

PROJECT: C201300 ID: U-3334A

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

GEOTECHNICAL UNIT

SUBSURFACE INVESTIGATION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3334A	1	21
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34929.1.1	STP-1923(2)	P.E.	
34929.2.4	STP-1923(3)	ROW, UTIL.	
34929.3.2	STP-1923(6)	CONSTR.	

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WAS MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL UNIT @ (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA IS PART OF THE CONTRACT.

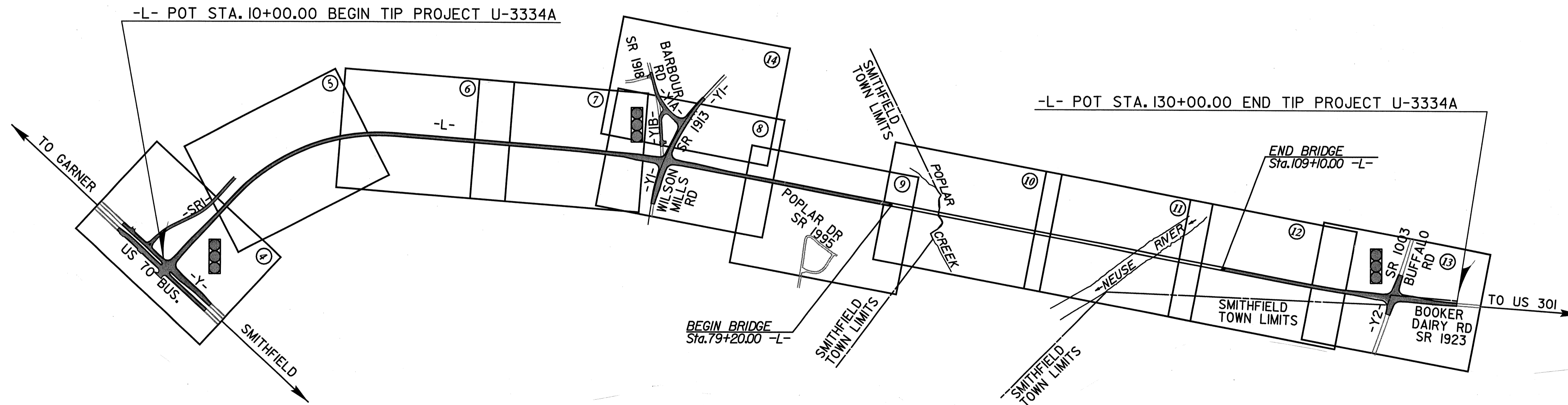
GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

CONTENTS:

LINE	STATION	SHEET NO.
-L-	10+00 TO 130+00	4-13, 15-19
-Y-	12+33 TO 22+86	4, 20
-Y1-	12+75 TO 23+20	8, 14, 20
-Y1A-	10+00 TO 15+65	8, 14, 21
-Y1B-	12+16 TO 13+37	8, 21
-Y2-	12+74 TO 16+40	13, 21

STATE PROJECT 8.2312101 I.D. NO. U-3334A
 F.A. PROJECT STP-1923(2)
 COUNTY JOHNSTON
 DESCRIPTION SR 1923 EXTENSION (BOOKER DAIRY ROAD)
FROM US 70 BUS. WEST TO SR 1003 (BUFFALO ROAD)
(INVENTORY)

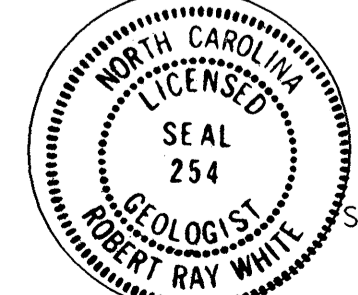


DRAWN BY: SSB

INVESTIGATED BY SSB PERSONNEL MMH
 CHECKED BY SSB SSB MBO
 SUBMITTED BY RRW RRW ELD
 DATE SEPTEMBER, 2003

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IT IS CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

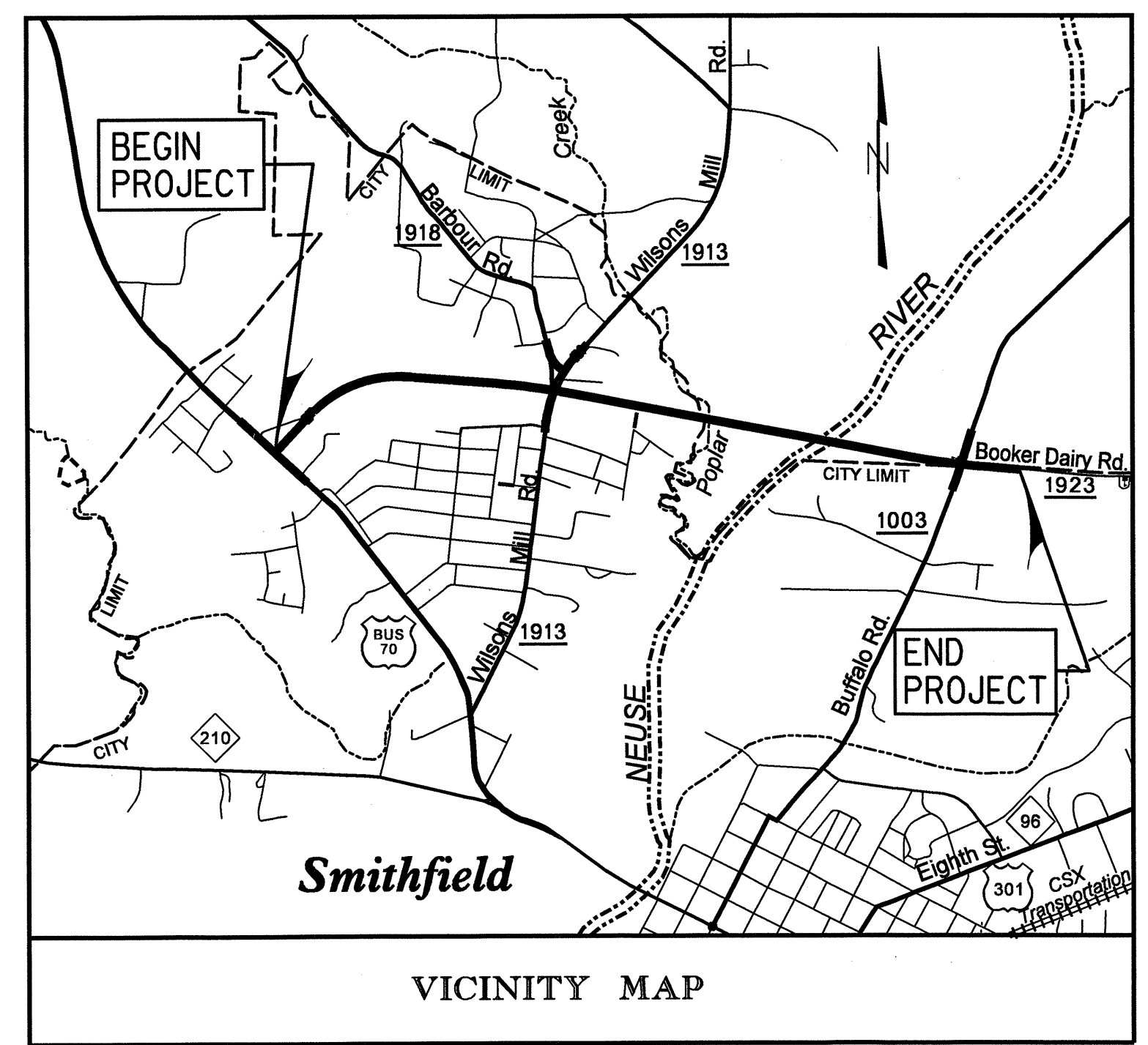
NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.


 SEAL
 SIGNATURE Robert Ray White

U-3334A

PROJECT: 8.2312101

See Sheet 1-B For Conventional Symbols



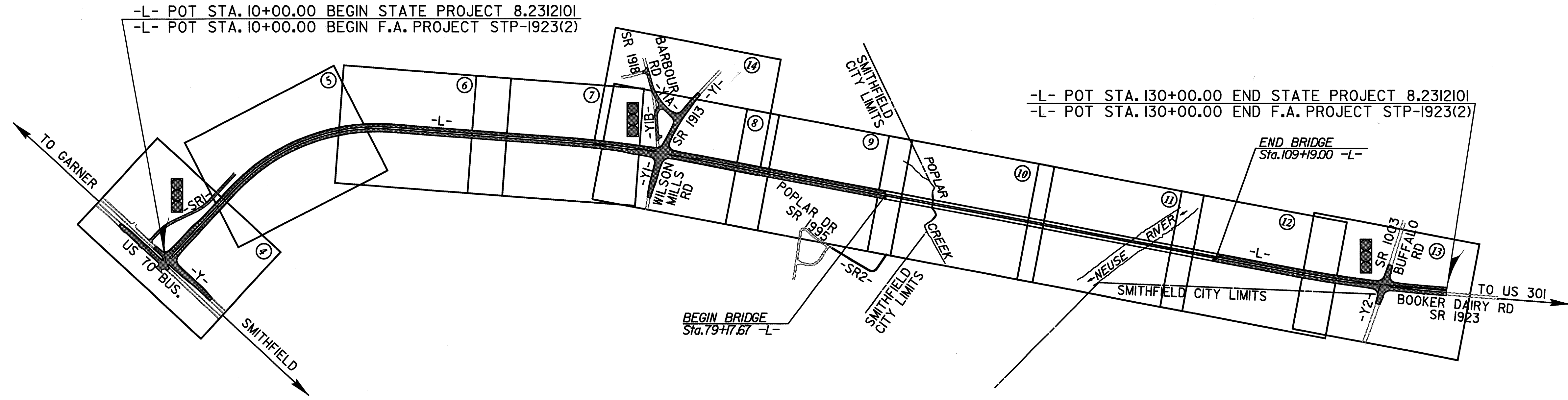
VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
JOHNSTON COUNTY

**LOCATION: SR 1923 EXTENSION (BOOKER DAIRY RD) FROM US 70
BUSINESS WEST TO SR 1003 (BUFFALO RD)**

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

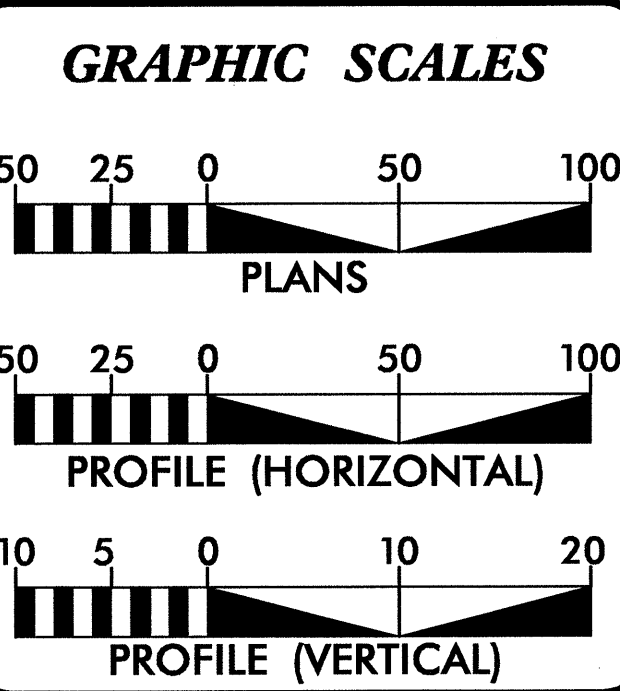
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3334A	3	21
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
8.2312101	STP-1923(2)	P.E.	



NCDOT CONTACT
T. M. BRUTON, P.E.
DESIGN SERVICES-
ENGINEERING COORDINATION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.



DESIGN DATA

ADT 2005 =	6,000
ADT 2025 =	9,500
DHV =	10 %
D =	55 %
* T =	10 %
V =	50 MPH
*(TTST 4 % + DUAL 6 %)	

PROJECT LENGTH

LENGTH OF ROADWAY F.A. PROJECT STP-1923(2) =	1.705 miles
LENGTH OF STRUCTURE F.A. PROJECT STP-1923(2) =	0.568 miles
TOTAL LENGTH STATE PROJECT 8.2312101 =	2.273 miles

THIS IS A FULL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS SHOWN ON THE PLANS. THIS PROJECT IS PARTIALLY WITHIN THE CITY LIMITS OF SMITHFIELD

Prepared In The Office of:
ARCADIS
80 Corporate Center Drive, Suite 300
Raleigh, NC 27607-5073
Tel: 919/854-4282 Fax: 919/854-5448
www.ARCADIS-US.COM

for the North Carolina Department of Transportation

2002 STANDARD SPECIFICATIONS	ARCADIS CONTACT
RIGHT OF WAY DATE: APRIL 18, 2003	STEVE SMALLWOOD, P.E. PROJECT ENGINEER
LETTING DATE: FEBRUARY 15, 2005	

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

SIGNATURE: _____ P.E.

STATE DESIGN ENGINEER

**DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION**

APPROVED _____ DATE _____
DIVISION ADMINISTRATOR

ARCADIS U.S. INC. 10000 WOODBRIDGE AVENUE, SUITE 300, FORT WORTH, TEXAS 76155-1000

PROJECT NAME U-3334A
 PROJECT NUMBER 34929.3.2

SUMMARY SHEET
 COMPUTED BY STS
 CHECKED BY _____

DATE SHEET October 31, 2008
3A OF 21

LINE	STATION	STATION	TOTAL EXCAV. (UNCL.)	EXCAVATION				EMBANKMENT				BORROW	WASTE			
				ROCK EXCAV.	UNDERCUT EXCAV.	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	EARTH EMB.	EMB. + 25%		ROCK	SUITABLE	UNSUIT.	TOTAL
SUMMARY #1																
-L-	10+44	32+00	1084		4213		1084	13638		13638	17048	15964			4213	4213
-YLT-	18+00	22+86	1099		992		1099	1136		1136	1420	321			992	992
-YMED-	12+23	17+25	66		741		66	847		847	1059	993			741	741
-SR1-	10+70	20+23.39	1899				1899	605		605	757			1142		1142
TOTAL SUMMARY #1			4148		5946		4148	16226		16226	20284	17278		1142	5946	7088
SUMMARY #2																
-L-	32+00	58+84	113				113	37511		37511	46889	46776				
-Y1LT-	12+75	23+20	62		1385		62	2323		2323	2904	2842			1385	1385
-Y1A-	10+50	15+65	435				435	1255		1255	1569	1134				
-Y1B-	12+16	13+25	67				67	279		279	349	282				
TOTAL SUMMARY #2			677		1385		677	41368		41368	51711	51034			1385	1385
SUMMARY #3																
-L-	58+84	79+20 (BEG. BR.)	45390		2619		45390	11498		11498	14373			31018	2619	33637
-Y1RT-	12+75	23+20	1212		1624		1212	1880		1880	2350	1138			1624	1624
TOTAL SUMMARY #3			46602		4243		46602	13378		13378	16723	1138		31018	4243	35261
SUMMARY #4																
-L-	109+10(END BR.)	124+40	17521		6019		17521	7866		7866	9833			7688	6019	13707
-Y2LT-	12+74	16+40	236				236	59		59	74			162		162
TOTAL SUMMARY #4			17757		6019		17757	7925		7925	9907			7850	6019	13869
SUMMARY #5																
-L-	124+40	130+00	570				570	649		649	812	242				
-Y2RT-	12+74	16+40	374				374	130		130	163			211		211
TOTAL SUMMARY #5			944				944	779		779	975	242		211		211
SUBTOTAL SUMMARIES #1-#5			70128		17593		70128	79676		79676	99600	69692		40221	17593	57814
EST. SHOULDER MATERIAL								6000		6000	7500	7500				
ADDITIONAL UNDERCUT PER GEOTECH					500			500		500	625	625			500	500
LOSS DUE TO CLEARING & GRUBBING			-2000				-2000					2000				
WASTE TO REPLACE BORROW											-32402		-32402		-32402	
PROJECT TOTALS			68128		18093		68128	86176		86176	107725	47415		7819	18093	25912
EST. 5% TO REPLACE TOPSOIL ON BORROW PITS													2241			
GRAND TOTALS			68128		18093		68128	86176		86176	107725	49656		7819	18093	25912
SAY			68500		18100							50000				
DDE					480											
PAVEMENT STRUCTURE VOLUME FOR -L-					3350											

Earthwork quantities are calculated by the Roadway Design Unit.
 These earthwork quantities are based in part on the subsurface data
 provided by the Geotechnical Engineering Unit.

BEGIN STATE PROJECT U-3334A
 -L- POT STA. 10+00.00 =
 -Y- POT STA. 17+69.37

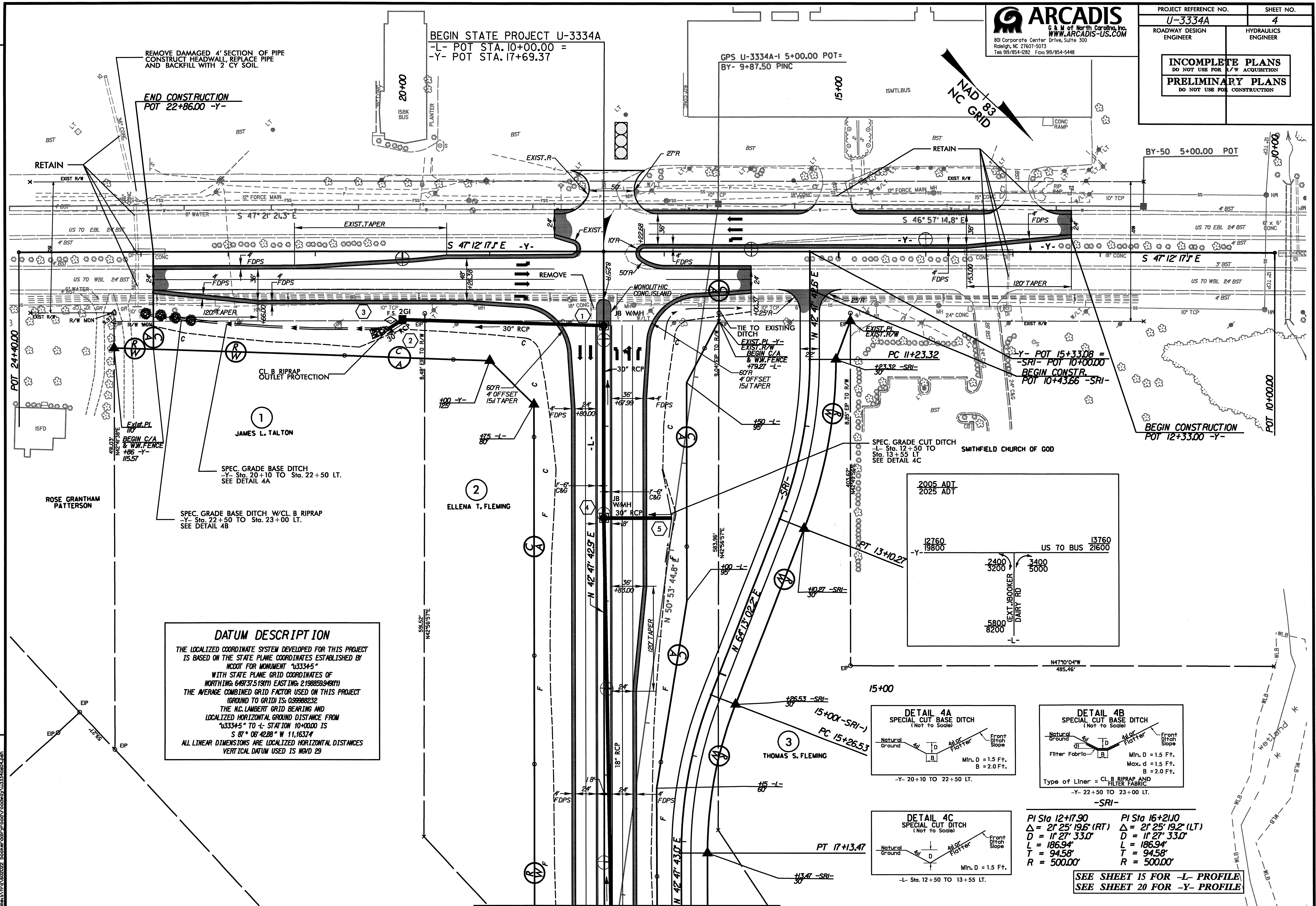
REMOVE DAMAGED 4' SECTION OF PIPE
 CONSTRUCT HEADWALL, REPLACE PIPE
 AND BACKFILL WITH 2 CY SOIL.

END CONSTRUCTION
 POT 22+86.00 -Y-

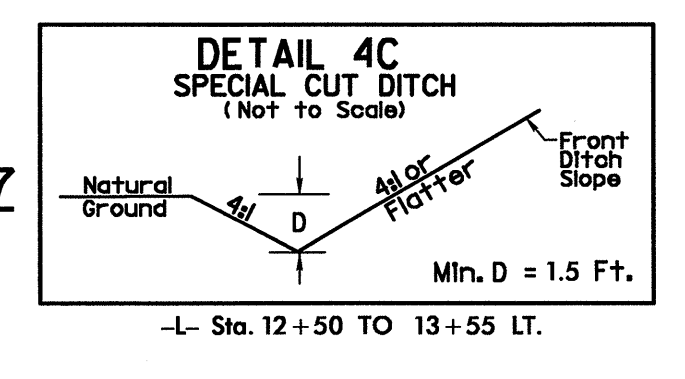
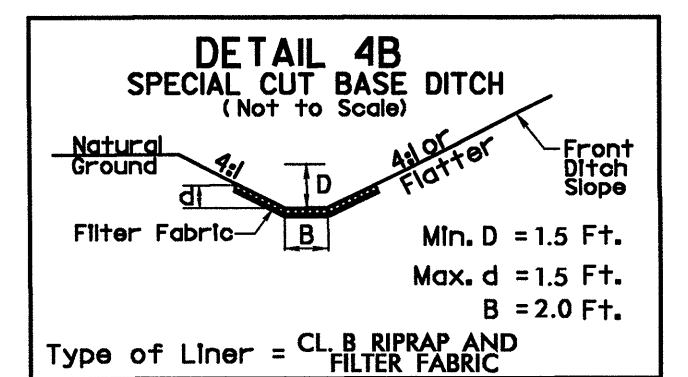
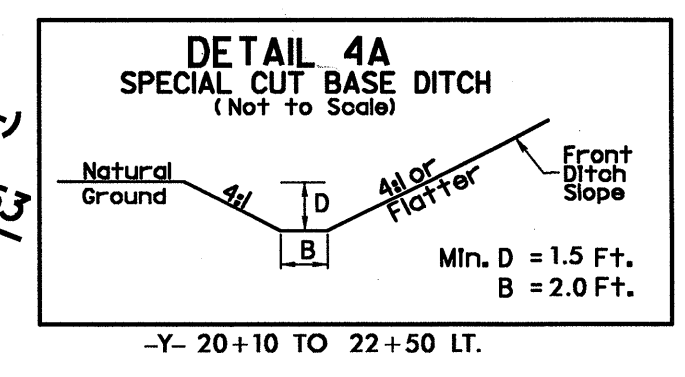
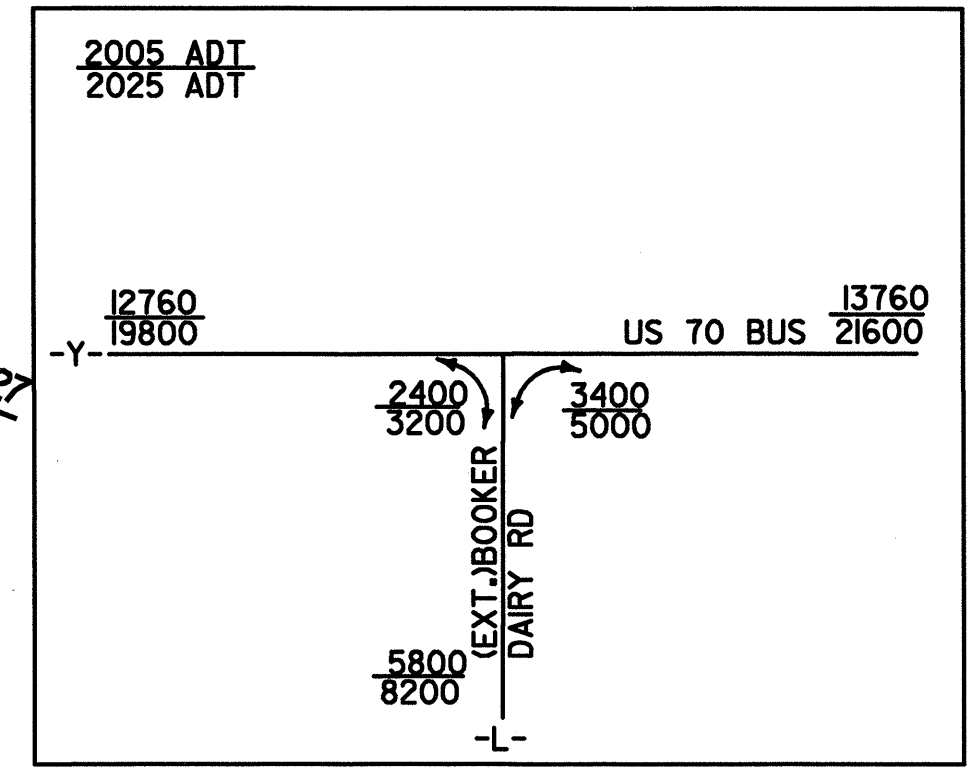
GPS U-3334A-I 5+00.00 POT=
 BY- 9+87.50 PINC

NAD 83
 NC GRID

BY-50 5+00.00 POT



DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U3334-5" WITH STATE PLANE GRID COORDINATES OF NORTHING: 648737.519(11) EASTING: 2198859.948(11) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99988232 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U3334-5" TO -L- STATION 10+00.00 IS S 87° 08' 42.88" W 11,163.74' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS MVD 29



PI Sta 12+17.90 Δ = 2' 25' 19.2" (RT) D = 1' 27' 33.0" L = 186.94' T = 94.58' R = 500.00'

PI Sta 16+21.0 Δ = 2' 25' 19.2" (LT) D = 1' 27' 33.0" L = 186.94' T = 94.58' R = 500.00'

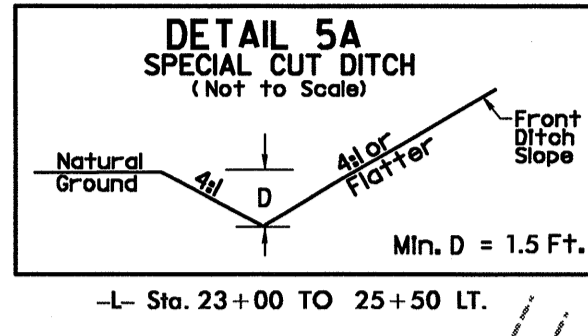
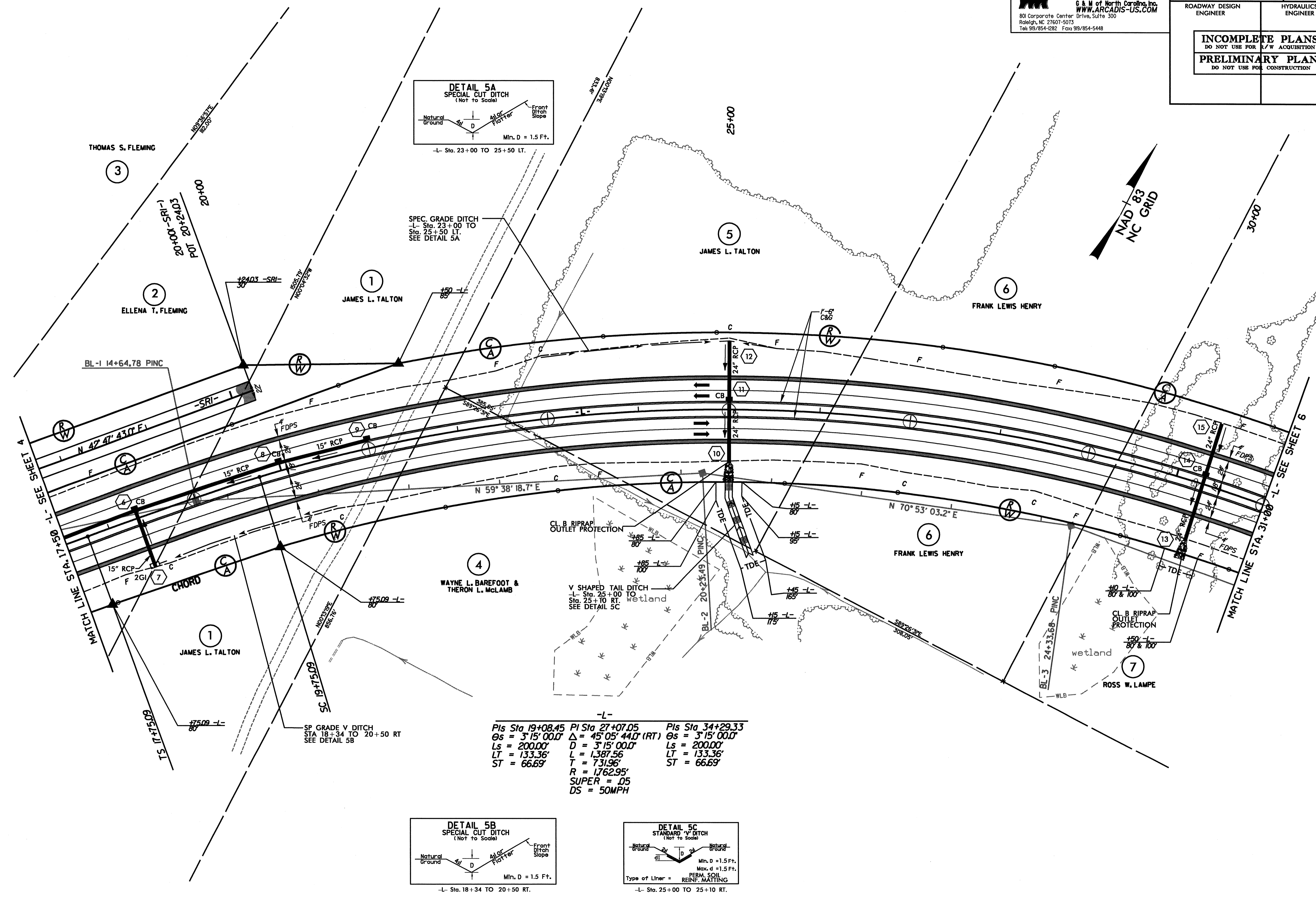
SEE SHEET 15 FOR -L- PROFILE
 SEE SHEET 20 FOR -Y- PROFILE

MATCH LINE STA. 17+50 -L- SEE SHEET 5

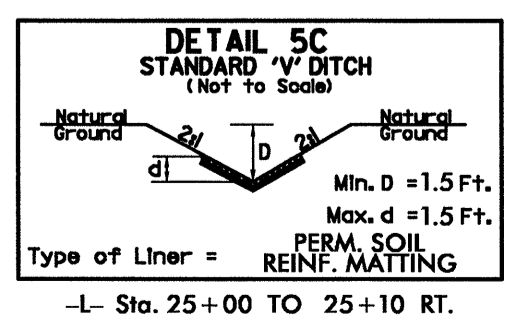
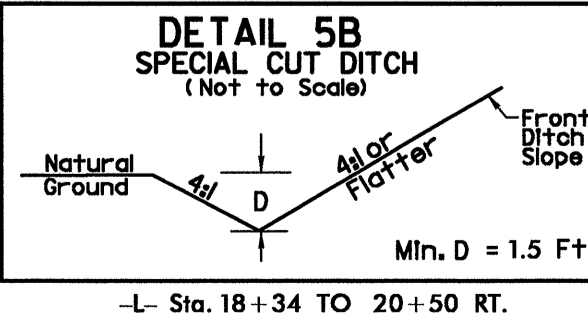
REVISIONS

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REVISIONS
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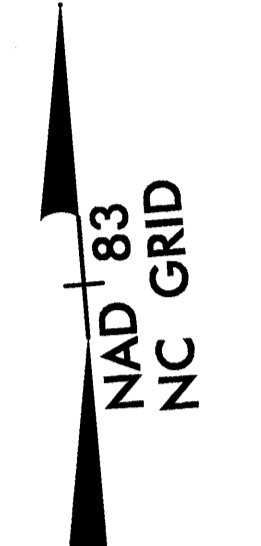
SPEC. GRADE DITCH
-L- Sta. 23+00 TO
Sta. 25+50 LT.
SEE DETAIL 5A



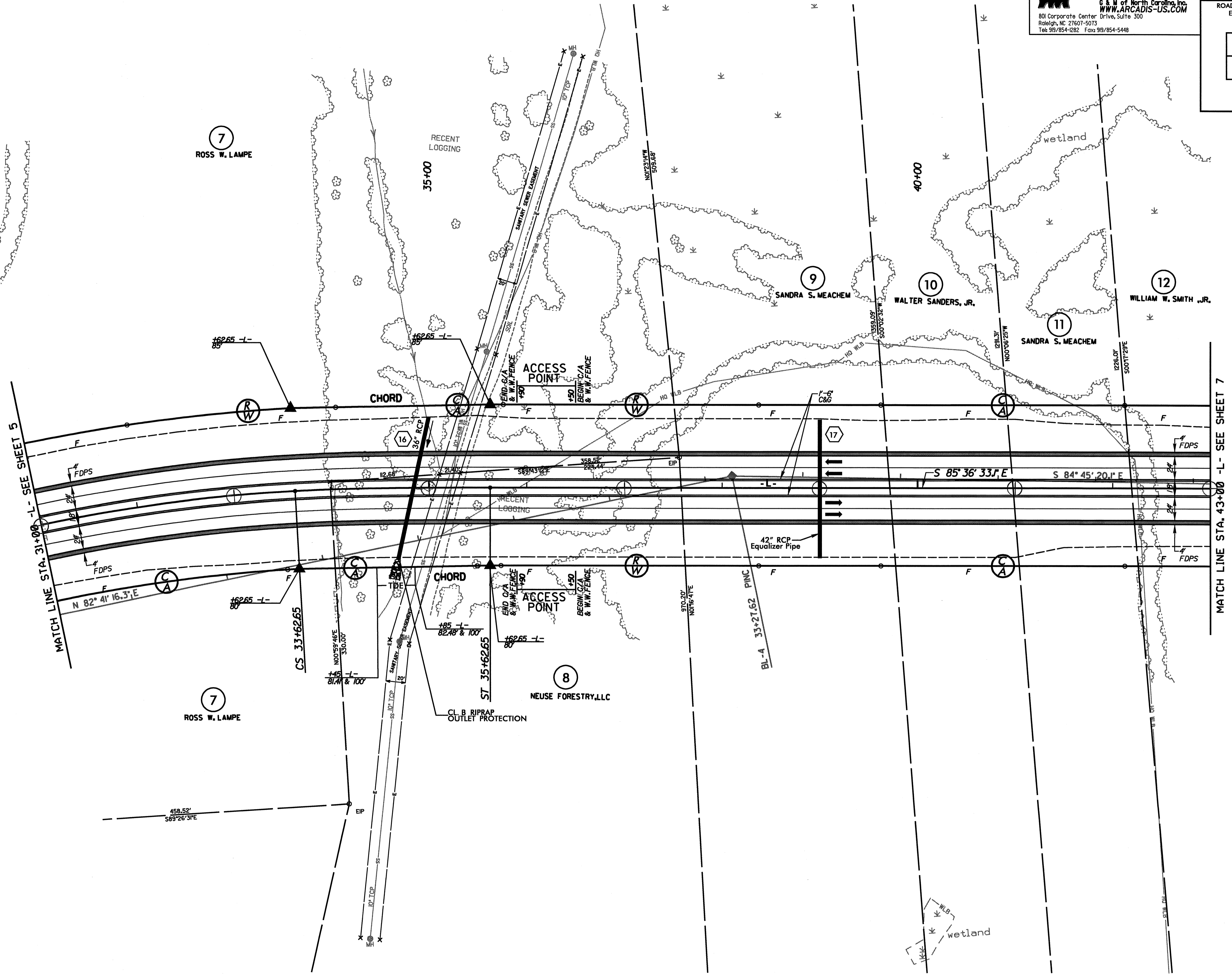
-L-

Pls Sta 19+08.45	Pls Sta 27+07.05	Pls Sta 34+29.33
Os = 3' 15" 00.0'	Δ = 45° 05' 44.0' (RT)	Os = 3' 15" 00.0'
Ls = 200.00'	D = 3' 15" 00.0'	Ls = 200.00'
LT = 133.36'	L = 1,387.56'	LT = 133.36'
ST = 66.69'	T = 731.96'	ST = 66.69'
	R = 1,762.95'	
	SUPER = .05	
	DS = 50MPH	

SEE SHEET 15 FOR -L- PROFILE



REVISIONS



MATCH LINE STA. 31+00 -L- SEE SHEET 5

MATCH LINE STA. 43+00 -L- SEE SHEET 7

7 ROSS W. LAMPE

7 ROSS W. LAMPE

8 NEUSE FORESTRY, LLC

9 SANDRA S. MEACHEM

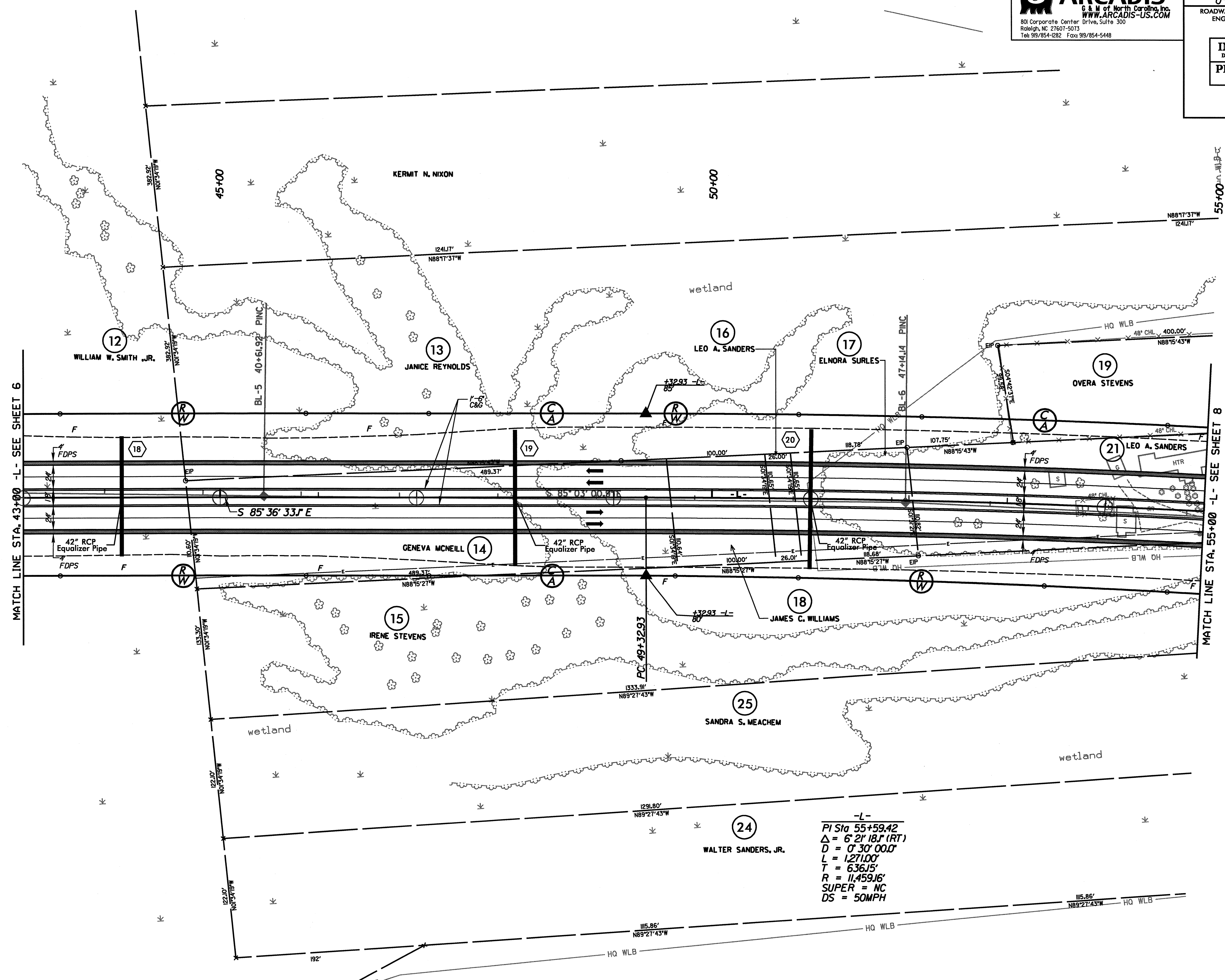
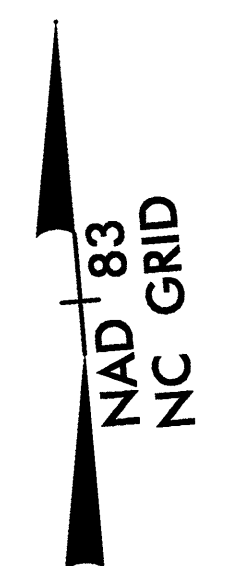
10 WALTER SANDERS, JR.

11 SANDRA S. MEACHEM

12 WILLIAM W. SMITH, JR.

SEE SHEETS 15 AND 16 -L- PROFILE

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REVISIONS

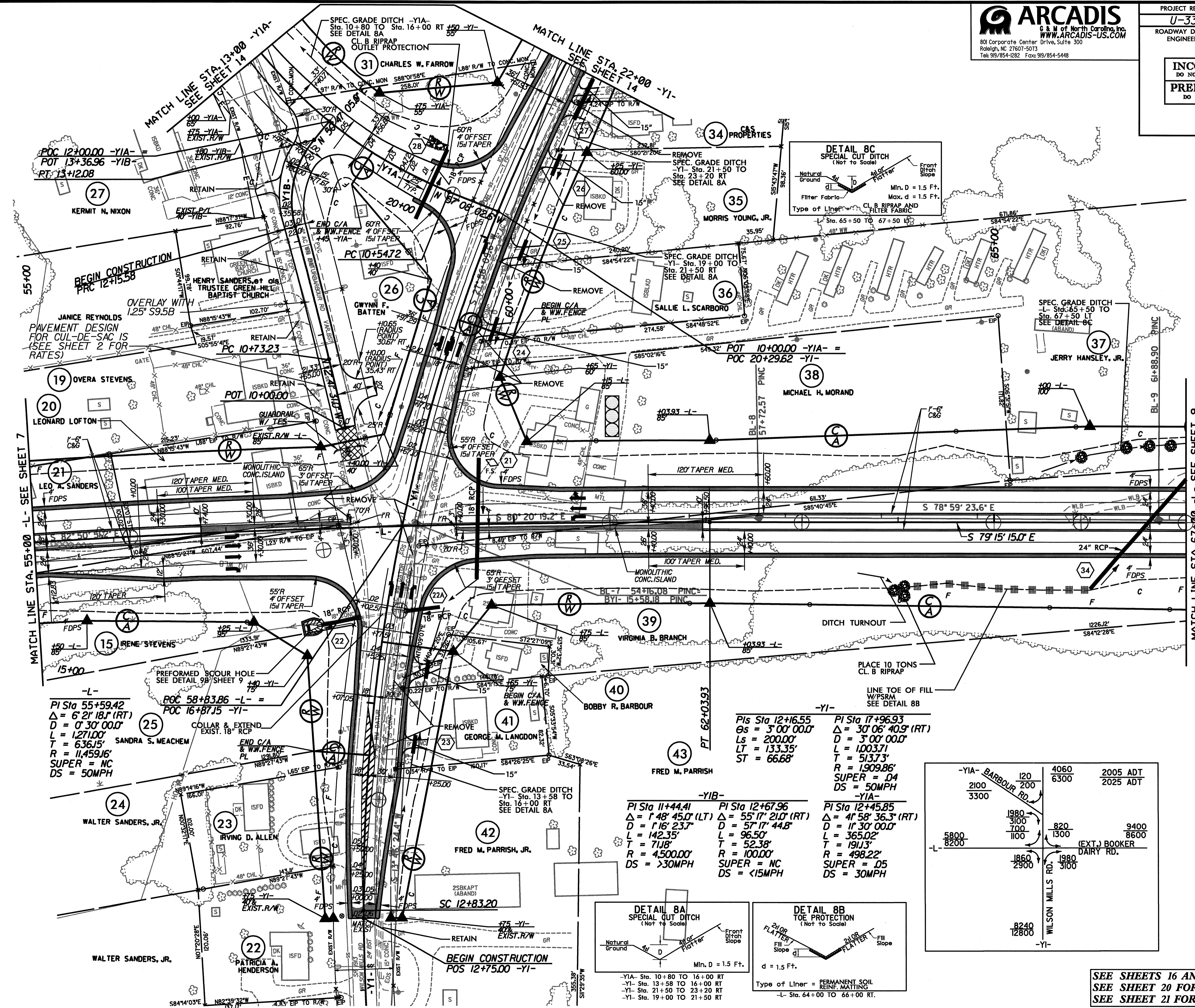
MATCH LINE STA. 43+00 -L- SEE SHEET 6

MATCH LINE STA. 55+00 -L- SEE SHEET 8

-L-
 PI Sta 55+59.42
 $\Delta = 6' 21' 18''$ (RT)
 $D = 0' 30' 00.0''$
 $L = 1271.00'$
 $T = 636.15'$
 $R = 11,459.16'$
 SUPER = NC
 DS = 50MPH

SEE SHEET 16 FOR -L- PROFILE

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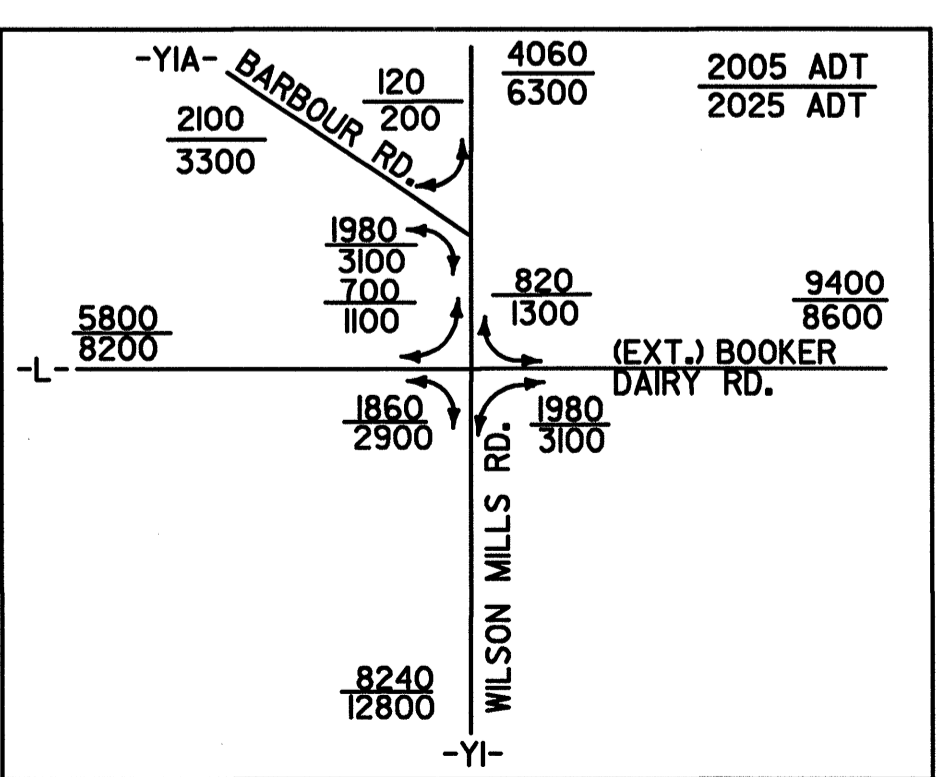


-L-
 PI Sta 55+59.42
 $\Delta = 6' 21" 18.1"$ (RT)
 $D = 0' 30" 00.0"$
 $L = 1271.00'$
 $T = 636.15'$
 $R = 11,459.16'$
 SUPER = NC
 DS = 50MPH

-YIB-
 PI Sta 11+44.41
 $\Delta = 1' 48" 45.0"$ (LT)
 $D = 1' 16" 23.7"$
 $L = 142.35'$
 $T = 71.18'$
 $R = 4,500.00'$
 DS = >30MPH

-YIB-
 PI Sta 12+67.96
 $\Delta = 55' 17" 21.0"$ (RT)
 $D = 57' 17" 44.8"$
 $L = 96.50'$
 $T = 52.38'$
 $R = 100.00'$
 SUPER = NC
 DS = <15MPH

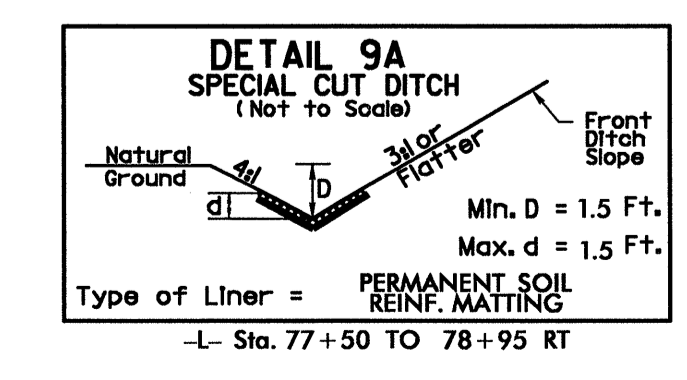
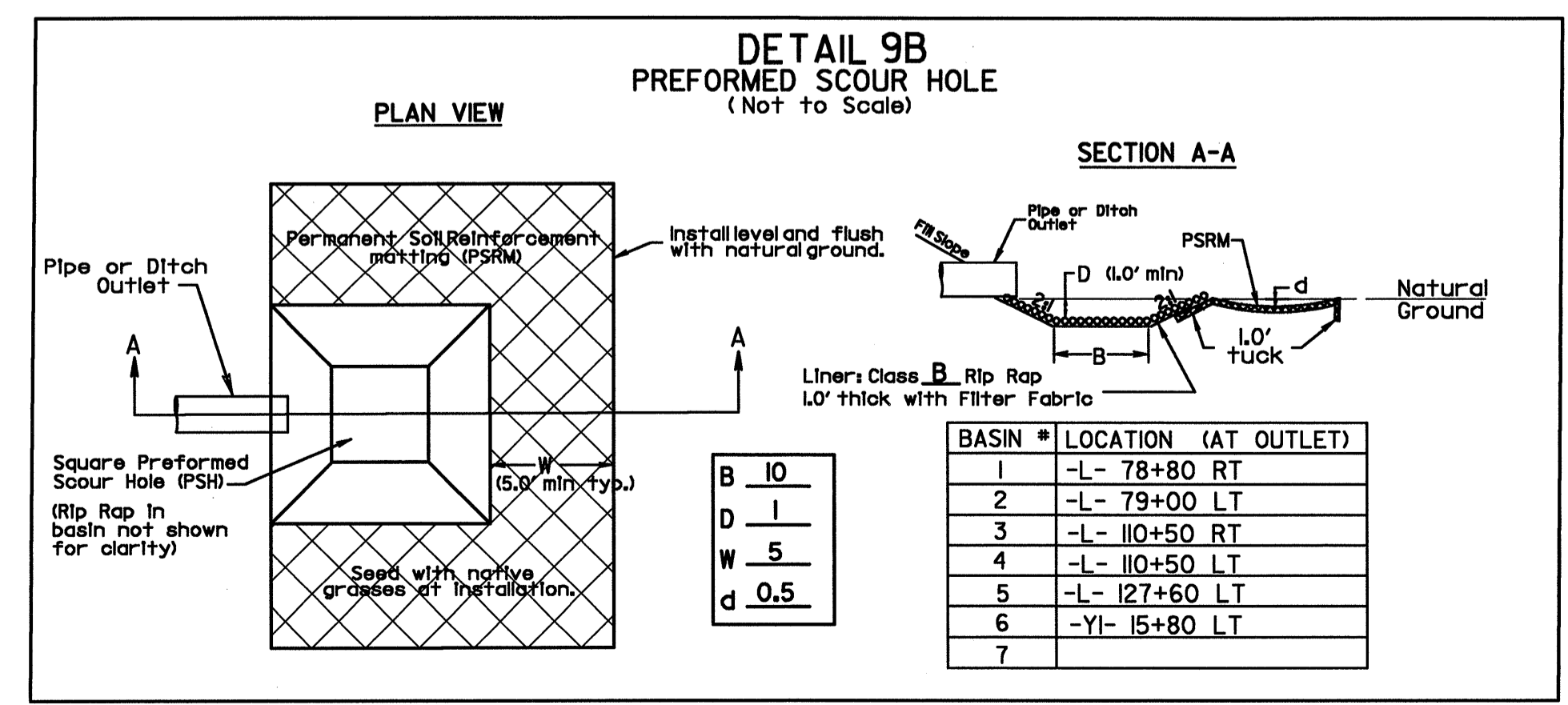
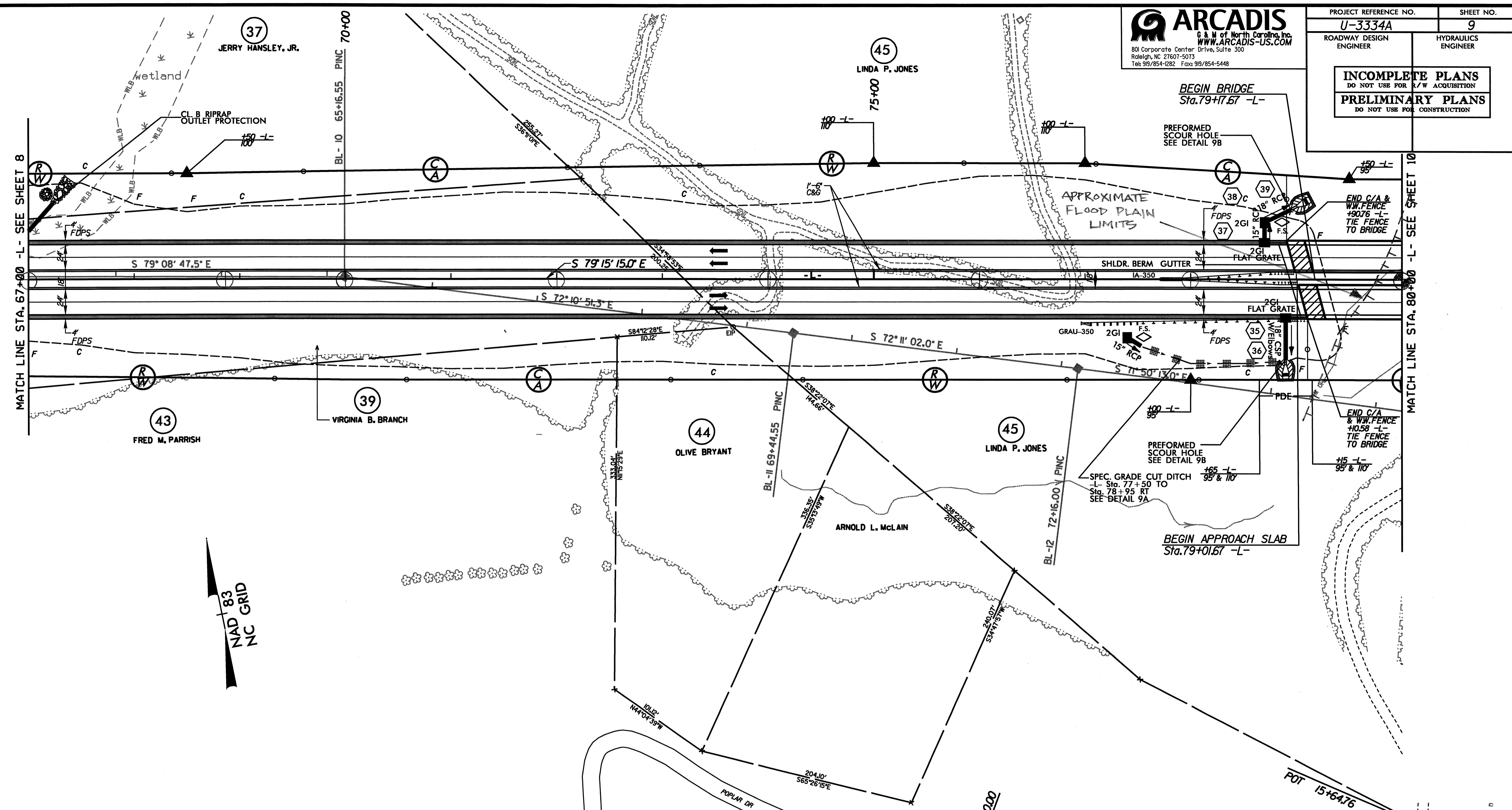
-YIA-
 PI Sta 17+96.93
 $\Delta = 30' 06" 40.9"$ (RT)
 $D = 3' 00" 00.0"$
 $L = 100.371'$
 $T = 513.73'$
 $R = 1,909.86'$
 SUPER = .04
 DS = 50MPH



SEE SHEETS 16 AND 17 FOR -L- PROFILE
 SEE SHEET 20 FOR -YIB- PROFILE
 SEE SHEET 21 FOR -YIA- PROFILE

REVISIONS

ARCADIS 841
 10/09/08 AM
 10:09:48 AM
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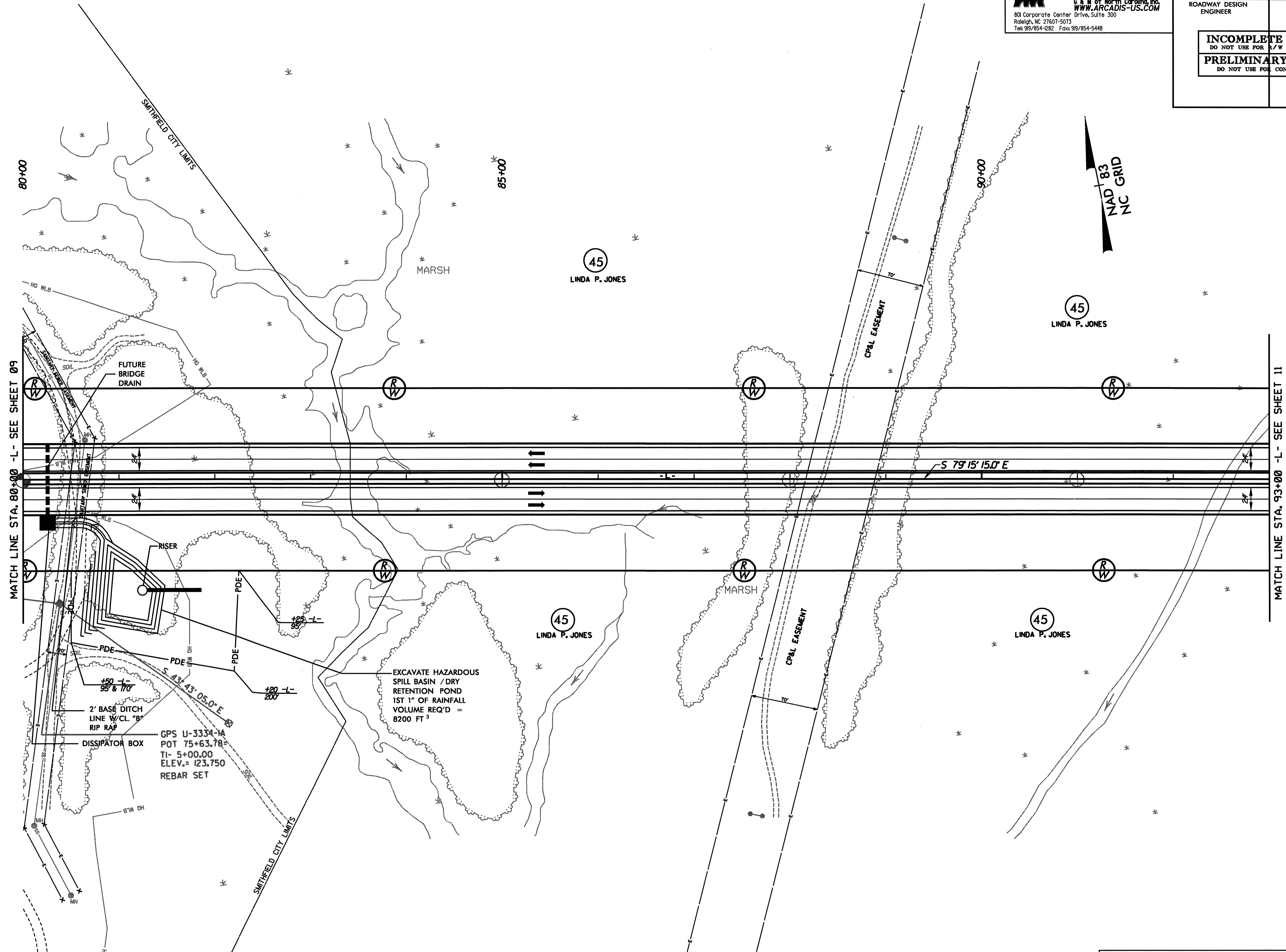
PI Sta 13+79.19
 $\Delta = 86^\circ 52' 29.6\"$ (LT)
 $D = 114^\circ 35' 29.6\"$
 $L = 75.81'$
 $T = 47.34'$
 $R = 50.00'$

SEE SHEET 17 FOR -L- PROFILE

REVISIONS

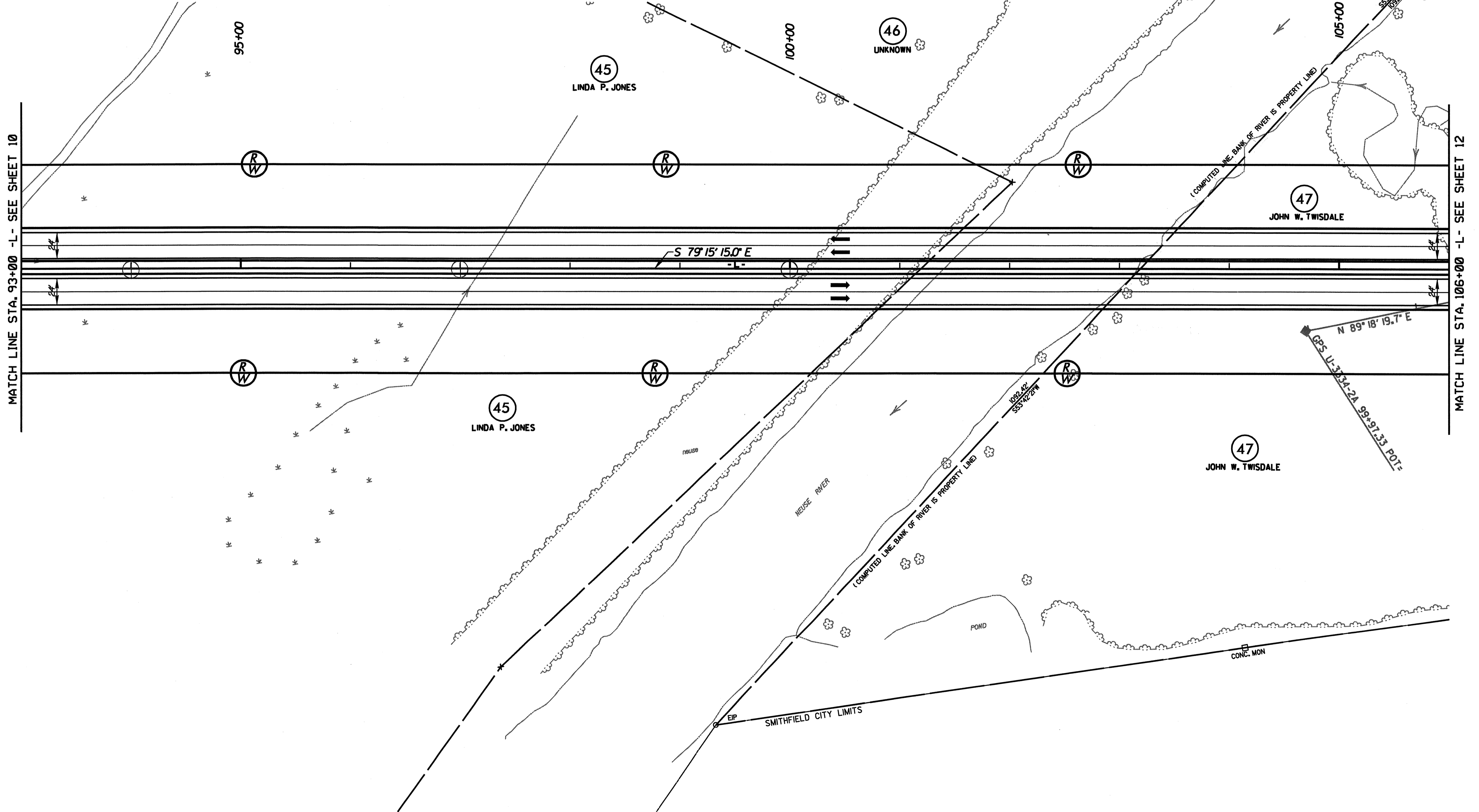
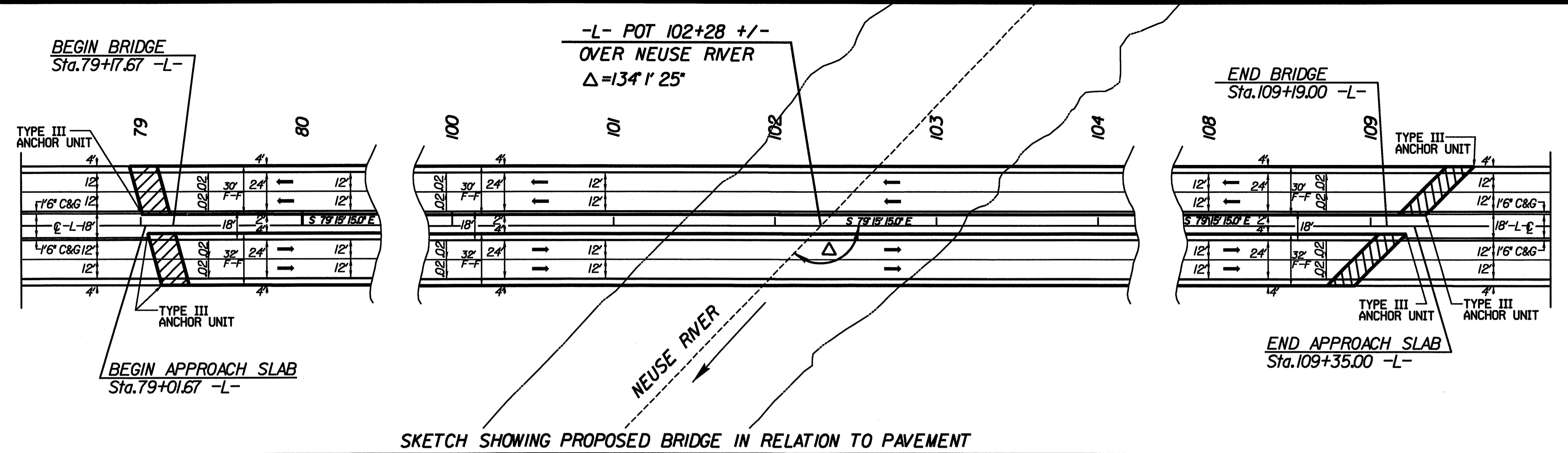
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REVISIONS



SEE SHEET 17 FOR -L- PROFILE
SEE SHEET 11 FOR BRIDGE SKETCH

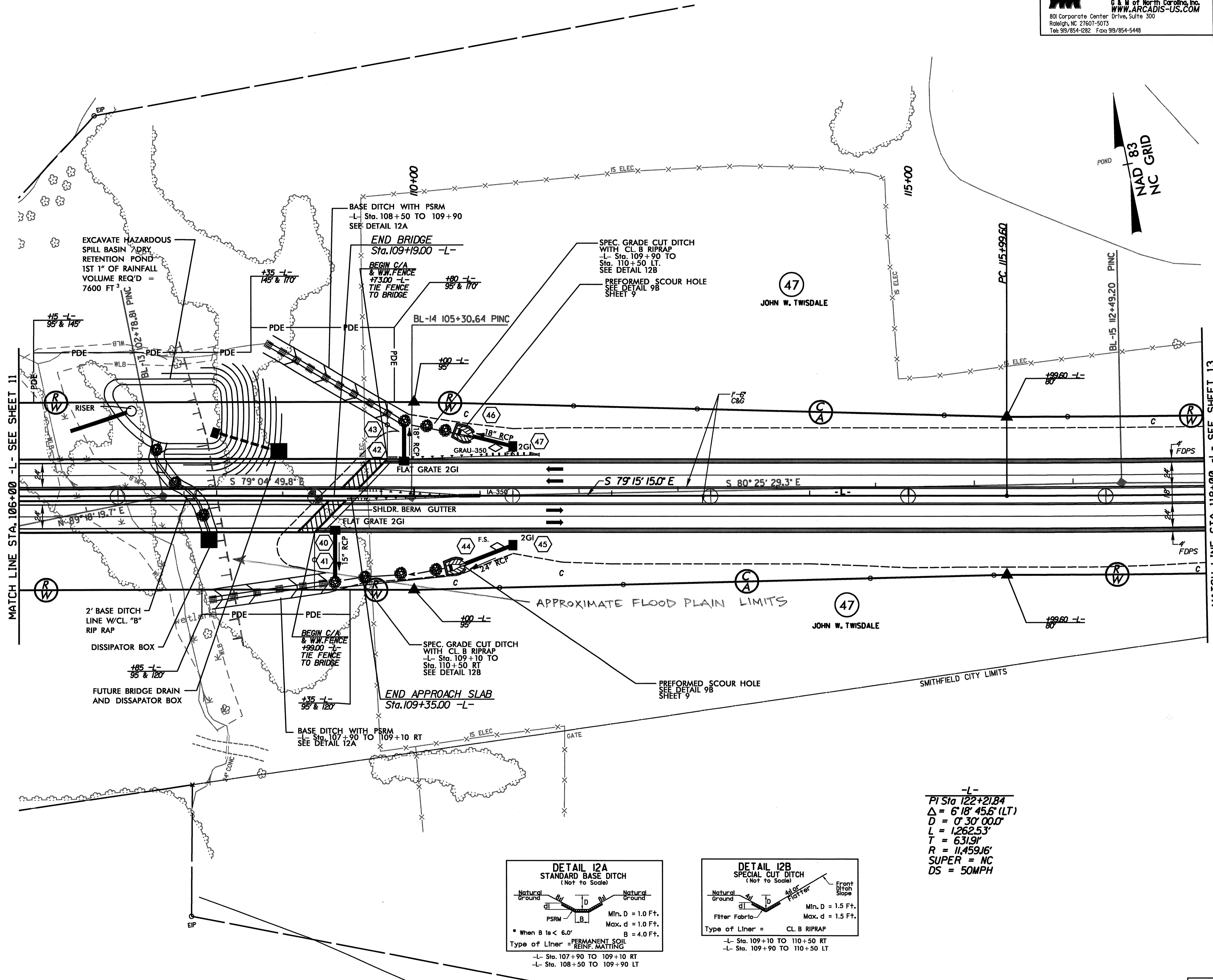
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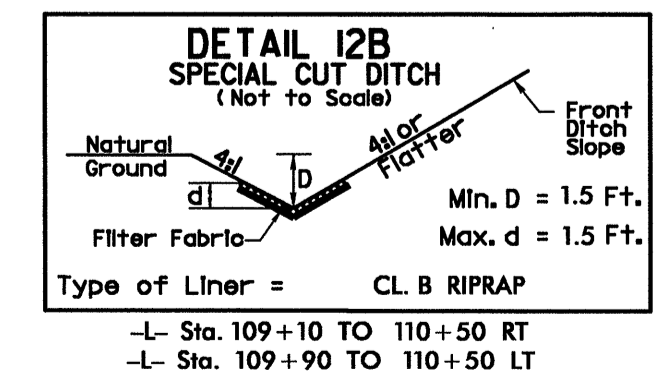
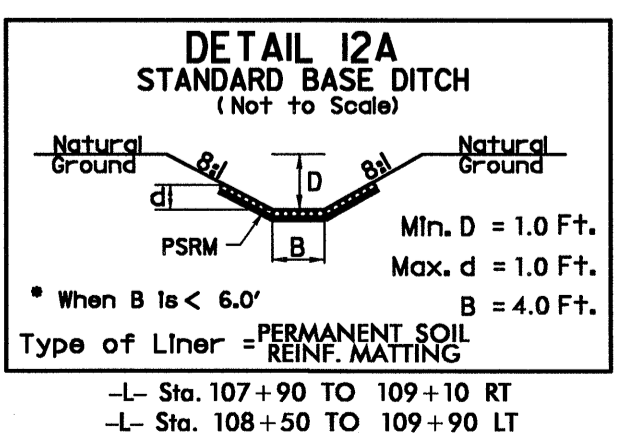
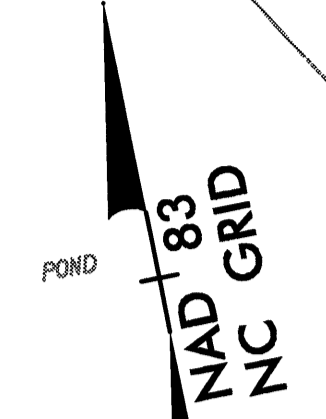
REVISIONS

ARCADIS P.L.L.C.
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SEE SHEETS 17 AND 18 FOR -L- PROFILE



REVISIONS



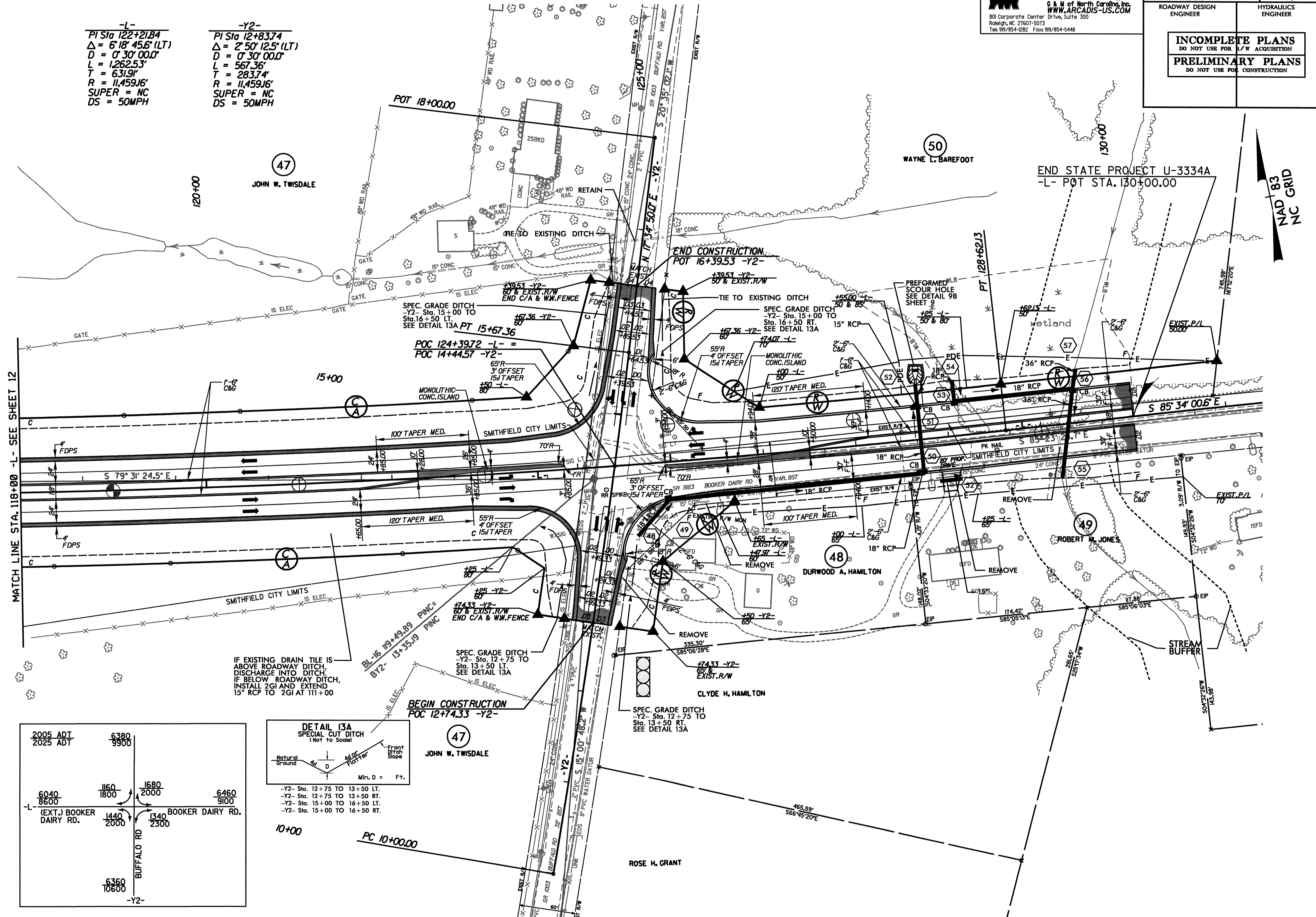
-L-
 Pj Sta 122+21.84
 Δ = 6' 18" 45.6" (LT)
 D = 0' 30" 00.0"
 L = 1262.53'
 T = 631.91'
 R = 11,459.16'
 SUPER = NC
 DS = 50MPH

SEE SHEET 18 FOR -L- PROFILE
SEE SHEET 11 FOR BRIDGE SKETCH

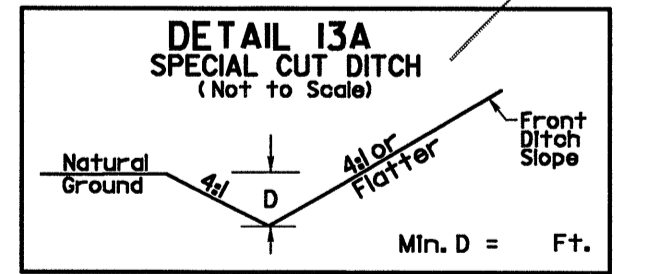
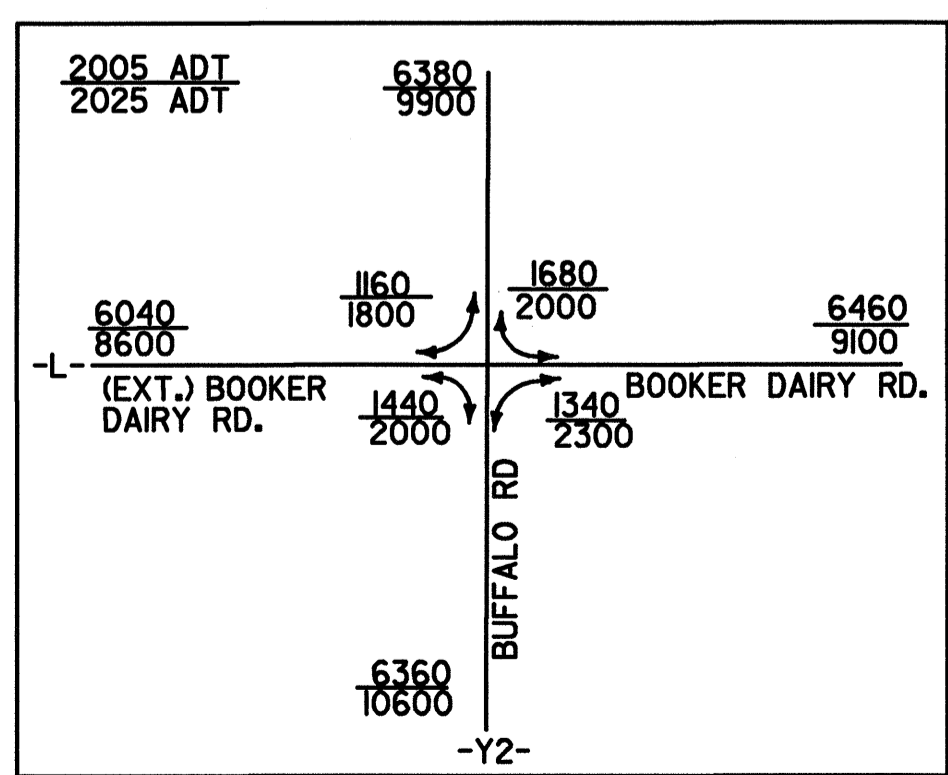
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-L-
 PI Sta 122+21.84
 $\Delta = 6' 18" 45.6' (LT)$
 $D = 0' 30' 00.0"$
 $L = 1,262.53'$
 $T = 6,319.1'$
 $R = 11,459.16'$
 SUPER = NC
 DS = 50MPH

-Y2-
 PI Sta 12+83.74
 $\Delta = 2' 50' 12.5' (LT)$
 $D = 0' 30' 00.0"$
 $L = 567.36'$
 $T = 283.74'$
 $R = 11,459.16'$
 SUPER = NC
 DS = 50MPH



MATCH LINE STA. 118+00 -L- SEE SHEET 12



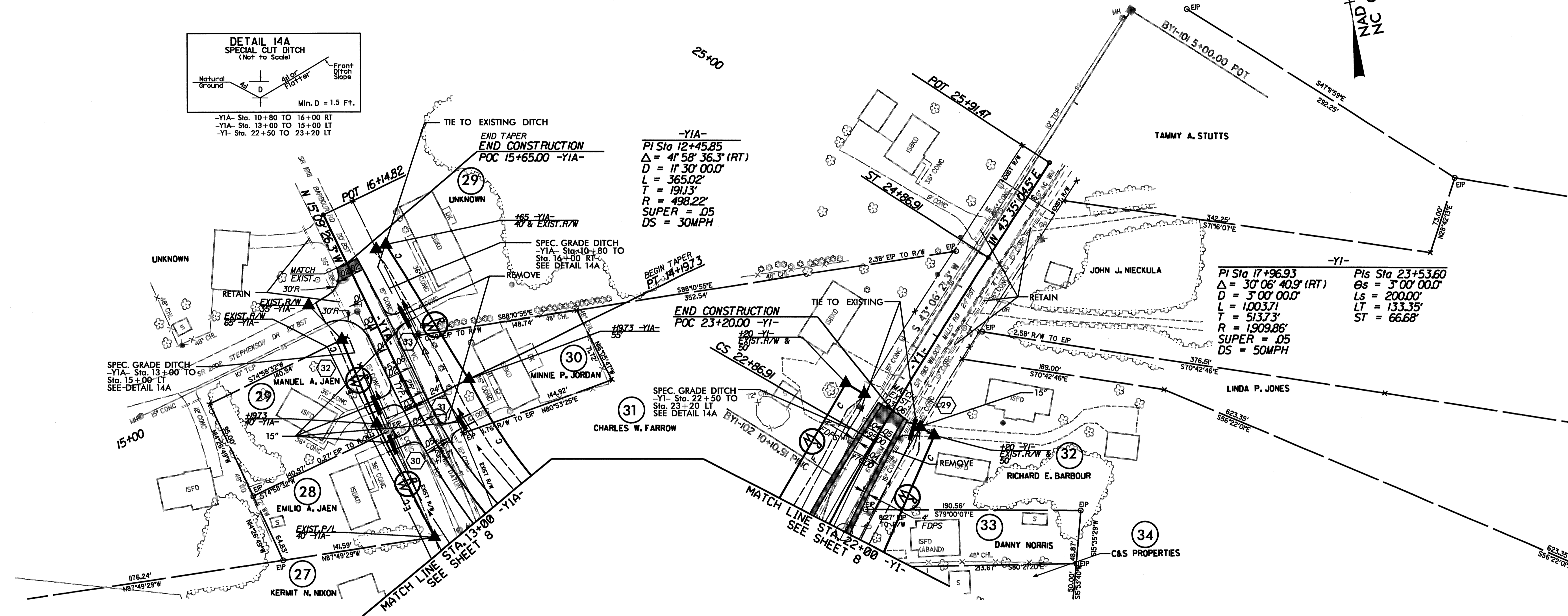
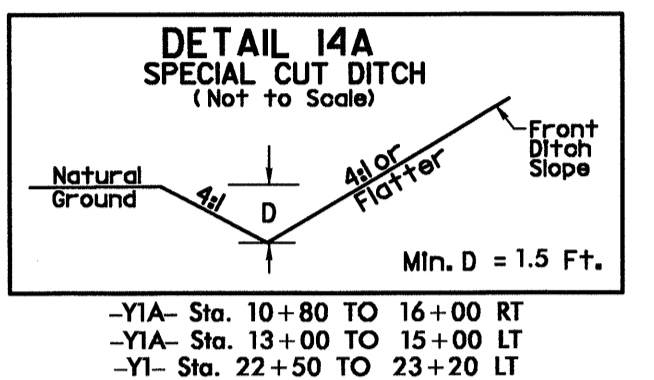
-Y2- Sta. 12+75 TO 13+50 LT.
 -Y2- Sta. 12+75 TO 13+50 RT.
 -Y2- Sta. 15+00 TO 16+50 LT.
 -Y2- Sta. 15+00 TO 16+50 RT.

SEE SHEETS 18 AND 19 FOR -L- PROFILE
 SEE SHEET 21 FOR -Y2- PROFILE

REVISIONS

ARCADIS 04/11/2003 10:00:06 AM
 P:\Projects\U-3334A\Roadway\Roadway\Roadway\U3334a.dwg
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INCOMPLETE PLANS
 DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION



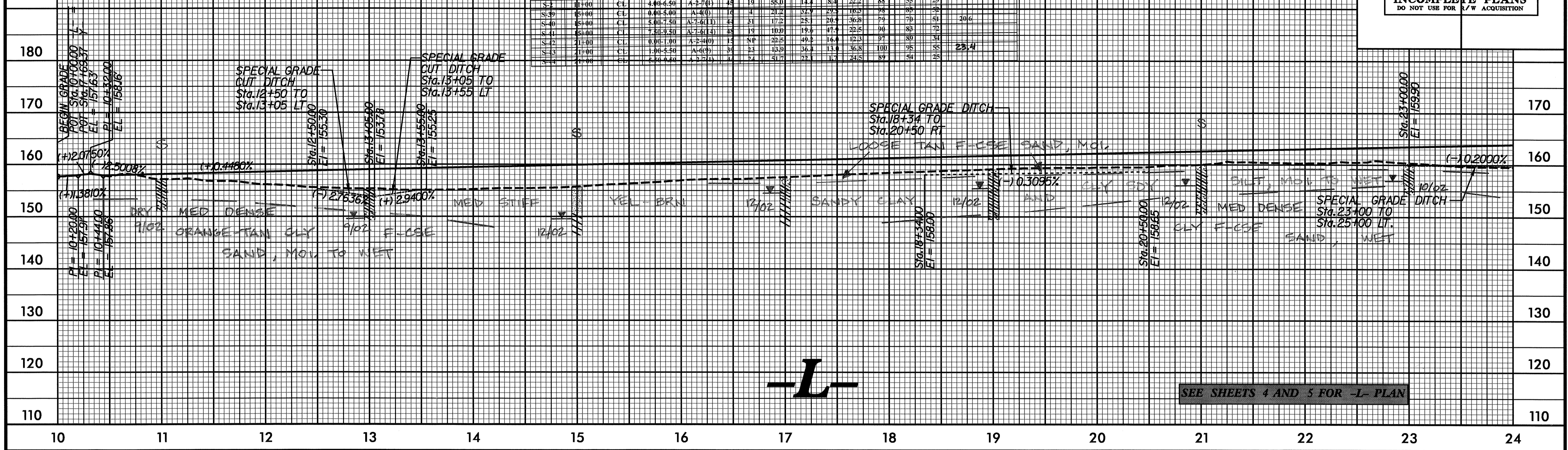
REVISIONS

ARCADIS 04/15/2003 10:00:09 AM
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SEE SHEET 20 FOR -YI- PROFILE
 SEE SHEET 21 FOR -YIA- PROFILE

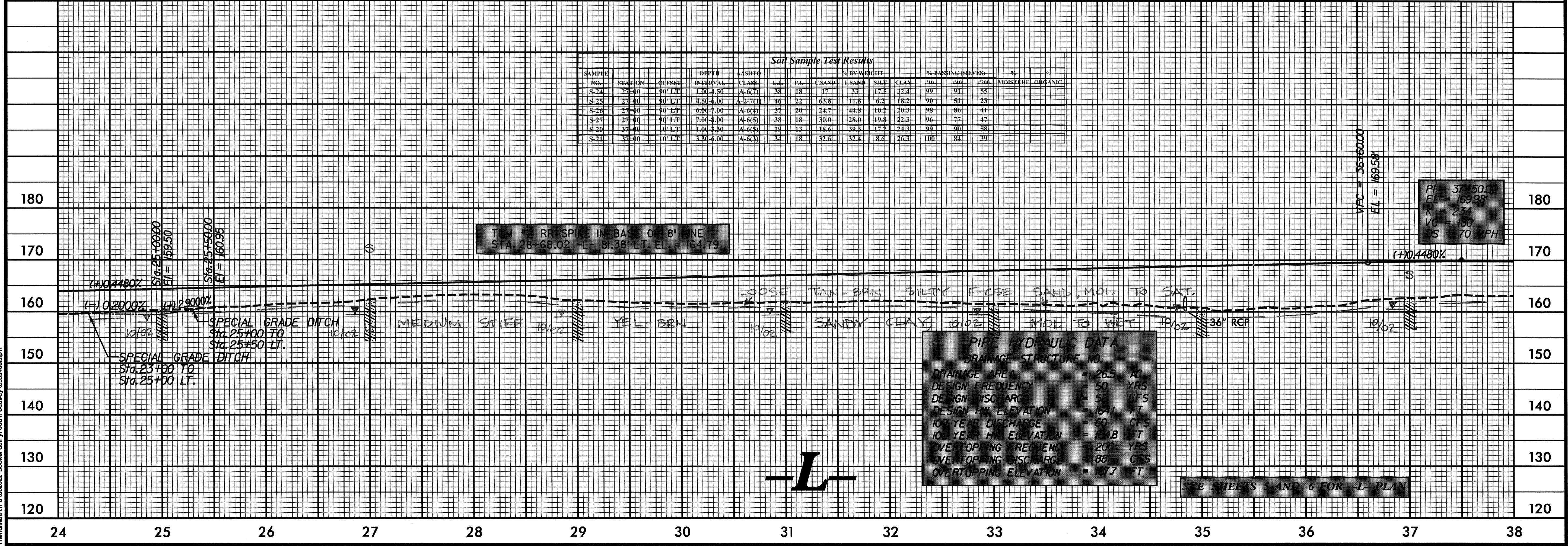
Soil Sample Test Results

SAMPLE NO.	STATION	DEPTH	INTERVAL	CLASS.	ASTM				% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE ORGANIC	
					LL	PL	CS	US	SL	CL	#10	#40	#200	W	U	
S-1	11+00	C.L.	1.00-3.50	A-6(10)	44	22	18.5	33.4	18	34.4	99	93	59			
S-2	11+00	C.L.	4.00-6.50	A-2-7(4)	45	19	55.0	14.4	8.8	22.2	88	55	29			
S-3	15+00	C.L.	0.00-5.00	A-4(0)	16	4	21.2	36.7	23.3	16.3	78	85	38			
S-4	15+00	C.L.	5.00-7.50	A-7-6(1)	43	21	17.2	25.7	24.3	36.8	79	70	51	20.6		
S-4.1	15+00	C.L.	7.50-9.50	A-7-6(1.4)	48	19	10.0	19.9	41.7	22.5	90	83	72			
S-4.2	15+00	C.L.	0.00-1.00	A-2-4(0)	15	NP	22.5	49.2	14.4	12.3	97	89	31			
S-4.3	15+00	C.L.	1.00-5.50	A-6(9)	39	24	13.9	36.1	13.1	36.8	100	95	55	23.4		
S-4.4	15+00	C.L.	5.50-6.00	A-2-7(1)	47	24	31.7	27.1	11.2	24.5	89	84	25			



Soil Sample Test Results

SAMPLE NO.	STATION	DEPTH	INTERVAL	CLASS.	ASTM				% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE ORGANIC	
					LL	PL	CS	US	SL	CL	#10	#40	#200	W	U	
S-24	27+00	90' LT	1.00-4.50	A-6(7)	58	18	17	33	17.5	32.4	99	91	55			
S-25	27+00	90' LT	4.50-6.00	A-2-7(1)	46	22	63.8	11.8	6.2	18.2	90	51	23			
S-26	27+00	90' LT	6.00-7.00	A-6(4)	37	20	24.7	48.8	16.2	30.3	98	86	41			
S-27	27+00	90' LT	7.00-8.00	A-6(6)	38	18	30.0	28.0	19.8	22.3	96	77	47			
S-28	27+00	10' LT	1.00-3.30	A-6(6)	29	13	18.6	30.3	17.7	24.3	99	90	58			
S-21	27+00	10' LT	5.30-6.00	A-4(3)	54	18	32.6	32.4	8.6	26.3	100	84	39			



PIPE HYDRAULIC DATA
 DRAINAGE STRUCTURE NO. _____

DRAINAGE AREA	= 26.5 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 52 CFS
DESIGN HW ELEVATION	= 164J FT
100 YEAR DISCHARGE	= 60 CFS
100 YEAR HW ELEVATION	= 164.8 FT
OVERTOPPING FREQUENCY	= 200 YRS
OVERTOPPING DISCHARGE	= 88 CFS
OVERTOPPING ELEVATION	= 167.7 FT

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Soil Sample Test Results

SAMPLE NO.	STATION	DEPTH	CLASS	% BY WEIGHT				% PASSING (SIEVES)			MOISTURE %	ORGANIC %
				LL	PL	SAND	SILT	CLAY	#20	#40		
S-17	41+10	CL	A-6(4)	27	13	12.9	33.9	17.0	30.2	99	94	58
S-18	41+10	CL	A-7(6)	41	23	19.7	38.9	9.2	52.2	100	93	45
S-19	41+10	CL	A-2(6)	35	19	24.3	43.9	3.1	28.2	98	88	33
S-14	47+00	CL	A-7(6)	41	23	8.3	20.3	27.1	44.3	100	96	77
S-15	47+00	CL	A-6(4)	30	23	8.7	20.7	28.3	42.3	100	95	76
S-16	47+00	CL	A-7(6)	45	29	11.9	24.4	21.5	42.3	99	93	69
S-12	51+10	CL	A-6(4)	32	16	4.0	15.6	31.9	48.5	100	98	84
S-13	51+10	CL	A-7(6)	43	24	5.2	18.0	25.2	43.9	100	96	89

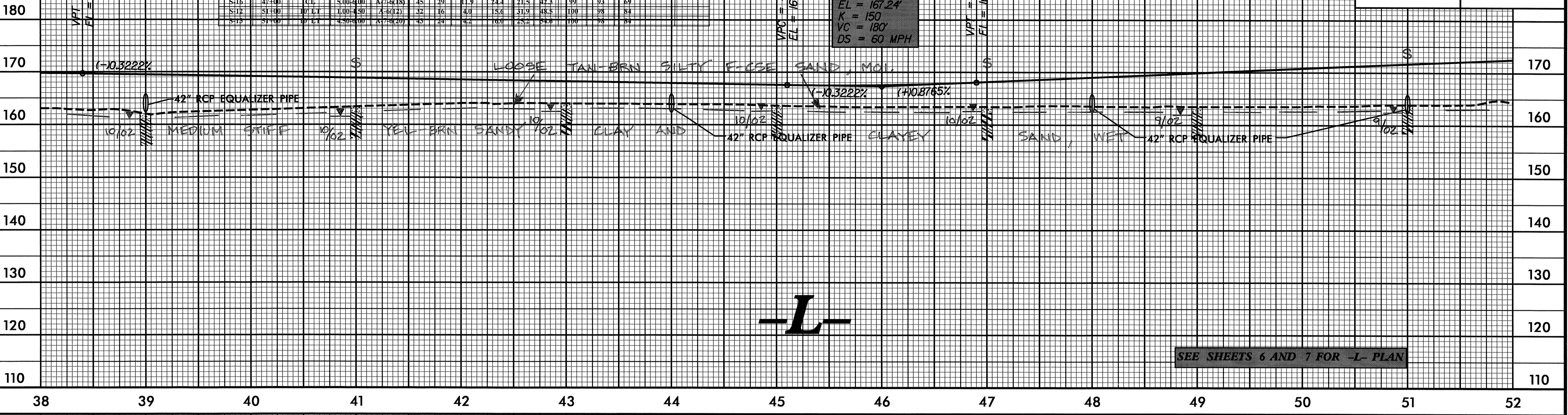
TBM #3 RR SPIKE IN BASE OF 8" RED OAK
 STA. 45+26.00 -L- 141.62' LT. EL. = 165.26

PI = 46+00.00
 EL = 167.24'
 K = 150
 VC = 180'
 DS = 60 MPH

VPT = 38+40.00
 EL = 169.62'

VPC = 45+10.00
 EL = 167.53'

VPT = 46+90.00
 EL = 168.03'



SEE SHEETS 6 AND 7 FOR -L- PLAN

Soil Sample Test Results

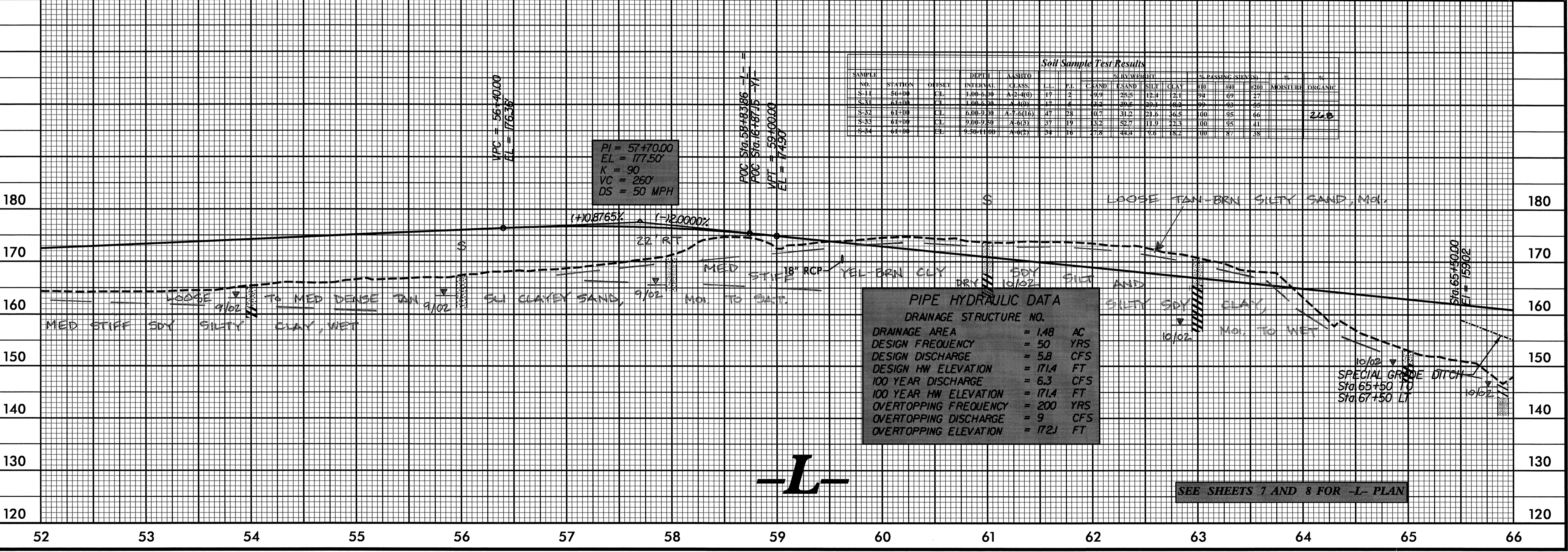
SAMPLE NO.	STATION	DEPTH	CLASS	% BY WEIGHT				% PASSING (SIEVES)			MOISTURE %	ORGANIC %
				LL	PL	SAND	SILT	CLAY	#20	#40		
S-14	54+00	CL	A-2(4)	17	2	19.9	26.5	12.4	2.1	94	49	27
S-33	61+10	CL	A-3(0)	12	2	3.2	30.6	29.4	48.2	99	43	25
S-32	61+10	CL	A-7(6)	47	23	10.7	31.2	23.6	36.5	100	95	66
S-35	61+10	CL	A-6(3)	37	19	3.2	52.7	11.9	2.3	100	95	41
S-34	61+10	CL	A-6(2)	34	16	27.8	48.4	9.6	8.2	100	87	38

PI = 57+70.00
 EL = 177.50'
 K = 90
 VC = 260'
 DS = 50 MPH

VPC = 56+40.00
 EL = 176.36'

POC Sta. 58+83.86 -L-
 POC Sta. 61+87.15 -L-
 VPT = 59+00.00
 EL = 174.90'

PIPE HYDRAULIC DATA
 DRAINAGE STRUCTURE NO. _____
 DRAINAGE AREA = 1.48 AC
 DESIGN FREQUENCY = 50 YRS
 DESIGN DISCHARGE = 5.8 CFS
 DESIGN HW ELEVATION = 171.4 FT
 100 YEAR DISCHARGE = 6.3 CFS
 100 YEAR HW ELEVATION = 171.4 FT
 OVERTOPPING FREQUENCY = 200 YRS
 OVERTOPPING DISCHARGE = 9 CFS
 OVERTOPPING ELEVATION = 172J FT



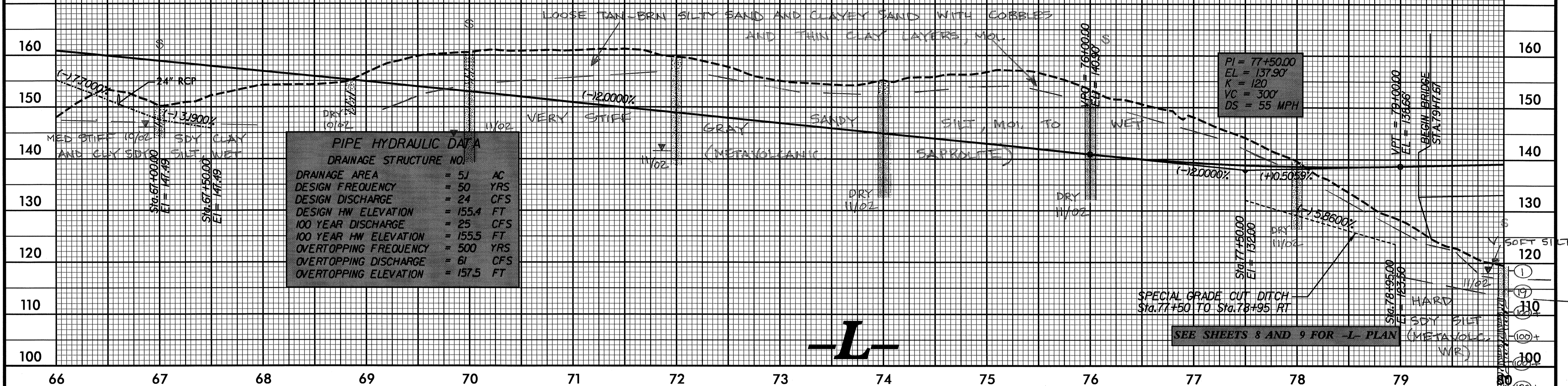
SEE SHEETS 7 AND 8 FOR -L- PLAN

Soil Sample Test Results

SAMPLE NO.	STATION	DEPTH INTERVAL	ASHFTO CLASS	L.L.	P.L.	% BY WEIGHT		% PASSING (SIEVES)			% MOISTURE	% ORGANIC	
						C SAND	F SAND	#10	#40	#200			
S-29	67+00	CL	3.00-4.00	A-6(7)	35	19	0.6	19.5	25.6	26.3	97	47	53
S-30	67+00	CL	4.00-5.00	A-6(10)	38	19	8.3	22.3	57.2	21.2	100	94	87
S-35	70+00	CL	3.00-3.50	A-6(6)	47	NP	6.2	19.2	4.4	8.4	56	24	8
S-36	70+00	CL	3.00-4.00	A-2(6C)	36	19	47.2	15.0	6.7	20.1	80	46	23
S-37	70+00	CL	4.00-6.00	A-2(6C)	28	13	47.6	21.8	8.4	21.1	95	55	22
S-38	70+00	CL	6.00-11.00	A-4(0)	21	NP	5.6	58.2	30.1	6.0	98	38	34
SS-6	80+00	CL	1.00-1.50	A-4(0)	20	4	2.8	27.1	47.4	16.1	100	95	73
SS-7	80+00	CL	3.80-5.50	A-4(1)	23	6	2.0	34.1	39.8	14.1	98	92	61
SS-8	80+00	CL	7.40-8.70	A-4(6)	32	6	3.4	38.0	52.6	8.0	100	100	72

Soil Sample Test Results

SAMPLE NO.	STATION	DEPTH INTERVAL	ASHFTO CLASS	L.L.	P.L.	% BY WEIGHT		% PASSING (SIEVES)			% MOISTURE	% ORGANIC	
						C SAND	F SAND	#10	#40	#200			
SS-1	76+00	CL	1.50-1.80	A-4(1)	33	3	0.2	55.8	38.2	18.6	100	88	43



PIPE HYDRAULIC DATA
 DRAINAGE STRUCTURE NO. 11/02
 DRAINAGE AREA = 51 AC
 DESIGN FREQUENCY = 50 YRS
 DESIGN DISCHARGE = 24 CFS
 DESIGN HW ELEVATION = 155.4 FT
 100 YEAR DISCHARGE = 25 CFS
 100 YEAR HW ELEVATION = 155.5 FT
 OVERTOPPING FREQUENCY = 500 YRS
 OVERTOPPING DISCHARGE = 61 CFS
 OVERTOPPING ELEVATION = 157.5 FT

BRIDGE HYDRAULIC DATA
 DESIGN DISCHARGE = 20,500 CFS
 DESIGN FREQUENCY = 50 YRS
 DESIGN HW ELEVATION = 127.7 FT
 BASE DISCHARGE = 25,100 CFS
 BASE FREQUENCY = 100 YRS
 BASE HW ELEVATION = 129.5 FT
 OVERTOPPING DISCHARGE = 60,000 CFS
 OVERTOPPING FREQUENCY = 500 YRS
 OVERTOPPING ELEVATION = 137.5 FT
 DATE OF SURVEY = SEPT. 2002
 W.S. ELEVATION AT DATE OF SURVEY = 105.6 FT

TBM #5 RR SPIKE IN BASE OF 10' ELM
 STA. 80+51.35 -L- 325.14' RT. EL. = 121.02

Soil Sample Test Results

SAMPLE NO.	STATION	DEPTH INTERVAL	ASHFTO CLASS	L.L.	P.L.	% BY WEIGHT		% PASSING (SIEVES)			% MOISTURE	% ORGANIC	
						C SAND	F SAND	#10	#40	#200			
SS-6	80+00	3' LT	1.00-1.50	A-4(0)	20	4	0.4	27.1	47.4	16.1	100	95	73
SS-7	80+00	3' LT	3.80-5.50	A-4(1)	23	6	2.0	34.1	39.8	14.1	98	92	61
SS-8	80+00	3' LT	7.40-8.70	A-4(4)	32	6	1.4	38.0	52.6	8.0	100	100	72
S-56	88+00	CU	0.00-0.50	A-6(6)	34	15	28.4	18.2	20.7	33.7	100	85	57

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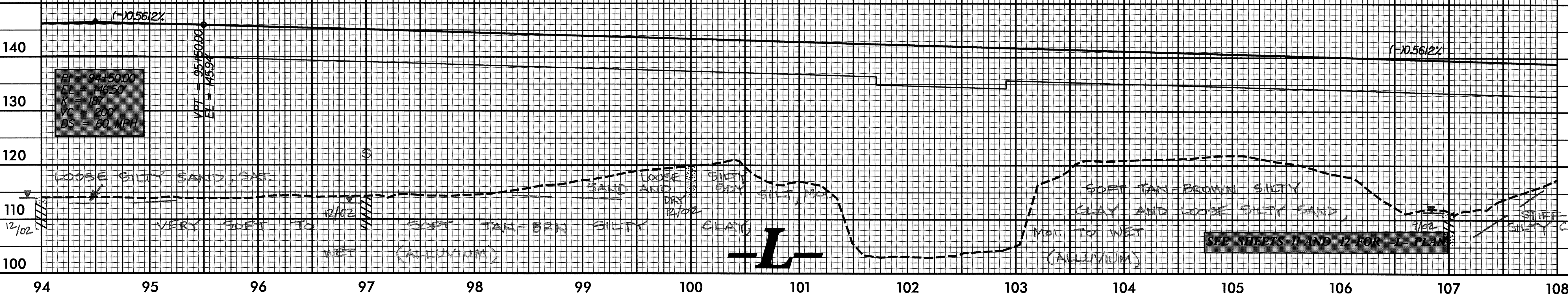
TBM #6 RR SPIKE IN BASE OF 15' POPLAR
 STA. 104+05.09 -L- 337.36' RT. EL. = 124.23

Soil Sample Test Results

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
					CLAY	SILT	SAND	FINES	#10	#40	#200		
S-55	97+00	CU	1.00-6.00	A-7.6(28)	50	24	83	7.8	38.9	39.0	100	98	91

PI = 94+50.00
 EL = 146.50'
 K = 187
 VC = 200'
 DS = 60 MPH

VPT = 95+50.00
 EL = 145.94'

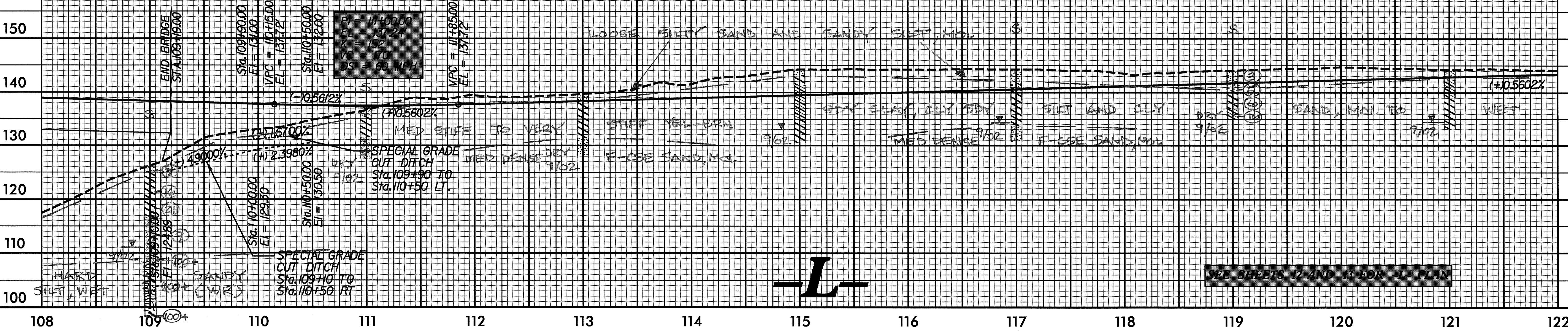


SEE SHEETS 11 AND 12 FOR -L- PLAN

Soil Sample Test Results

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
					CLAY	SILT	SAND	FINES	#10	#40	#200		
SS-1	100+00	CU	1.00-1.50	A-7.6(26)	51	27	80	11.7	55.8	48.5	100	97	99
SS-2	100+00	CU	1.20-1.70	A-4(2)	26	6	1.8	45.9	32.1	30.2	100	100	68
SS-3	111+00	CU	1.00-3.50	A-7.6(14)	48	31	8.9	43.5	19.2	36.4	100	98	56
SS-4	111+00	CU	4.80-8.10	A-4(9)	30	10	2.7	55.6	9.4	22.2	100	98	37
SS-7	117+00	CU	2.00-3.50	A-2.6(4)	33	17	41.6	16.6	9.6	22.2	100	75	33
SS-8	117+00	CU	1.50-1.60	A-7.6(13)	46	29	11.7	28.9	21.9	38.4	100	96	65
SS-3	119+00	CU	1.00-1.50	A-2.4(0)	14	NP	29.7	89.8	5.5	6.1	100	63	13
SS-4	119+00	CU	5.00-6.50	A-7.6(21)	44	26	3.6	21.0	34.9	40.4	100	98	82
SS-5	119+00	CU	7.50-9.00	A-6(5)	31	15	4.6	46.5	26.7	36.3	100	100	61

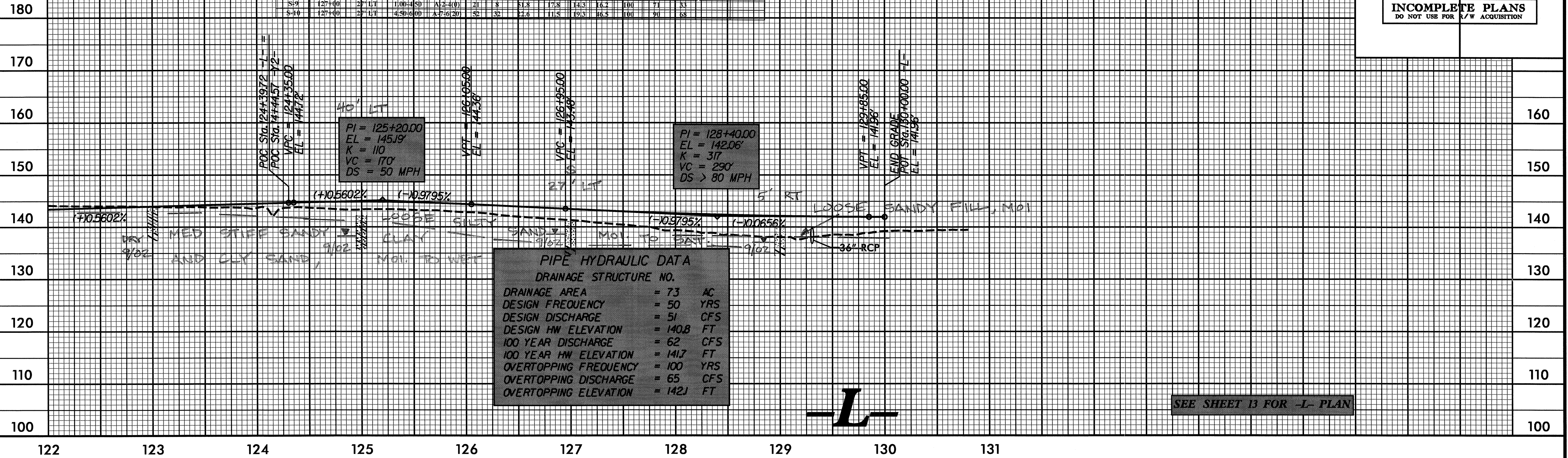
TBM #7 RR SPIKE IN BASE OF 30' OAK
 STA. 120+40.00 -L- 526.08' RT. EL. = 146.65



SEE SHEETS 12 AND 13 FOR -L- PLAN

Soil Sample Test Results

SAMPLE NO.	STATION	DEPTH	INTERVAL	CLASS	% BY WEIGHT				% PASSING (SIEVES)		MOISTURE	ORGANIC	
					LL	PL	CSAND	FSAND	SILT	CLAY			#10
5-9	127+10	2' LT	1:00-4:50	A-2-4(0)	21	8	81.8	17.8	14.3	6.2	100	77	53
5-10	127+10	2' LT	4:50-6:00	A-7-6(20)	32	32	22.6	11.5	19.3	16.5	100	90	68



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO.

DRAINAGE AREA	= 73	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 51	CFS
DESIGN HW ELEVATION	= 140.8	FT
100 YEAR DISCHARGE	= 62	CFS
100 YEAR HW ELEVATION	= 141.7	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 65	CFS
OVERTOPPING ELEVATION	= 142.1	FT

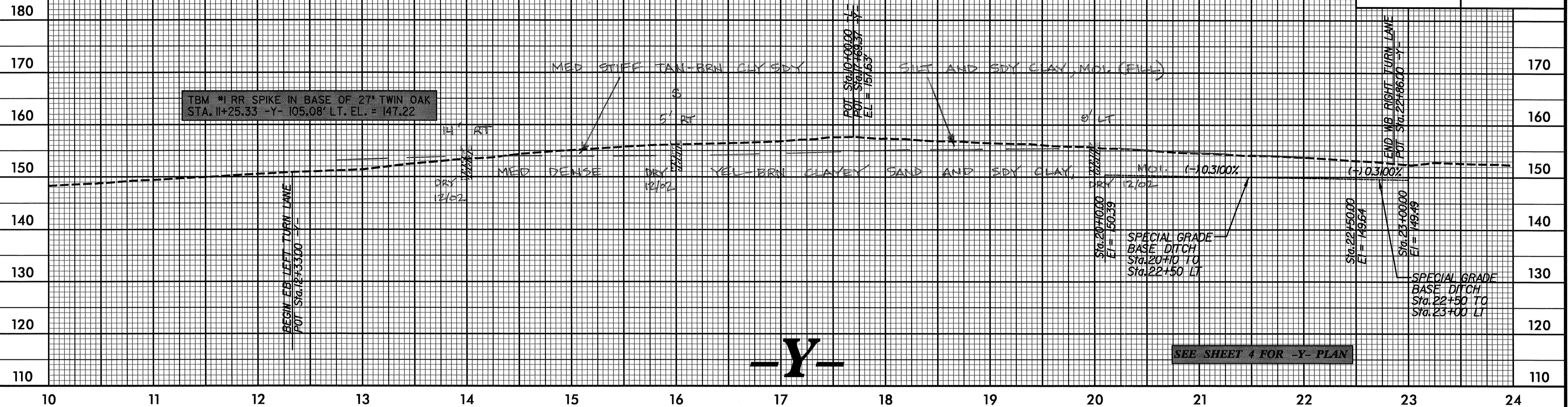
SEE SHEET 13 FOR -L- PLAN

-L-

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
 DO NOT USE FOR R/W ACQUISITION

Soil Sample Test Results

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS	LL	PI	CSAND	ESAND	SILT	CLAY	% PASSING (SIEMES)	% MOISTURE	% ORGANIC
S-45	16+00	S RT	0.00-0.50	A-4(0)	10	5	27.3	36.6	15.8	40.4	88	7.4	3
S-46	16+00	S RT	0.50-3.00	A-6(5)	33	18	28.0	30.0	13.4	28.6	87	7.2	4
S-47	16+00	S RT	3.00-5.50	A-2(7.2)	53	26	35.0	11.8	2.6	30.6	78	4.4	2
S-48	16+00	S RT	5.50-6.00	A-2(7.6)	44	21	27.0	15.9	1.6	32.5	80	4.7	4.3

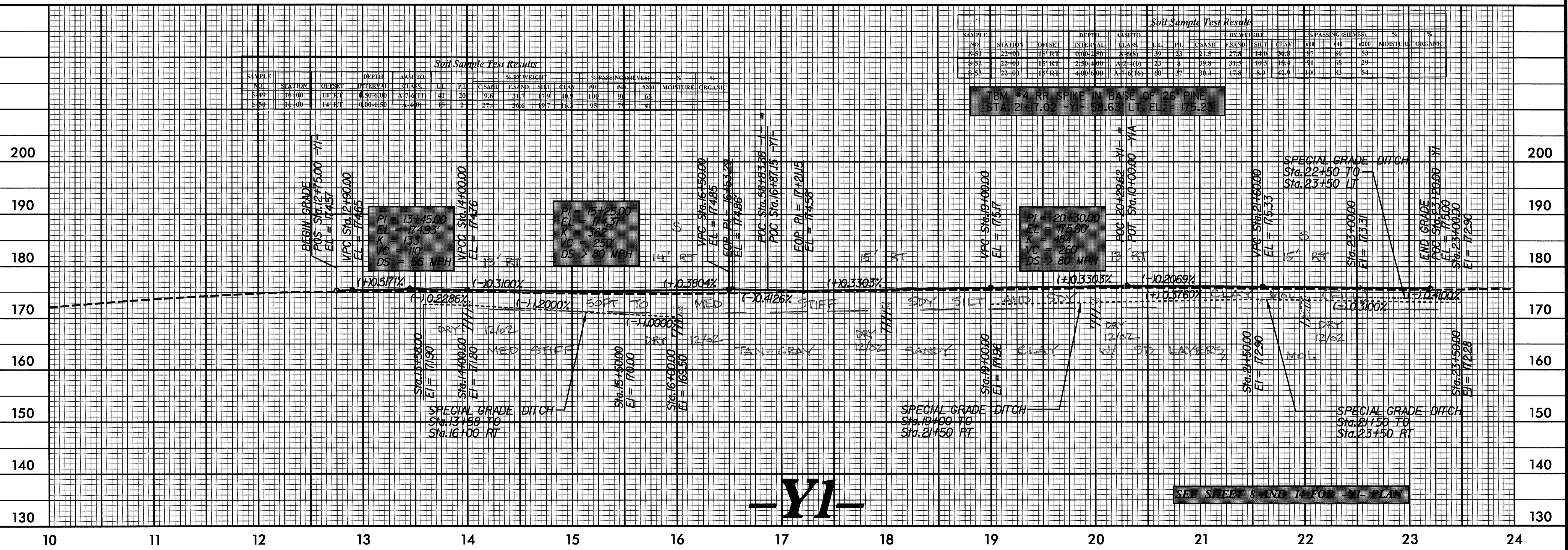


Soil Sample Test Results

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS	LL	PI	CSAND	ESAND	SILT	CLAY	% PASSING (SIEMES)	% MOISTURE	% ORGANIC
S-49	16+00	14' RT	0.50-6.00	A-7(0.71)	41	20	9.6	31.7	17.9	40.9	100	9.6	6.3
S-50	16+00	14' RT	0.00-1.50	A-4(0)	15	2	27.3	36.6	19.7	16.3	95	7.3	4

Soil Sample Test Results

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS	LL	PI	CSAND	ESAND	SILT	CLAY	% PASSING (SIEMES)	% MOISTURE	% ORGANIC
S-51	22+00	15' RT	0.00-2.50	A-3(8)	39	23	21.8	27.8	14.0	36.8	97	8.6	5.3
S-52	22+00	15' RT	2.50-4.00	A-2(4.0)	25	8	22.8	31.5	10.3	18.4	91	5.8	2.9
S-53	22+00	15' RT	4.00-6.00	A-7(6.76)	60	57	30.4	17.8	8.9	42.9	100	8.3	5.1

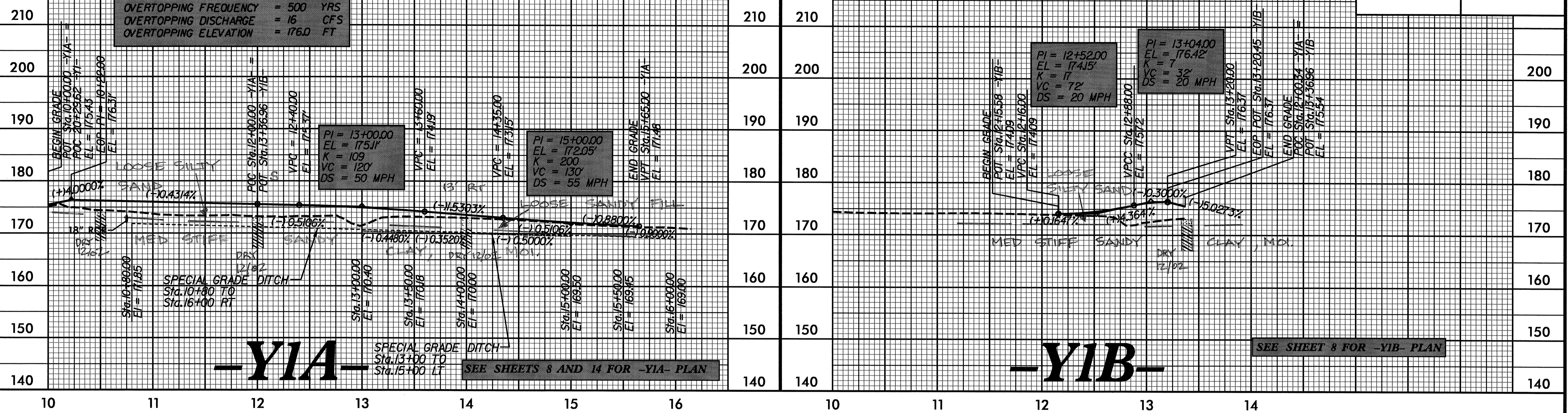


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PIPE HYDRAULIC DATA
 DRAINAGE STRUCTURE NO. _____
 DRAINAGE AREA = 0.53 AC
 DESIGN FREQUENCY = 50 YRS
 DESIGN DISCHARGE = 2.9 CFS
 DESIGN HW ELEVATION = 173.4 FT
 100 YEAR DISCHARGE = 3.1 CFS
 100 YEAR HW ELEVATION = 173.7 FT
 OVERTOPPING FREQUENCY = 500 YRS
 OVERTOPPING DISCHARGE = 16 CFS
 OVERTOPPING ELEVATION = 176.0 FT

Soil Sample Test Results

SAMPLE NO.	STATION	DEPTH	INTERVAL	ASHFTO		% BY WEIGHT				% MOISTURE		% ORGANIC	
				CLAY	SILT	CLAY	SAND	SILT	CLAY	W	P		
3-54	12+400	CL	1.00-3.00	46.07	29	14	0.2	28.6	28.5	22.7	100	96	69

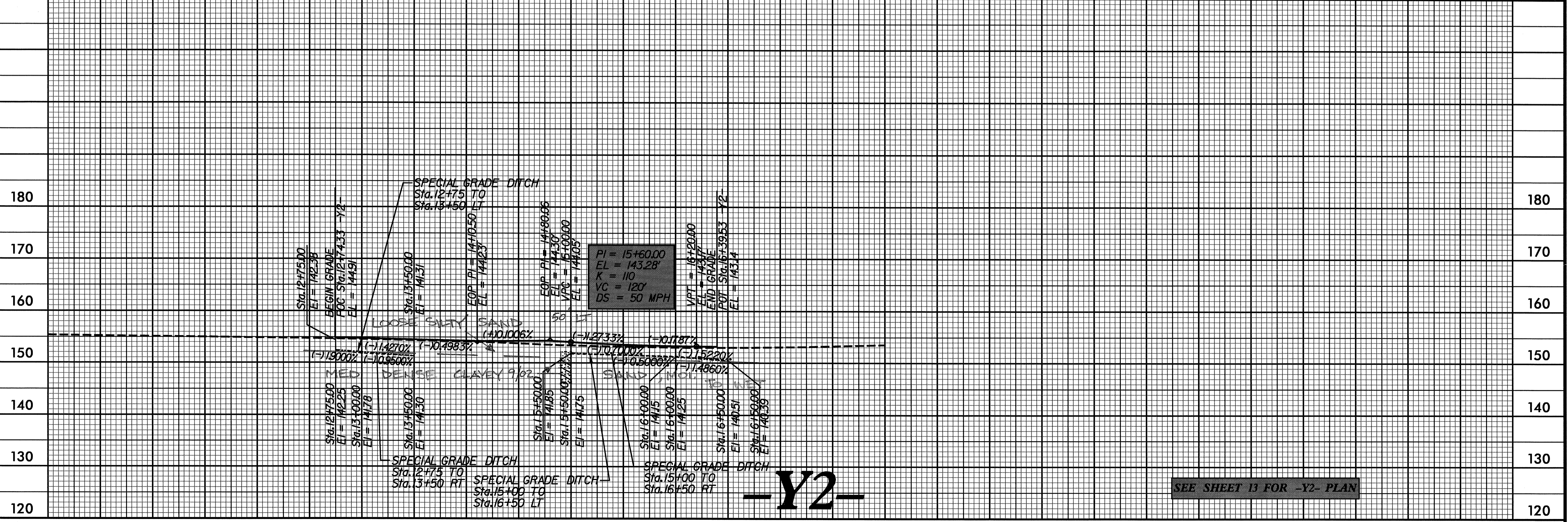


-Y1A-

-Y1B-

SEE SHEETS 8 AND 14 FOR -Y1A- PLAN

SEE SHEET 8 FOR -Y1B- PLAN



-Y2-

SEE SHEET 13 FOR -Y2- PLAN

ARCADIS, G&M Date: 10/01/20 AM File: \\na1\c\p\1572003\Drawings\1572003\booker\dwg\roadway\3334\21.dwg