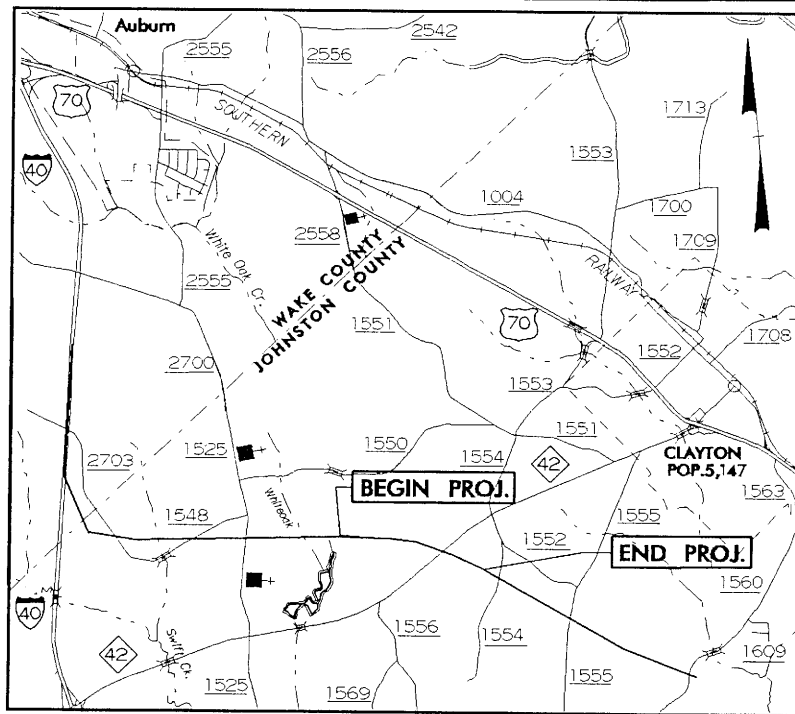
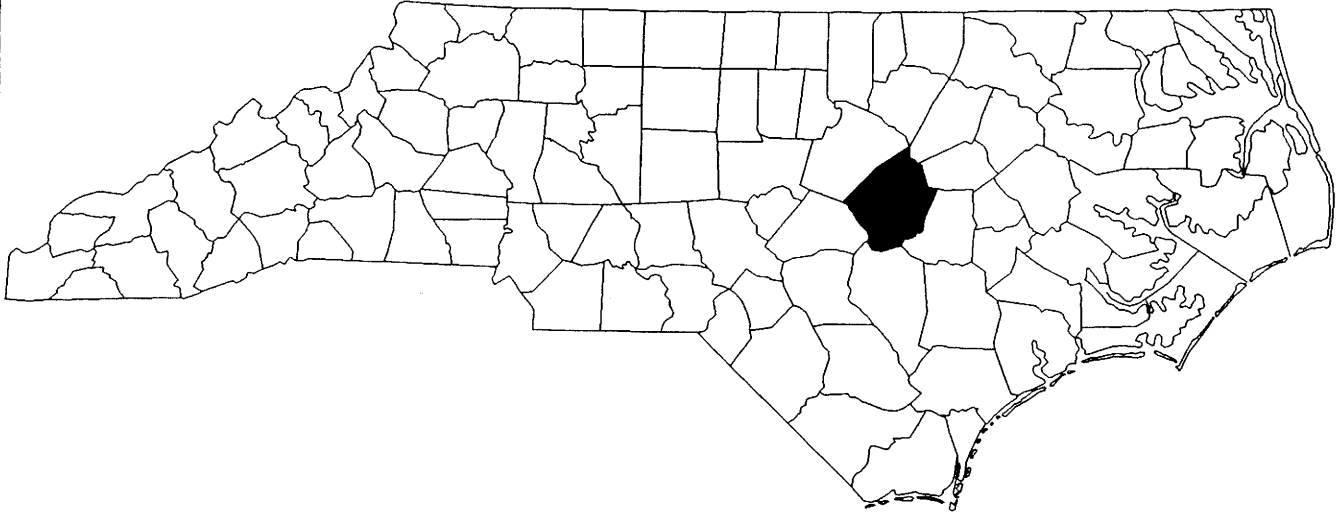
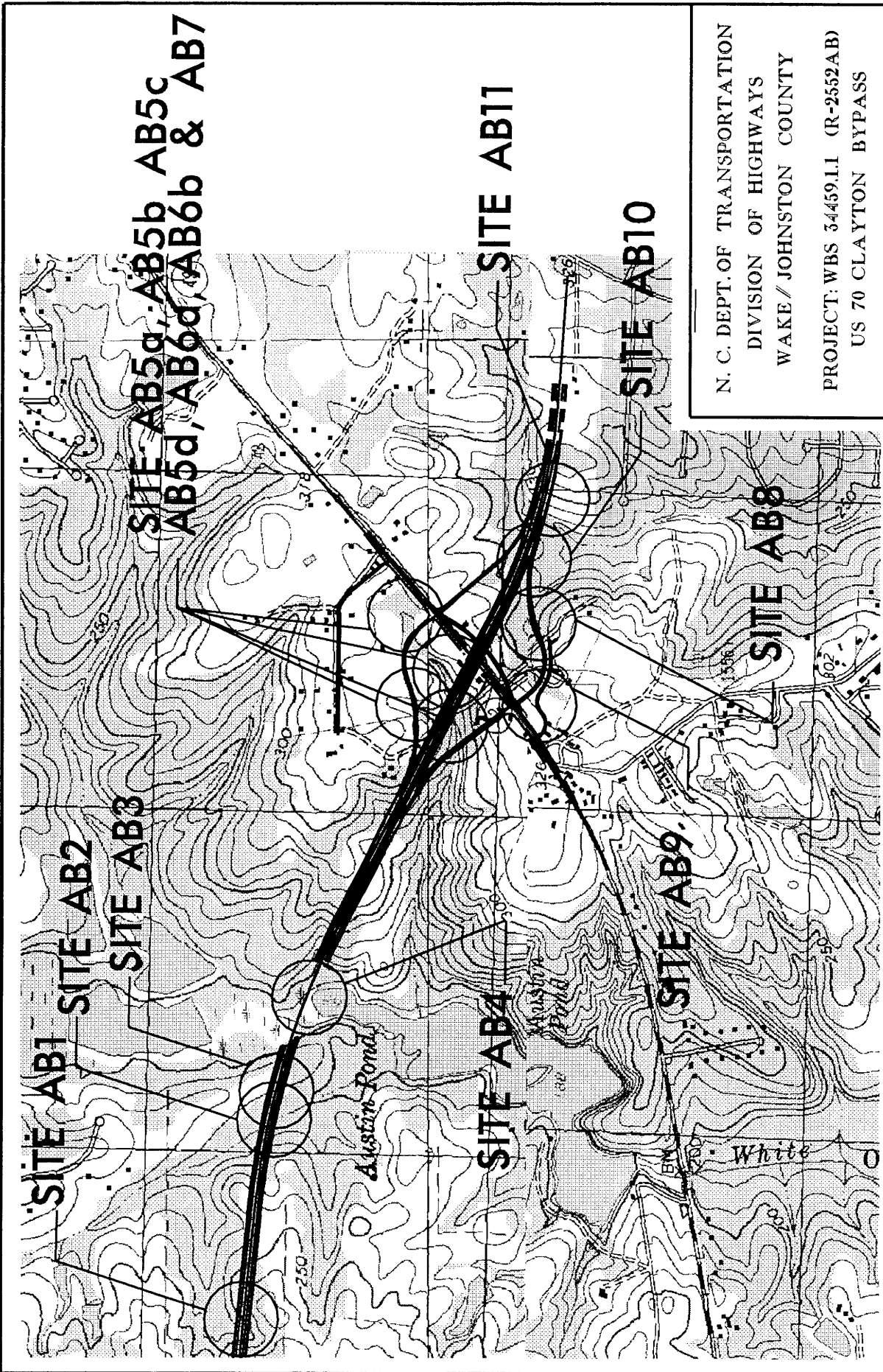


NORTH CAROLINA



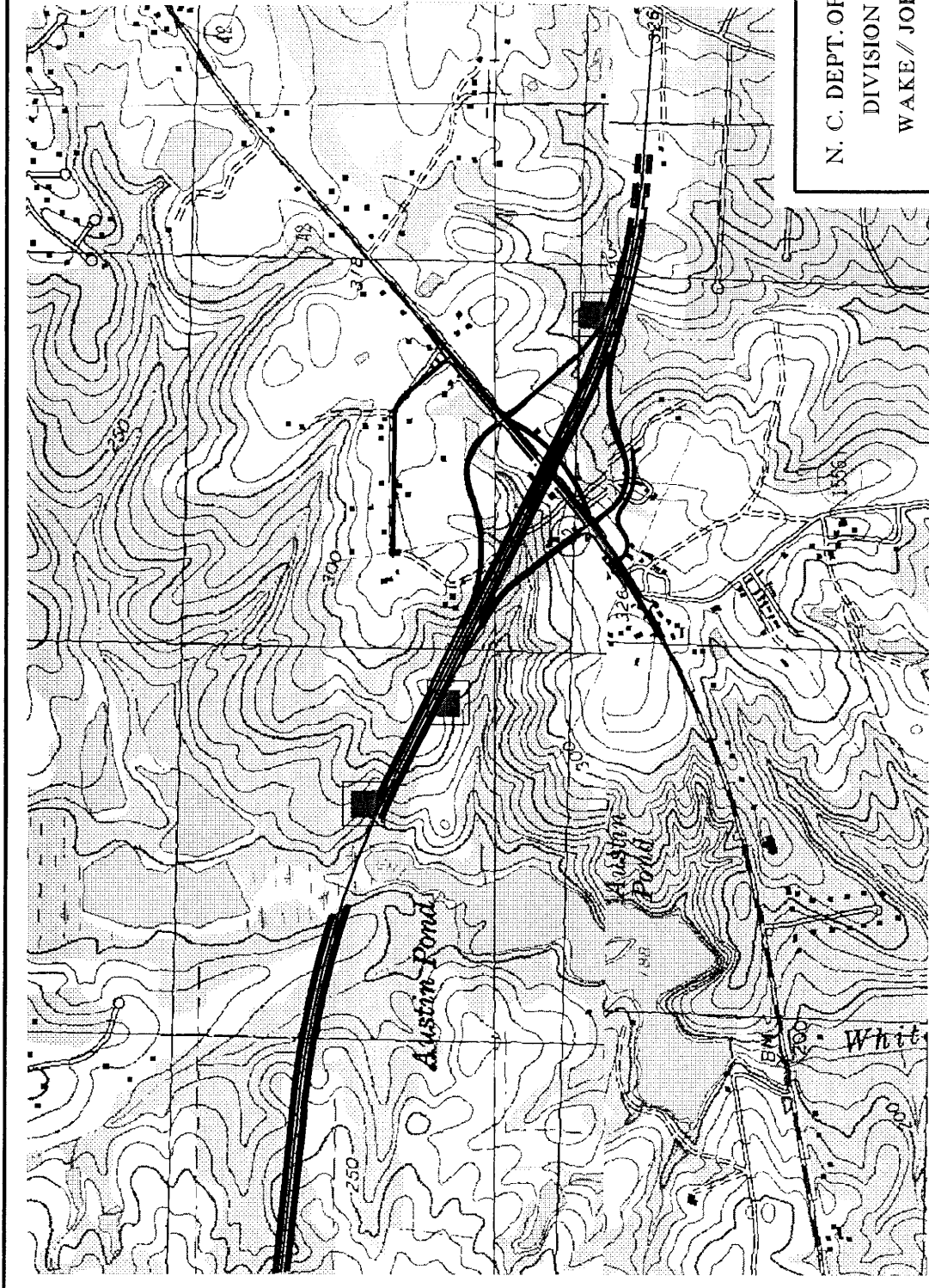
VICINITY MAP

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: WBS 34459.1.1 (R-2552AB)
US 70 CLAYTON BYPASS



SITE MAP

N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 WAKE / JOHNSTON COUNTY
 PROJECT: WBS 34459.1.1 (R-2552AB)
 US 70 CLAYTON BYPASS



HAZARDOUS SPILL BASIN



HAZARDOUS SPILL BASINS SITE MAP

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
WAKE/JOHNSTON COUNTY

PROJECT: WBS 34459.1.1 (R-2552AB)
US 70 CLAYTON BYPASS

SHEET 3 OF 23 10/01/04

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS					
			Fill In Wetlands Permanent (ac)	Excavation In Wetlands (ac)	Mechanized Clearing (Method III) (ac)	Fill In SW (Natural) Permanent (ac)	Fill In SW (Natural) Temporary (ac)	Existing Channel Impacted Permanent (ft)	Existing Channel Impacted Temporary (ft)	Natural Stream Design (ft)			
AB1	L 31+20	750 RCP	0.11		0.01								
AB2	L 37+10	RCBC				0.05				98			
AB3	L 37+60	N/A	0.04		0.01								
AB4	L 41+00	BRIDGE											
AB5b	RPB 14+80	900 RCP	0.07		0.02				128	26			
AB5c	L 50+70	1050 RCP	0.08		0.01	0.06			364	108			
AB7		POND	0.03			0.12							
AB5d	RPC 12+50	1350 RCP				0.13			561	13			
AB6a	RPB 12+90	900 RCP	0.01	0.01		0.02			102	10			
AB6b	L 50+30	900 RCP				0.09			226				
AB8	RPD 13+00	1350 RCP	0.17		0.05	0.01			118	23			
AB9	RPD 15+50	1050 RCP	0.09		0.01								
AB10	L 55+70	NONE	0.45		0.02								
AB11	L 57+30	RCBC	0.47		0.03	0.06			351	131			
PROJECT TOTALS:			1.52	0.01	0.16	0.49	0.05	0.05	2175	409			

NOTE: Hand Clearing in Wetlands SITE AB4 = 0.19 ac

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 WAKE / JOHNSTON COUNTY
 PROJECT # - WBS 34459.1.1 (R2552AB)
 US 70 - CLAYTON BYPASS

PROPERTY OWNERS
NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
33	WILLIE REAMS	6484 CORNWALLIS RD. GARNER, NC 27529
34	JANE CUNNINGHAM	P. O. BOX 965 MONTREAT, NC 28757
1	WILLIAM WESTON	806 LAWNDALE ST GARNER, NC 27529
2	SON-LAN SHIPWASH, LLC	5160 NC 42 WEST CLAYTON, NC 27520
3	CHARLES H. COATS	2279 NC 42 WEST CLAYTON, NC 27520
4	NETTIE ERDINE JOHNSON LIFE ESTATE	2740 NC 42 W CLAYTON, NC 27520
5	JOE BABOUR	3700 HWY 42 WEST CLAYTON, NC 27520

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: WBS 34459.1.1 (R-2552 AB)
US 70 CLAYTON BYPASS
FROM EAST OF SR 1525
TO EAST OF NC 42
SHEET 5 OF 23 10/01/04

PROPERTY OWNERS
NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
7	NETTIE ERDINE JOHNSON LIFE ESTATE	2740 NC 42 W CLAYTON, NC 27520
8	LEE BORTHERS RENTAL	400 W. MAIN ST. CLAYTON, NC 27520
9	CHARLES H. COATS, ET UX	2279 NC 42 WEST CLAYTON, NC 27520
10	JERRY M. COATS	2648 NC 42 WEST CLAYTON, NC 27520
14	JAMES H. SIMS	225-A S.A10 10TH ST. NEWARK, NJ 07103
15	SAMUEL SIMS	313 S. 9TH ST NEWARK, NJ 07103

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: WBS 34459.1.1 (R-2552 AB)
US 70 CLAYTON BYPASS
FROM EAST OF SR 1525
TO EAST OF NC 42
SHEET 6 OF 23 10/01/04

PROPERTY OWNERS
NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
17	JERRY M.COATS	2648 NC 42 WEST CLAYTON, NC 27520
18	LILLIAN LADD	987 NAPOLEAN RD.. SELMA, NC 27576-7701
19	NETTIE ERDINE JOHNSON LIFE ESTATE	2740 NC 42 W CLAYTON, NC 27520
20	MURIEL PENNY	2375 NC 42 WEST CLAYTON, NC 27520

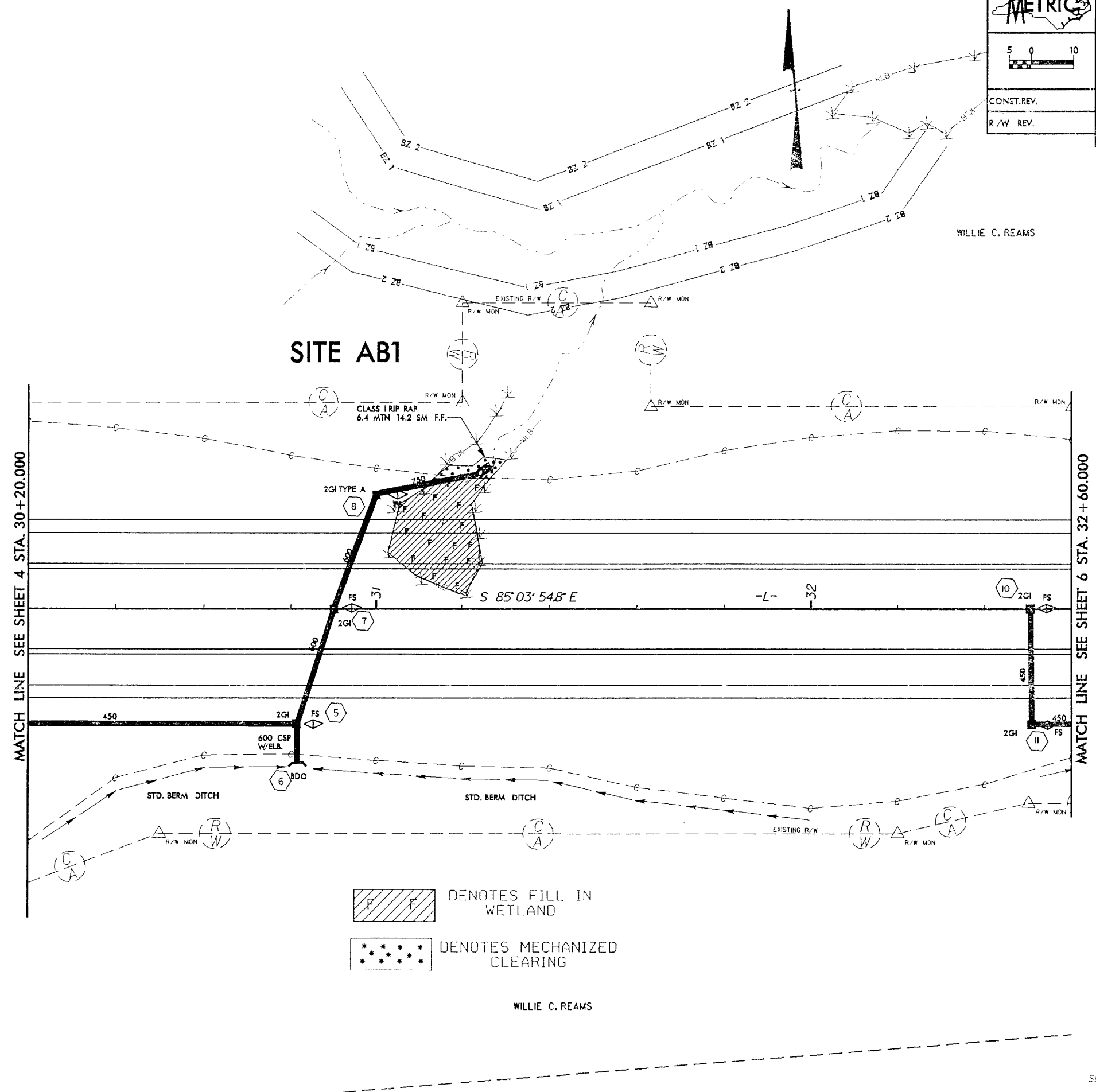
NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: WBS 34459.1.1 (R-2552 AB)
US 70 CLAYTON BYPASS
FROM EAST OF SR 1525
TO EAST OF NC 42
SHEET 7 OF 23 10/01/04



PROJECT REFERENCE NO.	R-2552AB	SHEET NO.	5
R/W SHEET NO.	R-2552AA *19 & *20		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
CONST. REV.			
R/W REV.			



REVISIONS

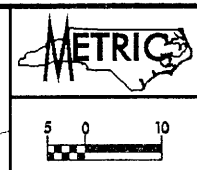


- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING

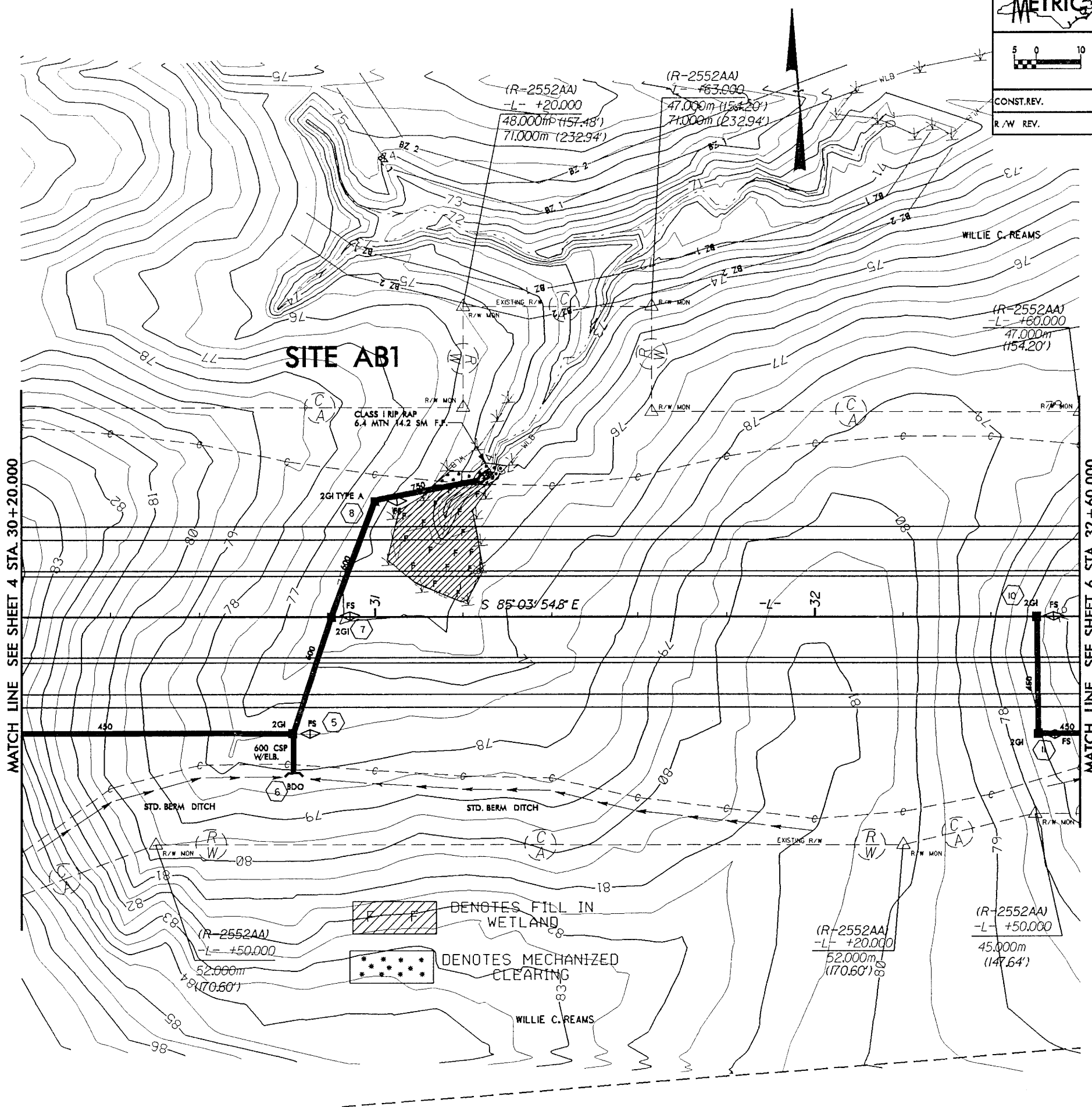
WILLIE C. REAMS

SEE SHEET 16 FOR -L- PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS

11/15/2011 10:51:11 AM
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 11/15/2011 10:51:11 AM
 11/15/2011 10:51:11 AM
 11/15/2011 10:51:11 AM



PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	5
R/W SHEET NO.	R-2552AA *19 & *20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST. REV.	
R/W REV.	



SITE AB1

CLASS 1 RIP RAP
6.4 MTN 14.2 SM F.F.

S 85°03'54.8" E

DENOTES FILL IN
WETLAND

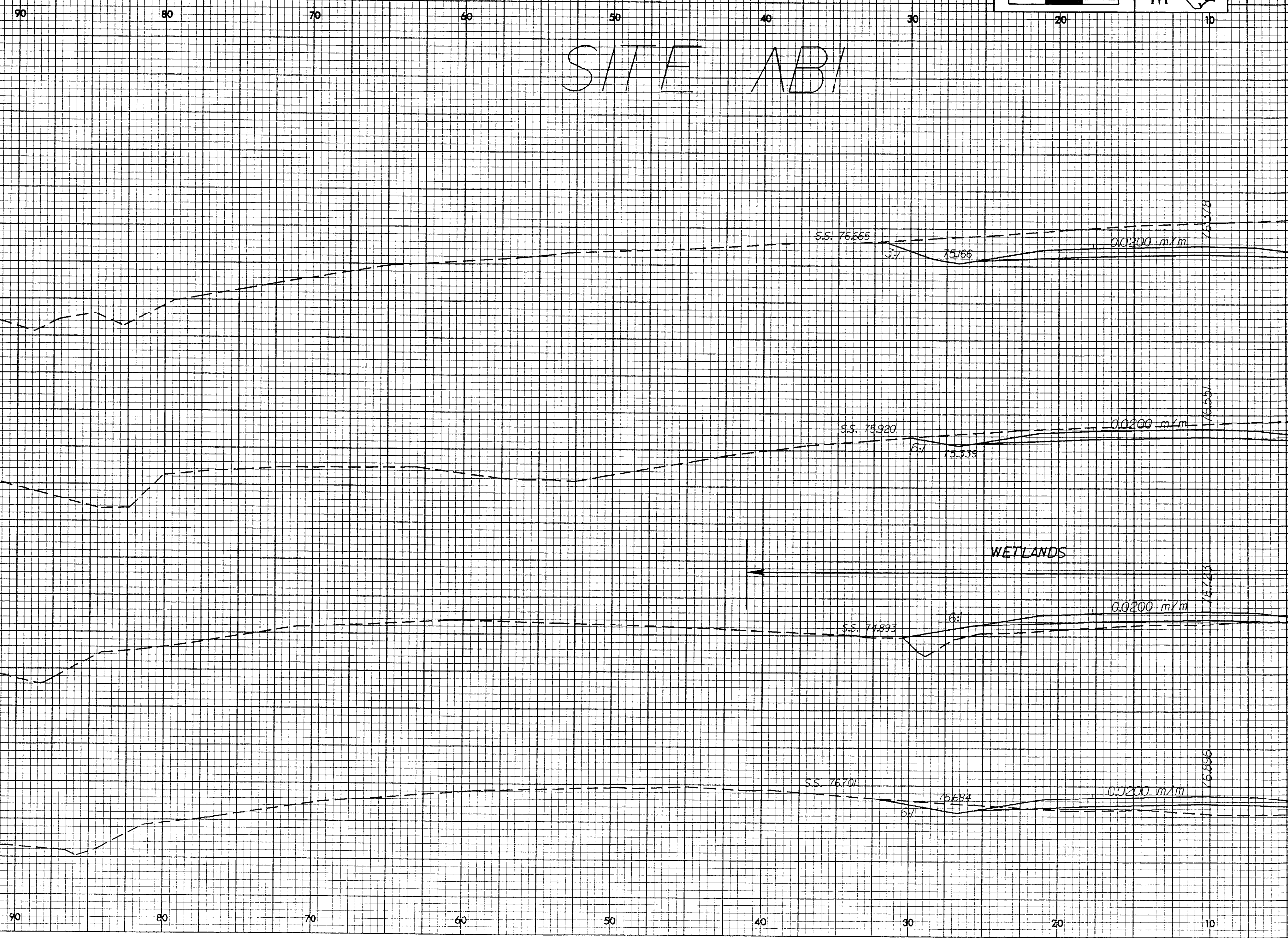
DENOTES MECHANIZED
CLEARING

SEE SHEET 16 FOR -L- PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS

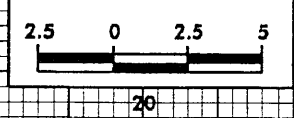
REVISIONS

*****SYSTEMS*****
*****DESIGN*****
*****ENGINEERS*****

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R-2552AB 1.2.rpl

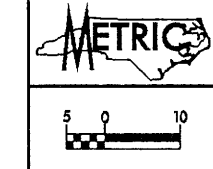


SITE ABI

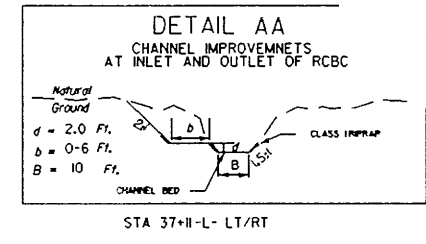


PROJECT REFERENCE NO. R-2552AB	SHEET NO. X-47
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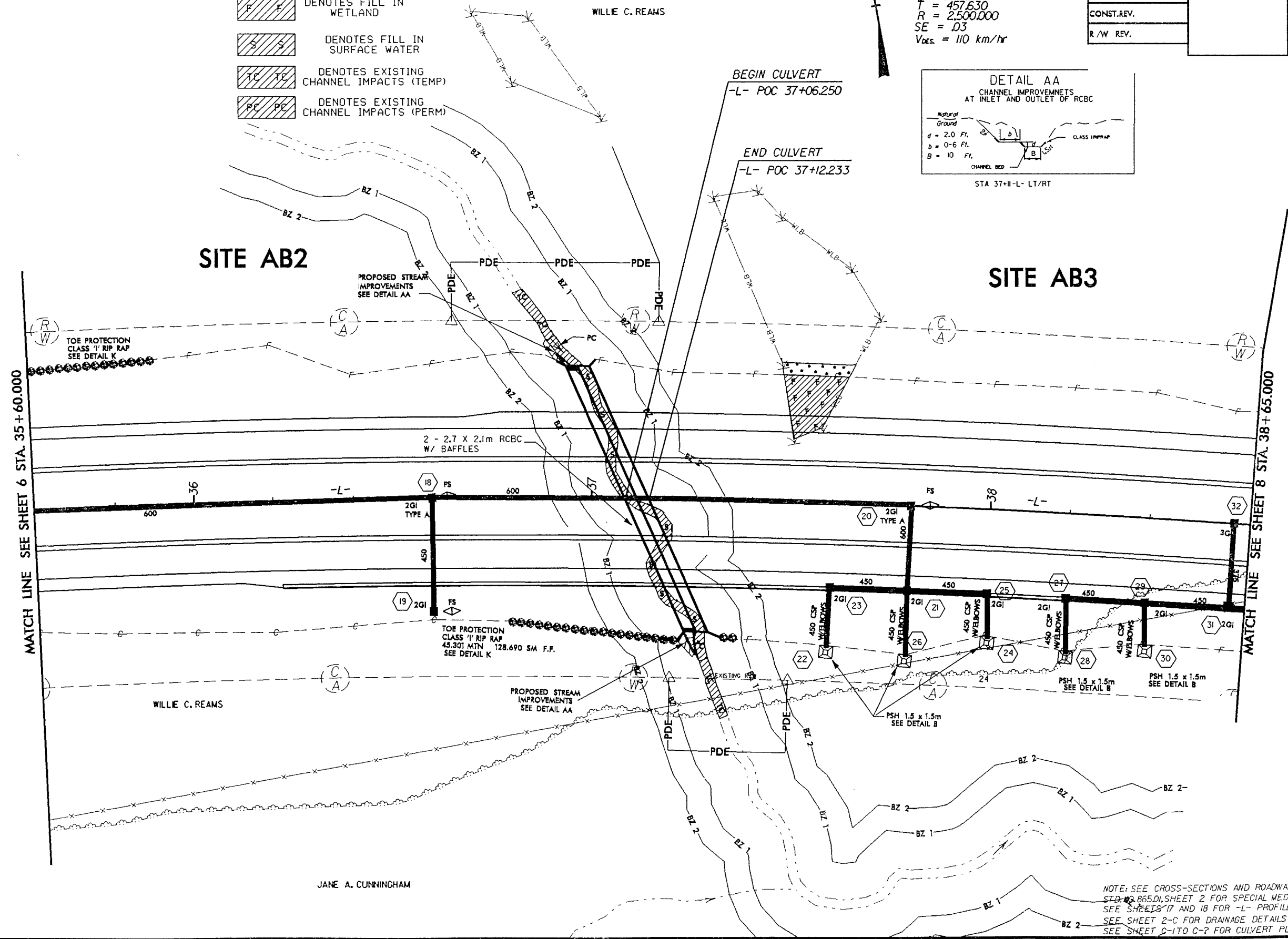
PROJECT REFERENCE NO. R-2552AB		SHEET NO. 7
R/W SHEET NO. R-2552AA *21 & *22		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		
CONST. REV.		
R/W REV.		



-L-
 $PI = 38+81.623$
 $\Delta = 20' 44" 47.5" (RT)$
 $L = 905.237$
 $T = 457.630$
 $R = 2,500.000$
 $SE = .03$
 $V_{DES} = 110 \text{ km/hr}$



- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES FILL IN SURFACE WATER
- DENOTES EXISTING CHANNEL IMPACTS (TEMP)
- DENOTES EXISTING CHANNEL IMPACTS (PERM)



JANE A. CUNNINGHAM

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS STD. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING. SEE SHEETS 17 AND 18 FOR -L- PROFILE. SEE SHEET 2-C FOR DRAINAGE DETAILS. SEE SHEET C-1 TO C-2 FOR CULVERT PLANS.

REVISIONS

METRIC

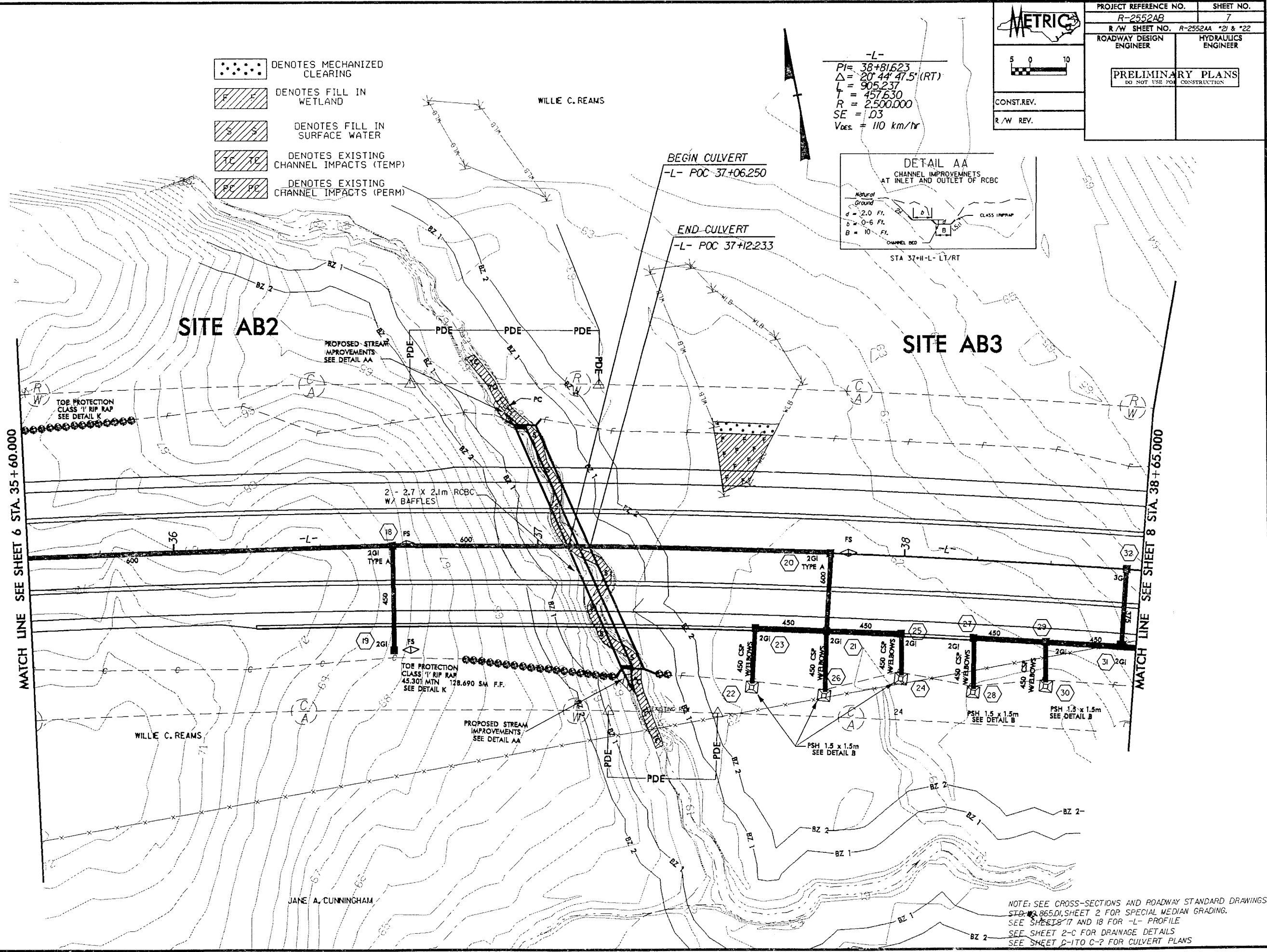
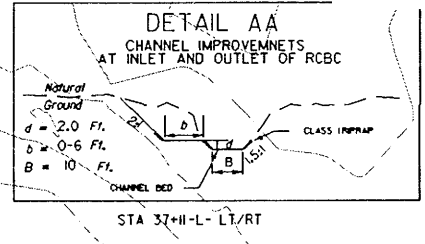
5 0 10

CONST. REV.
R/W REV.

PROJECT REFERENCE NO. R-2552AB	SHEET NO. 7
R/W SHEET NO. R-2552AA *21 & *22	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES FILL IN SURFACE WATER
- DENOTES EXISTING CHANNEL IMPACTS (TEMP)
- DENOTES EXISTING CHANNEL IMPACTS (PERM)

-L-
 $PI = 38+81.623$
 $\Delta = 20' 44' 47.5" (RT)$
 $L = 905.237$
 $R = 457.630$
 $R = 2,500.000$
 $SE = .03$
 $V_{des} = 110 \text{ km/hr}$



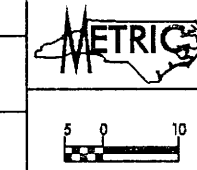
NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS
 STD. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.
 SEE SHEETS 17 AND 18 FOR -L- PROFILE
 SEE SHEET 2-C FOR DRAINAGE DETAILS
 SEE SHEET 2-TO C-2 FOR CULVERT PLANS

REVISIONS

11/15/2011 10:00 AM
 11/15/2011 10:00 AM
 11/15/2011 10:00 AM

-L- US 70 BYPASS

SITE AB2

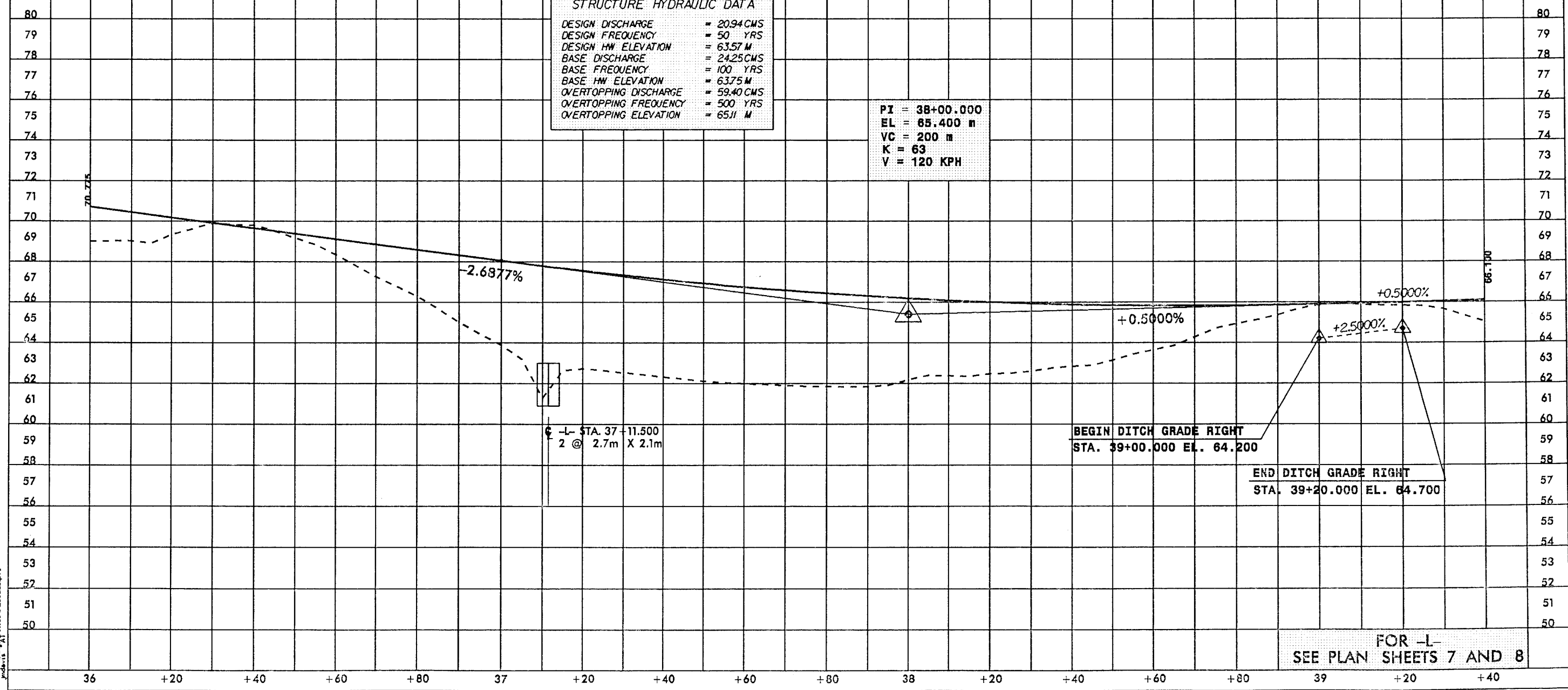


PROJECT REFERENCE NO. R-2552AB	SHEET NO. 18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
CONST. REV.	
R/W REV.	

B.M. R-2552-21
 N 208,585.2620 E 652,727.2850
 LOCATED 71.134 LT. OF -L- STA.
 38+65.077 AT AN ELEVATION 64.746

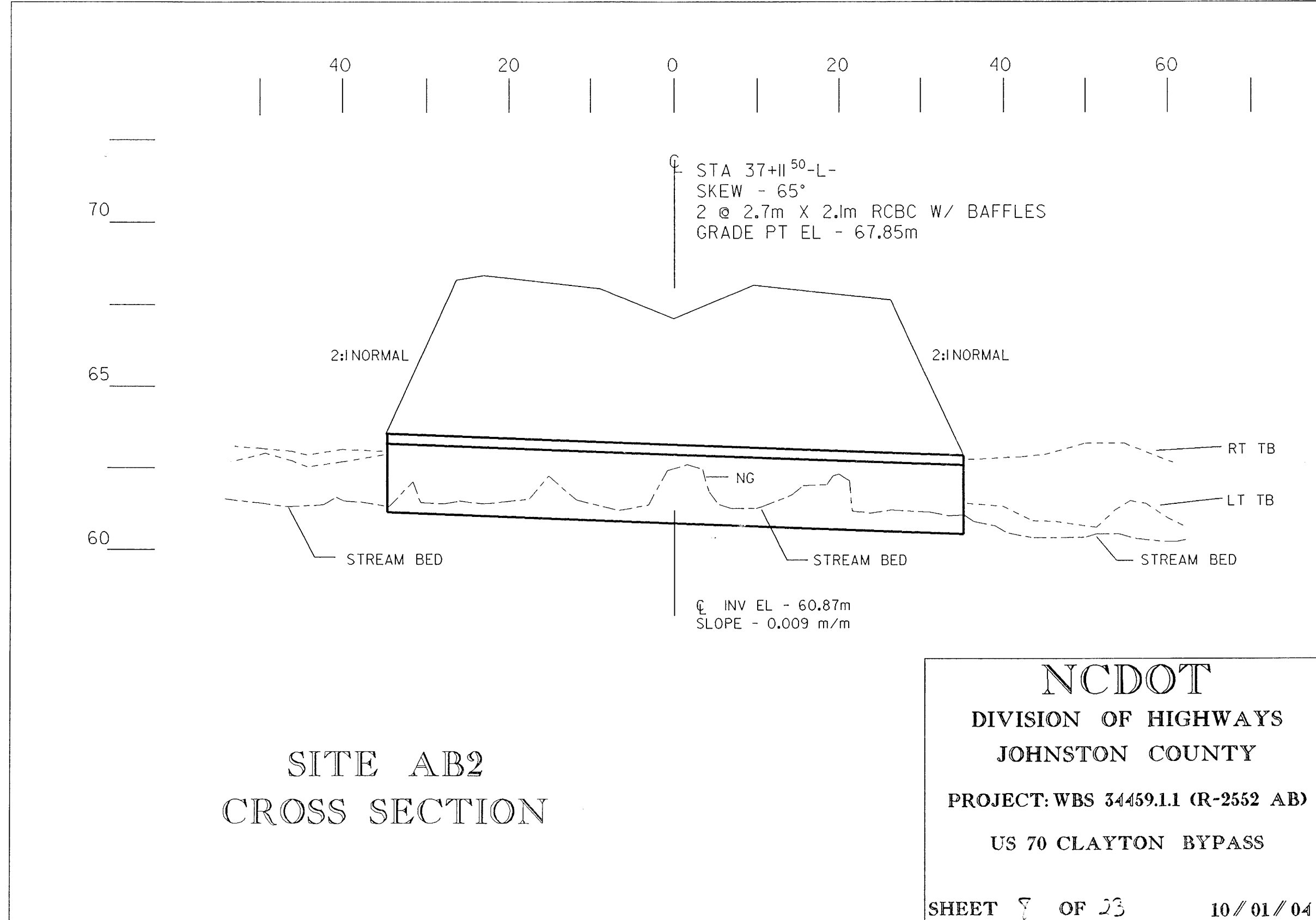
STRUCTURE HYDRAULIC DATA	
DESIGN DISCHARGE	= 20.94 CMS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 63.57 M
BASE DISCHARGE	= 24.25 CMS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 63.75 M
OVERTOPPING DISCHARGE	= 59.40 CMS
OVERTOPPING FREQUENCY	= 500 YRS
OVERTOPPING ELEVATION	= 65.11 M

PI = 38+00.000
 EL = 65.400 m
 VC = 200 m
 K = 63
 V = 120 KPH



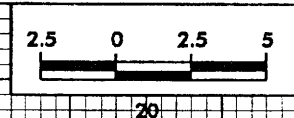
FOR -L-
 SEE PLAN SHEETS 7 AND 8

16-SEP-2004 09:48
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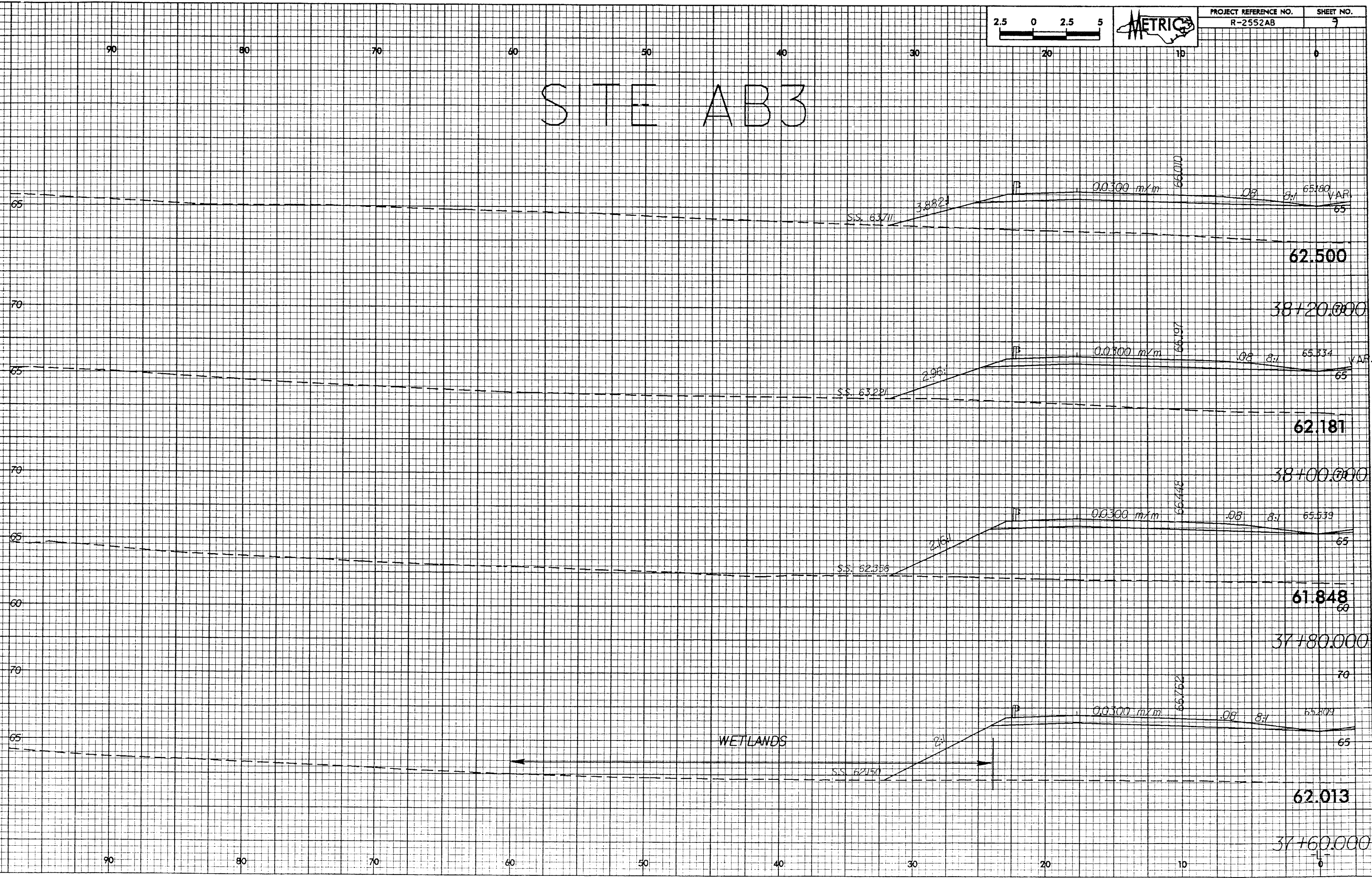
SITE AB2
CROSS SECTION

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: WBS 34459.1.1 (R-2552 AB)
US 70 CLAYTON BYPASS
SHEET 7 OF 23 10/01/04



PROJECT REFERENCE NO. R-2552AB	SHEET NO. 9
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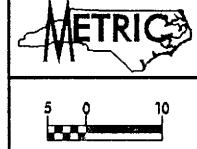
SITE AB3



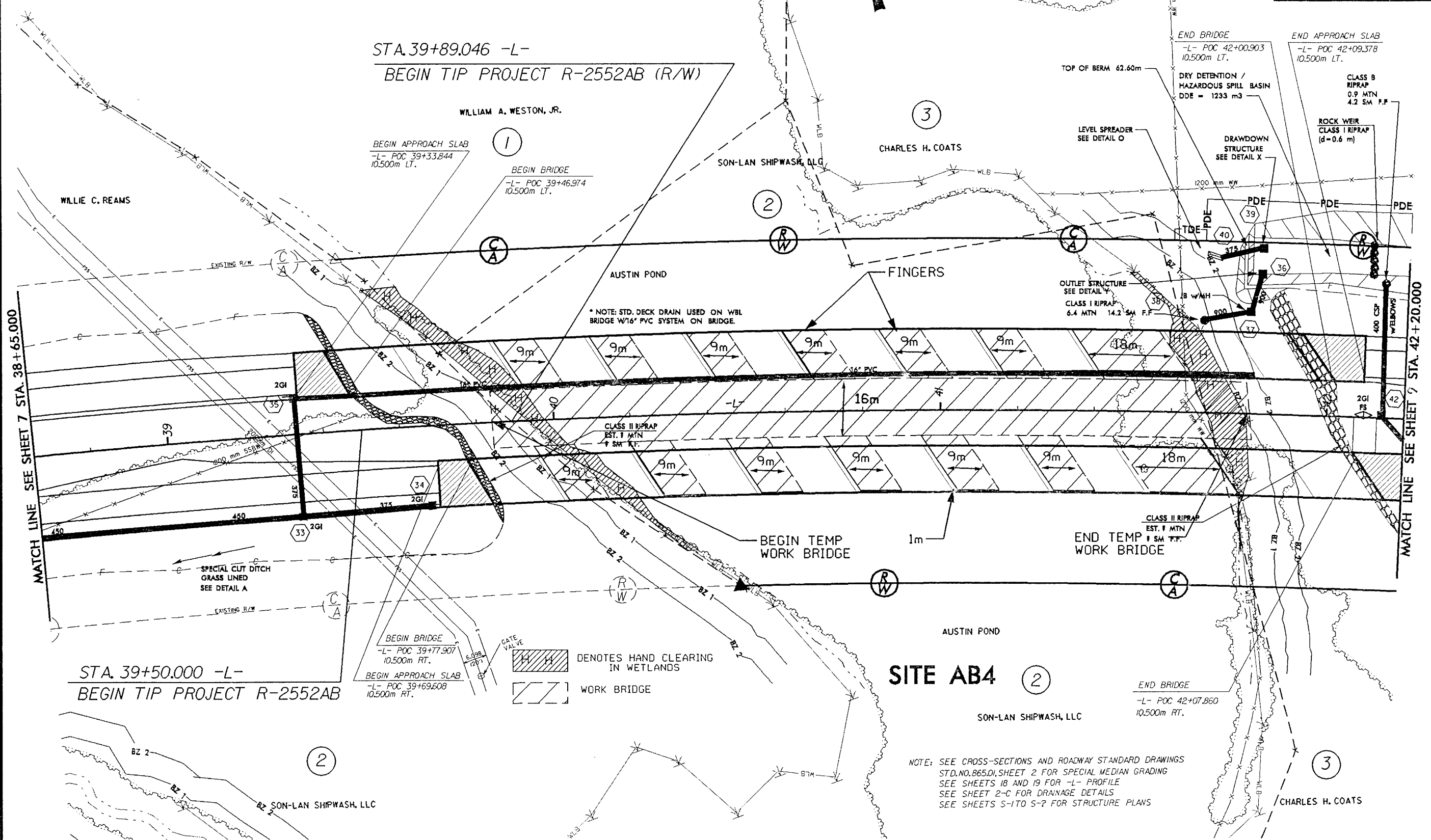
83-45-2004 15-07
 METRICS
 R-2552AB 12-01

PROJECT REFERENCE NO. R-2552AB		SHEET NO. 8	
R/W SHEET NO. R-2552AA *22 & R-2552AB *8		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
CONST. REV.			
R/W REV.			

-L-
 PI = 38+81.623
 $\Delta = 20^\circ 44' 47.5" (RT)$
 L = 905.237
 T = 457.630
 R = 2,500.000
 SE = 03
 V_{DES} = 110 km/hr



STA. 39+89.046 -L-
 BEGIN TIP PROJECT R-2552AB (R/W)



STA. 39+50.000 -L-
 BEGIN TIP PROJECT R-2552AB

SITE AB4 (2)

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING SEE SHEETS 18 AND 19 FOR -L- PROFILE SEE SHEET 2-C FOR DRAINAGE DETAILS SEE SHEETS S-1 TO S-2 FOR STRUCTURE PLANS

REVISIONS

MATCH LINE SEE SHEET 7 STA. 38+65.000

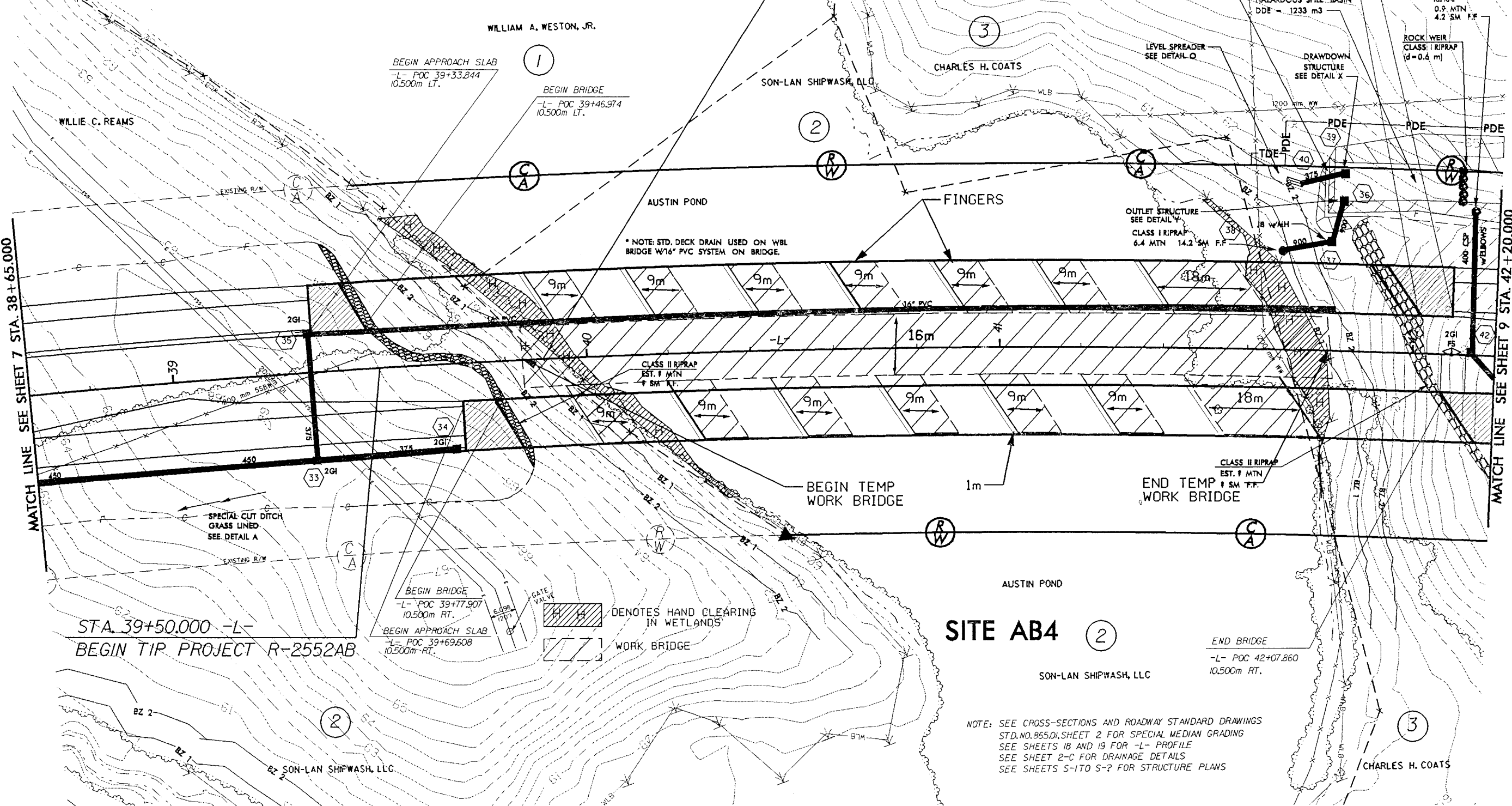
MATCH LINE SEE SHEET 9 STA. 42+20.000

PROJECT REFERENCE NO. R-2552AB		SHEET NO. 8	
R/W SHEET NO. R-2552AA *22 & R-2552AB *8		ROADWAY DESIGN ENGINEER	
HYDRAULICS ENGINEER		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST. REV.		R/W REV.	

-L-
 $PI = 38+81.623$
 $\Delta = 20' 44" 47.5" (RT)$
 $L = 905.237$
 $R = 457.630$
 $R = 2,500.000$
 $SE = .03$
 $V_{des} = 110 \text{ km/hr}$



STA. 39+89.046 -L-
 BEGIN TIP PROJECT R-2552AB (R/W)



REVISIONS

MATCH LINE SEE SHEET 7 STA. 38+65.000

MATCH LINE SEE SHEET 9 STA. 42+20.000

STA. 39+50.000 -L-
 BEGIN TIP PROJECT R-2552AB

SITE AB4 (2)

SON-LAN SHIPWASH, LLC

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS
 STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING
 SEE SHEETS 18 AND 19 FOR -L- PROFILE
 SEE SHEET 2-C FOR DRAINAGE DETAILS
 SEE SHEETS S-1 TO S-7 FOR STRUCTURE PLANS

*****SYSTEMS*****
 *****DESIGN*****
 *****ENGINEERING*****
 *****CONSULTANTS*****
 *****INCORPORATED*****
 *****MEMPHIS, TN*****
 *****381-252-8888*****
 *****WWW.MTSYSTEMS.COM*****

L- US 70 BYPASS EASTBOUND

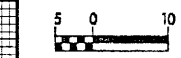


PROJECT REFERENCE NO. R-2552AB SHEET NO. 10

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

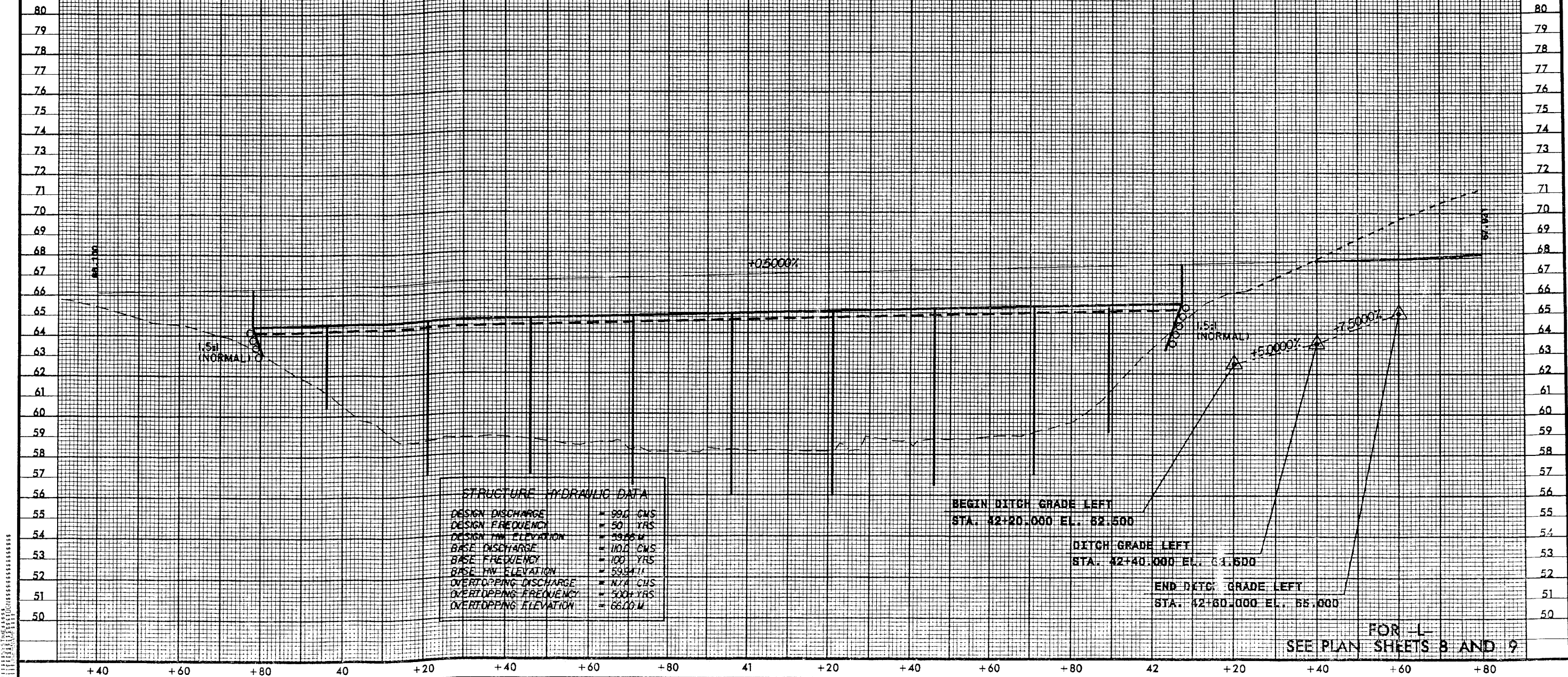


CONST. REV.

R/W REV.

SITE AB4

S.W. BE. 230
N 208.468 2180 E 452.892 2110
LOCATED 43.302 FT. OF L- STA.
41+46.950 AT AN ELEVATION 60.2110



DESIGN DISCHARGE	= 990 CMS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 59.65 M
BASE DISCHARGE	= 1100 CMS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 59.94 M
OVERTOPPING DISCHARGE	= N/A CMS
OVERTOPPING FREQUENCY	= 500 YRS
OVERTOPPING ELEVATION	= 66.00 M

BEGIN DITCH GRADE LEFT
STA. 42+20.000 EL. 62.500

DITCH GRADE LEFT
STA. 42+40.000 EL. 61.600

END DITCH GRADE LEFT
STA. 42+80.000 EL. 58.000

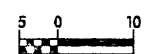
FOR L-
SEE PLAN SHEETS 8 AND 9

L- US 70 BYPASS WESTBOUND



PROJECT REFERENCE NO. **R-2552AB** SHEET NO. **11**

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER



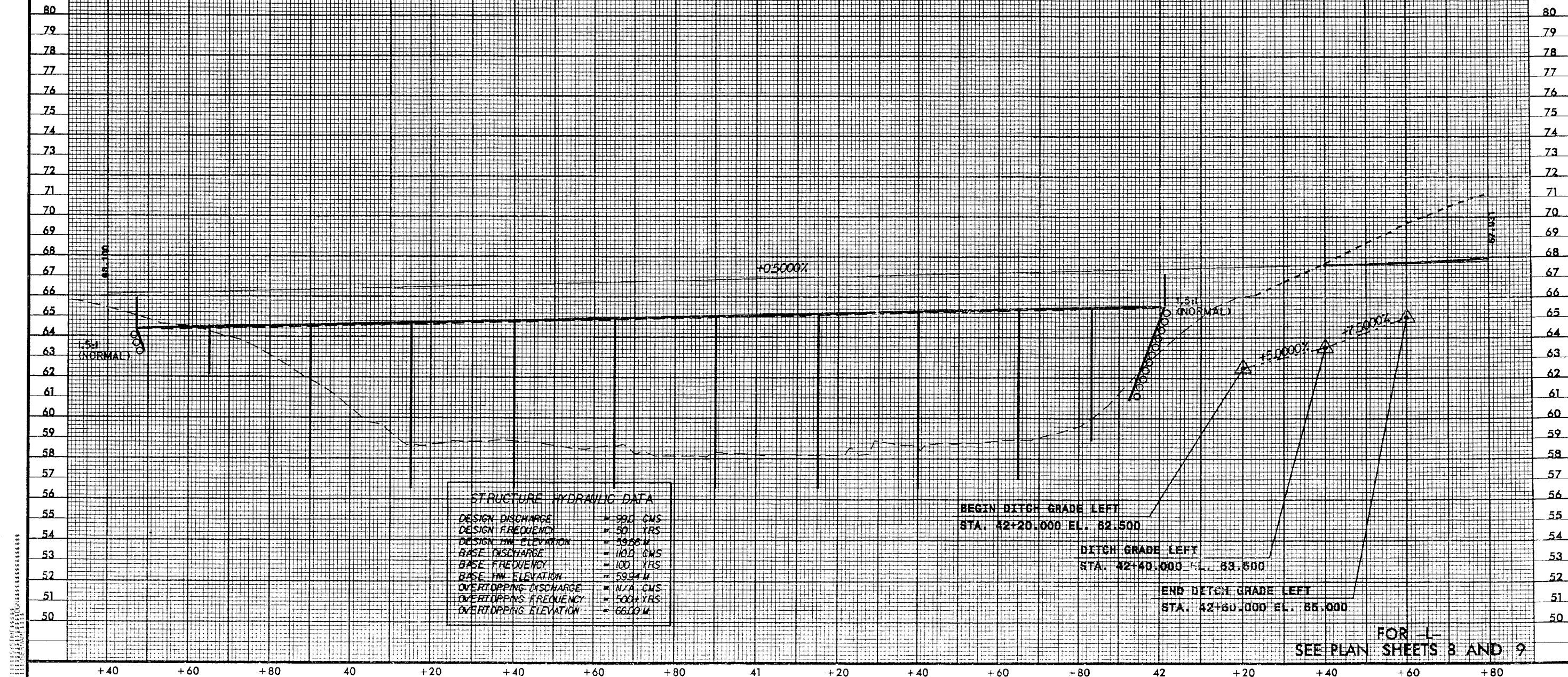
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST. REV.

R/W REV.


SITE AB4



S.M. BL-750
N 208,468.5180 E 652,997.2110
LOCATED 43.302 FT. OF L- STA.
41+46.950 AT AN ELEVATION 60.2110



DESIGN DISCHARGE	= 990 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 83.26 M
BASE DISCHARGE	= 1100 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 83.41 M
OVERTOPPING DISCHARGE	= 1274 CFS
OVERTOPPING FREQUENCY	= 500 YRS
OVERTOPPING ELEVATION	= 86.00 M

FOR L-
SEE PLAN SHEETS 8 AND 9

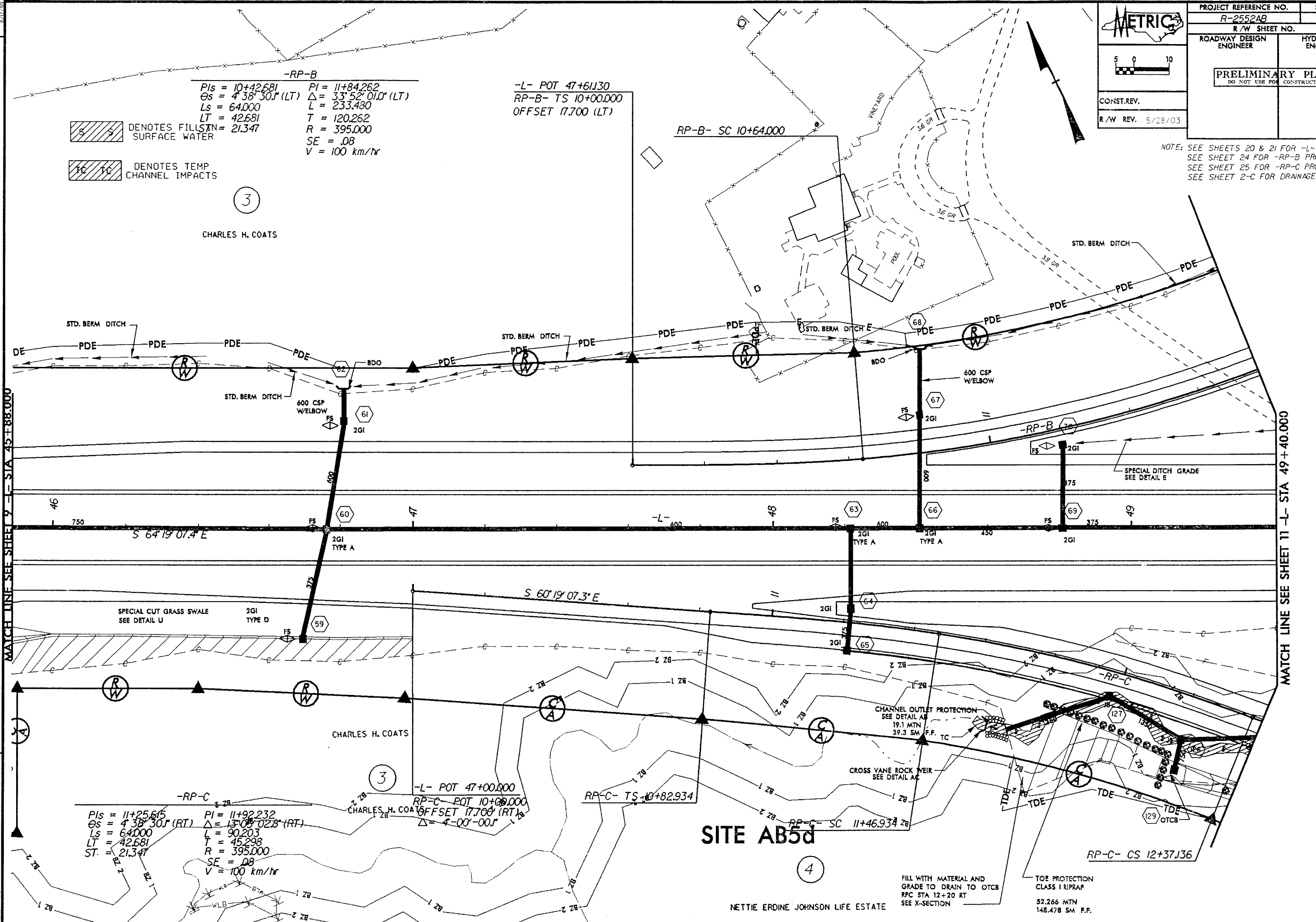
	PROJECT REFERENCE NO.	SHEET NO.
	R-2552AB	10
	R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		
CONST. REV.		
R/W REV.	5/28/03	

 DENOTES FILL/STAIN SURFACE WATER
 DENOTES TEMP CHANNEL IMPACTS

-RP-B
 PIs = 10+42.681 PI = 11+84.262
 Gs = 4°38'30.1" (LT) Δ = 33°52'01.0" (LT)
 Ls = 64.000 L = 233.480
 LT = 42.681 T = 120.262
 ST = 21.347 R = 395.000
 SE = .08
 V = 100 km/hr

-L- POT 47+61.130
 RP-B- TS 10+00.000
 OFFSET 17.700 (LT)

NOTE: SEE SHEETS 20 & 21 FOR -L- PROFILE
 SEE SHEET 24 FOR -RP-B PROFILE
 SEE SHEET 25 FOR -RP-C PROFILE
 SEE SHEET 2-C FOR DRAINAGE DETAILS



MATCH LINE SEE SHEET 9 - STA 45+88.000

MATCH LINE SEE SHEET 11 - STA 49+40.000

-RP-C
 PIs = 11+25.615 PI = 11+92.232
 Gs = 4°38'30.1" (RT) Δ = 13°08'02.8" (RT)
 Ls = 64.000 L = 90.203
 LT = 42.681 T = 45.298
 ST = 21.347 R = 395.000
 SE = .08
 V = 100 km/hr

-L- POT 47+00.000
 RP-C- POT 10+00.000
 OFFSET 17.700 (RT)
 Δ = 4°00'00.0"

RP-C- TS 10+82.934

FILL WITH MATERIAL AND GRADE TO DRAIN TO OTCS
 RPC STA 12+20 RT
 SEE X-SECTION

TOE PROTECTION CLASS I RIPRAP
 52.266 MTN
 148.478 SM F.F.

SITE AB5d

NETTIE ERDINE JOHNSON LIFE ESTATE

REVISIONS

*****SYSTEMS*****
*****USER*****

METRIC

CONST. REV.

R/W REV. 5/28/03

PROJECT REFERENCE NO. R-2552AB	SHEET NO. 10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

NOTE: SEE SHEETS 20 & 21 FOR -L- PROFILE
SEE SHEET 24 FOR -RP-B PROFILE
SEE SHEET 25 FOR -RP-C PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS

-RP-B

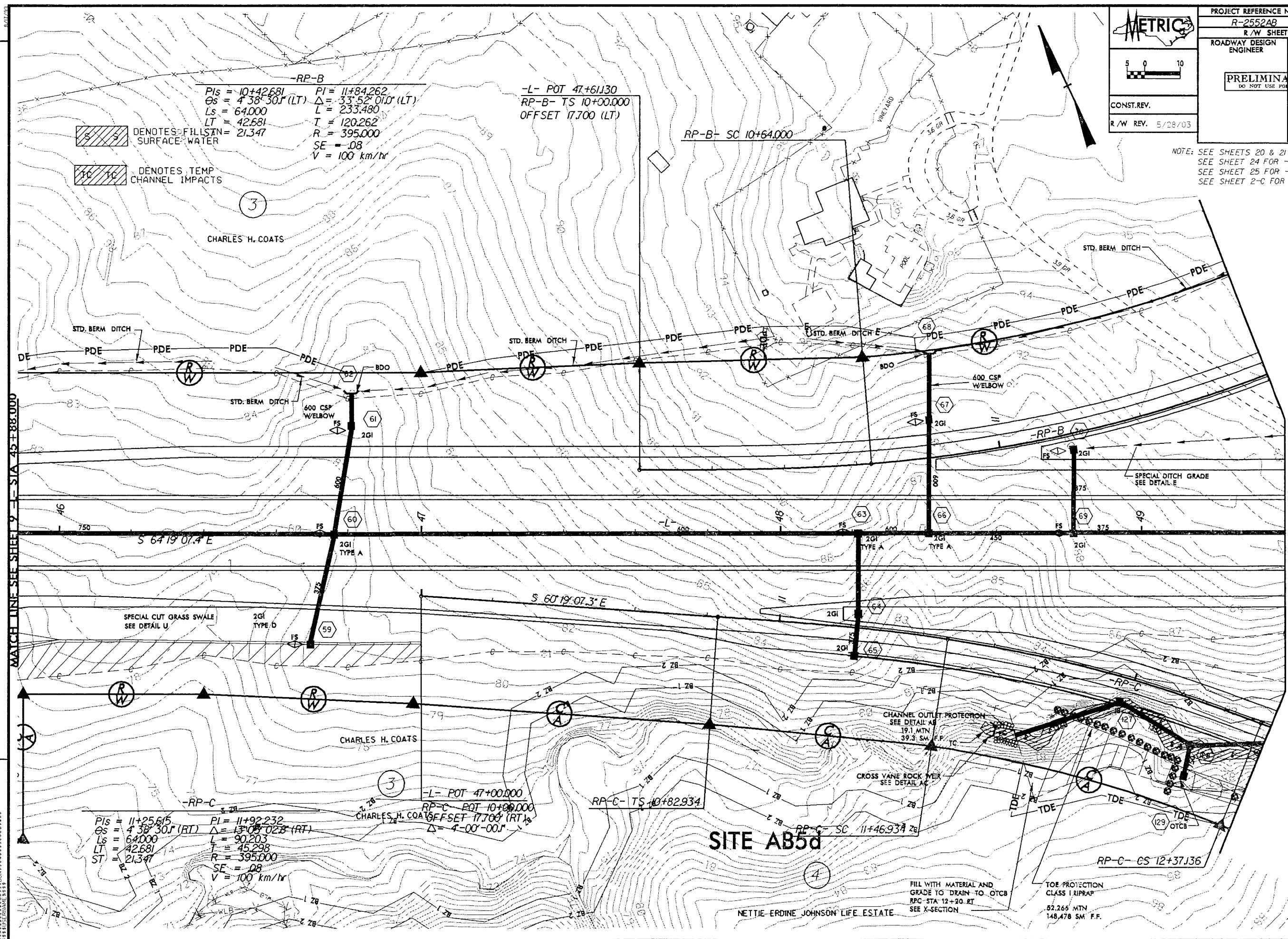
PIs = 10+42.681 PI = 11+84.262
 Os = 4°38'30.1" (LT) Δ = 33°52'01.0" (LT)
 Ls = 64,000 L = 233,480
 LT = 42,681 T = 120,262
 ST = 21,347 R = 395,000
 SE = .08
 V = 100 km/hr

-L- POT 47+61.130
RP-B- TS 10+00.000
OFFSET 17.700 (LT)

RP-B- SC 10+64.000

DENOTES FILL IN SURFACE WATER

DENOTES TEMP CHANNEL IMPACTS



-RP-C

PIs = 11+25.615 PI = 11+92.232
 Os = 4°38'30.1" (RT) Δ = 13°05'02.3" (RT)
 Ls = 64,000 L = 90,203
 LT = 42,681 T = 45,298
 ST = 21,347 R = 395,000
 SE = .08
 V = 100 km/hr

-L- POT 47+00.000
RP-C POT 10+00.000
OFFSET 17.700 (RT)
Δ = 4°00'00.1"

RP-C- TS 10+82.934

RP-C- SC 11+46.934

RP-C- CS 12+37.136

SITE AB5d

NETTIE-ERDINE JOHNSON LIFE ESTATE

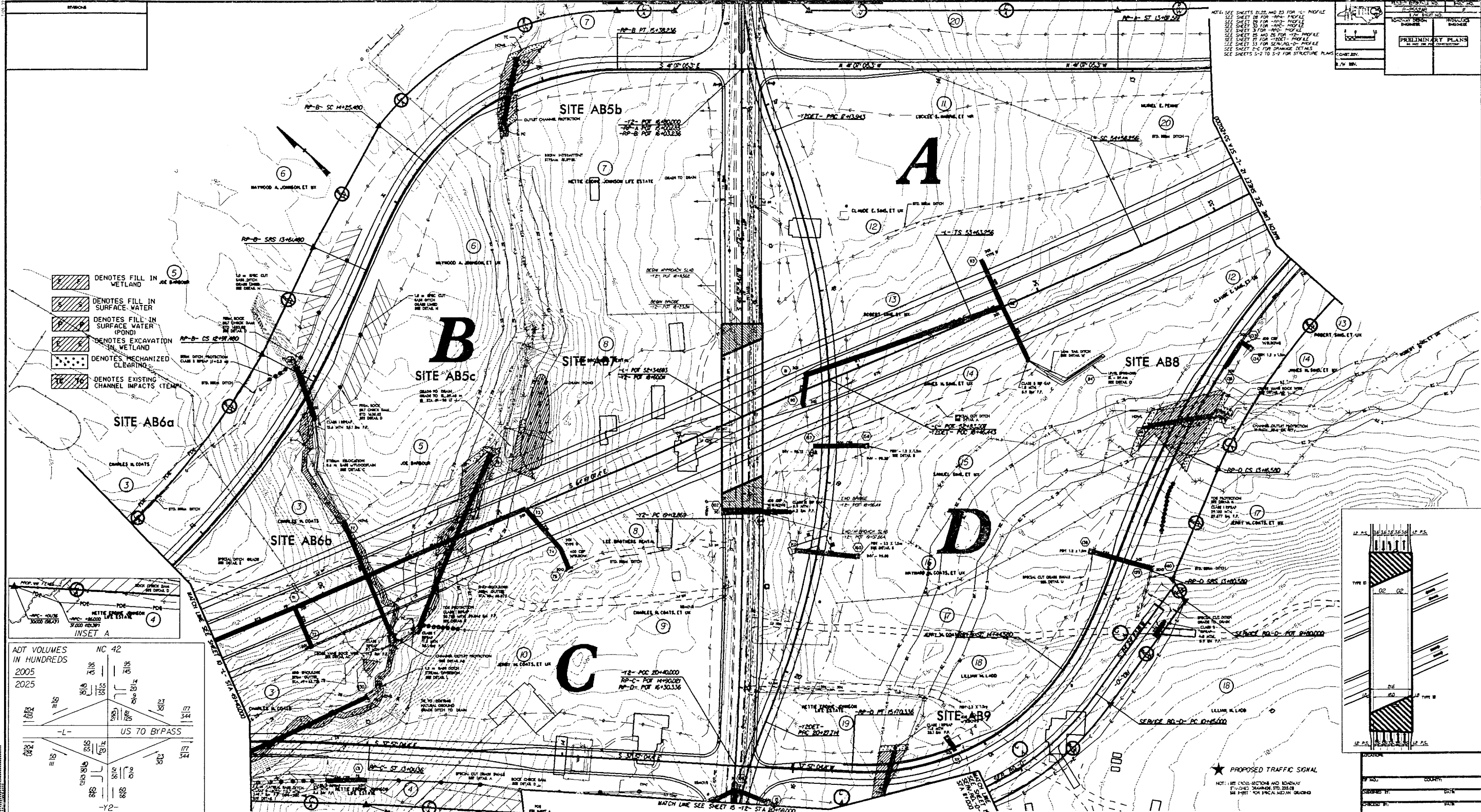
MATCH LINE SEE SHEET 9 - STA 45+88.000

MATCH LINE SEE SHEET 11 - STA 49+40.000

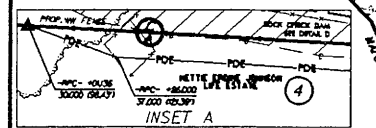
REVISIONS

PROJECT NO. 12-57A-20-0000
 SHEET NO. 12-57A-20-0000
 PRELIMINARY PLANS
 DATE: 12/15/09
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]

NOTE: SEE SHEETS 12-57A-20-0000 AND 12-57A-20-0001 FOR -1- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -2- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -3- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -4- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -5- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -6- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -7- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -8- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -9- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -10- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -11- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -12- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -13- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -14- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -15- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -16- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -17- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -18- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -19- PROFILE
 SEE SHEET 12-57A-20-0000 FOR -20- PROFILE
 SEE SHEETS 12-57A-20-0000 TO 12-57A-20-0001 FOR STRUCTURE PLANS
 SEE SHEETS 12-57A-20-0000 TO 12-57A-20-0001 FOR DRAINAGE PLANS
 SEE SHEETS 12-57A-20-0000 TO 12-57A-20-0001 FOR EROSION CONTROL PLANS

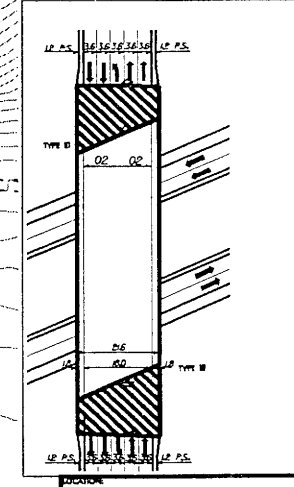


- DENOTES FILL IN WETLAND
- DENOTES FILL IN SURFACE WATER
- DENOTES FILL IN SURFACE WATER (POND)
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES EXISTING CHANNEL IMPACTS (TEMP)



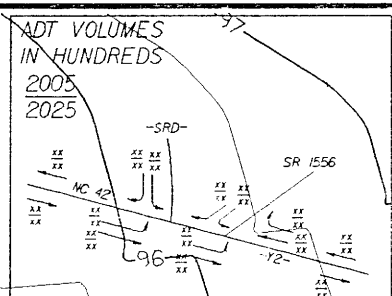
ADT VOLUMES IN HUNDREDS

Year	NC 42	US 70 BYPASS
2005	14.8	177
2025	15.5	177



★ PROPOSED TRAFFIC SIGNAL
 NOTE: SEE CROSS-SECTIONS AND ROADWAY FINISHED GRADES AND ELEVATIONS IN SHEET 12-57A-20-0000

PROJECT REFERENCE NO. R-2552AB		SHEET NO. 15
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		
CONST. REV.		
R/W REV. 6/10/04		

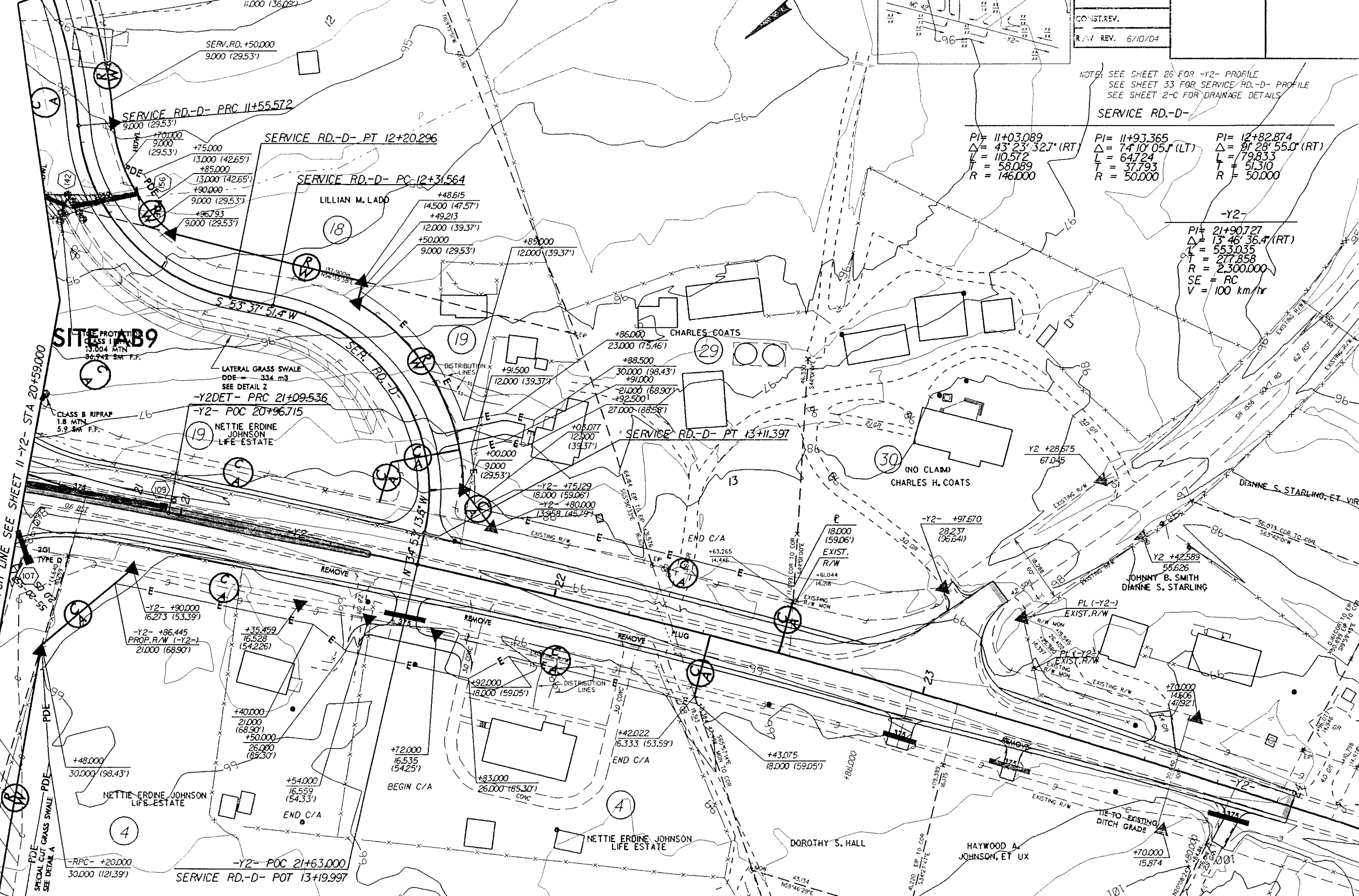


NOTE: SEE SHEET 26 FOR -Y2- PROFILE
SEE SHEET 33 FOR SERVICE RD.-D- PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS

SERVICE RD.-D-		
PI= 11+03.089 Δ= 43° 23' 32.7" (RT) L= 110.572 T= 58.089 R= 146.000	PI= 11+93.365 Δ= 74° 10' 05.1" (LT) L= 64.724 T= 37.793 R= 50.000	PI= 12+82.874 Δ= 91° 28' 55.0" (RT) L= 79.833 T= 51.310 R= 50.000
-Y2-		
PI= 21+90.727 Δ= 13° 46' 36.4" (RT) L= 553.035 T= 277.858 R= 2,300.000 SE = RC V = 100 km/hr		

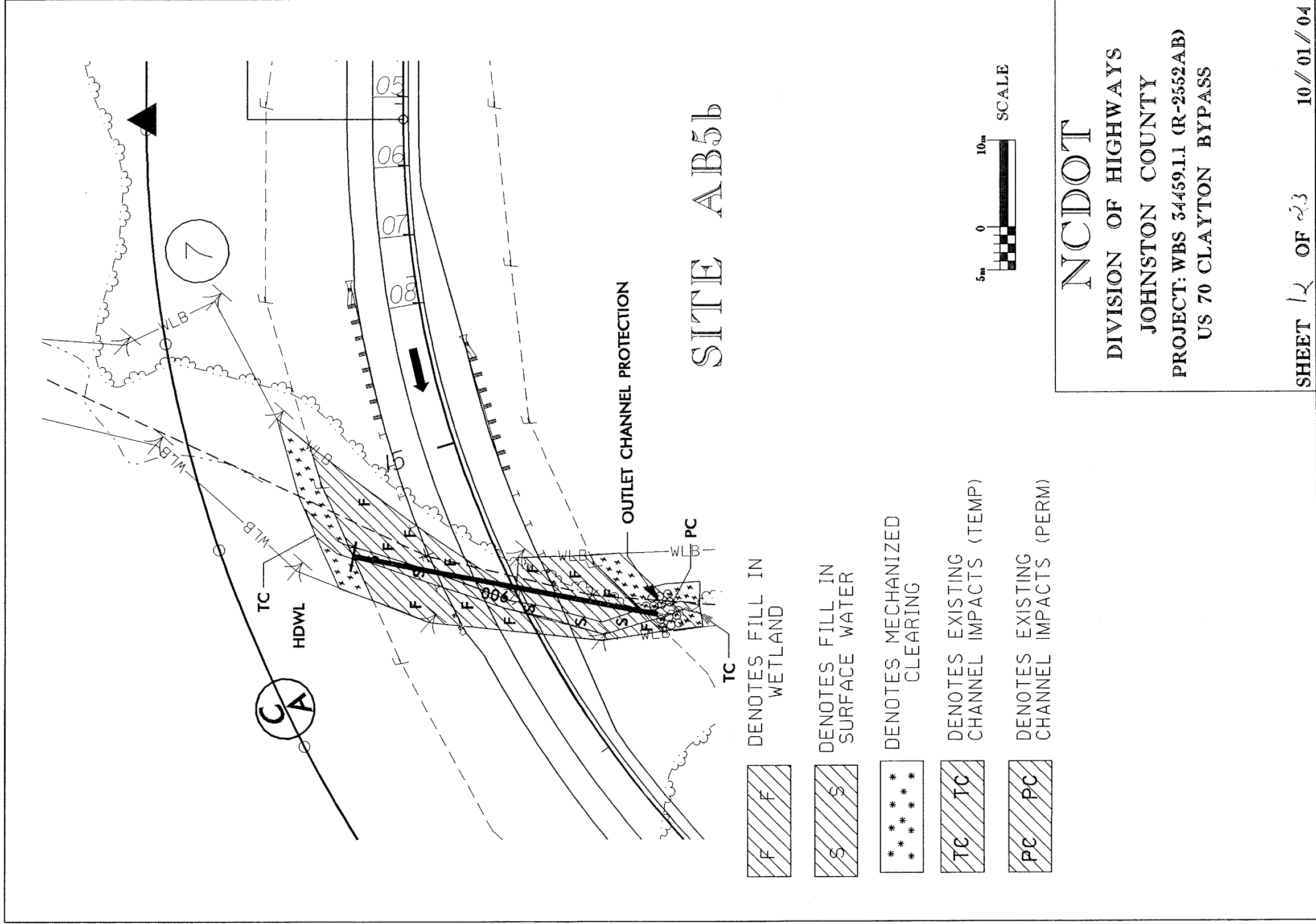
MATCH LINE SEE SHEET II
SERVICE RD.-D- STA 11+000

MATCH LINE SEE SHEET II -Y2- STA 20+59.000



REVISIONS

*****SYSTEMS*****
*****CONSTRUCTION*****
*****TRANSFER*****



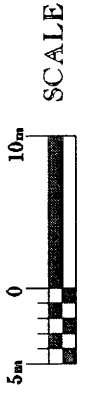
F F
DENOTES FILL IN WETLAND

S S
DENOTES FILL IN SURFACE WATER

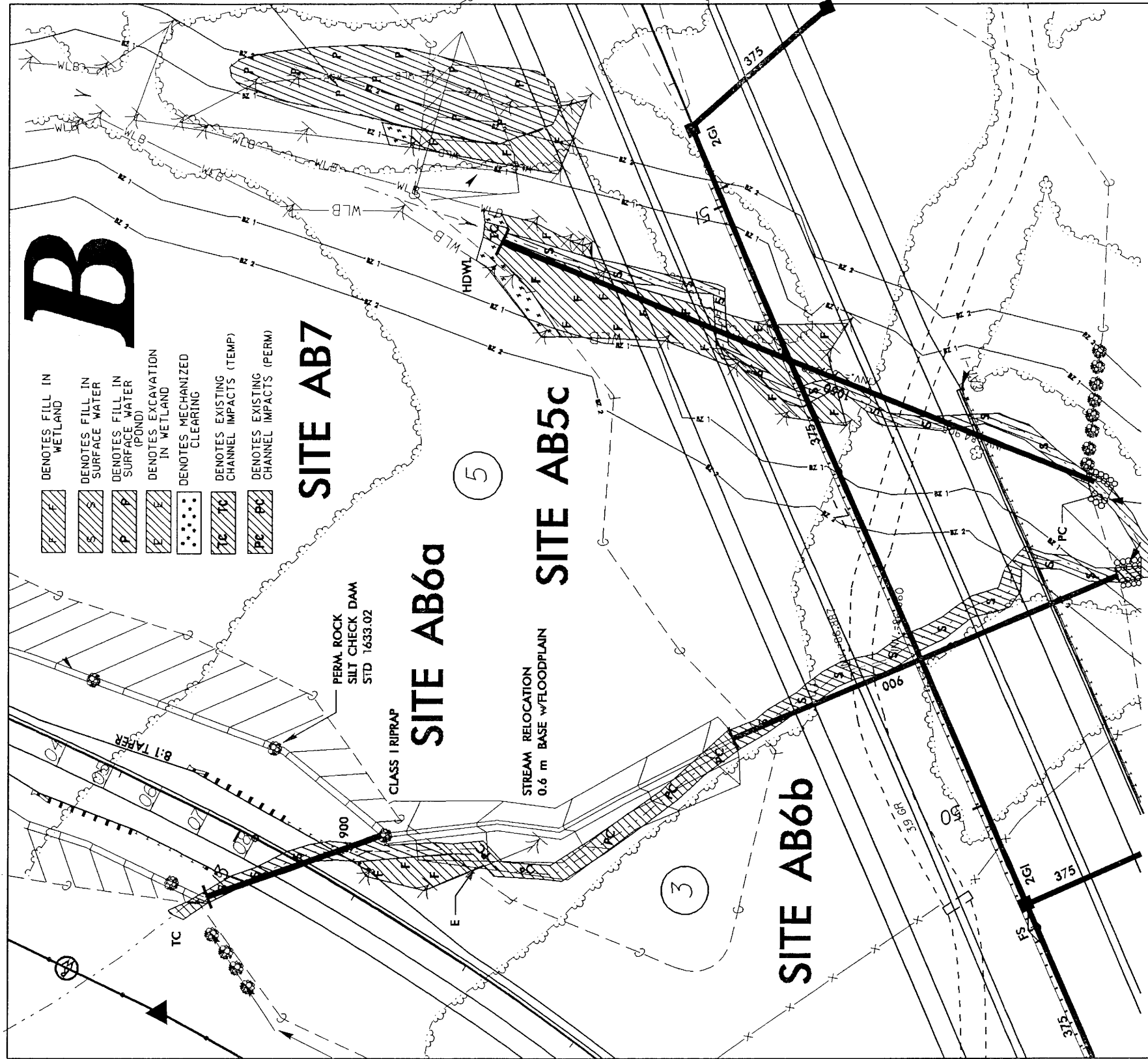
DENOTES MECHANIZED CLEARING

TC TC
DENOTES EXISTING CHANNEL IMPACTS (TEMP)

PC PC
DENOTES EXISTING CHANNEL IMPACTS (PERM)



NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: WBS 34459.1.1 (R-2552AB)
US 70 CLAYTON BYPASS



B

- DENOTES FILL IN WETLAND
- DENOTES FILL IN SURFACE WATER
- DENOTES FILL IN SURFACE WATER (POND)
- DENOTES EXCAVATION IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES EXISTING CHANNEL IMPACTS (TEMP)
- DENOTES EXISTING CHANNEL IMPACTS (PERM)

SITE AB7

SITE AB6a

SITE AB5c

SITE AB6b

PERM. ROCK SILT CHECK DAM STD 1633.02

CLASS 1 RIPRAP

STREAM RELOCATION 0.6 m BASE w/FLOODPLAIN

MATCHLINE A-A

TC

SITES AB5c, AB6a
AB6b & AB7



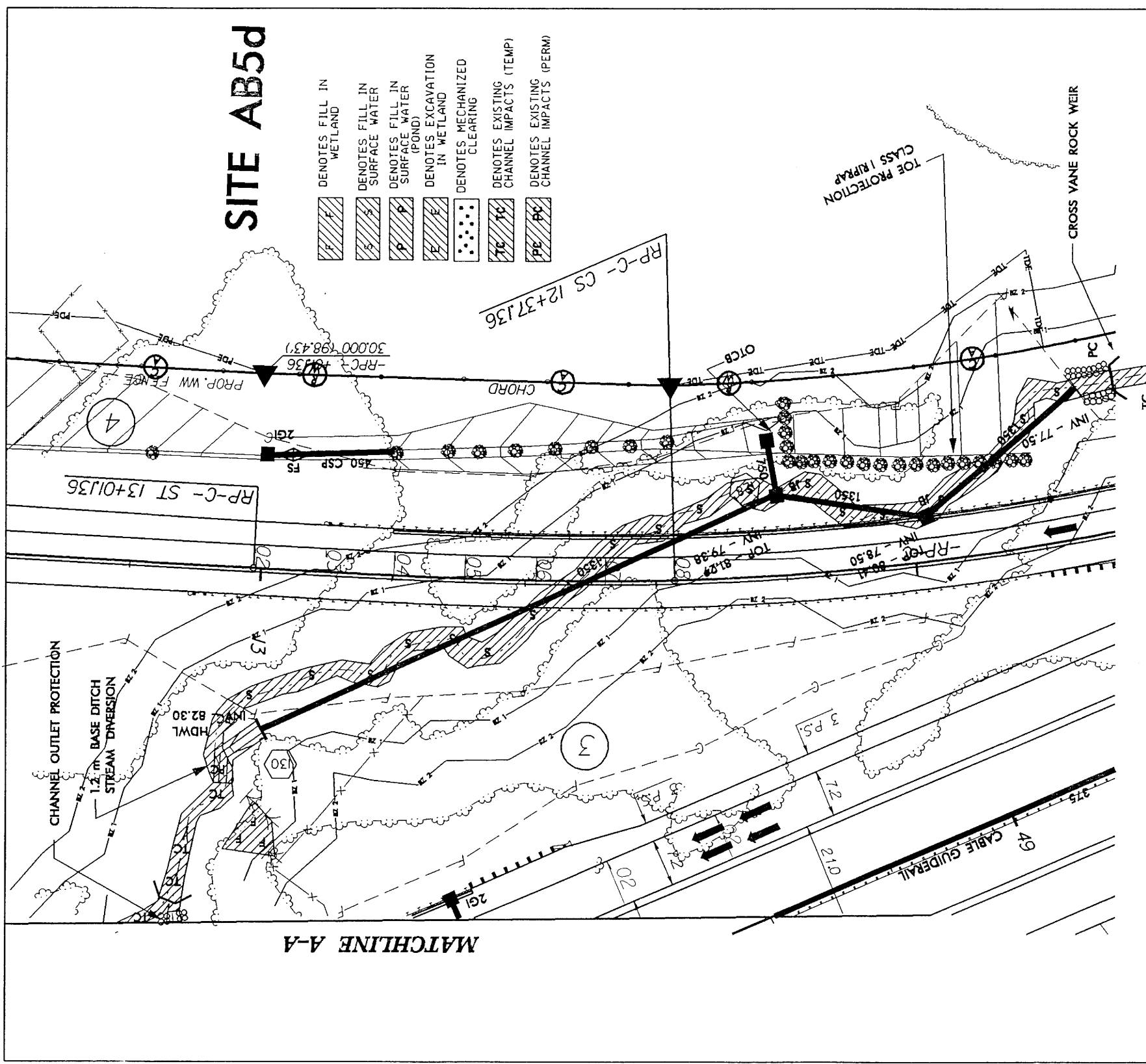
SCALE

NCDOT

DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: WBS 34459.1.1 (R-2552AB)
US 70 CLAYTON BYPASS

SHEET 13 OF 23

10/01/04

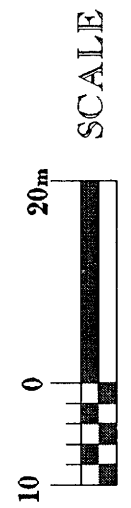


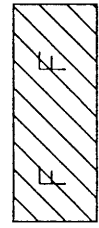
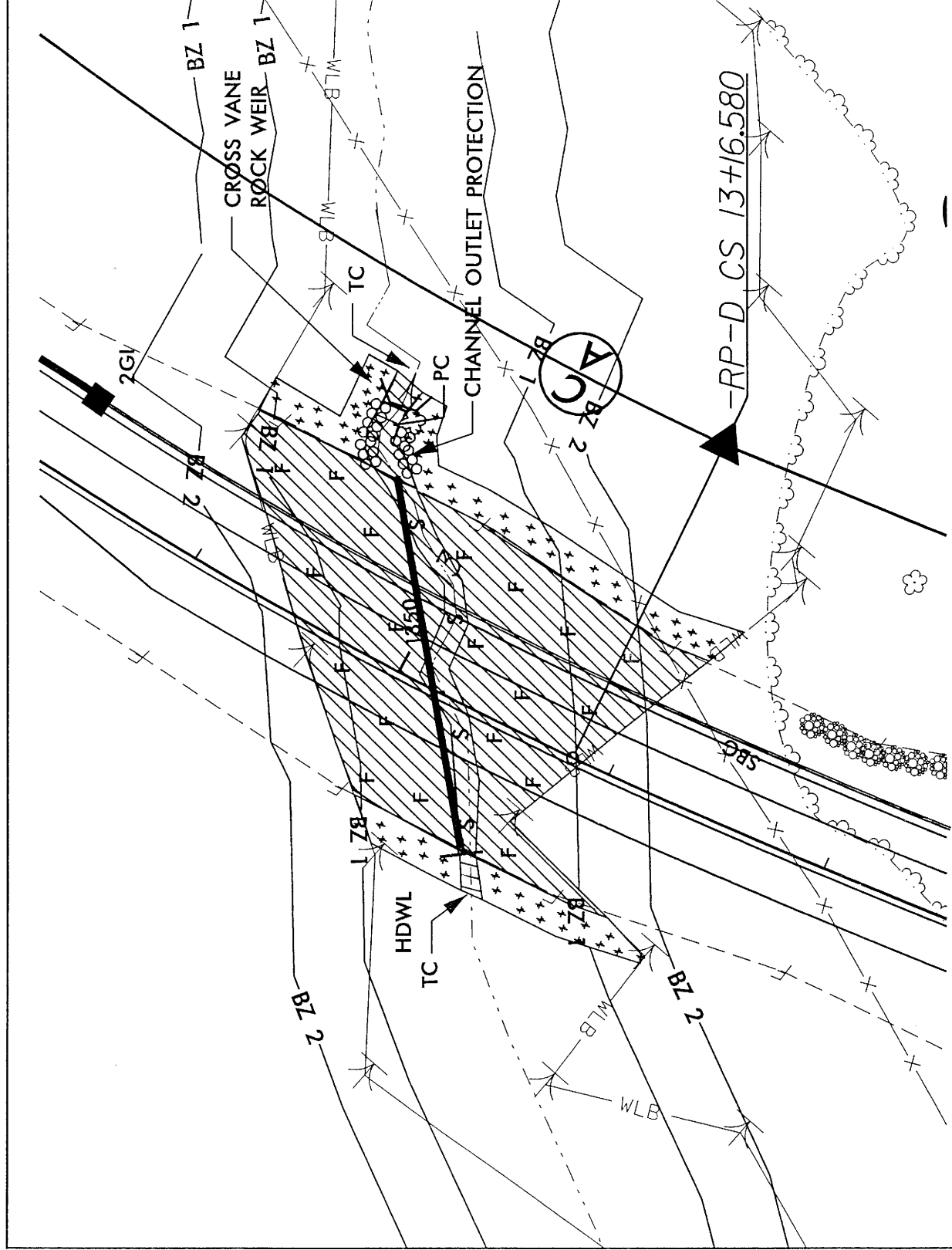
MATCHLINE A-A

NCDOT

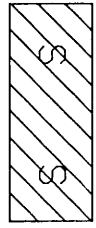
DIVISION OF HIGHWAYS
 JOHNSTON COUNTY
 PROJECT: WBS 34459.1.1 (R-2552AB)
 US 70 CLAYTON BYPASS

SITES AB5d

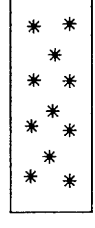




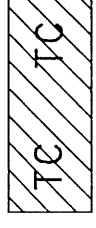
DENOTES FILL IN WETLAND



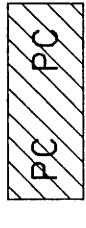
DENOTES FILL IN SURFACE WATER



DENOTES MECHANIZED CLEARING



DENOTES EXISTING CHANNEL IMPACTS (TEMP)



DENOTES EXISTING CHANNEL IMPACTS (PERM)

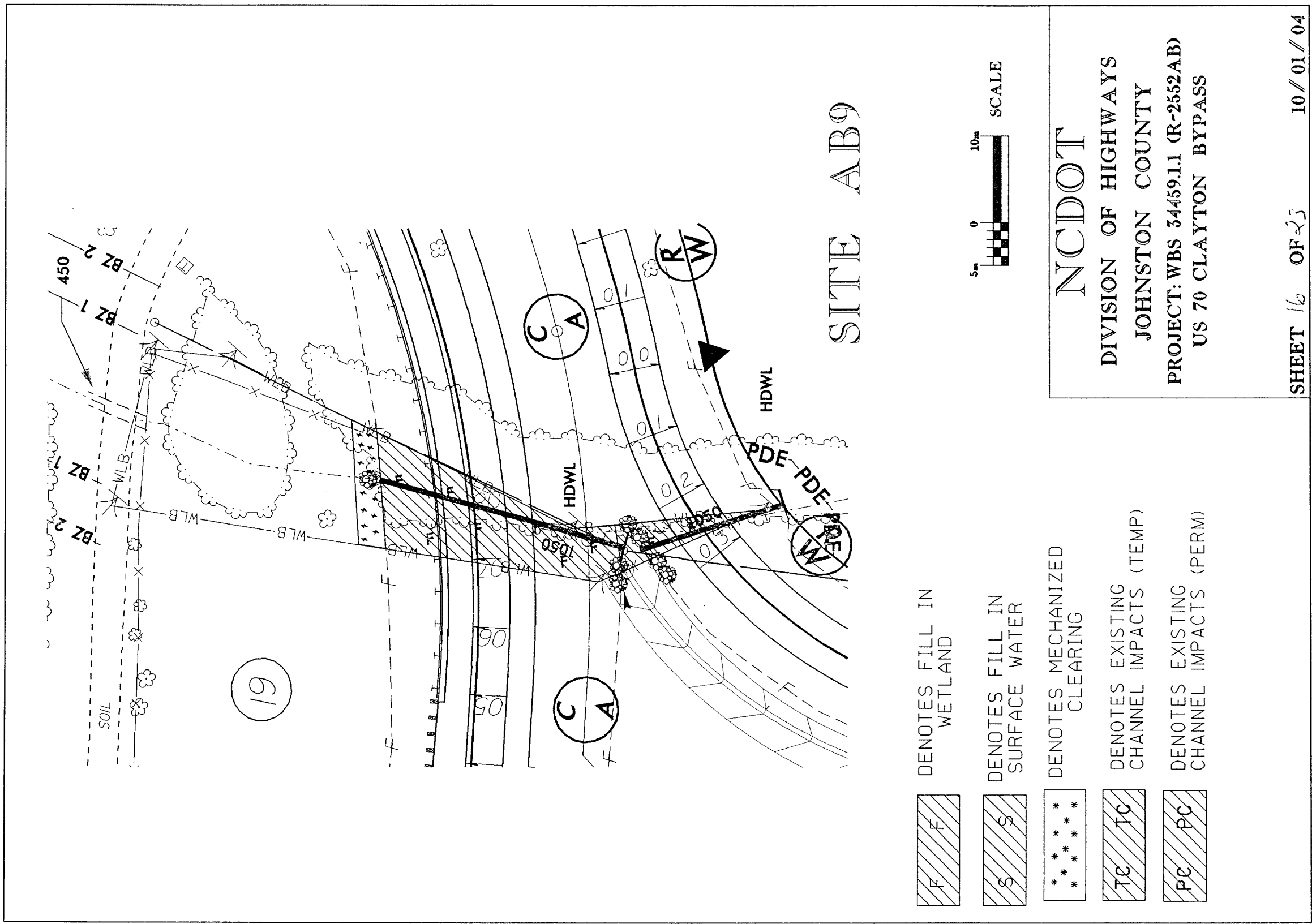
SITE AB8

NCDOT

**DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: WBS 34459.1.1 (R-2552AB)
US 70 CLAYTON BYPASS**



SCALE



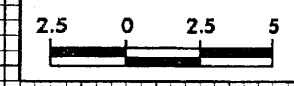
 DENOTES FILL IN WETLAND

 DENOTES FILL IN SURFACE WATER

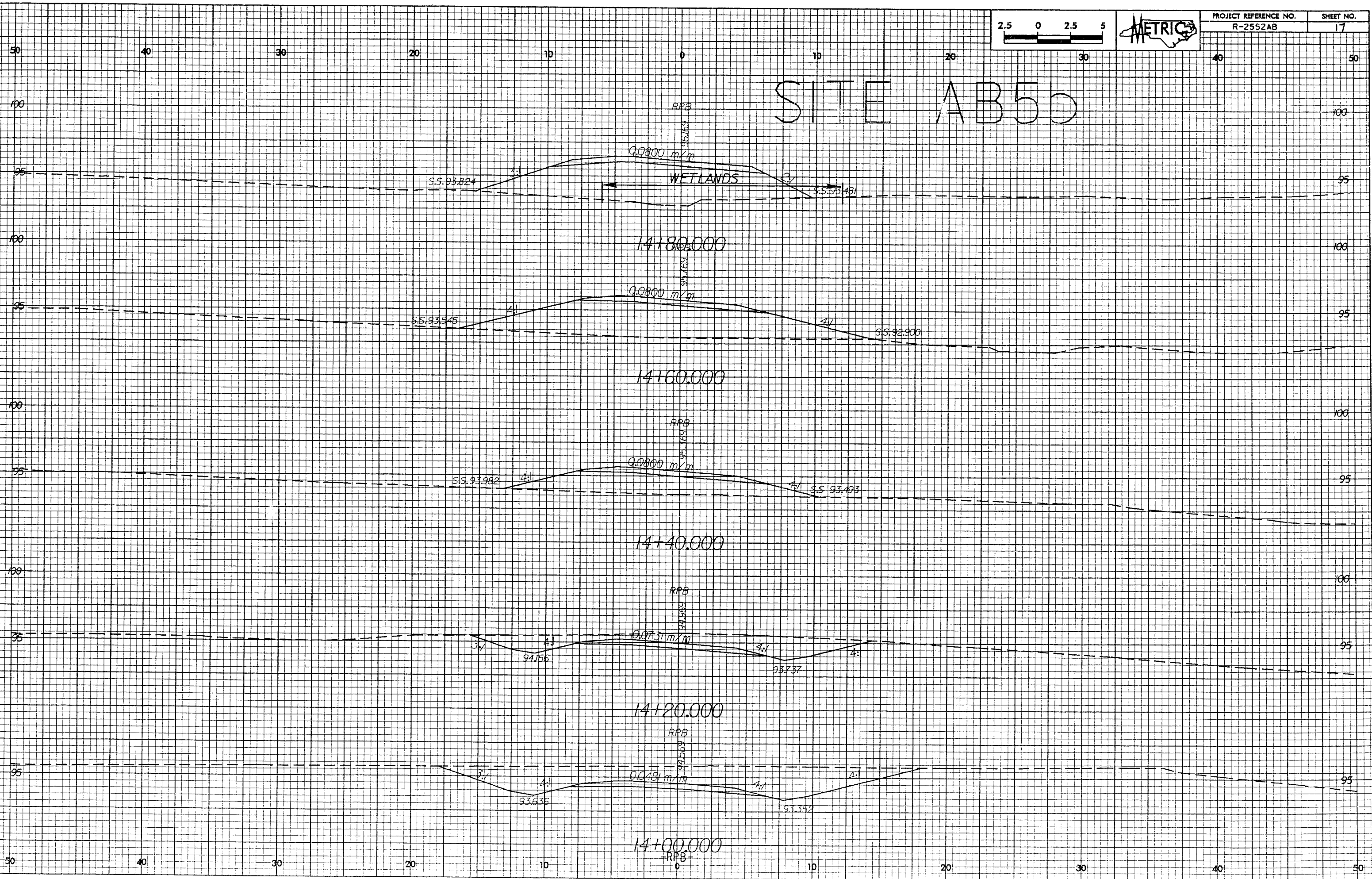
 DENOTES MECHANIZED CLEARING

 DENOTES EXISTING CHANNEL IMPACTS (TEMP)

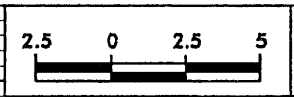
 DENOTES EXISTING CHANNEL IMPACTS (PERM)



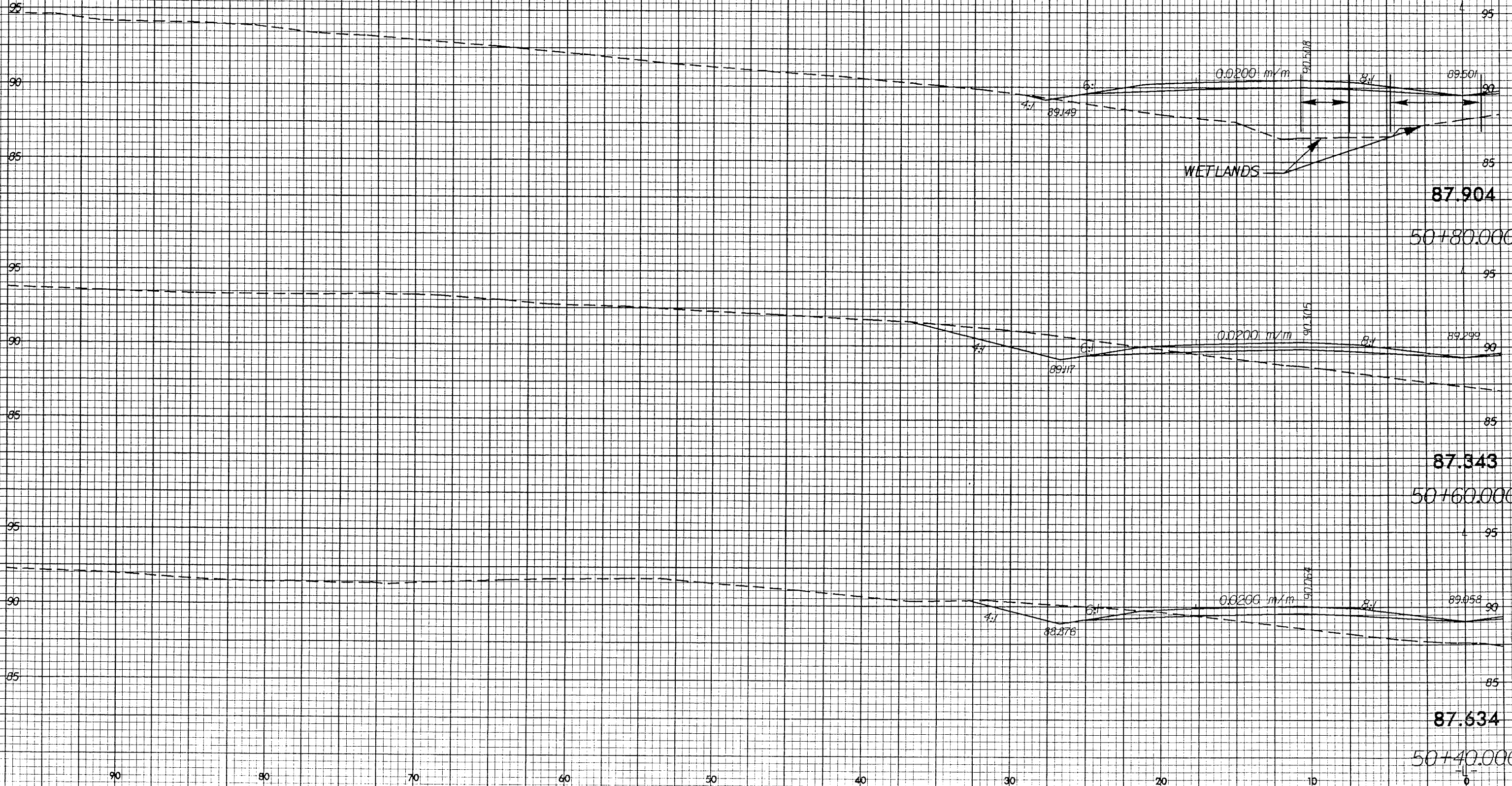
SITE AB50



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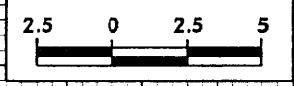


SITE AB5C

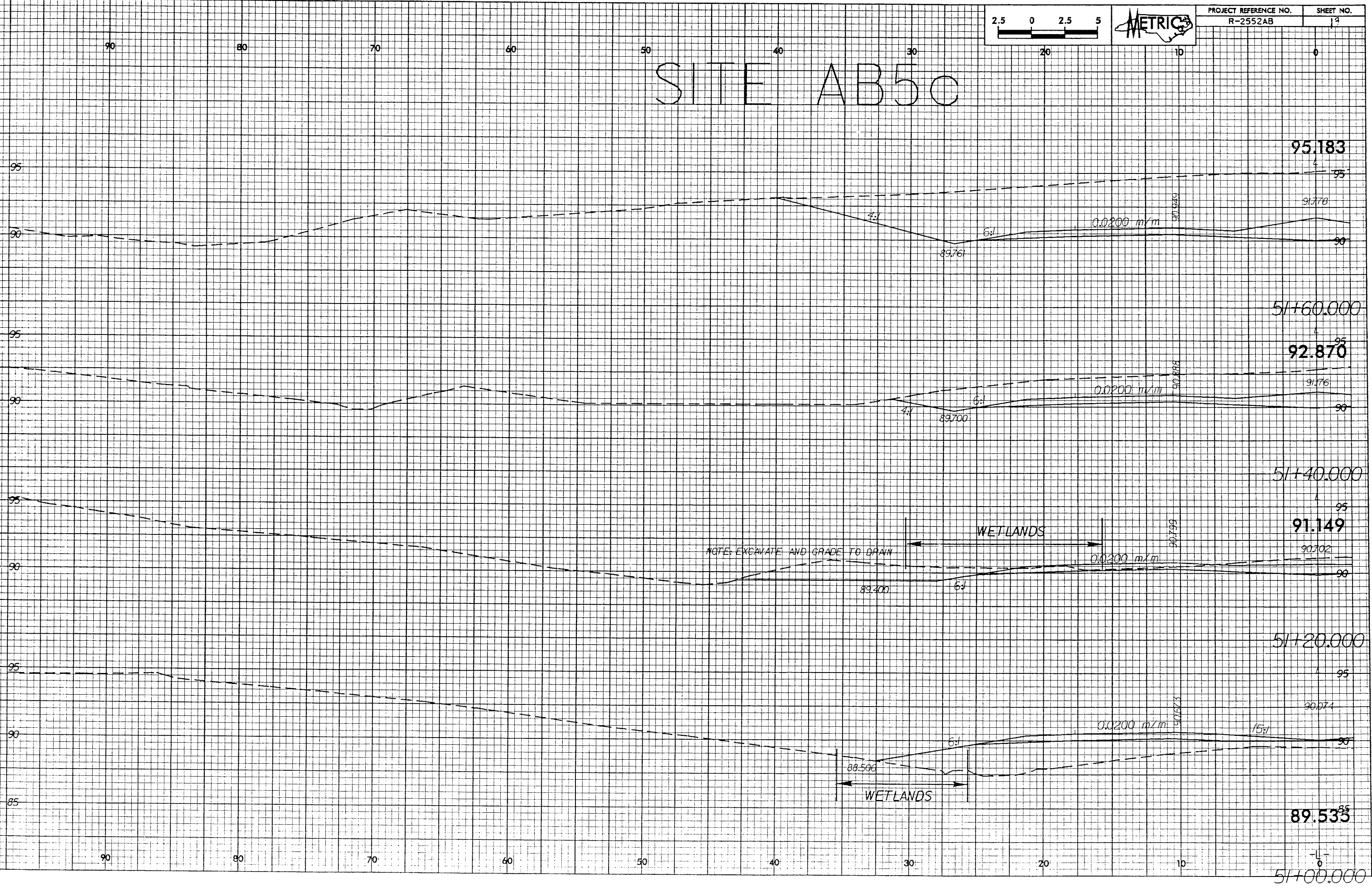


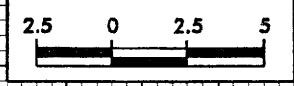
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03-14-2004 15:03
R-2552AB L2.dwg

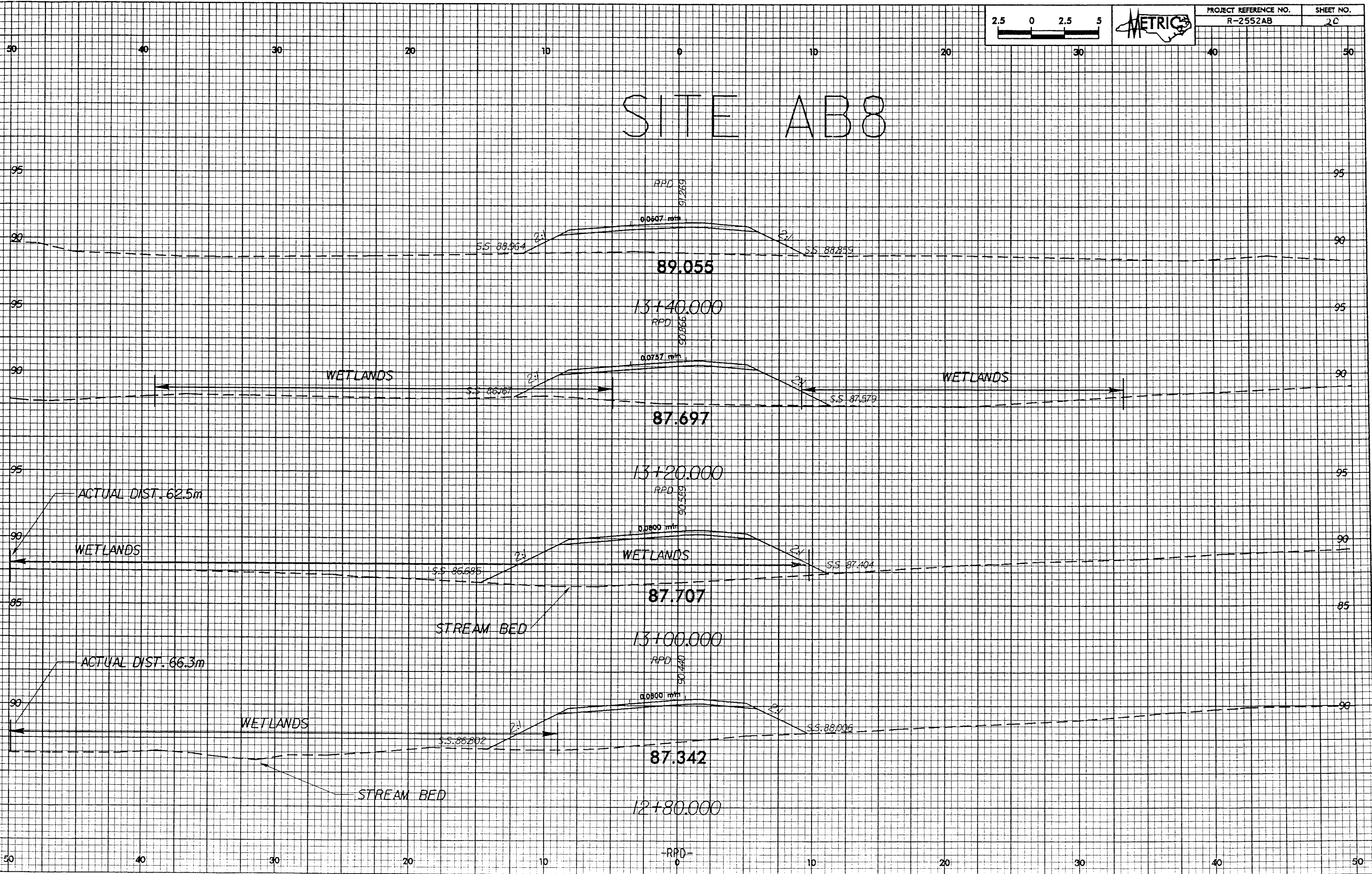


SITE AB50

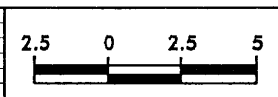




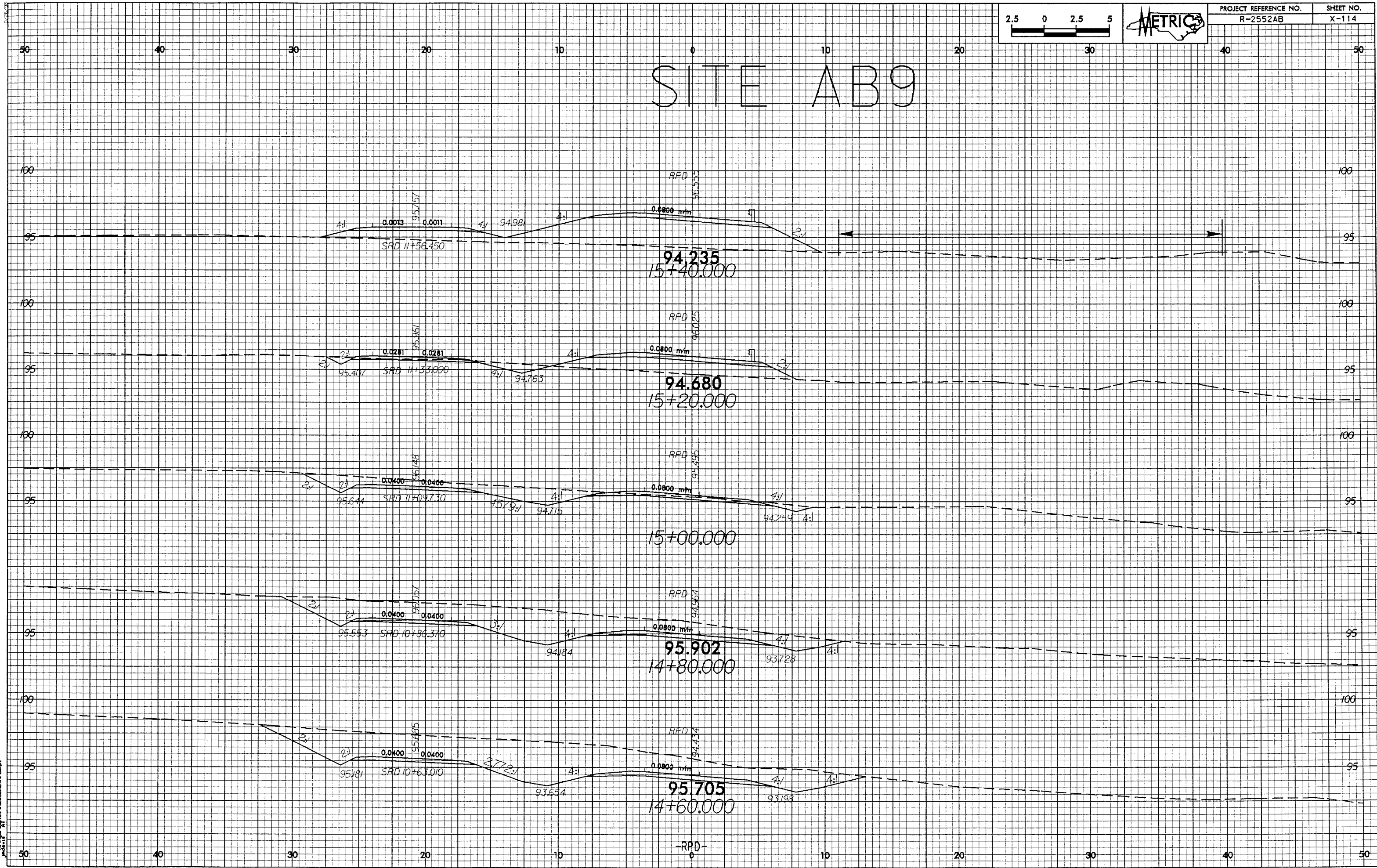
SITE AB8



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 Metric
 R-2552AB 2C.dwg

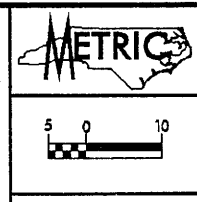


SITE AB9



30-SEP-2004 14:23
R-2552AB_RPD.dwg
R-2552AB_RPD.dwg

PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST. REV.	
R/W REV. 6/10/04	

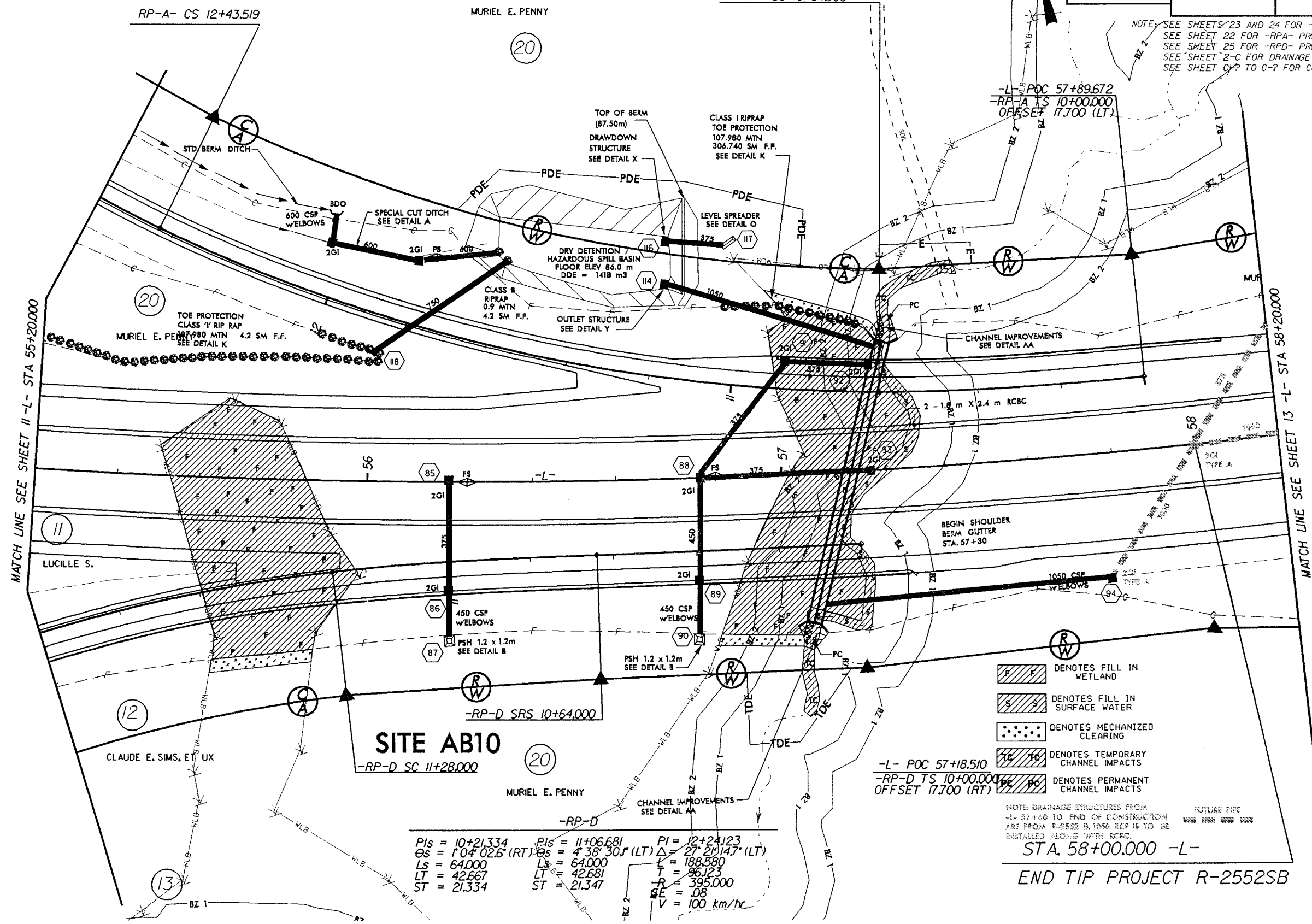


-RP-A

PIs = 10+38.594 R 1 = 1682.500 Θs 1 = 1°05'20.3" (RT) R 2 = 400.000 Θs 2 = 4°35'04.4" (RT) Ls = 64.000 LT = 38.594 ST = 25.455	PI = 11+55.297 Δ = 25°42'50.9" (RT) L = 179.519 T = 91.297 R = 400.000 SE = .08 V = 100 km/hr	PIs = 12+64.865 Θs = 4°35'01.2" (RT) Ls = 64.000 LT = 42.681 ST = 21.346	PIs = 54+26.592 Θs = 1°36'03.3" (LT) Ls = 95.000 LT = 63.336 ST = 31.669	PI = 57+45.284 Δ = 19°10'00.7" (LT) L = 568.692 T = 287.028 R = 1,700.000 SE = .04 Voes = 110 km/hr	PIs = 60+58.677 Θs = 1°36'03.3" (LT) Ls = 95.000 LT = 63.336 ST = 31.669
---	---	--	--	---	--

-L-

SITE AB11



SITE AB10

-RP-D

PIs = 10+21.334 Θs = 1°04'02.6" (RT) Ls = 64.000 LT = 42.667 ST = 21.334	PIs = 11+06.681 Θs = 4°38'30.1" (LT) Ls = 64.000 LT = 42.681 ST = 21.347	PI = 12+24.123 Δ = 27°21'14.7" (LT) L = 188.580 T = 96.123 R = 395.000 SE = .08 V = 100 km/hr
--	--	---

- DENOTES FILL IN WETLAND
- DENOTES FILL IN SURFACE WATER
- DENOTES MECHANIZED CLEARING
- DENOTES TEMPORARY CHANNEL IMPACTS
- DENOTES PERMANENT CHANNEL IMPACTS

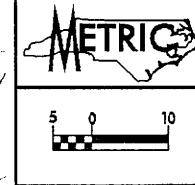
NOTE: DRAINAGE STRUCTURES FROM -L- 57+60 TO END OF CONSTRUCTION ARE FROM R-2552 B, 1050 RCP IS TO BE INSTALLED ALONG WITH RCBC.

STA. 58+00.000 -L-
END TIP PROJECT R-2552SB

REVISIONS

SYSTEMS TIME SERIES
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PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST. REV.	
R/W REV.	6/10/04



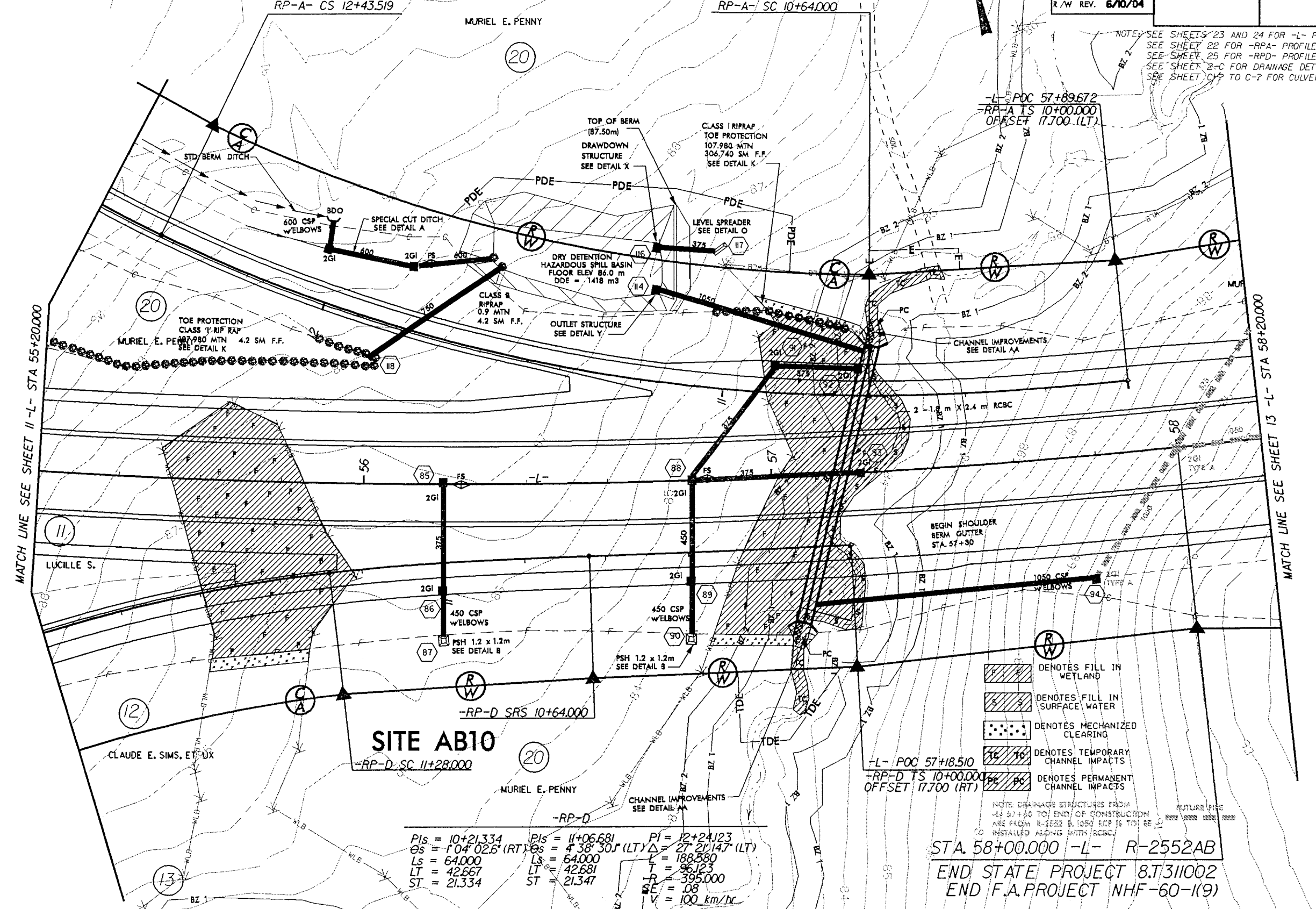
-HP-A

PIs = 10+38.594	PI = 11+55.297	PIs = 12+64.865
R 1 = 1682.500	$\Delta = 25^\circ 42' 50.9" (RT)$	$\Theta_s = 4^\circ 35' 01.2" (RT)$
$\Theta_s 1 = 1^\circ 05' 20.3" (RT)$	L = 179.519	Ls = 64.000
R 2 = 400.000	T = 91.297	LT = 42.681
$\Theta_s 2 = 4^\circ 35' 04.4" (RT)$	R = 400.000	ST = 21.346
Ls = 64.000	SE = .08	
LT = 38.594	V = 100 km/hr	
ST = 25.455		

-L-

PIs = 54+26.592	PI = 57+45.284	PIs = 60+58.617
$\Theta_s = 1^\circ 36' 03.3" (LT)$	$\Delta = 19^\circ 10' 00.7" (LT)$	$\Theta_s = 1^\circ 36' 03.3" (LT)$
Ls = 95.000	L = 568.692	Ls = 95.000
LT = 63.336	T = 287.028	LT = 63.336
ST = 31.669	R = 1700.000	ST = 31.669
	SE = .04	
	V = 110 km/hr	

SITE AB11



NOTE: SEE SHEETS 23 AND 24 FOR -L- PROFILE
SEE SHEET 22 FOR -RPA- PROFILE
SEE SHEET 25 FOR -RPD- PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS
SEE SHEET C-2 TO C-7 FOR CULVERT PLANS

- DENOTES FILL IN WETLAND
- DENOTES FILL IN SURFACE WATER
- DENOTES MECHANIZED CLEARING
- DENOTES TEMPORARY CHANNEL IMPACTS
- DENOTES PERMANENT CHANNEL IMPACTS

NOTE: DRAINAGE STRUCTURES FROM STA 57+30 TO END OF CONSTRUCTION ARE FROM R-2552 & 1050 RCP IS TO BE CO INSTALLED ALONG WITH RCBC.

-RP-D

PIs = 10+21.334	PIs = 11+06.681	PI = 12+24.123
$\Theta_s = 1^\circ 04' 02.6" (RT)$	$\Theta_s = 4^\circ 38' 30.1" (LT)$	$\Delta = 27^\circ 21' 14.7" (LT)$
Ls = 64.000	Ls = 64.000	L = 188.580
LT = 42.667	LT = 42.681	T = 96.123
ST = 21.334	ST = 21.347	R = 395.000
		SE = .08
		V = 100 km/hr

STA. 58+00.000 -L- R-2552AB
END STATE PROJECT 8.T311002
END F.A. PROJECT NHF-60-1(9)

REVISIONS

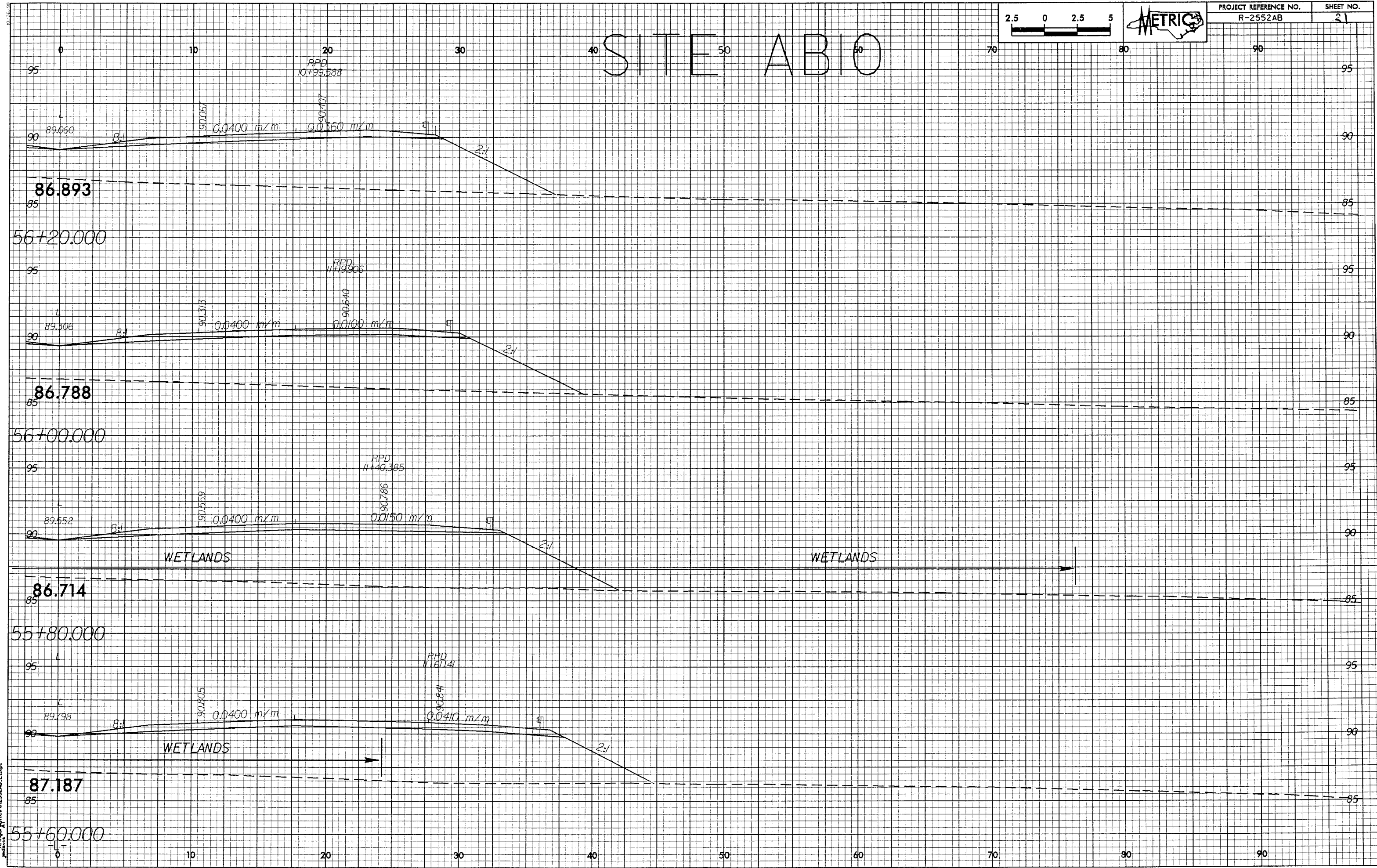
MATCH LINE SEE SHEET 11-L- STA 55+20.000

MATCH LINE SEE SHEET 13-L- STA 58+20.000

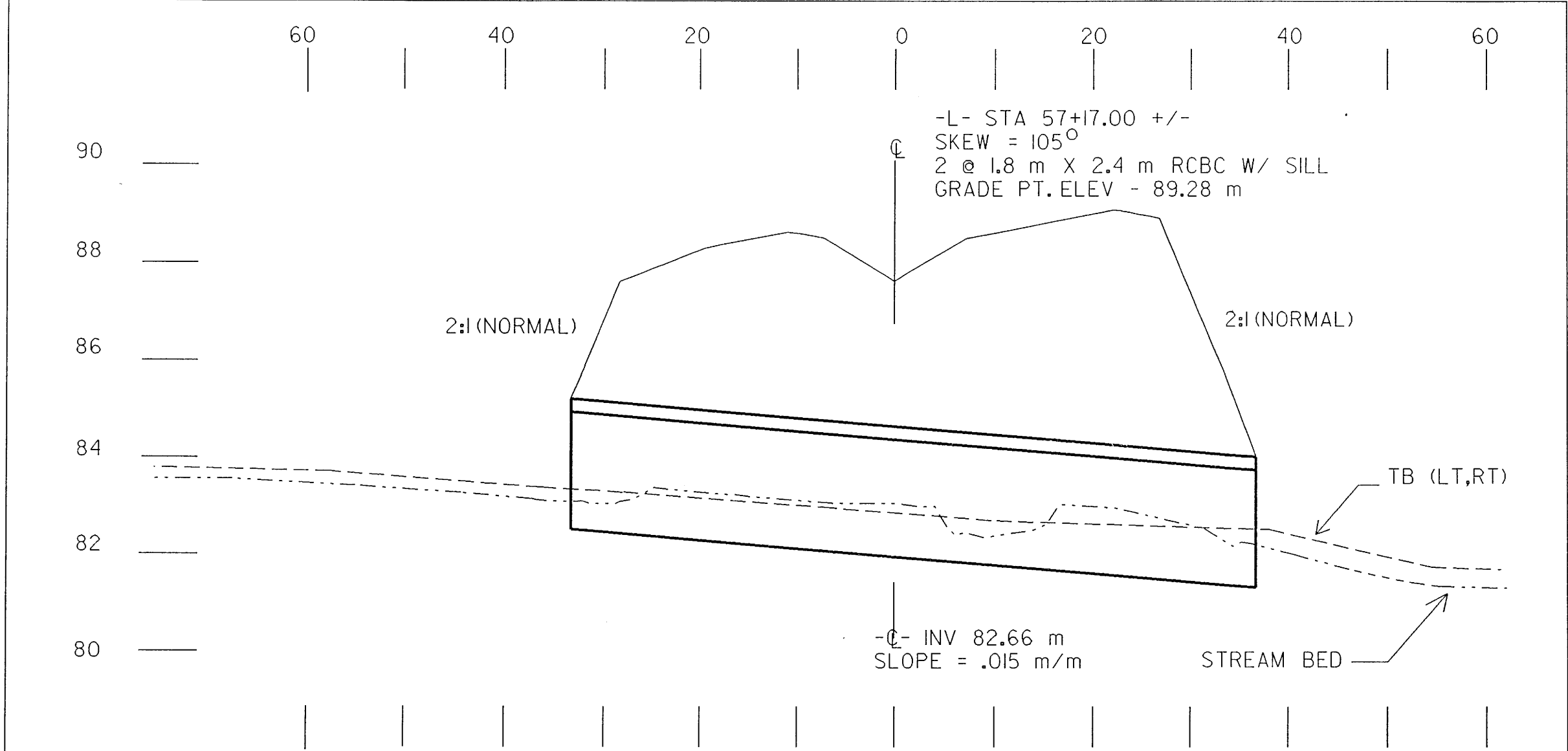
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SITE ABIO

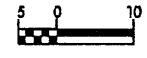


22-560-2004 11/28
Metric
R-2552AB.L1.rpt



SITE AB11
 CROSS SECTION

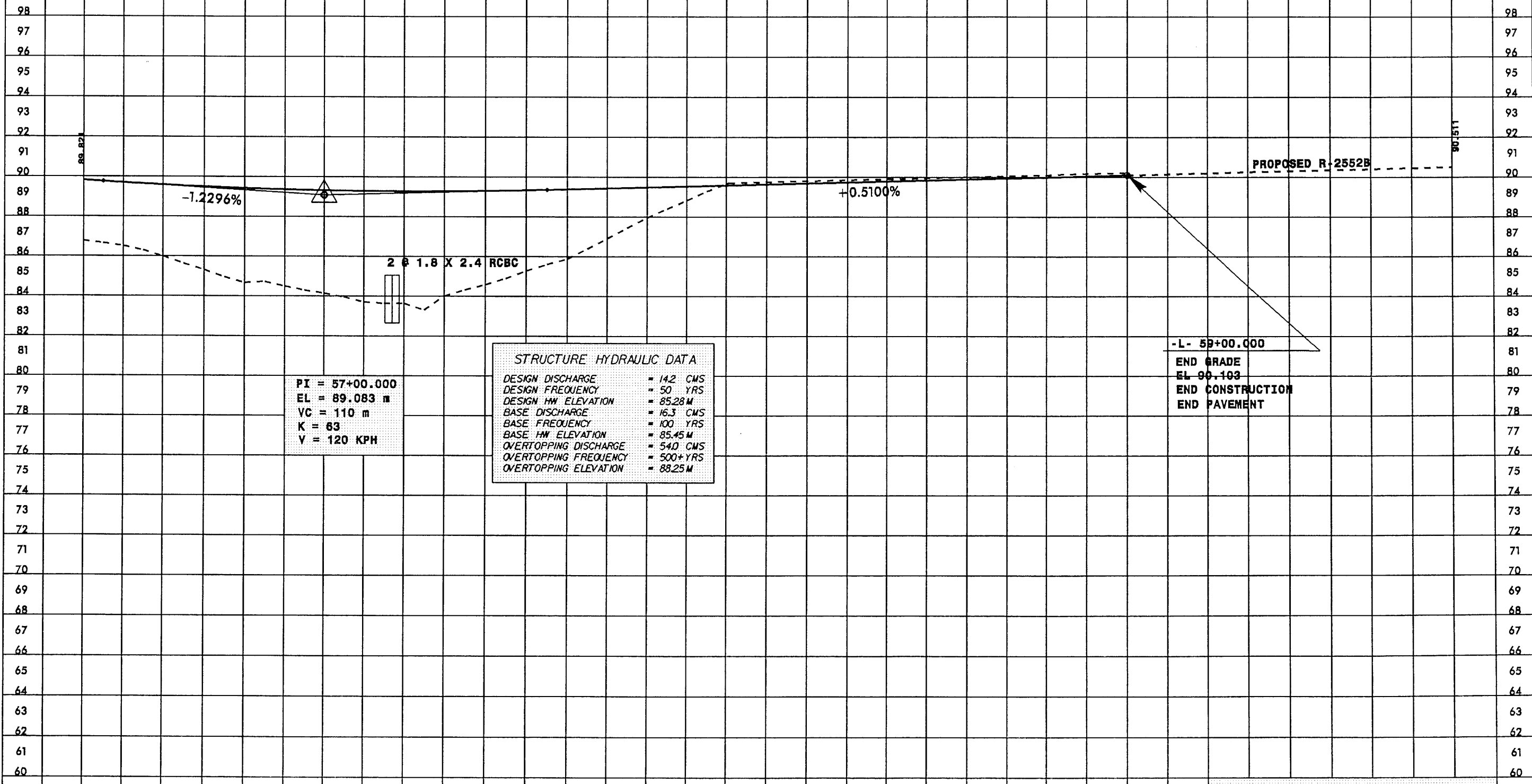
NCDOT
 DIVISION OF HIGHWAYS
 JOHNSTON COUNTY
 PROJECT: WBS 34459.1.1 (R-2552 AB)
 US 70 CLAYTON BYPASS
 SHEET 22 OF 23 10/01/04



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST.REV.
R/W REV.

-L- US 70 BYPASS



PI = 57+00.000
EL = 89.083 m
VC = 110 m
K = 83
V = 120 KPH

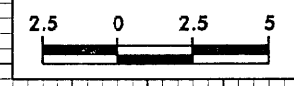
STRUCTURE HYDRAULIC DATA	
DESIGN DISCHARGE	= 142 CMS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 85.28M
BASE DISCHARGE	= 16.3 CMS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 85.45M
OVERTOPPING DISCHARGE	= 540 CMS
OVERTOPPING FREQUENCY	= 500+YRS
OVERTOPPING ELEVATION	= 88.25M

-L- 59+00.000
END GRADE
EL 90.103
END CONSTRUCTION
END PAVEMENT

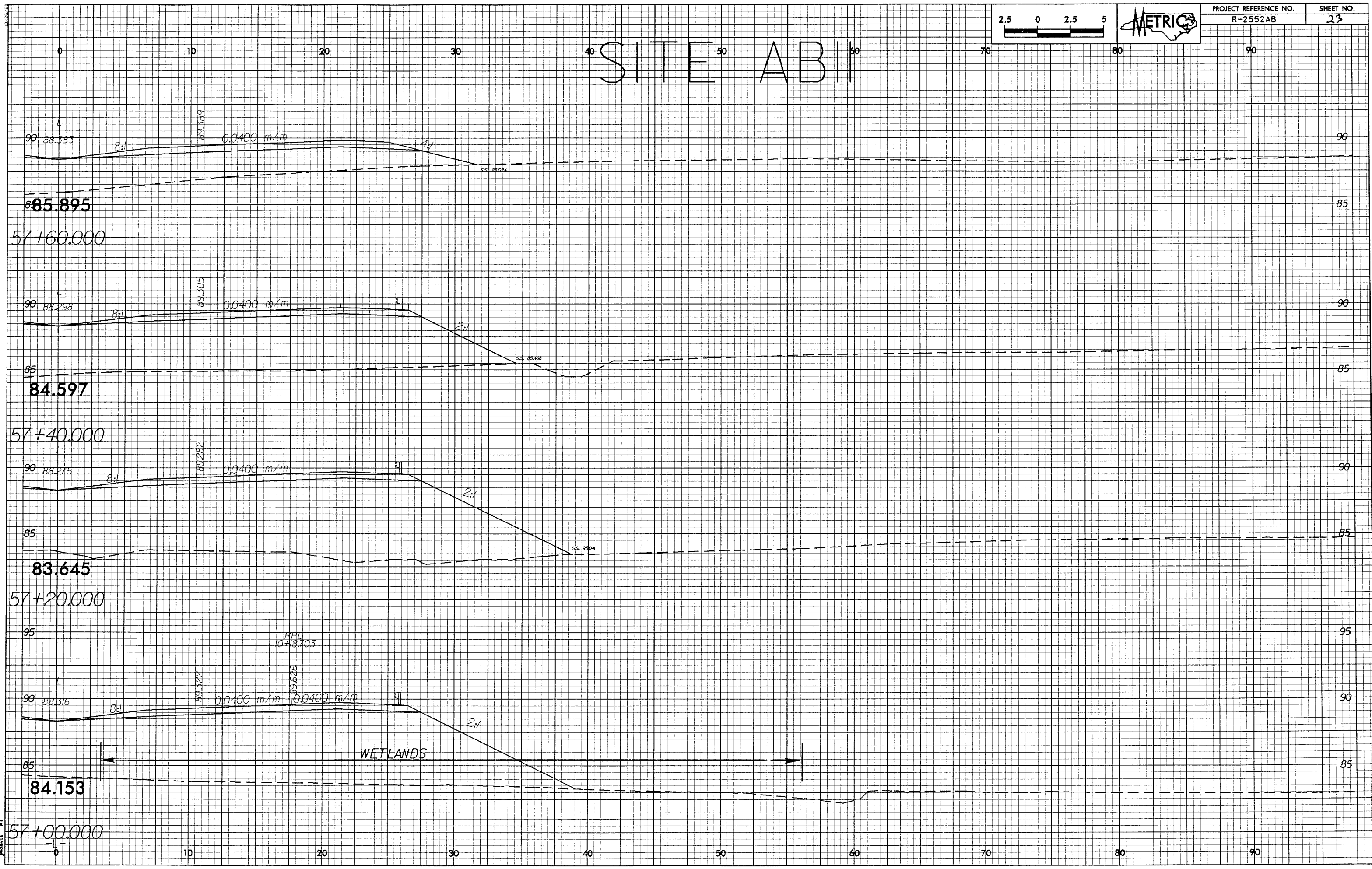
FOR -L-
SEE PLAN SHEETS 12 AND 13

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SITE ABII

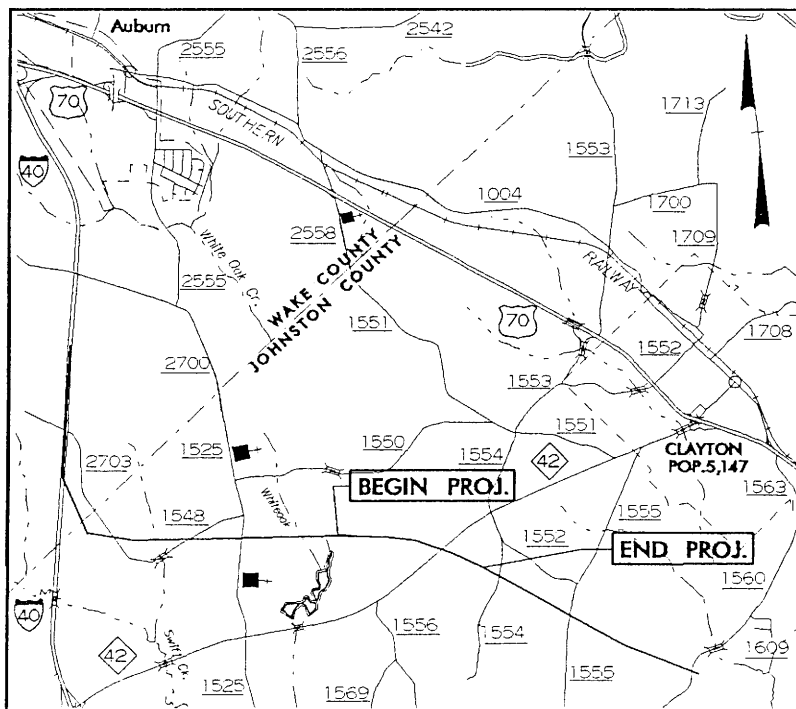
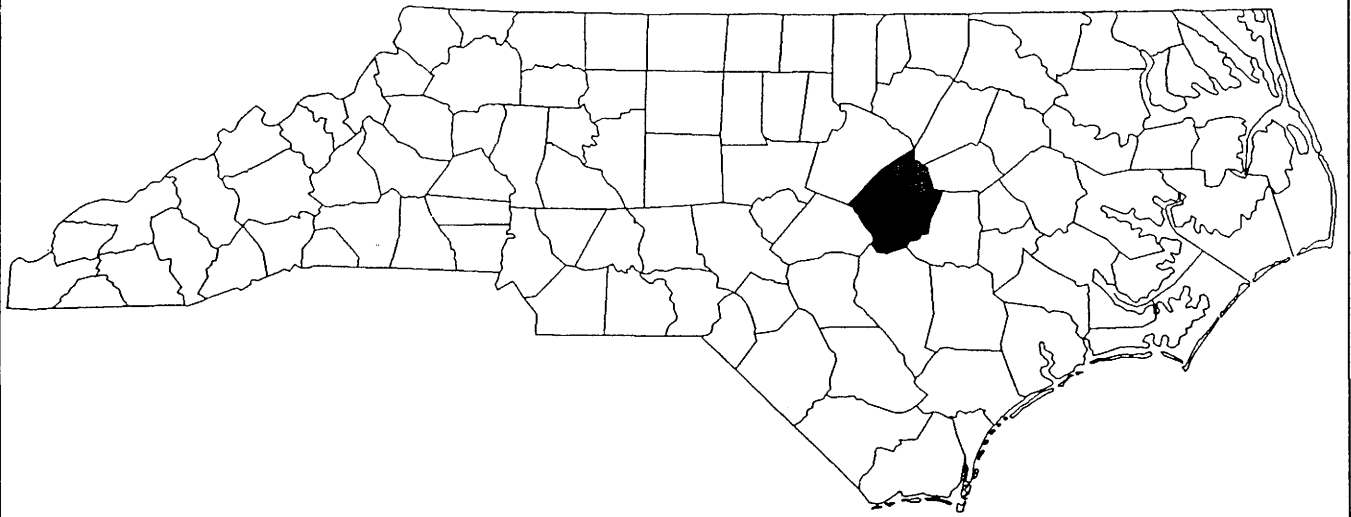


PROJECT REFERENCE NO. R-2552AB	SHEET NO. 23
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22-SEP-2004 11:29
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NORTH CAROLINA

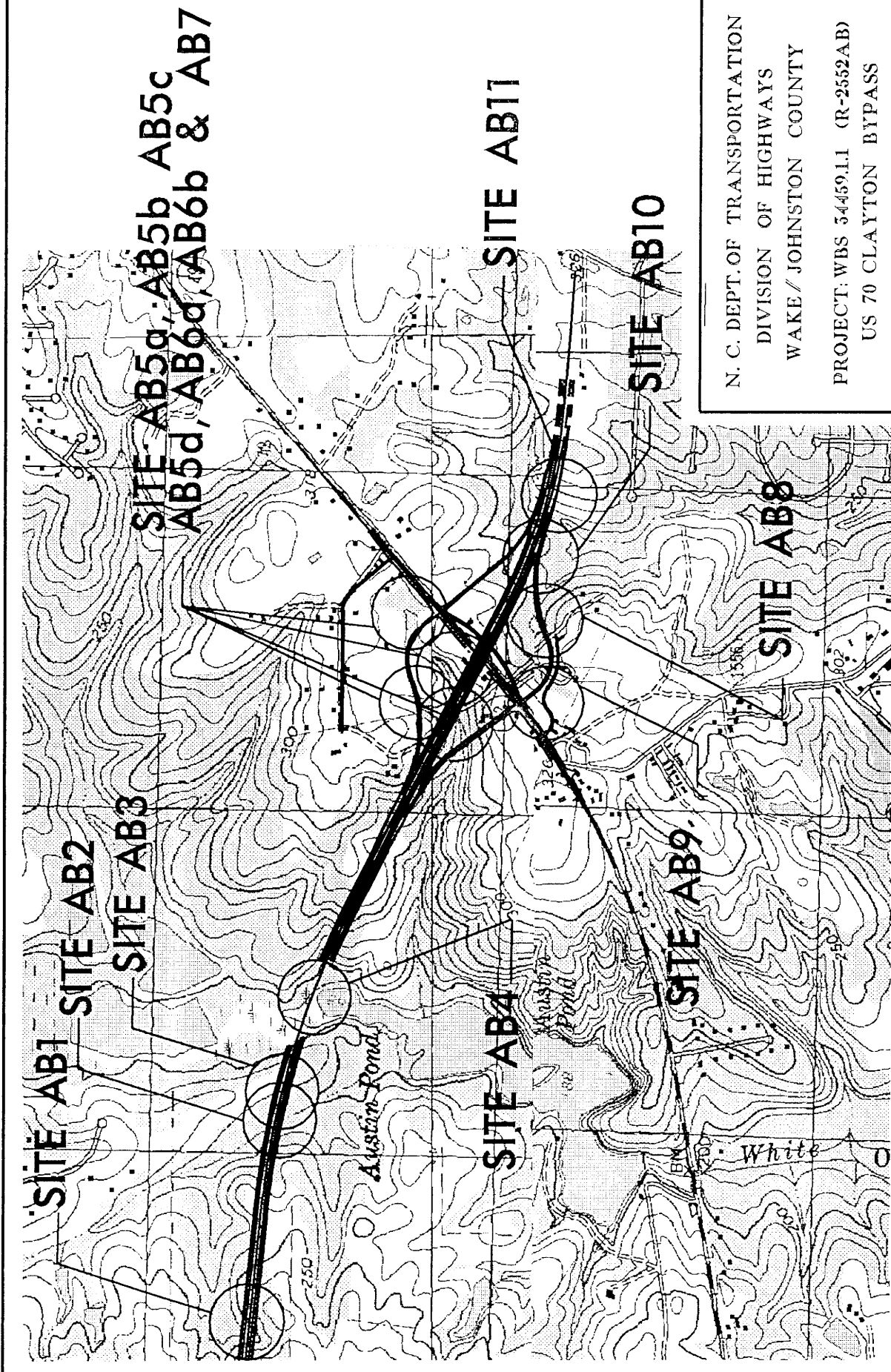


NEUSE RIVER BUFFER

VICINITY
MAP

NCDOT
DIVISION OF HIGHWAYS

JOHNSTON COUNTY
PROJECT: WBS 34459.1.1 (R-2552AB)
US 70 CLAYTON BYPASS



N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 WAKE / JOHNSTON COUNTY
 PROJECT: WBS 54459.11 (R-2552AB)
 US 70 CLAYTON BYPASS

SITE MAP

BUFFER IMPACTS SUMMARY

SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	IMPACT				MITIGABLE			BUFFER REPLACEMENT		
			TYPE		ALLOWABLE		TOTAL (ft ²)	ZONE 1 (ft ²)	ZONE 2 (ft ²)	TOTAL (ft ²)	ZONE 1 (ft ²)	ZONE 2 (ft ²)
			ROAD CROSSING	PARALLEL IMPACT	ZONE 1 (ft ²)	ZONE 2 (ft ²)						
AB2	RCBC	L 37+10	X				24211.05	15173.35	39384.40			
AB4	BRIDGE	L	X				18477.87	13015.94	31493.81			
AB5c	1050 RCP	I1Y1 13+70	X				58508.96	44229.66	102738.62			
AB5d	1350 CSP	I1Y1 13+70	X				SEE AB5c FOR SITE TOTAL					
AB8	1350 RCP	I1Y1 20+90	X			7294.38	4831.17	12125.55				
AB11	RCBC	FLYLEREV 29+50	X				20325.60	13774.79	34100.39			
PROJECT TOTAL:						7294.38	4831.17	12125.55	12125.55	121523.48	86193.74	207717.22

NOTE : WETLAND IMPACT IN BUFFER ZONES

- SITE AB4	1	2
- SITE AB7	8179.27	0.00
- SITE AB11	9272.26	0.00
	14760.87	0.00

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

WAKE / JOHNSTON COUNTY
PROJECT # - WBS 34459.1.1 (R2552AB)
US 70 - CLAYTON BYPASS

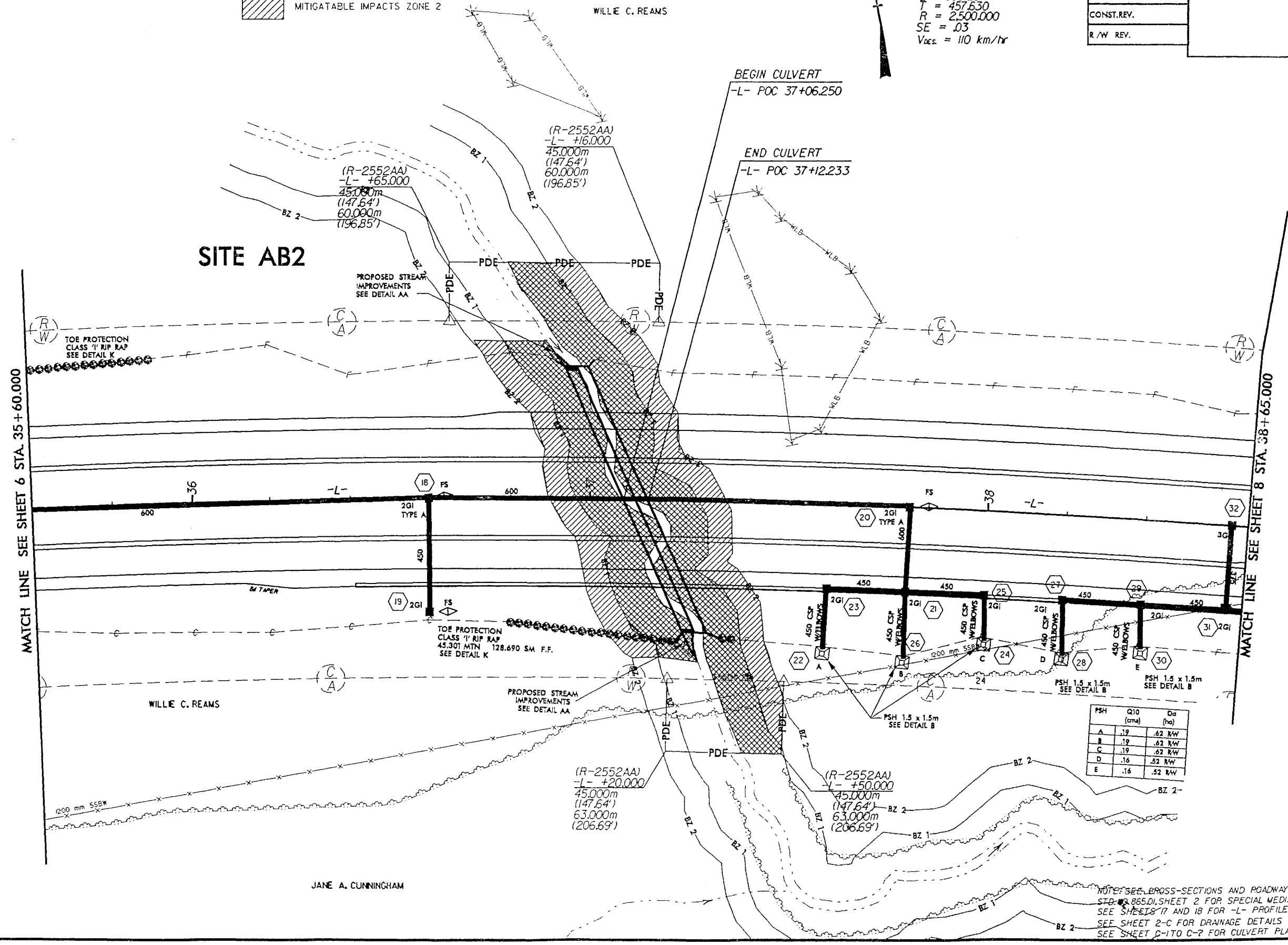
METRIC

CONST. REV.
R/W REV.

PROJECT REFERENCE NO. R-2552AB	SHEET NO. 7
R/W SHEET NO. R-2552AA *21 & *22	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-L-
 $PI = 38+81.623$
 $\Delta = 20' 44" 47.5" (RT)$
 $L = 905.237$
 $T = 457.630$
 $R = 2,500.000$
 $SE = .03$
 $V_{des} = 110 \text{ km/hr}$

MITIGATABLE IMPACTS ZONE 1
 MITIGATABLE IMPACTS ZONE 2



MATCH LINE SEE SHEET 6 STA. 35+60.000

MATCH LINE SEE SHEET 8 STA. 38+65.000

PSH	Q10 (cma)	Da (ha)
A	.19	.62 NW
B	.19	.62 NW
C	.19	.62 NW
D	.16	.52 NW
E	.16	.52 NW

JANE A. CUNNINGHAM

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS
 STD. 865.D1, SHEET 2 FOR SPECIAL MEDIAN GRADING.
 SEE SHEETS 17 AND 18 FOR -L- PROFILE
 SEE SHEET 2-C FOR DRAINAGE DETAILS
 SEE SHEET D-1 TO C-7 FOR CULVERT PLANS

REVISIONS

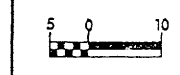
8/27/03

*****METRIC*****
 *****SUNSHINE*****



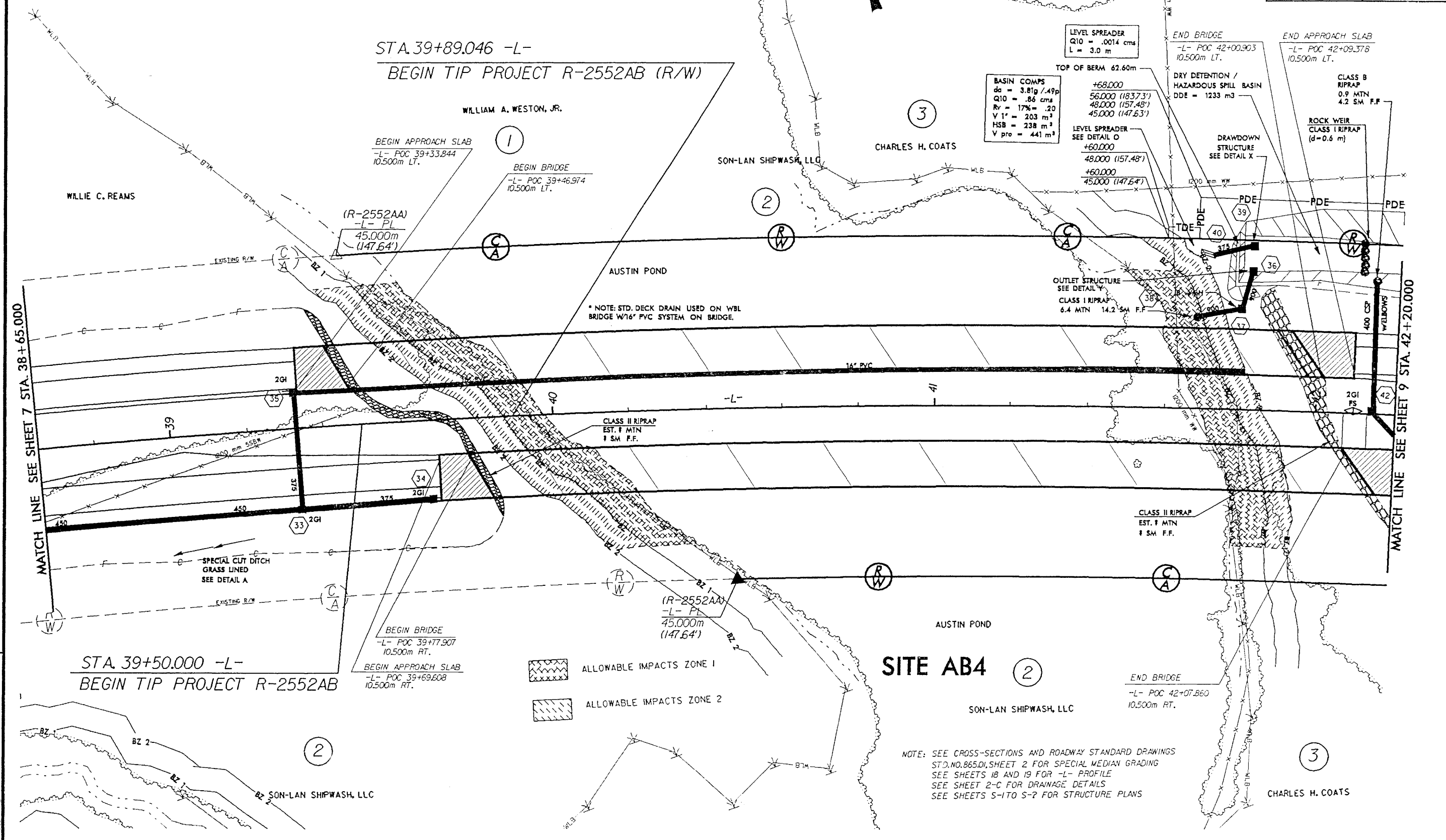
PROJECT REFERENCE NO. R-2552AB	SHEET NO. 8
R/W SHEET NO. R-2552AA *22 & R-2552AB *8	ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-L-
 $PI = 38+81.623$
 $\Delta = 20' 44' 47.5" (RT)$
 $L = 905.237$
 $T = 457.630$
 $R = 2,500.000$
 $SE = .03$
 $V_{des} = 110 \text{ km/hr}$



CONST. REV.
R/W REV.

STA. 39+89.046 -L-
 BEGIN TIP PROJECT R-2552AB (R/W)



REVISIONS

MATCH LINE SEE SHEET 7 STA. 38+65.000

MATCH LINE SEE SHEET 9 STA. 42+20.000

STA. 39+50.000 -L-
 BEGIN TIP PROJECT R-2552AB

SITE AB4

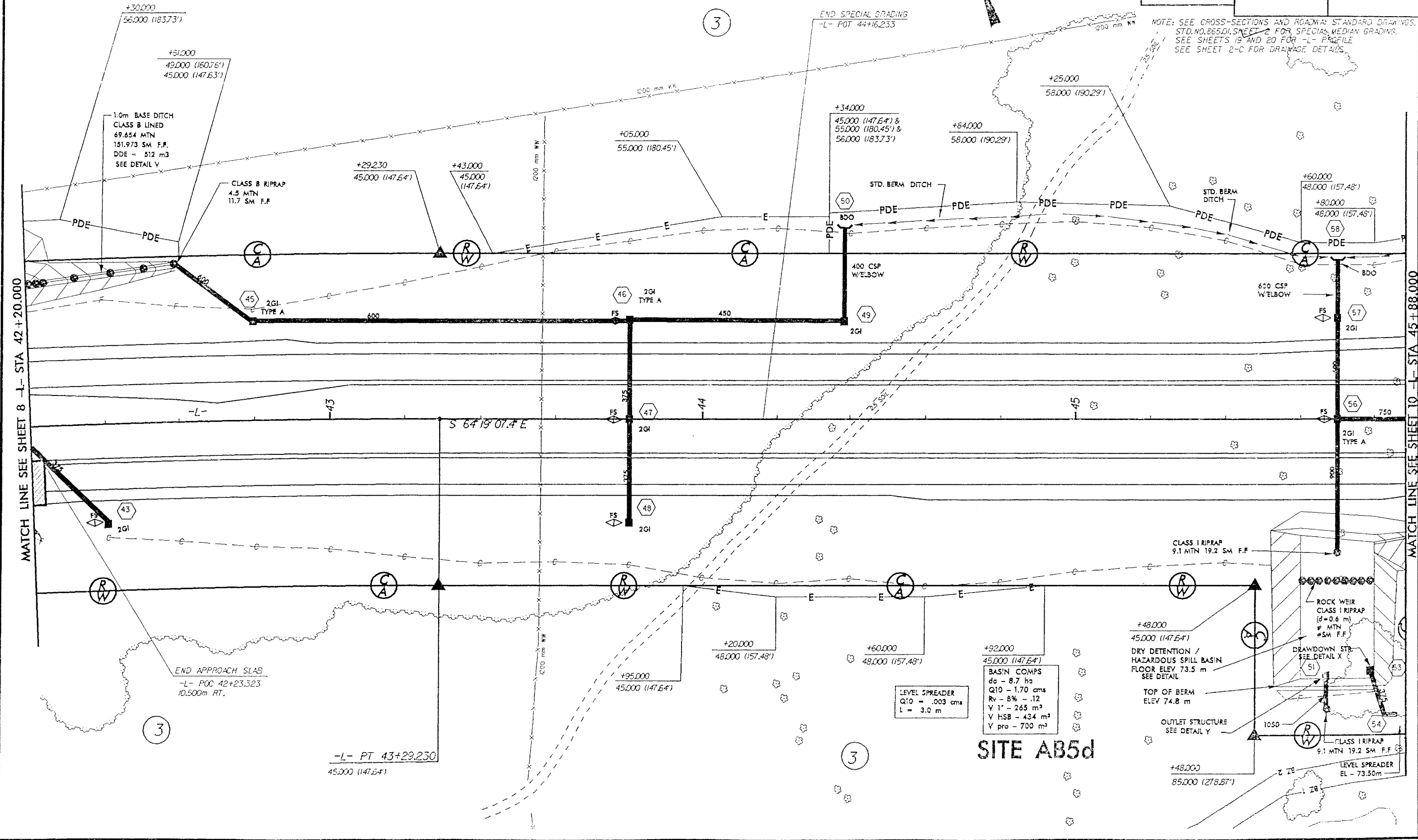
SON-LAN SHIPWASH, LLC

CHARLES H. COATS

-L-

$PI = 38+81.623$
 $\Delta = 20' 44' 47.5" (RT)$
 $L = 905.237$
 $T = 457.630$
 $R = 2,500.000$
 $SE = .03$
 $V_{DES} = 110 \text{ km/hr}$

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.D1, SHEET 2 FOR SPECIAL MEDIAN GRADING. SEE SHEETS 19 AND 20 FOR -L- PROFILE. SEE SHEET 2-C FOR DRAINAGE DETAILS.



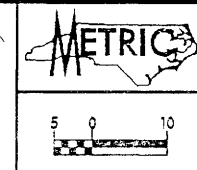
REVISIONS

MATCH LINE SEE SHEET 8 -L- STA 42+20.000

MATCH LINE SEE SHEET 10 -L- STA 45+88.000

SITE AB5d

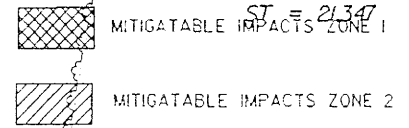
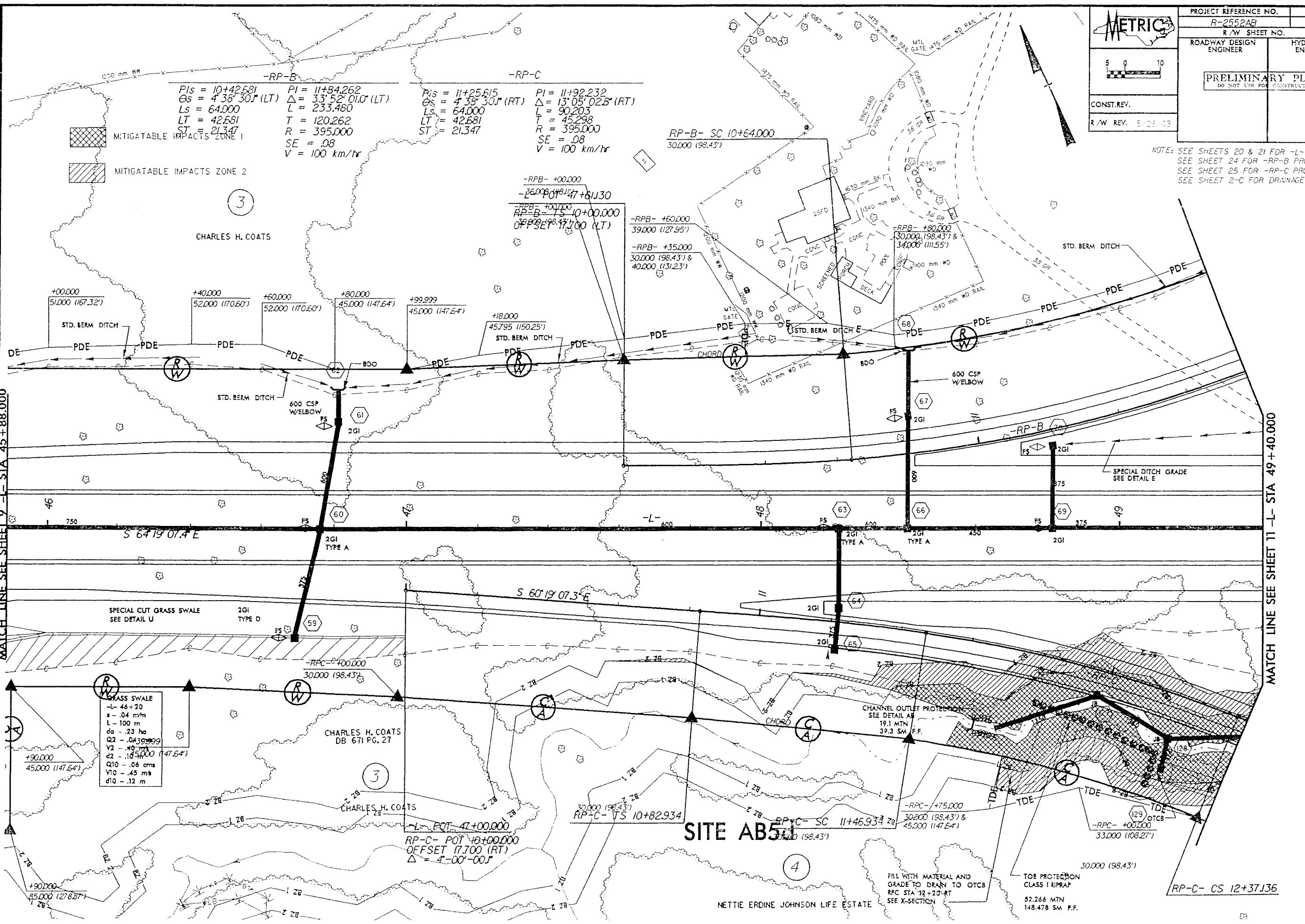
DATE PLOTTED: 11/11/2011 10:58:11 AM



PROJECT REFERENCE NO. R-2552AB	SHEET NO. 10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST. REV.	
R/W REV. 5/10/03	

NOTE: SEE SHEETS 20 & 21 FOR -L- PROFILE
SEE SHEET 24 FOR -RP-B PROFILE
SEE SHEET 25 FOR -RP-C PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS

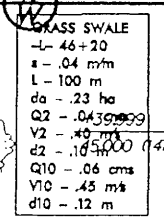
$PIs = 10+42.681$ $PI = 11+84.262$ $PIs = 11+25.615$ $PI = 11+92.232$
 $Os = 4' 38" 30.1" (LT)$ $\Delta = 33' 52" 01.0" (LT)$ $Os = 4' 38" 30.1" (RT)$ $\Delta = 13' 05" 02.8" (RT)$
 $Ls = 64,000$ $L = 233,460$ $Ls = 64,000$ $L = 90,203$
 $LT = 42,681$ $T = 120,262$ $LT = 42,681$ $T = 45,298$
 $ST = 21,347$ $R = 395,000$ $ST = 21,347$ $R = 395,000$
 $SE = .08$
 $V = 100 \text{ km/hr}$



MATCH LINE SEE SHEET 9 - L- STA 45+88.000

MATCH LINE SEE SHEET 11 - L- STA 49+40.000

GRASS SWALE
 -L- 46+20
 s - .04 m/m
 L - 100 m
 da - .23 ha
 Q2 - .0437999
 V2 - .49 m/s
 d2 - .103400 (147.64')
 Q10 - .06 cms
 V10 - .45 m/s
 d10 - .12 m



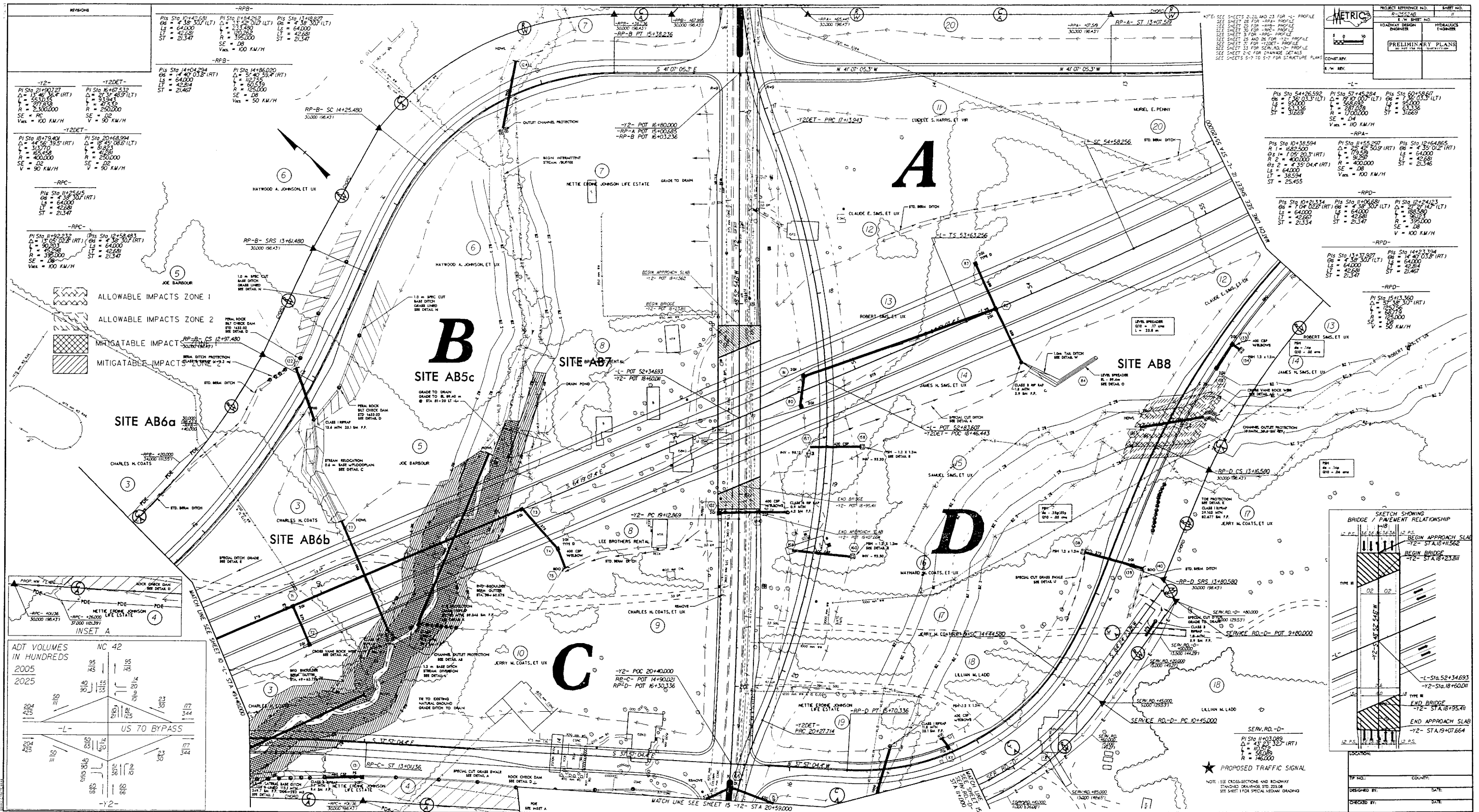
+90,000 (147.64')
 +85,000 (127.87')
 +80,000 (117.60')
 +75,000 (107.31')
 +70,000 (97.02')
 +65,000 (86.73')
 +60,000 (76.44')
 +55,000 (66.15')
 +50,000 (55.86')
 +45,000 (45.57')
 +40,000 (35.28')
 +35,000 (24.99')
 +30,000 (14.70')
 +25,000 (4.41')

SITE AB50

FILL WITH MATERIAL AND GRADE TO DRAIN TO OTCB
 RPC STA 12+20-RT
 SEE X-SECTION
 TOE PROTECTION CLASS 1 RIPRAP
 52.266 MTN
 148.478 SM. F.F.

RP-C- CS 12+37.136

REVISIONS



NOTES:

- SEE SHEETS 2, 3, 4 AND 13 FOR "L" PROFILE
- SEE SHEET 18 FOR "RPA" PROFILE
- SEE SHEET 19 FOR "RPA" PROFILE
- SEE SHEET 20 FOR "RPA" PROFILE
- SEE SHEET 21 FOR "RPA" PROFILE
- SEE SHEET 22 AND 23 FOR "Y2" PROFILE
- SEE SHEET 24 FOR "Y2" PROFILE
- SEE SHEET 25 FOR "Y2" PROFILE
- SEE SHEET 26 FOR "Y2" PROFILE
- SEE SHEET 27 FOR "Y2" PROFILE
- SEE SHEET 28 FOR "Y2" PROFILE
- SEE SHEET 29 FOR "Y2" PROFILE
- SEE SHEET 30 FOR "Y2" PROFILE
- SEE SHEET 31 FOR "Y2" PROFILE
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- SEE SHEET 93 FOR "Y2" PROFILE
- SEE SHEET 94 FOR "Y2" PROFILE
- SEE SHEET 95 FOR "Y2" PROFILE
- SEE SHEET 96 FOR "Y2" PROFILE
- SEE SHEET 97 FOR "Y2" PROFILE
- SEE SHEET 98 FOR "Y2" PROFILE
- SEE SHEET 99 FOR "Y2" PROFILE
- SEE SHEET 100 FOR "Y2" PROFILE

PROPERTY OWNERS:

- HATWOOD A. JOHNSON ET UX
- JOE BARBOUR
- CHARLES H. COATS
- JERRY M. COATS, ET UX
- LEE BROTHERS RENTAL
- NETTE E. JOHNSON LIFE ESTATE
- CLAUDE E. SAMS, ET UX
- ROBERT SAMS, ET UX
- JAMES H. SAMS, ET UX
- SAMUEL SAMS, ET UX
- MAYNARD H. COATS, ET UX
- LELLIAN M. LADD

ADT VOLUMES IN HUNDREDS:

Year	Station 14+00	Station 15+00	Station 16+00	Station 17+00	Station 18+00	Station 19+00	Station 20+00
2005	150	160	170	180	190	200	210
2025	160	170	180	190	200	210	220

US TO BYPASS:

Year	Station 14+00	Station 15+00	Station 16+00	Station 17+00	Station 18+00	Station 19+00	Station 20+00
2005	150	160	170	180	190	200	210
2025	160	170	180	190	200	210	220

ADDITIONAL NOTES:

- ALLOWABLE IMPACTS ZONE 1
- ALLOWABLE IMPACTS ZONE 2
- MITIGATABLE IMPACT
- MITIGATABLE IMPACT

ADDITIONAL NOTES:

- BRIDGE SKETCH SHOWING BRIDGE / PAVEMENT RELATIONSHIP
- TYPE II
- TYPE III
- TYPE IV

ADDITIONAL NOTES:

- PROPOSED TRAFFIC SIGNAL
- NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DIMENSIONS STD 255.08
- SEE SHEET 1 FOR SPECIAL UTILITY DRAWING

ADDITIONAL NOTES:

- PROPERTY OWNERS
- ADT VOLUMES
- US TO BYPASS

ADDITIONAL NOTES:

- BRIDGE SKETCH
- PROPOSED TRAFFIC SIGNAL

ADDITIONAL NOTES:

- PROPERTY OWNERS
- ADT VOLUMES
- US TO BYPASS
- BRIDGE SKETCH
- PROPOSED TRAFFIC SIGNAL

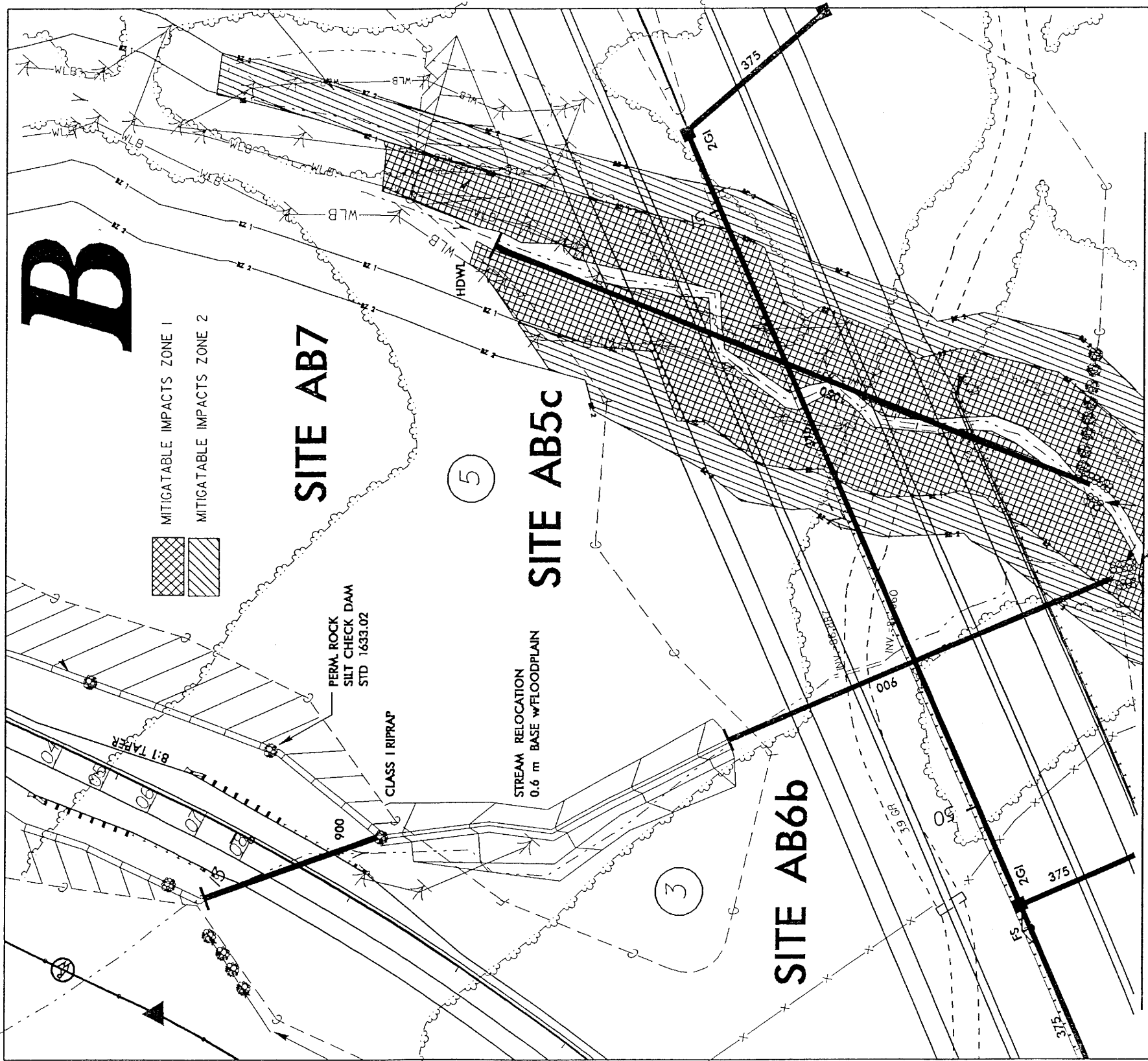
PROJECT INFORMATION:

PROJECT APPROPRIATION NO. _____ SHEET NO. _____

DATE: _____

DESIGNED BY: _____

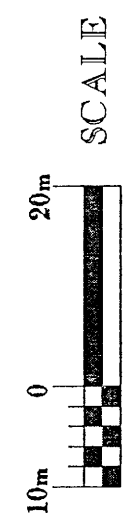
CHECKED BY: _____

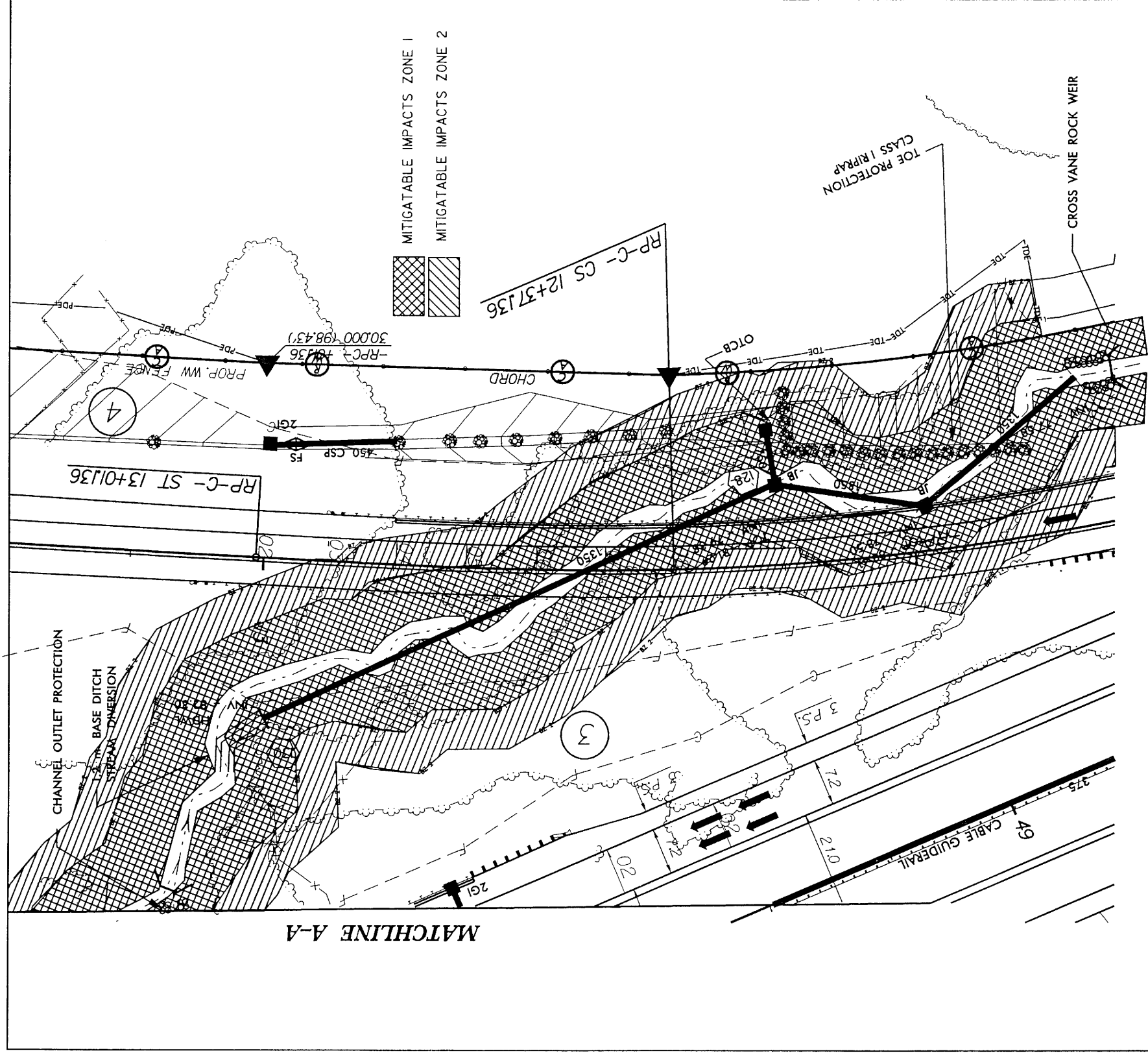


**SITES AB5c, AB6a,
 AB6b & AB7**

NCDOT

DIVISION OF HIGHWAYS
 JOHNSTON COUNTY
 PROJECT: WBS 34459.1.1 (R-2552.AB)
 US 70 CLAYTON BYPASS





MATCHLINE A-A

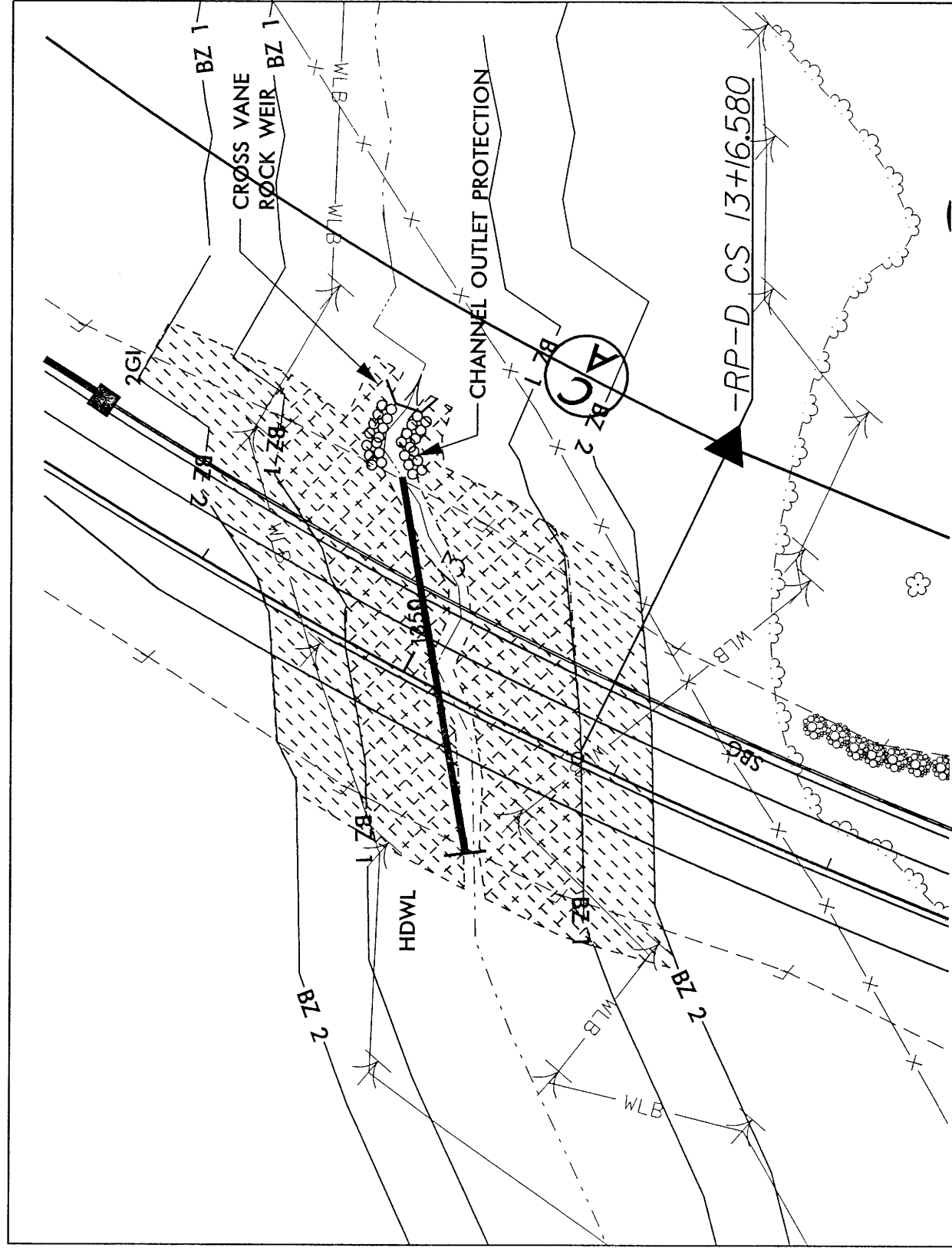
SITES AB5d



NCDOT

DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: WBS 34459.1.1 (R-2552AB)
US 70 CLAYTON BYPASS

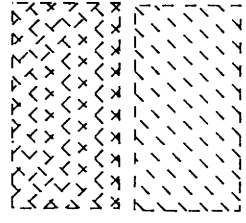
SHEET 5 OF 6 10/01/04



SITE AB8

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2



NCDOT
 DIVISION OF HIGHWAYS
 JOHNSTON COUNTY
 PROJECT: WBS 34459.1.1 (R-2552AB)
 US 70 CLAYTON BYPASS



COMPUTED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____



PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	3

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS



STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

SUMMARY OF 1200 mm
 WOVEN WIRE FENCE

LINE	SIDE	STATION TO STATION	FABRIC (METERS)	LINE POST	TERMINAL POST
-L-	RT.	28+00.000 - 37+22.123	976.995	191	46
-L-	RT.	37+32.541 - 39+83.479	290.635	59	16
-L-	RT.	42+15.703 - (-Y2-) 21+51.080	1103.196	225	61
-Y2-	RT.	21+50.000 - (-L-) 57+02.449	694.446	139	43
-L-	RT.	57+09.1666 - 58+49.272	147.925	29	10
-L-	MED.	39+47.526 - 39+77.228	35.398	5	7
-L-	MED.	42+01.758 - 42+06.994	19.323	2	4
-L-	LT.	28+00.000 - 36+91.043	945.122	195	49
-L-	LT.	37+00.756 - 39+41.460	264.092	53	16
-L-	LT.	41+89.134 - (-Y2-) 15+22.600	1313.630	271	67
-Y2-	LT.	14+73.000 - (-L-) 57+23.228	607.311	125	31
-L-	LT.	57+30.527 - 58+31.353	104.729	19	10
-Y2-	RT.	14+67.500 - 15+04.600	41.807	6	7
-Y2-	RT.	21+72.000 - 22+42.022	69.521	14	4
-Y2-	LT.	21+69.473 - 22+60.371	148.259	29	10
TOTAL			6708.428	1364	381
SAY			7000.0m	1400 EA	400 EA
ADDITIONAL BARBED WIRE:					150.0m

SUMMARY OF SHOULDER DRAINS

LINE	STA. TO STA.	SHOULDER DRAIN (m)	SHOULDER DRAIN PIPE (m)	OUTLET PIPE (m)	CONCRETE PAD (EA.)	DRAINAGE STR. NUMBER
-L-	29+80 TO 33+70 RT.	390.000	390.000			
-L-	30+81 RT.(2GI)			5.562		5
-L-	32+50 RT.(2GI)			5.597		11
-L-	33+70 RT.(2GI)			5.693		12
-L-	37+00 TO 39+76 RT.	273.665	273.665			
-L-	38+00 RT.(2GI)			0.500		25
-L-	38+68 RT.(2GI)			0.500		31
-L-	39+33 RT.(2GI)			0.500		33
-L-	42+22 TO 44+50 RT.	227.090	227.090			
-L-	42+22 RT.			7.300	1	
-L-	43+00 RT.			5.550	1	
-L-	43+80 RT.(2GI)			7.257		48
-L- MED	55+80 TO 58+00 RT.	221.165	221.165			
-L- MED	56+80 RT.(2GI)			8.947		88
-L- MED	57+22 RT.(2GI)			9.000		93
-L-	32+00 TO 33+55 LT.	155.000	155.000			
-L-	33+00 LT.			6.756	1	
-L-	33+55 LT.			8.962	1	
-L-	48+80 TO 50+80 LT.	200.000	200.000			
-L-	48+80 LT.(2GI)			2.543		70
-L-	49+80 LT.			7.586	1	
-L-	56+85 TO 58+00 LT.	113.404	113.404			
-L-	56+85 LT.			9.900	1	
-L- MED	36+80 TO 39+30 LT.	250.900	250.900			
-L- MED	37+80 LT.(2GI)			9.000		20
-L- MED	38+68 LT.(2GI)			11.437		32
-L- MED	42+14 TO 43+50 LT.	101.357	101.357			
-L- MED	42+14 LT.(2GI)			7.552		42
SHEET TOTAL		1932.581	1932.581	120.142	6	
PROJECT TOTAL		1932.581	1932.581	120.142	6	
SAY		1950.0	1950.0	125.0	6	

SUMMARY OF INCIDENTAL
 MILLING ASPHALT PAVEMENT

LINE	STA. TO STA.	LOCATION	INCIDENTAL SQ. METERS
-Y2-	13+55.000 - 13+70.000	LT & RT	91.8
-Y2-	23+50.000 - 24+00.000	LT & RT	244.5
	GOVERNMENT ROAD	LT & RT	68.6
TOTAL			404.9
SAY			410.0

SUMMARY OF ASPHALT
 PAVEMENT REMOVAL

IN SQUARE METERS

LINE	SIDE	STATION TO STATION	ASPHALT REMOVAL
-Y2-	CL	18+00.000 TO 19+20.000	733.000
-Y2DET-	CL	16+48.000 +/- TO 20+70.000 +/-	3193.000
TOTAL			3926.000
SAY			3930.0

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS



SUMMARY OF EARTHWORK
 IN CUBIC METERS

LOCATION	UNCL. EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
-L- 28 + 00.000 -- 37 + 00.000	223806	0	22697	0	201109
SUBTOTAL NO. 1					
	223806	0	22697	0	201109
-L- 37 + 00.000 -- 41 + 00.000	1364	0	50876	49512	0
-L- 41 + 00.000 -- 46 + 00.000	179063	0	9411	0	169652
SUBTOTAL NO. 2					
	180427	0	60286	49512	169652
-L- 46 + 00.000 -- 55 + 00.000	213757	0	16390	0	197367
-Y2- 13 + 70.000 -- 18 + 20.000	2964	0	2068	0	896
-Y2- 19 + 00.000 -- 25 + 50.000	1064	0	4306	3242	0
RAMP -A- 11 + 85.000 -- 14 + 85.000	12740	0	342	0	12398
RAMP -B- 11 + 60.000 -- 15 + 88.000	27618	0	7253	0	20365
RAMP -C- 11 + 80.000 -- 15 + 80.000	10939	0	20188	9249	0
RAMP -D- 12 + 00.000 -- 16 + 00.000	7342	0	13042	5700	0
-Y2DET- 16 + 40.000 -- 21 + 00.000	3805	0	7922	4117	0
-Y2DET REMOVAL	4203	0	4203	0	0
SUBTOTAL NO. 3					
	284432	0	75713	22307	231026
-L- 55 + 00.000 -- 60 + 00.000	36336	0	72224	35888	0
SUBTOTAL NO. 4					
	36336	0	72224	35888	0
PROJECT SUBTOTALS					
LOSS DUE TO CLEAR. & GRUB	725001	0	230920	107707	601787
ADDITIONAL UNDERCUT EXCAV.	20000	0	0	0	20000
EST. FOR DRIVEWAY	0	0	0	0	0
EST. FOR PAV'T REMOVAL	0	0	0	0	0
ROCK WASTE	0	0	0	0	0
ROCK TO REPLACE BORROW	0	0	0	0	0
WASTE IN LIEU OF BORROW	0	0	0	0	0
SHOULDER CONSTRUCTION	0	0	0	0	0
LESS SELECT GRANULAR MAT'L	0	0	0	0	0
PROJECT TOTALS					
REPLACE TOP SOIL BORROW PITS	745001	0	263420	0	481581
GRAND TOTALS					
	745001	0	263420	0	481581
SAY	745100	0	263420	0	481581

UNDERCUT EXCAVATION : 12,000 m3 (CONTINGENCY ITEM)
 DRAINAGE DITCH EXCAVATION : 28,000 m3
 PAVEMENT STRUCTURE VOLUME

PROJECT REFERENCE NO.	R-2552AB	SHEET NO.	4
R/W SHEET NO.	R-2552AA - 19	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>			
CONST. REV.		R/W REV.	

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "LAKE DAM"

WITH NAD 83 STATE PLANE GRID COORDINATES OF
NORTHING: 2220865690(L) EASTING: 6360962610(L)

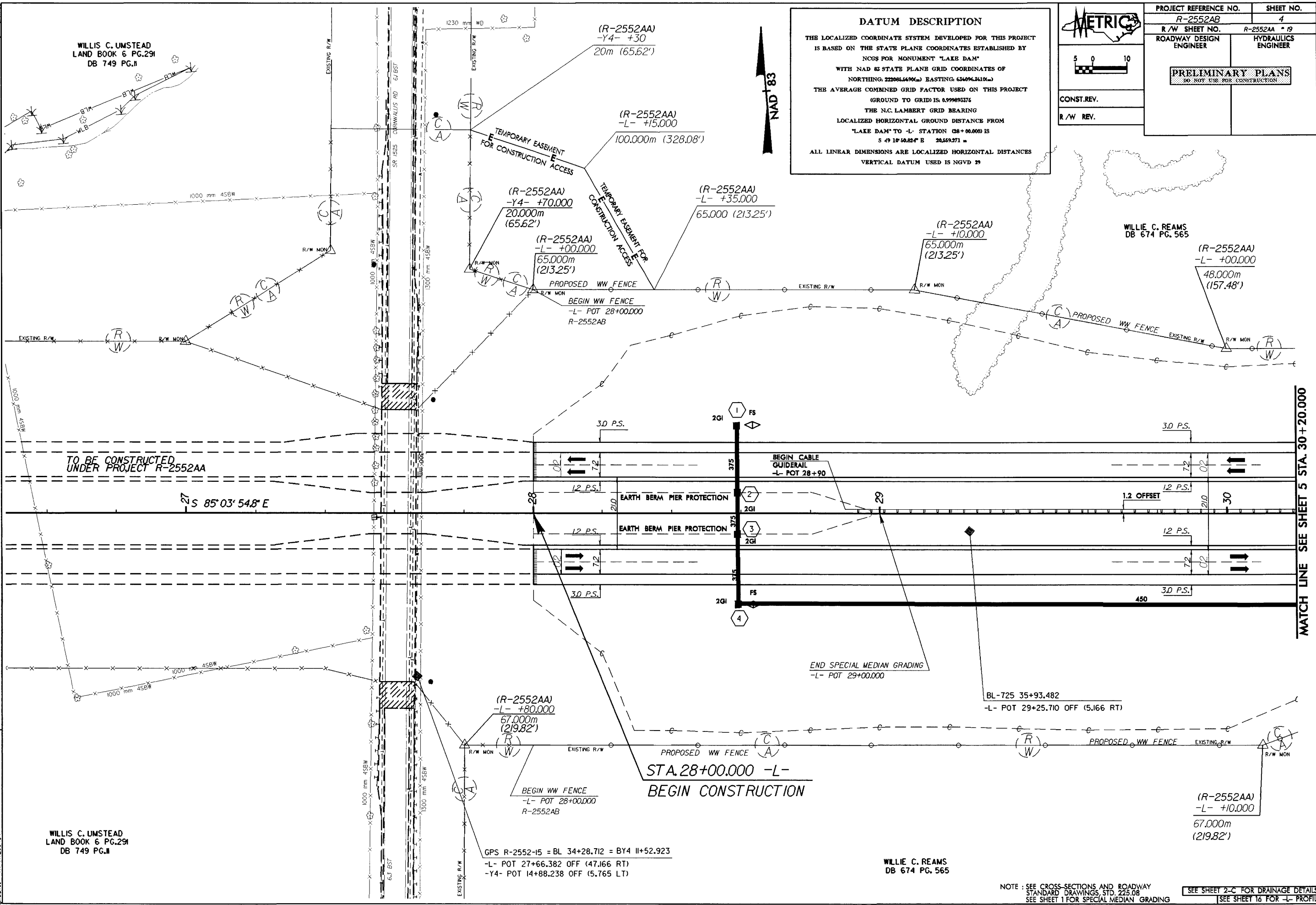
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999893376

THE N.C. LAMBERT GRID BEARING LOCALIZED HORIZONTAL GROUND DISTANCE FROM "LAKE DAM" TO -L- STATION CB+00.000 IS
S 49 10' 00.82" E 20,559.271 m

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29



NAD 83



REVISIONS

MATCH LINE SEE SHEET 5 STA. 30+20.000

WILLIS C. UMSTEAD
LAND BOOK 6 PG.291
DB 749 PG.11

WILLIE C. REAMS
DB 674 PG. 565

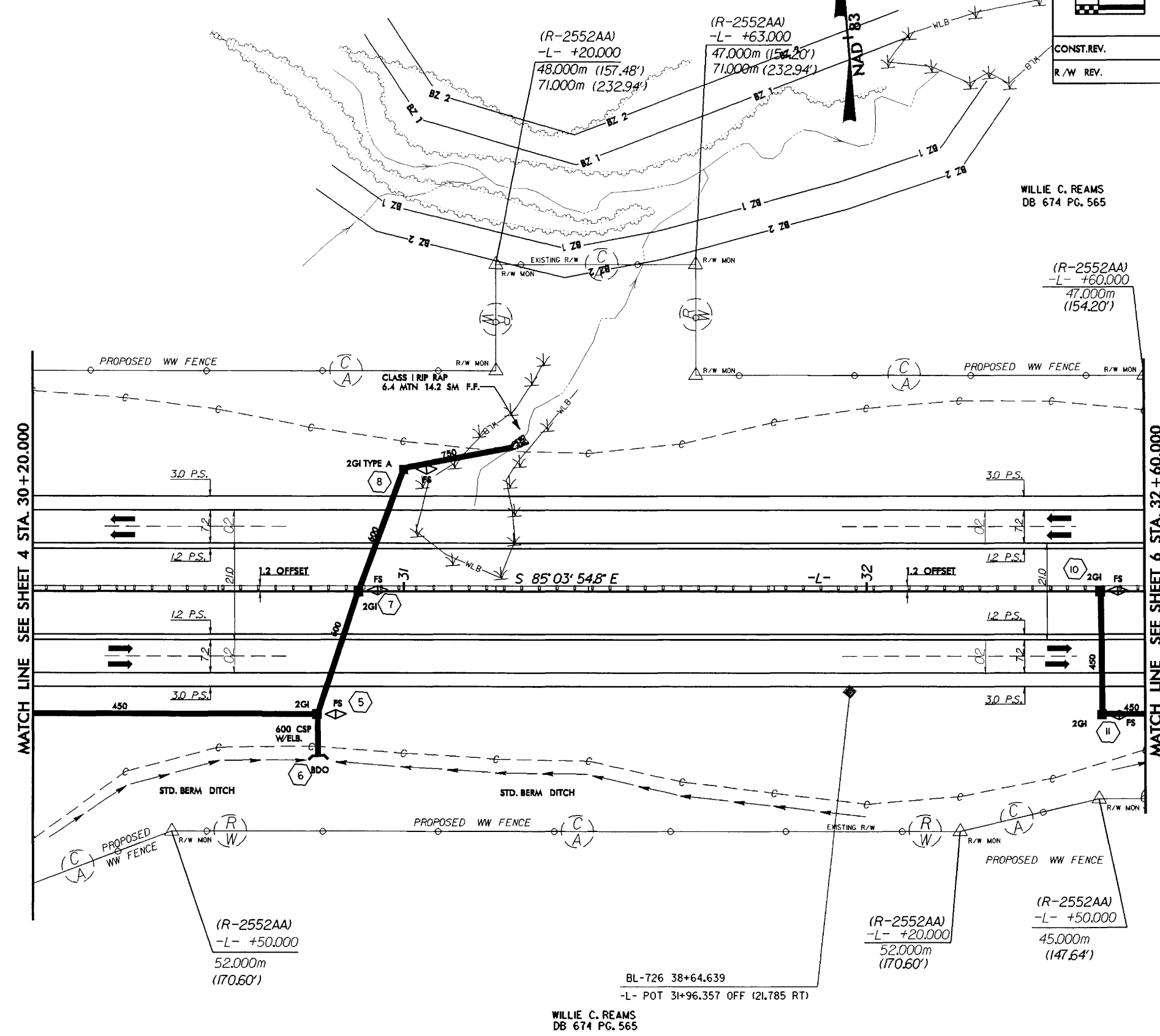
WILLIS C. UMSTEAD
LAND BOOK 6 PG.291
DB 749 PG.11

WILLIE C. REAMS
DB 674 PG. 565

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS STD. 225.08
SEE SHEET 1 FOR SPECIAL MEDIAN GRADING

SEE SHEET 2-C FOR DRAINAGE DETAILS
SEE SHEET 16 FOR -L- PROFILE

PROJECT REFERENCE NO. R-2552AB		SHEET NO. 5	
R/W SHEET NO. R-2552AA *19 & *20		ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
CONST. REV.		R/W REV.	



WILLIE C. REAMS
DB 674 PG. 565

(R-2552AA)
-L- +60.000
47.000m
(154.20')

(R-2552AA)
-L- +50.000
52.000m
(170.60')

(R-2552AA)
-L- +20.000
52.000m
(170.60')

(R-2552AA)
-L- +50.000
45.000m
(147.64')

BL-726 38+64.639
-L- POT 31+96.357 OFF (21.785 RT)

WILLIE C. REAMS
DB 674 PG. 565

MATCH LINE SEE SHEET 4 STA. 30 + 20.000

MATCH LINE SEE SHEET 6 STA. 32 + 60.000

REVISIONS

20-SEP-2004 15:33
R:\P\2552AB\2552AB.dwg
PLN 5

SEE SHEET 16 FOR -L- PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS

PROJECT REFERENCE NO.		SHEET NO.	
R-2552AB		6	
R/W SHEET NO.		R-2552AA *20 & *21	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
CONST. REV.			
R/W REV.			

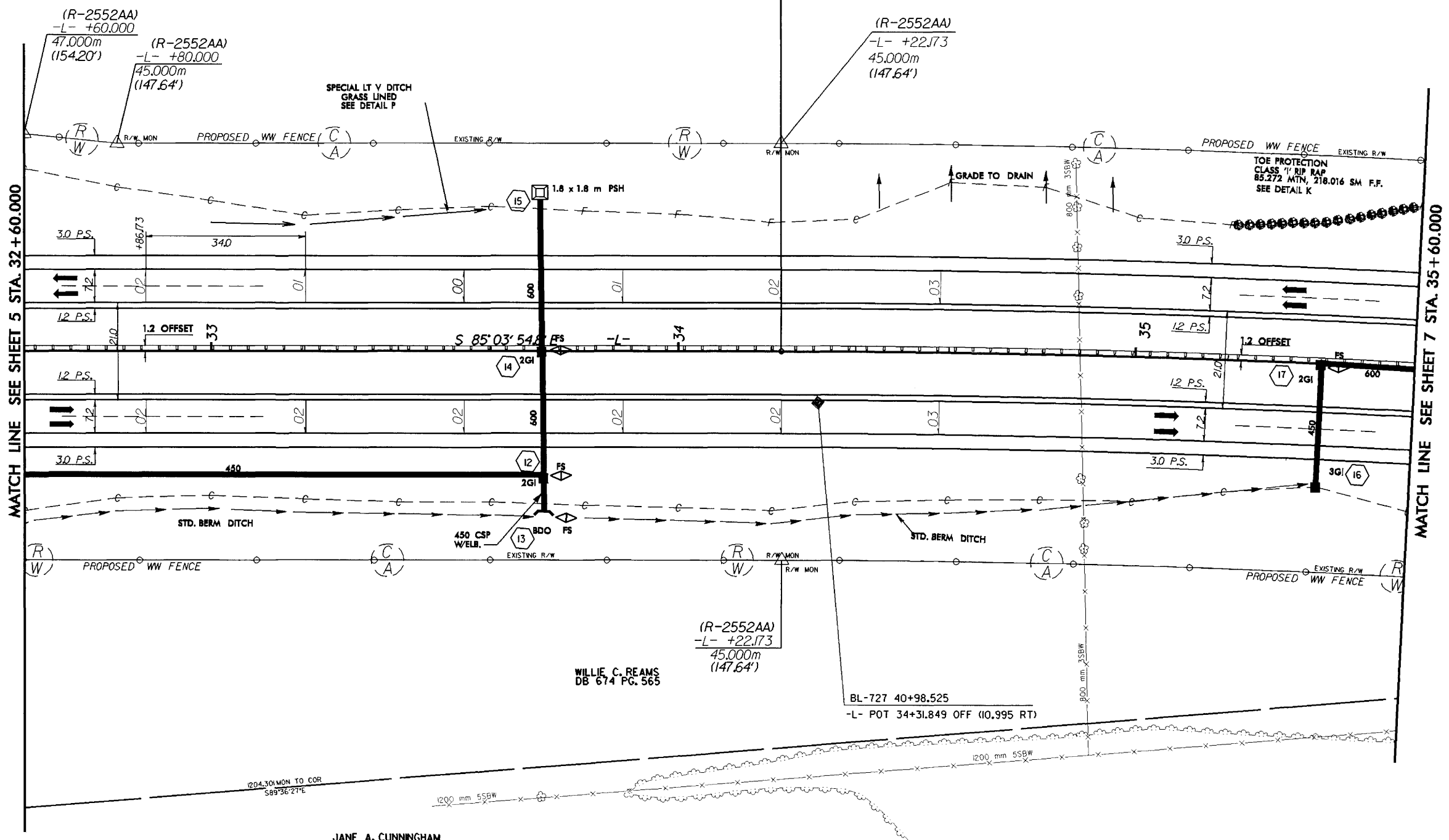
NOTE: SEE SHEETS 16 AND 17 FOR -L- PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS

-L-
 $PI = 38+81.623$
 $\Delta = 20' 44' 47.5" (RT)$
 $L = 905.237$
 $T = 457.630$
 $R = 2,500.000$
 $SE = .03$
 $V_{des} = 110 \text{ km/hr}$

WILLIE C. REAMS
DB 674 PG. 565



EQUATION:
 -L- POT 34+22.173 BK =
 -L- PC 34+23.993 AH



WILLIE C. REAMS
DB 674 PG. 565

(R-2552AA)
 -L- +22.173
 45.000m
 (147.64')


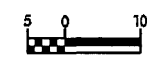
BL-727 40+98.525
 -L- POT 34+31.849 OFF (10.995 RT)

JANE A. CUNNINGHAM
DB 537 PG. 430

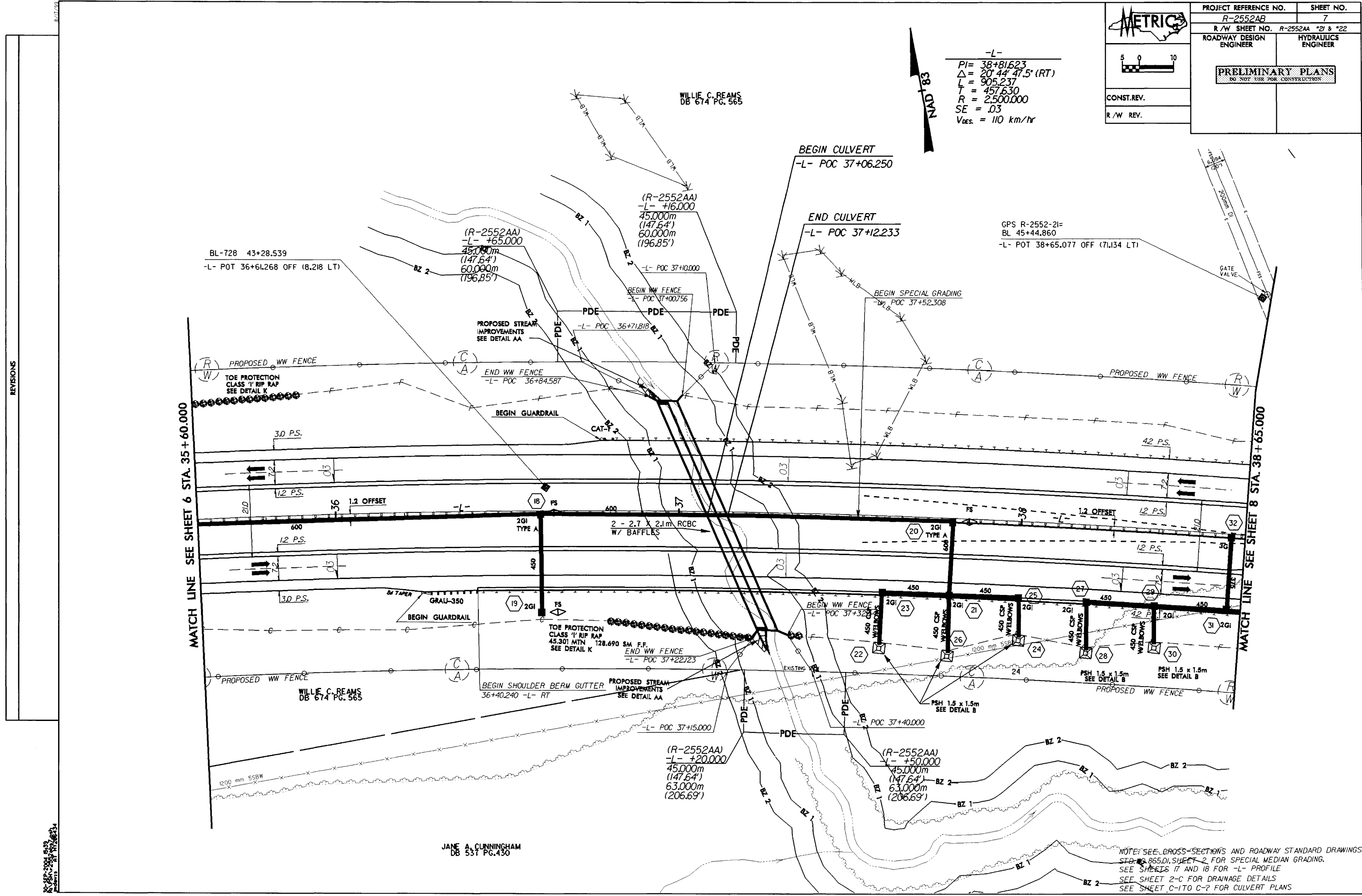
REVISIONS

8/17/99

20 SEP 2004 15:33
R:\64-2552\11\1108654

	PROJECT REFERENCE NO.	SHEET NO.
	R-2552AB	7
	R/W SHEET NO.	R-2552AA *21 & *22
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>		
CONST. REV.		
R/W REV.		

-L-
 PI = 38+81.623
 $\Delta = 20' 44" 47.5' (RT)$
 L = 905.237
 T = 457.630
 R = 2,500.000
 SE = .03
 V_{des} = 110 km/hr



MATCH LINE SEE SHEET 6 STA. 35+60.000

MATCH LINE SEE SHEET 8 STA. 38+65.000

WILLIE C. REAMS
DB 674 PG. 565

GPS R-2552-2I=
BL 45+44.860
-L- POT 38+65.077 OFF (71.34 LT)

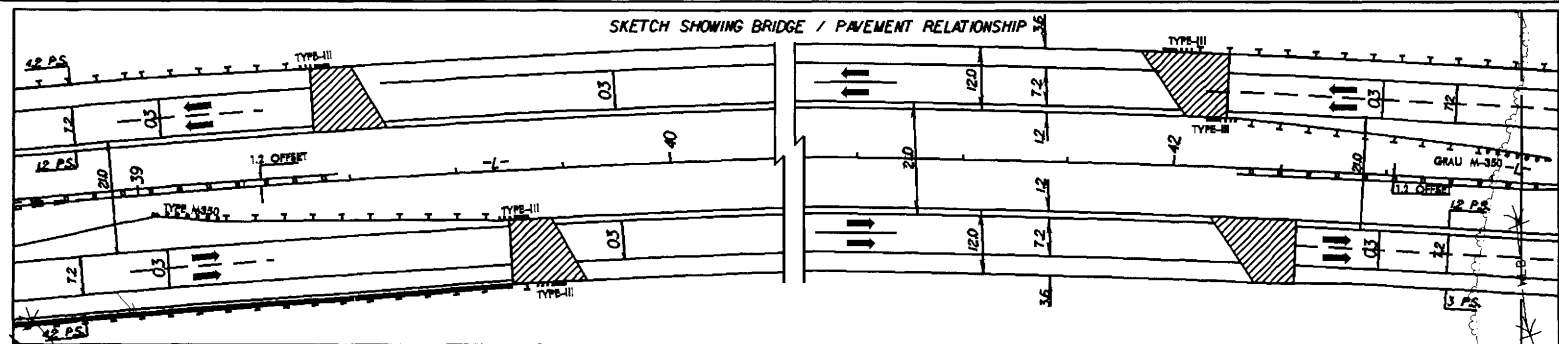
JANE A. CUNNINGHAM
DB 531 PG. 430

NOTE: SEE GROSS SECTIONS AND ROADWAY STANDARD DRAWINGS
 STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING.
 SEE SHEETS 17 AND 18 FOR -L- PROFILE
 SEE SHEET 2-C FOR DRAINAGE DETAILS
 SEE SHEET C-1 TO C-7 FOR CULVERT PLANS

REVISIONS

8/17/99

8/17/99



-L-
 $PI = 38+81.623$
 $\Delta = 20' 44" 47.5" (RT)$
 $L = 905.237$
 $R = 457.630$
 $R = 2,500.000$
 $SE = .03$
 $V_{des} = 110 \text{ km/hr}$

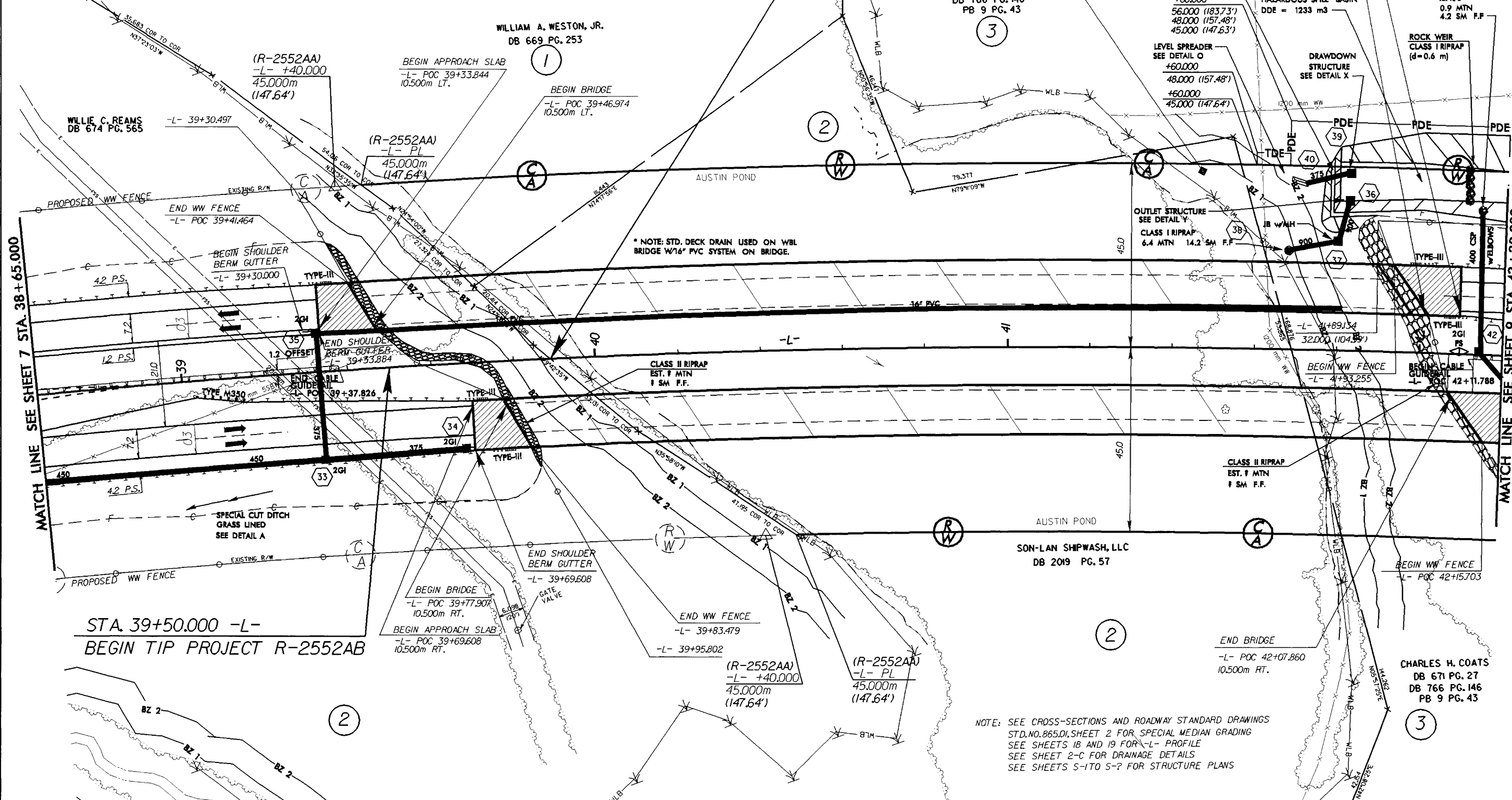
METRIC

PROJECT REFERENCE NO. R-2552AB SHEET NO. 8
 R/W SHEET NO. R-2552AA *22 & R-2552AB *8
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

CONST. REV.
 R/W REV.

STA. 39+89.046 -L-
 BEGIN TIP PROJECT R-2552AB (R/W)



STA. 39+50.000 -L-
 BEGIN TIP PROJECT R-2552AB

MATCH LINE SEE SHEET 7 STA. 38+65.000

MATCH LINE SEE SHEET 9 STA. 42+20.000

REVISIONS

30-SEP-2004 5:53
 10-SEP-2004 5:53
 10-SEP-2004 5:53

PROJECT REFERENCE NO. R-2552AB		SHEET NO. 9	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>			
CONST. REV.		R/W REV.	

NOTE: SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 2 FOR SPECIAL MEDIAN GRADING. SEE SHEETS 19 AND 20 FOR -L- PROFILE. SEE SHEET 2-C FOR DRAINAGE DETAILS.

-L-
 PI = 38+81.623
 $\Delta = 20^\circ 44' 47.5''$ (RT)
 L = 905.237
 T = 457.630
 R = 2,500.000
 SE = .03
 V_{DES.} = 110 km/hr

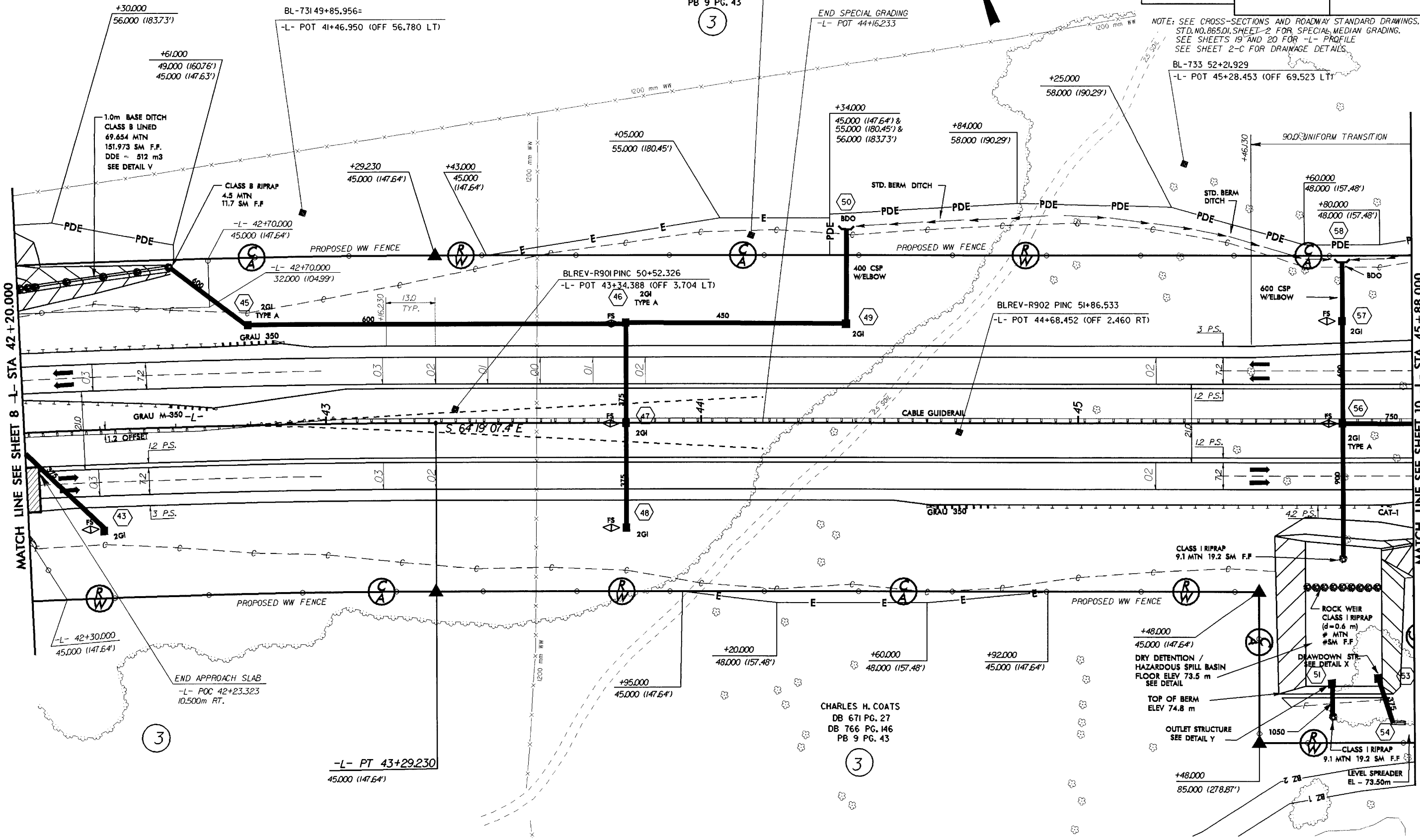
CHARLES H. COATS
 DB 671 PG. 27
 DB 766 PG. 146
 PB 9 PG. 43

CHARLES H. COATS
 DB 671 PG. 27
 DB 766 PG. 146
 PB 9 PG. 43

90.0% UNIFORM TRANSITION

MATCH LINE SEE SHEET 8 -L- STA 42+20.000

MATCH LINE SEE SHEET 10 -L- STA 45+88.000

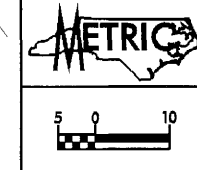


REVISIONS

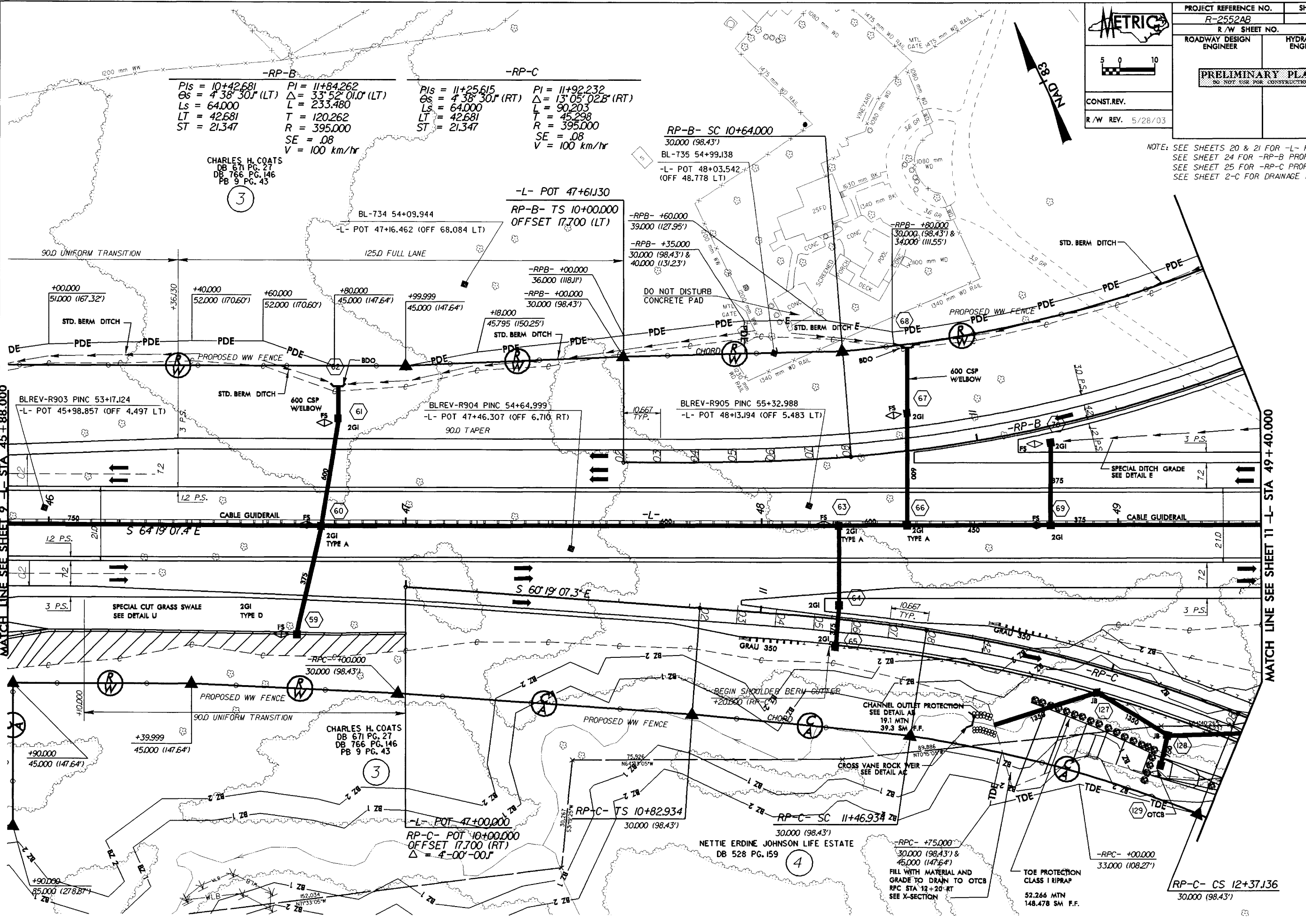
8.17.09

DATE: 2009.08.17
 DRAWN BY: [unreadable]
 CHECKED BY: [unreadable]

PROJECT REFERENCE NO. R-2552AB		SHEET NO. 10	
R/W SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
CONST. REV.			
R/W REV. 5/28/03			



NOTE: SEE SHEETS 20 & 21 FOR -L- PROFILE
SEE SHEET 24 FOR -RP-B PROFILE
SEE SHEET 25 FOR -RP-C PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS



-RP-B-
 $Pis = 10+42.681$ $PI = 11+84.262$ $Pis = 11+25.615$ $PI = 11+92.232$
 $\Delta s = 4' 38'' 30.1'' (LT)$ $\Delta = 33' 52'' 01.0'' (LT)$ $\Delta s = 4' 38'' 30.1'' (RT)$ $\Delta = 13' 05'' 02.8'' (RT)$
 $Ls = 64.000$ $L = 233.480$ $Ls = 64.000$ $L = 90.203$
 $LT = 42.681$ $T = 120.262$ $T = 45.298$
 $ST = 21.347$ $R = 395.000$ $R = 395.000$
 $SE = .08$ $SE = .08$
 $V = 100 \text{ km/hr}$ $V = 100 \text{ km/hr}$

CHARLES H. COATS
 DB 671 PG. 27
 DB 766 PG. 146
 PB 9 PG. 43

(3)

RP-B- SC 10+64.000
 30.000 (98.43')

-L- POT 47+61.130
 RP-B- TS 10+00.000
 OFFSET 17.700 (LT)

-RPB- +60.000
 39.000 (127.95')

-RPB- +35.000
 30.000 (98.43') &
 40.000 (131.23')

-RPB- +80.000
 30.000 (98.43') &
 34.000 (111.55')

BLREV-R903 PINC 53+17.124
 -L- POT 45+98.857 (OFF 4.497 LT)

BLREV-R904 PINC 54+64.999
 -L- POT 47+46.307 (OFF 6.710 RT)

BLREV-R905 PINC 55+32.988
 -L- POT 48+13.194 (OFF 5.483 LT)

MATCH LINE SEE SHEET 9 - STA 45+88.000

MATCH LINE SEE SHEET 11 - STA 49+40.000

CHARLES H. COATS
 DB 671 PG. 27
 DB 766 PG. 146
 PB 9 PG. 43

(3)

RP-C- TS 10+82.934
 30.000 (98.43')

RP-C- SC 11+46.934
 30.000 (98.43')

NETTIE ERDINE JOHNSON LIFE ESTATE
 DB 528 PG. 159

(4)

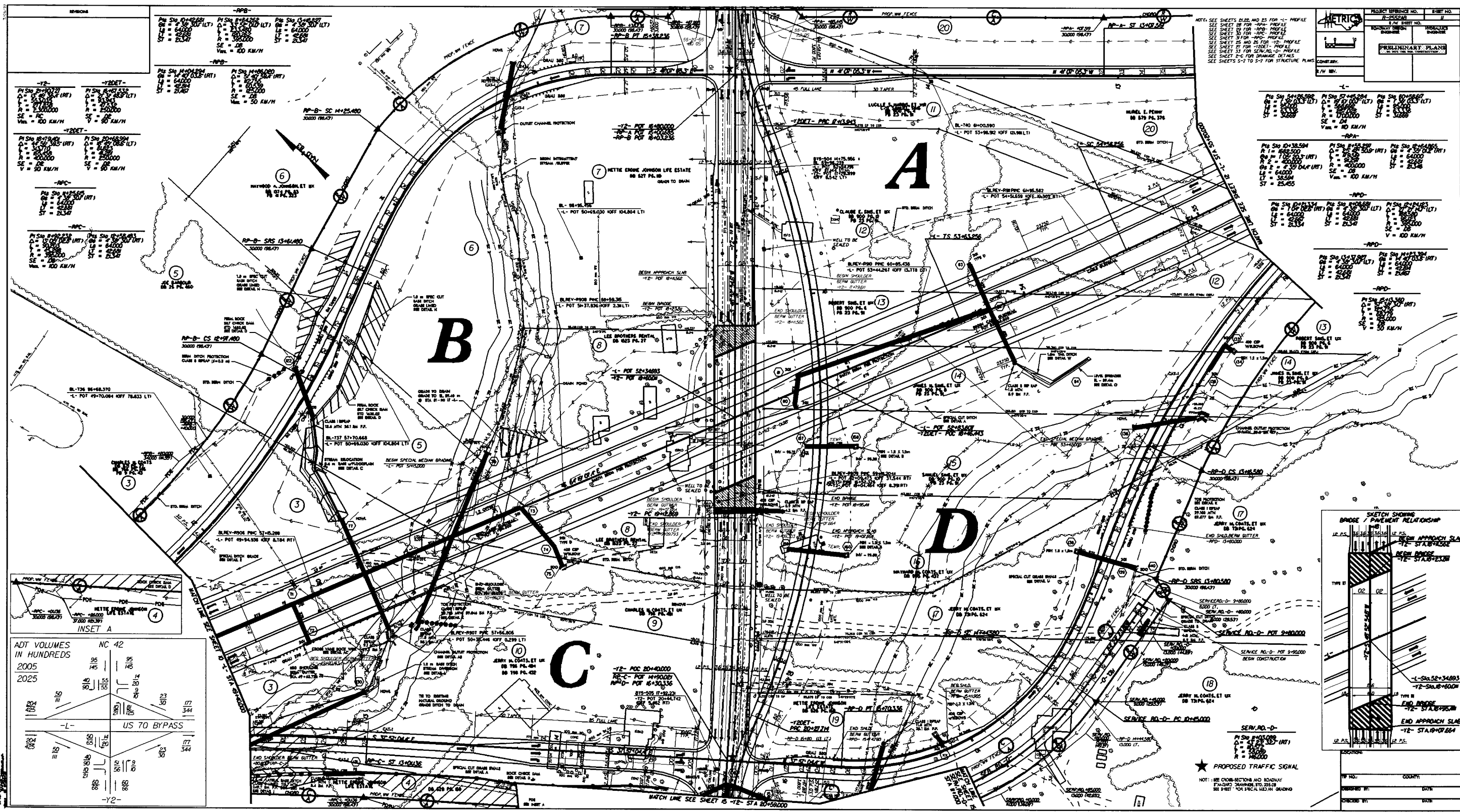
-RPC- +75.000
 30.000 (98.43') &
 45.000 (147.64')

TOE PROTECTION
 CLASS I RIPRAP
 52.266 MTN
 148.478 SM. F.F.

RP-C- CS 12+37.136
 30.000 (98.43')

REVISIONS

SCALE: 1" = 40'



REVISIONS

<p>PI Stg #100221 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>	<p>PI Stg #100222 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>	<p>PI Stg #100223 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>
--	--	--

-RPB-

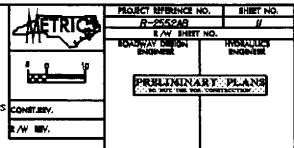
<p>PI Stg #100224 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>	<p>PI Stg #100225 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>	<p>PI Stg #100226 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>
--	--	--

-YDET-

<p>PI Stg #100227 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>	<p>PI Stg #100228 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>	<p>PI Stg #100229 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>
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-RPC-

<p>PI Stg #100230 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>	<p>PI Stg #100231 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>	<p>PI Stg #100232 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>
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PROJECT REFERENCE NO. SHEET NO.

PROJECT REFERENCE NO.	R-25000
SHEET NO.	1

-L-

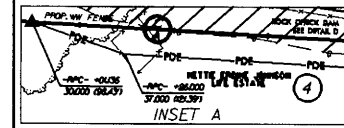
<p>PI Stg #100233 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>	<p>PI Stg #100234 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>	<p>PI Stg #100235 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>
--	--	--

-RPD-

<p>PI Stg #100236 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>	<p>PI Stg #100237 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>	<p>PI Stg #100238 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>
--	--	--

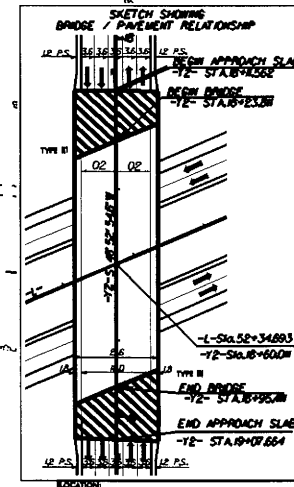
-RPD-

<p>PI Stg #100239 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>	<p>PI Stg #100240 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>	<p>PI Stg #100241 Q = 40000 (RT) L = 64000 SE = DE ST = 25.65 V = 100 KM/H</p>
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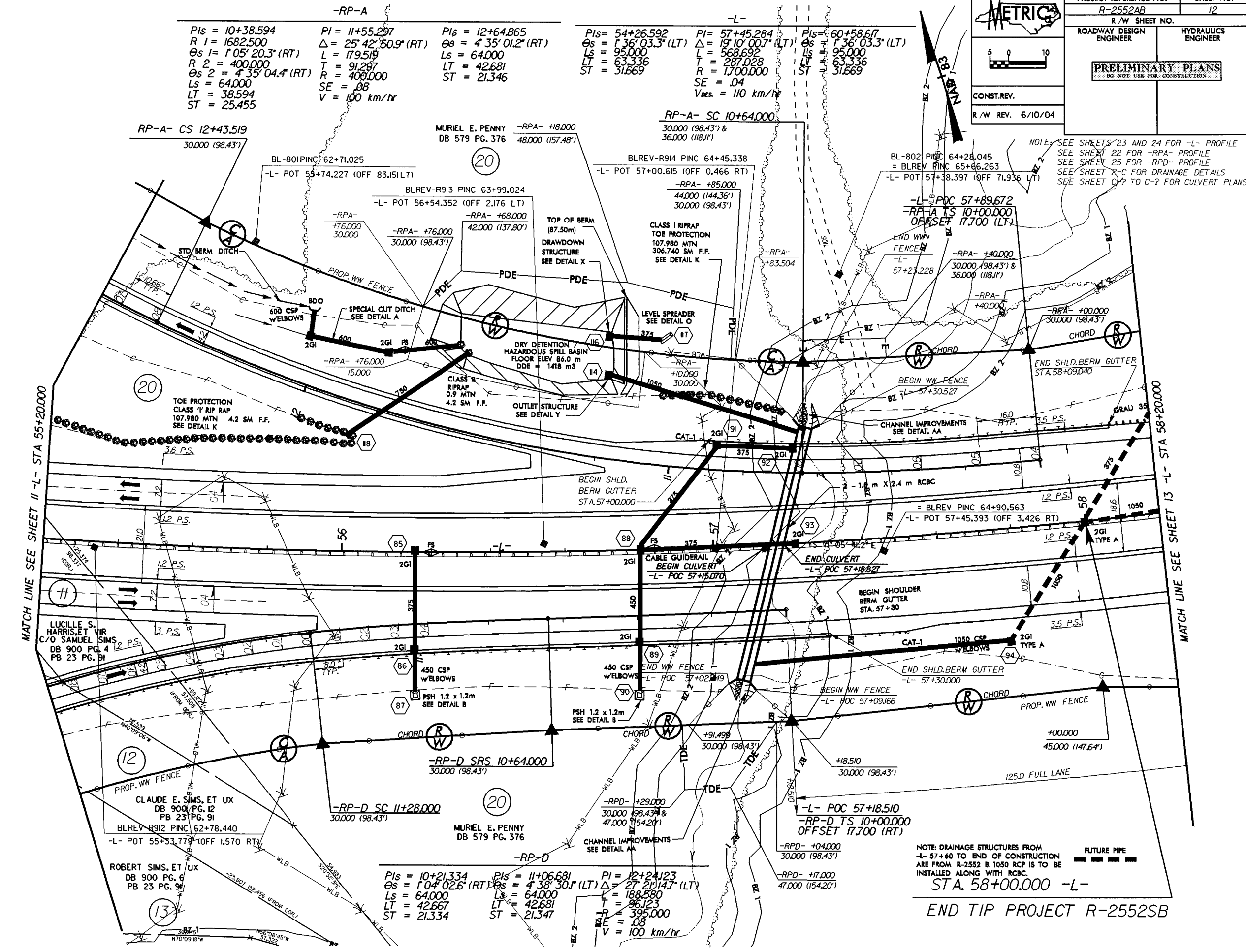
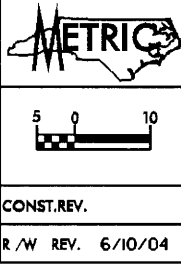
ADT VOLUMES IN HUNDREDS

Year	NC 42	US 70 BYPASS
2005	163	177
2025	188	344



PROPOSED TRAFFIC SIGNAL

PROJECT NO.	DATE
DESIGNED BY	DATE
CHECKED BY	DATE



-RP-A-
PIs = 10+38.594 R 1 = 1682.500
Cs 1 = 1'05'20.3" (RT) R 2 = 400.000
Cs 2 = 4'35'04.4" (RT) Ls = 64.000
LT = 38.594 ST = 25.455
PI = 11+55.297 Δ = 25'42'50.9" (RT) L = 179.519
T = 91.297 R = 400.000 SE = .08
V = 100 km/hr
PIs = 12+64.865 Cs = 4'35'01.2" (RT) Ls = 64.000
LT = 42.681 ST = 21.346

-L-
PIs = 54+26.592 Cs = 1'36'03.3" (LT) Ls = 95.000
LT = 63.336 ST = 31.669
PI = 57+45.284 Δ = 19'10'00.7" (LT) L = 568.692
T = 287.028 R = 1700.000 SE = .04
Vdes = 110 km/hr
PIs = 60+58.617 Cs = 1'36'03.3" (LT) Ls = 95.000
LT = 63.336 ST = 31.669

-RP-D-
PIs = 10+21.334 Cs = 1'04'02.6" (RT) Ls = 64.000
LT = 42.667 ST = 21.334
PI = 11+06.681 Cs = 4'38'30.1" (LT) Ls = 64.000
LT = 42.681 ST = 21.347
PI = 12+24.123 Δ = 27'21'14.7" (LT) L = 188.580
T = 96.123 R = 395.000 SE = .08
V = 100 km/hr

NOTE: SEE SHEETS 23 AND 24 FOR -L- PROFILE
SEE SHEET 22 FOR -RPA- PROFILE
SEE SHEET 25 FOR -RPD- PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS
SEE SHEET C-? FOR CULVERT PLANS

NOTE: DRAINAGE STRUCTURES FROM
-L- 57+60 TO END OF CONSTRUCTION
ARE FROM R-2552 B. 1050 RCP IS TO BE
INSTALLED ALONG WITH RCBC.
STA. 58+00.00 -L-
END TIP PROJECT R-2552SB

MATCH LINE SEE SHEET 11 -L- STA 55+20.000

MATCH LINE SEE SHEET 13 -L- STA 58+20.000

REVISIONS

8/17/04

NO. 2552-001, Rev. 0
DATE: 06/10/04
BY: [Signature]

METRIC

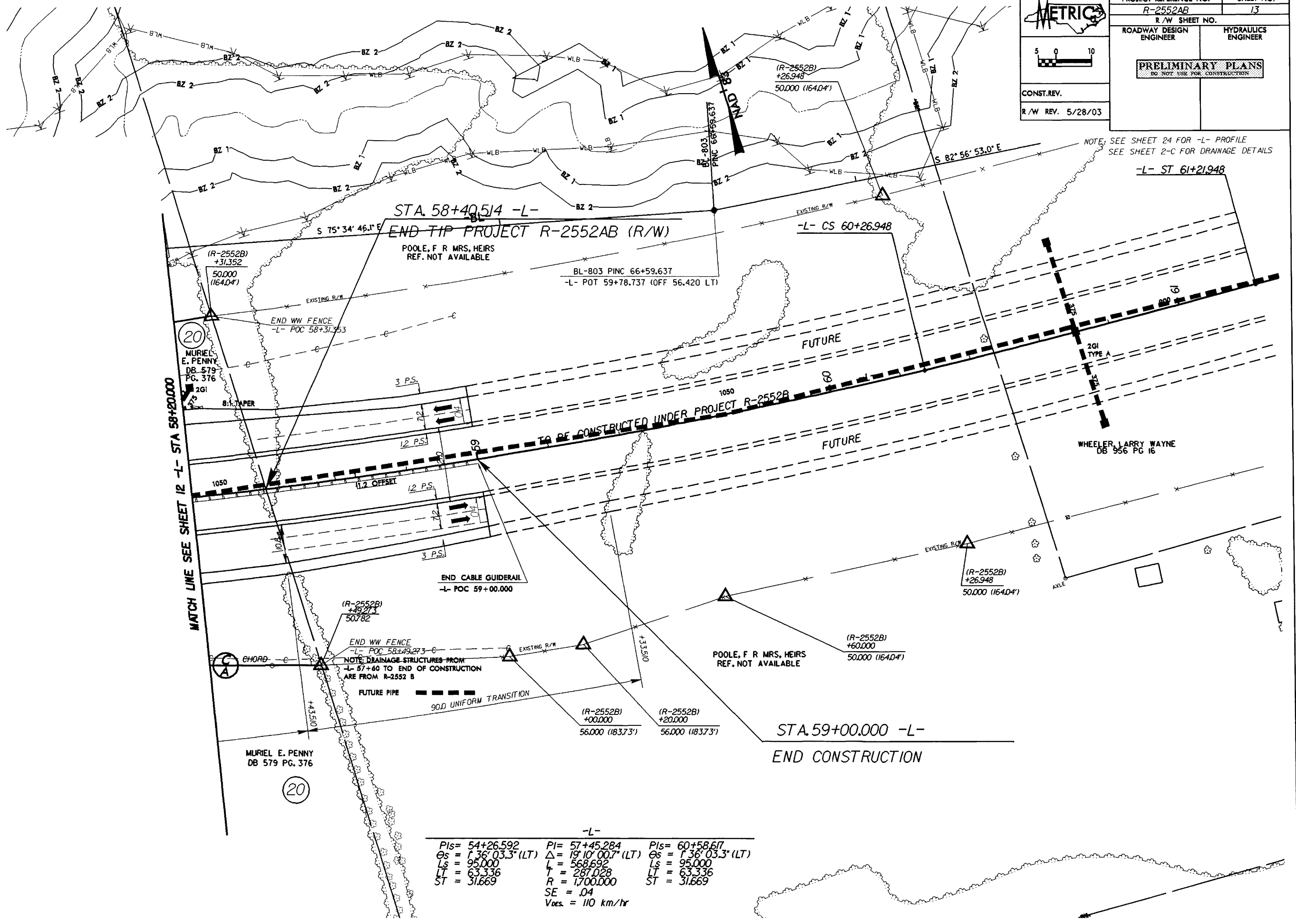
PROJECT REFERENCE NO. R-2552AB SHEET NO. 13
 R/W SHEET NO.
 ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

CONST. REV.
 R/W REV. 5/28/03



NOTE: SEE SHEET 24 FOR -L- PROFILE
 SEE SHEET 2-C FOR DRAINAGE DETAILS

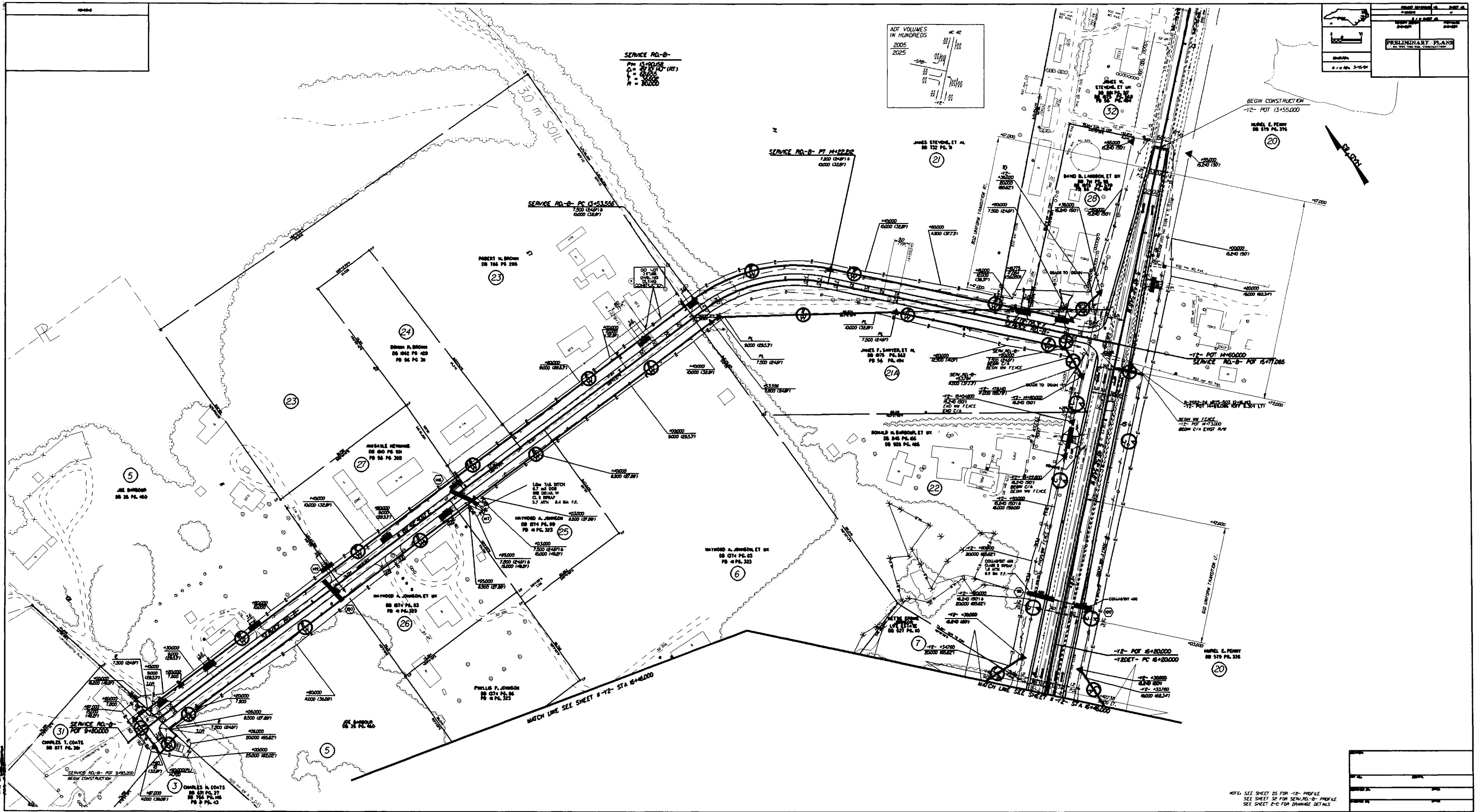


REVISIONS

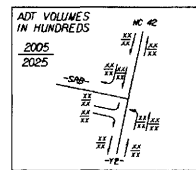
MATCH LINE SEE SHEET 12 -L- STA 58+20.000

-L-		
PIs = 54+26.592	PI = 57+45.284	PIs = 60+58.617
Os = 1° 36' 03.3" (LT)	Δ = 19° 10' 00.7" (LT)	Os = 1° 36' 03.3" (LT)
Ls = 95.000	L = 568.692	Ls = 95.000
LT = 63.336	T = 287.028	LT = 63.336
ST = 31.669	R = 1,700.000	ST = 31.669
	SE = .04	
	V _{DES} = 110 km/hr	

8/17/99
 8/17/99
 8/17/99

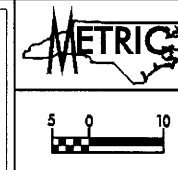


SERVICE RD-B-
 Plan 1-10000
 D = 20.00 (RT)
 R = 20000

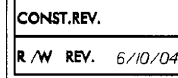


PROJECT NUMBER	10000
DATE	3-15-54
PRELIMINARY PLANS	
BY	
CHECKED BY	

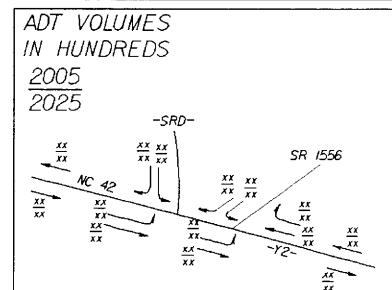
NOTE: SEE SHEET 05 FOR 10' PROFILE
 SEE SHEET 30 FOR SERVICE RD-B PROFILE
 SEE SHEET 2-C FOR DRAINAGE DETAILS



PROJECT REFERENCE NO. R-2552AB	SHEET NO. 15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	



NOTE: SEE SHEET 26 FOR -Y2- PROFILE
SEE SHEET 33 FOR SERVICE RD.-D- PROFILE
SEE SHEET 2-C FOR DRAINAGE DETAILS

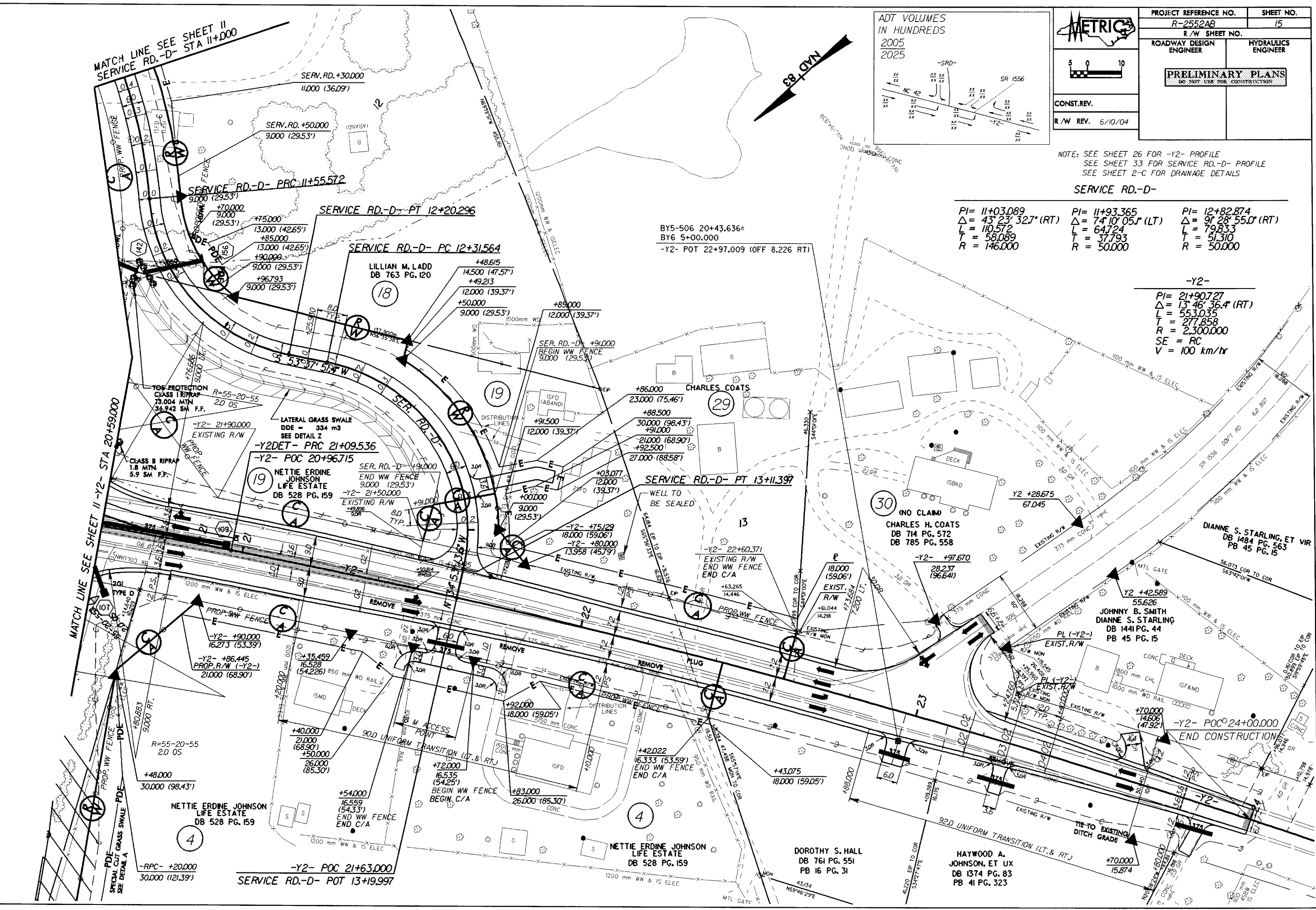


SERVICE RD.-D-

PI= 11+03.089	PI= 11+93.365	PI= 12+82.874
Δ = 43° 23' 32.7" (RT)	Δ = 74° 10' 05.7" (LT)	Δ = 91° 28' 55.0" (RT)
L = 110.572	L = 64.724	L = 79.833
T = 58.089	T = 37.793	T = 51.310
R = 146.000	R = 50.000	R = 50.000

-Y2-

PI= 21+90.727
Δ = 13° 46' 36.4" (RT)
L = 553.035
T = 277.858
R = 2,300.000
SE = RC
V = 100 km/hr



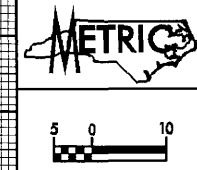
REVISIONS

DATE: 6/10/04
BY: [Signature]

6/03/98

B.M. R-2552-15
N 208,696.4610 E 651,634.783
LOCATED 48.027 LT. OF -L- STA.
27+75.439 AT AN ELEVATION 87.1560

-L- US 70 BYPASS



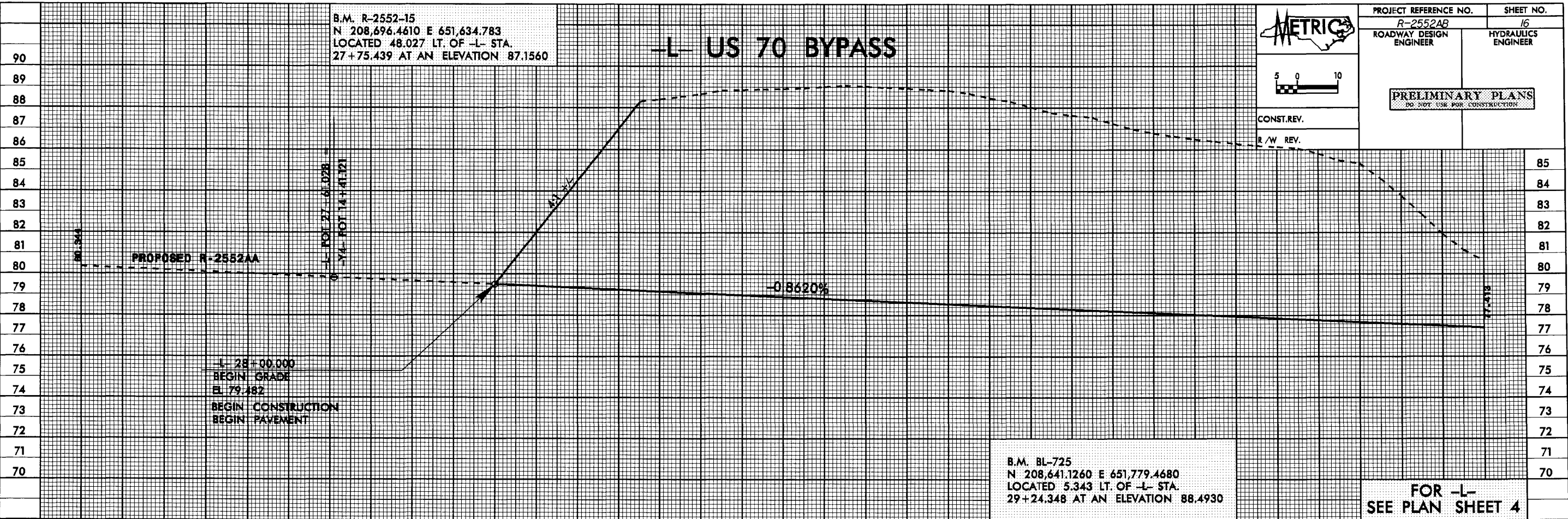
PROJECT REFERENCE NO. R-2552AB
ROADWAY DESIGN ENGINEER

SHEET NO. 16
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST. REV.

R/W REV.



27 +20 +40 +60 +80 28 +20 +40 +60 +80 29 +20 +40 +60 +80 30 +20 +40

B.M. BL-725
N 208,641.1260 E 651,779.4680
LOCATED 5.343 LT. OF -L- STA.
29+24.348 AT AN ELEVATION 88.4930

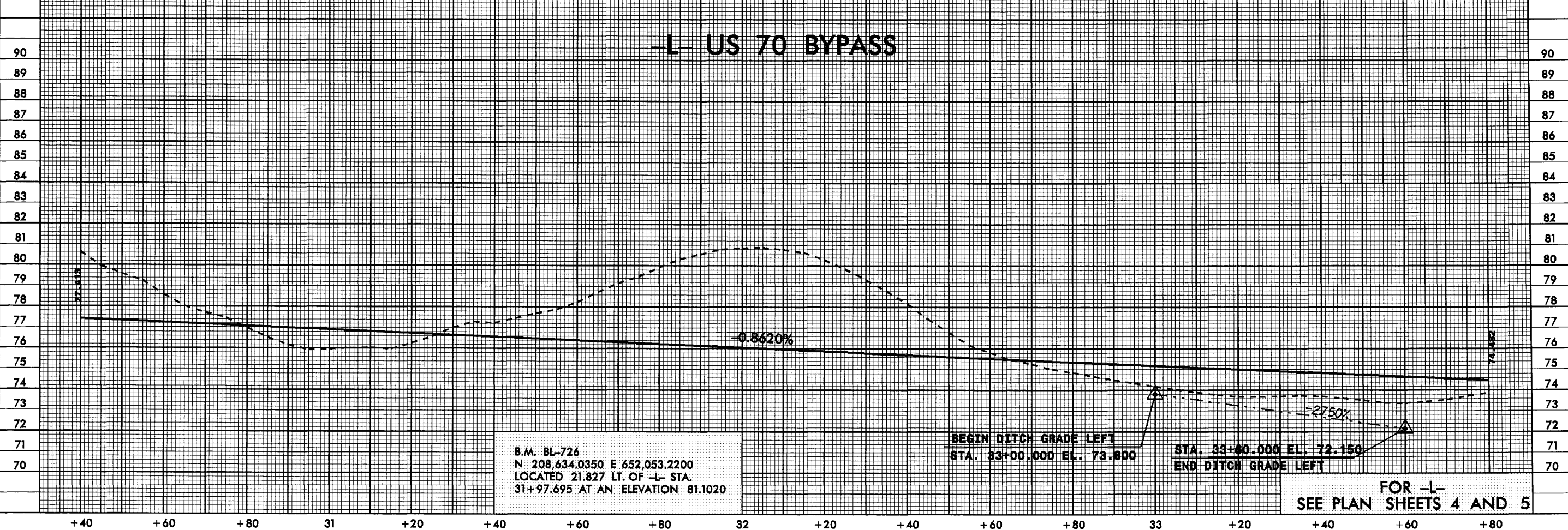
FOR -L-
SEE PLAN SHEET 4

L 28+00.000
BEGIN GRADE
EL. 79.482
BEGIN CONSTRUCTION
BEGIN PAVEMENT

PROPOSED R-2552AA

FOOT 27 - 61.028
FOOT 14 - 41.121

-L- US 70 BYPASS



+40 +60 +80 31 +20 +40 +60 +80 32 +20 +40 +60 +80 33 +20 +40 +60 +80

B.M. BL-726
N 208,634.0350 E 652,053.2200
LOCATED 21.827 LT. OF -L- STA.
31+97.695 AT AN ELEVATION 81.1020

BEGIN DITCH GRADE LEFT
STA. 33+00.000 EL. 73.800

STA. 33+60.000 EL. 72.150
END DITCH GRADE LEFT

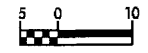
FOR -L-
SEE PLAN SHEETS 4 AND 5

30-SEP-2004 05:40
p:\m\11\11380\11380.dwg

-L- US 70 BYPASS



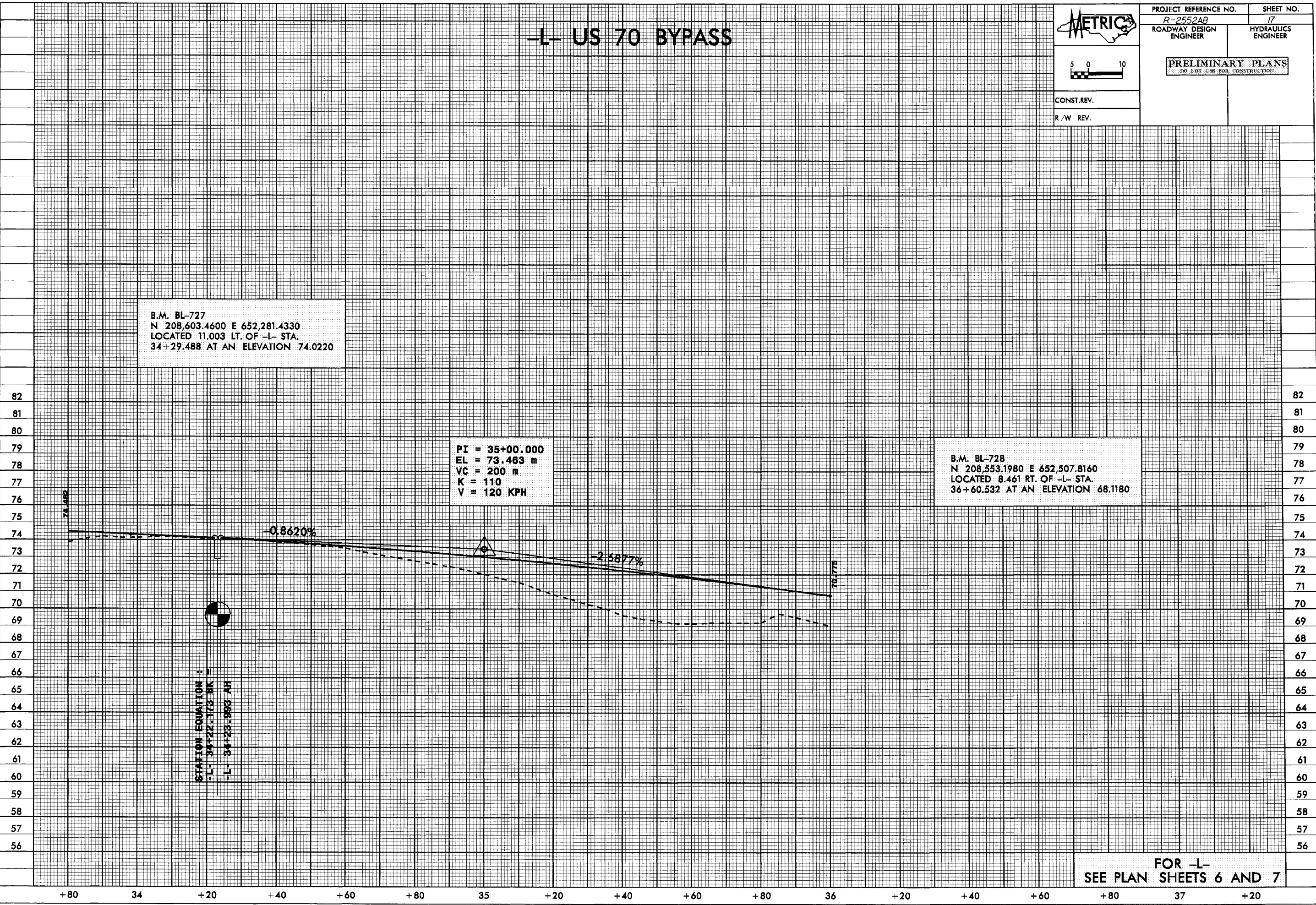
PROJECT REFERENCE NO. R-2552AB	SHEET NO. 17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
CONST. REV.	
R/W REV.	



B.M. BL-727
N 208,603.4600 E 652,281.4330
LOCATED 11.003 LT. OF -L- STA.
34+29.488 AT AN ELEVATION 74.0220

PI = 35+00.000
EL = 73.463 m
VC = 200 m
K = 110
V = 120 KPH

B.M. BL-728
N 208,553.1980 E 652,507.8160
LOCATED 8.461 RT. OF -L- STA.
36+60.532 AT AN ELEVATION 68.1180



STATION EQUATION :
-L- 34+22.173 BK =
-L- 34+23.993 AH

FOR -L-
SEE PLAN SHEETS 6 AND 7

30-SEP-2004 15:40
mudens AT 2173803322ch071

-L- US 70 BYPASS



PROJECT REFERENCE NO.	SHEET NO.
R-2552AB	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



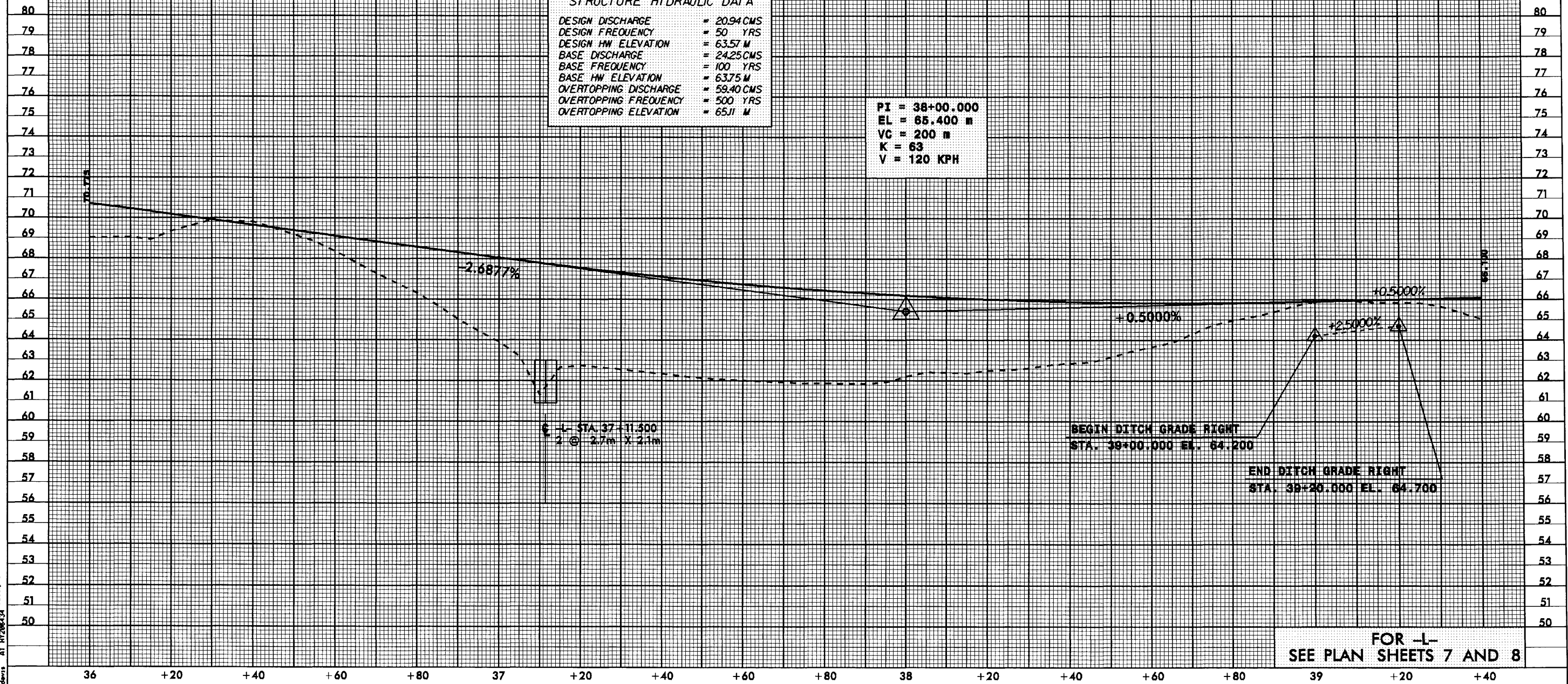
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

B.M. R-2552-21
N 208,585.2620 E 652,727.2850
LOCATED 71.134 LT. OF -L- STA.
38+65.077 AT AN ELEVATION 64.746

CONST. REV.
R/W REV.

STRUCTURE HYDRAULIC DATA	
DESIGN DISCHARGE	= 20.94 CMS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 63.57 M
BASE DISCHARGE	= 24.25 CMS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 63.75 M
OVERTOPPING DISCHARGE	= 59.40 CMS
OVERTOPPING FREQUENCY	= 500 YRS
OVERTOPPING ELEVATION	= 65.11 M

PI = 38+00.000
EL = 65.400 m
VC = 200 m
K = 63
V = 120 KPH



-L- STA. 37+11.500
2 @ 2.7m X 2.1m

BEGIN DITCH GRADE RIGHT
STA. 39+00.000 EL. 64.200

END DITCH GRADE RIGHT
STA. 39+20.000 EL. 64.700

FOR -L-
SEE PLAN SHEETS 7 AND 8

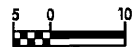
6/10/98

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 jacobus AT 11/28/04 11:37

-L- US 70 BYPASS



PROJECT REFERENCE NO. R-2552AB	SHEET NO. 19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONST. REV.
R/W REV.

PI = 43+30.000
EL = 68.050 m
VC = 180 m
K = 61
V = 110 KPH
GRADE AHEAD = +3.4397%

B.M. BL-730
N 208,468.5180 E 652,992.2110
LOCATED 43.302 LT. OF -L- STA.
41+46.950 AT AN ELEVATION 60.2110

WESTBOUND BRIDGE
 -L- STA. 40+74.000 (10.5m LT)
 GRADE POINT 66.77m
 OAL = 254.0m
 SPANS = 1 @ 18.0m; 8 @ 25.0m; 2 @ 18.0m
 1.65m PRESTRESSED GIRDER
 SKEW = 60°

EASTBOUND BRIDGE
 -L- STA. 40+92.500 (10.5m RT)
 GRADE POINT 64.86m
 OAL = 229.0m
 SPANS = 1 @ 18.0m; 7 @ 25.0m; 2 @ 18.0m
 1.65m PRESTRESSED GIRDER
 SKEW = 60°

BEGIN BRIDGE
 -L- 39+47.000 (LT. LN.)

END BRIDGE
 -L- 42+01.000 (LT. LN.)

+0.5000%

STRUCTURE HYDRAULIC DATA	
DESIGN DISCHARGE	= 99.0 CMS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 59.86 M
BASE DISCHARGE	= 10.0 CMS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 59.94 M
OVERTOPPING DISCHARGE	= N/A CMS
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING ELEVATION	= 66.00 M

BEGIN DITCH GRADE LEFT
 STA. 42+20.000 EL. 62.500


DITCH GRADE LEFT
 STA. 42+40.000 EL. 63.500

END DITCH GRADE LEFT
 STA. 42+80.000 EL. 65.000

**FOR -L-
SEE PLAN SHEETS 8 AND 9**

30-SEP-2011 09:58
 cadwin at N:\2011\2552\shop1

-L- US 70 BYPASS



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CONST. REV.

R/W REV.

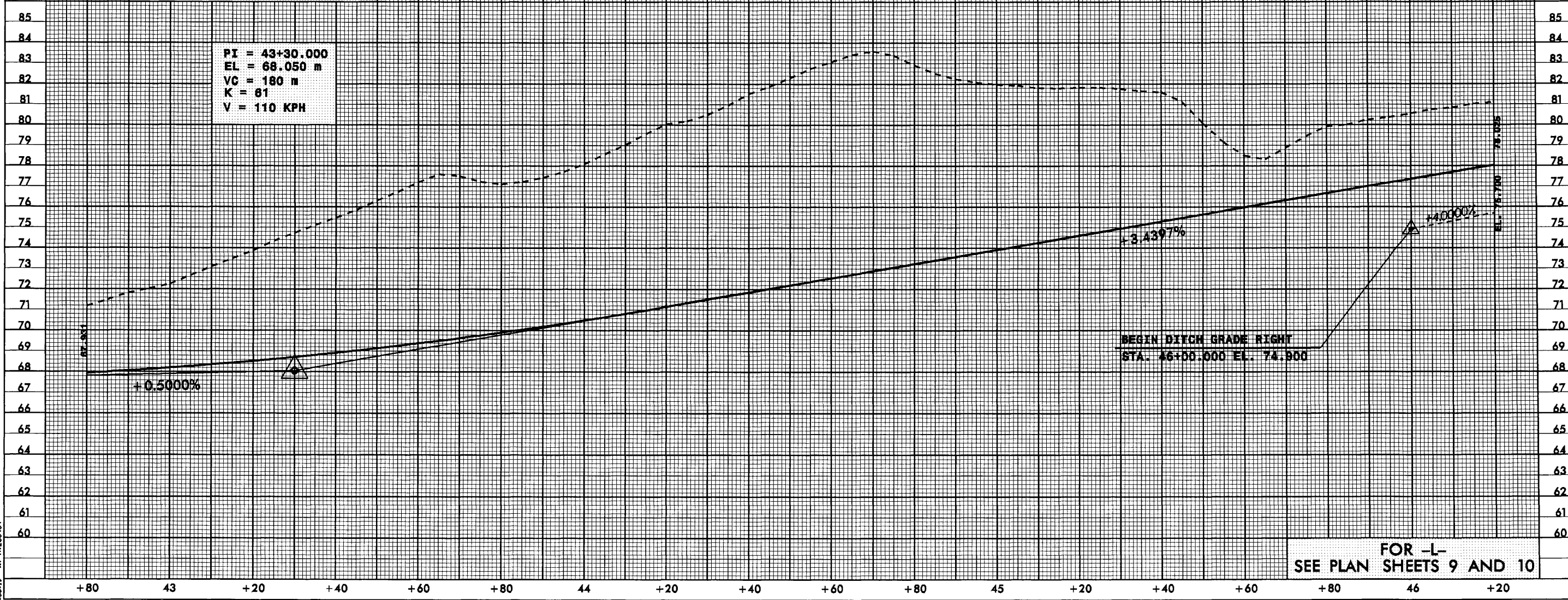
PROJECT REFERENCE NO. R-2552AB ROADWAY DESIGN ENGINEER	SHEET NO. 20 HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	

B.M. BL-731
N 208,421.4190 E 653,136.2960
LOCATED 56.780 LT. OF -L- STA.
42+94.996 AT AN ELEVATION 68.9430

B.M. BL-732
N 208,364.2640 E 653,240.9320
LOCATED 50.376 LT. OF -L- STA.
44+13.289 AT AN ELEVATION 81.6730

B.M. BL-733
N 208,331.6110 E 653,353.0180
LOCATED 69.523 LT. OF -L- STA.
45+28.453 AT AN ELEVATION 86.4030

PI = 43+30.000
EL = 68.050 m
VC = 180 m
K = 81
V = 110 KPH

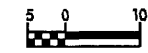


FOR -L-
SEE PLAN SHEETS 9 AND 10

30-SEP-2004 8:40 AM AT [unclear]



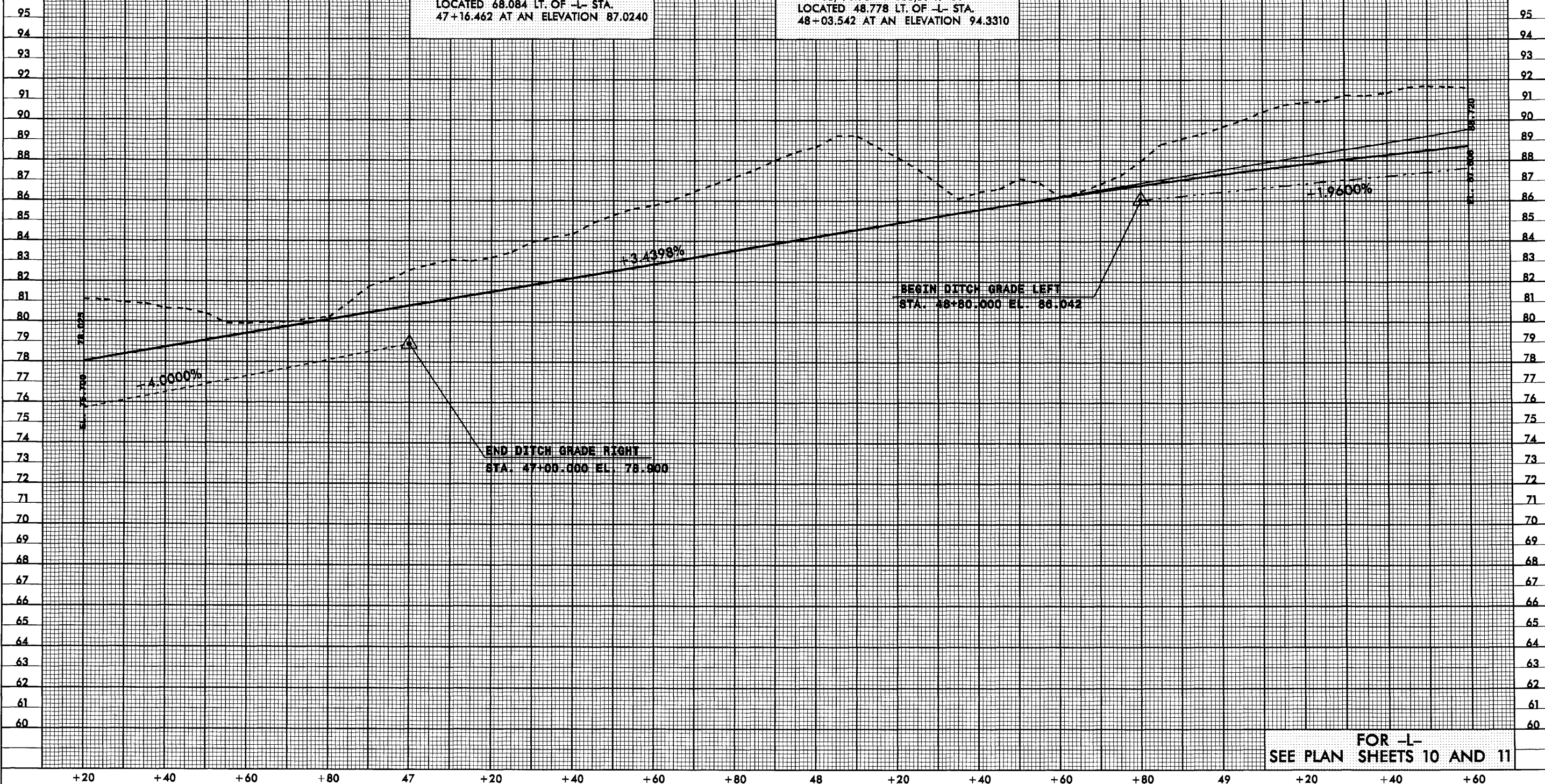
PROJECT REFERENCE NO. R-2552AB	SHEET NO. 21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST. REV.	
R/W REV.	



-L- US 70 BYPASS

B.M. BL-734
 N 208,248.8380 E 653,521.8320
 LOCATED 68.084 LT. OF -L- STA.
 47+16.462 AT AN ELEVATION 87.0240

B.M. BL-735
 N 208,193.702 E 653,591.9430
 LOCATED 48.778 LT. OF -L- STA.
 48+03.542 AT AN ELEVATION 94.3310



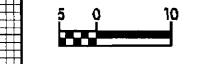
FOR -L-
 SEE PLAN SHEETS 10 AND 11

30-SEP-2004 15:40
 AT 11:56:53 2003-09-11

-L- US 70 BYPASS



PROJECT REFERENCE NO. R-2552AB	SHEET NO. 22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	

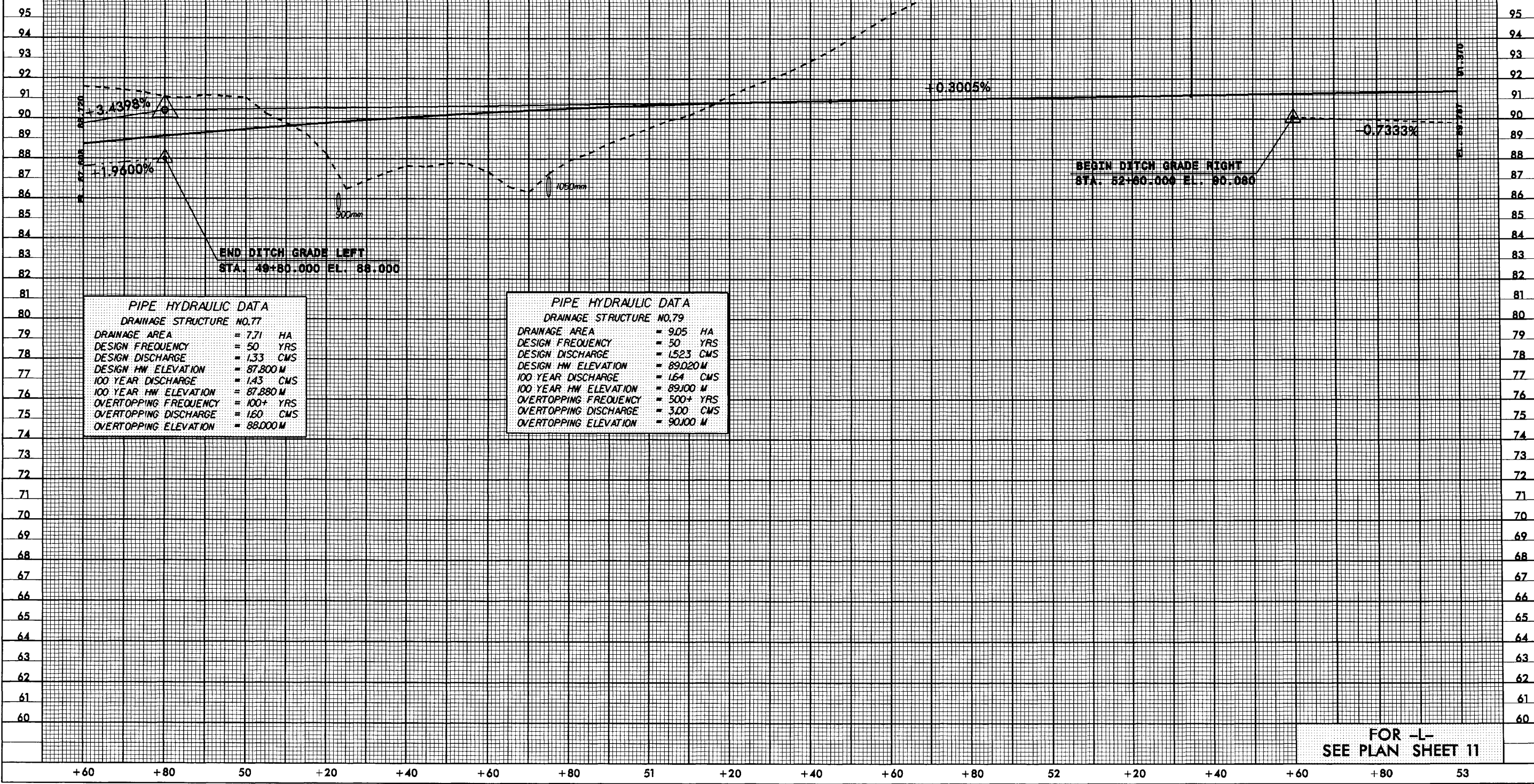


B.M. BL-736
N 208,148.6140 E 653,755.0580
LOCATED 78.833 LT. OF -L- STA.
49+70.084 AT AN ELEVATION 95.9540

B.M. BL-737
N 208,129.1400 E 653,855.4860
LOCATED 104.804 LT. OF -L- STA.
50+69.030 AT AN ELEVATION 94.9290

B.M. BL-738
N 208,078.7810 E 653,969.6610
LOCATED 108.899 LT. OF -L- STA.
51+93.751 AT AN ELEVATION 95.1590

PI = 49+80.000
EL = 90.408 m
VC = 330 m
K = 105
V = 120 KPH



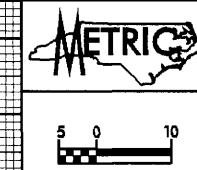
PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO.77	
DRAINAGE AREA	= 7.71 HA
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 1.33 CMS
DESIGN HW ELEVATION	= 87.800 M
100 YEAR DISCHARGE	= 1.43 CMS
100 YEAR HW ELEVATION	= 87.880 M
OVERTOPPING FREQUENCY	= 100+ YRS
OVERTOPPING DISCHARGE	= 1.60 CMS
OVERTOPPING ELEVATION	= 88.000 M

PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO.79	
DRAINAGE AREA	= 9.05 HA
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 1.523 CMS
DESIGN HW ELEVATION	= 89.020 M
100 YEAR DISCHARGE	= 1.64 CMS
100 YEAR HW ELEVATION	= 89.100 M
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING DISCHARGE	= 3.00 CMS
OVERTOPPING ELEVATION	= 90.000 M

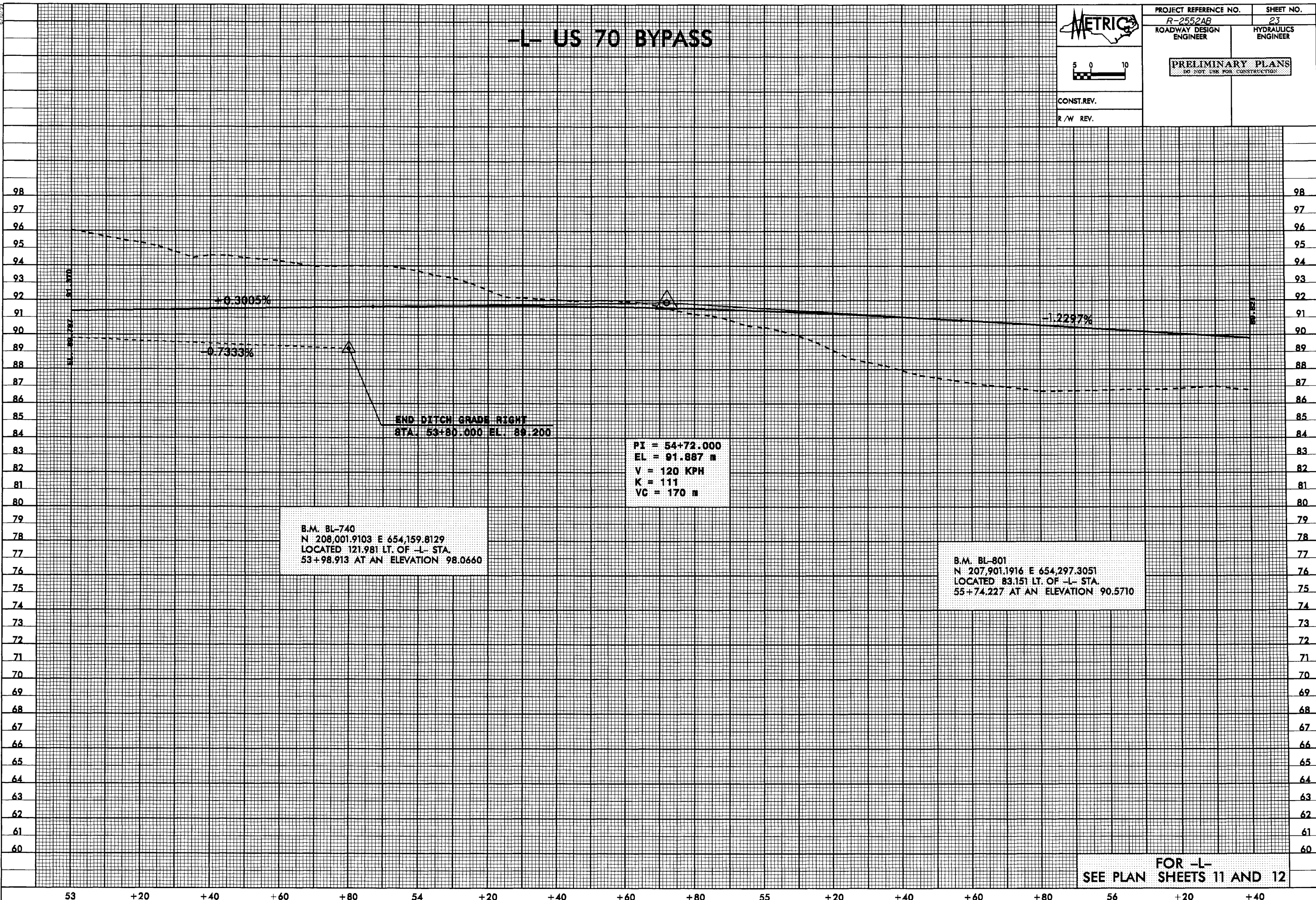
FOR -L-
SEE PLAN SHEET 11

30-SEP-2004 09:40
At 11:58:51
2552ab.dwg

-L- US 70 BYPASS



PROJECT REFERENCE NO. <i>R-2552AB</i>	SHEET NO. <i>23</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
CONST. REV.	
R/W REV.	



END DITCH GRADE RIGHT
STA. 53+80.000 EL. 89.200

PI = 54+72.000
EL = 91.887 m
V = 120 KPH
K = 111
VC = 170 m

B.M. BL-740
N 208,001.9103 E 654,159.8129
LOCATED 121.981 LT. OF -L- STA.
53+98.913 AT AN ELEVATION 98.0660

B.M. BL-801
N 207,901.1916 E 654,297.3051
LOCATED 83.151 LT. OF -L- STA.
55+74.227 AT AN ELEVATION 90.5710

FOR -L-
SEE PLAN SHEETS 11 AND 12

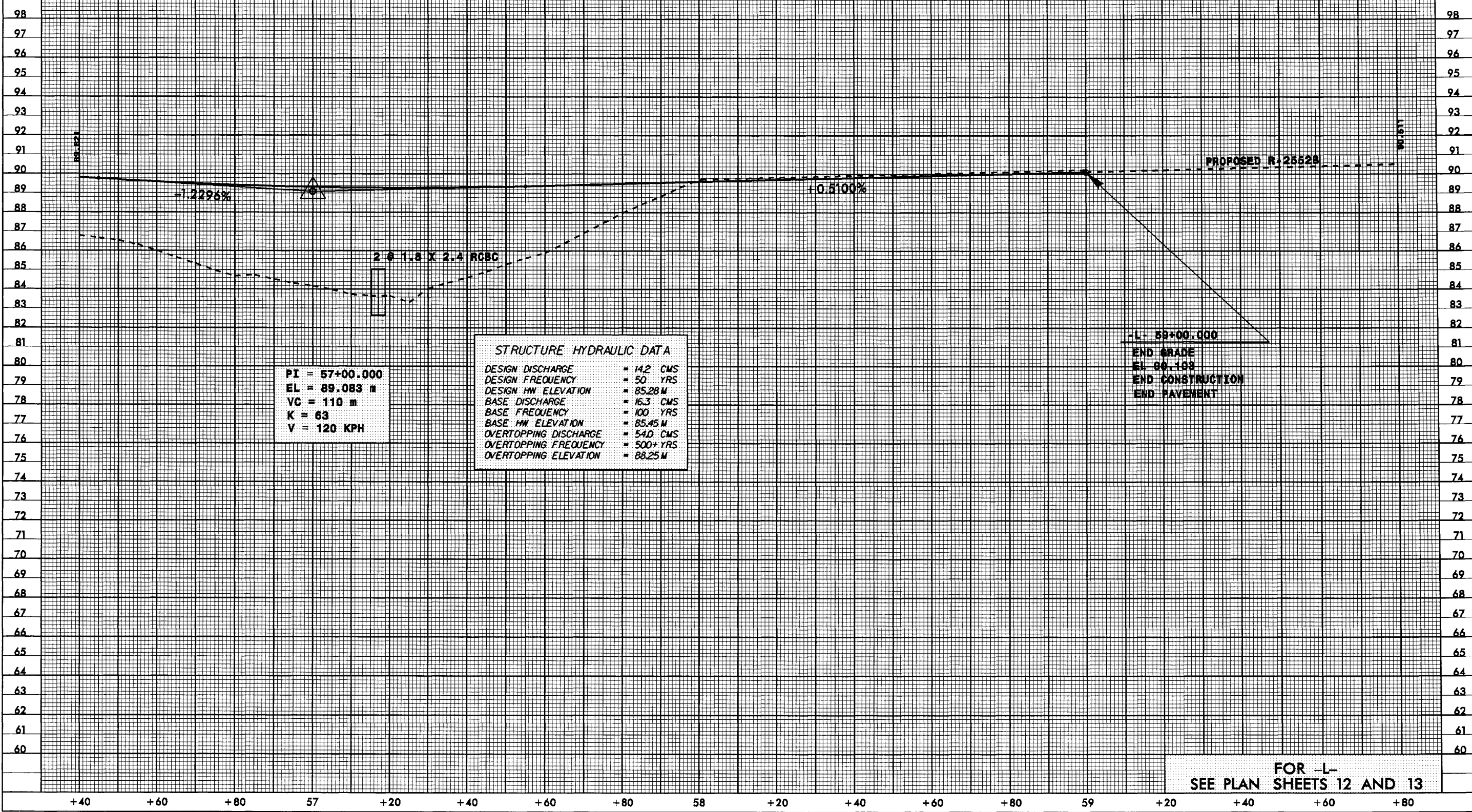
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AT 2552AB.dwg



PROJECT REFERENCE NO. R-2552AB	SHEET NO. 24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST. REV.	
R/W REV.	



-L- US 70 BYPASS



PI = 57+00.000
EL = 89.083 m
VC = 110 m
K = 63
V = 120 KPH

STRUCTURE HYDRAULIC DATA	
DESIGN DISCHARGE	= 142 CMS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 85.28 M
BASE DISCHARGE	= 16.3 CMS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 85.45 M
OVERTOPPING DISCHARGE	= 54.0 CMS
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING ELEVATION	= 88.25 M

-L- 59+00.000
END GRADE
EL 89.103
END CONSTRUCTION
END PAVEMENT

FOR -L-
SEE PLAN SHEETS 12 AND 13

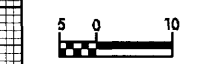
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PROJECT REFERENCE NO. R-2552AB
ROADWAY DESIGN ENGINEER

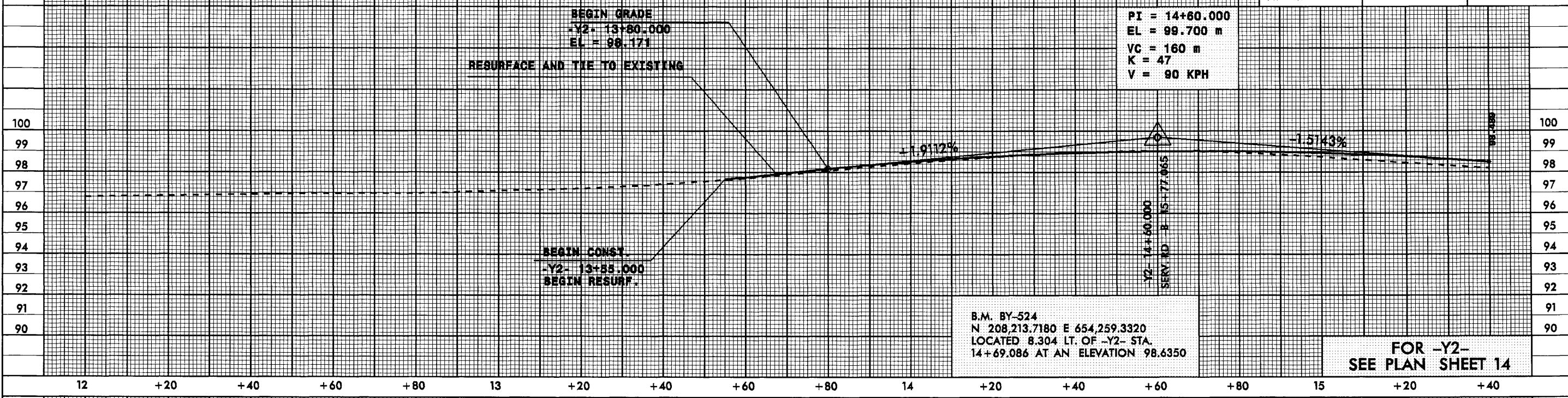
SHEET NO. 25
HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



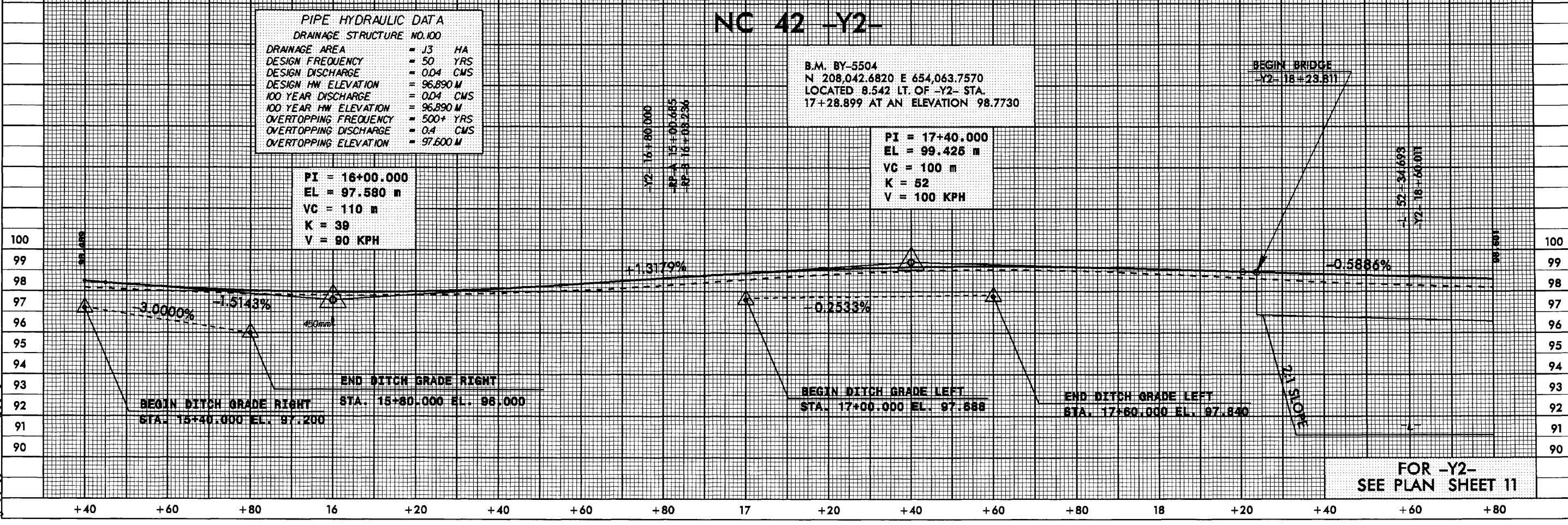
CONST. REV.
R/W REV.

NC 42 -Y2-



FOR -Y2-
SEE PLAN SHEET 14

NC 42 -Y2-



FOR -Y2-
SEE PLAN SHEET 11

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Jmdavis

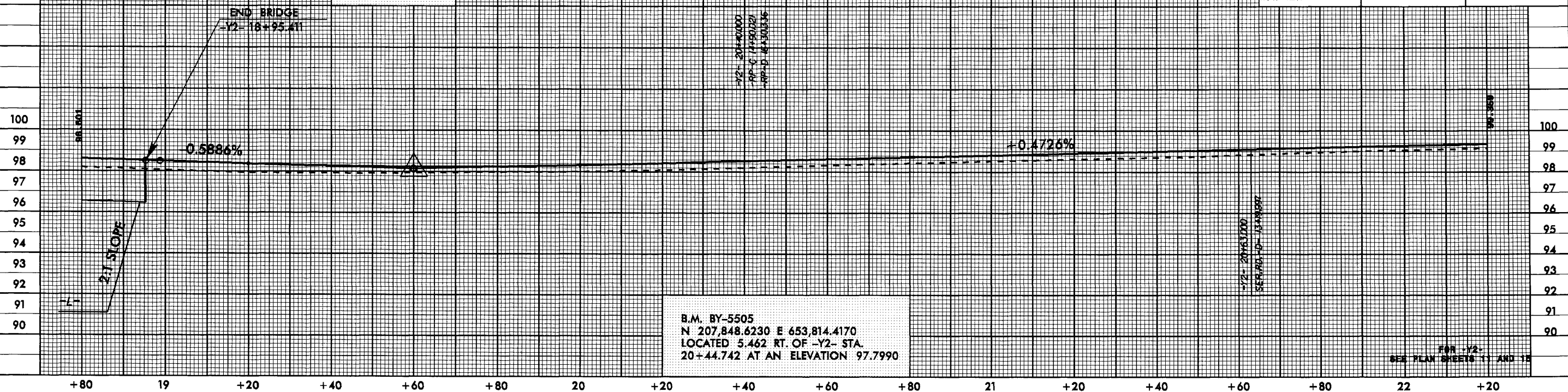


PROJECT REFERENCE NO. R-2552AB	SHEET NO. 26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
CONST. REV.	
R/W REV.	



NC 42 -Y2-

PI = 19+60.000
 EL = 98.130 m
 VC = 80 m
 K = 75
 V = 130 KPH

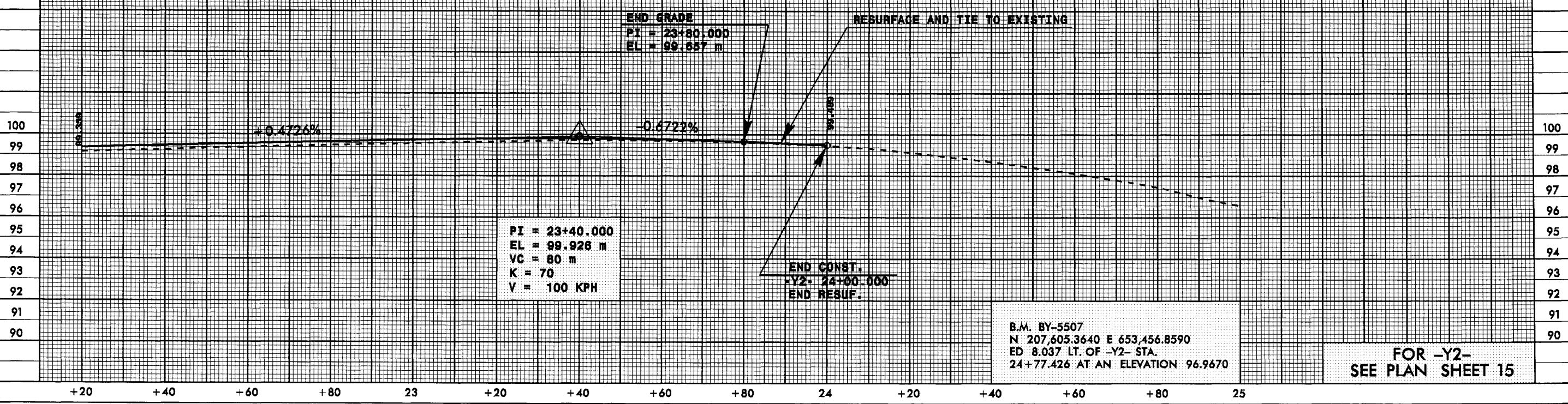


B.M. BY-5505
 N 207,848.6230 E 653,814.4170
 LOCATED 5.462 RT. OF -Y2- STA.
 20+44.742 AT AN ELEVATION 97.7990

FOR -Y2-
 SEE PLAN SHEETS 11 AND 12

NC 42 -Y2-

B.M. BY-5506
 N 207,707.8140 E 653,606.1440
 LOCATED 8.226 RT. OF -Y2- STA.
 22+97.009 AT AN ELEVATION 98.8950



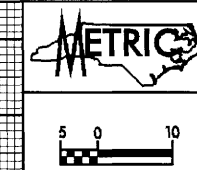
PI = 23+40.000
 EL = 99.926 m
 VC = 80 m
 K = 70
 V = 100 KPH

END CONST.
 -Y2- 24+00.000
 END RESUF.

B.M. BY-5507
 N 207,605.3640 E 653,456.8590
 ED 8.037 LT. OF -Y2- STA.
 24+77.426 AT AN ELEVATION 96.9670

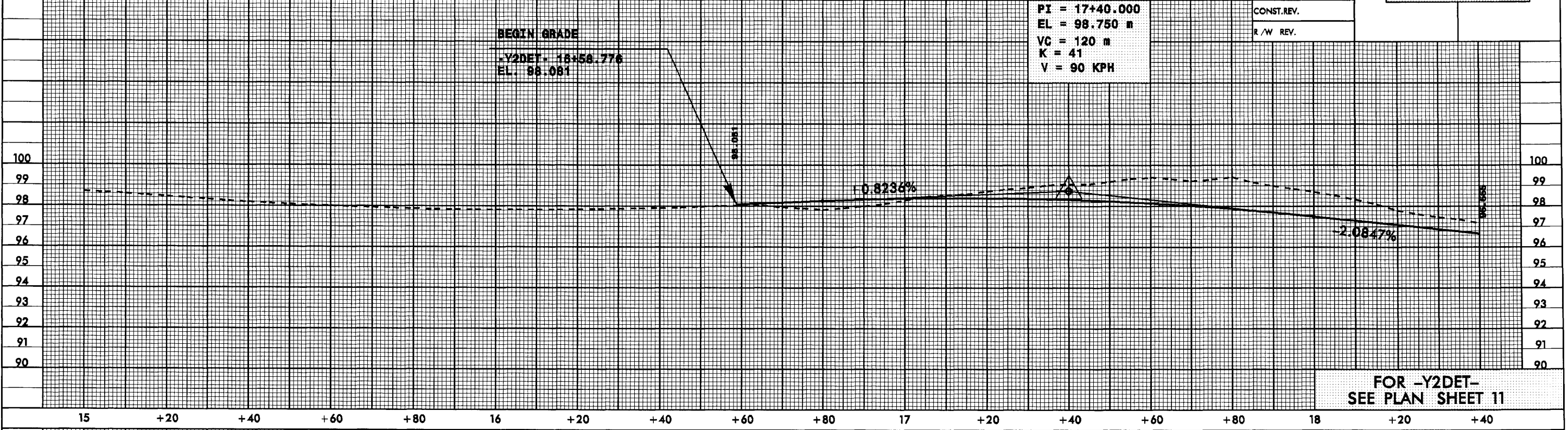
FOR -Y2-
 SEE PLAN SHEET 15

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 imdov\3 AT HY 206434



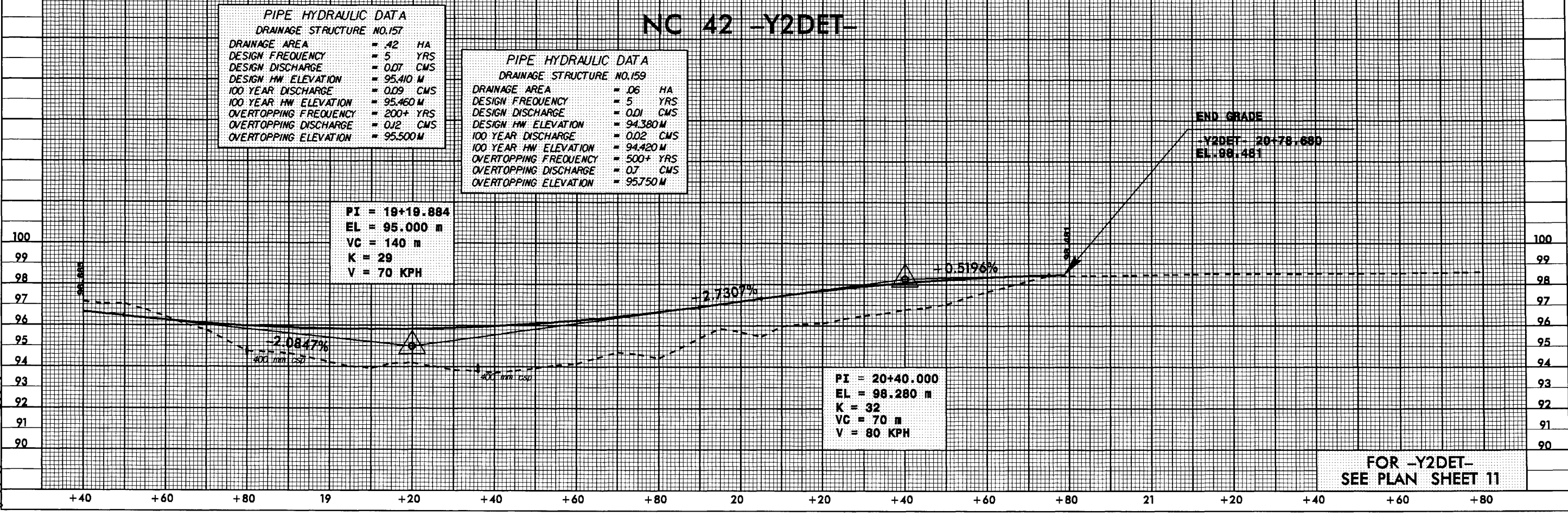
PROJECT REFERENCE NO. R-2552AB	SHEET NO. 27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
CONST. REV.	
R/W REV.	

NC 42 -Y2DET-



FOR -Y2DET-
SEE PLAN SHEET 11

NC 42 -Y2DET-



PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO.157	
DRAINAGE AREA	= 42 HA
DESIGN FREQUENCY	= 5 YRS
DESIGN DISCHARGE	= 0.07 CMS
DESIGN HW ELEVATION	= 95.410 M
100 YEAR DISCHARGE	= 0.09 CMS
100 YEAR HW ELEVATION	= 95.460 M
OVERTOPPING FREQUENCY	= 200+ YRS
OVERTOPPING DISCHARGE	= 0.12 CMS
OVERTOPPING ELEVATION	= 95.500 M

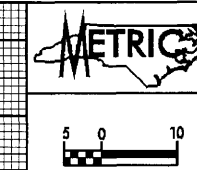
PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO.159	
DRAINAGE AREA	= 06 HA
DESIGN FREQUENCY	= 5 YRS
DESIGN DISCHARGE	= 0.01 CMS
DESIGN HW ELEVATION	= 94.380 M
100 YEAR DISCHARGE	= 0.02 CMS
100 YEAR HW ELEVATION	= 94.420 M
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING DISCHARGE	= 0.07 CMS
OVERTOPPING ELEVATION	= 95.750 M

PI = 19+19.884
EL = 95.000 m
VC = 140 m
K = 29
V = 70 KPH

PI = 20+40.000
EL = 98.280 m
K = 32
VC = 70 m
V = 80 KPH

FOR -Y2DET-
SEE PLAN SHEET 11

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jmdavis

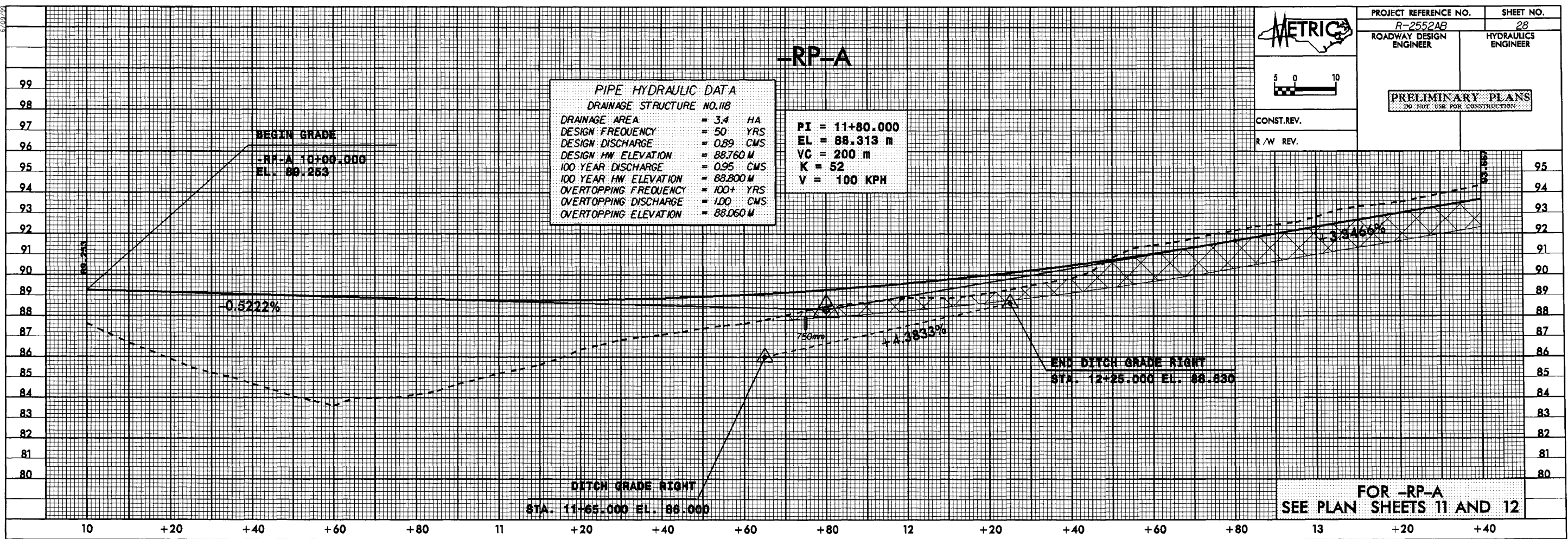


PROJECT REFERENCE NO. R-2552AB	SHEET NO. 28
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
CONST. REV.	
R/W REV.	

-RP-A

PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO.118	
DRAINAGE AREA	= 3.4 HA
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 0.89 CMS
DESIGN HW ELEVATION	= 88.760 M
100 YEAR DISCHARGE	= 0.95 CMS
100 YEAR HW ELEVATION	= 88.800 M
OVERTOPPING FREQUENCY	= 100+ YRS
OVERTOPPING DISCHARGE	= 1.00 CMS
OVERTOPPING ELEVATION	= 88.060 M

PI = 11+80.000
EL = 88.313 m
VC = 200 m
K = 52
V = 100 KPH

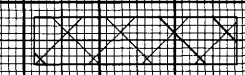


FOR -RP-A
SEE PLAN SHEETS 11 AND 12

-RP-A

PI = 14+70.000
EL = 98.018 m
VC = 40 m
K = 30
V = 80 KPH

-RP-A 14+61.883
EL. 98.454



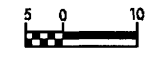
UNDERCUT EXCAVATION

FOR -RP-A
SEE PLAN SHEETS 11 AND 12

30-SEP-2004 15:41
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Imdavis AT HY 206434



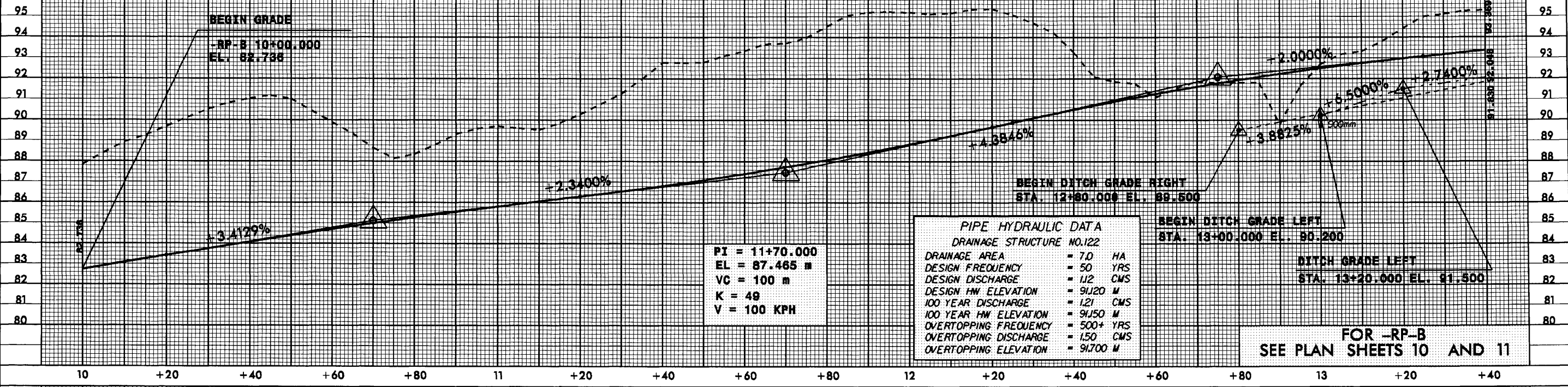
PROJECT REFERENCE NO. R-2552AB	SHEET NO. 29
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
CONST. REV.	
R/W REV.	



PI = 10+70.000
EL = 85.125 m
VC = 100 m
K = 93
V = 110 KPH

PI = 12+75.000
EL = 92.069 m
VC = 100 m
K = 42
V = 90 KPH

-RP-B



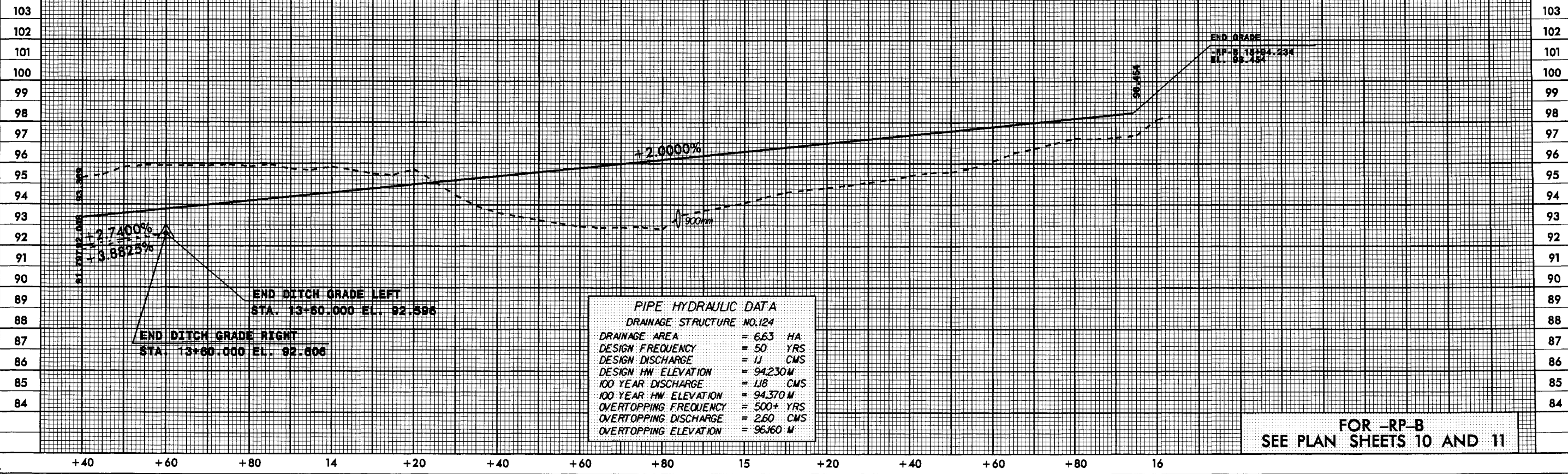
PI = 11+70.000
EL = 87.465 m
VC = 100 m
K = 49
V = 100 KPH

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.122
DRAINAGE AREA = 7.0 HA
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 112 CMS
DESIGN HW ELEVATION = 91.20 M
100 YEAR DISCHARGE = 121 CMS
100 YEAR HW ELEVATION = 91.50 M
OVERTOPPING FREQUENCY = 500+ YRS
OVERTOPPING DISCHARGE = 150 CMS
OVERTOPPING ELEVATION = 91.700 M

BEGIN DITCH GRADE LEFT
STA. 13+00.000 EL. 90.200
DITCH GRADE LEFT
STA. 13+20.000 EL. 91.500

FOR -RP-B
SEE PLAN SHEETS 10 AND 11

-RP-B



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.124
DRAINAGE AREA = 6.63 HA
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 11 CMS
DESIGN HW ELEVATION = 94.230 M
100 YEAR DISCHARGE = 118 CMS
100 YEAR HW ELEVATION = 94.370 M
OVERTOPPING FREQUENCY = 500+ YRS
OVERTOPPING DISCHARGE = 260 CMS
OVERTOPPING ELEVATION = 96.160 M

FOR -RP-B
SEE PLAN SHEETS 10 AND 11

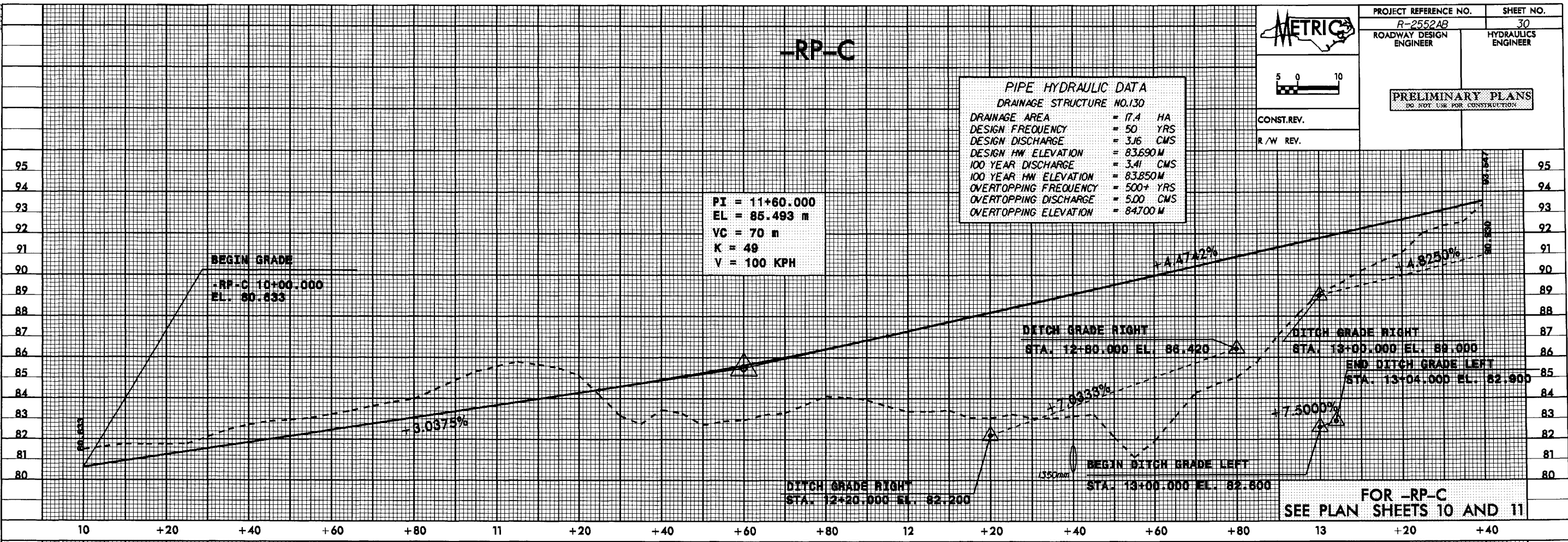
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indv\j



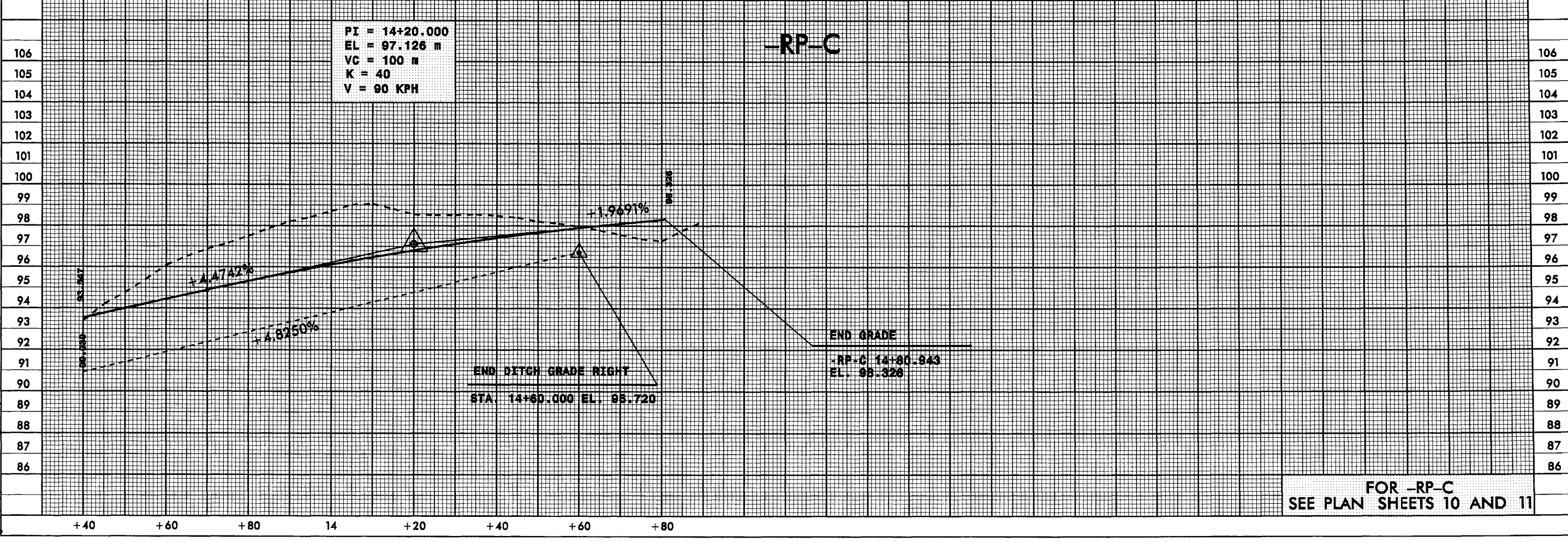
CONST. REV.
R/W REV.

PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO.130	
DRAINAGE AREA	= 17.4 HA
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 3.16 CMS
DESIGN HW ELEVATION	= 83.690 M
100 YEAR DISCHARGE	= 3.41 CMS
100 YEAR HW ELEVATION	= 83.850 M
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING DISCHARGE	= 5.00 CMS
OVERTOPPING ELEVATION	= 84.700 M

PI = 11+60.000
EL = 85.493 m
VC = 70 m
K = 49
V = 100 KPH



PI = 14+20.000
EL = 97.126 m
VC = 100 m
K = 40
V = 90 KPH

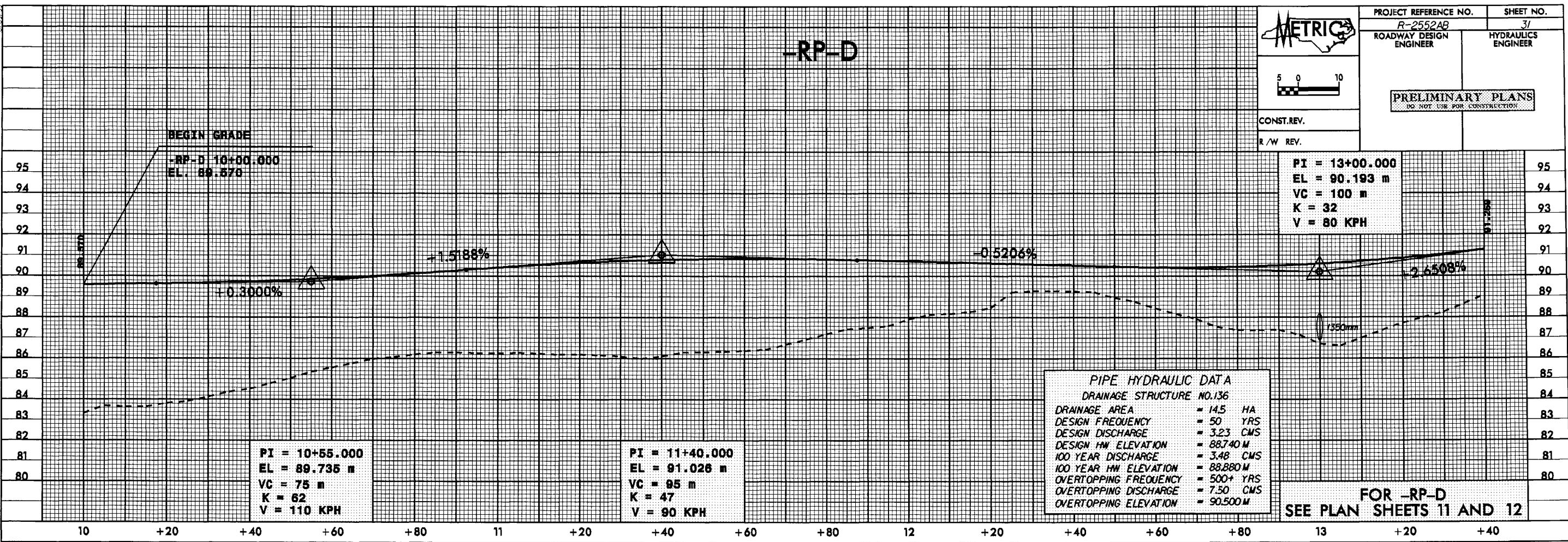


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CONST. REV.
 R/W REV.

PI = 13+00.000
 EL = 90.193 m
 VC = 100 m
 K = 32
 V = 80 KPH

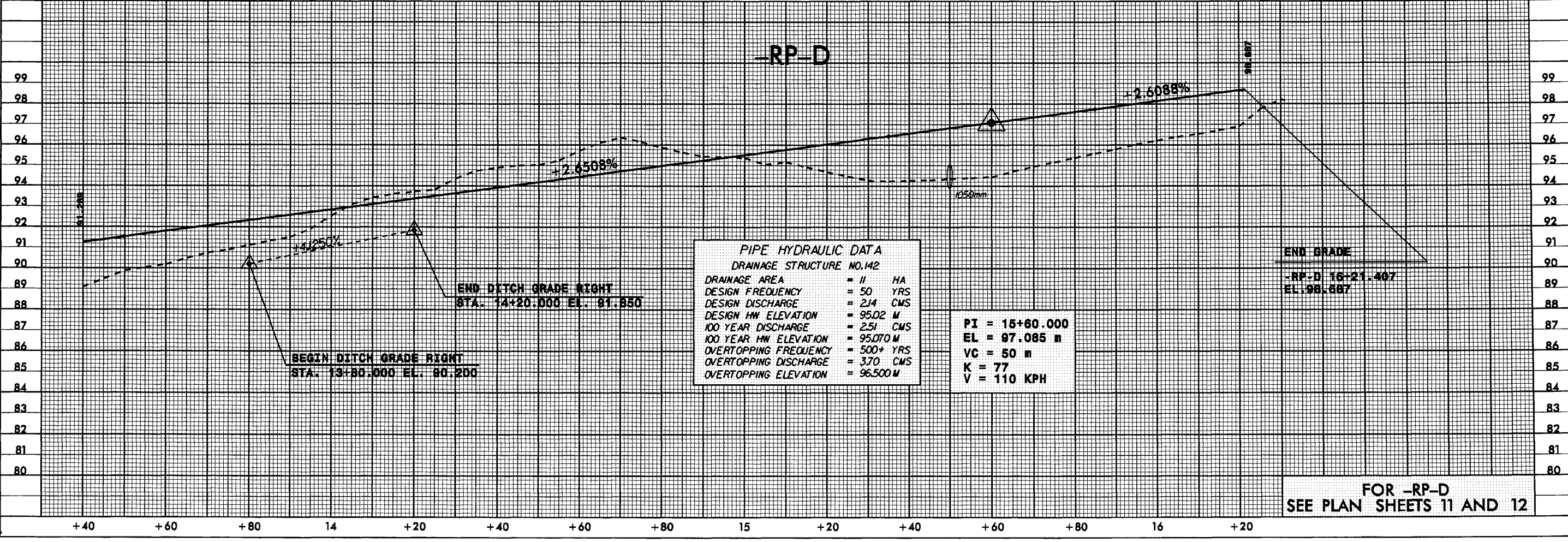


PI = 10+55.000
 EL = 89.735 m
 VC = 75 m
 K = 62
 V = 110 KPH

PI = 11+40.000
 EL = 91.026 m
 VC = 95 m
 K = 47
 V = 90 KPH

PIPE HYDRAULIC DATA
 DRAINAGE STRUCTURE NO.136
 DRAINAGE AREA = 14.5 HA
 DESIGN FREQUENCY = 50 YRS
 DESIGN DISCHARGE = 3.23 CMS
 DESIGN HW ELEVATION = 88.740 M
 100 YEAR DISCHARGE = 3.48 CMS
 100 YEAR HW ELEVATION = 88.880 M
 OVERTOPPING FREQUENCY = 500+ YRS
 OVERTOPPING DISCHARGE = 7.50 CMS
 OVERTOPPING ELEVATION = 90.500 M

FOR -RP-D
 SEE PLAN SHEETS 11 AND 12



PIPE HYDRAULIC DATA
 DRAINAGE STRUCTURE NO.142
 DRAINAGE AREA = 11 HA
 DESIGN FREQUENCY = 50 YRS
 DESIGN DISCHARGE = 2.14 CMS
 DESIGN HW ELEVATION = 95.02 M
 100 YEAR DISCHARGE = 2.51 CMS
 100 YEAR HW ELEVATION = 95.070 M
 OVERTOPPING FREQUENCY = 500+ YRS
 OVERTOPPING DISCHARGE = 3.70 CMS
 OVERTOPPING ELEVATION = 96.500 M

PI = 15+60.000
 EL = 97.085 m
 VC = 50 m
 K = 77
 V = 110 KPH

FOR -RP-D
 SEE PLAN SHEETS 11 AND 12

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PROJECT REFERENCE NO. R-2552AB	SHEET NO. 32
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
CONST. REV.	
R/W REV.	

SERVICE RD.-B-

PI = 10+40.000
EL = 98.534 m
VC = 80 m
K = 56
V = 100 KPH

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.149

DRAINAGE AREA = 88 HA
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 0.19 CMS
DESIGN HW ELEVATION = 97.91 M
100 YEAR DISCHARGE = 0.22 CMS
100 YEAR HW ELEVATION = 97.96 M
OVERTOPPING FREQUENCY = 500+ YRS
OVERTOPPING DISCHARGE = 0.4+ CMS
OVERTOPPING ELEVATION = 97.70 M

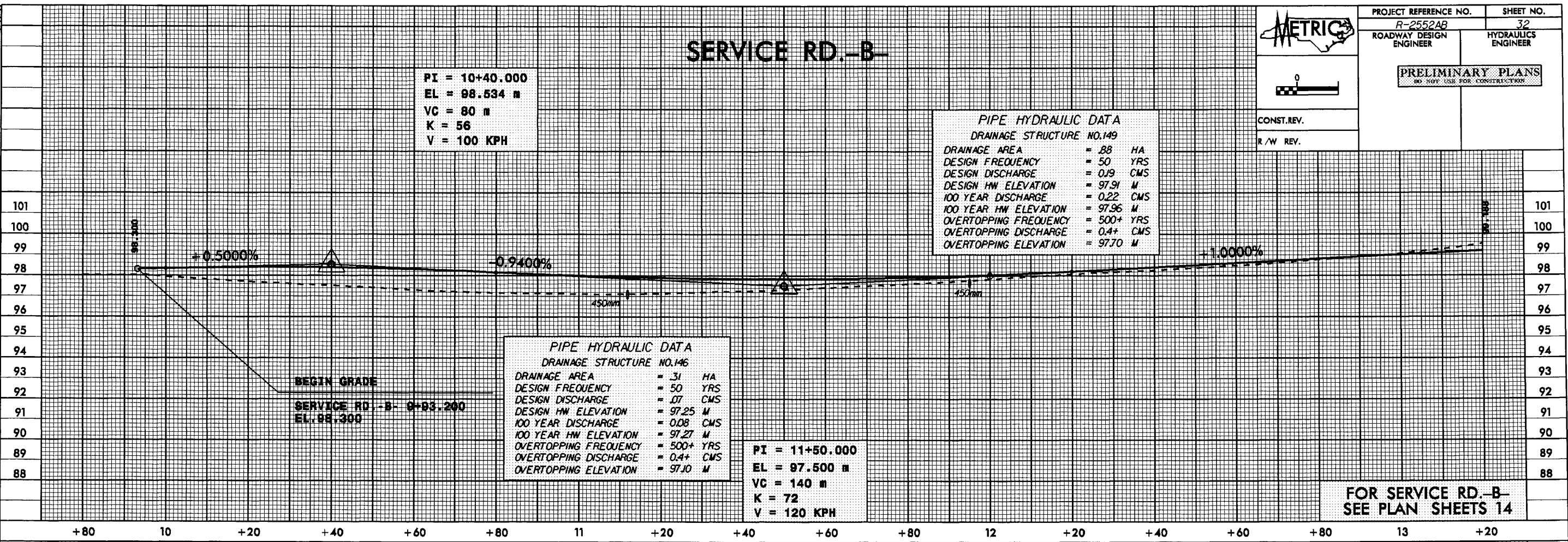
PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.146

DRAINAGE AREA = 31 HA
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 0.07 CMS
DESIGN HW ELEVATION = 97.25 M
100 YEAR DISCHARGE = 0.08 CMS
100 YEAR HW ELEVATION = 97.27 M
OVERTOPPING FREQUENCY = 500+ YRS
OVERTOPPING DISCHARGE = 0.4+ CMS
OVERTOPPING ELEVATION = 97.10 M

PI = 11+50.000
EL = 97.500 m
VC = 140 m
K = 72
V = 120 KPH

BEGIN GRADE
SERVICE RD.-B- 0+93.200
EL. 98.300

FOR SERVICE RD.-B-
SEE PLAN SHEETS 14



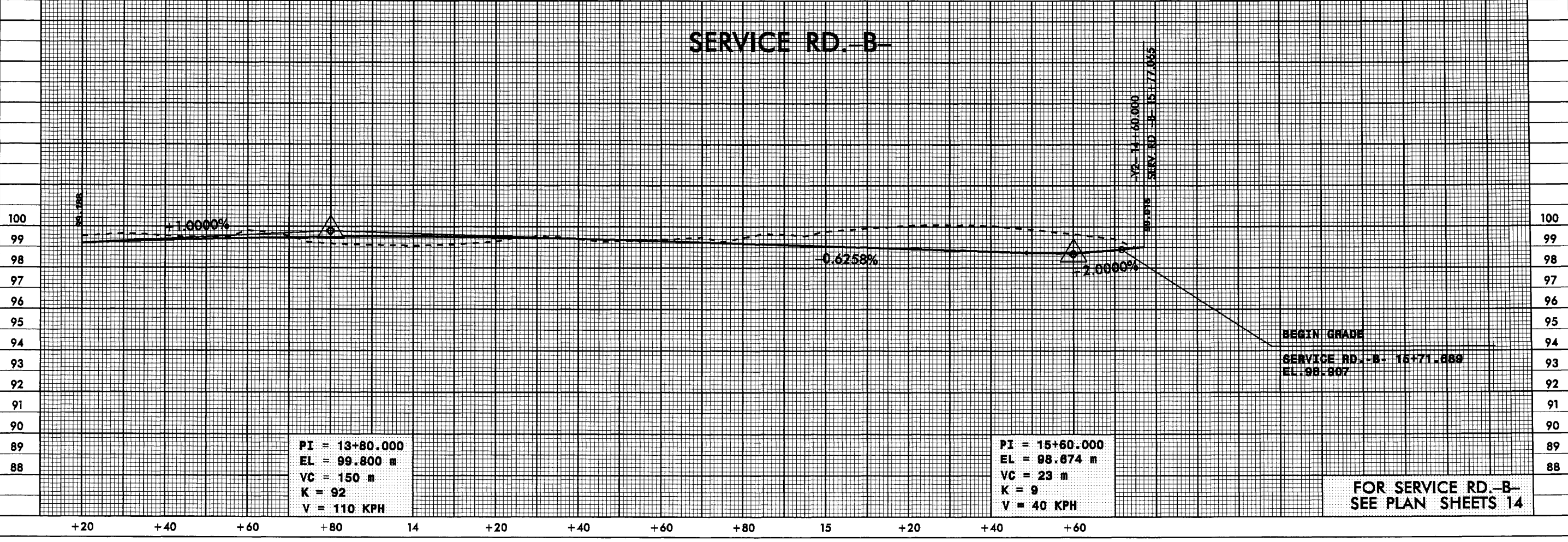
SERVICE RD.-B-

PI = 13+80.000
EL = 99.800 m
VC = 150 m
K = 92
V = 110 KPH

PI = 15+60.000
EL = 98.874 m
VC = 23 m
K = 9
V = 40 KPH

BEGIN GRADE
SERVICE RD.-B- 15+71.889
EL. 98.907

FOR SERVICE RD.-B-
SEE PLAN SHEETS 14



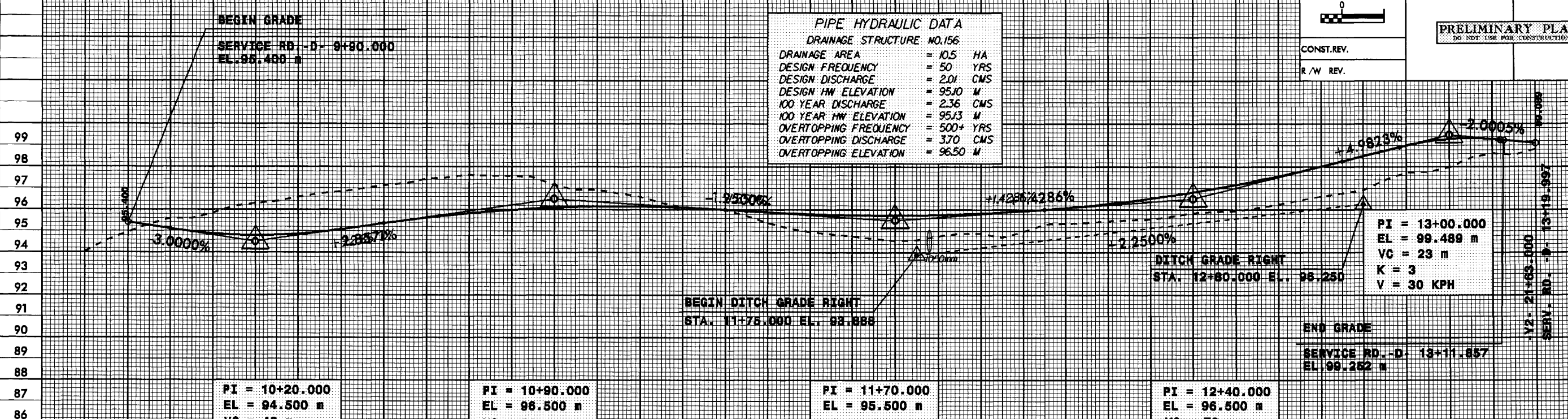
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SERVICE RD.-D-



PROJECT REFERENCE NO. R-2552AB	SHEET NO. 33
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
CONST. REV.	
R/W REV.	

PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO.156	
DRAINAGE AREA	= 10.5 HA
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 2.01 CMS
DESIGN HW ELEVATION	= 95.10 M
100 YEAR DISCHARGE	= 2.36 CMS
100 YEAR HW ELEVATION	= 95.13 M
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING DISCHARGE	= 3.70 CMS
OVERTOPPING ELEVATION	= 96.50 M



PI = 10+20.000
EL = 94.500 m
VC = 40 m
K = 7
V = 30 KPH

PI = 10+80.000
EL = 96.500 m
VC = 80 m
K = 19
V = 70 KPH

PI = 11+70.000
EL = 95.500 m
VC = 70 m
K = 26
V = 70 KPH

PI = 12+40.000
EL = 96.500 m
VC = 70 m
K = 20
V = 60 KPH

PI = 13+00.000
EL = 99.489 m
VC = 23 m
K = 3
V = 30 KPH

FOR SERVICE RD.-D-
SEE PLAN SHEETS 11 AND 15

+80 10 +20 +40 +60 +80 11 +20 +40 +60 +80 12 +20 +40 +60 +80 13

6/08/09

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