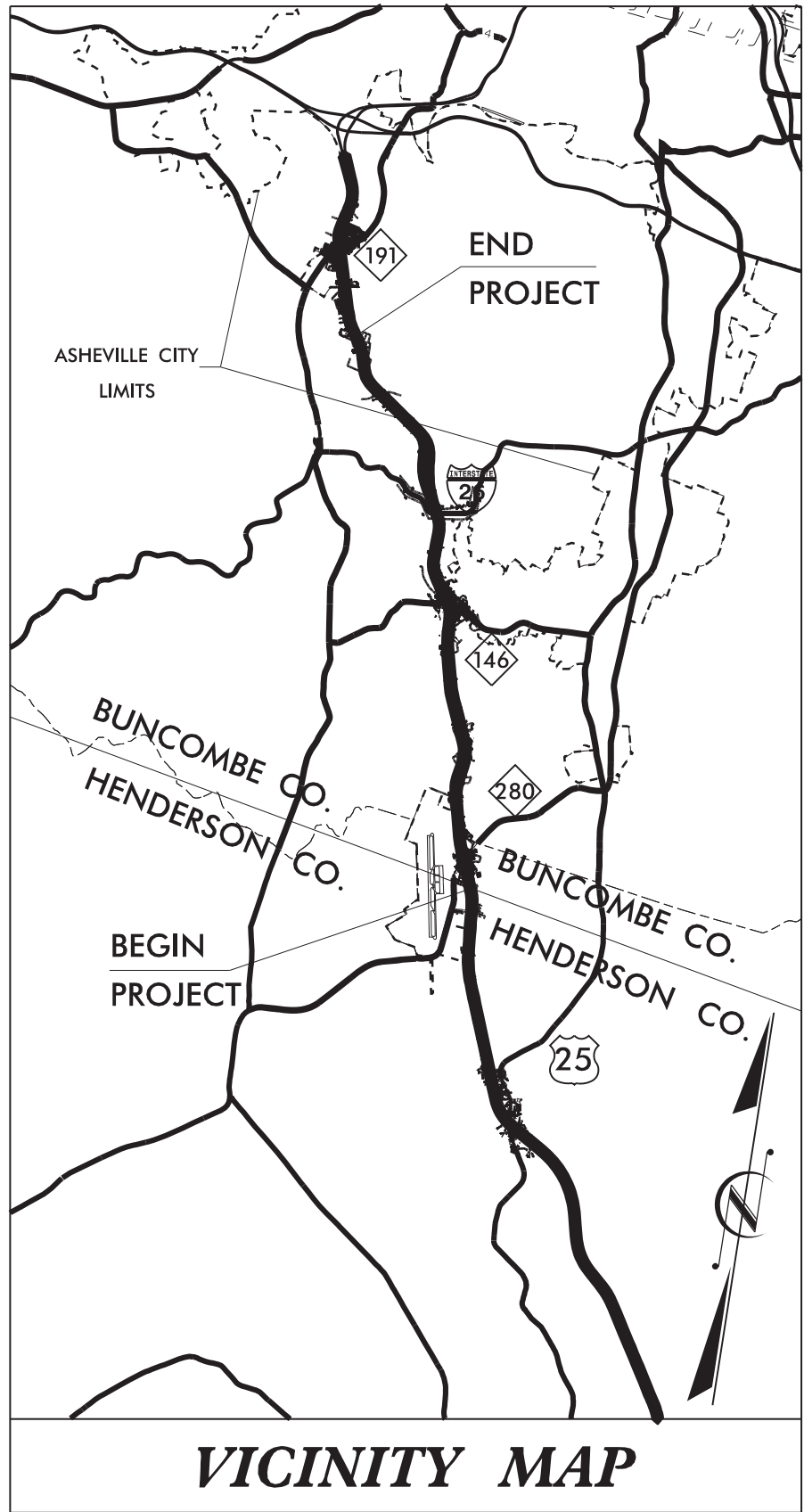


TIP PROJECT: I-4700

CONTRACT:



VICINITY MAP

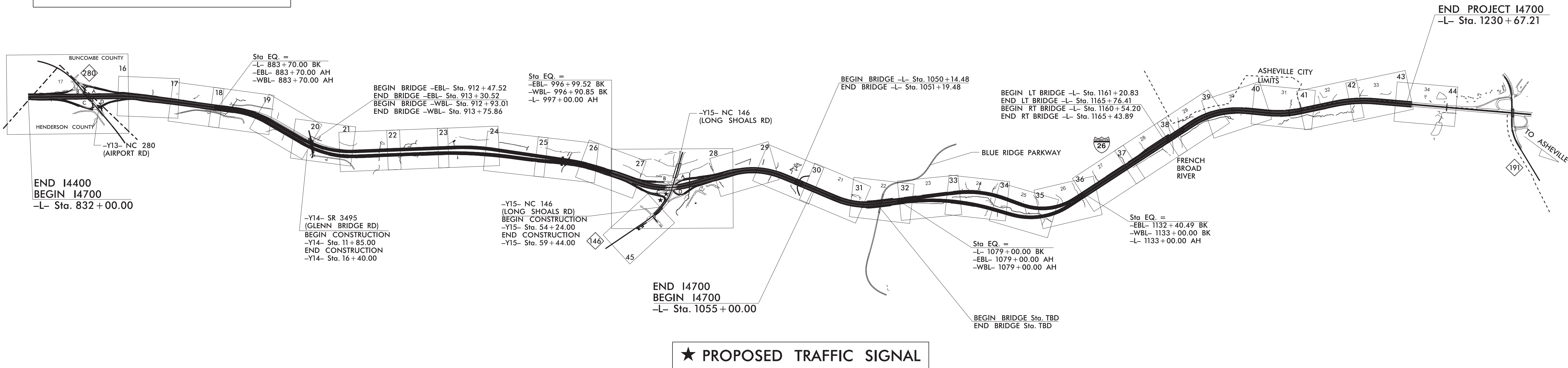
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BUNCOMBE & HENDERSON COUNTIES

LOCATION: I-26 FROM 0.3 MI EAST OF NC 280 (AIRPORT ROAD)
TO 0.5 MI EAST OF NC 191 (BREVARD ROAD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, RESURFACING, AND STRUCTURES

CP4B HYDRO CONCEPT PLANS
August 30, 2018

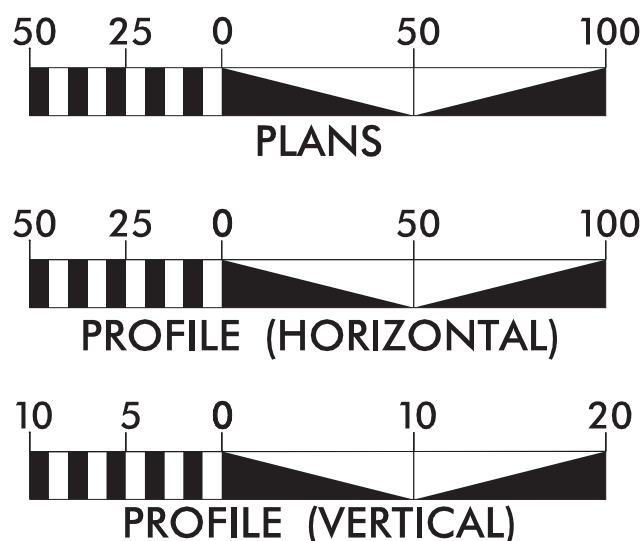


NOTE:
1. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
2. THIS PROJECT IS PARTIALLY WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF ASHEVILLE AND CITY OF HENDERSONVILLE.
3. THIS IS A CONTROLLED- ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

★ PROPOSED TRAFFIC SIGNAL

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2011 = 72,000
ADT 2040 = 117,900
DHV = 11,790
D = 55%
T = 10% *
V = 65 MPH
* TTST = 4% DUAL 6%
FUNC CLASS = INTERSTATE
STATEWIDE TIER

PROJECT LENGTH

TOTAL LENGTH OF ROADWAY TIP PROJECT
I-4700A / I-4700B = 7.369 MI
TOTAL LENGTH OF STRUCTURES OF TIP PROJECT
I-4700A / I-4700B = 0.121 MI
TOTAL LENGTH OF TIP PROJECT
I-4700A / I-4700B = 7.490 MI
NOTE: LENGTHS WERE CALCULATED USING THE WBL ALIGNMENT

Prepared in the Office of:
HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
July 1, 2018

LETTING DATE:
June 2019

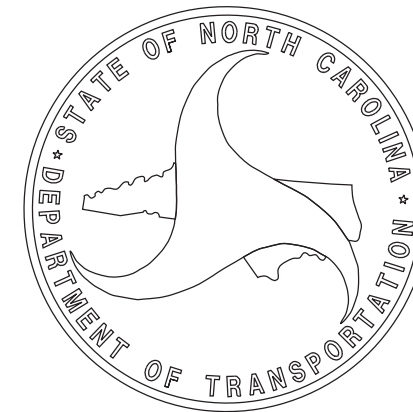
JOSEPH OLSON, P.E.
PROJECT ENGINEER
JEFF HESS, P.E.
PROJECT DESIGN ENGINEER
WANDA AUSTIN, P.E.
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN
ENGINEER

SIGNATURE: P.E.



FINAL PAVEMENT RECOMMENDATION
13.0" CONCRETE
NONWOVEN GEOTEXTILE INTERLAYER
1.25" S9.5B
12" AGGREGATE SUBGRADE TYPE I

OUTSIDE AND MEDIAN SHOULDER DESIGNS ARE AS FOLLOWS:

3.0" S9.5C
4.0" 19.0C
7.25" B25.0C
12.0" AGGREGATE SUBGRADE TYPE I

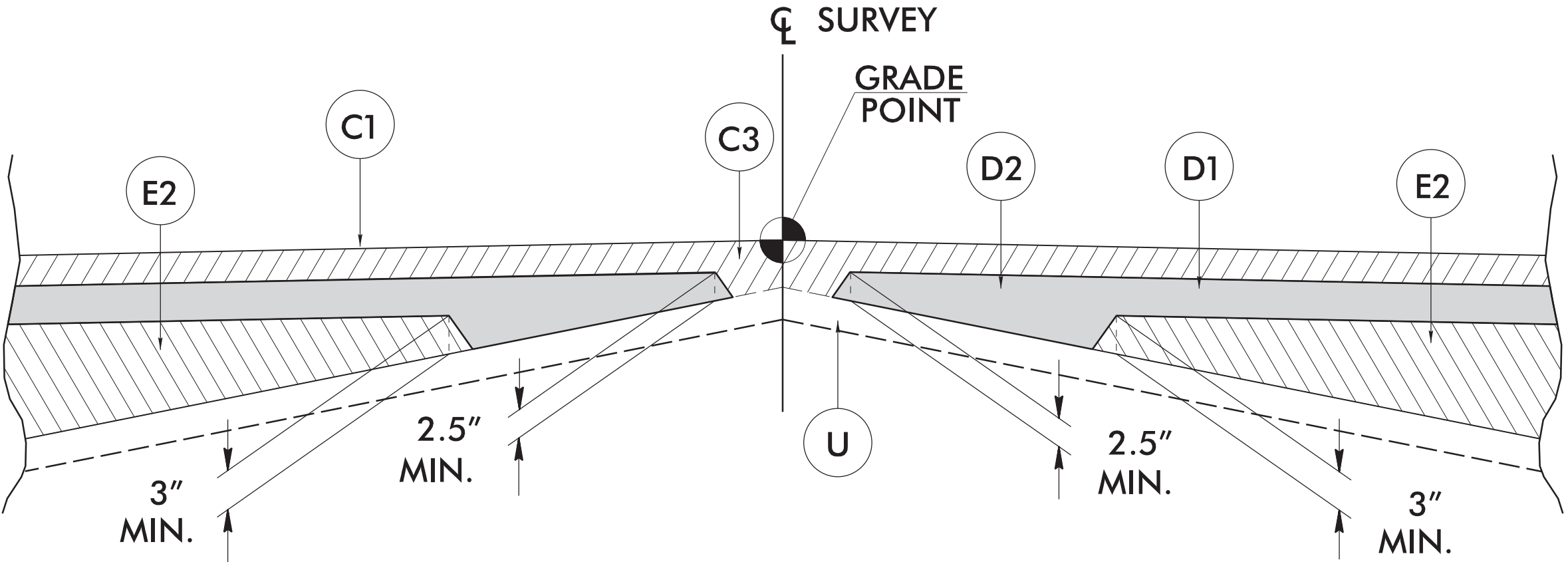
Y-LINES	SURFACE	INTERMED.	BASE	ABC	CTABC	STAB.
Y10 (US-25)	3.0" S9.5C	4.0" 119.0C	4.0" B25.0C	-	-	NO
Y10RPA	3.0" S9.5C	4.0" 119.0C	4.0" B25.0C	-	-	NO
Y10RPB	3.0" S9.5C	4.0" 119.0C	4.0" B25.0C	-	-	NO
Y10RPC	3.0" S9.5C	4.0" 119.0C	4.0" B25.0C	-	-	NO
Y10RPD	3.0" S9.5C	4.0" 119.0C	4.0" B25.0C	-	-	NO
Y11 (SR 1345 BUTLER BRIDGE RD.)	3.0" S9.5B	4.0" 119.0C	4.0" B25.0C	-	-	NO
Y12 (SR 1358 FANNING BRIDGE RD.)	3.0" S9.5B	2.5" 119.0C	4.0" B25.0C	-	-	NO
Y13 (NC 280 AIRPORT RD.)	3.0" S9.5C	4.0" 119.0C	4.0" B25.0C	-	-	NO
Y17 (SR 1561 MAXWELL DR.)	2.5" S9.5B	-	4.0" B25.0C			NO
Y20 (UNDERWOOD RD.)	3.0" S9.5B	2.5" 119.0C	4.0" B25.0C	-	-	NO
Y21 (SR 1366 CURETON PL.)	2.5" S9.5B	-	4.0" B25.0C			NO
Y22 (SR 1365 NORTH RUGBY RD.)	2.5" S9.5B	-	4.0" B25.0C			NO
Y13RPA	3.0" S9.5C	4.0" 119.0C	4.0" B25.0C	-	-	NO
Y13RPB	3.0" S9.5C	4.0" 119.0C	4.0" B25.0C	-	-	NO
Y13RPC	3.0" S9.5C	4.0" 119.0C	4.0" B25.0C	-	-	NO
Y13RPD	3.0" S9.5C	4.0" 119.0C	4.0" B25.0C	-	-	NO
RESTA, RESTB, RESTC, RESTD	9.0" CONCRETE 6.0" ABC					

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343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.		SHEET NO.	
1-4700A/B		2A	
ROADWAY DESIGN ENGINEER		PAVEMENT DESIGN ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

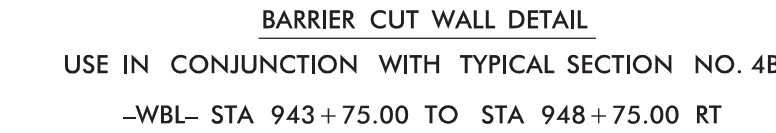
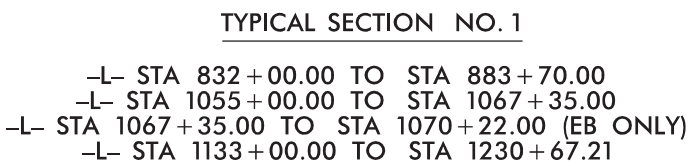
NOTE: TYPICAL SECTIONS DO NOT REFLECT THE FINAL PAVEMENT RECOMMENDATIONS.



Detail Showing Method of Wedging

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

NOTE: TYPICAL SECTIONS DO NOT REFLECT THE FINAL PAVEMENT RECOMMENDATIONS.



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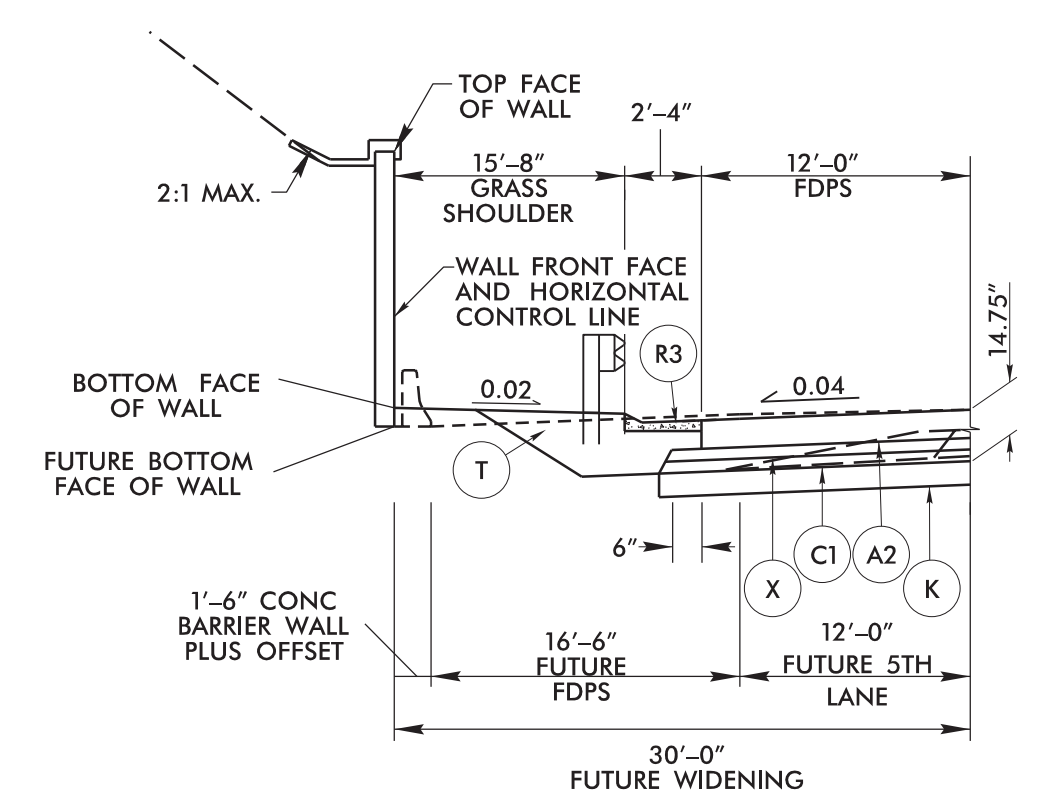
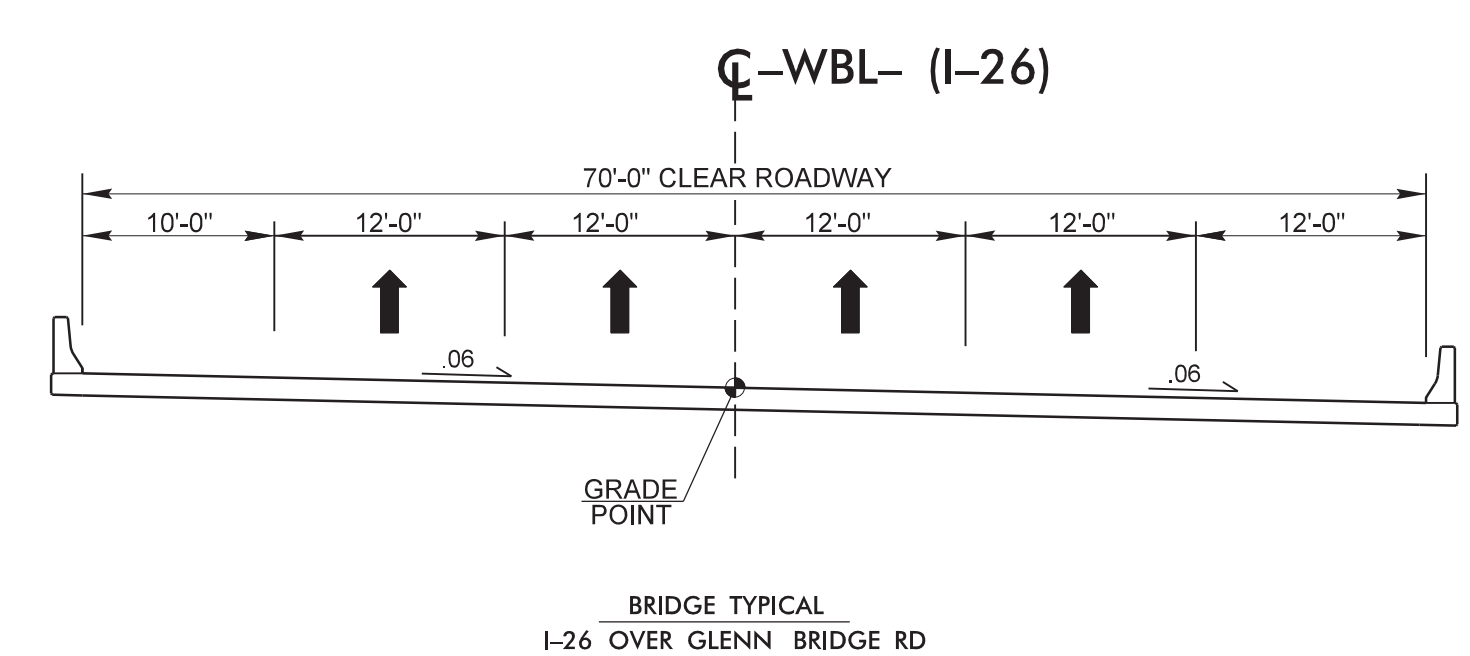
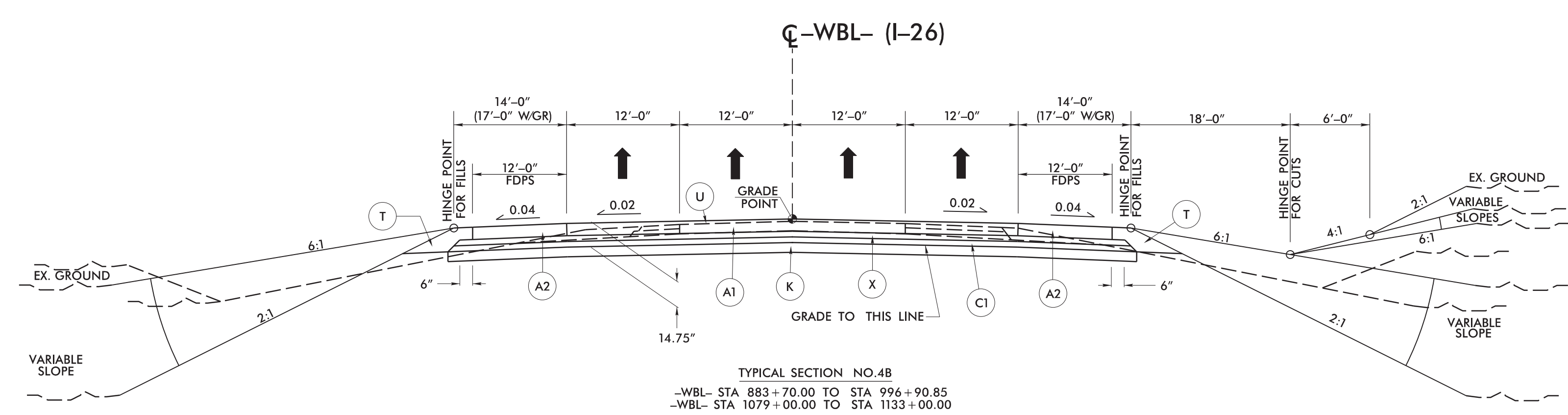
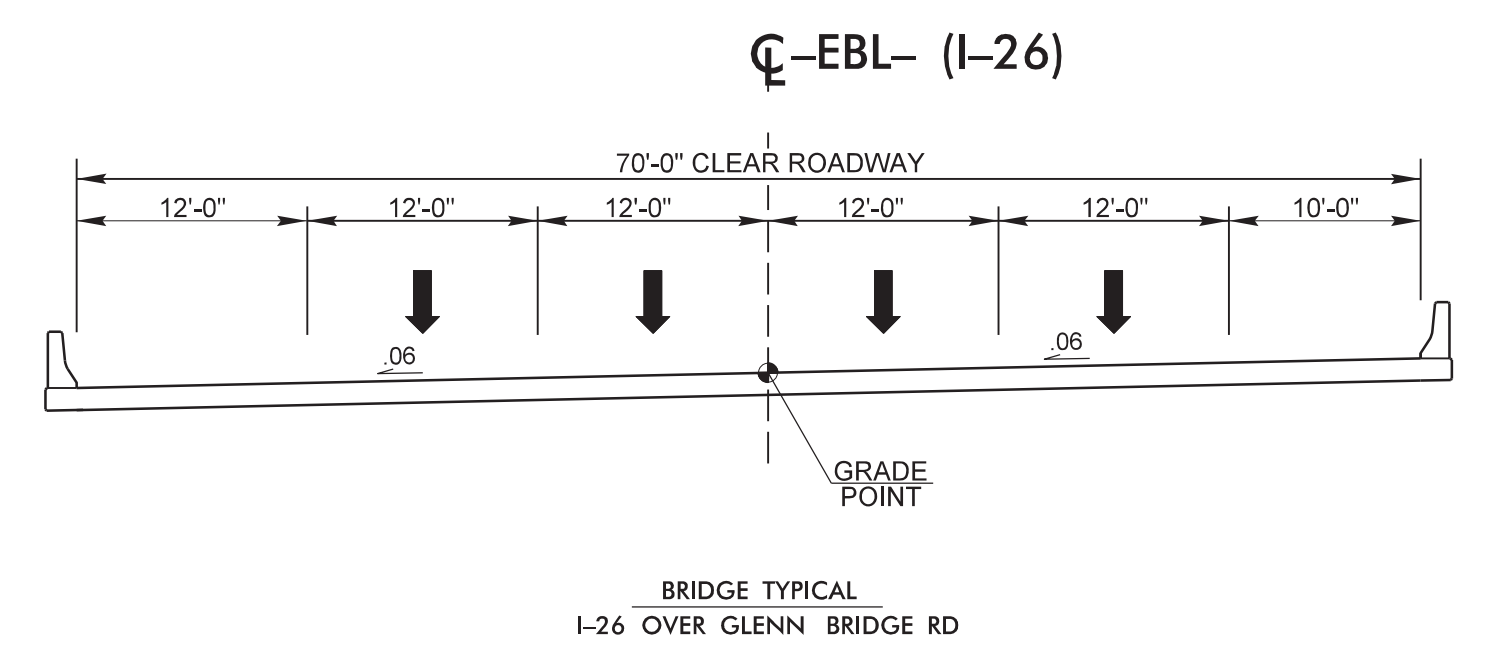
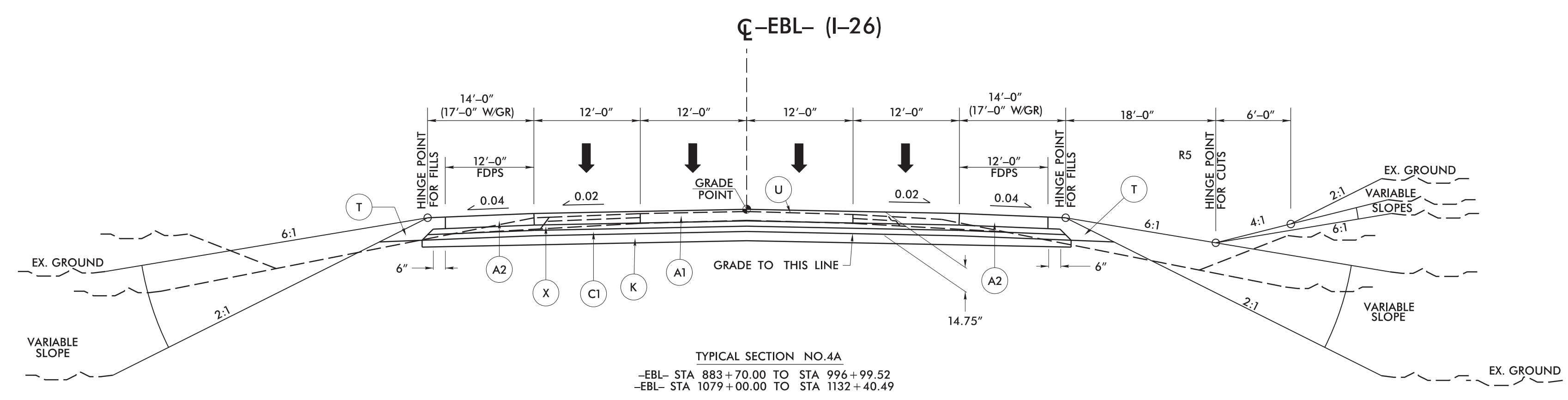
-!L STA 832+00.00 TO STA 833+84.17 LT (INVERT)
-!L STA 833+00.00 TO STA 837+83.27 RT
-!L STA 863+03.72 TO STA 869+00.00 LT (INVERT)
-!L STA 869+50.77 TO STA 871+00.00 RT
-!Y13RPA STA 10+00.00 TO STA 15+00.00 RT
-!Y13RBP STA 10+00.00 TO STA 17+00.00 LT (INVERT)
-!Y13RPA STA 10+00.00 TO STA 18+61.87 RT
-!L STA 874+75.00 TO STA 878+00.00 LT (INVERT)
-!L STA 880+50.00 TO -WBL STA 889+00.00 RT
-WBL STA 922+50.00 TO STA 981+00.00 LT (INVERT)
-EBL STA 932+00.00 TO STA 981+00.00 LT (INVERT)
-WBL STA 951+25.00 TO STA 959+75.00 RT
-WBL STA 981+00.00 TO STA 986+00.00 RT
-EBL STA 996+75.00 TO -Y15RBP STA 1009+35.00 LT (INVERT)
-!L STA 1000+00.00 TO STA 1006+00.00 RT
-!Y15RPA STA 1022+00.00 TO -!L STA 1033+00.00 LT (INVERT)
-!L STA 1026+50.00 TO STA 1050+16.41 RT
-!L STA 1044+25.00 TO STA 1050+16.41 LT (INVERT)
-!L STA 1050+21.41 TO STA 1055+00.00 LT (INVERT)
-!L STA 1051+21.41 TO STA 1055+00.00 LT (INVERT)
-!L STA 1055+00.00 TO STA 1067+35.00 RT
-!L STA 1055+00.00 TO STA 1070+00.00 LT (INVERT)
-WBL STA 1081+72.00 TO STA 1093+89.00 RT
-WBL STA 1089+50.00 TO STA 1128+50.00 LT (INVERT)
-WBL STA 1100+50.00 TO STA 1108+40.00 RT
-WBL STA 1114+27.00 TO STA 1133+00.00 RT
-WBL STA 1184+65.17 TO STA 1189.00 RT
-EBL STA 1084+00.00 TO STA 1085+50.00 LT (INVERT)
-EBL STA 1093+30.00 TO STA 1094+75.00 LT (INVERT)
-EBL STA 1094+00.00 TO STA 1124+00.00 RT
-EBL STA 1102+00.00 TO STA 1124+00.00 RT
-EBL STA 1125+80.00 TO STA 1132+40.49 LT (INVERT)
-!L STA 1133+00.00 TO STA 1140+75.00 LT (INVERT)
-!L STA 1133+00.00 TO STA 1160+27.15 RT
-!L STA 1133+00.00 TO STA 1160+27.15 RT
-!L STA 1175+75.00 TO STA 1182+79.00 LT (INVERT)
-!L STA 1181+30.00 TO STA 1193+75.00 RT
-!L STA 1198+25.00 TO STA 1217+69.00 LT (INVERT)
-!L STA 1204+25.00 TO STA 1212+25.00 RT
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-!L STA 1228+75.00 TO STA 1230+67.21 RT

```

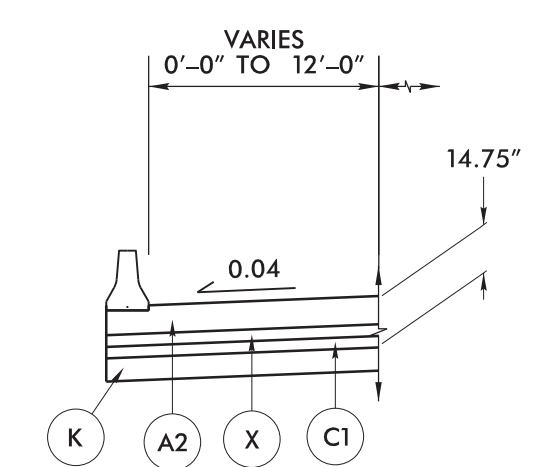

6/2/99

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HNTB

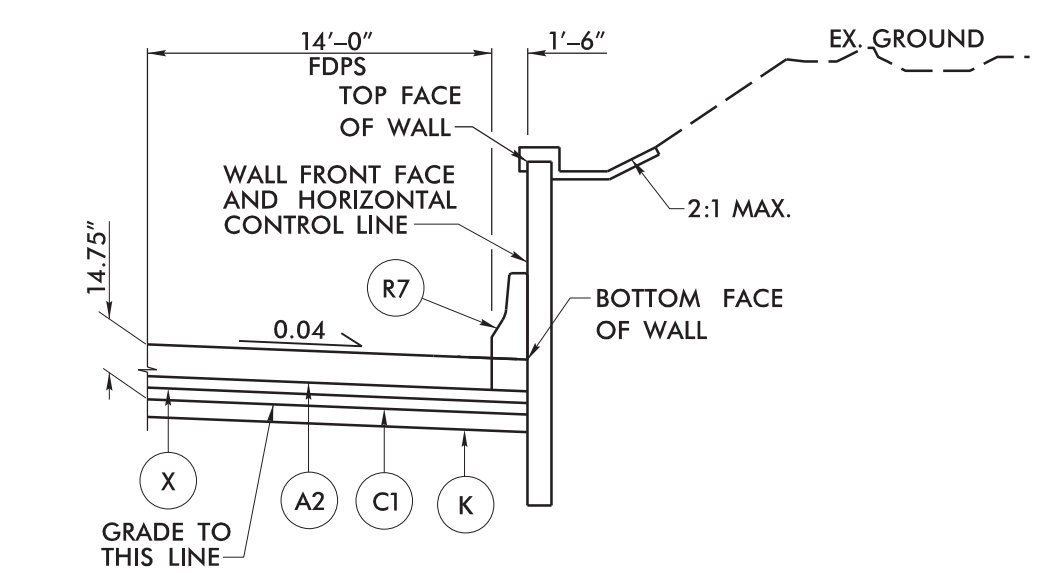
<div>HNTB</div>	HNTB NORTH CAROLINA, P.C. 343 E. Six Forks Road, Suite 200 Raleigh, North Carolina 27609 NC License No: C-1554	PROJECT REFERENCE NO.		SHEET NO.	
		1-4700A/B		2A-3	
		ROADWAY DESIGN ENGINEER		PAVEMENT DESIGN ENGINEER	
		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



CUT WALL WITH SHOULDER BERM, GUTTER AND GUARDRAIL DETAIL
USE IN CONJUNCTION WITH TYPICAL SECTIONS NO. 4A & 4B
-WBL- STA 1079+00.00 TO STA 1081+72.00 RT (INVERT)
-EBL- STA 1079+00.00 TO STA 1084+82.00 LT



MEDIAN BARRIER DETAIL
USE IN CONJUNCTION WITH TYPICAL SECTIONS NO. 4A & 4B



CUT WALL DETAIL
USE IN CONJUNCTION WITH TYPICAL SECTIONS NO. 4A & 4B
-L- STA 847+00.00 TO STA 848+50.00 LT (INVERT)
-L- STA 848+25.00 TO STA 850+00.00 RT
-WBL- STA 918+25.00 TO STA 923+75.00 RT
-WBL- STA 948+75.00 TO STA 950+00.00 RT
-WBL- STA 960+00.00 TO STA 975+00.00 RT
-WBL- STA 976+00.00 TO STA 980+00.00 RT
-WBL- STA 1093+89.00 TO STA 1100+50.00 RT
-EBL- STA 1106+78.00 TO STA 1125+80.00 LT (INVERT)
-WBL- STA 1108+40.00 TO STA 1114+27.00 RT
-L- STA 1140+75.00 TO STA 1146+58.00 LT (INVERT)
-L- STA 1148+06.00 TO STA 1159+02.00 LT (INVERT)
-L- STA 1182+79.00 TO STA 1194+92.00 LT (INVERT)
-L- STA 1217+25.00 TO STA 1228+75.00 RT
-L- STA 1217+69.00 TO STA 1228+75.00 LT (INVERT)

NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, MONOLITHIC ISLANDS, CURB AND GUTTER, AND LANE TAPER LOCATIONS.

6/2/99

2-JUN-2008 12:36
C:\p03\14700A_R0Y_TYP
HNTB

HNTB

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.

1-4700A/B

SHEET NO.

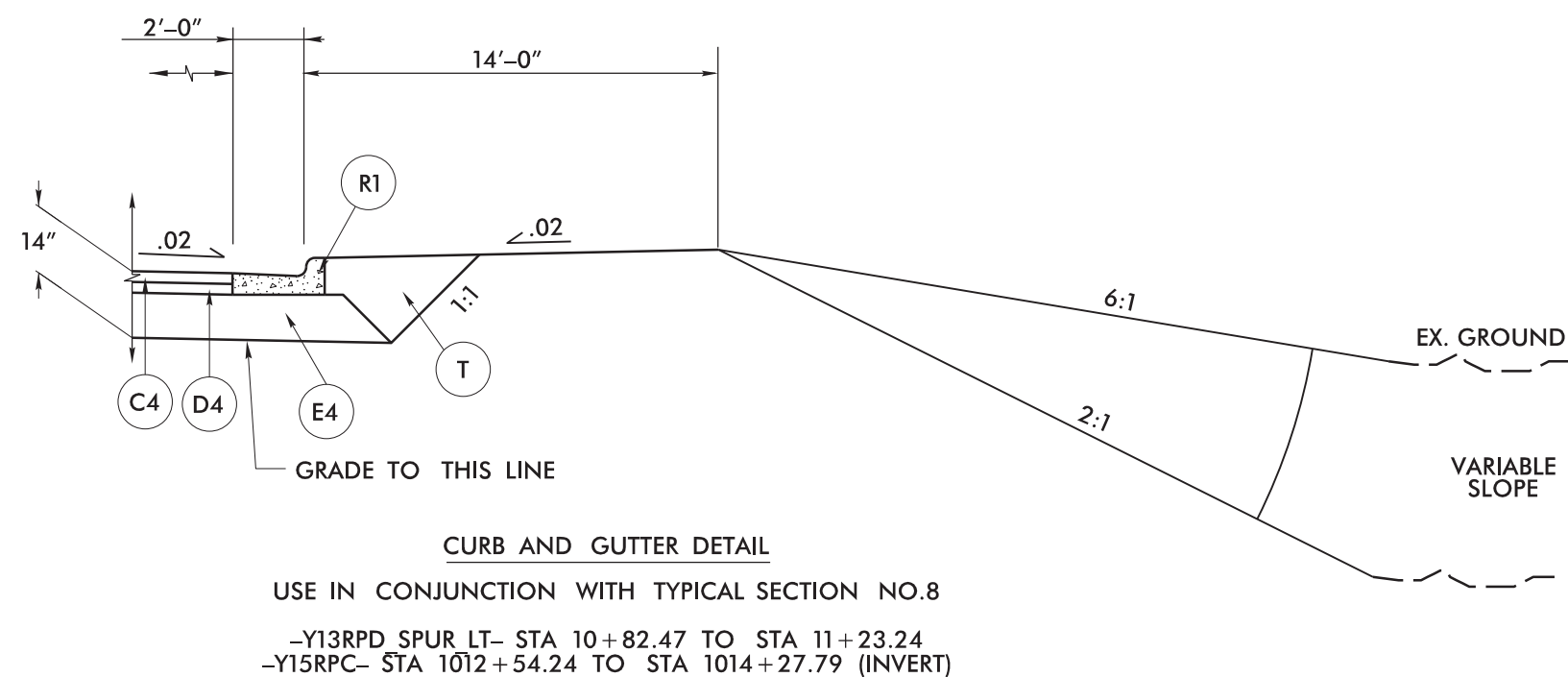
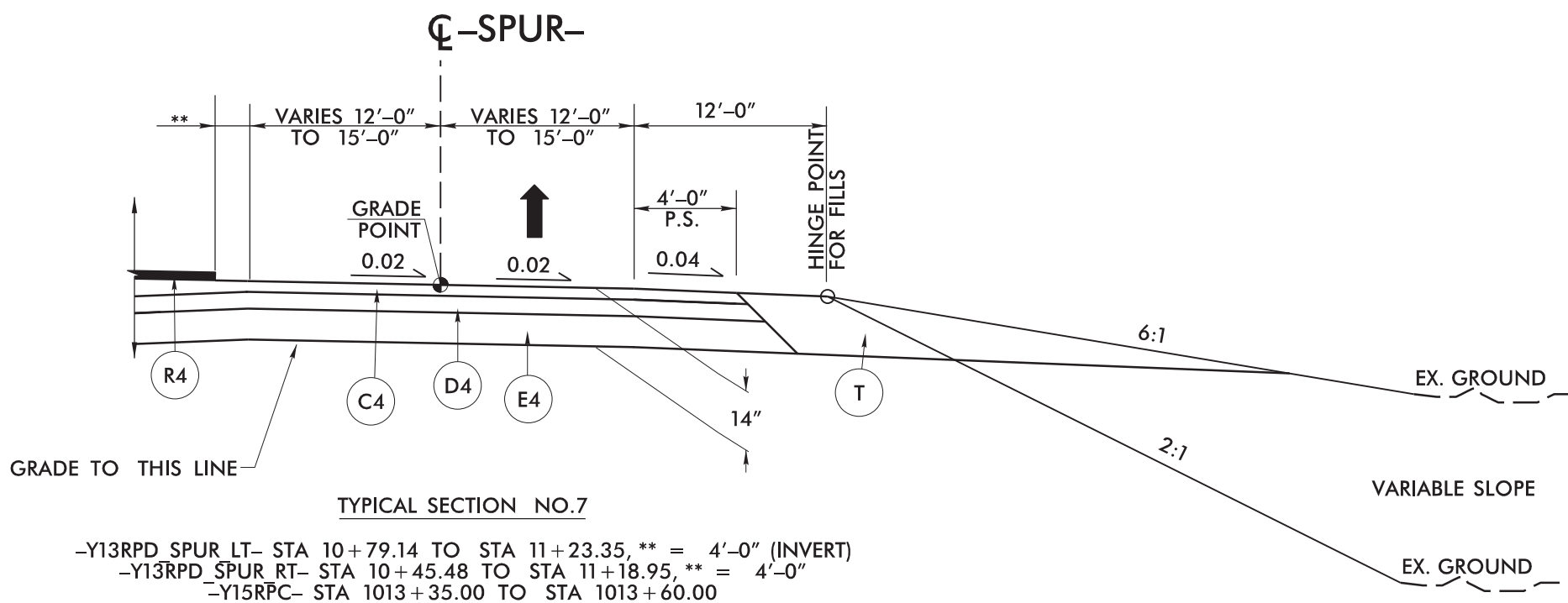
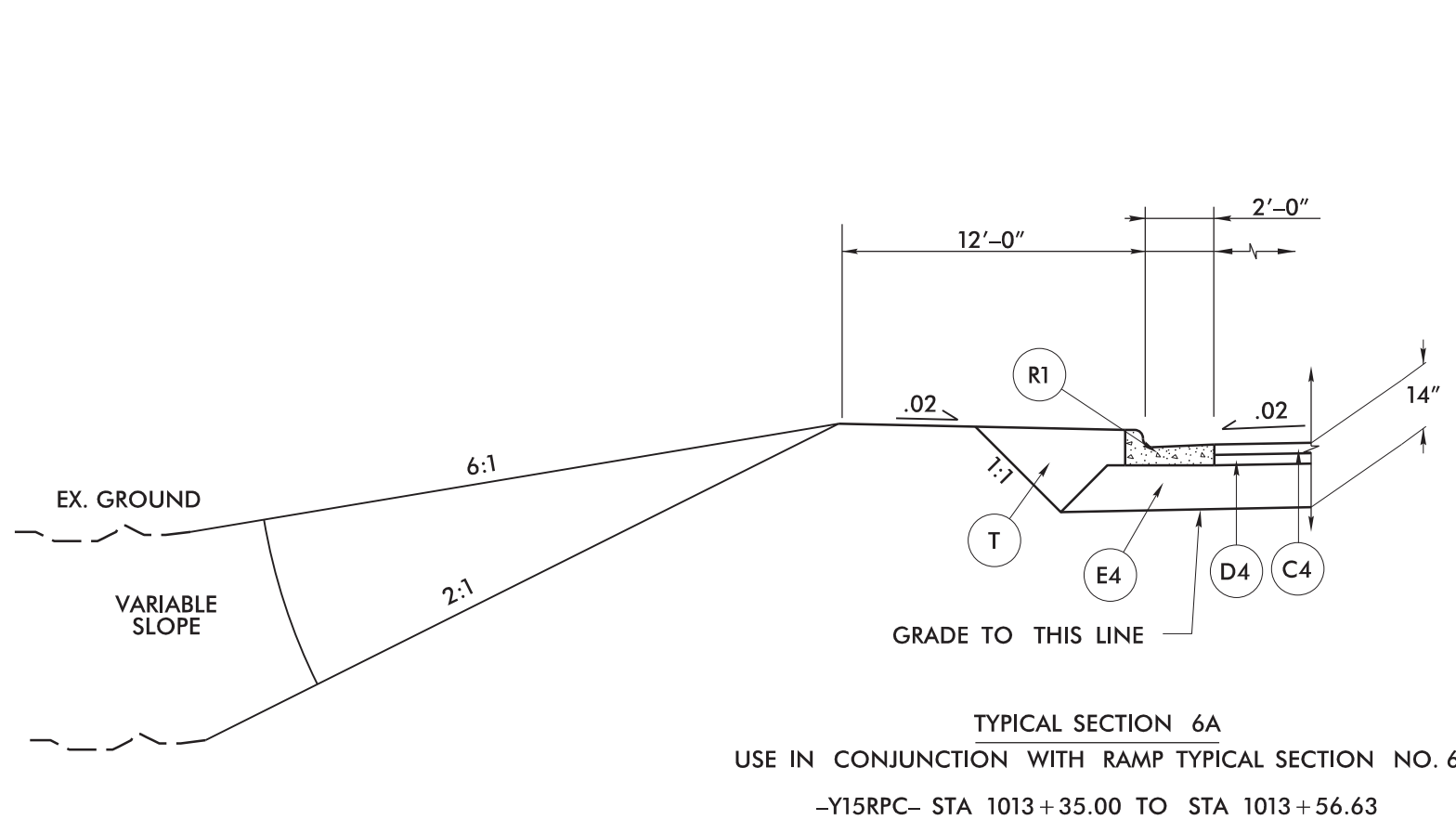
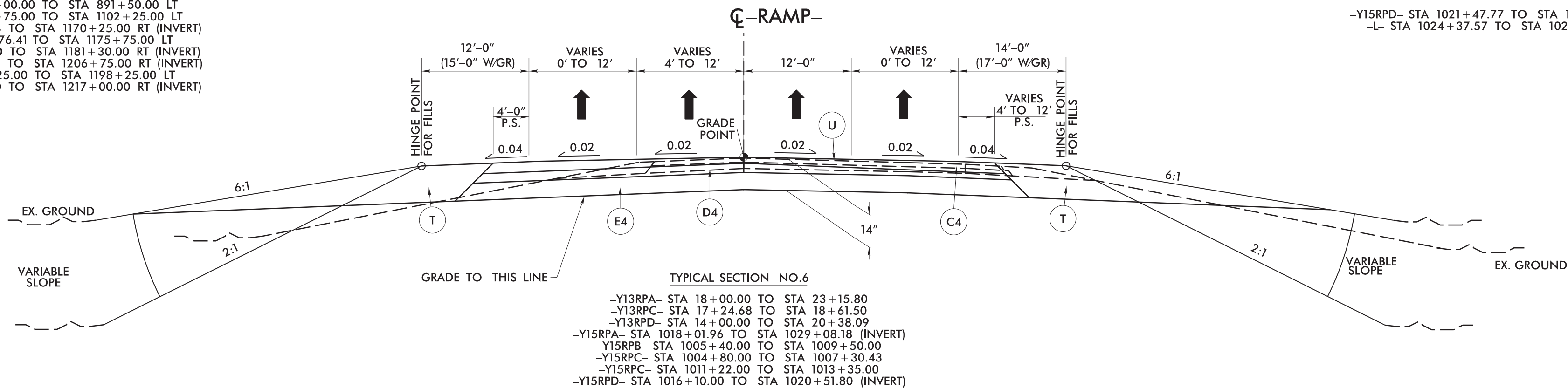
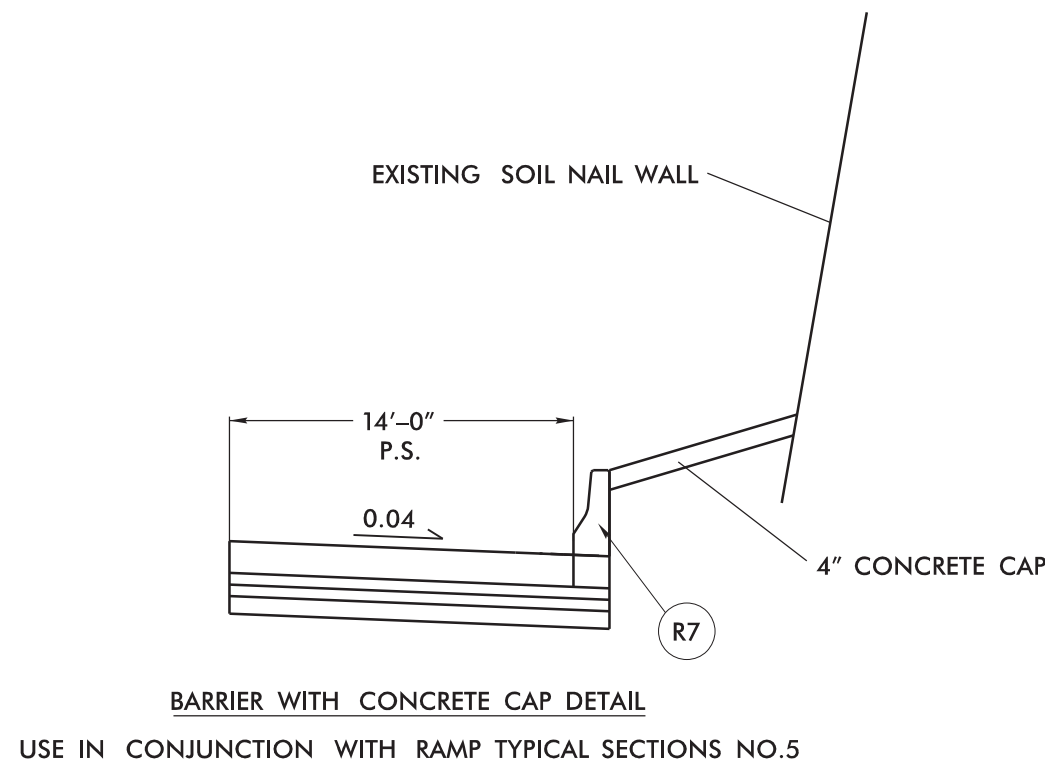
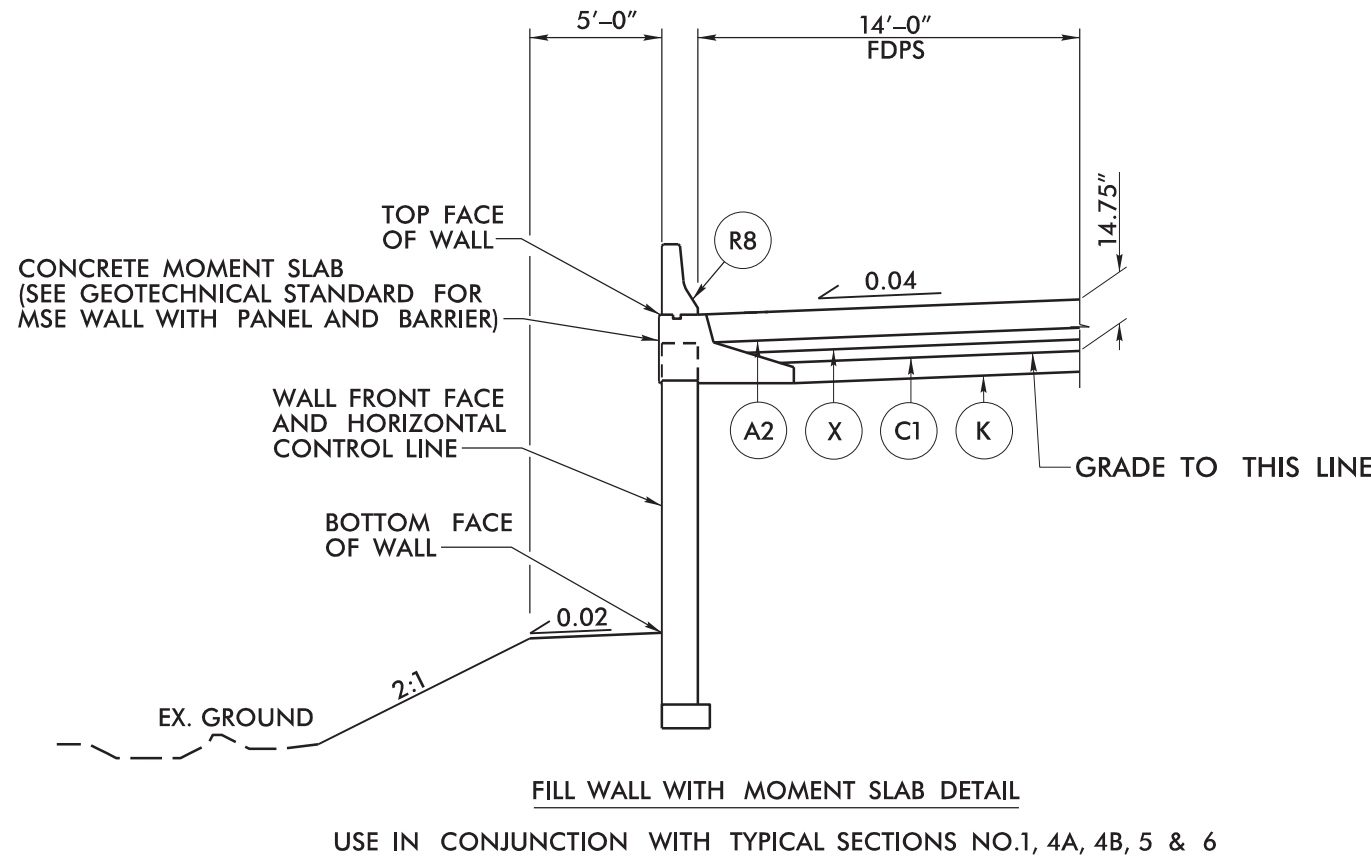
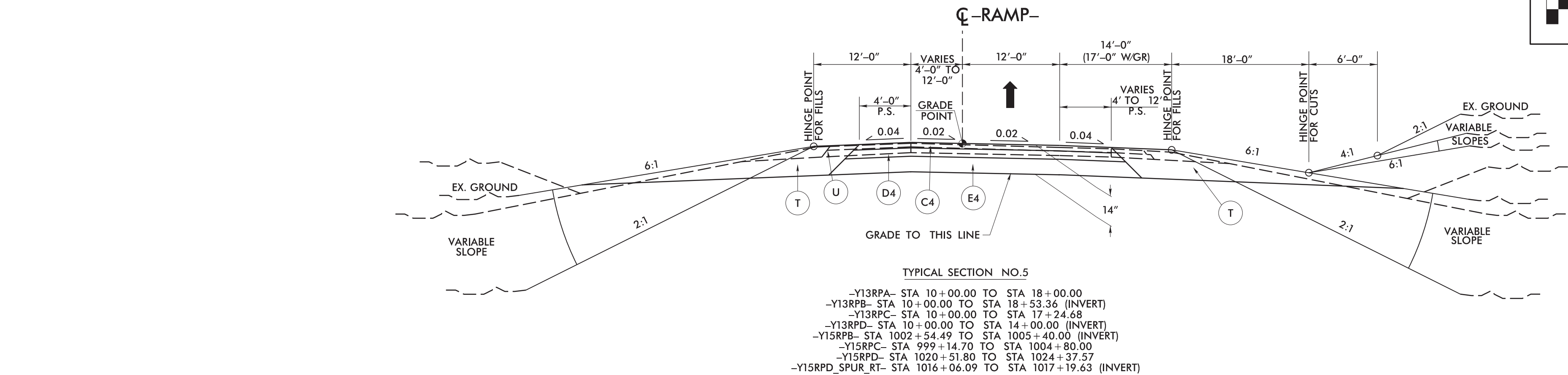
2A-4

ROADWAY DESIGN
ENGINEER

PAVEMENT DESIGN
ENGINEER

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

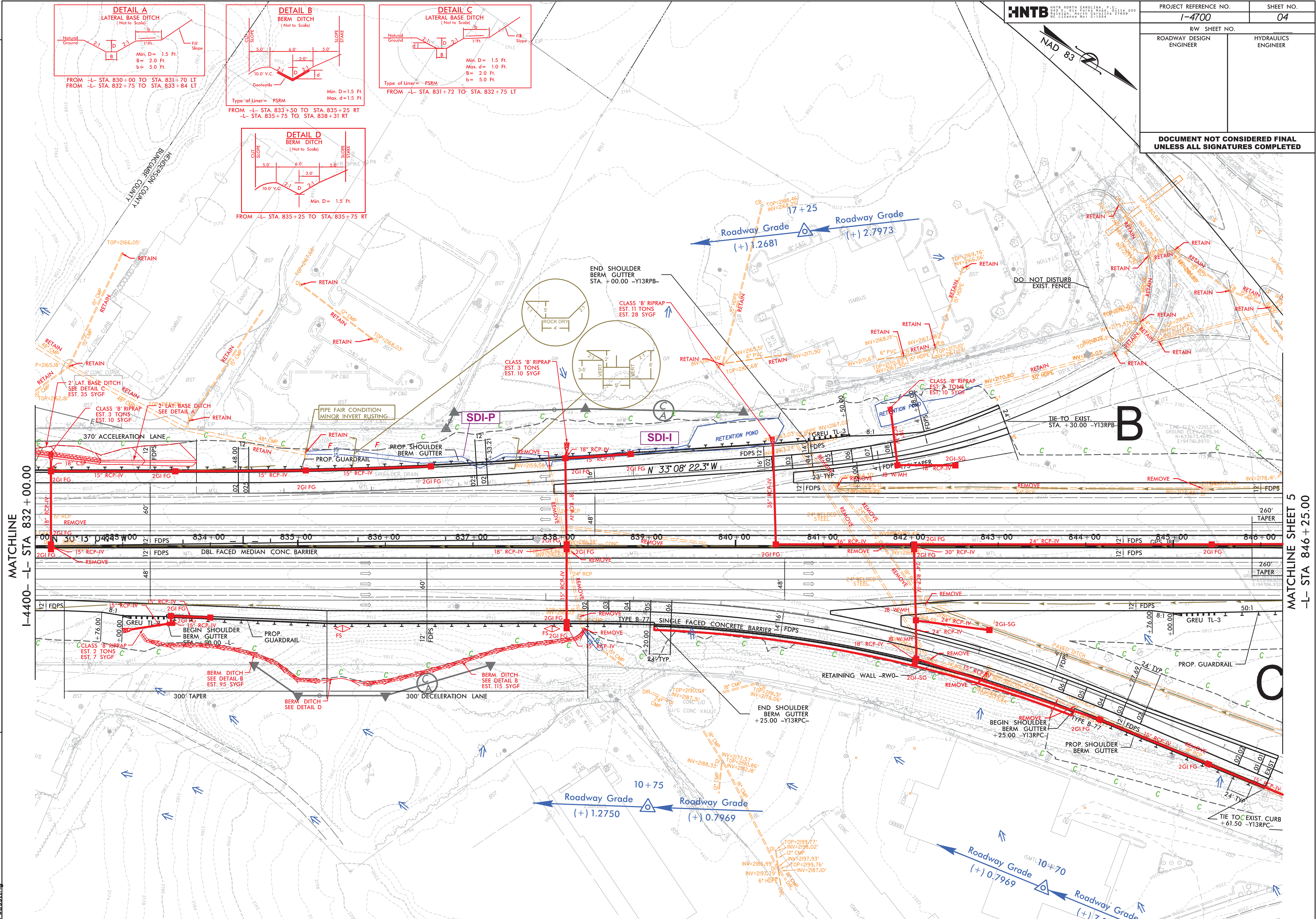
**NOTE: TYPICAL SECTIONS DO NOT REFLECT
THE FINAL PAVEMENT RECOMMENDATIONS.**



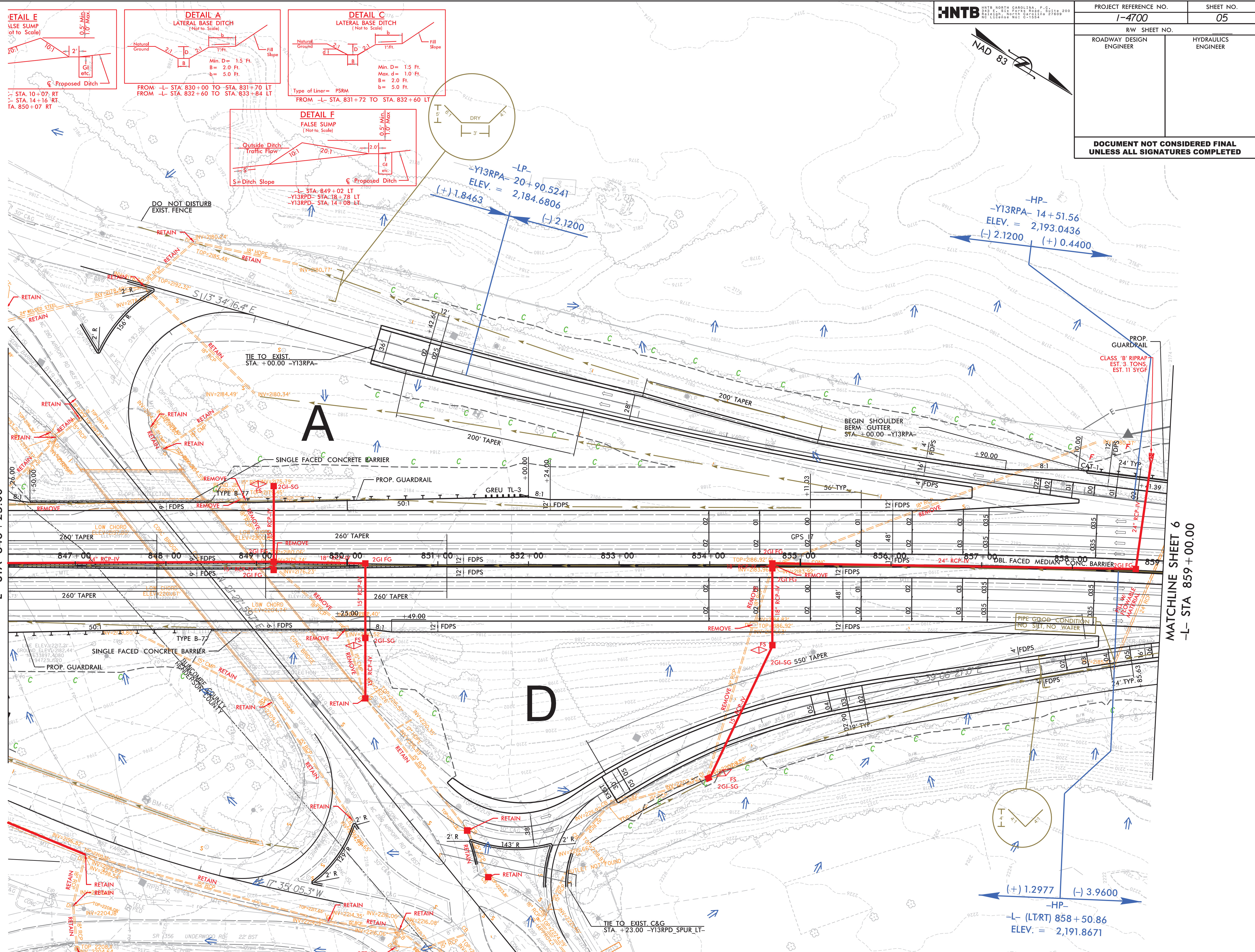
NOTE: SEE PLANS FOR SUPERELEVATIONS, TURN LANES, MONOLITHIC ISLANDS, CURB AND GUTTER, AND LANE TAPER LOCATIONS.

8/30/2018
14700A_RED LINES_PSH_04
rwr

14/00A-RE
erwessling

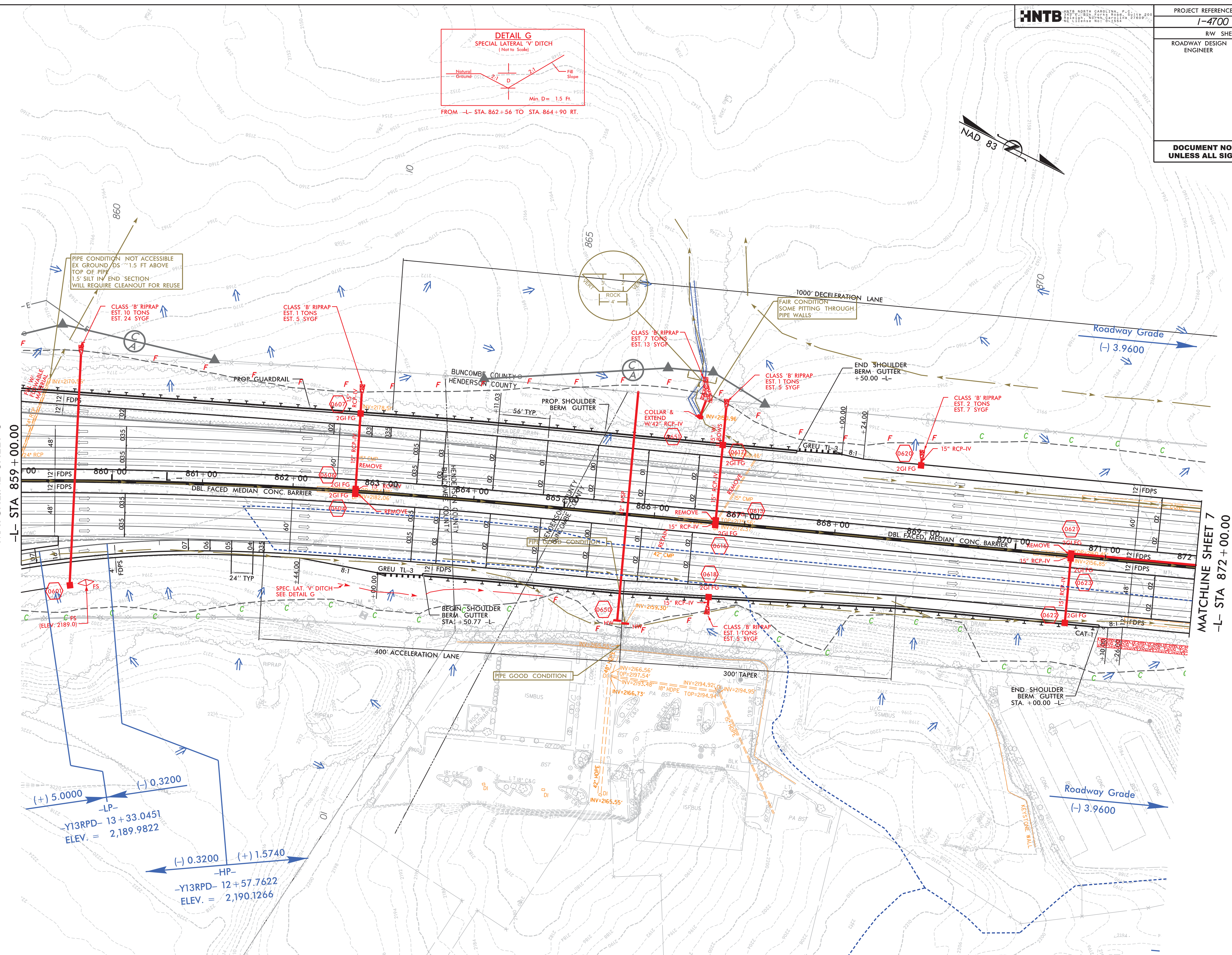


MATCHLINE SHEET 5
-L- STA 846 + 25.00



8/30/2018
14700A-REDLINES_PSH_06
rressing

MATCHLINE SHEET 5



8/17/99

REVISIONS

8/30/2018
14786A_RED LINES_PSH_07.dgn
f.wessling

HNTB

HNTB NORTH CAROLINA, P.C.
2425 E. S.W. 10TH ROAD, SUITE 200
FAYETTEVILLE, NORTH CAROLINA 27803
NC LICENSE NO. C-10884

PROJECT REFERENCE NO.
I-4700

SHEET NO.
07

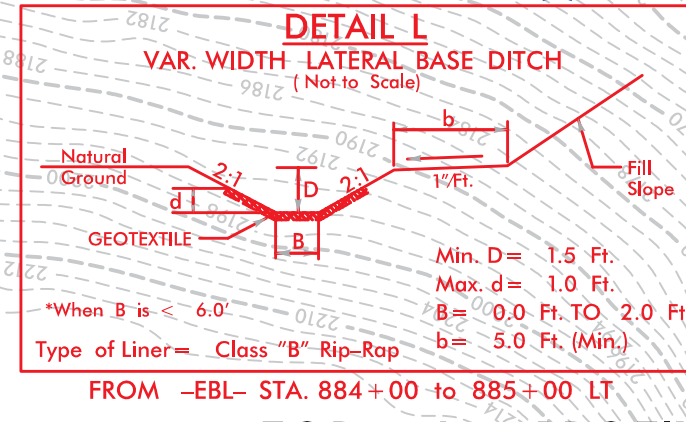
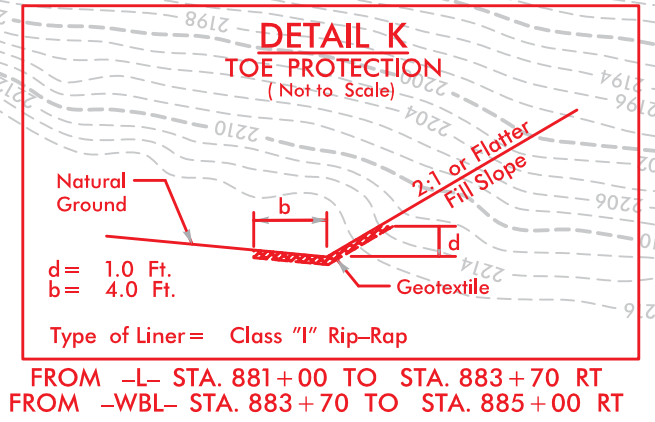
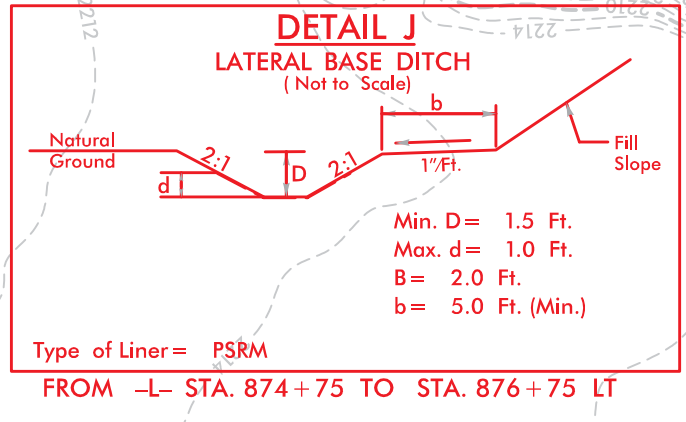
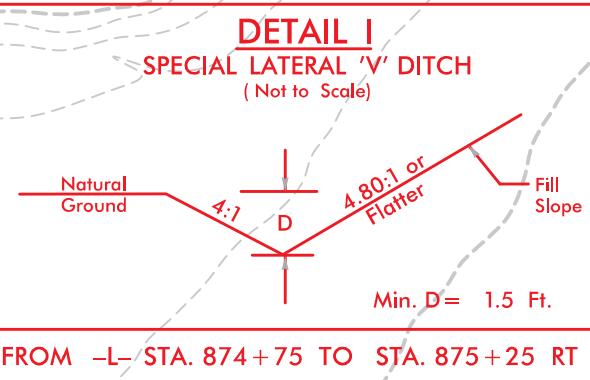
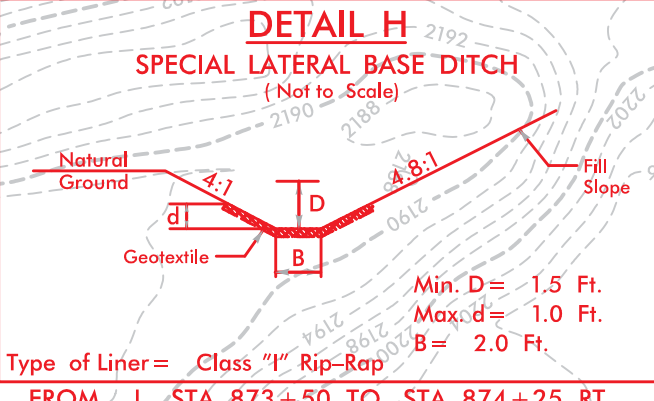
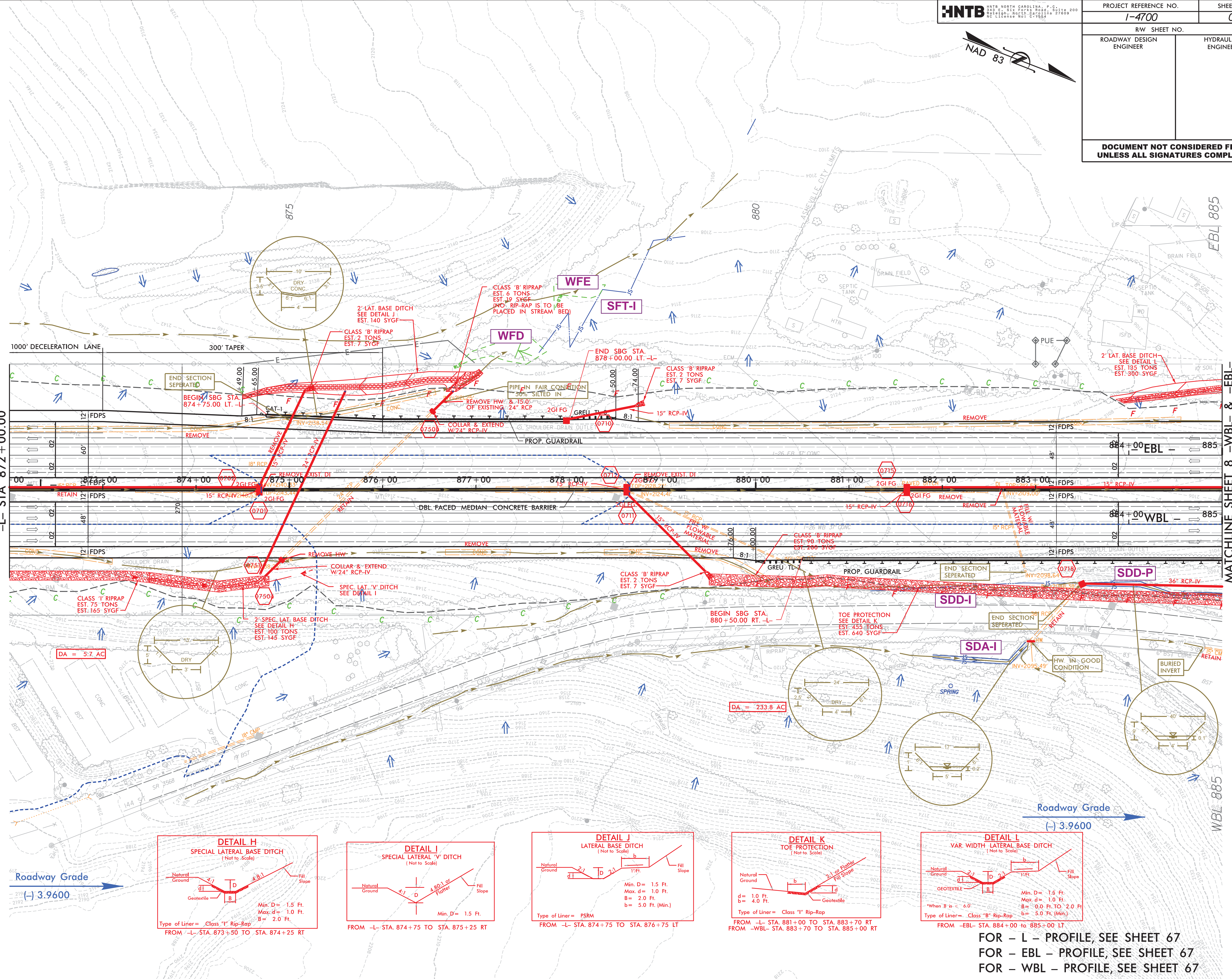
RW SHEET NO.
ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

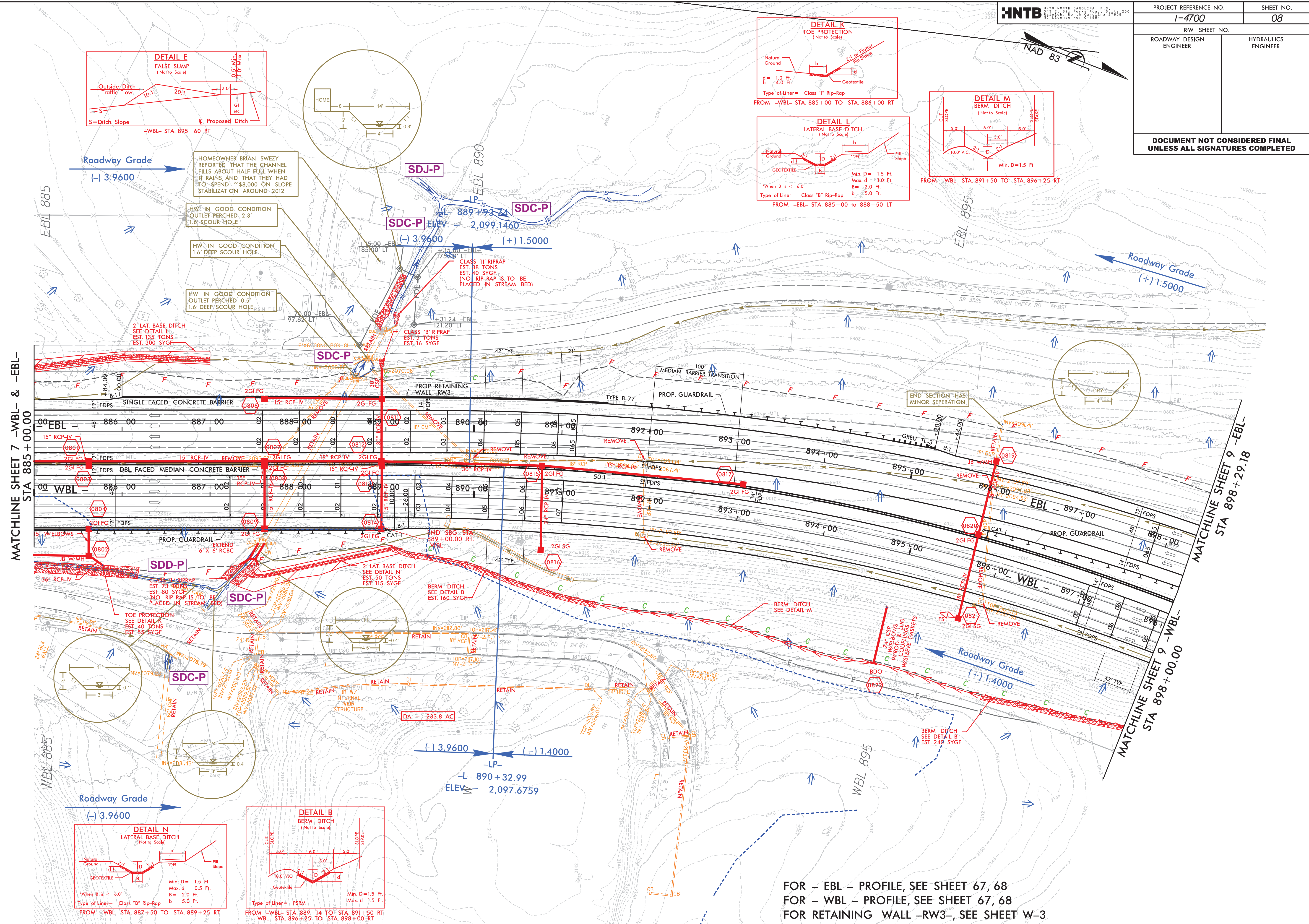
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

MATCHLINE SHEET 6
-L- STA 872+00.00

MATCHLINE SHEET 8 -WBL- & -EBL-
STA 885+00.00



FOR - L - PROFILE, SEE SHEET 67
FOR - EBL - PROFILE, SEE SHEET 67
FOR - WBL - PROFILE, SEE SHEET 67



8/17/99

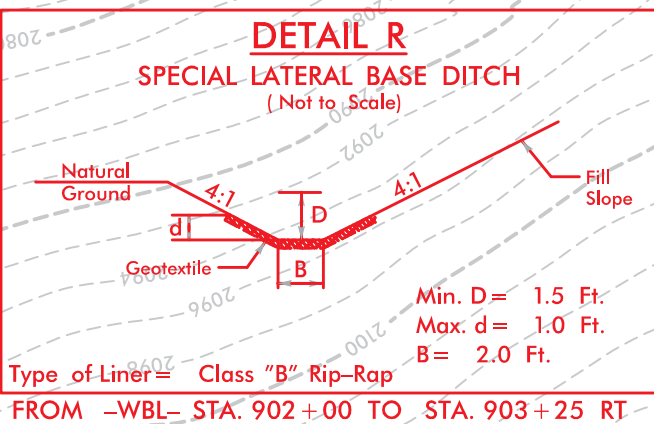
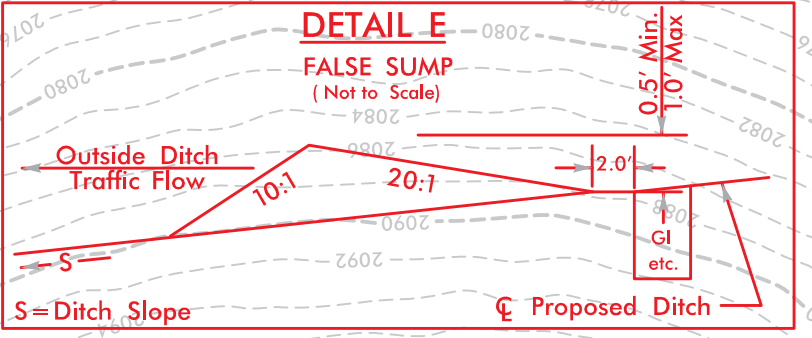
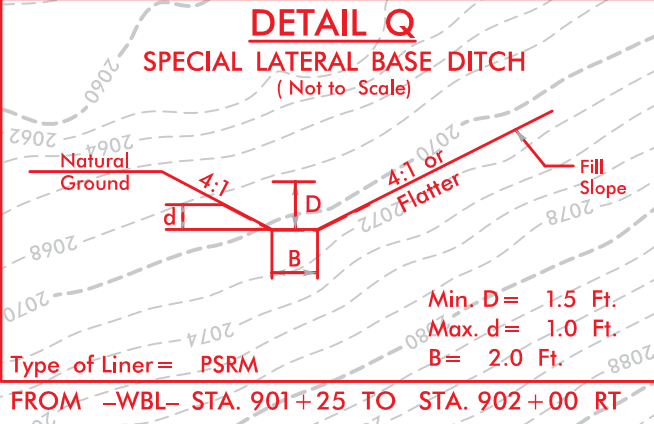
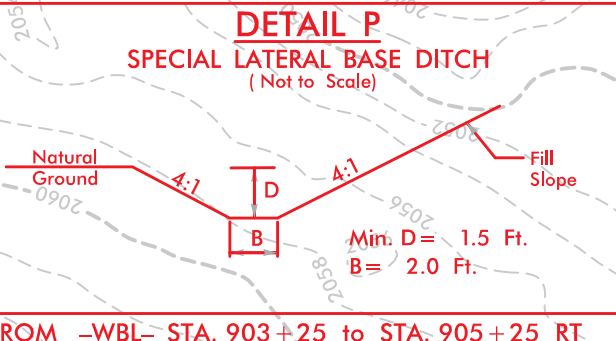
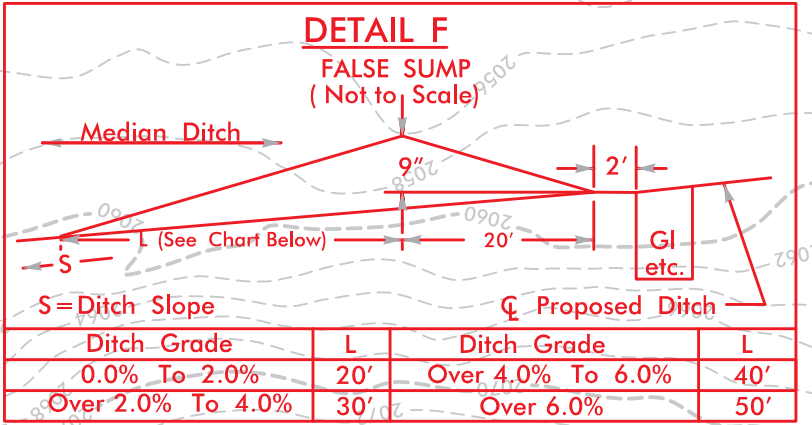
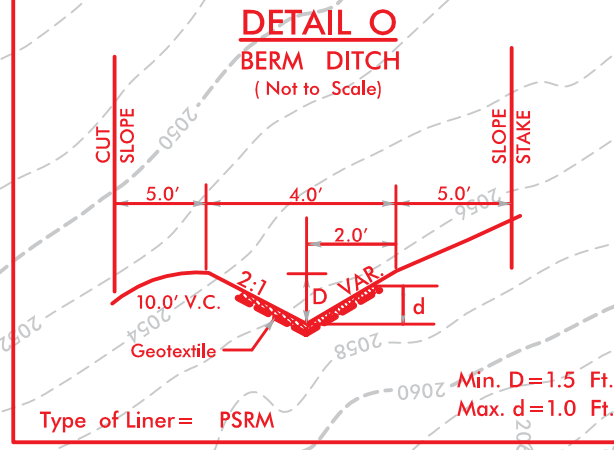
HNTB HNTB NORTH CAROLINA, P.C., 2425 E. 8th Street, Suite 200 Raleigh, NC 27601

PROJECT REFERENCE NO. 1-4700 SHEET NO. 9

RW SHEET NO. ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83



-HP-
-L- 898+40.16
ELEV. = 2,107.1442
(+) 1.5000 (-) -2.7291

Roadway Grade
(-) 2.7291

MATCHLINE SHEET 8
-EBL- STA 898+29.18

MATCHLINE SHEET 10
-EBL- STA 911+28.88

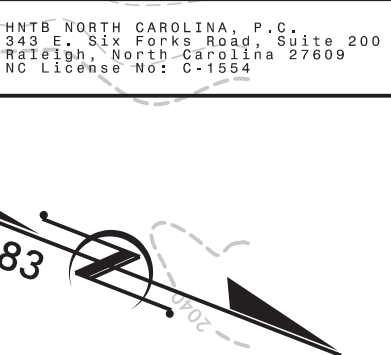
MATCHLINE SHEET 8
-WBL- STA 898+00.00

MATCHLINE SHEET 10
-WBL- STA 911+00.00

-HP-
-L- 899+15.95
ELEV. = 2,105.6767
(+) 1.4000 (-) -2.7900

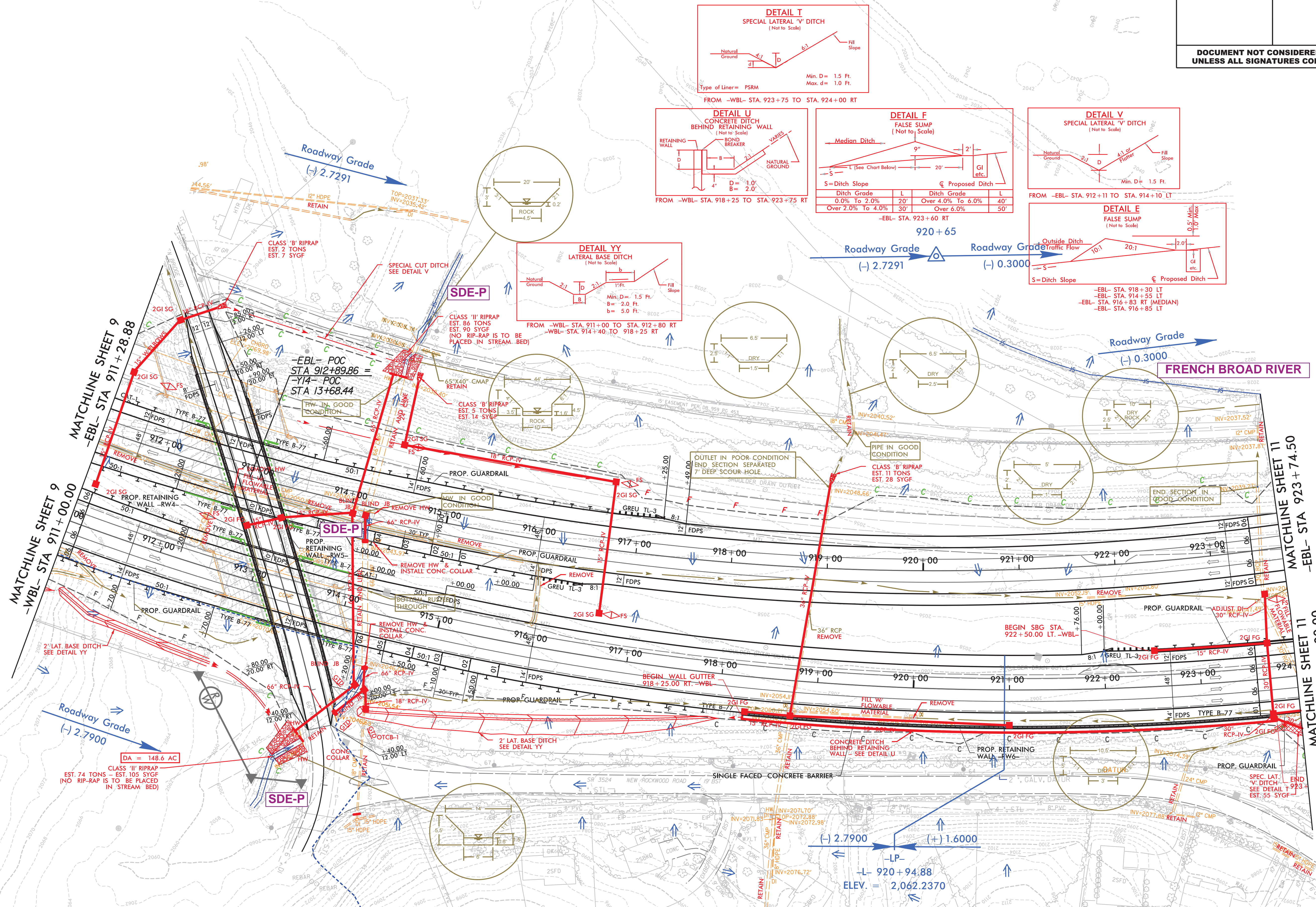
Roadway Grade
(-) 2.7900

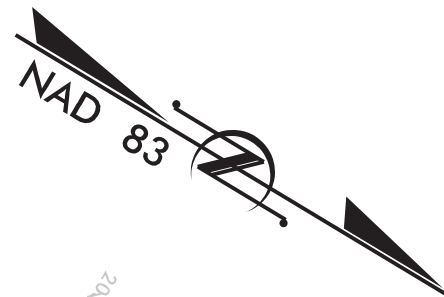
FOR - EBL - PROFILE, SEE SHEET 68, 69
FOR - WBL - PROFILE, SEE SHEET 68, 69



PROJECT REFERENCE NO.		SHEET NO.	
I-4700		10	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
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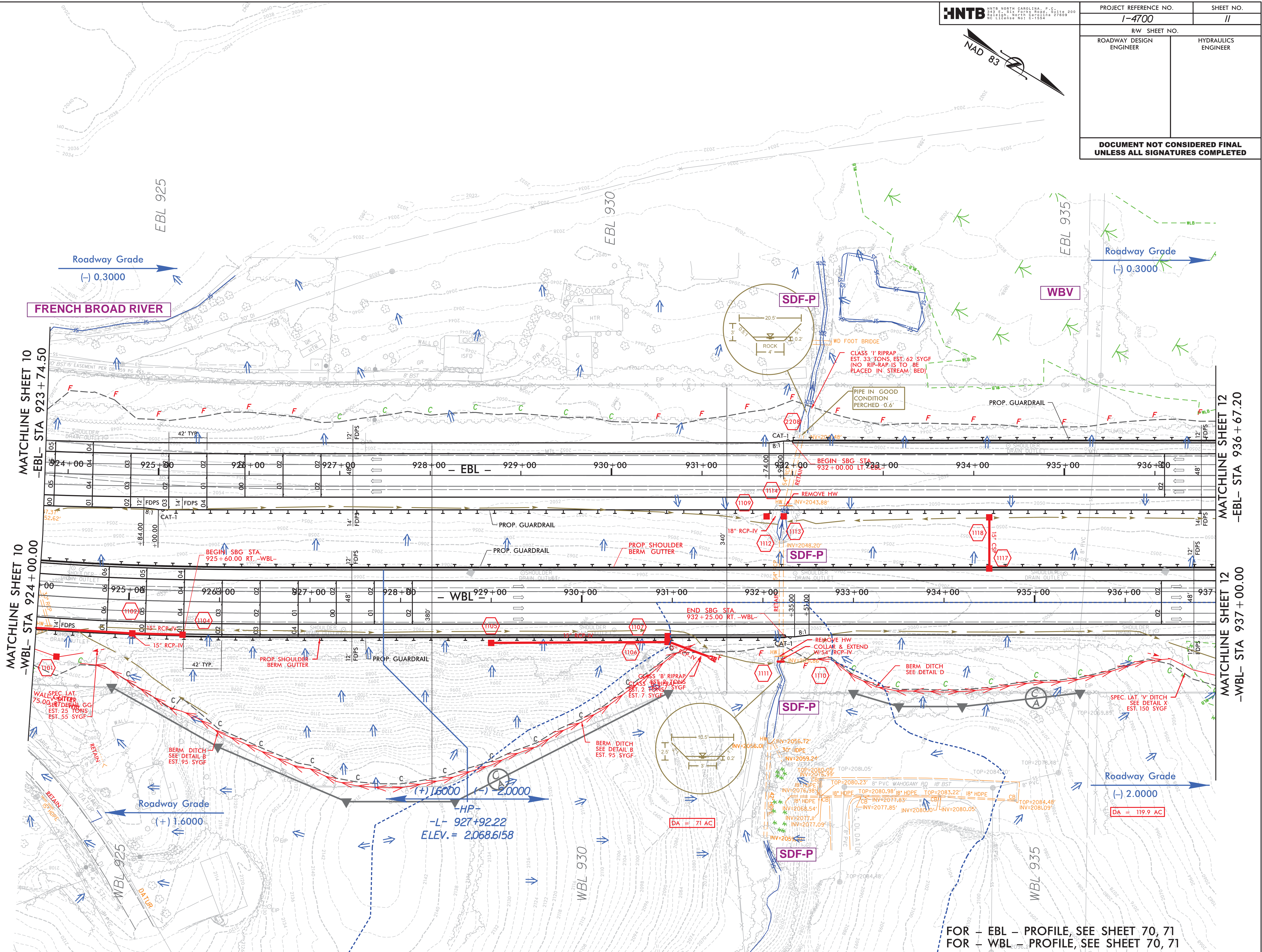
REVISIONS





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

REVISIONS

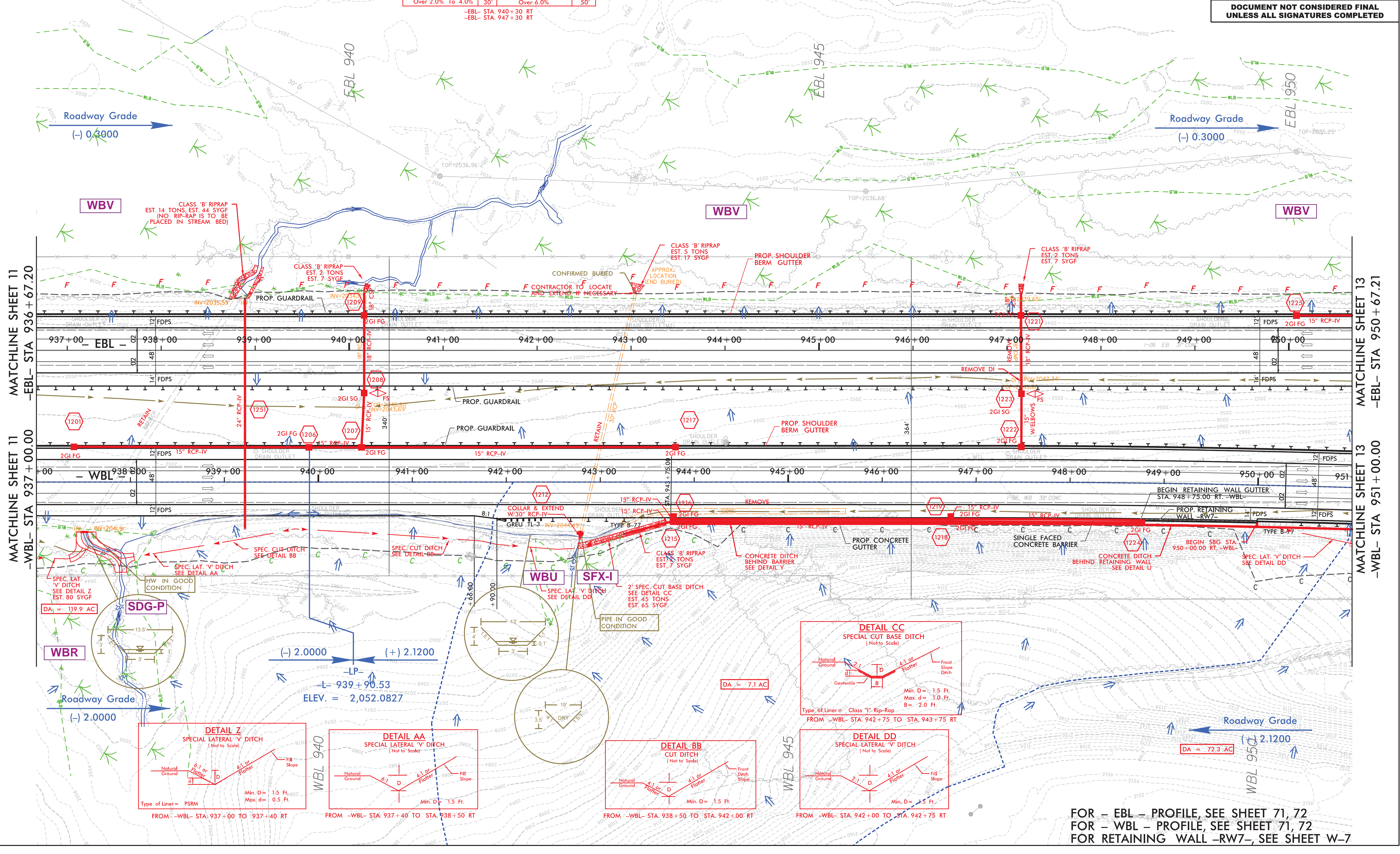
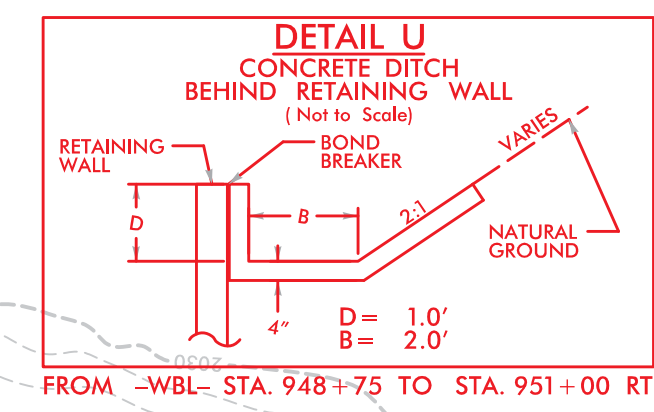
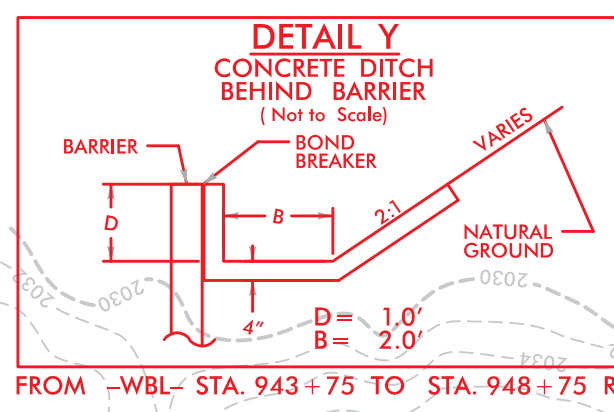
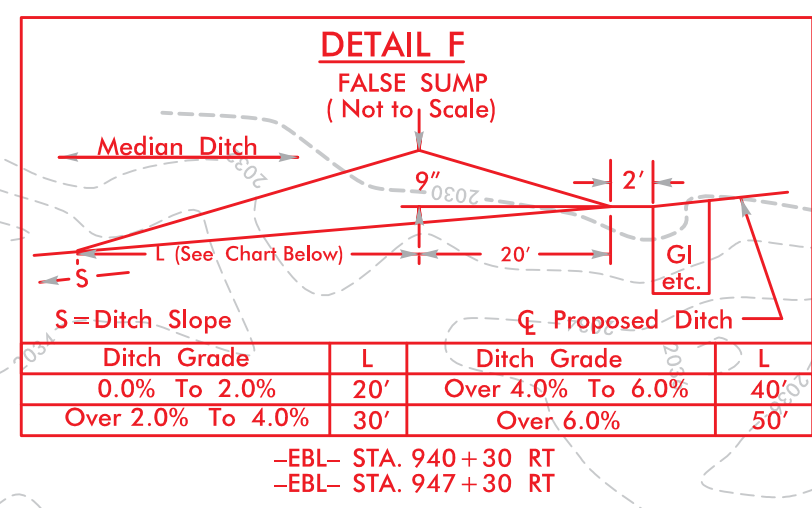
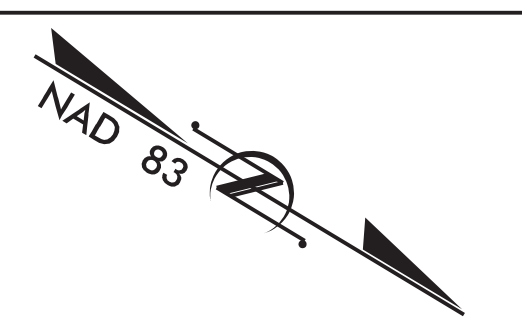


8/17/99

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2425 E. 8th Street, Suite 200
Raleigh, North Carolina 27609
NC License No. C-1054

PROJECT REFERENCE NO.		SHEET NO.
I-4700		12
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



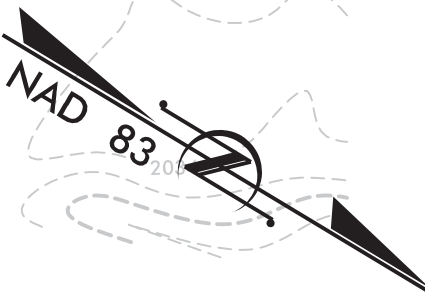
MATCHLINE SHEET 11
-EBL- STA 936+67.20

MATCHLINE SHEET 11
-WBL- STA 937+00.00

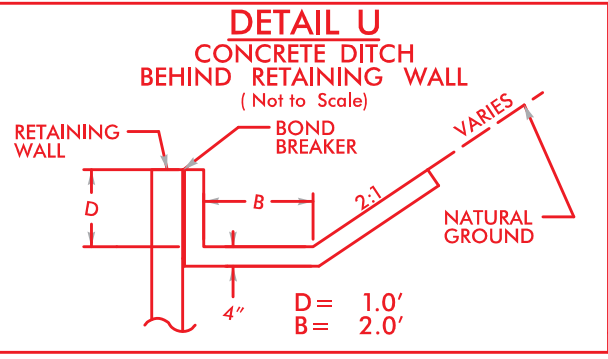
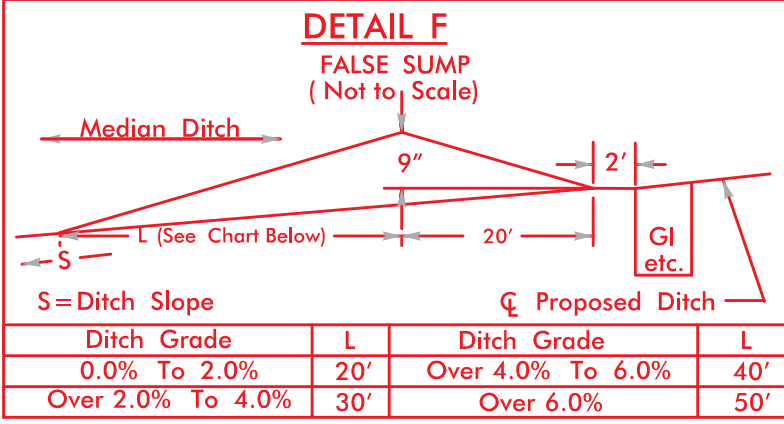
MATCHLINE SHEET 13
-EBL- STA 950+67.21

MATCHLINE SHEET 13
-WBL- STA 951+00.00

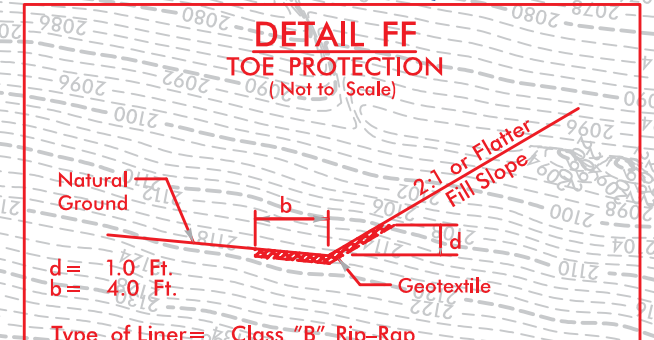
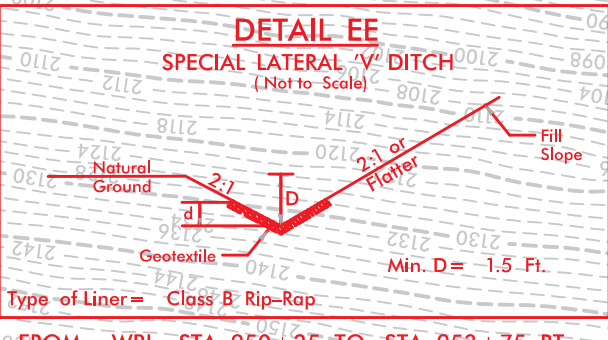
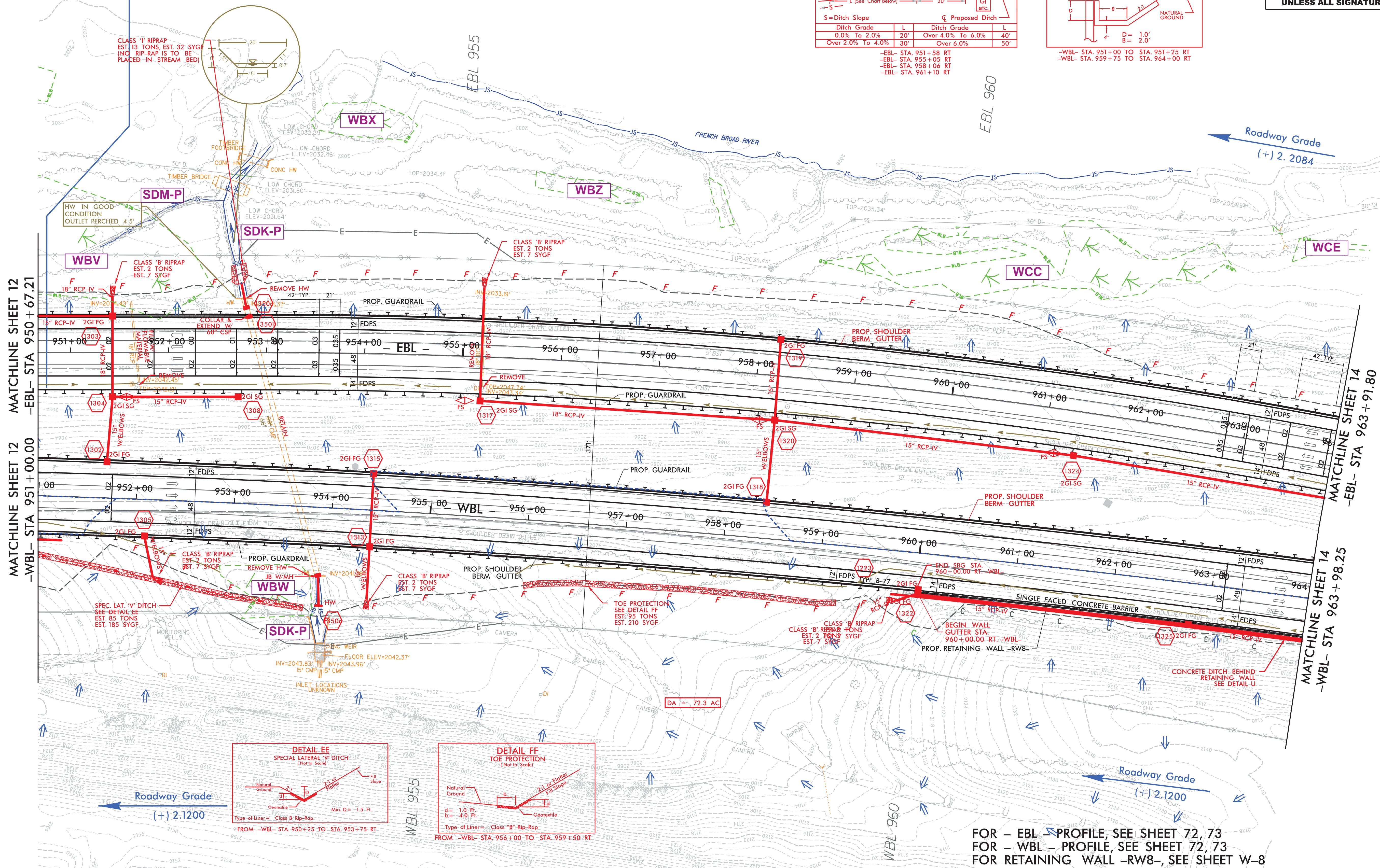
FOR - EBL - PROFILE, SEE SHEET 71, 72
FOR - WBL - PROFILE, SEE SHEET 71, 72
FOR RETAINING WALL -RW7-, SEE SHEET W-7



-LP-
-L- 950+71.7581
ELEV. = 2,047.1997
(-) 0.3000 (+) 2.2084

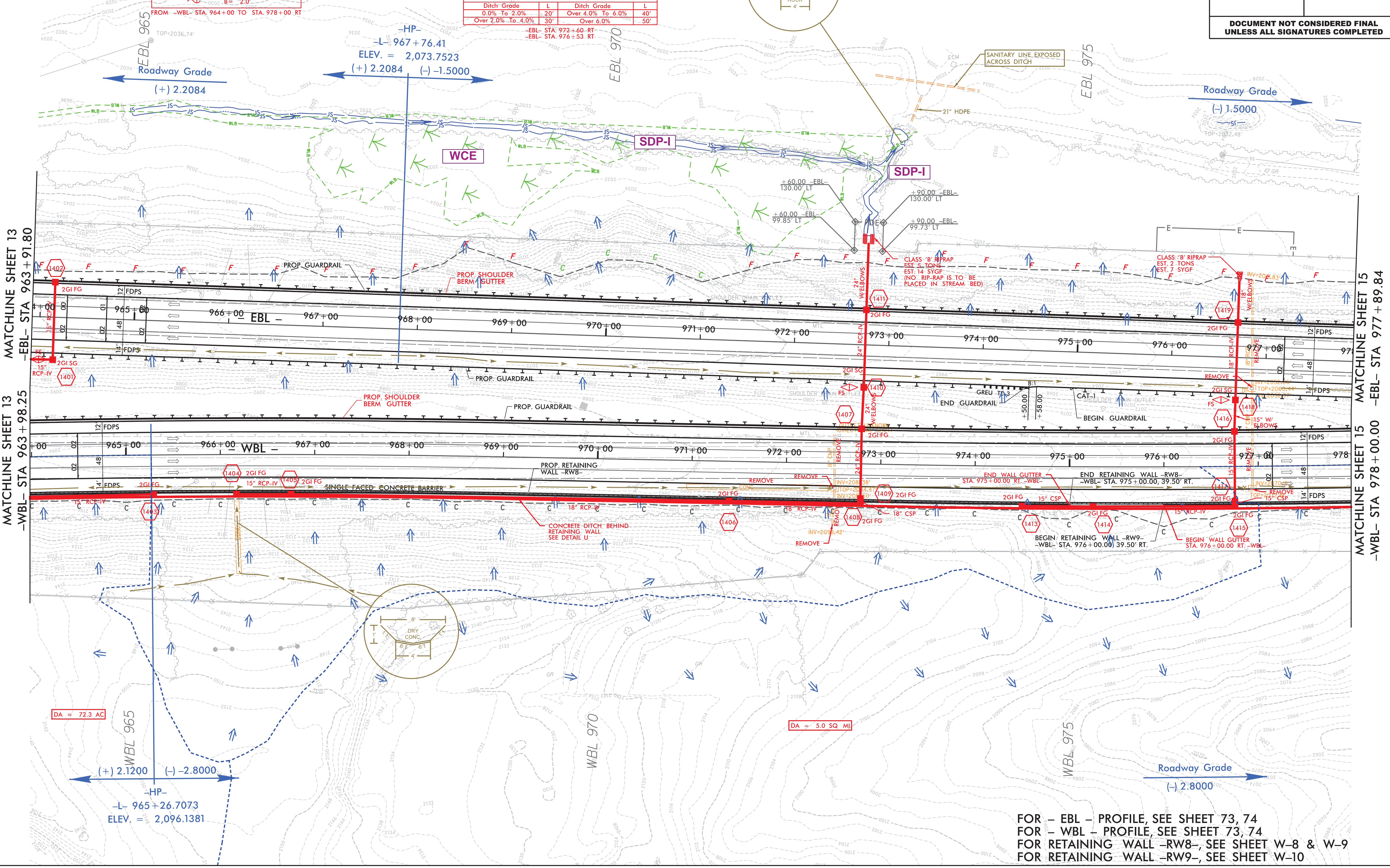
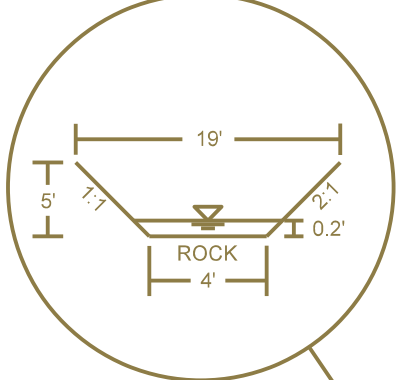
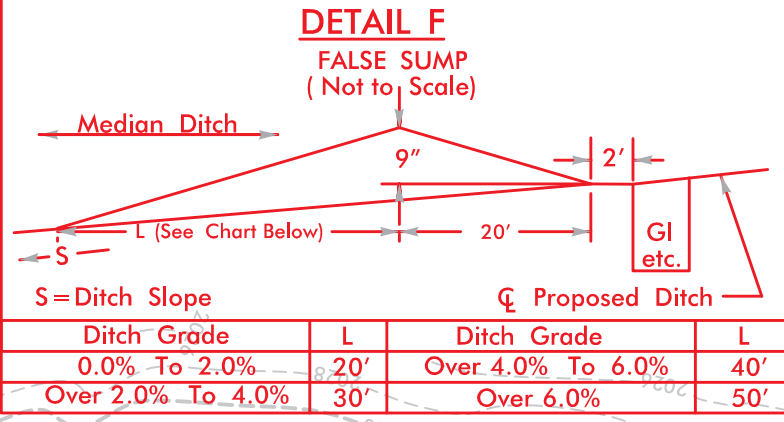
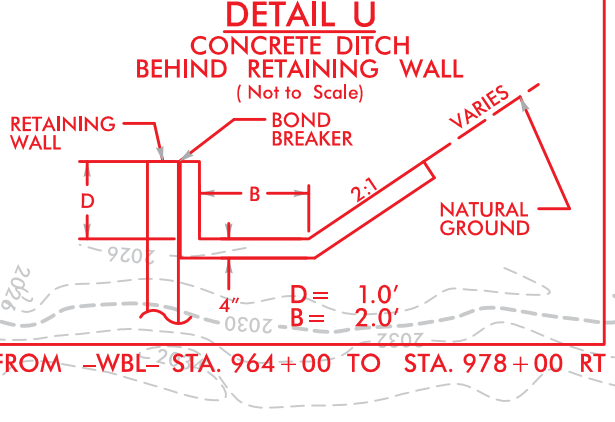
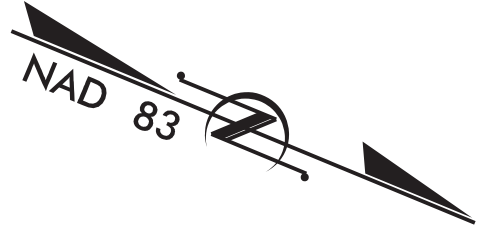


-EBL- STA. 951+58 RT
-EBL- STA. 955+05 RT
-EBL- STA. 958+06 RT
-EBL- STA. 961+10 RT
-WBL- STA. 951+00 TO STA. 951+25 RT
-WBL- STA. 959+75 TO STA. 964+00 RT



FOR - EBL - PROFILE, SEE SHEET 72, 73
FOR - WBL - PROFILE, SEE SHEET 72, 73
FOR RETAINING WALL - RW8-, SEE SHEET W-8

REVISIONS



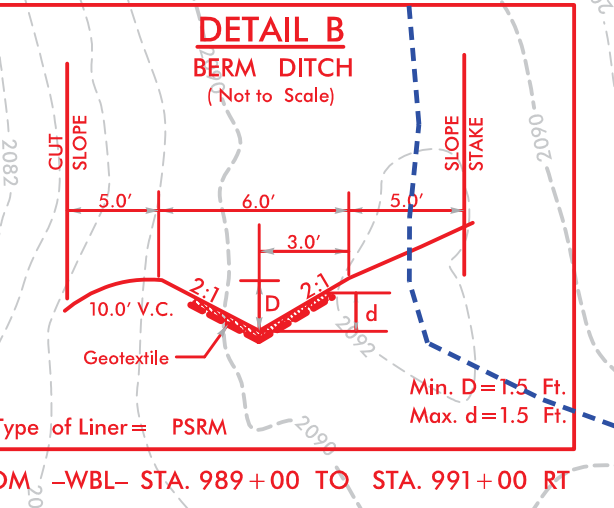
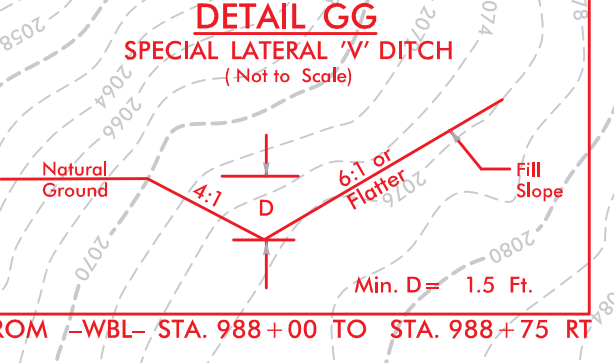
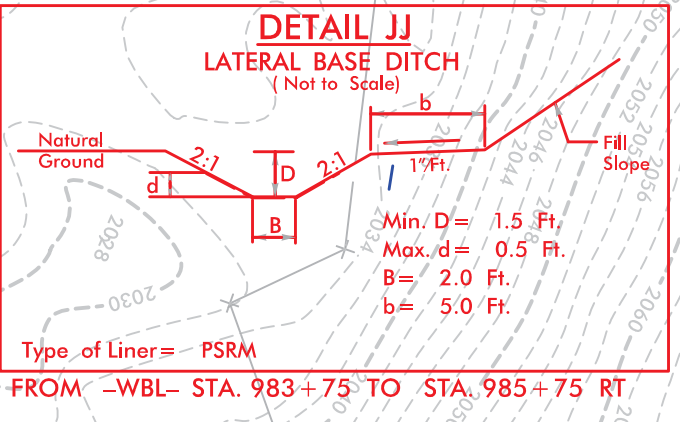
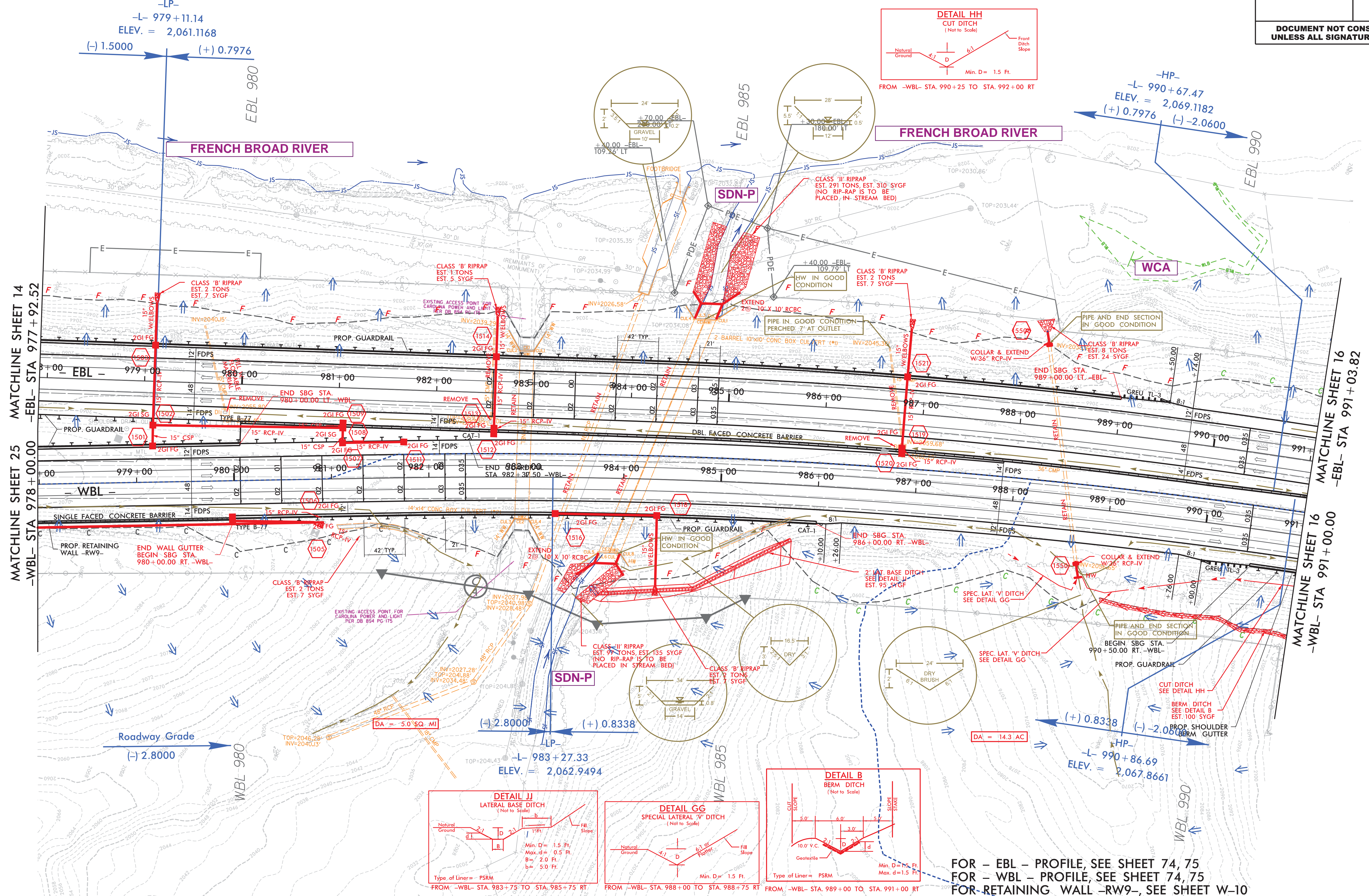
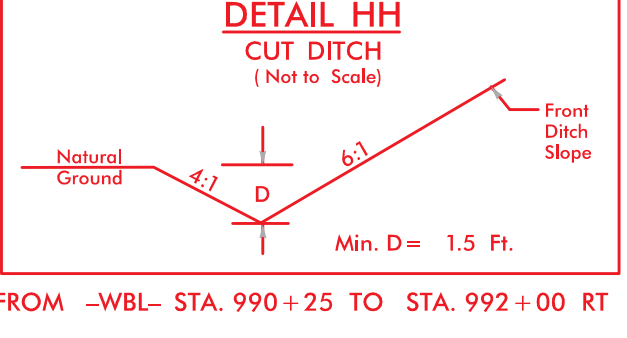
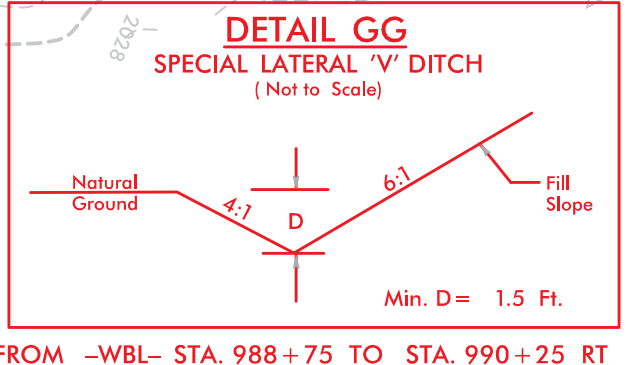
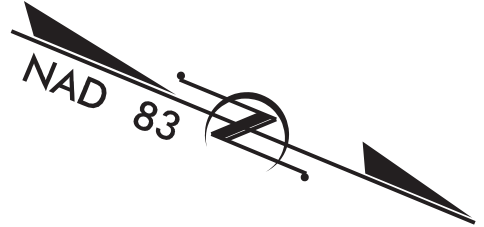
FOR - EBL - PROFILE, SEE SHEET 73, 74
FOR - WBL - PROFILE, SEE SHEET 73, 74
FOR RETAINING WALL -RW8-, SEE SHEET W-8 & W-9
FOR RETAINING WALL -RW9-, SEE SHEET W-10

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2425 E. S.W. PO BOX 2000
RALEIGH, NORTH CAROLINA 27609
NC LICENSE NO. C-1584

PROJECT REFERENCE NO.		SHEET NO.
I-4700		15
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER



FOR - EBL - PROFILE, SEE SHEET 74, 75
FOR - WBL - PROFILE, SEE SHEET 74, 75
FOR - RETAINING WALL - RW9 - SEE SHEET W-10

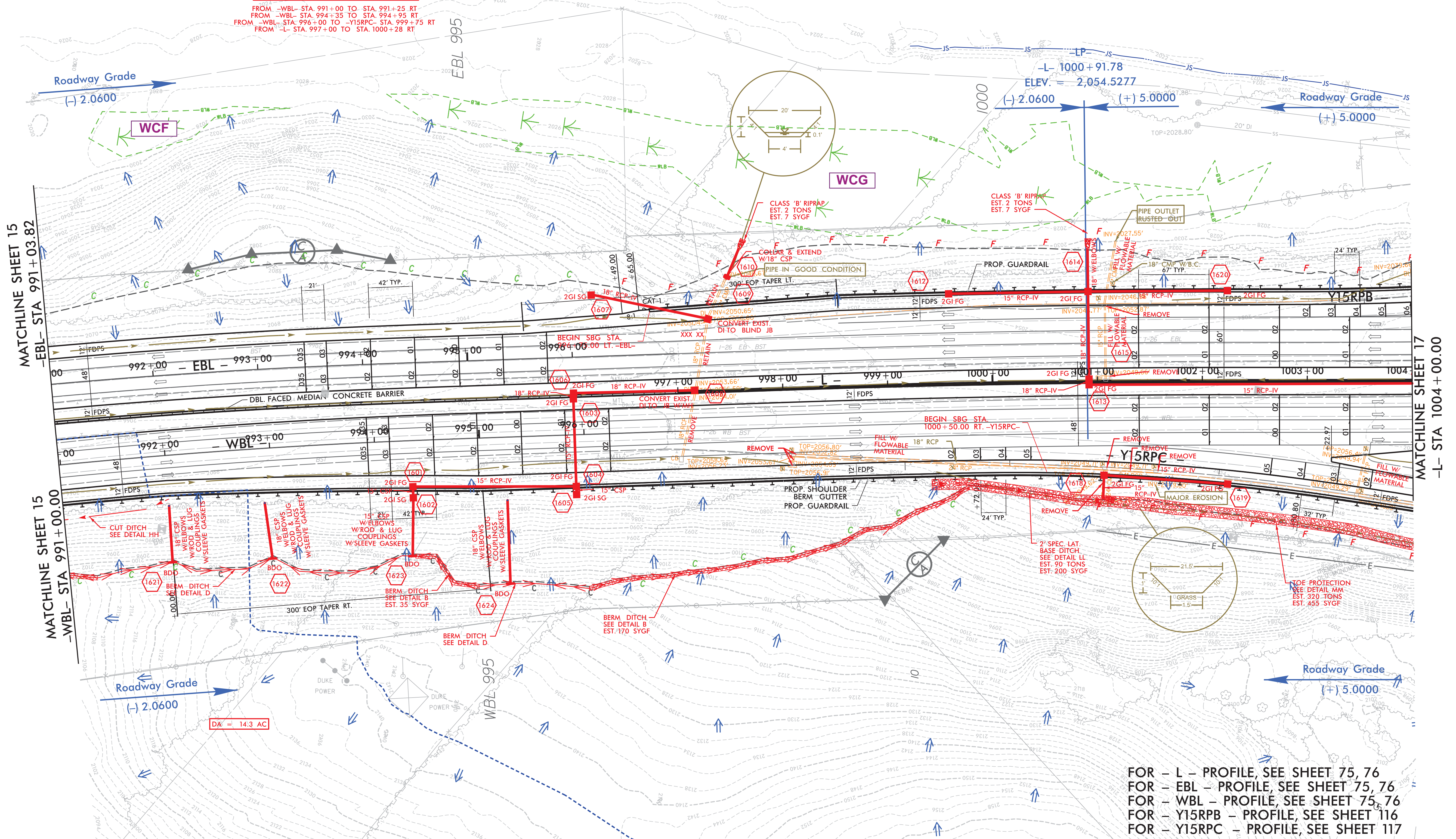
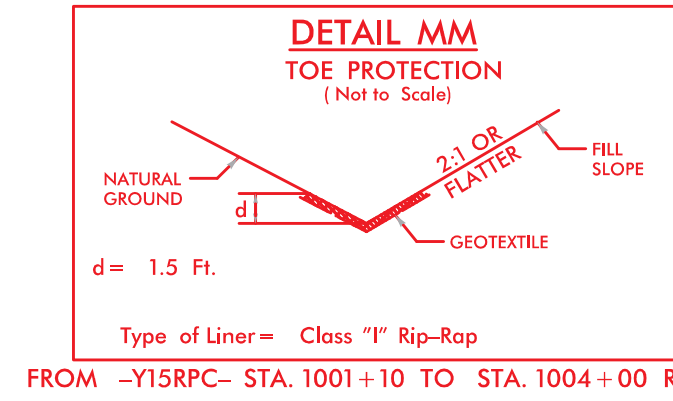
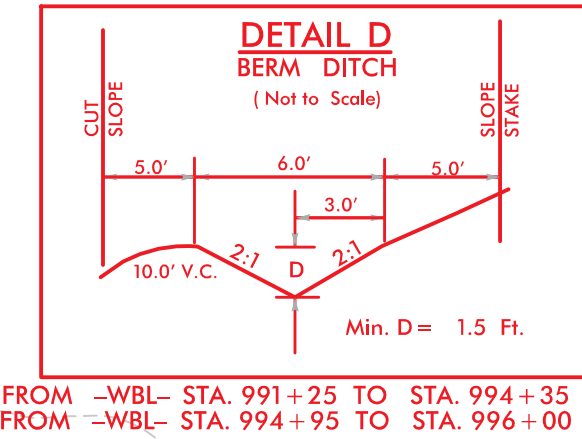
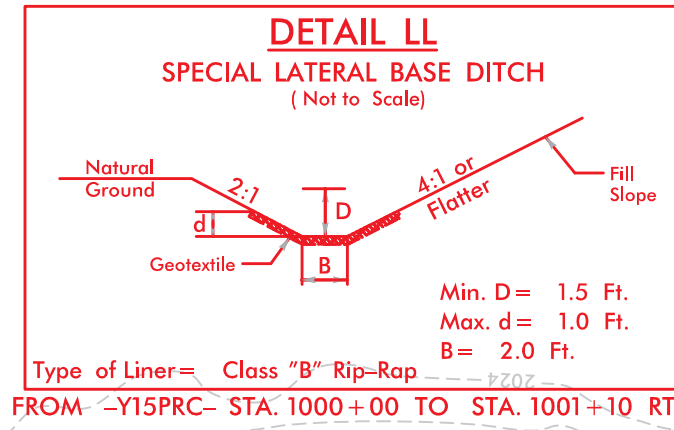
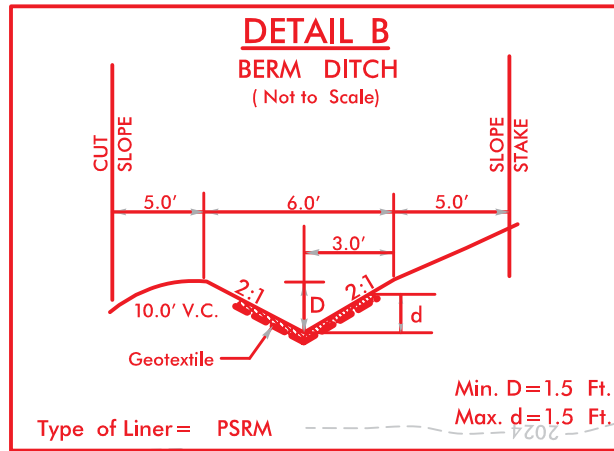
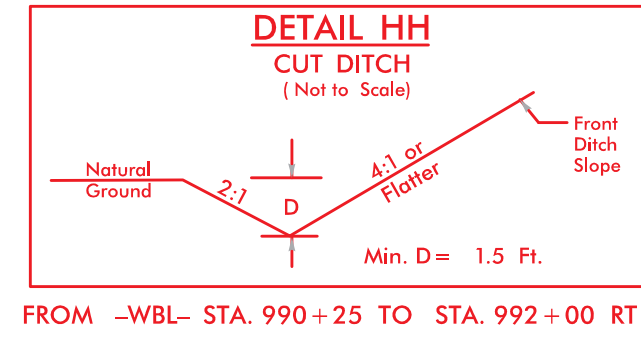
REVISIONS

8/30/2008
147866A-REDLINES_PSH_15.dgn
f.wessling

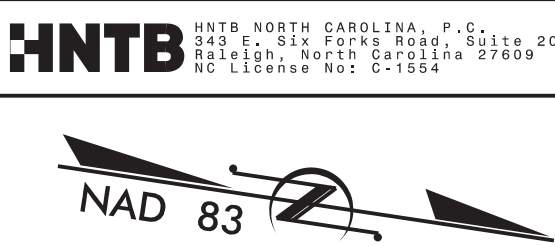
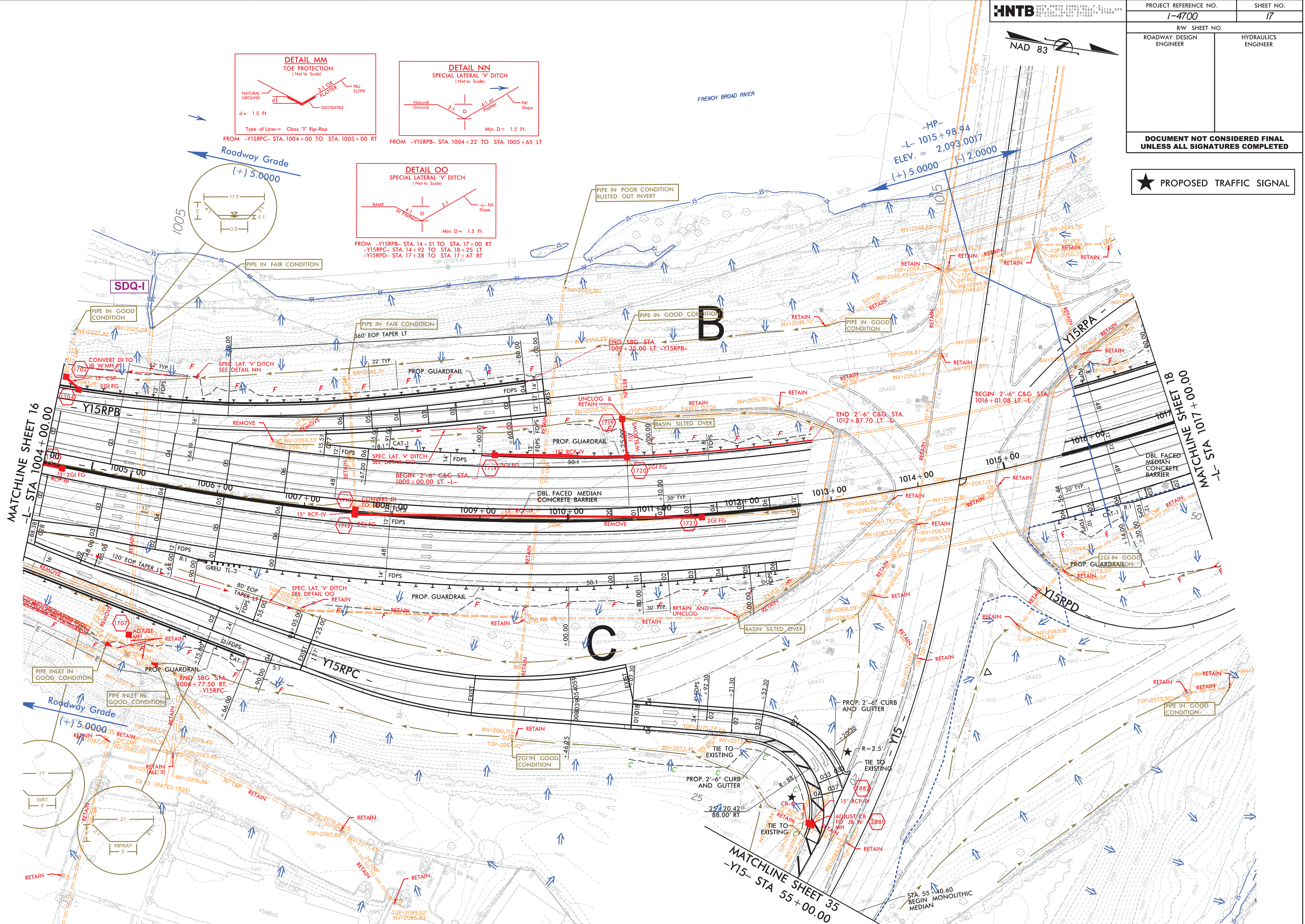
8/17/99

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2425 E. 8th FORTY ROAD, SUITE 200
FARMINGTON, NORTH CAROLINA 27834
NC LICENSE NO. C-1584

PROJECT REFERENCE NO.		SHEET NO.
I-4700		16
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



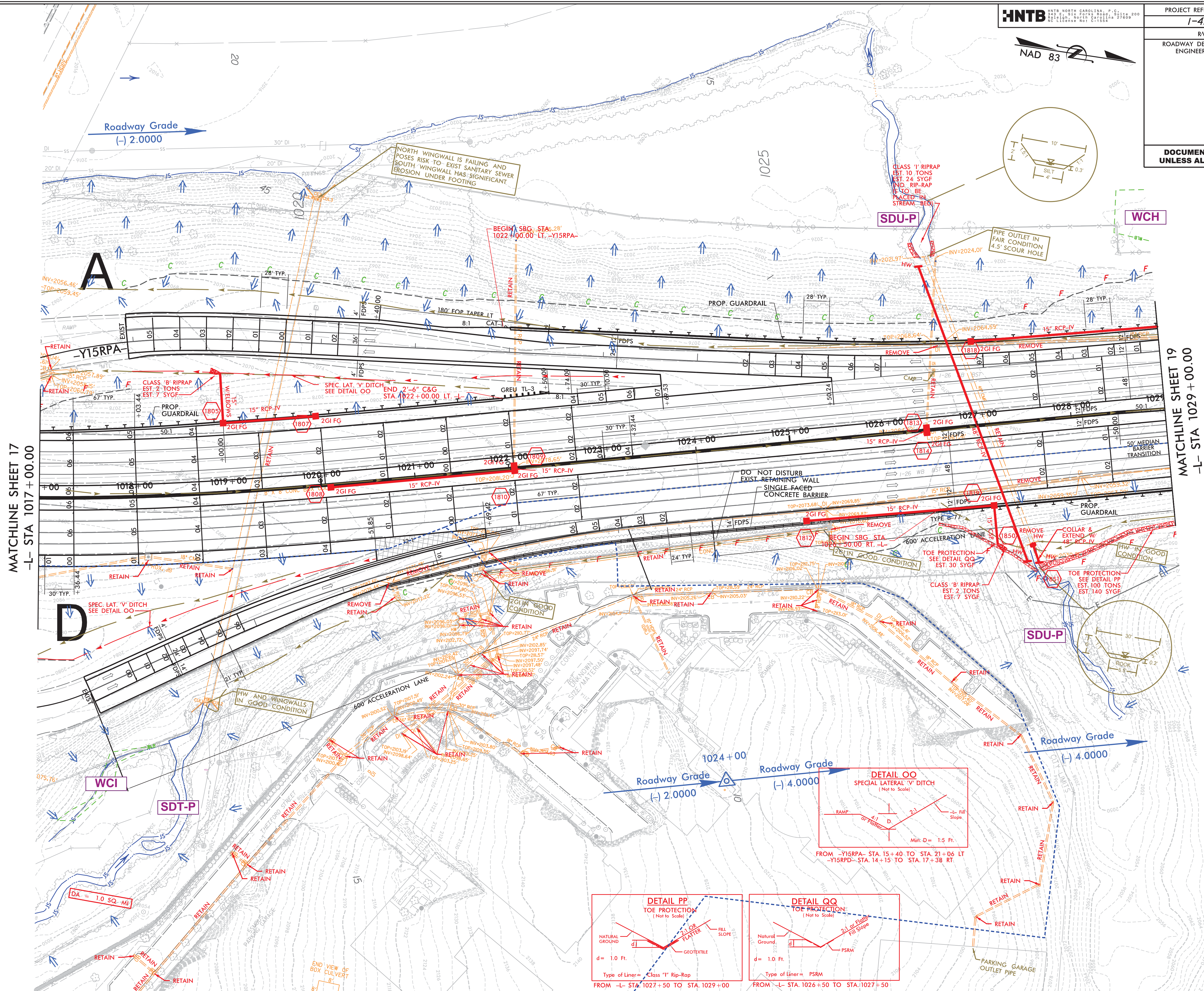
REVISIONS



PROJECT REFERENCE NO.		SHEET NO.	
1-4700		17	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

★ PROPOSED TRAFFIC SIGNAL

I4700A-REDLINES_PSH_18.dgn



8/30/2018
14700A_RED LINES_PSH_19.dgn
rwebling

8/30/2018
147004-REDLINES.PSH.19.dgn
r.wessling

8/30/2018
14700A_RED LINES_PSH_19.dgn
rwebling

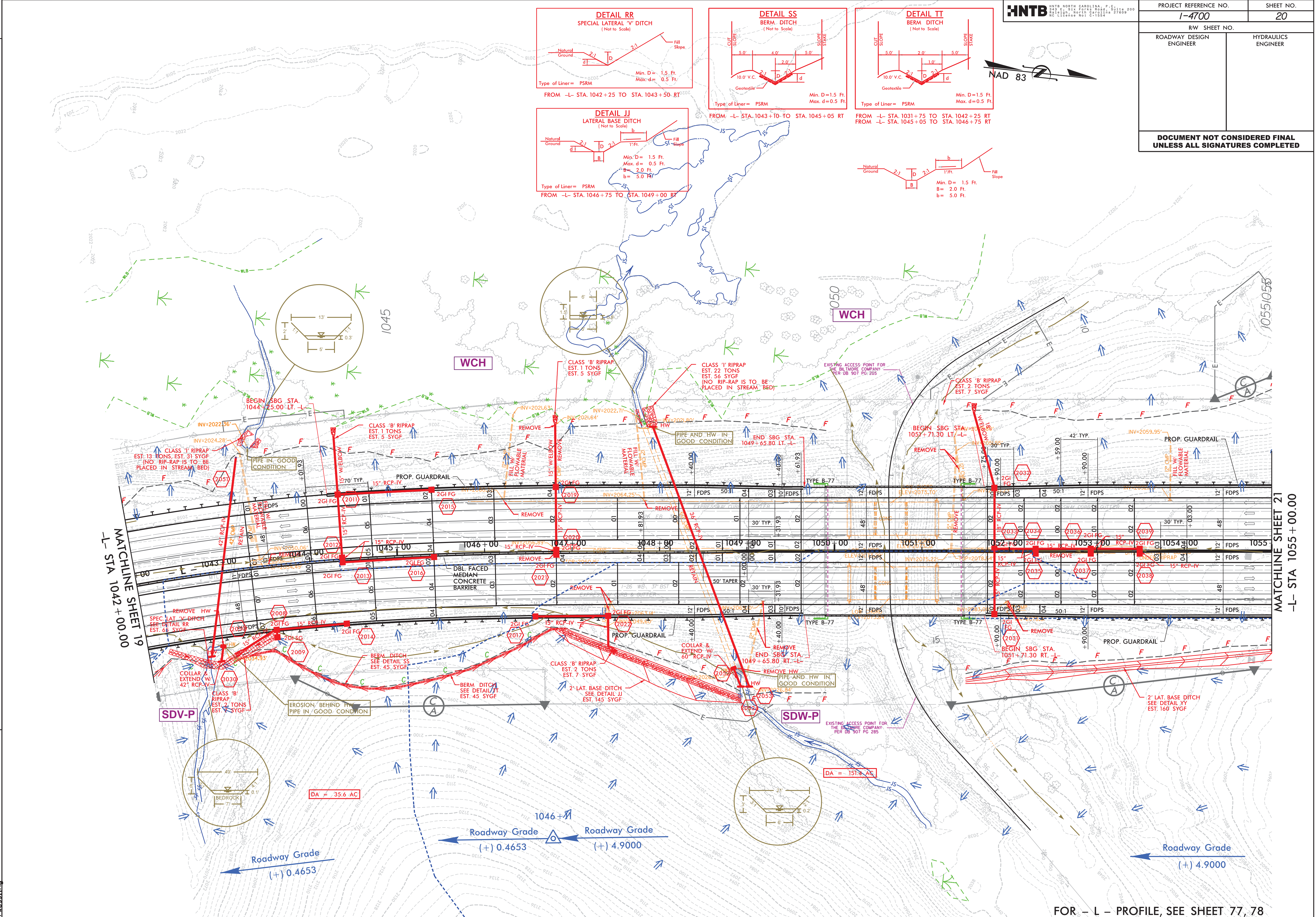
8/30/2018
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rwebling



8/17/99

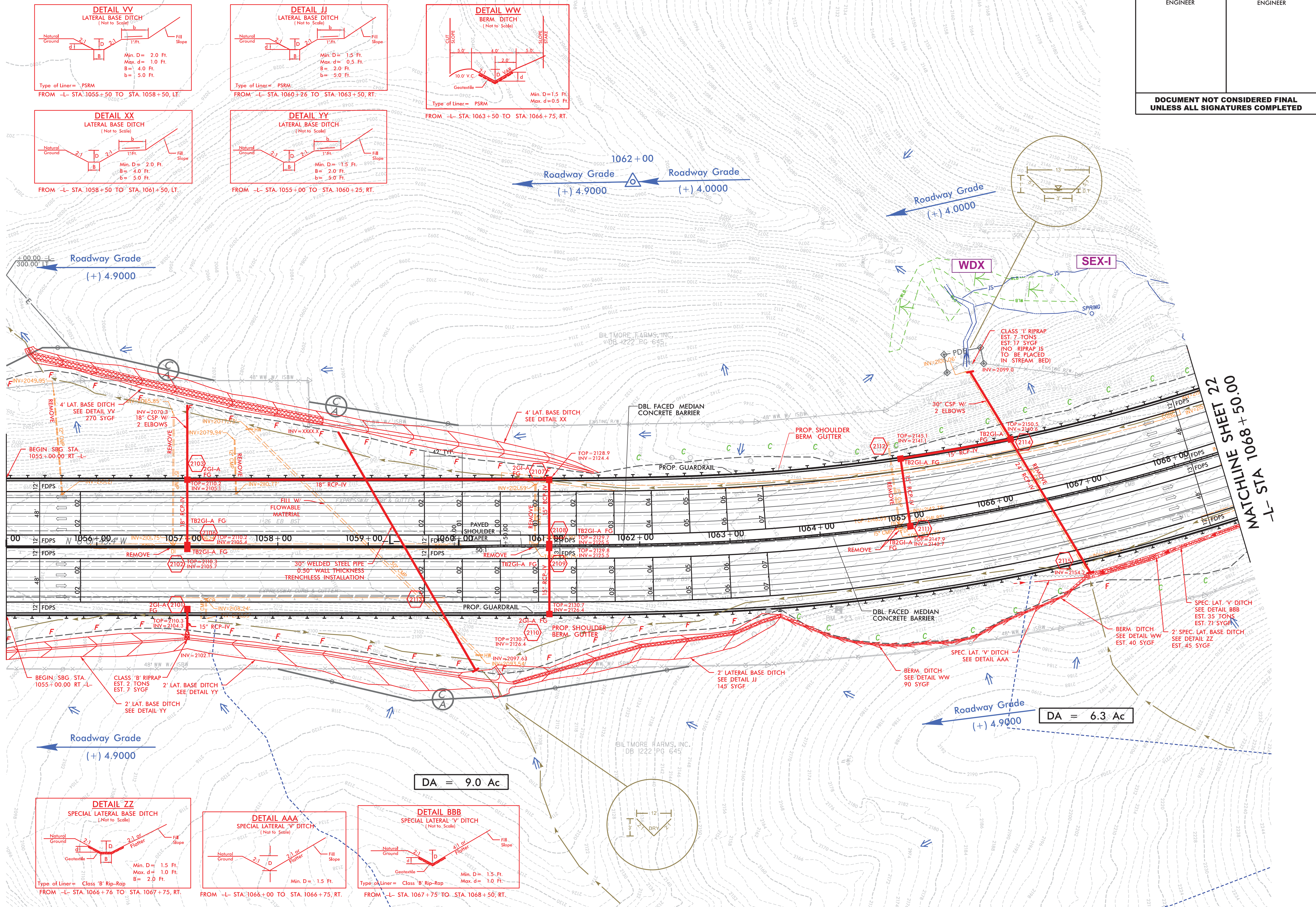
REVISIONS

8/30/2018
14786A_RED LINES_PSH_20.dgn
f.wessling



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HNTB NORTH CAROLINA, P.C.
24245 E. S.W. 10TH ROAD, SUITE 200
FARMINGTON, NORTH CAROLINA 27830
NC LICENSE NO. C-1584

PROJECT REFERENCE NO.		SHEET NO.	
I-4700		20	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

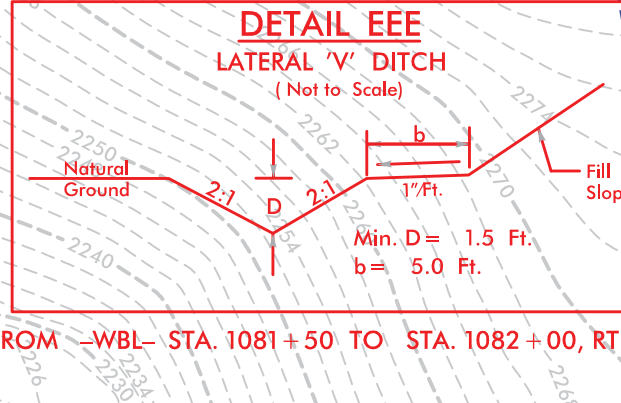
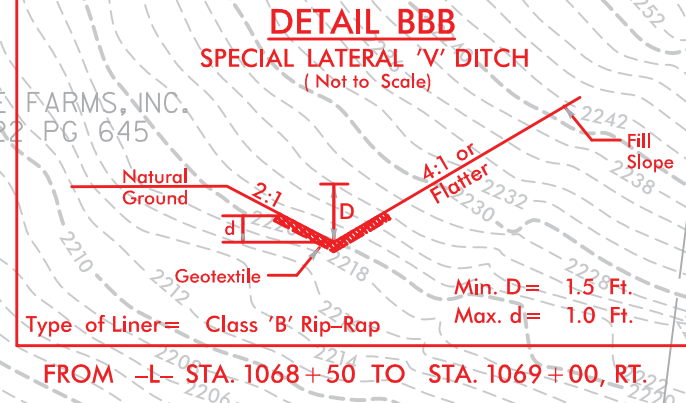
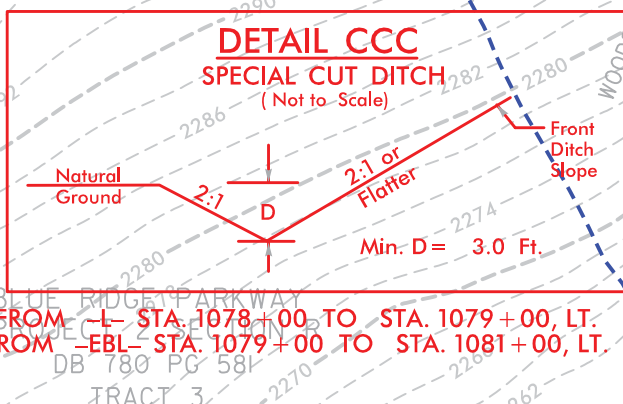
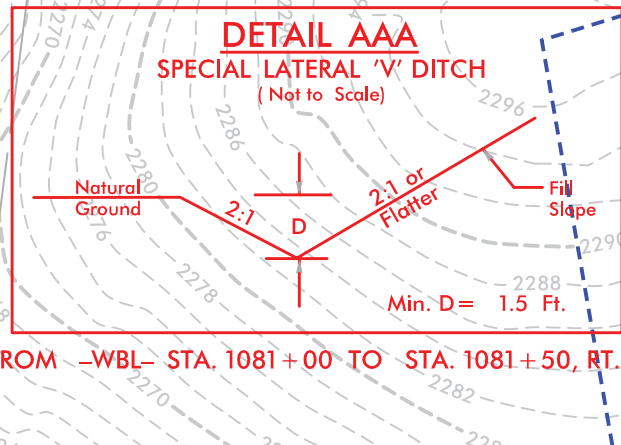
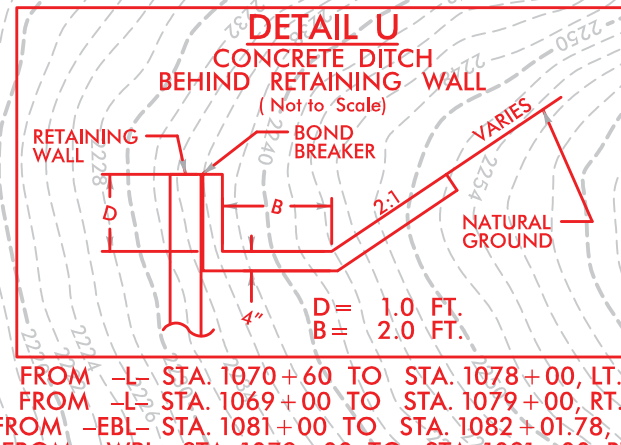
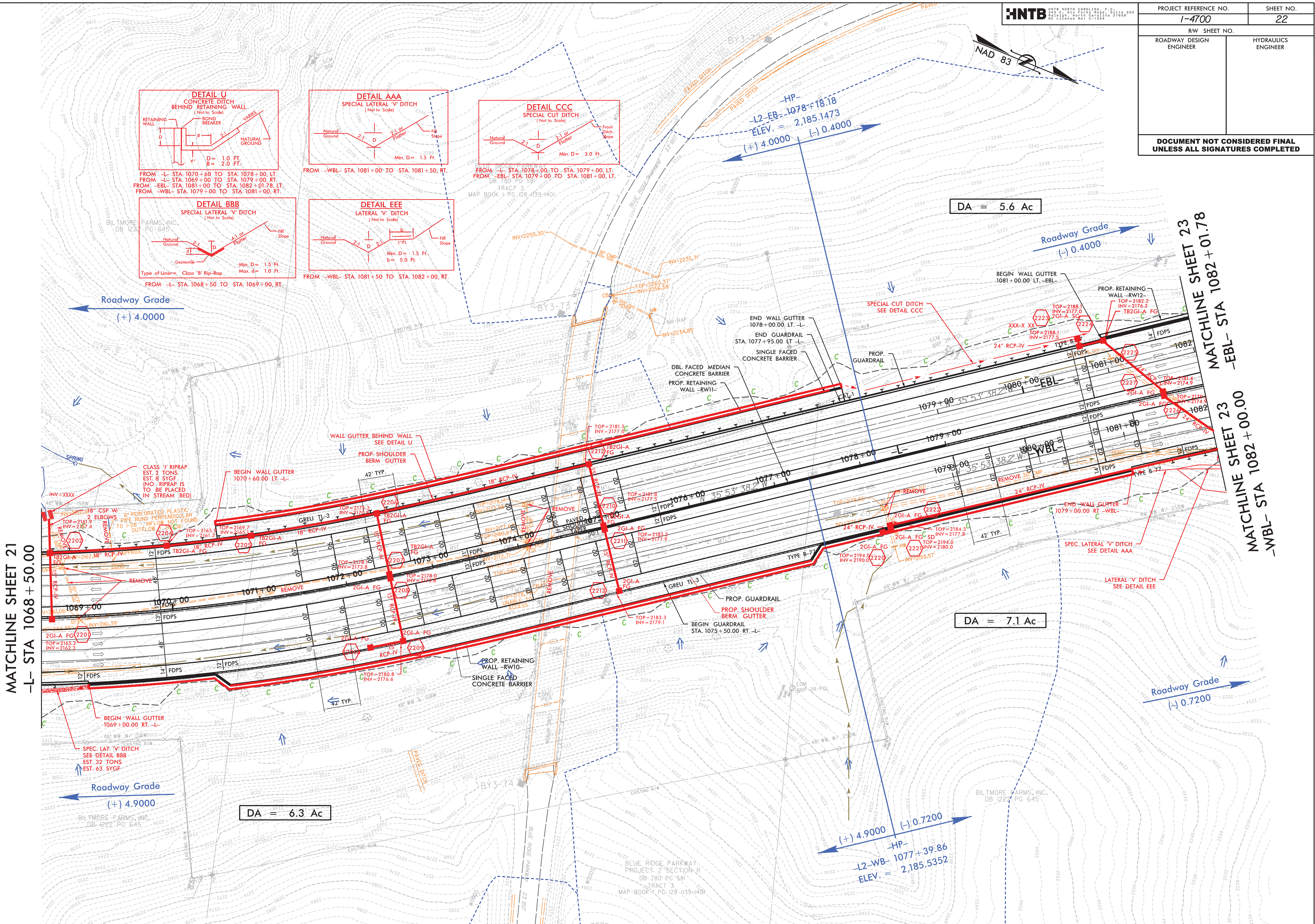


7/19/2017

1/19/2017 14:00:00 RDV.PSH.S16.dgn

REVISIONS

MATCHLINE SHEET 21
-L- STA 1068 + 50.00



DA = 5.6 Ac

DA = 7.1 Ac

DA = 6.3 Ac

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
I-4700	22
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

7/19/2017

1/19/2017 14:00:00 RDV_PSH_S16.dgn

REVISIONS

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2424 E. S.W. PO BOX 200
Raleigh, North Carolina 27609
NC LICENSE NO. C-1584

PROJECT REFERENCE NO.

1-4700

SHEET NO.

23

RW SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

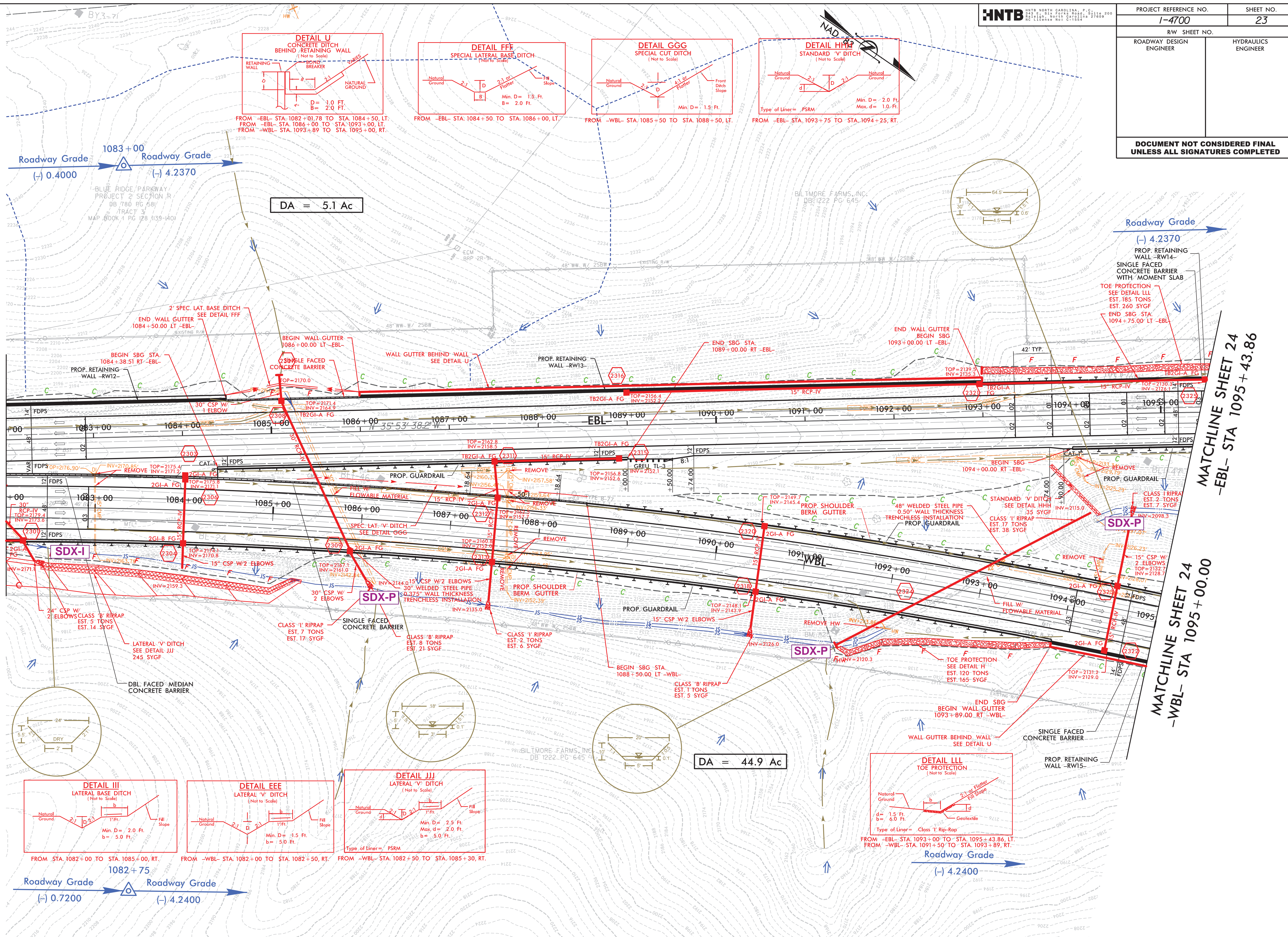
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

MATCHLINE SHEET 22
-EBL- STA 1082 + 01.78

MATCHLINE SHEET 22
-WBL- STA 1082 + 00.00

MATCHLINE SHEET 24
-EBL- STA 1095 + 43.86

MATCHLINE SHEET 24
-WBL- STA 1095 + 00.00



7/19/2017

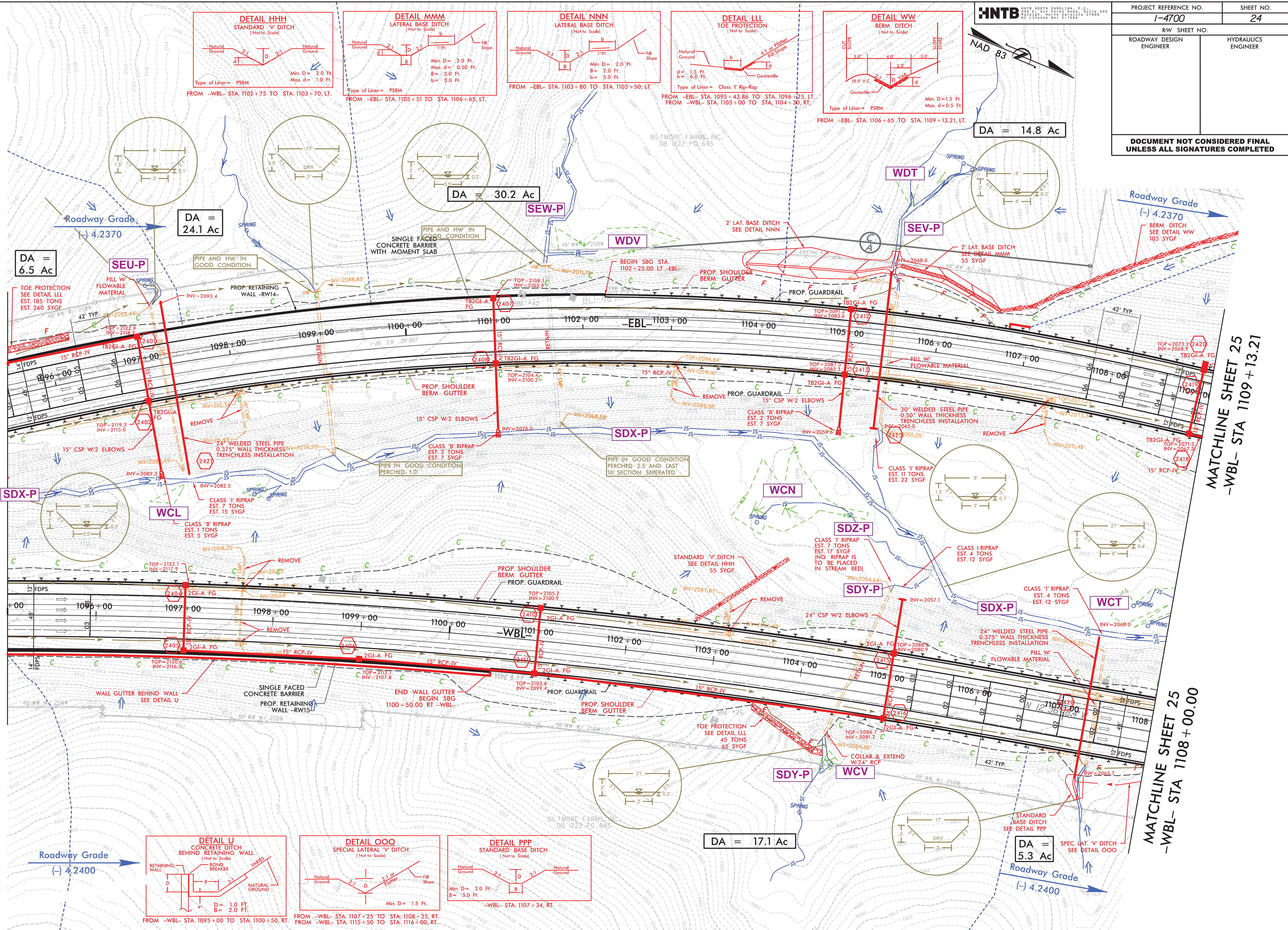
REVISIONS

1/19/2017
14:00:00
RDV.PSH.S16.dgn
3:43 AM

MATCHLINE SHEET 23
-EBL- STA 1095 + 43.86

MATCHLINE SHEET 23
-WBL- STA 1095 + 00.00

PROJECT REFERENCE NO.	SHEET NO.
I-4700	24
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



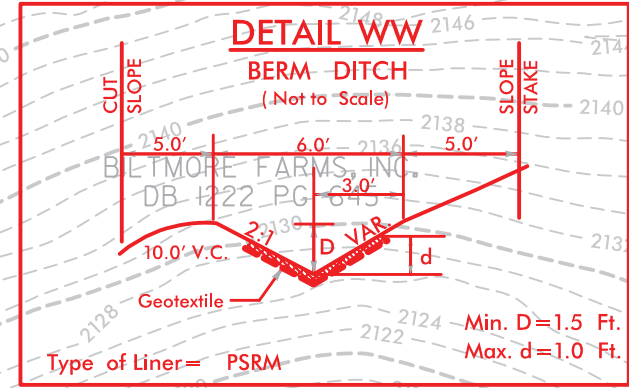
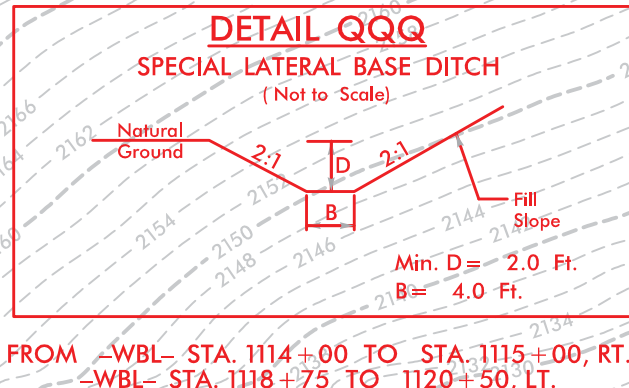
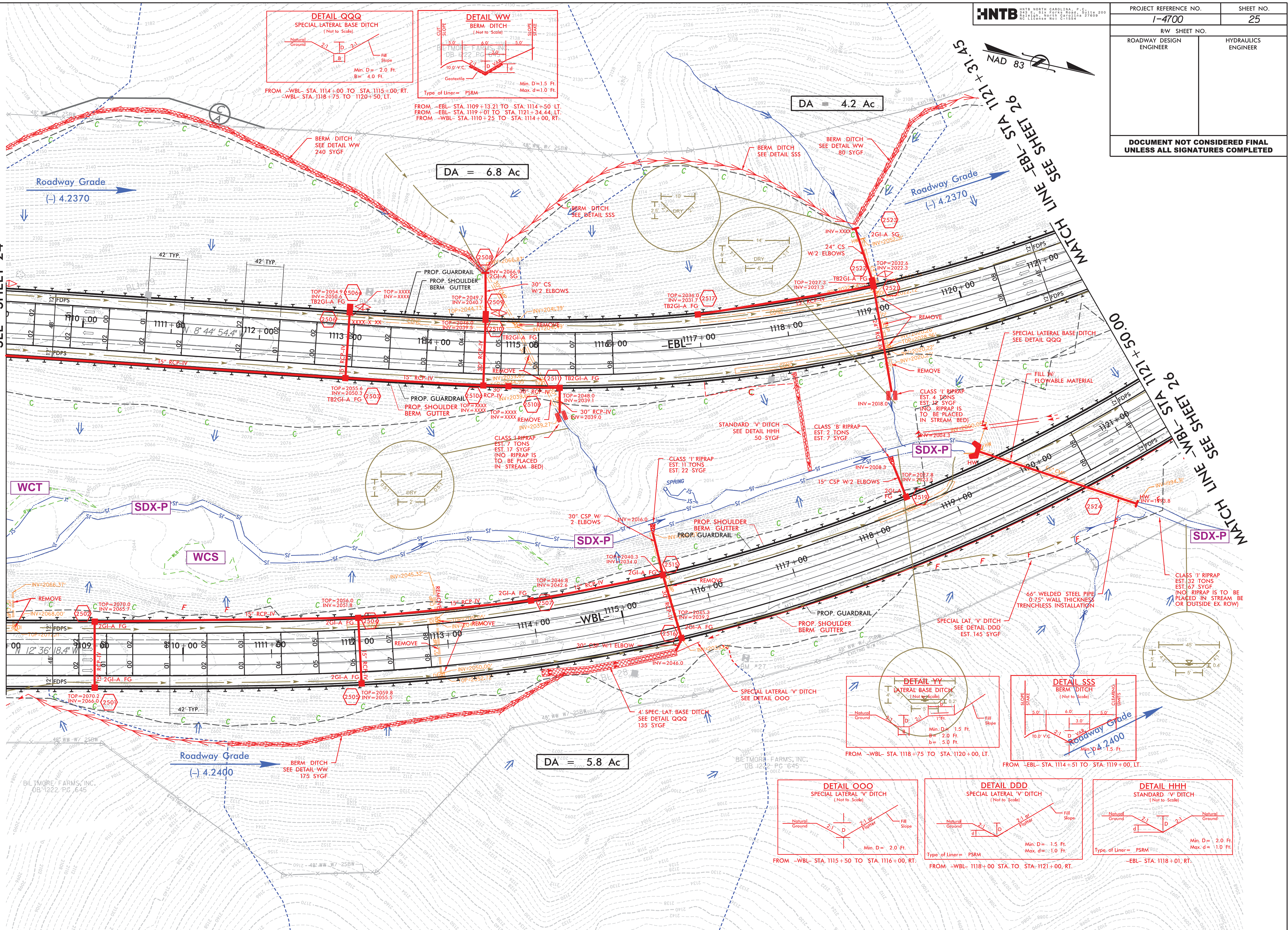
7/19/2017

1/19/2017 14:00:00
3:43 AM
RDY.PSH.S16.dgn

REVISIONS

MATCH LINE -WBL- STA 1108+00.00 SEE SHEET 24

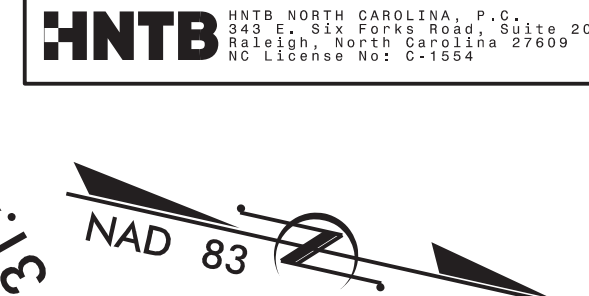
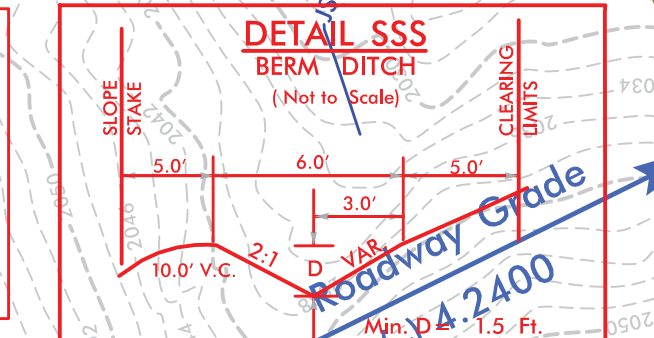
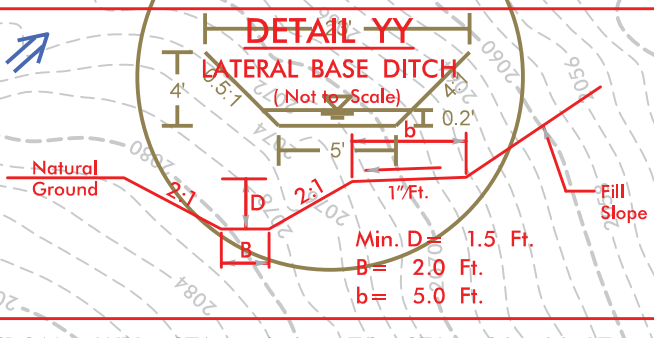
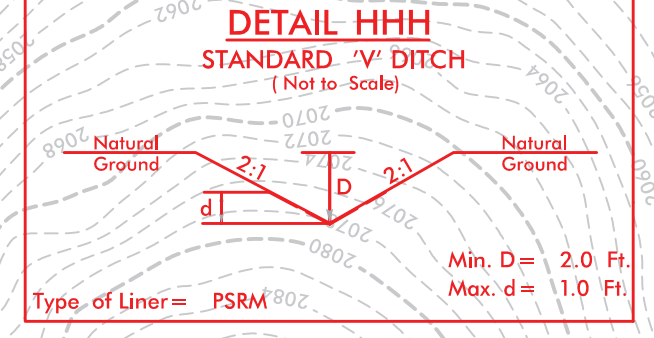
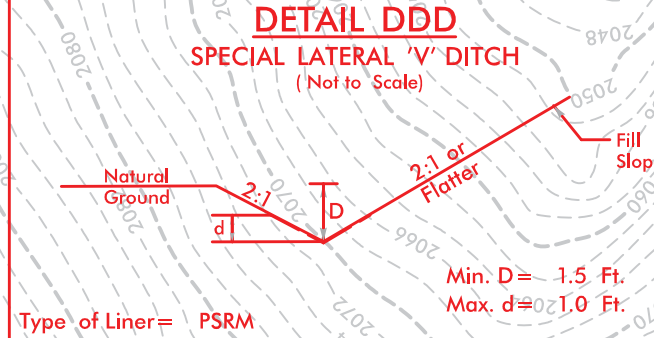
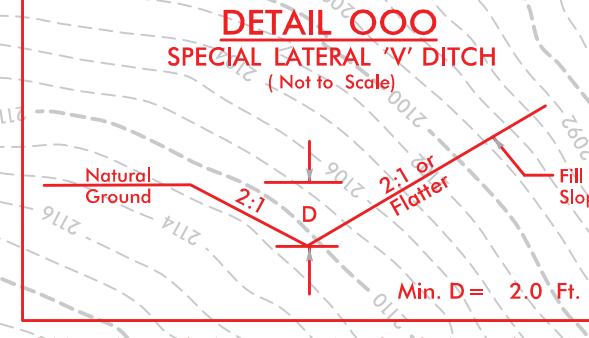
MATCH LINE -EBL- STA 1109+13.22 SEE SHEET 24



DA = 4.2 Ac

DA = 6.8 Ac

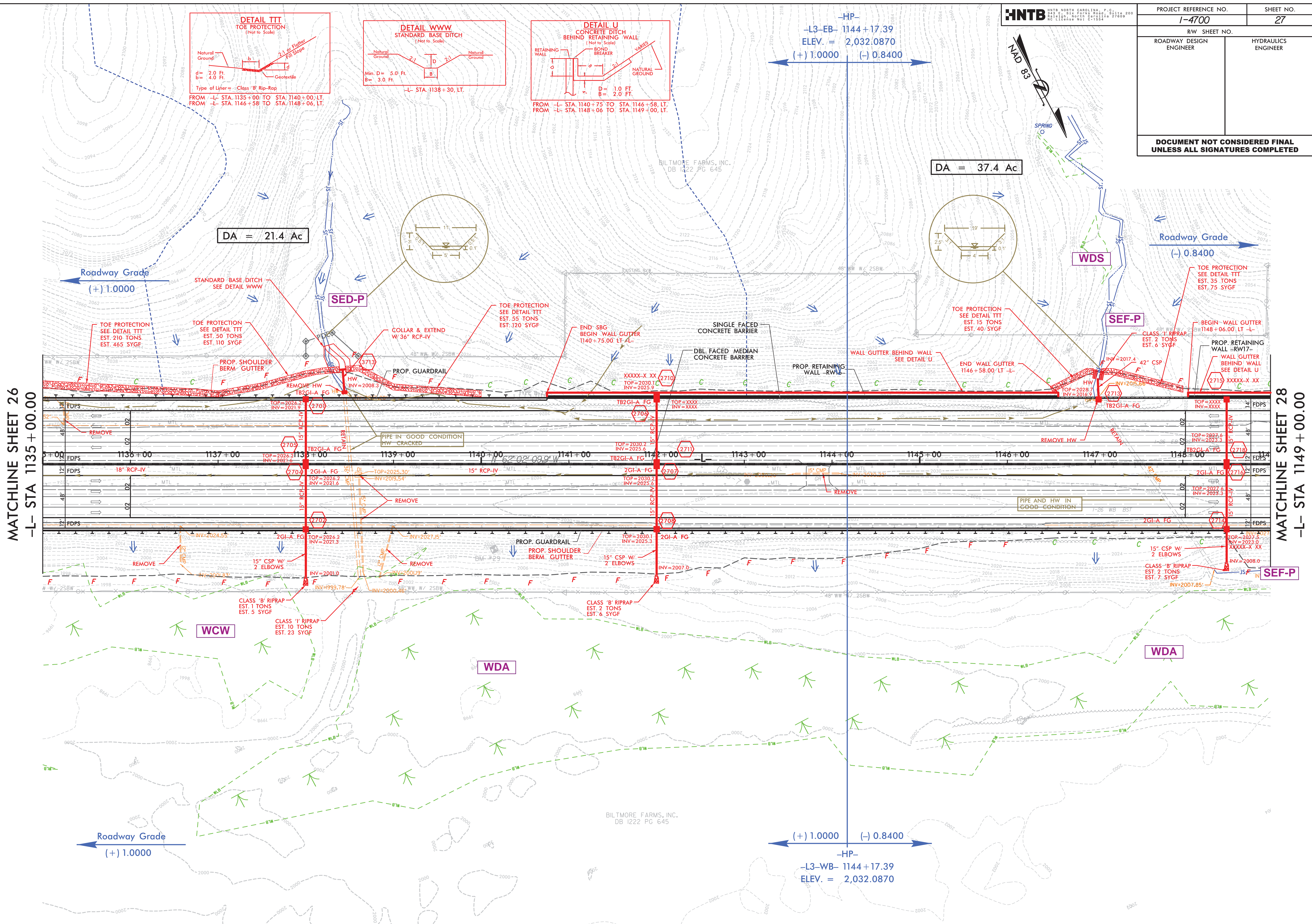
DA = 5.8 Ac



PROJECT REFERENCE NO.		SHEET NO.
I-4700		25
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	



7



PROJECT REFERENCE NO.	SHEET NO.
<i>1-4700</i>	<i>27</i>
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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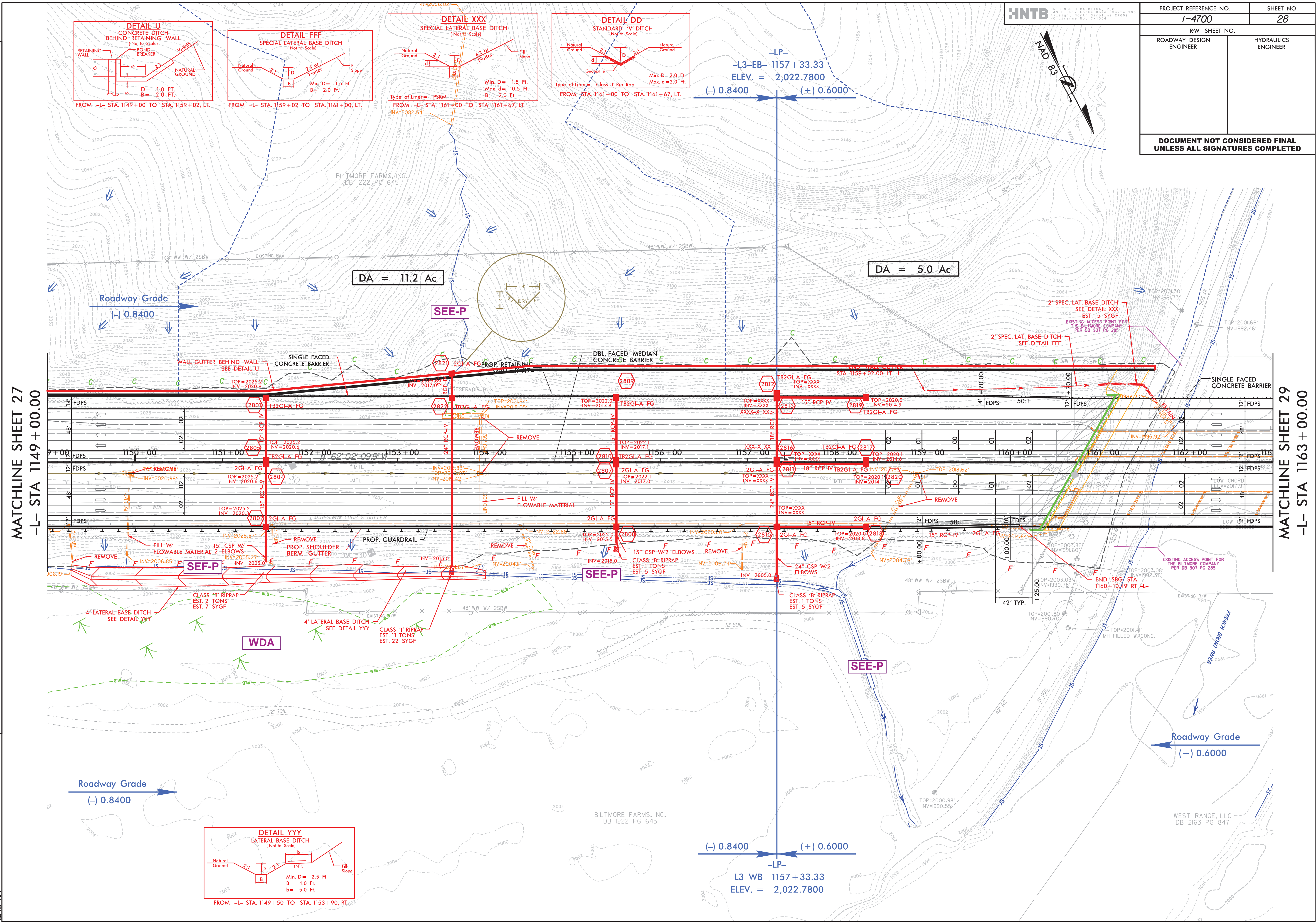
7/19/2017

1/19/2017
14:00:00
RDY_PSH_S16.dgn
3:43 AM

REVISIONS

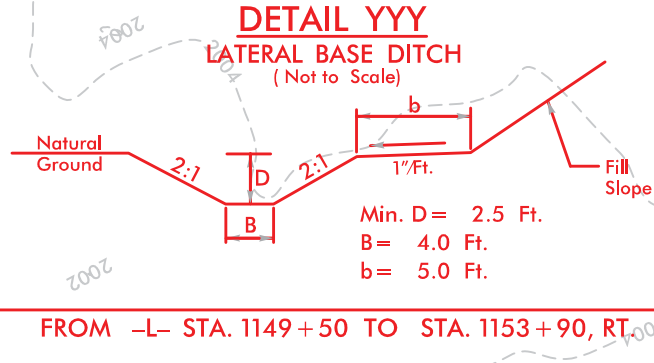
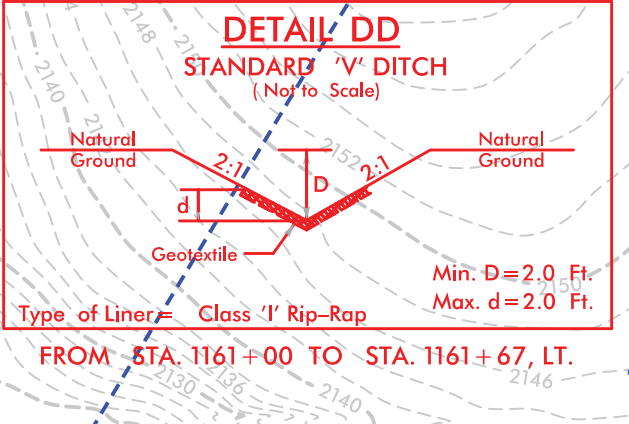
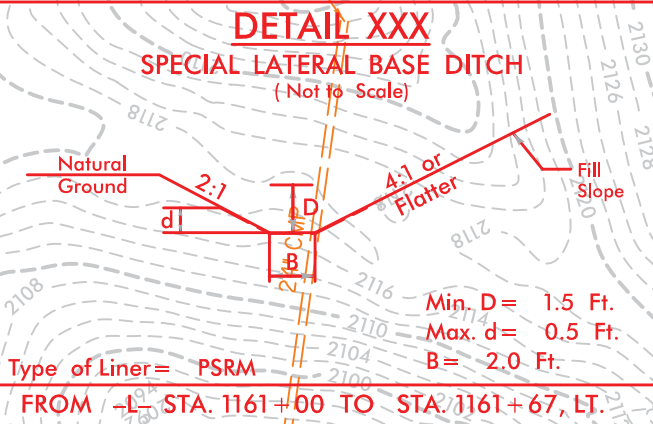
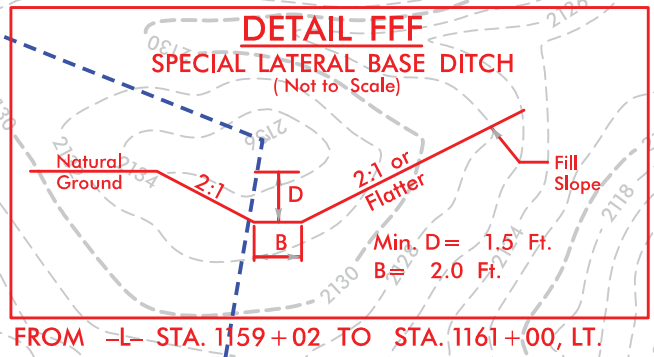
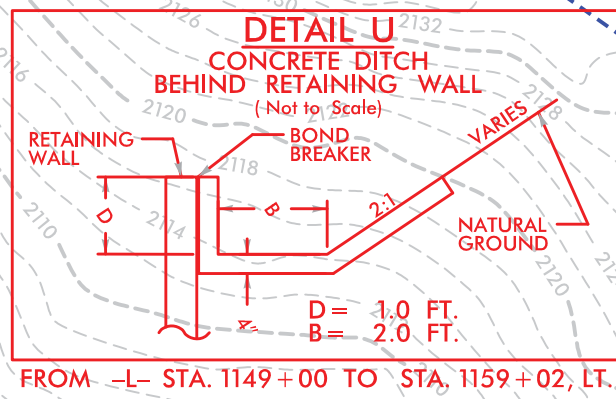
MATCHLINE SHEET 27
-L- STA 1149+00.00

MATCHLINE SHEET 29
-L- STA 1163+00.00



HNTB
HNTB NORTH CAROLINA, P.C.
14245 E. S.W. 10TH ROAD, SUITE 200
FORT WORTH, TEXAS 76126
TEL: 817.339.8800 FAX: 817.339.8801

PROJECT REFERENCE NO.		SHEET NO.
I-4700		28
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER





MATCHLINE SHEET 28
-L- STA 1163 + 00.00

MATCHLINE SHEET 30
-L- STA 1175 + 50.00

7/19/2017
14400C_RDY_PSH_S16.dgn
8:43 AM

MATCHLINE SHEET 29
-L- STA 1175 + 50.00

MATCHLINE SHEET 31
-L- STA 1188 + 50.00

Roadway Grade
← (+) 3.3323

Roadway Grade
(+) 3.3323

(+) 2.4800

$$DA = 10.9 \text{ Ac}$$

Roadway Grade
(+) 3.2400

Roadway Gr

Roadway G-21

DETAIL DDD
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

2:1
Natural Ground
d
D
2:1 or Flatter
Fill Slope
9002
9000
9001
9007
9008
Type of Liner = PSM

FROM -L- STA. 1183+00 TO STA. 1183+50, RT.

DETAIL LL

SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground

2:1

D

Geotextile

B

1.5:1 or flatter

Fill Slope

Min. D = 1.5 Ft.
Max. D = 1.0 Ft.
B = 2.0 Ft.

Type of Liner	Class
1	Rip-Rap
2	Rip-Rap

FROM STA. 1175+00 TO STA. 1176+00, LT.

DETAIL FFF
SPECIAL LATERAL BASE DITCH
 (Not to Scale)

Natural Ground

2:1

D

B

2:1 or Flatter

Fill Slope

Min. D = 1.5 Ft.
 B = 2.0 Ft.

FROM -L- STA. 1176+00 TO STA. 1184+00, LT.

DETAIL U
CONCRETE DITCH
BEHIND RETAINING WALL
 (Not to Scale)

RETAINING WALL

BOND BREAKER

DITCH

NATURAL GROUND

VARIES

1.0

1.0 FT
 D =
 2.0 FT
 B =

FROM -L- STA. 1184+00 TO -R- STA. 1188+50, LT

$$DA = 3.8 \text{ Ac}$$

REVISIONS

7/19/2017
14400C-RDY_PSH-S16.dgn
8:43 AM

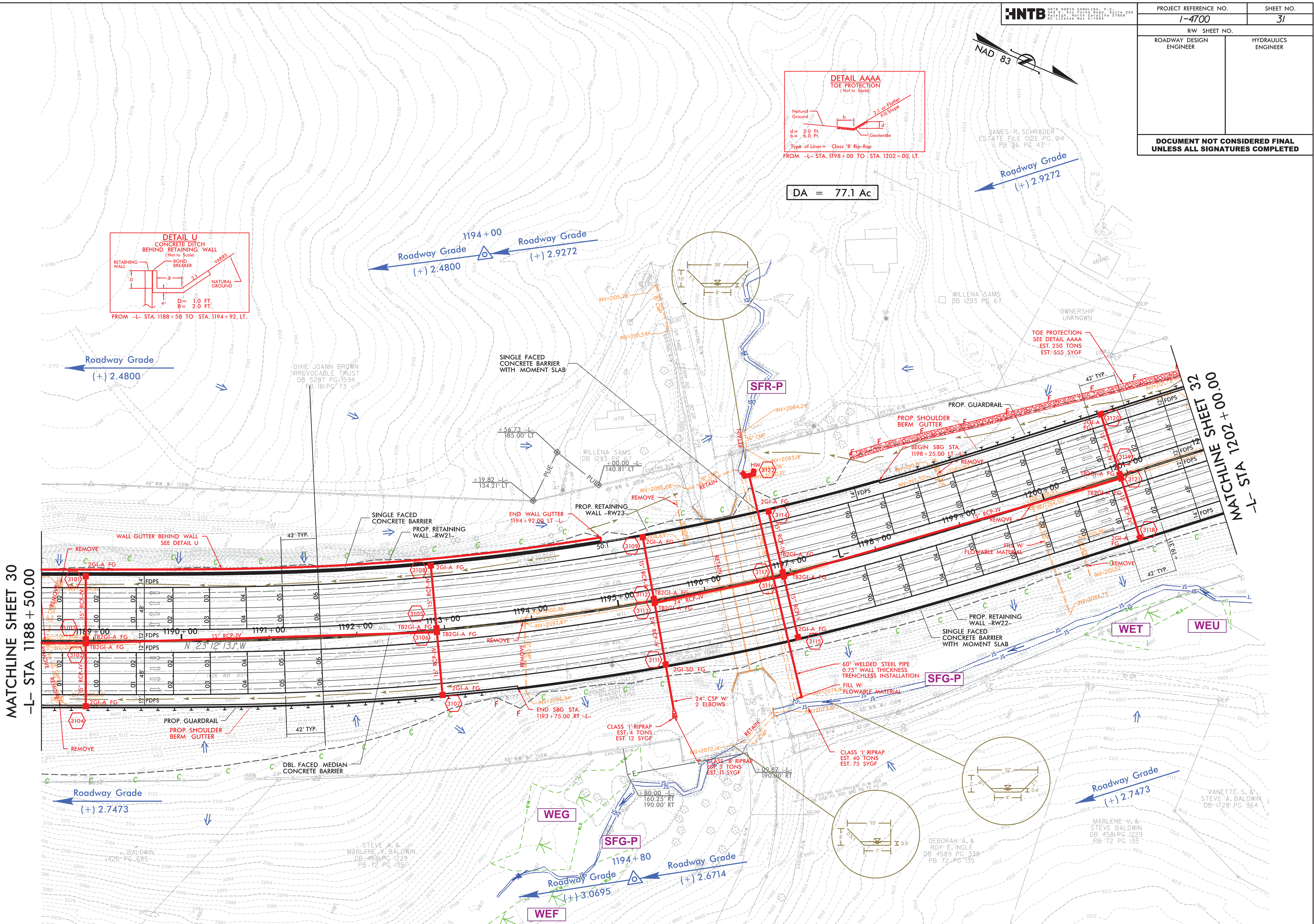
7/19/2017

1/19/2017 14:00:00 RDV_PSH_S16.dgn 3:43 AM

REVISIONS

MATCHLINE SHEET 30
-L- STA 1188+50.00

MATCHLINE SHEET 32
-L- STA 1202+00.00



HNTB
HNTB NORTH CAROLINA, P.C., Suite 200
2425 E. 8th Street, Suite 200
Fayetteville, North Carolina 27804
Tel: 704/336-1100 Fax: 704/336-1101
NC License No. C-1584

PROJECT REFERENCE NO.		SHEET NO.	
1-4700		31	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



7/19/2017

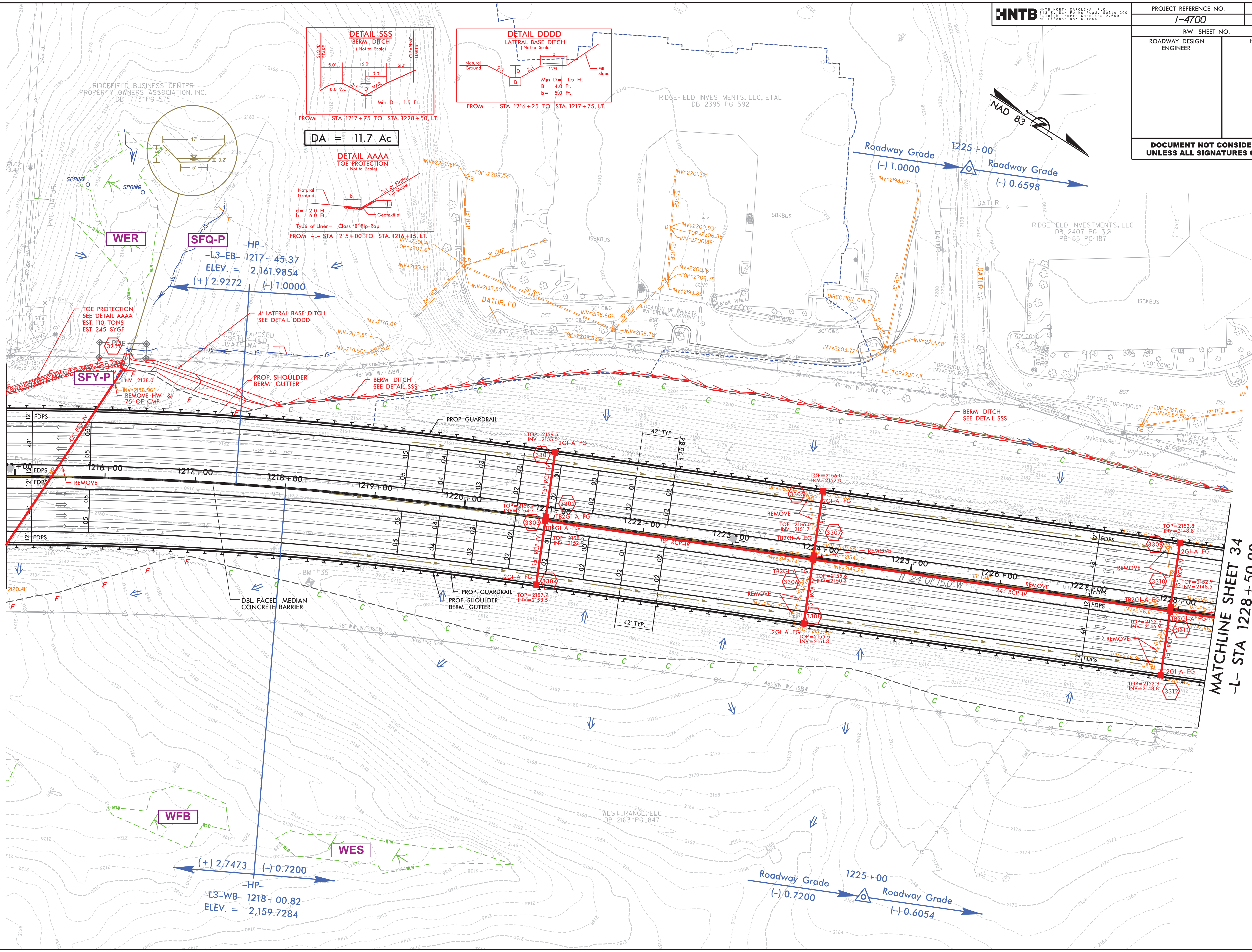
HNTB

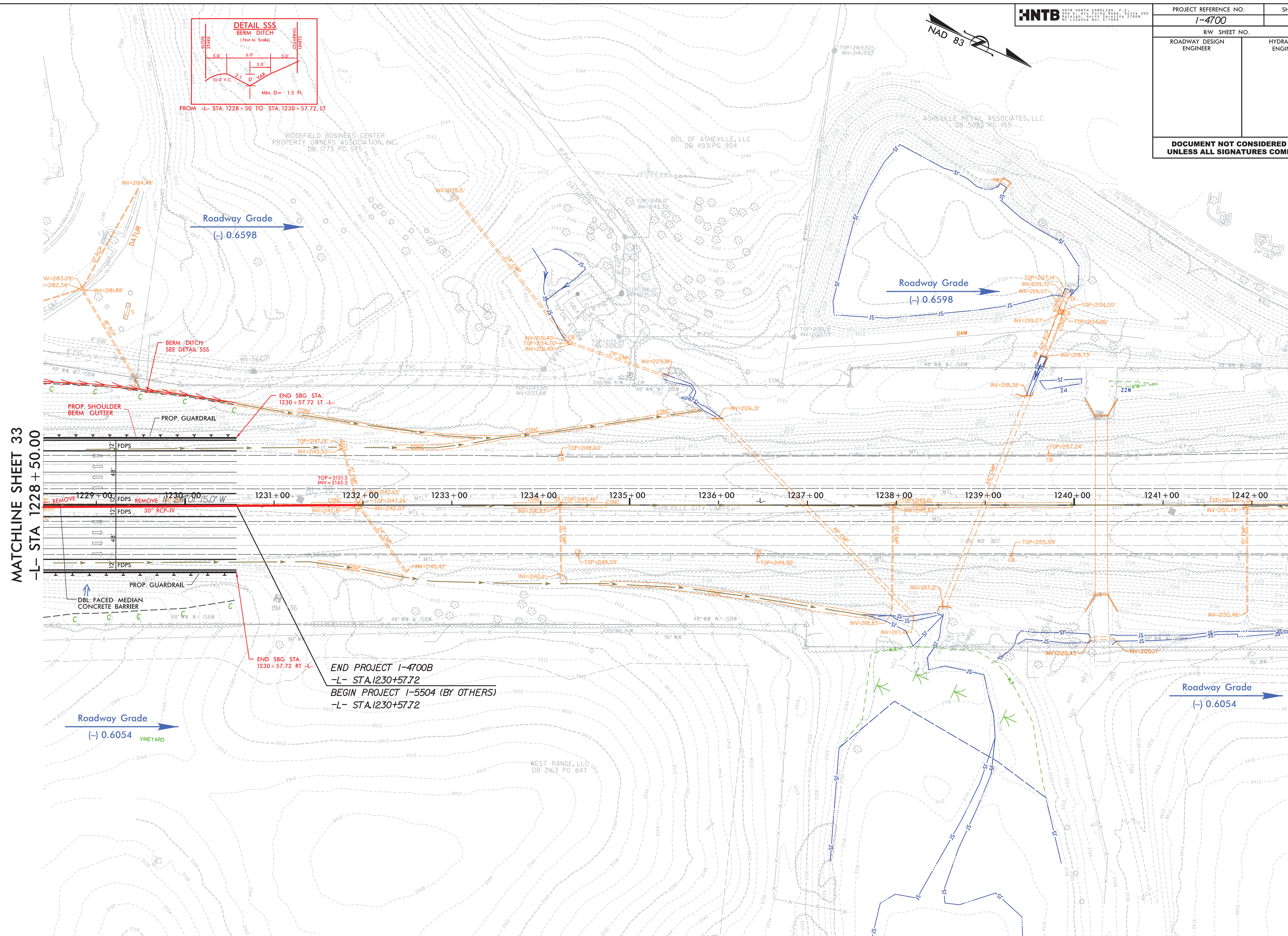
HNTB NORTH CAROLINA, P.C.
245 E. 8th Street, Suite 200
Charlotte, NC 28202
NC License No. C-1584

PROJECT REFERENCE NO.		SHEET NO.
I-4700		33
RW SHEET NO.		
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



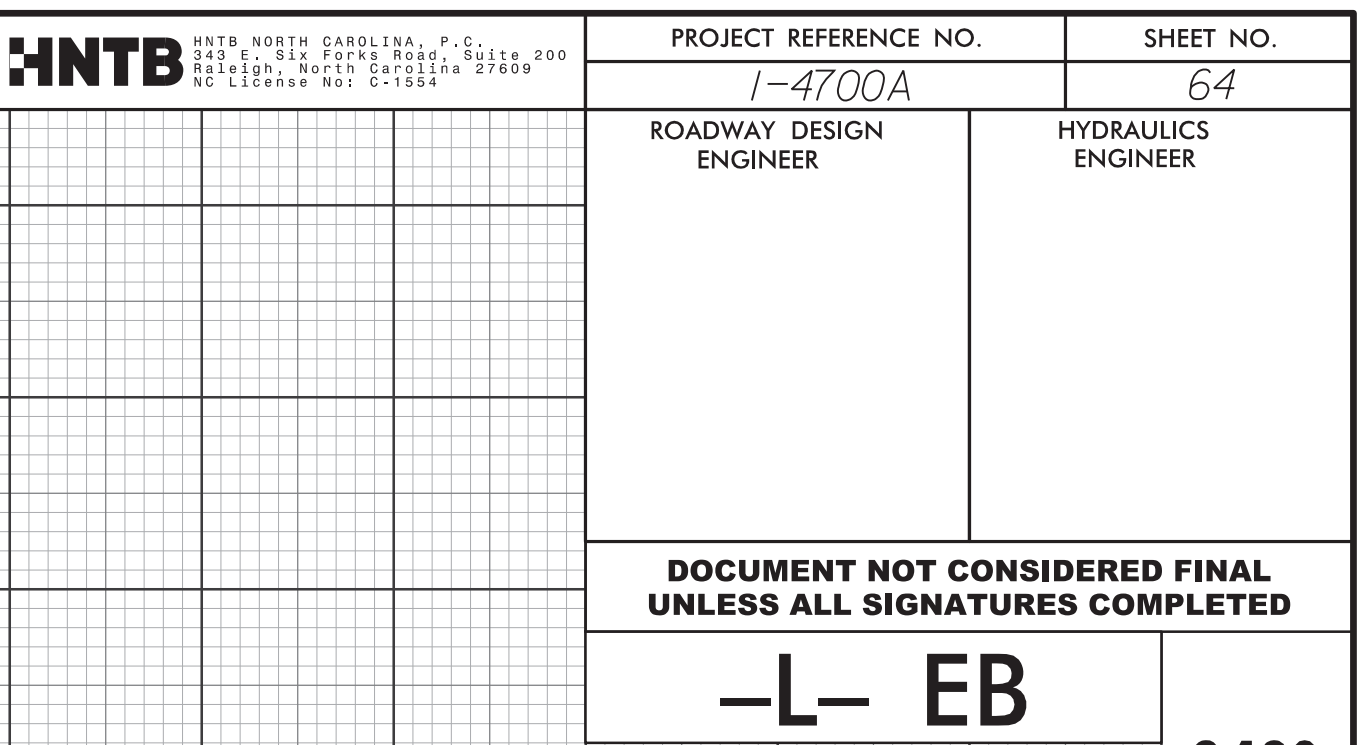


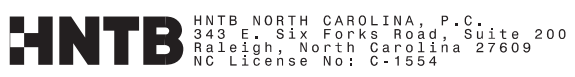


FOR -Y15E- INTERSECTION DETAIL, SEE SHEET 2B-2
FOR -Y15F- INTERSECTION DETAIL, SEE SHEET 2B-2

8/30/2018
14700A-REDLINES_PSH_35.dgn
rwebling

REVISIONS





5/28/99

HNTB

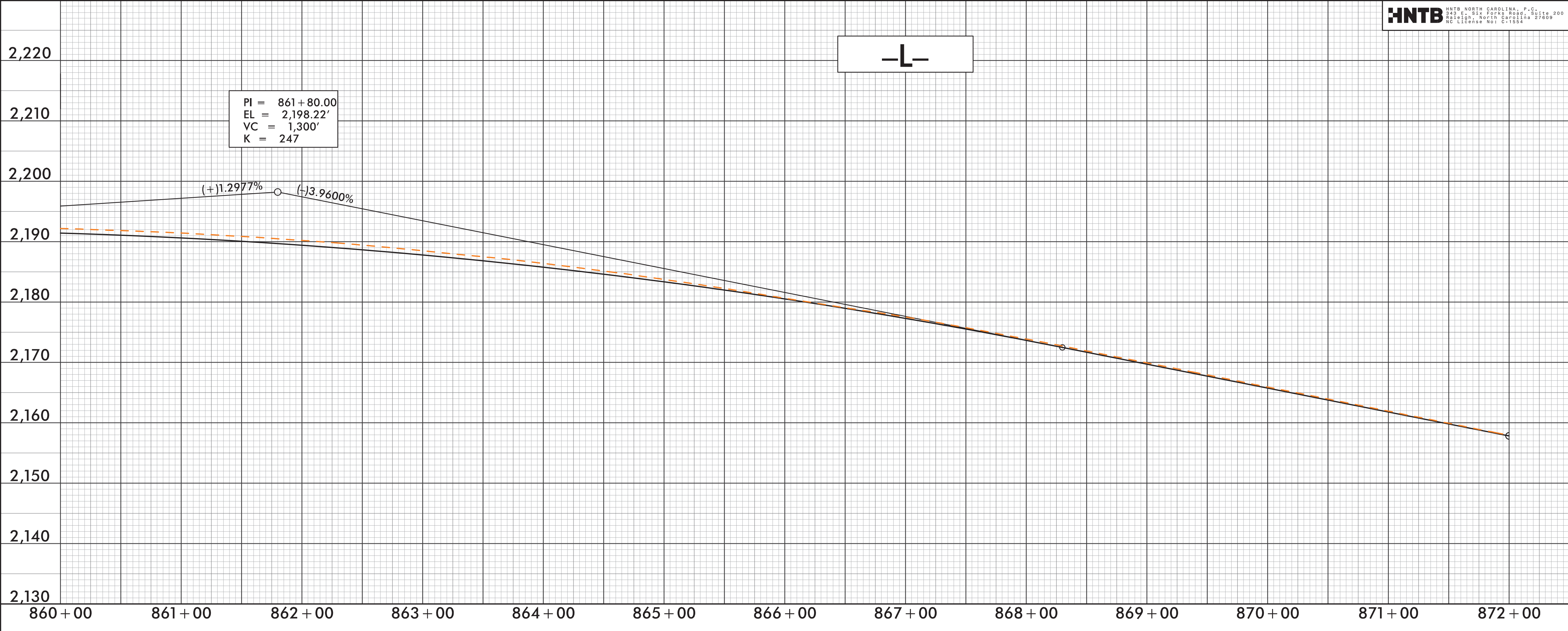
HNTB NORTH CAROLINA, P.C.

200 S. S11 PARR MARI SUITE 200

RALEIGH NORTH CAROLINA 27609

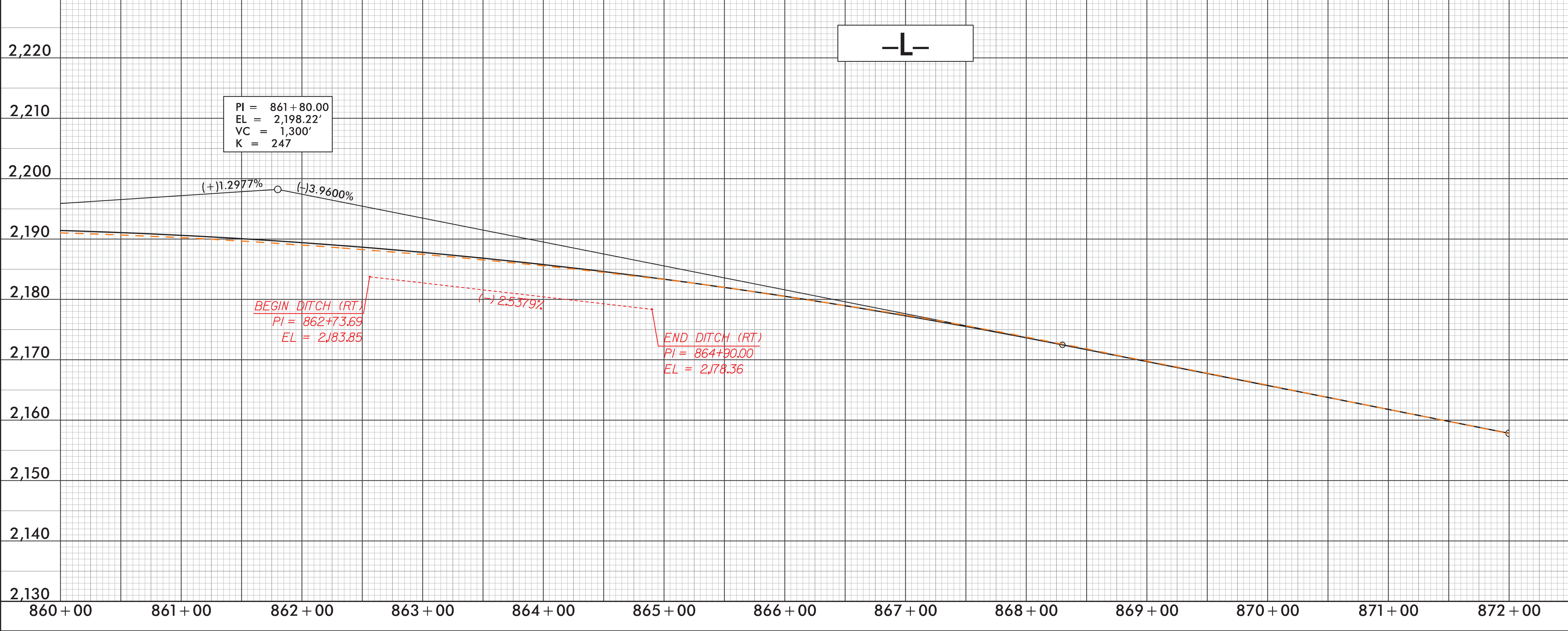
NO LICENSE NOV. 1, 1994

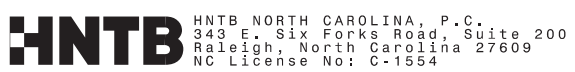
PROJECT REFERENCE NO.		SHEET NO.	
I-4700A		66	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
-L- EB		2100	



7/24/2018
14700A-CR01-PFL-66
Disc 1

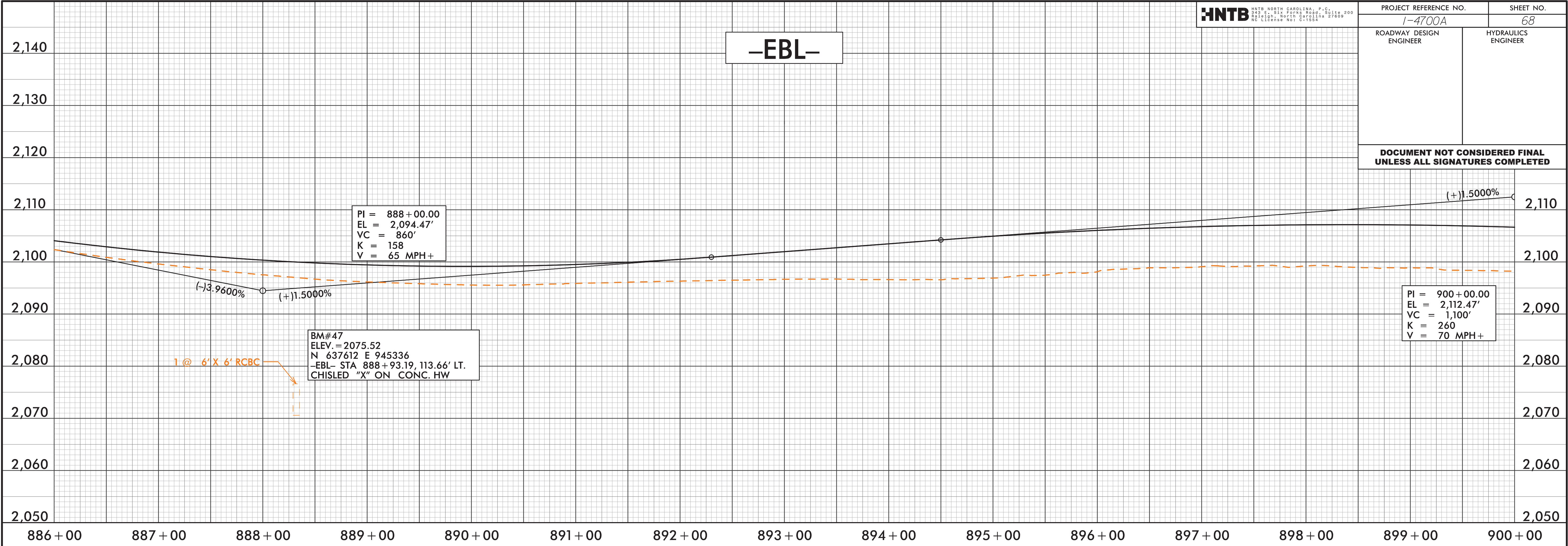
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	2,200
	2,190
	2,180
	2,170
	2,160
	2,150
	2,140
	2,130



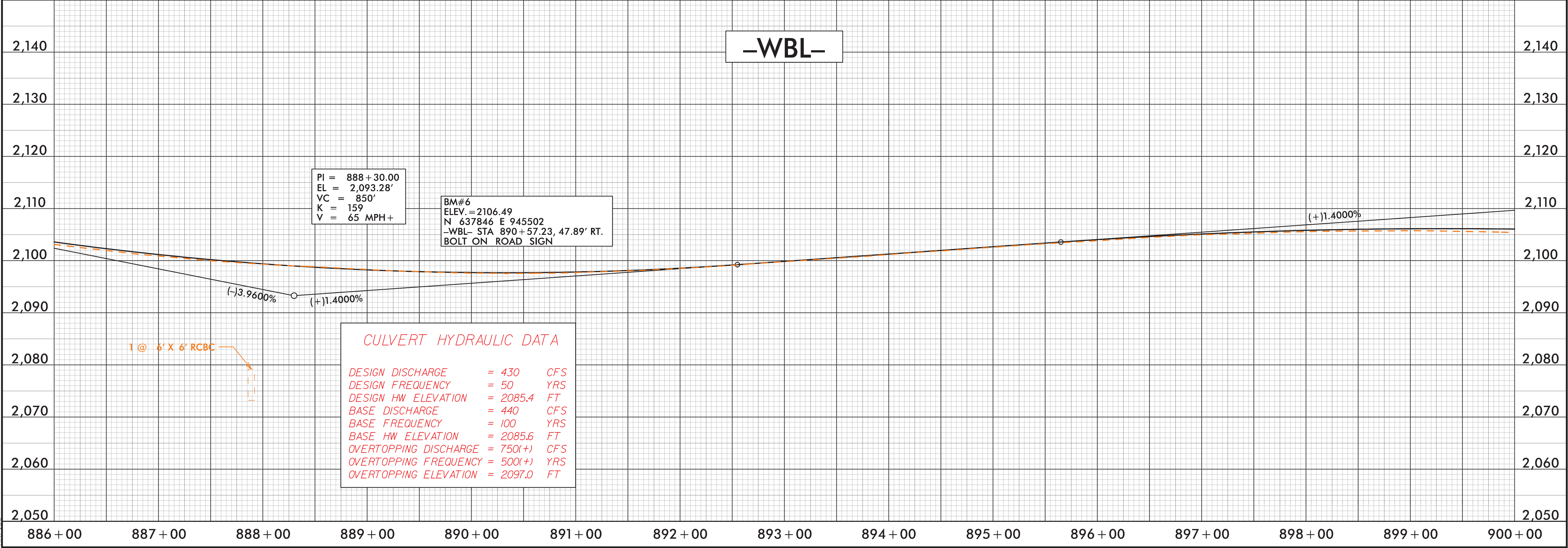


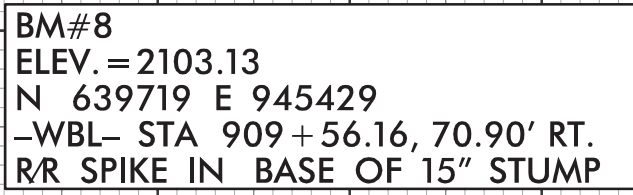
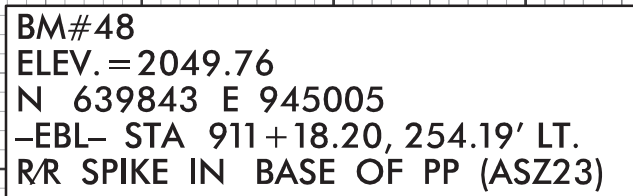
5/28/99

PROJECT REFERENCE NO.		SHEET NO.
I-4700A		68
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



7/24/2008
14700A-100Y-PFL-68.dgn
Disc 1







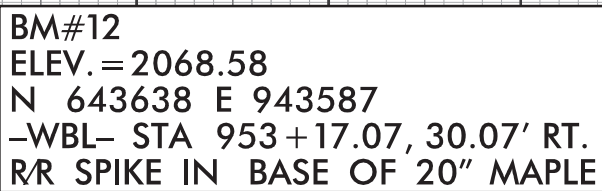
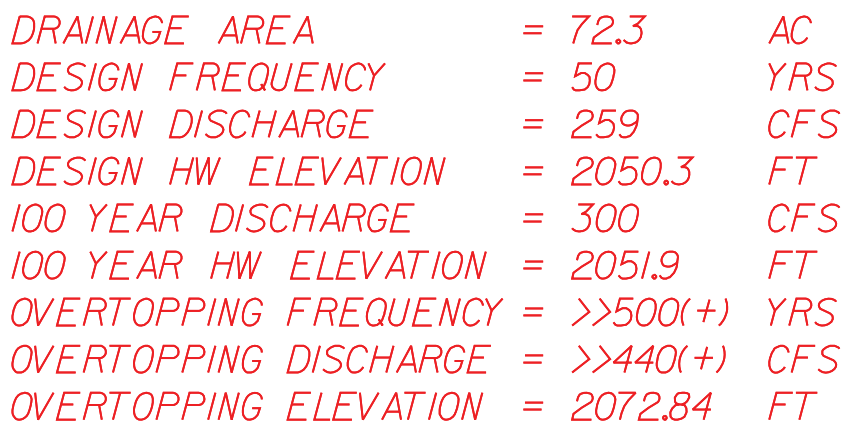
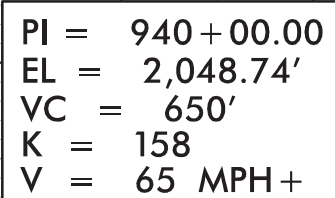
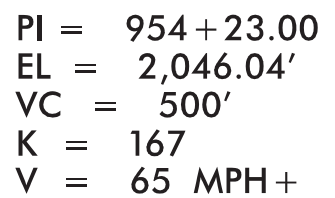


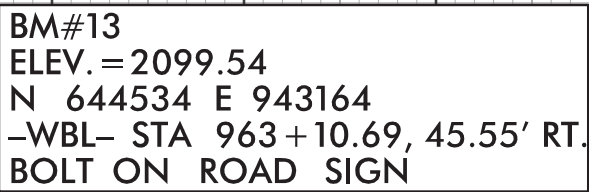
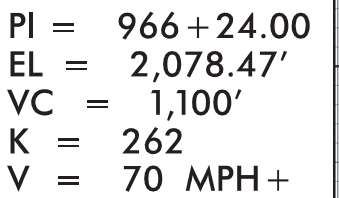
-WBL- Sta. 937+86 (Str. #2331)

DRAINAGE AREA	=	119.9	AC
DESIGN FREQUENCY	=	50	YRS
DESIGN DISCHARGE	=	248	CFS
DESIGN HW ELEVATION	=	2048.9	FT
100 YEAR DISCHARGE	=	300	CFS
100 YEAR HW ELEVATION	=	2050.1	FT
OVERTOPPING FREQUENCY	=	50<100	YRS
OVERTOPPING DISCHARGE	=	251.7	CFS
OVERTOPPING ELEVATION	=	2049.0	FT

$$\begin{aligned} \text{PI} &= 928 + 35.00 \\ \text{EL} &= 2,072.04' \\ \text{VC} &= 970' \\ \text{K} &= 269 \\ \text{V} &= 70 \text{ MPH} + \end{aligned}$$
$$\begin{aligned} PI &= 940+00.00 \\ EL &= 2,048.74' \\ VC &= 650' \\ K &= 158 \\ V &= 65 \text{ MPH} + \end{aligned}$$

BM#11
ELEV.=2055.65
N 642668 E 944213
-WBL- STA 941+61.98, 79.32' RT
R/R SPIKE IN BASE OF 8" PINE

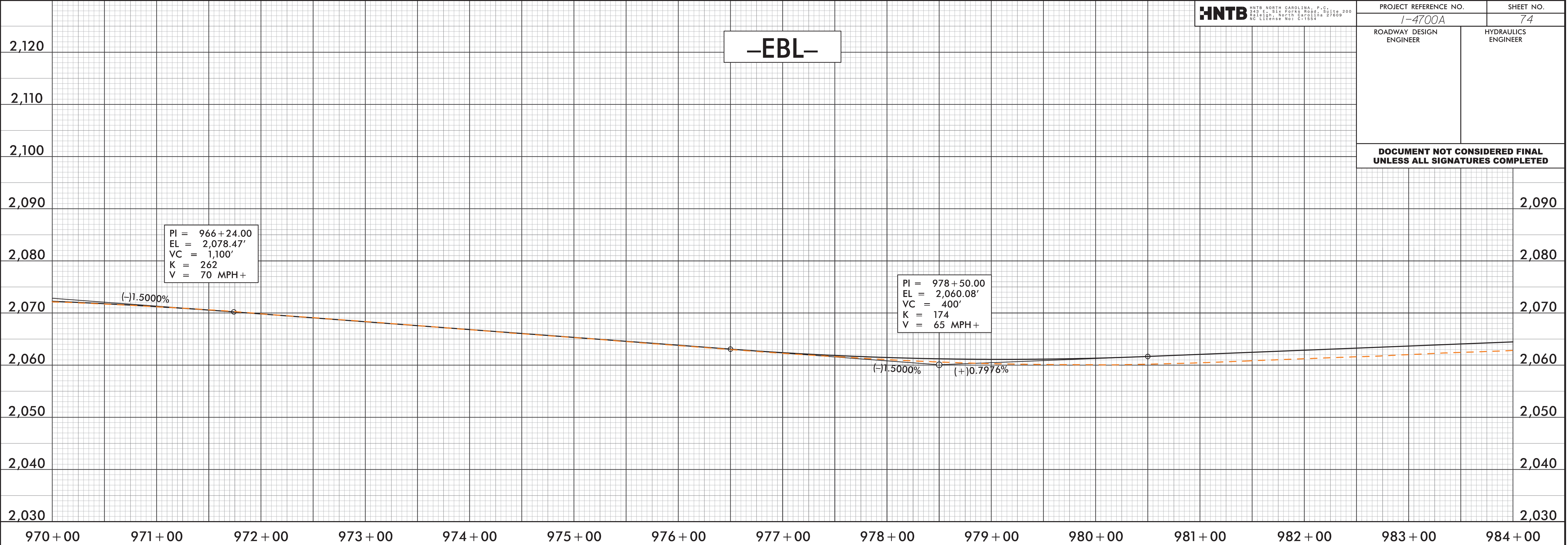




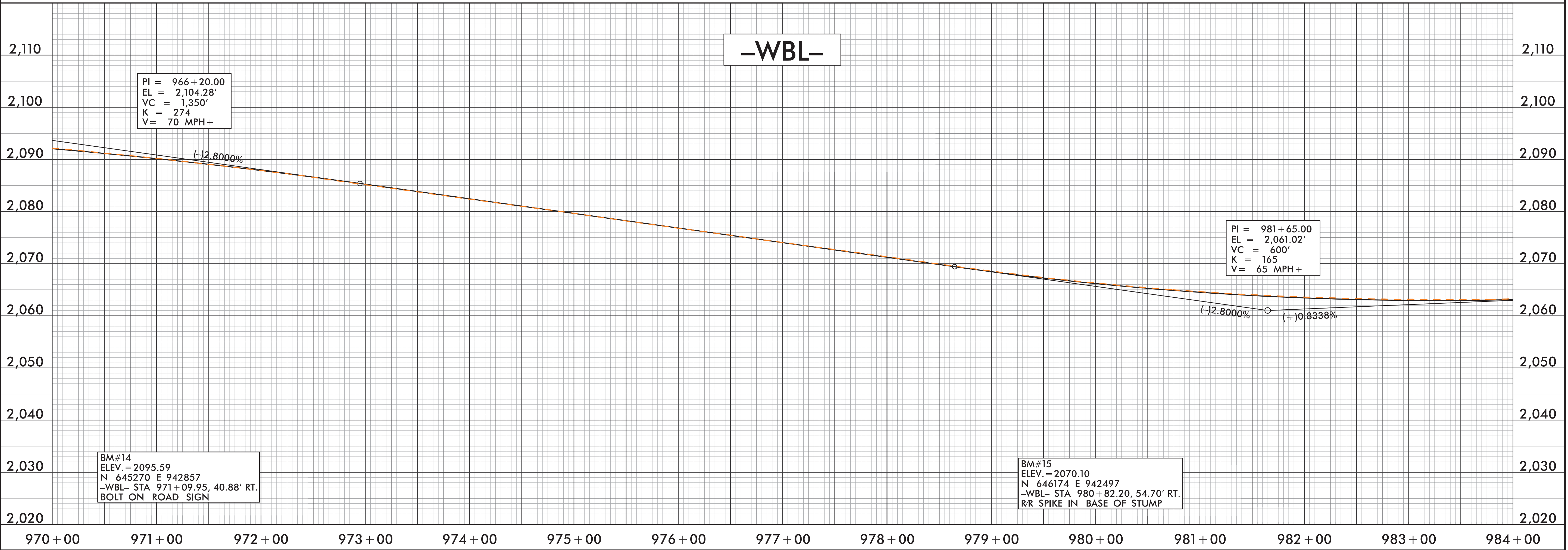
PI = 966 + 20.00
EL = 2,104.28'
VC = 1,350'
K = 274
V = 70 MPH +

5/28/99

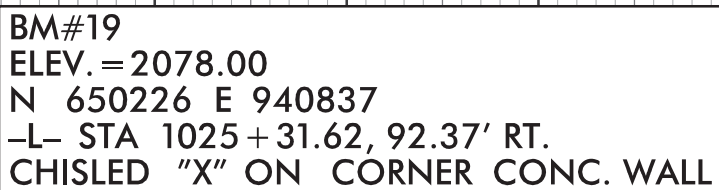
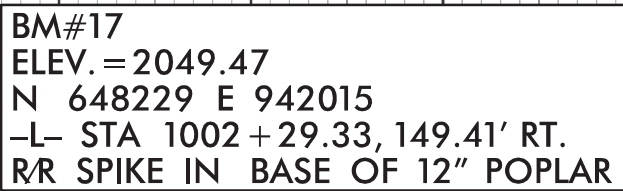
PROJECT REFERENCE NO.	SHEET NO.
I-4700A	74
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

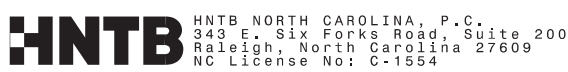


7/24/2008
14700A-TOY-PFL-74.dgn
14700A-TOY-PFL-74.dgn









5/28/99



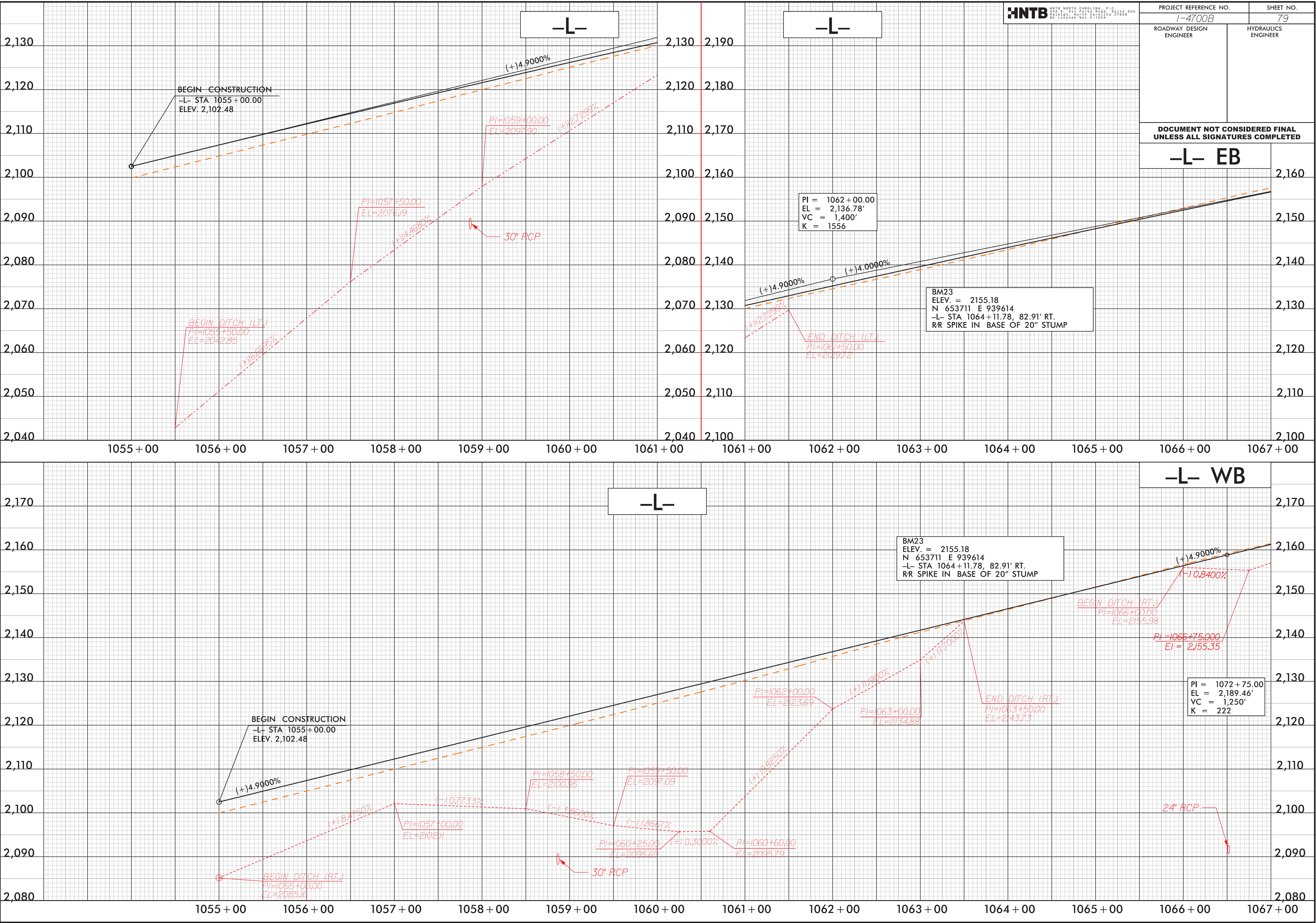
HNTB HNTB NORTH CAROLINA, P.C.
2500 E. 5th Street, Suite 200
Raleigh, North Carolina 27609
NO LICENSE NOV. 1, 1994

PROJECT REFERENCE NO.		SHEET NO.	
I-4700A		78	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

7/24/2018
14700A-TOY-PFL-78.dgn
14700A-TOY-PFL-78.dgn

8/7/2017

7/24/2018
147006.DWG_PFL_S79
nkr:iss



8/7/2017

PROJECT REFERENCE NO.

I-4700B

SHEET NO.

81

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

2,200
2,190
2,180
2,170
2,160
2,150
2,140
2,130
2,120
2,110

-EBL-

BEGIN GRADE
EBL STA 1079+00.00
ELEV. 2,184.98

PI = 1083+00.00
EL = 2,183.38'
VC = 800'
K = 209

PI=1080+75.000
EI = 2,180.00
(-) 0.8571%
(+) 4.7200%

END DITCH (LT.)
PI=1080+75.000
EI = 2,181.18
30" RCP

BEGIN DITCH (LT.)
PI=1080+75.000
EI = 2,181.50

BEGIN DITCH (LT.)
PI=1084+50.000
EL = 2,173.49

PI=1085+10.000
EI = 2,166.00
(-) 12.4833%
(+) 2.6556%
30" RCP

END DITCH (LT.)
PI=1086+00.000
EL = 2,168.39

1079+00 1080+00 1081+00 1082+00 1083+00 1084+00 1085+00 1086+00 1087+00 1088+00 1089+00 1090+00 1091+00 1092+00

2,200
2,190
2,180
2,170
2,160
2,150
2,140
2,130
2,120
2,110

-WBL-

BEGIN GRADE
WBL STA 1079+00.00
ELEV. 2,184.96

PI = 1082+75.00
EL = 2,182.26'
VC = 750'
K = 213

BEGIN DITCH (RT.)
PI=1081+00.00
EL=2,180.39

PI=1082+50.000
EI = 2,167.50

PI=1083+50.000
EI = 2,162.00

BEGIN DITCH (LT.)
PI=1085+50.00
EL=2,169.00

30" RCP

(-) 4.3333%

END DITCH (LT.)
PI=1088+50.00
EL=2,156.00

BM25
ELEV. = 2130.81
N 656098 E 938265
WBL STA 1091+45.70, 67.42' RT.
RR SPIKE IN BASE OF 8" BIRCH

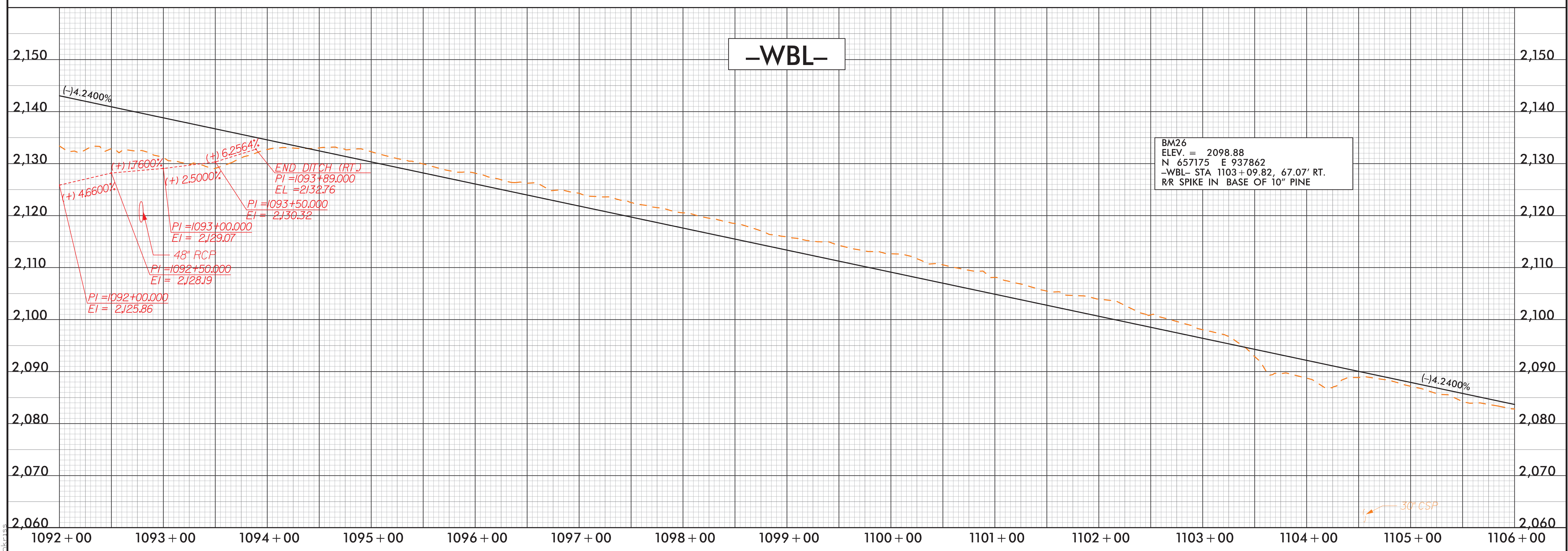
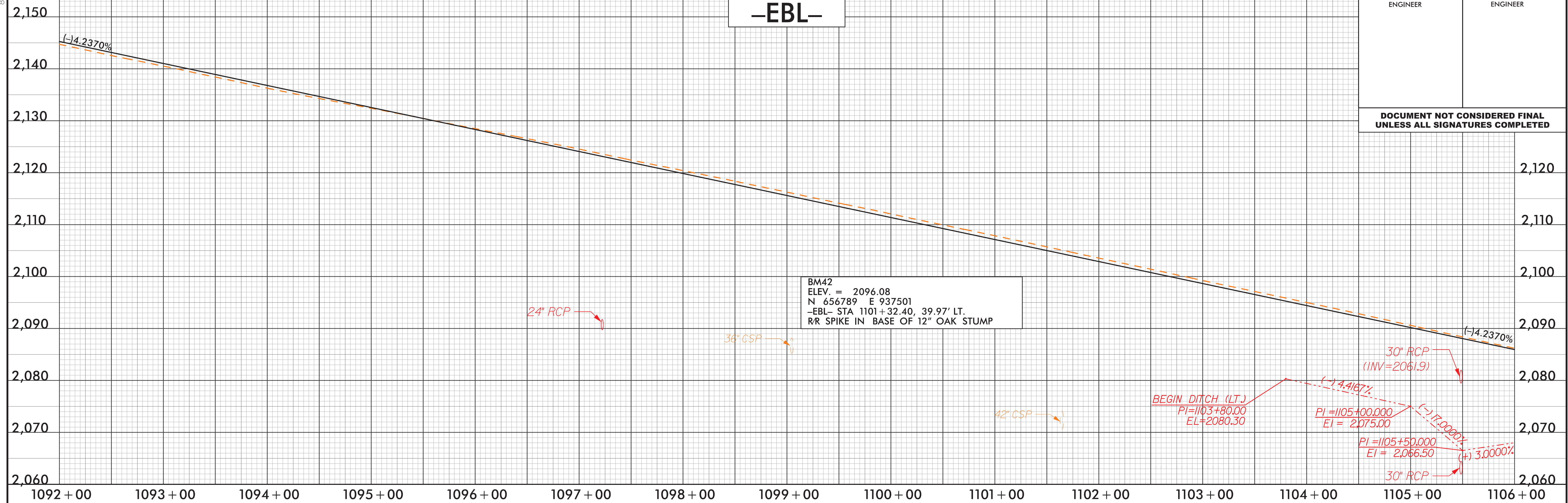
PI=1092+00.000
EI = 2,125.86
PI=1091+64.000
EI = 2,121.50
PI=1091+50.000
EI = 2,121.00
BEGIN DITCH (RT.)
PI=1091+00.00
EL=2,121.50
(-) 11.0000%
(+) 3.5714%
(+) 12.1111%

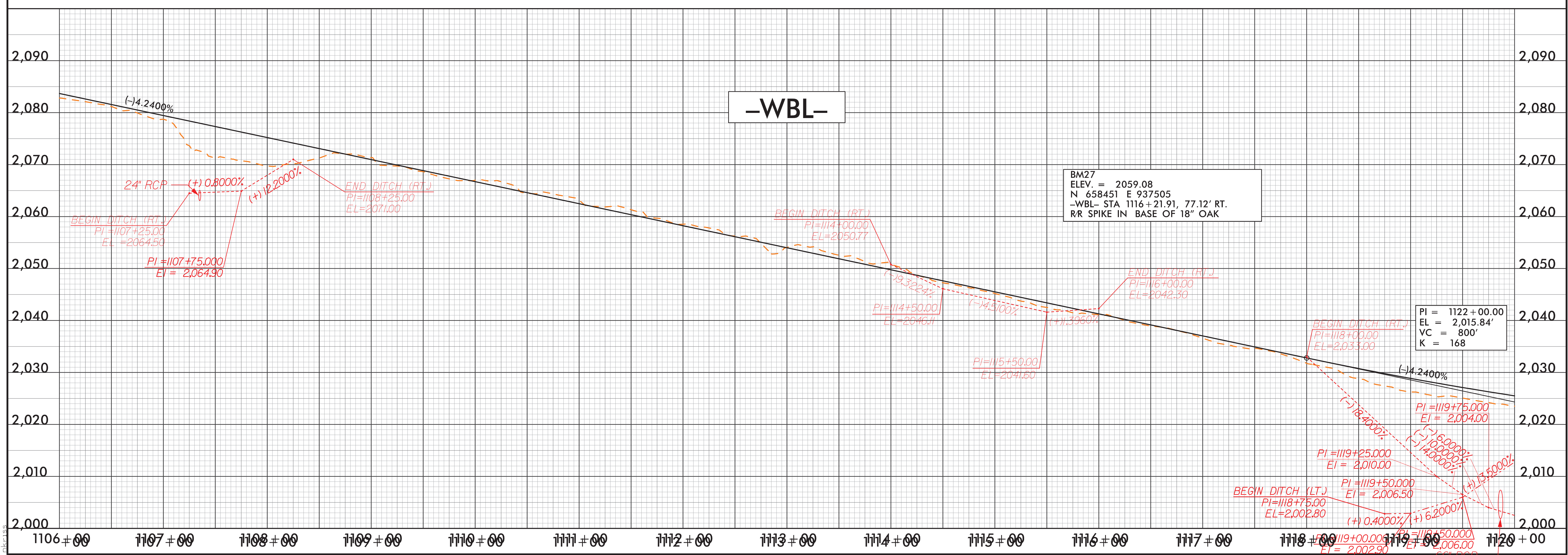
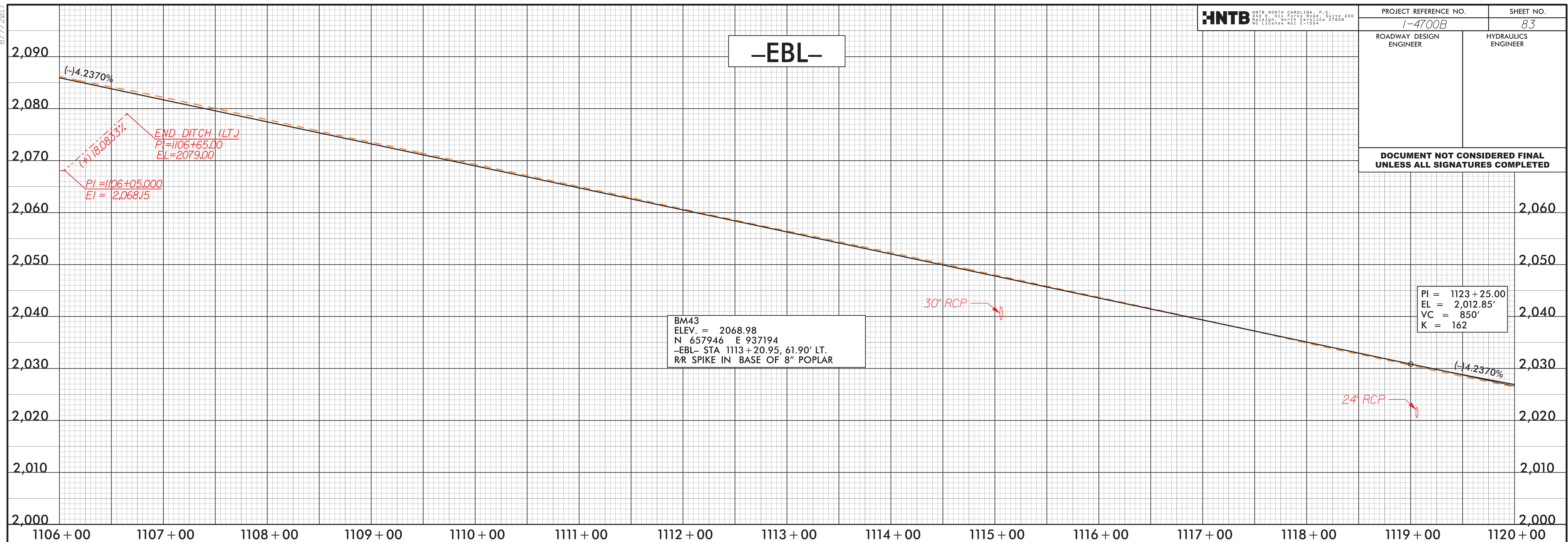
1079+00 1080+00 1081+00 1082+00 1083+00 1084+00 1085+00 1086+00 1087+00 1088+00 1089+00 1090+00 1091+00 1092+00

2,170
2,160
2,150
2,140
2,130
2,120
2,110

2,200
2,190
2,180
2,170
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2,120
2,110

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

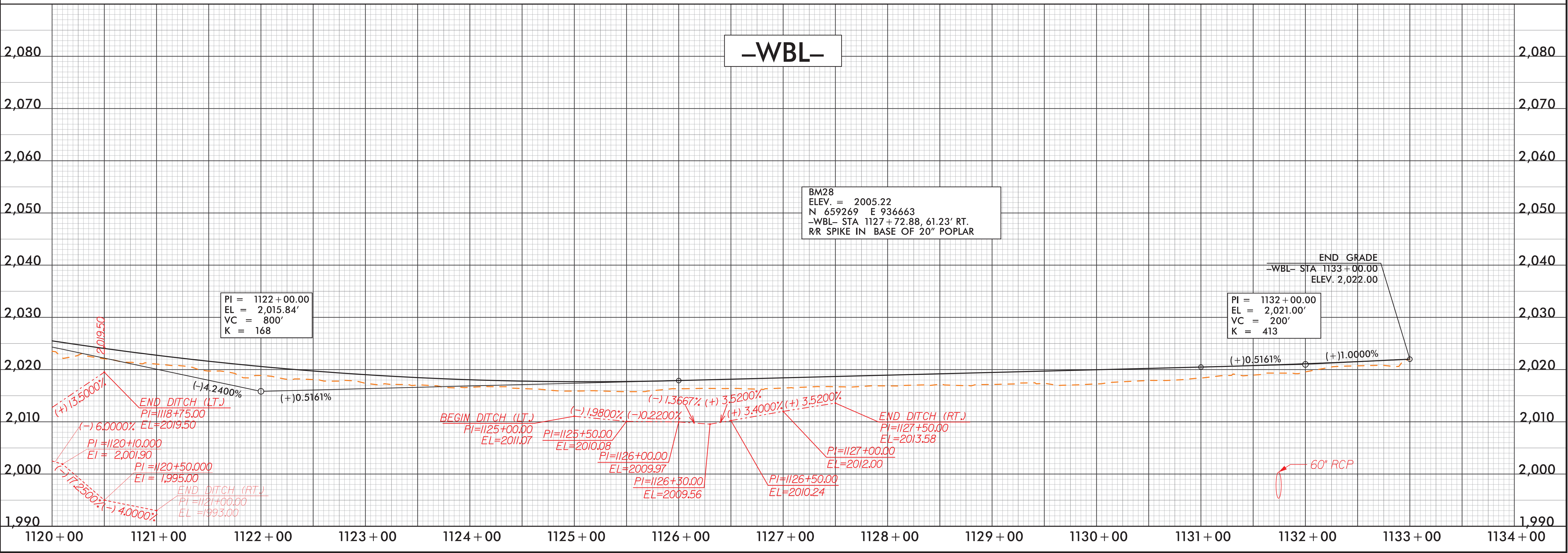
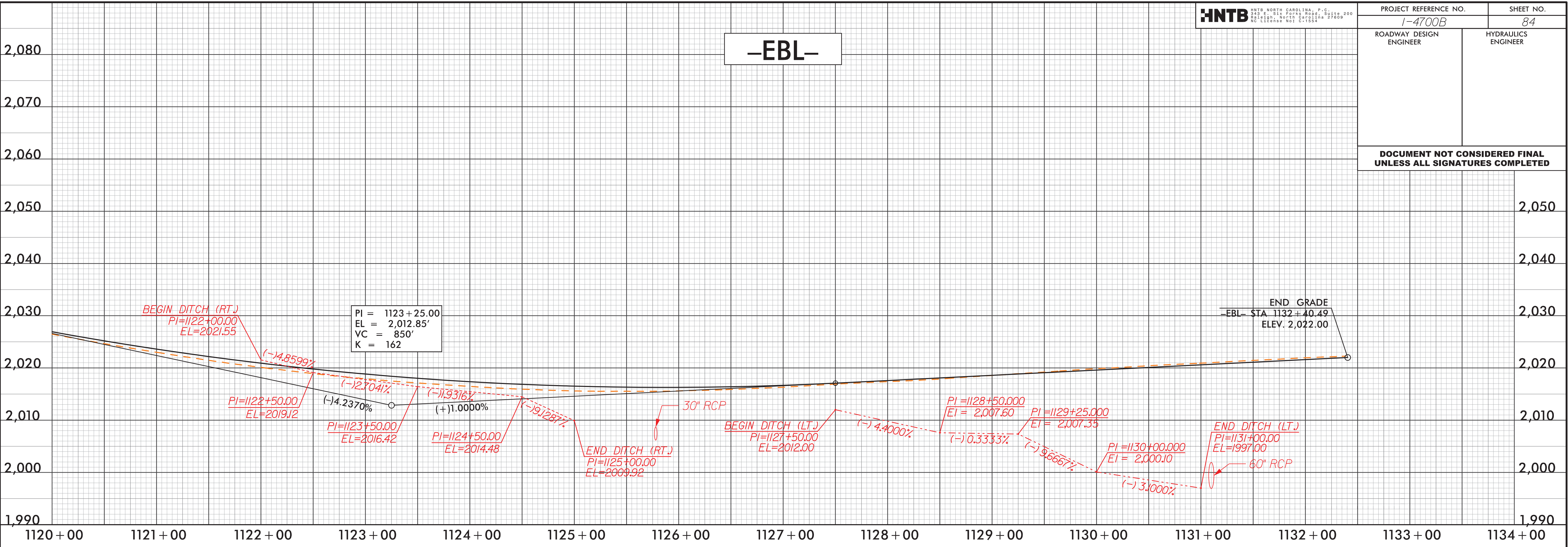




8/7/2017

HNTB
HNTB NORTH CAROLINA, P.C.
147006 RDY PFL S84
RALEIGH, NORTH CAROLINA 27609
NO LICENSE NOT L-1524

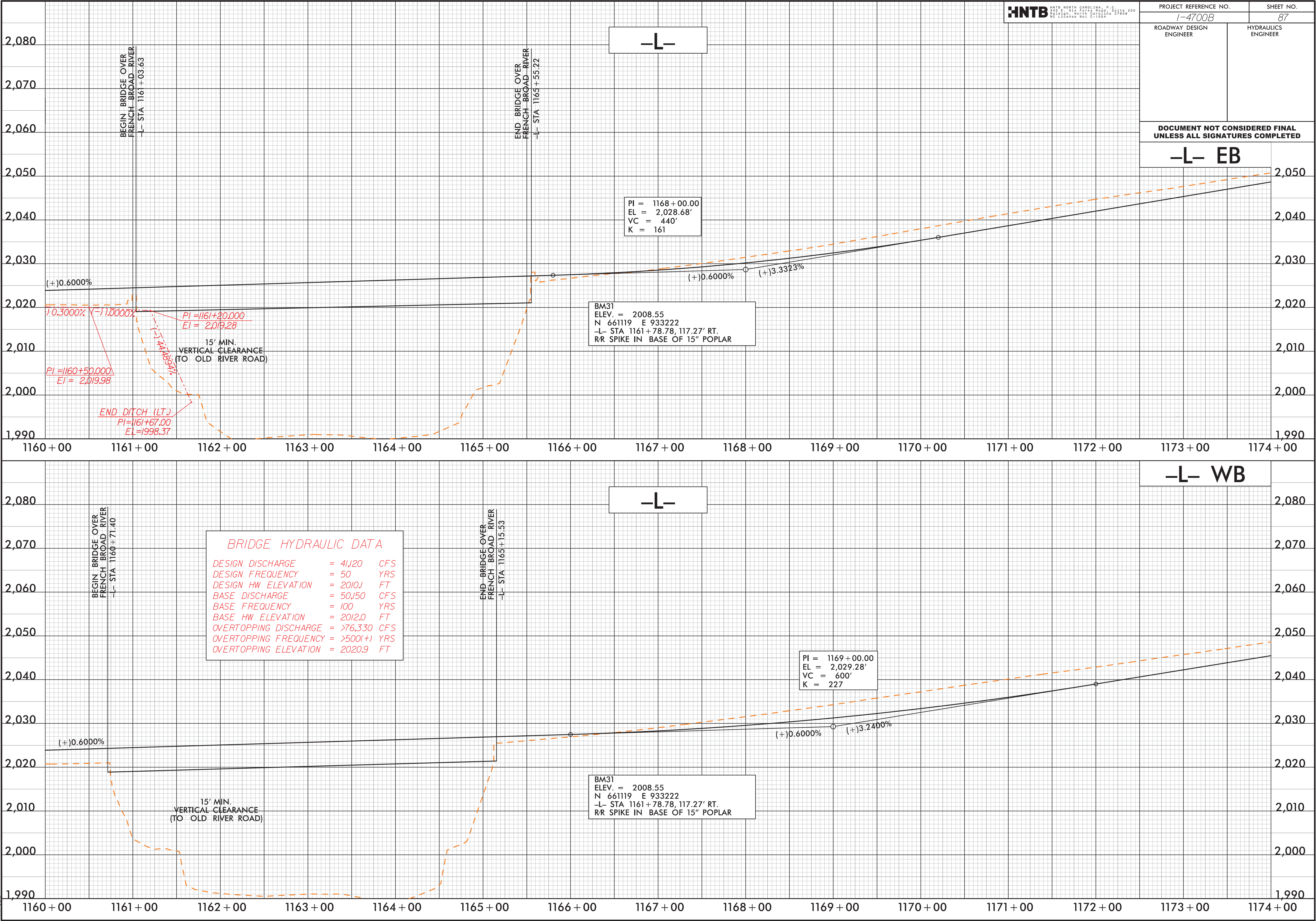
PROJECT REFERENCE NO.		SHEET NO.	
I-4700B		84	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



7/24/2018
147006 RDY PFL S84
HNTB

8/7/2017

7/24/2018
147006.DWG_PFL_S87

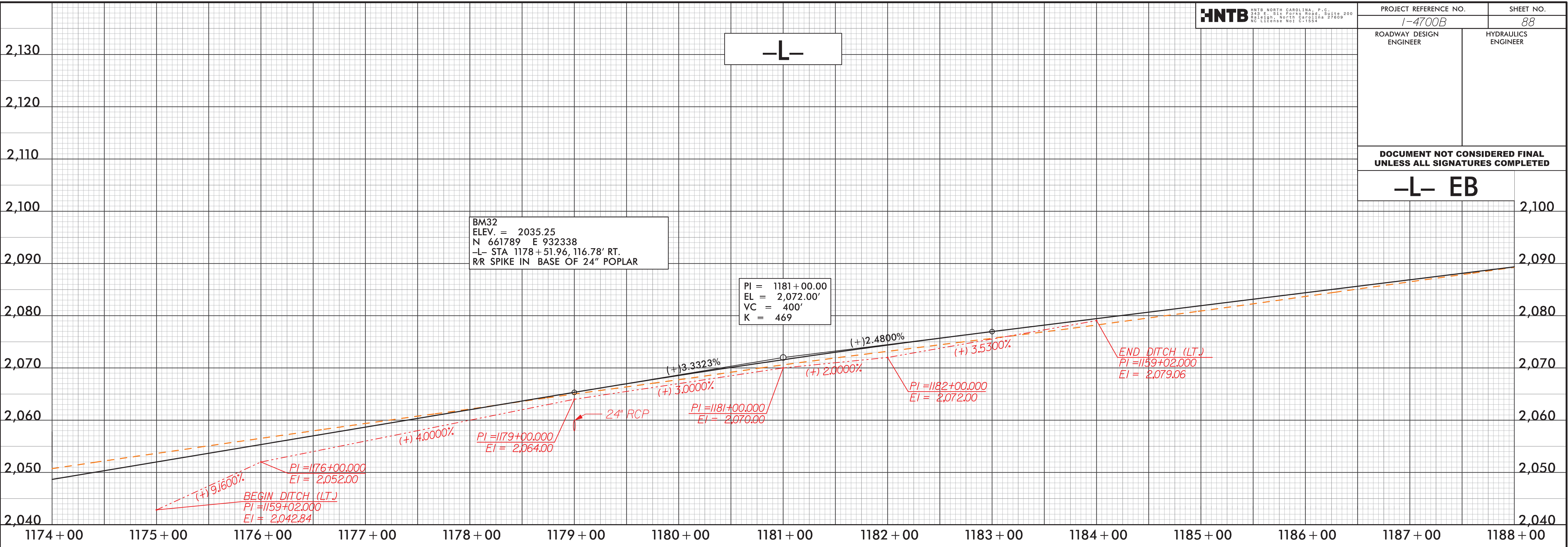


8/7/2017

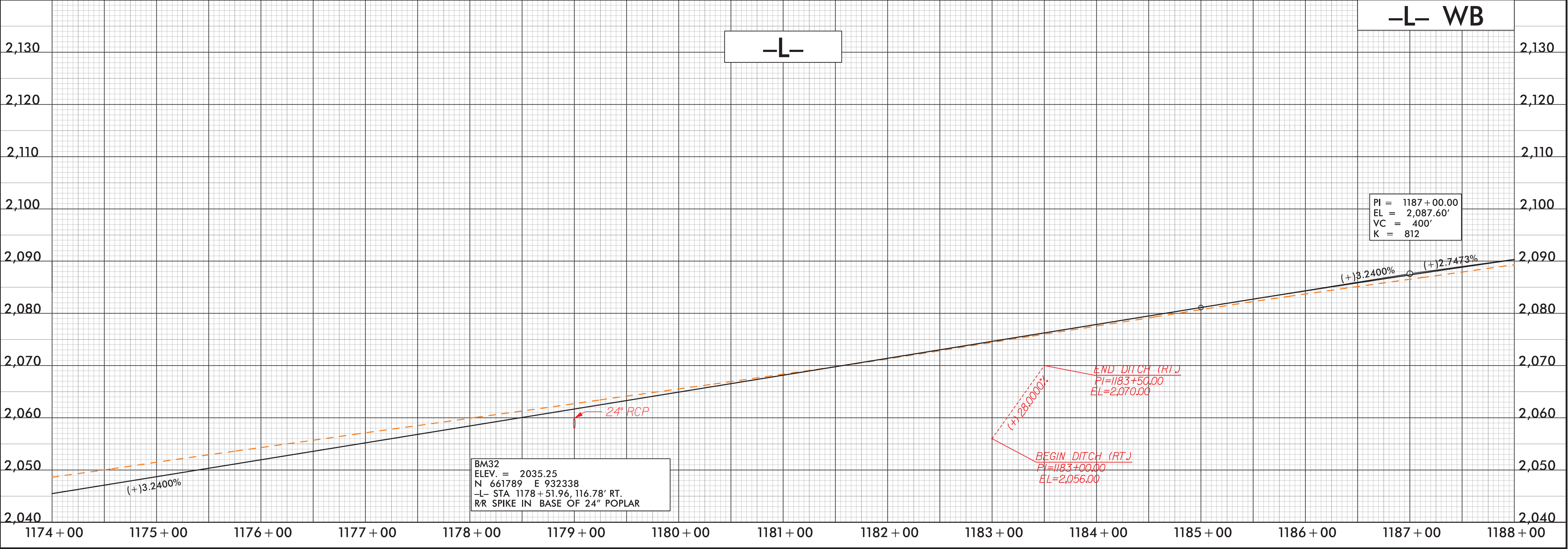
PROJECT REFERENCE NO.		SHEET NO.
I-4700B		88
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	

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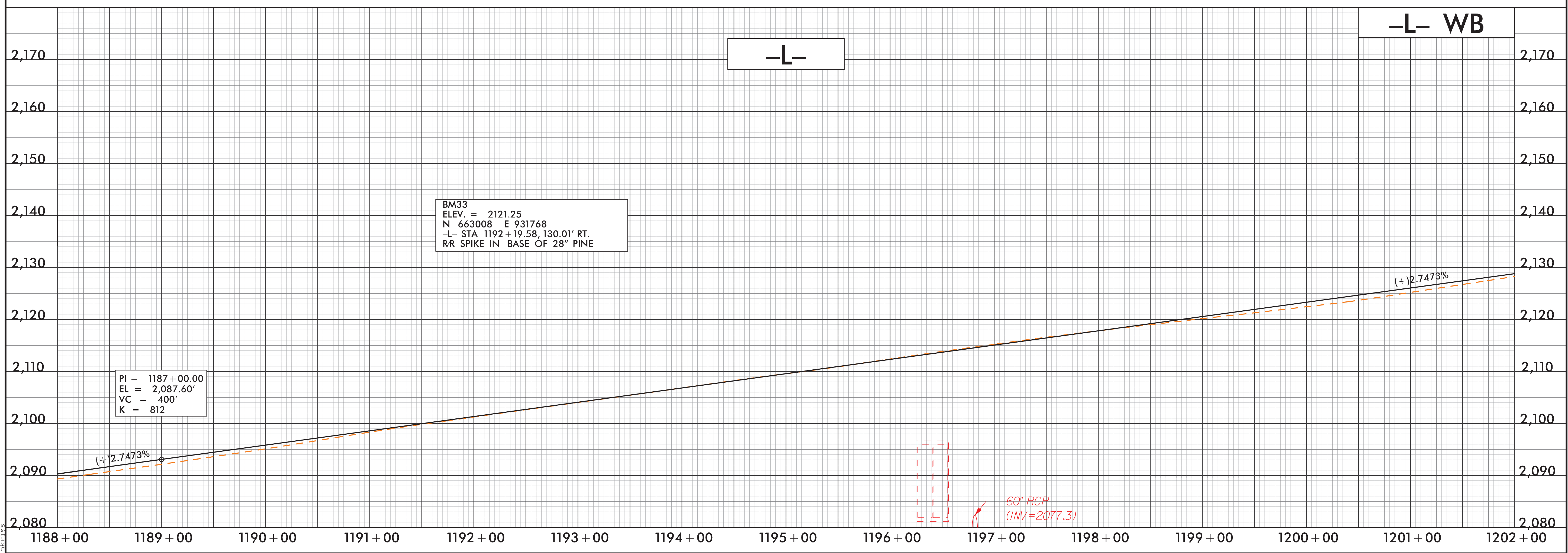
-L- EB

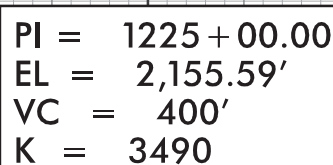
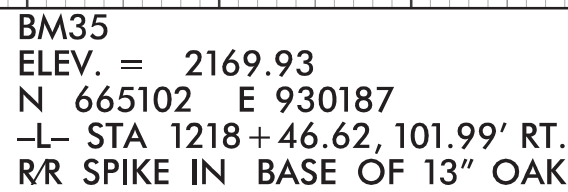
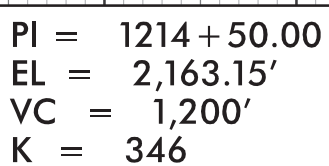
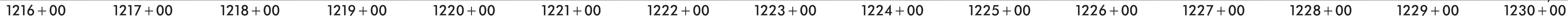
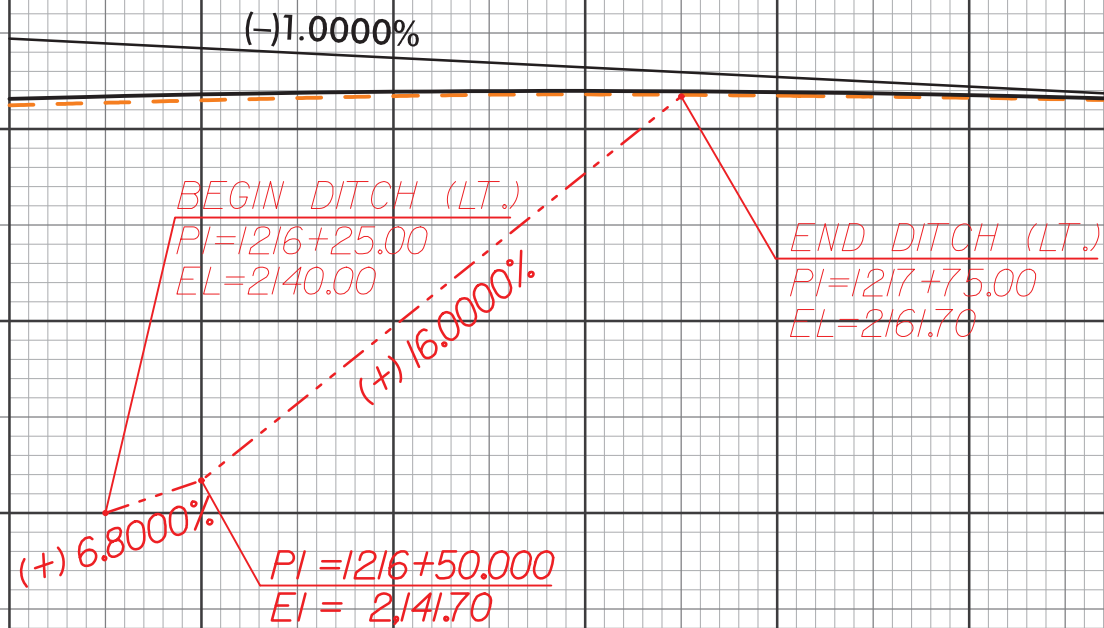
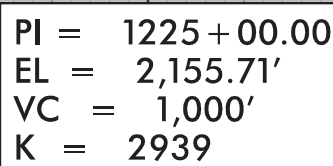
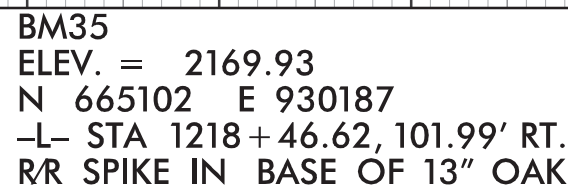
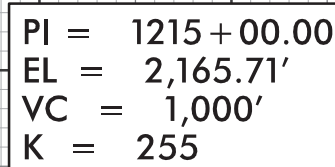
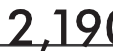


-L- WB



7/24/2018
147000000Y_PFL_S88
nkclass





8/7/2017

HNTB

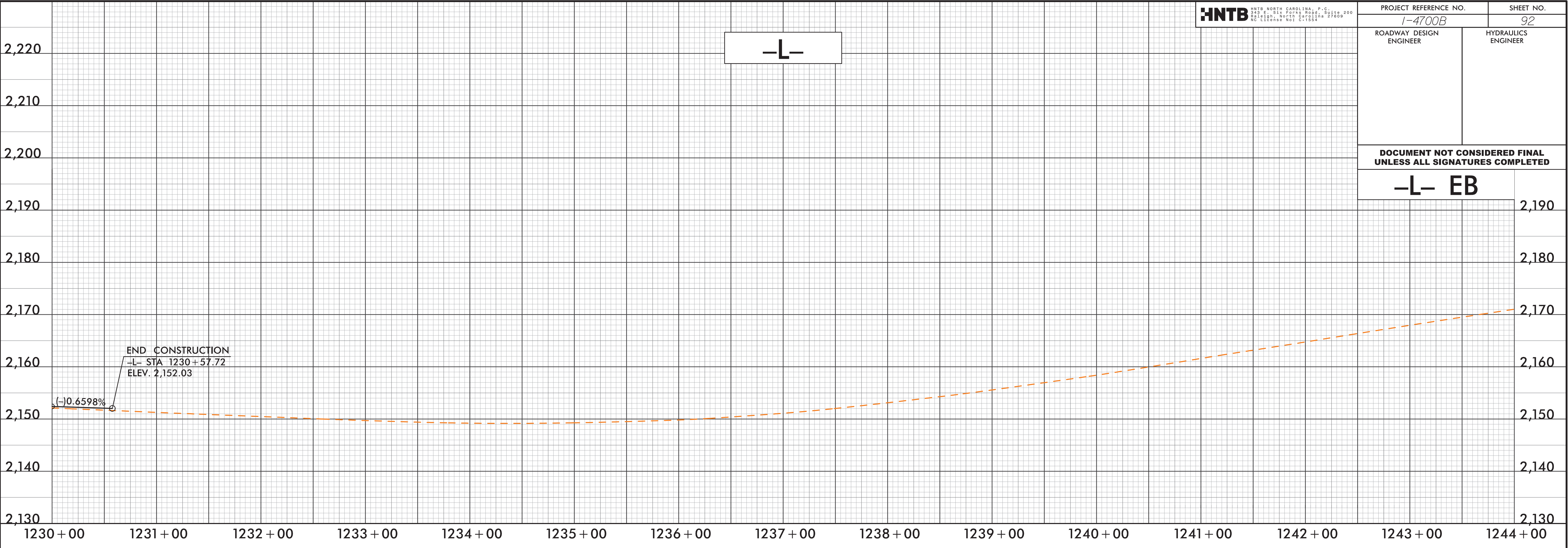
HNTB NORTH CAROLINA, P.C.

3400 E. 5th Avenue, Suite 200

Raleigh, North Carolina 27609

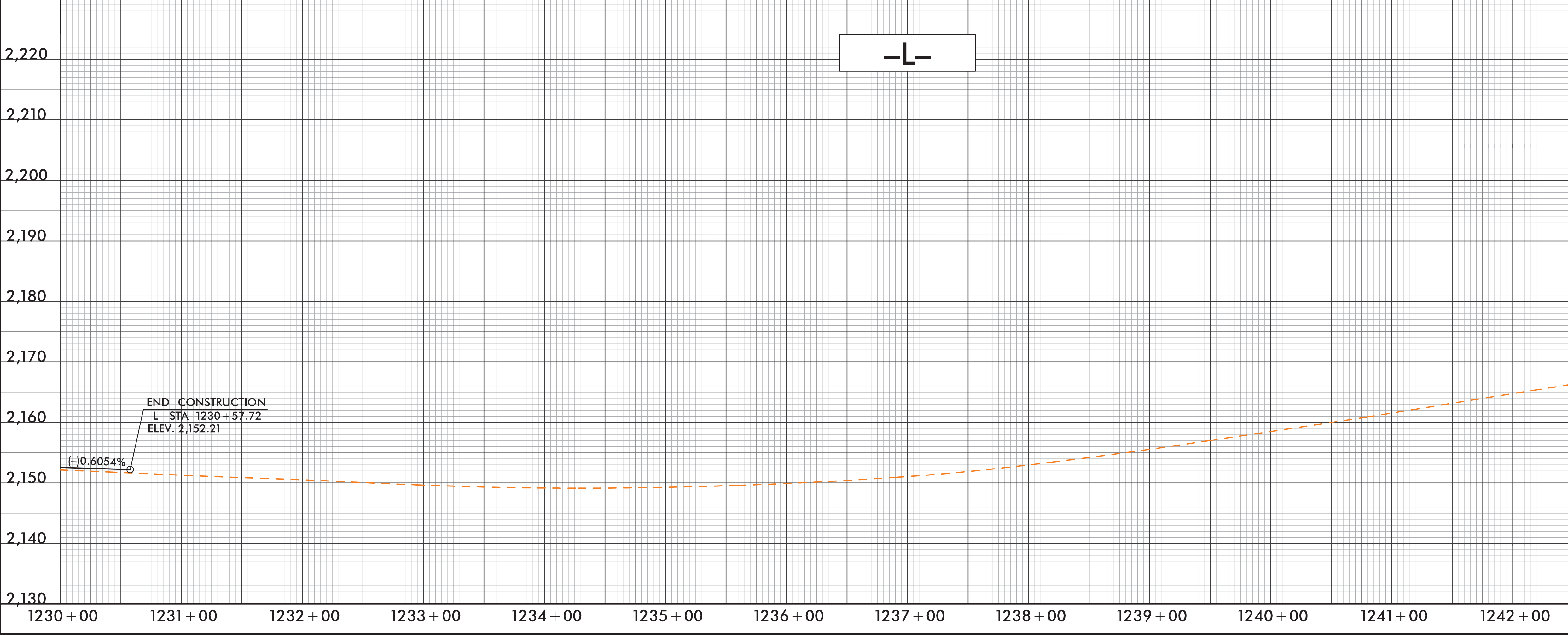
NC License No. C-1524

PROJECT REFERENCE NO.		SHEET NO.	
I-4700B		92	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
-L- EB			



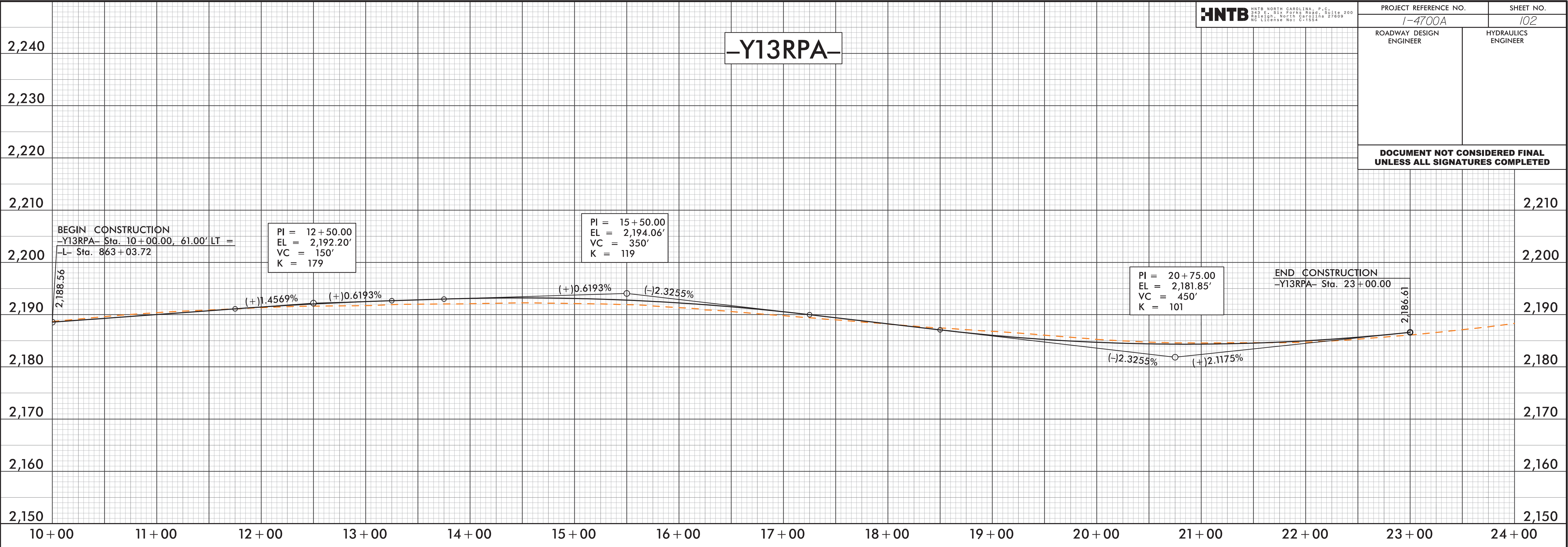
7/24/2018
14700B-00Y_PFL_S92
nk-1152

-L- WB	

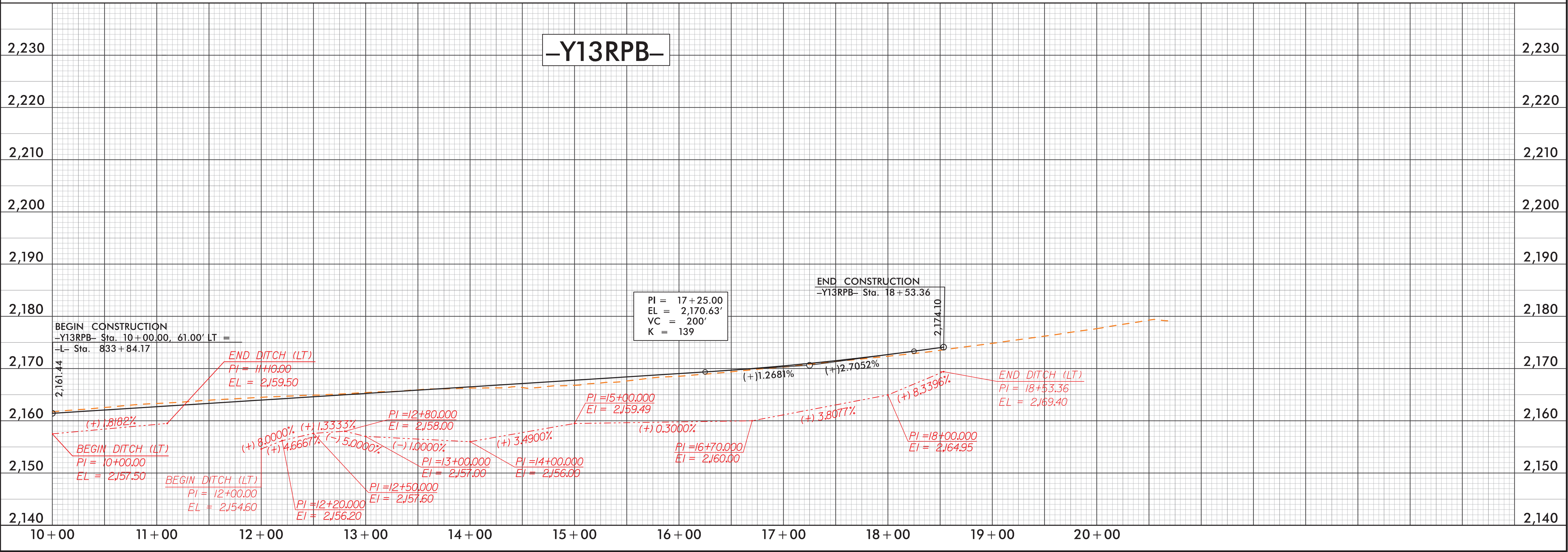


5/28/99

PROJECT REFERENCE NO.		SHEET NO.
I-4700A		102
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

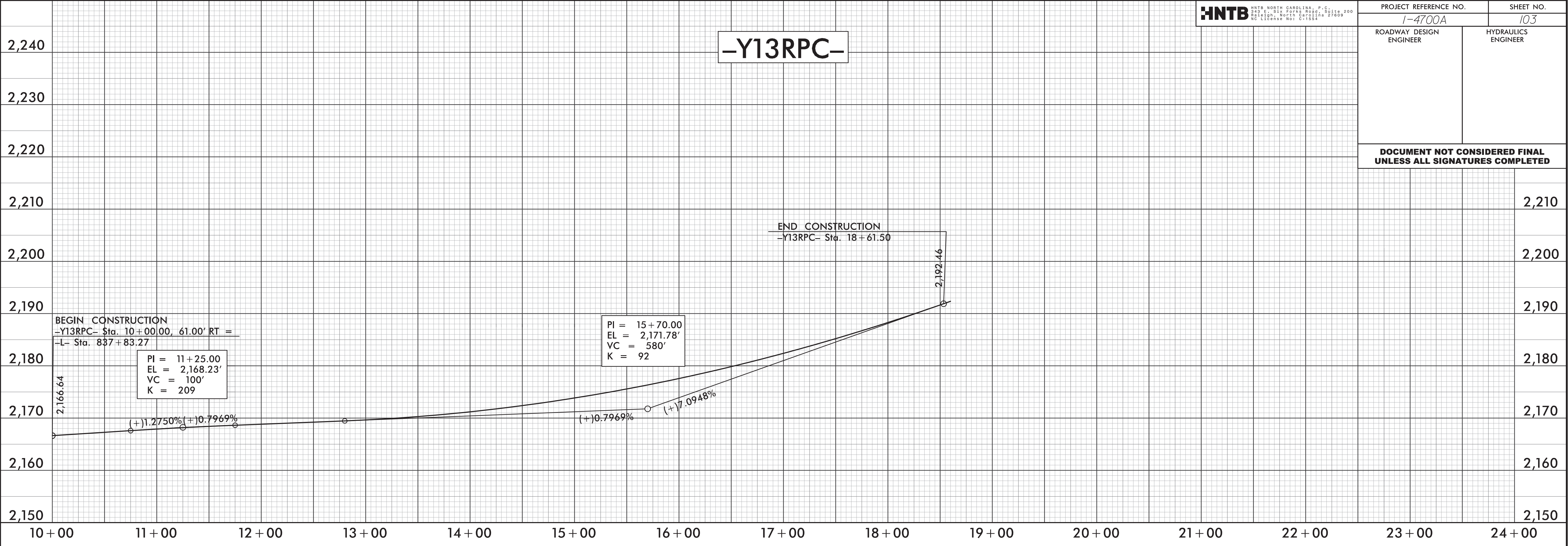


7/24/2008
147000-00-Y-PFL-S102
Disc 118

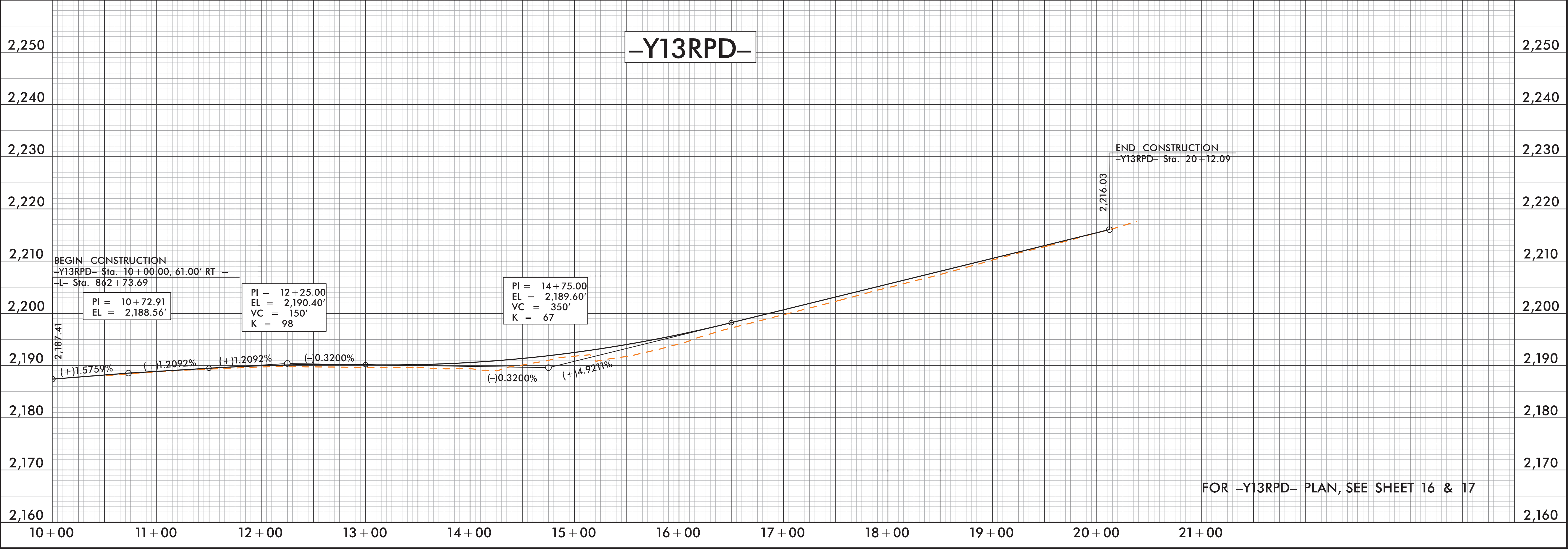


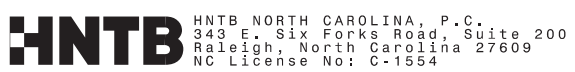
5/28/99

PROJECT REFERENCE NO.		SHEET NO.
I-4700A		103
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



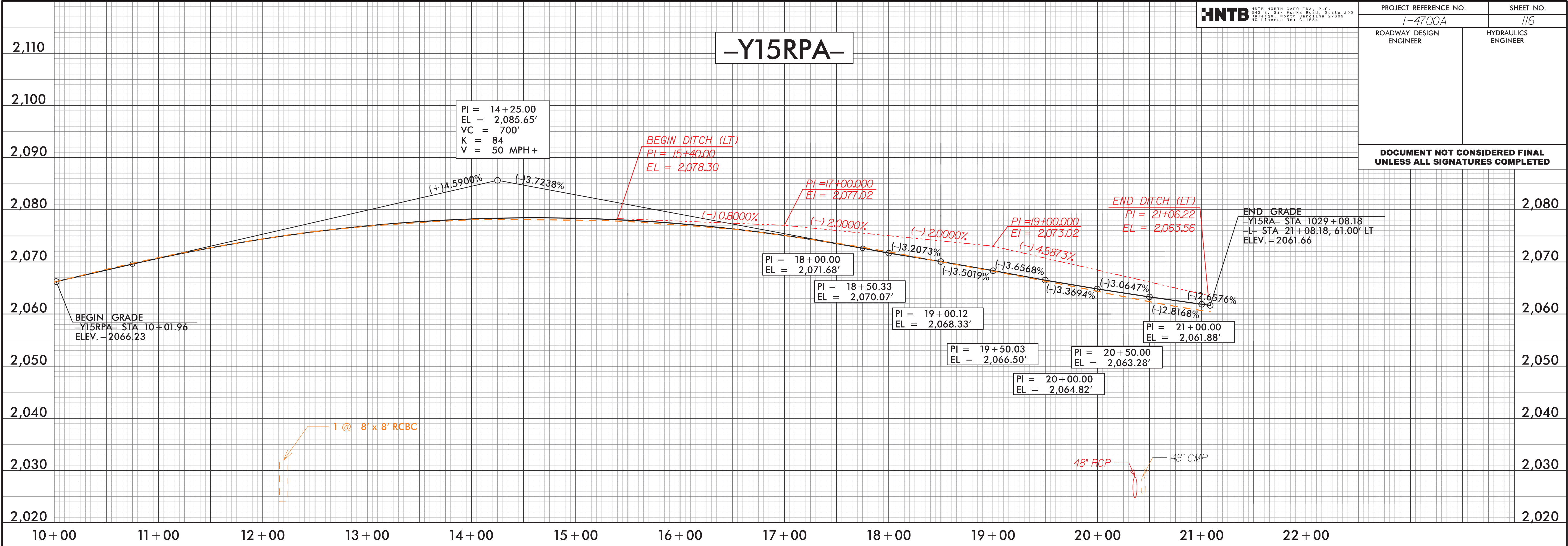
7/24/2018
14700A-03-Y-PFL-S103
Disc 1





5/28/99

PROJECT REFERENCE NO.		SHEET NO.
I-4700A		116
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



7/24/2008
14700A-100Y-PFL-116.dgn
14700A-100Y-PFL-116.dgn

