

COMPUTED BY: WJW/CMM DATE: 5/3/2023
CHECKED BY: DPB DATE: 5/3/2023

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. U-5839 SHEET NO. 3D-1

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, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, SIDE DRAIN 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 STANDARD, CONCRETE TRANSITIONAL SECTION, TYPE OF GRATE, and REMARKS. Includes a SHEET TOTAL row at the bottom.

- ABBREVIATIONS
C.A.A - CORRUGATED ALUMINUM INLET
C.B - CATCH BASIN
C.S. - CORRUGATED STEEL
D.I. - DROP INLET
G.D.I. - GRATED DROP INLET
P.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

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**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

PROJECT NO. U-5839 SHEET NO. 3D-4

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, SIDE DRAIN 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 STANDARD, CONCRETE TRANSITIONAL SECTION, TYPE OF GRATE, ADJUST C.B., ADJUST D.I., ADJUST M.H., CONC. COLLARS CL. "B" C.Y. STD. 840.72, FLOWABLE FILL, C.Y., CONC. & BRICK PLUG, C.Y. STD. 840.71, PIPE REMOVAL LIN. FT., REMARKS, ABBREVIATIONS.

COMPUTED BY: WJW/CMM DATE: 5/3/2023
CHECKED BY: DPB DATE: 5/3/2023

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. SHEET NO.
U-5839 3D-6

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, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, SIDE DRAIN 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 STANDARD 840.03, CONCRETE TRANSITIONAL SECTION, TYPE OF GRATE, and REMARKS. Includes a summary row at the bottom for SHEET TOTAL and PROJECT TOTAL.

ABBREVIATIONS
C.A.A - CORRUGATED ALUMINUM INLET
C.B - CATCH BASIN
C.S - CORRUGATED STEEL
D.I. - DROP INLET
G.D.I. - GRATED DROP INLET
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

PROJECT TOTAL 352 28 4485 1128 1832 48 224 153 125.9 20.6 100 13 46 45 11 1 18 18 3 7 1 4 12 11 5 33 4 3 3 2 2 5.38 70.776 1764

COMPUTED BY: J. Daily DATE: 4/6/23
 CHECKED BY: L. Campos DATE: 4/6/23

(2-3-23)

PROJECT NO.	SHEET NO.
U-5839	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	350
				TOTAL LF:	350

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

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Subgrade Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
	CONTINGENCY		ASU 1	12	350	700	1050		
			TOTAL CY/TONS/SY:		350	700**	1050**	0	0

*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)
 *AST = Aggregate Stabilization
 **Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Subgrade Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.

SUMMARY OF ROCK PLATING

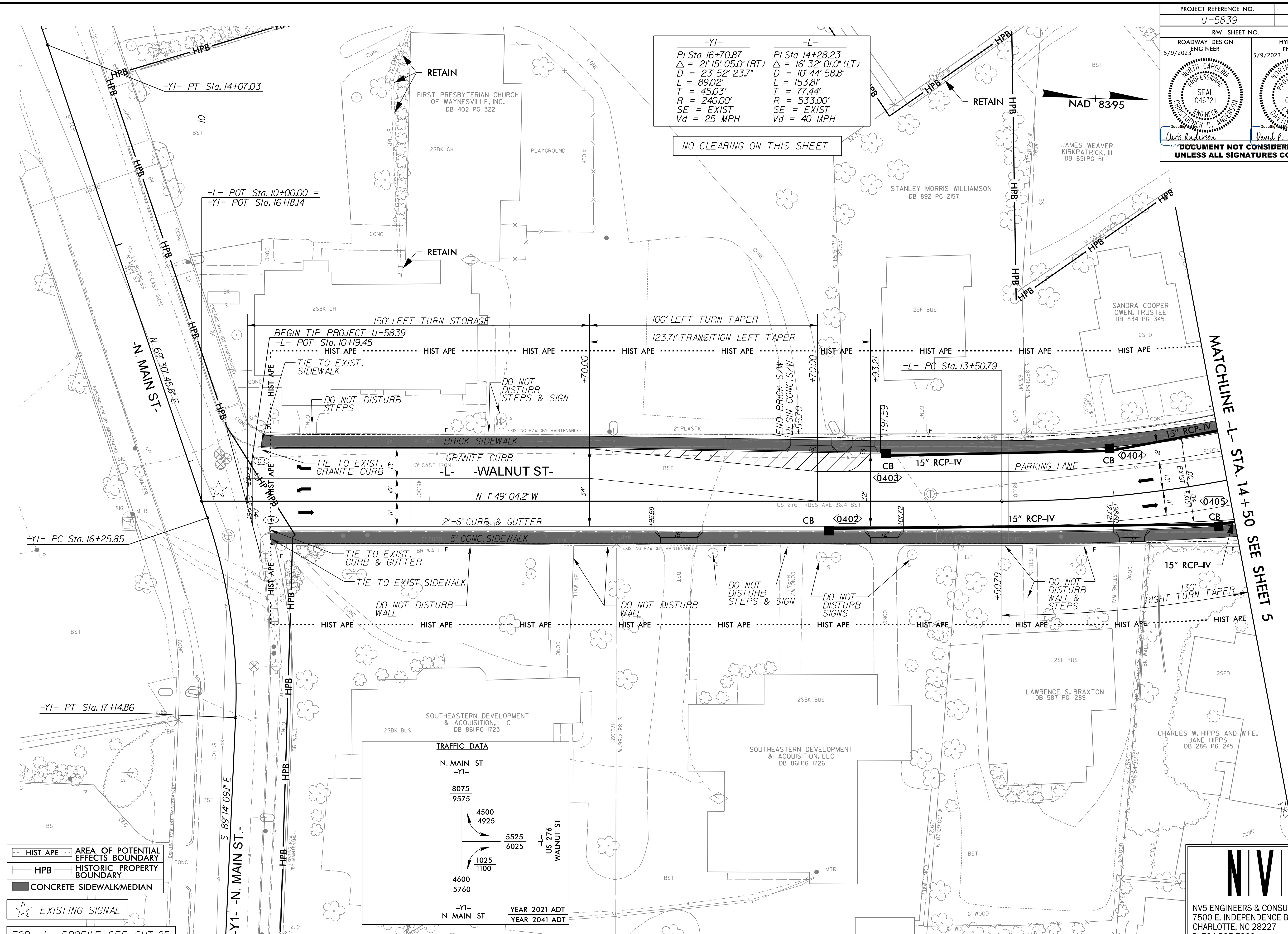
LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
Y6	1.5:1	14+25	1.5:1	16+75	LT & RT	3		2500
	CONTINGENCY							250
							TOTAL SY:	2750

*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

PROJECT REFERENCE NO. U-5839	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 5/9/2023	HYDRAULICS ENGINEER 5/9/2023
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-YI-	-L-
PI Sta 16+70.87	PI Sta 14+28.23
$\Delta = 21' 15" 05.0" (RT)$	$\Delta = 16' 32" 01.0" (LT)$
$D = 23' 52" 23.7"$	$D = 10' 44" 58.8"$
$L = 89.02'$	$L = 153.81'$
$T = 45.03'$	$T = 77.44'$
$R = 240.00'$	$R = 533.00'$
$SE = EXIST$	$SE = EXIST$
$Vd = 25 MPH$	$Vd = 40 MPH$

NO CLEARING ON THIS SHEET



- HIST APE AREA OF POTENTIAL EFFECTS BOUNDARY
- HPB HISTORIC PROPERTY BOUNDARY
- CONCRETE SIDEWALK/MEDIAN
- EXISTING SIGNAL

FOR -L- PROFILE SEE SHT. 25

TRAFFIC DATA	
N. MAIN ST -YI-	
8075	9575
4500	4925
5525	6025
1025	1100
4600	5760
-YI- N. MAIN ST	YEAR 2021 ADT
	YEAR 2041 ADT

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8.17.19
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Revised: 5/9/2023

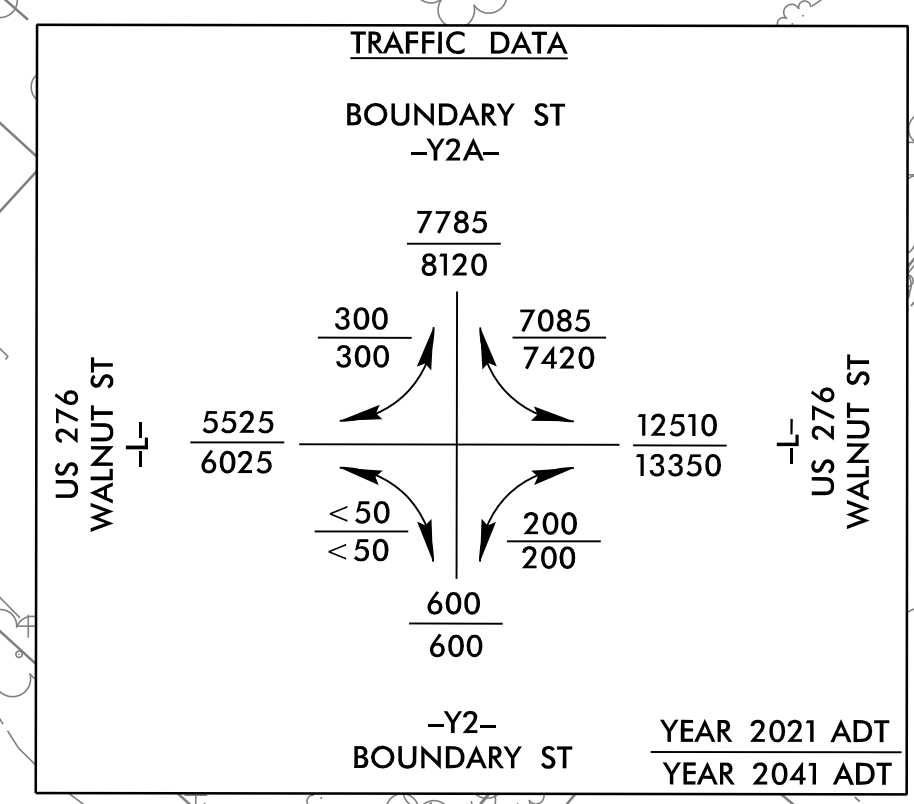
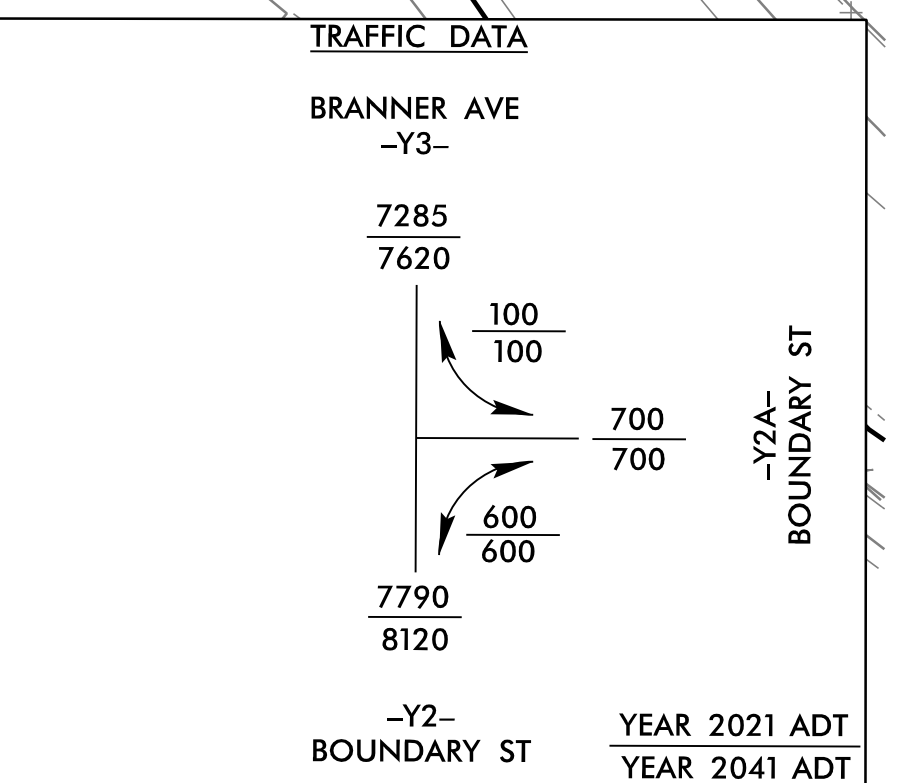
PROJECT REFERENCE NO. U-5839		SHEET NO. 5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 5/9/2023		HYDRAULICS ENGINEER 5/9/2023	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

SOUTHERN CONCRETE MATERIALS INC
DB 356 PG 1009
DB 337 PG 979

NO CLEARING THIS SHEET,
EXCEPT ON PARCELS 1 & 2



-L-	-L-	-Y3-	-Y2A-
PI Sta 14+28.23	PI Sta 16+64.17	PI Sta 16+13.59	PI Sta 14+96.94
$\Delta = 16' 32'' 01.0''$ (LT)	$\Delta = 33' 20'' 05.7''$ (RT)	$\Delta = 50' 51'' 29.0''$ (RT)	$\Delta = 38' 11'' 43.9''$ (RT)
$D = 10' 44'' 58.8''$	$D = 10' 44'' 58.8''$	$D = 66' 37'' 22.8''$	$D = 66' 37'' 22.8''$
$L = 153.81'$	$L = 310.10'$	$L = 76.34'$	$L = 57.33'$
$T = 77.44'$	$T = 159.58'$	$T = 40.89'$	$T = 29.78'$
$R = 533.00'$	$R = 533.00'$	$R = 86.00'$	$R = 86.00'$
$SE = EXIST$	$*SE = EXIST$	$SE = EXIST$	$SE = EXIST$
$Vd = 40$ MPH	$Vd = 35.5$ MPH	$Vd = 20$ MPH	$Vd = 20$ MPH



- HIST APE
- AREA OF POTENTIAL EFFECTS BOUNDARY
- HPB
- HISTORIC PROPERTY BOUNDARY
- CONCRETE SIDEWALK/MEDIAN
- PAVEMENT REMOVAL

FOR -L- PROFILE SEE SHT.25
FOR -Y2- PROFILE SEE SHT.31
FOR -Y2A- PROFILE SEE SHT.31
FOR -Y3- PROFILE SEE SHT.32
FOR INTERSECTION DETAIL SEE SHT.2B-1

EXISTING SIGNAL TO BE UPGRADED * HORIZONTAL CURVE SUPERELEVATION RATE BELOW DESIGN SPEED

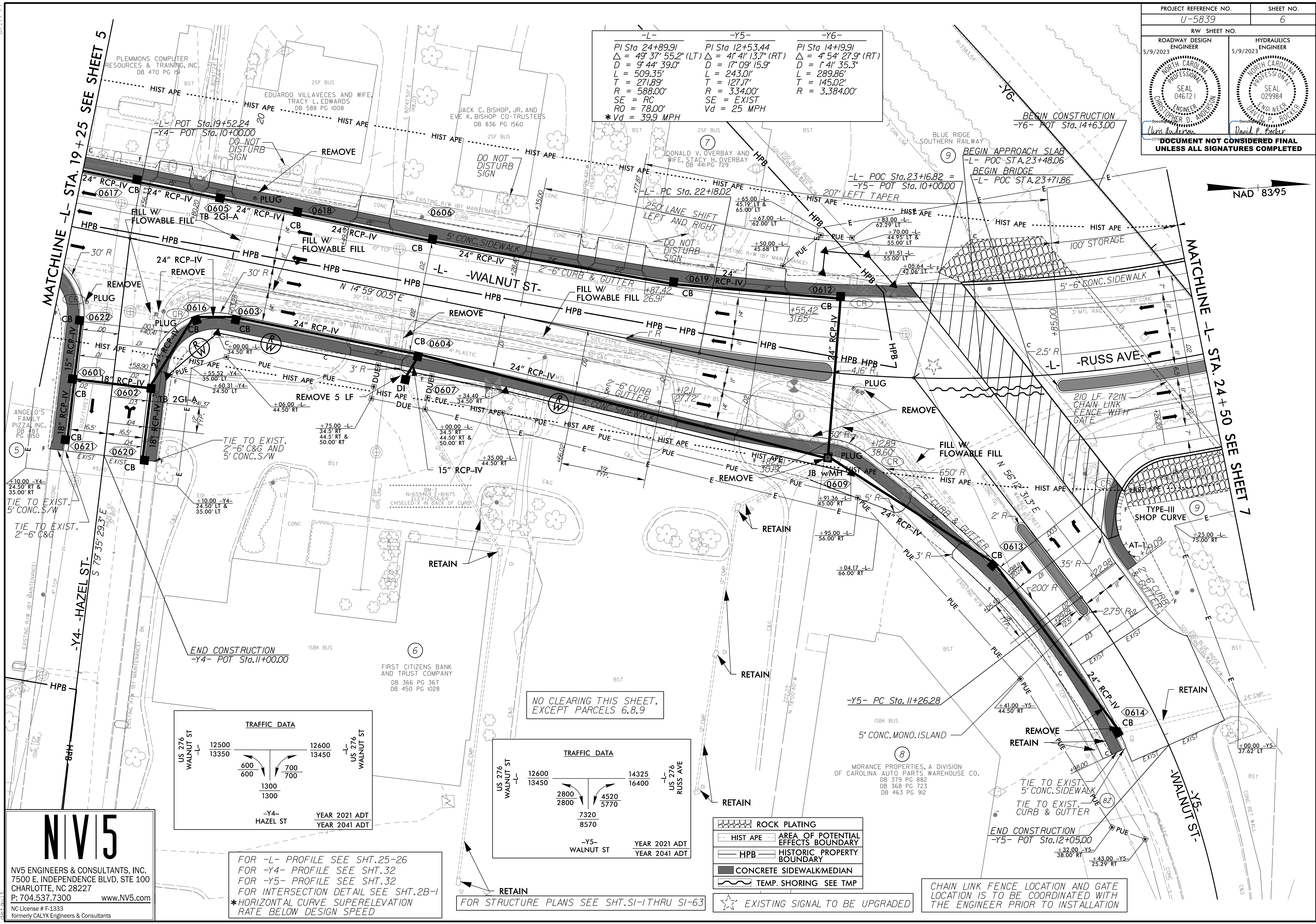
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 CHARLOTTE, NC 28227
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 formerly CALYX Engineers & Consultants

2/23/2023 R:\Roadway\Proj\U5839_RDY_PSH_05.dgn

PROJECT REFERENCE NO. U-5839	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 5/9/2023	HYDRAULICS ENGINEER 5/9/2023
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NAD 83/95

-L-	-Y5-	-Y6-
PI Sta 24+89.91	PI Sta 12+53.44	PI Sta 14+19.91
$\Delta = 49^\circ 37' 55.2''$ (LT)	$\Delta = 41^\circ 41' 13.7''$ (RT)	$\Delta = 4^\circ 54' 27.9''$ (RT)
D = 9' 44' 39.0"	D = 17' 09' 15.9"	D = 1' 41' 35.3"
L = 509.35'	L = 243.01'	L = 289.86'
T = 271.89'	T = 127.17'	T = 145.02'
R = 588.00'	R = 334.00'	R = 3,384.00'
SE = RC	SE = EXIST	
RO = 78.00'	Vd = 25 MPH	
*Vd = 39.9 MPH		



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TRAFFIC DATA

US 276 WALNUT ST	12500 13350	12600 13450	US 276 WALNUT ST
	600 600	700 700	
	1300 1300		
	-Y4- HAZEL ST		
	YEAR 2021 ADT		
	YEAR 2041 ADT		

TRAFFIC DATA

US 276 WALNUT ST	12600 13450	14325 16400	US 276 RUSS AVE
	2800 2800	4520 5770	
	7320 8570		
	-Y5- WALNUT ST		
	YEAR 2021 ADT		
	YEAR 2041 ADT		

FOR -L- PROFILE SEE SHT.25-26
 FOR -Y4- PROFILE SEE SHT.32
 FOR -Y5- PROFILE SEE SHT.32
 FOR INTERSECTION DETAIL SEE SHT.2B-1
 *HORIZONTAL CURVE SUPERELEVATION RATE BELOW DESIGN SPEED

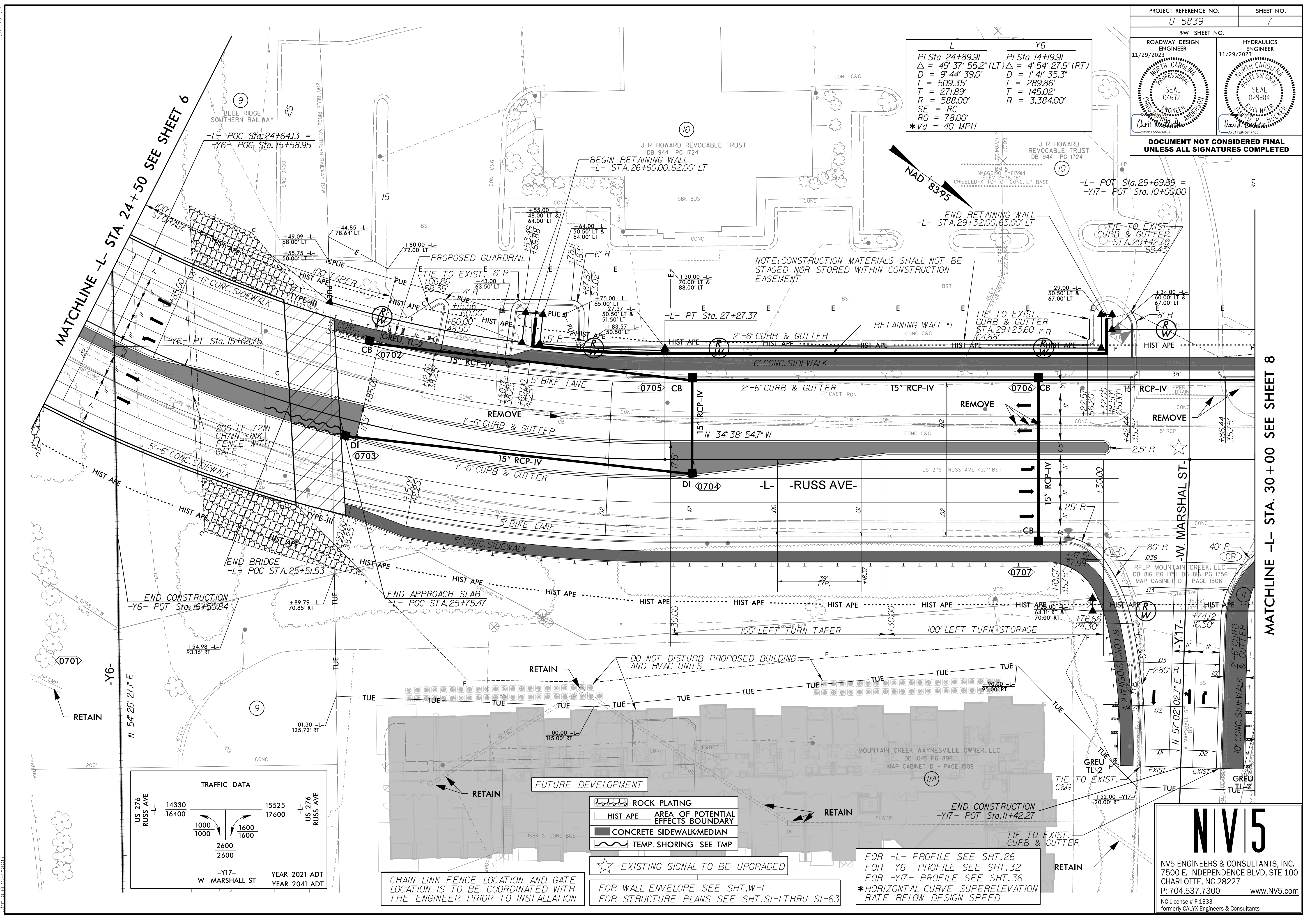
FOR STRUCTURE PLANS SEE SHT.SI-1 THRU SI-63

- ROCK PLATING
- HIST APE
- AREA OF POTENTIAL EFFECTS BOUNDARY
- HISTORIC PROPERTY BOUNDARY
- CONCRETE SIDEWALK/MEDIAN
- TEMP. SHORING SEE TMP
- EXISTING SIGNAL TO BE UPGRADED

CHAIN LINK FENCE LOCATION AND GATE LOCATION IS TO BE COORDINATED WITH THE ENGINEER PRIOR TO INSTALLATION

PROJECT REFERENCE NO. U-5839		SHEET NO. 7	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 11/29/2023		HYDRAULICS ENGINEER 11/29/2023	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

-L-	-Y6-
PI Sta 24+89.91	PI Sta 14+19.91
$\Delta = 49^{\circ} 37' 55.2''$ (LT)	$\Delta = 4^{\circ} 54' 27.9''$ (RT)
D = 9' 44' 39.0"	D = 1' 41' 35.3"
L = 509.35'	L = 289.86'
T = 271.89'	T = 145.02'
R = 588.00'	R = 3,384.00'
SE = RC	
RO = 78.00'	
*Vd = 40 MPH	



TRAFFIC DATA			
US 276 RUSS AVE -L-	14330 16400	15525 17600	-L- RUSS AVE
1000 1000		1600 1600	
2600 2600			
-Y17- W MARSHALL ST		YEAR 2021 ADT YEAR 2041 ADT	

- ROCK PLATING
 - HIST APE AREA OF POTENTIAL EFFECTS BOUNDARY
 - CONCRETE SIDEWALK/MEDIAN
 - TEMP. SHORING SEE TMP
 - EXISTING SIGNAL TO BE UPGRADED
- FOR WALL ENVELOPE SEE SHT. W-1
FOR STRUCTURE PLANS SEE SHT. SI-1 THRU SI-63

FOR -L- PROFILE SEE SHT. 26
FOR -Y6- PROFILE SEE SHT. 32
FOR -Y17- PROFILE SEE SHT. 36
*HORIZONTAL CURVE SUPERELEVATION RATE BELOW DESIGN SPEED

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MATCHLINE -L- STA. 30+00 SEE SHEET 8

MATCHLINE -L- STA. 24+50 SEE SHEET 6

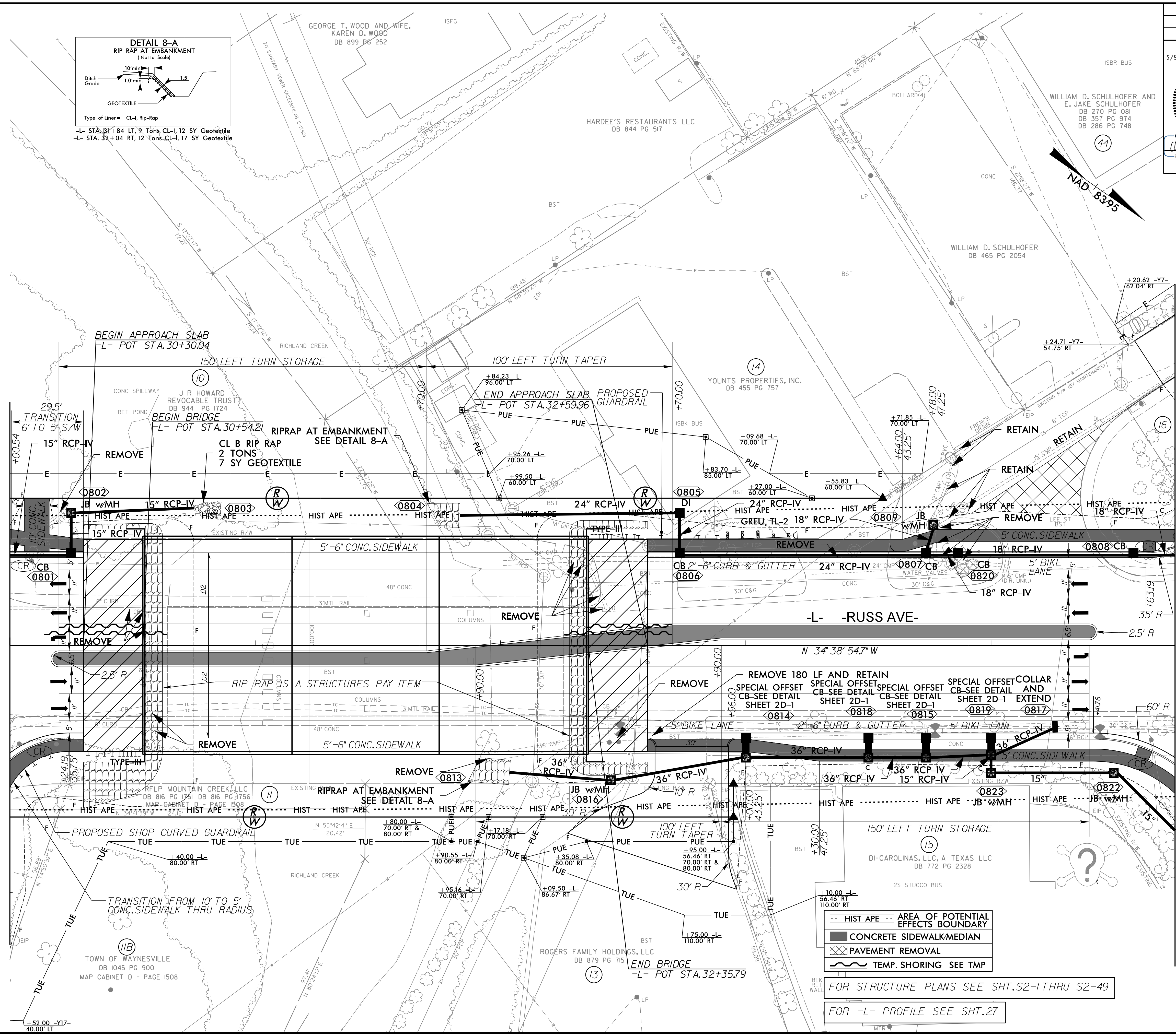
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Reagan, C
5/2/2023

PROJECT REFERENCE NO. U-5839	SHEET NO. 8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 5/9/2023	HYDRAULICS ENGINEER 5/9/2023
WILLIAM D. SCHULHOFER AND E. JAKE SCHULHOFER DB 270 PG 081 DB 357 PG 974 DB 286 PG 748	
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MATCHLINE -L- STA. 30+00 SEE SHEET 7

MATCHLINE -L- STA. 34+75 SEE SHEET 9



	HIST APE
	AREA OF POTENTIAL EFFECTS BOUNDARY
	CONCRETE SIDEWALK/MEDIAN
	PAVEMENT REMOVAL
	TEMP. SHORING SEE TMP

FOR STRUCTURE PLANS SEE SHT. S2-1 THRU S2-49

FOR -L- PROFILE SEE SHT. 27

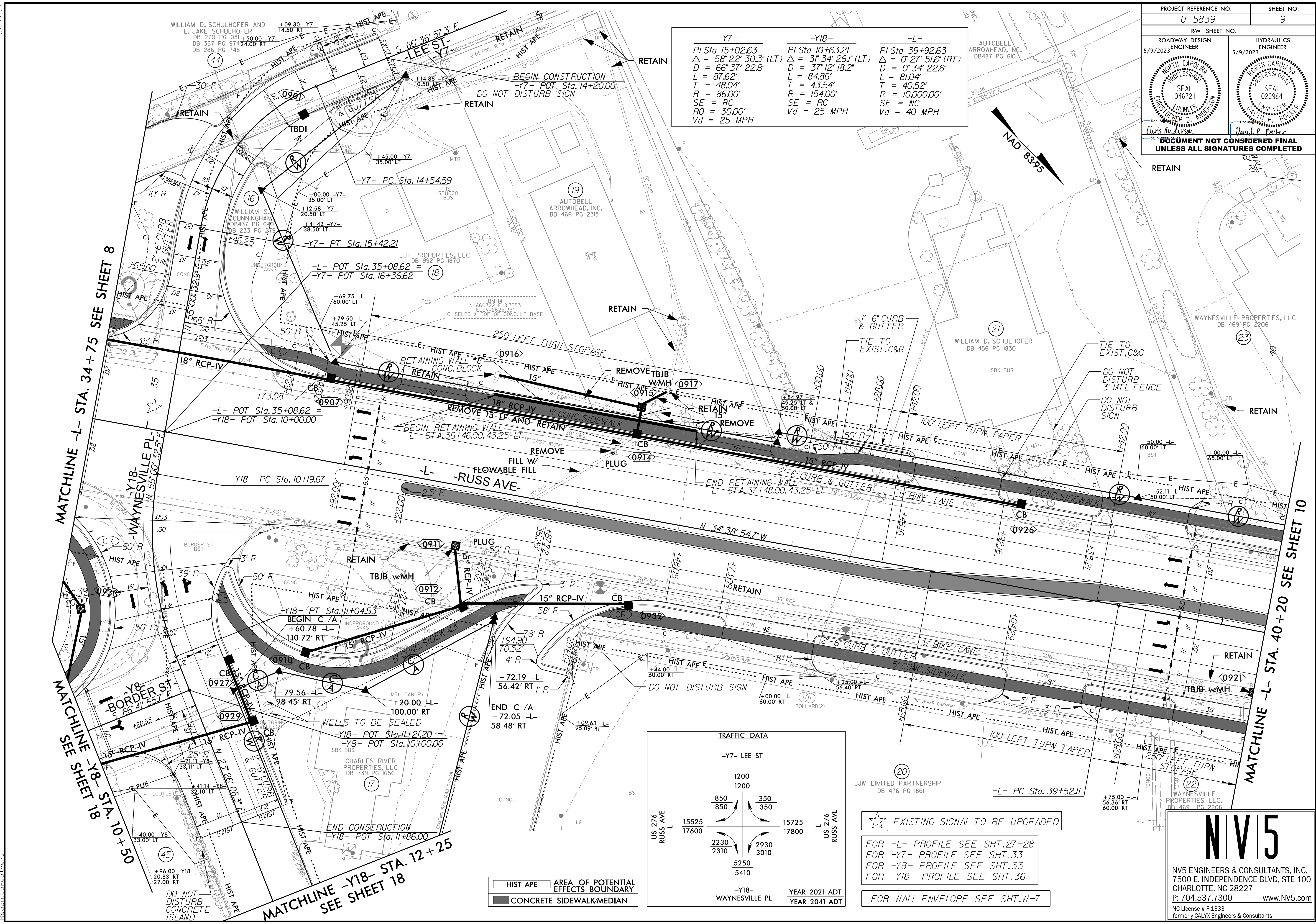
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PROJECT REFERENCE NO. U-5839		SHEET NO. 9	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 5/9/2023		HYDRAULICS ENGINEER 5/9/2023	
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>			

-Y7-	-Y18-	-L-
PI Sta 15+02.63	PI Sta 10+63.21	PI Sta 39+92.63
$\Delta = 58' 22" 30.3" (LT)$	$\Delta = 37' 34" 26.1" (LT)$	$\Delta = 0' 27" 51.6" (RT)$
$D = 66' 37" 22.8"$	$D = 37' 12" 18.2"$	$D = 0' 34" 22.6"$
$L = 87.62'$	$L = 84.86'$	$L = 81.04'$
$T = 48.04'$	$T = 43.54'$	$T = 40.52'$
$R = 86.00'$	$R = 154.00'$	$R = 10,000.00'$
$SE = RC$	$SE = RC$	$SE = NC$
$RO = 30.00'$	$Vd = 25 MPH$	$Vd = 40 MPH$



TRAFFIC DATA

-Y7- LEE ST			
1200		1200	
850	350	350	850
15525	17600	15725	17800
US 276 RUSS AVE		US 276 RUSS AVE	
-Y18- WAYNESVILLE PL			
2230	2930	2930	2230
5250	5410	5410	5250
YEAR 2021 ADT		YEAR 2041 ADT	

★ EXISTING SIGNAL TO BE UPGRADED

FOR -L- PROFILE SEE SHT.27-28
 FOR -Y7- PROFILE SEE SHT.33
 FOR -Y8- PROFILE SEE SHT.33
 FOR -Y18- PROFILE SEE SHT.36

FOR WALL ENVELOPE SEE SHT.W-7

--- HIST APE --- AREA OF POTENTIAL EFFECTS BOUNDARY
 ■ CONCRETE SIDEWALK/MEDIAN

MATCHLINE -L- STA. 34+75 SEE SHEET 8

MATCHLINE -Y8- STA. 10+50 SEE SHEET 18

MATCHLINE -Y18- STA. 12+25 SEE SHEET 18

MATCHLINE -L- STA. 40+20 SEE SHEET 10

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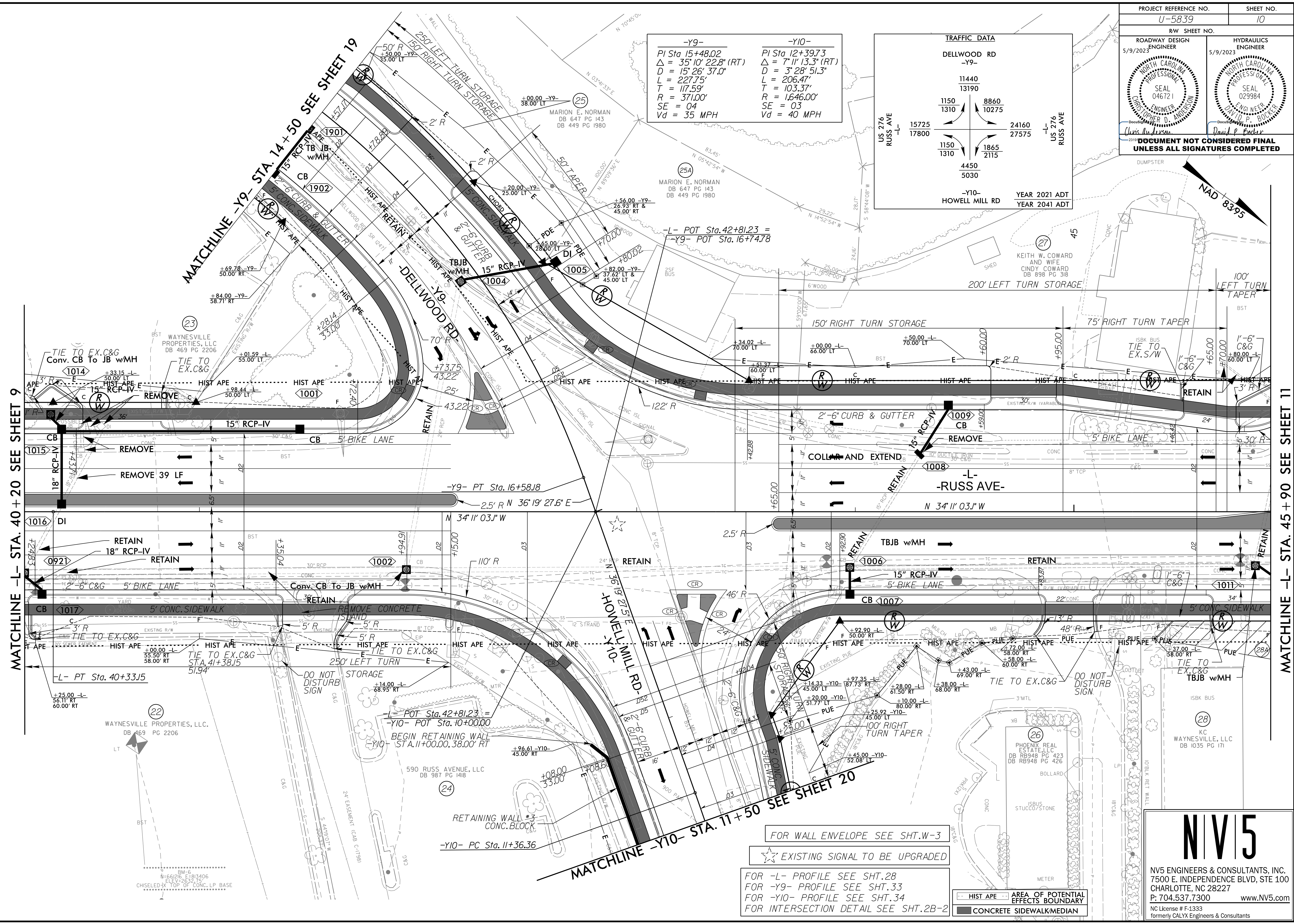
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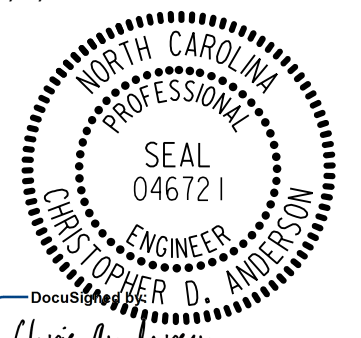
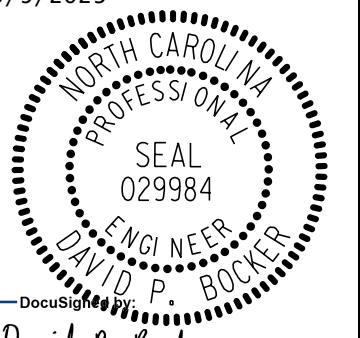
8/17/2023
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 Ryan Carothers

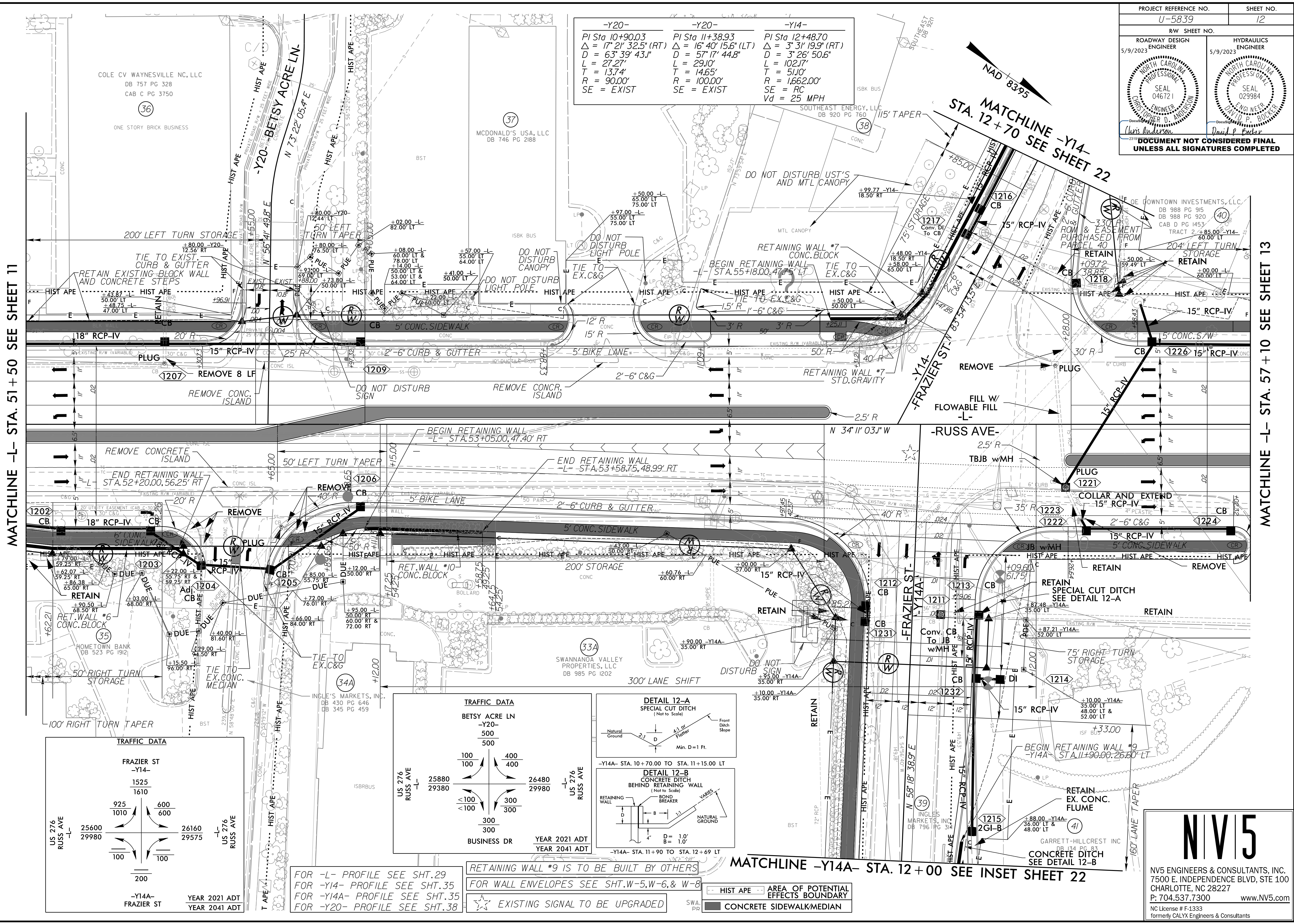
PROJECT REFERENCE NO. U-5839	SHEET NO. 10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 5/9/2023	HYDRAULICS ENGINEER 5/9/2023
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-Y9-	-Y10-
PI Sta 15+48.02	PI Sta 12+39.73
$\Delta = 35' 10" 22.8" (RT)$	$\Delta = 7' 11" 13.3" (RT)$
$D = 15' 26' 37.0"$	$D = 3' 28' 51.3"$
$L = 227.75'$	$L = 206.47'$
$T = 117.59'$	$T = 103.37'$
$R = 371.00'$	$R = 1,646.00'$
$SE = 04$	$SE = 03$
$Vd = 35 \text{ MPH}$	$Vd = 40 \text{ MPH}$

TRAFFIC DATA			
DELLWOOD RD -Y9-			
11440			
13190			
1150	8860	24160	
1310	10275	27575	
1150	1865		
1310	2115		
4450			
5030			
-Y10-		YEAR 2021 ADT	
HOWELL MILL RD		YEAR 2041 ADT	



PROJECT REFERENCE NO. U-5839		SHEET NO. 12	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 5/9/2023		HYDRAULICS ENGINEER 5/9/2023	
			
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>			



-Y20-	-Y20-	-Y14-
PI Sta 10+90.03	PI Sta 11+38.93	PI Sta 12+48.70
$\Delta = 17^{\circ} 21' 32.5''$ (RT)	$\Delta = 16^{\circ} 40' 15.6''$ (LT)	$\Delta = 3^{\circ} 31' 19.9''$ (RT)
$D = 63^{\circ} 39' 43.1''$	$D = 57^{\circ} 17' 44.8''$	$D = 3^{\circ} 26' 50.6''$
$L = 27.27'$	$L = 29.10'$	$L = 102.17'$
$T = 13.74'$	$T = 14.65'$	$T = 51.10'$
$R = 90.00'$	$R = 100.00'$	$R = 1,662.00'$
SE = EXIST	SE = EXIST	SE = RC
		Vd = 25 MPH

MATCHLINE -L- STA. 51+50 SEE SHEET 11

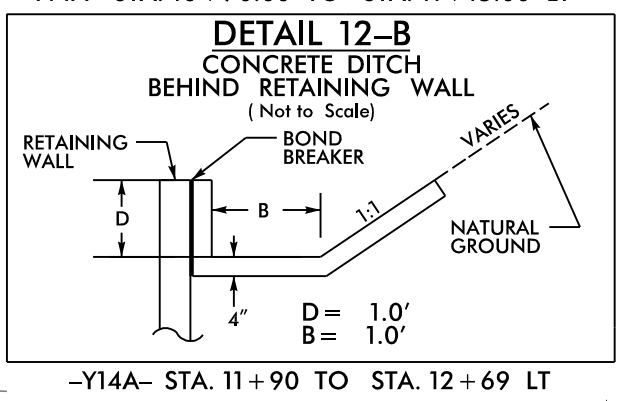
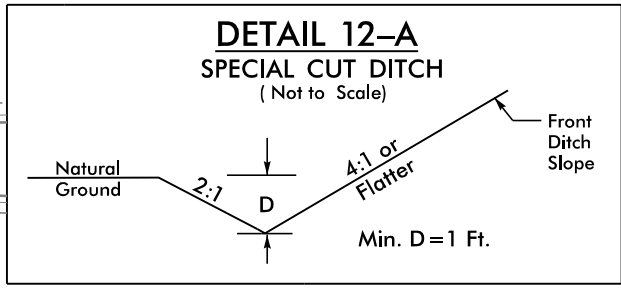
MATCHLINE -L- STA. 57+10 SEE SHEET 13

TRAFFIC DATA

FRAZIER ST -Y14-			
1525		1610	
925	600	600	925
1010	600	600	1010
25600	29980	26160	29575
200		200	
-Y14A- FRAZIER ST			
YEAR 2021 ADT		YEAR 2041 ADT	

TRAFFIC DATA

BETSY ACRE LN -Y20-			
500		500	
100	400	400	100
100	300	300	100
25880	29380	26480	29980
300		300	
BUSINESS DR			
YEAR 2021 ADT		YEAR 2041 ADT	



FOR -L- PROFILE SEE SHT.29
 FOR -Y14- PROFILE SEE SHT.35
 FOR -Y14A- PROFILE SEE SHT.35
 FOR -Y20- PROFILE SEE SHT.38

RETAINING WALL #9 IS TO BE BUILT BY OTHERS

EXISTING SIGNAL TO BE UPGRADED

HIST APE

AREA OF POTENTIAL EFFECTS BOUNDARY


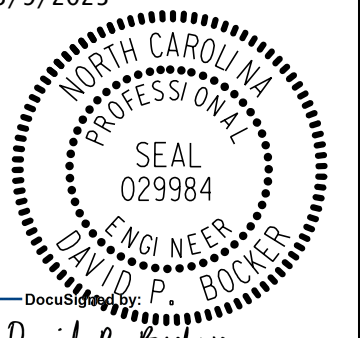
CONCRETE SIDEWALK/MEDIAN

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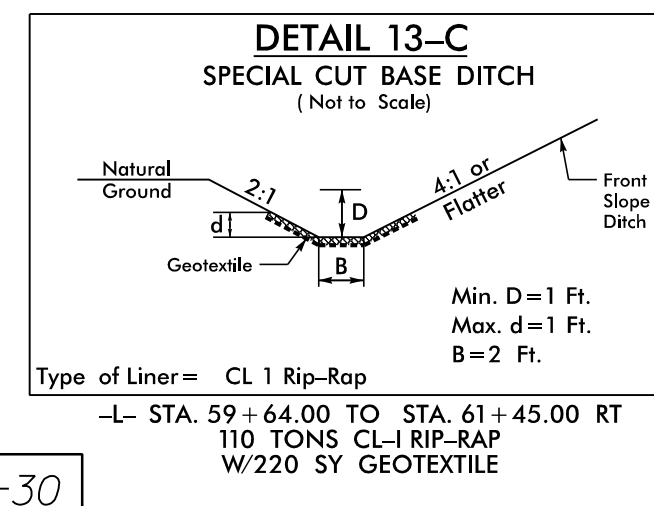
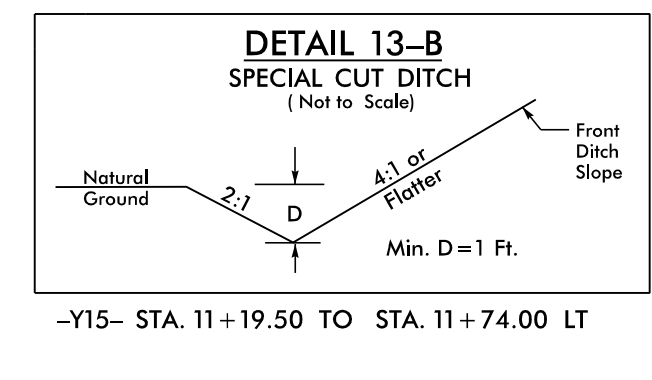
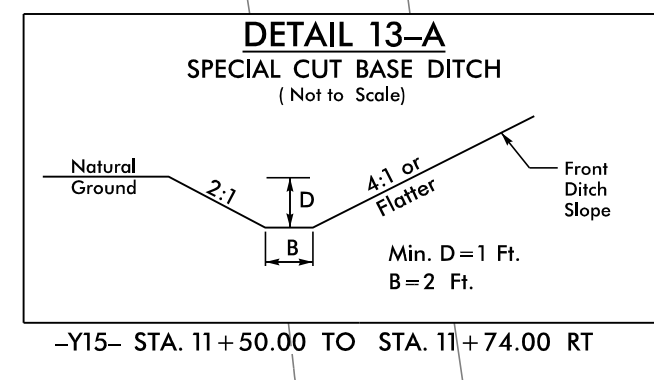
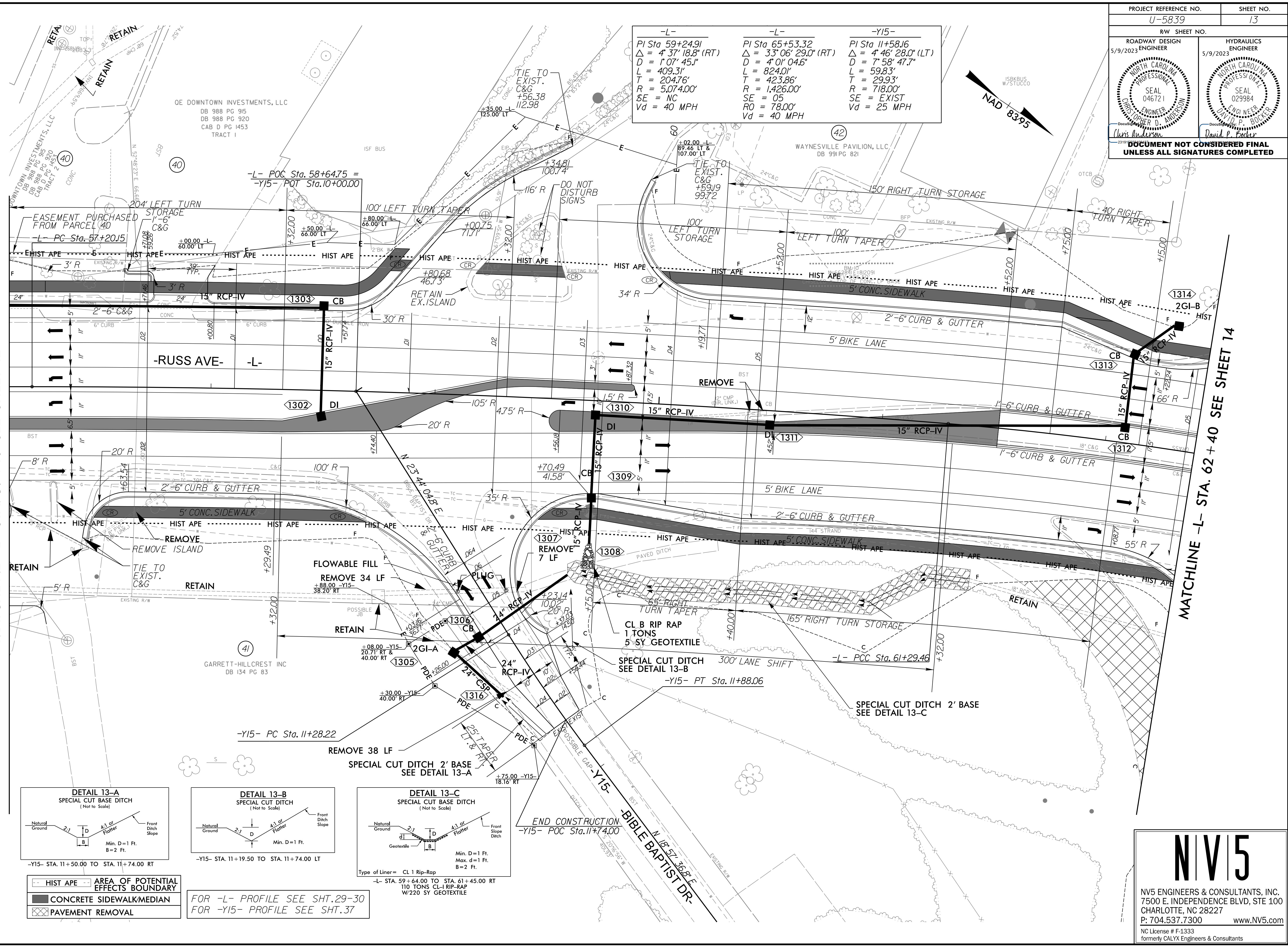
8.17.2023
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 5/9/2023
 R:\Projects\U5839\RDY_PSH_12.dgn
 5/9/2023

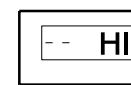
PROJECT REFERENCE NO. U-5839		SHEET NO. 13	
RW SHEET NO.			
ROADWAY DESIGN 5/9/2023 ENGINEER		HYDRAULICS ENGINEER 5/9/2023	
			
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>			

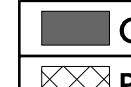
-L-	-L-	-Y15-
PI Sta 59+24.91	PI Sta 65+53.32	PI Sta 11+58.16
$\Delta = 4' 37" 18.8" (RT)$	$\Delta = 33' 06" 29.0" (RT)$	$\Delta = 4' 46" 28.0" (LT)$
$D = 1' 07" 45.1"$	$D = 4' 01" 04.6"$	$D = 7' 58" 47.7"$
$L = 409.31'$	$L = 824.01'$	$L = 59.83'$
$T = 204.76'$	$T = 423.86'$	$T = 29.93'$
$R = 5074.00'$	$R = 1,426.00'$	$R = 718.00'$
$SE = NC$	$SE = 05$	$SE = EXIST$
$Vd = 40 MPH$	$RO = 78.00'$	$Vd = 25 MPH$

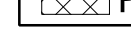
MATCHLINE -L- STA. 57 + 10 SEE SHEET 12

MATCHLINE -L- STA. 62 + 40 SEE SHEET 14



 HIST APE

 CONCRETE SIDEWALK/MEDIAN

 PAVEMENT REMOVAL

FOR -L- PROFILE SEE SHT. 29-30
FOR -Y15- PROFILE SEE SHT. 37

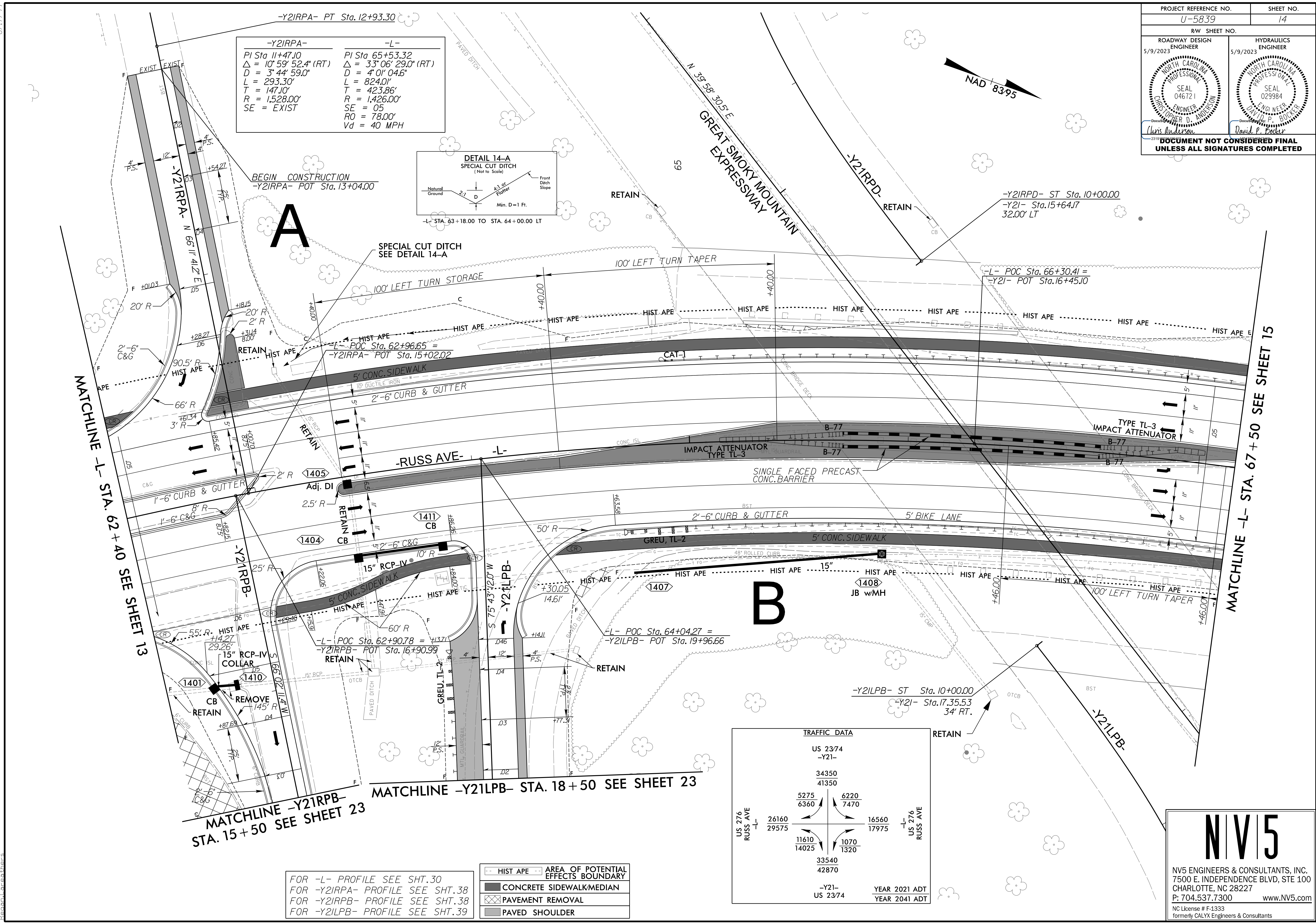
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Roy, PSH

PROJECT REFERENCE NO. U-5839	SHEET NO. 14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 5/9/2023	HYDRAULICS ENGINEER 5/9/2023
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

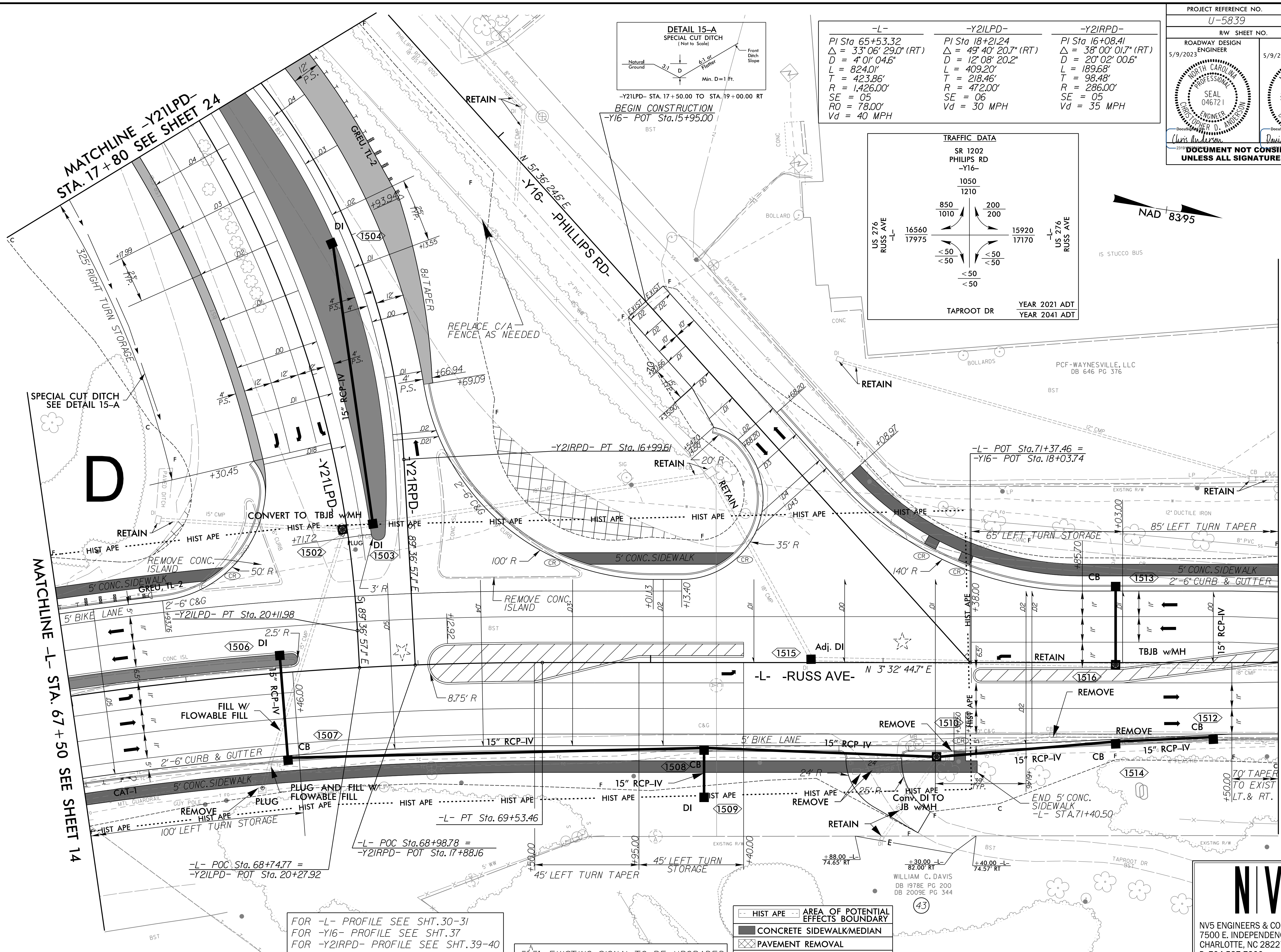
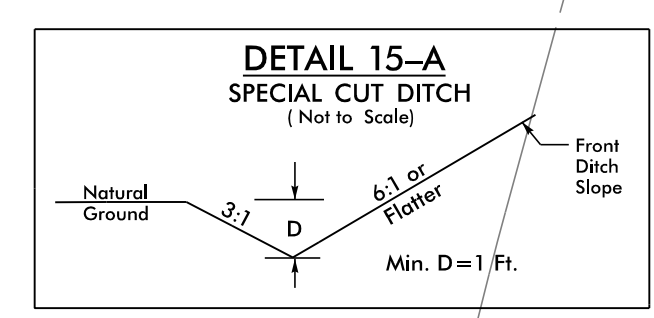
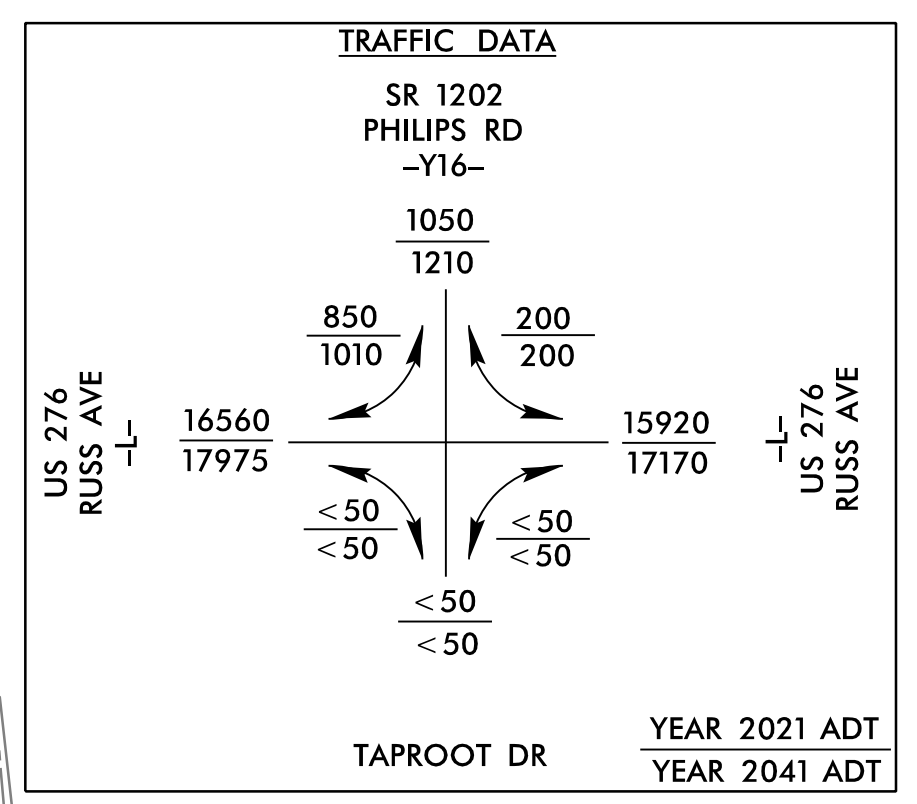


- HIST APE
 - AREA OF POTENTIAL EFFECTS BOUNDARY
 - CONCRETE SIDEWALK/MEDIAN
 - PAVEMENT REMOVAL
 - PAVED SHOULDER
- FOR -L- PROFILE SEE SHT.30
 FOR -Y21RPA- PROFILE SEE SHT.38
 FOR -Y21RPB- PROFILE SEE SHT.38
 FOR -Y21LPB- PROFILE SEE SHT.39

8.17.19
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 5/23/2023
 Ryan Carothers

PROJECT REFERENCE NO. U-5839		SHEET NO. 15	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER 5/9/2023		HYDRAULICS ENGINEER 5/9/2023	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

-L-	-Y2ILPD-	-Y2IRPD-
PI Sta 65+53.32	PI Sta 18+21.24	PI Sta 16+08.41
$\Delta = 33^{\circ}06'29.0"$ (RT)	$\Delta = 49^{\circ}40'20.7"$ (RT)	$\Delta = 38^{\circ}00'01.7"$ (RT)
$D = 4^{\circ}01'04.6"$	$D = 12^{\circ}08'20.2"$	$D = 20^{\circ}02'00.6"$
$L = 824.0'$	$L = 409.20'$	$L = 189.68'$
$T = 423.86'$	$T = 218.46'$	$T = 98.48'$
$R = 1,426.00'$	$R = 472.00'$	$R = 286.00'$
$SE = 05$	$SE = 06$	$SE = 05$
$RO = 78.00'$	$Vd = 30$ MPH	$Vd = 35$ MPH
$Vd = 40$ MPH		



MATCHLINE -Y2ILPD-
STA. 17+80 SEE SHEET 24

MATCHLINE -L- STA. 67+50 SEE SHEET 14

MATCHLINE -L- STA. 72+70 SEE SHEET 16

FOR -L- PROFILE SEE SHT.30-31
FOR -Y16- PROFILE SEE SHT.37
FOR -Y2IRPD- PROFILE SEE SHT.39-40
FOR -Y2ILPD- PROFILE SEE SHT.40

★ EXISTING SIGNAL TO BE UPGRADED

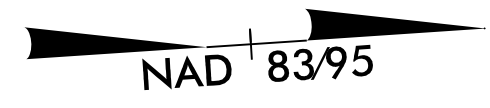
	HIST APE		AREA OF POTENTIAL EFFECTS BOUNDARY
	CONCRETE SIDEWALK/MEDIAN		PAVEMENT REMOVAL
	PAVED SHOULDER		

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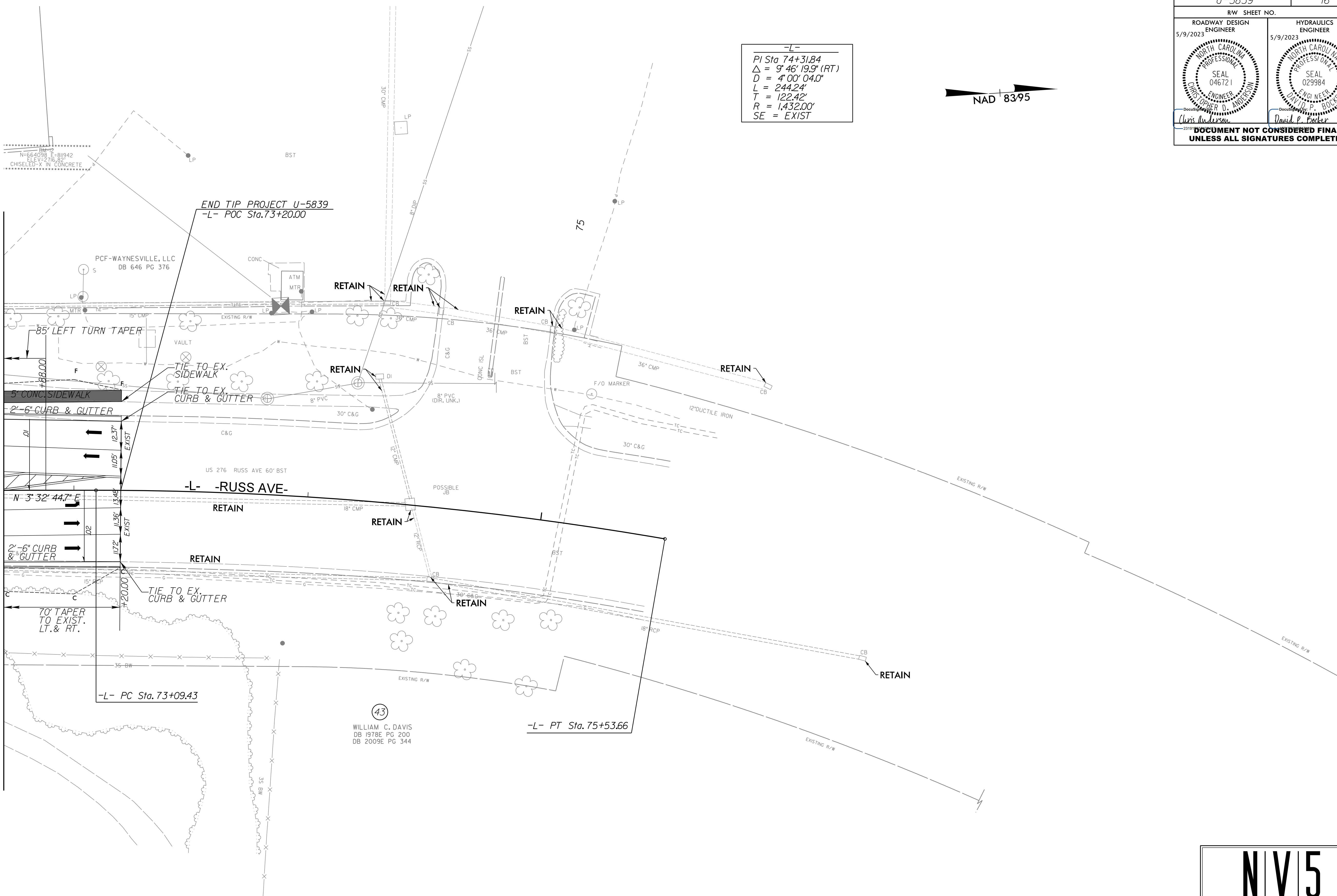
8.17.19

PROJECT REFERENCE NO. <i>U-5839</i>	SHEET NO. <i>16</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 5/9/2023	HYDRAULICS ENGINEER 5/9/2023
<p>Chris Anderson</p> <p>David P. Becker</p> <p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	

-L-
 PI Sta 74+31.84
 $\Delta = 9' 46' 19.9" (RT)$
 $D = 4' 00' 04.0"$
 $L = 244.24'$
 $T = 122.42'$
 $R = 1,432.00'$
 SE = EXIST



MATCHLINE -L- STA. 72 + 70 SEE SHEET 15



CONCRETE SIDEWALK/MEDIAN
 FOR -L- PROFILE SEE SHT. 31

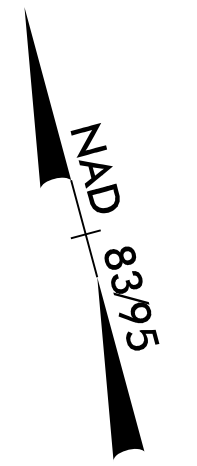
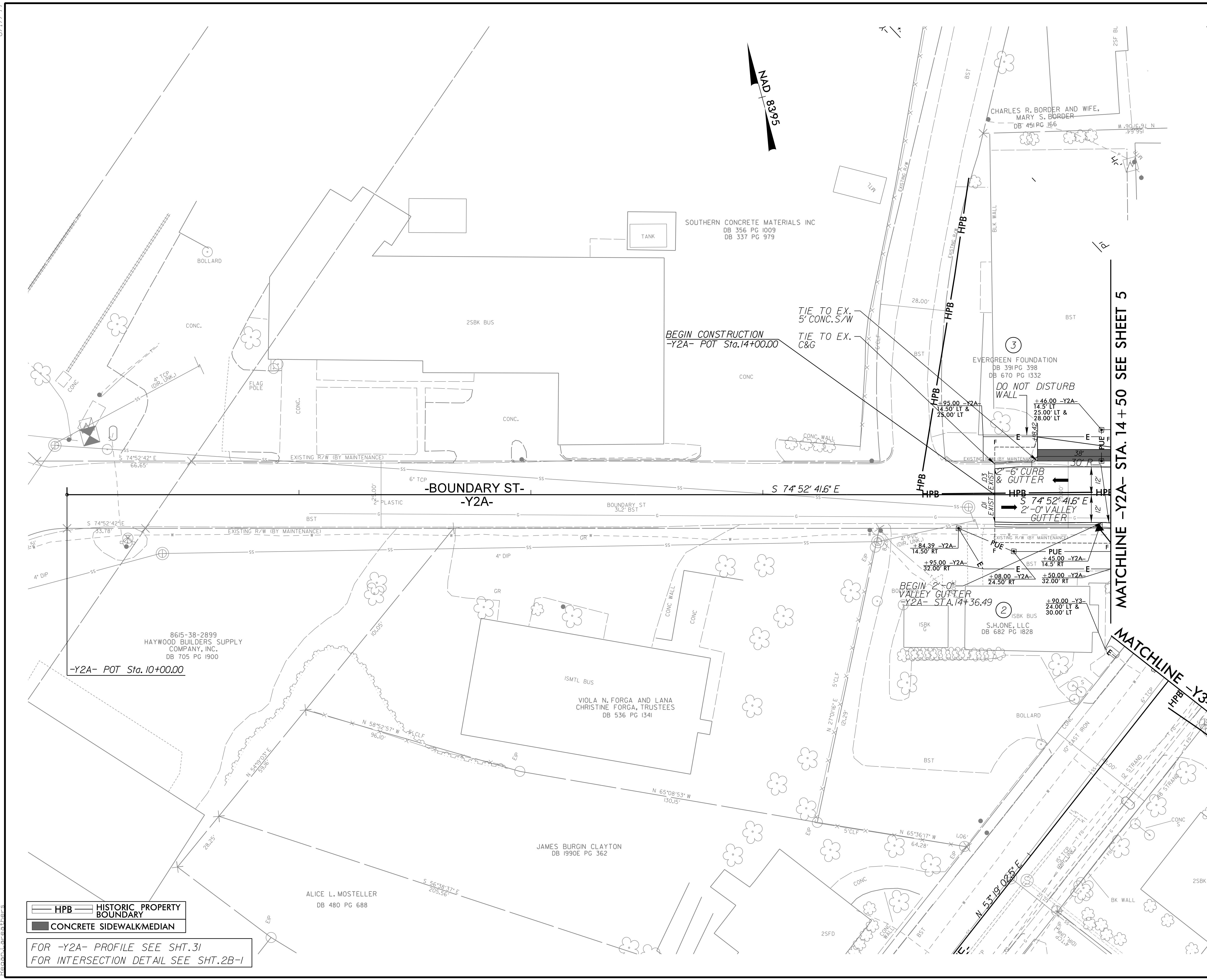
43
 WILLIAM C. DAVIS
 DB 1978E PG 200
 DB 2009E PG 344

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 Ryan Carothers

8.17.17.99

PROJECT REFERENCE NO. U-5839	SHEET NO. 17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 5/9/2023	HYDRAULICS ENGINEER 5/9/2023
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	



HPB HISTORIC PROPERTY BOUNDARY
 CONCRETE SIDEWALK/MEDIAN

FOR -Y2A- PROFILE SEE SHT.31
 FOR INTERSECTION DETAIL SEE SHT.2B-1

MATCHLINE -Y2A- STA. 14 + 50 SEE SHEET 5

MATCHLINE -Y3- STA. 14 + 96 SEE SHEET 5

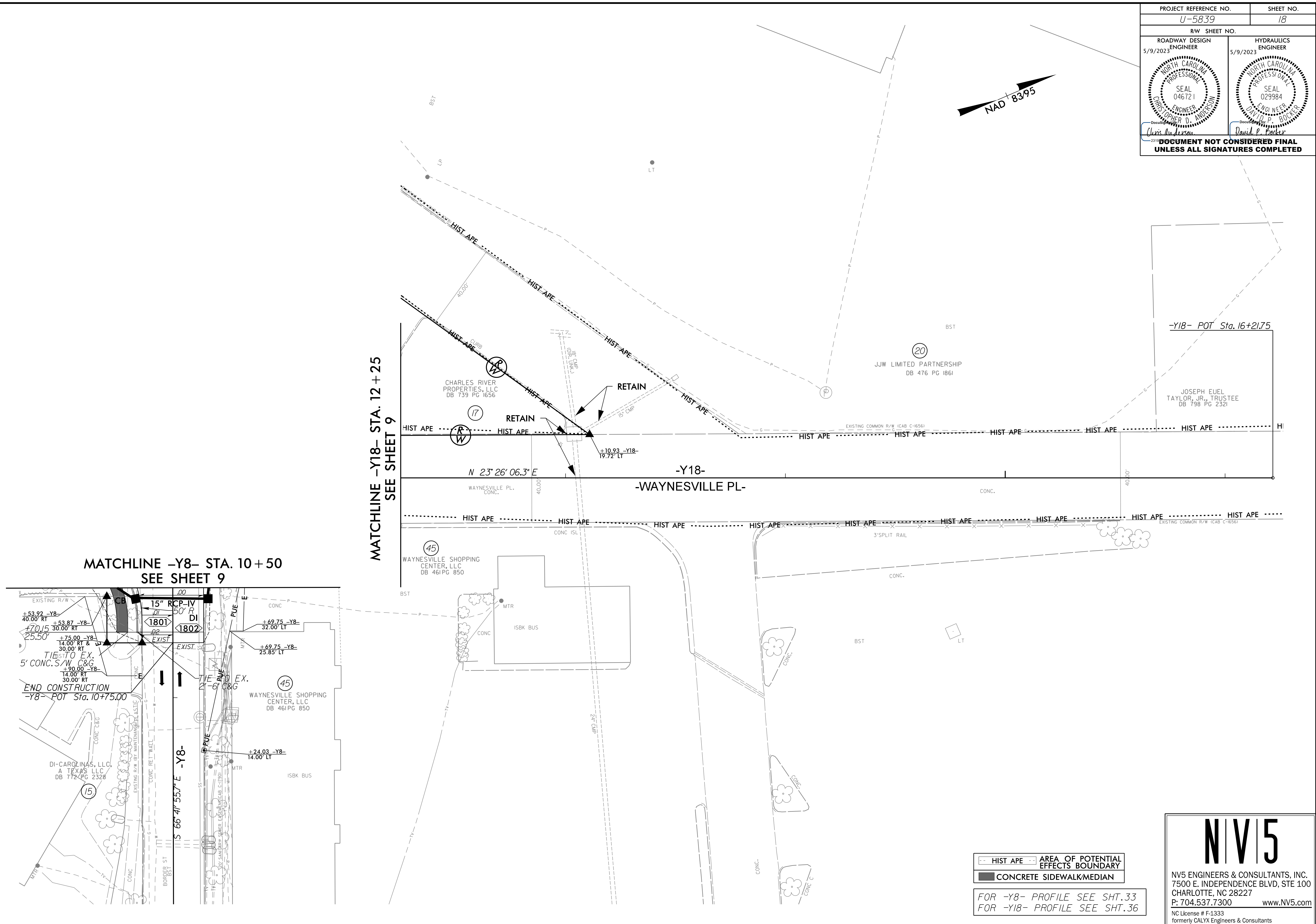
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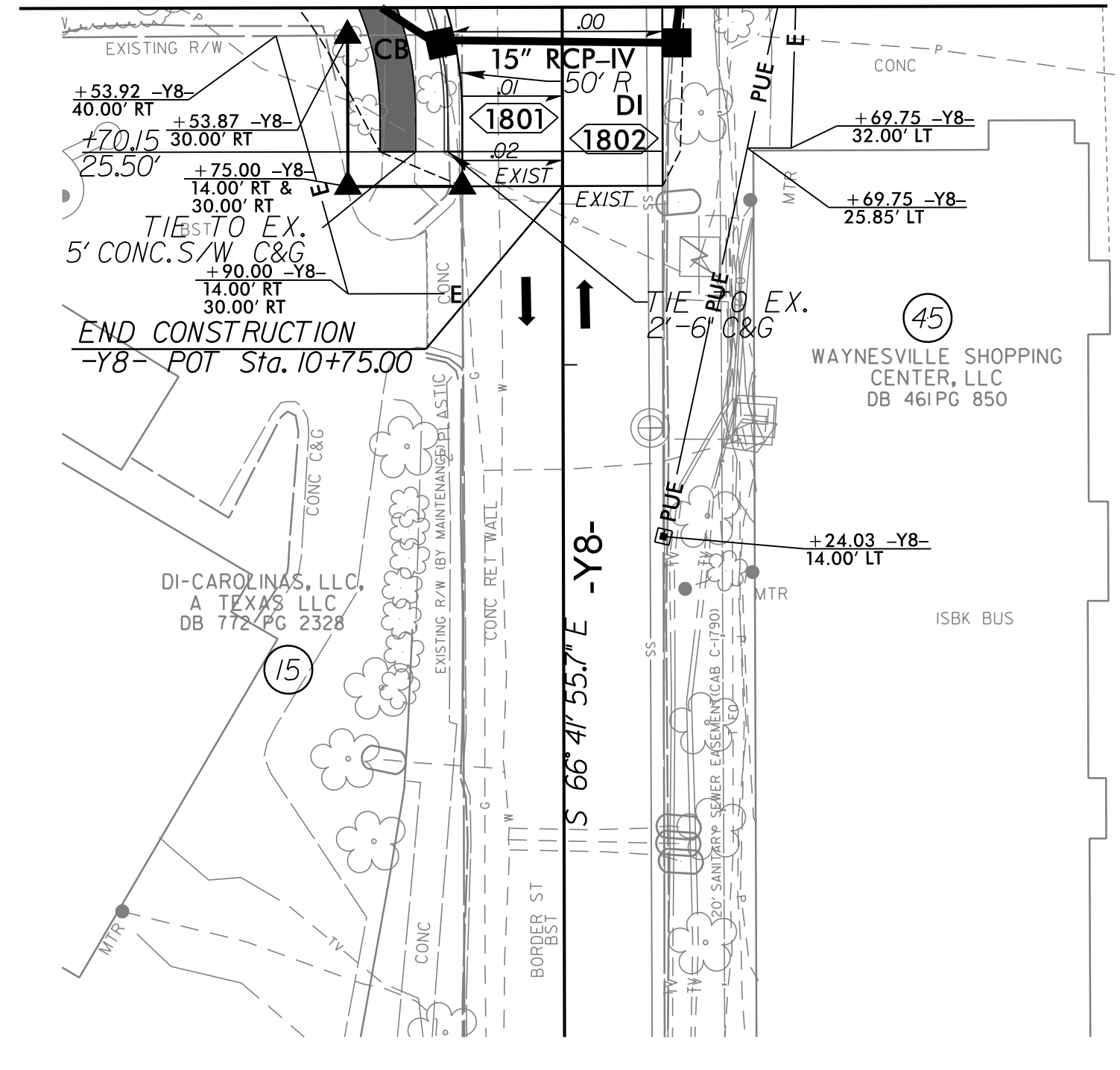
8/17/99

PROJECT REFERENCE NO. U-5839	SHEET NO. 18
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 5/9/2023	HYDRAULICS ENGINEER 5/9/2023
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	



MATCHLINE -Y18- STA. 12 + 25
SEE SHEET 9

MATCHLINE -Y8- STA. 10 + 50
SEE SHEET 9



--- HIST APE --- AREA OF POTENTIAL EFFECTS BOUNDARY
 █ CONCRETE SIDEWALK/MEDIAN

FOR -Y8- PROFILE SEE SHT. 33
 FOR -Y18- PROFILE SEE SHT. 36

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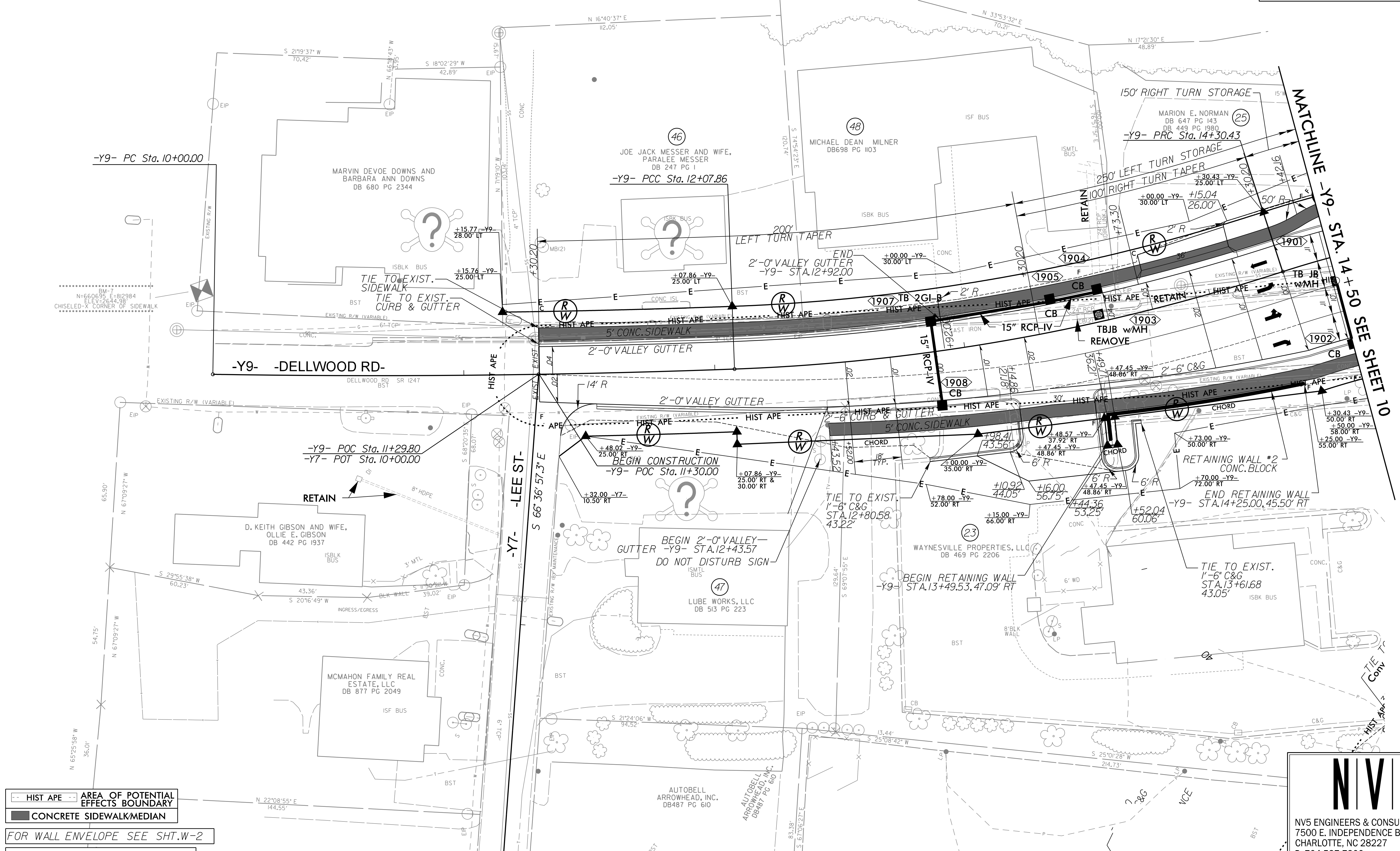
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Reagan, C

8.17/19

-Y9-	-Y9-	-Y9-
PI Sta 11+03.95	PI Sta 13+19.87	PI Sta 15+48.02
$\Delta = 3^{\circ}04'15.7''$ (LT)	$\Delta = 15^{\circ}56'26.3''$ (LT)	$\Delta = 35^{\circ}10'22.8''$ (RT)
$D = 1^{\circ}28'38.8''$	$D = 7^{\circ}09'43.1''$	$D = 15^{\circ}26'37.0''$
$L = 207.86'$	$L = 222.57'$	$L = 227.75'$
$T = 103.95'$	$T = 112.01'$	$T = 117.59'$
$R = 3,878.00'$	$R = 800.00'$	$R = 371.00'$
SE = EXIST	SE = 04	SE = 04
	Vd = 35 MPH	Vd = 35 MPH

PROJECT REFERENCE NO. U-5839	SHEET NO. 19
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 5/9/2023	HYDRAULICS ENGINEER 5/9/2023
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	



HIST APE
 AREA OF POTENTIAL EFFECTS BOUNDARY
 CONCRETE SIDEWALK/MEDIAN
 FOR WALL ENVELOPE SEE SHT.W-2
 FOR -Y9- PROFILE SEE SHT.33

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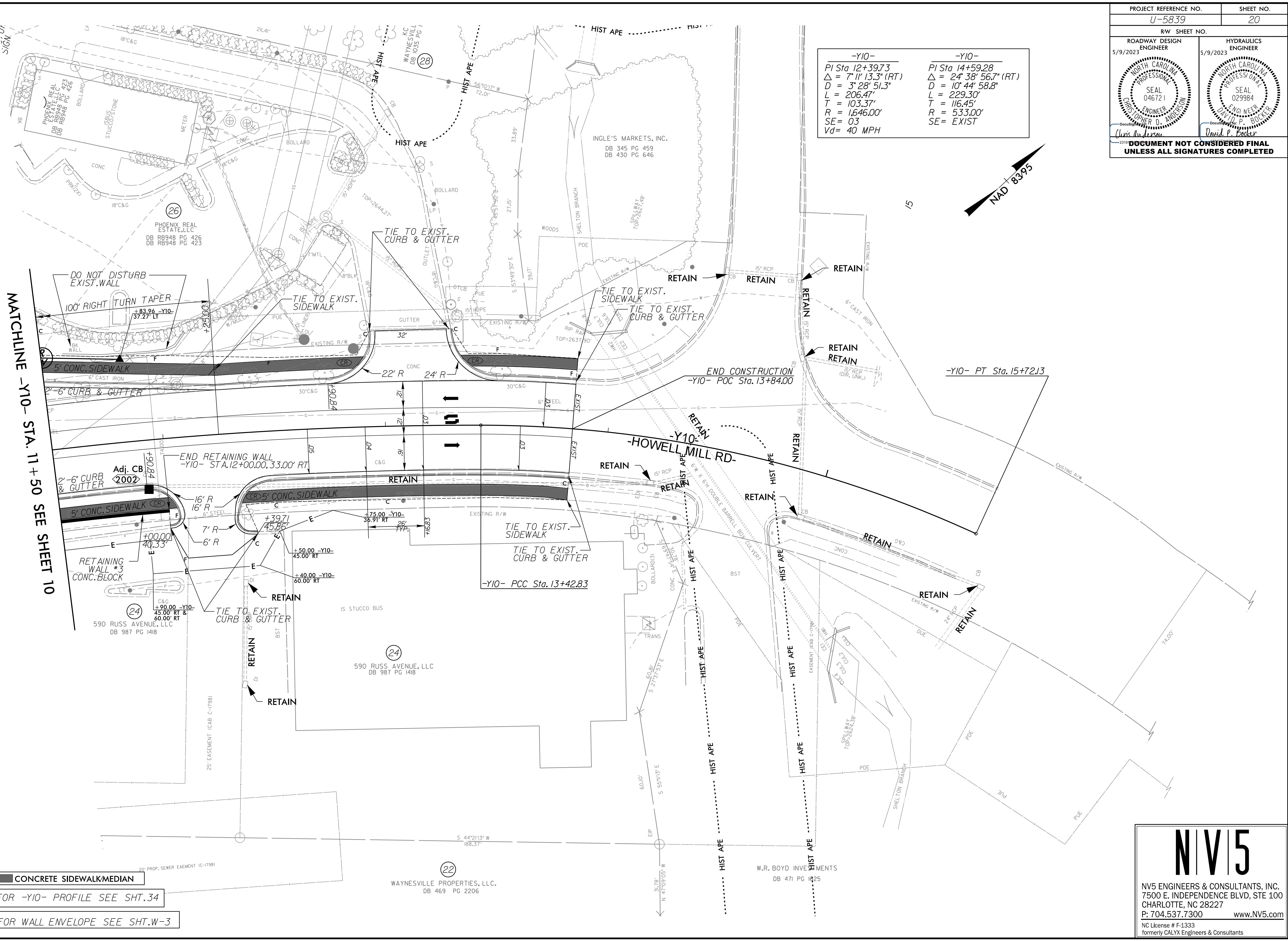
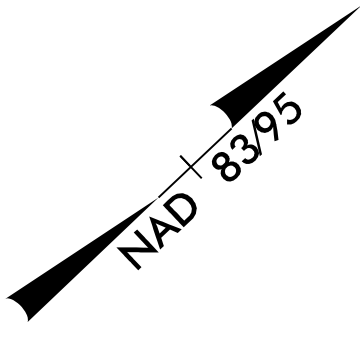
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8.17.19

PROJECT REFERENCE NO. U-5839	SHEET NO. 20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 5/9/2023	HYDRAULICS ENGINEER 5/9/2023
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-Y10- PI Sta 12+39.73 Δ = 7' 11" 13.3" (RT) D = 3' 28' 51.3" L = 206.47' T = 103.37' R = 1,646.00' SE = 03 Vd = 40 MPH	-Y10- PI Sta 14+59.28 Δ = 24' 38' 56.7" (RT) D = 10' 44' 58.8" L = 229.30' T = 116.45' R = 533.00' SE = EXIST
-------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------



MATCHLINE -Y10- STA. 11+50 SEE SHEET 10

CONCRETE SIDEWALK/MEDIAN
FOR -Y10- PROFILE SEE SHT. 34
FOR WALL ENVELOPE SEE SHT. W-3

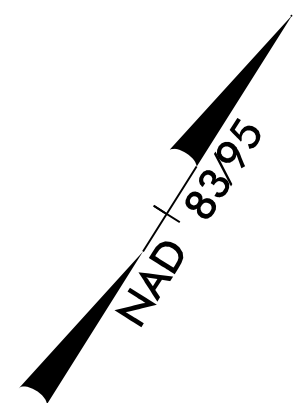
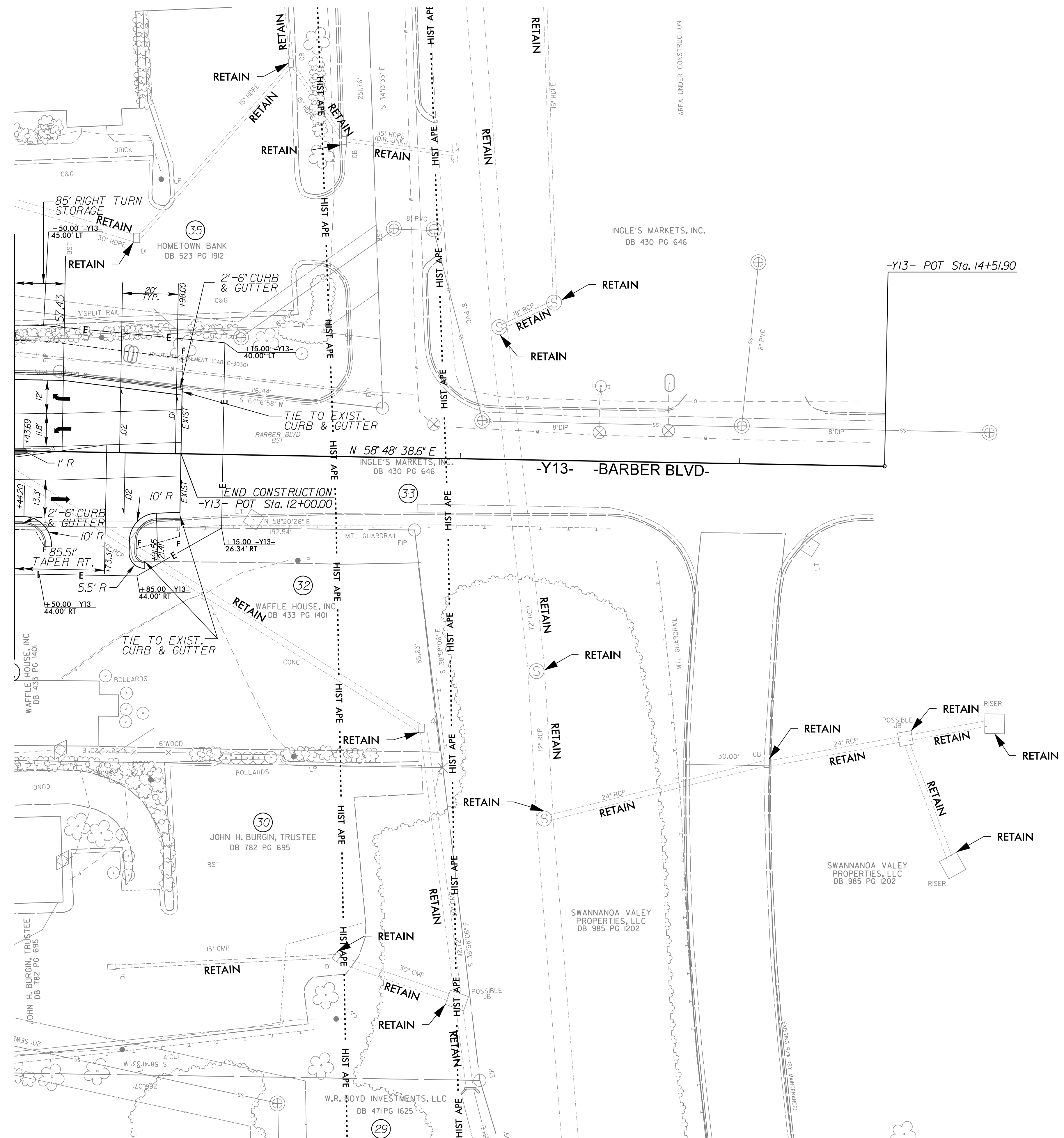
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8/23/2023
Reagan, C

8.17.2023

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Reagan, C
8/17/2023

MATCHLINE -Y13- STA. 11 + 40 SEE SHEET 11



PROJECT REFERENCE NO. <i>U-5839</i>	SHEET NO. <i>21</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 5/9/2023	HYDRAULICS ENGINEER 5/9/2023
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FOR -Y13- PROFILE SEE SHT. 34

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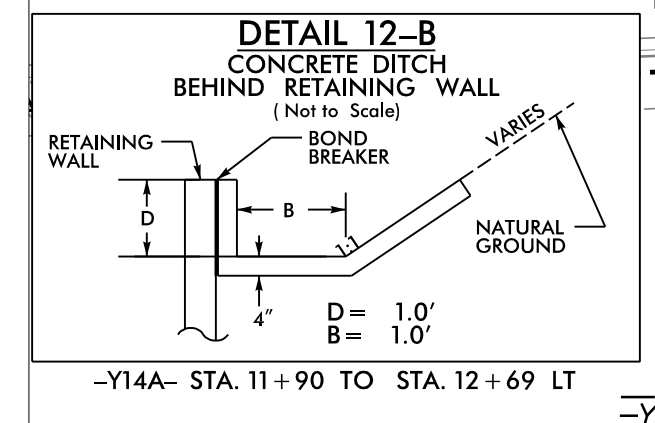
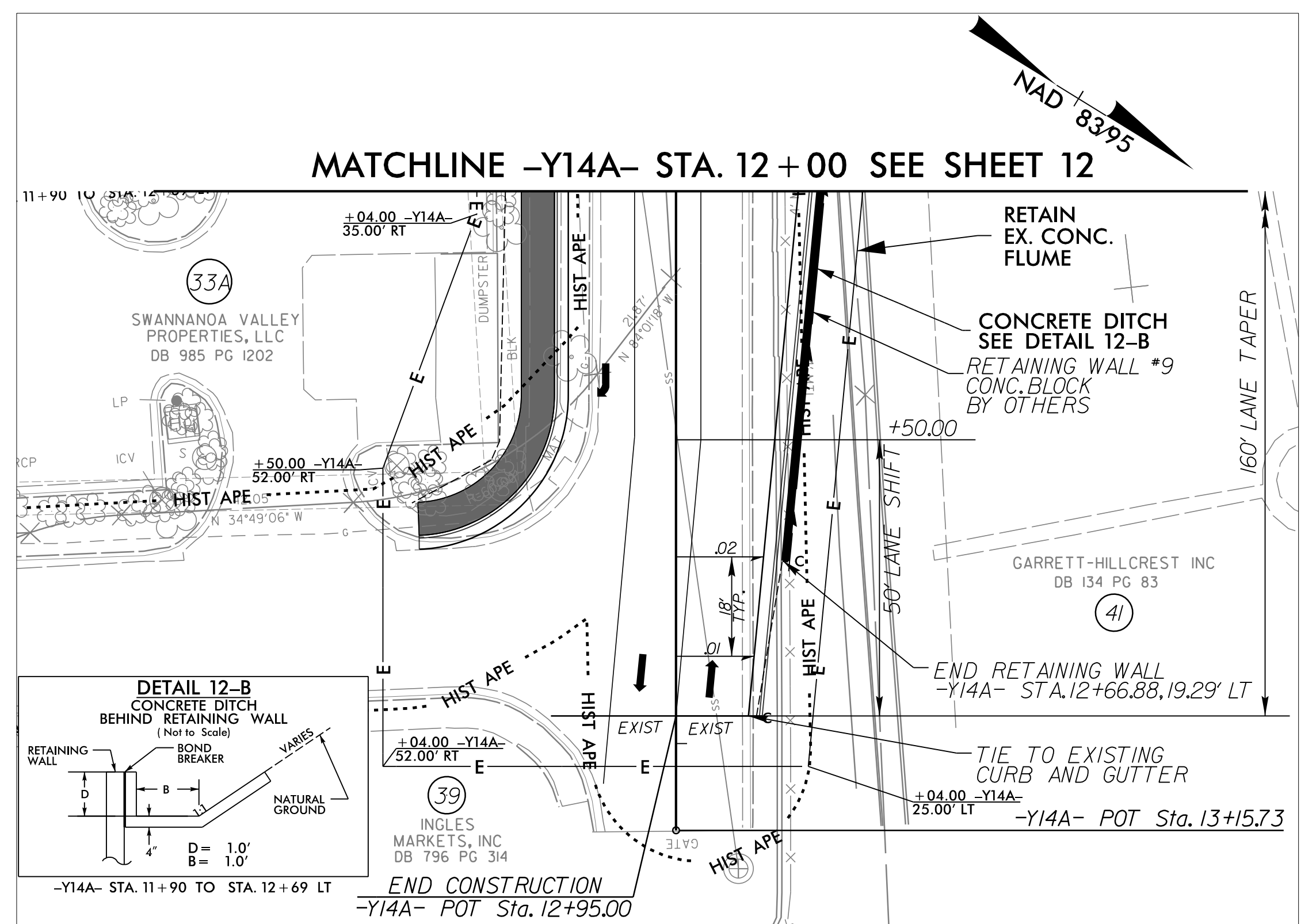
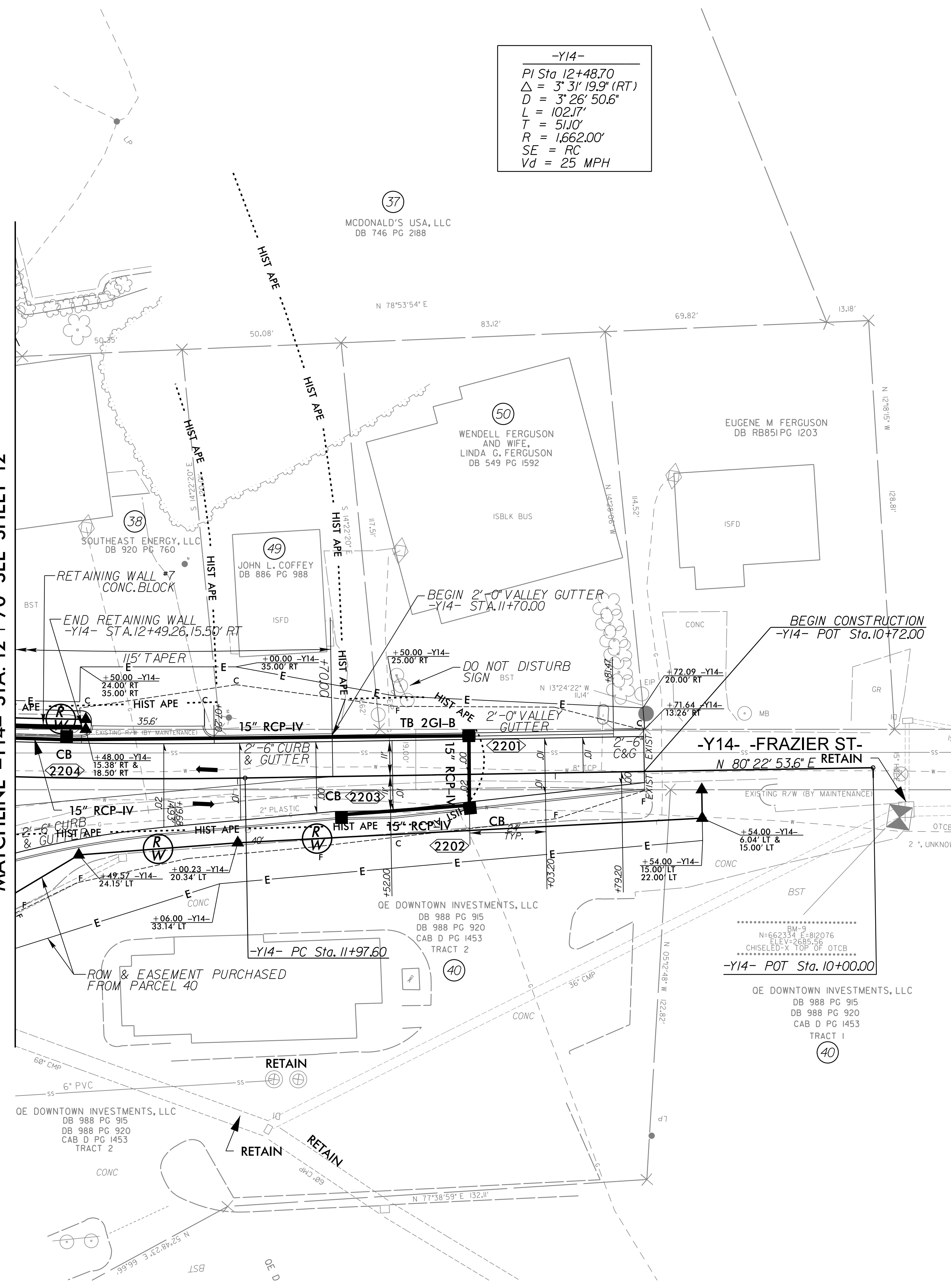
8.17.19

PROJECT REFERENCE NO. <i>U-5839</i>	SHEET NO. <i>22</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 5/9/2023	HYDRAULICS ENGINEER 5/9/2023
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	



-Y14-
 PI Sta. 12+48.70
 $\Delta = 3' 31" 19.9" (RT)$
 $D = 3' 26' 50.6"$
 $L = 102.17'$
 $T = 51.10'$
 $R = 1,662.00'$
 $SE = RC$
 $Vd = 25 MPH$

MATCHLINE -Y14- STA. 12 + 70 SEE SHEET 12



HIST APE AREA OF POTENTIAL EFFECTS BOUNDARY

FOR WALL ENVELOPES SEE SHT.W-6

FOR -Y14- PROFILE SEE SHT.35

RETAINING WALL #9 IS TO BE BUILT BY OTHERS

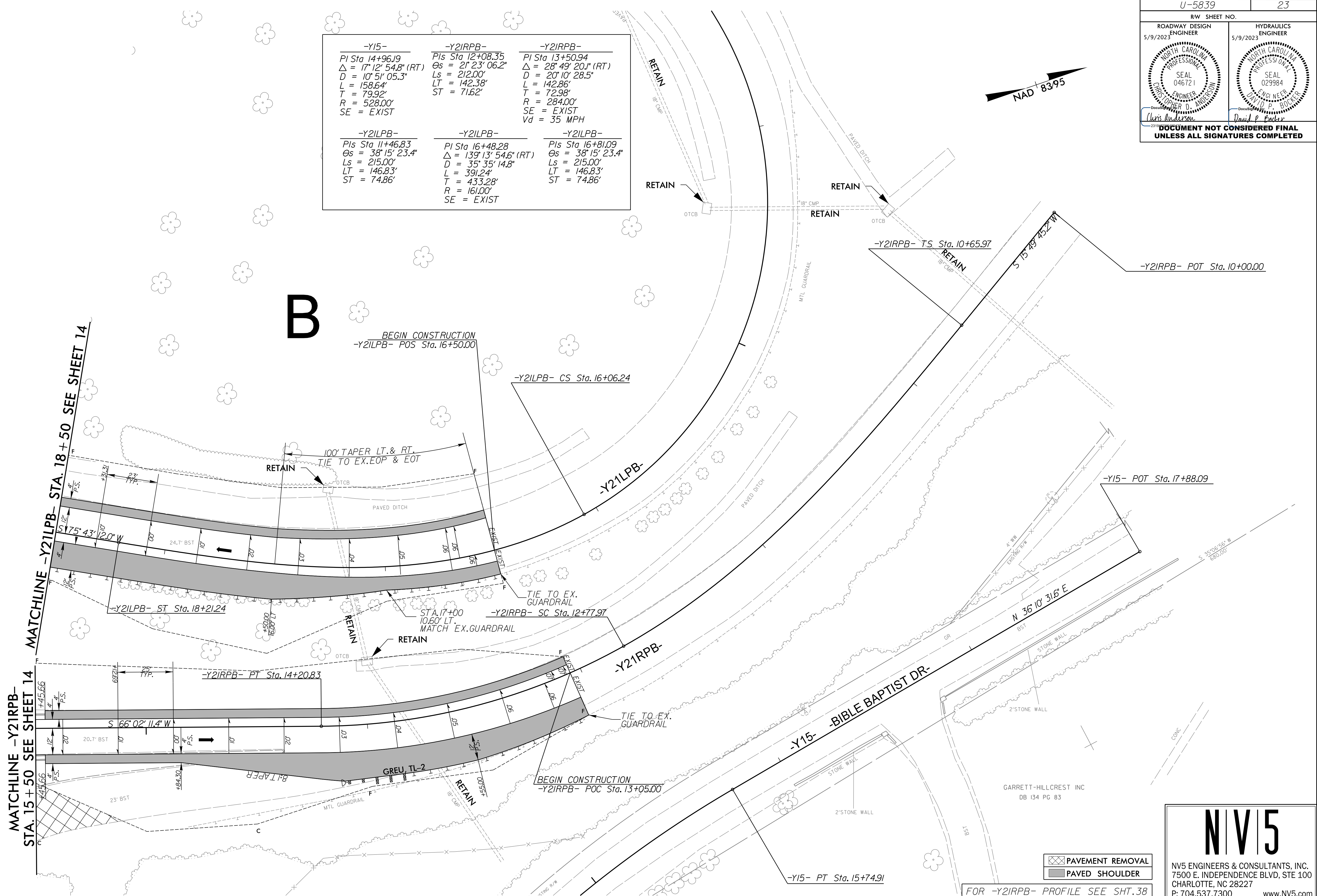
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PROJECT REFERENCE NO. U-5839	SHEET NO. 23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 5/9/2023	HYDRAULICS ENGINEER 5/9/2023
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-Y15- PI Sta 14+96.19 $\Delta = 17^{\circ}12'54.8"$ (RT) D = 10'51'05.3" L = 158.64' T = 79.92' R = 528.00' SE = EXIST	-Y2IRPB- PIs Sta 12+08.35 $\Theta_s = 21^{\circ}23'06.2"$ Ls = 212.00' LT = 142.38' ST = 71.62'	-Y2IRPB- PI Sta 13+50.94 $\Delta = 28^{\circ}49'20.1"$ (RT) D = 20'10'28.5" L = 142.86' T = 72.98' R = 284.00' SE = EXIST Vd = 35 MPH
-Y2ILPB- PIs Sta 11+46.83 $\Theta_s = 38^{\circ}15'23.4"$ Ls = 215.00' LT = 146.83' ST = 74.86'	-Y2ILPB- PI Sta 16+48.28 $\Delta = 139^{\circ}13'54.6"$ (RT) Ls = 35'35'14.8" L = 391.24' R = 161.00' SE = EXIST	-Y2ILPB- PIs Sta 16+81.09 $\Theta_s = 38^{\circ}15'23.4"$ Ls = 215.00' LT = 146.83' ST = 74.86'



PAVEMENT REMOVAL
 PAVED SHOULDER

FOR -Y2IRPB- PROFILE SEE SHT. 38
 FOR -Y2ILPB- PROFILE SEE SHT. 39

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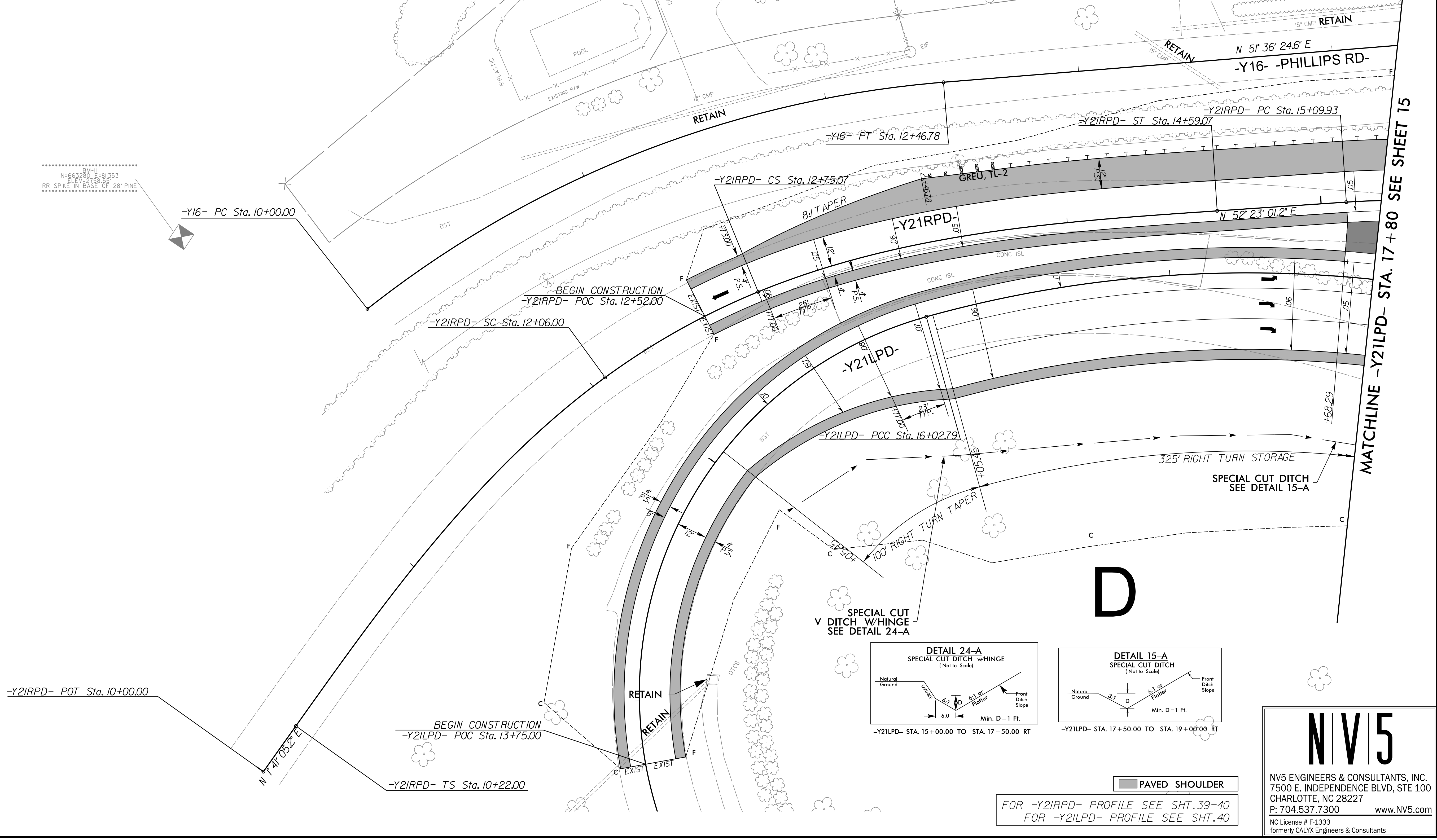
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 Ryan Carothers

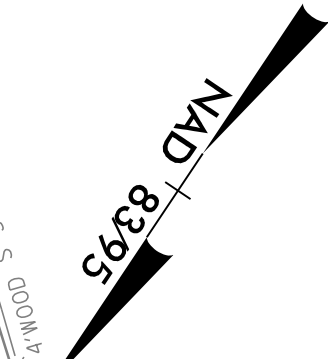
8.17.2023

PROJECT REFERENCE NO. U-5839		SHEET NO. 24	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 5/9/2023 Chris Anderson		HYDRAULICS ENGINEER 5/9/2023 David P. Parker	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

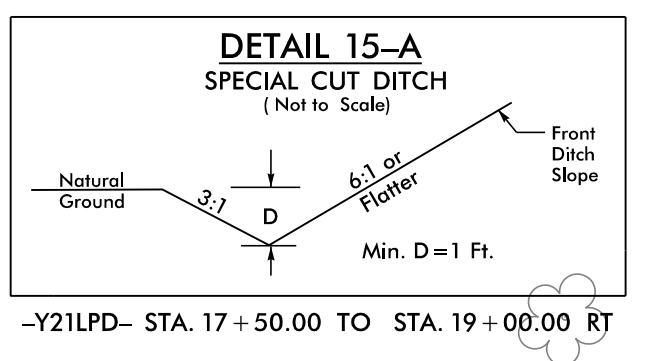
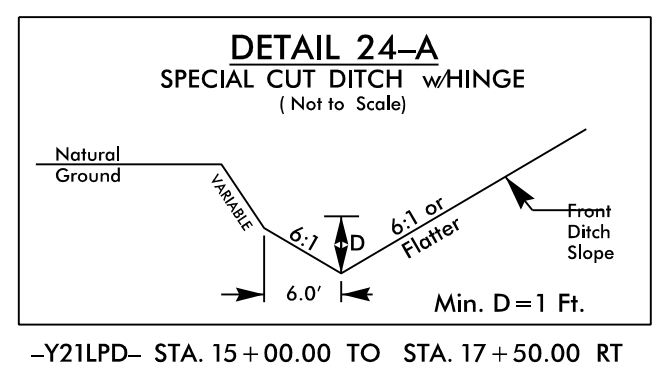
-Y16- PI Sta 11+27.06 Δ = 33° 39' 52.9" (RT) D = 13' 38' 30.7" L = 246.78' T = 127.06' R = 420.00' SE = EXIST	-Y21LPD- Pls Sta 11+60.99 Δs = 43° 31' 47.7" D = 234.00' LT = 160.99' ST = 82.56'	-Y21LPD- PI Sta 16+27.03 Δ = 137° 12' 24.0" (RT) D = 37' 12' 18.2" L = 368.79' T = 393.03' R = 154.00' SE = EXIST Vd = 30 MPH	-Y21LPD- PI Sta 18+21.24 Δ = 49° 40' 20.7" (RT) D = 12' 08' 20.2" L = 409.20' T = 218.46' R = 472.00' SE = 06 Vd = 30 MPH
-Y21RPD- Pls Sta 11+45.34 Δs = 18° 25' 50.9" Ls = 184.00' LT = 123.34' ST = 61.94'	-Y21RPD- PI Sta 12+40.70 Δ = 13° 50' 14.1" (RT) D = 20° 02' 00.6" L = 69.07' T = 34.70' R = 286.00' SE = EXIST Vd = 35 MPH	-Y21RPD- Pls Sta 13+37.01 Δs = 18° 25' 50.9" Ls = 184.00' LT = 123.34' ST = 61.94'	-Y21RPD- PI Sta 16+08.41 Δ = 38° 00' 01.7" (RT) D = 20° 02' 00.6" L = 189.68' T = 98.48' R = 286.00' SE = 05 Vd = 35 MPH



N=663280 E=811353
ELEV=2758.58'
RR SPIKE IN BASE OF 28" PINE



MATCHLINE -Y21LPD- STA. 17+80 SEE SHEET 15



PAVED SHOULDER

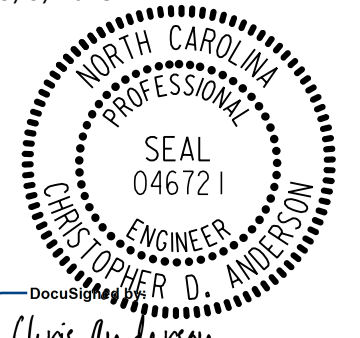
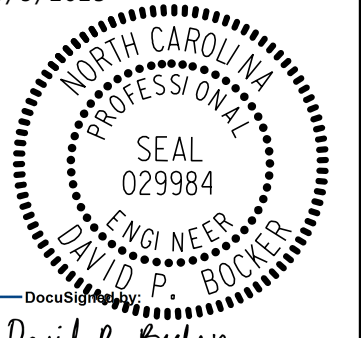
FOR -Y21RPD- PROFILE SEE SHT. 39-40
FOR -Y21LPD- PROFILE SEE SHT. 40

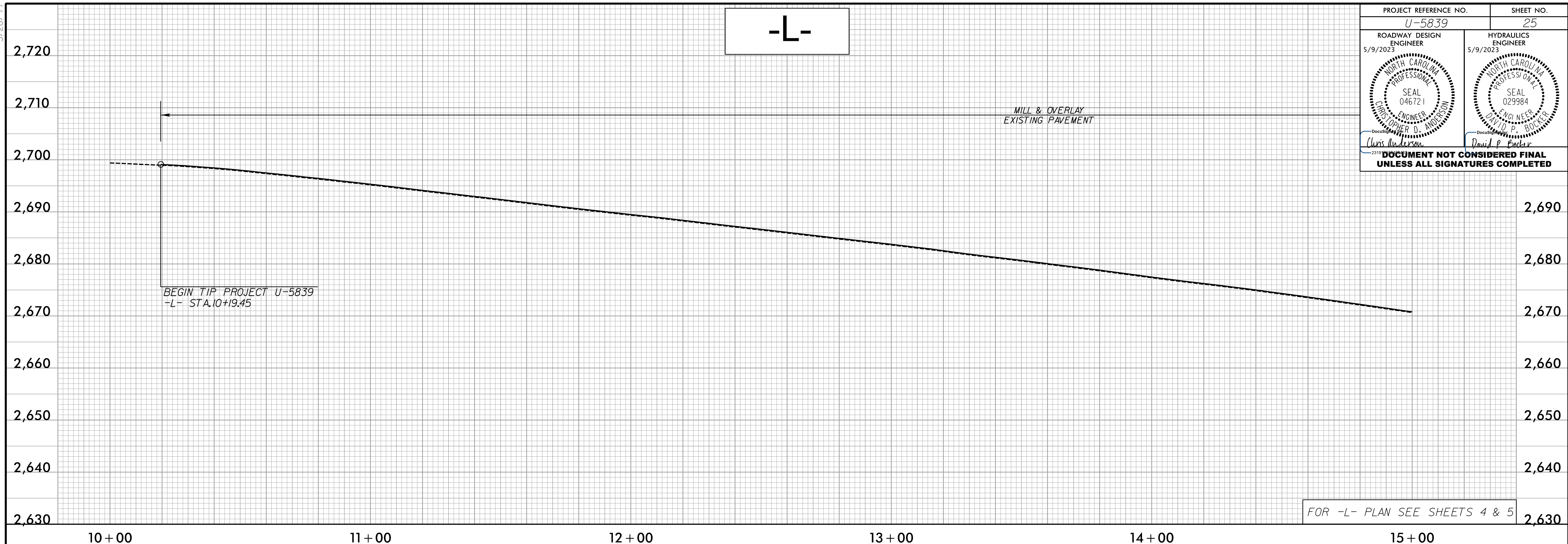
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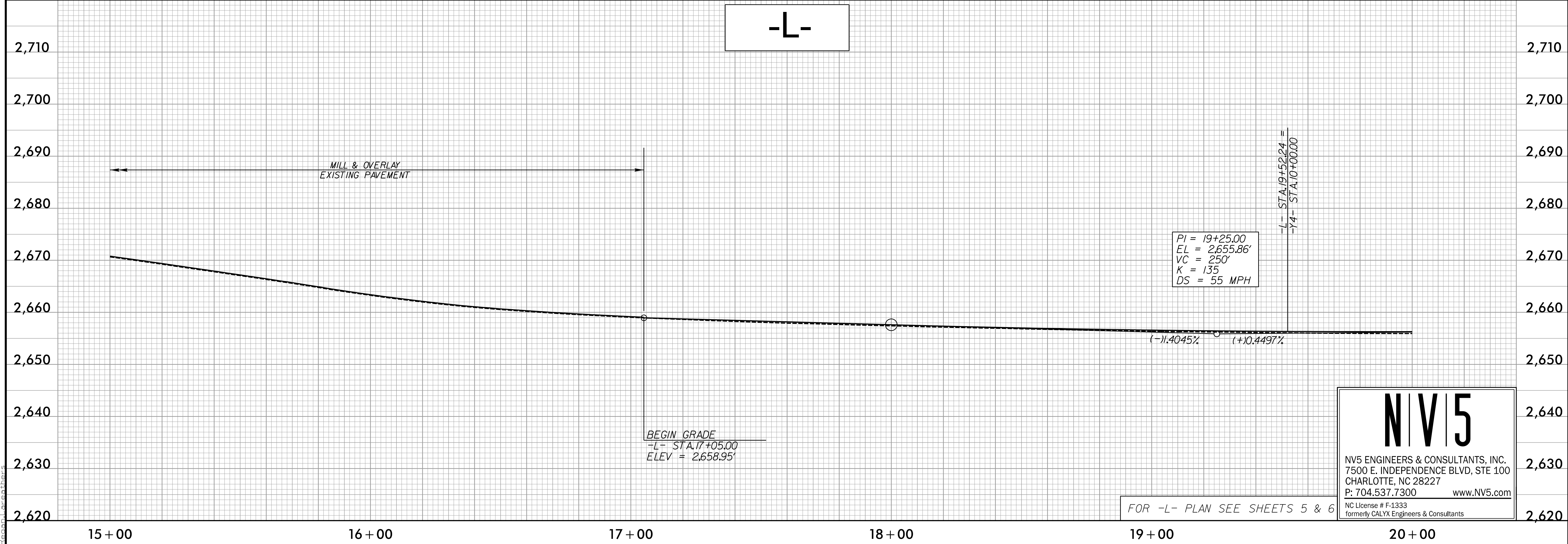
5/28/23

PROJECT REFERENCE NO. U-5839	SHEET NO. 25
ROADWAY DESIGN ENGINEER 5/9/2023 	HYDRAULICS ENGINEER 5/9/2023 
<p>2319 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	



FOR -L- PLAN SEE SHEETS 4 & 5

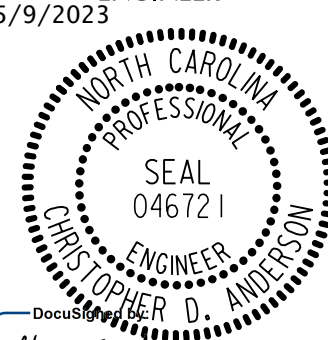
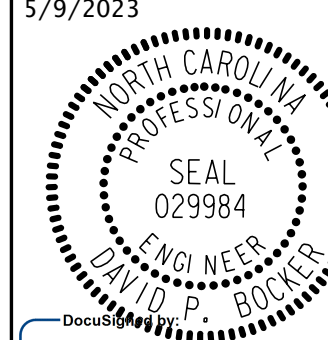
5/26/2023
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Reagan, C.

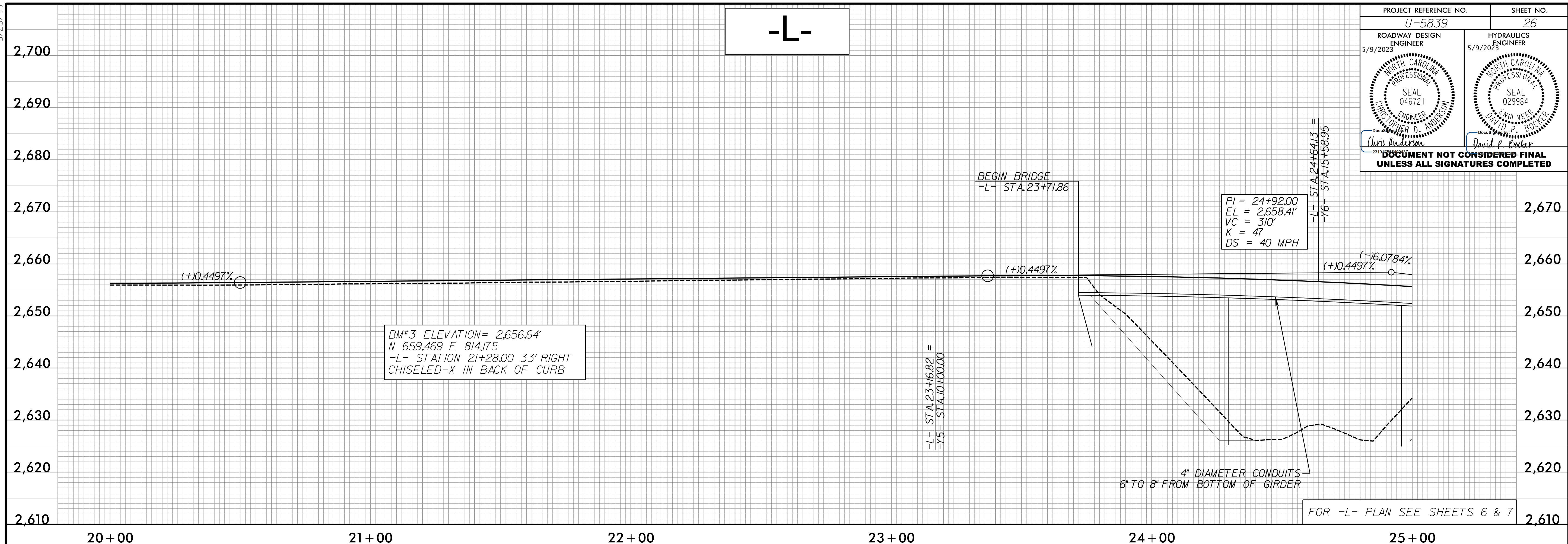


FOR -L- PLAN SEE SHEETS 5 & 6

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PROJECT REFERENCE NO. U-5839		SHEET NO. 26	
ROADWAY DESIGN ENGINEER 5/9/2023		HYDRAULICS ENGINEER 5/9/2023	
 Christopher D. Addison Engineer		 David P. Becker Engineer	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



BM*3 ELEVATION = 2,656.64'
 N 659,469 E 814,175
 -L- STATION 21+28.00 33' RIGHT
 CHISELED-X IN BACK OF CURB

PI = 24+92.00
 EL = 2,658.41'
 VC = 310'
 K = 47
 DS = 40 MPH

FOR -L- PLAN SEE SHEETS 6 & 7

5/16/2023
 R:\Projects\U5839\RDY_PSH_26.dgn
 Robert Carothers



BM*5 ELEVATION = 2,636.78'
 N 660,190 E 813,914
 -L- STATION 29+39.00 58' LEFT
 CHISELED-X TOP OF CONC. LP BASE

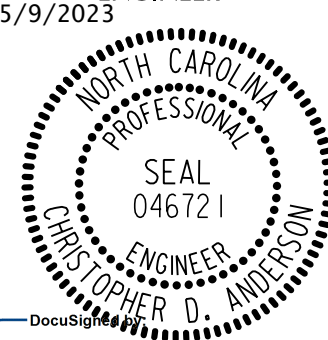
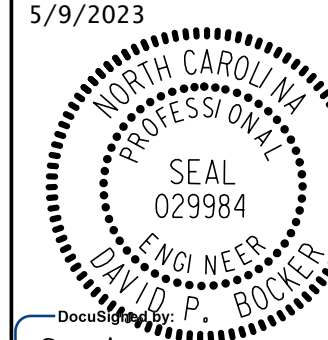
FOR -L- PLAN SEE SHEET 7

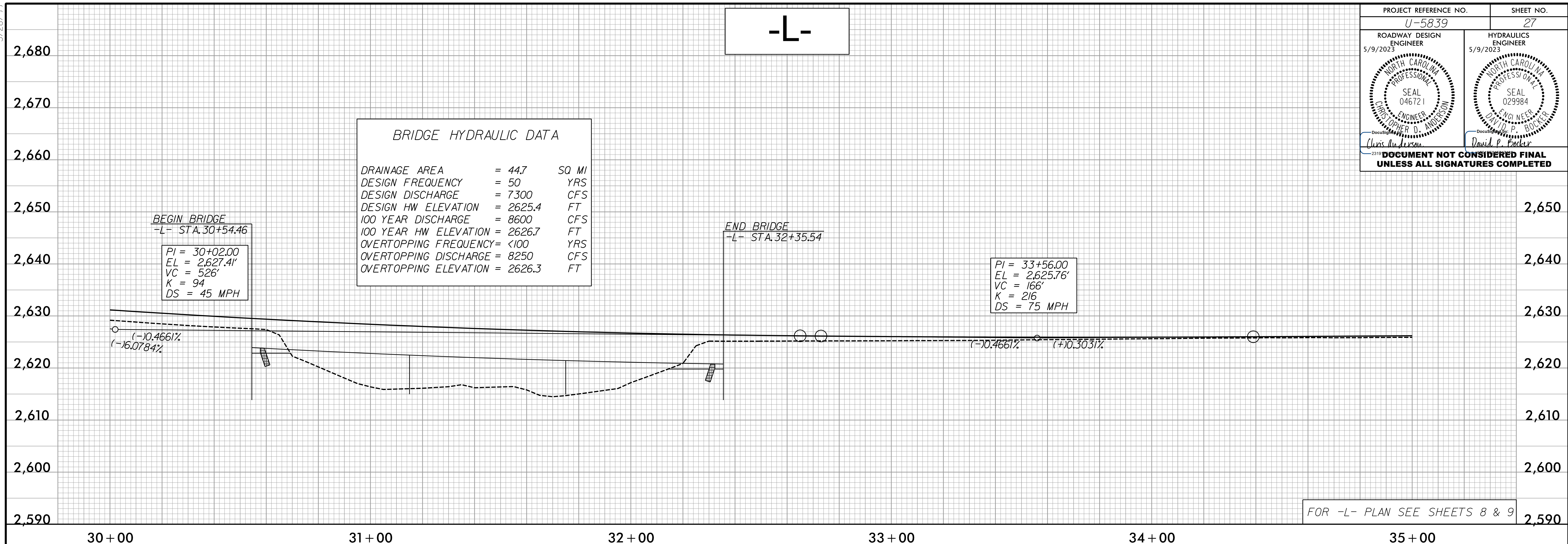
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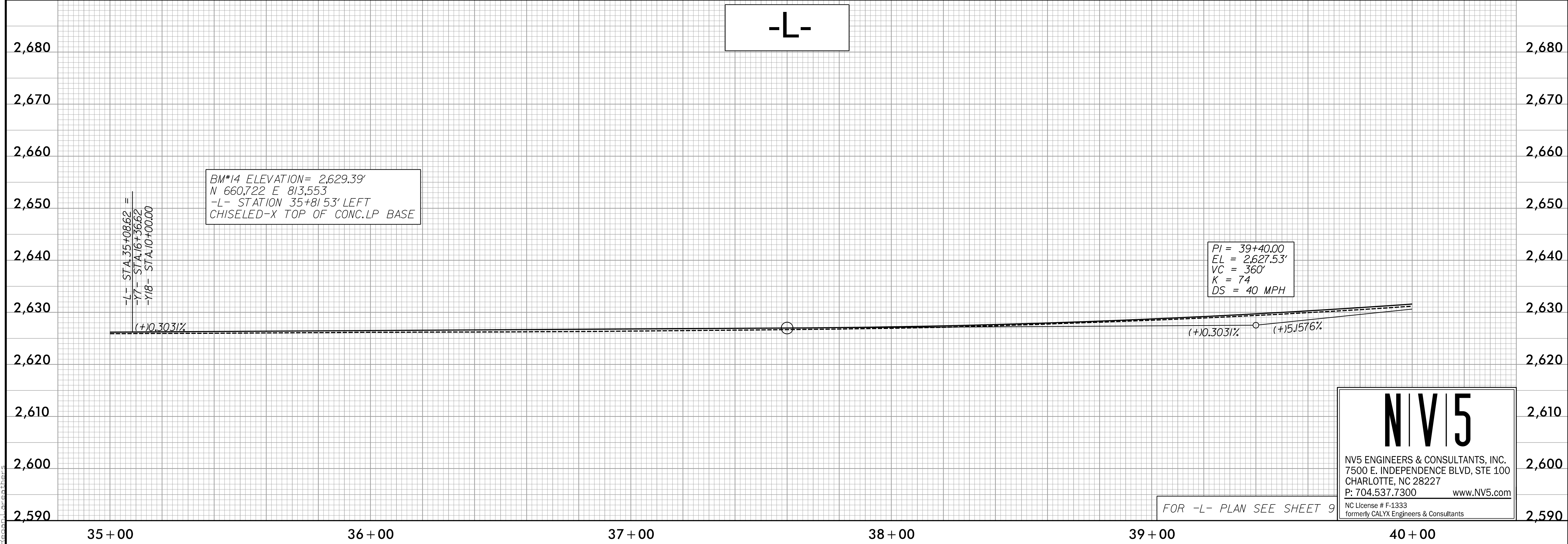
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PROJECT REFERENCE NO. U-5839		SHEET NO. 27
ROADWAY DESIGN ENGINEER 5/9/2023		HYDRAULICS ENGINEER 5/9/2023
		
<small>Chris Anderson</small> <small>David P. Becker</small> DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



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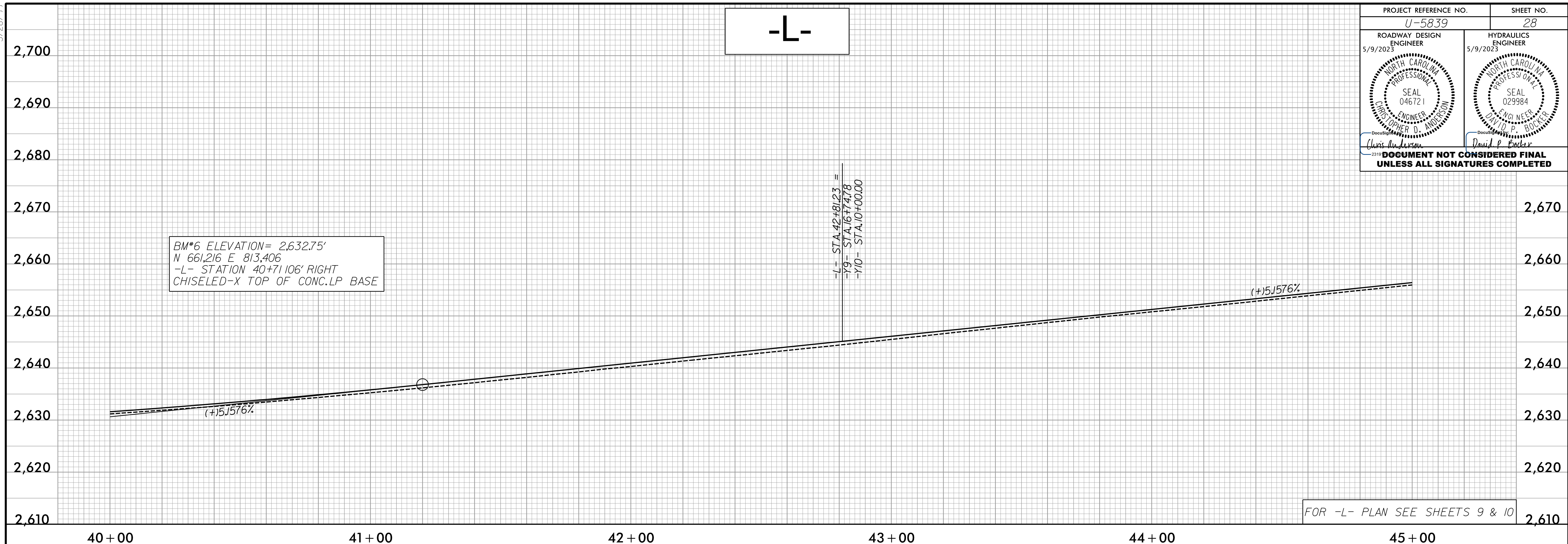
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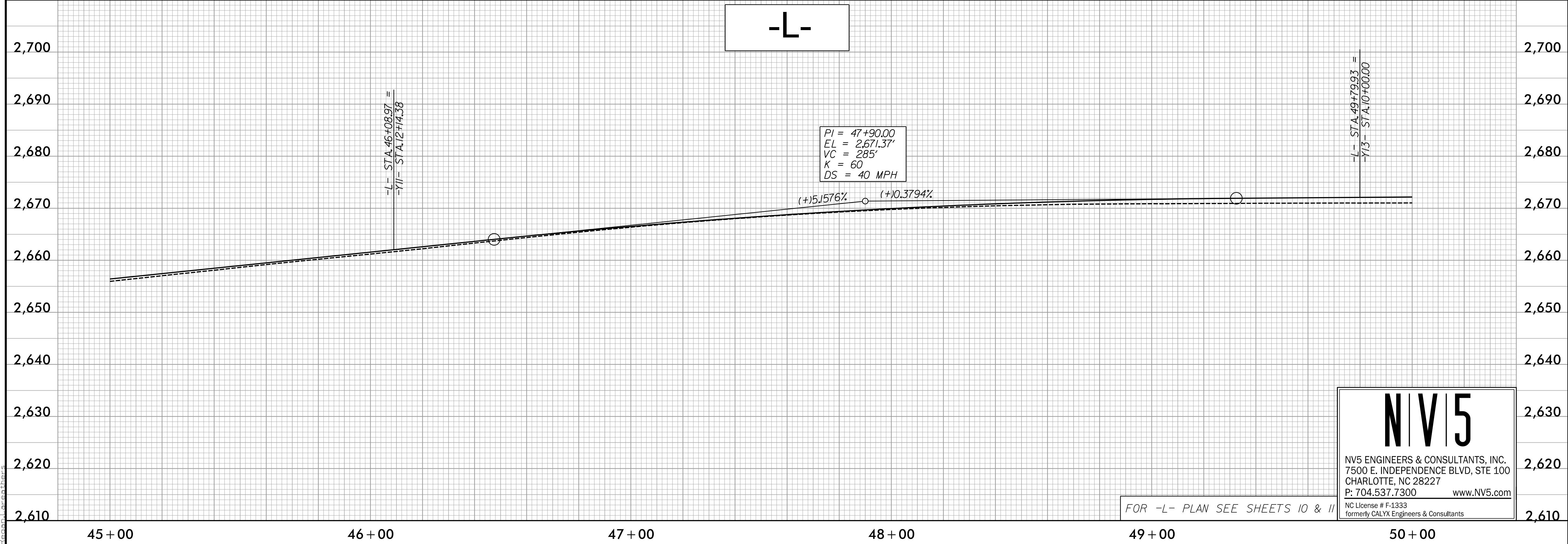
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PROJECT REFERENCE NO. U-5839	SHEET NO. 28
ROADWAY DESIGN ENGINEER 5/9/2023	HYDRAULICS ENGINEER 5/9/2023
<i>Chris Anderson</i>	<i>David P. Becker</i>
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R:\Projects\U5839\RDY_PSH_28.dgn
Reagan, Carothers

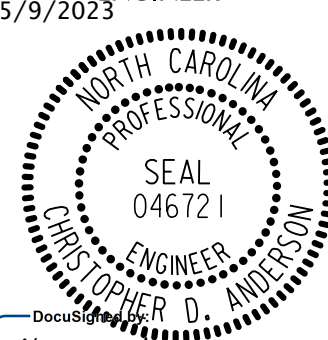
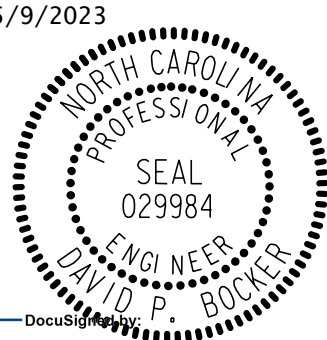


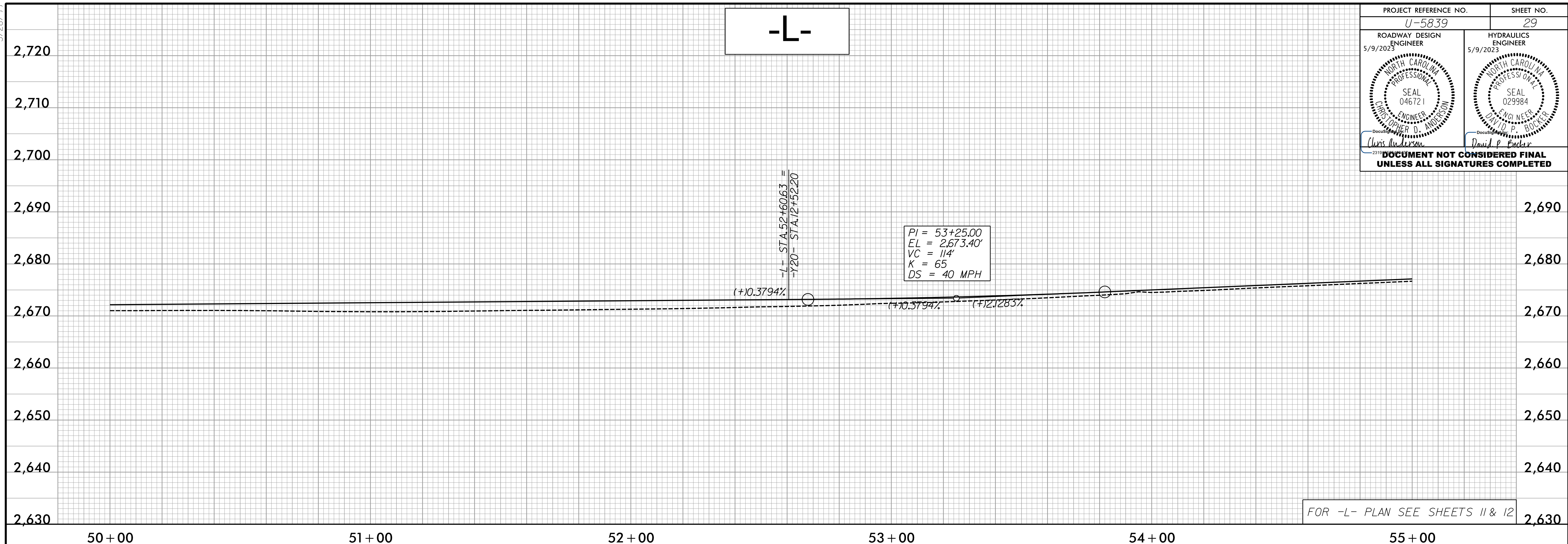
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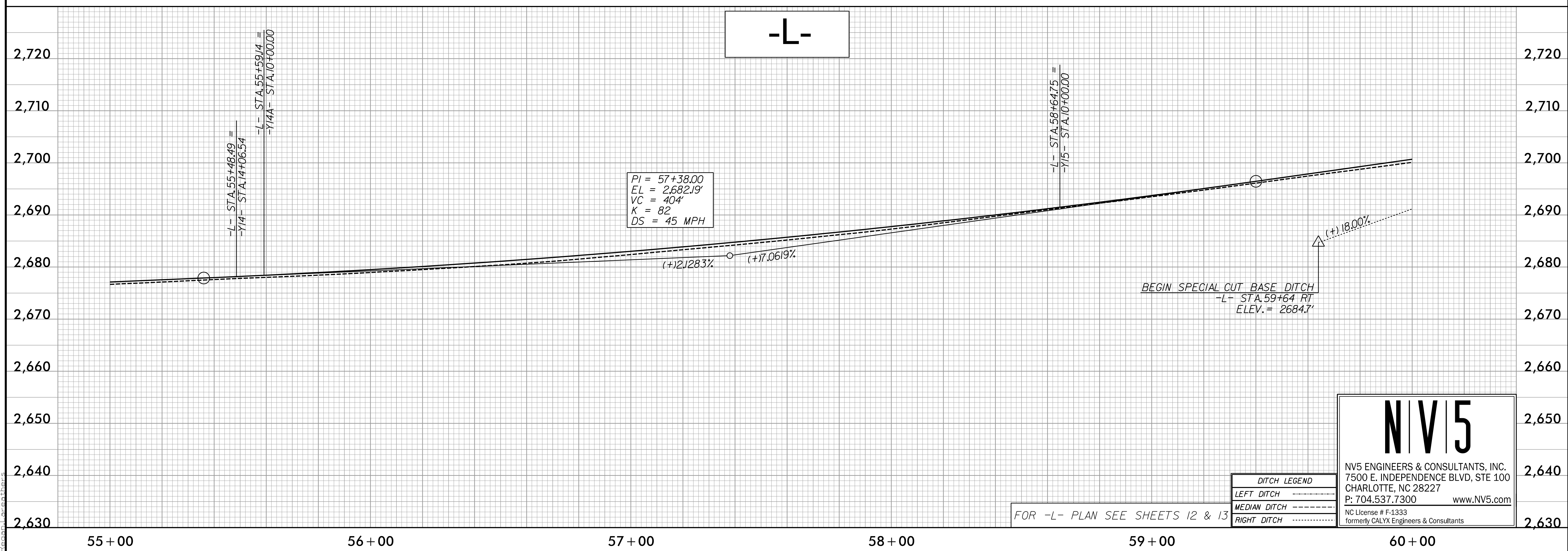
5/28/23

PROJECT REFERENCE NO. U-5839	SHEET NO. 29
ROADWAY DESIGN ENGINEER 5/9/2023 	HYDRAULICS ENGINEER 5/9/2023 
<p>2019 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	



FOR -L- PLAN SEE SHEETS 11 & 12

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Reagan, C



FOR -L- PLAN SEE SHEETS 12 & 13

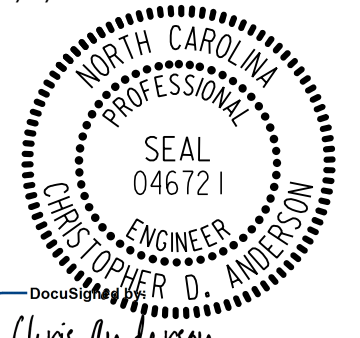
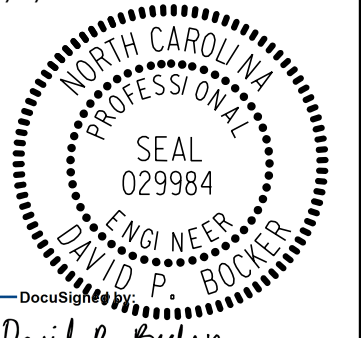
DITCH LEGEND	
LEFT DITCH	-----
MEDIAN DITCH	-----
RIGHT DITCH	-----

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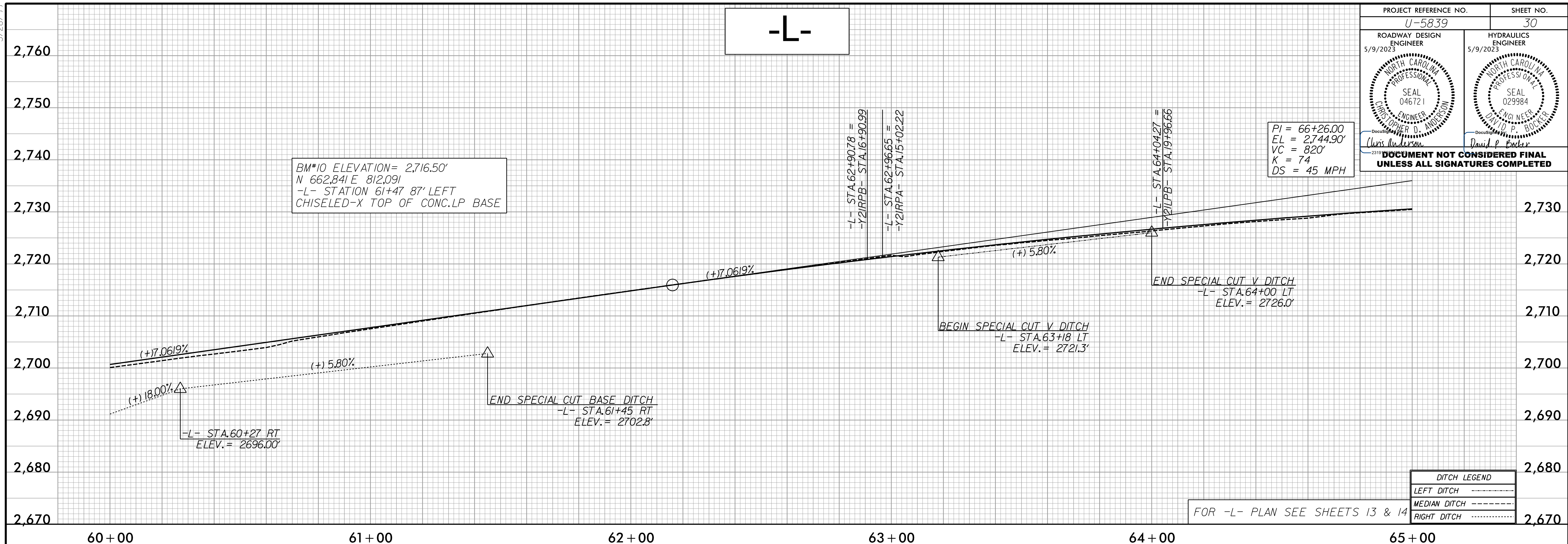
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PROJECT REFERENCE NO. U-5839	SHEET NO. 30
ROADWAY DESIGN ENGINEER 5/9/2023 	HYDRAULICS ENGINEER 5/9/2023 
<p>Chris Addison David P. Becker</p> <p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	

PI = 66+26.00
 EL = 2744.90'
 VC = 820'
 K = 74
 DS = 45 MPH

BM#10 ELEVATION = 2716.50'
 N 662,841 E 812,091
 -L- STATION 61+47 87' LEFT
 CHISELED-X TOP OF CONC.LP BASE

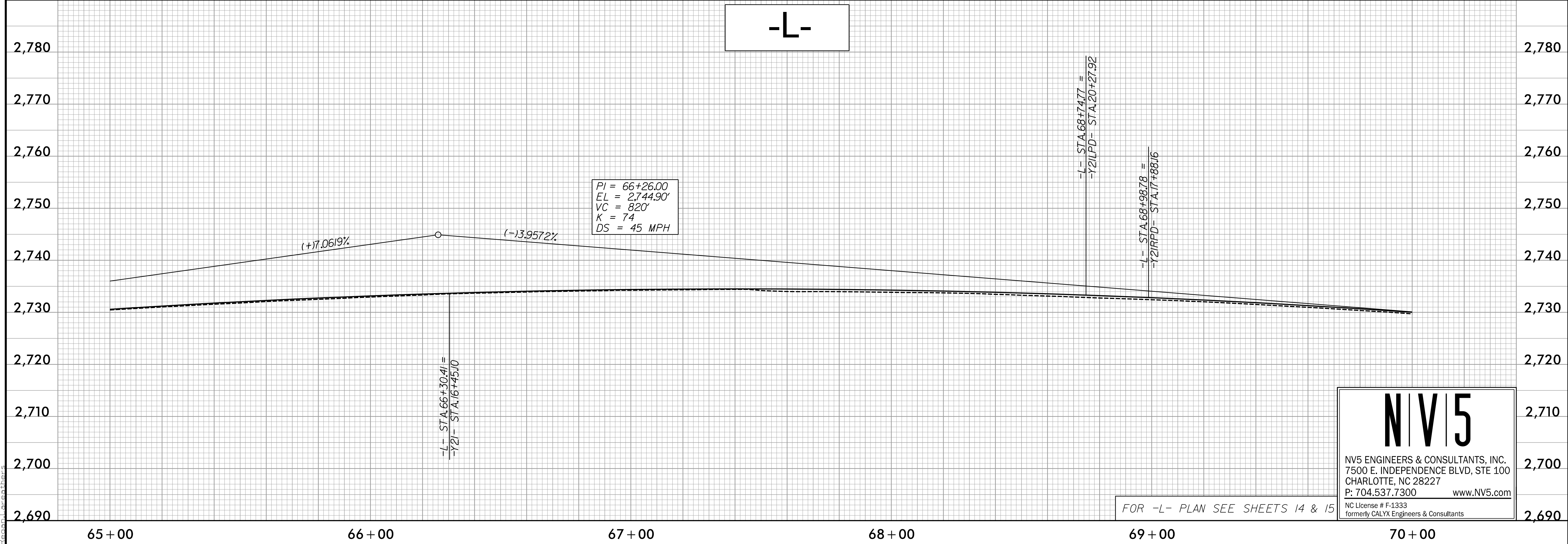


DITCH LEGEND	
LEFT DITCH	-----
MEDIAN DITCH	-----
RIGHT DITCH	-----

FOR -L- PLAN SEE SHEETS 13 & 14

5/16/2023
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Reagan, Carothers

-L-

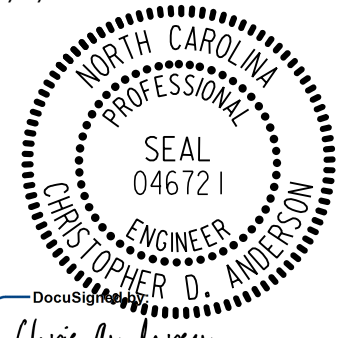
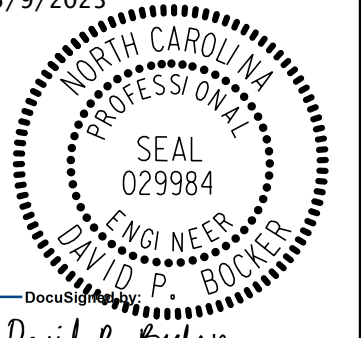


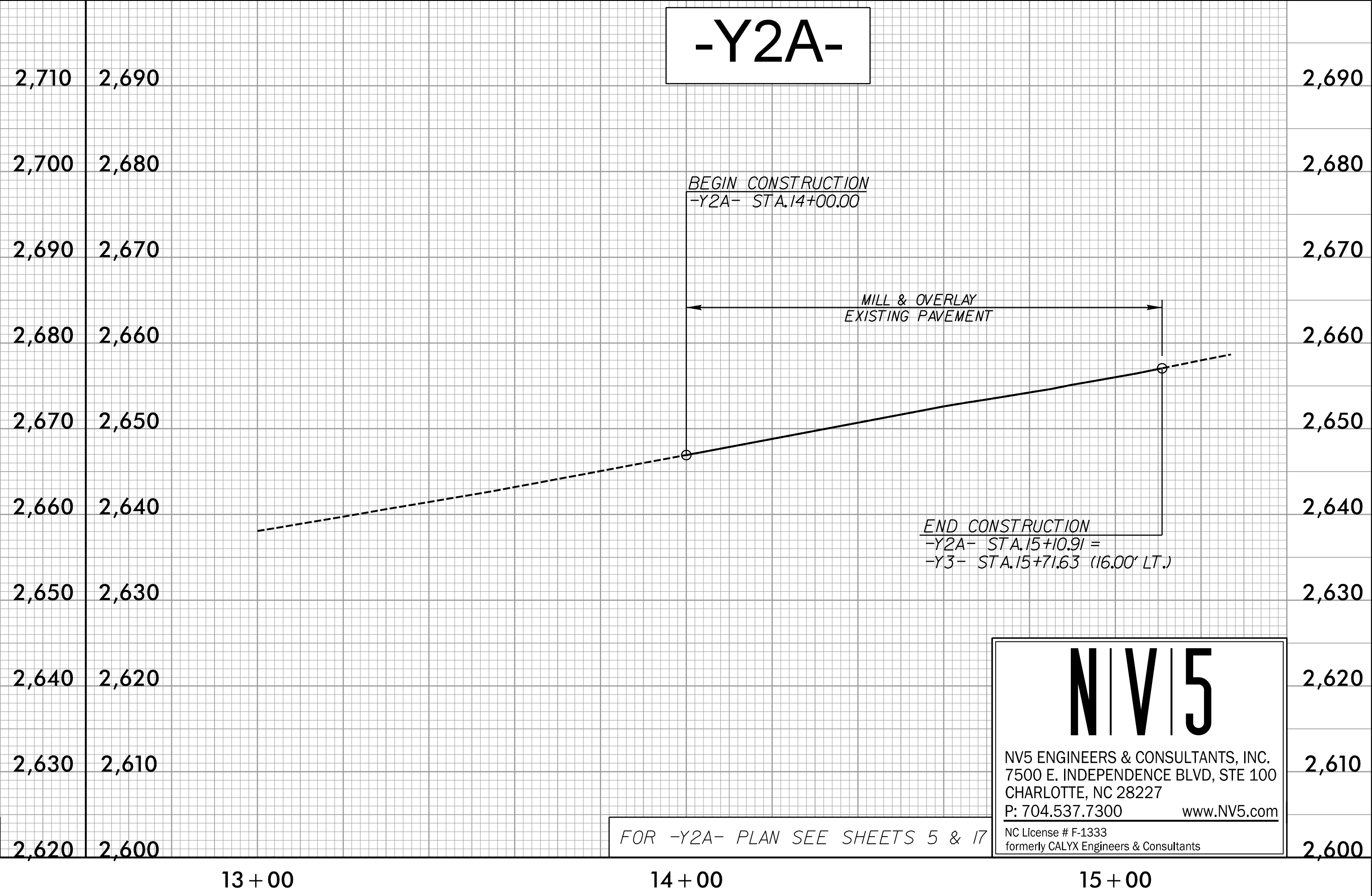
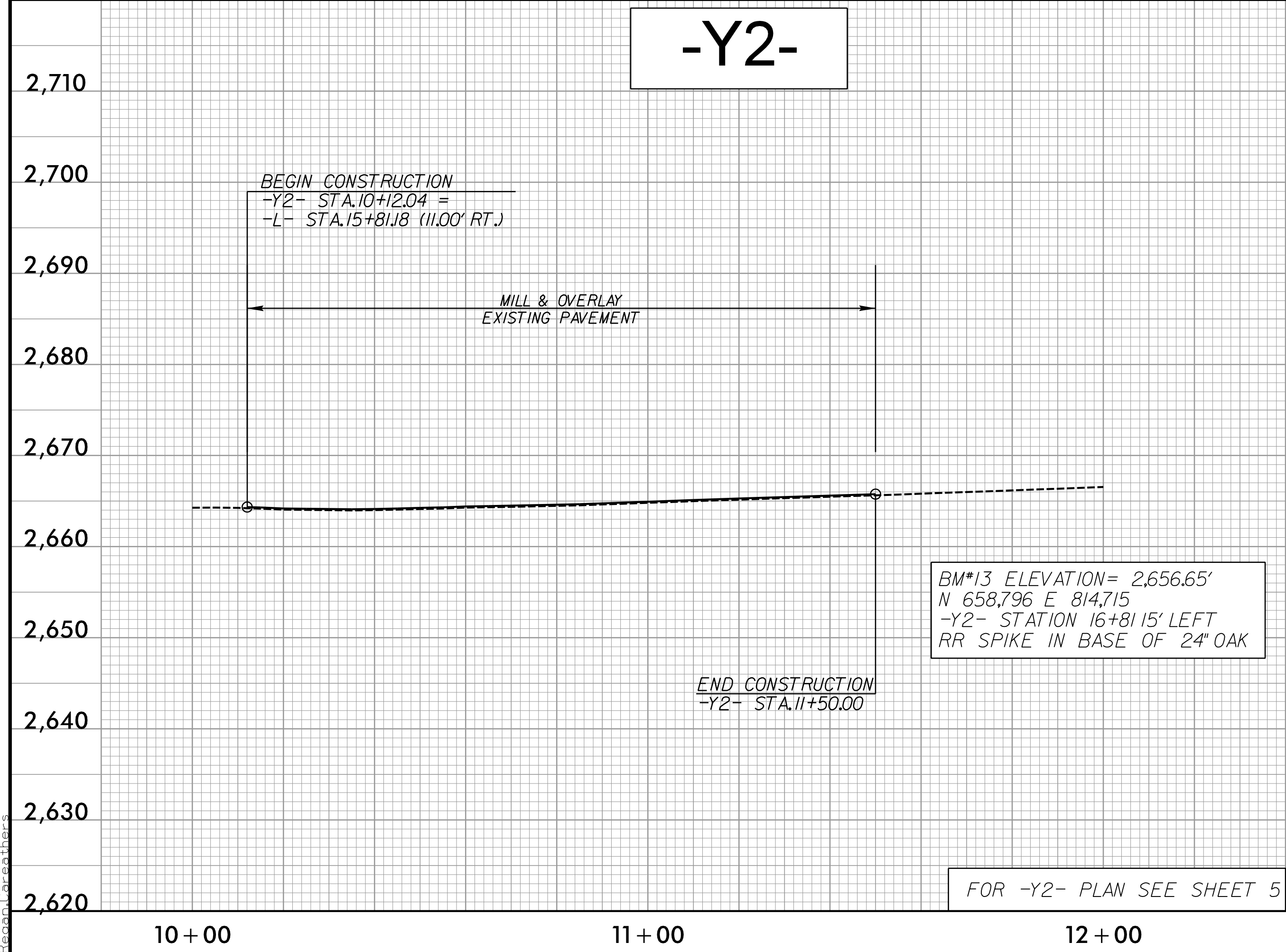
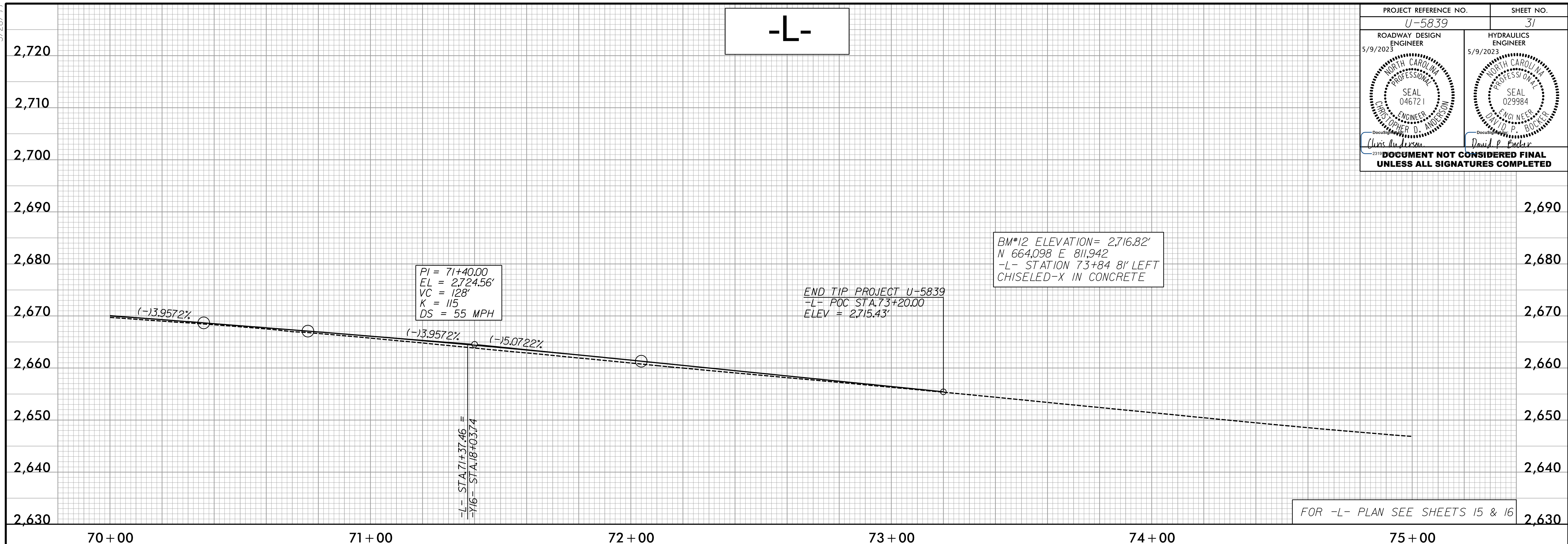
PI = 66+26.00
 EL = 2744.90'
 VC = 820'
 K = 74
 DS = 45 MPH

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FOR -L- PLAN SEE SHEETS 14 & 15

5/28/23

PROJECT REFERENCE NO. U-5839	SHEET NO. 31
ROADWAY DESIGN ENGINEER 5/9/2023 	HYDRAULICS ENGINEER 5/9/2023 
<p>Chris Anderson David P. Becker</p> <p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	



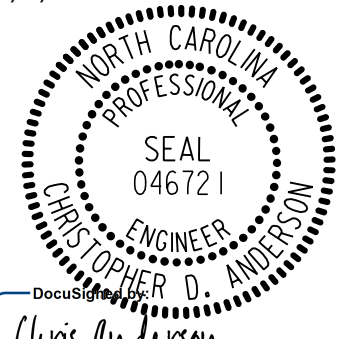
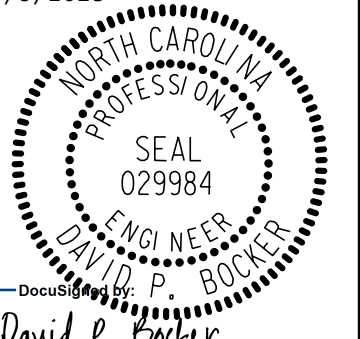
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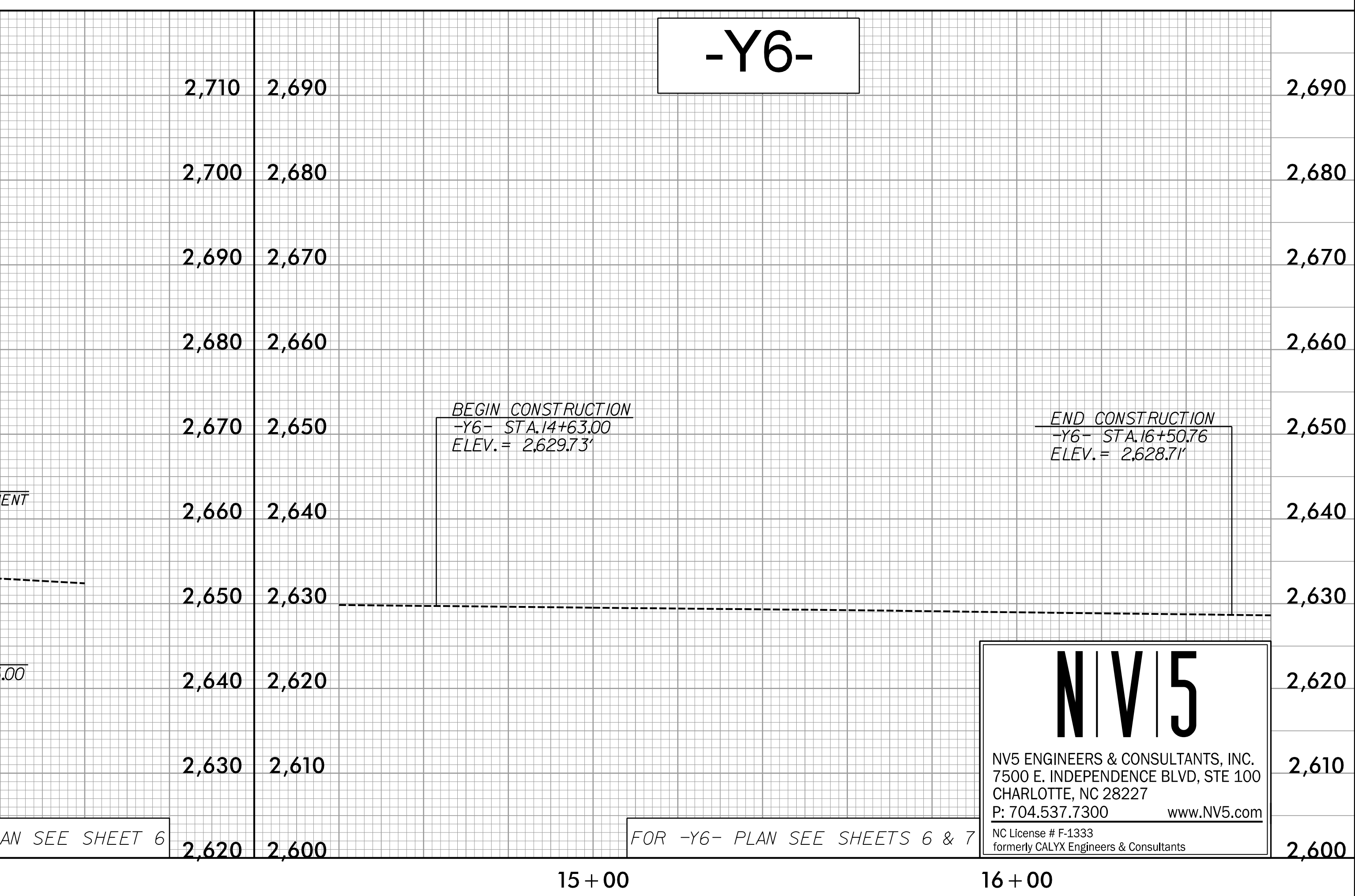
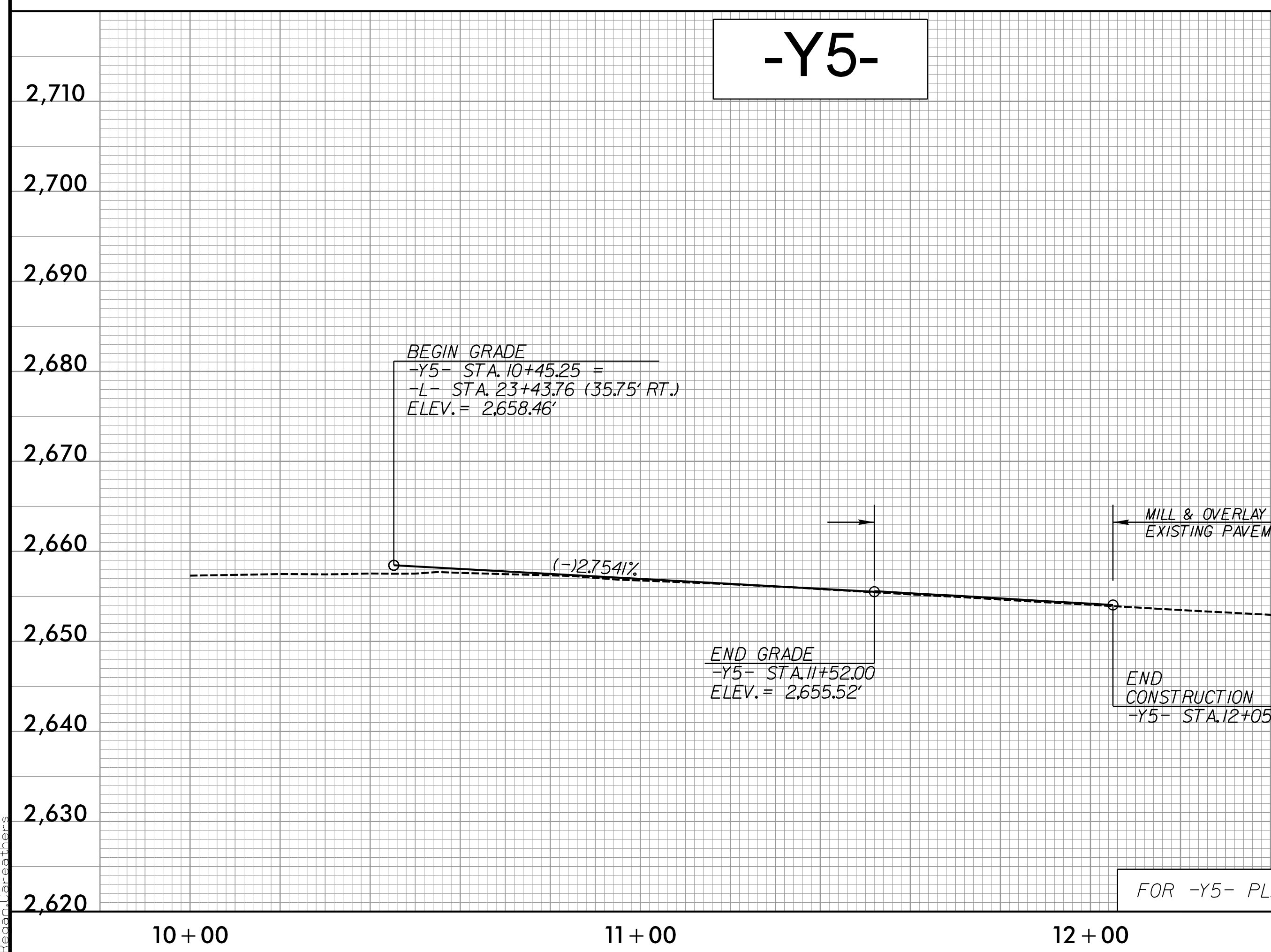
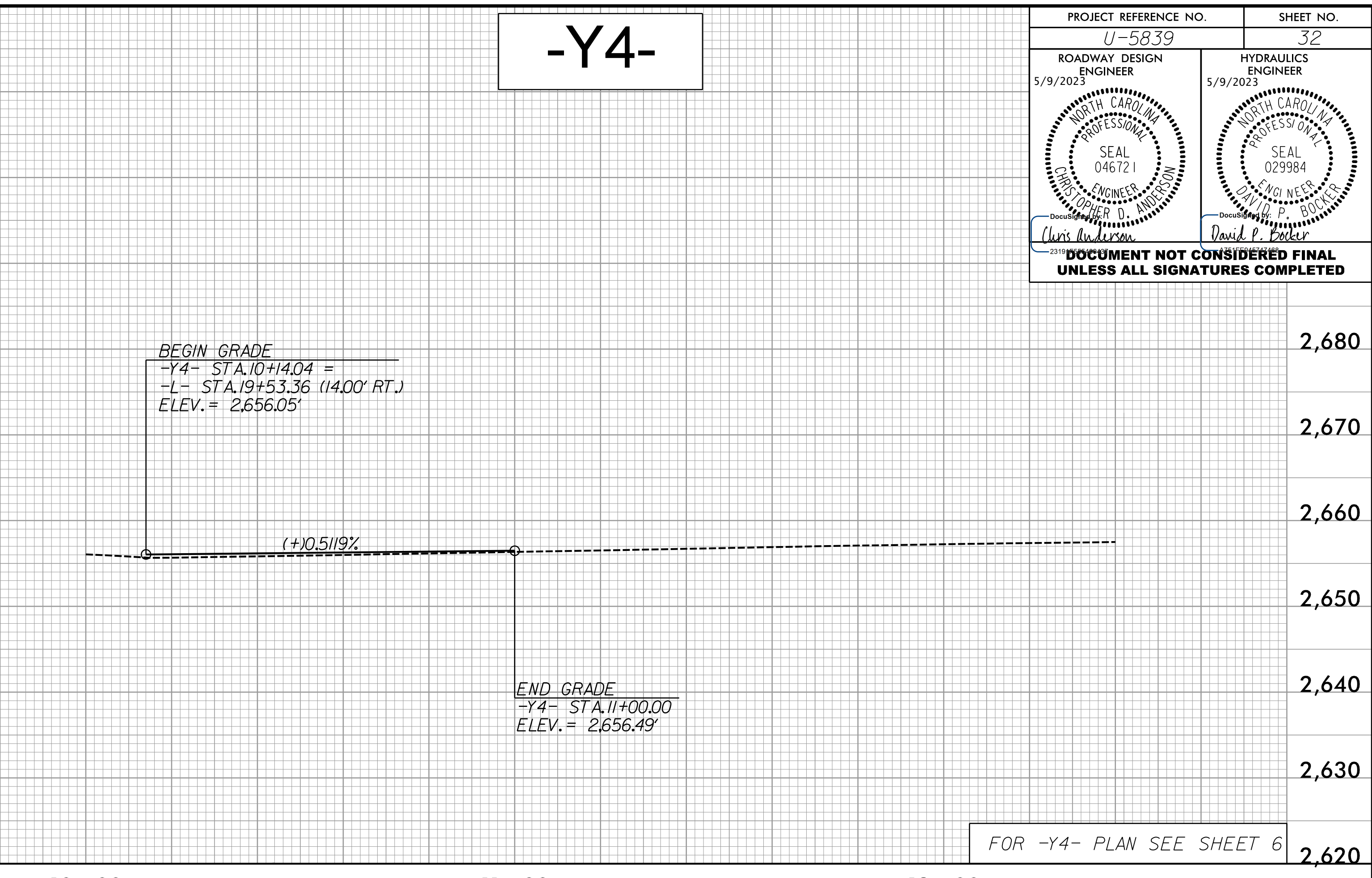
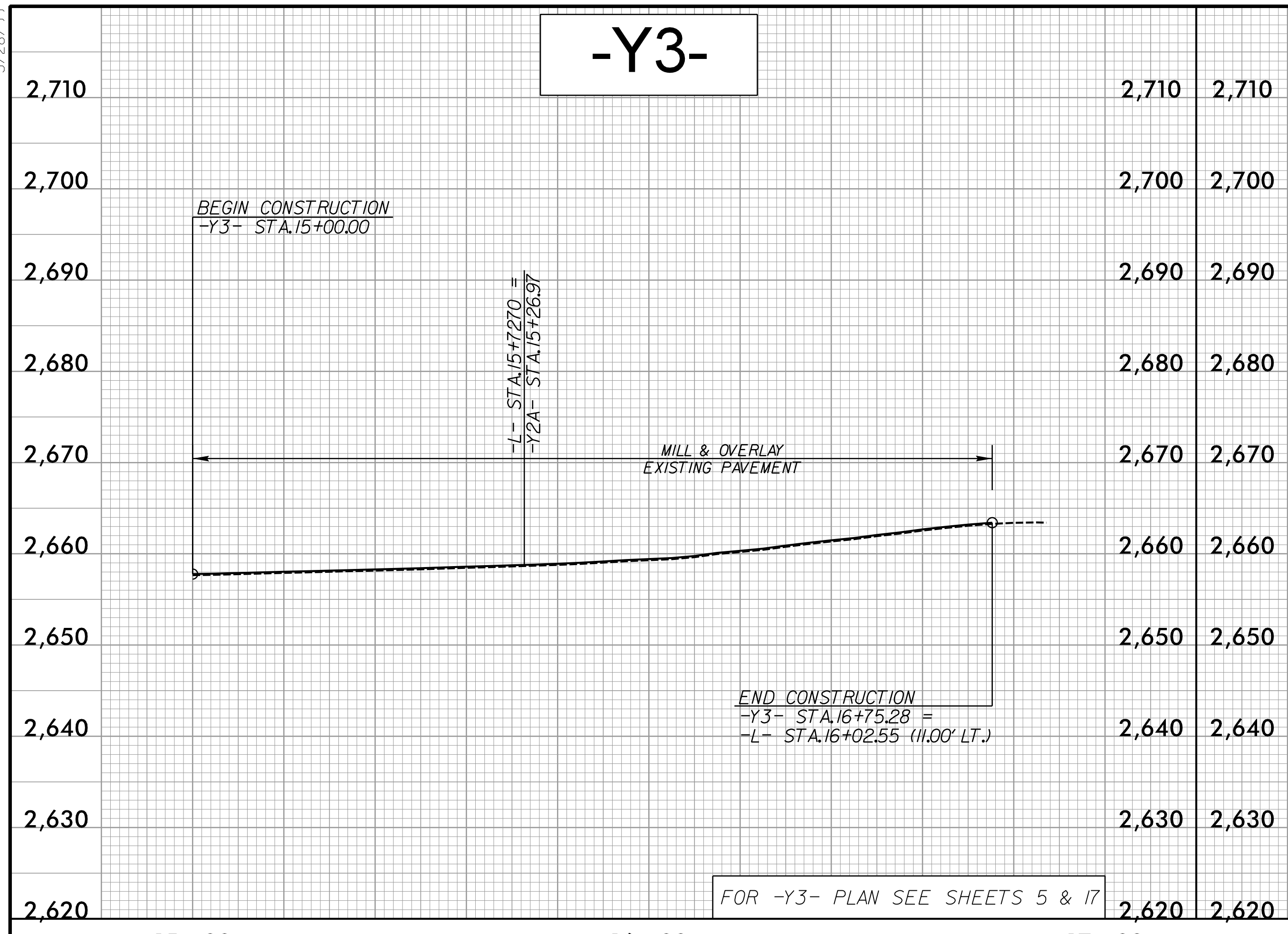
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5/28/23

PROJECT REFERENCE NO. U-5839	SHEET NO. 32
ROADWAY DESIGN ENGINEER 5/9/2023 	HYDRAULICS ENGINEER 5/9/2023 
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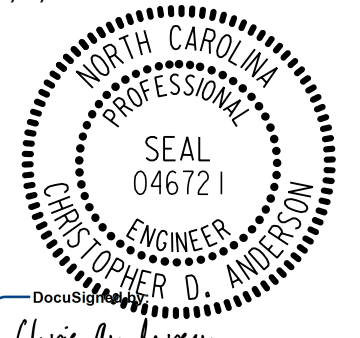
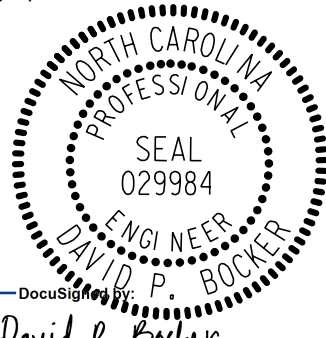
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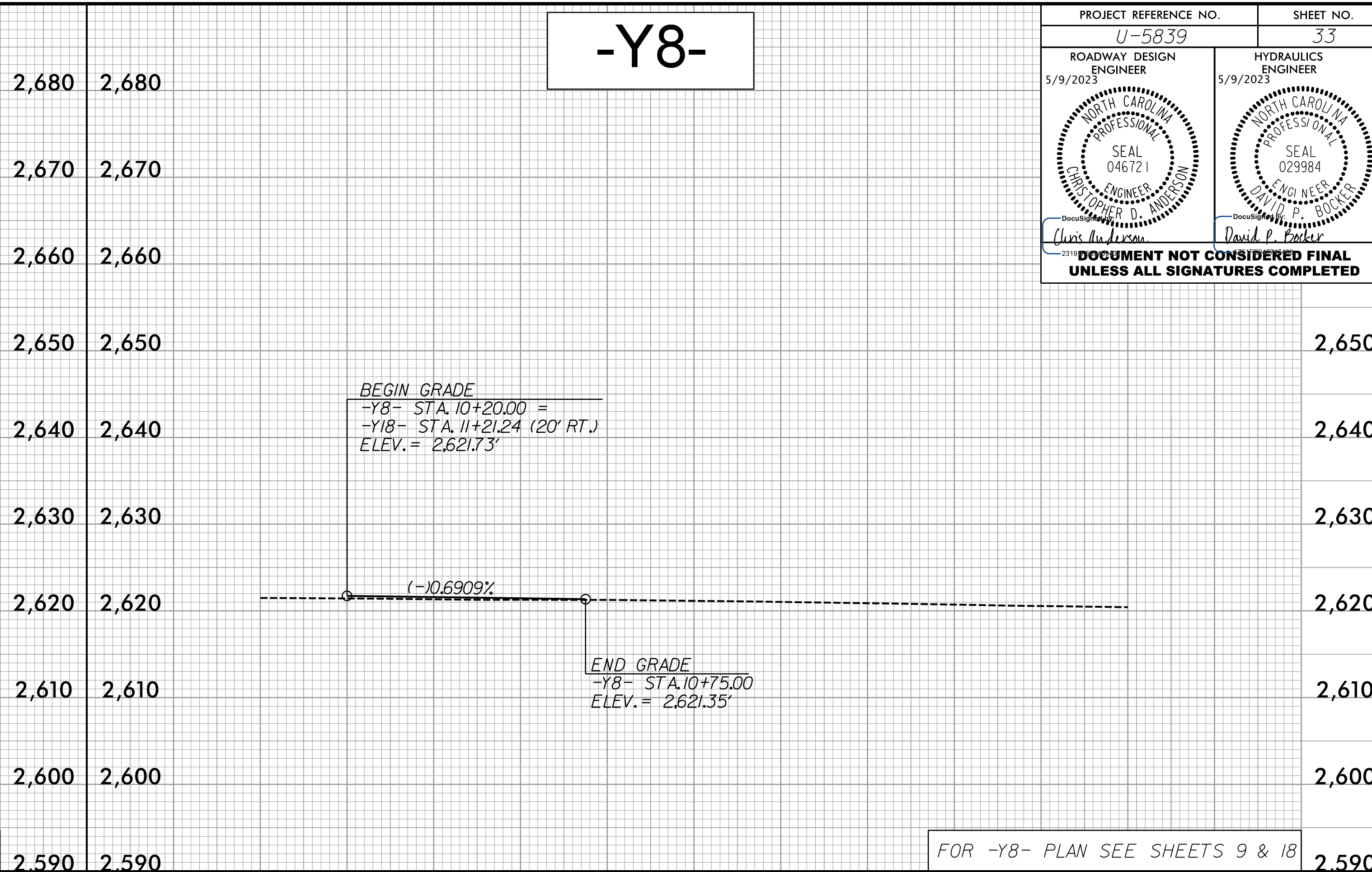
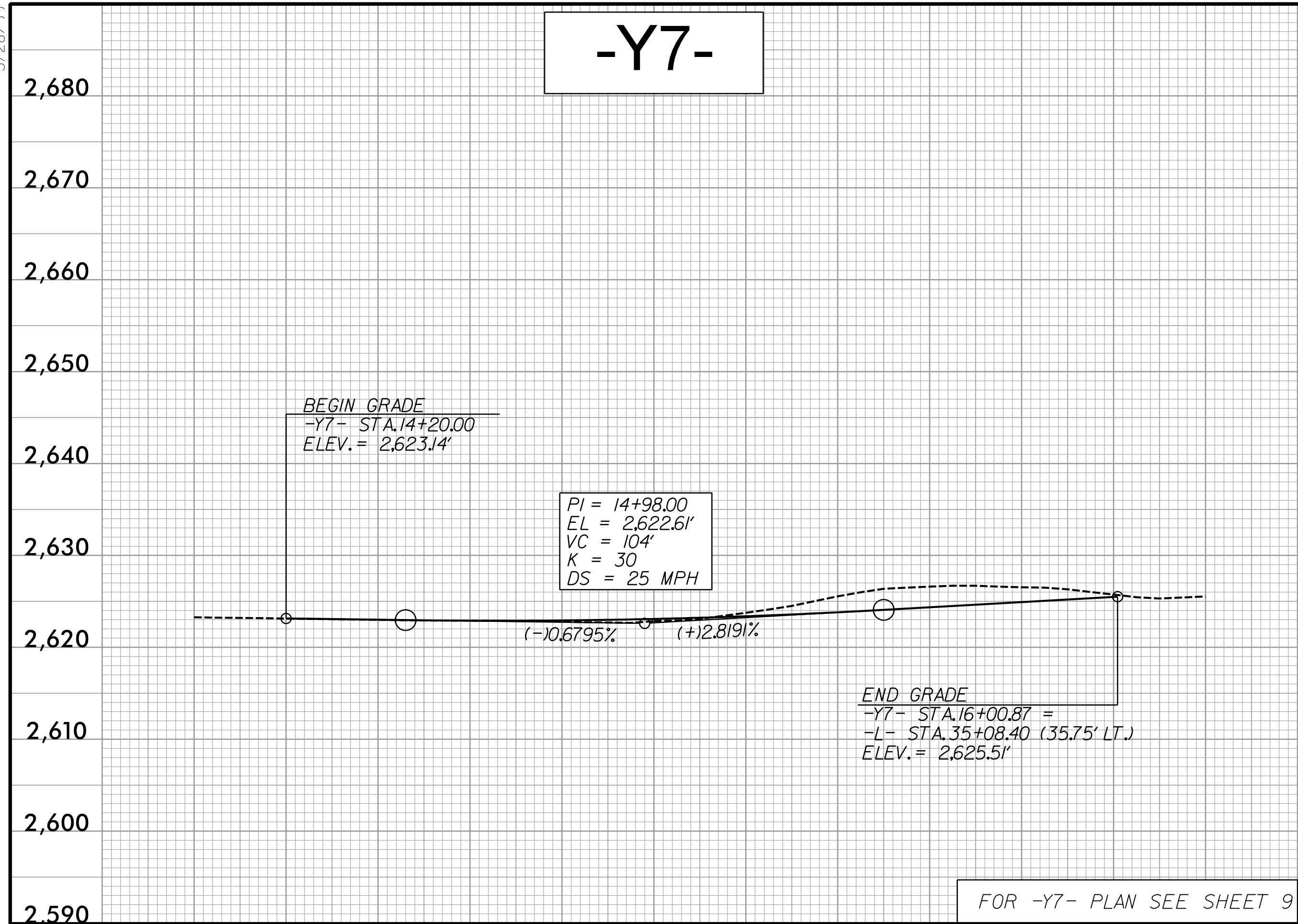
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Reagan, C

5/28/23

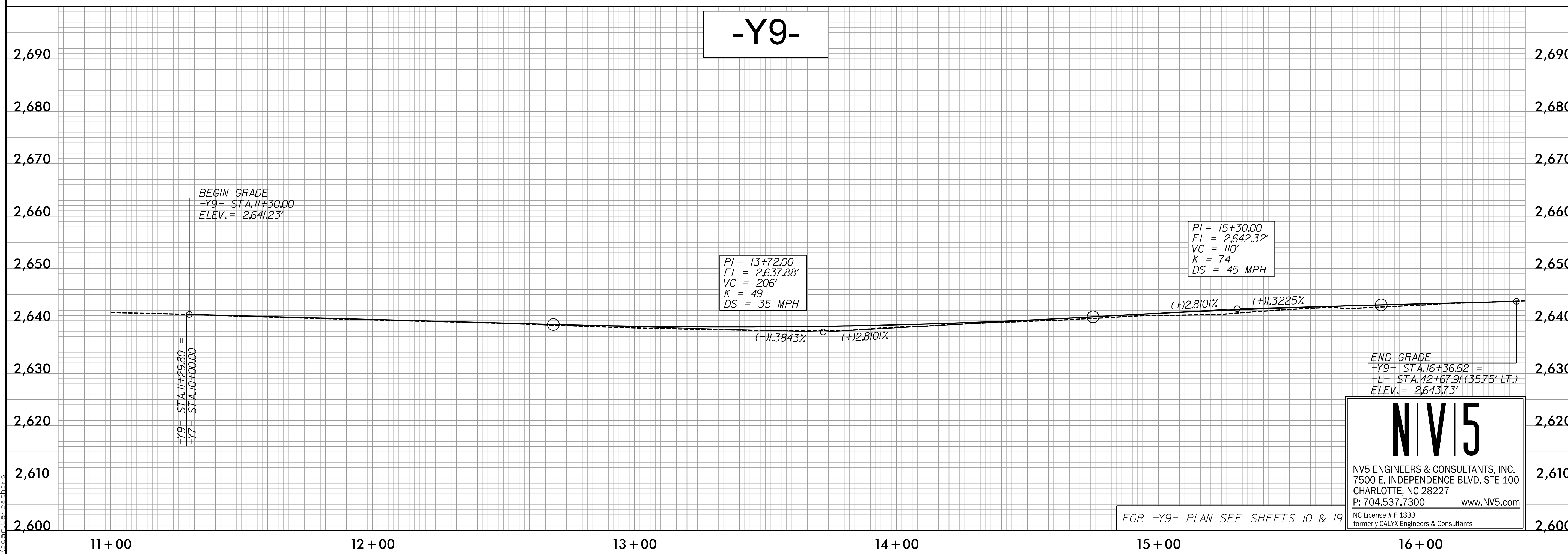
-Y7-

-Y8-

PROJECT REFERENCE NO. U-5839	SHEET NO. 33
ROADWAY DESIGN ENGINEER 5/9/2023  Christopher D. Addison	HYDRAULICS ENGINEER 5/9/2023  David P. Becker
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-Y9-



NV5

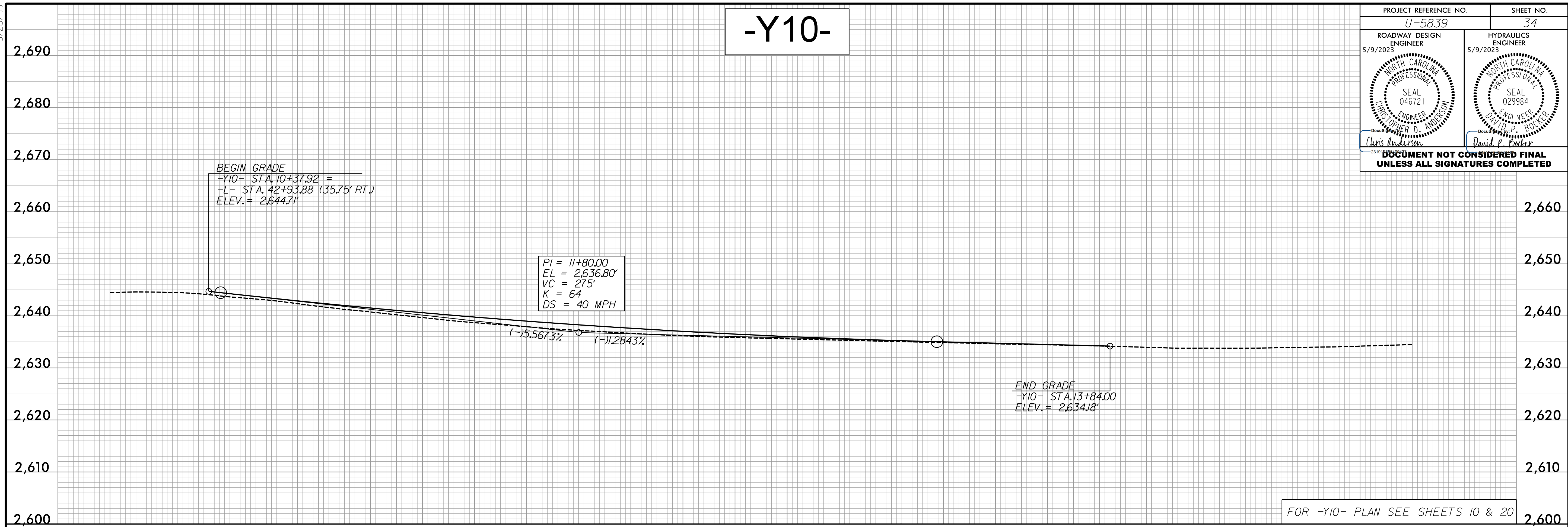
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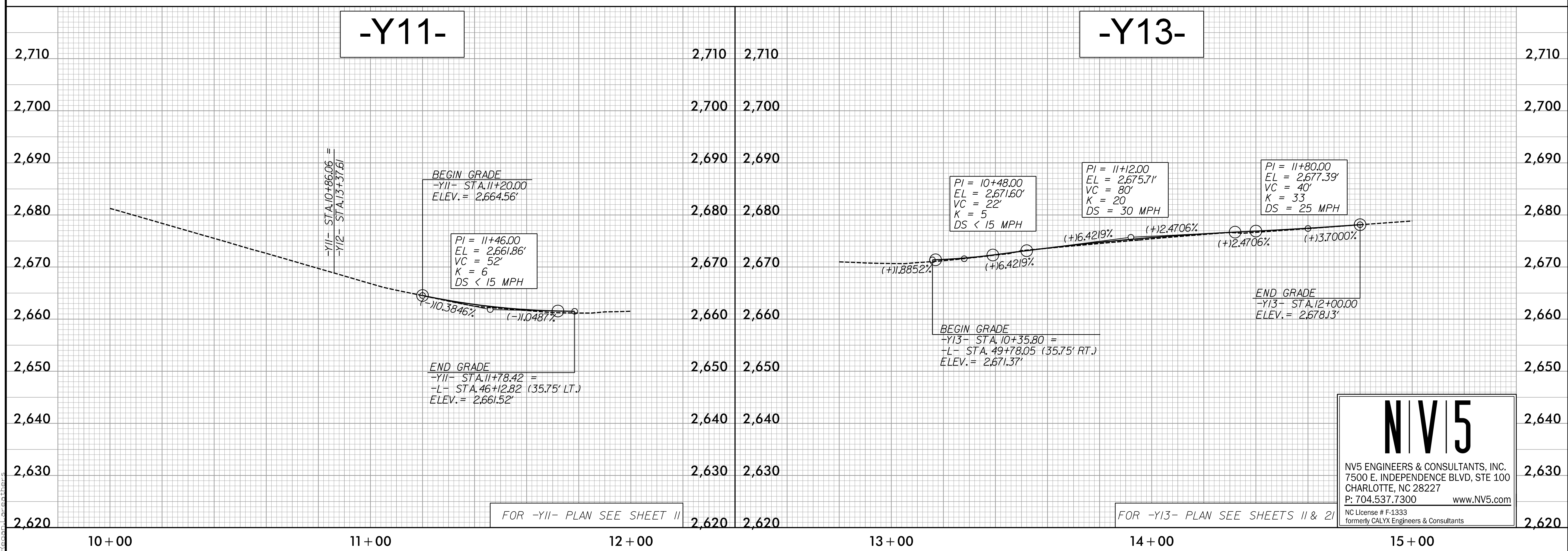
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5/28/2023

PROJECT REFERENCE NO. U-5839	SHEET NO. 34
ROADWAY DESIGN ENGINEER 5/9/2023 	HYDRAULICS ENGINEER 5/9/2023
<small>2319</small> DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



FOR -Y10- PLAN SEE SHEETS 10 & 20



FOR -Y11- PLAN SEE SHEET 11


FOR -Y13- PLAN SEE SHEETS 11 & 21

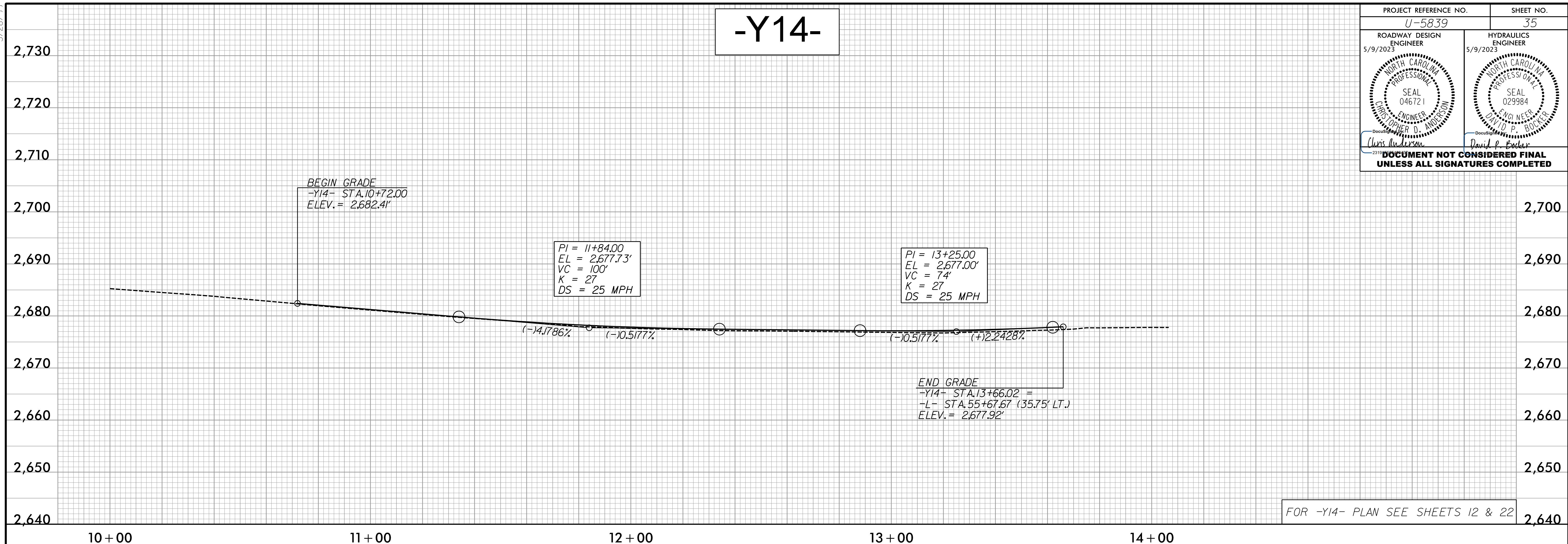
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5/28/2023
David P. Barker

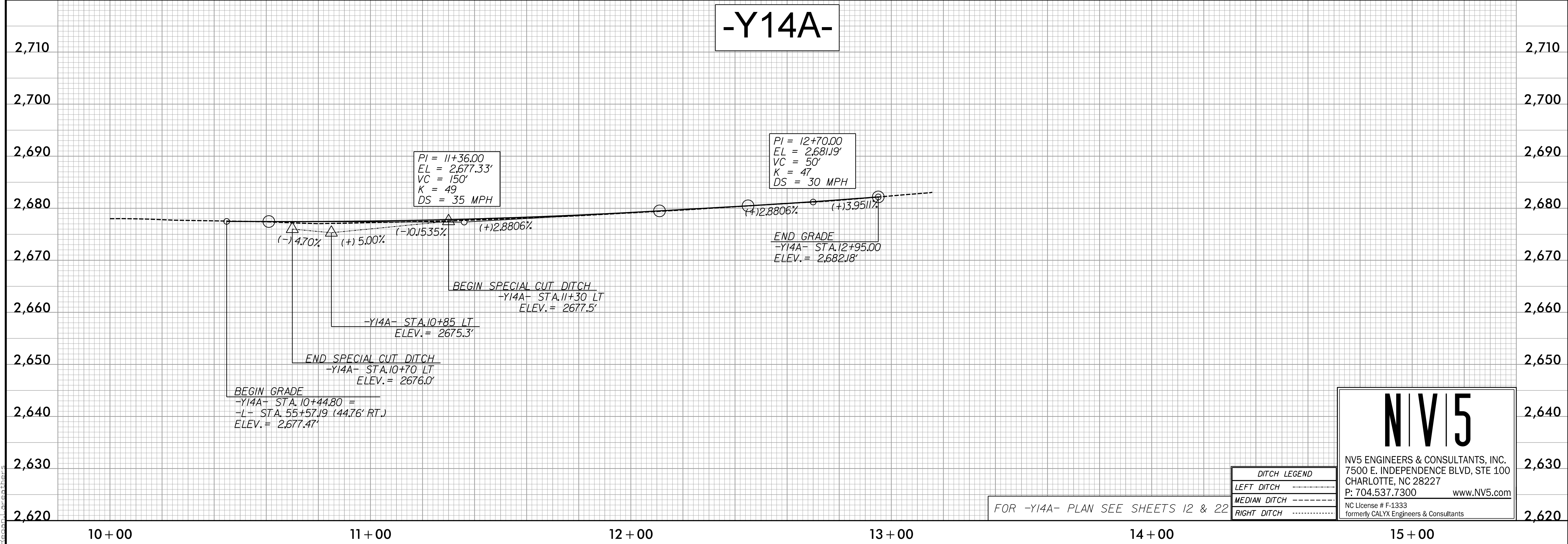
5/28/23

PROJECT REFERENCE NO. U-5839	SHEET NO. 35
ROADWAY DESIGN ENGINEER 5/9/2023 SEAL 046721 CHRISTOPHER D. ANDERSON	HYDRAULICS ENGINEER 5/9/2023 SEAL 029984 DAVID P. BOEKER
	
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FOR -Y14- PLAN SEE SHEETS 12 & 22

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Boeker

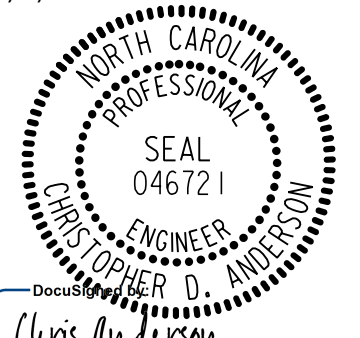
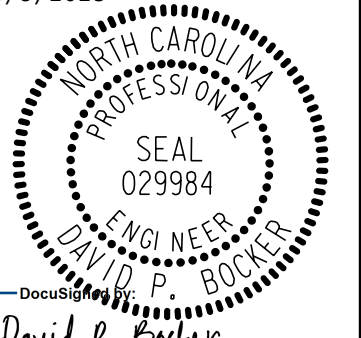


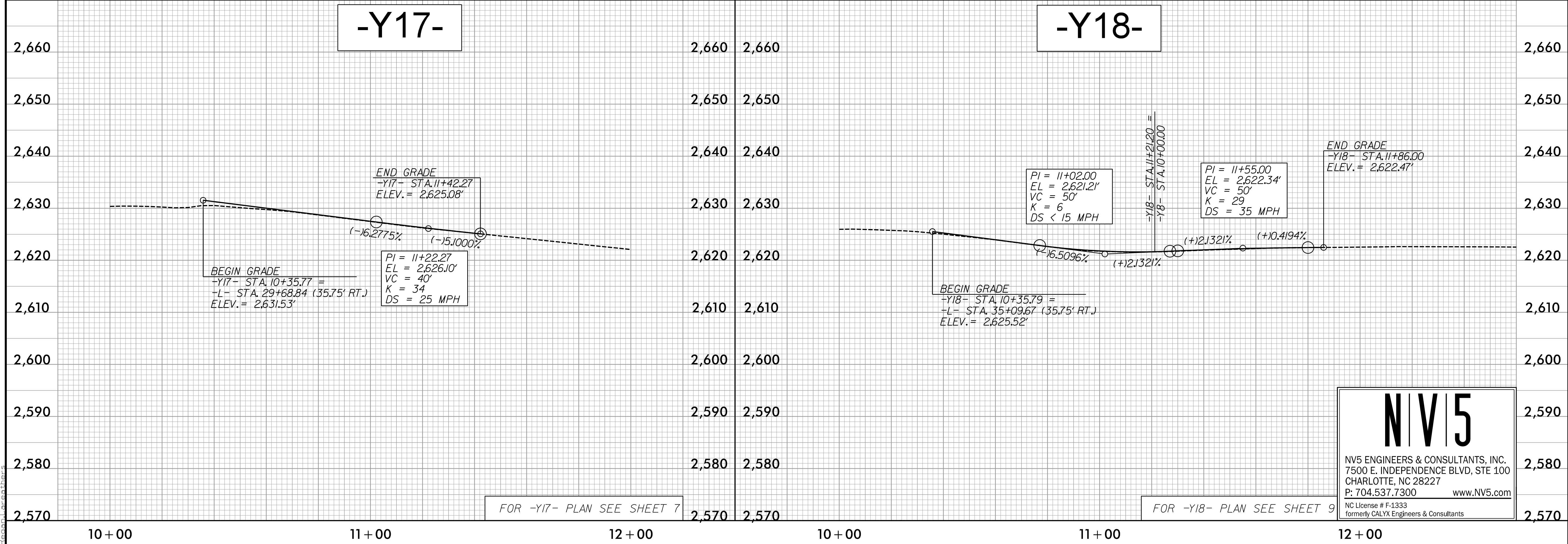
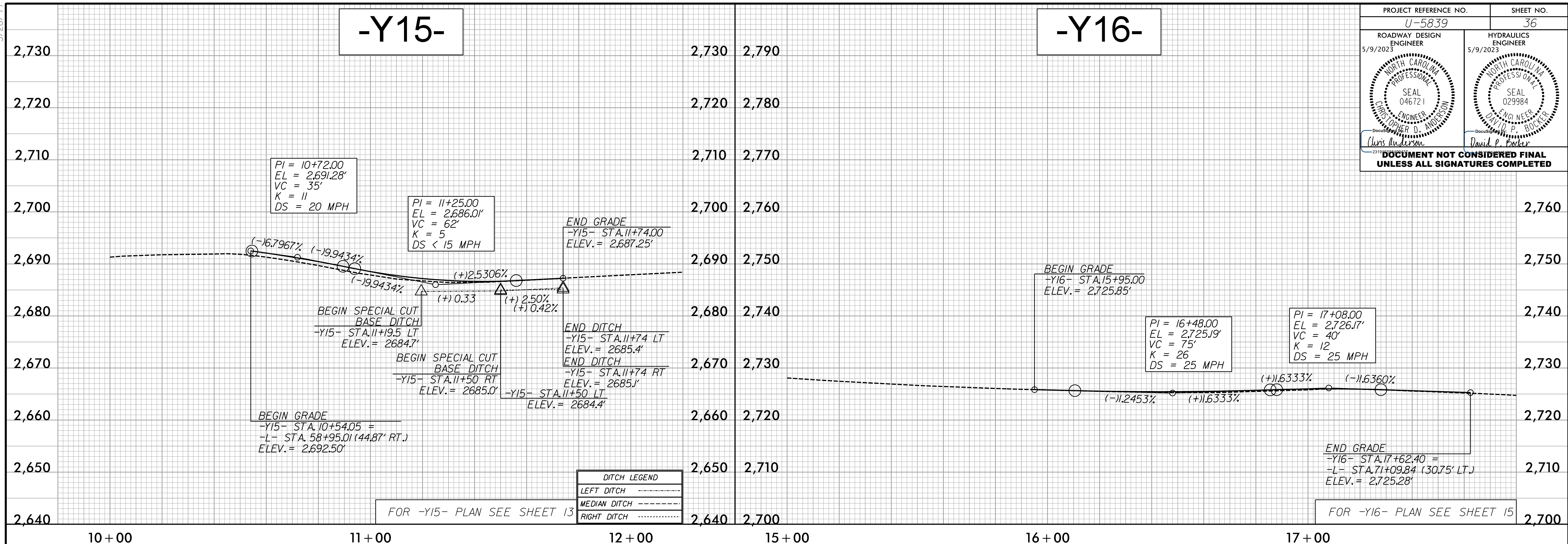
FOR -Y14A- PLAN SEE SHEETS 12 & 22

DITCH LEGEND	
LEFT DITCH	-----
MEDIAN DITCH	-----
RIGHT DITCH	-----

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PROJECT REFERENCE NO. U-5839	SHEET NO. 36
ROADWAY DESIGN ENGINEER 5/9/2023 	HYDRAULICS ENGINEER 5/9/2023 
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



N|V|5

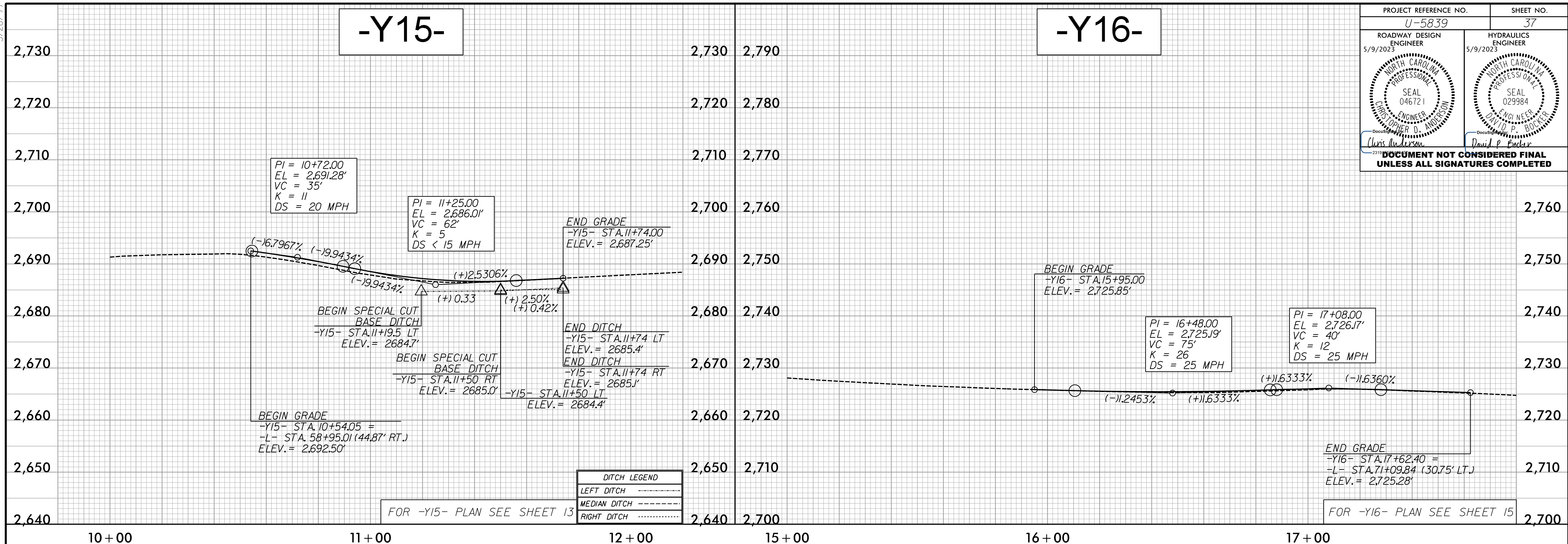
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R:\2023\Projects\U5839_RDY_PSH_36.dgn
Reagan, C

5/28/2023

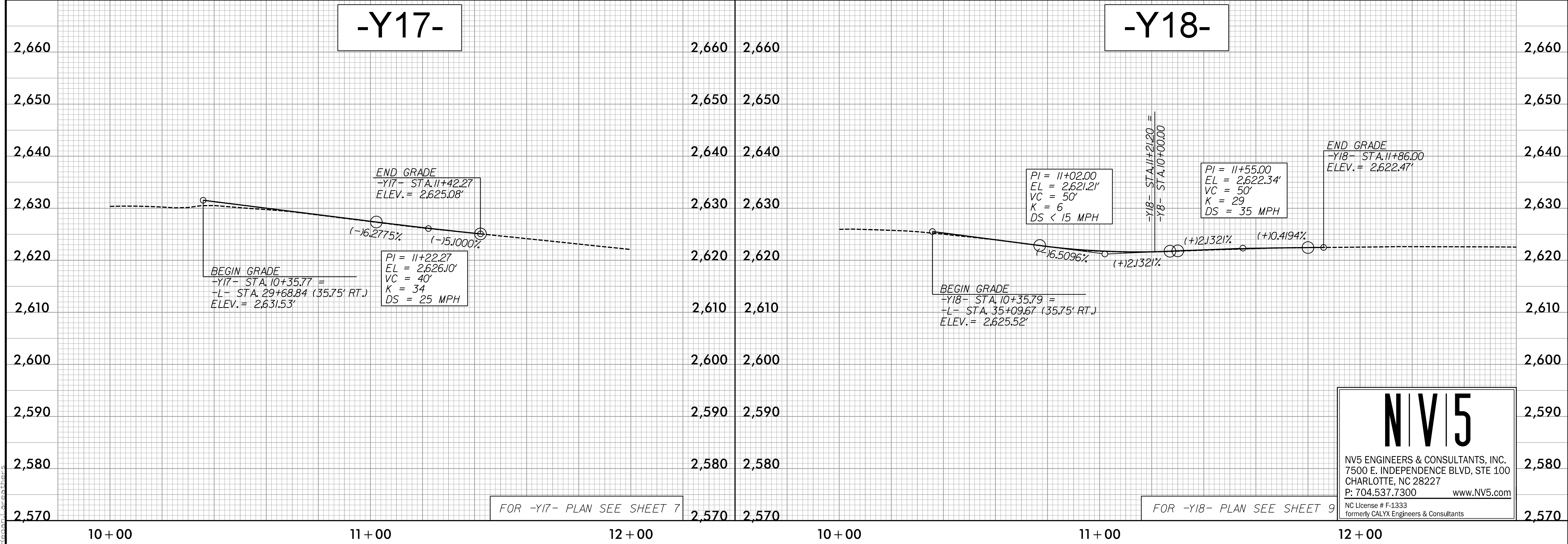
PROJECT REFERENCE NO. U-5839	SHEET NO. 37
ROADWAY DESIGN ENGINEER 5/9/2023	HYDRAULICS ENGINEER 5/9/2023
<p>Chris Addison David P. Becker</p> <p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	



DITCH LEGEND	
LEFT DITCH	-----
MEDIAN DITCH	-----
RIGHT DITCH	-----

FOR -Y15- PLAN SEE SHEET 13

FOR -Y16- PLAN SEE SHEET 15



FOR -Y17- PLAN SEE SHEET 7

FOR -Y18- PLAN SEE SHEET 9

N|V|5

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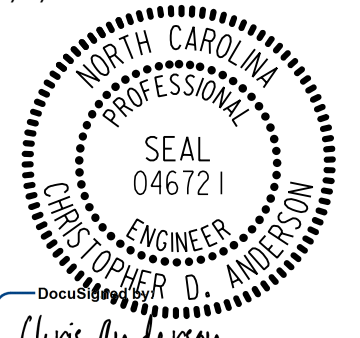
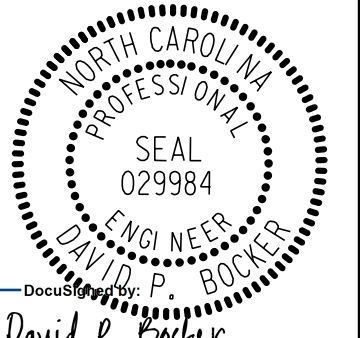
NC License # F-1333
formerly CALYX Engineers & Consultants

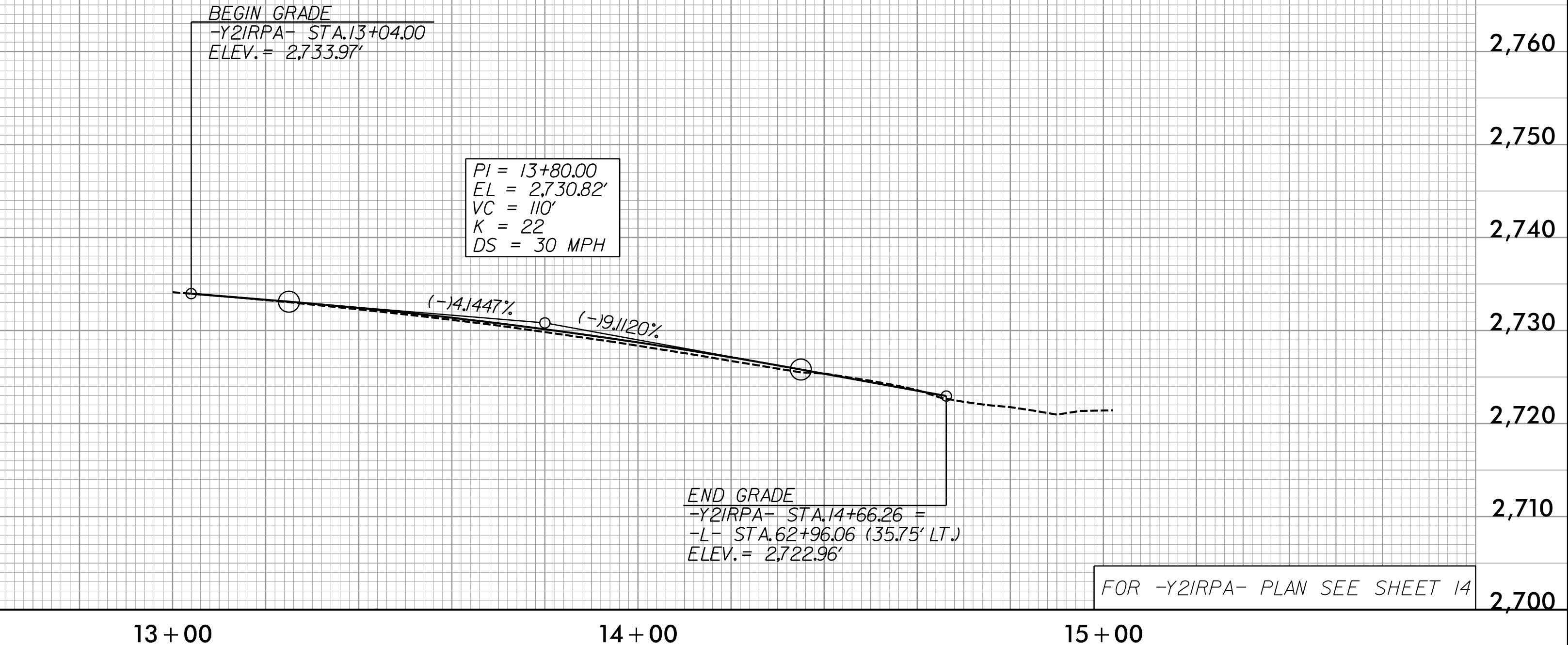
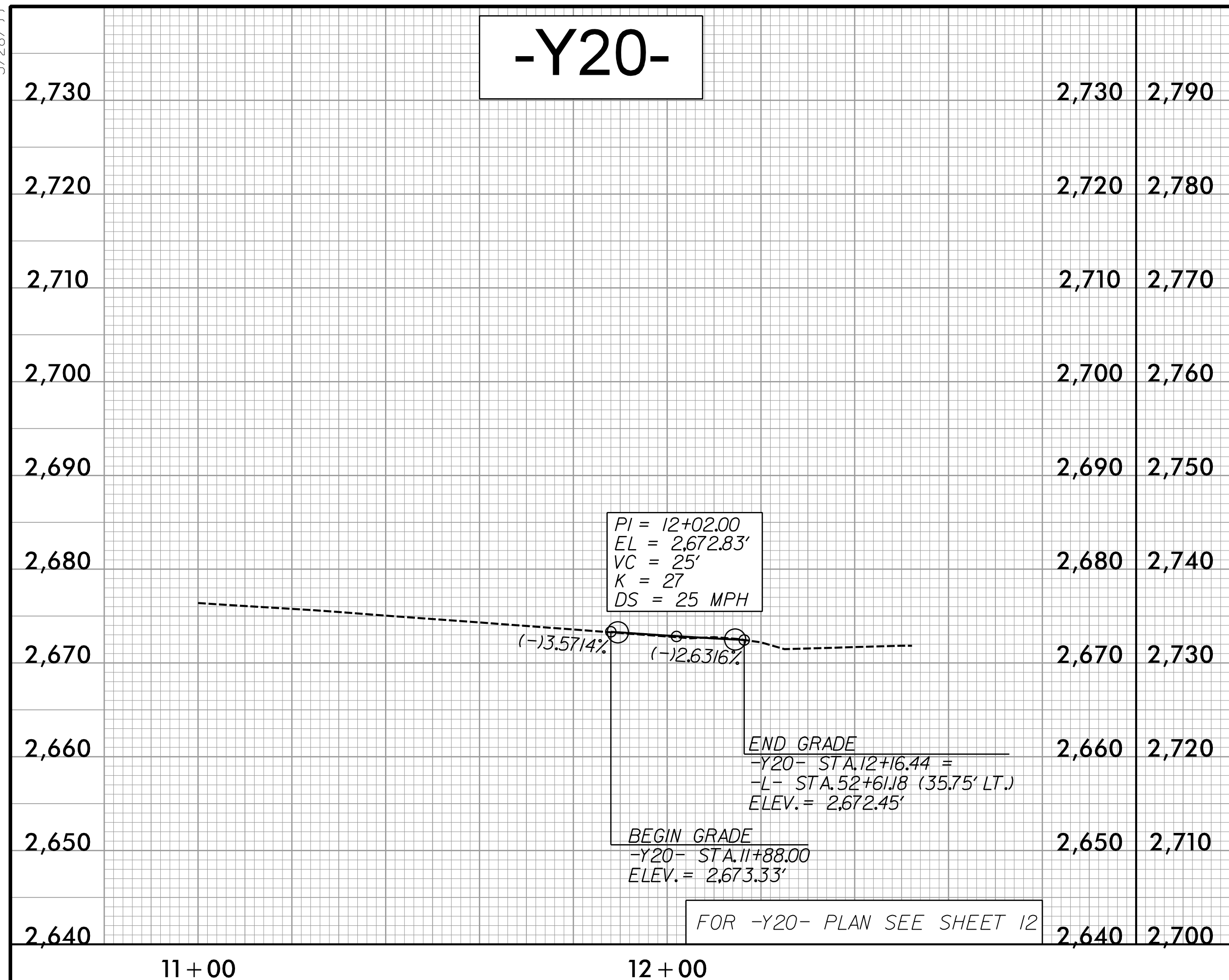
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Reagan, C

5/28/23

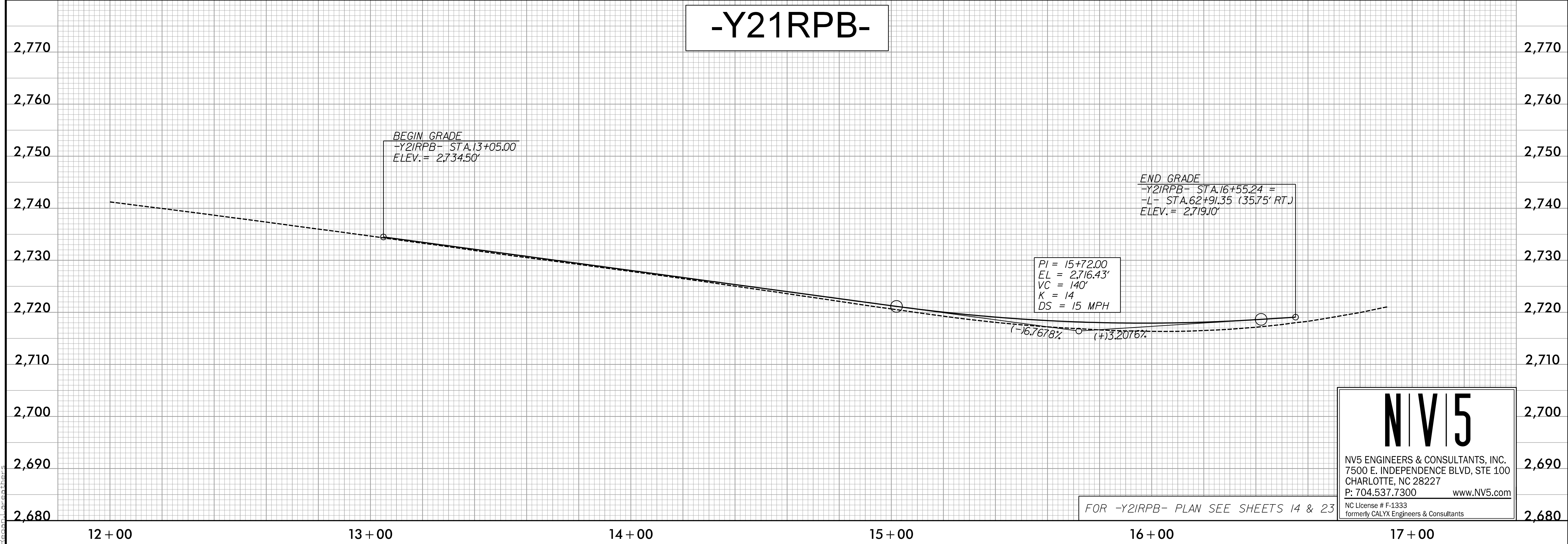
-Y20-

-Y21RPA-

PROJECT REFERENCE NO. U-5839	SHEET NO. 38
ROADWAY DESIGN ENGINEER 5/9/2023 	HYDRAULICS ENGINEER 5/9/2023 
<p><i>Chris Anderson</i> <i>David P. Becker</i></p> <p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	



-Y21RPB-



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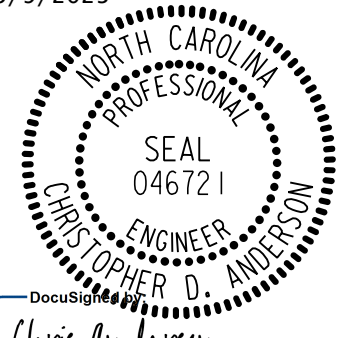
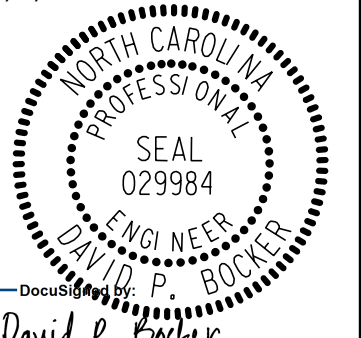
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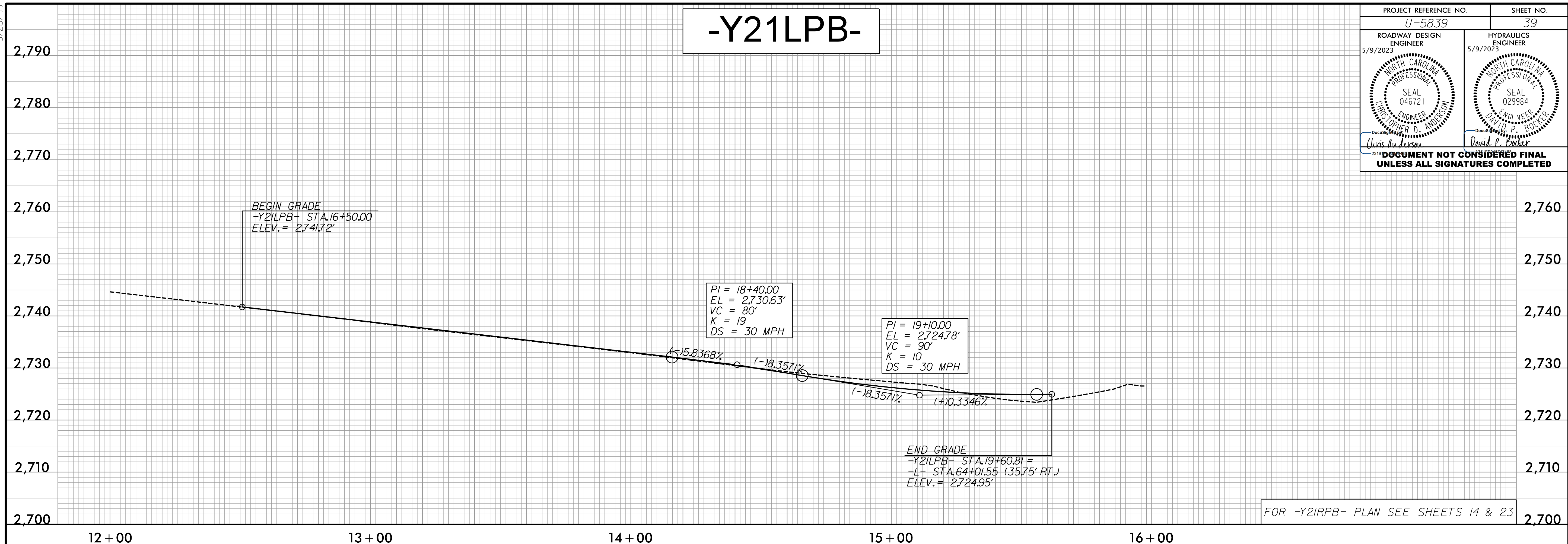
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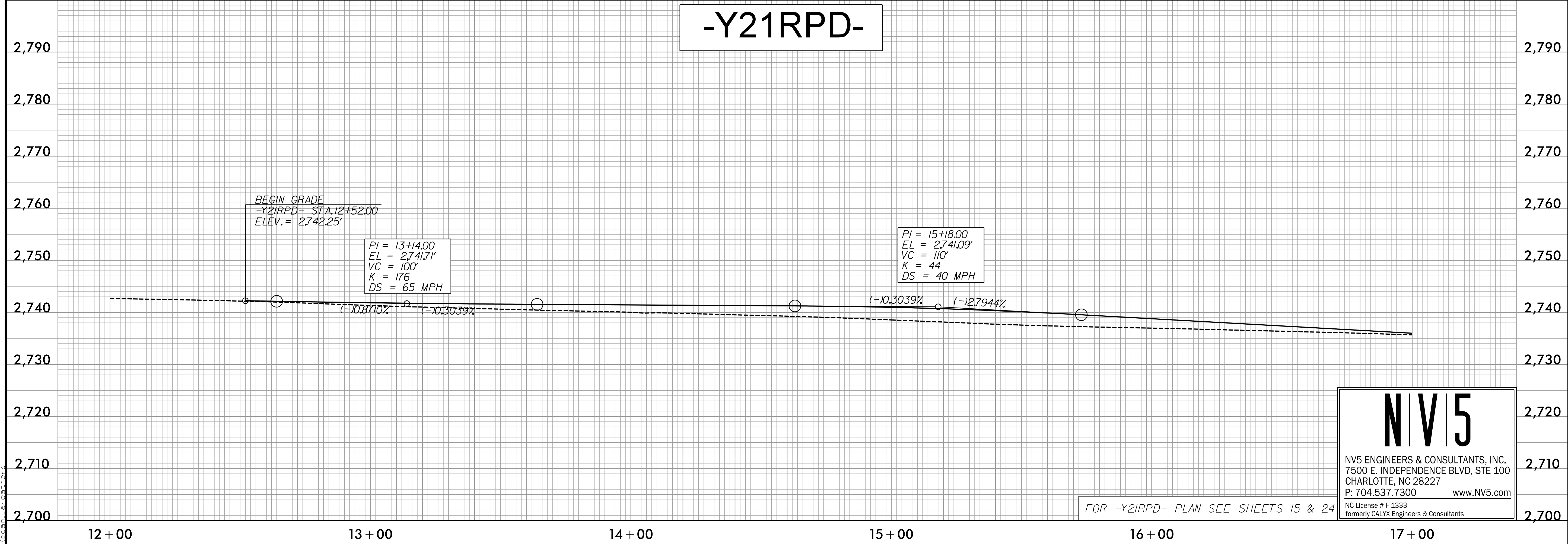
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PROJECT REFERENCE NO. U-5839	SHEET NO. 39
ROADWAY DESIGN ENGINEER 5/9/2023 	HYDRAULICS ENGINEER 5/9/2023 
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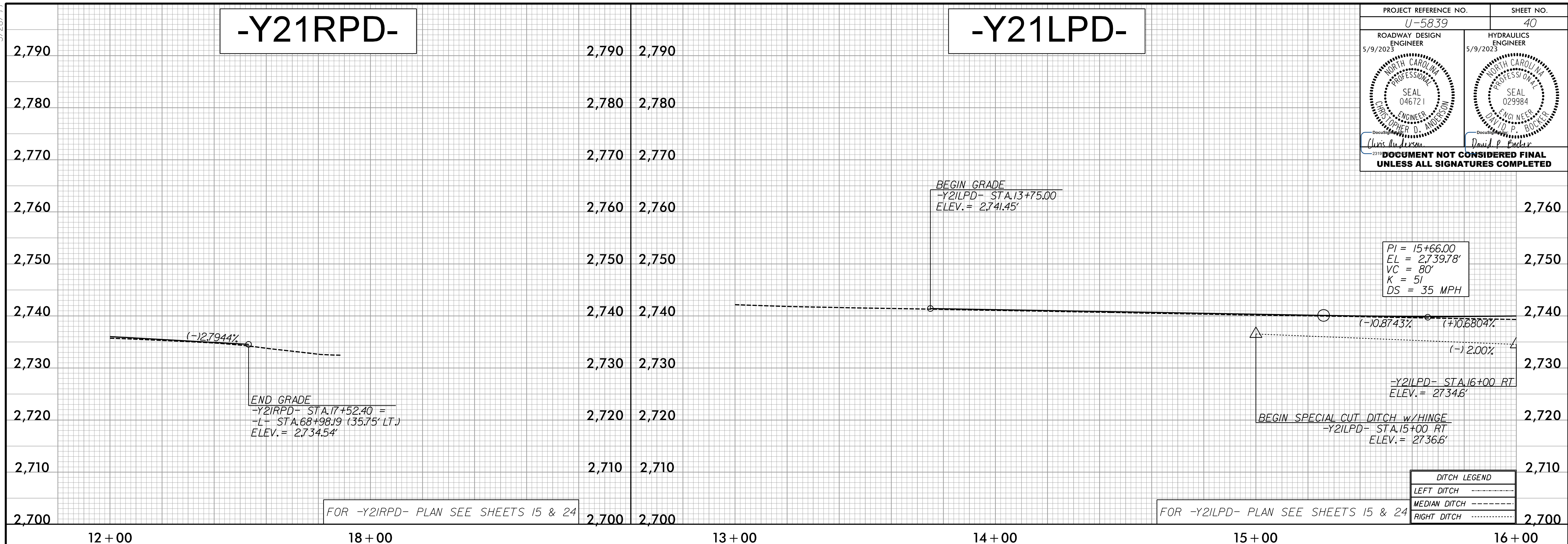
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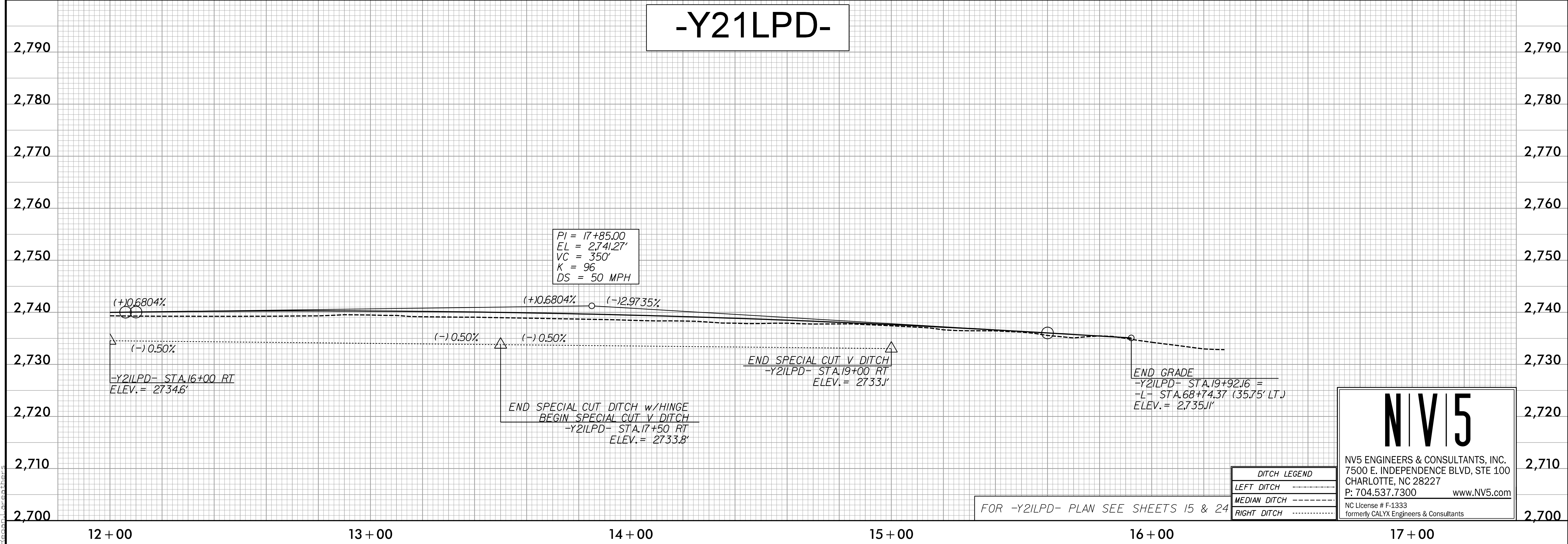
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FOR -Y21RPD- PLAN SEE SHEETS 15 & 24

FOR -Y21LPD- PLAN SEE SHEETS 15 & 24

-Y21LPD-



FOR -Y21LPD- PLAN SEE SHEETS 15 & 24

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