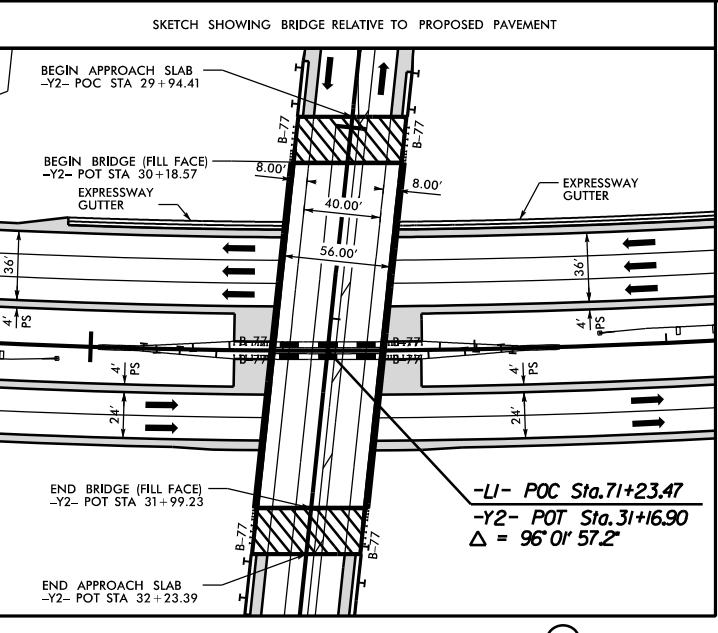
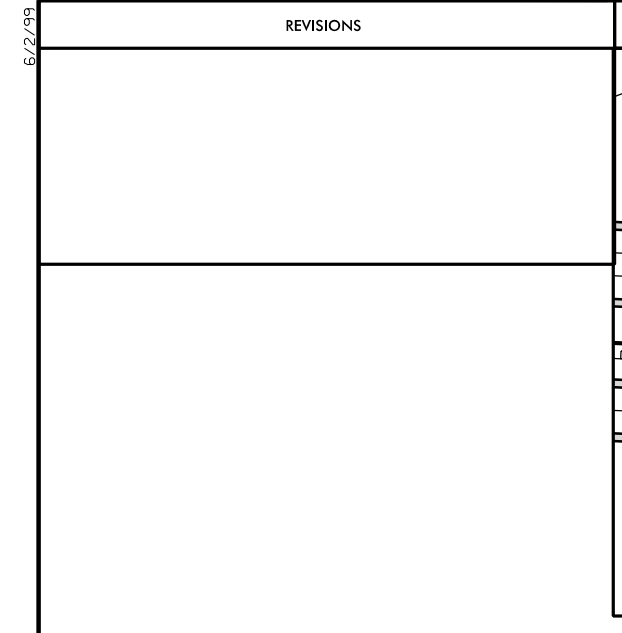
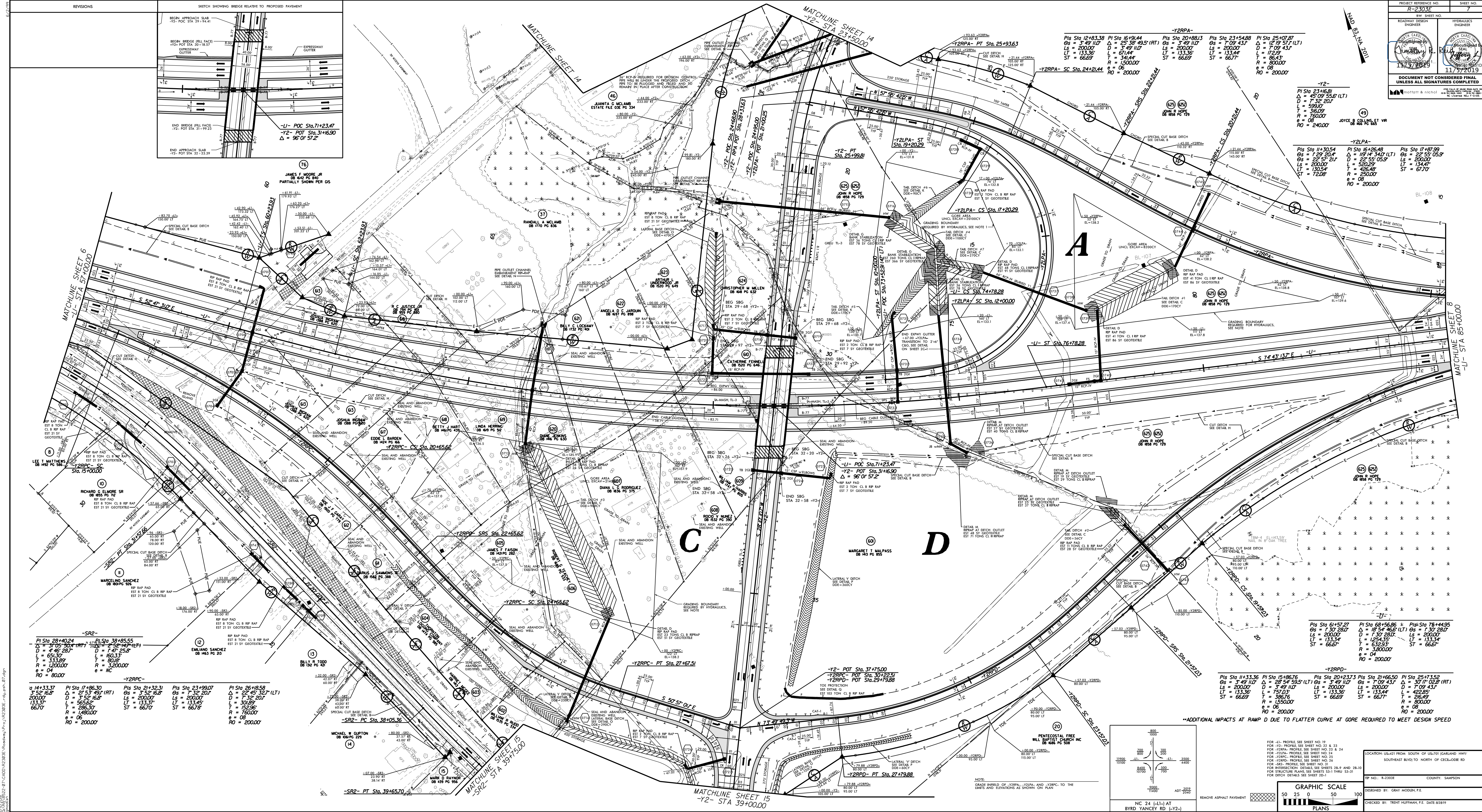


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**This file or an individual page
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PROJECT REFERENCE NO. **R-23074** SHEET NO. **7**

R/W SHEET NO. **7**

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DATE: 11/27/2019

| | | | | |
|--|---|---|--|--|
| <p>-SR2-</p> <p>PI Sta 28+40.24 Δ = 3° 10' 53" (RT) D = 4' 46" 287' L = 653.37' T = 333.89' R = 3200.00' e = 04' RO = 80.00'</p> | <p>-Y2RPC-</p> <p>PI Sta 17+86.30 Δ = 3° 52' 16" (RT) D = 2' 53' 49" (RT) L = 133.37' T = 286.39' R = 1480.00' e = 06' RO = 200.00'</p> | <p>-Y2RPC-</p> <p>PI Sta 21+32.31 Δ = 3° 52' 16" (RT) D = 2' 53' 49" (RT) L = 133.37' T = 286.39' R = 1480.00' e = 06' RO = 200.00'</p> | <p>-Y2RPC-</p> <p>PI Sta 23+99.07 Δ = 7° 32' 20" (RT) D = 7° 32' 20" (RT) L = 301.89' T = 152.98' R = 760.00' e = 06' RO = 200.00'</p> | <p>-Y2RPC-</p> <p>PI Sta 25+18.58 Δ = 2° 45' 32" (LT) D = 7° 32' 20" (RT) L = 301.89' T = 152.98' R = 760.00' e = 06' RO = 200.00'</p> |
|--|---|---|--|--|

| | | |
|--|--|--|
| <p>-Y2RPC-</p> <p>PI Sta 61+57.27 Δ = 1° 30' 28.00" (LT) D = 1° 30' 28.00" (LT) L = 133.34' T = 66.67' R = 3200.00' e = 04' RO = 200.00'</p> | <p>-Y2RPC-</p> <p>PI Sta 68+56.86 Δ = 1° 30' 28.00" (LT) D = 1° 30' 28.00" (LT) L = 133.34' T = 66.67' R = 3200.00' e = 04' RO = 200.00'</p> | <p>-Y2RPC-</p> <p>PI Sta 78+44.95 Δ = 1° 30' 28.00" (LT) D = 1° 30' 28.00" (LT) L = 133.34' T = 66.67' R = 3200.00' e = 04' RO = 200.00'</p> |
|--|--|--|

GRAPHIC SCALE

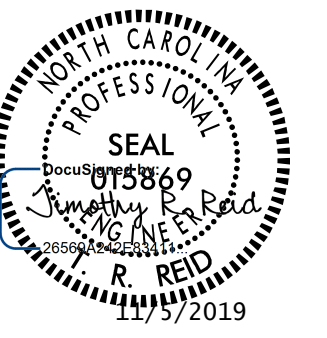
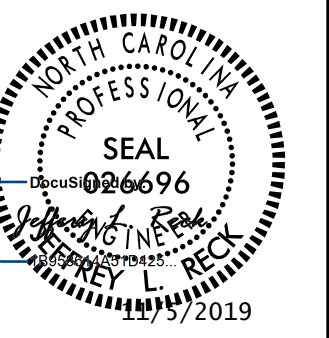
50 25 0 50 100

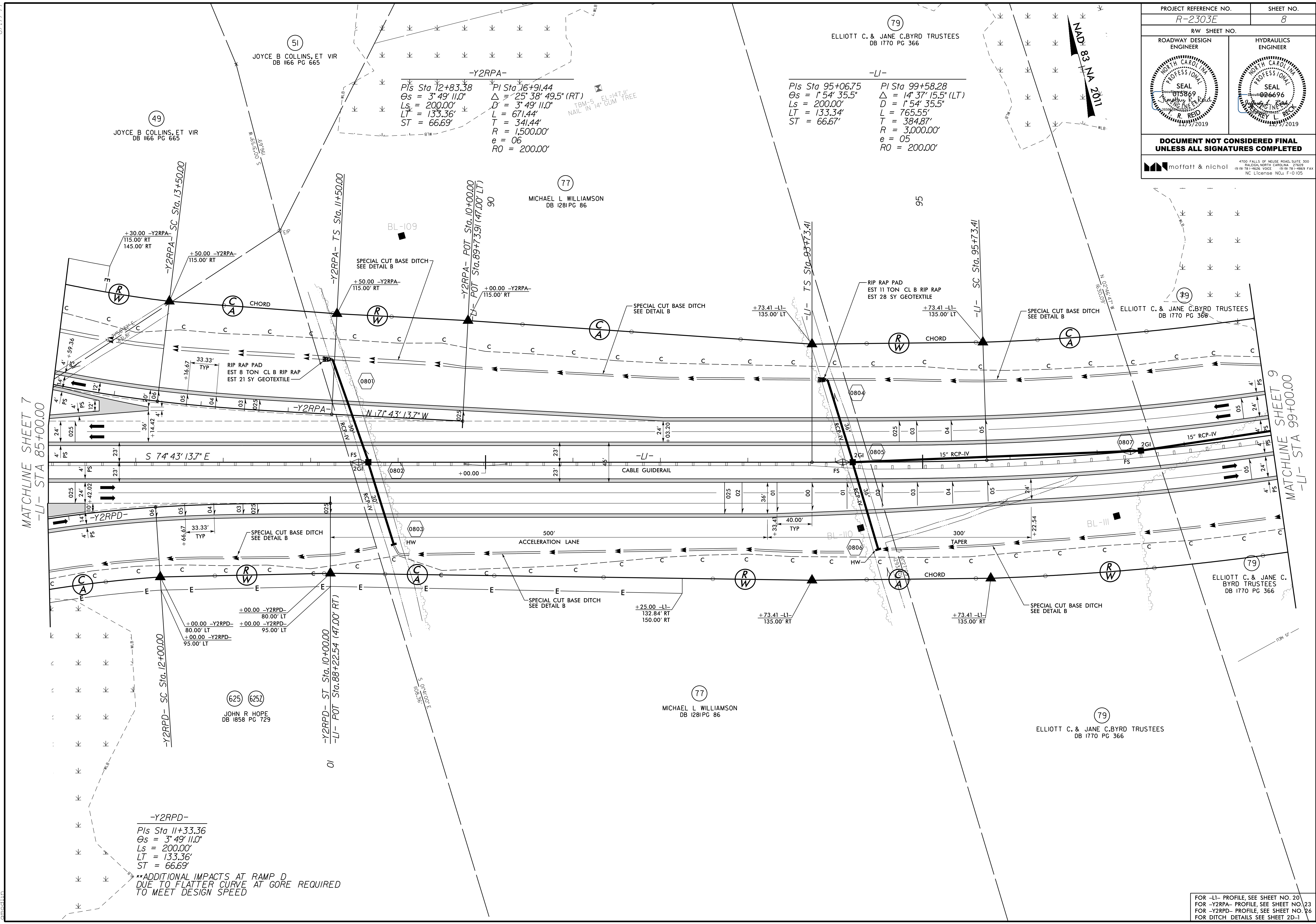
PLANS

REMOVE ASPHALT PAVEMENT

NOTES:

- FOR ALL PROFILES SEE SHEET NO. 19
- FOR -Y2RPC- PROFILES SEE SHEET NO. 22 & 23
- FOR -Y2RPC- PROFILES SEE SHEET NO. 24
- FOR -Y2RPC- PROFILES SEE SHEET NO. 25
- FOR -Y2RPC- PROFILES SEE SHEET NO. 26
- FOR -Y2RPC- PROFILES SEE SHEET NO. 27
- FOR -Y2RPC- PROFILES SEE SHEET NO. 28
- FOR -Y2RPC- PROFILES SEE SHEET NO. 29
- FOR -Y2RPC- PROFILES SEE SHEET NO. 30
- FOR -Y2RPC- PROFILES SEE SHEET NO. 31
- FOR -Y2RPC- PROFILES SEE SHEET NO. 32
- FOR -Y2RPC- PROFILES SEE SHEET NO. 33
- FOR -Y2RPC- PROFILES SEE SHEET NO. 34
- FOR -Y2RPC- PROFILES SEE SHEET NO. 35
- FOR -Y2RPC- PROFILES SEE SHEET NO. 36
- FOR -Y2RPC- PROFILES SEE SHEET NO. 37
- FOR -Y2RPC- PROFILES SEE SHEET NO. 38
- FOR -Y2RPC- PROFILES SEE SHEET NO. 39
- FOR -Y2RPC- PROFILES SEE SHEET NO. 40
- FOR -Y2RPC- PROFILES SEE SHEET NO. 41
- FOR -Y2RPC- PROFILES SEE SHEET NO. 42
- FOR -Y2RPC- PROFILES SEE SHEET NO. 43
- FOR -Y2RPC- PROFILES SEE SHEET NO. 44
- FOR -Y2RPC- PROFILES SEE SHEET NO. 45
- FOR -Y2RPC- PROFILES SEE SHEET NO. 46
- FOR -Y2RPC- PROFILES SEE SHEET NO. 47
- FOR -Y2RPC- PROFILES SEE SHEET NO. 48
- FOR -Y2RPC- PROFILES SEE SHEET NO. 49
- FOR -Y2RPC- PROFILES SEE SHEET NO. 50
- FOR -Y2RPC- PROFILES SEE SHEET NO. 51
- FOR -Y2RPC- PROFILES SEE SHEET NO. 52
- FOR -Y2RPC- PROFILES SEE SHEET NO. 53
- FOR -Y2RPC- PROFILES SEE SHEET NO. 54
- FOR -Y2RPC- PROFILES SEE SHEET NO. 55
- FOR -Y2RPC- PROFILES SEE SHEET NO. 56
- FOR -Y2RPC- PROFILES SEE SHEET NO. 57
- FOR -Y2RPC- PROFILES SEE SHEET NO. 58
- FOR -Y2RPC- PROFILES SEE SHEET NO. 59
- FOR -Y2RPC- PROFILES SEE SHEET NO. 60
- FOR -Y2RPC- PROFILES SEE SHEET NO. 61
- FOR -Y2RPC- PROFILES SEE SHEET NO. 62
- FOR -Y2RPC- PROFILES SEE SHEET NO. 63
- FOR -Y2RPC- PROFILES SEE SHEET NO. 64
- FOR -Y2RPC- PROFILES SEE SHEET NO. 65
- FOR -Y2RPC- PROFILES SEE SHEET NO. 66
- FOR -Y2RPC- PROFILES SEE SHEET NO. 67
- FOR -Y2RPC- PROFILES SEE SHEET NO. 68
- FOR -Y2RPC- PROFILES SEE SHEET NO. 69
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- FOR -Y2RPC- PROFILES SEE SHEET NO. 89
- FOR -Y2RPC- PROFILES SEE SHEET NO. 90
- FOR -Y2RPC- PROFILES SEE SHEET NO. 91
- FOR -Y2RPC- PROFILES SEE SHEET NO. 92
- FOR -Y2RPC- PROFILES SEE SHEET NO. 93
- FOR -Y2RPC- PROFILES SEE SHEET NO. 94
- FOR -Y2RPC- PROFILES SEE SHEET NO. 95
- FOR -Y2RPC- PROFILES SEE SHEET NO. 96
- FOR -Y2RPC- PROFILES SEE SHEET NO. 97
- FOR -Y2RPC- PROFILES SEE SHEET NO. 98
- FOR -Y2RPC- PROFILES SEE SHEET NO. 99
- FOR -Y2RPC- PROFILES SEE SHEET NO. 100

| | | | |
|---|--|---|--|
| PROJECT REFERENCE NO. R-2303E | | SHEET NO. 8 | |
| RW SHEET NO. | | HYDRAULICS ENGINEER | |
| ROADWAY DESIGN ENGINEER | | SEAL | |
|  | |  | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | | | |
| moffatt & nichol | | <small>4700 FALLS OF NEUSE ROAD, SUITE 300 RALEIGH, NORTH CAROLINA 27609 (919) 781-4626 VOICE (919) 781-4869 FAX NC License No.: F-0105</small> | |



MATCHLINE SHEET 7
-LI- STA 85+00.00

MATCHLINE SHEET 9
-LI- STA 99+00.00

-Y2RPA-
 PIs Sta 12+83.38 PI Sta 16+91.44
 $\theta_s = 3^\circ 49' 11.0''$ $\Delta = 25^\circ 38' 49.5''$ (RT)
 $L_s = 200.00'$ $D = 3^\circ 49' 11.0''$
 $LT = 133.36'$ $L = 671.44'$
 $ST = 66.69'$ $T = 341.44'$
 $R = 1,500.00'$
 $e = 06$
 $RO = 200.00'$

-LI-
 PIs Sta 95+06.75 PI Sta 99+58.28
 $\theta_s = 1^\circ 54' 35.5''$ $\Delta = 14^\circ 37' 15.5''$ (LT)
 $L_s = 200.00'$ $D = 1^\circ 54' 35.5''$
 $LT = 133.34'$ $L = 765.55'$
 $ST = 66.67'$ $T = 384.87'$
 $R = 3,000.00'$
 $e = 05$
 $RO = 200.00'$

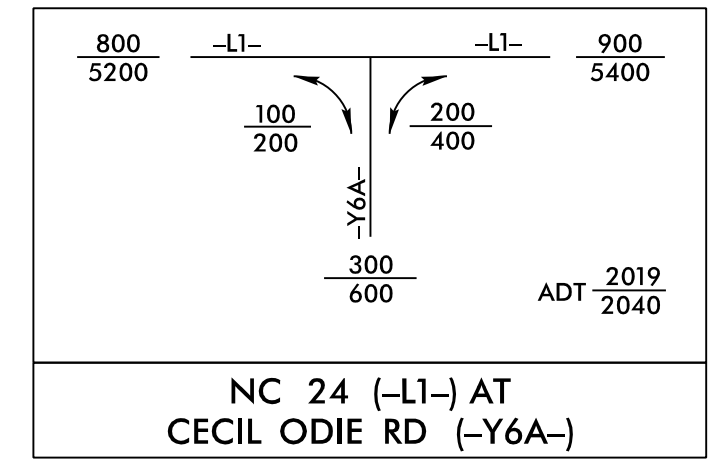
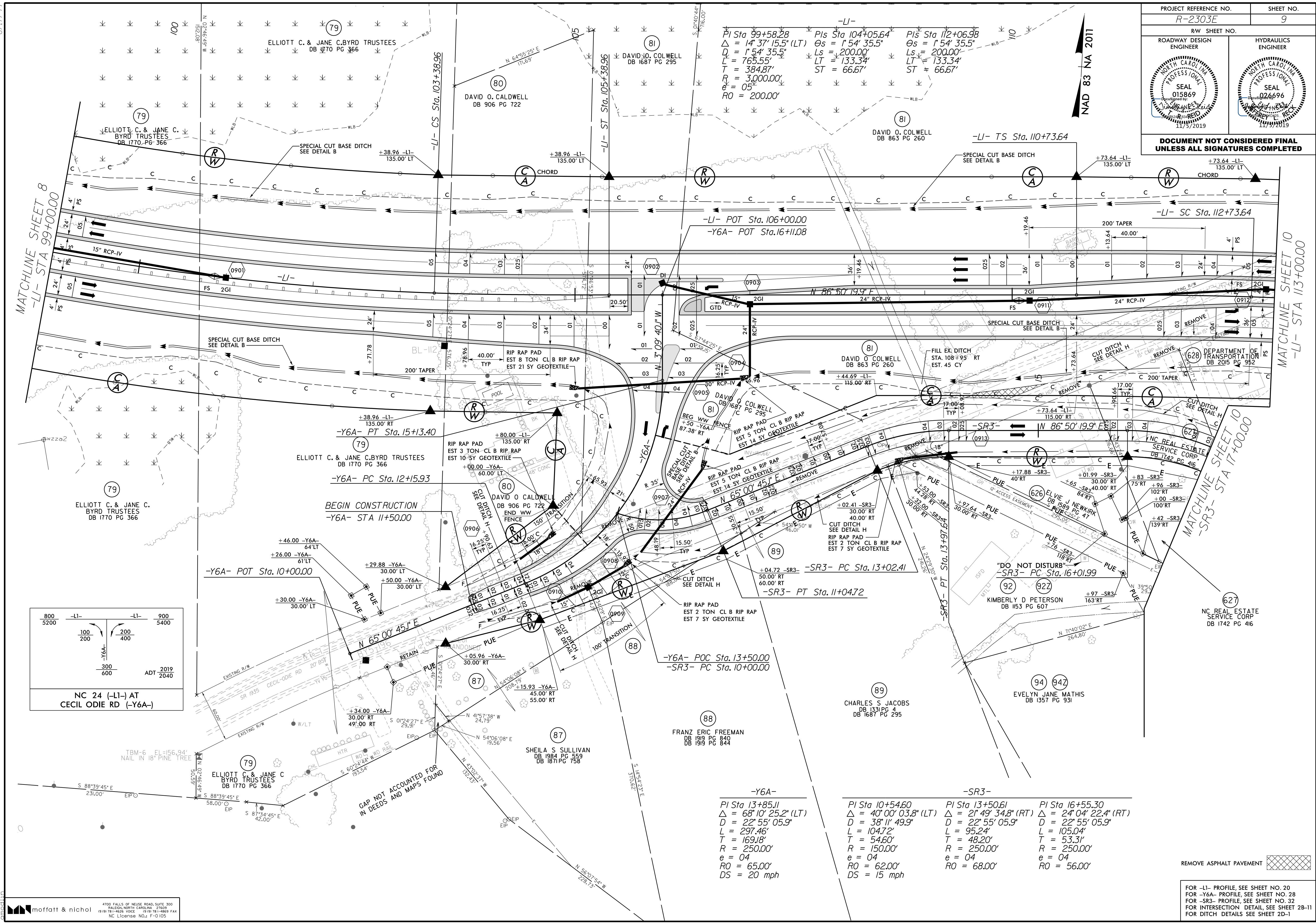
-Y2RPD-
 PIs Sta 11+33.36
 $\theta_s = 3^\circ 49' 11.0''$
 $L_s = 200.00'$
 $LT = 133.36'$
 $ST = 66.69'$

****ADDITIONAL IMPACTS AT RAMP D
DUE TO FLATTER CURVE AT GORE REQUIRED
TO MEET DESIGN SPEED**

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 moffatt & nichol

FOR -LI- PROFILE, SEE SHEET NO. 20
 FOR -Y2RPA- PROFILE, SEE SHEET NO. 23
 FOR -Y2RPD- PROFILE, SEE SHEET NO. 23
 FOR DITCH DETAILS SEE SHEET 2D-1

| | | | |
|--|--|---------------------|--|
| PROJECT REFERENCE NO. R-2303E | | SHEET NO. 9 | |
| ROADWAY DESIGN ENGINEER | | HYDRAULICS ENGINEER | |
| | | | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | | | |



-LI-
 PI Sta 99+58.28 Δ = 14° 37' 15.5" (LT) Os = 154' 35.5"
 D = 154' 35.5" Ls = 200.00'
 L = 765.55' LT = 133.34'
 T = 384.87' ST = 66.67'
 R = 3,000.00'
 e = 05'
 RO = 200.00'

-Y6A-
 PI Sta 13+85.11 Δ = 68° 10' 25.2" (LT)
 D = 22° 55' 05.9"
 L = 297.46'
 T = 169.18'
 R = 250.00'
 e = 04'
 RO = 65.00'
 DS = 20 mph

-SR3-
 PI Sta 10+54.60 Δ = 40° 00' 03.8" (LT)
 D = 38° 11' 49.9"
 L = 104.72'
 T = 54.60'
 R = 150.00'
 e = 04'
 RO = 62.00'
 DS = 15 mph

-SR3-
 PI Sta 13+50.61 Δ = 21° 49' 34.8" (RT)
 D = 22° 55' 05.9"
 L = 95.24'
 T = 48.20'
 R = 250.00'
 e = 04'
 RO = 68.00'

-SR3-
 PI Sta 16+55.30 Δ = 24° 04' 22.4" (RT)
 D = 22° 55' 05.9"
 L = 105.04'
 T = 53.31'
 R = 250.00'
 e = 04'
 RO = 56.00'

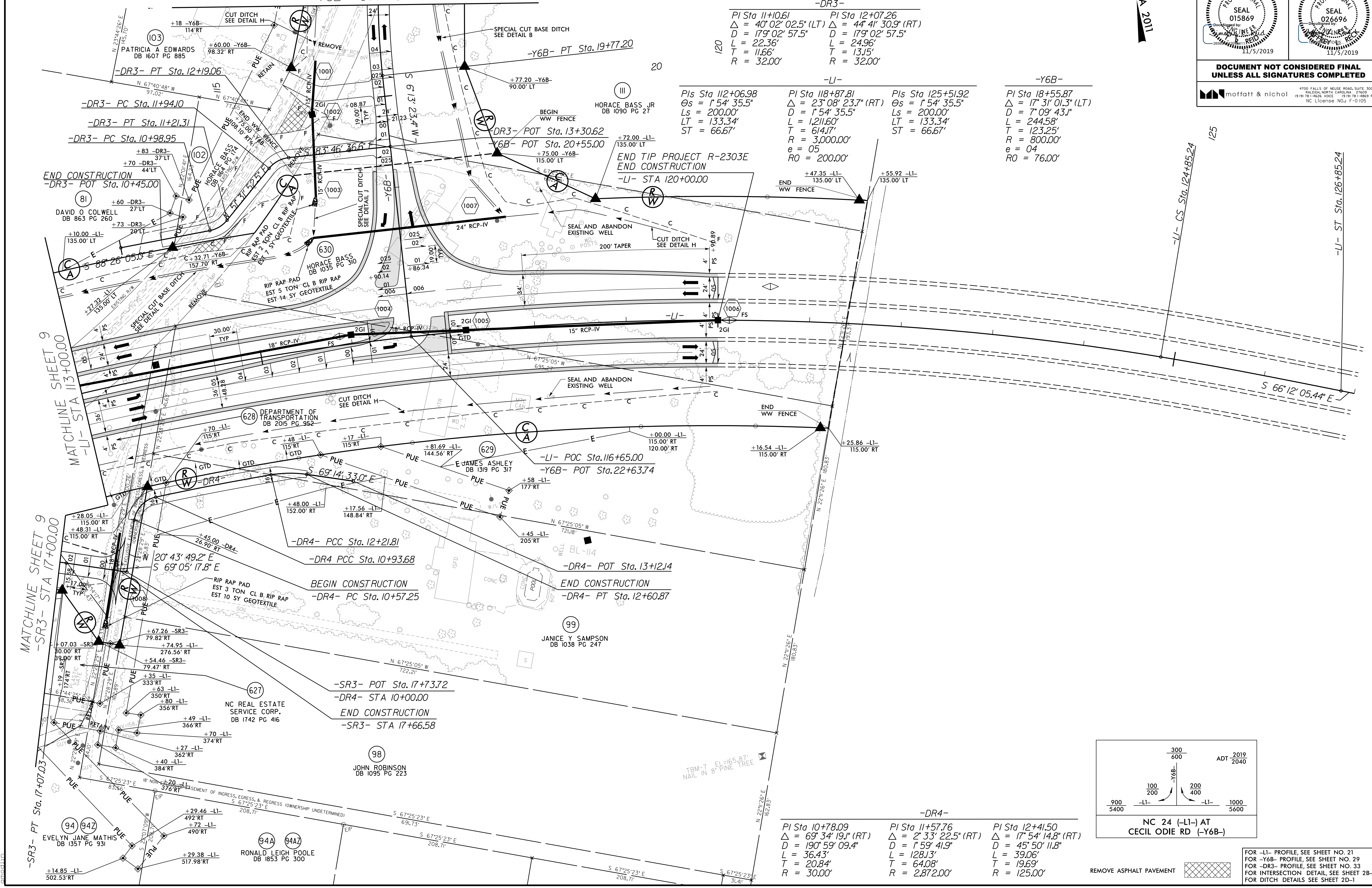
REMOVE ASPHALT PAVEMENT

FOR -LI- PROFILE, SEE SHEET NO. 20
 FOR -Y6A- PROFILE, SEE SHEET NO. 28
 FOR -SR3- PROFILE, SEE SHEET NO. 32
 FOR INTERSECTION DETAIL, SEE SHEET 28-11
 FOR DITCH DETAILS SEE SHEET 28-1

| | |
|--|---------------------|
| PROJECT REFERENCE NO. R-2303E | SHEET NO. 10 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |
| moftatt & nichol | |

NAD 83 NA 2011

MATCHLINE SHEET 16
-Y6B- STA 19+00.00



-DR3-

| | |
|---|---|
| PI Sta 11+10.61 $\Delta = 40' 02' 02.5''$ (LT) D = 179' 02' 57.5" L = 22.36' T = 11.66' R = 32.00' | PI Sta 12+07.26 $\Delta = 44' 41' 30.9''$ (RT) D = 179' 02' 57.5" L = 24.96' T = 13.15' R = 32.00' |
|---|---|

-LI-

| | | | |
|--|--|--|--|
| PIs Sta 112+06.98 $\Delta s = 1' 54' 35.5''$ Ls = 200.00' LT = 133.34' ST = 66.67' | PI Sta 118+87.81 $\Delta = 23' 08' 23.7''$ (RT) D = 1' 54' 35.5" L = 121.60' T = 61.47' R = 3,000.00' e = 05 RO = 200.00' | PIs Sta 125+51.92 $\Delta s = 1' 54' 35.5''$ Ls = 200.00' LT = 133.34' ST = 66.67' | -Y6B- PI Sta 18+55.87 $\Delta = 17' 31' 01.3''$ (LT) D = 7' 09' 43.1" L = 244.58' T = 123.25' R = 800.00' e = 04 RO = 76.00' |
|--|--|--|--|

MATCHLINE SHEET 9
-LI- STA 113+00.00

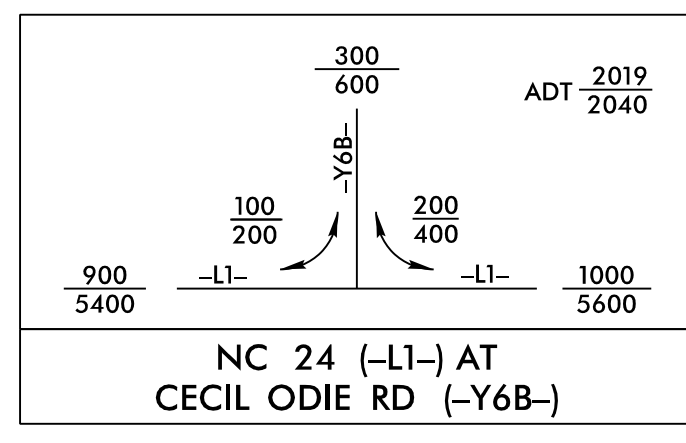
MATCHLINE SHEET 9
-SR3- STA 17+00.00

-LI- CS Sta. 124+85.24

-LI- ST Sta. 126+85.24

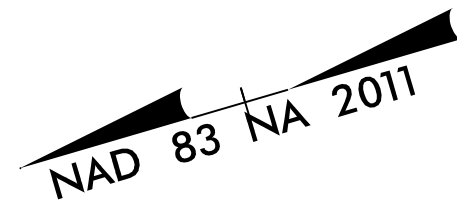
-DR4-

| | | |
|---|--|---|
| PI Sta 10+78.09 $\Delta = 69' 34' 19.1''$ (RT) D = 190' 59' 09.4" L = 36.43' T = 20.84' R = 30.00' | PI Sta 11+57.76 $\Delta = 2' 33' 22.5''$ (RT) D = 1' 59' 41.9" L = 128.13' T = 64.08' R = 2,872.00' | PI Sta 12+41.50 $\Delta = 17' 54' 14.8''$ (RT) D = 45' 50' 11.8" L = 39.06' T = 19.69' R = 125.00' |
|---|--|---|



FOR -LI- PROFILE, SEE SHEET NO. 21
 FOR -Y6B- PROFILE, SEE SHEET NO. 29
 FOR -DR3- PROFILE, SEE SHEET NO. 33
 FOR INTERSECTION DETAIL, SEE SHEET 2B-12
 FOR DITCH DETAILS SEE SHEET 2D-1

| | | | |
|--|--|---|--|
| PROJECT REFERENCE NO. R-2303E | | SHEET NO. 11 | |
| RW SHEET NO. | | | |
| ROADWAY DESIGN ENGINEER | | HYDRAULICS ENGINEER | |
| | | | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | | | |
| | | <small>4700 FALLS OF NEUSE ROAD, SUITE 300 RALEIGH, NORTH CAROLINA 27609 (919) 781-4626 VOICE (919) 781-4669 FAX NC License No.: F-0105</small> | |



-SRI-
 PI Sta 11+91.97
 $\Delta = 56^{\circ} 58' 13.8''$ (RT)
 $D = 28^{\circ} 38' 52.4''$
 $L = 198.86'$
 $T = 108.52'$
 $R = 200.00'$
 $e = 06$
 $RO = 108.00'$
 $DS = 25$ mph

(67)
 JAMES L. HOPE
 DB 1425 PG 956

-SRI- PT Sta. 12+82.31

(68)
 MARTHA P. HALES
 DB 1922 PG 367

MATCHLINE SHEET 12
 -SRI- STA 15+00.00

10
 -Y5- POT Sta. 10+00.00

-SRI- PC Sta. 10+83.45

-Y5- POT Sta. 14+86.51

(62)
 ANN W. PERERSON, ET AL
 DB 1570 PG 174
 PARTIALLY SHOWN PER GIS

BEGIN CONSTRUCTION
 -SRI- STA 10+12.09

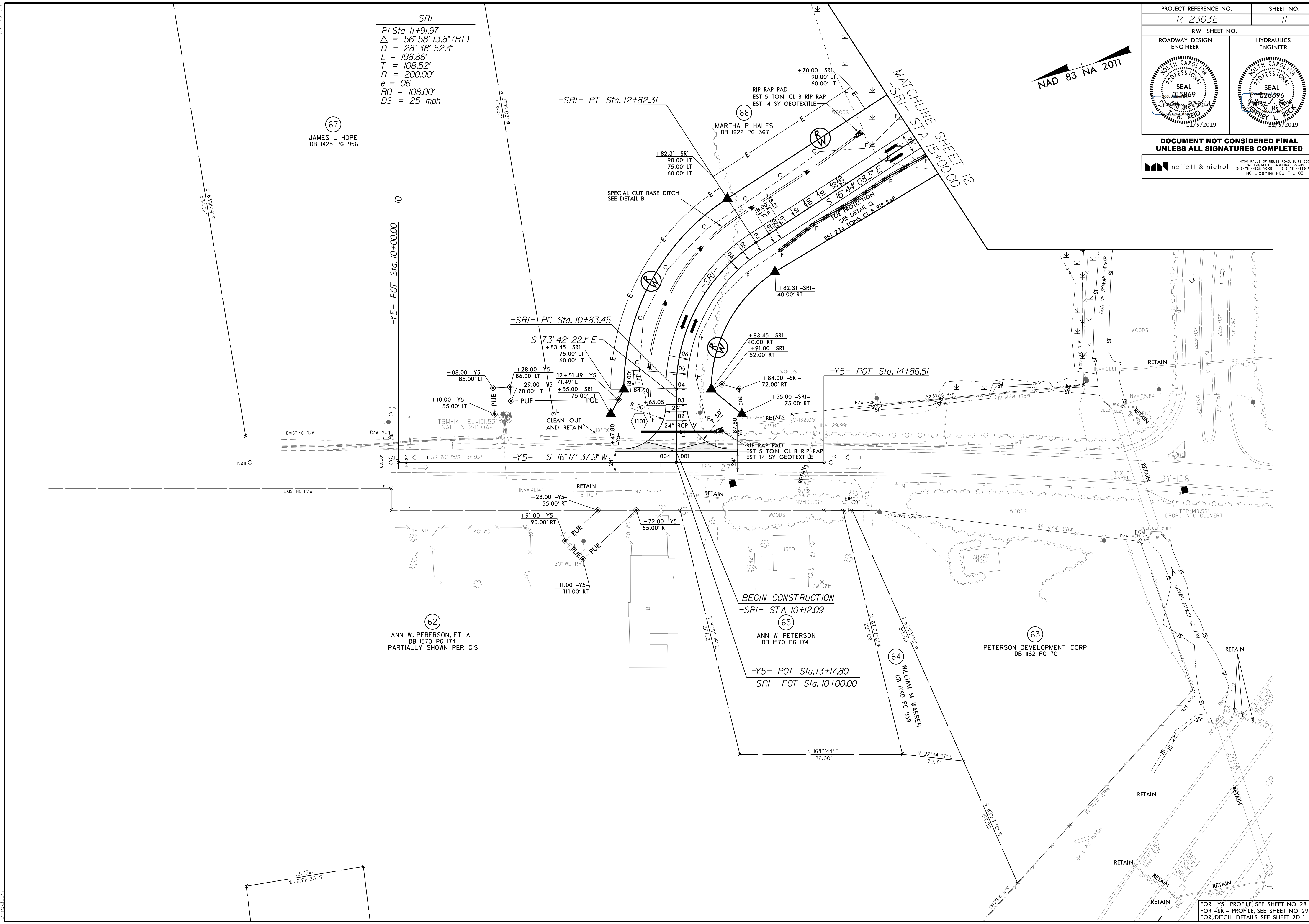
(65)
 ANN W. PETERSON
 DB 1570 PG 174

-Y5- POT Sta. 13+17.80
 -SRI- POT Sta. 10+00.00

(63)
 PETERSON DEVELOPMENT CORP
 DB 1162 PG 70

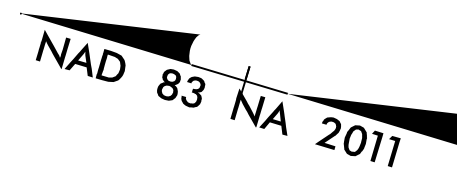
(64)
 WILLIAM M. WARREN
 DB 1140 PG 958

8/17/19
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 moffatt & nichol



FOR -Y5- PROFILE SEE SHEET NO. 28
 FOR -SRI- PROFILE SEE SHEET NO. 29
 FOR DITCH DETAILS SEE SHEET 2D-1

| | | | |
|--|--|--|--|
| PROJECT REFERENCE NO. <i>R-2303E</i> | | SHEET NO. <i>12</i> | |
| RW SHEET NO. | | | |
| ROADWAY DESIGN ENGINEER | | HYDRAULICS ENGINEER | |
| | | | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | | | |
| | | <small>4700 FALLS OF NEUSE ROAD, SUITE 300 RALEIGH, NORTH CAROLINA 27609 (919) 781-4626 VOICE (919) 781-4869 FAX NC License No. F-0105</small> | |

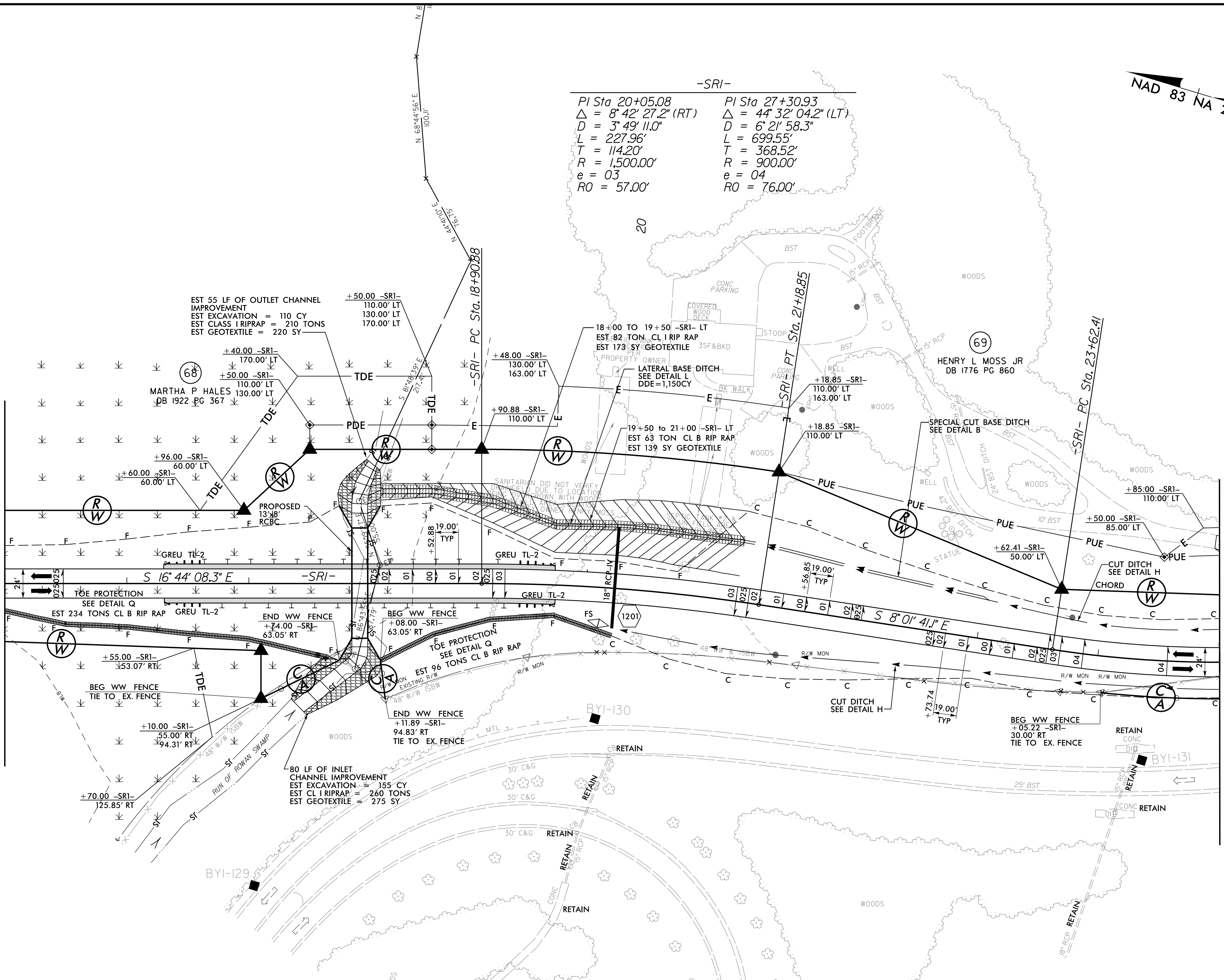


-SRI-

| | |
|-------------------------------------|--------------------------------------|
| <i>PI Sta 20+05.08</i> | <i>PI Sta 27+30.93</i> |
| $\Delta = 8^{\circ} 42' 27.2" (RT)$ | $\Delta = 44^{\circ} 32' 04.2" (LT)$ |
| $D = 3^{\circ} 49' 11.0"$ | $D = 6^{\circ} 21' 58.3"$ |
| $L = 227.96'$ | $L = 699.55'$ |
| $T = 114.20'$ | $T = 368.52'$ |
| $R = 1,500.00'$ | $R = 900.00'$ |
| $e = 03'$ | $e = 04'$ |
| $RO = 57.00'$ | $RO = 76.00'$ |

MATCHLINE SHEET 11
-SRI- STA 15+00.00

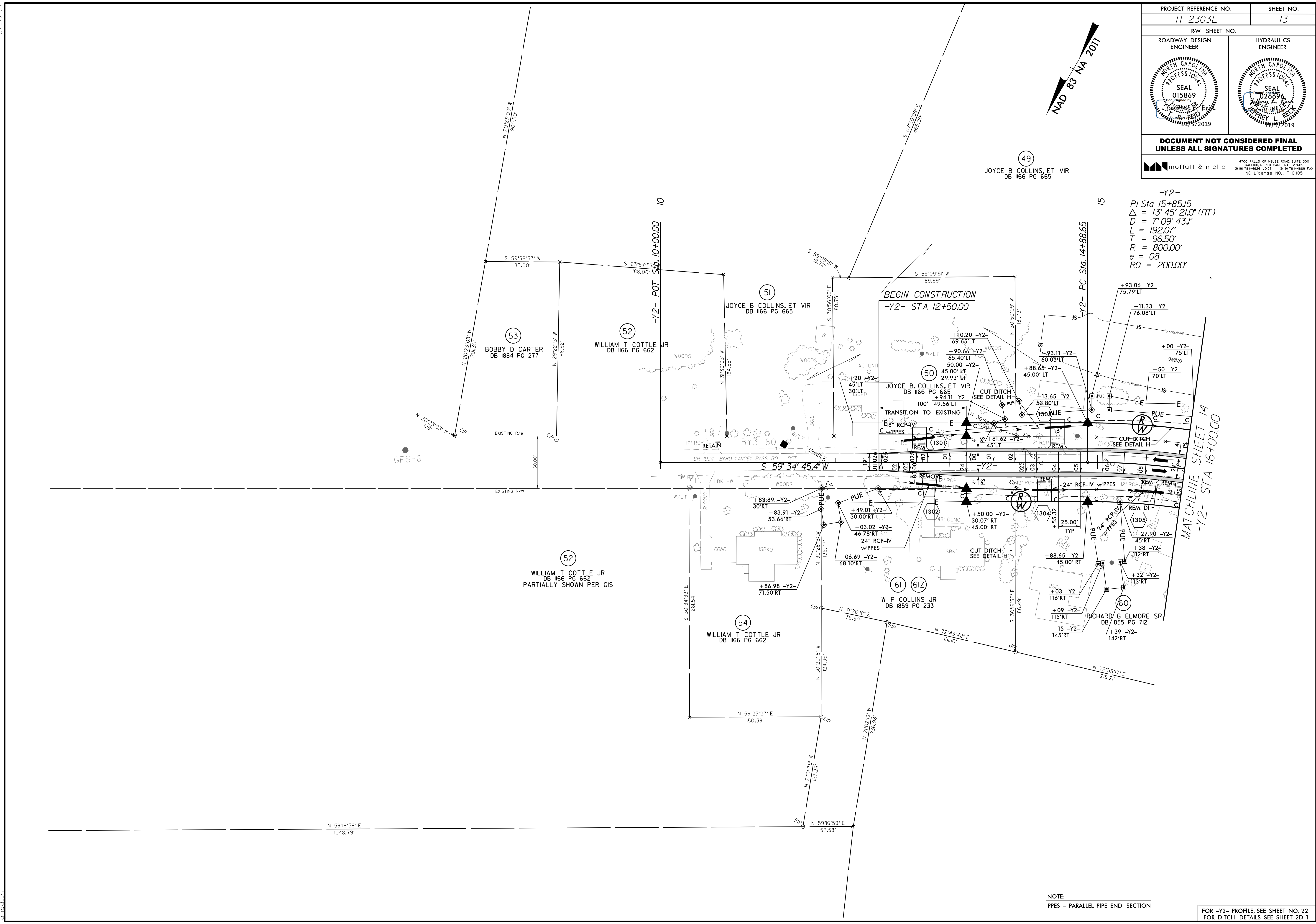
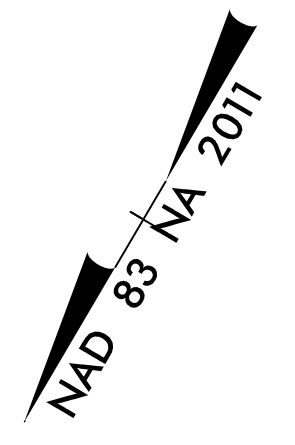
MATCHLINE SHEET 5
-SRI- STA 25+00.00



FOR -SRI- PROFILE, SEE SHEET NO. 30 & 31
FOR CULVERT PLANS, SEE SHEETS C2-1 THRU C2-4
FOR DITCH DETAILS SEE SHEET 2D-1

8/17/09

| | | | |
|--|--|---|--|
| PROJECT REFERENCE NO. <i>R-2303E</i> | | SHEET NO. <i>13</i> | |
| ROADWAY DESIGN ENGINEER | | HYDRAULICS ENGINEER | |
| | | | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | | | |
| moffatt & nichol | | <small>4700 FALLS OF NEUSE ROAD, SUITE 300 RALEIGH, NORTH CAROLINA 27619 (919) 781-4626 VOICE (919) 781-4669 FAX NC License No.: F-0105</small> | |



-Y2-
 PI Sta 15+85.15
 $\Delta = 13^{\circ} 45' 21.0''$ (RT)
 $D = 7^{\circ} 09' 43.1''$
 $L = 192.07'$
 $T = 96.50'$
 $R = 800.00'$
 $e = 08$
 $RO = 200.00'$

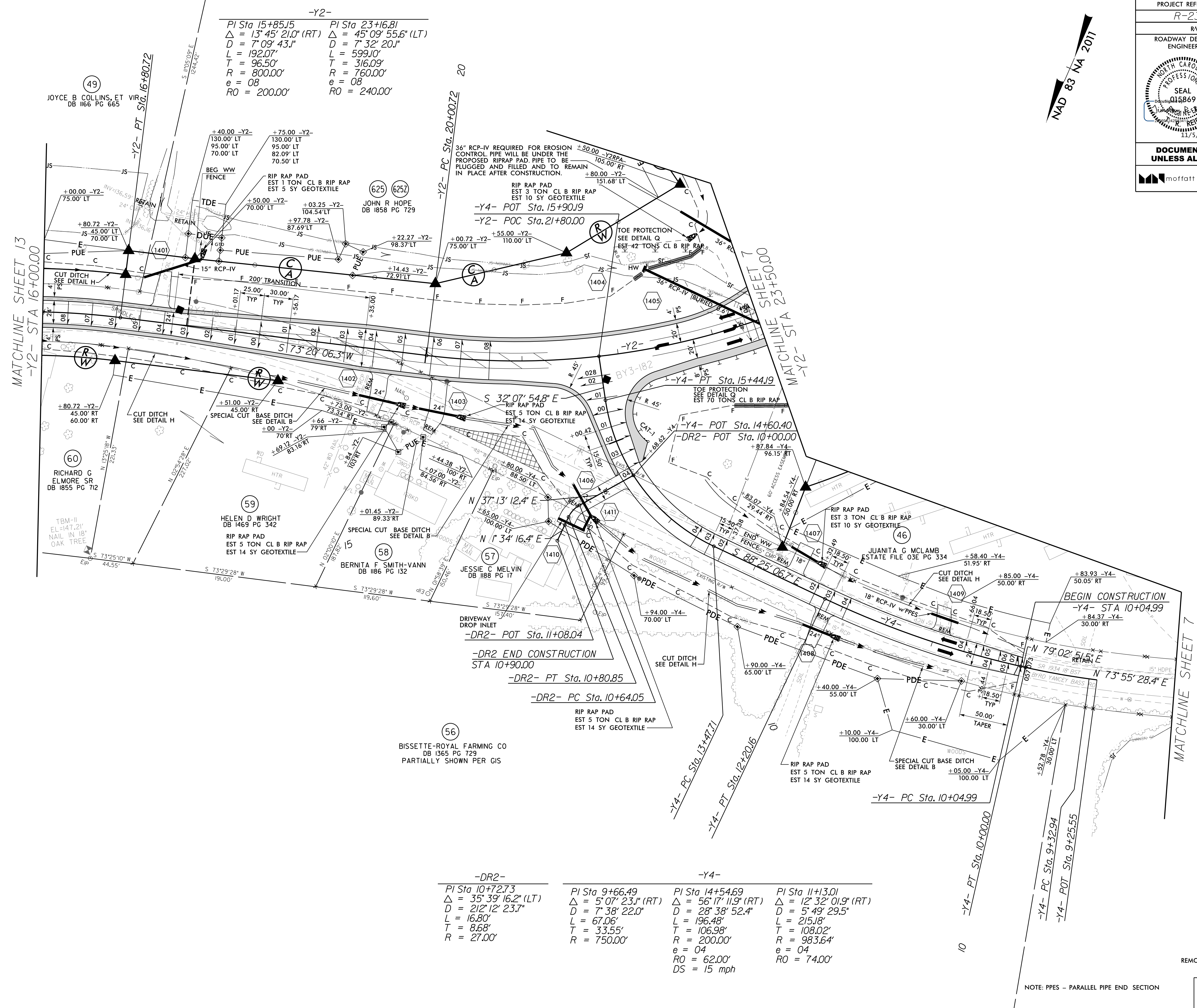
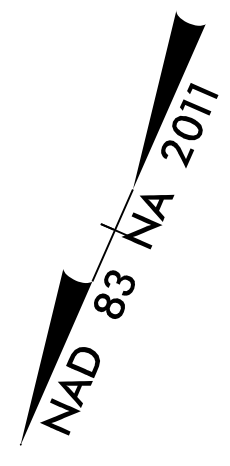
MATCHLINE SHEET 14
 -Y2- STA 16+00.00

NOTE:
 PPES - PARALLEL PIPE END SECTION

FOR -Y2- PROFILE, SEE SHEET NO. 22
 FOR DITCH DETAILS SEE SHEET 2D-1

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 10/11/09 10:11:10 AM

| | | | |
|--|--|---|--|
| PROJECT REFERENCE NO. R-2303E | | SHEET NO. 14 | |
| ROADWAY DESIGN ENGINEER | | HYDRAULICS ENGINEER | |
| | | | |
| <p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p> | | | |
| moffatt & nichol | | <small>4700 FALLS OF NEUSE ROAD, SUITE 300 RALEIGH, NORTH CAROLINA 27619 (919) 781-4626 VOICE (919) 781-4969 FAX NC License No.: F-0105</small> | |



-Y2-
 PI Sta 15+85.15 PI Sta 23+16.81
 $\Delta = 13^\circ 45' 21.0''$ (RT) $\Delta = 45^\circ 09' 55.6''$ (LT)
 $D = 7^\circ 09' 43.1''$ $D = 7^\circ 32' 20.1''$
 $L = 192.07'$ $L = 599.10'$
 $T = 96.50'$ $T = 316.09'$
 $R = 800.00'$ $R = 760.00'$
 $e = 08$ $e = 08$
 $RO = 200.00'$ $RO = 240.00'$

-DR2-
 PI Sta 10+72.73
 $\Delta = 35^\circ 39' 16.2''$ (LT)
 $D = 212^\circ 12' 23.7''$
 $L = 16.80'$
 $T = 8.68'$
 $R = 27.00'$

-Y4-
 PI Sta 9+66.49
 $\Delta = 5^\circ 07' 23.1''$ (RT)
 $D = 7^\circ 38' 22.0''$
 $L = 67.06'$
 $T = 33.55'$
 $R = 750.00'$

-Y4-
 PI Sta 14+54.69
 $\Delta = 56^\circ 17' 11.9''$ (RT)
 $D = 28^\circ 38' 52.4''$
 $L = 196.48'$
 $T = 106.98'$
 $R = 200.00'$
 $e = 04$
 $RO = 62.00'$
 $DS = 15$ mph

-Y4-
 PI Sta 11+13.01
 $\Delta = 12^\circ 32' 01.9''$ (RT)
 $D = 5^\circ 49' 29.5''$
 $L = 215.18'$
 $T = 108.02'$
 $R = 983.64'$
 $e = 04$
 $RO = 74.00'$

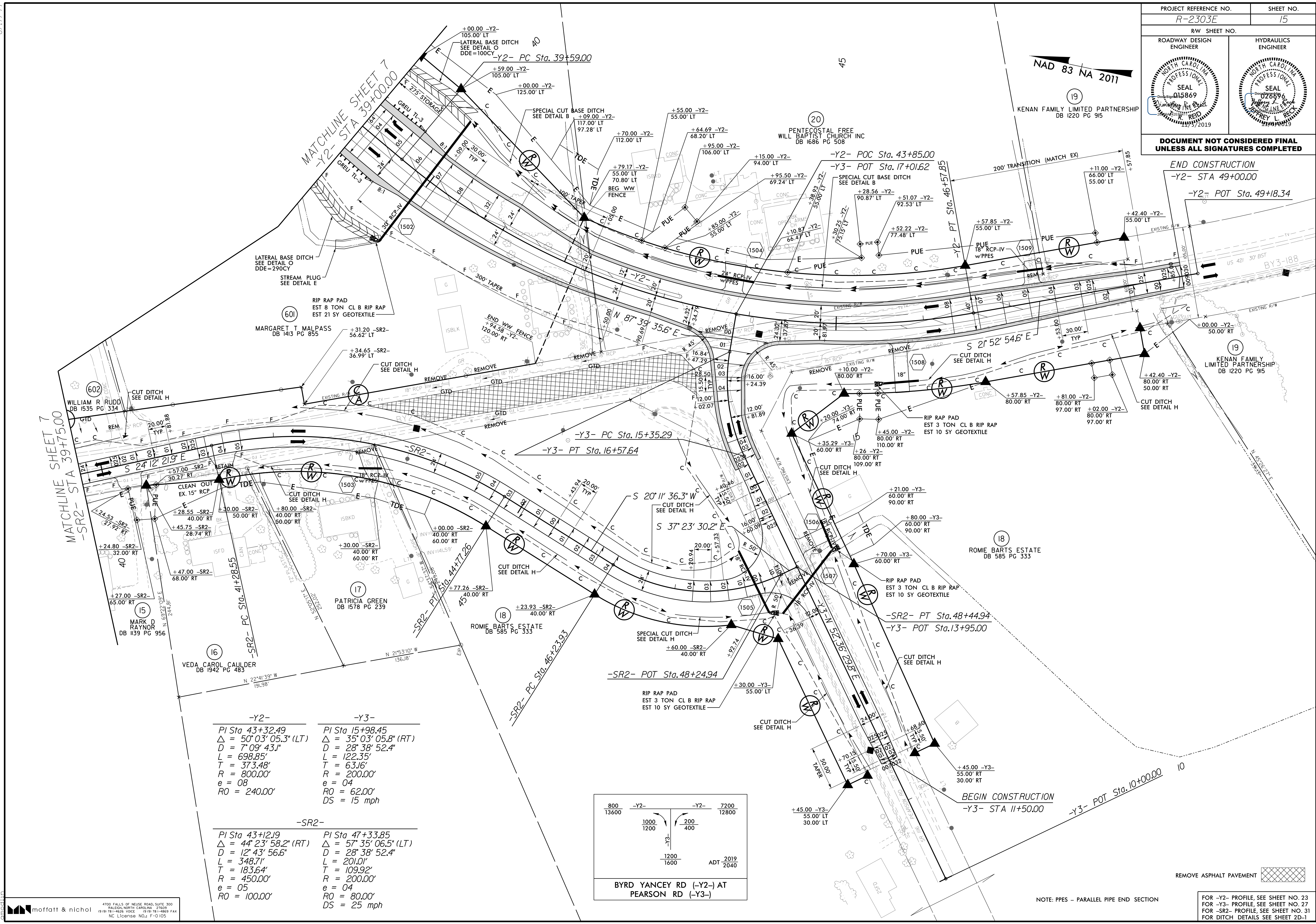
REMOVE ASPHALT PAVEMENT

NOTE: PPES - PARALLEL PIPE END SECTION

FOR -Y2- PROFILE, SEE SHEET NO. 22
 FOR -Y4- PROFILE, SEE SHEET NO. 27
 FOR -DR2- PROFILE, SEE SHEET NO. 33
 FOR DITCH DETAILS SEE SHEET 2D-1

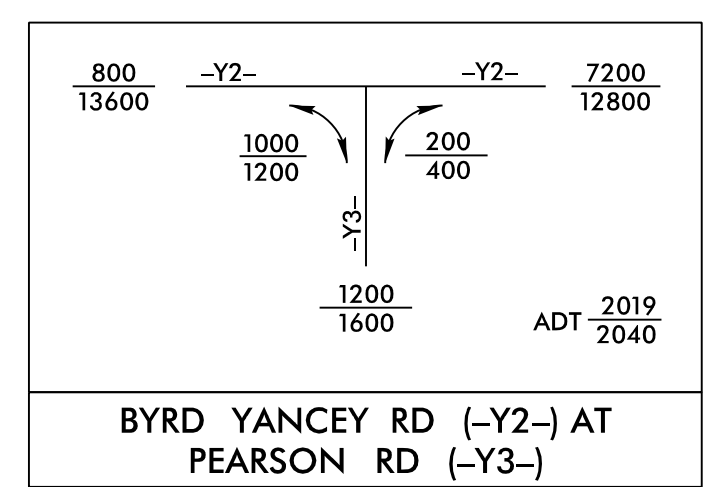
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1/5/2019 10:52:22-077\CA000\2303E\Roadway\Proj\N\2303E_rdy_psh_15.dgn

| | |
|--|---------------------|
| PROJECT REFERENCE NO. R-2303E | SHEET NO. 15 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |



| -Y2- | -Y3- |
|---------------------------------------|---------------------------------------|
| PI Sta. 43+32.49 | PI Sta. 15+98.45 |
| $\Delta = 50^{\circ} 03' 05.3''$ (LT) | $\Delta = 35^{\circ} 03' 05.8''$ (RT) |
| $D = 7^{\circ} 09' 43.1''$ | $D = 28^{\circ} 38' 52.4''$ |
| $L = 698.85'$ | $L = 122.35'$ |
| $T = 373.48'$ | $T = 63.16'$ |
| $R = 800.00'$ | $R = 200.00'$ |
| $e = 08$ | $e = 04$ |
| $RO = 240.00'$ | $RO = 62.00'$ |
| | $DS = 15$ mph |

| -SR2- | -SR2- |
|---------------------------------------|---------------------------------------|
| PI Sta. 43+12.19 | PI Sta. 47+33.85 |
| $\Delta = 44^{\circ} 23' 58.2''$ (RT) | $\Delta = 57^{\circ} 35' 06.5''$ (LT) |
| $D = 12^{\circ} 43' 56.6''$ | $D = 28^{\circ} 38' 52.4''$ |
| $L = 348.71'$ | $L = 201.01'$ |
| $T = 183.64'$ | $T = 109.92'$ |
| $R = 450.00'$ | $R = 200.00'$ |
| $e = 05$ | $e = 04$ |
| $RO = 100.00'$ | $RO = 80.00'$ |
| | $DS = 25$ mph |

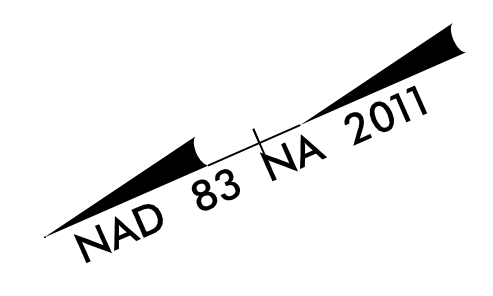


NOTE: PPES - PARALLEL PIPE END SECTION

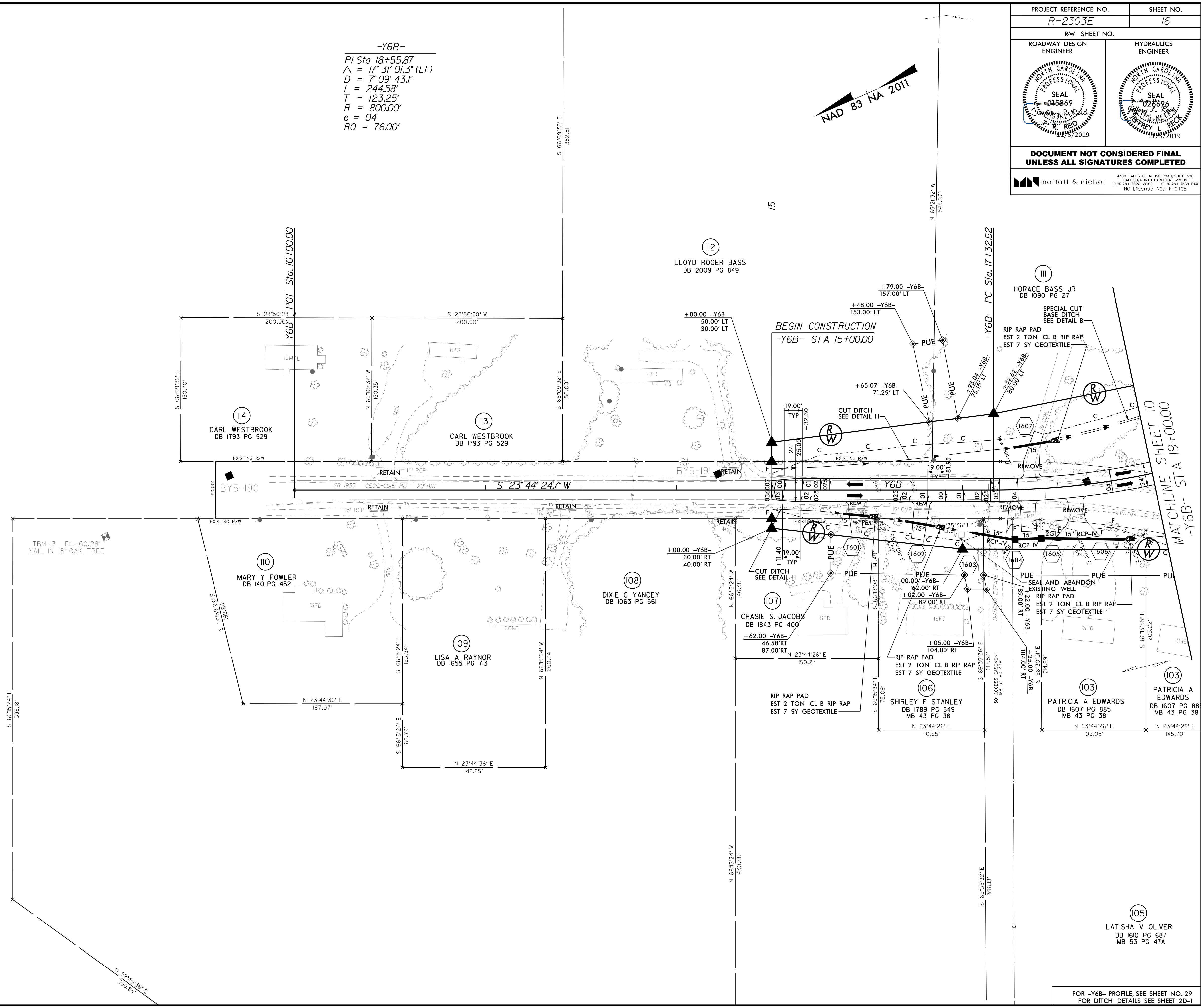
REMOVE ASPHALT PAVEMENT
FOR -Y2- PROFILE, SEE SHEET NO. 23
FOR -Y3- PROFILE, SEE SHEET NO. 27
FOR -SR2- PROFILE, SEE SHEET NO. 31
FOR DITCH DETAILS SEE SHEET 2D-1

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-Y6B-
PI Sta 18+55.87
 $\Delta = 17^{\circ} 31' 01.3''$ (LT)
D = 7' 09" 43.1"
L = 244.58'
T = 123.25'
R = 800.00'
e = 04
RO = 76.00'



| | | | |
|--|--|---|--|
| PROJECT REFERENCE NO. R-2303E | | SHEET NO. 16 | |
| RW SHEET NO. | | HYDRAULICS ENGINEER | |
| ROADWAY DESIGN ENGINEER | | HYDRAULICS ENGINEER | |
| | | | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | | | |
| | | <small>4700 FALLS OF NEUSE ROAD, SUITE 300 RALEIGH, NORTH CAROLINA 27609 (919) 781-4626 VOICE (919) 781-4869 FAX NC License No.: F-0105</small> | |



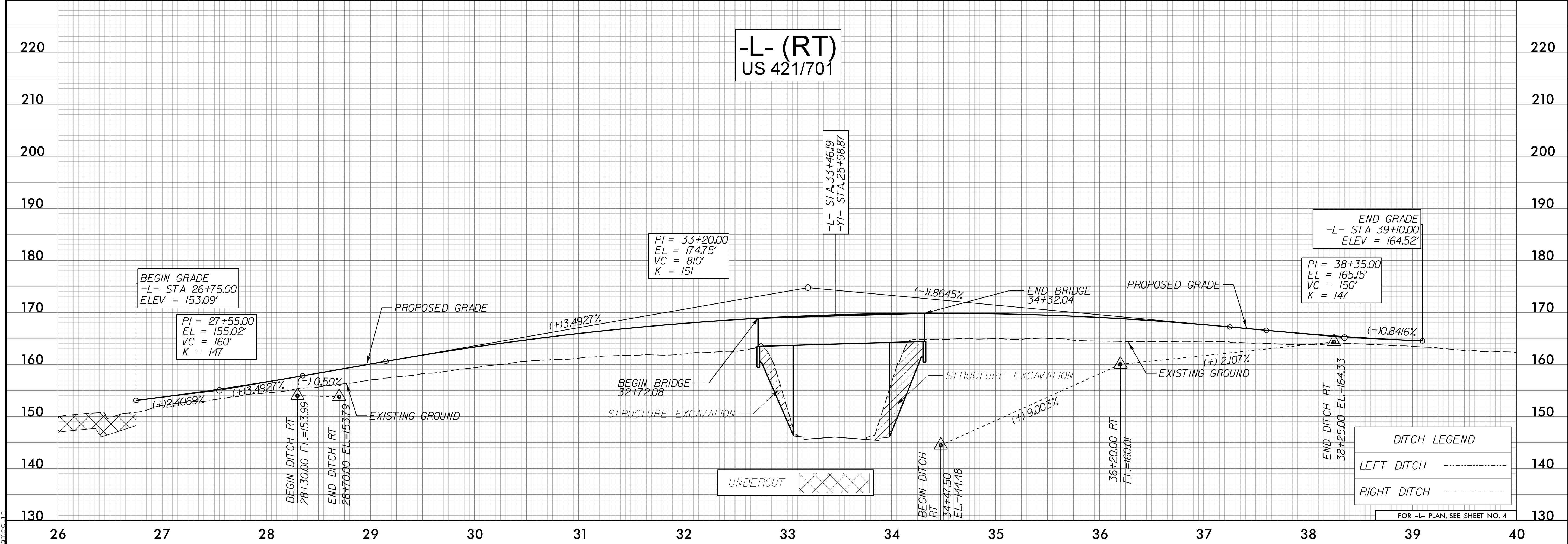
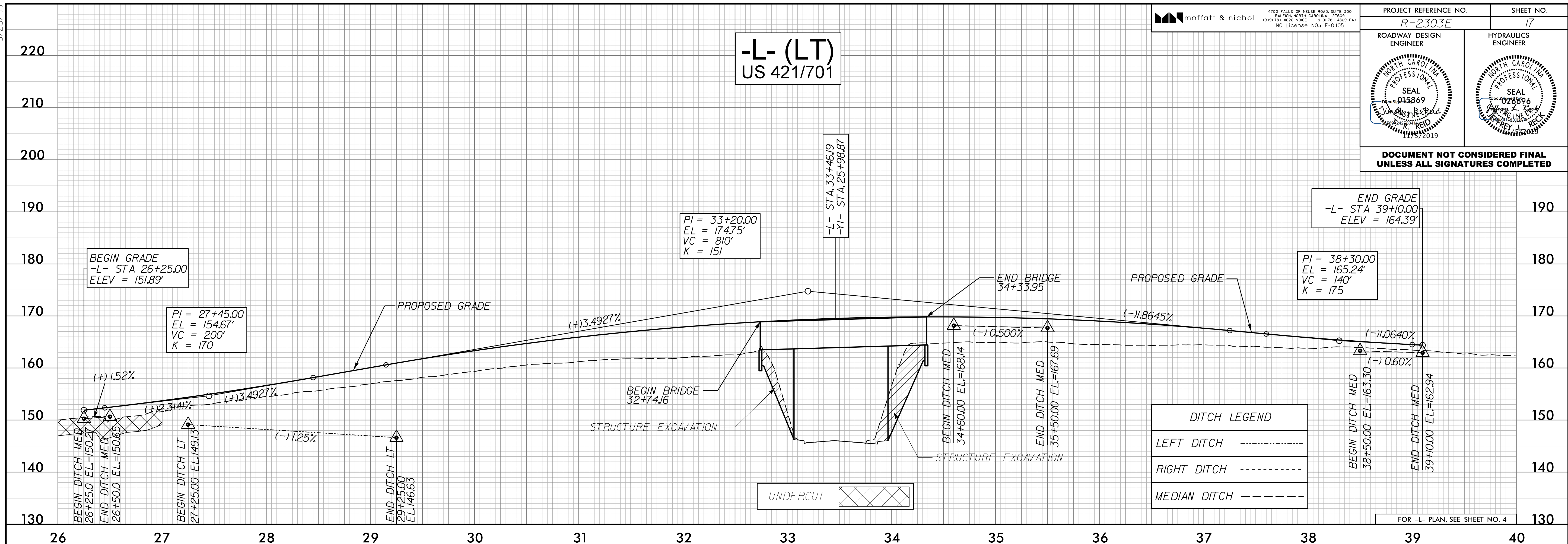
FOR -Y6B- PROFILE, SEE SHEET NO. 29
FOR DITCH DETAILS SEE SHEET 2D-1

5/28/2019



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NC License No. F-0105

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|--|---------------------|------------------------|
| PROJECT REFERENCE NO. R-2303E | | SHEET NO. 17 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER | |
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| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | | |



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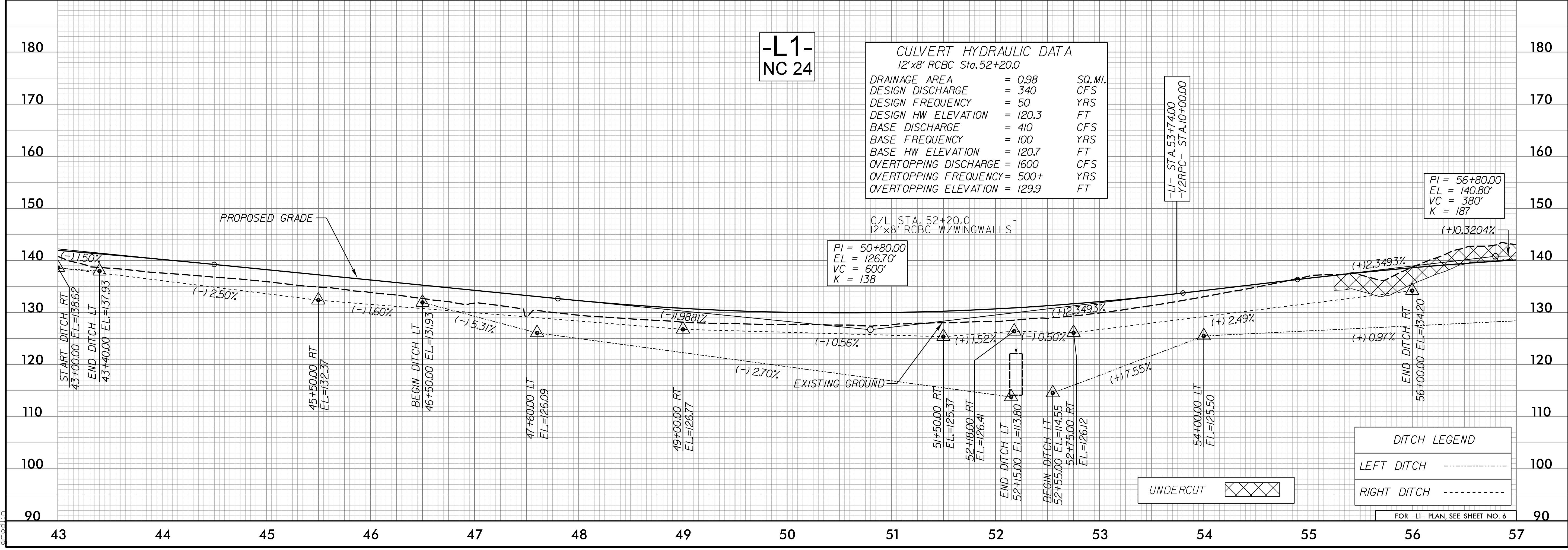
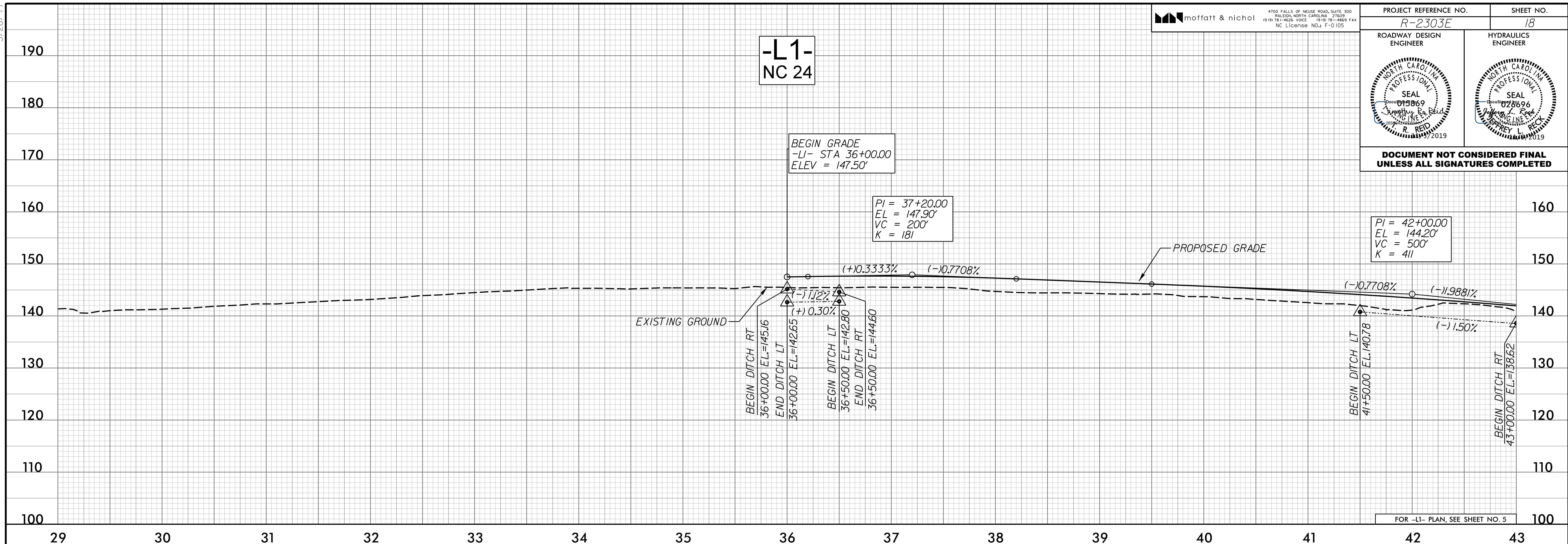
5/28/99



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|---|------------------------|
| PROJECT REFERENCE NO. R-2303E | SHEET NO. 18 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
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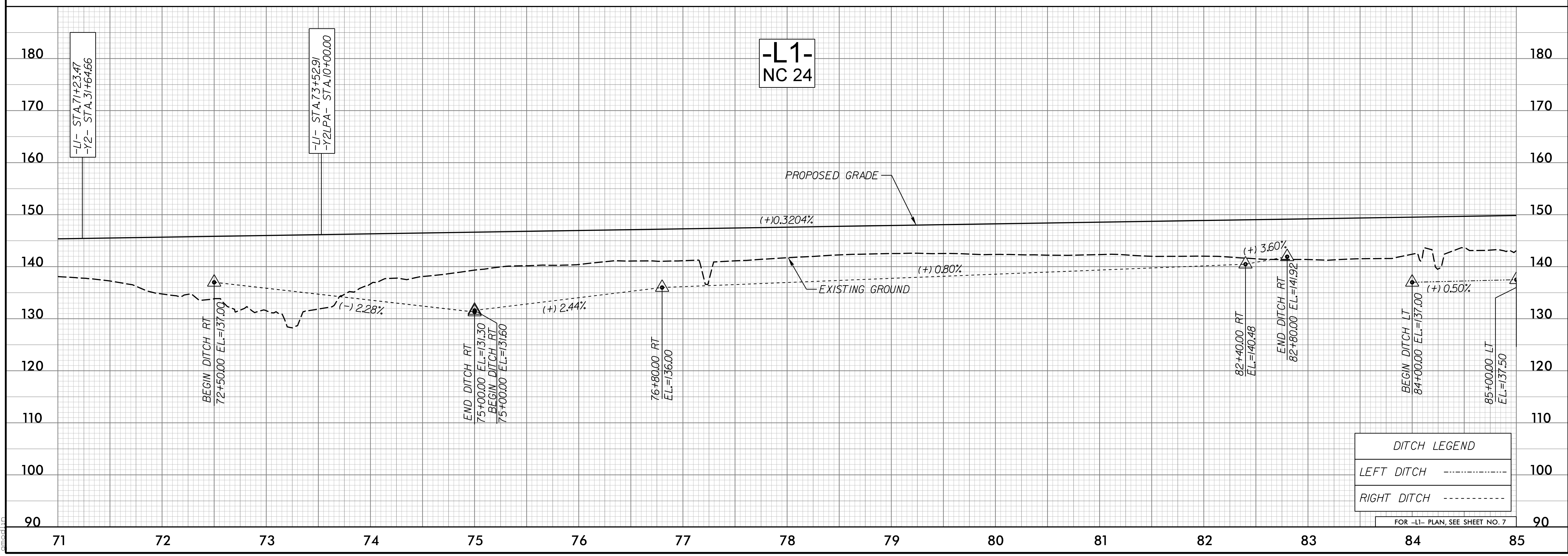
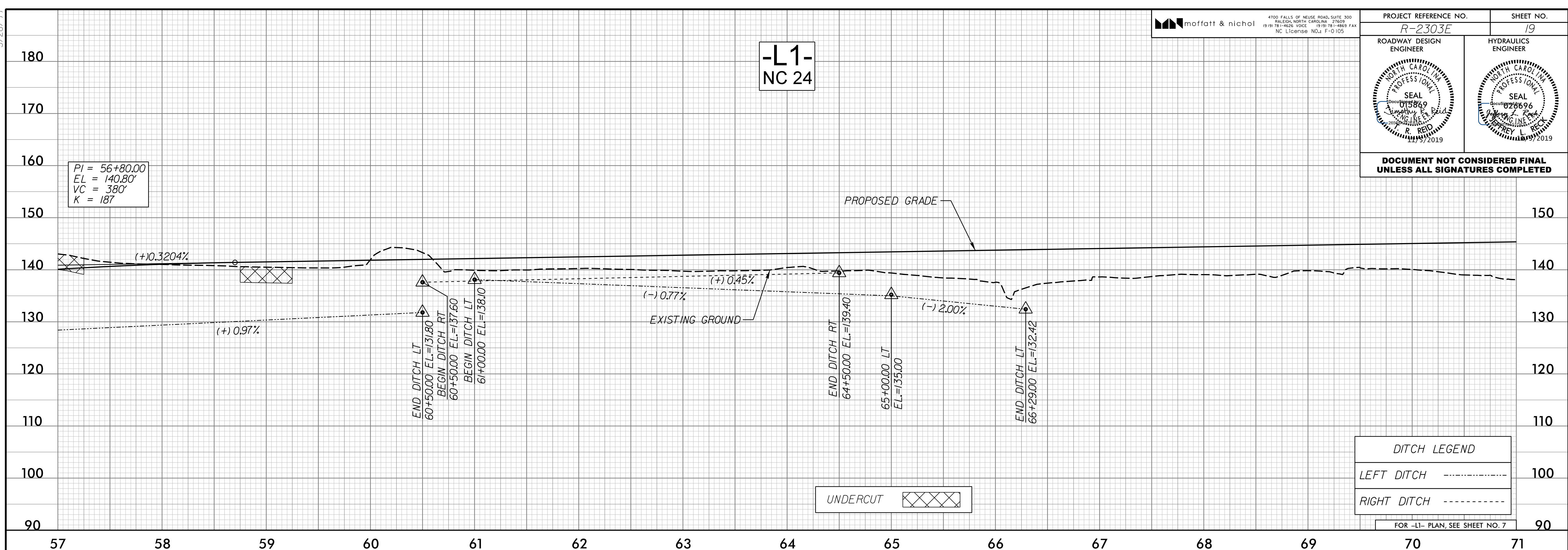
5/28/19



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| | | |
|---|------------------------|------------------------|
| PROJECT REFERENCE NO. R-2303E | | SHEET NO. 19 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER | |
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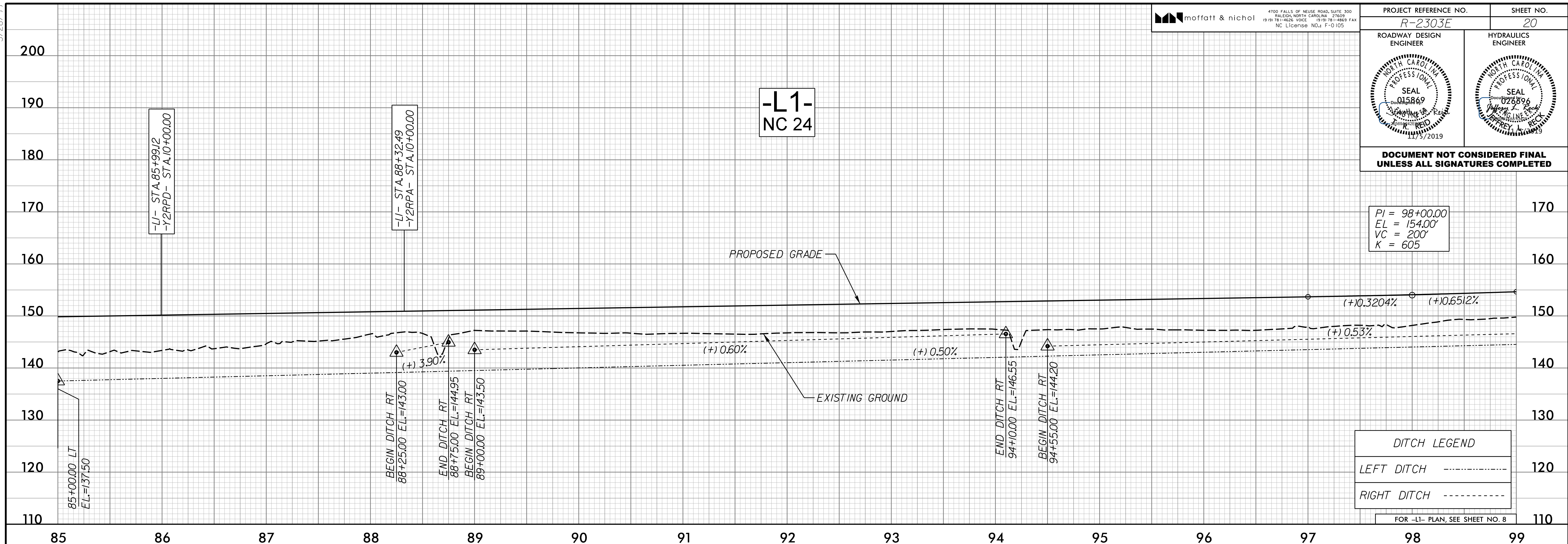


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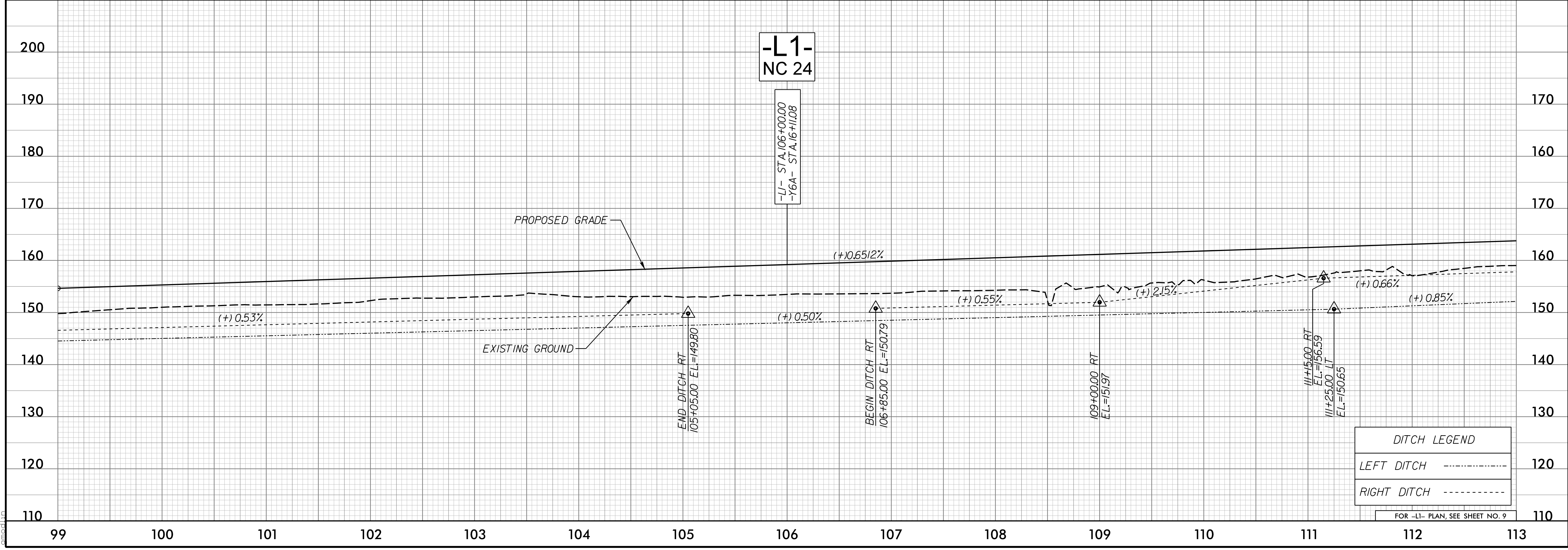
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| PROJECT REFERENCE NO. R-2303E | | SHEET NO. 20 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER | |
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PI = 98+00.00
EL = 154.00'
VC = 200'
K = 605



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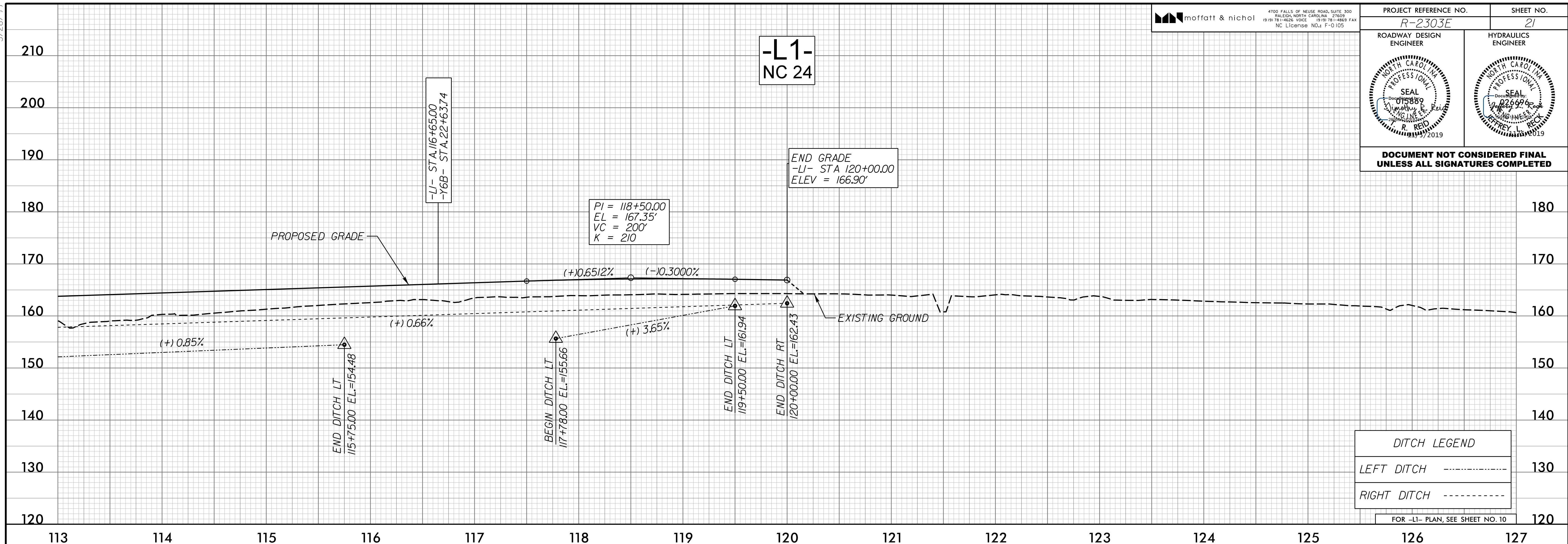


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|---|------------------------|
| PROJECT REFERENCE NO. R-2303E | SHEET NO. 21 |
|---|------------------------|

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|--------------------------------|----------------------------|
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
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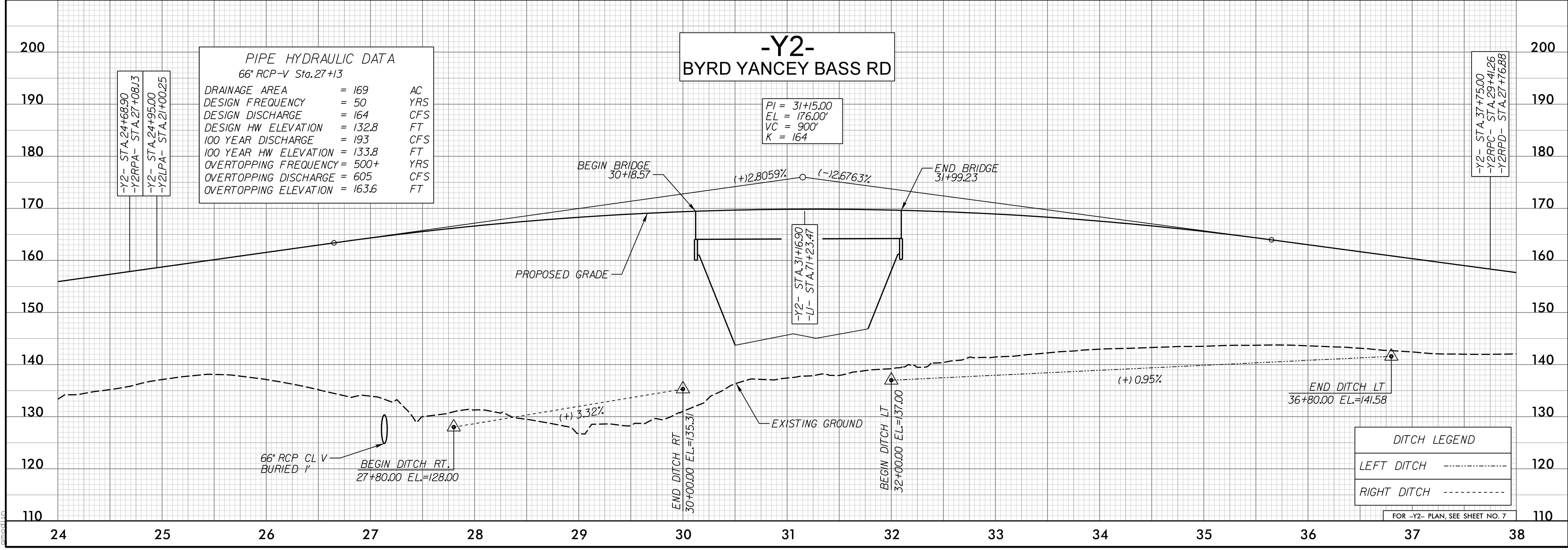
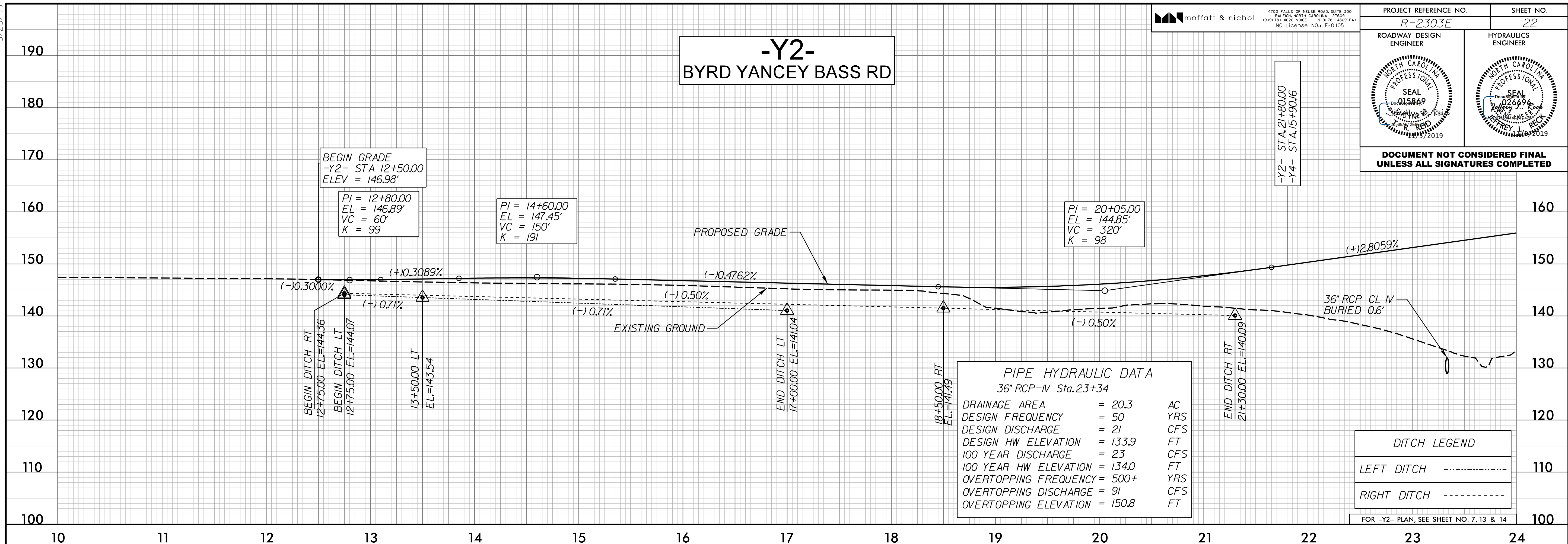
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|---|------------------------|
| PROJECT REFERENCE NO. R-2303E | SHEET NO. 22 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
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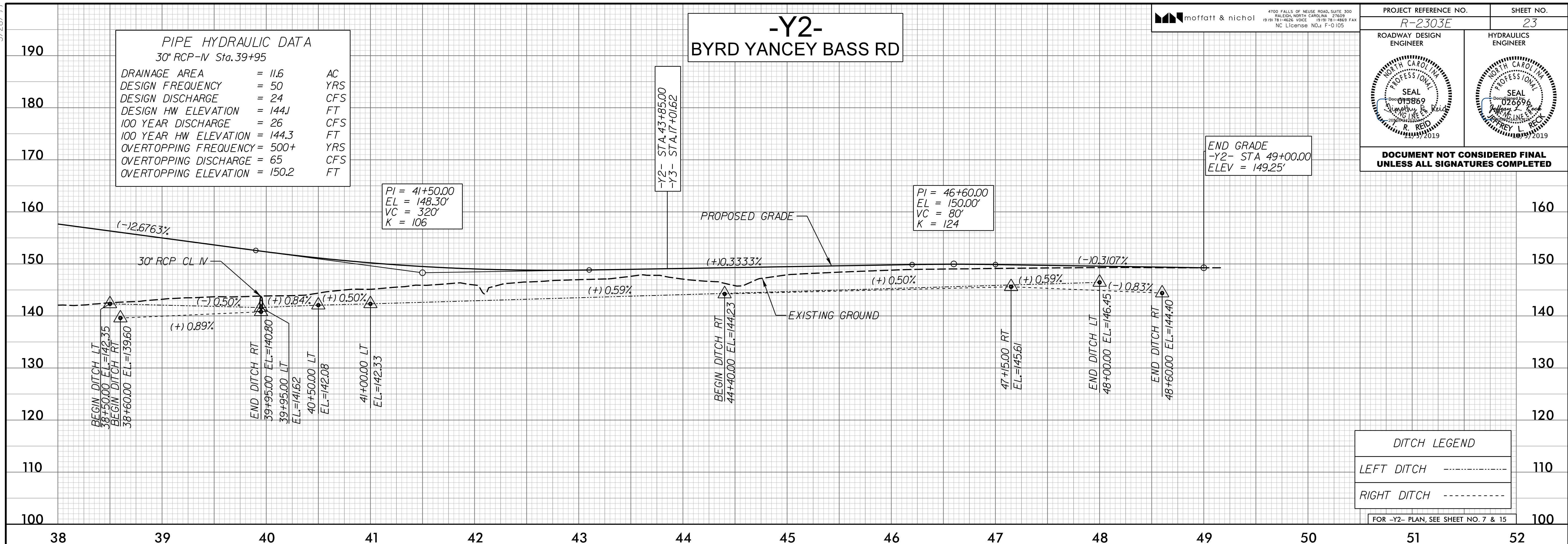
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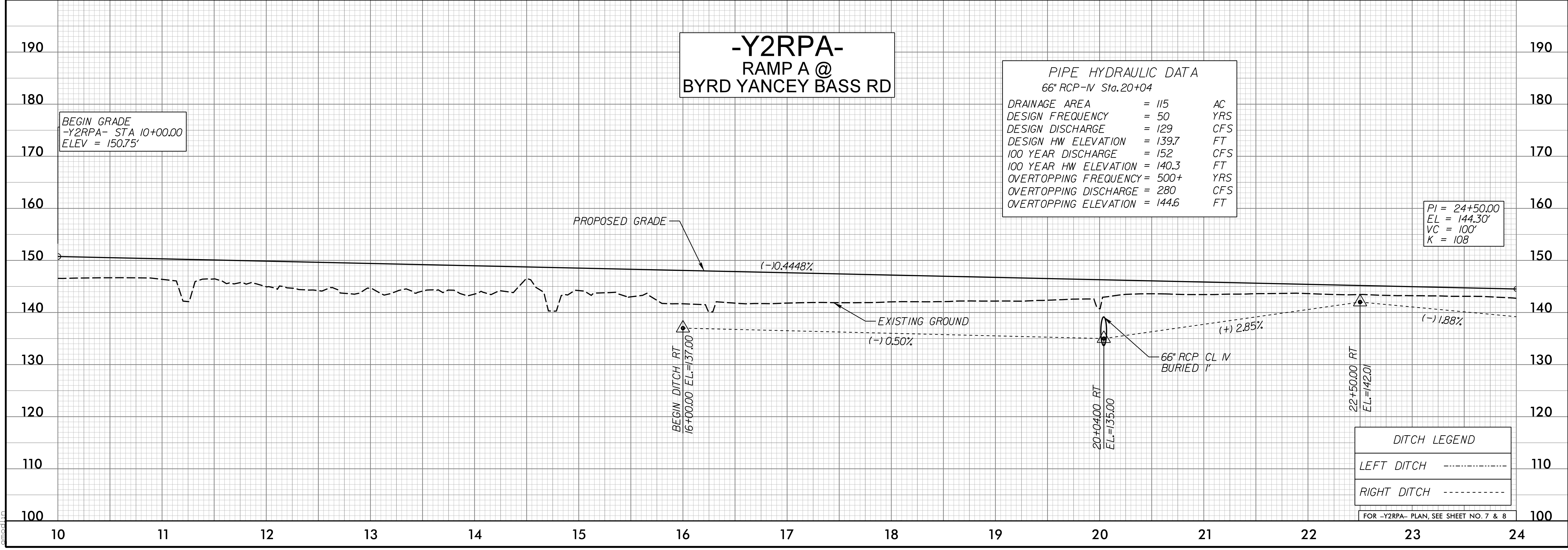


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|---|------------------------|
| PROJECT REFERENCE NO. R-2303E | SHEET NO. 23 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
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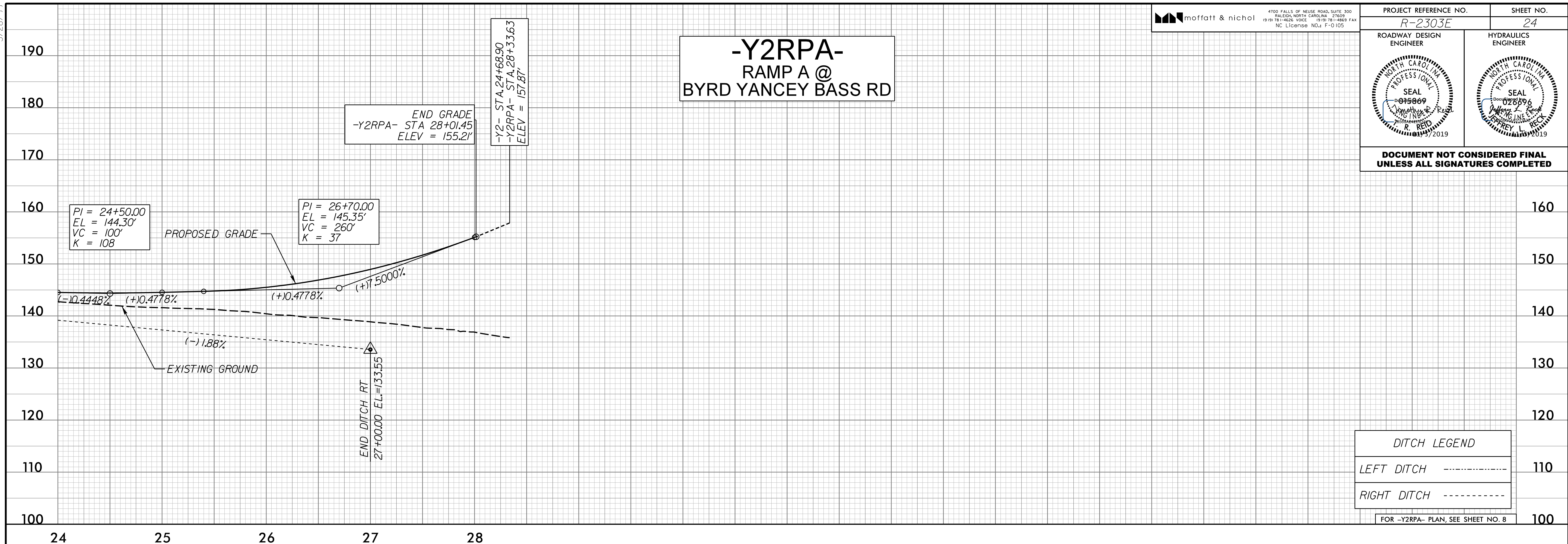
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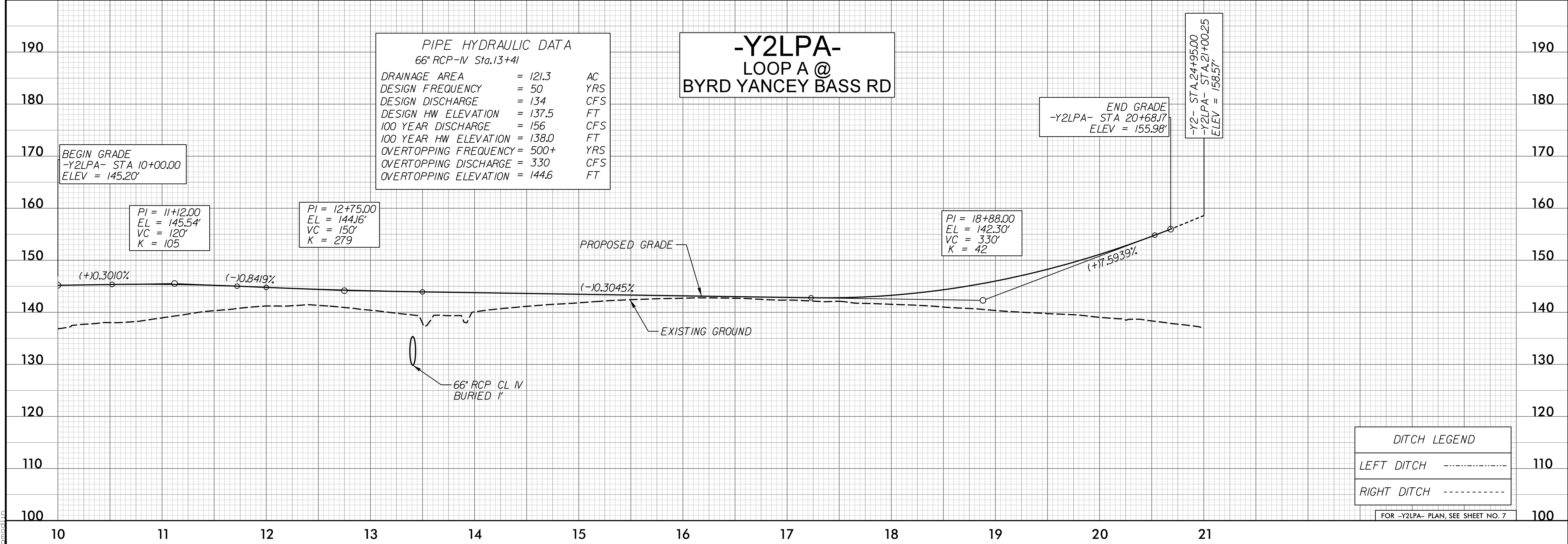
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| PROJECT REFERENCE NO. R-2303E | SHEET NO. 24 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

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| DITCH LEGEND | |
|--------------|-------|
| LEFT DITCH | ----- |
| RIGHT DITCH | ----- |

FOR -Y2RPA- PLAN, SEE SHEET NO. 8



| PIPE HYDRAULIC DATA | |
|-----------------------|------------|
| 66" RCP-IV Sta. 13+41 | |
| DRAINAGE AREA | = 121.3 AC |
| DESIGN FREQUENCY | = 50 YRS |
| DESIGN DISCHARGE | = 134 CFS |
| DESIGN HW ELEVATION | = 137.5 FT |
| 100 YEAR DISCHARGE | = 156 CFS |
| 100 YEAR HW ELEVATION | = 138.0 FT |
| OVERTOPPING FREQUENCY | = 500+ YRS |
| OVERTOPPING DISCHARGE | = 330 CFS |
| OVERTOPPING ELEVATION | = 144.6 FT |

| DITCH LEGEND | |
|--------------|-------|
| LEFT DITCH | ----- |
| RIGHT DITCH | ----- |

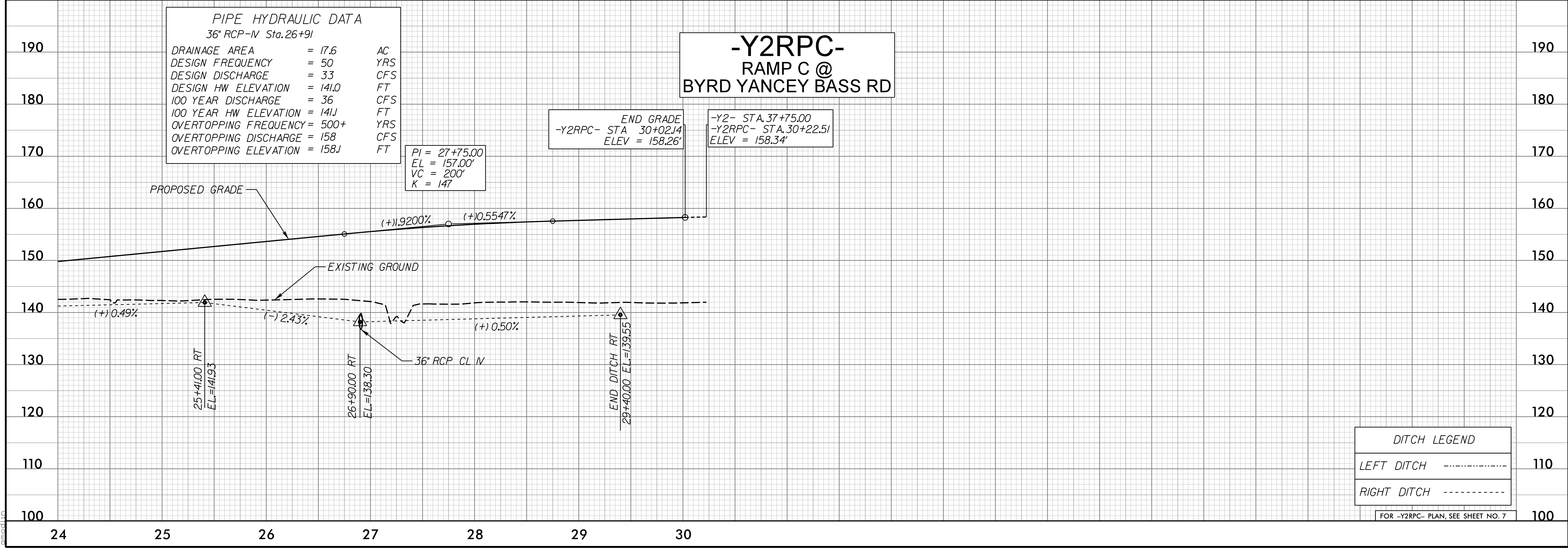
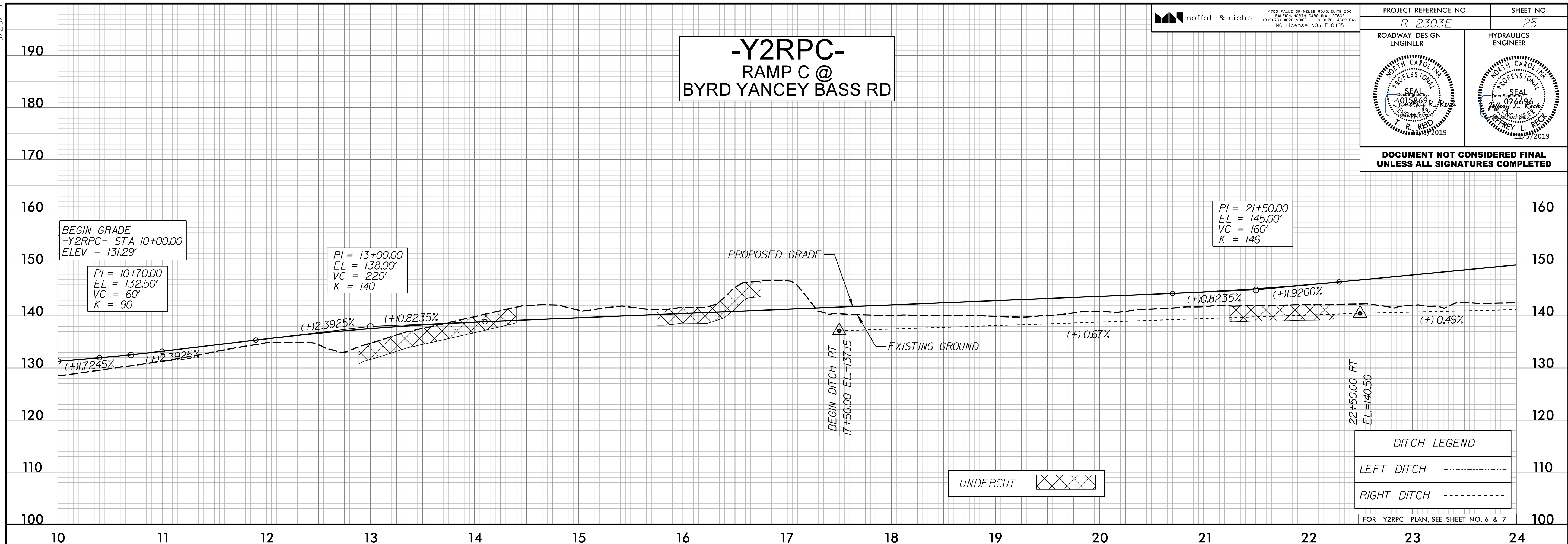
FOR -Y2LPA- PLAN, SEE SHEET NO. 7

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|---|-------------------------|
| PROJECT REFERENCE NO. R-2303E | SHEET NO. 25 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

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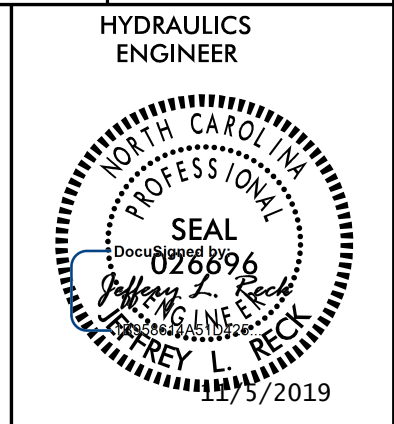
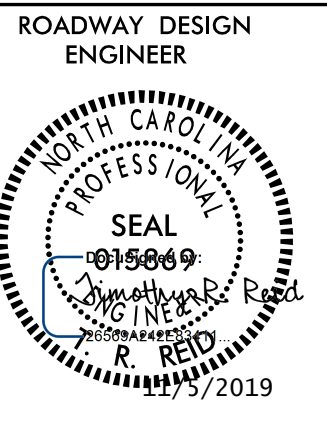
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PROJECT REFERENCE NO. R-2303E SHEET NO. 26



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-Y2RPD- RAMP D @ BYRD YANCEY BASS RD

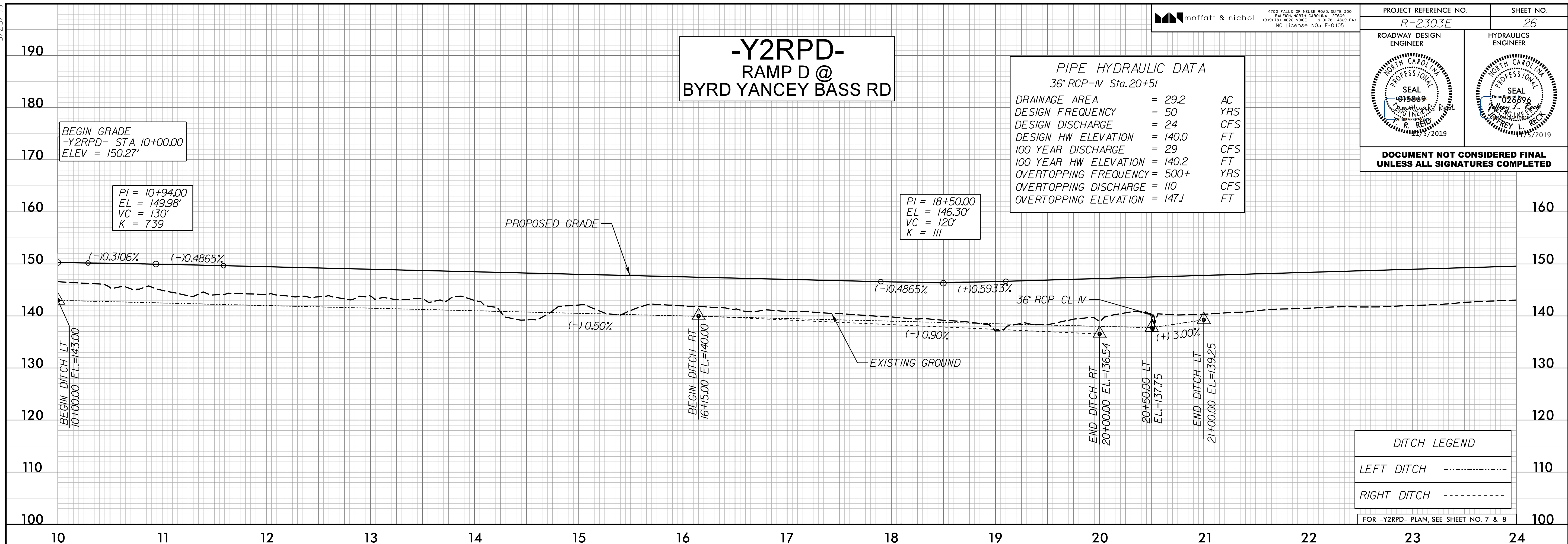
PIPE HYDRAULIC DATA
36" RCP - IV Sta. 20+51

| | | |
|-----------------------|---------|-----|
| DRAINAGE AREA | = 29.2 | AC |
| DESIGN FREQUENCY | = 50 | YRS |
| DESIGN DISCHARGE | = 24 | CFS |
| DESIGN HW ELEVATION | = 140.0 | FT |
| 100 YEAR DISCHARGE | = 29 | CFS |
| 100 YEAR HW ELEVATION | = 140.2 | FT |
| OVERTOPPING FREQUENCY | = 500+ | YRS |
| OVERTOPPING DISCHARGE | = 110 | CFS |
| OVERTOPPING ELEVATION | = 147J | FT |

BEGIN GRADE
-Y2RPD- STA 10+00.00
ELEV = 150.27'

PI = 10+94.00
EL = 149.98'
VC = 130'
K = 739

PI = 18+50.00
EL = 146.30'
VC = 120'
K = 111



DITCH LEGEND

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

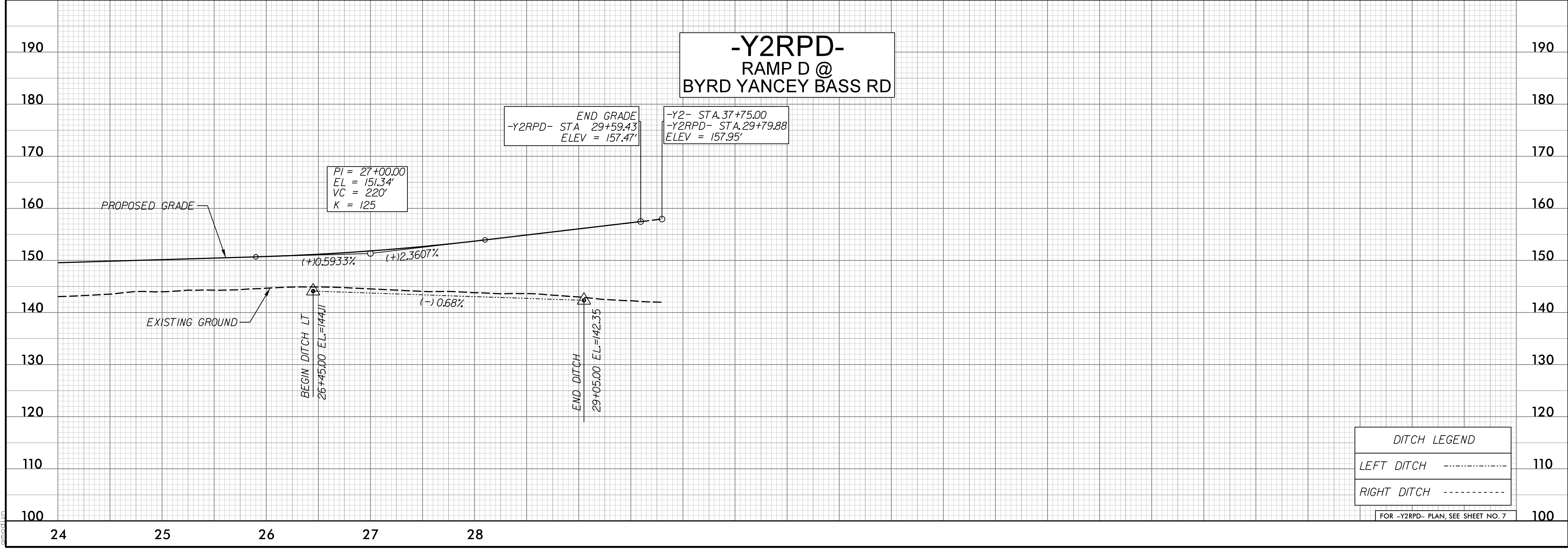
FOR -Y2RPD- PLAN, SEE SHEET NO. 7 & 8

-Y2RPD- RAMP D @ BYRD YANCEY BASS RD

END GRADE
-Y2RPD- STA 29+59.43
ELEV = 157.47'

-Y2- STA. 37+75.00
-Y2RPD- STA. 29+79.88
ELEV = 157.95'

PI = 27+00.00
EL = 151.34'
VC = 220'
K = 125



DITCH LEGEND

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

FOR -Y2RPD- PLAN, SEE SHEET NO. 7

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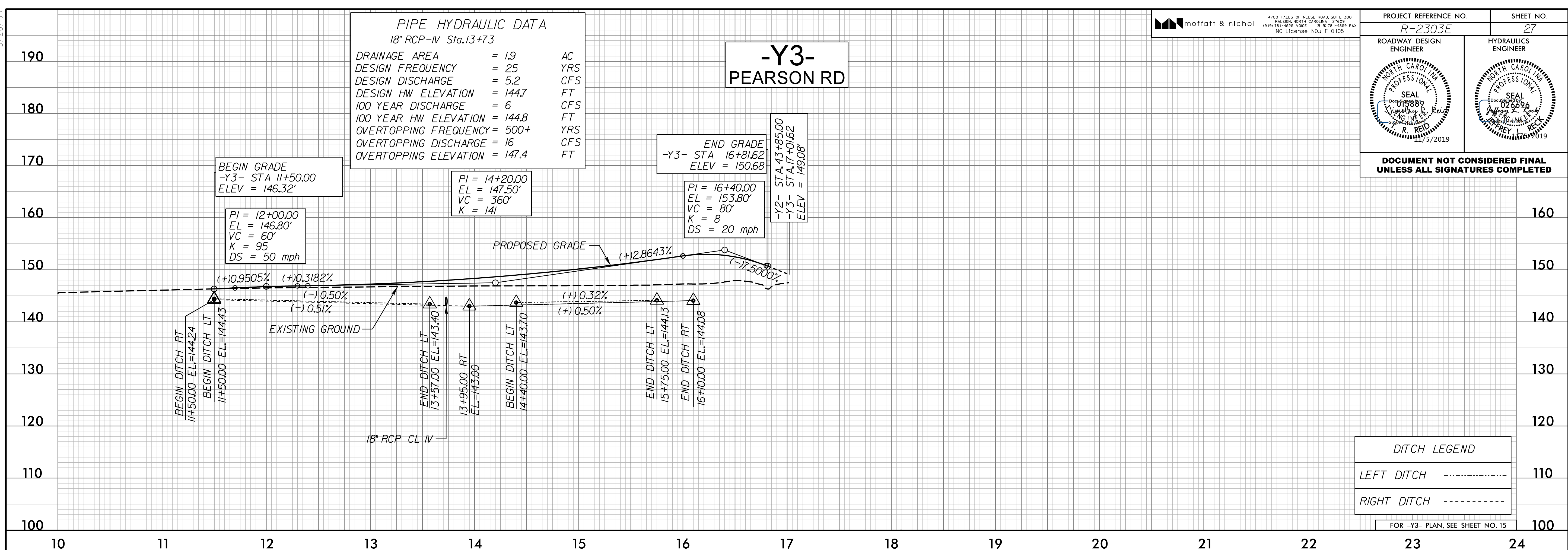
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|---|---|
| PROJECT REFERENCE NO. R-2303E | SHEET NO. 27 |
| ROADWAY DESIGN ENGINEER R. REID SEAL 075889 11/5/2019 | HYDRAULICS ENGINEER JEFFREY L. RECK SEAL 026698 11/5/2019 |

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

PIPE HYDRAULIC DATA
18" RCP-IV Sta. 13+73

| | | |
|-----------------------|---------|-----|
| DRAINAGE AREA | = 1.9 | AC |
| DESIGN FREQUENCY | = 25 | YRS |
| DESIGN DISCHARGE | = 5.2 | CFS |
| DESIGN HW ELEVATION | = 144.7 | FT |
| 100 YEAR DISCHARGE | = 6 | CFS |
| 100 YEAR HW ELEVATION | = 144.8 | FT |
| OVERTOPPING FREQUENCY | = 500+ | YRS |
| OVERTOPPING DISCHARGE | = 16 | CFS |
| OVERTOPPING ELEVATION | = 147.4 | FT |

-Y3- PEARSON RD



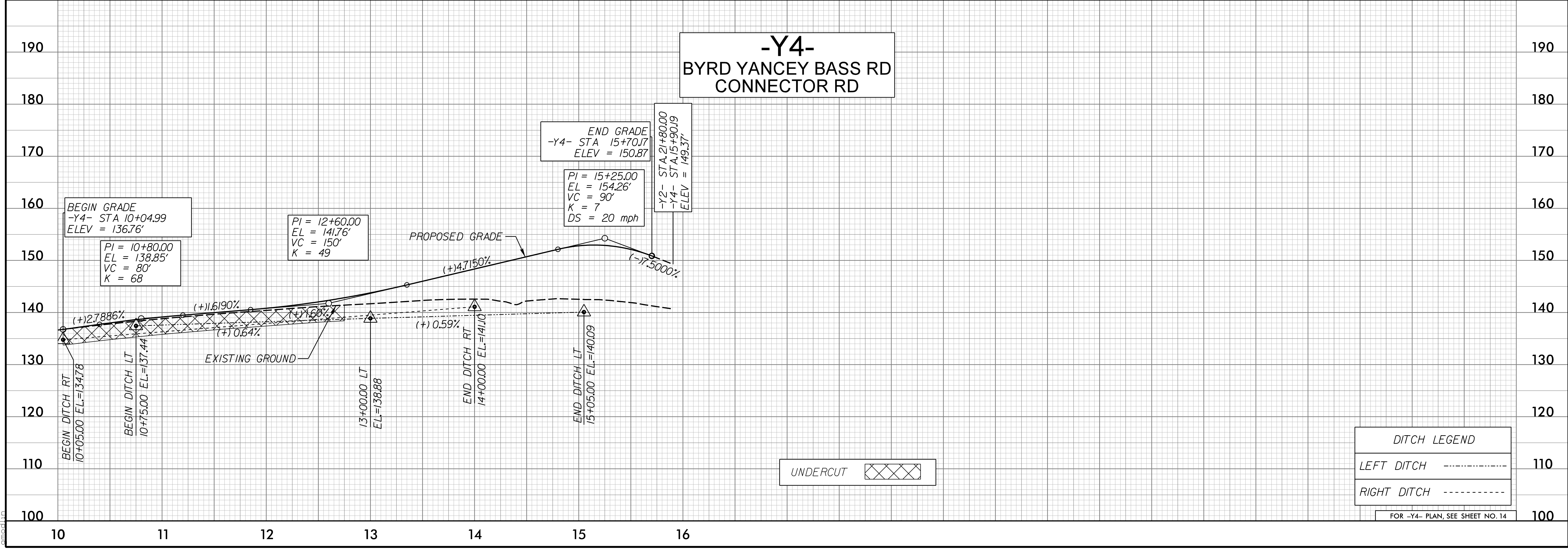
DITCH LEGEND

LEFT DITCH -----

RIGHT DITCH -----

FOR -Y3- PLAN, SEE SHEET NO. 15

-Y4- BYRD YANCEY BASS RD CONNECTOR RD



DITCH LEGEND

LEFT DITCH -----

RIGHT DITCH -----

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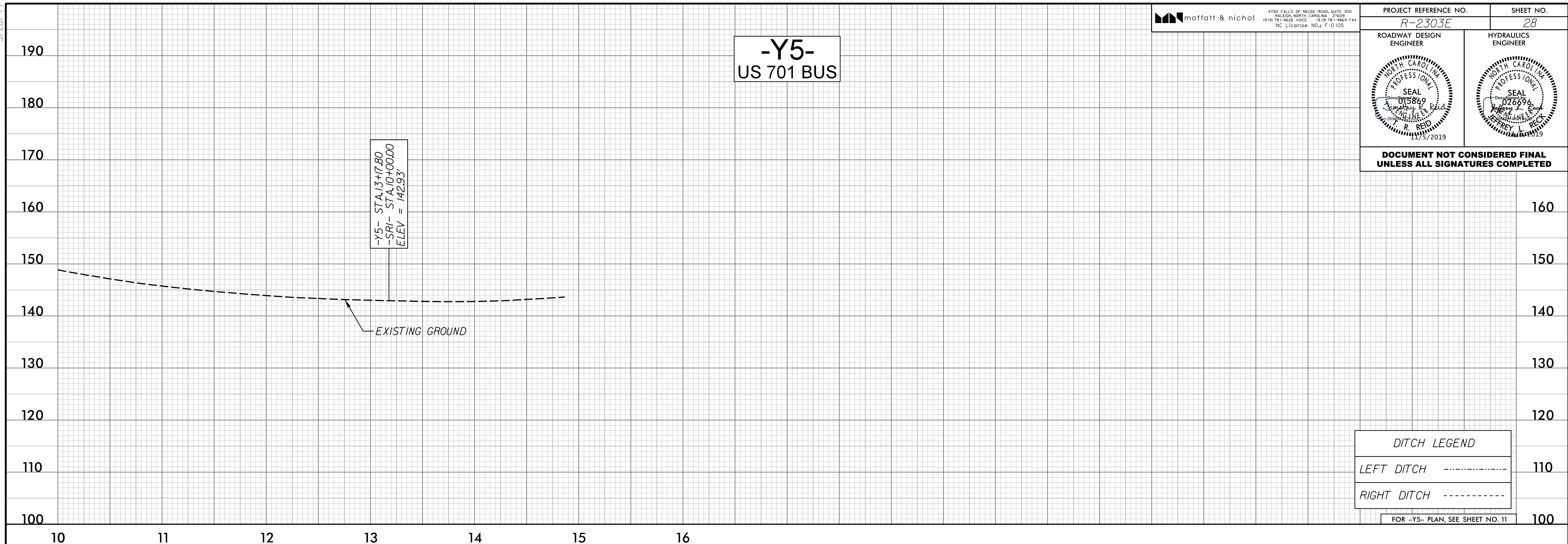
FOR -Y4- PLAN, SEE SHEET NO. 14

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| PROJECT REFERENCE NO. <i>R-2303E</i> | SHEET NO. <i>28</i> |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
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DITCH LEGEND

LEFT DITCH - - - - -

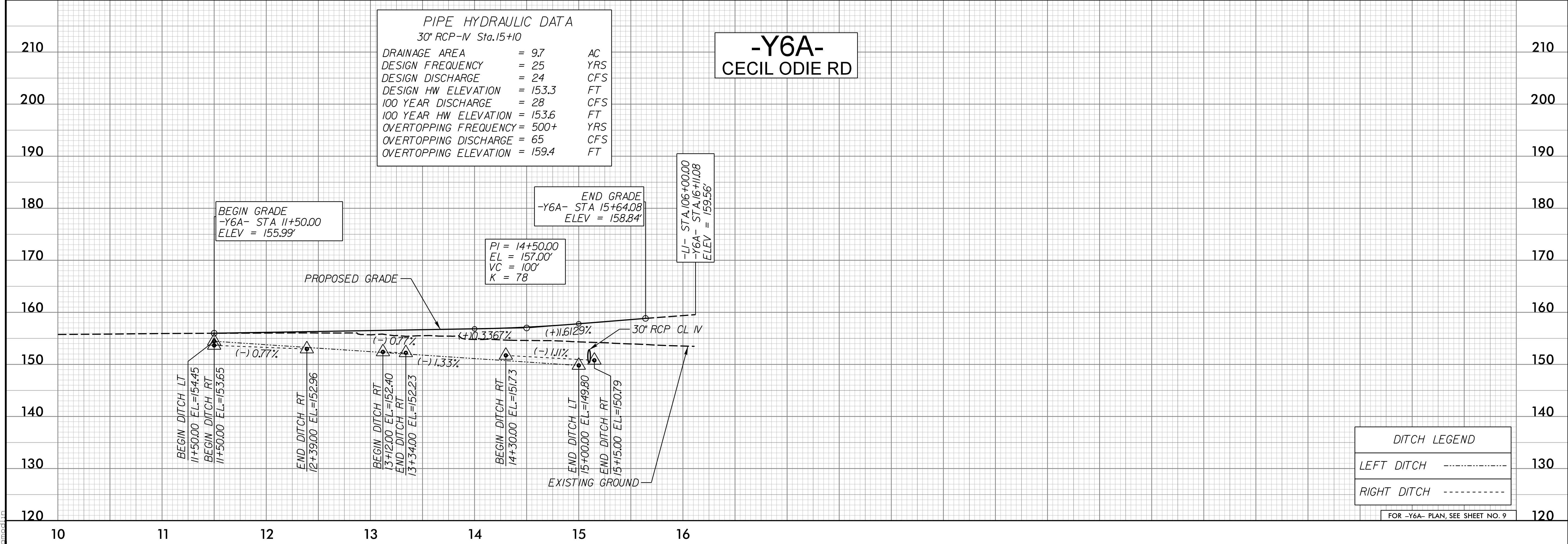
RIGHT DITCH - - - - -

FOR -Y5- PLAN, SEE SHEET NO. 11

PIPE HYDRAULIC DATA
 30" RCP-N Sta.15+10

| | | |
|-----------------------|---------|-----|
| DRAINAGE AREA | = 9.7 | AC |
| DESIGN FREQUENCY | = 25 | YRS |
| DESIGN DISCHARGE | = 24 | CFS |
| DESIGN HW ELEVATION | = 153.3 | FT |
| 100 YEAR DISCHARGE | = 28 | CFS |
| 100 YEAR HW ELEVATION | = 153.6 | FT |
| OVERTOPPING FREQUENCY | = 500+ | YRS |
| OVERTOPPING DISCHARGE | = 65 | CFS |
| OVERTOPPING ELEVATION | = 159.4 | FT |

**-Y6A-
 CECIL ODIE RD**



DITCH LEGEND

LEFT DITCH - - - - -

RIGHT DITCH - - - - -

FOR -Y6A- PLAN, SEE SHEET NO. 9

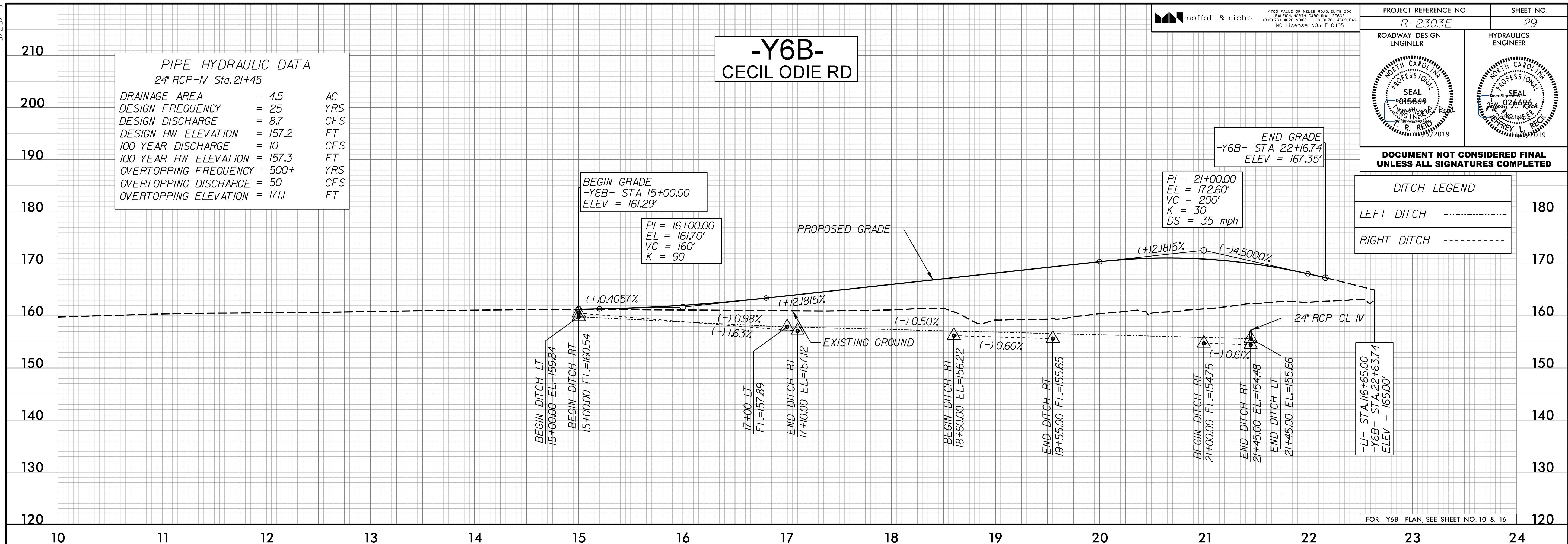
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5/28/2019

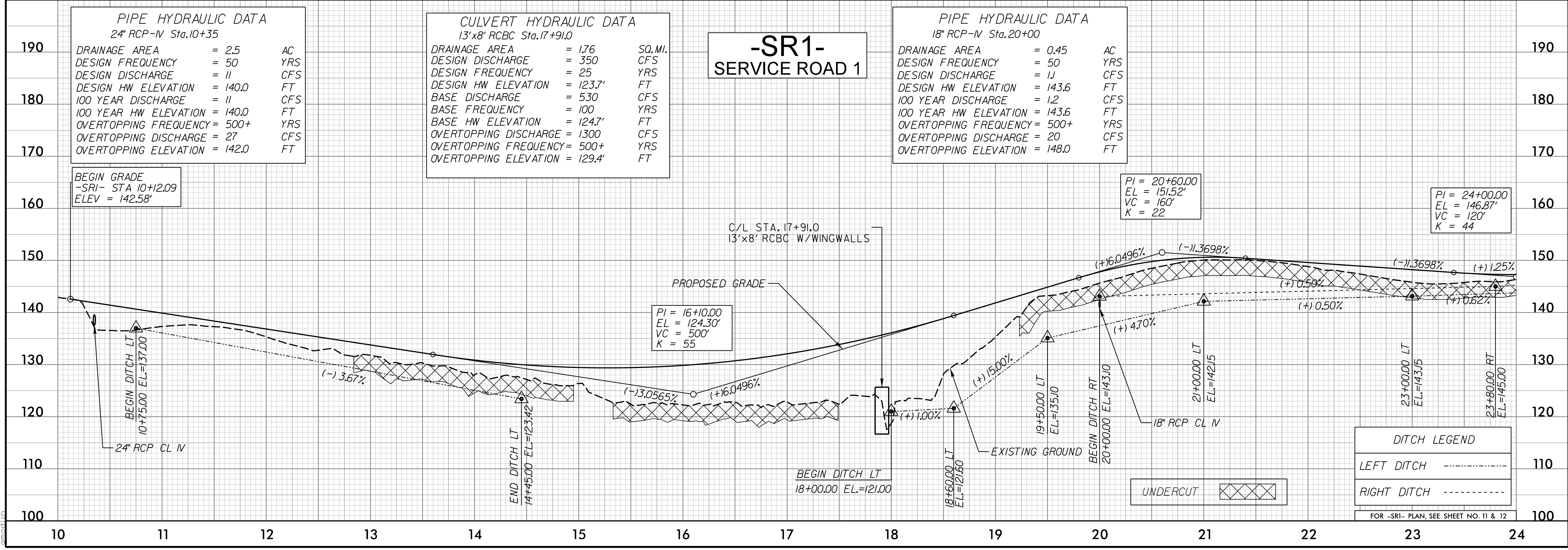
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| PROJECT REFERENCE NO. R-2303E | SHEET NO. 29 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
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| DITCH LEGEND | |
|--------------|-------|
| LEFT DITCH | ----- |
| RIGHT DITCH | ----- |



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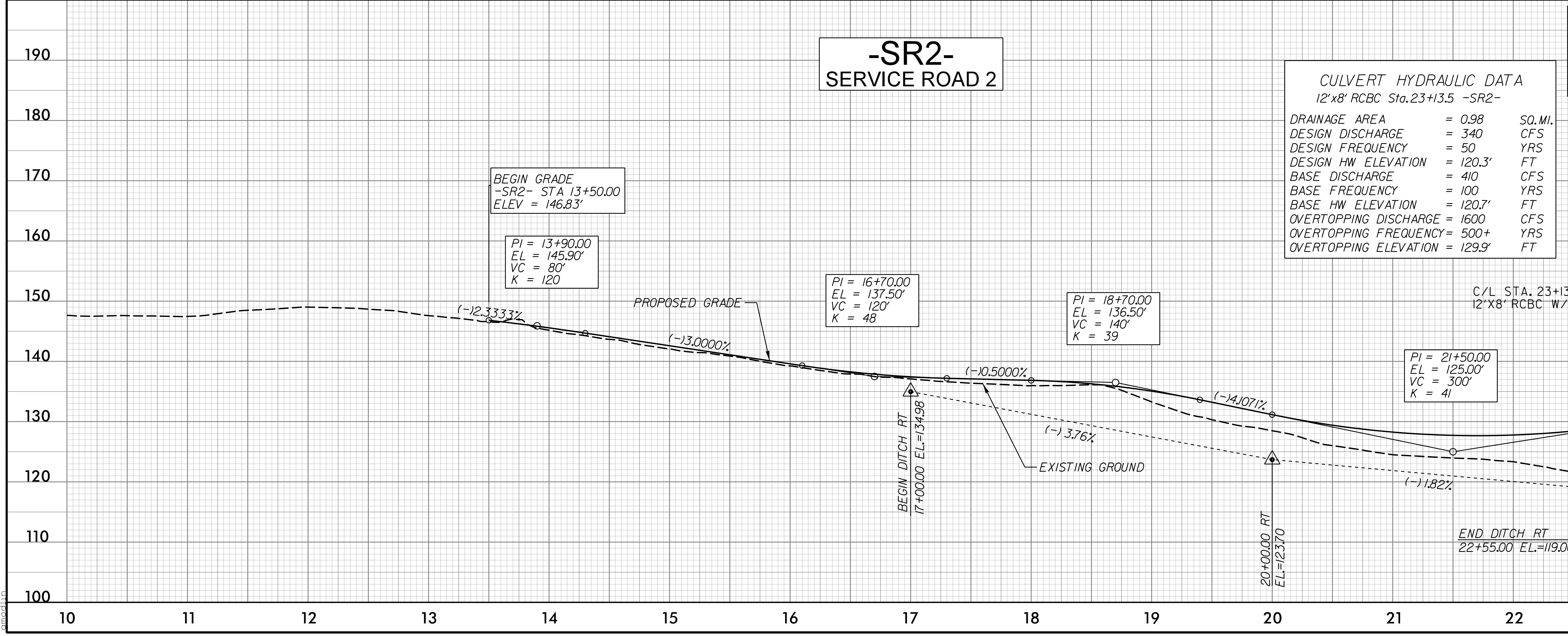
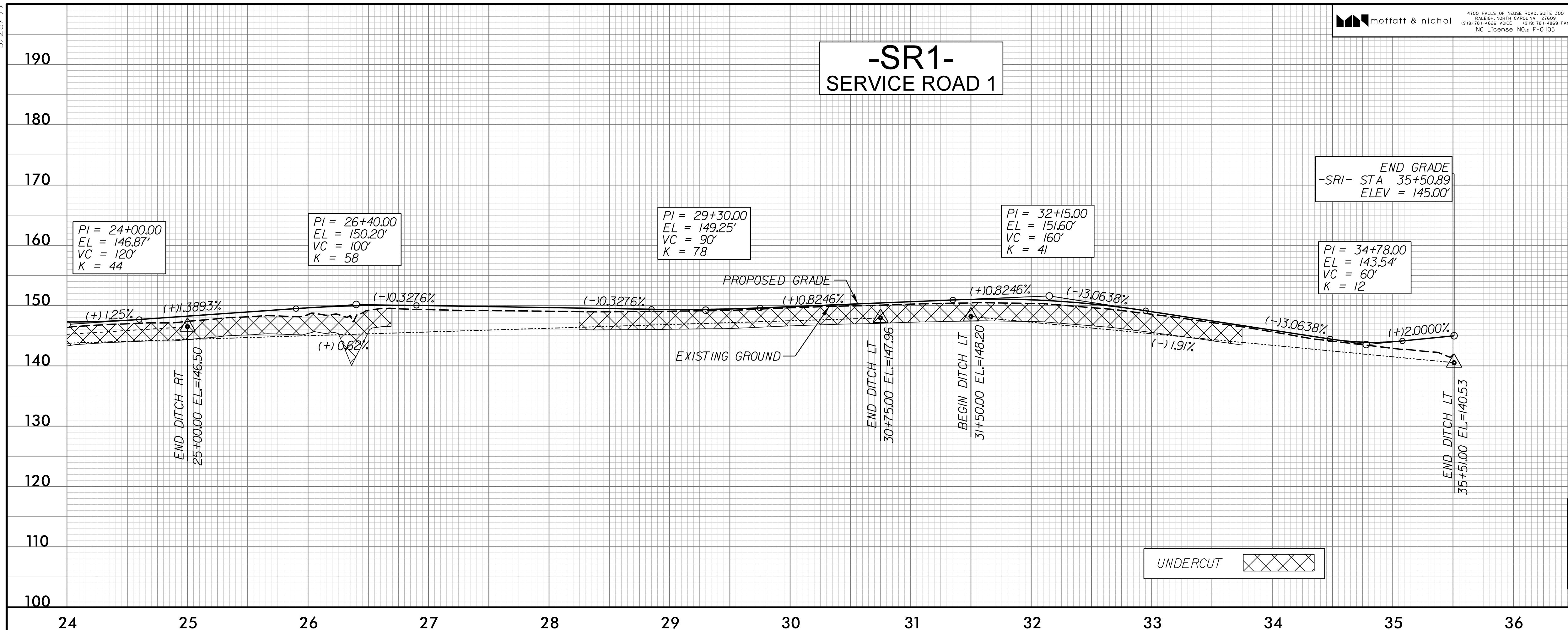


5/28/99

moffatt & nichol
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|---|------------------------------------|
| PROJECT REFERENCE NO. R-2303E | SHEET NO. 30 |
| ROADWAY DESIGN ENGINEER R. REID | HYDRAULICS ENGINEER REID |
| | |

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UNLESS ALL SIGNATURES COMPLETED**



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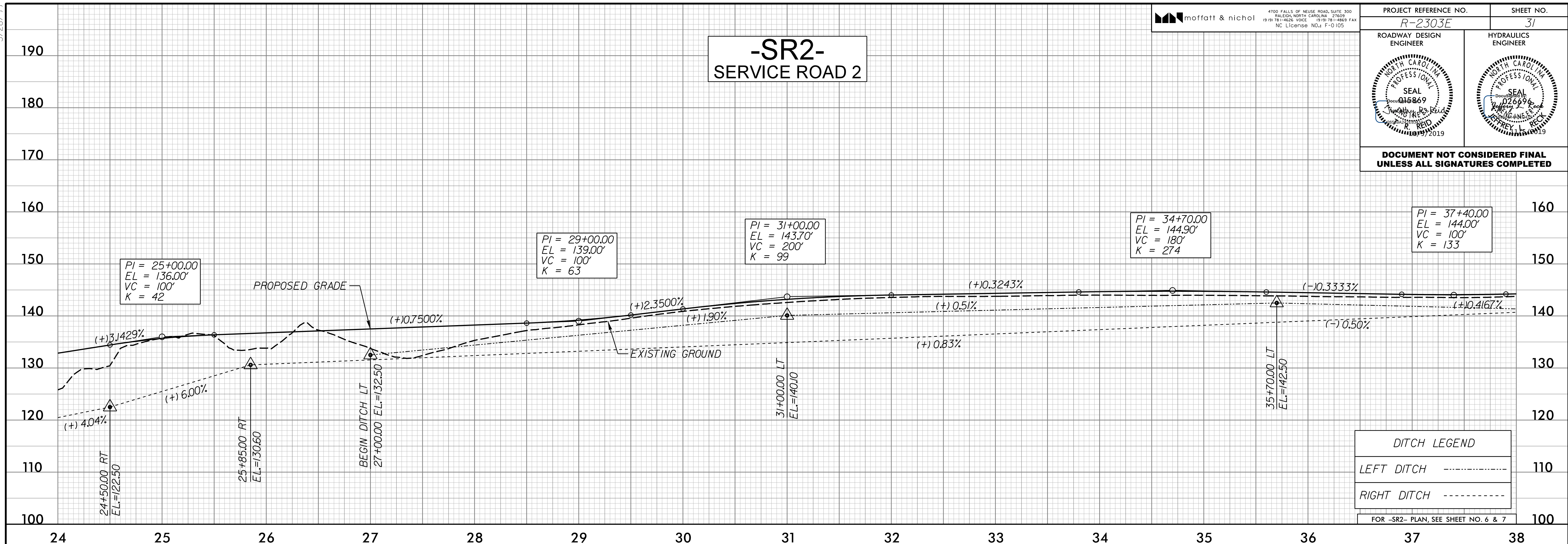
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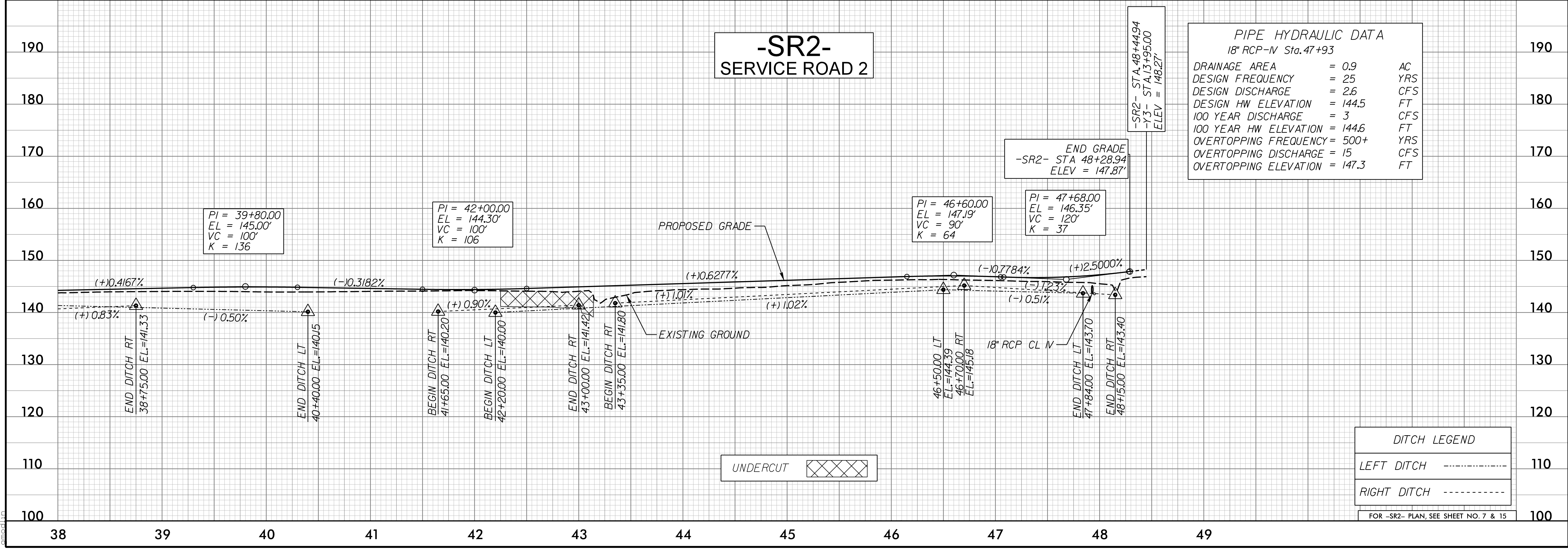
4700 FALLS OF NEUSE ROAD, SUITE 300
RALEIGH, NORTH CAROLINA 27609
(919) 781-9800 FAX (919) 781-4869
NC License No. F-0105

| | |
|---|------------------------|
| PROJECT REFERENCE NO. R-2303E | SHEET NO. 31 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| | |

**DOCUMENT NOT CONSIDERED FINAL
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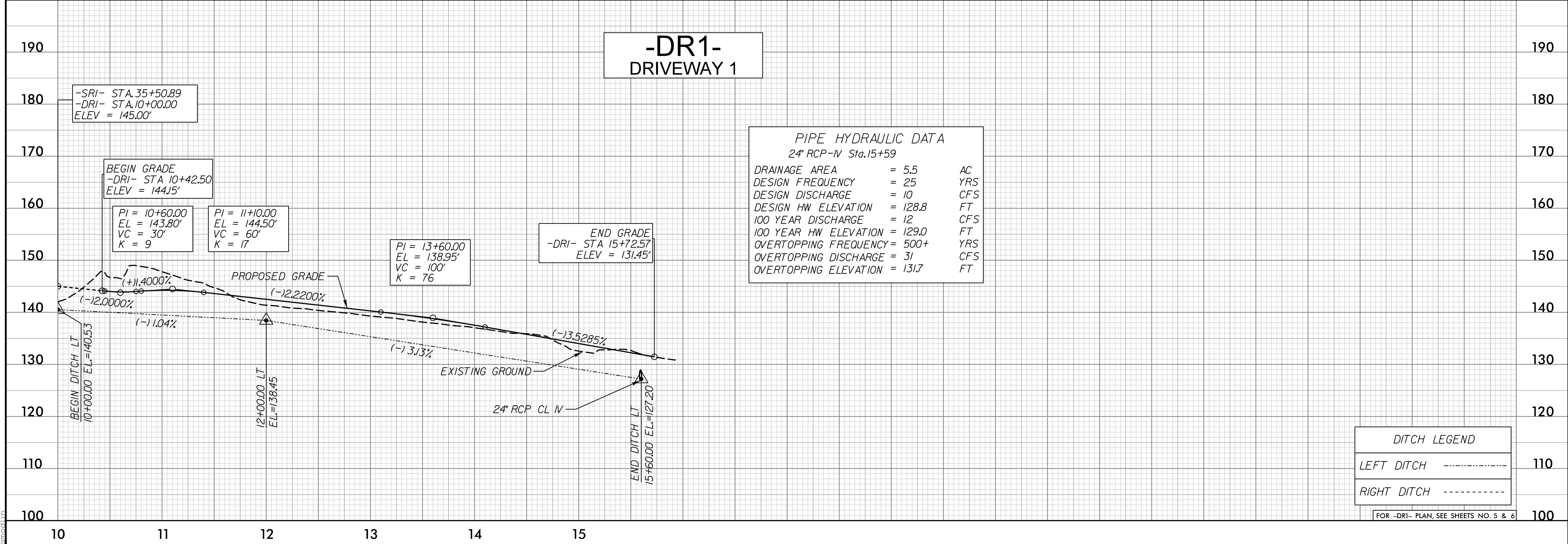
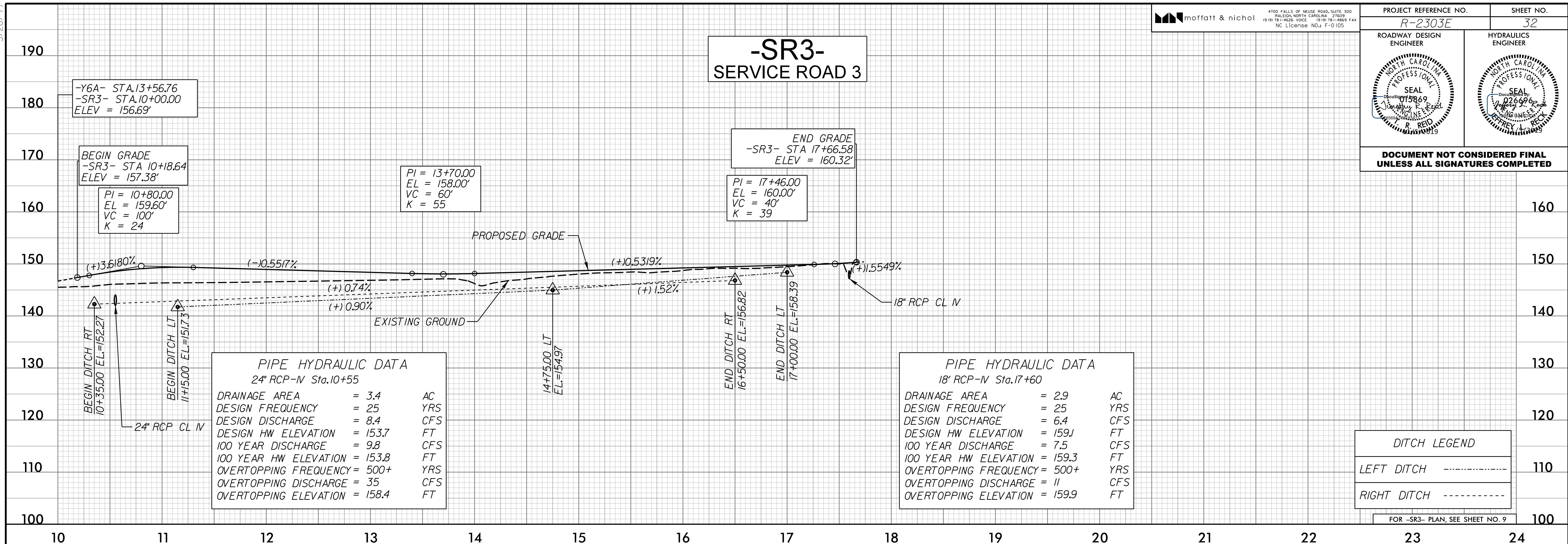
5/28/99



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RALEIGH, NORTH CAROLINA 27609
(919) 781-7800 FAX (919) 781-4889
NC License No. F-0105

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|---|-------------------------|
| PROJECT REFERENCE NO. R-2303E | SHEET NO. 32 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

**DOCUMENT NOT CONSIDERED FINAL
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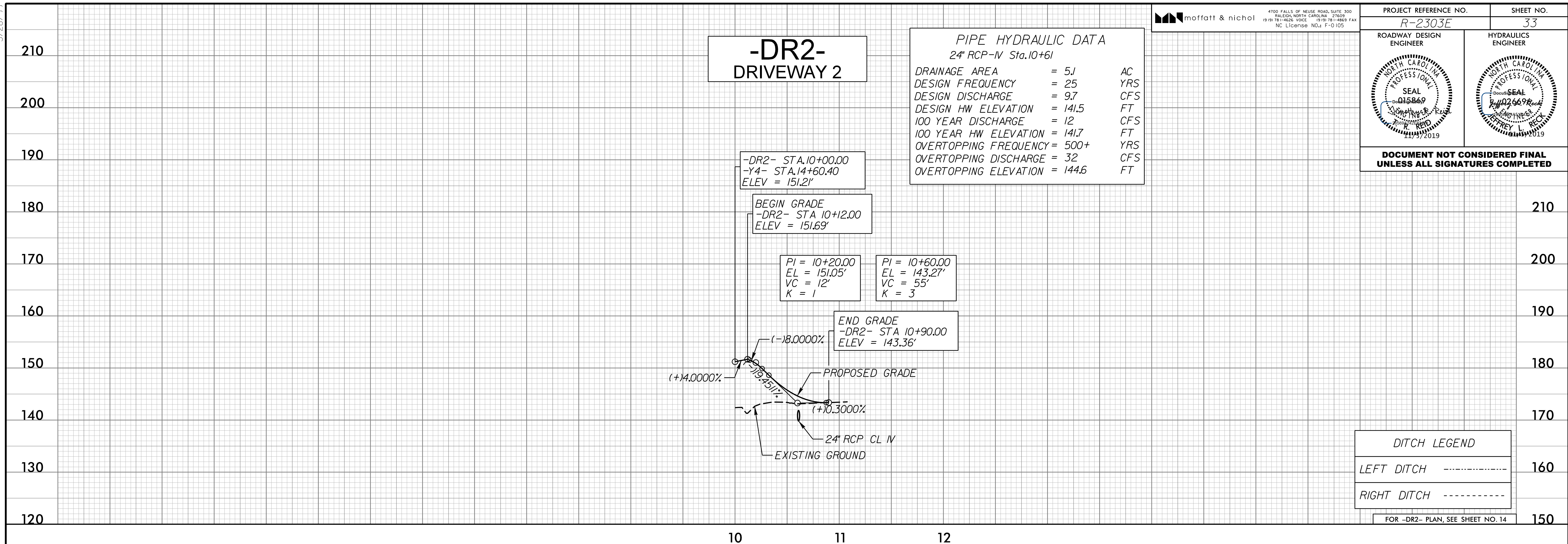
5/28/19



4700 FALLS OF NEUSE ROAD, SUITE 300
RALEIGH, NORTH CAROLINA 27609
(919) 781-4800 VOICE (919) 781-4809 FAX
NC License No.: F-0105

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|---|-------------------------|
| PROJECT REFERENCE NO. R-2303E | SHEET NO. 33 |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

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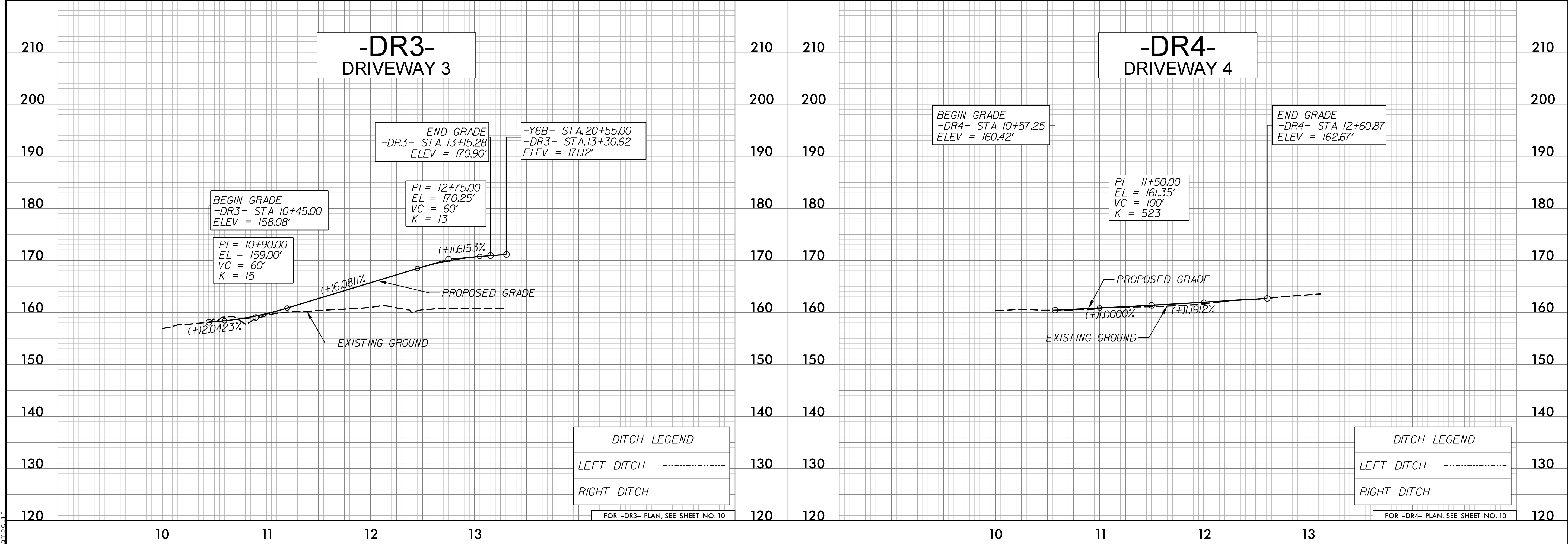
PIPE HYDRAULIC DATA
24" RCP-IV Sta.10+61

| | | |
|-----------------------|---------|-----|
| DRAINAGE AREA | = 5.1 | AC |
| DESIGN FREQUENCY | = 25 | YRS |
| DESIGN DISCHARGE | = 9.7 | CFS |
| DESIGN HW ELEVATION | = 141.5 | FT |
| 100 YEAR DISCHARGE | = 12 | CFS |
| 100 YEAR HW ELEVATION | = 141.7 | FT |
| OVERTOPPING FREQUENCY | = 500+ | YRS |
| OVERTOPPING DISCHARGE | = 32 | CFS |
| OVERTOPPING ELEVATION | = 144.6 | FT |

DITCH LEGEND

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

FOR -DR2- PLAN, SEE SHEET NO. 14



DITCH LEGEND

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

FOR -DR3- PLAN, SEE SHEET NO. 10

DITCH LEGEND

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

FOR -DR4- PLAN, SEE SHEET NO. 10

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