

DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

SUMMARY OF EARTHWORK
 IN CUBIC YARDS

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

CONSTRUCTION REVISION: THE CROSSOVER ALIGNMENTS, -L-CR-WBL- HAVE BEEN REVISED TO AVOID WETLAND IMPACTS AROUND
 -L- STA. 453+50.00 RT. THIS REVISION AFFECTS EARTHWORK FROM -L- 430+00.00 TO 443+89.29 LT AND -L- 443+89.29 TO
 456+118.6 LT & RT. PROJECT TOTALS HAVE BEEN UPDATED. JPM 7/7/2020

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
PHASE II					
-L- 61+00 TO 91+00 LT	12,243	1,552	14,938	13,853	12,710
-L- 91+00 TO 103+50 LT	3,257	508	2,795	1,018	1,988
-L- 103+50 TO 121+00 LT	11,112	2,421	4,809	4,200	12,924
-Y4- 10+47 TO 12+00	56		385	329	
-L- 121+00 TO 130+00 LT	5,527	631	9,230	9,212	6,140
-DET_2- 13+00 TO 25+04.76	47		225	178	
-DET_3- 10+00 TO 17+84.86	1,790		680		1,110
-L- 150+00 TO 156+50 LT	514	582	15,864	15,472	704
-Y6- 10+47.63 TO 12+00	9	153	1,141	1,138	159
-L- 280+00 TO 286+00 LT	1,592	16	4,735	3,427	300
-L- 286+00 TO 310+00 LT	2,988	429	13,591	13,338	3,164
-Y15- 11+65 TO 13+00	39	223	375	342	229
-L- 310+00 TO 340+00 LT	1,612		35,111	34,170	671
-L- 340+00 TO 346+00 LT	585	7	2,300	1,807	99
-L- 346+00 TO 370+00 LT	1,393	245	8,456	8,122	1,304
-Y16- 20+68.76 TO 25+70	283	194	585	456	348
-L- 370+00 TO 400+00 LT	2,303	768	30,930	30,750	2,891
-L- 400+00 TO 406+00 LT	416	30	2,789	2,789	446
-L- 406+00 TO 430+00 LT	2,705	460	14,783	14,783	3,165
-L- 430+00 TO 443+89.29 LT	2,361	1,786	7,535	7,321	3,933
-L- 443+89.29 TO 456+11.86 LT/RT	4,496	759	4,330	3,390	4,315
-Y18- 10+48.24 TO 11+65	2	52	204	202	52
PHASE II SUBTOTAL	55,330	10,816	175,790	166,296	56,652

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
PHASE III					
-Y2- 13+00 TO 13+93.92	30		149	119	
-L- 37+00 TO 62+50 RT	660	1	32,590	31,987	58
-L- 125+00 TO 130+00 RT	80	362	9,555	9,555	442
-L- 150+00 TO 156+50 RT	2,011	1,249	8,494	6,895	1,661
-DET_2 REMOVAL-	180		59		121
-DET_3 REMOVAL-	544		2,238	1,694	
PHASE III SUBTOTAL	3,505	1,612	53,083	50,249	2,282
SUMMARY TOTAL	236,113	69,350	2,905,636	2,837,048	236,874
MATERIAL FOR SHOULDER CONSTRUCTION					
ADD'L UNDERCUT (CONTIGENCY FOR EMBANKMENT STABILITY)		10,000	12,500	12,500	10,000
ADD'L UNDERCUT (CONTIGENCY FOR SUBGRADE STABILITY)		5,000	6,250	6,250	5,000
ADD'L UNDERCUT (GRADE POINT UNDERCUT)		3,000	3,750	3,750	3,000
SELECT GRANULAR MATERIAL IN LIEU OF BORROW			-92,500	-92,500	
SELECT GRANULAR MATERIAL, CLASS III			-10,700	-10,700	
WASTE IN LIEU OF BORROW				-1,562	-1,562
PROJECT TOTAL	236,113	87,350	2,901,611	2,831,461	253,312
5% TO REPLACE TOPSOIL ON BORROW PIT					
				141,573	
GRAND TOTAL	236,113	87,315	2,901,611	2,973,034	253,312
SAY	250,000	94,000		3,125,000	
PAVEMENT STRUCURE VOLUME = 100,000 CY					
DDE = 18,460 CY					

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
 FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
 W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
 G = GATING IMPACT ATTENUATOR TYPE 350
 NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS						IMPACT ATTENUATOR TYPE 350			RELAP GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMARKS				
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GREU TL-3	CAT-1	B-77											PERMITTED NO.	G	NG
L	17+00.00	195 RPD 16+00.00	RT	425.00			18+00.00	195 RPD 16+00	10	13	50		1		1	1									603					
L	19+62.21	21+99.71	RT	237.50			21+99.71		4	13	214.63		4.29		1	1									211					
L	19+41.93	21+79.43	LT	237.50				21+79.43	4	13		214.63	4.29	4.29	1	1									224					
L	24+77.77	27+15.27	LT	237.50			24+77.77		4	13	214.63		4.29		1	1									274					
L	24+97.72	195 RPA 14+46.93	RT	400.00	50		195 RPD 14+40	24+97.72	4	13	50	300	1	6	1		1								250	(20) 8' POSTS ARE REQUIRED AT RETAINING WALL				
L	195 RPA 13+94.94	29+50.14	RT	287.50			195 RPA 14+70.00	29+50.14	10	13	50		1		1	1									490					
L	81+91.16	87+67.16	RT	575.00			84+00.00	87+17.16	10	13	50	50	1	1	2										302					
L	84+42.13	88+02.63	LT	362.50			85+70.38	85+99.37	10	13	50	50	1	1	2										229	GREU-3 @ TRAILING REQ'D FOR CONST. PHASING				
L	137+00.00	144+62.50	RT	762.5			138+50.00	144+75.00	10	13	50		1		1	1														
L	140+00.00	146+00.00	LT	600.00			144+50.00	140+00.00	10	13	50		1		1	1														
L	150+43.90		RT	62.50																										
L	166+76.25	169+91.75	RT	312.50			169+91.75		10	13	50		1		1		1													
L	166+68.25	169+68.25	RT MED	300.00			169+68.25		4	13	277.13		5.54		1		1							300			REQUIRED FOR CONST. PHASING			
L	166+44.74	169+44.74	LT MED	300.00			169+44.74		4	13	277.13		5.54		1		1						300				REQUIRED FOR CONST. PHASING			
L	167+33.73	169+21.23	LT	187.50				169+21.23	10	13	50		1		1		1													
L	170+49.23	191+27.35	LT	2087.50			170+49.23	191+27.35	6	13		200	4				2													
L	170+72.74	173+72.74	LT MED	300.00			170+72.74		4	13	277.13		5.54		1		1													
L	170+96.25	173+96.25	RT MED	300.00			170+96.25		4	13	277.13		5.54		1		1						300				RELAPPING REQUIRED			
L	171+19.75	191+37.34	RT	2025.00			191+37.34	171+19.75	6	13	200		4				2													
L	188+33.78	191+33.00	RT MED	300.00			191+33.00		4	13	277.13		5.54		1		1													
L	193+88.18	197+88.25	LT	475.00			193+88.18	197+88.25	6	13							2													
L	193+91.72	197+88.27	LT MED	475.00			193+91.72	197+88.27	4	13							2													
L	193+94.64	197+88.29	RT MED	475.00			197+88.29	193+94.64	4	13							2													
L	193+98.18	197+88.32	RT	475.00			197+88.32	193+23.23	6	13							2													
L	198+92.00	201+42.00	LT	250.00			198+92.00		6	13	227.13		4.34		1		1													
L	198+92.00	201+92.00	LT MED	300.00			198+92.00		4	13	277.13		5.54		1		1													
Y9RPD	10+00.00	20+25.00	LT	1025.00			18+75.00	11+50.00	12	15	50		1		1	1														
Y13A	19+75.00	27+28.46	RT	750.00			21+00.00	26+00.00	6	9	50	50	1	1	2															
L	248+00.00	253+50.00	LT	550.00			252+00.00	248+00.00	10	13	50		1		1	1														
L	282+62.02	288+12.02	RT	600.00			284+12.02	290+12.02	10	13	50	50	1		2										492					
L	282+92.67	289+92.67	LT	700.00			287+42.67	288+42.67	10	13	50		1		1	1									427					
Y9	30+45.00																								26					
L	27+58.14	29+79.34	RT																						677					
SUB TOTAL				16,375	50																									
LESS ANCHOR DEDUCTIONS																														
GREU TL-3																														
CAT-1																														
B-77																														
TOTAL SAY				14,390.625	50													27	10	25						900	4,205			
TOTAL SAY				14,400	50																					900	4,300			
ADDITIONAL GUARDRAIL POSTS = 15 EA																														

12/06/07

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

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. **R-2582A** SHEET NO. **3B-04**
 Prepared in the Office of: **SUMMIT**
NC FIRM LICENSE No. P-0339
 504 Meadows Road, Drive
 Hillsborough, NC 27278
 (919) 732-3883
 (919) 732-6676 (FAX)

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD ²
L	17+93	18+63	RT	21.22
I95_RPC	12+47	13+17	RT	23.36
I95_RPC	13+40	13+47	LT	1.08
RPCD_R			CL	450.42
I95_RPD	12+19	17+40	RT	1043.87
I95_RPB	17+03	17+66	RT	52.29
RPAB_R			CL	478.75
I95_RPA	16+39	16+45	LT	0.77
L	29+55	30+18	RT	58.33
L	30+55	32+71	RT	349.22
L	32+95	38+08	RT	1723.37
L	33+85	34+39	CL	58.75
L	39+01	44+67	RT	351.50
L	43+61	45+22	CL	29.90
L	44+90	45+51	RT	4.35
L	51+03	56+00	RT	602.76
L	60+52	65+19	CL	842.11
L	80+88	91+33	CL	159.15
L	107+00	109+00	LT	553.80
L	123+31	127+79	CL	658.04
L	127+84	131+05	RT	954.03
L	150+45	152+69	RT	52.19
L	152+93	154+24	CL	194.92
L	154+29	156+45	LT	386.66
Y9	13+00	14+85	RT	37.33
Y9	21+62	23+56	RT	26.55
Y9	26+53	28+40	RT	10.85
Y9	28+85	29+51	RT	12.33
Y9RPD_R			CL	303.32
Y9RPA_R			CL	234.95
Y10	10+59	11+30	RT	4.66
Y10	10+59	11+30	LT	6.76
L	268+41	275+77	LT	2257.30
Y13	11+81	13+78	LT	207.84
Y13	11+76	13+44	RT	509.13
L	275+95	288+39	LT	2383.18
L	299+35	316+79	CL	626.26
L	299+27	305+77	LT	133.11
Y15	10+60	11+65	CL	1061.48
Y15	12+29	13+00	RT	40.03
L	322+92	324+65	CL	157.12
Y16	18+00	19+08	LT	18.72
Y16	20+69	23+00	RT	567.06
L	331+85	333+26	CL	77.11
L	334+24	352+50	CL	3478.78
Y17	12+95	13+47	CL	263.59
L	354+08	375+67	LT	3383.80
L	379+67	387+47	CL	1661.82
L	387+58	403+25	LT	2699.71
L	402+50	407+00	LT	1397.63
L	415+00	419+00	LT	1236.32
L	423+20	441+17	LT	3613.72
L	442+70	447+50	CL	1438.74
DET 2	124+00	131+20	CL	876.14
DET 3	11+10	17+87	CL	1815.45
DET 4A	175+25	185+07	CL	844.62
DET 4B	175+55	182+79	CL	768.71
DET 5	247+47	253+42	CL	600.58
TOTAL:				41,805.57
SAY:				41,810.00

SUMMARY OF BREAKING EXISTING ASPHALT PAVEMENT

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD ²
I95_RPD	13+99	17+50	CL	838.46
I95_RPD	14+50	16+25	CL	448.60
L	30+95	32+45	RT	239.05
L	33+50	35+00	RT	303.88
L	39+00	43+00	RT	1451.48
L	43+00	61+17	RT	4126.50
Y3	10+45	11+00	CL	181.28
L	81+00	90+00	LT	2374.36
L	124+50	125+75	LT	248.65
L	126+72	128+68	RT	321.84
L	151+84	153+70	RT	410.86
L	153+59	154+88	LT	207.88
Y6	10+86	11+00	LT	76.46
L	281+79	292+50	LT	2965.05
L	301+00	341+00	LT	11576.61
Y16	18+50	19+00	CL	165.08
L	357+00	382+54	LT	4199.94
L	372+55	382+64	LT	2074.80
L	385+34	389+81	LT	702.24
L	393+23	402+50	LT	1778.39
L	407+00	415+00	LT	2507.98
L	419+00	428+50	LT	2697.28
L	452+00	454+50	LT	778.78
DET 1	10+00	16+65	CL	1414.14
DET 2	121+00	124+00	CL	932.97
TOTAL:				41,735.51
SAY:				41,740.00

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	LENGTH
L	17+35	19+93	RT	319.0
L	20+42	21+83	RT	145.0
L	19+94	21+60	LT	185.0
L	24+96.52	26+76	LT	190.0
L	25+12	27+05.23	RT	213.0
L	85+02.35	87+17.24	RT	215.0
L	85+02.35	87+17.24	LT	215.0
L	139+38.34	144+75.69	RT	525.0
L	167+38.15	169+66.41	RT	228.0
L	171+41.72	191+13.11	RT	1987.0
L	170+75	191+03.60	LT	2014.0
L	194+22	197+64.14	RT	343.0
L	194+12	197+64.07	LT	352.0
L	248+45	252+00	LT	355.0
L	284+45	288+00	RT	354.0
I95_RPA	14+45	16+34	RT	206.0
Y13A	20+45	26+00	RT	555.0
TOTAL:				8401.0
SAY:				8401

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 R5-2582A-3B-04-summ.dgn
 sara@dot.gov

78DVIY042018A

COMPUTED BY: Summit Design & Engineering Services DATE: 6/22/2020
CHECKED BY: DATE:

PROJECT NO. R-2582A SHEET NO. 3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Side Drain Pipe (RCP, CSP, CAAP, HDPE, or PVC), C. S. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, ENDWALLS, DRAINAGE STRUCTURE, MASONRY, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, GRATE TYPE, ANGLE VANE GRATES AND FRAMES, T.B.D.I. FOR STEEL GRATES, TEMP STEEL PLATE COVER MASONRY DRAINAGE, M.H. FRAME AND COVER, 36" RCP JACK AND BORE, 15" SIDE DRAIN PIPE ELBOW, 18" C.S. ELBOW, 24" C.S. ELBOW, 30" C.S. ELBOW, BERM DITCH OUTLET, MODIFIED CONCRETE FLUME, FLOWABLE FILL, CONCRETE COLLARS, CONCRETE AND BRICK PIPE PLUG, PIPE REMOVAL, REMARKS, ABBREVIATIONS.

SHEET TOTALS

78DIV042018A

COMPUTED BY: Summit Design & Engineering Services DATE: 6/22/2020
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. R-2582A SHEET NO. 3D-2

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Side Drain Pipe, C. S. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, GRADE TYPE, and REMARKS. Includes a 'SHEET TOTALS' row at the bottom.

SHEET TOTALS

1544 156 108 256 160 588

15 6.0

3 3 12 2

10

4

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COMPUTED BY: Summit Design & Engineering Services DATE: 6/22/2020
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PROJECT NO. R-2582A SHEET NO. 3D-4

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns for Line & Station, Offset, Structure Number, Invert Elevation, Minimum Required Slope, Side Drain Pipe, C.S. Pipe, R.C. Pipe Class III, R.C. Pipe Class IV, Quantities for Drainage Structures, Frame, Grates, and Hood, Concrete Transitional Section, and Remarks. Includes a SHEET TOTALS row at the bottom.

ABBREVIATIONS table listing terms like C.A.A., C.B., C.S., D.I., G.D.I., H.D.P.E., J.B., M.H., N.S., P.V.C., R.C., T.B.D.I., T.B.J.B., W.S. and their corresponding descriptions.

REMARKS

Contractor Design Pipe

78DIV042018A

COMPUTED BY: Summit Design & Engineering Services DATE: 6/22/2020
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PROJECT NO. R-2582A SHEET NO. 3D-7

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns for Line & Station, Offset, Structure Number, Invert Elevation, Minimum Required Slope, Pipe Type (C.S. PIPE, R.C. PIPE CLASS III/IV), Quantities for Drainage Structures, Frame/Grates/Hood, and Remarks. Includes a SHEET TOTALS row at the bottom.

ABBREVIATIONS table listing codes and their corresponding material or structure names, such as C.A.A. for Corrugated Aluminium Alloy and R.C. for Reinforced Concrete.

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COMPUTED BY: Summit Design & Engineering Services DATE: 6/22/2020
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PROJECT NO. R-2582A SHEET NO. 3D-8

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Side Drain Pipe, C. S. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, GRATE TYPE, and REMARKS.

ABBREVIATIONS table listing materials and components like CORRUGATED ALUMINUM ALLOY, CATCH BASIN, CORRUGATED STEEL, etc.

SHEET TOTALS

78DIV042018A

COMPUTED BY: Summit Design & Engineering Services DATE: 6/22/2020
CHECKED BY: DATE:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. R-2582A SHEET NO. 3D-11

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Main data table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Side Drain Pipe, C. S. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, GRAPE TYPE, PIPE REMOVAL, REMARKS.

ABBREVIATIONS: C.A.A. CORRUGATED ALUMINIUM ALLOY, C.B. CATCH BASIN, C.S. CORRUGATED STEEL, D.I. DROP INLET, G.D.I. GRATED DROP INLET, H.D.P.E. HIGH DENSITY POLYETHYLENE, J.B. JUNCTION BOX, M.H. MANHOLE, N.S. NARROW SLOT, P.V.C. POLYVINYL CHLORIDE, R.C. REINFORCED CONCRETE, T.B.D.I. TRAFFIC BEARING DROP INLET, T.B.J.B. TRAFFIC BEARING JUNCTION BOX, W.S. WIDE SLOT

SHEET TOTALS

1543

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COMPUTED BY: Summit Design & Engineering Services DATE: 6/22/2020
CHECKED BY: DATE:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. R-2582A SHEET NO. 3D-12

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Side Drain Pipe, C. S. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, ENDWALLS, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, and REMARKS. Includes a SHEET TOTALS row at the bottom.

ABBREVIATIONS table listing codes like C.A.A., C.B., C.S., D.I., G.D.I., H.D.P.E., J.B., M.H., N.S., P.V.C., R.C., T.B.D.I., T.B.J.B., W.S. and their corresponding descriptions.

COMPUTED BY: Tyler C. Bottoms DATE: 3/14/18
 CHECKED BY: Jinyoung Park DATE: 03/20/19

(5-15-18)

PROJECT NO.
R-2582A

SHEET NO.
3G-1

**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
	CONTINGENCY			SD	2400
				TOTAL LF:	2400

*UD = Underdrain
 *BD = Blind Drain
 *SD = Subsurface Drain

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
			CONTINGENCY	AST	3				500
			CONTINGENCY	ASU(1)	12	500	1000	1500	
			CONTINGENCY	ASU(1)	12	1000	1900	3000	
			TOTAL CY/TONS/SY:		1500	2900**	4500**	0	500

*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)
 *AST = Aggregate Stabilization
 **Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.

**SUMMARY OF
SETTLEMENT GAUGES**

Gauge No.	LINE and Station	Offset	
		Distance FT	Direction LT/RT
1	-L- 191+10±	65±	LT
2	-L- 191+15±	20±	LT
3	-L- 191+20±	20±	RT
4	-L- 191+20±	65±	RT
5	-L- 192+25±	40±	LT
6	-L- 192+30±	40±	RT
7	-L- 193+15±	40±	LT
8	-L- 193+20±	40±	RT
9	-L- 194+05±	65±	LT
10	-L- 194+05±	20±	LT
11	-L- 194+10±	20±	RT
12	-L- 194+15±	65±	RT
13	-L- 197+75±	65±	LT
14	-L- 197+75±	65±	RT
15	-L- 199+05±	65±	LT
16	-L- 199+05±	65±	RT
	TOTAL GAUGES (EACH):	16	

Note : Contractor shall monitor the top of rail elevations at every 100 feet along CSX A-Line (-Y7-) and CSX SA-Line (-Y8-) to 100 feet beyond the retaining walls or embankment fill limits before and during construction of retaining walls or embankment and proposed waiting period. Payment for monitoring top of rail elevations is incidental to the cost of Embankment Settlement Gauges.

SUMMARY OF BRIDGE WAITING PERIODS

Bridge Description	End Bent/ Bent No.	MONTHS
Br. No. 126 on -L- over -Y7- (CSX A-Line), LL, Site 1	EB1, EB2	1
Br. No. 127 on -L- over -Y7- (CSX A-Line), RL, Site 1	EB1, EB2	1
Br. No. 128 on -L- over -Y8- (CSX SA-Line), LL, Site 2	EB1,B1, B2,EB2	5*
Br. No. 129 on -L- over -Y8- (CSX SA-Line), RL, Site 2	EB1,B1, B2,EB2	5*
Br. No. 124 on -L- over -Y9- (US 301), RL	EB1, EB2	4
Br. No. 125 on -L- over -Y9- (US 301), LL	EB1, EB2	4

* Staged construction recommended for approach to Site 2 End Bent 1. See Sheets 2G-2 and 2G-3.

**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	KAPSTONE KRAFT PAPER CORP.
2	4	ANNA R. JONES
3	4	MDT INC.
4	4	LYNN WOODRUFF
5	4	MDT
5A	4	NATIONAL PROPERTIES, INC
7	4	RENA DEVELOPMENT, LLC
7A	4	O. S. SUITER, JR
7B	4	O. S. SUITER, JR
8	4	NEW DIXIE OIL CORP.
9	4	W. J. LONG & JUNE LONG (NO CLAIM)
9A	4	OAK GROVE BAPTIST CHURCH (NO CLAIM)
10	4	LUICILLE IVEY HEIRS
11	4,5	WILLIAM R. GARNER
12	4,5	JERRY WRIGHT
13	4,5	CAROLYN N. BARDEN
14	5	BEATRICE GARNER HEIRS
15	5	LAWRENCE C. KING
16	5	WILLARD LEE BELFIELD
18	5	FLORA R. PITCHFORD ET AL
19	5	MICHAEL H. WRAY ET UX
20	5	JUDITH SYKES
21	5	WALTER SYKES ET UX
22	5	ASHBY SYKES HEIRS
23	5	ROBERT L. SYKES ET UX
24	5	ROBERT L. EDMONDS JR. ET UX
25	5	CORA MAE MAYO
26	5	FESSIE PORCH ET AL
27	5	J. E. ROSCOE HEIRS
28	5	ANNIE P. WILLIAMS
28A	5,6	JESSE J. ROOK HEIRS
29	5,6	JESSE J. ROOK
30	5,6	GEORGE INGRAM ET UX
31	6,7,8,10	ANNIE TUDOR
31A	7	THOMAS TUDOR
31B	10	ANNIE TUDOR
32	6	JESSE J. ROOK
33	6	BRIDGETT DANIELS
34	6	GILBERT EDWARD HEIRS
35	6	ADAM CLEMONT
36	6	SHARON F. PEELE
37	6	ELLA JOYNER
38	6	JESSE MALLORY HEIRS
39	6,7	CONSTANCE DICKERSON
40	7	DAVID M. GRANT ET UX
41	7	HENRY B. LONG
42	7,8	HENRY LONG
43	8,9,10	O. S. SUITER, JR
44	8,9,10	SAND RIDGE DEVELOPMENT ASSN, INC.
44A	8	NEDA SOBHANI
44B	9	SAND RIDGE DEVELOPMENT, INC.
44C	9, 10	SAND RIDGE DEVELOPMENT, INC.
45	10,11	S & S MEMORY REALTY, LLC
46	10	GLADIES MOODY
47	10	SHAWN TORRES
48	10,11	MARISSA D. JORDAN
49	10,11	CATHERINE B. MOODY ET VIR
49A	10,11	THEODORE E. MOODY
50	11	STATE OF NORTH CAROLINA
51	11	W. A. BUFFALOE

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
52	11	VICKY COTTON BENNETT
53	11	ROBINSON FARMS LLC
54	11,12	NEWTON STEPHENSON
55	13	JANE F. WILLIFORD
56	13,14	JOHN B. SANFILIPPO & SONS. INC
57	13	JOHN L. FITZHUGH, JR. ET UX
58	13	WILBERT V. WARREN, JR.
59	14	NORTHAMPTON COUNTY
60	14,15,16	JANE F. WILLIFORD
61	14,15	CSX RAILWAY
62	14,15	JOHN L. FITZHUGH, JR.
62A	16,36	LOUISE P. GREGORY
62B	36	BIANCA M. BROWN
63	16	TOSCA VIOLA TOWNES
64	16	NORTHAMPTON COUNTY UTILITIES
65	16	VIRGINIA W. COLEMAN
66	16	LAWRENCE C. PITTMAN, JR. AND CLAUDIA PITTMAN
67	16	ROZELIA C. PITTMAN AND LAWRENCE C. PITTMAN, JR.
68	16	ROZELIA C. PITTMAN
69	16	JAMES TINSLEY COLEMAN
70	16	JAMES W. SIMMONS
71	16	WALTER LEE CLABOINE
72	16,35	MINNIE ANNE SMITH AND JOSEPH SMITH, SR ...
73	16,35	FWZY TALB ALI-GHLIS
75	16	MATT JOSEPH ALSTON AND MARGARET S. ALSTON
76	16,3	AILZEAN CLEMENTS
77	16	DEPARTMENT OF TRANSPORTATION
78	16	JAMES WASHINGTON
79	16	ELLA MAE COLEMAN
80	16	MILDRED GATLING WILLIAMS
81	16	JAMES T. COLEMAN AND MALINDA P. COLEMAN
82	16,17,36	WILLIAM SCHELL SR. CO-TRUSTEE
83	17,18,18A	NANCY BLALOCK HEIRS & OTHERS
84	18,18A,19,20,21,22	KATHERINE ROBINSON, TRUSTEE
85	18,19	ELLIS ROBINSON HARRIS
86	22,23,24,25	CURTIS R. TURNER, JR.
87	22,23	ELNORA T. TUNER, ET VIR
88	23	L. H. MOSELLEY. ET UX
89	23	ELIJAH LAWRENCE WILLIAMS
90	23	AUDREY W. BANKSTON
91	23	DEBRA TUCK
92	23	NORTHAMPTON COUNTY VICINITY MISSIONARY
93	23,24	STEPHENSON BROTHERS
94	24	WILLIAM T. VASSOR, ET UX
95	24	ALEJANDRO MATOS, JR.
96	24,25	TONYA SCHAEFER
97	24,25	TONYA SCHAEFER
98	25	MARY EASTEP
99	25	VERNON T. BRADLEY JR. LIVING TRUST
100	25,26	ELANOR PRUDEN & HUGH WITT III HEIRS
101	25,26	BARBARA A. STEPHENSON
102	25,26	HENRY B. STEPHENSON
104	26,27,28,29	TAYLOR FARM PROPERTIES
105	27	DFLOSSIE T. DEBERRY
106	27	DANNY T. JERNIGAN & DARLENE E. JERNIGAN
108	28	EDWARD H. PATE
109	28	THOMAS JERNIGAN & REBECCA JERNIGAN
110	28	THOMAS JERNIGAN & REBECCA JERNIGAN
111	8,29,30,31,32,33,34	MILDRED S. EDWARDS ET AL
112	29	ELSIE BROWN SMITH

PROJECT REFERENCE NO.	R-2582A	SHEET NO.	4
DATE	8/25/2013	SCALE	1/2" = 10'
DRAWN BY	046981	CHECKED BY	037863
PROJECT TITLE	ROADWAY IMPROVEMENTS AND TRAFFIC SIGNALS		

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

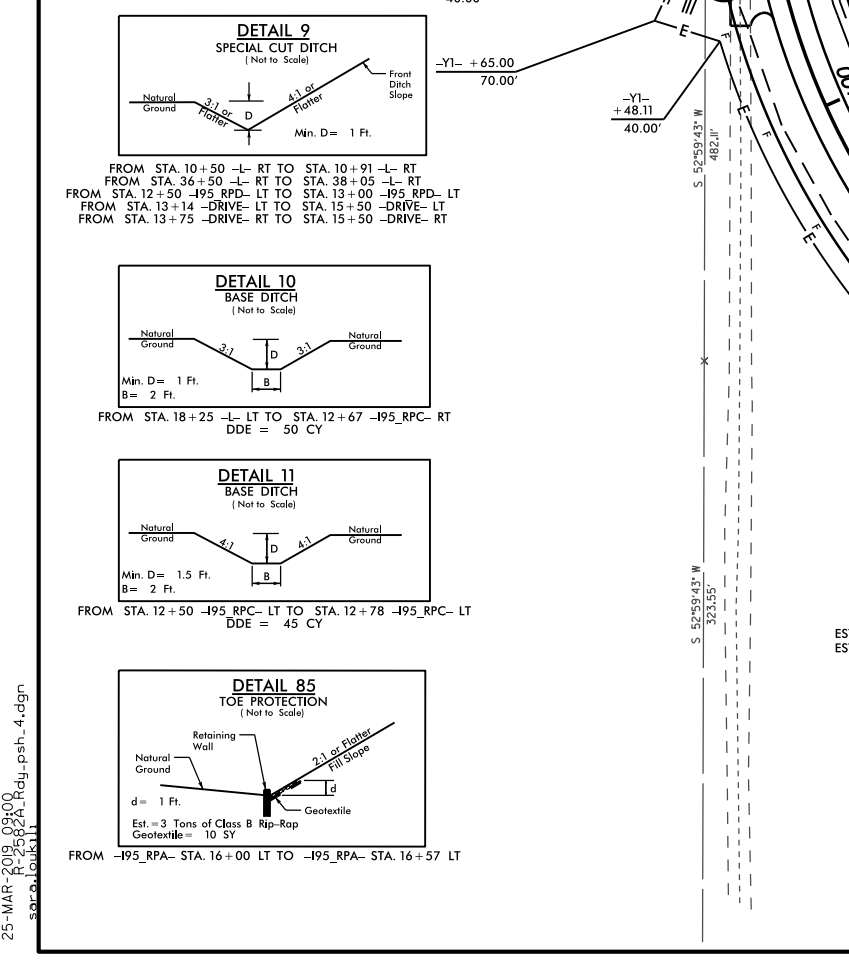
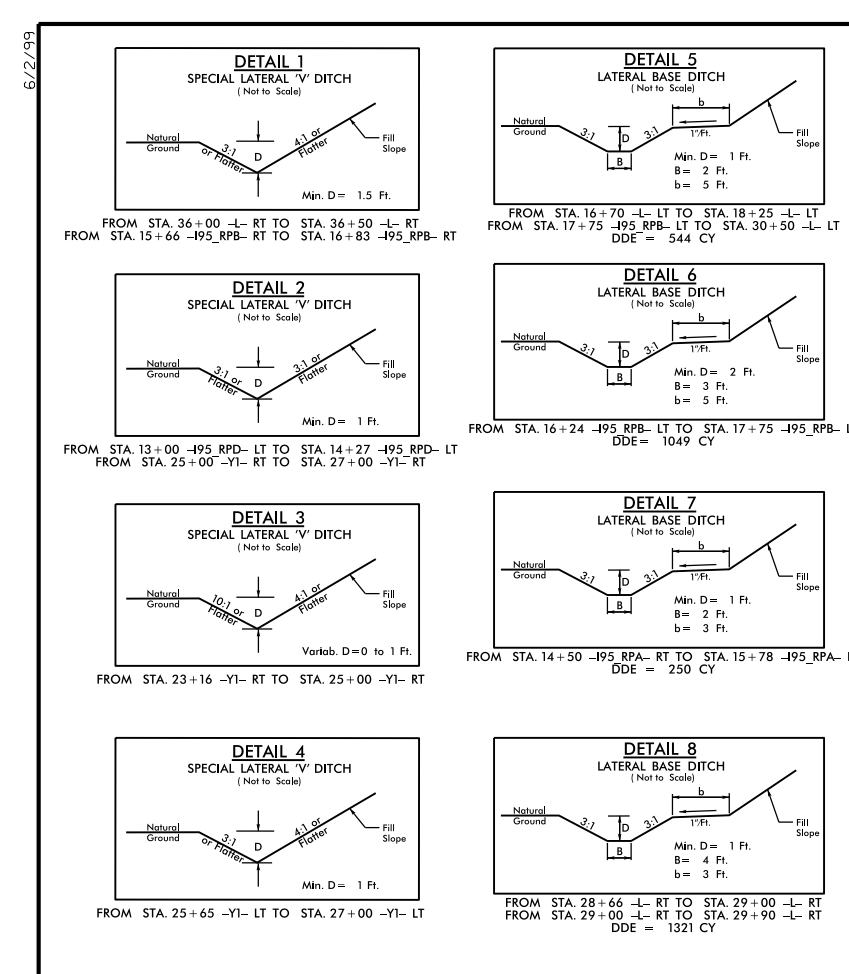
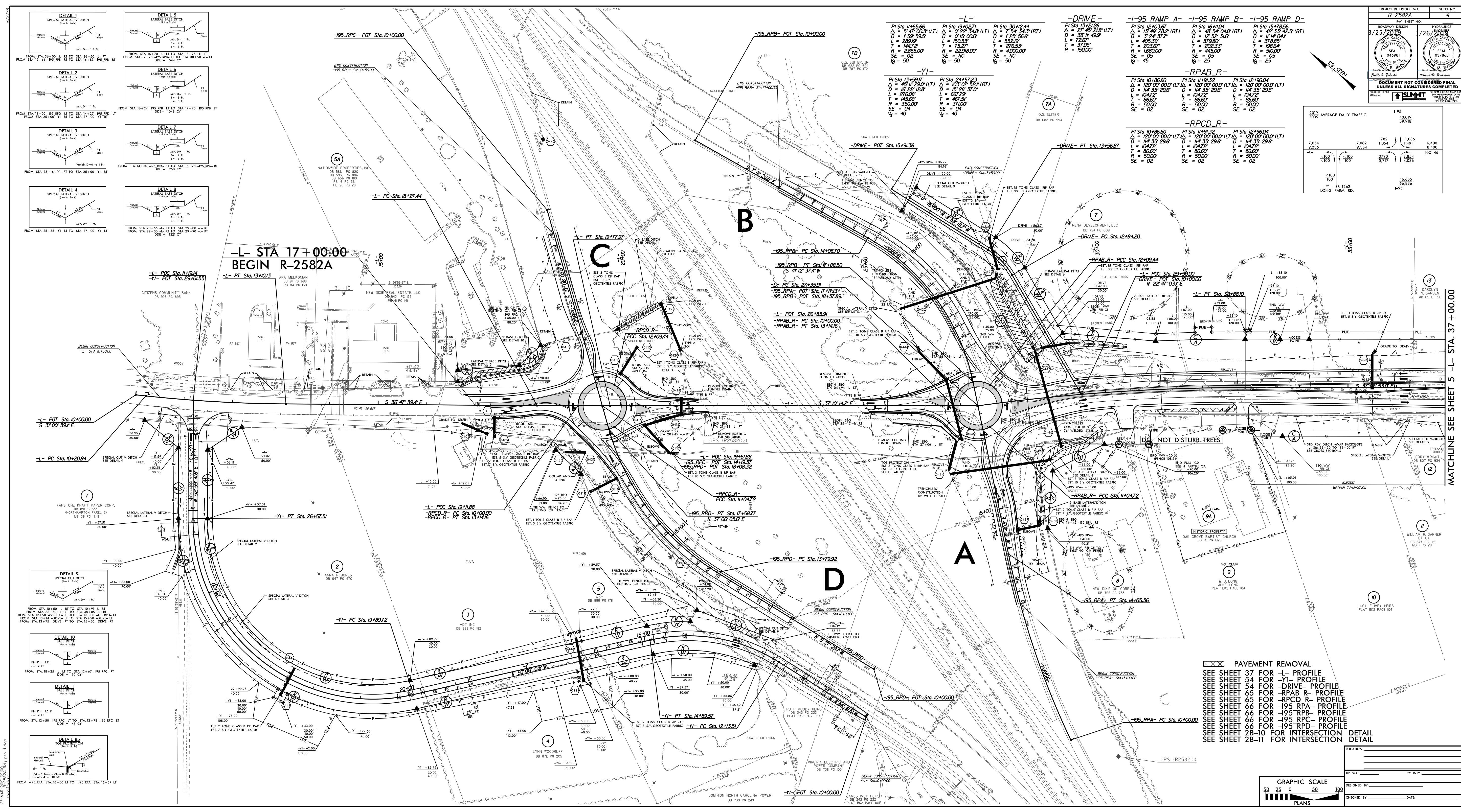
SUMMIT

STATE OF NORTH CAROLINA
COUNTY OF WAKE
CIVIL ENGINEER
No. 046981
Exp. 08/31/15

STATE OF NORTH CAROLINA
COUNTY OF WAKE
CIVIL ENGINEER
No. 037863
Exp. 08/31/15

2010 AVERAGE DAILY TRAFFIC

Direction	ADT
Northbound	1,495
Southbound	1,409
Eastbound	1,004
Westbound	1,401
NC 48	6,400
Long Farm Rd	2,854
Long Farm Rd	1,958
Long Farm Rd	2,655
Long Farm Rd	1,475



XXXX PAVEMENT REMOVAL
SEE SHEET 37 FOR -L- PROFILE
SEE SHEET 54 FOR -YI- PROFILE
SEE SHEET 54 FOR DRIVE- PROFILE
SEE SHEET 65 FOR -RPAB R- PROFILE
SEE SHEET 65 FOR -RPCD R- PROFILE
SEE SHEET 66 FOR -195 RPA- PROFILE
SEE SHEET 66 FOR -195 RPB- PROFILE
SEE SHEET 66 FOR -195 RPC- PROFILE
SEE SHEET 66 FOR -195 RPD- PROFILE
SEE SHEET 28-10 FOR INTERSECTION DETAIL
SEE SHEET 28-11 FOR INTERSECTION DETAIL

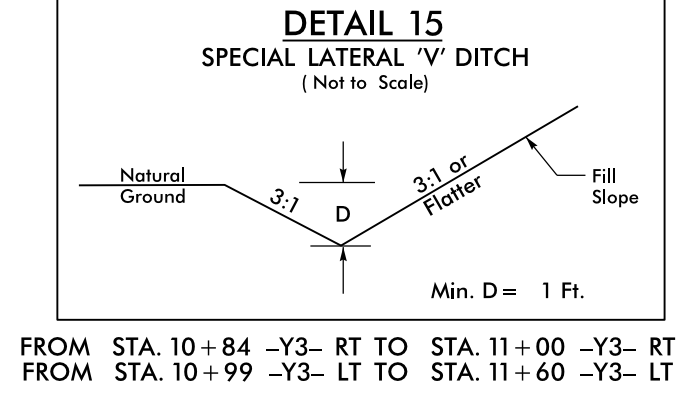
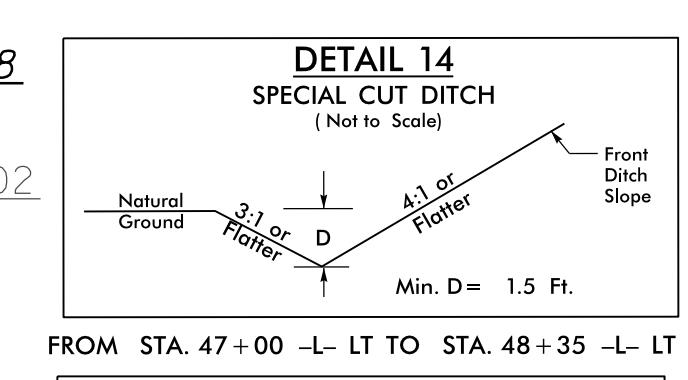
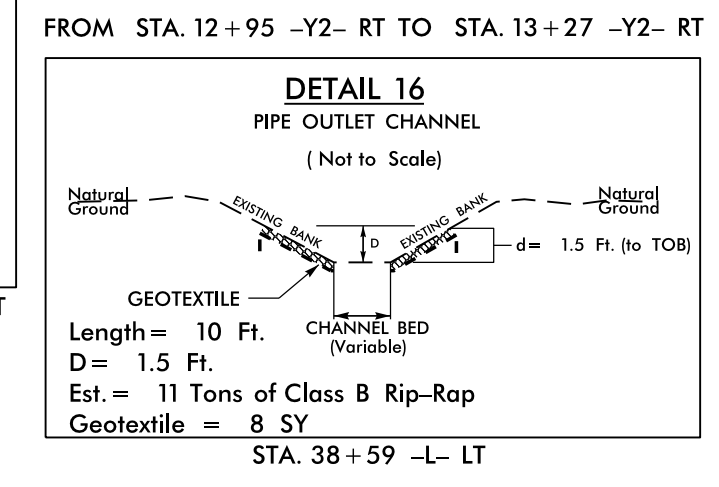
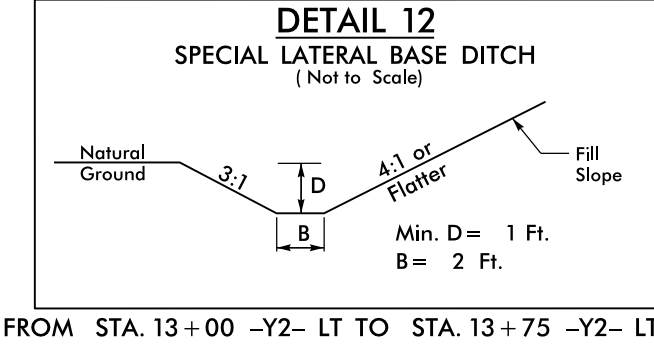
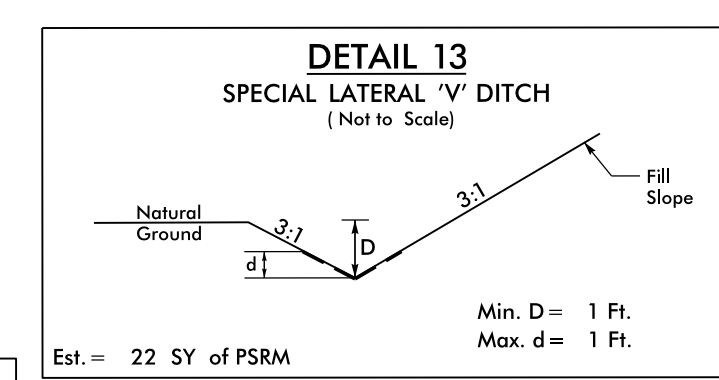
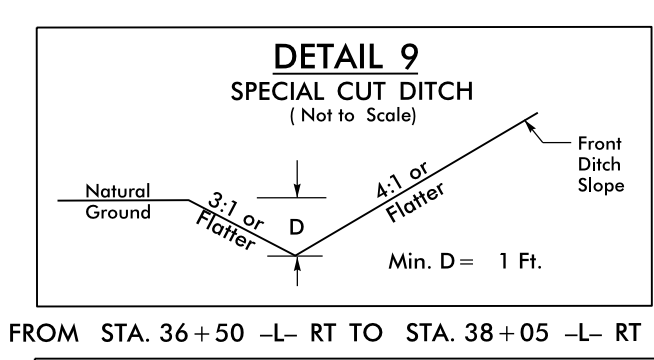
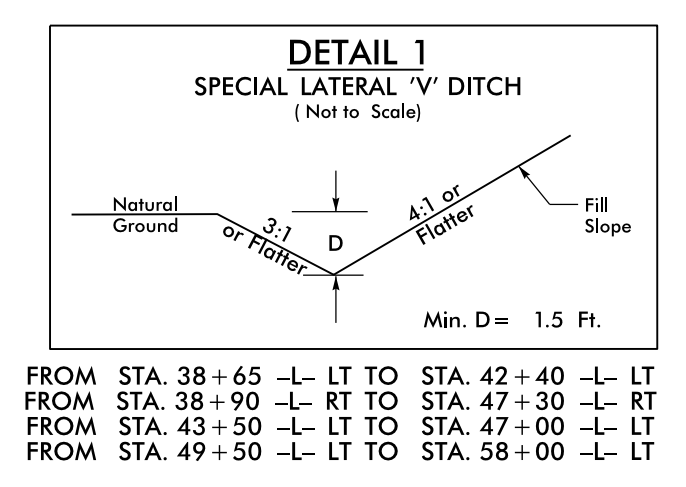
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PLANS

DESIGNED BY: _____
CHECKED BY: _____

DATE: _____

25-MAR-2013 10:43:00 AM
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8.17.19



-L-

Pls Sta 51+18.42
Os = 4'05"33.2"
Ls = 300.00'
LT = 200.05'
ST = 100.05'

Pls Sta 58+36.35
Δ = 32'47"46.4" (LT)
D = 2'43"42.1"
L = 1,202.04'
T = 617.99'
R = 2,100.00'
SE = 06
Vg = 70

Pls Sta 65+20.46
Os = 4'05"33.2"
Ls = 300.00'
LT = 200.05'
ST = 100.05'

-Y2-

Pls Sta 11+52.91
Δ = 2'04"06.8" (RT)
D = 1'59"59.5"
L = 103.43'
T = 51.72'
R = 2,865.00'

PROJECT REFERENCE NO. R-2582A	SHEET NO. 5
ROADWAY DESIGN ENGINEER 8/25/2019 SEAL 046981 PAUL E. JANKO	HYDRAULICS ENGINEER 8/26/2019 SEAL 037863 MARIO D. BUSCOMI

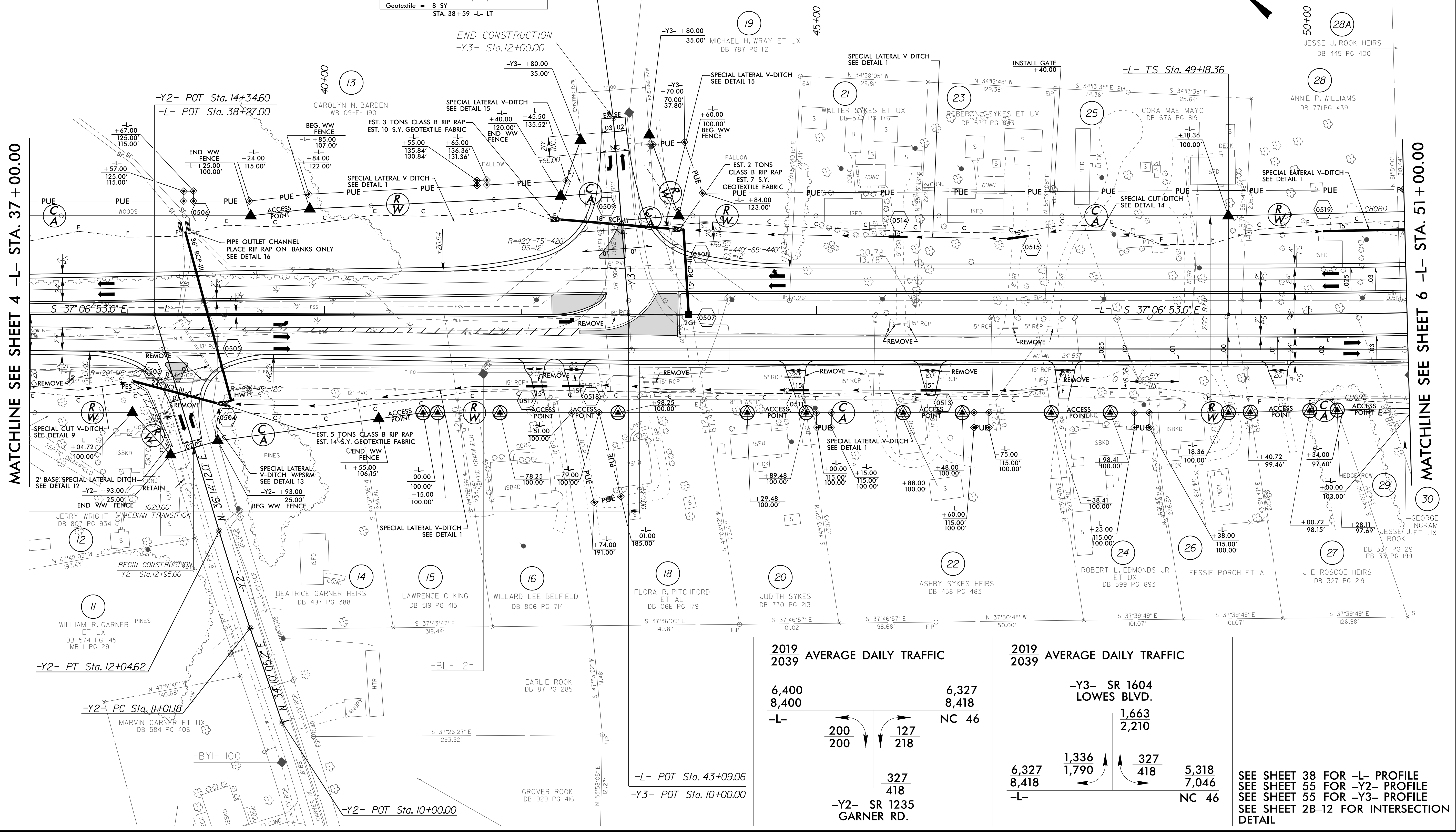
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Prepared in the Office at: **SUMMIT**

NC FIRM LICENSE NO: P-0339
504 Meadowslands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

MATCHLINE SEE SHEET 4 -L- STA. 37+00.00

MATCHLINE SEE SHEET 6 -L- STA. 51+00.00



2019 AVERAGE DAILY TRAFFIC	
2019	2039
6,400	6,327
8,400	8,418
-L- NC 46	
200	127
200	218
327	
418	
-Y2- SR 1235 GARNER RD.	

2019 AVERAGE DAILY TRAFFIC	
2019	2039
-Y3- SR 1604 LOWES BLVD.	
1,663	
2,210	
6,327	
8,418	
-L- NC 46	
1,336	327
1,790	418
5,318	
7,046	
-L- NC 46	

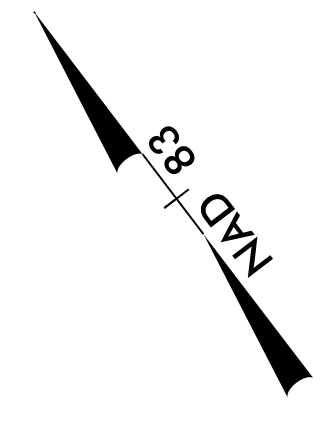
SEE SHEET 38 FOR -L- PROFILE
SEE SHEET 55 FOR -Y2- PROFILE
SEE SHEET 55 FOR -Y3- PROFILE
SEE SHEET 2B-12 FOR INTERSECTION DETAIL

8.17.19

PROJECT REFERENCE NO. R-2582A	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 3/25/2019	HYDRAULICS ENGINEER 3/26/2019
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p> <p>Prepared in the Office at: SUMMIT</p> <p>NC FIRM LICENSE No: P-0339 504 Meadowslands Drive Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)</p>	

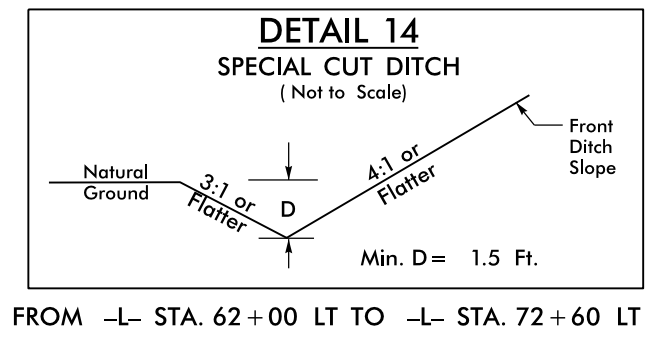
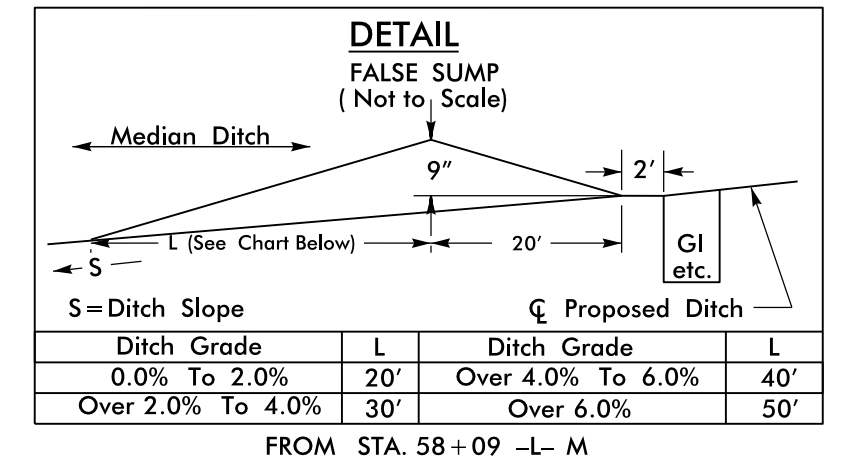
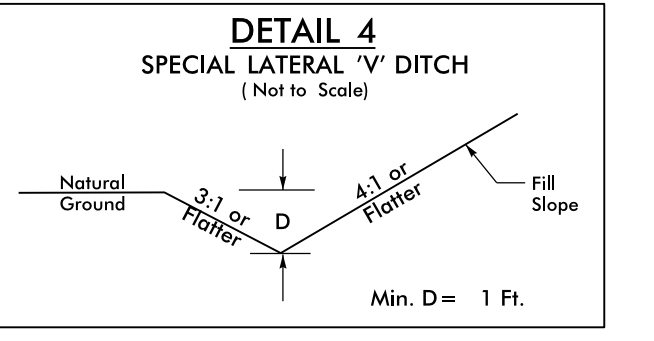
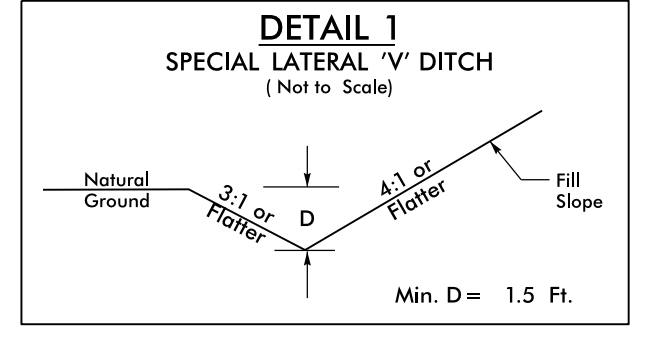
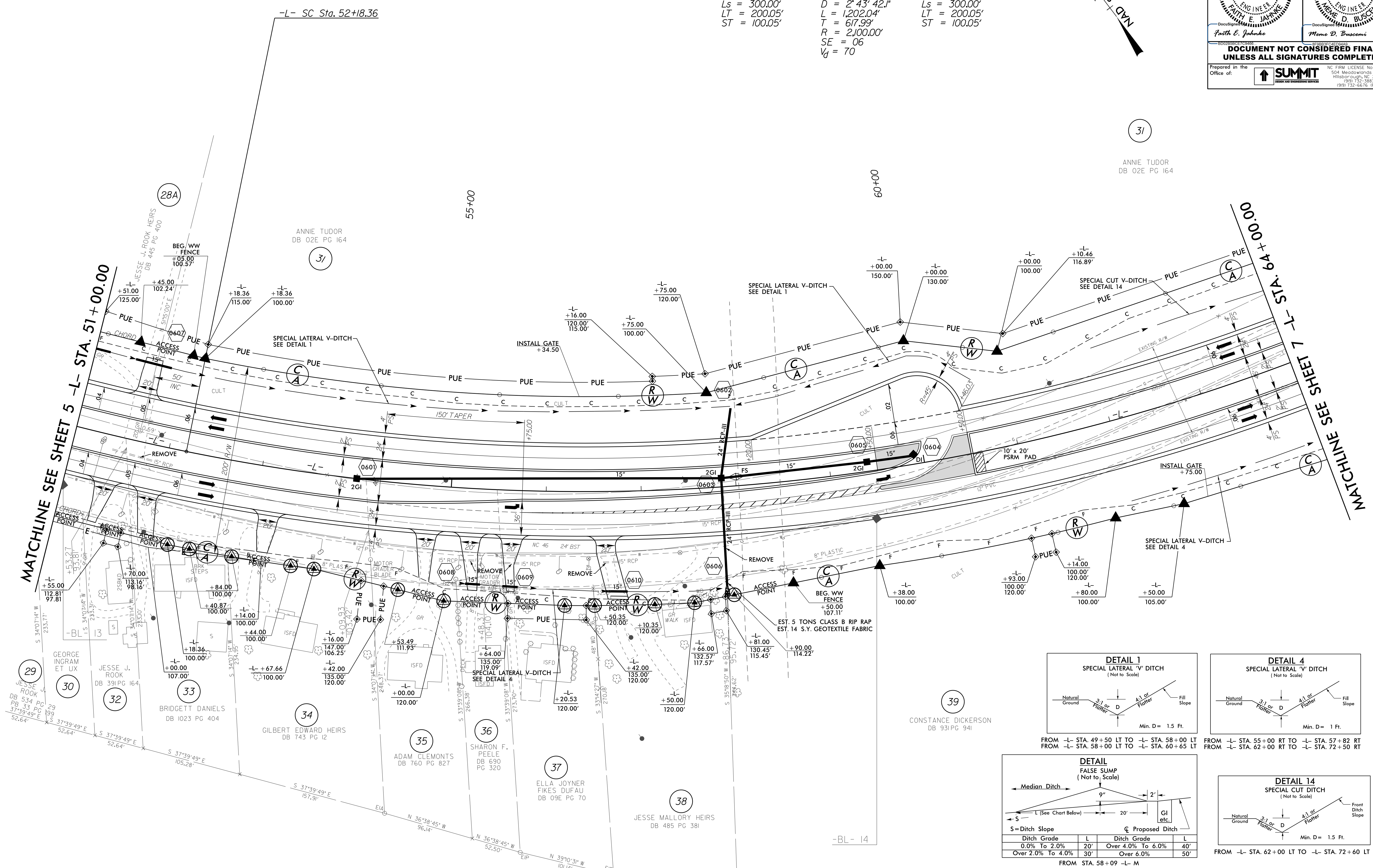
-L-

Pls Sta 51+18.42	PI Sta 58+36.35	Pls Sta 65+20.46
$\theta_s = 4^{\circ}05'33.2''$	$\Delta = 32^{\circ}47'46.4''$ (LT)	$\theta_s = 4^{\circ}05'33.2''$
$L_s = 300.00'$	$D = 2^{\circ}43'42.1''$	$L_s = 300.00'$
$LT = 200.05'$	$L = 1,202.04'$	$LT = 200.05'$
$ST = 100.05'$	$T = 617.99'$	$ST = 100.05'$
	$R = 2,100.00'$	
	$SE = 06$	
	$V_d = 70$	



(31)

ANNIE TUDOR
DB 02E PG 164



SEE SHEET 38 FOR -L- PROFILE
SEE SHEET 2B-9 FOR INTERSECTION DETAIL

8.17.17.99

25-MAR-2019 09:00
R-2582A.dwg
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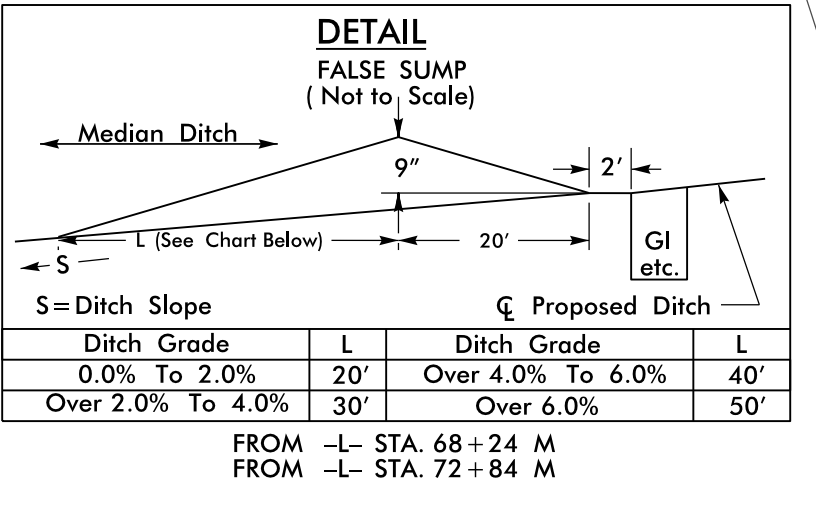
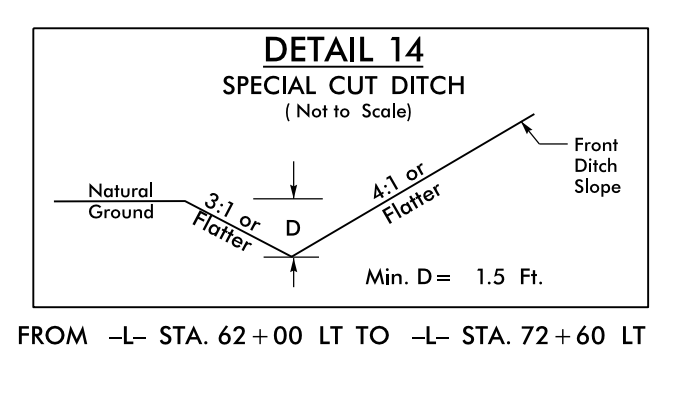
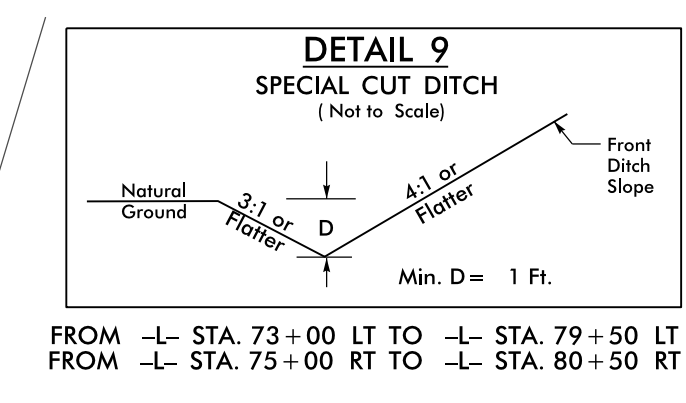
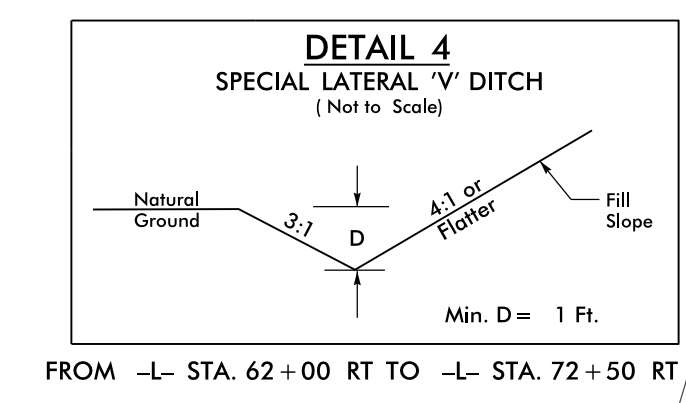
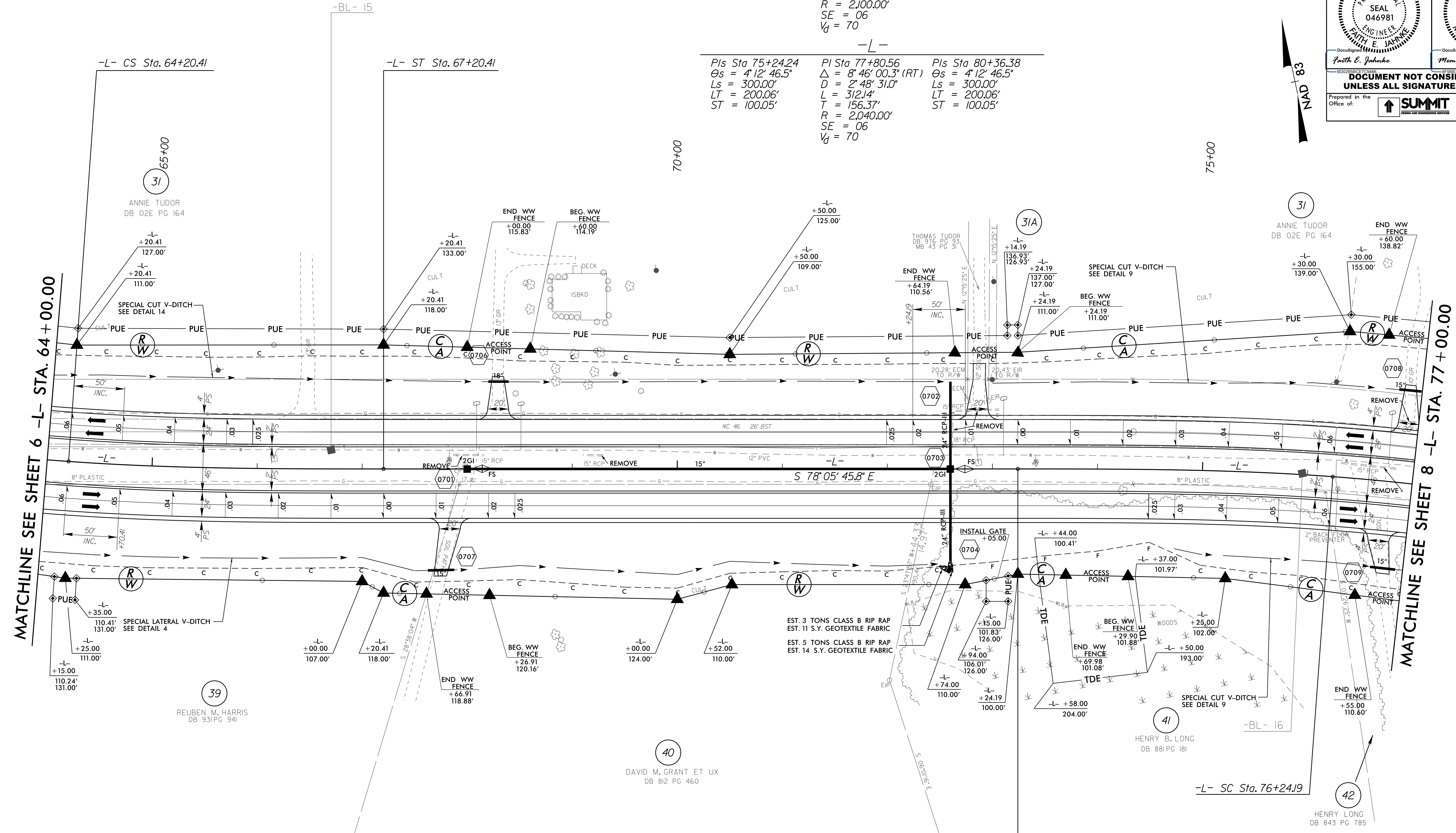
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RW SHEET NO.			
ROADWAY DESIGN ENGINEER 3/25/2019		HYDRAULICS ENGINEER 3/26/2019	
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>			
Prepared in the Office at:			

-L-

Pls Sta 51+18.42 Os = 4'05' 33.2" Ls = 300.00' LT = 200.05' ST = 100.05'	Pls Sta 58+36.35 Δ = 32' 47' 46.4" (LT) D = 2' 43' 42.1" L = 1,202.04' T = 617.99' R = 2,100.00' SE = 06 Vd = 70	Pls Sta 65+20.46 Os = 4'05' 33.2" Ls = 300.00' LT = 200.05' ST = 100.05'
--	---	--

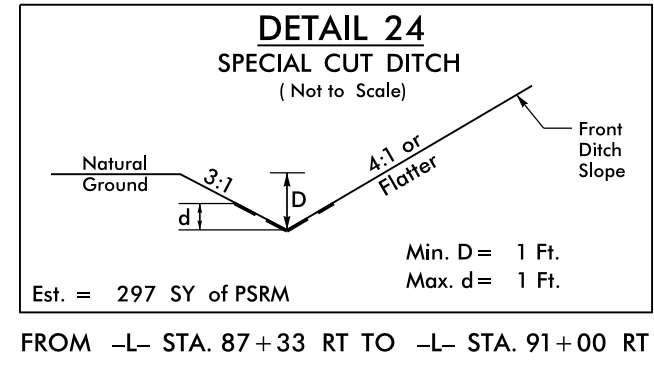
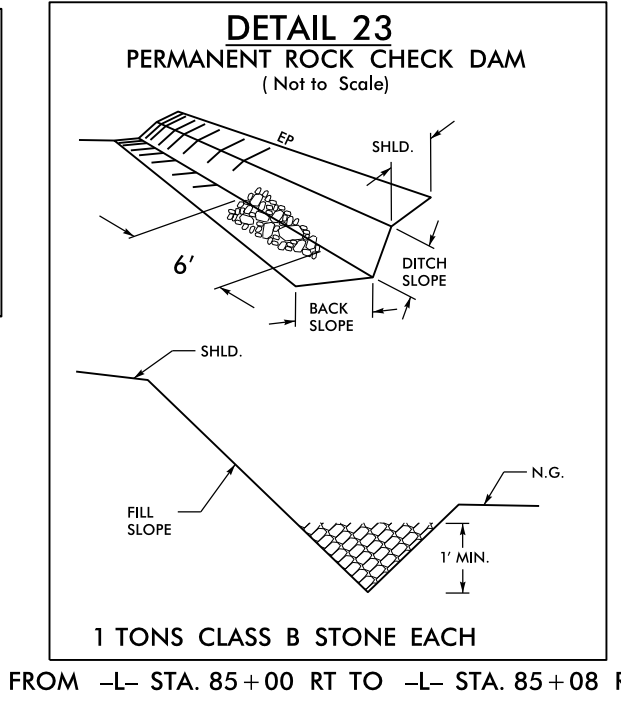
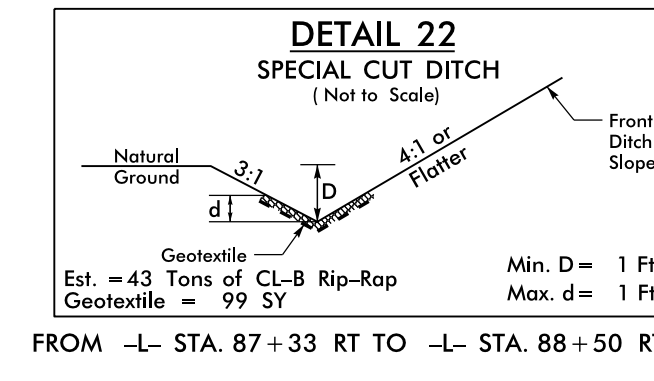
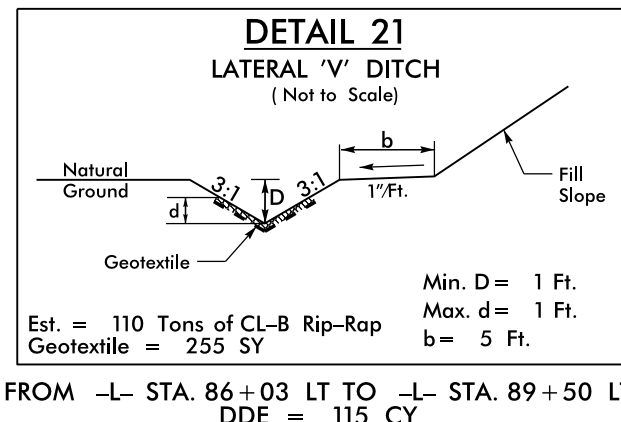
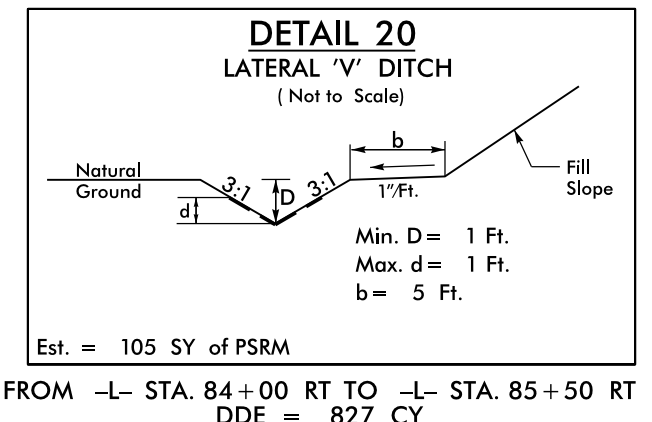
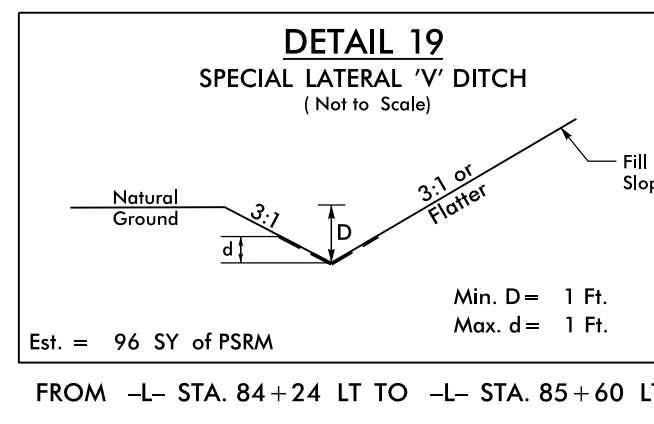
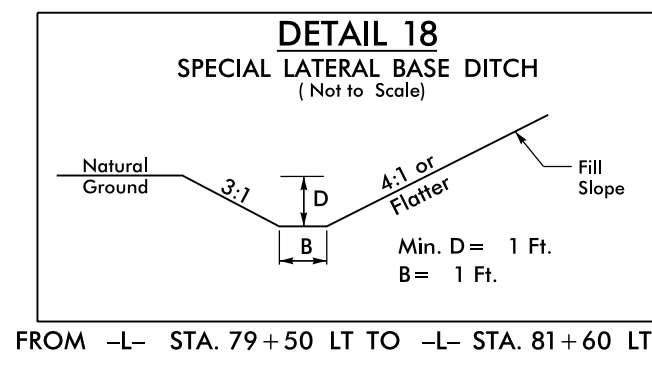
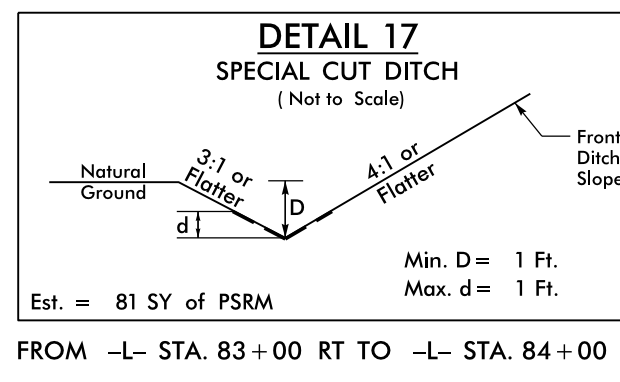
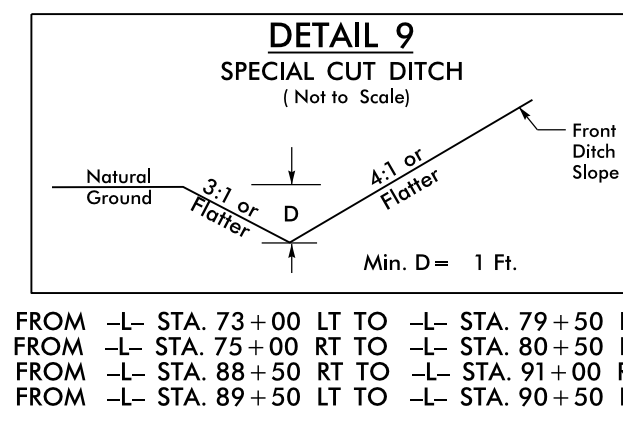
-L-

Pls Sta 75+24.24 Os = 4'12' 46.5" Ls = 300.00' LT = 200.06' ST = 100.05'	Pls Sta 77+80.56 Δ = 8' 46' 00.3" (RT) D = 2' 48' 31.0" L = 312.14' T = 156.37' R = 2,040.00' SE = 06 Vd = 70	Pls Sta 80+36.38 Os = 4'12' 46.5" Ls = 300.00' LT = 200.06' ST = 100.05'
--	--	--



SEE SHEET 39 FOR -L- PROFILE

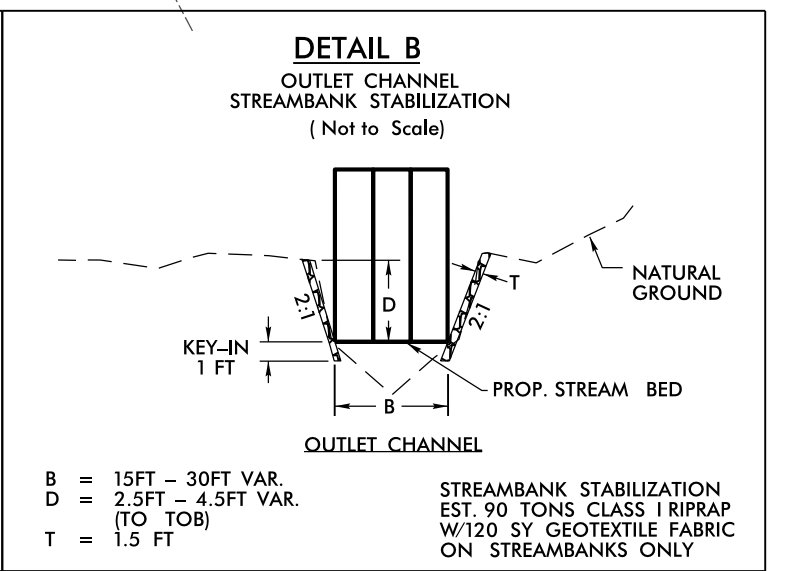
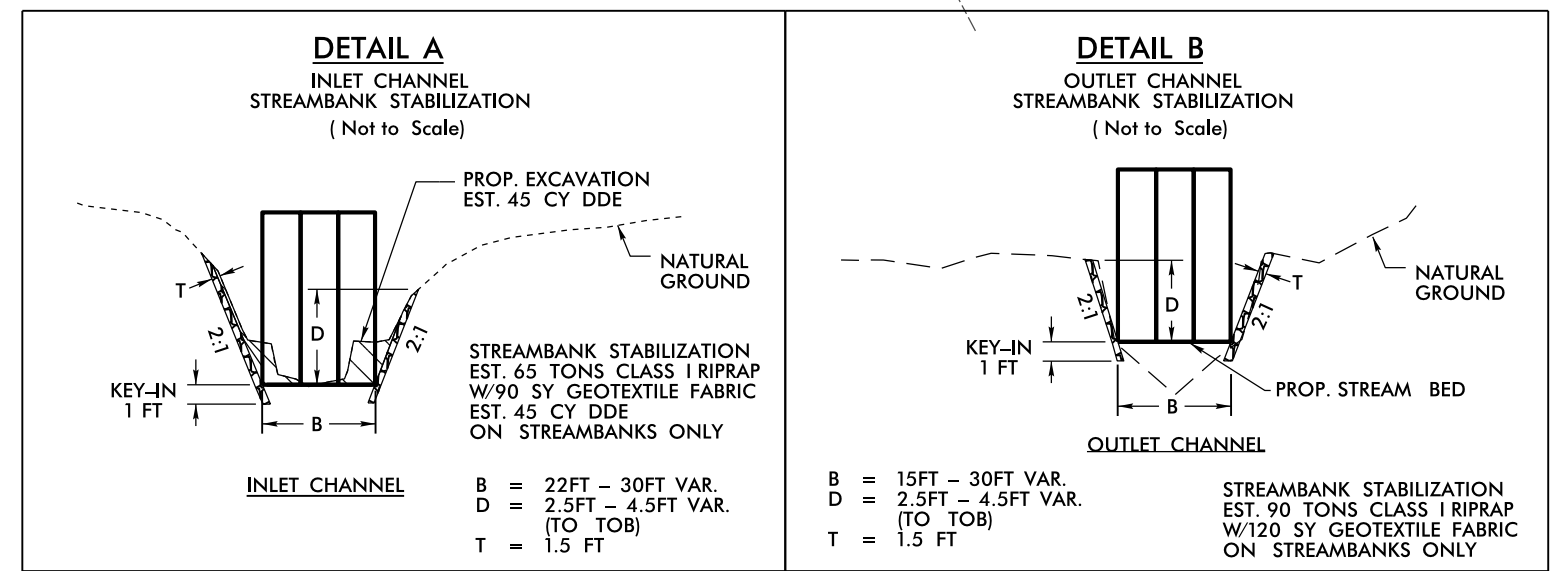
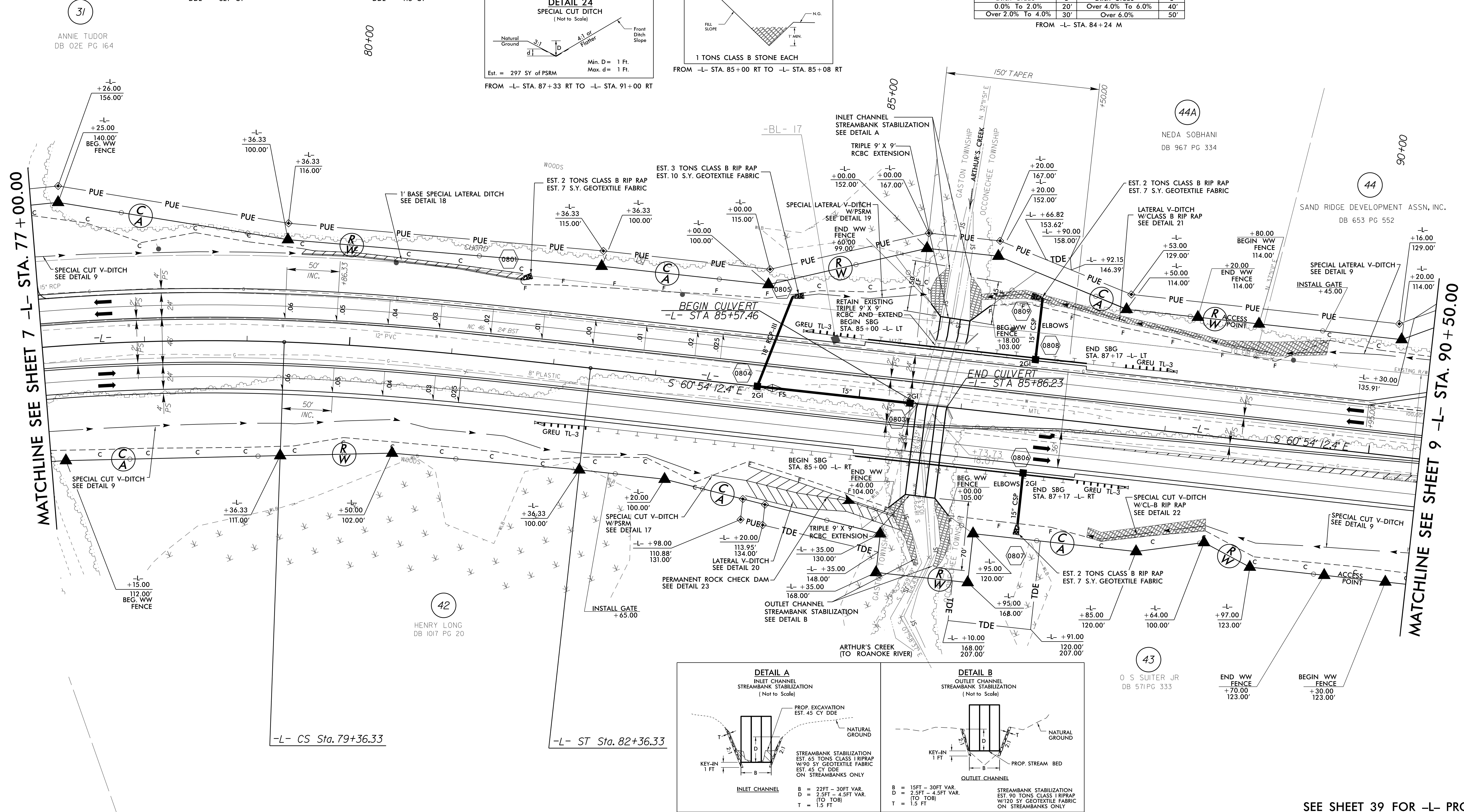
PROJECT REFERENCE NO. R-2582A	SHEET NO. 8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 3/25/2019 FAITH E. JAHNKE SEAL 046981 NORTH CAROLINA PROFESSIONAL ENGINEER	HYDRAULICS ENGINEER 3/26/2019 MEMO D. BUSCEMI SEAL 037863 NORTH CAROLINA PROFESSIONAL ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office at: SUMMIT	NC FIRM LICENSE NO: P-0339 504 Meadowslands Drive Hillsborough, NC 27278 (919) 332-3883 (919) 732-6676 (FAX)



DETAIL FALSE SUMP (Not to Scale)

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

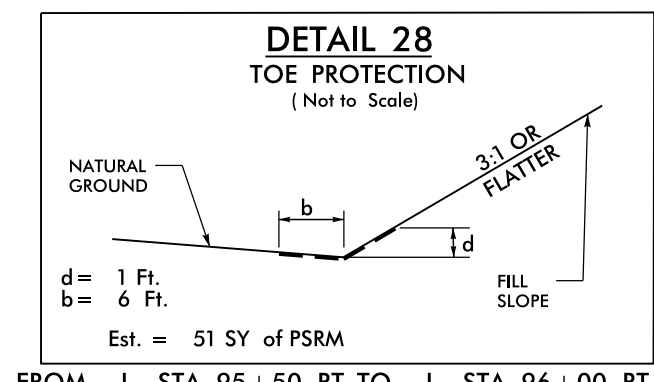
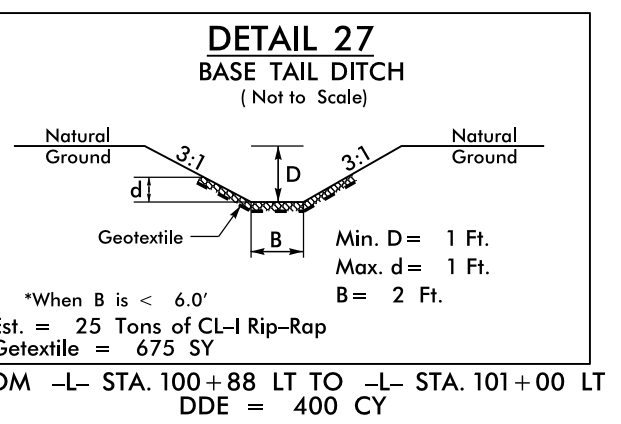
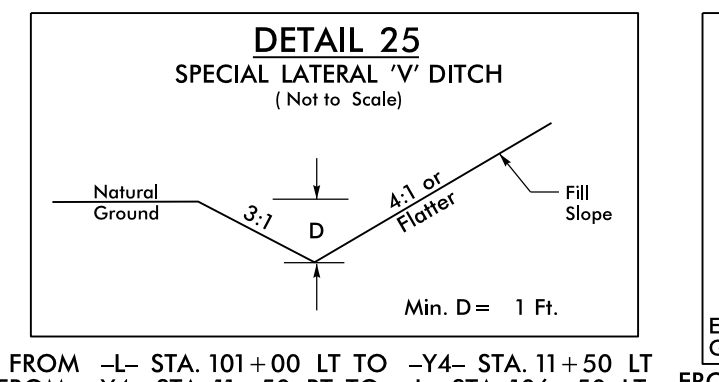
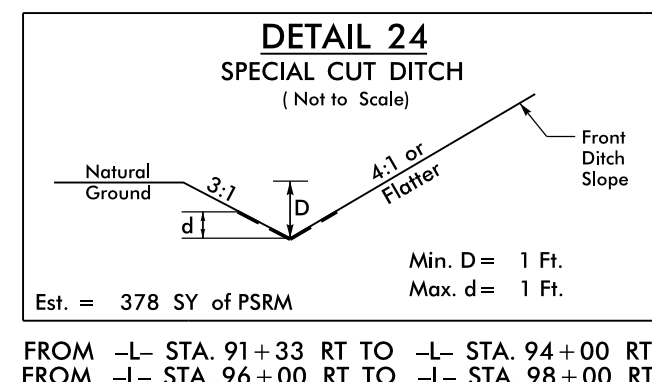
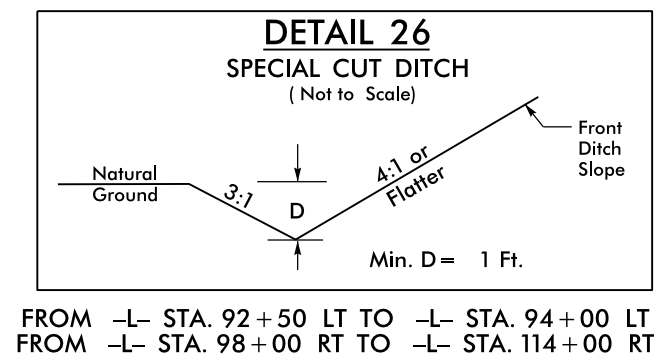
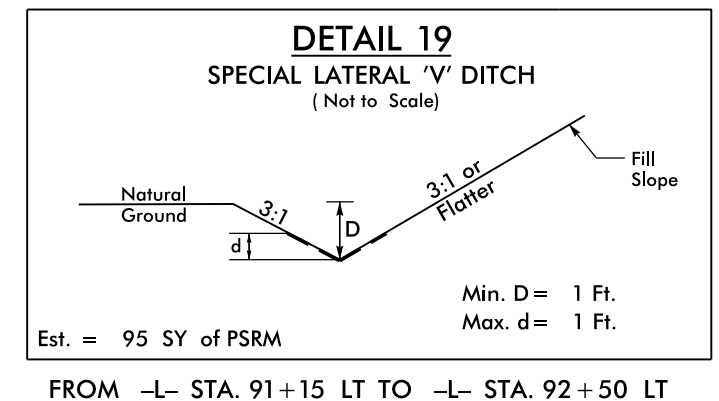
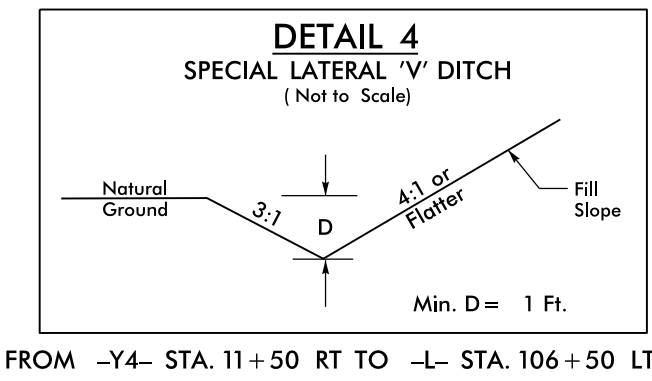
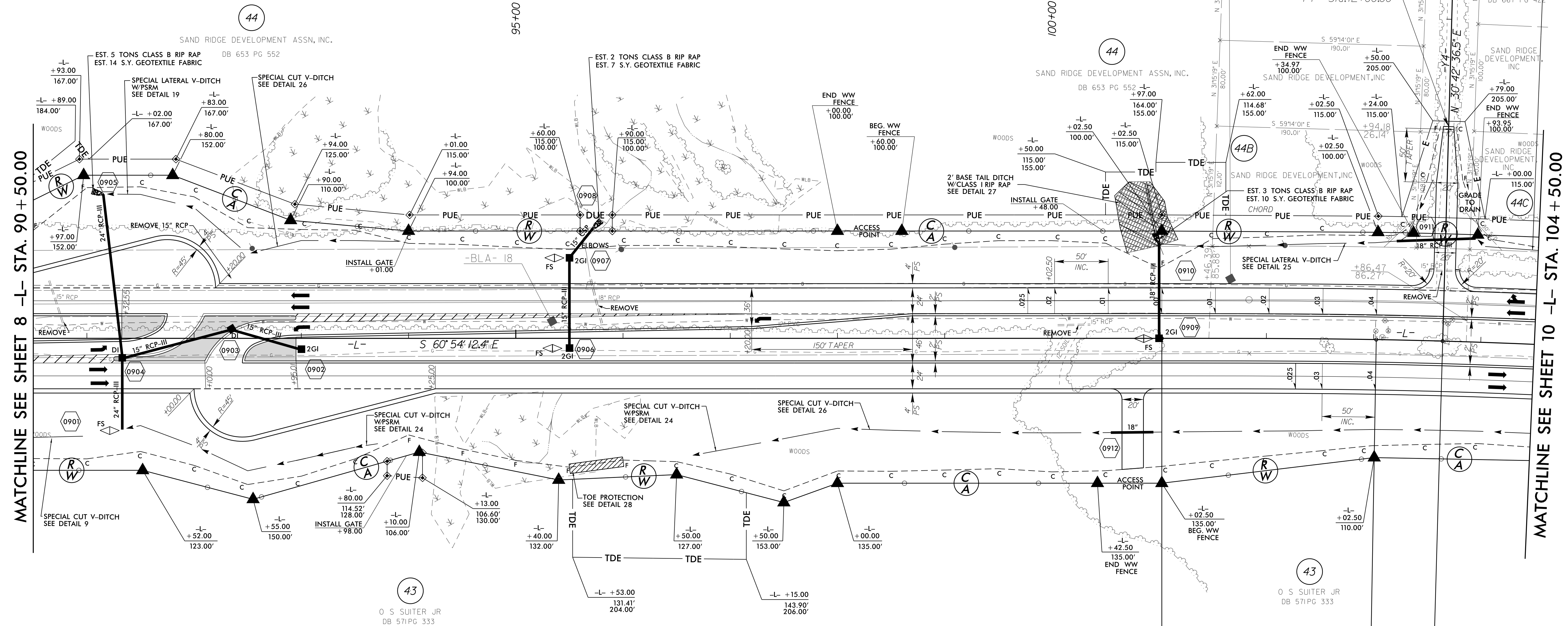
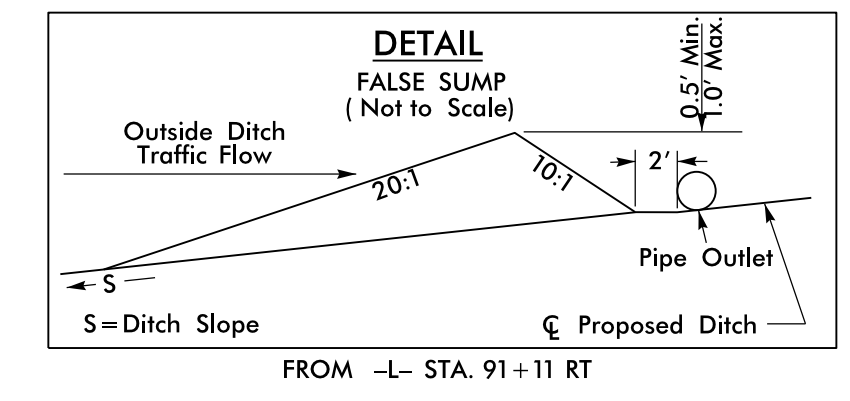
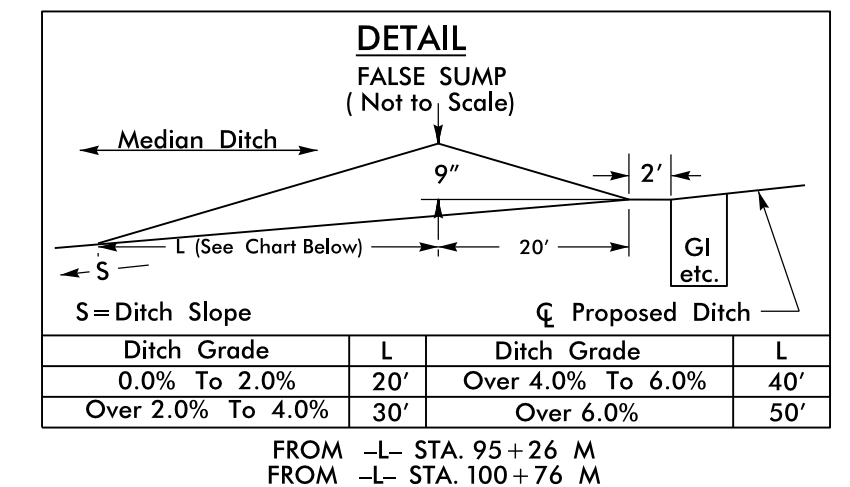
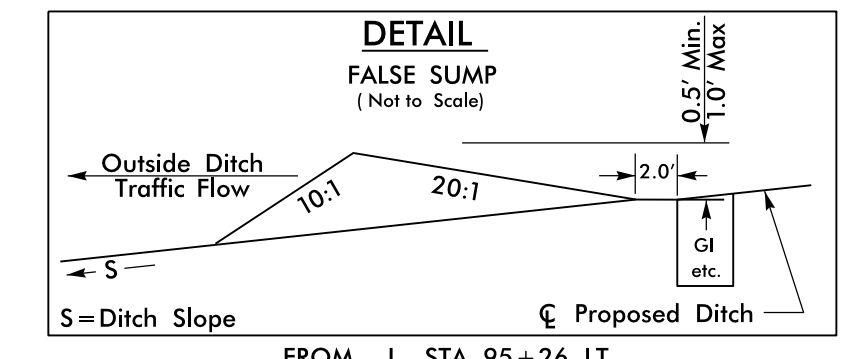
FROM -L- STA. 84+24 M



SEE SHEET 39 FOR -L- PROFILE

8.17.17.99

PROJECT REFERENCE NO. R-2582A		SHEET NO. 9	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 8/25/2019		HYDRAULICS ENGINEER 8/26/2019	
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>			



-L- TS Sta. 101+02.50

-L- SC Sta. 103+02.50

-L-

Pls Sta 102+35.83	Pl Sta 107+85.54	Pls Sta 113+33.00
$\Delta s = 0^{\circ} 59' 47.2''$	$\Delta = 9^{\circ} 36' 14.6''$ (RT)	$\Delta s = 0^{\circ} 59' 47.2''$
$Ls = 200.00'$	$D = 0^{\circ} 59' 47.2''$	$Ls = 200.00'$
$LT = 133.34'$	$T = 963.83'$	$LT = 133.34'$
$ST = 66.67'$	$L = 483.05'$	$ST = 66.67'$
	$R = 5,750.00'$	
	$SE = NC$	
	$V_d = 70+$	

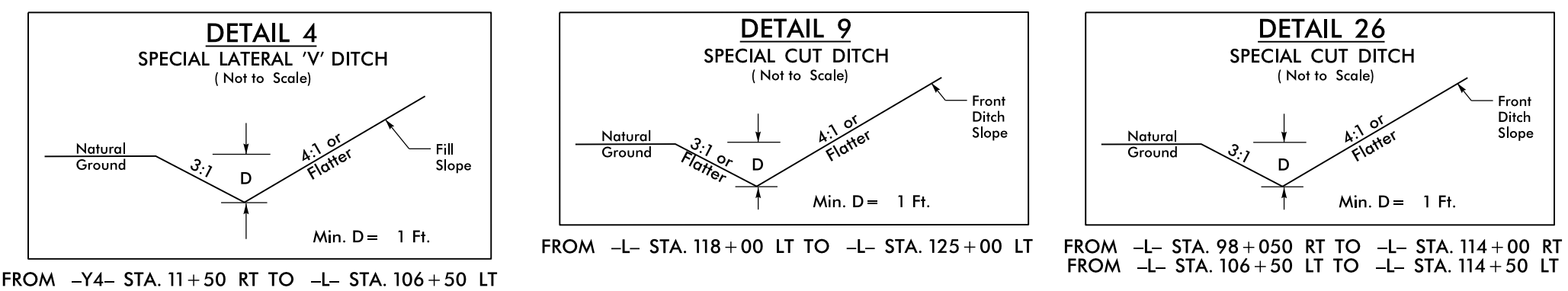
-Y4- POT Sta. 10+00.00
-L- POC Sta. 103+64.46

SEE SHEET 40 FOR -L- PROFILE
SEE SHEET 55 FOR -Y4- PROFILE
SEE SHEET 2B-9 FOR INTERSECTION DETAIL

R5-MAR-2019 09:00 R5-28682A.dwg

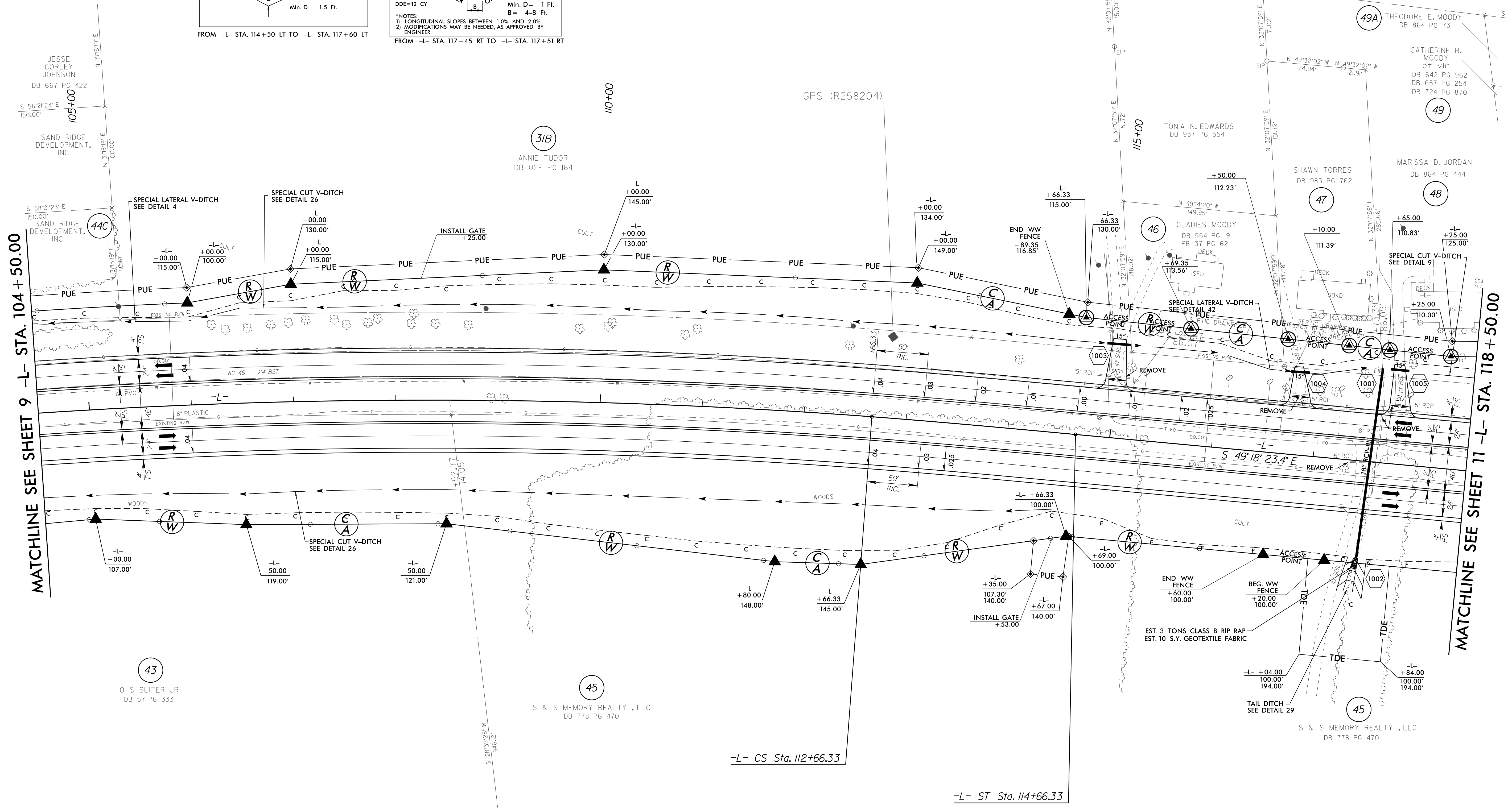
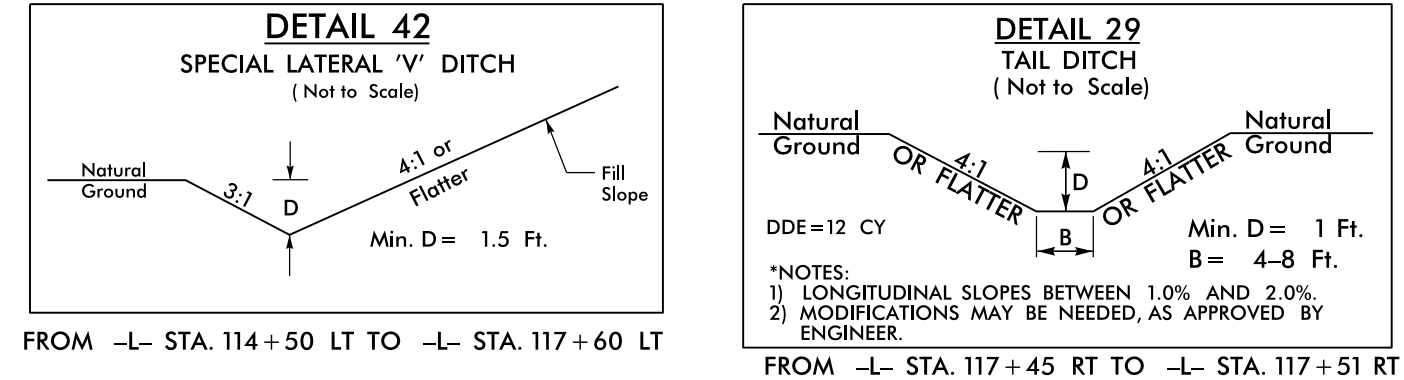
8/17/19

PROJECT REFERENCE NO. R-2582A		SHEET NO. 10	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 8/25/2019		HYDRAULICS ENGINEER 8/26/2019	
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>			
Prepared in the Office of:			



-L-

Pls Sta 102+35.83	Pl Sta 107+85.54	Pls Sta 113+33.00
$\theta_s = 0^\circ 59' 47.2''$	$\Delta = 9^\circ 36' 14.6''$ (RT)	$\theta_s = 0^\circ 59' 47.2''$
$L_s = 200.00'$	$D = 0^\circ 59' 47.2''$	$L_s = 200.00'$
$LT = 133.34'$	$L = 963.83'$	$LT = 133.34'$
$ST = 66.67'$	$T = 483.05'$	$ST = 66.67'$
	$R = 5,750.00'$	
	$SE = .04$	
	$V_d = 70+$	



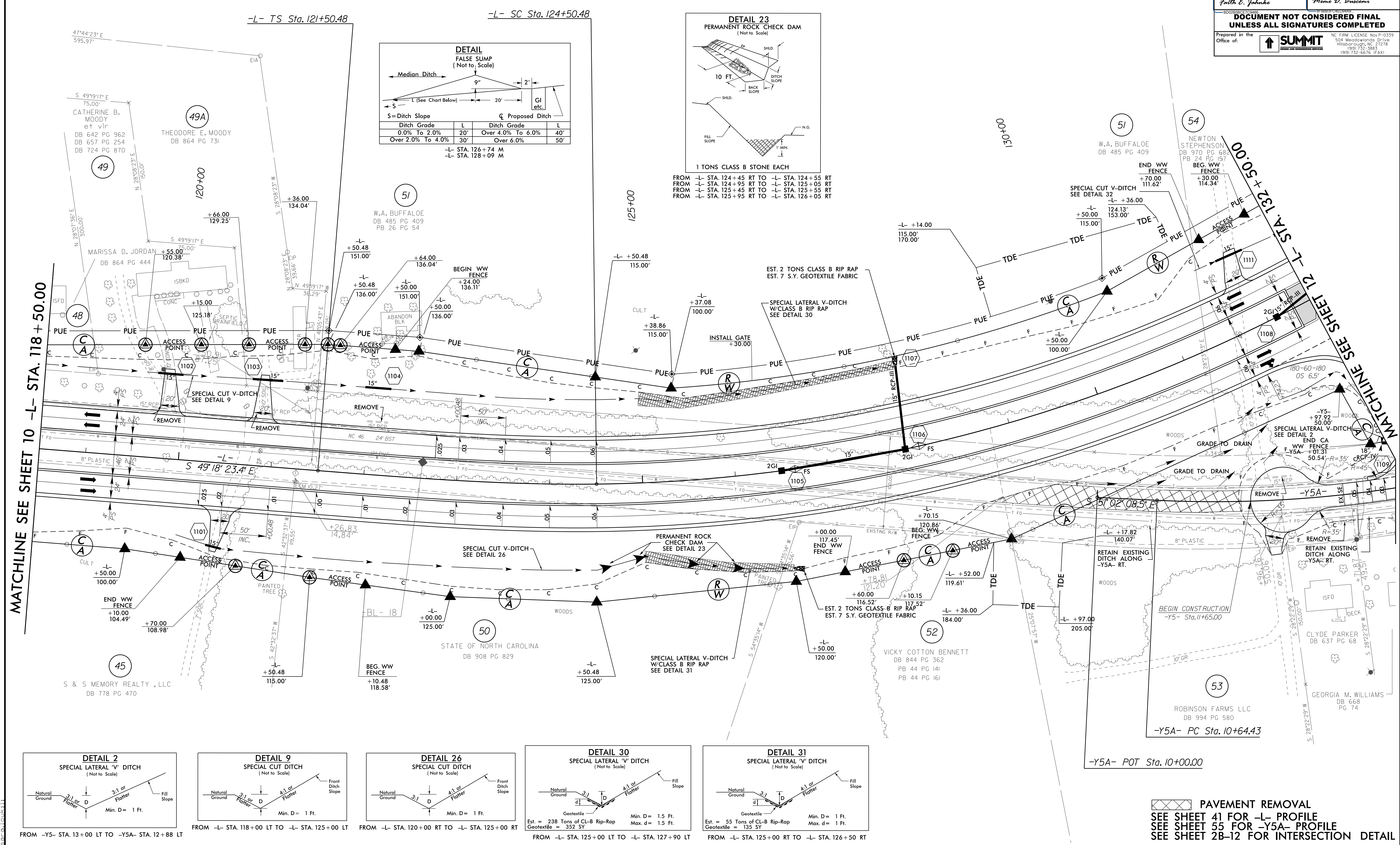
R-2582A.dgn
8/17/19
8:50 AM

SEE SHEET 40 FOR -L- PROFILE

8.17.19

-L-		-L-		-L-		-Y5A-	
PIs Sta 123+50.56	PI Sta 130+71.11	PIs Sta 137+38.40	PIs Sta 141+38.41	PI Sta 155+83.30	PIs Sta 165+99.14	PI Sta 12+93.94	
$\Delta s = 5' 10" 38.4"$	$\Delta = 40' 59" 57.1" (LT)$	$\Delta s = 5' 10" 38.4"$	$\Delta s = 5' 10" 38.4"$	$\Delta = 78' 01" 49.4" (RT)$	$\Delta s = 5' 10" 38.4"$	$\Delta = 20' 19" 50.5" (LT)$	
$Ls = 300.00'$	$D = 3' 27" 05.6"$	$Ls = 300.00'$	$Ls = 300.00'$	$D = 3' 27" 05.6"$	$Ls = 300.00'$	$D = 4' 28" 34.4"$	
$LT = 200.09'$	$L = 1,187.85'$	$LT = 200.09'$	$LT = 200.09'$	$L = 2,260.73'$	$LT = 200.09'$	$L = 454.19'$	
$ST = 100.08'$	$T = 620.64'$	$ST = 100.08'$	$ST = 100.08'$	$T = 1,344.97'$	$ST = 100.08'$	$T = 229.51'$	
	$R = 1,660.00'$			$R = 1,660.00'$		$R = 1,280.00'$	
	$SE = 06$			$SE = 06$		$SE = NC$	
	$V_d = 65$			$V_d = 65$		$V_d = 60+$	

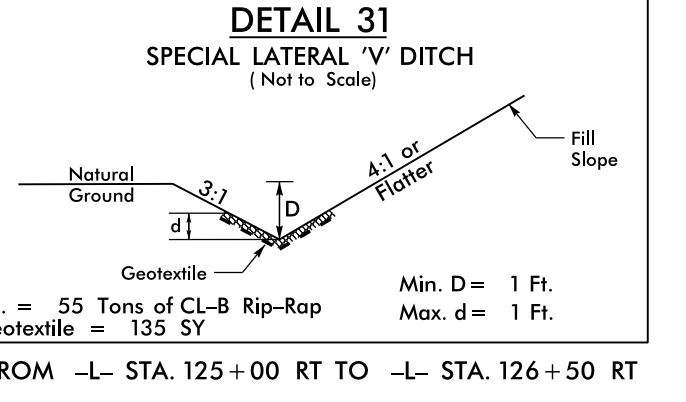
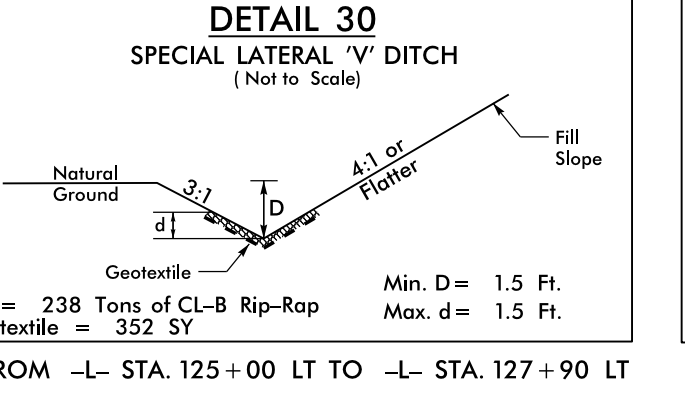
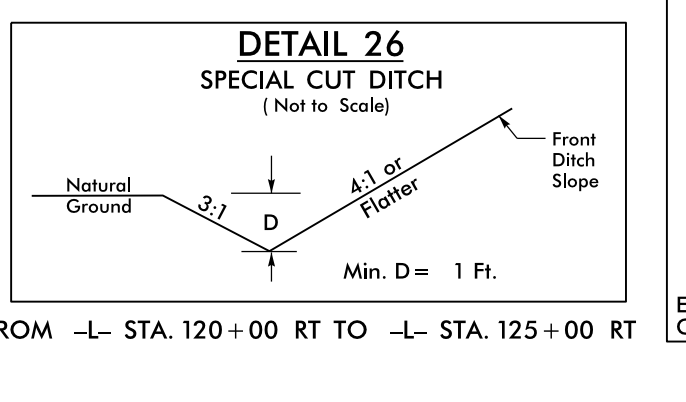
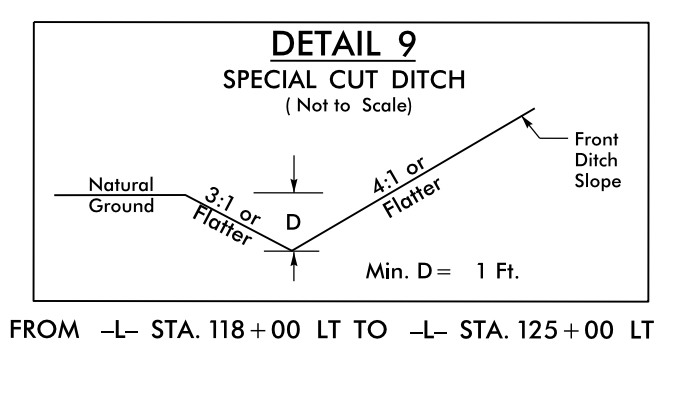
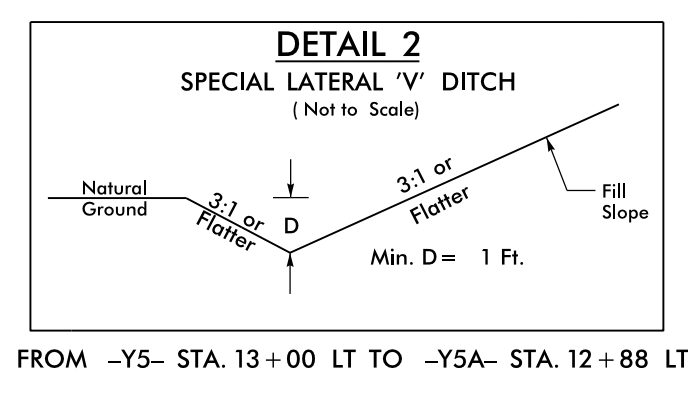
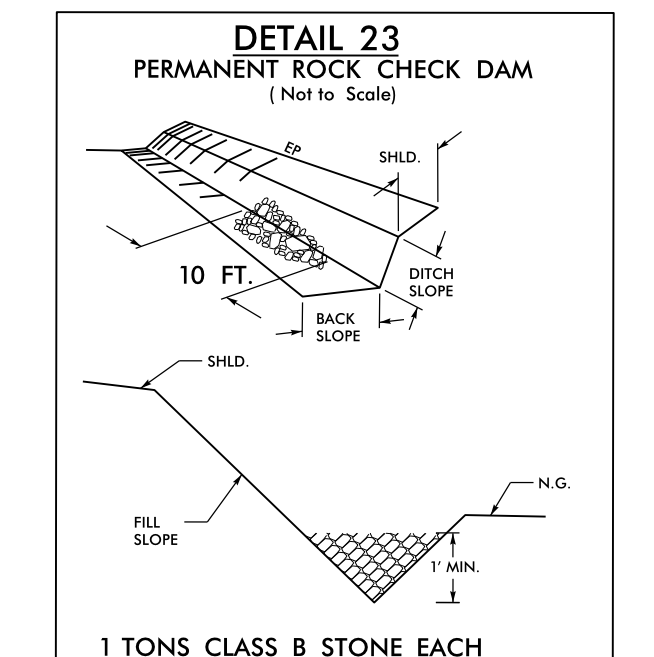
PROJECT REFERENCE NO. R-2582A	SHEET NO. 11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 8/25/2019	HYDRAULICS ENGINEER 8/26/2019
SEAL 046981 PAUL E. JAHNKE	SEAL 037863 MEMO D. BUSCOMI
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office at: SUMMIT	NC FIRM LICENSE NO: P-0339 504 Meadowslands Drive Hillsborough, NC 27278 (919) 332-3883 (919) 732-6676 (FAX)



DETAIL 1 FALSE SUMP (Not to Scale)

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

-L- STA. 126+74 M
 -L- STA. 128+09 M



PAVEMENT REMOVAL
 SEE SHEET 41 FOR -L- PROFILE
 SEE SHEET 55 FOR -Y5A- PROFILE
 SEE SHEET 2B-12 FOR INTERSECTION DETAIL

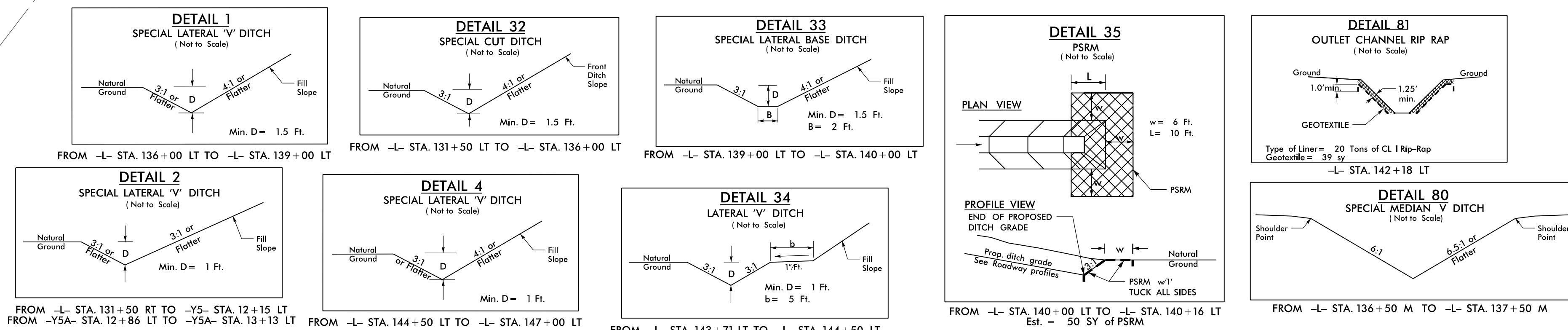
2019 AVERAGE DAILY TRAFFIC

5,318	5,318
7,045	7,045

BYPASS

327	827
418	418
654	327
836	418
	327
	418
	NC 46
327	<100
418	<100

-Y5- SR 1231 VINCENT LOOP RD.



PROJECT REFERENCE NO. R-2582A SHEET NO. 12

RW SHEET NO. 4/5/2019

ROADWAY DESIGN ENGINEER FAITH E. JAHNKE

HYDRAULICS ENGINEER WENDE D. BUCKUM

Professional Engineer Seal 046981

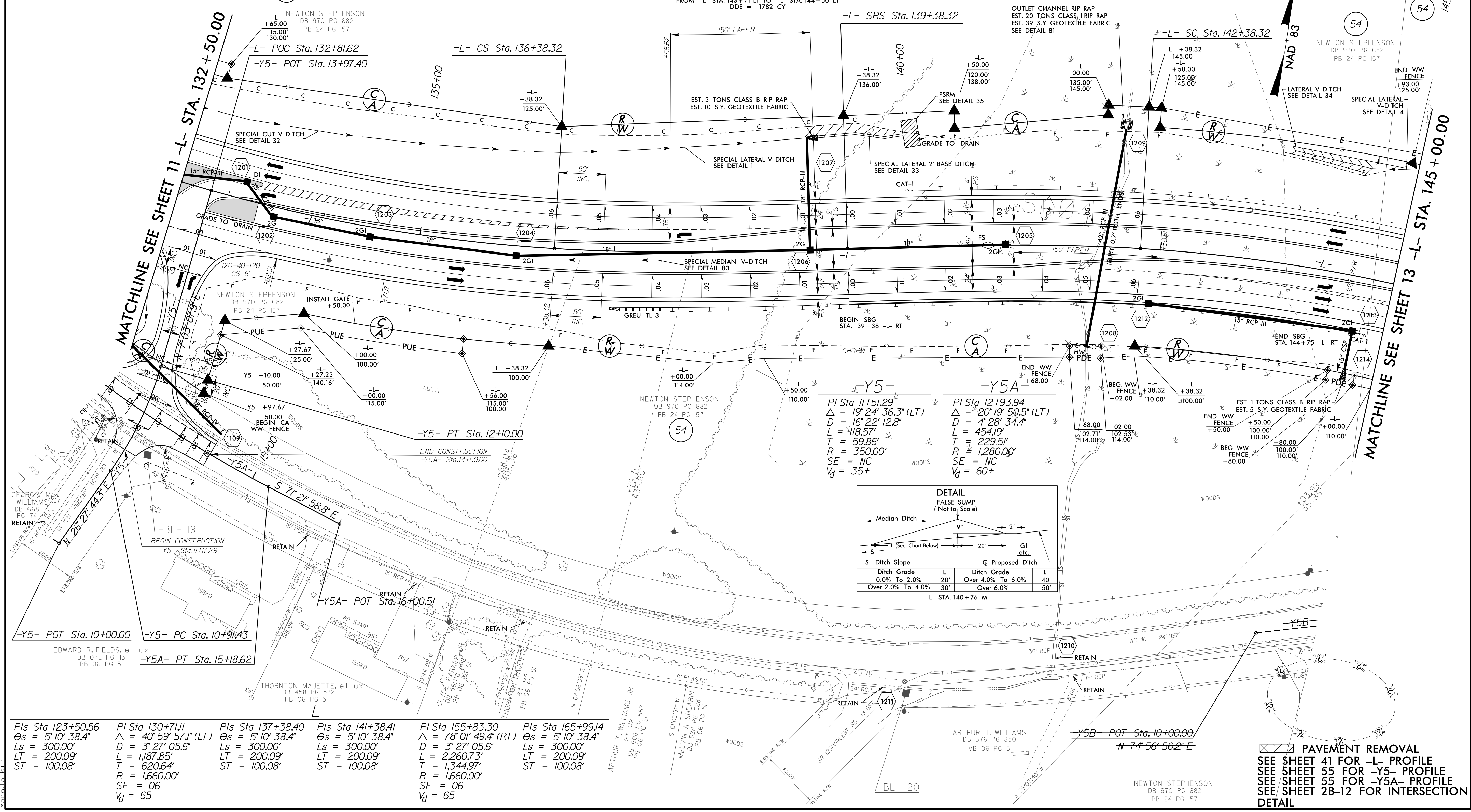
Professional Engineer Seal 037863

DocuSigned by: Faith E. Jahnke

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office at: SUMMIT

NC FIRM LICENSE NO: P-0339
504 Meadowslands Drive
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)



-Y5- PI Sta 11+51.29
 $\Delta = 19' 24' 36.3''$ (LT)
 $D = 16' 22' 12.8''$
 $L = 118.57'$
 $T = 59.86'$
 $R = 350.00'$
 $SE = NC$
 $V_d = 35+$

-Y5A- PI Sta 12+93.94
 $\Delta = 20' 19' 50.5''$ (LT)
 $D = 4' 28' 34.4''$
 $L = 45.41'$
 $T = 229.51'$
 $R = 1,280.00'$
 $SE = NC$
 $V_d = 60+$

DETAIL FALSE SUMP (Not to Scale)

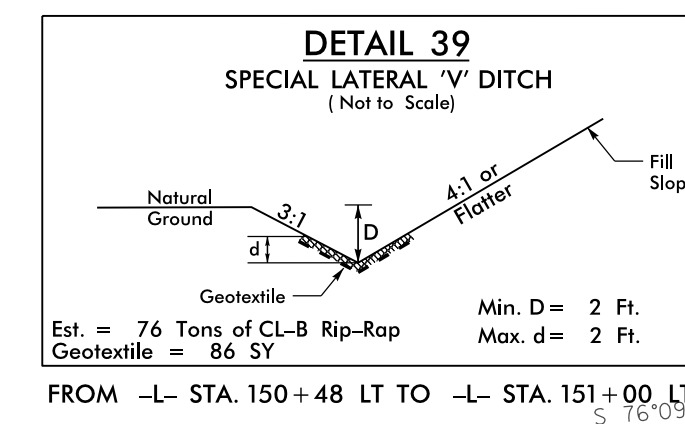
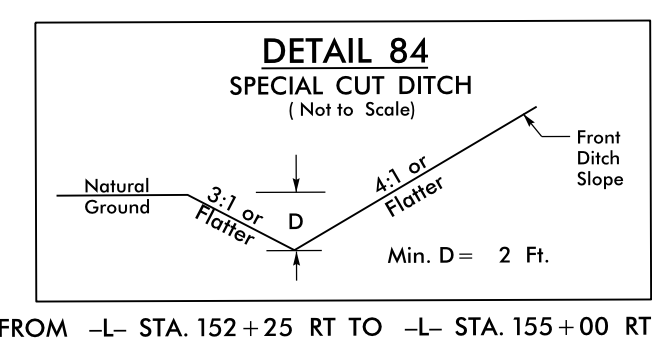
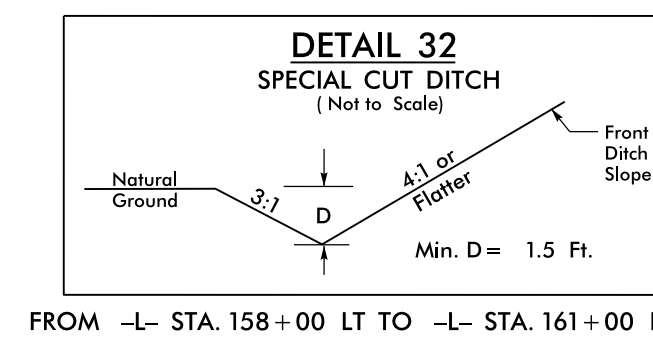
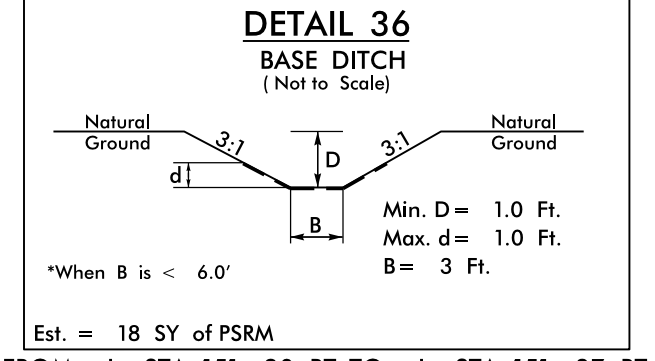
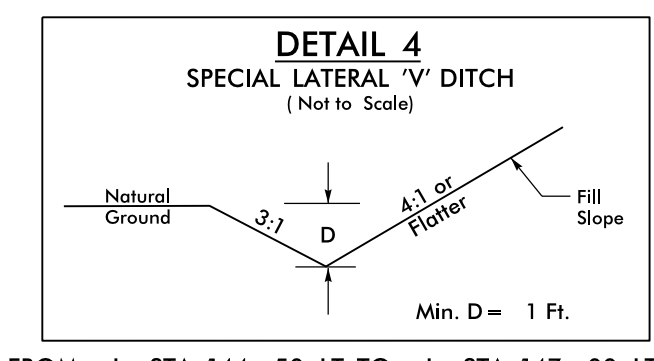
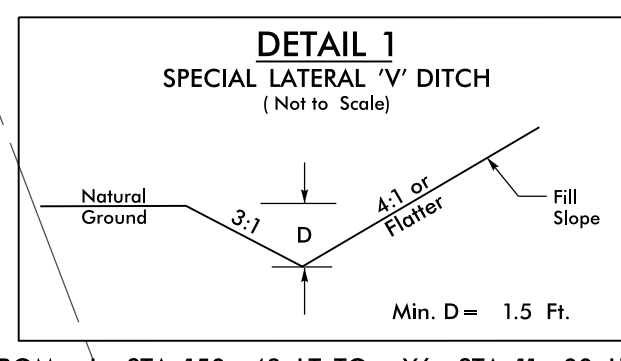
Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

-L- STA. 140+76 M

Pls Sta 123+50.56 $\Delta = 5' 10' 38.4''$ $D = 3' 27' 05.6''$ $L = 300.00'$ $LT = 200.09'$ $ST = 100.08'$	Pls Sta 130+71.11 $\Delta = 40' 59' 57.1''$ (LT) $D = 5' 10' 38.4''$ $L = 300.00'$ $LT = 200.09'$ $ST = 100.08'$	Pls Sta 137+38.40 $\Delta = 5' 10' 38.4''$ $D = 3' 27' 05.6''$ $L = 300.00'$ $LT = 200.09'$ $ST = 100.08'$	Pls Sta 141+38.41 $\Delta = 5' 10' 38.4''$ $D = 3' 27' 05.6''$ $L = 300.00'$ $LT = 200.09'$ $ST = 100.08'$	Pls Sta 155+83.30 $\Delta = 78' 01' 49.4''$ (RT) $D = 3' 27' 05.6''$ $L = 2,260.73'$ $T = 1,344.97'$ $R = 1,660.00'$ $SE = 06$ $V_d = 65$	Pls Sta 165+99.14 $\Delta = 5' 10' 38.4''$ $D = 3' 27' 05.6''$ $L = 300.00'$ $LT = 200.09'$ $ST = 100.08'$
---	---	---	---	--	---

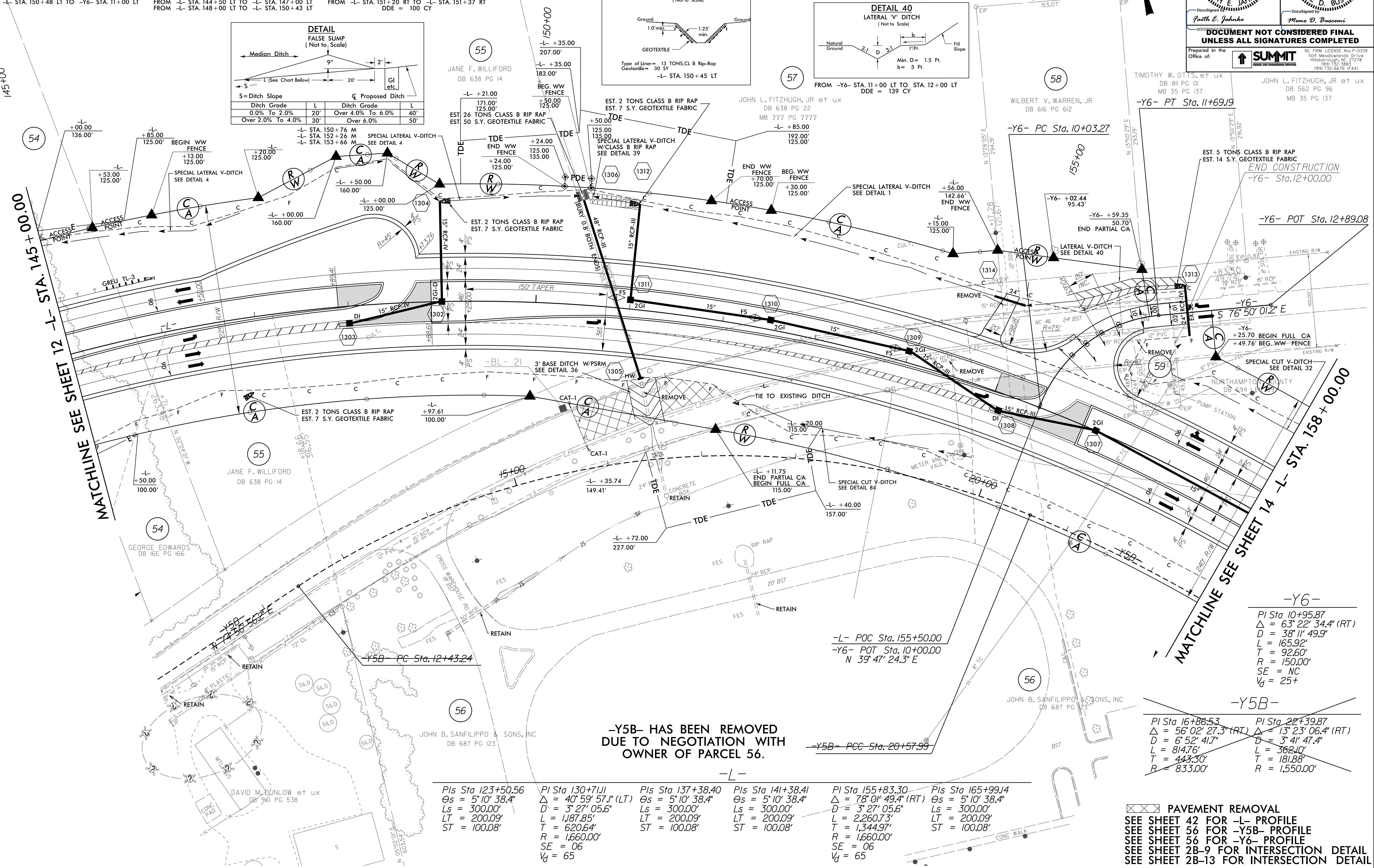
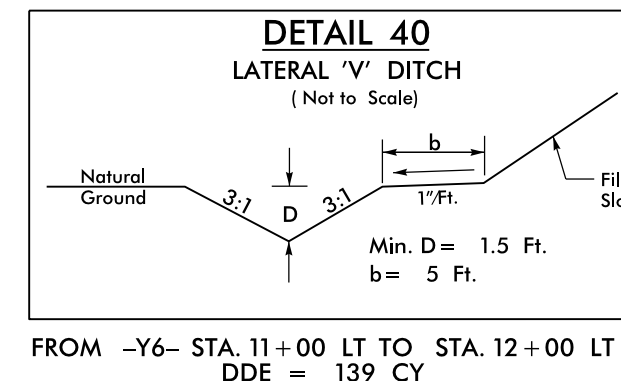
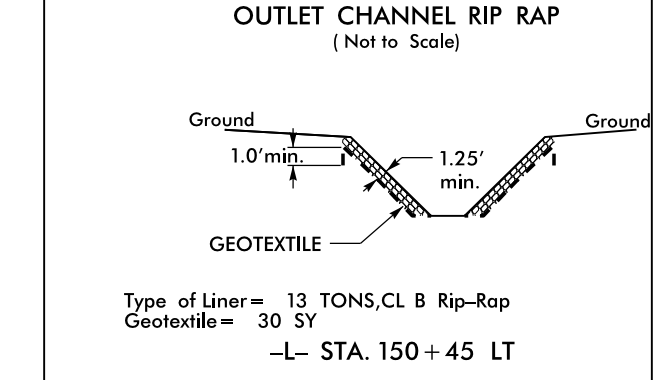
PAVEMENT REMOVAL
 SEE SHEET 41 FOR -L- PROFILE
 SEE SHEET 55 FOR -Y5- PROFILE
 SEE SHEET 55 FOR -Y5A- PROFILE
 SEE SHEET 2B-12 FOR INTERSECTION DETAIL

PROJECT REFERENCE NO. R-2582A	SHEET NO. 13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 4/5/2019	HYDRAULICS ENGINEER 4/5/2019
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	
Prepared in the Office at: 	<p>NC FIRM LICENSE No: P-0339 504 Meadowslands Drive Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)</p>



DETAIL FALSE SUMP
(Not to Scale)

Ditch Grade	L	Proposed Ditch	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'



MATCHLINE SEE SHEET 12 -L- STA. 145+00.00

MATCHLINE SEE SHEET 14 -L- STA. 158+00.00

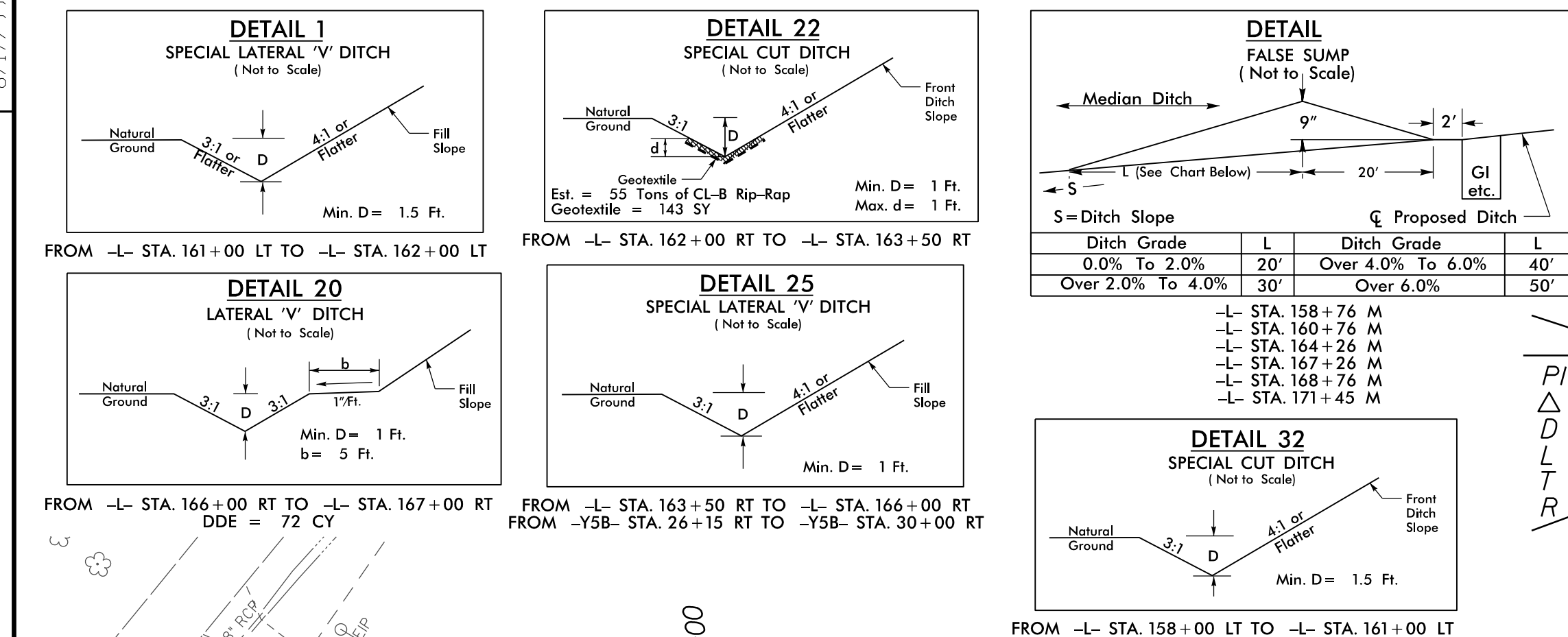
-Y5B- HAS BEEN REMOVED DUE TO NEGOTIATION WITH OWNER OF PARCEL 56.

- L-**
- Pls Sta 123+50.56
Δs = 5' 10' 38.4"
Ls = 300.00'
LT = 200.09'
ST = 100.08'
- Pls Sta 130+71.11
Δ = 40' 59' 57.1" (LT)
D = 3' 27' 05.6"
L = 1,187.85'
T = 6,206.64'
R = 1,660.00'
SE = 06
Vd = 65
- Pls Sta 137+38.40
Δs = 5' 10' 38.4"
Ls = 300.00'
LT = 200.09'
ST = 100.08'
- Pls Sta 141+38.41
Δs = 5' 10' 38.4"
Ls = 300.00'
LT = 200.09'
ST = 100.08'
- Pls Sta 155+83.30
Δ = 78' 01' 49.4" (RT)
D = 3' 27' 05.6"
L = 2,260.73'
T = 1,344.97'
R = 1,660.00'
SE = 06
Vd = 65
- Pls Sta 165+99.14
Δs = 5' 10' 38.4"
Ls = 300.00'
LT = 200.09'
ST = 100.08'

- Y6-**
- PI Sta 10+95.87
Δ = 63' 22' 34.4" (RT)
D = 38' 11' 49.9"
L = 165.92'
T = 92.60'
R = 150.00'
SE = NC
Vd = 25+
- Y5B-**
- PI Sta 16+86.53
Δ = 56' 02' 27.3" (RT)
D = 6' 52' 41.7"
L = 814.76'
T = 443.30'
R = 833.00'
- PI Sta 22+39.87
Δ = 13' 23' 06.4" (RT)
D = 3' 41' 47.4"
L = 362.10'
T = 181.88'
R = 1,550.00'

PAVEMENT REMOVAL
 SEE SHEET 42 FOR -L- PROFILE
 SEE SHEET 56 FOR -Y5B- PROFILE
 SEE SHEET 56 FOR -Y6- PROFILE
 SEE SHEET 2B-9 FOR INTERSECTION DETAIL
 SEE SHEET 2B-13 FOR INTERSECTION DETAIL

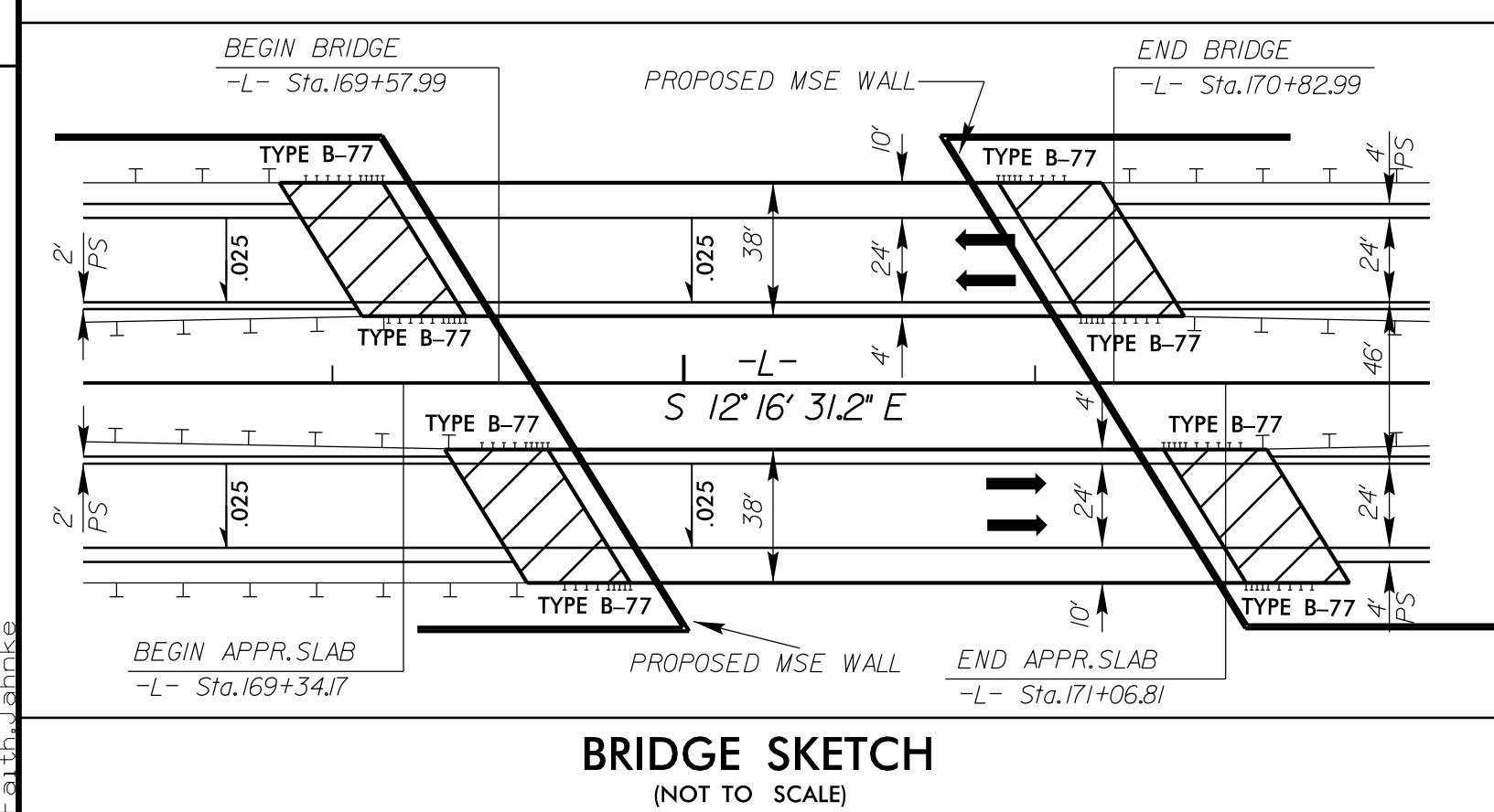
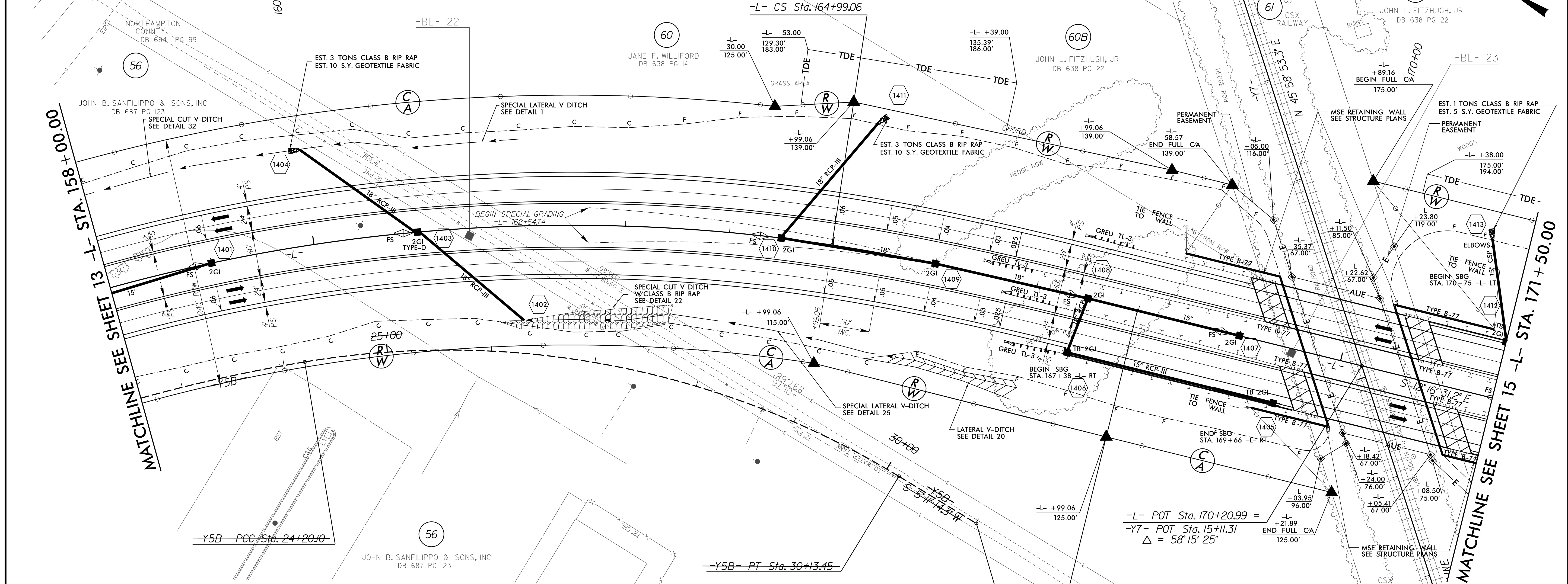
8.17.19
 RE: 158-2019_08.rvt
 R-2582A Rev: Part 13.dgn
 David M. Dunlow et ux
 DB 910 PG 538



Pls Sta 123+50.56 $\Theta_s = 5^\circ 10' 38.4''$ $L_s = 300.00'$ $LT = 200.09'$ $ST = 100.08'$	Pl Sta 130+71.11 $\Delta = 40^\circ 59' 57.1''$ (LT) $D = 3^\circ 27' 05.6''$ $L = 1,187.85'$ $T = 620.64'$ $R = 1,660.00'$ $SE = 06$ $V_d = 65$	Pls Sta 137+38.40 $\Theta_s = 5^\circ 10' 38.4''$ $L_s = 300.00'$ $LT = 200.09'$ $ST = 100.08'$	Pls Sta 141+38.41 $\Theta_s = 5^\circ 10' 38.4''$ $L_s = 300.00'$ $LT = 200.09'$ $ST = 100.08'$	Pl Sta 155+83.30 $\Delta = 78^\circ 01' 49.4''$ (RT) $D = 3^\circ 27' 05.6''$ $L = 2,260.73'$ $T = 1,344.97'$ $R = 1,660.00'$ $SE = 06$ $V_d = 65$	Pls Sta 165+99.14 $\Theta_s = 5^\circ 10' 38.4''$ $L_s = 300.00'$ $LT = 200.09'$ $ST = 100.08'$
---	---	---	---	---	---

-Y5B-

Pl Sta 22+39.87 $\Delta = 13^\circ 23' 06.4''$ (RT) $D = 3^\circ 41' 47.4''$ $L = 362.10'$ $T = 181.88'$ $R = 1,550.00'$	Pl Sta 27+29.99 $\Delta = 40^\circ 48' 44.8''$ (RT) $D = 6^\circ 52' 41.7''$ $L = 593.36'$ $T = 309.89'$ $R = 833.00'$
---	---



SEE SHEET 42 FOR -L- PROFILE
SEE SHEET 56 FOR -Y5B- PROFILE

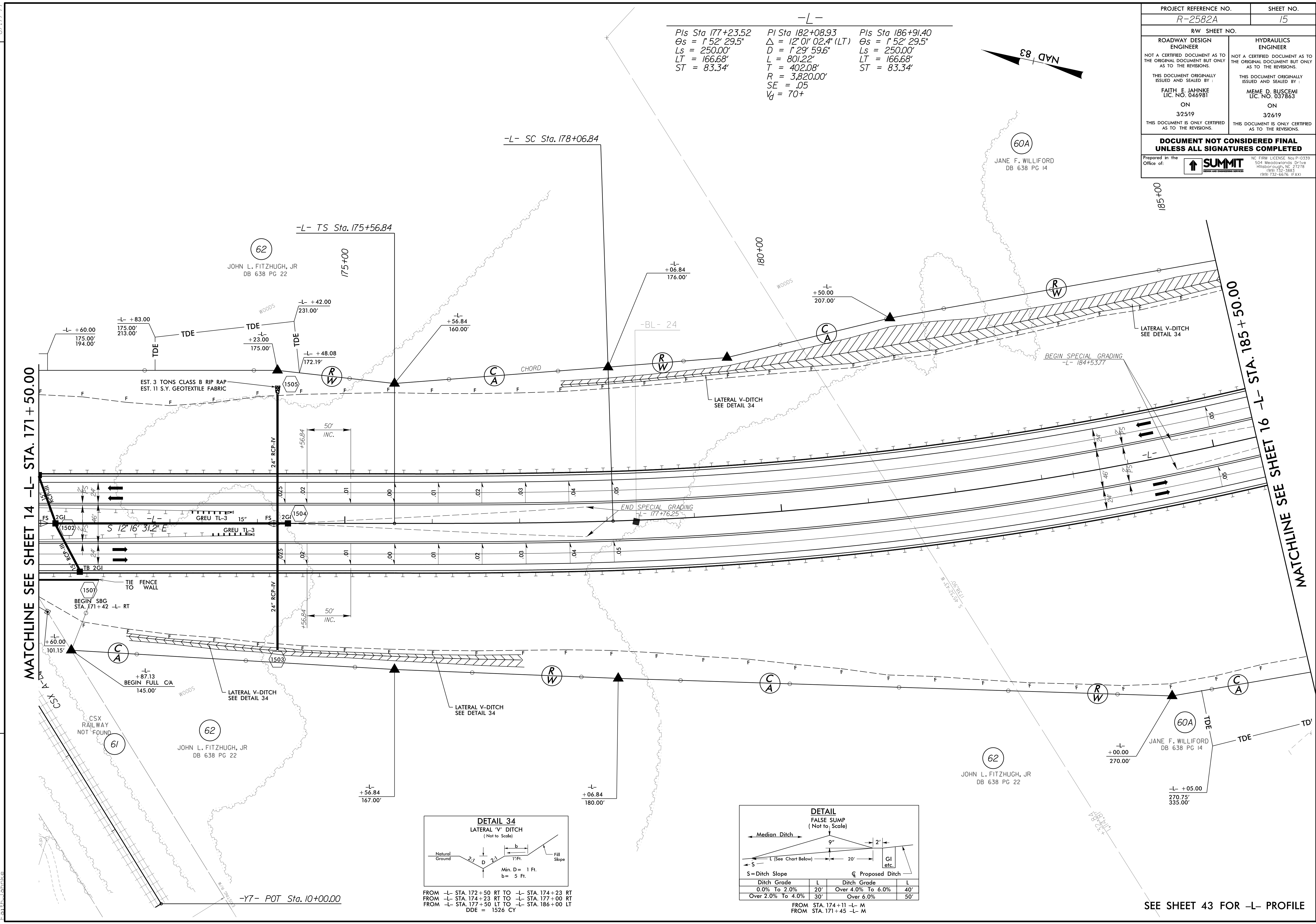
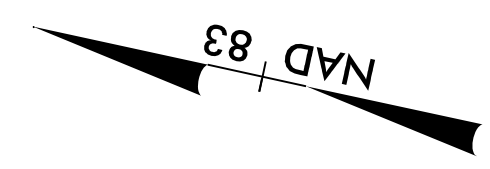
REVISIONS
R/W REV. 03/09/20 (FEU): ADDED PARCEL 60B AND ASSOCIATED PROPERTY LINES.

8.17/99
13-MAR-2020 14:32
R:\2582A\Drawings\plan\plan_14.dgn
E:\Lib\lshk

PROJECT REFERENCE NO. R-2582A	SHEET NO. 15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NOT A CERTIFIED DOCUMENT AS TO THE ORIGINAL DOCUMENT BUT ONLY AS TO THE REVISIONS. THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY: FAITH E. JAHNKE LIC. NO. 046981 ON 32519 THIS DOCUMENT IS ONLY CERTIFIED AS TO THE REVISIONS.	HYDRAULICS ENGINEER NOT A CERTIFIED DOCUMENT AS TO THE ORIGINAL DOCUMENT BUT ONLY AS TO THE REVISIONS. THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY: MEME D. BUSCEMI LIC. NO. 037863 ON 32619 THIS DOCUMENT IS ONLY CERTIFIED AS TO THE REVISIONS.
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of: SUMMIT	NC FIRM LICENSE No: P-0359 504 Meadows Road Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)

-L-

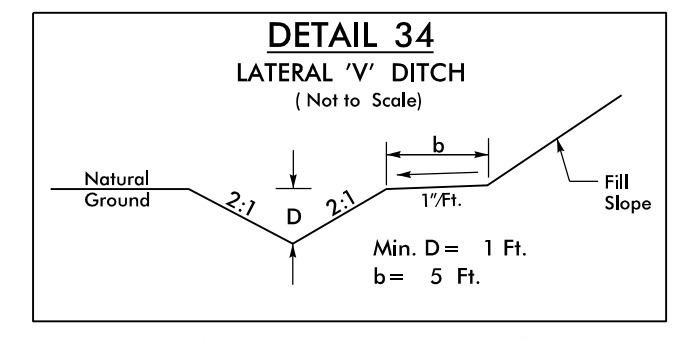
PIs Sta 177+23.52 Θs = 1°52'29.5" Ls = 250.00' LT = 166.68' ST = 83.34'	PI Sta 182+08.93 Δ = 12°01'02.4" (LT) D = 1°29'59.6" L = 801.22' T = 402.08' R = 3,820.00' SE = .05 V _g = 70+	PIs Sta 186+91.40 Θs = 1°52'29.5" Ls = 250.00' LT = 166.68' ST = 83.34'
---	---	---



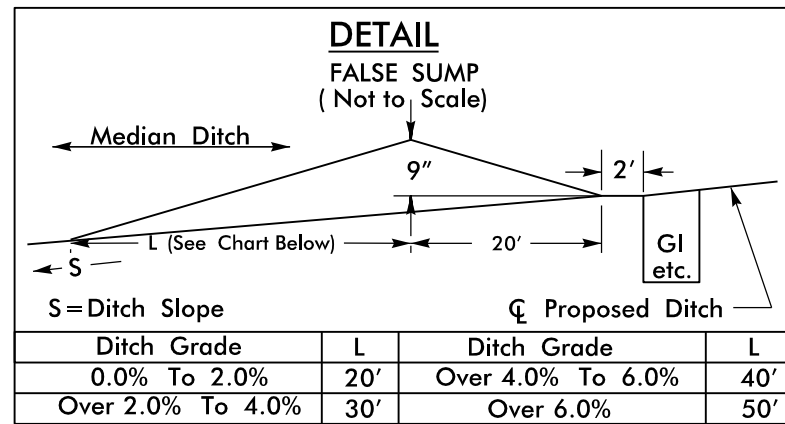
REVISIONS
R/W REV. 07/27/20 (FEJ): REVISED PARCEL 60 TO PARCEL 60A.

MATCHLINE SEE SHEET 14 -L- STA. 171+50.00

MATCHLINE SEE SHEET 16 -L- STA. 185+50.00



FROM -L- STA. 172+50 RT TO -L- STA. 174+23 RT
FROM -L- STA. 174+23 RT TO -L- STA. 177+00 RT
FROM -L- STA. 177+50 LT TO -L- STA. 186+00 LT
DDE = 1526 CY

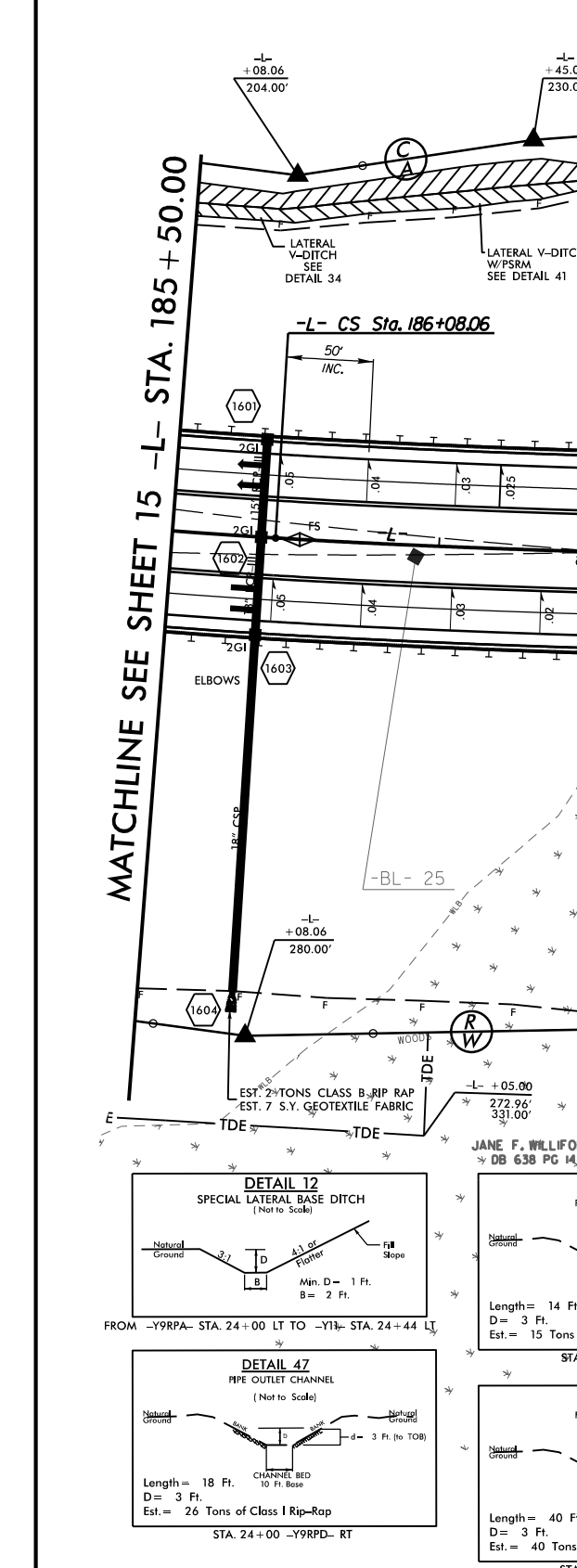
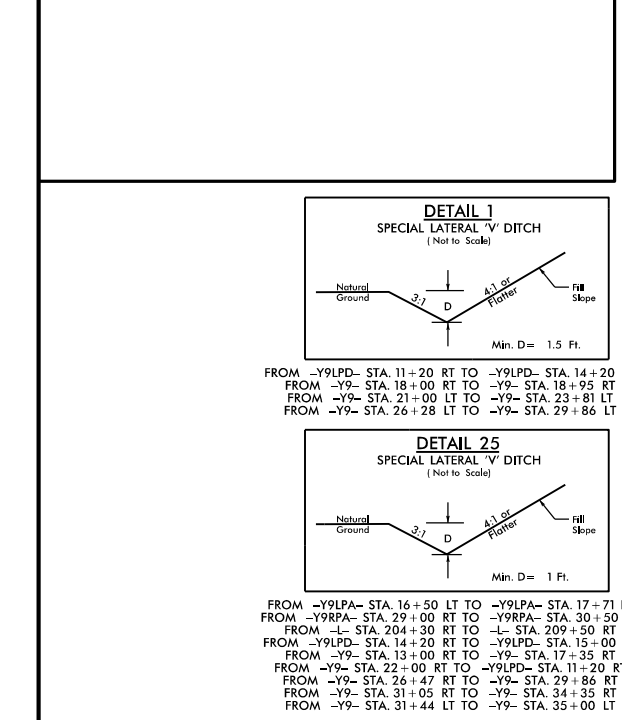


SEE SHEET 43 FOR -L- PROFILE

8/17/99

13-AUG-2020 08:49
R-2582A (Full) dsh-15.dgn
E:\tbl\jahnke

NO.	DESCRIPTION	DATE
1	REVISED PARCEL 65 TO PARCEL 60A	03/27/20

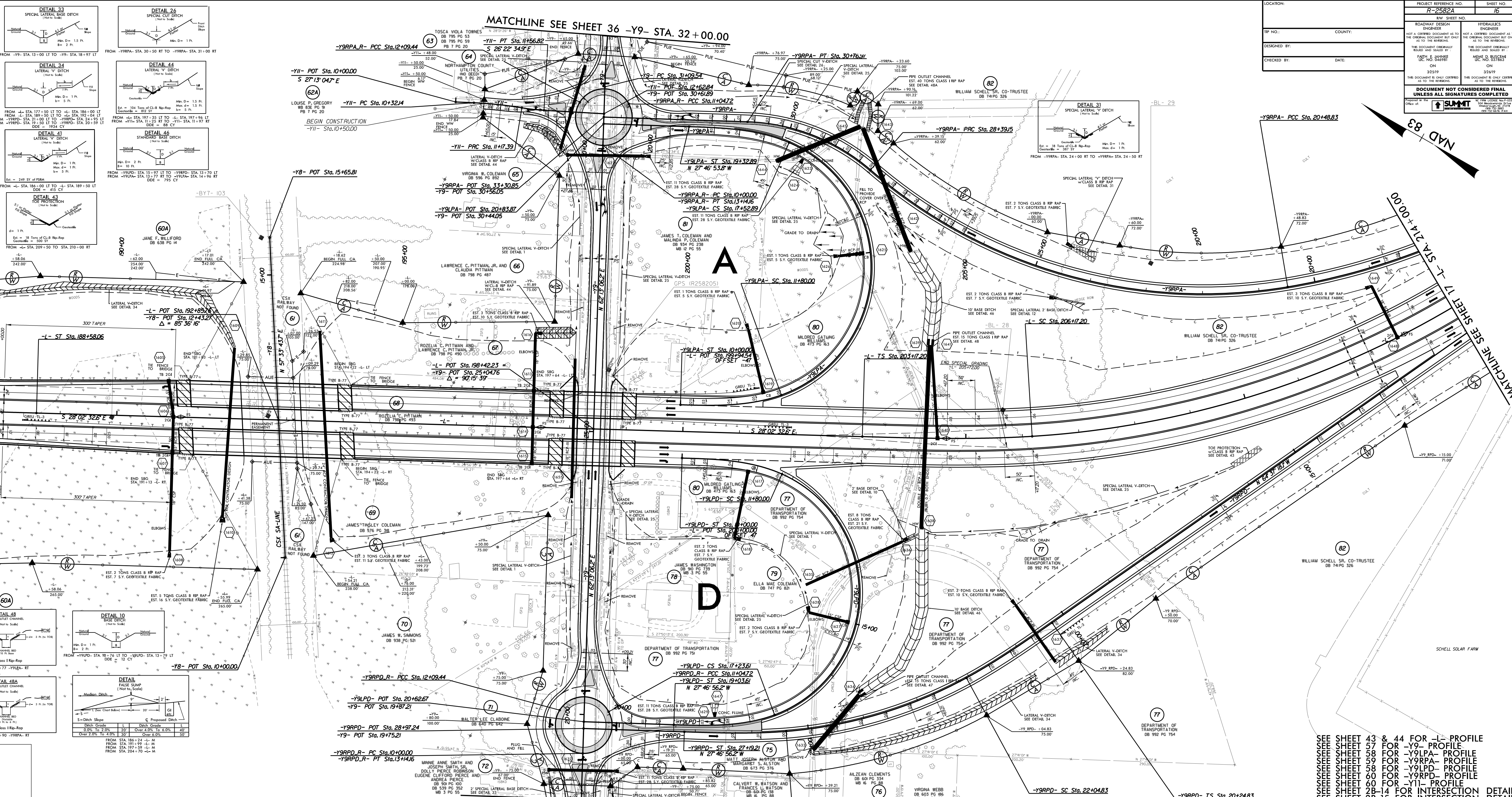


2017
2037

AVERAGE DAILY TRAFFIC

US 301/US 158

5,318	1,209	554	6,100
7,045	1,572	736	8,100
			NC 46
	1,890	3,327	
	2,527	4,418	
		10,182	
		13,127	
		US 301/US 158	



-Y9 LOOP A-

Pi Sta 17+85.67	Pi Sta 18+137.1
Δ = 156.46 (22.5°)	Δ = 38.58 (51.5°)
L = 180.00	L = 180.00
T = 57.28	T = 60.82
SE = 06	SE = 06
VE = 60	VE = 60

-Y9 RAMP A-

Pi Sta 15+60.56	Pi Sta 24+71.51	Pi Sta 29+62.85
Δ = 50.04 (40.3°)	Δ = 50.18 (48.1°)	Δ = 38.58 (51.5°)
D = 4.48 (28.7°)	D = 5.21 (34.3°)	D = 10.22 (12.2°)
L = 104.83	L = 79.32	L = 237.82
T = 49.85	T = 42.86	T = 12.37
R = 1200.00	R = 900.00	R = 3500.00
SE = 06	SE = 06	SE = 06
VE = 60	VE = 50	VE = 35

-Y9 LOOP D-

Pi Sta 17+41.09	Pi Sta 17+84.50
Δ = 135.25 (14.2°)	Δ = 22.25 (12.3°)
L = 180.00	L = 180.00
T = 54.16	T = 60.89
SE = 06	SE = 06
VE = 30	VE = 60

-Y9 RAMP D-

Pi Sta 23+14.49	Pi Sta 25+99.28
Δ = 25.96 (52.4°)	Δ = 6.26 (44.8°)
D = 7.09 (43.7°)	D = 18.00
L = 54.38	L = 120.00
T = 16.67	T = 60.89
R = 1600.00	R = 800.00
SE = 06	SE = 06
VE = 50	VE = 60

-Y9RPA-R-

Pi Sta 17+23.52	Pi Sta 18+91.40
Δ = 127.00 (0.0°)	Δ = 127.00 (0.0°)
D = 147.35 (2.6°)	D = 147.35 (2.6°)
L = 186.60	L = 186.60
T = 86.60	T = 86.60
SE = 02	SE = 02

-Y9RPA-R-

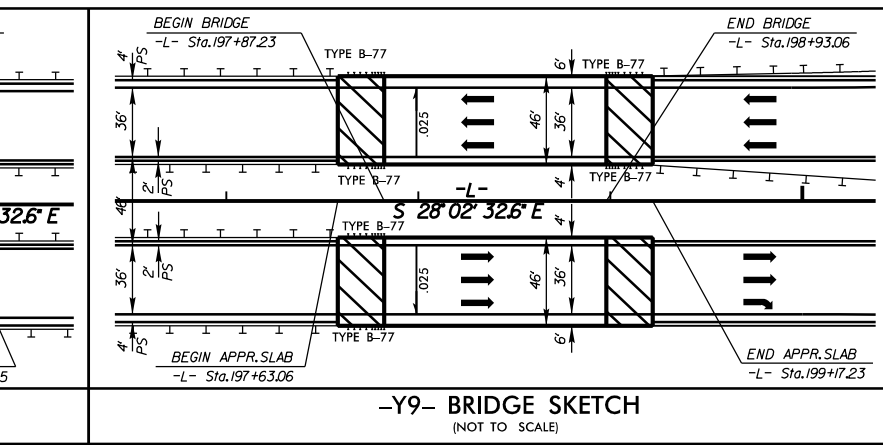
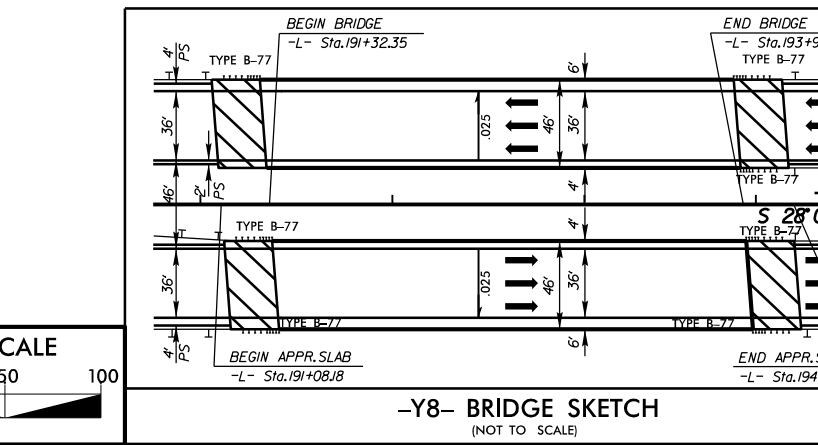
Pi Sta 10+86.60	Pi Sta 12+96.04
Δ = 120.00 (0.0°)	Δ = 120.00 (0.0°)
D = 147.35 (2.6°)	D = 147.35 (2.6°)
L = 186.60	L = 186.60
T = 86.60	T = 86.60
SE = 02	SE = 02

-Y9-

Pi Sta 33+47.93	Δ = 13.09 (7.6°)
D = 23.28 (3.1°)	L = 54.25
T = 25.39	R = 1200.00
SE = 08	VE = 60

-Y11-

Pi Sta 11+37.12	Δ = 6.12 (23.3°)
D = 12.44 (26.2°)	L = 39.43
T = 9.15	R = 3600.00
SE = 04	VE = 25



SEE SHEET 43 & 44 FOR -L- PROFILE
SEE SHEET 57 FOR -Y9- PROFILE
SEE SHEET 58 FOR -Y91PA- PROFILE
SEE SHEET 59 FOR -Y9RPA- PROFILE
SEE SHEET 58 FOR -Y9LPD- PROFILE
SEE SHEET 60 FOR -Y9RPD- PROFILE
SEE SHEET 60 FOR -Y11- PROFILE
SEE SHEET 28-14 FOR INTERSECTION DETAIL
SEE SHEET 28-15 FOR INTERSECTION DETAIL

PROJECT REFERENCE NO.	7-2582A	SHEET NO.	16
REV. SHEET NO.			
ROADWAY DESIGN ENGINEER	HYDRONICS	HYDRAULIC DESIGN ENGINEER	HYDRONICS
DESIGNED BY		CHECKED BY	
DATE			

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DATE: 03/27/20

BY: [Signature]

LOCATION: [Blank]

COUNTY: [Blank]

PROJECT: [Blank]

DATE: [Blank]

PROJECT REFERENCE NO. 7-2582A

SHEET NO. 16

REV. SHEET NO.

ROADWAY DESIGN ENGINEER HYDRONICS

HYDRAULIC DESIGN ENGINEER HYDRONICS

DESIGNED BY

CHECKED BY

DATE

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DATE: 03/27/20

BY: [Signature]

LOCATION: [Blank]

COUNTY: [Blank]

PROJECT: [Blank]

DATE: [Blank]

PROJECT REFERENCE NO. 7-2582A

SHEET NO. 16

REV. SHEET NO.

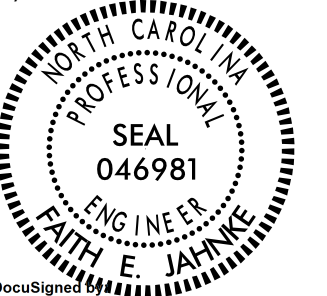
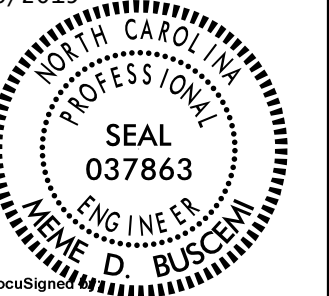

ROADWAY DESIGN ENGINEER HYDRONICS

HYDRAULIC DESIGN ENGINEER HYDRONICS

DESIGNED BY

CHECKED BY

DATE

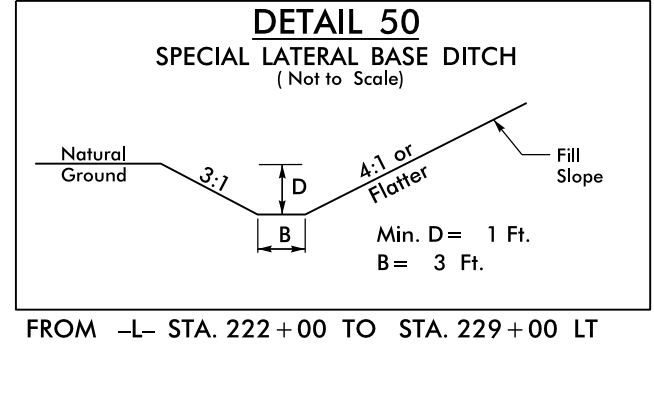
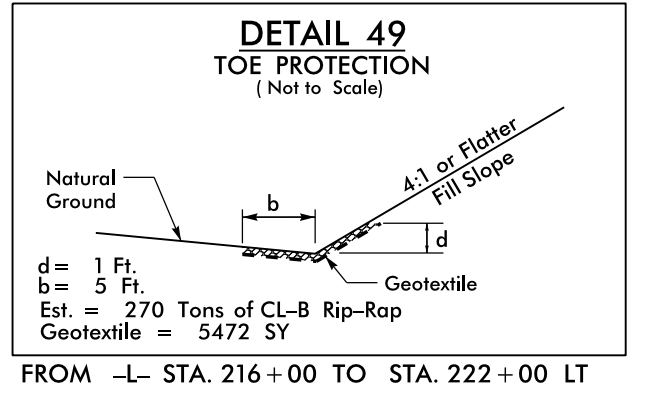
PROJECT REFERENCE NO. R-2582A	SHEET NO. 17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 3/25/2019	HYDRAULICS ENGINEER 3/26/2019
	
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-L-
 PIs Sta 205+17.28 PIs Sta 219+89.00 PIs Sta 230+10.15
 $\Delta = 5^{\circ} 10' 38.4"$ $\Delta = 7^{\circ} 08' 23.8"$ (LT) $\Delta = 5^{\circ} 10' 38.4"$
 $L_s = 300.00'$ $D = 3' 27.056"$ $L_s = 300.00'$
 $LT = 200.09'$ $L = 2,292.88'$ $LT = 200.09'$
 $ST = 100.08'$ $T = 1,371.81'$ $ST = 100.08'$
 $R = 1,660.00'$
 $SE = 06$
 $V_d = 65$

-Y9 RAMP A-
 PIs Sta 15+60.56 PIs Sta 24+71.51 PIs Sta 29+62.85
 $\Delta = 50^{\circ} 04' 40.3"$ (RT) $\Delta = 50^{\circ} 18' 48.1"$ (RT) $\Delta = 38^{\circ} 55' 53.5"$ (LT)
 $D = 4' 46.287"$ $D = 6' 21.583"$ $D = 16' 22.128"$
 $L = 1,048.83'$ $L = 790.32'$ $L = 237.82'$
 $T = 560.56'$ $T = 422.68'$ $T = 123.71'$
 $R = 1,200.00'$ $R = 900.00'$ $R = 350.00'$
 $SE = 06$ $SE = 06$ $SE = 06$
 $V_d = 60$ $V_d = 50$ $V_d = 35$

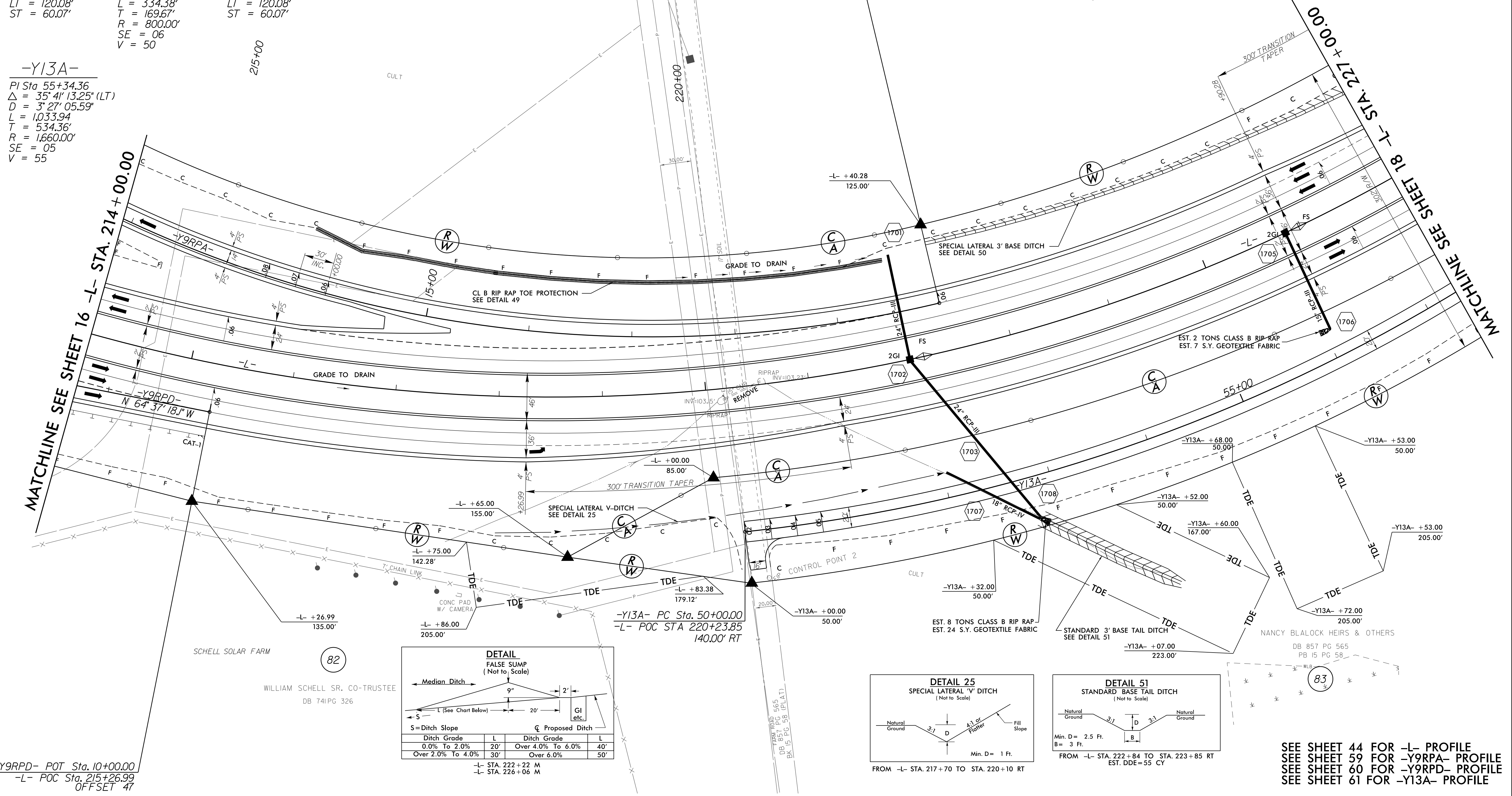
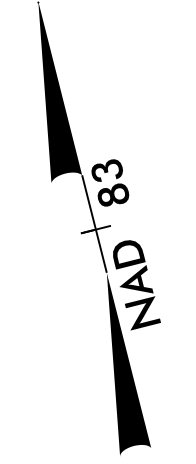
-Y9 RAMP D-
 PIs Sta 21+44.91 PIs Sta 23+74.49 PIs Sta 25+99.28
 $\Delta = 6^{\circ} 26' 44.8"$ $\Delta = 23^{\circ} 56' 52.4"$ (RT) $\Delta = 6^{\circ} 26' 44.8"$
 $L_s = 180.00'$ $D = 7' 09.431"$ $L_s = 180.00'$
 $LT = 120.08'$ $L = 334.38'$ $LT = 120.08'$
 $ST = 60.07'$ $T = 169.67'$ $ST = 60.07'$
 $R = 800.00'$
 $SE = 06$
 $V = 50$

-Y13A-
 PIs Sta 55+34.36
 $\Delta = 35^{\circ} 41' 13.25"$ (LT)
 $D = 3' 27.0559"$
 $L = 1,033.94'$
 $T = 534.36'$
 $R = 1,660.00'$
 $SE = 05$
 $V = 55$



(82)
WILLIAM SCHELL SR. CO-TRUSTEE
DB 741 PG 326

(83)
NANCY BLALOCK HEIRS & OTHERS
DB 857 PG 565
PB 15 PG 58

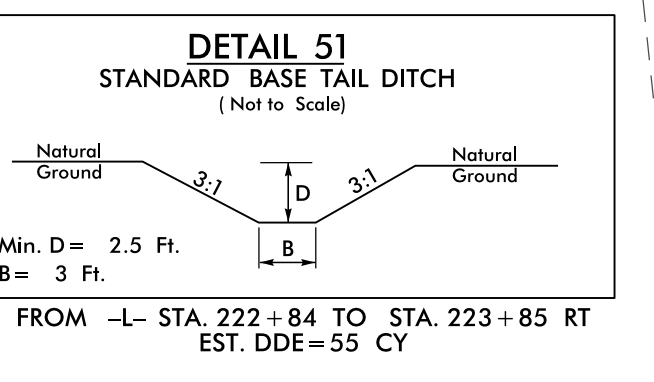
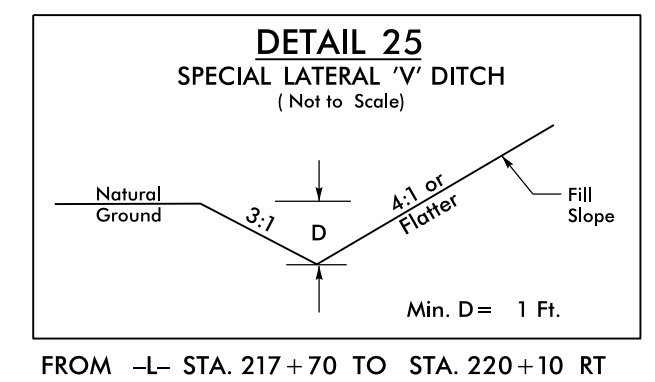


DETAIL
FALSE SUMP
(Not to Scale)

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

S = Ditch Slope ϕ Proposed Ditch
 L (See Chart Below) GI etc.

-L STA 222+22 M
 -L STA 226+06 M



SEE SHEET 44 FOR -L- PROFILE
 SEE SHEET 59 FOR -Y9RPA- PROFILE
 SEE SHEET 60 FOR -Y9RPD- PROFILE
 SEE SHEET 61 FOR -Y13A- PROFILE

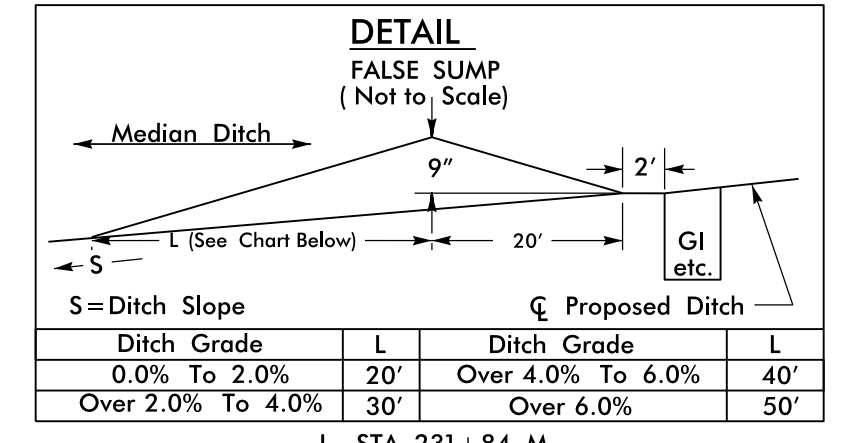
8/17/19 25-MAR-2019 09:50 R3-268 24 R344-Par-17.dgn

8/17/99

-Y13A-
 PI Sta 55+34.36
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 $D = 3^\circ 27' 05.59''$
 $L = 1,033.94$
 $T = 534.36'$
 $R = 1,660.00'$
 $SE = .05$
 $V = 55$

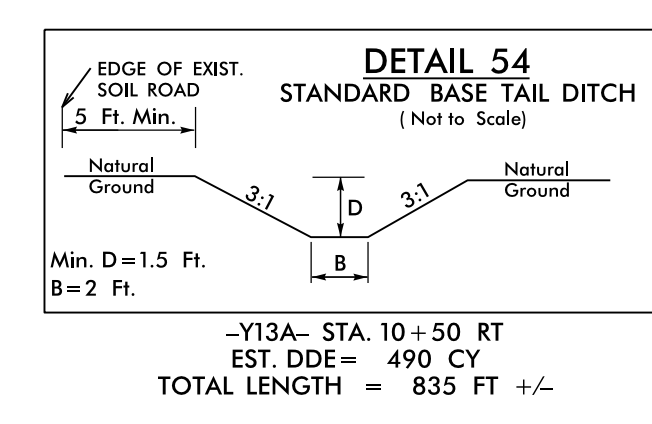
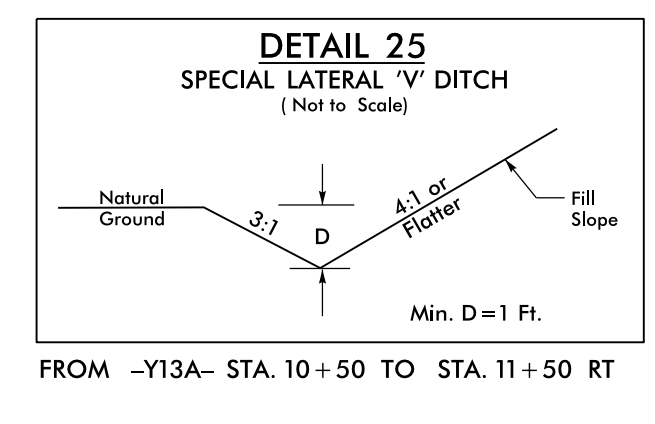
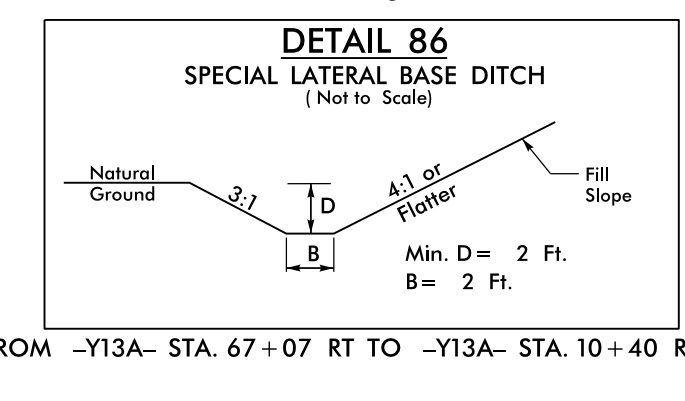
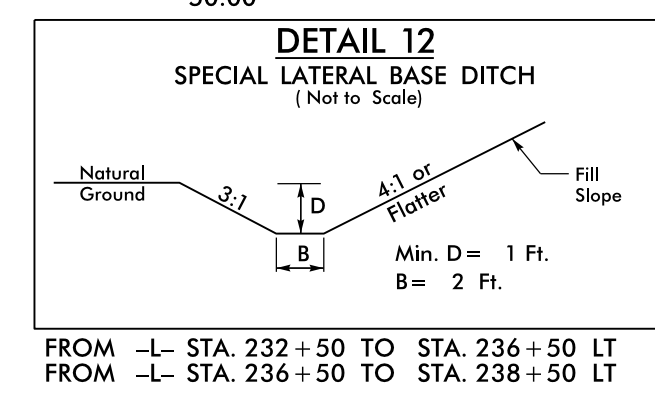
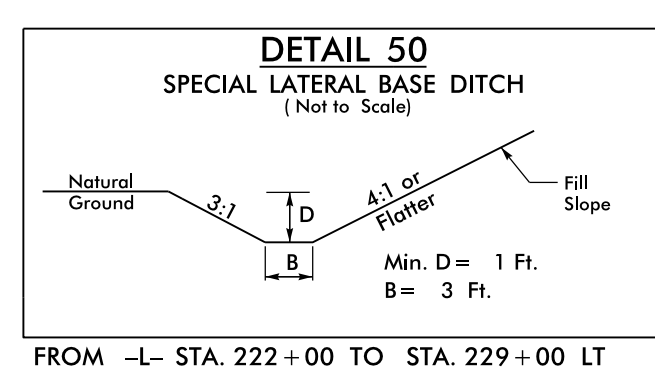
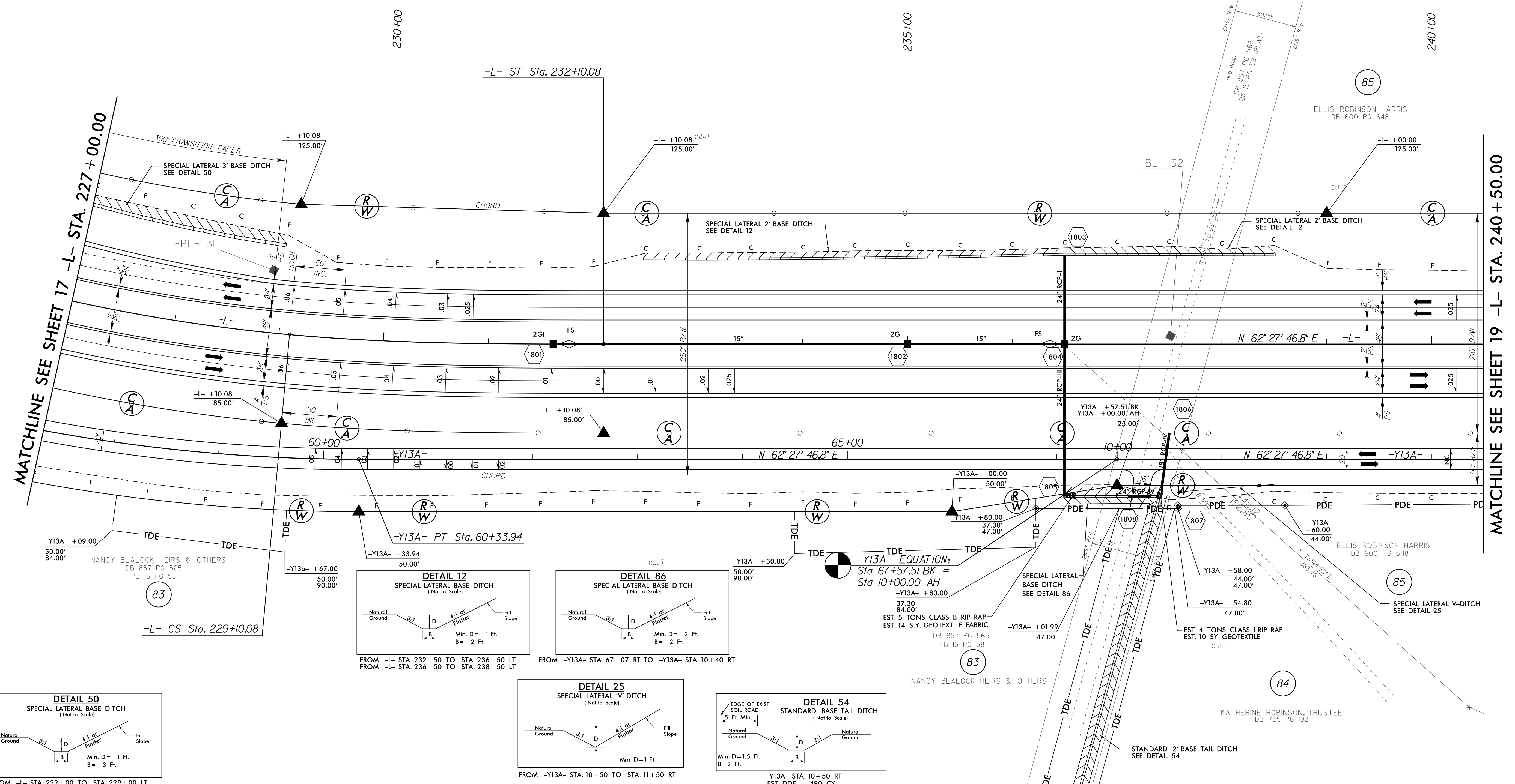
(83)
 NANCY BLALOCK HEIRS & OTHERS
 DB 857 PG 565
 PB 15 PG 58

-L-
 PI Sta 205+17.28 $\Delta = 5^\circ 10' 38.4''$ $Ls = 300.00'$ $LT = 200.09'$ $ST = 100.08'$
 PI Sta 219+89.00 $\Delta = 79^\circ 08' 23.8''$ (LT) $Ls = 3^\circ 27' 05.6''$ $L = 2,292.88'$ $T = 1,371.81'$ $R = 1,660.00'$ $SE = .06$ $Vq = 65$
 PI Sta 230+10.15 $\Delta = 5^\circ 10' 38.4''$ $Ls = 300.00'$ $LT = 200.09'$ $ST = 100.08'$



-L- STA. 231+84 M
 -L- STA. 236+28 M

PROJECT REFERENCE NO. R-2582A	SHEET NO. 18
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 3/25/2019 Faith E. Jahnke	HYDRAULICS ENGINEER 3/26/2019 Memo D. Brusconi
SEAL 046981 NORTH CAROLINA PROFESSIONAL ENGINEER	SEAL 037863 NORTH CAROLINA PROFESSIONAL ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office at: SUMMIT	NC FIRM LICENSE NO: P-0339 504 Woodlands Drive Hillsborough, NC 27278 (919) 332-3883 (919) 732-6676 (FAX)

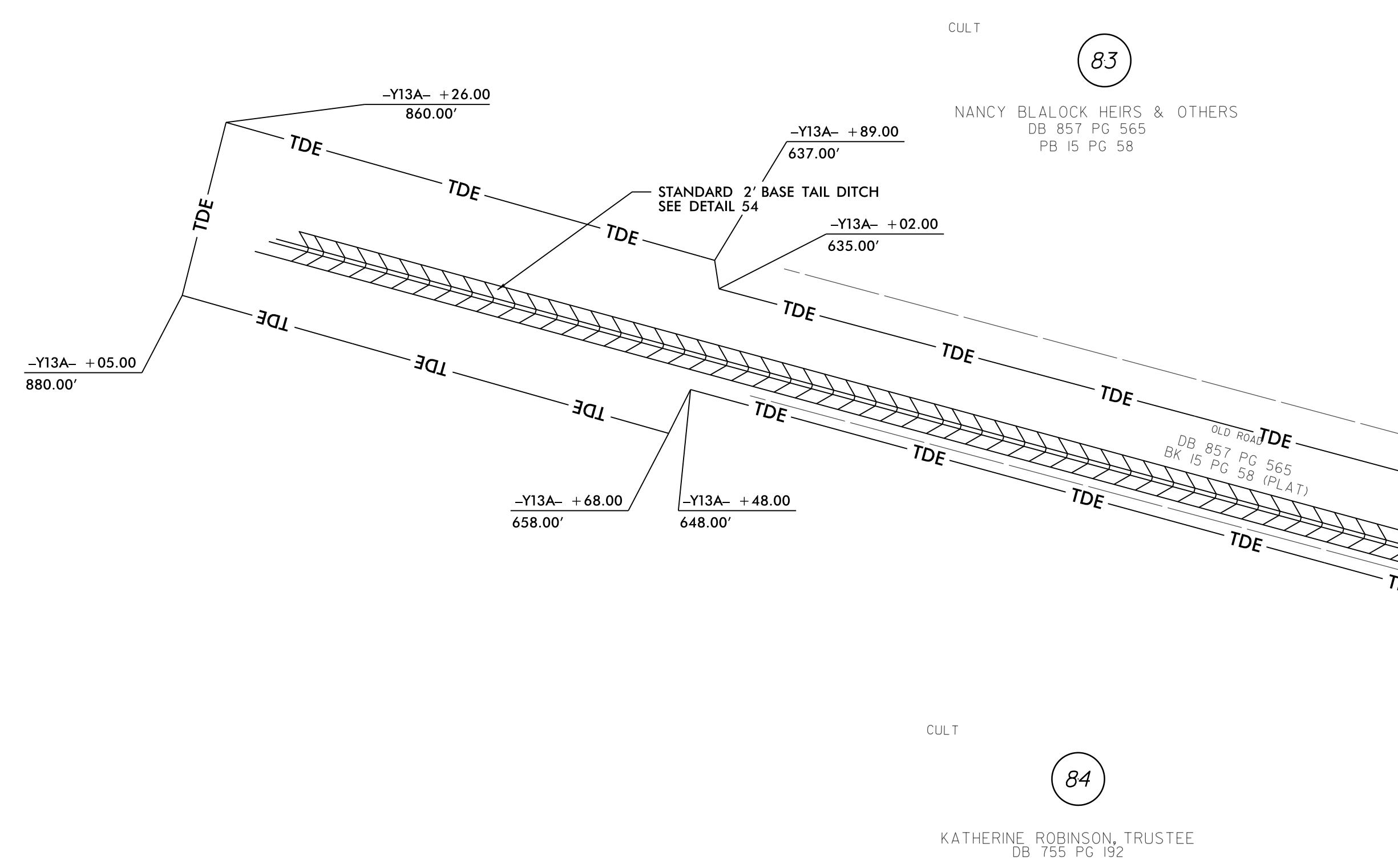
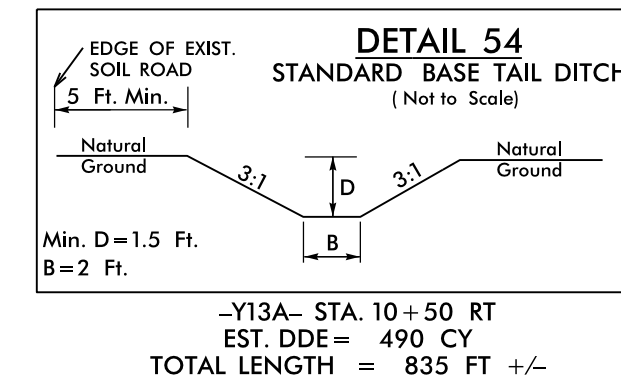
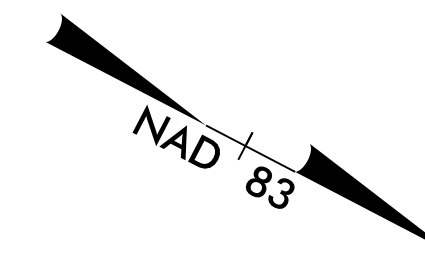


MATCHLINE SEE SHEET 18-A
 SEE SHEET 45 FOR -L- PROFILE
 SEE SHEET 61, 62, 62A FOR -Y13A- PROFILE

25-MAR-2019 09:50
 R-2582A.dwg
 8/17/99

8/17/99

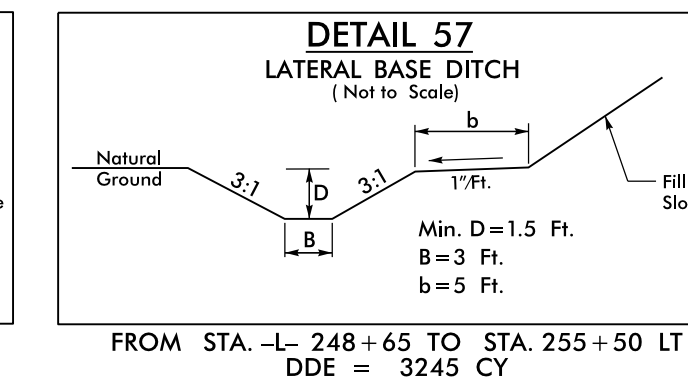
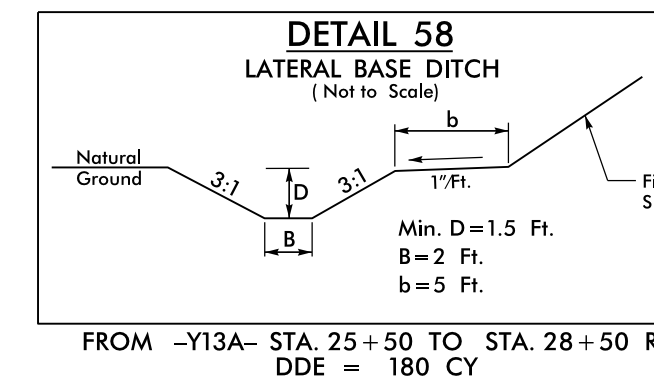
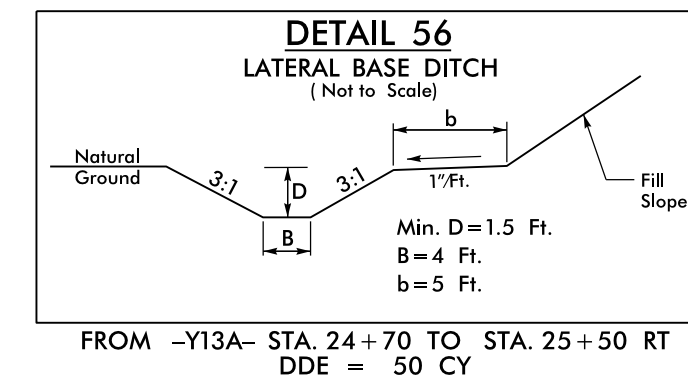
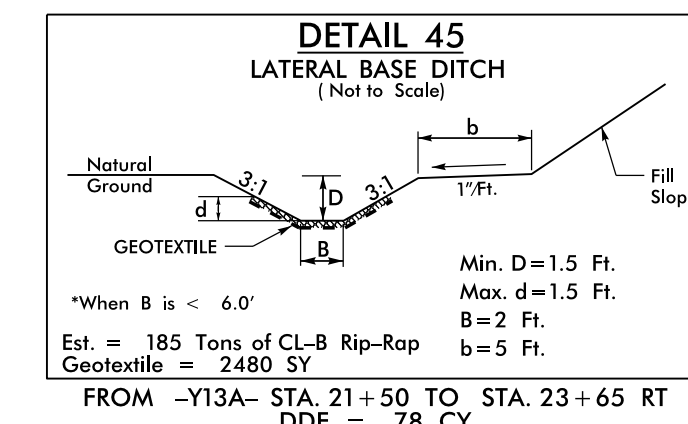
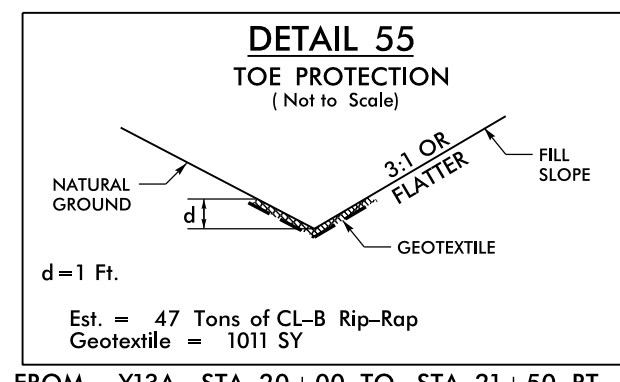
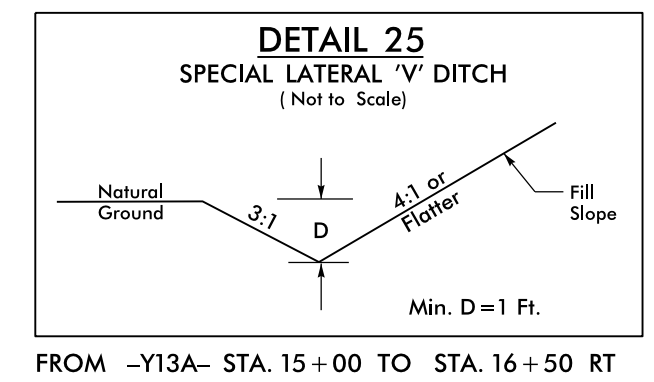
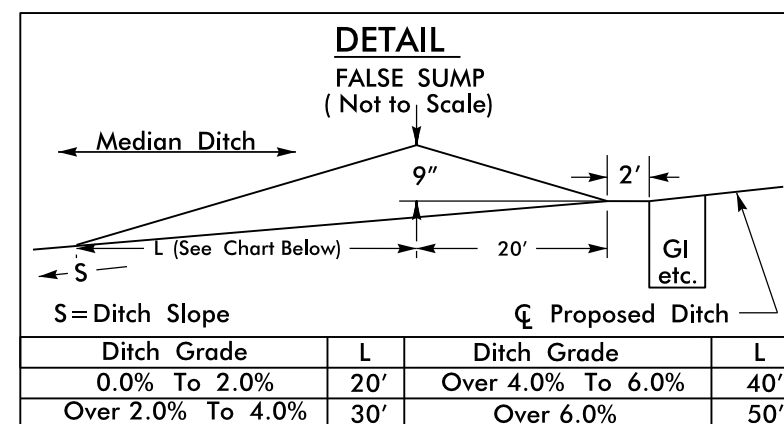
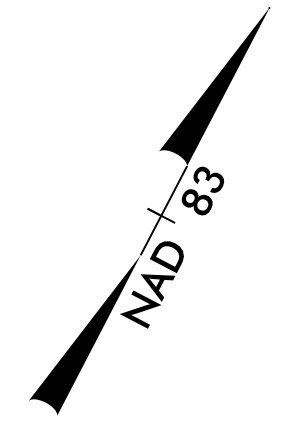
PROJECT REFERENCE NO. <i>R-2582A</i>		SHEET NO. <i>18-A</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 3/25/2019 <i>Faith E. Janenko</i>		HYDRAULICS ENGINEER 3/26/2019 <i>Memo D. Busconi</i>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
Prepared in the Office at:			
		<small>NC FIRM LICENSE No: P-0339 504 Meadowslands Drive Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)</small>	



MATCHLINE SHEET 18

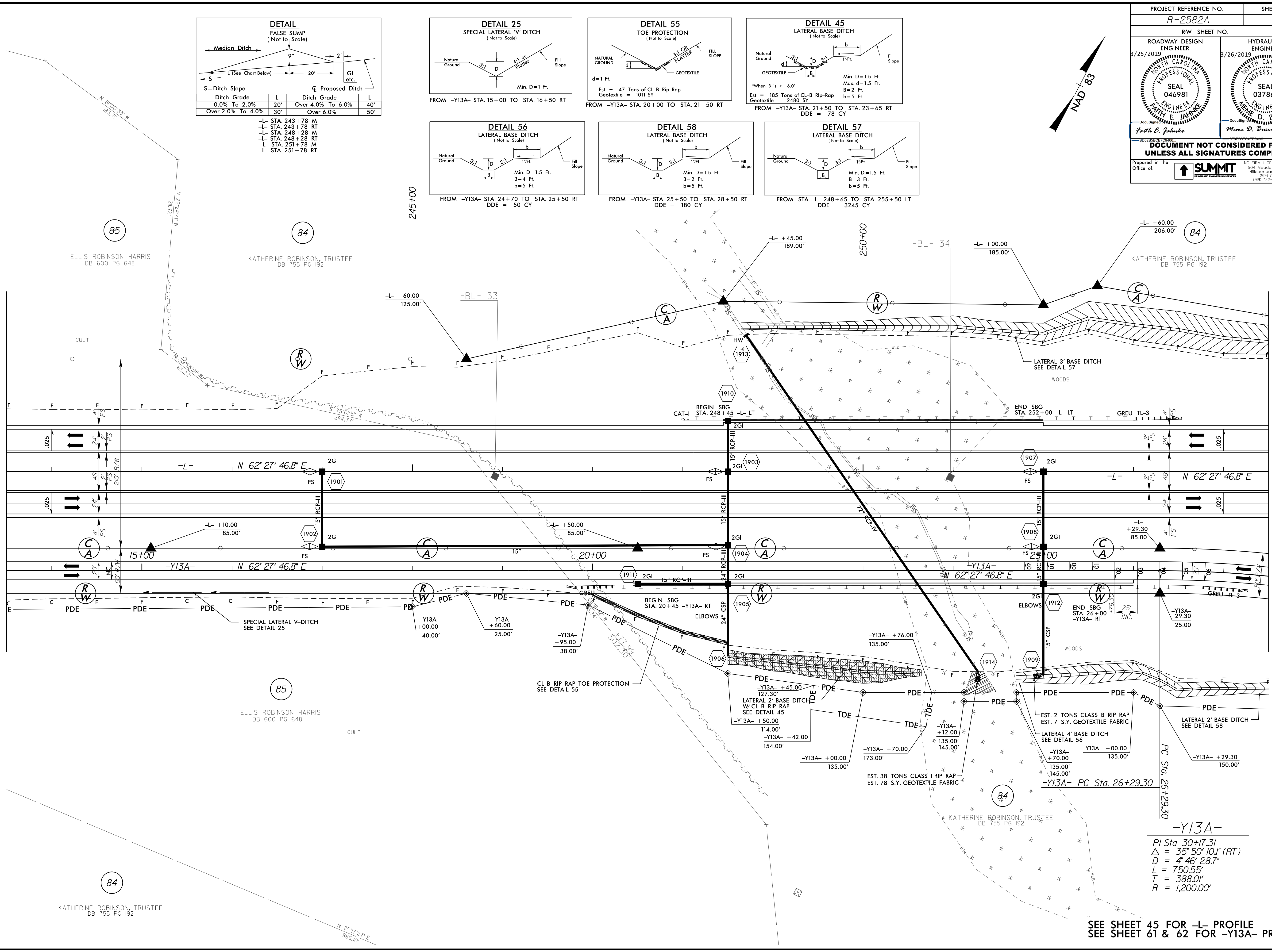
R-2582A.dgn
8/17/99
Faith E. Janenko

PROJECT REFERENCE NO. R-2582A	SHEET NO. 19
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 3/25/2019 FAITH E. JAHNKE SEAL 046981 NORTH CAROLINA PROFESSIONAL ENGINEER	HYDRAULICS ENGINEER 3/26/2019 MEMO D. BUSCOMI SEAL 037863 NORTH CAROLINA PROFESSIONAL ENGINEER
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p> <p>Prepared in the Office at: SUMMIT 1901 S. WOODLANDS DRIVE HILLSBOROUGH, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)</p>	



MATCHLINE SEE SHEET 18 -L- STA. 240+50.00

MATCHLINE SEE SHEET 20 -L- STA. 254+50.00



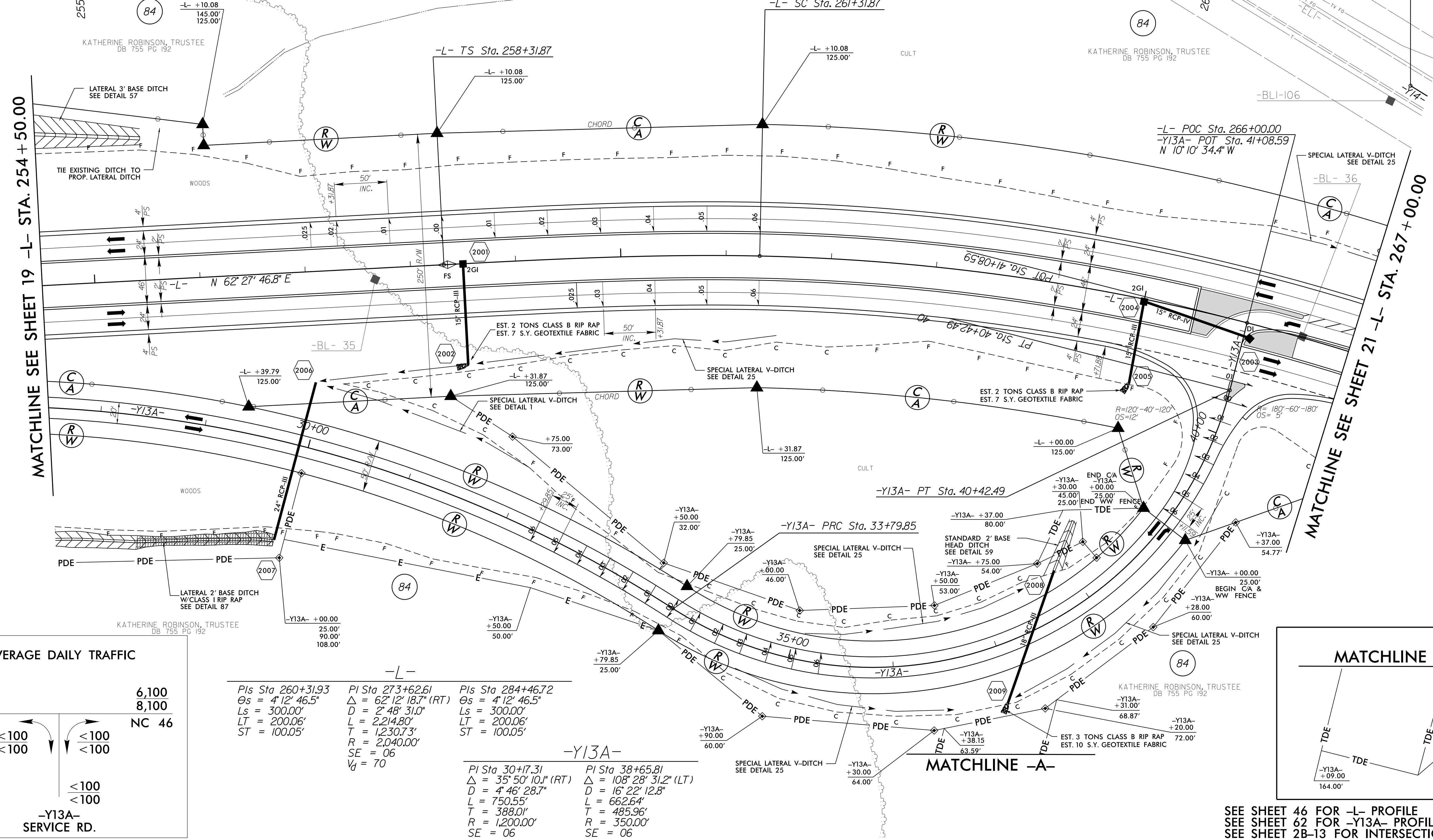
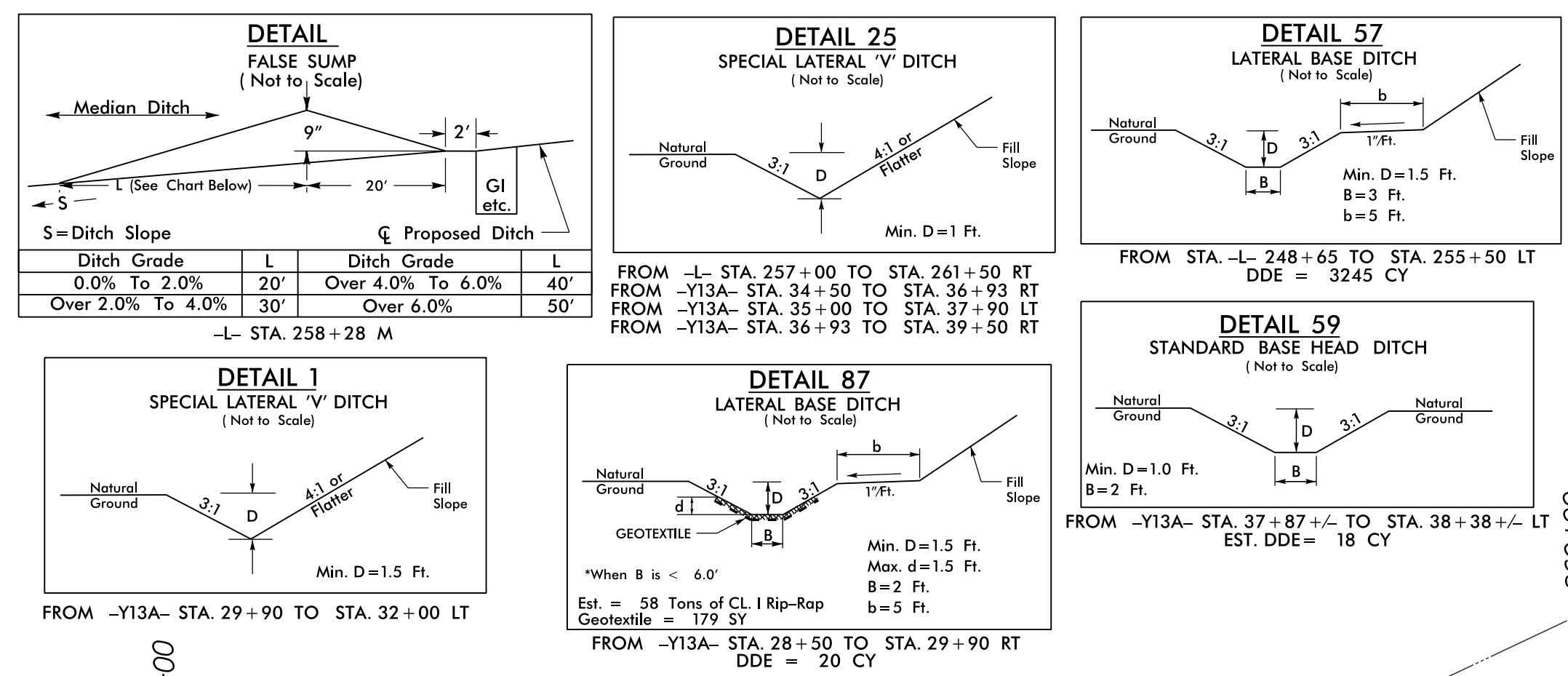
-Y13A-
 PI Sta 30+17.31
 $\Delta = 35^{\circ} 50' 10.1''$ (RT)
 $D = 4' 46' 28.7''$
 $L = 750.55'$
 $T = 388.0'$
 $R = 1,200.0'$

SEE SHEET 45 FOR -L- PROFILE
 SEE SHEET 61 & 62 FOR -Y13A- PROFILE

8.17.19
 09/02/2019
 R-2582A.dwg
 Faith E. Jahnke
 Faith E. Jahnke

8.17.19

PROJECT REFERENCE NO. R-2582A	SHEET NO. 20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 3/25/2019 SEAL 046981 PAUL E. JANKO	HYDRAULICS ENGINEER 3/26/2019 SEAL 037863 MEME D. BUSCEMI
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office at: SUMMIT	NC FIRM LICENSE NO: P-0339 504 Meadowslands Drive Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)



**2019
2039 AVERAGE DAILY TRAFFIC**

6,100	6,100
8,100	8,100

NC 46

-Y13A- SERVICE RD.

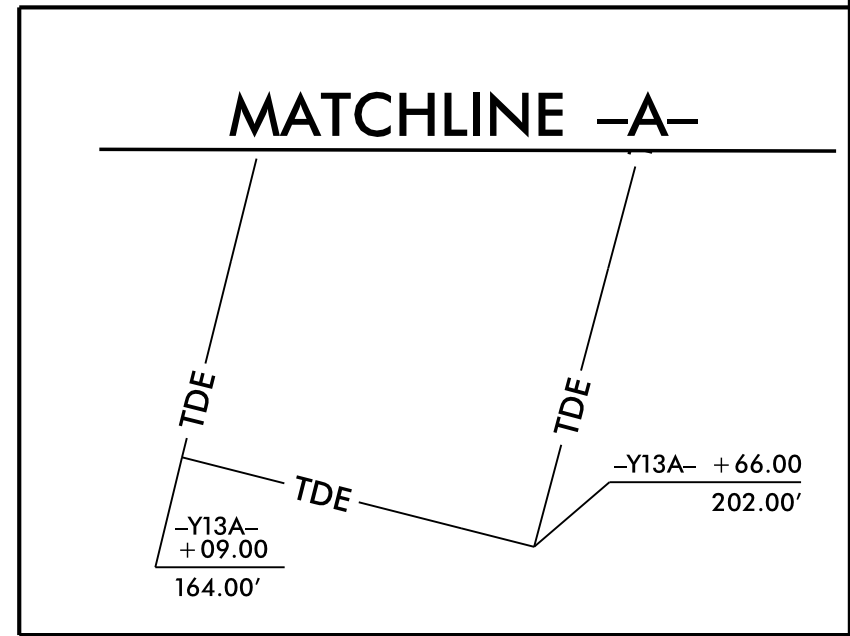
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 $\begin{matrix} <100 \\ <100 \end{matrix}$

-L-

PIs Sta 260+31.93 $\Delta = 4' 12'' 46.5''$ $L_s = 300.00'$ $LT = 200.06'$ $ST = 100.05'$	PI Sta 273+62.61 $\Delta = 62' 12'' 18.7''$ (RT) $D = 2' 48'' 31.0''$ $L = 2,214.80'$ $T = 1,230.73'$ $R = 2,040.00'$ $SE = 06$ $V_d = 70$	PIs Sta 284+46.72 $\Delta = 4' 12'' 46.5''$ $L_s = 300.00'$ $LT = 200.06'$ $ST = 100.05'$
---	---	---

-Y13A-

PI Sta 30+7.31 $\Delta = 35' 50'' 10.1''$ (RT) $D = 4' 46'' 28.7''$ $L = 750.55'$ $T = 388.01'$ $R = 1,200.00'$ $SE = 06$	PI Sta 38+65.81 $\Delta = 108' 28'' 31.2''$ (LT) $D = 16' 22'' 12.8''$ $L = 662.64'$ $T = 485.96'$ $R = 350.00'$ $SE = 06$
---	--



SEE SHEET 46 FOR -L- PROFILE
SEE SHEET 62 FOR -Y13A- PROFILE
SEE SHEET 2B-13 FOR INTERSECTION DETAIL

25-MAR-2019 09:02
 R2-268.dwg
 Paul E. Janko
 paul.janko@summiteng.com

8.17.19

2017 AVERAGE DAILY TRAFFIC

2037 AVERAGE DAILY TRAFFIC

-Y13- SR 1310 OLD HIGHWAY RD.

<100	<100
<100	<100
654	836
227	427
318	518
6,100	6,300
8,100	8,300

US 158 CONNECTOR

US 158

-Y13- POT Sta. 20+78.99

-Y13- PT Sta. 18+64.45

-Y13- POC Sta. 17+55.92

-Y14- POT Sta. 17+63.64

FROM -L- STA. 271+00 TO STA. 275+00 LT

FROM -L- STA. 276+50 TO STA. 282+00 LT

FROM -L- STA. 266+00 TO STA. 269+90 LT

FROM -Y13- STA. 12+90 TO STA. 18+50 LT

Est. = 53 SY of PSRM

FROM -Y13- STA. 18+50 TO STA. 19+00 LT

-L- STA. 271+80 +/- LT

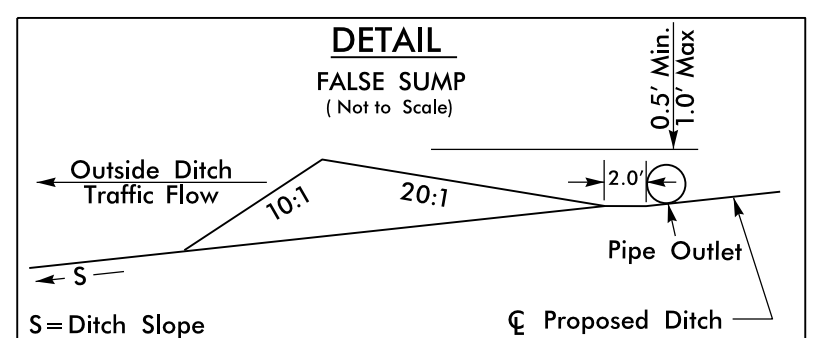
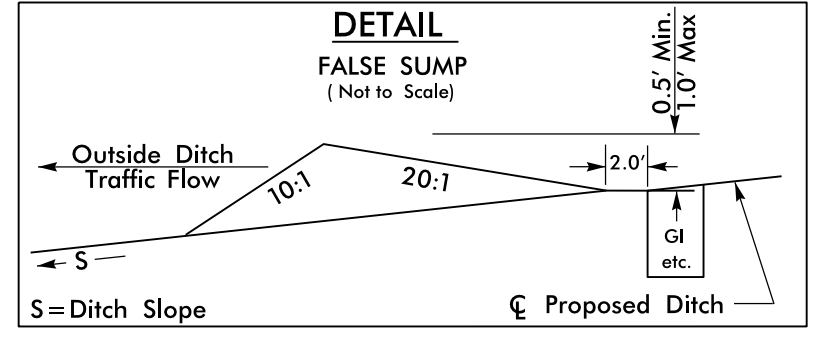
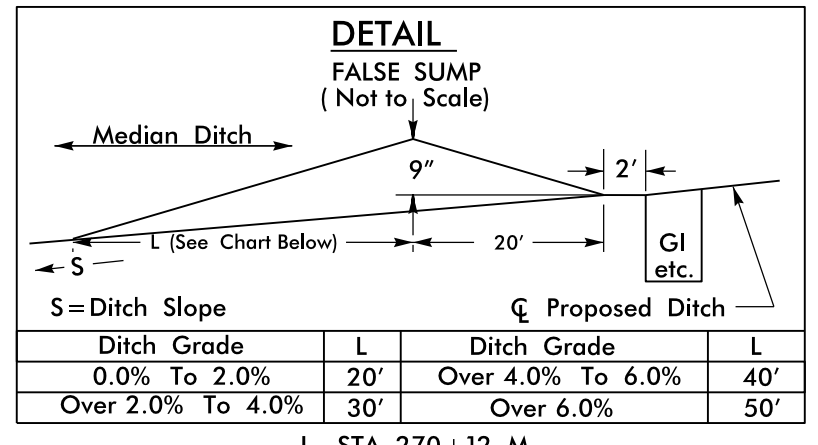
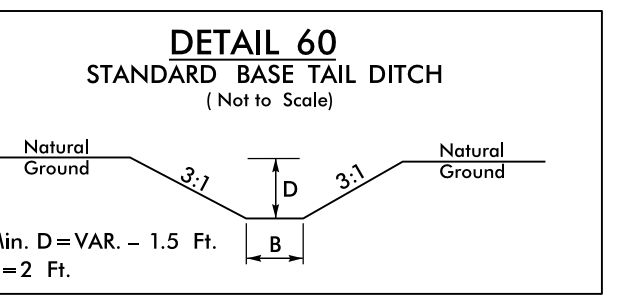
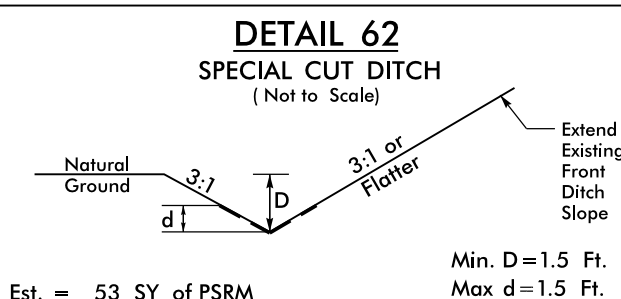
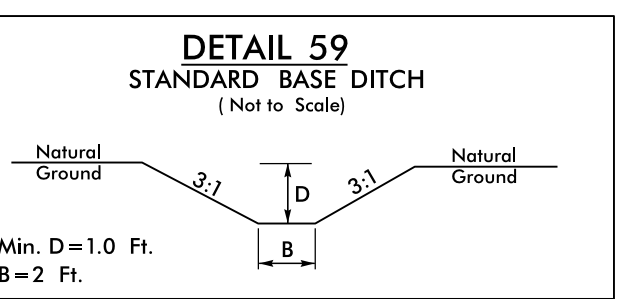
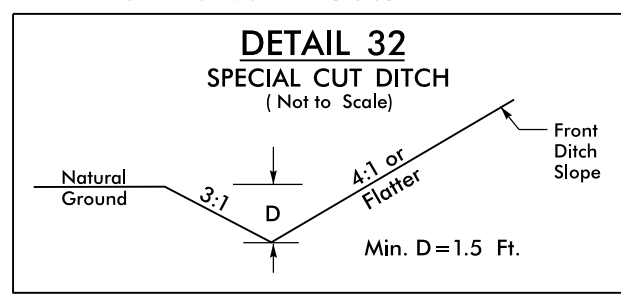
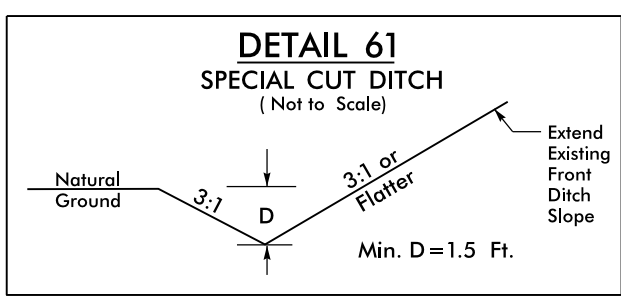
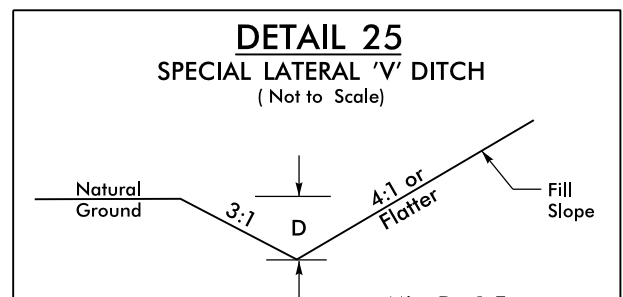
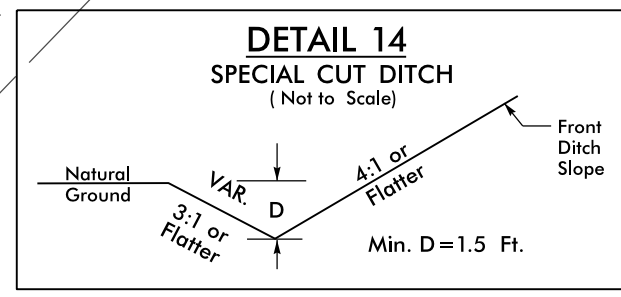
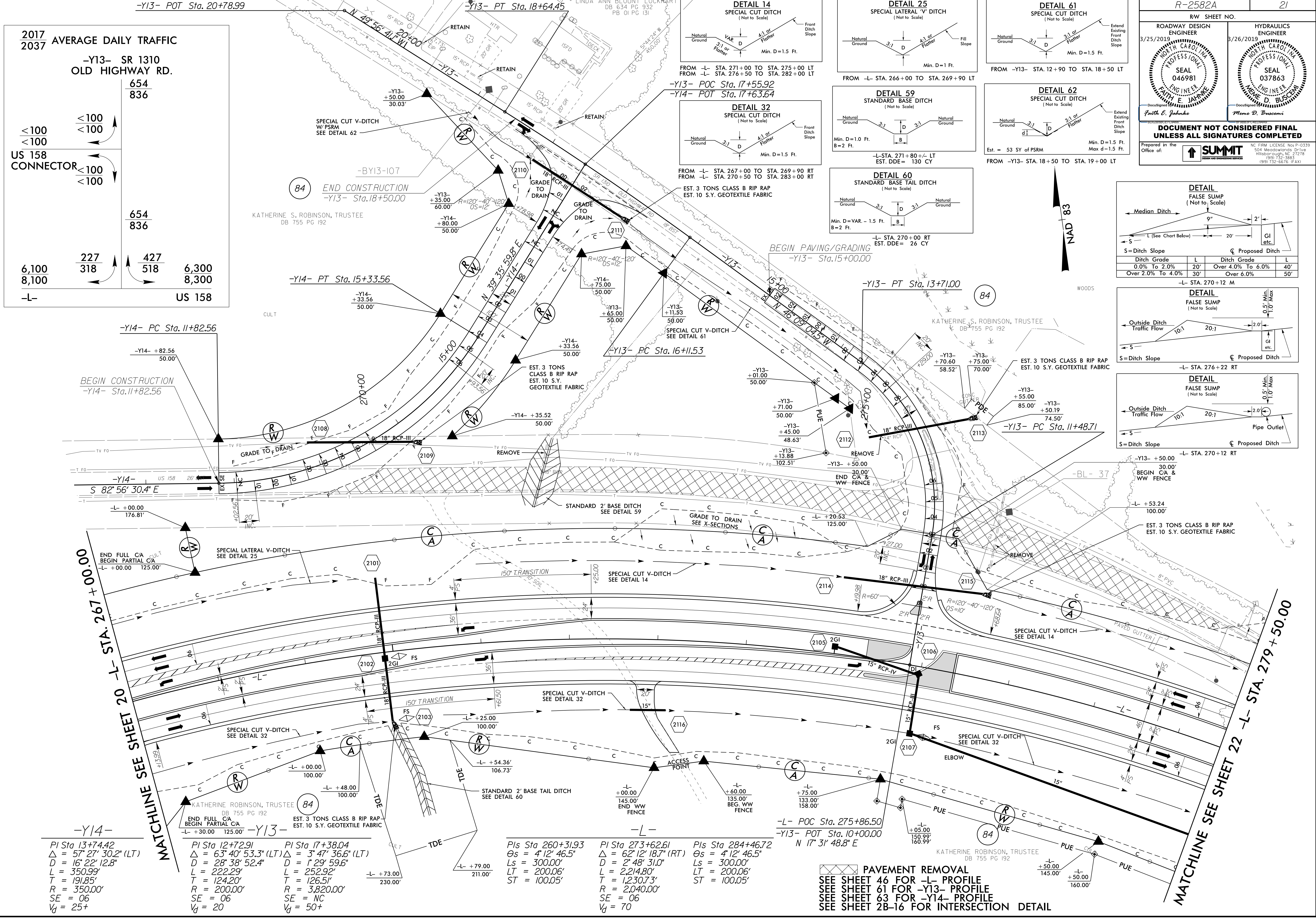
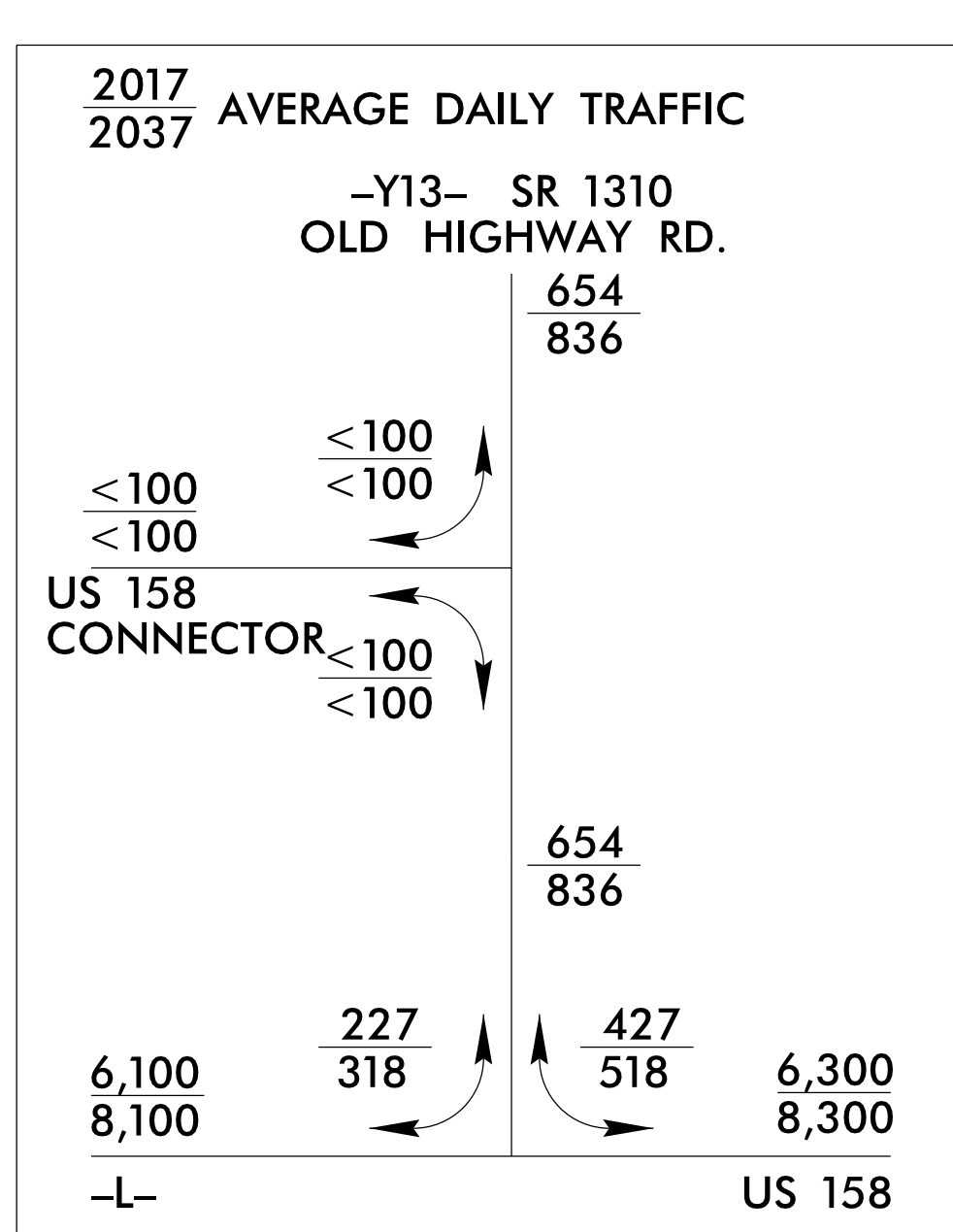
EST. DDE = 130 CY

-L- STA. 270+00 RT

EST. DDE = 26 CY

BEGIN PAVING/GRADING -Y13- Sta. 15+00.00

BEGIN CONSTRUCTION -Y14- Sta. 11+82.56



-Y14-

PI Sta 13+74.42	Δ = 57° 27' 30.2" (LT)
D = 16' 22' 12.8"	L = 350.99'
T = 191.85'	R = 350.00'
SE = 06	V _g = 25+

-Y13-

PI Sta 12+72.91	Δ = 63° 40' 53.3" (LT)
D = 28' 38' 52.4"	L = 222.29'
T = 124.20'	R = 200.00'
SE = 06	V _g = 20

-Y13-

PI Sta 17+38.04	Δ = 3° 47' 36.6" (LT)
D = 1' 29' 59.6"	L = 252.92'
T = 126.51'	R = 3,820.00'
SE = NC	V _g = 50+

-L-

PIs Sta 260+31.93	Δs = 4' 12' 46.5"
Ls = 300.00'	LT = 200.06'
ST = 100.05'	

-L-

PIs Sta 273+62.61	Δ = 62° 12' 18.7" (RT)
D = 2' 48' 31.0"	L = 2,214.80'
T = 1,230.73'	R = 2,040.00'
SE = 06	V _g = 70

-L-

PIs Sta 284+46.72	Δs = 4' 12' 46.5"
Ls = 300.00'	LT = 200.06'
ST = 100.05'	

PAVEMENT REMOVAL
 SEE SHEET 46 FOR -L- PROFILE
 SEE SHEET 61 FOR -Y13- PROFILE
 SEE SHEET 63 FOR -Y14- PROFILE
 SEE SHEET 2B-16 FOR INTERSECTION DETAIL

PROJECT REFERENCE NO. **R-2582A** SHEET NO. **21**

RW SHEET NO.

ROADWAY DESIGN ENGINEER 3/25/2019
FAITH E. JANKO
 SEAL 046981

HYDRAULICS ENGINEER 3/26/2019
MOMO D. BRUSCO
 SEAL 037863

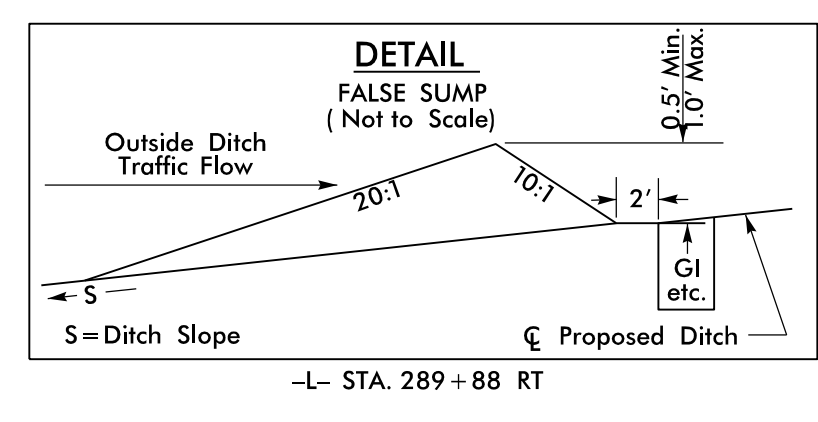
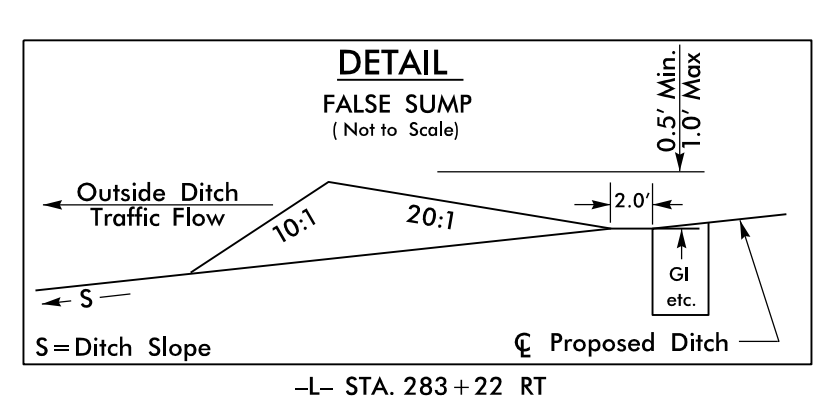
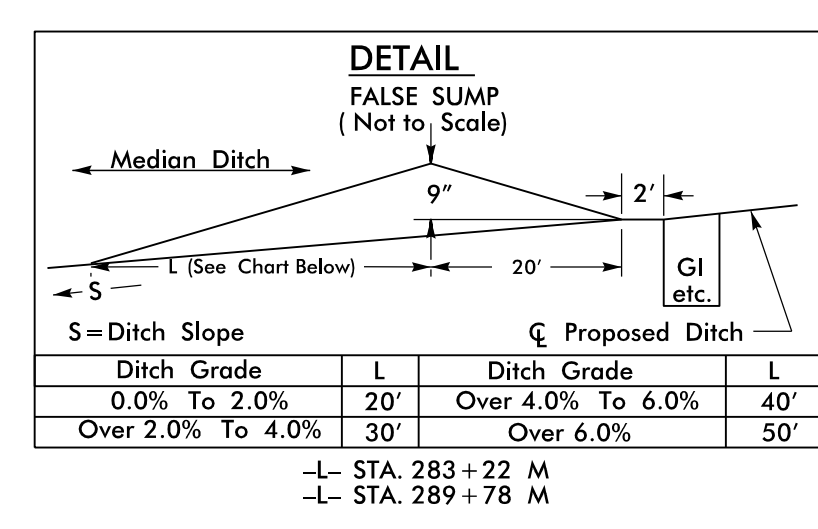
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office at: **SUMMIT**

NC FIRM LICENSE NO: P-0339
 504 Meadowslands Drive
 Hillsborough, NC 27278
 (919) 732-8883
 (919) 732-6676 (FAX)

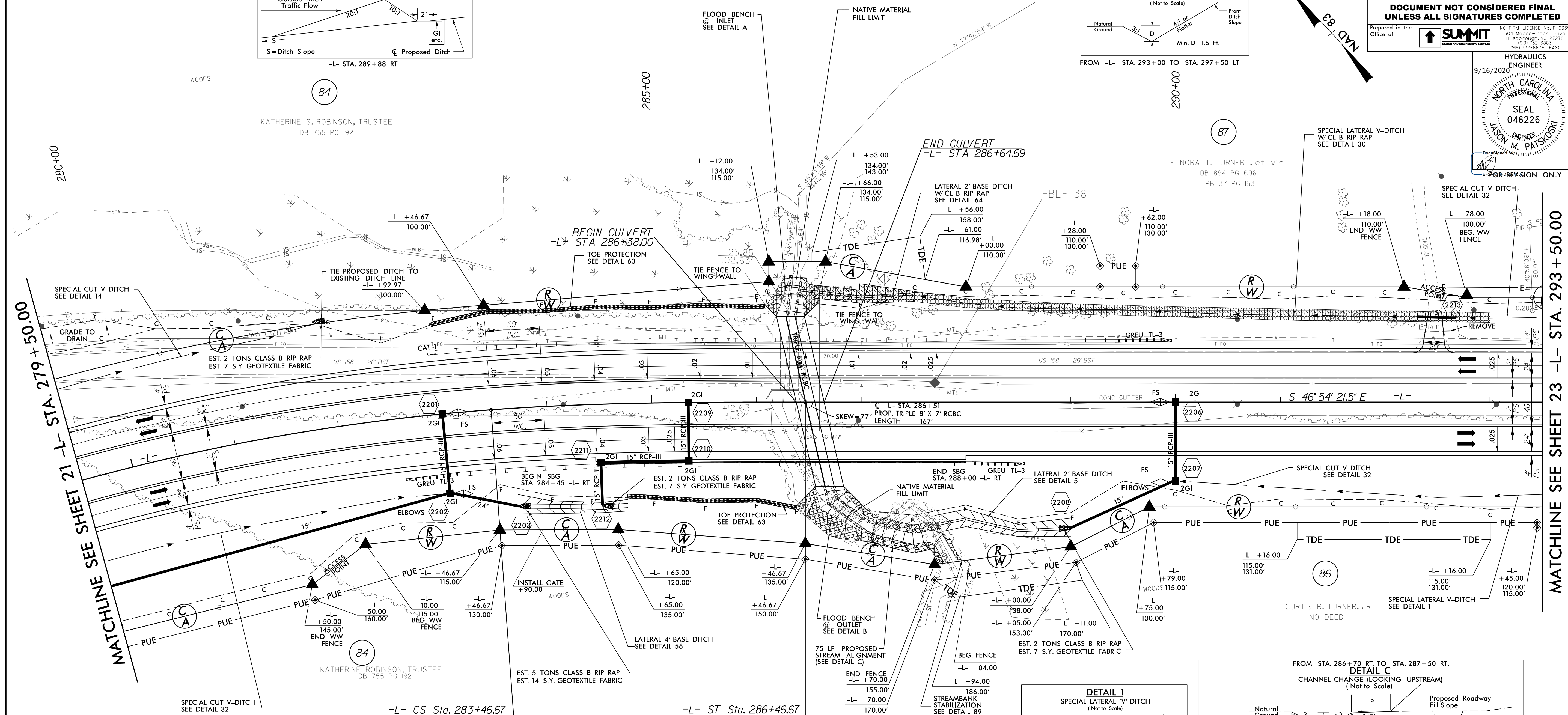
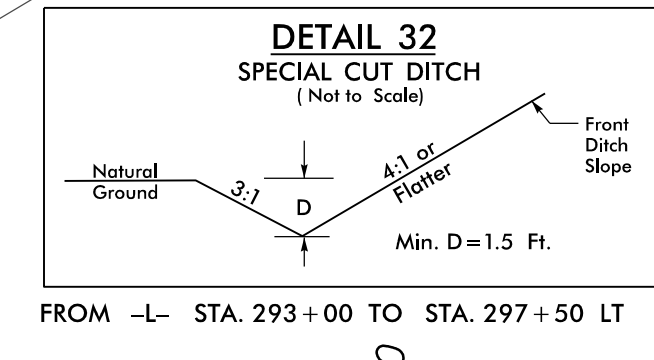
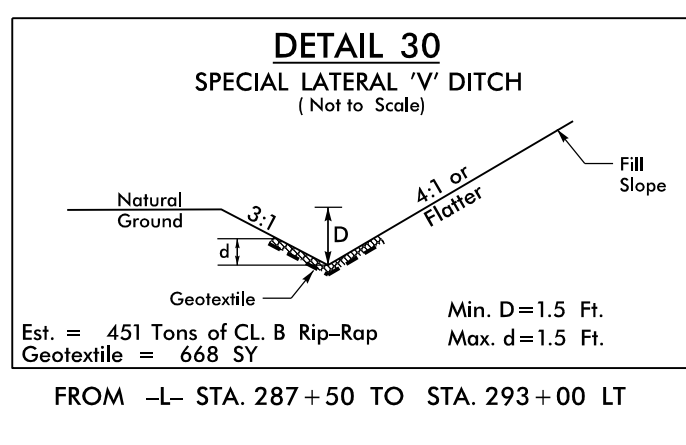
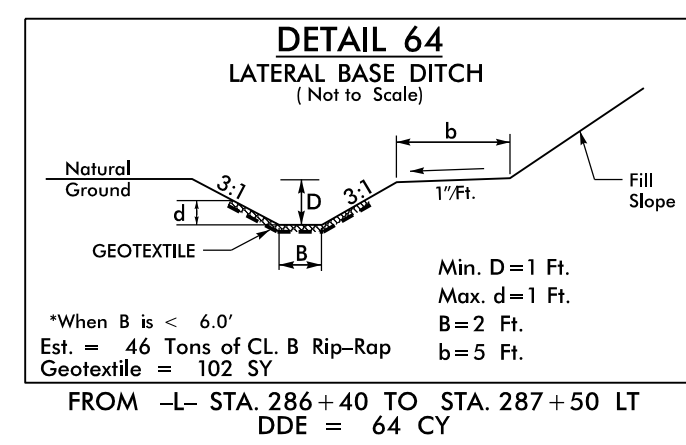
25-MAR-2019 09:02 - R2-2582A.dwg - Faith E. Janko

PROJECT REFERENCE NO. R-2582A	SHEET NO. 22
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NOT A CERTIFIED DOCUMENT AS TO THE ORIGINAL DOCUMENT BUT ONLY AS TO THE REVISIONS. THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY: FAITH E. JAHNKE LIC. NO. 046981 ON 3/25/19 THIS DOCUMENT IS ONLY CERTIFIED AS TO THE REVISIONS.	HYDRAULICS ENGINEER NOT A CERTIFIED DOCUMENT AS TO THE ORIGINAL DOCUMENT BUT ONLY AS TO THE REVISIONS. THIS DOCUMENT ORIGINALLY ISSUED AND SEALED BY: MEME D. BUSCEMI LIC. NO. 037863 ON 3/26/19 THIS DOCUMENT IS ONLY CERTIFIED AS TO THE REVISIONS.
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of: SUMMIT 1000 S. W. 10th St. Fort Lauderdale, FL 33304 (954) 332-3883 (954) 732-6676 (FAX)	HYDRAULICS ENGINEER 9/16/2020 NORTH CAROLINA PROFESSIONAL SEAL 046226 USJON M. PATSKOSKI FOR REVISION ONLY



-L-

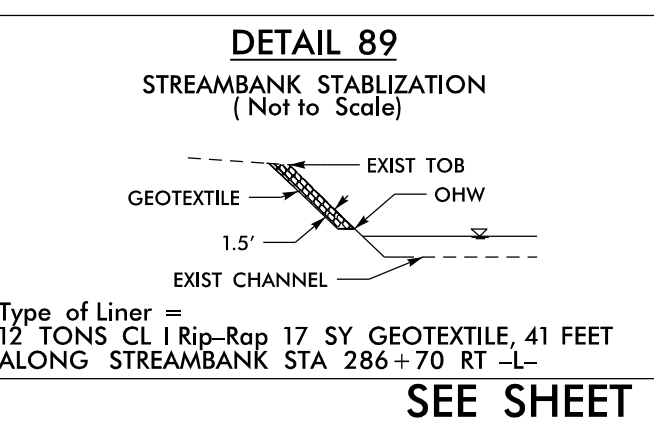
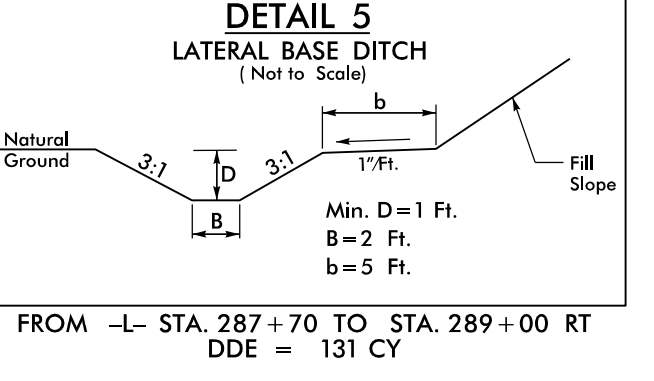
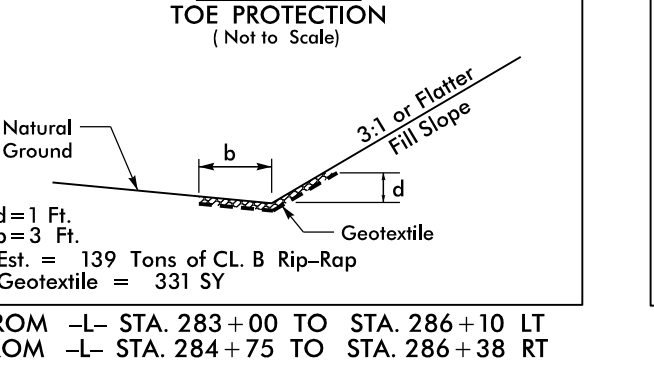
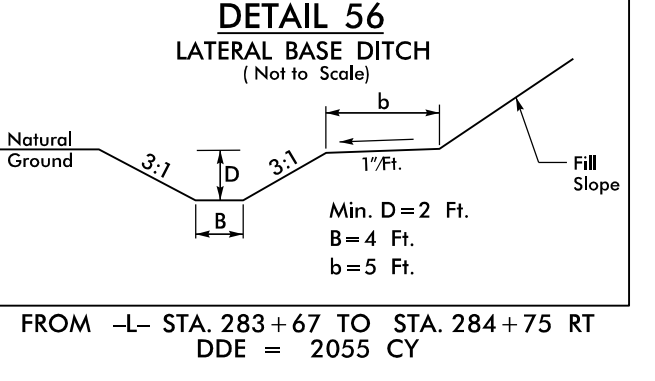
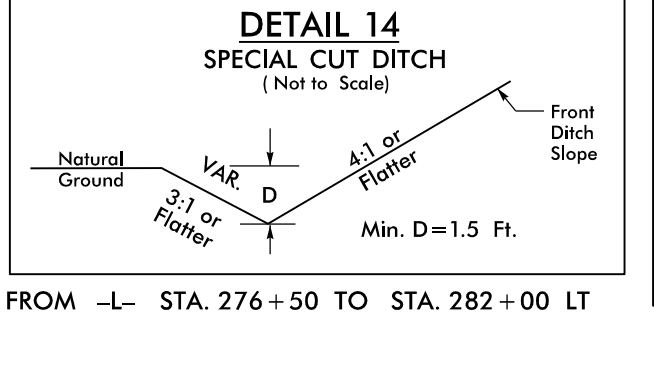
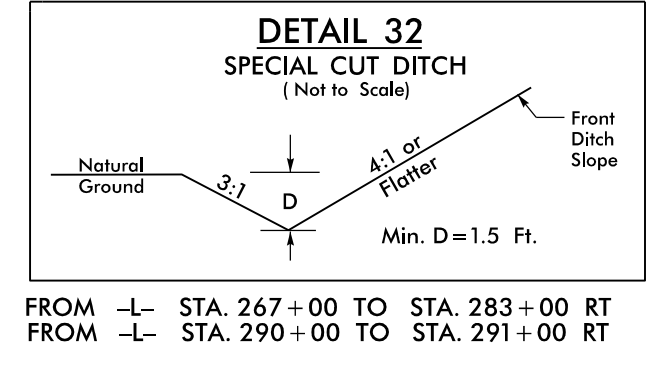
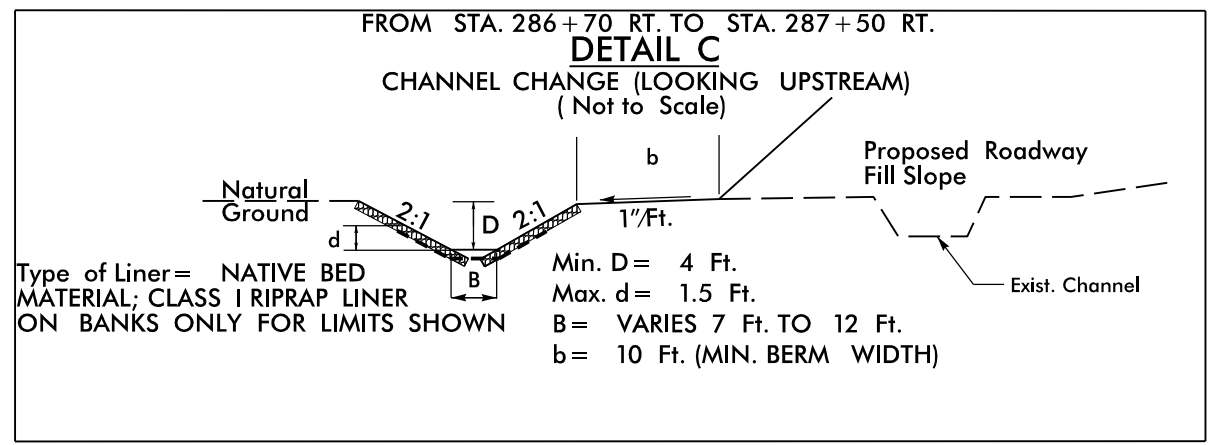
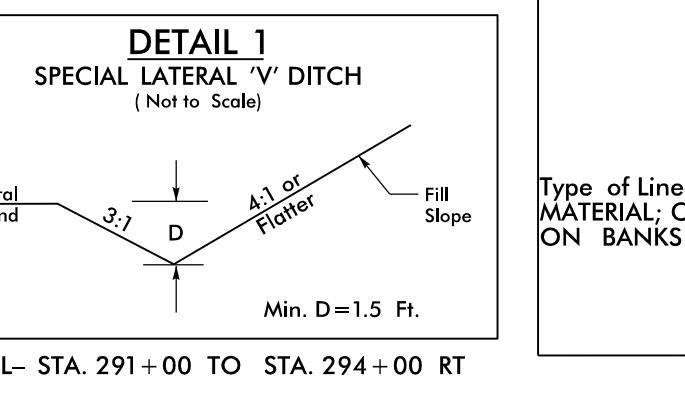
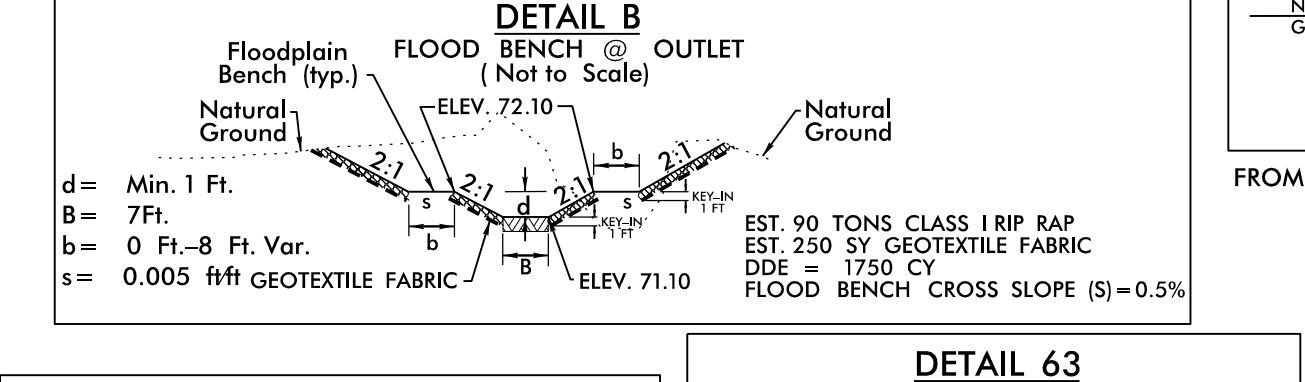
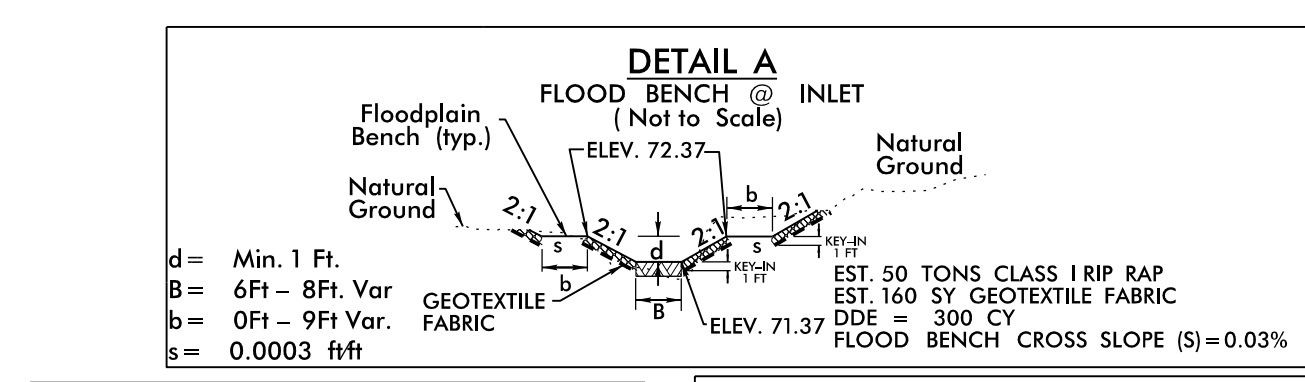
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<i>Os = 4'12" 46.5"</i>	<i>Δ = 62'12" 18.7" (RT)</i>	<i>Os = 4'12" 46.5"</i>
<i>Ls = 300.00'</i>	<i>D = 2'48" 31.0"</i>	<i>Ls = 300.00'</i>
<i>LT = 200.06'</i>	<i>L = 2,214.80'</i>	<i>LT = 200.06'</i>
<i>ST = 100.05'</i>	<i>T = 1,230.73'</i>	<i>ST = 100.05'</i>
	<i>R = 2,040.00'</i>	
	<i>SE = 06</i>	
	<i>Vj = 70</i>	



REVISIONS
CONST. REV. 09/02/2020 (FEJ): ADDED DRAINAGE DETAIL 89 AND STREAM BANK STABILIZATION UP TO ROW AT STA 286+70.

MATCHLINE SEE SHEET 23 -L- STA. 293+50.00

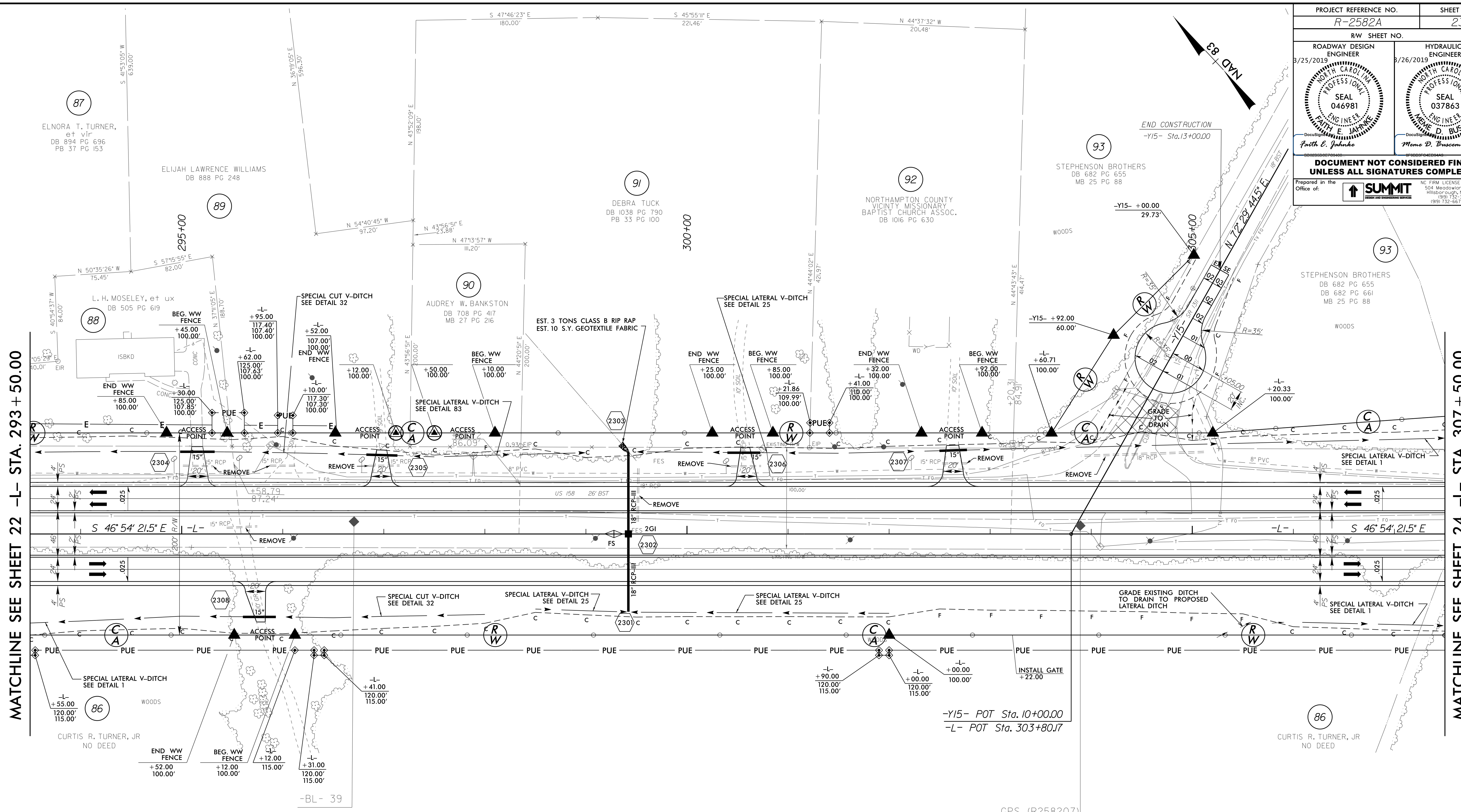
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R-2582A.dwg
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SEE SHEET 47 FOR -L- PROFILE

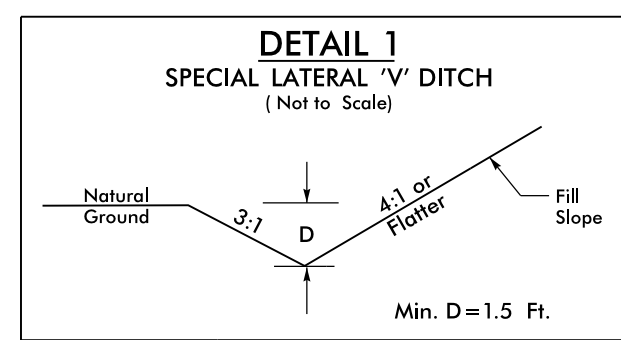
8.17.19

PROJECT REFERENCE NO. R-2582A		SHEET NO. 23	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER 8/25/2019 FAITH E. JAHNKE NORTH CAROLINA PROFESSIONAL SEAL 046981		HYDRAULICS ENGINEER 8/26/2019 MARCO D. BUSCONI NORTH CAROLINA PROFESSIONAL SEAL 037863	
<p align="center">DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p> <p>Prepared in the Office of: SUMMIT</p> <p>NC FIRM LICENSE NO: P-0339 504 Meadowslands Drive Hillsborough, NC 27278 (919) 332-3883 (919) 732-6676 (FAX)</p>			

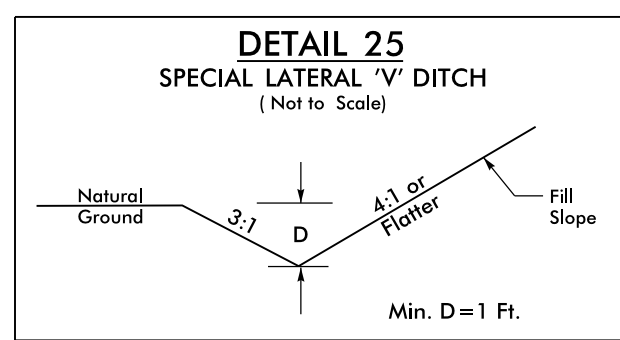


MATCHLINE SEE SHEET 22 -L- STA. 293 + 50.00

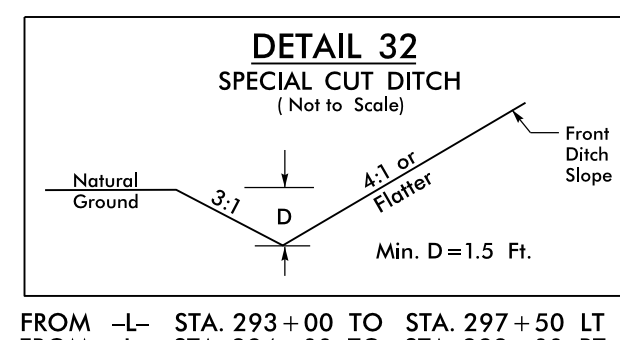
MATCHLINE SEE SHEET 24 -L- STA. 307 + 50.00



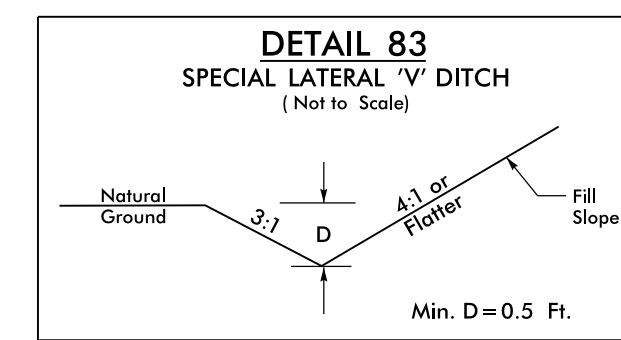
FROM -L- STA. 291+00 TO STA. 294+00 RT
FROM -L- STA. 301+50 TO STA. 307+70 LT
FROM -L- STA. 305+70 TO STA. 307+74 RT



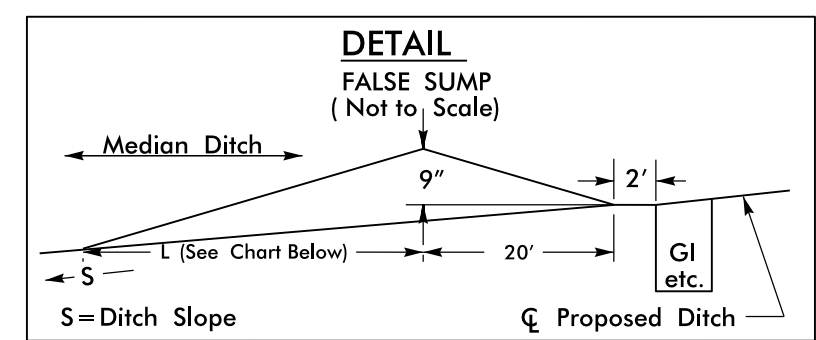
FROM -L- STA. 299+42 TO STA. 301+50 LT
FROM -L- STA. 298+50 TO STA. 299+42 RT
FROM -L- STA. 299+42 TO STA. 302+00 RT



FROM -L- STA. 293+00 TO STA. 297+50 LT
FROM -L- STA. 294+00 TO STA. 298+00 RT



FROM -L- STA. 297+50 TO STA. 299+42 LT



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

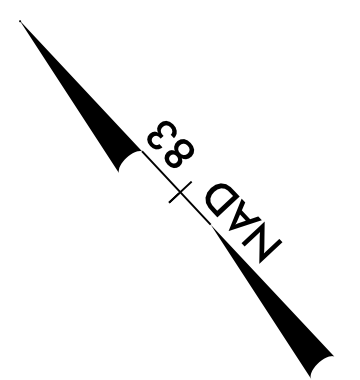
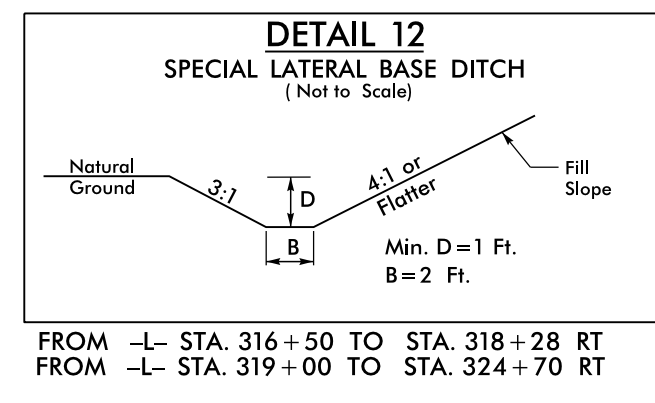
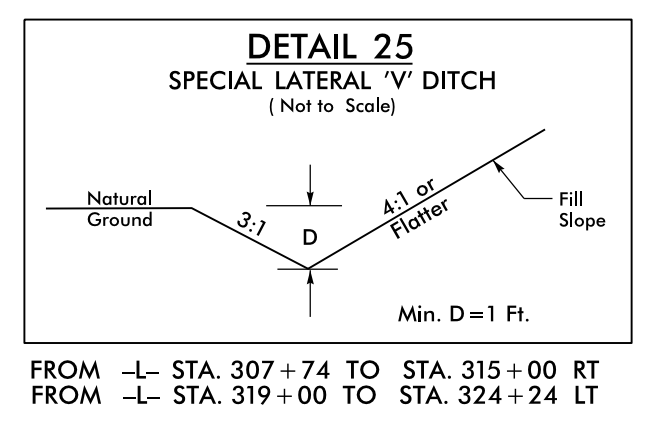
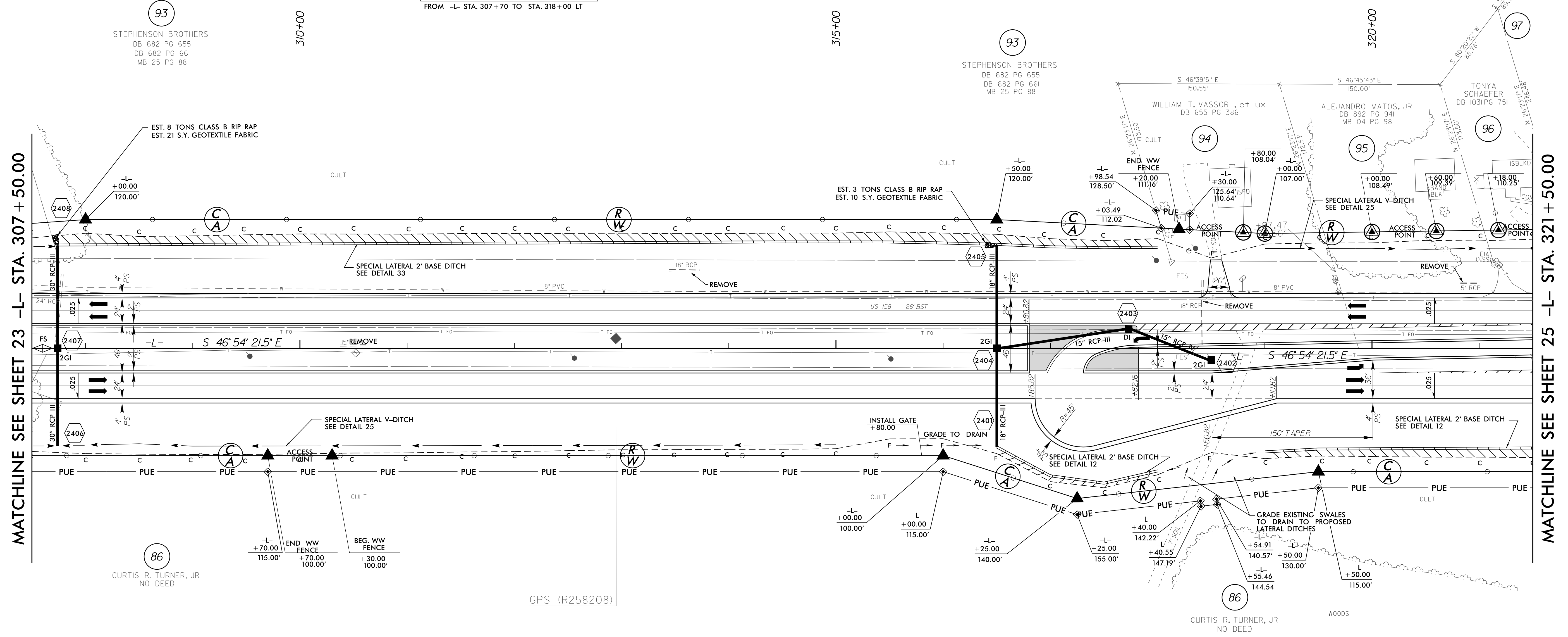
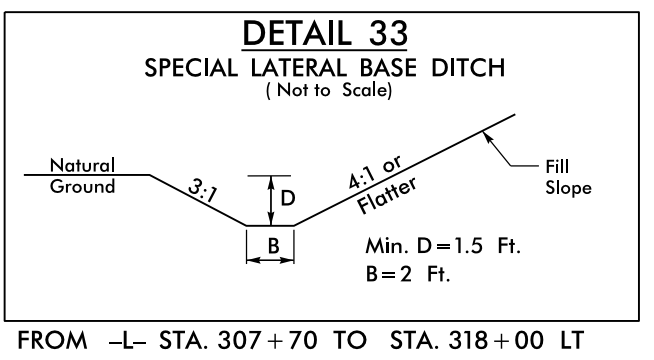
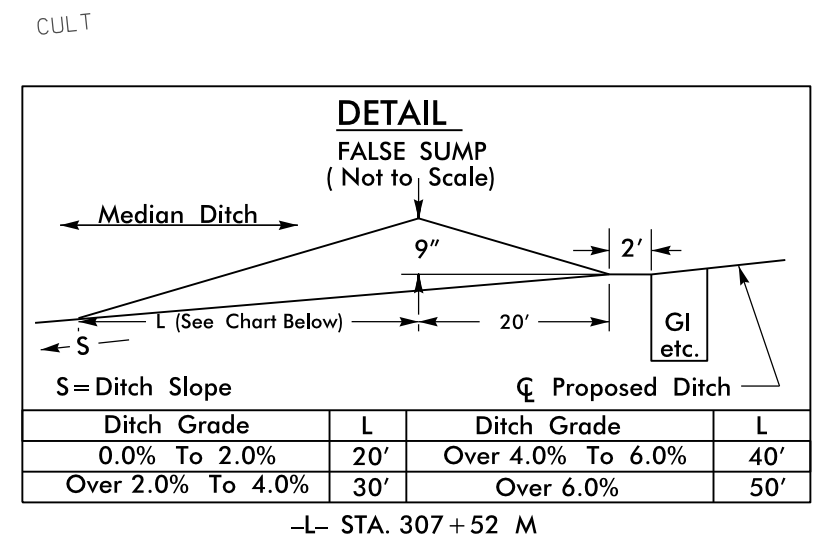
-L- STA. 299+20 M

SEE SHEET 47 FOR -L- PROFILE
SEE SHEET 63 FOR -Y15- PROFILE

R5-MAR-2019_09:02_23.dgn

8/17/19

PROJECT REFERENCE NO. R-2582A		SHEET NO. 24
RW SHEET NO.		
ROADWAY DESIGN ENGINEER 3/25/2019 PAUL E. JANKO SEAL 046981	HYDRAULICS ENGINEER 8/26/2019 MOMO D. BUSCINI SEAL 037863	
<p align="center">DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>		
Prepared in the Office at:		



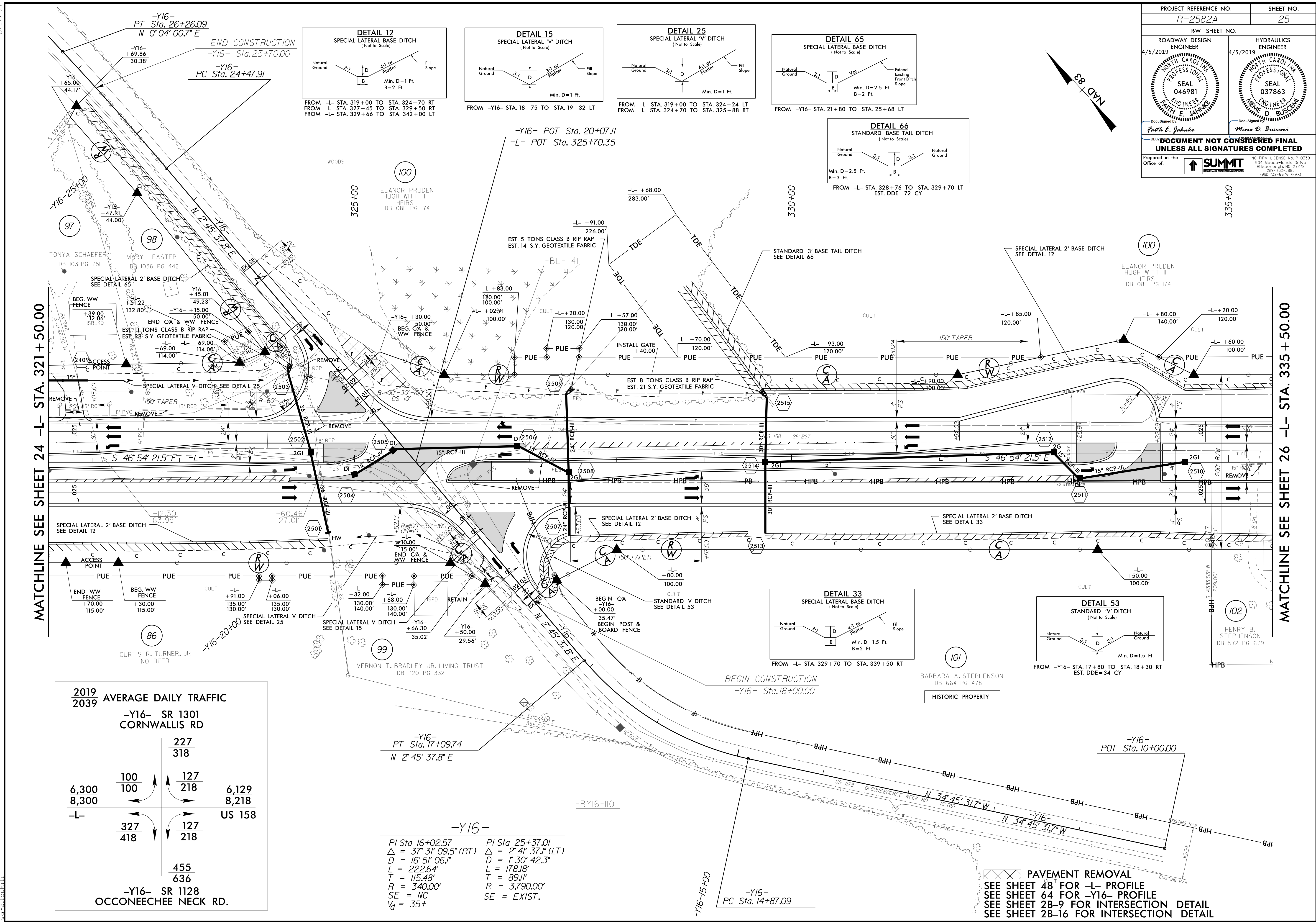
MATCHLINE SEE SHEET 23 -L- STA. 307+50.00

MATCHLINE SEE SHEET 25 -L- STA. 321+50.00

R2-2482A.dgn
8/17/19

SEE SHEET 48 FOR -L- PROFILE
SEE SHEET 2B-9 FOR INTERSECTION DETAIL

PROJECT REFERENCE NO. R-2582A	SHEET NO. 25
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 4/5/2019	HYDRAULICS ENGINEER 4/5/2019
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	
	<p>NC FIRM LICENSE NO. P-0339 504 Meadowslands Drive Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)</p>



MATCHLINE SEE SHEET 24 -L- STA. 321+50.00

MATCHLINE SEE SHEET 26 -L- STA. 335+50.00

2019 AVERAGE DAILY TRAFFIC
2039 AVERAGE DAILY TRAFFIC

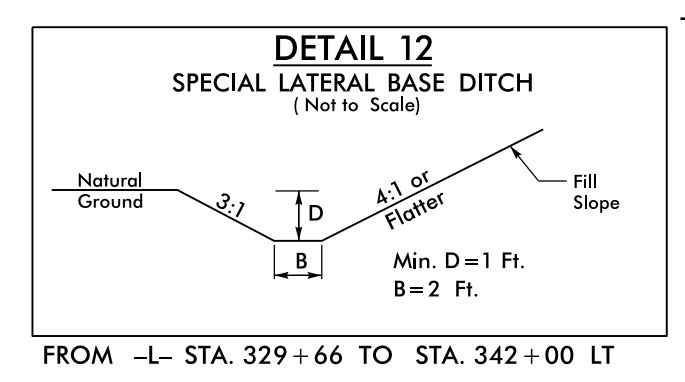
-Y16- SR 1301 CORNWALLIS RD			
	227		
	318		
100	127	100	127
6,300	218	6,129	218
8,300		8,218	
-L- US 158			
327	127	327	127
418	218	418	218
-Y16- SR 1128 OCCONEECHEE NECK RD.			
	455		
	636		

-Y16-
 PI Sta 16+02.57 PI Sta 25+37.01
 $\Delta = 37^{\circ} 31' 09.5''$ (RT) $\Delta = 2^{\circ} 41' 37.1''$ (LT)
 $D = 16^{\circ} 51' 06.1''$ $D = 1^{\circ} 30' 42.3''$
 $L = 222.64'$ $L = 178.18'$
 $T = 115.48'$ $R = 3,790.00'$
 $R = 340.00'$ $SE = NC$
 $SE = NC$ $V_d = 35+$
 $V_d = 35+$

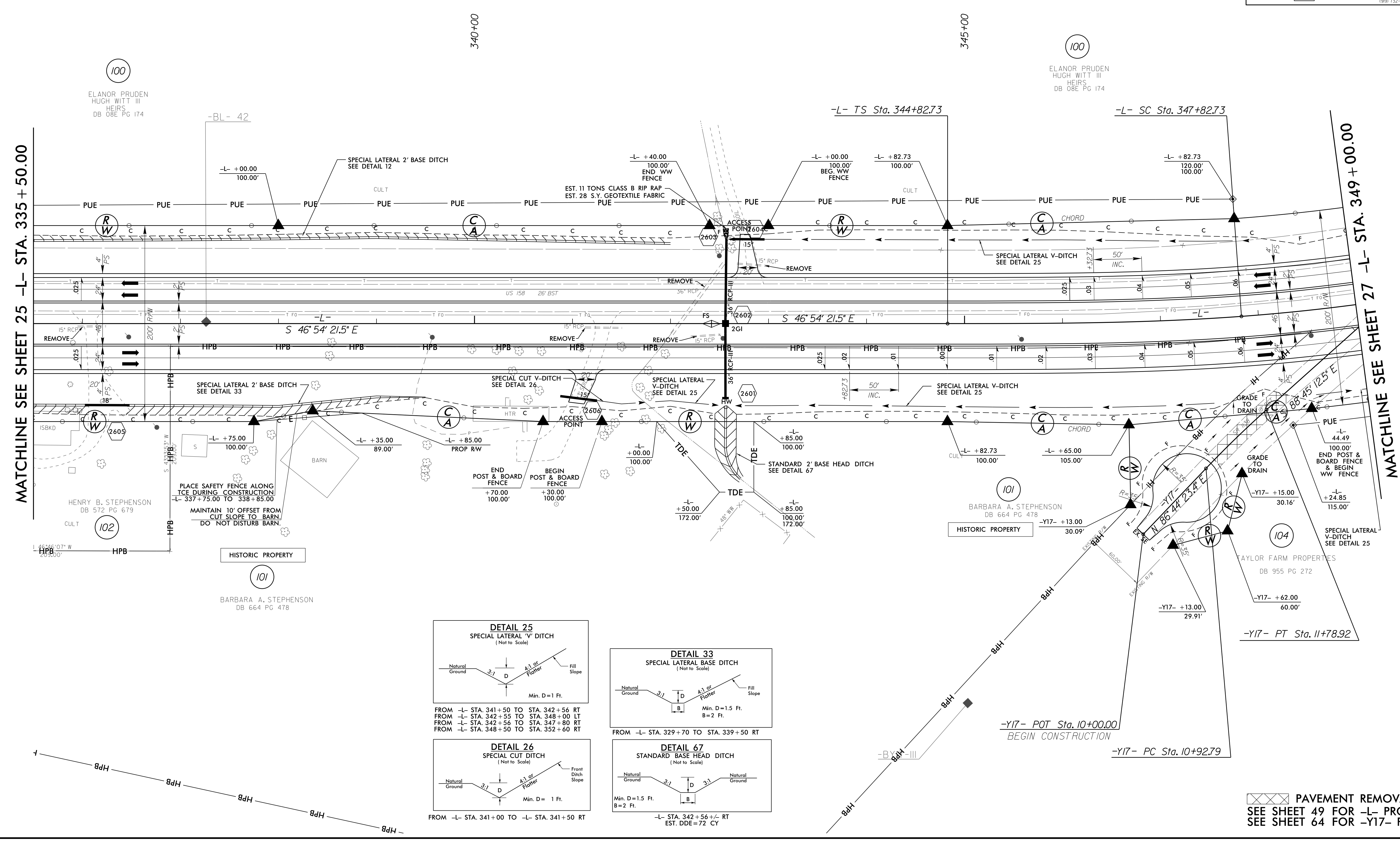
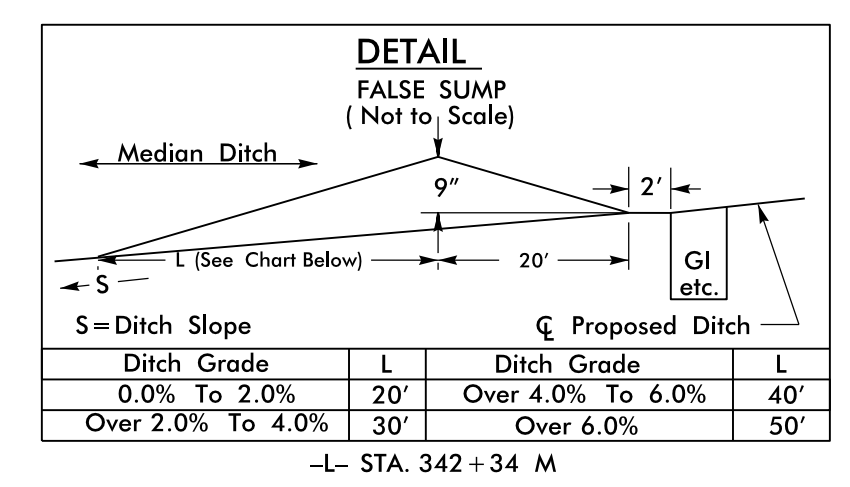
PAVEMENT REMOVAL
 SEE SHEET 48 FOR -L- PROFILE
 SEE SHEET 64 FOR -Y16- PROFILE
 SEE SHEET 2B-9 FOR INTERSECTION DETAIL
 SEE SHEET 2B-16 FOR INTERSECTION DETAIL

8.17.19
 2019 08.16
 R-2582A-14-15-16-17-18-19-20-21-22-23-24-25.dgn
 10/11/2019 10:11:11 AM

PROJECT REFERENCE NO. R-2582A	SHEET NO. 26
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 3/25/2019 FAITH E. JAHNKE	HYDRAULICS ENGINEER 3/26/2019 MEME D. BUSCOMI
SEAL 046981	SEAL 037863
FAITH E. JAHNKE	MEME D. BUSCOMI
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p> <p>Prepared in the Office at: SUMMIT</p> <p>NC FIRM LICENSE No: P-0339 504 Meadowslands Drive Hillsborough, NC 27278 (919) 732-8883 (919) 732-6676 (FAX)</p>	

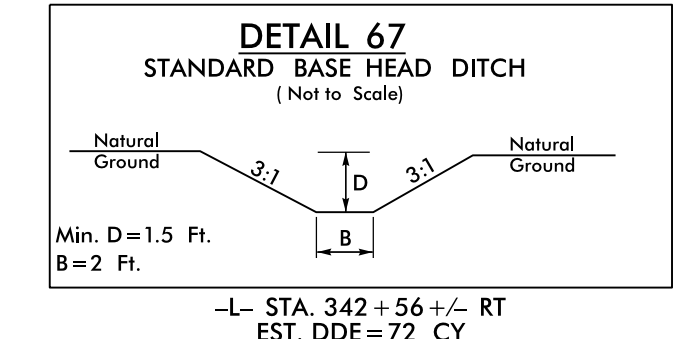
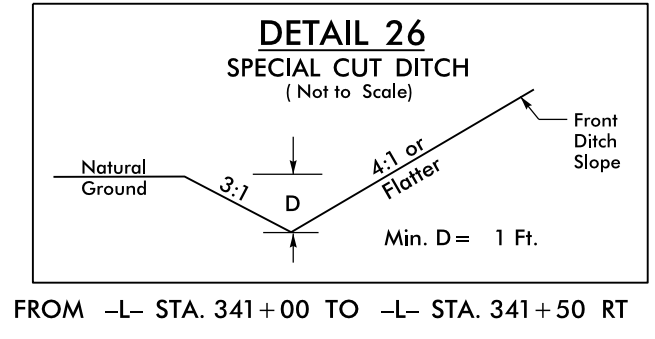
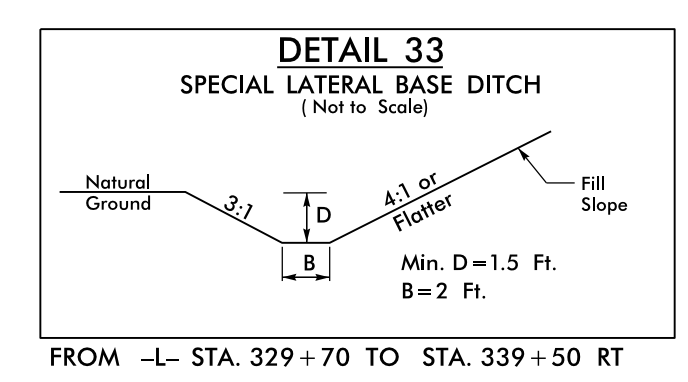
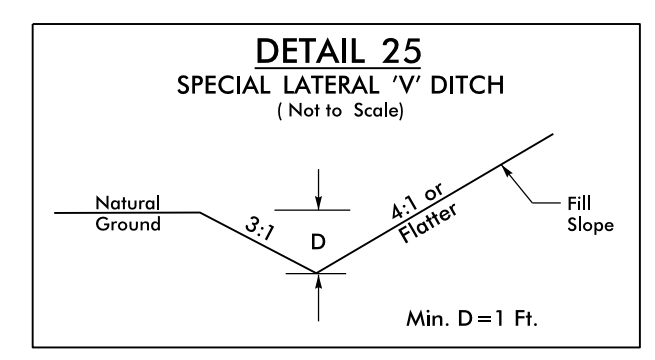


-L- PI Sta 346+82.79 Δs = 4°12'46.5" Ls = 300.00' LT = 200.06' ST = 100.05'	-L- PI Sta 348+94.01 Δ = 6°14'41.4" (LT) D = 2'48" 31.0" L = 222.35' T = 111.28' R = 2,040.00' SE = 06 V _g = 70	-L- PI Sta 351+05.13 Δs = 4°12'46.5" Ls = 300.00' LT = 200.06' ST = 100.05'	-Y17- PI Sta 11+35.88 Δ = 4°30'24.2" (RT) D = 5°13'57.0" L = 86.13' T = 43.09' R = 1,095.00' SE = NC V _g = 50+
---	---	---	--



MATCHLINE SEE SHEET 25 -L- STA. 335+50.00

MATCHLINE SEE SHEET 27 -L- STA. 349+00.00



PAVEMENT REMOVAL
SEE SHEET 49 FOR -L- PROFILE
SEE SHEET 64 FOR -Y17- PROFILE

8.17.17.99

RS-MAR-2019_09p02
R-2582A.dwg
FAITH E. JAHNKE

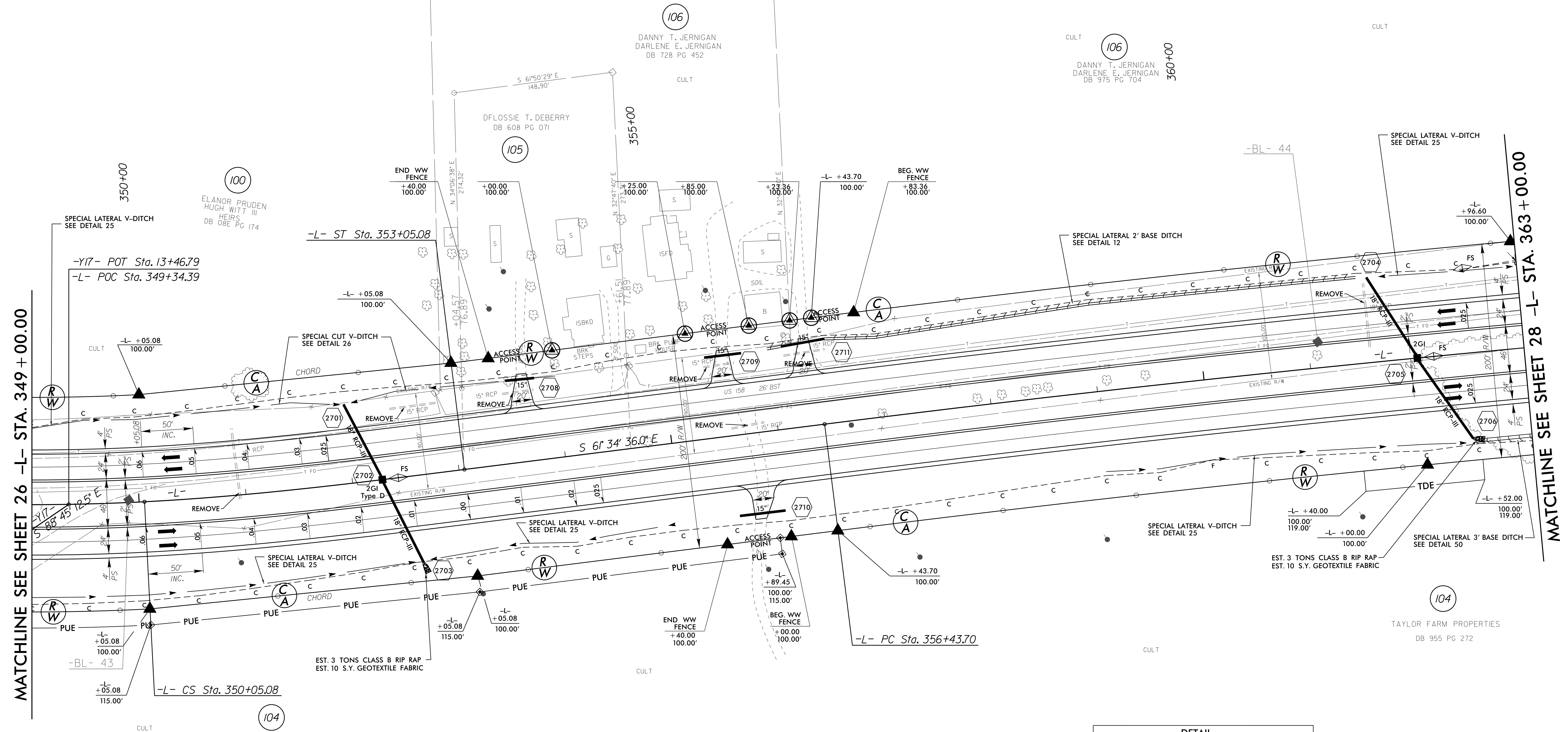
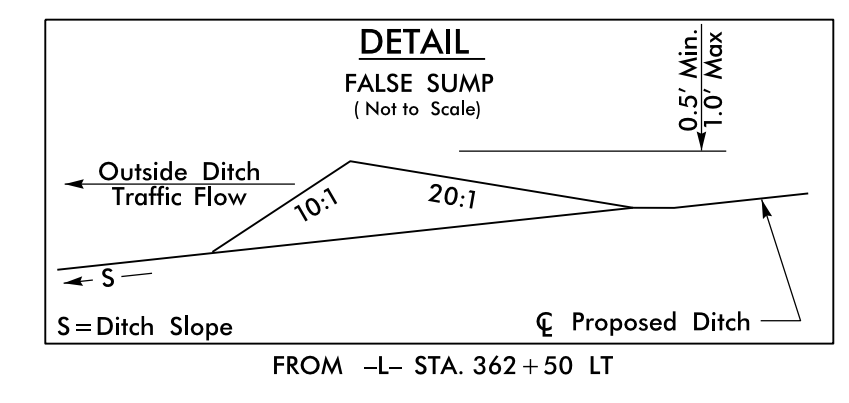
PROJECT REFERENCE NO. R-2582A	SHEET NO. 27
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 8/25/2019 FAITH E. JANKO SEAL 046981	HYDRAULICS ENGINEER 8/26/2019 MICHAEL D. BUSCOMI SEAL 037863
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p> <p>Prepared in the Office at: SUMMIT</p> <p>NC FIRM LICENSE NO: P-0339 504 Meadowslands Drive Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)</p>	

-L-

PIs Sta 346+82.79 θs = 4°12'46.5" Ls = 300.00' LT = 200.06' ST = 100.05'	PI Sta 348+94.01 Δ = 6°14'41.4" (LT) D = 2°48'31.0" L = 222.35' T = 111.28' R = 2,040.00' SE = .06 Vd = 70	PIs Sta 351+05.13 θs = 4°12'46.5" Ls = 300.00' LT = 200.06' ST = 100.05'
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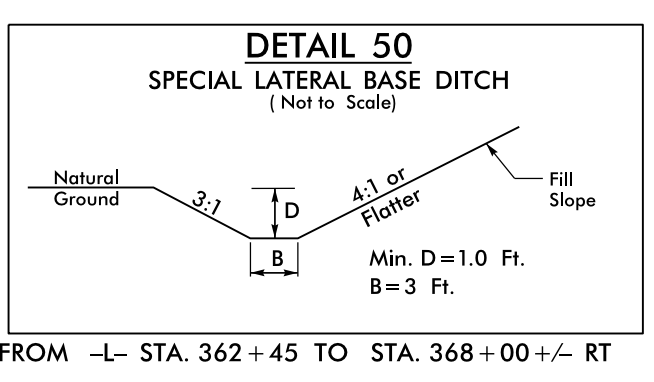
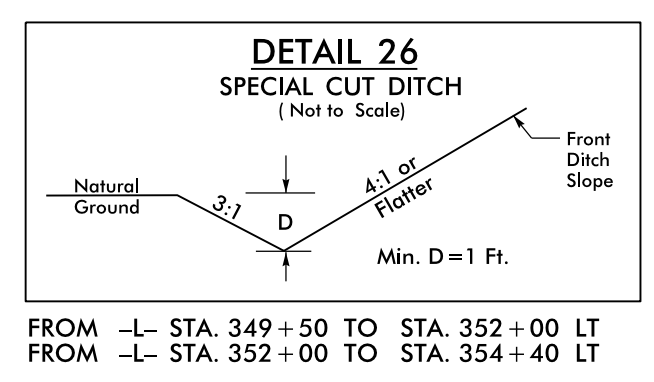
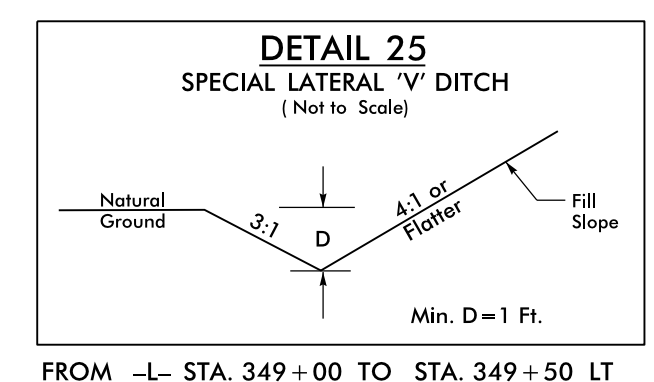
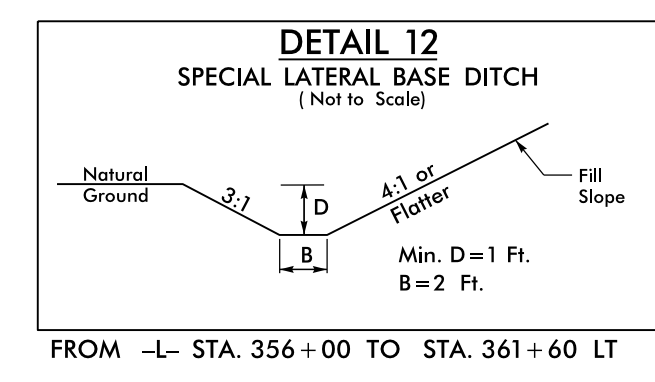
-L-

PI Sta 380+35.95 Δ = 13°38'30.3" (RT) D = 0°17'11.3" L = 4,761.87' T = 2,392.25' R = 20,000.00' SE = NC Vd = 70+



MATCHLINE SEE SHEET 26 -L- STA. 349+00.00

MATCHLINE SEE SHEET 28 -L- STA. 363+00.00



DETAIL FALSE SUMP (Not to Scale)

Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

-L- STA. 352+50 M
-L- STA. 362+22 M

SEE SHEET 49 FOR -L- PROFILE

8.17.19

R5-MAR-2019_09:02
R5-2582A.dwg
R5-2582A.dwg
R5-2582A.dwg