

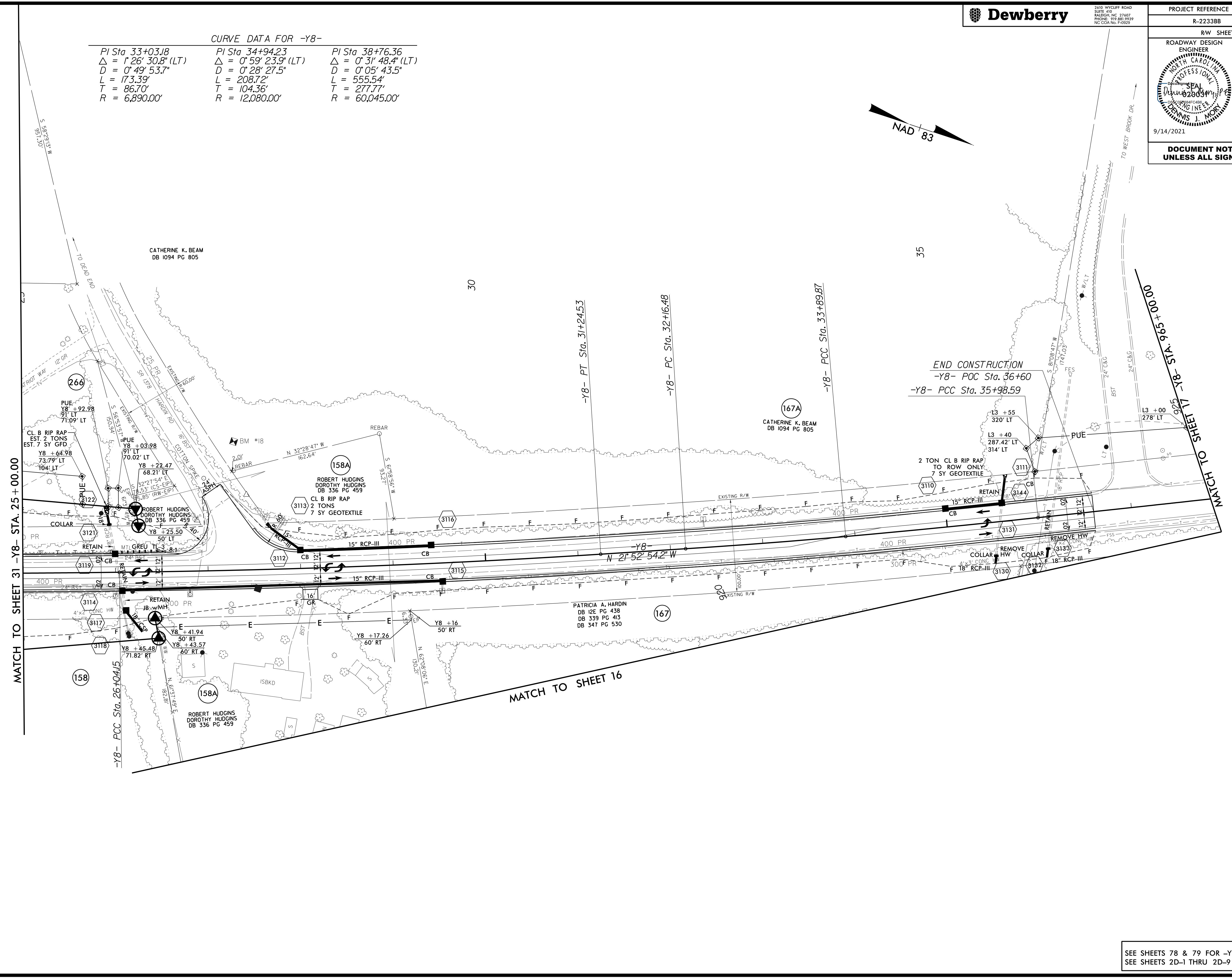
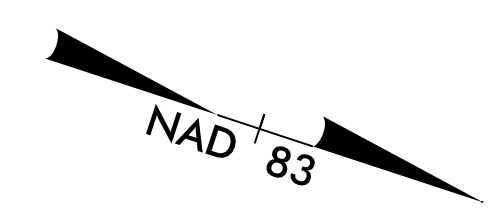
R/W SHEET NO.

ROADWAY DESIGN ENGINEER SEAL DENNIS M. MOY 9/14/2021	HYDRAULICS ENGINEER SEAL STEVEN M. BOYD 9/14/2021
---	--

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CURVE DATA FOR -Y8-

PI Sta 33+03.18 $\Delta = 1^{\circ}26'30.8''$ (LT) $D = 0^{\circ}49'53.7''$ $L = 173.39'$ $T = 86.70'$ $R = 6,890.00'$	PI Sta 34+94.23 $\Delta = 0^{\circ}59'23.9''$ (LT) $D = 0^{\circ}28'27.5''$ $L = 208.72'$ $T = 104.36'$ $R = 12,080.00'$	PI Sta 38+76.36 $\Delta = 0^{\circ}31'48.4''$ (LT) $D = 0^{\circ}05'43.5''$ $L = 555.54'$ $T = 277.77'$ $R = 60,045.00'$
---	---	---



MATCH TO SHEET 31 - Y8 - STA. 25+00.00

MATCH TO SHEET 16

END CONSTRUCTION
-Y8- POC Sta. 36+60
-Y8- PCC Sta. 35+98.59

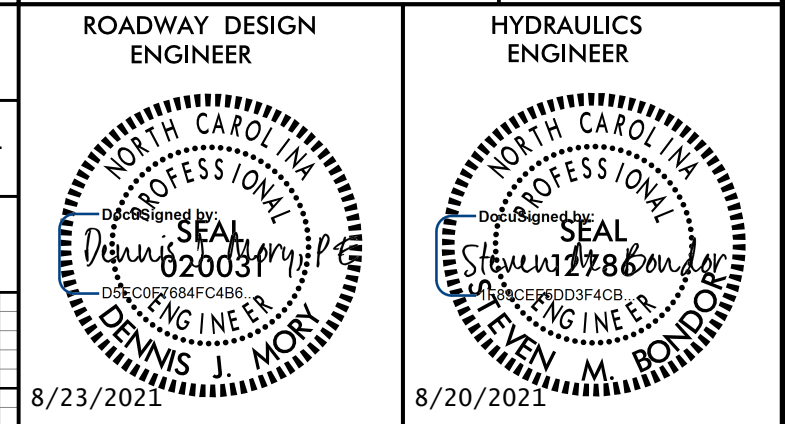
MATCH TO SHEET 17
925
00+00 + 566 STA. 81-81

5/14/99



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27601
PHONE: 919.881.9939
NC COA No. F.0929

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



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

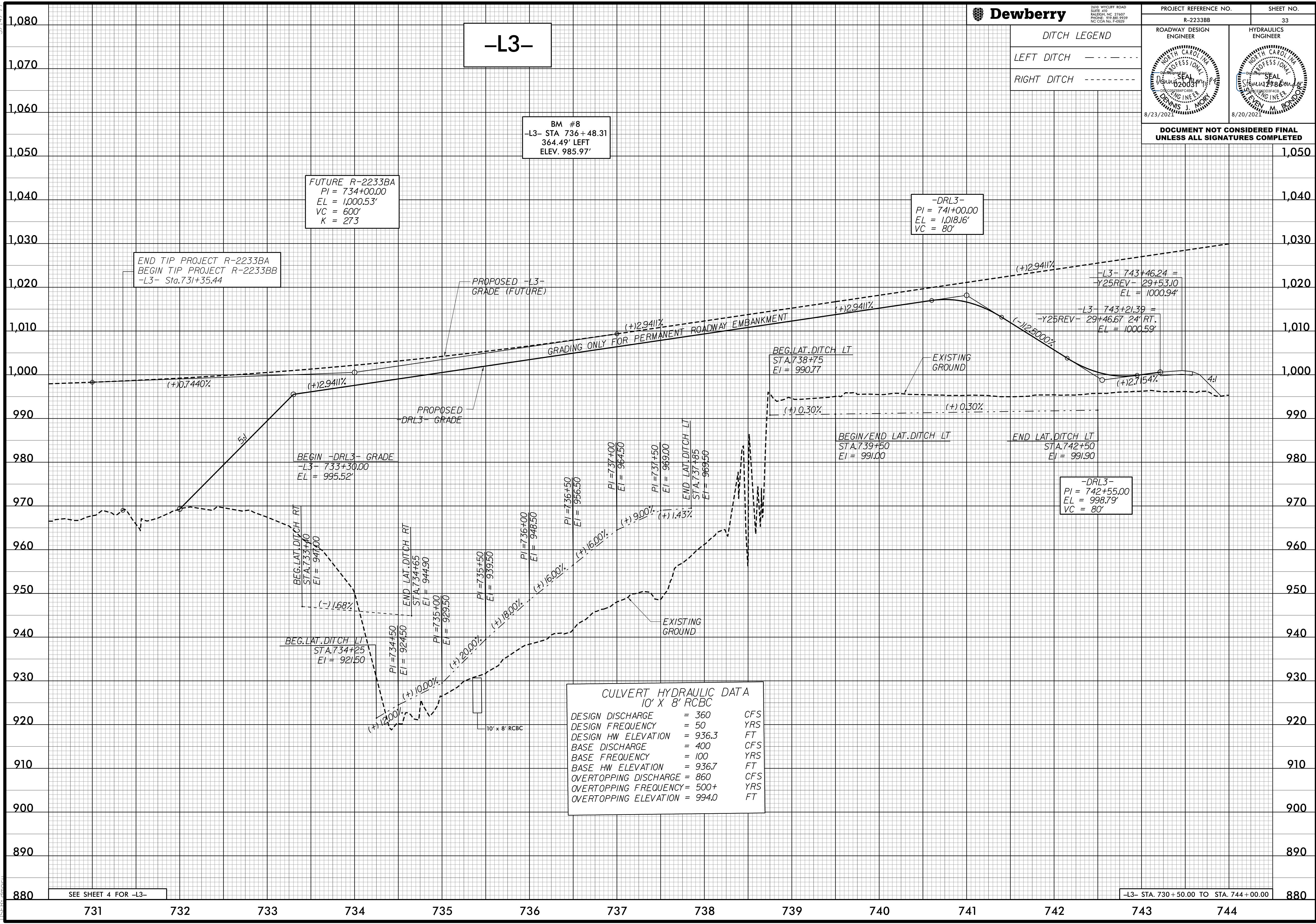
-L3-

BM #8
-L3- STA 736+48.31
364.49' LEFT
ELEV. 985.97'

FUTURE R-2233BA
PI = 734+00.00
EL = 1,000.53'
VC = 600'
K = 273

-DRL3-
PI = 741+00.00
EL = 1,018.16'
VC = 80'

END TIP PROJECT R-2233BA
BEGIN TIP PROJECT R-2233BB
-L3- Sta. 731+35.44



CULVERT HYDRAULIC DATA
10' X 8' RCBC

DESIGN DISCHARGE	= 360	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 936.3	FT
BASE DISCHARGE	= 400	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 936.7	FT
OVERTOPPING DISCHARGE	= 860	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 994.0	FT

SEE SHEET 4 FOR -L3-

-L3- STA. 730+50.00 TO STA. 744+00.00

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5/14/99

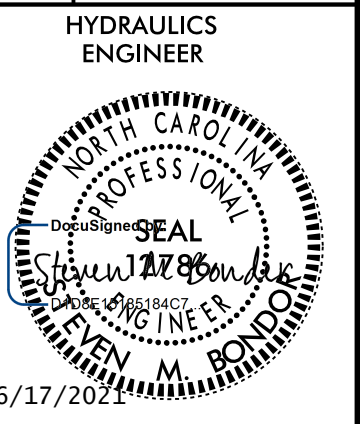
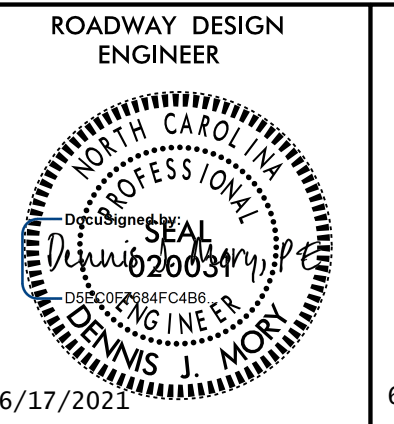


2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9200
NC COA No. F-09251

PROJECT REFERENCE NO.
R-2233BB

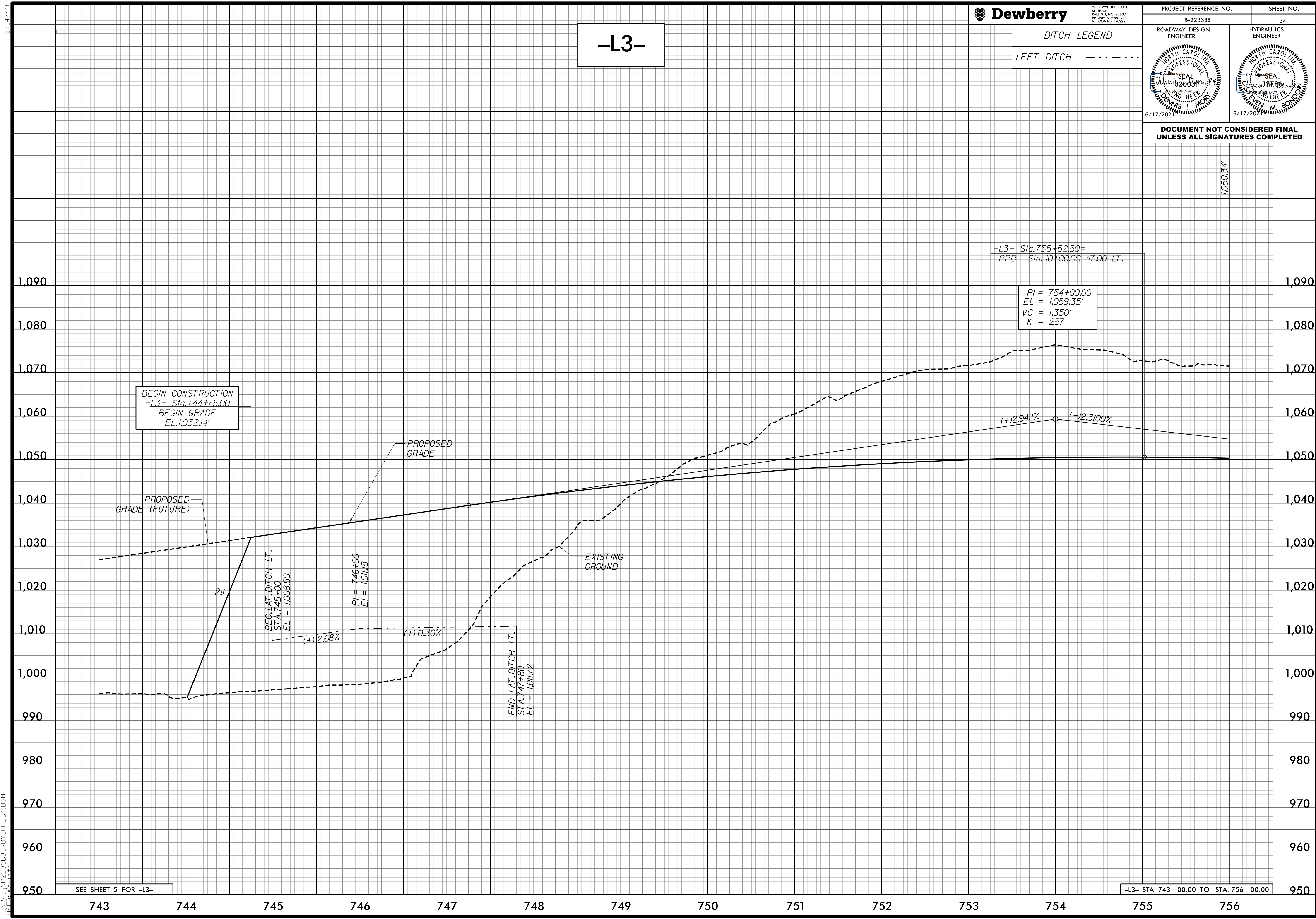
SHEET NO.
34

DITCH LEGEND
LEFT DITCH - - - - -



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-L3-





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USER: dmorley

5/14/99

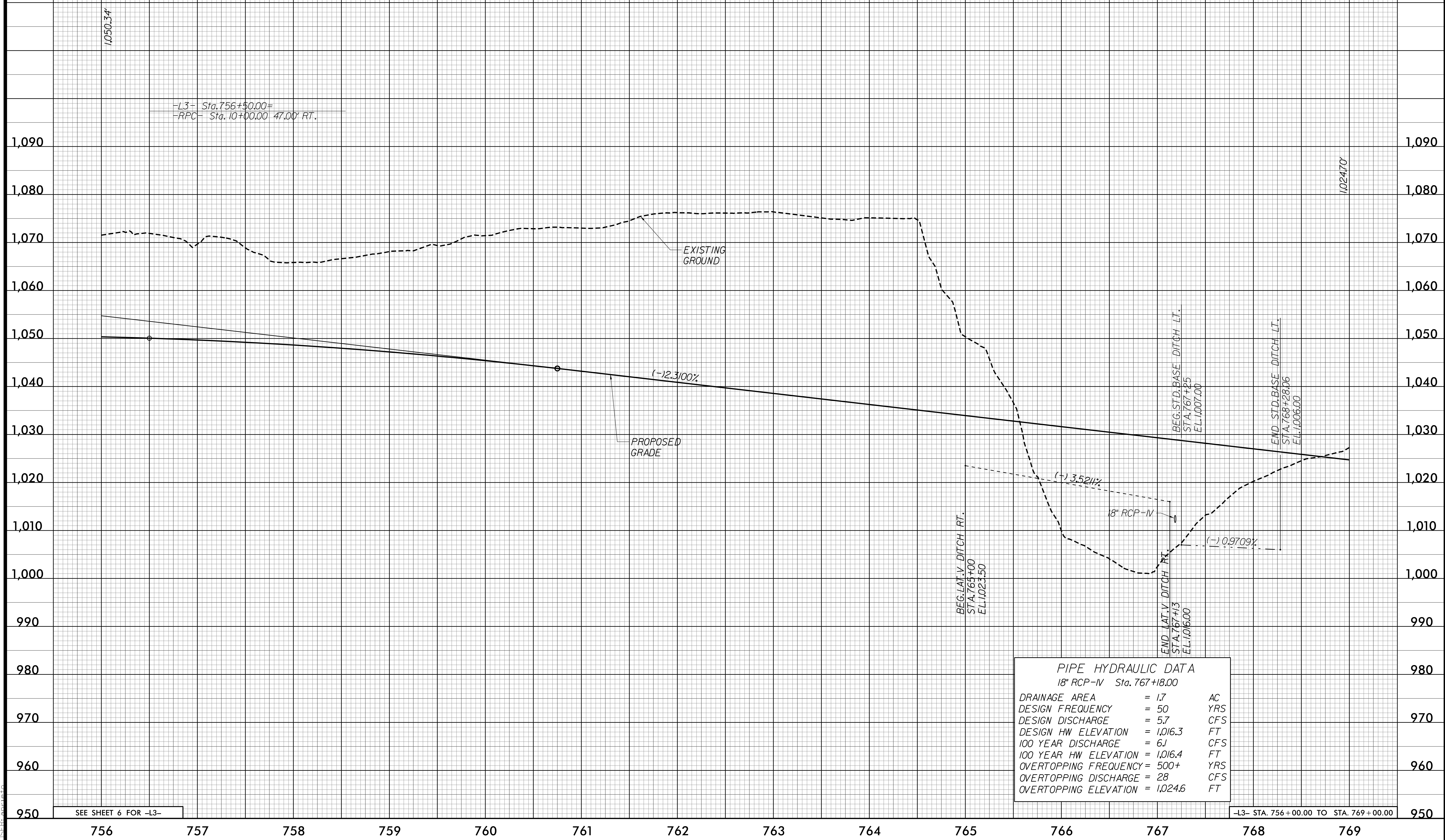
-L3-

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

ROADWAY DESIGN ENGINEER

 6/17/2024

HYDRAULICS ENGINEER

 6/17/2024

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



PIPE HYDRAULIC DATA
18" RCP-N Sta. 767+18.00

DRAINAGE AREA	= 1.7	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 5.7	CFS
DESIGN HW ELEVATION	= 1,016.3	FT
100 YEAR DISCHARGE	= 6.1	CFS
100 YEAR HW ELEVATION	= 1,016.4	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 28	CFS
OVERTOPPING ELEVATION	= 1,024.6	FT

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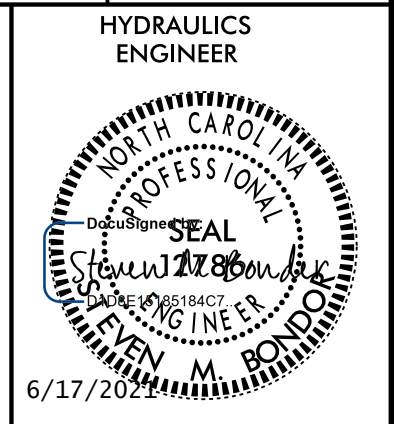
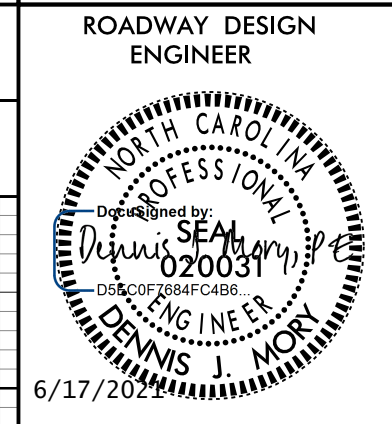
5/14/99



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27601
PHONE: 919.881.9299
NC COA No. F-0925

PROJECT REFERENCE NO. R-2233BB
SHEET NO. 36

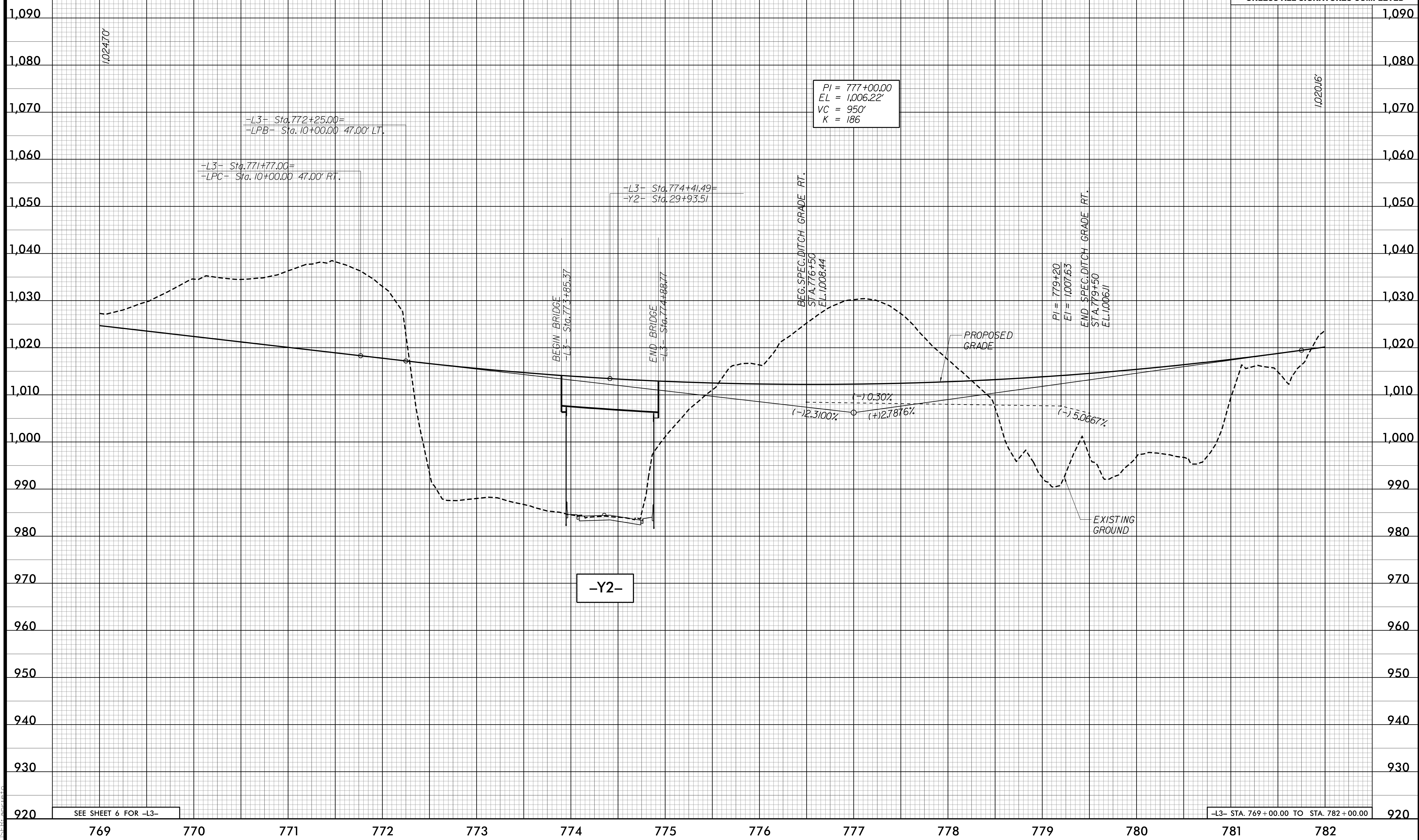
DITCH LEGEND
RIGHT DITCH - - - - -



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-L3-

-Y2-



-L3- Sta. 772+25.00=
-LPB- Sta. 10+00.00 47.00' LT.

-L3- Sta. 771+77.00=
-LPC- Sta. 10+00.00 47.00' RT.

-L3- Sta. 774+41.49=
-Y2- Sta. 29+93.51

PI = 777+00.00
EL = 1,006.22'
VC = 950'
K = 186

PI = 779+20
EI = 1,007.63
END. SPEC. DITCH GRADE RT.
STA. 779+50
EL. 1,006.11

BEG. SPEC. DITCH GRADE RT.
STA. 776+50
EL. 1,008.44

BEGIN BRIDGE
-L3- Sta. 773+85.37

END BRIDGE
-L3- Sta. 774+88.77

SEE SHEET 6 FOR -L3-

-L3- STA. 769+00.00 TO STA. 782+00.00

4/24/2020 4:45:33 PM
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USER: dmoran

5/14/99

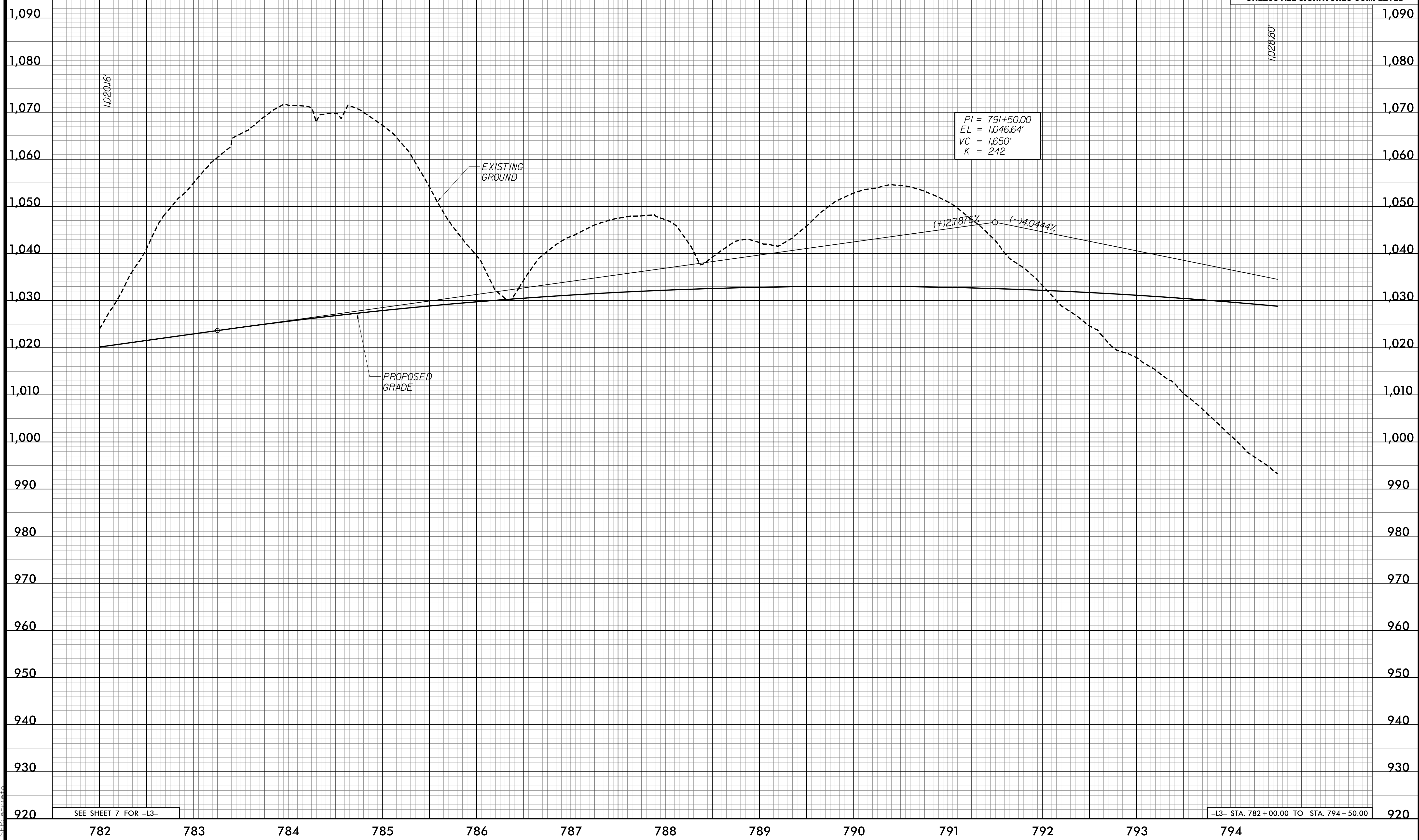
-L3-



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9299
NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB	SHEET NO. 37
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



SEE SHEET 7 FOR -L3-

-L3- STA. 782+00.00 TO STA. 794+50.00

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USER: dmorin

5/14/99



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0925

PROJECT REFERENCE NO. R-2233BB SHEET NO. 38

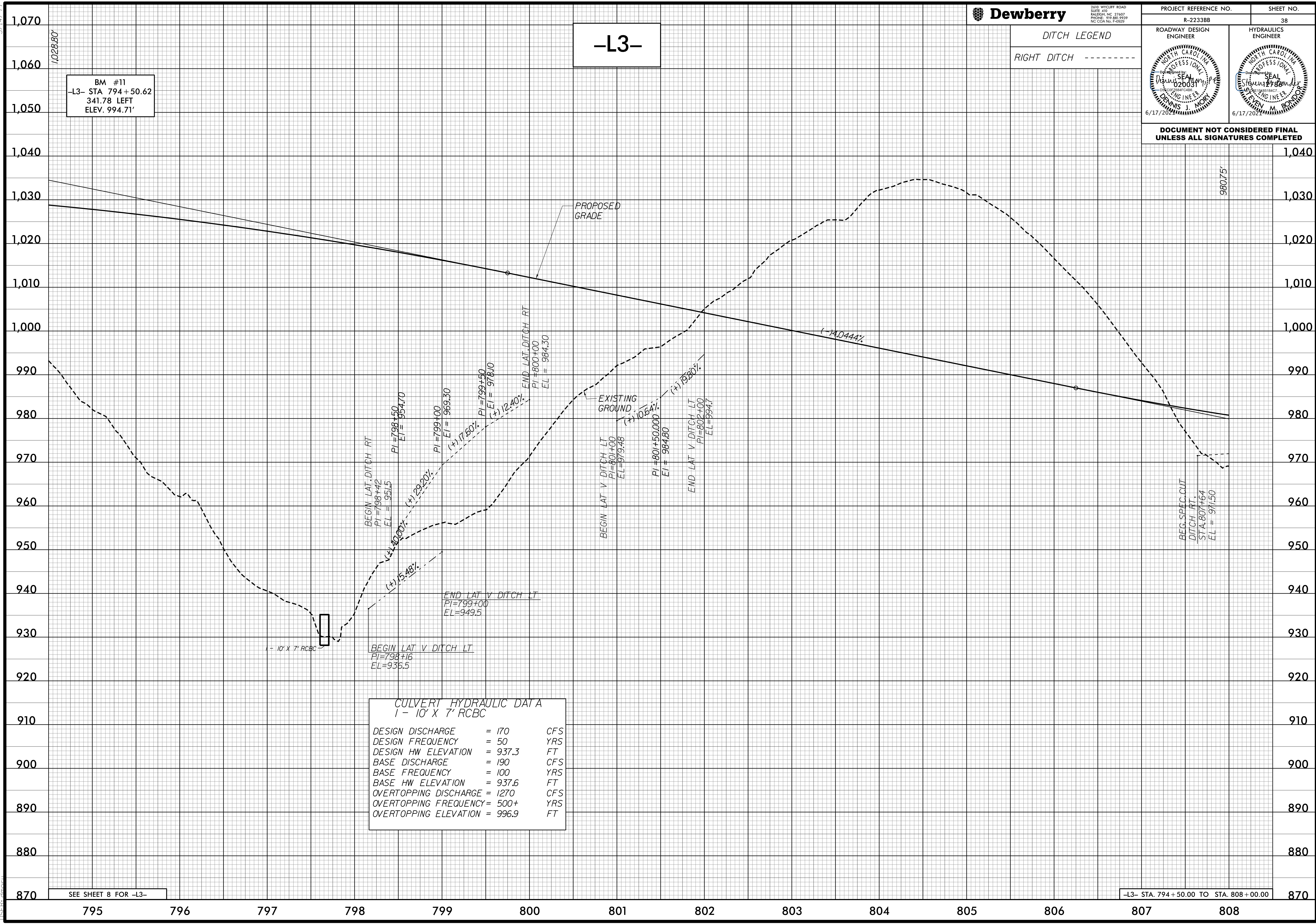
DITCH LEGEND

RIGHT DITCH - - - - -

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



CULVERT HYDRAULIC DATA
1 - 10' X 7' RCBC

DESIGN DISCHARGE	= 170	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 937.3	FT
BASE DISCHARGE	= 190	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 937.6	FT
OVERTOPPING DISCHARGE	= 1270	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 996.9	FT

SEE SHEET 8 FOR -L3-

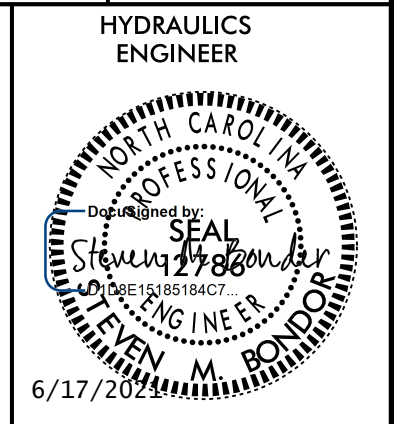
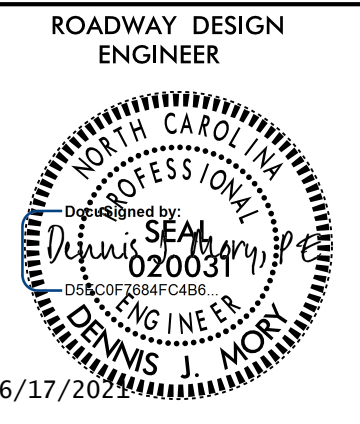
-L3- STA. 794+50.00 TO STA. 808+00.00

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R:\Projects\223338B_P01\PEL_PFL_38.DGN
D:\Users\dmorin

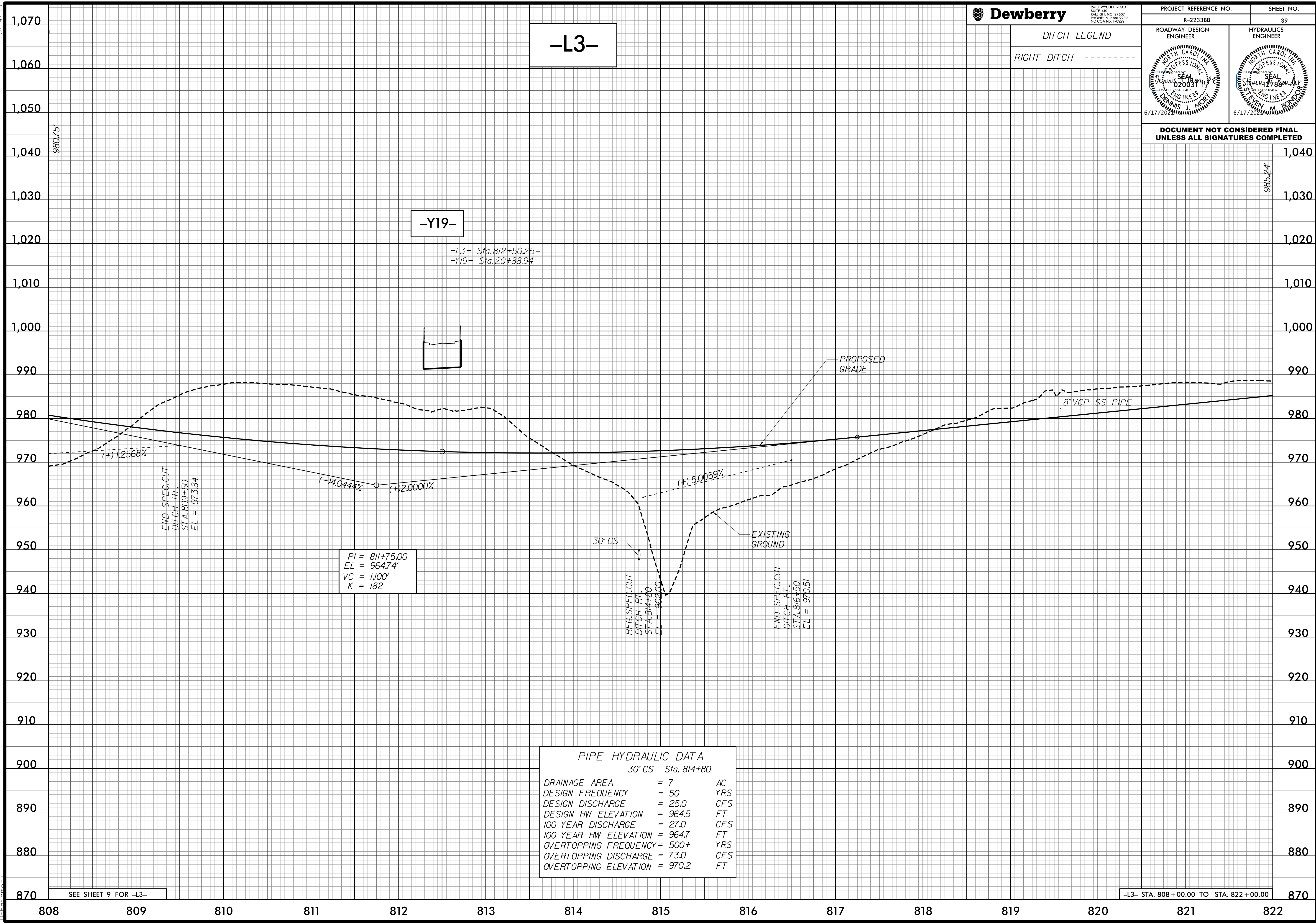
5/14/99

DITCH LEGEND

RIGHT DITCH - - - - -



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



-L3-

-Y19-

-L3- Sta. 812+50.25=
-Y19- Sta. 20+88.94

PI = 811+75.00
EL = 964.74'
VC = 1100'
K = 182

PIPE HYDRAULIC DATA		
30" CS Sta. 814+80		
DRAINAGE AREA	= 7	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 25.0	CFS
DESIGN HW ELEVATION	= 964.5	FT
100 YEAR DISCHARGE	= 27.0	CFS
100 YEAR HW ELEVATION	= 964.7	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 73.0	CFS
OVERTOPPING ELEVATION	= 970.2	FT

SEE SHEET 9 FOR -L3-

-L3- STA. 808 +00.00 TO STA. 822 +00.00

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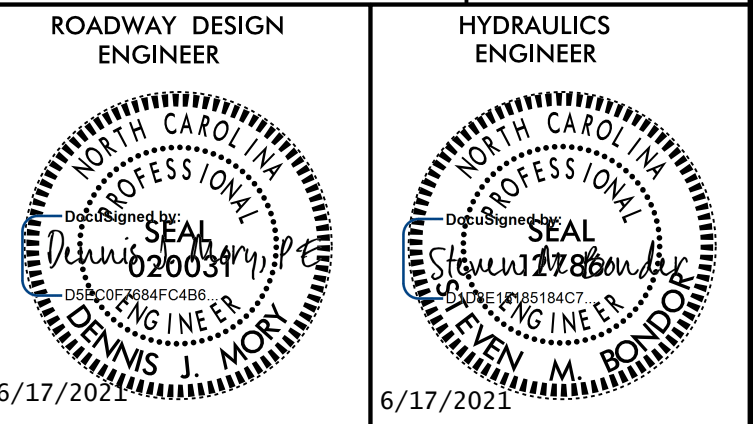
5/14/19



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27601
PHONE: 919.881.9299
NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB
SHEET NO. 40

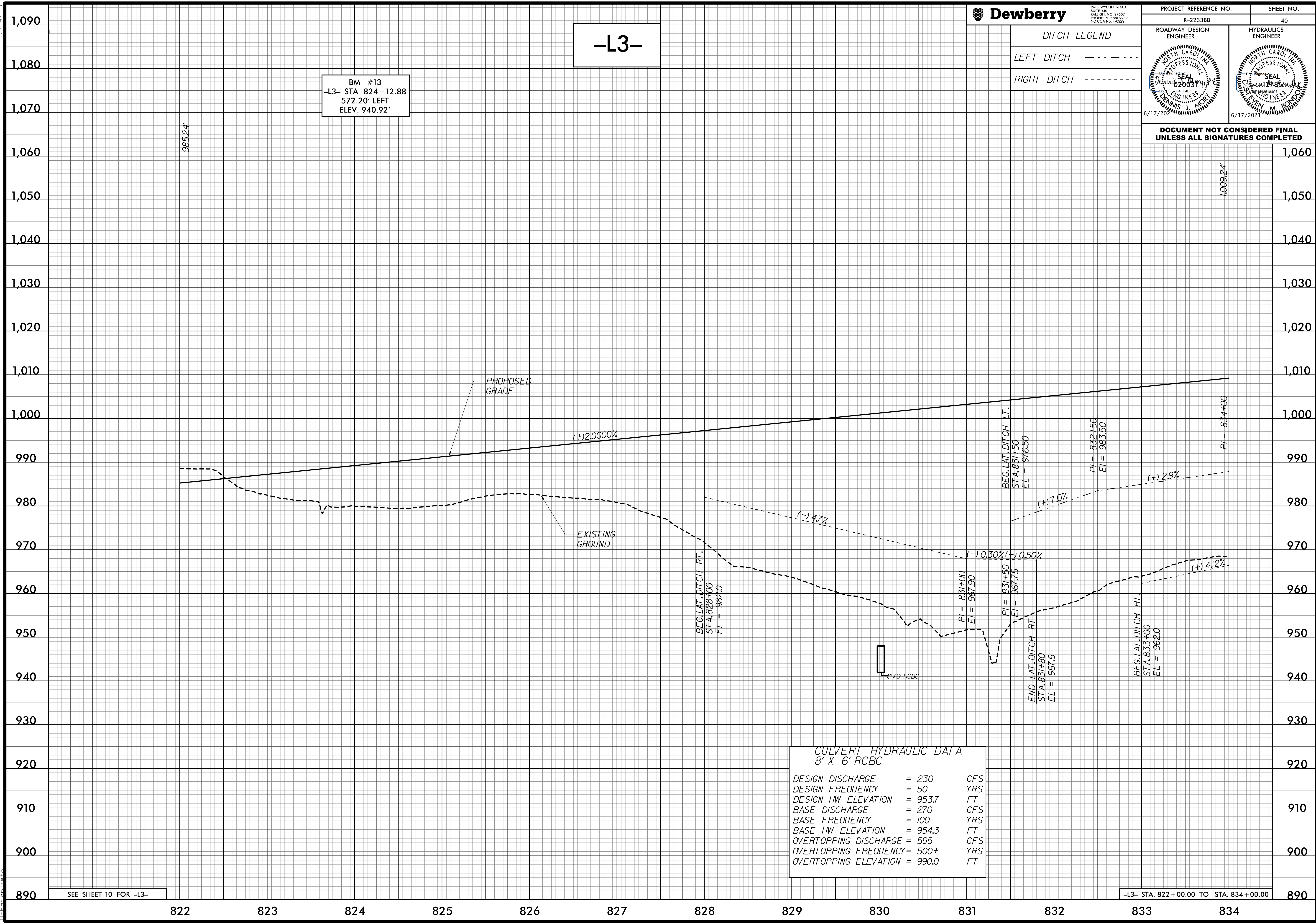
DITCH LEGEND
LEFT DITCH - - - - -
RIGHT DITCH - - - - -



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

BM #13
-L3- STA 824 + 12.88
572.20' LEFT
ELEV. 940.92'

-L3-



CULVERT HYDRAULIC DATA
8' X 6' RCBC

DESIGN DISCHARGE	= 230	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 953.7	FT
BASE DISCHARGE	= 270	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 954.3	FT
OVERTOPPING DISCHARGE	= 595	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 990.0	FT



SEE SHEET 10 FOR -L3-

-L3- STA. 822 + 00.00 TO STA. 834 + 00.00

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5/14/19

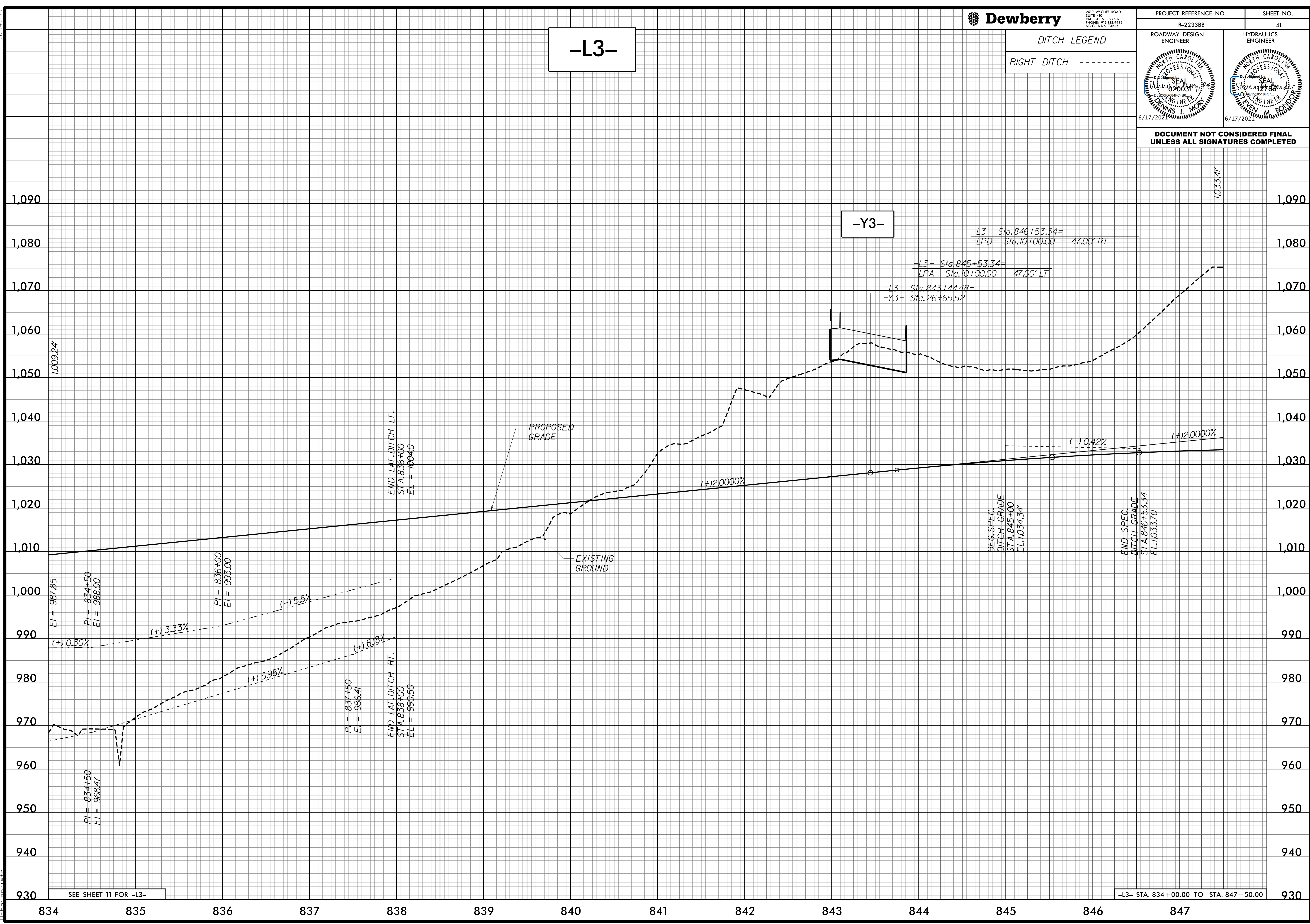
Dewberry
 2610 WYCLIFF ROAD
 SUITE 410
 RALEIGH, NC 27607
 PHONE: 919.881.9299
 NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB	SHEET NO. 41
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 
6/17/2021	

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-L3-

-Y3-



SEE SHEET 11 FOR -L3-

-L3- STA. 834+00.00 TO STA. 847+50.00

4/24/2020 4:55:00 PM
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USER: dmorris

5/14/99

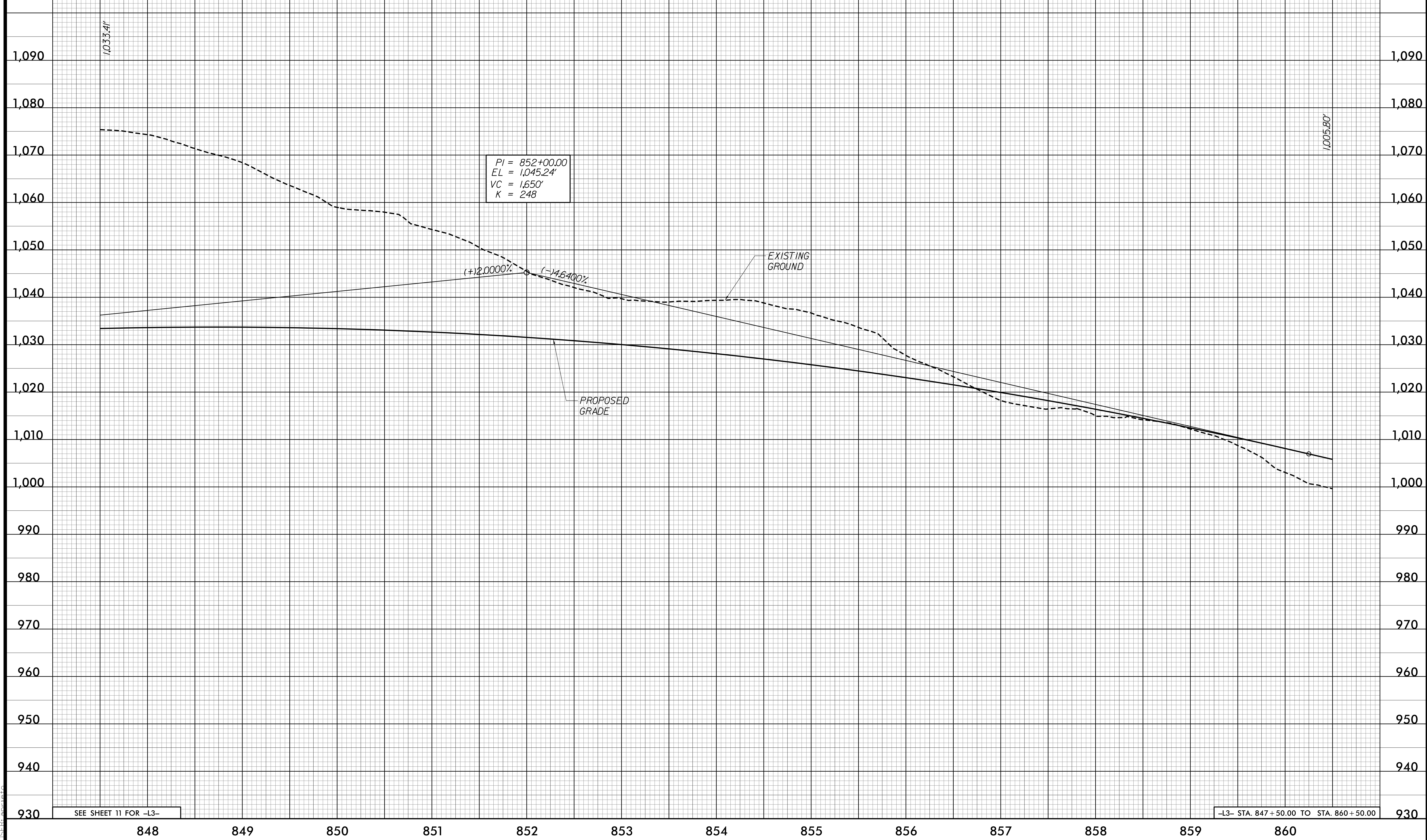
-L3-



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9299
NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB		SHEET NO. 42
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



SEE SHEET 11 FOR -L3-

-L3- STA. 847 +50.00 TO STA. 860 +50.00

4/24/2020 4:45:05 PM
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USER: dmoran

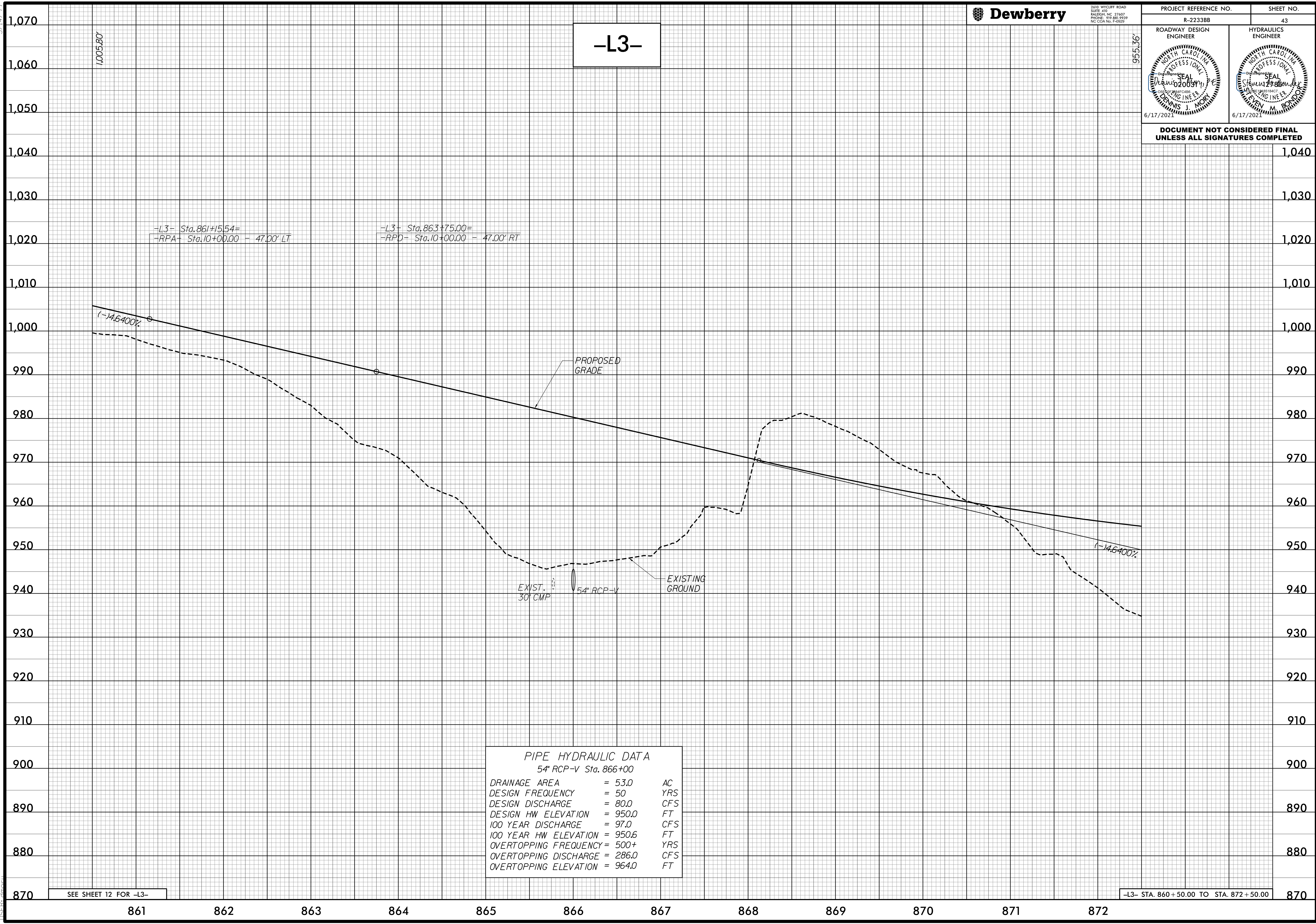
5/14/99



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0929

PROJECT REFERENCE NO. R-2233BB	SHEET NO. 43
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



PIPE HYDRAULIC DATA		
54" RCP-V Sta. 866+00		
DRAINAGE AREA	= 53.0	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 80.0	CFS
DESIGN HW ELEVATION	= 950.0	FT
100 YEAR DISCHARGE	= 97.0	CFS
100 YEAR HW ELEVATION	= 950.6	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 286.0	CFS
OVERTOPPING ELEVATION	= 964.0	FT

SEE SHEET 12 FOR -L3-

-L3- STA. 860+50.00 TO STA. 872+50.00

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6/16/2009 9:47:53 AM
R-2233BB_R01_PFL43.DGN
Dennis J. Moran

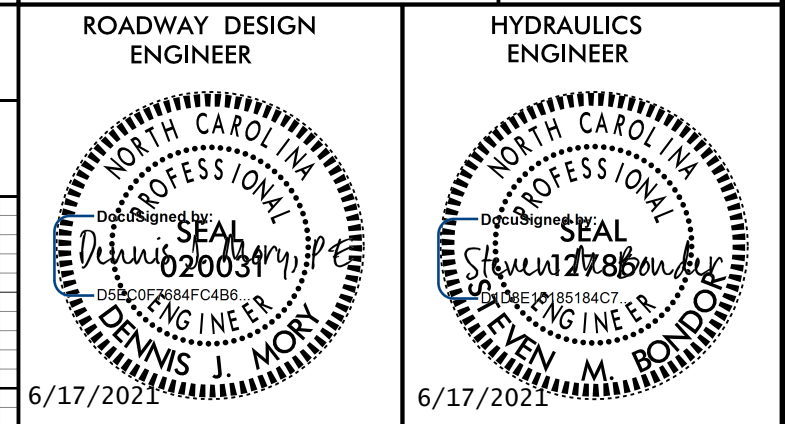
5/14/99



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9299
NC COA No. F-0929

PROJECT REFERENCE NO. R-2233BB
SHEET NO. 44

DITCH LEGEND
RIGHT DITCH - - - - -

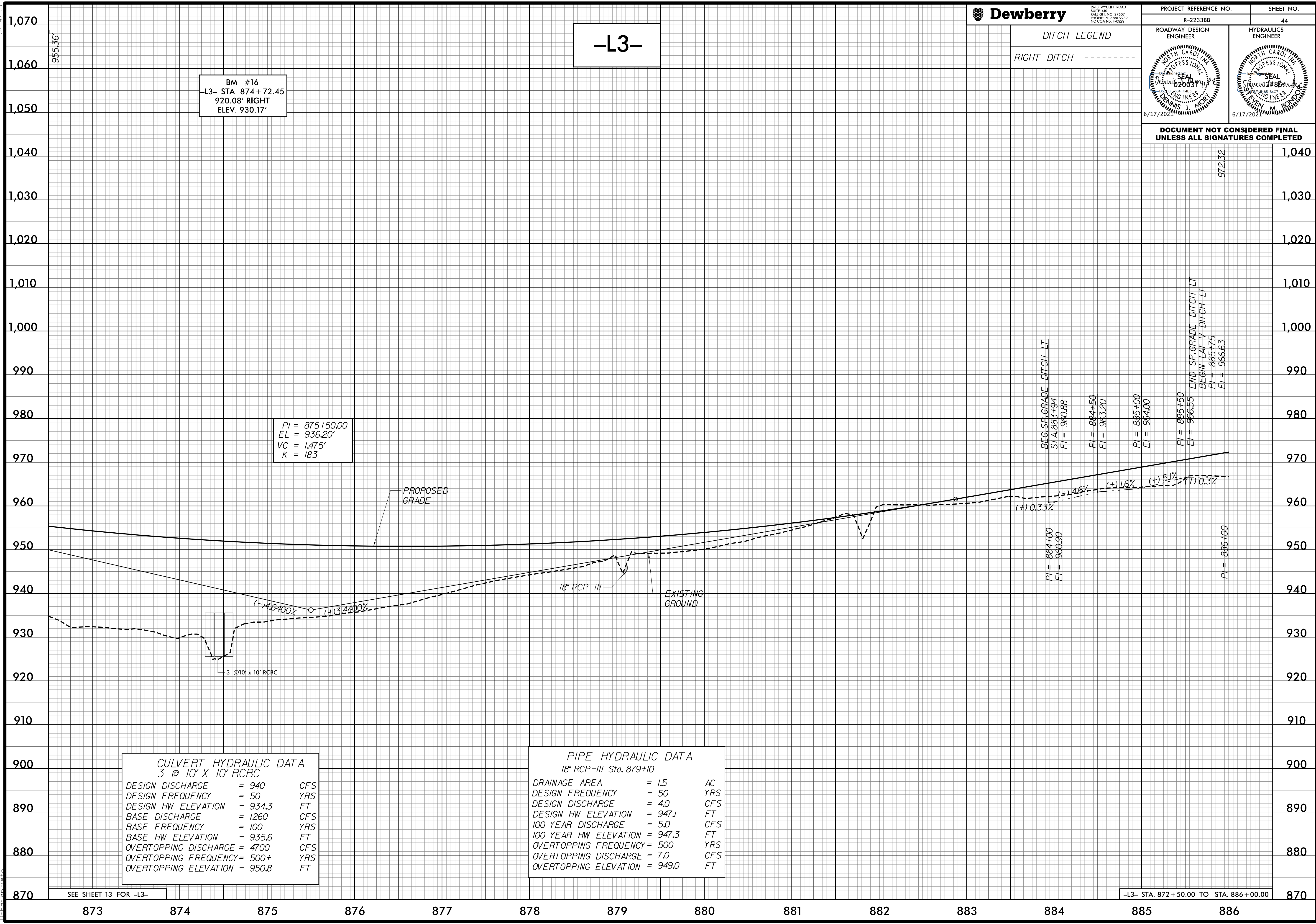


DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-L3-

BM #16
-L3- STA 874 + 72.45
920.08' RIGHT
ELEV. 930.17'

PI = 875+50.00
EL = 936.20'
VC = 1,475'
K = 183



CULVERT HYDRAULIC DATA
3 @ 10' x 10' RCBC

DESIGN DISCHARGE	= 940	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 934.3	FT
BASE DISCHARGE	= 1260	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 935.6	FT
OVERTOPPING DISCHARGE	= 4700	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 950.8	FT

PIPE HYDRAULIC DATA
18" RCP-III Sta. 879+10

DRAINAGE AREA	= 1.5	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 4.0	CFS
DESIGN HW ELEVATION	= 947.1	FT
100 YEAR DISCHARGE	= 5.0	CFS
100 YEAR HW ELEVATION	= 947.3	FT
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING DISCHARGE	= 7.0	CFS
OVERTOPPING ELEVATION	= 949.0	FT

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USER: dmorris

SEE SHEET 13 FOR -L3-

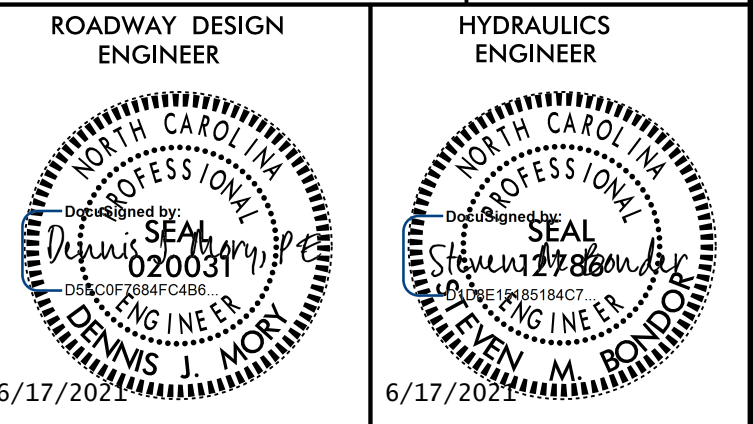
-L3- STA. 872 + 50.00 TO STA. 886 + 00.00

5/14/99

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9299
NC COA No. F-0925

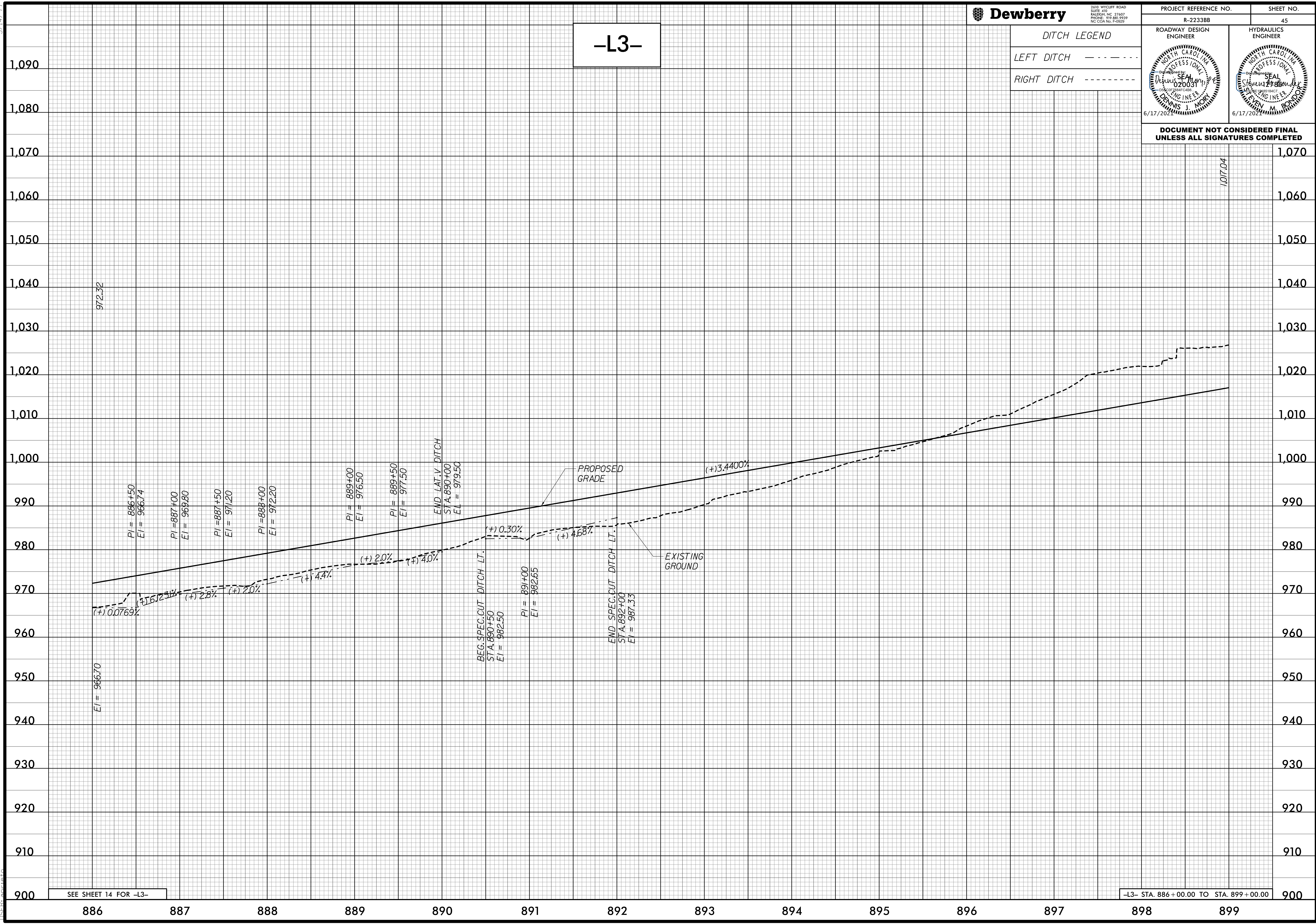
PROJECT REFERENCE NO. R-2233BB
SHEET NO. 45

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



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-L3-



SEE SHEET 14 FOR -L3-

-L3- STA. 886+00.00 TO STA. 899+00.00

4/24/2020 4:55:22 PM R-2233BB-F01_PFL45.DGN

5/14/99

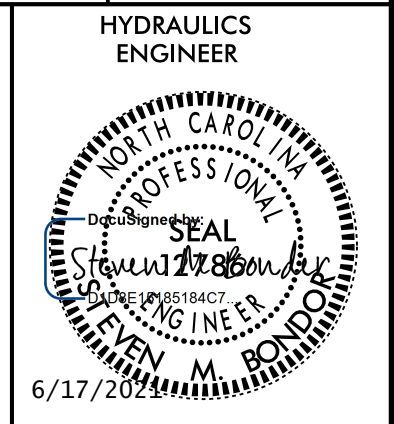
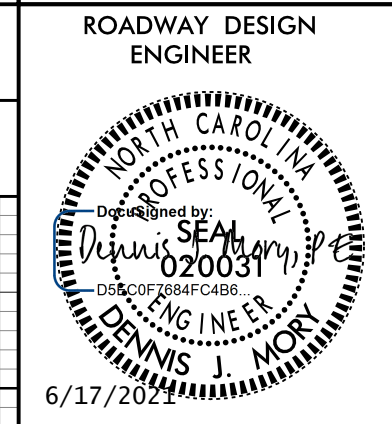
-L3-

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9000
NC COA No. F.0925

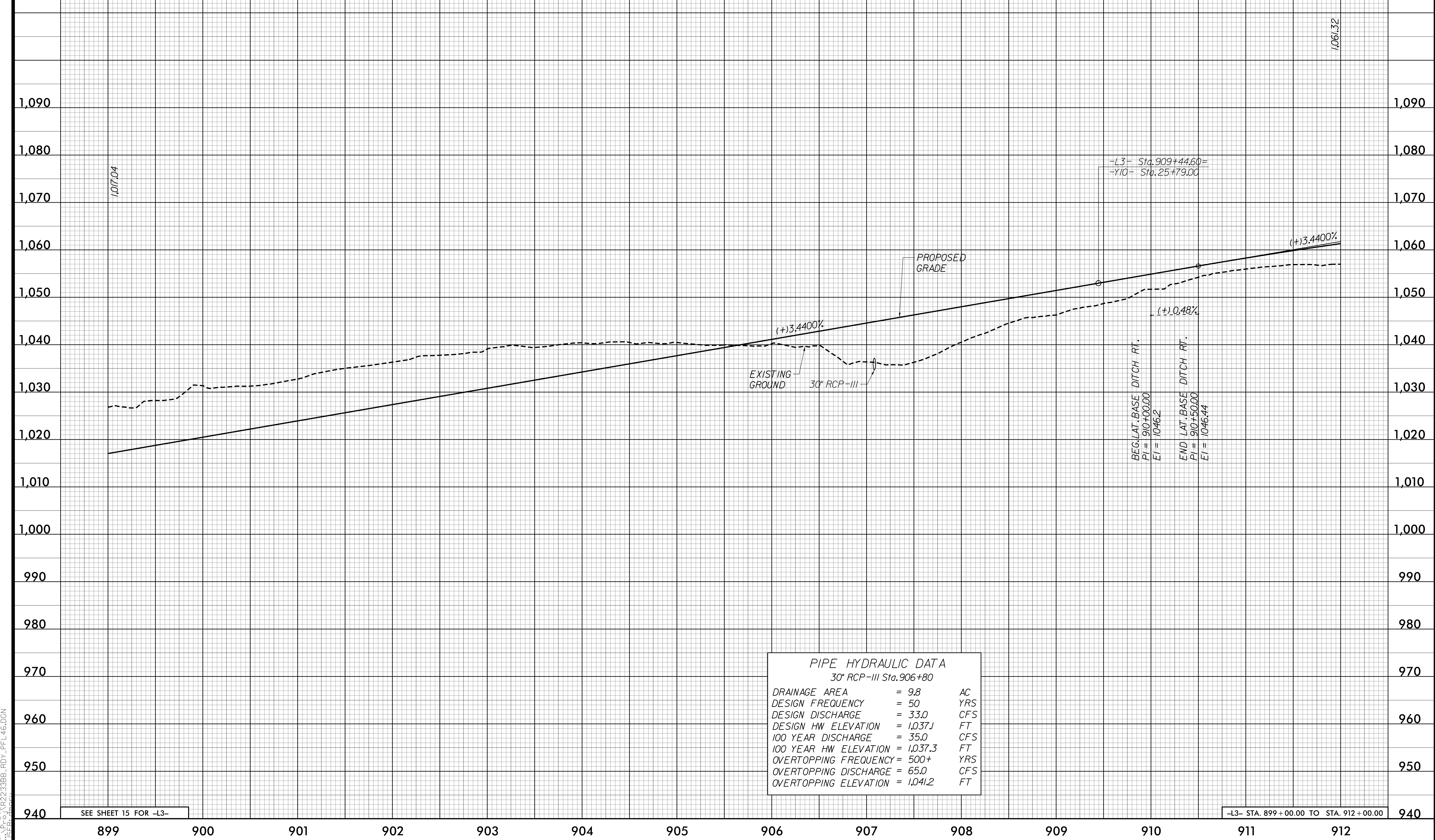
PROJECT REFERENCE NO. R-2233BB
SHEET NO. 46

DITCH LEGEND

RIGHT DITCH - - - - -



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



PIPE HYDRAULIC DATA
30" RCP-III Sta. 906+80

DRAINAGE AREA	= 9.8	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 33.0	CFS
DESIGN HW ELEVATION	= 1,037.1	FT
100 YEAR DISCHARGE	= 35.0	CFS
100 YEAR HW ELEVATION	= 1,037.3	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 65.0	CFS
OVERTOPPING ELEVATION	= 1,041.2	FT

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TJESB

5/14/99



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9299
NC COA No. F-09251

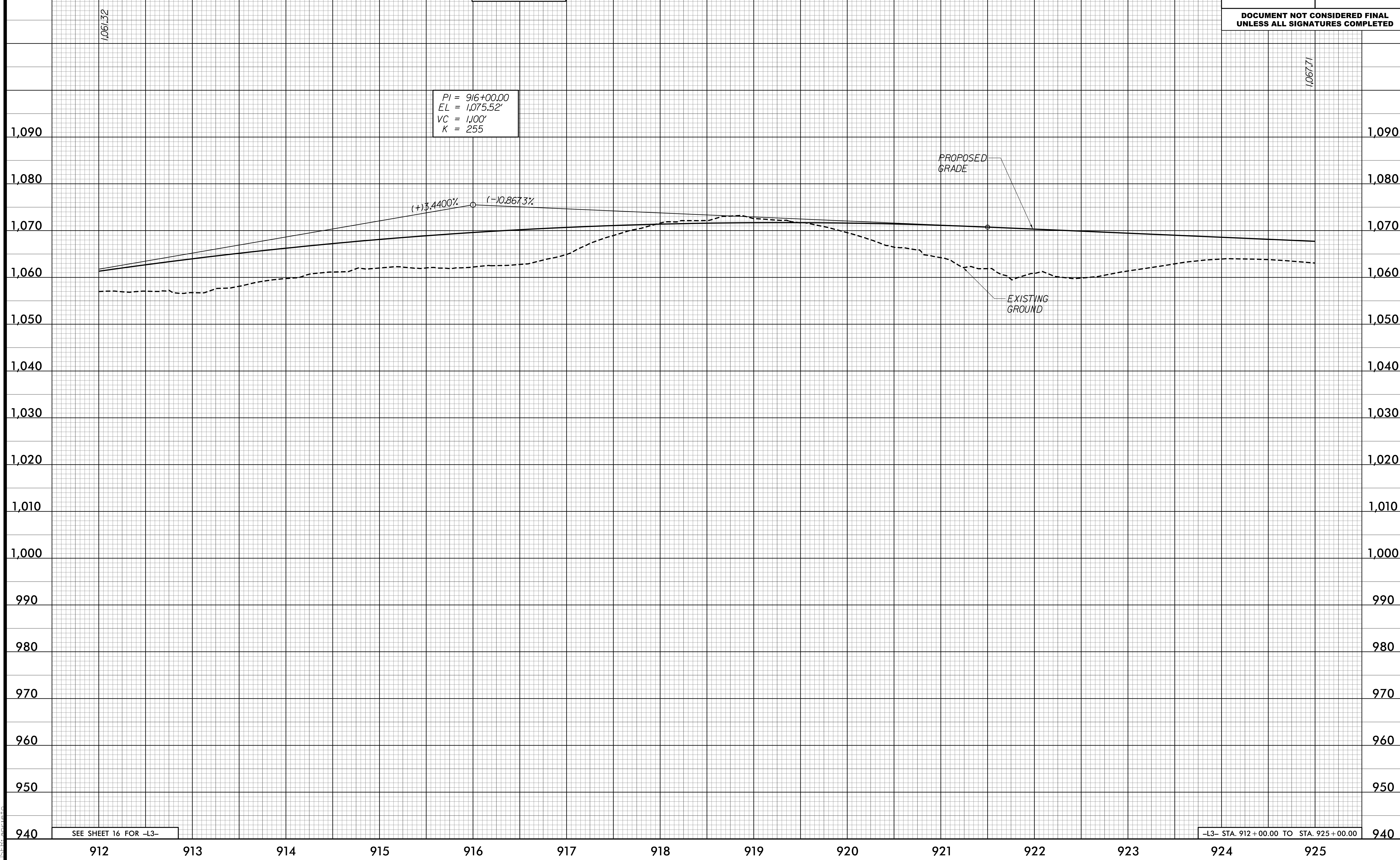
PROJECT REFERENCE NO. R-2233BB		SHEET NO. 47
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-L3-

BM #18
-L3- STA 916 + 49.08
685.23' LEFT
ELEV. 1030.87'

PI = 916+00.00
EL = 1,075.52'
VC = 1,100'
K = 255



4/24/2020 4:55:32 PM
R-2233BB-F04_PFL47.DGN
USER: dmoran

SEE SHEET 16 FOR -L3-

-L3- STA. 912 + 00.00 TO STA. 925 + 00.00

5/14/99

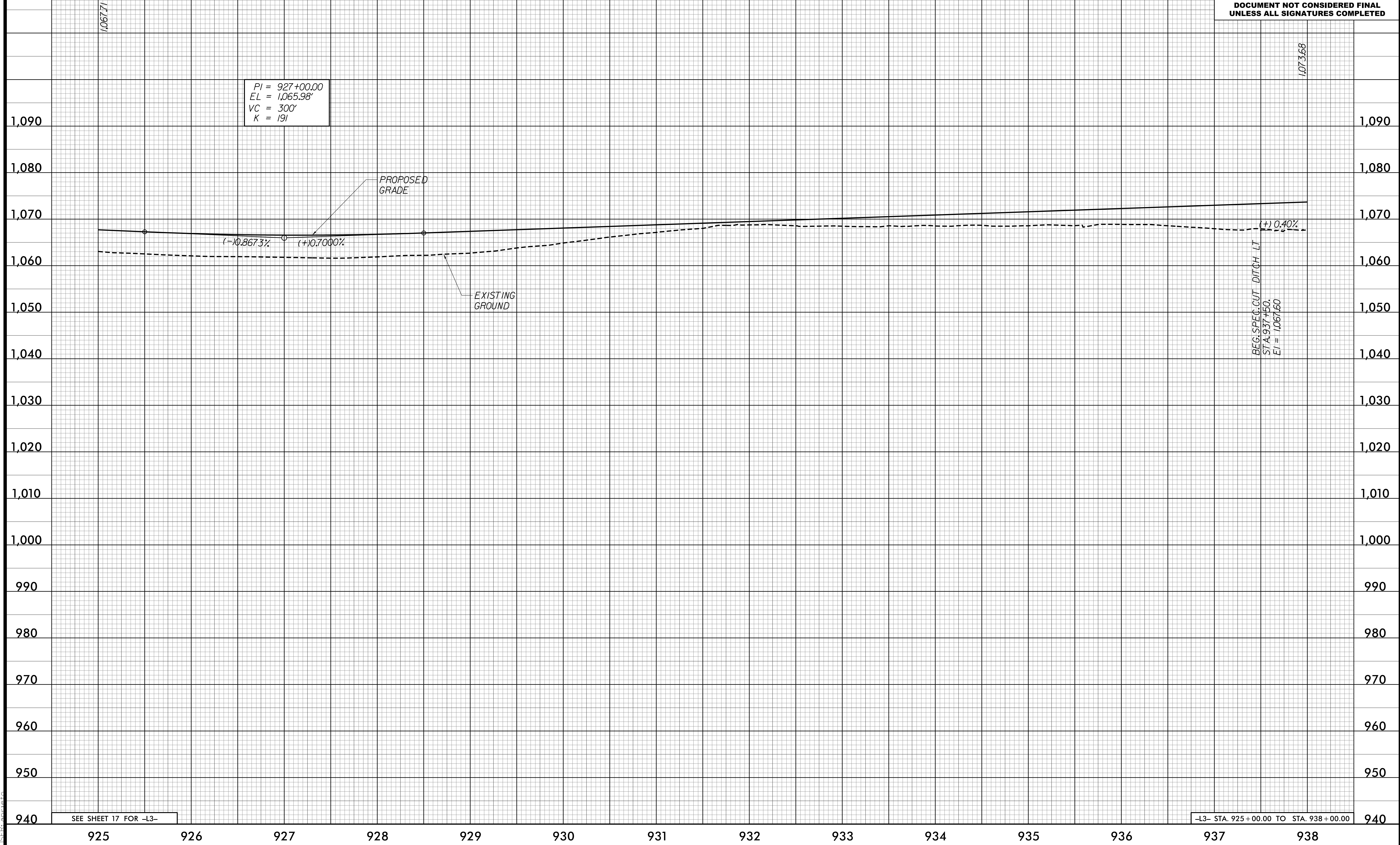
-L3-

DITCH LEGEND
LEFT DITCH - - - - -

ROADWAY DESIGN ENGINEER <i>[Signature]</i> 6/17/2024	HYDRAULICS ENGINEER <i>[Signature]</i> 6/17/2024
--	--

BM #19
-L3- STA 932 + 95.61
350.11' LEFT
ELEV. 1050.02'

PI = 927+00.00
EL = 1,065.98'
VC = 300'
K = 191



SEE SHEET 17 FOR -L3-

-L3- STA. 925+00.00 TO STA. 938+00.00

4/24/2020 4:55:36 PM
R-2233BB-ROADWAY-PEL 48.DGN
USER: jmorris

5/14/99



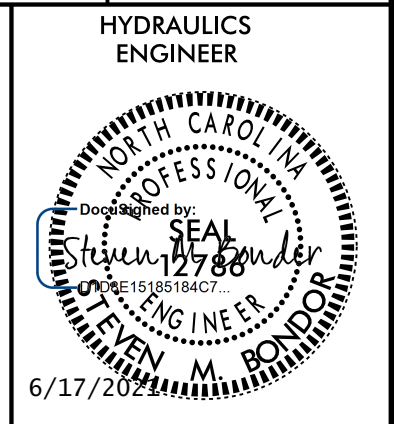
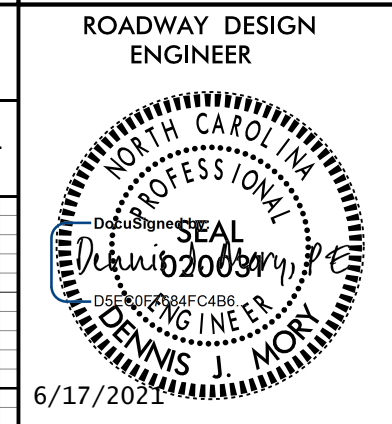
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9299
NC COA No. F-09251

PROJECT REFERENCE NO.
R-2233BB

SHEET NO.
49

DITCH LEGEND

LEFT DITCH - - - - -

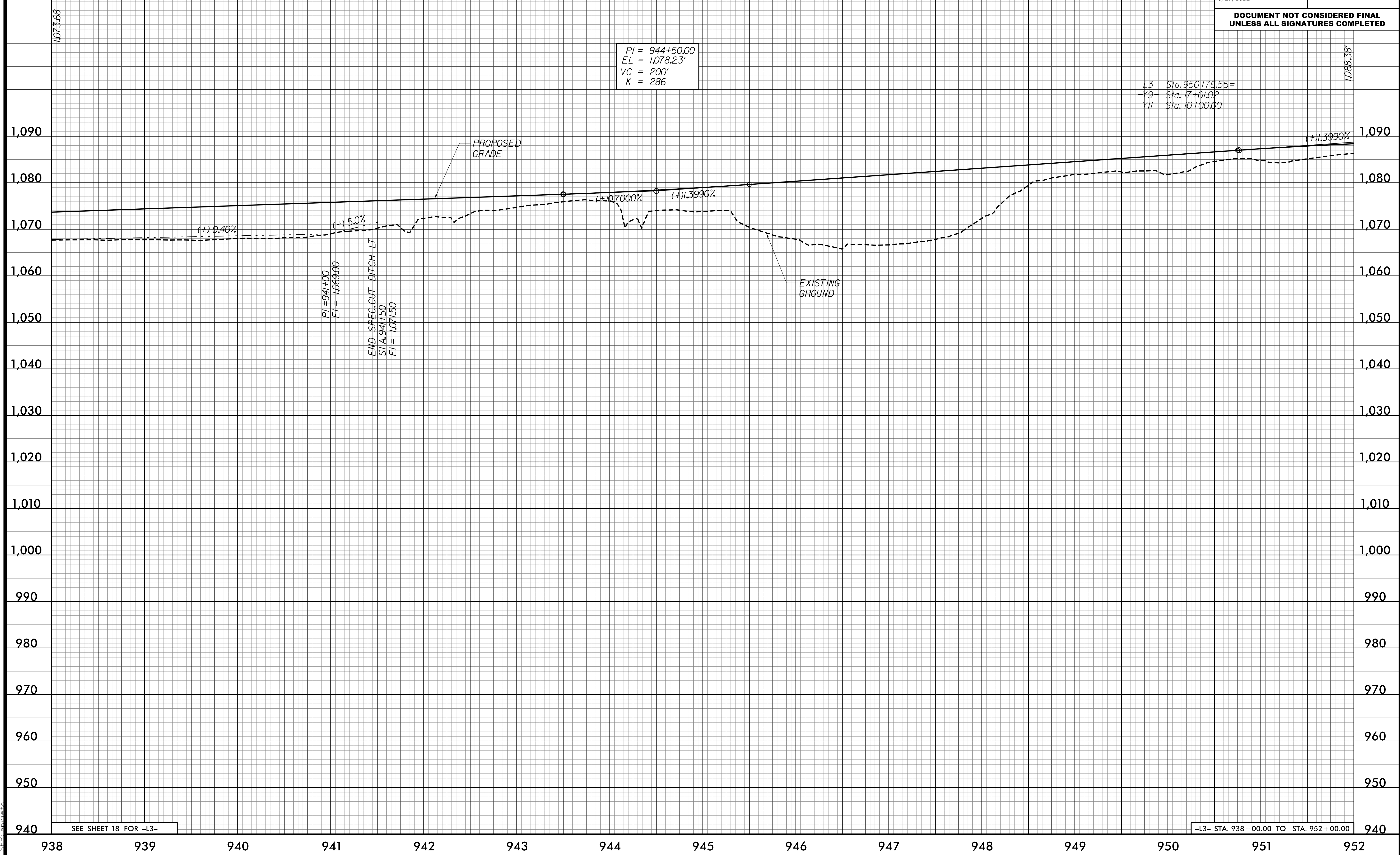


DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-L3-

PI = 944+50.00
EL = 1,078.23'
VC = 200'
K = 286

-L3- Sta. 950+76.55=
-Y9- Sta. 17+01.02
-Y11- Sta. 10+00.00



4/24/2020 4:45:41 PM
R-2233BB PROJ_PFL_49.DGN
USER: dmorley

5/14/19



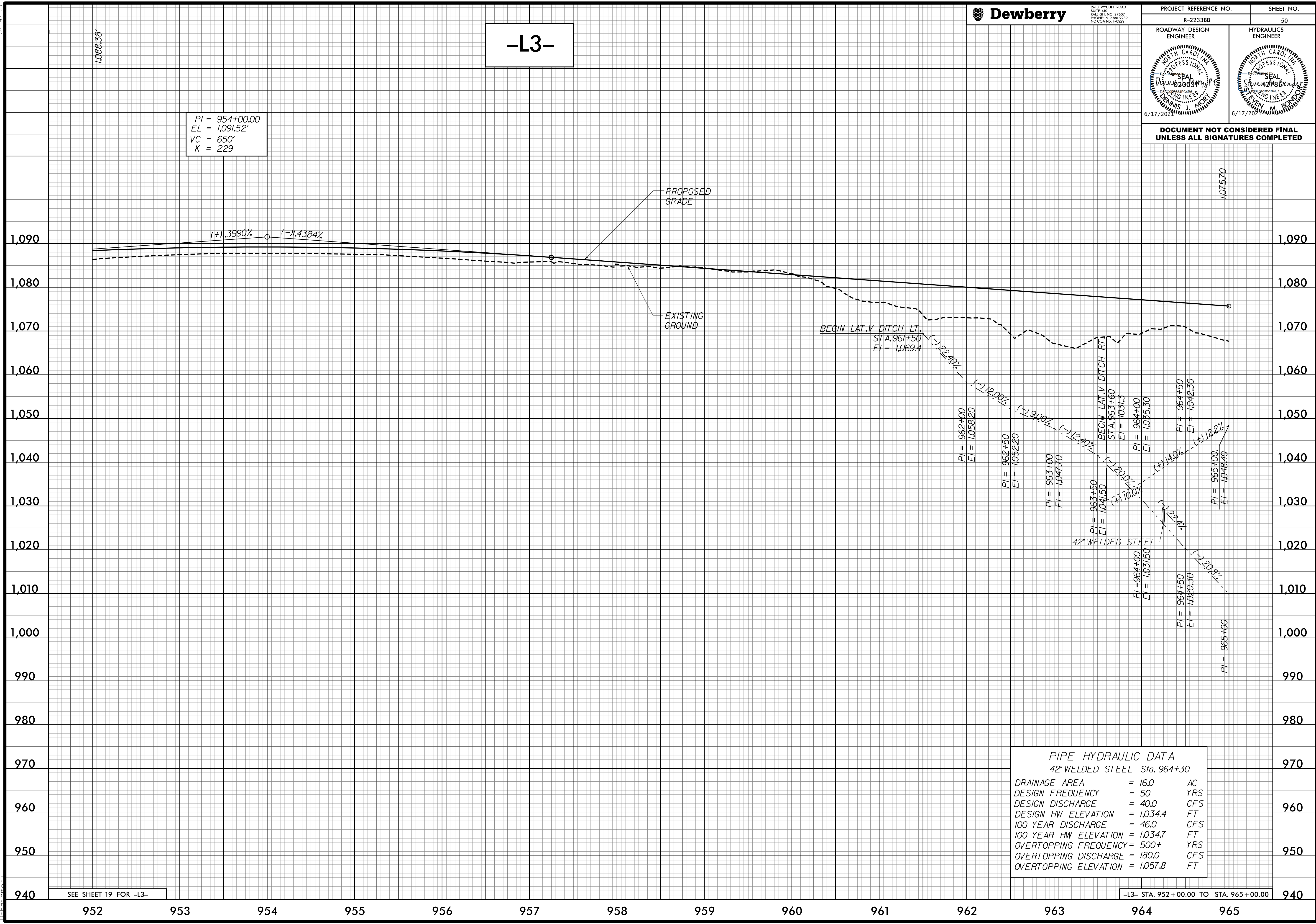
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27601
PHONE: 919.881.9939
NC COA No. F.0929

PROJECT REFERENCE NO. R-2233BB	SHEET NO. 50
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
6/17/2024	

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-L3-

$PI = 954+00.00$
 $EL = 1,091.52'$
 $VC = 650'$
 $K = 229$



PIPE HYDRAULIC DATA	
42" WELDED STEEL Sta. 964+30	
DRAINAGE AREA	= 16.0 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 40.0 CFS
DESIGN HW ELEVATION	= 1,034.4 FT
100 YEAR DISCHARGE	= 46.0 CFS
100 YEAR HW ELEVATION	= 1,034.7 FT
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING DISCHARGE	= 180.0 CFS
OVERTOPPING ELEVATION	= 1,057.8 FT

SEE SHEET 19 FOR -L3-

-L3- STA. 952+00.00 TO STA. 965+00.00

6/16/2024 9:50:06 AM
R:\Projects\2024\2233BB_A01\PEL50.DGN
Dennis Morin

5/14/19



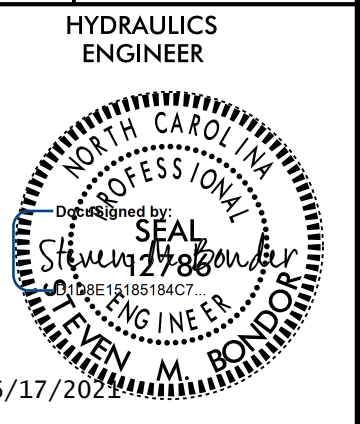
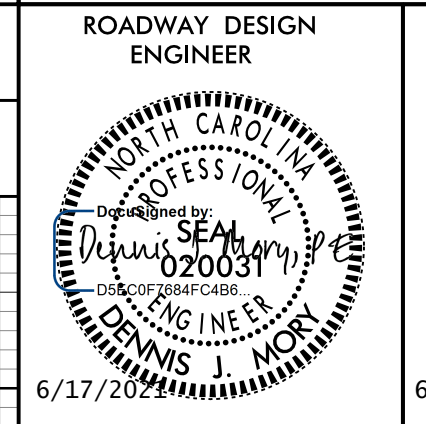
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0925

PROJECT REFERENCE NO.
R-2233BB

SHEET NO.
51

DITCH LEGEND

RIGHT DITCH - - - - -



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

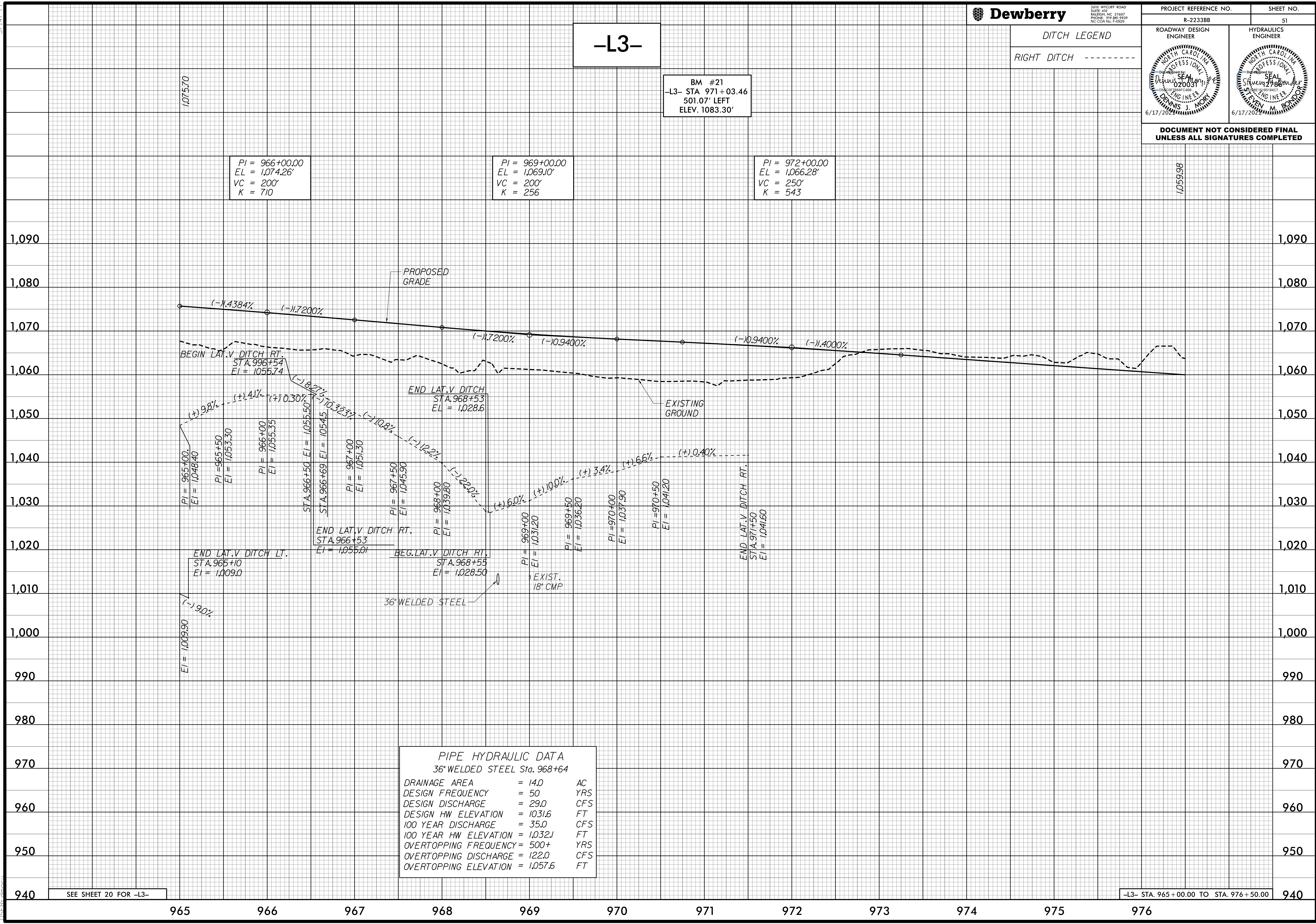
-L3-

BM #21
-L3- STA 971+03.46
501.07' LEFT
ELEV. 1083.30'

PI = 966+00.00
EL = 1,074.26'
VC = 200'
K = 710

PI = 969+00.00
EL = 1,069.10'
VC = 200'
K = 256

PI = 972+00.00
EL = 1,066.28'
VC = 250'
K = 543



PIPE HYDRAULIC DATA	
36" WELDED STEEL Sta. 968+64	
DRAINAGE AREA	= 14.0 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 29.0 CFS
DESIGN HW ELEVATION	= 1031.6 FT
100 YEAR DISCHARGE	= 35.0 CFS
100 YEAR HW ELEVATION	= 1032.1 FT
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING DISCHARGE	= 122.0 CFS
OVERTOPPING ELEVATION	= 1057.6 FT

SEE SHEET 20 FOR -L3-

-L3- STA. 965+00.00 TO STA. 976+50.00

6/16/2019 9:52:10 AM
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TJES:dm

5/14/99

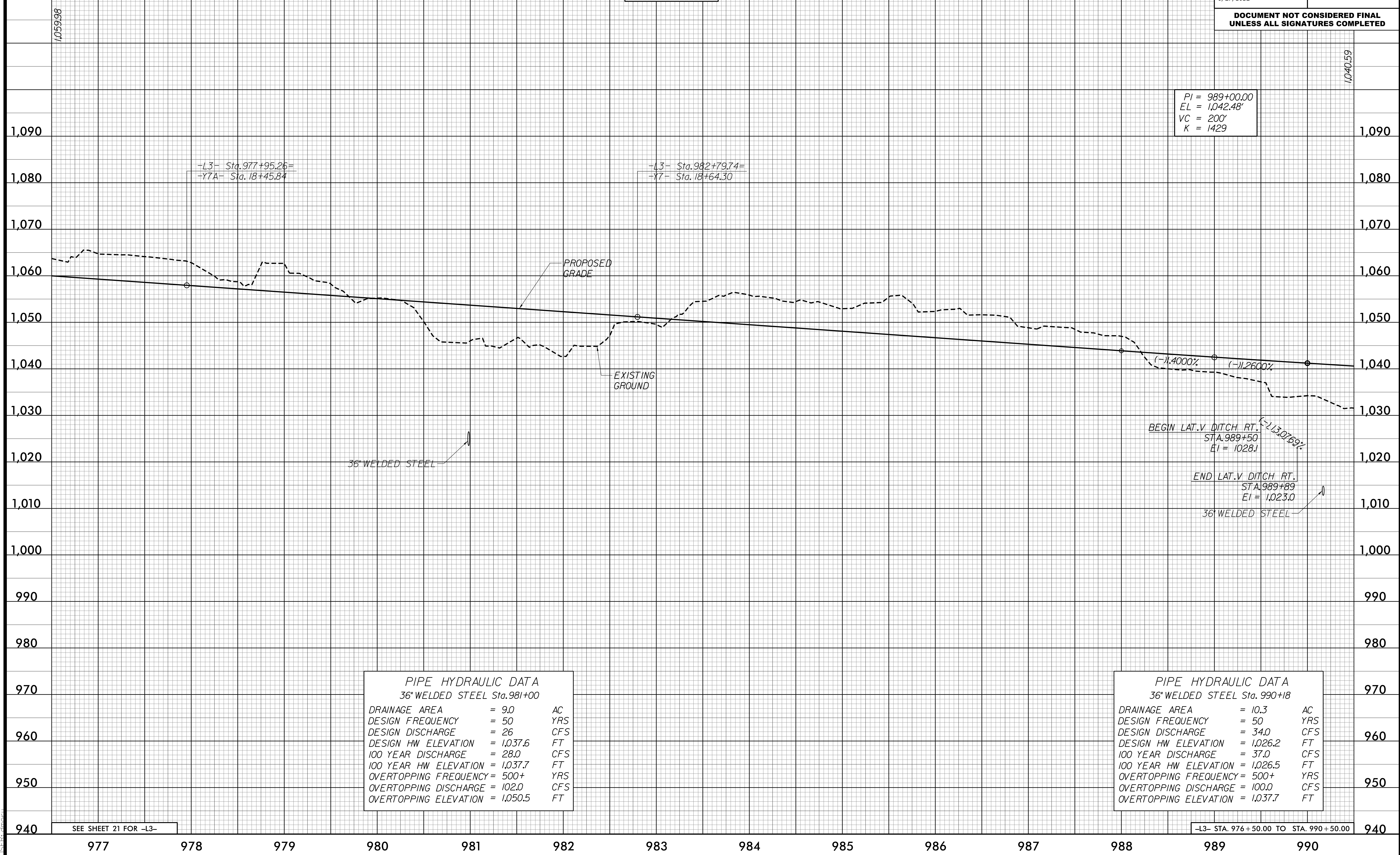


2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0929

PROJECT REFERENCE NO. R-2233BB	SHEET NO. 52
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-L3-

BM #22
-L3- STA 983+16.40
621.23' LEFT
ELEV. 990.41'



PIPE HYDRAULIC DATA
36" WELDED STEEL Sta. 981+00

DRAINAGE AREA	= 9.0	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 26	CFS
DESIGN HW ELEVATION	= 1,037.6	FT
100 YEAR DISCHARGE	= 28.0	CFS
100 YEAR HW ELEVATION	= 1,037.7	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 102.0	CFS
OVERTOPPING ELEVATION	= 1,050.5	FT

PIPE HYDRAULIC DATA
36" WELDED STEEL Sta. 990+18

DRAINAGE AREA	= 10.3	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 34.0	CFS
DESIGN HW ELEVATION	= 1,026.2	FT
100 YEAR DISCHARGE	= 37.0	CFS
100 YEAR HW ELEVATION	= 1,026.5	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 100.0	CFS
OVERTOPPING ELEVATION	= 1,037.7	FT

SEE SHEET 21 FOR -L3-

-L3- STA. 976+50.00 TO STA. 990+50.00

6/16/2009 9:57:45 AM
R:\PROJECTS\2009\2233BB_R01\PEL52.DGN
Dennis Morley

5/14/19



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB
SHEET NO. 53

ROADWAY DESIGN ENGINEER

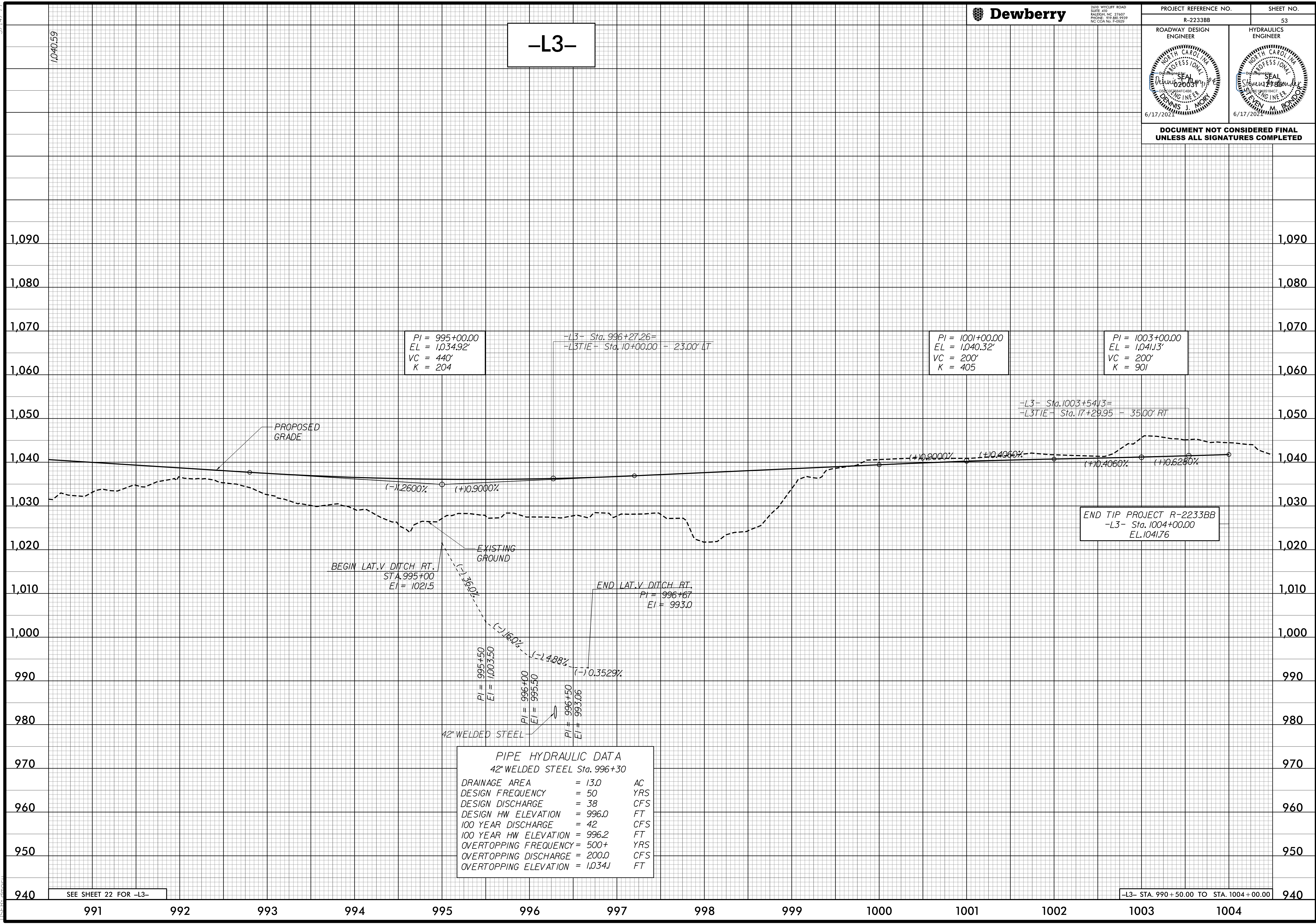
 6/17/2024

HYDRAULICS ENGINEER

 6/17/2024

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-L3-



SEE SHEET 22 FOR -L3-

-L3- STA. 990+50.00 TO STA. 1004+00.00

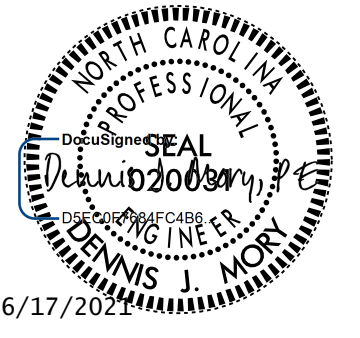
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Dennis Morin

5/14/19

DITCH LEGEND

RIGHT DITCH - - - - -

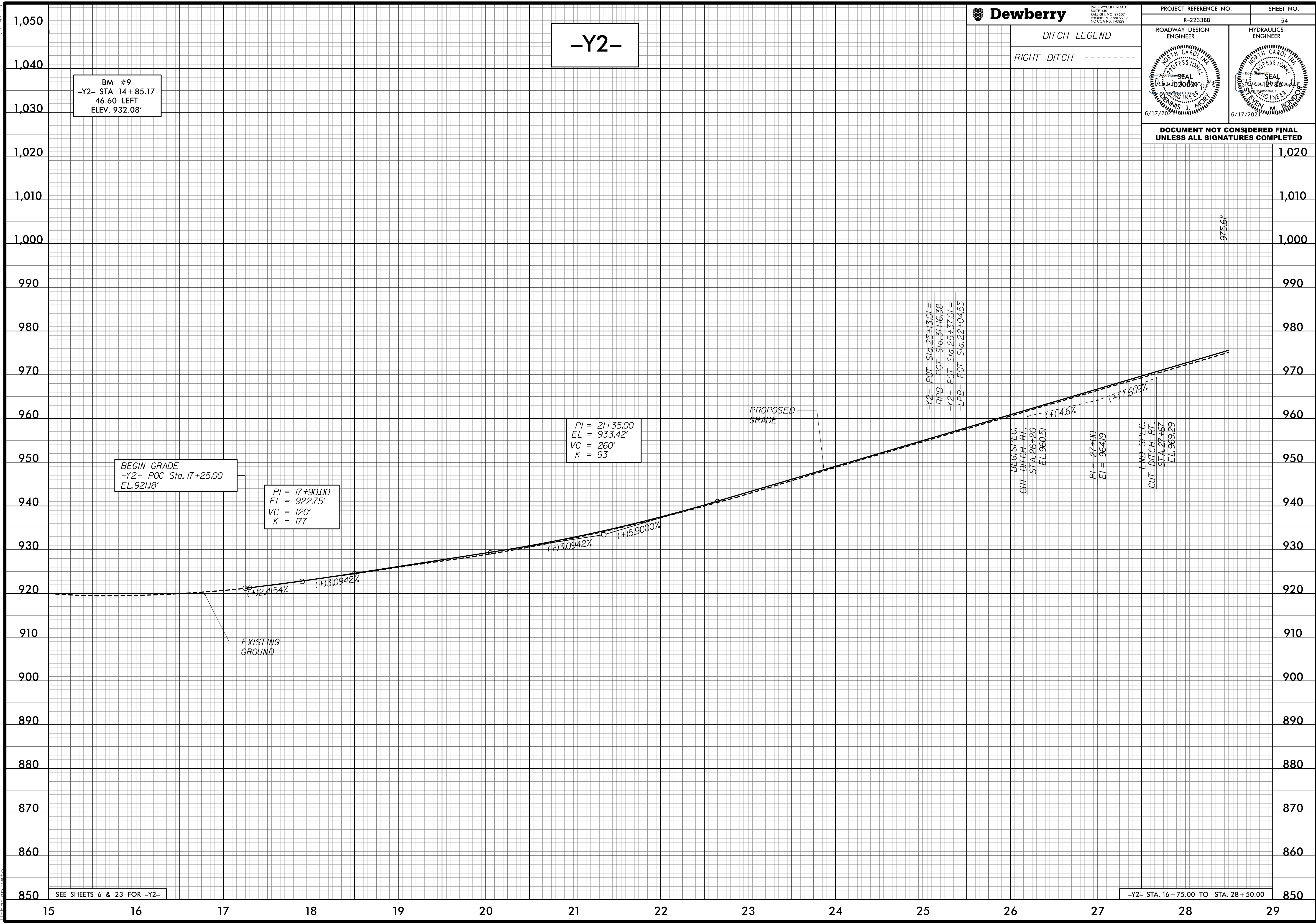
ROADWAY DESIGN ENGINEER



HYDRAULICS ENGINEER



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



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USER: dmorin

5/14/99

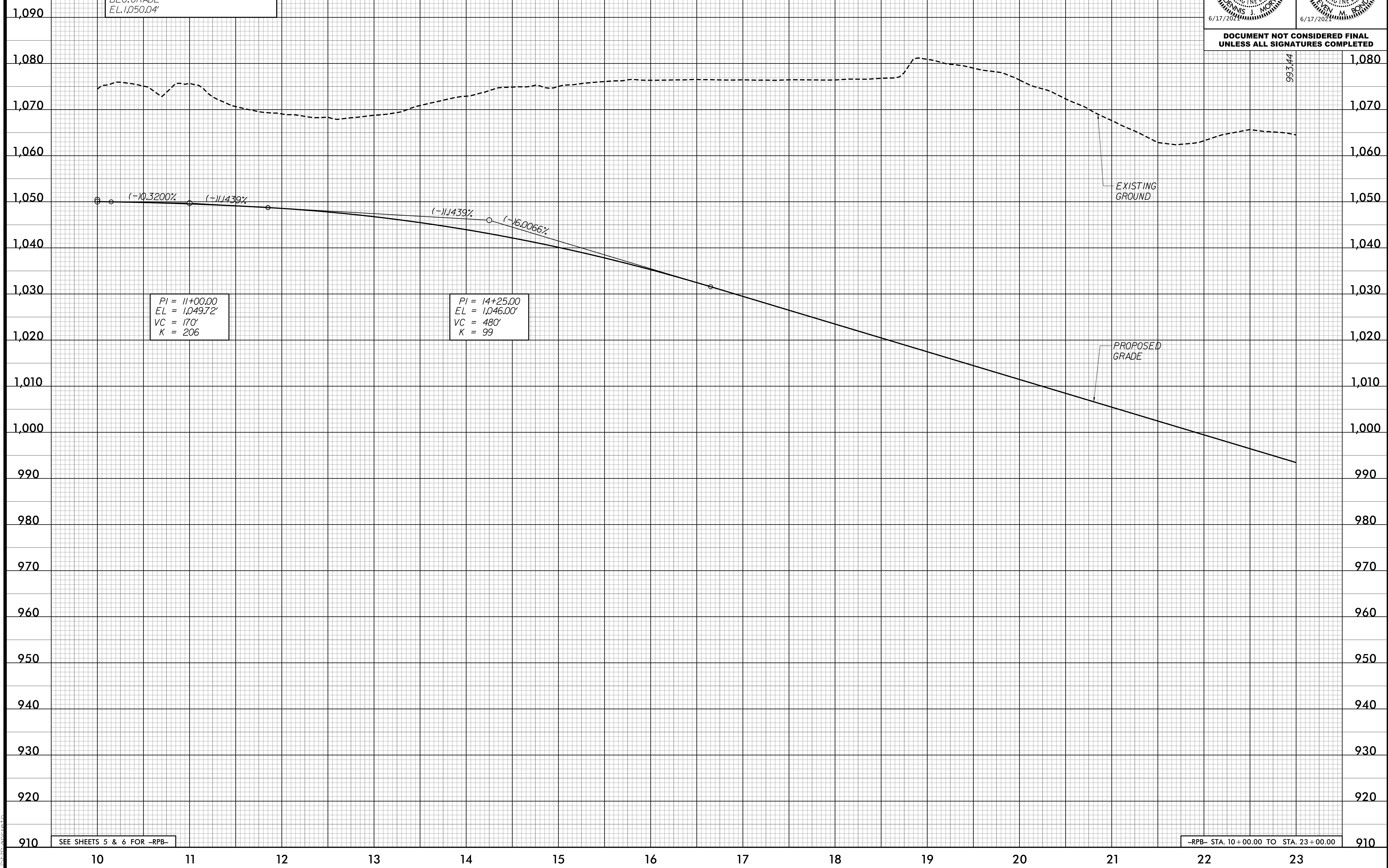


2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB		SHEET NO. 56
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

-RPB-

-L3- POT Sta. 755+52.50=
-RPB- TS Sta. 10+00.00 47.00' LT.
BEG. GRADE
EL. 1,050.04'



SEE SHEETS 5 & 6 FOR -RPB-

-RPB- STA. 10+00.00 TO STA. 23+00.00

4/24/2020 4:47:18 PM
R-2233BB.RDY_PFL56.DGN
15:55:20

5/14/99



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9999
NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB	SHEET NO. 57
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-RPB-



SEE SHEET 6 FOR -RPB-

-RPB- STA. 23+00.00 TO STA. 30+40.47

4/24/2020 4:13:23 PM
R-2233BB_P01_PFL57.DGN
11:55:20

5/14/99



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-0925

PROJECT REFERENCE NO. R-2233BB	SHEET NO. 58
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-LPB-

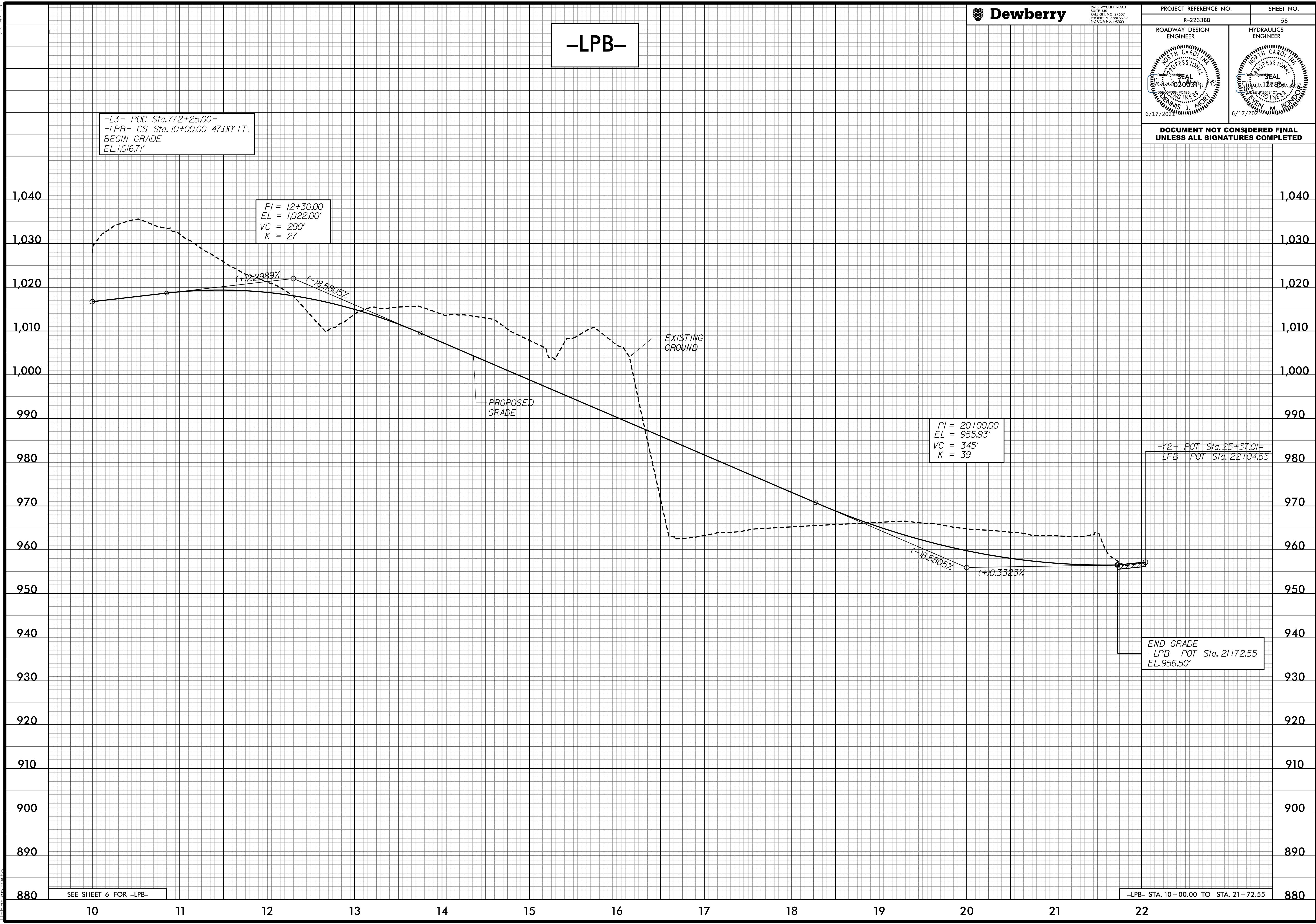
-L3- POC Sta. 772+25.00=
-LPB- CS Sta. 10+00.00 47.00' LT.
BEGIN GRADE
EL. 1,016.71'

PI = 12+30.00
EL = 1,022.00'
VC = 290'
K = 27

PI = 20+00.00
EL = 955.93'
VC = 345'
K = 39

-Y2- POT Sta. 25+37.01=
-LPB- POT Sta. 22+04.55

END GRADE
-LPB- POT Sta. 21+72.55
EL. 956.50'



SEE SHEET 6 FOR -LPB-

-LPB- STA. 10+00.00 TO STA. 21+72.55

4/24/2020 4:17:28 PM
R-2233BB RDY_PFL58.DGN
USER: dmorin

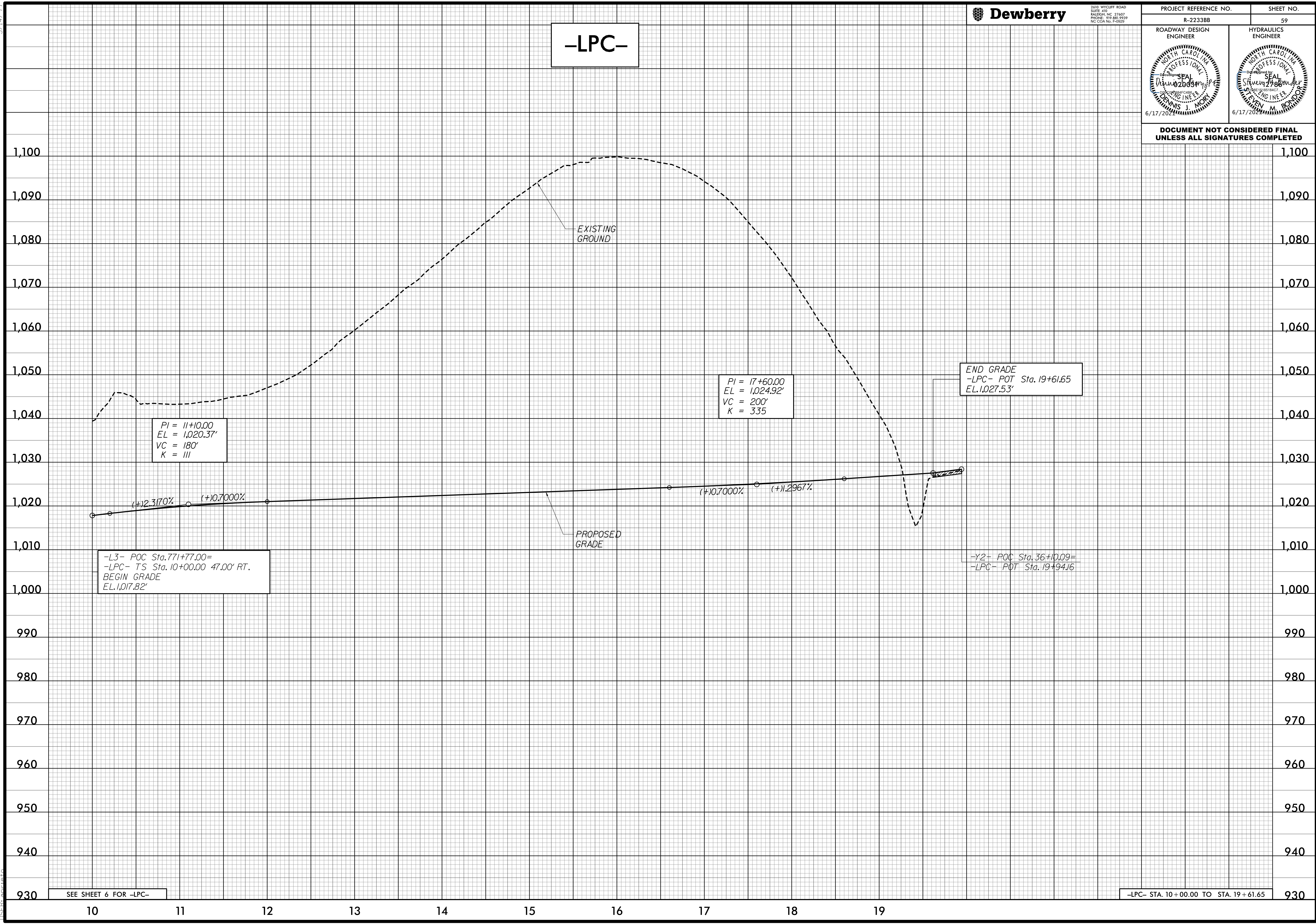
5/14/99



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB		SHEET NO. 59
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



-LPC-

PI = 11+10.00
EL = 1,020.37'
VC = 180'
K = 111

PI = 17+60.00
EL = 1,024.92'
VC = 200'
K = 335

END GRADE
-LPC- POT Sta. 19+61.65
EL. 1,027.53'

-L3- POC Sta. 771+77.00=
-LPC- TS Sta. 10+00.00 47.00' RT.
BEGIN GRADE
EL. 1,017.82'

-Y2- POC Sta. 36+10.09=
-LPC- POT Sta. 19+94.16

SEE SHEET 6 FOR -LPC-

-LPC- STA. 10+00.00 TO STA. 19+61.65

4/24/2020 4:17:34 PM
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USER: dmoran

5/14/19

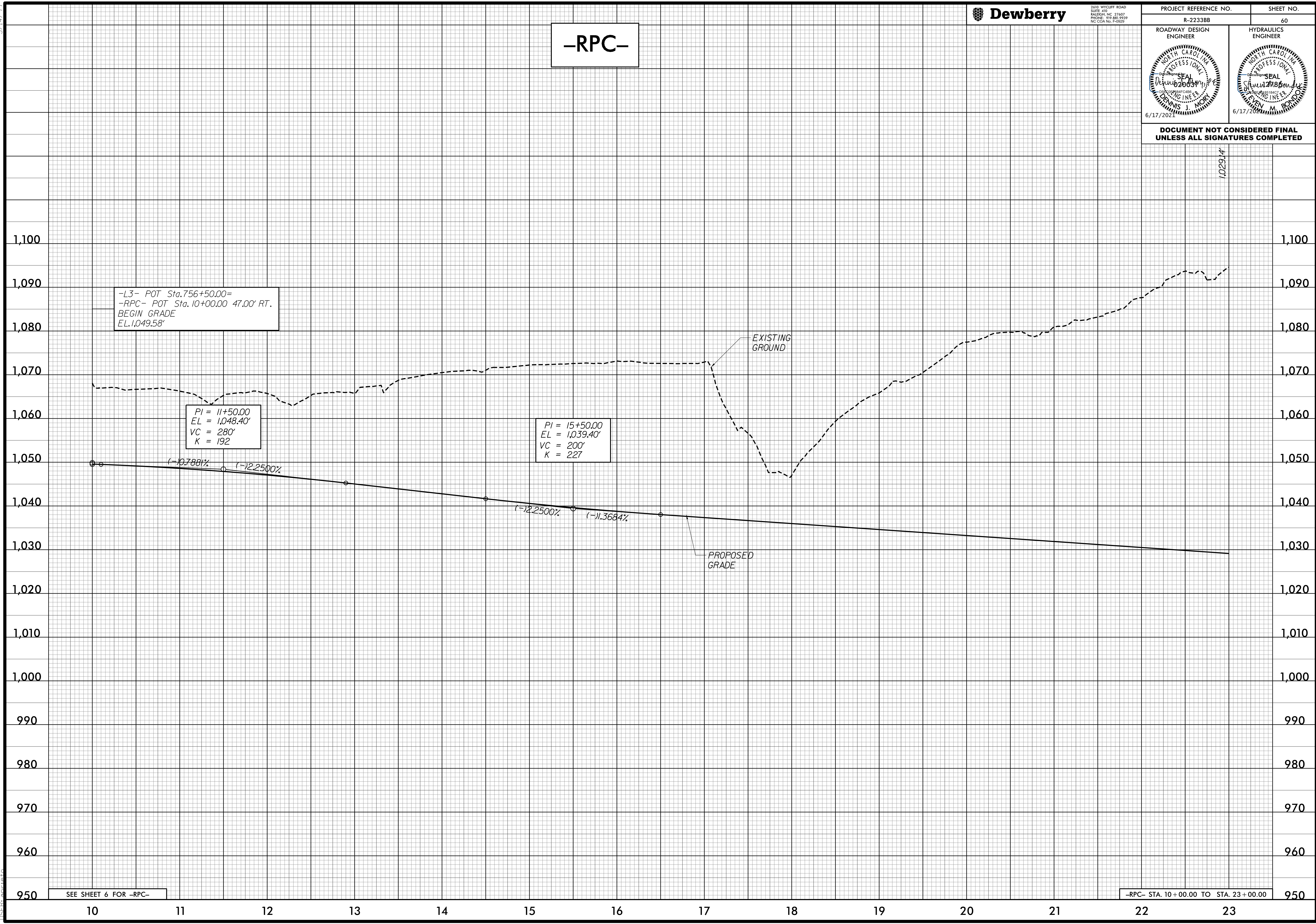


2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9299
NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB		SHEET NO. 60
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-RPC-




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5/14/19



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9299
NC COA No. F-09251

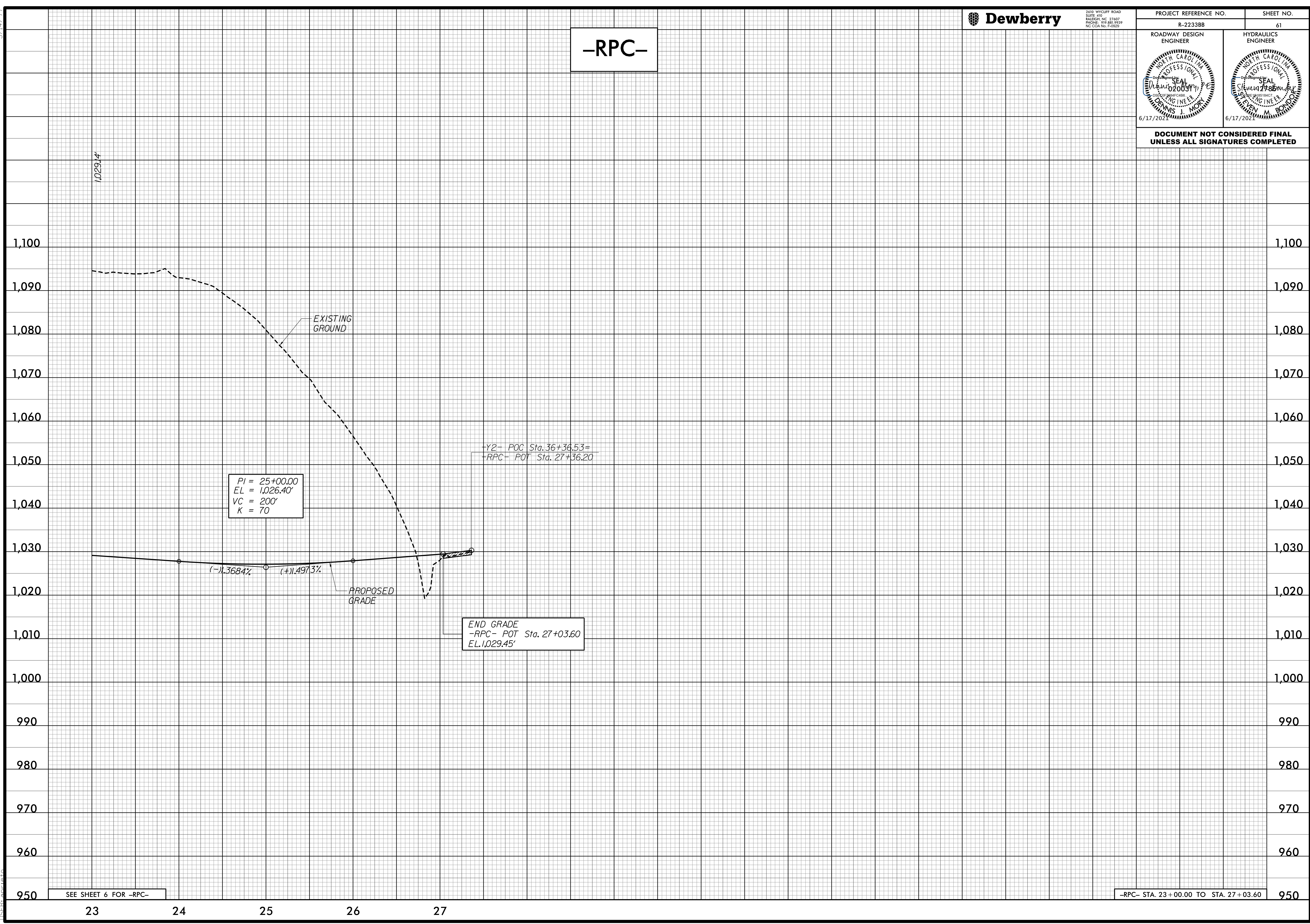
PROJECT REFERENCE NO. R-2233BB
SHEET NO. 61

ROADWAY DESIGN ENGINEER

 6/17/2021

HYDRAULICS ENGINEER

 6/17/2021

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



-RPC-



4/24/2020 4:41:42 PM
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USER: dmoran

5/14/99

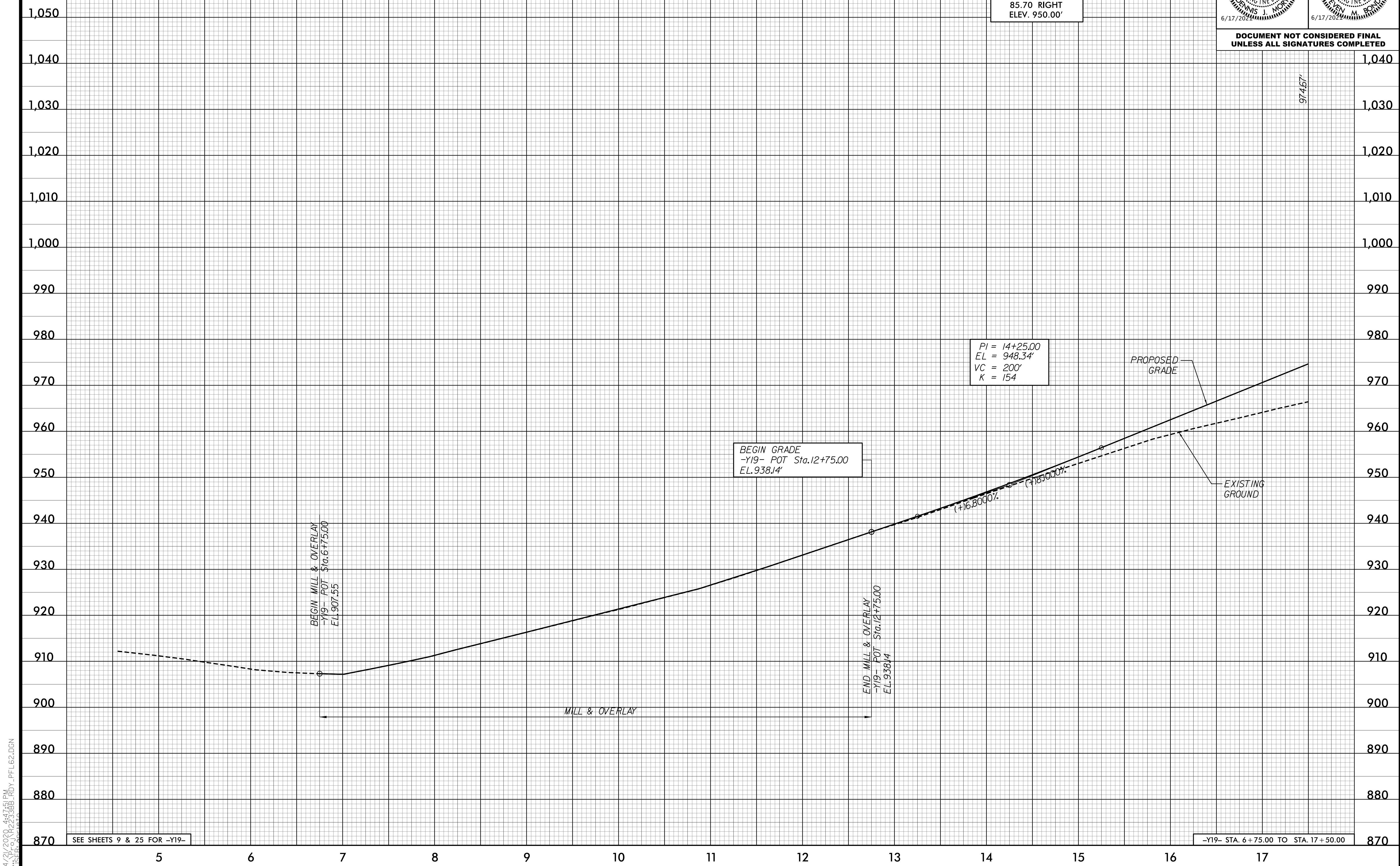
DITCH LEGEND
RIGHT DITCH - - - - -

ROADWAY DESIGN ENGINEER  DENNIS J. MORK 6/17/2022	HYDRAULICS ENGINEER  STEVEN M. BONDO 6/17/2022
---	--

BM #12
-Y19- STA. 14 + 54.81
85.70 RIGHT
ELEV. 950.00'

-Y19-

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



PI = 14+25.00
EL = 948.34'
VC = 200'
K = 154

BEGIN GRADE
-Y19- POT Sta. 12+75.00
EL. 938.14'

BEGIN MILL & OVERLAY
-Y19- POT Sta. 6+75.00
EL. 907.55

END MILL & OVERLAY
-Y19- POT Sta. 12+75.00
EL. 938.14

MILL & OVERLAY

PROPOSED GRADE

EXISTING GROUND

974.67'

SEE SHEETS 9 & 25 FOR -Y19-

-Y19- STA. 6 + 75.00 TO STA. 17 + 50.00

4/24/2020 4:17:51 PM
R-2233BB_P01_PFL62.DGN
USER: dmorris

5/14/99



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9299
NC COA No. F-0929

PROJECT REFERENCE NO. R-2233BB SHEET NO. 63

DITCH LEGEND
RIGHT DITCH - - - - -

ROADWAY DESIGN ENGINEER

 6/17/2022

HYDRAULICS ENGINEER

 6/17/2022

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-Y19-

END GRADE
-Y19- POT Sta. 28+50.00
EL. 1,021.55'

PI = 26+45.00
EL = 1,008.52'
VC = 350'
K = 78

PI = 20+25.00
EL = 996.94'
VC = 300'
K = 48

1,050
1,040
1,030
1,020
1,010
1,000
990
980
970
960
950
940
930
920
910
900
890
880
870

1,040
1,030
1,020
1,010
1,000
990
980
970
960
950
940
930
920
910
900
890
880
870

SEE SHEETS 9 & 26 FOR -Y19-

-Y19- STA. 17+50.00 TO STA. 30+75.00

18 19 20 21 22 23 24 25 26 27 28 29 30 31

974.67'

(+) 18.1000%
(+) 1.8671%

(+) 2.8750%
(+) 3.40%

(+) 1.8671%
(+) 3.40%

(+) 5.60%
(+) 6.3582%

(+) 6.3582%

BEGIN BRIDGE
-Y19- POT Sta. 20+03.44

-L3- POT Sta. 21+50.25 =
-Y19- POT Sta. 20+88.94

END BRIDGE
-Y19- POT Sta. 21+84.94

BEG. SPEC. CUT DITCH RT.
STA. 22+20
EL = 992.40

PI = 23+00
EL = 994.70

PI = 26+50
EL = 1,006.60

END SPEC. CUT DITCH RT.
STA. 27+00
EL = 1,008.40

BEGIN MILL & OVERLAY
-Y19- POT Sta. 28+50.00
EL. 1,021.55

END MILL & OVERLAY
-Y19- POT Sta. 30+75.00
EL. 1,032.55

MILL & OVERLAY

PROPOSED GRADE

EXISTING GROUND

-L3-

4/24/2020 4:17:54 PM
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USER: dmoran

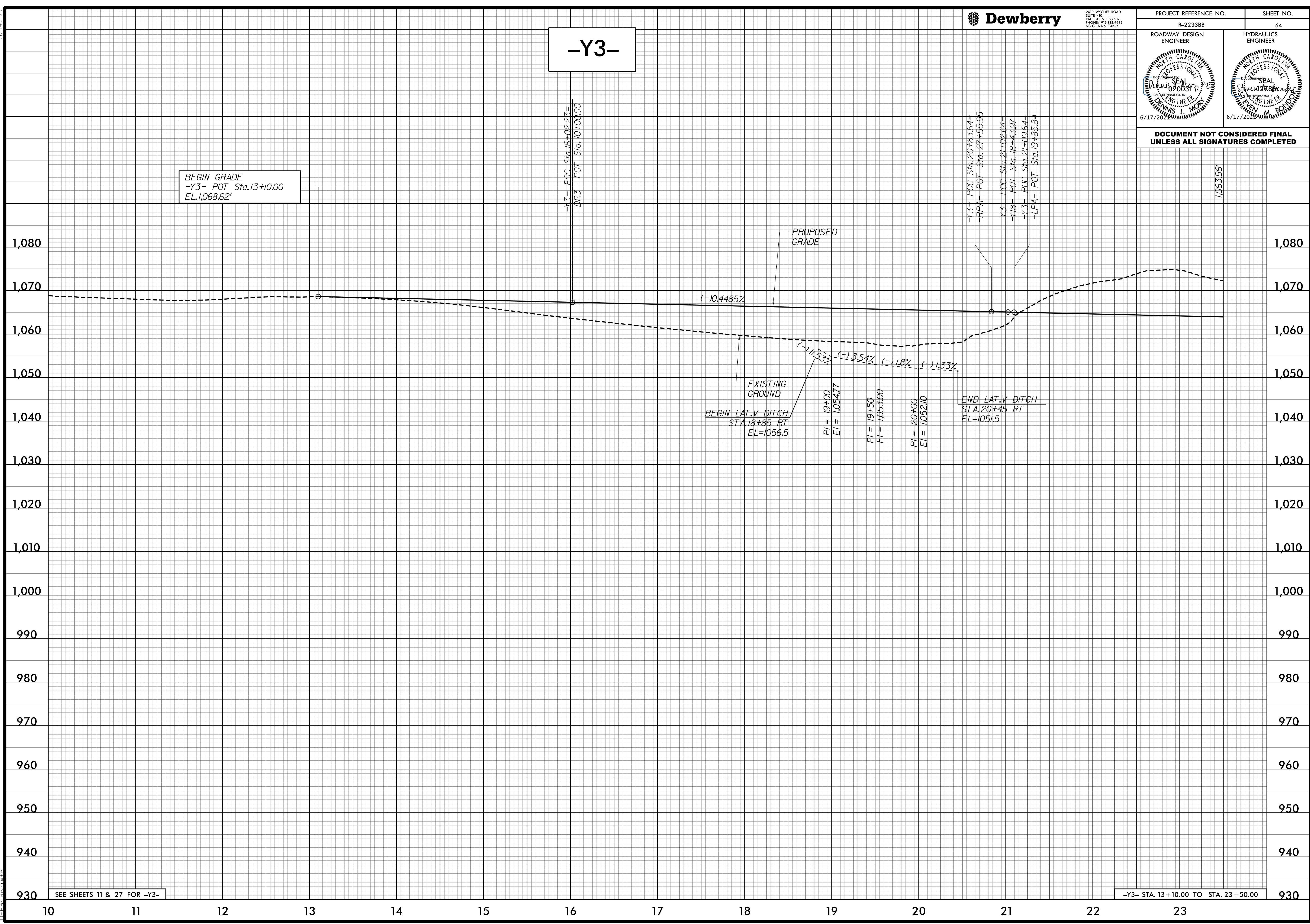
5/14/99



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9999
NC COA No. F-0929

PROJECT REFERENCE NO. R-2233BB		SHEET NO. 64
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

-Y3-



SEE SHEETS 11 & 27 FOR -Y3-

-Y3- STA. 13+10.00 TO STA. 23+50.00

4/24/2020 4:48:00 PM
R-2233BB-P01_PFL64.DGN
11:55:10

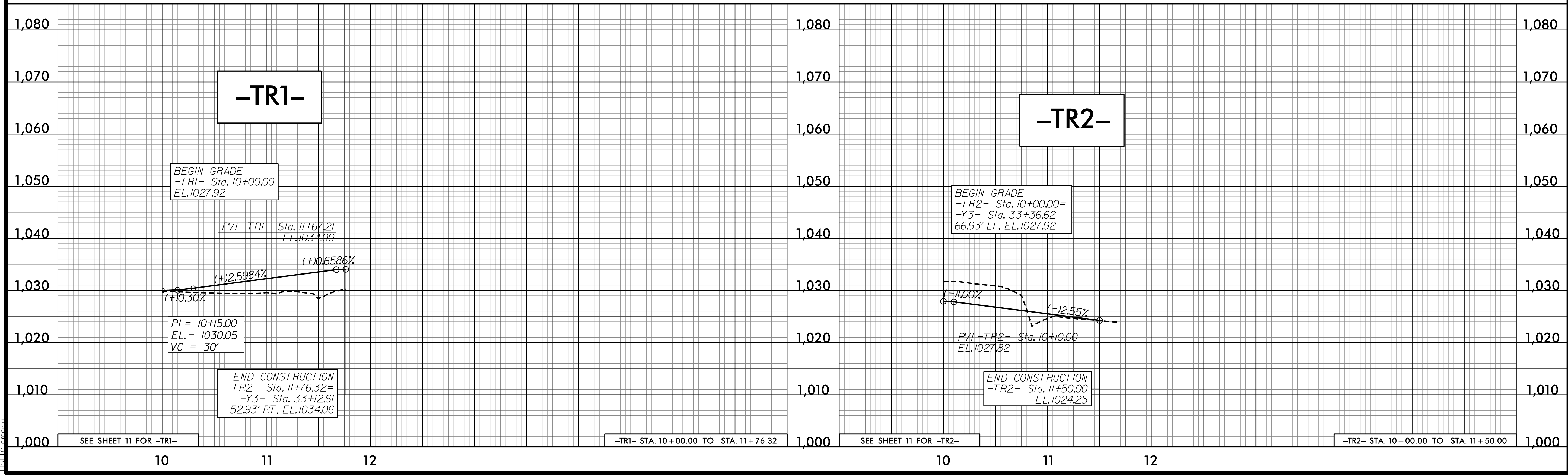
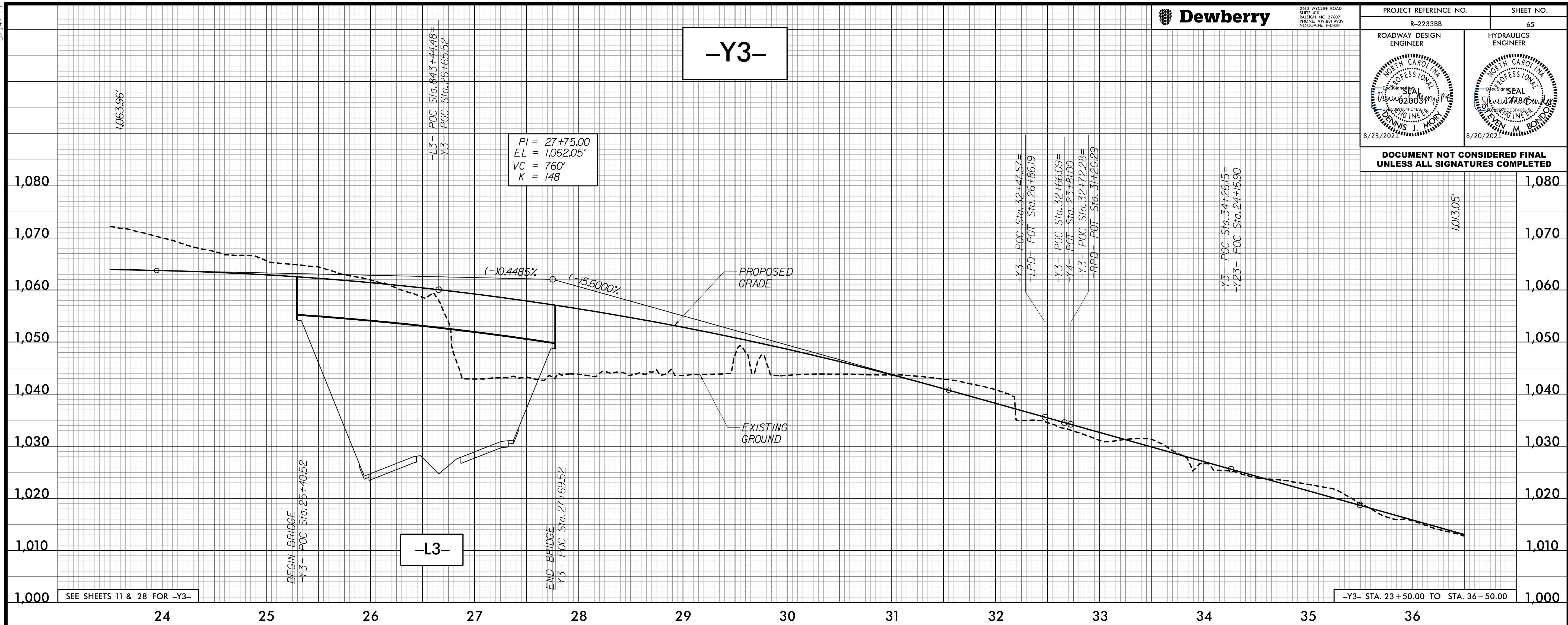
5/14/19



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9999
NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB	SHEET NO. 65
ROADWAY DESIGN ENGINEER Dennis J. Moran	HYDRAULICS ENGINEER Steven M. Bond
8/23/2021	8/20/2021

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



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11/15/2021

5/14/99



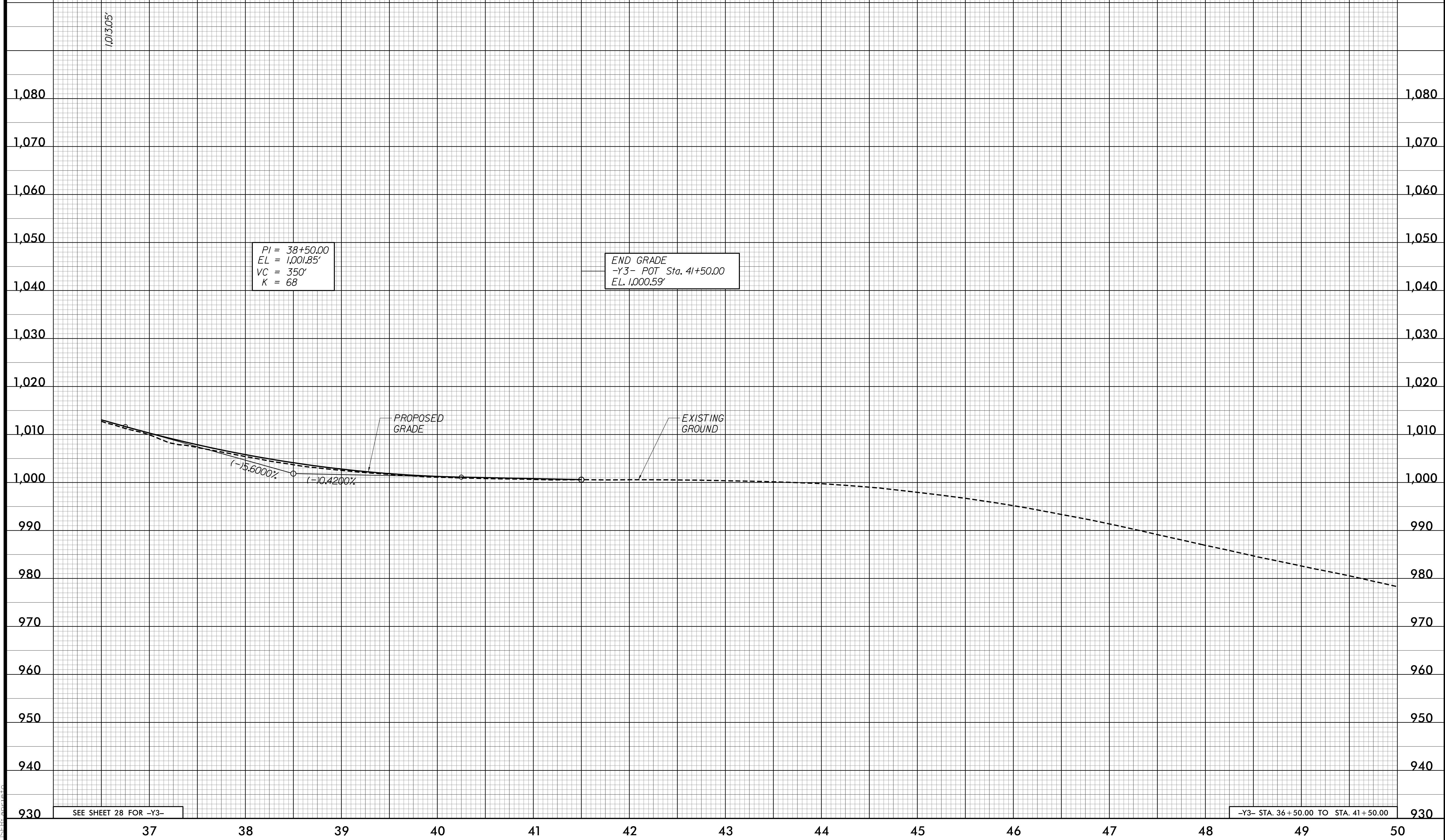
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9299
NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB
SHEET NO. 66

ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
-----------------------------	-------------------------

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-Y3-



$PI = 38+50.00$
 $EL = 1,001.85'$
 $VC = 350'$
 $K = 68$

END GRADE
 -Y3- POT Sta. 41+50.00
 EL. 1,000.59'

PROPOSED GRADE

EXISTING GROUND

-15.6000%

-10.4200%

SEE SHEET 28 FOR -Y3-

-Y3- STA. 36+50.00 TO STA. 41+50.00

4/24/2020 4:48:07 PM
R-2233BB_P01_PFL66.DGN
USER: dmoran

5/14/99

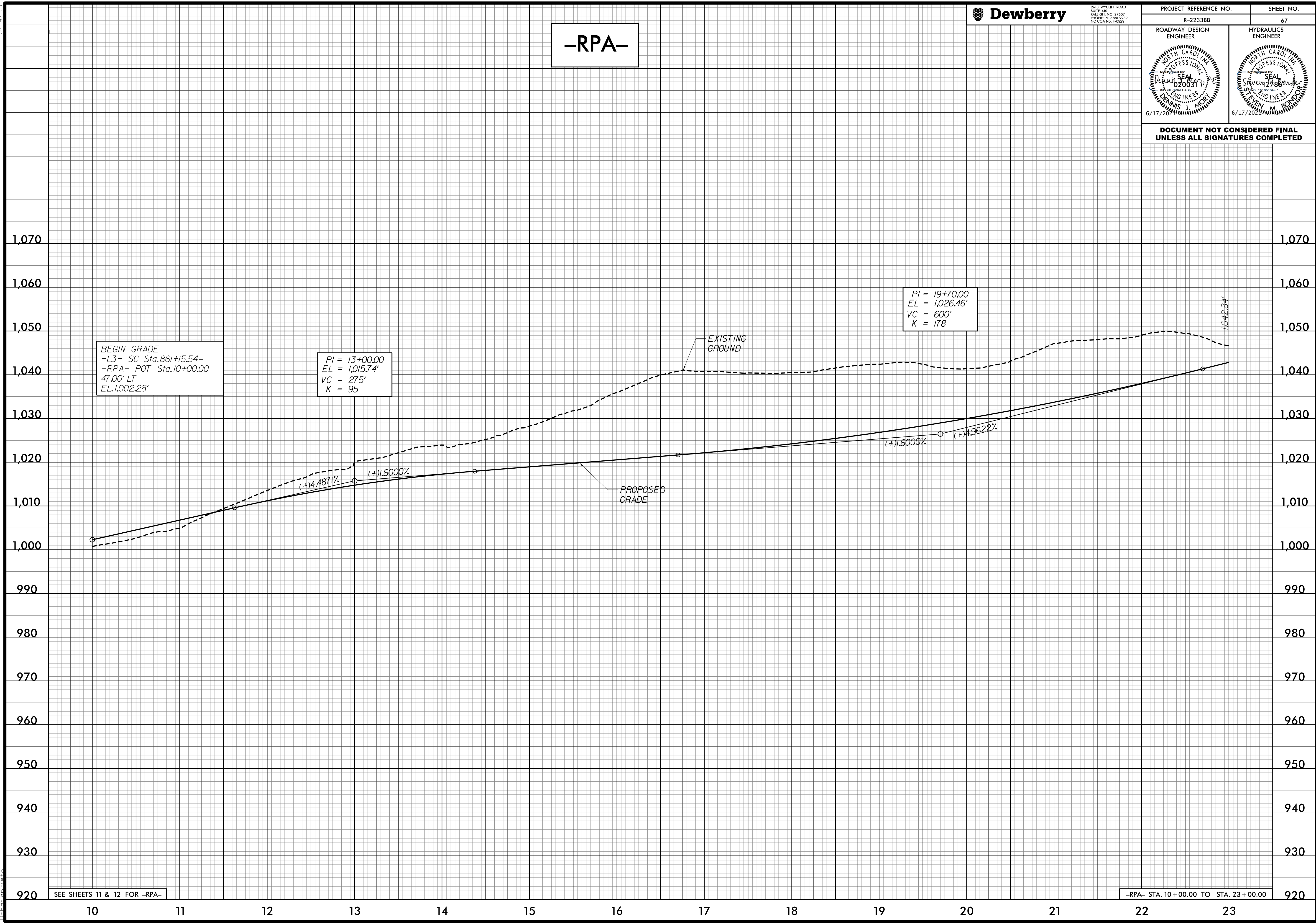


2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9239
NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB		SHEET NO. 67
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER 	

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-RPA-



SEE SHEETS 11 & 12 FOR -RPA-

-RPA- STA. 10+00.00 TO STA. 23+00.00

4/24/2020 4:48:15 PM
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11:55:00 AM

5/14/99



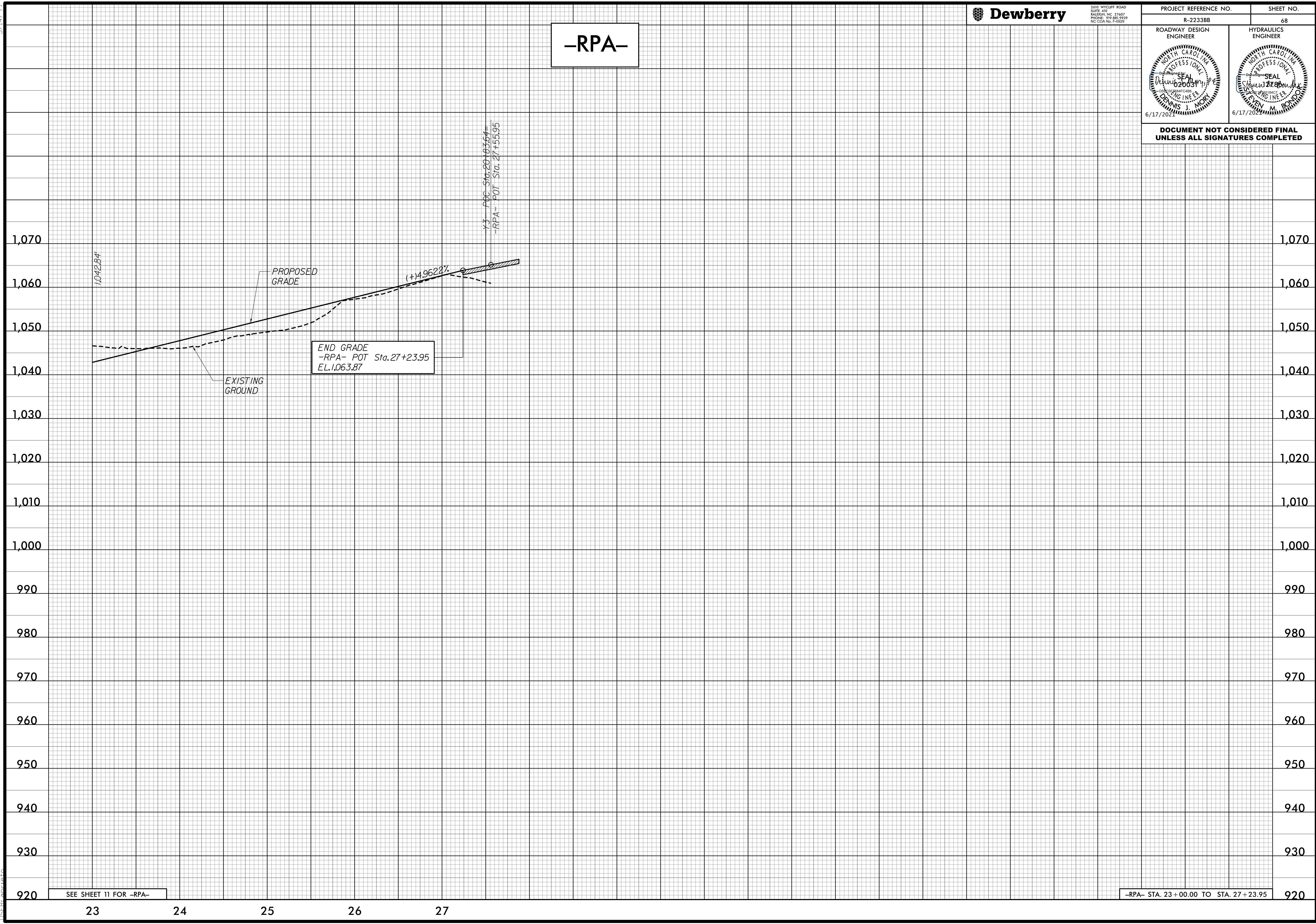
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9239
NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB
SHEET NO. 68

ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
6/17/2024

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-RPA-



4/24/2020 4:48:15 PM
R-2233BB_P01_PFL68.DGN
TJG

SEE SHEET 11 FOR -RPA-

-RPA- STA. 23+00.00 TO STA. 27+23.95

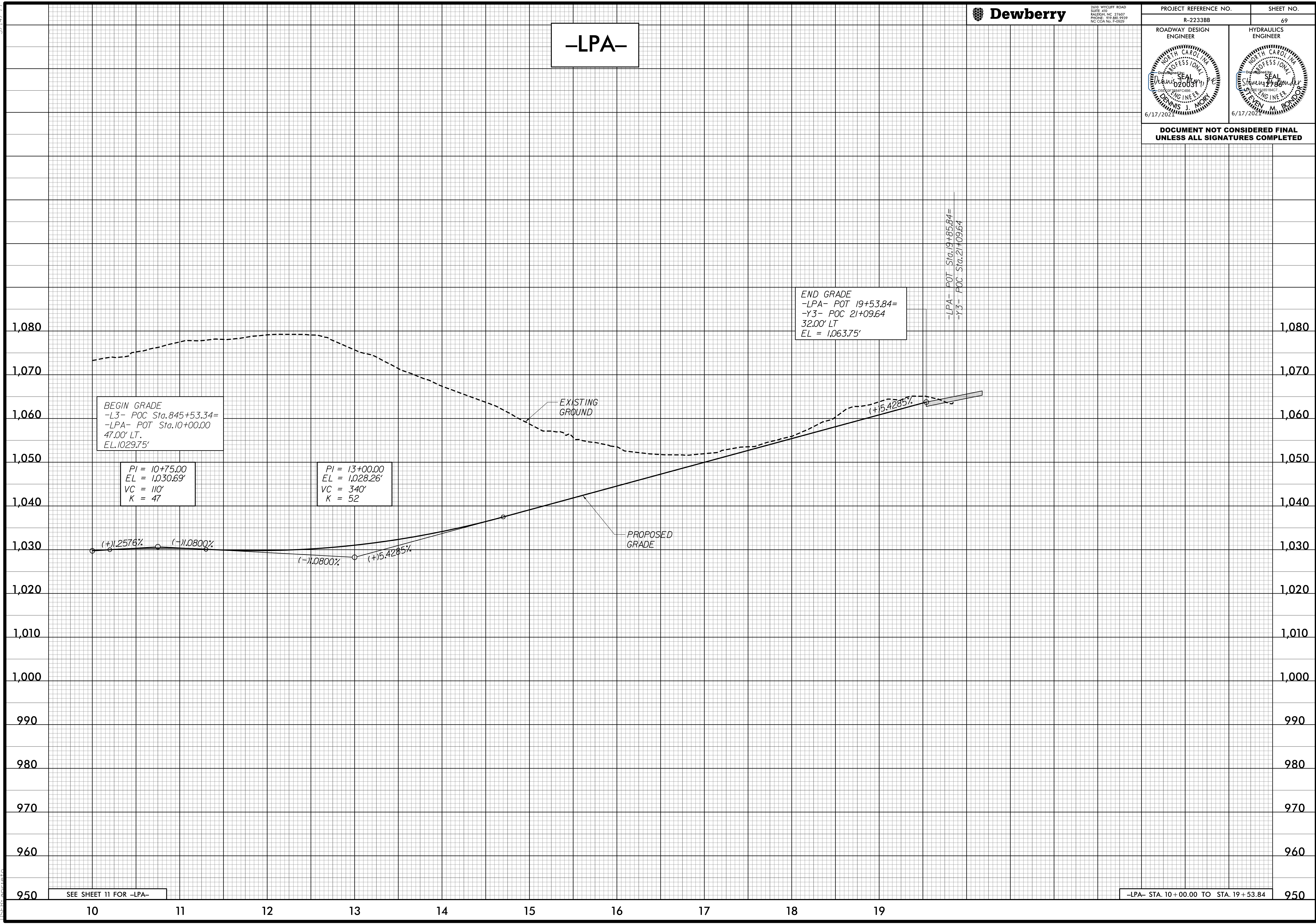
5/14/99



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.3339
NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB		SHEET NO. 69
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

-LPA-



SEE SHEET 11 FOR -LPA-

-LPA- STA. 10+00.00 TO STA. 19+53.84

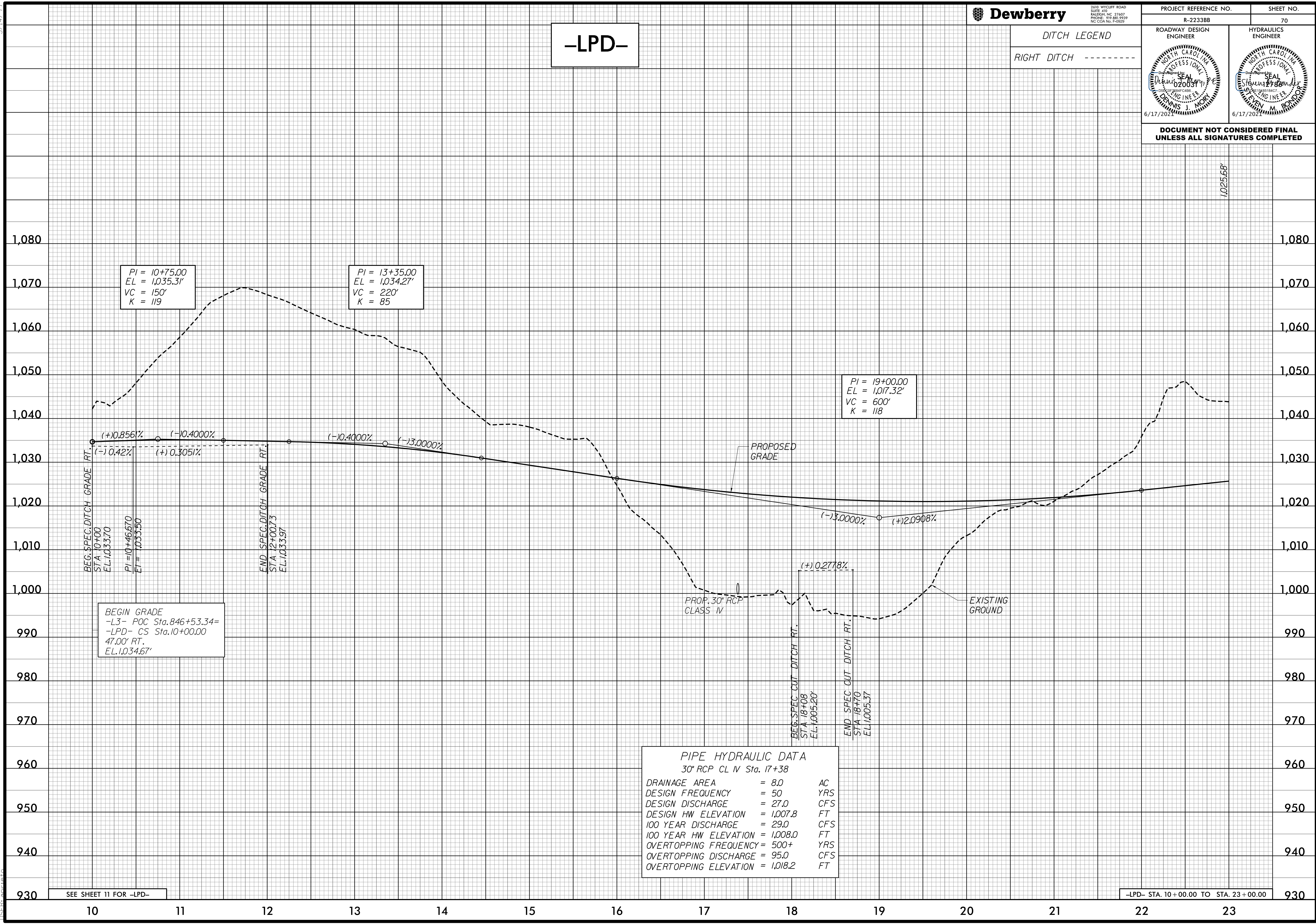
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11:51:10 AM

5/14/99

-LPD-



PROJECT REFERENCE NO. R-2233BB	SHEET NO. 70
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



PI = 10+75.00
EL = 1,035.31'
VC = 150'
K = 119

PI = 13+35.00
EL = 1,034.27'
VC = 220'
K = 85

PI = 19+00.00
EL = 1,017.32'
VC = 600'
K = 118

BEG. SPEC. DITCH GRADE RT.
STA 10+00
EL: 1033.70
PI = 10+46.670
EI = 1033.50

END. SPEC. DITCH GRADE RT.
STA 12+00.3
EL: 1033.97

BEG. SPEC. CUT DITCH RT.
STA 18+08
EL: 1005.20'

END. SPEC. CUT DITCH RT.
STA 18+70
EL: 1005.37

BEGIN GRADE
-L3- POC Sta. 846+53.34=
-LPD- CS Sta. 10+00.00
47.00' RT.
EL: 1,034.67'

PIPE HYDRAULIC DATA		
30" RCP CL IV Sta. 17+38		
DRAINAGE AREA	= 8.0	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 27.0	CFS
DESIGN HW ELEVATION	= 1,007.8	FT
100 YEAR DISCHARGE	= 29.0	CFS
100 YEAR HW ELEVATION	= 1,008.0	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 95.0	CFS
OVERTOPPING ELEVATION	= 1,018.2	FT

SEE SHEET 11 FOR -LPD-

-LPD- STA. 10+00.00 TO STA. 23+00.00

4/24/2020 4:08:26 PM P:\PEL70.DGN

5/14/99



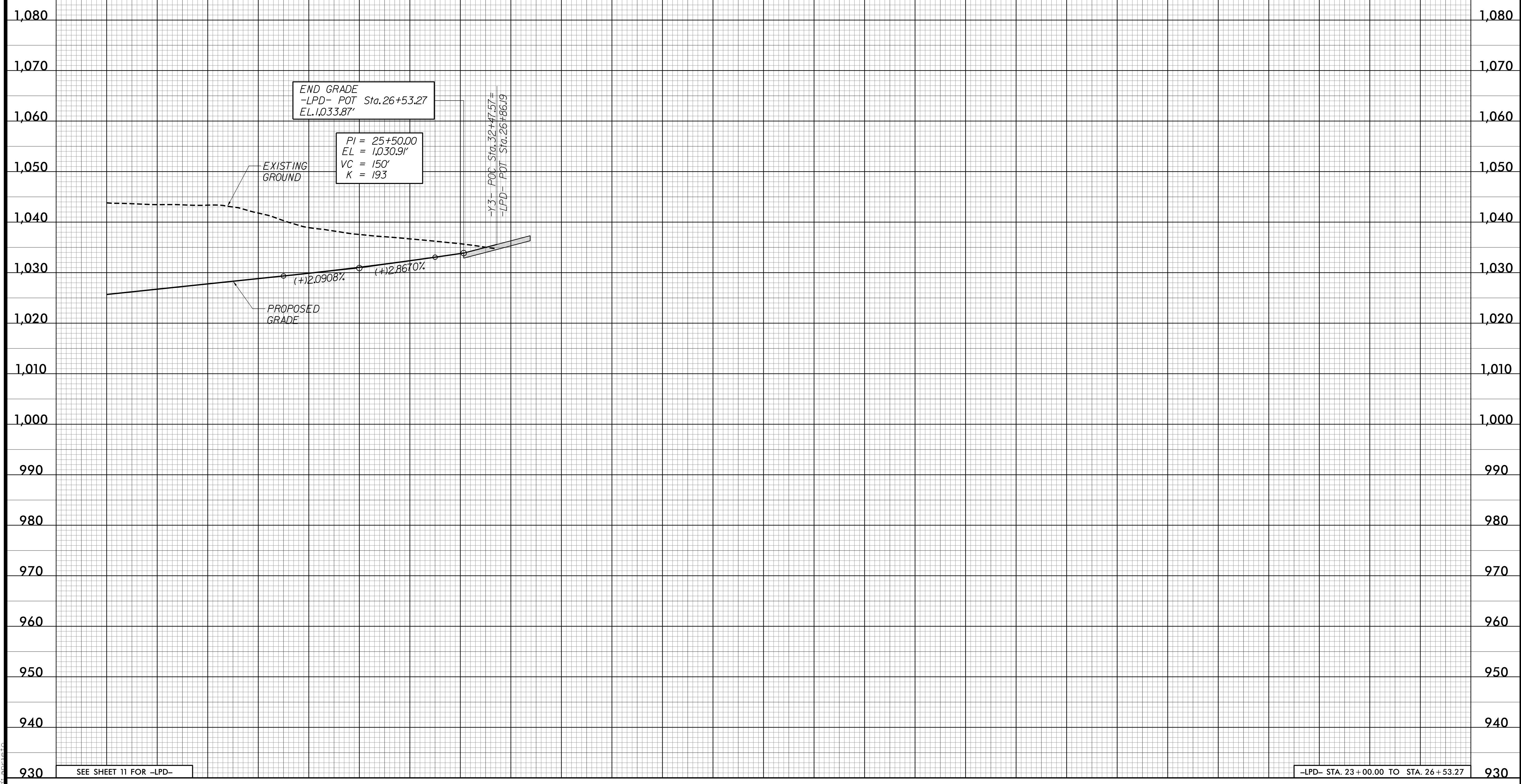
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9299
NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB	SHEET NO. 71
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-LPD-

1025.68'



SEE SHEET 11 FOR -LPD-

-LPD- STA. 23+00.00 TO STA. 26+53.27

4/24/2020 4:48:30 PM
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USER: dmoran

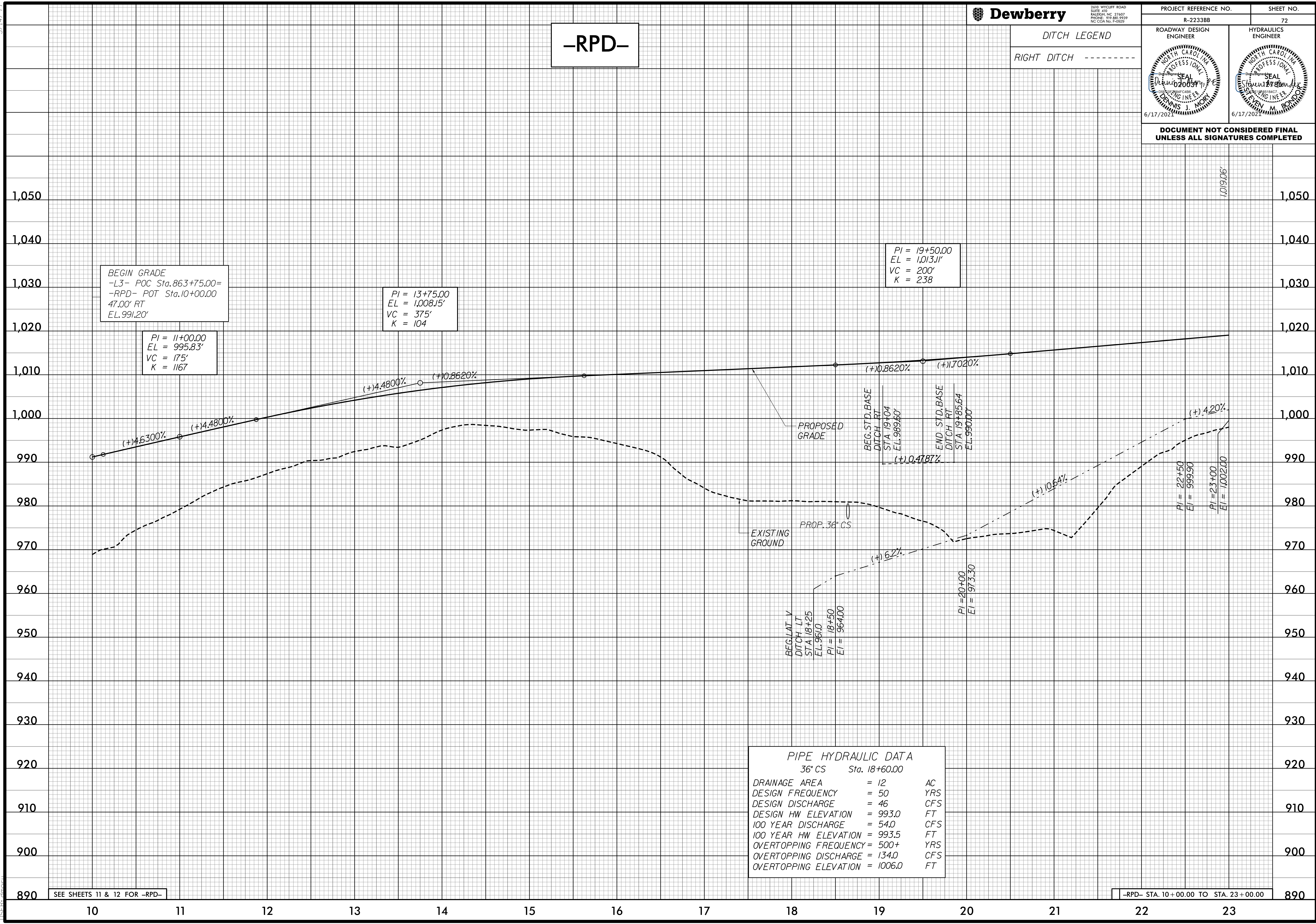
5/14/99

-RPD-



PROJECT REFERENCE NO. R-2233BB	SHEET NO. 72
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PIPE HYDRAULIC DATA		
36" CS Sta. 18+60.00		
DRAINAGE AREA	= 12	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 46	CFS
DESIGN HW ELEVATION	= 993.0	FT
100 YEAR DISCHARGE	= 54.0	CFS
100 YEAR HW ELEVATION	= 993.5	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 134.0	CFS
OVERTOPPING ELEVATION	= 1006.0	FT

SEE SHEETS 11 & 12 FOR -RPD-

-RPD- STA. 10+00.00 TO STA. 23+00.00

6/16/2019 9:56:38 AM
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5/14/99

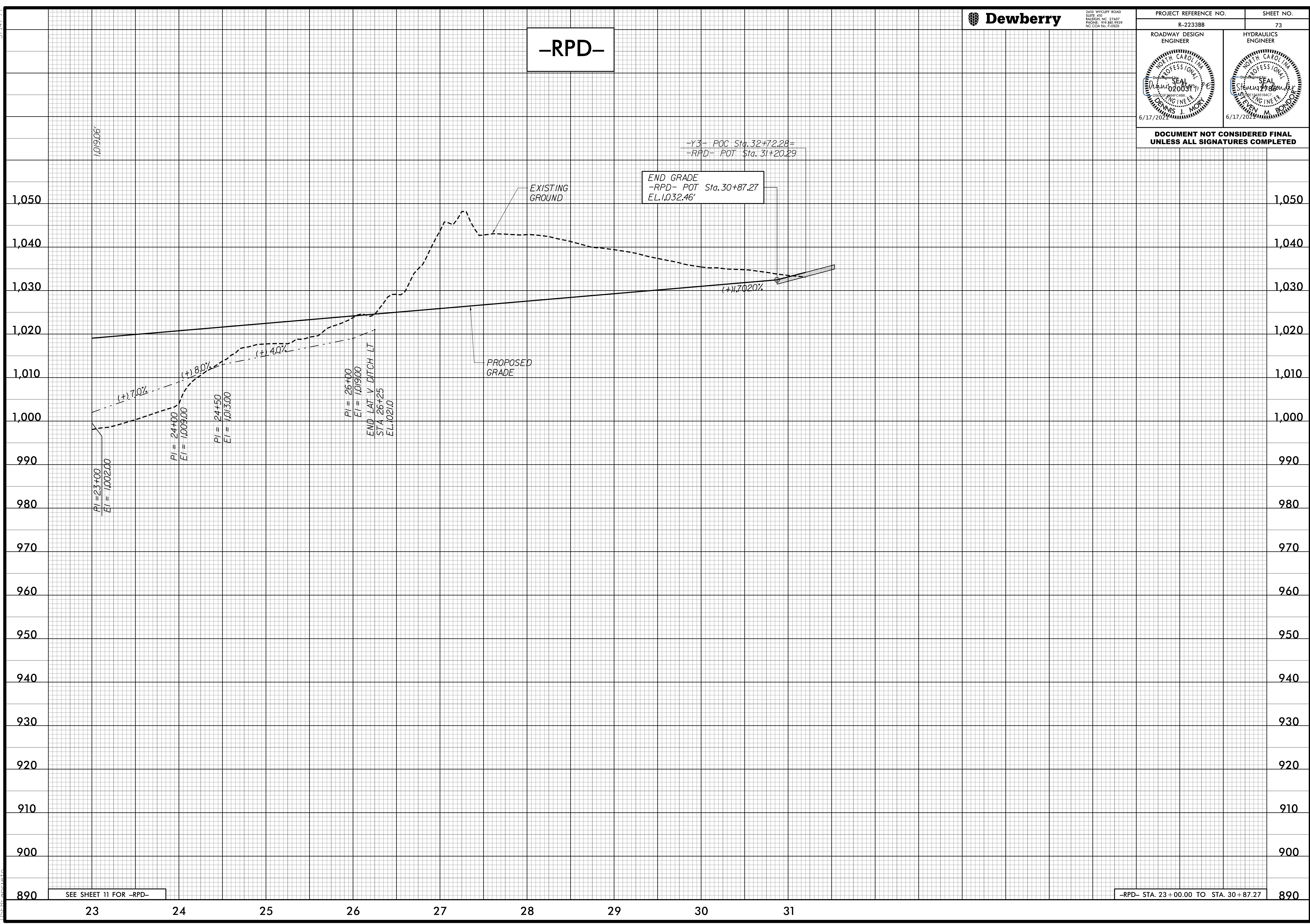


2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9299
NC COA No. F-0925

PROJECT REFERENCE NO. R-2233BB	SHEET NO. 73
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-RPD-



4/24/2020 4:48:39 PM
R-2233BB-RDY_PFL73.DGN
USER: dmoran

SEE SHEET 11 FOR -RPD-

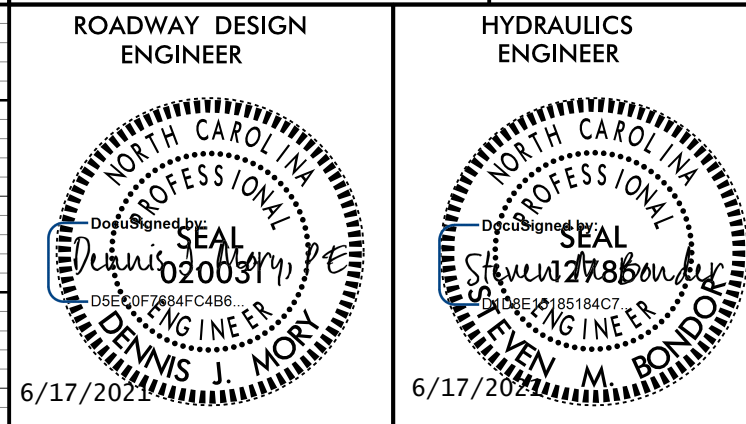
-RPD- STA. 23+00.00 TO STA. 30+87.27

5/28/99



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.883.9329
NC CCA No. F-0029

PROJECT REFERENCE NO. R-2233BB SHEET NO. 74



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

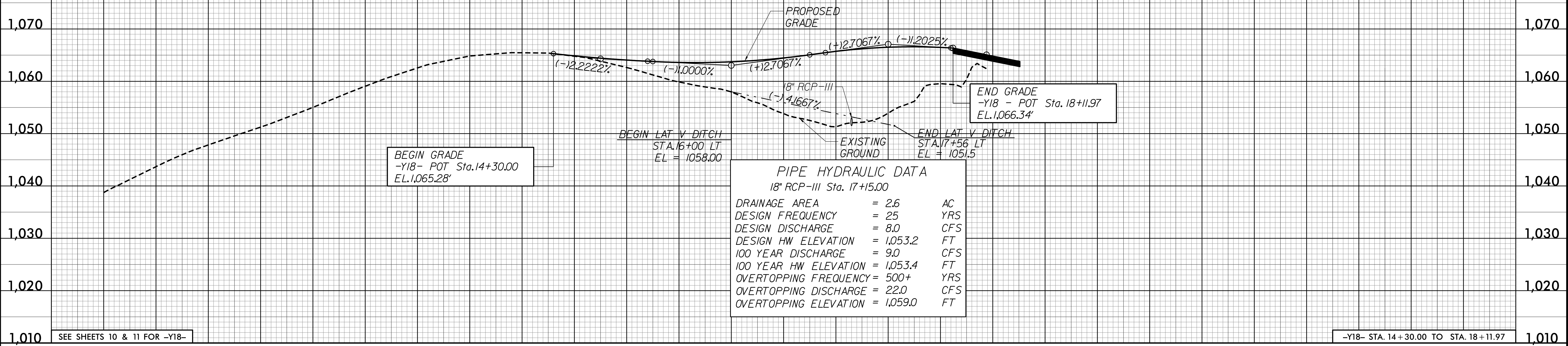
-Y18-

PI = 14+75.00
EL = 1,064.28'
VC = 90'
K = 74

PI = 16+00.00
EL = 1,063.03'
VC = 150'
K = 40

PI = 17+50.00
EL = 1,067.09'
VC = 120'
K = 31

-Y3- POC Sta. 16+02.64 =
-Y18- POT Sta. 18+11.97

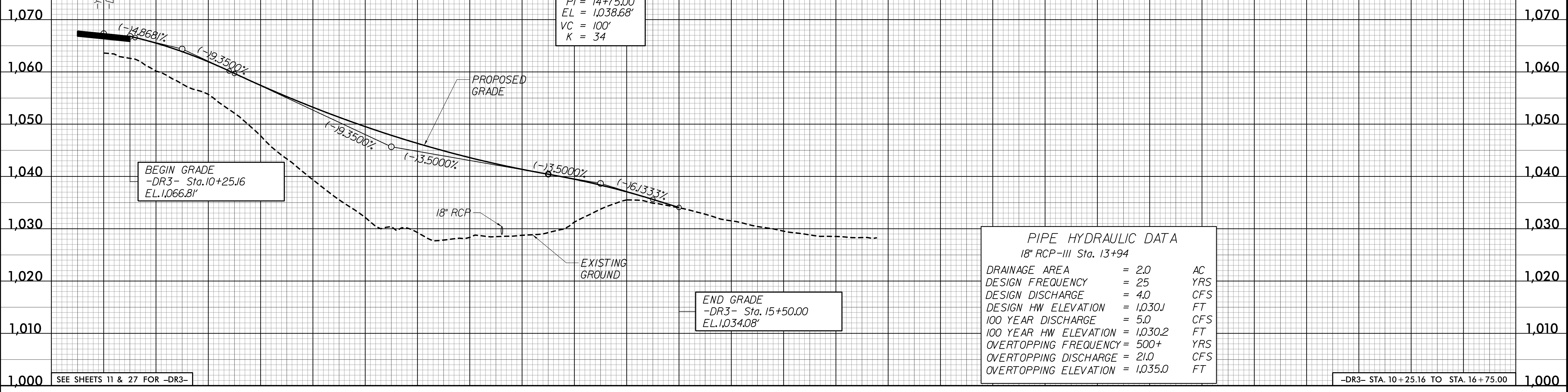


-DR3-

PI = 10+75.00
EL = 1,064.38'
VC = 90'
K = 20

PI = 12+75.00
EL = 1,045.68'
VC = 300'
K = 51

PI = 14+75.00
EL = 1,038.68'
VC = 100'
K = 34



6/12/2023 10:57:39 PM
ITS:FC-JAR:2233BB-RDY-PFL 74.DGN

5/14/19



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9299
NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB	SHEET NO. 75
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER

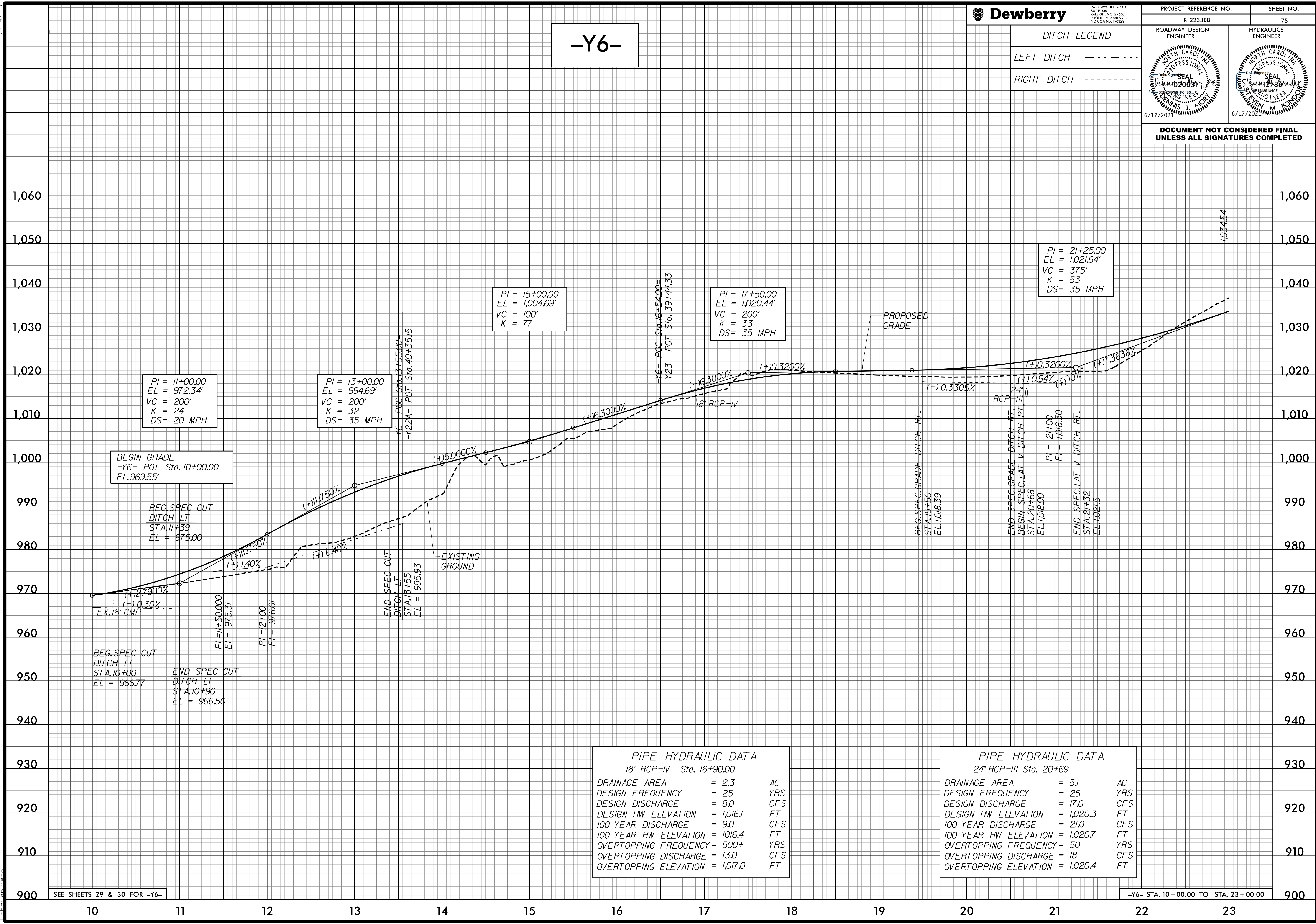
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-Y6-

DITCH LEGEND

LEFT DITCH - - - - -

RIGHT DITCH - - - - -



BEGIN GRADE
-Y6- POT Sta. 10+00.00
EL. 969.55'

PI = 11+00.00
EL = 972.34'
VC = 200'
K = 24
DS = 20 MPH

PI = 13+00.00
EL = 994.69'
VC = 200'
K = 32
DS = 35 MPH

PI = 15+00.00
EL = 1,004.69'
VC = 100'
K = 77

PI = 17+50.00
EL = 1,020.44'
VC = 200'
K = 33
DS = 35 MPH

PI = 21+25.00
EL = 1,021.64'
VC = 375'
K = 53
DS = 35 MPH

PIPE HYDRAULIC DATA
18" RCP-IV Sta. 16+90.00

DRAINAGE AREA	= 2.3	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 8.0	CFS
DESIGN HW ELEVATION	= 1,016.1	FT
100 YEAR DISCHARGE	= 9.0	CFS
100 YEAR HW ELEVATION	= 1016.4	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 13.0	CFS
OVERTOPPING ELEVATION	= 1,017.0	FT

PIPE HYDRAULIC DATA
24" RCP-III Sta. 20+69

DRAINAGE AREA	= 5.1	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 17.0	CFS
DESIGN HW ELEVATION	= 1,020.3	FT
100 YEAR DISCHARGE	= 21.0	CFS
100 YEAR HW ELEVATION	= 1,020.7	FT
OVERTOPPING FREQUENCY	= 50	YRS
OVERTOPPING DISCHARGE	= 18	CFS
OVERTOPPING ELEVATION	= 1,020.4	FT

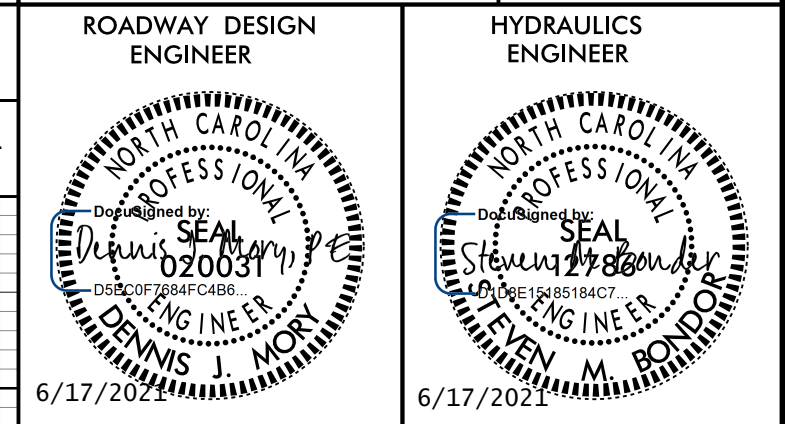
SEE SHEETS 29 & 30 FOR -Y6-

-Y6- STA. 10+00.00 TO STA. 23+00.00

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USER: dmorris

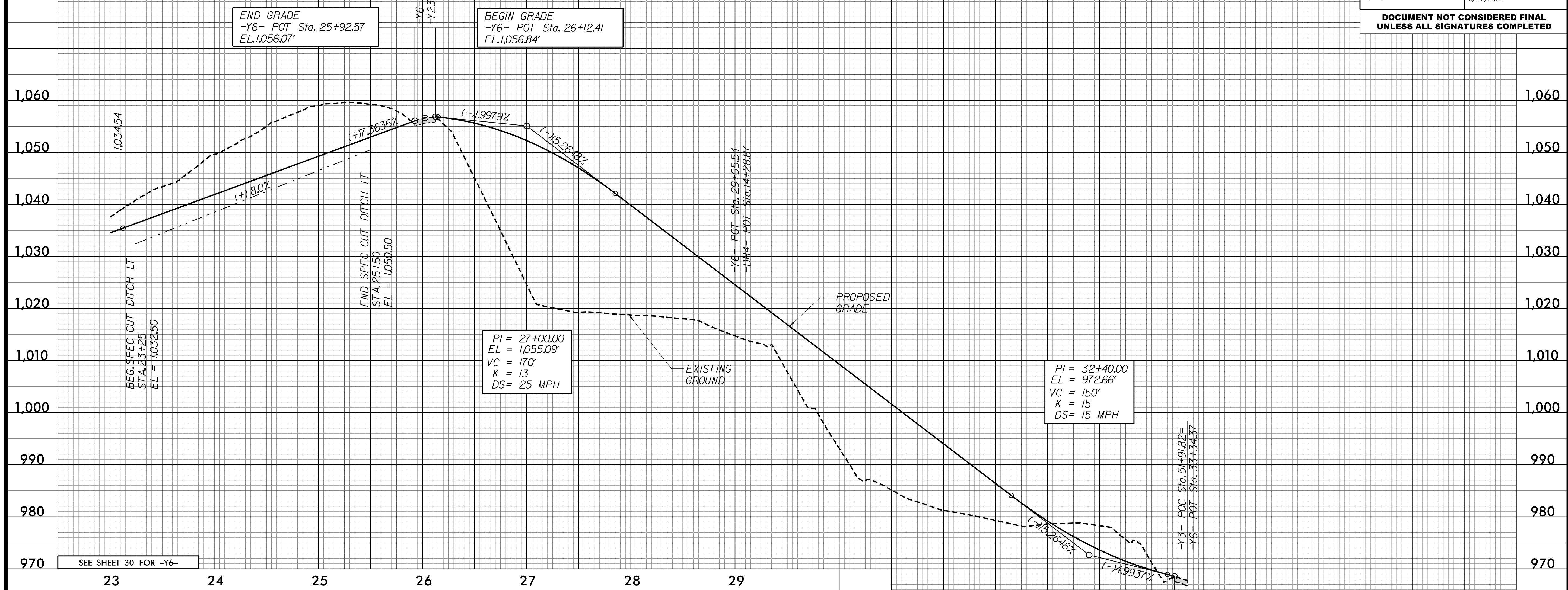
5/14/99

DITCH LEGEND
LEFT DITCH - - - - -

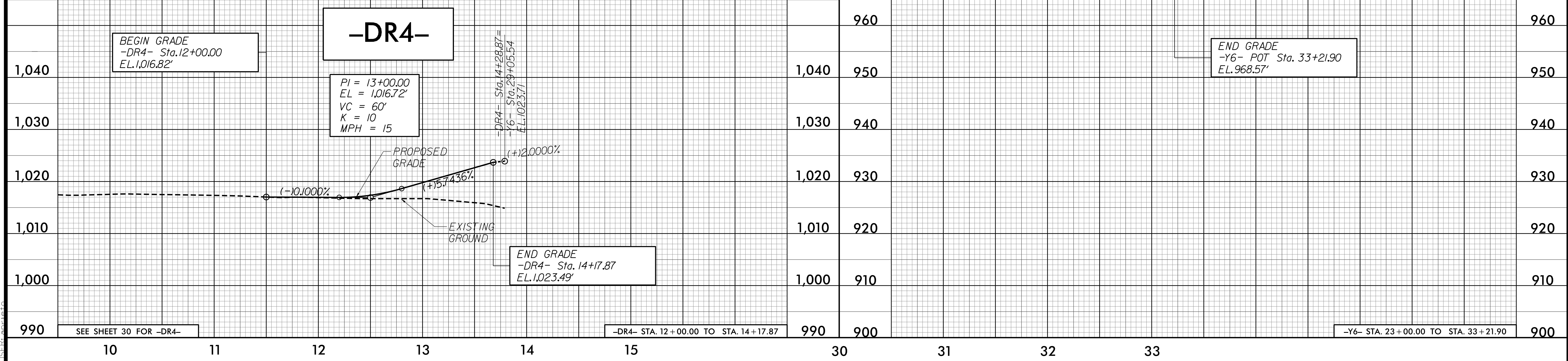


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UNLESS ALL SIGNATURES COMPLETED

-Y6-



-DR4-



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USER: dmorin

5/28/2019

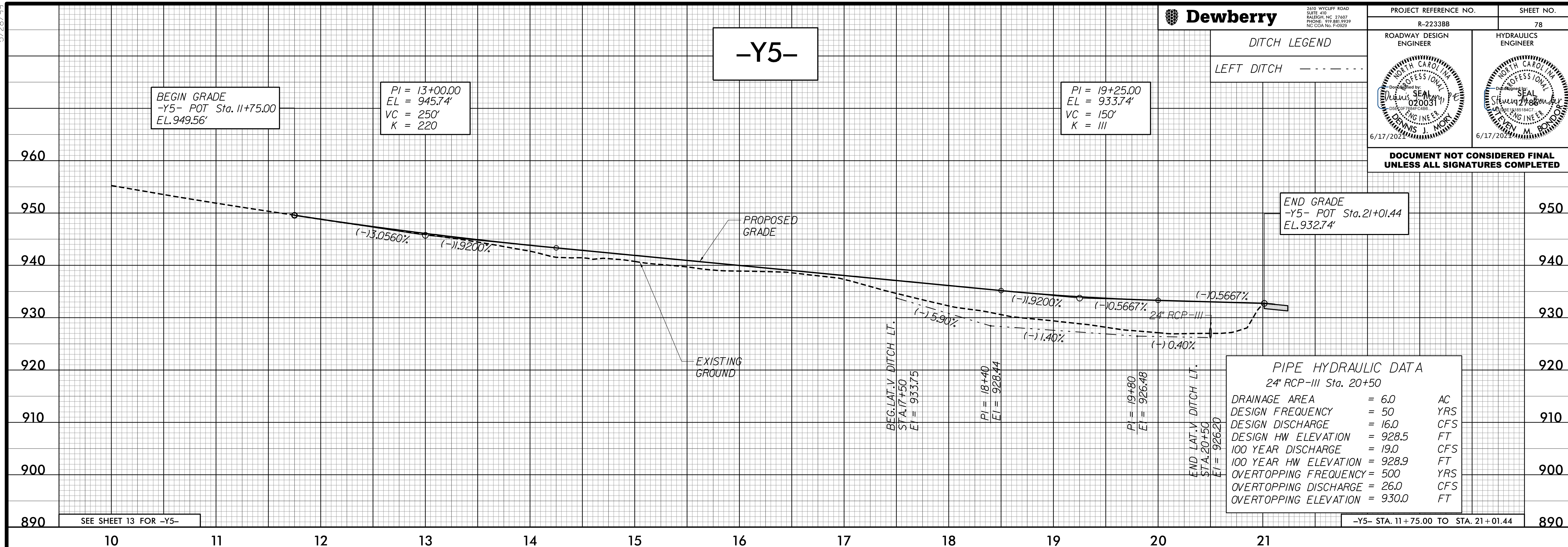
Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 772.883.9329
NC CCA No. F-0929

PROJECT REFERENCE NO. R-2233BB SHEET NO. 78

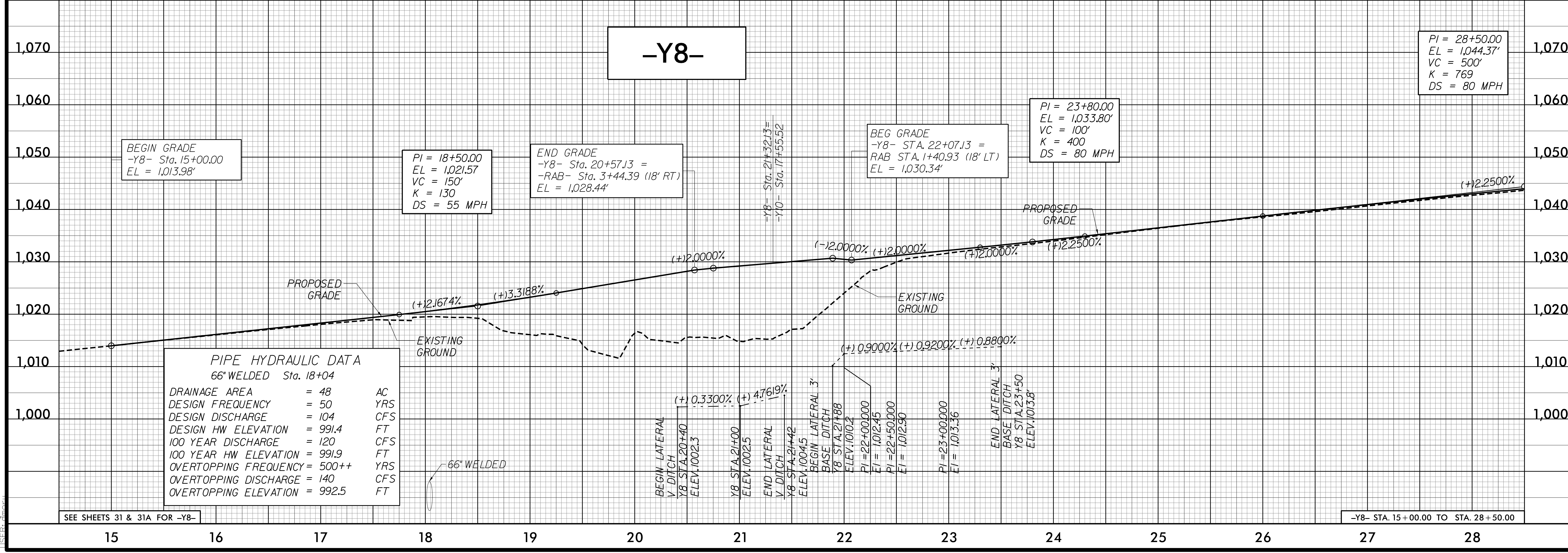
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

6/17/2019

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6/16/2019 10:58:36 AM Y_PFL 78.DGN



5/28/2020

Dewberry
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27603
PHONE: 919.881.9939
NC COA No. F-09251

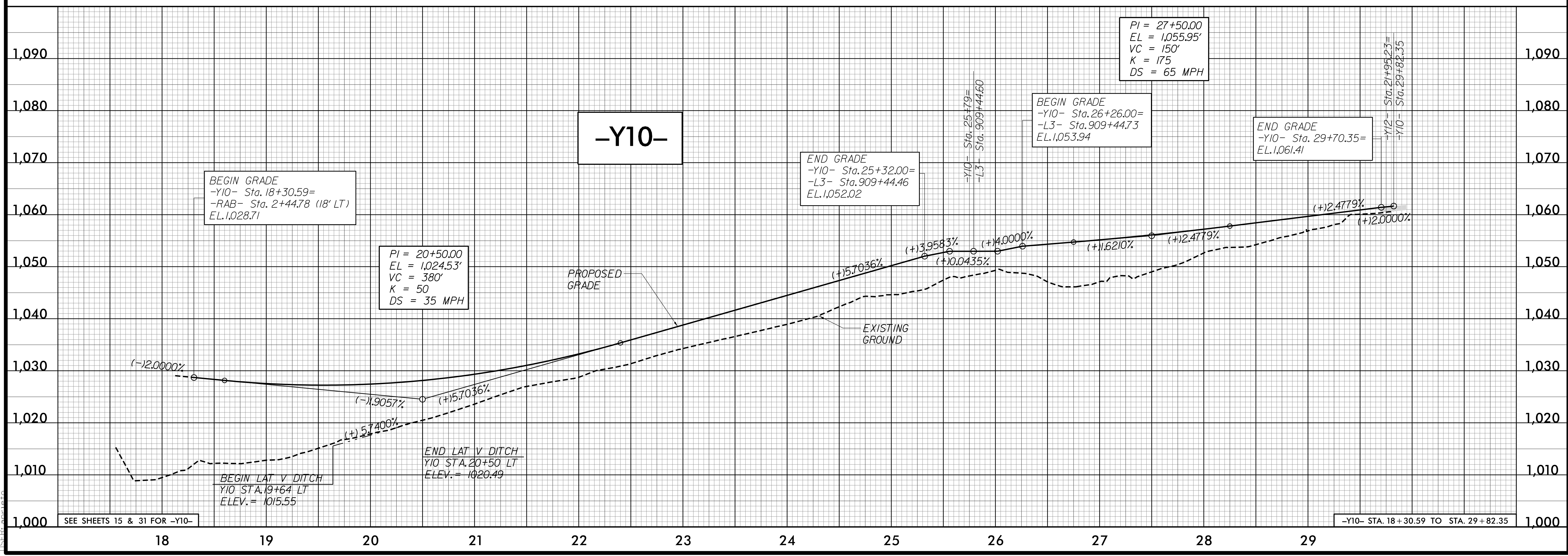
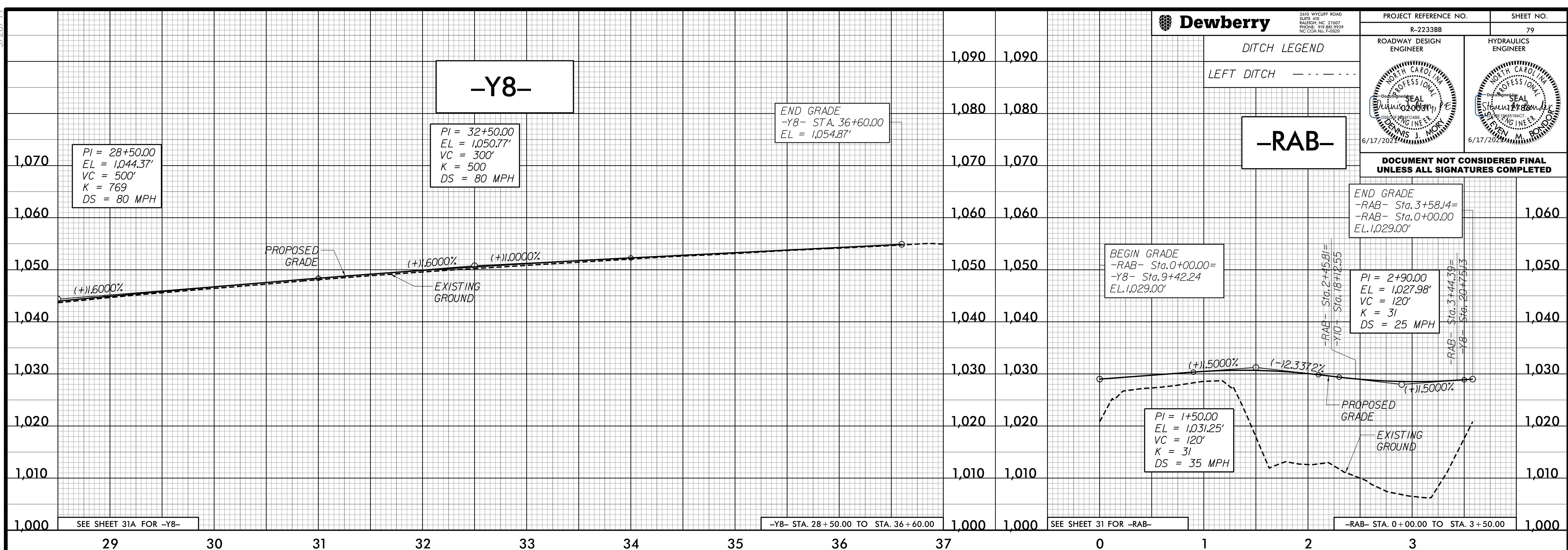
PROJECT REFERENCE NO. R-2233BB
SHEET NO. 79

ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

SEAL
DENNIS J. MOY
6/17/2020

SEAL
TIMOTHY M. BOND
6/17/2020

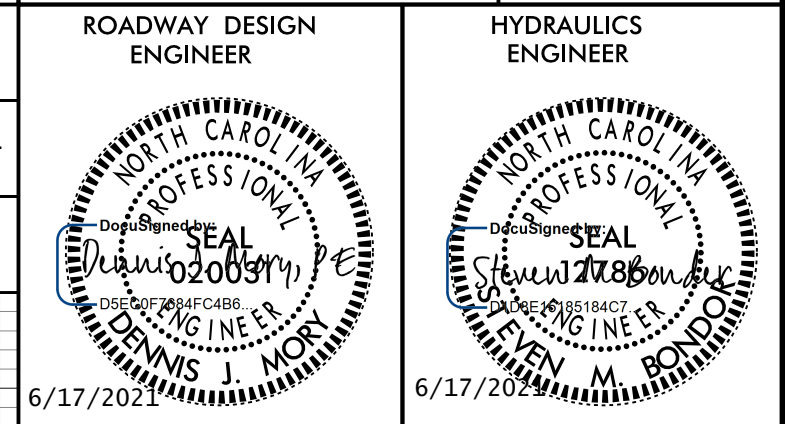
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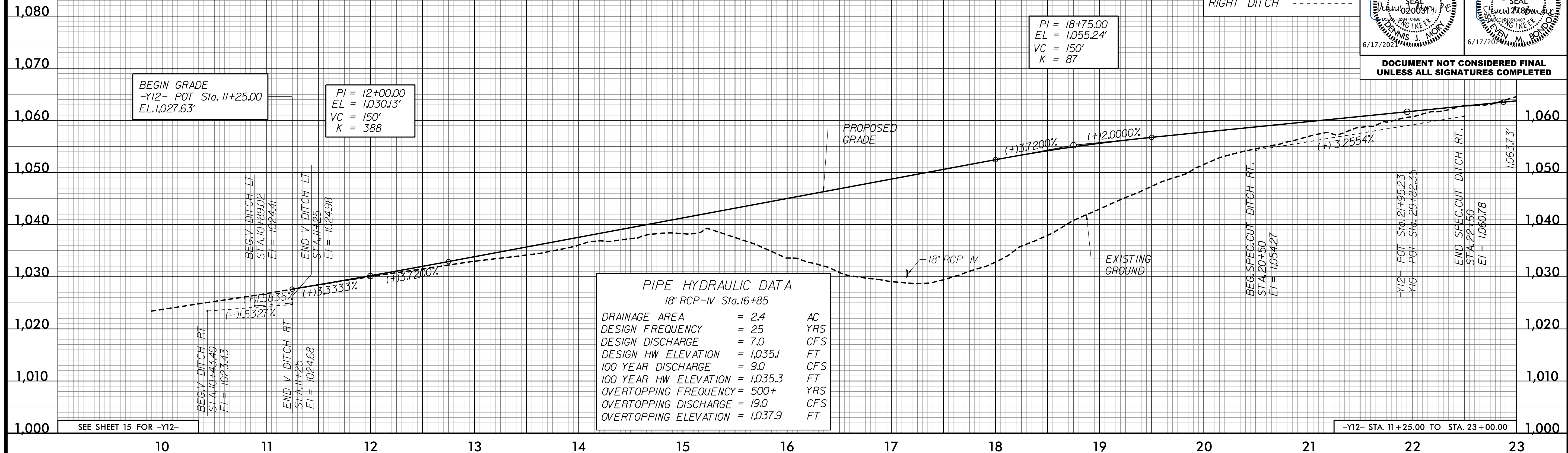
5/28/20

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

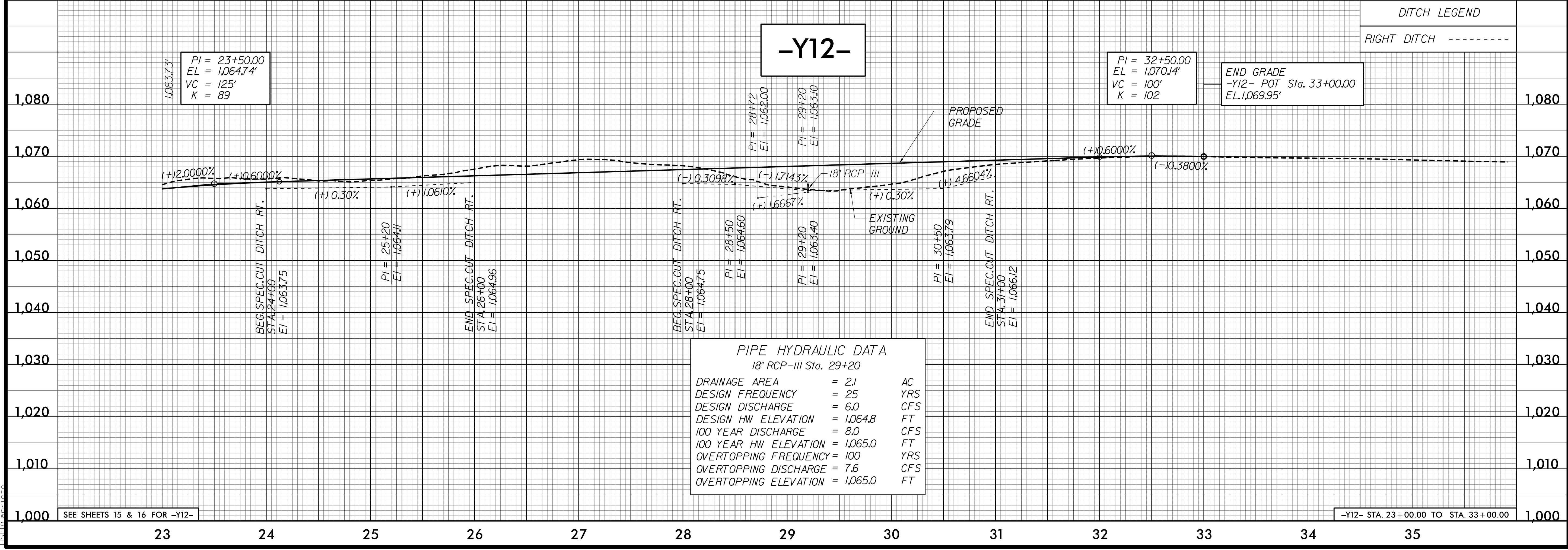


DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-Y12-



-Y12-



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5/14/19

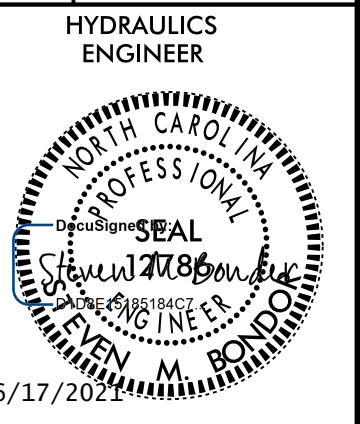
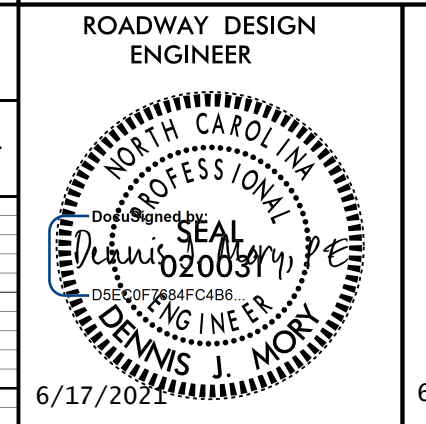


2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9299
NC COA No. F-09251

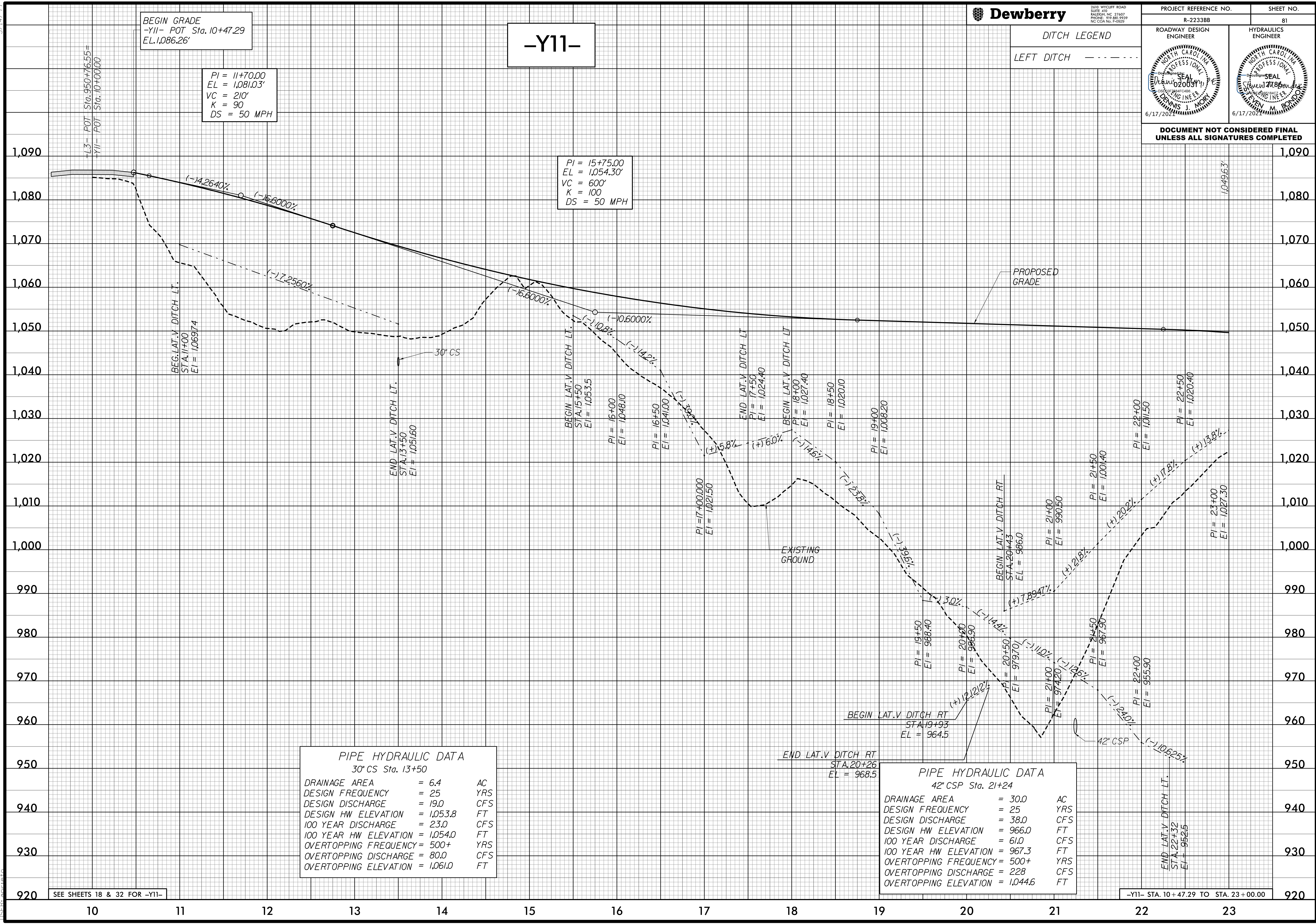
PROJECT REFERENCE NO.
R-2233BB

SHEET NO.
81

DITCH LEGEND
LEFT DITCH - - - - -



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



BEGIN GRADE
-Y11- POT Sta. 10+47.29
EL. 1,086.26'

PI = 11+70.00
EL = 1,081.03'
VC = 210'
K = 90
DS = 50 MPH

-Y11-

PI = 15+75.00
EL = 1,054.30'
VC = 600'
K = 100
DS = 50 MPH

PIPE HYDRAULIC DATA
30" CS Sta. 13+50

DRAINAGE AREA	= 6.4	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 19.0	CFS
DESIGN HW ELEVATION	= 1,053.8	FT
100 YEAR DISCHARGE	= 23.0	CFS
100 YEAR HW ELEVATION	= 1,054.0	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 80.0	CFS
OVERTOPPING ELEVATION	= 1,061.0	FT

PIPE HYDRAULIC DATA
42" CSP Sta. 21+24

DRAINAGE AREA	= 30.0	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 38.0	CFS
DESIGN HW ELEVATION	= 966.0	FT
100 YEAR DISCHARGE	= 61.0	CFS
100 YEAR HW ELEVATION	= 967.3	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 228	CFS
OVERTOPPING ELEVATION	= 1,044.6	FT

SEE SHEETS 18 & 32 FOR -Y11-

-Y11- STA. 10+47.29 TO STA. 23+00.00

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TSEB

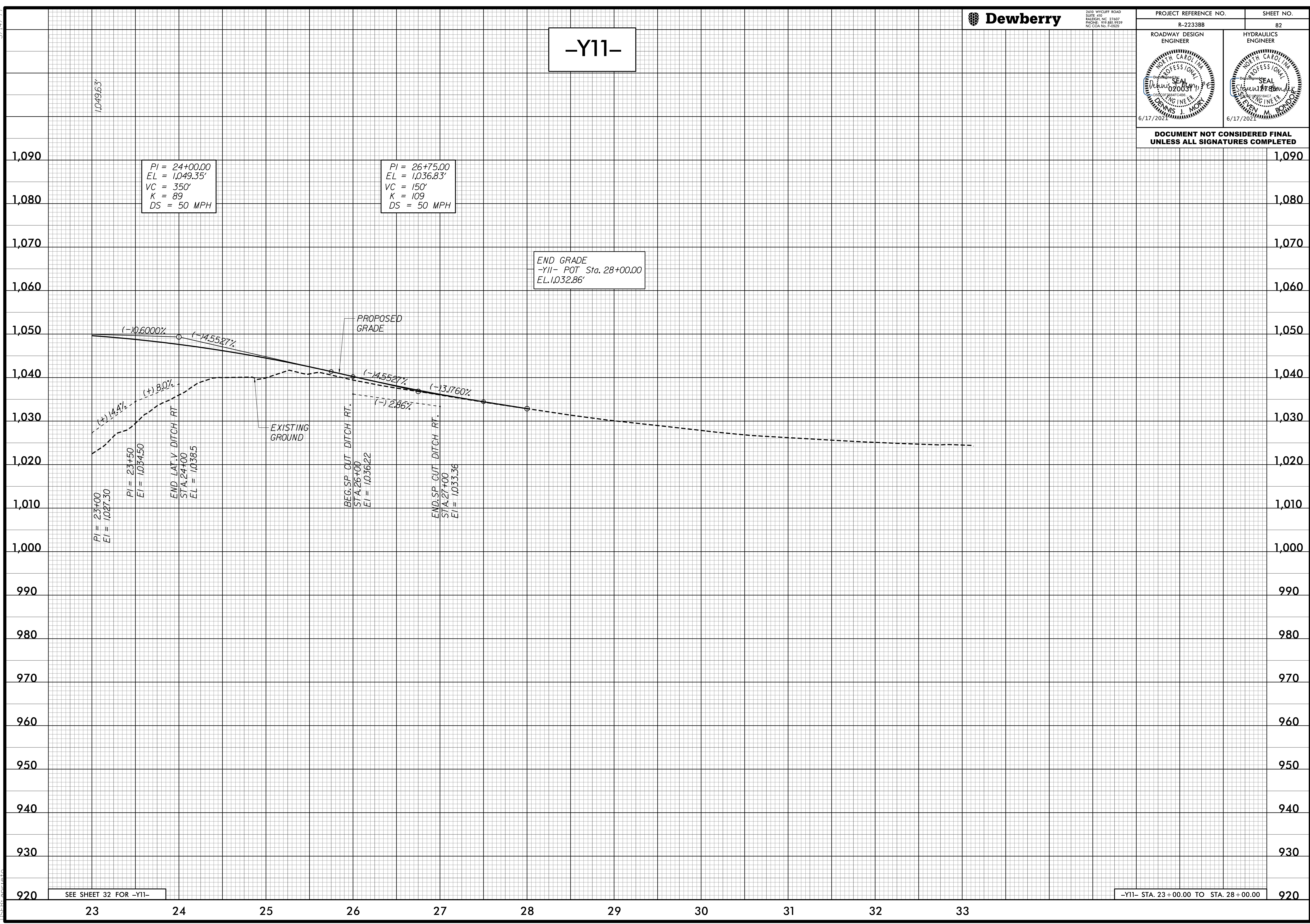
5/14/19



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9299
NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB		SHEET NO. 82
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

-Y11-



$PI = 24+00.00$
 $EL = 1,049.35'$
 $VC = 350'$
 $K = 89$
 $DS = 50 MPH$

$PI = 26+75.00$
 $EL = 1,036.83'$
 $VC = 150'$
 $K = 109$
 $DS = 50 MPH$

END GRADE
 -Y11- POT Sta. 28+00.00
 EL. 1,032.86'

SEE SHEET 32 FOR -Y11-

-Y11- STA. 23+00.00 TO STA. 28+00.00

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USER: dmoran

5/28/2024

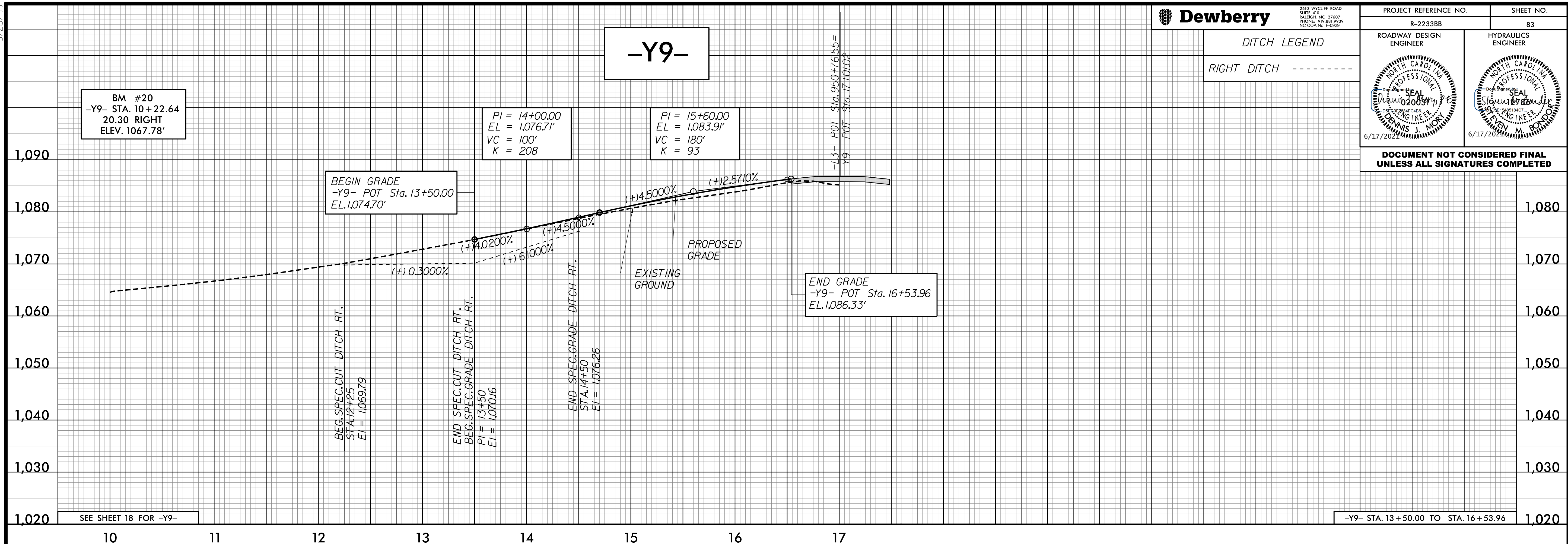
Dewberry
2610 WYCLIFF ROAD
 SUITE 410
 RALEIGH, NC 27607
 PHONE: 919.881.9299
 NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB	SHEET NO. 83
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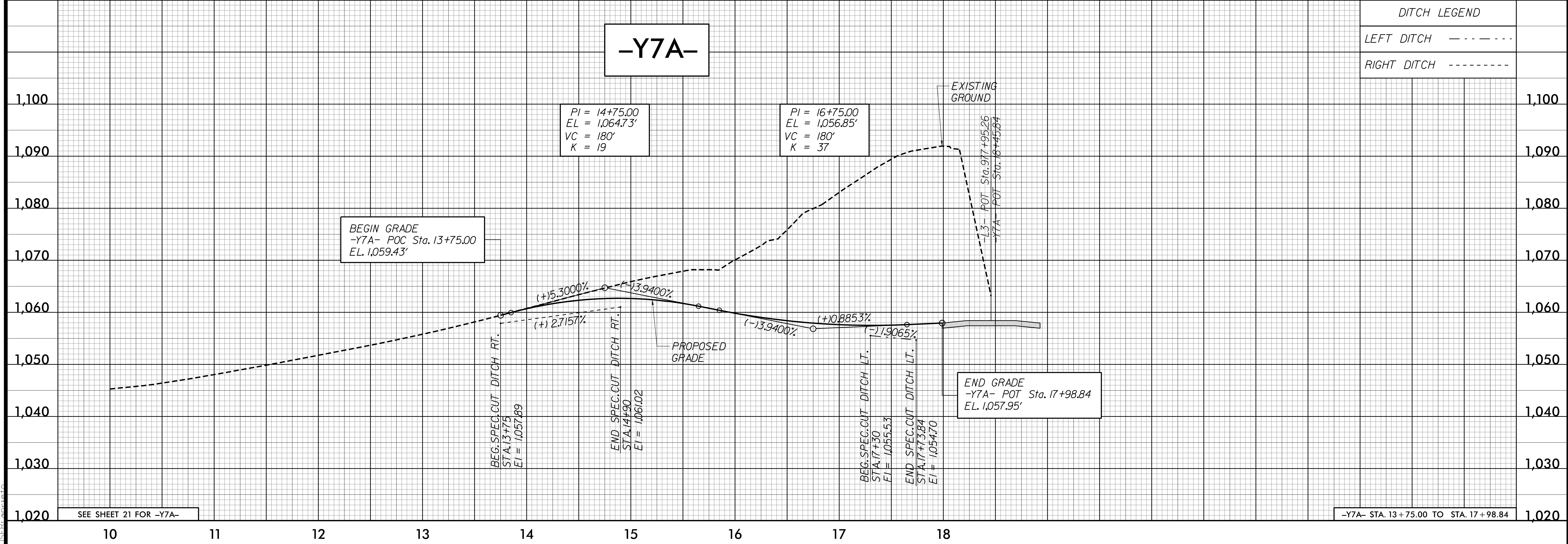
DITCH LEGEND
 RIGHT DITCH - - - - -

ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
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4/24/2020 4:50:00 PM PFL83.DGN



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

5/28/2024



2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9939
NC COA No. F-09291

PROJECT REFERENCE NO. R-2233BB SHEET NO. 84

ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER

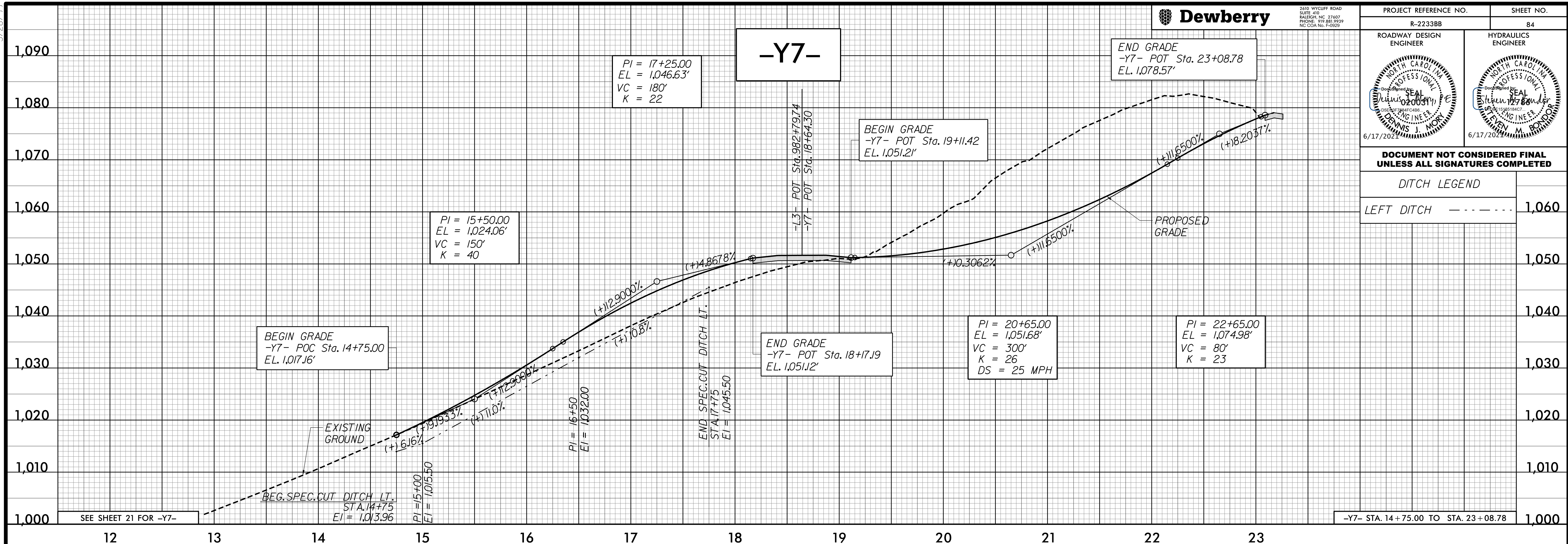
6/17/2024

6/17/2024

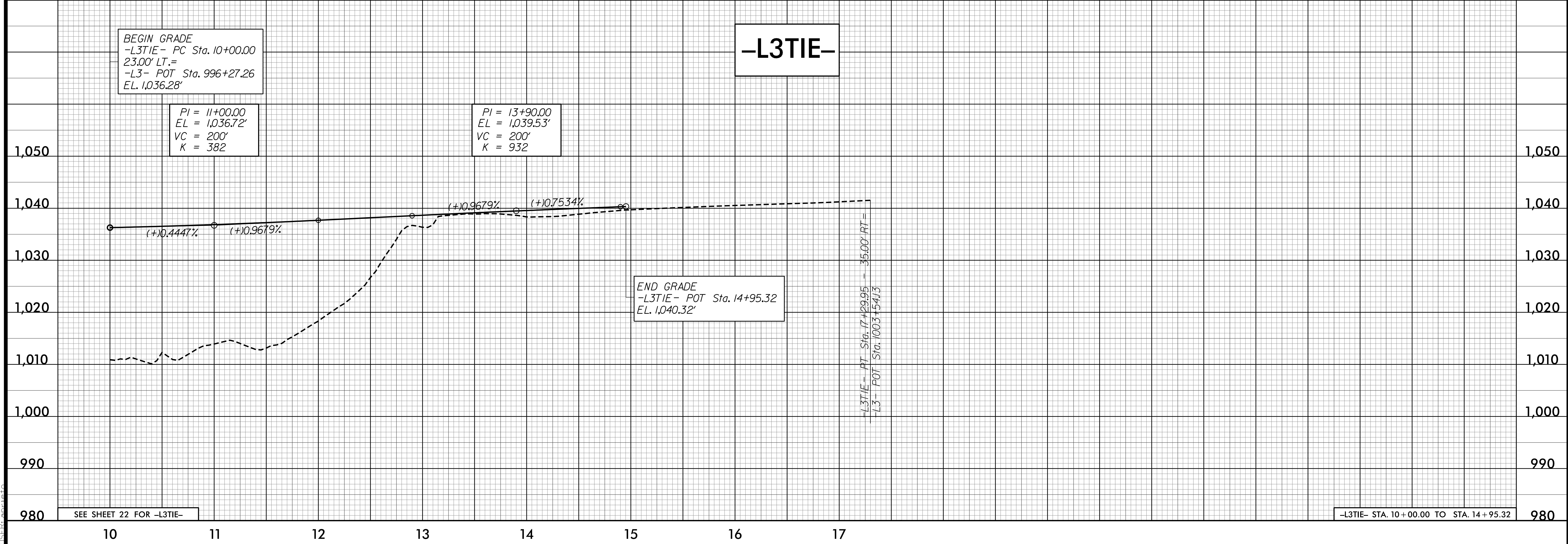
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DITCH LEGEND

LEFT DITCH	-----	1,060
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4/24/2020 4:50:07 PM PFL_B4.DGN



5/28/99

ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER

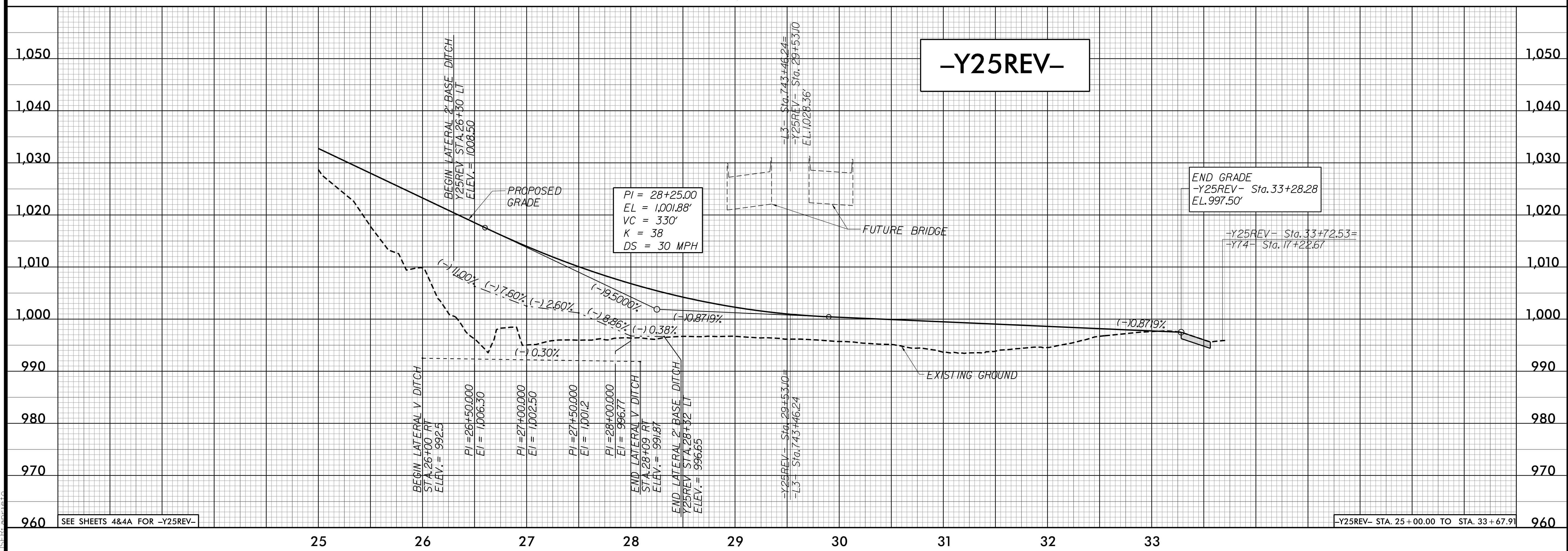
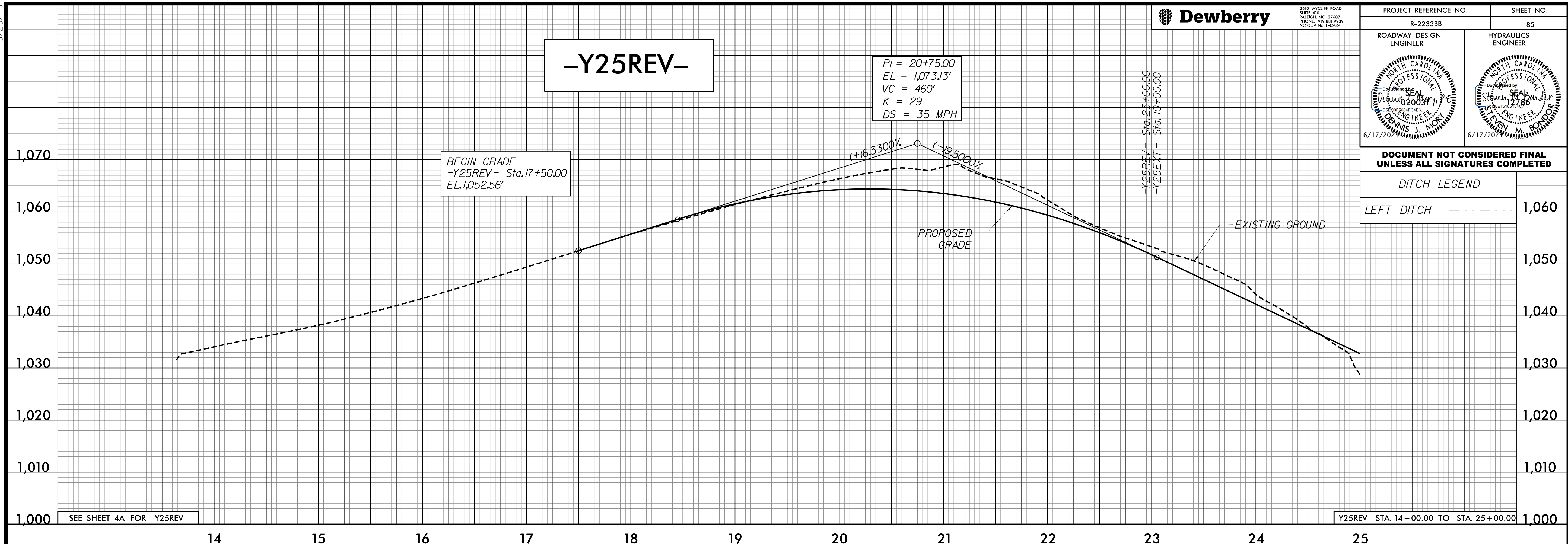
6/17/2024

6/17/2024

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

DITCH LEGEND

LEFT DITCH	-----	1,060
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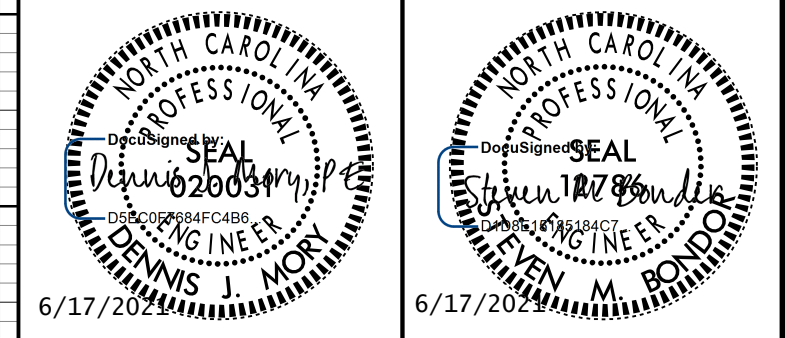
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Dewberry

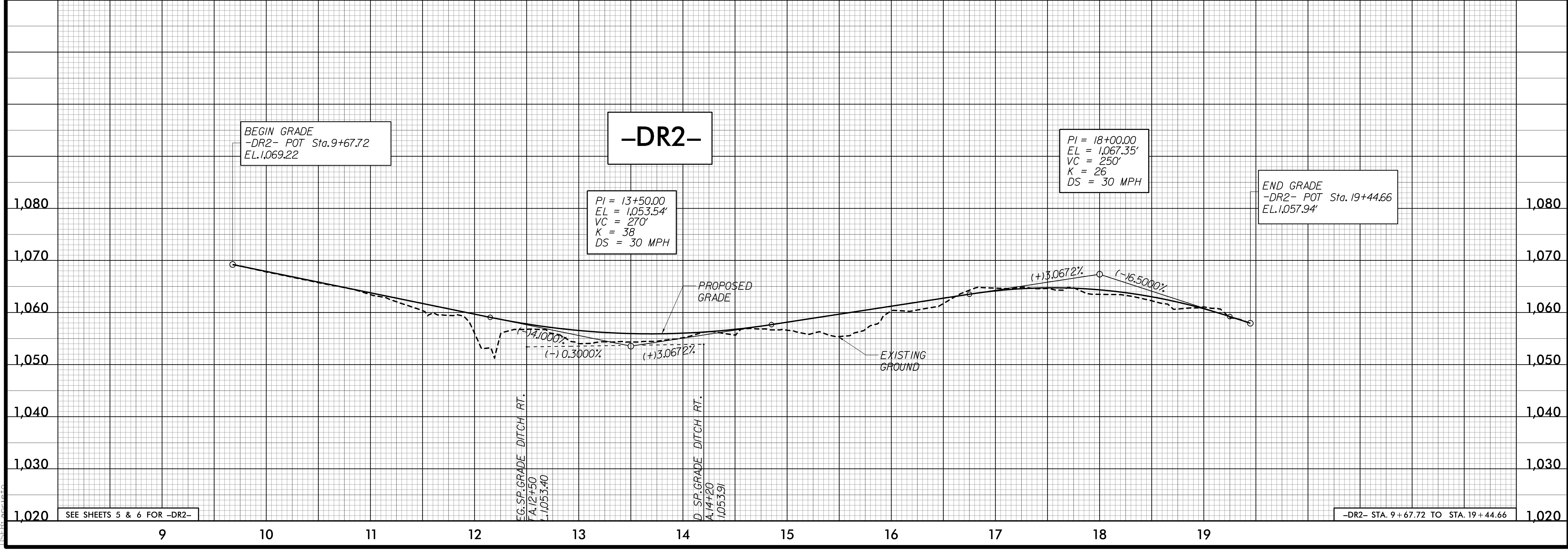
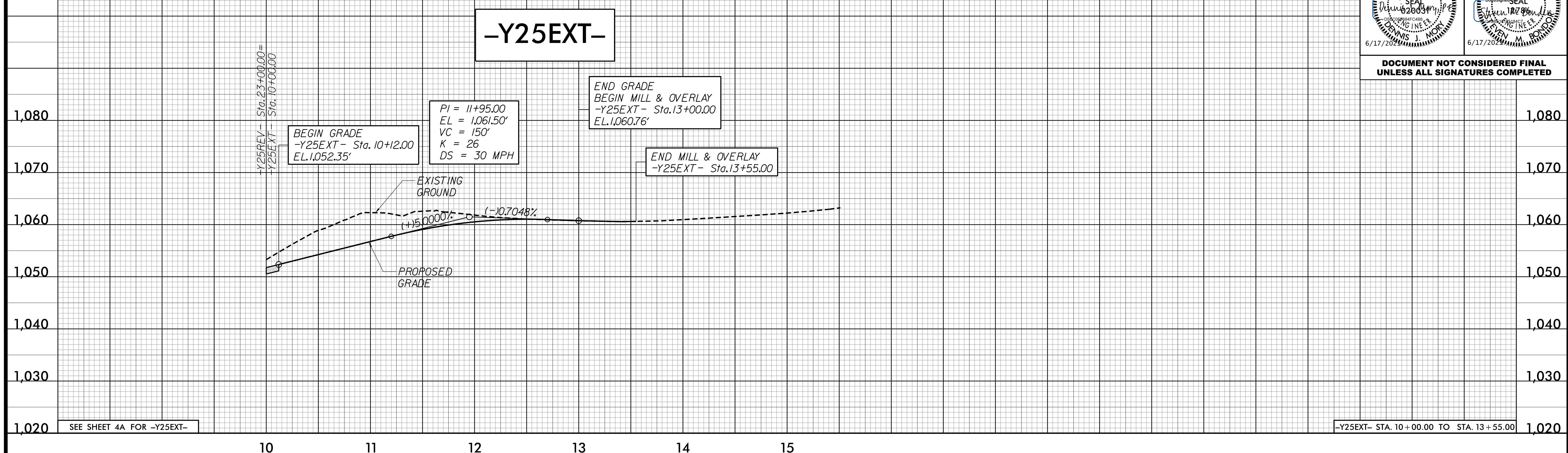
2610 WYCLIFF ROAD
SUITE 410
RALEIGH, NC 27607
PHONE: 919.881.9299
NC COA No. F-09251

PROJECT REFERENCE NO. R-2233BB	SHEET NO. 86
ROADWAY DESIGN ENGINEER Dennis J. Moran	HYDRAULICS ENGINEER Allen M. Bond

6/17/2024



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