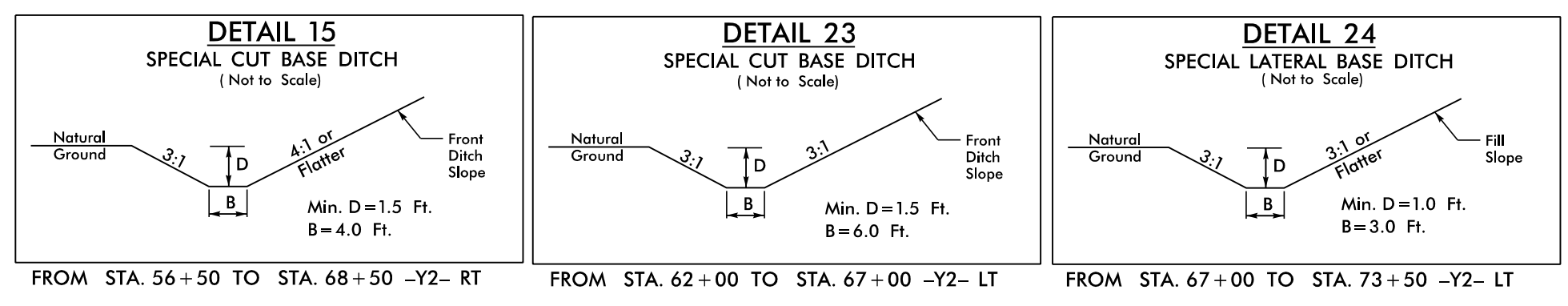


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8.17/199



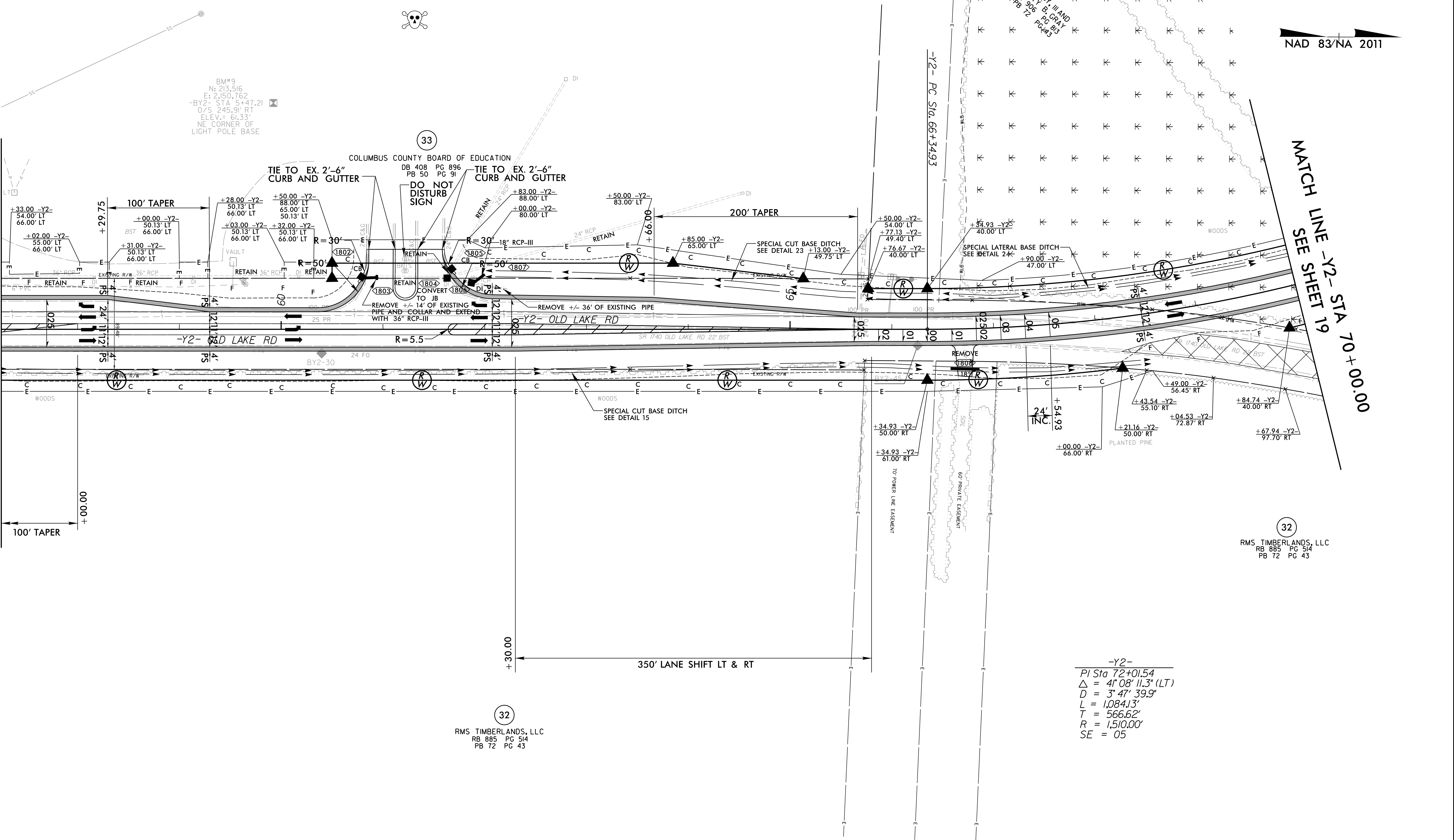
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CARY, NC 27518
P: 919.851.1312 www.NV5.com
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PROJECT REFERENCE NO. R-5819 /R-5820		SHEET NO. 18	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 4/13/2022		HYDRAULICS ENGINEER 4/13/2022	
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>			

NAD 83/NA 2011

MATCH LINE -Y2- STA 57 + 25.00
SEE SHEET 17

MATCH LINE -Y2- STA 70 + 00.00
SEE SHEET 19



-Y2-
PI Sta 72+01.54
 $\Delta = 41^{\circ} 08' 11.3" (LT)$
 $D = 3' 47' 39.9"$
 $L = 1,084.13'$
 $T = 566.62'$
 $R = 1,510.00'$
 $SE = 05$

NOTES:
 PROP PAVED SHOULDER
 PAVEMENT REMOVAL
 FOR -Y2- PROFILE, SEE SHEET 34

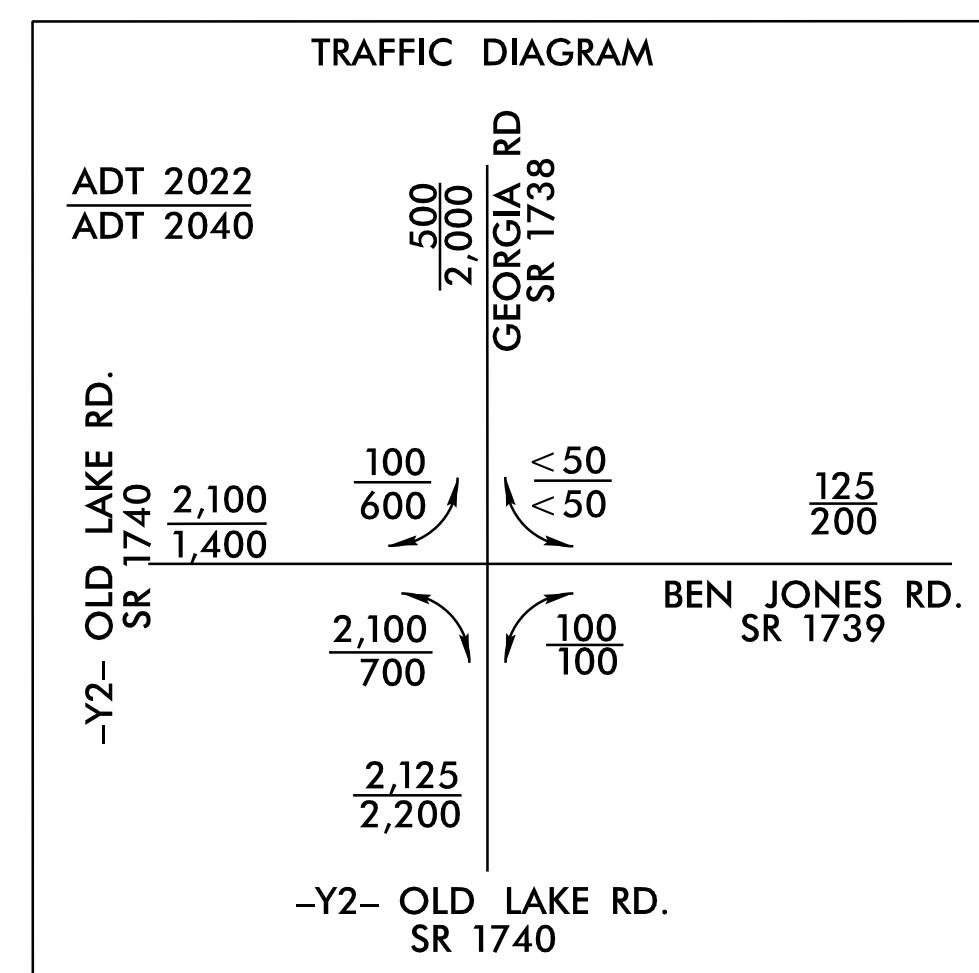
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8/17/19

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PROJECT REFERENCE NO. R-5819 /R-5820		SHEET NO. 19
RW SHEET NO.		
ROADWAY DESIGN ENGINEER 4/13/2022	HYDRAULICS ENGINEER 4/13/2022	
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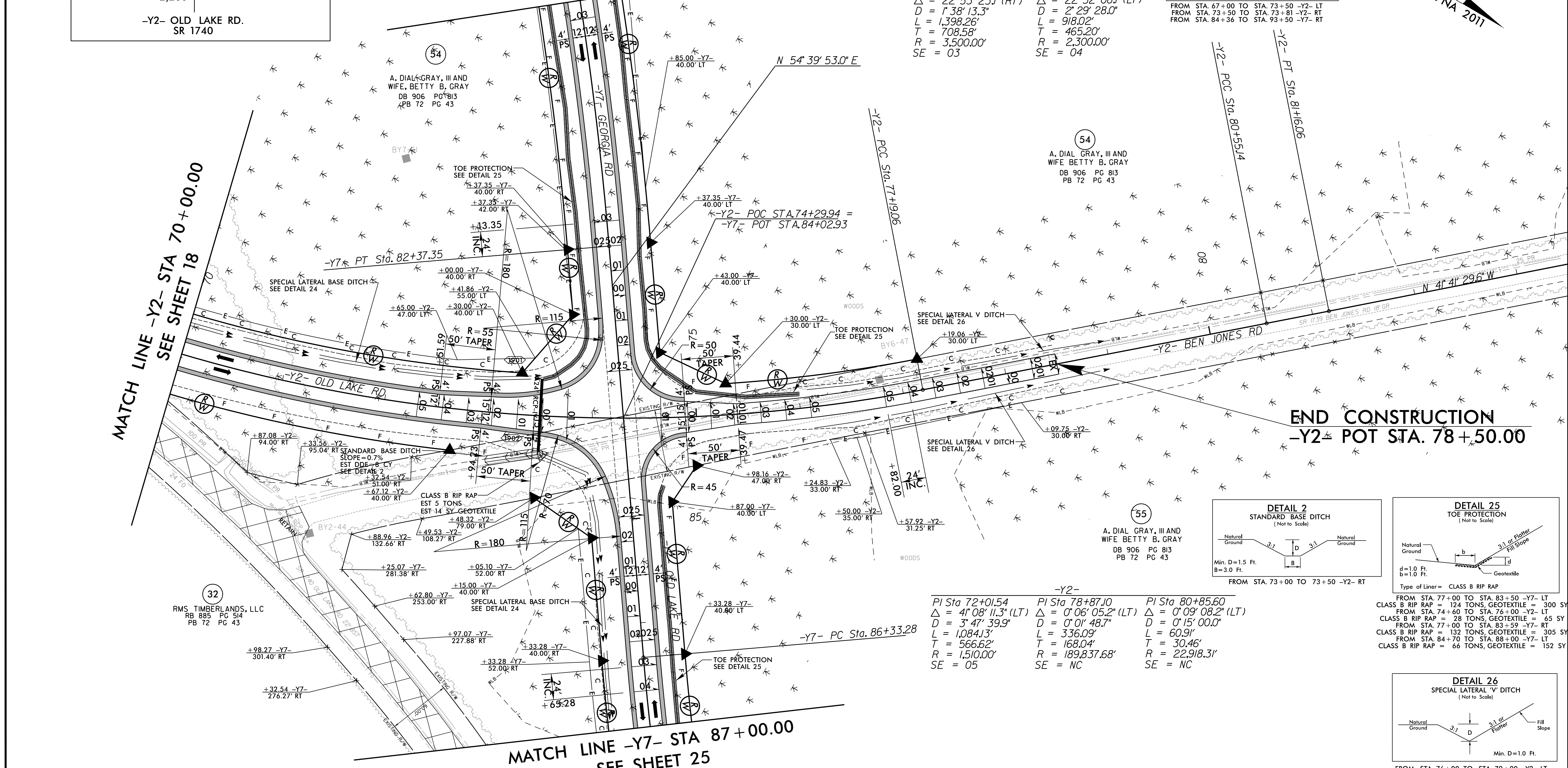
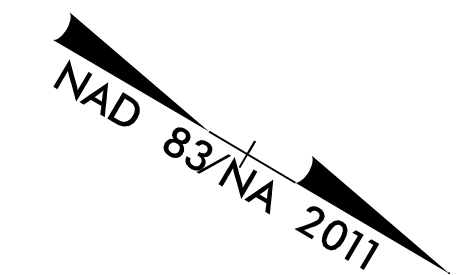
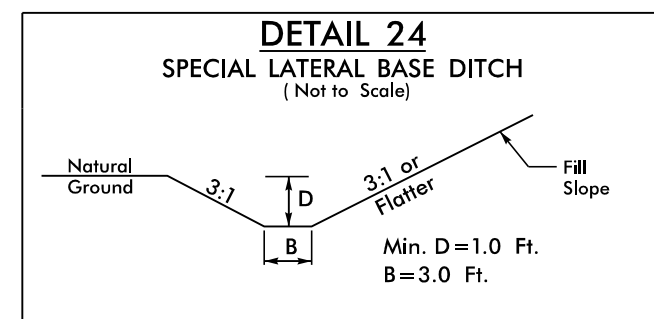
**MATCH LINE -Y7- STA 80+00.00
SEE SHEET 24**

**MATCH LINE -Y2- STA 70+00.00
SEE SHEET 18**

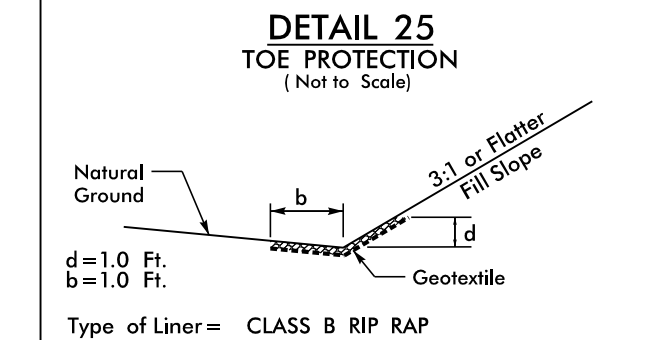
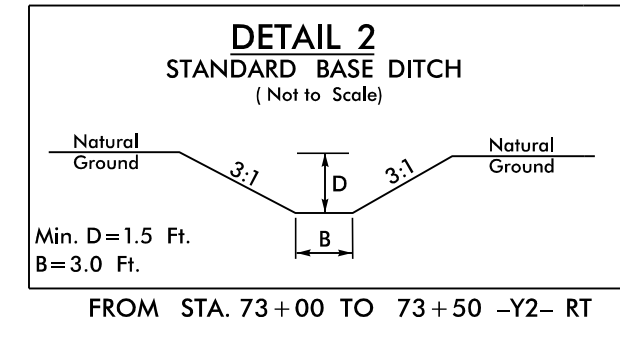
**MATCH LINE -Y7- STA 87+00.00
SEE SHEET 25**

-Y7-

PI Sta 75+47.67 $\Delta = 22^\circ 53' 23.1''$ (RT) D = 1,388.13.3' L = 1,398.26' T = 708.58' R = 3,500.00' SE = 03	PI Sta 90+98.48 $\Delta = 22^\circ 52' 08.1''$ (LT) D = 2,297.28.0' L = 918.02' T = 465.20' R = 2,300.00' SE = 04
---	---



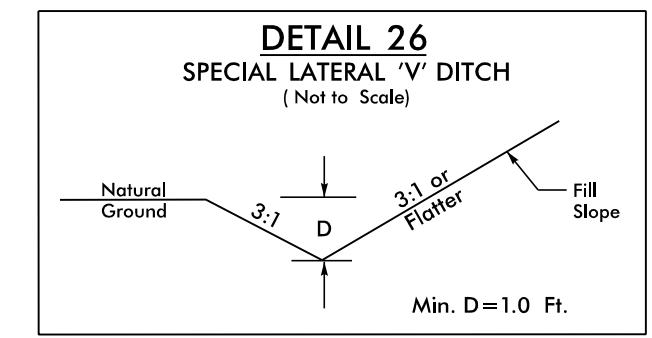
**END CONSTRUCTION
-Y2- POT STA. 78+50.00**



-Y2-

PI Sta 72+01.54 $\Delta = 41^\circ 08' 11.3''$ (LT) D = 3,477.39.9' L = 1,084.13' T = 566.62' R = 1,510.00' SE = 05	PI Sta 78+87.10 $\Delta = 0^\circ 06' 05.2''$ (LT) D = 0' 01' 48.7" L = 336.09' T = 168.04' R = 189,837.68' SE = NC	PI Sta 80+85.60 $\Delta = 0^\circ 09' 08.2''$ (LT) D = 0' 15' 00.0" L = 60.91' T = 30.46' R = 22,918.31' SE = NC
---	---	--

FROM STA. 77+00 TO STA. 83+50 -Y7- LT
CLASS B RIP RAP = 124 TONS, GEOTEXTILE = 300 SY
FROM STA. 74+60 TO STA. 76+00 -Y2- LT
CLASS B RIP RAP = 28 TONS, GEOTEXTILE = 65 SY
FROM STA. 77+00 TO STA. 83+59 -Y7- RT
CLASS B RIP RAP = 132 TONS, GEOTEXTILE = 305 SY
FROM STA. 84+70 TO STA. 88+00 -Y7- LT
CLASS B RIP RAP = 66 TONS, GEOTEXTILE = 152 SY



NOTES:

- PROP PAVED SHOULDER
- PAVEMENT REMOVAL
- FOR -Y2- PROFILE, SEE SHEET 34 & 35
- FOR -Y7- PROFILE, SEE SHEET 38

4/6/2022
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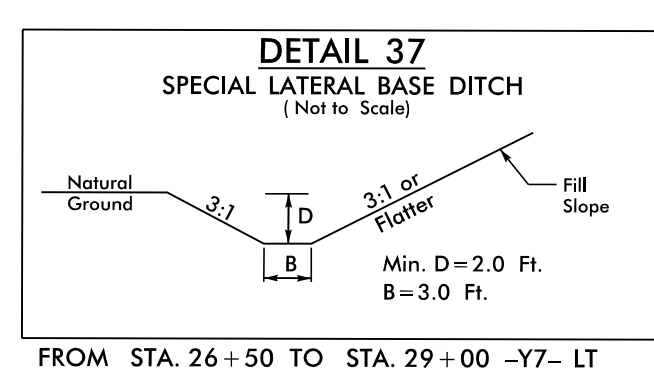
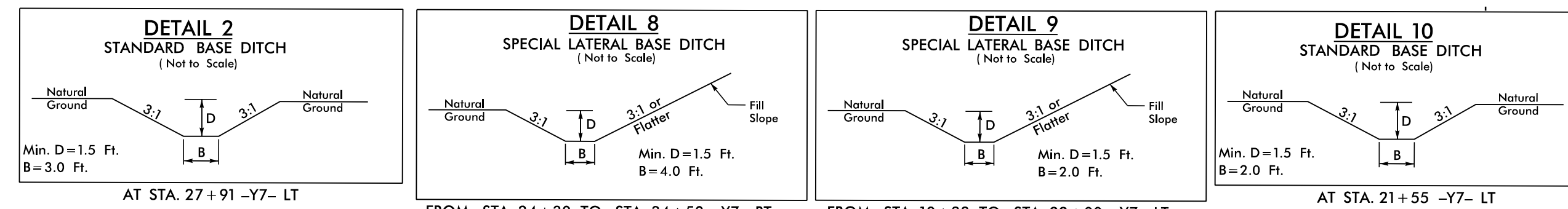
8/17/2022

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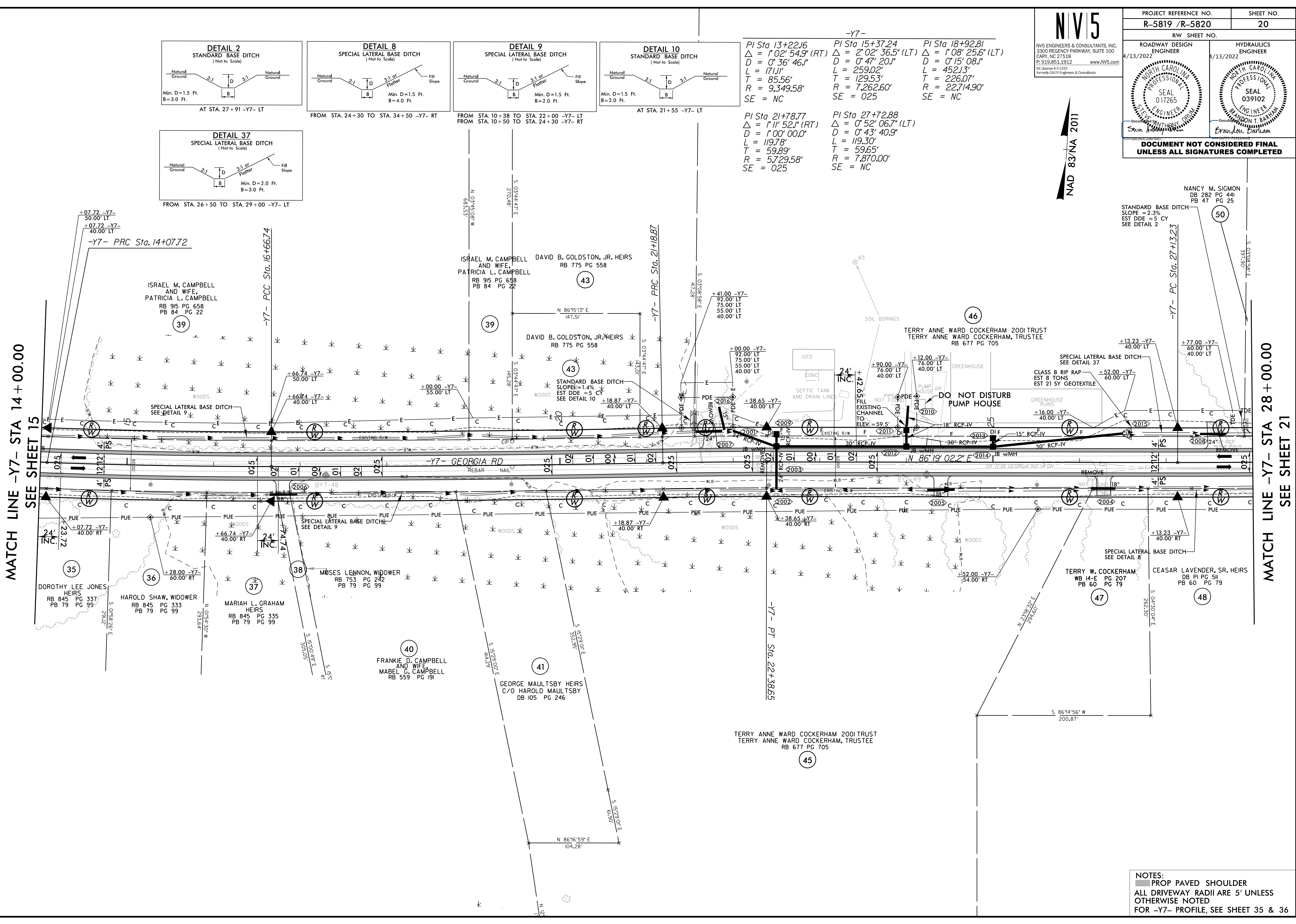
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PROJECT REFERENCE NO. R-5819 / R-5820	SHEET NO. 20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 4/13/2022	HYDRAULICS ENGINEER 4/13/2022
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-Y7-

<i>PI Sta 13+22.16</i> $\Delta = 1^{\circ}02'54.9''$ (RT) $D = 0^{\circ}36'46.1''$ $L = 171.1'$ $T = 85.56'$ $R = 9,349.58'$ $SE = NC$	<i>PI Sta 15+37.24</i> $\Delta = 2^{\circ}02'36.5''$ (LT) $D = 0^{\circ}47'20.1''$ $L = 259.02'$ $T = 129.53'$ $R = 7,262.60'$ $SE = 025$	<i>PI Sta 18+92.81</i> $\Delta = 1^{\circ}08'25.6''$ (LT) $D = 0^{\circ}15'08.1''$ $L = 452.13'$ $T = 226.07'$ $R = 22,714.90'$ $SE = NC$
<i>PI Sta 21+78.77</i> $\Delta = 1^{\circ}11'52.1''$ (RT) $D = 1^{\circ}00'00.0''$ $L = 119.78'$ $T = 59.89'$ $R = 5,729.58'$ $SE = 025$	<i>PI Sta 27+72.88</i> $\Delta = 0^{\circ}52'06.7''$ (LT) $D = 0^{\circ}43'40.9''$ $L = 119.30'$ $T = 59.65'$ $R = 7,870.00'$ $SE = NC$	



MATCH LINE -Y7- STA 14+00.00
SEE SHEET 15

MATCH LINE -Y7- STA 28+00.00
SEE SHEET 21

NOTES:

- PROP PAVED SHOULDER
- ALL DRIVEWAY RADII ARE 5' UNLESS OTHERWISE NOTED
- FOR -Y7- PROFILE, SEE SHEET 35 & 36

8/17/99

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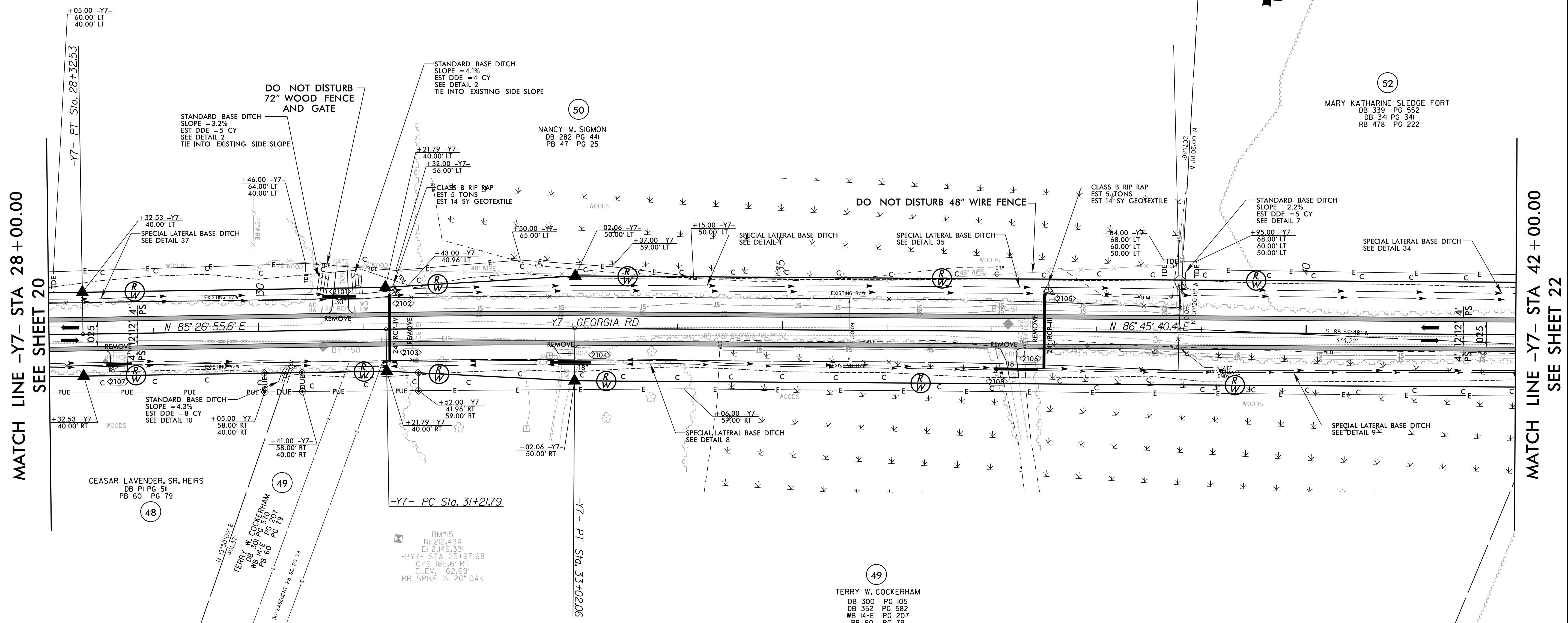
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RW SHEET NO.	
ROADWAY DESIGN ENGINEER 4/13/2022	HYDRAULICS ENGINEER 4/13/2022
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-Y7-

PI Sta 27+72.88 Δ = 0° 52' 06.7" (LT) D = 0° 43' 40.9" L = 119.30' T = 59.65' R = 7,870.00' SE = NC	PI Sta 32+11.93 Δ = 1° 18' 44.8" (RT) D = 0° 43' 40.9" L = 180.27' T = 90.14' R = 7,870.00' SE = NC
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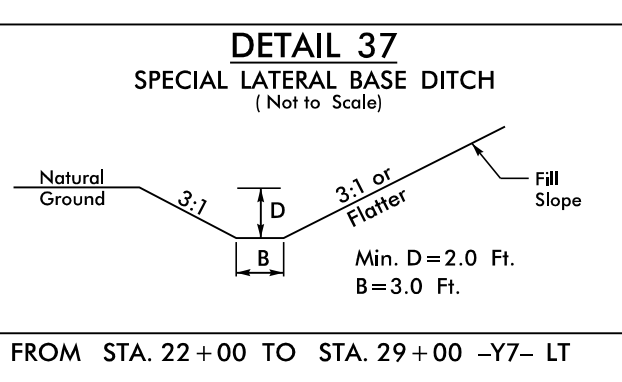
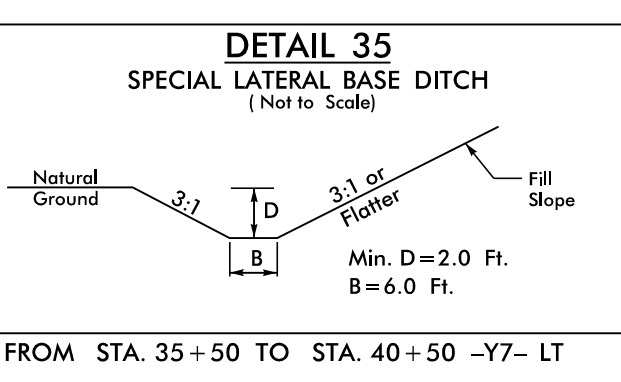
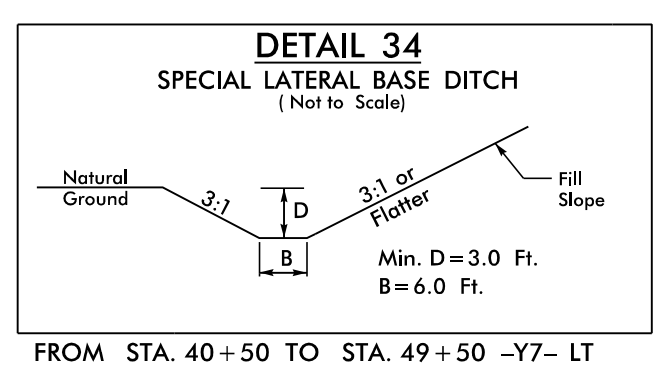
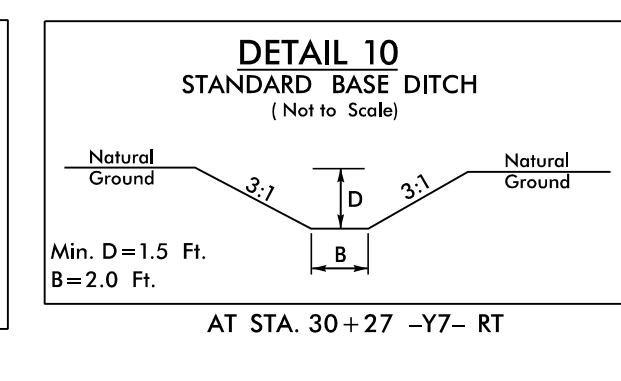
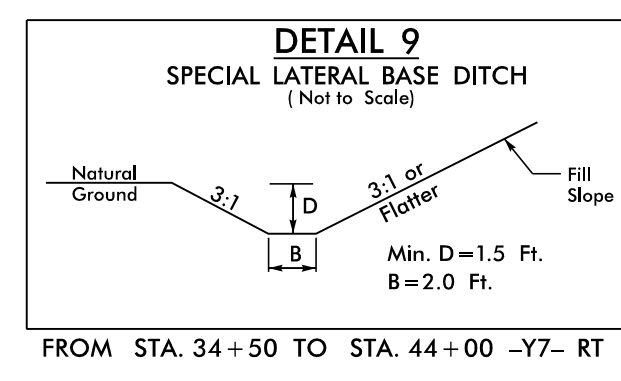
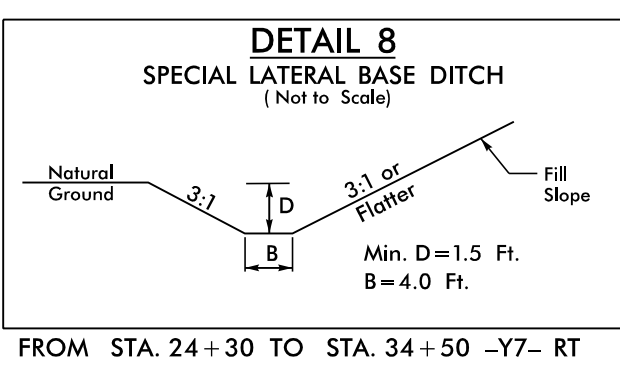
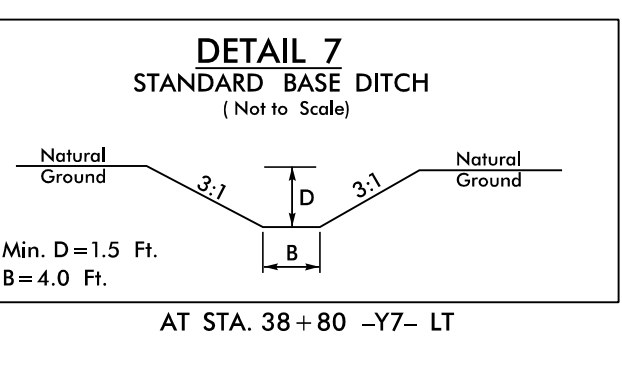
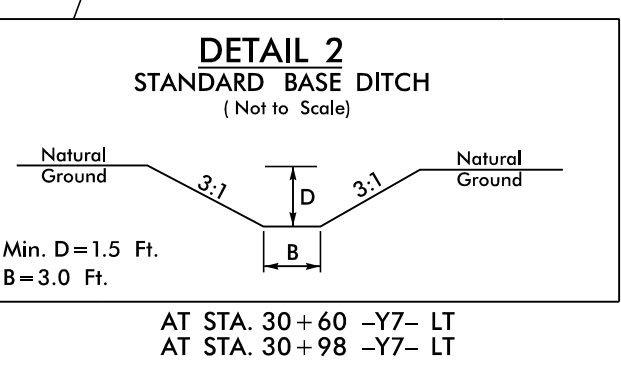
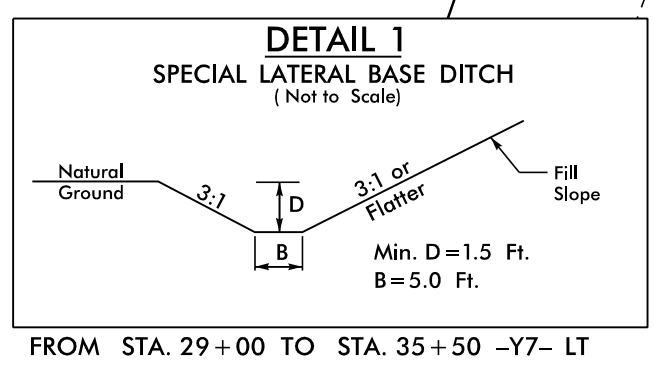
N 85°58'08" E
262.16'

NAD 83 NA 2011



MATCH LINE -Y7- STA 28+00.00
SEE SHEET 20

MATCH LINE -Y7- STA 42+00.00
SEE SHEET 22



52

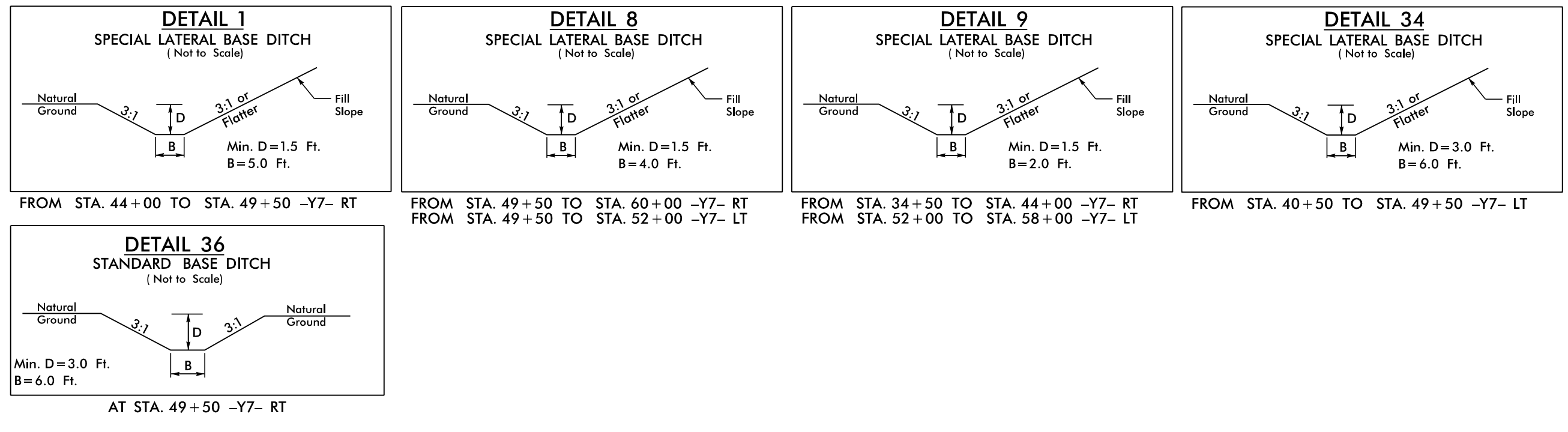
MARY KATHARINE SLEDGE FORT
DB 339 PG 552
DB 341 PG 341
RB 478 PG 222

NOTES:
 PROP PAVED SHOULDER
 ALL DRIVEWAY RADII ARE 5' UNLESS OTHERWISE NOTED
 FOR -Y7- PROFILE, SEE SHEET 36

8/15/2022
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C:\Users\jbarham

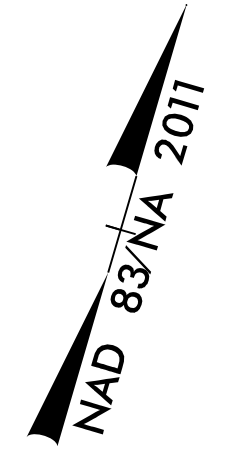
8.17.2022

PROJECT REFERENCE NO. R-5819 /R-5820		SHEET NO. 22
RW SHEET NO.		
ROADWAY DESIGN ENGINEER 4/13/2022	HYDRAULICS ENGINEER 4/13/2022	
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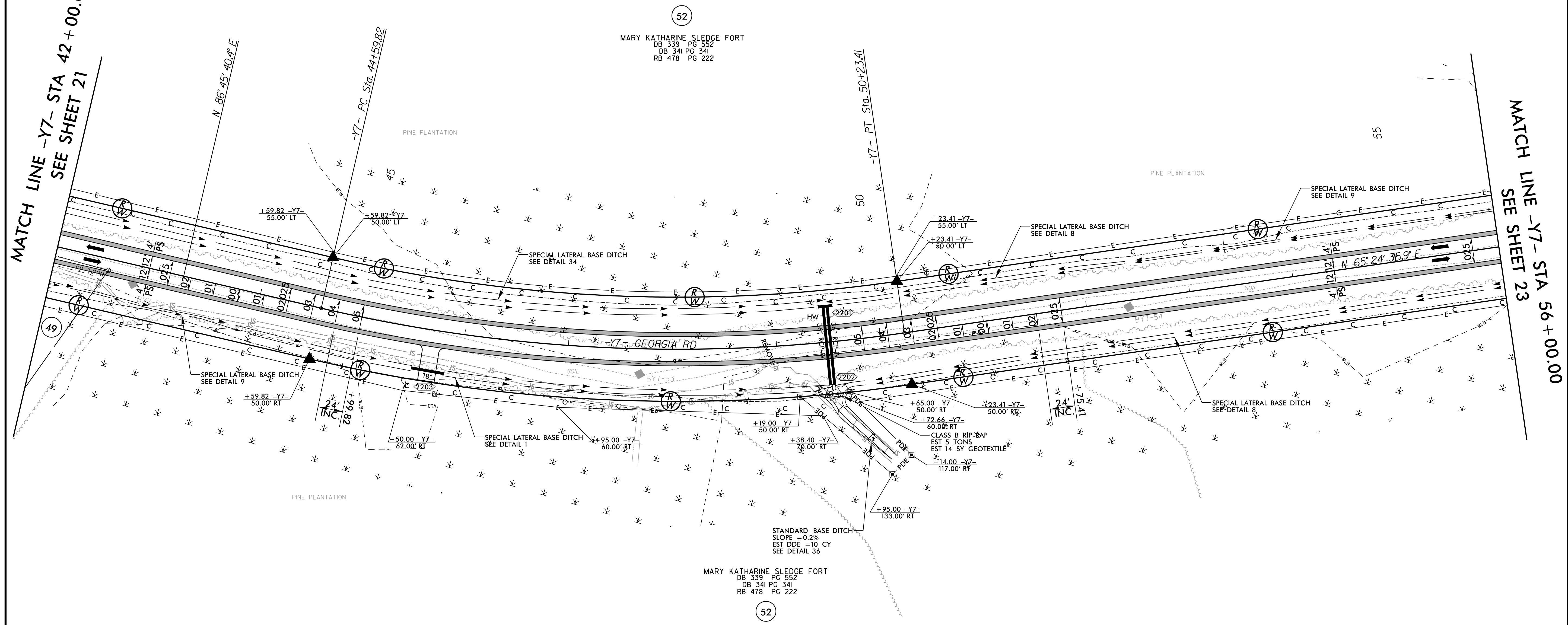
-Y7-

PI Sta 47+44.93
 $\Delta = 2' 23' 05.4''$ (LT)
 $D = 3' 47' 39.9''$
 $L = 563.59'$
 $T = 285.11'$
 $R = 1,510.00'$
 $SE = 05$



MATCH LINE -Y7- STA 42+00.00
SEE SHEET 21

MATCH LINE -Y7- STA 56+00.00
SEE SHEET 23



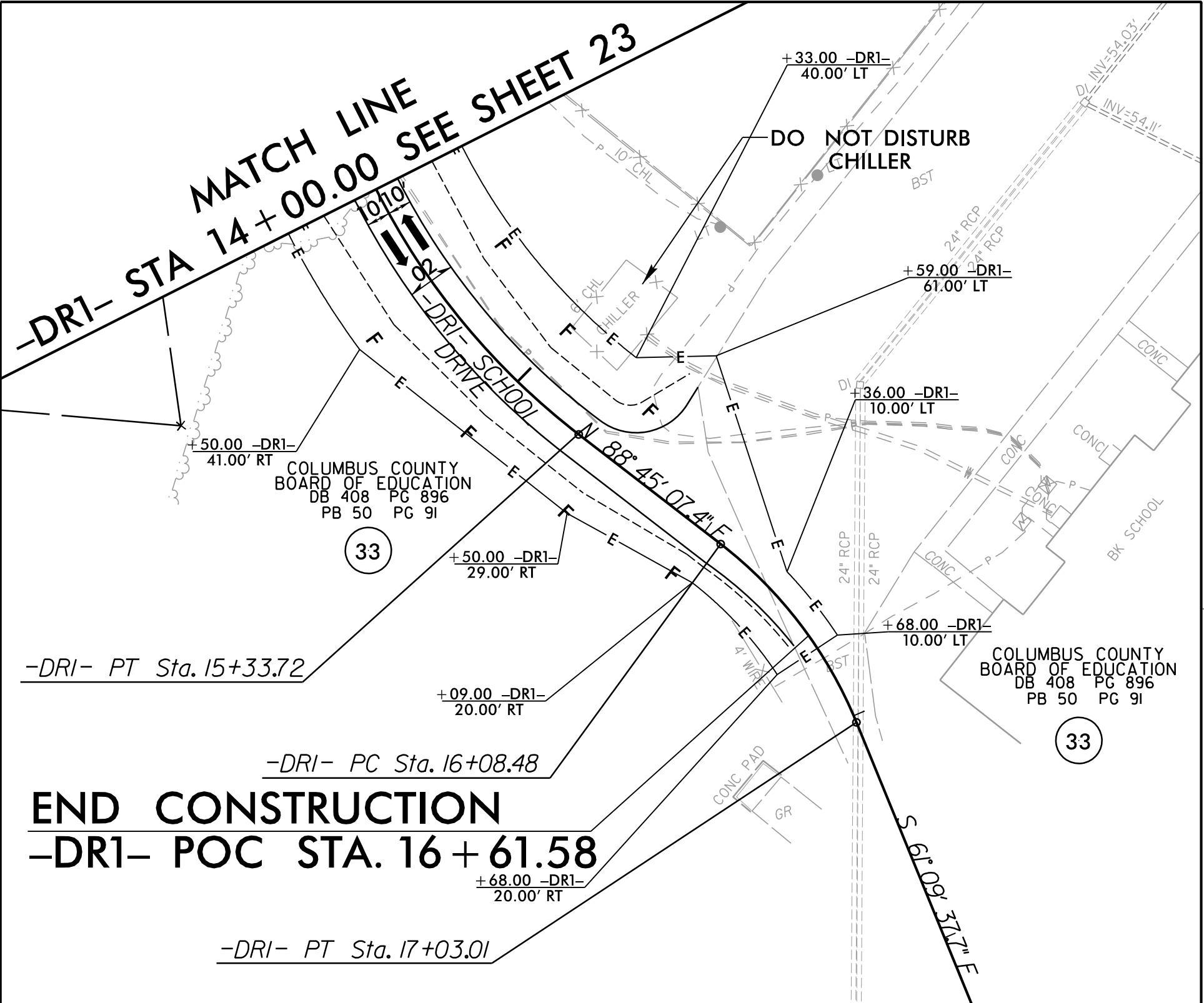
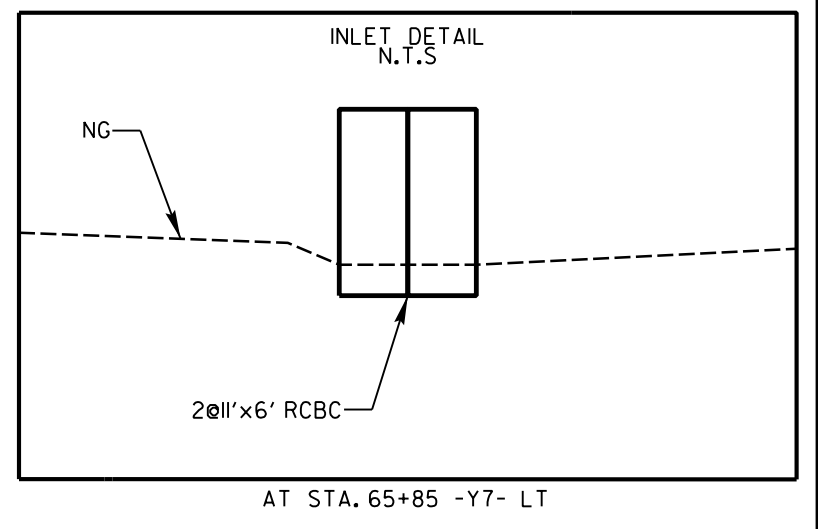
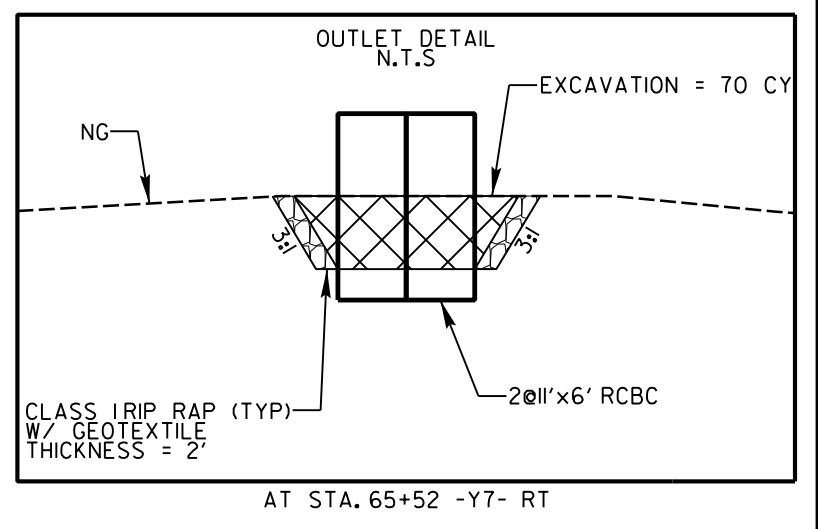
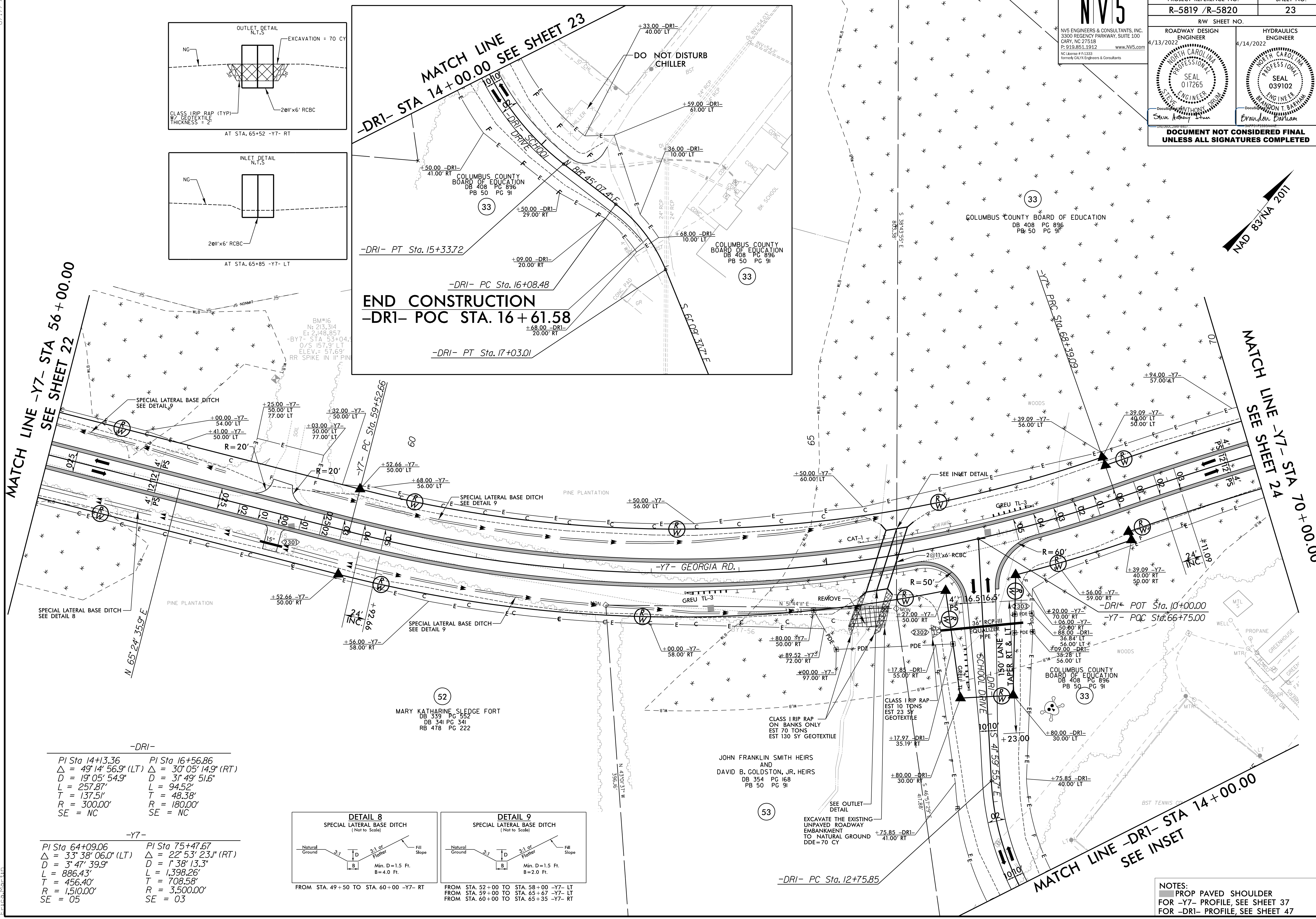
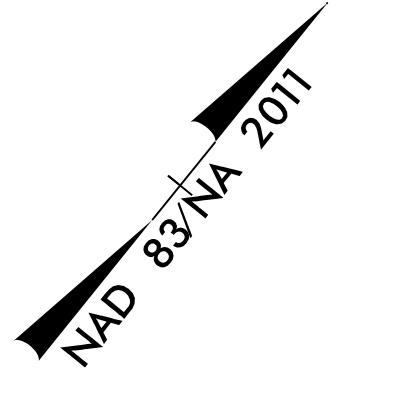
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NOTES:
 PROP PAVED SHOULDER
 FOR -Y7- PROFILE, SEE SHEET 36 & 37

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PROJECT REFERENCE NO. R-5819 / R-5820		SHEET NO. 23
RW SHEET NO.		
ROADWAY DESIGN ENGINEER 4/13/2022	HYDRAULICS ENGINEER 4/14/2022	
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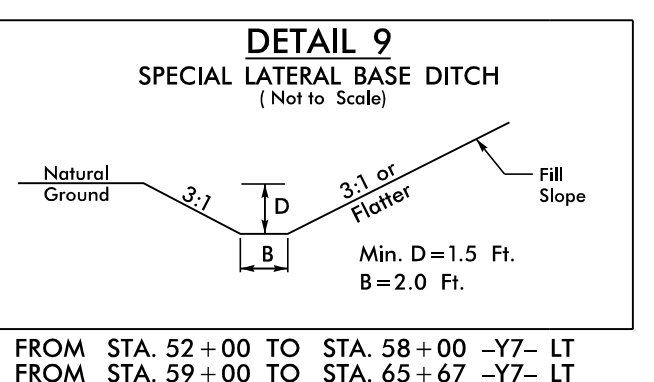
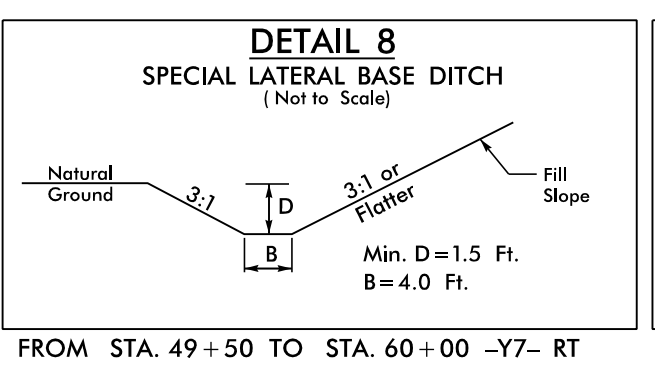


MATCH LINE -Y7- STA 56+00.00 SEE SHEET 22

MATCH LINE -Y7- STA 70+00.00 SEE SHEET 24

-DRI-	
PI Sta 14+13.36	PI Sta 16+56.86
$\Delta = 49^{\circ}14'56.9"$ (LT)	$\Delta = 30^{\circ}05'14.9"$ (RT)
D = 19'05'54.9"	D = 31'49'51.6"
L = 257.87'	L = 94.52'
T = 137.51'	T = 48.38'
R = 300.00'	R = 180.00'
SE = NC	SE = NC

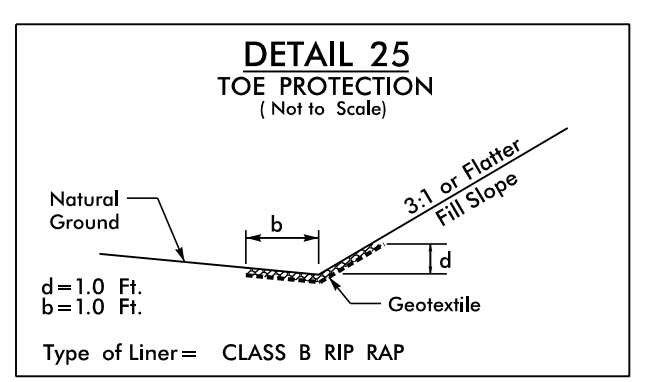
-Y7-	
PI Sta 64+09.06	PI Sta 75+47.67
$\Delta = 33^{\circ}38'06.0"$ (LT)	$\Delta = 22^{\circ}53'23.1"$ (RT)
D = 3'47'39.9"	D = 1'38'13.3"
L = 886.43'	L = 1,398.26'
T = 456.40'	T = 708.58'
R = 1,510.00'	R = 3,500.00'
SE = 05	SE = 03



NOTES:
 ■ PROP PAVED SHOULDER
 ■ FOR -Y7- PROFILE, SEE SHEET 37
 ■ FOR -DRI- PROFILE, SEE SHEET 47

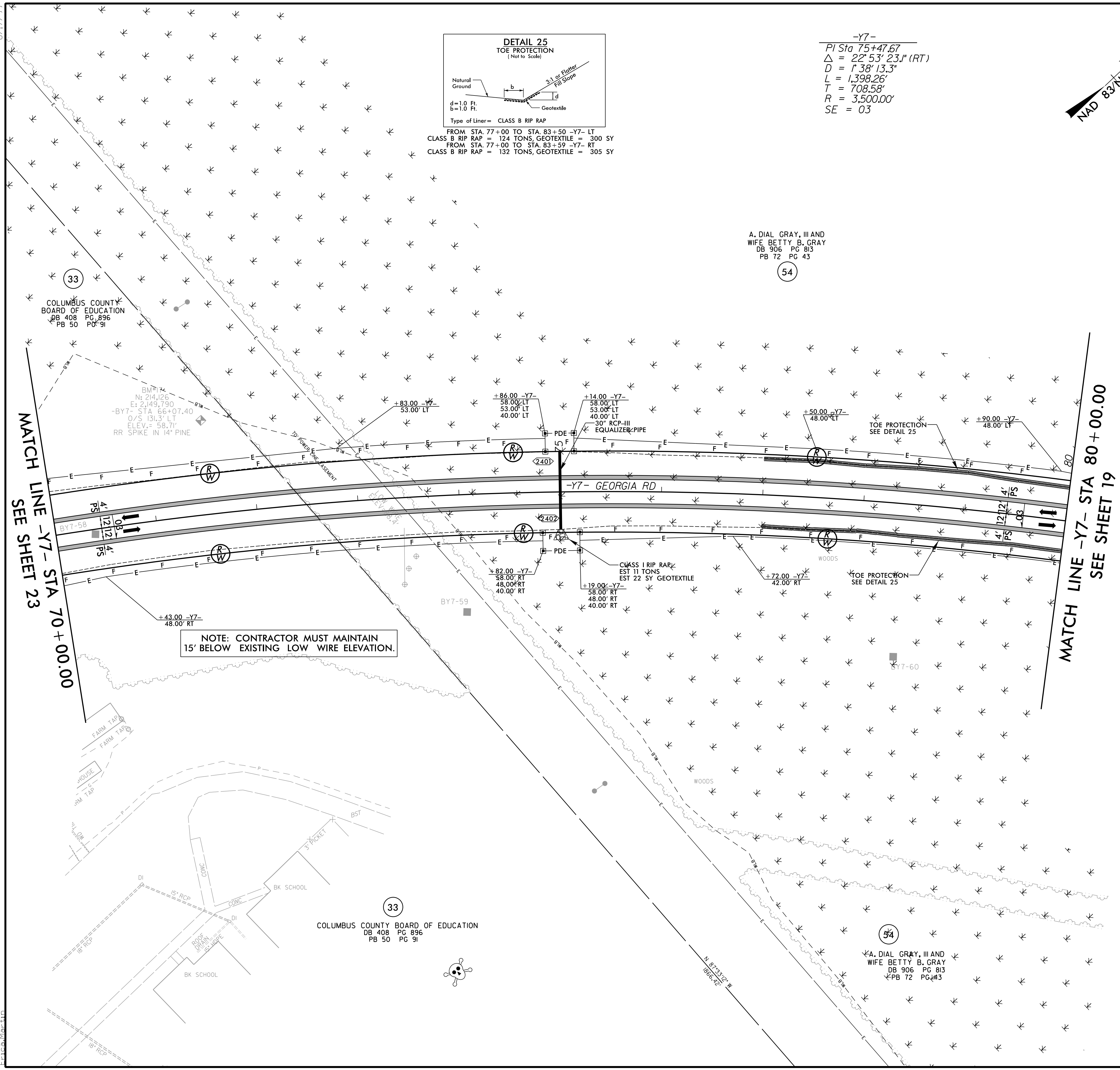
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RW SHEET NO.		HYDRAULICS SHEET NO.	
ROADWAY DESIGN ENGINEER 4/13/2022		HYDRAULICS ENGINEER 4/13/2022	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



FROM STA. 77+00 TO STA. 83+50 -Y7- LT
 CLASS B RIP RAP = 124 TONS, GEOTEXTILE = 300 SY
 FROM STA. 77+00 TO STA. 83+50 -Y7- RT
 CLASS B RIP RAP = 132 TONS, GEOTEXTILE = 305 SY

-Y7-
 PI Sta 75+47.67
 $\Delta = 22^{\circ}53'23.1''$ (RT)
 $D = 1'38'13.3''$
 $L = 1,398.26'$
 $R = 708.58'$
 $SE = 03$



NOTE: CONTRACTOR MUST MAINTAIN
 15' BELOW EXISTING LOW WIRE ELEVATION.

NOTES:
 ■ PROP PAVED SHOULDER
 FOR -Y7- PROFILE, SEE SHEET 37

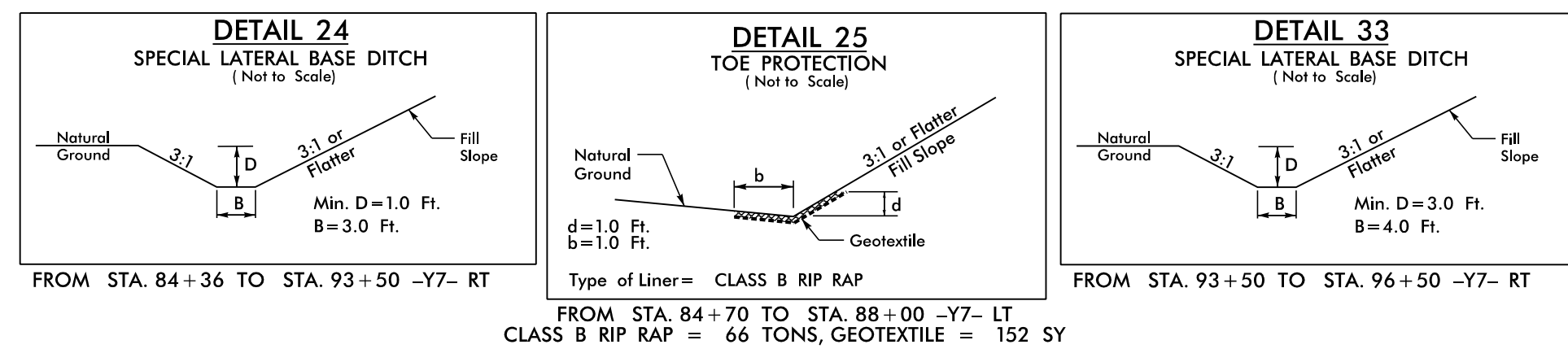
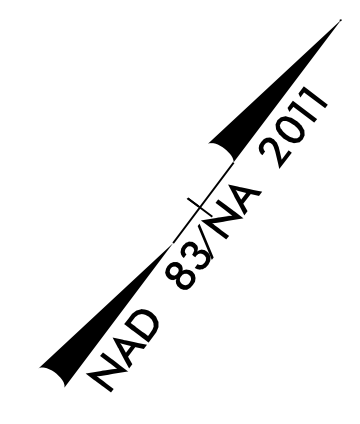
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8/17/22

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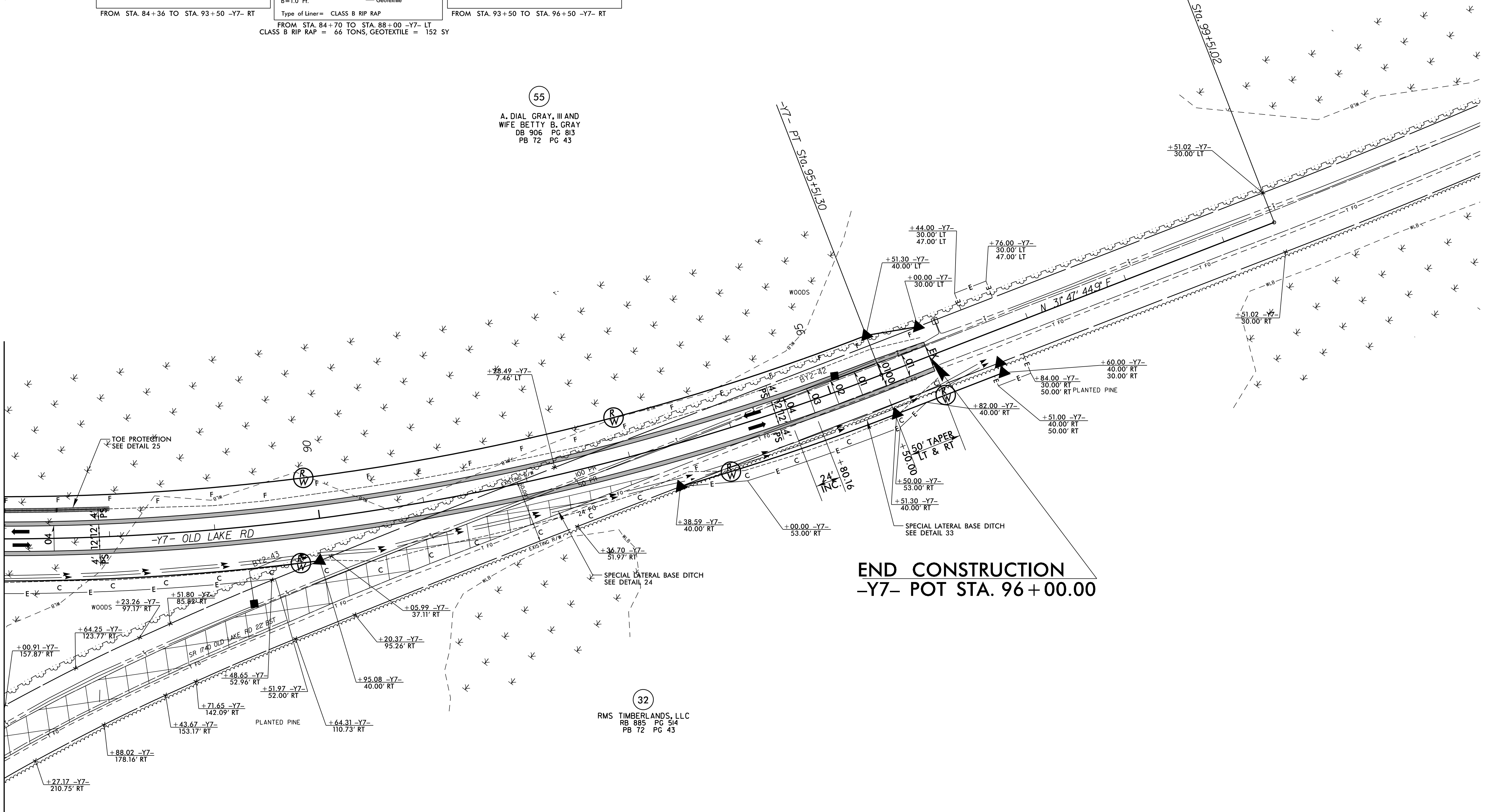
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RW SHEET NO.		
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<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>		

-Y7-
 PI Sta 90+98.48
 $\Delta = 22' 52" 08.1" (LT)$
 $D = 2' 29' 28.0"$
 $L = 918.02'$
 $T = 465.20'$
 $R = 2,300.00'$
 $SE = 04$



55
 A. DIAL GRAY, III AND
 WIFE BETTY B. GRAY
 DB 906 PG 813
 PB 72 PG 43

MATCH LINE -Y7- STA 87+00.00
 SEE SHEET 19



END CONSTRUCTION
 -Y7- POT STA. 96+00.00

32
 RMS TIMBERLANDS, LLC
 RB 885 PG 514
 PB 72 PG 43

NOTES:
 PROP PAVED SHOULDER
 PAVEMENT REMOVAL
 FOR -Y7- PROFILE, SEE SHEET 38

4/16/2022
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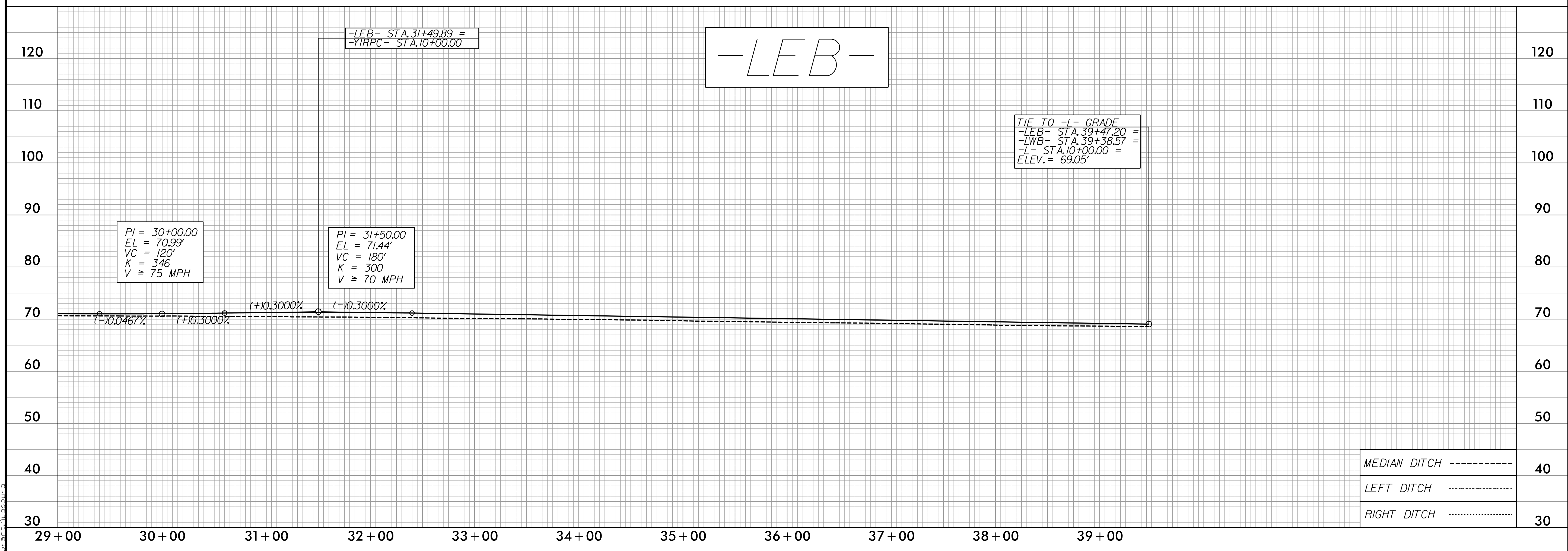
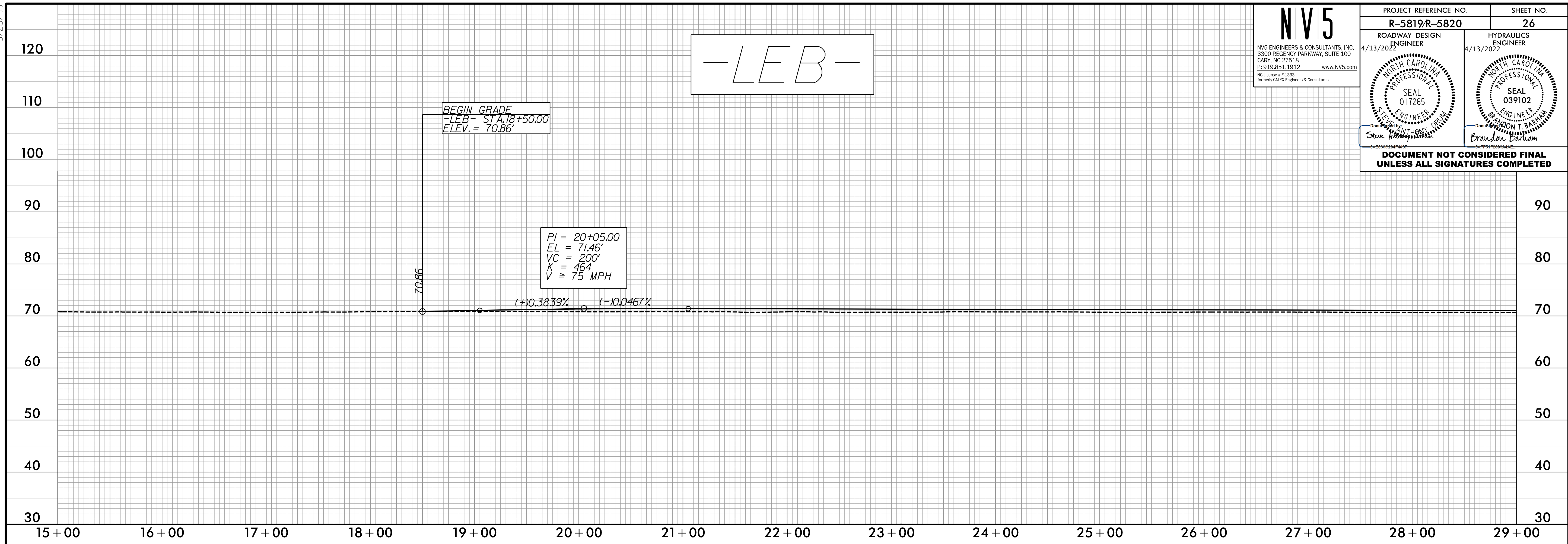
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PROJECT REFERENCE NO. R-5819/R-5820		SHEET NO. 26
ROADWAY DESIGN ENGINEER 4/13/2022	HYDRAULICS ENGINEER 4/13/2022	

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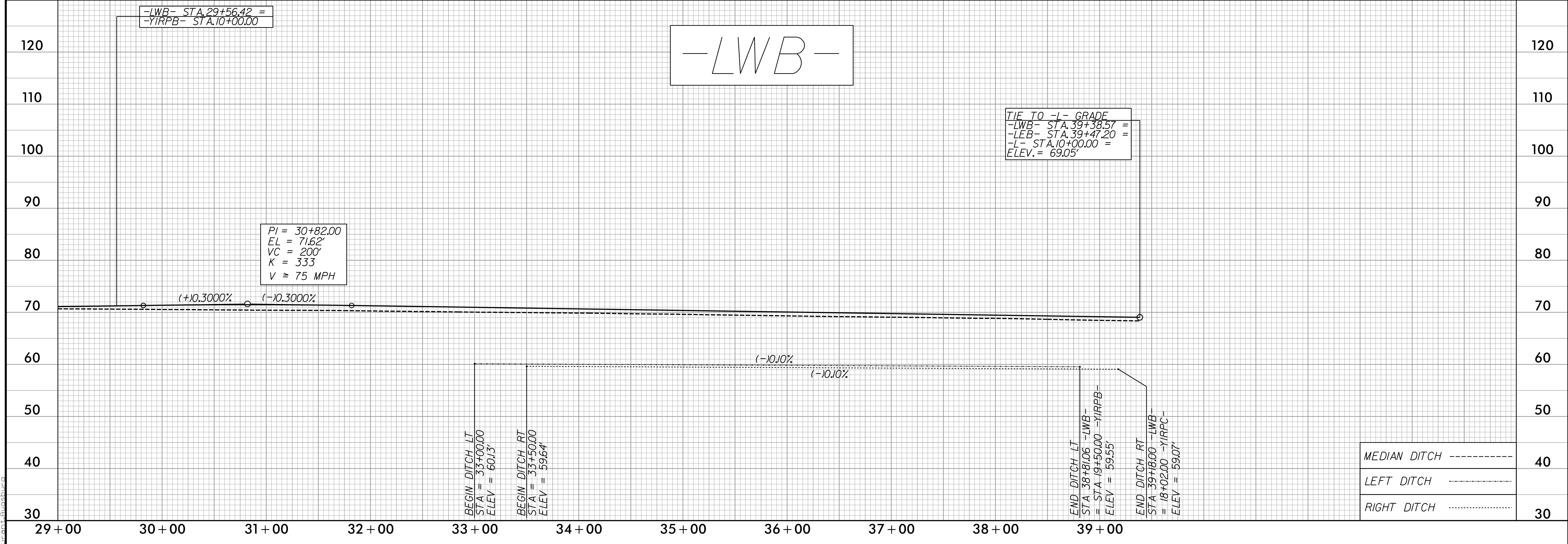
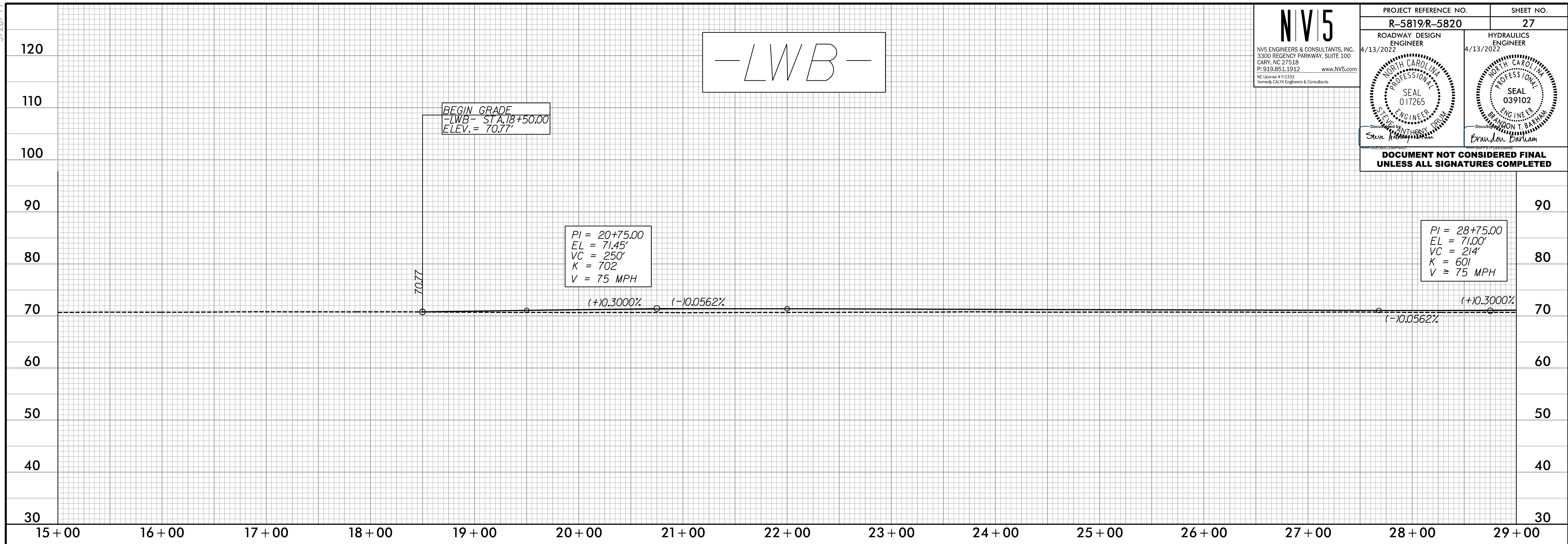


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C:\Users\bradbarham

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PROJECT REFERENCE NO. R-5819/R-5820	SHEET NO. 27
ROADWAY DESIGN ENGINEER 4/13/2022	HYDRAULICS ENGINEER 4/13/2022
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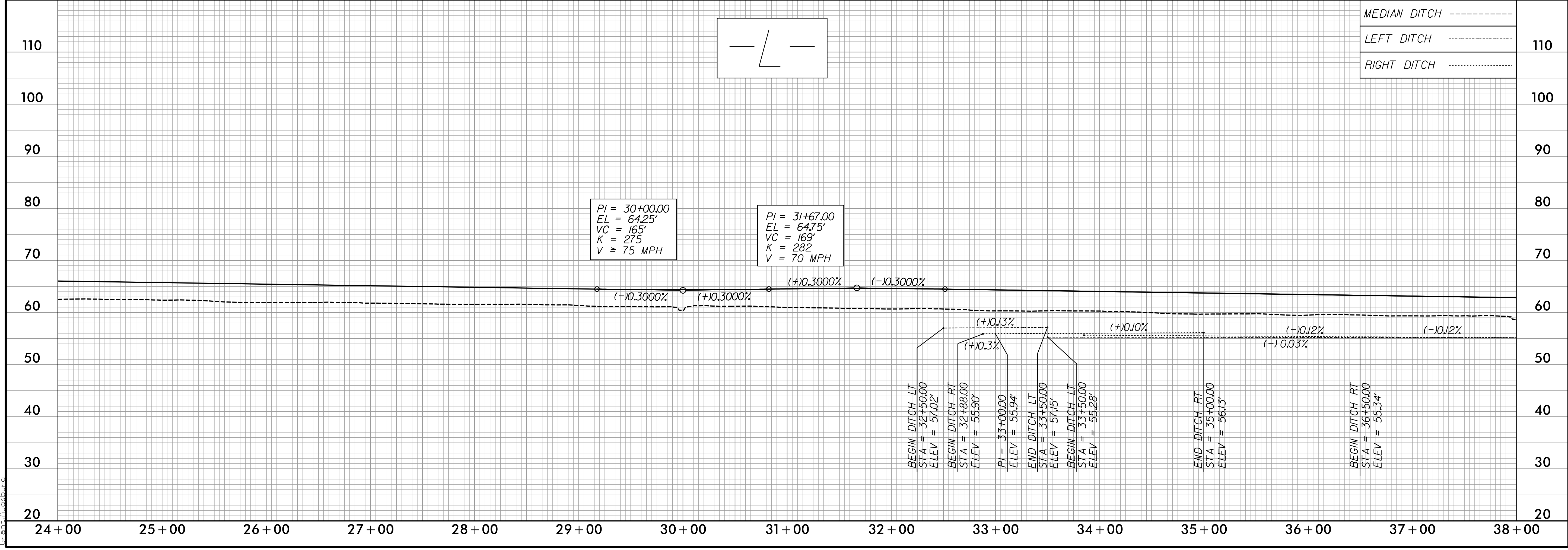
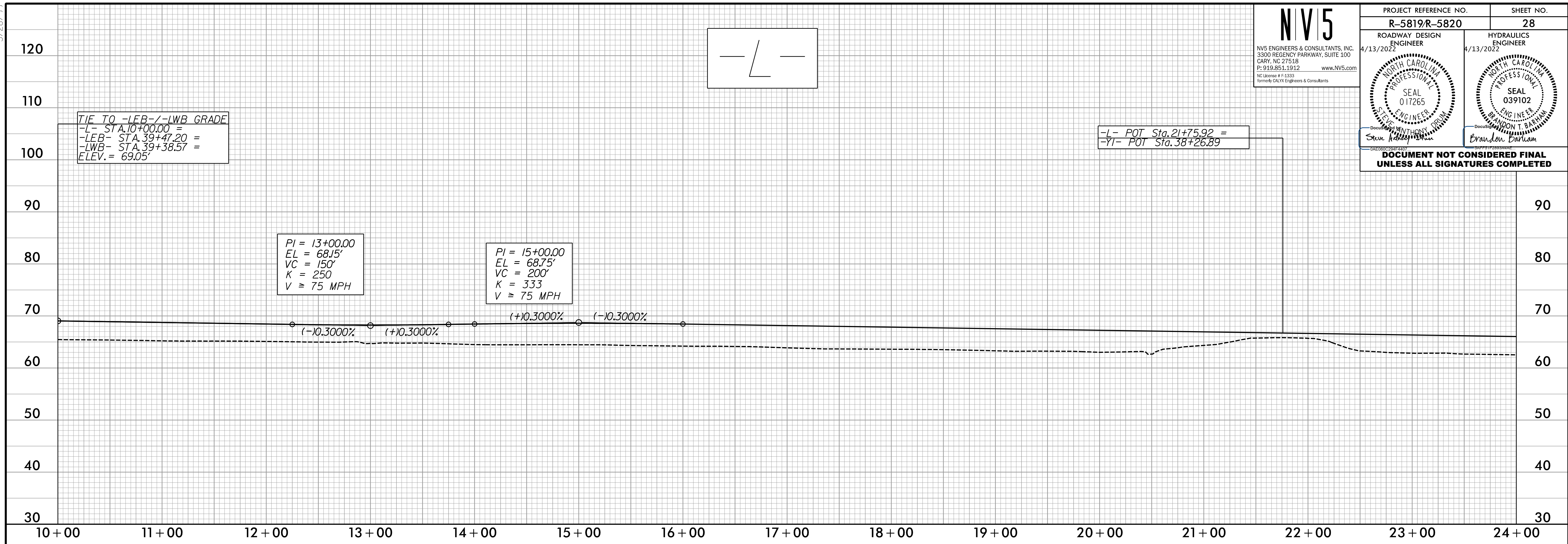
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PROJECT REFERENCE NO. R-5819/R-5820	SHEET NO. 28
ROADWAY DESIGN ENGINEER 4/13/2022	HYDRAULICS ENGINEER 4/13/2022
DocuSign: Steven Anthony Abram	DocuSign: Brandon Barham

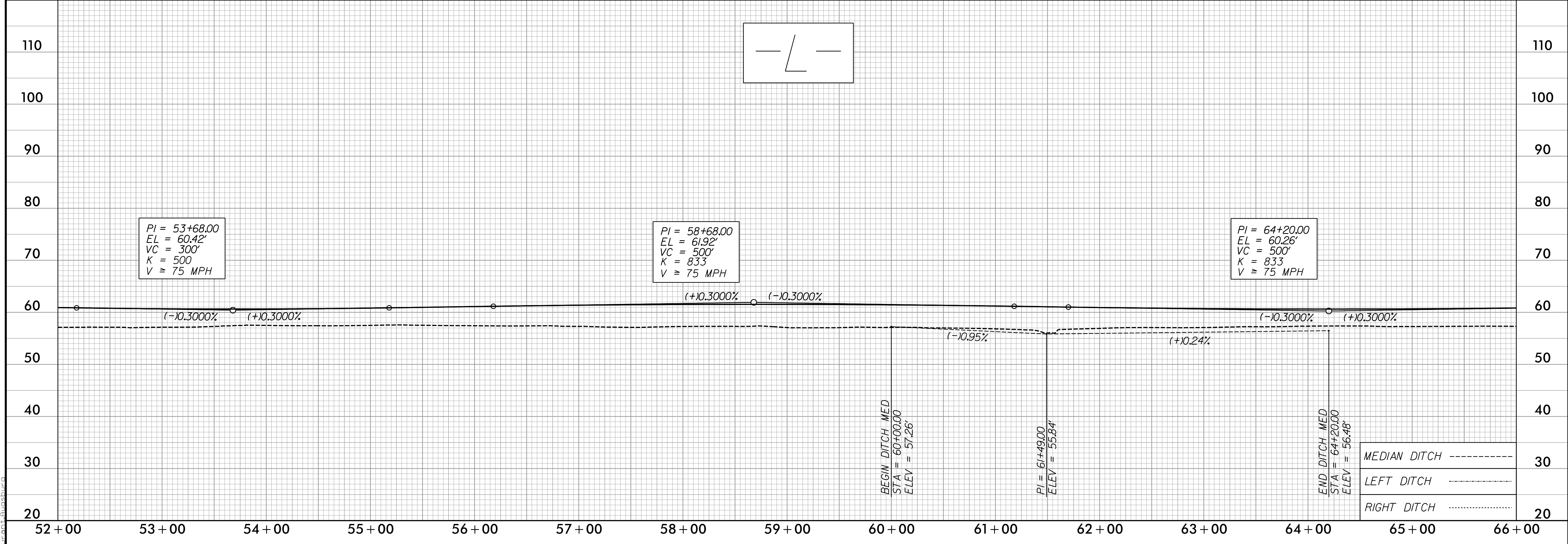
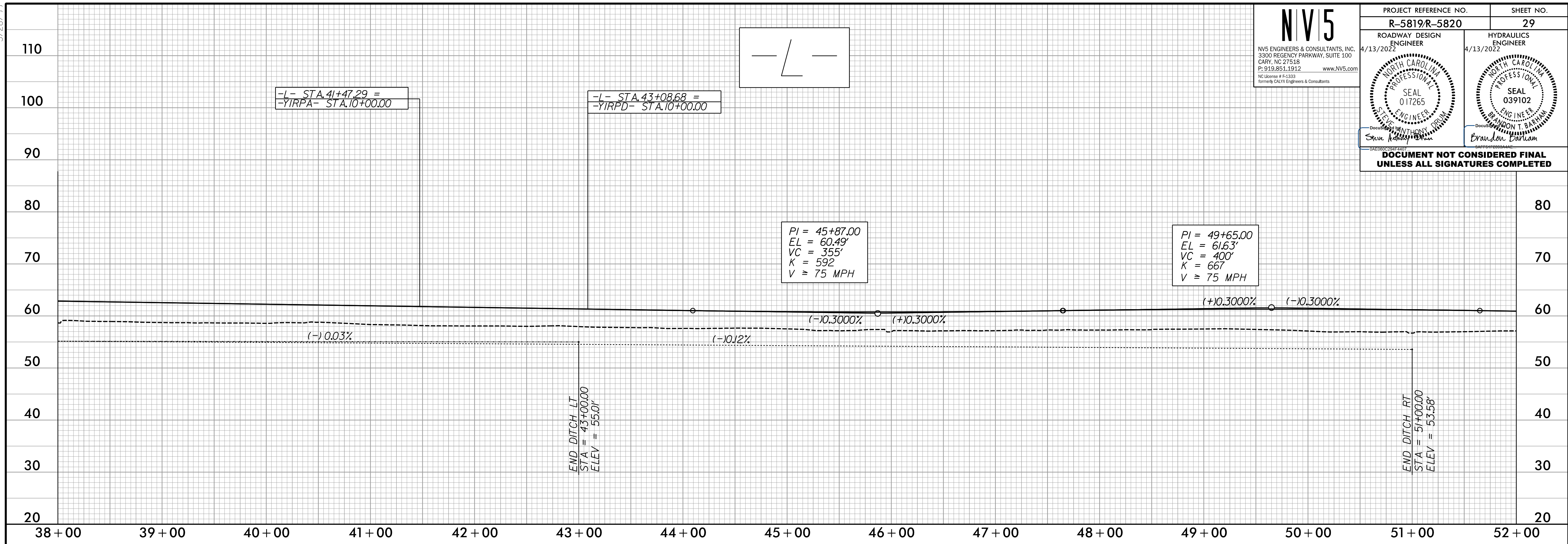
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R-5819-R-5820-RDY_PFL-28.dgn
C:\Users\bram\Documents

5/28/2022

PROJECT REFERENCE NO. R-5819/R-5820		SHEET NO. 29
ROADWAY DESIGN ENGINEER 4/13/2022		HYDRAULICS ENGINEER 4/13/2022
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MEDIAN DITCH	-----
LEFT DITCH	-----
RIGHT DITCH	-----

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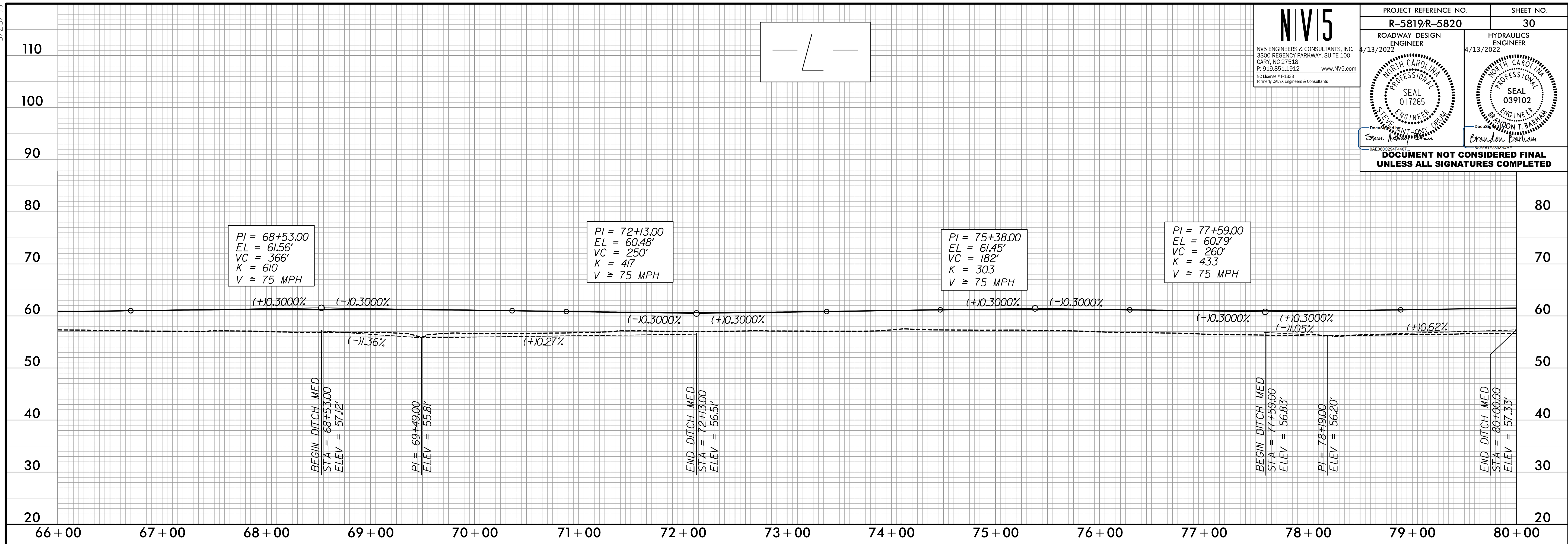
5/28/22

NV5

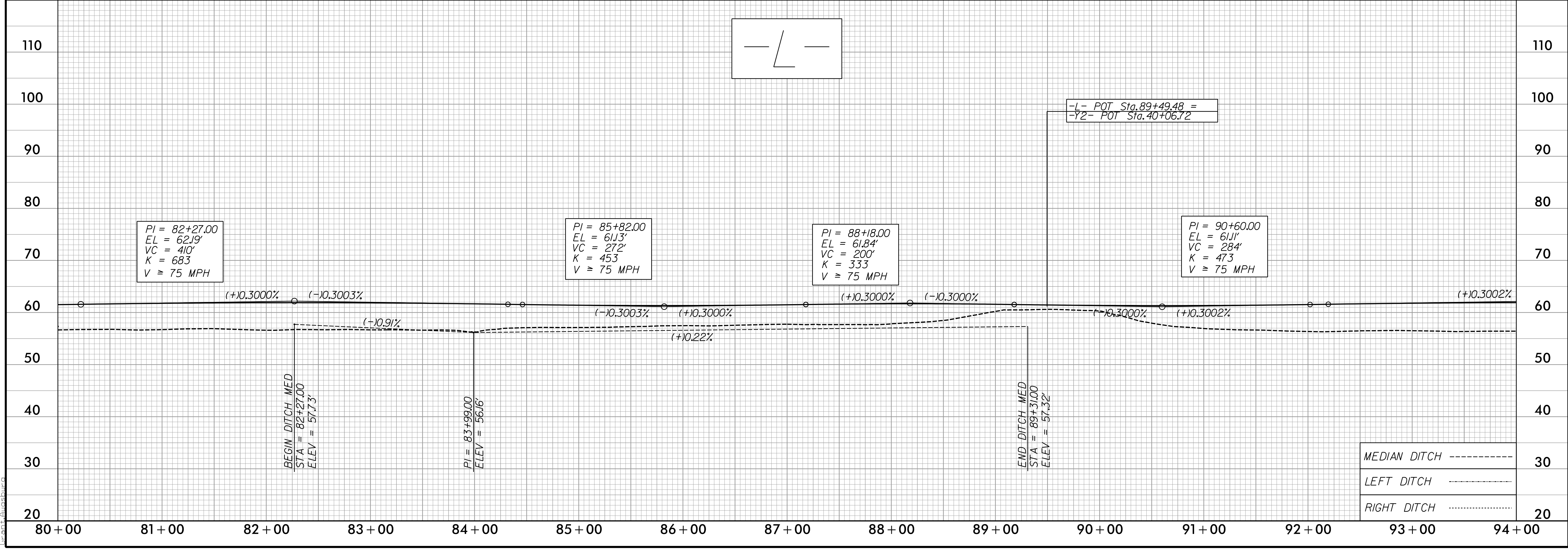
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PROJECT REFERENCE NO. R-5819/R-5820	SHEET NO. 30
ROADWAY DESIGN ENGINEER 4/13/2022	HYDRAULICS ENGINEER 4/13/2022
Steven Anthony Dorman	Brandon T. Barham

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— L —





-L- POT Sta. 89+49.48 =
-Y2- POT Sta. 40+06.72

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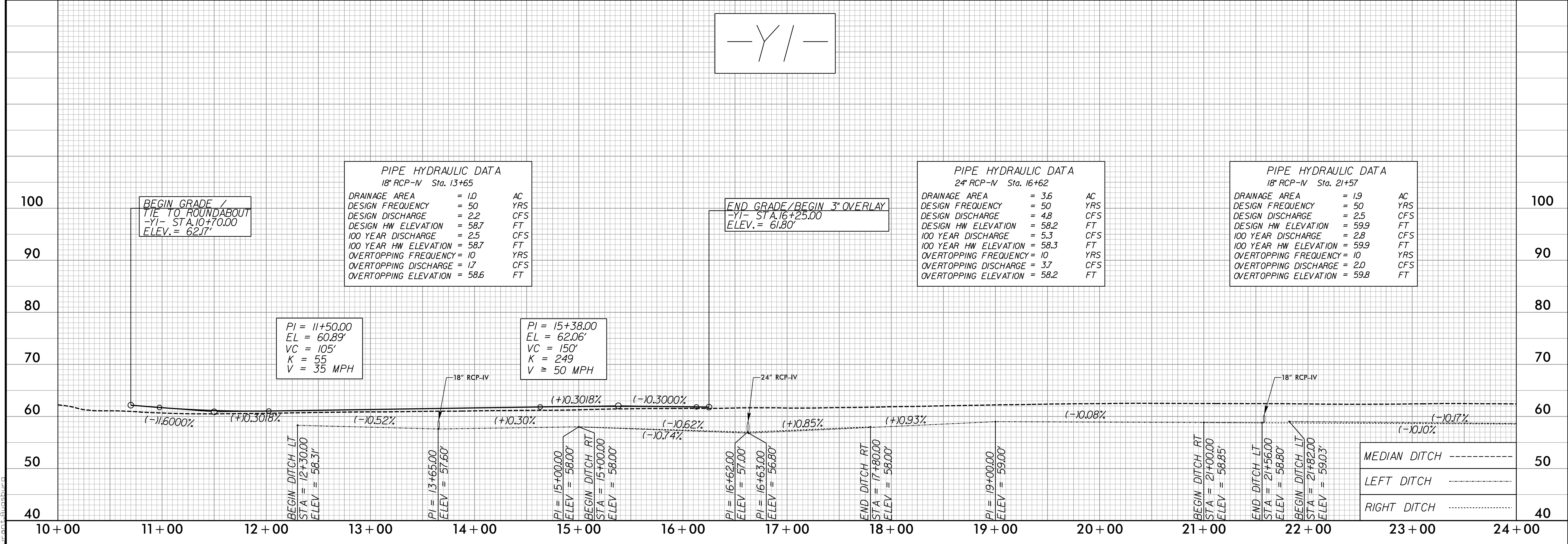
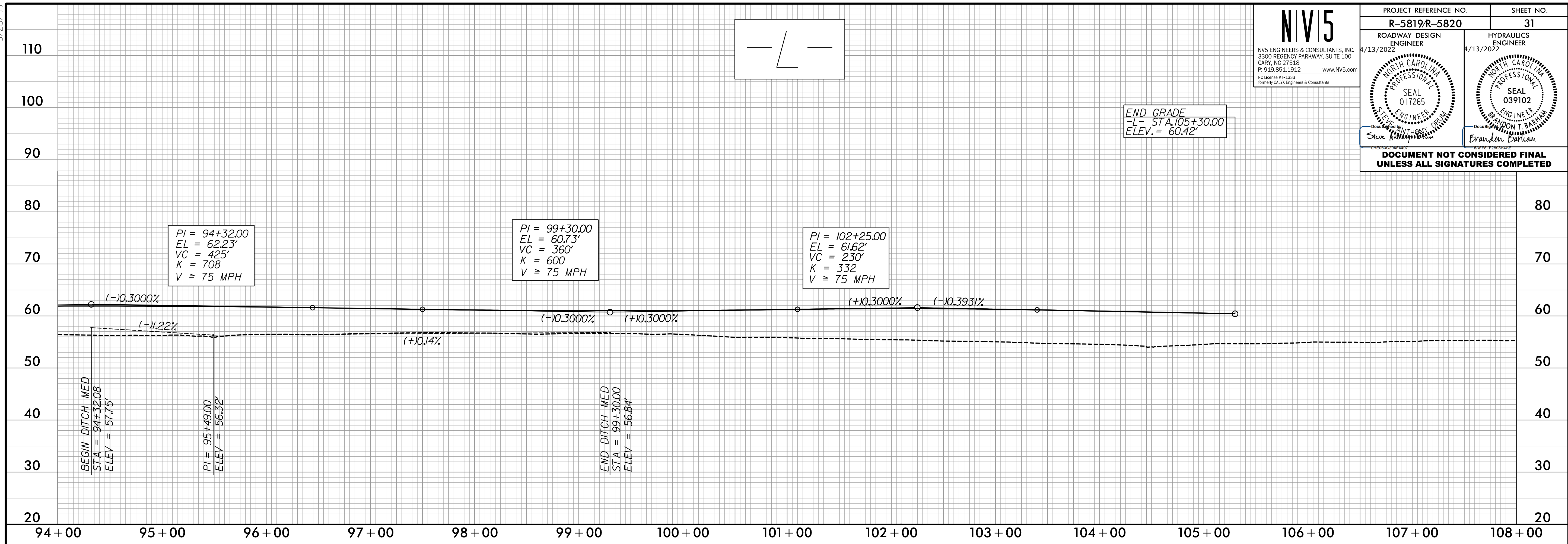
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PROJECT REFERENCE NO. R-5819/R-5820	SHEET NO. 31
ROADWAY DESIGN ENGINEER 4/13/2022	HYDRAULICS ENGINEER 4/13/2022
	
Steve Anthony Professional Engineer Seal 017265	Brandon Barham Professional Engineer Seal 039102

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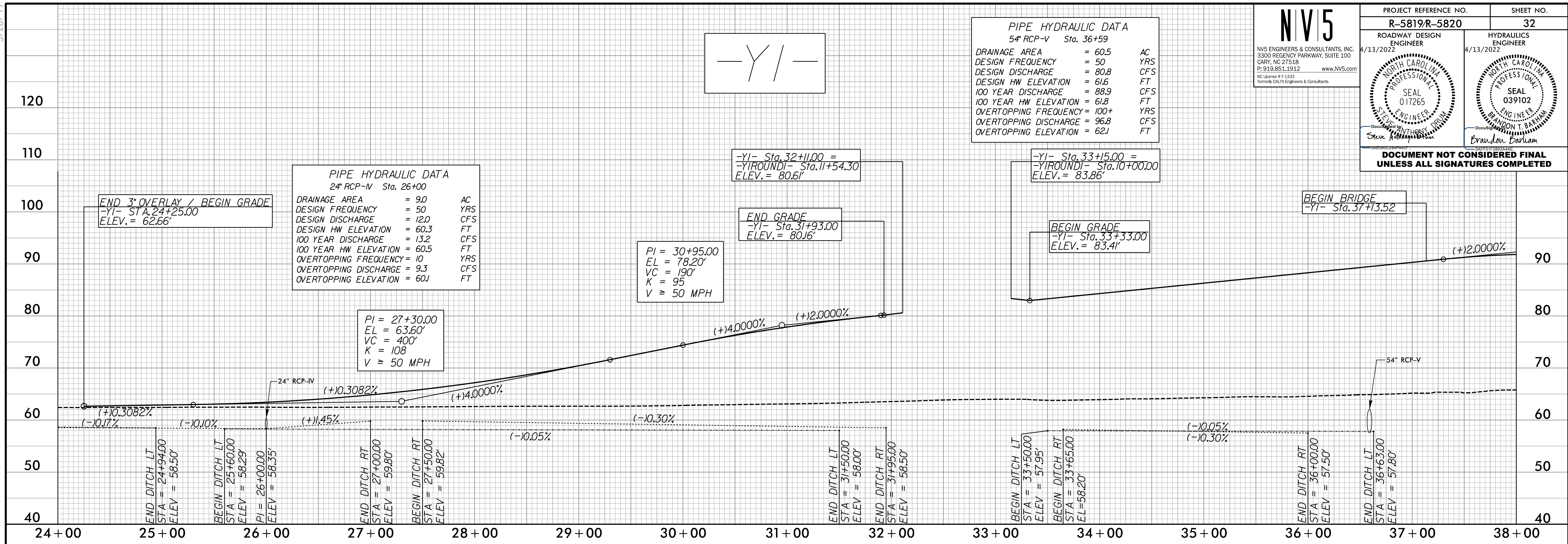
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PROJECT REFERENCE NO. R-5819/R-5820	SHEET NO. 32
ROADWAY DESIGN ENGINEER 4/13/2022	HYDRAULICS ENGINEER 4/13/2022

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PIPE HYDRAULIC DATA
54" RCP-V Sta. 36+59

DRAINAGE AREA	= 60.5	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 80.8	CFS
DESIGN HW ELEVATION	= 61.6	FT
100 YEAR DISCHARGE	= 88.9	CFS
100 YEAR HW ELEVATION	= 61.8	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 96.8	CFS
OVERTOPPING ELEVATION	= 62.1	FT



PIPE HYDRAULIC DATA
24" RCP-V Sta. 26+00

DRAINAGE AREA	= 9.0	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 12.0	CFS
DESIGN HW ELEVATION	= 60.3	FT
100 YEAR DISCHARGE	= 13.2	CFS
100 YEAR HW ELEVATION	= 60.5	FT
OVERTOPPING FREQUENCY	= 10	YRS
OVERTOPPING DISCHARGE	= 9.3	CFS
OVERTOPPING ELEVATION	= 60.1	FT

PI = 30+95.00
EL = 78.20'
VC = 190'
K = 95
V ≥ 50 MPH

PI = 27+30.00
EL = 63.60'
VC = 400'
K = 108
V ≥ 50 MPH

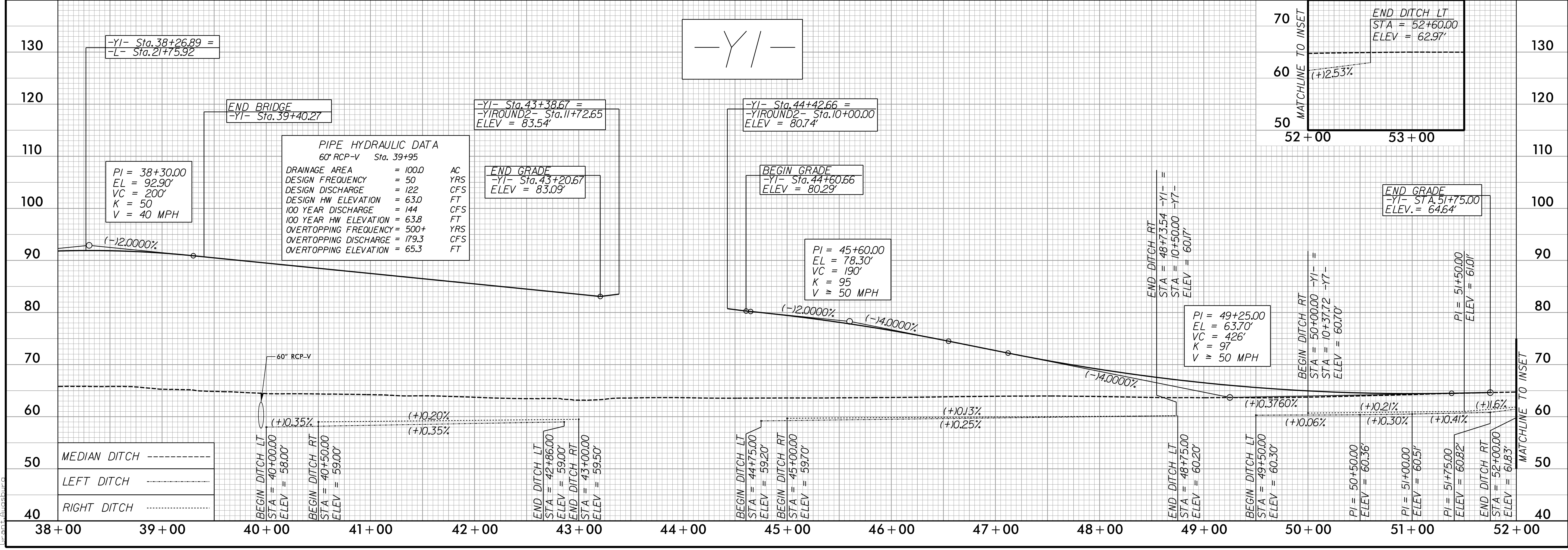
-YI- Sta. 32+11.00 =
-YIROUND1- Sta. 11+54.30
ELEV. = 80.61'

END GRADE
-YI- Sta. 31+93.00
ELEV. = 80.16'

-YI- Sta. 33+15.00 =
-YIROUND1- Sta. 10+00.00
ELEV. = 83.86'

BEGIN GRADE
-YI- Sta. 33+33.00
ELEV. = 83.41'

BEGIN BRIDGE
-YI- Sta. 37+13.52



PIPE HYDRAULIC DATA
60" RCP-V Sta. 39+95

DRAINAGE AREA	= 100.0	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 122	CFS
DESIGN HW ELEVATION	= 63.0	FT
100 YEAR DISCHARGE	= 144	CFS
100 YEAR HW ELEVATION	= 63.8	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 179.3	CFS
OVERTOPPING ELEVATION	= 65.3	FT

END GRADE
-YI- Sta. 43+20.67
ELEV. = 83.09'

-YI- Sta. 44+42.66 =
-YIROUND2- Sta. 10+00.00
ELEV. = 80.74'

BEGIN GRADE
-YI- Sta. 44+60.66
ELEV. = 80.29'

PI = 45+60.00
EL = 78.30'
VC = 190'
K = 95
V ≥ 50 MPH

PI = 49+25.00
EL = 63.70'
VC = 426'
K = 97
V ≥ 50 MPH

END GRADE
-YI- Sta. 51+75.00
ELEV. = 64.64'

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

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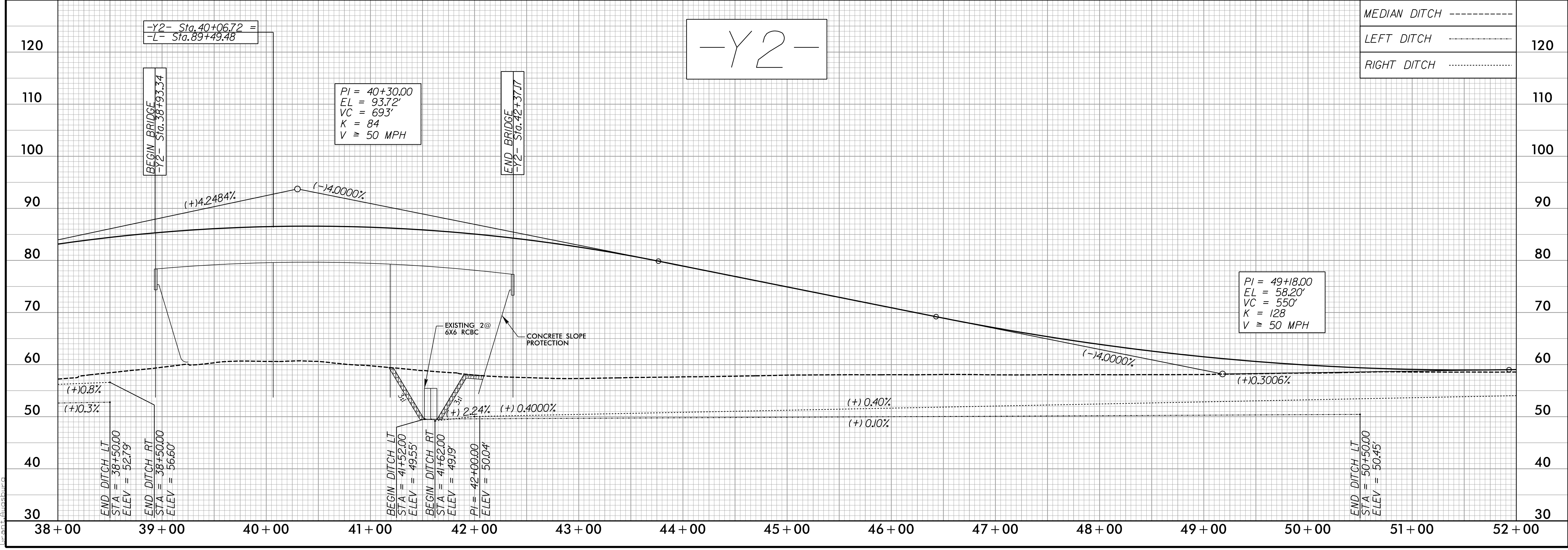
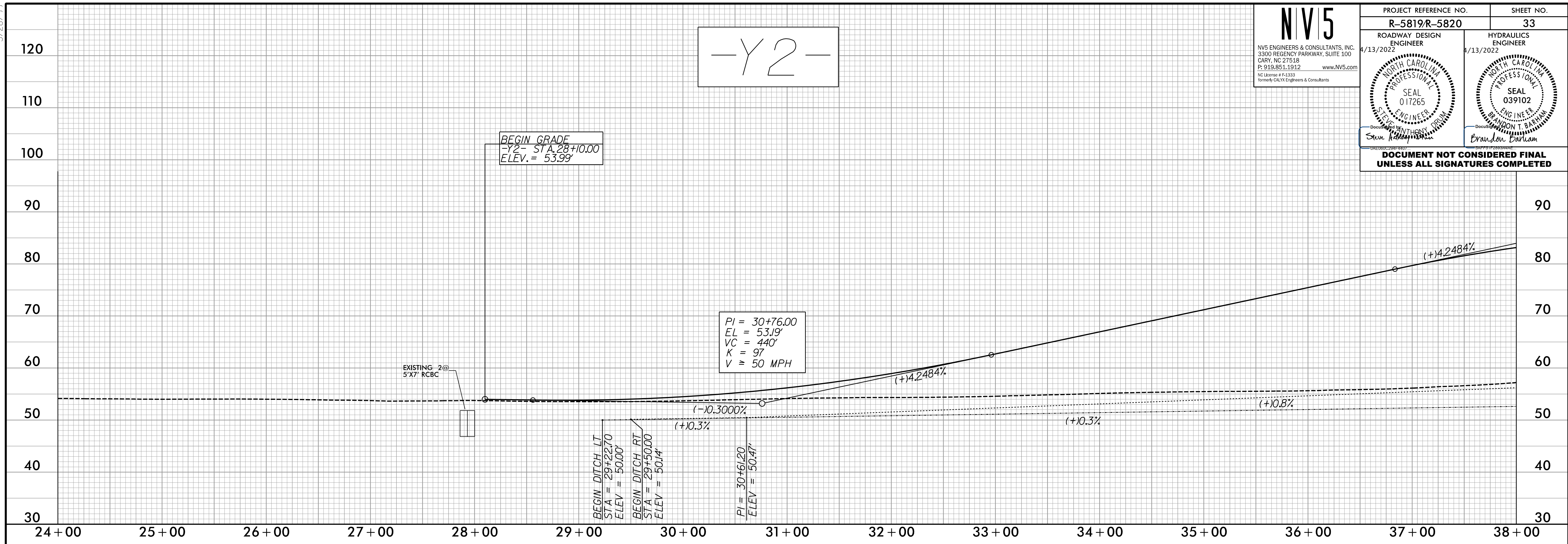
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PROJECT REFERENCE NO. R-5819/R-5820	SHEET NO. 33
ROADWAY DESIGN ENGINEER 4/13/2022	HYDRAULICS ENGINEER 4/13/2022

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MEDIAN DITCH	-----	
LEFT DITCH	-----	120
RIGHT DITCH	-----	

5/14/2022
R:\Projects\N5819_R5820_RDY_PFI_33.dgn
C:\Users\jbarham

5/28/2022

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PROJECT REFERENCE NO. **R-5819/R-5820** SHEET NO. **34**

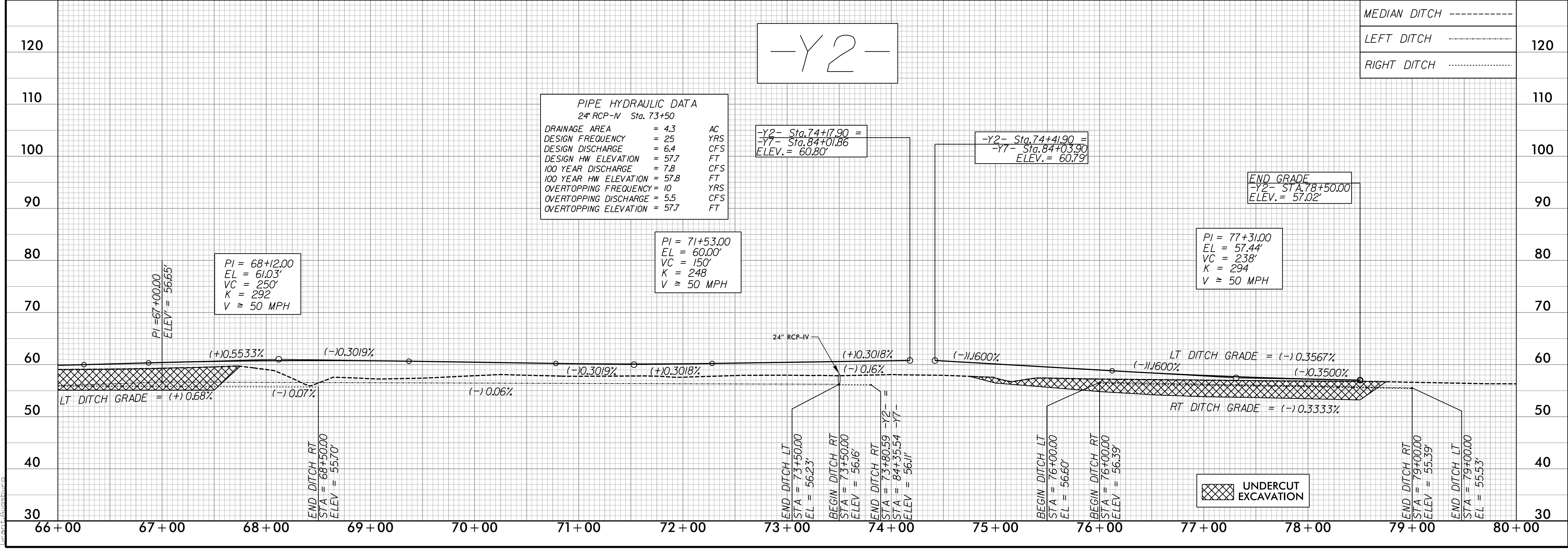
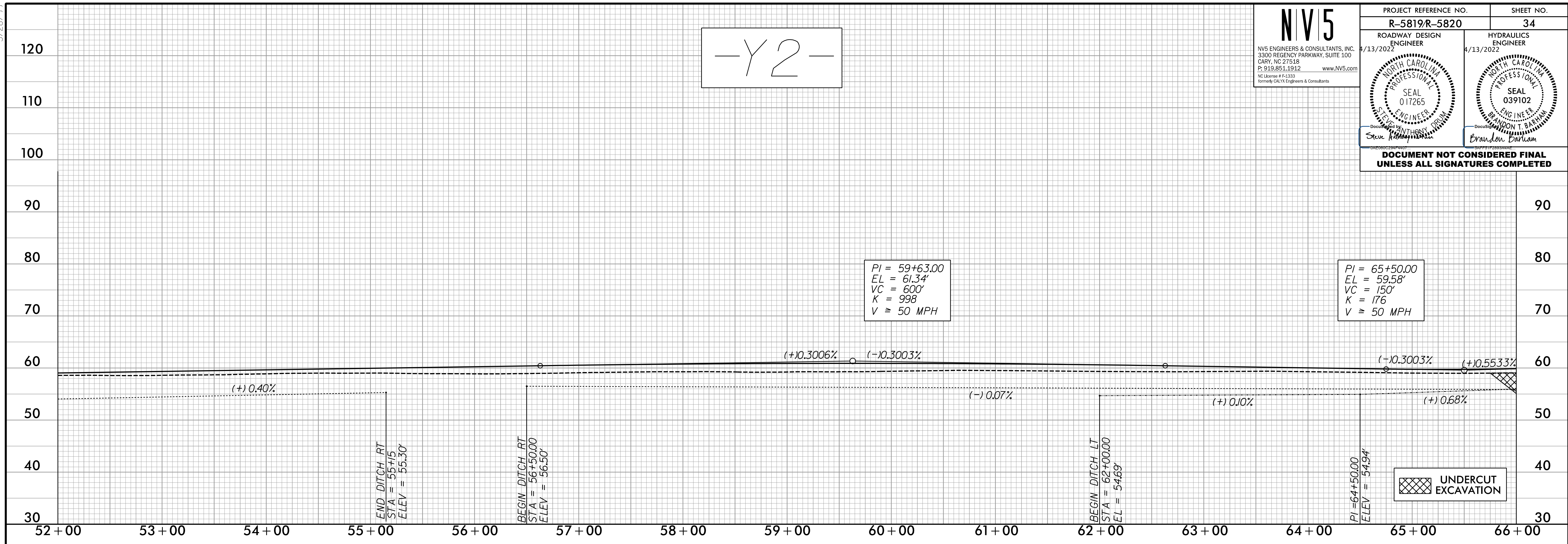
ROADWAY DESIGN ENGINEER
 4/13/2022

HYDRAULICS ENGINEER
 4/13/2022

SEAL 017265
 ENGINEER
 STANTON T. BARHAM

SEAL 039102
 ENGINEER
 BRANDON T. BARHAM

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PROJECT REFERENCE NO. **R-5819/R-5820** SHEET NO. **35**

ROADWAY DESIGN ENGINEER
 4/13/2022

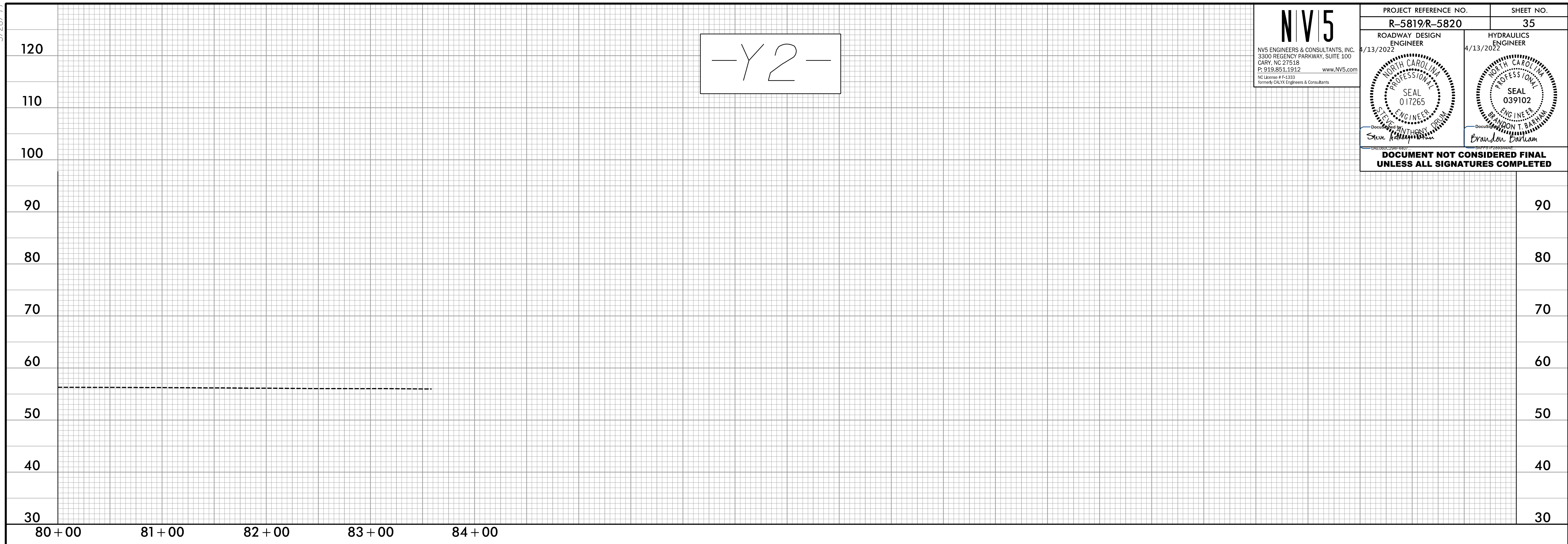
HYDRAULICS ENGINEER
 4/13/2022

SEAL 017265
 ENGINEER
 STEVE ANTHONY DUBOIS

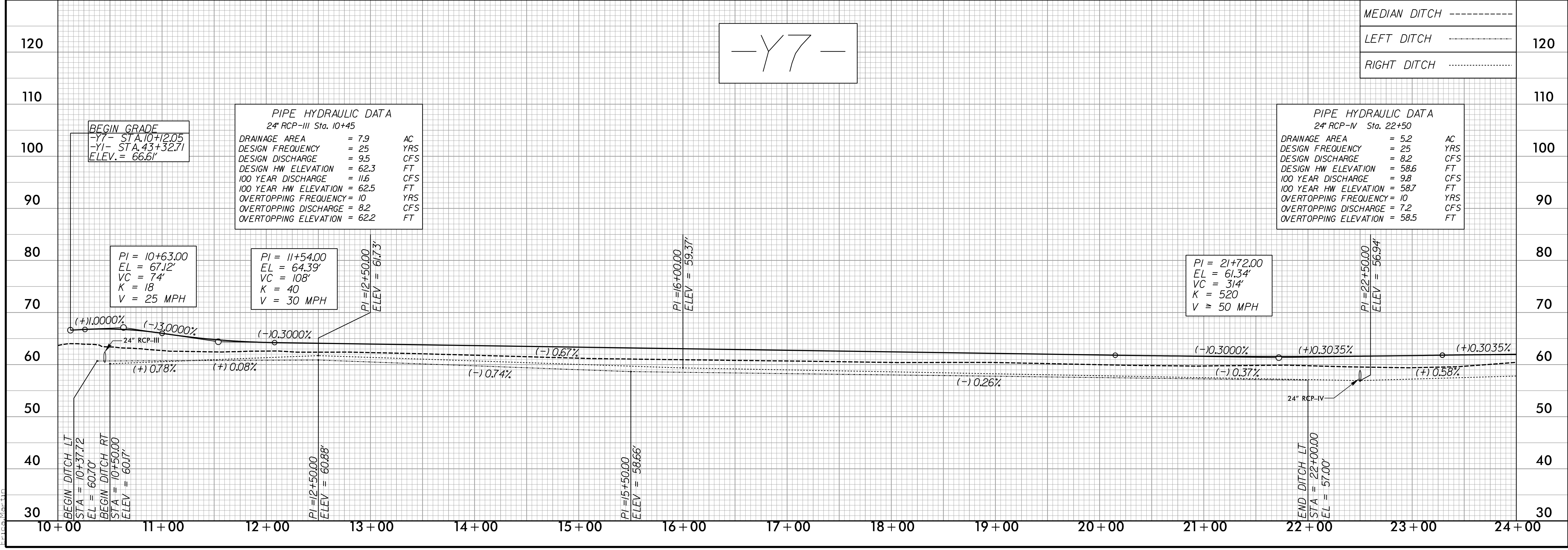
SEAL 039102
 ENGINEER
 BRANDON T. BARHAM

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-Y2-



-Y7-



3/31/2022
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5/28/2022

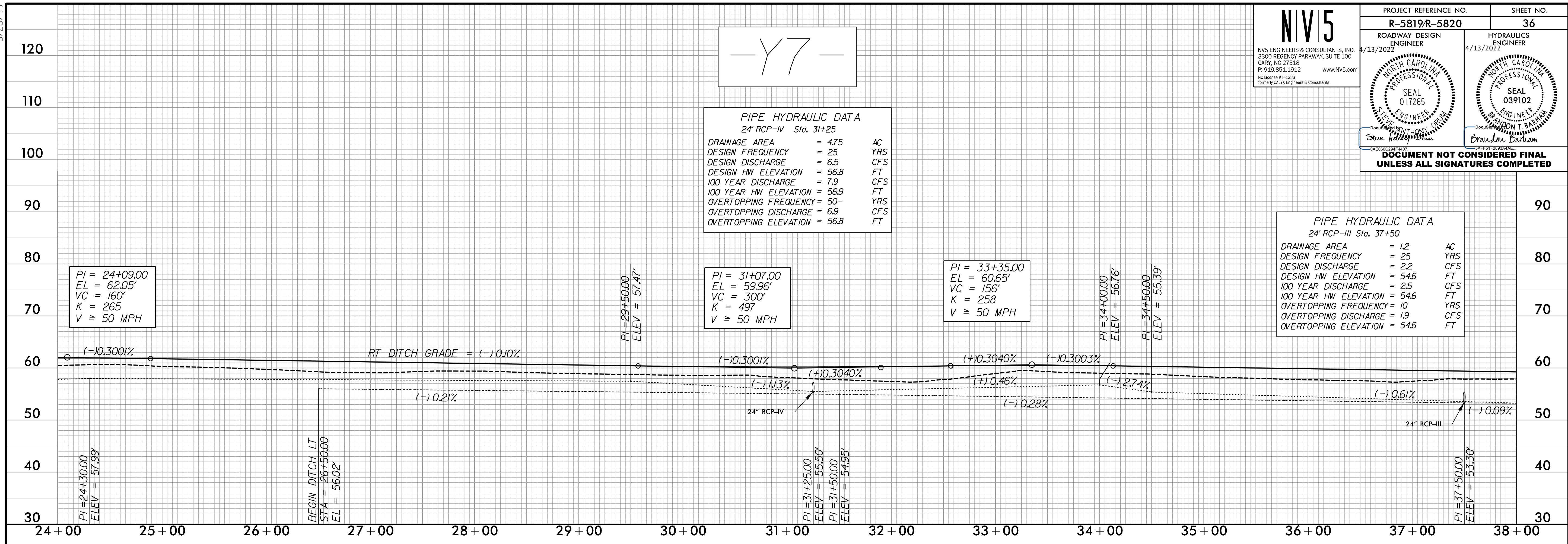
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PROJECT REFERENCE NO. **R-5819/R-5820** SHEET NO. **36**

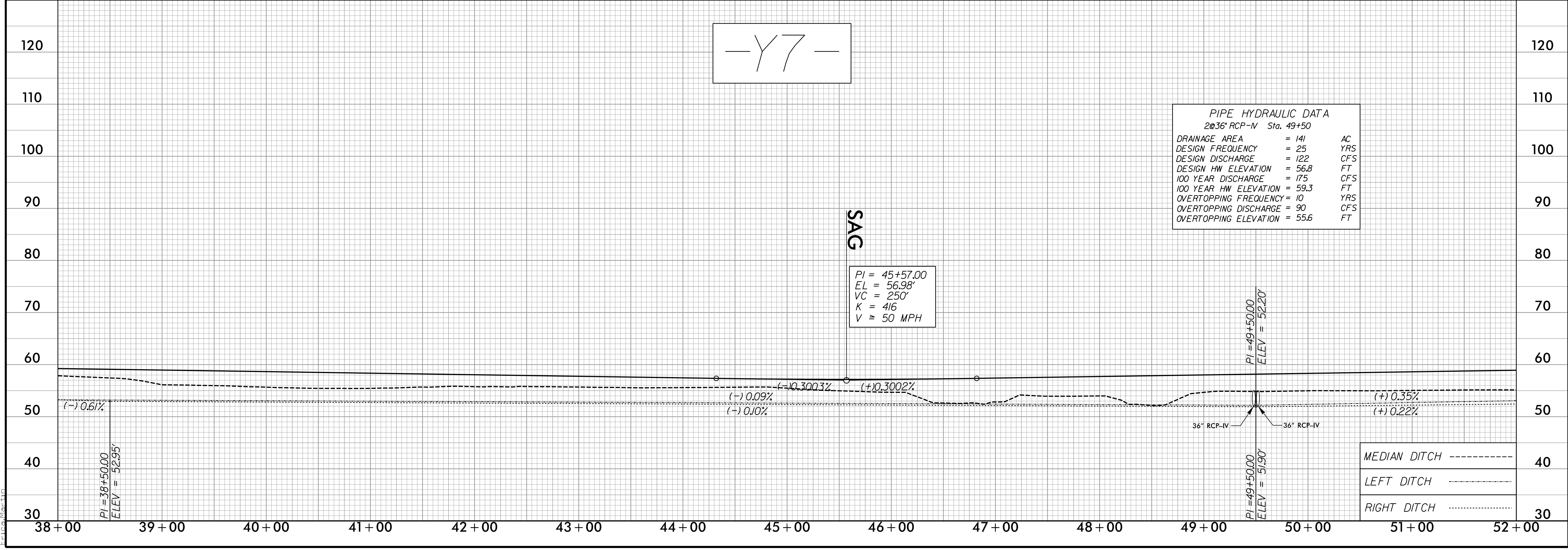
ROADWAY DESIGN ENGINEER
 4/13/2022
 NORTH CAROLINA PROFESSIONAL SEAL 017265
 ANTHONY J. DRUM

HYDRAULICS ENGINEER
 4/13/2022
 NORTH CAROLINA PROFESSIONAL SEAL 039102
 BRANDON T. BARHAM

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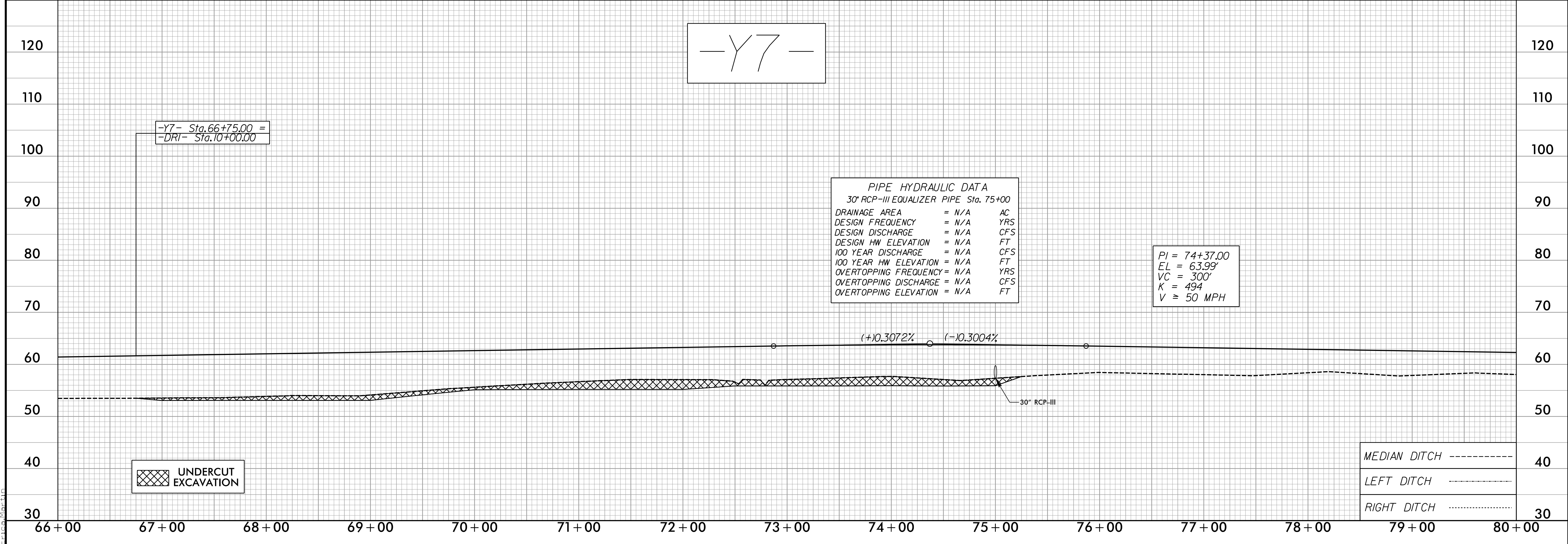
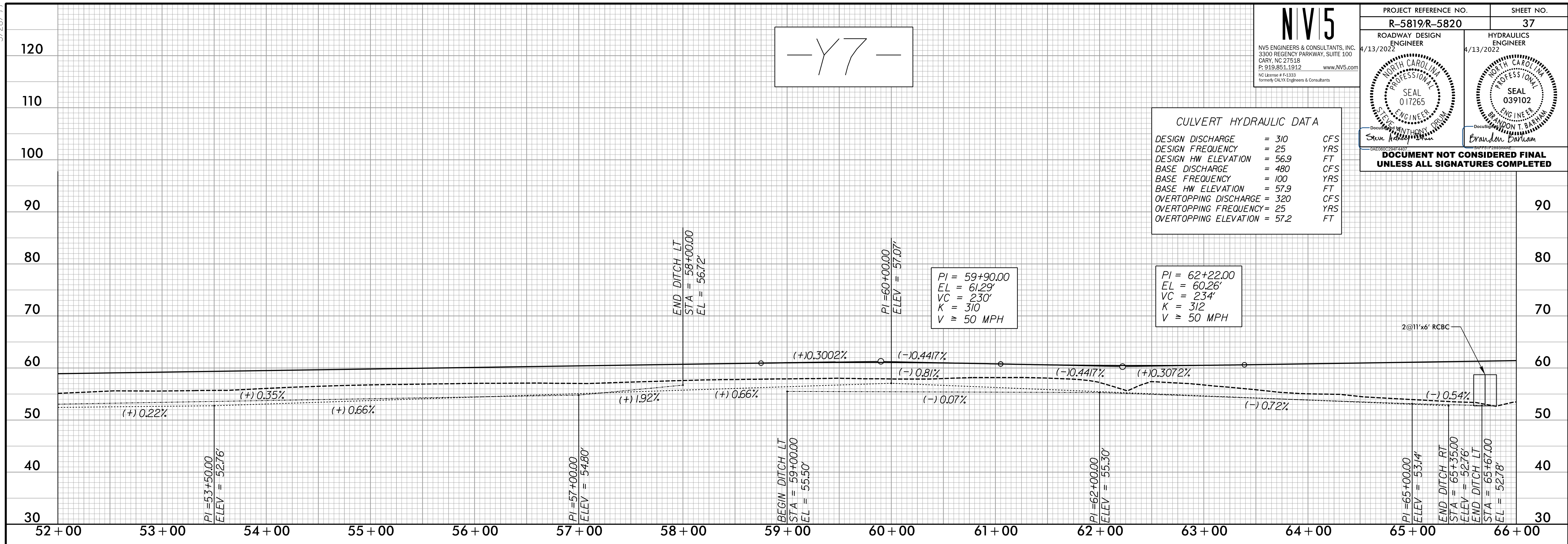
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PROJECT REFERENCE NO. R-5819/R-5820	SHEET NO. 37
ROADWAY DESIGN ENGINEER 4/13/2022	HYDRAULICS ENGINEER 4/13/2022
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CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 310	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 56.9	FT
BASE DISCHARGE	= 480	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 57.9	FT
OVERTOPPING DISCHARGE	= 320	CFS
OVERTOPPING FREQUENCY	= 25	YRS
OVERTOPPING ELEVATION	= 57.2	FT



3/18/2022
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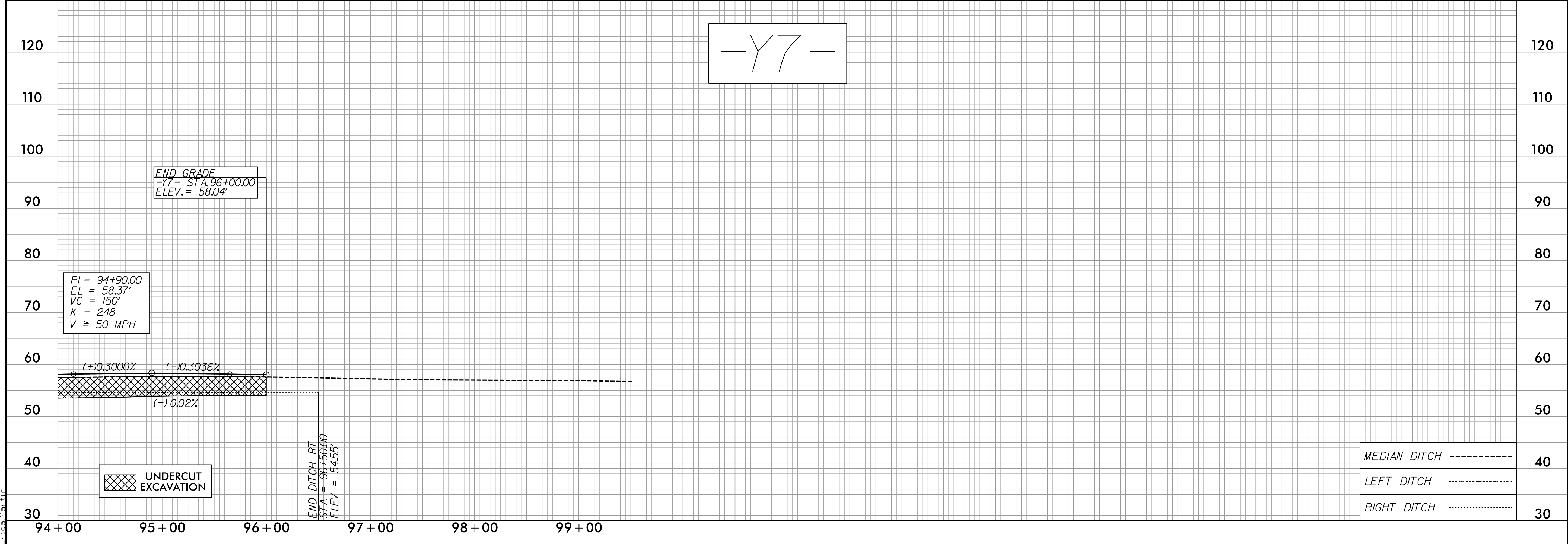
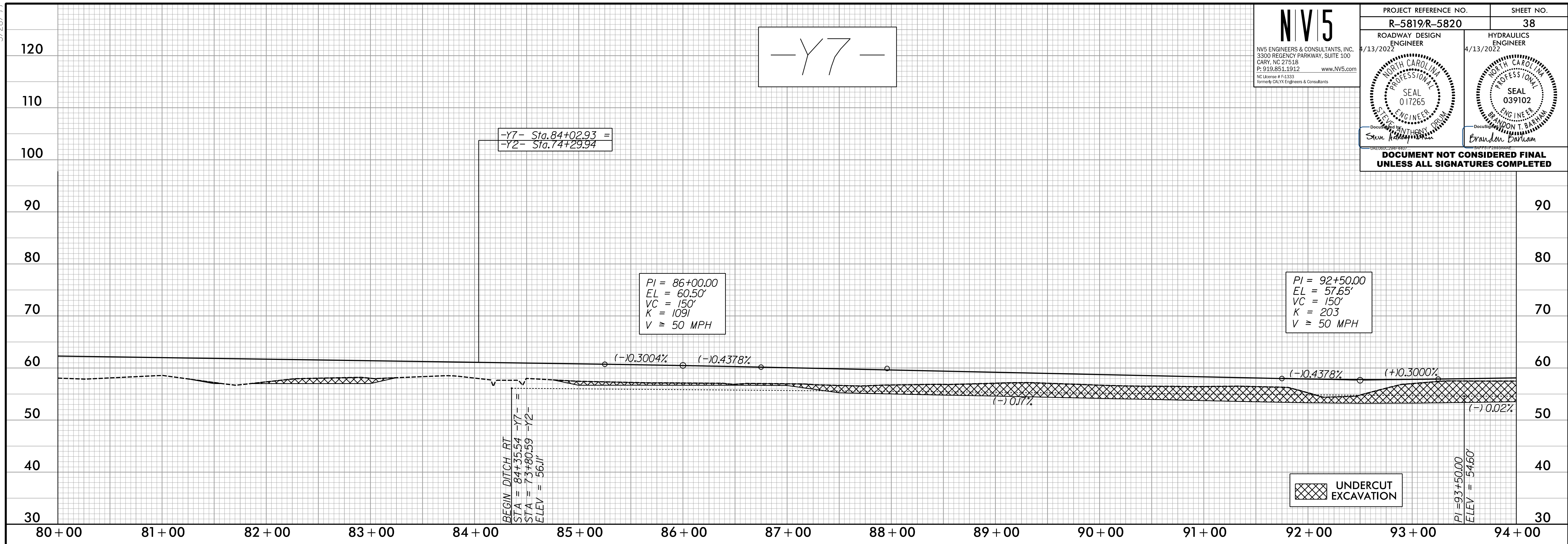
ROADWAY DESIGN ENGINEER
 4/13/2022

HYDRAULICS ENGINEER
 4/13/2022

SEAL 017265
 ENGINEER
 STANLEY ANTHONY DUBOIS

SEAL 039102
 ENGINEER
 BRANDON T. BARHAM

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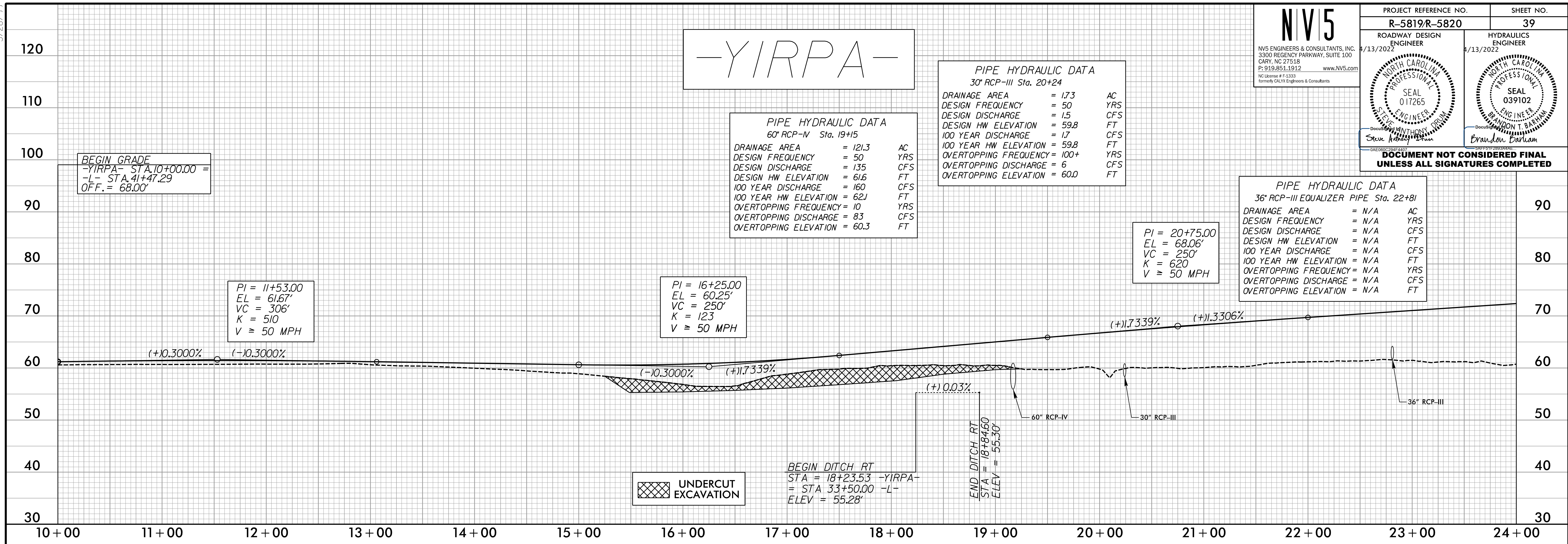
ROADWAY DESIGN ENGINEER
 4/13/2022

HYDRAULICS ENGINEER
 4/13/2022

SEAL 017265
 ANTHONY J. DRUM
 CIVIL ENGINEER

SEAL 039102
 BRANDON T. BATHAM
 HYDRAULICS ENGINEER

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-YIRPA-

PIPE HYDRAULIC DATA
 30' RCP-III Sta. 20+24

DRAINAGE AREA	= 173	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 15	CFS
DESIGN HW ELEVATION	= 59.8	FT
100 YEAR DISCHARGE	= 17	CFS
100 YEAR HW ELEVATION	= 59.8	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 6	CFS
OVERTOPPING ELEVATION	= 60.0	FT

PIPE HYDRAULIC DATA
 60' RCP-IV Sta. 19+15

DRAINAGE AREA	= 121.3	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 135	CFS
DESIGN HW ELEVATION	= 61.6	FT
100 YEAR DISCHARGE	= 160	CFS
100 YEAR HW ELEVATION	= 62.1	FT
OVERTOPPING FREQUENCY	= 10	YRS
OVERTOPPING DISCHARGE	= 83	CFS
OVERTOPPING ELEVATION	= 60.3	FT

PIPE HYDRAULIC DATA
 36' RCP-III EQUALIZER PIPE Sta. 22+81

DRAINAGE AREA	= N/A	AC
DESIGN FREQUENCY	= N/A	YRS
DESIGN DISCHARGE	= N/A	CFS
DESIGN HW ELEVATION	= N/A	FT
100 YEAR DISCHARGE	= N/A	CFS
100 YEAR HW ELEVATION	= N/A	FT
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= N/A	FT

PI = 20+75.00
 EL = 68.06'
 VC = 250'
 K = 620
 V ≥ 50 MPH

PI = 11+53.00
 EL = 61.67'
 VC = 306'
 K = 510
 V ≥ 50 MPH

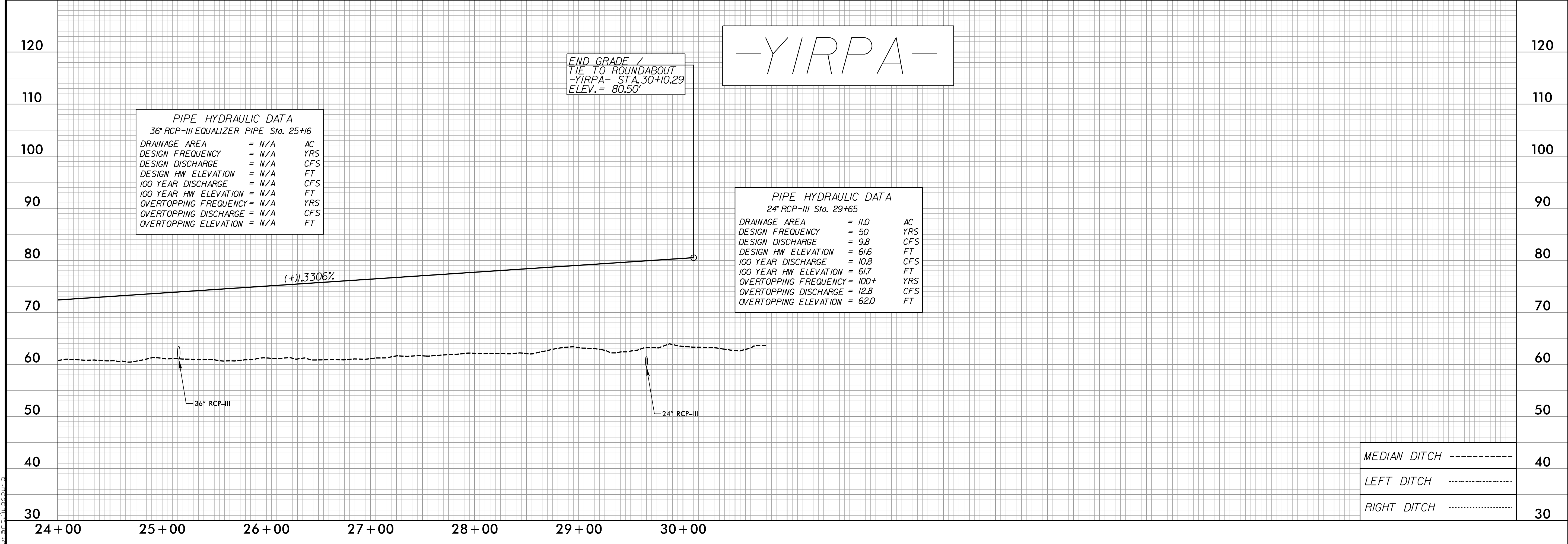
PI = 16+25.00
 EL = 60.25'
 VC = 250'
 K = 123
 V ≥ 50 MPH

UNDERCUT EXCAVATION

BEGIN DITCH RT
 STA = 18+23.53 -YIRPA-
 = STA 33+50.00 -L-
 ELEV = 55.28'

END DITCH RT
 STA = 18+84.60
 ELEV = 55.30'

BEGIN GRADE
 -YIRPA- STA. 10+00.00 =
 -L- STA. 41+47.29
 OFF. = 68.00'



-YIRPA-

PIPE HYDRAULIC DATA
 36' RCP-III EQUALIZER PIPE Sta. 25+16

DRAINAGE AREA	= N/A	AC
DESIGN FREQUENCY	= N/A	YRS
DESIGN DISCHARGE	= N/A	CFS
DESIGN HW ELEVATION	= N/A	FT
100 YEAR DISCHARGE	= N/A	CFS
100 YEAR HW ELEVATION	= N/A	FT
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= N/A	FT

PIPE HYDRAULIC DATA
 24' RCP-III Sta. 29+65

DRAINAGE AREA	= 11.0	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 9.8	CFS
DESIGN HW ELEVATION	= 61.6	FT
100 YEAR DISCHARGE	= 10.8	CFS
100 YEAR HW ELEVATION	= 61.7	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 12.8	CFS
OVERTOPPING ELEVATION	= 62.0	FT

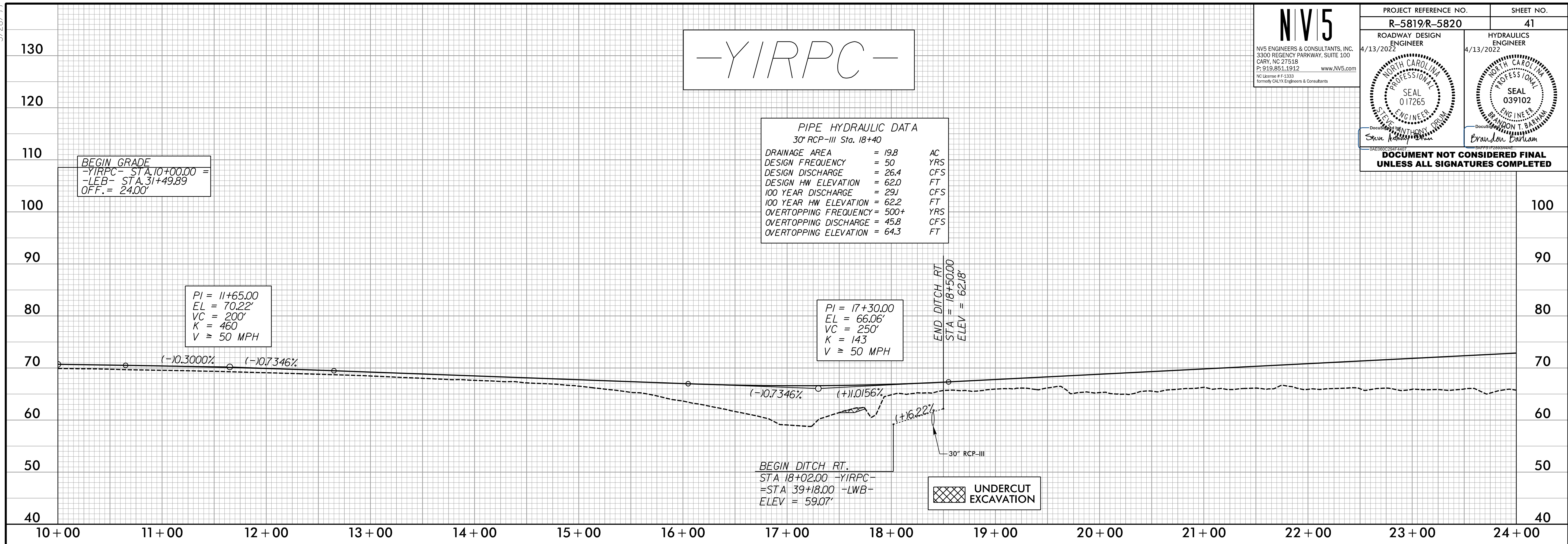
END GRADE /
 TIE TO ROUNDABOUT
 -YIRPA- STA. 30+10.29
 ELEV. = 80.50'

MEDIAN DITCH	-----	40
LEFT DITCH	-----	40
RIGHT DITCH	-----	30

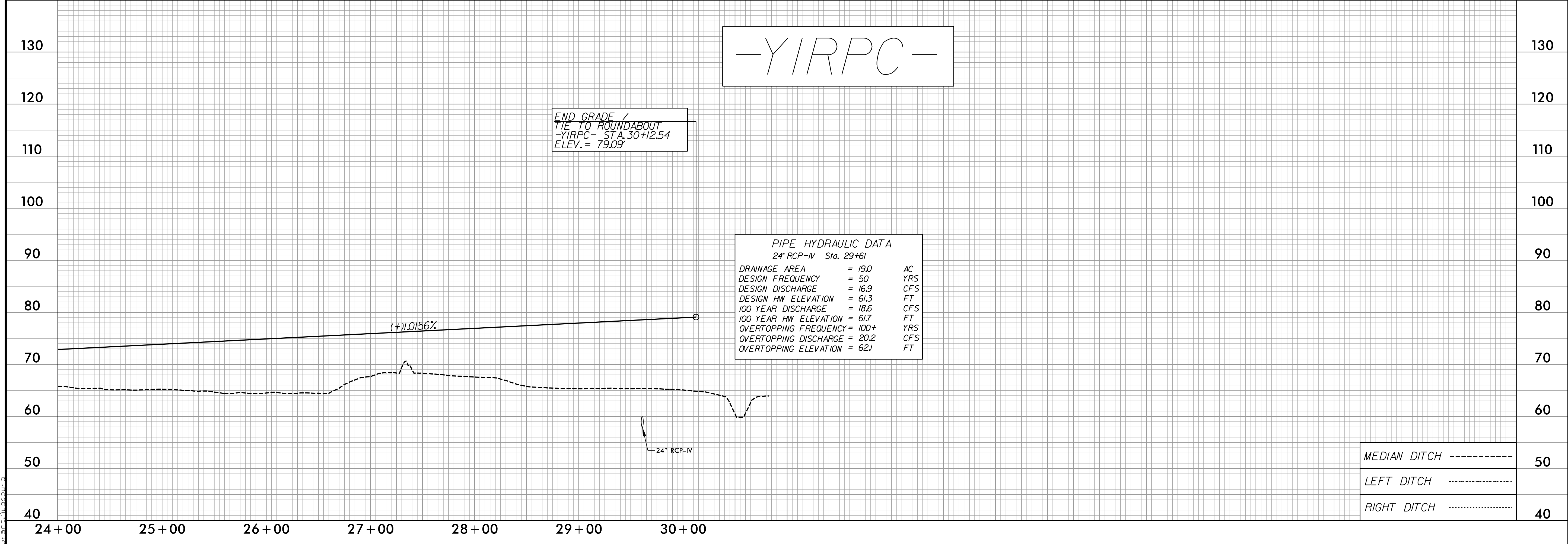
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PROJECT REFERENCE NO. R-5819/R-5820		SHEET NO. 41
ROADWAY DESIGN ENGINEER 4/13/2022		HYDRAULICS ENGINEER 4/13/2022
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-YIRPC-



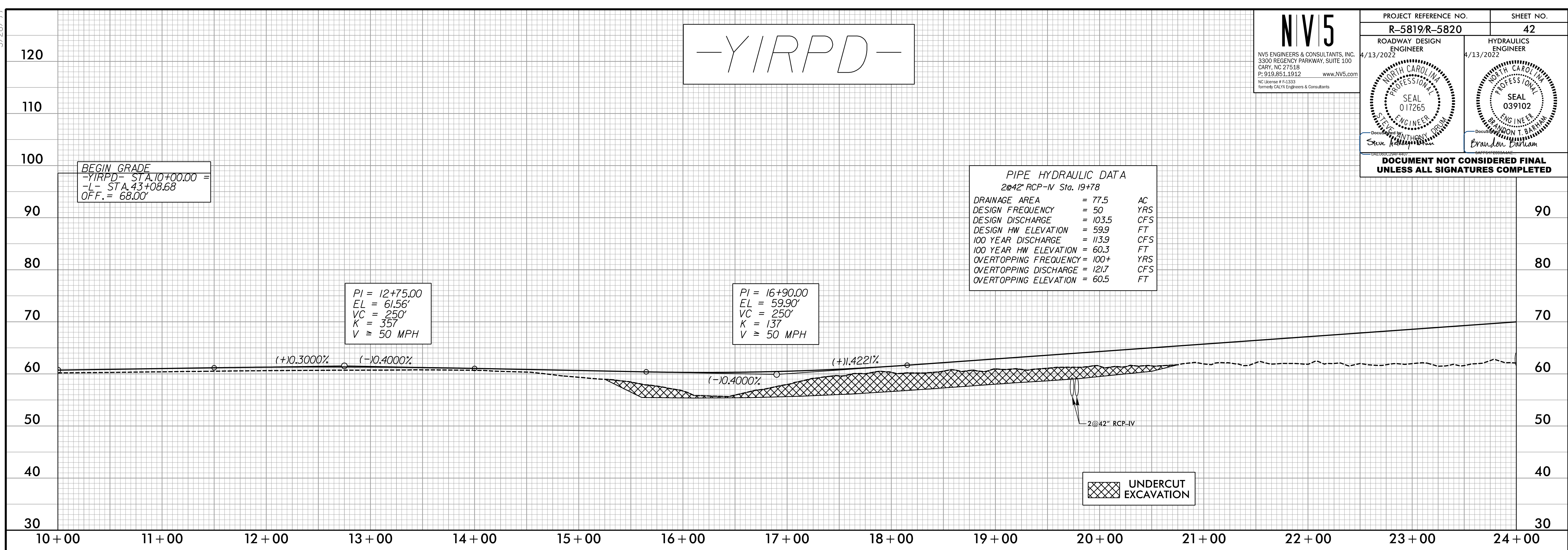
MEDIAN DITCH	-----	50
LEFT DITCH	40
RIGHT DITCH	- . - . - .	40

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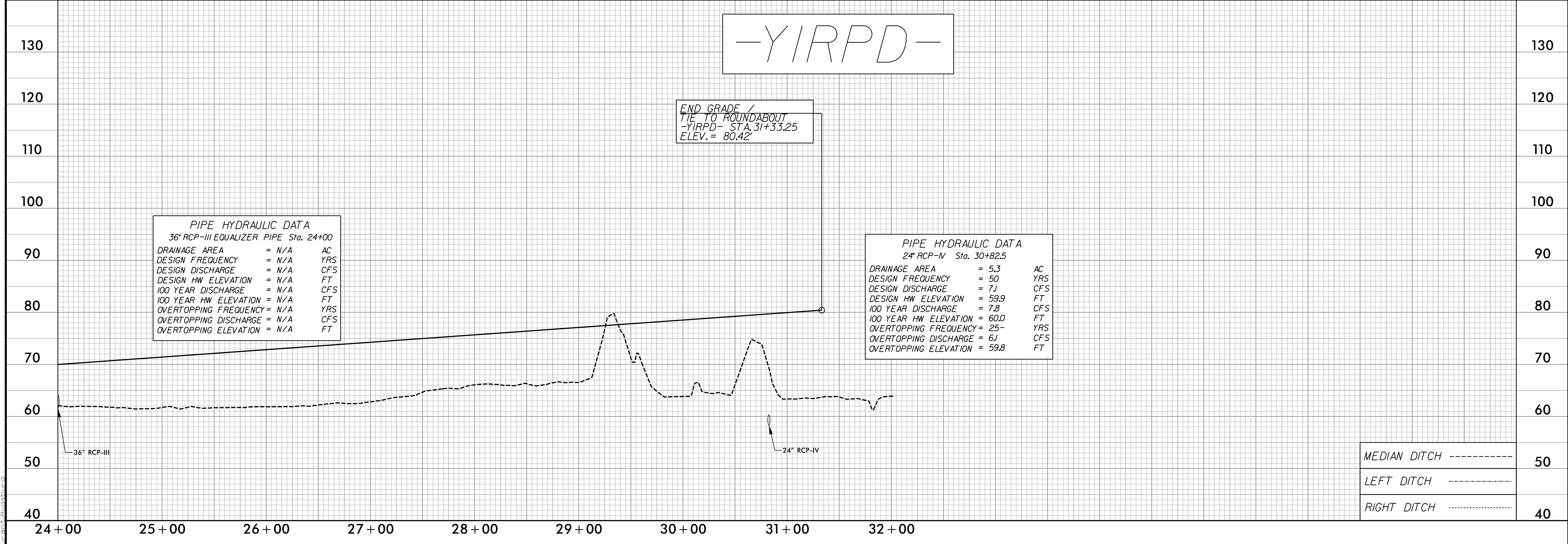
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-YIRPD-

PROJECT REFERENCE NO. R-5819/R-5820		SHEET NO. 42
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4/13/2022 SEAL 017265 ANTHONY DUBOIS ENGINEER		4/13/2022 SEAL 039102 BRANDON T. BARNUM ENGINEER
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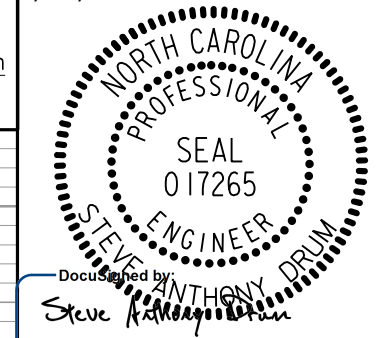



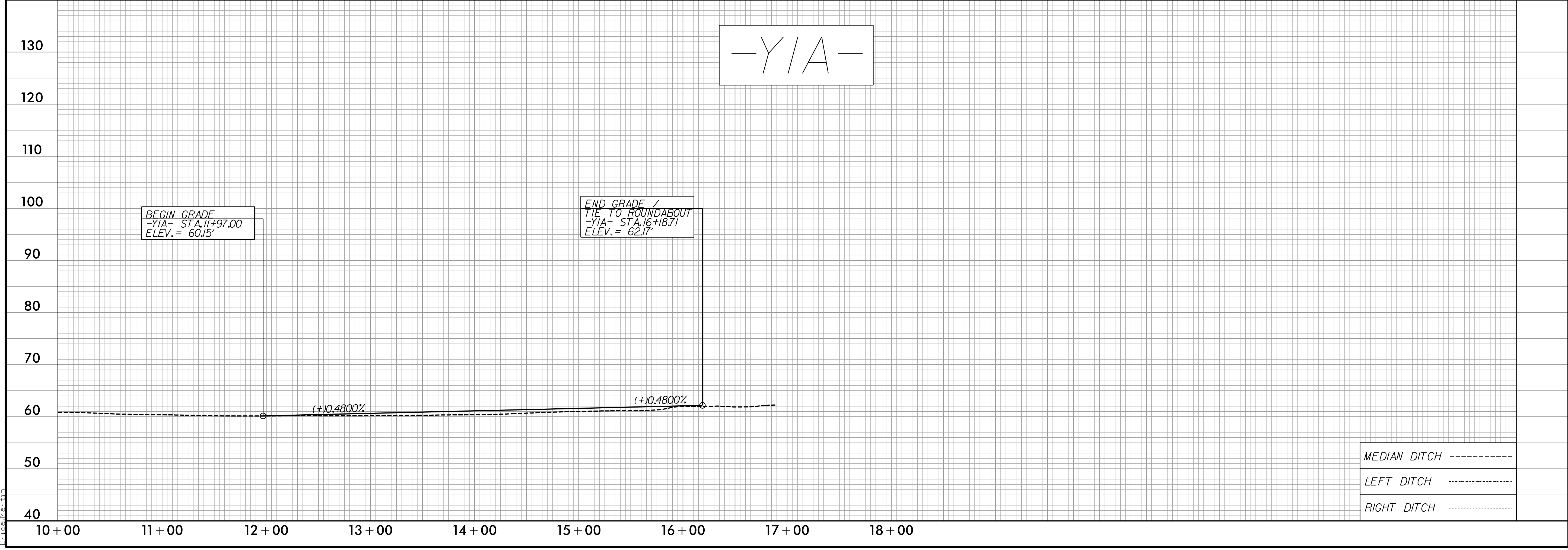
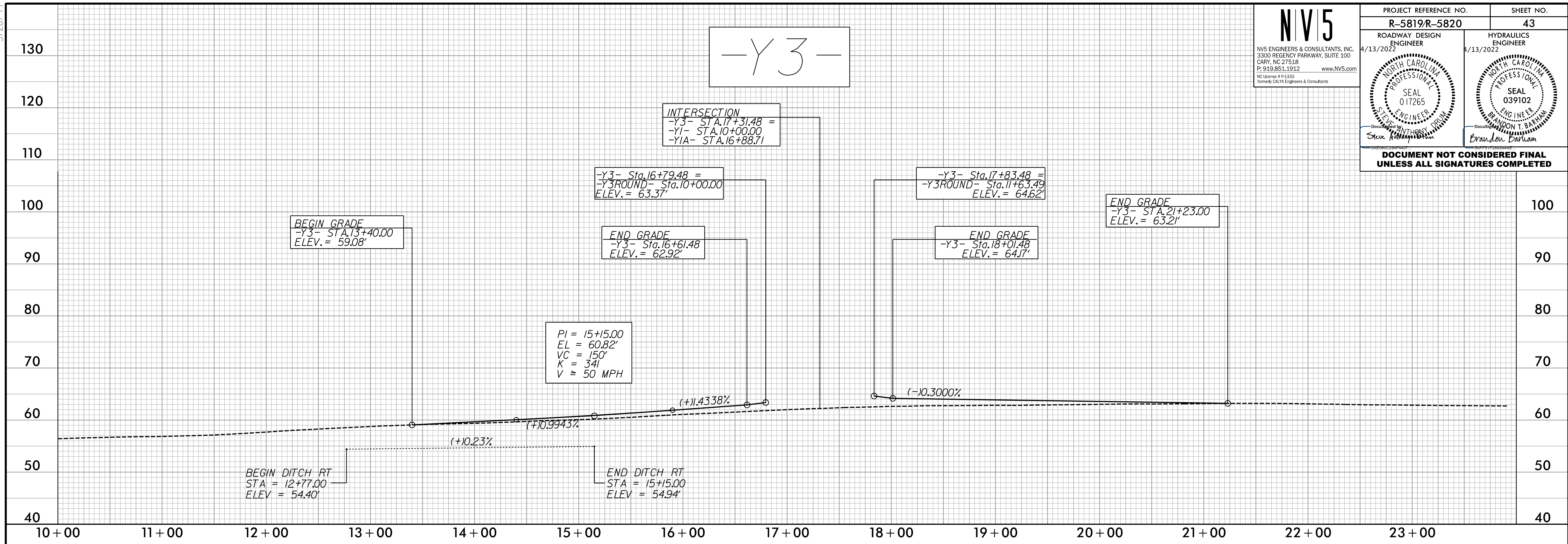
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PROJECT REFERENCE NO. R-5819/R-5820		SHEET NO. 43
ROADWAY DESIGN ENGINEER 4/13/2022		HYDRAULICS ENGINEER 4/13/2022
 SEAL 017265 STEVE ANTHONY ENGINEER		 SEAL 039102 BRANDON T. BARHAM ENGINEER
NV5 ENGINEERS & CONSULTANTS, INC. 3300 REGENCY PARKWAY, SUITE 100 CARY, NC 27518 P: 919.851.1912 www.NV5.com NC License # 61333 Formerly CALXX Engineers & Consultants		
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MEDIAN DITCH	-----
LEFT DITCH	-----
RIGHT DITCH	-----

3/1/2022
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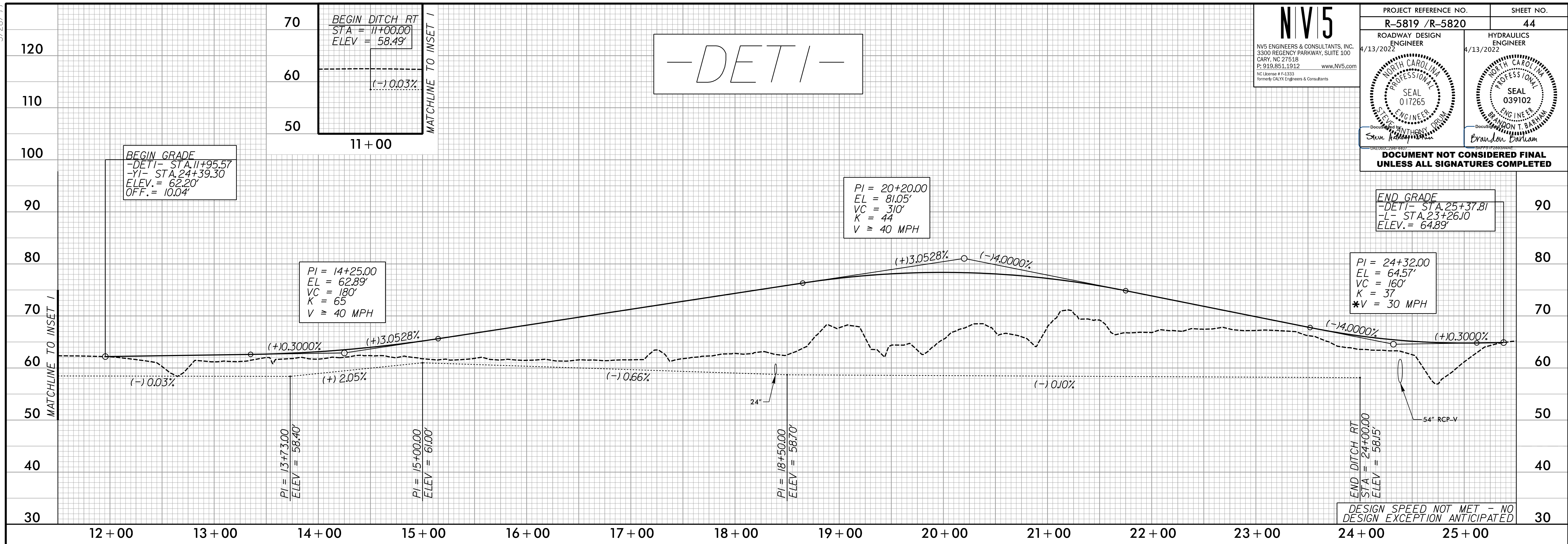
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NV5

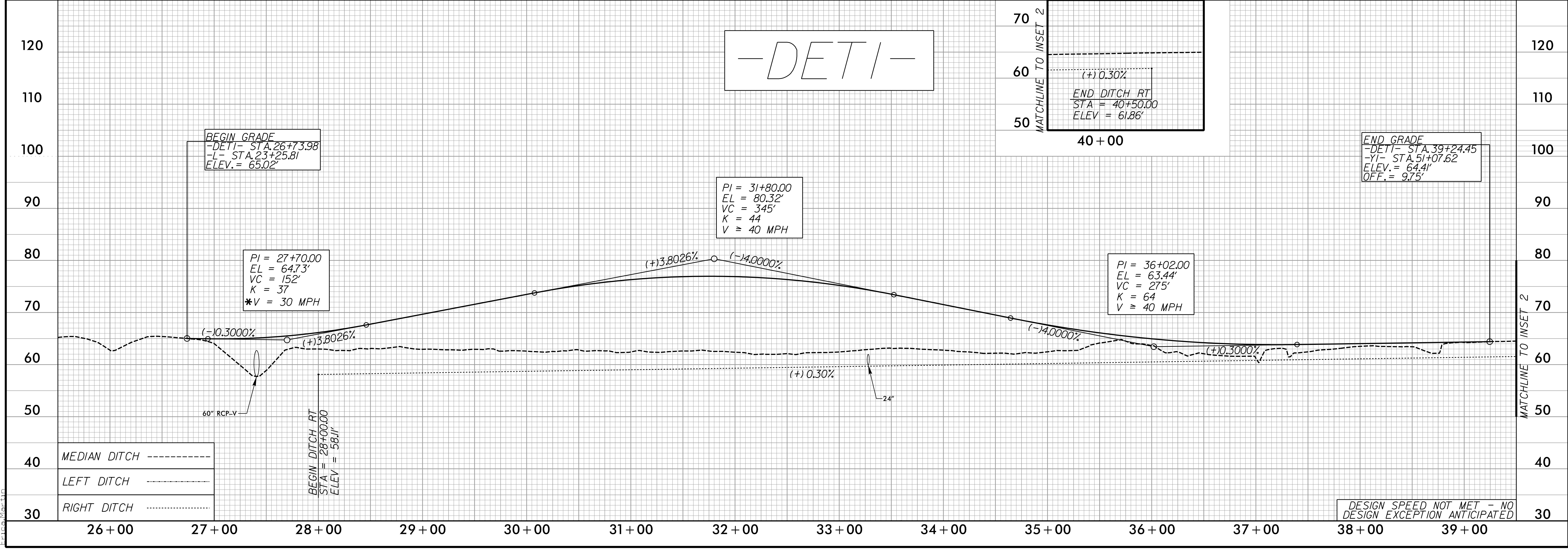
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3300 REGENCY PARKWAY, SUITE 100
CARY, NC 27518
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PROJECT REFERENCE NO. R-5819 /R-5820	SHEET NO. 44
ROADWAY DESIGN ENGINEER 4/13/2022	HYDRAULICS ENGINEER 4/13/2022
SEAL 017265 ANTHONY DUBOIS	SEAL 039102 BRANDON T. BARNUM

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UNLESS ALL SIGNATURES COMPLETED**



-DETI-




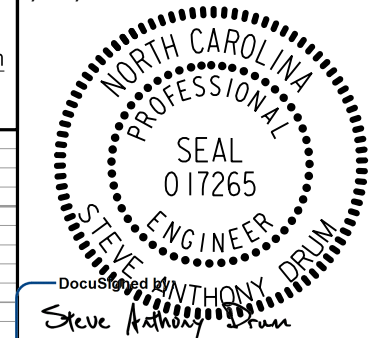

-DETI-

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

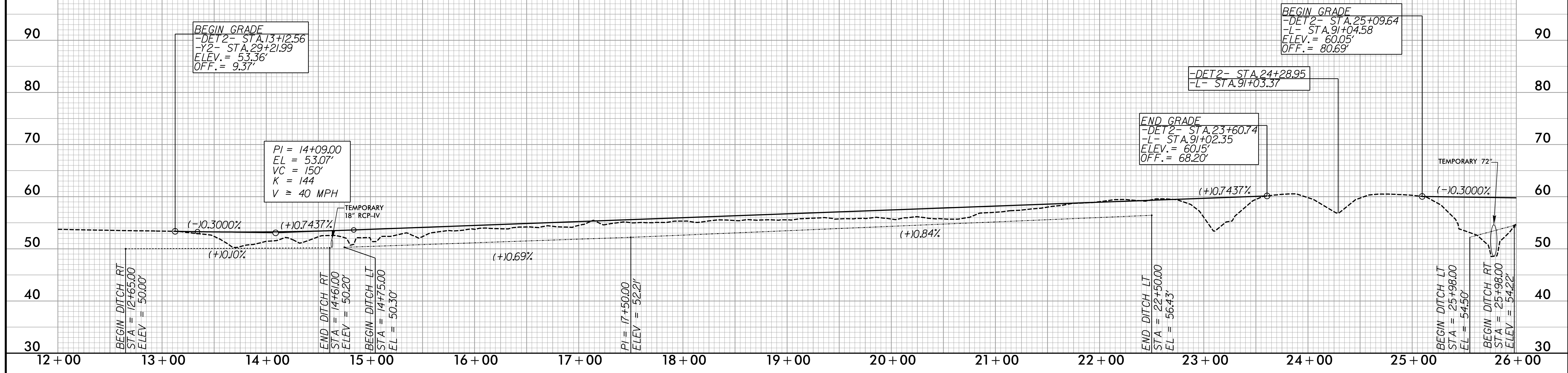
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5/28/22

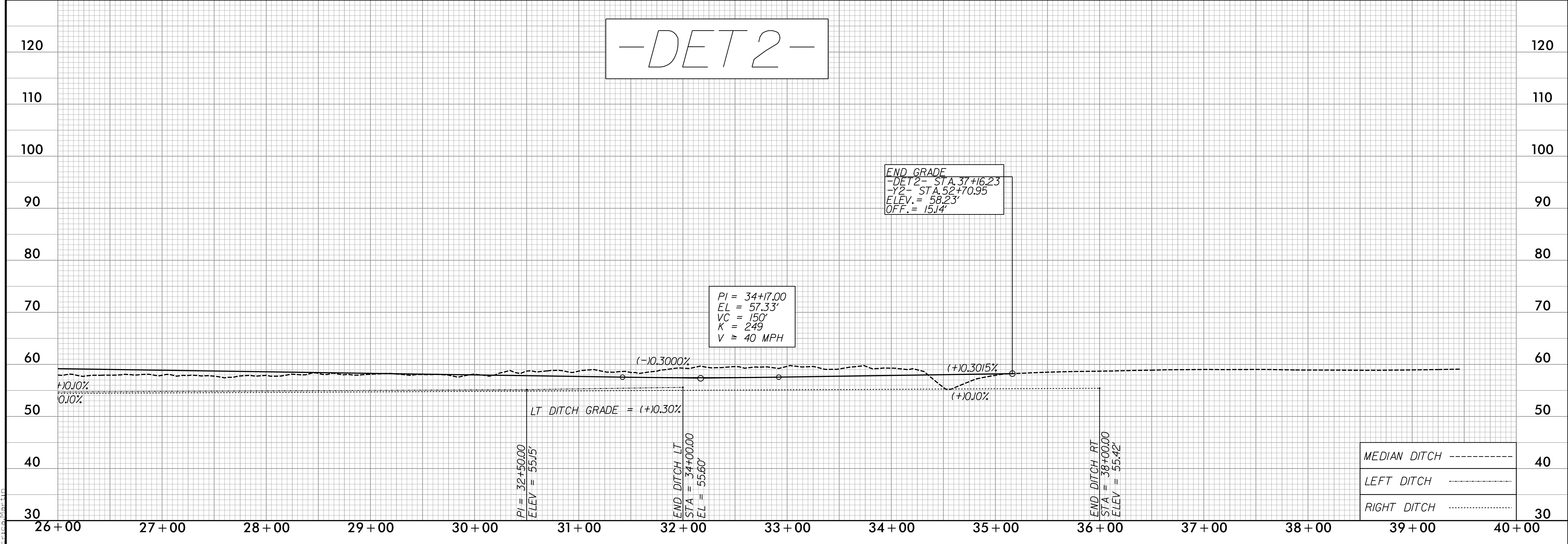
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PROJECT REFERENCE NO. R-5819 /R-5820		SHEET NO. 45
 NV5 ENGINEERS & CONSULTANTS, INC. 3300 REGENCY PARKWAY, SUITE 100 CARY, NC 27518 P: 919.851.1912 www.NV5.com NC License # E-1333 Formerly CALYX Engineers & Consultants		ROADWAY DESIGN ENGINEER 4/13/2022  SEAL 017265 ENGINEER STEVE ANTHONY
HYDRAULICS ENGINEER 4/13/2022  SEAL 039102 ENGINEER BRANDON T. BARHAM		

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-DET 2-



MEDIAN DITCH	-----	40
LEFT DITCH	-----	40
RIGHT DITCH	-----	30

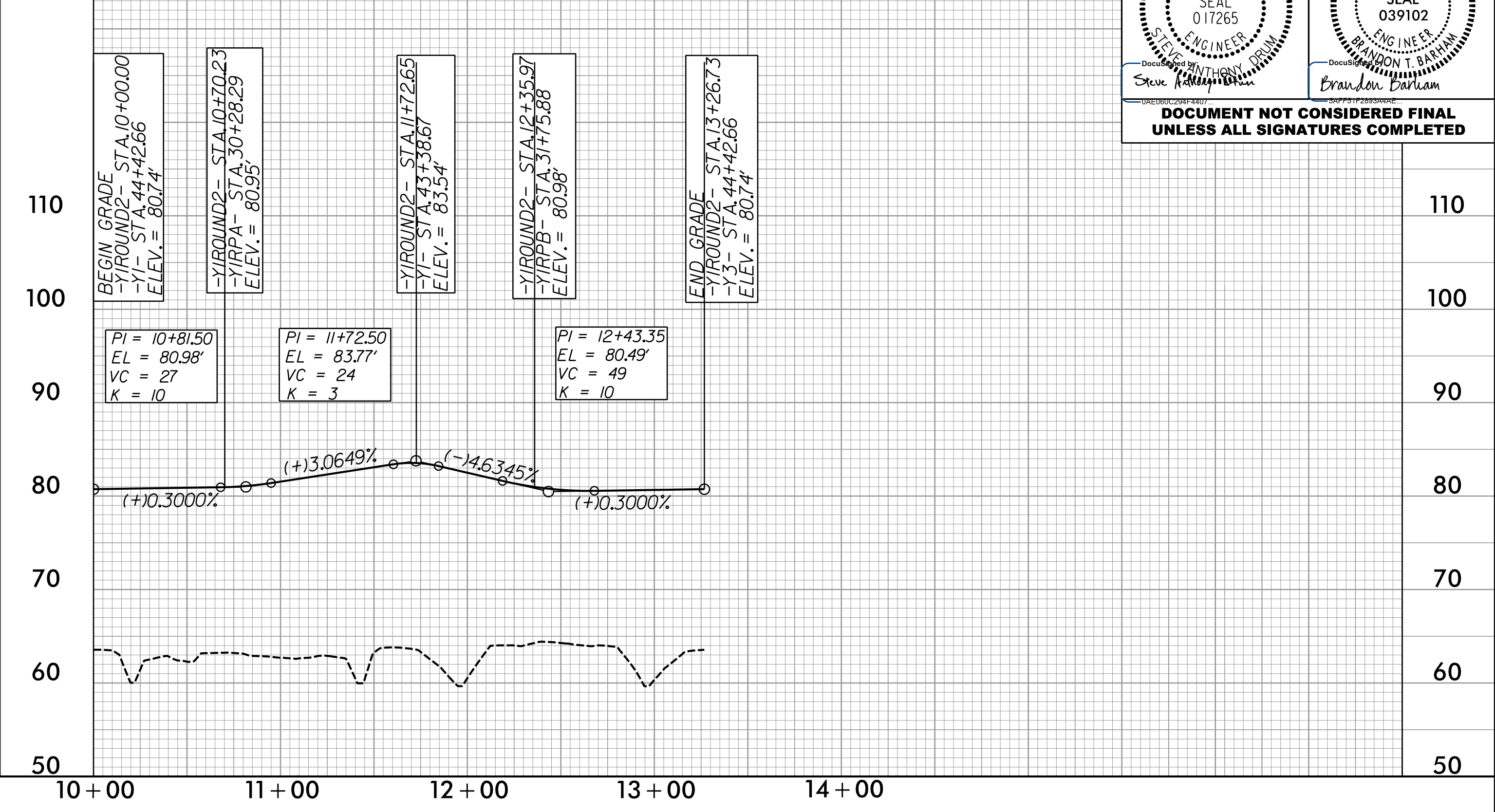
3/8/2022
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5/28/22

-Y1ROUND1-



-Y1ROUND2-



NV5

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PROJECT REFERENCE NO.
R-5819 / R-5820

SHEET NO.
46

ROADWAY DESIGN ENGINEER
4/13/2022

HYDRAULICS ENGINEER
4/13/2022

SEAL 017265

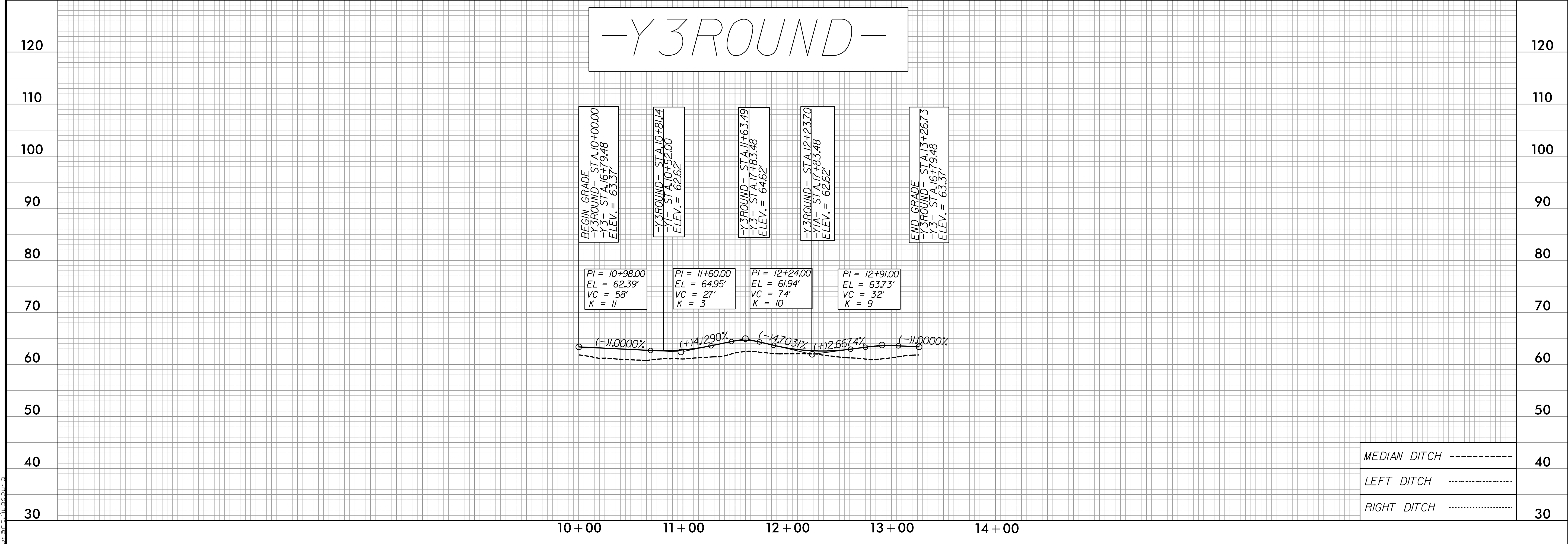
STEVE ANTHONY DUBOIS

SEAL 039102

BRANDON T. BARNUM

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-Y3ROUND-



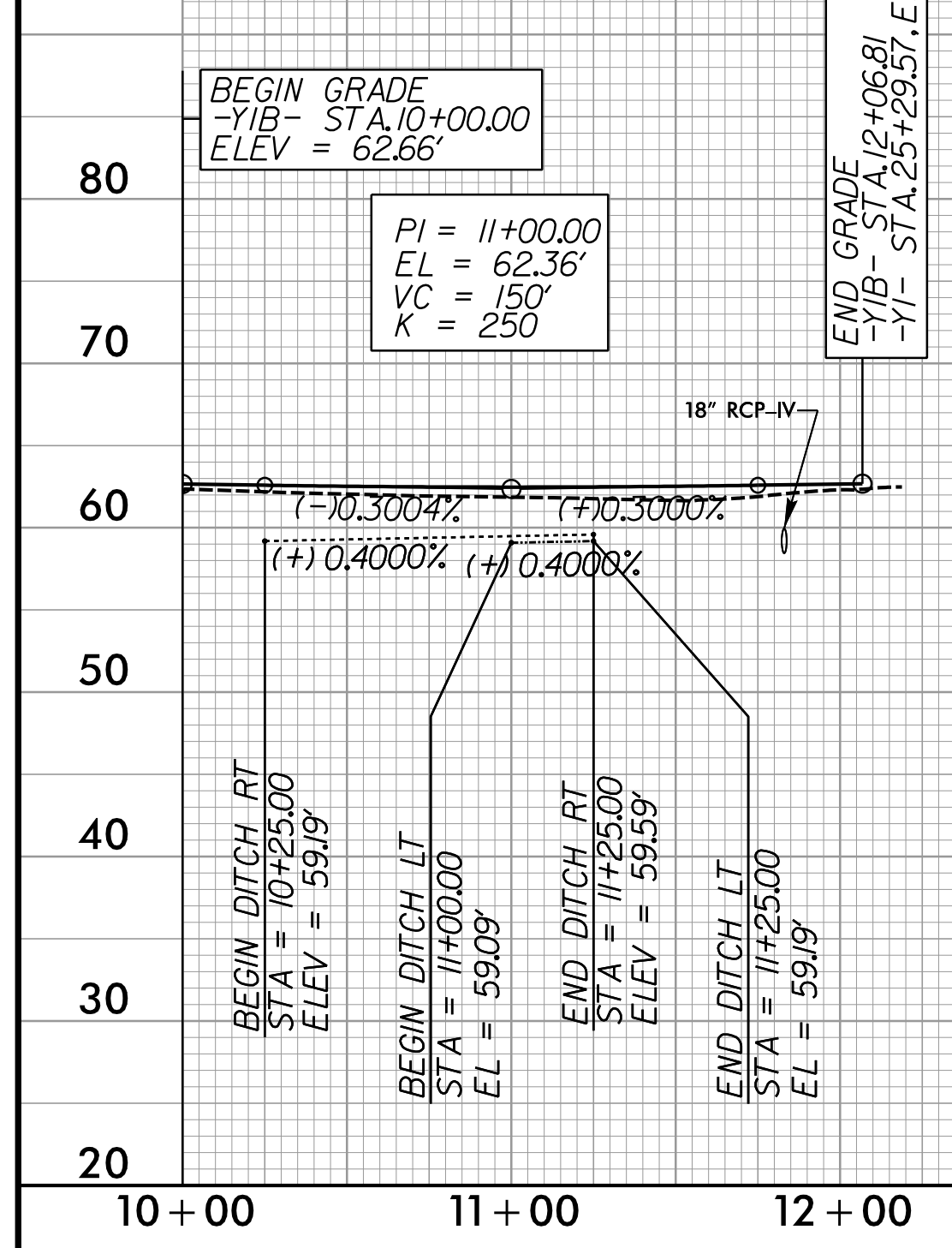
MEDIAN DITCH	40
LEFT DITCH	40
RIGHT DITCH	30

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 5/28/22

5/28/22

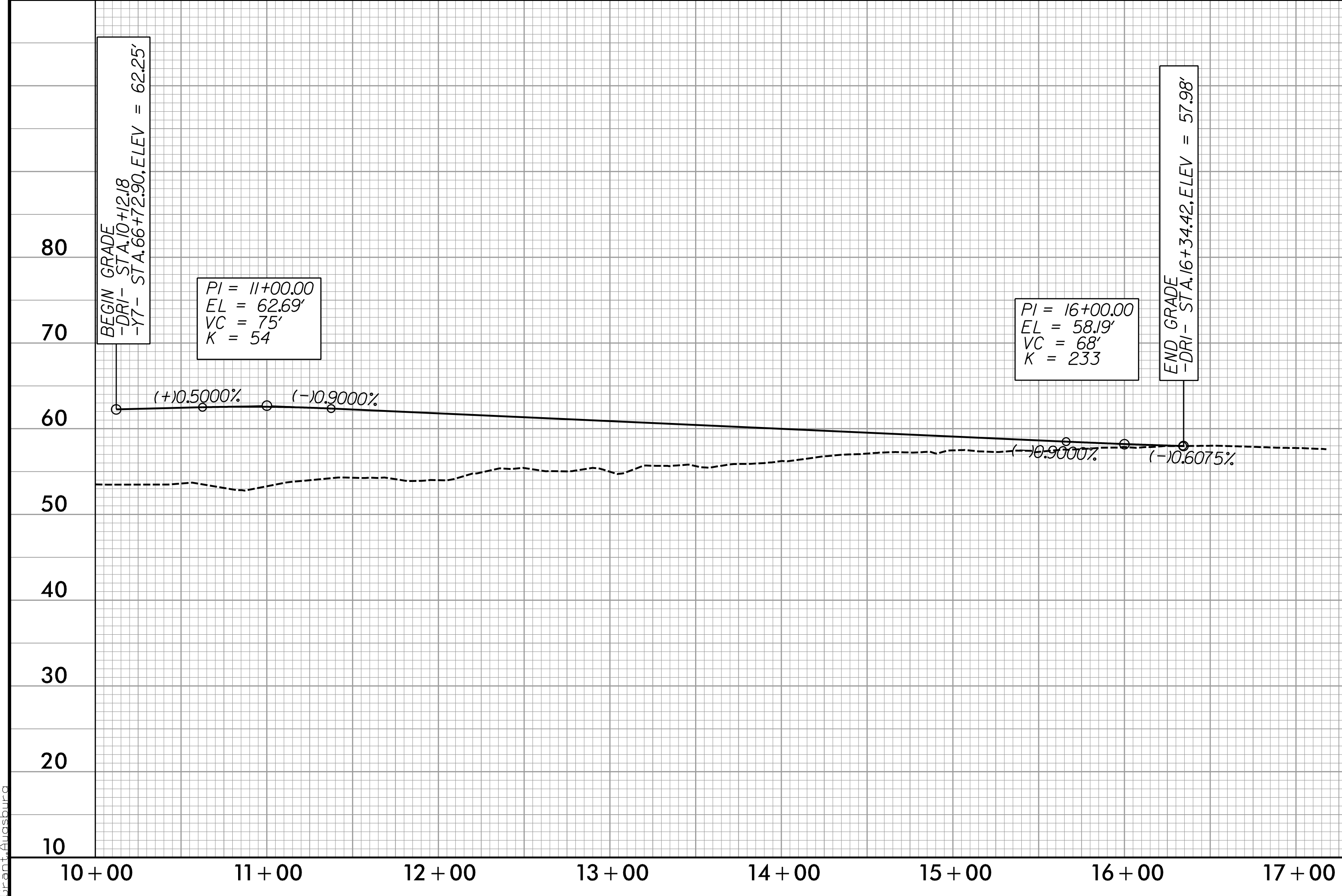
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PROJECT REFERENCE NO. R-5819 / R-5820		SHEET NO. 47
NV5 NV5 ENGINEERS & CONSULTANTS, INC. 3300 REGENCY PARKWAY, SUITE 100 CARY, NC 27518 P: 919.851.1912 www.NV5.com <small>NC License # E5337 formerly CALV Engineers & Consultants</small>		HYDRAULICS ENGINEER 4/13/2022
ROADWAY DESIGN ENGINEER 4/13/2022 		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PIPE HYDRAULIC DATA
18" RCP-IV Sta. 11+83

DRAINAGE AREA	= 1.6	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 4.3	CFS
DESIGN HW ELEVATION	= 59.8	FT
100 YEAR DISCHARGE	= 5.2	CFS
100 YEAR HW ELEVATION	= 59.9	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 12.0	CFS
OVERTOPPING ELEVATION	= 62.2	FT



-DRI-

MEDIAN DITCH	-----	20
LEFT DITCH	-----	
RIGHT DITCH	-----	

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 R-5819\5819\Pro\N5819_R5820_RDY_PFL_47.dgn
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