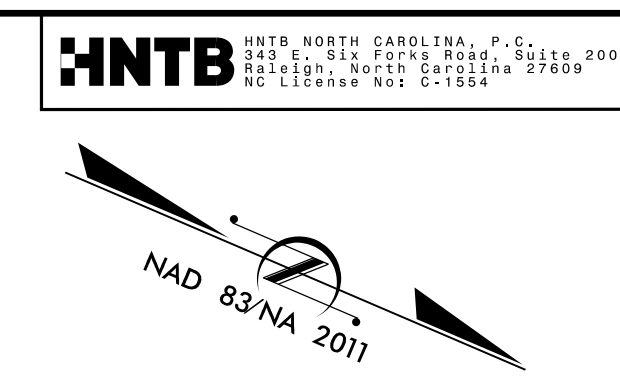


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7/19/2017

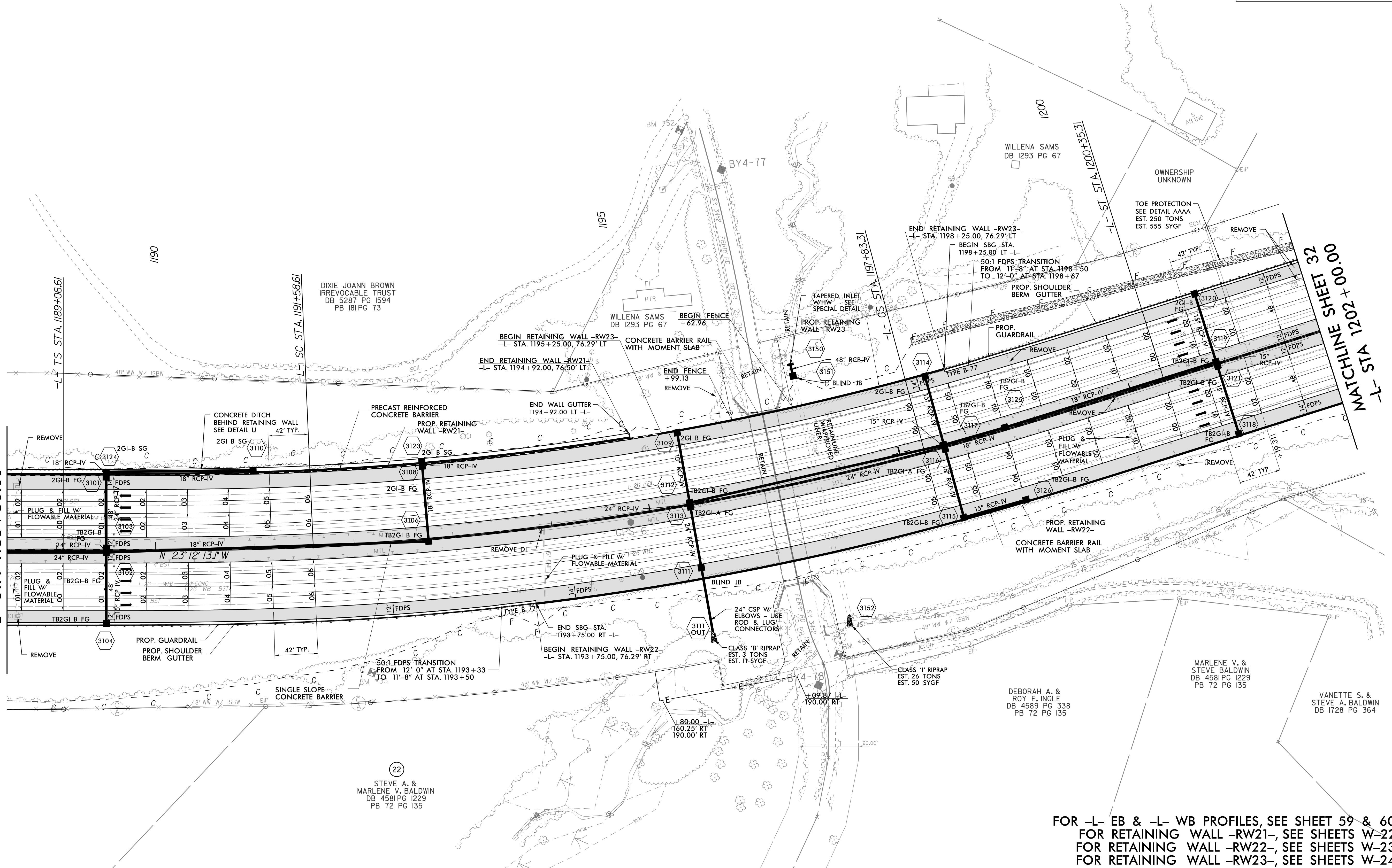


PROJECT REFERENCE NO. 1-4700		SHEET NO. 31	
RW SHEET NO. 1-4700B-41		ROADWAY DESIGN ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
Marc Whittore 5/16/2019		John Blawie 5/16/2019	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

REVISIONS

MATCHLINE SHEET 30
-L- STA 1188 + 50.00

MATCHLINE SHEET 32
-L- STA 1202 + 00.00



15 MAY 2019 12:20
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22
STEVE A. & MARLENE V. BALDWIN
DB 4581 PG 1229
PB 72 PG 135

DEBORAH A. & ROY E. INGLE
DB 4589 PG 338
PB 72 PG 135

MARLENE V. & STEVE BALDWIN
DB 4581 PG 1229
PB 72 PG 135

VANETTE S. & STEVE A. BALDWIN
DB 1728 PG 364

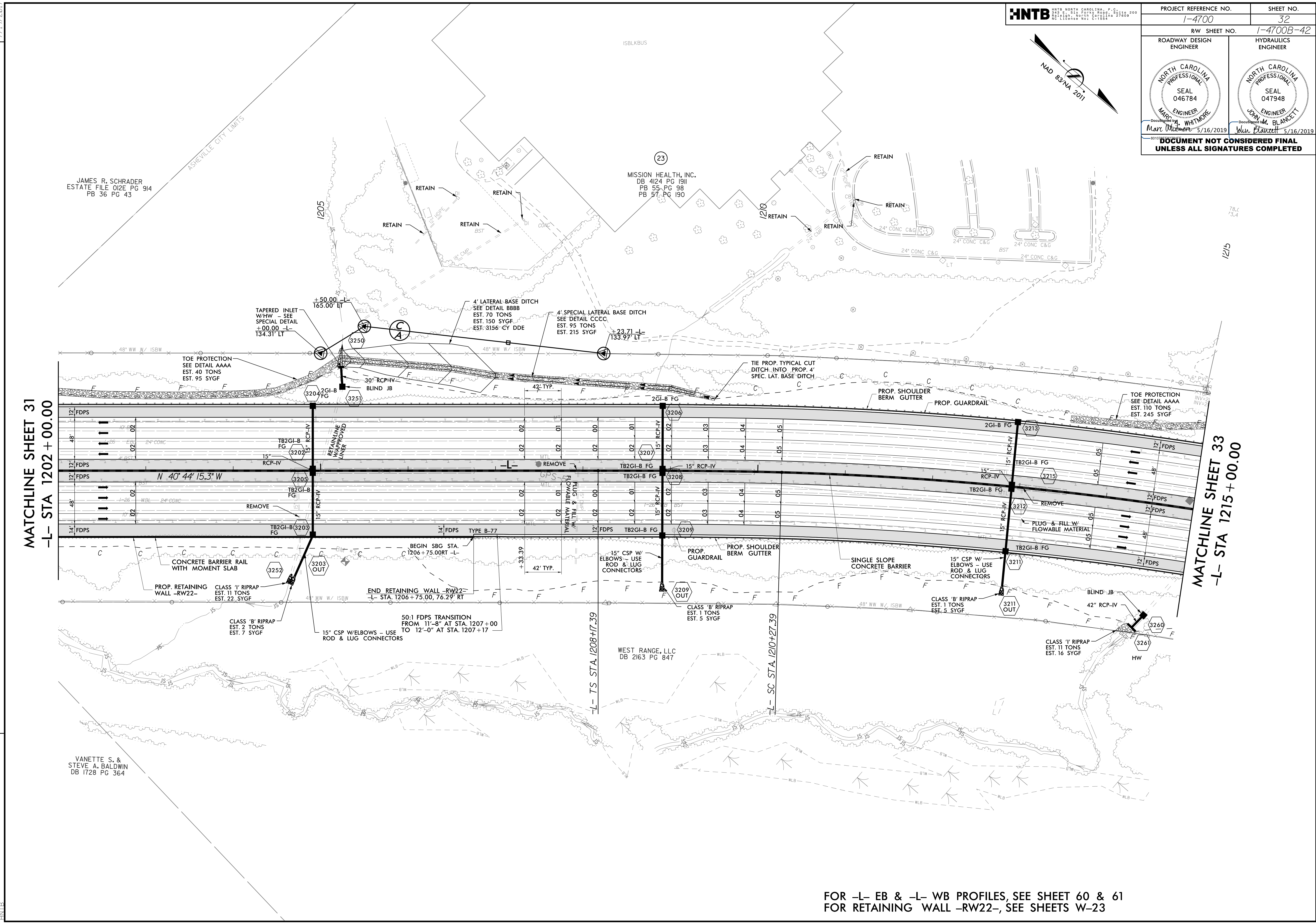
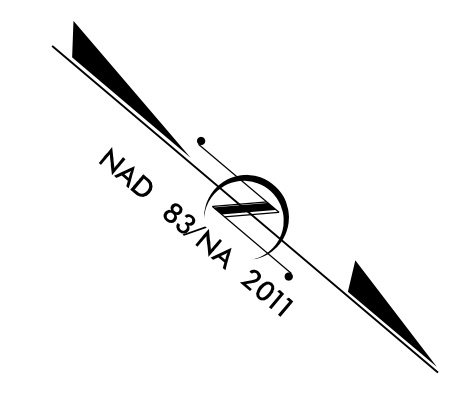
FOR -L- EB & -L- WB PROFILES, SEE SHEET 59 & 60
FOR RETAINING WALL -RW21-, SEE SHEETS W-22
FOR RETAINING WALL -RW22-, SEE SHEETS W-23
FOR RETAINING WALL -RW23-, SEE SHEETS W-24

7/19/2017

HNTB HNTB NORTH CAROLINA, P.C.
 285 W. 521 PARRS ROAD, SUITE 300
 RALEIGH, NORTH CAROLINA 27609
 NC LICENSE NO. 2-13554

PROJECT REFERENCE NO. 1-4700	SHEET NO. 32
RW SHEET NO. 1-4700B-42	
ROADWAY DESIGN ENGINEER MARCO WHITMORE	HYDRAULICS ENGINEER JOHN M. BLANCKETT
SEAL 046784 MARCO WHITMORE 5/16/2019	SEAL 047948 JOHN M. BLANCKETT 5/16/2019

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UNLESS ALL SIGNATURES COMPLETED**



MATCHLINE SHEET 31
 -L- STA 1202 + 00.00

MATCHLINE SHEET 33
 -L- STA 1215 + 00.00

REVISIONS

JAMES R. SCHRADER
 ESTATE FILE 012E PG 914
 PB 36 PG 43

MISSION HEALTH, INC.
 DB 4124 PG 1911
 PB 55 PG 98
 PB 57 PG 190

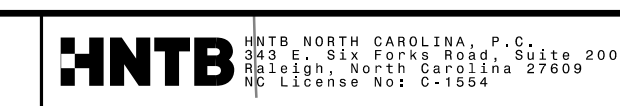
VANETTE S. &
 STEVE A. BALDWIN
 DB 1728 PG 364

WEST RANGE, LLC
 DB 2163 PG 847

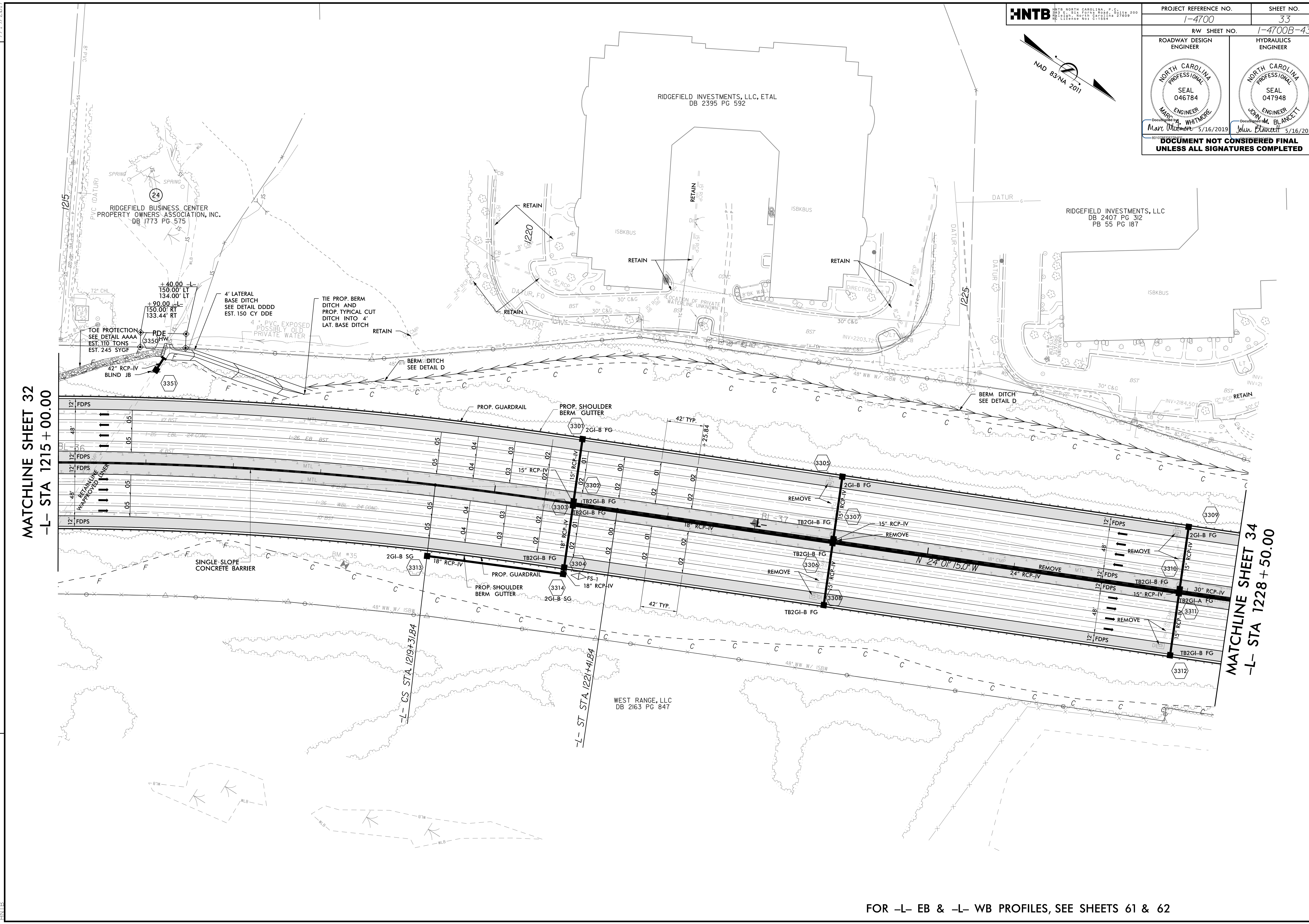
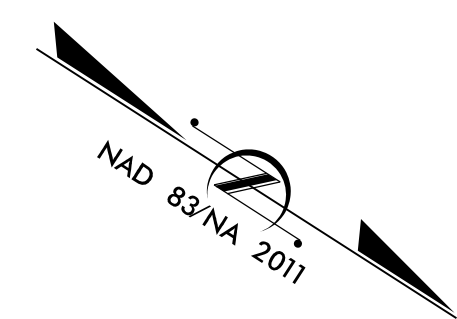
FOR -L- EB & -L- WB PROFILES, SEE SHEET 60 & 61
 FOR RETAINING WALL -RW22-, SEE SHEETS W-23

15-MAY-2019 12:20
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7/19/2017



PROJECT REFERENCE NO. 1-4700		SHEET NO. 33	
RW SHEET NO. 1-4700B-43		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



MATCHLINE SHEET 32
 -L- STA 1215 + 00.00

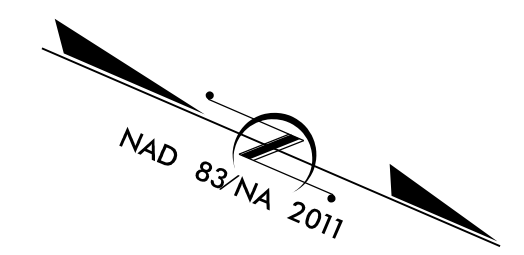
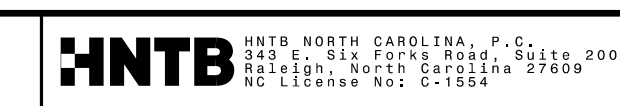
MATCHLINE SHEET 34
 -L- STA 1228 + 50.00

REVISIONS

15-MAY-2019 12:20
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 HNTB

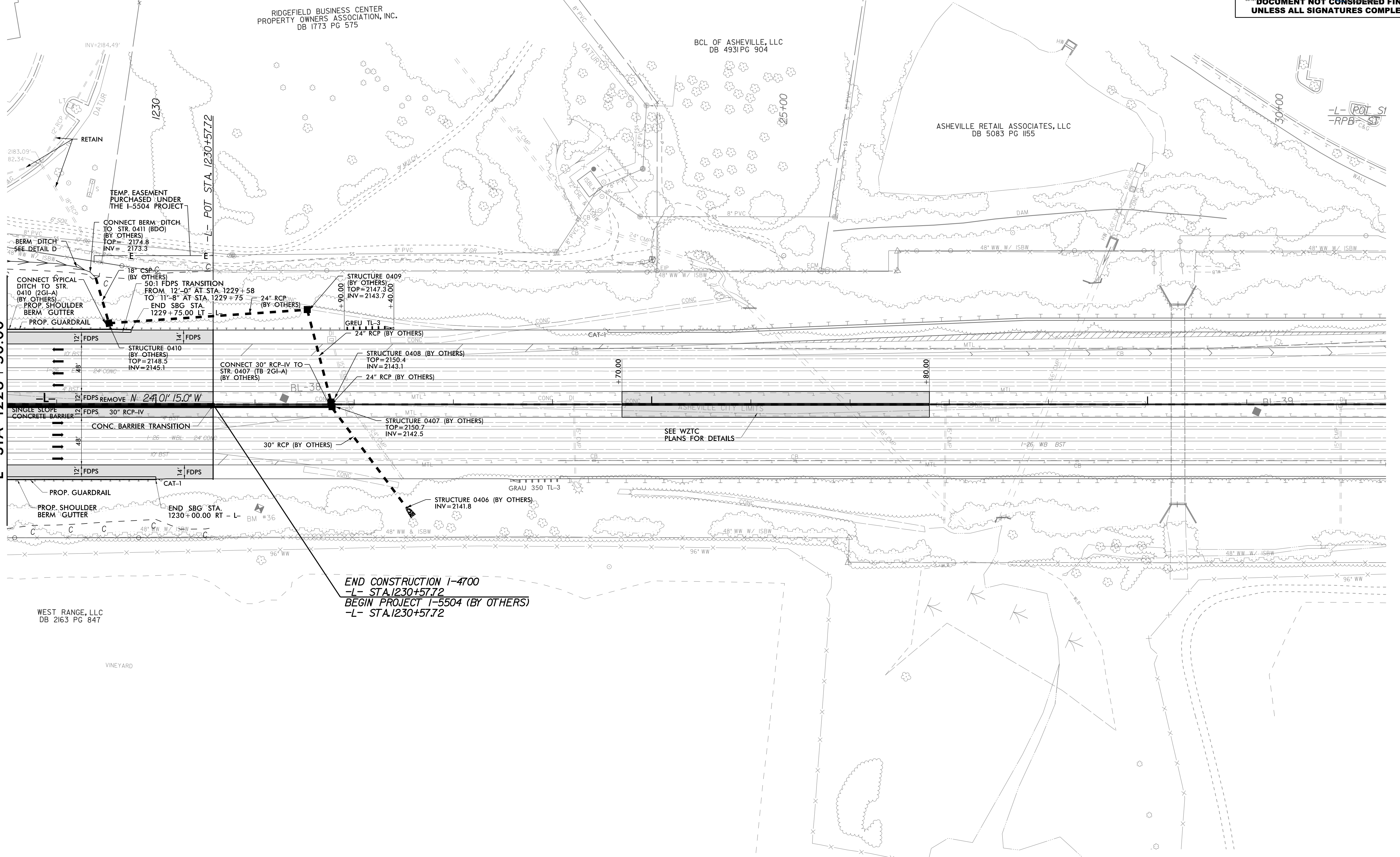
FOR -L- EB & -L- WB PROFILES, SEE SHEETS 61 & 62

7/19/2017



PROJECT REFERENCE NO. 1-4700	SHEET NO. 34
RW SHEET NO. 1-4700B-44	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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MATCHLINE SHEET 33
-L- STA 1228+50.00



REVISIONS

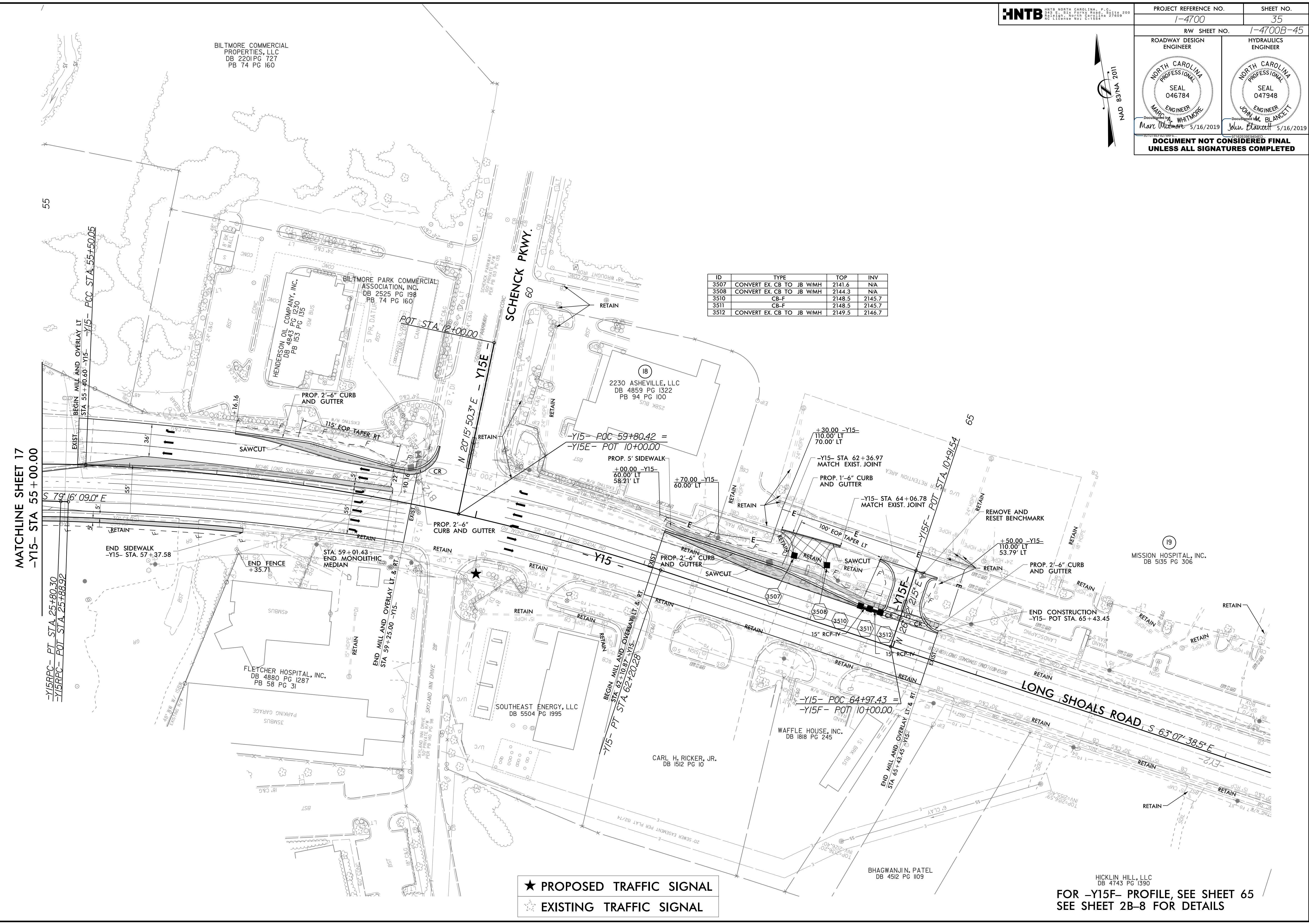
END CONSTRUCTION 1-4700
-L- STA. 1230+57.72
BEGIN PROJECT 1-5504 (BY OTHERS)
-L- STA. 1230+57.72

FOR -L- EB & -L- WB PROFILES, SEE SHEETS 62

15-MAY-2019 12:20
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REVISIONS



ID	TYPE	TOP	INV
3507	CONVERT EX. CB TO JB WMH	2141.6	NA
3508	CONVERT EX. CB TO JB WMH	2144.3	NA
3510	CB-F	2148.5	2145.7
3511	CB-F	2148.5	2145.7
3512	CONVERT EX. CB TO JB WMH	2149.5	2146.7

MATCHLINE SHEET 17
-Y15- STA 55+00.00

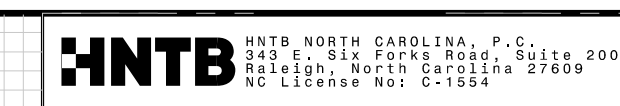
-Y15RCP- PT STA 25+80.30
-Y15RCP- POT STA 25+88.92

★ PROPOSED TRAFFIC SIGNAL
☆ EXISTING TRAFFIC SIGNAL

FOR -Y15F- PROFILE, SEE SHEET 65
SEE SHEET 2B-8 FOR DETAILS

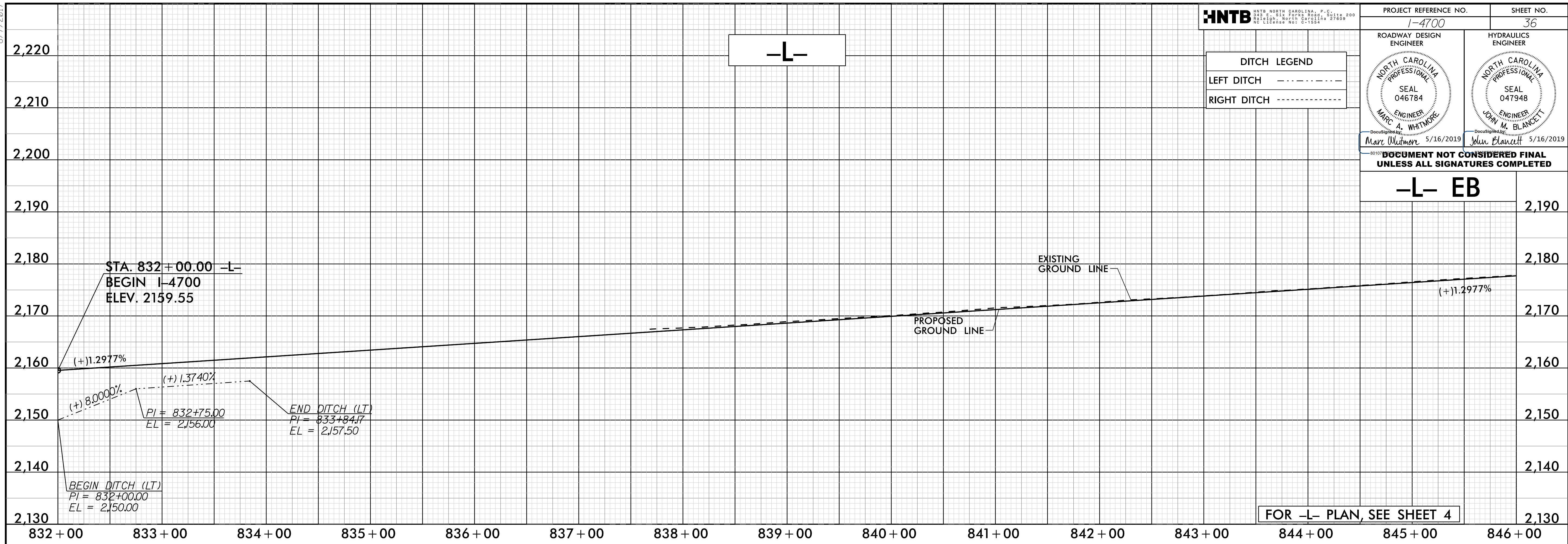
16 MAY 2019 12:20
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8/7/2017



PROJECT REFERENCE NO. 1-4700		SHEET NO. 36
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

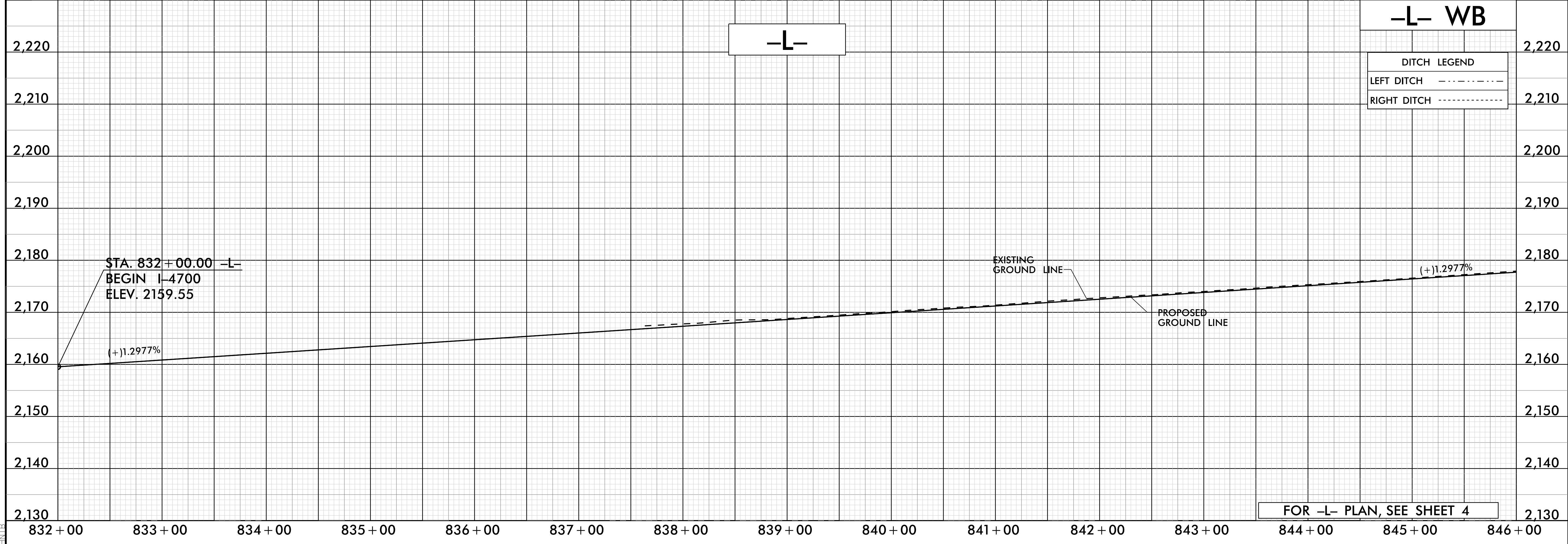
DITCH LEGEND	
LEFT DITCH	-----
RIGHT DITCH	-----



-L- EB

FOR -L- PLAN, SEE SHEET 4

16 MAY 2019 12:21 14700.RDY_PFL_36

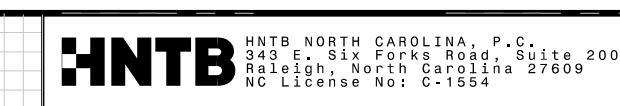


-L- WB

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

FOR -L- PLAN, SEE SHEET 4

8/7/2017



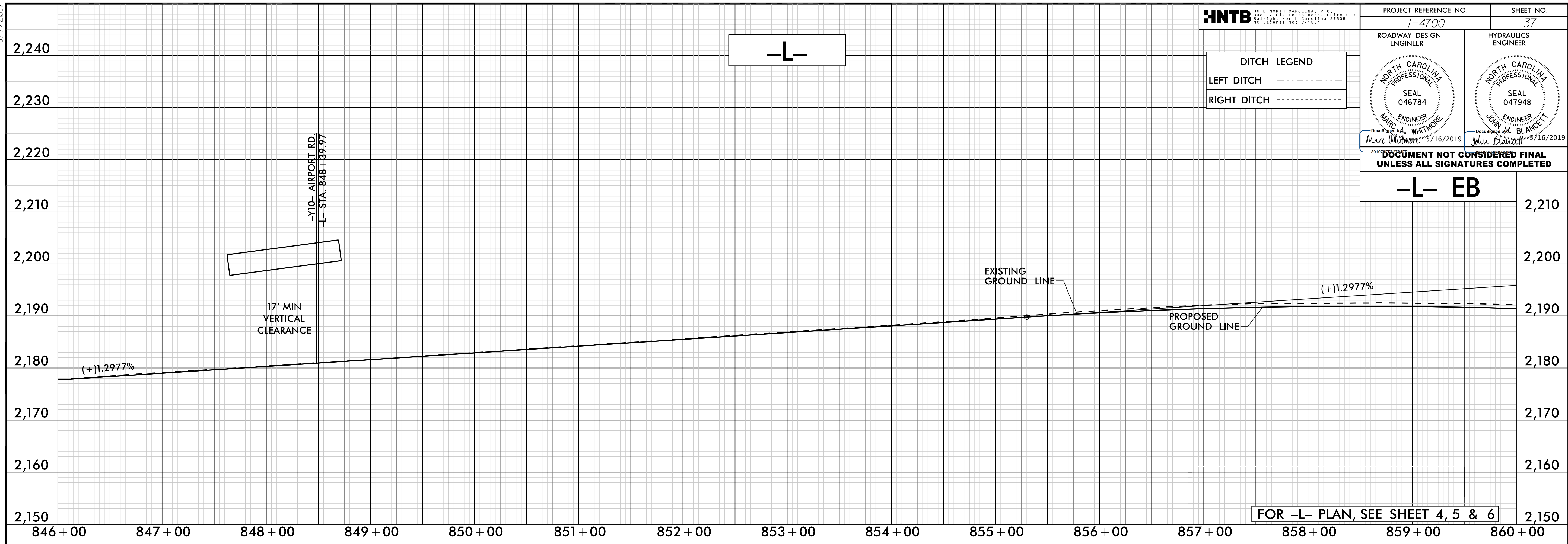
PROJECT REFERENCE NO. 1-4700 SHEET NO. 37

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

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

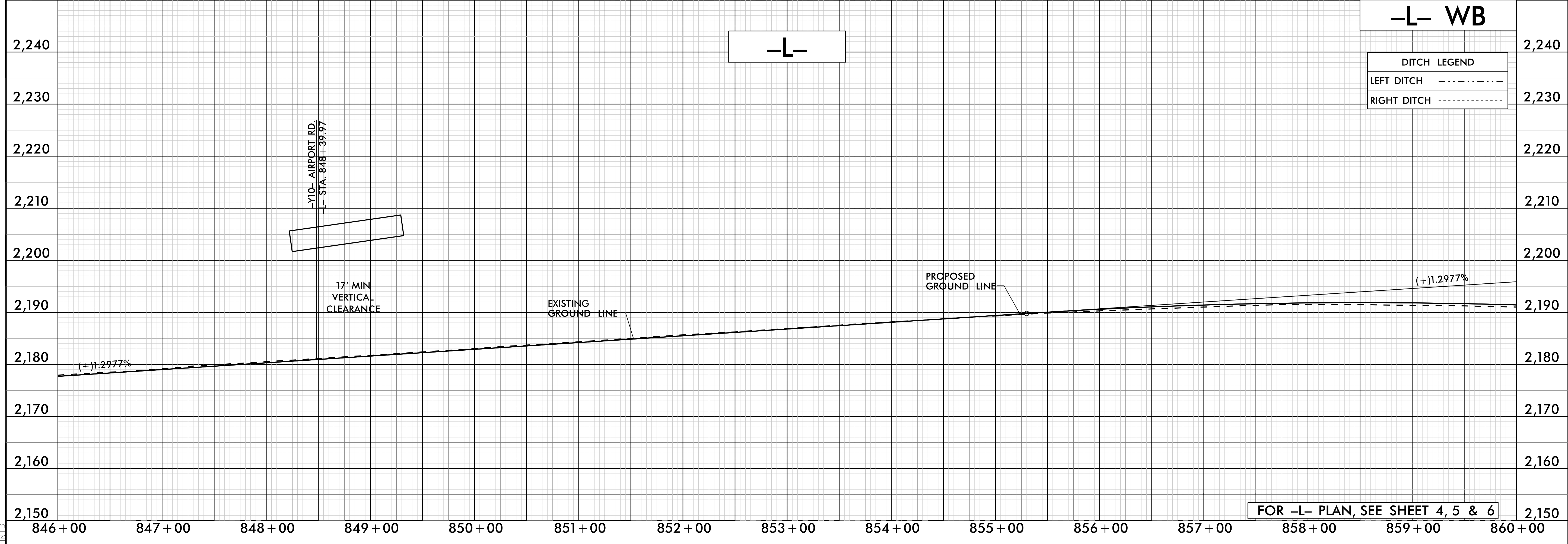
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- EB



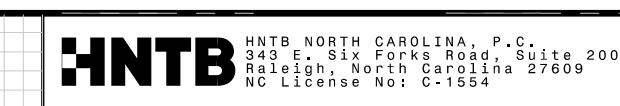
-L- WB

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



15 MAY 2019 12:21 14700.RDY_PFL-37

5/28/19



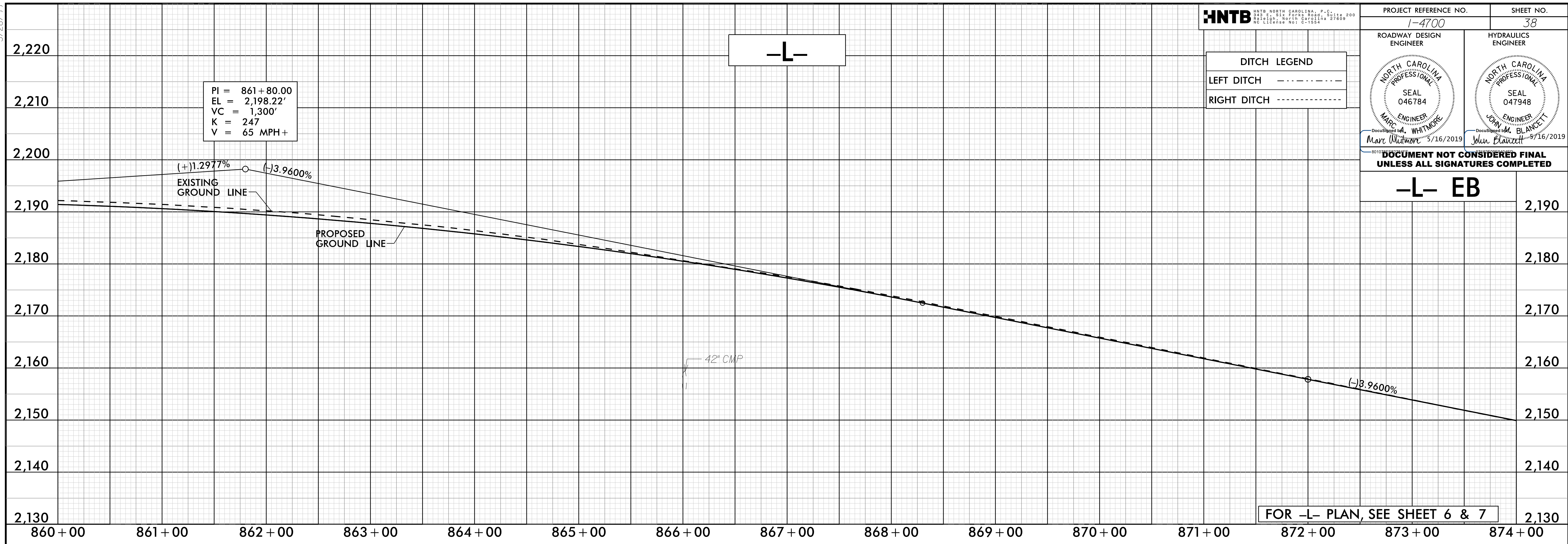
PROJECT REFERENCE NO. 1-4700 SHEET NO. 38

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

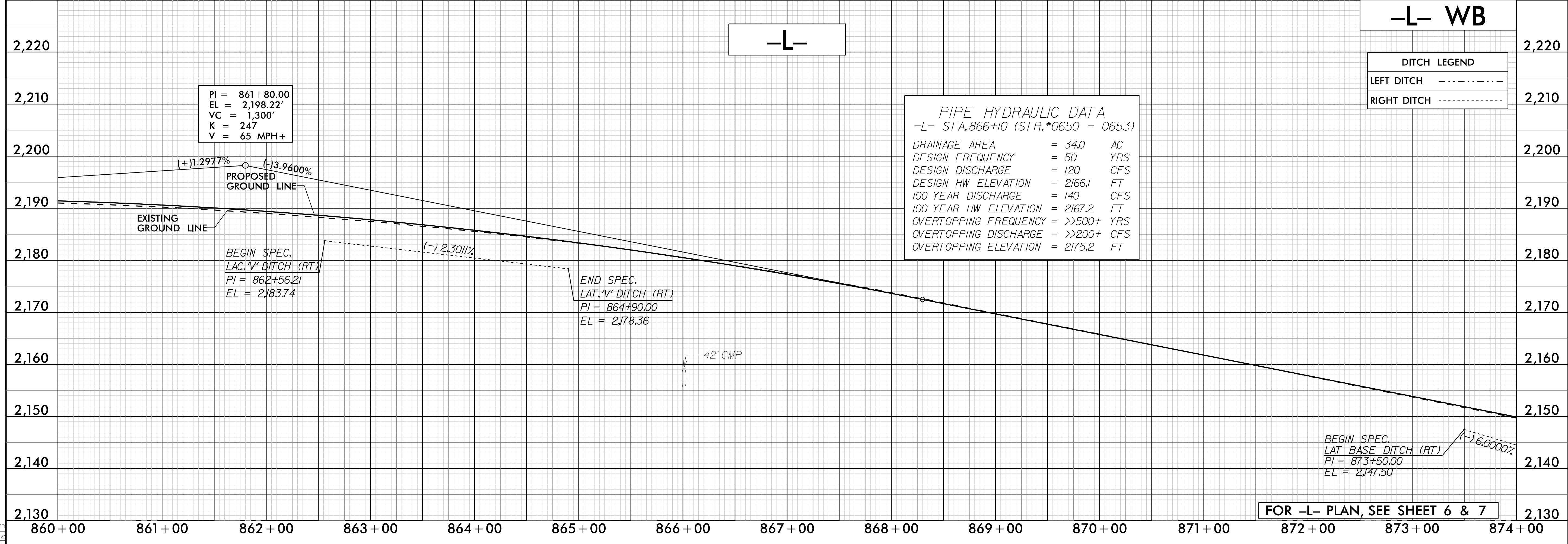
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-L- EB



-L- WB



PIPE HYDRAULIC DATA
-L- STA. 866+10 (STR. #0650 - 0653)

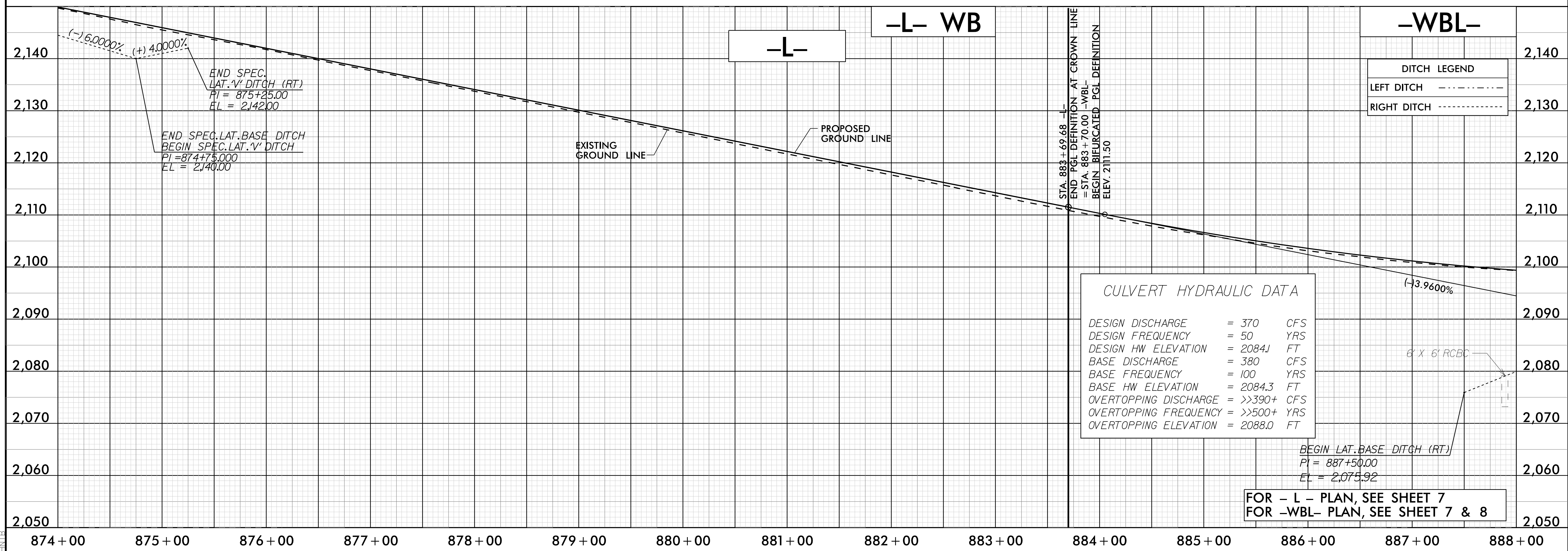
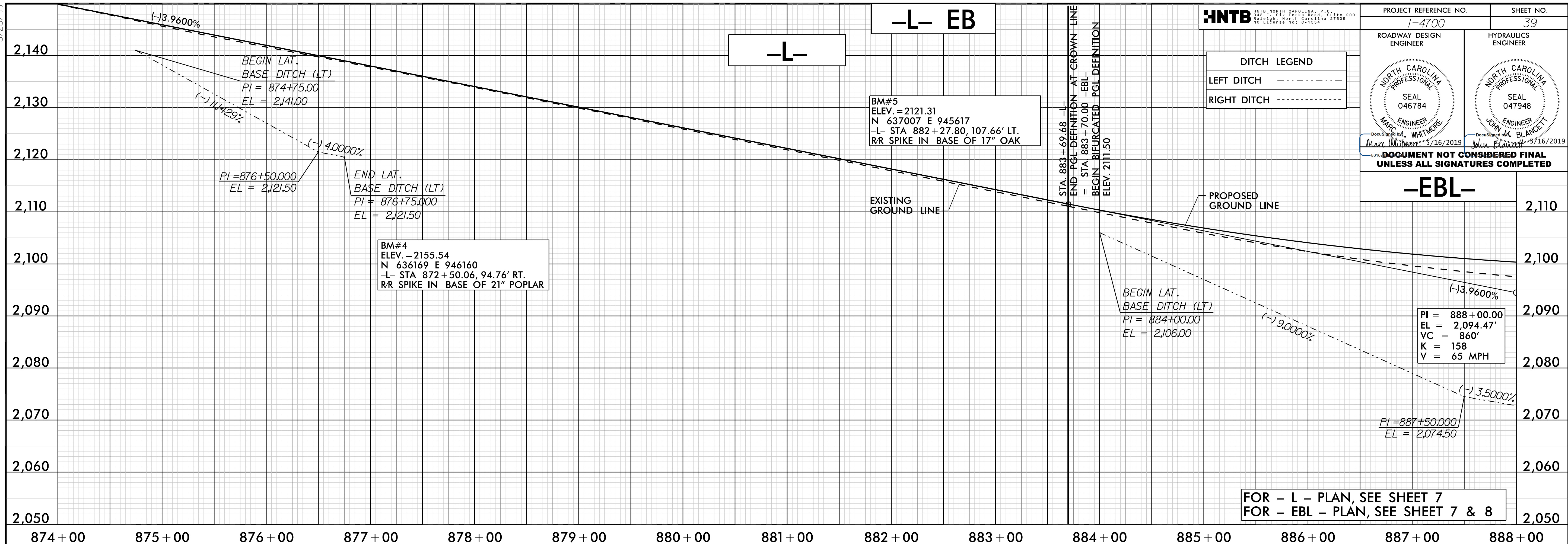
DRAINAGE AREA	= 34.0	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 120	CFS
DESIGN HW ELEVATION	= 2166.1	FT
100 YEAR DISCHARGE	= 140	CFS
100 YEAR HW ELEVATION	= 2167.2	FT
OVERTOPPING FREQUENCY	= >>500+	YRS
OVERTOPPING DISCHARGE	= >>200+	CFS
OVERTOPPING ELEVATION	= 2175.2	FT

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

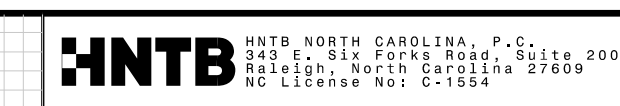
5/28/19 14:00 RDY_PFL_38

5/28/2019

15-MAY-2019 12:21 147000_RDY_PFL_39.dgn



5/28/19



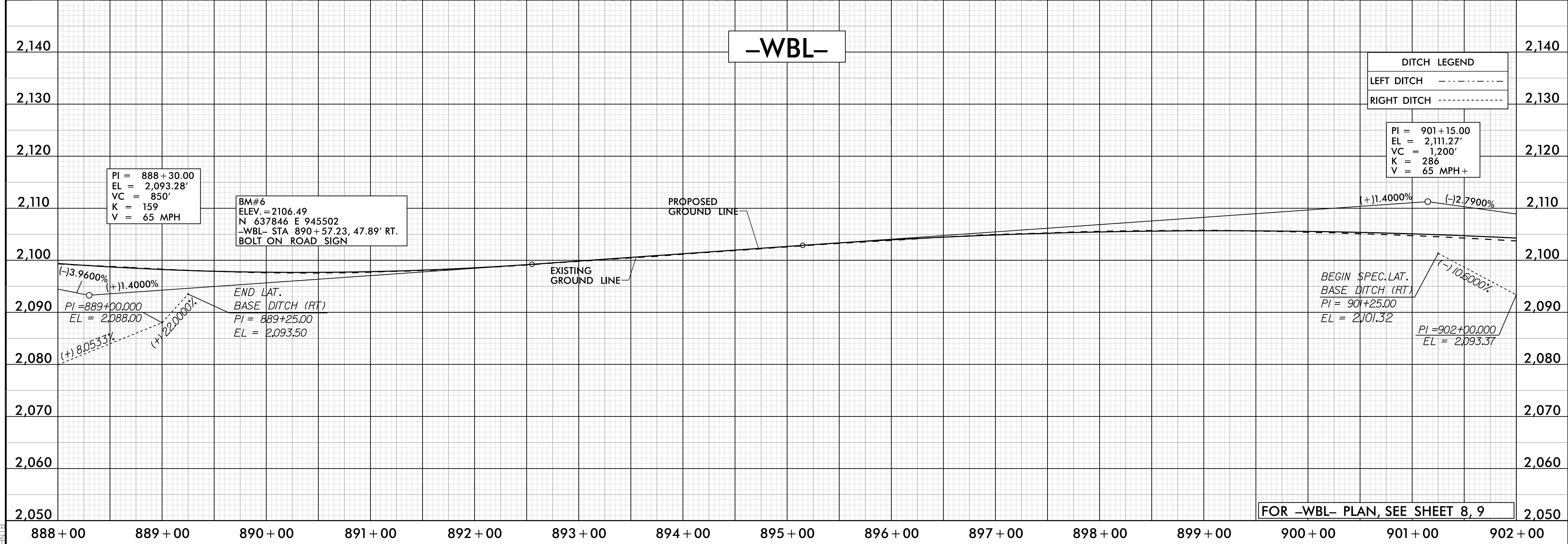
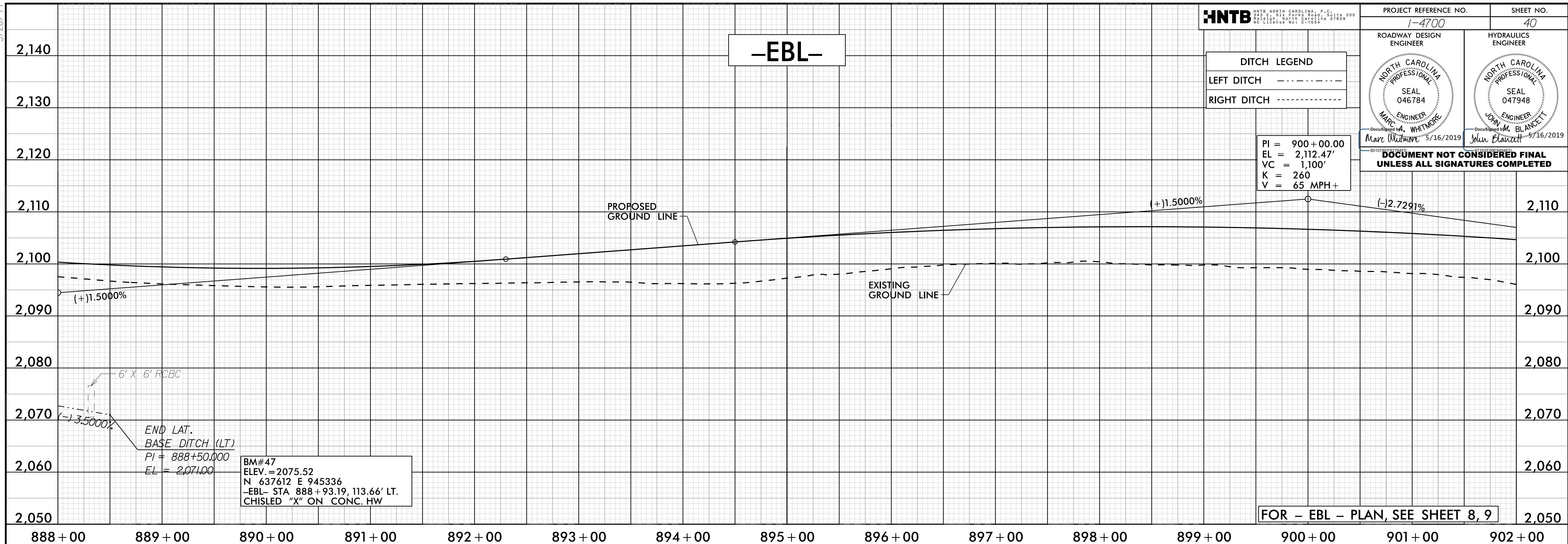
PROJECT REFERENCE NO. 1-4700 SHEET NO. 40

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

ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 046784 MARC A. WHITMORE 5/16/2019	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 047948 JOHN M. BLANCKETT 5/16/2019
---	--

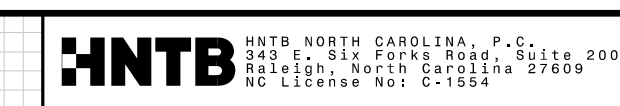
PI = 900+00.00
EL = 2,112.47'
VC = 1,100'
K = 260
V = 65 MPH+

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



5/28/19 14:00 RDY_PFL_40.dgn

5/28/19



PROJECT REFERENCE NO. 1-4700 SHEET NO. 41

ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL
SEAL 046784
MARC WHITMAN
ENGINEER
MARC WHITMAN 5/16/2019

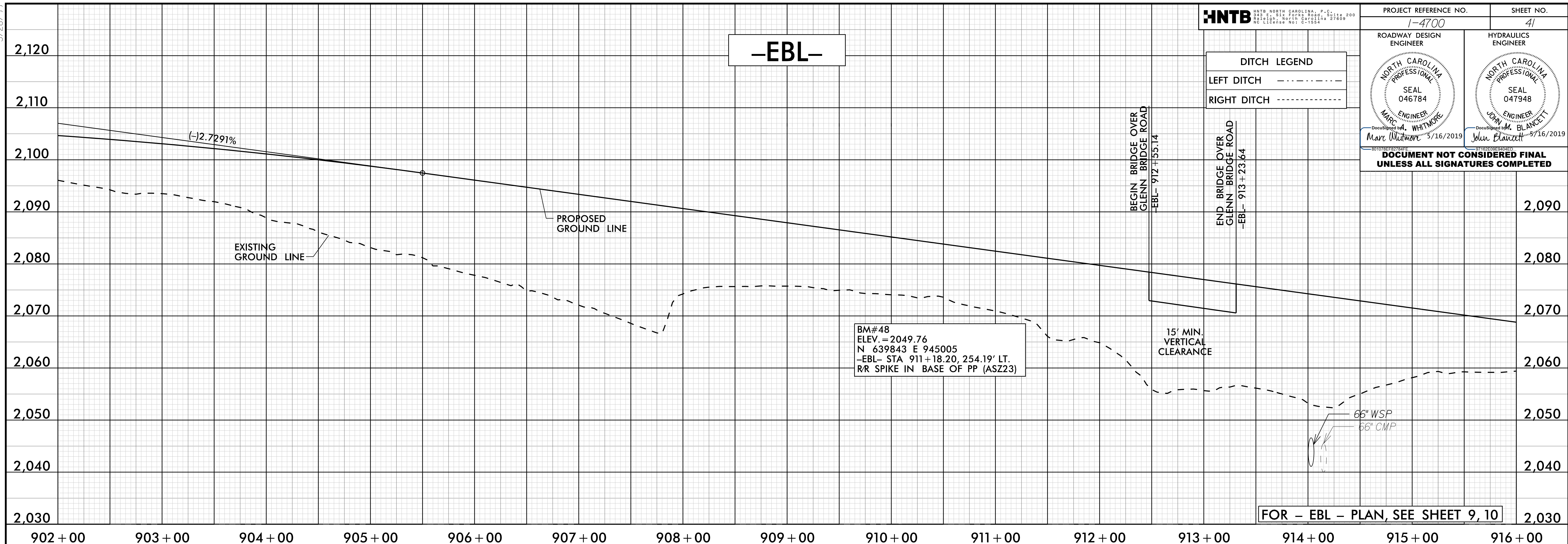
NORTH CAROLINA PROFESSIONAL SEAL
SEAL 047948
JOHN M. BLANCHETT
ENGINEER
JOHN M. BLANCHETT 5/16/2019

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

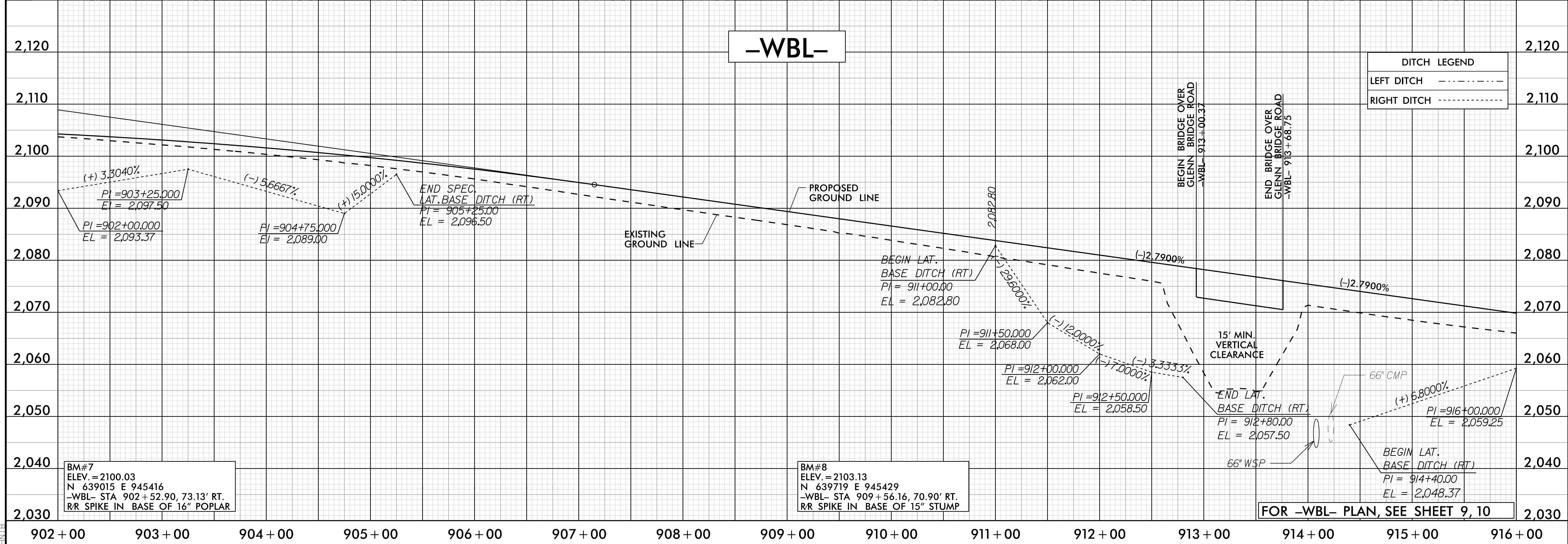
DITCH LEGEND

LEFT DITCH - - - - -

RIGHT DITCH - - - - -



BM#48
ELEV. = 2049.76
N 639843 E 945005
-EBL- STA 911+18.20, 254.19' LT.
RR SPIKE IN BASE OF PP (ASZ23)



BM#7
ELEV. = 2100.03
N 639015 E 945416
-WBL- STA 902+52.90, 73.13' RT.
R/R SPIKE IN BASE OF 16" POPLAR

BM#8
ELEV. = 2103.13
N 639719 E 945429
-WBL- STA 909+56.16, 70.90' RT.
R/R SPIKE IN BASE OF 15" STUMP

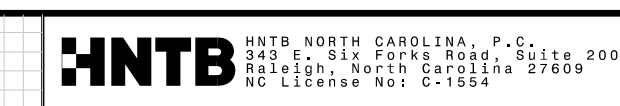
DITCH LEGEND

LEFT DITCH - - - - -

RIGHT DITCH - - - - -

5/28/19 12:21 14700_R0Y_PFL_41.dgn

5/28/19



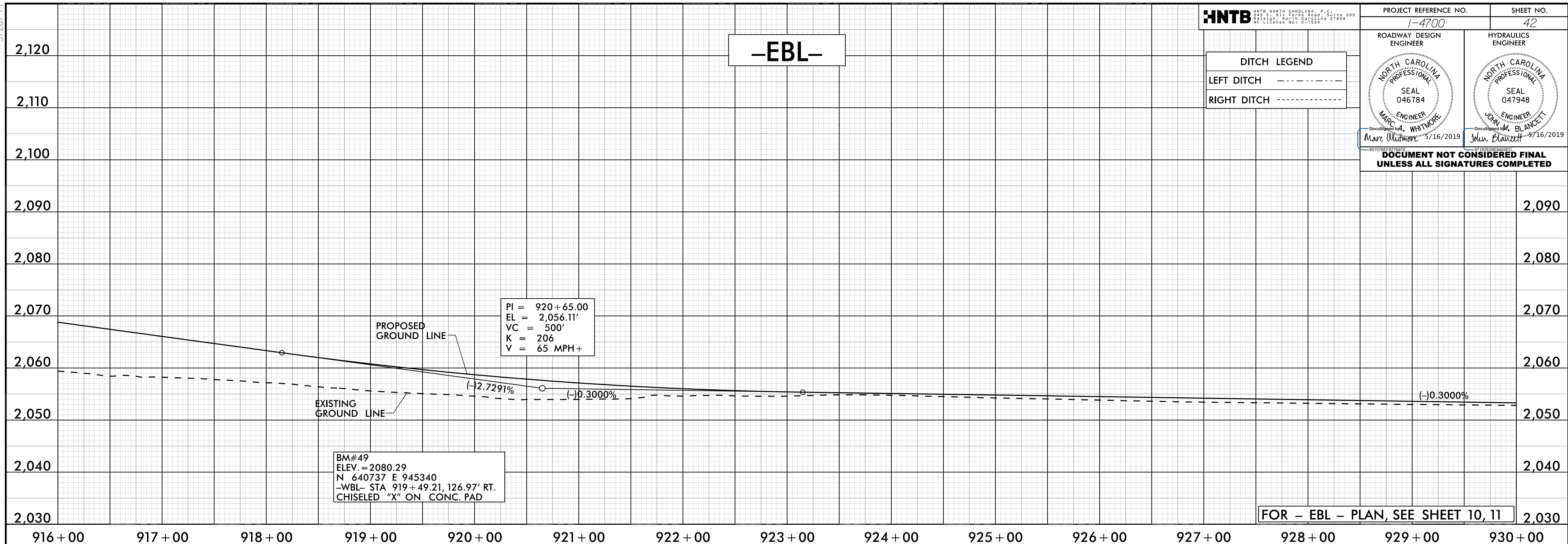
PROJECT REFERENCE NO. 1-4700 SHEET NO. 42

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

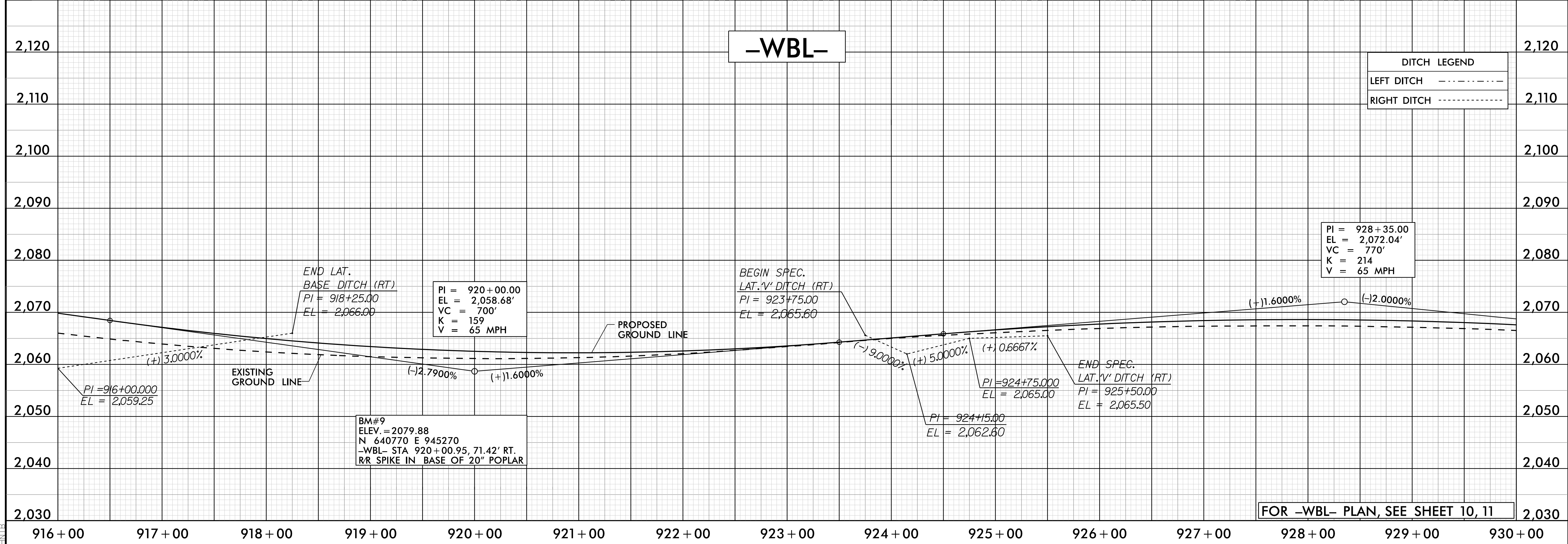
ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 046784, M. A. WHITMORE, 5/16/2019

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 047948, JOHN M. BLANCETT, 5/16/2019

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

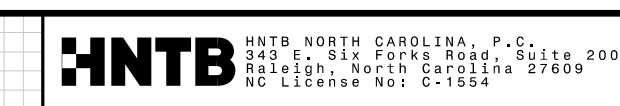


16-MAY-2019 12:21 14700-RDY_PFL_42.dgn



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

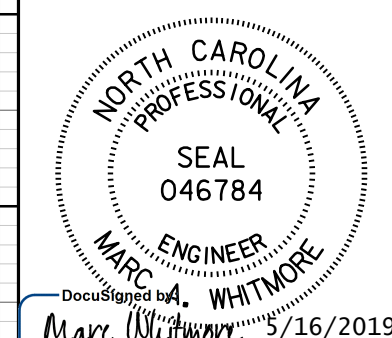
5/28/19



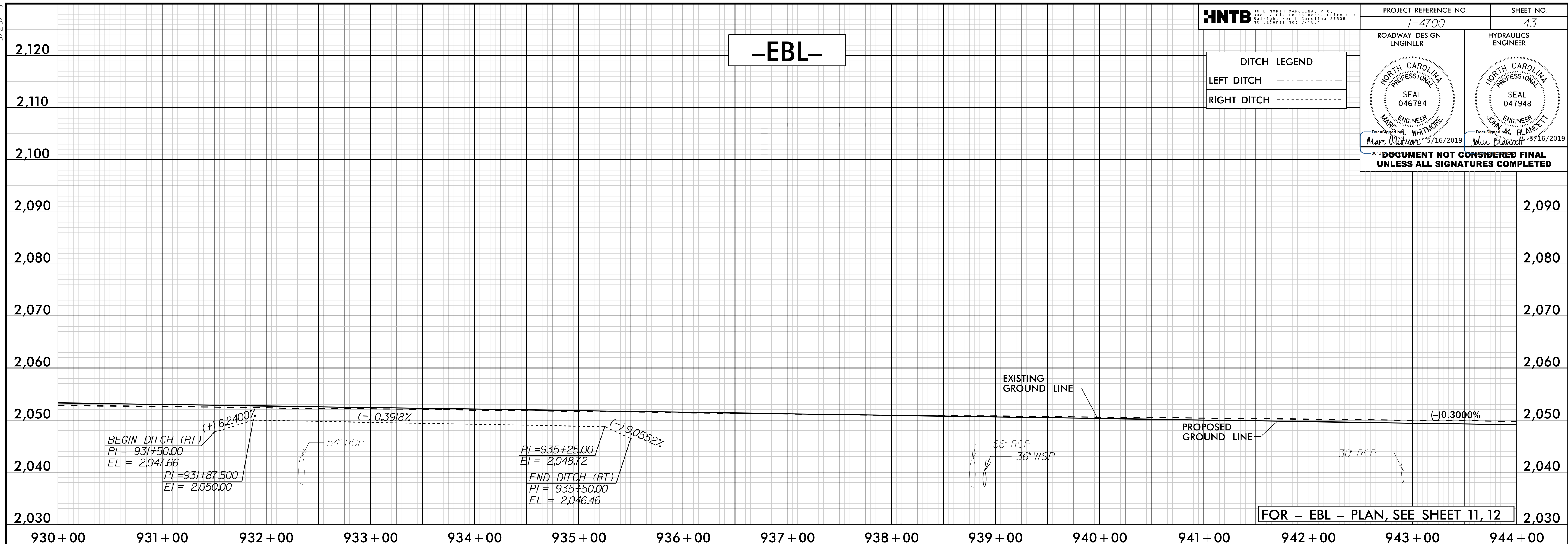
DITCH LEGEND

LEFT DITCH - - - - -

RIGHT DITCH - - - - -



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



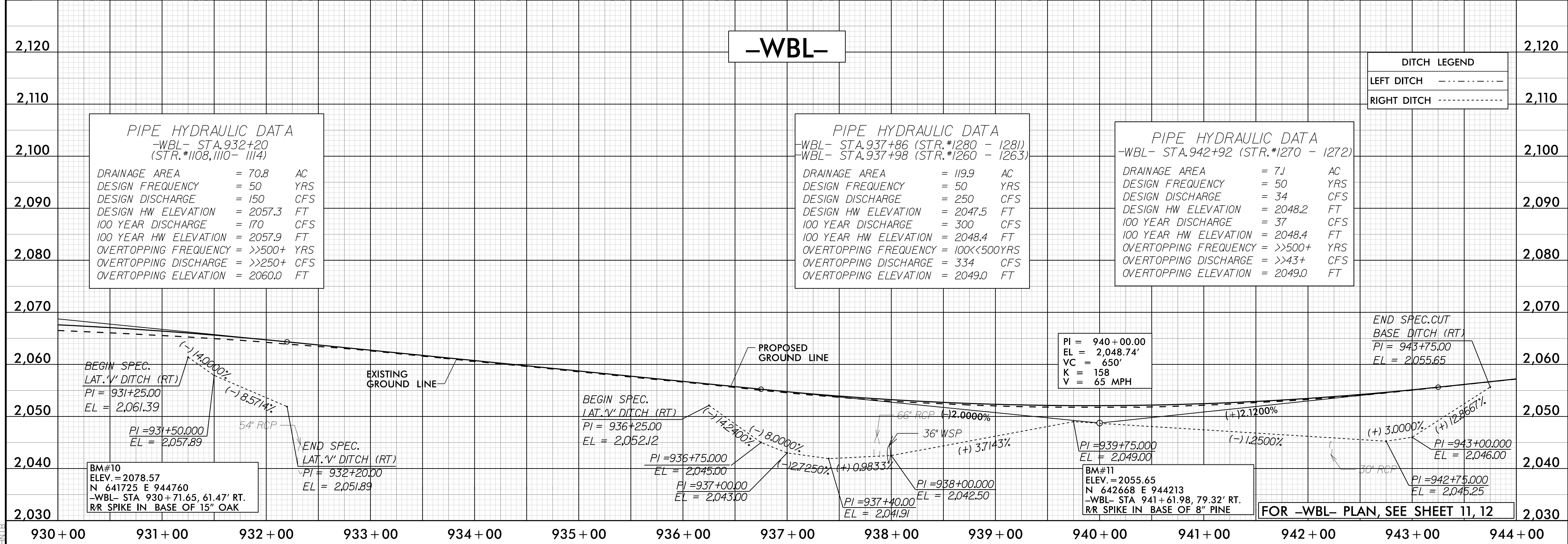
FOR - EBL - PLAN, SEE SHEET 11, 12

-WBL-

DITCH LEGEND

LEFT DITCH - - - - -

RIGHT DITCH - - - - -



PIPE HYDRAULIC DATA
-WBL- STA. 932+20 (STR. #1108, 1110 - 1114)

DRAINAGE AREA	= 70.8	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 150	CFS
DESIGN HW ELEVATION	= 2057.3	FT
100 YEAR DISCHARGE	= 170	CFS
100 YEAR HW ELEVATION	= 2057.9	FT
OVERTOPPING FREQUENCY	= >>500+	YRS
OVERTOPPING DISCHARGE	= >>250+	CFS
OVERTOPPING ELEVATION	= 2060.0	FT

PIPE HYDRAULIC DATA
-WBL- STA. 937+86 (STR. #1280 - 1281)
-WBL- STA. 937+98 (STR. #1260 - 1263)

DRAINAGE AREA	= 119.9	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 250	CFS
DESIGN HW ELEVATION	= 2047.5	FT
100 YEAR DISCHARGE	= 300	CFS
100 YEAR HW ELEVATION	= 2048.4	FT
OVERTOPPING FREQUENCY	= 100<<500	YRS
OVERTOPPING DISCHARGE	= 334	CFS
OVERTOPPING ELEVATION	= 2049.0	FT

PIPE HYDRAULIC DATA
-WBL- STA. 942+92 (STR. #1270 - 1272)

DRAINAGE AREA	= 71	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 34	CFS
DESIGN HW ELEVATION	= 2048.2	FT
100 YEAR DISCHARGE	= 37	CFS
100 YEAR HW ELEVATION	= 2048.4	FT
OVERTOPPING FREQUENCY	= >>500+	YRS
OVERTOPPING DISCHARGE	= >>43+	CFS
OVERTOPPING ELEVATION	= 2049.0	FT

BM#10
ELEV. = 2078.57
N 641725 E 944760
-WBL- STA 930+71.65, 61.47' RT.
RR SPIKE IN BASE OF 15" OAK

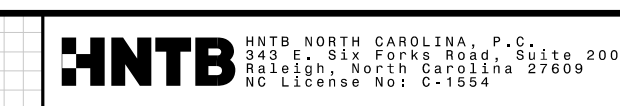
PI = 940+00.00
EL = 2,048.74'
VC = 650'
K = 158
V = 65 MPH

END SPEC. CUT
BASE DITCH (RT.)
PI = 943+75.00
EL = 2,055.65

FOR -WBL- PLAN, SEE SHEET 11, 12

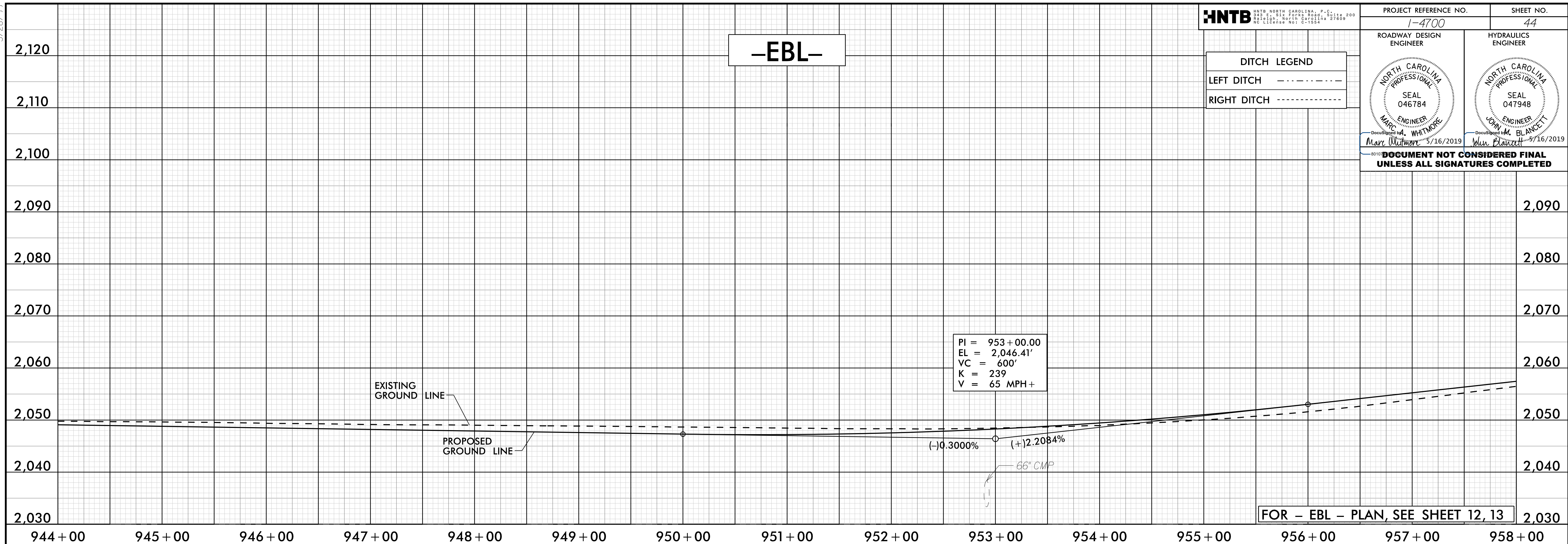
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5/28/19



PROJECT REFERENCE NO. I-4700	SHEET NO. 44
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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



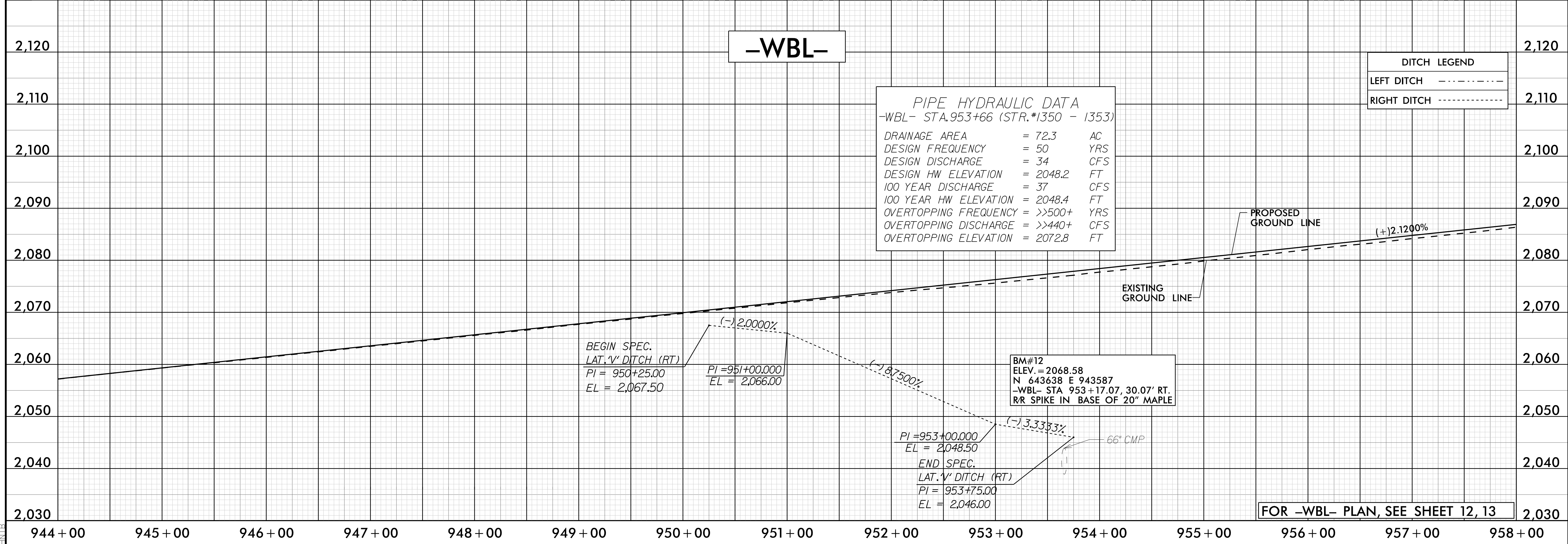
15 MAY 2019 12:21 14700.RDY_PFL_44.dgn

-WBL-

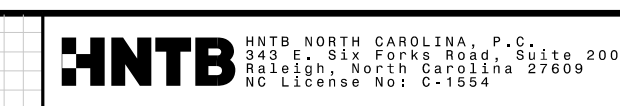
PIPE HYDRAULIC DATA
 -WBL- STA. 953+66 (STR. #1350 - 1353)

DRAINAGE AREA	= 72.3	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 34	CFS
DESIGN HW ELEVATION	= 2048.2	FT
100 YEAR DISCHARGE	= 37	CFS
100 YEAR HW ELEVATION	= 2048.4	FT
OVERTOPPING FREQUENCY	= >>500+	YRS
OVERTOPPING DISCHARGE	= >>440+	CFS
OVERTOPPING ELEVATION	= 2072.8	FT

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



5/28/19

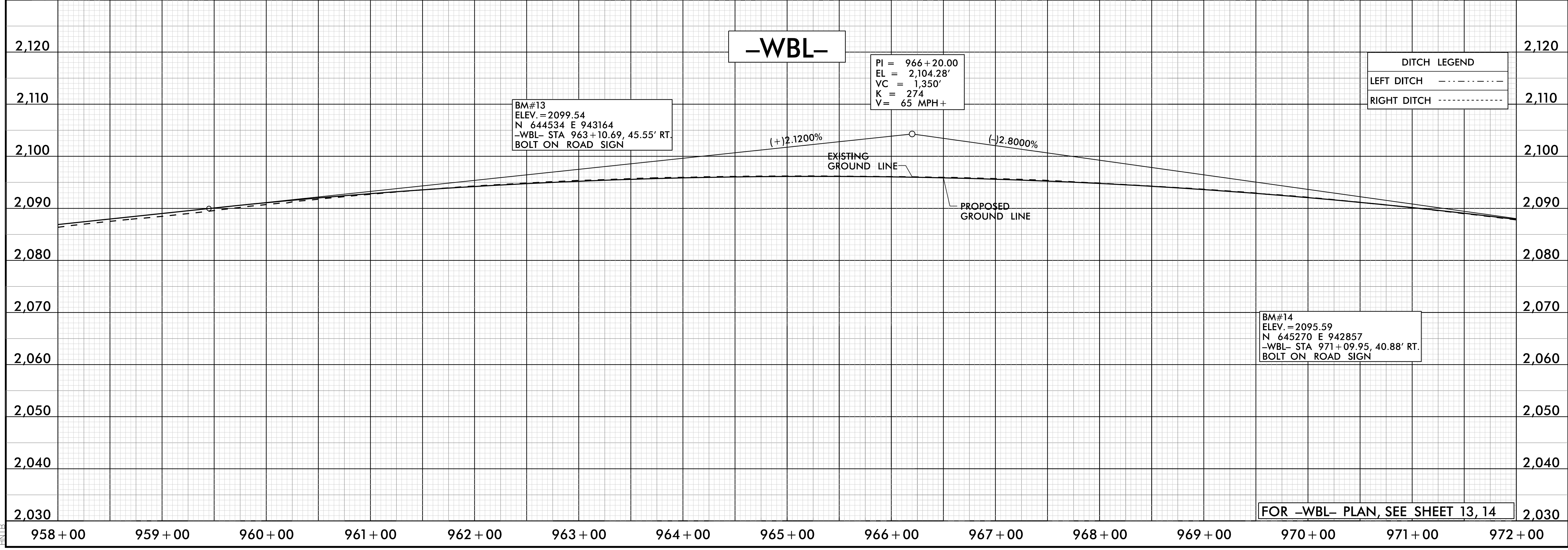
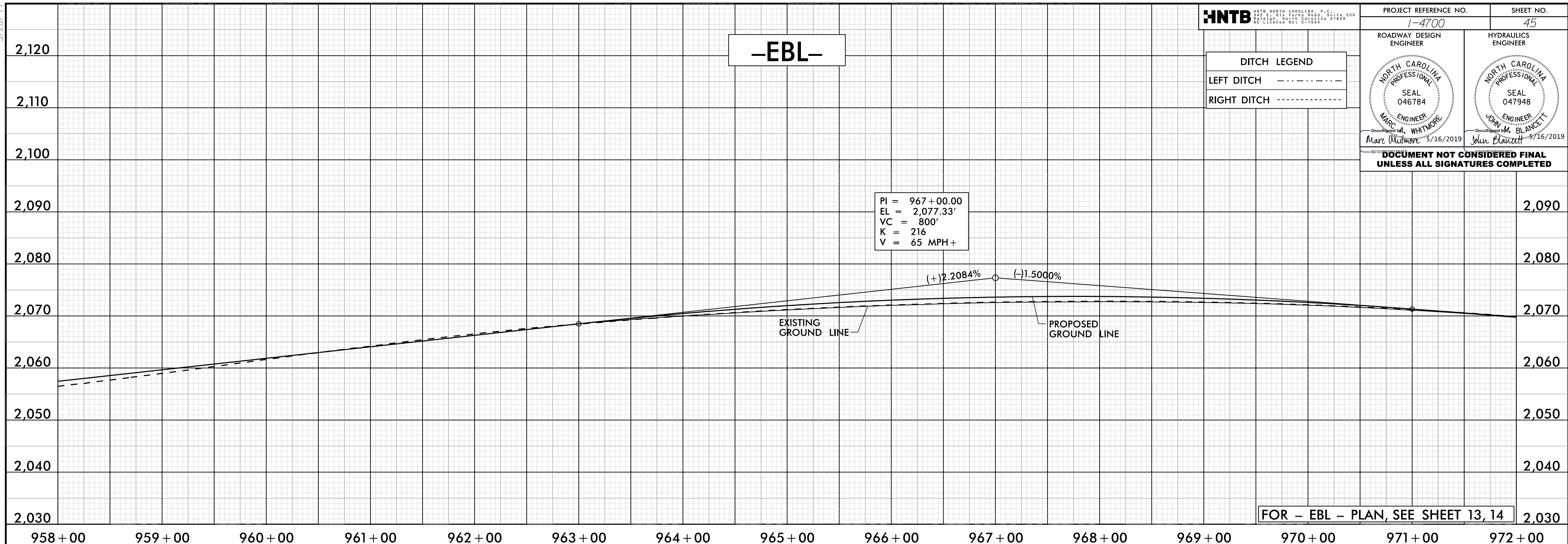


PROJECT REFERENCE NO. 1-4700 SHEET NO. 45

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

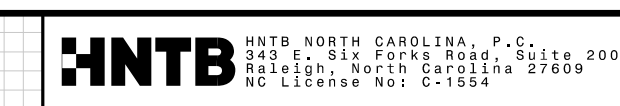
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
Marc Whitmore 5/16/2019	John Blawie 5/16/2019

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



16-MAY-2019 12:21 14700-RDY_PFL-45.dgn

5/28/19



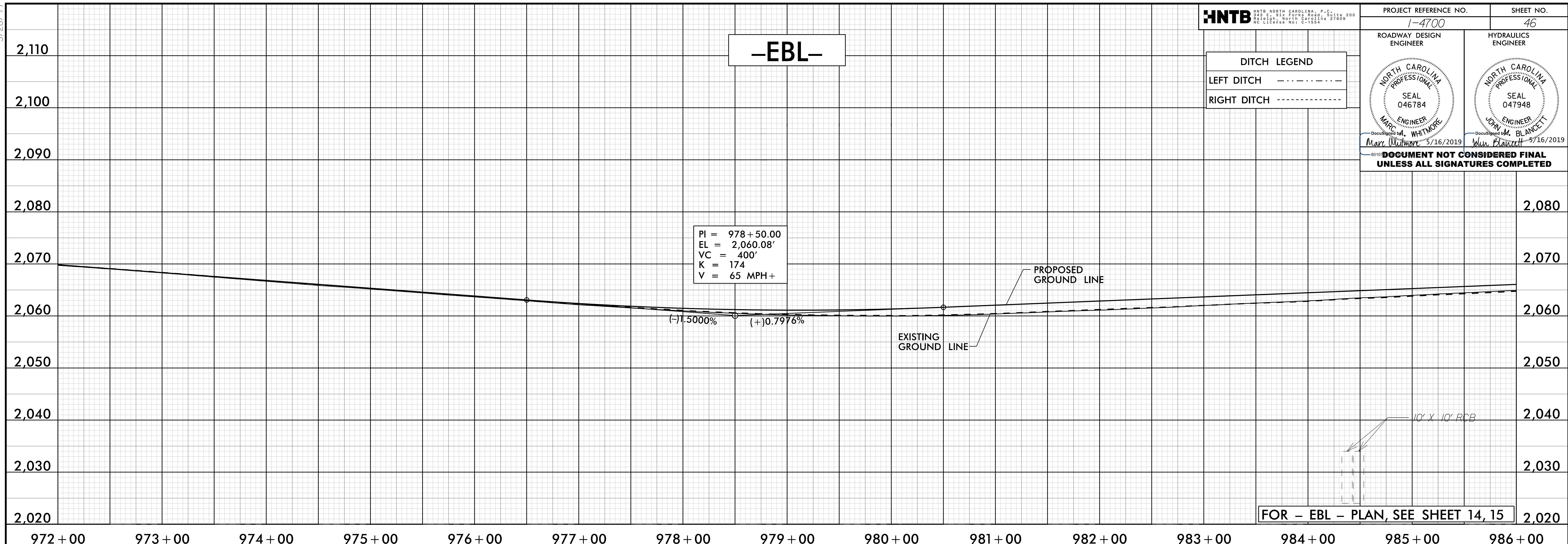
PROJECT REFERENCE NO. 1-4700		SHEET NO. 46
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
M. Whitmore 5/16/2019	M. Blance 5/16/2019	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DITCH LEGEND

LEFT DITCH - - - - -

RIGHT DITCH - - - - -



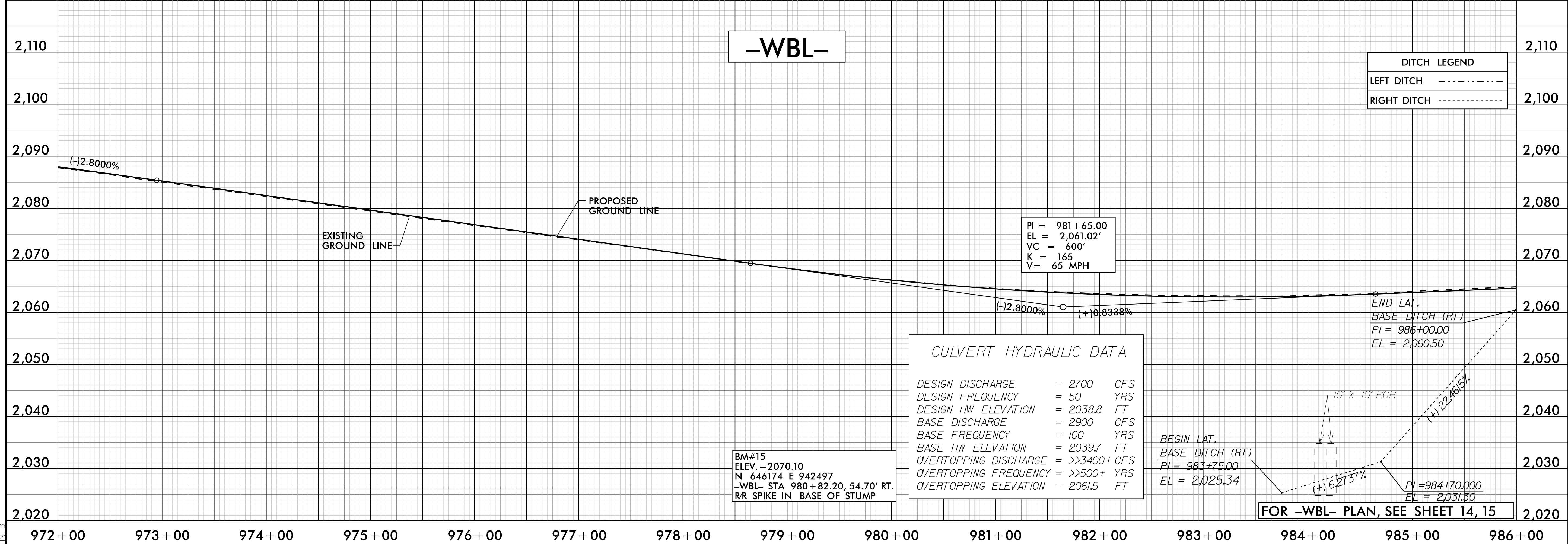
5-MAY-2019 12:21 14700.RDY_PFL_46.dgn

-WBL-

DITCH LEGEND

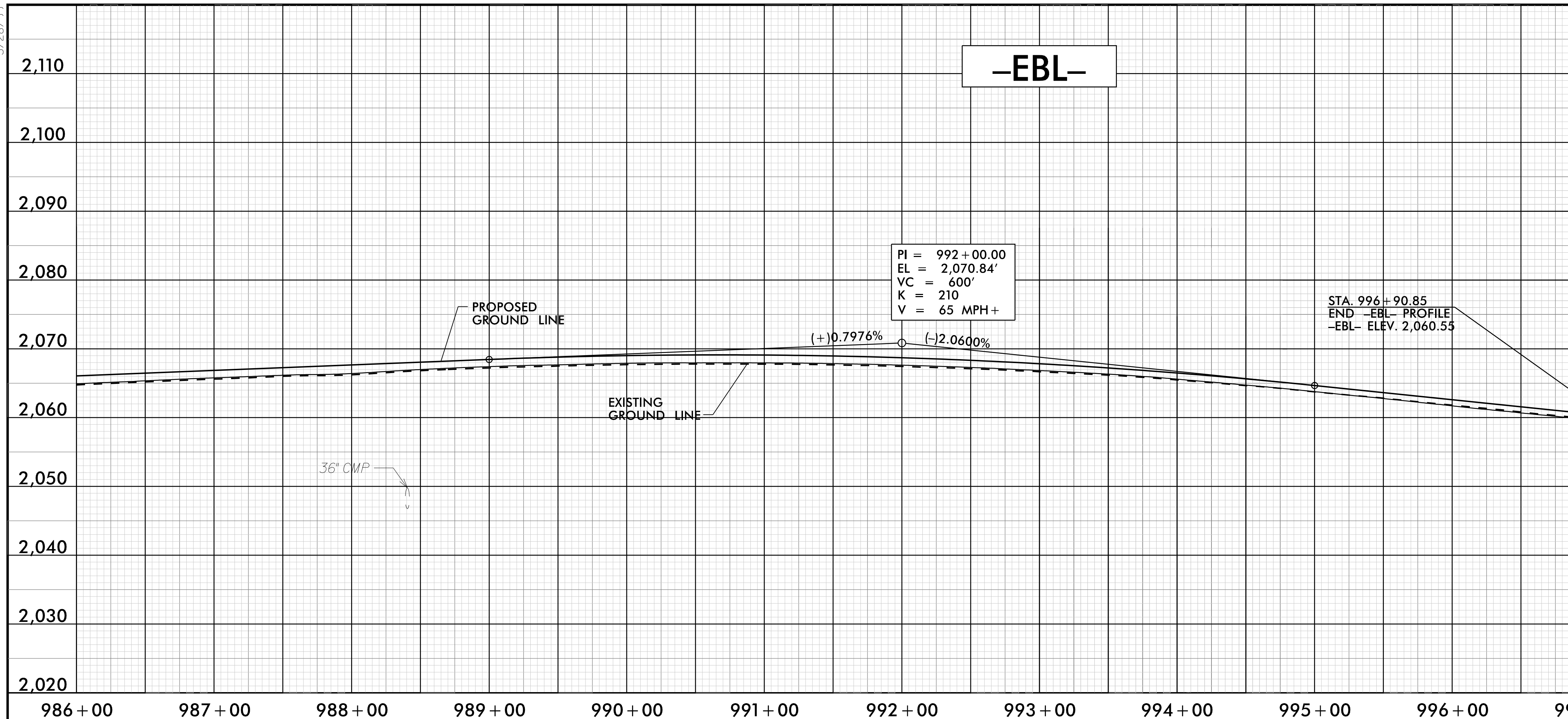
LEFT DITCH - - - - -

RIGHT DITCH - - - - -

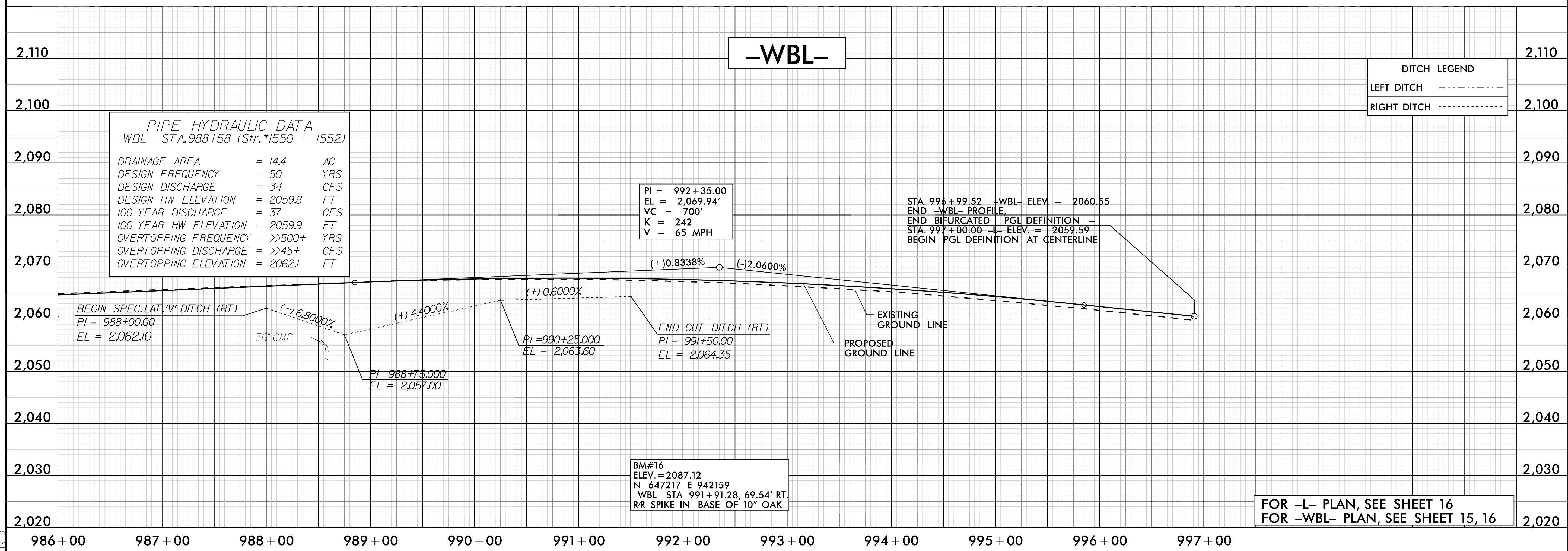


5/28/19

PROJECT REFERENCE NO. I-4700		SHEET NO. 47
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



FOR -L- PLAN, SEE SHEET 16
FOR -EBL- PLAN, SEE SHEET 15 & 16



FOR -L- PLAN, SEE SHEET 16
FOR -WBL- PLAN, SEE SHEET 15, 16

I:\MAY_2019_1221\14700_RDY_PFL_47.dgn
 DATE: 5/28/19 11:05 AM

5/28/19

HNTB HNTB NORTH CAROLINA, P.C.
 324 PAPER MILL ROAD, SUITE 300
 RALEIGH, NORTH CAROLINA 27609
 REG. LICENSE NO. 1-1554

PROJECT REFERENCE NO. 1-4700 SHEET NO. 48

ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 046784
 ENGINEER
 M. A. WHITMORE
 5/16/2019

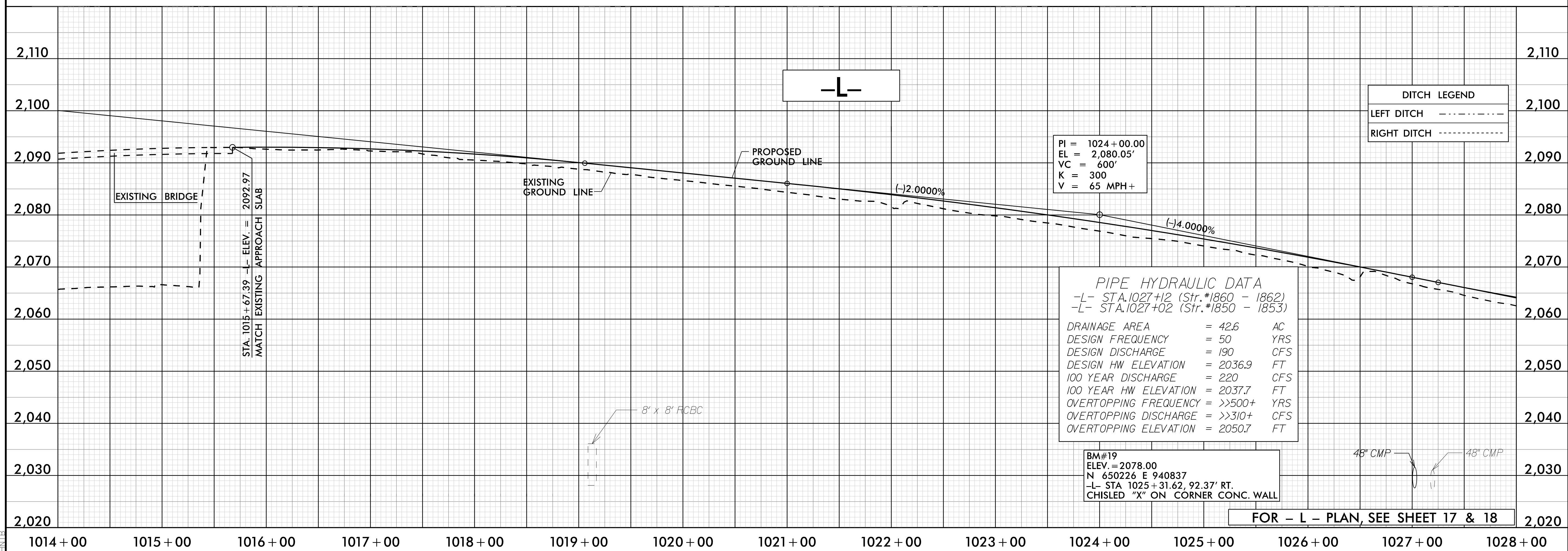
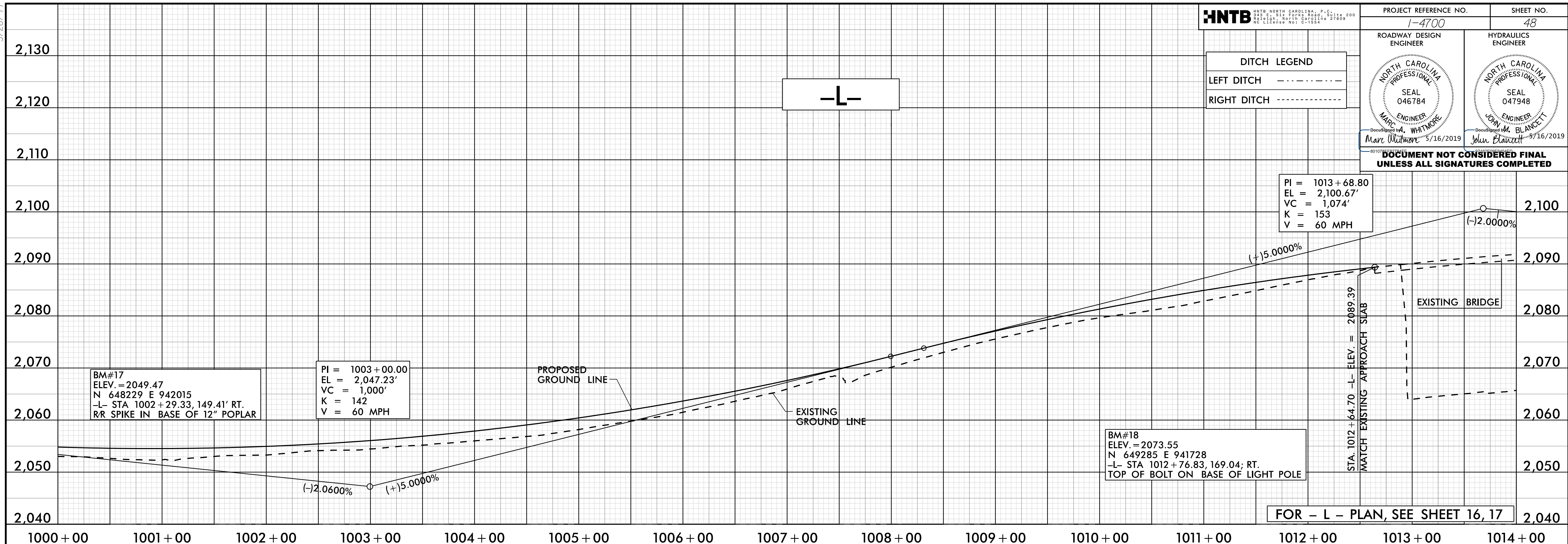
NORTH CAROLINA PROFESSIONAL SEAL 047948
 ENGINEER
 JOHN BLANCO
 5/16/2019

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DITCH LEGEND

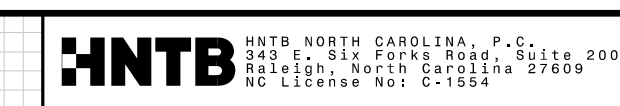
LEFT DITCH - - - - -

RIGHT DITCH - - - - -

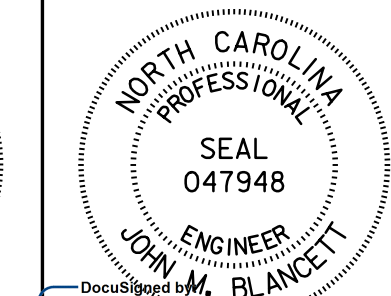
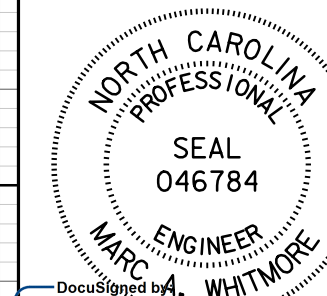


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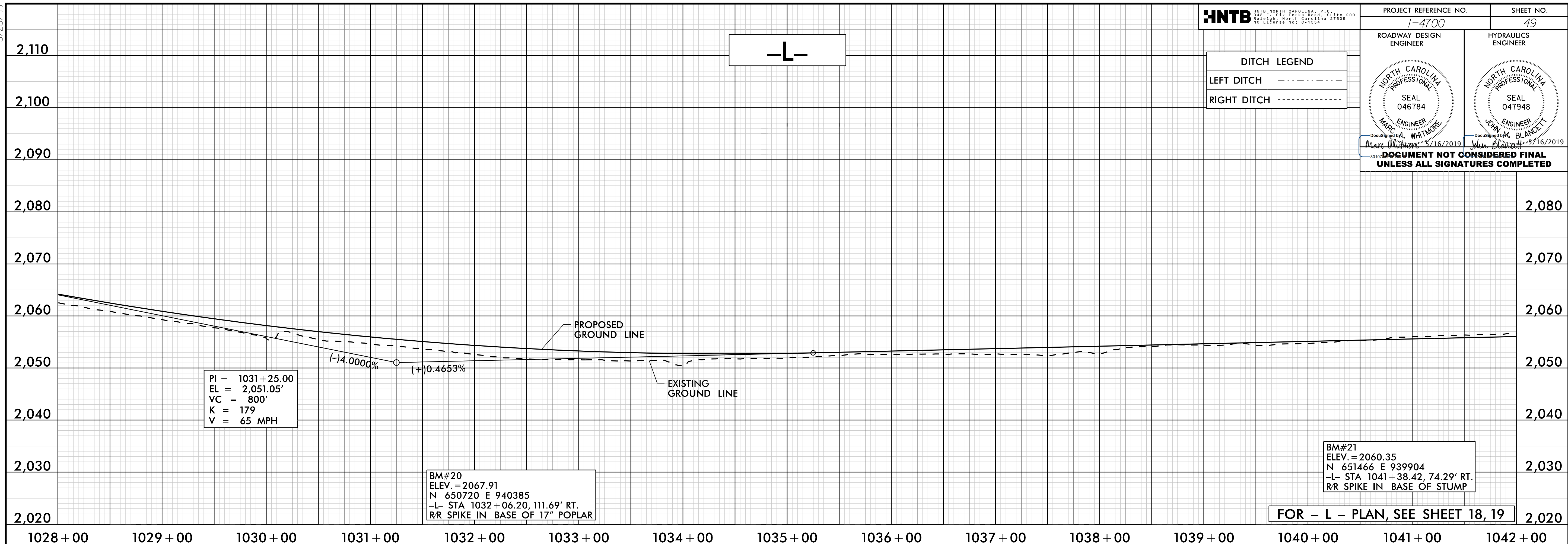
5/28/19



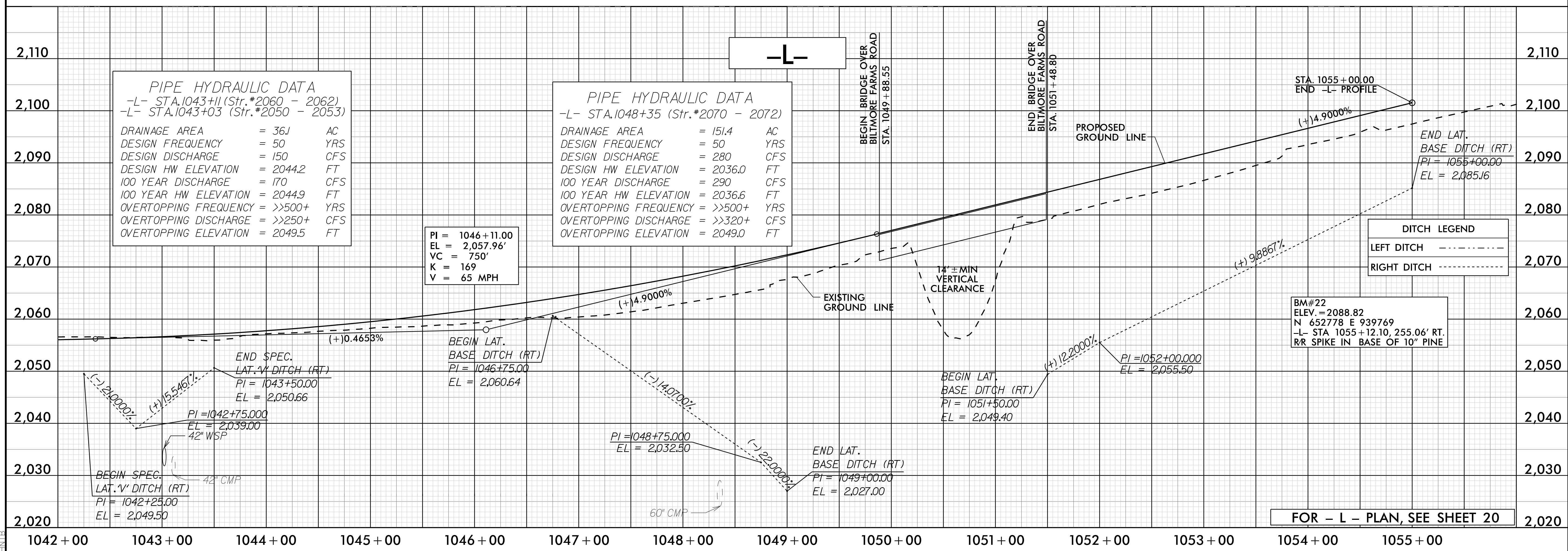
DITCH LEGEND	
LEFT DITCH	-----
RIGHT DITCH	-----



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



FOR - L - PLAN, SEE SHEET 18, 19



FOR - L - PLAN, SEE SHEET 20

PIPE HYDRAULIC DATA
-L- STA.1043+11 (Str.*2060 - 2062)
-L- STA.1043+03 (Str.*2050 - 2053)

DRAINAGE AREA	= 36.1	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 150	CFS
DESIGN HW ELEVATION	= 2044.2	FT
100 YEAR DISCHARGE	= 170	CFS
100 YEAR HW ELEVATION	= 2044.9	FT
OVERTOPPING FREQUENCY	= >>500+	YRS
OVERTOPPING DISCHARGE	= >>250+	CFS
OVERTOPPING ELEVATION	= 2049.5	FT

PIPE HYDRAULIC DATA
-L- STA.1048+35 (Str.*2070 - 2072)

DRAINAGE AREA	= 151.4	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 280	CFS
DESIGN HW ELEVATION	= 2036.0	FT
100 YEAR DISCHARGE	= 290	CFS
100 YEAR HW ELEVATION	= 2036.6	FT
OVERTOPPING FREQUENCY	= >>500+	YRS
OVERTOPPING DISCHARGE	= >>320+	CFS
OVERTOPPING ELEVATION	= 2049.0	FT

PI = 1046+11.00
EL = 2,057.96'
VC = 750'
K = 169
V = 65 MPH

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

BM#22
ELEV. = 2088.82
N 652778 E 939769
-L- STA 1055+12.10, 255.06' RT.
RR SPIKE IN BASE OF 10" PINE

15-MAY-2019 12:21 14700.RDY_PFL_49.dgn

8/7/2017

HNTB HNTB NORTH CAROLINA, P.C.
 2000 S. W. 10TH ST., SUITE 200
 FAYETTEVILLE, NC 27804
 HNTB LICENSE NO. 21-1554

PROJECT REFERENCE NO. 1-4700 SHEET NO. 50

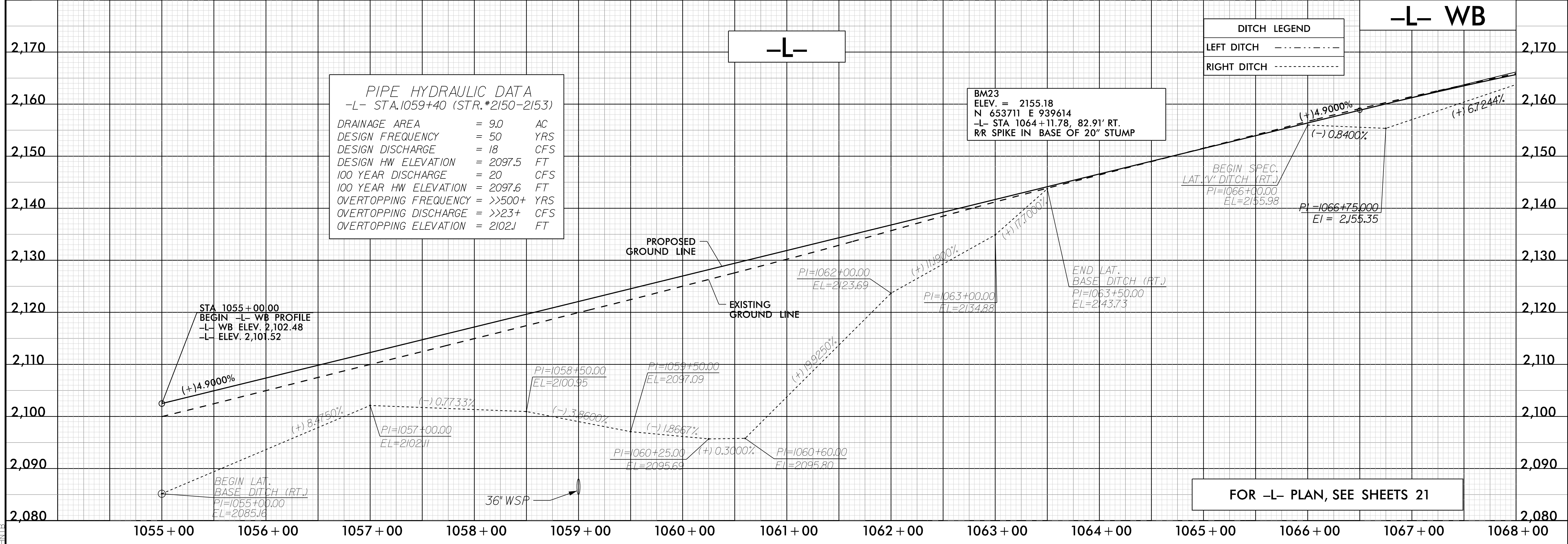
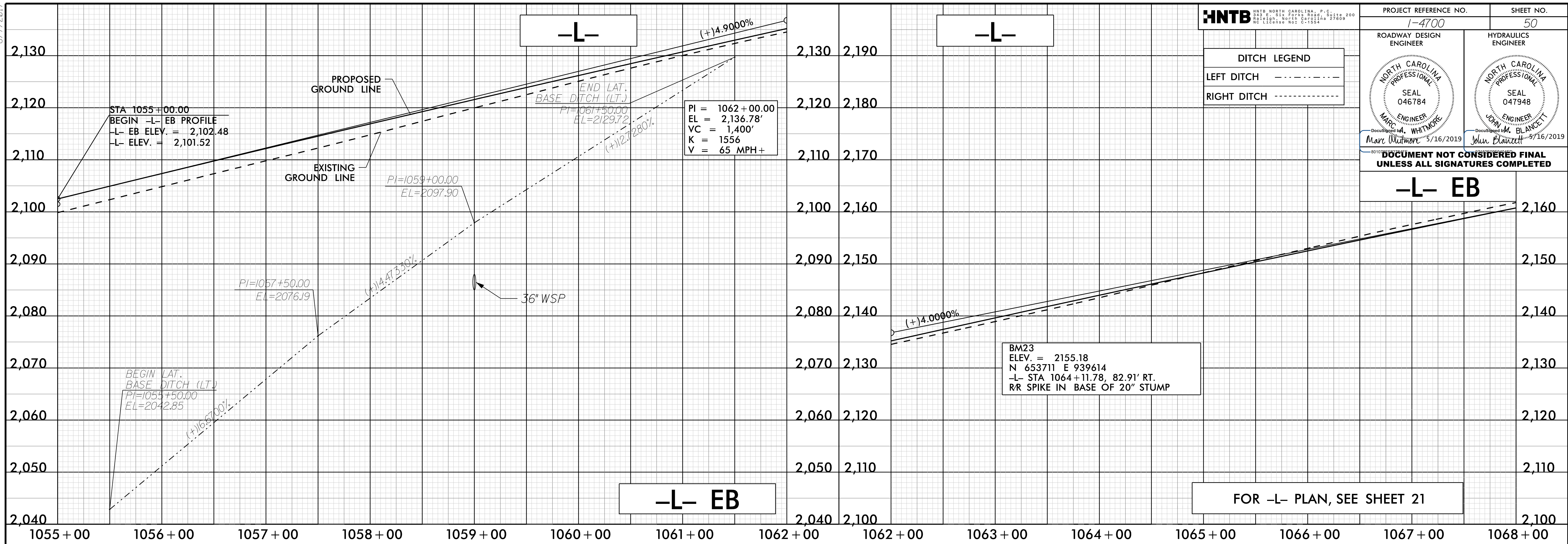
ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER

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

Professional Engineer Seals:
 NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 046784
 NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 047948

Described by: M. WHITMORE 5/16/2019
 Described by: M. BLANCO 5/16/2019

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

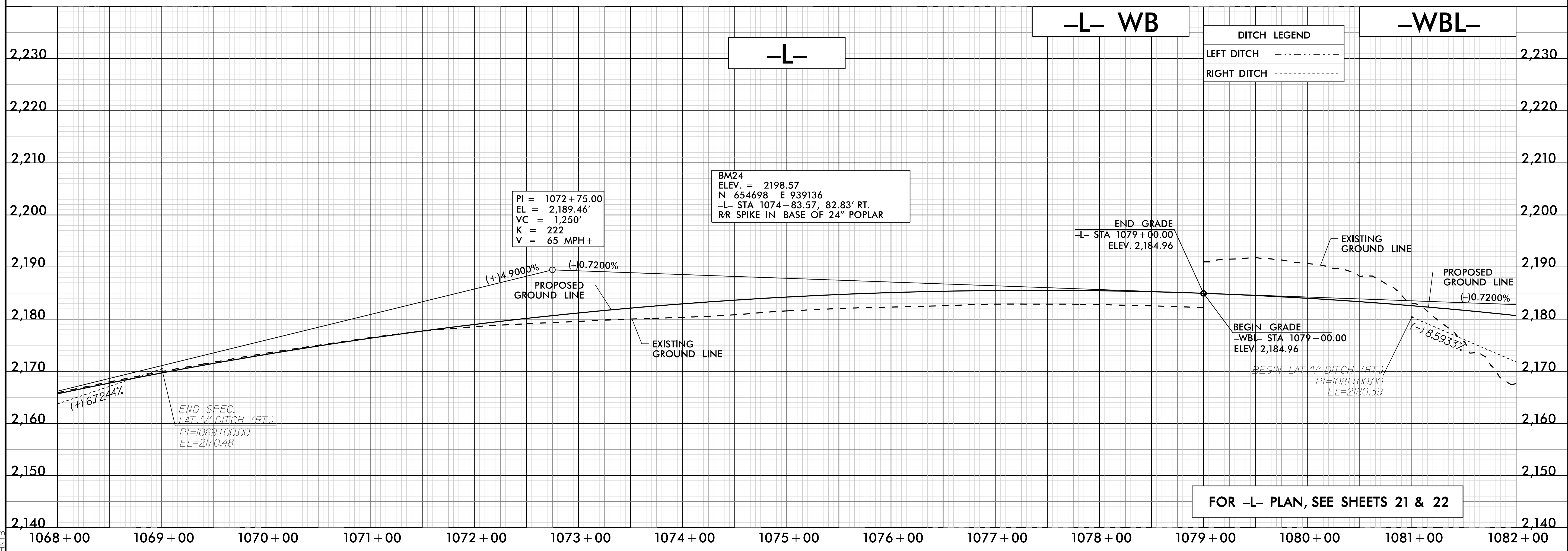
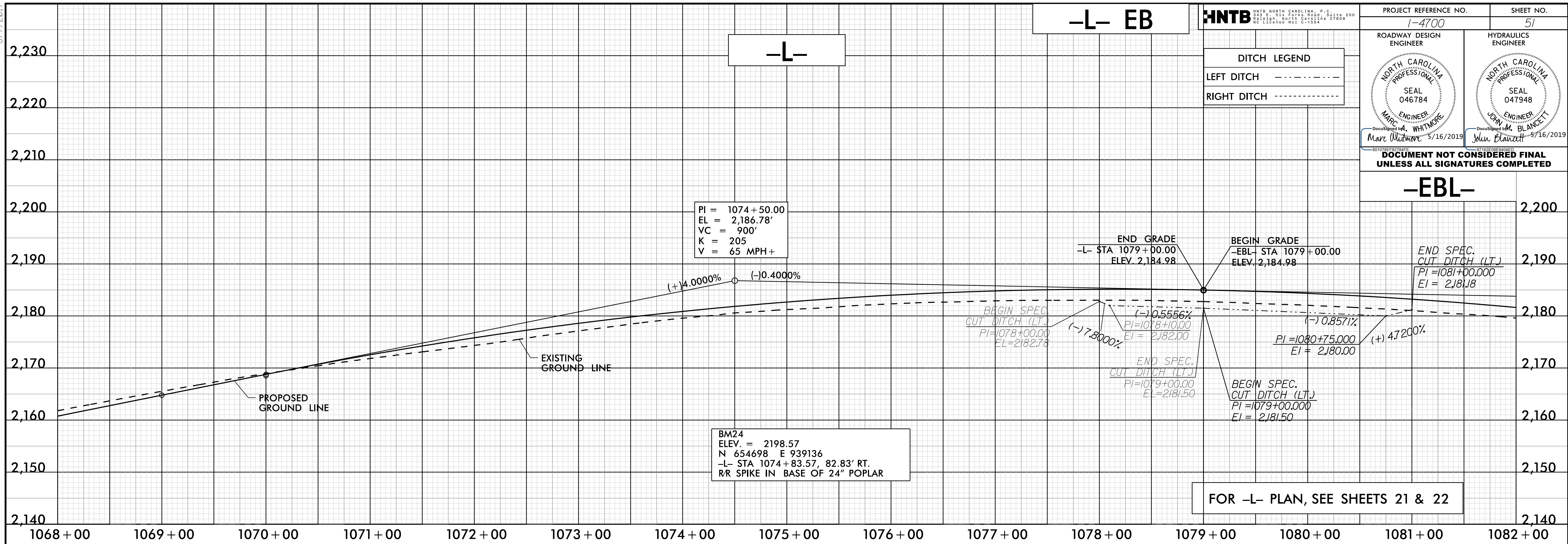


PIPE HYDRAULIC DATA
 -L- STA.1059+40 (STR.#2150-2153)

DRAINAGE AREA	= 9.0	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 18	CFS
DESIGN HW ELEVATION	= 2097.5	FT
100 YEAR DISCHARGE	= 20	CFS
100 YEAR HW ELEVATION	= 2097.6	FT
OVERTOPPING FREQUENCY	= >>500+	YRS
OVERTOPPING DISCHARGE	= >>23+	CFS
OVERTOPPING ELEVATION	= 2102.1	FT

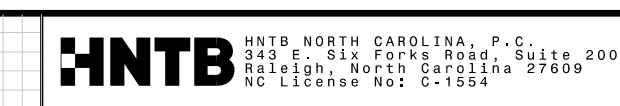
15 MAY 2019 12:21 (P:\04\14700_R0Y_PFL_50) INT

8/7/2017



15-MAY-2018 12:21 PM 14700.RDY_PFL_51

5/28/19

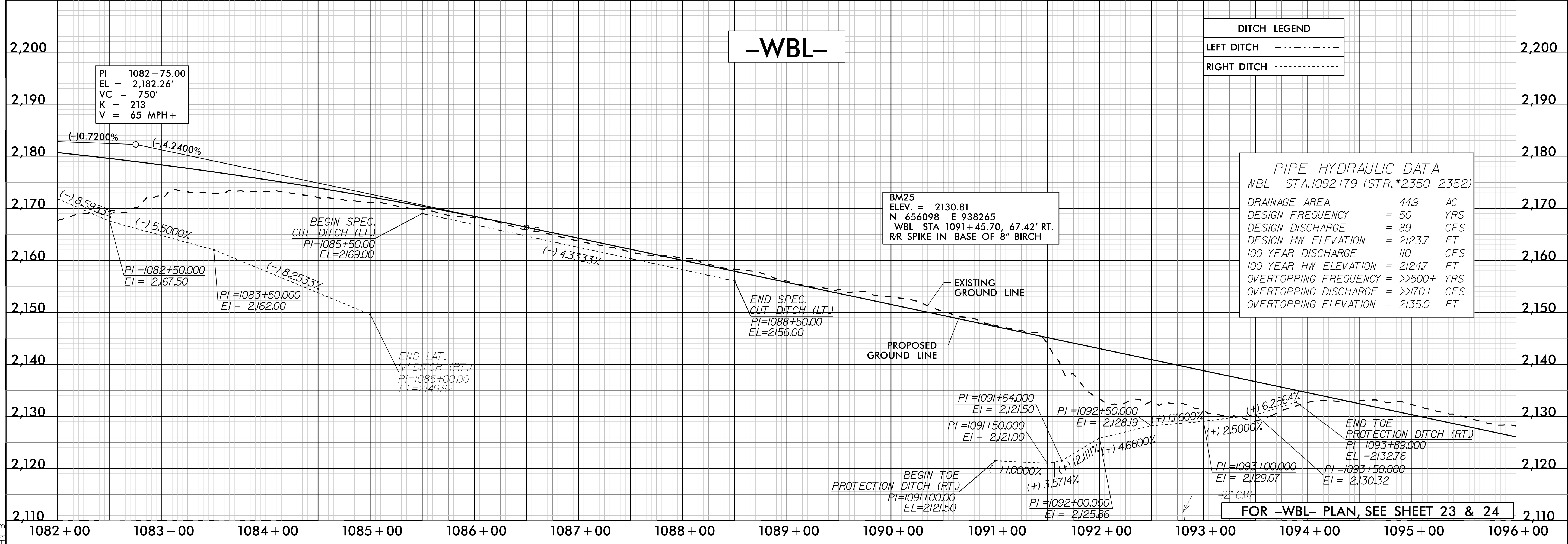
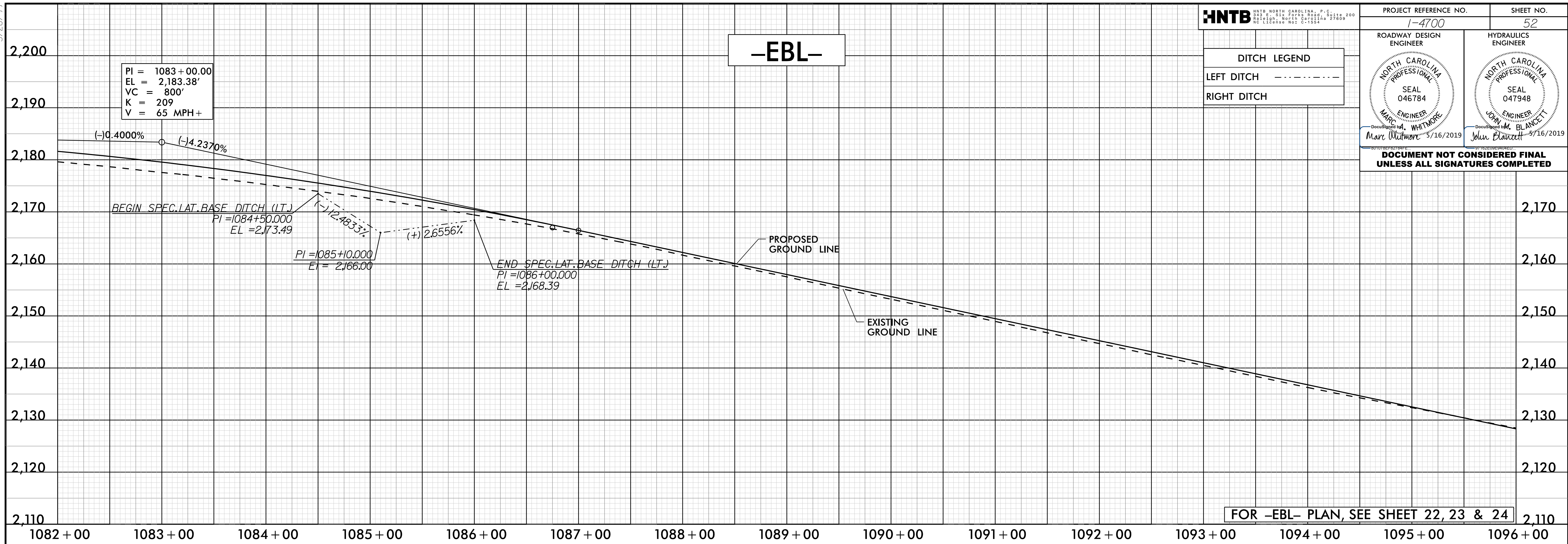


DITCH LEGEND	
LEFT DITCH	-----
RIGHT DITCH	-----

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 046784
Marc Whitmore 5/16/2019

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 047948
John Blawie 5/16/2019

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

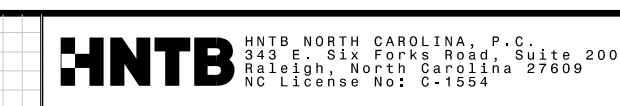


PIPE HYDRAULIC DATA
-WBL- STA.1092+79 (STR.#2350-2352)

DRAINAGE AREA	= 44.9	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 89	CFS
DESIGN HW ELEVATION	= 2123.7	FT
100 YEAR DISCHARGE	= 110	CFS
100 YEAR HW ELEVATION	= 2124.7	FT
OVERTOPPING FREQUENCY	= >>500+	YRS
OVERTOPPING DISCHARGE	= >>170+	CFS
OVERTOPPING ELEVATION	= 2135.0	FT

5 MAY 2019 12:21 (S:\04700\14700.RD\14700_PFL_52.DWG) P.05

5/28/19



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

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 046784
MARC A. WHITMORE
5/16/2019

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 047948
JOHN M. BLANCETT
5/16/2019

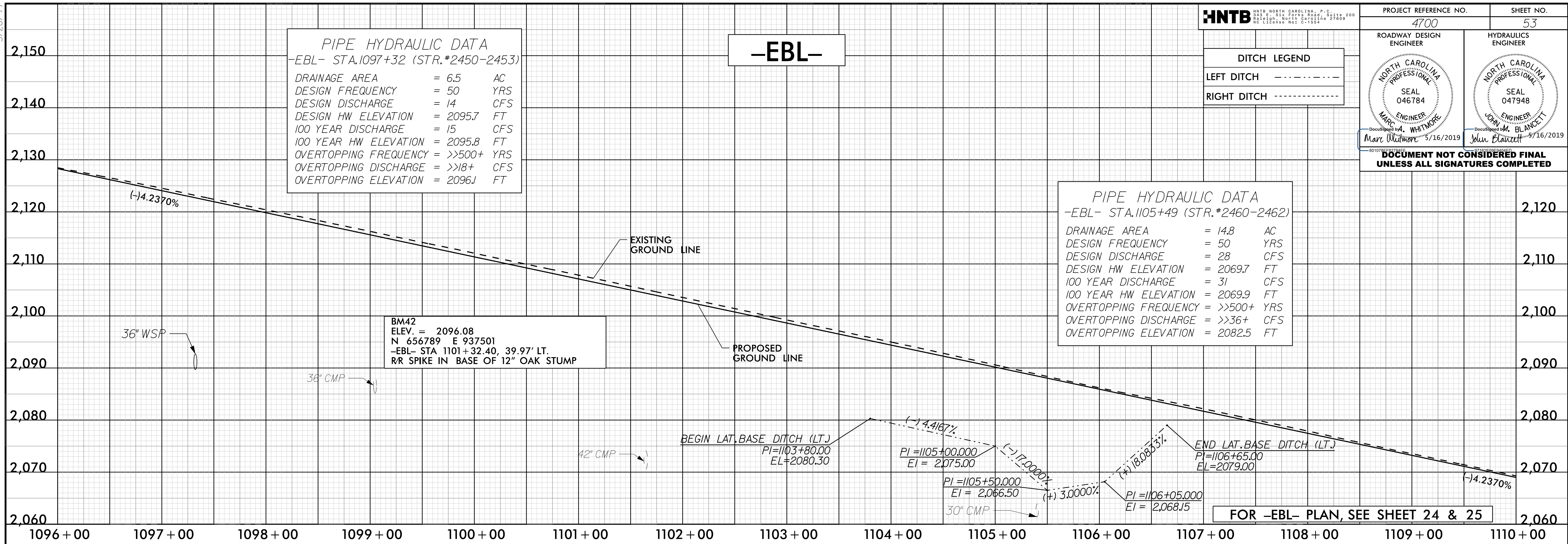
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PIPE HYDRAULIC DATA
-EBL- STA.1097+32 (STR.#2450-2453)

DRAINAGE AREA	= 6.5	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 14	CFS
DESIGN HW ELEVATION	= 2095.7	FT
100 YEAR DISCHARGE	= 15	CFS
100 YEAR HW ELEVATION	= 2095.8	FT
OVERTOPPING FREQUENCY	= >>500+	YRS
OVERTOPPING DISCHARGE	= >>18+	CFS
OVERTOPPING ELEVATION	= 2096J	FT

PIPE HYDRAULIC DATA
-EBL- STA.1105+49 (STR.#2460-2462)

DRAINAGE AREA	= 14.8	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 28	CFS
DESIGN HW ELEVATION	= 2069.7	FT
100 YEAR DISCHARGE	= 31	CFS
100 YEAR HW ELEVATION	= 2069.9	FT
OVERTOPPING FREQUENCY	= >>500+	YRS
OVERTOPPING DISCHARGE	= >>36+	CFS
OVERTOPPING ELEVATION	= 2082.5	FT

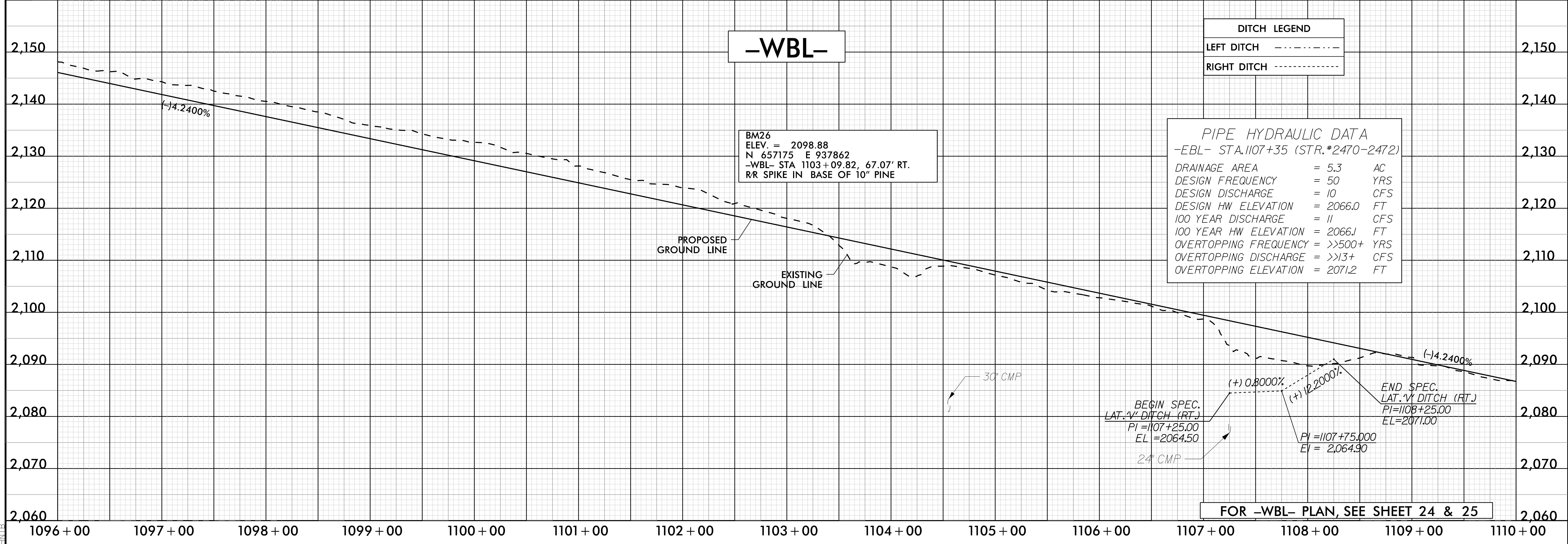


-WBL-

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

PIPE HYDRAULIC DATA
-EBL- STA.1107+35 (STR.#2470-2472)

DRAINAGE AREA	= 5.3	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 10	CFS
DESIGN HW ELEVATION	= 2066.0	FT
100 YEAR DISCHARGE	= 11	CFS
100 YEAR HW ELEVATION	= 2066J	FT
OVERTOPPING FREQUENCY	= >>500+	YRS
OVERTOPPING DISCHARGE	= >>13+	CFS
OVERTOPPING ELEVATION	= 2071.2	FT



16 MAY 2019 12:22
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HNTB

8/7/2017

HNTB HNTB NORTH CAROLINA, P.C.
 300 W. 5th Street, Suite 200
 Raleigh, North Carolina 27609
 NC License No. C-1554

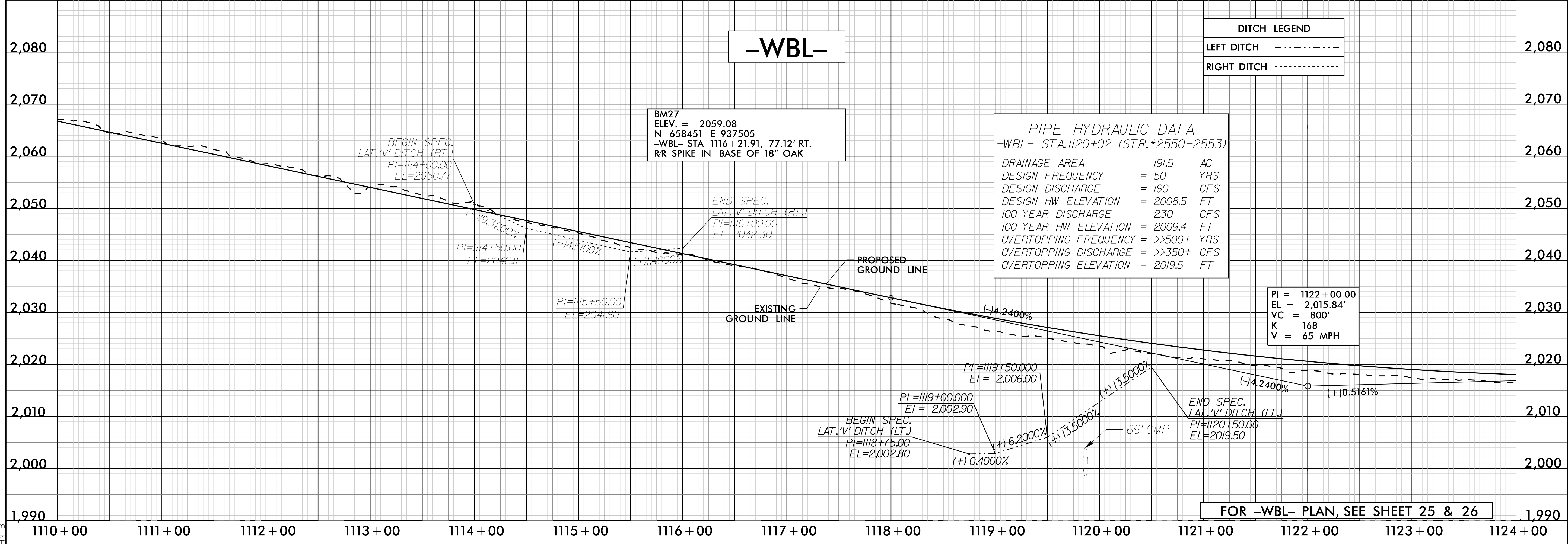
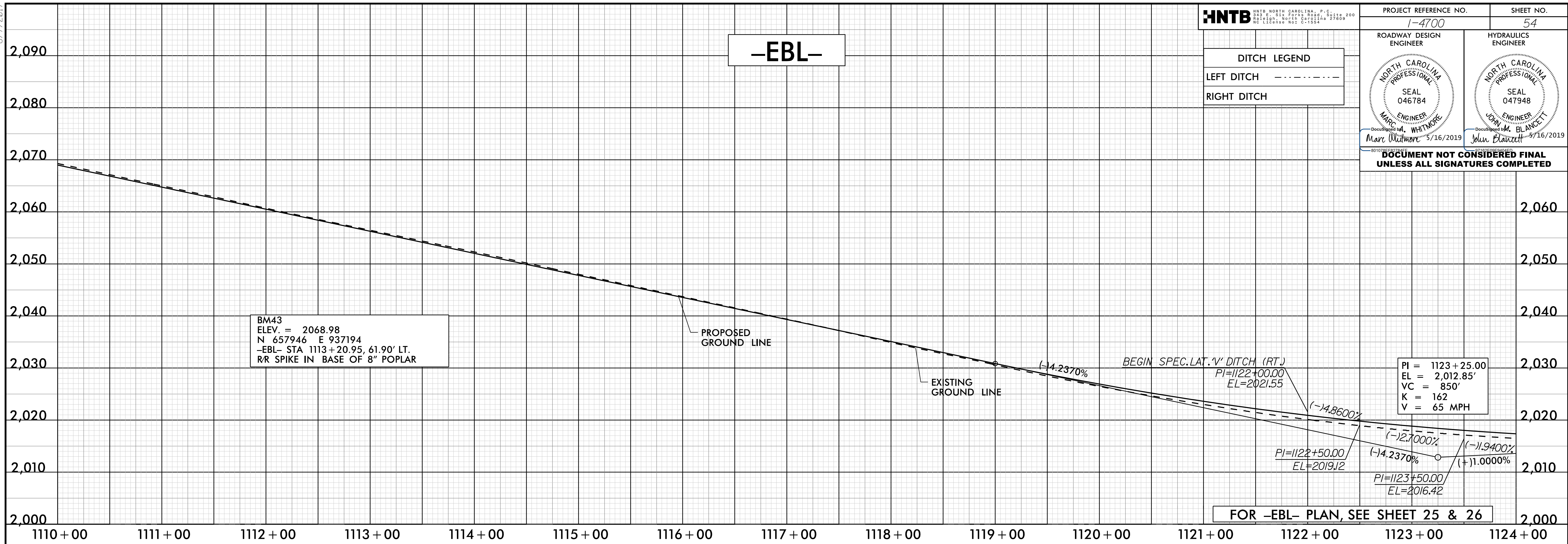
PROJECT REFERENCE NO. 1-4700 SHEET NO. 54

ROADWAY DESIGN ENGINEER
 HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 046784
 MARCH 2019
 M. WHITMORE 5/16/2019

NORTH CAROLINA PROFESSIONAL SEAL 047948
 JUNE 2019
 J. BLANCKETT 5/16/2019

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

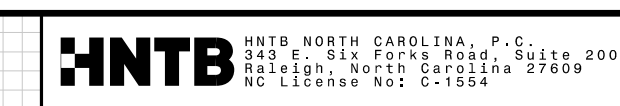


PIPE HYDRAULIC DATA
 -WBL- STA.1120+02 (STR.#2550-2553)

DRAINAGE AREA	= 191.5	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 190	CFS
DESIGN HW ELEVATION	= 2008.5	FT
100 YEAR DISCHARGE	= 230	CFS
100 YEAR HW ELEVATION	= 2009.4	FT
OVERTOPPING FREQUENCY	= >>500+	YRS
OVERTOPPING DISCHARGE	= >>350+	CFS
OVERTOPPING ELEVATION	= 2019.5	FT

16 MAY 2019 12:22
 C:\p04\dwg\14700_R01_PFL_54
 INT

8/7/2017

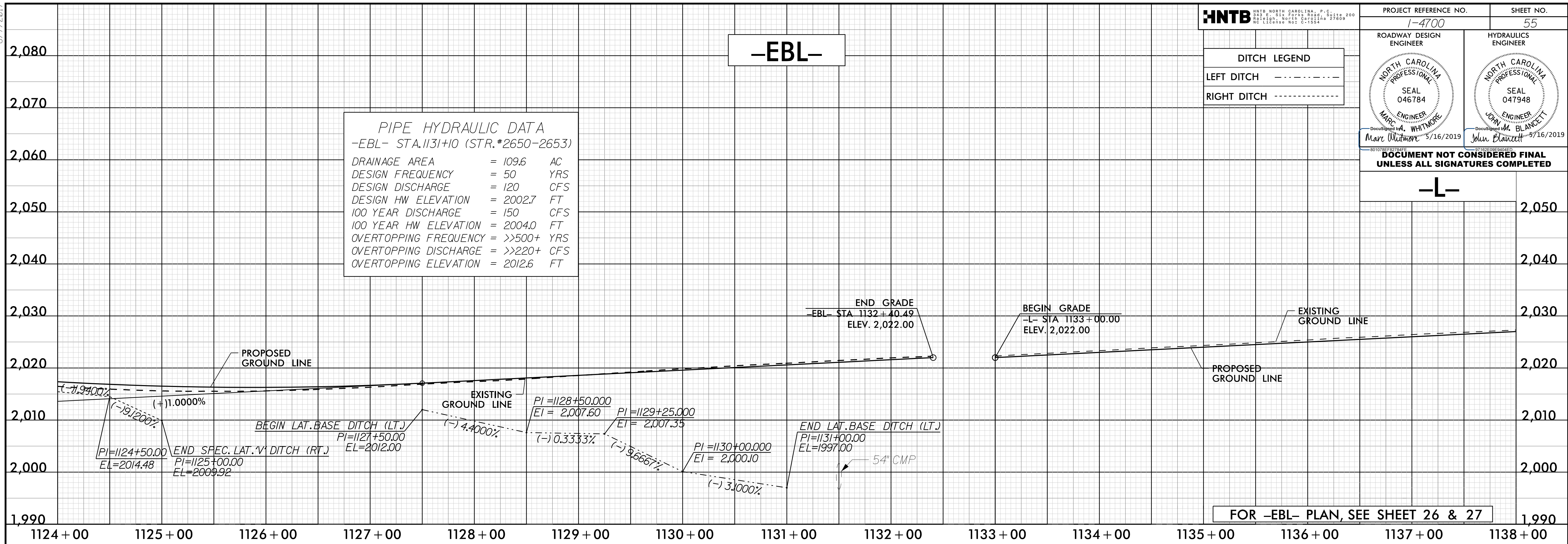


DITCH LEGEND	
LEFT DITCH	-----
RIGHT DITCH	-----

ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 046784 MARC WHITMORE 5/16/2019	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 047948 JOHN M. BLANCETT 9/16/2019
---	--

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PIPE HYDRAULIC DATA
 -EBL- STA. 1131+10 (STR.*2650-2653)
 DRAINAGE AREA = 109.6 AC
 DESIGN FREQUENCY = 50 YRS
 DESIGN DISCHARGE = 120 CFS
 DESIGN HW ELEVATION = 2002.7 FT
 100 YEAR DISCHARGE = 150 CFS
 100 YEAR HW ELEVATION = 2004.0 FT
 OVERTOPPING FREQUENCY = >>500+ YRS
 OVERTOPPING DISCHARGE = >>220+ CFS
 OVERTOPPING ELEVATION = 2012.6 FT

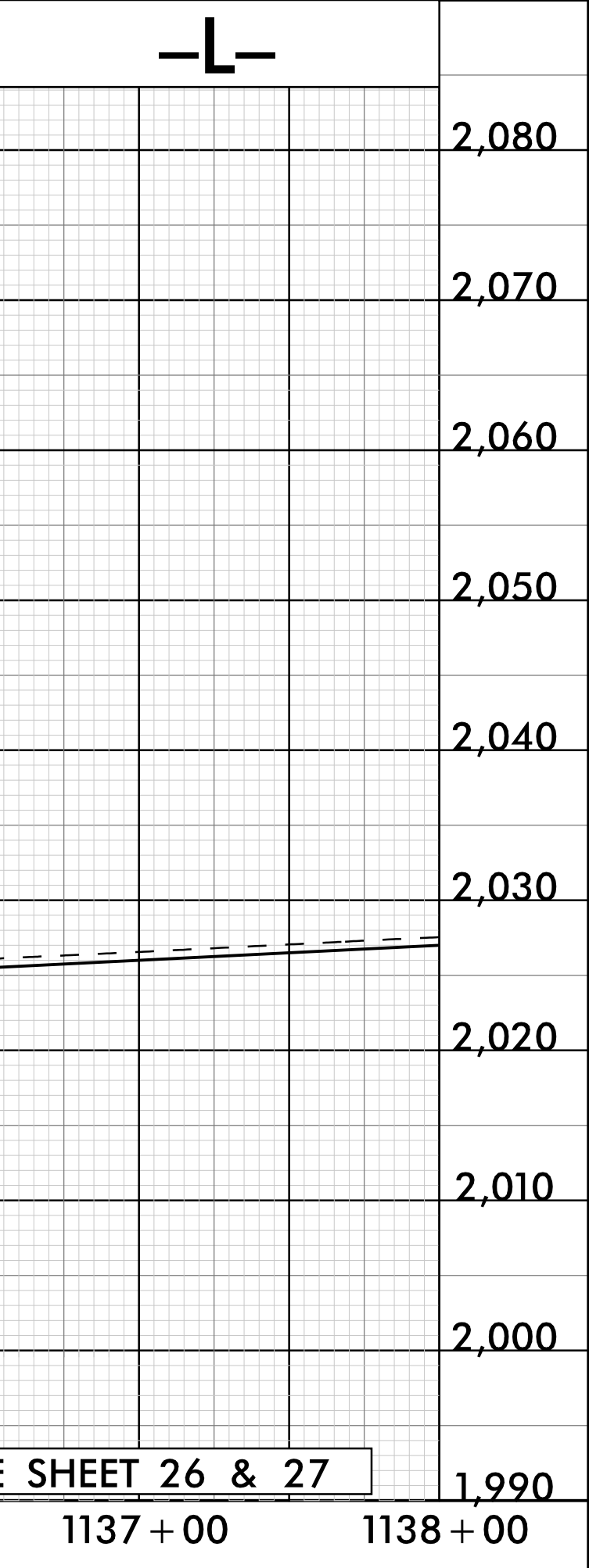


-L-

6 MAY 2019 12:22 PM (P:\04700\14700_R0Y_PFL_55)

-WBL-

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

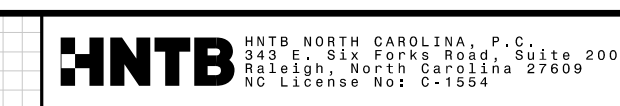


-L-

BM28
 ELEV. = 2005.22
 N 659269 E 936663
 -WBL- STA 1127+72.88, 61.23' RT.
 R/R SPIKE IN BASE OF 20" POPLAR

PI = 1132+00.00
 EL = 2,021.00'
 VC = 200'
 K = 413
 V = 65 MPH+

5/28/19



PROJECT REFERENCE NO. 1-4700 SHEET NO. 56

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

ROADWAY DESIGN ENGINEER MARC WHITMORE SEAL 046784 5/16/2019	HYDRAULICS ENGINEER JOHN BLANCETT SEAL 047948 5/16/2019
--	--

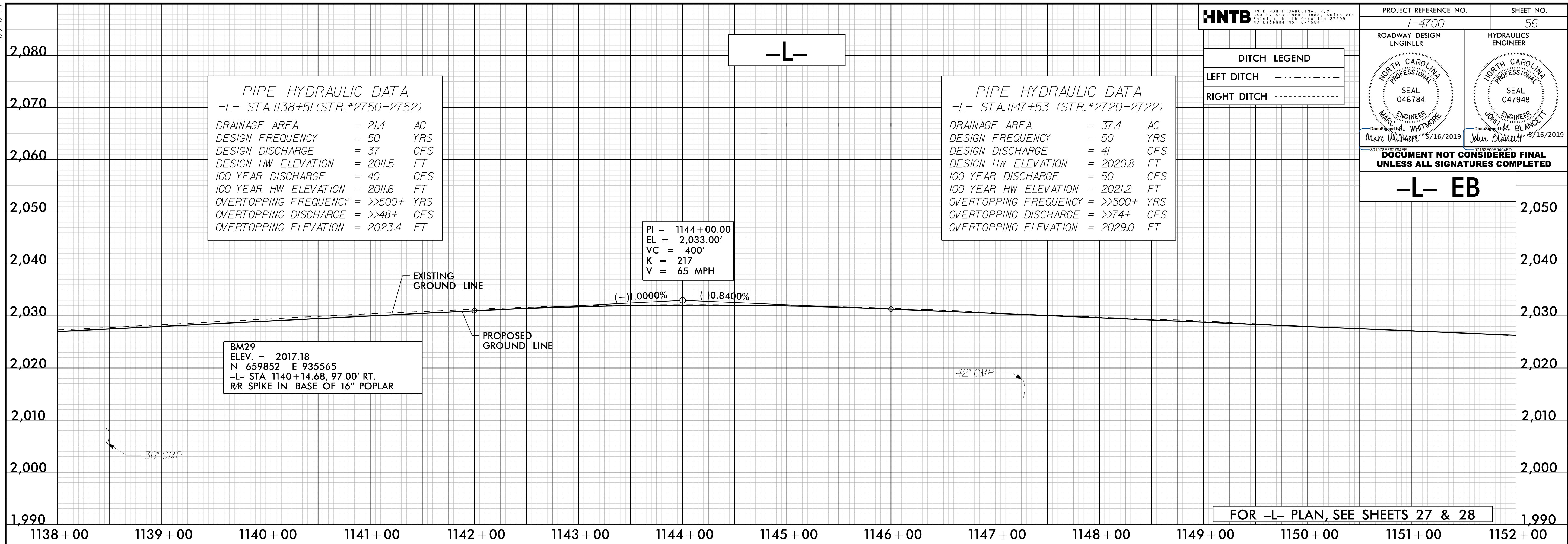
PIPE HYDRAULIC DATA
-L- STA.1138+51 (STR.#2750-2752)

DRAINAGE AREA = 21.4 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 37 CFS
DESIGN HW ELEVATION = 2011.5 FT
100 YEAR DISCHARGE = 40 CFS
100 YEAR HW ELEVATION = 2011.6 FT
OVERTOPPING FREQUENCY = >>500+ YRS
OVERTOPPING DISCHARGE = >>48+ CFS
OVERTOPPING ELEVATION = 2023.4 FT

PIPE HYDRAULIC DATA
-L- STA.1147+53 (STR.#2720-2722)

DRAINAGE AREA = 37.4 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 41 CFS
DESIGN HW ELEVATION = 2020.8 FT
100 YEAR DISCHARGE = 50 CFS
100 YEAR HW ELEVATION = 2021.2 FT
OVERTOPPING FREQUENCY = >>500+ YRS
OVERTOPPING DISCHARGE = >>74+ CFS
OVERTOPPING ELEVATION = 2029.0 FT

PI = 1144+00.00
EL = 2,033.00'
VC = 400'
K = 217
V = 65 MPH



BM29
ELEV. = 2017.18
N 659852 E 935565
-L- STA 1140+14.68, 97.00' RT.
R/R SPIKE IN BASE OF 16" POPLAR

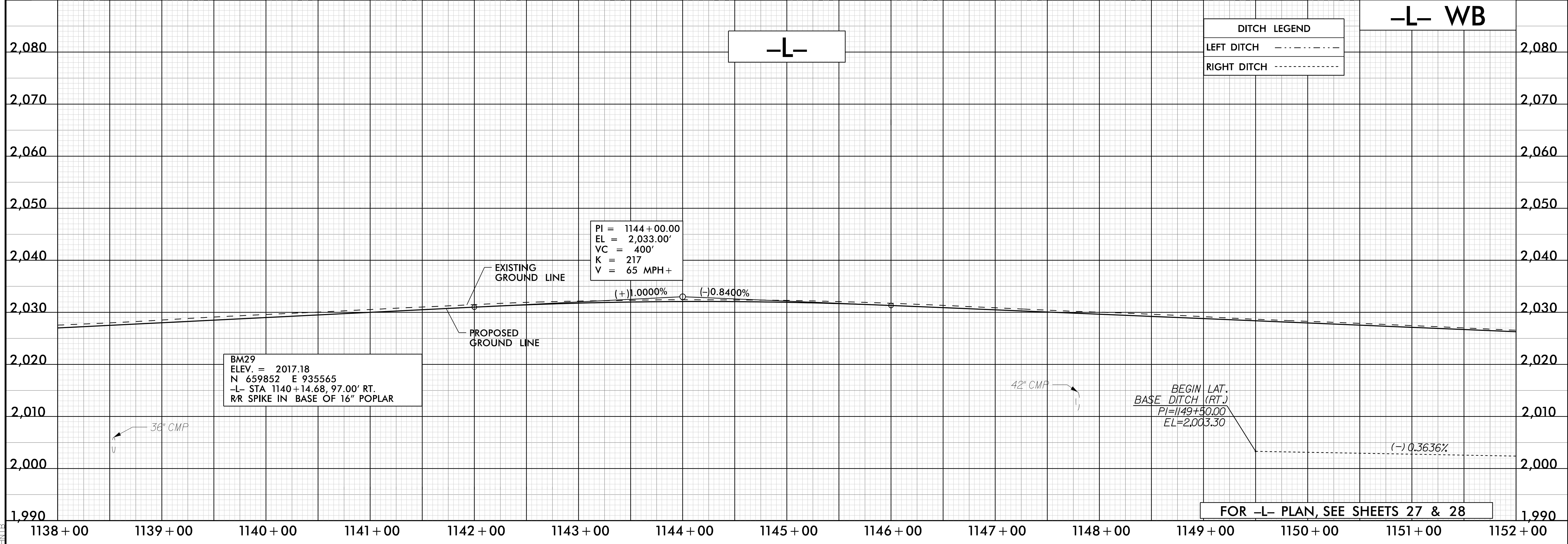
-L- EB

6 MAY 2019 12:22 PM
C:\p\14700\RDY_PFL_56

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

-L- WB

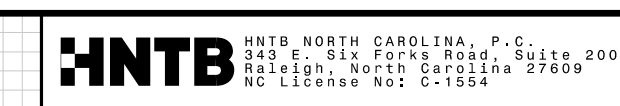
PI = 1144+00.00
EL = 2,033.00'
VC = 400'
K = 217
V = 65 MPH+



BM29
ELEV. = 2017.18
N 659852 E 935565
-L- STA 1140+14.68, 97.00' RT.
R/R SPIKE IN BASE OF 16" POPLAR

BEGIN LAT.
BASE DITCH (RT.)
PI=1149+50.00
EL=2,003.30

8/7/2017



PROJECT REFERENCE NO. 1-4700 SHEET NO. 57

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

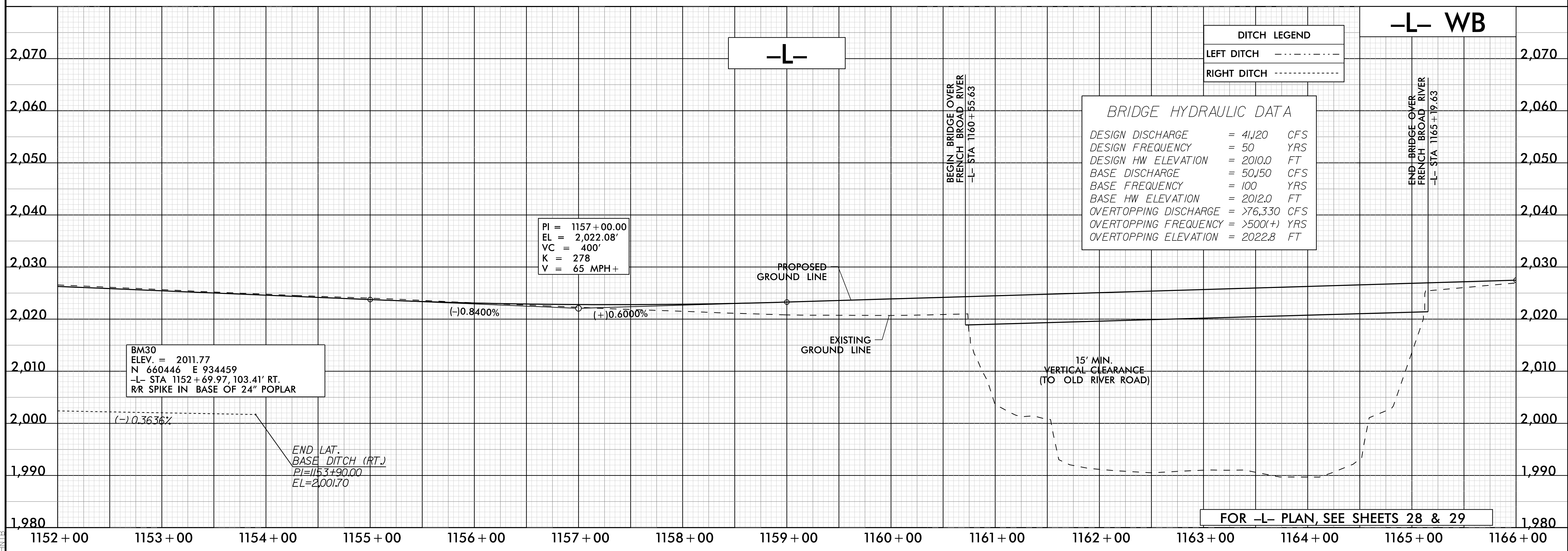
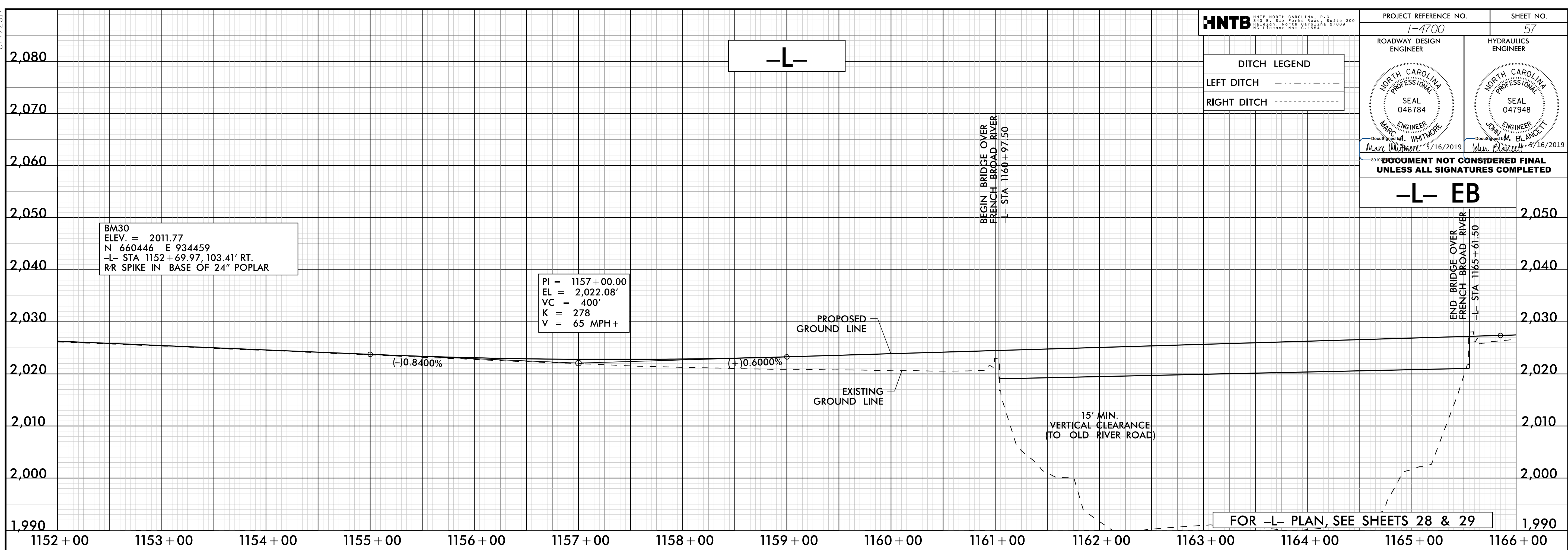
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 046784
MARCUS WHITMORE
ENGINEER
5/16/2019

NORTH CAROLINA PROFESSIONAL SEAL 047948
JOHN BLANCETT
ENGINEER
5/16/2019

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



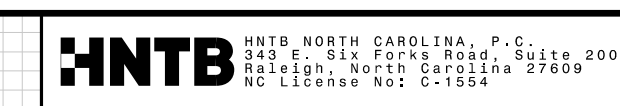
BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 41,120 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 2010.0 FT
BASE DISCHARGE	= 50,150 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 2012.0 FT
OVERTOPPING DISCHARGE	= >76,330 CFS
OVERTOPPING FREQUENCY	= >500(+) YRS
OVERTOPPING ELEVATION	= 2022.8 FT

END LAT. BASE DITCH (RT.)
PI=1153+90.00
EL=2001.70

16-MAY-2019 12:22
C:\p04\dwg\14700_R01_PFL_57
INTL

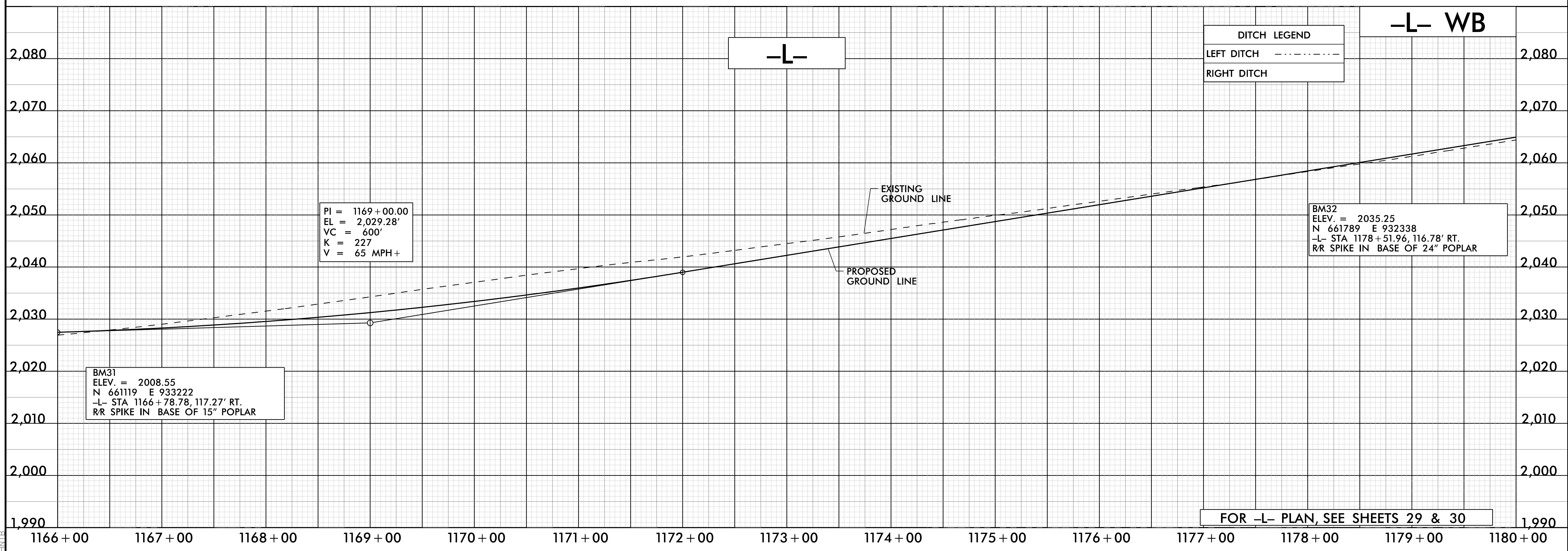
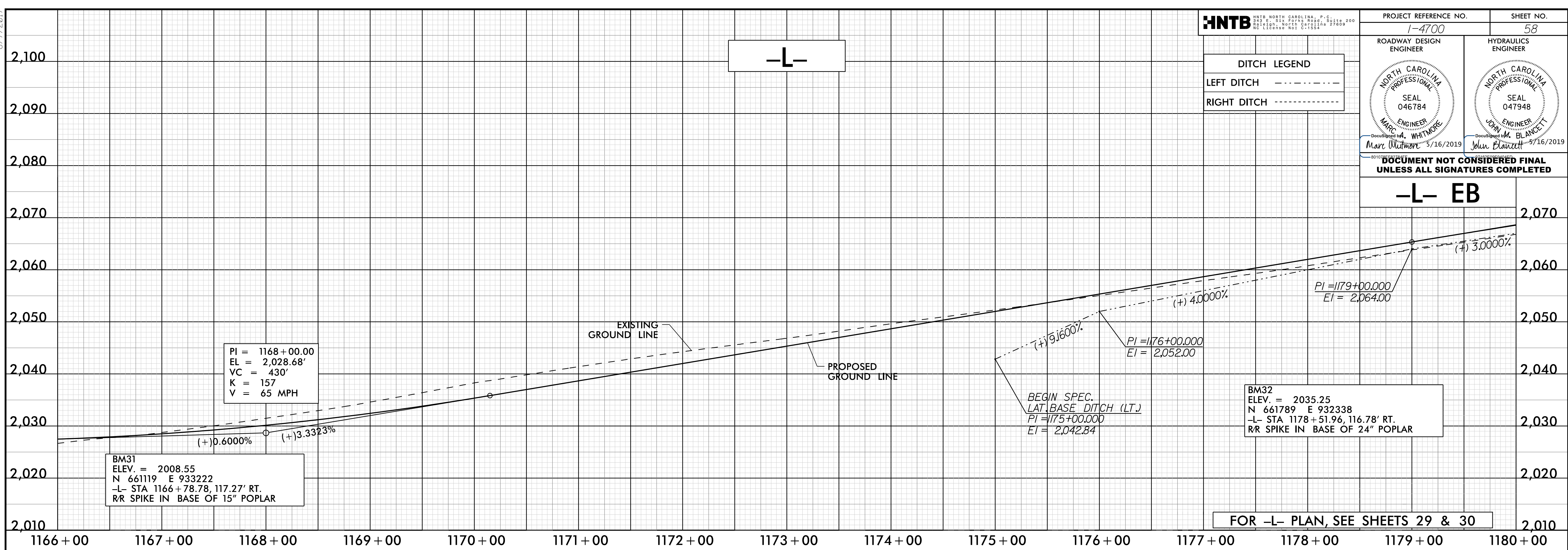
8/7/2017



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

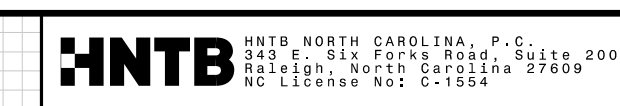
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
Marc Whitmore	John Blanchett

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



8 MAY 2019 12:22 PM C:\pwworkspace\14700\RDY_PFL_58

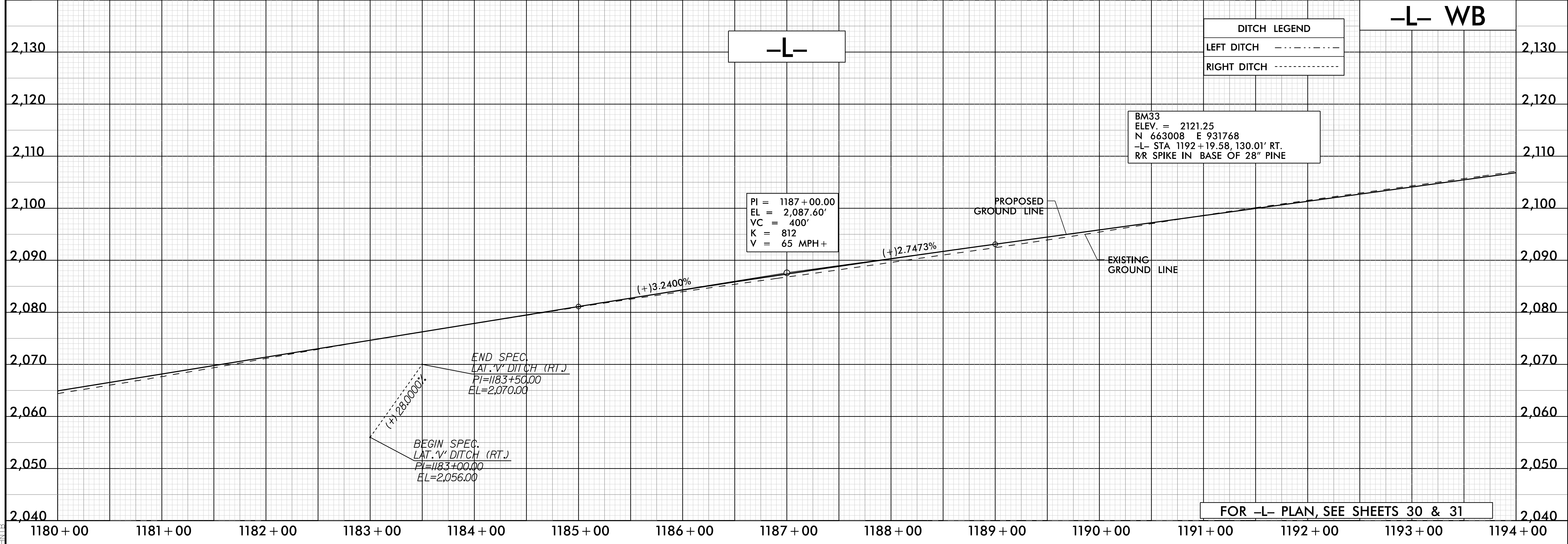
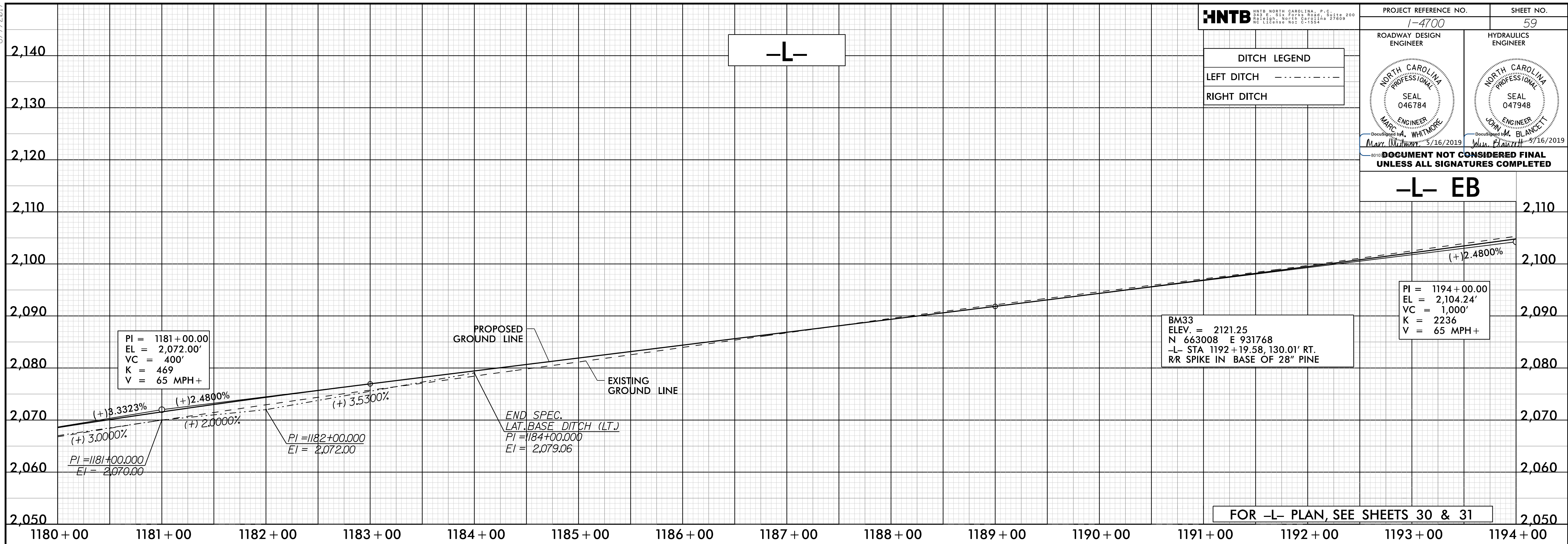
8/7/2017



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

ROADWAY DESIGN ENGINEER	
NORTH CAROLINA PROFESSIONAL SEAL 046784	
M. J. WHITMORE	
5/16/2019	
HYDRAULICS ENGINEER	
NORTH CAROLINA PROFESSIONAL SEAL 047948	
J. M. BLANCETT	
5/16/2019	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



16 MAY 2019 12:22
C:\p\14700\RDY_PFL_59

5/28/19

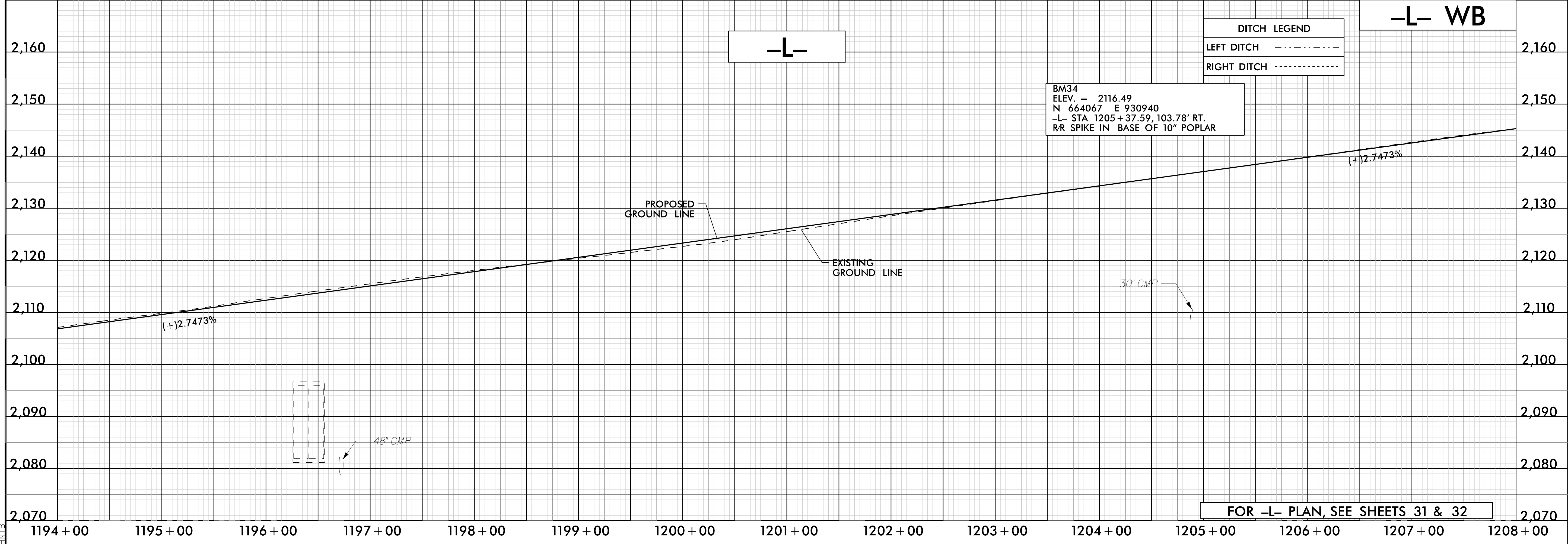
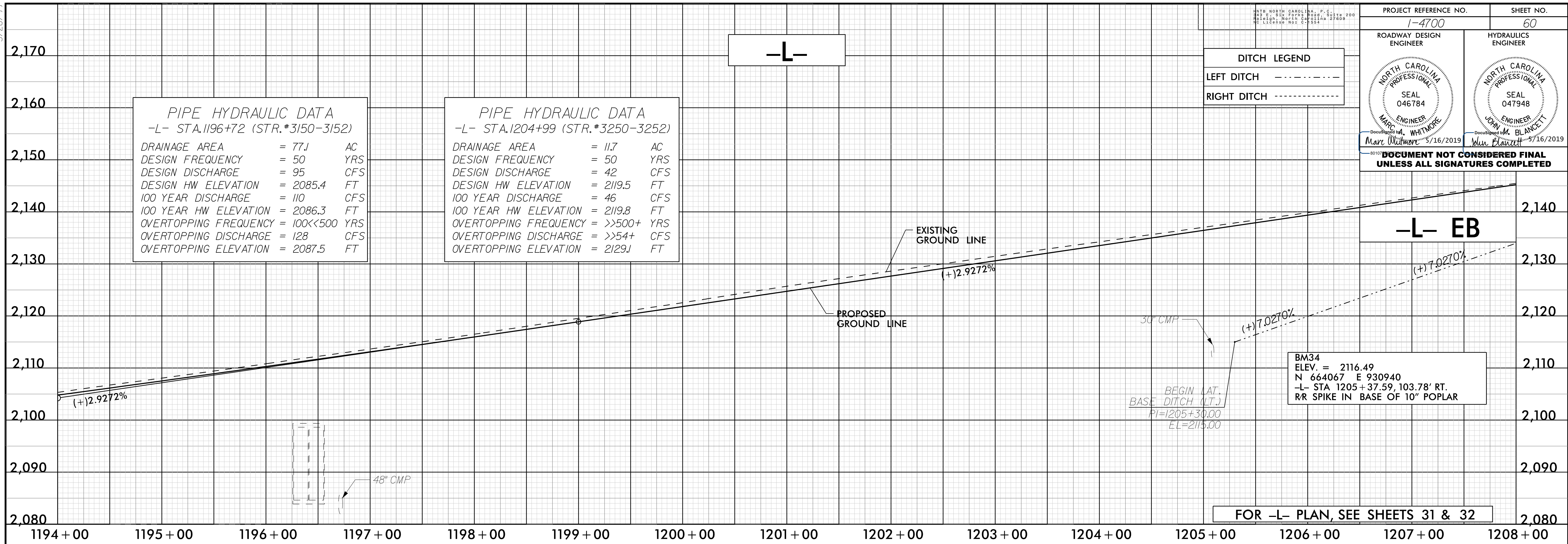
PROJECT REFERENCE NO. 1-4700		SHEET NO. 60
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

PIPE HYDRAULIC DATA
-L- STA.1196+72 (STR.#3150-3152)

DRAINAGE AREA	= 77.1	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 95	CFS
DESIGN HW ELEVATION	= 2085.4	FT
100 YEAR DISCHARGE	= 110	CFS
100 YEAR HW ELEVATION	= 2086.3	FT
OVERTOPPING FREQUENCY	= 100<<500	YRS
OVERTOPPING DISCHARGE	= 128	CFS
OVERTOPPING ELEVATION	= 2087.5	FT

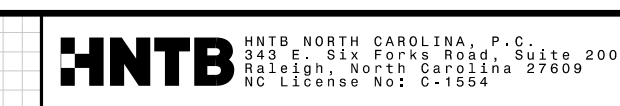
PIPE HYDRAULIC DATA
-L- STA.1204+99 (STR.#3250-3252)

DRAINAGE AREA	= 11.7	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 42	CFS
DESIGN HW ELEVATION	= 2119.5	FT
100 YEAR DISCHARGE	= 46	CFS
100 YEAR HW ELEVATION	= 2119.8	FT
OVERTOPPING FREQUENCY	= >>500+	YRS
OVERTOPPING DISCHARGE	= >>54+	CFS
OVERTOPPING ELEVATION	= 2129.1	FT



16 MAY 2019 12:22
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INTE

8/7/2017



PROJECT REFERENCE NO. 1-4700 SHEET NO. 61

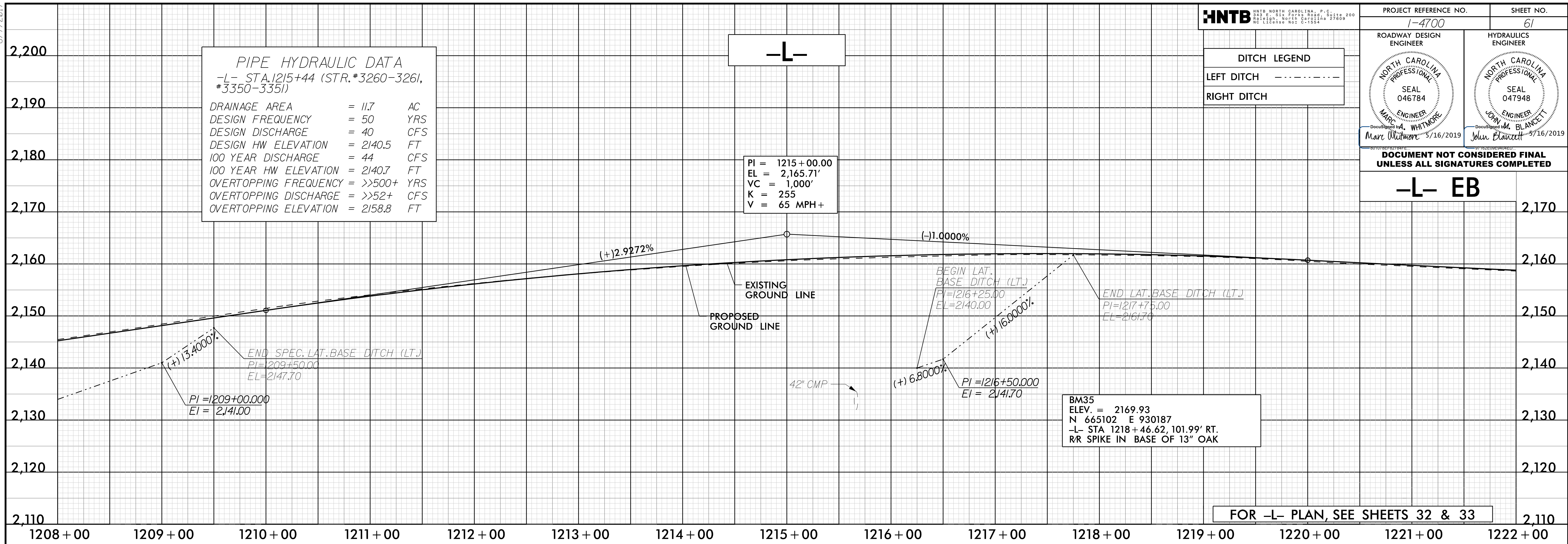
DITCH LEGEND	
LEFT DITCH	-----
RIGHT DITCH	-----

ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 046784 Marc Whitmore 5/16/2019	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 047948 John Blawie 5/16/2019
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PIPE HYDRAULIC DATA
 -L- STA. 1215+44 (STR. #3260-3261, #3350-3351)
 DRAINAGE AREA = 11.7 AC
 DESIGN FREQUENCY = 50 YRS
 DESIGN DISCHARGE = 40 CFS
 DESIGN HW ELEVATION = 2140.5 FT
 100 YEAR DISCHARGE = 44 CFS
 100 YEAR HW ELEVATION = 2140.7 FT
 OVERTOPPING FREQUENCY = >>500+ YRS
 OVERTOPPING DISCHARGE = >>52+ CFS
 OVERTOPPING ELEVATION = 2158.8 FT

-L-

PI = 1215+00.00
 EL = 2,165.71'
 VC = 1,000'
 K = 255
 V = 65 MPH+

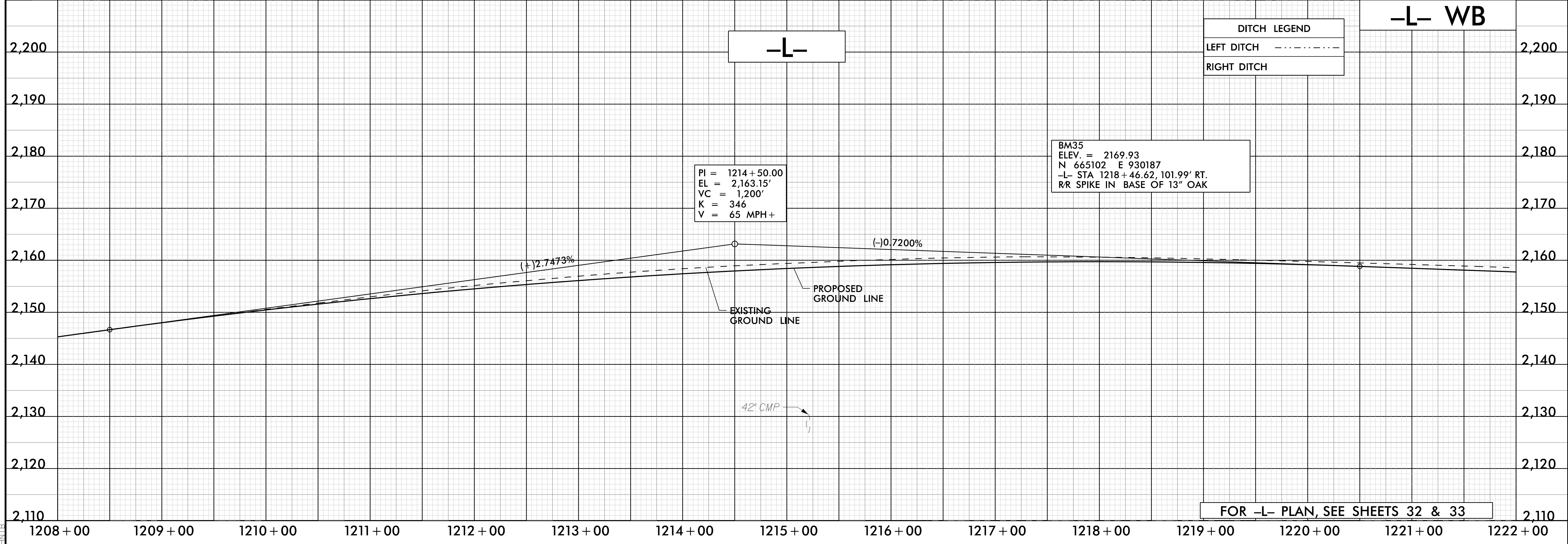


-L- EB

FOR -L- PLAN, SEE SHEETS 32 & 33

-L-

PI = 1214+50.00
 EL = 2,163.15'
 VC = 1,200'
 K = 346
 V = 65 MPH+

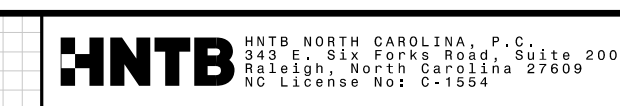


-L- WB

FOR -L- PLAN, SEE SHEETS 32 & 33

16 MAY 2018 12:22
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5/28/19



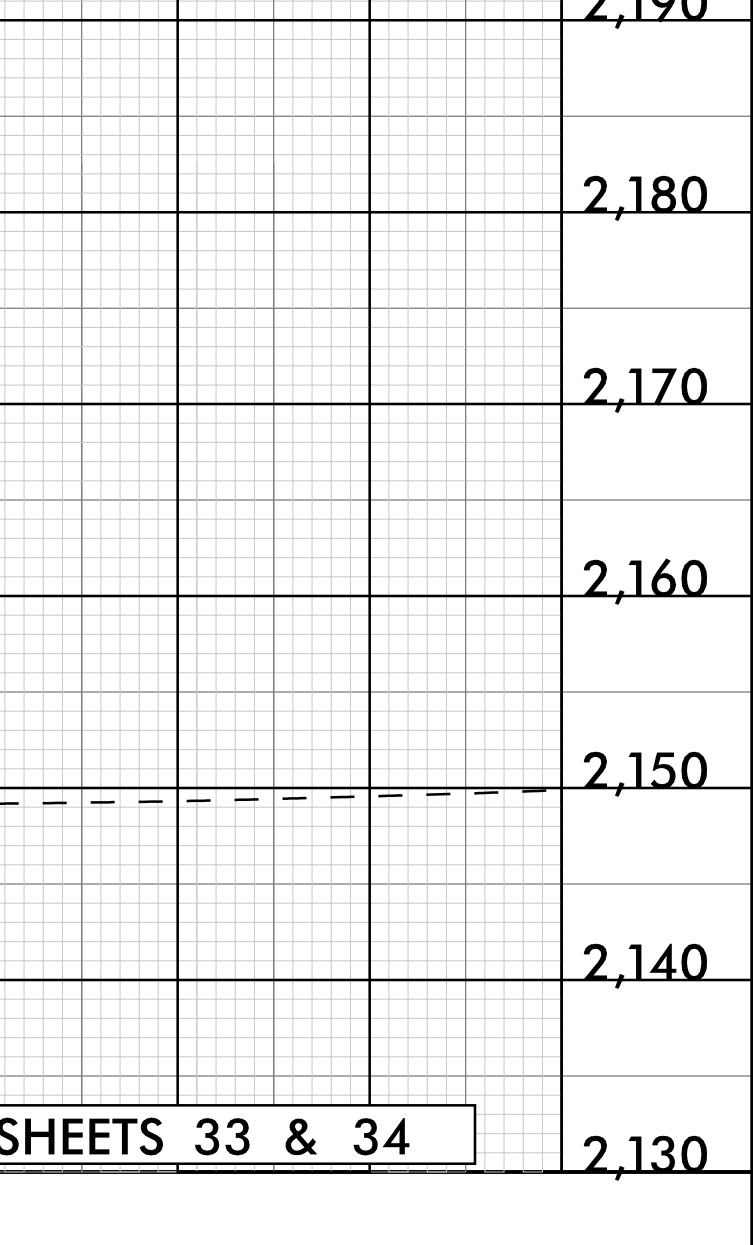
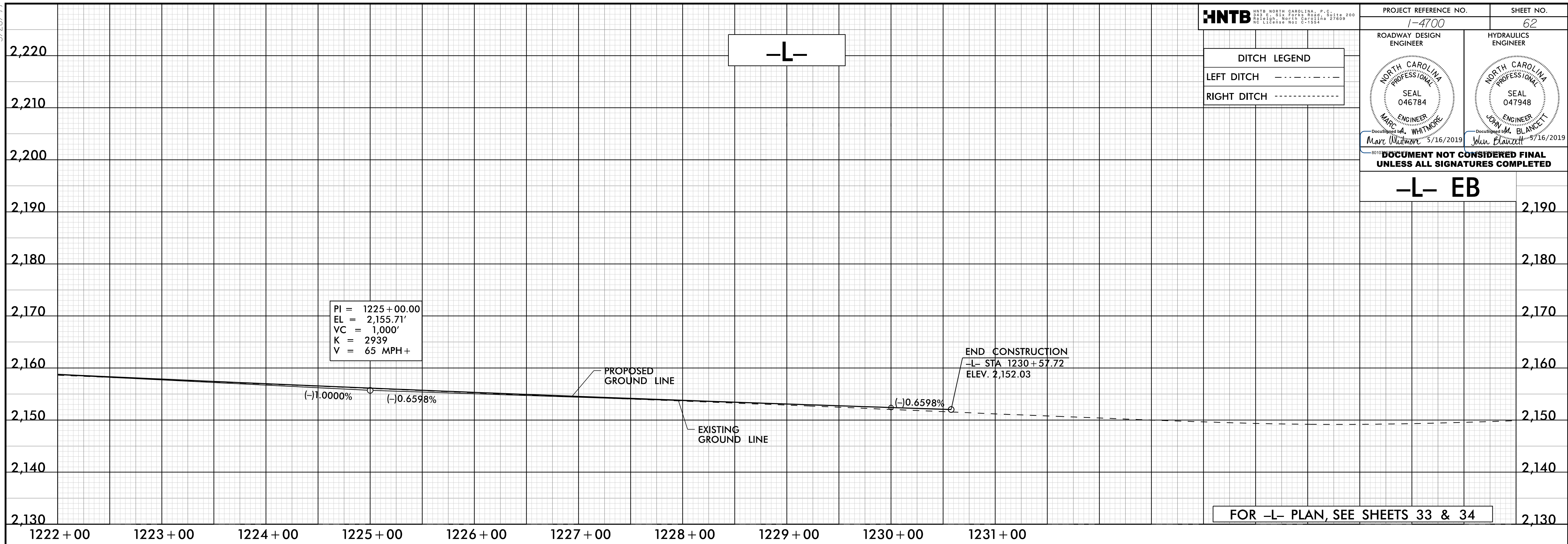
PROJECT REFERENCE NO. 1-4700 SHEET NO. 62

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

ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
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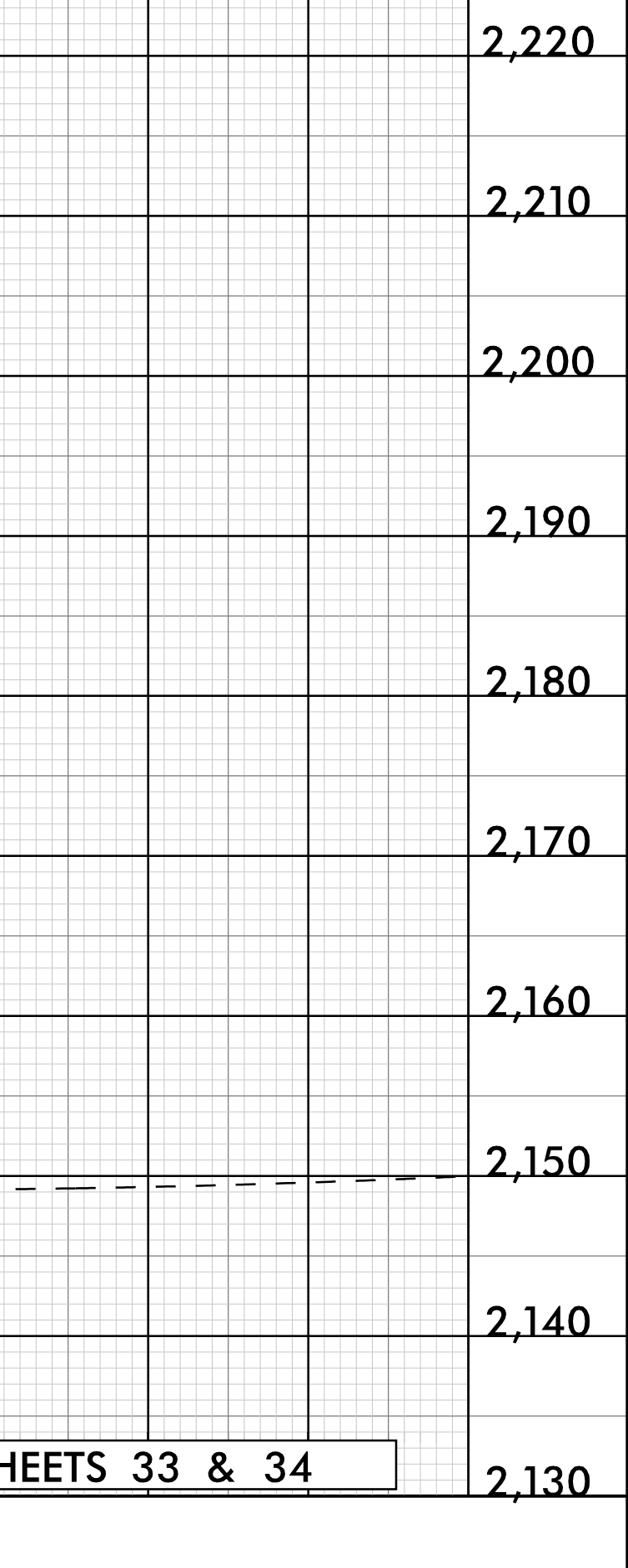
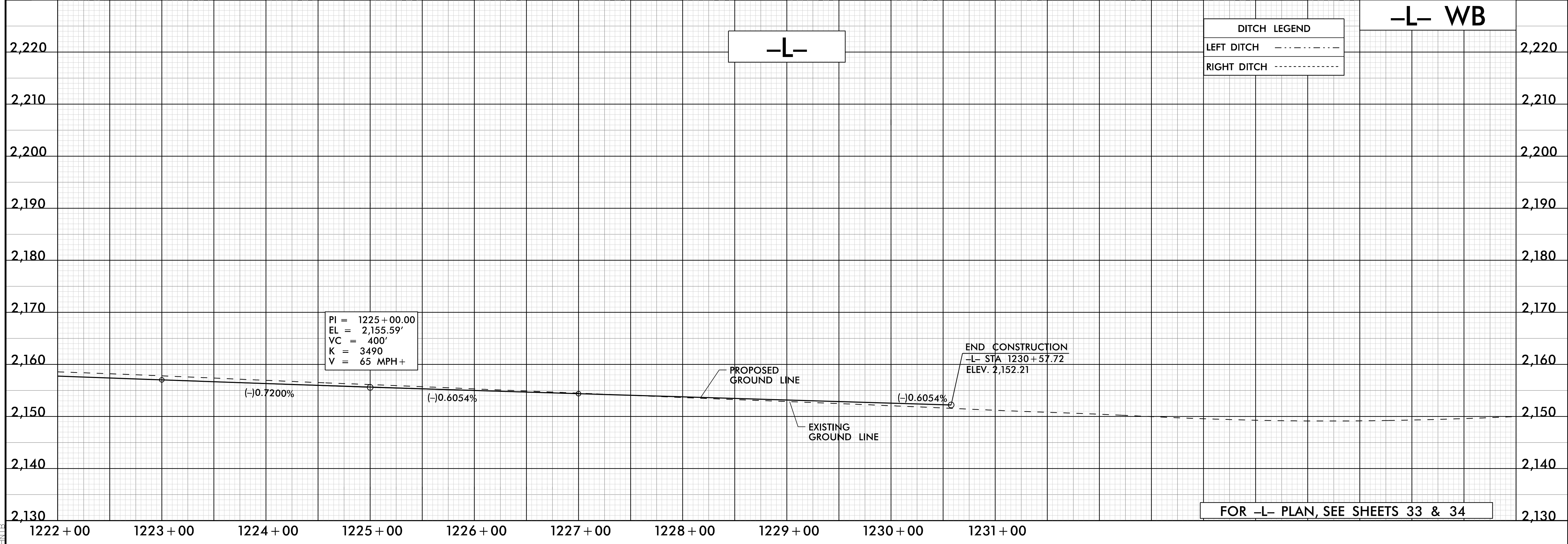
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-L- EB



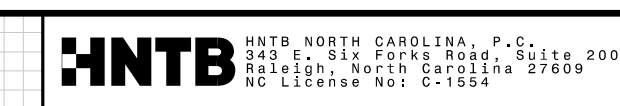
DITCH LEGEND	
LEFT DITCH	-----
RIGHT DITCH	-----

-L- WB

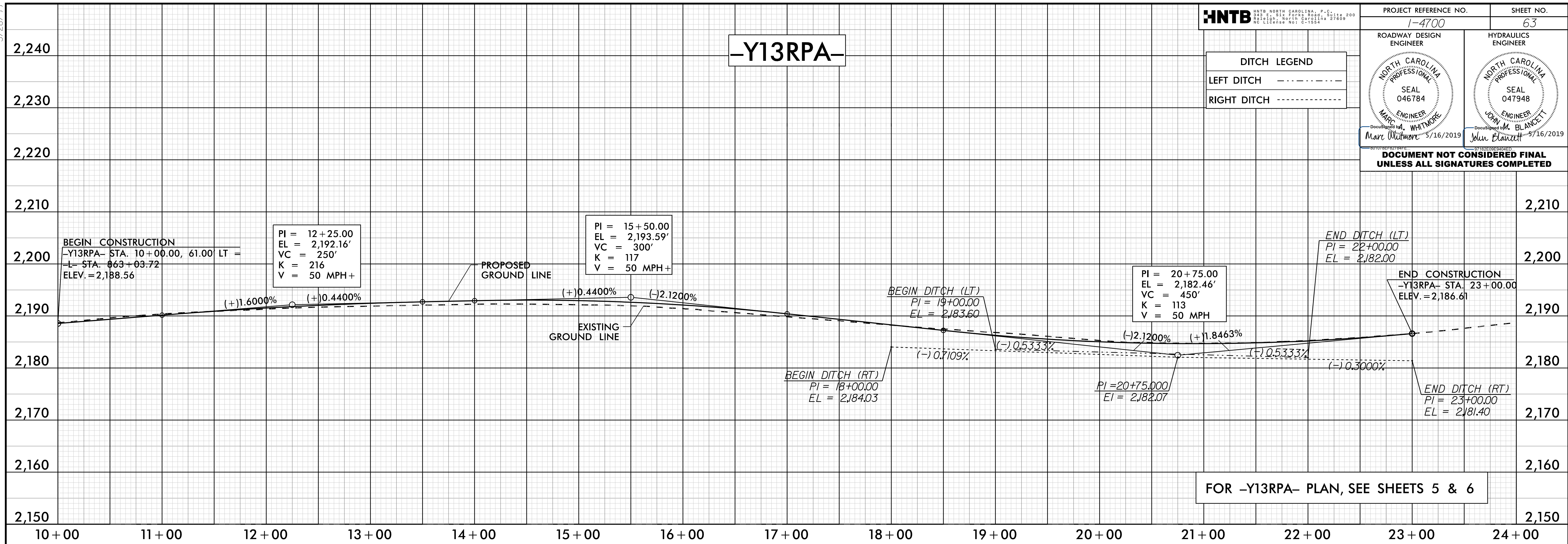


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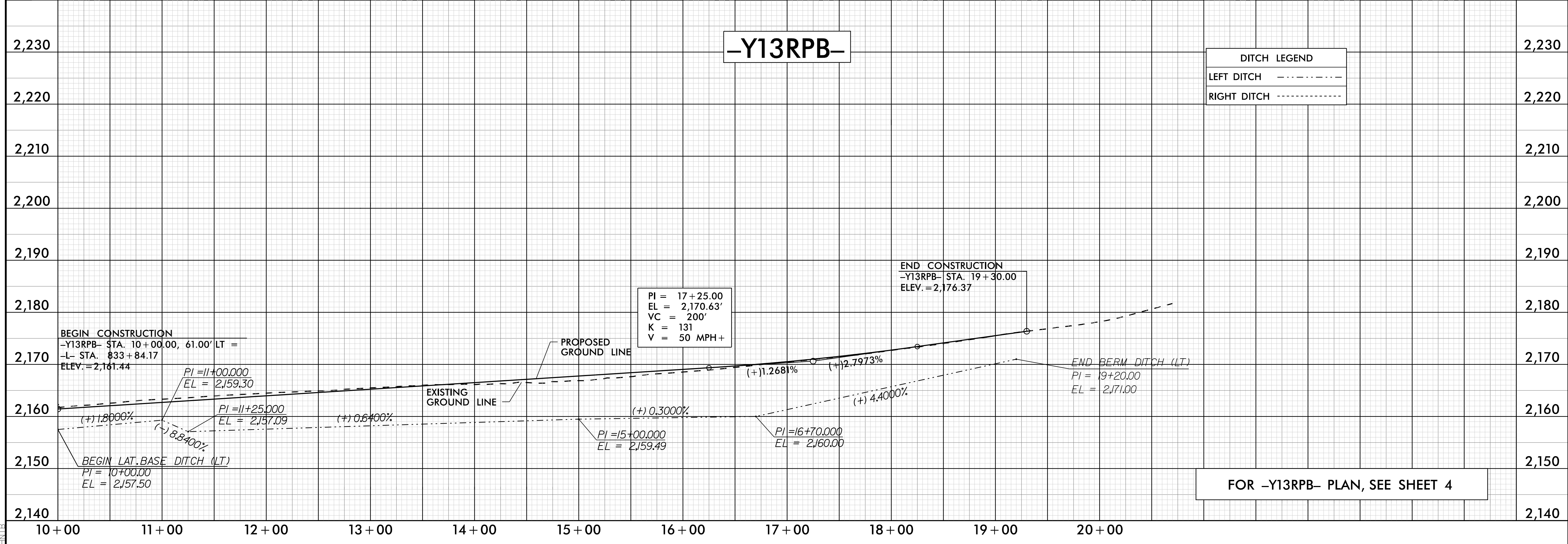
5/28/19



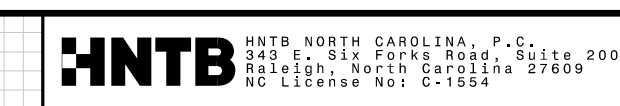
PROJECT REFERENCE NO. I-4700		SHEET NO. 63
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



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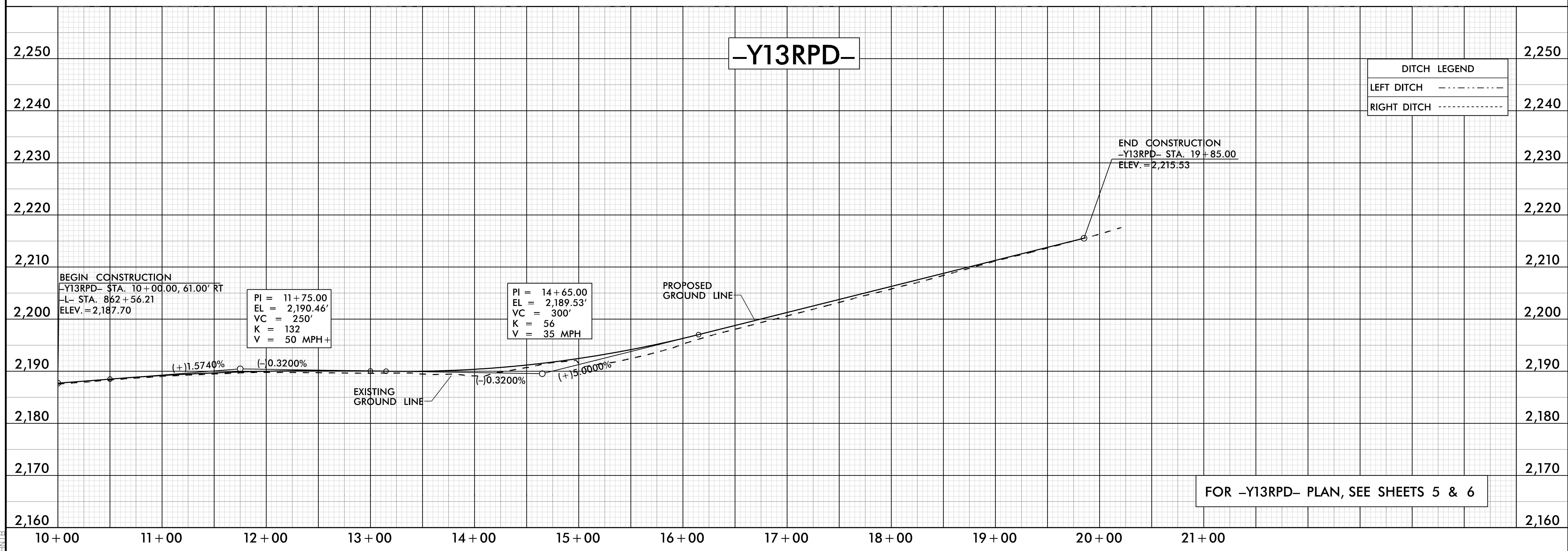
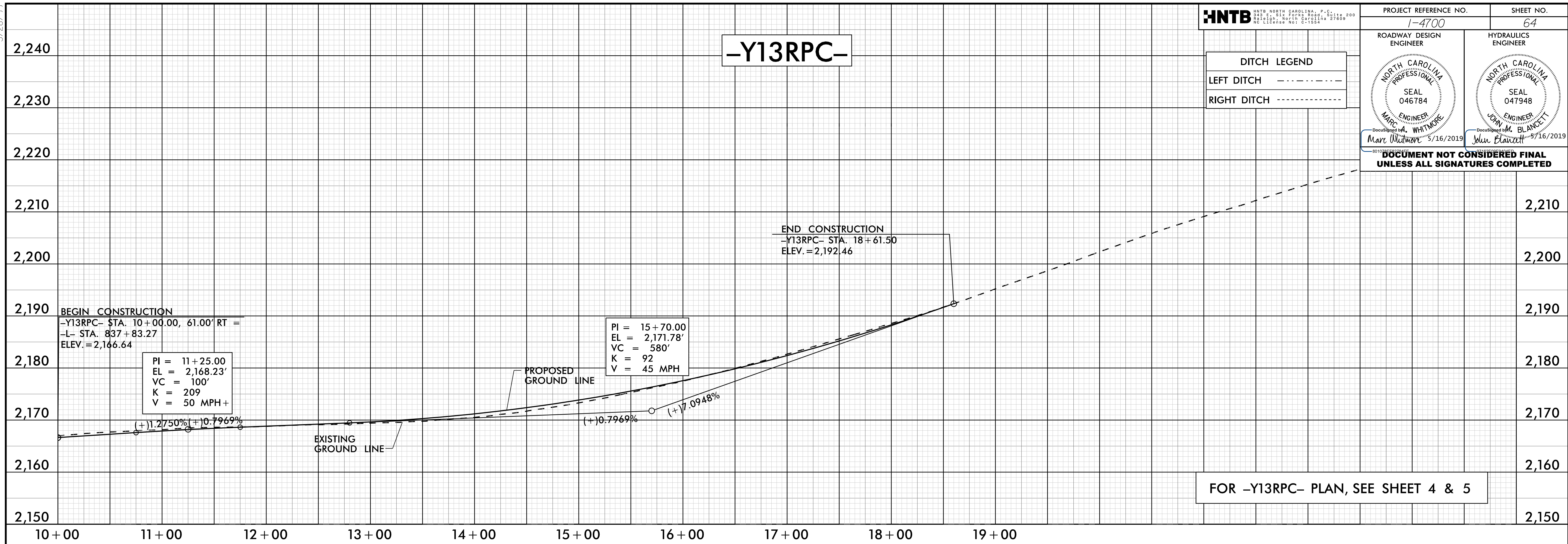
5/28/19



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

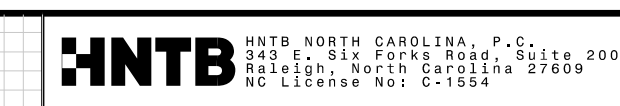
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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5/28/19

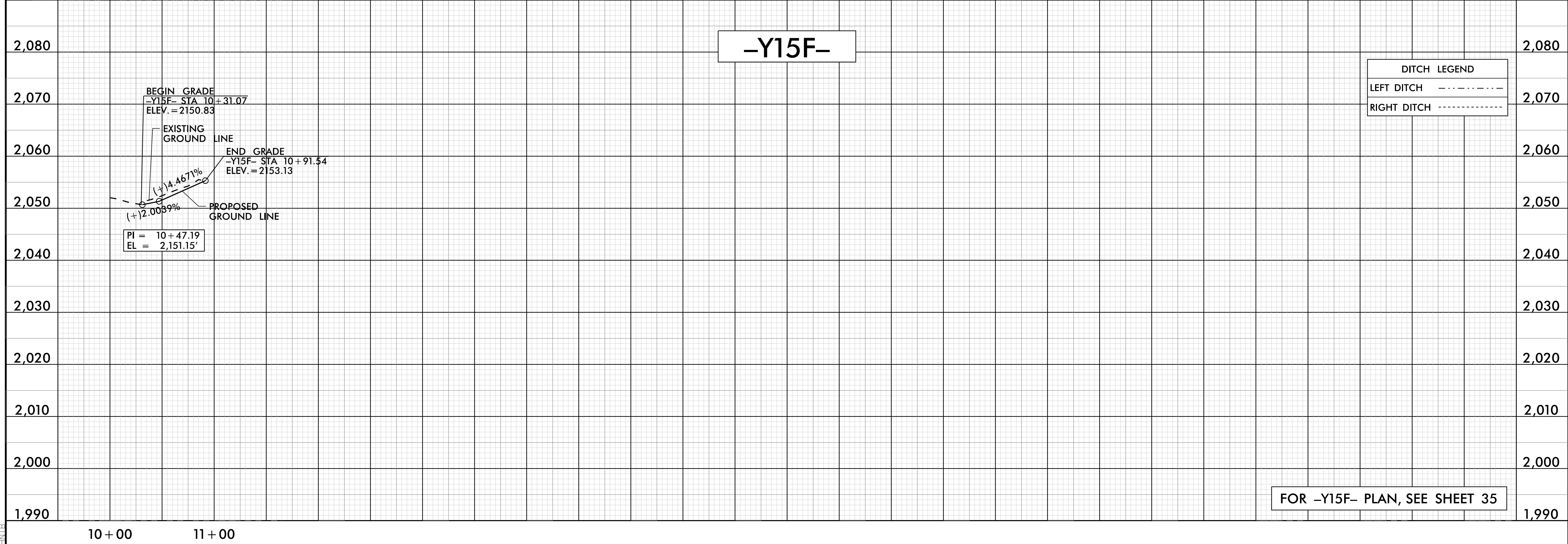
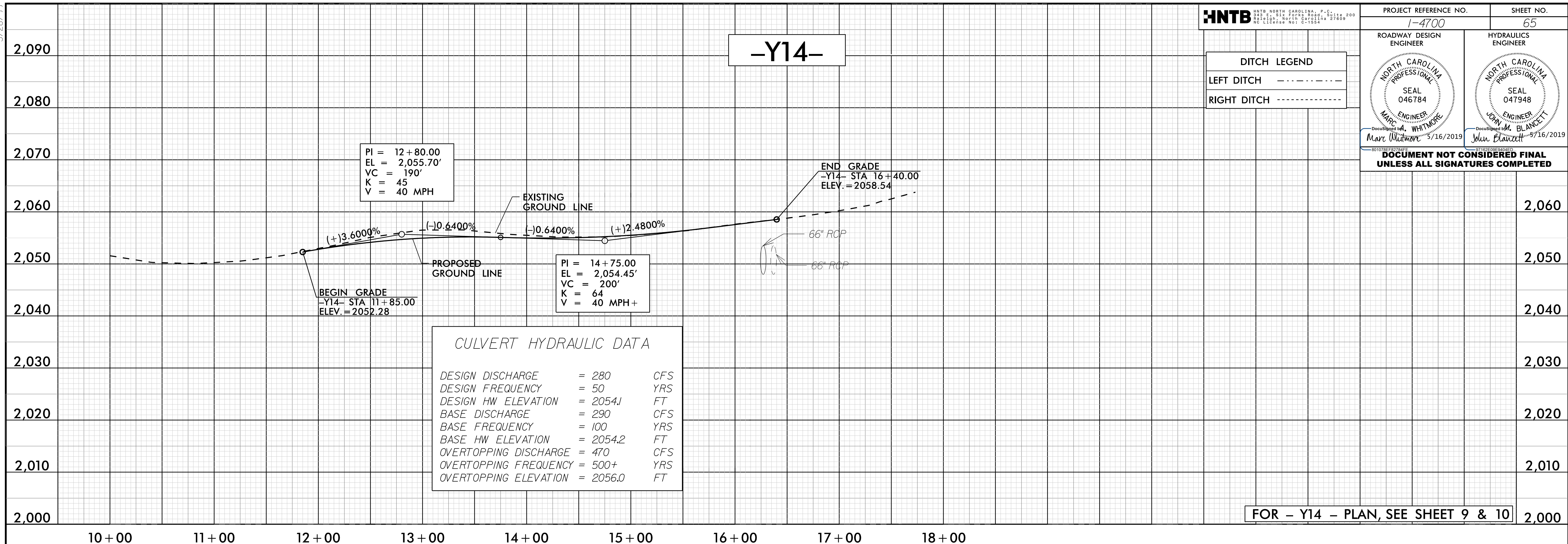


DITCH LEGEND	
LEFT DITCH	-----
RIGHT DITCH	-----

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 046784, Marc Whitmore, 5/16/2019

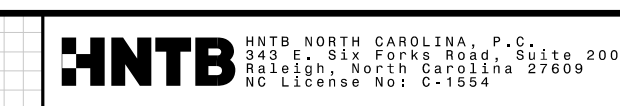
HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 047948, John M. Blawie, 5/16/2019

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



5-MAY-2019 12:22 PM C:\p05\14700\RDY_PFL_65.dgn

5/28/19

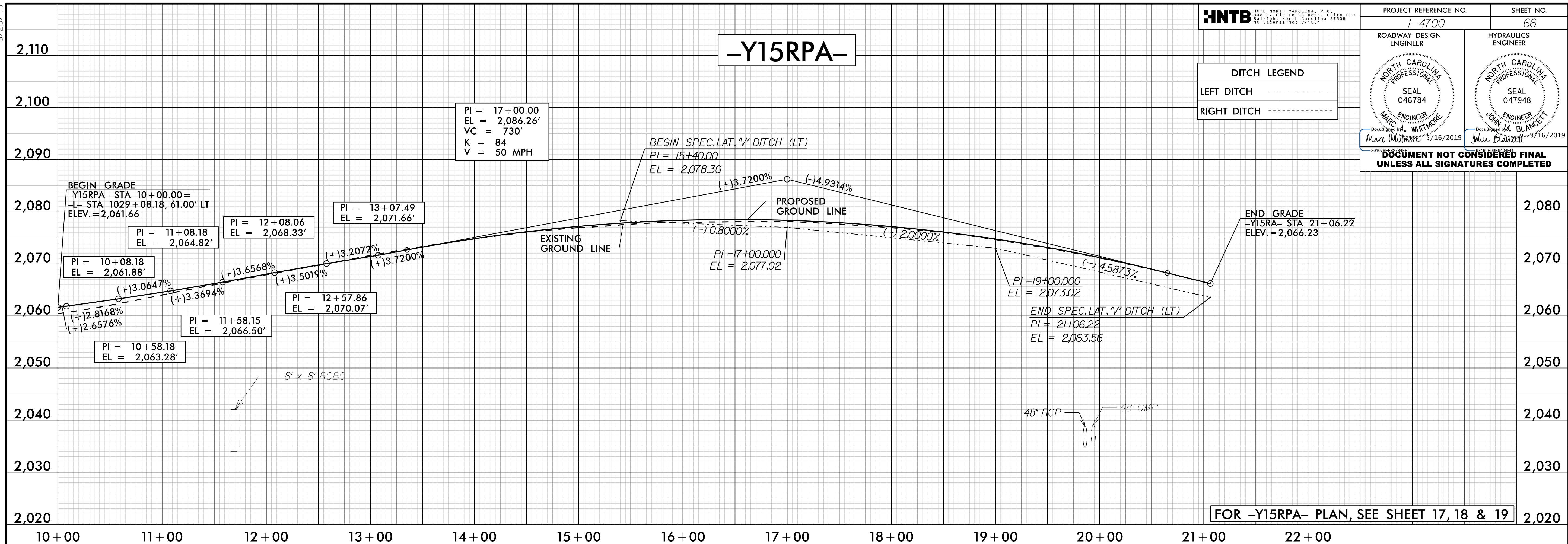


ROADWAY DESIGN ENGINEER
 MARC WHITMAN
 SEAL 046784
 NORTH CAROLINA PROFESSIONAL ENGINEER
 DOCUMENTED 5/16/2019

HYDRAULICS ENGINEER
 JOHN M. BLANCKETT
 SEAL 047948
 NORTH CAROLINA PROFESSIONAL ENGINEER
 DOCUMENTED 5/16/2019

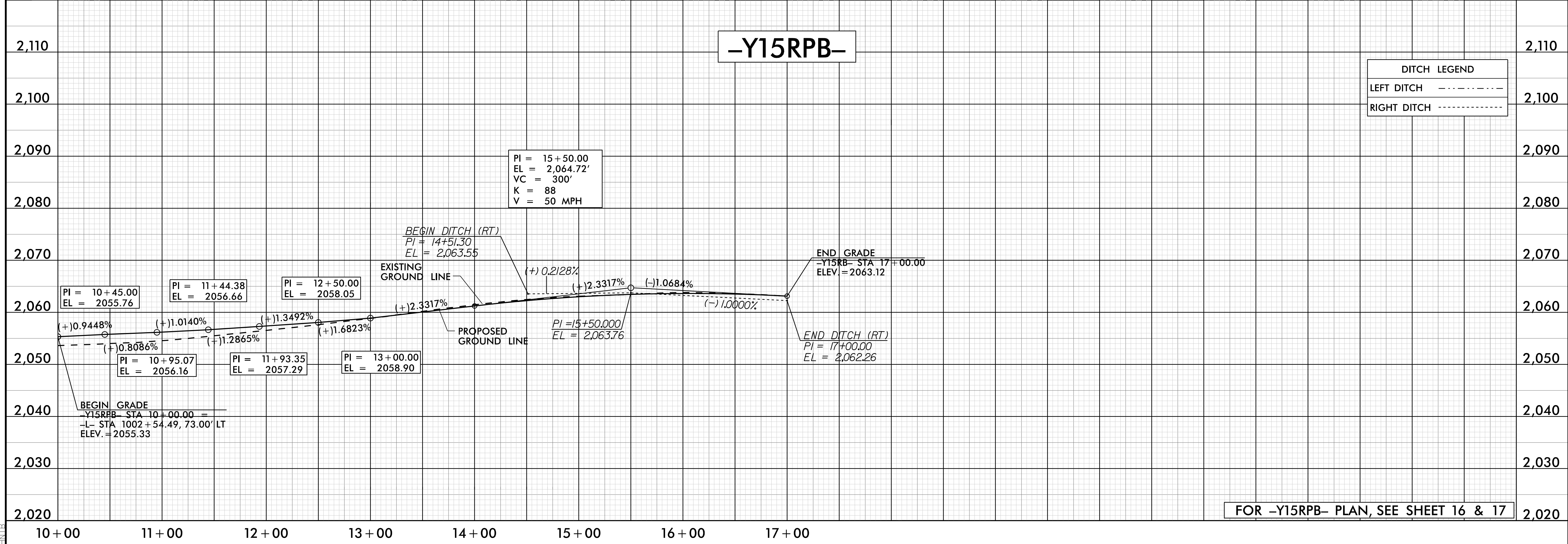
DITCH LEGEND
 LEFT DITCH - - - - -
 RIGHT DITCH - - - - -

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



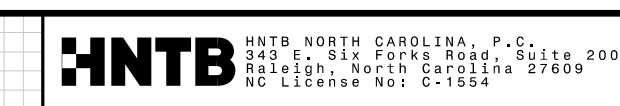
FOR -Y15RPA- PLAN, SEE SHEET 17, 18 & 19

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FOR -Y15RPB- PLAN, SEE SHEET 16 & 17

5/28/19



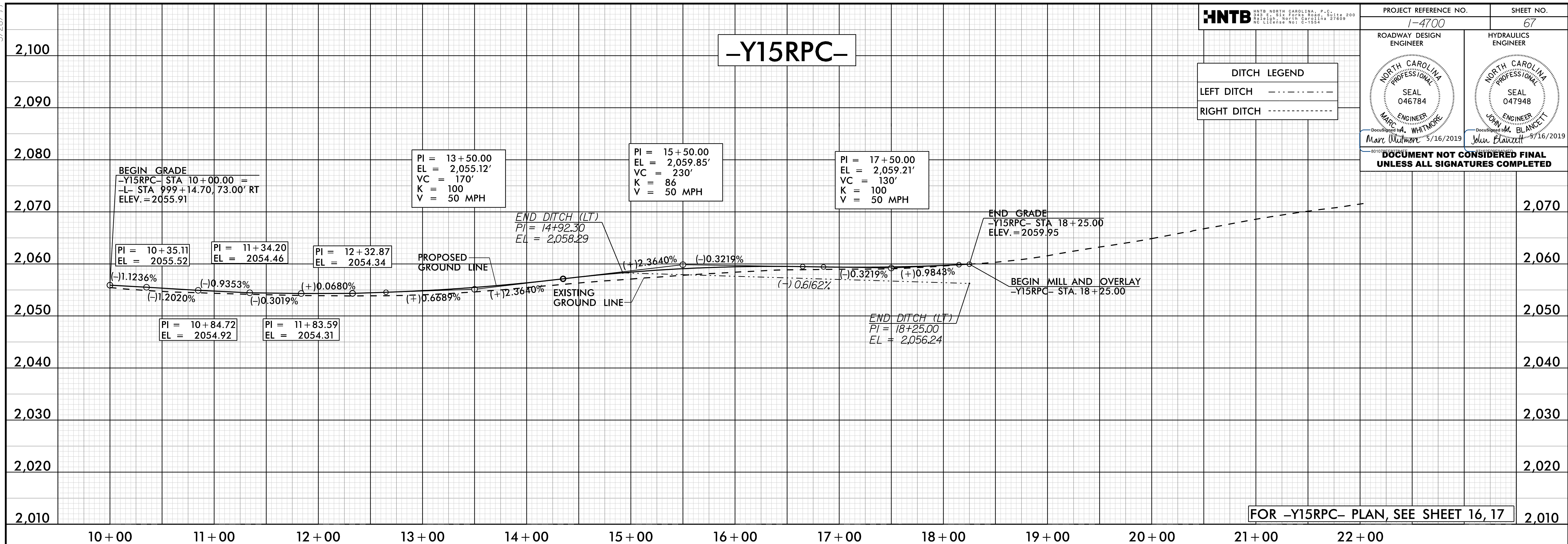
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 046784 Marc Whitmore 5/16/2019	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 047948 John Clavett 5/16/2019
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DITCH LEGEND

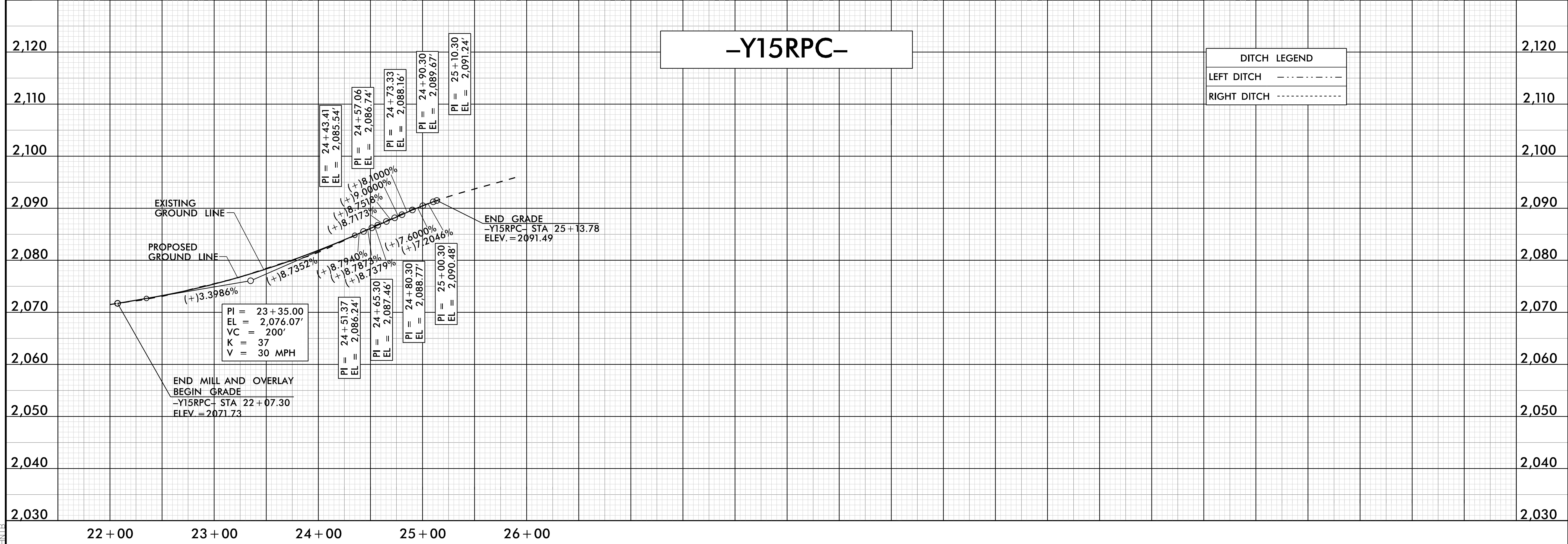
LEFT DITCH - - - - -

RIGHT DITCH - - - - -

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



FOR -Y15RPC- PLAN, SEE SHEET 16, 17



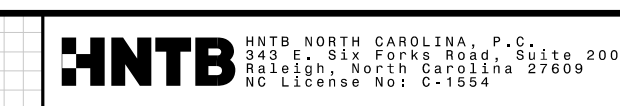
DITCH LEGEND

LEFT DITCH - - - - -

RIGHT DITCH - - - - -

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5/28/19



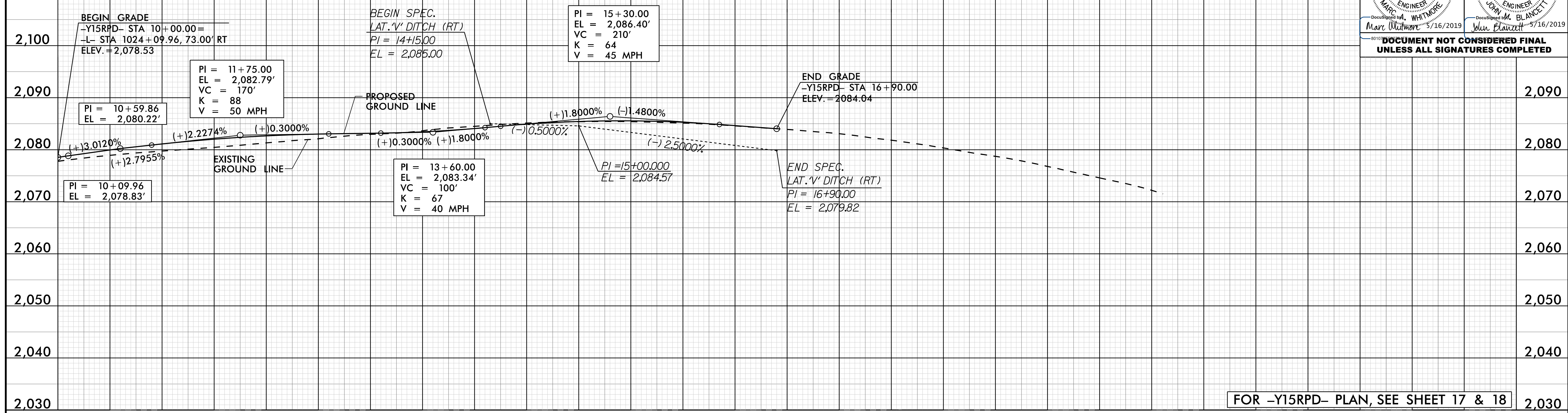
PROJECT REFERENCE NO. 1-4700 SHEET NO. 68

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

ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
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-Y15RPD-



FOR -Y15RPD- PLAN, SEE SHEET 17 & 18

5-MAY-2019 12:22
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