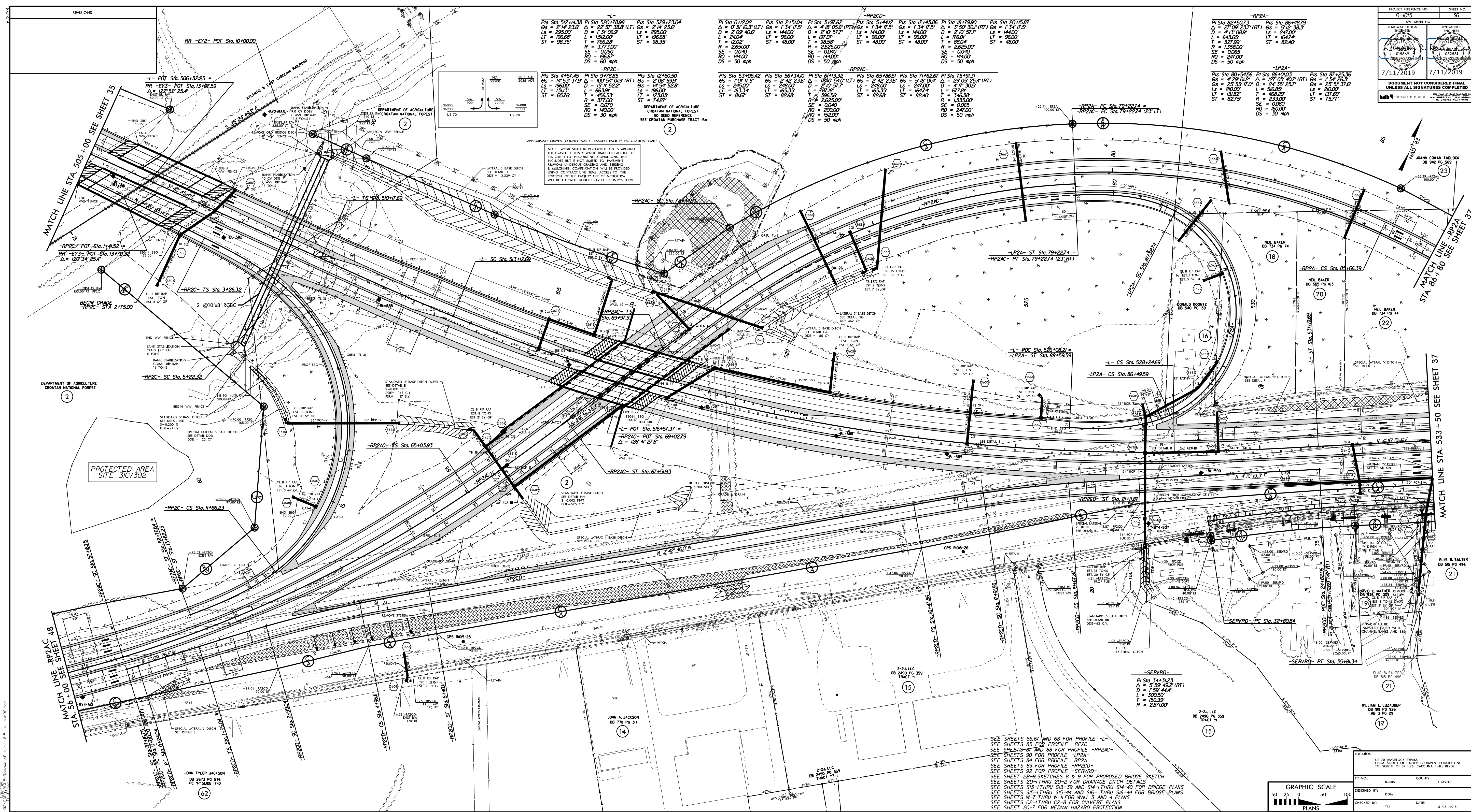


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shall not be considered a certified document.**



REVISIONS

NO.	DATE	DESCRIPTION
1	6/18/2018	ISSUED FOR PERMIT
2	6/18/2018	ISSUED FOR PERMIT
3	6/18/2018	ISSUED FOR PERMIT
4	6/18/2018	ISSUED FOR PERMIT
5	6/18/2018	ISSUED FOR PERMIT
6	6/18/2018	ISSUED FOR PERMIT
7	6/18/2018	ISSUED FOR PERMIT
8	6/18/2018	ISSUED FOR PERMIT
9	6/18/2018	ISSUED FOR PERMIT
10	6/18/2018	ISSUED FOR PERMIT
11	6/18/2018	ISSUED FOR PERMIT
12	6/18/2018	ISSUED FOR PERMIT
13	6/18/2018	ISSUED FOR PERMIT
14	6/18/2018	ISSUED FOR PERMIT
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23	6/18/2018	ISSUED FOR PERMIT
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27	6/18/2018	ISSUED FOR PERMIT
28	6/18/2018	ISSUED FOR PERMIT
29	6/18/2018	ISSUED FOR PERMIT
30	6/18/2018	ISSUED FOR PERMIT
31	6/18/2018	ISSUED FOR PERMIT
32	6/18/2018	ISSUED FOR PERMIT
33	6/18/2018	ISSUED FOR PERMIT
34	6/18/2018	ISSUED FOR PERMIT
35	6/18/2018	ISSUED FOR PERMIT
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38	6/18/2018	ISSUED FOR PERMIT
39	6/18/2018	ISSUED FOR PERMIT
40	6/18/2018	ISSUED FOR PERMIT
41	6/18/2018	ISSUED FOR PERMIT
42	6/18/2018	ISSUED FOR PERMIT
43	6/18/2018	ISSUED FOR PERMIT
44	6/18/2018	ISSUED FOR PERMIT
45	6/18/2018	ISSUED FOR PERMIT
46	6/18/2018	ISSUED FOR PERMIT
47	6/18/2018	ISSUED FOR PERMIT
48	6/18/2018	ISSUED FOR PERMIT
49	6/18/2018	ISSUED FOR PERMIT
50	6/18/2018	ISSUED FOR PERMIT

NOTE: WORK SHALL BE PERFORMED ON & AROUND THE CRAWEN COUNTY WASTE TRANSFER FACILITY TO RESTORE IT TO PRE-EXISTING CONDITIONS. THIS INCLUDING, BUT NOT LIMITED TO, PAVEMENT REMOVAL, UNDERCUT GRADING AND SEEDING & MULCHING. CONSTRUCTION SHALL BE PROHIBITED USING CONTRACT LINE ITEMS ACCESS TO THE PORTION OF THE FACILITY OUT OF PROJECT ROW. THIS SHALL BE ALLOWED UNDER CRAWEN COUNTY'S PERMIT.

APPROXIMATE CRAWEN COUNTY WASTE TRANSFER FACILITY RESTORATION LIMITS

NOTE: WORK SHALL BE PERFORMED ON & AROUND THE CRAWEN COUNTY WASTE TRANSFER FACILITY TO RESTORE IT TO PRE-EXISTING CONDITIONS. THIS INCLUDING, BUT NOT LIMITED TO, PAVEMENT REMOVAL, UNDERCUT GRADING AND SEEDING & MULCHING. CONSTRUCTION SHALL BE PROHIBITED USING CONTRACT LINE ITEMS ACCESS TO THE PORTION OF THE FACILITY OUT OF PROJECT ROW. THIS SHALL BE ALLOWED UNDER CRAWEN COUNTY'S PERMIT.

PROJECT REFERENCE NO. R-105 SHEET NO. 36

DATE: 7/11/2019

DESIGNED BY: DGM

CHECKED BY: TRM

DATE: 6/18/2018

LOCATION: 0.5 MILE SOUTH OF CRAWEN COUNTY LINE 100 SOUTH OF US 101, CRAWEN COUNTY, MISSISSIPPI

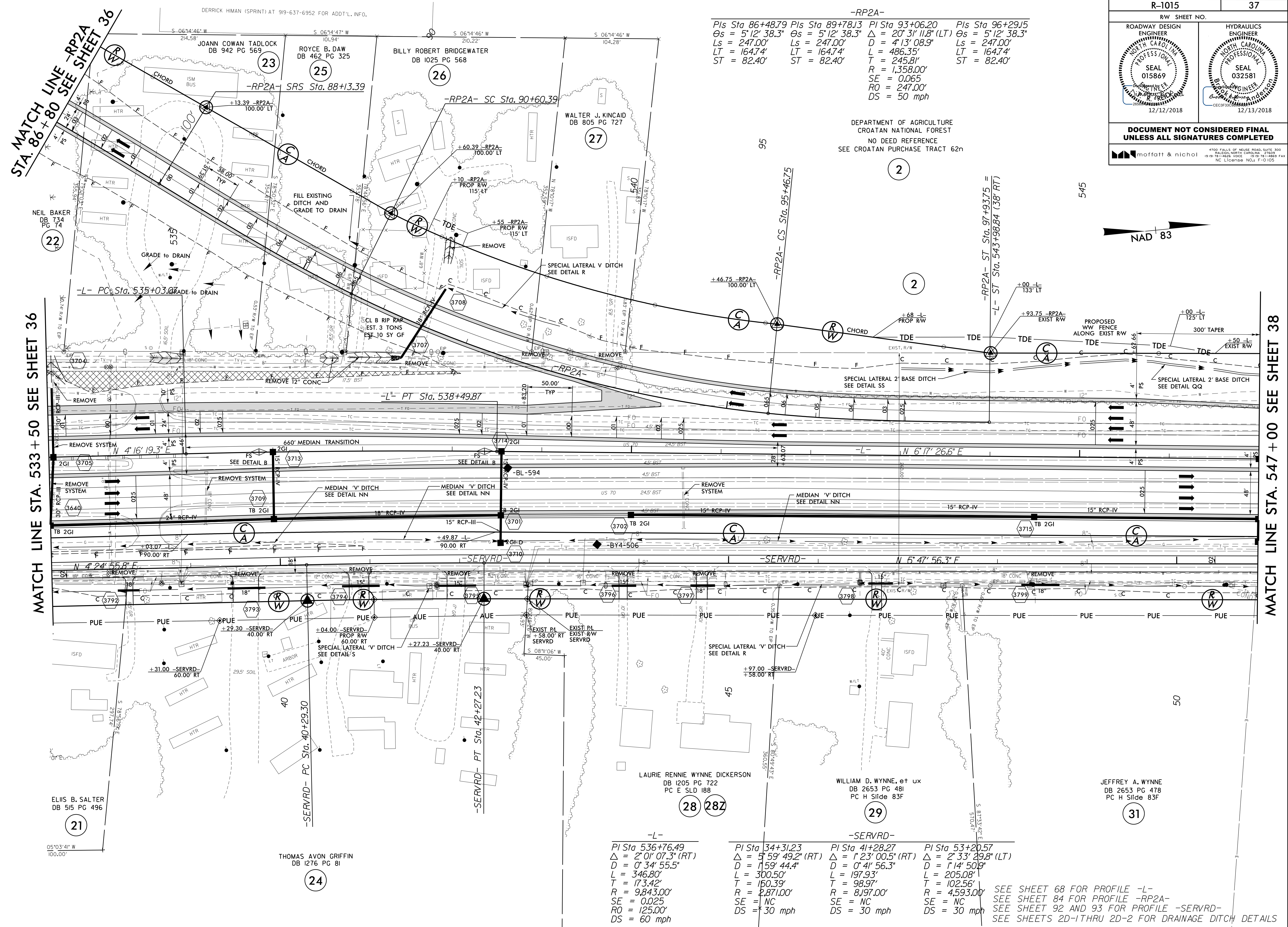
GRAPHIC SCALE: 1" = 50'

SEE SHEETS 66, 67 AND 68 FOR PROFILE -L-
 SEE SHEETS 65 FOR PROFILE -RP2C-
 SEE SHEETS 67 AND 68 FOR PROFILE -RP2A-
 SEE SHEETS 69 FOR PROFILE -LP2A-
 SEE SHEETS 69 FOR PROFILE -RP2D-
 SEE SHEETS 92 FOR PROFILE -SERVD-
 SEE SHEET 88-SKETCHES 8 & 9 FOR PROPOSED BRIDGE SKETCH
 SEE SHEETS 513-THRU 513-39 AND 514-THRU 514-40 FOR BRIDGE PLANS
 SEE SHEETS 515-THRU 515-44 AND 516-THRU 516-44 FOR BRIDGE PLANS
 SEE SHEETS W-7 THRU W-11 FOR WALL 3 AND 4 PLANS
 SEE SHEETS C2-1 THRU C2-8 FOR CULVERT PLANS
 SEE SHEET C2-7 FOR MEDIAN HAZARD PROTECTION

DATE PLOTTED: 7/11/2019 10:41:00 AM

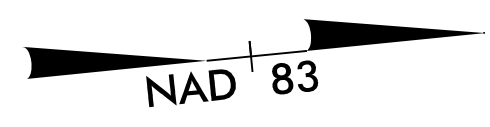
8/17/2018

PROJECT REFERENCE NO. R-1015	SHEET NO. 37
RW SHEET NO.	
ROADWAY DESIGN ENGINEER MOFFATT & NICHOL SEAL 015869 12/12/2018	HYDRAULICS ENGINEER MOFFATT & NICHOL SEAL 032581 12/13/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
4700 FALLS OF NEUSE ROAD, SUITE 300 RALEIGH, NORTH CAROLINA 27603 (919) 781-4626 VOICE (919) 781-4669 FAX NC LICENSE NO. F-0105	



-RP2A-
 Pls Sta 86+48.79 Pls Sta 89+78.13 Pls Sta 93+06.20 Pls Sta 96+29.15
 $\Delta s = 5' 12'' 38.3''$ $\Delta s = 5' 12'' 38.3''$ $\Delta = 20' 31'' 11.8''$ (LT) $\Delta s = 5' 12'' 38.3''$
 $Ls = 247.00'$ $Ls = 247.00'$ $D = 4' 13'' 08.9''$ $Ls = 247.00'$
 $LT = 164.74'$ $LT = 164.74'$ $L = 486.35'$ $LT = 164.74'$
 $ST = 82.40'$ $ST = 82.40'$ $T = 245.81'$ $ST = 82.40'$
 $R = 1,358.00'$
 $SE = 0.065$
 $RO = 247.00'$
 $DS = 50$ mph

DEPARTMENT OF AGRICULTURE
 CROATAN NATIONAL FOREST
 NO DEED REFERENCE
 SEE CROATAN PURCHASE TRACT 62n



MATCH LINE STA. 533 + 50 SEE SHEET 36

MATCH LINE STA. 547 + 00 SEE SHEET 38

ELIIS B. SALTER
 DB 515 PG 496
 (21)

THOMAS AVON GRIFFIN
 DB 1276 PG 81
 (24)

-L-
 PI Sta 536+76.49
 $\Delta = 2' 01'' 07.3''$ (RT)
 $D = 0' 34'' 55.5''$
 $L = 346.80'$
 $T = 173.42'$
 $R = 9,843.00'$
 $SE = 0.025$
 $RO = 125.00'$
 $DS = 60$ mph

-SERVRD-
 PI Sta 34+31.23
 $\Delta = 5' 59'' 49.2''$ (RT)
 $D = 1' 59'' 44.4''$
 $L = 300.50'$
 $T = 160.39'$
 $R = 2,871.00'$
 $SE = NC$
 $DS = 30$ mph

-SERVRD-
 PI Sta 41+28.27
 $\Delta = 1' 23'' 00.5''$ (RT)
 $D = 0' 41'' 56.3''$
 $L = 197.93'$
 $T = 98.97'$
 $R = 8,197.00'$
 $SE = NC$
 $DS = 30$ mph

-SERVRD-
 PI Sta 53+20.57
 $\Delta = 2' 33'' 29.8''$ (LT)
 $D = 1' 14'' 50.9''$
 $L = 205.08'$
 $T = 102.56'$
 $R = 4,593.00'$
 $SE = NC$
 $DS = 30$ mph

SEE SHEET 68 FOR PROFILE -L-
 SEE SHEET 84 FOR PROFILE -RP2A-
 SEE SHEET 92 AND 93 FOR PROFILE -SERVRD-
 SEE SHEETS 2D-1 THRU 2D-2 FOR DRAINAGE DITCH DETAILS

12/12/2018
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PROJECT REFERENCE NO. R-1015	SHEET NO. 38
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
DEPARTMENT OF AGRICULTURE CROATAN NATIONAL FOREST 4700 FALLS OF NEUSE ROAD, SUITE 300 WAKEFORD, NORTH CAROLINA 27893 (919) 761-4626 VOICE (919) 761-4869 FAX NC License No. F-0105	

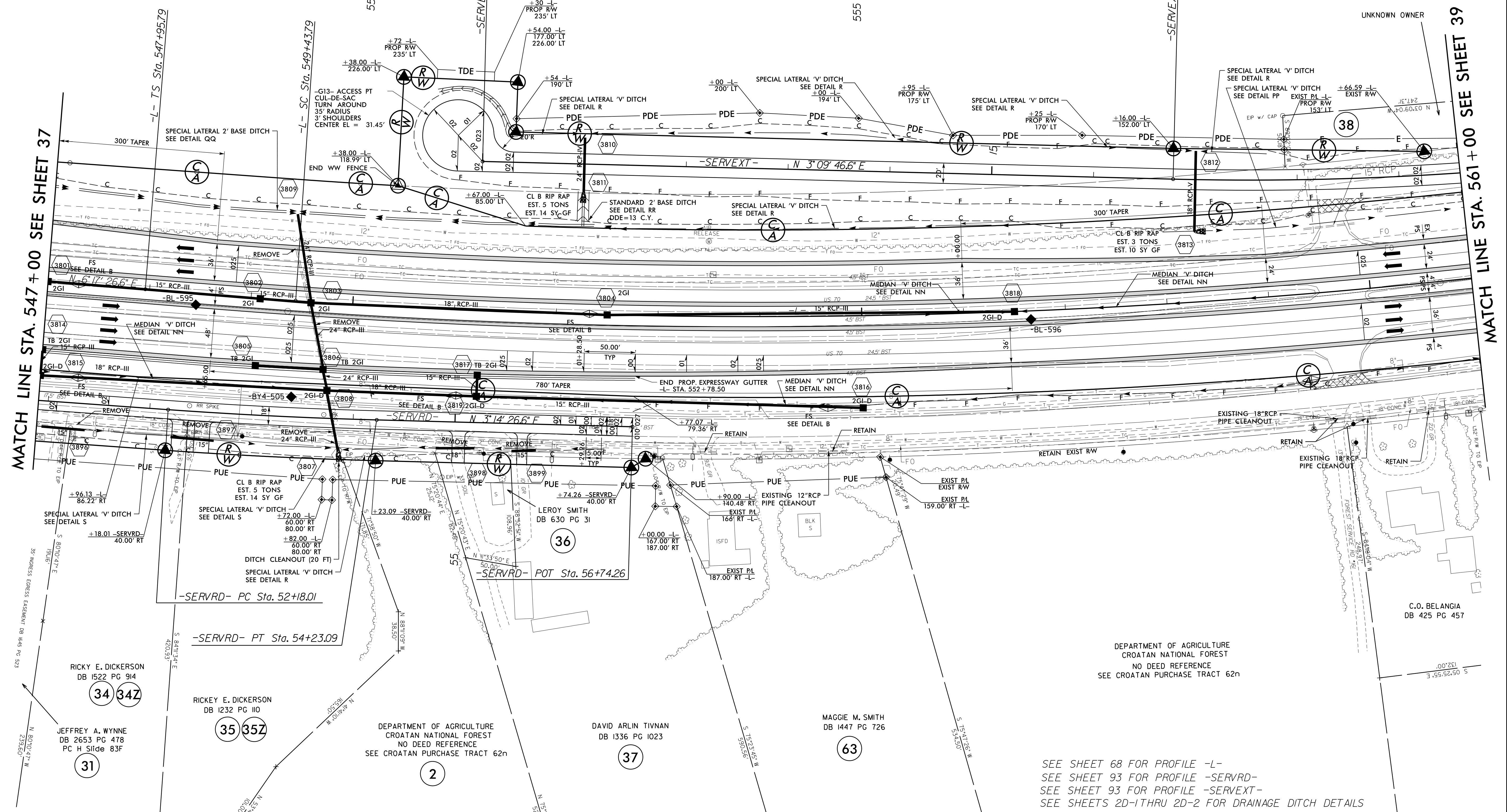
-L-
 PIs Sta 548+94.45 PI Sta 555+33.32
 $\Delta s = 0^\circ 38' 46.1''$ $\Delta = 10^\circ 16' 02.6''$ (LT)
 $L_s = 148.00'$ $D = 0^\circ 52' 23.3''$
 $LT = 98.67'$ $L = 1,175.91'$
 $ST = 49.33'$ $T = 589.53'$
 $R = 6,562.00'$
 $SE = 0.025$
 $RO = 150.00'$
 $DS = 60$ mph

-SERVEXT-
 PI Sta 18+96.44
 $\Delta = 8^\circ 19' 25.3''$ (LT)
 $D = 1^\circ 54' 35.5''$
 $L = 435.83'$
 $T = 218.30'$
 $R = 3,000.00'$
 $SE = NC$
 $DS = 30$ mph



DEPARTMENT OF AGRICULTURE
 CROATAN NATIONAL FOREST

2



SEE SHEET 68 FOR PROFILE -L-
 SEE SHEET 93 FOR PROFILE -SERVRD-
 SEE SHEET 93 FOR PROFILE -SERVEXT-
 SEE SHEETS 2D-1 THRU 2D-2 FOR DRAINAGE DITCH DETAILS

12/14/2018 10:49:29 AM C:\ADDD\1015\Roadway\Proj\1015_rdw_psh_38.dgn

8/17/99
I:\286\2018\15\RA\9729-02\CA000\1015\Roadway\Proj\1015_rdl_psh_39.dgn

MATCH LINE STA. 561 + 00 SEE SHEET 38

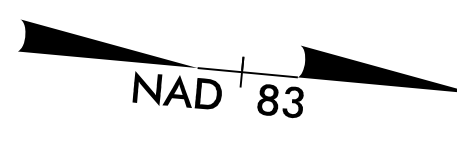
MATCH LINE STA. 575 + 00 SEE SHEET 40

DEPARTMENT OF AGRICULTURE
CROATAN NATIONAL FOREST
NO DEED REFERENCE
SEE CROATAN PURCHASE TRACT 62n

-L-
 PI Sta 555+33.32 Δ = 10° 16' 02.6" (LT)
 D = 0° 52' 23.3" L = 1,175.91'
 T = 589.53' R = 6,562.00'
 SE = 0.025
 RO = 148.00'
 DS = 60 mph

-SERVEXT-
 PI Sta 561+69.03 Δ = 0° 38' 46.1"
 Ls = 148.00' LT = 98.67'
 ST = 49.33'

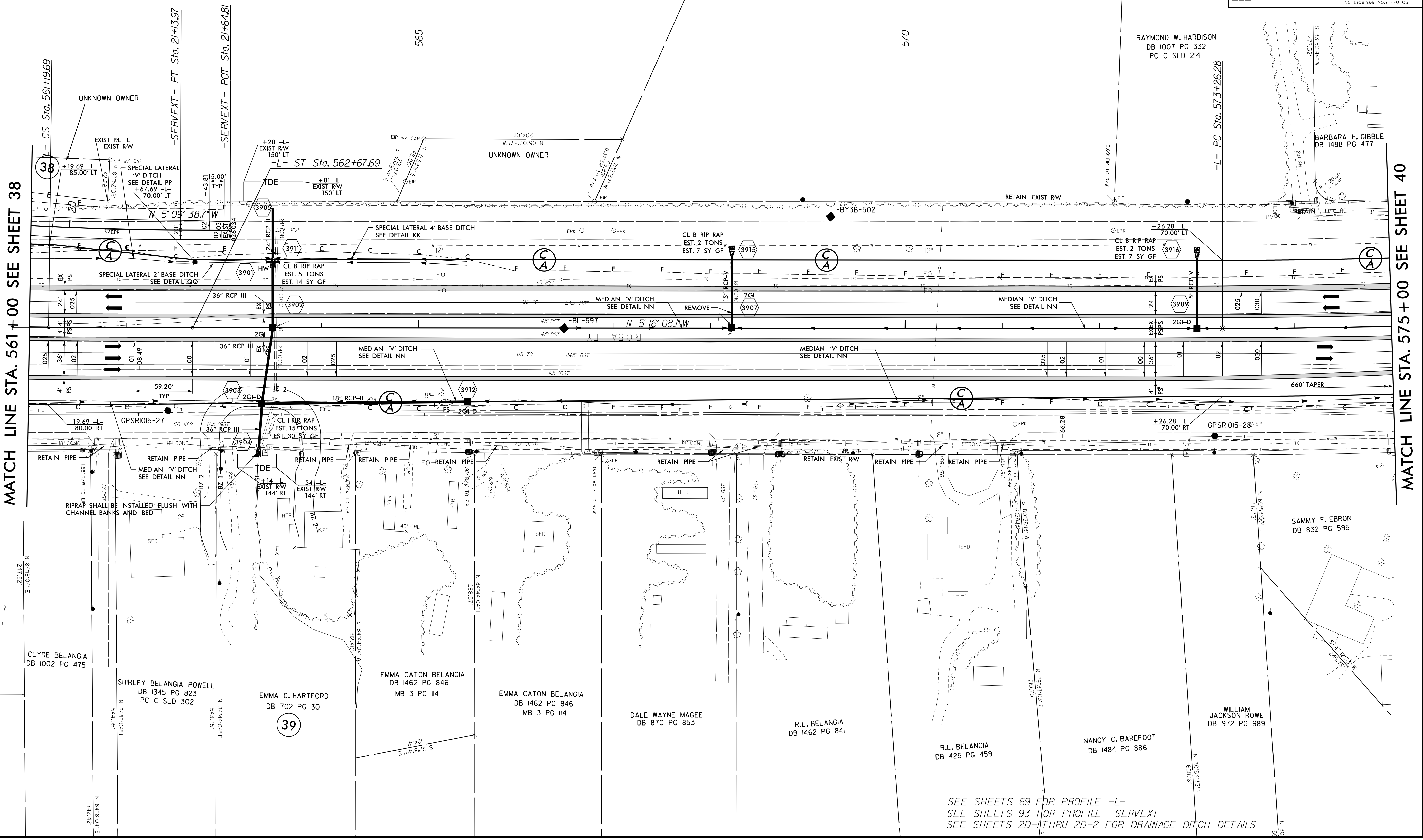
-SERVEXT-
 PI Sta 18+96.44 Δ = 8° 19' 25.3" (LT)
 D = 1° 54' 35.5" L = 435.83'
 T = 218.30' R = 3,000.00'
 SE = NC
 DS = 30 mph



ROBERT B. HARDISON
DB 1006 PG 50
PC C SLD 214

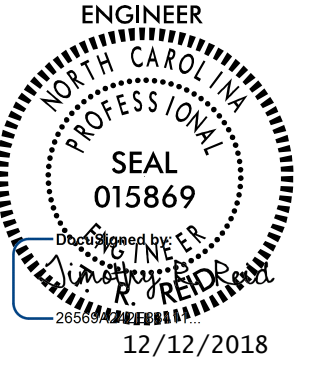


RAYMOND W. HARDISON
DB 1007 PG 332
PC C SLD 214

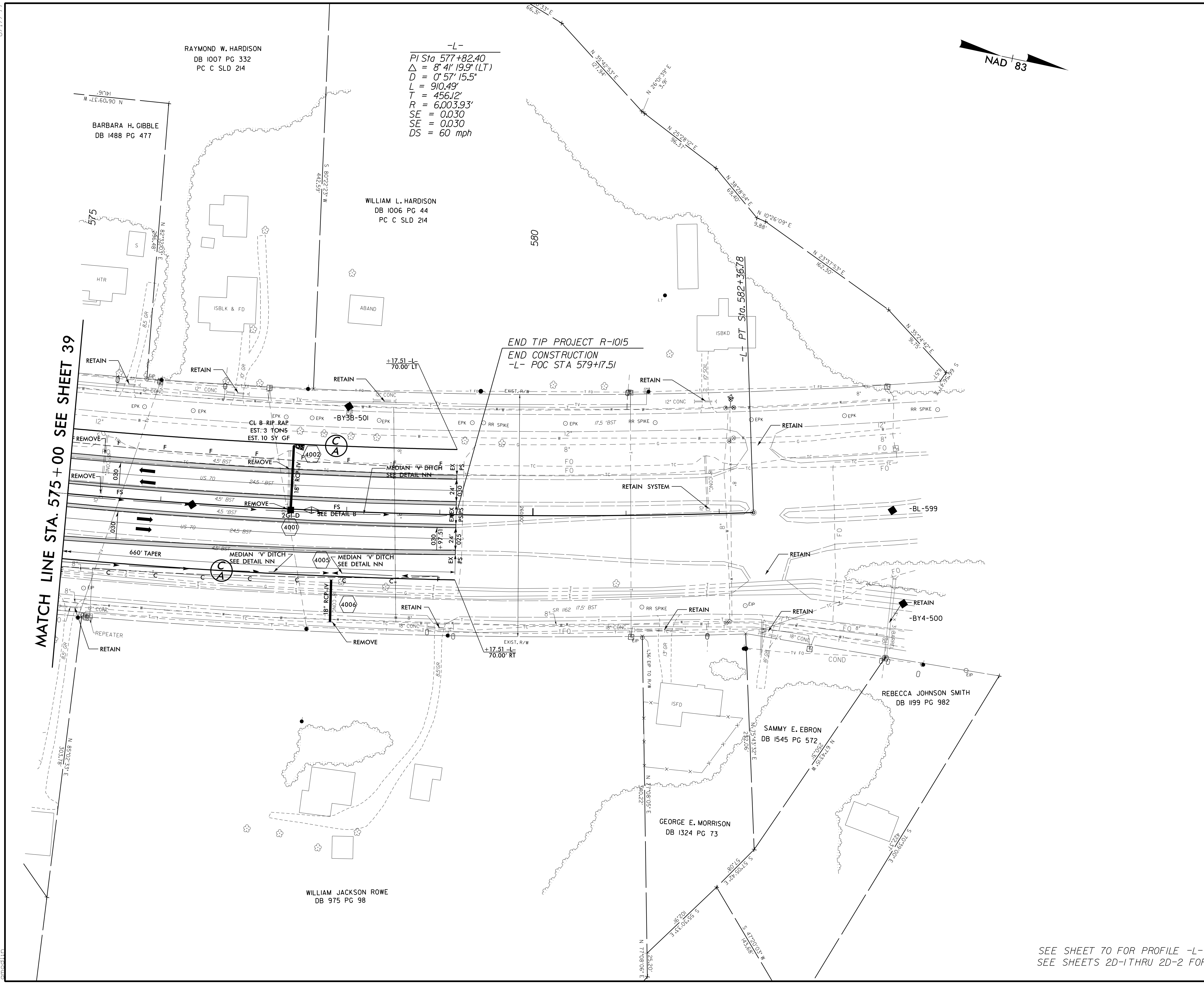
PROJECT REFERENCE NO. R-1015	SHEET NO. 39
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
moffatt & nichol	



SEE SHEETS 69 FOR PROFILE -L-
SEE SHEETS 93 FOR PROFILE -SERVEXT-
SEE SHEETS 2D-1 THRU 2D-2 FOR DRAINAGE DITCH DETAILS

8/17/99

PROJECT REFERENCE NO. R-1015	SHEET NO. 40
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>	



MATCH LINE STA. 575 + 00 SEE SHEET 39

END TIP PROJECT R-1015
END CONSTRUCTION
-L- POC STA 579+17.51

SEE SHEET 70 FOR PROFILE -L-
SEE SHEETS 2D-1 THRU 2D-2 FOR DRAINAGE DITCH DETAILS

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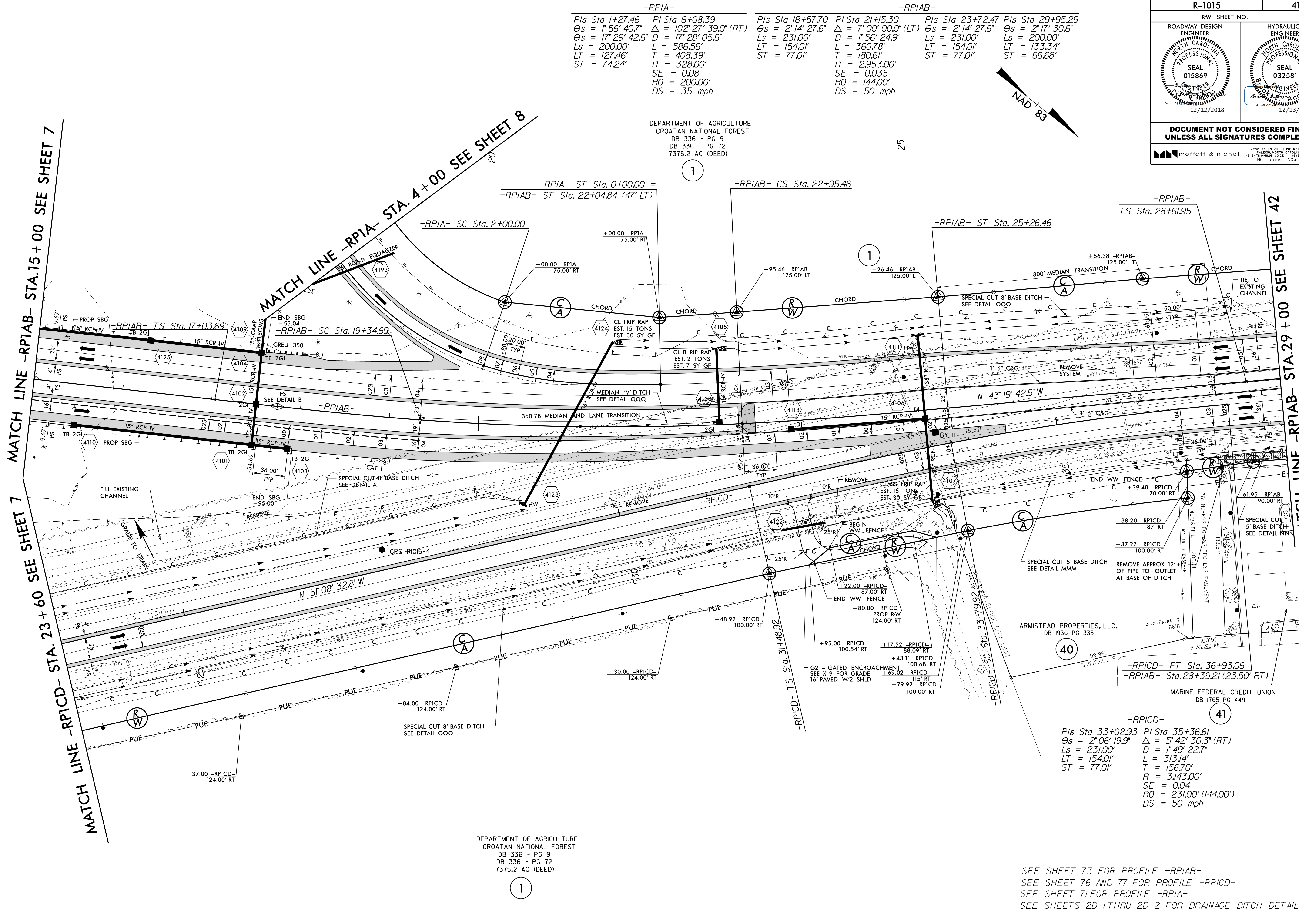
8.17.19

12/26/2018 9:29:02Z:\CA000\1015\Roadway\Proj\1015_rdi_esh41.dgn

PROJECT REFERENCE NO. R-1015	SHEET NO. 41
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER

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

4100 FALLS OF NEUSE ROAD, SUITE 300
RALEIGH, NORTH CAROLINA 27609
(919) 781-4626 VOICE (919) 781-4869 FAX
NC LICENSE NO. A-F-0105

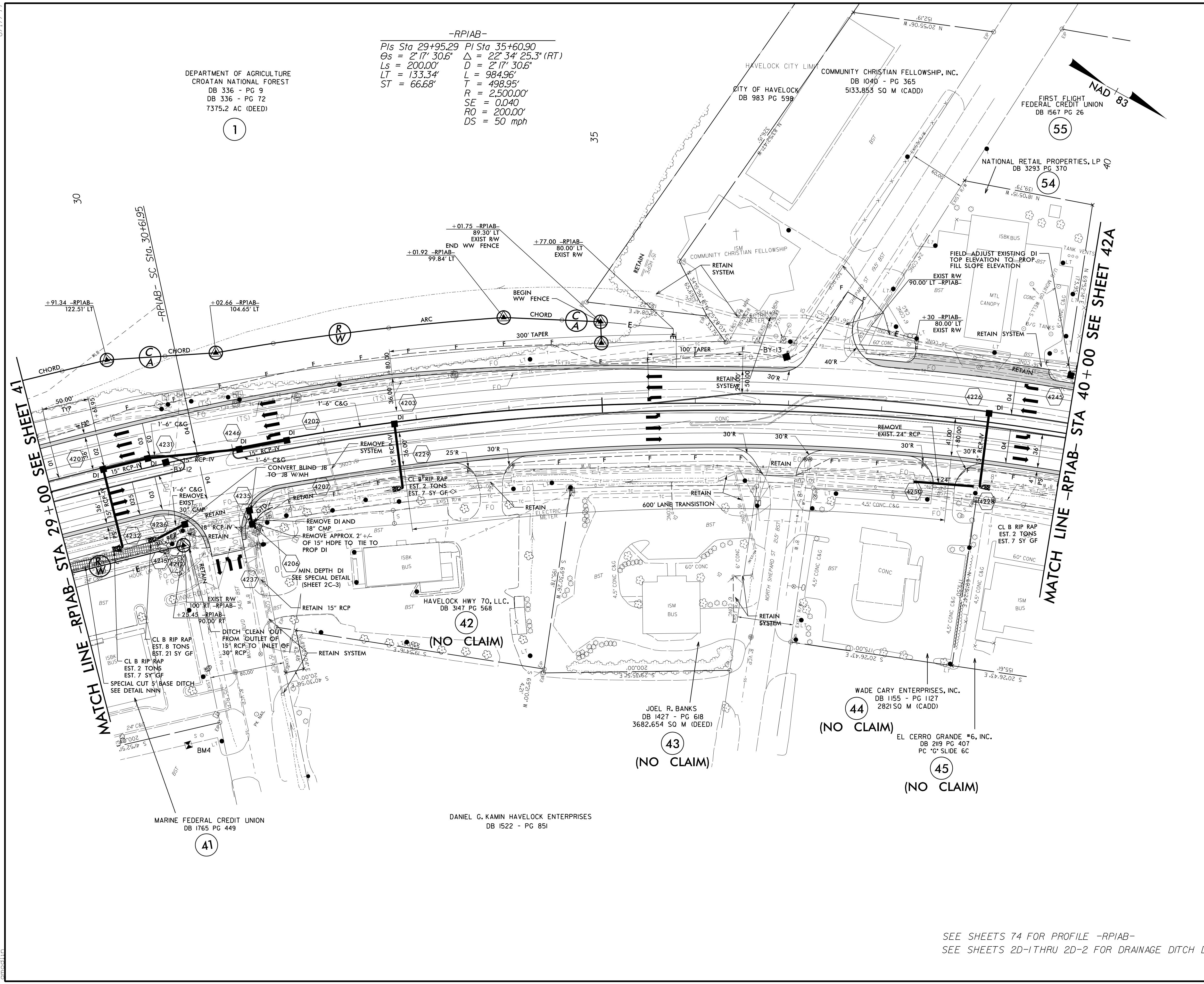


DEPARTMENT OF AGRICULTURE
CROATAN NATIONAL FOREST
DB 336 - PG 9
DB 336 - PG 72
7375.2 AC (DEED)

SEE SHEET 73 FOR PROFILE -RPIAB-
SEE SHEET 76 AND 77 FOR PROFILE -RPICD-
SEE SHEET 71 FOR PROFILE -RPIA-
SEE SHEETS 2D-1 THRU 2D-2 FOR DRAINAGE DITCH DETAILS

8/17/19
12/2/2018
I:\Projects\1015\Roadway\Proj\1015_rdl\psh42.dgn

PROJECT REFERENCE NO. R-1015	SHEET NO. 42
RW SHEET NO.	
ROADWAY DESIGN ENGINEER MOFFATT & NICHOL SEAL 015869 12/12/2018	HYDRAULICS ENGINEER MOFFATT & NICHOL SEAL 032581 12/13/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
4700 FALLS OF NEUSE ROAD, SUITE 300 RALEIGH, NORTH CAROLINA 27603 (919) 781-4626 VOICE (919) 781-4669 FAX NC LICENSE NO. F-0105	



DEPARTMENT OF AGRICULTURE
CROATAN NATIONAL FOREST
DB 336 - PG 9
DB 336 - PG 72
7375.2 AC (DEED)

-RPIAB-
PIs Sta 29+95.29 PI Sta 35+60.90
 $\theta_s = 2^\circ 17' 30.6''$ $\Delta = 22^\circ 34' 25.3''$ (RT)
 $L_s = 200.00'$ $D = 2^\circ 17' 30.6''$
 $LT = 133.34'$ $L = 984.96'$
 $ST = 66.68'$ $T = 498.95'$
 $R = 2,500.00'$
 $SE = 0.040$
 $RO = 200.00'$
 $DS = 50$ mph

MATCH LINE -RPIAB- STA 29+00 SEE SHEET 41

MATCH LINE -RPIAB- STA 40+00 SEE SHEET 42A

MARINE FEDERAL CREDIT UNION
DB 1765 PG 449

DANIEL G. KAMIN HAVELock ENTERPRISES
DB 1522 - PG 851

JOEL R. BANKS
DB 1427 - PG 618
3682.654 SQ M (DEED)

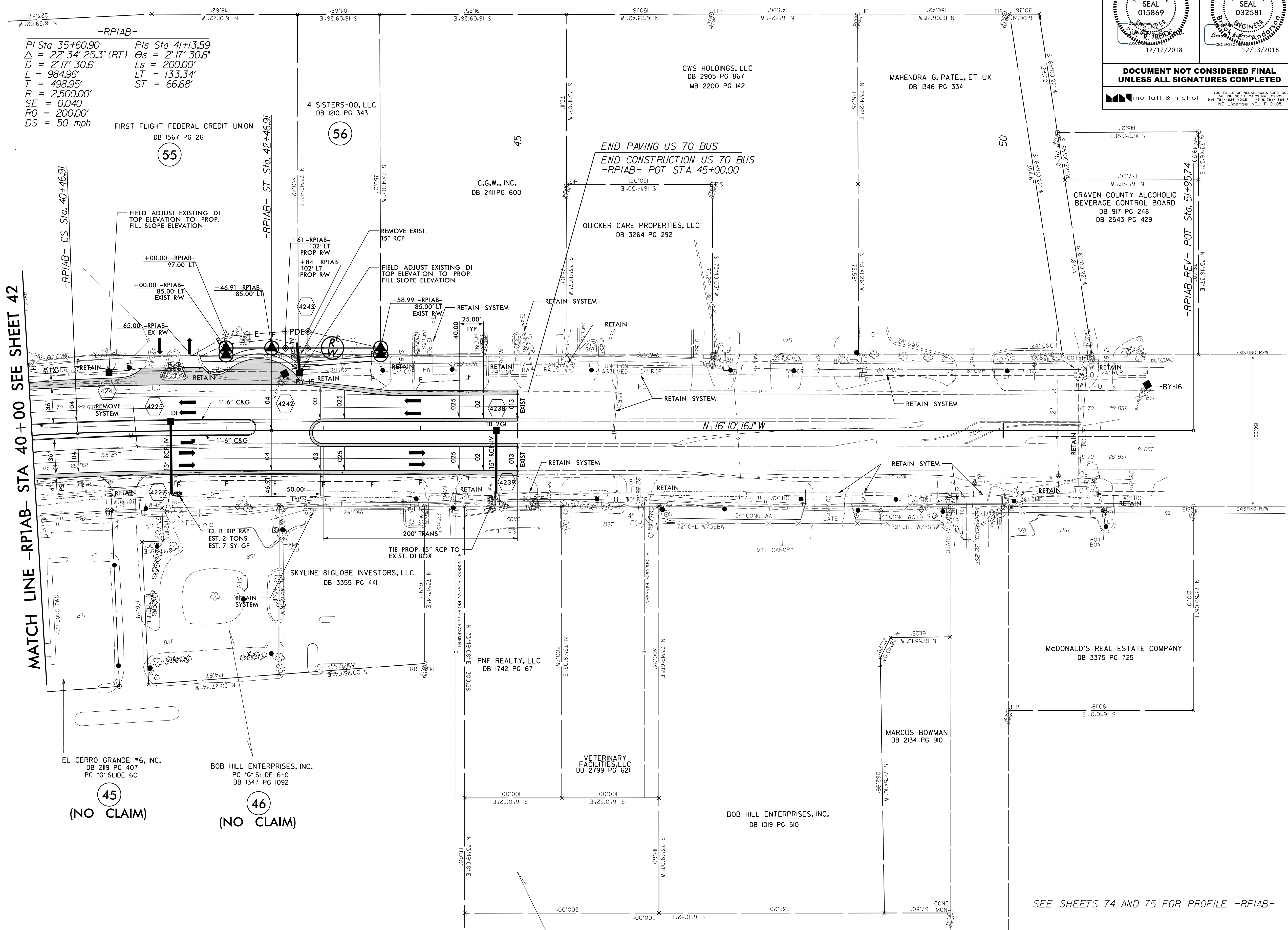
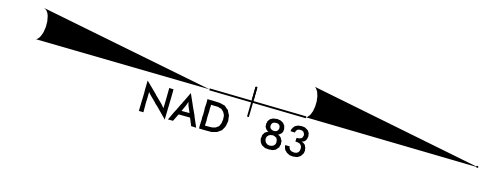
WADE CARY ENTERPRISES, INC.
DB 1155 - PG 1127
2821 SQ M (CADD)

EL CERRO GRANDE #6, INC.
DB 2119 PG 407
PG *G SLIDE 6C

SEE SHEETS 74 FOR PROFILE -RPIAB-
SEE SHEETS 2D-1 THRU 2D-2 FOR DRAINAGE DITCH DETAILS

8.17.17.99

PROJECT REFERENCE NO. R-1015		SHEET NO. 42A	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER MOFFATT & NICHOL SEAL 015869 12/12/2018		HYDRAULICS ENGINEER MOFFATT & NICHOL SEAL 032581 12/13/2018	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
moffatt & nichol		4700 FALLS OF NEUSE ROAD, SUITE 300 RALEIGH, NORTH CAROLINA 27609 (919) 761-4626 VOICE (919) 761-4869 FAX NC LICENSE NO. F-0105	



MATCH LINE -RPIAB- STA 40 + 00 SEE SHEET 42

-RPIAB-

PI Sta 35+60.90	PIs Sta 41+13.59
$\Delta = 22^\circ 34' 25.3''$ (RT)	$\Theta_s = 2^\circ 17' 30.6''$
$D = 2^\circ 17' 30.6''$	$L_s = 200.00'$
$L = 984.96'$	$LT = 133.34'$
$T = 498.95'$	$ST = 66.68'$
$R = 2,500.00'$	
$SE = 0.040$	
$RO = 200.00'$	
$DS = 50$ mph	

END PAVING US TO BUS
END CONSTRUCTION US TO BUS
-RPIAB- POT STA 45+00.00

(45) (NO CLAIM)

(46) (NO CLAIM)

SEE SHEETS 74 AND 75 FOR PROFILE -RPIAB-

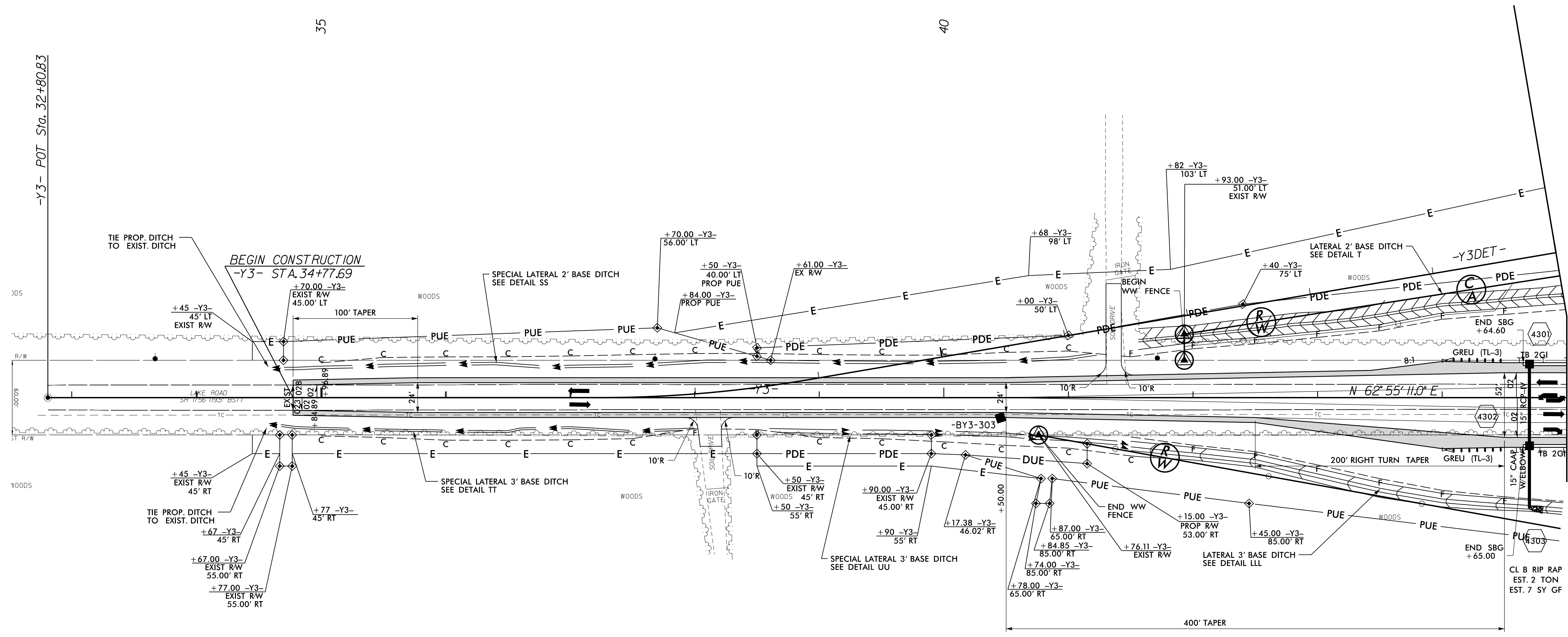
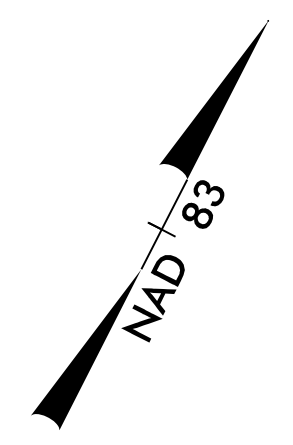
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8/17/99

PROJECT REFERENCE NO. R-1015	SHEET NO. 43
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
moffatt & nichol	

WEYERHAEUSER COMPANY
DB 1048 - PG 1014

4



MATCH LINE -Y3- STA. 45 + 00 SEE SHEET 17

WEYERHAEUSER COMPANY
DB 1048 - PG 1014

4

SEE SHEET 78 FOR PROFILE -Y3-
SEE SHEETS 2D-1 THRU 2D-2 FOR DRAINAGE DITCH DETAILS

12/12/2018 10:59:29-02\CA000\1015\Roadway\Proj\1015_rdl_psh+43.dgn

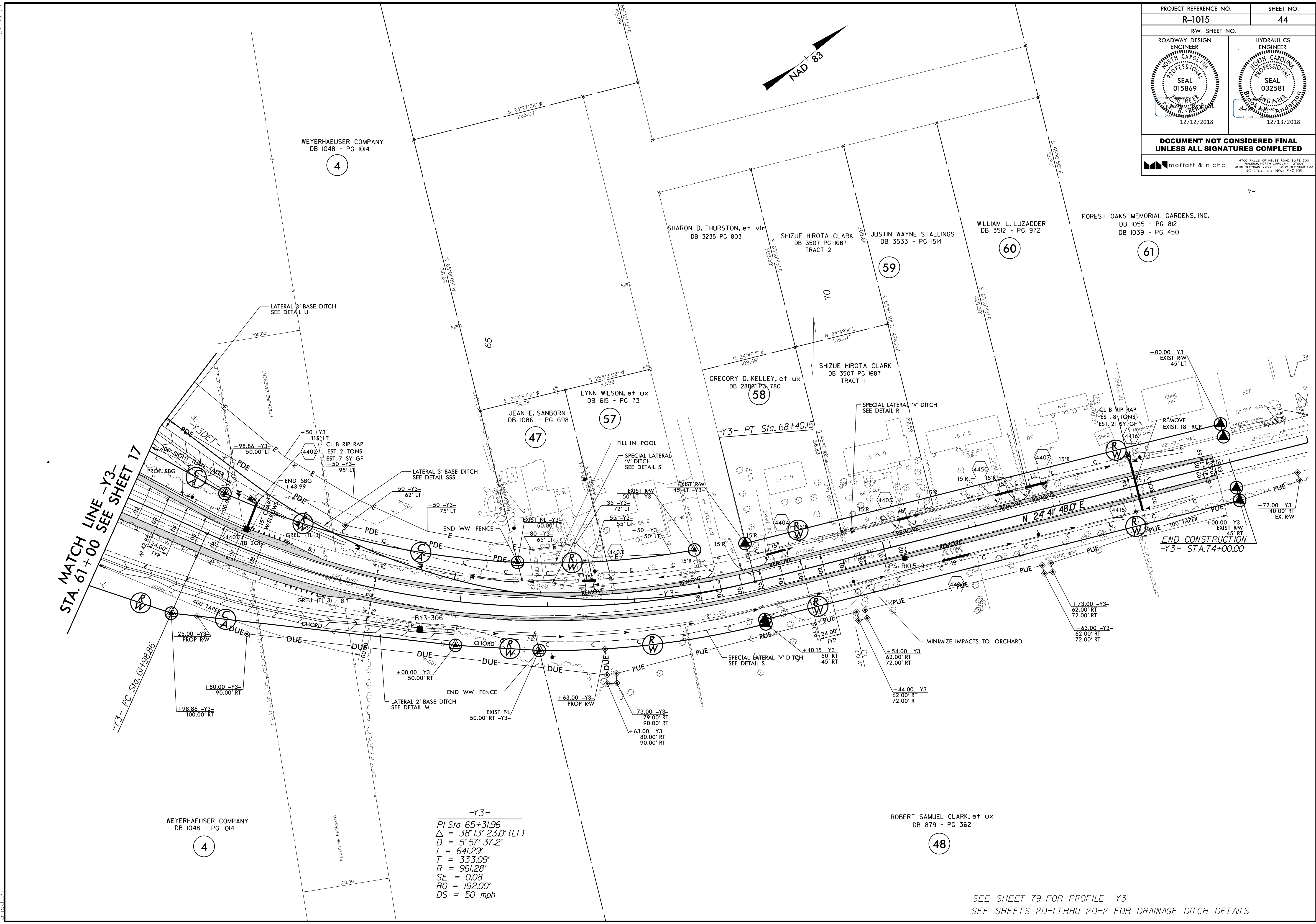
8.17.17.99

PROJECT REFERENCE NO. R-1015	SHEET NO. 44
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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

moftatt & nichol

4100 FALLS OF NEUSE ROAD, SUITE 300
RALEIGH, NORTH CAROLINA 27603
(919) 781-4626 VOICE (919) 781-4669 FAX
NC LICENSE NO. F-0105



**MATCH LINE -Y3-
STA. 61+00 SEE SHEET 17**

-Y3- PC Sta. 61+98.86

**END CONSTRUCTION
-Y3- STA. 74+00.00**

-Y3-
 $PI\ Sta\ 65+31.96$
 $\Delta = 38'13''23.0''\ (LT)$
 $D = 5'57''37.2''$
 $L = 641.29'$
 $T = 333.09'$
 $R = 961.28'$
 $SE = 0.08$
 $RO = 192.00'$
 $DS = 50\ mph$

SEE SHEET 79 FOR PROFILE -Y3-
SEE SHEETS 2D-1 THRU 2D-2 FOR DRAINAGE DITCH DETAILS

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PROJECT REFERENCE NO. R-1015	SHEET NO. 45
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 015869 T. R. REID	HYDRAULICS ENGINEER SEAL 032581 Brook E. Anderson
5/7/2019	5/7/2019

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

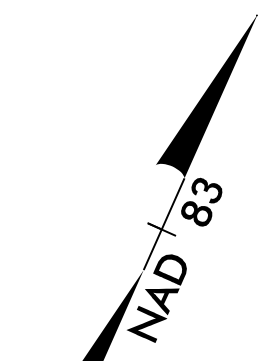
moftatt & nichol

4700 FALLS OF NEUSE ROAD, SUITE 300
RALEIGH, NORTH CAROLINA 27609
(919) 781-4626 VOICE (919) 781-4669 FAX
NC LICENSE NO. F-10105

MICHAEL O. WOODRUFF, et ux
DB 1494 - PG 68

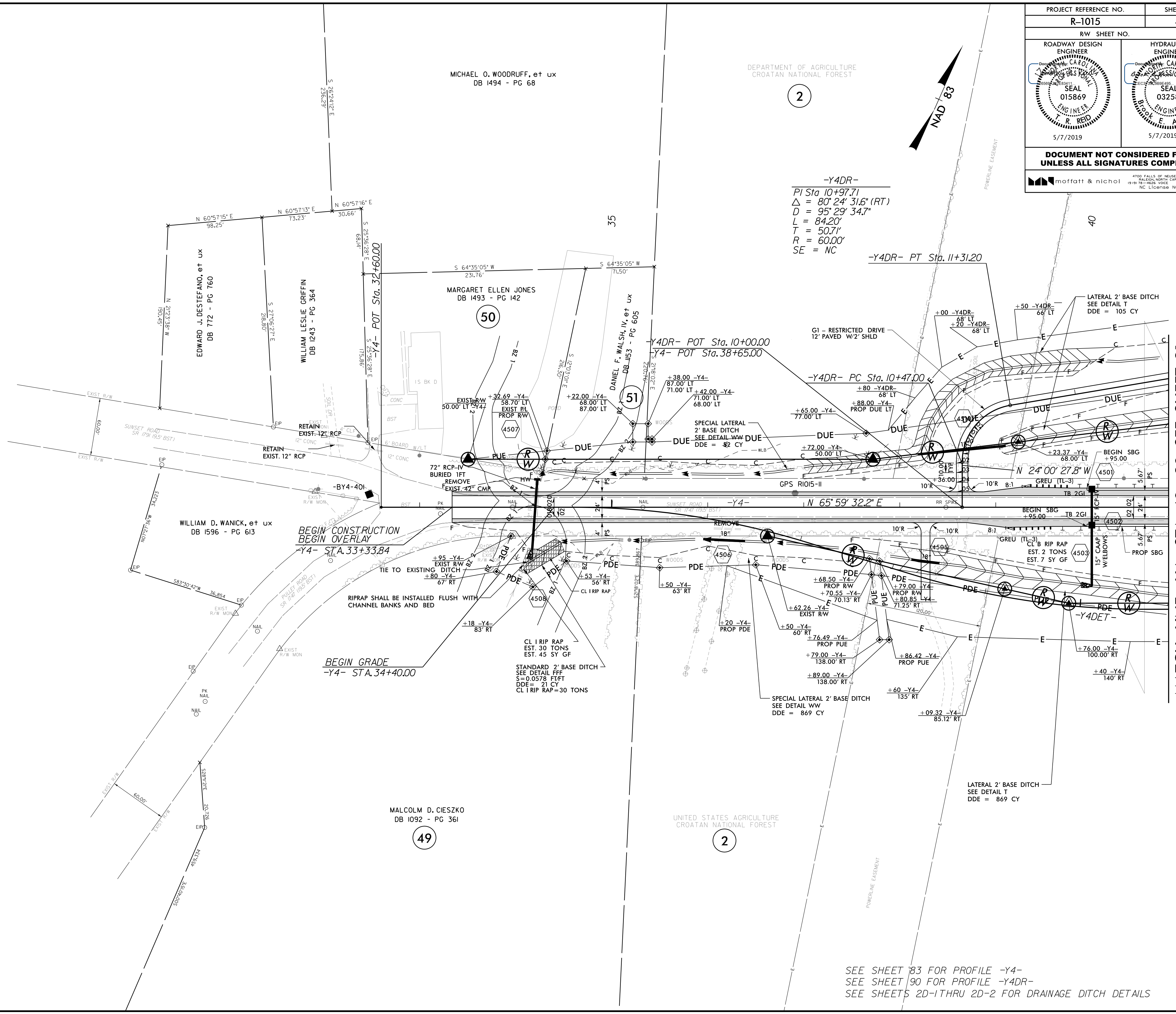
DEPARTMENT OF AGRICULTURE
CROATAN NATIONAL FOREST

2



-Y4DR-
 PI Sta 10+97.71
 $\Delta = 80^\circ 24' 31.6" (RT)$
 $D = 95^\circ 29' 34.7"$
 $L = 84.20'$
 $T = 50.71'$
 $R = 60.00'$
 $SE = NC$

-Y4DR- PT Sta. 11+31.20

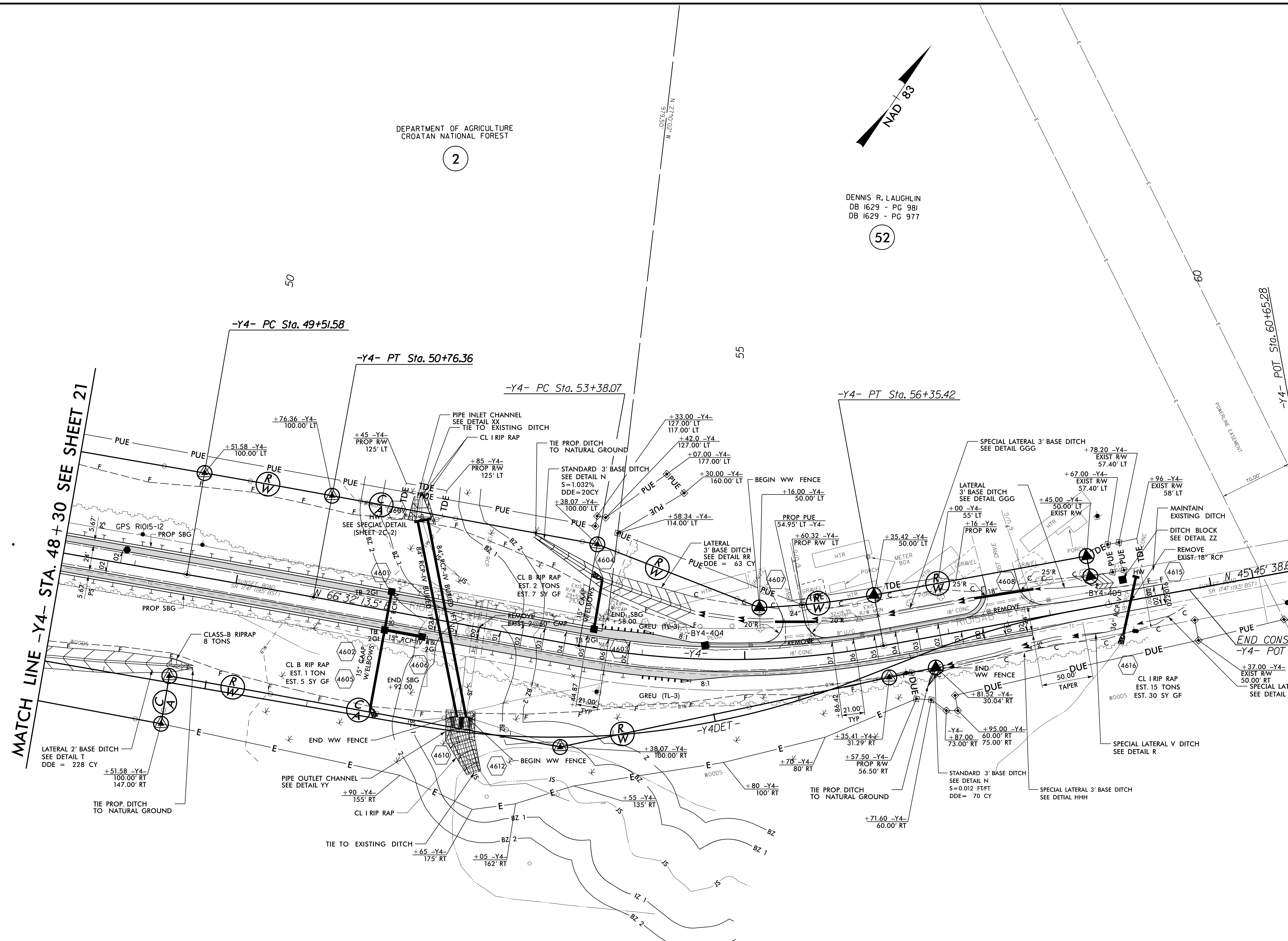


MATCH LINE -Y4- STA. 40 + 80 SEE SHEET 21

SEE SHEET 83 FOR PROFILE -Y4-
 SEE SHEET 90 FOR PROFILE -Y4DR-
 SEE SHEETS 2D-1 THRU 2D-2 FOR DRAINAGE DITCH DETAILS

8/17/99

PROJECT REFERENCE NO. R-1015	SHEET NO. 46
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
moffatt & nichol	



-Y4-	
PI Sta 50+13.97	PI Sta 54+88.39
$\Delta = 0^{\circ} 32' 41.2" (RT)$	$\Delta = 20^{\circ} 46' 34.8" (LT)$
$D = 0^{\circ} 26' 11.8"$	$D = 6^{\circ} 59' 14.2"$
$L = 124.78'$	$L = 297.34'$
$T = 62.39'$	$T = 150.32'$
$R = 13123.00'$	$R = 820.00'$
$SE = NC$	$SE = 0.070$
	$RO = 147.00'$
	$DS = 40 \text{ mph}$

DEPARTMENT OF AGRICULTURE
CROATAN NATIONAL FOREST

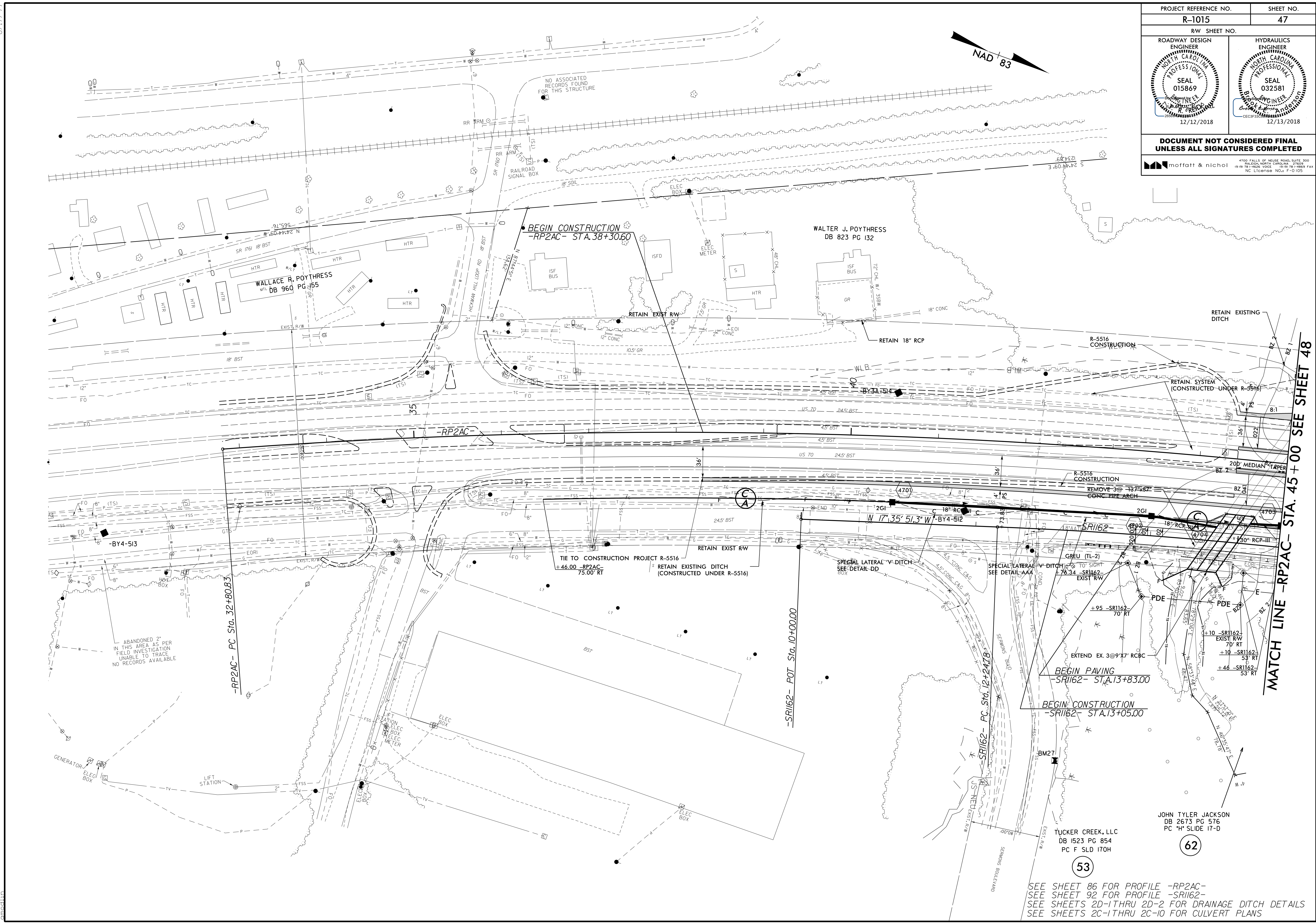
2

SEE SHEET 83 FOR PROFILE -Y4-
SEE SHEETS 2D-1 THRU 2D-2 FOR DRAINAGE DITCH DETAILS

12/2/2018 10:46:59 AM C:\Users\rdj\OneDrive\Documents\Roadway\Proj\1015_rdj_psh-46.dgn

8/17/19

PROJECT REFERENCE NO. R-1015		SHEET NO. 47	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		PROFESSIONAL SEAL 015869 12/12/2018	
PROFESSIONAL SEAL 015869 12/12/2018		PROFESSIONAL SEAL 032581 12/13/2018	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
moftatt & nichol		4700 FALLS OF NEUSE ROAD, SUITE 300 RALEIGH, NORTH CAROLINA 27609 (919) 781-4626 VOICE (919) 781-4869 FAX NC LICENSE NO. F-0103	

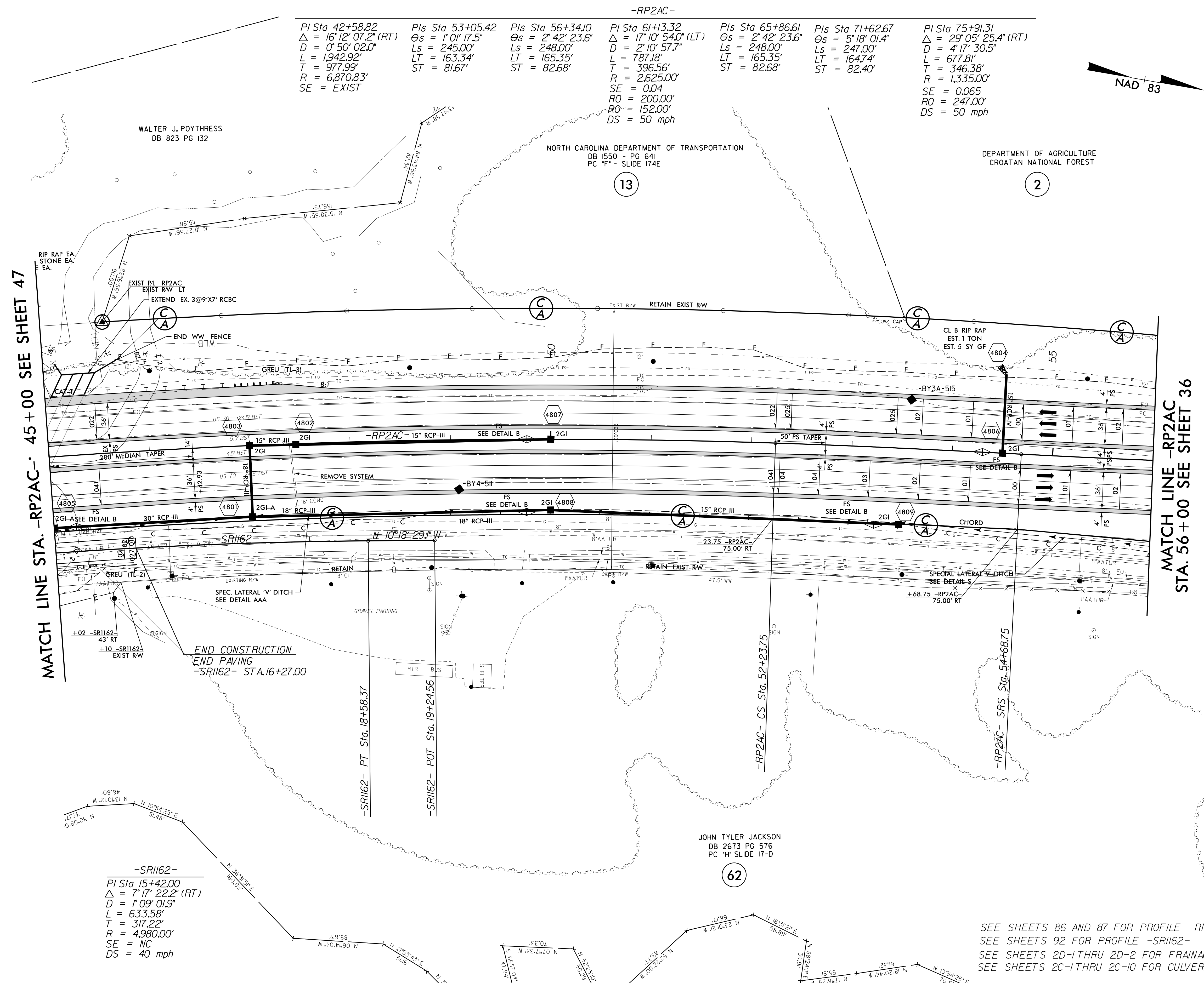


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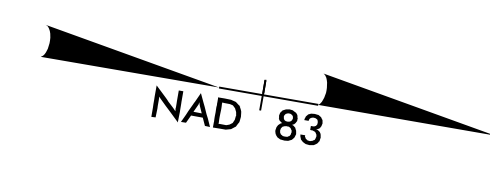
SEE SHEET 86 FOR PROFILE -RP2AC-
SEE SHEET 92 FOR PROFILE -SRI162-
SEE SHEETS 2D-1 THRU 2D-2 FOR DRAINAGE DITCH DETAILS
SEE SHEETS 2C-1 THRU 2C-10 FOR CULVERT PLANS

8/17/99

PROJECT REFERENCE NO. R-1015	SHEET NO. 48
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018
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moffatt & nichol	



-RP2AC-						
PI Sta 42+58.82 Δ = 16°12'07.2" (RT) D = 0°50'02.0" L = 1,942.92' T = 977.99' R = 6,870.83' SE = EXIST	PIs Sta 53+05.42 Θs = 1°01'17.5" Ls = 245.00' LT = 163.34' ST = 81.67'	PIs Sta 56+34.10 Θs = 2°42'23.6" Ls = 248.00' LT = 165.35' ST = 82.68'	PI Sta 61+13.32 Δ = 17°10'54.0" (LT) D = 2°10'57.7" L = 787.18' T = 396.56' R = 2,625.00' SE = 0.04 RO = 200.00' RO' = 152.00' DS = 50 mph	PIs Sta 65+86.61 Θs = 2°42'23.6" Ls = 248.00' LT = 165.35' ST = 82.68'	PIs Sta 71+62.67 Θs = 5°18'01.4" Ls = 247.00' LT = 164.74' ST = 82.40'	PI Sta 75+91.31 Δ = 29°05'25.4" (RT) D = 4°17'30.5" L = 677.81' T = 346.38' R = 1,335.00' SE = 0.065 RO = 247.00' DS = 50 mph



MATCH LINE STA. -RP2AC- 45+00 SEE SHEET 47

MATCH LINE -RP2AC STA. 56+00 SEE SHEET 36

-SRI162-	
PI Sta 15+42.00	Δ = 7°17'22.2" (RT)
D = 1°09'01.9"	L = 633.58'
T = 317.22'	R = 4,980.00'
SE = NC	DS = 40 mph

SEE SHEETS 86 AND 87 FOR PROFILE -RP2AC-
SEE SHEETS 92 FOR PROFILE -SRI162-
SEE SHEETS 2D-1 THRU 2D-2 FOR FRAINAGE DITCH DETAILS
SEE SHEETS 2C-1 THRU 2C-10 FOR CULVERT PLANS

JOHN TYLER
DB 2673 P
PC 4" SLID

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 10/26/2018 10:26:29 AM

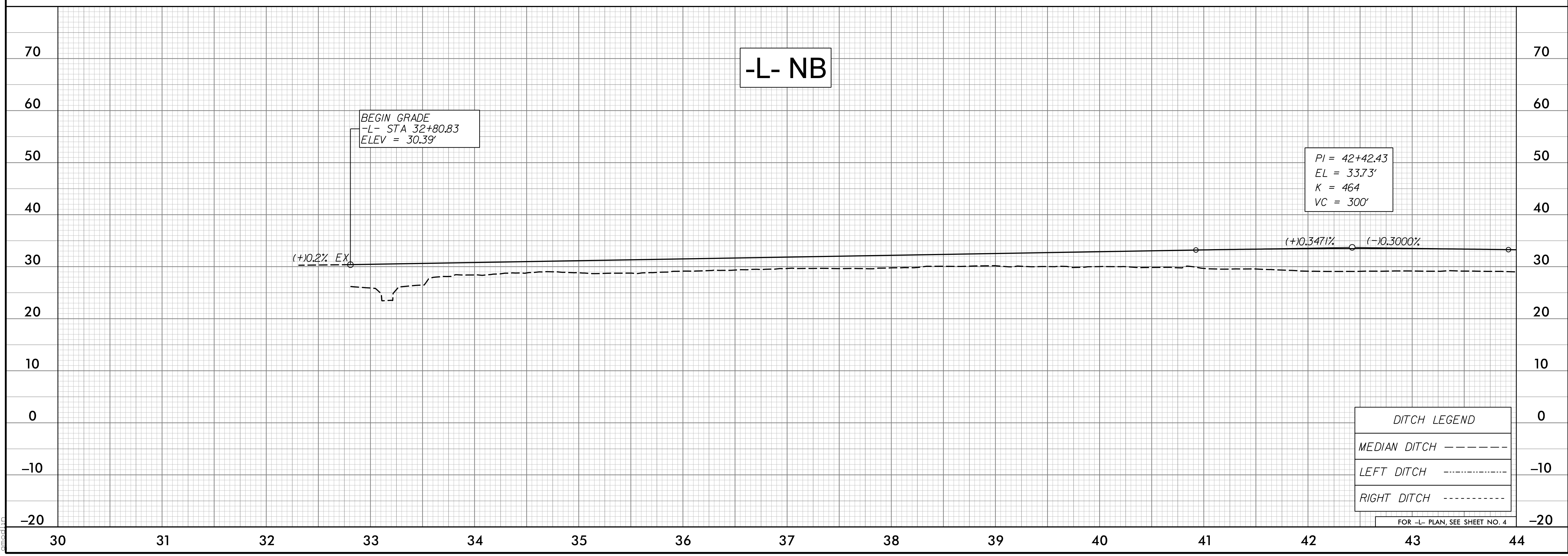
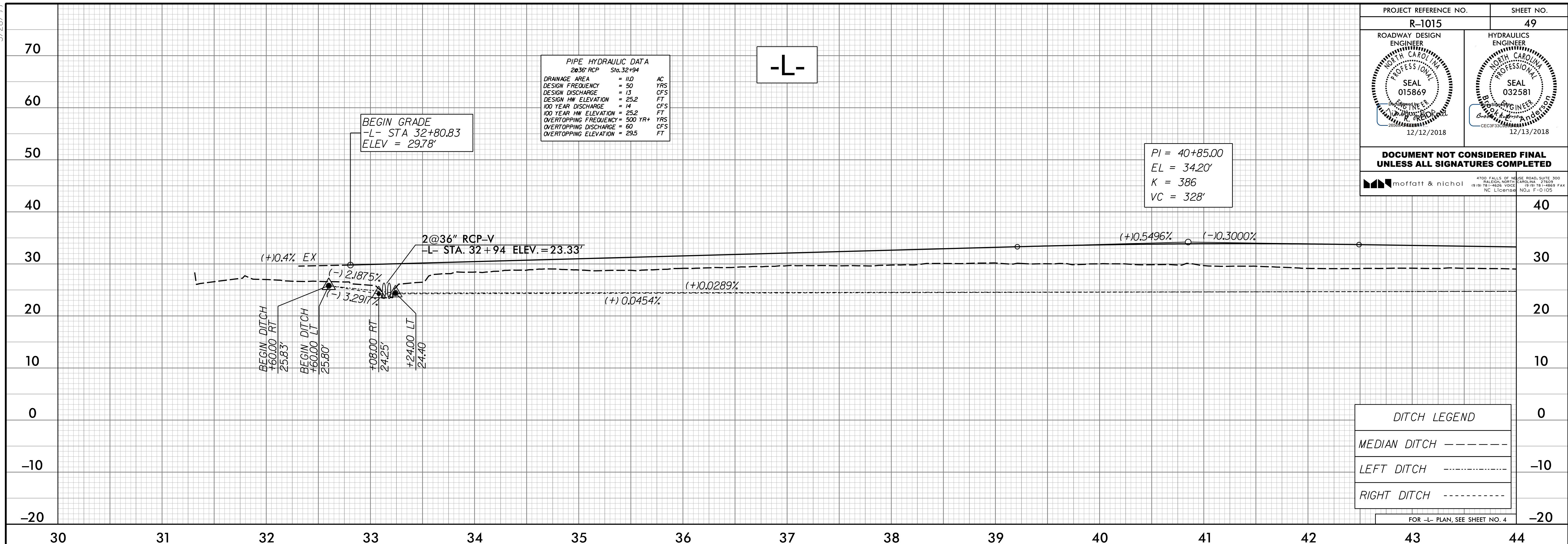
5/28/19

PROJECT REFERENCE NO. R-1015	SHEET NO. 49
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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4700 FALLS OF THE ROADS, SUITE 300
FALGOUT, NORTH CAROLINA 27629
(919) 781-4600 VOICE (919) 781-4666 FAX
NC License NO.: F-0105

moffatt & nichol



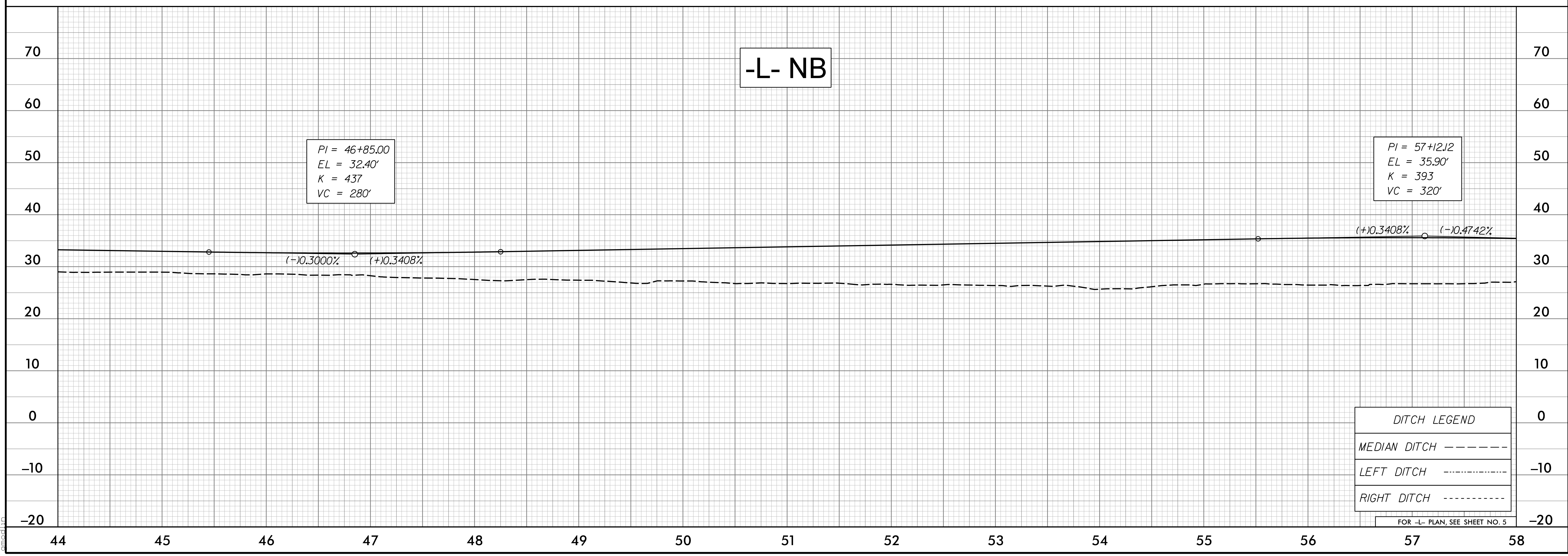
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5/28/19

PROJECT REFERENCE NO. R-1015	SHEET NO. 50
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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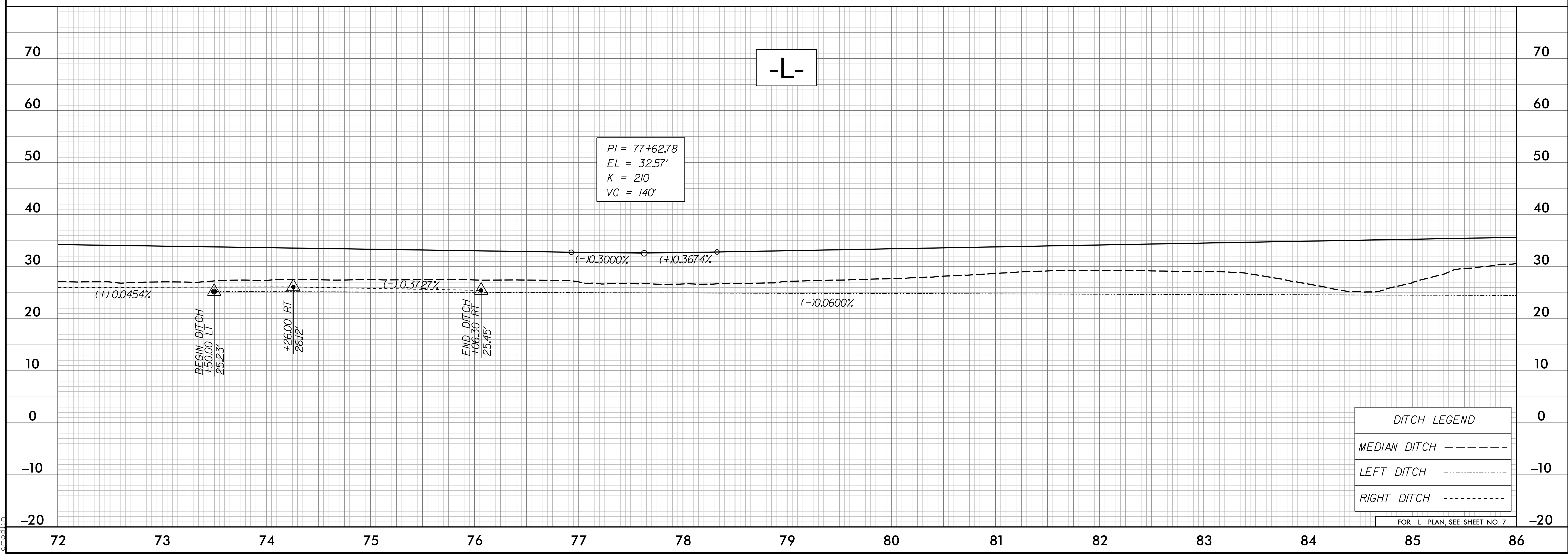
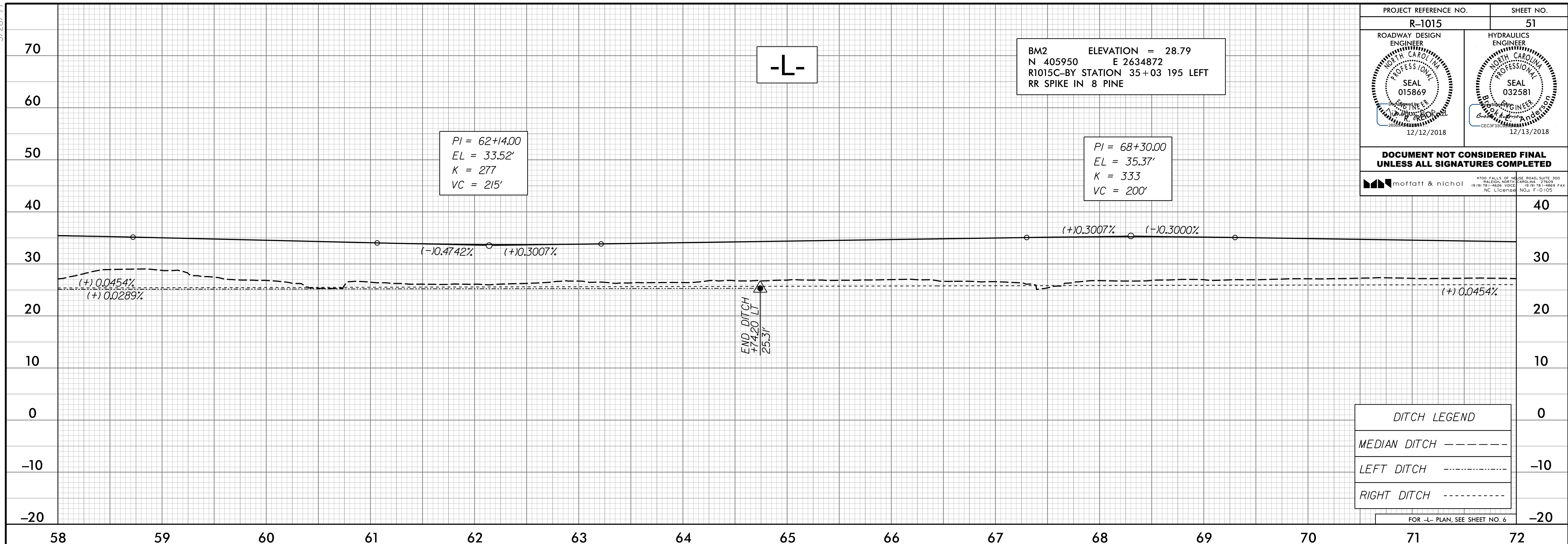
moftatt & nichol
4700 FALLS OF THE ROADS, SUITE 100
FALCON, NORTH CAROLINA 27629
(919) 781-4626 VOICE (919) 781-4666 FAX
NC License NO.: F-0105



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5/28/19

PROJECT REFERENCE NO. R-1015	SHEET NO. 51
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 015869 12/12/2018	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 032581 12/13/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
<small>4705 FALLS OF THE ROADS, SUITE 200 FALGOUT, NORTH CAROLINA 27629 (919) 781-4600 VOICE (919) 781-4666 FAX NC License NO.: F-0105</small>	



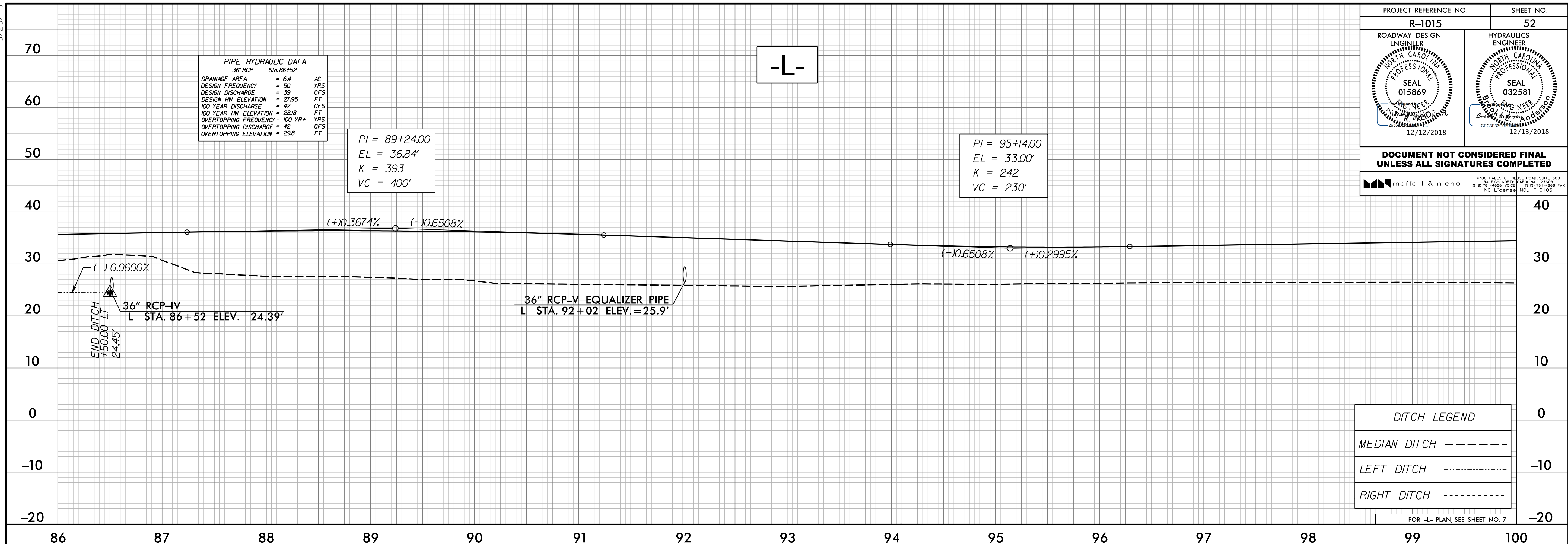
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5/28/19

PROJECT REFERENCE NO. R-1015	SHEET NO. 52
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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DITCH LEGEND

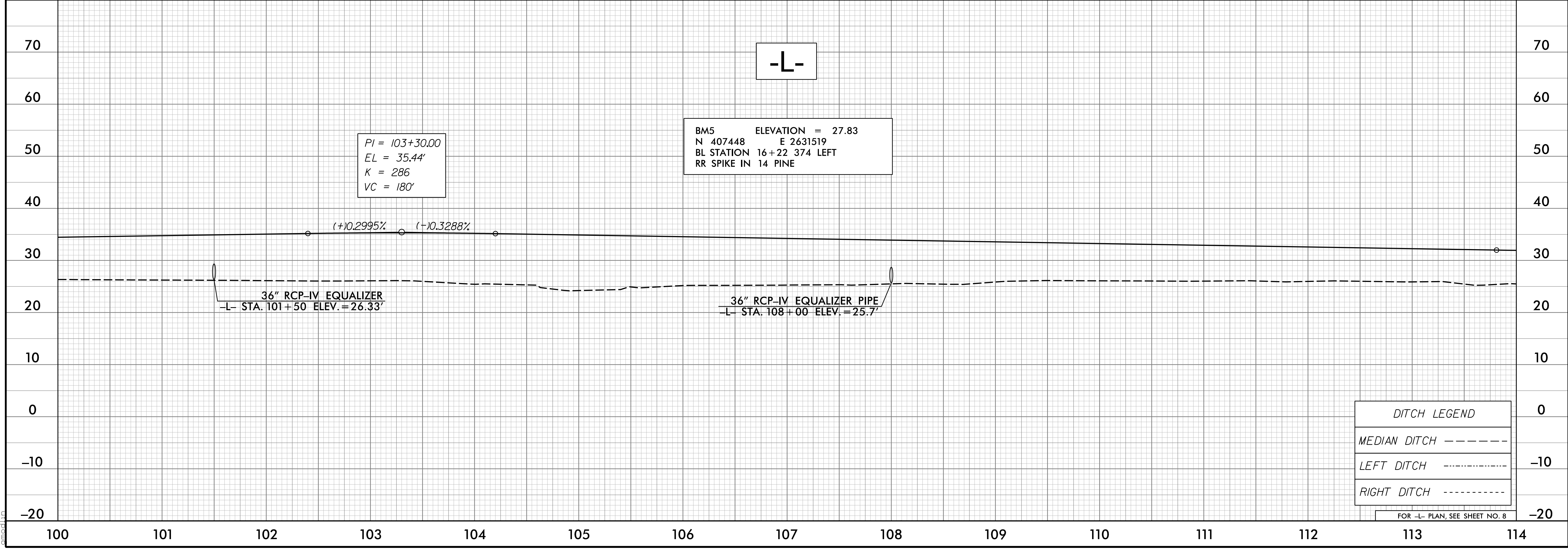
MEDIAN DITCH - - - - -

LEFT DITCH -

RIGHT DITCH - - - - -

FOR -L- PLAN, SEE SHEET NO. 7

I:\2018\10-18-18\1015\Roadway\Proc\1015_rdy_of152.dgn



DITCH LEGEND

MEDIAN DITCH - - - - -

LEFT DITCH -

RIGHT DITCH - - - - -

FOR -L- PLAN, SEE SHEET NO. 8

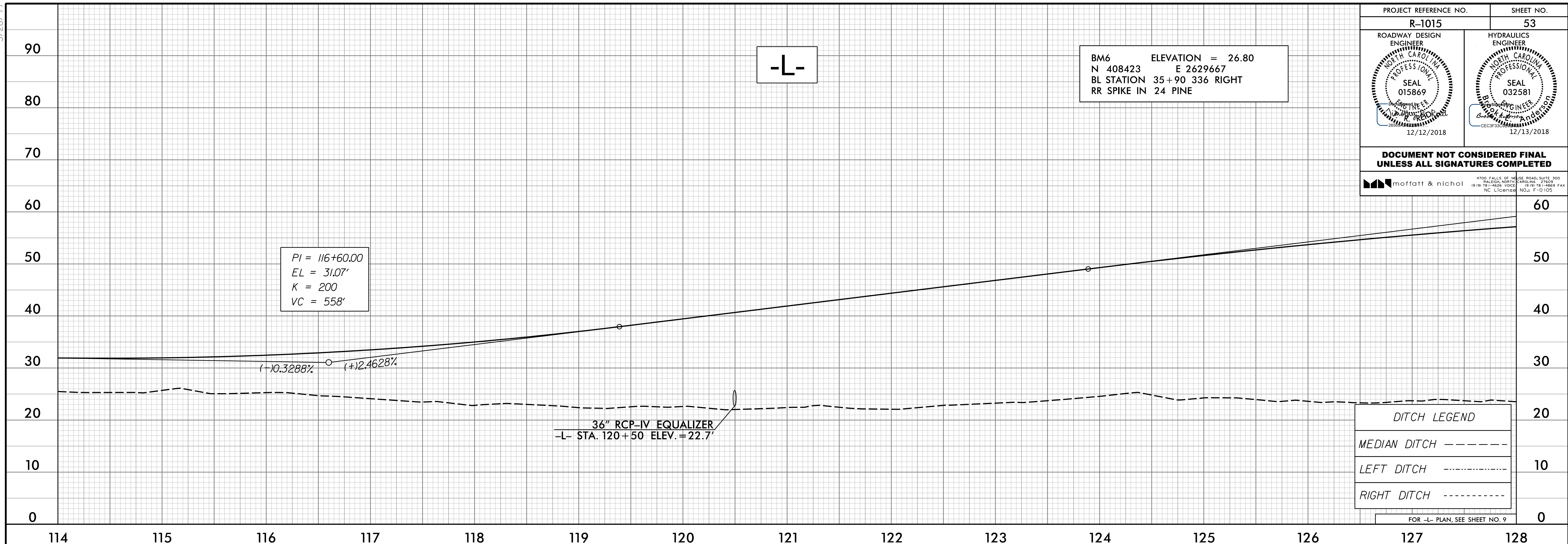
5/28/2018

PROJECT REFERENCE NO. R-1015	SHEET NO. 53
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 015869 12/12/2018	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 032581 12/13/2018

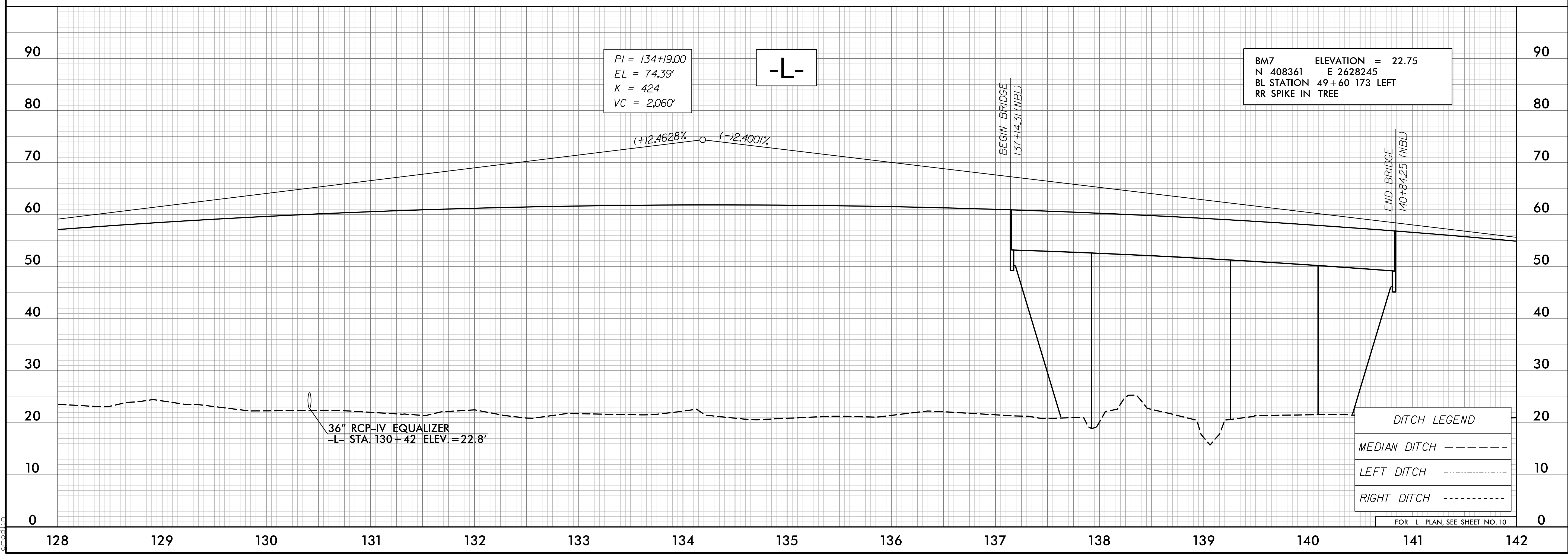
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NC License NO.: F-0105



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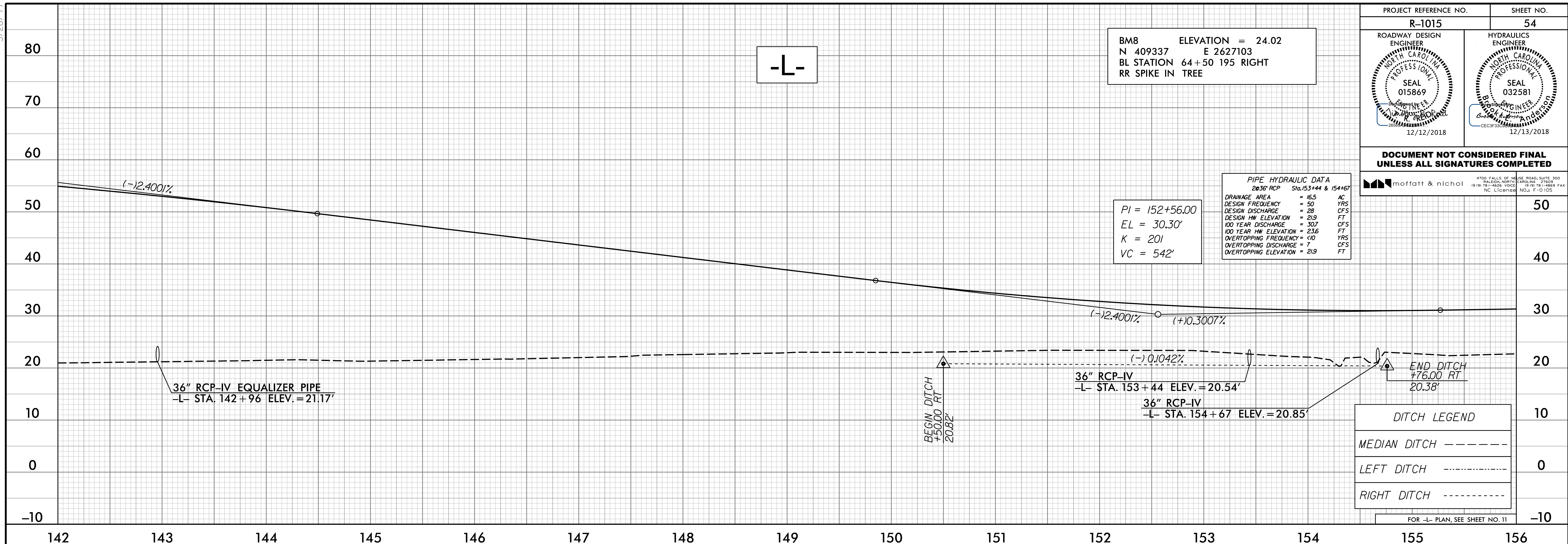
PROJECT REFERENCE NO. R-1015	SHEET NO. 54
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

BM8 ELEVATION = 24.02
N 409337 E 2627103
BL STATION 64+50 195 RIGHT
RR SPIKE IN TREE

PIPE HYDRAULIC DATA
20.36" RCP Sta. 153+44 & 154+67

DRAINAGE AREA	= 16.5	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 28	CFS
DESIGN HW ELEVATION	= 21.9	FT
100 YEAR DISCHARGE	= 30.7	CFS
100 YEAR HW ELEVATION	= 23.6	FT
OVERTOPPING FREQUENCY	= 10	YRS
OVERTOPPING DISCHARGE	= 7	CFS
OVERTOPPING ELEVATION	= 21.9	FT

PI = 152+56.00
EL = 30.30'
K = 201
VC = 542'



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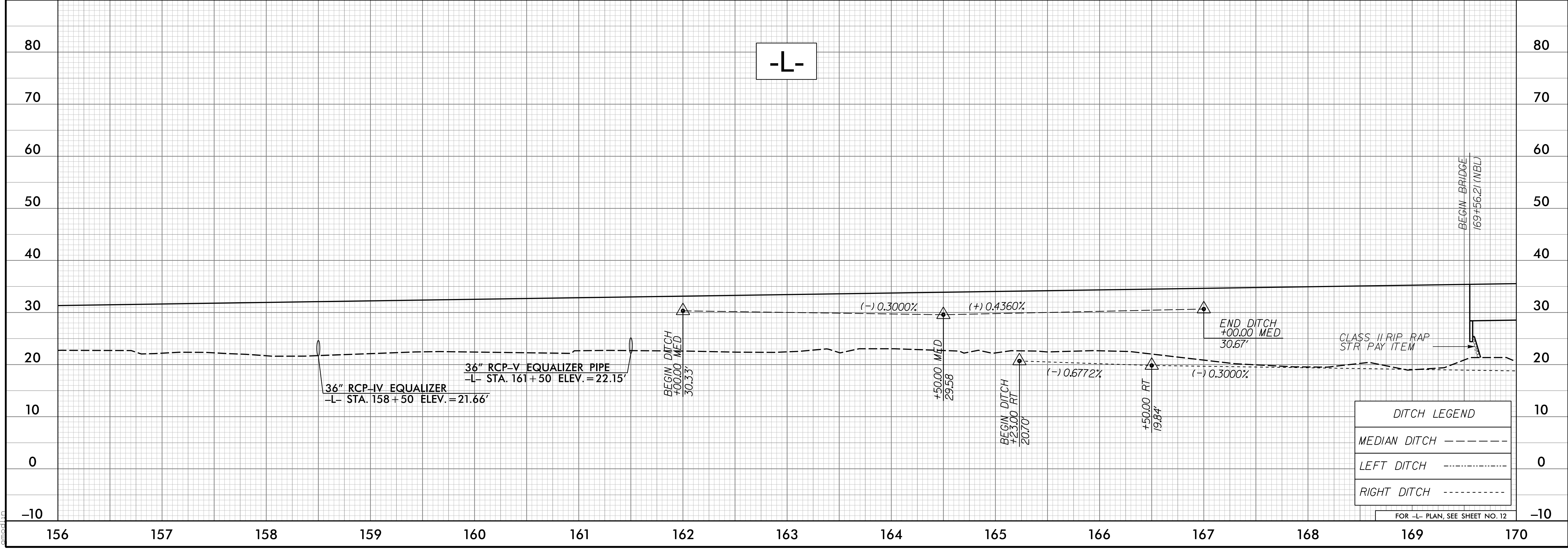
moftatt & nichol

DITCH LEGEND

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

FOR -L- PLAN, SEE SHEET NO. 11

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DITCH LEGEND

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

FOR -L- PLAN, SEE SHEET NO. 12

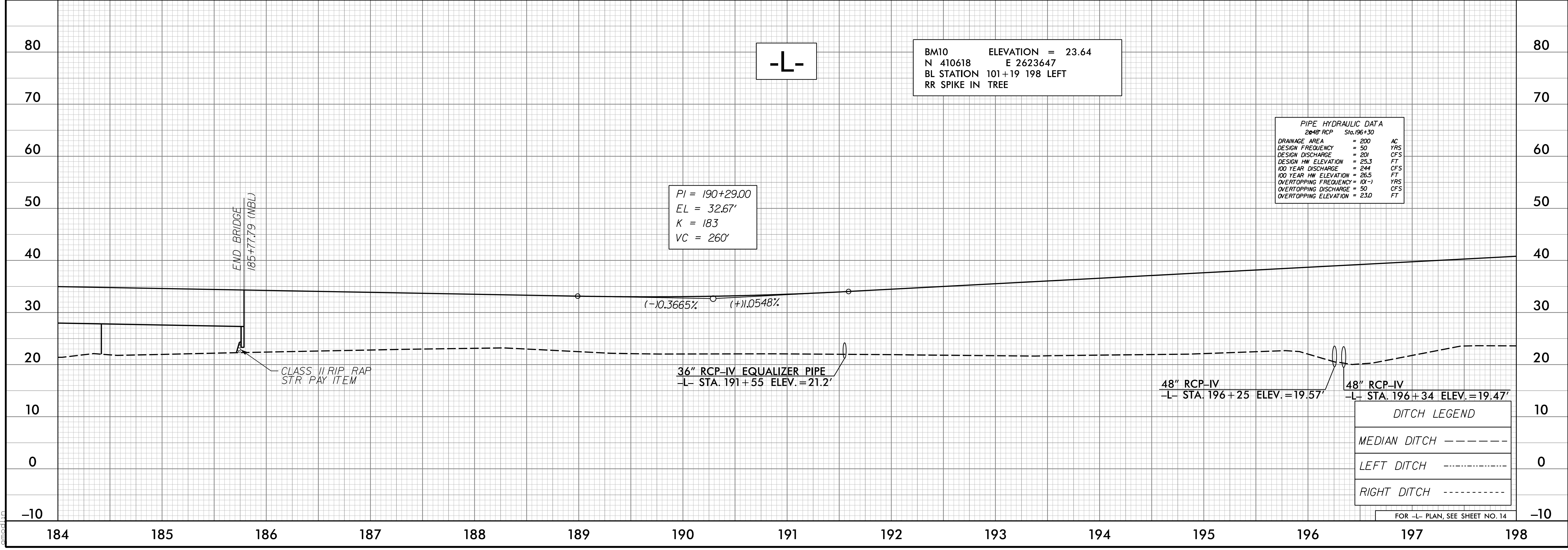
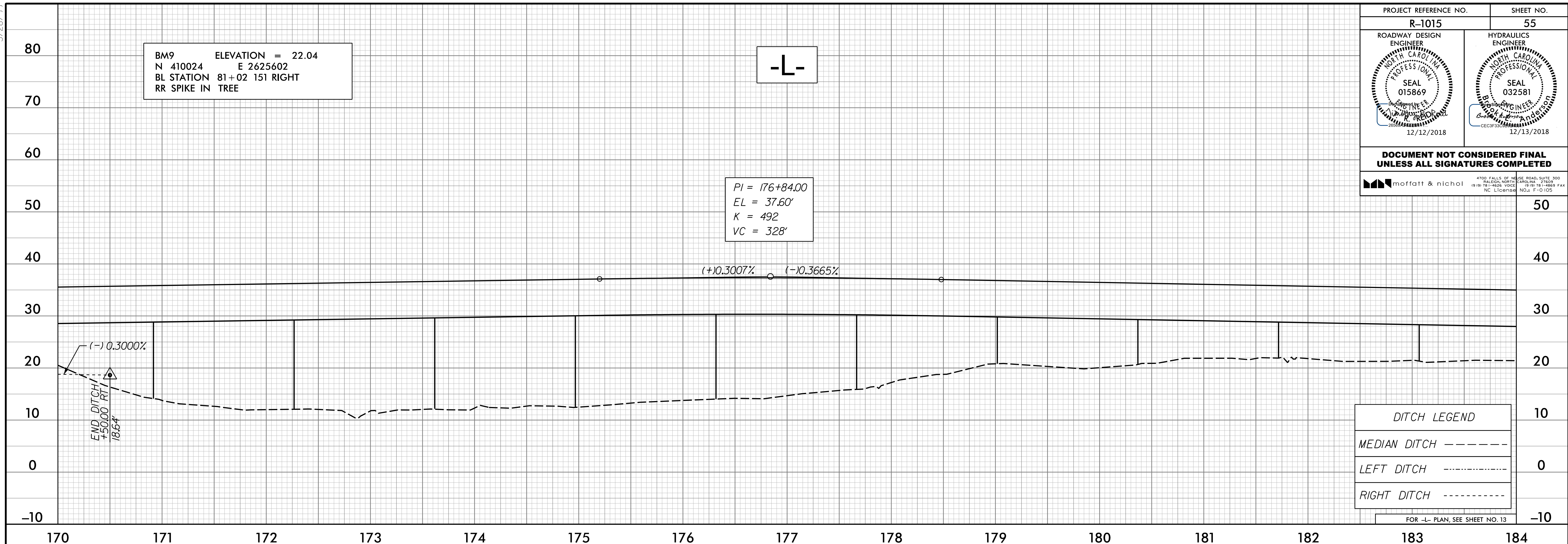
5/28/2018

PROJECT REFERENCE NO. R-1015	SHEET NO. 55
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 015869 12/12/2018	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 032581 12/13/2018

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4700 FALLS OF THE ROADS, SUITE 200
FALGOUT, NORTH CAROLINA 27629
(919) 781-4626 VOICE (919) 781-4666 FAX
NC License NO.: F-0105



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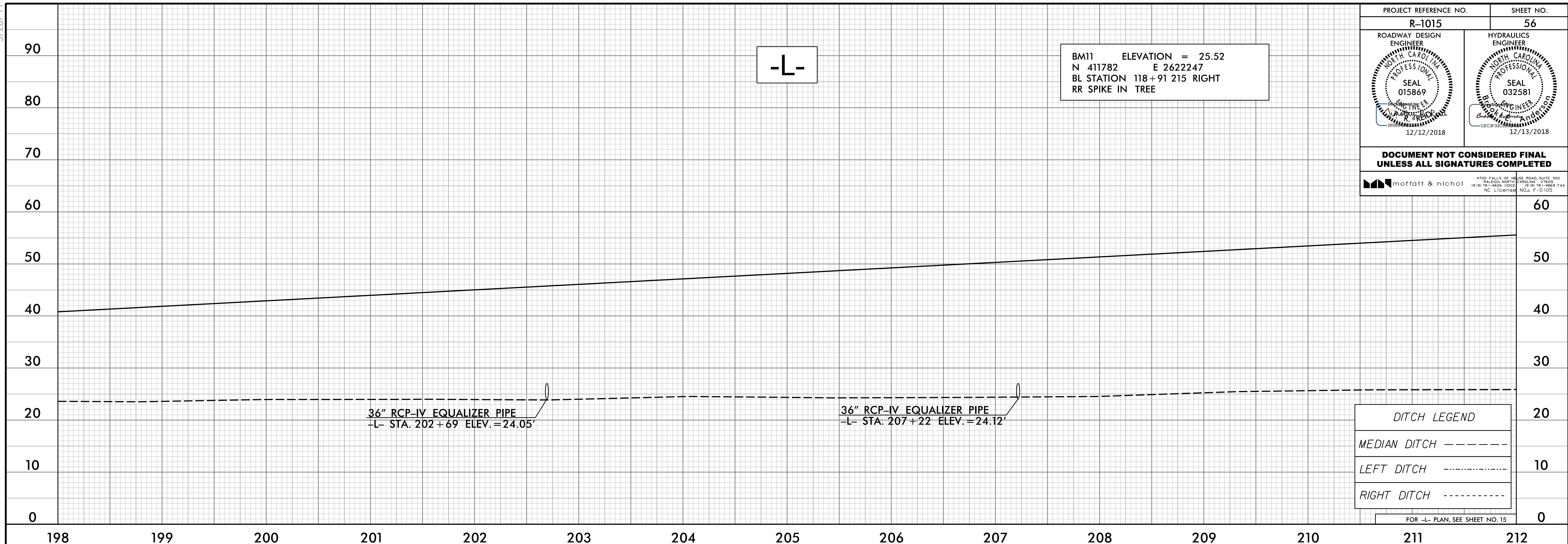
5/28/19

PROJECT REFERENCE NO. R-1015	SHEET NO. 56
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

BM11 ELEVATION = 25.52
 N 411782 E 2622247
 BL STATION 118+91 215 RIGHT
 RR SPIKE IN TREE

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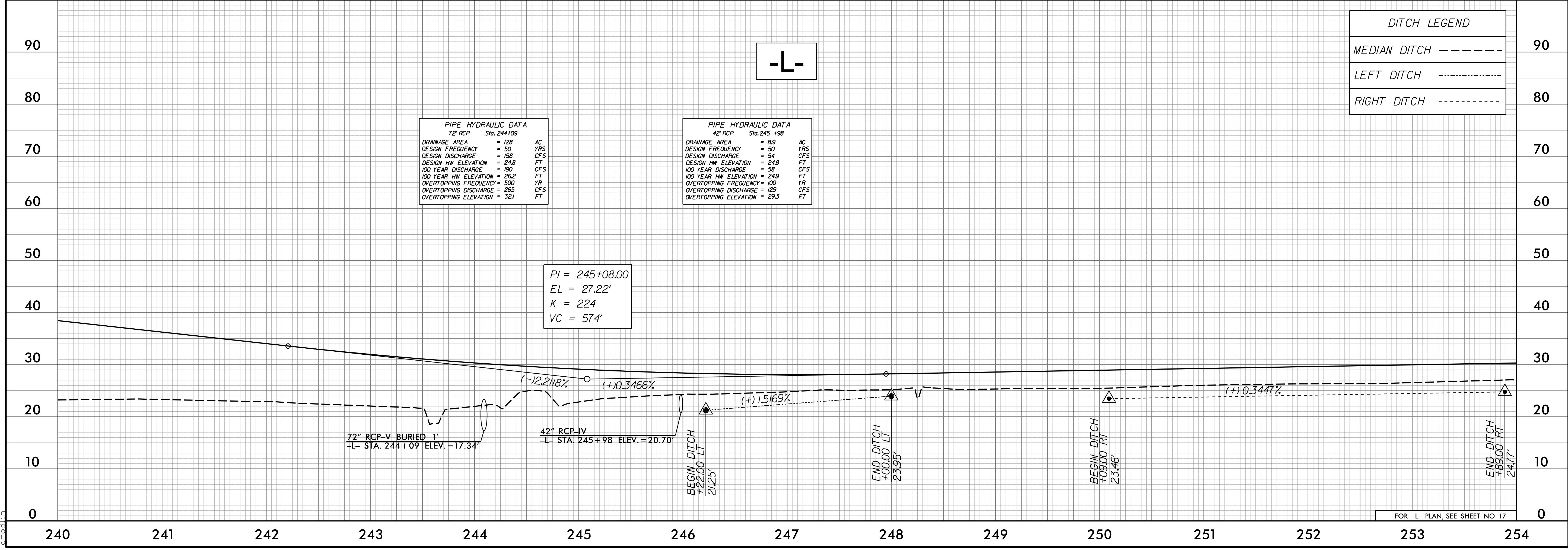
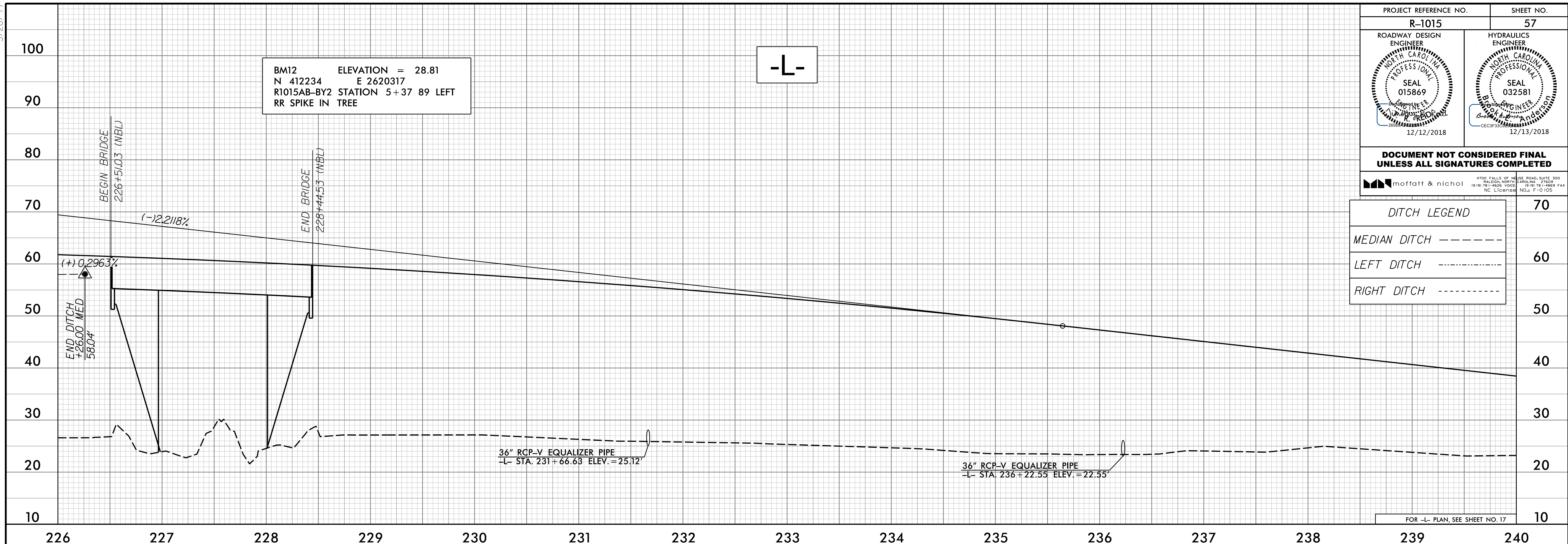
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PROJECT REFERENCE NO. R-1015	SHEET NO. 57
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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4705 FALLS OF THE ROADS, SUITE 100
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NC License NO.: F-0105



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5/28/2018

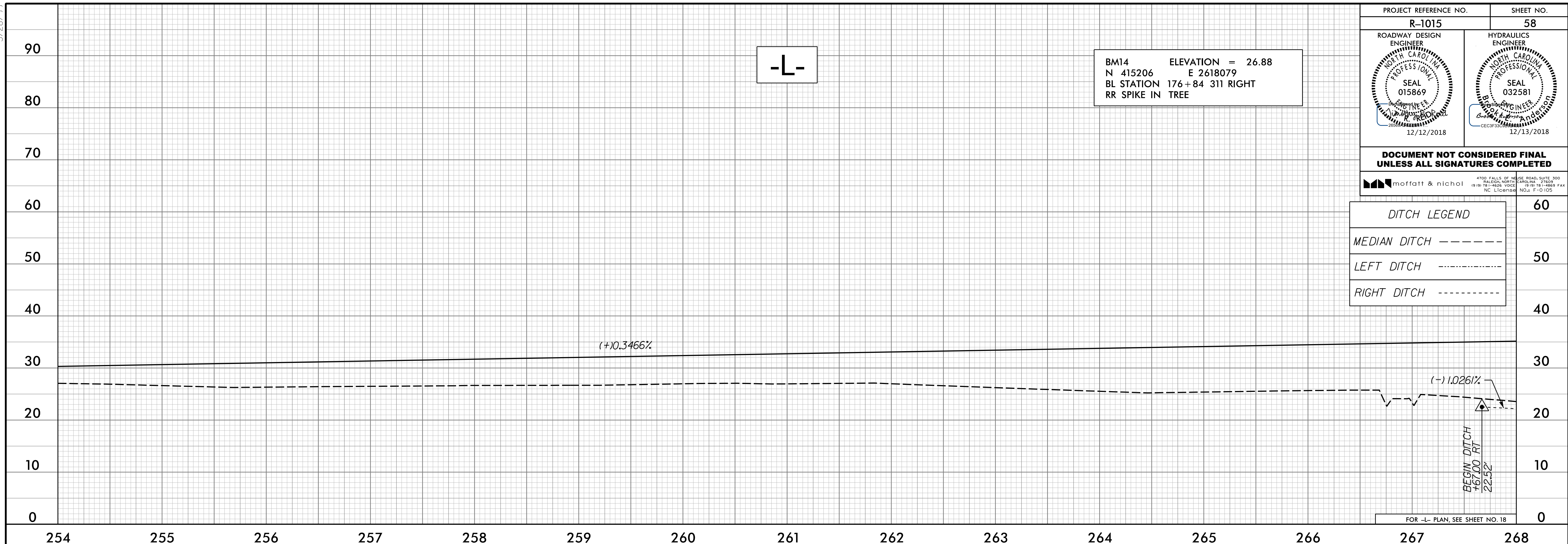
PROJECT REFERENCE NO. R-1015	SHEET NO. 58
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

BM14 ELEVATION = 26.88
 N 415206 E 2618079
 BL STATION 176+84 311 RIGHT
 RR SPIKE IN TREE

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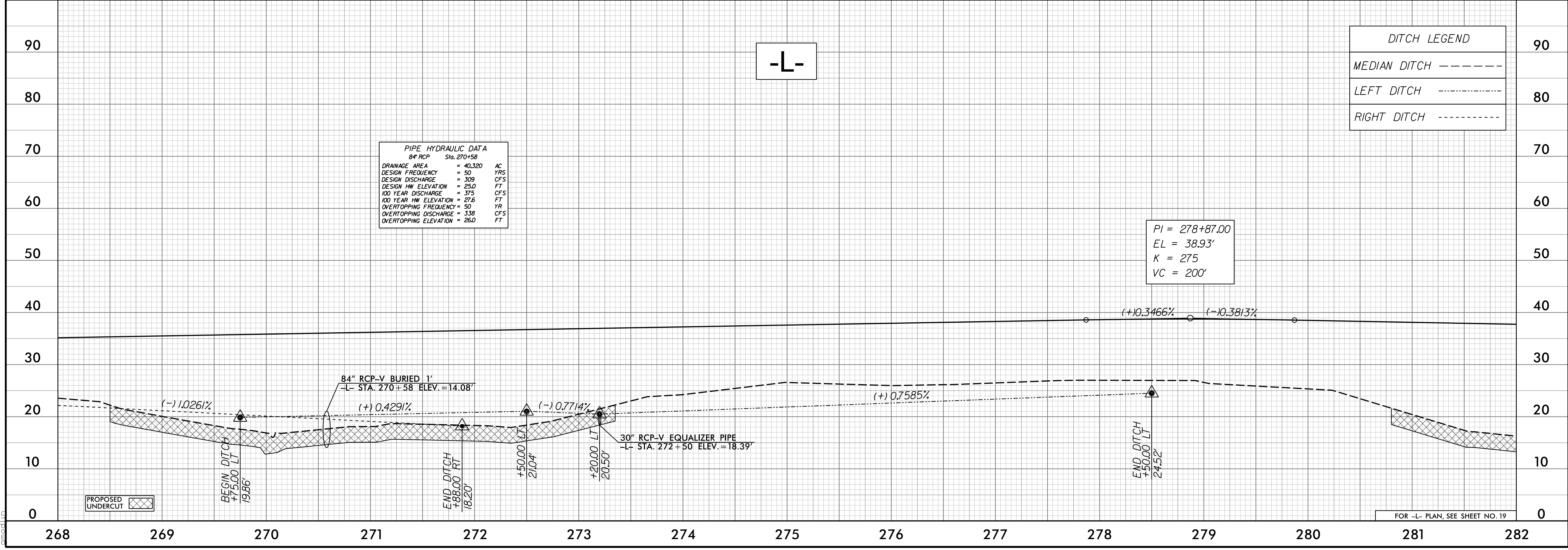
DITCH LEGEND	
MEDIAN DITCH	-----
LEFT DITCH	-----
RIGHT DITCH	-----



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

PIPE HYDRAULIC DATA		
84" RCP	Sta. 270+58	
DRAINAGE AREA	= 40.320	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 309	CFS
DESIGN HW ELEVATION	= 25.0	FT
100 YEAR DISCHARGE	= 375	CFS
100 YEAR HW ELEVATION	= 27.6	FT
OVERTOPPING FREQUENCY	= 50	YR
OVERTOPPING DISCHARGE	= 338	CFS
OVERTOPPING ELEVATION	= 26.0	FT

PI = 278+87.00
 EL = 38.93'
 K = 275
 VC = 200'



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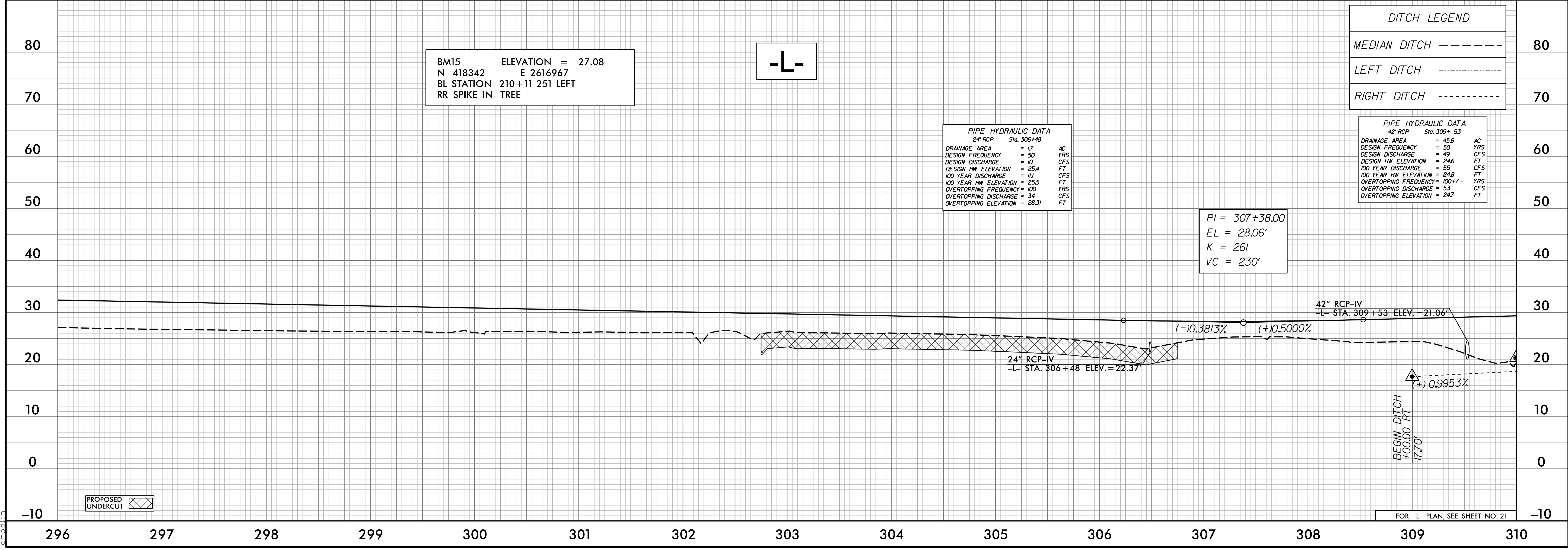
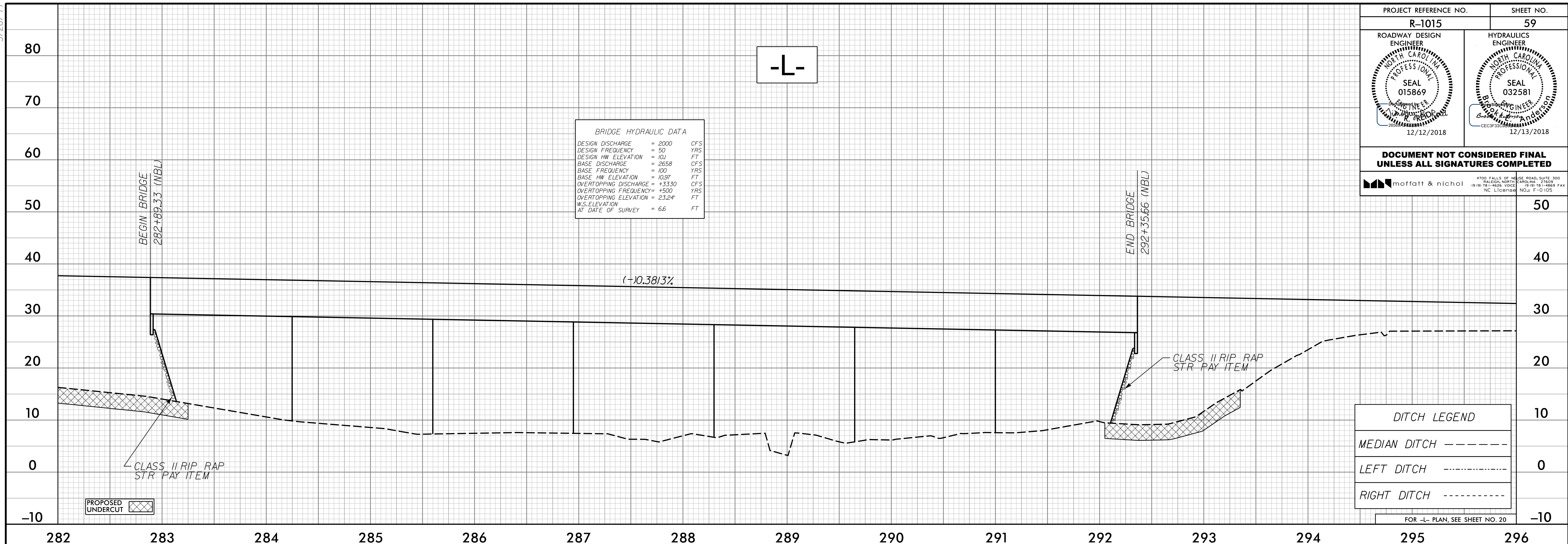
FOR -L- PLAN, SEE SHEET NO. 19

5/28/2018

PROJECT REFERENCE NO. R-1015	SHEET NO. 59
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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4700 FALLS OF THE ROADS, SUITE 200
FARGO, NORTH DAKOTA 58103
701-781-4600 VOICE 701-781-4664 FAX
NC License No. F-0105



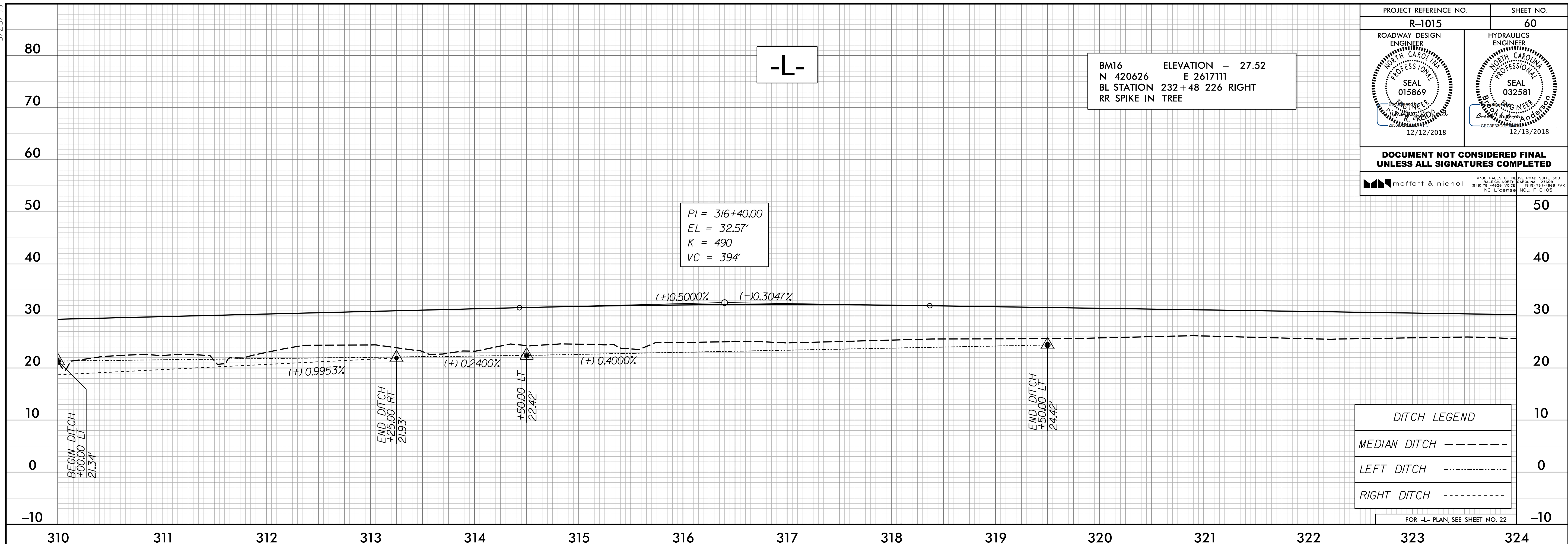
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5/28/19

PROJECT REFERENCE NO. R-1015	SHEET NO. 60
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 015869 12/12/2018	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 032581 12/13/2018

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PI = 316+40.00
EL = 32.57'
K = 490
VC = 394'

BM16 ELEVATION = 27.52
N 420626 E 2617111
BL STATION 232+48 226 RIGHT
RR SPIKE IN TREE

DITCH LEGEND

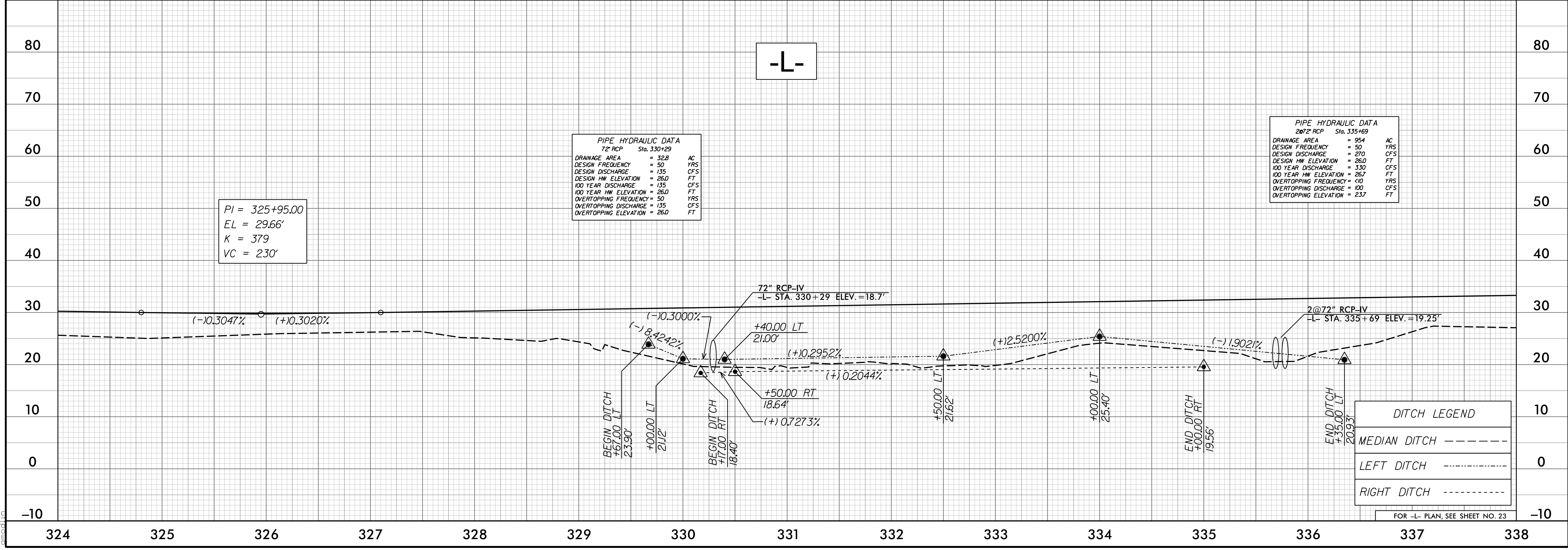
MEDIAN DITCH - - - - -

LEFT DITCH -

RIGHT DITCH - - - - -

FOR -L- PLAN, SEE SHEET NO. 22

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PI = 325+95.00
EL = 29.66'
K = 379
VC = 230'

PIPE HYDRAULIC DATA
72" RCP Sta. 330+29

DRAINAGE AREA	= 32.8	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 135	CFS
DESIGN HW ELEVATION	= 26.0	FT
100 YEAR DISCHARGE	= 135	CFS
100 YEAR HW ELEVATION	= 26.0	FT
OVERTOPPING FREQUENCY	= 50	YRS
OVERTOPPING DISCHARGE	= 135	CFS
OVERTOPPING ELEVATION	= 26.0	FT

PIPE HYDRAULIC DATA
2x72" RCP Sta. 335+69

DRAINAGE AREA	= 95.4	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 270	CFS
DESIGN HW ELEVATION	= 26.0	FT
100 YEAR DISCHARGE	= 330	CFS
100 YEAR HW ELEVATION	= 26.7	FT
OVERTOPPING FREQUENCY	= 50	YRS
OVERTOPPING DISCHARGE	= 100	CFS
OVERTOPPING ELEVATION	= 23.7	FT

DITCH LEGEND

MEDIAN DITCH - - - - -

LEFT DITCH -

RIGHT DITCH - - - - -

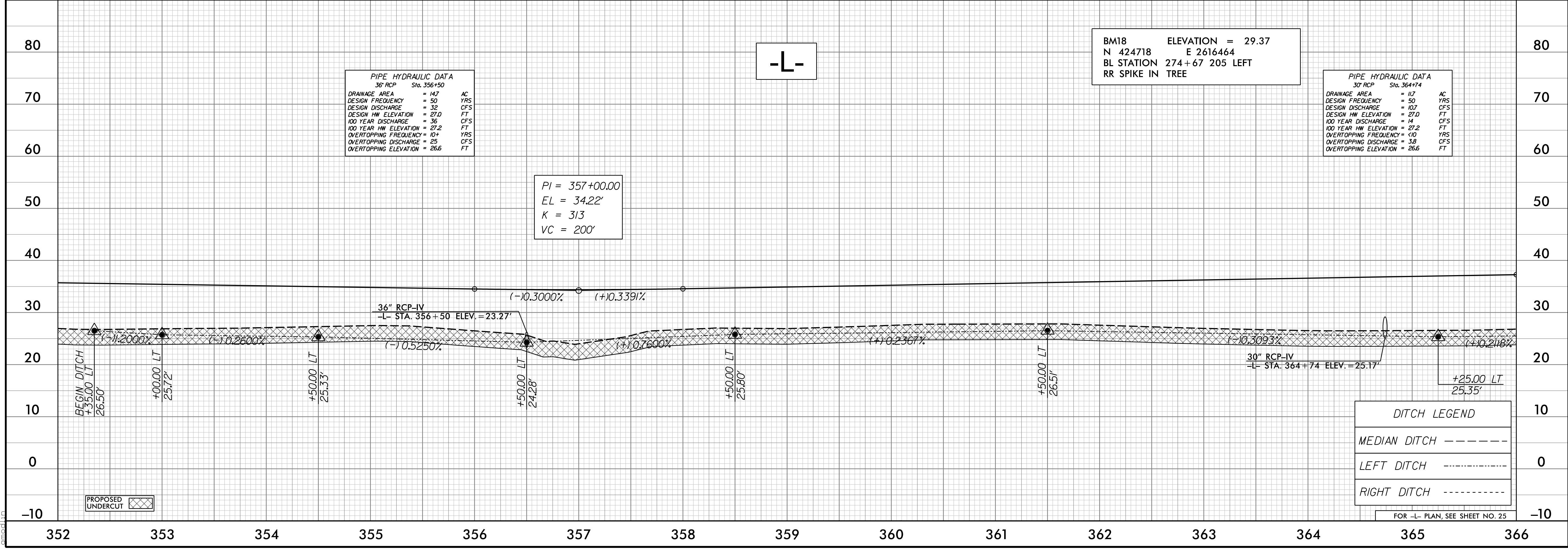
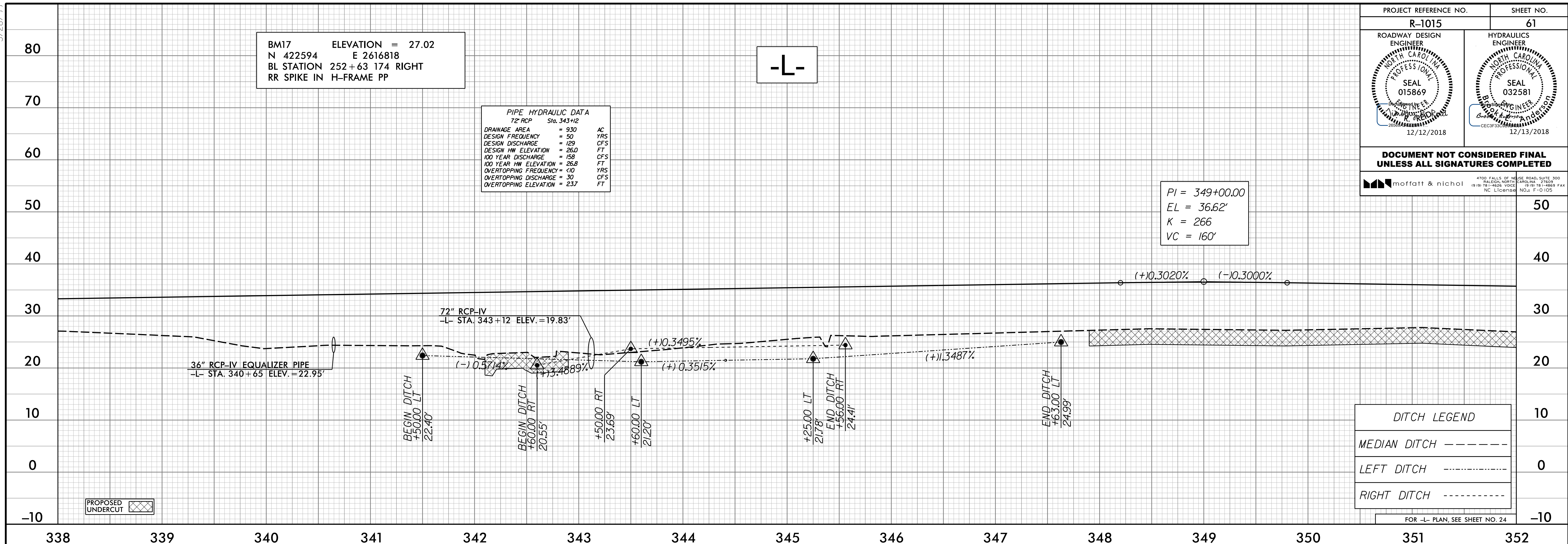
FOR -L- PLAN, SEE SHEET NO. 23

5/28/19

PROJECT REFERENCE NO. R-1015	SHEET NO. 61
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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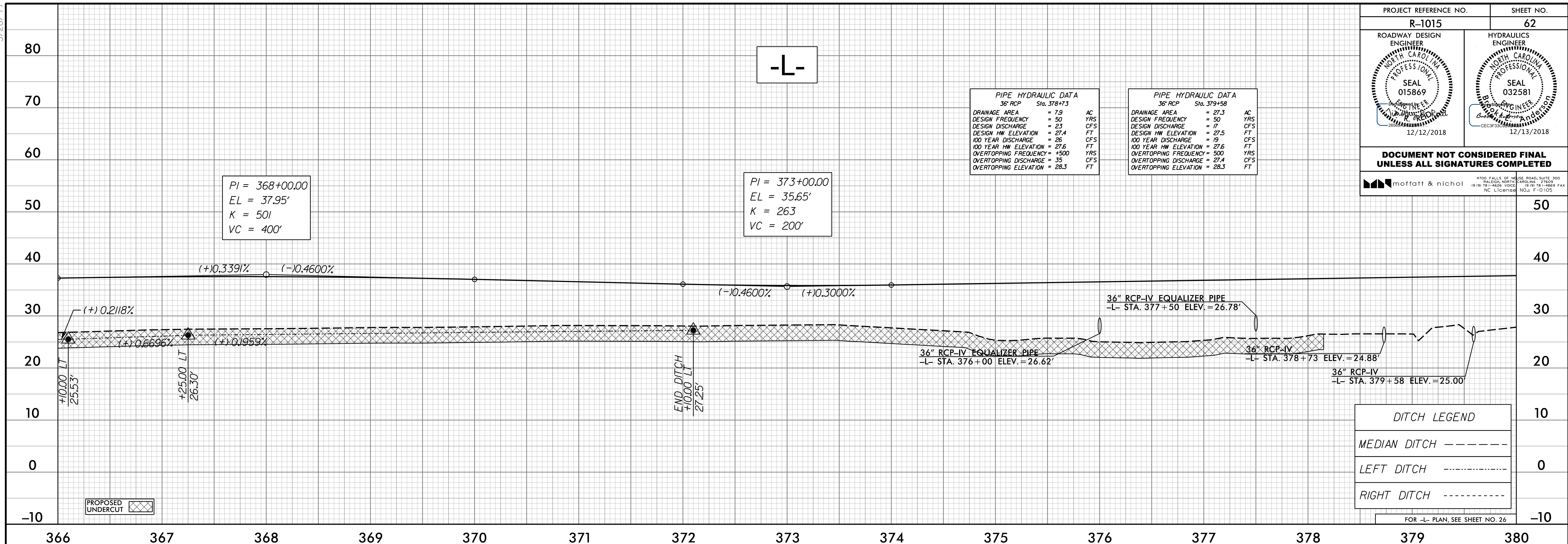
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5/28/2018

PROJECT REFERENCE NO. R-1015	SHEET NO. 62
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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PIPE HYDRAULIC DATA
36" RCP Sta. 378+73

DRAINAGE AREA	= 7.9	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 23	CFS
DESIGN HW ELEVATION	= 27.4	FT
100 YEAR DISCHARGE	= 36	CFS
100 YEAR HW ELEVATION	= 27.6	FT
OVERTOPPING FREQUENCY	= +500	YRS
OVERTOPPING DISCHARGE	= 35	CFS
OVERTOPPING ELEVATION	= 28.3	FT

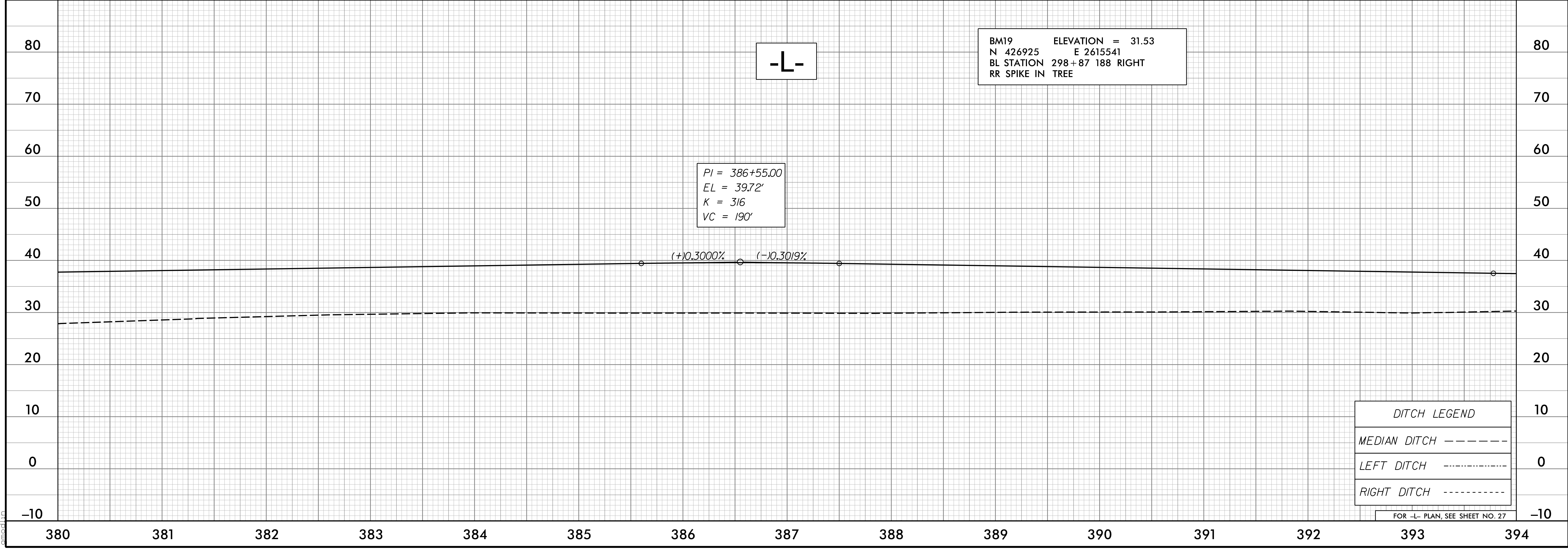
PIPE HYDRAULIC DATA
36" RCP Sta. 379+58

DRAINAGE AREA	= 27.3	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 17	CFS
DESIGN HW ELEVATION	= 21.5	FT
100 YEAR DISCHARGE	= 19	CFS
100 YEAR HW ELEVATION	= 21.6	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 21.4	CFS
OVERTOPPING ELEVATION	= 28.3	FT

DITCH LEGEND

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

FOR -L- PLAN, SEE SHEET NO. 26



BM19 ELEVATION = 31.53
N 426925 E 2615541
BL STATION 298+87 188 RIGHT
RR SPIKE IN TREE

DITCH LEGEND

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

FOR -L- PLAN, SEE SHEET NO. 27

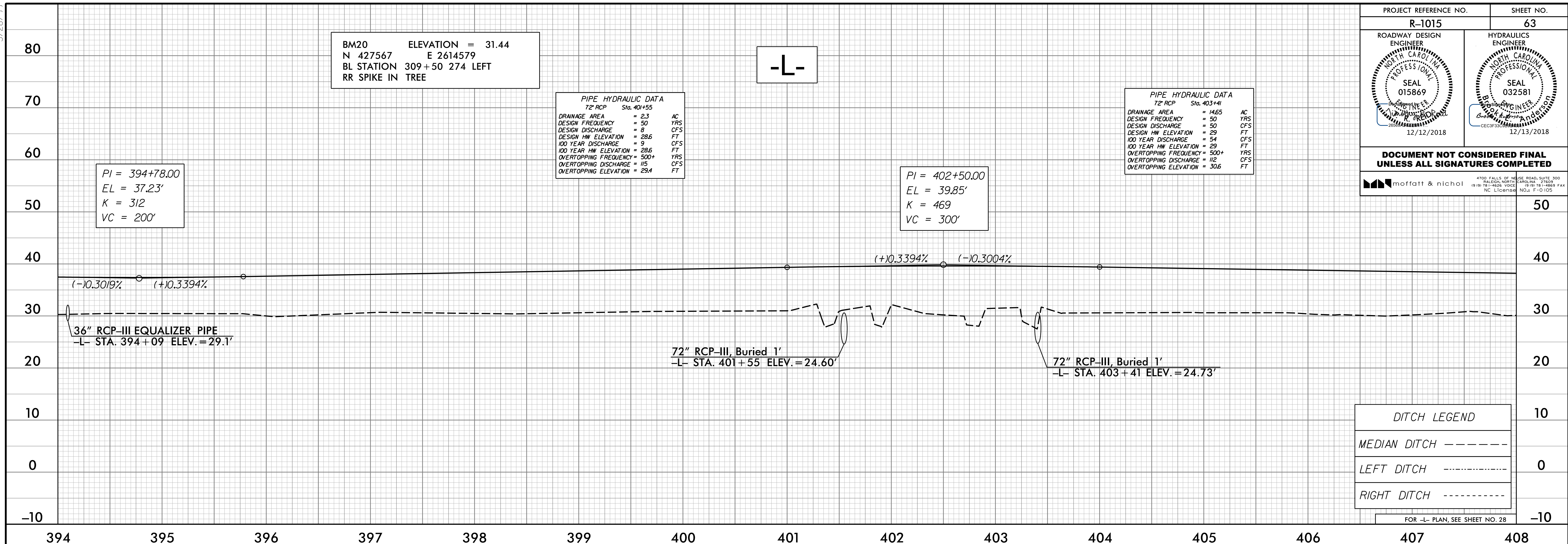
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5/28/2018

PROJECT REFERENCE NO. R-1015	SHEET NO. 63
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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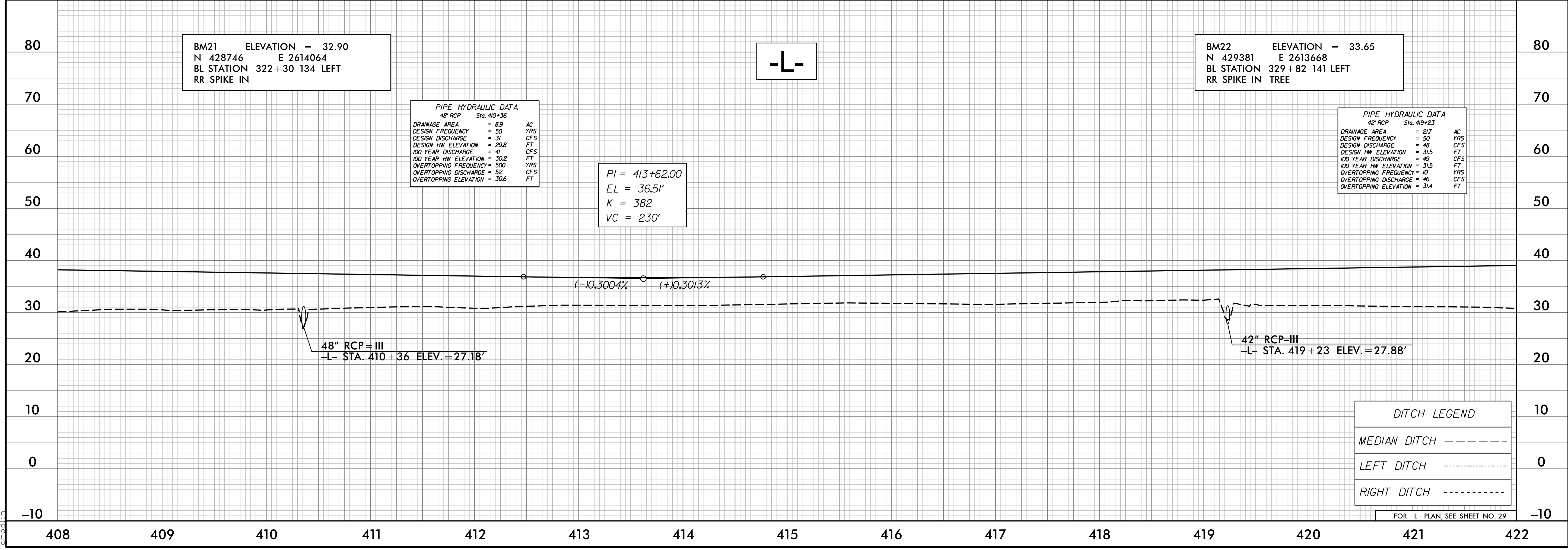
DITCH LEGEND

MEDIAN DITCH - - - - -

LEFT DITCH -

RIGHT DITCH - - - - -

FOR -L- PLAN, SEE SHEET NO. 28



DITCH LEGEND

MEDIAN DITCH - - - - -

LEFT DITCH -

RIGHT DITCH - - - - -

FOR -L- PLAN, SEE SHEET NO. 29

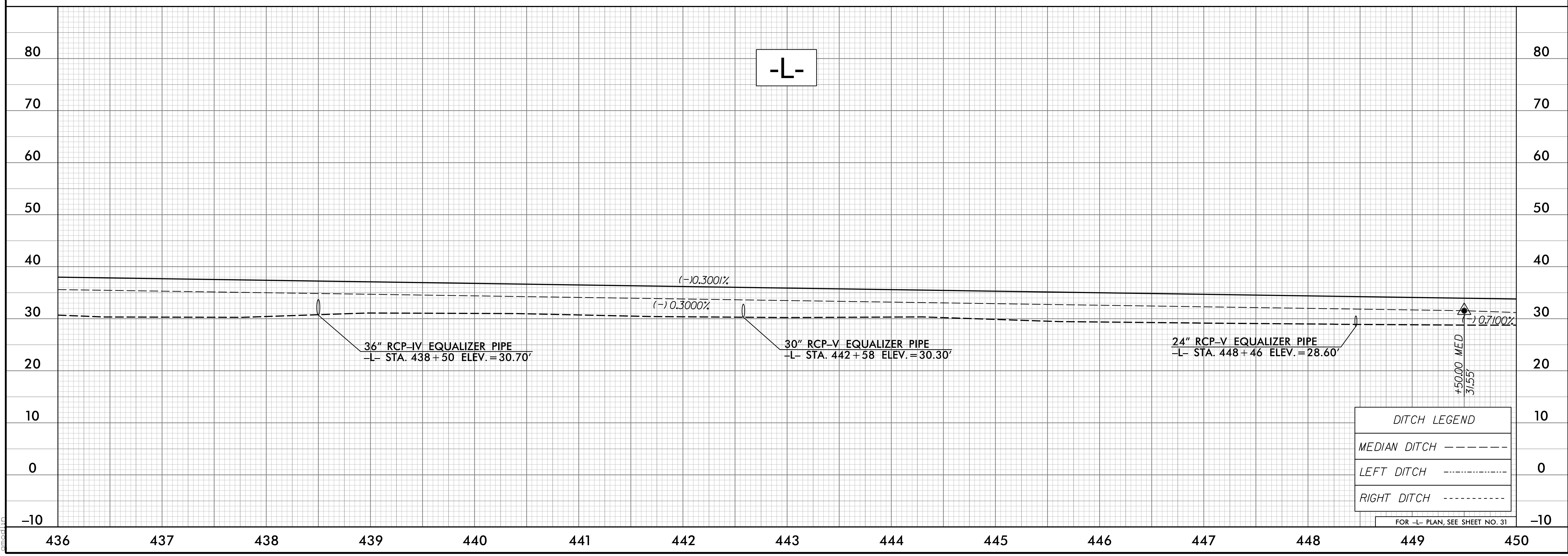
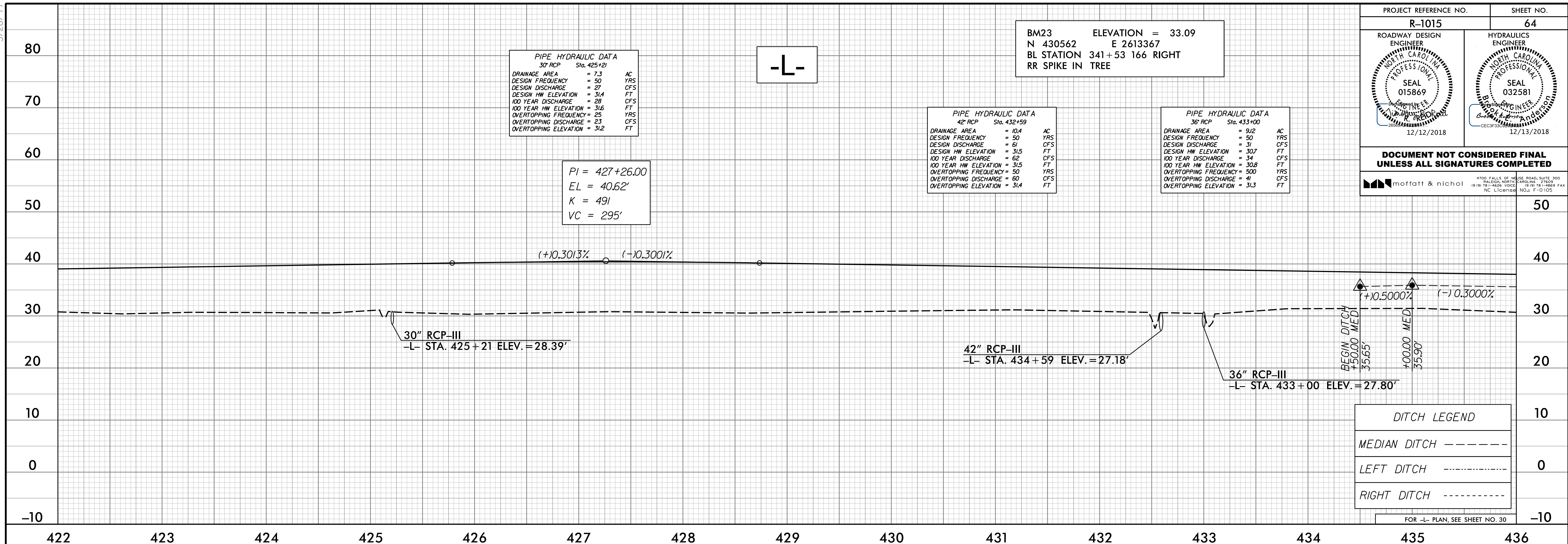
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5/28/2018

PROJECT REFERENCE NO. R-1015	SHEET NO. 64
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 015869 12/12/2018	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 032581 12/13/2018

**DOCUMENT NOT CONSIDERED FINAL
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MOFFATT & NICHOL



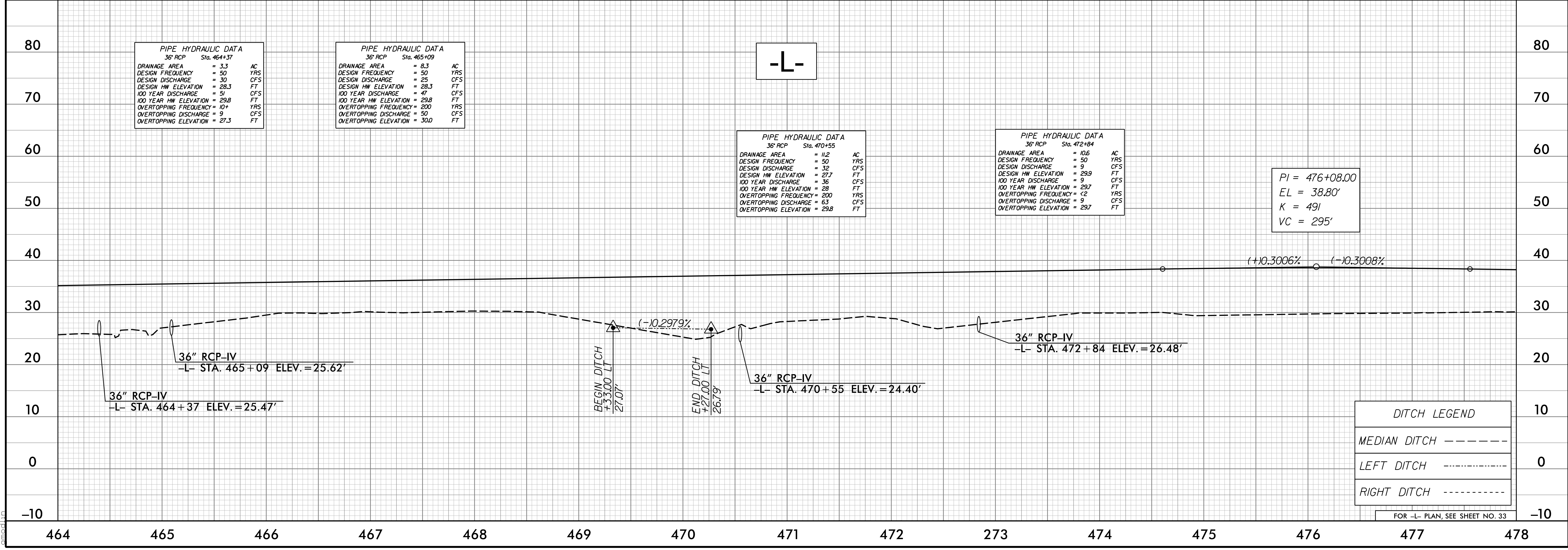
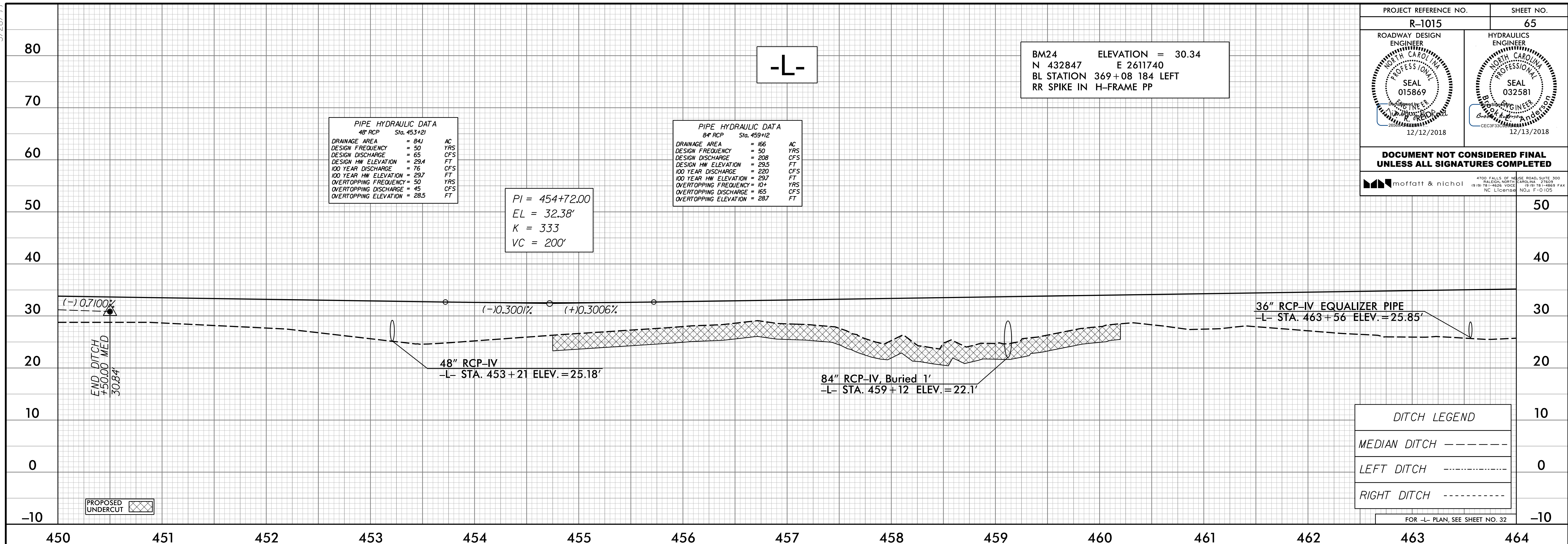
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5/28/2018

PROJECT REFERENCE NO. R-1015	SHEET NO. 65
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018


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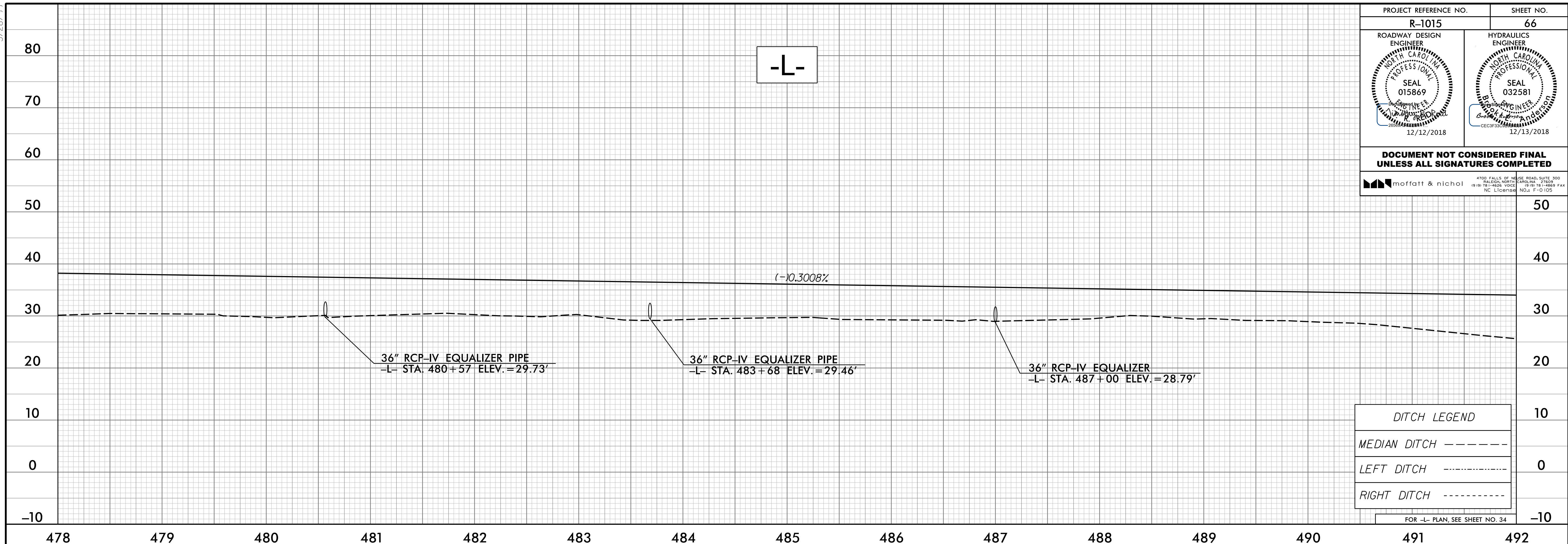
MOFFATT & NICHOL
4700 FALLS OF THE ROADS, SUITE 200
FARGO, NORTH CAROLINA 27825
(919) 781-4000 VOICE (919) 781-4868 FAX
NC License No. F-0 105



I:\2018\12\13\1015\Roadway\Proc\1015_rdy_of165.dgn

5/28/2018

PROJECT REFERENCE NO. R-1015	SHEET NO. 66
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 <small>4700 FALLS OF THE ROADS, SUITE 300 FALCON, NORTH CAROLINA 27629 (919) 781-4626 VOICE (919) 781-4664 FAX NC License NO.: F-0105</small>	



DITCH LEGEND

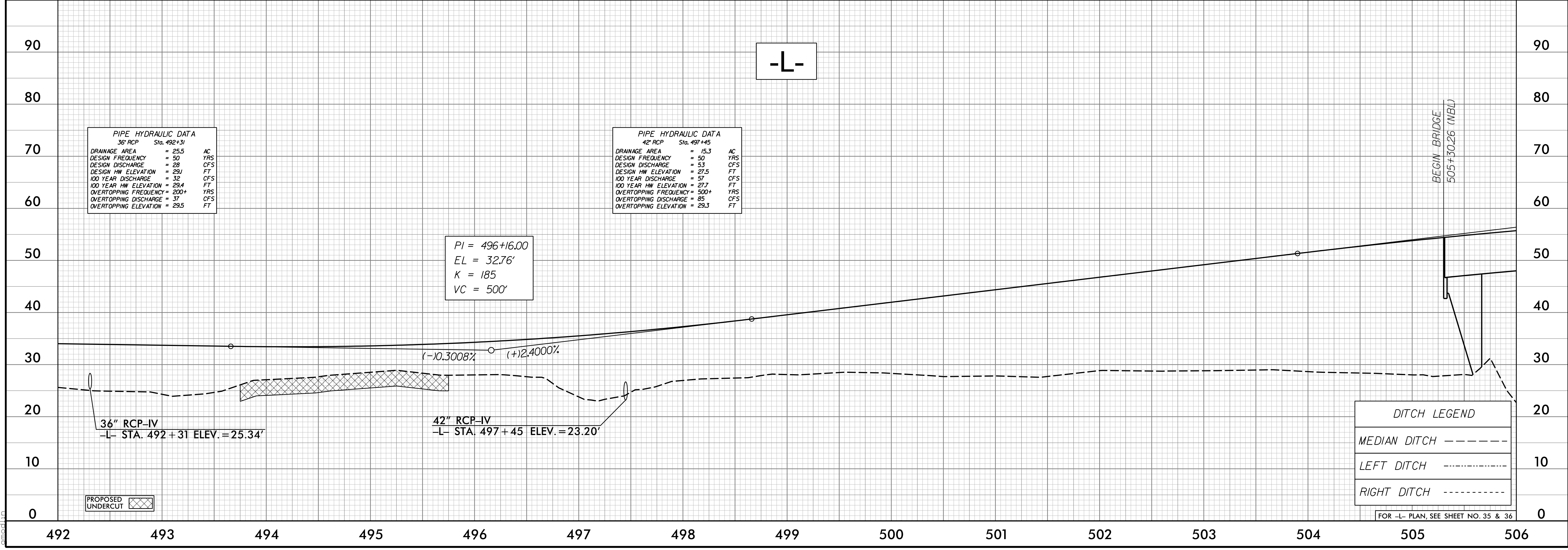
MEDIAN DITCH -----

LEFT DITCH0

RIGHT DITCH0

FOR -L- PLAN, SEE SHEET NO. 34

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PIPE HYDRAULIC DATA
36" RCP Sta. 492+31

DRAINAGE AREA	= 25.5	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 28	CFS
DESIGN HW ELEVATION	= 29J	FT
100 YEAR DISCHARGE	= 32	CFS
100 YEAR HW ELEVATION	= 29.4	FT
OVERTOPPING FREQUENCY	= 200+	YRS
OVERTOPPING DISCHARGE	= 37	CFS
OVERTOPPING ELEVATION	= 29.5	FT

PIPE HYDRAULIC DATA
42" RCP Sta. 497+45

DRAINAGE AREA	= 15.3	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 53	CFS
DESIGN HW ELEVATION	= 27.5	FT
100 YEAR DISCHARGE	= 57	CFS
100 YEAR HW ELEVATION	= 27.7	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 65	CFS
OVERTOPPING ELEVATION	= 29.3	FT

PI = 496+16.00
EL = 32.76'
K = 185
VC = 500'

DITCH LEGEND

MEDIAN DITCH -----

LEFT DITCH10

RIGHT DITCH0

FOR -L- PLAN, SEE SHEET NO. 35 & 36

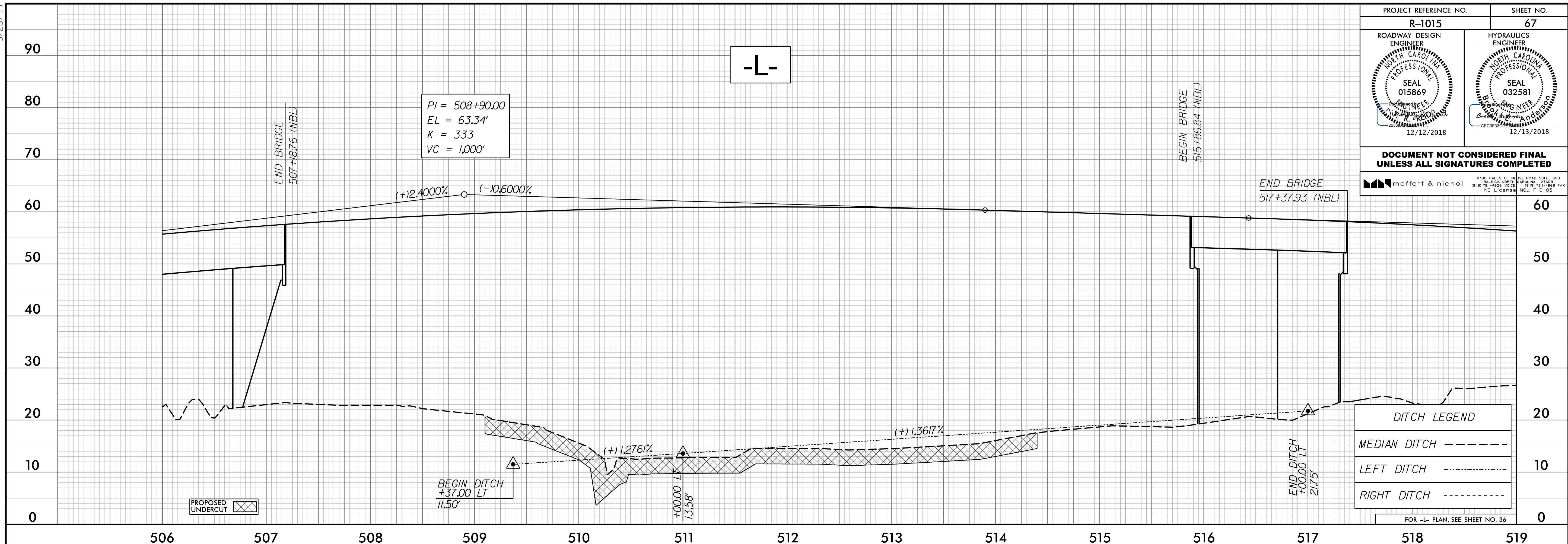
PROPOSED UNDERCUT

5/28/19

PROJECT REFERENCE NO. R-1015	SHEET NO. 67
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

**DOCUMENT NOT CONSIDERED FINAL
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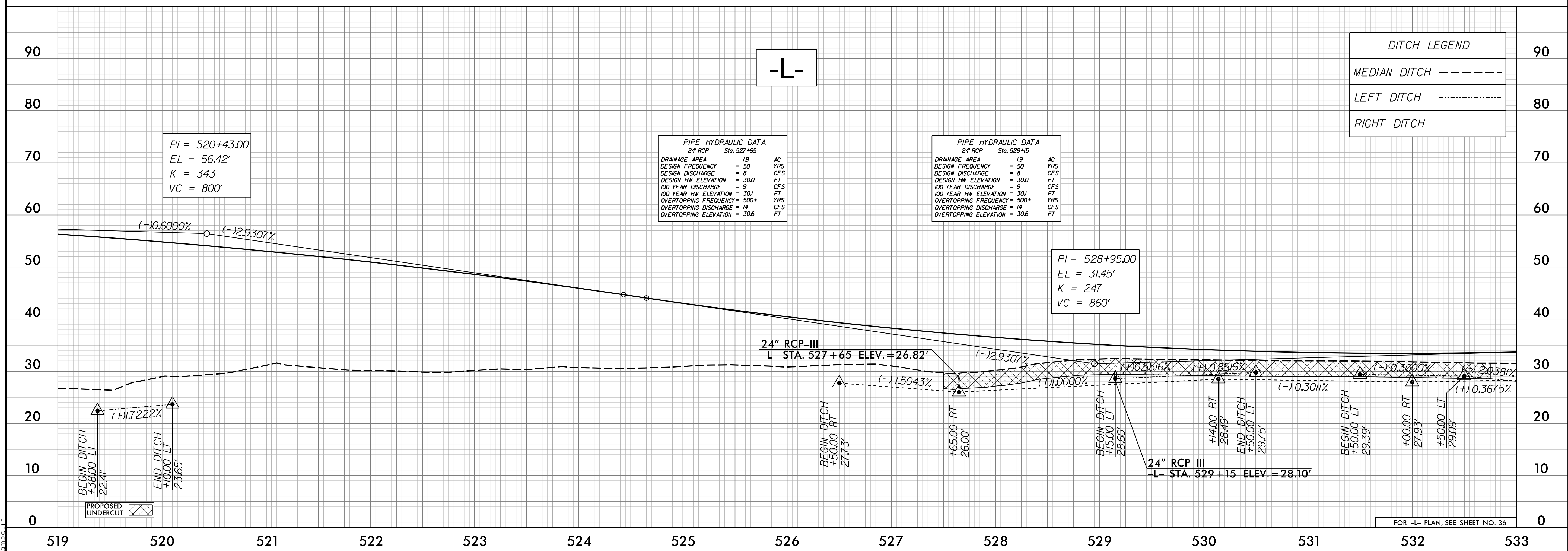
MOFFATT & NICHOL



DITCH LEGEND

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

FOR -L- PLAN, SEE SHEET NO. 36



PIPE HYDRAULIC DATA
24" RCP Sta. 527+65

DRAINAGE AREA	= 19	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 6	CFS
DESIGN HW ELEVATION	= 300	FT
100 YEAR DISCHARGE	= 9	CFS
100 YEAR HW ELEVATION	= 301	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 14	CFS
OVERTOPPING ELEVATION	= 306	FT

PIPE HYDRAULIC DATA
24" RCP Sta. 529+15

DRAINAGE AREA	= 19	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 6	CFS
DESIGN HW ELEVATION	= 300	FT
100 YEAR DISCHARGE	= 9	CFS
100 YEAR HW ELEVATION	= 301	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 14	CFS
OVERTOPPING ELEVATION	= 306	FT

DITCH LEGEND

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

FOR -L- PLAN, SEE SHEET NO. 36

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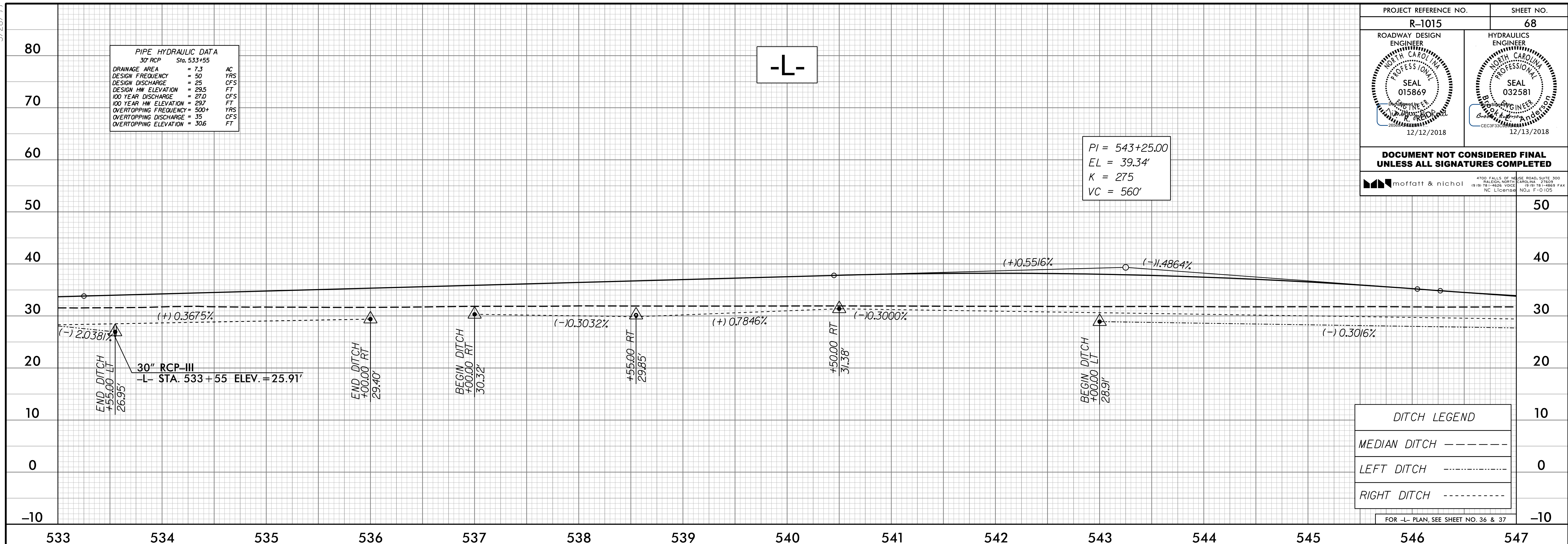
5/28/2018

PROJECT REFERENCE NO. R-1015	SHEET NO. 68
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 015869 12/12/2018	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 032581 12/13/2018

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4700 FALLS OF THE ROADS, SUITE 200
FALCON, NORTH CAROLINA 27629
(919) 781-4625 VOICE (919) 781-4666 FAX
NC License NO.: F-0105

moffatt & nichol

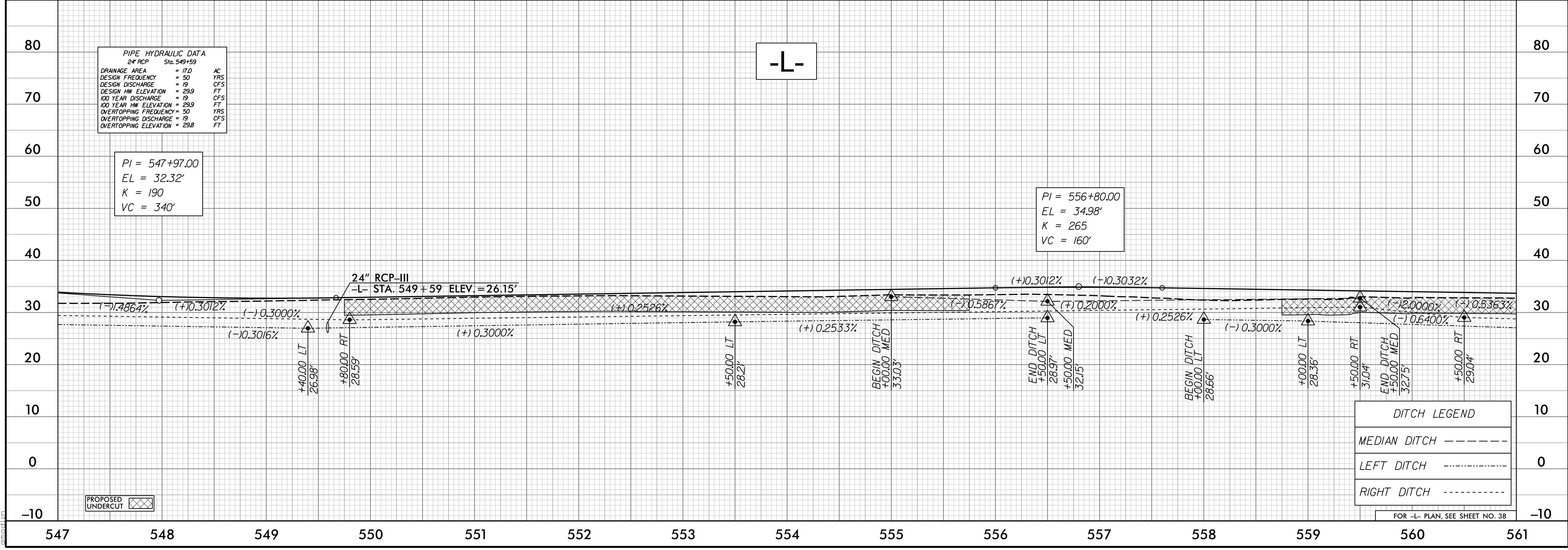


30" RCP	Sta. 533+55	AC
DRAINAGE AREA	= 7.3	YRS
DESIGN FREQUENCY	= 50	CFS
DESIGN DISCHARGE	= 25	FT
DESIGN HW ELEVATION	= 29.5	FT
100 YEAR DISCHARGE	= 27.0	YRS
100 YEAR HW ELEVATION	= 29.7	CFS
OVERTOPPING FREQUENCY	= 500+	FT
OVERTOPPING DISCHARGE	= 35	YRS
OVERTOPPING ELEVATION	= 30.6	CFS

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

FOR -L- PLAN, SEE SHEET NO. 36 & 37

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PI = 547+97.00
EL = 32.32'
K = 190
VC = 340'

PI = 556+80.00
EL = 34.98'
K = 265
VC = 160'

24" RCP	Sta. 549+59	AC
DRAINAGE AREA	= 17.0	YRS
DESIGN FREQUENCY	= 50	CFS
DESIGN DISCHARGE	= 19	FT
DESIGN HW ELEVATION	= 29.9	FT
100 YEAR DISCHARGE	= 19	CFS
100 YEAR HW ELEVATION	= 29.9	YRS
OVERTOPPING FREQUENCY	= 50	FT
OVERTOPPING DISCHARGE	= 19	CFS
OVERTOPPING ELEVATION	= 29.8	FT

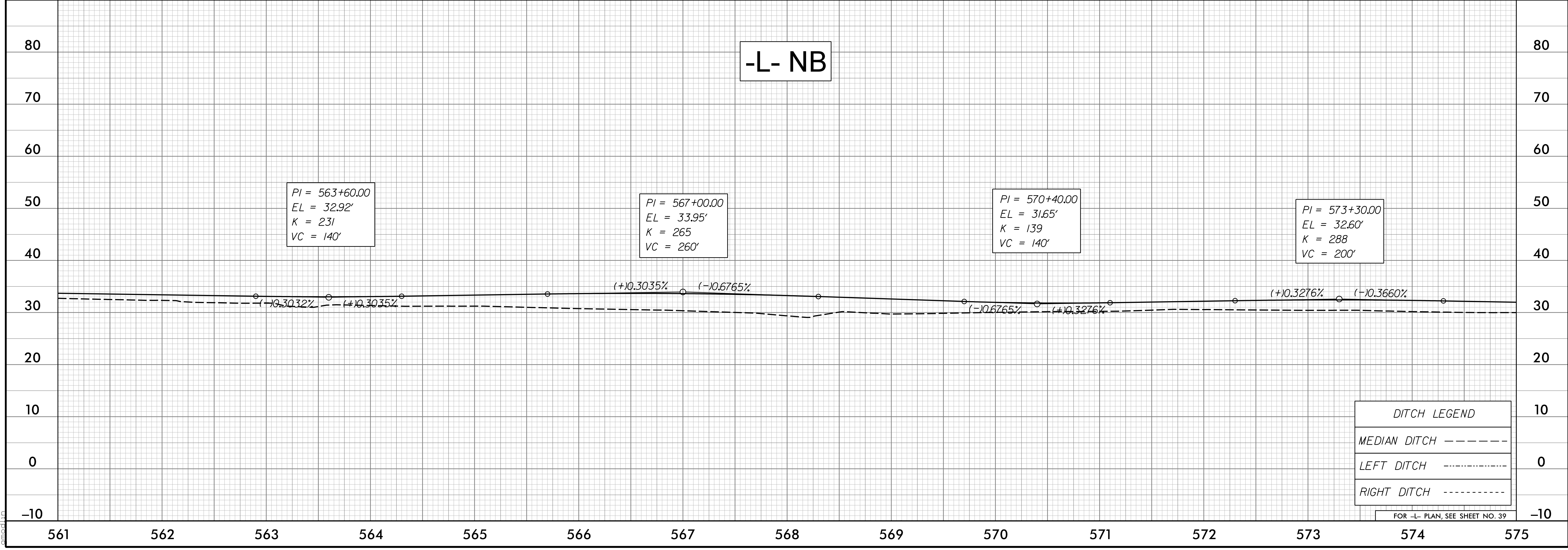
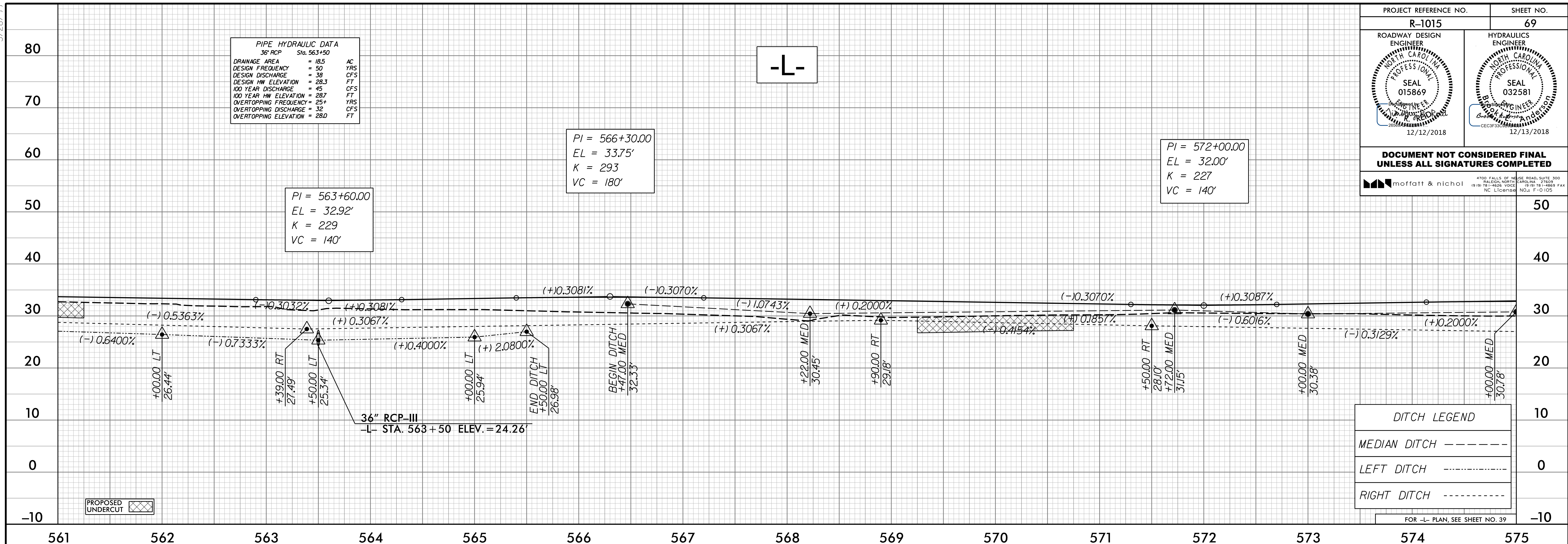
MEDIAN DITCH	---
LEFT DITCH	----
RIGHT DITCH	-----

FOR -L- PLAN, SEE SHEET NO. 38

PROPOSED UNDERCUT

5/28/2018

PROJECT REFERENCE NO. R-1015	SHEET NO. 69
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
<small>4700 FALLS OF THE ROADS, SUITE 200 FALCON, NORTH CAROLINA 27629 (919) 781-4600 VOICE (919) 781-4666 FAX NC License NO.: F-0105</small>	



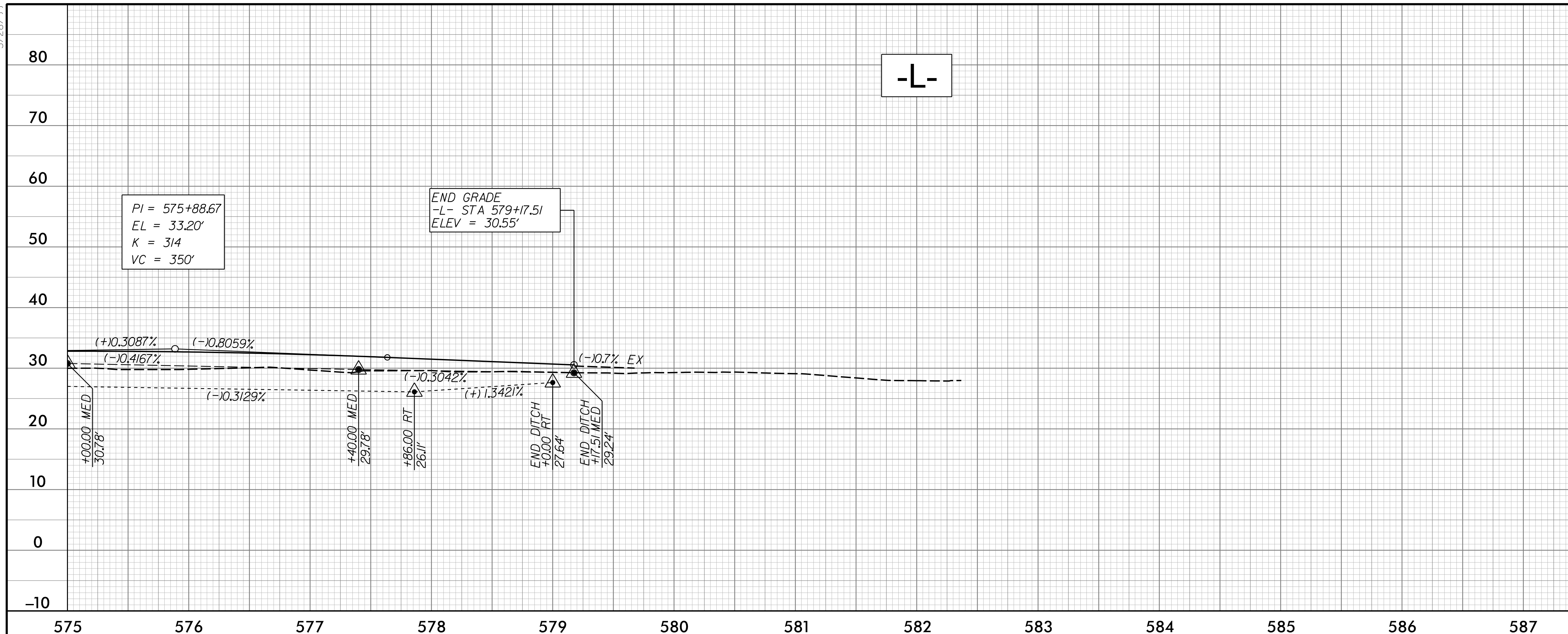
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5/28/19

PROJECT REFERENCE NO. R-1015	SHEET NO. 70
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

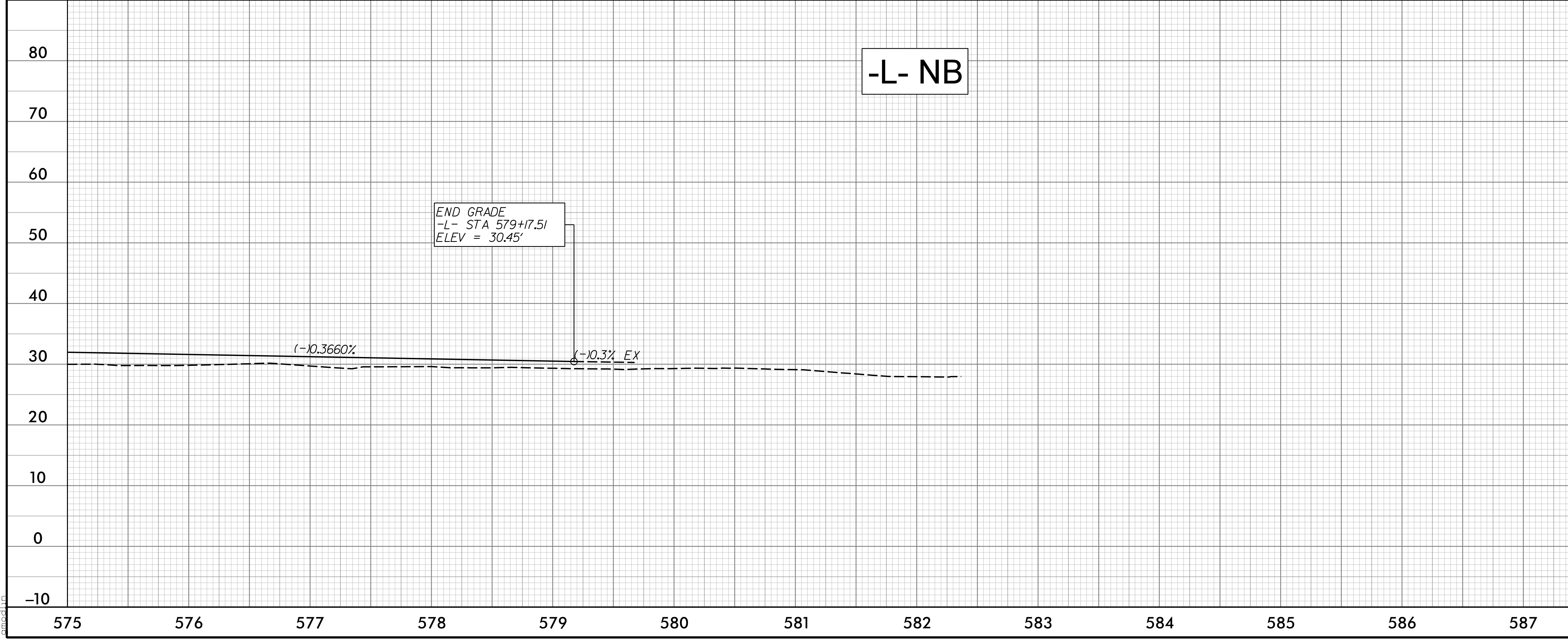
**DOCUMENT NOT CONSIDERED FINAL
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FALCON, NORTH CAROLINA 27629
(919) 781-4600 VOICE (919) 781-4666 FAX
NC License NO. F-0105



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

FOR -L- PLAN, SEE SHEET NO. 40



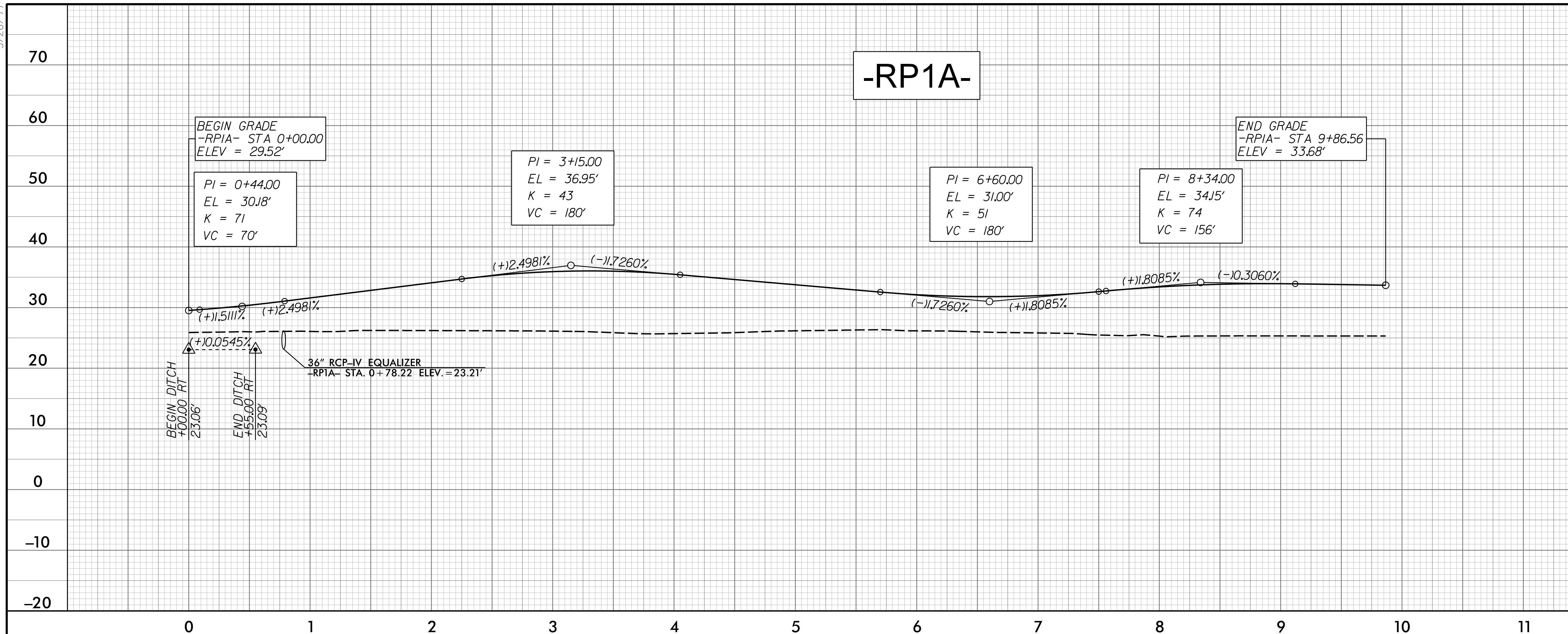
DITCH LEGEND	
MEDIAN DITCH	-----
LEFT DITCH	- - - - -
RIGHT DITCH	- - - - -

FOR -L- PLAN, SEE SHEET NO. 40

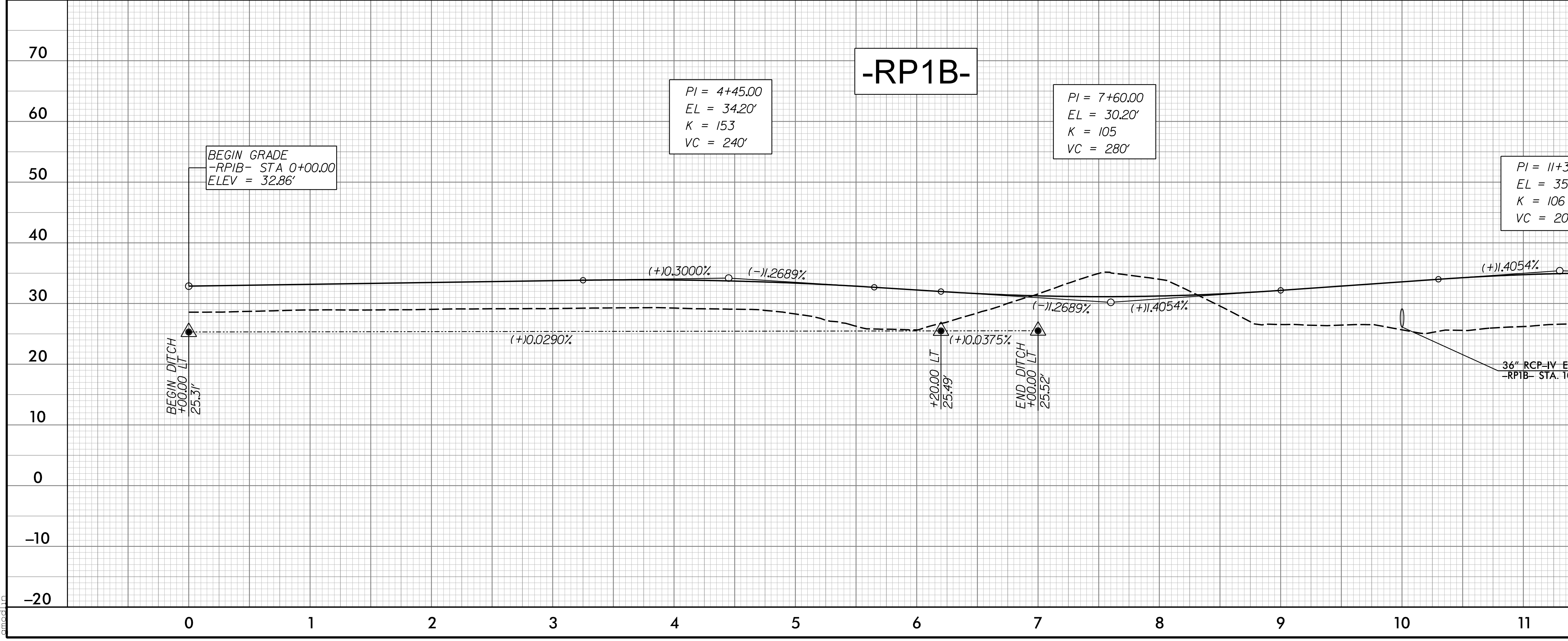
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5/28/2018

PROJECT REFERENCE NO. R-1015	SHEET NO. 71
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 015869 12/12/2018	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 032581 12/13/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
<small>4709 FALLS OF THE ROADS, SUITE 200 FALGOUT, NORTH CAROLINA 27629 (919) 781-4600 VOICE (919) 781-4666 FAX NC License NO.: F-0105</small>	



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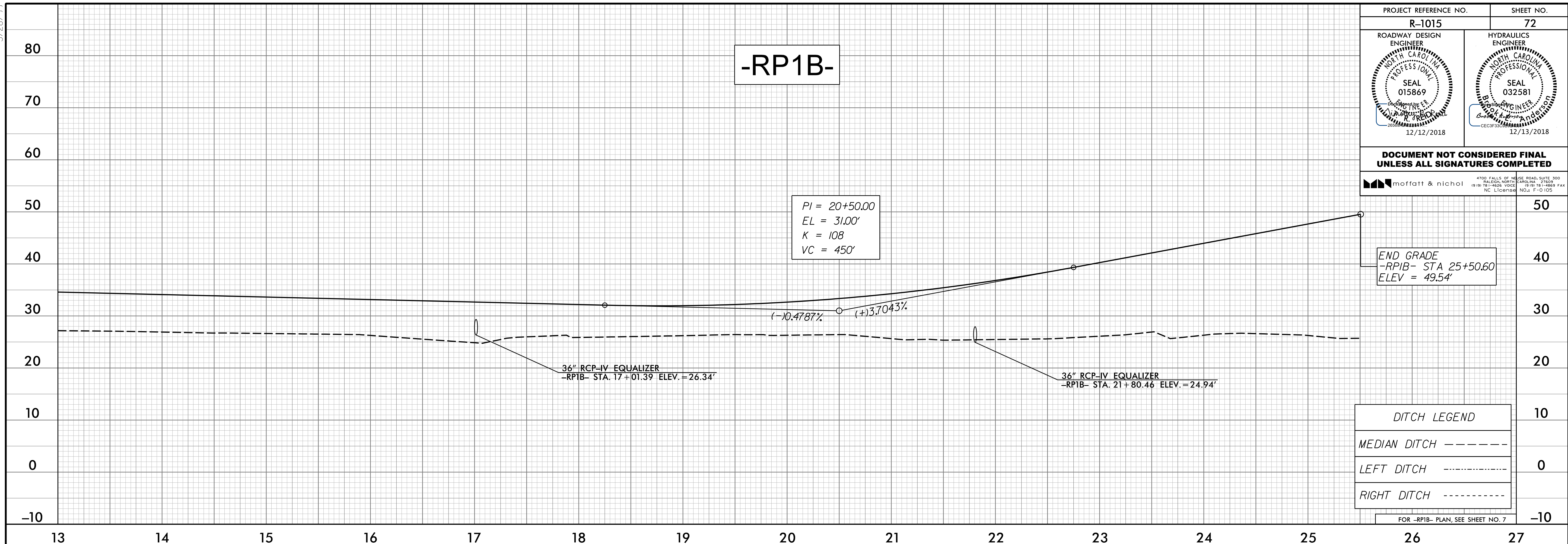


5/28/2018

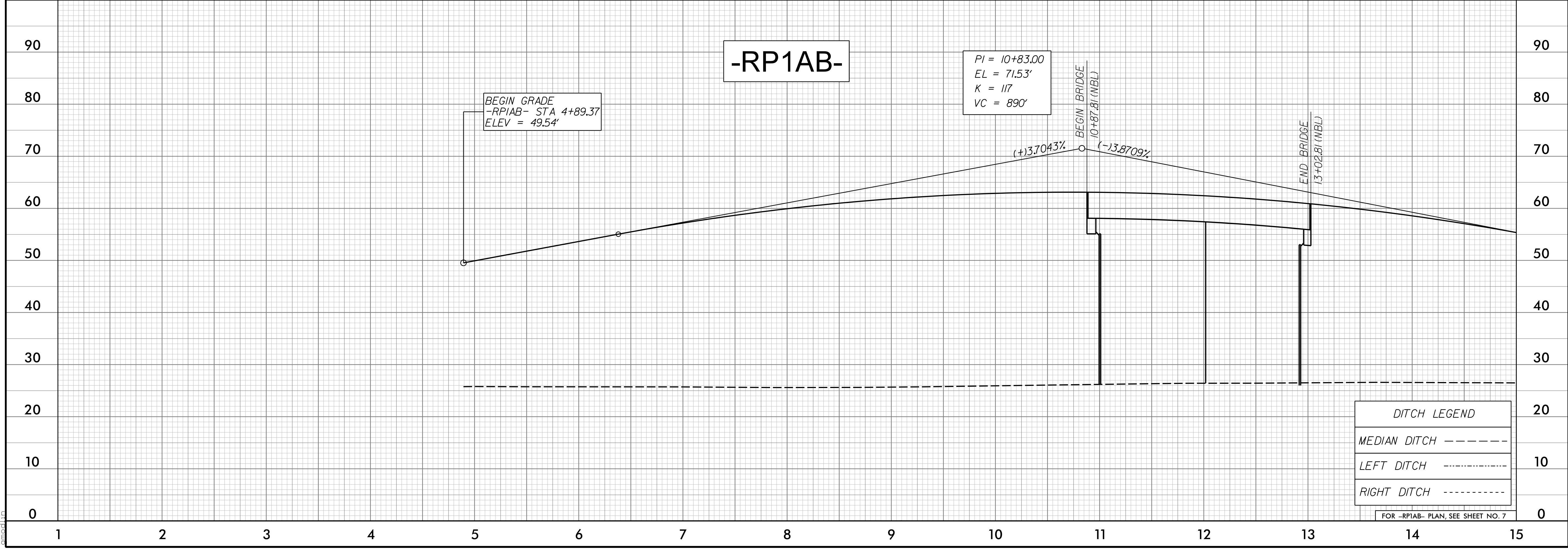
PROJECT REFERENCE NO. R-1015	SHEET NO. 72
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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5/28/2018

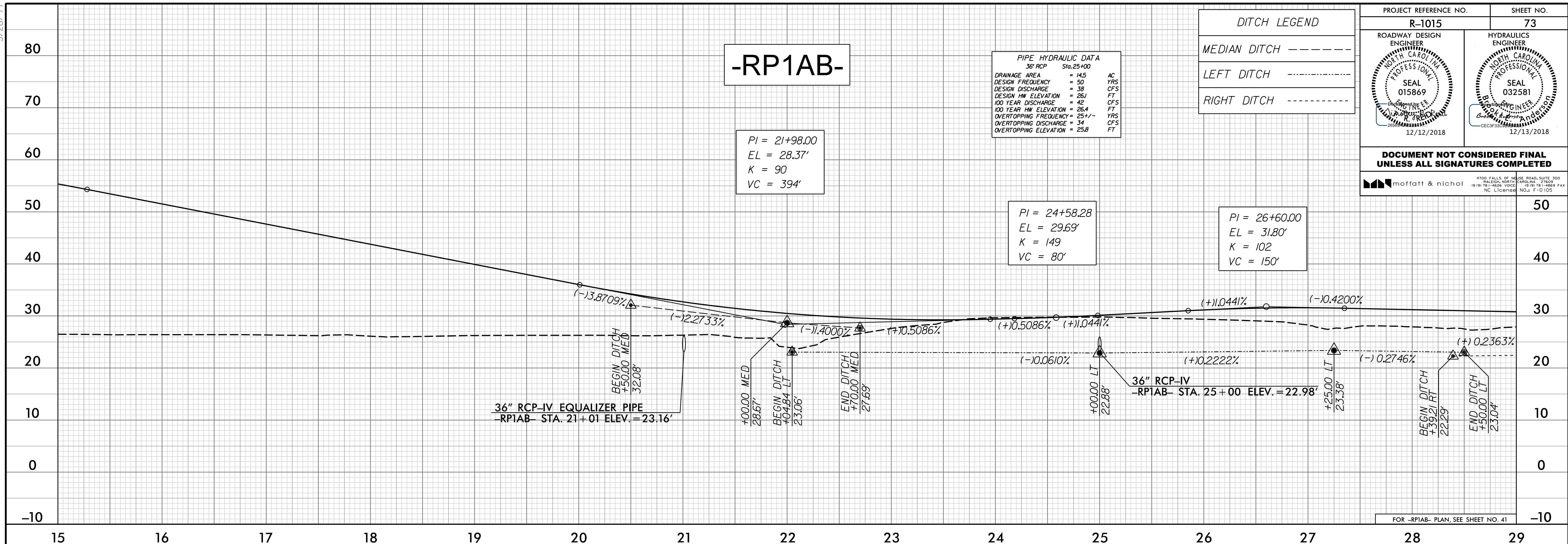
PROJECT REFERENCE NO. R-1015	SHEET NO. 73
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018
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moffatt & nichol	

PIPE HYDRAULIC DATA
36" RCP Sta. 25+00

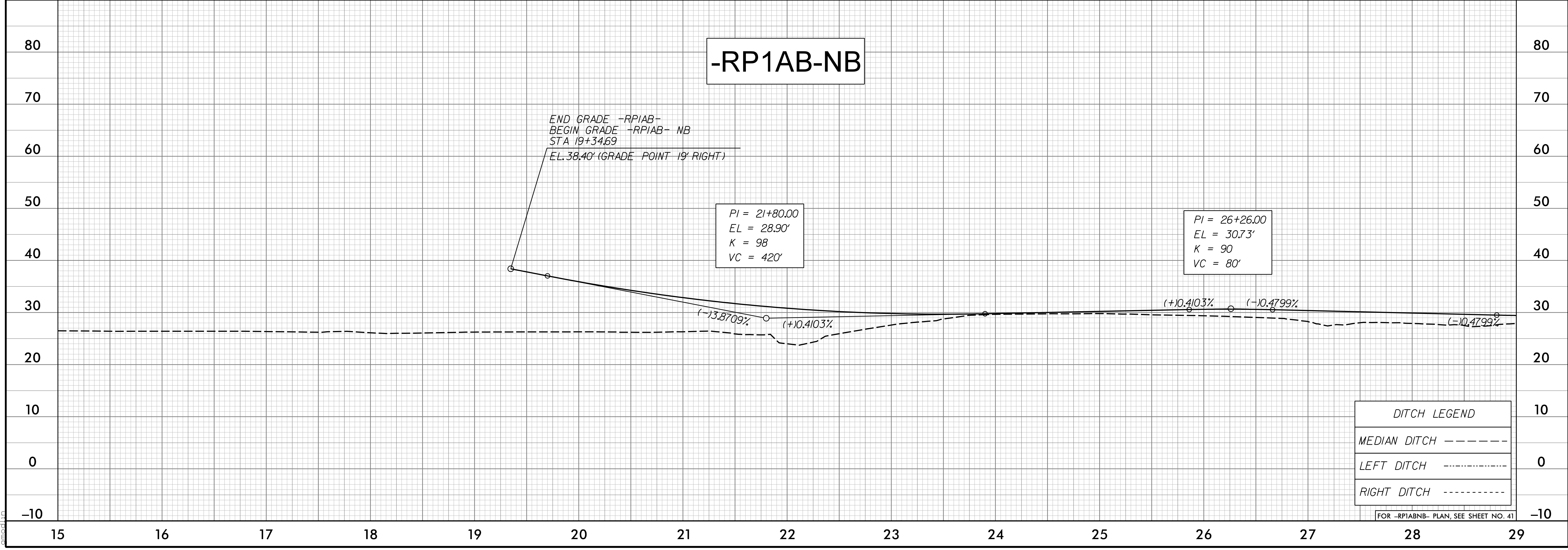
DRAINAGE AREA	= 14.5	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 38	CFS
DESIGN HW ELEVATION	= 26.1	FT
100 YEAR DISCHARGE	= 42	CFS
100 YEAR HW ELEVATION	= 26.4	FT
OVERTOPPING FREQUENCY	= 25+/-	YRS
OVERTOPPING DISCHARGE	= 34	CFS
OVERTOPPING ELEVATION	= 25.8	FT

DITCH LEGEND

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



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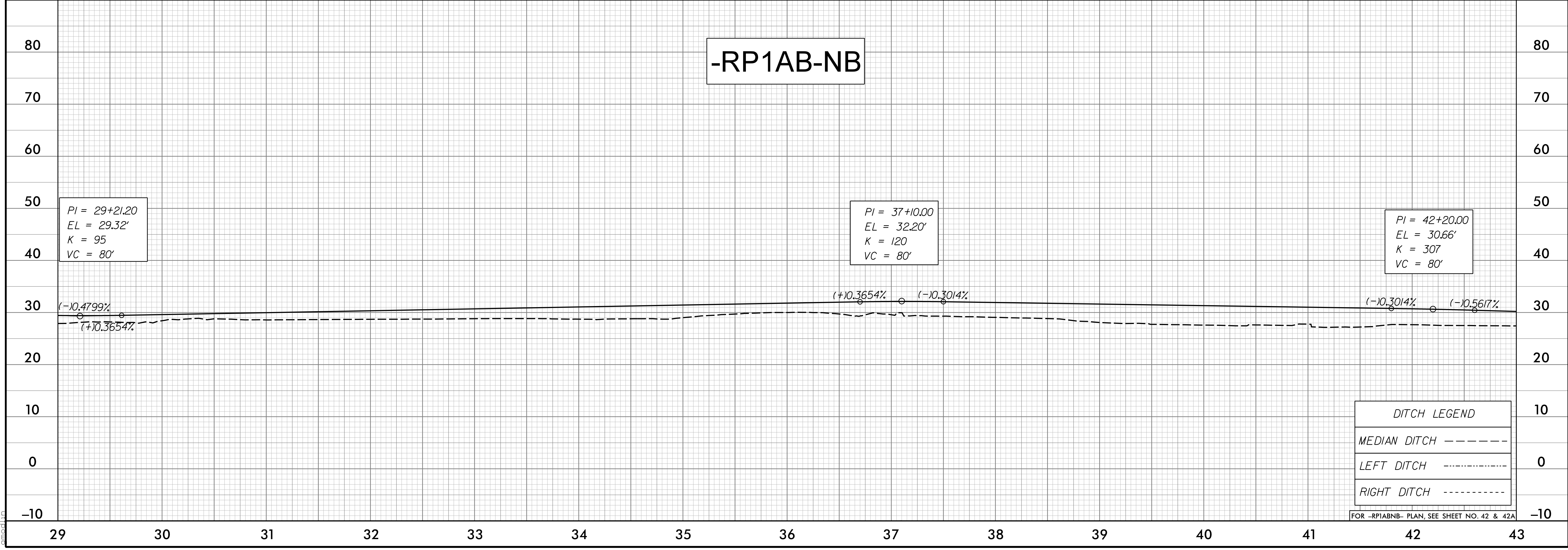
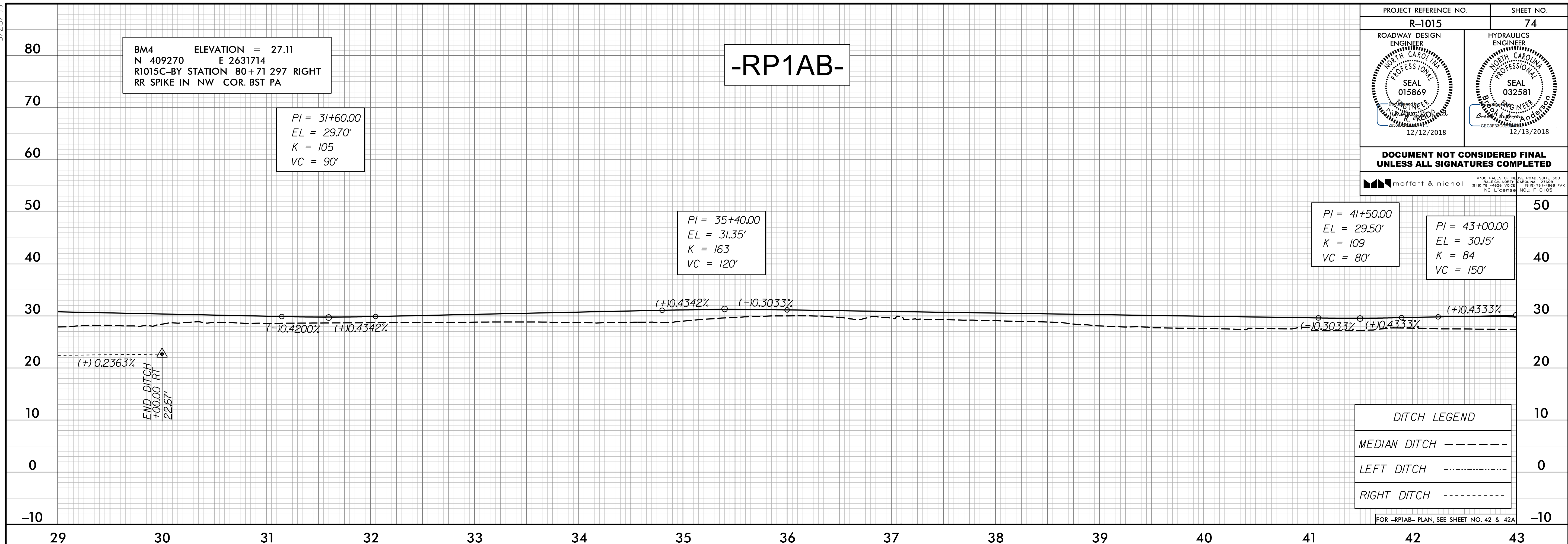


5/28/19

PROJECT REFERENCE NO. R-1015	SHEET NO. 74
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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4700 FALLS OF THE ROADS, SUITE 300
FALLEN, NORTH CAROLINA 27629
(919) 781-4600 VOICE (919) 781-4666 FAX
NC License NO.: F-0105



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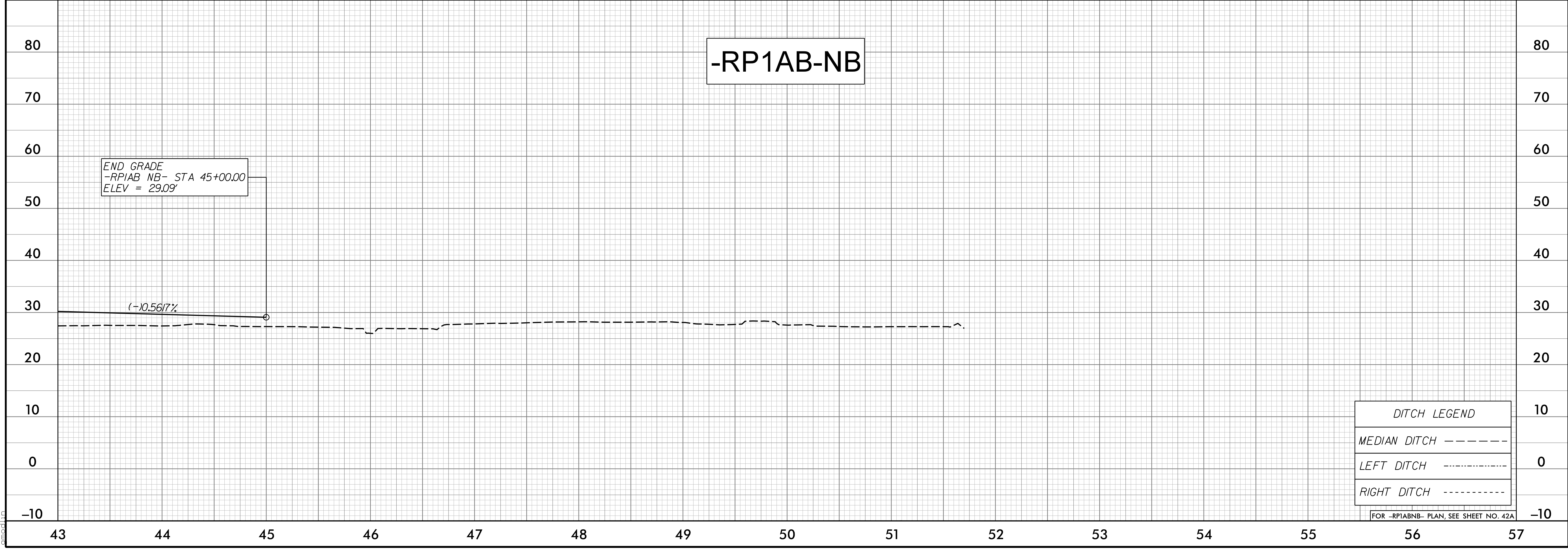
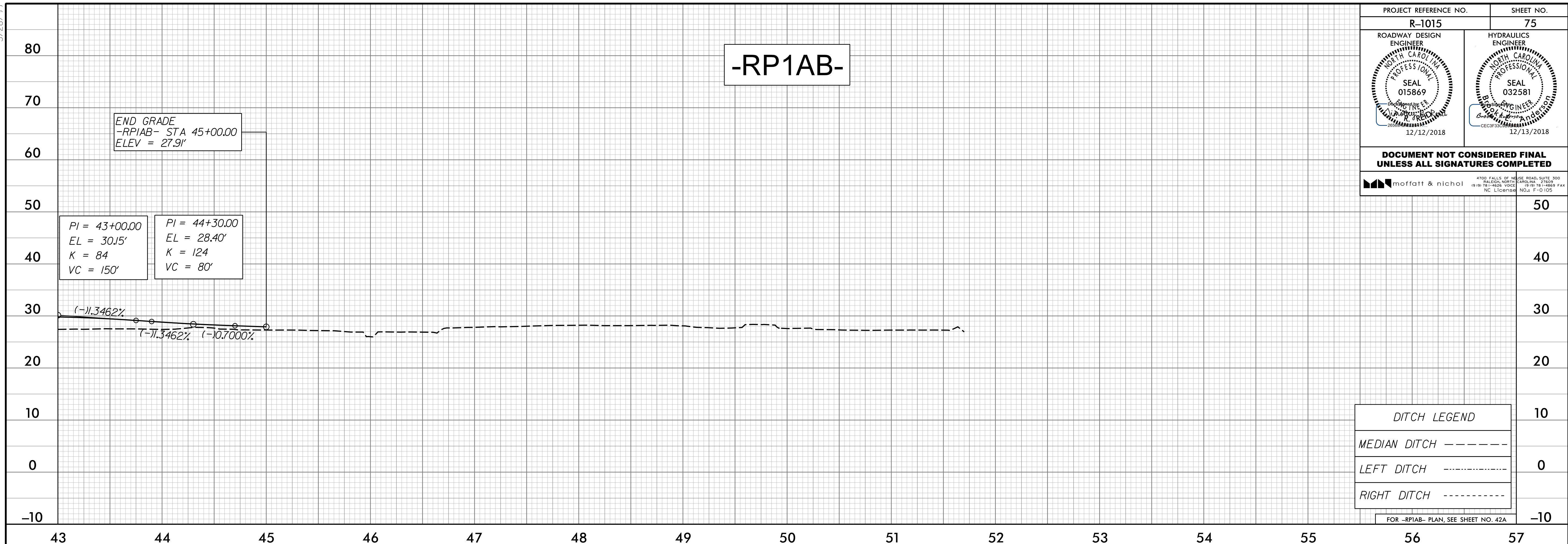
5/28/19

PROJECT REFERENCE NO. R-1015	SHEET NO. 75
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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4700 FALLS OF THE ROADS, SUITE 300
FALGOUT, NORTH CAROLINA 27629
1919 781-4662 VOICE 1919 781-4664 FAX
NC License NO. F-0105



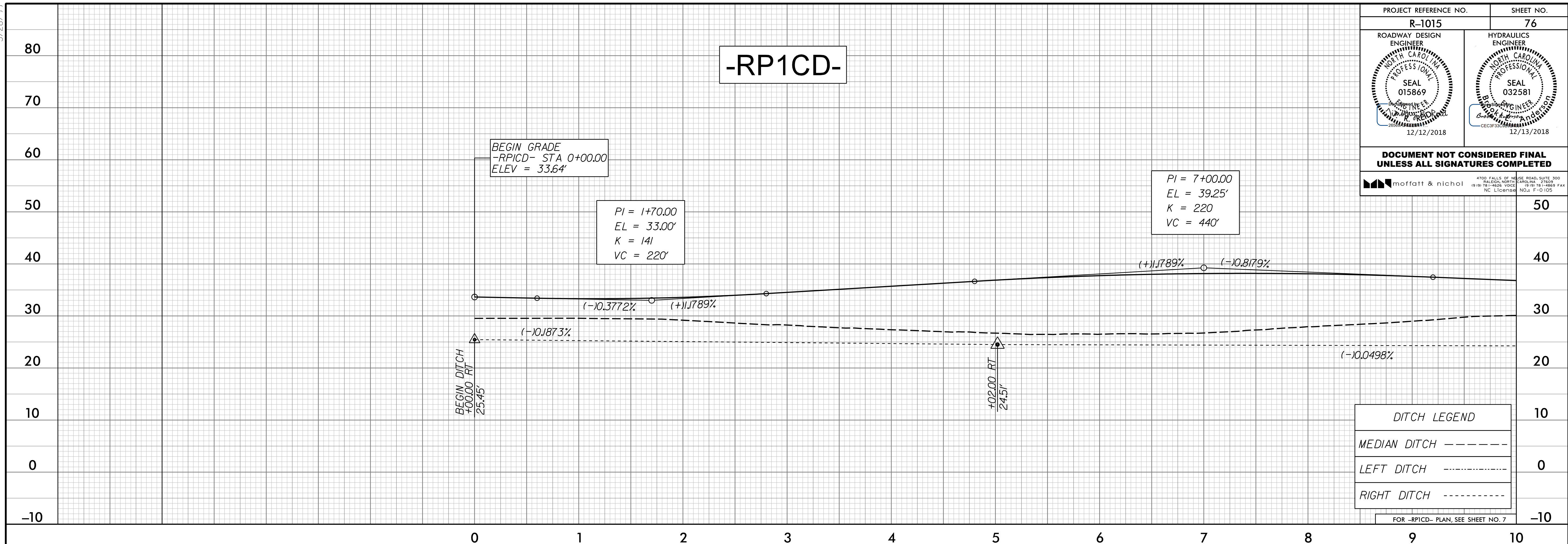
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5/28/19

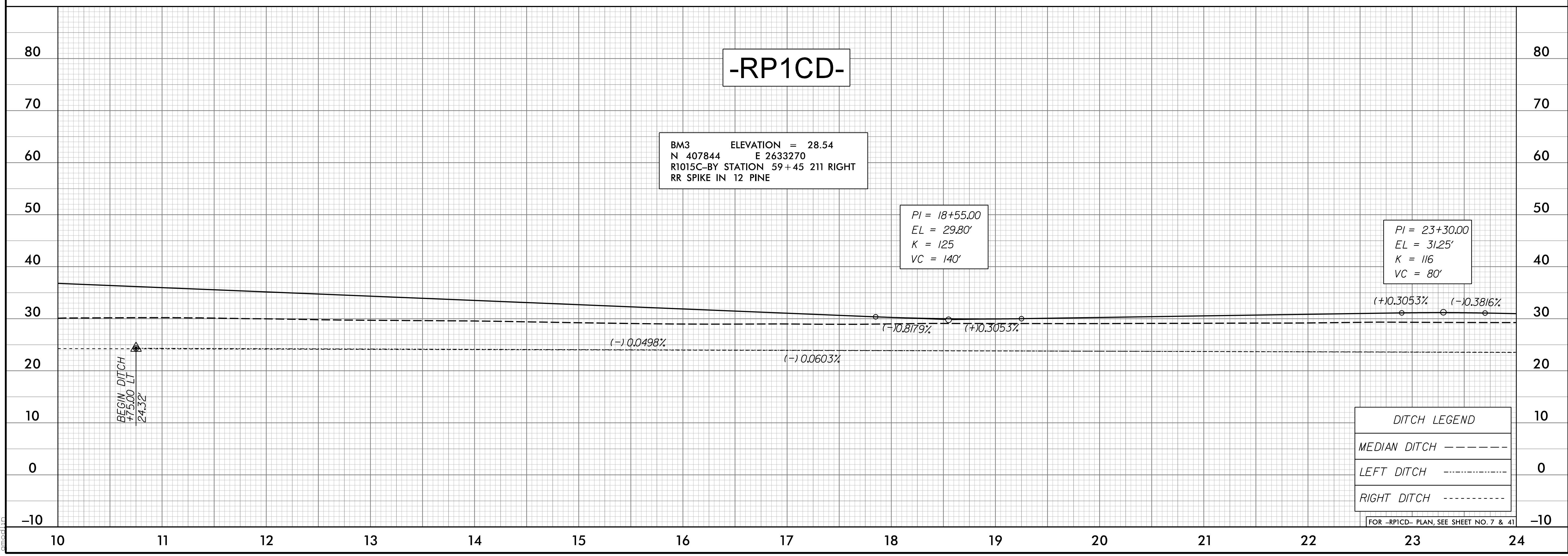
PROJECT REFERENCE NO. R-1015	SHEET NO. 76
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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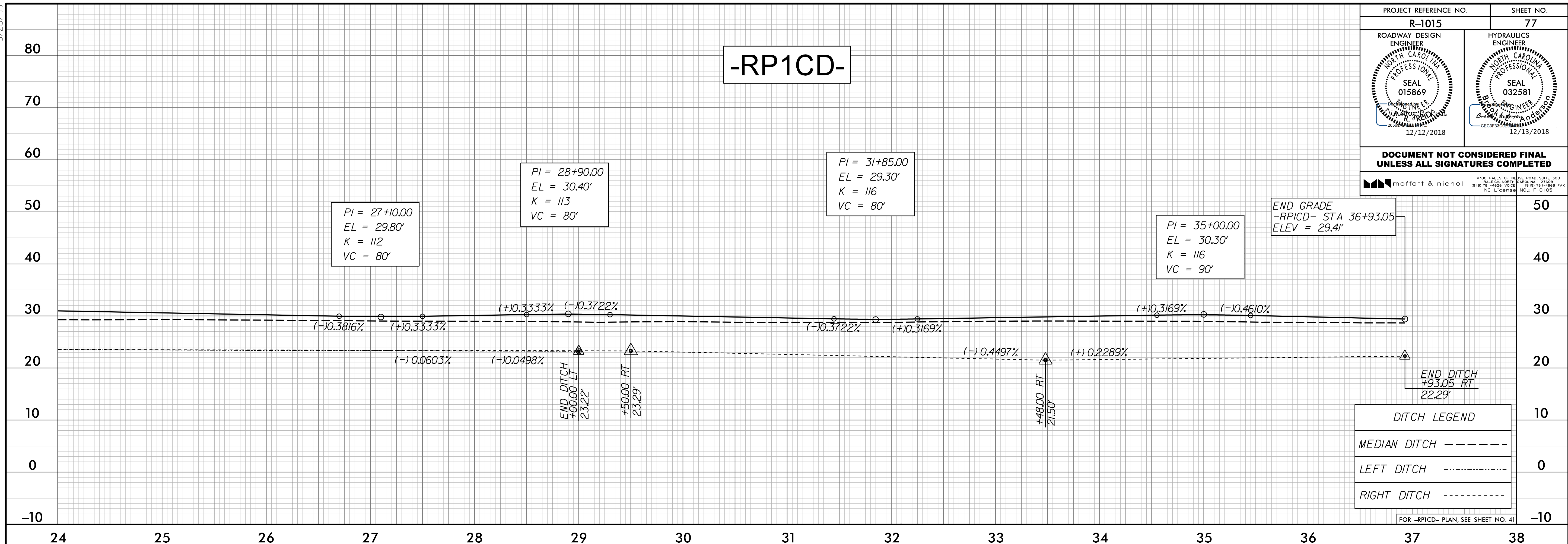
5/28/2018

PROJECT REFERENCE NO. R-1015	SHEET NO. 77
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

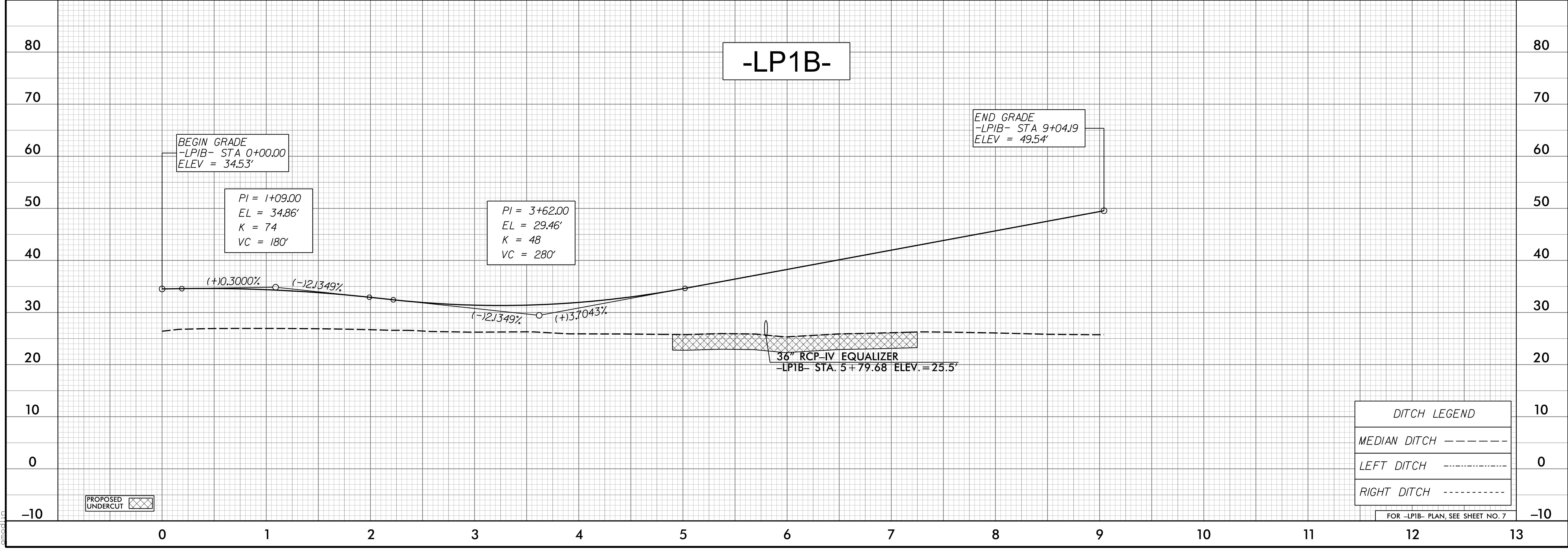
**DOCUMENT NOT CONSIDERED FINAL
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MOFFATT & NICHOL

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FALCON, NORTH CAROLINA 27629
(919) 781-4600 VOICE (919) 781-4666 FAX
NC License NO. F-0105



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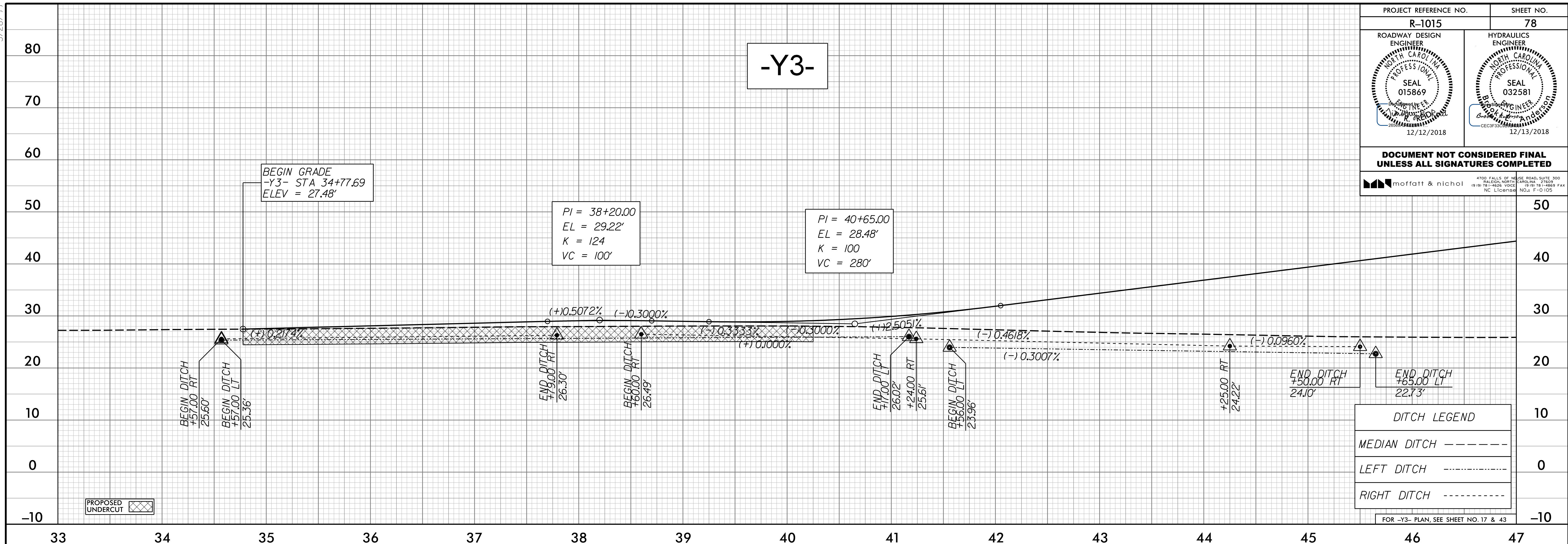
5/28/19

PROJECT REFERENCE NO. R-1015	SHEET NO. 78
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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FALCON, NORTH CAROLINA 27629
(919) 781-4600 VOICEMAIL (919) 781-4666 FAX
NC License No. F-0105

moffatt & nichol



DITCH LEGEND

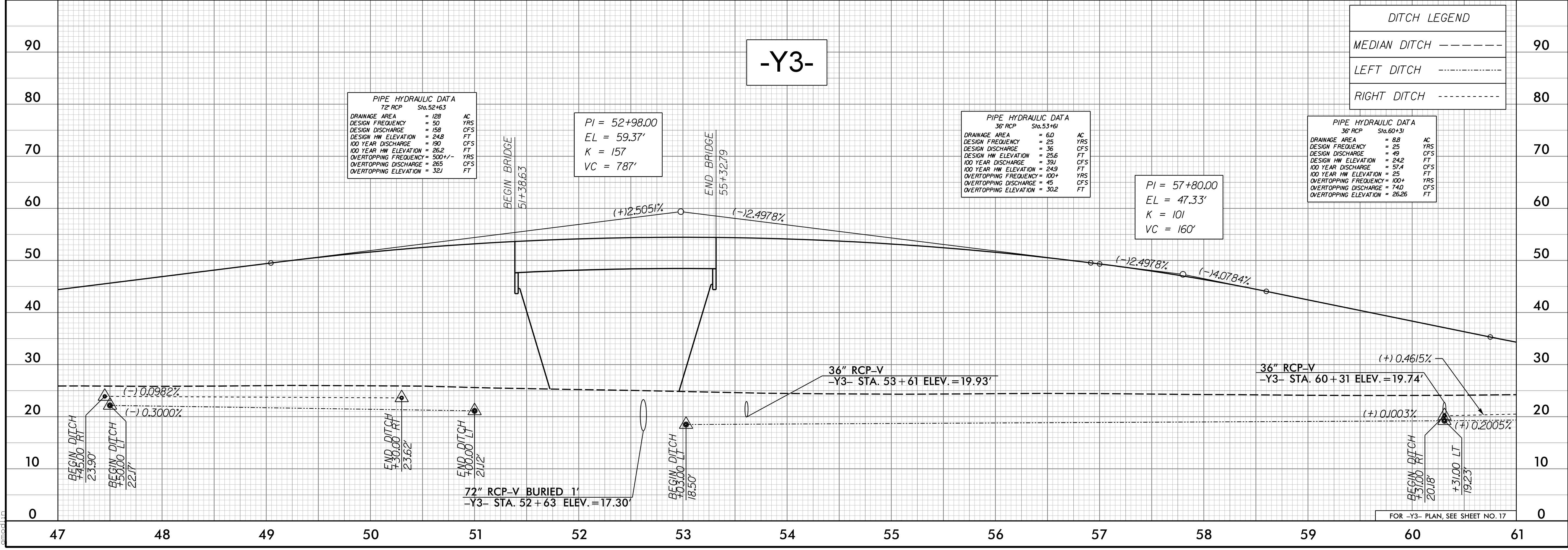
MEDIAN DITCH - - - - -

LEFT DITCH -

RIGHT DITCH - - - - -

FOR -Y3- PLAN, SEE SHEET NO. 17 & 43

I:\2018\10-28-18\1015\Roadway\Proc\1015-rdy-ef178.dgn



PIPE HYDRAULIC DATA
72" RCP Sta. 52+63

DRAINAGE AREA	= 128	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 158	CFS
DESIGN HW ELEVATION	= 24.8	FT
100 YEAR DISCHARGE	= 190	CFS
100 YEAR HW ELEVATION	= 26.2	FT
OVERTOPPING FREQUENCY	= 500+/-	YRS
OVERTOPPING DISCHARGE	= 255	CFS
OVERTOPPING ELEVATION	= 321	FT

PI = 52+98.00
EL = 59.37'
K = 157
VC = 787'

PIPE HYDRAULIC DATA
36" RCP Sta. 53+31

DRAINAGE AREA	= 6.0	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 36	CFS
DESIGN HW ELEVATION	= 25.6	FT
100 YEAR DISCHARGE	= 391	CFS
100 YEAR HW ELEVATION	= 24.9	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 45	CFS
OVERTOPPING ELEVATION	= 30.2	FT

PI = 57+80.00
EL = 47.33'
K = 101
VC = 160'

PIPE HYDRAULIC DATA
36" RCP Sta. 60+31

DRAINAGE AREA	= 8.8	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 49	CFS
DESIGN HW ELEVATION	= 24.2	FT
100 YEAR DISCHARGE	= 57.4	CFS
100 YEAR HW ELEVATION	= 25	FT
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING DISCHARGE	= 74.0	CFS
OVERTOPPING ELEVATION	= 26.26	FT

DITCH LEGEND

MEDIAN DITCH - - - - -

LEFT DITCH -

RIGHT DITCH - - - - -

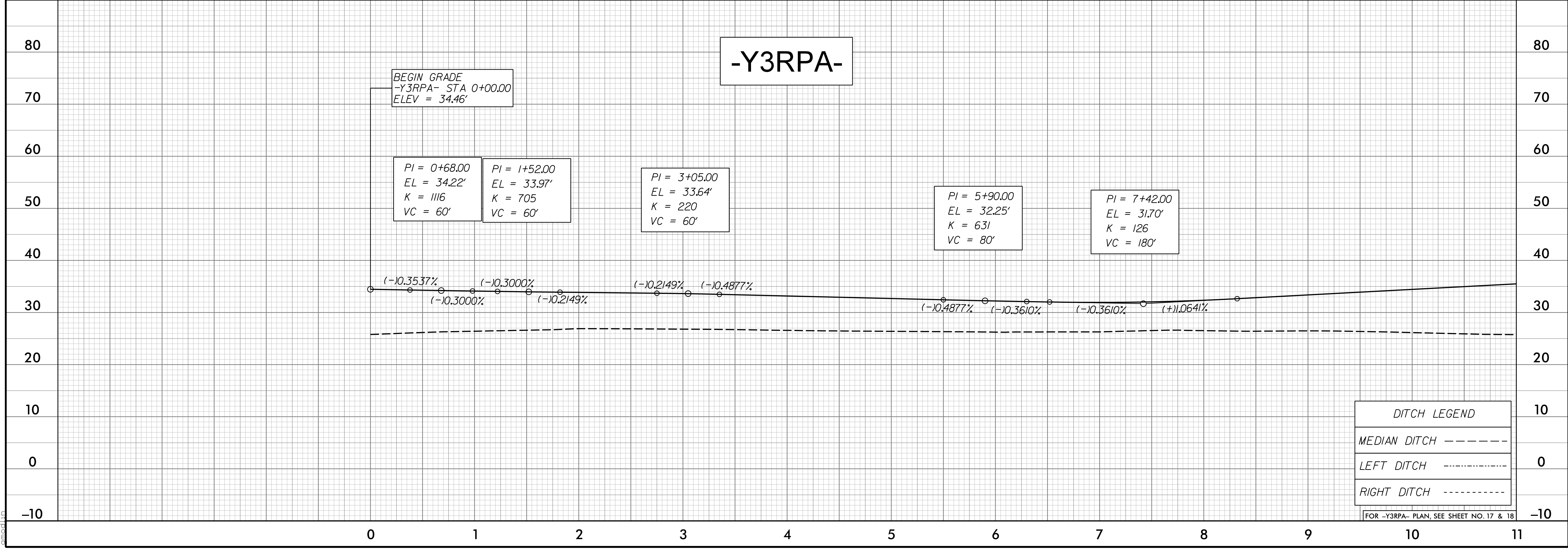
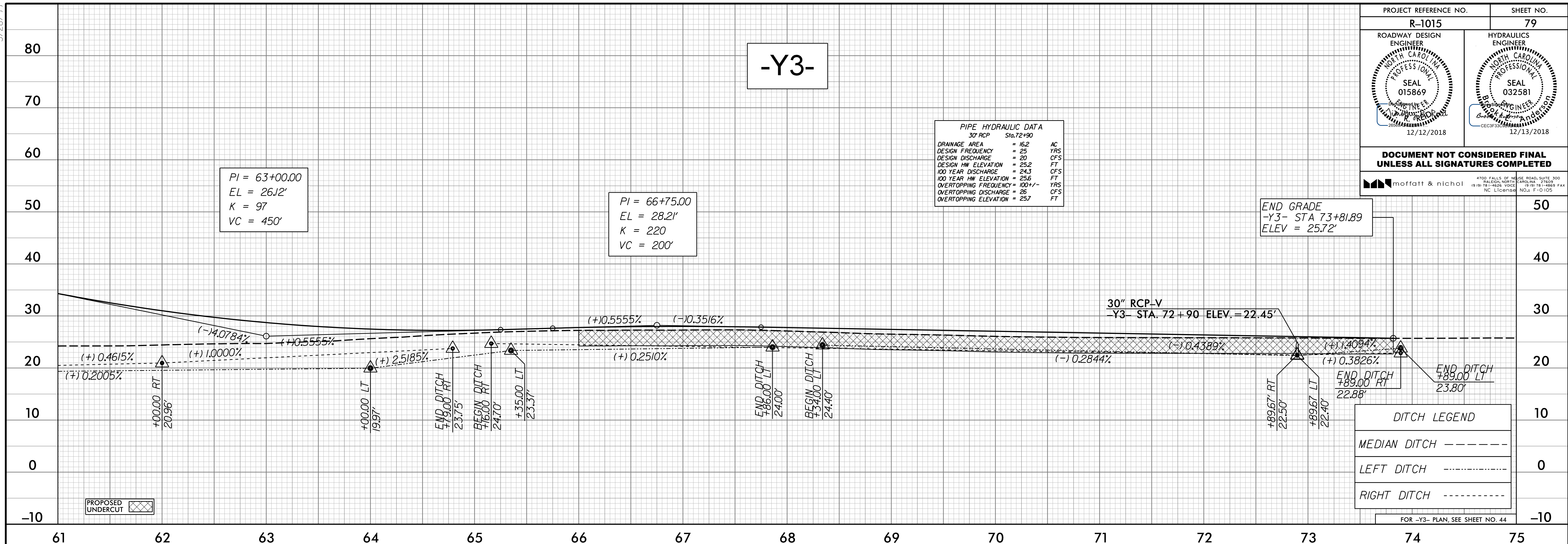
FOR -Y3- PLAN, SEE SHEET NO. 17

5/28/19

PROJECT REFERENCE NO. R-1015	SHEET NO. 79
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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moftatt & nichol



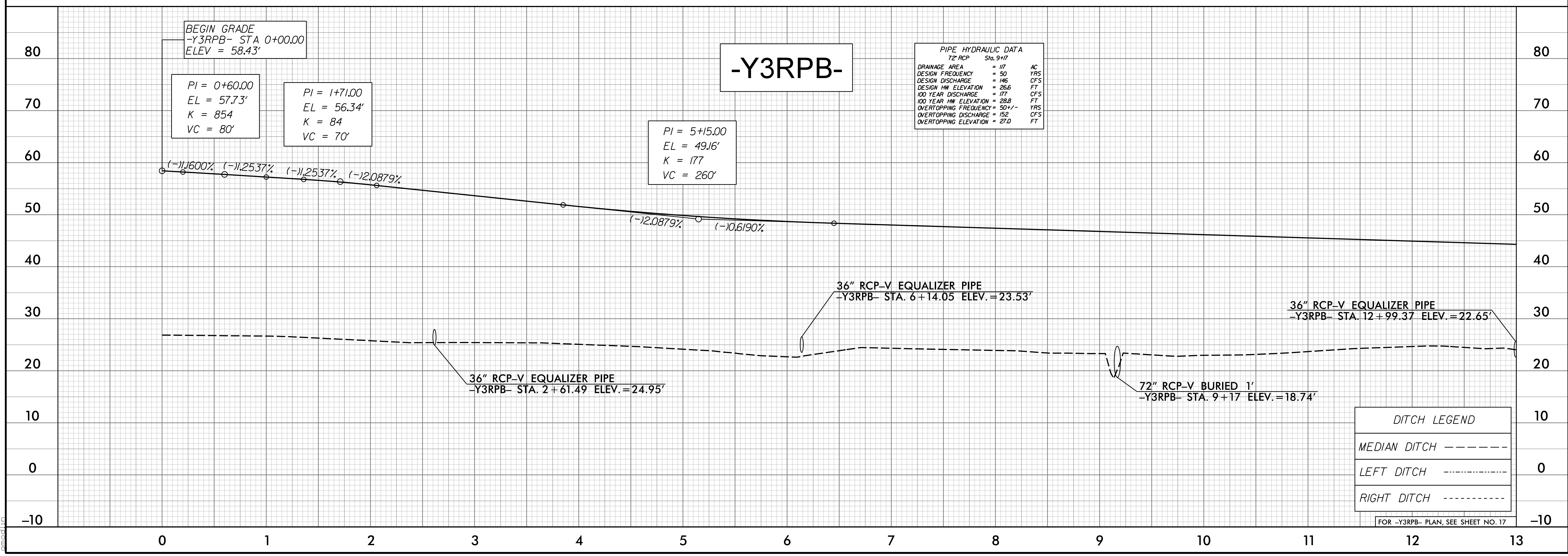
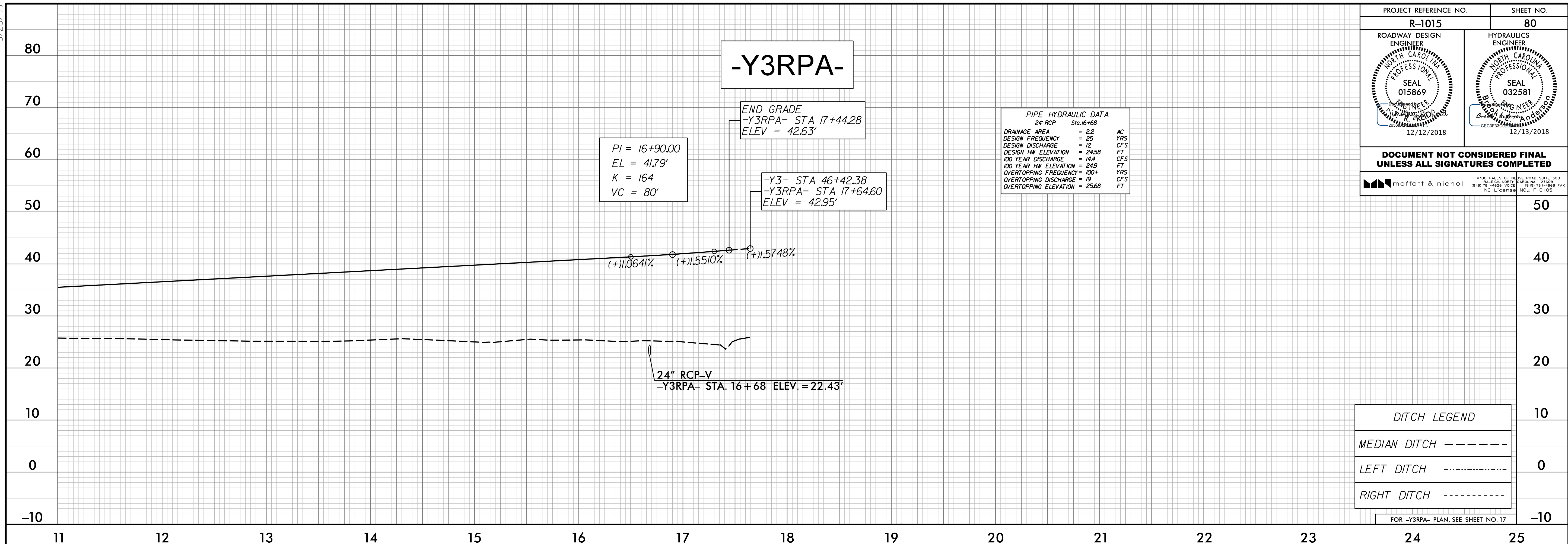
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5/28/19

PROJECT REFERENCE NO. R-1015	SHEET NO. 80
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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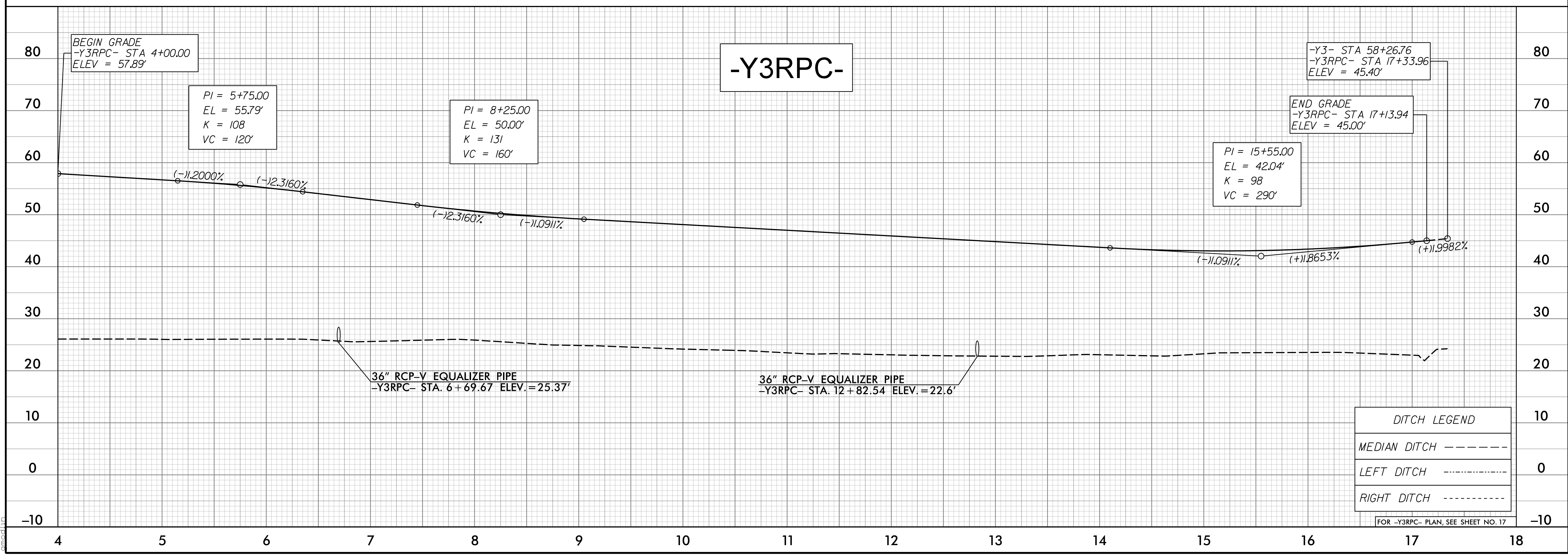
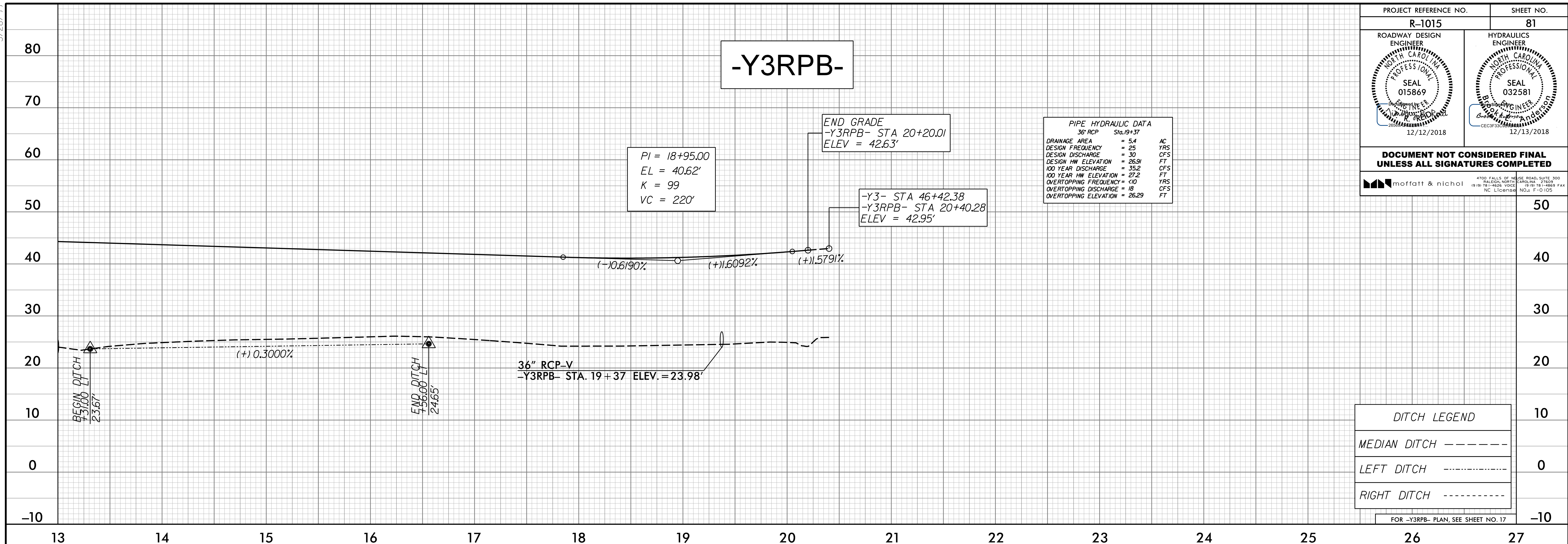
MOFFATT & NICHOL



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5/28/19

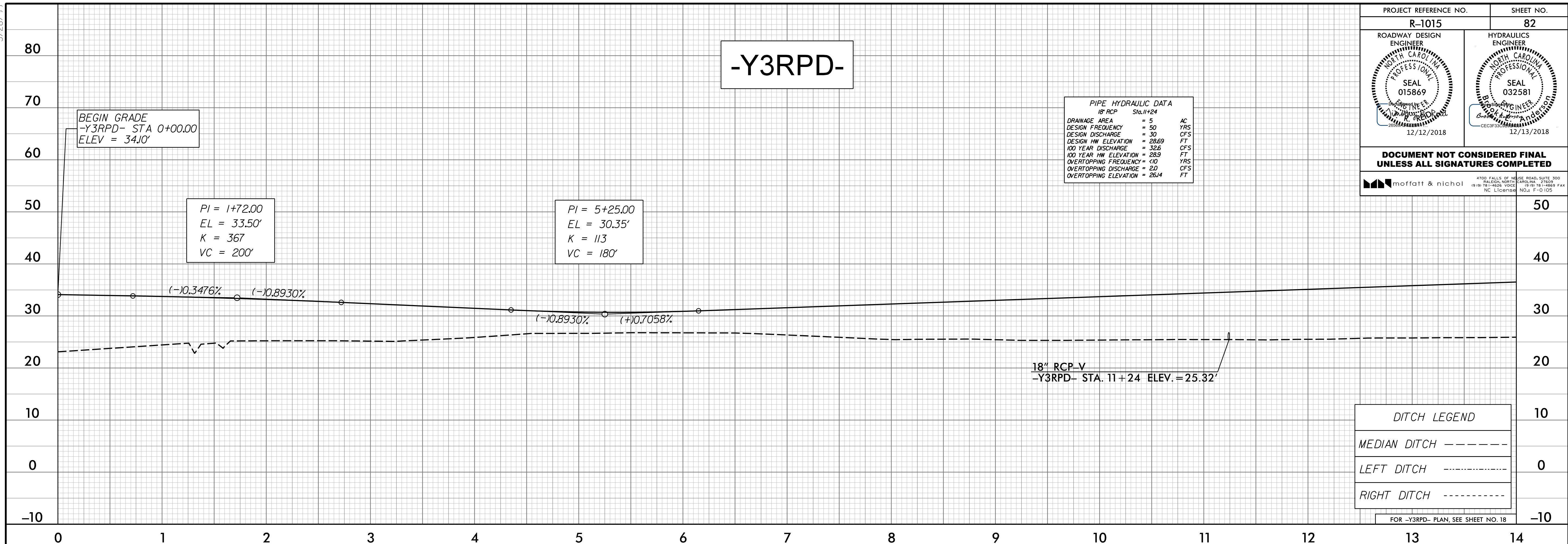
PROJECT REFERENCE NO. R-1015	SHEET NO. 81
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
<small>MOFFATT & NICHOL ENGINEERS, P.A. 1919 781-4868 FAX NC License No. F-0105</small>	



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5/28/2018

PROJECT REFERENCE NO. R-1015	SHEET NO. 82
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
<small>4700 FALLS OF THE ROADS, SUITE 300 FALCON, NORTH CAROLINA 27629 (919) 781-4626 VOICE (919) 781-4666 FAX NC License NO. F-0105</small> moffatt & nichol	



DITCH LEGEND

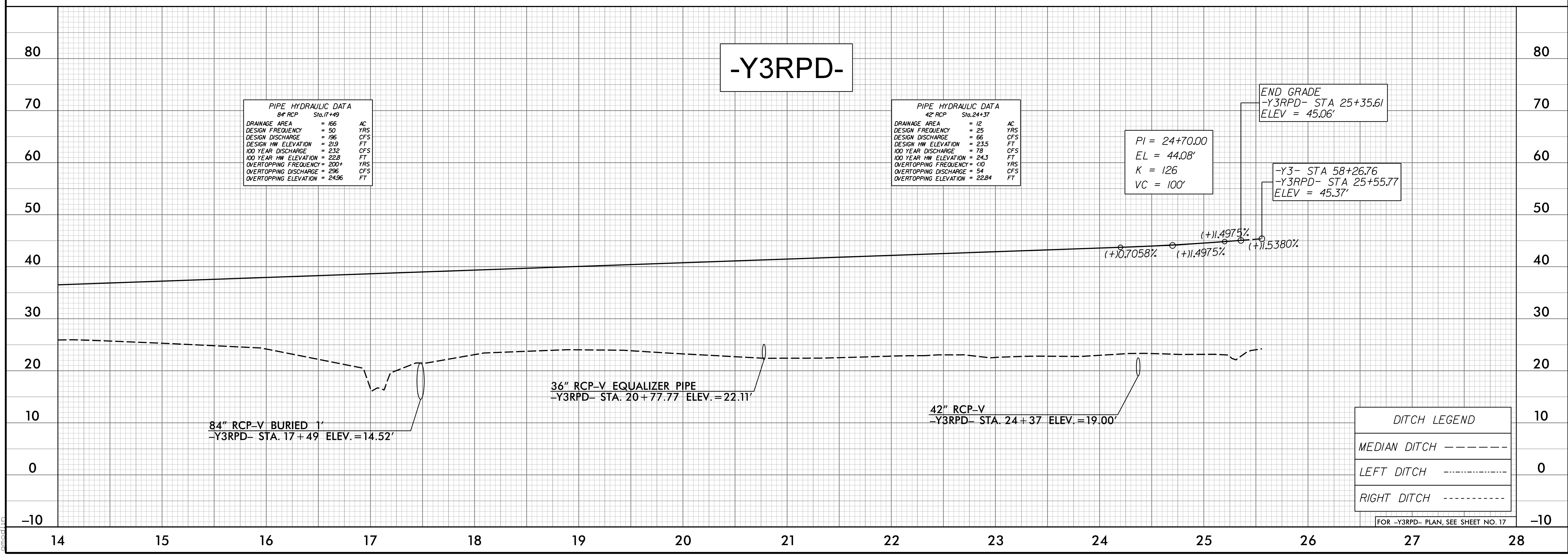
MEDIAN DITCH - - - - -

LEFT DITCH -

RIGHT DITCH - - - - -

FOR -Y3RPD- PLAN, SEE SHEET NO. 18

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DITCH LEGEND

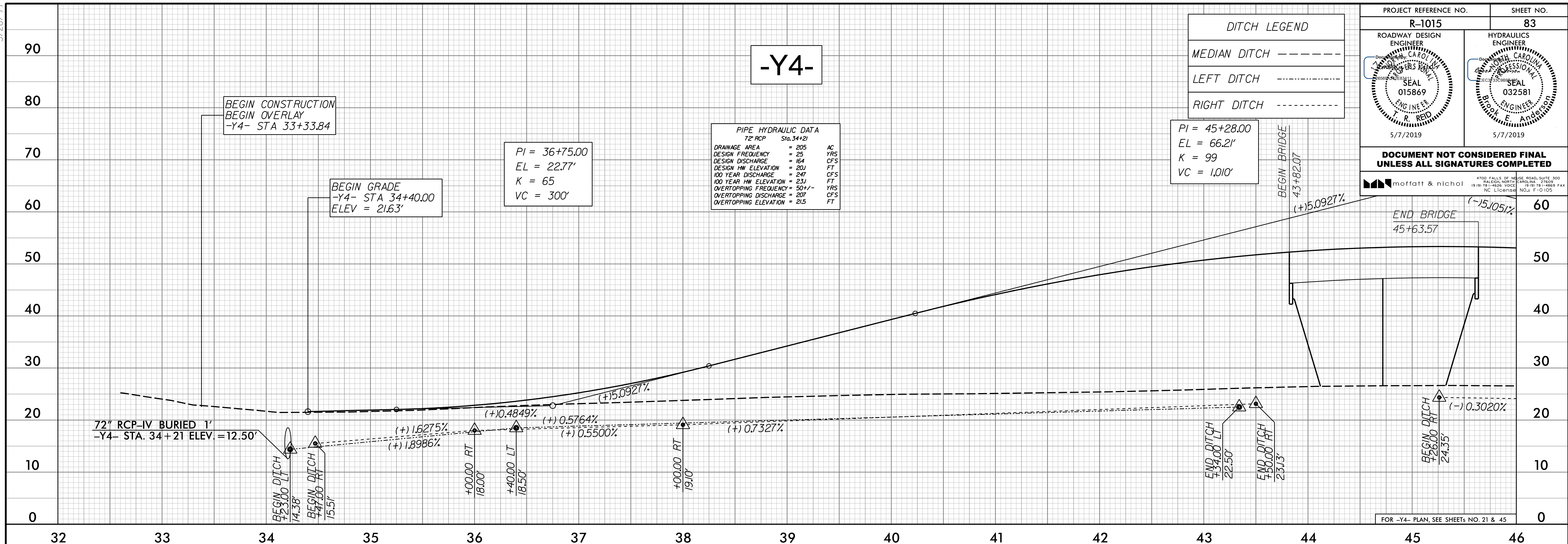
MEDIAN DITCH - - - - -

LEFT DITCH -

RIGHT DITCH - - - - -

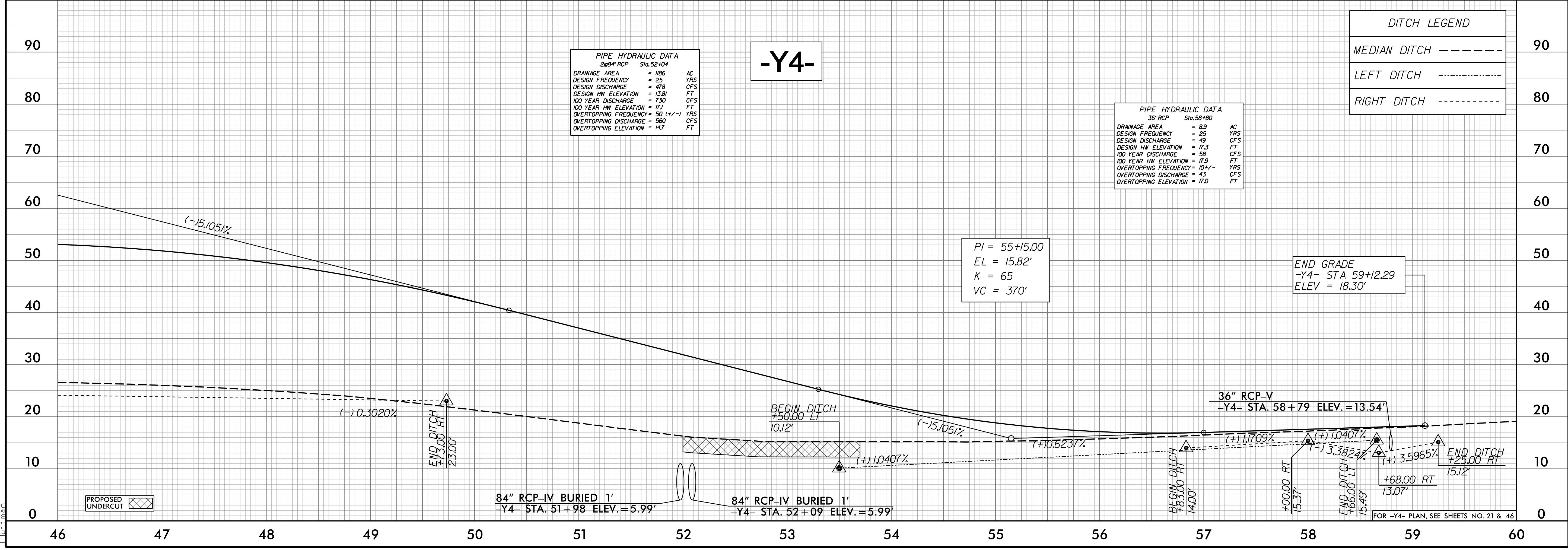
FOR -Y3RPD- PLAN, SEE SHEET NO. 17

5/28/2019



PROJECT REFERENCE NO. R-1015	SHEET NO. 83
ROADWAY DESIGN ENGINEER R. REID 015869 5/7/2019	HYDRAULICS ENGINEER BROOK E. AMBERSON 032581 5/7/2019
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

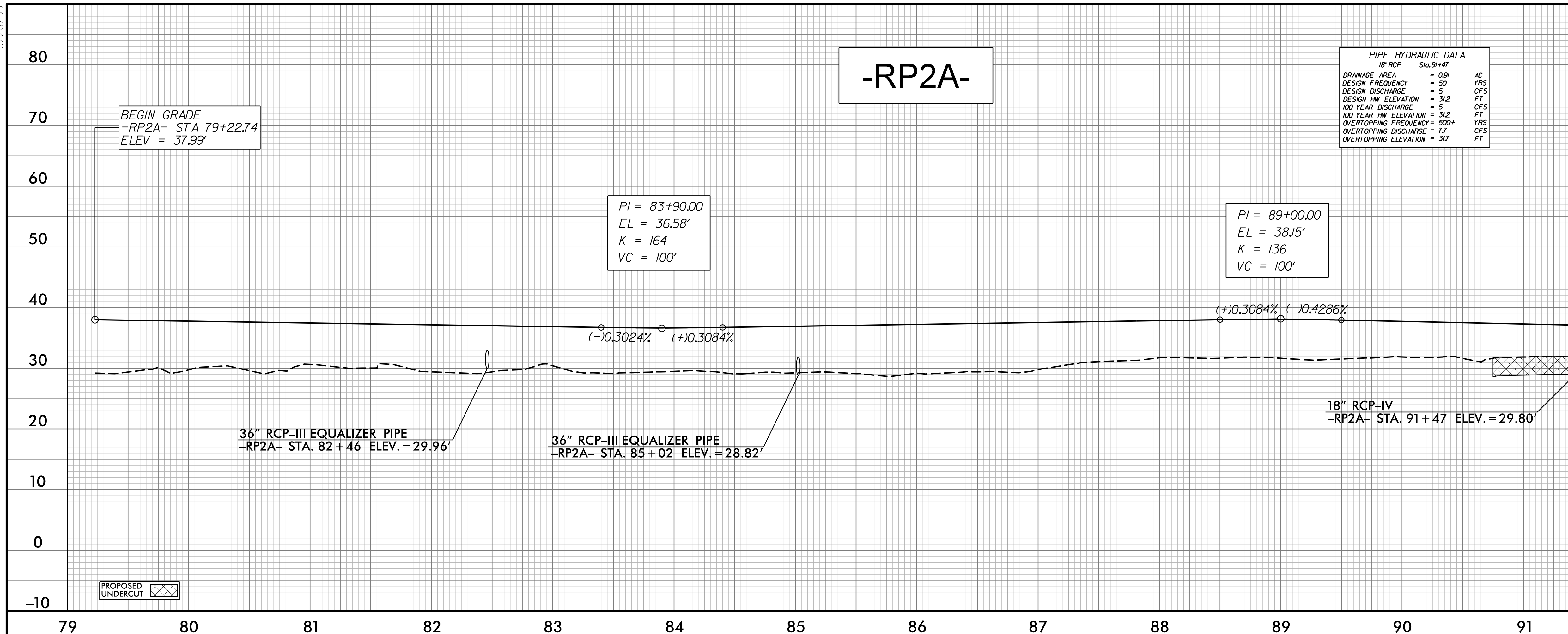
5/16/2019
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5/28/19

PROJECT REFERENCE NO.	SHEET NO.
R-1015	84
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	

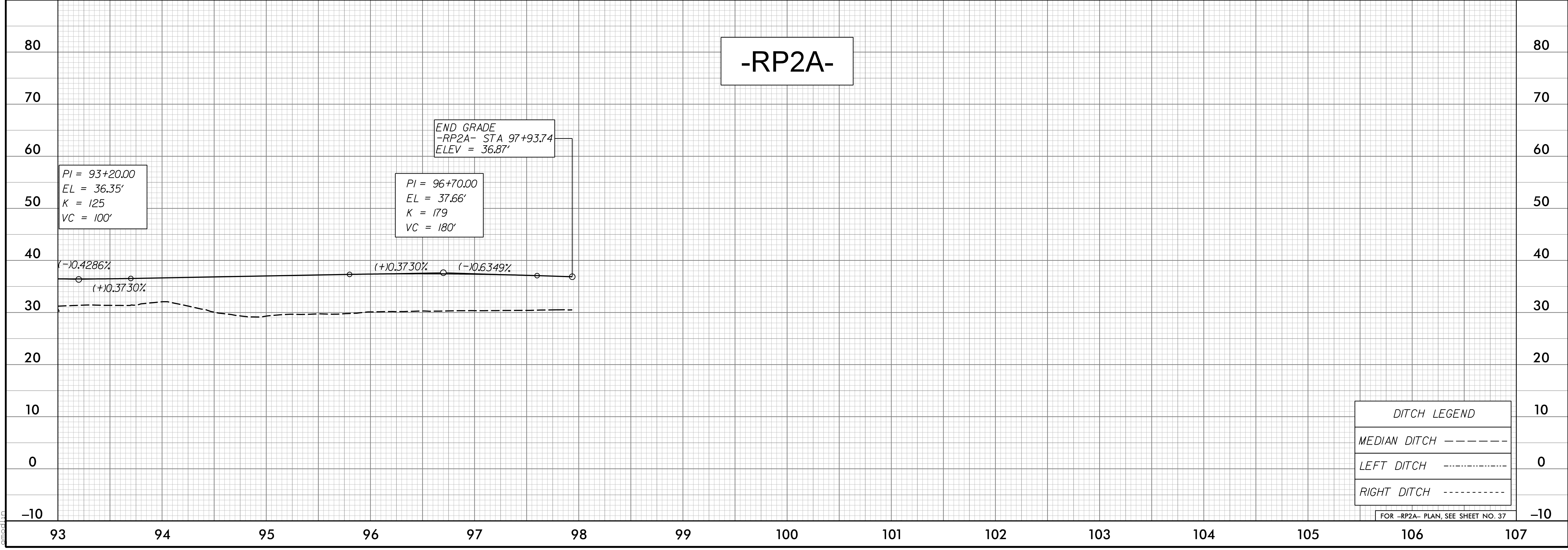
PIPE HYDRAULIC DATA		
18" RCP	Sta. 91+47	AC
DRAINAGE AREA	= 0.91	YRS
DESIGN FREQUENCY	= 50	CFS
DESIGN DISCHARGE	= 5	FT
DESIGN HW ELEVATION	= 31.2	FT
100 YEAR DISCHARGE	= 5	CFS
100 YEAR HW ELEVATION	= 31.2	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 1.7	CFS
OVERTOPPING ELEVATION	= 31.7	FT



<p>4700 FALLS OF THE ROADS, SUITE 300 FAYETTEVILLE, NORTH CAROLINA 27409 919 781-4626 VOIC 919 781-4664 FAX NC License NO. F-0 105</p>	

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

FOR -RP2A- PLAN, SEE SHEET NO. 36 & 37



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

FOR -RP2A- PLAN, SEE SHEET NO. 37

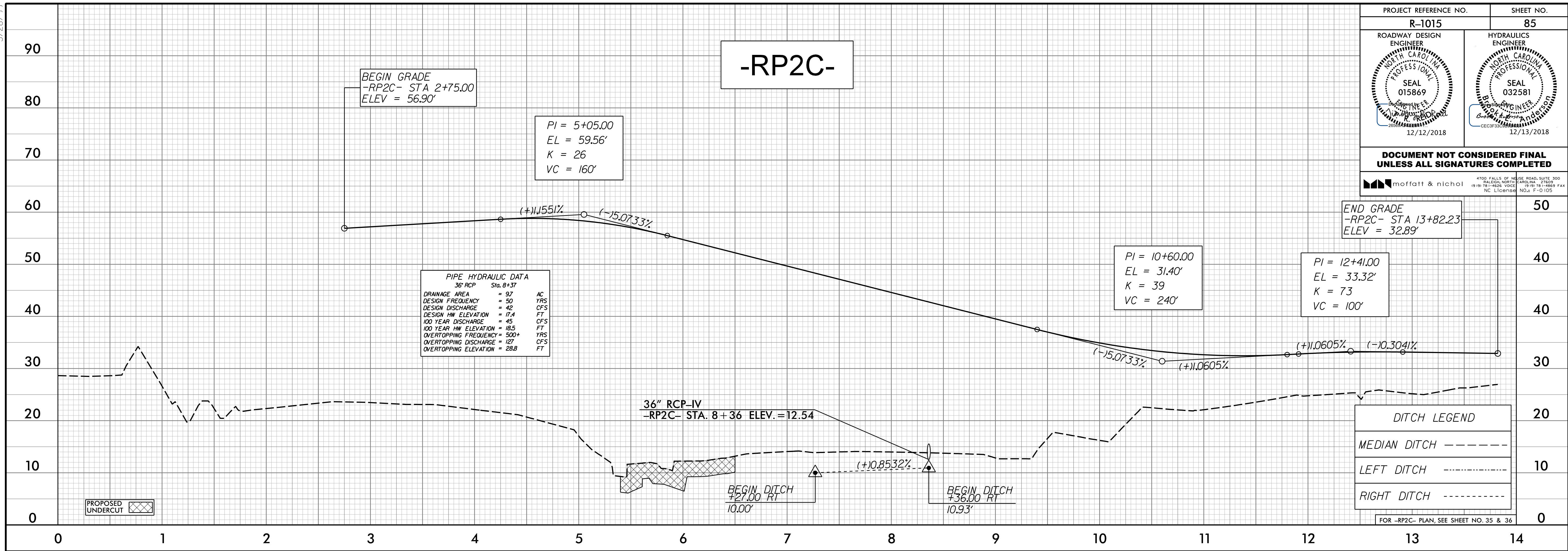
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5/28/2018

PROJECT REFERENCE NO. R-1015	SHEET NO. 85
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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moffatt & nichol
4700 FALLS OF THE ROADS, SUITE 300
 FALCON, NORTH CAROLINA 27629
 (919) 781-4626 VOICE (919) 781-4666 FAX
 NC License NO.: F-0105



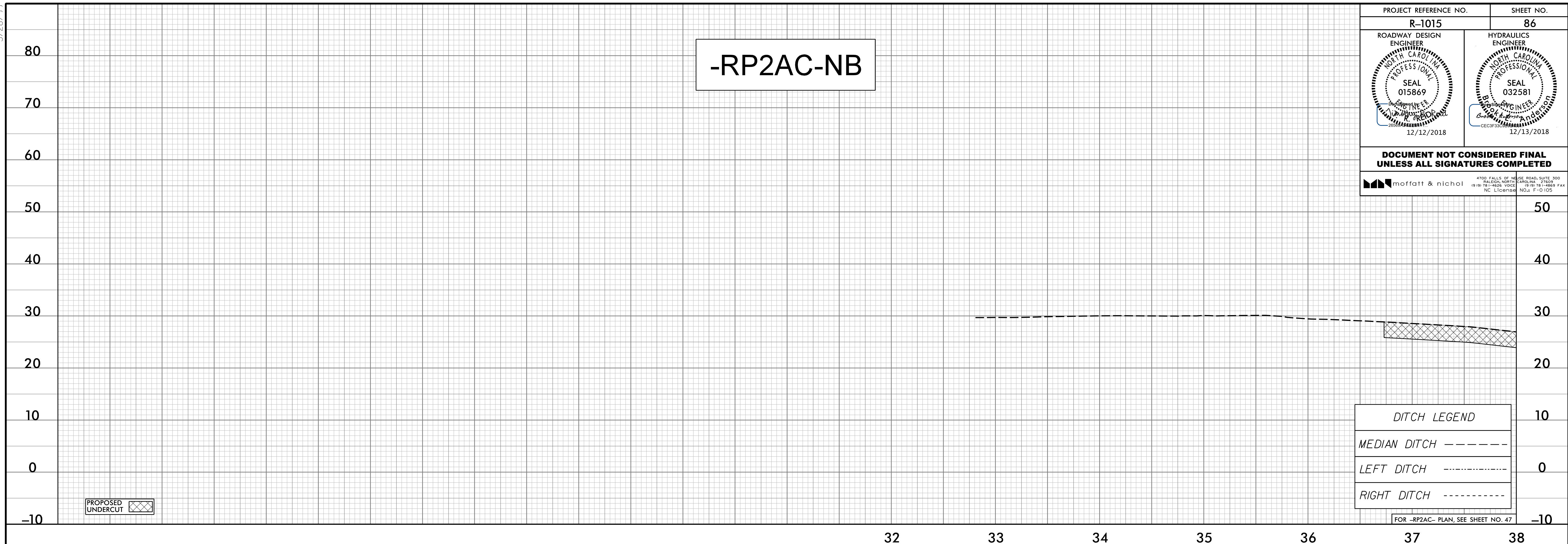
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5/28/19

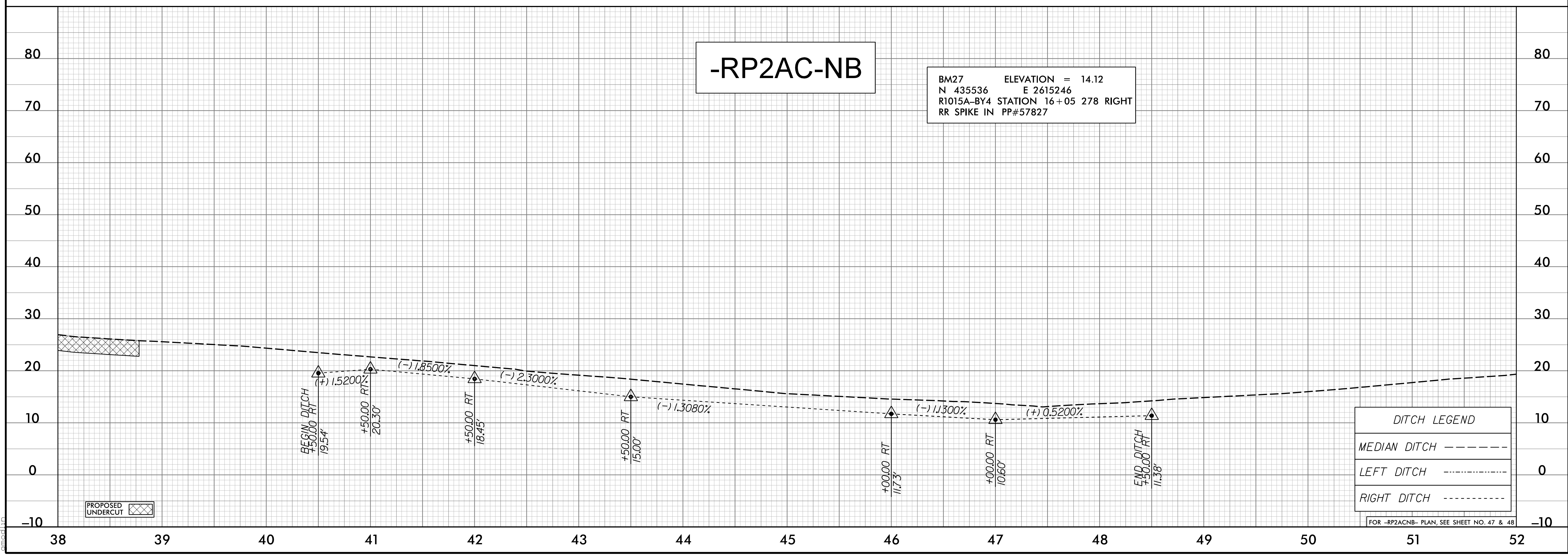
PROJECT REFERENCE NO. R-1015	SHEET NO. 86
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

**DOCUMENT NOT CONSIDERED FINAL
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MOFFATT & NICHOL



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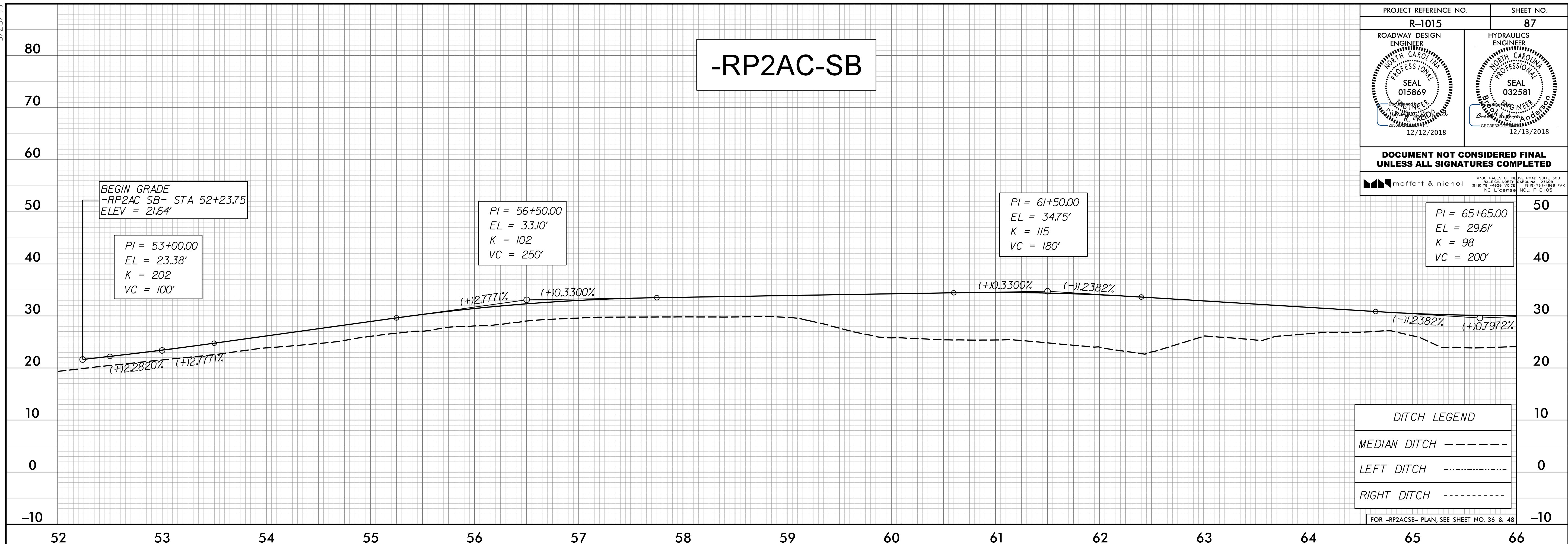


5/28/19

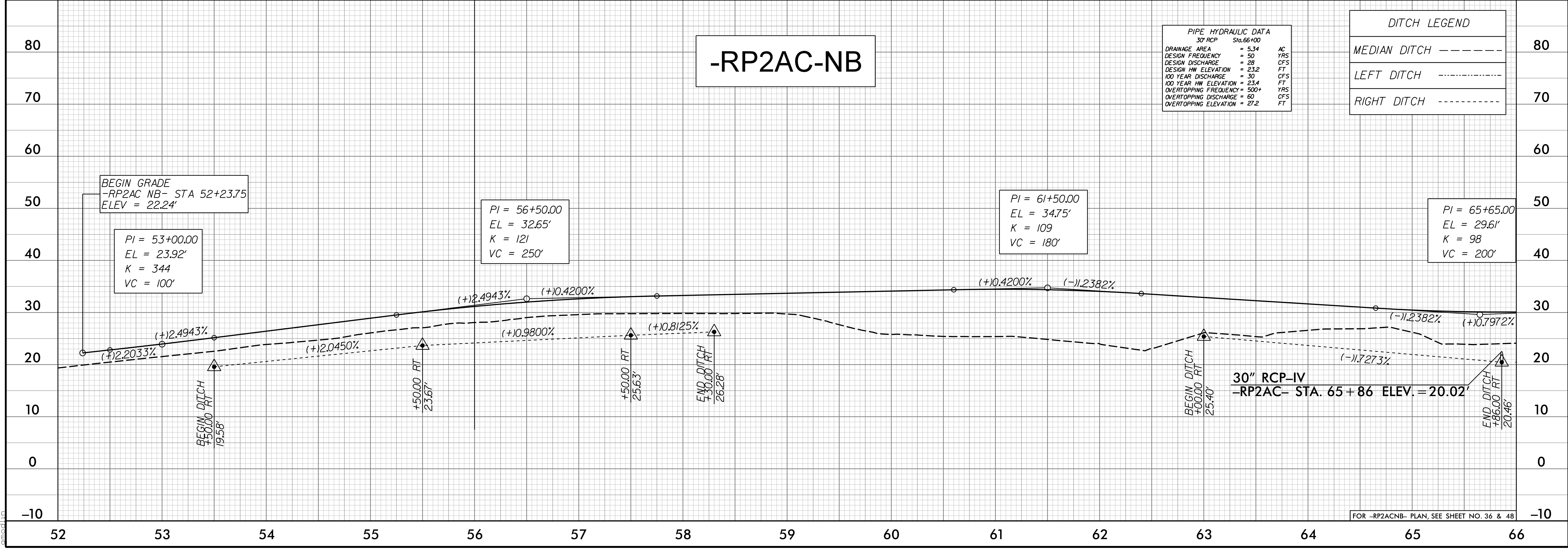
PROJECT REFERENCE NO. R-1015	SHEET NO. 87
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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

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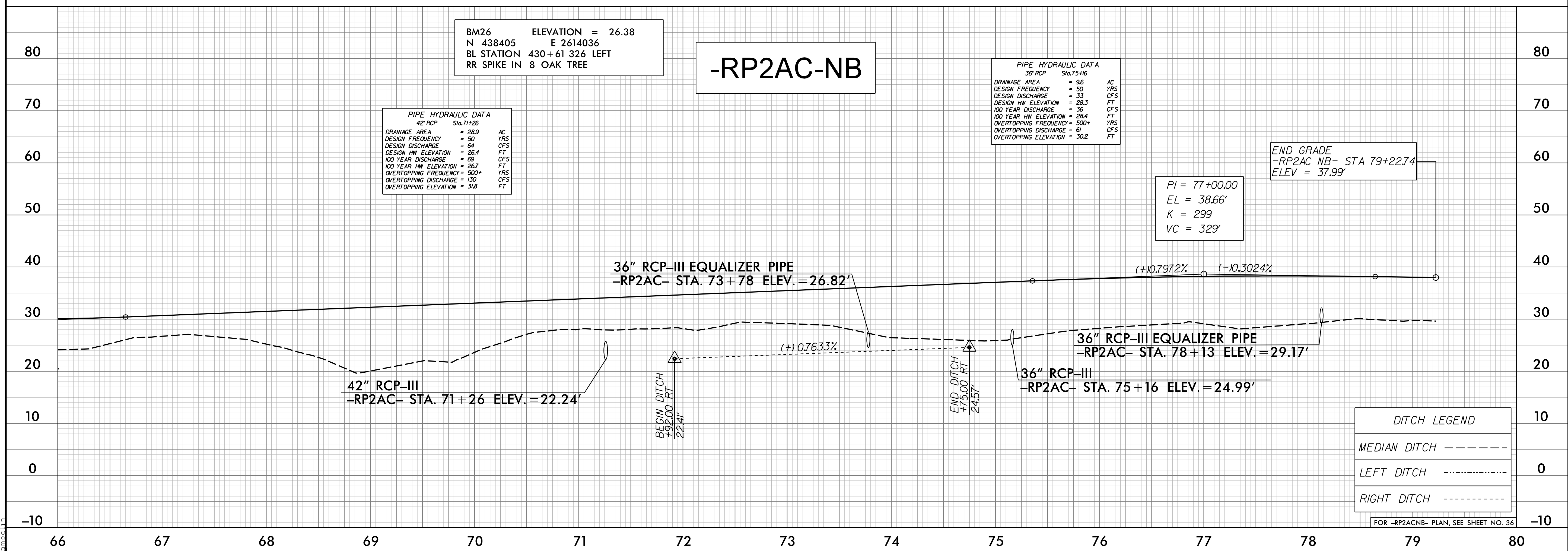
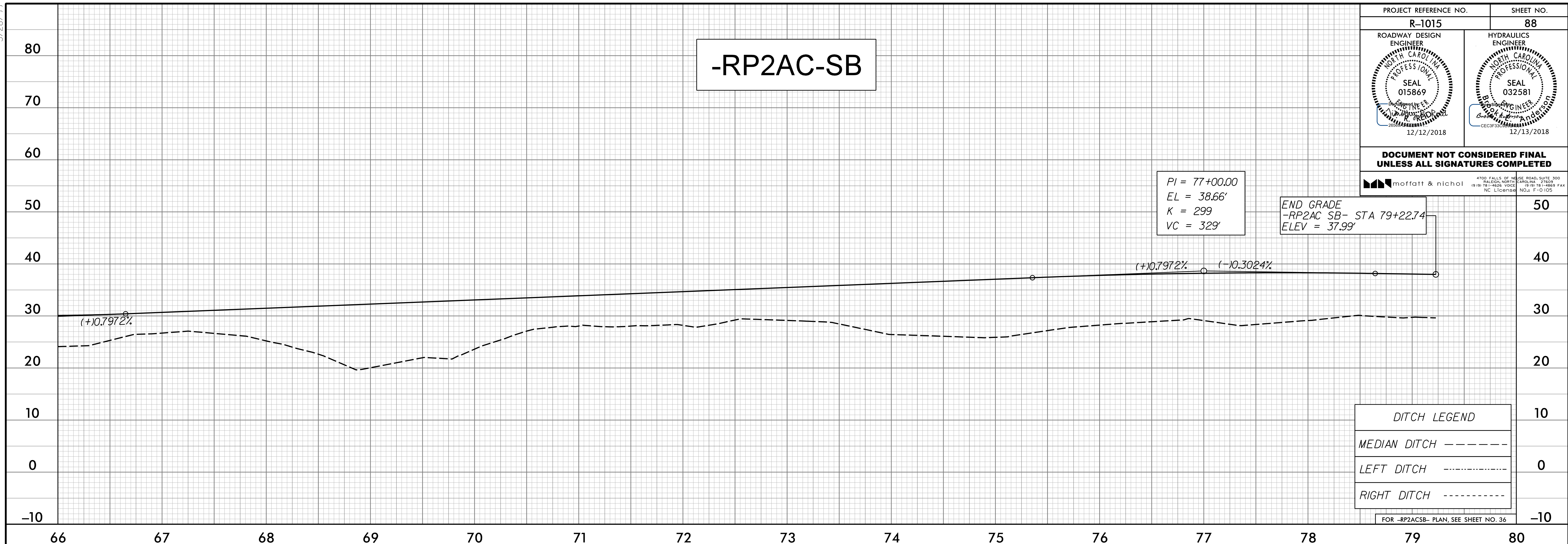


5/28/19

PROJECT REFERENCE NO. R-1015	SHEET NO. 88
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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MOFFATT & NICHOL
4700 FALLS OF THE ROADS, SUITE 100
FAYETTEVILLE, NORTH CAROLINA 27629
(919) 781-4600 VOICE (919) 781-4666 FAX
NC License NO. F-0105



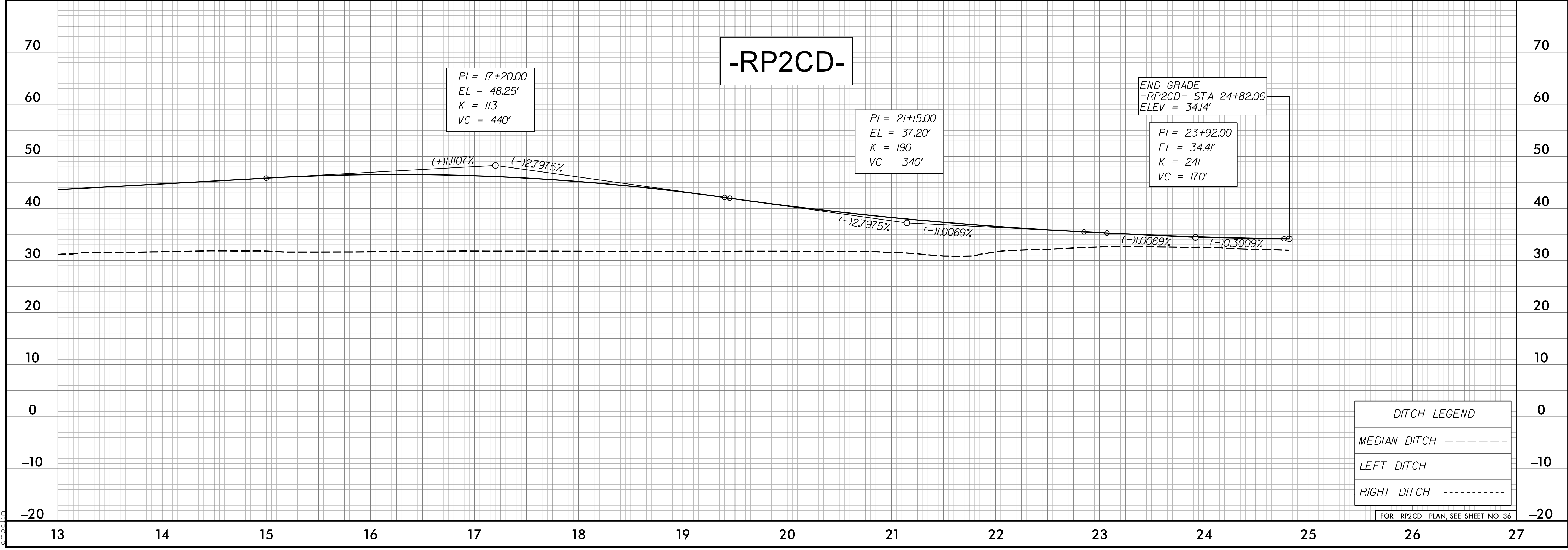
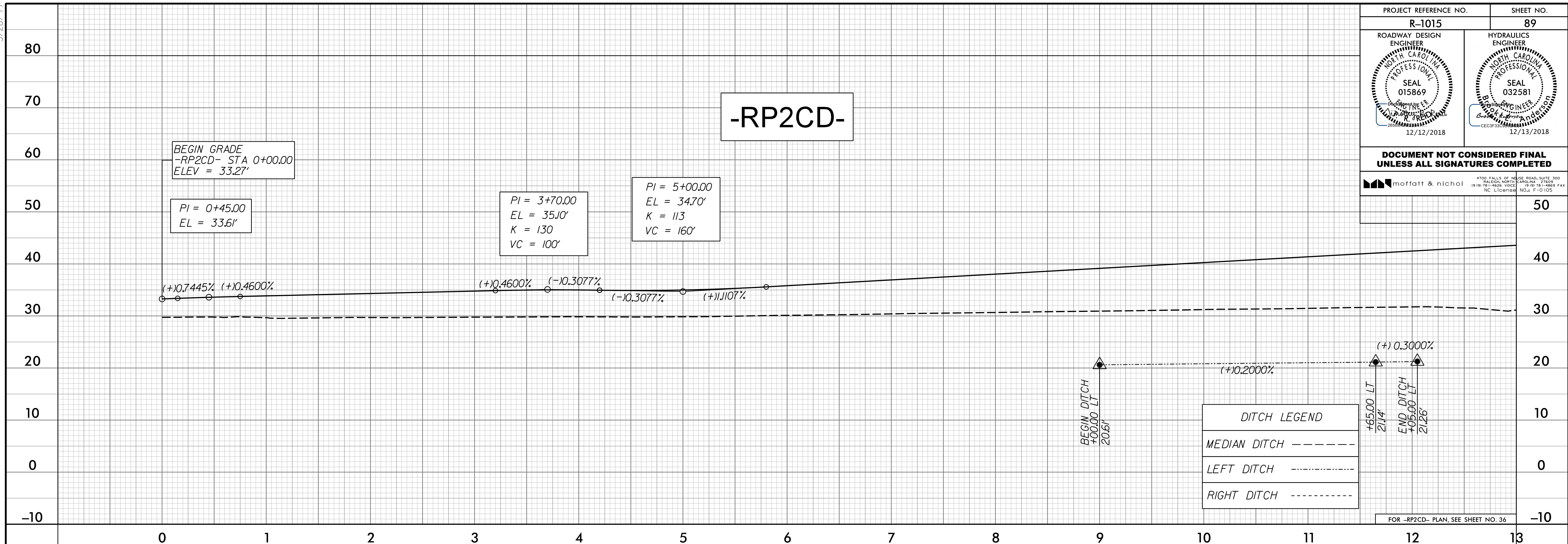
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5/28/19

PROJECT REFERENCE NO. R-1015	SHEET NO. 89
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018

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

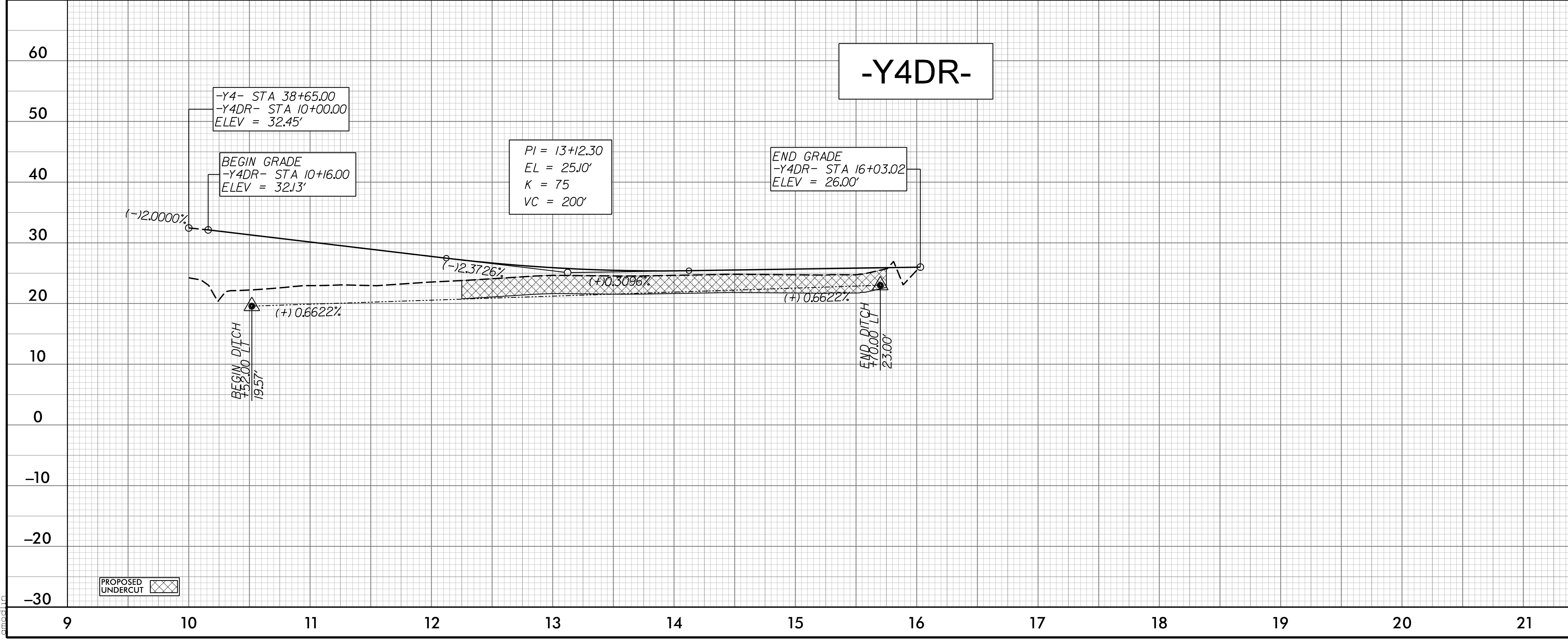
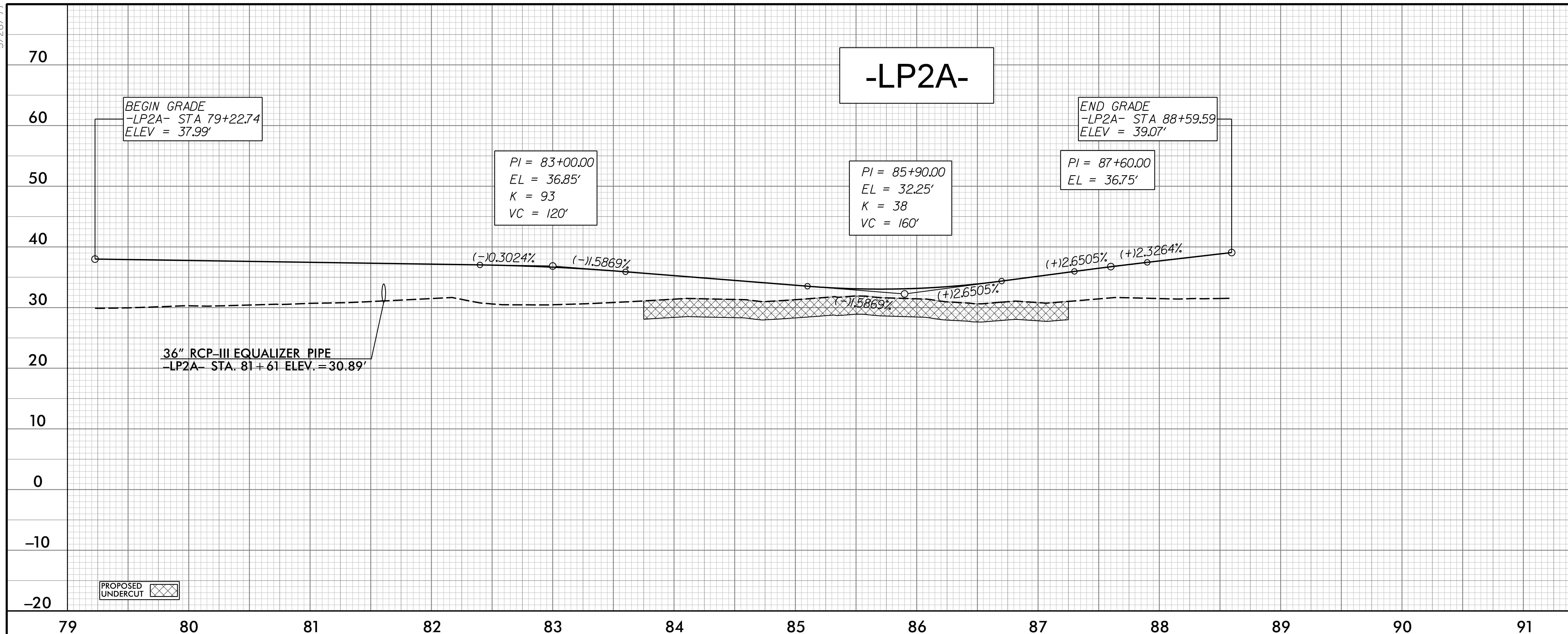
4700 FALLS OF THE ROADS, SUITE 200
FALCON, NORTH CAROLINA 27629
(919) 781-4600 VOICE (919) 781-4666 FAX
NC License NO. F-0105
moftatt & nichol



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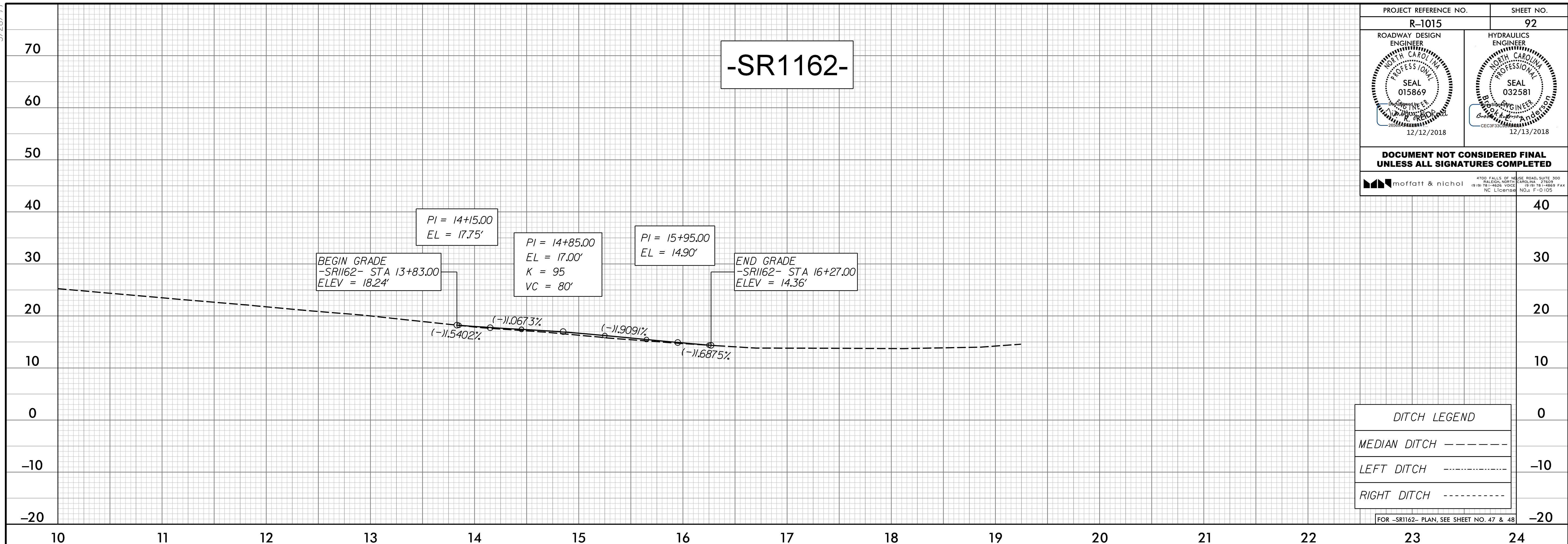
PROJECT REFERENCE NO. R-1015	SHEET NO. 90
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
<small>4700 FALLS OF THE ROADS, SUITE 300 FALCON, NORTH CAROLINA 27629 (919) 781-4600 VOICE (919) 781-4866 FAX NC License NO.: F-0105</small>	



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5/28/19

PROJECT REFERENCE NO. R-1015	SHEET NO. 92
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
moffatt & nichol <small>4705 FALLS OF THE ROADS, SUITE 300 FALGOUT, NORTH CAROLINA 27629 (919) 781-4626 VOICE (919) 781-4666 FAX NC License NO.: F-0105</small>	



DITCH LEGEND

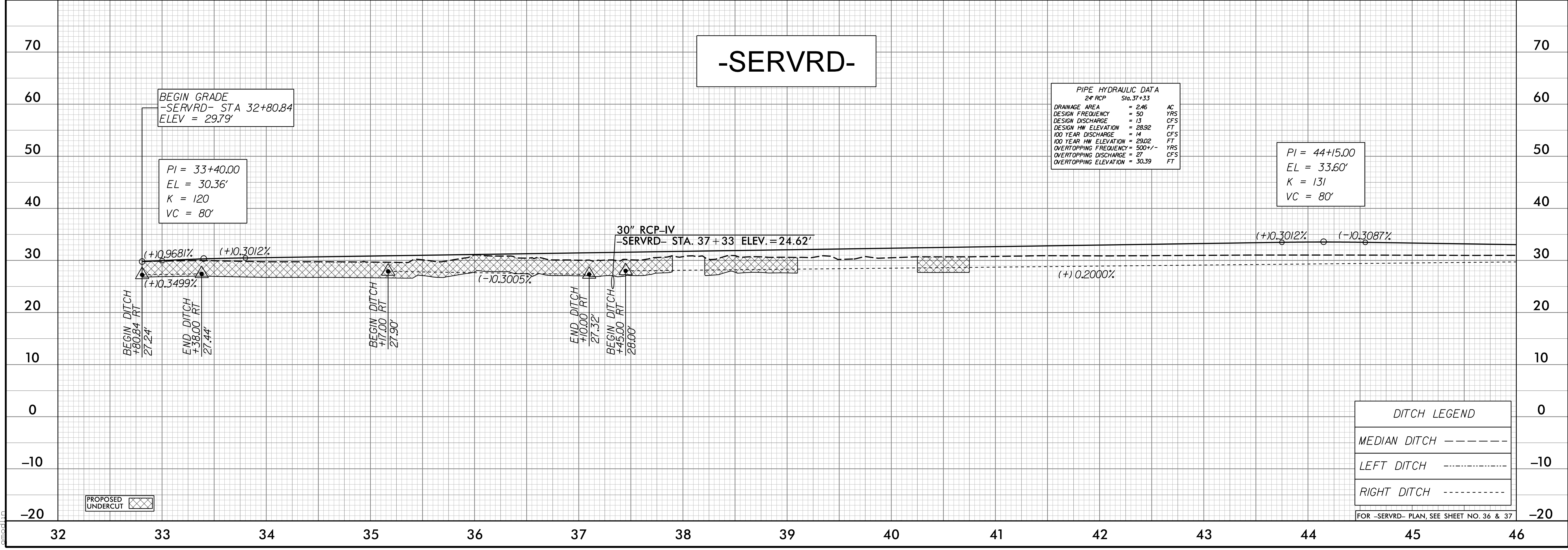
MEDIAN DITCH - - - - -

LEFT DITCH -

RIGHT DITCH - - - - -

FOR -SR1162- PLAN, SEE SHEET NO. 47 & 48

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PIPE HYDRAULIC DATA

24" RCP S16.37+33

DRAINAGE AREA	= 2.46	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 13	CFS
DESIGN HW ELEVATION	= 28.92	FT
100 YEAR DISCHARGE	= 14	CFS
100 YEAR HW ELEVATION	= 29.02	FT
OVERTOPPING FREQUENCY	= 500+/-	YRS
OVERTOPPING DISCHARGE	= 27	CFS
OVERTOPPING ELEVATION	= 30.39	FT

DITCH LEGEND

MEDIAN DITCH - - - - -

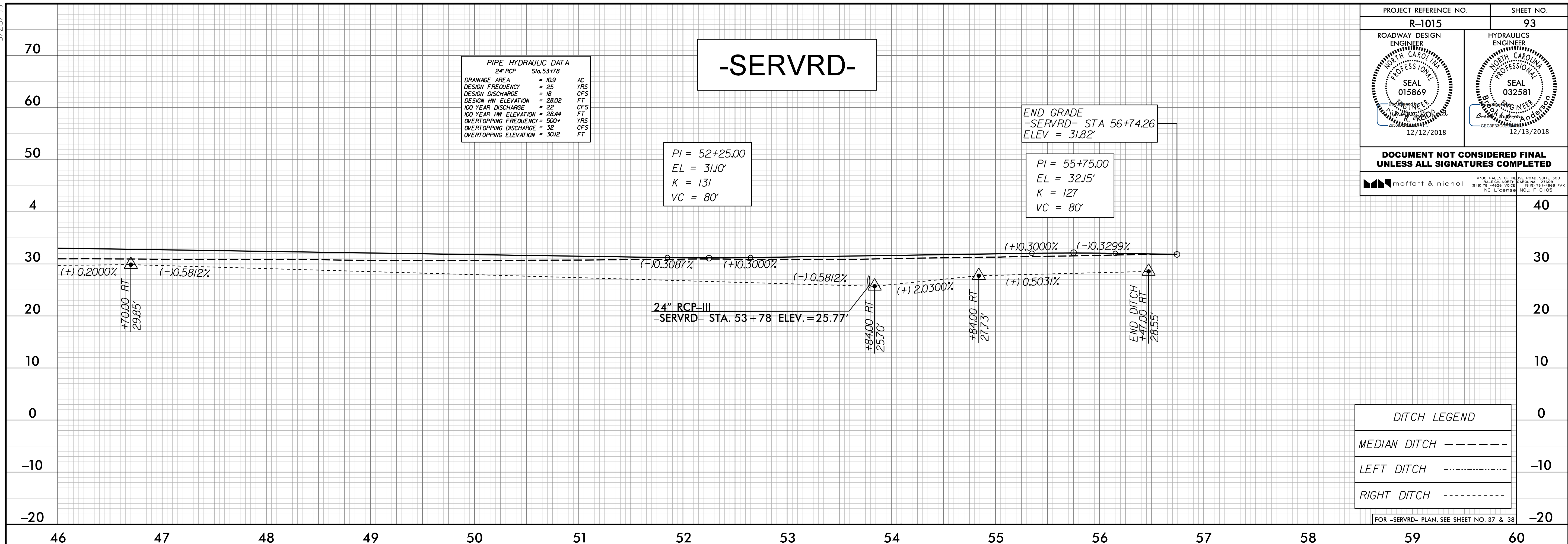
LEFT DITCH -

RIGHT DITCH - - - - -

FOR -SERVRD- PLAN, SEE SHEET NO. 36 & 37

5/28/2018

PROJECT REFERENCE NO. R-1015	SHEET NO. 93
ROADWAY DESIGN ENGINEER SEAL 015869 12/12/2018	HYDRAULICS ENGINEER SEAL 032581 12/13/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
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