

		North Carolina Department of Transportation Highway Stormwater Program STORMWATER MANAGEMENT PLAN FOR NCDOT PROJECTS					
(Version 2.08; Released April 2018)							
WBS Element: 41499.1.3		TIP No.: R-5020B		County(ies): Columbus		Page 1 of 2	
General Project Information							
WBS Element:		41499.1.3		TIP Number: R-5020B		Project Type: Roadway Widening	
NCDOT Contact:		Steven Kendall, PE		Contractor / Designer:		William M. Hines, PE	
Address:		NCDOT Division 6 558 Gillespie Street (P.O. Box 1150) Fayetteville, NC 28302		Address:		Sungate Design Group, PA 905 Jones Franklin Road Raleigh, NC 27606	
Phone:		(910) 364-0603		Phone:		(919) 859-2243	
Email:		sdkendall@ncdot.gov		Email:		whines@sungatedesign.com	
City/Town:		Whiteville		County(ies):		Columbus	
River Basin(s):		Lumber		CAMA County?		No	
Wetlands within Project Limits?		Yes					
Project Description							
Project Length (lin. miles or feet):		2.183 Mi.		Surrounding Land Use: Urban - Commercial and Residential			
		Proposed Project		Existing Site			
Project Built-Up Area (ac.)		28.1 ac.		27.4 ac.			
Typical Cross Section Description:		-L- (US 701 Bypass): One 14' travel lane and one 12' travel lane in each direction (four travel lanes total) with 2'-6" curb and gutter drainage, sidewalk, and a 20' raised grass median.		-L- (US 701 Bypass): Two 12' travel lanes in each direction (four travel lanes total), plus a 12' center turn lane, with 2'-6" curb and gutter drainage and sidewalk.			
Annual Avg Daily Traffic (veh/hr/day):		Design/Future: 26,000 Year: 2040		Existing: 21,417		Year: 2020	
General Project Narrative: (Description of Minimization of Water Quality Impacts)		The R-5020B project involves replacing the existing US-701 Bypass within the Town of Whiteville and improving intersections along with other improvements to adjacent roadways. Rip rap dissipation has been incorporated at drainage pipe outlets and outfalls where applicable. 2:1 roadway fill slopes were used in the area of the jurisdictional stream in order to minimize impacts. In areas adjacent to the wetland, 3:1 roadway fill slopes were used to reduce wetland impacts.					
Waterbody Information							
Surface Water Body (1):		Soules Swamp		NCDWR Stream Index No.:		15-4-8	
NCDWR Surface Water Classification for Water Body		Primary Classification:		Class C			
		Supplemental Classification:		Swamp Waters (Sw)			
Other Stream Classification:							
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?		No	
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 2.08; Released April 2018)							
WBS Element: 41499.1.3		TIP No.: R-5020B		County(ies): Columbus		Page 2 of 2	
Additional Waterbody Information							
Surface Water Body (2):		Mollie Branch		NCDWR Stream Index No.:		15-4-8-8	
NCDWR Surface Water Classification for Water Body		Primary Classification:		Class C			
		Supplemental Classification:		Swamp Waters (Sw)			
Other Stream Classification:							
Impairments:		None					
Aquatic T&E Species?		Comments:					
NRTR Stream ID:				Buffer Rules in Effect:			
Project Includes Bridge Spanning Water Body?		No		Deck Drains Discharge Over Buffer?		Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?				(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):		White Marsh		NCDWR Stream Index No.:		15-4	
NCDWR Surface Water Classification for Water Body		Primary Classification:		Class C			
		Supplemental Classification:		Swamp Waters (Sw)			
Other Stream Classification:							
Impairments:		None					
Aquatic T&E Species?		Comments:					
NRTR Stream ID:				Buffer Rules in Effect:			
Project Includes Bridge Spanning Water Body?		No		Deck Drains Discharge Over Buffer?		Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?				(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):				NCDWR Stream Index No.:			
NCDWR Surface Water Classification for Water Body		Primary Classification:					
		Supplemental Classification:					
Other Stream Classification:							
Impairments:							
Aquatic T&E Species?		Comments:					
NRTR Stream ID:				Buffer Rules in Effect:			
Project Includes Bridge Spanning Water Body?				Deck Drains Discharge Over Buffer?		Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?				(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 (5):				NCDWR Stream Index No.:			
NCDWR Surface Water Classification for Water Body		Primary Classification:					
		Supplemental Classification:					
Other Stream Classification:							
Impairments:							
Aquatic T&E Species?		Comments:					
NRTR Stream ID:				Buffer Rules in Effect:			
Project Includes Bridge Spanning Water Body?				Deck Drains Discharge Over Buffer?		Dissipator Pads Provided in Buffer?	
Deck Drains Discharge Over Water Body?				(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)							

CONTRACT:

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

The seal of the State of North Carolina Department of Transportation is a circular emblem. It features a stylized, white silhouette of the state of North Carolina centered within a dark circular border. The words "STATE OF NORTH CAROLINA" are inscribed along the top arc of the border, and "DEPARTMENT OF TRANSPORTATION" is inscribed along the bottom arc.

25% APPROVED PLANS

Submitted 2/11/2020

PROJECT REFERENCE NO. R-5020B		SHEET NO. 9	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
 KCI Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266			
 SUNGATE DESIGN GROUP, P.A. 905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL (919) 858-2243 FAX (919) 858-2243 ENG. FIRM LICENSE NO. C-480			

PERMIT DRAWING
SHEET 2 OF 10

SCALE: 1" = 100'

SEE SHEET 6 OF 10

SITE 1

DO NOT DISTURB SIGN

DO NOT DISTURB SIGN

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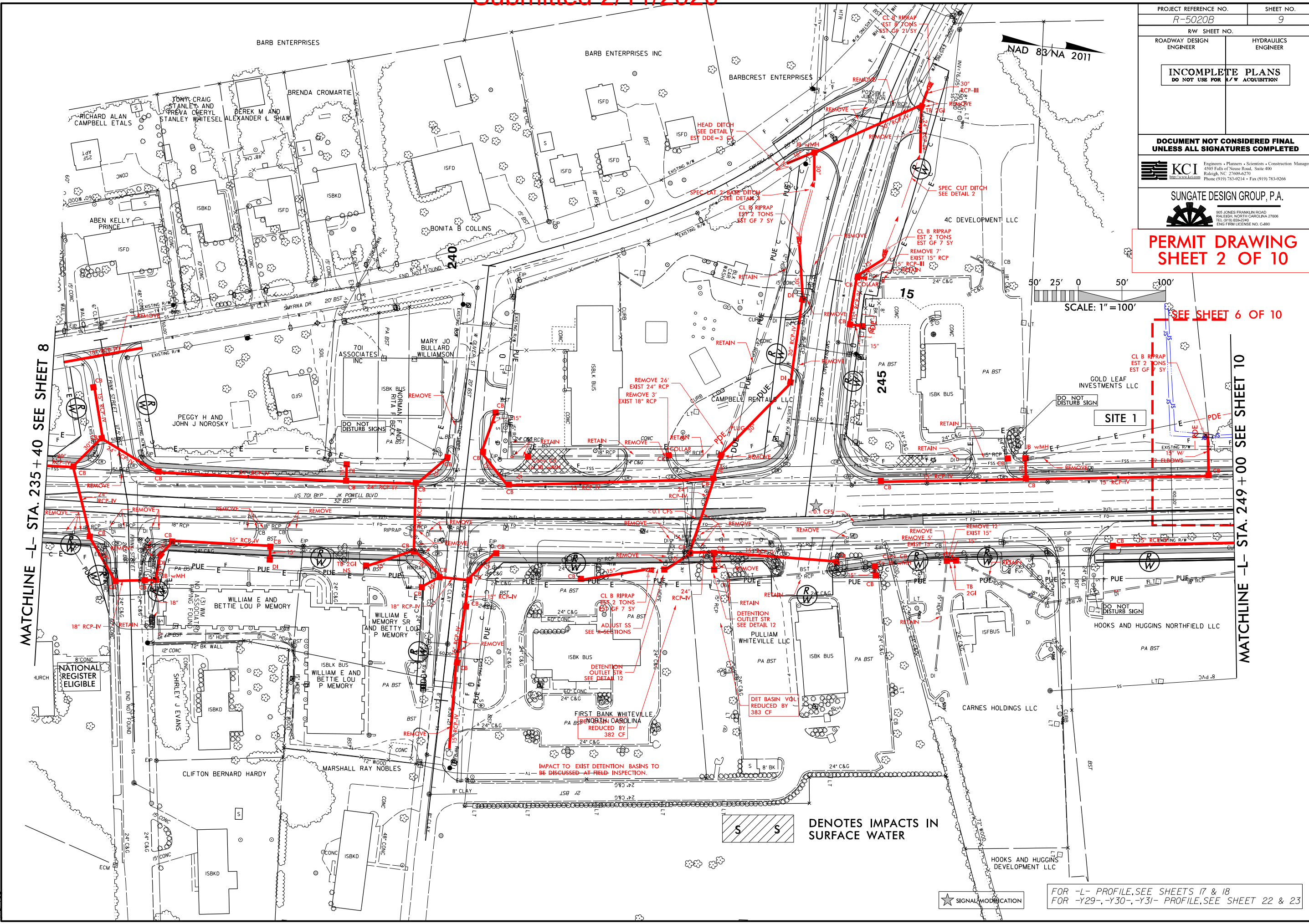
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MATCHLINE -L- STA. 235 + 40 SEE SHEET 8

MATCHLINE -L- STA. 249 + 00 SEE SHEET 10

DENOTES IMPACTS IN SURFACE WATER

★ SIGNAL MODIFICATION

FOR -L- PROFILE, SEE SHEETS 17 & 18
FOR -Y29-, -Y30-, -Y31- PROFILE, SEE SHEET 22 & 23

8/17/99
1/17/2020
H5020B-Hyd-prm-wet_psh_09.dgn

Submitted 2/11/2020

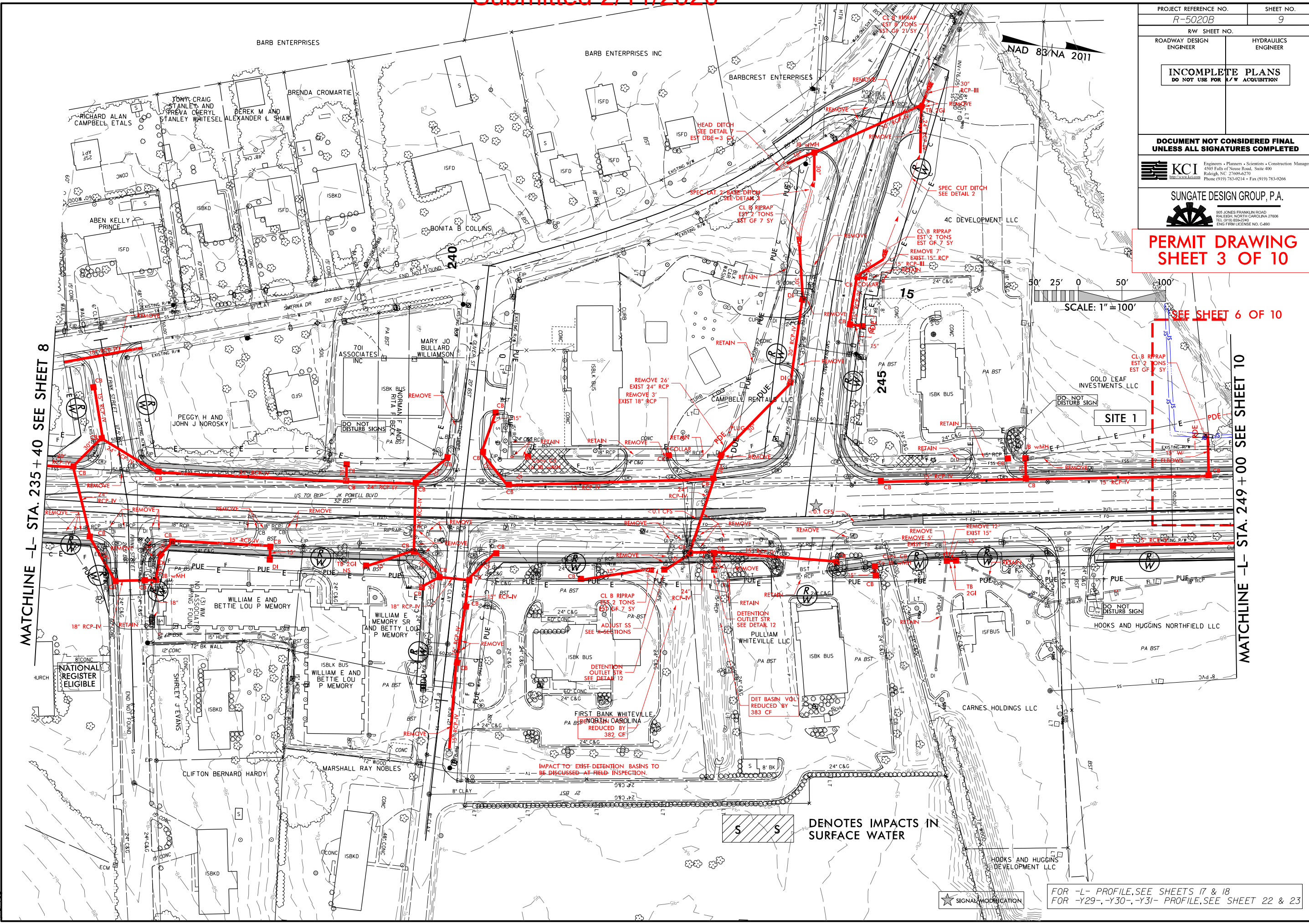
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RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER			
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PERMIT DRAWING
SHEET 3 OF 10

SEE SHEET 6 OF 10

MATCHLINE -L- STA. 235 + 40 SEE SHEET 8

MATCHLINE -L- STA. 249 + 00 SEE SHEET 10



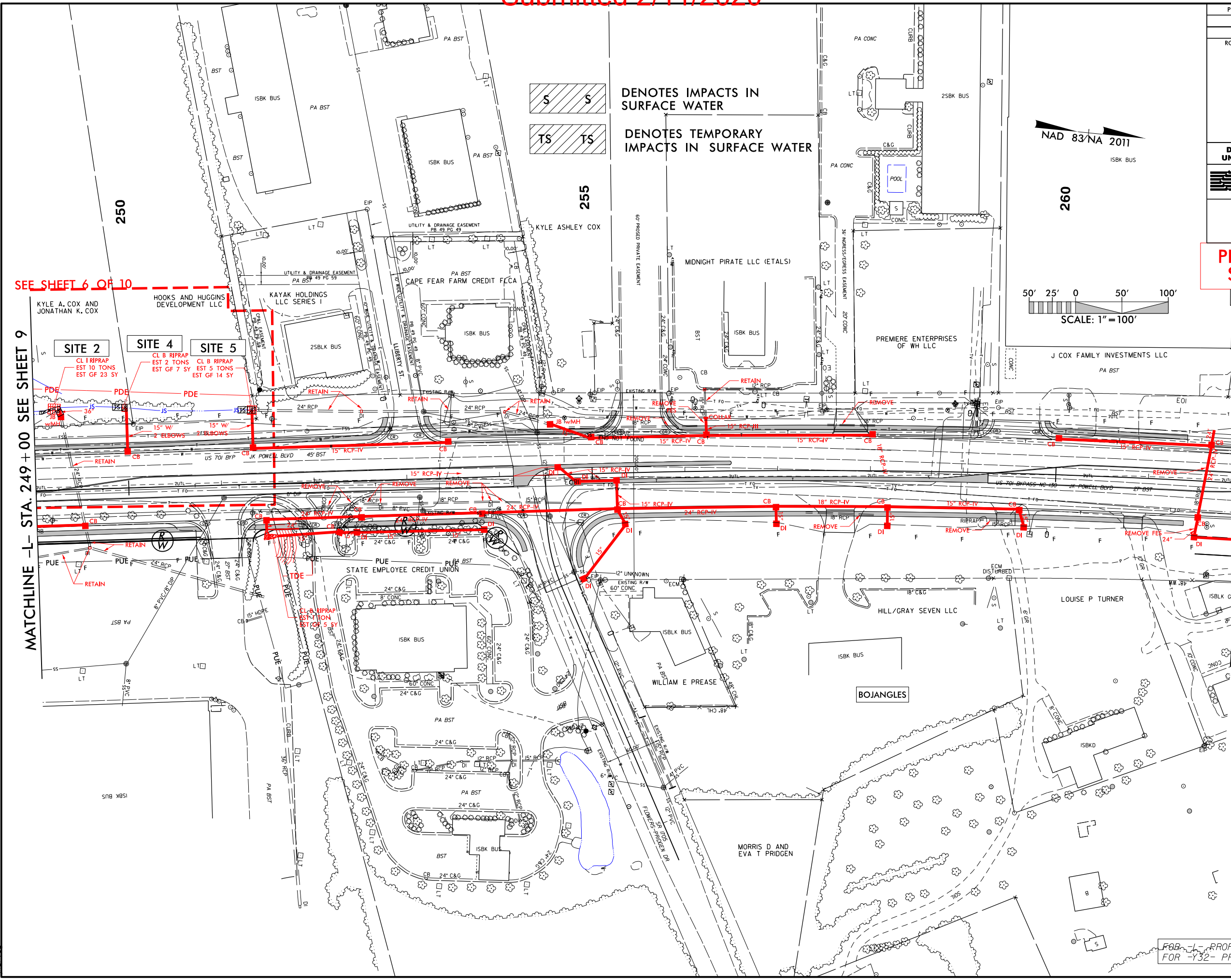
8/17/99

1/17/2020 H5020B-Hyd-prm-wet_psh_09_condgn

Submitted 2/11/2020

PROJECT REFERENCE NO. R-5020B		SHEET NO. 10
RW SHEET NO.		
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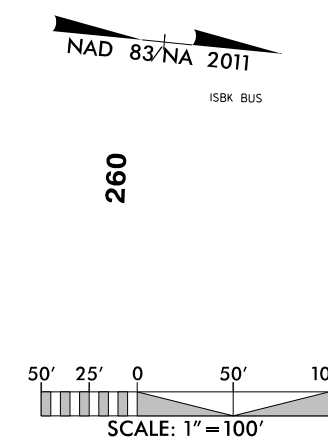
PERMIT DRAWING
SHEET 4 OF 10



SEE SHEET 6 OF 10

MATCHLINE -L- STA. 249 + 00 SEE SHEET 9

MATCHLINE -L- STA. 262 + 00 SEE SHEET 11

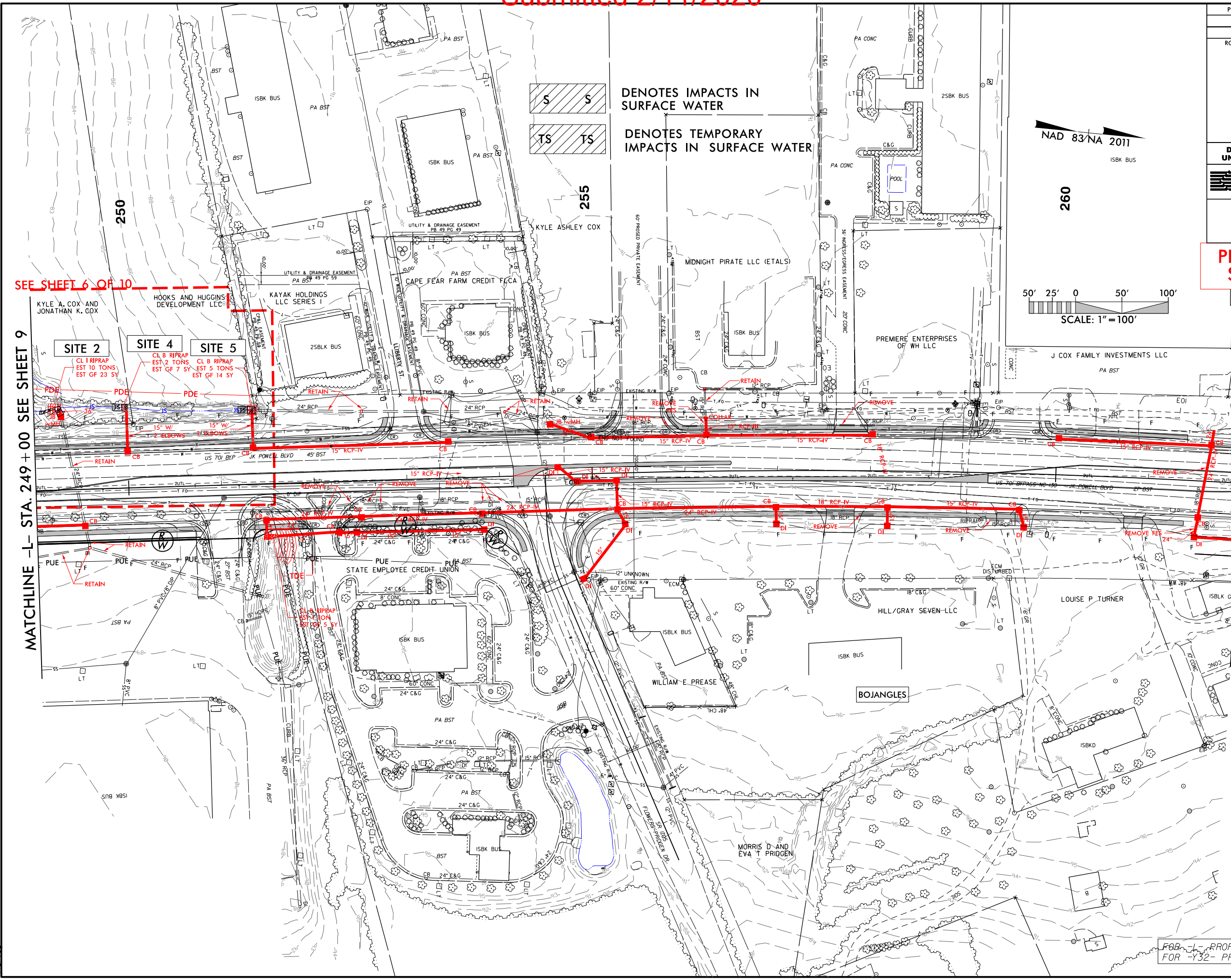


FOR -L- PROFILE, SEE SHEET 18
FOR -Y32- PROFILE, SEE SHEET 23

Submitted 2/11/2020

PROJECT REFERENCE NO.	SHEET NO.
R-5020B	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
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PERMIT DRAWING
SHEET 4 OF 10



FOR -L- PROFILE, SEE SHEET 18
FOR -Y32- PROFILE, SEE SHEET 23

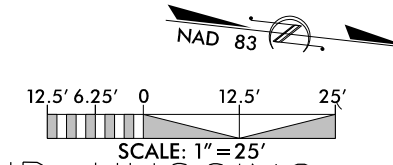
8/17/99



DENOTES IMPACTS IN
SURFACE WATER

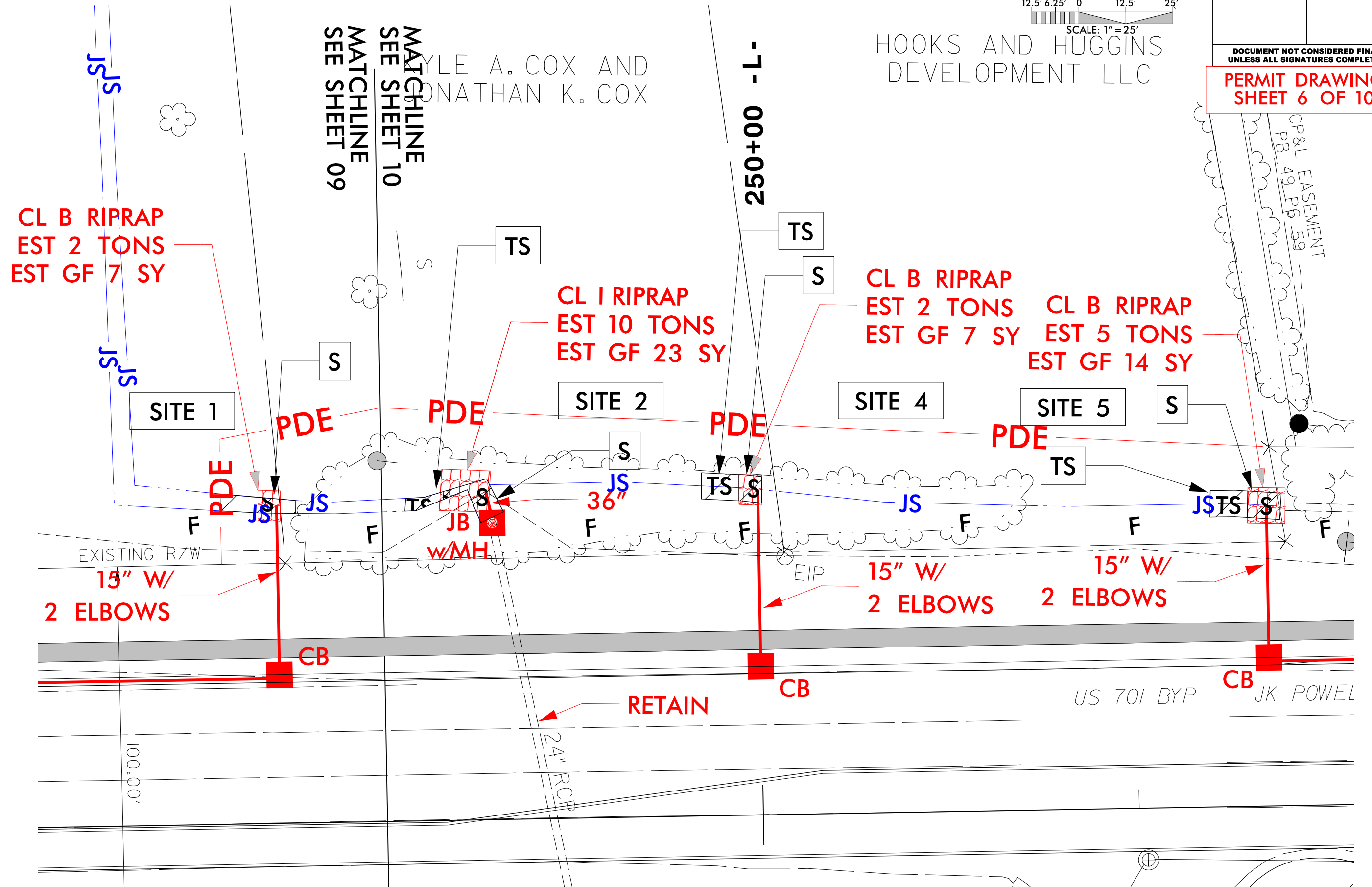


DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

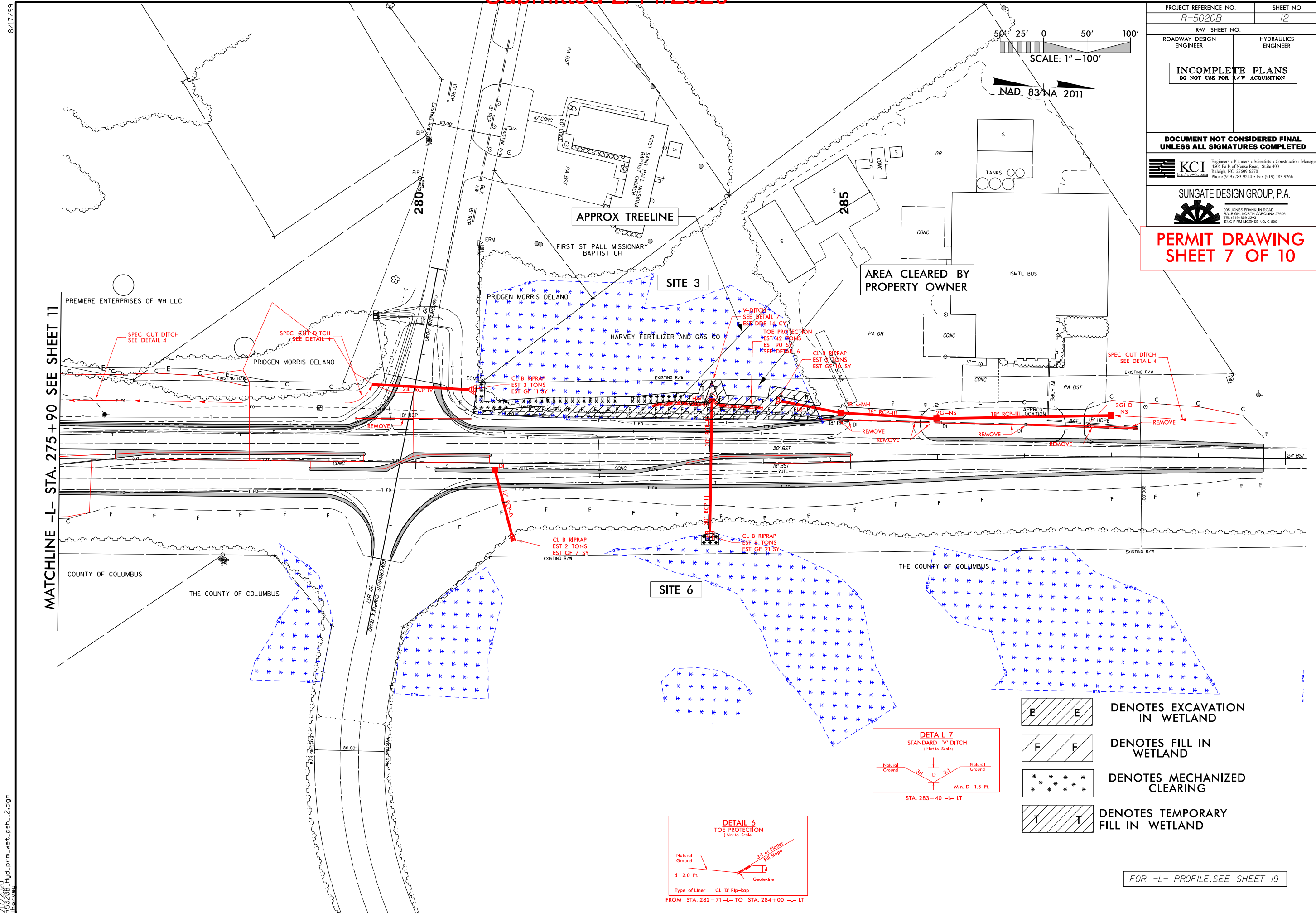


PROJECT REFERENCE NO.	SHEET NO.
R-5020B	10B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PERMIT DRAWING
SHEET 6 OF 10



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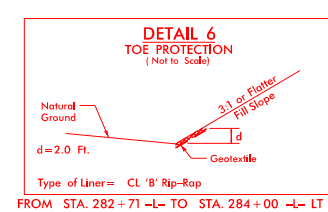
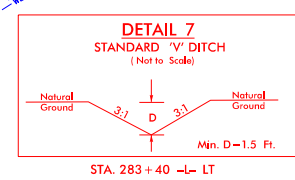
8/17/99

1/17/2020
R5020B-Hyd-prm-wet_psh_12.dgn

PROJECT REFERENCE NO. R-5020B		SHEET NO. 12	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
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SUNGATE DESIGN GROUP, P.A. 905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL (919) 858-2243 ENG. FIRM LICENSE NO. C-480			

PERMIT DRAWING
SHEET 7 OF 10

- E** DENOTES EXCAVATION IN WETLAND
- F** DENOTES FILL IN WETLAND
- *** DENOTES MECHANIZED CLEARING
- T** DENOTES TEMPORARY FILL IN WETLAND



FOR -L- PROFILE, SEE SHEET 19

PROJECT REFERENCE NO.		SHEET NO.	
R-5020B		12	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
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http://www.kci.com			
SUNGATE DESIGN GROUP, P.A.			
		802 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 TEL (919) 854-2943 FAX (919) 854-2944 C-680	

Matchline -L- STA. 275 + 90 SEE SHEET 11

Scale: 1" = 100'

NAD 83/NA 2011

APPROX TREELINE

SITE 3

AREA CLEARED BY PROPERTY OWNER

SITE 6

DETAIL 7
STANDARD 'V' DITCH
(Not to Scale)

DETAIL 6
TOE PROTECTION
(Not to Scale)

Legend:

- E E DEN
- F F DEN
- * * * * * DEN
- T T DENO
- FILL I

FROM STA. 282 + 71 -L- TO STA. 284 + 00 -L- LT

DETAIL 6
TOE PROTECTION
 (Not to Scale)

Natural Ground

$d = 2.0 \text{ Ft.}$

3:1 or Flatter Fill Slope

Geotextile

Type of Liner = CL 'B' Rip-Rap

FROM STA. 282 + 71 — TO STA. 284 + 00 — LT

4/17/2020	50208_Hyd_prm_wet_psh_12.con.dgn	8/17/99
	ihervau	

PERMIT DRAWING
SHEET 9 OF 10

8/23/99

SITE 3

FILL IN WETLAND
TEMPORARY FILL
IN WETLAND

WETLAND

283 + 00.00

FILL IN WETLAND
MECHANIZED CLEARING

WETLAND

282 + 50.00

FILL IN WETLAND
MECHANIZED CLEARING

WETLAND

282 + 00.00

FILL IN WETLAND
MECHANIZED CLEARING

WETLAND

281 + 50.00

SITE 3

FILL IN WETLAND
MECHANIZED CLEARING

WETLAND

281 + 00.00

WETLAND AND SURACE WATER IMPACTS SUMMARY												
			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	248+57 to 248+77-L-LT	OUTLET PROTECTION						< 0.01		20		
2	249+06 to 249+32-L-LT	36" PIPE						< 0.01	< 0.01	20	11	
3	280+66 to 284.68-L-LT	ROADWAY FILL	0.14	0.04	< 0.01	0.06						
4	249+85 to 250+01-L-LT	15" PIPE						< 0.01	< 0.01	6	10	
5	251+20 to 251+39 -L-LT	15" PIPE						< 0.01	< 0.01	9	10	
6	283+28 to 283+48-L-RT	30" PIPE	< 0.01			< 0.01						
TOTALS*:			0.15	0.04	< 0.01	0.06		< 0.01	< 0.01	55	31	0

*Rounded totals are sum of actual impacts

NOTES:

Site #3: Due to clearing by property owner, mechanized clearing adjusted and temporary fill in wetland added.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
01-17-2020
COLUMBUS
R-5020B
41499.1.3

		North Carolina Department of Transportation Highway Stormwater Program STORMWATER MANAGEMENT PLAN FOR NCDOT PROJECTS					
(Version 2.08; Released April 2018)							
WBS Element: 41499.1.2		TIP No.: R-5020A		County(ies): Columbus		Page 1 of 2	
General Project Information							
WBS Element:		41499.1.2		TIP Number: R-5020A		Project Type: Roadway Widening	
NCDOT Contact:		Steven Kendall, PE		Contractor / Designer:		Brad T. Smith, EI	
Address: NCDOT Division 6 558 Gillespie Street (P.O. Box 1150) Fayetteville, NC 28302 Phone: (910) 364-0603 Email: skendall@ncdot.gov		Address: Sungate Design Group, PA 905 Jones Franklin Road Raleigh, NC 27606 Phone: (919) 859-2243 Email: bsmith@sungatedesign.com					
City/Town:		Whiteville		County(ies):		Columbus	
River Basin(s):		Lumber		CAMA County?		No	
Wetlands within Project Limits?		Yes					
Project Description							
Project Length (lin. miles or feet):		3.112 Mi.		Surrounding Land Use: Medium and low density residential, business, and industrial.			
		Proposed Project		Existing Site			
Project Built-Up Area (ac.):		38.5 ac.		21.6 ac.			
Typical Cross Section Description:		-L- (US 701): One 14' travel lane and one 12' travel lane in each direction (four travel lanes total) with 2'-6" curb and gutter drainage, sidewalk, and a concrete island.		-L- (US 701): Two 12' travel lanes with grass shoulders and grass roadway ditches on both sides.			
Annual Avg Daily Traffic (veh/hr/day):		Design/Future: 26,900 Year: 2040		Existing: 21,650		Year: 2020	
General Project Narrative: (Description of Minimization of Water Quality Impacts)		The R-5020A project involves widening existing US-701 south of Whiteville, improving intersections, and replacing bridges along with other improvements to adjacent roadways, including replacing an undersized culvert under US-701 Business. Curb and gutter drainage has replaced existing roadway ditches. Rip rap dissipation has been incorporated at drainage pipe outlets and outfalls where applicable. Proposed cross pipes in jurisdictional streams will be buried. In areas adjacent to wetlands, 3:1 roadway fill slopes were used to reduce wetland impacts. There are two existing major structures crossing waterways within the project limits that will be replaced. The first proposed structure is a 3 span (1@45', 1@55', 1@45') 36" girder bridge with 4' end bent caps over Soules Swamp. The proposed bridge will have spill-through abutments. In the area of the causeway and bridge, 10' of mechanized clearing will be provided to allow enough room for the contractor to successfully construct the proposed slopes. In the project limits, Soules Swamp is a FEMA detailed study area with non-encroachment widths established. The second proposed structure is a 9'x7' RCBC buried 1' on UT to Richardson Swamp, which is not in a FEMA study area. Both structures have been designed to have as little environmental and surface water impacts as is practicable.					
Waterbody Information							
Surface Water Body (1):		Deep Branch		NCDWR Stream Index No.:		15-4-8-6	
NCDWR Surface Water Classification for Water Body		Primary Classification:		Class C			
		Supplemental Classification:		Swamp Waters (Sw)			
Other Stream Classification:							
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)		(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 2.08; Released April 2018)

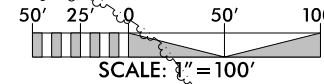
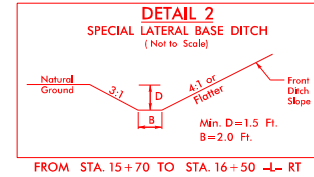
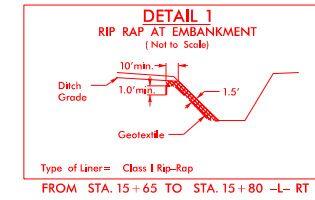
WBS Element:	41499.1.2	TIP No.:	R-5020A	County(ies):	Columbus	Page	2	of	2
Additional Waterbody Information									
Surface Water Body (2):	Richardson Swamp			NCDWR Stream Index No.:	15-4-9				
NCDWR Surface Water Classification for Water Body	Primary Classification:			Class C					
	Supplemental Classification:			Swamp Waters (Sw)					
Other Stream Classification:									
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?		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)									
Surface Water Body (3):	Soules Swamp			NCDWR Stream Index No.:	15-4-8				
NCDWR Surface Water Classification for Water Body	Primary Classification:			Class C					
	Supplemental Classification:			Swamp Waters (Sw)					
Other Stream Classification:									
Impairments:	None								
Aquatic T&E Species?	No	Comments:							
NRTR Stream ID:				Buffer Rules in Effect:		N/A			
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?		N/A			
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)			(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)				
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Surface Water Body (4):				NCDWR Stream Index No.:					
NCDWR Surface Water Classification for Water Body	Primary Classification:								
	Supplemental Classification:								
Other Stream Classification:									
Impairments:									
Aquatic T&E Species?	Comments:								
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Project Includes Bridge Spanning Water Body?		Deck Drains Discharge Over Buffer?		Dissipator Pads Provided in Buffer?					
Deck Drains Discharge Over Water Body?		(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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NCDWR Surface Water Classification for Water Body	Primary Classification:								
	Supplemental Classification:								
Other Stream Classification:									
Impairments:									
Aquatic T&E Species?	Comments:								
NRTR Stream ID:				Buffer Rules in Effect:					
Project Includes Bridge Spanning Water Body?		Deck Drains Discharge Over Buffer?		Dissipator Pads Provided in Buffer?					
Deck Drains Discharge Over Water Body?		(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)									

CONTRACT:

SUNGATE DESIGN GROUP, P.A.



905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243
ENG FIRM LICENSE NO. C-899

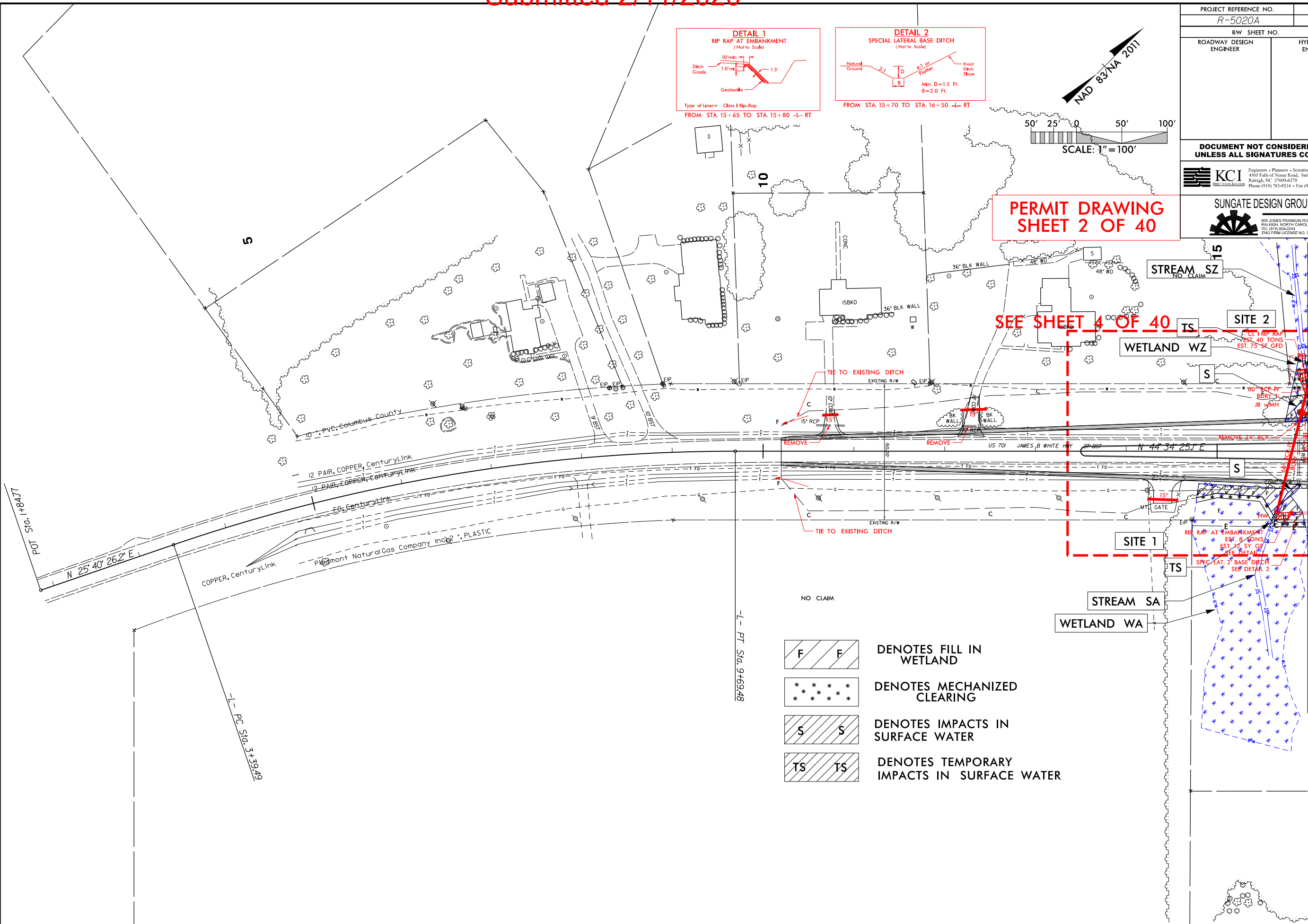


PERMIT DRAWING
SHEET 2 OF 40

SEE SHEET 4 OF 40

MATCHLINE -L- STA. 16+00 SEE SHEET 5

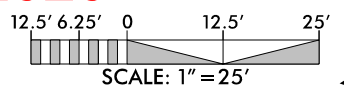
PROJECT REFERENCE NO.	SHEET NO.
<i>R-5020A</i>	<i>4</i>
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 KCI http://www.kci.com	Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266
SUNGATE DESIGN GROUP, P.A.  905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL (919) 858-9245 ENG FIRM LICENSE NO. C-890	



FOR -L- PROFILE, SEE SHEET 18
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-4

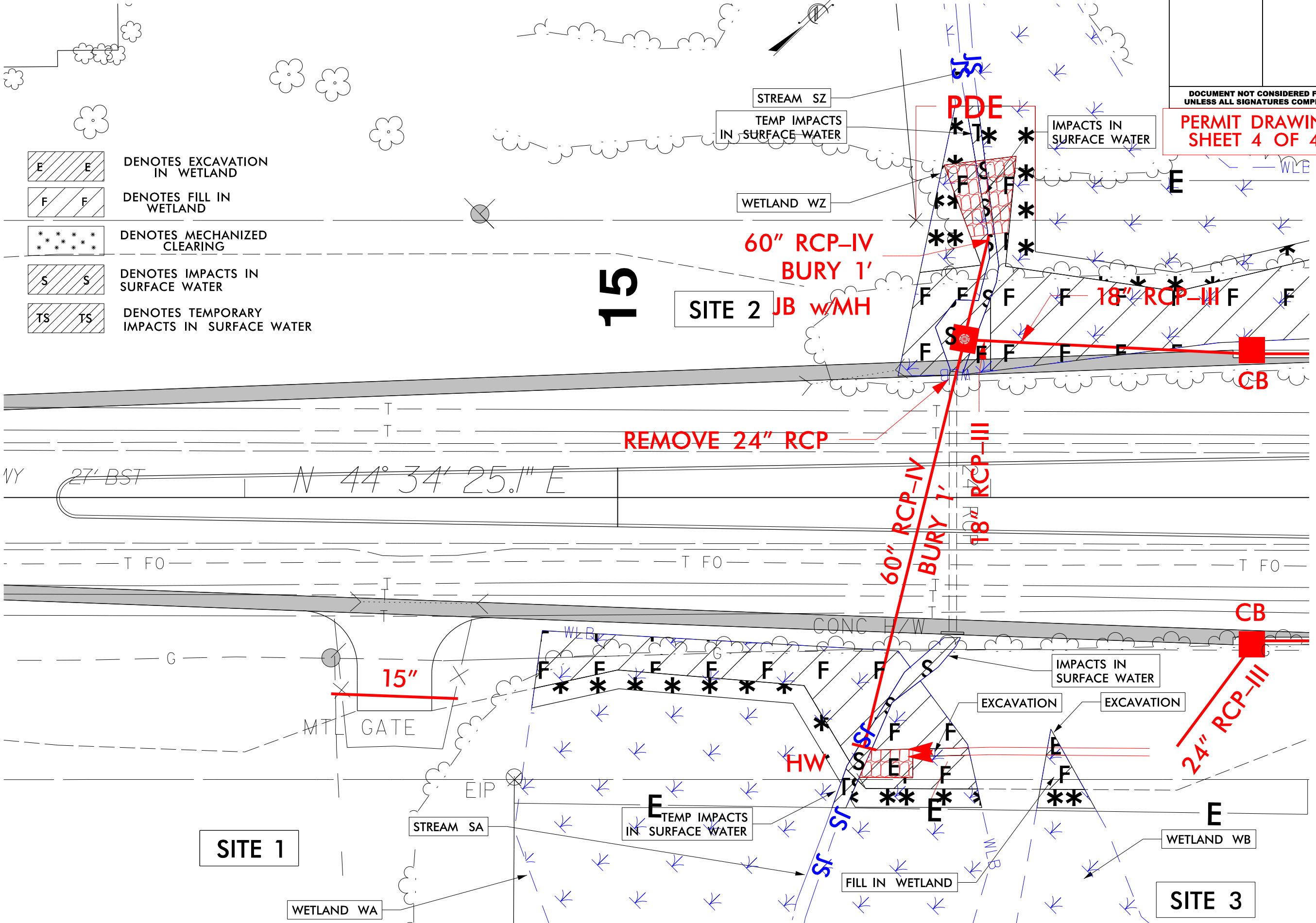
FOR -L- PROFILE, SEE SHEET 18
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-4

8/17/99
12/27/2018
R-5020A Hyd.prm_wet.psh_04B-View-1.in.dgn
10:00 AM

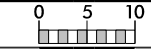


PROJECT REFERENCE NO. <i>R-5020A</i>		SHEET NO.
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

PERMIT DRAWING
SHEET 4 OF 40



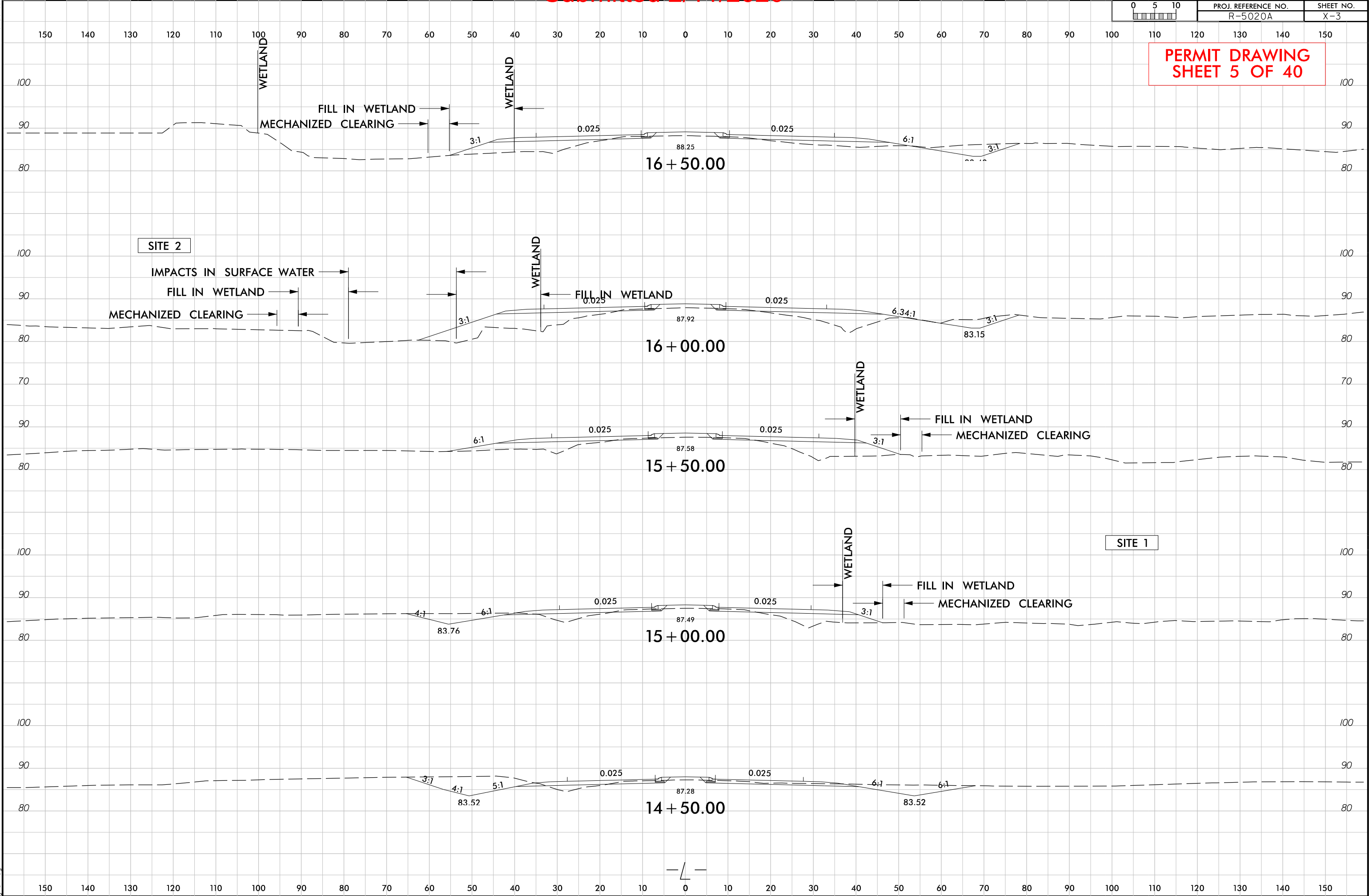
6/23/16



PROJ. REFERENCE NO.
R-5020A

SHEET NO.
X-3

PERMIT DRAWING
SHEET 5 OF 40

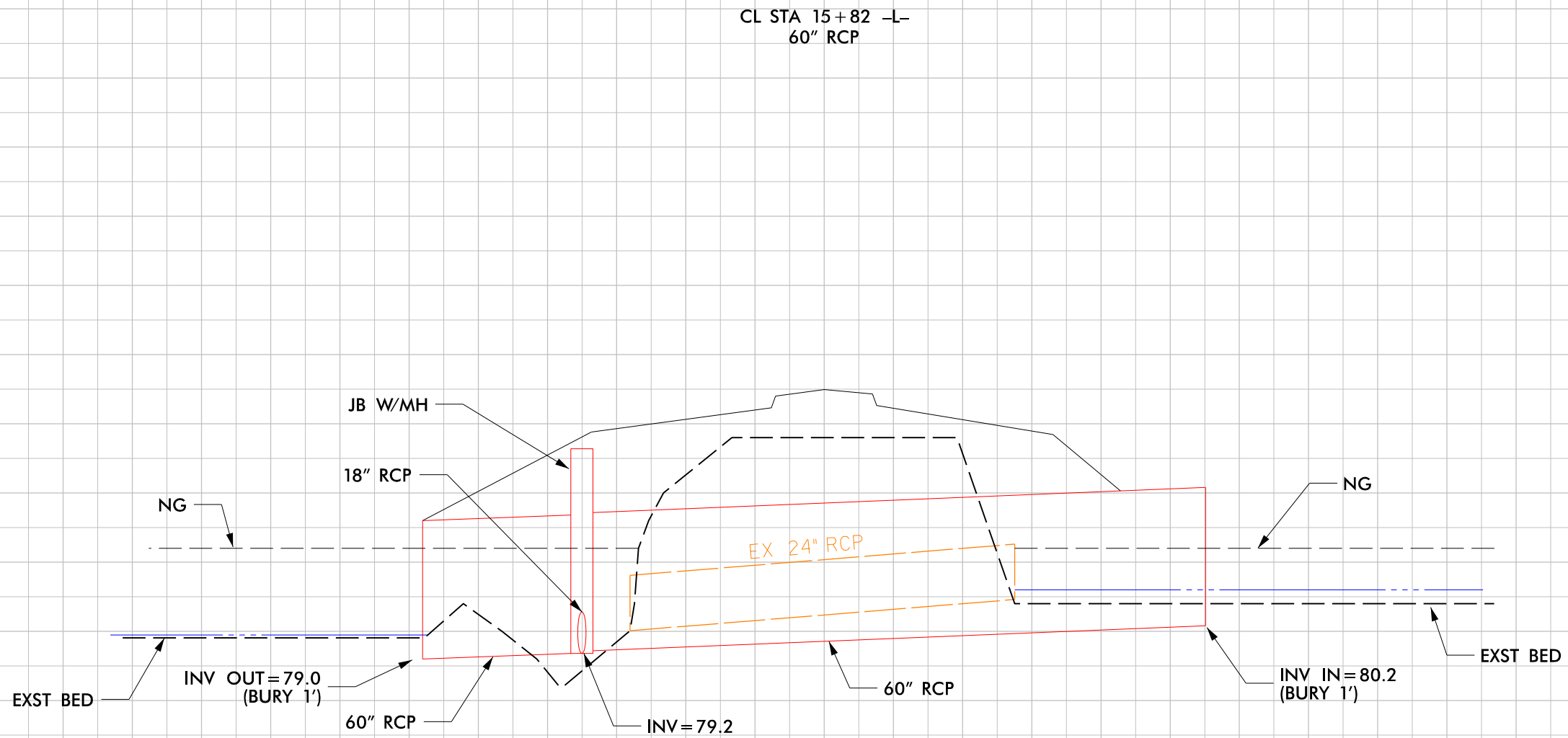


6/23/16



PROJ. REFERENCE NO.	SHEET NO.
R-5020A	40

PERMIT DRAWING
SHEET 6 OF 40



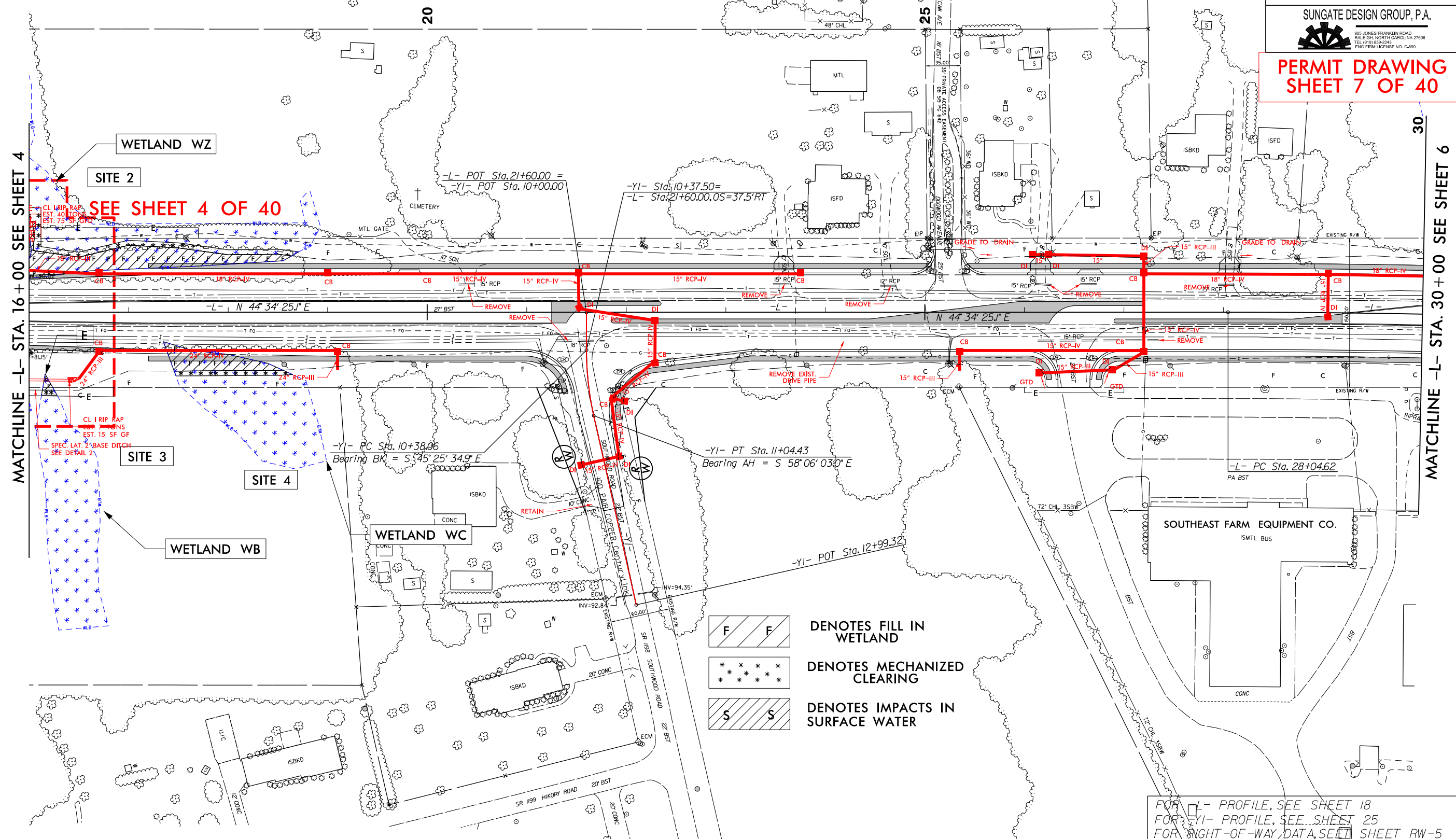
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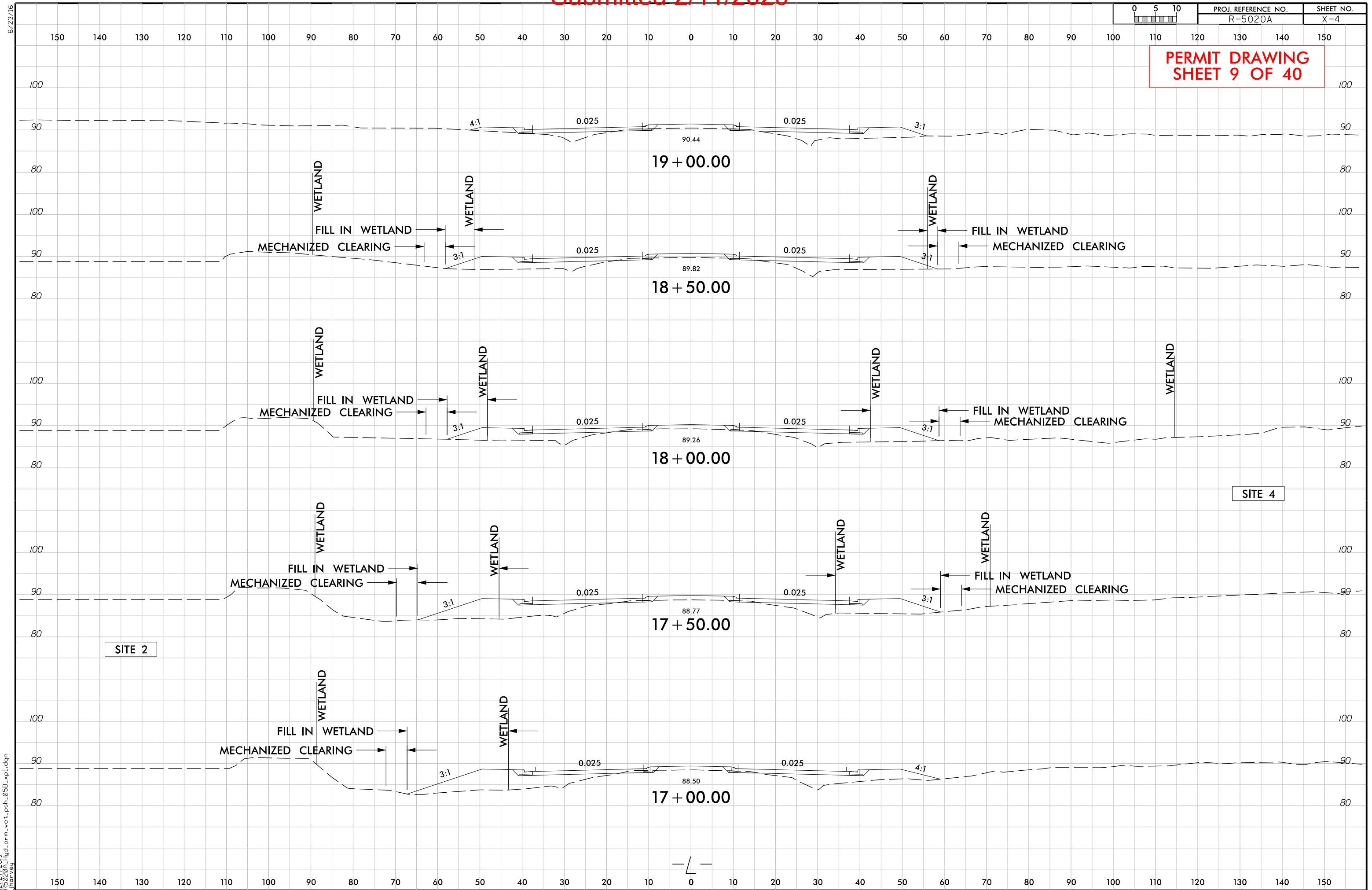
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PERMIT DRAWING
SHEET 7 OF 40

MATCHLINE -L- STA. 30+00 SEE SHEET 6

Submitted 2/11/2020

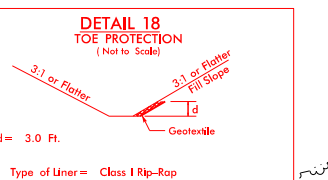
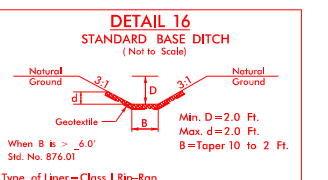
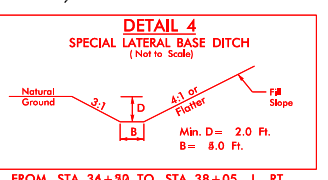
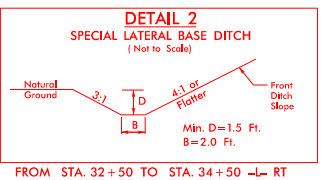
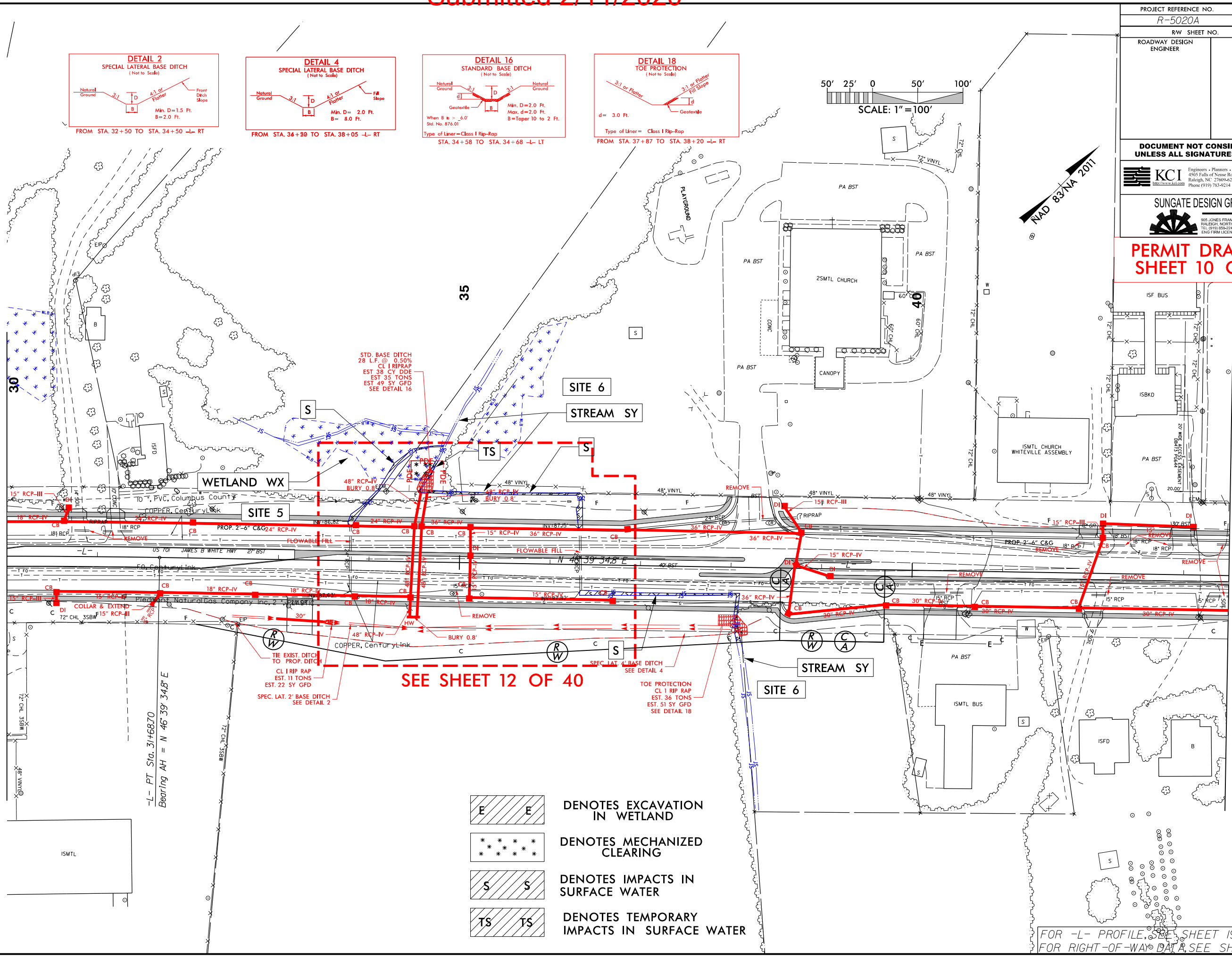


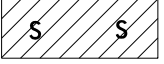
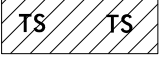
PROJECT REFERENCE NO. R-5020A		SHEET NO. 6
RW SHEET NO.		HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		
 KCI Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266		
 SUNGATE DESIGN GROUP, P.A. 805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL (919) 809-2243 ENG FROM LICENSE NO. C-890		

**PERMIT DRAWING
SHEET 10 OF 40**

MATCHLINE -L- STA. 30 + 00 SEE SHEET 5

MATCHLINE -L- STA. 43 + 50 SEE SHEET 7



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

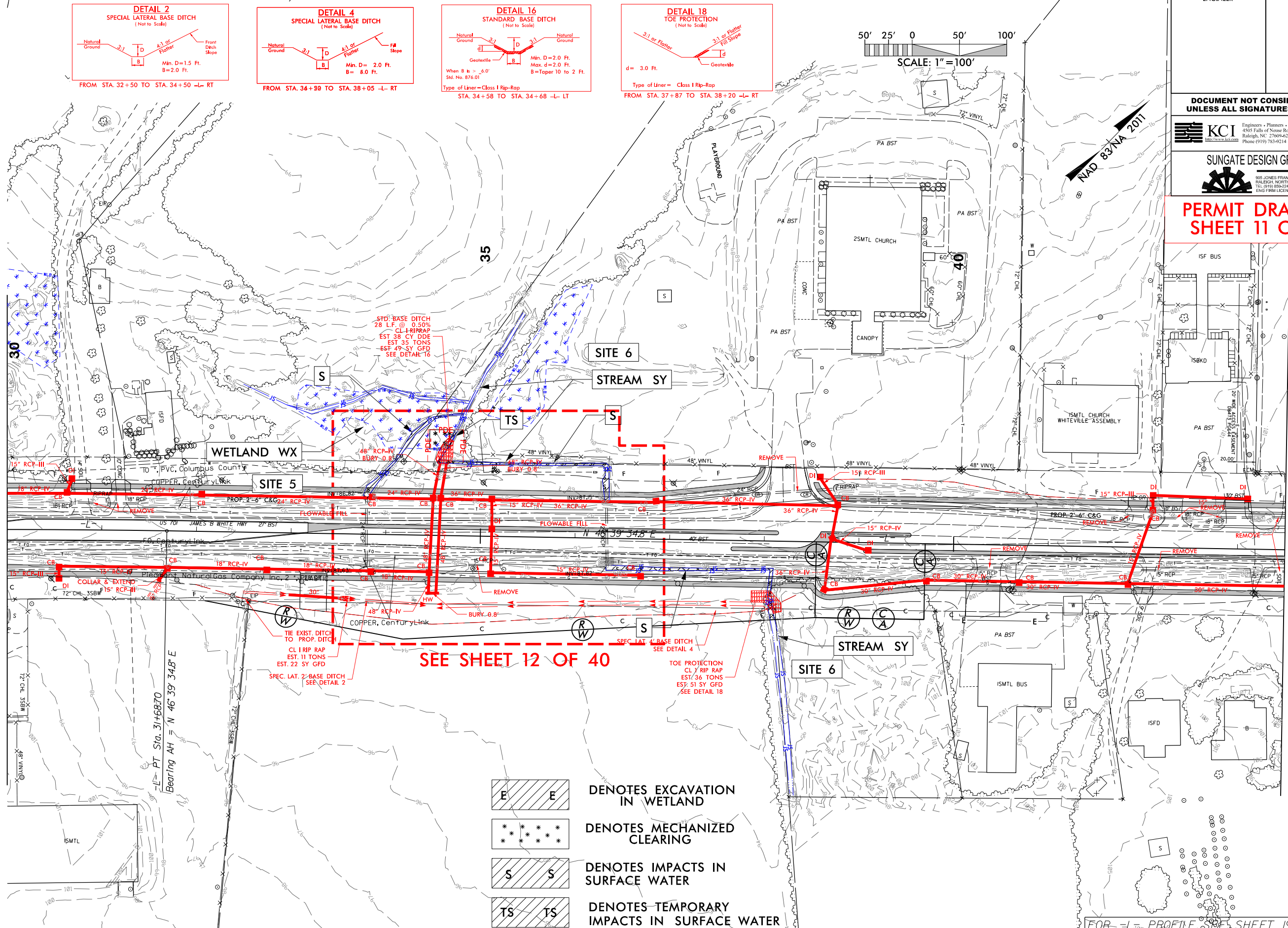
FOR -L- PROFILE, SEE SHEET 19
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-6

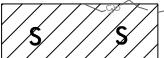
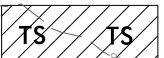
PROJECT REFERENCE NO. R-5020A		SHEET NO. 6
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		
 KCI Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266		
 SUNGATE DESIGN GROUP, P.A. 805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL (919) 889-2243 ENG. FIRM LICENSE NO. C-490		

**PERMIT DRAWING
SHEET 11 OF 40**

MATCHLINE -L- STA. 30 + 00 SEE SHEET 5

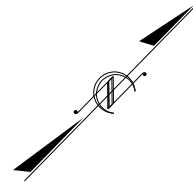
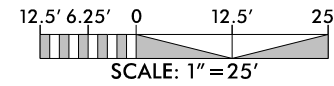
MATCHLINE -L- STA. 43 + 50 SEE SHEET 7



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

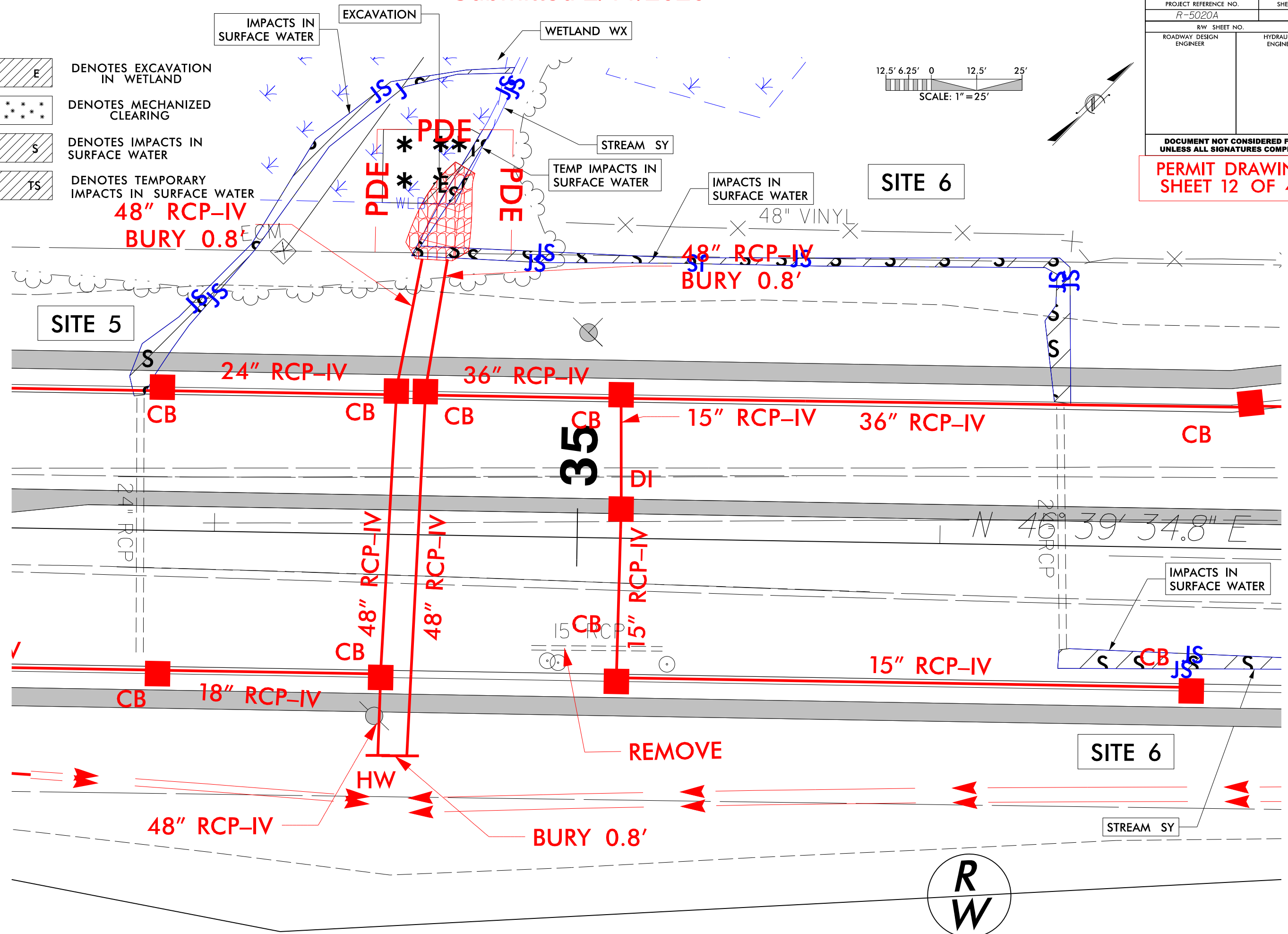
FOR -L- PROFILE, SEE SHEET 19
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-6

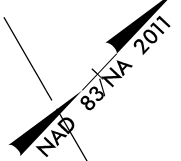
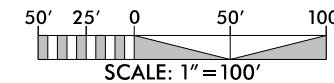
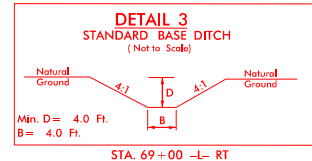
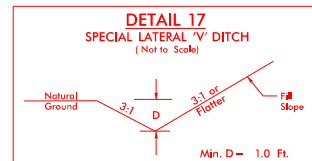
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



PROJECT REFERENCE NO. <i>R-5020A</i>		SHEET NO.
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

PERMIT DRAWING
SHEET 12 OF 40

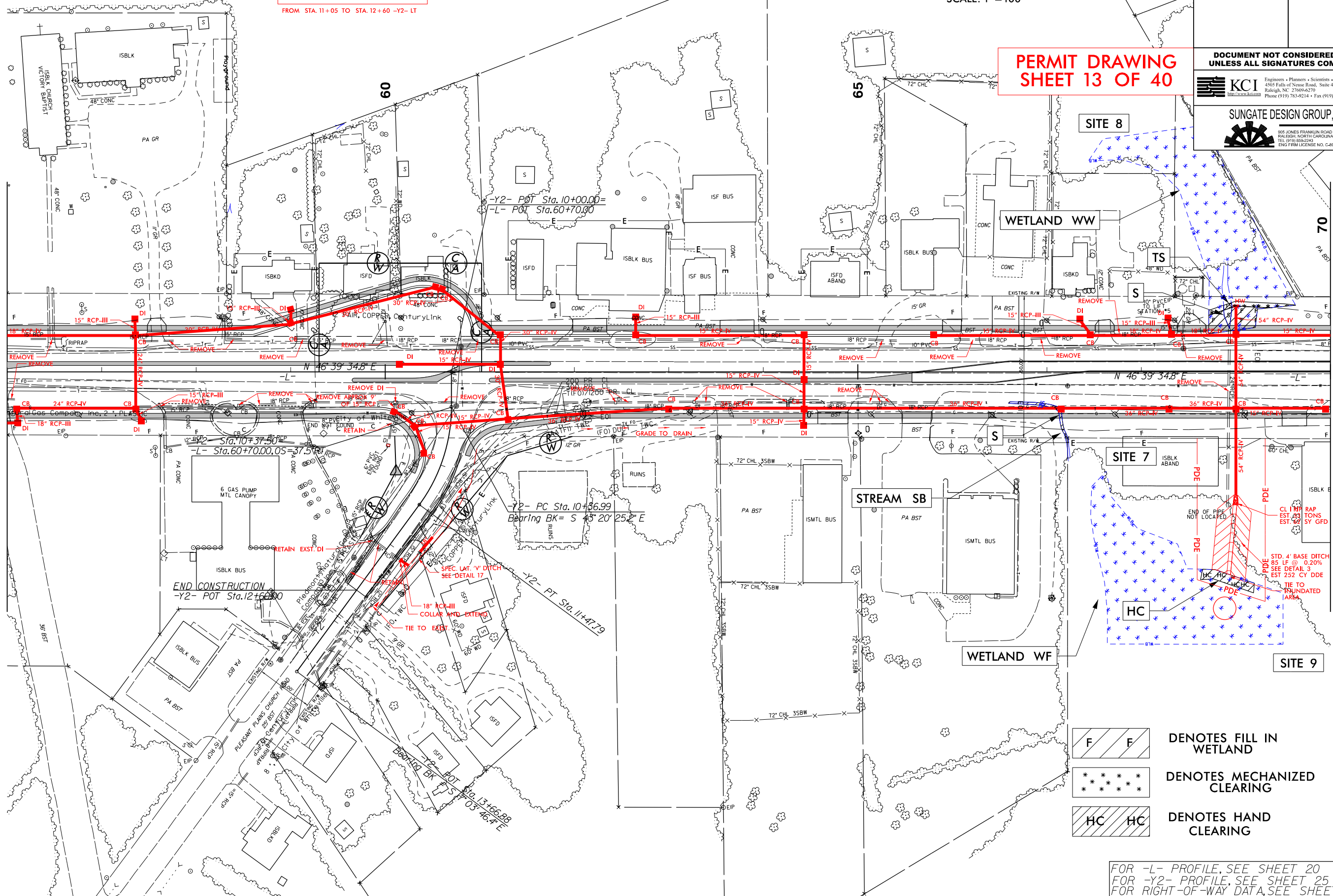


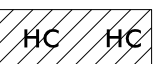


PROJECT REFERENCE NO. R-5020A		SHEET NO. 8
RW SHEET NO.		HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		
 KCI Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266		
 SUNGATE DESIGN GROUP, P.A. 805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL (919) 802-2243 ENG FROM LICENSE NO. C-890		

MATCHLINE -L- STA. 56+00 SEE SHEET 7

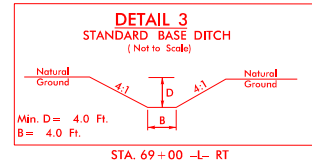
MATCHLINE -L- STA. 70+00 SEE SHEET 9



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

FOR -L- PROFILE, SEE SHEET 20
FOR -Y2- PROFILE, SEE SHEET 25
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-8

R5020A_Hyd-prm_wet_psh_08A.dgn

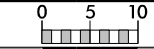


MATCHLINE -L- STA. 70+00 SEE SHEET 9

[illegible]

FOR -L- PROFILE, SEE SHEET 20
FOR -Y2- PROFILE, SEE SHEET 25
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-8

6/23/16

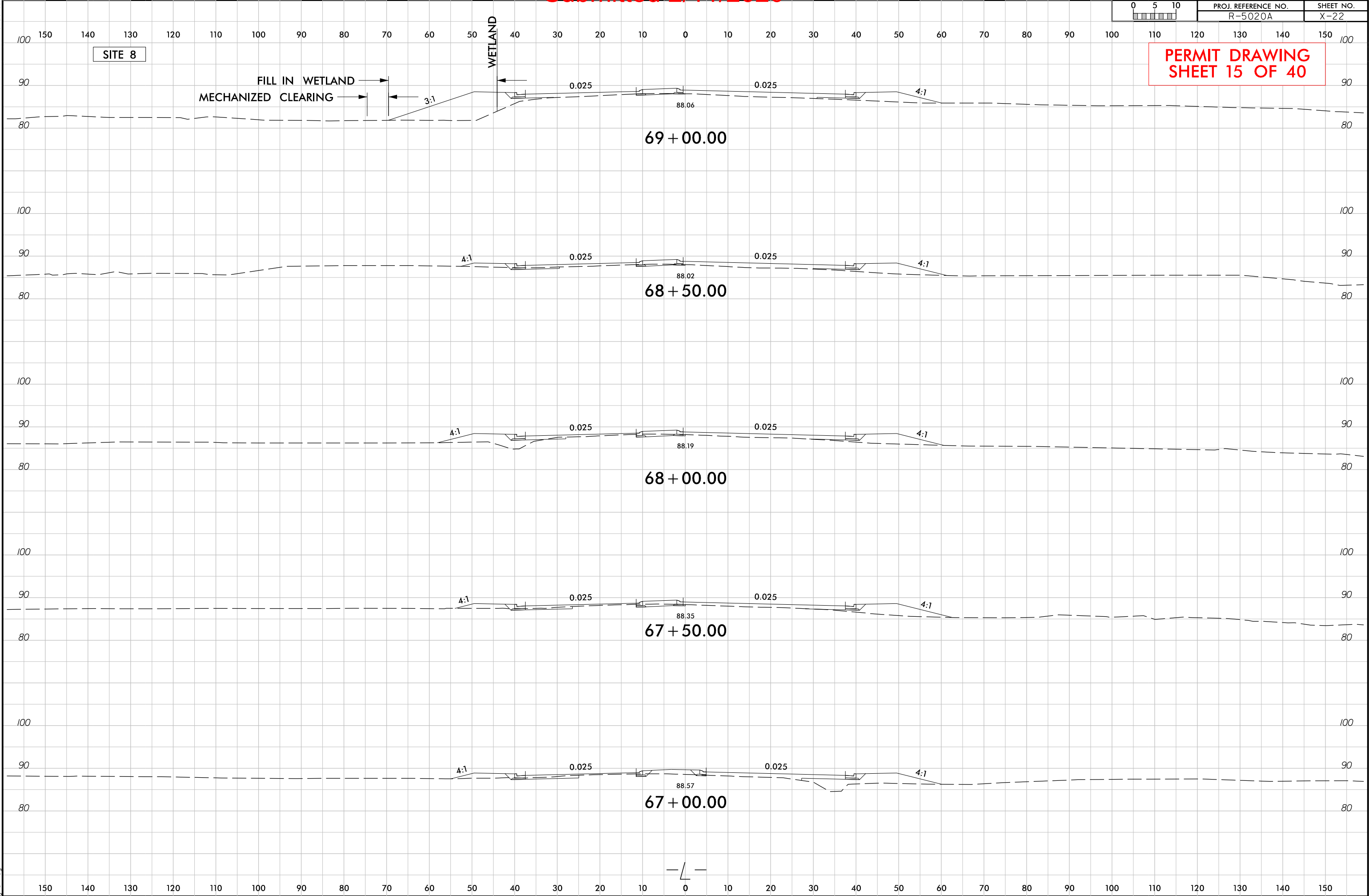


PROJ. REFERENCE NO.
R-5020A

SHEET NO.
X-22

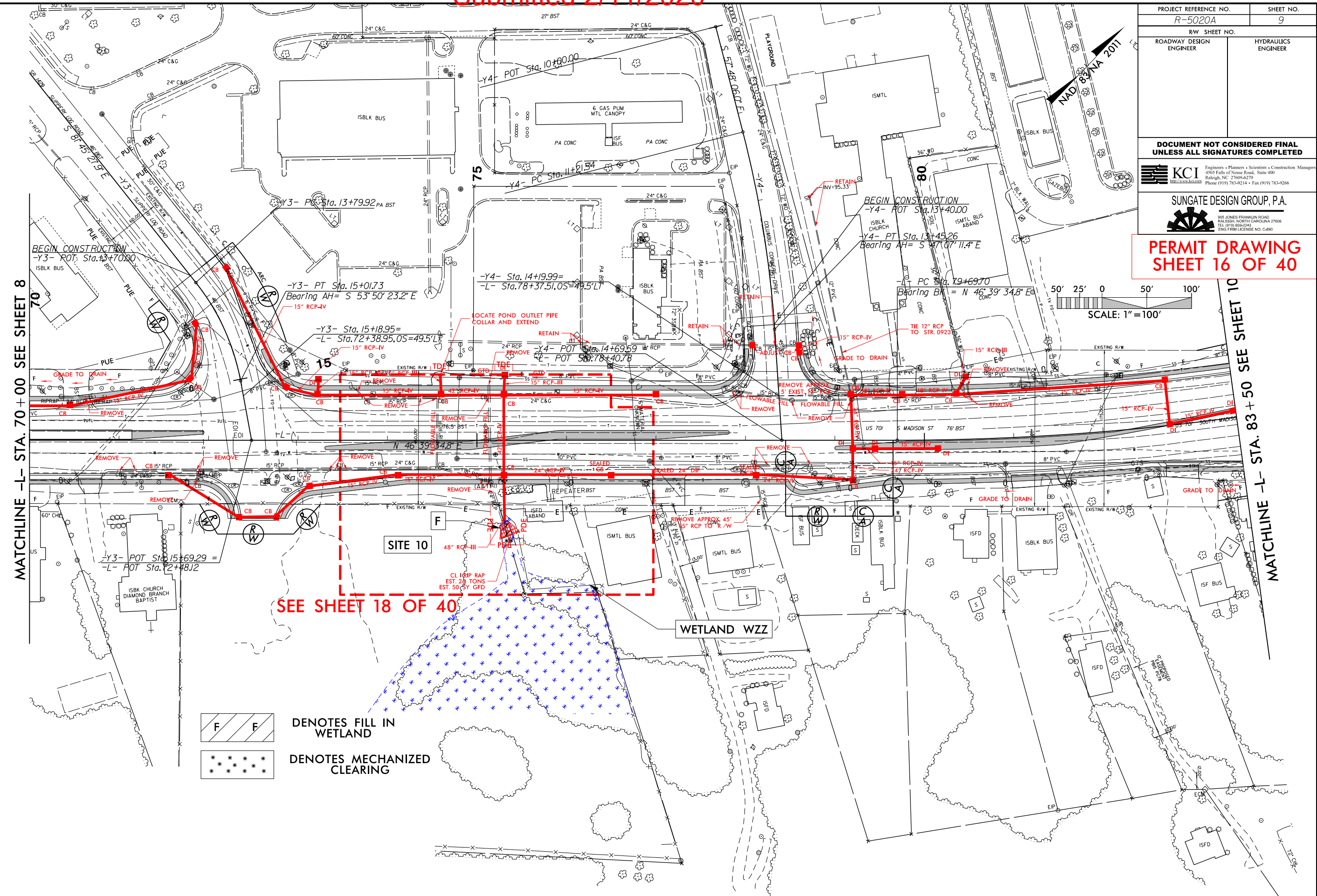
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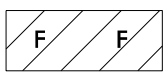
PERMIT DRAWING
SHEET 15 OF 40



PROJECT REFERENCE NO. R-5020A		SHEET NO. 9
RW SHEET NO.		HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		
 KCI Engineers • Planners • Scientists • Construction Managers 4305 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266 www.kci.com		
 SUNGATE DESIGN GROUP, P.A. 805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL (919) 804-2243 FAX (919) 804-2243 ENG. FIRM LICENSE NO. C-890		

**PERMIT DRAWING
SHEET 16 OF 40**



 **DENOTES FILL IN WETLAND**

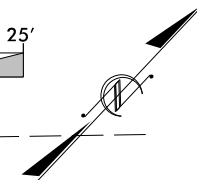
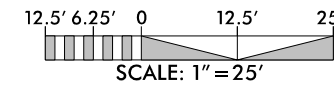
 **DENOTES MECHANIZED CLEARING**

FOR -L- PROFILE, SEE SHEET 20
FOR -Y3-, -Y4- PROFILE, SEE SHEET 25
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-9

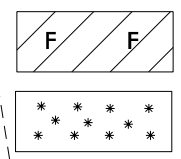
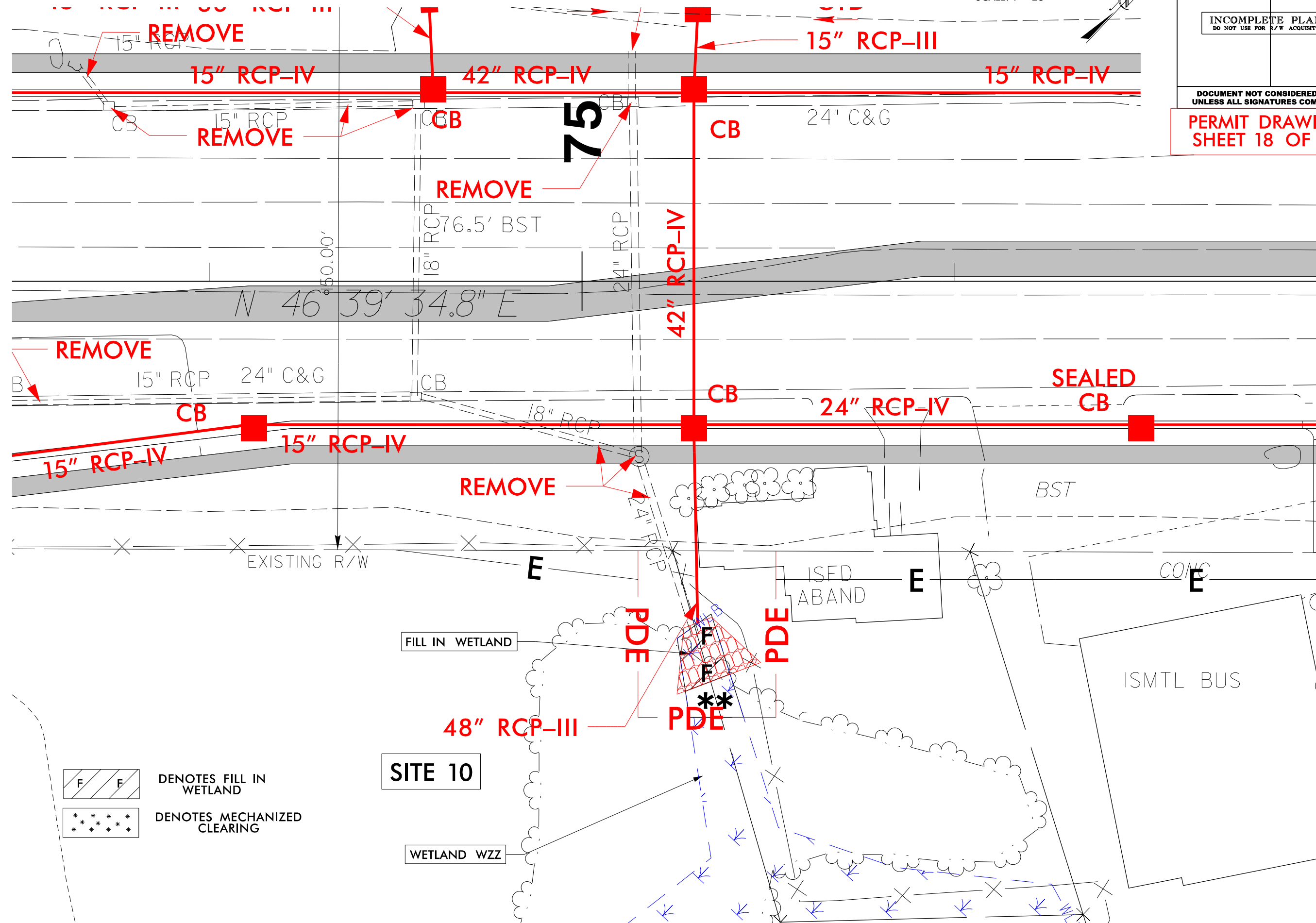
8/17/99
12/27/2018
R-5020A_Hyd.prm_wet.psh_09.dgn

12/27/2019
R5020A-Hyd-prm-wet-psh-09A.dgn



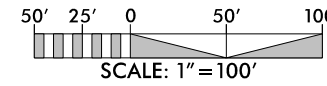
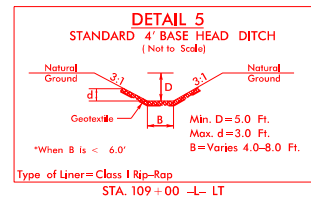
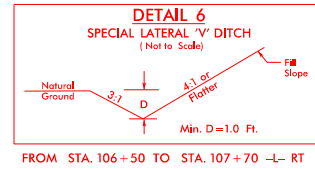


PROJECT REFERENCE NO. <i>R-5020A</i>		SHEET NO.	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
PERMIT DRAWING SHEET 18 OF 40			



12/27/2018
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8/17/99



PERMIT DRAWING
SHEET 19 OF 40

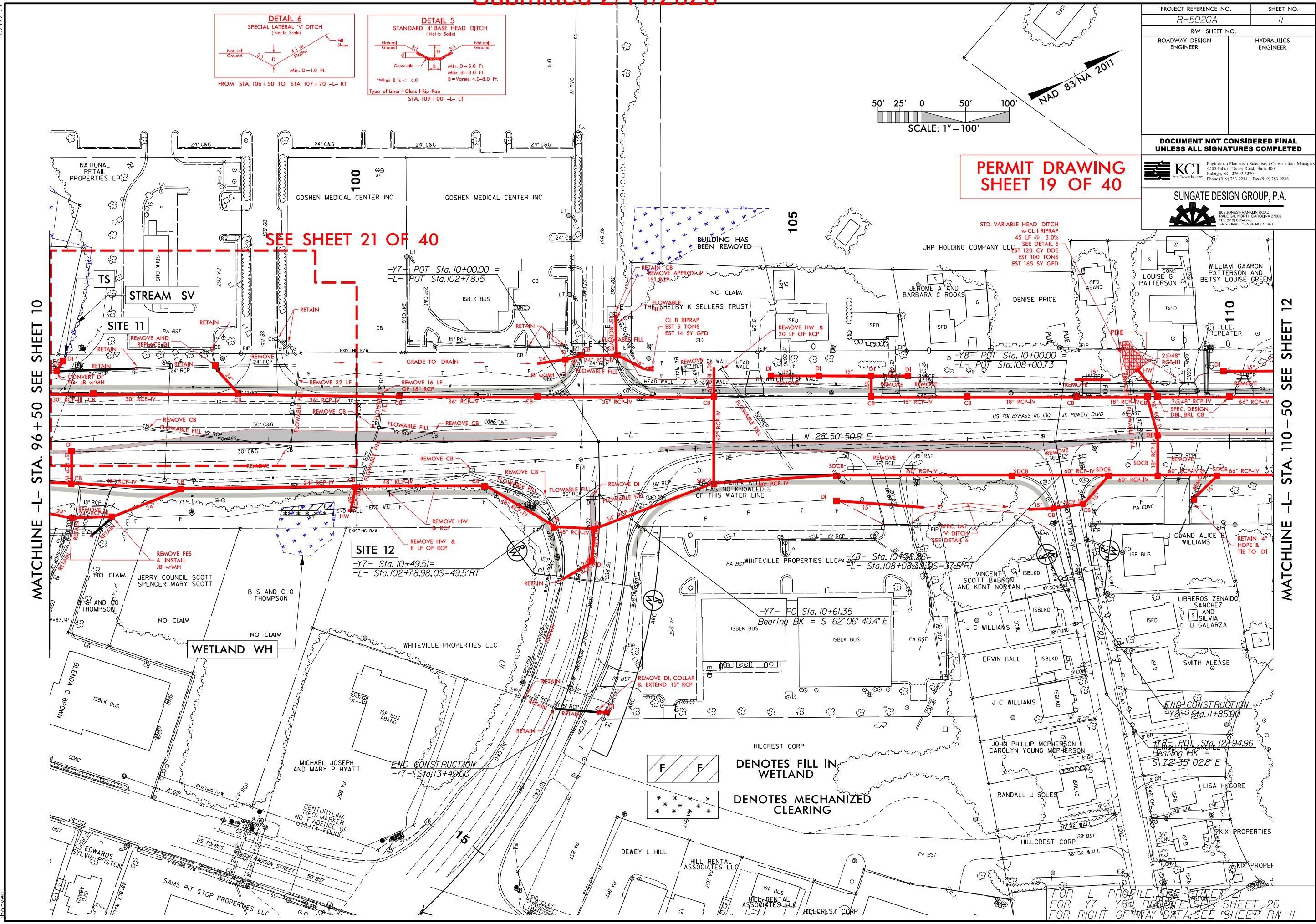
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RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
 KCI http://www.kci.com		Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266	
SUNGATE DESIGN GROUP, P.A.  805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL (919) 802-2243 ENG FROM LICENSE NO. C-6890			

MATCHLINE -L- STA. 96+50 SEE SHEET 10

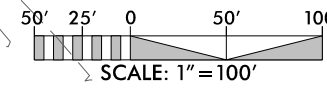
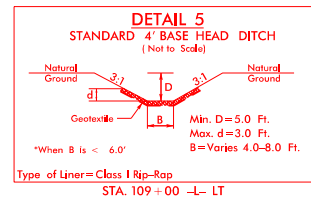
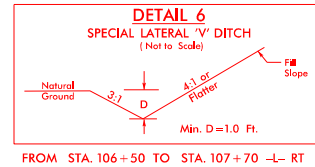
MATCHLINE -L- STA. 110+50 SEE SHEET 12

ROW REV.12 - 02/22/19 - Removed TCE from Parcel 98, (BCS)
ROW REV.14 - 06/18/19 - Removed TCE from Parcel 47, (BCS)

12/27/2019
R5020A Hyd.prm-wet.psh-11.dgn
11:41 AM



8/17/99



PERMIT DRAWING
SHEET 20 OF 40

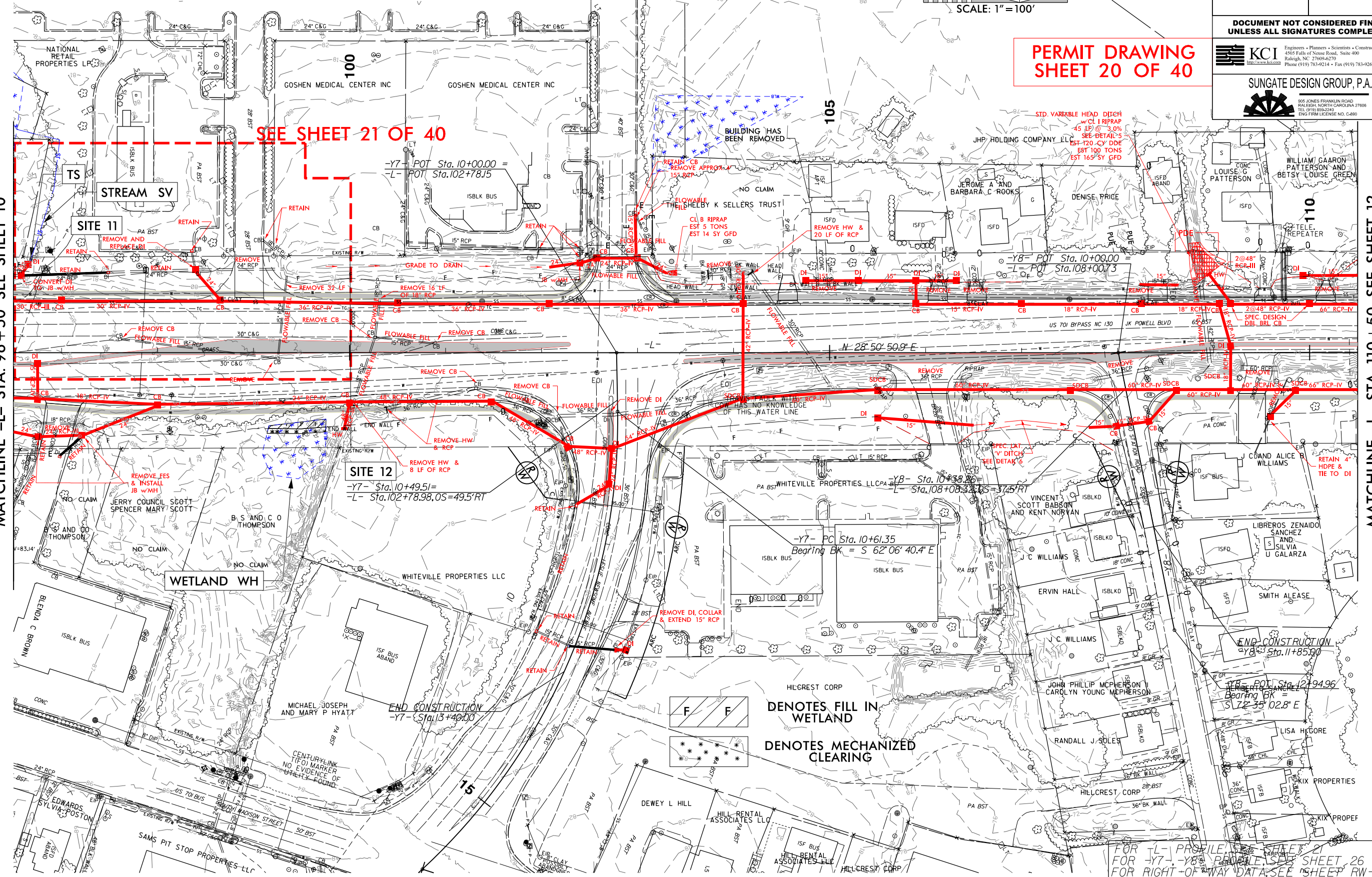
PROJECT REFERENCE NO. <i>R-5020A</i>		SHEET NO. <i>11</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
 KCI http://www.kci.com		Engineers • Planners • Scientists • Construction Managers 4305 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266	
 SUNGATE DESIGN GROUP, P.A.		905 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL (919) 828-2243 ENG FROM LICENSE NO. C-680	

MATCHLINE -L- STA. 96+50 SEE SHEET 10

MATCHLINE -L- STA. 110+50 SEE SHEET 12

ROW REV.12 - 02/22/19 - Removed TCE from Parcel 98, (BCS)
ROW REV.14 - 06/18/19 - Removed TCE from Parcel 47, (BCS)

8/27/2019
R5020A_Hyd.prm-wet.psh-11A.dgn

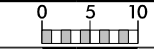


 **DENOTES FILL IN WETLAND**
 **DENOTES MECHANIZED CLEARING**

FOR -L- PROFILE SEE SHEET 21
FOR -Y7-, -Y8- PROFILE SEE SHEET 26
FOR RIGHT-OF-WAY DATA SEE SHEET RW-11

8/17/99DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

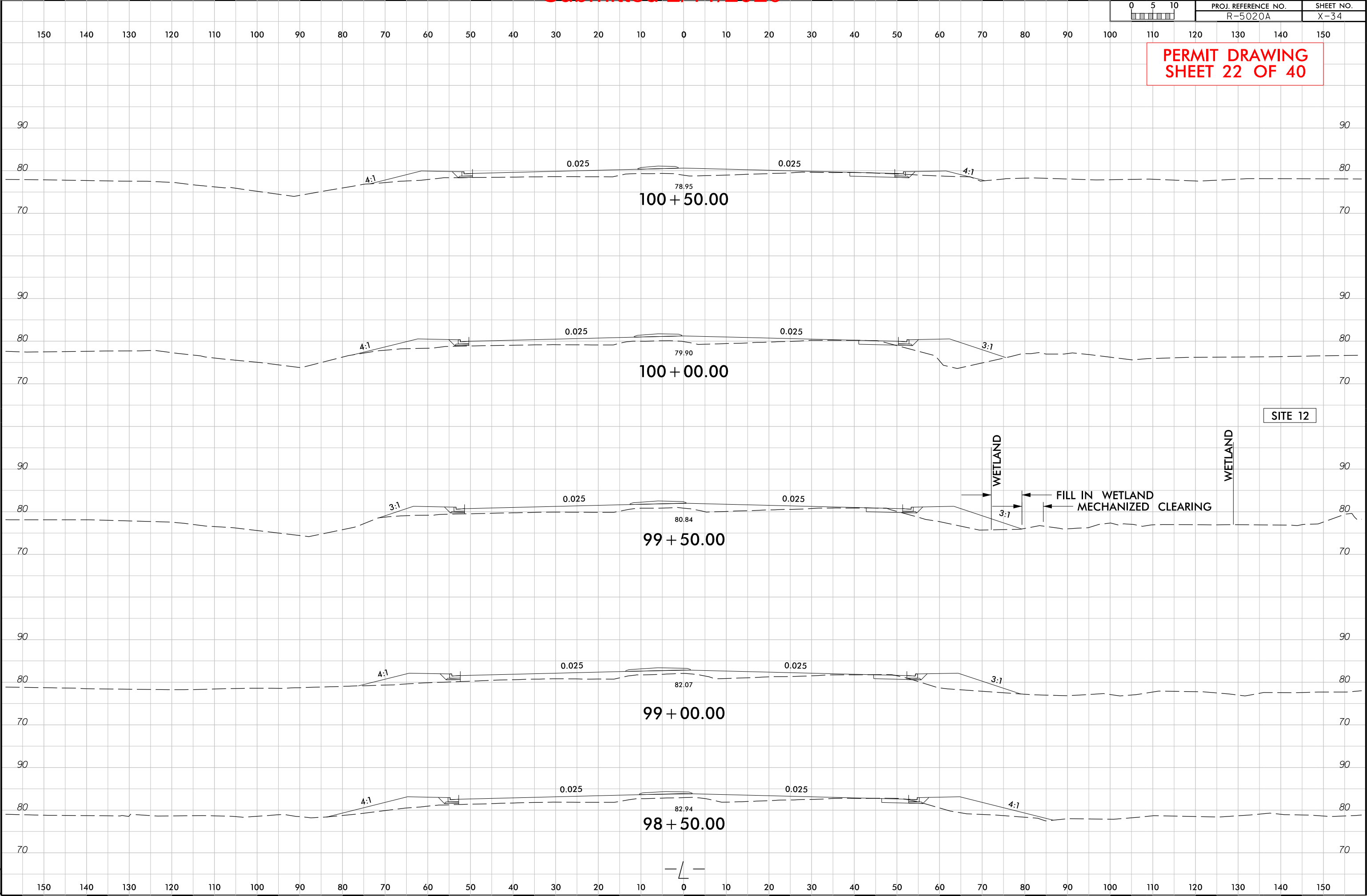
6/23/16



PROJ. REFERENCE NO.
R-5020A

SHEET NO.
X-34

PERMIT DRAWING
SHEET 22 OF 40



12/21/2019
R5020A_Hyd.prm_wet.psh_11C_xpl.dgn
Harvey



 **KCI**
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 Raleigh, NC 27609-6270
 Phone (919) 783-9214 • Fax (919) 783-9266

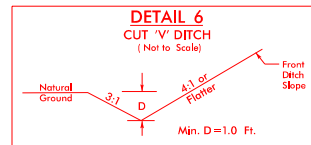
SUNGATE DESIGN GROUP, P.A.



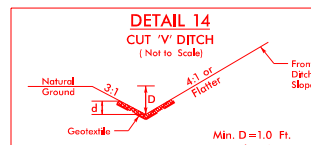
905 JONES FRANKLIN ROAD
 RALEIGH, NORTH CAROLINA 27608
 TEL (919) 852-2343
 ENG FIRM LICENSE NO. C-480

MATCHLINE -L- STA. 124+50 SEE SHEET 13

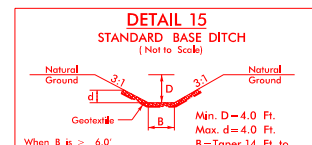
FOR -L- PROFILE, SEE SHEET 22
FOR -Y9-, -Y10-, -Y11- PROFILE, SEE SHEETS 26 & 27
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-12



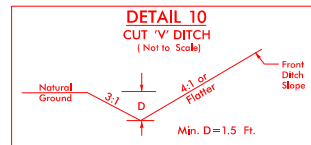
FROM STA. 13+50 TO STA. 14+40 -Y9- RT
FROM STA. 12+45 TO STA. 14+85 -Y9- LT
FROM STA. 114+30 TO STA. 114+85 -LT
FROM STA. 115+78 TO STA. 116+50 -LT
FROM STA. 115+00 TO STA. 118+00 -LT
FROM STA. 12+25 TO STA. 13+28 -Y10- LT
FROM STA. 118+75 TO STA. 120+00 -LT
FROM STA. 123+75 TO STA. 128+00 -LT



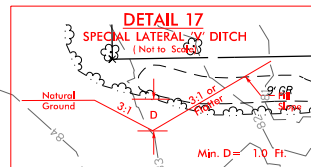
Type of Liner=Class B Rip-Rap
FROM STA. 114+30 TO STA. 115+00 -LT RT



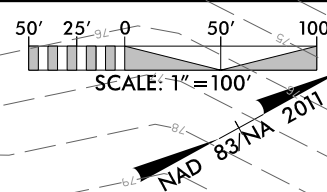
When B is > 5.0'
Std. No. 876.01
Type of Liner=Class I Rip-Rap
STA. 111+64 -LT RT



FROM STA. 16+80 TO STA. 18+00 -Y9- LT



FROM STA. 119+20 TO STA. 120+00 -LT RT

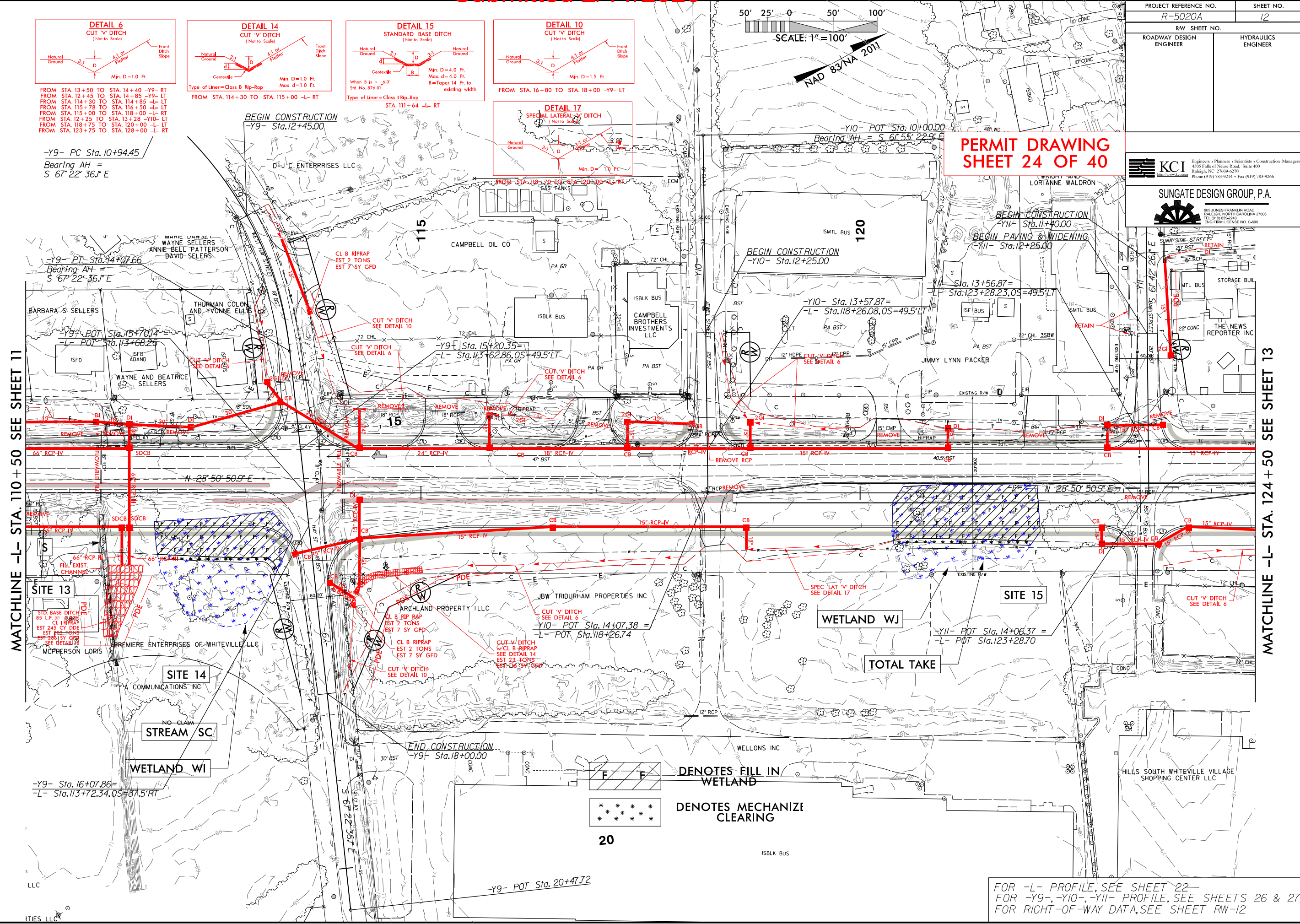


PERMIT DRAWING
SHEET 24 OF 40

PROJECT REFERENCE NO. R-5020A		SHEET NO. 12	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
 KCI Engineers • Planners • Scientists • Construction Managers 4305 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266		 SUNGATE DESIGN GROUP, P.A. 805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL (919) 869-6270 ENG. FIRM LICENSE NO. C-680	

MATCHLINE -L- STA. 110+50 SEE SHEET 11

MATCHLINE -L- STA. 124+50 SEE SHEET 13



-Y9- Sta. 16+07.86=
-L- Sta. 113+72.34, OS=31.5' RT

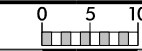
20

DENOTES FILL IN
WETLAND

DENOTES MECHANIZE
CLEARING

FOR -L- PROFILE, SEE SHEET 22
FOR -Y9-, -Y10-, -Y11- PROFILE, SEE SHEETS 26 & 27
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-12

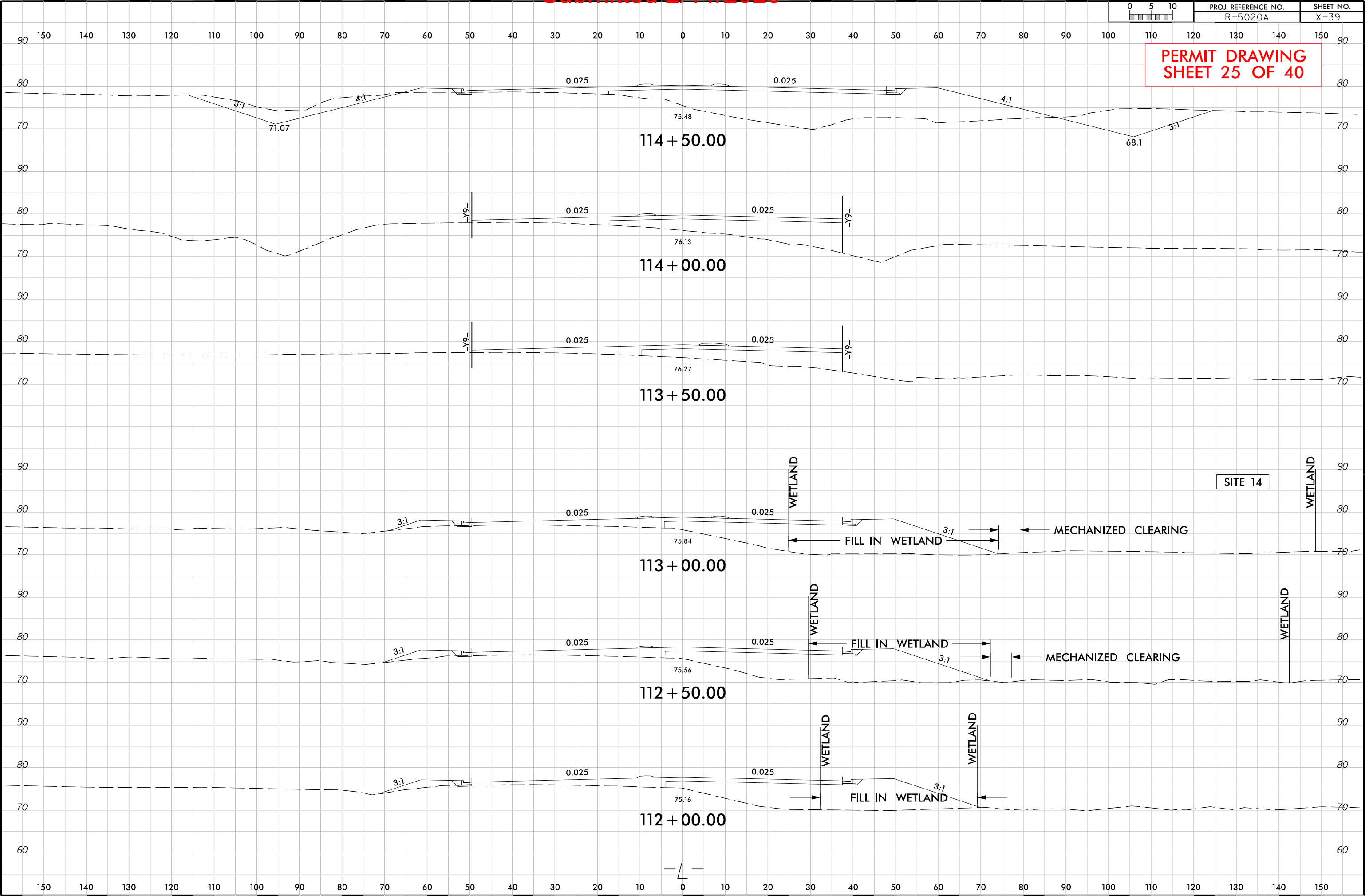
6/23/16



PROJ. REFERENCE NO.
R-5020A

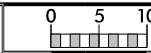
SHEET NO.
X-39

PERMIT DRAWING
SHEET 25 OF 40



Submitted 2/11/2020

6/23/16



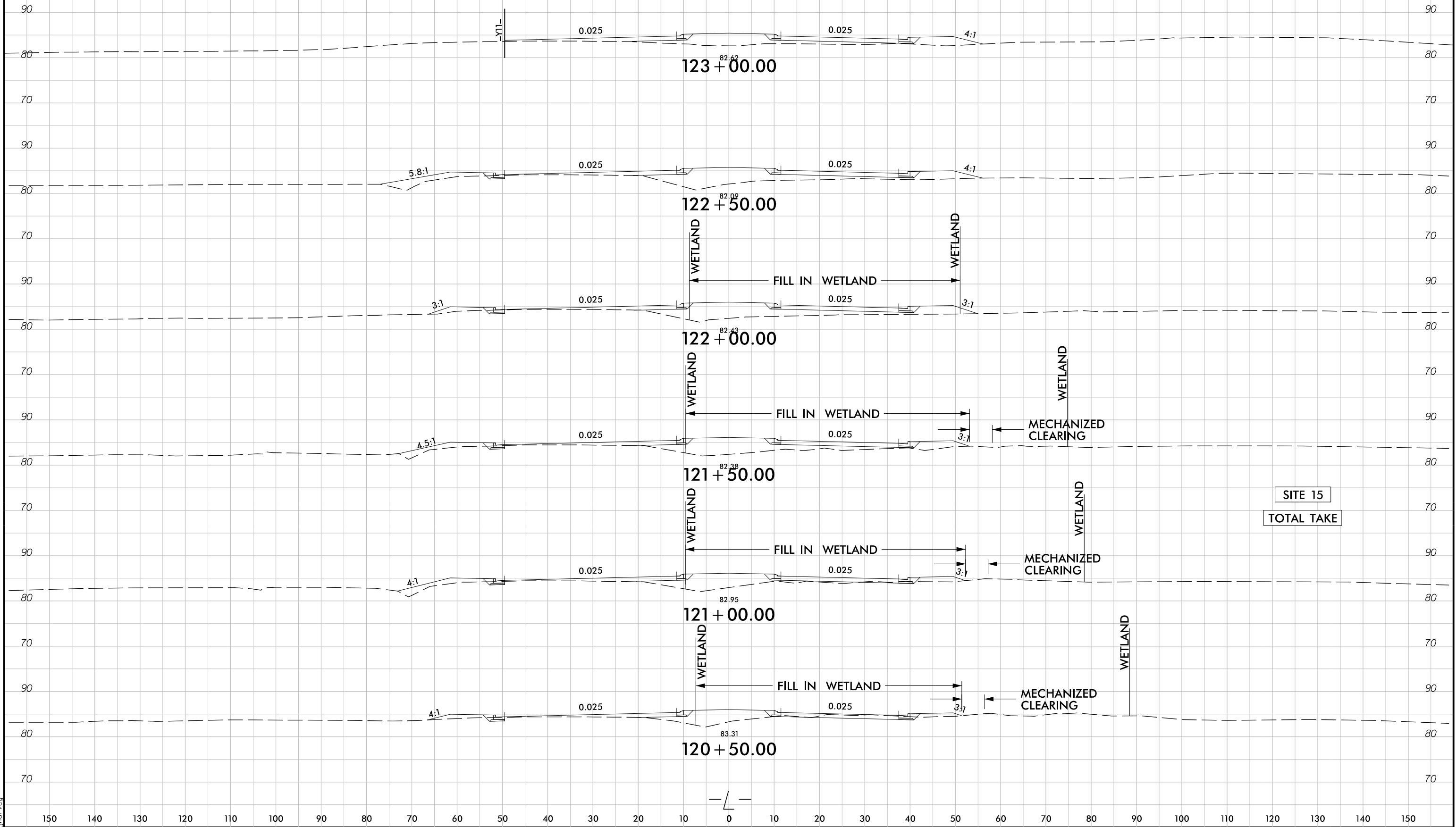
PROJ. REFERENCE NO.

R-5020A

SHEET NO.

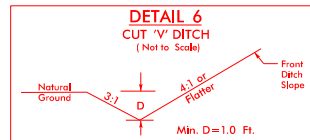
X-42

**PERMIT DRAWING
SHEET 26 OF 40**

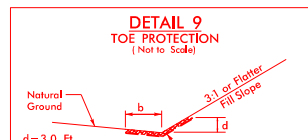
12/27/2019
R5020A-Hyd-prm-wet-psh-12C-xpl.dgn
iharvey

Submitted 2/11/2020

8/17/99

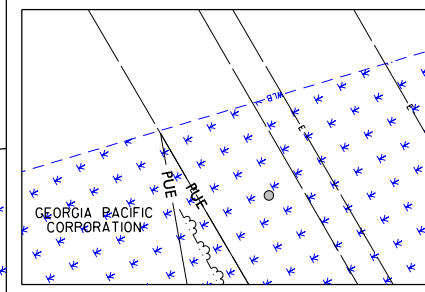


FROM STA. 140+00 TO STA. 142+50 -L- RT
FROM STA. 11+00 TO STA. 12+00 -Y14- RT



Type of Liner=Class B Rip-Rap
FROM STA. 140+50 TO STA. 152+50 -L- LT

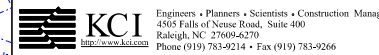
INSET A



SEE INSET A

PROJECT REFERENCE NO. <i>R-5020A</i>		SHEET NO. <i>14</i>	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER			

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



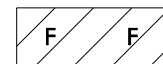
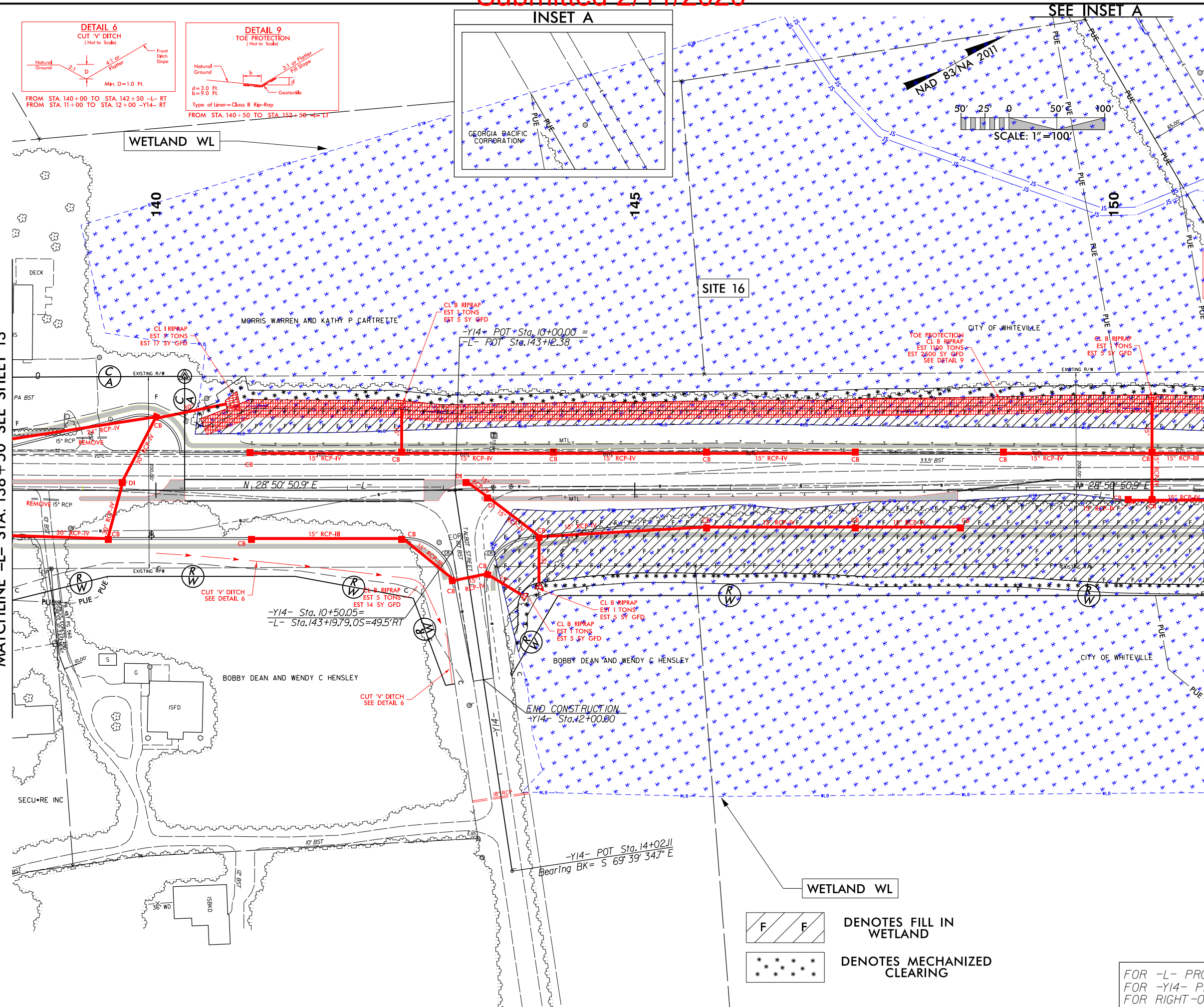
**PERMIT DRAWING
SHEET 27 OF 40**

MATCHLINE -L- STA. 138+50 SEE SHEET 13

MATCHLINE -L- STA. 151+00 SEE SHEET 15

ROW REV. 6 - 10/08/18 - Added CA on Parcel 72, (BCS)
ROW REV. 13 - 06/03/19 - Added Parcel 109, Added PUE on Parcels 75 and 109, (BCS)
ROW REV. 14 - 06/24/19 - Added PUE on Parcels 71 and 73, (BCS)

12/27/2019
R-5020A_Hyd.prm_wet.psh_14.dgn
14:00:00



**DENOTES FILL IN
WETLAND**

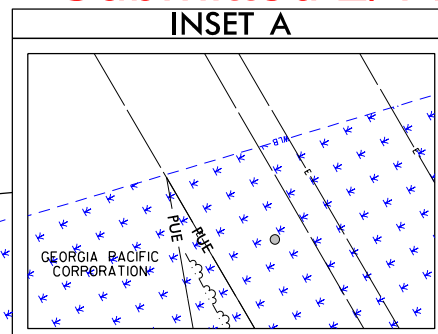
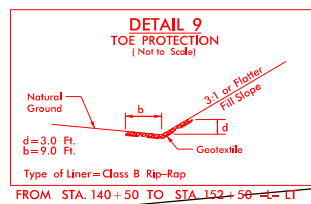
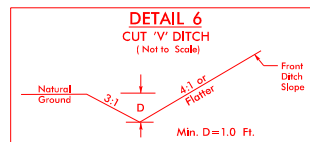


**DENOTES MECHANIZED
CLEARING**

FOR -L- PROFILE, SEE SHEET 23
FOR -Y14- PROFILE, SEE SHEET 27
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-14

Submitted 2/11/2020

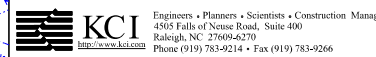
8/17/99



SEE INSET A

PROJECT REFERENCE NO. <i>R-5020A</i>		SHEET NO. <i>14</i>	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER			

DOCUMENT NOT CONSIDERED FINAL
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SUNGATE DESIGN GROUP, P.A.
805 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27608
TEL (919) 802-2243
FAX (919) 783-9266
ENG. FIRM LICENSE NO. C-6890

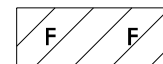
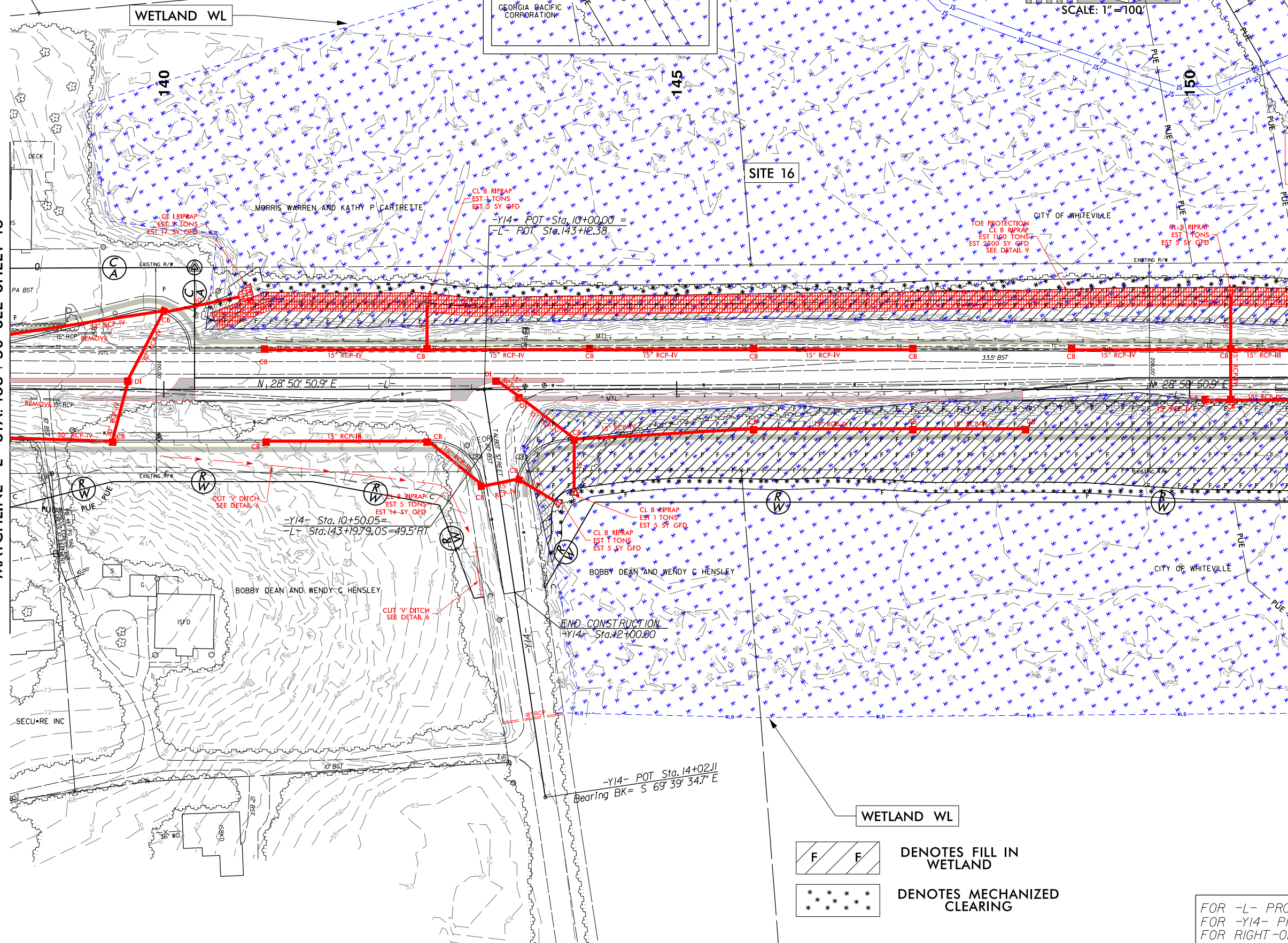
PERMIT DRAWING
SHEET 28 OF 40

MATCHLINE -L- STA. 138+50 SEE SHEET 13

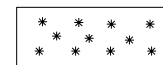
MATCHLINE -L- STA. 151+00 SEE SHEET 15

ROW REV. 6 - 10/08/18 - Added CA on Parcel 72, (BCS)
ROW REV. 13 - 06/03/19 - Added Parcel 109, Added PUE on Parcels 75 and 109, (BCS)
ROW REV. 14 - 06/24/19 - Added PUE on Parcels 71 and 73, (BCS)

12/27/2019
R-5020A_Hyd.prm_wet.psh_14A.dgn
14A.dgn



DENOTES FILL IN
WETLAND



DENOTES MECHANIZED
CLEARING

FOR -L- PROFILE, SEE SHEET 23
FOR -Y14- PROFILE, SEE SHEET 27
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-14

12/27/2019
R5020A_Hyd-prm_wet_psh_15.dgn
iharvey

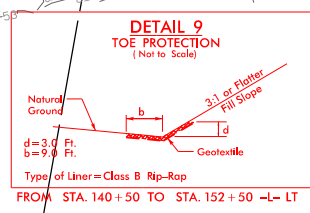
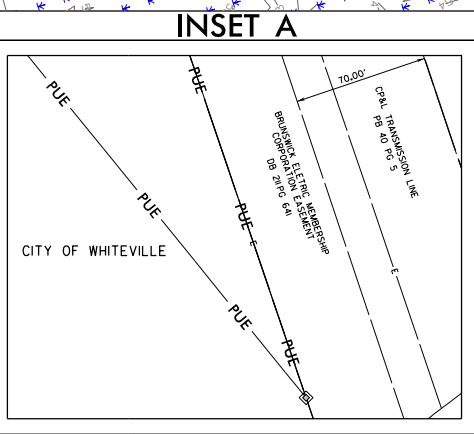
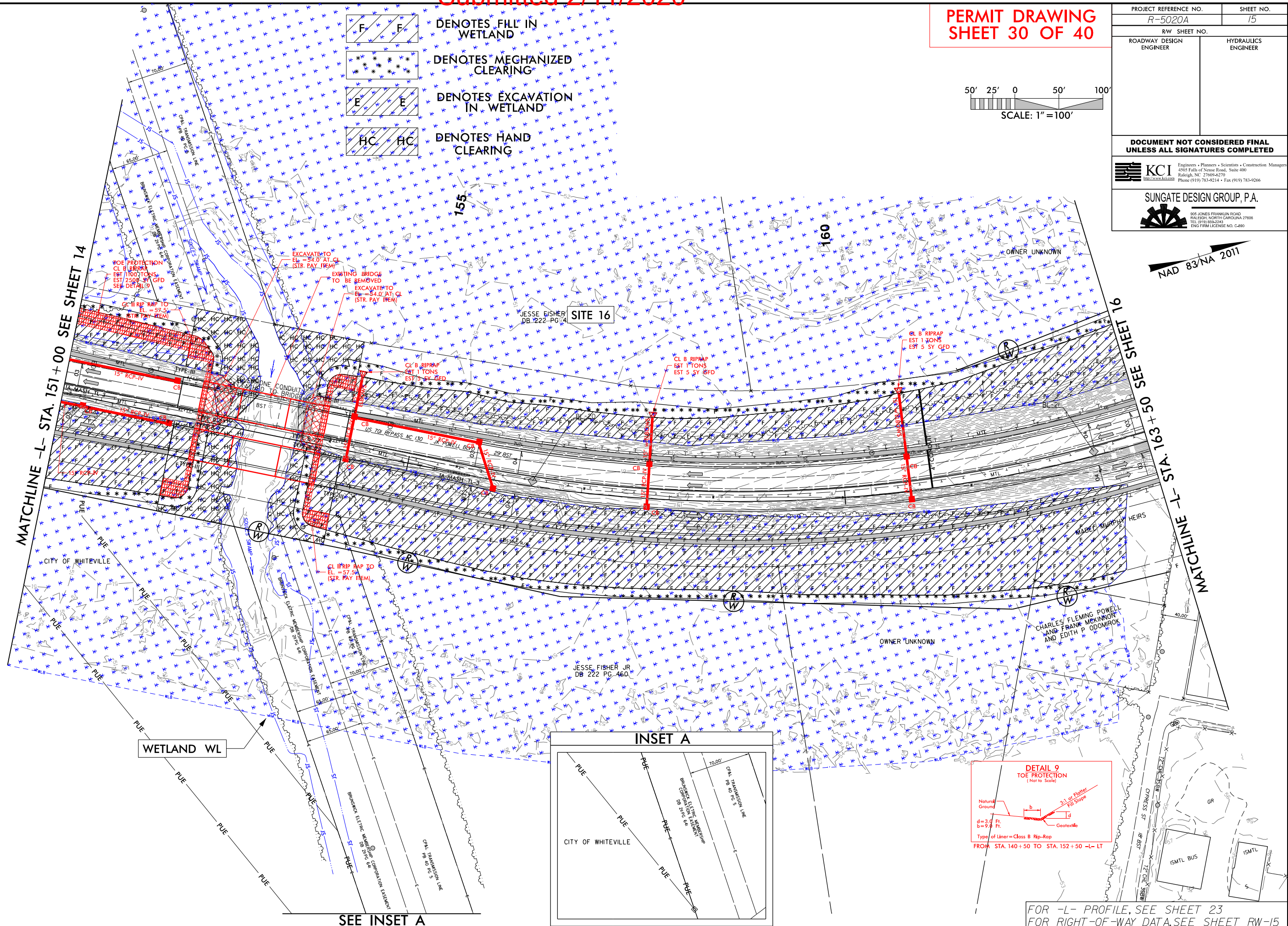
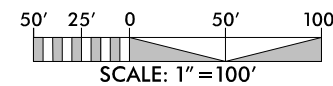
50' 25' 0 50' 100'

SCALE: 1" = 100'

NAD 83/NA 2011

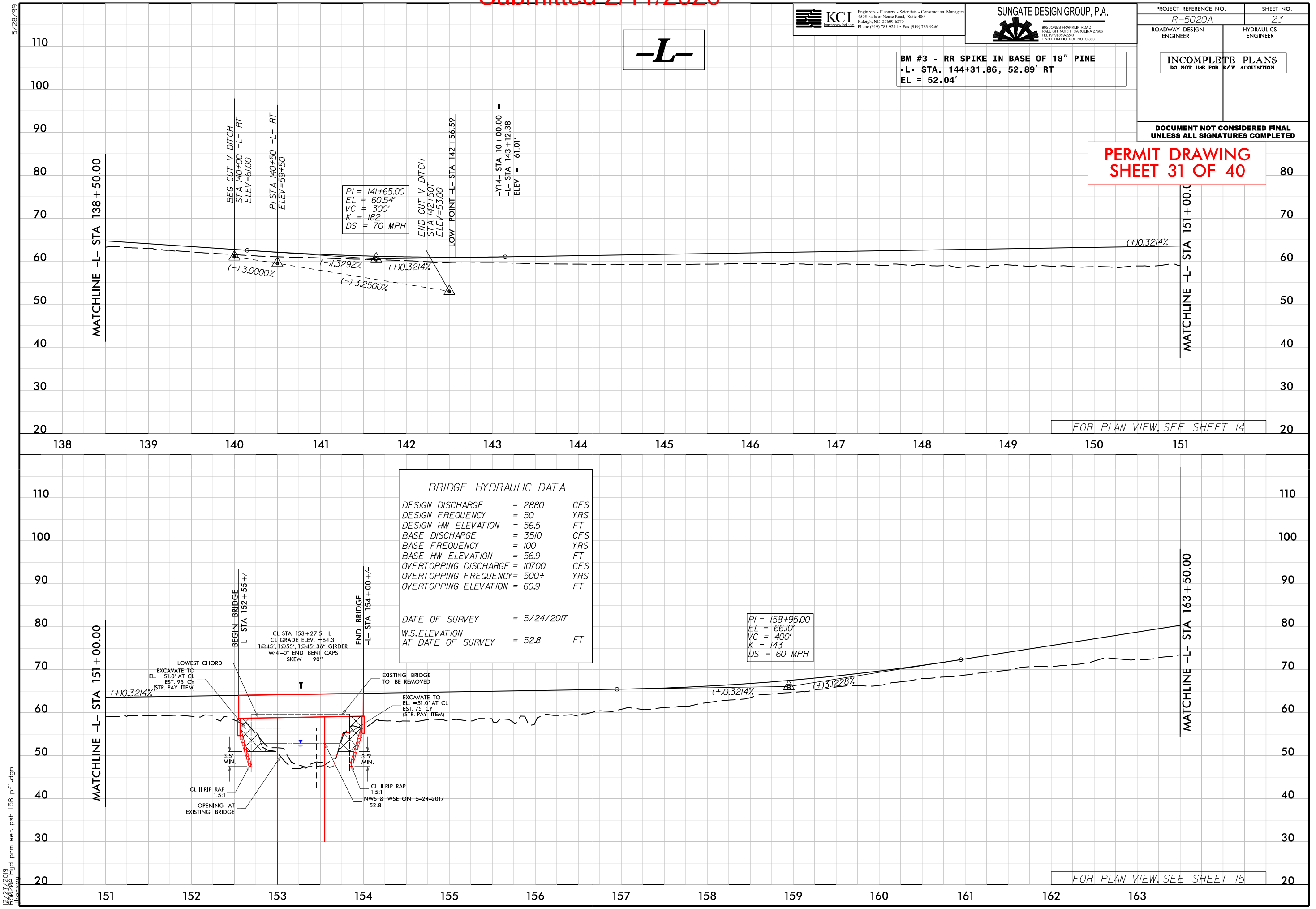


PROJECT REFERENCE NO. <i>R-5020A</i>		SHEET NO. <i>15</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
 KCI http://www.kci.com		Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266	
SUNGATE DESIGN GROUP, P.A.  805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27608 TEL (919) 868-2243 ENG FROM LICENSE NO. C-890			



FOR -L- PROFILE, SEE SHEET 23
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-15

8/17/99
12/27/2018
R-5020A_Hyd.prm_wet.psh_15A.dgn
15A.dgn



KCI
Engineers • Planners • Scientists • Construction Managers
4505 Falls of Neuse Road, Suite 400
Raleigh, NC 27609-6270
Phone (919) 783-9214 • Fax (919) 783-9266

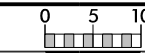
SUNGATE DESIGN GROUP, P.A.
885 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 885-2243
ENG. BRL LICENSE NO. C-490

BM #3 - RR SPIKE IN BASE OF 18" PINE
-L- STA. 144+31.86, 52.89' RT
EL = 52.04'

PROJECT REFERENCE NO.		SHEET NO.	
R-5020A		23	
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 31 OF 40

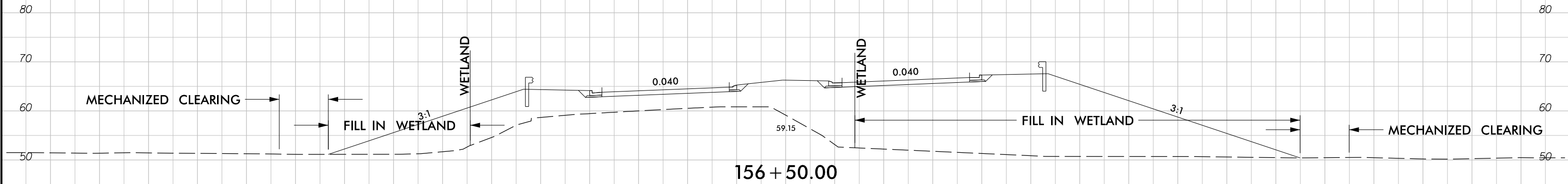
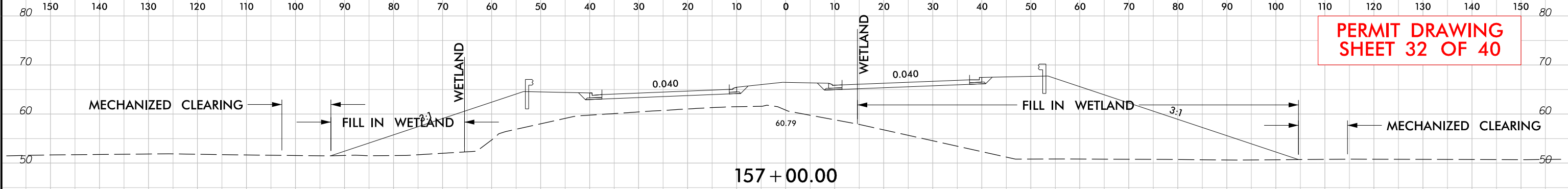
6/23/16



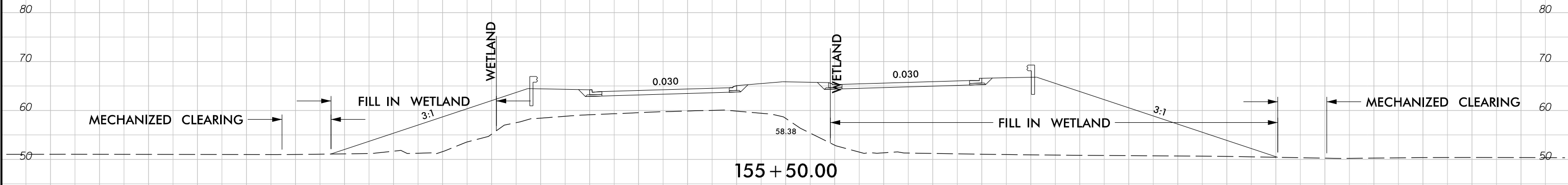
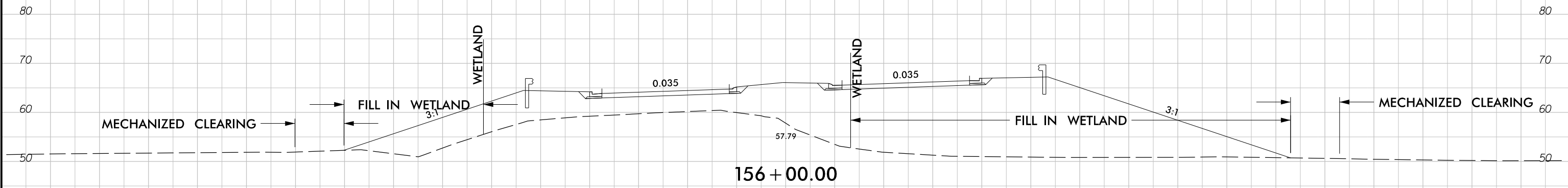
PROJ. REFERENCE NO.
R-5020A

SHEET NO.
X-56

PERMIT DRAWING
SHEET 32 OF 40



SITE 16

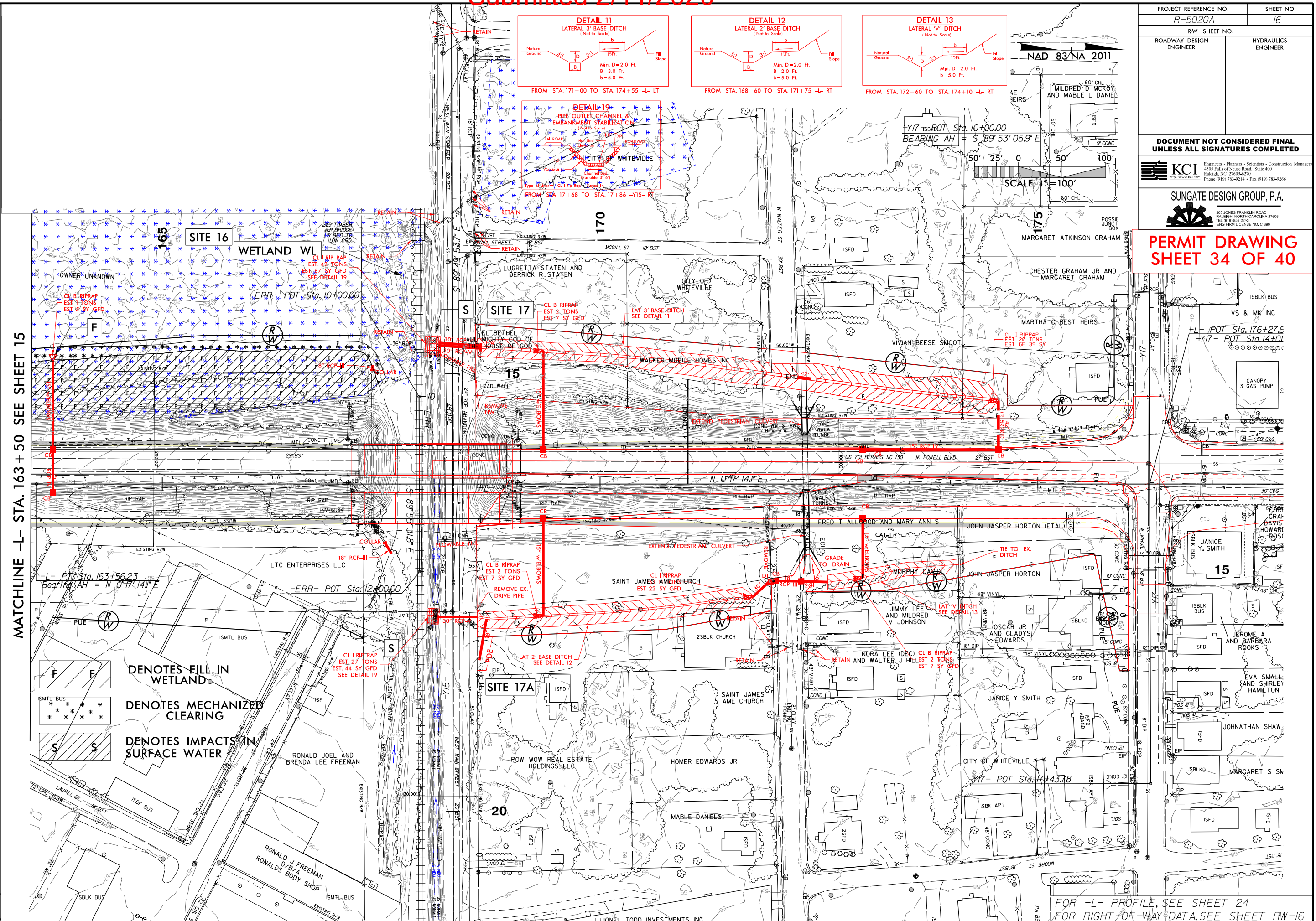


12/21/2019
R5020A_Hyd.prm_wet.psh_15C_xpl.dgn
Harvey

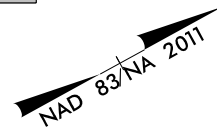
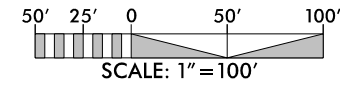
R5020A_Hyd_prm_wet_psh_16.dgn



R5020A_Hyd_prm_wet_psh_16A.dgn

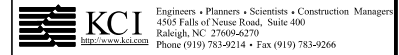






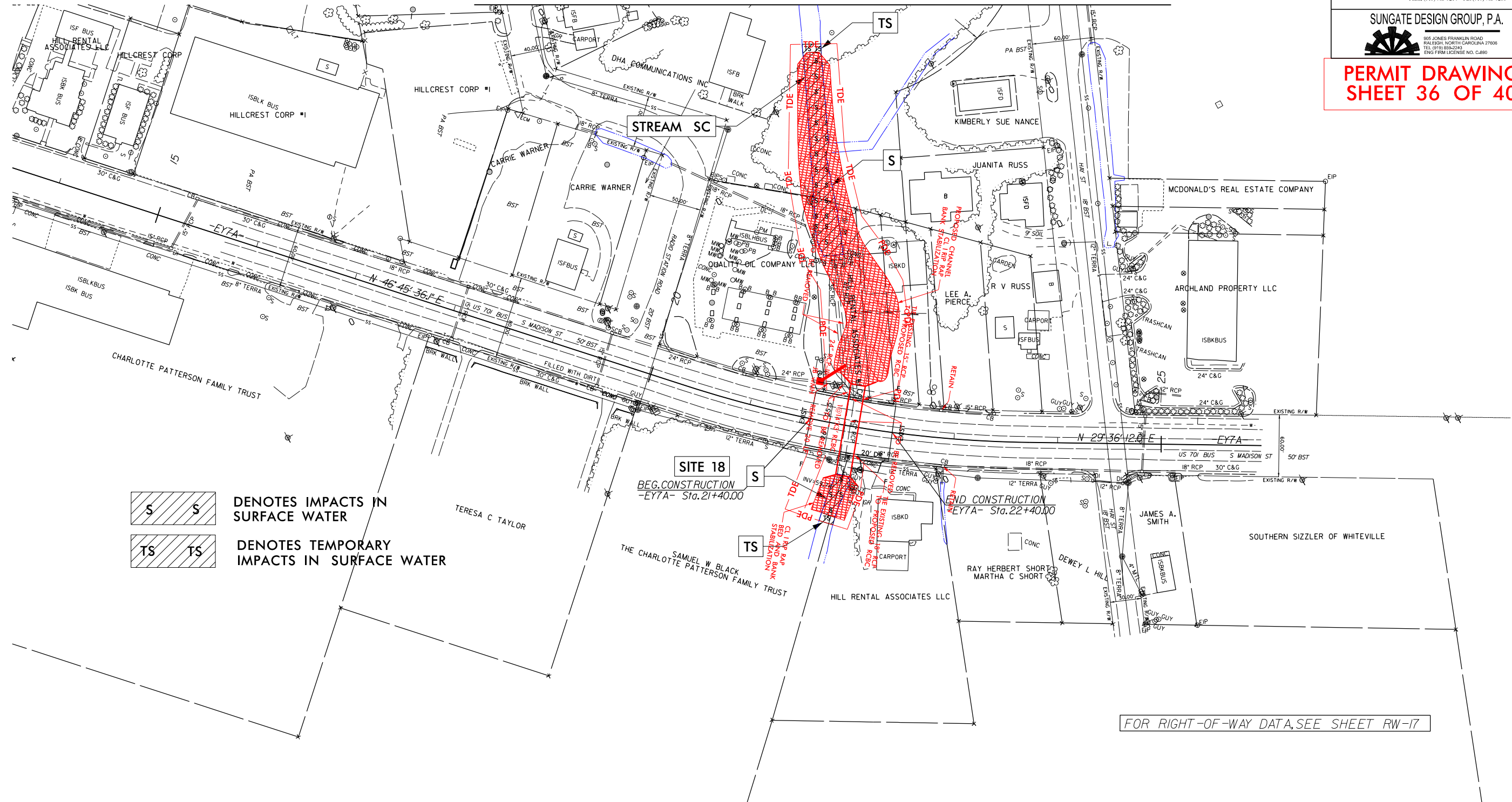
PROJECT REFERENCE NO.		SHEET NO.
R-5020A		17
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



PERMIT DRAWING
SHEET 36 OF 40

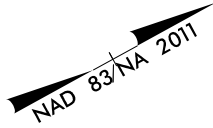
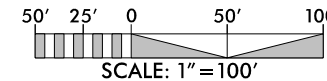
MATCHLINE SEE SHEETS 11 & 12



- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

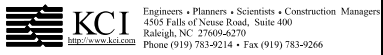
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-17

8/17/99



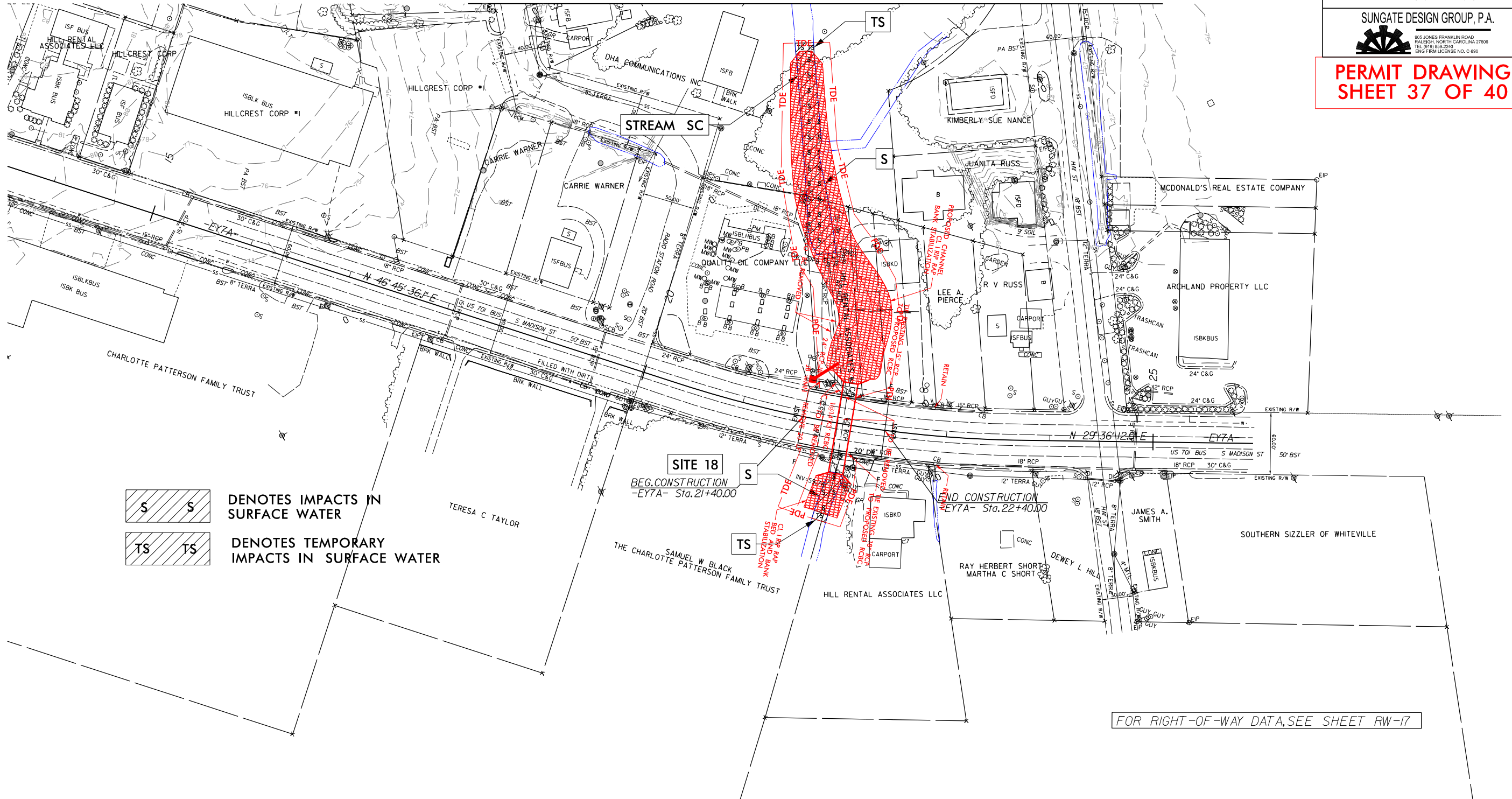
PROJECT REFERENCE NO. <i>R-5020A</i>		SHEET NO. <i>17</i>
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

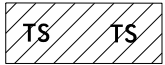


PERMIT DRAWING
SHEET 37 OF 40

MATCHLINE SEE SHEETS 11 & 12

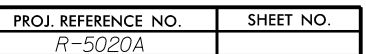


 DENOTES IMPACTS IN SURFACE WATER

 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

FOR RIGHT-OF-WAY DATA, SEE SHEET RW-17

12/27/2018
R-5020A_Hyd.prm_wet.psh_17A.dgn
10:45:48 AM

[illegible]

WETLAND AND SURFACE WATER IMPACTS SUMMARY												
			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	14+75 to 15+97-L-RT	60" RCP	0.06		< 0.01	0.03		< 0.01	< 0.01	38	8	
	15+65 to 15+79 -L-RT	BANK STABILIZATION								8		
2	15+75 to 18+80-L-LT	ROADWAY FILL	0.15			0.07		< 0.01	< 0.01	60	15	
	15+88 to 16+08-L-LT	BANK STABILIZATION								20		
3	16+12 to 16+28-L-RT	ROADWAY FILL	< 0.01		< 0.01	< 0.01						
4	17+35 to 18+78-L-RT	ROADWAY FILL	0.05		0.03							
5	33+76 to 34+10-L-LT	ROADWAY FILL						0.01		146		
6	34+45 to 38+12-L-	2 AT 48" RCP						0.03	< 0.01	403	25	
	34+53 to 34+69-L-LT	BANK STABILIZATION								58		
7	66+69 to 67.23-L-RT	ROADWAY FILL						< 0.01	< 0.01	76	15	
8	68+71 to 69+63-L-LT	ROADWAY FILL	0.03			0.02		< 0.01	< 0.01	21	5	
9	68+63 to 69+20-L-RT	DITCH OUTLET					0.01					
10	75+26 to 75+43-L-RT	42" RCP	< 0.01			< 0.01						
11	96+66 to 96+70-L-LT	DRAINAGE INLET							< 0.01		7	
12	99+12 to 99+75-L-RT	ROADWAY FILL	0.01			0.01						
13	111+33 to 111+52-L-RT	ROADWAY FILL						0.01	< 0.01	81	12	
	111+42 to 111+50--L-RT	BANK STABILIZATION								58		
14	111+96 to 113+54-L-RT	ROADWAY FILL	0.16			0.03						
15	120+37 to 122+05-L-	ROADWAY FILL	0.23			0.02						
16	140+41 to 167+55-L-	ROADWAY FILL	5.66			1.03						
	152+31 to 154+24 -L-	BRIDGE	0.16		0.02	0.08	0.38					
17	14+52 to 14+79-Y15-RT	PIPE OUTLET						< 0.01				
17A	17+63 to 17+83-Y15RT	PIPE OUTLET						< 0.01				
TOTALS*:			6.51		0.06	1.30	0.39	0.07	< 0.01	969	87	0

*Rounded totals are sum of actual impacts

NOTES:

Site 15: Will also include 0.078 ac for total take of wetlands

Site 16: Each bent has 5 piers of 24" Diam, 4 bents=20 piers=62.8 SF=0.001 AC

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
01-17-2020
COLUMBUS COUNTY
R-5020A
41499.1.2

revised 2018 Feb

SHEET 39 OF 40

WETLAND AND SURFACE WATER IMPACTS SUMMARY												
			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
18	22+00 -EY7A-	14'x4' RCBC										
	20+43 to 21+57-EY7A-LT	INLET CHANNEL						0.09	< 0.01	197	8	
	21+86 to 22+07-EY7A-RT	OUTLET CHANNEL						0.01	< 0.01	41	8	
	TOTALS THIS SHEET							0.10	< 0.01	238	16	
	TOTALS SHEET 39		6.51		0.06	1.30	0.39	0.07	< 0.01	969	87	
TOTALS*:			6.51		0.06	1.30	0.39	0.17	0.02	1207	103	0

*Rounded totals are sum of actual impacts

NOTES:

Site 15: Will also include 0.078 ac for total take of wetlands

Site 16: Each bent has 5 piers of 24" Diam, 4 bents=20 piers=62.8 SF=0.001 AC

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
01-17-2020
COLUMBUS COUNTY
R-5020A
41499.1.2

SHEET 40 OF 40