09/08/99

TIP PROJECT: R-5763

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5763	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
44638.1.1		P.E.

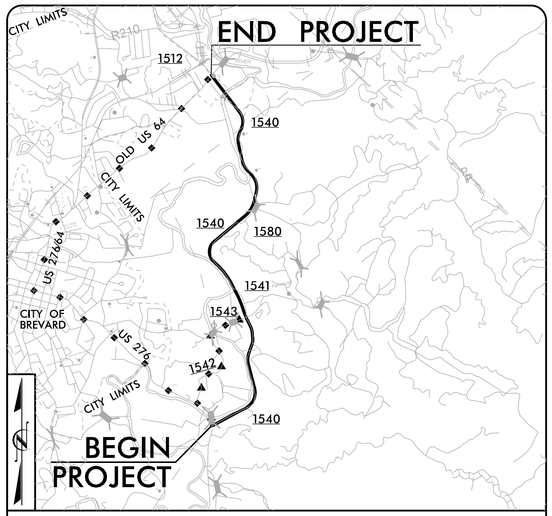
TRANSYLVANIA COUNTY

LOCATION: SR 1540 (WILSON ROAD) FROM SR 1504 (OLD US 64) TO US 276

TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES, AND RETAINING WALLS

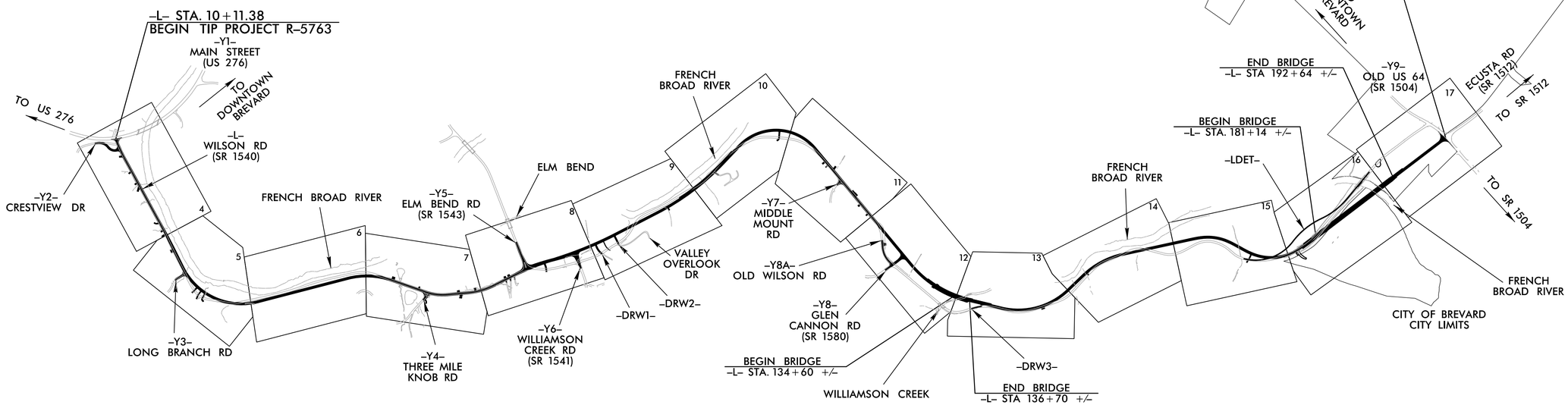
NAD 83/NA 2011

REDLINE DRAINAGE PLANS
AUGUST 18, 2020



VICINITY MAP
(NTS)

DETOUR ROUTES
DETOUR 1
DETOUR 2



NOTES:
1. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD __.
2. THIS PROJECT IS PARTIALLY WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF BREVARD.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2022 = 4290
ADT 2042 = 5420
K = 9 %
D = 60 %
T = 6 % *
V = 45 MPH
* TTST = 1% DUAL 5%
FUNC CLASS =
MAJOR COLLECTOR
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY T.I.P. PROJECT R-5763 = 3.347 MILES
LENGTH OF STRUCTURES T.I.P. PROJECT R-5763 = 0.258 MILES
TOTAL LENGTH OF T.I.P. PROJECT R-5763 = 3.605 MILES

LENGTH BASED ON -L- CENTERLINE

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
FOR NCDOT DIVISION 14

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 10, 2020

LETTING DATE:
SEPTEMBER 20, 2022

ROY H. TELLIER, PE
PROJECT ENGINEER

ANDREW B. HALL, PE
PROJECT DESIGN ENGINEER

ADAM DOCKERY
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

8/18/2020
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HNTB

PROJECT REFERENCE NO.	SHEET NO.
R-5763	2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

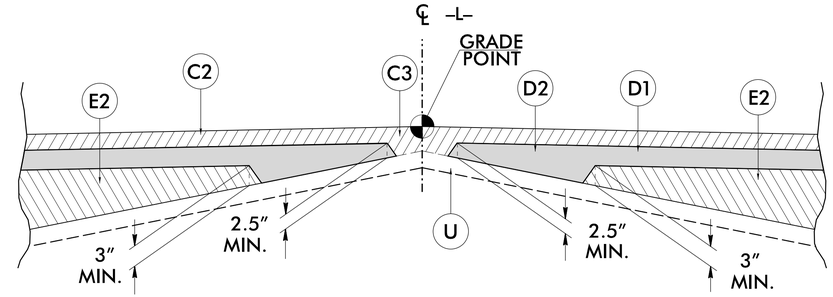
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

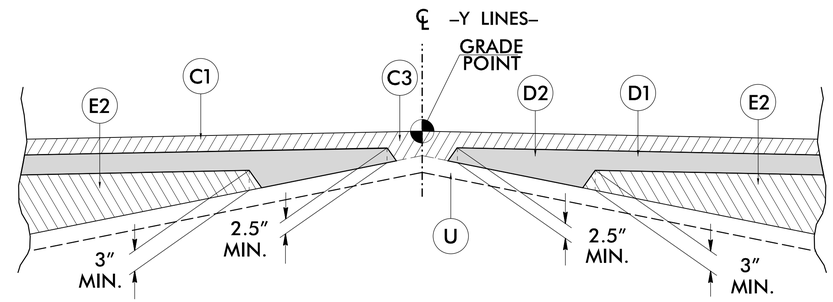
PRELIMINARY PAVEMENT DESIGN

C1	PROP. APPROX. 1.5″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5″ OR GREATER THAN 2″ IN DEPTH.
D1	PROP. APPROX. 2.5″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2.5″ OR GREATER THAN 4″ IN DEPTH
E1	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3″ OR GREATER THAN 5.5″ IN DEPTH.
J1	PROP. 6″ AGGREGATE BASE COURSE.
J2	PROP. 8″ AGGREGATE BASE COURSE.
R1	EXPRESSWAY GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	RETAINING WALL.
W	VARIABLE DEPTH ASPHALT PAVEMENT. SEE DETAIL SHOWING METHOD OF WEDGING NO. 1. SHEET 2A-1.

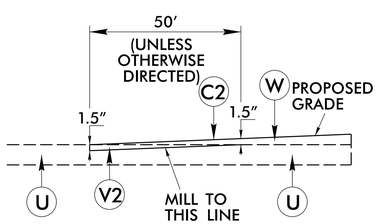
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



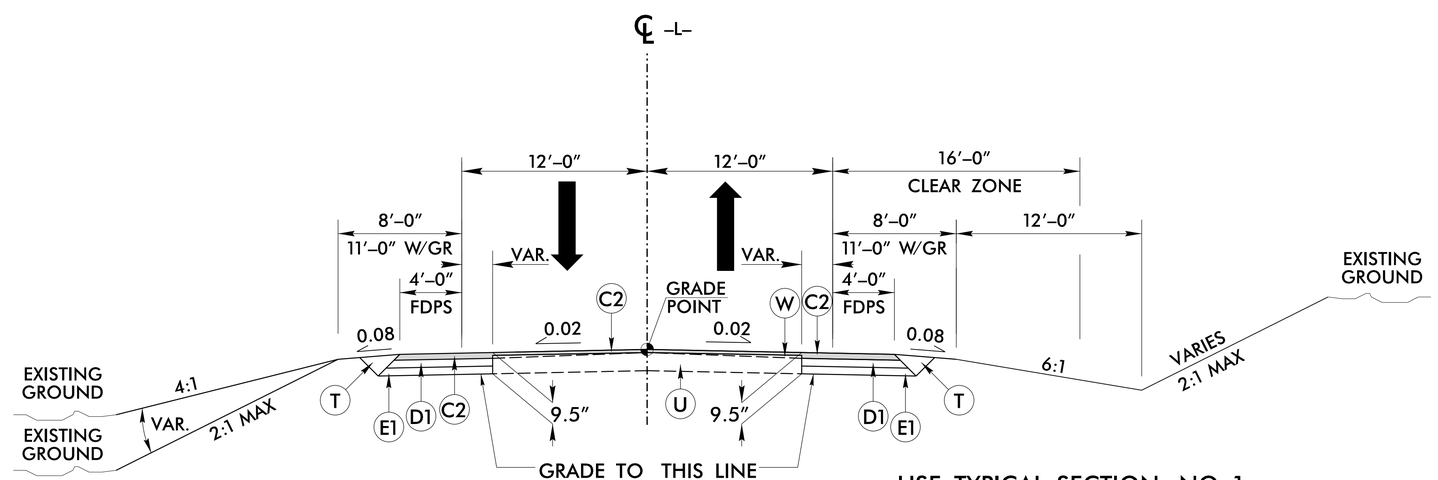
Detail Showing Method of Wedging No. 1



Detail Showing Method of Wedging No. 2



DETAIL FOR INCIDENTAL MILLING



TYPICAL SECTION NO. 1

–L– WILSON RD (SR 1540)

NOTE: PAVE TO FACE OF GUARDRAIL.

USE TYPICAL SECTION NO. 1

–L– STA. 10+11.38 TO STA. 15+50.00
–L– STA. 54+00.00 TO STA. 71+79.09
–L– STA. 110+36.79 TO STA. 122+96.75
–L– STA. 138+72.22 TO STA. 142+03.08
–L– STA. 142+90.57 TO STA. 146+82.59

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PROJECT REFERENCE NO.	SHEET NO.
R-5763	2A-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

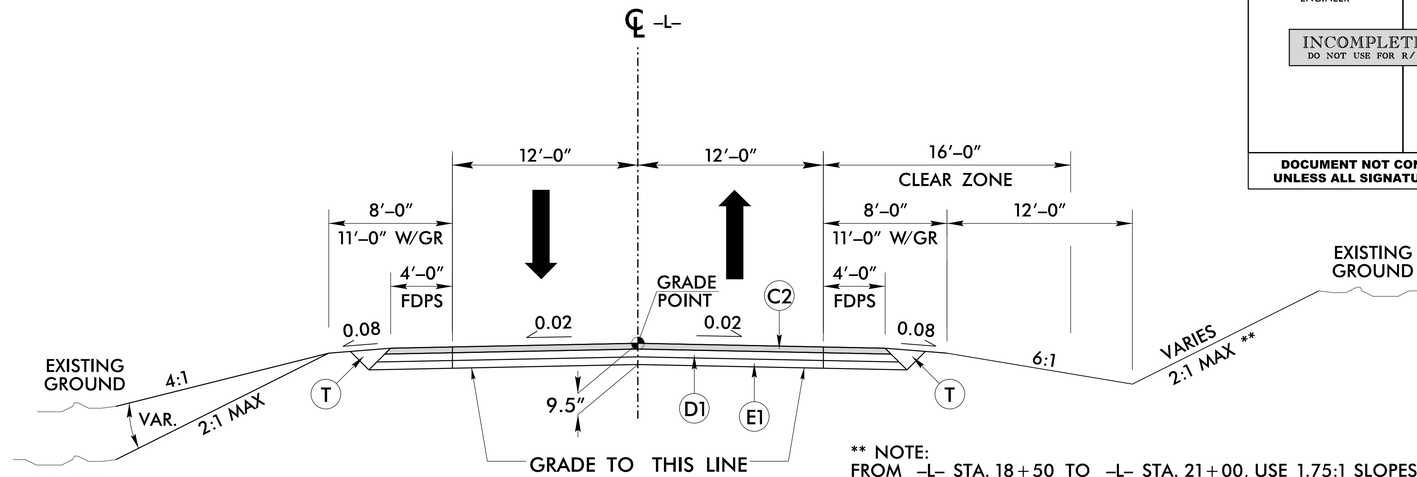
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PRELIMINARY PAVEMENT DESIGN

C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5C.
C2	PROP. APPROX. 3" ACSC, TYPE S9.5C.
C3	PROP. APPROX. VAR. ACSC, TYPE S9.5C.
D1	PROP. APPROX. 2½" ACIC, TYPE I19.0C.
D2	PROP. APPROX. VAR. ACIC, TYPE I19.0C.
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C.
E2	PROP. APPROX. VAR. ACBC, TYPE B25.0C.
J1	PROP. 6" ABC.
J2	PROP. 8" ABC.
R1	EXPRESSWAY GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	RETAINING WALL.
W	VARIABLE DEPTH ASPHALT PAVEMENT.

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



NOTE: PAVE TO FACE OF GUARDRAIL.

TYPICAL SECTION NO. 2

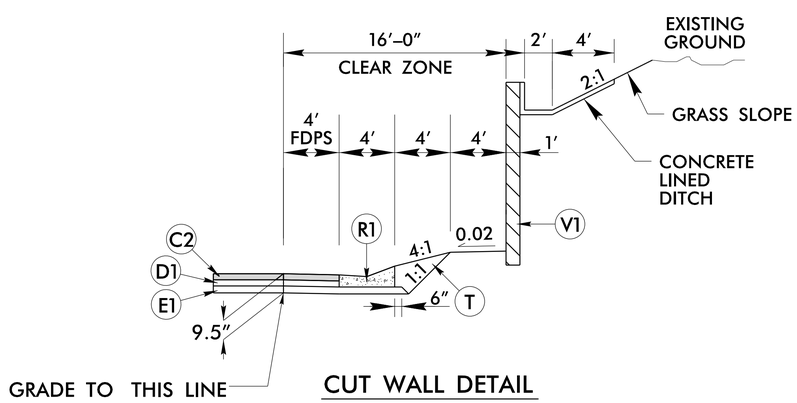
-L- WILSON RD (SR 1540)

** NOTE:
FROM -L- STA. 18+50 TO -L- STA. 21+00, USE 1.75:1 SLOPES.
FROM -L- STA. 38+50 TO -L- STA. 40+00, USE 1.75:1 SLOPES.
FROM -L- STA. 85+50 TO -L- STA. 100+00, USE 1.5:1 SLOPES.
FROM -L- STA. 155+50 TO -L- STA. 160+00, USE 1.5:1 SLOPES.

USE TYPICAL SECTION NO. 2

-L- STA. 15+50.00 TO STA. 54+00.00
-L- STA. 71+79.09 TO STA. 110+36.79
-L- STA. 122+96.75 TO STA. 134+60 +/- (BEGIN BRIDGE)
-L- STA. 136+70 +/- (END BRIDGE) TO STA. 138+72.22
-L- STA. 142+03.08 TO STA. 142+90.57
-L- STA. 146+82.59 TO STA. 181+14 +/- (BEGIN BRIDGE)
-L- STA. 192+64 +/- (END BRIDGE) TO STA. 200+43.79

DETAIL 2A

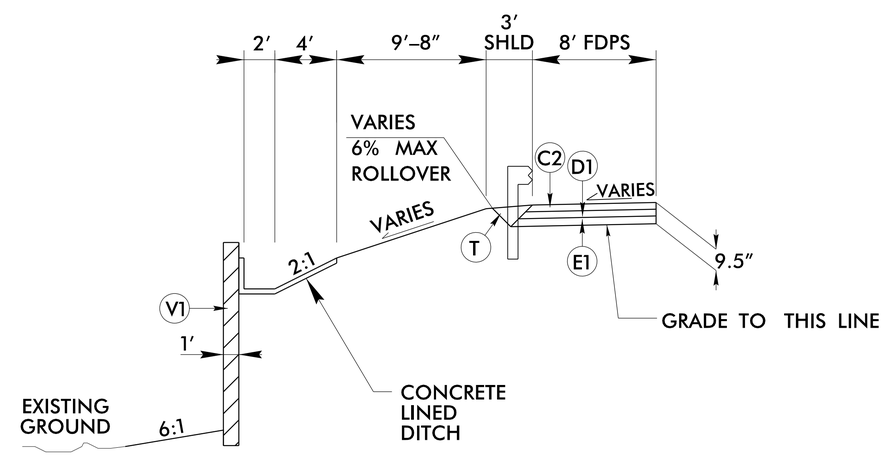


CUT WALL DETAIL

USE CUT WALL DETAIL IN CONJUNCTION WITH TYPICAL SECTIONS NO. 1 & 2

-L- STA. 49+50.00 TO STA. 53+00.00 RT

DETAIL 2B



FILL WALL DETAIL

USE FILL WALL DETAIL IN CONJUNCTION WITH TYPICAL SECTION NO. 1

-L- STA. 84+00.00 TO STA. 91+00.00 LT

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PROJECT REFERENCE NO.	SHEET NO.
R-5763	2A-3
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

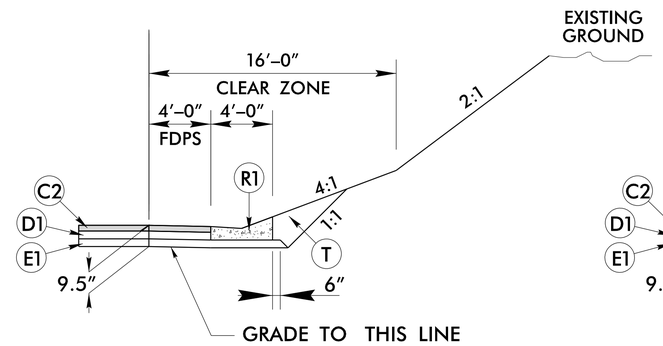
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PRELIMINARY PAVEMENT DESIGN

C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5C.
C2	PROP. APPROX. 3" ACSC, TYPE S9.5C.
C3	PROP. APPROX. VAR. ACSC, TYPE S9.5C.
D1	PROP. APPROX. 2½" ACIC, TYPE I19.0C.
D2	PROP. APPROX. VAR. ACIC, TYPE I19.0C.
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C.
E2	PROP. APPROX. VAR. ACBC, TYPE B25.0C.
J1	PROP. 6" ABC.
J2	PROP. 8" ABC.
R1	EXPRESSWAY GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	RETAINING WALL.
W	VARIABLE DEPTH ASPHALT PAVEMENT.

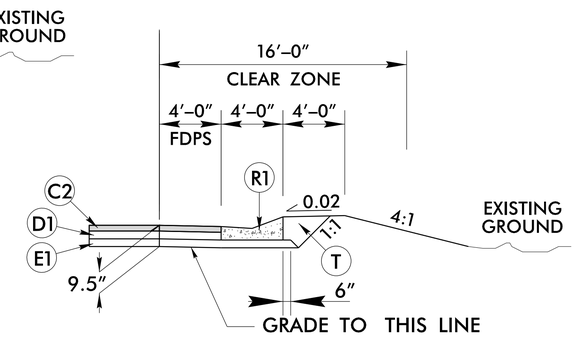
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

DETAIL 3A



EXPRESSWAY GUTTER IN CUTS DETAIL

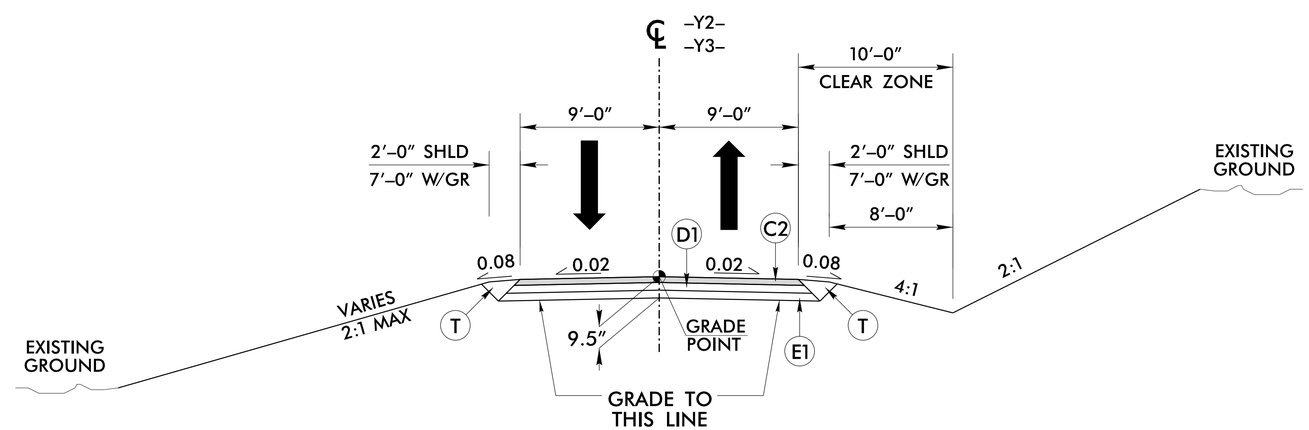
DETAIL 3B



EXPRESSWAY GUTTER IN FILL DETAIL

USE DETAILS 3A AND 3B IN CONJUNCTION WITH TYPICAL SECTIONS NO. 1 & 2

-L- STA 44+50.00 RT TO STA. 47+00.00 RT
-L- STA. 49+40.00 RT TO STA. 57+70.00 RT
-L- STA. 59+30.00 RT TO STA. 66+80.00 RT
-L- STA. 69+35.00 RT TO STA. 72+00.00 RT



TYPICAL SECTION NO. 3

-Y2- CRESTVIEW DR
-Y3- LONG BRANCH RD

USE TYPICAL SECTION NO. 3

-Y2- STA. 10+12.00 TO STA. 12+07.60
-Y3- STA. 10+12.00 TO STA. 11+03.63

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PROJECT REFERENCE NO.	SHEET NO.
R-5763	2A-4
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

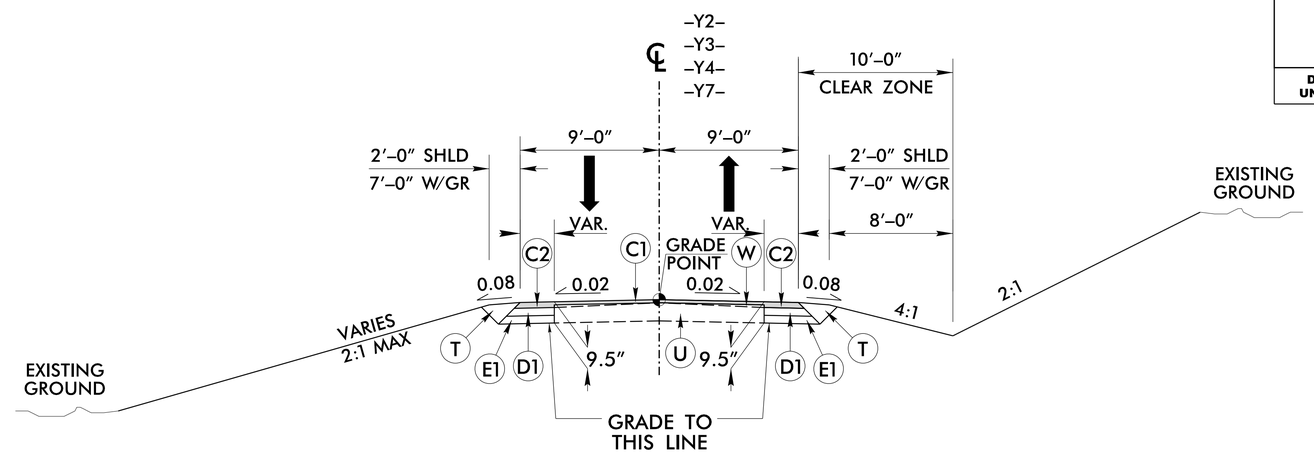
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PRELIMINARY PAVEMENT DESIGN

C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5C.
C2	PROP. APPROX. 3" ACSC, TYPE S9.5C.
C3	PROP. APPROX. VAR. ACSC, TYPE S9.5C.
D1	PROP. APPROX. 2½" ACIC, TYPE I19.0C.
D2	PROP. APPROX. VAR. ACIC, TYPE I19.0C.
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C.
E2	PROP. APPROX. VAR. ACBC, TYPE B25.0C.
J1	PROP. 6" ABC.
J2	PROP. 8" ABC.
R1	EXPRESSWAY GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	RETAINING WALL.
W	VARIABLE DEPTH ASPHALT PAVEMENT.

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

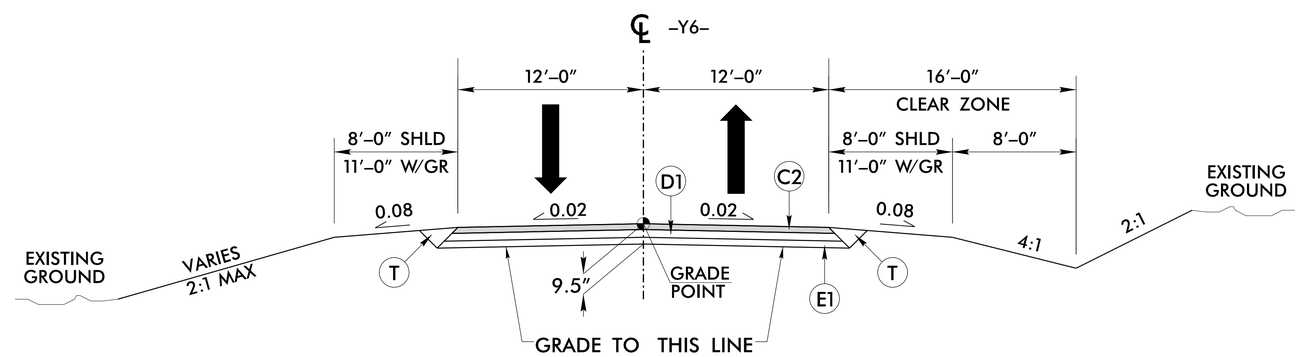


TYPICAL SECTION NO. 4

-Y2- CRESTVIEW DR
-Y3- LONG BRANCH RD
-Y4- THREE MILE KNOB RD
-Y7- MIDDLE MOUNT RD

USE TYPICAL SECTION NO. 4

-Y2- STA. 12+07.60 TO STA. 13+25.00
-Y3- STA. 11+03.63 TO STA. 11+50.00
-Y4- STA. 10+12.00 TO STA. 11+00.00
-Y7- STA. 10+12.11 TO STA. 10+75.00



TYPICAL SECTION NO. 5

-Y6- SR 1541 (WILLIAMSON CREEK RD)

USE TYPICAL SECTION NO. 5

-Y6- STA. 10+24.00 TO STA. 11+12.33

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PROJECT REFERENCE NO.	SHEET NO.
R-5763	2A-5
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

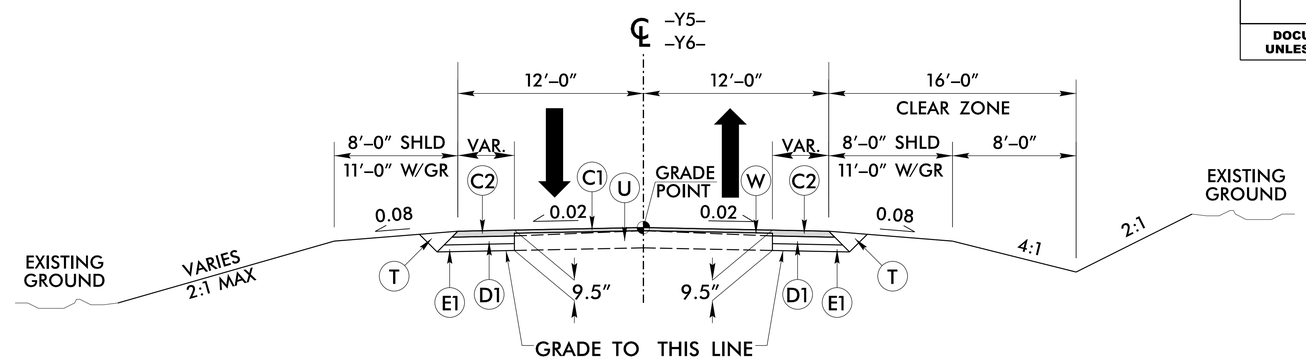
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PRELIMINARY PAVEMENT DESIGN

C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5C.
C2	PROP. APPROX. 3" ACSC, TYPE S9.5C.
C3	PROP. APPROX. VAR. ACSC, TYPE S9.5C.
D1	PROP. APPROX. 2½" ACIC, TYPE I19.0C.
D2	PROP. APPROX. VAR. ACIC, TYPE I19.0C.
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C.
E2	PROP. APPROX. VAR. ACBC, TYPE B25.0C.
J1	PROP. 6" ABC.
J2	PROP. 8" ABC.
R1	EXPRESSWAY GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	RETAINING WALL.
W	VARIABLE DEPTH ASPHALT PAVEMENT.

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

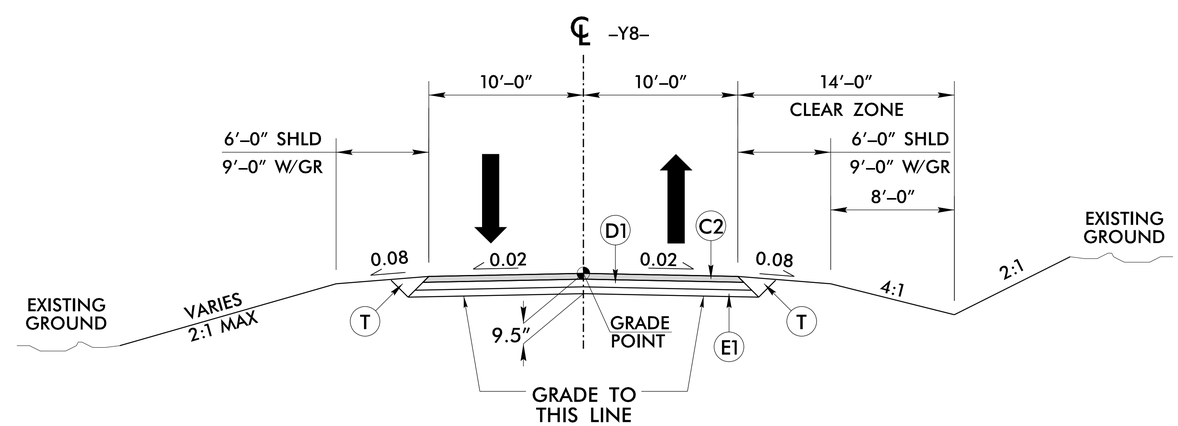


TYPICAL SECTION NO. 6

-Y5- SR 1543 (ELM BEND RD)
-Y6- SR 1541 (WILLIAMSON CREEK RD)

USE TYPICAL SECTION NO. 6

-Y5- STA. 18+50.00 TO STA. 21+69.60
-Y6- STA. 11+12.33 TO STA. 12+00.00



TYPICAL SECTION NO. 7

-Y8- SR 1580 (GLEN CANNON DR)

USE TYPICAL SECTION NO. 7

-Y8- STA. 10+12.00 TO STA. 11+56.37

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PROJECT REFERENCE NO.	SHEET NO.
R-5763	2A-6
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PRELIMINARY PAVEMENT DESIGN

C1	PROP. APPROX. 1.5" ACSC, TYPE S9.5C.
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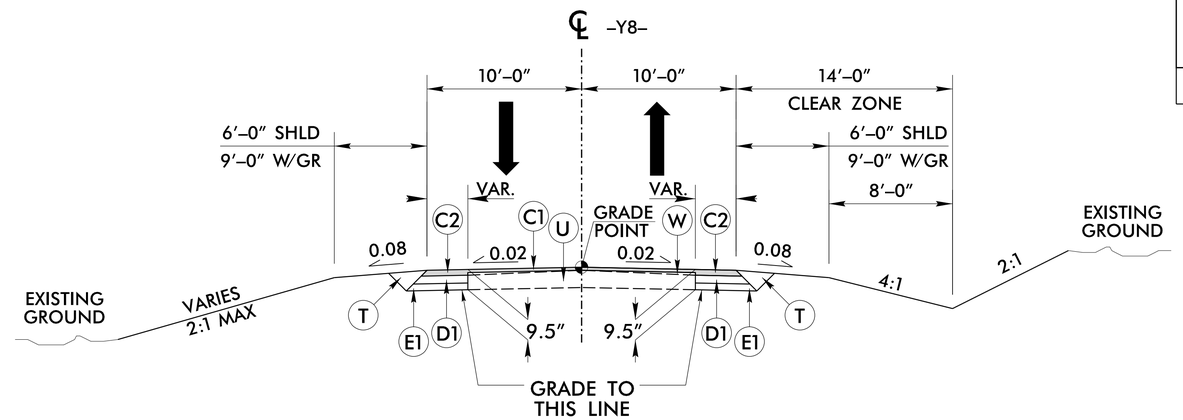
D2	PROP. APPROX. VAR. ACIC, TYPE I19.0C.
E1	PROP. APPROX. 4" ACBC, TYPE B25.0C.
E2	PROP. APPROX. VAR. ACBC, TYPE B25.0C.
J1	PROP. 6" ABC.
J2	PROP. 8" ABC.
R1	EXPRESSWAY GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	RETAINING WALL.
W	VARIABLE DEPTH ASPHALT PAVEMENT.

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

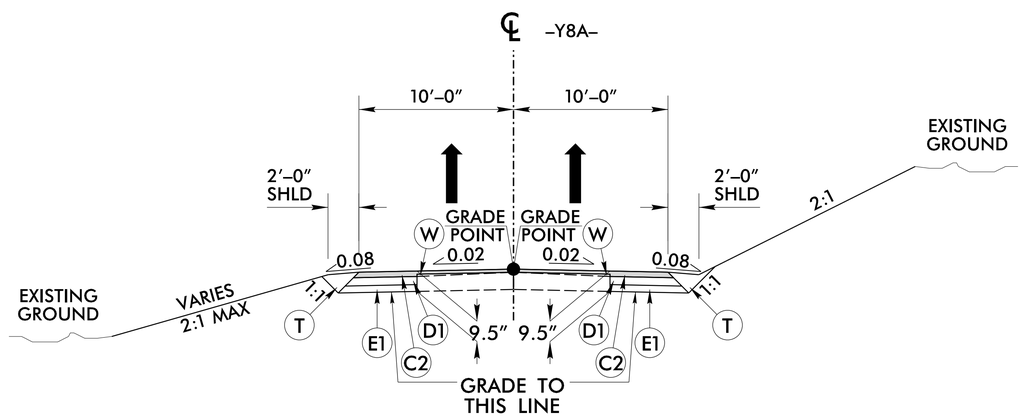


TYPICAL SECTION NO. 8

-Y8- SR 1580 (GLEN CANNON DR)

USE TYPICAL SECTION NO. 8

-Y8- STA. 11+56.37 TO STA. 12+75.00

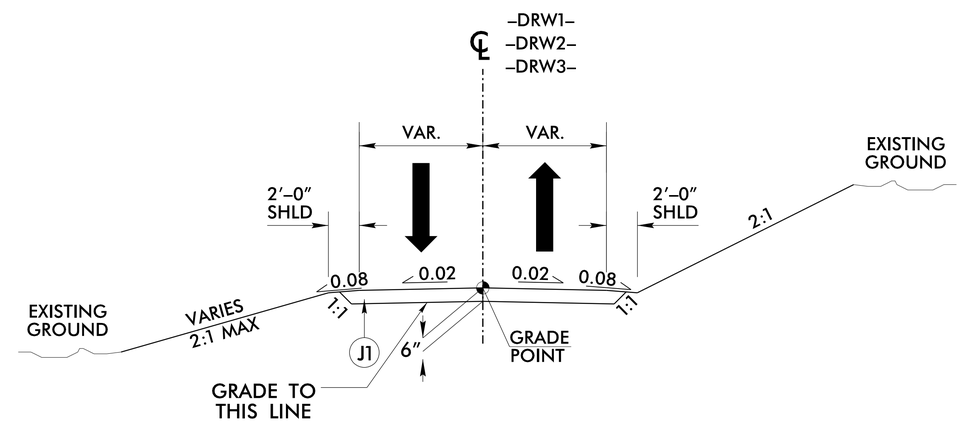


TYPICAL SECTION NO. 9

-Y8A-

USE TYPICAL SECTION NO. 9

-Y8A- STA. 10+10.35 TO STA. 13+25.00



TYPICAL SECTION NO. 10

-DRW1-
-DRW2-
-DRW3-

USE TYPICAL SECTION NO. 10

-DRW1- STA. 10+12.00 TO STA. 11+50.00
-DRW2- STA. 10+12.00 TO STA. 11+15.00
-DRW3- STA. 10+12.00 TO STA. 11+50.00

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HNTB

6/2/99

PRELIMINARY PAVEMENT DESIGN

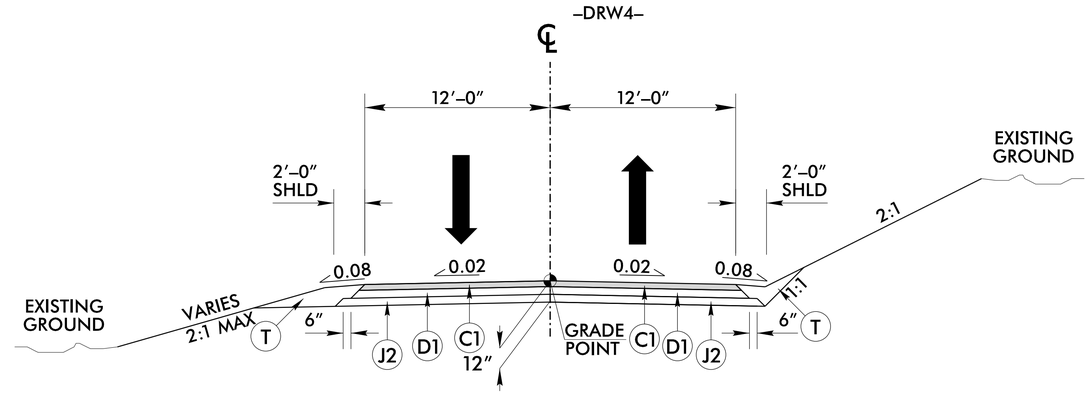
C1	PROP. APPROX. 1.5″ ACSC, TYPE S9.5C.
C2	PROP. APPROX. 3″ ACSC, TYPE S9.5C.
C3	PROP. APPROX. VAR. ACSC, TYPE S9.5C.
D1	PROP. APPROX. 2½″ ACIC, TYPE I19.0C.
D2	PROP. APPROX. VAR. ACIC, TYPE I19.0C.
E1	PROP. APPROX. 4″ ACBC, TYPE B25.0C.
E2	PROP. APPROX. VAR. ACBC, TYPE B25.0C.
J1	PROP. 6″ ABC.
J2	PROP. 8″ ABC.
R1	EXPRESSWAY GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V1	RETAINING WALL.
W	VARIABLE DEPTH ASPHALT PAVEMENT.

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PROJECT REFERENCE NO.	SHEET NO.
R-5763	2A-7
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

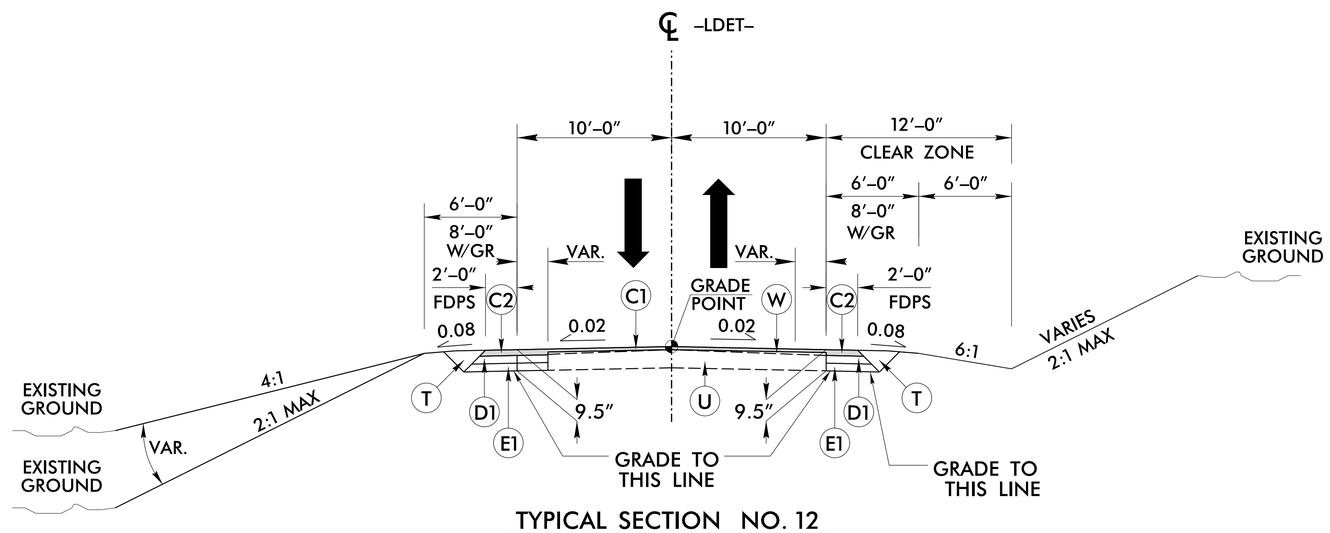
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION NO. 11

USE TYPICAL SECTION NO. 11

-DRW4- STA. 10+00.00 TO STA. 11+50.00



TYPICAL SECTION NO. 12

-LDET- ONSITE DETOUR

USE TYPICAL SECTION NO. 12

-LDET- STA. 10+00.00 TO STA. 13+06.59
-LDET- STA. 22+87.72 TO STA. 25+00.00

18-AUG-2020 14:46
R:\Roadway\Proj\R5763_RDY_TYP.dgn

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.	SHEET NO.
R-5763	2D-1

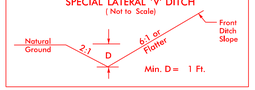
HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

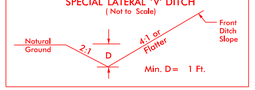
R-5763 PROPOSED DITCH TYPICALS

DETAIL SLV1
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



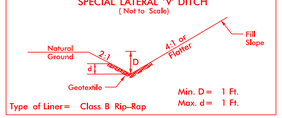
FROM -L- STA. 13+50 TO STA. 14+20 RT
FROM -L- STA. 35+40 TO STA. 36+00 RT
FROM -L- STA. 36+00 TO STA. 36+50 RT
FROM -L- STA. 116+00 TO STA. 122+00 RT
FROM -L- STA. 153+75 TO STA. 155+50 RT

DETAIL SLV2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



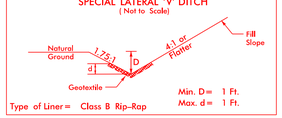
FROM -L- STA. 17+00 TO STA. 17+85 RT
FROM -L- STA. 25+50 TO STA. 27+60 RT
FROM -L- STA. 28+60 TO STA. 30+50 RT
FROM -L- STA. 111+50 TO STA. 114+00 RT
FROM -L- STA. 145+75 TO STA. 150+00 RT
FROM -L- STA. 150+50 TO STA. 151+80 RT
FROM -L- STA. 175+00 TO STA. 176+50 RT
FROM -L- STA. 175+00 TO STA. 178+50 LT
FROM -Y7- STA. 10+41 TO STA. 10+75 LT

DETAIL SLV3
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



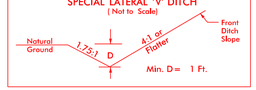
FROM -L- STA. 17+85 TO STA. 18+20 RT
FROM -L- STA. 94+00 TO STA. 94+42 RT
FROM -L- STA. 114+00 TO STA. 115+00 RT
FROM -L- STA. 165+00 TO STA. 168+50 RT
FROM -L- STA. 176+50 TO STA. 178+12 RT
FROM -Y4- STA. 10+30 TO STA. 10+75 LT

DETAIL SLV4
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



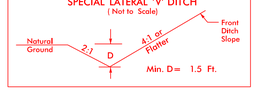
FROM -L- STA. 18+37 TO STA. 18+75 RT

DETAIL SLV5
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



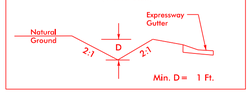
FROM -L- STA. 18+75 TO STA. 21+00 RT

DETAIL SLV6
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



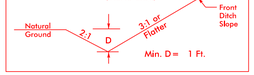
FROM -L- STA. 22+50 TO STA. 24+00 RT
FROM -L- STA. 138+25 TO STA. 143+00 RT

DETAIL SLV7
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



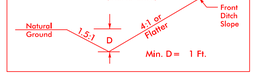
FROM -L- STA. 59+50 TO STA. 62+00 RT
FROM -L- STA. 63+00 TO STA. 63+75 RT

DETAIL SLV8
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



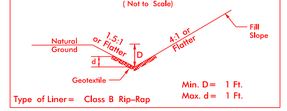
FROM -L- STA. 59+00 TO STA. 61+50 LT

DETAIL SLV9
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



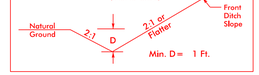
FROM -L- STA. 87+50 TO STA. 89+00 RT
FROM -L- STA. 89+00 TO STA. 90+50 RT
FROM -L- STA. 96+50 TO STA. 99+50 RT
FROM -L- STA. 155+50 TO STA. 160+02 RT

DETAIL SLV10
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



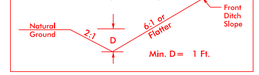
FROM -L- STA. 95+80 TO STA. 96+00 RT
FROM -DRW3- STA. 10+35 TO STA. 11+00 LT

DETAIL SLV11
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



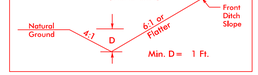
FROM -YA8- STA. 10+75 TO STA. 12+25 RT
FROM -YA8- STA. 10+50 TO STA. 13+00 LT

DETAIL SC1
SPECIAL CUT DITCH
(Not to Scale)



FROM -L- STA. 195+50 TO STA. 197+00 RT

DETAIL SC2
SPECIAL CUT DITCH
(Not to Scale)

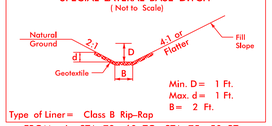


FROM -L- STA. 197+00 TO STA. 200+00 RT
FROM -L- STA. 197+50 TO STA. 200+00 LT

DETAIL SLB1
SPECIAL LATERAL BASE DITCH
(Not to Scale)

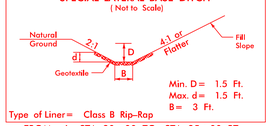
FROM -L- STA. 15+80 TO STA. 16+25 RT
FROM -L- STA. 100+60 TO STA. 105+00 RT
FROM -L- STA. 108+00 TO STA. 111+50 RT
FROM -L- STA. 129+00 TO STA. 131+50 RT

DETAIL SLB2
SPECIAL LATERAL BASE DITCH
(Not to Scale)



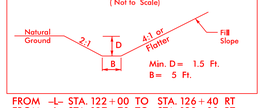
FROM -L- STA. 73+60 TO STA. 75+50 RT
FROM -Y3- STA. 10+60 TO STA. 11+50 RT
FROM -Y6- STA. 10+59 TO STA. 12+00 LT

DETAIL SLB3
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM -L- STA. 80+00 TO STA. 85+00 RT

DETAIL SLB4
SPECIAL LATERAL BASE DITCH
(Not to Scale)

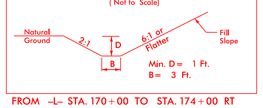


FROM -L- STA. 122+00 TO STA. 126+40 RT
FROM -L- STA. 127+70 TO STA. 129+00 RT

DETAIL SLB5
SPECIAL LATERAL BASE DITCH
(Not to Scale)

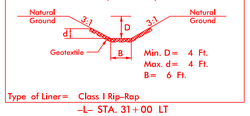
FROM -L- STA. 161+50 TO STA. 165+00 RT
FROM -Y3- STA. 10+65 TO STA. 11+15 LT

DETAIL SLB6
SPECIAL LATERAL BASE DITCH
(Not to Scale)



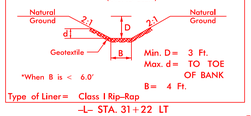
FROM -L- STA. 170+00 TO STA. 174+00 RT

DETAIL SB1
STANDARD BASE DITCH
(Not to Scale)



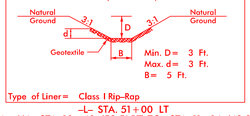
-L- STA. 31+00 LT

DETAIL SB2
STANDARD BASE DITCH
(Not to Scale)



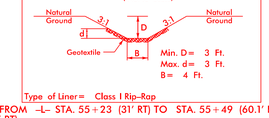
-L- STA. 31+22 LT

DETAIL SB3
STANDARD BASE DITCH
(Not to Scale)



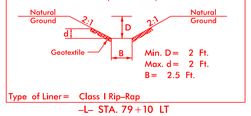
-L- STA. 51+00 LT

DETAIL SB4
STANDARD BASE DITCH
(Not to Scale)



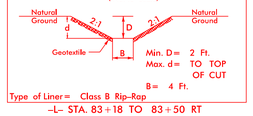
FROM -L- STA. 55+23 (31' RT) TO STA. 55+49 (60.1' RT)
FROM -Y4- STA. 10+40 (58.5' RT) TO STA. 11+14 (48.3' RT)

DETAIL SB5
STANDARD BASE DITCH
(Not to Scale)



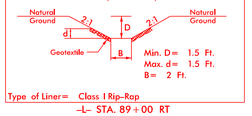
-L- STA. 79+10 LT

DETAIL SB6
STANDARD BASE DITCH
(Not to Scale)



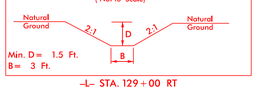
-L- STA. 83+18 TO 83+50 RT

DETAIL SB7
STANDARD BASE DITCH
(Not to Scale)



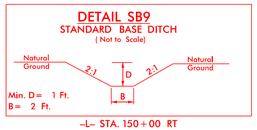
-L- STA. 89+00 RT

DETAIL SB8
STANDARD BASE DITCH
(Not to Scale)



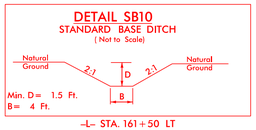
-L- STA. 129+00 RT

DETAIL SB9
STANDARD BASE DITCH
(Not to Scale)



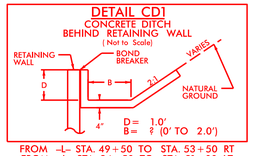
-L- STA. 150+00 RT

DETAIL SB10
STANDARD BASE DITCH
(Not to Scale)



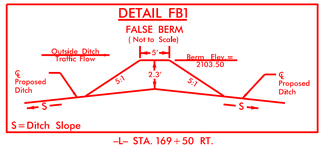
-L- STA. 161+50 LT

DETAIL CD1
CONCRETE DITCH
BEHIND RETAINING WALL
(Not to Scale)



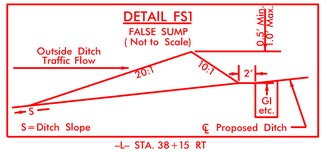
FROM -L- STA. 49+50 TO STA. 53+50 RT
FROM -L- STA. 84+50 TO STA. 91+00 LT

DETAIL FB1
FALSE BERM
(Not to Scale)



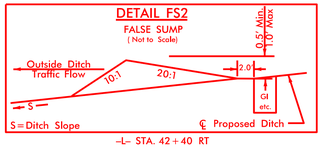
-L- STA. 169+50 RT.

DETAIL FS1
FALSE SUMP
(Not to Scale)



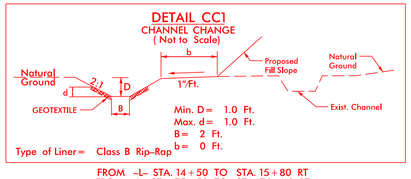
-L- STA. 38+15 RT

DETAIL FS2
FALSE SUMP
(Not to Scale)



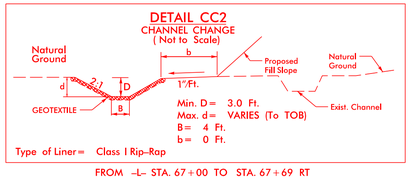
-L- STA. 42+40 RT

DETAIL CC1
CHANNEL CHANGE
(Not to Scale)



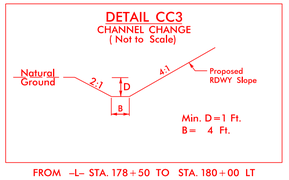
FROM -L- STA. 14+50 TO STA. 15+80 RT
FROM -L- STA. 75+50 TO STA. 76+46 RT
FROM -L- STA. 77+76 TO STA. 78+75 RT

DETAIL CC2
CHANNEL CHANGE
(Not to Scale)



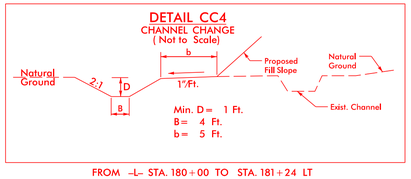
FROM -L- STA. 67+00 TO STA. 67+69 RT

DETAIL CC3
CHANNEL CHANGE
(Not to Scale)



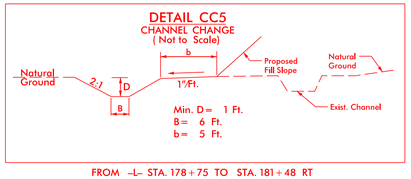
FROM -L- STA. 178+50 TO STA. 180+00 LT

DETAIL CC4
CHANNEL CHANGE
(Not to Scale)



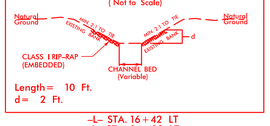
FROM -L- STA. 180+00 TO STA. 181+24 LT

DETAIL CC5
CHANNEL CHANGE
(Not to Scale)



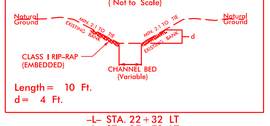
FROM -L- STA. 178+75 TO STA. 181+48 RT

DETAIL PO1
PIPE OUTLET CHANNEL BANK STABILIZATION
(Not to Scale)



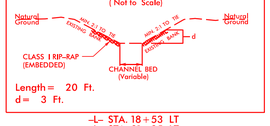
-L- STA. 16+42 LT
-L- STA. 94+38 LT
-L- STA. 114+00 LT
-L- STA. 150+13 LT
-L- STA. 151+97 LT

DETAIL PO2
PIPE OUTLET CHANNEL BANK STABILIZATION
(Not to Scale)



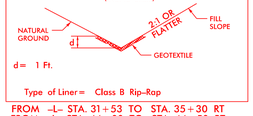
-L- STA. 22+32 LT
-L- STA. 27+73 LT

DETAIL PO3
PIPE OUTLET CHANNEL BANK STABILIZATION
(Not to Scale)



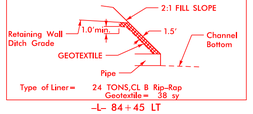
-L- STA. 18+53 LT
-L- STA. 31+25 LT
-L- STA. 84+39 LT
-L- STA. 128+63 LT
-L- STA. 170+78 LT

DETAIL TP1
TOE PROTECTION
(Not to Scale)



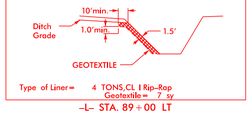
FROM -L- STA. 31+53 TO STA. 35+30 RT
FROM -L- STA. 44+00 TO STA. 44+50 RT
FROM -L- STA. 46+50 TO STA. 49+50 RT
FROM -L- STA. 94+42 TO STA. 94+75 RT
FROM -L- STA. 100+00 TO STA. 100+60 RT

DETAIL E1
RIP RAP AT FILL SLOPE
(Not to Scale)



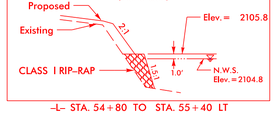
-L- 84+45 LT

DETAIL E2
RIP RAP AT EMBANKMENT
(Not to Scale)



-L- STA. 89+00 LT

DETAIL F1
ROCK FILL IN POND
(Not to Scale)



-L- STA. 54+80 TO STA. 55+40 LT

$$$$$$$$SYSTIME$$$$$$$$
$$$$$$$$USERNAME$$$$$$$$

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Raleigh, North Carolina 27609
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PROJECT REFERENCE NO.	SHEET NO.
R-5763	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-

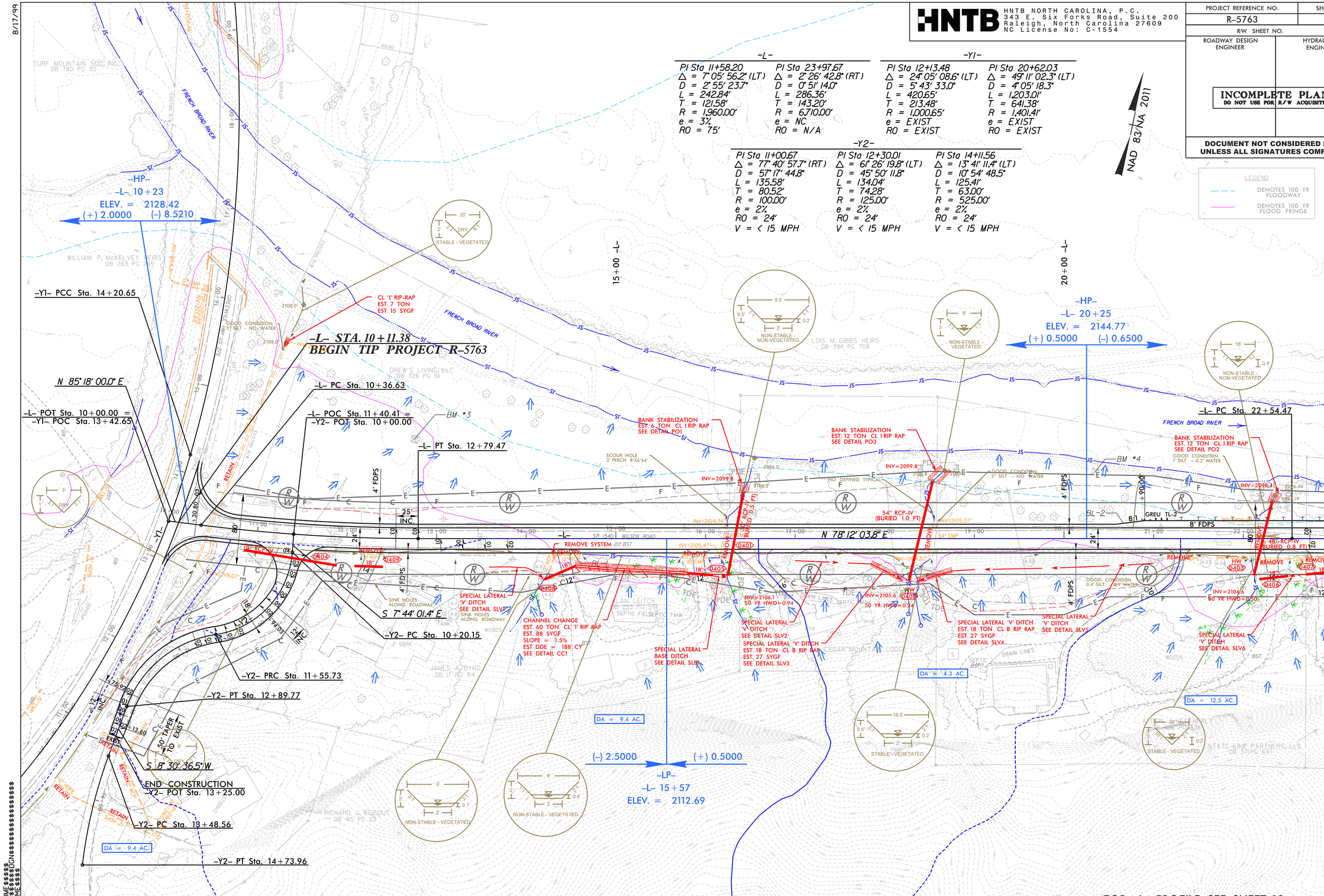
PI Sta 11+58.20	PI Sta 23+97.67
Δ = 7° 05' 56.2" (LT)	Δ = 2° 26' 42.8" (RT)
D = 2° 55' 23.7"	D = 0° 51' 14.0"
L = 242.84'	L = 286.36'
T = 121.58'	T = 143.20'
R = 1,960.00'	R = 6,710.00'
e = 3%	e = NC
RO = 75'	RO = N/A

-Y1-

PI Sta 12+13.48	PI Sta 20+62.03
Δ = 24° 05' 08.6" (LT)	Δ = 49° 11' 02.3" (LT)
D = 5° 43' 33.0"	D = 4° 05' 18.3"
L = 420.65'	L = 1,203.01'
T = 213.48'	T = 641.38'
R = 1,000.65'	R = 1,401.41'
e = EXIST	e = EXIST
RO = EXIST	RO = EXIST

-Y2-

PI Sta 11+00.67	PI Sta 12+30.01	PI Sta 14+11.56
Δ = 77° 40' 57.7" (RT)	Δ = 61° 26' 19.8" (LT)	Δ = 13° 41' 11.4" (LT)
D = 57° 17' 44.8"	D = 45° 50' 11.8"	D = 10° 54' 48.5"
L = 135.58'	L = 134.04'	L = 125.41'
T = 80.52'	T = 74.28'	T = 63.00'
R = 100.00'	R = 125.00'	R = 525.00'
e = 2%	e = 2%	e = 2%
RO = 24'	RO = 24'	RO = 24'
V = < 15 MPH	V = < 15 MPH	V = < 15 MPH



NOTE:
1. ALL DRIVEWAYS HAVE 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE, SEE SHEET 18
FOR -Y2- PROFILE, SEE SHEET 25
FOR INTERSECTION DETAIL, SEE SHEET 2B-1

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PROJECT REFERENCE NO.	SHEET NO.
R-5763	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-

PI Sta 23+97.67	PI Sta 33+55.83
Δ = 2° 26' 42.8" (RT)	Δ = 78° 21' 48.2" (LT)
D = 0° 51' 14.0"	D = 7° 23' 34.8"
L = 286.36'	L = 1,059.97'
T = 143.20'	T = 631.66'
R = 6,710.00'	R = 775.00'
e = NC	e = 8%
RO = N/A	RO = 200'

-Y3-

PI Sta 11+42.26	PI Sta 11+94.59	PI Sta 12+66.97
Δ = 27° 44' 01.9" (LT)	Δ = 3° 21' 31.0" (LT)	Δ = 12° 42' 45.0" (RT)
D = 47° 44' 47.3"	D = 7° 02' 16.2"	D = 38° 11' 49.9"
L = 58.09'	L = 47.72'	L = 33.28'
T = 29.62'	T = 23.87'	T = 16.71'
R = 120.00'	R = 814.11'	R = 150.00'
e = EXIST	e = EXIST	e = EXIST
RO = N/A	RO = N/A	RO = N/A

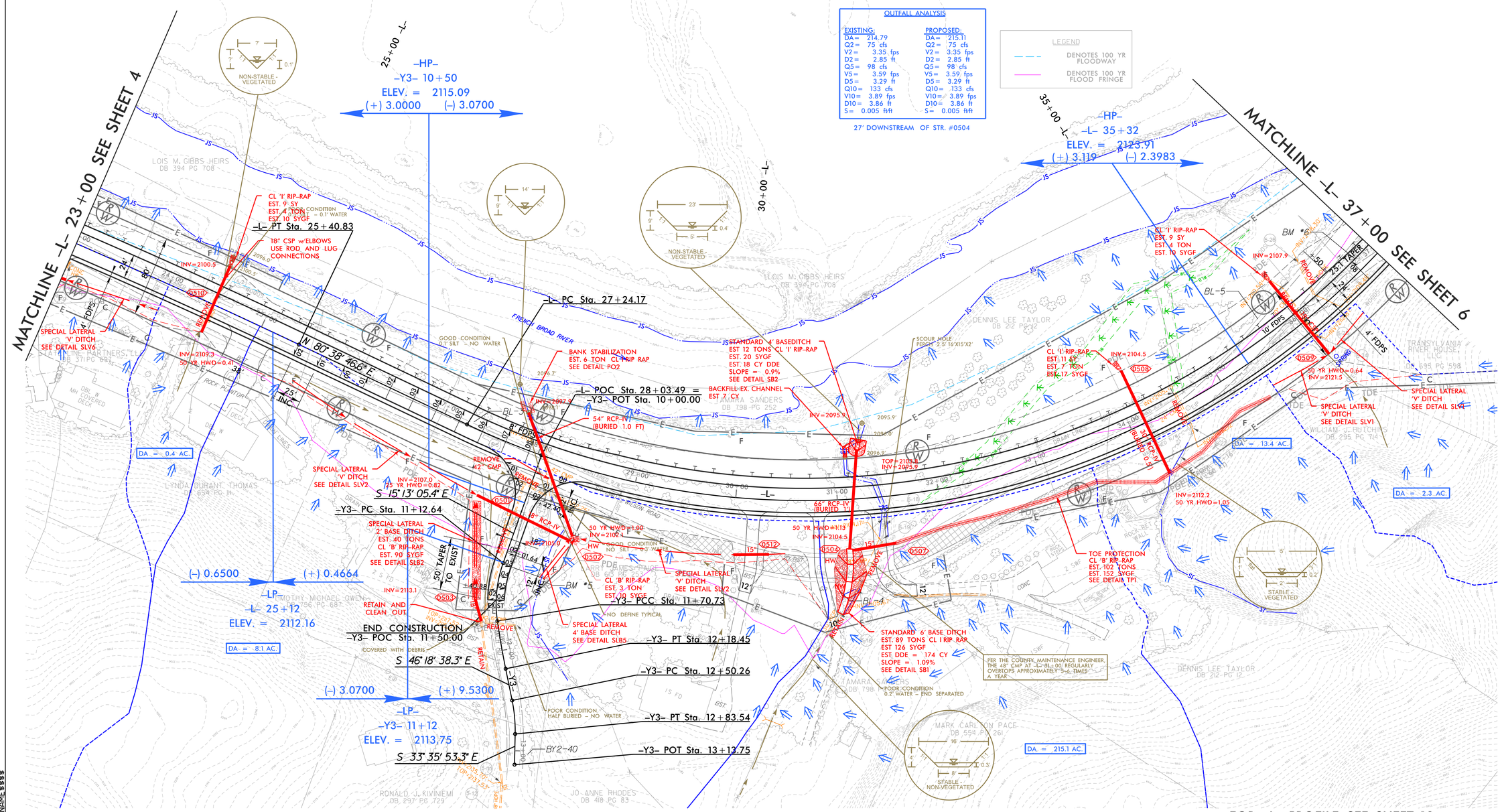
NAD 83/NA 2011

OUTFALL ANALYSIS

EXISTING:	PROPOSED:
DA = 214.79	DA = 215.11
Q2 = 75 cfs	Q2 = 75 cfs
V2 = 3.35 fps	V2 = 3.35 fps
D2 = 2.85 ft	D2 = 2.85 ft
Q5 = 98 cfs	Q5 = 98 cfs
V5 = 3.59 fps	V5 = 3.59 fps
D5 = 3.29 ft	D5 = 3.29 ft
Q10 = 133 cfs	Q10 = 133 cfs
V10 = 3.89 fps	V10 = 3.89 fps
D10 = 3.86 ft	D10 = 3.86 ft
S = 0.005 ft/ft	S = 0.005 ft/ft

27' DOWNSTREAM OF STR. #0504

LEGEND
DENOTES 100 YR FLOODWAY
DENOTES 100 YR FLOOD FRINGE



NOTE:
1. ALL DRIVEWAYS HAVE 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE, SEE SHEET 18
FOR -Y3- PROFILE, SEE SHEET 25
FOR INTERSECTION DETAIL, SEE SHEET 2B-2

$$$$$$SYSTIME$$$$$$
$$$$$$SYSNAME$$$$$$
$$$$$$USERNAME$$$$$$

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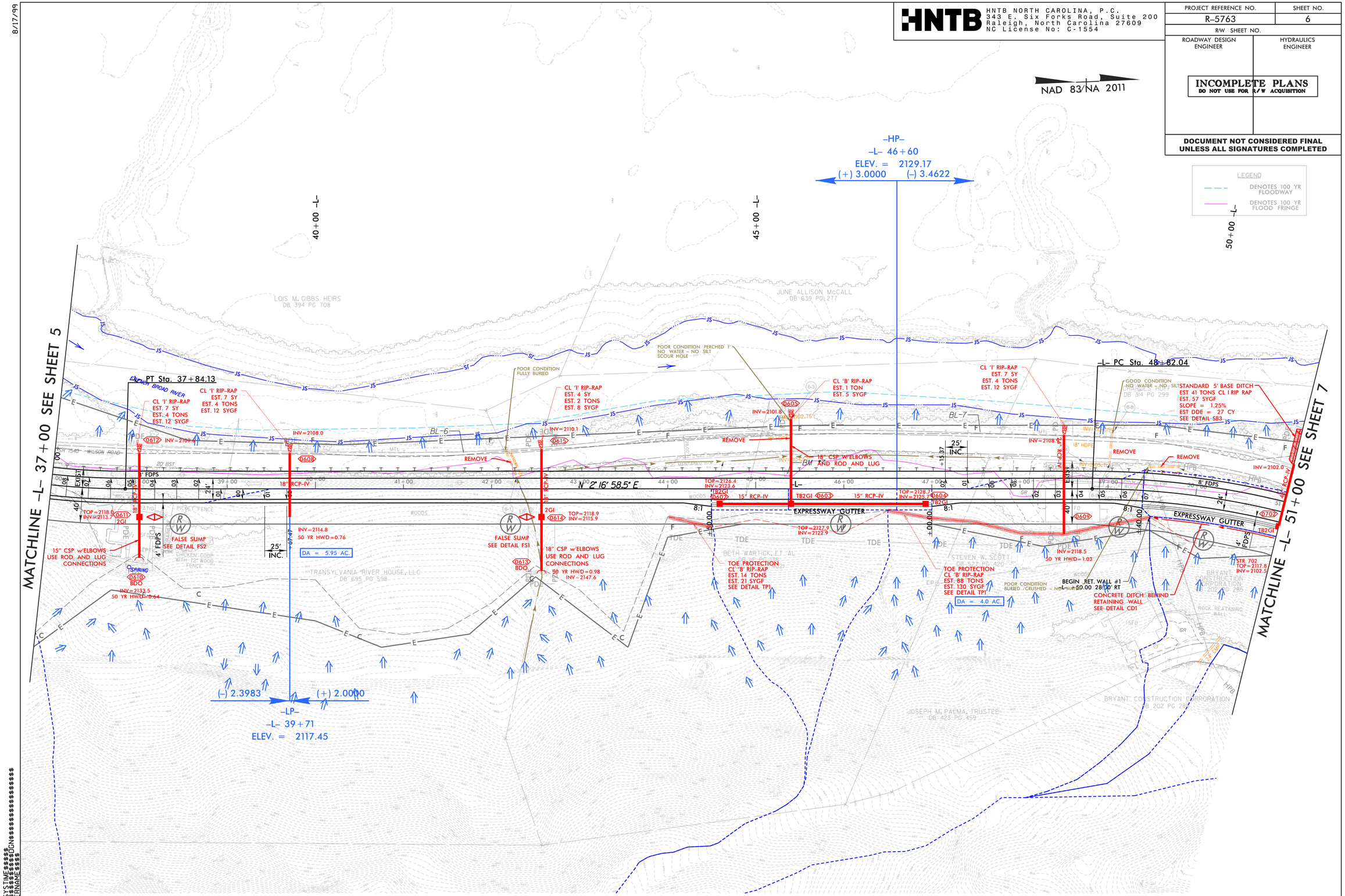
PROJECT REFERENCE NO.	SHEET NO.
R-5763	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NOTE:
1. ALL DRIVEWAYS HAVE 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE, SEE SHEET 19

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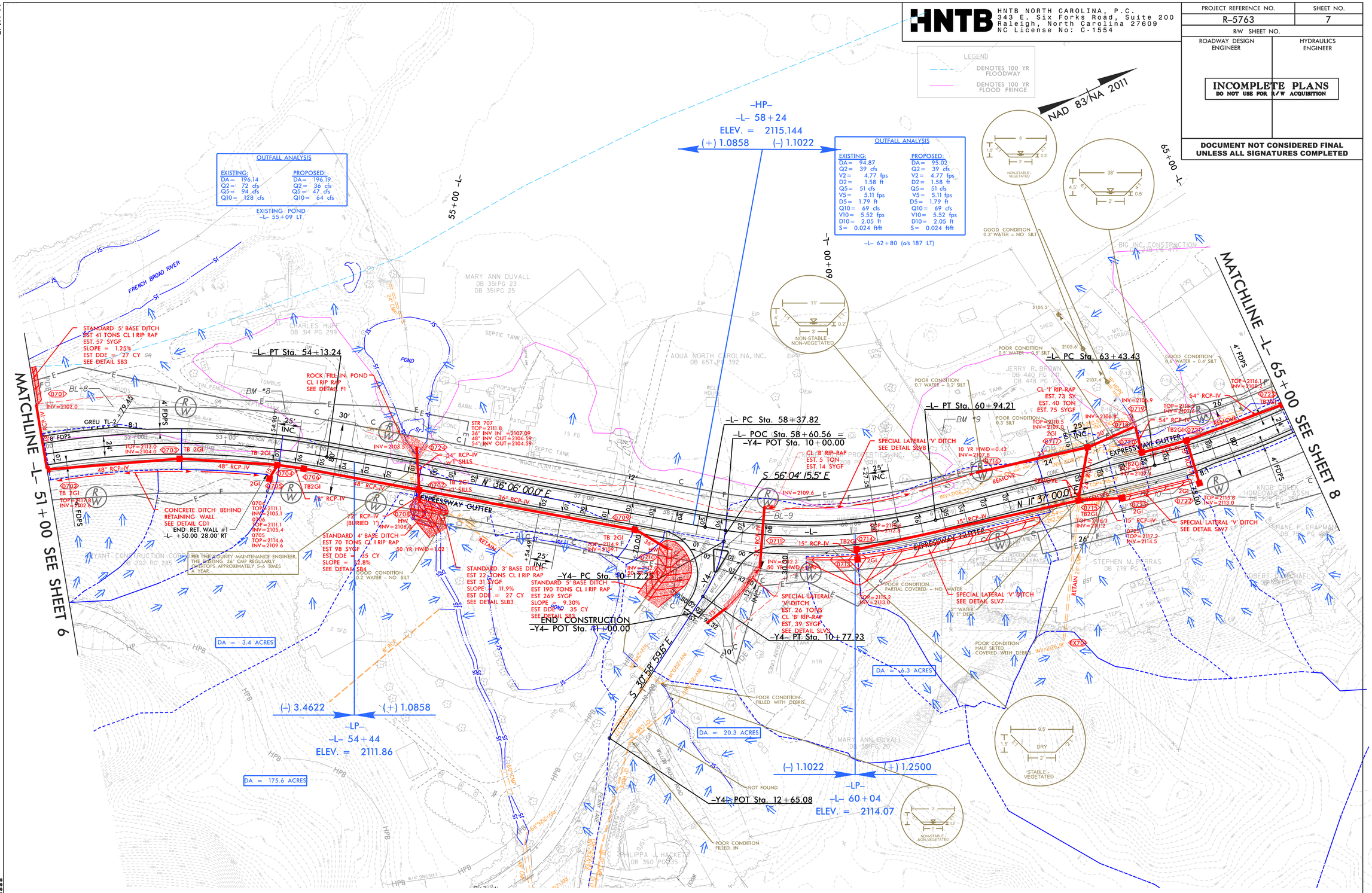
PROJECT REFERENCE NO.	SHEET NO.
R-5763	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NOTE:
1. ALL DRIVEWAYS HAVE 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE, SEE SHEET 19
FOR -Y4- PROFILE, SEE SHEET 25
FOR INTERSECTION DETAIL, SEE SHEET 2B-2

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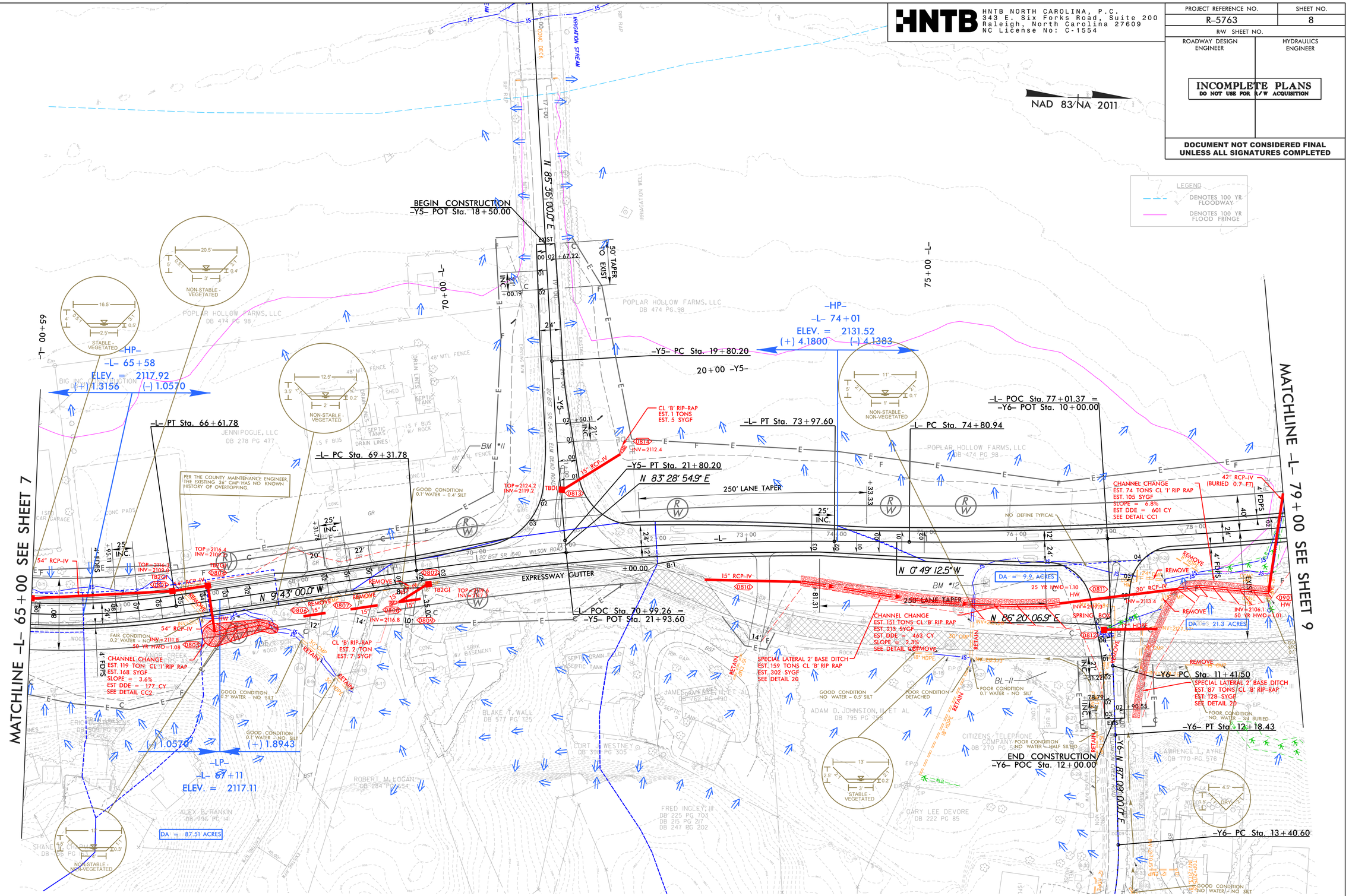
PROJECT REFERENCE NO.	SHEET NO.
R-5763	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

LEGEND
DENOTES 100 YR FLOODWAY
DENOTES 100 YR FLOOD FRINGE



NOTE:
1. ALL DRIVEWAYS HAVE 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE, SEE SHEET 20
FOR -Y5- PROFILE, SEE SHEET 25
FOR -Y6- PROFILE, SEE SHEET 26
FOR INTERSECTION DETAILS, SEE SHEET 2B-3

$$$$$$CXTIME$$$$$$DGN$$$$$$

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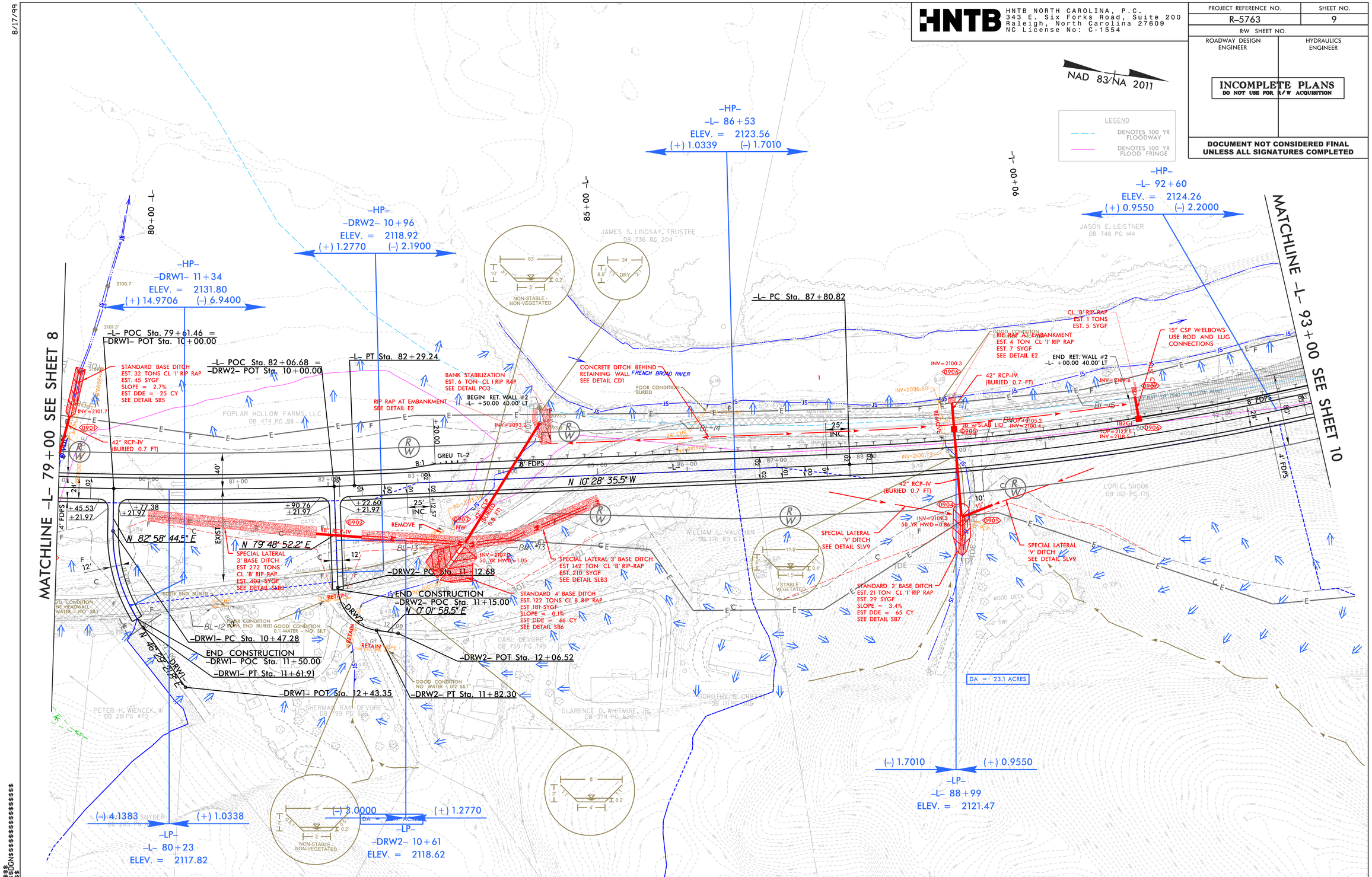
PROJECT REFERENCE NO.	SHEET NO.
R-5763	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NOTE:
1. ALL DRIVEWAYS HAVE 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE, SEE SHEET 20
FOR -DRW1- PROFILE, SEE SHEET 27
FOR -DRW2- PROFILE, SEE SHEET 27

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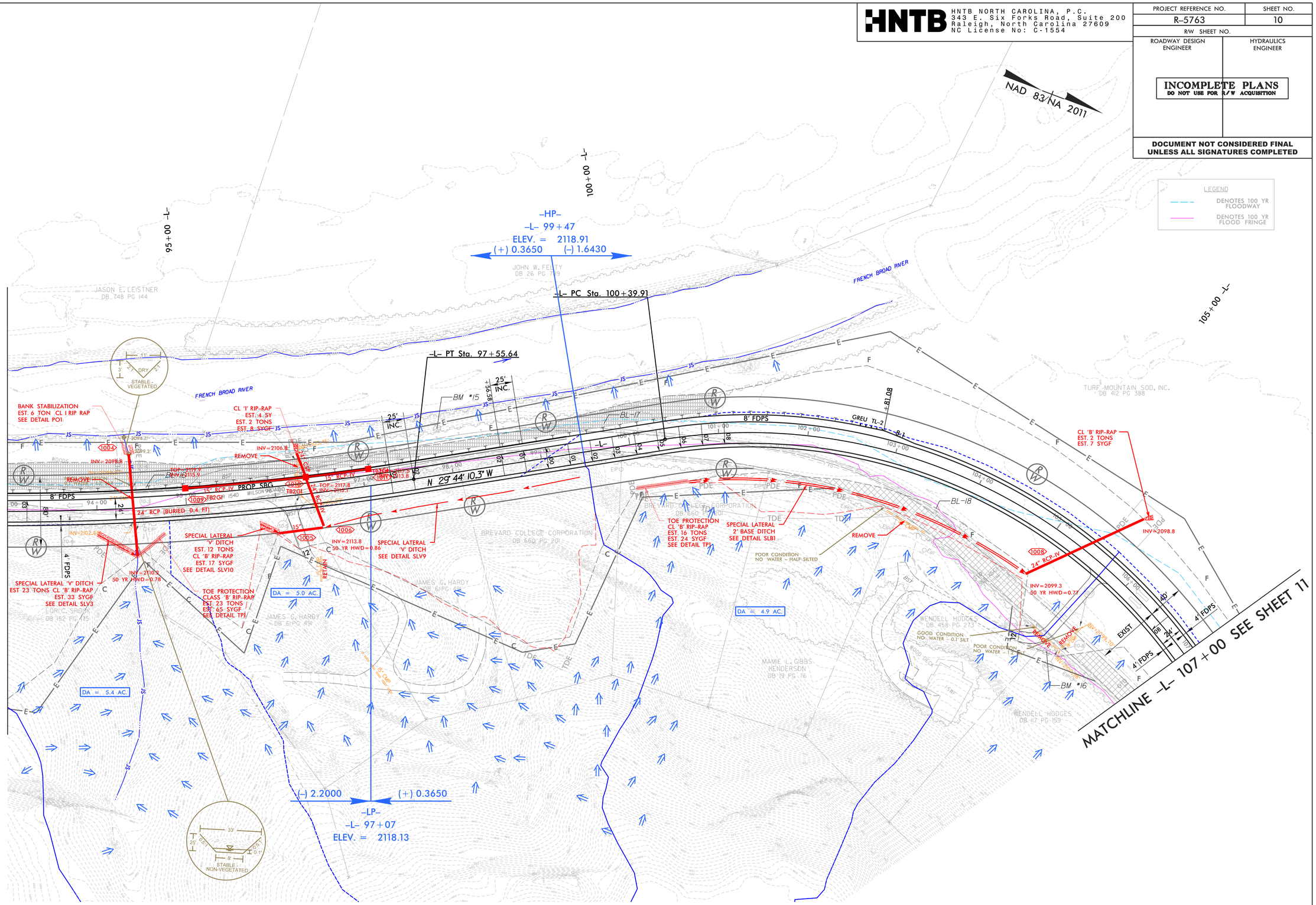
PROJECT REFERENCE NO.	SHEET NO.
R-5763	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NOTE:
1. ALL DRIVEWAYS HAVE 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE, SEE SHEET 21

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PROJECT REFERENCE NO.	SHEET NO.
R-5763	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

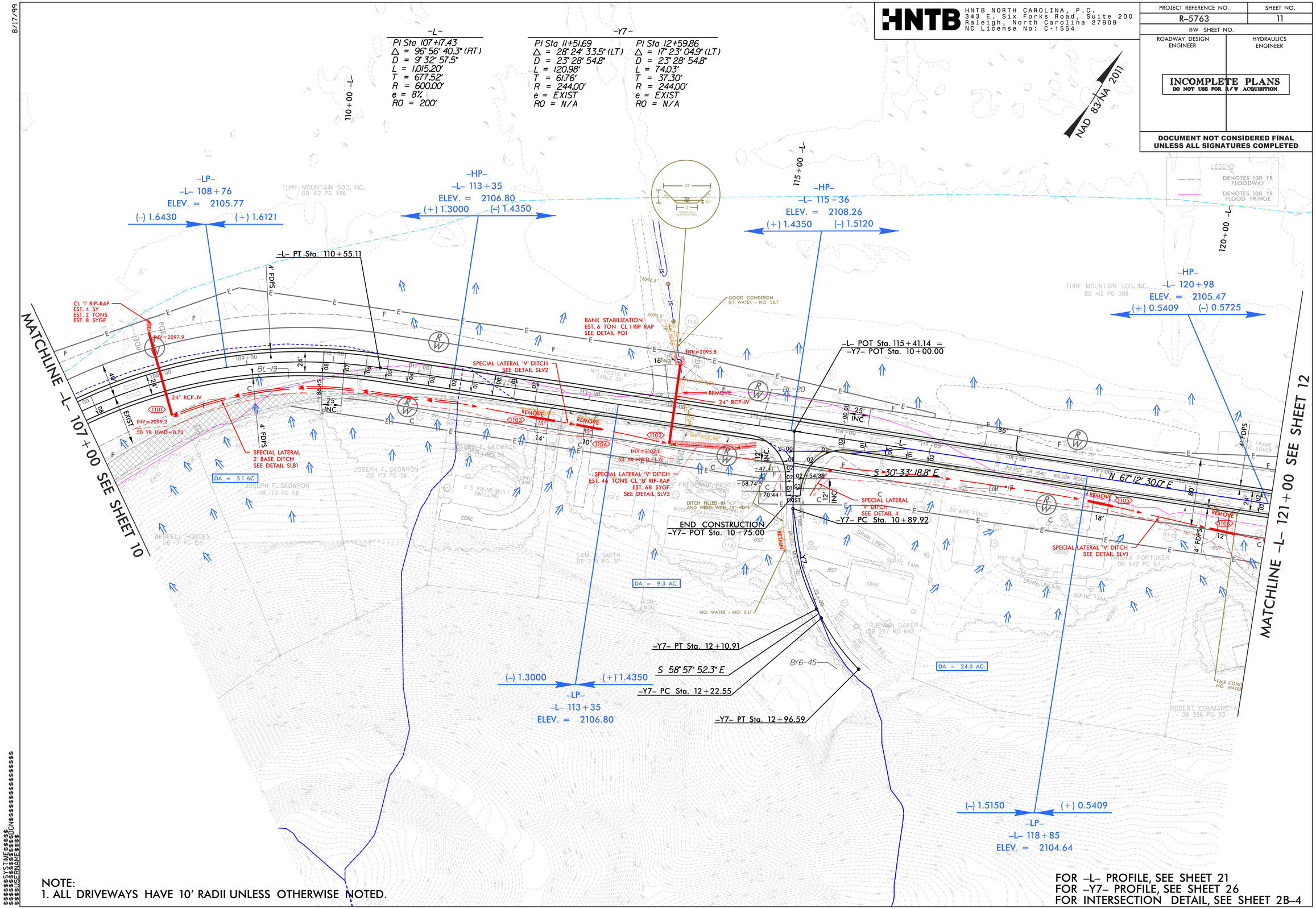
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-
PI Sta 107+17.43
Δ = 96° 56' 40.3" (RT)
D = 9° 32' 57.5"
L = 1,015.20'
T = 677.52'
R = 600.00'
e = 8%
RO = 200'

-Y7-
PI Sta 11+51.69
Δ = 28° 24' 33.5" (LT)
D = 23° 28' 54.8"
L = 120.98'
T = 61.76'
R = 244.00'
e = EXIST
RO = N/A

PI Sta 12+59.86
Δ = 17° 23' 04.9" (LT)
D = 23° 28' 54.8"
L = 74.03'
T = 37.30'
R = 244.00'
e = EXIST
RO = N/A



NOTE:
1. ALL DRIVEWAYS HAVE 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE, SEE SHEET 21
FOR -Y7- PROFILE, SEE SHEET 26
FOR INTERSECTION DETAIL, SEE SHEET 2B-4

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PROJECT REFERENCE NO.	SHEET NO.
R-5763	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-
PI Sta 132+58.36
Δ = 36° 58' 30.0" (LT)
D = 4° 35' 01.2"
L = 806.67'
T = 417.94'
R = 1,250.00'
e = 6%
RO = 150'

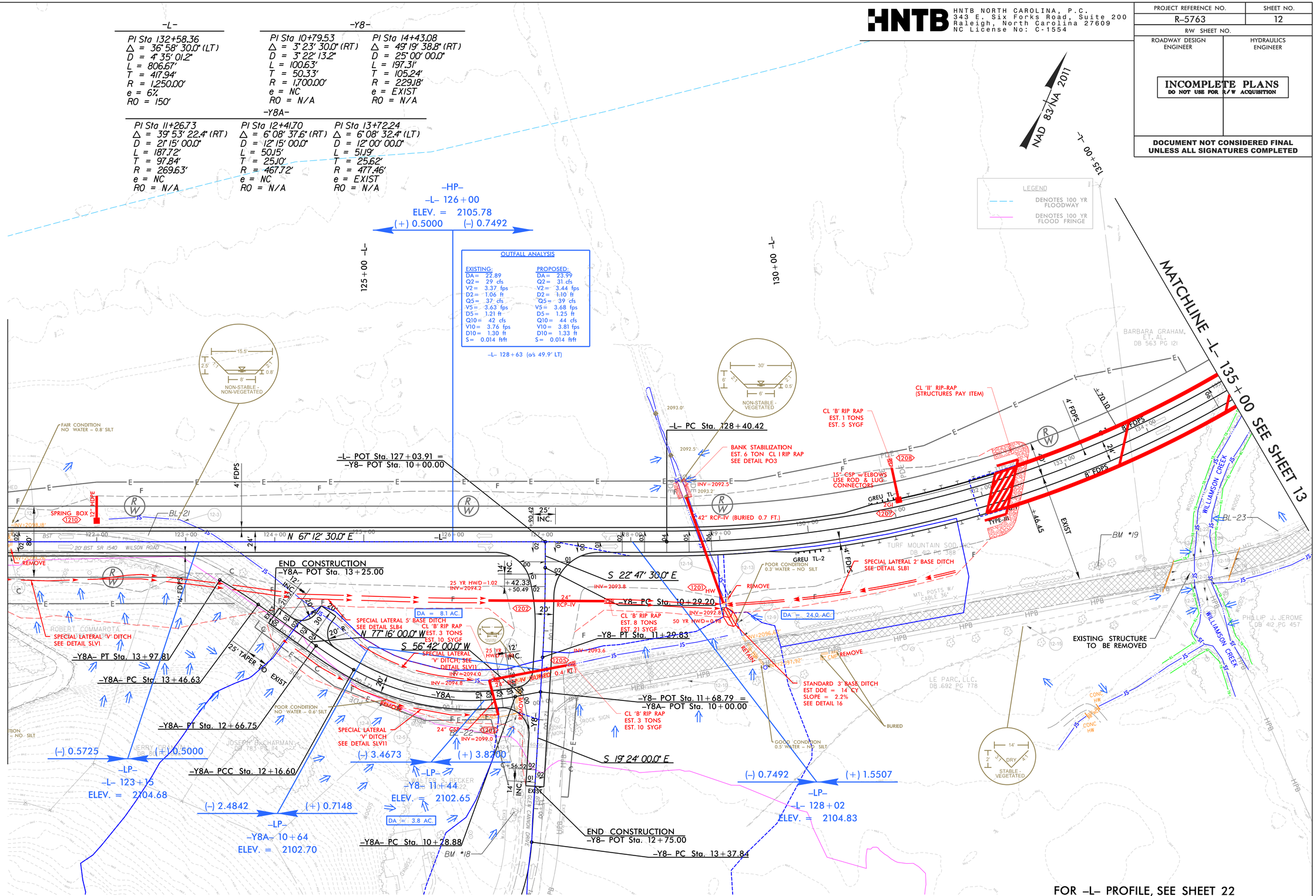
-Y8-
PI Sta 10+79.53
Δ = 3° 23' 30.0" (RT)
D = 3° 22' 13.2"
L = 100.63'
T = 50.33'
R = 1,700.00'
e = NC
RO = N/A

PI Sta 14+43.08
Δ = 49° 19' 38.8" (RT)
D = 25° 00' 00.0"
L = 197.31'
T = 105.24'
R = 229.18'
e = EXIST
RO = N/A

-Y8A-
PI Sta 11+26.73
Δ = 39° 53' 22.4" (RT)
D = 21° 15' 00.0"
L = 187.72'
T = 97.84'
R = 269.63'
e = NC
RO = N/A

PI Sta 12+41.70
Δ = 6° 08' 37.6" (RT)
D = 12° 15' 00.0"
L = 50.15'
T = 25.10'
R = 467.72'
e = NC
RO = N/A

PI Sta 13+72.24
Δ = 6° 08' 32.4" (LT)
D = 12° 00' 00.0"
L = 51.19'
T = 25.62'
R = 477.46'
e = EXIST
RO = N/A



NOTE:
1. ALL DRIVEWAYS HAVE 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE, SEE SHEET 22
FOR -Y8- PROFILE, SEE SHEET 26
FOR -Y8A- PROFILE, SEE SHEET 26
FOR INTERSECTION DETAIL, SEE SHEET 2B-4

$$$$$$$$SYSTIME$$$$$$$$
$$$$$$$$USERNAME$$$$$$$$

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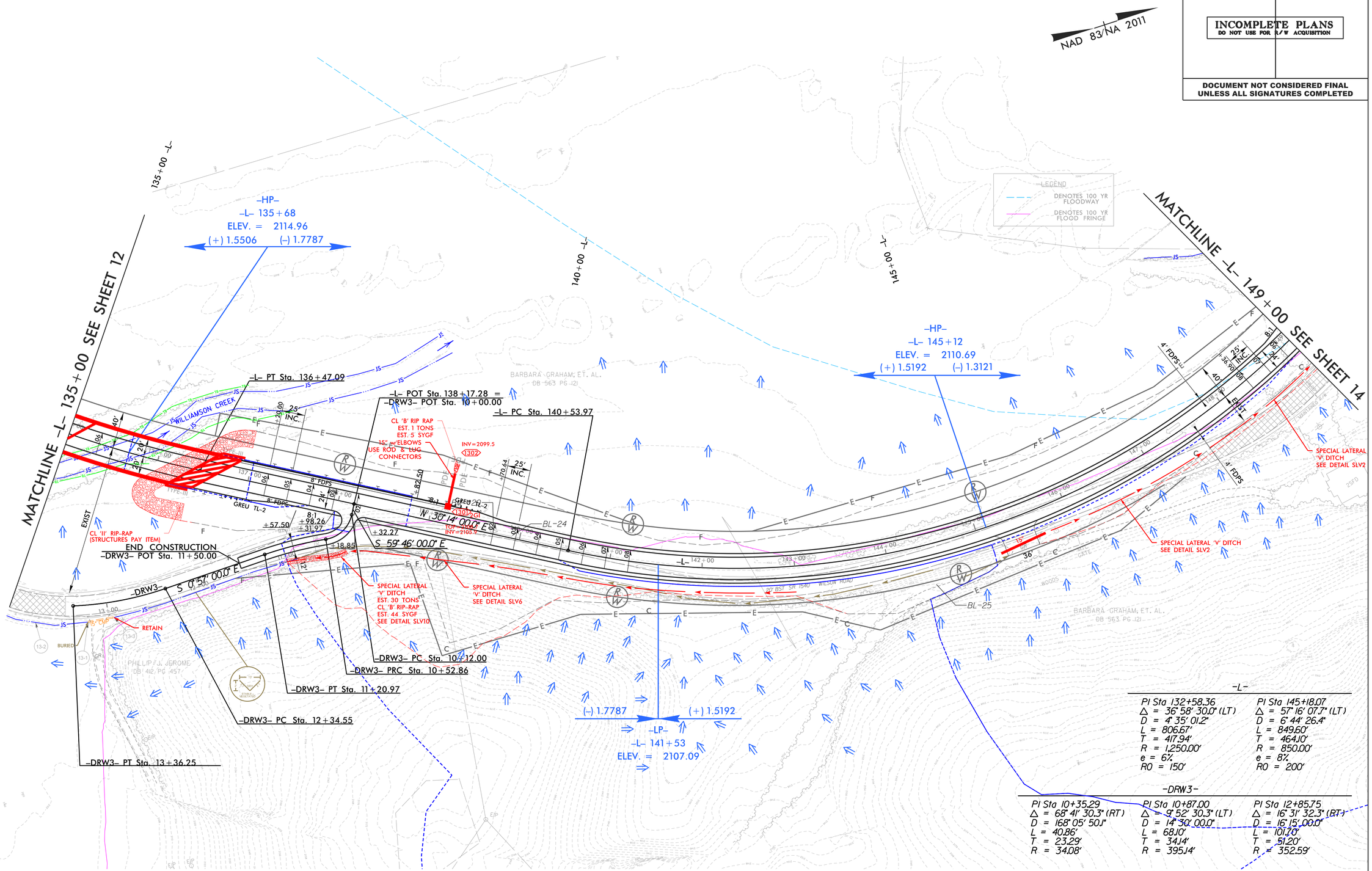
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-5763	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-L-

PI Sta 132+58.36	PI Sta 145+18.07
Δ = 36° 58' 30.0" (LT)	Δ = 57° 16' 07.7" (LT)
D = 4° 35' 01.2"	D = 6° 44' 26.4"
L = 806.67'	L = 849.60'
T = 417.94'	T = 464.10'
R = 1,250.00'	R = 850.00'
e = 6%	e = 8%
RO = 150'	RO = 200'

-DRW3-

PI Sta 10+35.29	PI Sta 10+87.00	PI Sta 12+85.75
Δ = 68° 41' 30.3" (RT)	Δ = 9° 52' 30.3" (LT)	Δ = 16° 31' 32.3" (RT)
D = 168° 05' 50.1"	D = 14° 30' 00.0"	D = 16° 15' 00.0"
L = 40.86'	L = 68.10'	L = 101.70'
T = 23.29'	T = 34.14'	T = 51.20'
R = 34.08'	R = 395.14'	R = 352.59'

NOTE:
1. ALL DRIVEWAYS HAVE 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE, SEE SHEET 22
FOR -DRW3- PROFILE, SEE SHEET 27

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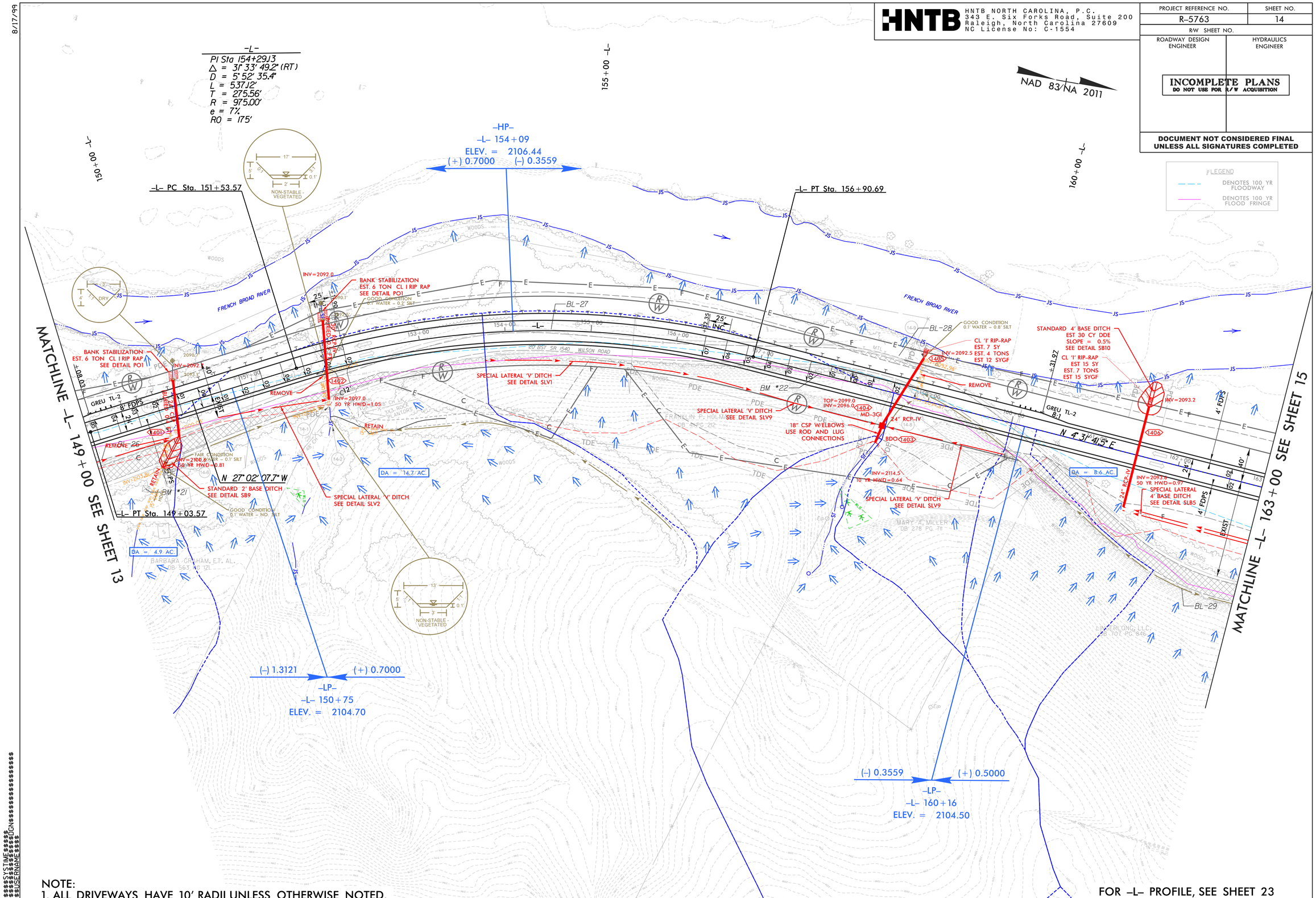
PROJECT REFERENCE NO.	SHEET NO.
R-5763	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NOTE:
1. ALL DRIVEWAYS HAVE 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE, SEE SHEET 23

$$$$SYSTIME$$$$
$$$$USERNAME$$$$ $$$$DGN$$$$

8/17/99

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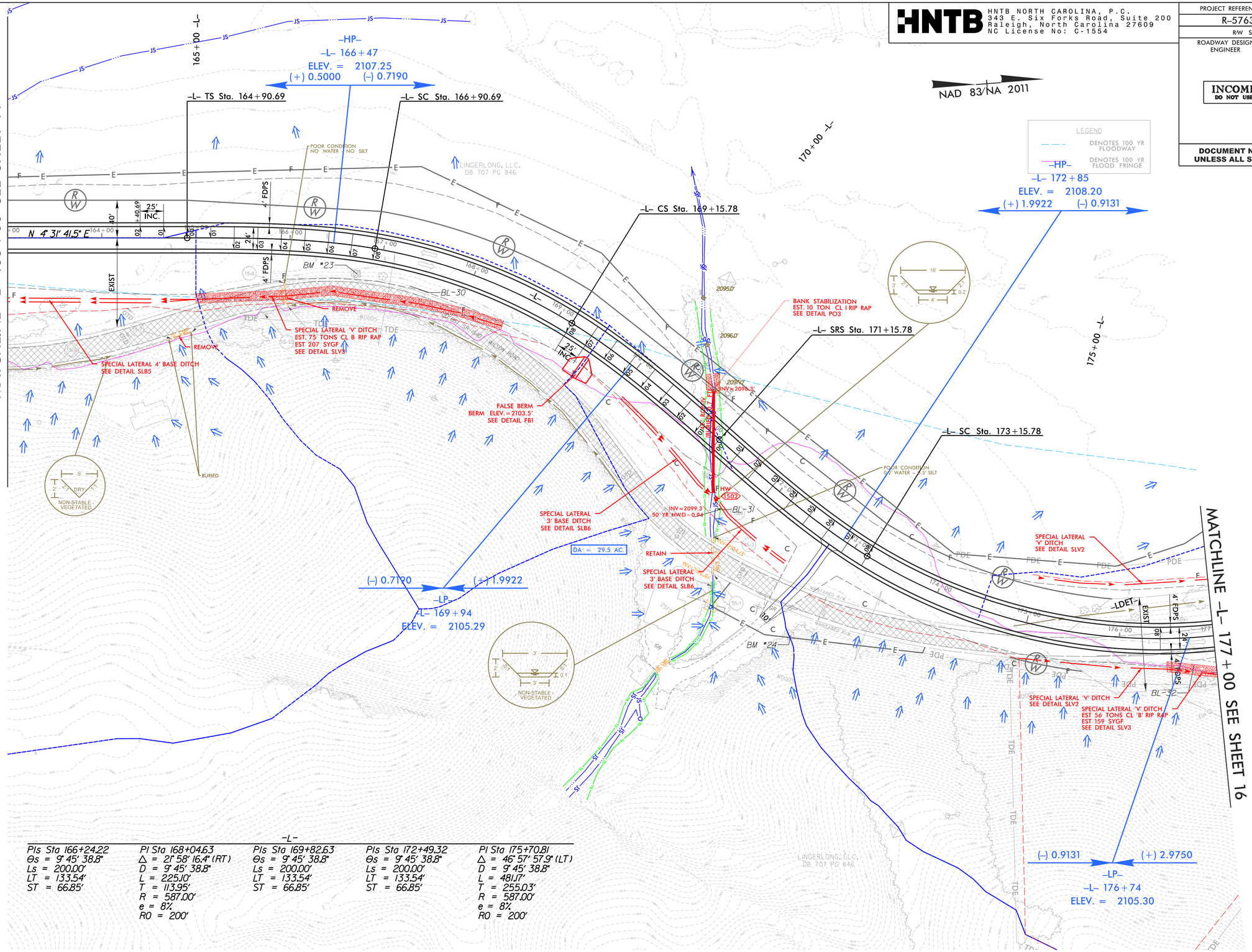
PROJECT REFERENCE NO.	SHEET NO.
R-5763	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NOTE:
1. ALL DRIVEWAYS HAVE 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE, SEE SHEET 23
FOR -LDET- PLAN AND PROFILE SEE SHEETS 2B-5 & 2B-6

$$$$$$SYSTIME$$$$$$DGNV8$$$$$$

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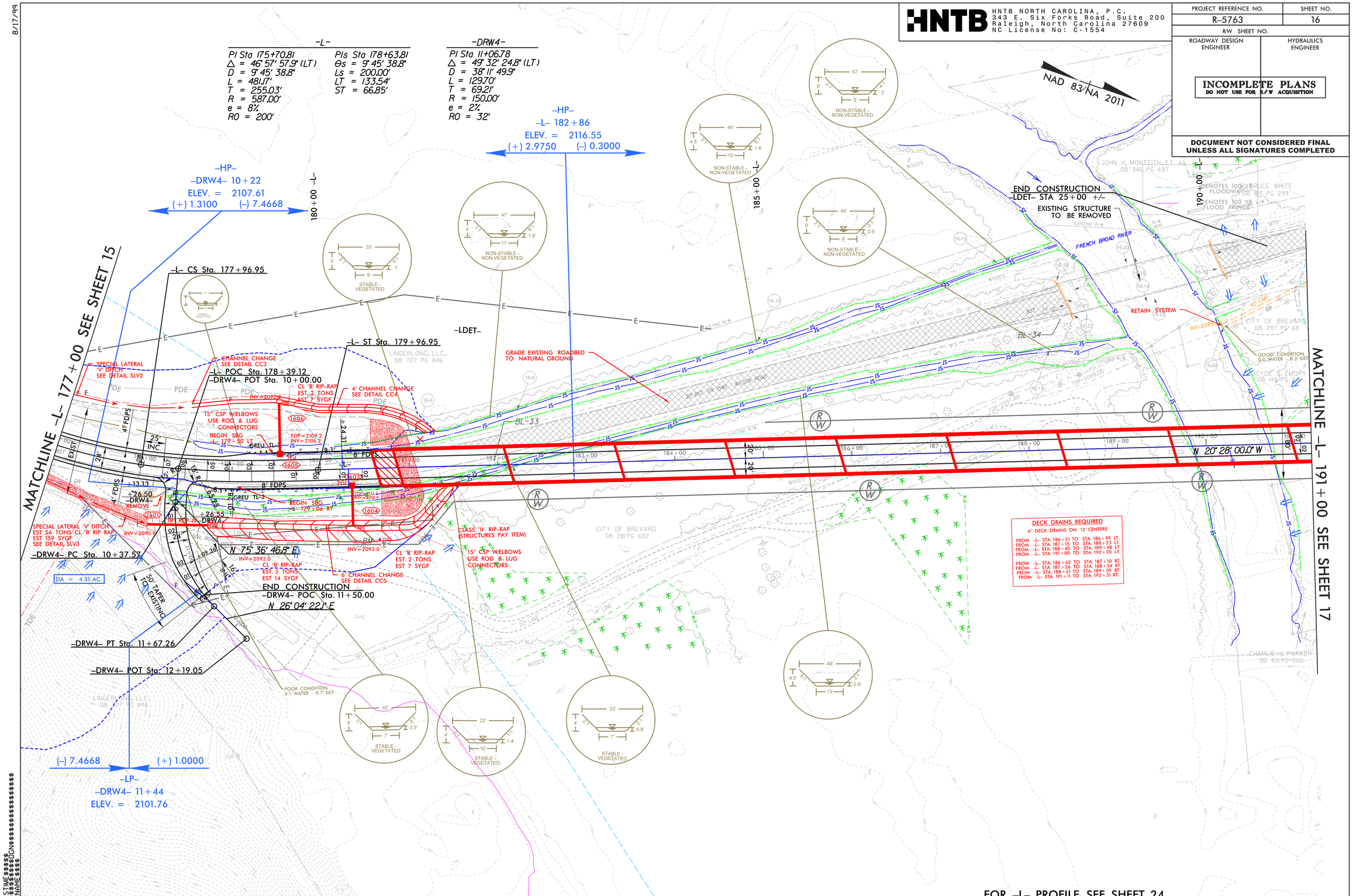
PROJECT REFERENCE NO.	SHEET NO.
R-5763	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NOTE:
1. ALL DRIVEWAYS HAVE 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE, SEE SHEET 24
FOR -DRW4- PROFILE, SEE SHEET 27
FOR -L_DET- PLAN AND PROFILE, SEE SHEETS 2B-5 & 2B-6

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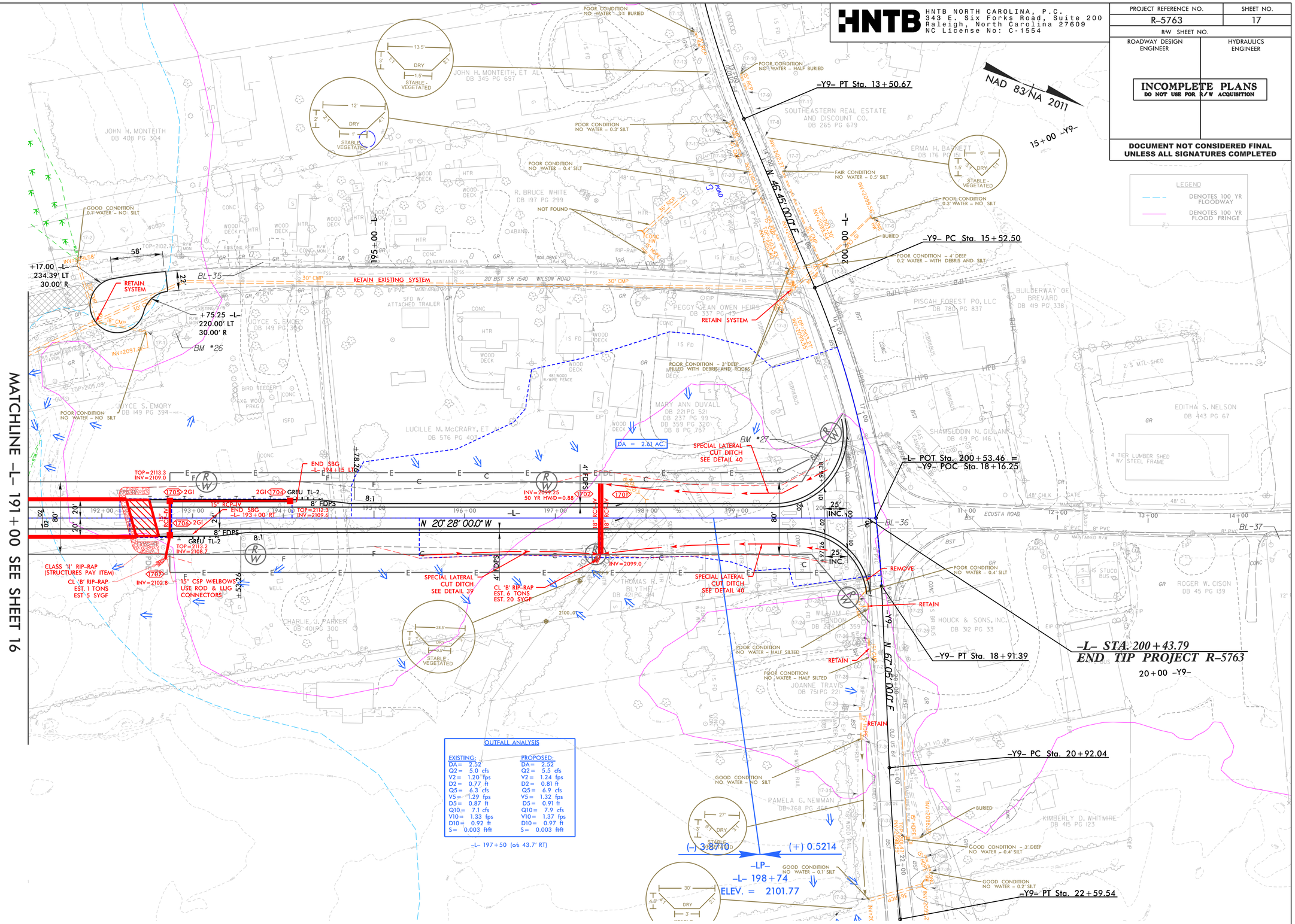
PROJECT REFERENCE NO.	SHEET NO.
R-5763	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NOTE:
1. ALL DRIVEWAYS HAVE 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE, SEE SHEET 24

$$$$$$CKTWE$$$$$$DGN
$$$$$$USERNAME$$$$$$

5/28/99

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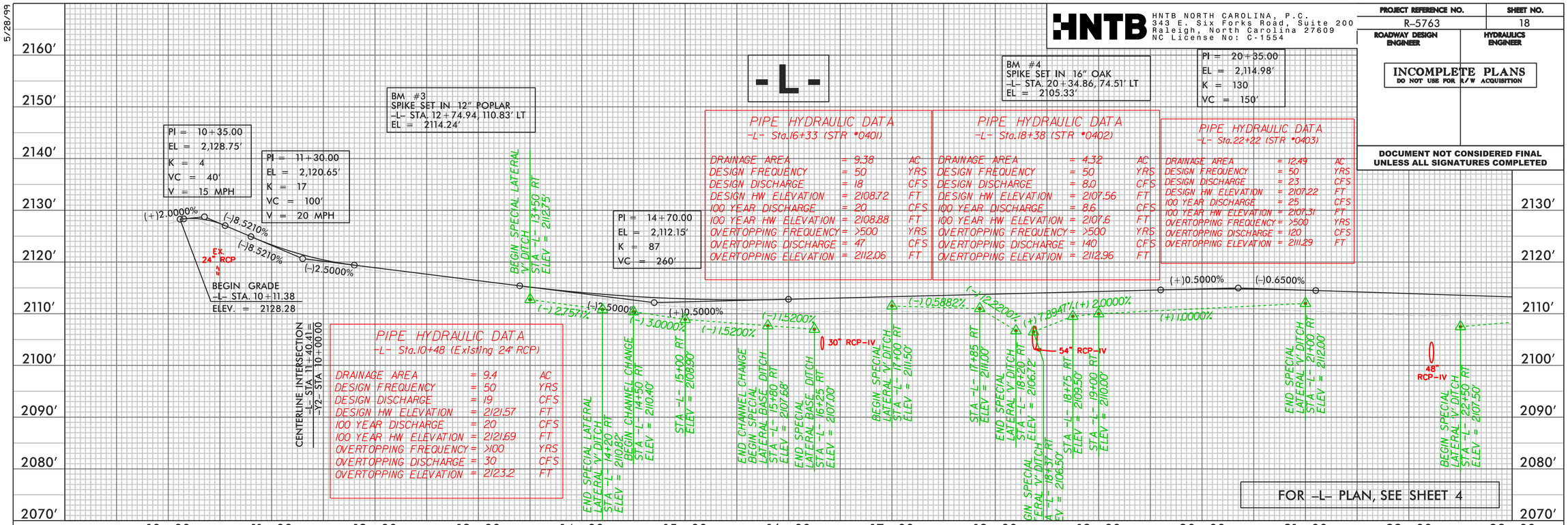
PROJECT REFERENCE NO.	SHEET NO.
R-5763	18

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$

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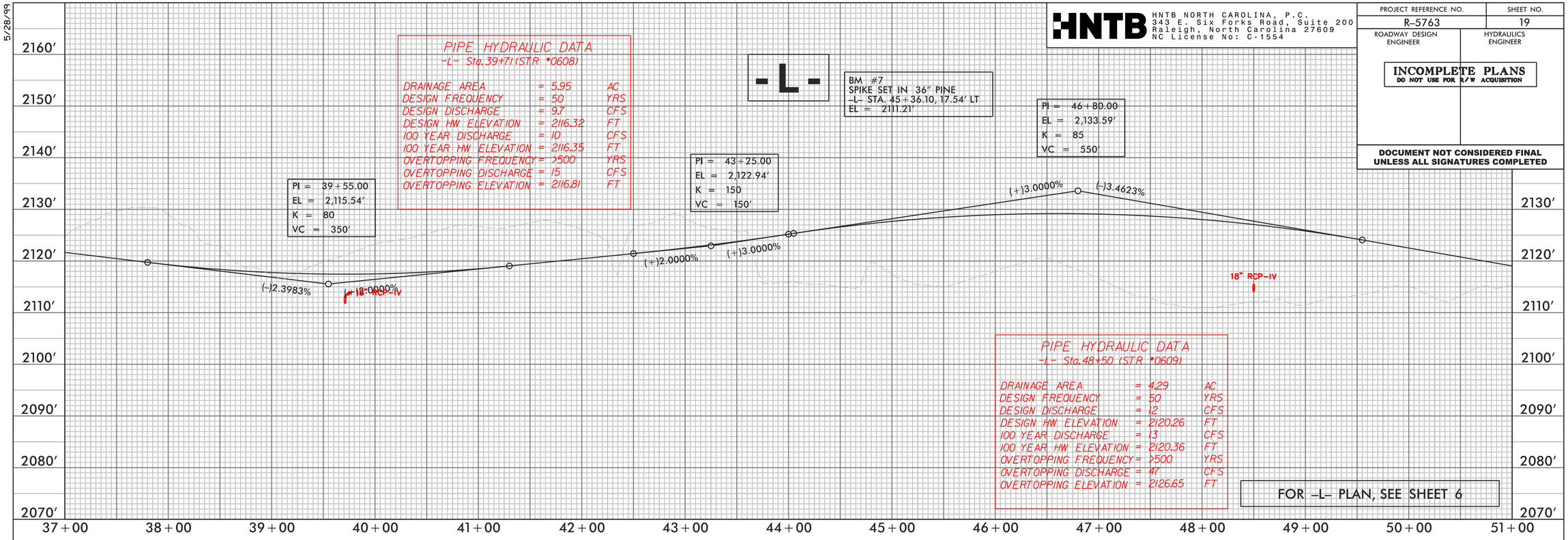
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-5763	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

5/28/99



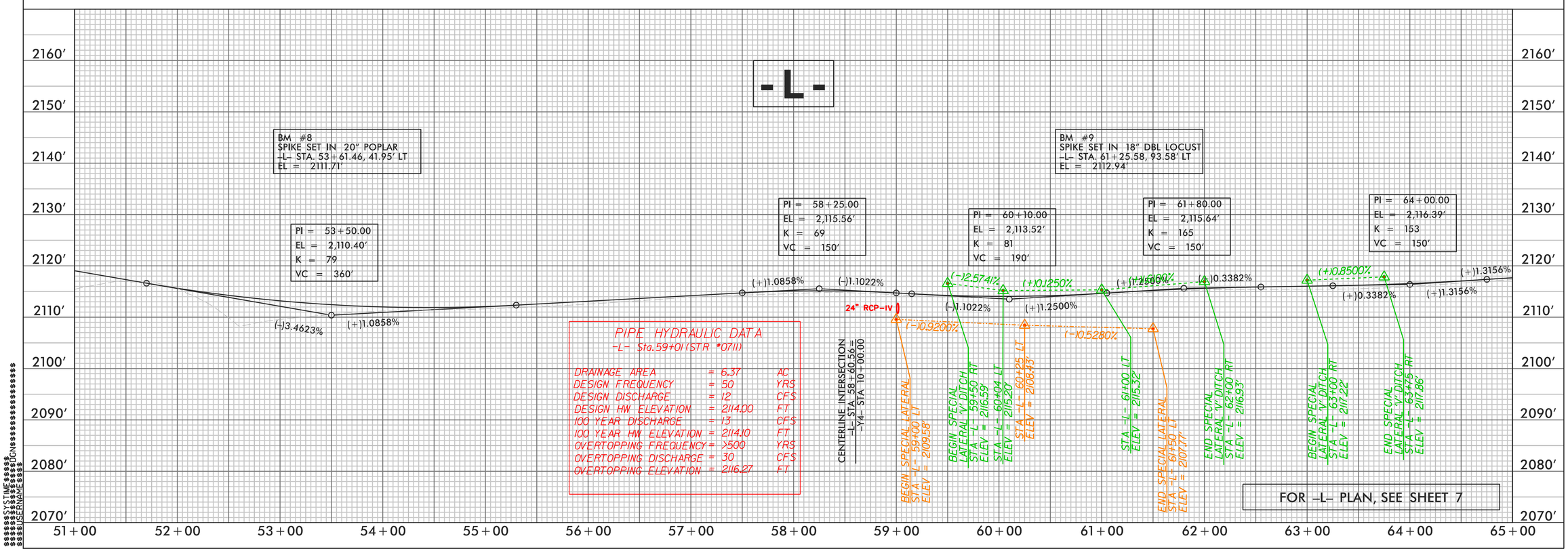
PIPE HYDRAULIC DATA
-L- Sta. 39+71 (STR #0608)

DRAINAGE AREA	= 5.95	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 9.7	CFS
DESIGN HW ELEVATION	= 2116.32	FT
100 YEAR DISCHARGE	= 10	CFS
100 YEAR HW ELEVATION	= 2116.35	FT
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING DISCHARGE	= 15	CFS
OVERTOPPING ELEVATION	= 2116.81	FT

PIPE HYDRAULIC DATA
-L- Sta. 48+50 (STR #0609)

DRAINAGE AREA	= 4.29	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 12	CFS
DESIGN HW ELEVATION	= 2120.26	FT
100 YEAR DISCHARGE	= 13	CFS
100 YEAR HW ELEVATION	= 2120.36	FT
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING DISCHARGE	= 47	CFS
OVERTOPPING ELEVATION	= 2126.65	FT

FOR -L- PLAN, SEE SHEET 6



PIPE HYDRAULIC DATA
-L- Sta. 59+01 (STR #0711)

DRAINAGE AREA	= 6.37	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 12	CFS
DESIGN HW ELEVATION	= 2114.00	FT
100 YEAR DISCHARGE	= 13	CFS
100 YEAR HW ELEVATION	= 2114.10	FT
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING DISCHARGE	= 30	CFS
OVERTOPPING ELEVATION	= 2116.27	FT

FOR -L- PLAN, SEE SHEET 7

$$$$$SYSTIME$$$$$
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PROJECT REFERENCE NO.	SHEET NO.
R-5763	20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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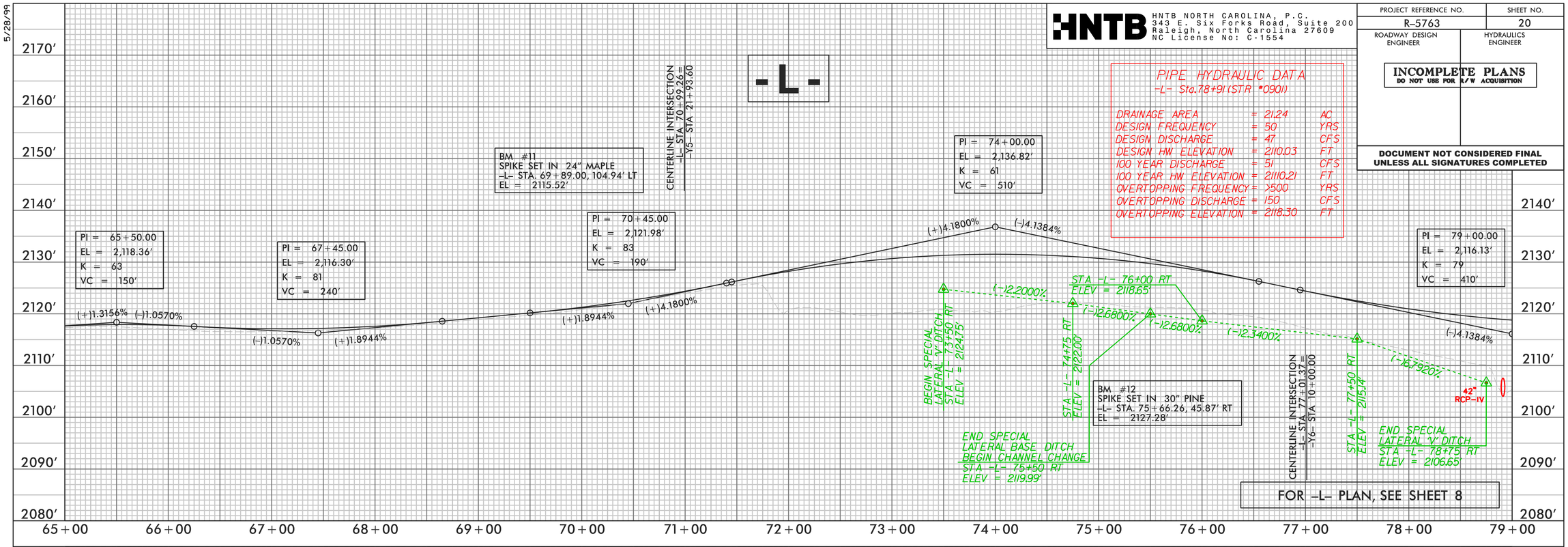
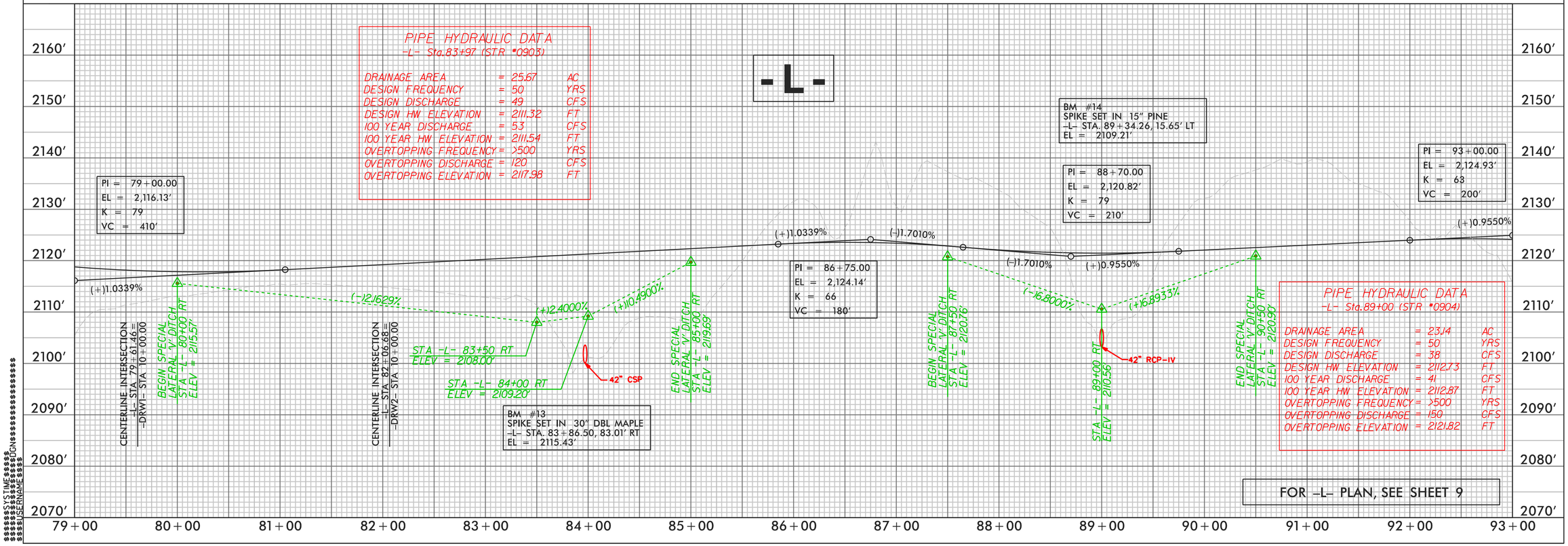


PIPE HYDRAULIC DATA
-L- Sta.78+91 (STR. #0901)

DRAINAGE AREA	= 21.24	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 47	CFS
DESIGN HW ELEVATION	= 2110.03	FT
100 YEAR DISCHARGE	= 51	CFS
100 YEAR HW ELEVATION	= 2110.21	FT
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING DISCHARGE	= 150	CFS
OVERTOPPING ELEVATION	= 2118.30	FT



PIPE HYDRAULIC DATA
-L- Sta.83+97 (STR. #0903)

DRAINAGE AREA	= 25.67	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 49	CFS
DESIGN HW ELEVATION	= 2111.32	FT
100 YEAR DISCHARGE	= 53	CFS
100 YEAR HW ELEVATION	= 2111.54	FT
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING DISCHARGE	= 120	CFS
OVERTOPPING ELEVATION	= 2117.98	FT

PIPE HYDRAULIC DATA
-L- Sta.89+00 (STR. #0904)

DRAINAGE AREA	= 23.14	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 38	CFS
DESIGN HW ELEVATION	= 2112.73	FT
100 YEAR DISCHARGE	= 41	CFS
100 YEAR HW ELEVATION	= 2112.87	FT
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING DISCHARGE	= 150	CFS
OVERTOPPING ELEVATION	= 2121.82	FT

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PROJECT REFERENCE NO.	SHEET NO.
R-5763	21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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-L-

PIPE HYDRAULIC DATA
-L- Sta.94+41 (STR #1004)

DRAINAGE AREA	= 5.44	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 8.0	CFS
DESIGN HW ELEVATION	= 2112.01	FT
100 YEAR DISCHARGE	= 8.7	CFS
100 YEAR HW ELEVATION	= 2112.10	FT
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING DISCHARGE	= 43	CFS
OVERTOPPING ELEVATION	= 2120.40	FT

PIPE HYDRAULIC DATA
-L- Sta.105+35 (STR #1008)

DRAINAGE AREA	= 4.94	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 9.1	CFS
DESIGN HW ELEVATION	= 2100.84	FT
100 YEAR DISCHARGE	= 9.9	CFS
100 YEAR HW ELEVATION	= 2100.93	FT
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING DISCHARGE	= 43	CFS
OVERTOPPING ELEVATION	= 2108.41	FT

PI = 93+00.00
EL = 2,124.93'
K = 63
VC = 200'

PI = 96+25.00
EL = 2,117.78'
K = 90
VC = 230'

BM #15
SPIKE SET IN 18" MAPLE
-L- STA. 97+90.26, 51.98' LT
EL = 2107.60'

PI = 99+95.00
EL = 2,119.13'
K = 75
VC = 150'

(-)2.2000%
(-)2.4560%
(-)2.2000%
(-)2.2000%
(+)0.3650%
(+)3.0000%
(+)0.5720%
(+)0.3650%
(-)1.6430%
(-)2.3295%
(-)2.0314%

24" RCP
24" CSP
24" RCP-IV

BEGIN SPECIAL LATERAL 'V' DITCH STA -L- 94+00 RT ELEV = 2121.09'
END SPECIAL LATERAL 'V' DITCH STA -L- 94+27 RT ELEV = 2110.60'
BEGIN SPECIAL LATERAL 'V' DITCH STA -L- 96+80 RT ELEV = 2117.40'
END SPECIAL LATERAL 'V' DITCH STA -L- 96+00 RT ELEV = 2114.08'
BEGIN SPECIAL LATERAL 'V' DITCH STA -L- 96+50 RT ELEV = 2113.82'
STA -L- 97+00 RT ELEV = 2115.32'
END SPECIAL LATERAL 'V' DITCH STA -L- 99+50 RT ELEV = 2116.75'
BEGIN SPECIAL LATERAL 'V' DITCH STA -L- 100+50 RT ELEV = 2109.25'
STA -L- 104+00 RT ELEV = 2101.33'
END SPECIAL LATERAL BASE DITCH STA -L- 105+00 RT ELEV = 2099.30'

BM #16
SPIKE SET IN 15" OAK
-L- STA. 105+85.13, 113.60' RT
EL = 2104.97'

FOR -L- PLAN, SEE SHEET 10

2160' 2150' 2140' 2130' 2120' 2110' 2100' 2090' 2080' 2070'
93+00 94+00 95+00 96+00 97+00 98+00 99+00 100+00 101+00 102+00 103+00 104+00 105+00 106+00 107+00

-L-

PIPE HYDRAULIC DATA
-L- Sta.108+00 (STR #1101)

DRAINAGE AREA	= 5.09	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 8.3	CFS
DESIGN HW ELEVATION	= 2100.60	FT
100 YEAR DISCHARGE	= 9.0	CFS
100 YEAR HW ELEVATION	= 2100.67	FT
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING DISCHARGE	= 42	CFS
OVERTOPPING ELEVATION	= 2106.10	FT

PIPE HYDRAULIC DATA
-L- Sta.114+00 (STR #1102)

DRAINAGE AREA	= 9.27	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 17	CFS
DESIGN HW ELEVATION	= 2105.34	FT
100 YEAR DISCHARGE	= 19	CFS
100 YEAR HW ELEVATION	= 2105.57	FT
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING DISCHARGE	= 23	CFS
OVERTOPPING ELEVATION	= 2106.10	FT

PI = 108+75.00
EL = 2,104.67'
K = 83
VC = 270'

PI = 111+30.00
EL = 2,108.78'
K = 69
VC = 200'

PI = 113+40.00
EL = 2,106.05'
K = 80
VC = 220'

PI = 115+40.00
EL = 2,108.92'
K = 61
VC = 180'

PI = 118+45.00
EL = 2,104.30'
K = 83
VC = 170'

PI = 121+00.00
EL = 2,105.68'
K = 135
VC = 150'

(-)1.6430%
(+)1.6121%
(+)1.6121%
(-)1.3000%
(-)1.2000%
(-)1.3000%
(+)1.4350%
(+)3.3400%
(+)1.4350%
(-)1.5150%
(-)1.2750%
(-)1.5150%
(+)0.5409%
(+)0.5409%

24" RCP-IV
24" RCP-IV

BEGIN SPECIAL LATERAL BASE DITCH STA -L- 108+00 RT ELEV = 2099.15'
END SPECIAL LATERAL BASE DITCH
BEGIN SPECIAL LATERAL 'V' DITCH STA -L- 111+50 RT ELEV = 2106.10'
STA -L- 114+00 RT ELEV = 2103.10'
END SPECIAL LATERAL 'V' DITCH STA -L- 115+00 RT ELEV = 2106.44'
CENTERLINE INTERSECTION
-L- STA. 115+41.14 =
-Y7- STA. 10+00.00
BEGIN SPECIAL LATERAL 'V' DITCH STA -L- 116+00 RT ELEV = 2105.80'
STA -L- 118+00 RT ELEV = 2103.25'

BM #17
SPIKE SET IN 38" OAK
-L- STA. 117+44.49, 34.19' RT
EL = 2109.83'

FOR -L- PLAN, SEE SHEET 11

2150' 2140' 2130' 2120' 2110' 2100' 2090' 2080' 2070' 2060'
107+00 108+00 109+00 110+00 111+00 112+00 113+00 114+00 115+00 116+00 117+00 118+00 119+00 120+00 121+00

$$$$$$$$SYSTIME$$$$$$$$
$$$$$$$$CUVS$$$$$$$$$$$$$$$$
$$$$$$$$USERNAME$$$$

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PROJECT REFERENCE NO.	SHEET NO.
R-5763	22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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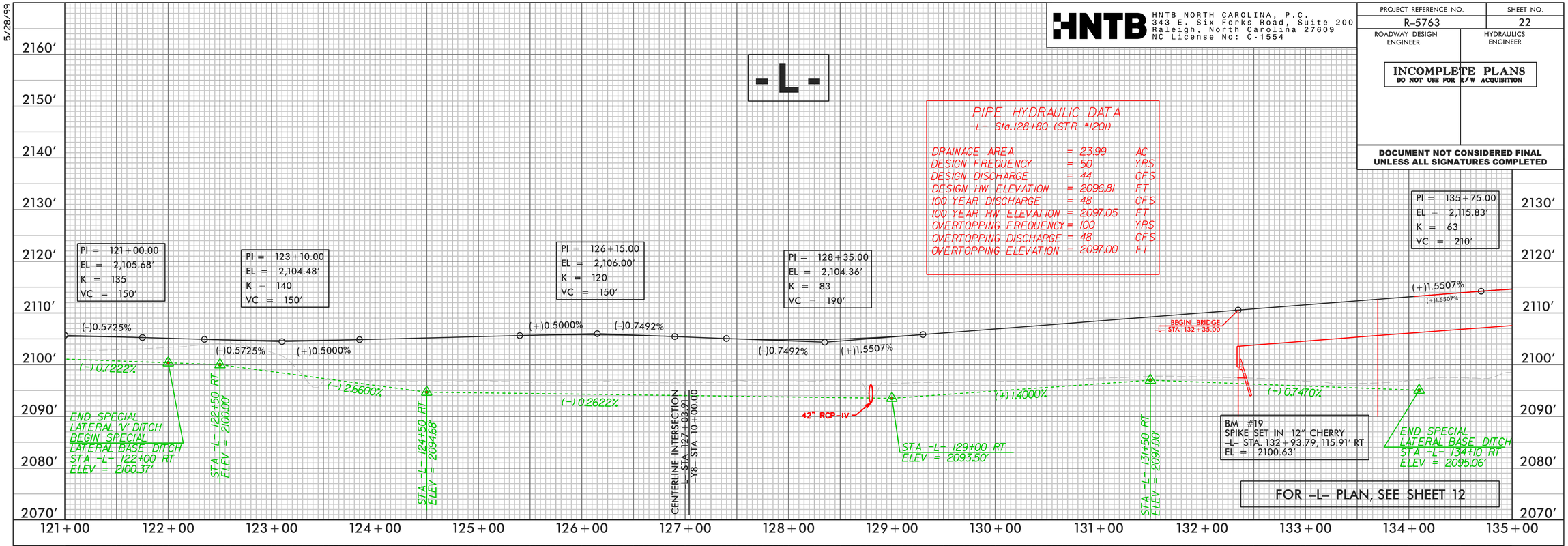

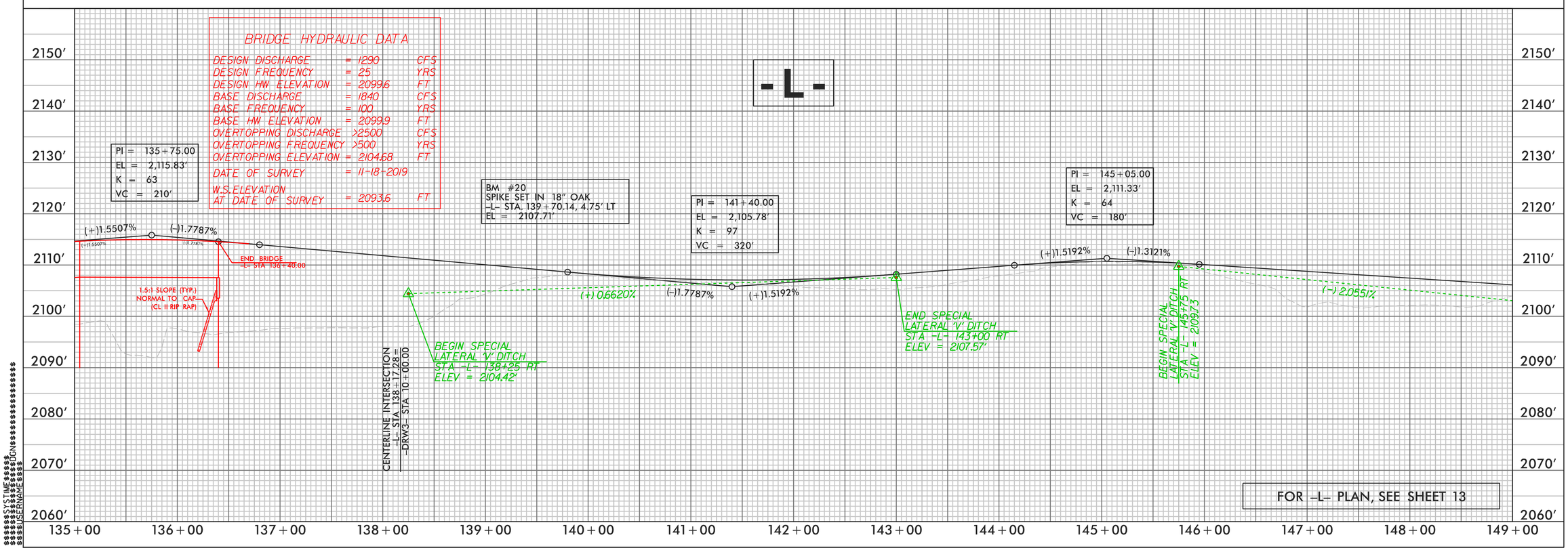

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PROJECT REFERENCE NO.	SHEET NO.
R-5763	23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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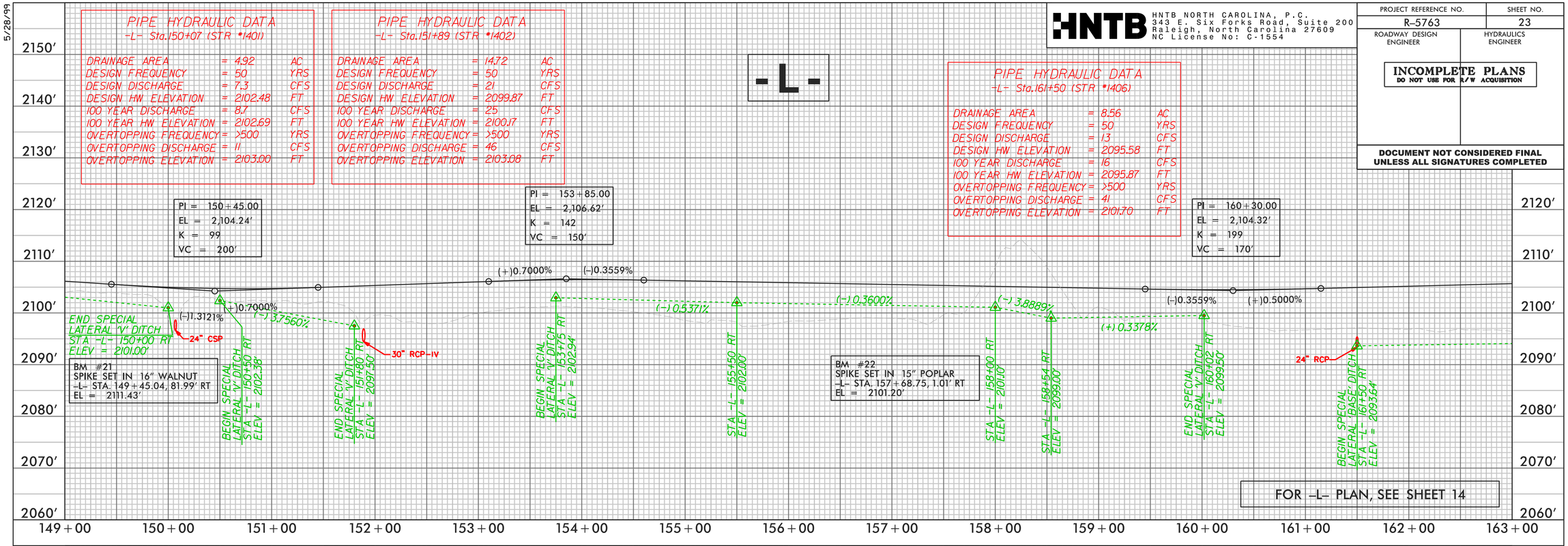

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PROJECT REFERENCE NO.	SHEET NO.
R-5763	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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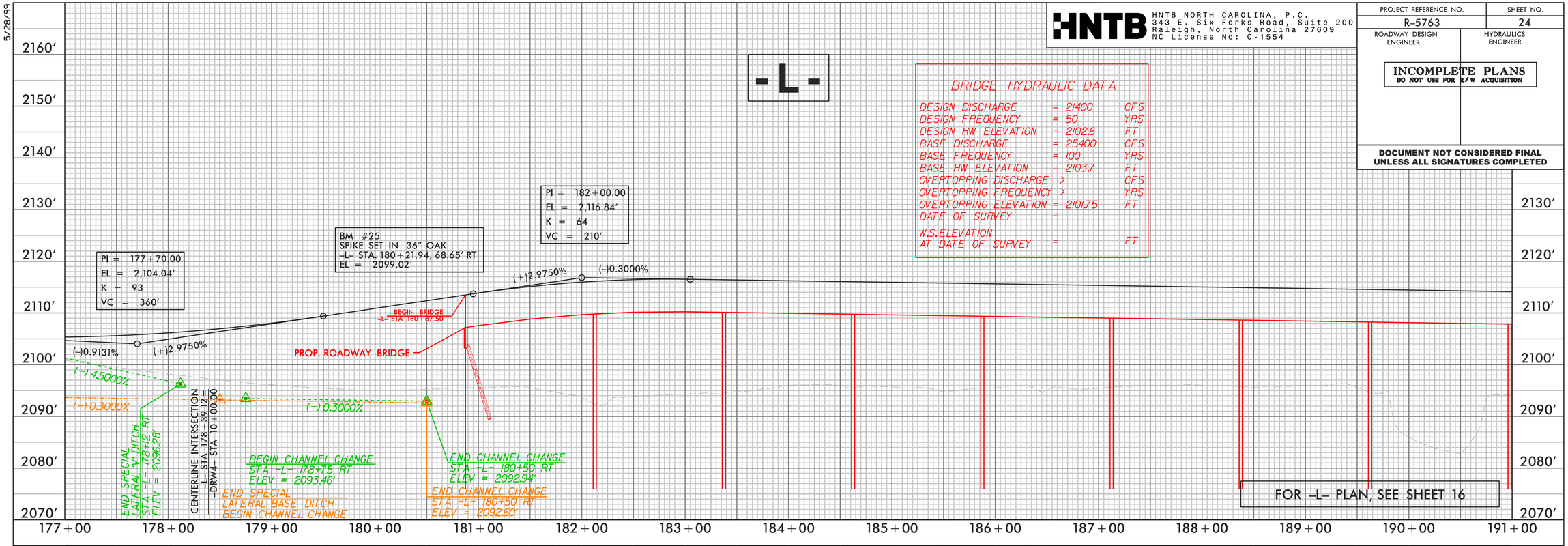

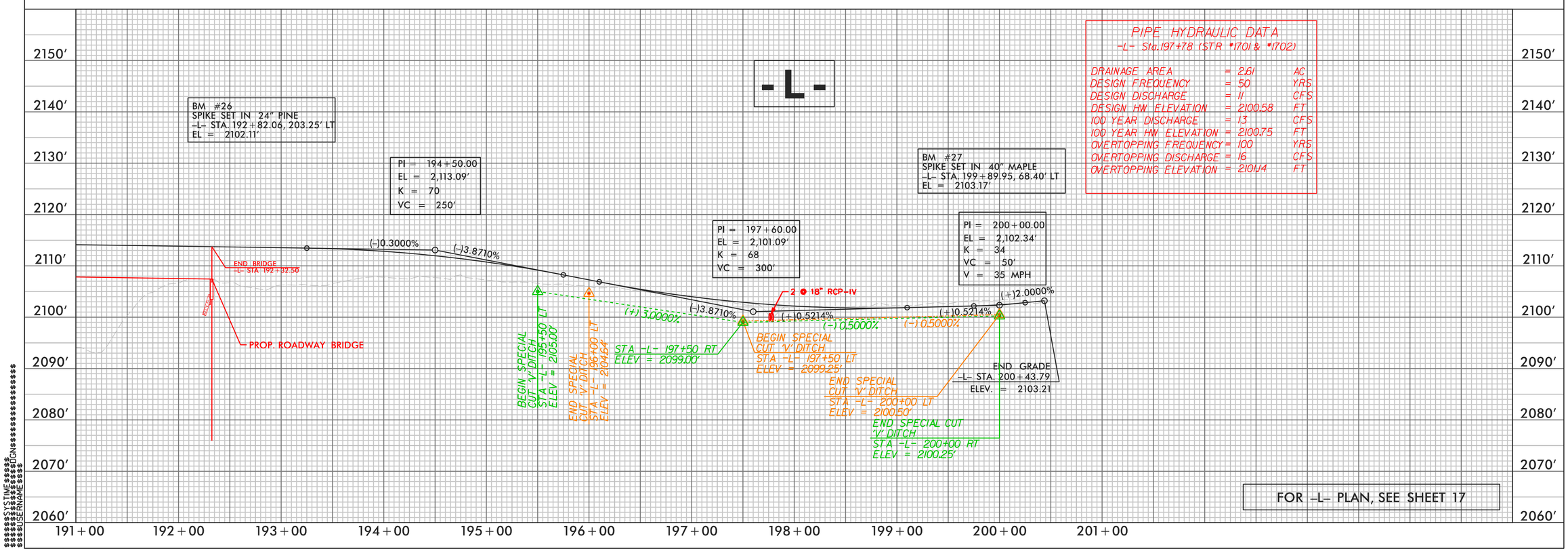

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PROJECT REFERENCE NO.	SHEET NO.
R-5763	25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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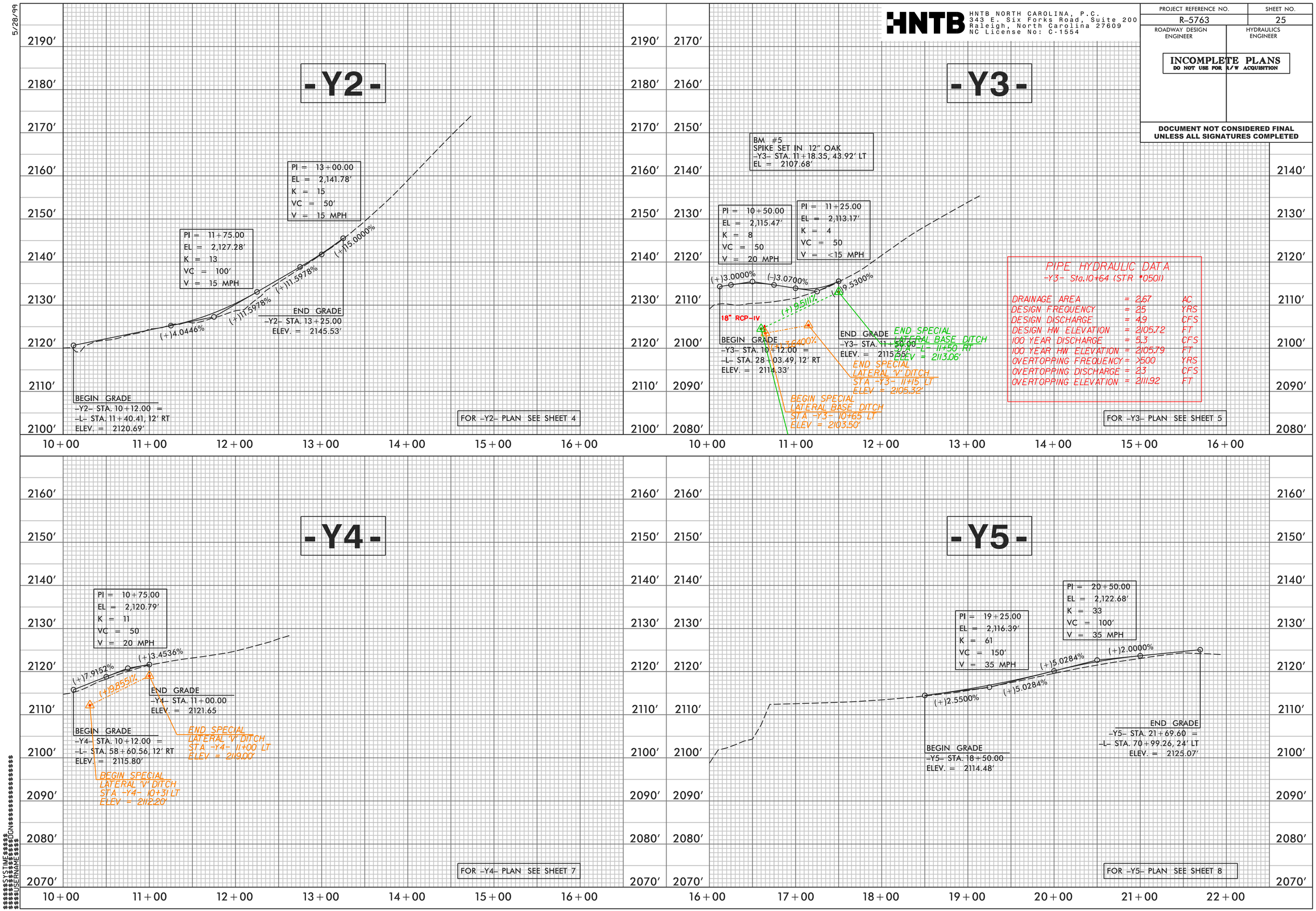

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PROJECT REFERENCE NO.	SHEET NO.
R-5763	26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y6-

PI = 11+25.00
EL = 2,129.93'
K = 20
VC = 150'
V = 20 MPH

(+)5.0446%
(+)12.1000%
(+)16.2618%

END GRADE
-Y6- STA. 12+00.00
ELEV. = 2139.45'

30" RCP-IV

BEGIN GRADE
-Y6- STA. 10+24.00 =
-L- STA. 77+01.37, 24' RT
ELEV. = 2124.83'

END SPECIAL LATERAL 'V' DITCH
STA -Y6- 12+00 LT
ELEV = 2137.57'

BEGIN SPECIAL LATERAL 'V' DITCH
STA -Y4- 10+53 LT
ELEV = 2113.48'

PIPE HYDRAULIC DATA
-Y6- Sta.10+65 (STR #0811)

DRAINAGE AREA	= 9.92	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 22.0	CFS
DESIGN HW ELEVATION	= 2119.80	FT
100 YEAR DISCHARGE	= 24	CFS
100 YEAR HW ELEVATION	= 2119.93	FT
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING DISCHARGE	= 59.0	CFS
OVERTOPPING ELEVATION	= 2126.13	FT

FOR -Y6- PLAN SEE SHEET 8

-Y7-

PI = 10+40.00
EL = 2,110.45'
K = 8
VC = 50'
V = <15 MPH

(+)7.0000%
(+)0.2400%
(+)13.5934%

END GRADE
-Y7- STA. 10+75.00
ELEV. = 2115.21'

BEGIN GRADE
-Y7- STA. 10+12.11 =
-L- STA. 115+41.14, 12.11' RT
ELEV. = 2108.50'

BEGIN SPECIAL LATERAL 'V' DITCH
STA -Y7- 10+41.50 LT
ELEV = 2105.80'

END SPECIAL LATERAL 'V' DITCH
STA -Y7- 10+75 LT
ELEV = 2112.65'

FOR -Y7- PLAN SEE SHEET 11

-Y8-

PIPE HYDRAULIC DATA
-Y8- Sta.10+66 (STR #1202)

DRAINAGE AREA	= 8.08	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 14	CFS
DESIGN HW ELEVATION	= 2096.31	FT
100 YEAR DISCHARGE	= 16	CFS
100 YEAR HW ELEVATION	= 2096.61	FT
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING DISCHARGE	= 25	CFS
OVERTOPPING ELEVATION	= 2098.50	FT

PI = 11+50.00
EL = 2,100.38'
K = 34
VC = 250'
V = 25 MPH

(-)3.4674%
(+)3.8200%

24" RCP-IV
24" RCP-IV

END GRADE
-Y8- STA. 12+75.00
ELEV. = 2105.15'

BEGIN GRADE
-Y8- STA. 10+12.00 =
-L- STA. 127+03.91, 12' RT
ELEV. = 2105.16'

BM #18
SPIKE SET IN 12" PINE
-Y8- STA. 13+05.29, 21.52' RT
EL = 2107.32'

CENTERLINE INTERSECTION
-Y8- STA 11+68.79 =
-Y8A- STA 10+00.00

PIPE HYDRAULIC DATA
-Y8- Sta.11+44 (STR #1205)

DRAINAGE AREA	= 4.15	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 11	CFS
DESIGN HW ELEVATION	= 2096.24	FT
100 YEAR DISCHARGE	= 13	CFS
100 YEAR HW ELEVATION	= 2096.57	FT
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING DISCHARGE	= 21	CFS
OVERTOPPING ELEVATION	= 2098.50	FT

FOR -Y8- PLAN SEE SHEET 12

-Y8A-

PIPE HYDRAULIC DATA
-Y8A- Sta.10+53 (STR #1203)

DRAINAGE AREA	= 3.84	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 10	CFS
DESIGN HW ELEVATION	= 2100.71	FT
100 YEAR DISCHARGE	= 12	CFS
100 YEAR HW ELEVATION	= 2100.96	FT
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING DISCHARGE	= 19	CFS
OVERTOPPING ELEVATION	= 2101.90	FT

PI = 10+50.00
EL = 2,101.56'
K = 16
VC = 50'
V = 15 MPH

PI = 11+50.00
EL = 2,102.27'
K = 51
VC = 50'
V = 35 MPH

PI = 12+75.00
EL = 2,104.39'
K = 36
VC = 50'
V = 35 MPH

(-)2.4842%
(+)0.7148%
(+)1.6961%
(+)0.1250%
(+)1.6961%
(+)0.3000%
(+)0.1500%

24" CSP

BEGIN GRADE
-Y8A- STA. 10+10.35 =
-Y8- STA. 11+68.79, 10.35' RT
ELEV. = 2102.54'

END GRADE
-Y8A- STA. 13+25.00
ELEV. = 2104.54'

BEGIN SPECIAL LATERAL 'V' DITCH
STA -Y8A- 10+50 LT
ELEV = 2099.00'

END SPECIAL LATERAL 'V' DITCH
STA -L- 12+25 RT
ELEV = 2094.98'

BEGIN SPECIAL LATERAL 'V' DITCH
STA -L- 10+75 RT
ELEV = 2094.75'

END SPECIAL LATERAL 'V' DITCH
STA -Y8A- 13+00 LT
ELEV = 2102.30'

FOR -Y8A- PLAN SEE SHEET 12

10+00 11+00 12+00 13+00 14+00 15+00 16+00

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$$$$DGN$$$$
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PROJECT REFERENCE NO.	SHEET NO.
R-5763	27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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-DRW1-

PI = 10+40.00
EL = 2,120.26'
K = 6
VC = 50'
V = <15 MPH

PI = 11+25.00
EL = 2,132.99'
K = 2
VC = 50'
V = <15 MPH

(+)7.0000%
(+)14.9796%
(-)6.9400%

BEGIN GRADE
-DRW1- STA. 10+12.00 =
-L- STA. 79+61.46, 12' RT
ELEV. = 2118.30'

END GRADE
-DRW1- STA. 11+50.00
ELEV. = 2131.25'

FOR -DRW1- PLAN SEE SHEET 9

-DRW2-

PI = 10+50.00
EL = 2,118.40'
K = 12
VC = 50'
V = 15 MPH

PI = 11+00.00
EL = 2,119.04'
K = 9
VC = 30'
V = 20 MPH

(+)1.2770%
(-)3.0000%
(-)2.1900%

-18" RCP-IV

BEGIN GRADE
-DRW2- STA. 10+12.00 =
-L- STA. 82+06.68, 12' RT
ELEV. = 2119.54'

END GRADE
-DRW2- STA. 11+15.00
ELEV. = 2118.71'

PIPE HYDRAULIC DATA
-DRW2- Sta.10+55 (STR #0902)

DRAINAGE AREA	=	0.57	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	0.93	CFS
DESIGN HW ELEVATION	=	2112.04	FT
100 YEAR DISCHARGE	=	1.0	CFS
100 YEAR HW ELEVATION	=	2112.06	FT
OVERTOPPING FREQUENCY	=	>500	YRS
OVERTOPPING DISCHARGE	=	29.0	CFS
OVERTOPPING ELEVATION	=	2120.90	FT

FOR -DRW2- PLAN SEE SHEET 9

-DRW3-

PI = 10+40.00
EL = 2,110.99'
K = 8
VC = 50'
V = 20 MPH

PI = 11+25.00
EL = 2,103.02'
K = 7
VC = 50'
V = <15 MPH

(-)2.8000%
(-)9.3718%
(-)4.3247%
(-)2.0000%

BEGIN GRADE
-DRW3- STA. 10+12.00 =
-L- STA. 138+17.28, 12' RT
ELEV. = 2111.77'

END GRADE
-DRW3- STA. 11+50.00
ELEV. = 2102.52'

BEGIN SPECIAL LATERAL 'V' DITCH
STA -DRW03- 10+35 LT
ELEV = 2104.42'

END SPECIAL LATERAL 'V' DITCH
STA -DRW03- 11+00 LT
ELEV = 2101.66'

FOR -DRW3- PLAN SEE SHEET 13

-DRW4-

PI = 10+40.00
EL = 2,107.89'
K = 6
VC = 50'
V = 15 MPH

PI = 11+25.00
EL = 2,101.54'
K = 6
VC = 50'
V = <15 MPH

(+)1.3100%
(-)7.4668%
(+)1.0000%

18" RCP-IV

BEGIN GRADE
-DRW4- STA. 10+12.00 =
-L- STA. 178+39.12, 12' RT
ELEV. = 2107.52'

END GRADE
-DRW4- STA. 11+50.00
ELEV. = 2101.79'

PIPE HYDRAULIC DATA
-DRW4- Sta.11+44 (STR #1601)

DRAINAGE AREA	=	4.51	AC
DESIGN FREQUENCY	=	25	YRS
DESIGN DISCHARGE	=	8.3	CFS
DESIGN HW ELEVATION	=	2097.62	FT
100 YEAR DISCHARGE	=	9.0	CFS
100 YEAR HW ELEVATION	=	2097.75	FT
OVERTOPPING FREQUENCY	=	>500	YRS
OVERTOPPING DISCHARGE	=	22	CFS
OVERTOPPING ELEVATION	=	2101.74	FT

FOR -DRW4- PLAN SEE SHEET 16

$$$$$$$$SYSTIME$$$$
$$$$$$$$USERNAME$$$$ $$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$