

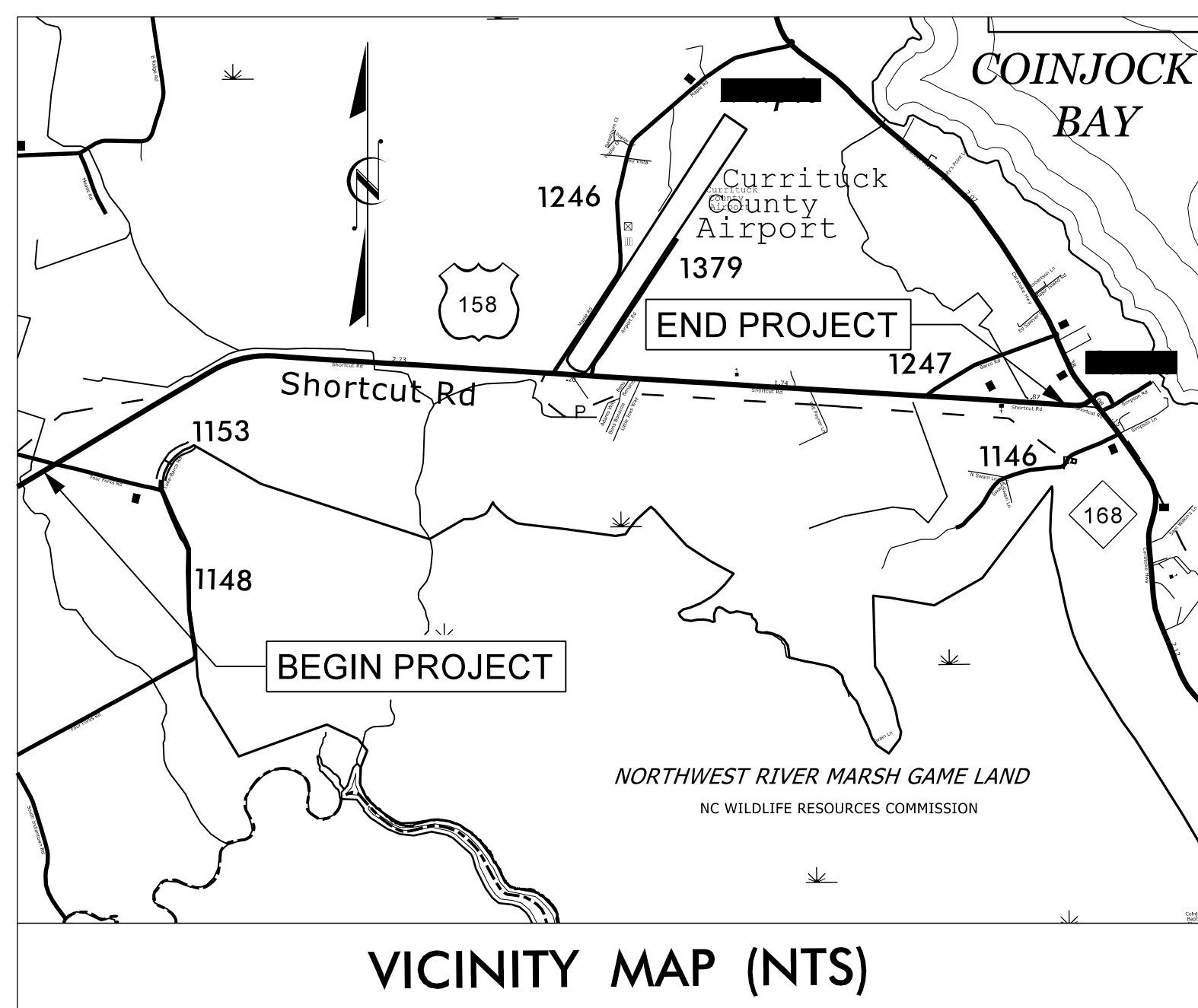
09/08/19

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Plan Sheet Symbols
See Sheet 1C-1 For Survey Control Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2574B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
38802.1.3		PE	

TIP PROJECT: R-2574B



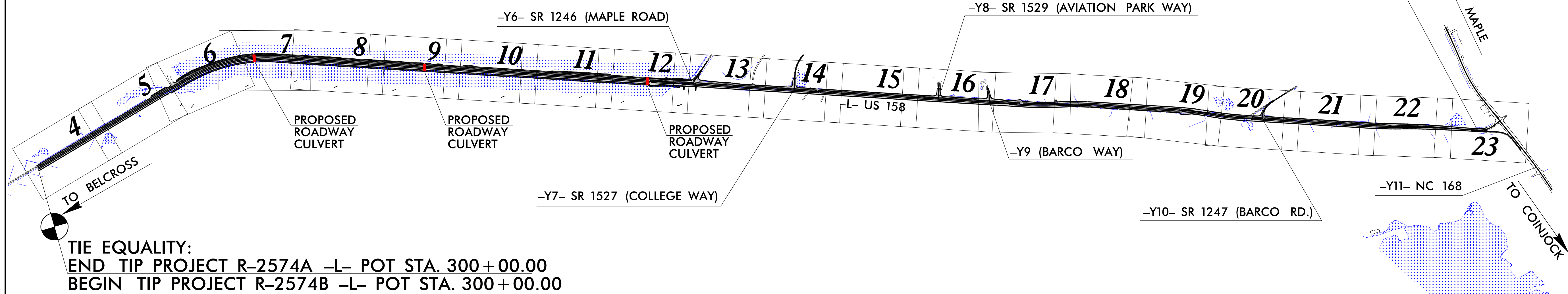
25% APPROVED SUBMITTAL

CURRITUCK COUNTY

LOCATION: US 158 EAST OF SR 1200 (SANDERLIN ROAD)
TO NC 168 (CARATOKE HIGHWAY)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, CULVERTS

END TIP PROJECT R-2574B
-L- POT STA. 571+35.00



TIE EQUALITY:
END TIP PROJECT R-2574A -L- POT STA. 300+00.00
BEGIN TIP PROJECT R-2574B -L- POT STA. 300+00.00

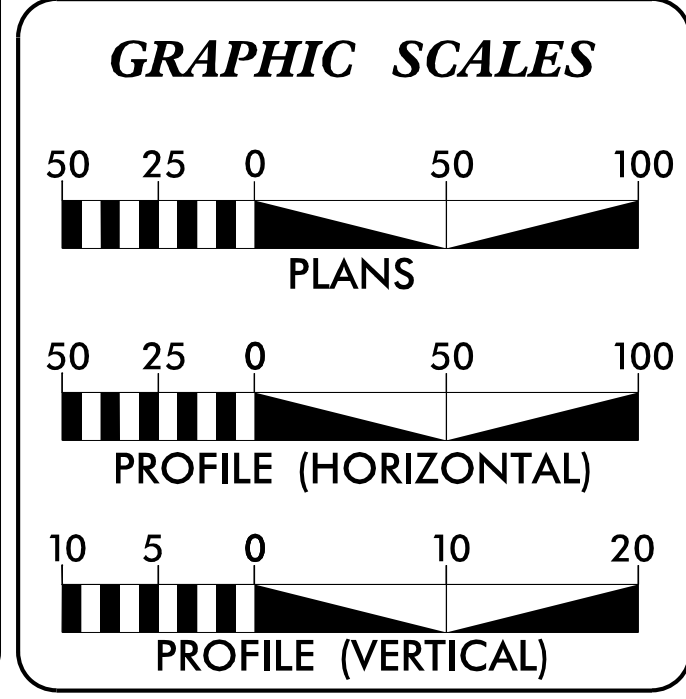
**4B INTERAGENCY
CONCURRENCE POINT SET**

AUGUST 22, 2019

- THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
- CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
- THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTRACT:



DESIGN DATA

ADT 2024 =	9,200
ADT 2044 =	13,600
K =	9 %
D =	55 %
T =	7 % *
V =	60 MPH
* TTST =	2% DUAL 5%
FUNC CLASS =	
RURAL MINOR STATEWIDE	ARTERIAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2574B =	5.139 MILES
TOTAL LENGTH OF TIP PROJECT R-2574B =	5.139 MILES

NCDOT POINT OF CONTACT:

GARY LOVERING, PE
PROJECT ENGINEER

JMT Prepared in the Office of:
JOHNSON, MIRMIRAN, & THOMPSON, INC.
1130 Situs Court, Suite 200, Raleigh NC, 27606

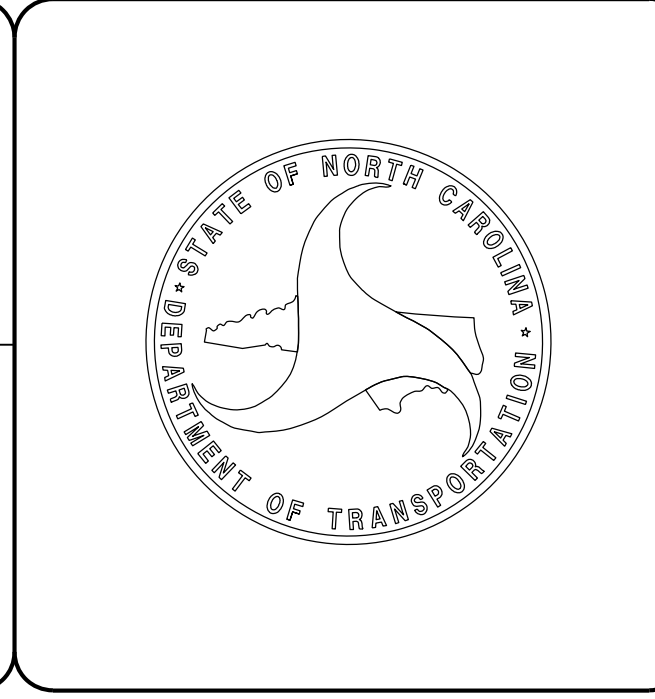
2018 STANDARD SPECIFICATIONS	
PRODUCTION RIGHT OF WAY DATE: NOVEMBER 15, 2019	ENRICO A. ROQUE, PE PROJECT ENGINEER
PRODUCTION LETTING DATE: JULY 16, 2024	CHARLES R. BARBOUR, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



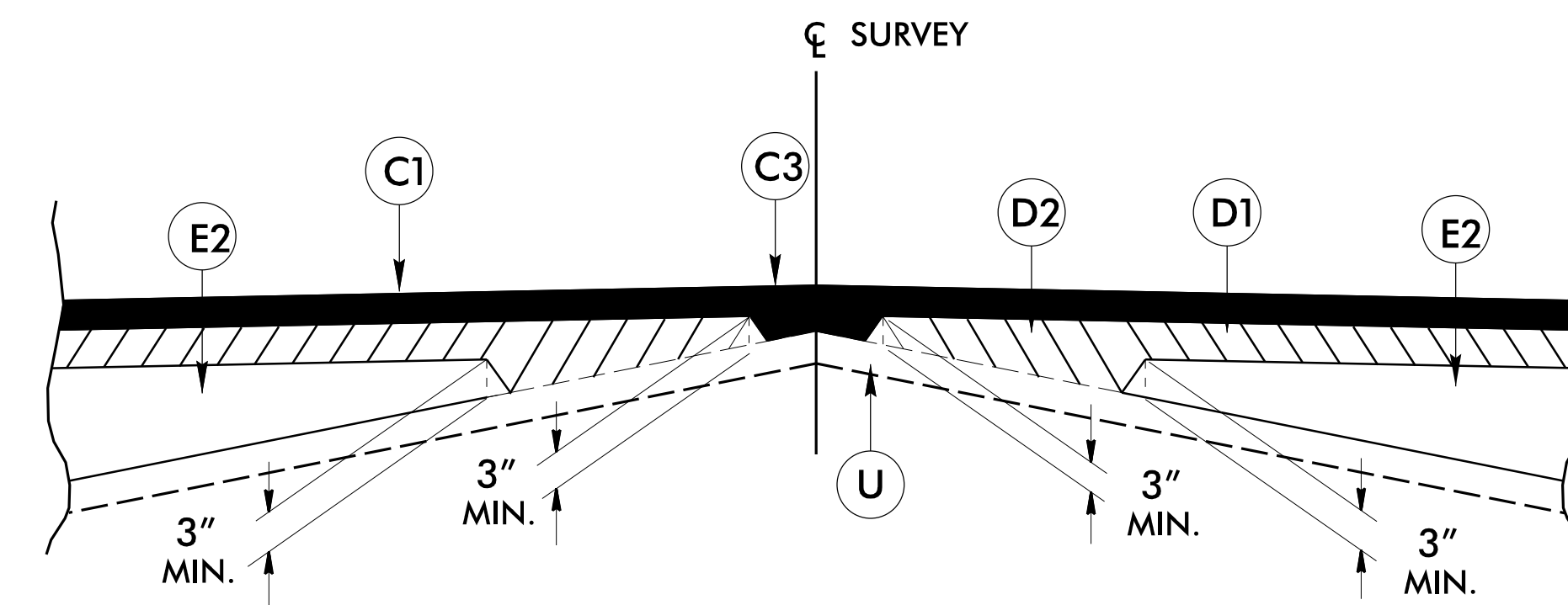
06-AUG-2019 20:07 R:\Hydraulic\CADD\R2574B_hyd_4B.tsh.dgn \$\$\$USERNAME\$\$\$

PROJECT REFERENCE NO. R-2574B	SHEET NO. 2A-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

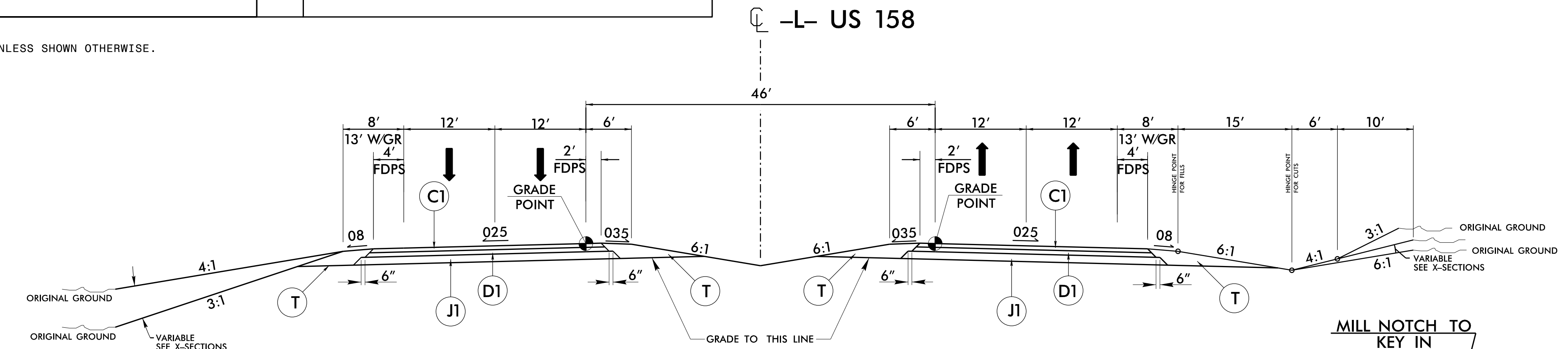
PRELIMINARY PAVEMENT SCHEDULE

C1	PROP. APPROX. ___" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF ___ LBS. PER SQ. YD.	R1	1'-6" CONCRETE CURB AND GUTTER.
C2	PROP. APPROX. ___" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF ___ LBS. PER SQ. YD. PLACED IN TWO LAYERS.	R2	2'-6" CONCRETE CURB AND GUTTER.
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 1/2" IN DEPTH OR GREATER THAN 2" IN DEPTH.	R3	5" MONOLITHIC CONCRETE ISLAND.
D1	PROP. APPROX. ___" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF ___ LBS. PER SQ. YD.	T	EARTH MATERIAL.
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 1/2" IN DEPTH OR GREATER THAN 4" IN DEPTH.	U	EXISTING PAVEMENT.
E1	PROP. APPROX. ___" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF ___ LBS. PER SQ. YD.	V	MILLING VAR. 0 TO ___"
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" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.	W	VARIABLE DEPTH ASPHALT PAVEMENT. (SEE DETAIL SHOWING METHOD OF WEDGING No. 1. SEE SHEET 2A-1)
J1	PROP. ___" AGGREGATE BASE COURSE		
J2	PROP. VAR. DEPTH AGGREGATE BASE COURSE		



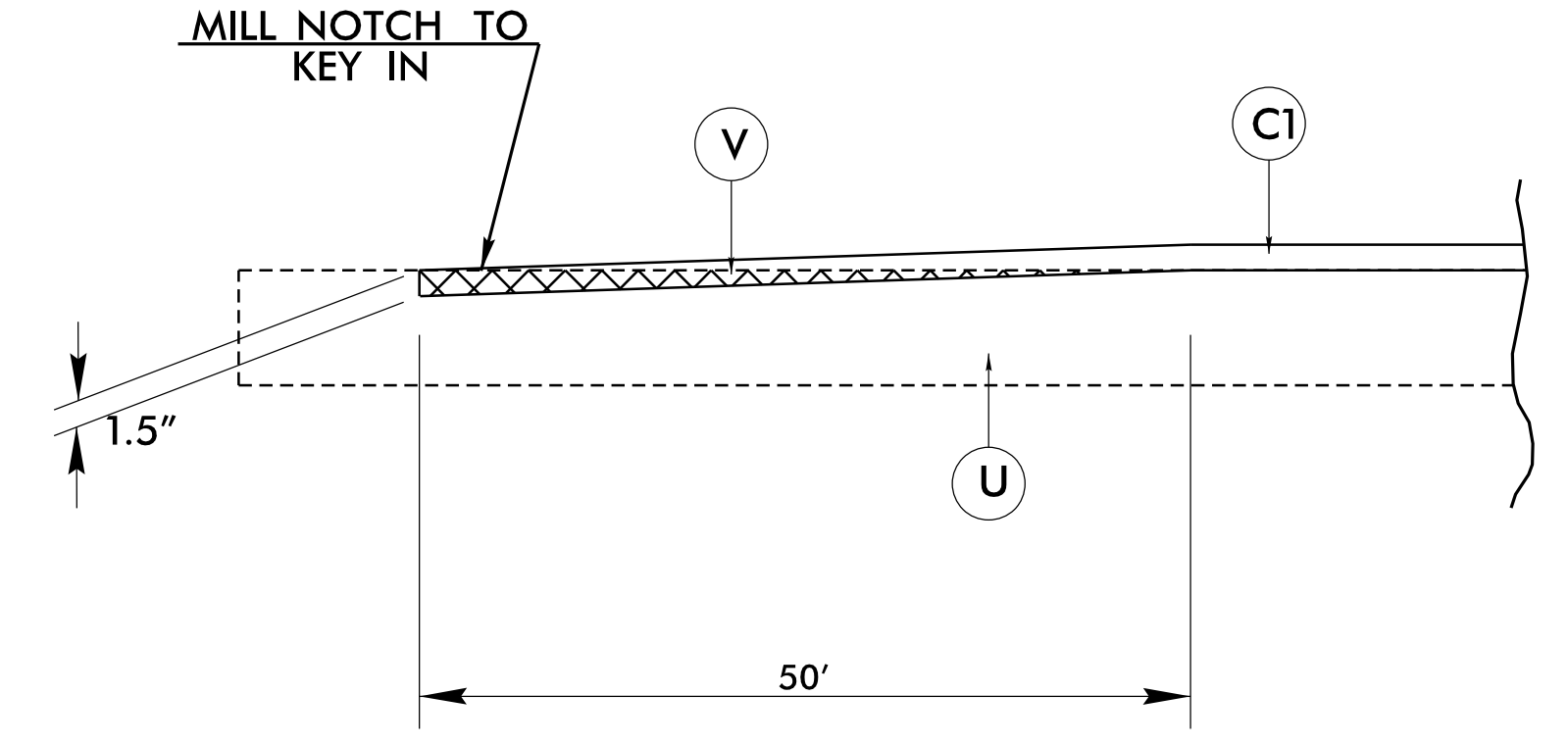
Detail Showing Method of Wedging No. 1

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

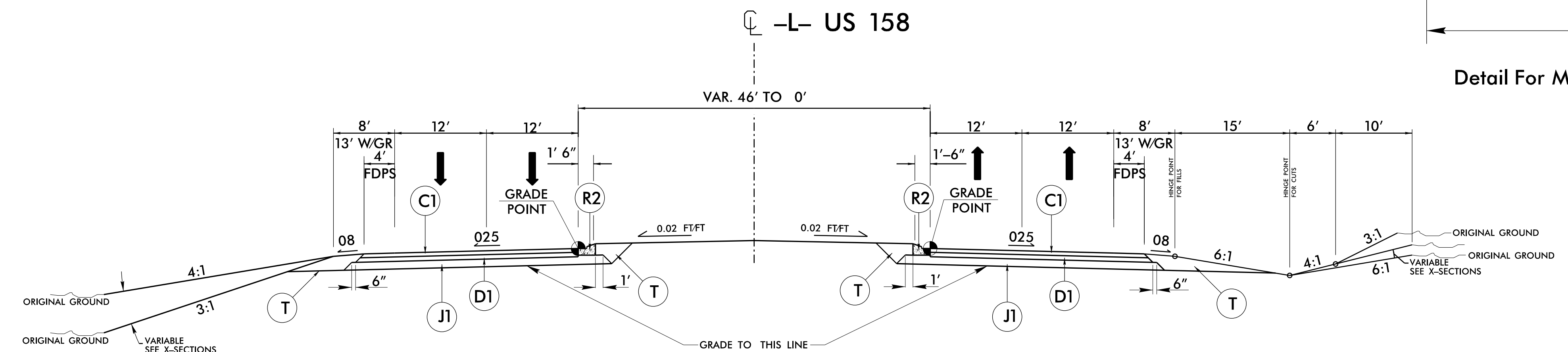


TYPICAL SECTION NO. 1

-L- STA. 300+00.00 TO STA. 553+46.00



Detail For Milling at Tie-ins.



TYPICAL SECTION NO. 2

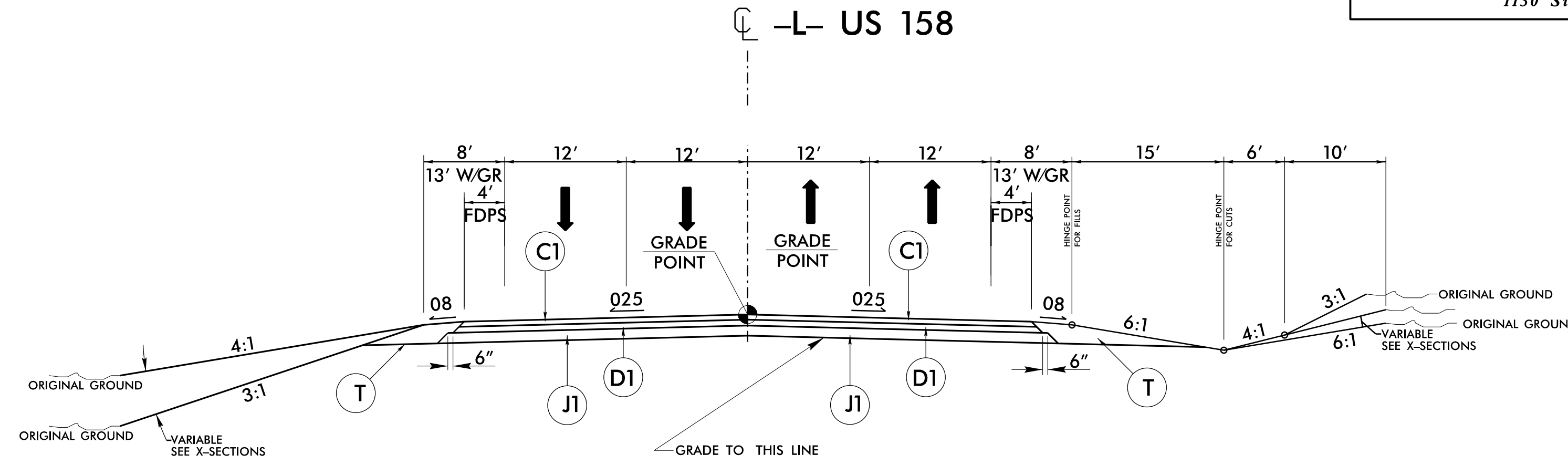
-L- STA. 553+46.00 TO STA. 567+69.00

REVISIONS



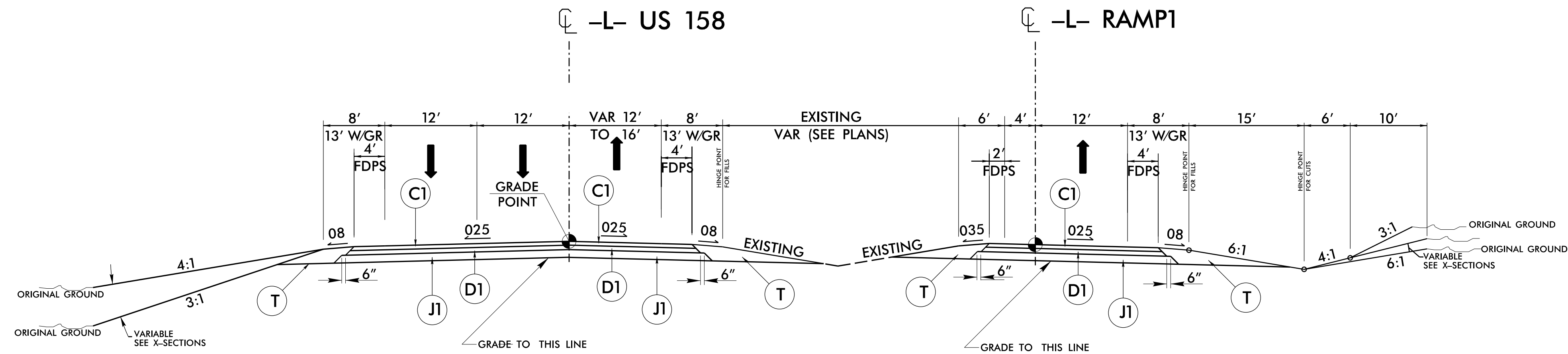
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 1130 Situs Court, Suite 200, Raleigh NC, 27606

PROJECT REFERENCE NO. <i>R-2574B</i>	SHEET NO. <i>2A-2</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



TYPICAL SECTION NO. 3

-L- STA. 567+69.00 TO STA. 568+30.02



TYPICAL SECTION NO. 4

TRANSITION TYPICAL SECTION NO. 3 TO TYPICAL SECTION NO. 4

-L- STA. 568+30.02 TO STA. 571+35.00
 -RAMP1- STA. 10+00.00 TO STA. 13+00.00

REVISIONS

8/17/99

3/1/2019 R2574B_Rev1.txd
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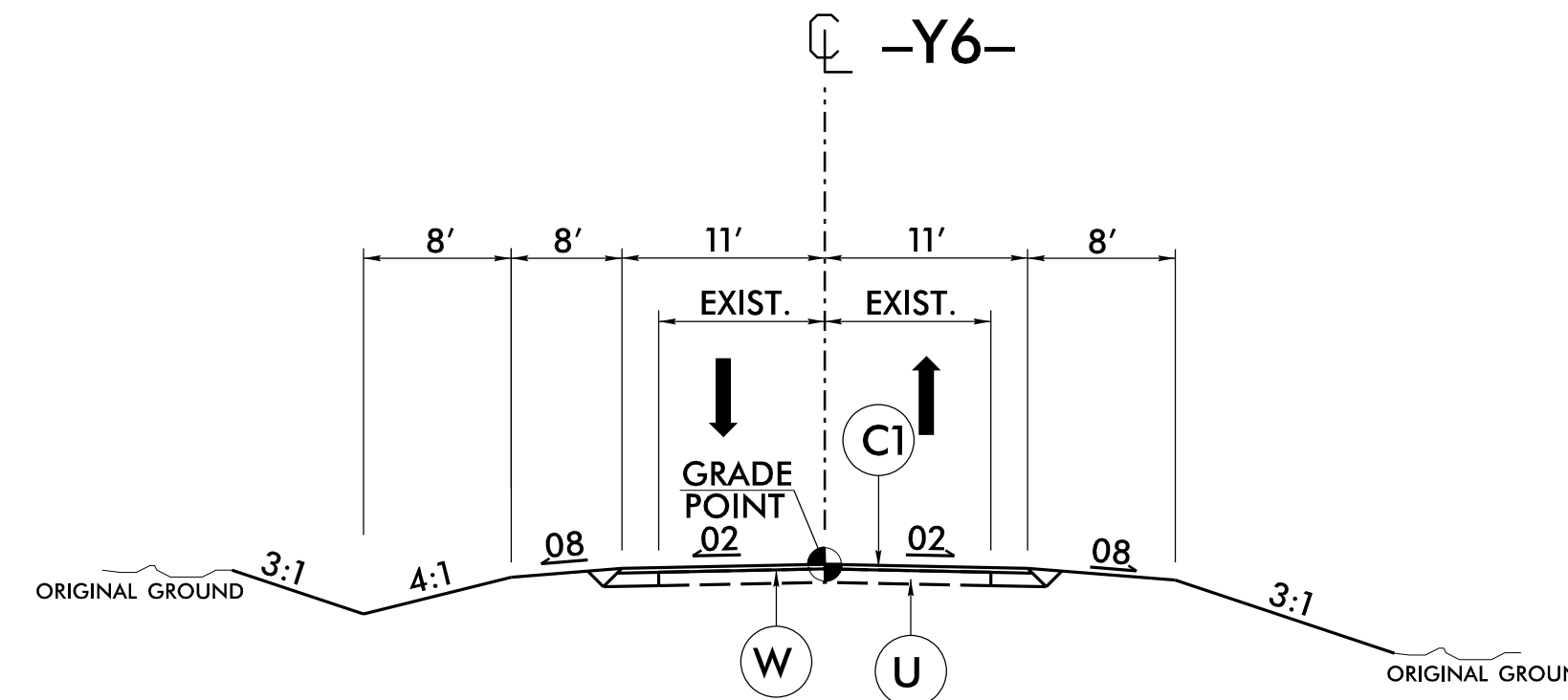


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 1130 Situs Court, Suite 200, Raleigh NC, 27606

PROJECT REFERENCE NO. <i>R-2574B</i>	SHEET NO. <i>2A-3</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

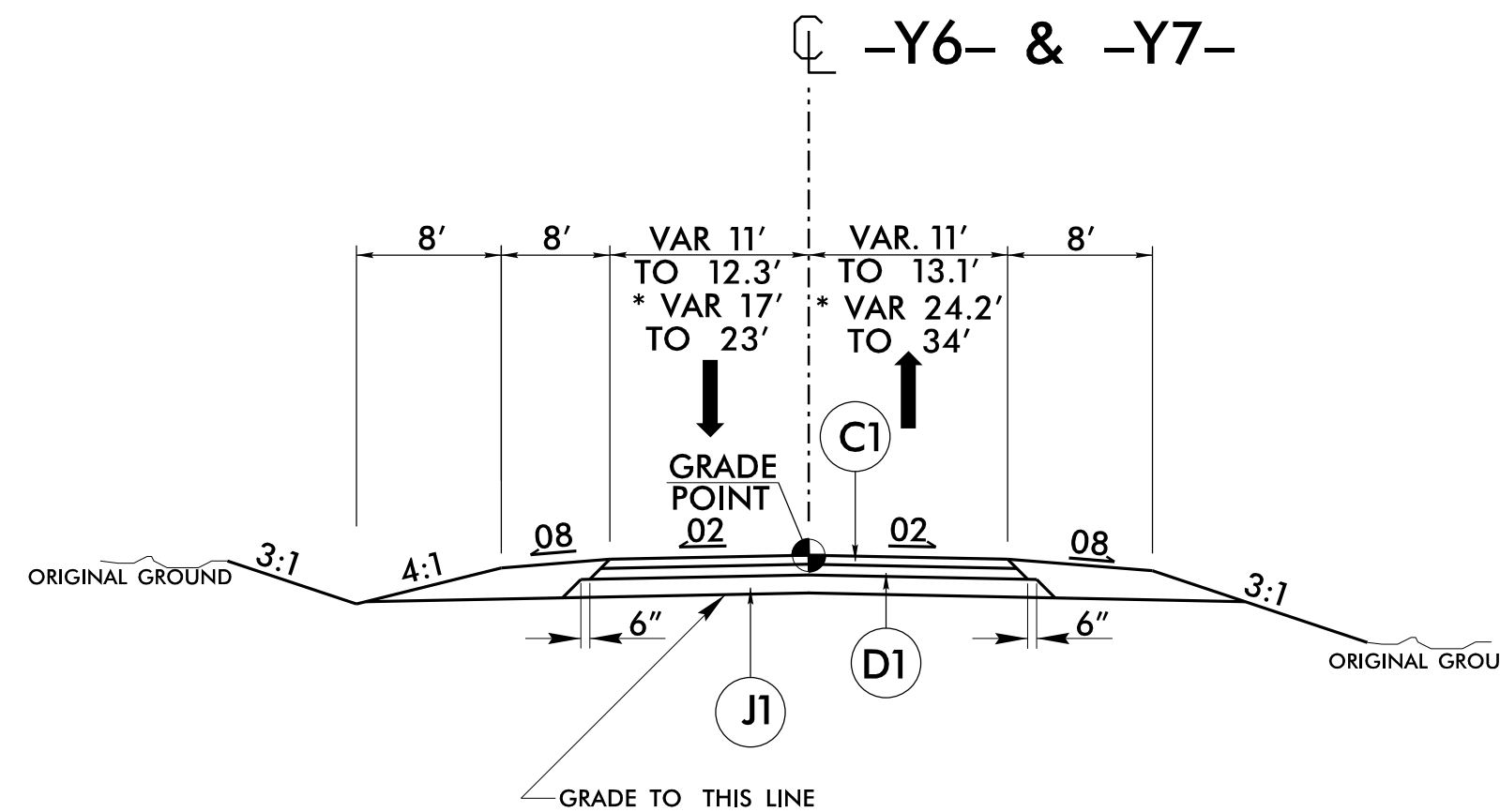
8/17/99

REVISIONS



TYPICAL SECTION NO. 5

-Y6- STA. 12+00.00 TO STA. 12+46.75

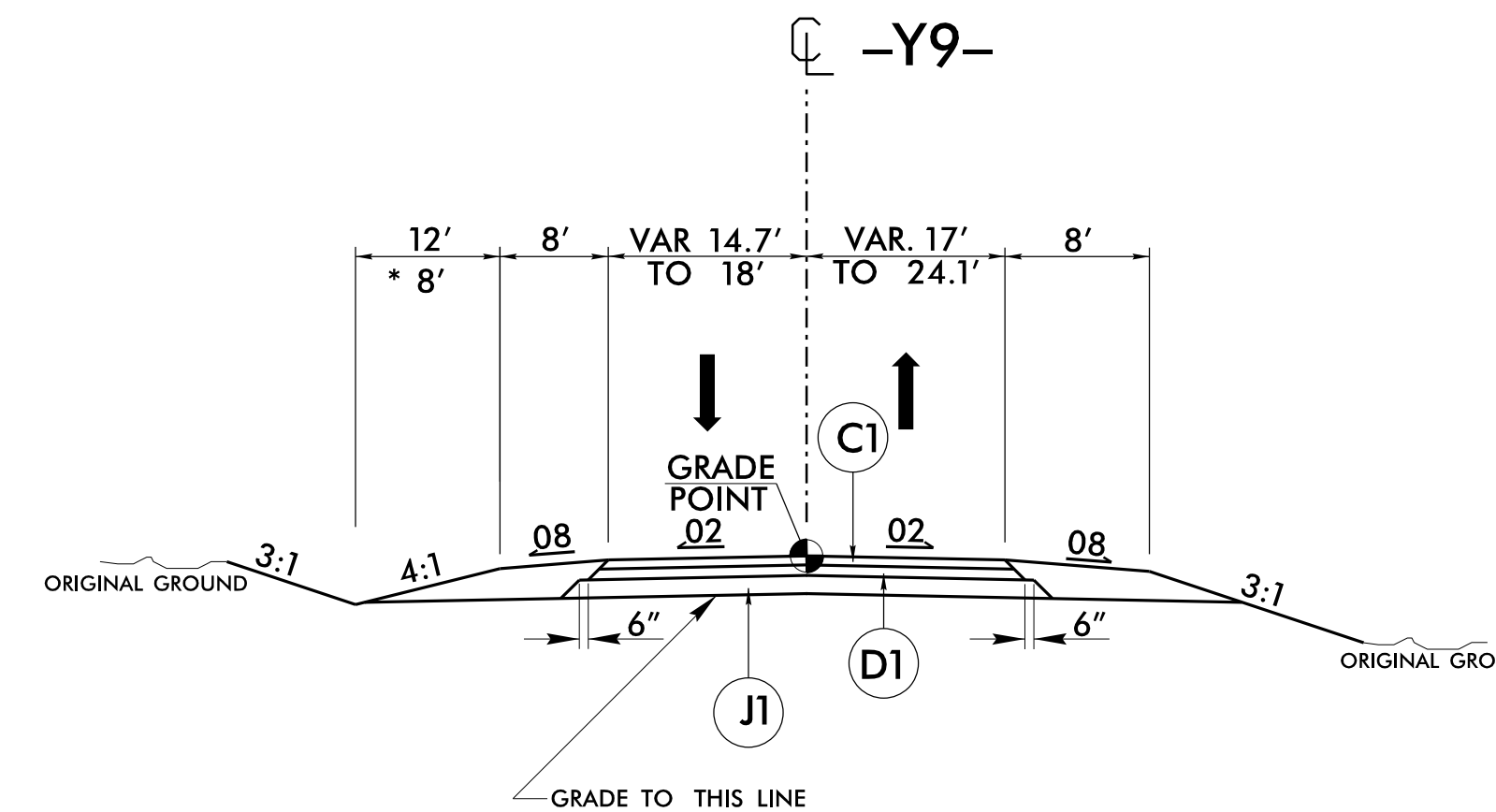


TYPICAL SECTION NO. 6

-Y6- STA. 12+46.75 TO STA. 12+81.28

TRANSITION TYPICAL SECTION NO. 6 TO TYPICAL SECTION NO. 8

* -Y7- STA. 14+80.00 TO STA. 15+28.14



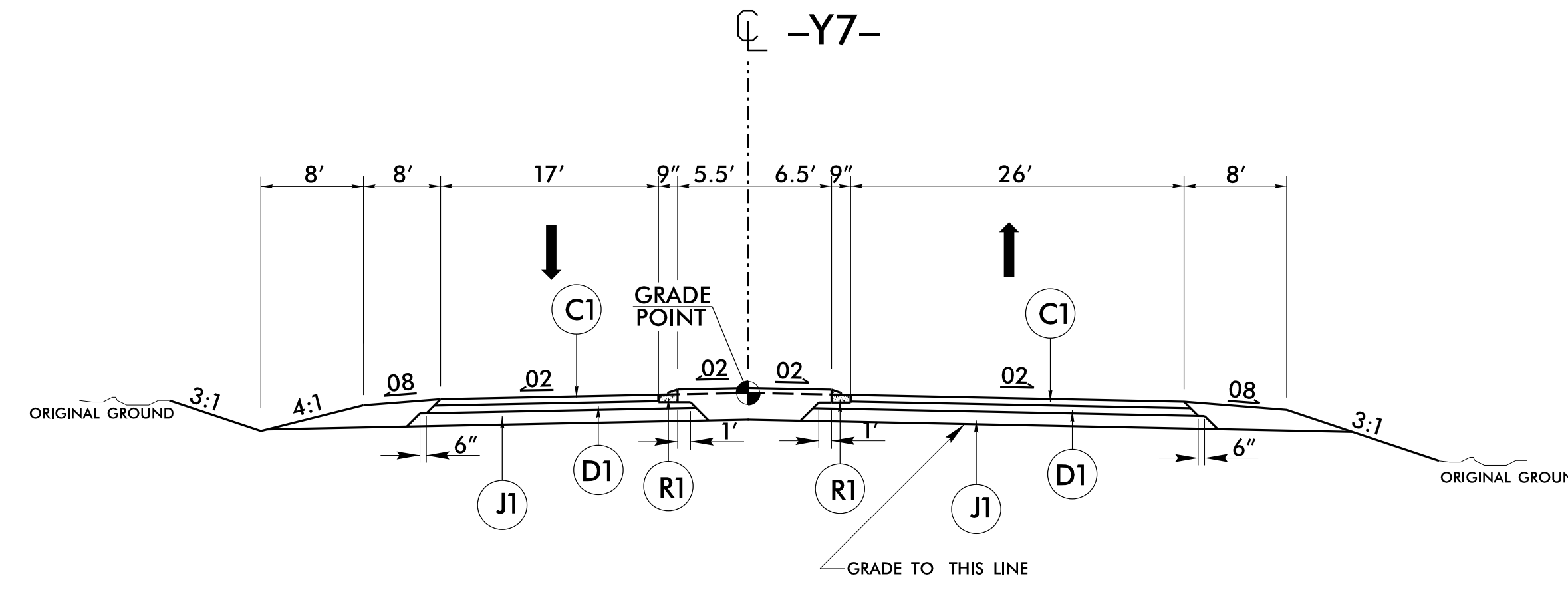
TYPICAL SECTION NO. 7

-Y9- STA. 10+45.00 TO STA. 11+61.84

3/1/2019 3:11:20 PM R2574B_Rev1.txd
 R2574B_Rev1.txd
 R2574B_Rev1.txd

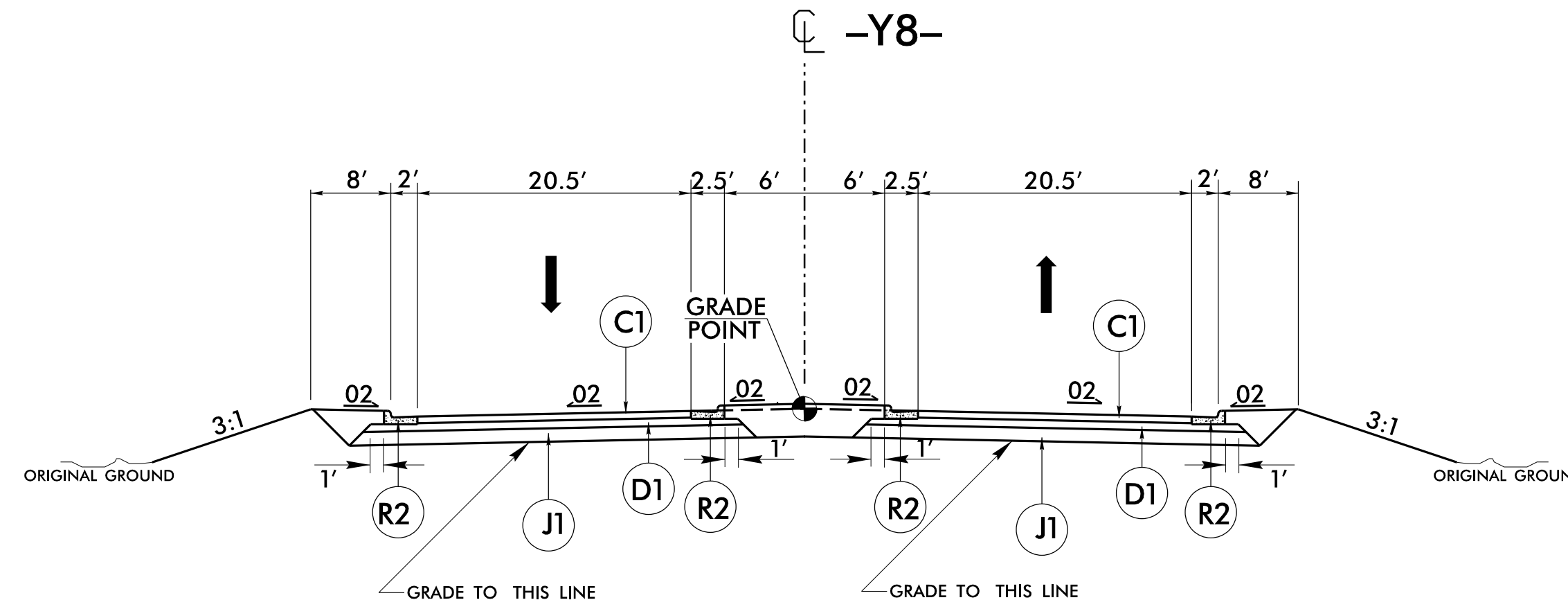


PROJECT REFERENCE NO. <i>R-2574B</i>	SHEET NO. <i>2A-4</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



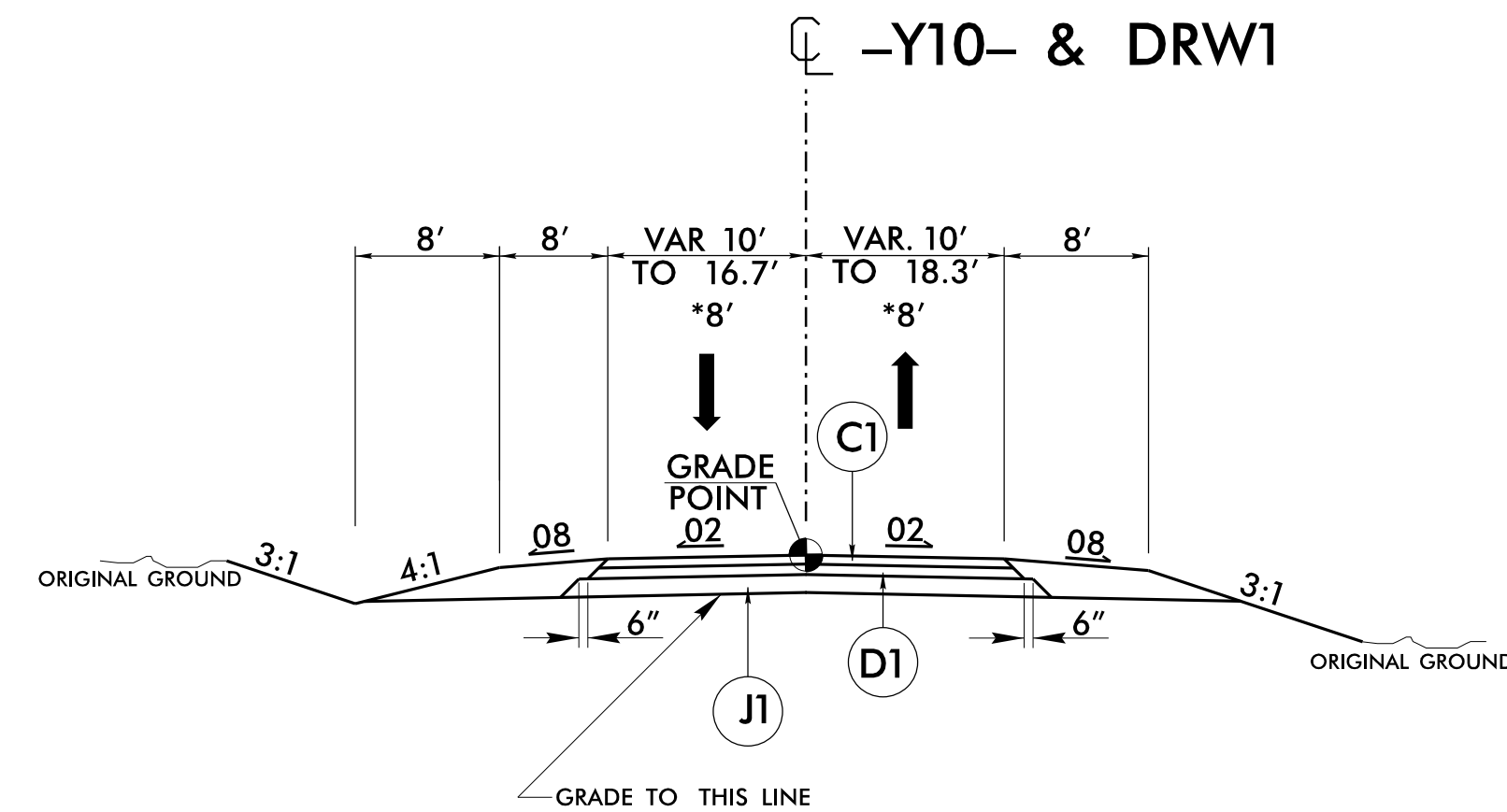
TYPICAL SECTION NO. 8

-Y7- STA. 15+28.14 TO STA. 15+56.28



TYPICAL SECTION NO. 9

-Y8- STA. 11+00.00 TO STA. 11+80.82



TYPICAL SECTION NO. 10

-Y10- STA. 12+60.00 TO STA. 15+85.08
 -DRW1- STA. 10+92.62 TO STA. 12+03.01

REVISIONS

8/17/99

8/17/99

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER: P-0671

JMT Prepared in the Office of:
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1130 Situs Court, Suite 200, Raleigh NC, 27606

PROJECT REFERENCE NO. R-2574B	SHEET NO. 04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

END PROJECT TIP R-2574A -L- US 158 STA. 300+00
BEGIN PROJECT TIP R-2574B -L- US 158 STA. 300+00

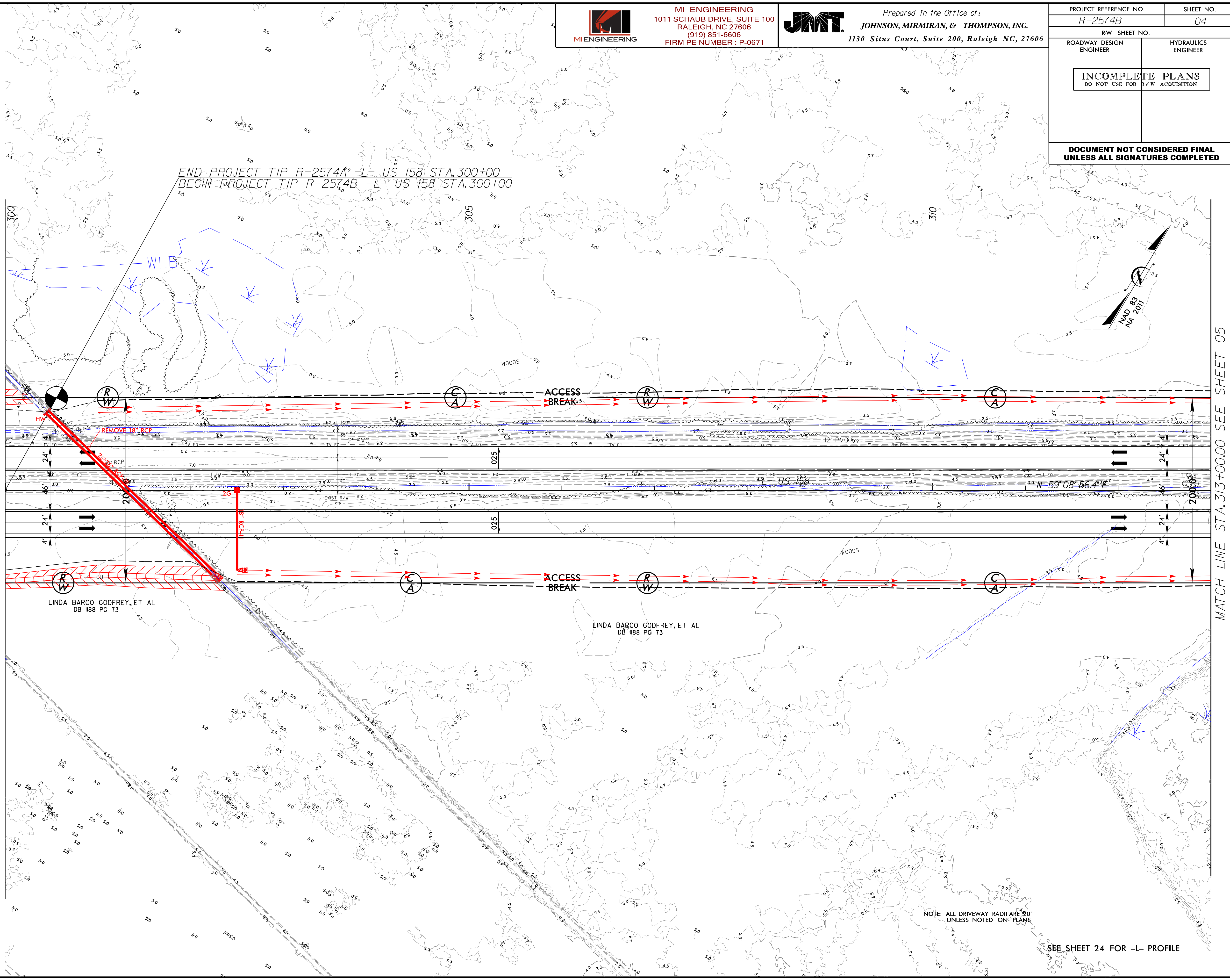
SEE PROJECT R-2574A

SEE PROJECT R-2574A

MATCH LINE STA. 313+00.00 SEE SHEET 05

REVISIONS

07-AUG-2019 15:48
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User: jmt



LINDA BARCO GODFREY, ET AL
DB 1188 PG 73

LINDA BARCO GODFREY, ET AL
DB 1188 PG 73

NOTE: ALL DRIVEWAY RADII ARE 20'
UNLESS NOTED ON PLANS

SEE SHEET 24 FOR -L- PROFILE

8/17/99

MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

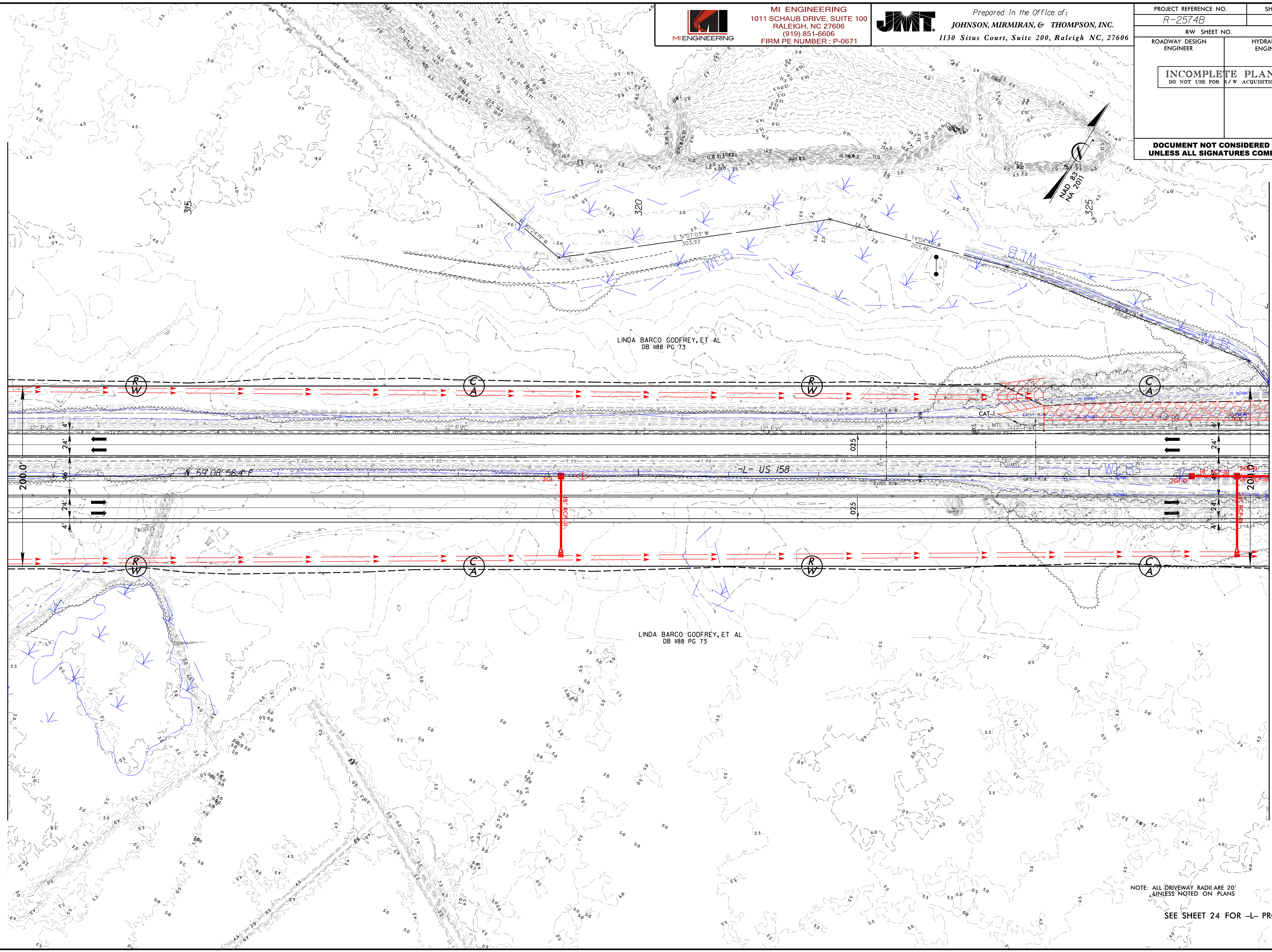
JMT Prepared in the Office of:
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 1130 Situs Court, Suite 200, Raleigh NC, 27606

PROJECT REFERENCE NO. R-2574B	SHEET NO. 05
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

REVISIONS

MATCH LINE STA. 313+00.00 SEE SHEET 04

MATCH LINE STA. 327+00.00 SEE SHEET 06

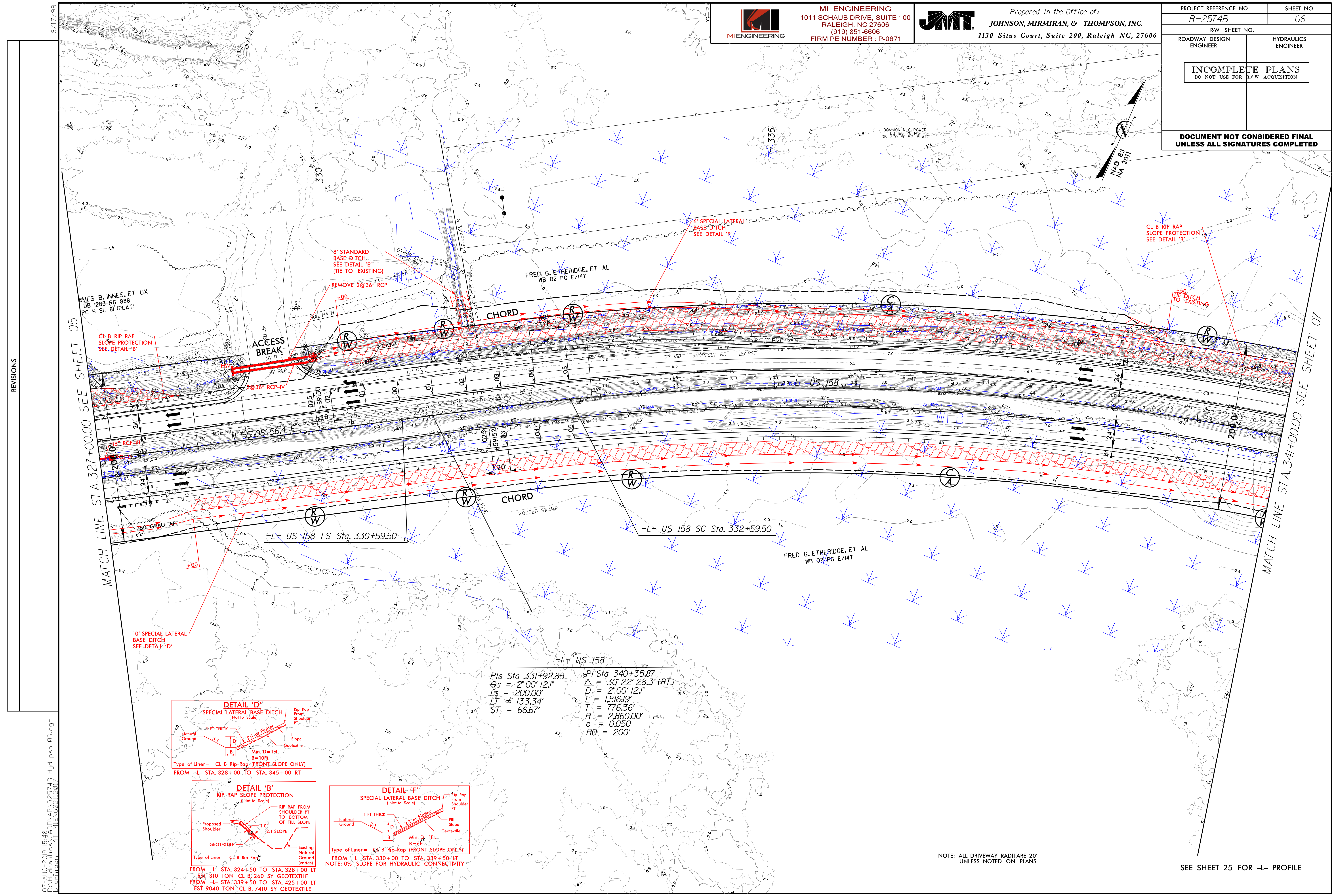


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 Plotting at: MIEN02112017

NOTE: ALL DRIVEWAY RADII ARE 20'
 UNLESS NOTED ON PLANS
 SEE SHEET 24 FOR -L- PROFILE

PROJECT REFERENCE NO. R-2574B	SHEET NO. 06
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

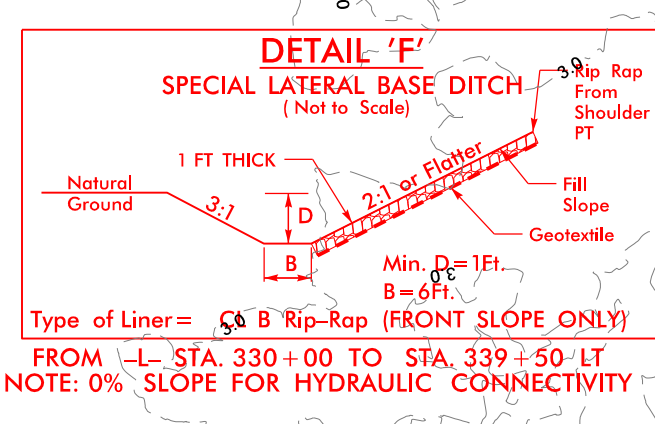
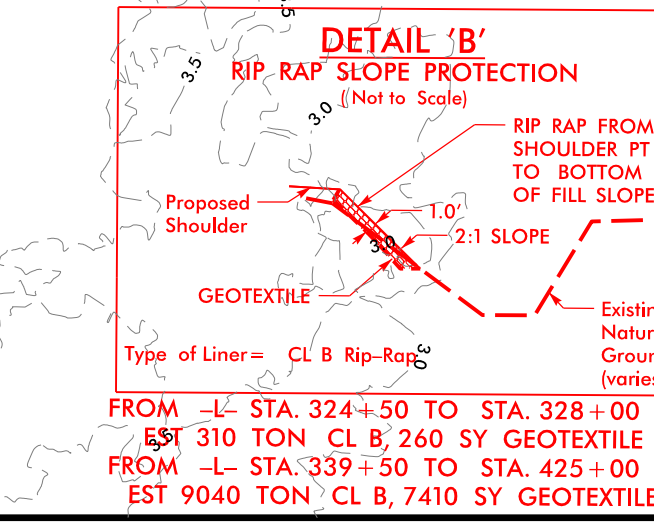
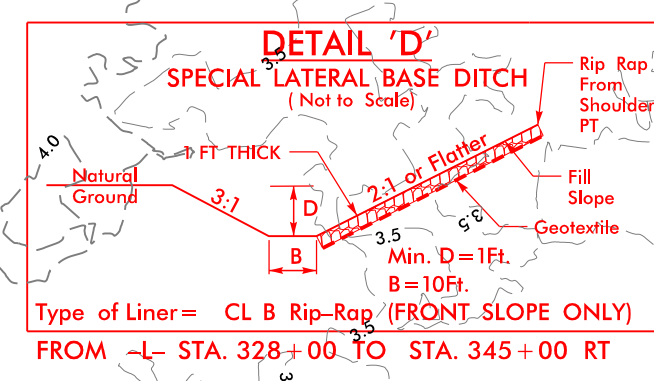
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



REVISIONS

MATCH LINE STA. 327+00.00 SEE SHEET 05

MATCH LINE STA. 341+00.00 SEE SHEET 07



$Pis\ Sta\ 331+92.85$
 $Os = 2'00''12.1''$
 $Ls = 200.00'$
 $LT = 133.34'$
 $ST = 66.67'$

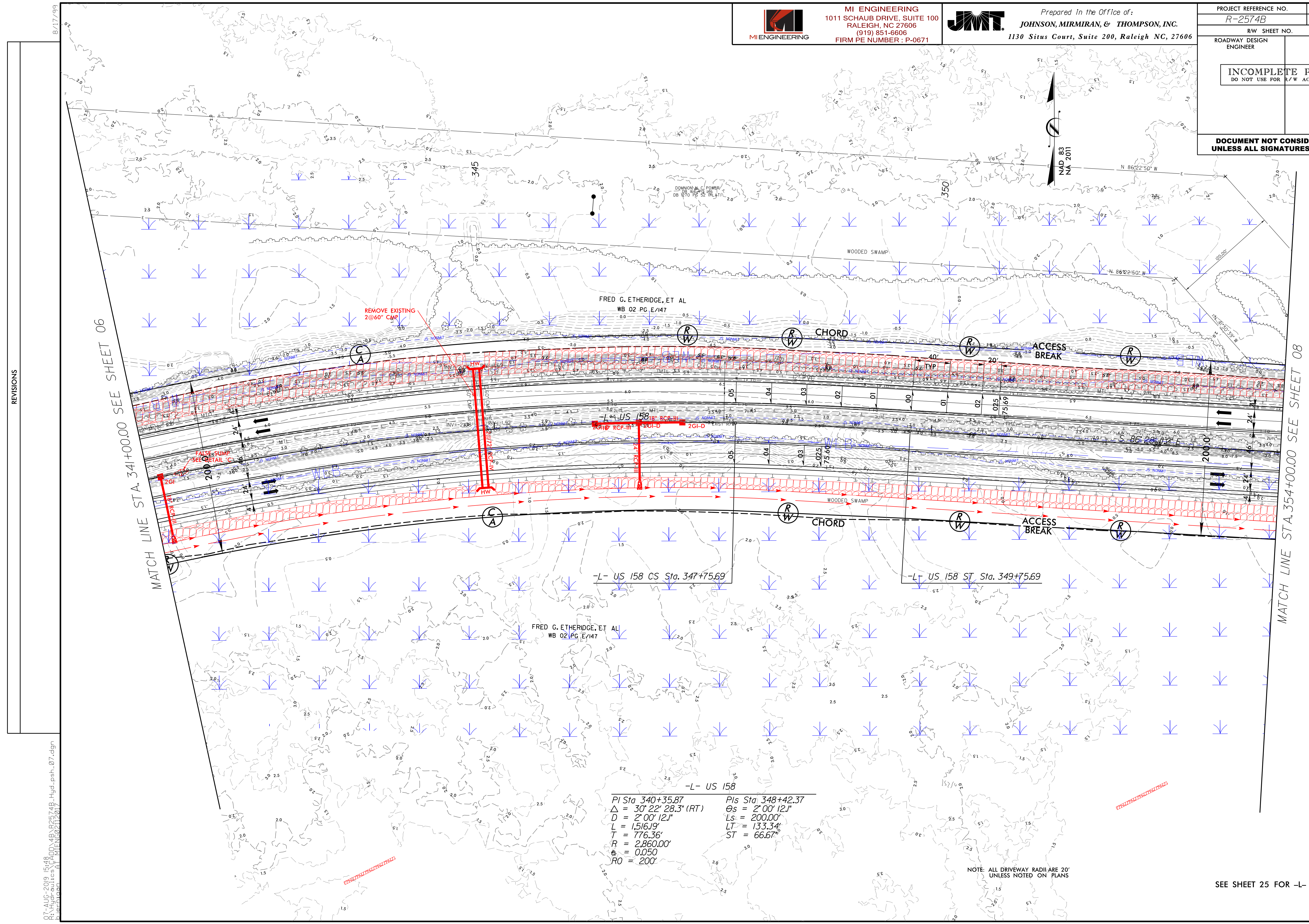
$PI\ Sta\ 340+35.87$
 $\Delta = 30'22''28.3''(RT)$
 $D = 2'00''12.1''$
 $L = 1516.19'$
 $T = 776.36'$
 $R = 2,860.00'$
 $e = 0.050$
 $RO = 200'$

NOTE: ALL DRIVEWAY RADII ARE 20' UNLESS NOTED ON PLANS

SEE SHEET 25 FOR -L- PROFILE

07-AUG-2019 15:48
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 B:\MIRMAN\212017

PROJECT REFERENCE NO. R-2574B	SHEET NO. 07
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



REVISIONS

MATCH LINE STA. 341+00.00 SEE SHEET 06

MATCH LINE STA. 354+00.00 SEE SHEET 08

-L- US 158 CS Sta. 347+75.69

-L- US 158 ST Sta. 349+75.69

-L- US 158
 PI Sta 340+35.87
 $\Delta = 30^\circ 22' 28.3''$ (RT)
 $D = 2^\circ 00' 12.1''$
 $L = 1516.19'$
 $T = 776.36'$
 $R = 2860.00'$
 $e = 0.050$
 $RO = 200'$
 PIs Sta 348+42.37
 $\Theta_s = 2^\circ 00' 12.1''$
 $L_s = 200.00'$
 $LT = 133.34'$
 $ST = 66.67'$

NOTE: ALL DRIVEWAY RADII ARE 20' UNLESS NOTED ON PLANS

SEE SHEET 25 FOR -L- PROFILE

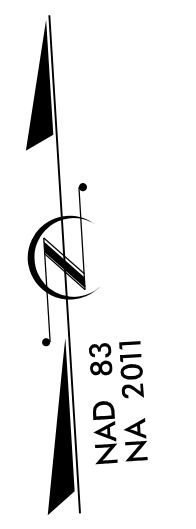
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MIEN00212017

8/17/99

MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER : P-0671

JMT Prepared in the Office of:
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 1130 Situs Court, Suite 200, Raleigh NC, 27606

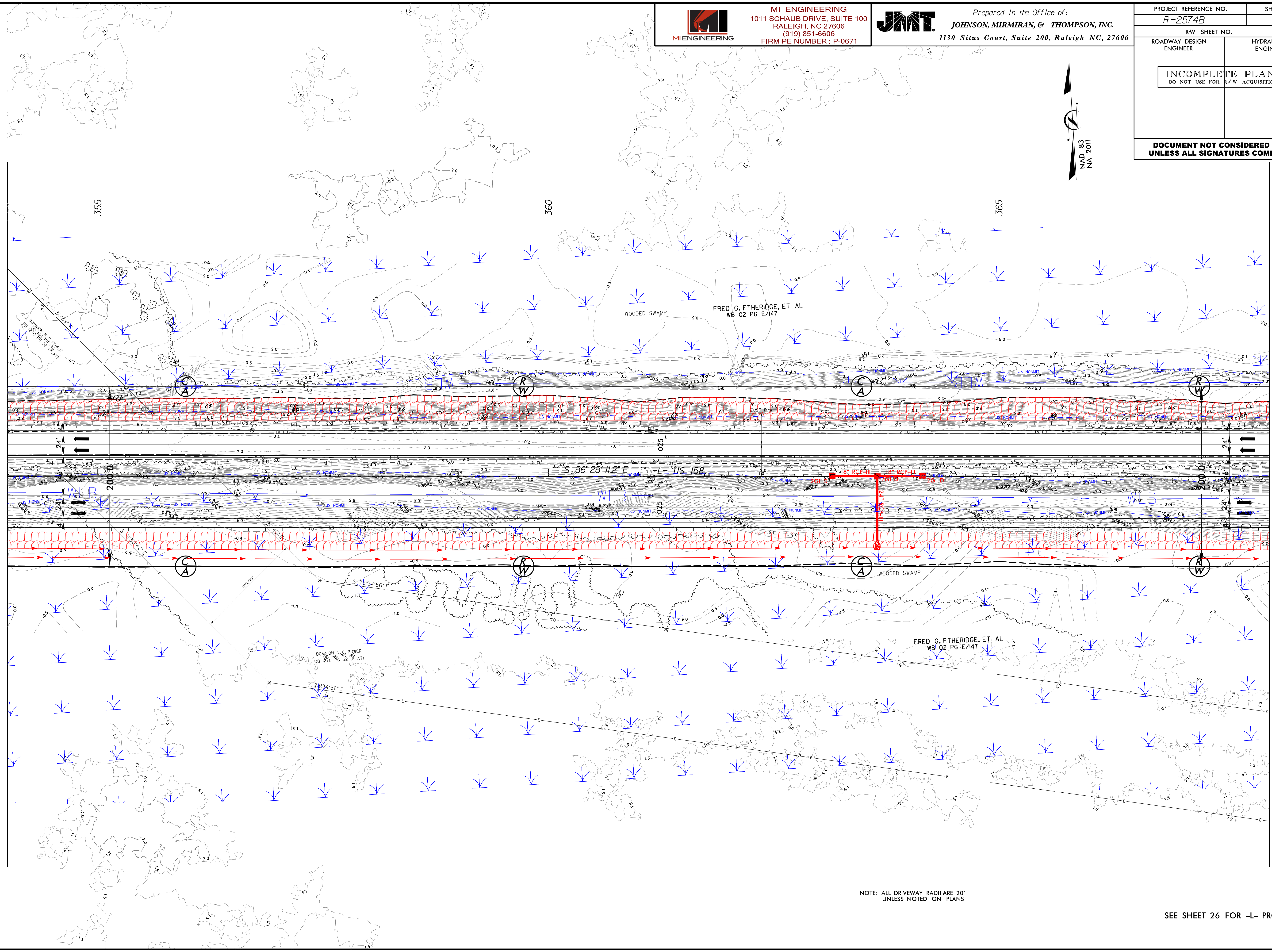
PROJECT REFERENCE NO. R-2574B	SHEET NO. 08
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



REVISIONS

MATCH LINE STA. 354+00.00 SEE SHEET 07

MATCH LINE STA. 368+00.00 SEE SHEET 09



07-AUG-2019 15:49
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 Plot Date: 8/17/2017

NOTE: ALL DRIVEWAY RADII ARE 20'
 UNLESS NOTED ON PLANS

SEE SHEET 26 FOR -L- PROFILE

8/17/99



MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER: P-0671



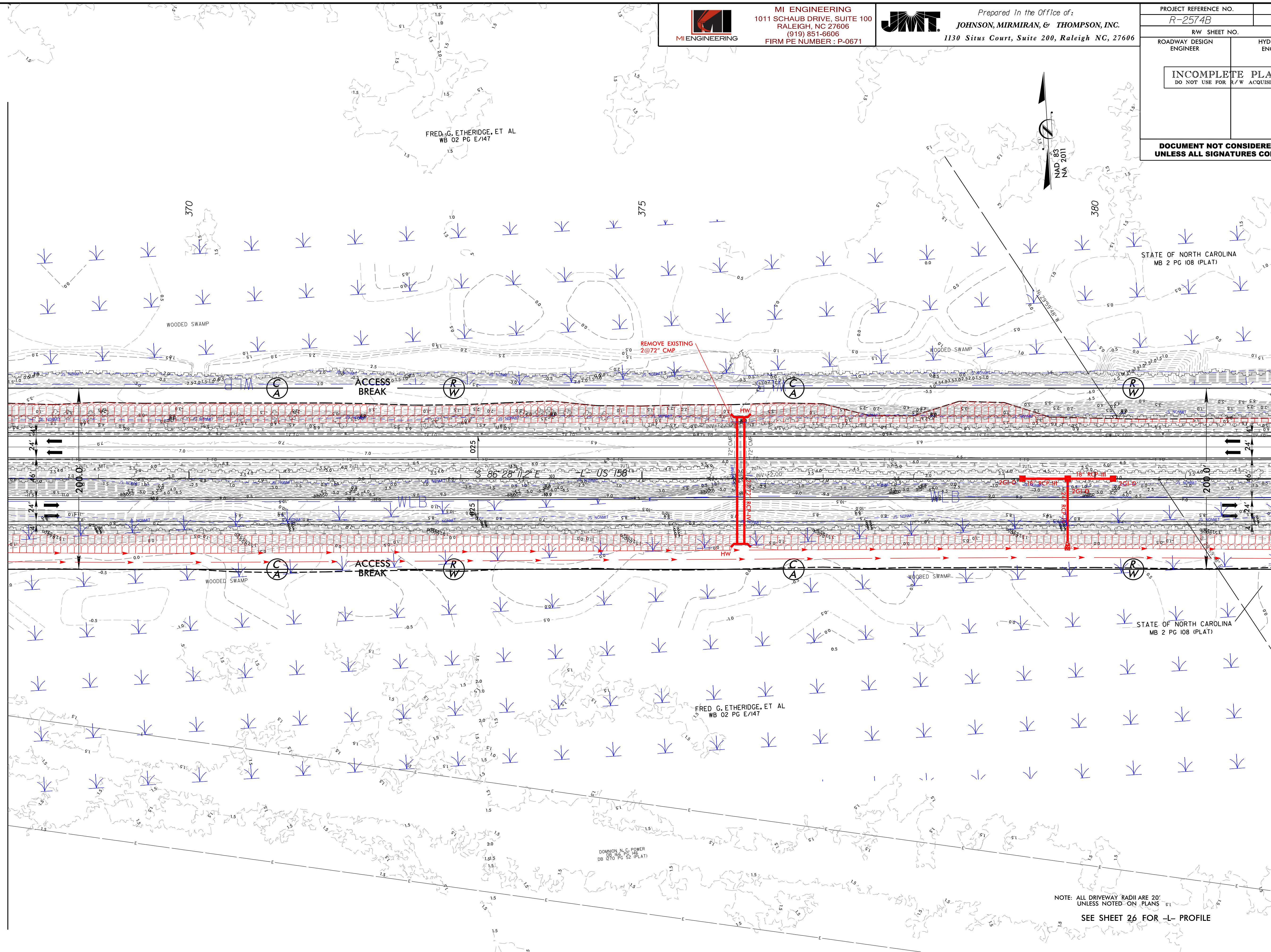
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1130 Situs Court, Suite 200, Raleigh NC, 27606

PROJECT REFERENCE NO. R-2574B	SHEET NO. 09
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

REVISIONS

MATCH LINE STA. 368+00.00 SEE SHEET 08

MATCH LINE STA. 382+00.00 SEE SHEET 10



NOTE: ALL DRIVEWAY RADII ARE 20'
UNLESS NOTED ON PLANS

SEE SHEET 26 FOR -L- PROFILE

07-AUG-2019 15:49
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MIRMAN

8/17/99

MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER: P-0671

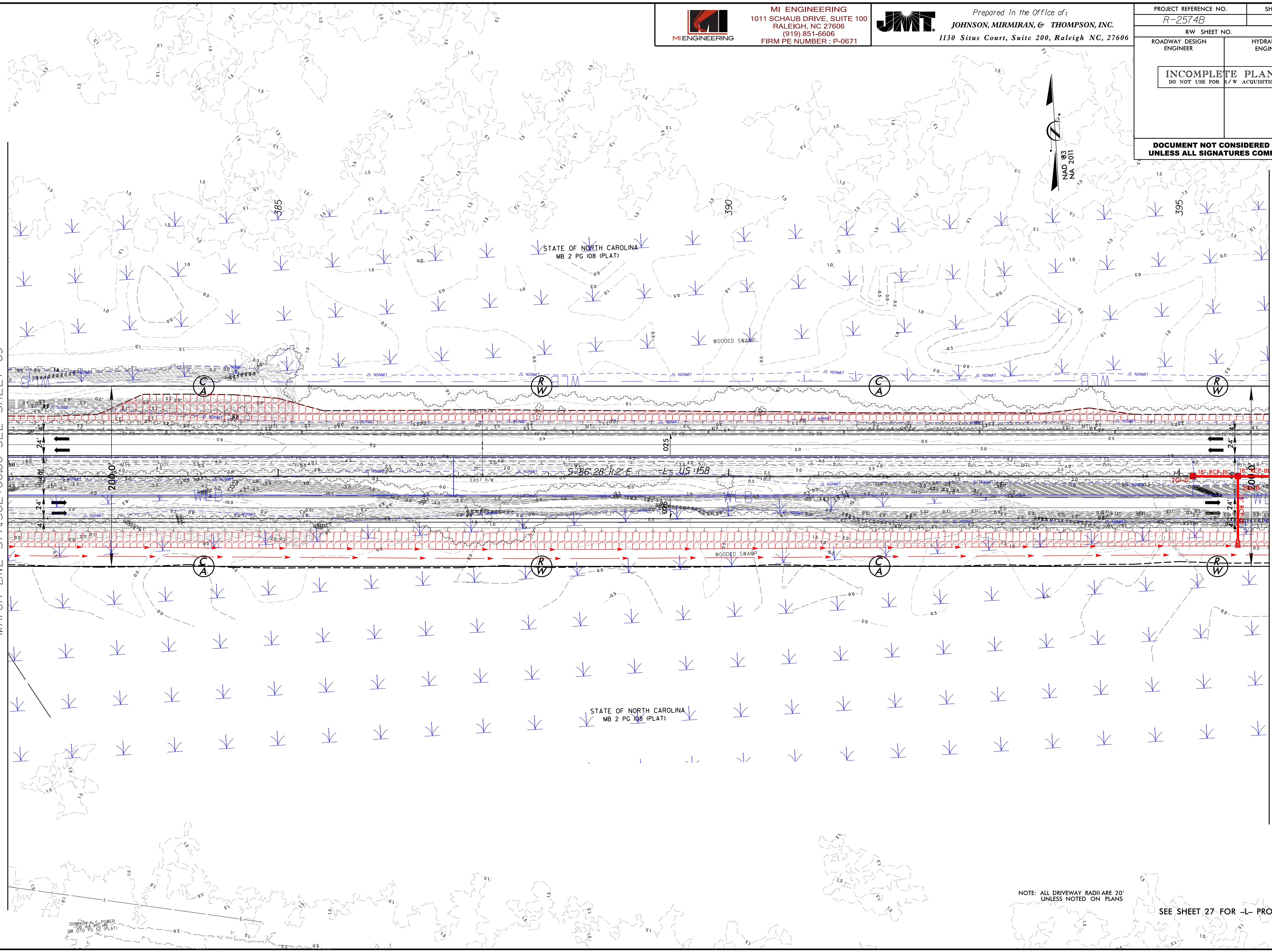
JMT. Prepared in the Office of:
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 1130 Situs Court, Suite 200, Raleigh NC, 27606

PROJECT REFERENCE NO. R-2574B	SHEET NO. 10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

REVISIONS

MATCH LINE STA. 382+00.00 SEE SHEET 09

MATCH LINE STA. 396+00.00 SEE SHEET 11



07-AUG-2019 15:50
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 User: jmt

NOTE: ALL DRIVEWAY RADII ARE 20'
 UNLESS NOTED ON PLANS
 SEE SHEET 27 FOR -L- PROFILE

8/17/99



MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER: P-0671



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1130 Situs Court, Suite 200, Raleigh NC, 27606

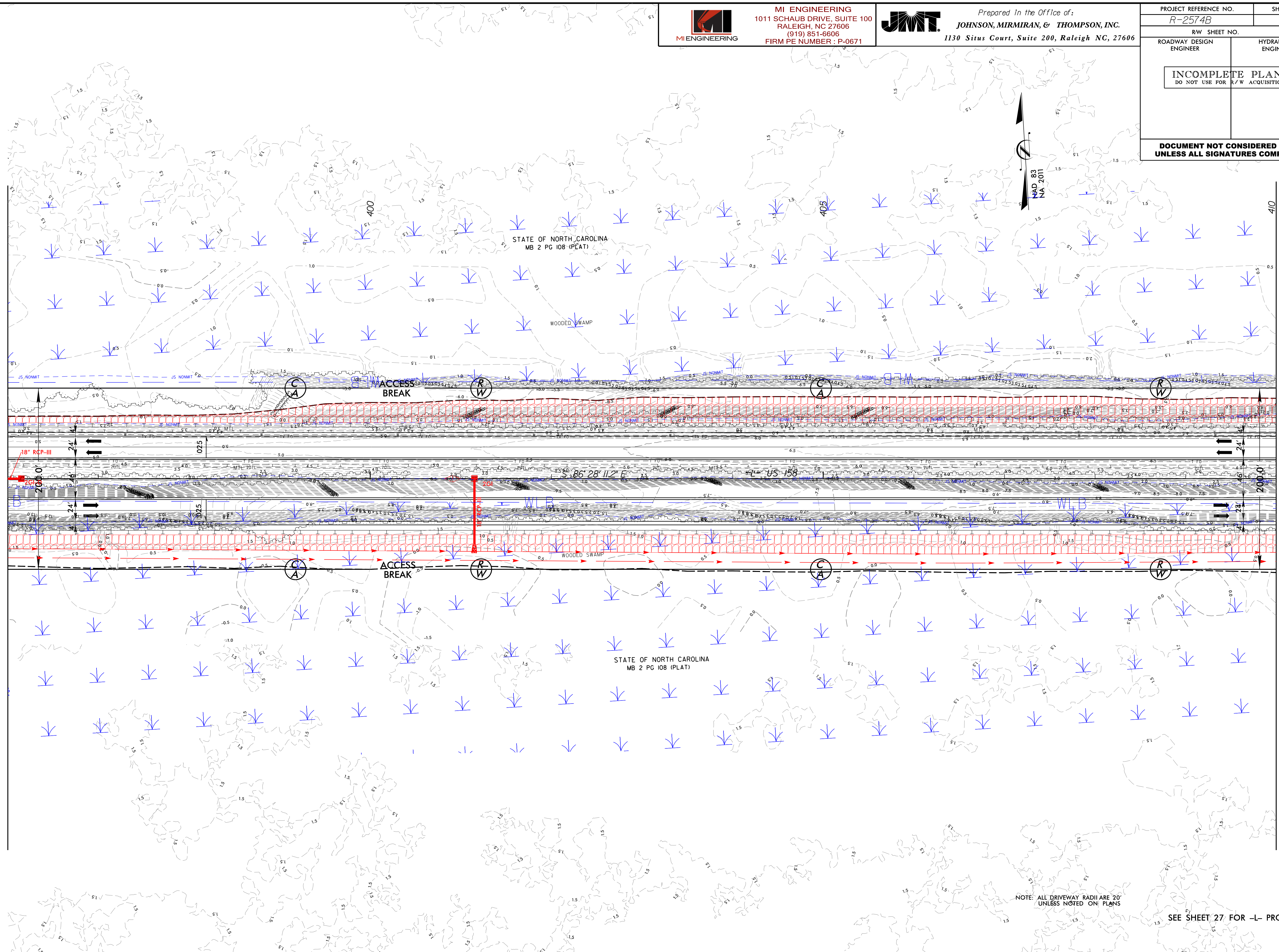
PROJECT REFERENCE NO. R-2574B	SHEET NO. 11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

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

REVISIONS

MATCH LINE STA. 396+00.00 SEE SHEET 10

MATCH LINE STA. 410+00.00 SEE SHEET 12



07-AUG-2019 15:50
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User: jmt

SEE SHEET 27 FOR -L- PROFILE

8/17/99

MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER: P-0671

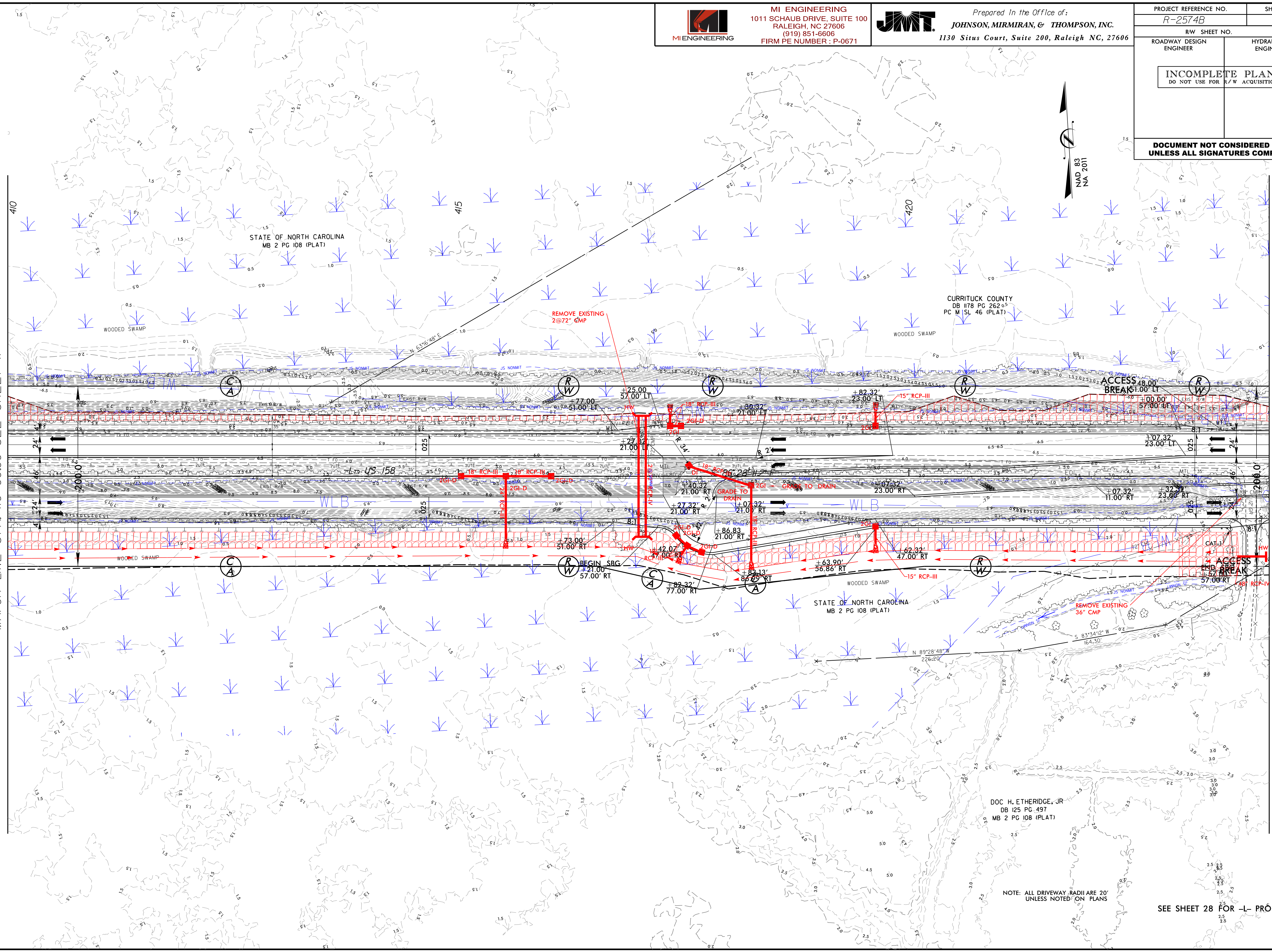
JMT. Prepared in the Office of:
JOHNSON, MIRMAN, & THOMPSON, INC.
1130 Situs Court, Suite 200, Raleigh NC, 27606

PROJECT REFERENCE NO. R-2574B	SHEET NO. 12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

REVISIONS

MATCH LINE STA. 410+00.00 SEE SHEET 11

MATCH LINE STA. 424+00.00 SEE SHEET 13



07-AUG-2019 15:51
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MIEN0212017

DOC. H. ETHERIDGE, JR
DB 125 PG 497
MB 2 PG 108 (PLAT)

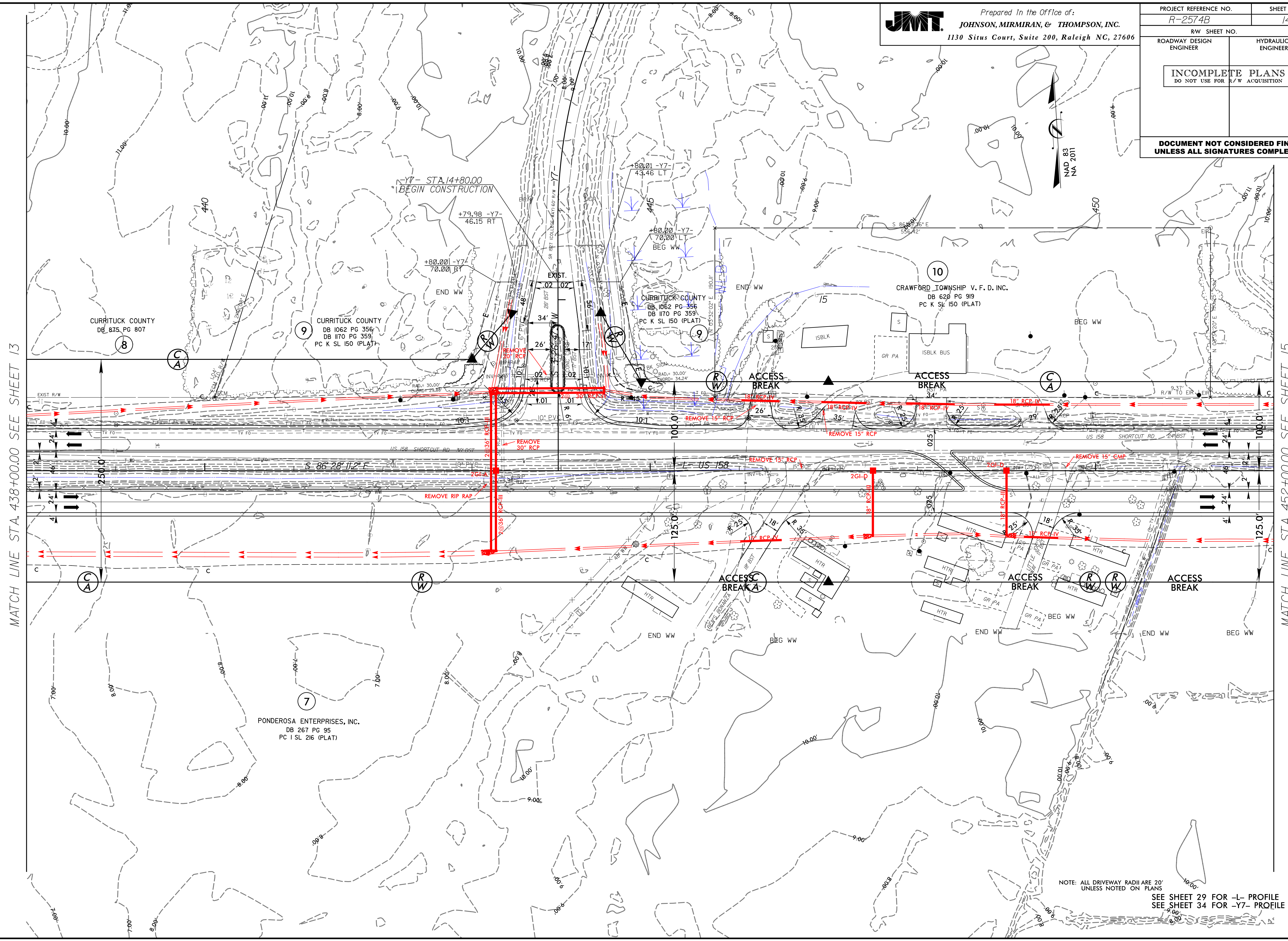
NOTE: ALL DRIVEWAY RADII ARE 20'
UNLESS NOTED ON PLANS

SEE SHEET 28 FOR -L- PROFILE



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PROJECT REFERENCE NO. R-2574B	SHEET NO. 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	



MATCH LINE STA. 438+00.00 SEE SHEET 13

MATCH LINE STA. 452+00.00 SEE SHEET 15

REVISIONS

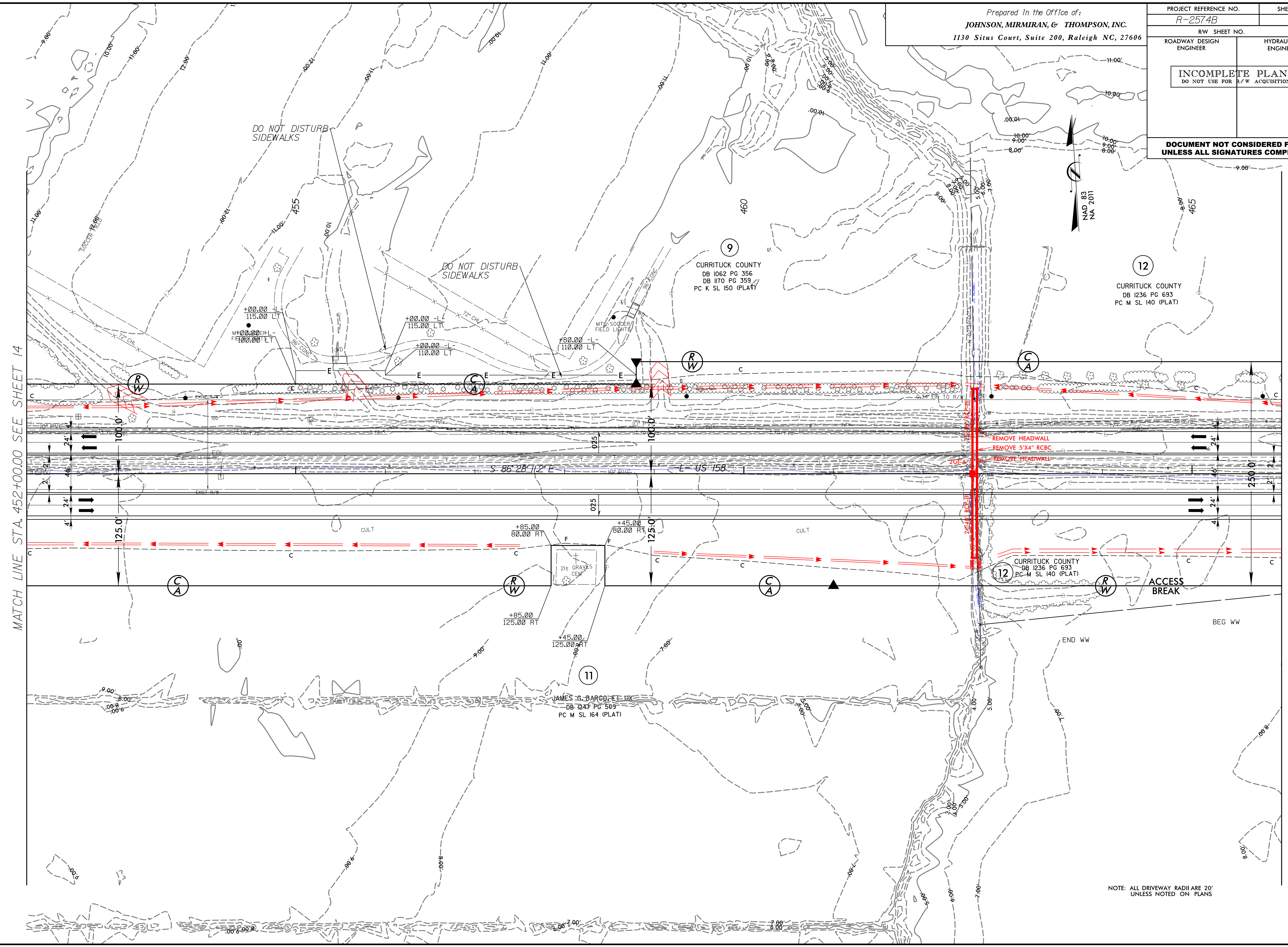
8/17/99
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 AT: VBA1922051

NOTE: ALL DRIVEWAY RADII ARE 20' UNLESS NOTED ON PLANS
 SEE SHEET 29 FOR -L- PROFILE
 SEE SHEET 34 FOR -Y7- PROFILE

8/17/99
REVISIONS
07-2016-160488-0008_R-2574B_US_158_Widen\CA000\R-2574B\Drainage\Maple to US 158\Plot.dgn R-2574B hyd_psh_15.dgn
AT:VBA1922051

Prepared in the Office of:
JOHNSON, MIRMIRAN, & THOMPSON, INC.
1130 Situs Court, Suite 200, Raleigh NC, 27606

PROJECT REFERENCE NO. R-2574B	SHEET NO. 15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

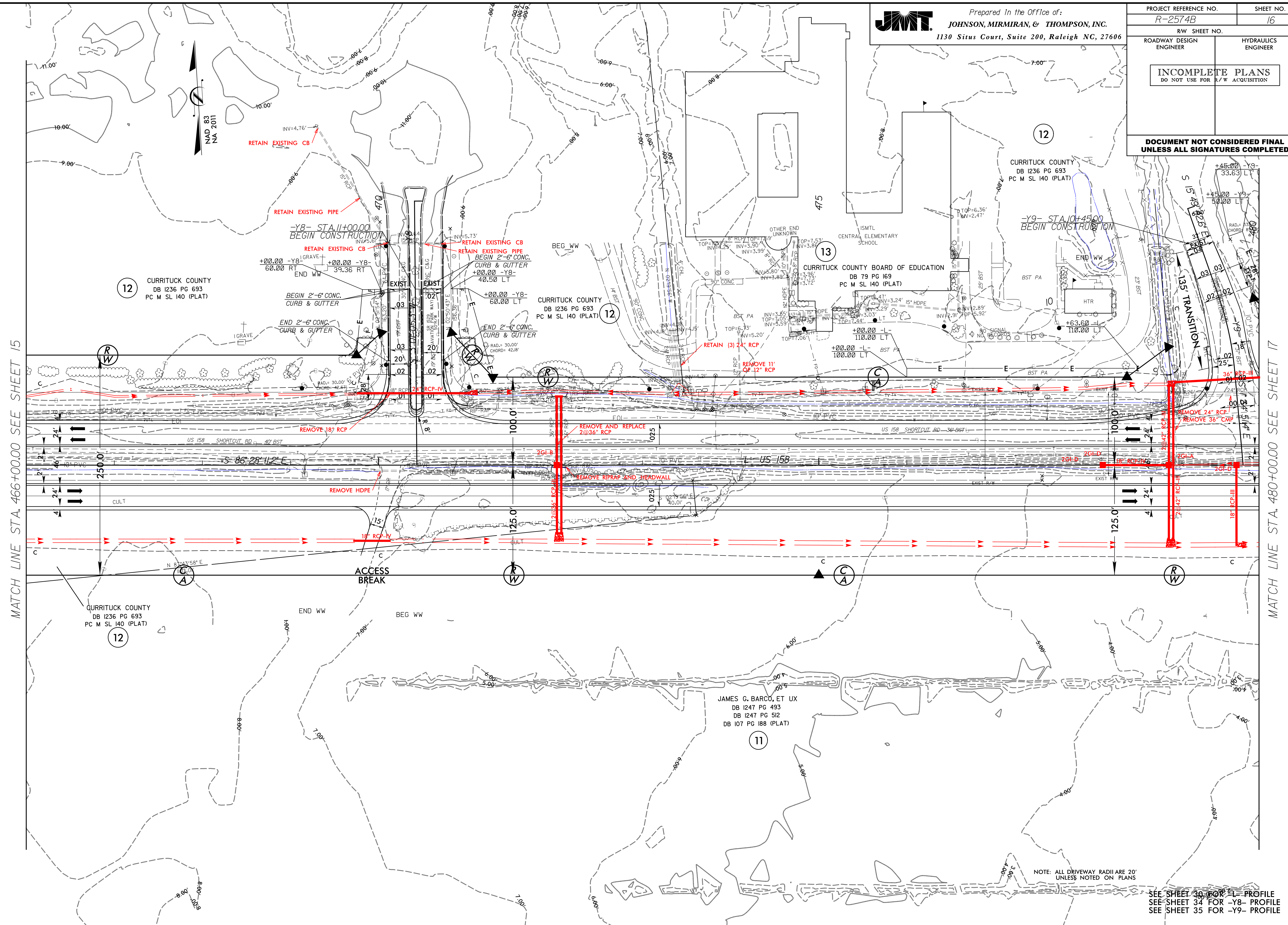


NOTE: ALL DRIVEWAY RADII ARE 20'
UNLESS NOTED ON PLANS



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 1130 Situs Court, Suite 200, Raleigh NC, 27606

PROJECT REFERENCE NO. R-2574B	SHEET NO. 16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



MATCH LINE STA. 466+00.00 SEE SHEET 15

MATCH LINE STA. 480+00.00 SEE SHEET 17

REVISIONS

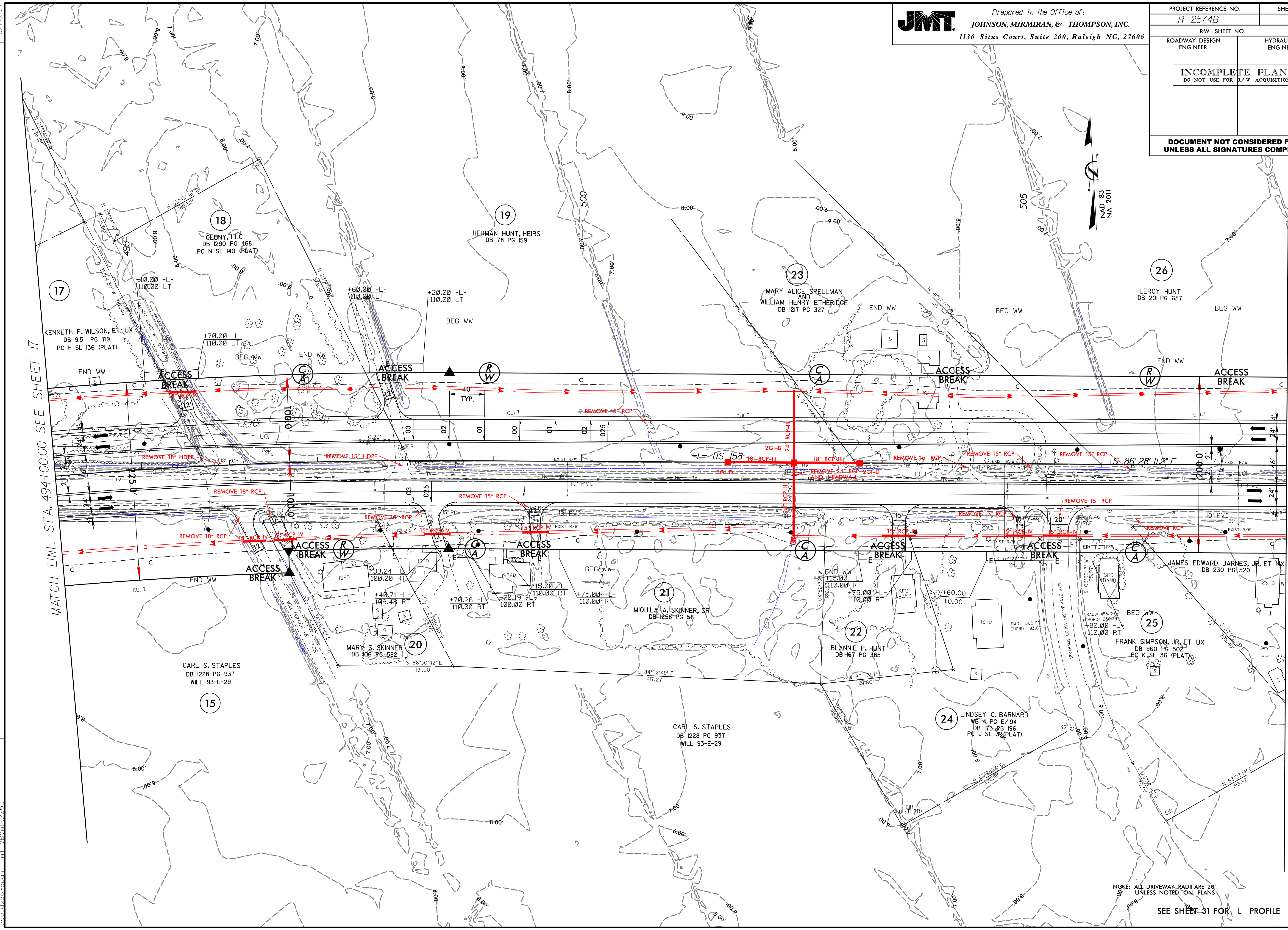
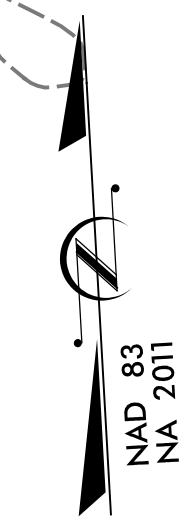
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 01-16-2015 15:22 20510

NOTE: ALL DRIVEWAY RADII ARE 20' UNLESS NOTED ON PLANS
 SEE SHEET 30 FOR -L- PROFILE
 SEE SHEET 34 FOR -Y8- PROFILE
 SEE SHEET 35 FOR -Y9- PROFILE



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PROJECT REFERENCE NO. R-2574B	SHEET NO. 18
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



MATCH LINE STA. 494+00.00 SEE SHEET 17

MATCH LINE STA. 508+00.00 SEE SHEET 19

REVISIONS

07-AUG-2018 14:01 05-5016-160-88-0008 R-2574B US 158 Widen\CA0001 R-2574B\Drainage\Maple to US 158\Plot.dgn R2574B hyd_psh_18.dgn

NOTE: ALL DRIVEWAY RADII ARE 20' UNLESS NOTED ON PLANS

SEE SHEET 31 FOR -L- PROFILE

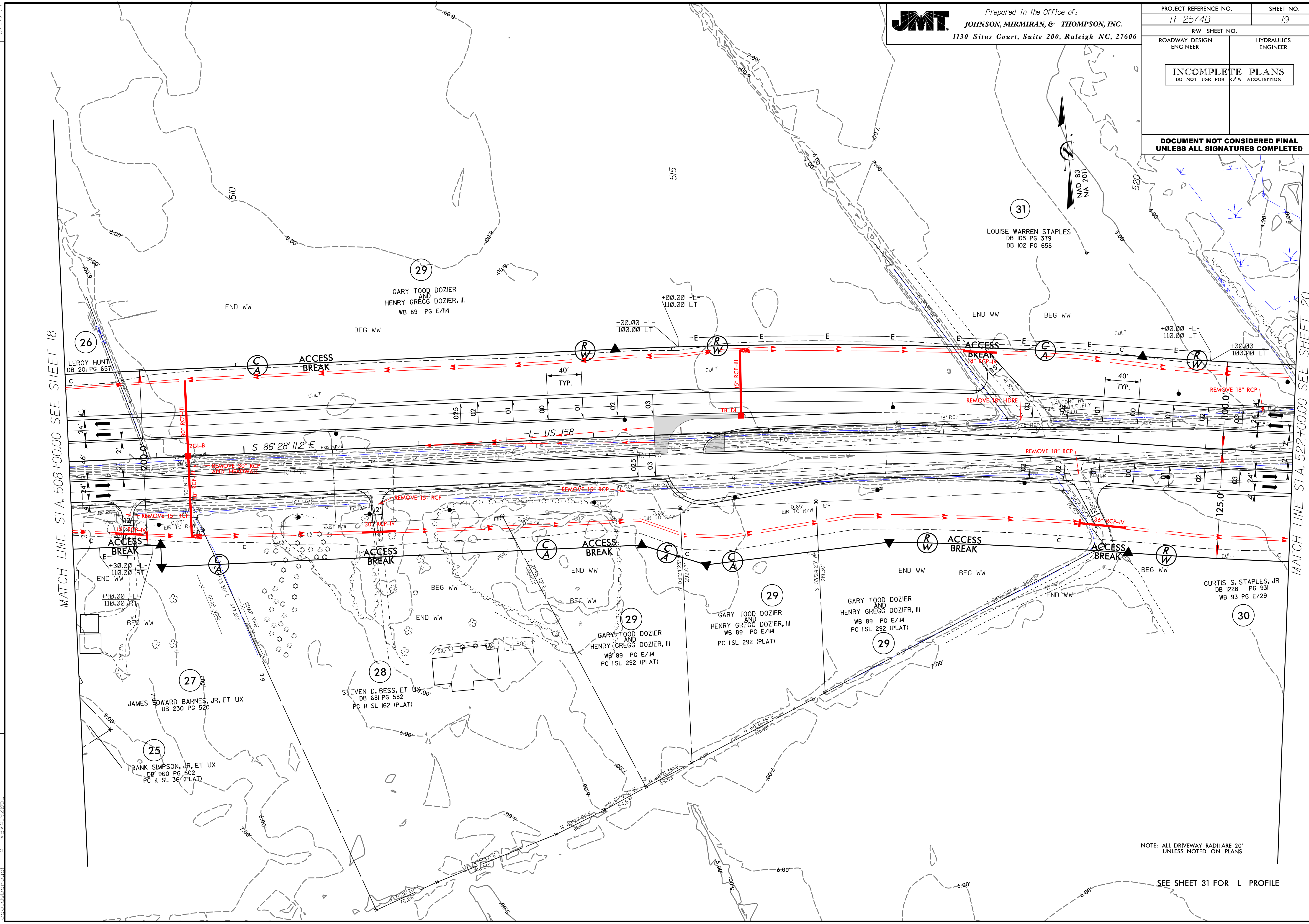
PROJECT REFERENCE NO. R-2574B	SHEET NO. 19
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

MATCH LINE STA. 508+00.00 SEE SHEET 18

MATCH LINE STA. 522+00.00 SEE SHEET 20

REVISIONS

07-11-2018 14:02 07-10-2018 16:08 07-10-2018 16:08 R-2574B US 158 Widen\CA000\R-2574B\Drainage\Maple to US 158\Plot.dgn R-2574B hyd_psh_19.dgn



NOTE: ALL DRIVEWAY RADII ARE 20' UNLESS NOTED ON PLANS

SEE SHEET 31 FOR -L- PROFILE

07-2016-160488-2008_R-2574B_US_158_Widen\CA000\R-2574B\Drawings\Maple to US 158\Plot.dgn R-2574B_hyd_psh_20.dgn
8.17.09

PROJECT REFERENCE NO.	SHEET NO.
R-2574B	20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

ROBERT JOSEPH HALKO
AND
PATRICIA A. HALKO
DB 330 PG 828
PC B SL 52 (PLAT)

HUBERT L. CONNER, JR.
DB 350 PG 429
PC C2 SL 374 (PLAT)

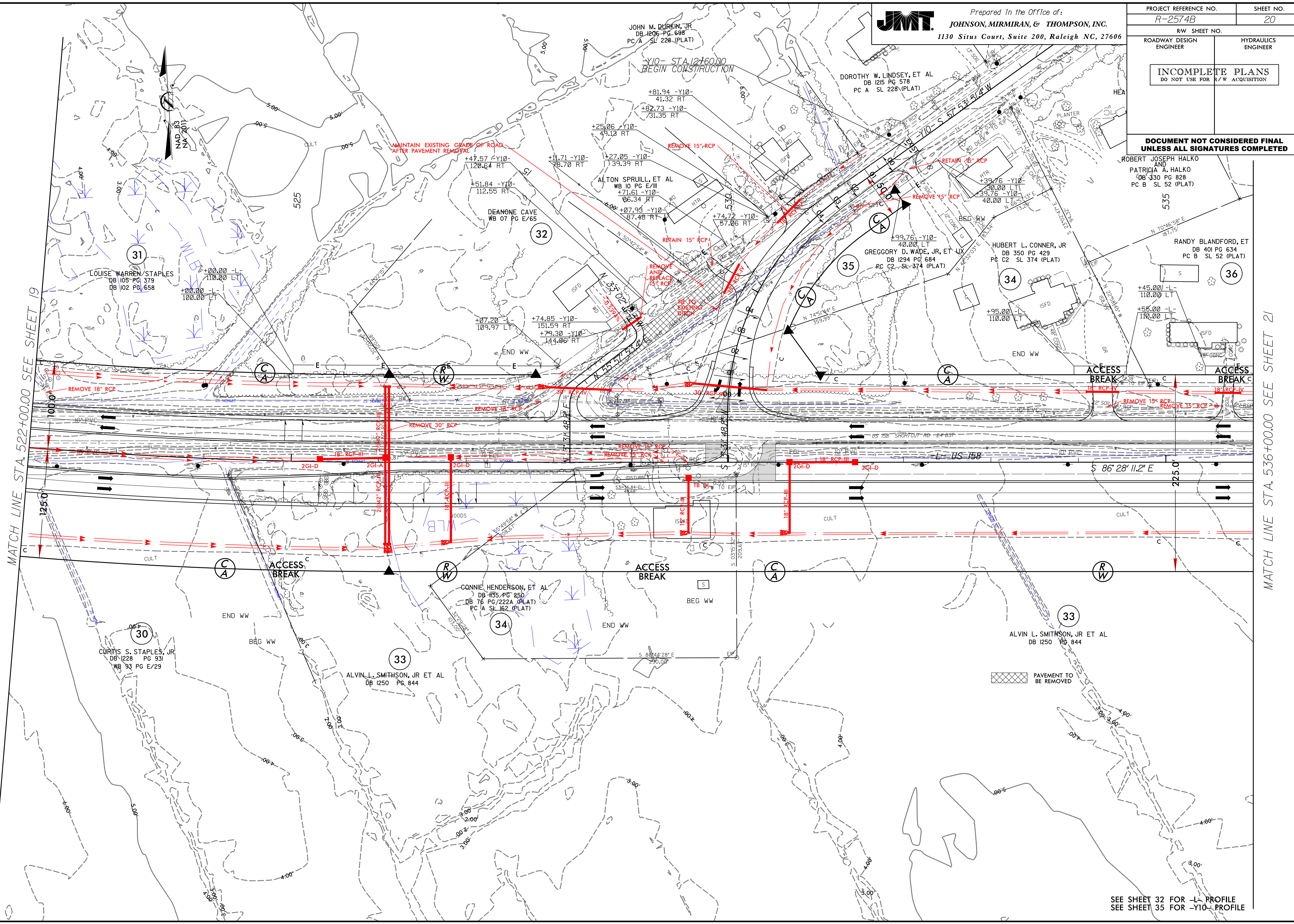
RANDY BLANDFORD, ET AL
DB 401 PG 634
PC B SL 52 (PLAT)

JOHN M. DURKIN, JR.
DB 1206 PG 698
PC A SL 228 (PLAT)

DOROTHY W. LINDSEY, ET AL
DB 1215 PG 578
PC A SL 228 (PLAT)

ALTON SPRULL, ET AL
WB 10 PG E/III
+71.61 -Y10-
66.34 RT

GREGORY D. WADE, JR, ET AL
DB 1294 PG 684
PC C2 SL 374 (PLAT)



MATCH LINE STA. 522+00.00 SEE SHEET 19

MATCH LINE STA. 536+00.00 SEE SHEET 21

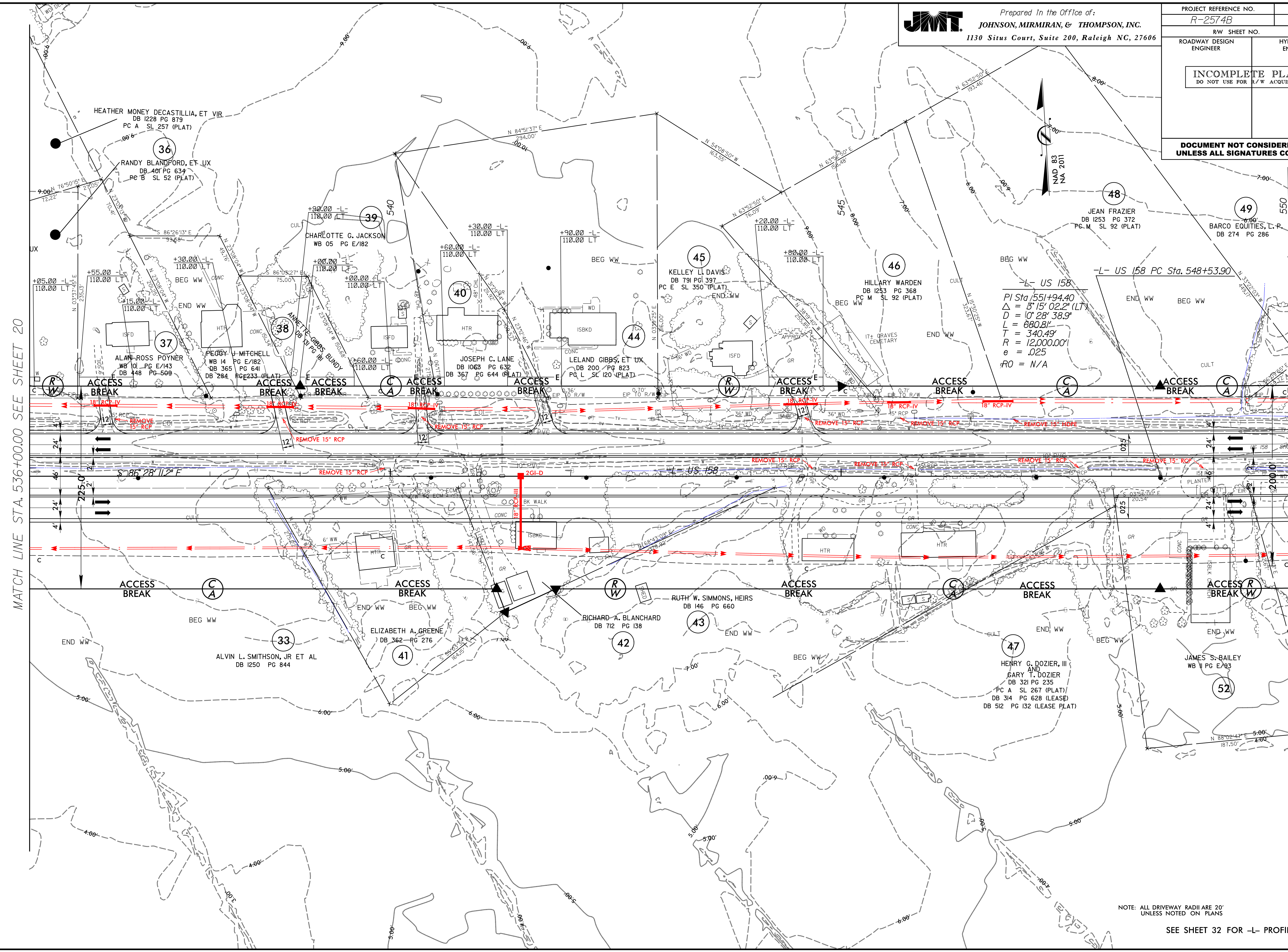
REVISIONS

SEE SHEET 32 FOR -L- PROFILE
SEE SHEET 35 FOR -Y10- PROFILE



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PROJECT REFERENCE NO. R-2574B	SHEET NO. 21
RW 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- US 158
 PI Sta 551+94.40
 $\Delta = 5^{\circ}15'02.2''$ (LT)
 $D = 0^{\circ}28'38.9''$
 $L = 660.8'$
 $T = 340.49'$
 $R = 12,000.00'$
 $e = .025$
 $RO = N/A$

MATCH LINE STA. 536+00.00 SEE SHEET 20

MATCH LINE STA. 550+00.00 SEE SHEET 22

REVISIONS

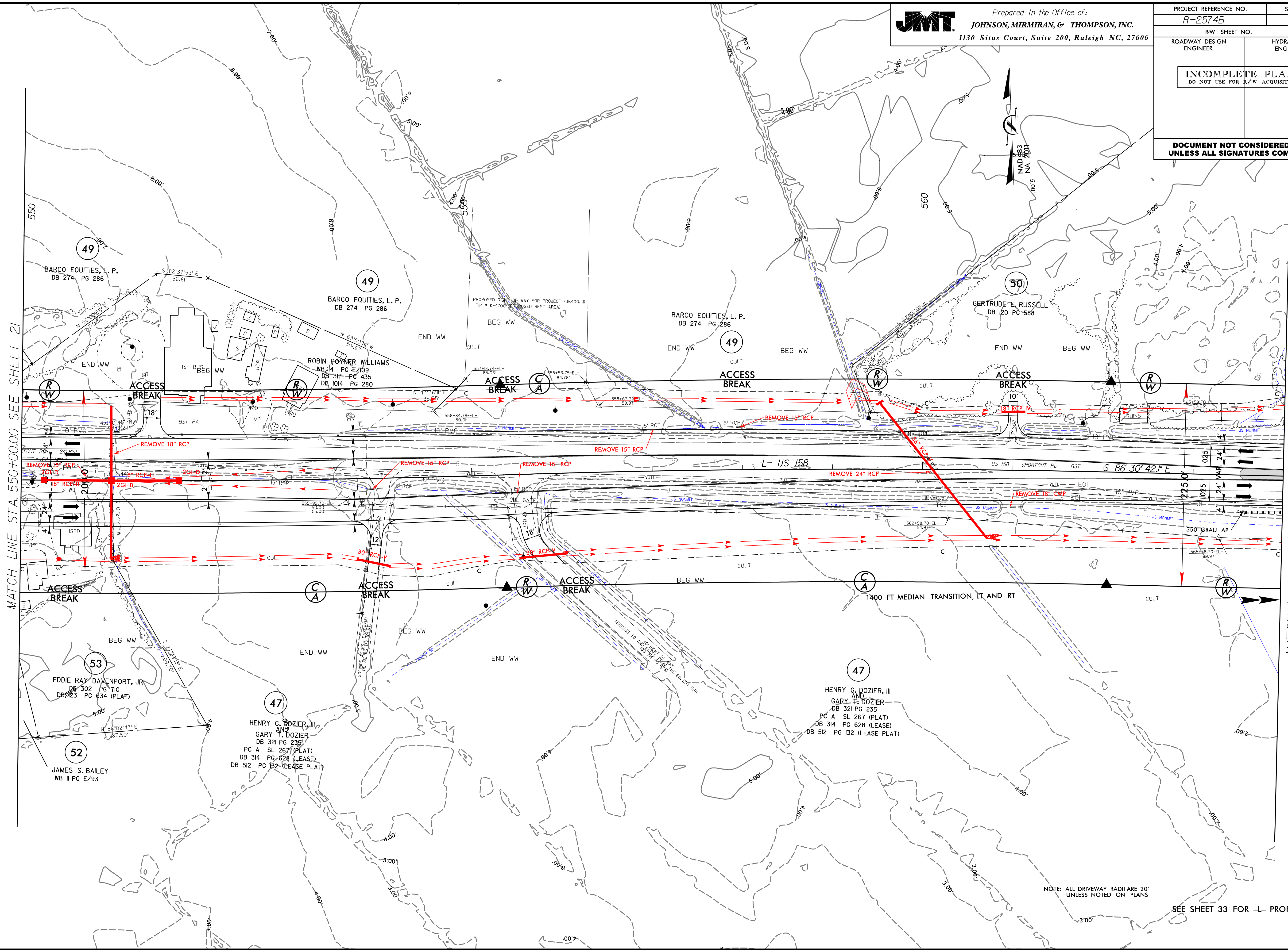
8.17.09
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 AT: VBA192051

NOTE: ALL DRIVEWAY RADII ARE 20'
 UNLESS NOTED ON PLANS
 SEE SHEET 32 FOR -L- PROFILE



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PROJECT REFERENCE NO. R-2574B	SHEET NO. 22
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	



MATCH LINE STA. 550+00.00 SEE SHEET 21

MATCH LINE STA. 564+00.00 SEE SHEET 23

REVISIONS

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NOTE: ALL DRIVEWAY RADII ARE 20' UNLESS NOTED ON PLANS

SEE SHEET 33 FOR -L- PROFILE

5/28/99



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1130 Situs Court, Suite 200, Raleigh NC, 27606



MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

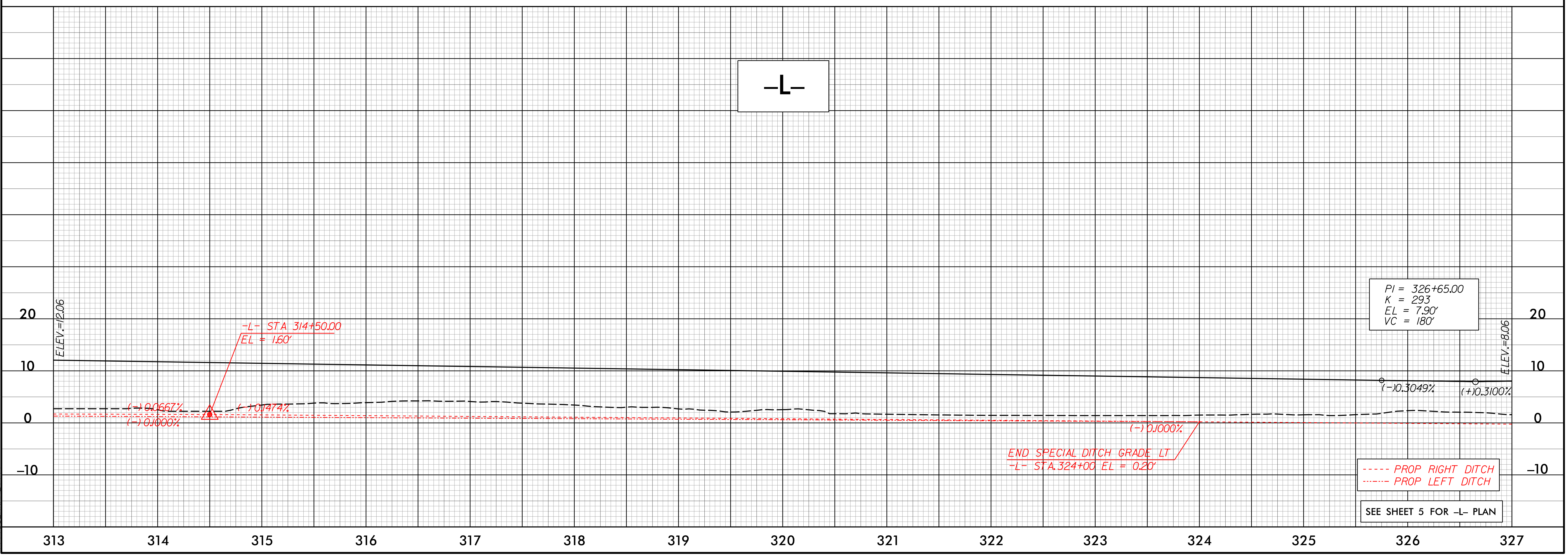
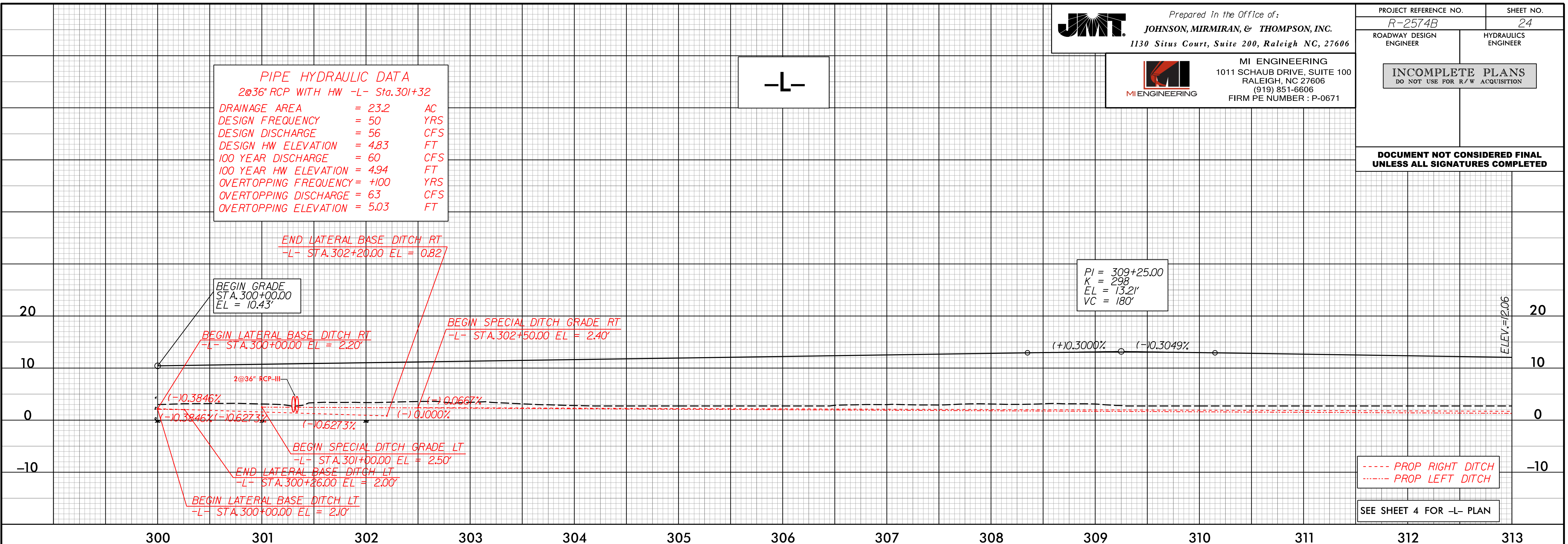
PROJECT REFERENCE NO. R-2574B	SHEET NO. 24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

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

PIPE HYDRAULIC DATA
2@36" RCP WITH HW -L- Sta.301+32

DRAINAGE AREA	= 23.2	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 56	CFS
DESIGN HW ELEVATION	= 4.83	FT
100 YEAR DISCHARGE	= 60	CFS
100 YEAR HW ELEVATION	= 4.94	FT
OVERTOPPING FREQUENCY	= +100	YRS
OVERTOPPING DISCHARGE	= 63	CFS
OVERTOPPING ELEVATION	= 5.03	FT

-L-



15-MAY-2019 15:07
R:\11111111\11111111\CADD\NR2574B-Hyd-p1_24.dgn

5/28/99



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JOHNSON, MIRMIRAN, & THOMPSON, INC.
1130 Situs Court, Suite 200, Raleigh NC, 27606



MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

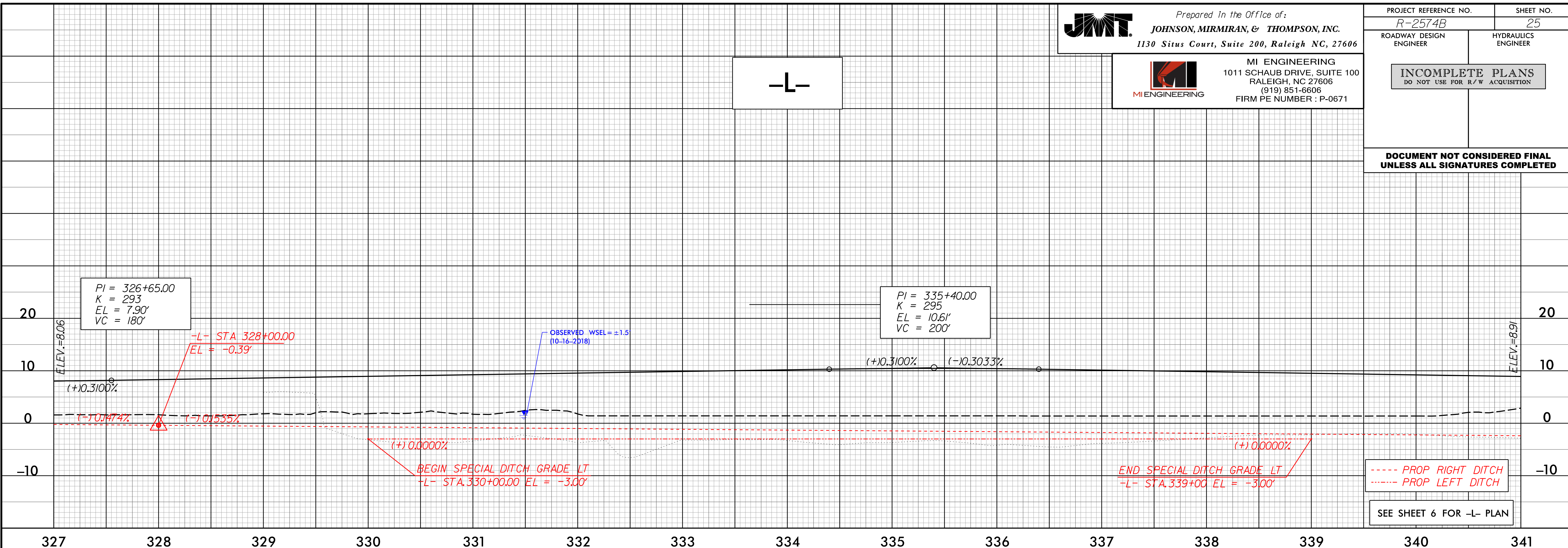
PROJECT REFERENCE NO. SHEET NO.

R-2574B 25

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

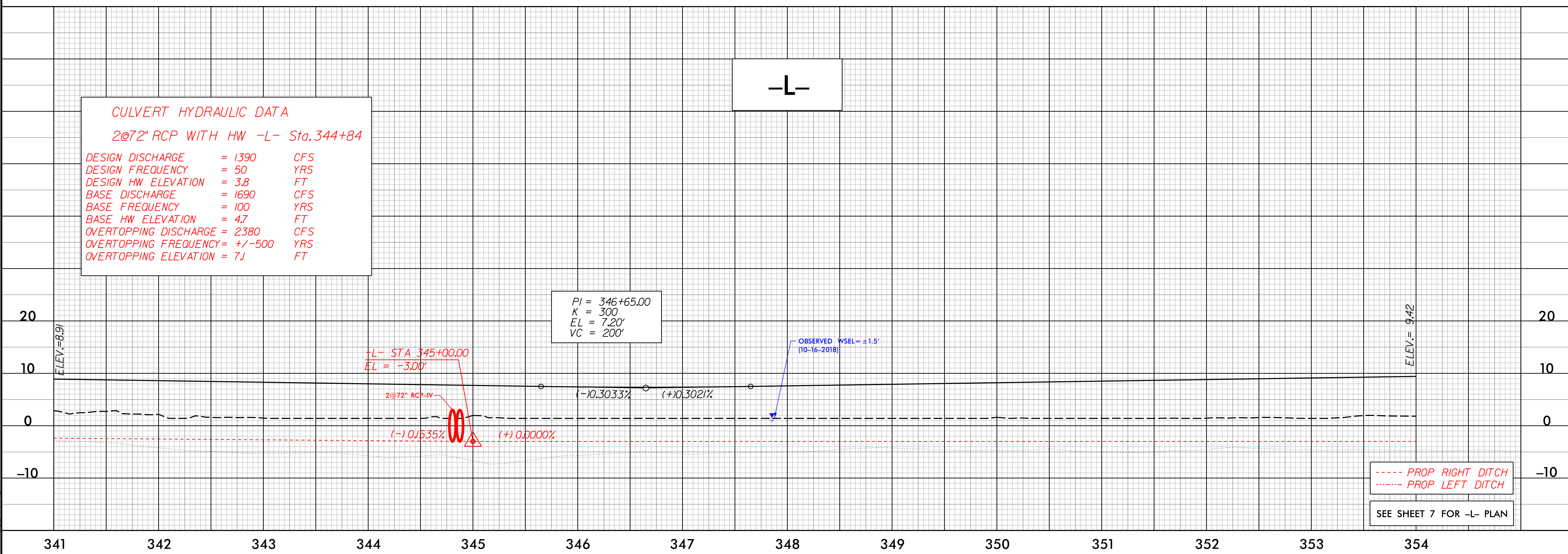
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



CULVERT HYDRAULIC DATA
2@72" RCP WITH HW -L- Sta. 344+84

DESIGN DISCHARGE	= 1390	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 3.8	FT
BASE DISCHARGE	= 1690	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 4.7	FT
OVERTOPPING DISCHARGE	= 2380	CFS
OVERTOPPING FREQUENCY	= +/-500	YRS
OVERTOPPING ELEVATION	= 7.1	FT



15-MAY-2019 15:07
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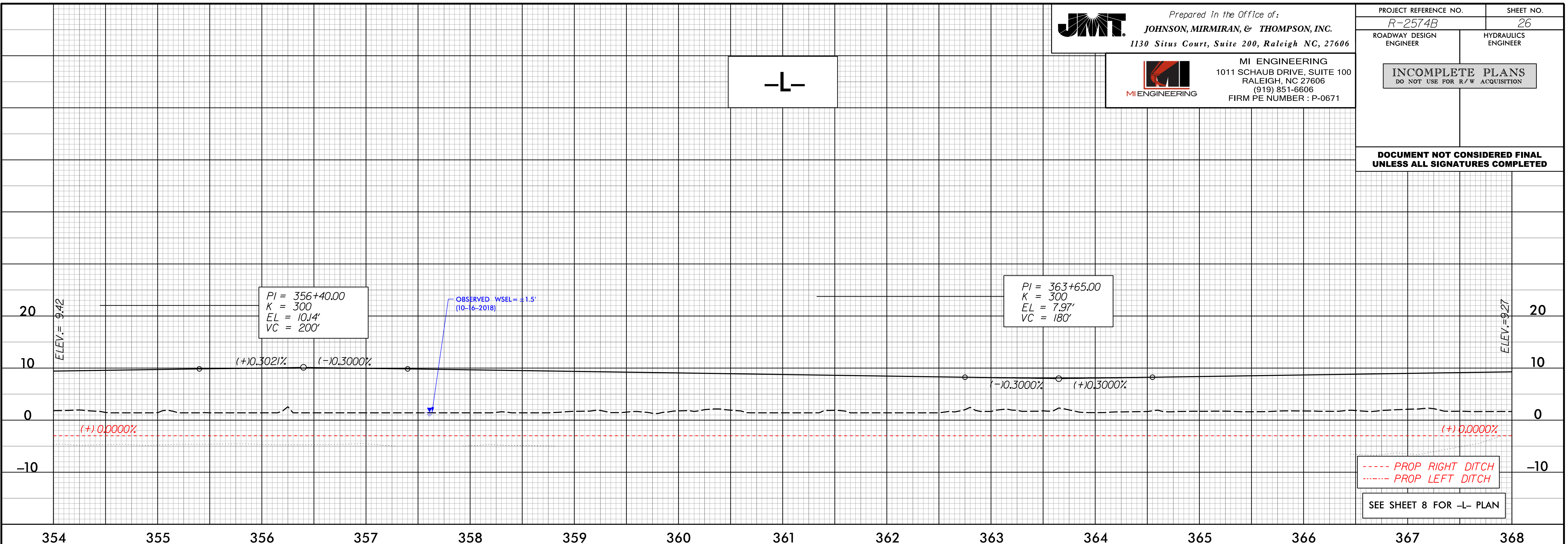
5/28/99

JMT Prepared in the Office of:
JOHNSON, MIRMIRAN, & THOMPSON, INC.
 1130 Situs Court, Suite 200, Raleigh NC, 27606

MI ENGINEERING
 1011 SCHAUB DRIVE, SUITE 100
 RALEIGH, NC 27606
 (919) 851-6606
 FIRM PE NUMBER : P-0671

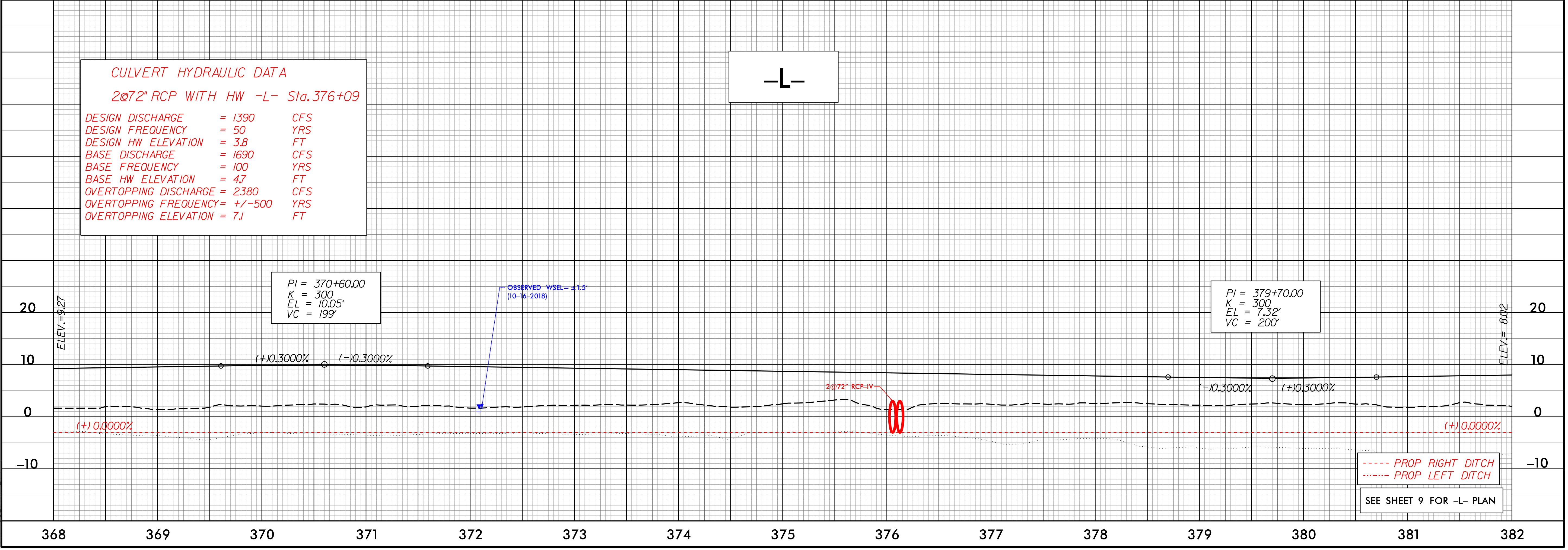
PROJECT REFERENCE NO. R-2574B	SHEET NO. 26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

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



CULVERT HYDRAULIC DATA
 2@72" RCP WITH HW -L- Sta.376+09

DESIGN DISCHARGE	= 1390	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 3.8	FT
BASE DISCHARGE	= 1690	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 4.7	FT
OVERTOPPING DISCHARGE	= 2380	CFS
OVERTOPPING FREQUENCY	= +/-500	YRS
OVERTOPPING ELEVATION	= 7J	FT



15-MAY-2019 15:07
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5/28/99



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1130 Situs Court, Suite 200, Raleigh NC, 27606



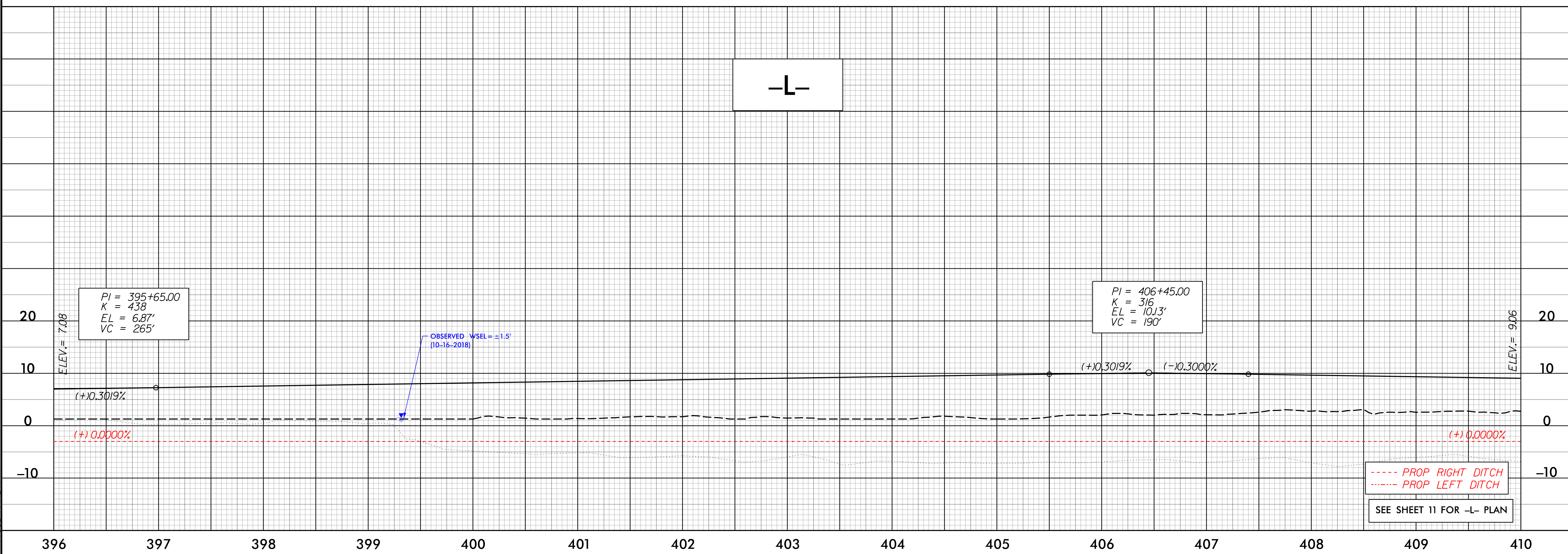
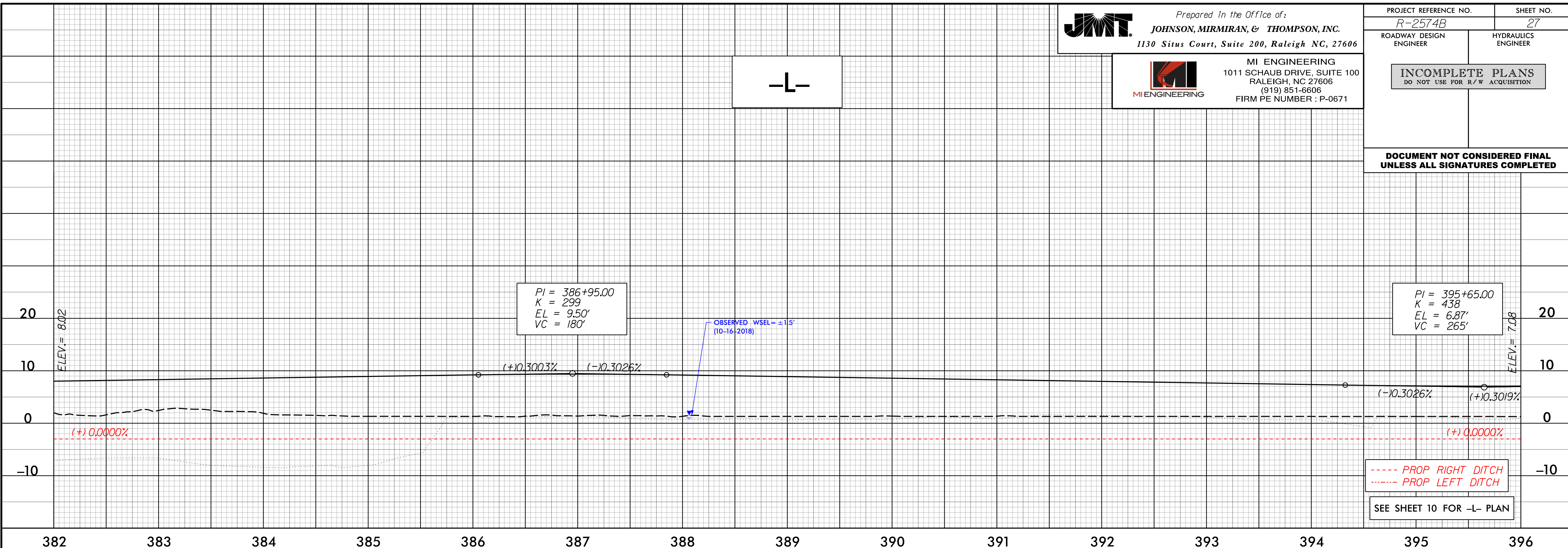
MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

PROJECT REFERENCE NO. **R-2574B** SHEET NO. **27**

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
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JOHNSON, MIRMIRAN, & THOMPSON, INC.
1130 Situs Court, Suite 200, Raleigh NC, 27606



MI ENGINEERING
1011 SCHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

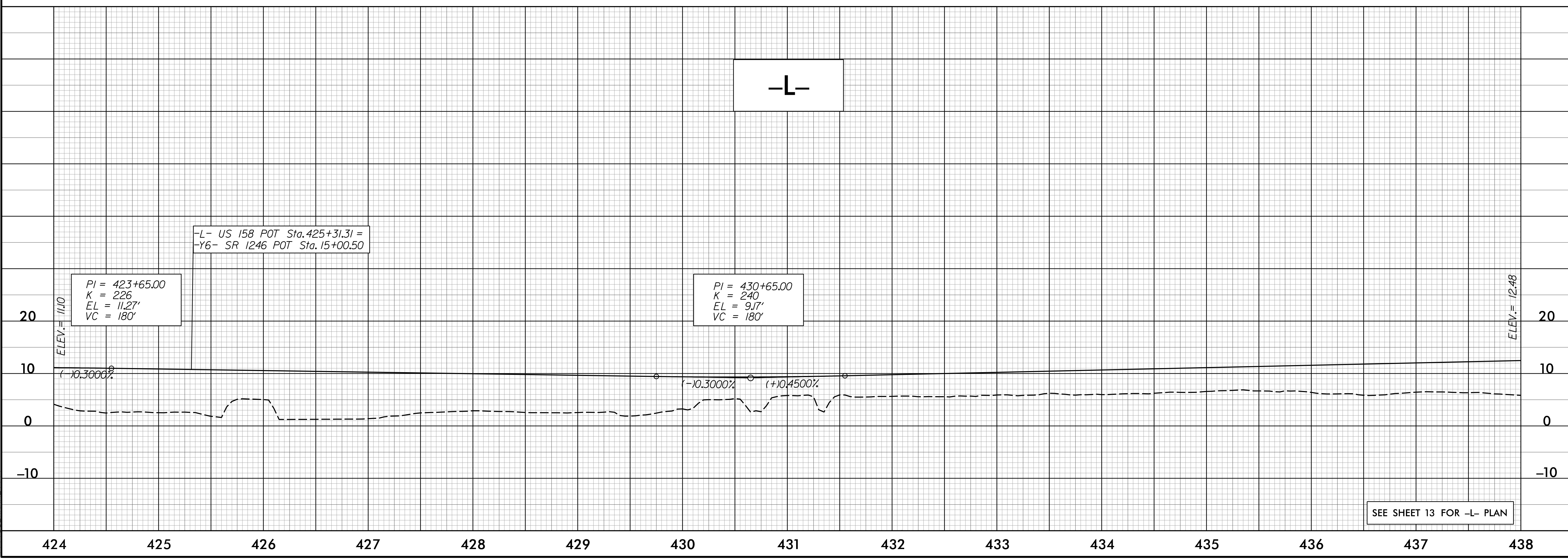
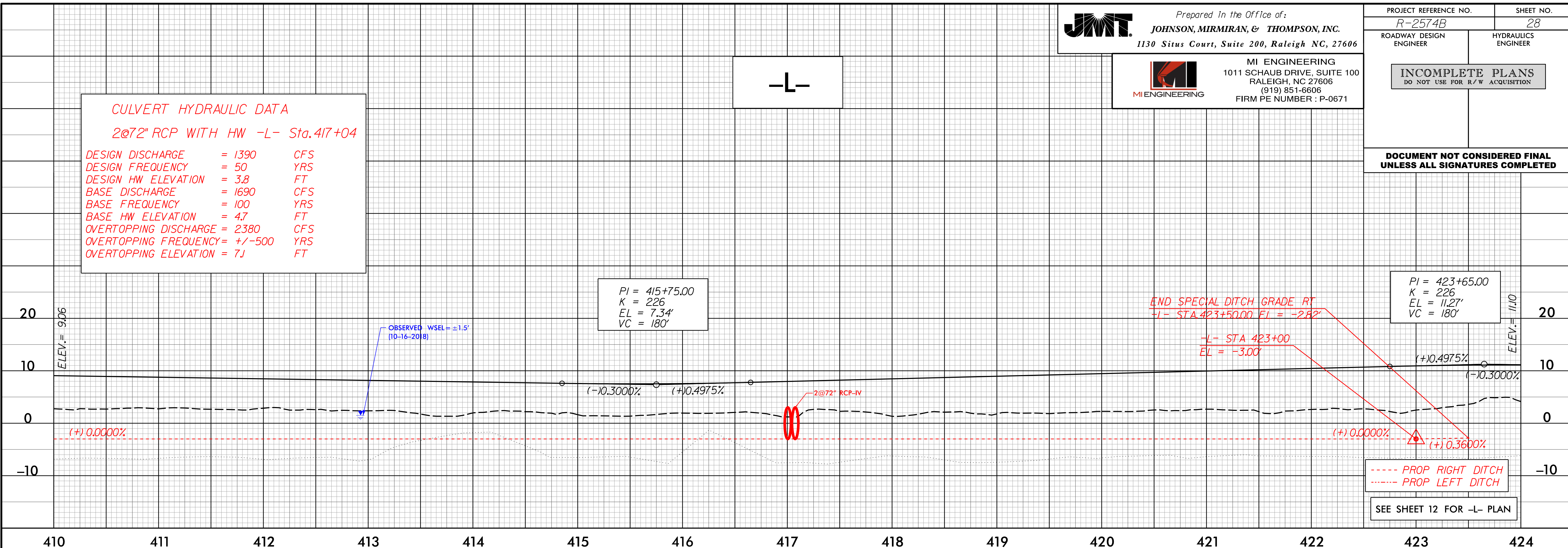
PROJECT REFERENCE NO. **R-2574B** SHEET NO. **28**

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CULVERT HYDRAULIC DATA
2@72" RCP WITH HW -L- Sta. 417+04
DESIGN DISCHARGE = 1390 CFS
DESIGN FREQUENCY = 50 YRS
DESIGN HW ELEVATION = 3.8 FT
BASE DISCHARGE = 1690 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 4.7 FT
OVERTOPPING DISCHARGE = 2380 CFS
OVERTOPPING FREQUENCY = +/- 500 YRS
OVERTOPPING ELEVATION = 7.1 FT



15-MAY-2019 15:07
R:\Users\paul@jmt.com\Projects\CADD\NR2574B-Hyd-pfl-28.dgn

5/28/99



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PROJECT REFERENCE NO. SHEET NO.

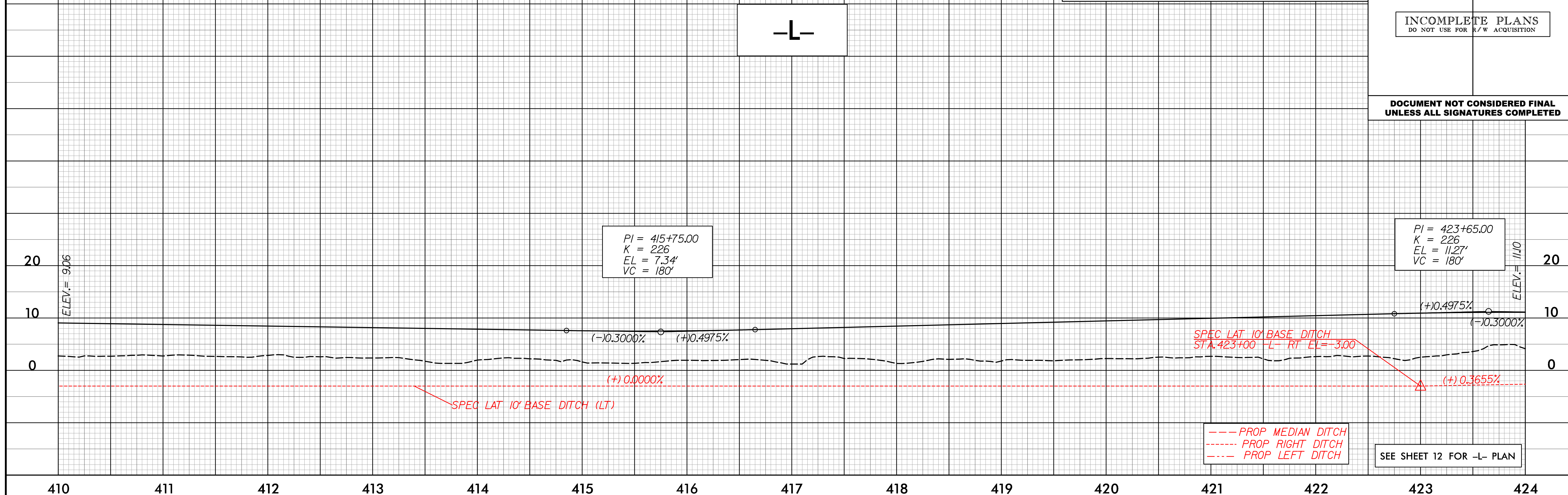
R-2574B 28

ROADWAY DESIGN ENGINEER

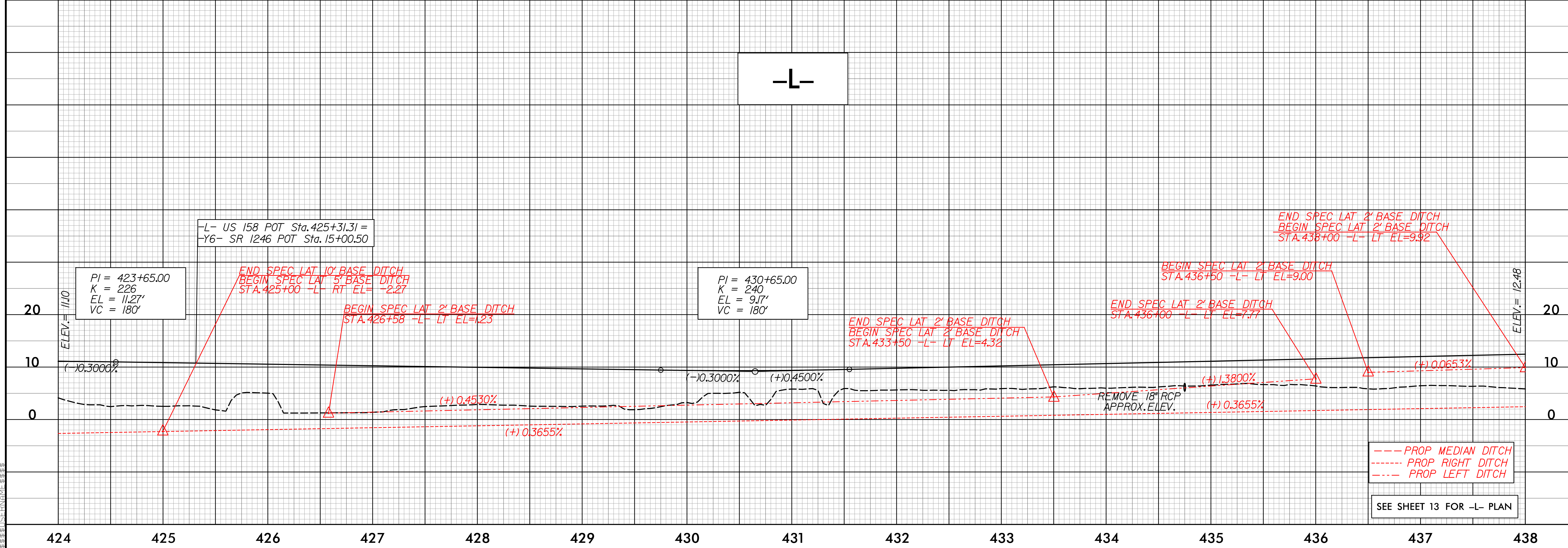
HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



10 JUN 2016 10:06 AM
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5/28/2019

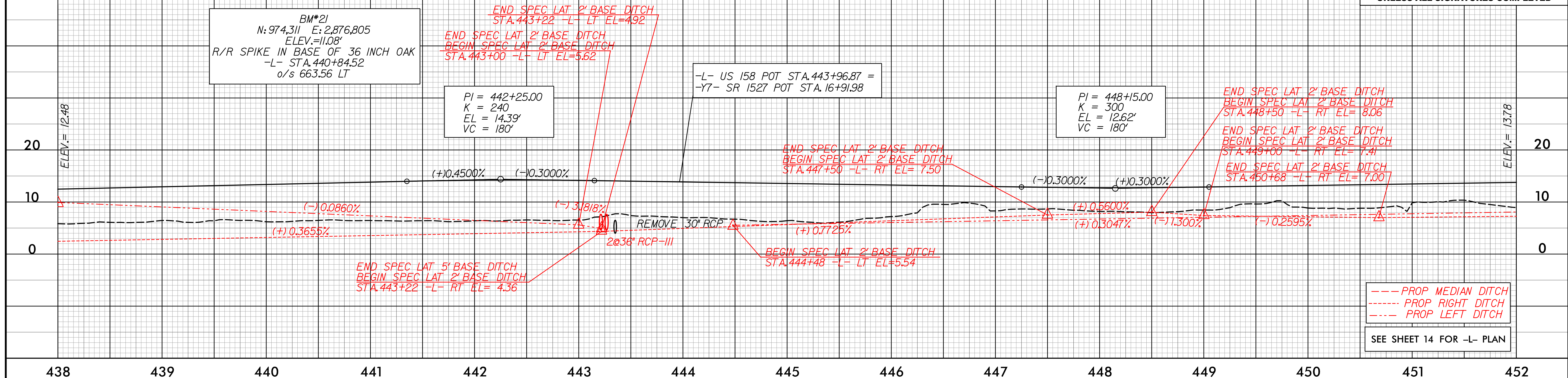
CULVERT HYDRAULIC DATA
2@36" RCP III -L- STA 443+22

DESIGN DISCHARGE	= 70	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 7.86	FT
BASE DISCHARGE	= 76	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 8.03	FT
OVERTOPPING DISCHARGE	= >76	CFS
OVERTOPPING FREQUENCY	= >100	YRS
OVERTOPPING ELEVATION	= 14.14	FT

JMT Prepared In the Office of:
JOHNSON, MIRMIRAN, & THOMPSON, INC.
1130 Situs Court, Suite 200, Raleigh NC, 27606

PROJECT REFERENCE NO.	R-2574B	SHEET NO.	29
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			

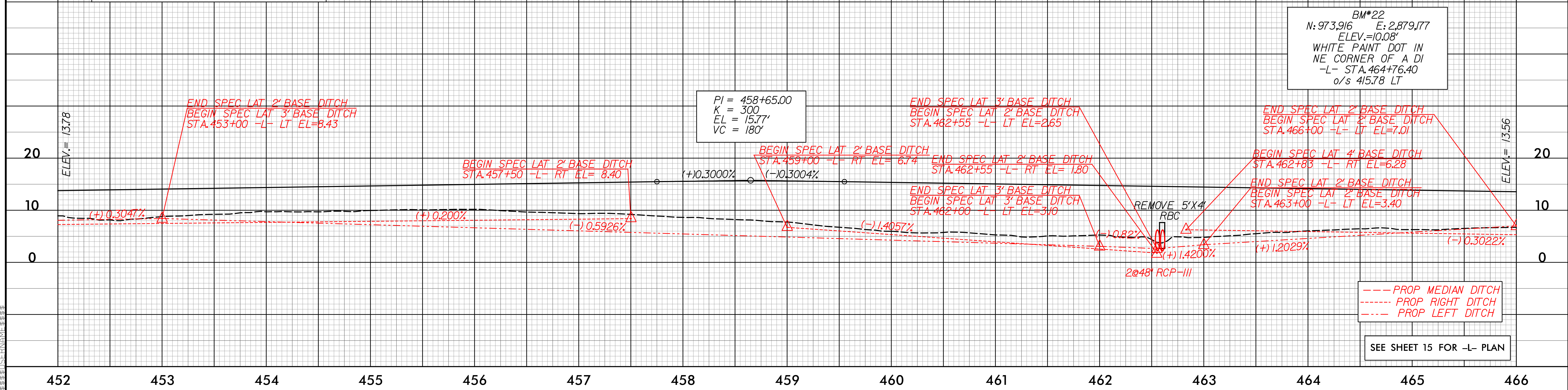
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



CULVERT HYDRAULIC DATA
2@ 48" RCP III -L- STA 462+55

DESIGN DISCHARGE	= 169	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 6.81	FT
BASE DISCHARGE	= 187	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 7.24	FT
OVERTOPPING DISCHARGE	= >187	CFS
OVERTOPPING FREQUENCY	= >100	YRS
OVERTOPPING ELEVATION	= 14.64	FT

BM*22
N: 973,916 E: 2,879,777
ELEV.=10.08'
WHITE PAINT DOT IN
NE CORNER OF A DI
-L- STA.464+76.40
o/s 415.78 LT



I:\JUN-2019\06080008_R-2574B_US-158_Widem\CA000\R-2574B_Roadway\Proj\Roadway\2574B_rdy_of1_29.dgn
 5/28/2019 10:08:00 AM

5/28/99

CULVERT HYDRAULIC DATA
24" RCP III-L- STA 502+40

DESIGN DISCHARGE	= 11	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 5.60	FT
BASE DISCHARGE	= 12	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 5.72	FT
OVERTOPPING DISCHARGE	= >12	CFS
OVERTOPPING FREQUENCY	= >100	YRS
OVERTOPPING ELEVATION	= 11.41	FT

PROJECT REFERENCE NO.	R-2574B	SHEET NO.	31
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

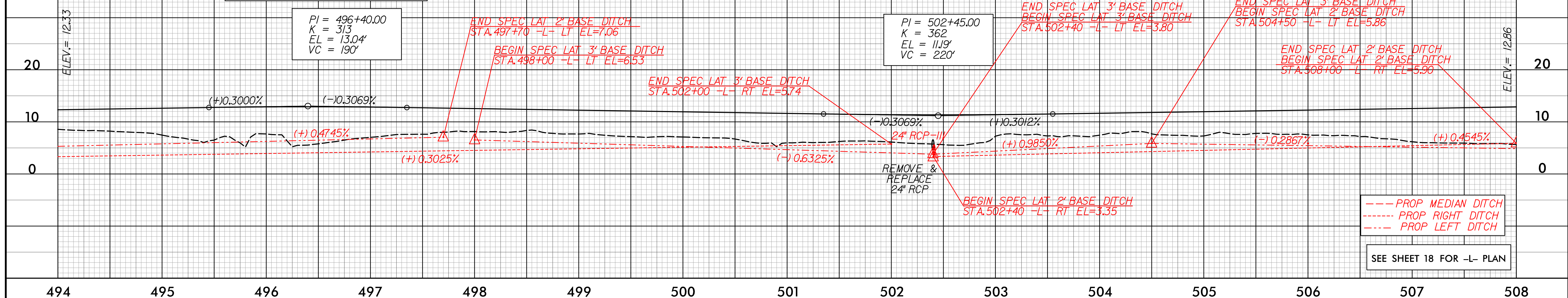
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BM*23
N: 973,573 E: 2,882,340
ELEV.=10.13'
R/R SPIKE IN BASE OF 24 IN OAK
-L- STA. 496+65.10
o/s 201.86 LT

PI = 496+40.00
K = 313
EL = 13.04'
VC = 190'

PI = 502+45.00
K = 362
EL = 11.19'
VC = 220'



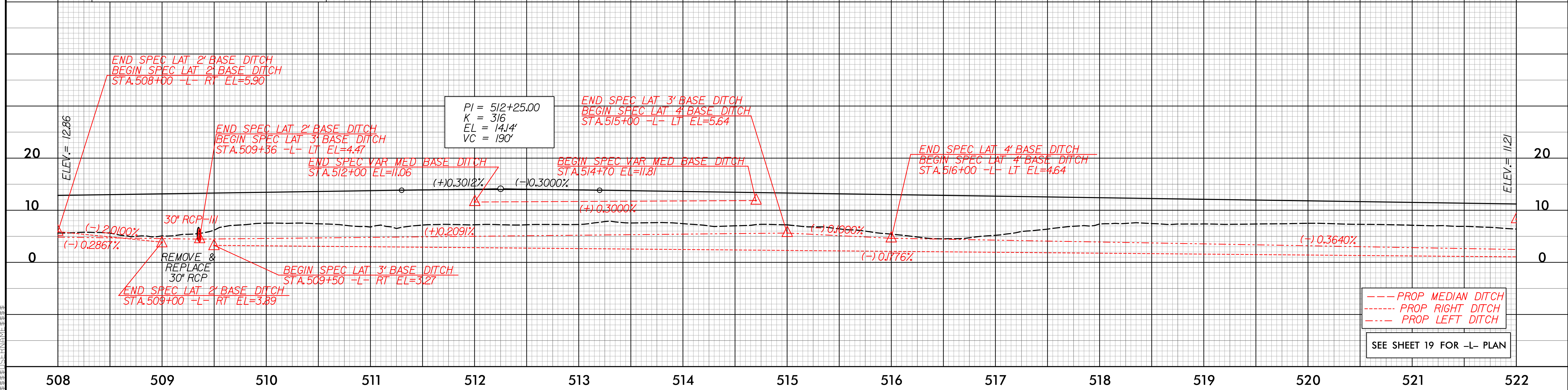
--- PROP MEDIAN DITCH
..... PROP RIGHT DITCH
..... PROP LEFT DITCH

SEE SHEET 18 FOR -L- PLAN

CULVERT HYDRAULIC DATA
30" RCP III-L- STA 509+36

DESIGN DISCHARGE	= 14	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 6.27	FT
BASE DISCHARGE	= 15	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 6.34	FT
OVERTOPPING DISCHARGE	= >15	CFS
OVERTOPPING FREQUENCY	= >100	YRS
OVERTOPPING ELEVATION	= 13.25	FT

PI = 512+25.00
K = 316
EL = 14.14'
VC = 190'



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

SEE SHEET 19 FOR -L- PLAN

10-JUN-2016 10:06 AM
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5/28/99

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-Y6-

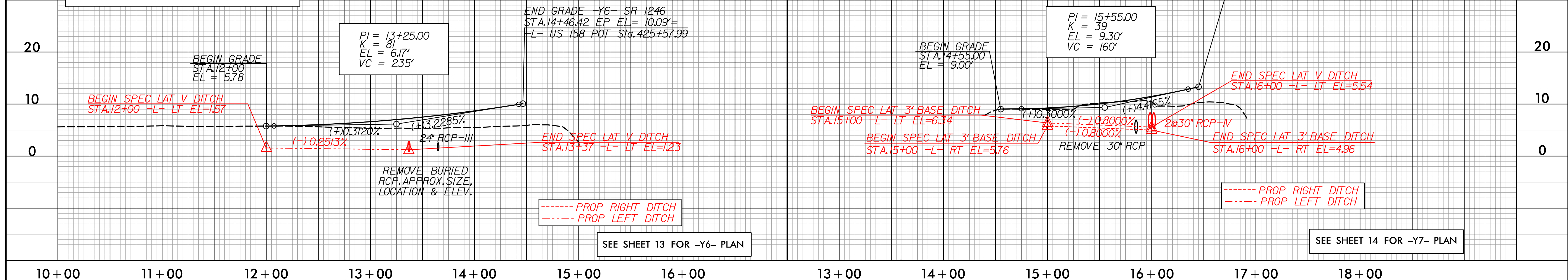
CULVERT HYDRAULIC DATA
24" RCP III-Y6- STA 13+37

DESIGN DISCHARGE	= 12	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 3.05	FT
BASE DISCHARGE	= 15	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 3.33	FT
OVERTOPPING DISCHARGE	= >15	CFS
OVERTOPPING FREQUENCY	= >100	YRS
OVERTOPPING ELEVATION	= 5.78	FT

-Y7-

CULVERT HYDRAULIC DATA
2@30" RCP N-Y7- STA 16+02

DESIGN DISCHARGE	= 33	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 8.05	FT
BASE DISCHARGE	= 41	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 8.61	FT
OVERTOPPING DISCHARGE	= >41	CFS
OVERTOPPING FREQUENCY	= >100	YRS
OVERTOPPING ELEVATION	= 9.22	FT



10+00 11+00 12+00 13+00 14+00 15+00 16+00 13+00 14+00 15+00 16+00 17+00 18+00

-Y8-

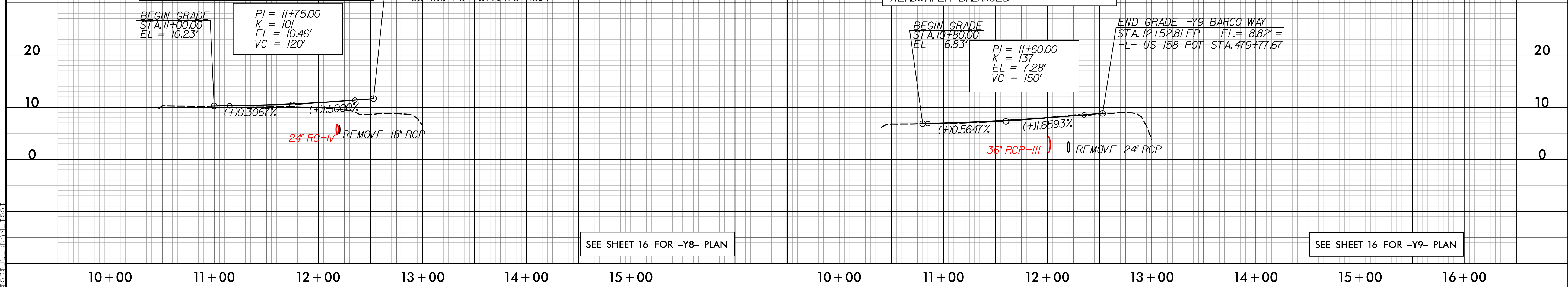
CULVERT HYDRAULIC DATA
24" RCP N-Y8- STA 12+18

DESIGN DISCHARGE	= 9	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 6.88	FT
BASE DISCHARGE	= 11	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 7.39	FT
OVERTOPPING DISCHARGE	= >11	CFS
OVERTOPPING FREQUENCY	= >100	YRS
OVERTOPPING ELEVATION	= 10.07	FT

-Y9-

CULVERT HYDRAULIC DATA
36" RCP III-Y9- STA 12+02

DESIGN DISCHARGE	= 117	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 3.40	FT
BASE DISCHARGE	= 160	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 3.84	FT
OVERTOPPING DISCHARGE	= >160	CFS
OVERTOPPING FREQUENCY	= >100	YRS
OVERTOPPING ELEVATION	= 8.93	FT
*HEADWATER BALANCED		



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

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