

KCP-20663X2

COMPUTED BY: Will Hines, Jr., PE DATE: 4/12/2018
CHECKED BY: Joshua G. Dalton, PE DATE: 4/12/2018

PROJECT NO. R-5020B SHEET NO. 3D-11

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), R. C. PIPE CLASS III, R. C. PIPE CLASS IV, DUCTILE IRON PIPE TYPE 3 SEALED PIPE SYSTEM SEE SPECIAL PROVISIONS, QUANTITIES FOR SEALED DRAINAGE STRUCTURES, ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, OPEN THROAT C.B. STD., D.I. FRAME AND GRATES STD., G.D.I. TYPE "A" STD., G.D.I. TYPE "B" STD., G.D.I. TYPE "D" STD., G.D.I. (W.S. FLAT) FRAME WITH GRATE STD., G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD., G.D.I. (W.S. SAG) FRAME W/ GRATE STD., G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD., G.D.I. (N.S. SAG) FRAME W/ GRATE STD., G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD., G.D.I. (N.S. FLAT) FRAME W/ GRATE STD., J.B. STD., T.B.D.I. STD., M.H. STD., M.H. FRAME AND COVER STD., CONVERT EXISTING C.B. TO J.B., CONVERT EXISTING C.B. TO D.I., CONVERT EXISTING D.I. TO J.B., SLUICE GATE (DRY DETENTION BASIN), ADJUST D.I., 15" DRAINAGE PIPE ELBOW, FLOWABLE FILL, CONCRETE COLLARS CL. "B" STD., CONCRETE AND BRICK PIPE PLUG STD., PIPE REMOVAL, REMARKS, and SHEET TOTALS.

KCP-20663X2

COMPUTED BY: Will Hines, Jr., PE DATE: 4/12/2018
CHECKED BY: Joshua G. Dalton, PE DATE: 4/12/2018

PROJECT NO. R-5020B SHEET NO. 3D-12

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns for Line & Station, Offset, Structure Number, Invert Elevation, Pipe Class (R.C. Pipe Class III/IV, Ductile Iron Pipe), Quantities for Sealed Drainage Structures, Endwalls, Reinforced Endwalls, Drainage Structure, Quantities for Drainage Structures, Frame, Grates, and Hood, Concrete Transitional Section, and Pipe Removal. Includes a 'SHEET TOTALS' row at the bottom.

ABBREVIATIONS table listing symbols and their corresponding materials or components like C.A.A. CORRUGATED ALUMINIUM ALLOY, C.B. CATCH BASIN, etc.

REMARKS

KCP-20663X2

COMPUTED BY: Will Hines, Jr., PE DATE: 4/12/2018
CHECKED BY: Joshua G. Dalton, PE DATE: 4/12/2018

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. R-5020B SHEET NO. 3D-14

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns: LINE & STATION, SIZE, THICKNESS OR GAUGE, OFFSET, STRUCTURE NUMBER, FROM, TO, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), R. C. PIPE CLASS III, R. C. PIPE CLASS IV, DUCTILE IRON PIPE TYPE 3 SEALED PIPE SYSTEM SEE SPECIAL PROVISIONS, QUANTITIES FOR SEALED DRAINAGE STRUCTURES, ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, OPEN THROAT C.B., D.I. STD., G.D.I. TYPE, G.D.I. (W.S. SAG) FRAME, G.D.I. (W.S. SAG) FRAME W/ 2 GRATES, G.D.I. (N.S. SAG) FRAME, G.D.I. (N.S. SAG) FRAME W/ 2 GRATES, G.D.I. (N.S. FLAT) FRAME, G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES, J.B. STD., T.B.D.I. STD., M.H. STD., M.H. FRAME AND COVER, CONVERT EXISTING C.B. TO J.B., CONVERT EXISTING C.B. TO D.I., SLUICE GATE (DRY DETENTION BASIN), ADJUST D.I., 15" DRAINAGE PIPE ELBOW, FLOWABLE FILL, CONCRETE COLLARS, CONCRETE AND BRICK PIPE PLUG, PIPE REMOVAL, ABBREVIATIONS, REMARKS.

SHEET TOTALS

WINNES

COMPUTED BY: Will Hines, Jr., PE DATE: 4/12/2018
CHECKED BY: Joshua G. Dalton, PE DATE: 4/12/2018

PROJECT NO. R-5020B SHEET NO. 3D-16

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54 INCHES & OVER)

Main data table with columns: LINE & STATION, SIZE, THICKNESS OR GAUGE, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), R. C. PIPE CLASS III, R. C. PIPE CLASS IV, ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, OPEN THROAT, D.I. FRAME AND GRATES, G.D.I. TYPE, G.D.I. (W.S. FLAT) FRAME WITH GRATE, G.D.I. (W.S. SAG) FRAME W/ GRATE, G.D.I. (N.S. SAG) FRAME W/ GRATE, T.B.J.B. STD., T.B.D.I. STD., T.B.D.I. FOR STEEL GRATES, STEEL FRAME WITH TWO GRATES, TEMP STEEL PLATE COVER MASONRY DRAINAGE, M.H. STD., M.H. FRAME AND COVER, FLOWABLE FILL, CONCRETE COLLARS, CONCRETE AND BRICK PIPE PLUG, PIPE REMOVAL, and REMARKS.

SHEET TOTALS: 560, 292, 112, 42.102, 5, 2, 1, 2, 4, 1, 5
PROJECT TOTALS: 560, 292, 112, 42.102, 5, 2, 1, 2, 4, 1, 5

ABBREVIATIONS
C.A.A. CORRUGATED ALUMINIUM ALLOY
C.B. CATCH BASIN
C.S. CORRUGATED STEEL
D.I. DROP INLET
G.D.I. GRATED DROP INLET
H.D.P.E. HIGH DENSITY POLYETHYLENE
J.B. JUNCTION BOX
M.H. MANHOLE
N.S. NARROW SLOT
P.V.C. POLYVINYL CHLORIDE
R.C. REINFORCED CONCRETE
T.B.D.I. TRAFFIC BEARING DROP INLET
T.B.J.B. TRAFFIC BEARING JUNCTION BOX
W.S. WIDE SLOT

COMPUTED BY: J. PARK DATE: 2/25/2019
 CHECKED BY: B. SMITH DATE: 3/18/2020

(1-16-18)

PROJECT NO.	SHEET NO.
R-5020B	3G-1

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS**

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	200
				TOTAL LF:	200

*UD = Underdrain
 *BD = Blind Drain
 *SD = Subsurface Drain

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU/AST	Aggregate Thickness INCHES	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS	
-L-	182+90	227+25	ASU	12	6380	12280	18660			
-RPB-	11+30	13+75	ASU	12	120	220	340			
CONTINGENCY							400		500	
					TOTAL CY/TONS/SY:	6500	12500**	19400**	0	500

*ASU = Aggregate Subgrade
 *AST = Aggregate Stabilization
 **Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities for ASU/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.

SUMMARY OF REINFORCED SOIL SLOPES AND SLOPE EROSION CONTROL

LINE	Beginning Slope/ RSS (H:V)	Approx. Station	Ending Slope/ RSS (H:V)	Approx. Station	Location LT/RT	Reinforced Soil Slope (RSS) SY	Geocells SY	Coir Fiber Mat SY	Matting for Erosion Control SY	
-L-	2.5	248+25 ±	2.5	251+25 ±	LT	650			650	
						TOTAL SY:	650	0	0*	650**

*Total square yards of "Coir Fiber Mat" is only the estimated quantity for slopes steeper than 2:1 (H:V) and may only represent a portion of the coir fiber mat quantity shown in the Item Sheets of the Proposal.
 **Total square yards of "Matting for Erosion Control" is only the estimated quantity for RSS and may only represent a portion of the matting quantity shown in the Item Sheets of the Proposal.

**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**

PARCEL INDEX SHEET

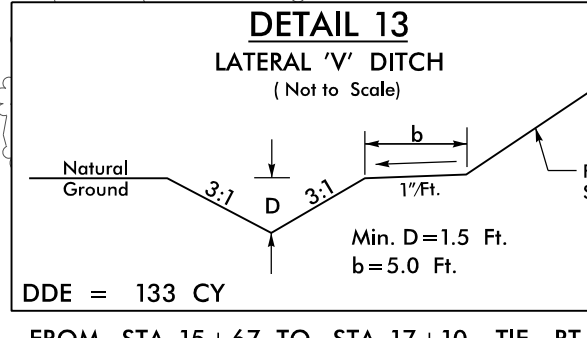
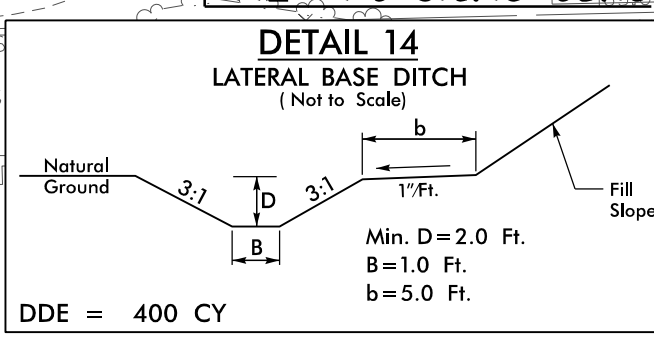
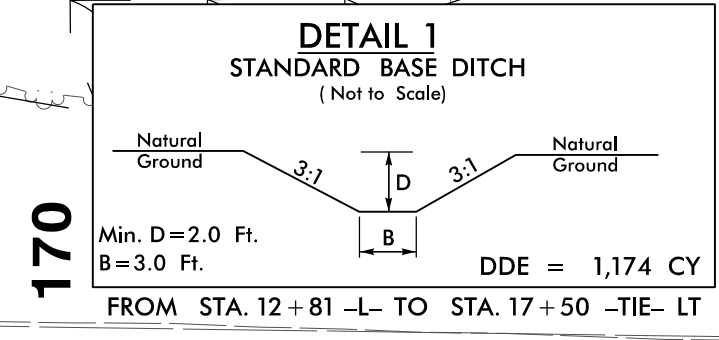
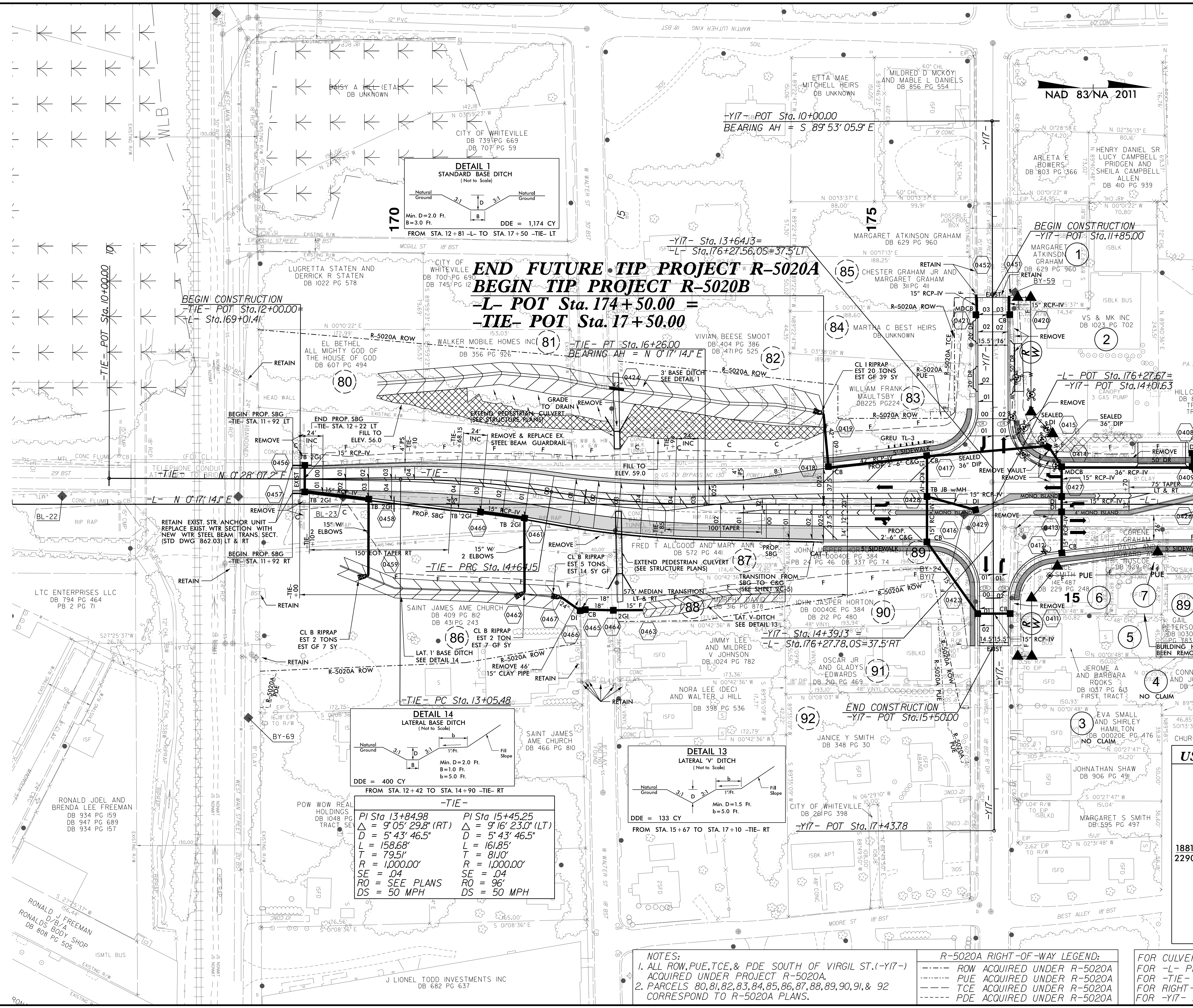
PROJ. REFERENCE NO.	SHEET NO.
R-5020B	3P-1

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	MARGARET ATKINSON GRAHAM
2	4	VS & MK INC
3	4	EVA SMALL AND SHIRLEY HAMILTON - (NO CLAIM)
4	4	CONNIE EDWARDS AND JOHN S YOUNG - (NO CLAIM)
5	4	JEROME A AND BARBARA ROOKS
6	4	JANICE Y. SMITH
7	4	CORENE GRAHAM DAVIS AND HOWARD AND ROSCOE
8	4	DEPARTMENT OF TRANSPORTATION
9	4	MBB HOLDINGS LLC
10	4,5	HAMMONDS MYRA LEE
11	5	SON-FISH CORP
12	5	CAROL JOHN CALDWELL
13	5	JANICE Y. SMITH
14	5	JESSE P. AND ROSE WALKER
15	5	EDITH M RUSSELL AND LINDA A KOPRA
16	5	LENNON AND SPAULDING AMERICAN LEGION POST NO. 233
17	5	JUANITA G TROY
18	5	WHITEVILLE ABC STORE
19	5	SIBBETT PROPERTIES INC
20	5	SIBBETT PROPERTIES INC
21	5	WACCAMAW DEVELOPMENT CORP
22	5	LOIS WILLIAMS GERALD REVOCABLE LIVING TRUST TRACT 1
23	5	GERALD & GERALD (INC)
24	5	JOHN E JR AND SARA B THOMPSON
25	5,6	MARY ALICE BULLOCK
26	6	SIGNET HEALTHCARE INC
27	6	JAMES DAVID AND VIRGINIA MAE NORRIS
28	6	AMICUS INVESTMENTS LLC
29	6	HOLLY FAMILY, LLC
30	6	JAMES E(DEC) AND GLORIA MCCULLUM
31	6	KCS FARMS LLC
32	6	PREMIERE ENTERPRISES OF WHITEVILLE LLC
33	6	PREMIERE PROPERTIES OF WHITEVILLE, LLC
34	6,7	US 701 DRIVE IN, LLC
35	5,6	CRESCOM BANK
36	6	LESSOR PROPERTIES LLC
37	6	STANLEY SAM P (III)
38	6	DEWEY L. HILL
39	6	HILLCREST CORP
40	6,7	E AUTRY AND FAYE DAWSEY
42	7	GORDON CHEE-MING AND SIU-YUNG WONG
43	7	JEROME A AND BARBARA ROOKS
44	7	COLUMBUS COUNTY
45	7	RJ HAMILTON INVESTMENTS, LLC
46	7	PREMIER ENTERPRISES OF WHITEVILLE
47	7	JONATHAN KYLE COX
48	7,8	O'REILLY AUTOMOTIVE INC
49	6,7	WHITEVILLE CITY BD OF EDUCATION
50	7,8	DAWSEY INVESTMEN COMPANY INC
51	8	LESSOR PROPERTIES LLC
52	8	SERVICE REALTY COMPANY
53	8	Z V PATE INC
54	8	Z V PATE INC
55	8	CITY OF WHITEVILLE
56	8	ARCP WG PORTFOLIO II LLC
57	8,9	DEPARTMENT OF TRANSPORTATION
58	8	PREMIERE ENTERPRISES OF WHITEVILLE
59	8	BASS - FISHER PROPERTIES, LLC
60	8	PREMIERE ENTERPRISES OF WHITEVILLE
61	8	CHARLES ARON AND HEIDI DUNCAN

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
62	8	PREMIER ENTERPRISES OF WHITEVILLE, LLC
63	8	WILSON ELAINE ELLIOTT
64	8	WHITEVILLE MINI MALL LLC
64A	8	WHITEVILLE MINI MALL LLC
65	8	YAM CITY OIL CO, INC
66	8	REALTY INCOME PROP. 21 LLC
67	8,9	WHITEVILLE HEBREW CENTER
68	9	PEGGY H AND JOHN J NOROSKY
69	9	701 ASSOCIATES INC
70	9	MARY JO BULLARD WILLIAMSON
71	9	CAMPBELL RENTALS LLC
72	9	4C DEVELOPMENT LLC
73	9	GOLD LEAF INVESTMENTS LLC
74	9	WILLIAM E AND BETTIE LOU P MEMORY
75	9	FIRST BANK WHITEVILLE NORTH CAROLINA
76	9	PULLIAM WHITEVILLE LLC
77	9	CARNES HOLDINGS LLC
78	9,10	HOOKS AND HUGGINS NORTHFIELD LLC
79	9,10	KYLE A. COX AND JONATHAN K. COX
80	10	HOOKS AND HUGGINS DEVELOPMENT LLC
81	10	STATE EMPLOYEE CREDIT UNION
82	11,12	PREMIERE ENTERPRISES OF WH LLC
83	12	PRIDGEN MORRIS DELANO
84	5	JAMES O PRICE AND EDITH G
85	5	SHAW ARMWOOD
86	6	COLLIER FAMILY PROPERTIES LLC
87	7	HUANG DE KE
88	7	ELRA F AND BARBARA JANE INMAN
89	4	GAIL PETERSON
90	8	BRYANT RESTAURANTS INC
91	9	SHIRLEY J. EVANS (NO CLAIM)
92	9	HOOKS AND HUGGINS DEVELOPMENT LLC
93	5	EUGENE J AND CORA CALDWELL
94	5	TMS FAMILY SERVICES INC

8/17/2019 10:17:00 AM R:\2019\161899\161899\161899\Roadway\Proj\R-5020B_Rdw_psh_4.dgn

PROJECT REFERENCE NO. R-5020B	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



-TIE-

PI Sta 13+84.98	PI Sta 15+45.25
$\Delta = 9' 05" 29.8" (RT)$	$\Delta = 9' 16" 23.0" (LT)$
$D = 5' 43" 46.5"$	$D = 5' 43" 46.5"$
$L = 158.68'$	$L = 161.85'$
$T = 79.51'$	$T = 81.0'$
$R = 1,000.00'$	$R = 1,000.00'$
$SE = .04$	$SE = .04$
$RO = SEE PLANS$	$RO = 96'$
$DS = 50 MPH$	$DS = 50 MPH$

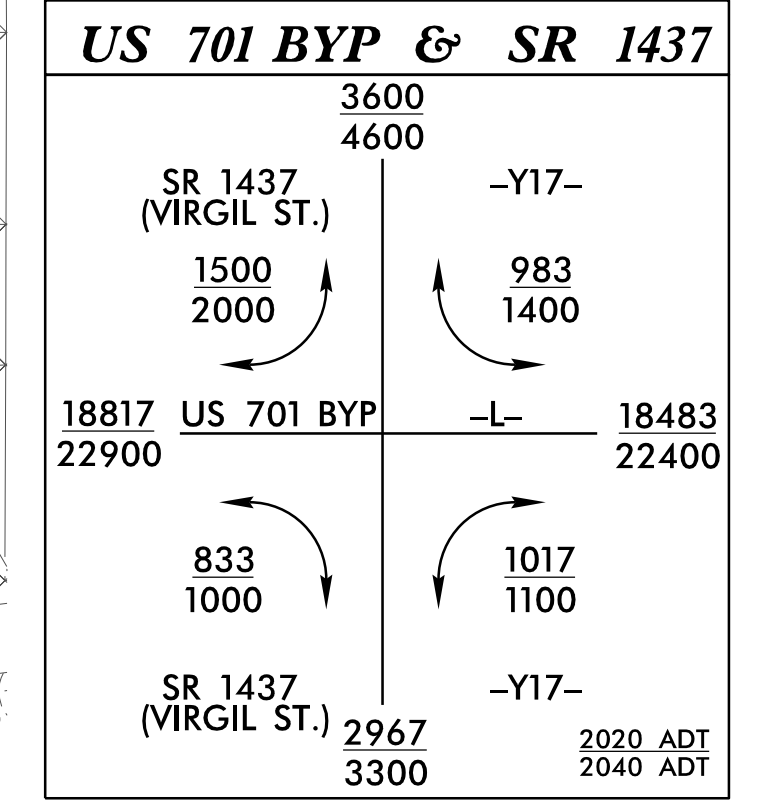
NOTES:

- ALL ROW, PUE, TCE, & PDE SOUTH OF VIRGIL ST. (-Y17-) ACQUIRED UNDER PROJECT R-5020A.
- PARCELS 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, & 92 CORRESPOND TO R-5020A PLANS.

R-5020A RIGHT-OF-WAY LEGEND:

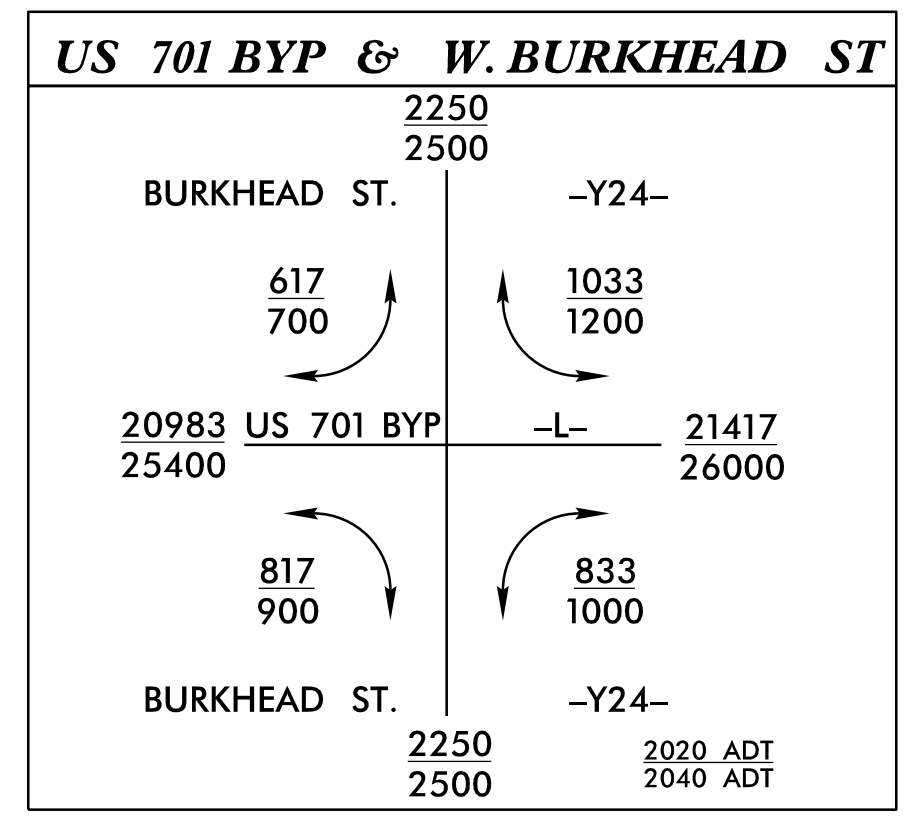
- ROW ACQUIRED UNDER R-5020A
- PUE ACQUIRED UNDER R-5020A
- TCE ACQUIRED UNDER R-5020A
- PDE ACQUIRED UNDER R-5020A

FOR CULVERT PLANS, SEE SHEETS CI-1 TO CI-4
FOR -L- PROFILE, SEE SHEET 15
FOR -TIE- PROFILE, SEE SHEET 23
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-4
FOR -Y17- INTERSECTION DETAIL, SEE SHEET 2B-3



MATCHLINE -L- STA. 180+00 SEE SHEET 5

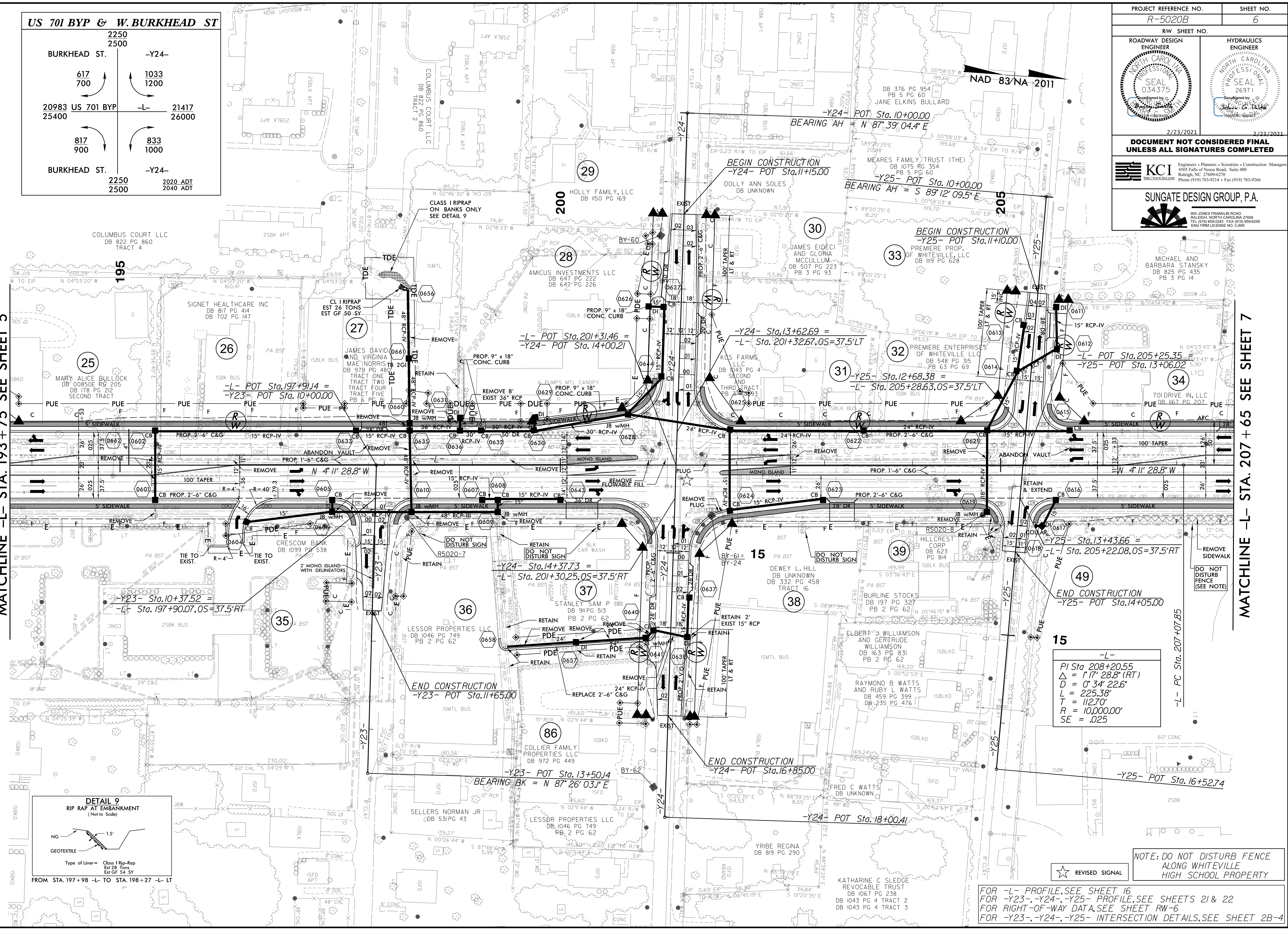
8.17.799


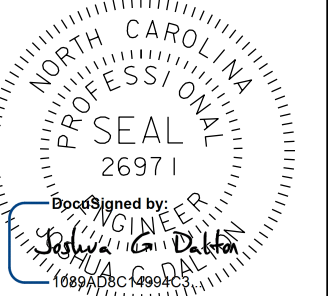




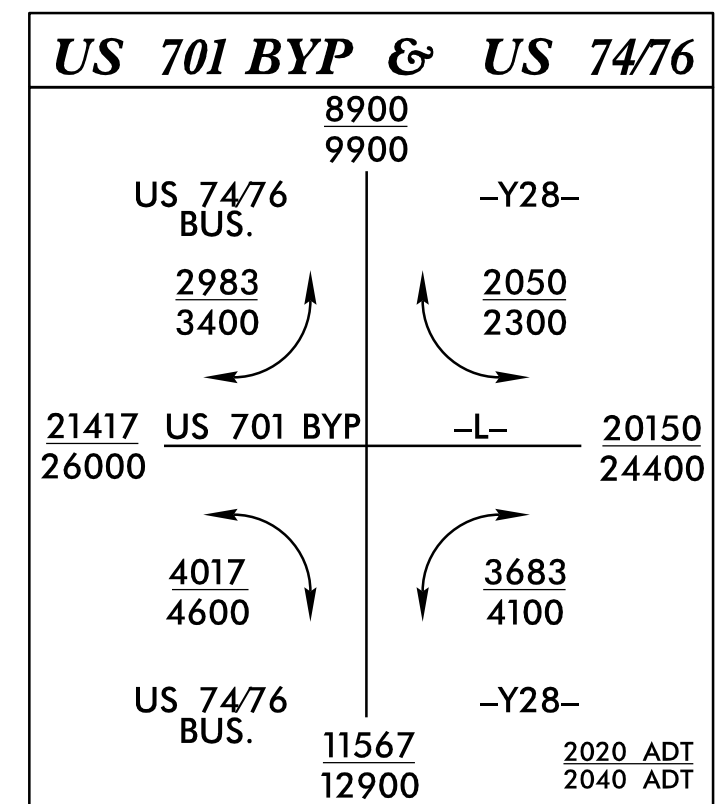
PROJECT REFERENCE NO. R-5020B	SHEET NO. 6
ROADWAY DESIGN ENGINEER KCI	HYDRAULICS ENGINEER KCI
SEAL 054375	SEAL 26971
2/23/2021	2/23/2021
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
SUNGATE DESIGN GROUP, P.A.	

MATCHLINE -L- STA. 193 + 75 SEE SHEET 5

MATCHLINE -L- STA. 207 + 65 SEE SHEET 7



PROJECT REFERENCE NO. R-5020B		SHEET NO. 8	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
 SEAL 034375 2/25/2021		 SEAL 26971 2/25/2021	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
 KCI <small>Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266</small>			
 SUNGATE DESIGN GROUP, P.A. <small>800 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 TEL (919) 859-2243 FAX (919) 859-6258 ENG FROM LICENSE NO. C4600</small>			



-Y28-
 PI Sta 12+83.25
 $\Delta = 8^{\circ}56'07.0''$ (RT)
 $D = 2^{\circ}23'14.4''$
 $L = 374.28'$
 $T = 187.52'$
 $R = 2,400.00'$

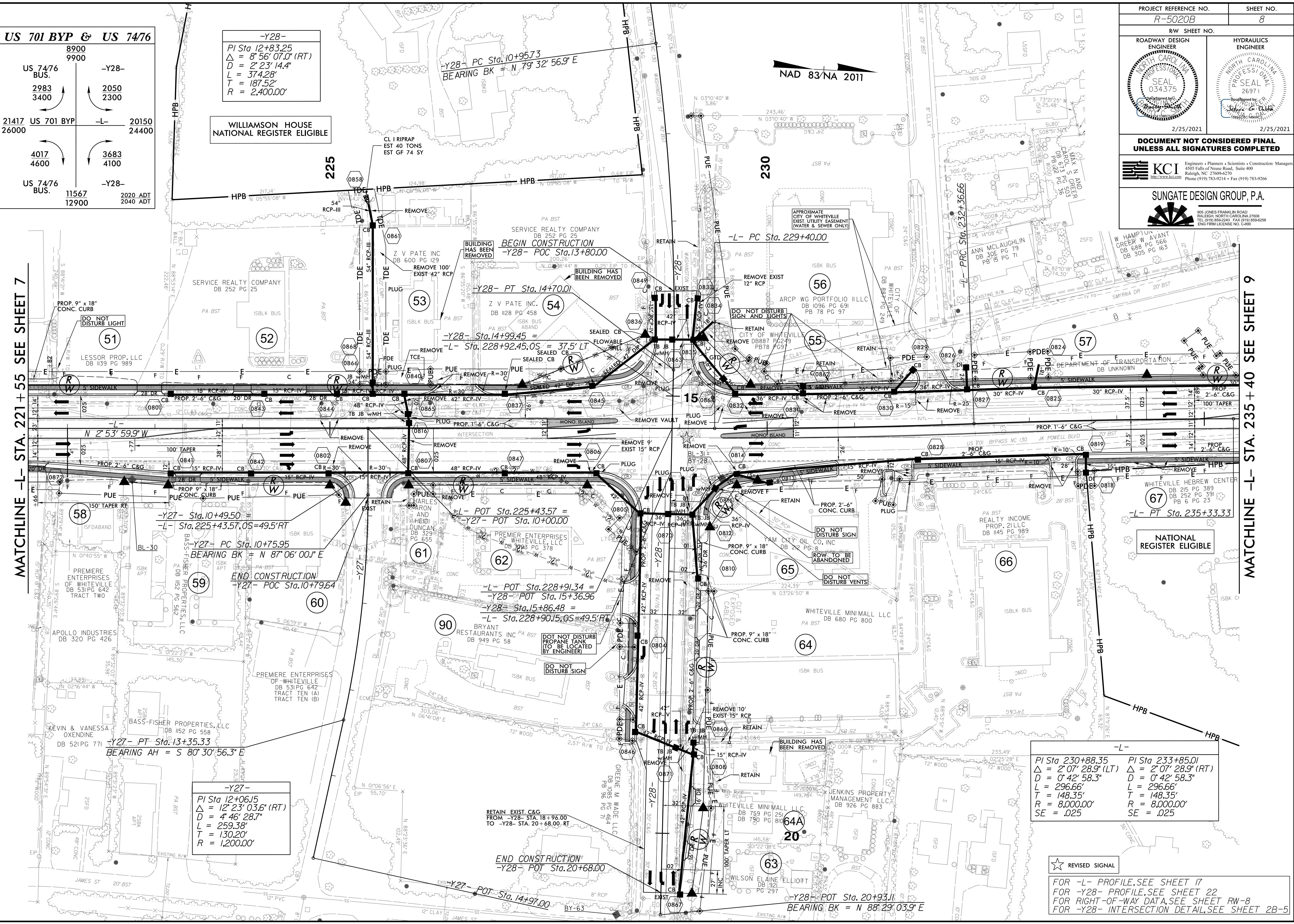
WILLIAMSON HOUSE
 NATIONAL REGISTER ELIGIBLE

-Y28- PC Sta. 10+95.73
 BEARING BK = N 79°32'56.9° E

NAD 83/NA 2011

MATCHLINE -L- STA. 221+55 SEE SHEET 7

MATCHLINE -L- STA. 235+40 SEE SHEET 9



-Y27- PC Sta. 10+75.95
 BEARING BK = N 87°06'00.0° E

-Y27-
 PI Sta 12+06.15
 $\Delta = 12^{\circ}23'03.6''$ (RT)
 $D = 4^{\circ}46'28.7''$
 $L = 259.38'$
 $T = 130.20'$
 $R = 1,200.00'$

-L- POT Sta. 228+91.34 =
-Y28- POT Sta. 15+36.96
-Y28- Sta. 15+86.48 =
-L- Sta. 228+90.15, OS=49.5'

-L-
 PI Sta 230+88.35 $\Delta = 2^{\circ}07'28.9''$ (LT)
 $D = 0^{\circ}42'58.3''$
 $L = 296.66'$
 $T = 148.35'$
 $R = 8,000.00'$
 SE = .025

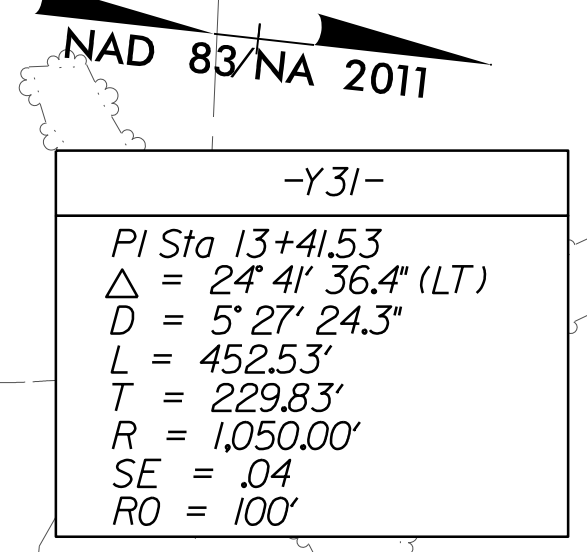
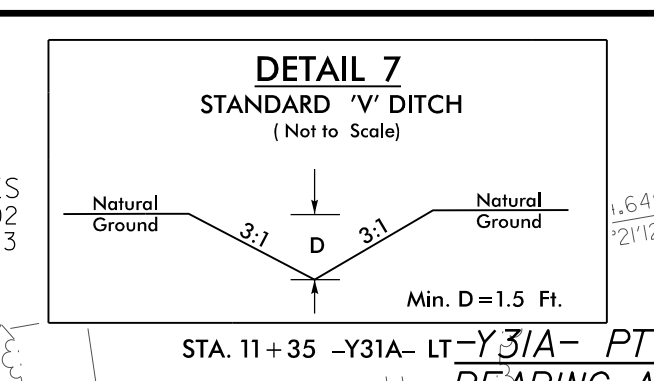
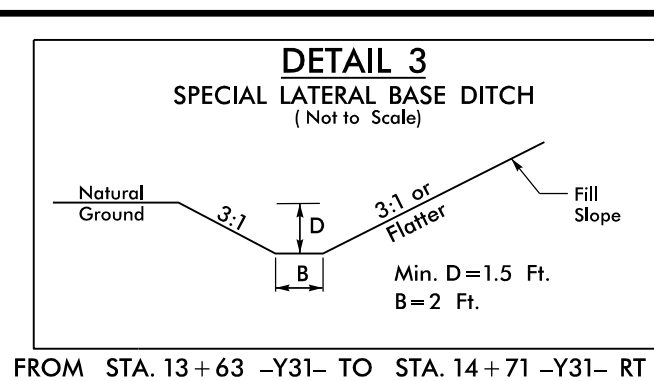
-L-
 PI Sta 233+85.01 $\Delta = 2^{\circ}07'28.9''$ (RT)
 $D = 0^{\circ}42'58.3''$
 $L = 296.66'$
 $T = 148.35'$
 $R = 8,000.00'$
 SE = .025

★ REVISED SIGNAL

FOR -L- PROFILE, SEE SHEET 17
 FOR -Y28- PROFILE, SEE SHEET 22
 FOR RIGHT-OF-WAY DATA, SEE SHEET RW-8
 FOR -Y28- INTERSECTION DETAIL, SEE SHEET 2B-5

25-FEB-2021 09:28:99 NCDOT R-5020B US 701 Widening\Roadway\Pro\1\N\5020B_Rd\psh_8.dgn
 25-FEB-2021 09:28:99 NCDOT R-5020B US 701 Widening\Roadway\Pro\1\N\5020B_Rd\psh_8.dgn
 25-FEB-2021 09:28:99 NCDOT R-5020B US 701 Widening\Roadway\Pro\1\N\5020B_Rd\psh_8.dgn

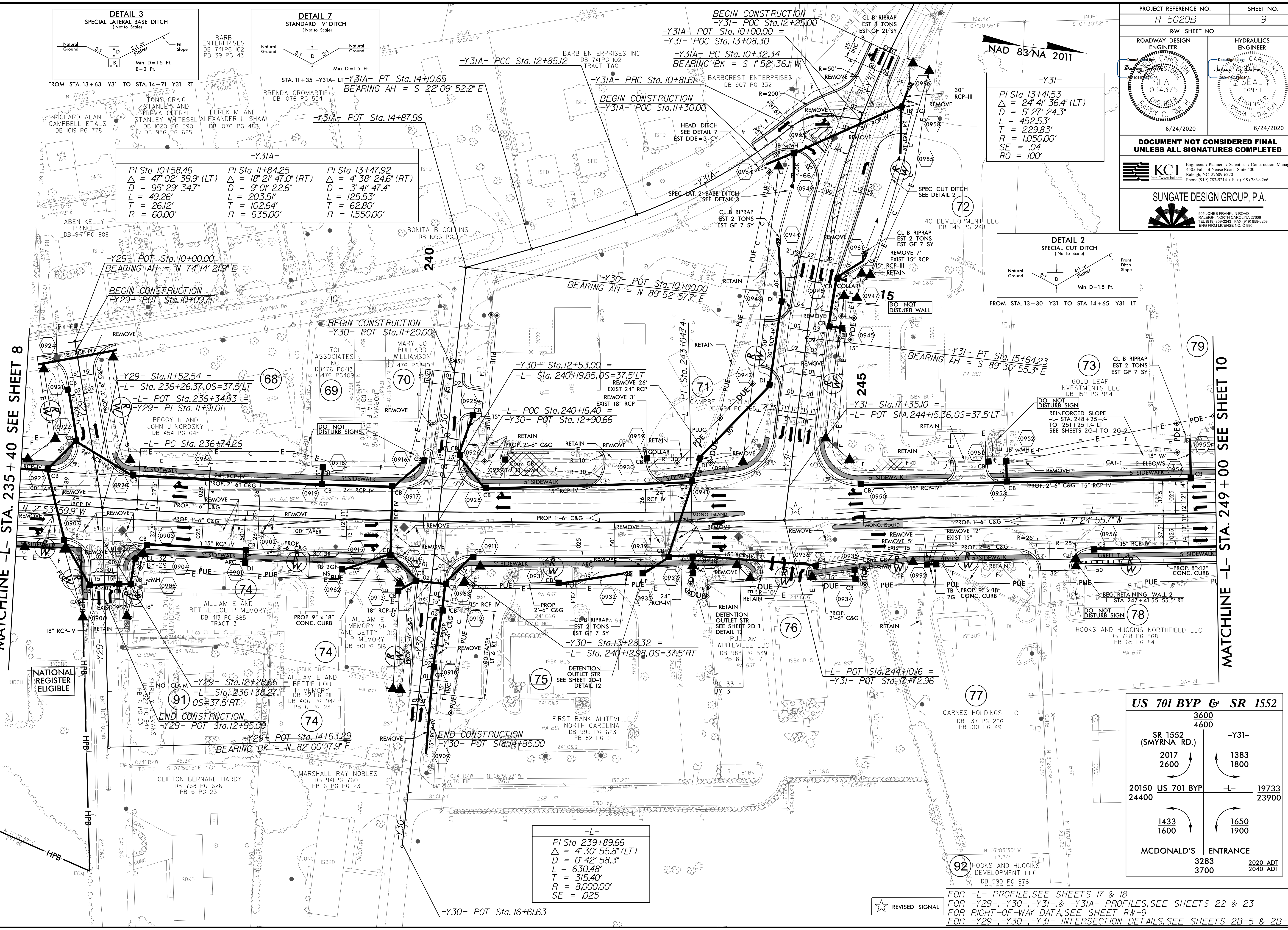
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PROJECT REFERENCE NO. R-5020B	SHEET NO. 9
ROADWAY DESIGN ENGINEER PAUL C. SMITH	HYDRAULICS ENGINEER JOSHUA G. DALTON
6/24/2020	6/24/2020
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
KCI Engineers • Planners • Scientists • Construction 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. 800 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 TEL (919) 858-2243 FAX (919) 858-6258 ENG FIRM LICENSE NO. C4600	

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

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



-Y31A-

PI Sta 10+58.46 $\Delta = 47^{\circ}02'39.9"$ (LT) D = 95.29' 34.7" L = 49.26' T = 26.12' R = 60.00'	PI Sta 11+84.25 $\Delta = 18^{\circ}21'47.0"$ (RT) D = 9'01' 22.6" L = 203.51' T = 102.64' R = 635.00'	PI Sta 13+47.92 $\Delta = 4^{\circ}38'24.6"$ (RT) D = 3'41' 47.4" L = 125.53' T = 62.80' R = 1,550.00'
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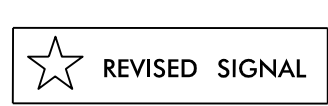
-L-

PI Sta 239+89.66 $\Delta = 4^{\circ}30'55.8"$ (LT) D = 0'42' 58.3" L = 630.48' T = 315.40' R = 8,000.00' SE = .025
--

US 701 BYP & SR 1552

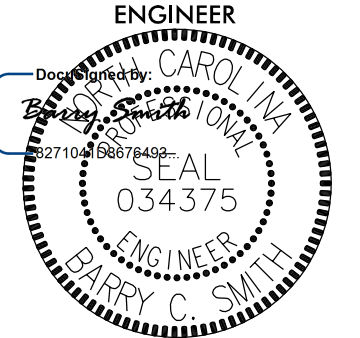
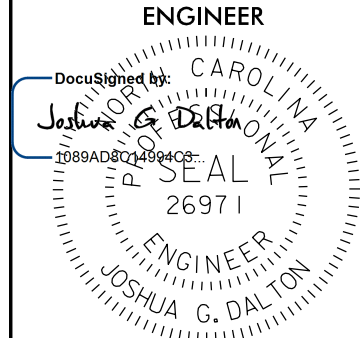


3600			
4600			
	SR 1552 (SMYRNA RD.)	-Y31-	
2017	2600	1383	1800
20150	24400	US 701 BYP	-L-
			19733
1433	1600		23900
		MCDONALD'S ENTRANCE	
3283	3700	2020 ADT	2040 ADT

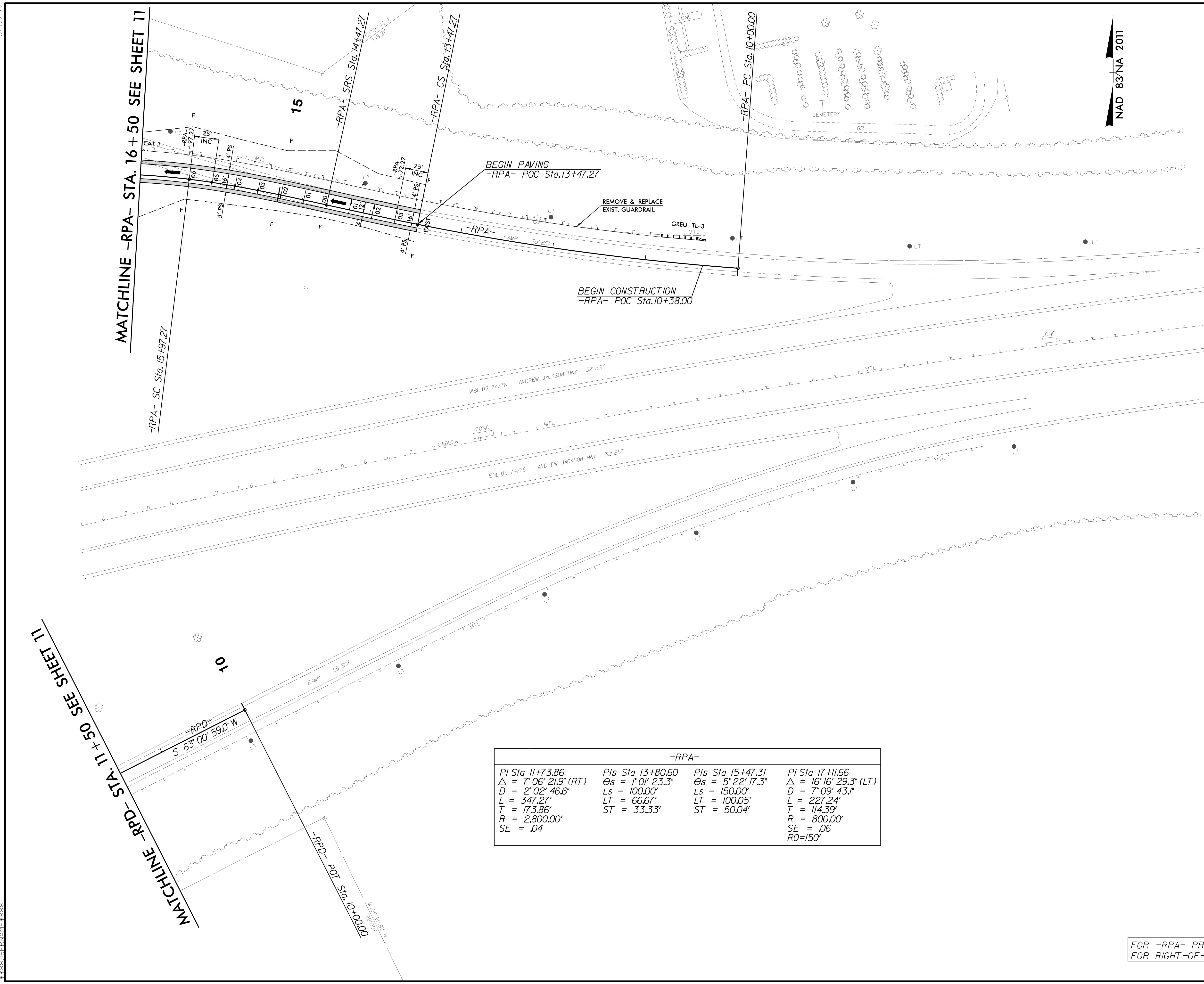
FOR -L- PROFILE, SEE SHEETS 17 & 18
 FOR -Y29-, -Y30-, -Y31-, & -Y31A- PROFILES, SEE SHEETS 22 & 23
 FOR RIGHT-OF-WAY DATA, SEE SHEET RW-9
 FOR -Y29-, -Y30-, -Y31- INTERSECTION DETAILS, SEE SHEETS 2B-5 & 2B-6



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8/17/99

PROJECT REFERENCE NO. <i>R-5020B</i>		SHEET NO. <i>13</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 		HYDRAULICS ENGINEER 	
6/24/2020		6/24/2020	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
 KCI <small>Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609-6270 Phone (919) 783-9214 • Fax (919) 783-9266</small>			
 SUNGATE DESIGN GROUP, P.A. <small>805 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 TEL (919) 859-2243 FAX (919) 859-6258 ENG FIRM LICENSE NO. C-400</small>			



-RPA-			
PI Sta 11+73.86	PIs Sta 13+80.60	PIs Sta 15+47.31	PI Sta 17+11.66
$\Delta = 7^{\circ} 06' 21.9" (RT)$	$\Theta s = 1^{\circ} 01' 23.3"$	$\Theta s = 5^{\circ} 22' 17.3"$	$\Delta = 16^{\circ} 16' 29.3" (LT)$
$D = 2^{\circ} 02' 46.6"$	$Ls = 100.00'$	$Ls = 150.00'$	$D = 7^{\circ} 09' 43.1"$
$L = 347.27'$	$LT = 66.67'$	$LT = 100.05'$	$L = 227.24'$
$T = 173.86'$	$ST = 33.33'$	$ST = 50.04'$	$T = 114.39'$
$R = 2,800.00'$			$R = 800.00'$
$SE = .04$			$SE = .06$
			$RO=150'$

FOR -RPA- PROFILE, SEE SHEET 24
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-13

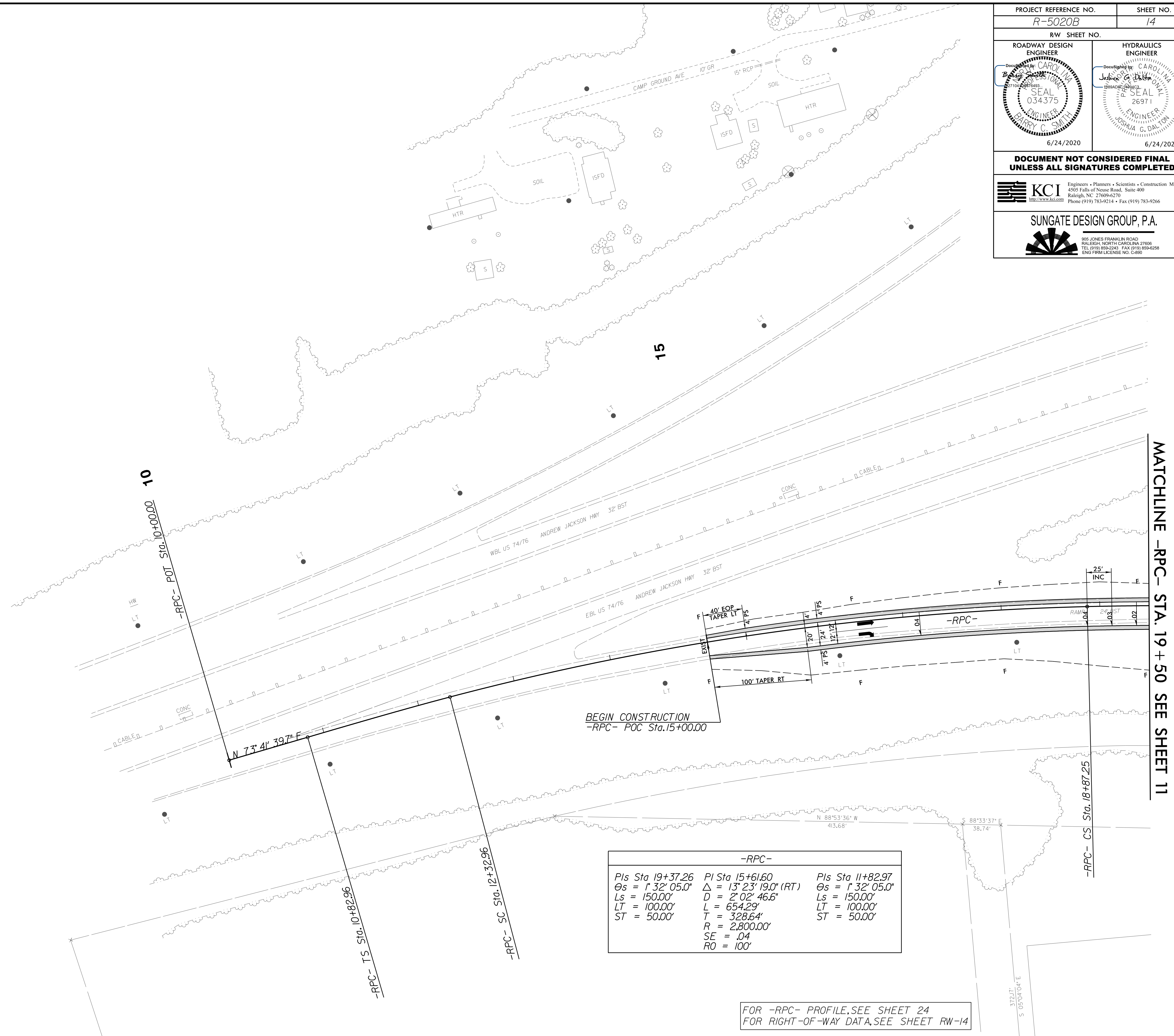
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 \$\$\$\$ USER NAME \$\$\$\$

8/17/99

PR: APR 2020, I: 28
MS: 2016, C: 1501689
NCDDOT R-5020B US 701 Wdrmtng\Roadway\Proc\N\N\5020B_Rdy_psh_14.dgn

NAD 83/NA 2011

PROJECT REFERENCE NO. <i>R-5020B</i>		SHEET NO. <i>14</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER <i>Darryl C. Smith</i>		HYDRAULICS ENGINEER <i>Joshua G. Dalton</i>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
SUNGATE DESIGN GROUP, P.A. <small>800 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 TEL (919) 859-2243 FAX (919) 859-6258 ENG FIRM LICENSE NO. C-400</small>			



-RPC-		
<i>PIs Sta 19+37.26</i>	<i>PI Sta 15+61.60</i>	<i>PIs Sta 11+82.97</i>
<i>θs = 1° 32' 05.0"</i>	<i>Δ = 13° 23' 19.0" (RT)</i>	<i>θs = 1° 32' 05.0"</i>
<i>Ls = 150.00'</i>	<i>D = 2' 02' 46.6"</i>	<i>Ls = 150.00'</i>
<i>LT = 100.00'</i>	<i>L = 654.29'</i>	<i>LT = 100.00'</i>
<i>ST = 50.00'</i>	<i>T = 328.64'</i>	<i>ST = 50.00'</i>
	<i>R = 2,800.00'</i>	
	<i>SE = .04</i>	
	<i>RO = 100'</i>	

FOR -RPC- PROFILE, SEE SHEET 24
FOR RIGHT-OF-WAY DATA, SEE SHEET RW-14

MATCHLINE -RPC- STA. 19 + 50 SEE SHEET 11

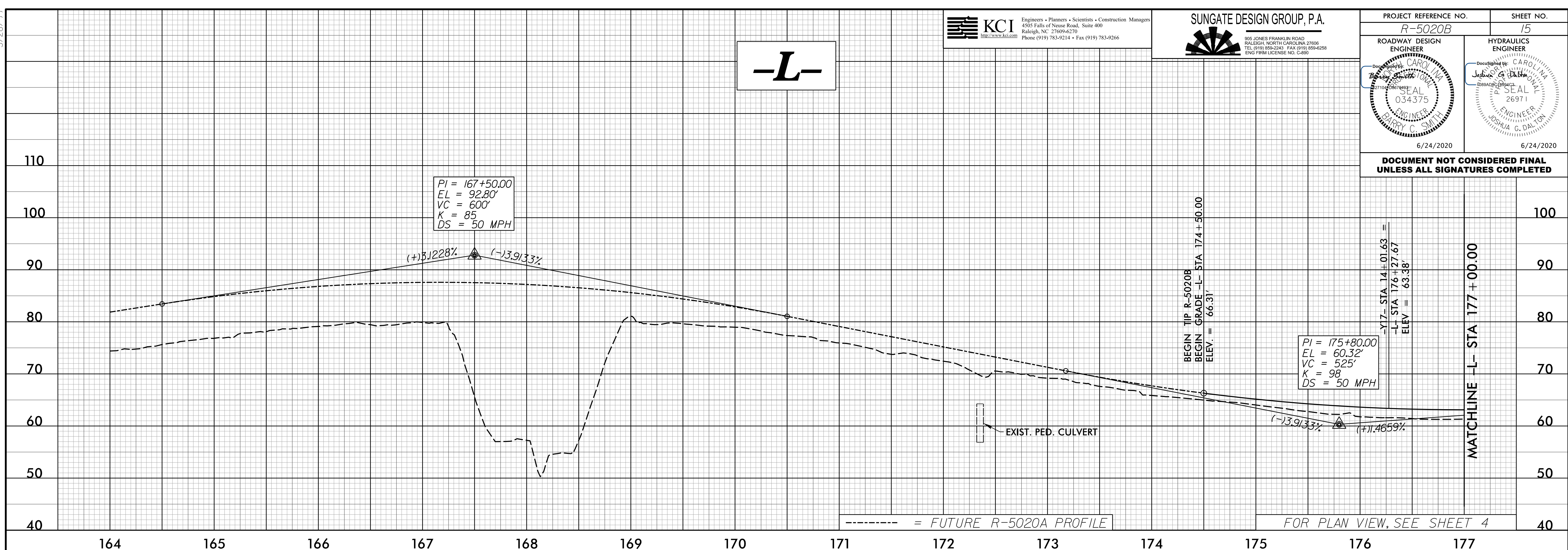
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KCI
 Engineers • Planners • Scientists • Construction Managers
 455 Falls of Neuse Road, Suite 400
 Raleigh, NC 27609-6270
 Phone (919) 783-9214 • Fax (919) 783-9266

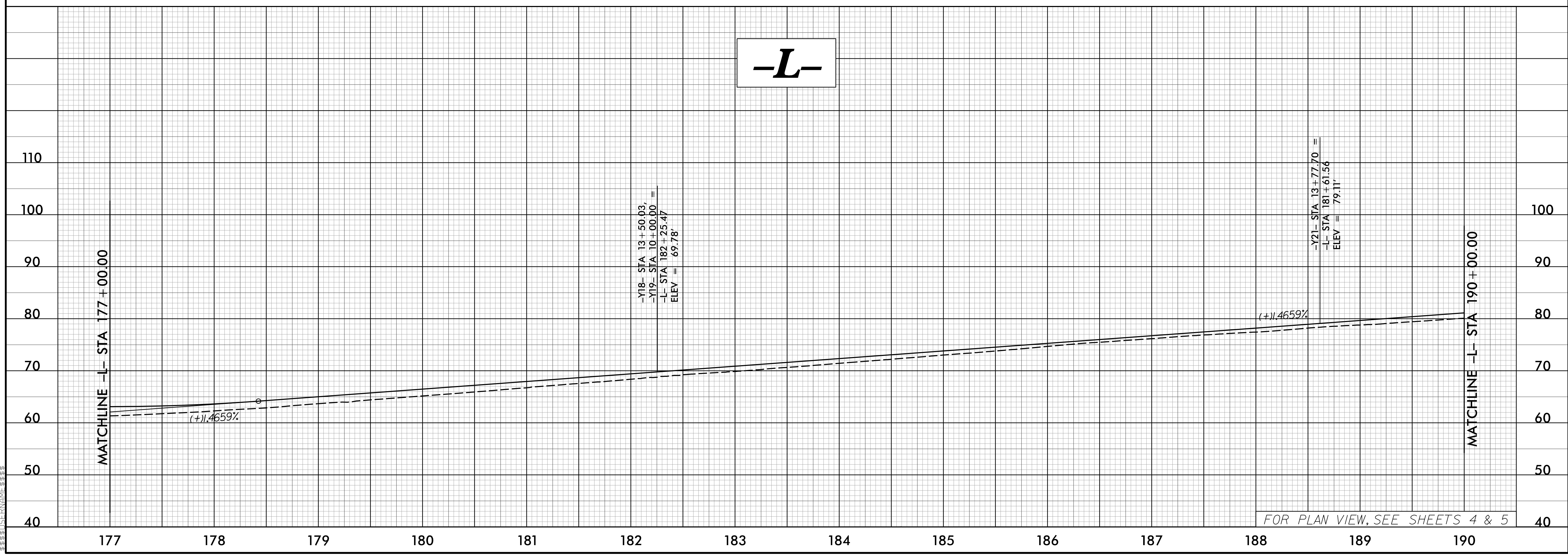
SUNGATE DESIGN GROUP, P.A.
 805 JONES FRANKLIN ROAD
 RALEIGH, NORTH CAROLINA 27606
 TEL (919) 859-2243 FAX (919) 859-6258
 ENG. FIRM LICENSE NO. C480

PROJECT REFERENCE NO. <i>R-5020B</i>	SHEET NO. 15
ROADWAY DESIGN ENGINEER BRADY C. SMITH 034375 6/24/2020	HYDRAULICS ENGINEER JOSHUA S. DALTON 26971 6/24/2020

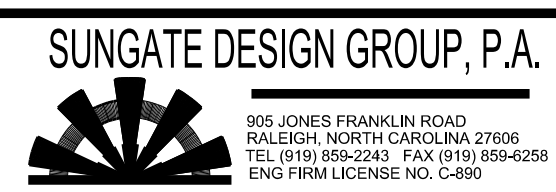
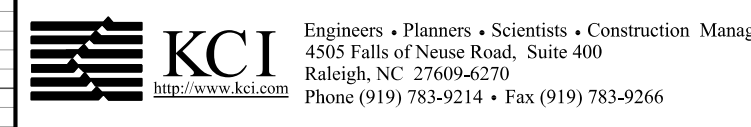
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UNLESS ALL SIGNATURES COMPLETED**



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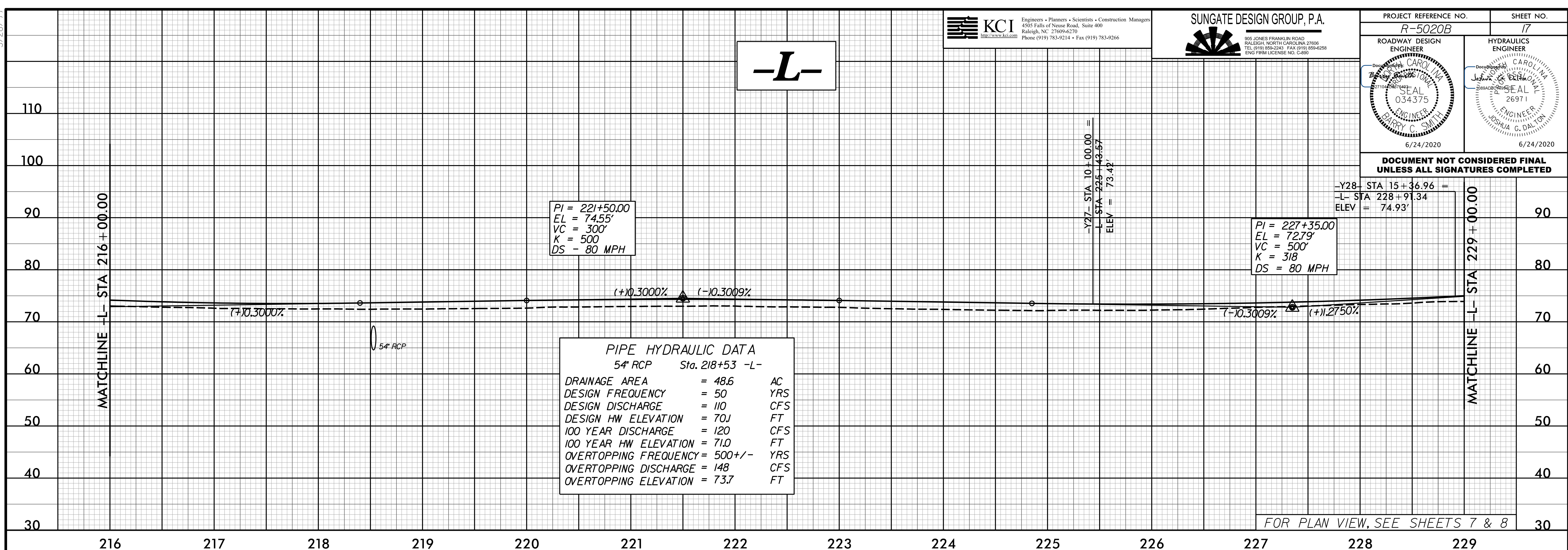


5/28/20

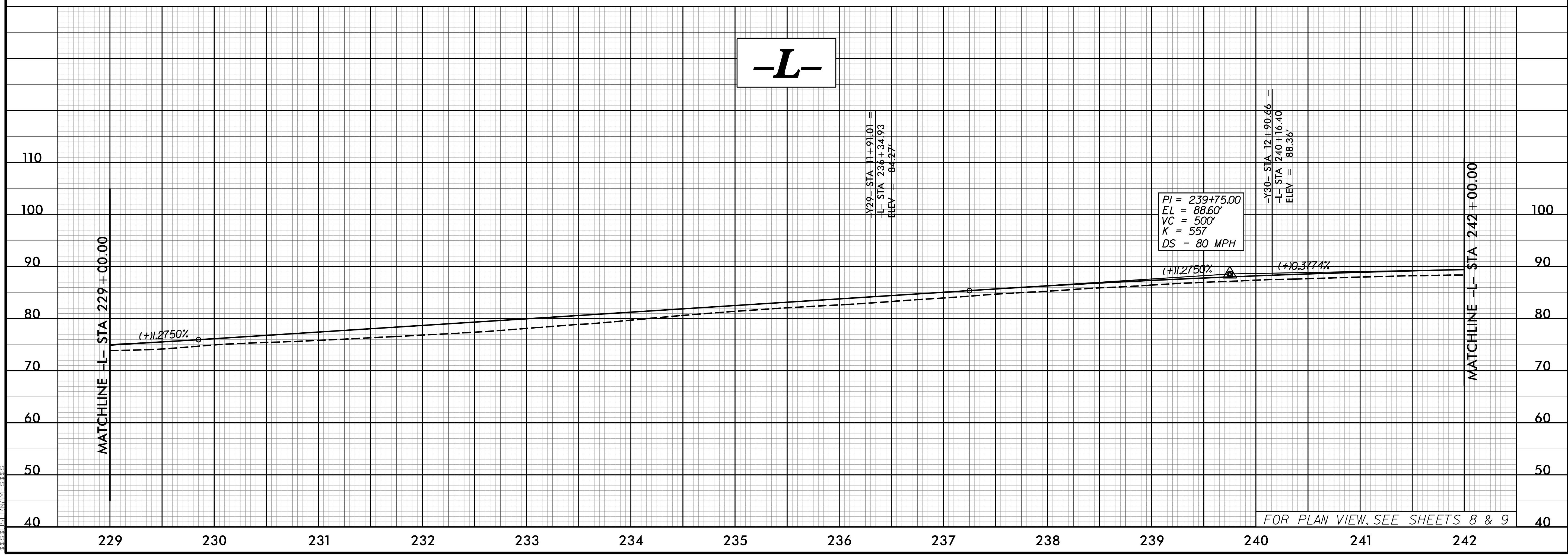


PROJECT REFERENCE NO. R-5020B	SHEET NO. 17
ROADWAY DESIGN ENGINEER SEAL 034375 BARRY C. SMITH 6/24/2020	HYDRAULICS ENGINEER SEAL 26971 JOSHUA S. DALTON 6/24/2020

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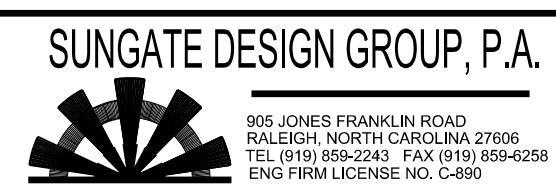
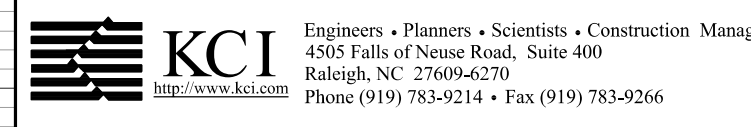


PIPE HYDRAULIC DATA		
54" RCP Sta. 218+53 -L-		
DRAINAGE AREA	= 48.6	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 110	CFS
DESIGN HW ELEVATION	= 70.1	FT
100 YEAR DISCHARGE	= 120	CFS
100 YEAR HW ELEVATION	= 71.0	FT
OVERTOPPING FREQUENCY	= 500+/-	YRS
OVERTOPPING DISCHARGE	= 148	CFS
OVERTOPPING ELEVATION	= 73.7	FT



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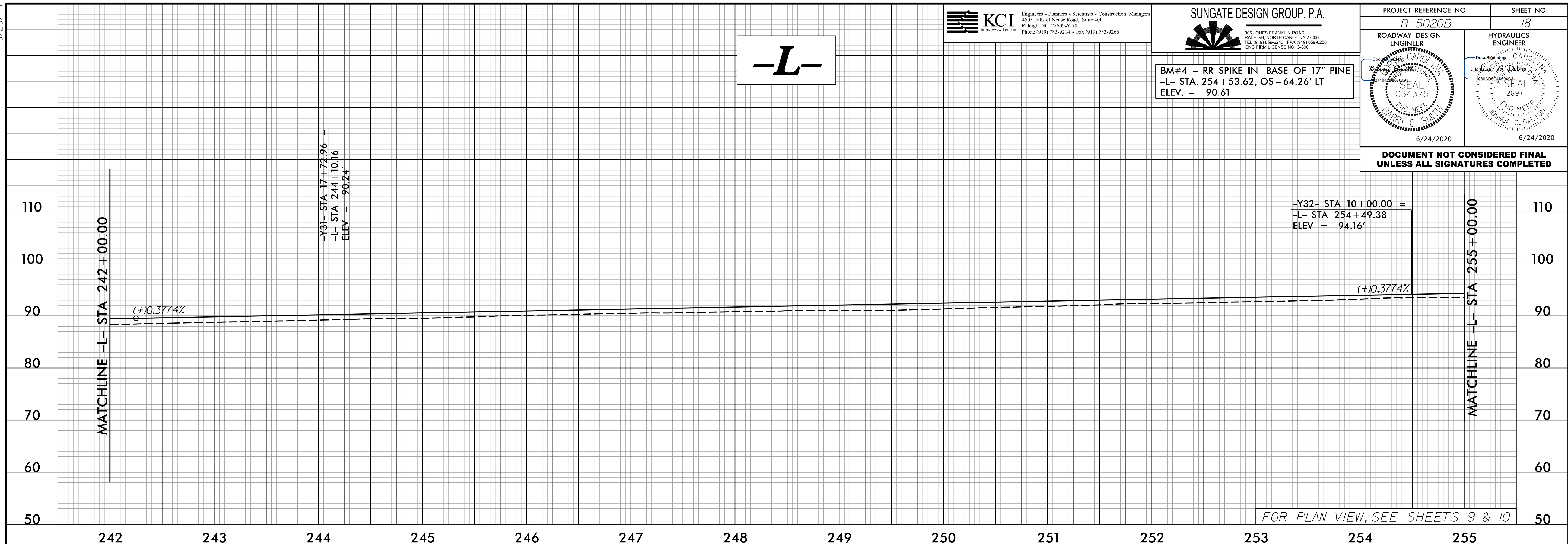
5/28/19



PROJECT REFERENCE NO. <i>R-5020B</i>	SHEET NO. <i>18</i>
ROADWAY DESIGN ENGINEER BRADY C. SMITH 034375 6/24/2020	HYDRAULICS ENGINEER JOSHUA S. DALTON 26971 6/24/2020

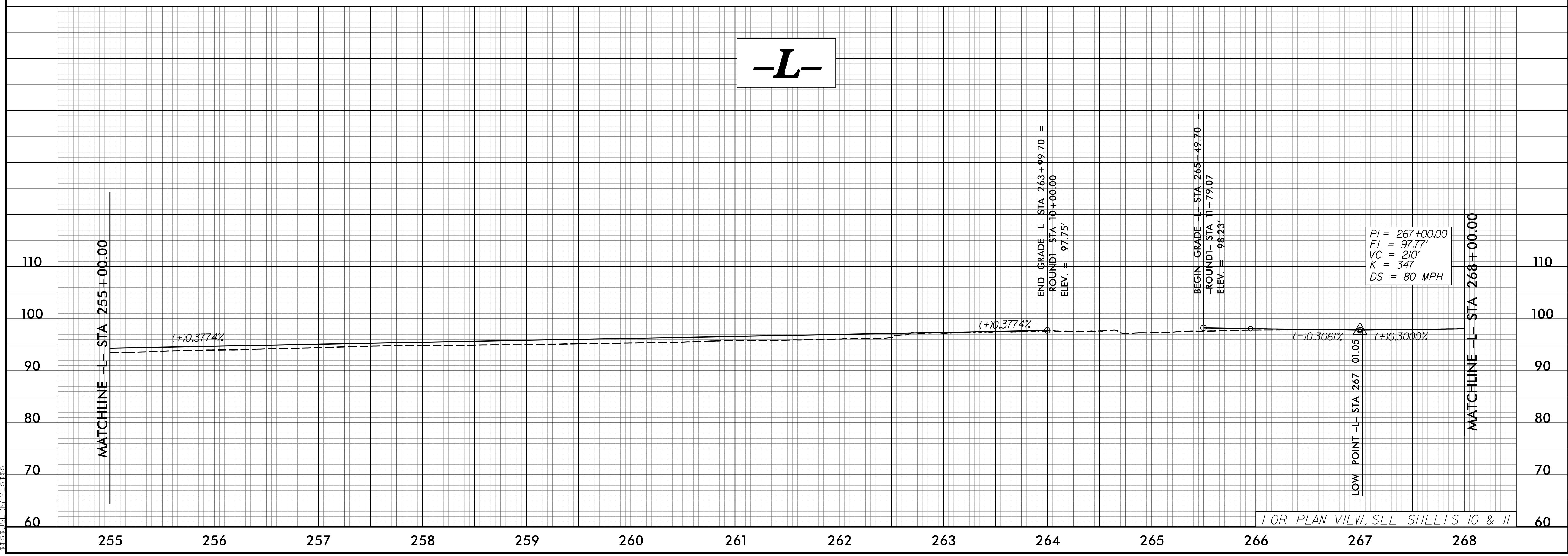
BM#4 - RR SPIKE IN BASE OF 17" PINE
-L- STA. 254 + 53.62, OS = 64.26' LT
ELEV. = 90.61

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



FOR PLAN VIEW, SEE SHEETS 9 & 10

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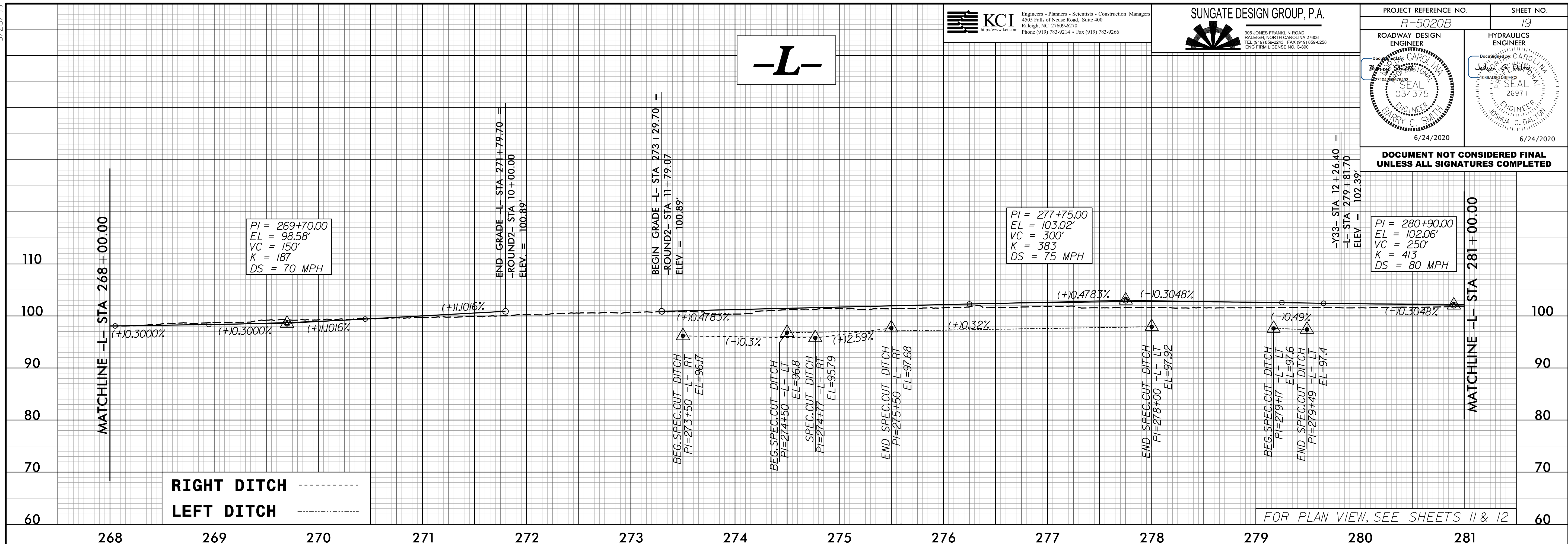


FOR PLAN VIEW, SEE SHEETS 10 & 11

5/28/20

PROJECT REFERENCE NO. R-5020B	SHEET NO. 19
ROADWAY DESIGN ENGINEER Bryan S. Tomlin Professional Seal 034375 6/24/2020	HYDRAULICS ENGINEER Joshua S. Dalton Professional Seal 26971 6/24/2020

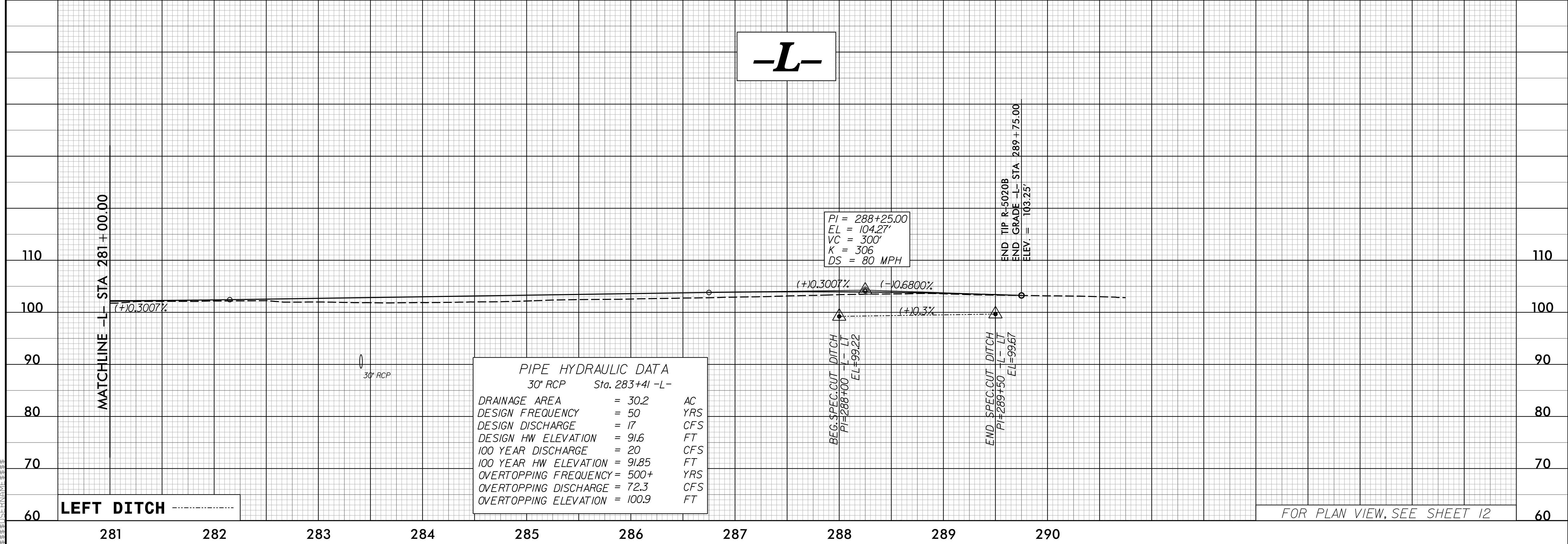
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RIGHT DITCH -----
 LEFT DITCH -----

FOR PLAN VIEW, SEE SHEETS 11 & 12

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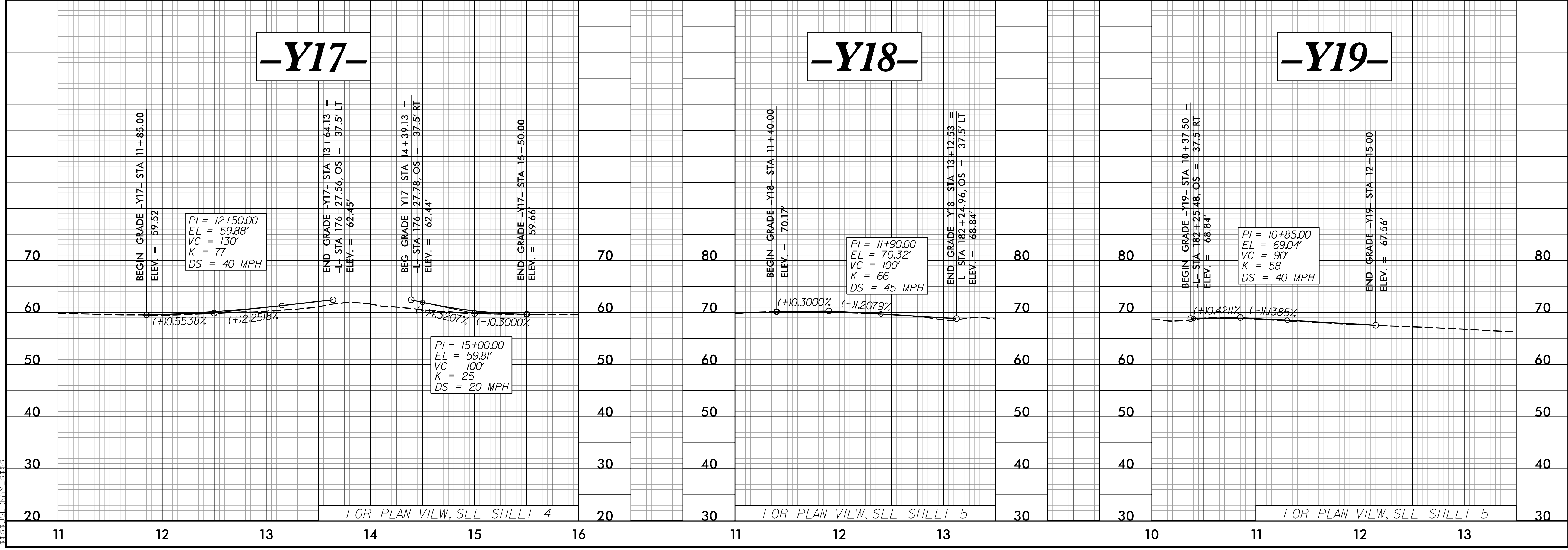
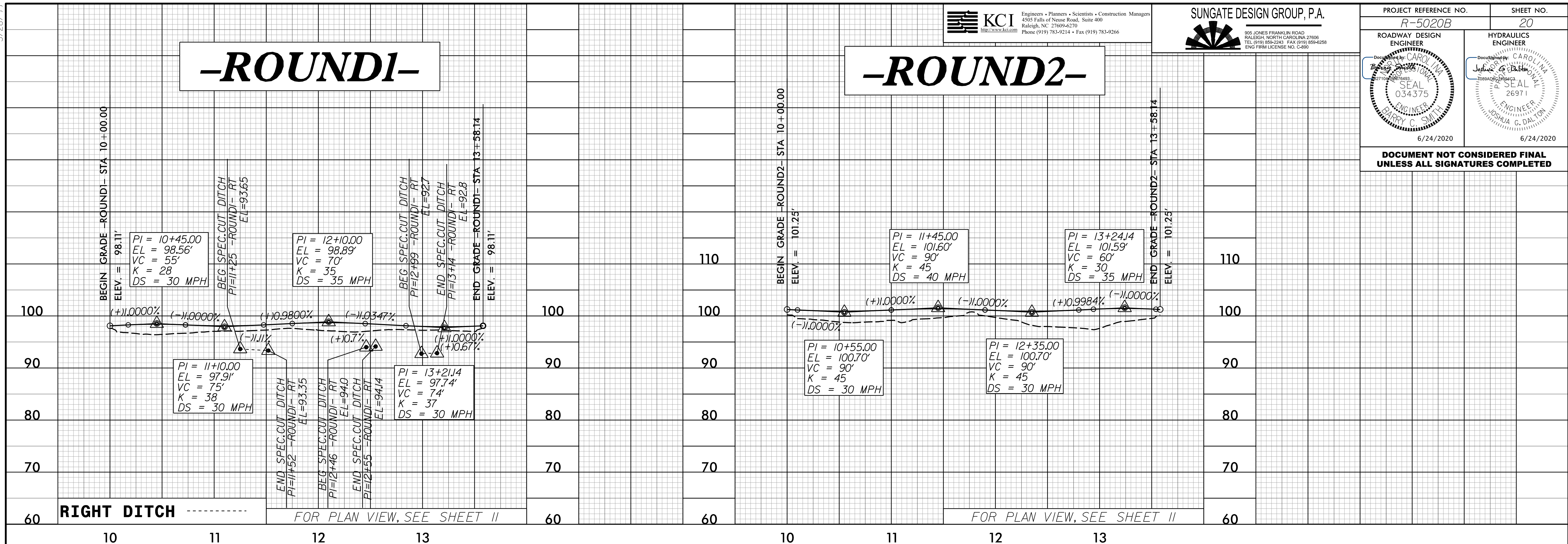
PIPE HYDRAULIC DATA
 30" RCP Sta. 283+41 -L-

DRAINAGE AREA	= 30.2	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 17	CFS
DESIGN HW ELEVATION	= 91.6	FT
100 YEAR DISCHARGE	= 20	CFS
100 YEAR HW ELEVATION	= 91.85	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 72.3	CFS
OVERTOPPING ELEVATION	= 100.9	FT

FOR PLAN VIEW, SEE SHEET 12

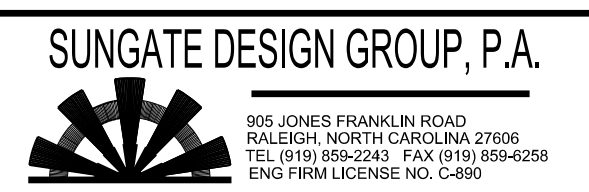
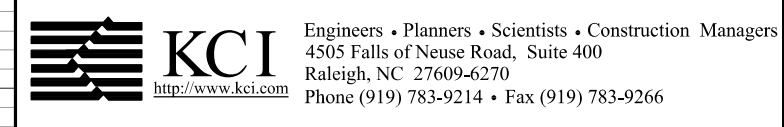
5/28/19

PROJECT REFERENCE NO. R-5020B	SHEET NO. 20
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



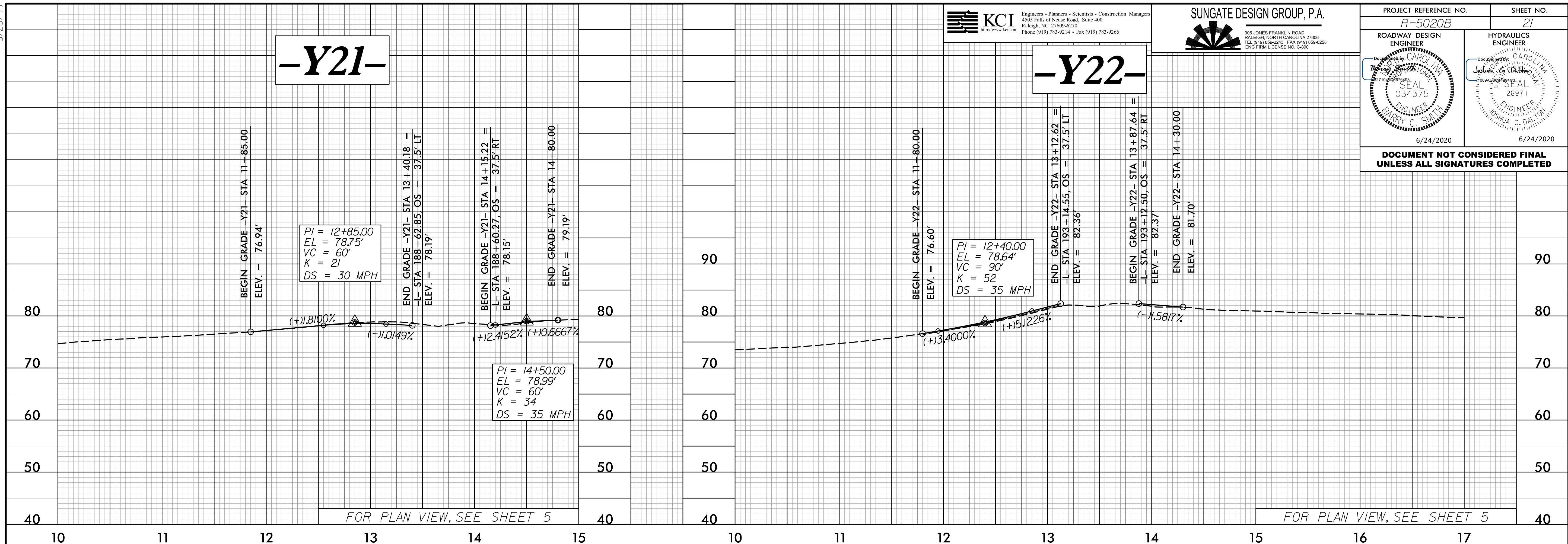
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5/28/19



PROJECT REFERENCE NO. <i>R-5020B</i>	SHEET NO. <i>21</i>
ROADWAY DESIGN ENGINEER <i>BRADY C. SMITH</i> SEAL 034375 6/24/2020	HYDRAULICS ENGINEER <i>JOSHUA S. DALTON</i> SEAL 26971 6/24/2020

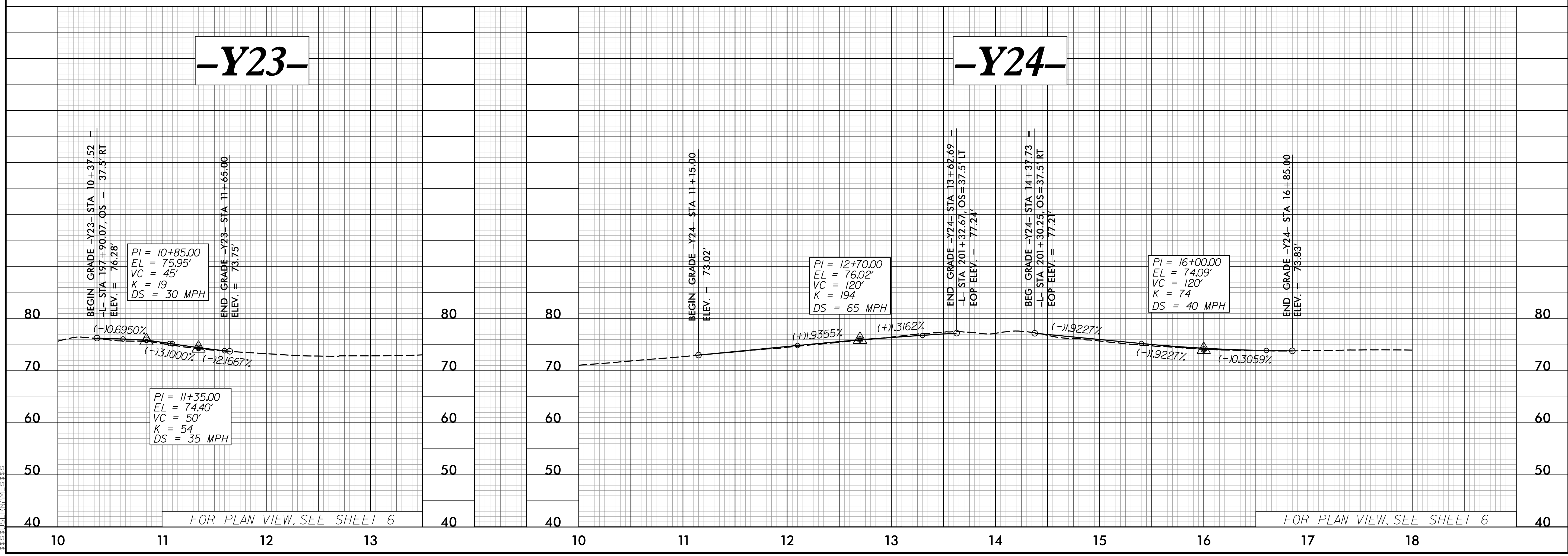
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



FOR PLAN VIEW, SEE SHEET 5

FOR PLAN VIEW, SEE SHEET 5

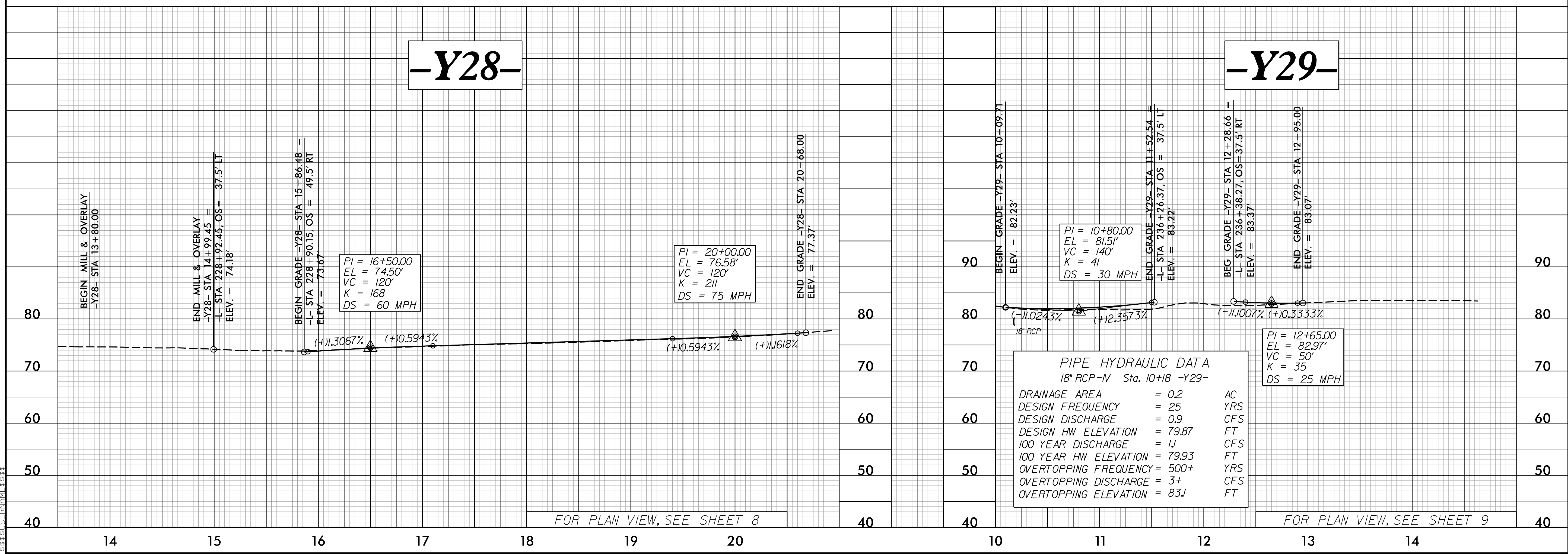
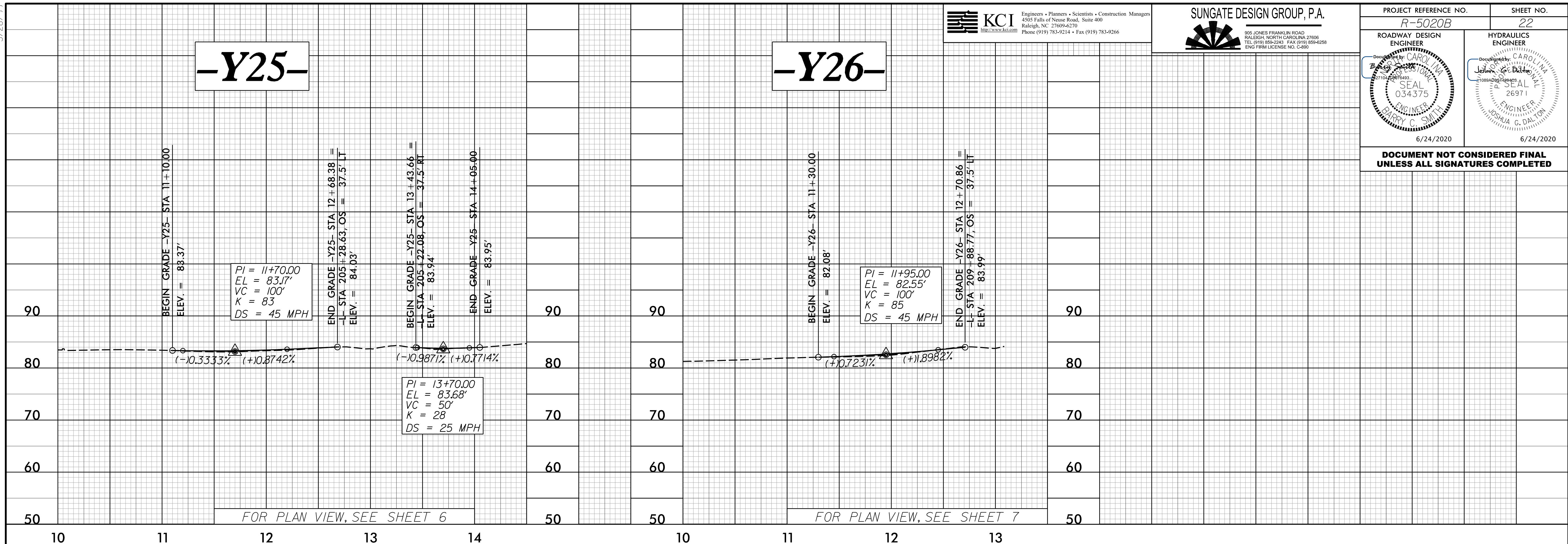
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FOR PLAN VIEW, SEE SHEET 6

FOR PLAN VIEW, SEE SHEET 6

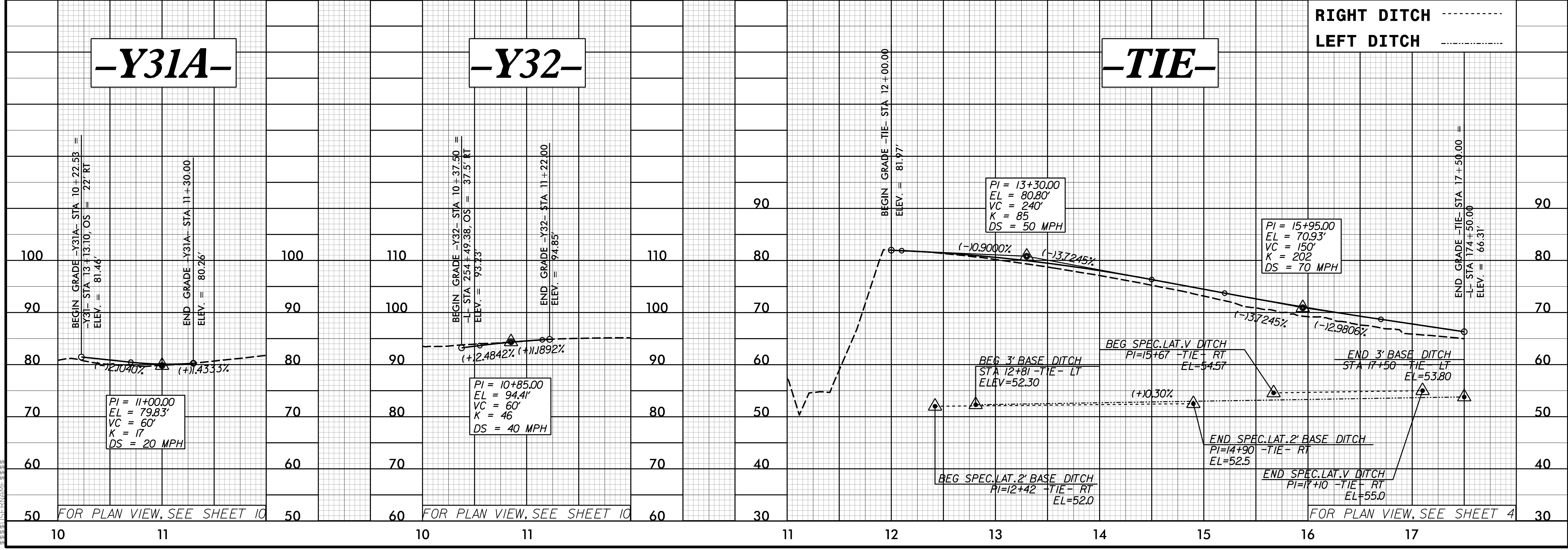
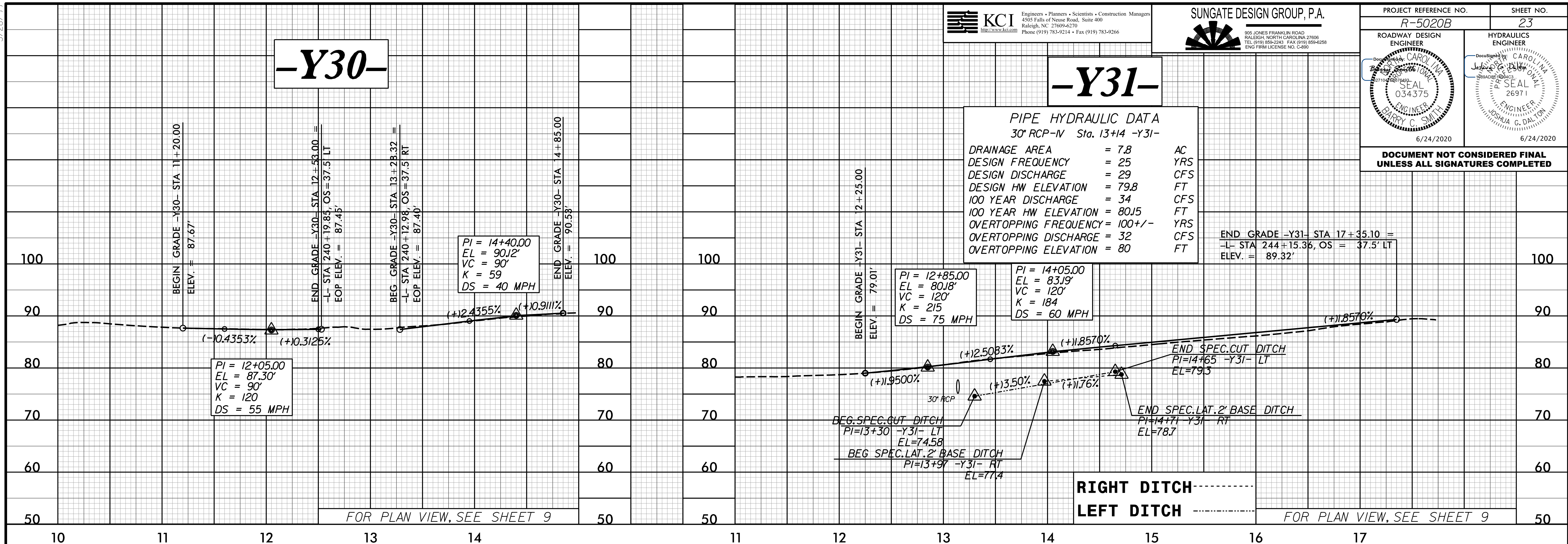
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



5/28/20

PROJECT REFERENCE NO. R-5020B	SHEET NO. 23
ROADWAY DESIGN ENGINEER JOSHUA S. DALTON 034375	HYDRAULICS ENGINEER JOSHUA S. DALTON 26971
6/24/2020	6/24/2020

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



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5/28/20

PROJECT REFERENCE NO. R-5020B	SHEET NO. 24
ROADWAY DESIGN ENGINEER BRADY C. SMITH 034375	HYDRAULICS ENGINEER JOSHUA S. DALTON 26971
6/24/2020	6/24/2020

DOCUMENT NOT CONSIDERED FINAL
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6/24/2020 10:50:16 AM
BRADY C. SMITH
034375

