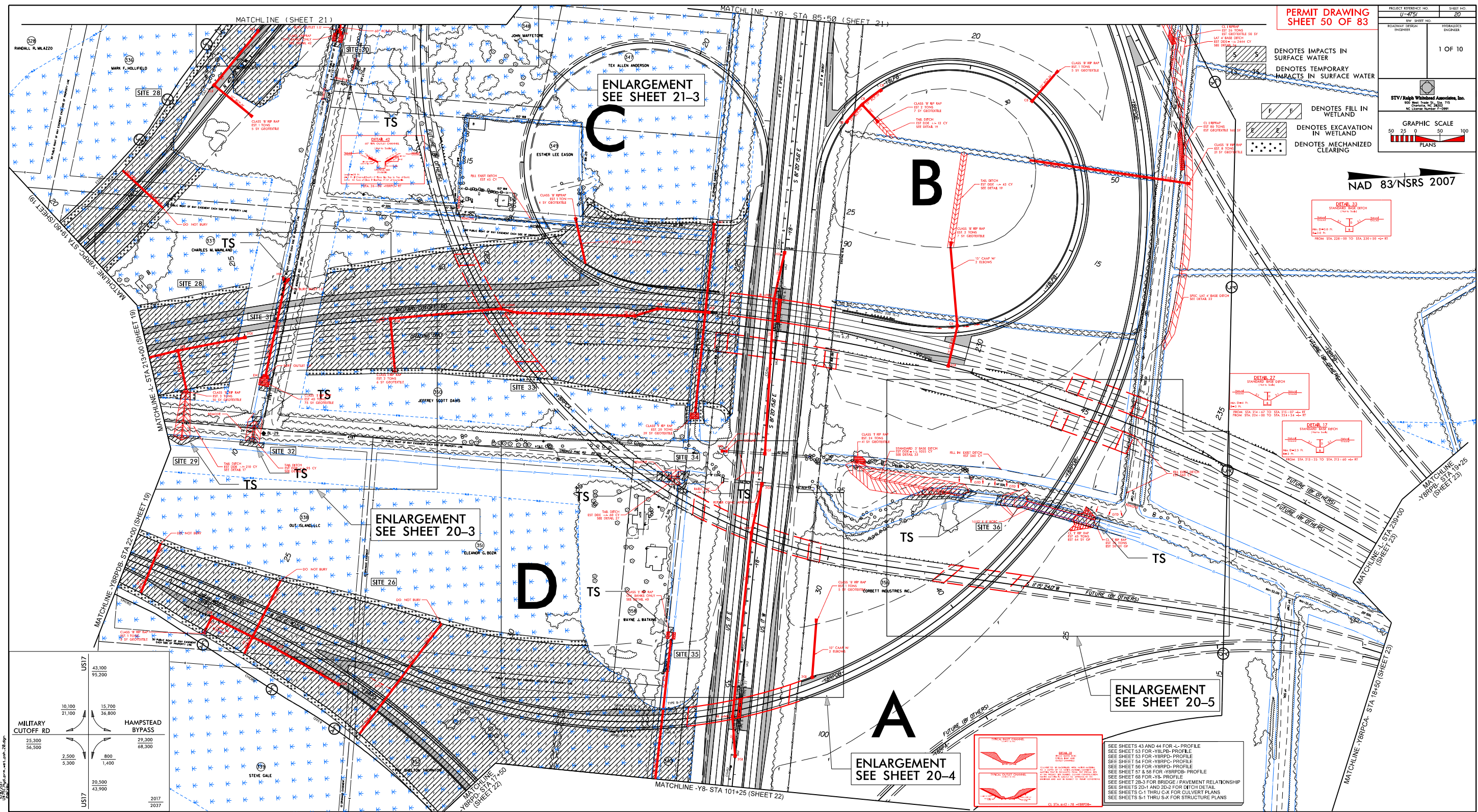
Revised 5/9/2017

5/8/2017
U4751 Hyd-prm.wet.psh.19-3.xpl.089-L2.dgn
jharvey

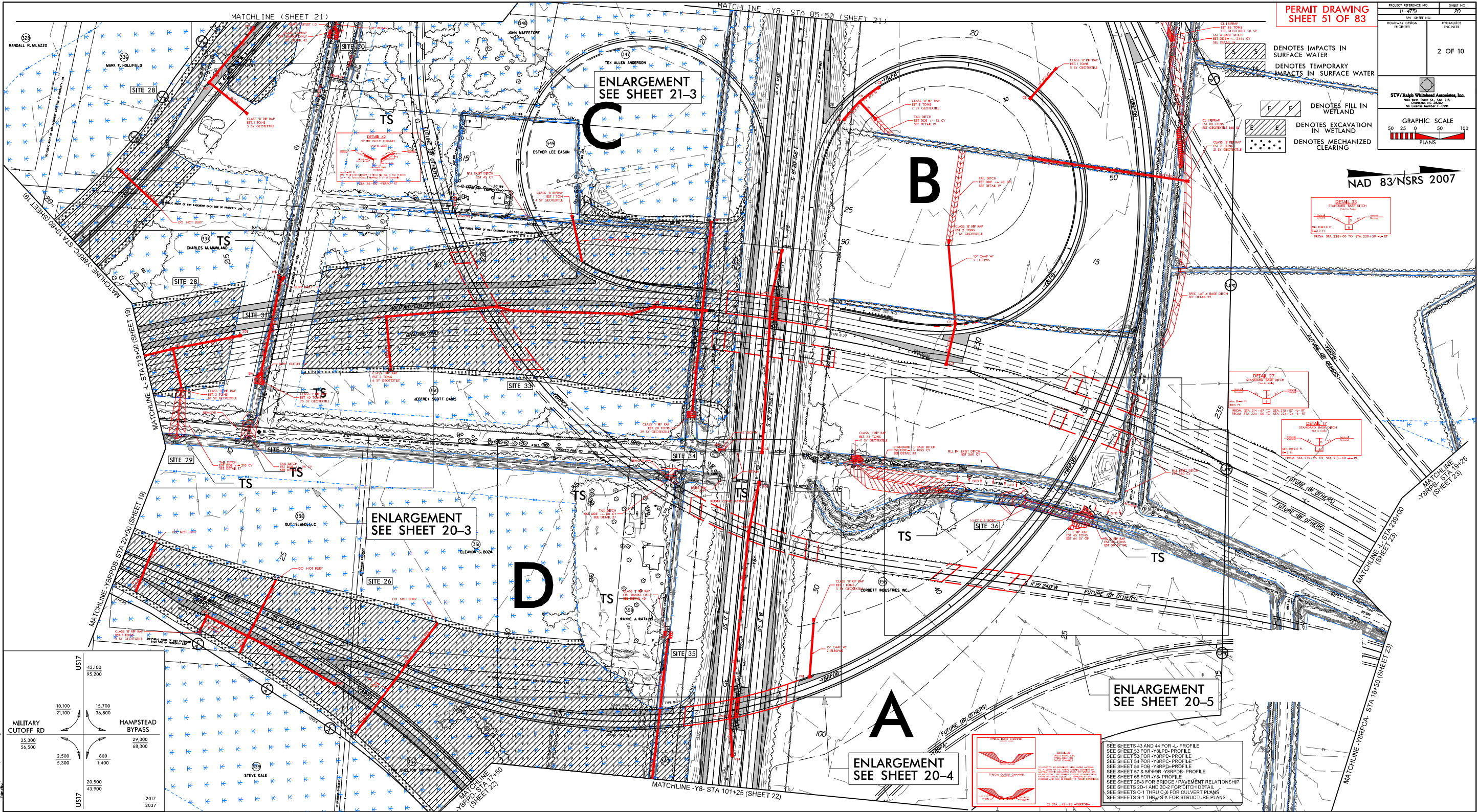
PERMIT DRAWING
SHEET 49 OF 83



Revised 5/9/2017



Revised 5/9/2017

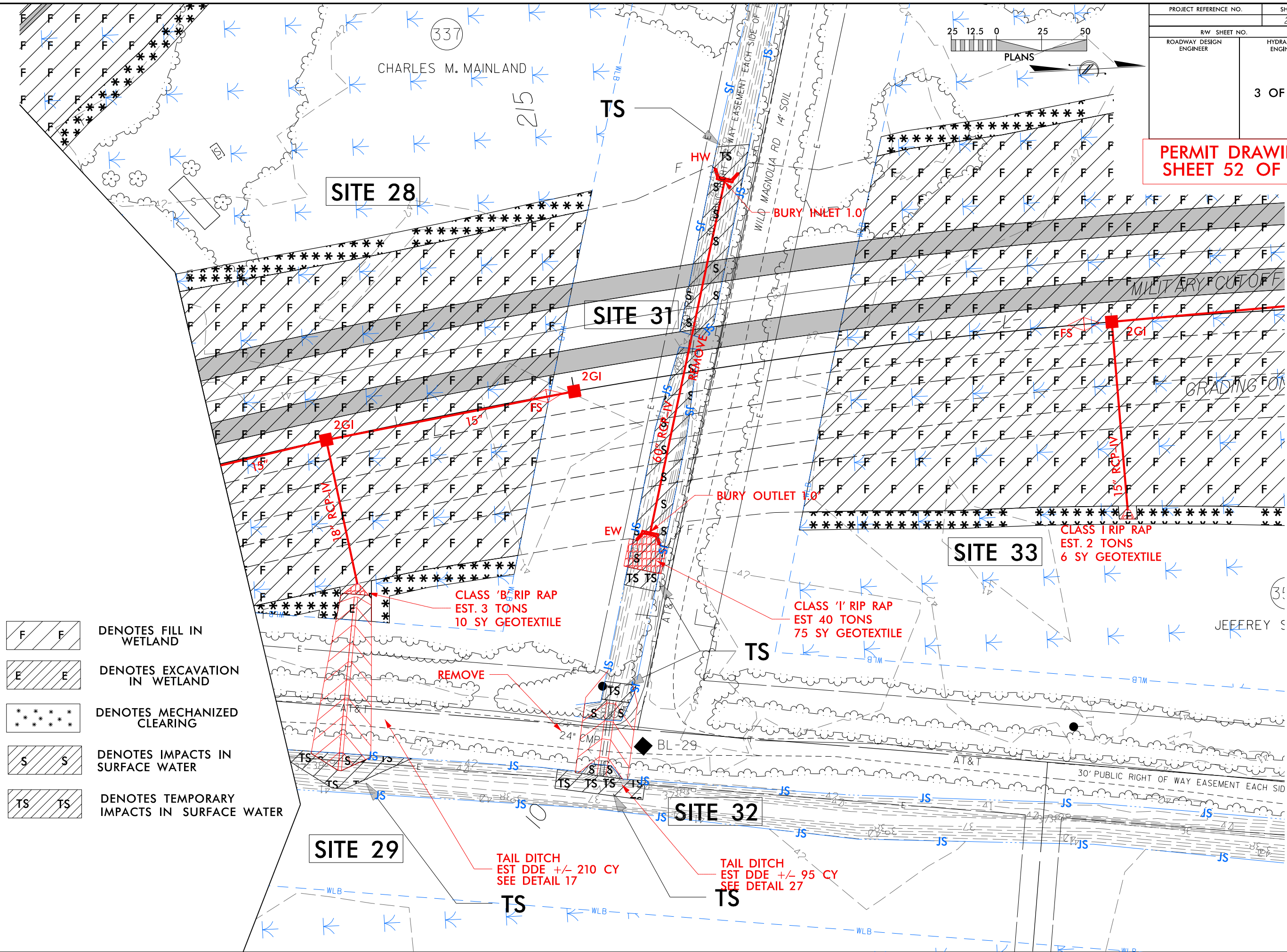


Revised 5/9/2017

8/17/99

REVISIONS

5/8/2017
14951 Hyd_prm_wet.psh.20-3 View-in.dgn
jbarva



PERMIT DRAWING
SHEET 52 OF 83

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

PROJECT REFERENCE NO.		SHEET NO.	
		20-3	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
		3 OF 10	

REVISIONS

8/17/99

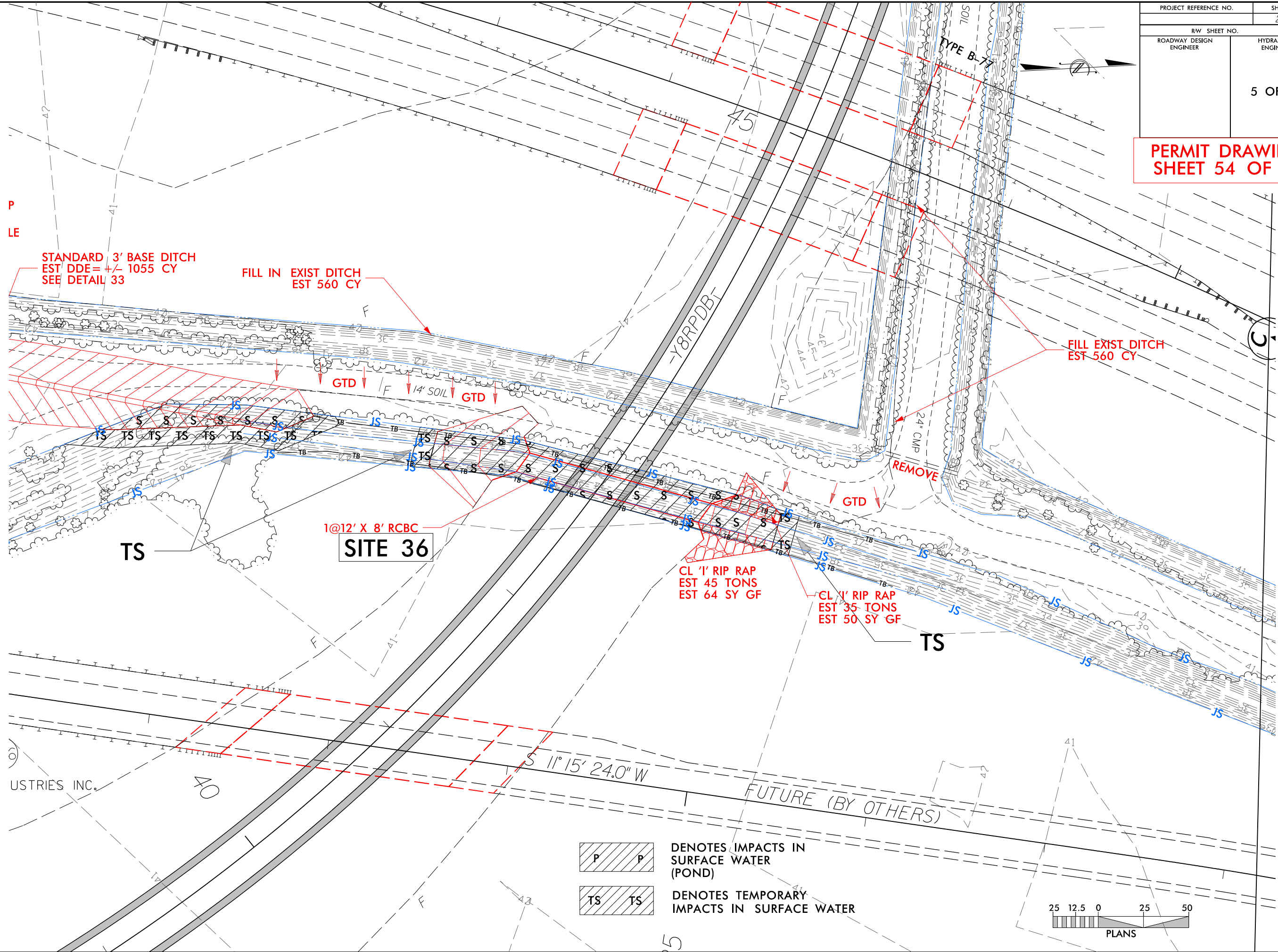


Revised 5/9/2017

8/17/99

REVISIONS

5/8/2017
1451 Hyd-prm-wet.psh.20-5 View-in.dgn
jbarve



PROJECT REFERENCE NO.		SHEET NO.	
		20-5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
		5 OF 10	

PERMIT DRAWING
SHEET 54 OF 83

Revised 5/9/2017

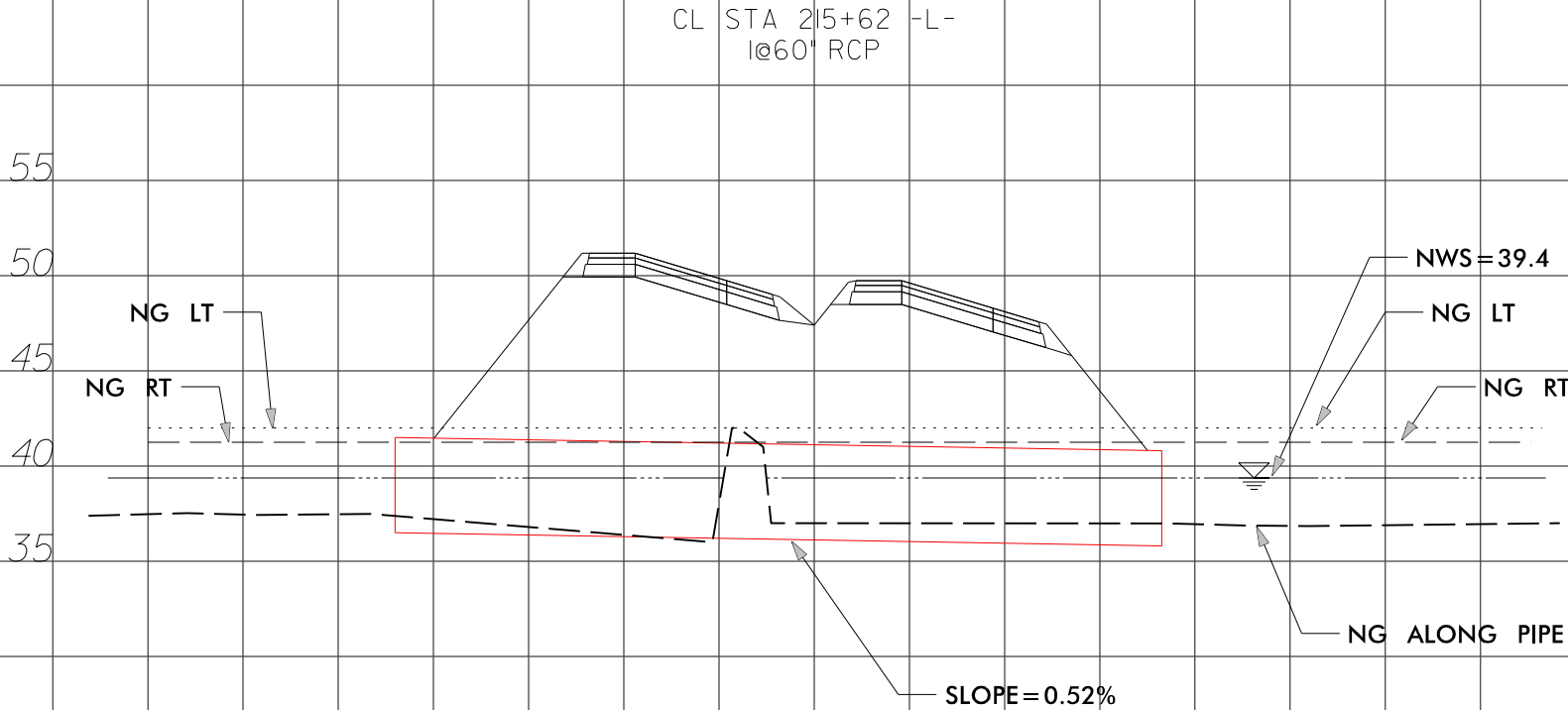
5/14/99
5/9/2017
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lba:vu

PROJECT REFERENCE NO.		SHEET NO.
		20-6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
6 OF 10		

PERMIT DRAWING SHEET 55 OF 83



SITE 31



Revised 5/9/2017

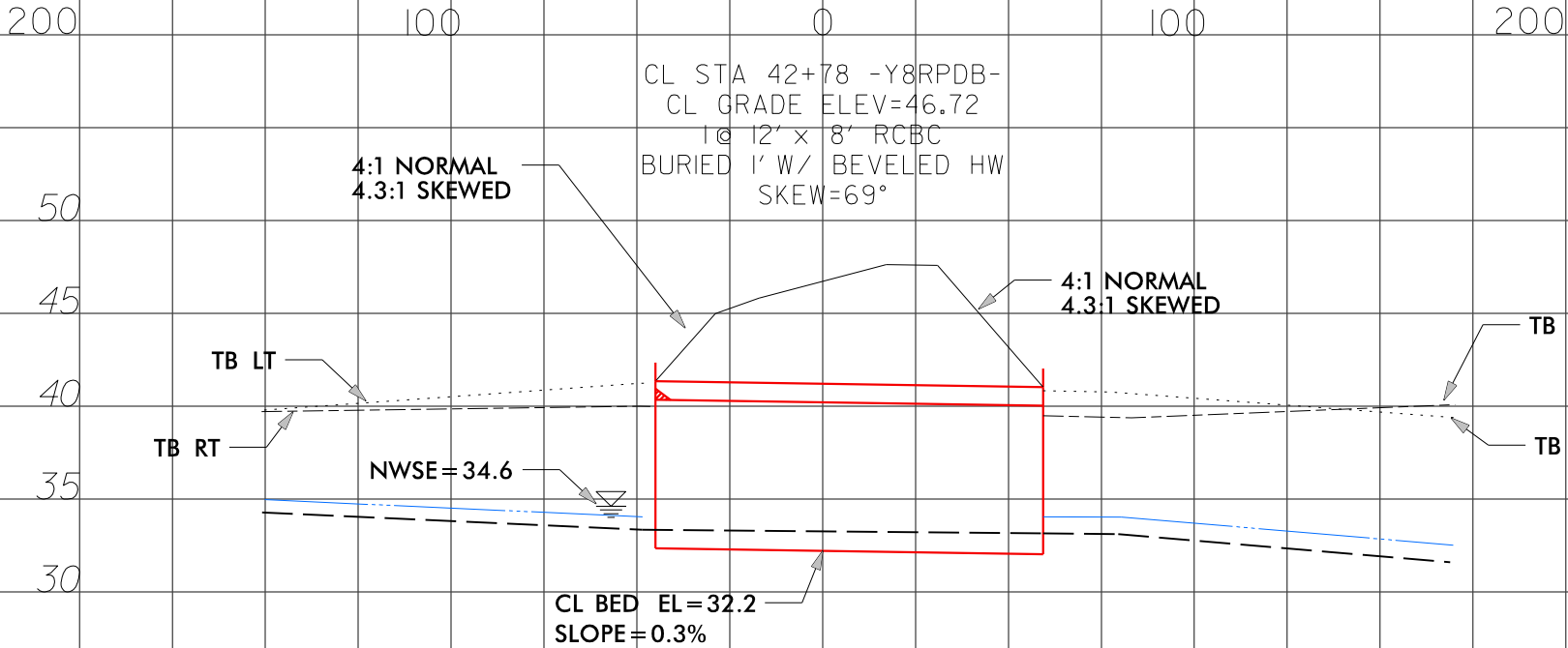
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5/9/2017
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lba-ven

PROJECT REFERENCE NO.		SHEET NO.
		20-7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
7 OF 10		

PERMIT DRAWING
SHEET 56 OF 83



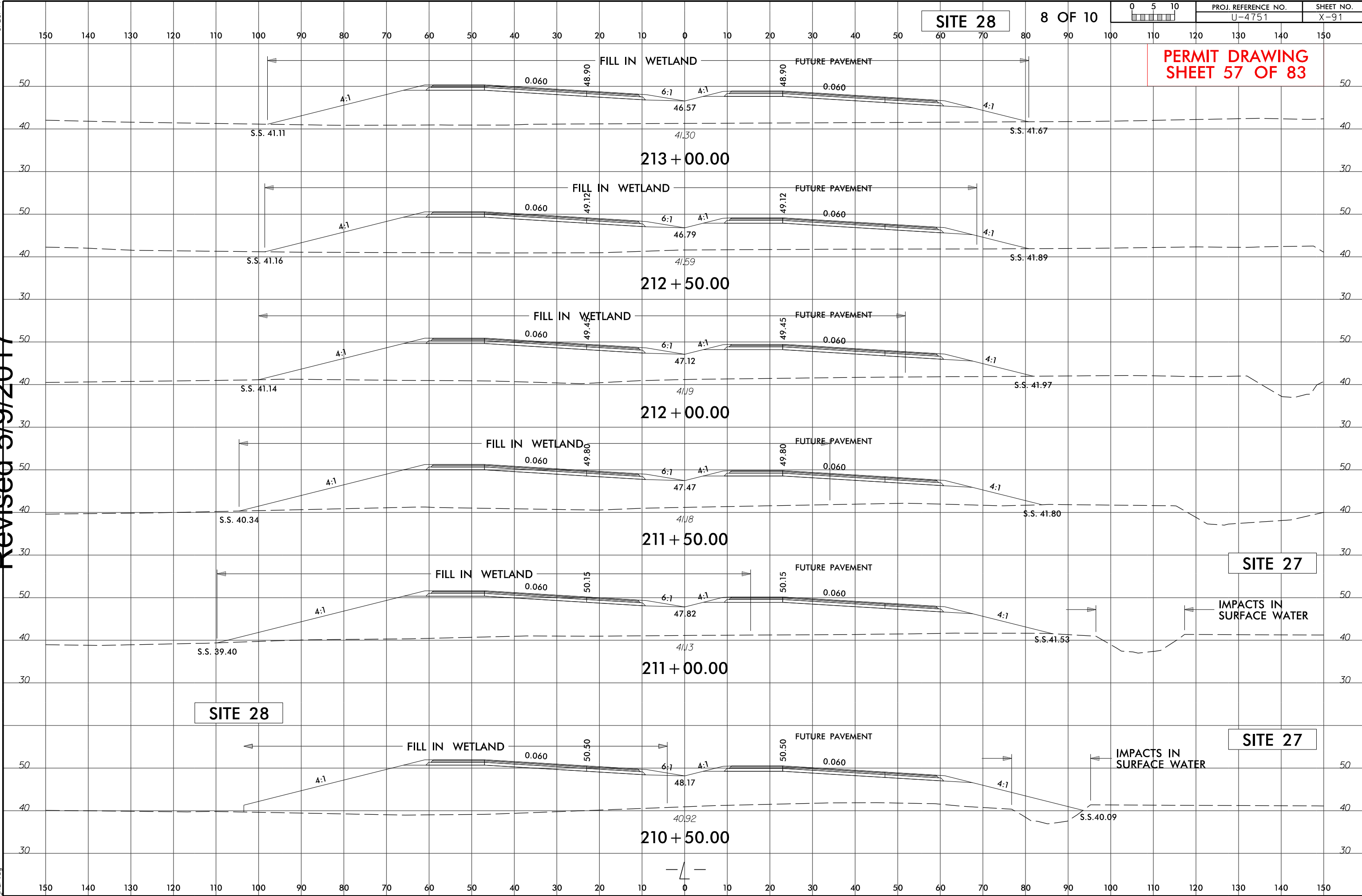
SITE 36



Revised 5/9/2017

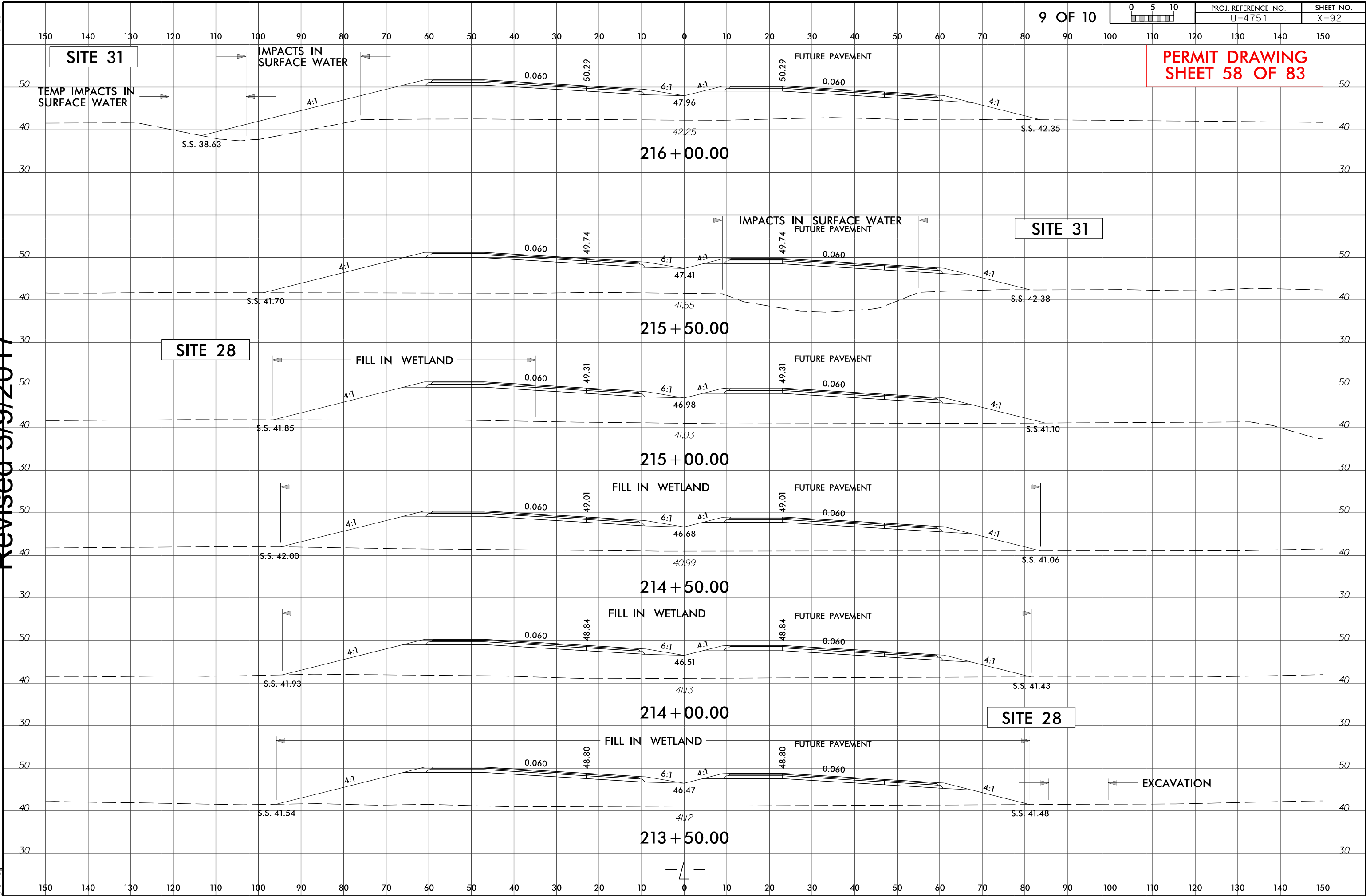
8/23/99

5/8/2017
U4751 Hyd-prm-wet.psh, 20-8.xp1, 091-L2.dgn
jharvey



Revised 5/9/2017

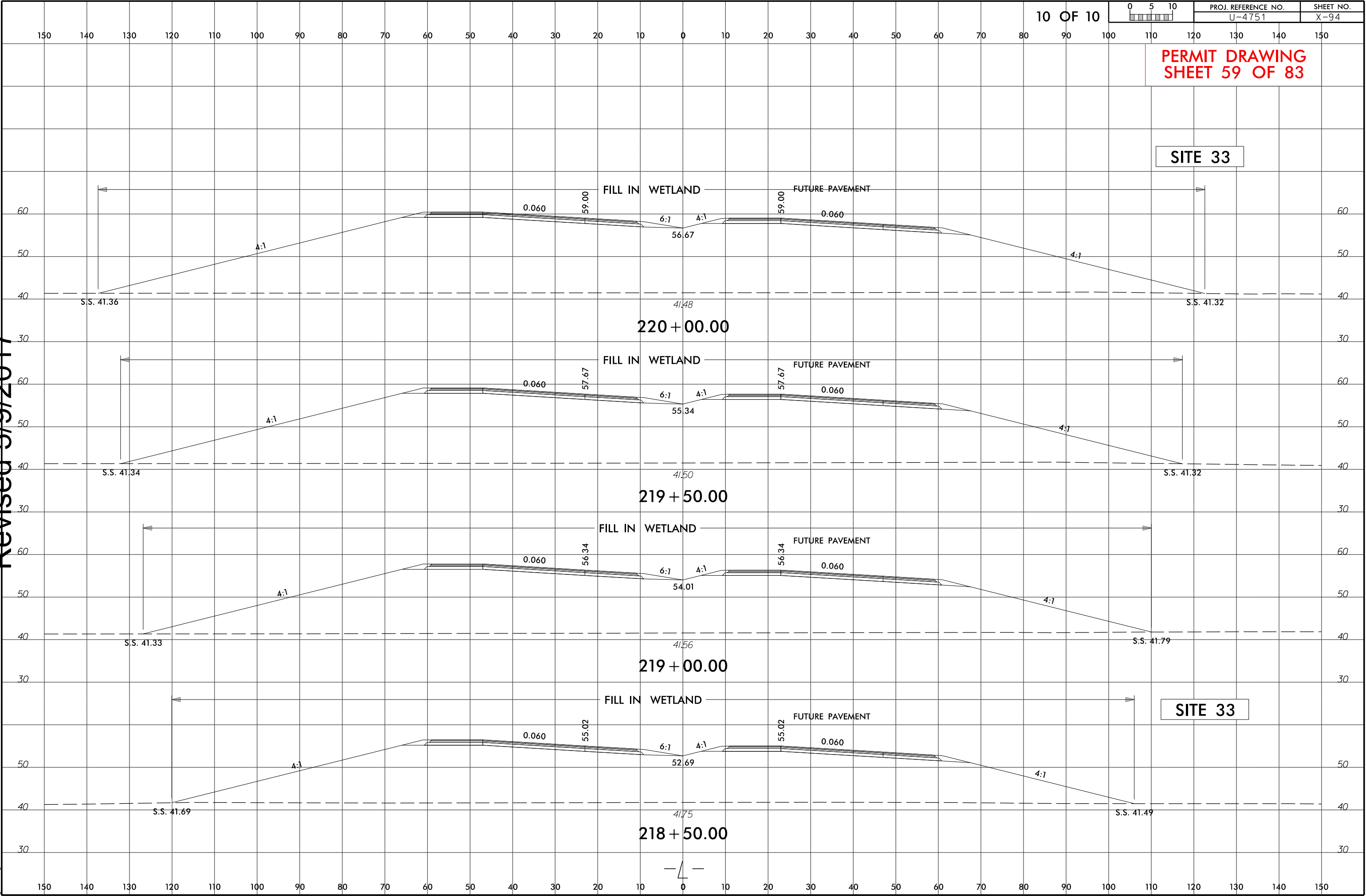
8/23/99
5/8/2017
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jharvey



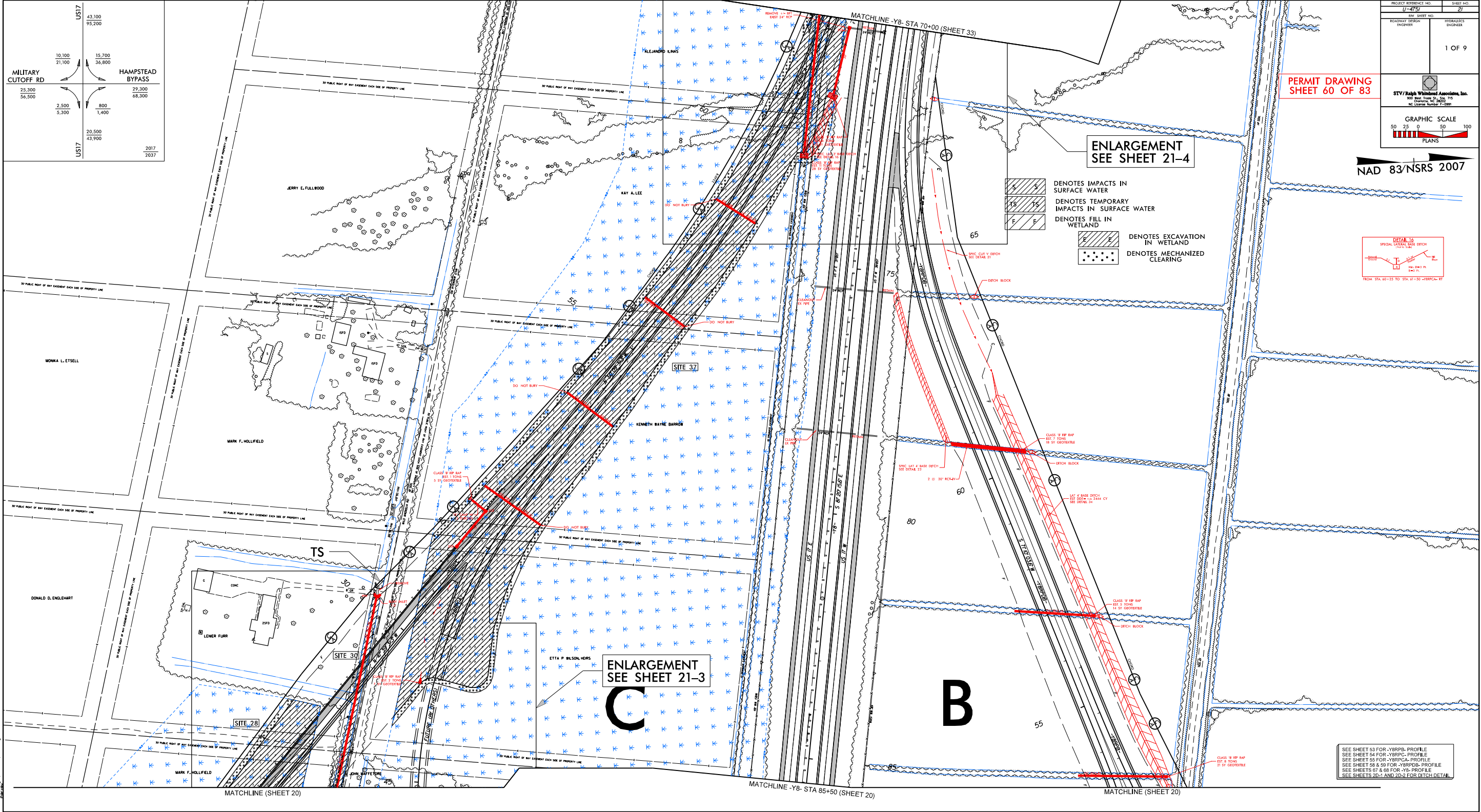
Revised 5/9/2017

5/8/2017
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jharvey

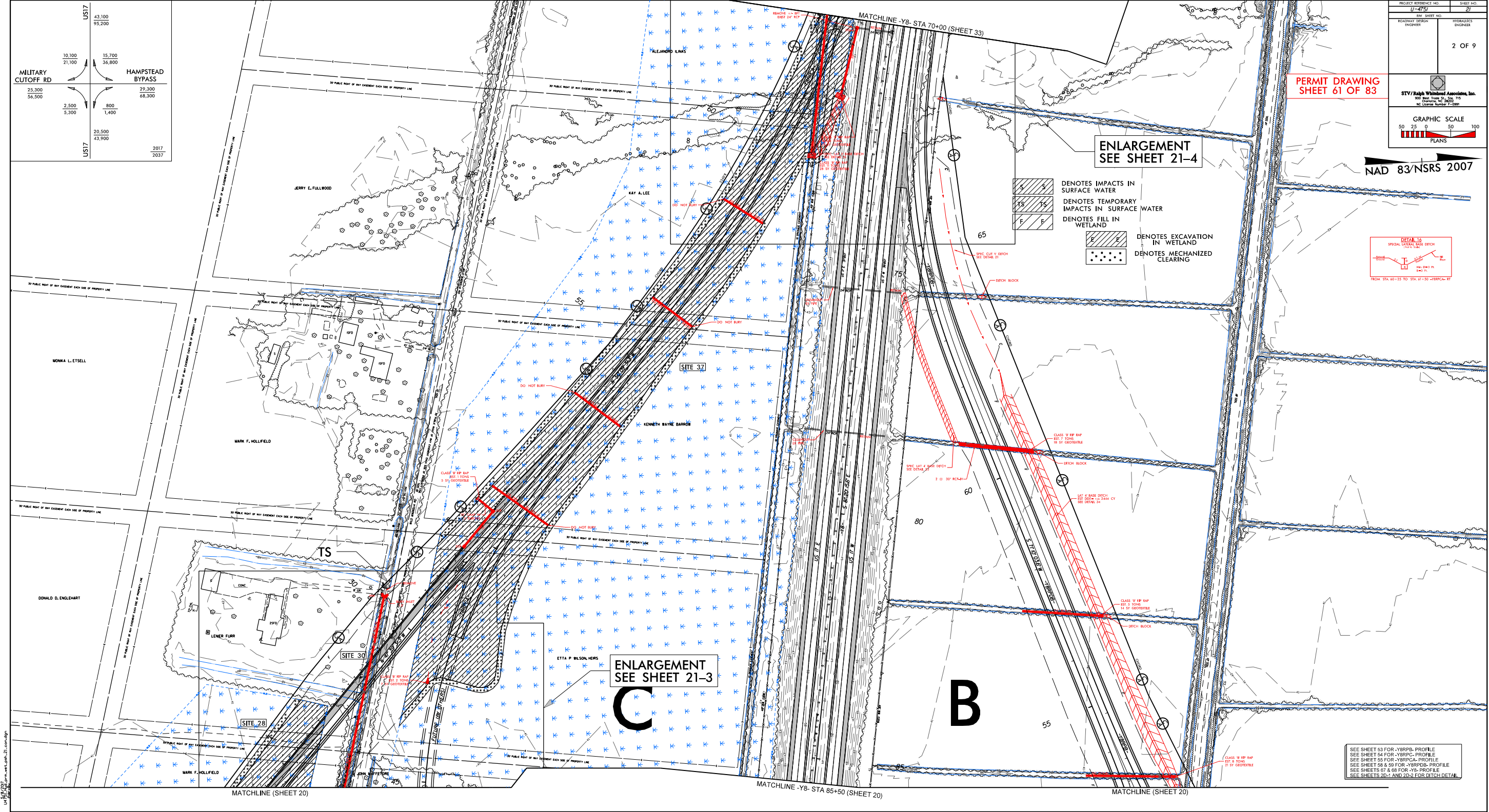
8/23/99



Revised 5/9/2017



Revised 5/9/2017



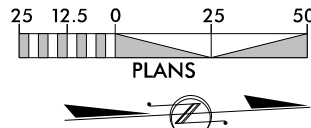
REVISIONS

8/17/99



REVISIONS

8/17/99



65

Revised 5/9/2017

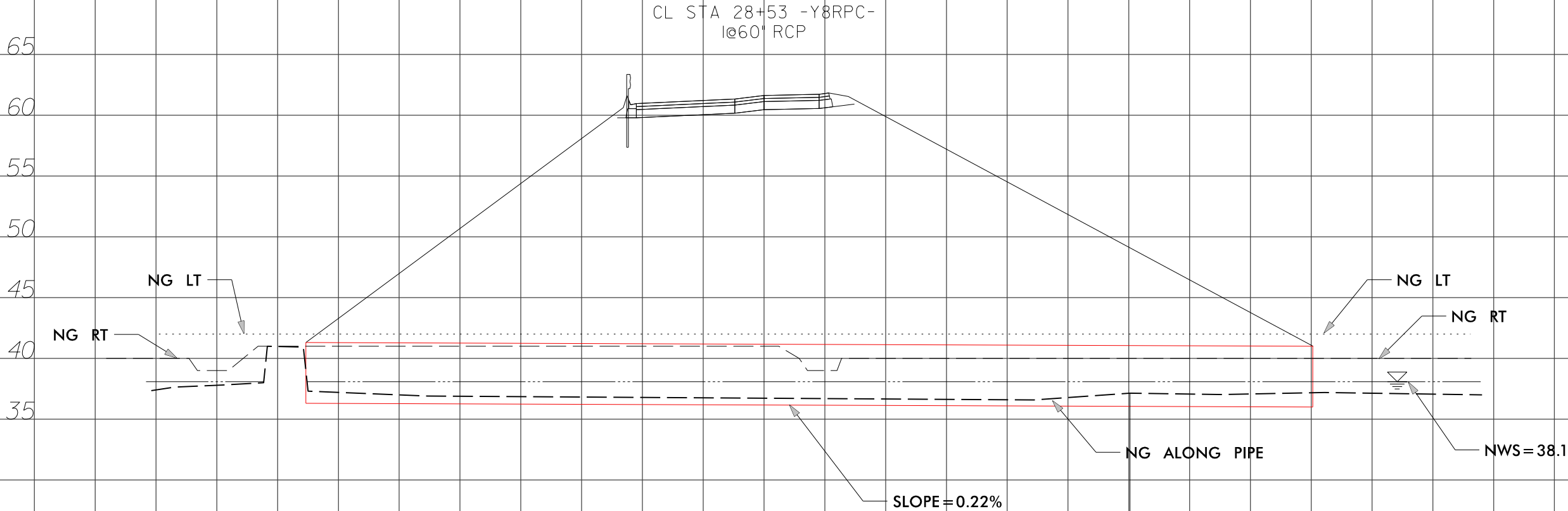
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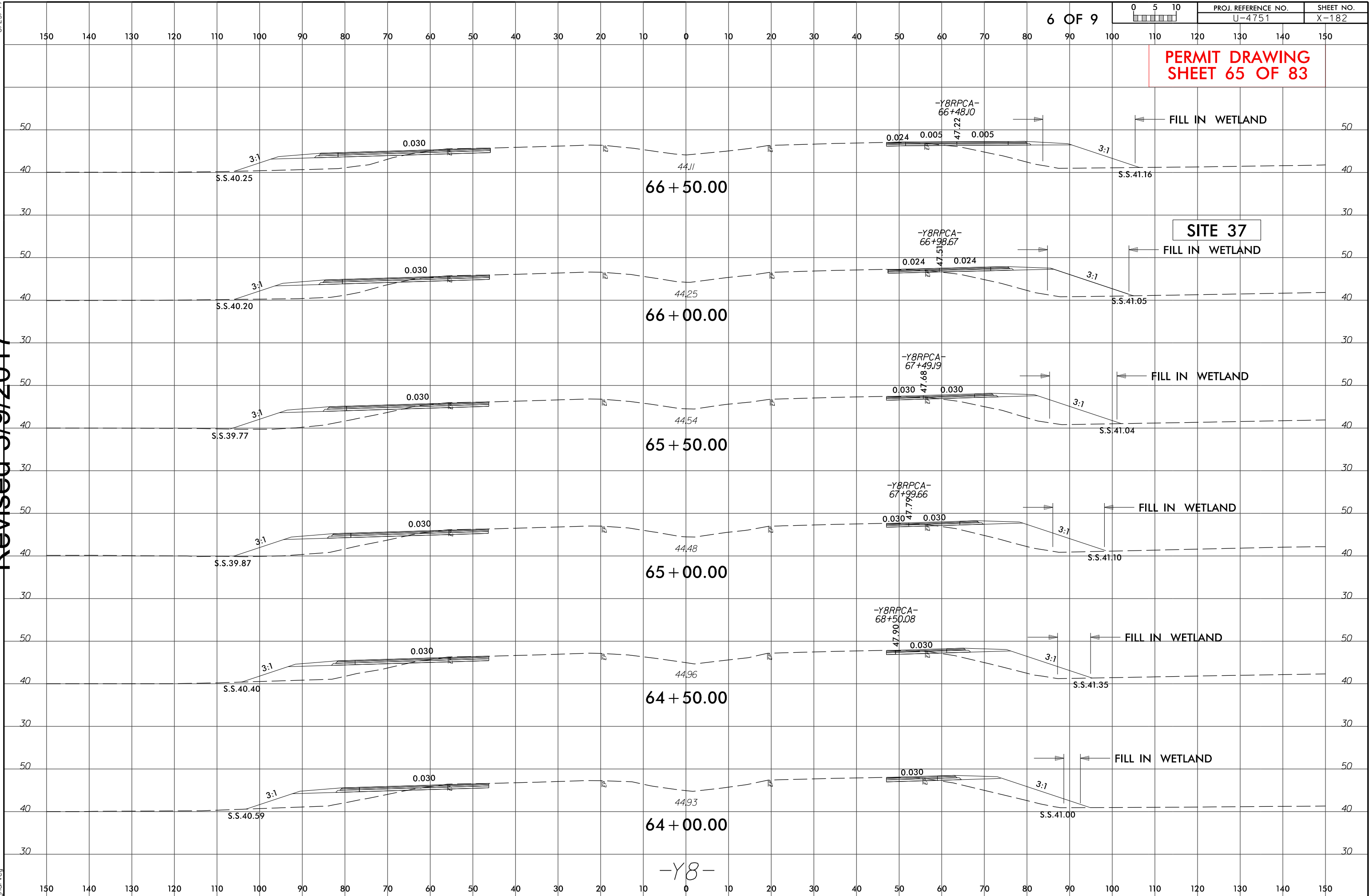
PROJECT REFERENCE NO.		SHEET NO.
		21-5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
5 OF 9		

PERMIT DRAWING SHEET 64 OF 83



SITE 30

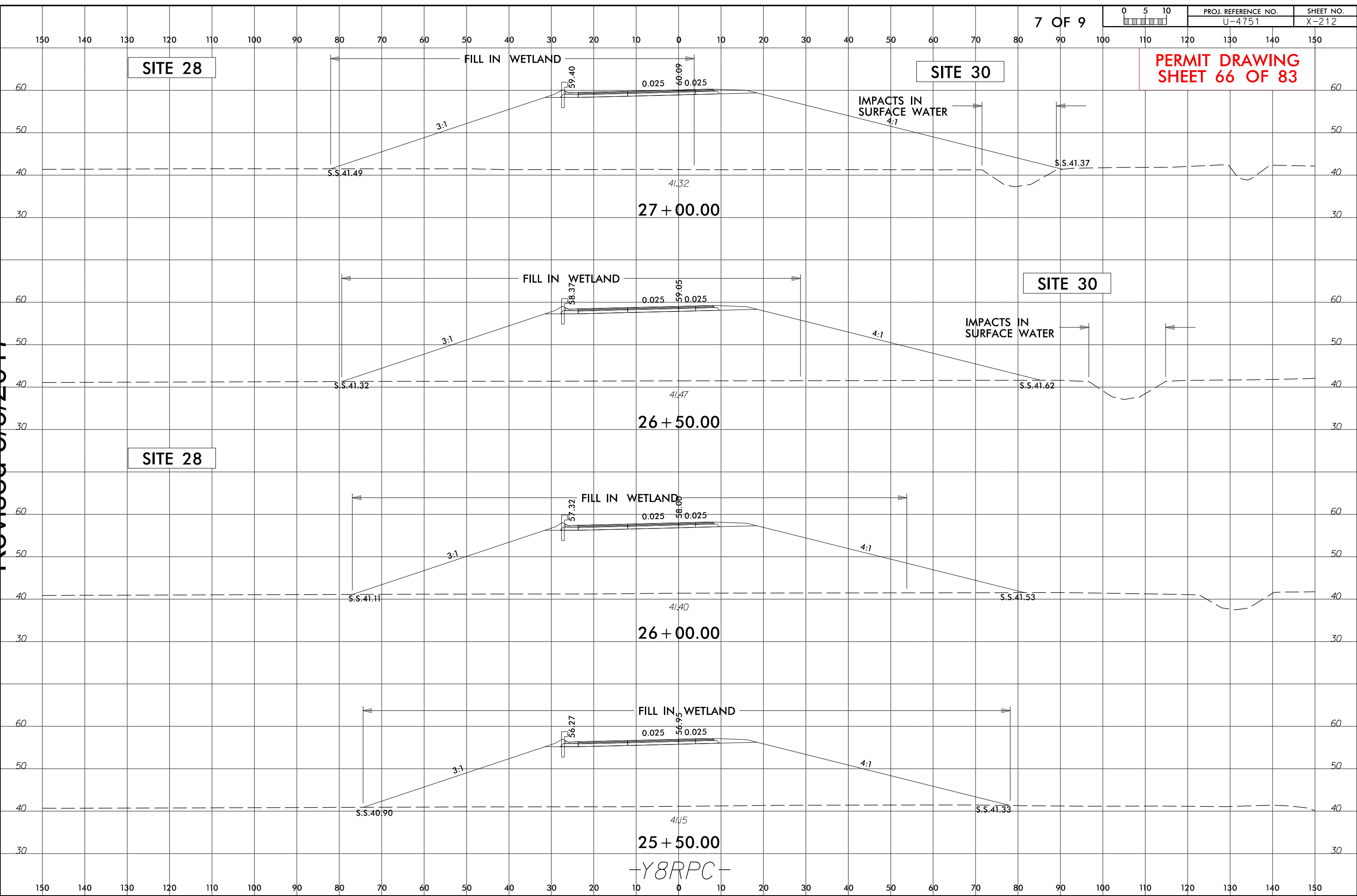




Revised 5/9/2017

5/8/2017
U4751.Hyd-prm_wet_21-7_.xpl- Y8RPC.dgn
plan view

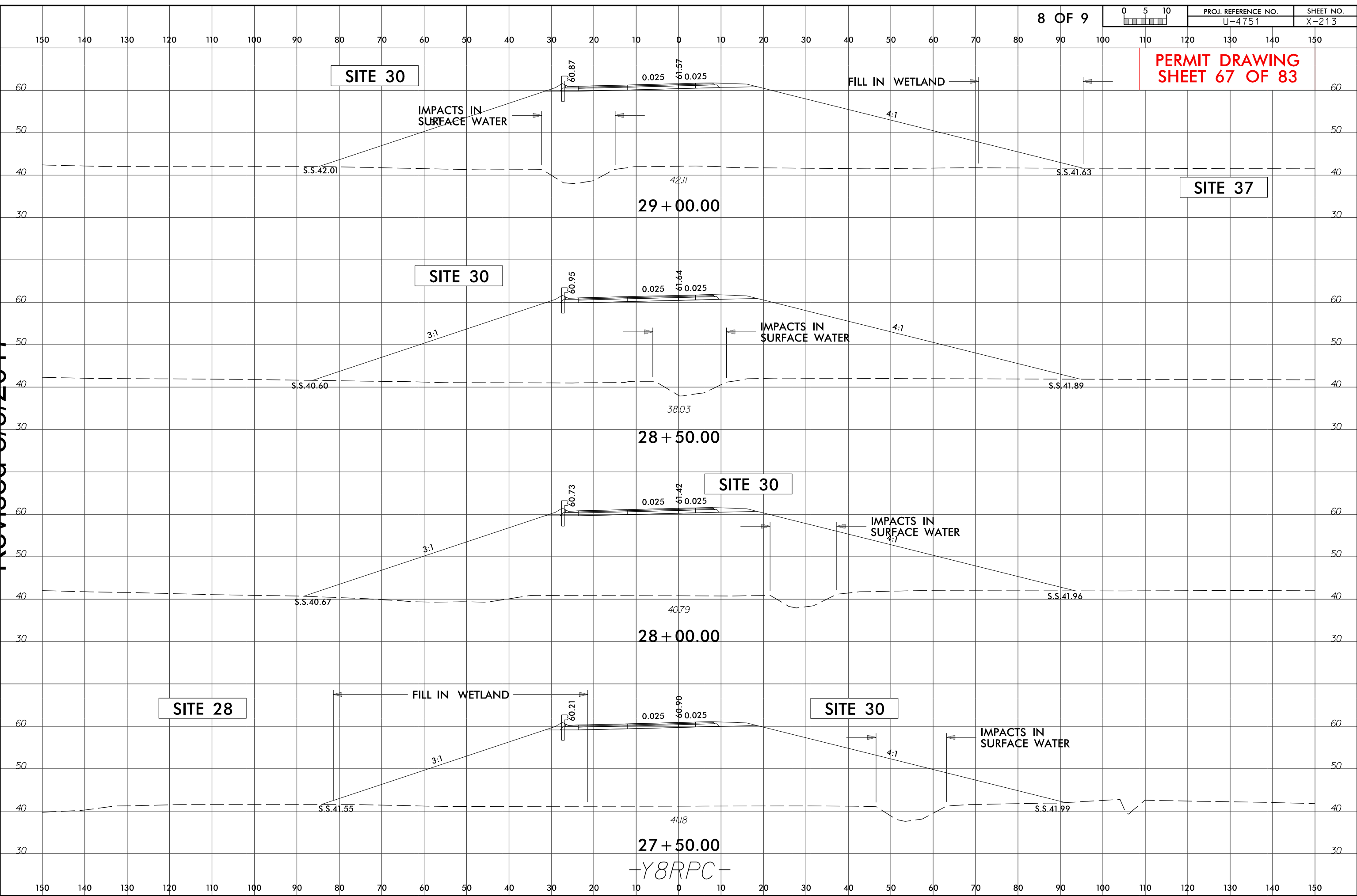
8/23/99



Revised 5/9/2017

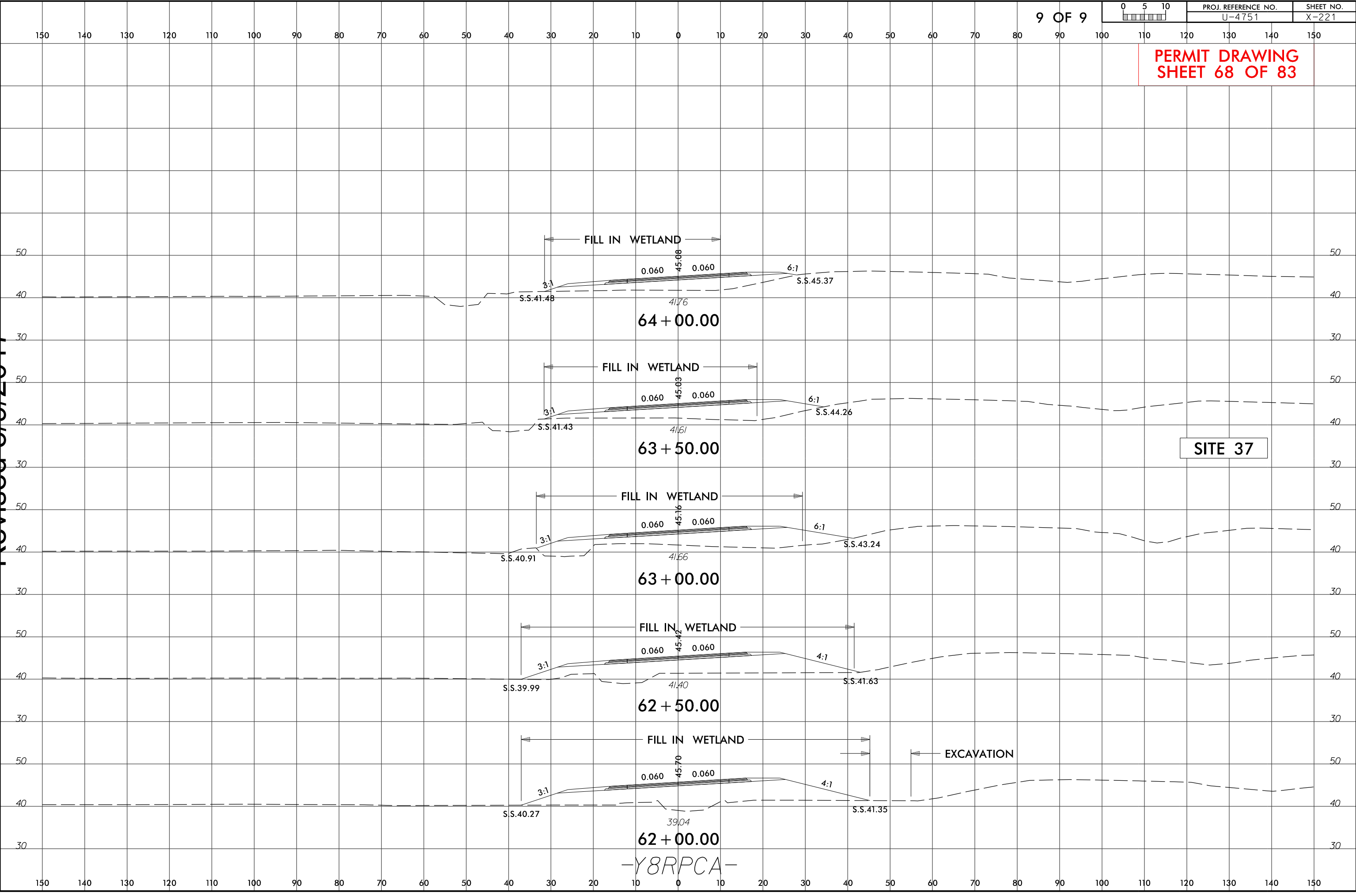
5/8/2017
U4751-Hyd-prm-wet.psh-21-8-xpl-213-Y8RPC.dgn
plan view

8/23/99

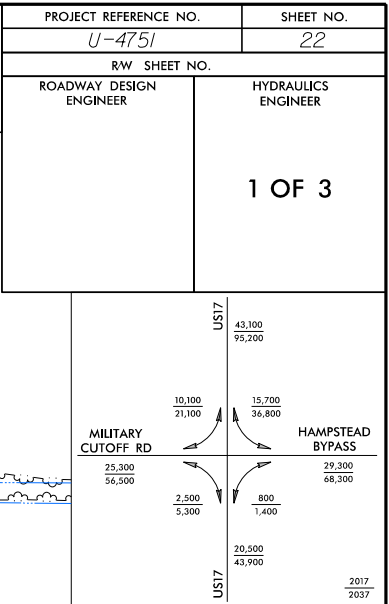


PERMIT DRAWING
SHEET 67 OF 83

8/23/99
Revised 5/9/2017
5/8/2017
U4751-Hyd-prm-wet.psh, 21-9-.xpl, 221-Y8RPCA.dgn
jharvey



5/8/2017
U4/51-Hyd-prm-wet-psh-22.dgn
iharvey



 DENOTES FILL IN WETLAND

 DENOTES MECHANIZED CLEARING

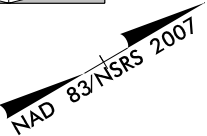
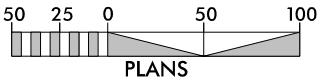
SEE SHEET 56 FOR -Y8RPD- PROFILE

Revised 5/9/2017

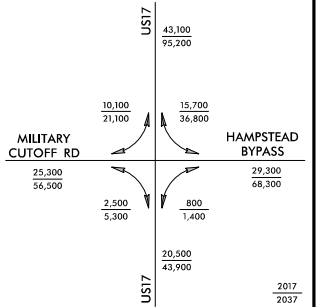
5/8/2017
U:\4951\hyd_prm_wet.psh.22_con.dgn
jbarreau



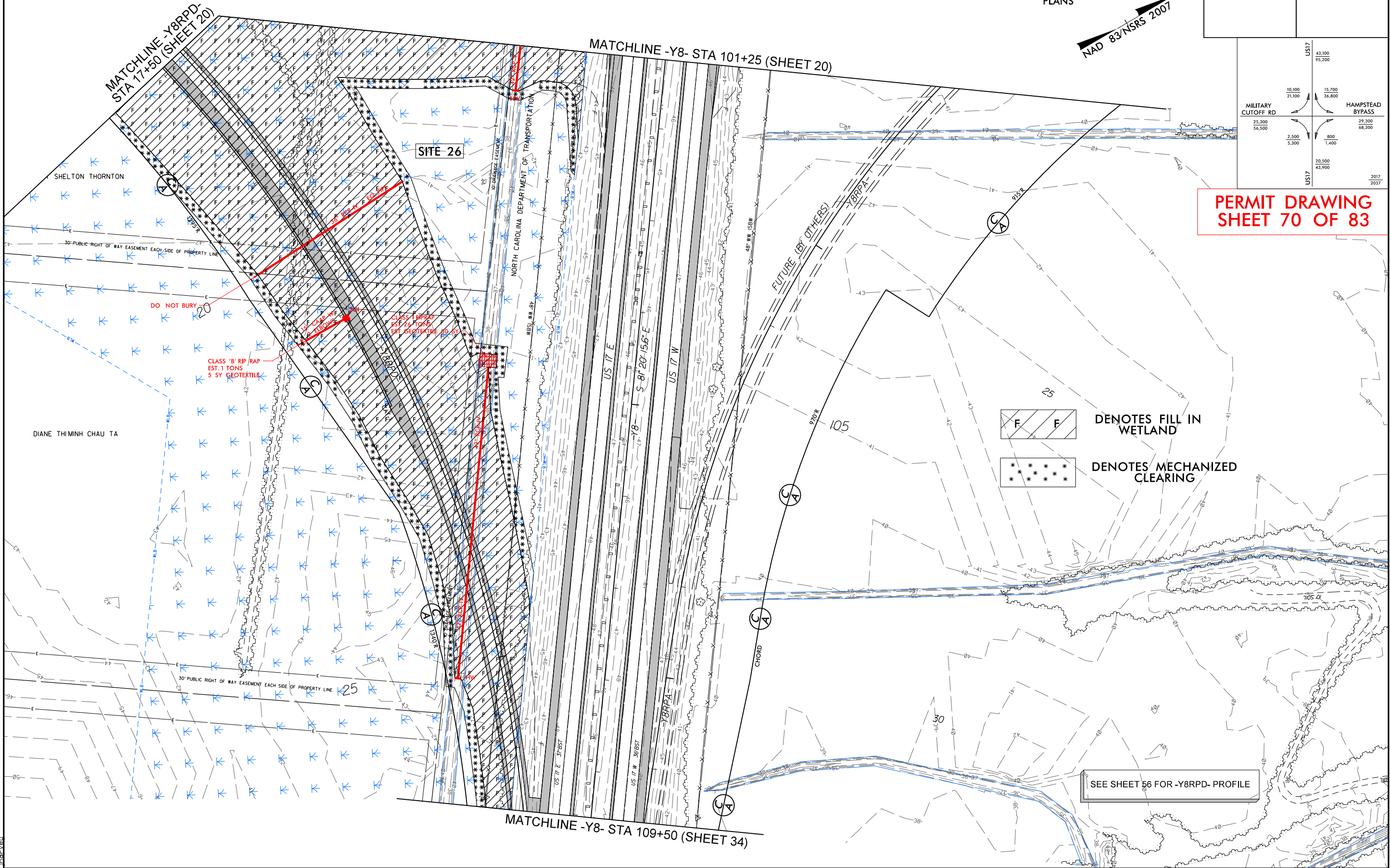
STV / Ralph Whitehead Associates, Inc.
900 West Trade St., Ste. 715
Charlotte, NC 28202
NC License Number F-0991



PROJECT REFERENCE NO.		SHEET NO.
U-4751		22
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
	2 OF 3	



PERMIT DRAWING
SHEET 70 OF 83



DENOTES FILL IN
WETLAND

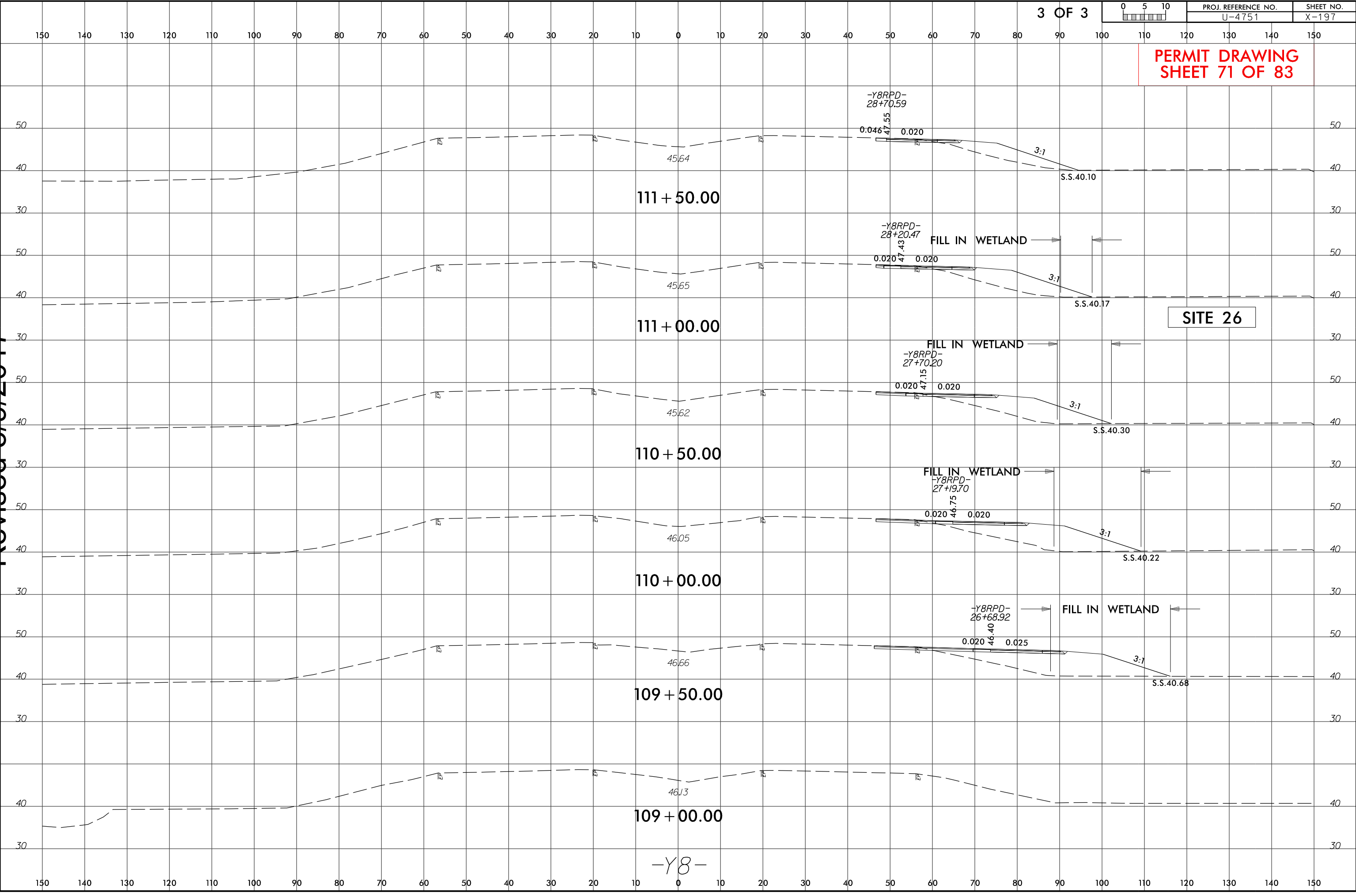


DENOTES MECHANIZED
CLEARING

SEE SHEET 56 FOR -Y8RPD- PROFILE

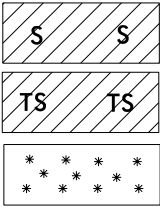
Revised 5/9/2017

8/23/99
5/8/2017
U4751-Hyd-prm-wet.psh, 22-3.xpl, 197-Y8.dgn
jharvey



Revised 5/9/2017

5/8/2017
14:51
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haxxau



DENOTES IMPACTS IN
SURFACE WATER

DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

DENOTES MECHANIZED
CLEARING

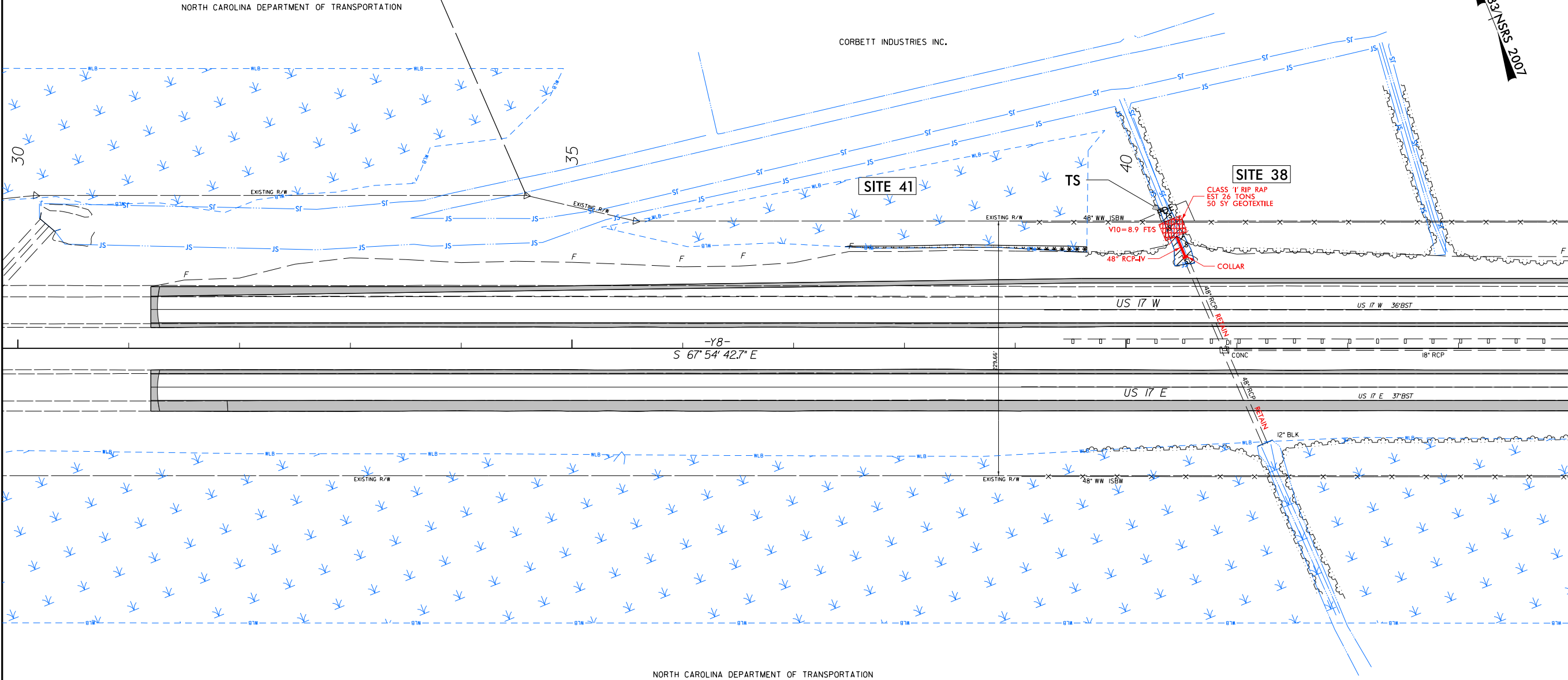
**STV / Ralph Whitehead Associates, Inc.**
900 West Trade St., Ste. 715
Charlotte, NC 28202
NC License Number F-0991

**PERMIT DRAWING
SHEET 72 OF 83**

50 25 0 50 100

PLANS

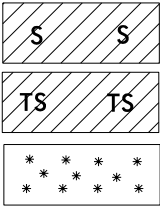
PROJECT REFERENCE NO.		SHEET NO.
U-4751		31
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
	1 OF 2	



SEE SHEET 66 FOR -Y8- PROFILE

Revised 5/9/2017

5/8/2017
14:51
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haxxau



DENOTES IMPACTS IN
SURFACE WATER

DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

DENOTES MECHANIZED
CLEARING

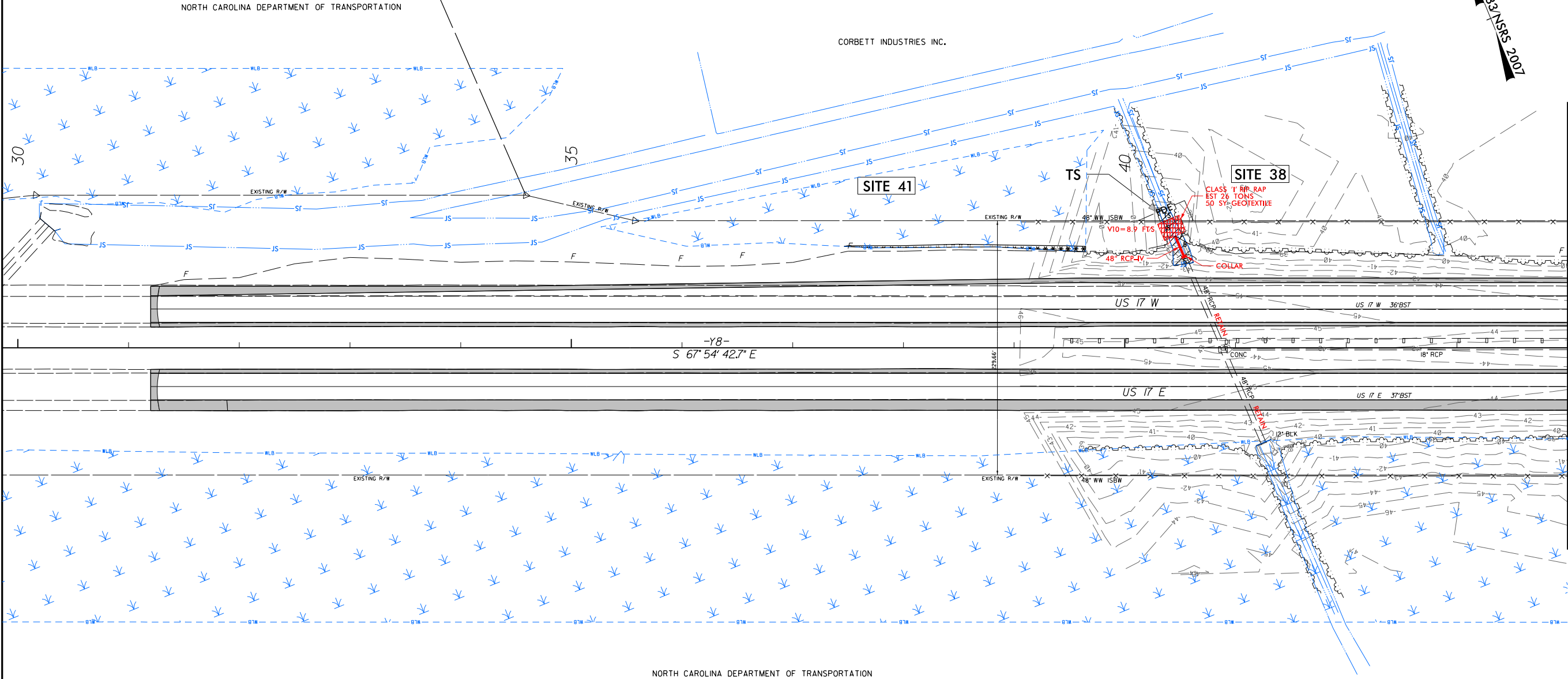
**STV / Ralph Whitehead Associates, Inc.**
900 West Trade St., Ste. 715
Charlotte, NC 28202
NC License Number F-0991

**PERMIT DRAWING
SHEET 73 OF 83**

50 25 0 50 100

PLANS

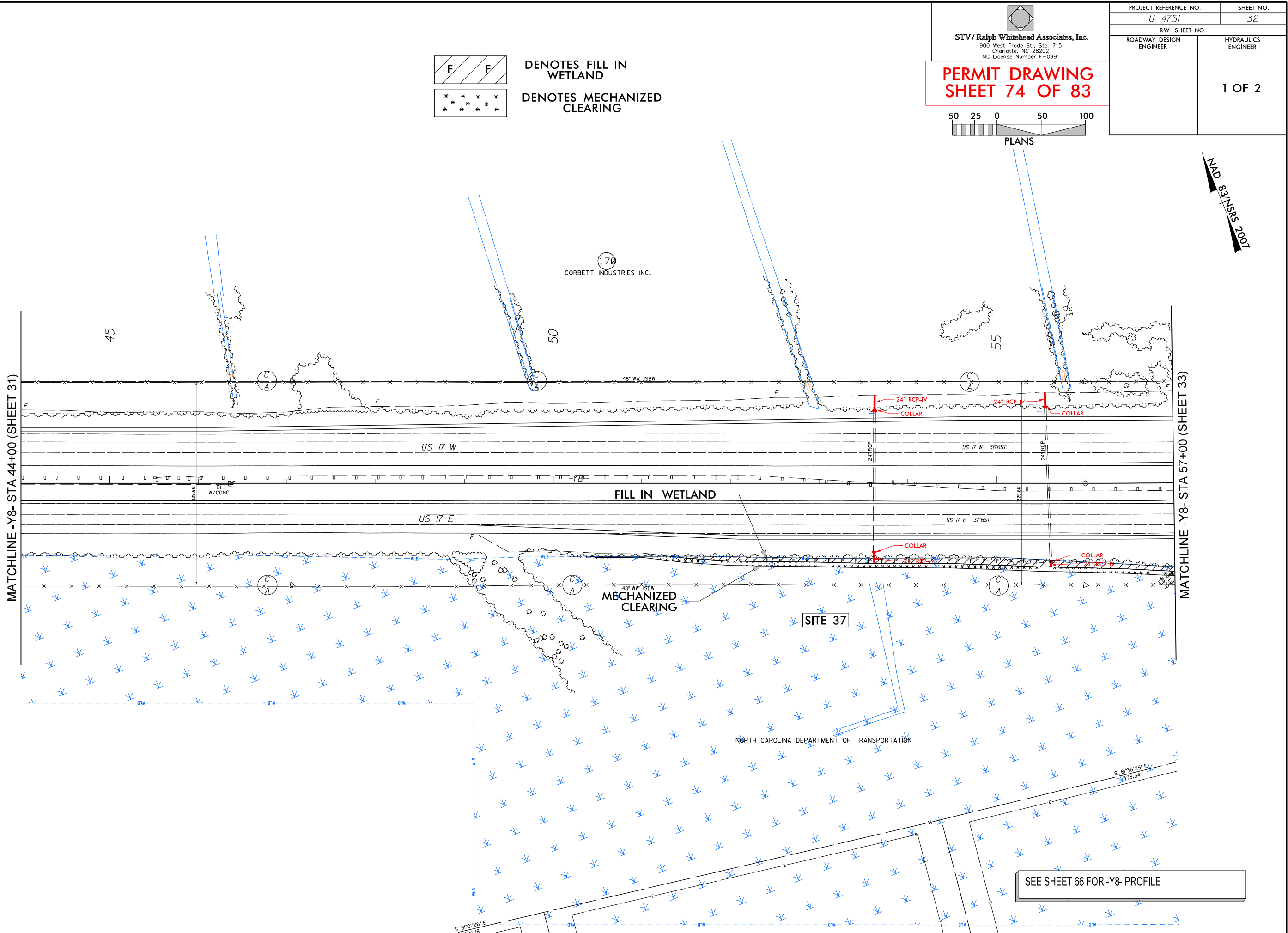
PROJECT REFERENCE NO.		SHEET NO.
U-4751		31
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
	2 OF 2	



SEE SHEET 66 FOR -Y8- PROFILE

Revised 5/9/2017

5/8/2017 14:51 Hyd_prm_wet_psh_32.dgn
jbarbeau



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Charlotte, NC 28202

NC License Number F-0991

PERMIT DRAWING

SHEET 74 OF 83

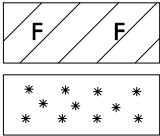
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PLANS

PROJECT REFERENCE NO.		SHEET NO.
U-4751		32
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
1 OF 2		

Revised 5/9/2017

5/8/2017
14:51
C:\hyd_perm_wet_psh_32_con.dgn
jbarrow



DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING



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900 West Trade St., Ste. 715
Charlotte, NC 28202
NC License Number F-0991

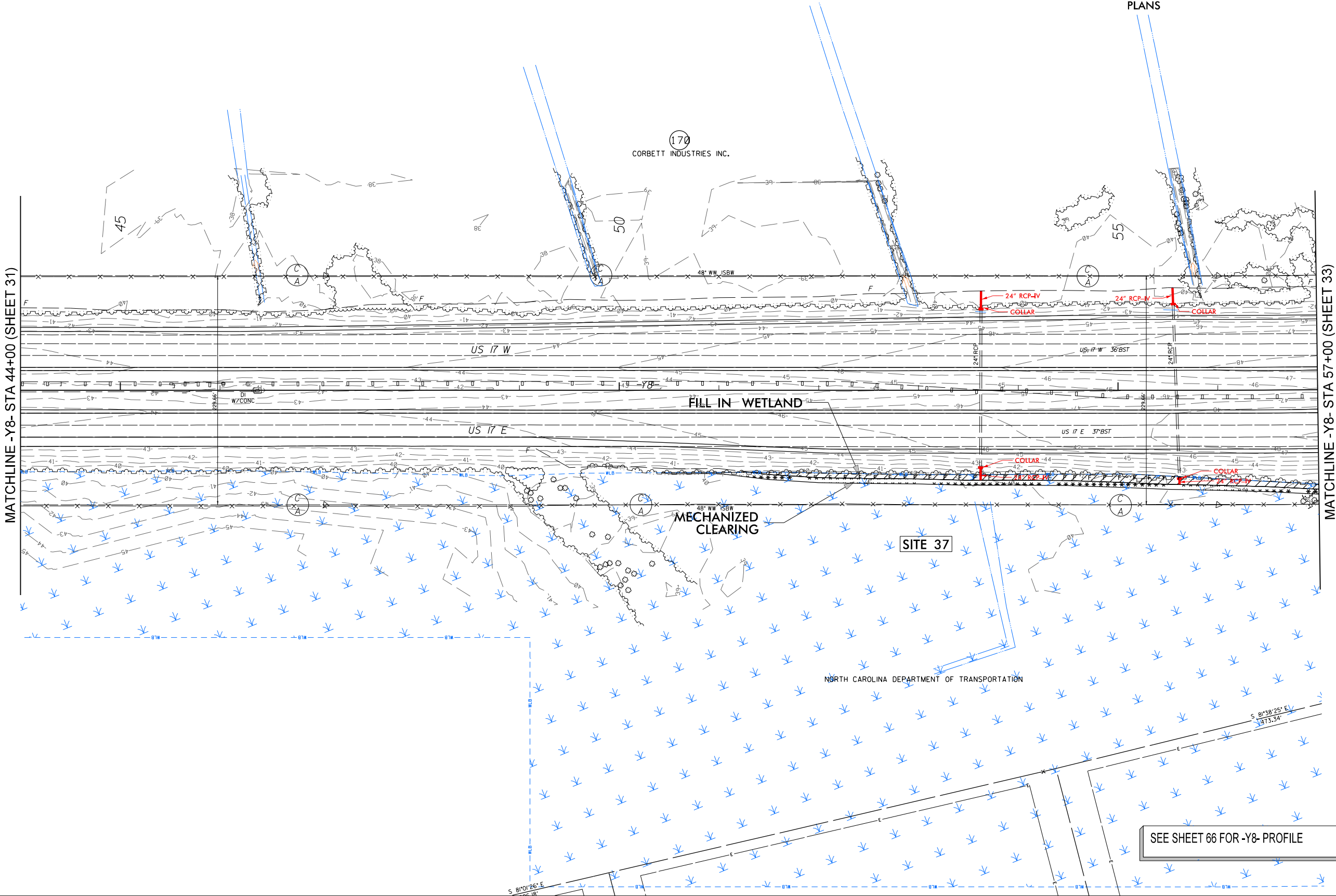
PERMIT DRAWING
SHEET 75 OF 83

50 25 0 50 100

PLANS

NAD 83 NRS 2007

PROJECT REFERENCE NO.		SHEET NO.
U-4751		32
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
	2 OF 2	

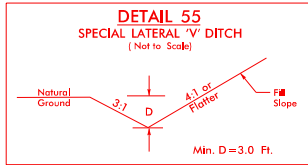


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

SEE SHEET 66 FOR -Y8- PROFILE

Revised 5/9/2017

5/8/2017 14:51:41 Hyd_perm_wet_psh_33.dgn
jbarrett



FROM STA. 67+50 TO STA. 72+79 -Y8- LT



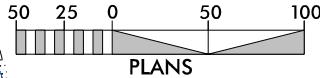
DENOTES FILL IN WETLAND



DENOTES MECHANIZED CLEARING

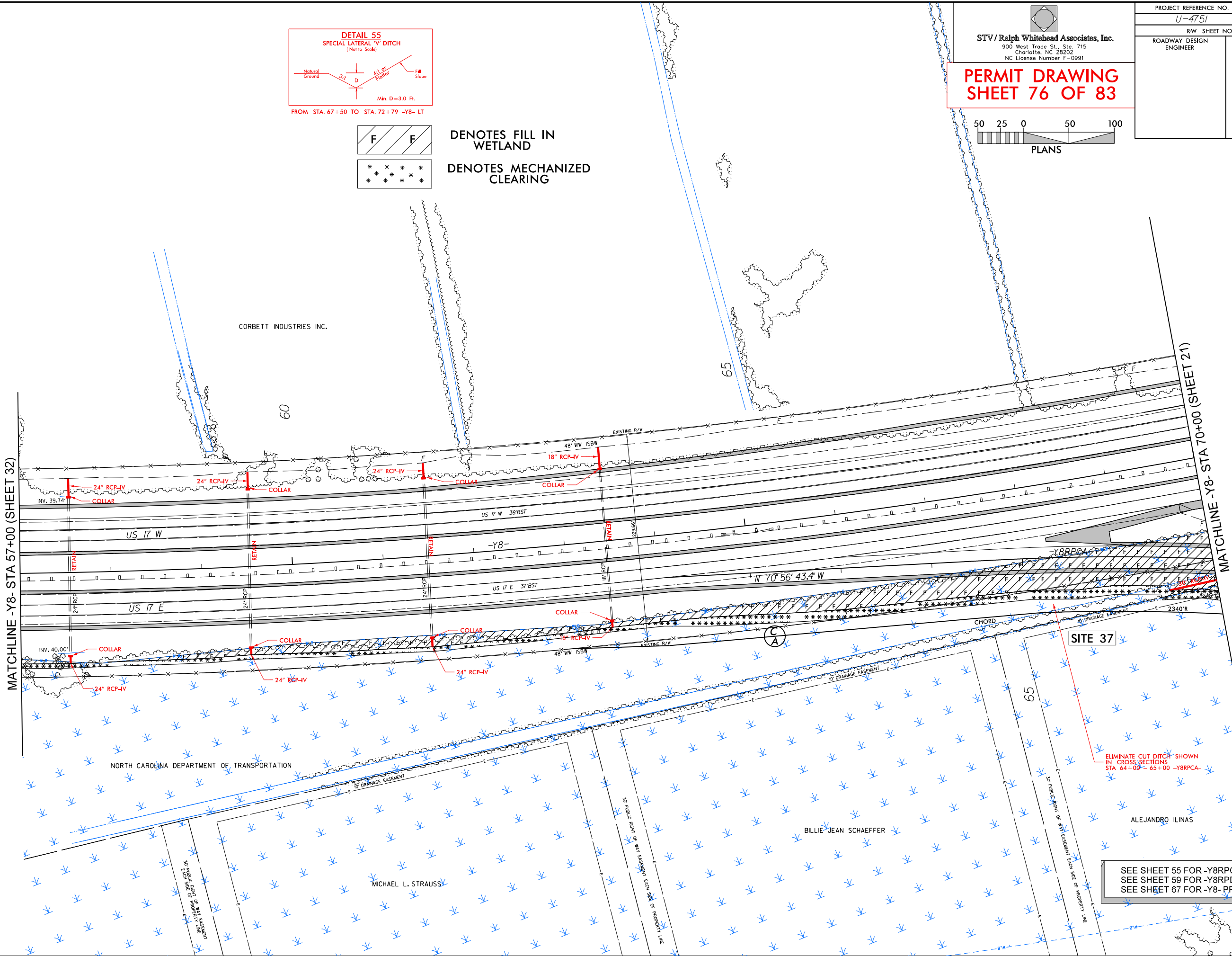
STV / Ralph Whitehead Associates, Inc.
900 West Trade St., Ste. 715
Charlotte, NC 28202
NC License Number F-0991

PERMIT DRAWING
SHEET 76 OF 83



PROJECT REFERENCE NO.		SHEET NO.
U-4751		33
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
		1 OF 2

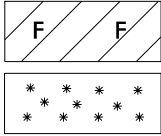
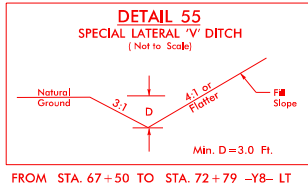
NAD 83/NSRS 2007



SEE SHEET 55 FOR -Y8RPCA- PROFILE
SEE SHEET 59 FOR -Y8RPDB- PROFILE
SEE SHEET 67 FOR -Y8- PROFILE

Revised 5/9/2017

5/8/2017 14:51 Hyd_prm_wet_psh_33.con.dgn
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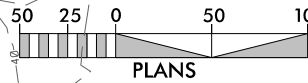


DENOTES FILL IN
WETLAND

DENOTES MECHANIZED
CLEARING

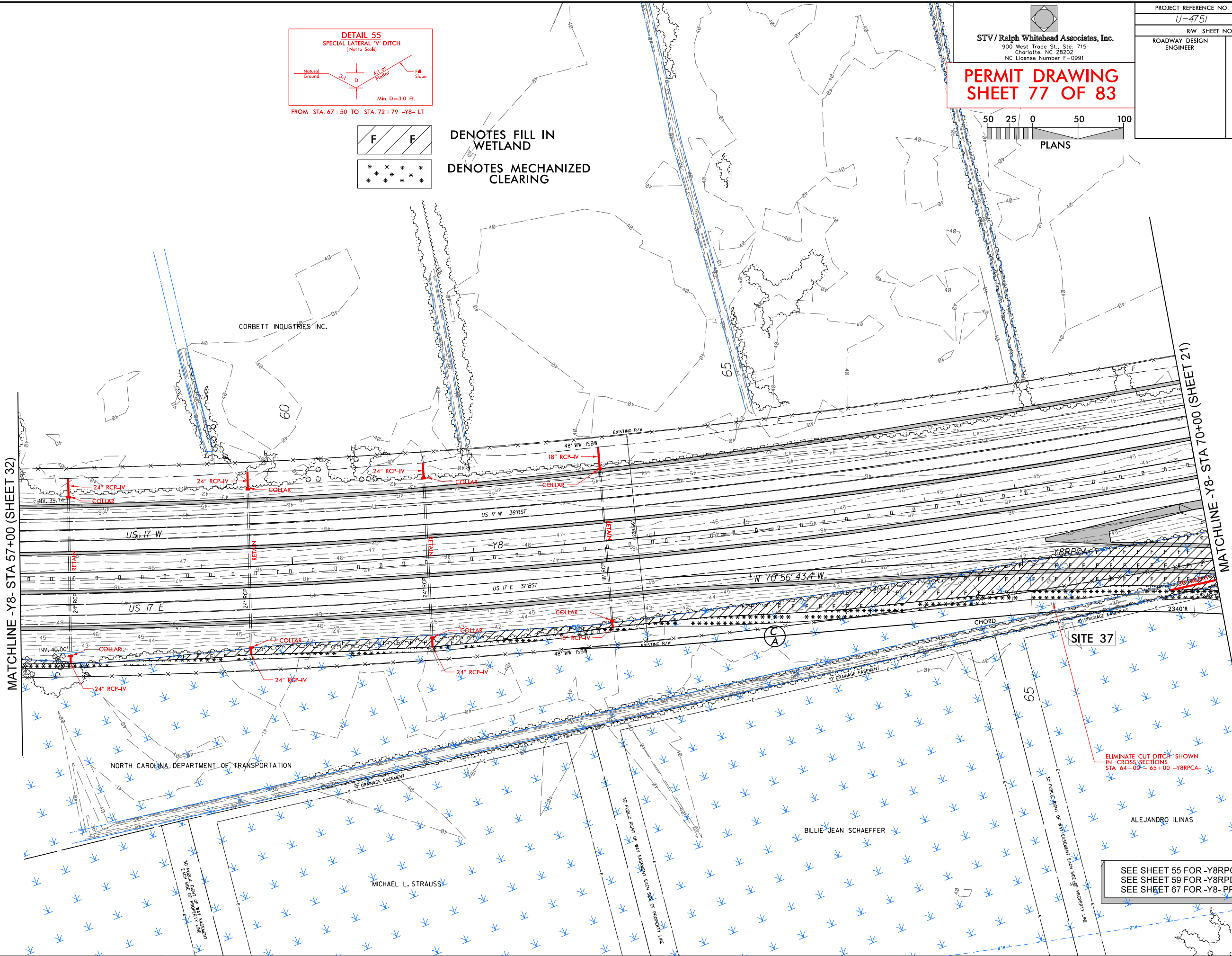
STV / Ralph Whitehead Associates, Inc.
900 West Trade St., Ste. 715
Charlotte, NC 28202
NC License Number F-0991

PERMIT DRAWING
SHEET 77 OF 83



PROJECT REFERENCE NO.		SHEET NO.
U-4751		33
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
		2 OF 2

NAD 83/NSRS 2007

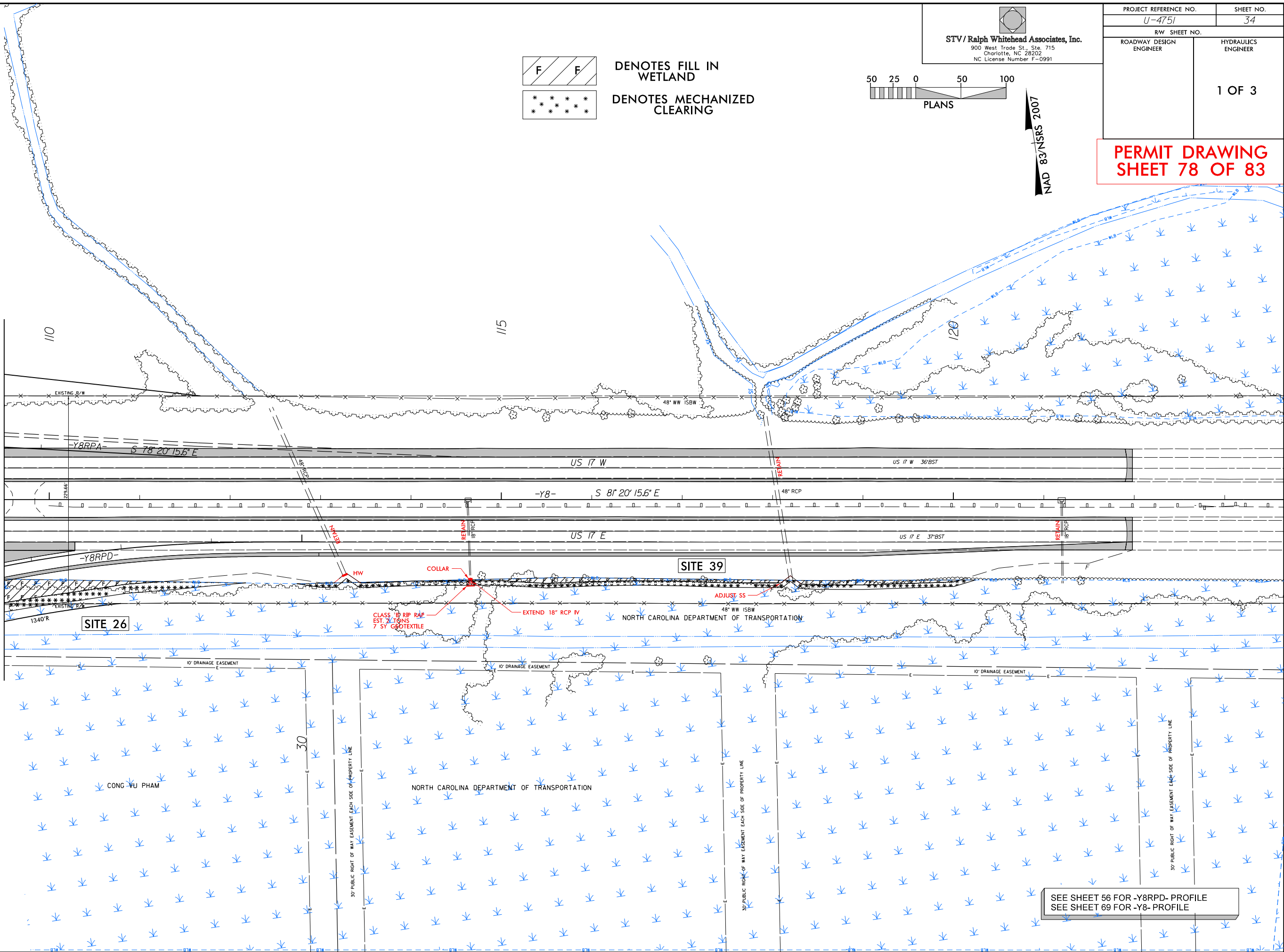


SEE SHEET 55 FOR -Y8RPCA- PROFILE
SEE SHEET 59 FOR -Y8RPDB- PROFILE
SEE SHEET 67 FOR -Y8- PROFILE

Revised 5/9/2017

5/8/2017
U:\4751\Hyd_prm_wet_psh_34.dgn
jbarveu

MATCHLINE -Y8- STA 109+50 (SHEET 22)

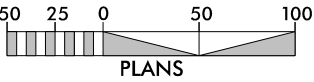


DENOTES FILL IN
WETLAND



DENOTES MECHANIZED
CLEARING

STV / Ralph Whitehead Associates, Inc.
900 West Trade St., Ste. 715
Charlotte, NC 28202
NC License Number F-0991



PLANS

NAD 83/NSRS 2007

PROJECT REFERENCE NO. SHEET NO.

U-4751

34

RW SHEET NO.

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

1 OF 3

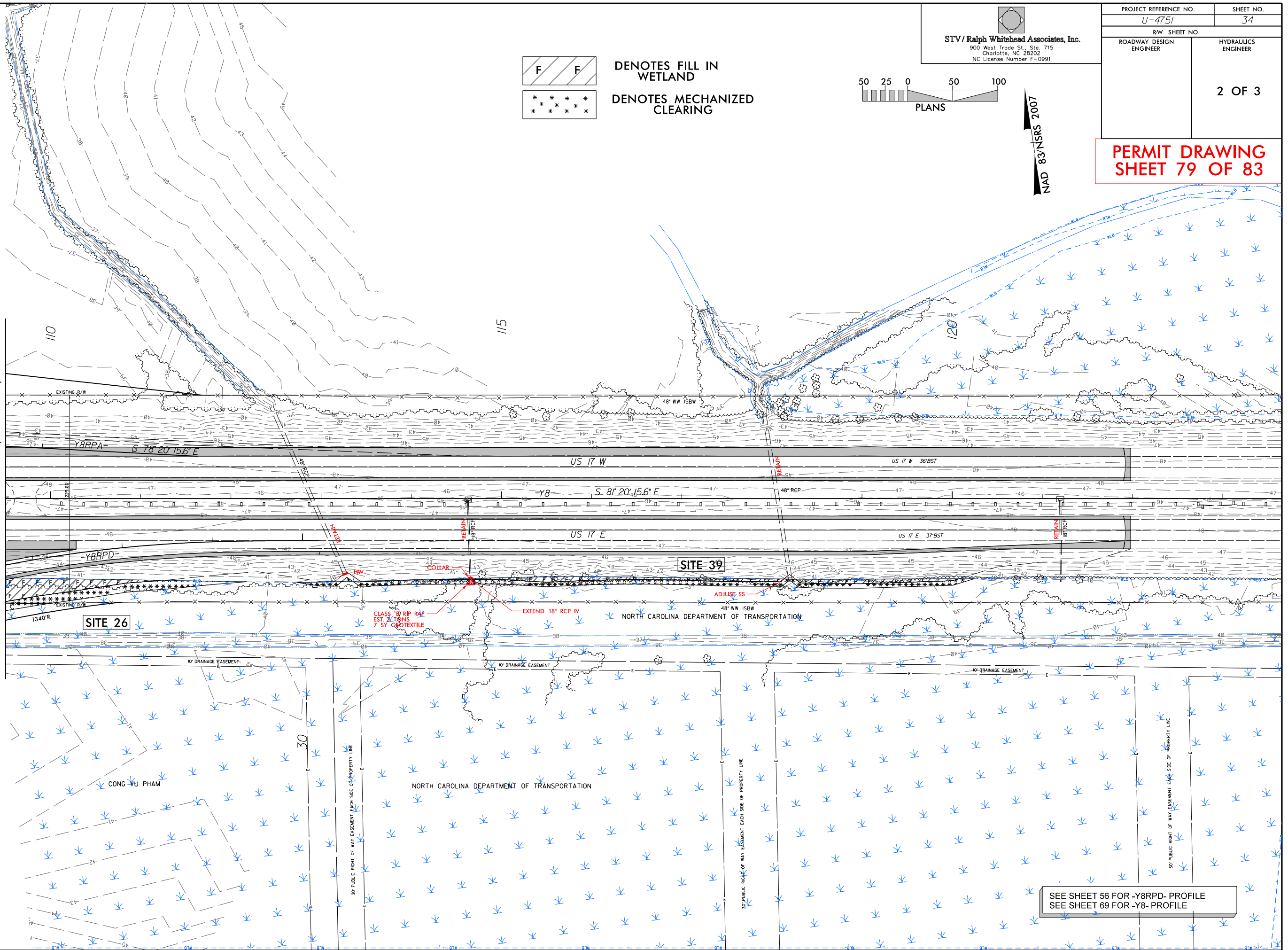
PERMIT DRAWING
SHEET 78 OF 83

SEE SHEET 56 FOR -Y8RPD- PROFILE
SEE SHEET 69 FOR -Y8- PROFILE

Revised 5/9/2017

5/8/2017
U:\451\hyd_prm_wet_psh_34_con.dgn
baw

MATCHLINE -Y8- STA 109+50 (SHEET 22)

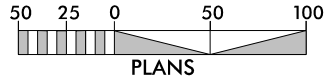


DENOTES FILL IN
WETLAND



DENOTES MECHANIZED
CLEARING

STV / Ralph Whitehead Associates, Inc.
900 West Trade St., Ste. 715
Charlotte, NC 28202
NC License Number F-0991



NAD 83/NSRS 2007

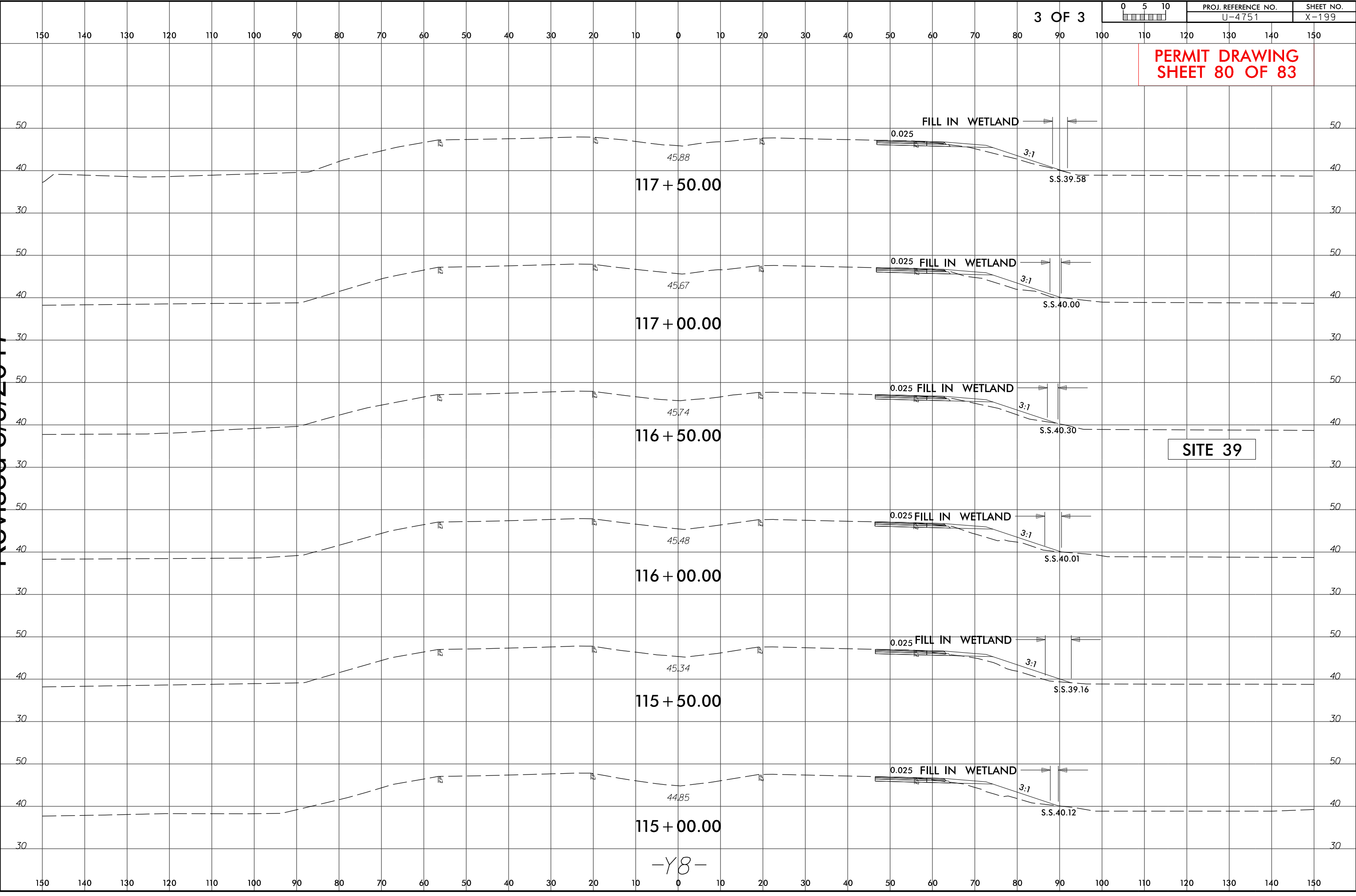
PROJECT REFERENCE NO.		SHEET NO.
U-4751		34
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
		2 OF 3

PERMIT DRAWING
SHEET 79 OF 83

SEE SHEET 56 FOR -Y8RPD- PROFILE
SEE SHEET 69 FOR -Y8- PROFILE

Revised 5/9/2017

8/23/99
5/8/2017
U4751-Hyd-prm-wet_psh_34-3.xpl.199-y8.dgn
jharvey



Revised 5/9/2017

WETLAND PERMIT IMPACT SUMMARY												
			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	27+77-28+11 -L- RT	ROADWAY FILL	< 0.01			< 0.01						
	11+15-15+20 -Y1RPD- LT&RT	ROADWAY FILL	1.11			0.10						
	15+20-15+29 -Y1RPD- LT&RT	48" PIPE						0.03	< 0.01			
2	20+16-24+68 -Y1RPB- LT&RT	ROADWAY FILL	0.26		0.05	0.02						
3	52+3-63+29 -L- LT&RT	ROADWAY FILL	5.02			0.26						
4	63+20-77+3 -L- LT&RT	ROADWAY FILL	6.02			0.30						
5	84+90-85+68 -L- LT	ROADWAY FILL				< 0.01						
SHEET TOTALS*:			12.41		0.05	0.69		0.03	< 0.01			

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
5-9-17
New Hanover
U-4751
40191.1.2

WETLAND PERMIT IMPACT SUMMARY												
			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
6	110+42 -L- LT&RT	2@42" PIPE						0.21	0.03			
		Streambank Stabilization						< 0.01				
7	14+05 -Y4 LT&RT	42" PIPE						0.16				
8	110+41 to 117+49 -L- LT	ROADWAY FILL						0.47				
9	112+57 to 116+35 -L- RT	ROCK FILL						0.51				
10	117+49 -L- LT&RT	2@9'x7' RCBC						0.34	0.19	373	201	
11	118+15 to 217+87 -L- LT	ROADWAY FILL						0.28				
12	120+35 to 127+74-L- RT	ROCK FILL						0.70				
13	126+00 to 126+50 -L- LT	PIPE/TAIL DITCH						< 0.01	< 0.01			
14	124+39 to 145+48 -L- RT	ROADWAY FILL						2.05	0.02			
15	151+41 -L- RT	2@10'x10' RCBC	< 0.01		0.06	0.02		0.15	0.02	303	58	
16	151+41 to 165+59 -L- LT&RT	ROADWAY FILL	5.72			0.31						
17	166+32 -L- LT&RT	48" PIPE						0.06	< 0.01			
18	166+73 -L- LT&RT	48" PIPE						0.07	< 0.01	231	19	
19	165+51 to 168+79 -L- LT&RT	ROADWAY FILL	0.51			0.01						
20	163+73 -L- LT&RT	ROADWAY FILL						0.11				
21	169+92 to 180+39 -L-LT&RT	ROADWAY FILL	4.09			0.31						
22	175+00 to 184+16 -L- LT&RT	ROADWAY FILL						0.98	0.02			
23	177+13 to 198+17 -L- LT&RT	ROADWAY FILL	6.43		0.02	0.40		0.42	0.04			
24	27+55 to 31+96 -SR4- LT	ROADWAY FILL	0.03			0.04						
25	199+05 -L- LT&RT	ROADWAY FILL						0.12	< 0.01	251	16	
SHEET TOTALS*:			16.77		0.08	1.10		6.61	0.34	1158	294	

*Rounded totals are sum of actual impacts

NOTES:

WETLAND PERMIT IMPACT SUMMARY												
			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
26	15+94 to 29+38 -Y8RPDB-	ROADWAY FILL	10.83			1.16						
27	205+35 to 211+16 -L- LT&RT	42" PIPE						0.25	0.02	544	46	
		Streambank Stabilization						< 0.01		14		
28	208+35 to 214+86 -L- LT&RT	ROADWAY FILL	4.60		< 0.01	0.51						
29	212+90 to 213+70 -L- RT	TAIL DITCH						< 0.01	0.02	34	46	
30	26+22 to 30+19 -Y8RPC- LT&RT	60" PIPE						0.14	< 0.01			
		Streambank Stabilization						< 0.01				
31	215+61.5 -L- LT&RT	60" PIPE						0.08	0.01			
32	214+85 -L- RT	TAIL DITCH						< 0.01	0.02	36	33	
33	216+46 to 225+15 -L- LT&RT	ROADWAY FILL	5.76			0.42						
34	223+72.58 to 224+45 -L- RT	TAIL DITCH						0.01	0.01	32	37	
35	33+79 -Y8RPDB- LT	TAIL DITCH						0.19	< 0.01			
		Streambank Stabilization						< 0.01				
36	40+74 to 42+78 -Y8RPDB- LT &RT	TAIL DITCH/12'x8' RCBC						0.34	0.04	200	56	
		Streambank Stabilization						0.02		41		
37	4+04.6 to 62+90 -Y8RPCA- LT &RT	ROADWAY FILL	4.97		0.05	0.97						
	50+42 to 64+08-Y8- RT											
38	40+46 -Y8- LT	48" PIPE						0.01	0.02	43	10	
39	112+37 to 120+42 -Y8- RT	ROADWAY FILL	0.05			0.08						
40	18+68 to Y18- LT	RIPRAP						0.06		20		
41	37+46 to 39+65 -Y8- LT	ROADWAY FILL				0.01						
PROJECT TOTALS*:			55.39		0.18	4.94		7.77	0.50	2122.00	522.00	

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
5-9-17
New Hanover
U-4751
40191.1.2
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