

TGSL1W1014

COMPUTED BY: BJH DATE: 03-15-22
CHECKED BY: REL DATE: 03-15-22

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. A-0009CA SHEET NO. 3D-7

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, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), 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.

TGSL1W1014

COMPUTED BY: BJH DATE: 03-15-22
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. A-0009CA SHEET NO. 3D-8

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 for Line & Station, Offset, Structure Number, Invert Elevation, Minimum Required Slope, Drainage Pipe, C.S. Pipe, R.C. Pipe Class III, R.C. Pipe Class IV, Quantities for Drainage Structures, Frame, Grates, and Hood, and Remarks.

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 material descriptions.

SHEET TOTALS

Summary row for SHEET TOTALS showing counts for various pipe and grate types across the project.

COMPUTED BY: D. Matthew Brewer DATE: 6/1/22
 CHECKED BY: Robert E. Kral DATE: 6/1/2022

(12-17-19)

PROJECT NO. A-0009CA 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
-L-	124+00	132+00	LT/RT	SD	1200
-L-	191+00	193+00	RT	SD	400
-L-	205+00	207+00	LT/RT	SD	400
CONTINGENCY				SD	500
TOTAL LF:					2500

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

**SUMMARY OF GEOTEXTILE
 FOR PAVEMENT STABILIZATION**

LINE	Station	Station	Geotextile for Pavement Stabilization SY	Class IV Subgrade Stabilization TONS
-L-	31+50	33+50	470	200
-L-	34+50	36+50	470	210
-L-	42+50	46+00	1030	440
-L-	47+00	47+50	1170	510
-L-	55+00	59+20	430	190
-L-	64+50	67+50	250	110
-L-	72+00	72+50	520	220
-L-	79+00	80+50	1740	750
-L-	108+50		130	60
-L-	114+00	119+50	1480	640
-L-	135+00	140+00	1420	610
-L-	150+50	151+50	250	110
-L-	157+50	158+00	210	90
-L-	162+00	163+50	490	210
-L-	165+00	167+50	640	280
-L-	172+00	175+50	820	350
-L-	177+50	178+50	290	130
-L-	180+00		110	50
-L-	182+00	187+50	1350	580
-L-	194+50	195+00	130	60
CONTINGENCY				
TOTAL SY/TONS:			13400	5800*

*Total tons of "Class IV Subgrade Stabilization" is only the estimated quantity for pavement stabilization and may only represent a portion of the subgrade stabilization quantity shown in the Item Sheets of the Proposal.

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY			ASU (1)	12	1000	2000	3000	600	0
TOTAL CY/TONS/SY:					1000	2000**	3000**	600	0

*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 REINFORCED SOIL SLOPES AND SLOPE EROSION CONTROL

LINE	Beginning Slope/ RSS (H:V)	Approx. Station	Ending Slope/ RSS (H:V)	Approx. Station	Location LT/RT	Reinforced Soil Slope (RSS) SY	Geocells SY	Coir Fiber Mat SY	Matting for Erosion Control SY
-L-	1.5:1	60+25	1.5:1	63+75	RT			2700	
-L-	1.5:1	70+25	1.5:1	71+25	RT			680	
-L-	1.5:1	74+25	1.5:1	77+75	RT			3480	
-L-	1.5:1	86+75	1.5:1	87+25	LT			380	
TOTAL SY:						0	0	7240*	

*Total square yards of "Coir Fiber Mat" is only the estimated quantity for slopes steeper than 2:1 (H:V) and may only represent a portion of the coir fiber mat quantity shown in the Item Sheets of the Proposal.

**Total square yards of "Matting for Erosion Control" is only the estimated quantity for RSS and may only represent a portion of the matting quantity shown in the Item Sheets of the Proposal.

SUMMARY OF ROCK PLATING

LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
-L-	1.5:1	42+00	1.5:1	45+64	LT	2	*	1430
-L-	1.5:1	44+50	1.5:1	45+00	RT	2	*	180
-L-	1.5:1	47+14	1.75:1	48+00	RT	2	*	410
-L-	1.5:1	56+00	1.5:1	58+00	RT	2	*	1110
-L-	1.5:1	57+00	1.5:1	59+50	LT	2	*	1110
TOTAL SY:								4240

*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

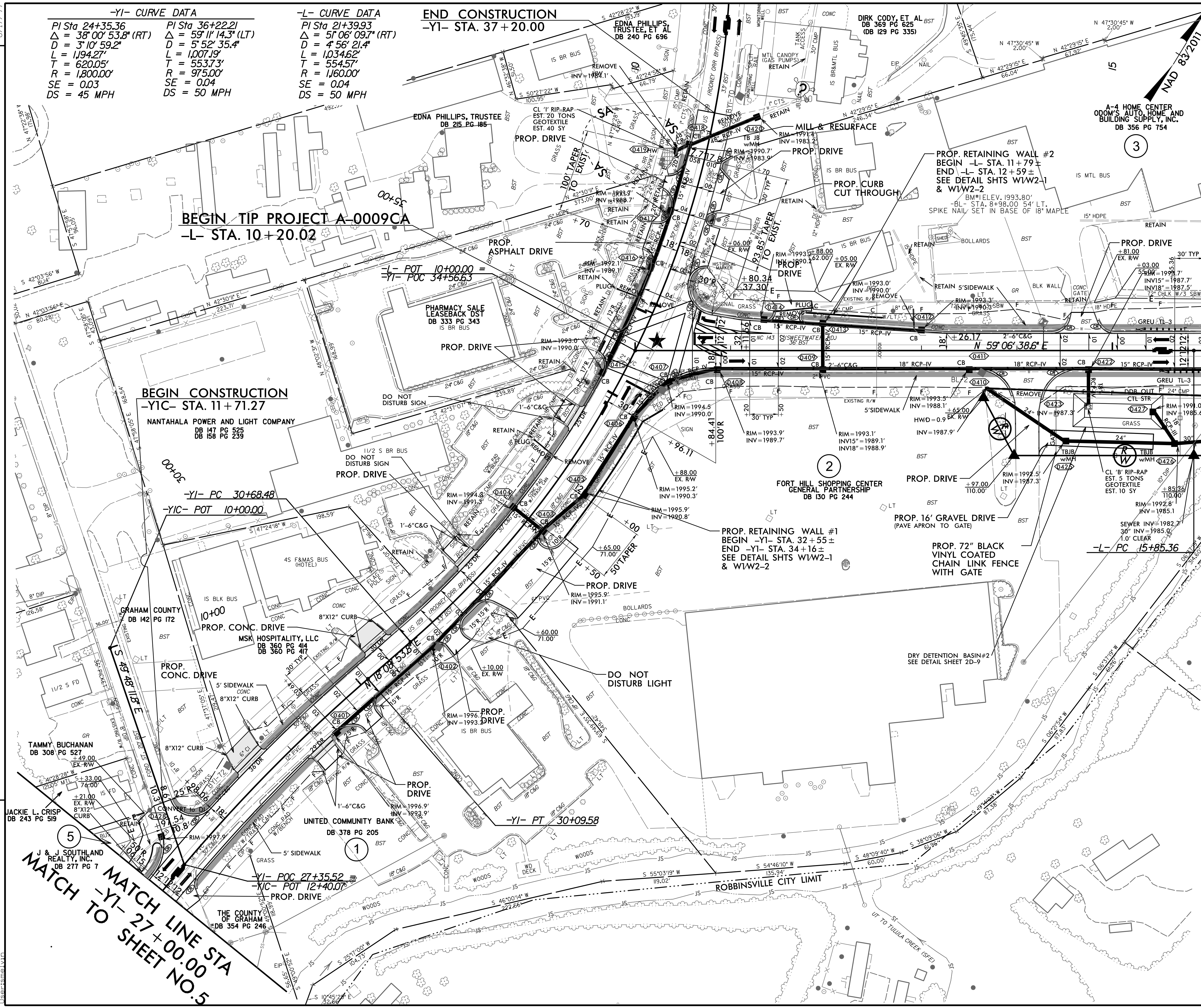
**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	UNITED COMMUNITY BANK
2	4	FORT HILL SHOPPING CENTER GENERAL PARTNERSHIP
3	4	A-4 HOME CENTER ODOM'S AUTO, HOME & BUILD. SUPPLY
4	5	PHILLIPS PROPERTY HOLDINGS, LLC
5	4 & 5	J & J SOUTHLAND REALTY, INC
6	5	ROBERT COLVARD SR., ET. AL.
7	5	TONY CODY, ET. AL.
8	5	EDDIE R. BROOMS, JR
8A	5	CLARA BELLE SHULER HEIRS
9	6	TOMMY R. COLLINS, ET. AL.
10	6 & 7	JACK EDWARD MILLSAPS AND WIFE LINDA MILLSAPS
11	7 & 8	KENNETH GARLAND, ET. AL.
12	7 & 8	JACK EDWARD MILLSAPS AND WIFE LINDA MILLSAPS
13	7 & 8	NOT USED
14	8 & 9	LOVIN MANAGEMENT COMPANY, LLC
15	7 & 8	NELLY HALL
16	8	DANA J. SMITH
17	8	ERIC FORD AND JOEL FORD
18	8 & 9	LOVIN MANAGEMENT COMPANY, LLC (TRACT 2)
19	9	CHRISTOPHER T. ODOM
20	9	NICHOLAS L. PHILLIPS
21	8 & 9	BARRY L. QUEEN
22	9 & 10	RANCE ADAMS
23	9 & 10	BILLY K. ANDERSON
24	10 & 11	WILLIAM SCOTT MILLSAPS & WIFE CAROL MILLSAPS, DAVID CRAIG MILLSAPS & WIFE CONNIE MILLSAPS, FRED CARROLL MILLSAPS
25	10	ADAMS CONTRACTING CO.
26	10	KAREN M. HILL, ET. AL.
27	11 & 12	LOVIN MANAGEMENT COMPANY, LLC
28	11	STEPHEN M. HALL
29	11	LOVIN REAL PROPERTY MANAGEMENT, LLC
30	11	MIDWAY BAPTIST CHURCH
31		NOT USED
32	11 & 12	ROBERT P. WEHR, TRUSTEE
33	12 & 13	WTAAP PROPERTIES, LLC, ET. AL.
34	12 & 13	D. R. PHILLIPS, LLC
35	12	ESTATE OF DOUGLAS E. WILSON
36	13 & 14	GILBERT D. LANCE, ET. AL.
37	14	THOMAS A. CARPENTER
38	14	DAVID M. DENTON, TRUSTEE
39	14	THOMAS A. CARPENTER
40	14 & 15	JAMES H. MYERS
41	15	JEREMY C. PHILLIPS
42	15 & 16	JAMES T. KEEFER
43	16	SCOTT ANDERSON
44	16 & 17	KENNETH AND SANDRA CODY TRUSTEES UNDER THE KENNETH CODY LIVING TRUST
45	16 & 17	KENNETH AND SANDRA CODY TRUSTEES UNDER THE KENNETH CODY LIVING TRUST

REVISIONS

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
46	17 & 18	GLENDA ODOM, ET. AL.
47	17	ESTATE OF J. C. PAYNE
48	17 & 18	RICHARD C. GRINDSTAFF
49	17 & 18	PAM FINCHER, ET. AL.
50	18 & 19	DELMAR HOLDER AND WIFE MARTHA HOLDER COELLELL HOLDER AND WIFE GERLINE HOLDER
51	18 & 19	MELANIE O. CRUSE
52	19	CAROL R. ADAMS, ET. AL.



-YI- CURVE DATA		-L- CURVE DATA	
PI Sta 24+35.36	PI Sta 36+22.21	PI Sta 21+39.93	PI Sta 21+39.93
$\Delta = 38^{\circ}00'53.8"$ (RT)	$\Delta = 59^{\circ}11'14.3"$ (LT)	$\Delta = 51^{\circ}06'09.7"$ (RT)	$\Delta = 51^{\circ}06'09.7"$ (RT)
$D = 3^{\circ}10'59.2"$	$D = 5^{\circ}52'35.4"$	$D = 4^{\circ}56'21.4"$	$D = 4^{\circ}56'21.4"$
$L = 1,94.27'$	$L = 1,007.19'$	$L = 1,034.62'$	$L = 1,034.62'$
$T = 620.05'$	$T = 553.73'$	$T = 554.57'$	$T = 554.57'$
$R = 1,800.00'$	$R = 975.00'$	$R = 1,160.00'$	$R = 1,160.00'$
$SE = 0.03$	$SE = 0.04$	$SE = 0.04$	$SE = 0.04$
$DS = 45$ MPH	$DS = 50$ MPH	$DS = 50$ MPH	$DS = 50$ MPH

PROJECT REFERENCE NO. A-0009CA	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST
SHELBY, NC 28150
PH: (704) 476-0003
CORP. LICENSE NO.: C-0275

MATCH LINE STA -L- 16+00.00
MATCH TO SHEET NO.6

NOTE:
ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED. END LOCATION OF DRIVEWAY SHOWN ON PLANS REPRESENTS TIE-IN PER CROSS-SECTIONS, THE CONTRACTOR SHALL EXTEND THE DRIVES AND PAVE UP TO THE RIGHT OF WAY LINE FROM ROW POINT ON MATCH DRIVEWAY IN KIND, UNLESS OTHERWISE NOTED.

- SA ELIGIBLE AND UNASSESSED SITES
- PROP CONC SIDEWALK
- PROPOSED SIGNAL

AVERAGE DAILY TRAFFIC			
		9,500	12,900
	200	3,600	7,200
	300	4,300	8,500
COMMERCIAL DRIVE	700	3,500	4,100
	900	4,100	4,700
	400	3,500	4,100
	500	4,100	4,700
		9,600	12,900
		-L- NC 143	

2019 ADT
2045ADT

FOR -L- PROFILE, SEE SHEET NO. 20
FOR -YI- PROFILE, SEE SHEET NO. 28

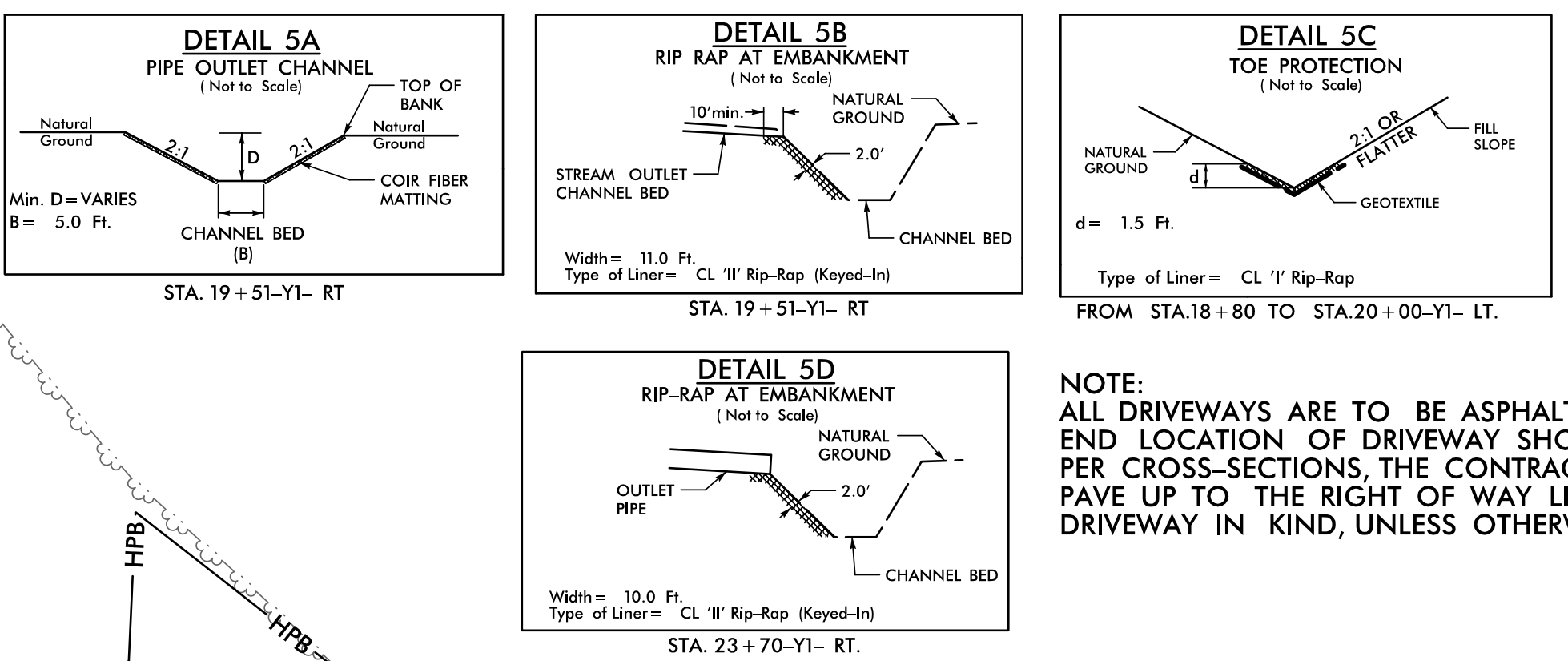
REVISIONS

5/10/2022 X:\NC0009\Roadway\Proj\A-0009CA\Plan Sheets\A-0009CA_Rdy_psh_04.dgn

MATCH LINE STA -YI- 27+00.00
MATCH TO SHEET NO.5

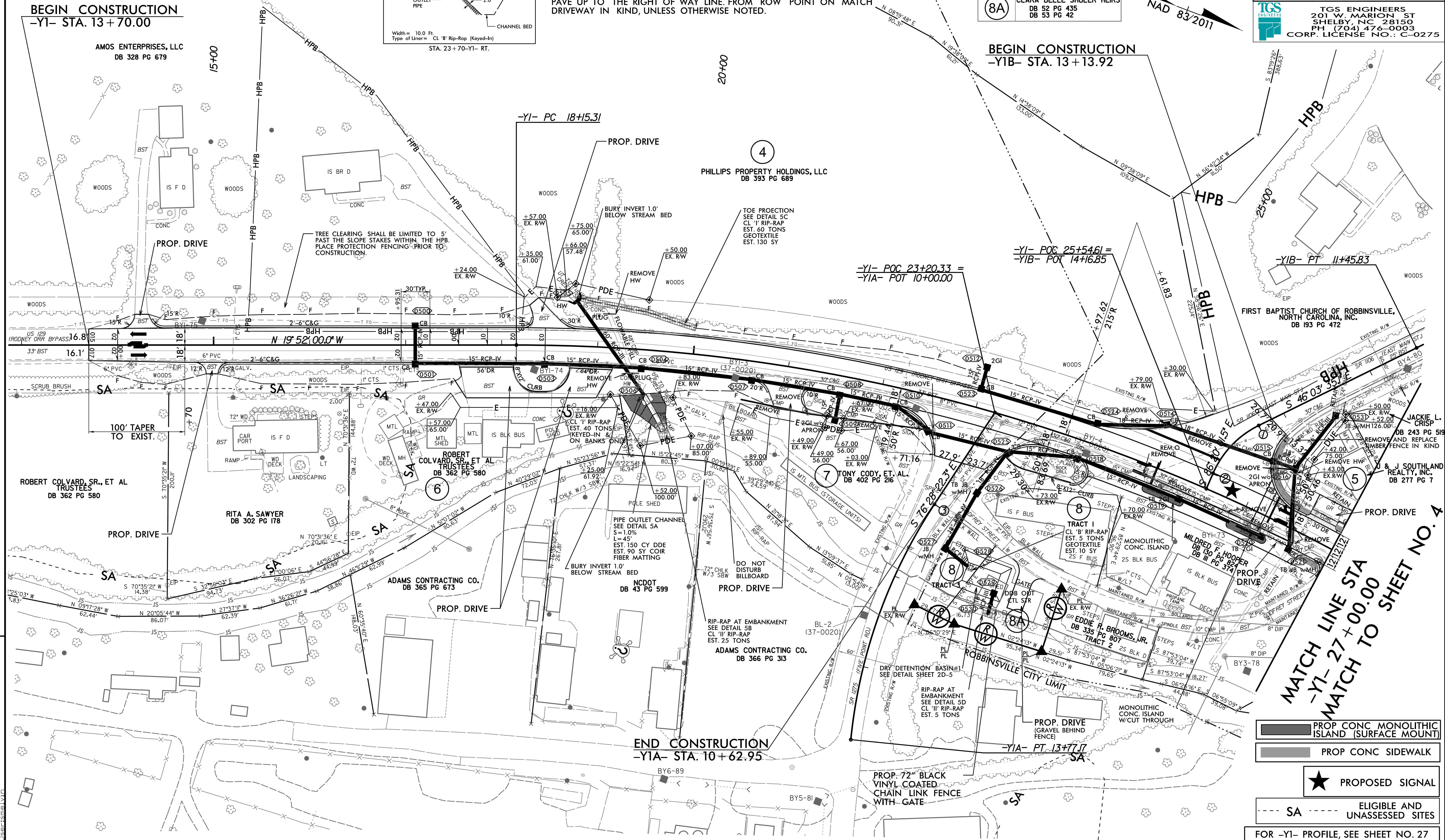
PROJECT REFERENCE NO. A-0009CA	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	

-YIA- CURVE DATA	-YIB- CURVE DATA	-YI- CURVE DATA
PI Sta 12+48.39 $\Delta = 27^\circ 40' 40.3" (LT)$ $D = 10' 31' 56.3"$ $L = 262.79'$ $T = 134.01'$ $R = 544.00'$	PI Sta 10+93.09 $\Delta = 7^\circ 33' 51.9" (RT)$ $D = 7' 09' 43.1"$ $L = 105.62'$ $T = 52.89'$ $R = 800.00'$	PI Sta 13+65.73 $\Delta = 40' 16' 26.4" (LT)$ $D = 57' 17' 44.8"$ $L = 70.29'$ $T = 36.67'$ $R = 100.00'$
PI Sta 24+35.36 $\Delta = 38' 00' 53.8" (RT)$ $D = 3' 10' 59.2"$ $L = 1,194.27'$ $T = 620.05'$ $R = 1,800.00'$ $SE = 0.03$ $DS = 45 MPH$		



NOTE:
ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.
END LOCATION OF DRIVEWAY SHOWN ON PLANS REPRESENTS TIE-IN PER CROSS-SECTIONS, THE CONTRACTOR SHALL EXTEND THE DRIVES AND PAVE UP TO THE RIGHT OF WAY LINE FROM ROW POINT ON MATCH DRIVEWAY IN KIND, UNLESS OTHERWISE NOTED.

8	EDDIE R. BROOMS, JR. DB 335 PG 807
8A	CLARA BELLE SHULER HEIRS DB 52 PG 435 DB 53 PG 42



	PROP CONC MONOLITHIC ISLAND (SURFACE MOUNT)
	PROP CONC SIDEWALK
	PROPOSED SIGNAL
	ELIGIBLE AND UNASSESSED SITES
FOR -YI- PROFILE, SEE SHEET NO. 27	

REVISIONS

5/20/2022 10:00 AM Roadway\Proj\A-0009CA_Plan_Sheets\A-0009CA_Rdy_psh_05.dgn

PROJECT REFERENCE NO. A-0009CA		SHEET NO. 6	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH: (704) 476-0003 CORP. LICENSE NO.: C-0275			

-L- CURVE DATA
 PI Sta 21+39.93
 $\Delta = 51^{\circ} 06' 09.7" (RT)$
 $D = 4' 56' 21.4"$
 $L = 1034.62'$
 $T = 554.57'$
 $R = 1160.00'$
 $SE = 0.04$
 $DS = 50 MPH$

-Y5- CURVE DATA
 PI Sta 11+51.55
 $\Delta = 9^{\circ} 49' 14.7" (RT)$
 $D = 9' 32' 57.5"$
 $L = 102.84'$
 $T = 51.55'$
 $R = 600.00'$

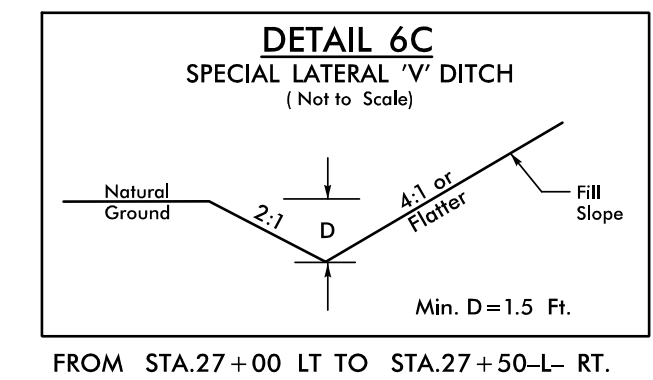
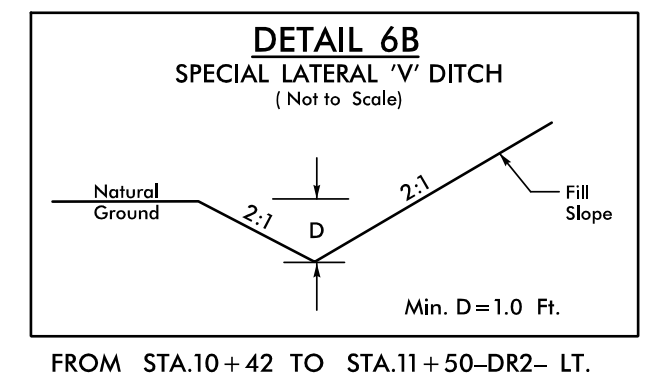
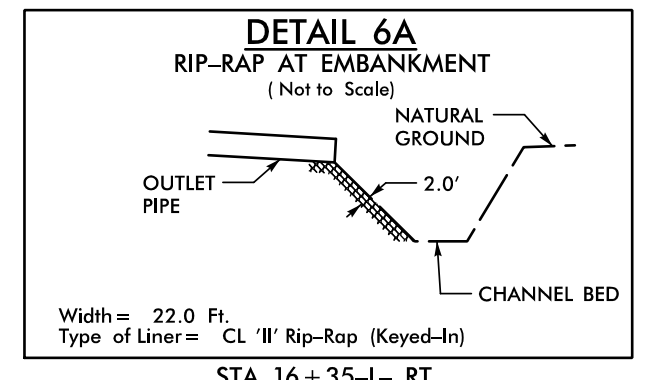
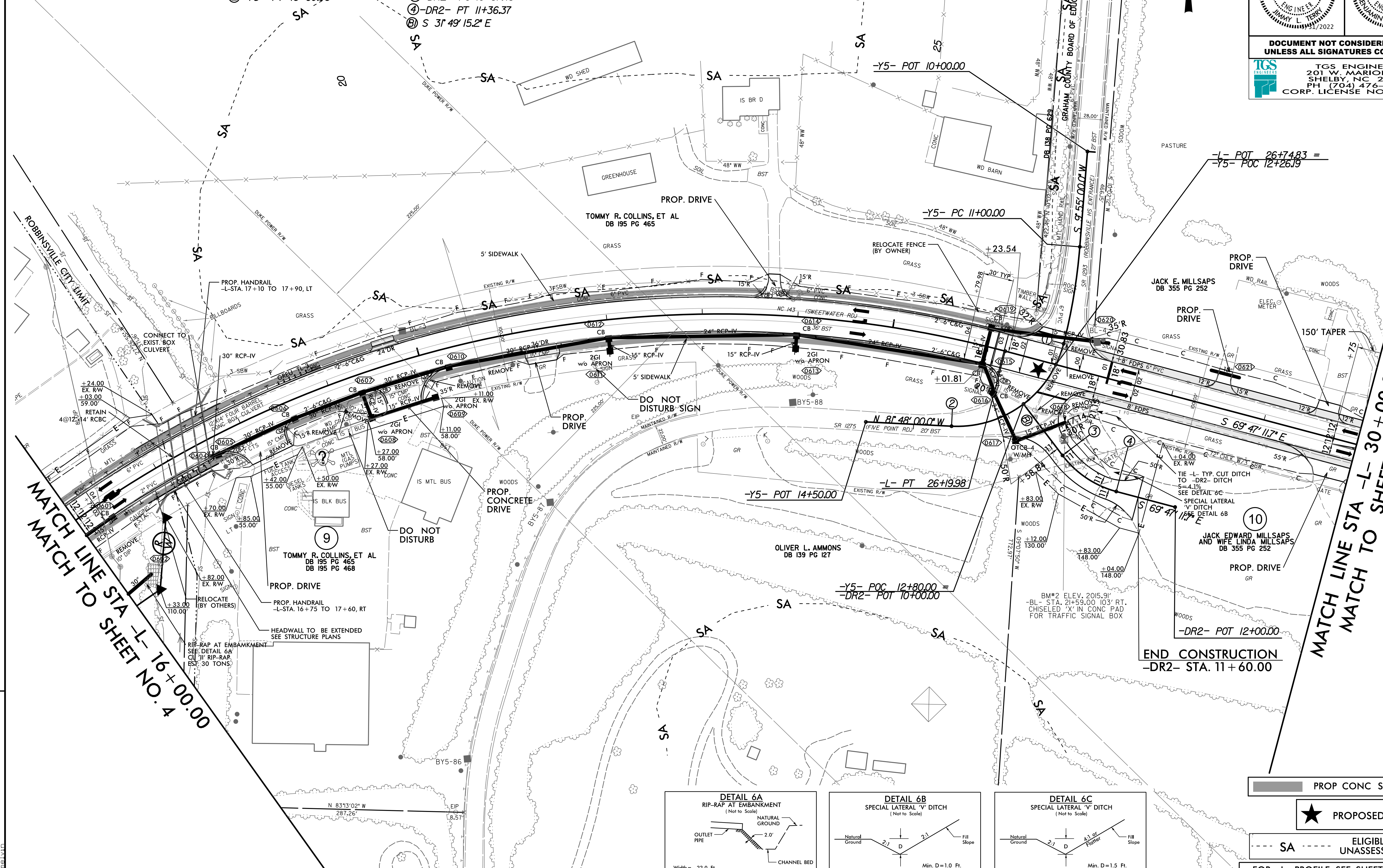
① -Y5- PCC 12+02.84
 ② -Y5- PT 13+60.33

-DR2- CURVE DATA
 PI Sta 11+03.23
 $\Delta = 37^{\circ} 57' 56.5" (LT)$
 $D = 55' 05' 31.5"$
 $L = 68.91'$
 $T = 35.78'$
 $R = 104.00'$
 $SE = NC$

③ -DR2- PC 10+67.46
 ④ -DR2- PT 11+36.37
 ⑤ S 31° 49' 15.2" E

NOTE:
 ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.
 END LOCATION OF DRIVEWAY SHOWN ON PLANS REPRESENTS TIE-IN
 PER CROSS-SECTIONS, THE CONTRACTOR SHALL EXTEND THE DRIVES AND
 PAYE UP TO THE RIGHT OF WAY LINE FROM ROW POINT ON MATCH
 DRIVEWAY IN KIND, UNLESS OTHERWISE NOTED.

REVISIONS



- PROP CONC SIDEWALK
- ★ PROPOSED SIGNAL
- - SA - - ELIGIBLE AND UNASSESSED SITES

FOR -L- PROFILE, SEE SHEET NO. 20
 FOR -DR2- PROFILE, SEE SHEET NO. 28

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 8/17/09
 11/2/2011

8/17/99

NOTE:
PRIOR TO COMMENCING WORK ON ANY TRENCHLESS INSTALLATION,
PROVIDE A DESIGN FOR THE TRENCHLESS INSTALLATION CERTIFIED
BY AN ENGINEER LICENSED BY THE STATE OF NORTH CAROLINA,
AS REQUIRED BY SUBARTICLE 1550-3(B) OF THE STANDARD SPECIFICATIONS.

NOTE:
ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.
END LOCATION OF DRIVEWAY SHOWN ON PLANS REPRESENTS TIE-IN
PER CROSS-SECTIONS, THE CONTRACTOR SHALL EXTEND THE DRIVES AND
PAVE UP TO THE RIGHT OF WAY LINE FROM ROW POINT ON MATCH
DRIVEWAY IN KIND, UNLESS OTHERWISE NOTED.

PROJECT REFERENCE NO. A-0009CA	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

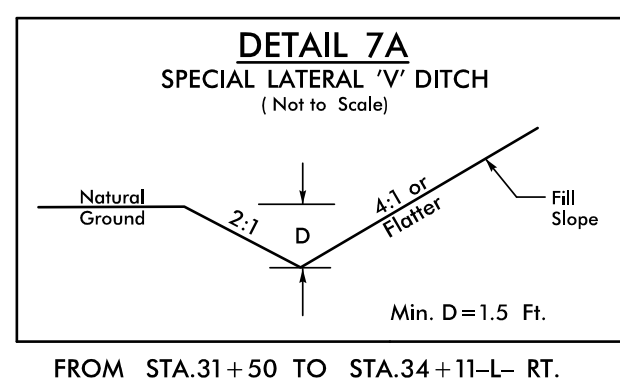
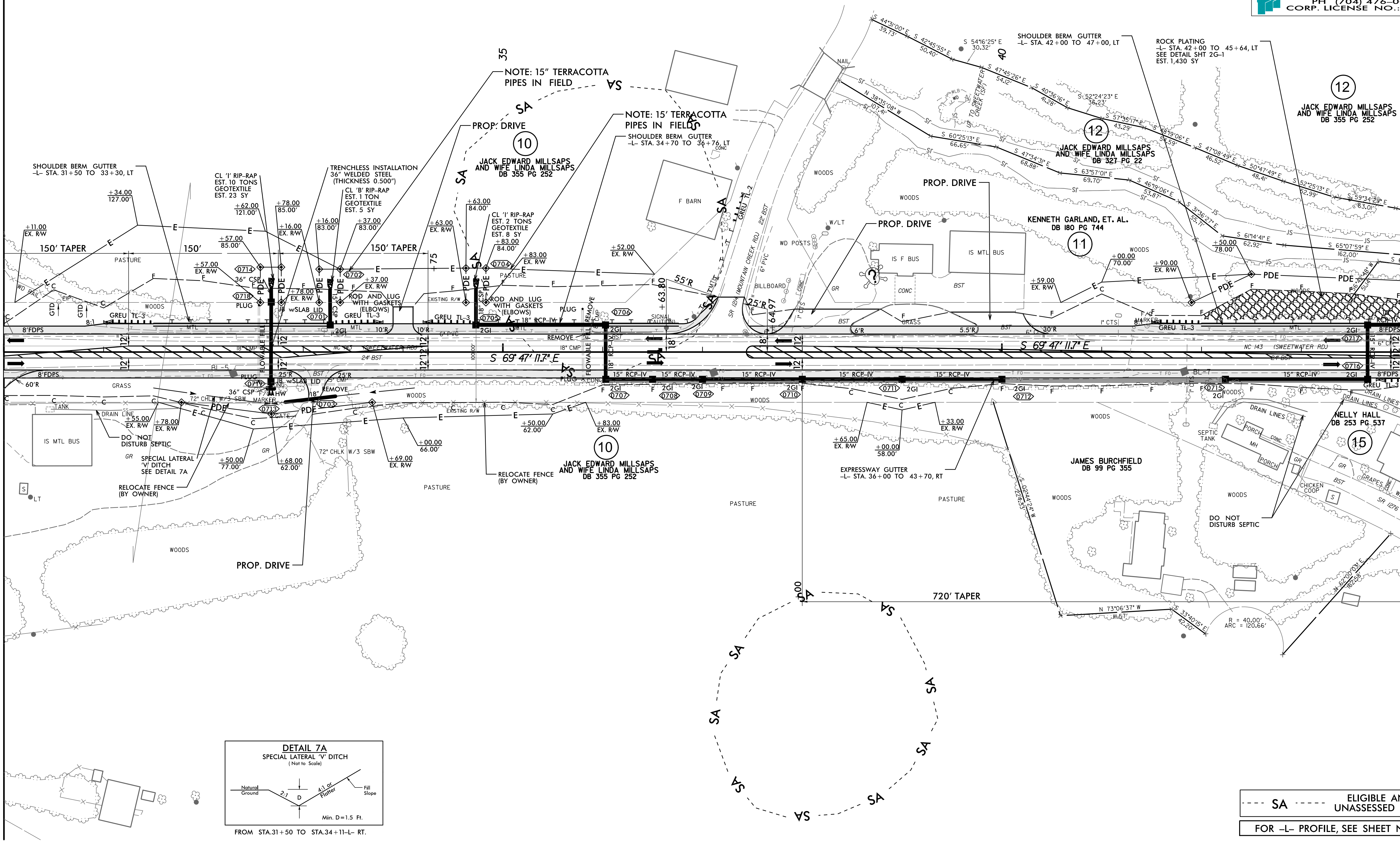
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

TGS ENGINEERS
201 W. MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275



MATCH LINE STA -L- 30+00.00
MATCH TO SHEET NO. 6

MATCH LINE STA -L- 44+00.00
MATCH TO SHEET NO. 8



--- SA --- ELIGIBLE AND UNASSESSED SITES
FOR -L- PROFILE, SEE SHEET NO. 21

REVISIONS

5/25/2022
X:\Roadway\A-0009CA\Roadway\Proj\A-0009CA_Plan
Sheets\A-0009CA_Rdy_psh_07.dgn

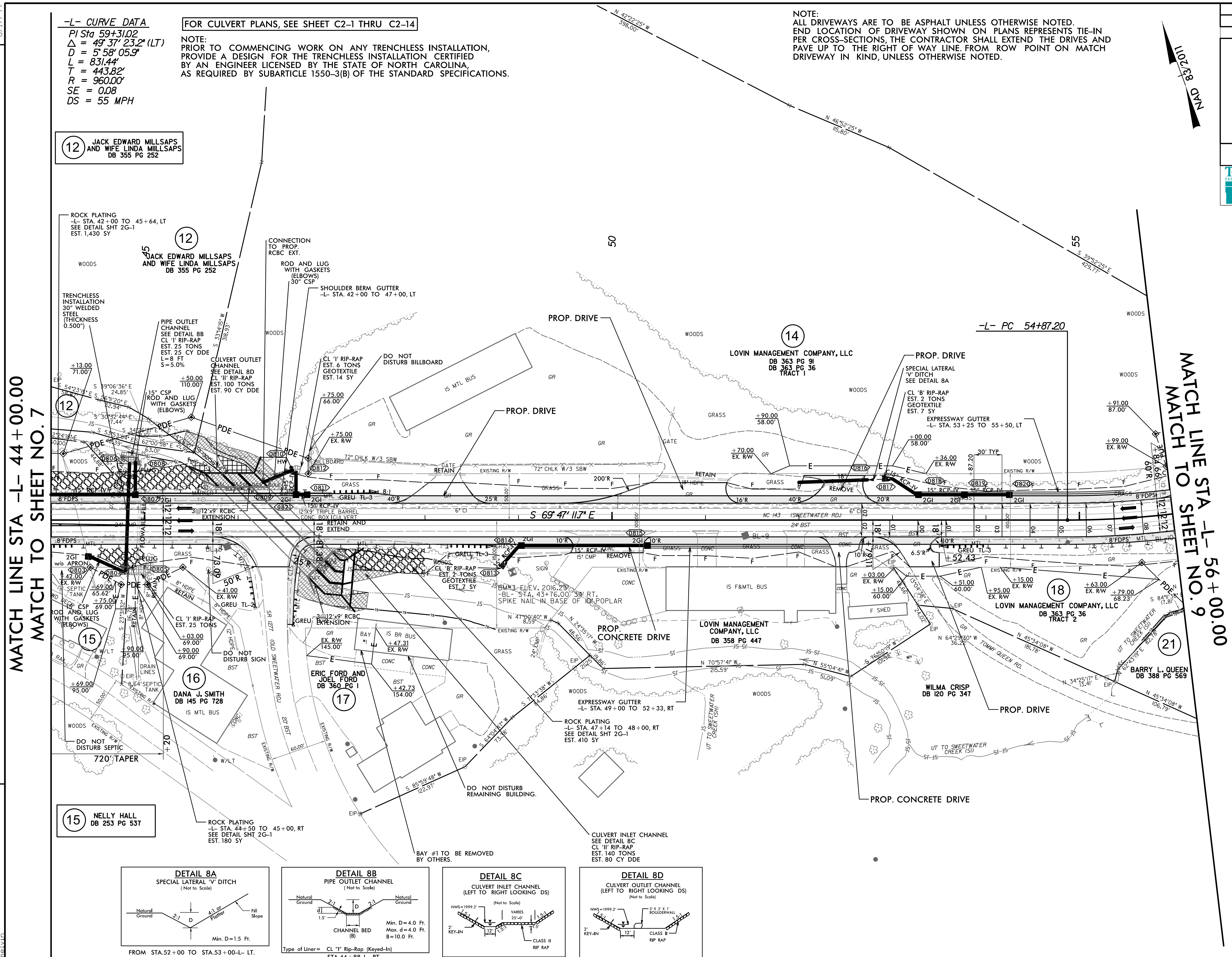
PROJECT REFERENCE NO. A-0009CA	SHEET NO. 8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH: (704) 476-0003 CORP. LICENSE NO.: C-0275	

-L- CURVE DATA
 PI Sta 59+31.02
 $\Delta = 49^\circ 37' 23.2''$ (LT)
 $D = 5^\circ 58' 05.9''$
 $L = 831.44'$
 $T = 443.82'$
 $R = 960.00'$
 $SE = 0.08$
 $DS = 55$ MPH

FOR CULVERT PLANS, SEE SHEET C2-1 THRU C2-14

NOTE:
 PRIOR TO COMMENCING WORK ON ANY TRENCHLESS INSTALLATION, PROVIDE A DESIGN FOR THE TRENCHLESS INSTALLATION CERTIFIED BY AN ENGINEER LICENSED BY THE STATE OF NORTH CAROLINA, AS REQUIRED BY SUBARTICLE 1550-3(B) OF THE STANDARD SPECIFICATIONS.

NOTE:
 ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED. END LOCATION OF DRIVEWAY SHOWN ON PLANS REPRESENTS TIE-IN PER CROSS-SECTIONS, THE CONTRACTOR SHALL EXTEND THE DRIVES AND PAVE UP TO THE RIGHT OF WAY LINE. FROM ROW POINT ON MATCH DRIVEWAY IN KIND, UNLESS OTHERWISE NOTED.



12 JACK EDWARD MILLSAPS AND WIFE LINDA MILLSAPS DB 355 PG 252

12 JACK EDWARD MILLSAPS AND WIFE LINDA MILLSAPS DB 355 PG 252

14 LOVIN MANAGEMENT COMPANY, LLC DB 363 PG 91 DB 363 PG 36 TRACT 1

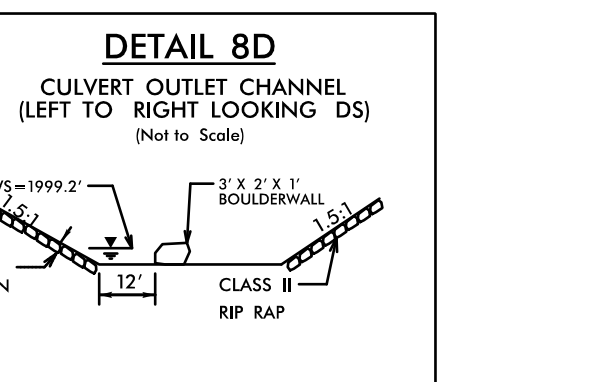
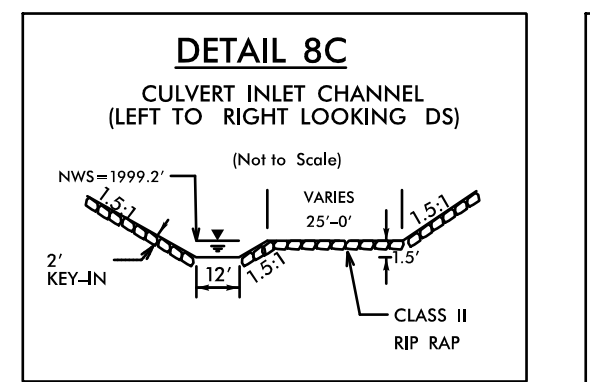
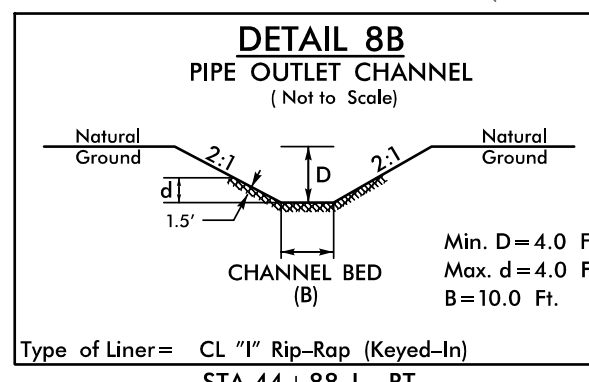
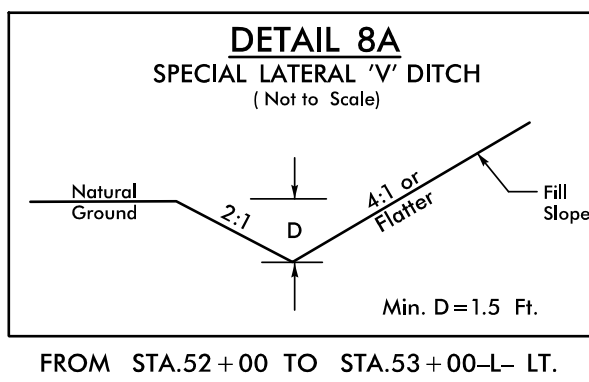
18 LOVIN MANAGEMENT COMPANY, LLC DB 363 PG 36 TRACT 2

15 NELLY HALL DB 253 PG 537

16 DANA J. SMITH DB 145 PG 728

17 ERIC FORD AND JOEL FORD DB 360 PG 1

21 BARRY L. QUEEN DB 388 PG 569



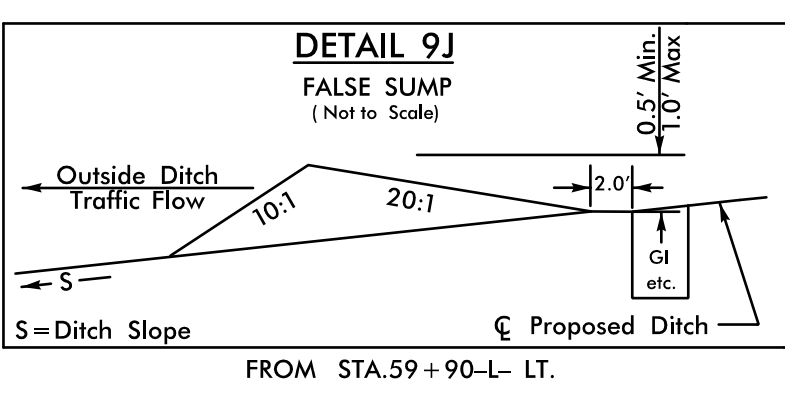
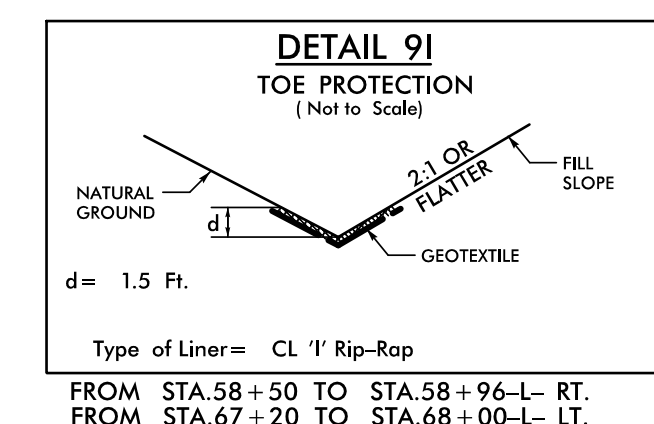
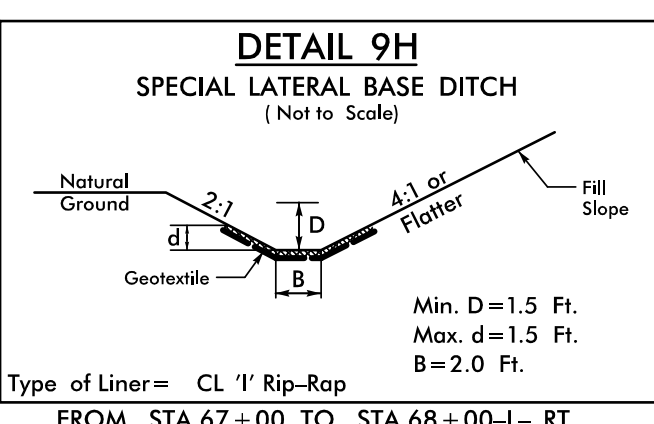
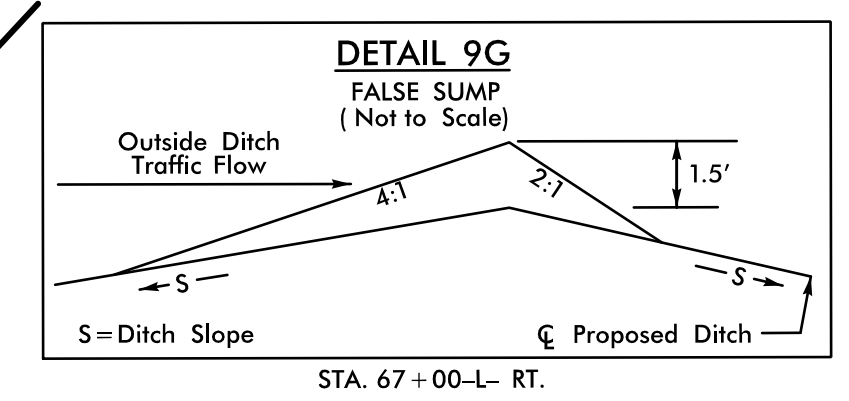
FOR -L- PROFILE, SEE SHEET NO. 21

REVISIONS

5/25/2022 R.A.-0009CA-0009CA-Plan Sheets\A-0009CA-Rdw_psh_08.dgn
 8/17/99

PROJECT REFERENCE NO. A-0009CA	SHEET NO. 9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	

-L- CURVE DATA	-Y3- CURVE DATA
PI Sta 59+31.02	PI Sta 12+33.55
$\Delta = 49^\circ 37' 23.2''$ (LT)	$\Delta = 43^\circ 48' 04.8''$ (LT)
D = 5' 58" 05.9'	D = 57' 17" 44.8"
L = 831.44'	L = 76.45'
T = 443.82'	T = 40.20'
R = 960.00'	R = 100.00'
SE = 0.08	① -Y3- PC 12+93.35
DS = 55 MPH	② -Y3- PT 11+69.80
	③ S 29° 24' 34.8" E



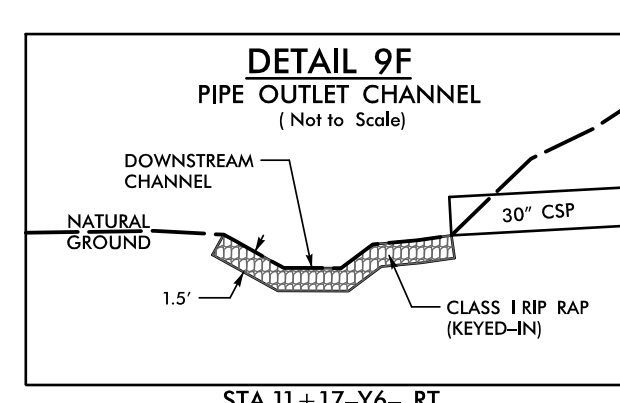
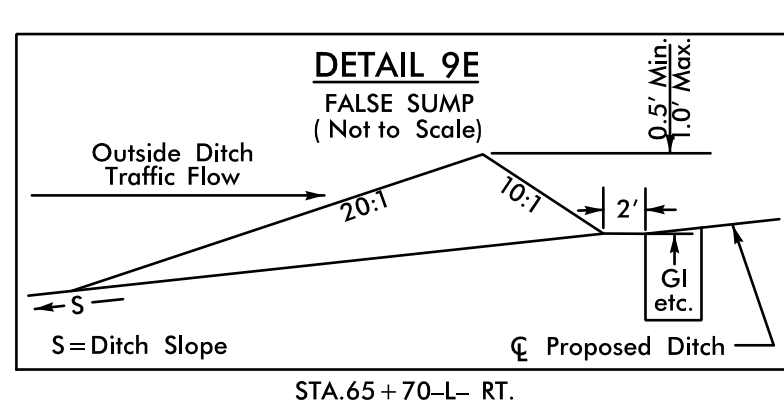
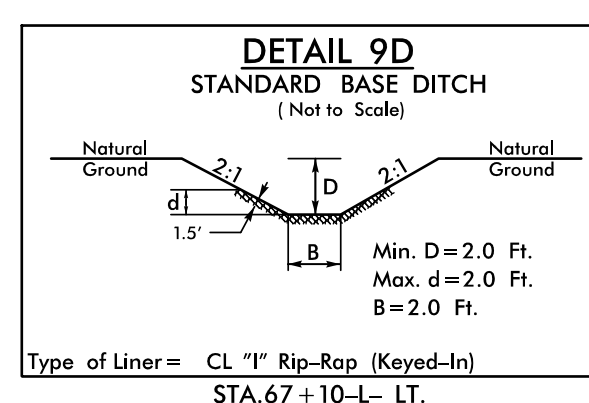
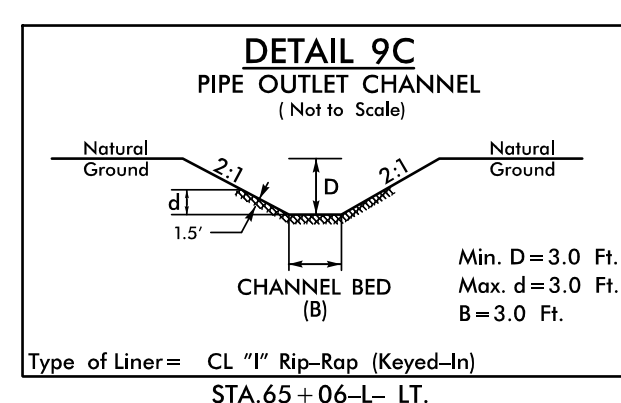
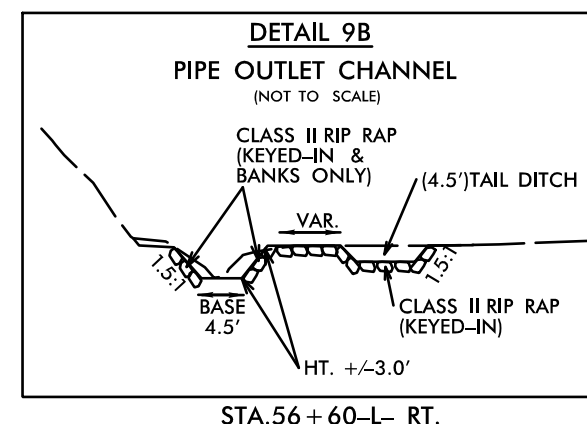
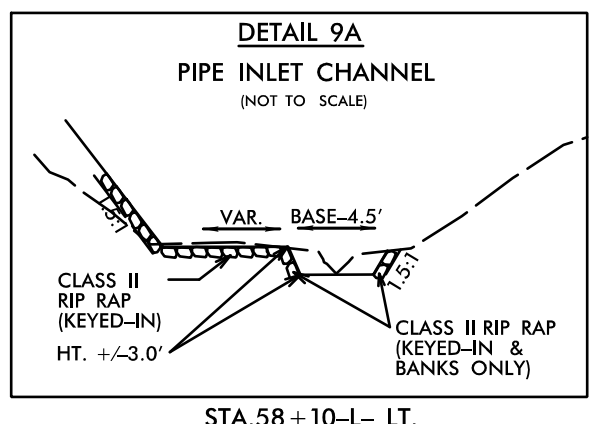
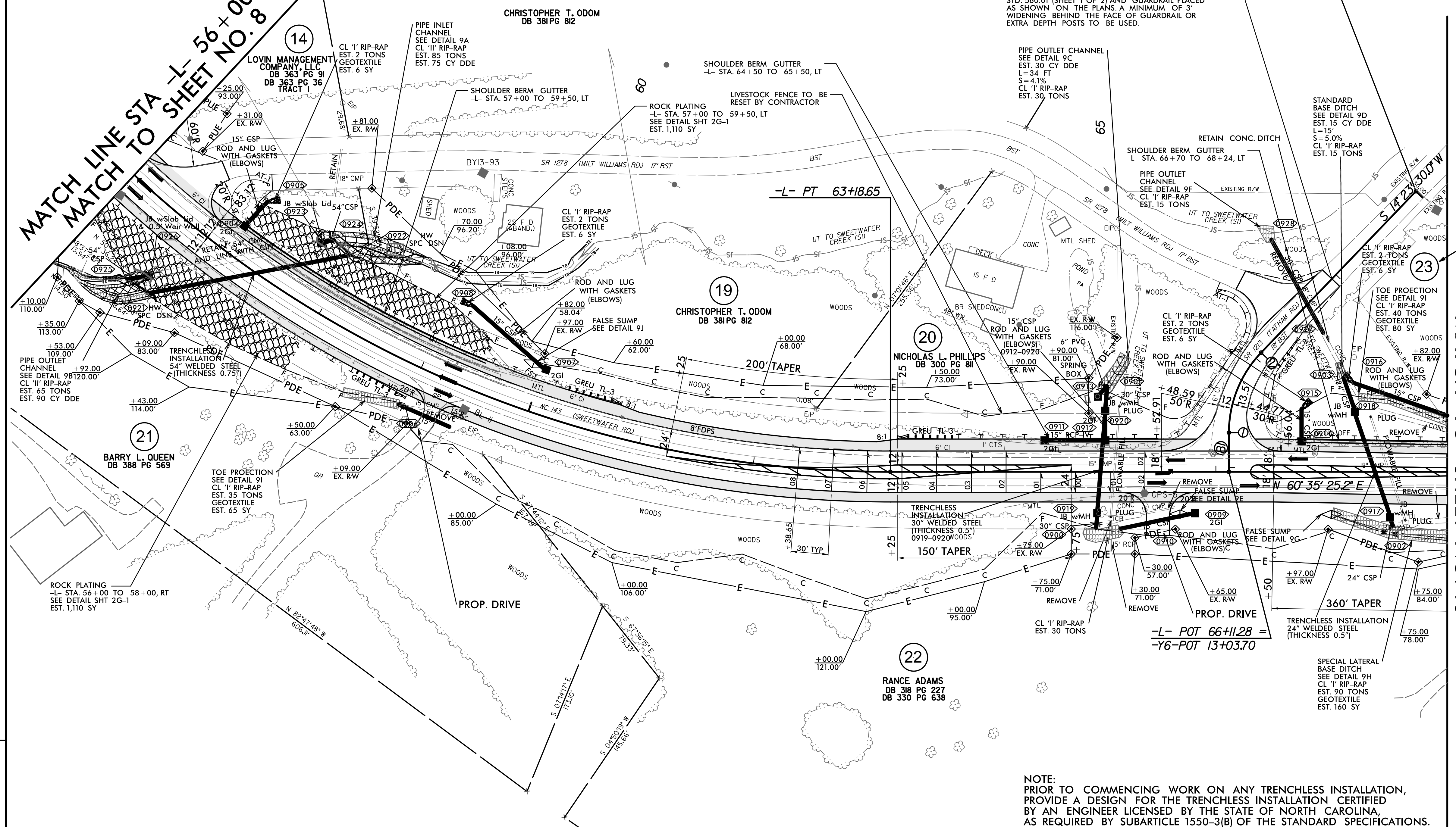
NOTE:
 ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.
 END LOCATION OF DRIVEWAY SHOWN ON PLANS REPRESENTS TIE-IN PER CROSS-SECTIONS, THE CONTRACTOR SHALL EXTEND THE DRIVES AND PAVE UP TO THE RIGHT OF WAY LINE FROM ROW POINT ON MATCH DRIVEWAY IN KIND, UNLESS OTHERWISE NOTED.

BEGIN CONSTRUCTION
-Y6- STA. 11+05.00

NOTE:
 -Y6- TO BE RESURFACED WITH 1 1/2" S9.5B. SHOULDER SHALL BE CONSTRUCTED USING NCDOT STD. 560.01 (SHEET 1 OF 2) AND GUARDRAIL PLACED AS SHOWN ON THE PLANS A MINIMUM OF 3' WIDENING BEHIND THE FACE OF GUARDRAIL OR EXTRA DEPTH POSTS TO BE USED.

MATCH LINE STA -L- 56+00.00
MATCH TO SHEET NO. 8

MATCH LINE STA -L- 68+00.00
MATCH TO SHEET NO. 10



NOTE:
 PRIOR TO COMMENCING WORK ON ANY TRENCHLESS INSTALLATION, PROVIDE A DESIGN FOR THE TRENCHLESS INSTALLATION CERTIFIED BY AN ENGINEER LICENSED BY THE STATE OF NORTH CAROLINA, AS REQUIRED BY SUBARTICLE 1550-3(B) OF THE STANDARD SPECIFICATIONS.

FOR -L- PROFILE, SEE SHEET NO. 22

REVISIONS

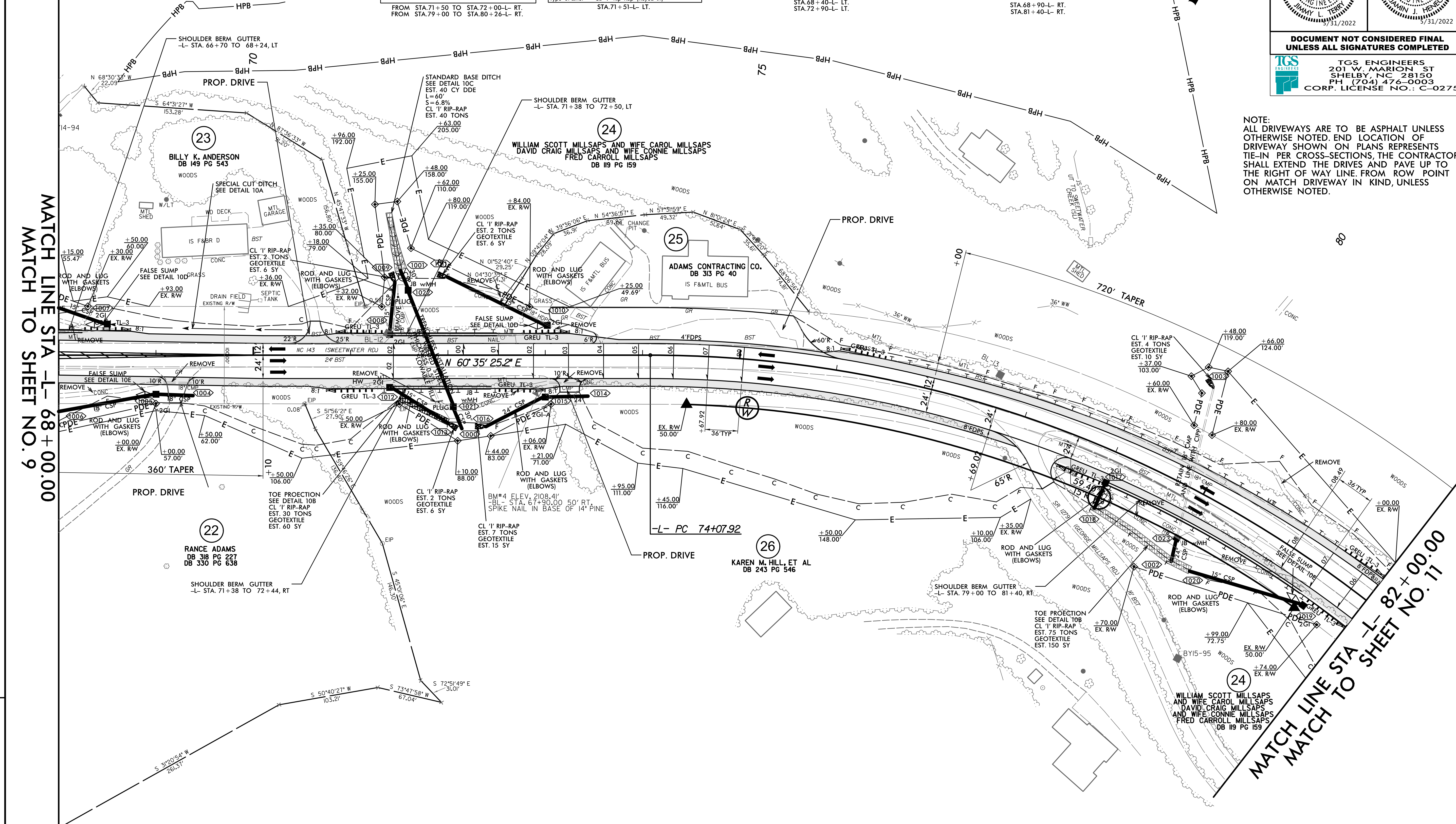
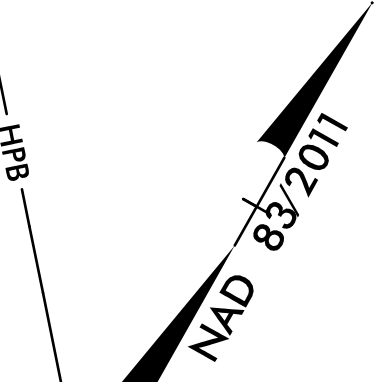
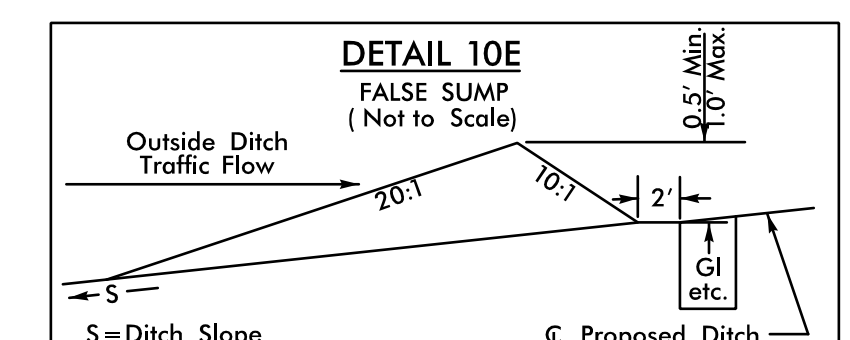
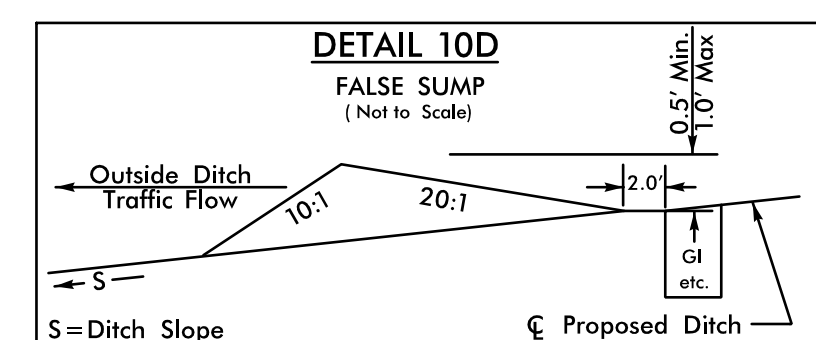
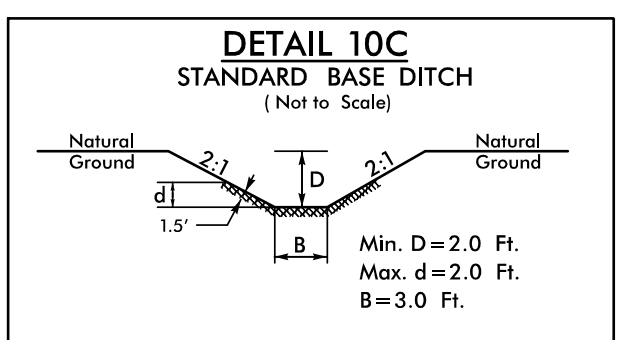
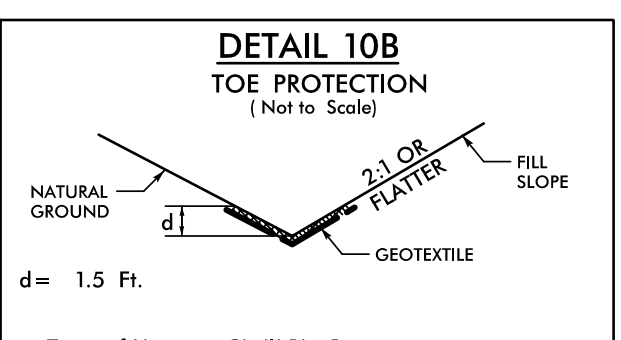
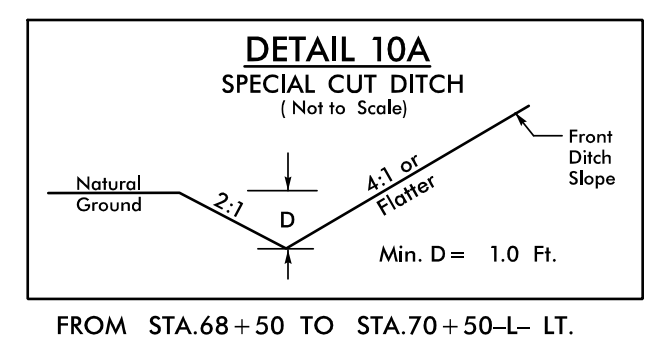
5/25/2022 R.A. 0009CA-Roadway\Proj\A-0009CA_Plan
 5/25/2022 R.A. 0009CA-Roadway\Proj\A-0009CA_Plan
 5/25/2022 R.A. 0009CA-Roadway\Proj\A-0009CA_Plan

PROJECT REFERENCE NO. A-0009CA		SHEET NO. 10	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST
SHELBY, NC 28150
PH: (704) 476-0003
CORP. LICENSE NO.: C-0275

-L- CURVE DATA
 PI Sta 78+21.51
 $\Delta = 38^{\circ} 02' 00.5" (RT)$
 $D = 4^{\circ} 46' 28.7"$
 $L = 796.57'$
 $T = 413.59'$
 $R = 1,200.00'$
 $SE = 0.08$
 $DS = 60 MPH$



NOTE:
 ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED. END LOCATION OF DRIVEWAY SHOWN ON PLANS REPRESENTS TIE-IN PER CROSS-SECTIONS, THE CONTRACTOR SHALL EXTEND THE DRIVES AND PAVE UP TO THE RIGHT OF WAY LINE FROM ROW POINT ON MATCH DRIVEWAY IN KIND, UNLESS OTHERWISE NOTED.

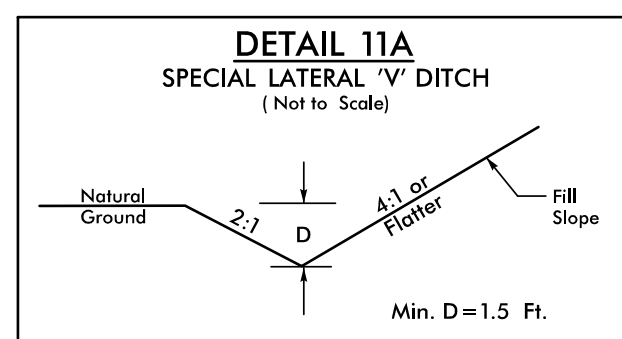
NOTE:
 PRIOR TO COMMENCING WORK ON ANY TRENCHLESS INSTALLATION, PROVIDE A DESIGN FOR THE TRENCHLESS INSTALLATION CERTIFIED BY AN ENGINEER LICENSED BY THE STATE OF NORTH CAROLINA, AS REQUIRED BY SUBARTICLE 1550-3(B) OF THE STANDARD SPECIFICATIONS.

FOR -L- PROFILE, SEE SHEET NO. 22

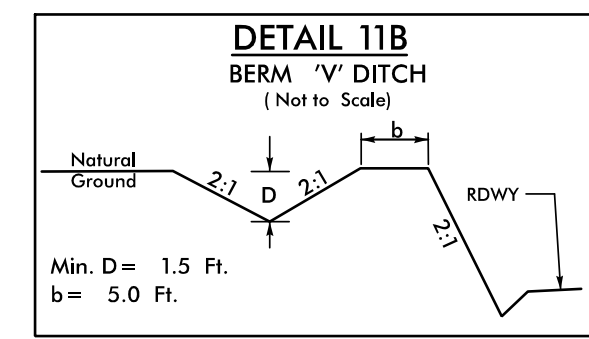
8/17/99

-L- CURVE DATA
 PI Sta 78+21.5/
 $\Delta = 38^{\circ}02'00.5''$ (RT)
 $D = 4^{\circ}46'28.7''$
 $L = 796.57'$
 $T = 413.59'$
 $R = 1,200.00'$
 $SE = 0.08$
 $DS = 60$ MPH

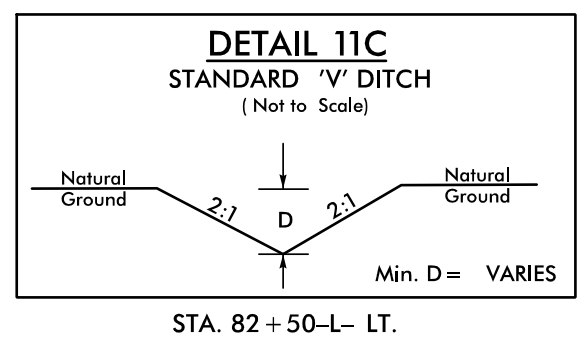
-L- CURVE DATA
 PI Sta 98+90.1/
 $\Delta = 65^{\circ}35'01.6''$ (LT)
 $D = 5^{\circ}58'05.9''$
 $L = 1,098.87'$
 $T = 618.49'$
 $R = 960.00'$
 $SE = 0.08$
 $DS = 55$ MPH



FROM STA.87+00 TO STA.87+50-L- LT.
 FROM STA.88+62 TO STA.89+50-L- LT.



FROM STA.91+95 TO STA.92+50-L- LT.
 FROM STA.93+85 TO STA.96+00-L- LT.



STA. 82 + 50-L- LT.

NOTE:
 ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.
 END LOCATION OF DRIVEWAY SHOWN ON PLANS REPRESENTS TIE-IN
 PER CROSS-SECTIONS, THE CONTRACTOR SHALL EXTEND THE DRIVES AND
 PAVE UP TO THE RIGHT OF WAY LINE. FROM ROW POINT ON MATCH
 DRIVEWAY IN KIND, UNLESS OTHERWISE NOTED.

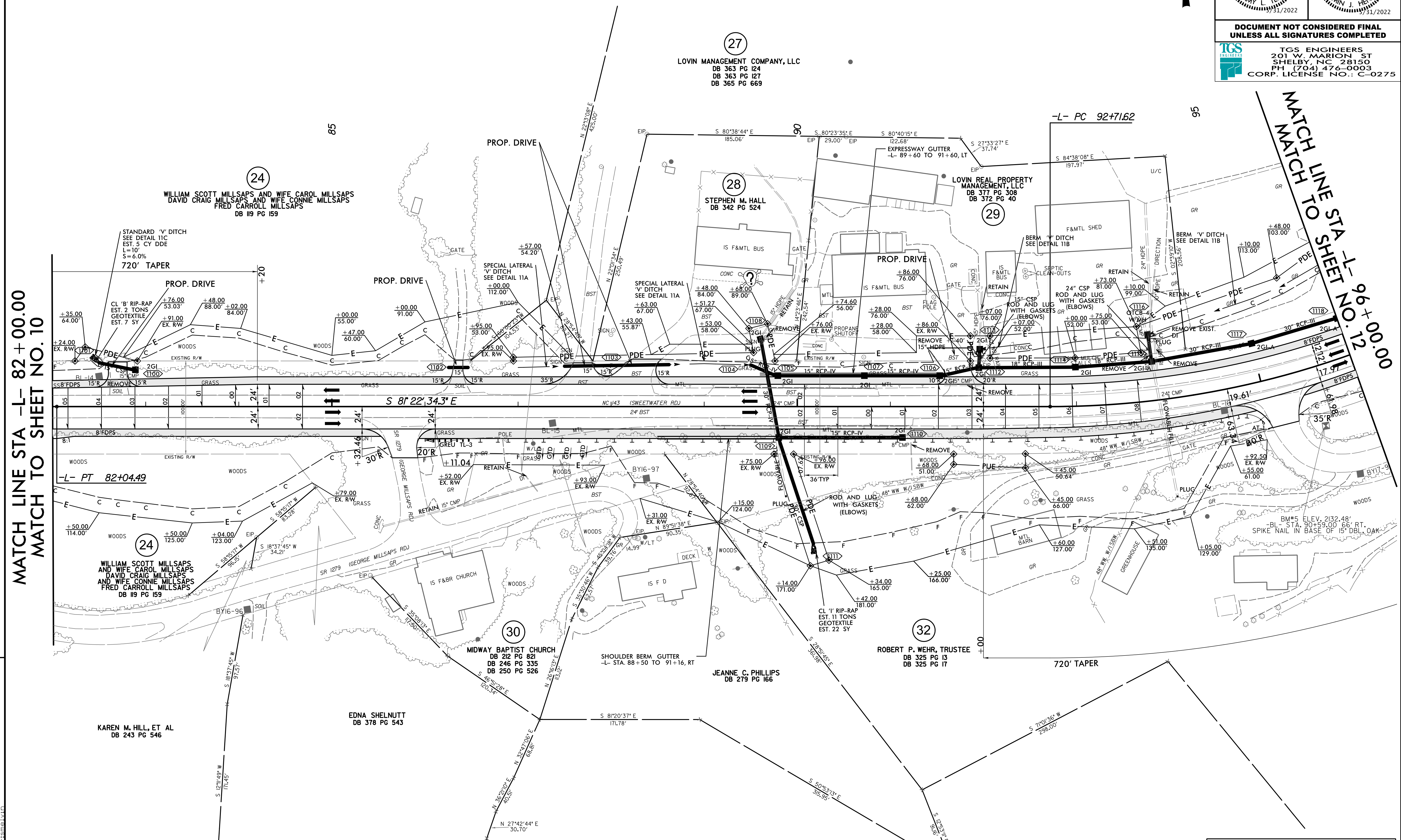
NAD 83/2011

PROJECT REFERENCE NO. A-0009CA		SHEET NO. 11	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
 TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275			

REVISIONS

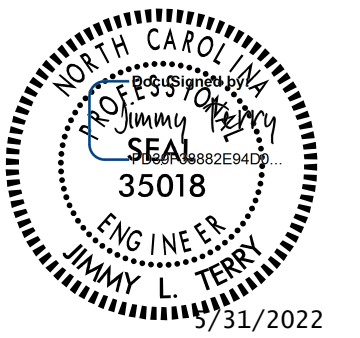
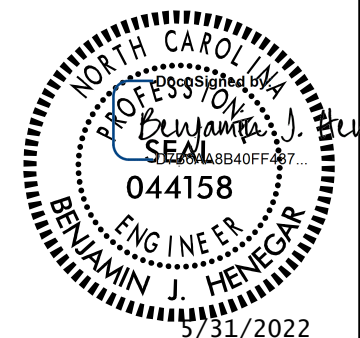

MATCH LINE STA -L- 82 + 00.00
 MATCH TO SHEET NO. 10

MATCH LINE STA -L- 96 + 00.00
 MATCH TO SHEET NO. 12

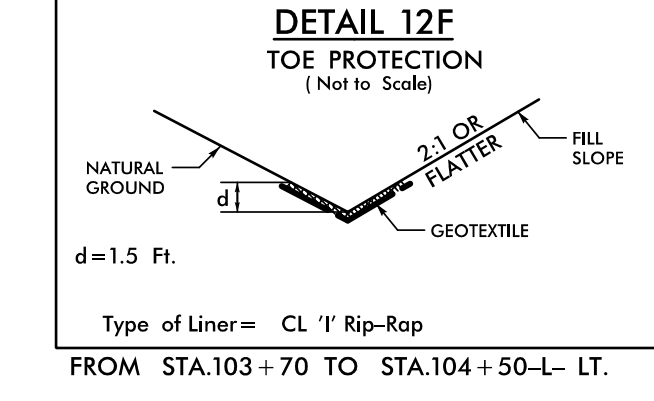
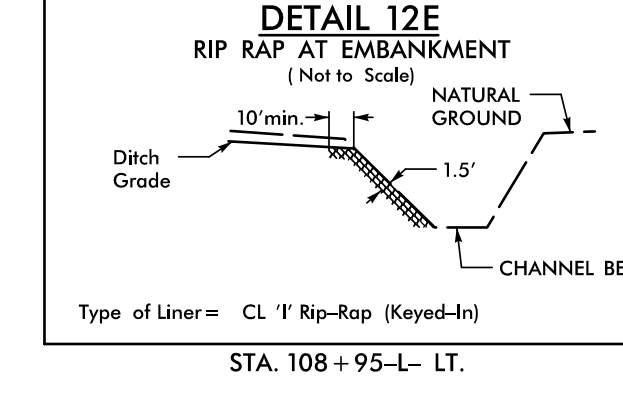
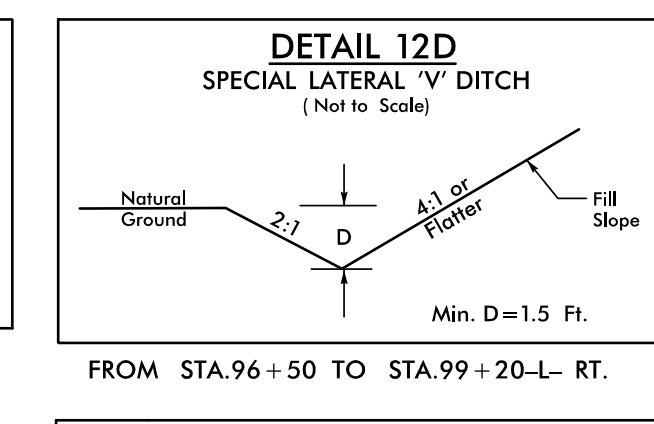
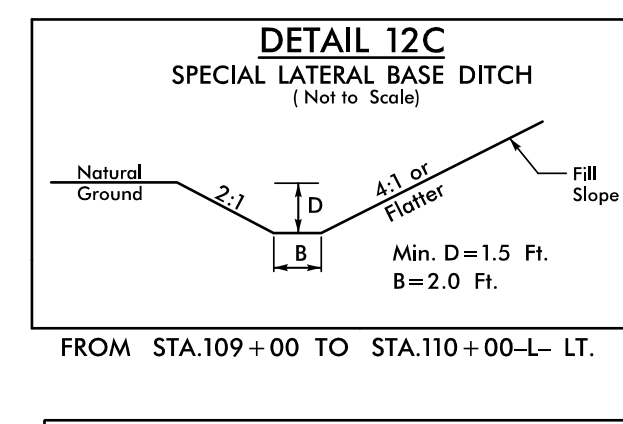
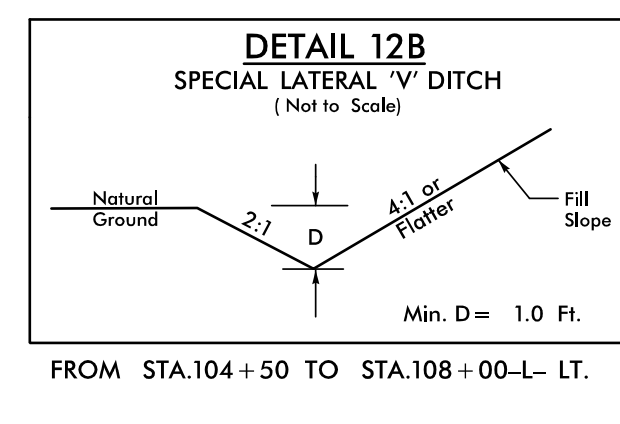
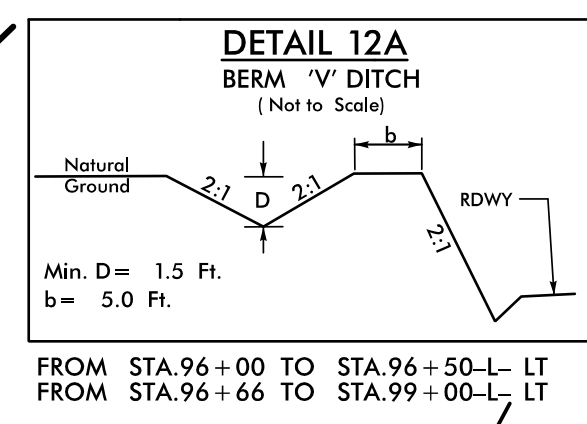


5/20/2022
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 lmc

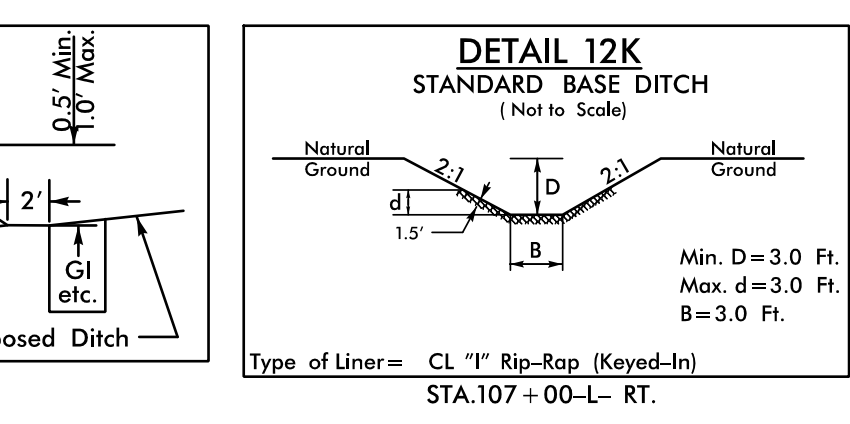
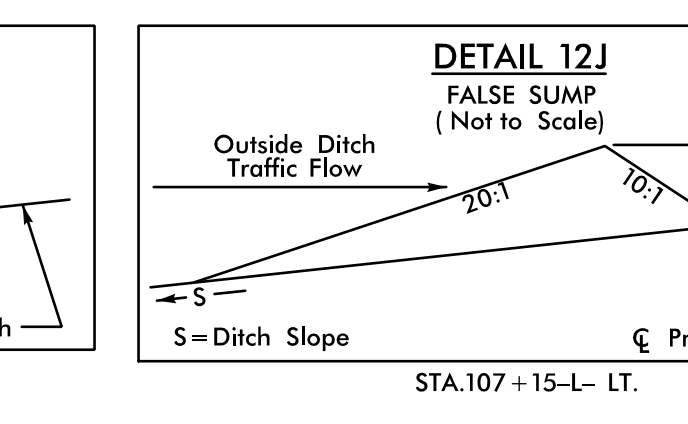
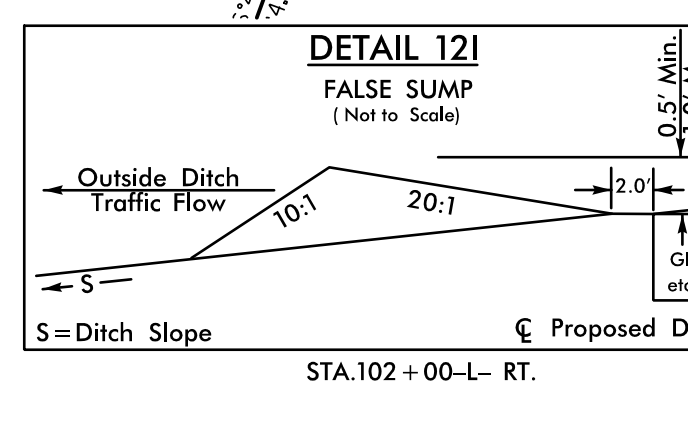
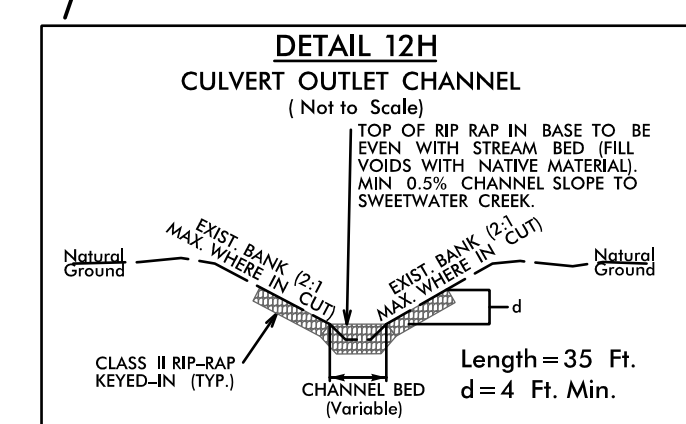
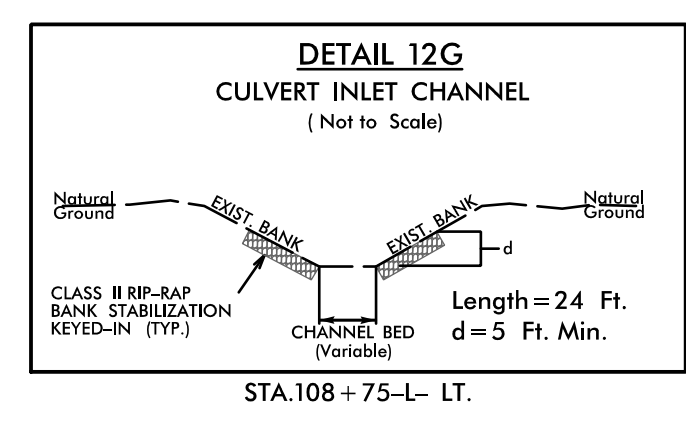
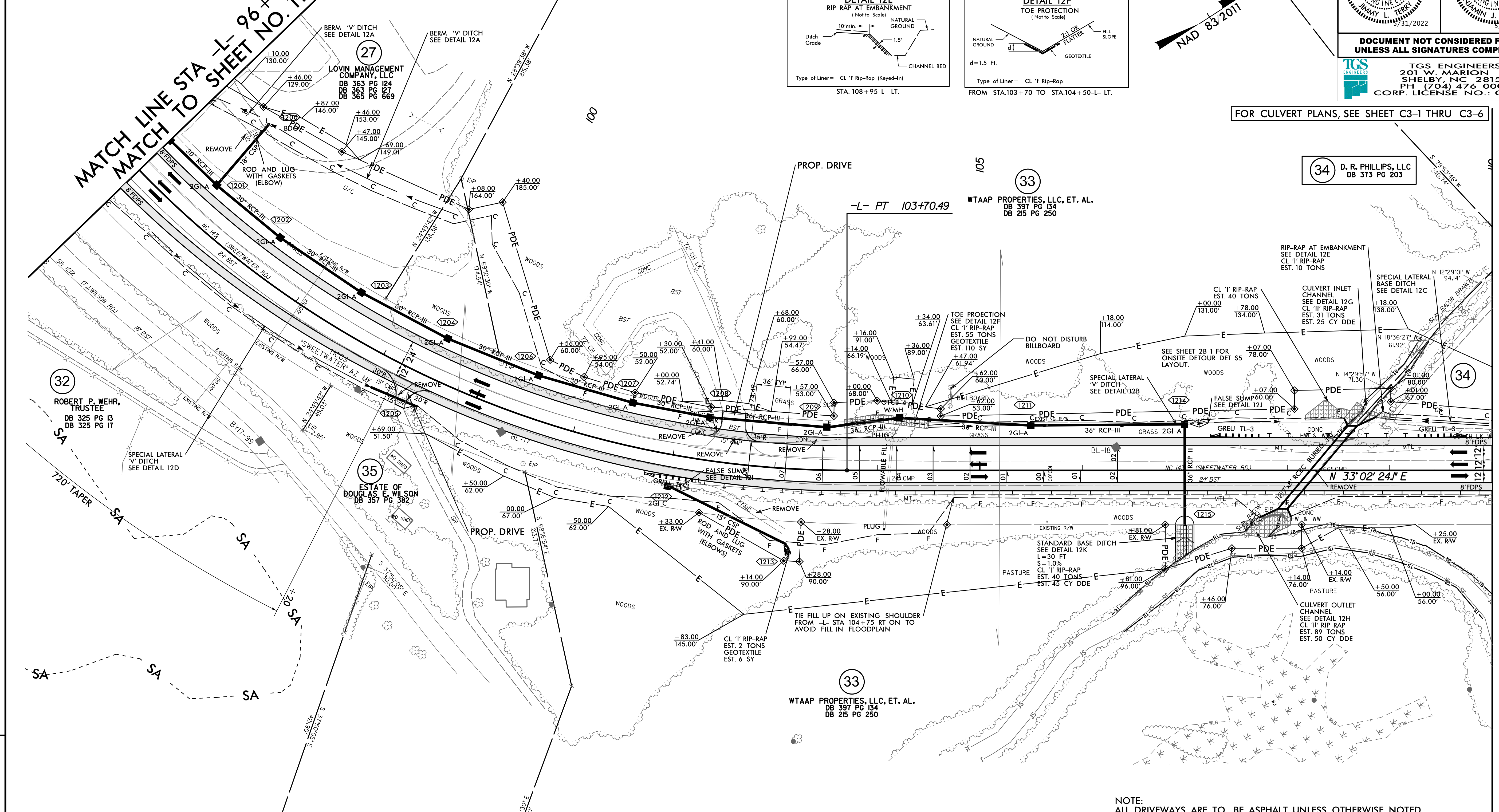
FOR -L- PROFILE, SEE SHEET NO. 23

PROJECT REFERENCE NO. A-0009CA		SHEET NO. 12	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		ENGINEER	
			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
 TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275			

-L- CURVE DATA
 PI Sta 98+90.11
 $\Delta = 65^{\circ} 35' 01.6" (LT)$
 $D = 5' 58" 05.9"$
 $L = 1,098.87'$
 $R = 618.49'$
 $SE = 0.08$
 $DS = 55 MPH$



FOR CULVERT PLANS, SEE SHEET C3-1 THRU C3-6



NOTE:
 ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.
 END LOCATION OF DRIVEWAY SHOWN ON PLANS REPRESENTS TIE-IN
 PER CROSS-SECTIONS, THE CONTRACTOR SHALL EXTEND THE DRIVES AND
 PAVE UP TO THE RIGHT OF WAY LINE FROM ROW POINT ON MATCH
 DRIVEWAY IN KIND, UNLESS OTHERWISE NOTED.

SEE SHEET 2B-1 FOR ONSITE DETOUR DET S5

SA ELIGIBLE AND UNASSESSED SITES

FOR -L- PROFILE, SEE SHEET NO. 23

REVISIONS

5/27/2024 Roadway\Proj\A-0009CA_Plan_Sheets\A-0009CA_Plan_Sheet_12.dgn
 11/15/2023

MATCH LINE STA -L- 96+00.00
 MATCH TO SHEET NO. 11

MATCH LINE STA -L- 110+00.00
 MATCH TO SHEET NO. 13

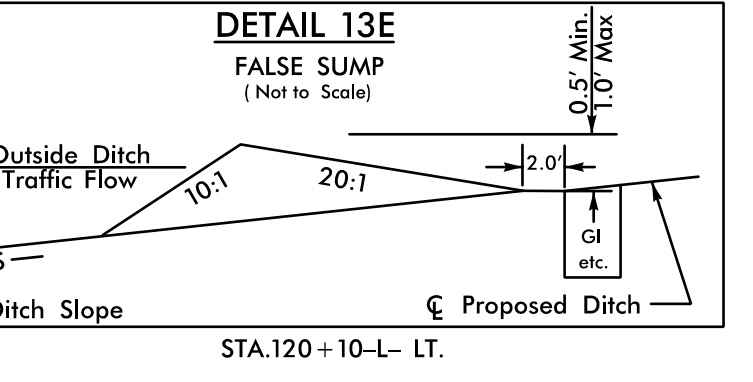
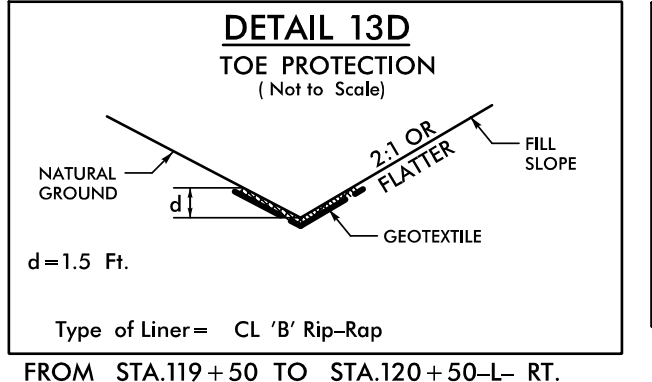
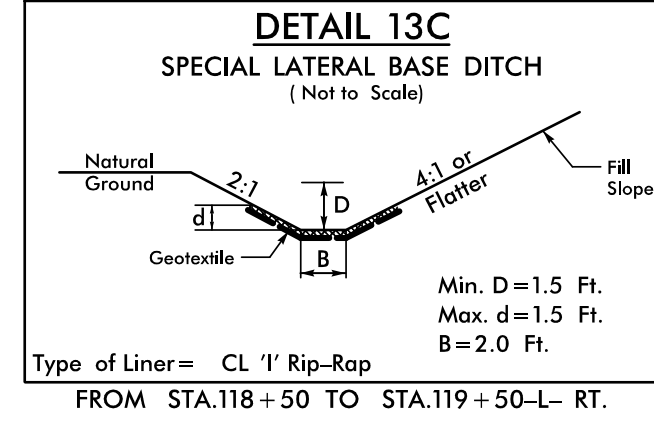
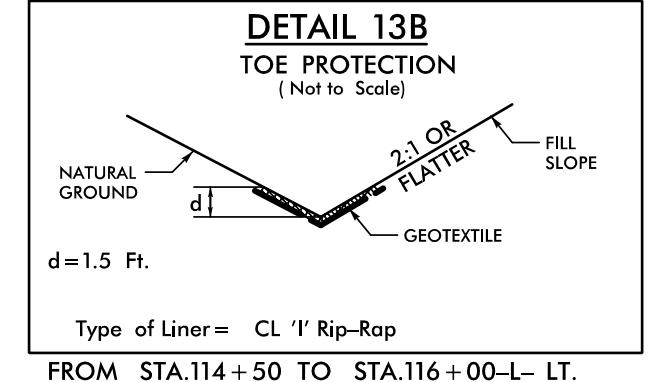
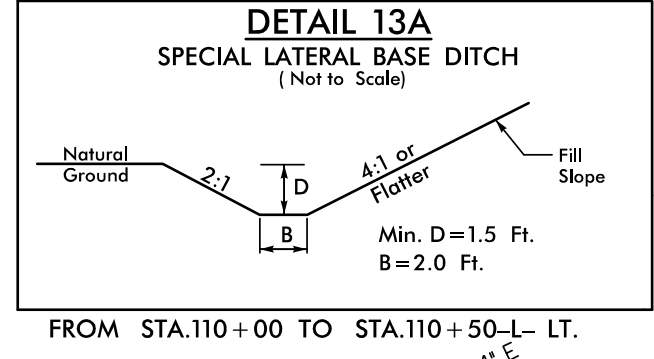
PROJECT REFERENCE NO. A-0009CA	SHEET NO. 13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST
SHELBY, NC 28150
PH: (704) 476-0003
CORP. LICENSE NO.: C-0275

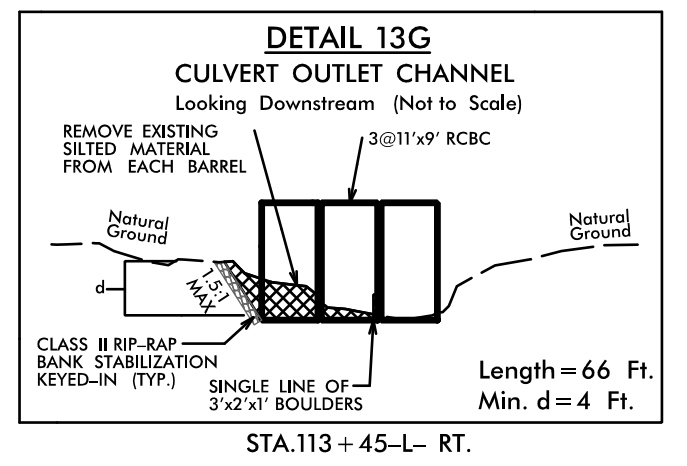
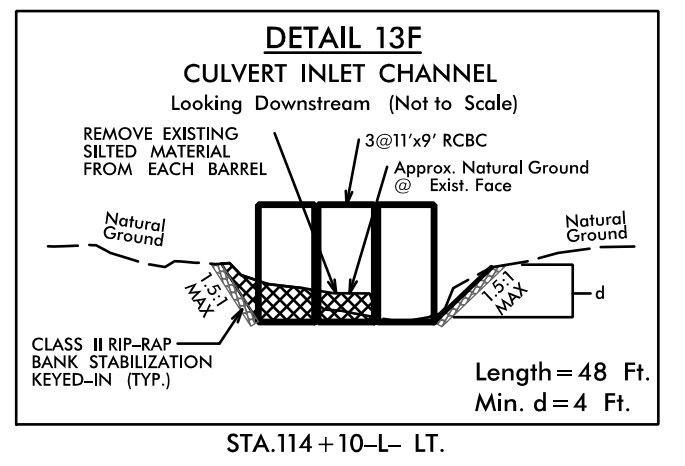
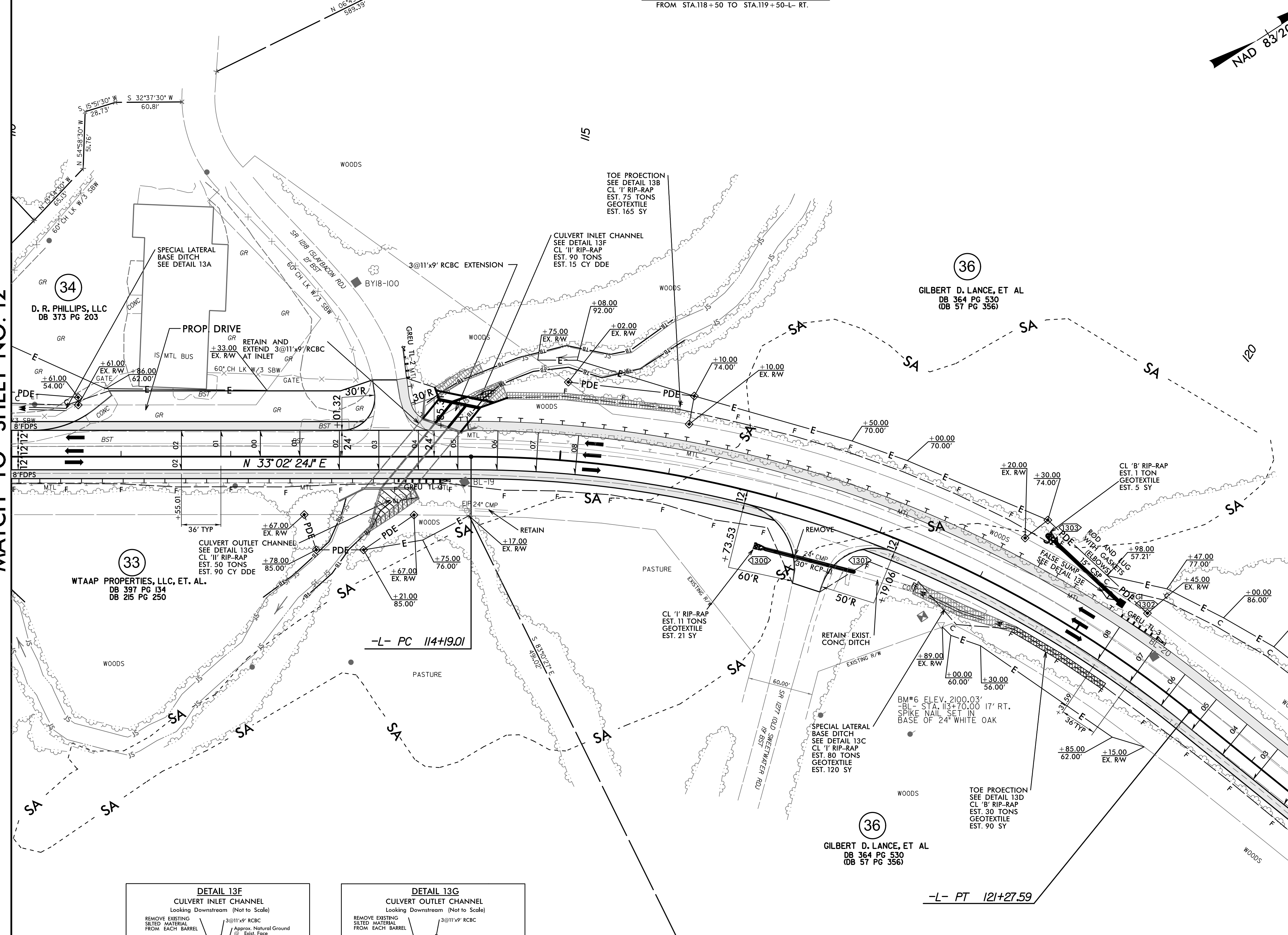
FOR CULVERT PLANS, SEE SHEET C4-1 THRU C4-8

-L- CURVE DATA
PI Sta 117+87.67
 $\Delta = 39^{\circ} 02' 13.1''$ (RT)
 $D = 5^{\circ} 30' 33.2''$
 $L = 708.58'$
 $T = 368.66'$
 $R = 1,040.00'$
 $SE = 0.08$
 $DS = 55$ MPH



MATCH LINE STA -L- 110+00.00
MATCH TO SHEET NO. 12

MATCH LINE STA -L- 124+00.00
MATCH TO SHEET NO. 14



NOTE:
ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.
END LOCATION OF DRIVEWAY SHOWN ON PLANS REPRESENTS TIE-IN PER CROSS-SECTIONS, THE CONTRACTOR SHALL EXTEND THE DRIVES AND PAVE UP TO THE RIGHT OF WAY LINE. FROM ROW POINT ON MATCH DRIVEWAY IN KIND, UNLESS OTHERWISE NOTED.

SEE SHEET 2B-1 FOR ONSITE DETOUR DET 55

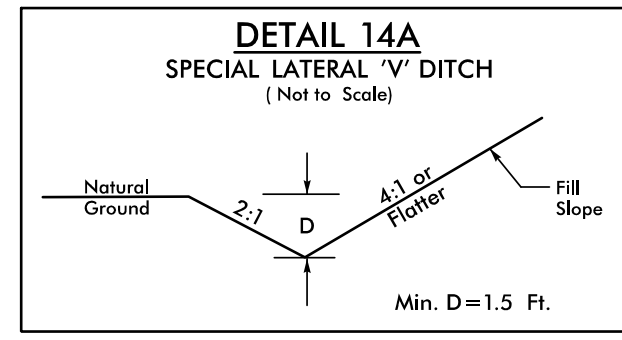
--- SA --- ELIGIBLE AND UNASSESSED SITES

FOR -L- PROFILE, SEE SHEET NO. 24

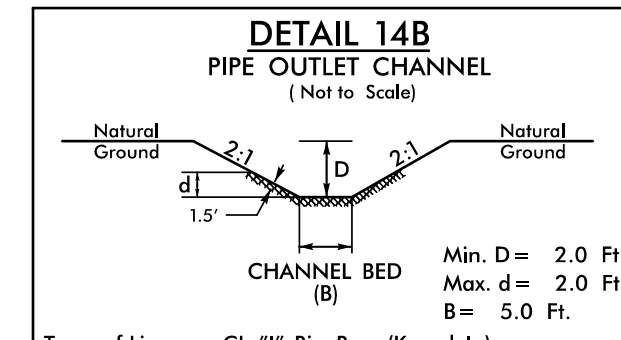
REVISIONS

5/20/2022 A-0009CA-0009CA-Roadway\Proj\A-0009CA-Plan Sheets\A-0009CA-Rdw_psh_13.dgn
1/11/2022 A-0009CA-0009CA-Plan Sheets\A-0009CA-Plan Sheets\A-0009CA-Rdw_psh_13.dgn

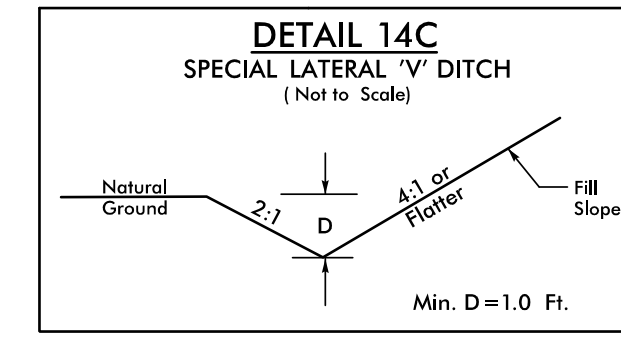
8/17/99



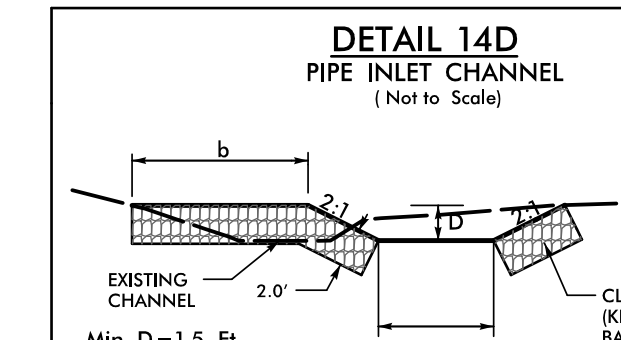
FROM STA.127+00 TO STA.127+25-LT.
FROM STA.127+80 TO STA.128+00-LT.



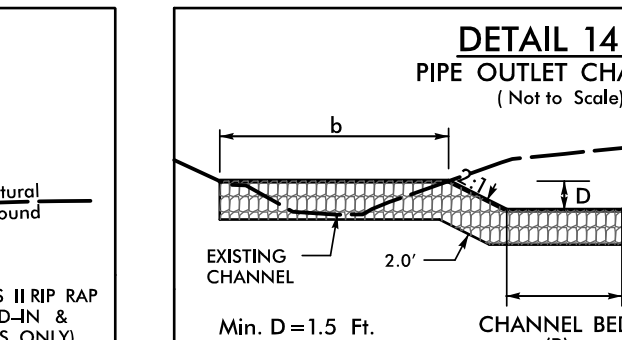
STA. 129+13-LT.



FROM STA.129+50 TO STA.130+70-LT.
FROM STA.131+50 TO STA.132+00-LT.
FROM STA.130+00 TO STA.131+00-LT.



STA.135+20-RT.



STA.134+40-LT.

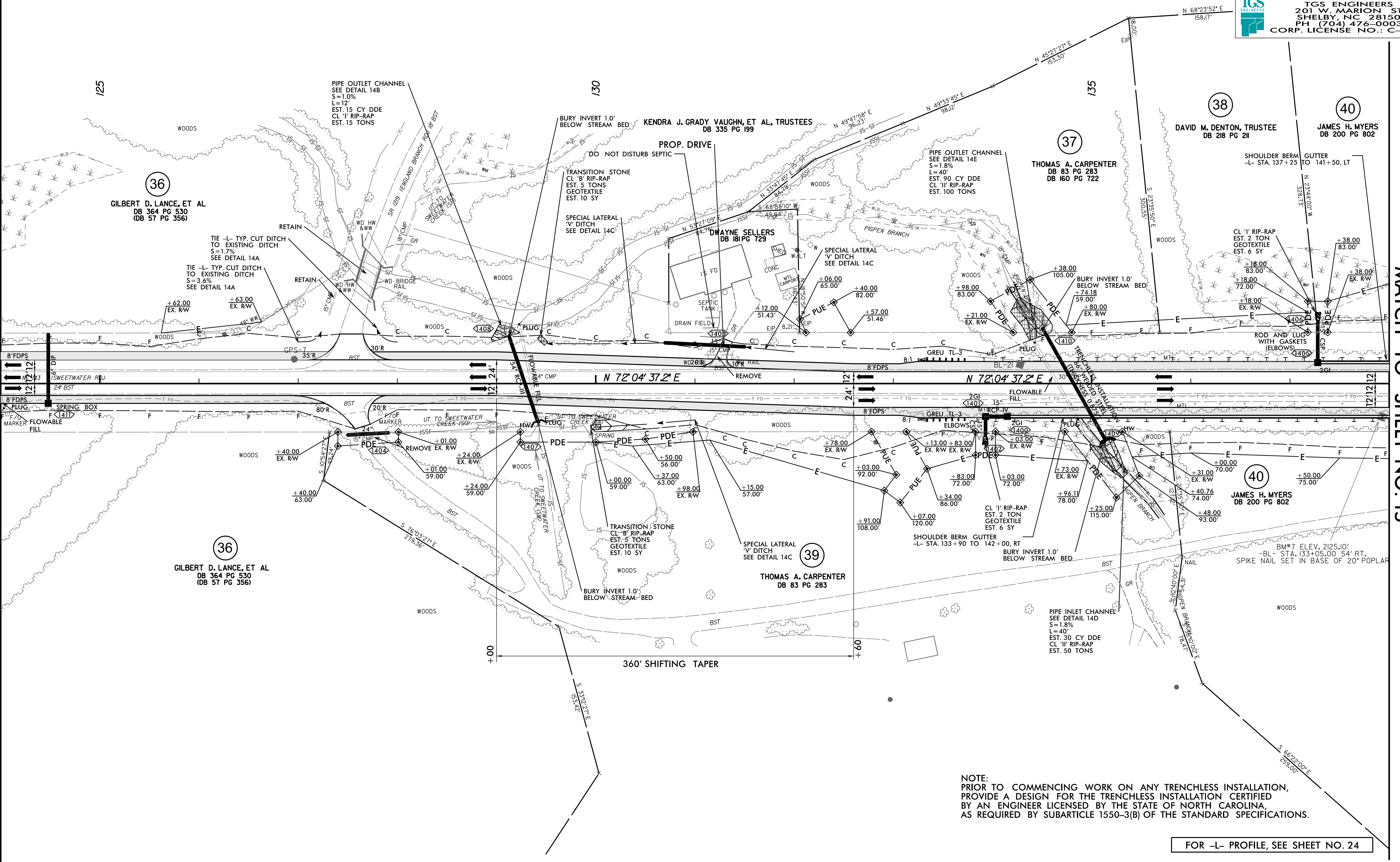
NOTE: ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED. END LOCATION OF DRIVEWAY SHOWN ON PLANS REPRESENTS TIE-IN PER CROSS-SECTIONS, THE CONTRACTOR SHALL EXTEND THE DRIVES AND PAVE UP TO THE RIGHT OF WAY LINE. FROM ROW POINT ON MATCH DRIVEWAY IN KIND, UNLESS OTHERWISE NOTED.



PROJECT REFERENCE NO. A-0009CA	SHEET NO. 14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	

REVISIONS

MATCH LINE STA -L- 124+00.00
MATCH TO SHEET NO. 13



MATCH LINE STA -L- 138+00.00
MATCH TO SHEET NO. 15

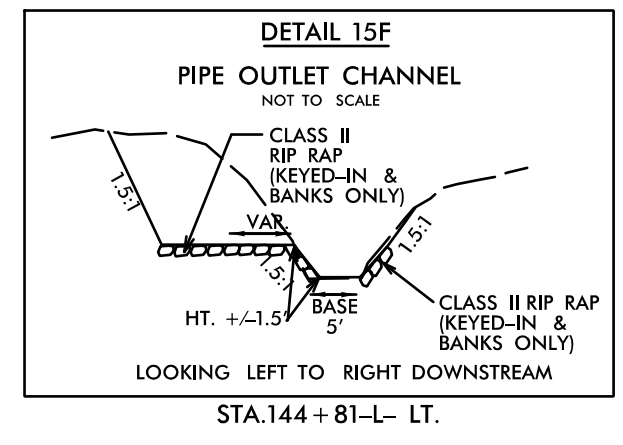
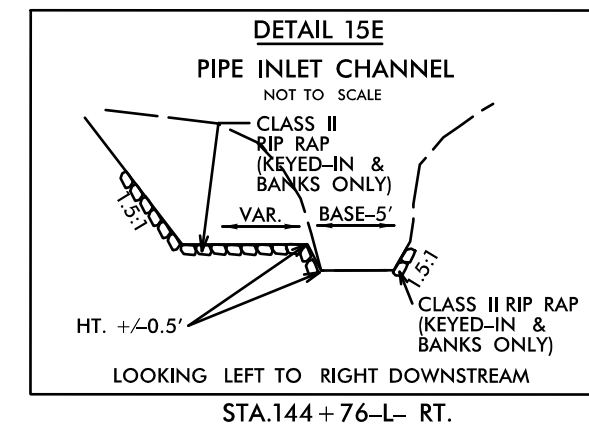
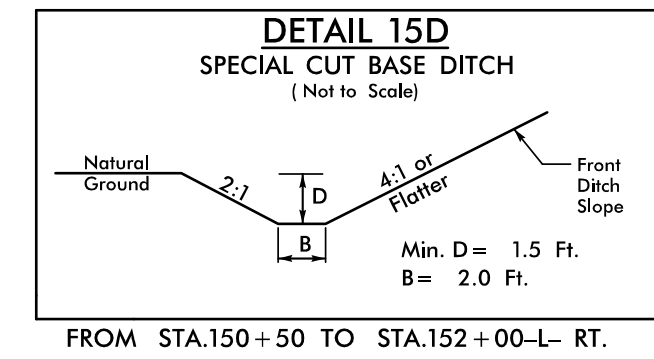
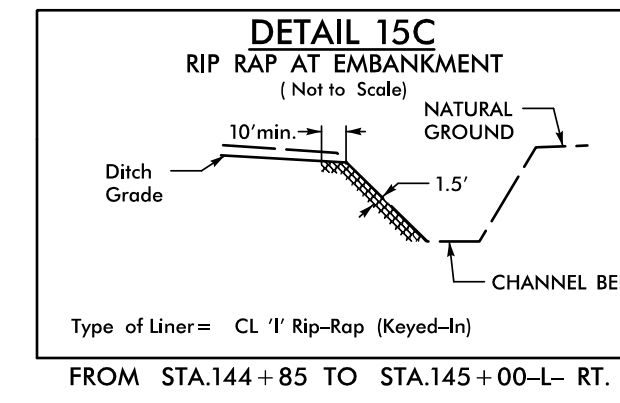
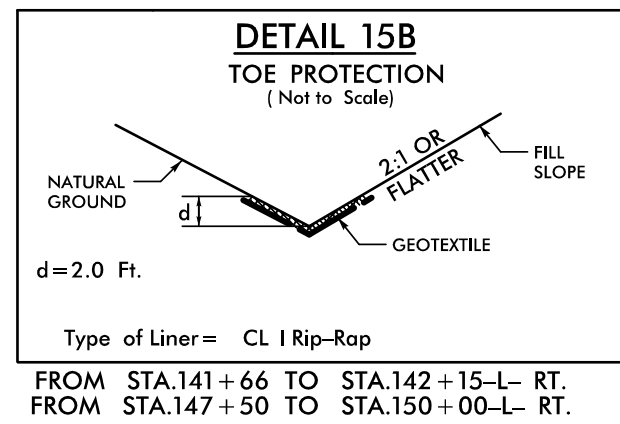
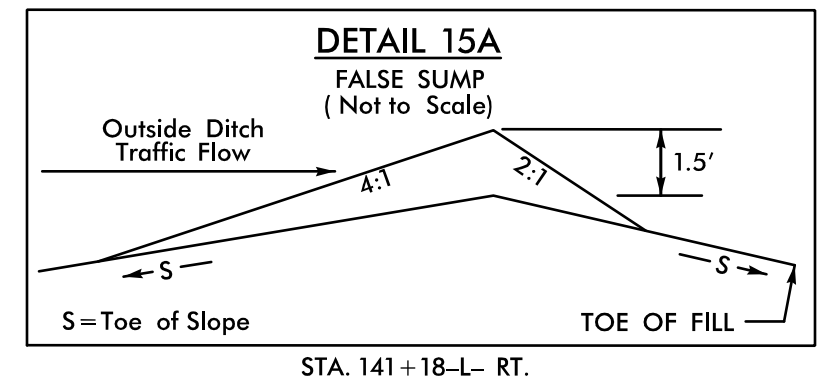
NOTE: PRIOR TO COMMENCING WORK ON ANY TRENCHLESS INSTALLATION, PROVIDE A DESIGN FOR THE TRENCHLESS INSTALLATION CERTIFIED BY AN ENGINEER LICENSED BY THE STATE OF NORTH CAROLINA, AS REQUIRED BY SUBARTICLE 1550-3(B) OF THE STANDARD SPECIFICATIONS.

FOR -L- PROFILE, SEE SHEET NO. 24

5/20/2022
K:\2009\A-0009\Roadway\Proj\A-0009CA_Plan
Sheets\A-0009CA_Rdy_psh_14.dgn

PROJECT REFERENCE NO. A-0009CA	SHEET NO. 15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	
<p>TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH: (704) 476-0003 CORP. LICENSE NO.: C-0275</p>	

-L- CURVE DATA
 PI Sta 149+87.02
 $\Delta = 0^\circ 52' 26.7" (LT)$
 $D = 0^\circ 28' 38.9"$
 $L = 183.07'$
 $R = 12,000.00'$
 SE = NC
 DS = 60 MPH

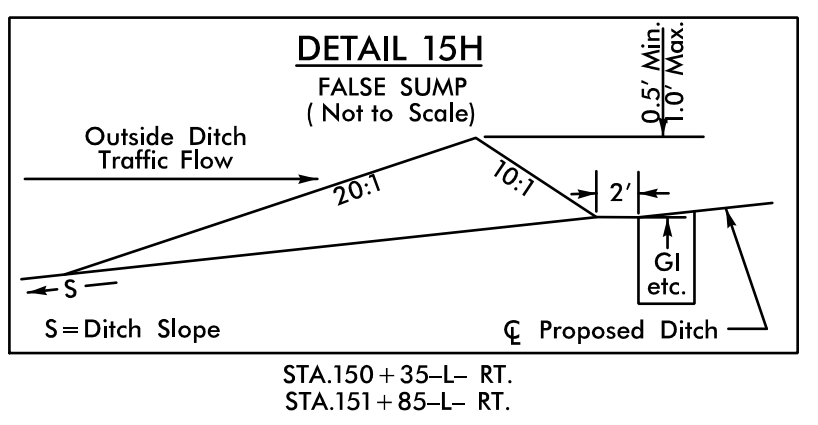
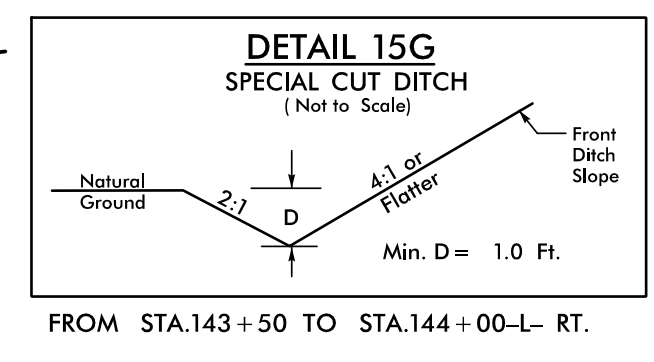
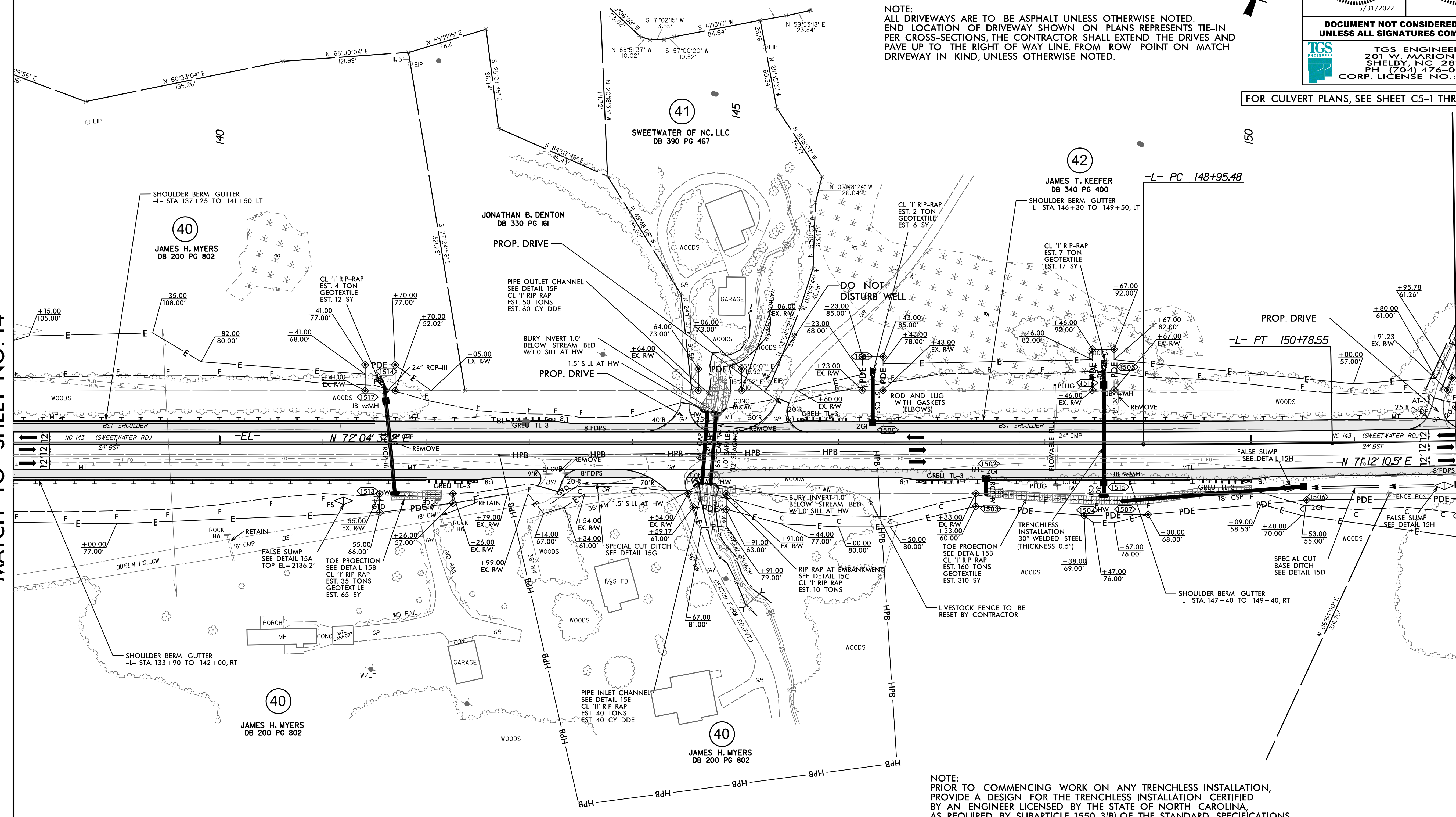


NOTE:
 ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.
 END LOCATION OF DRIVEWAY SHOWN ON PLANS REPRESENTS TIE-IN PER CROSS-SECTIONS, THE CONTRACTOR SHALL EXTEND THE DRIVES AND PAVE UP TO THE RIGHT OF WAY LINE FROM ROW POINT ON MATCH DRIVEWAY IN KIND, UNLESS OTHERWISE NOTED.

FOR CULVERT PLANS, SEE SHEET C5-1 THRU C5-4

MATCH LINE STA -L- 138+00.00
MATCH TO SHEET NO. 14

MATCH LINE STA -L- 152+00.00
MATCH TO SHEET NO. 16



FOR -L- PROFILE, SEE SHEET NO. 25

NOTE:
 PRIOR TO COMMENCING WORK ON ANY TRENCHLESS INSTALLATION, PROVIDE A DESIGN FOR THE TRENCHLESS INSTALLATION CERTIFIED BY AN ENGINEER LICENSED BY THE STATE OF NORTH CAROLINA, AS REQUIRED BY SUBARTICLE 1550-3(B) OF THE STANDARD SPECIFICATIONS.

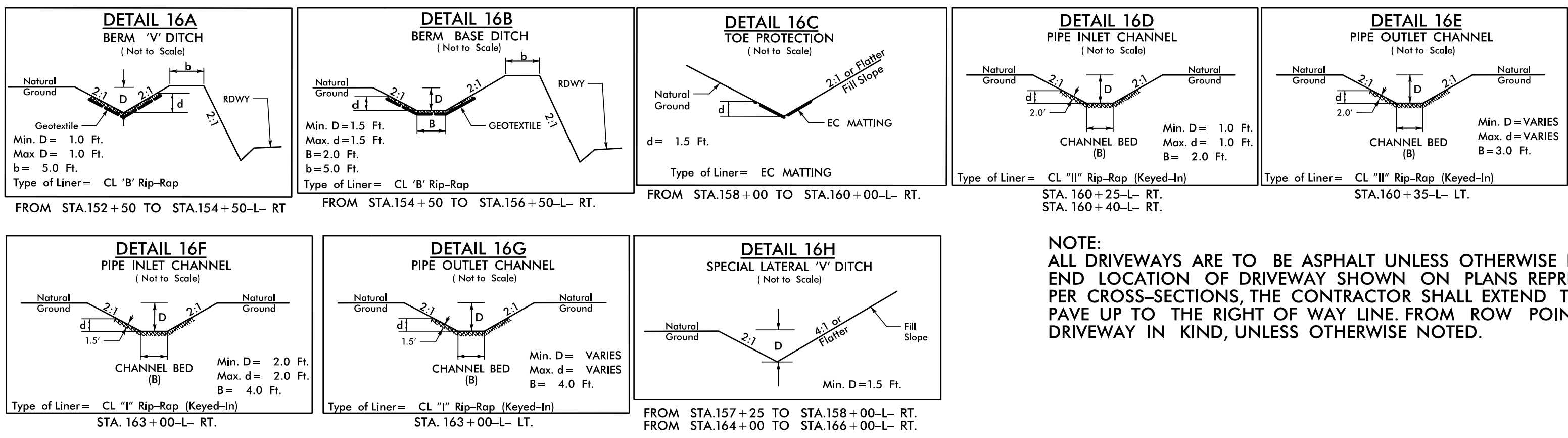
REVISIONS

5/20/2022 X:\Roadway\0009\Roadway\Proj\A-0009CA_Plan_Sheets\A-0009CA_Rdw_psh_15.dgn
 8/17/99
 15

8/17/99

PROJECT REFERENCE NO. A-0009CA		SHEET NO. 16	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

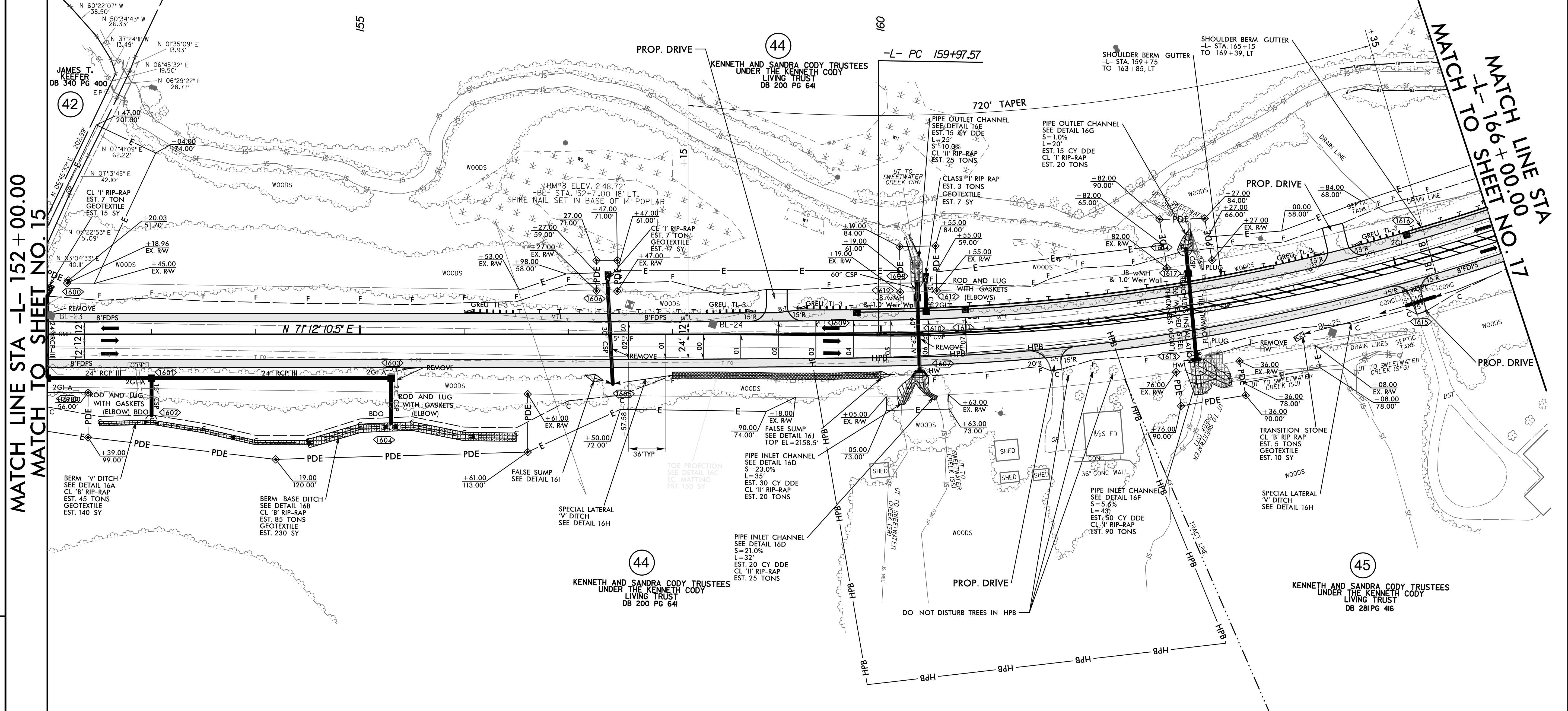
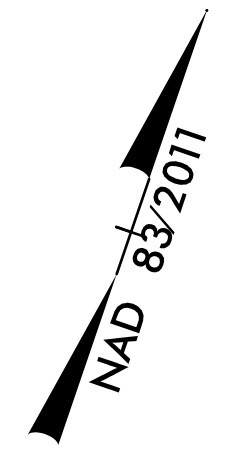
-L- CURVE DATA
 PI Sta 166+10.36
 $\Delta = 35^{\circ} 44' 58.6''$ (LT)
 $D = 3^{\circ} 00' 56.0''$
 $L = 1,185.50'$
 $T = 612.76'$
 $R = 1,900.00'$
 $SE = .007$
 $DS = 60$ MPH



NOTE:
 ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED.
 END LOCATION OF DRIVEWAY SHOWN ON PLANS REPRESENTS TIE-IN PER CROSS-SECTIONS, THE CONTRACTOR SHALL EXTEND THE DRIVES AND PAVE UP TO THE RIGHT OF WAY LINE. FROM ROW POINT ON MATCH DRIVEWAY IN KIND, UNLESS OTHERWISE NOTED.

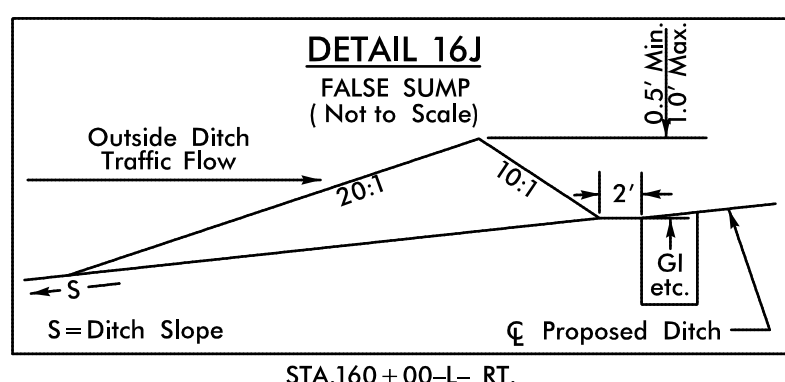
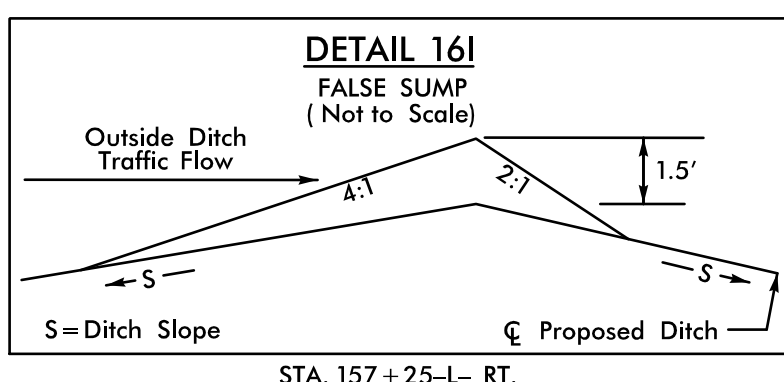
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

 TGS ENGINEERS
 201 W. MARION ST
 SHELBY, NC 28150
 PH (704) 476-0003
 CORP. LICENSE NO.: C-0275



MATCH LINE STA -L- 152+00.00
MATCH TO SHEET NO. 15

MATCH LINE STA -L- 166+00.00
MATCH TO SHEET NO. 17



NOTE:
 PRIOR TO COMMENCING WORK ON ANY TRENCHLESS INSTALLATION, PROVIDE A DESIGN FOR THE TRENCHLESS INSTALLATION CERTIFIED BY AN ENGINEER LICENSED BY THE STATE OF NORTH CAROLINA, AS REQUIRED BY SUBARTICLE 1550-3(B) OF THE STANDARD SPECIFICATIONS.

FOR -L- PROFILE, SEE SHEET NO. 25

REVISONS

Sheets\A-0009CA_Plan
 Sheets\A-0009CA_Plan
 Sheets\A-0009CA_Plan
 Sheets\A-0009CA_Plan

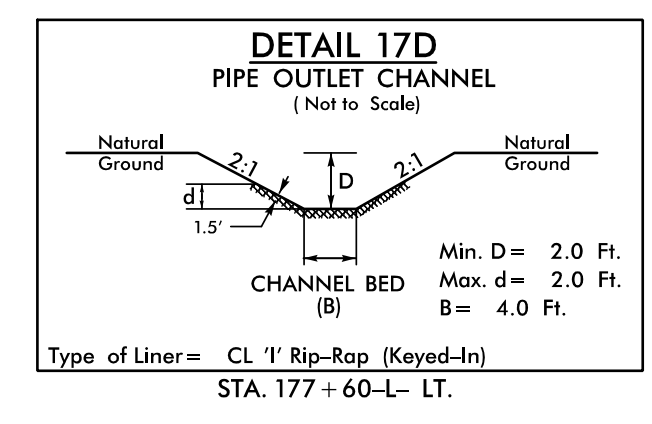
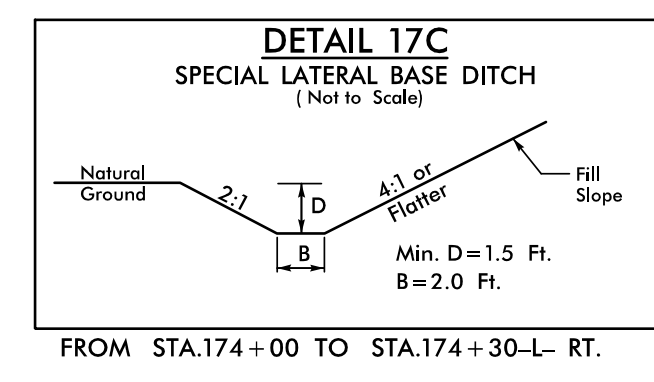
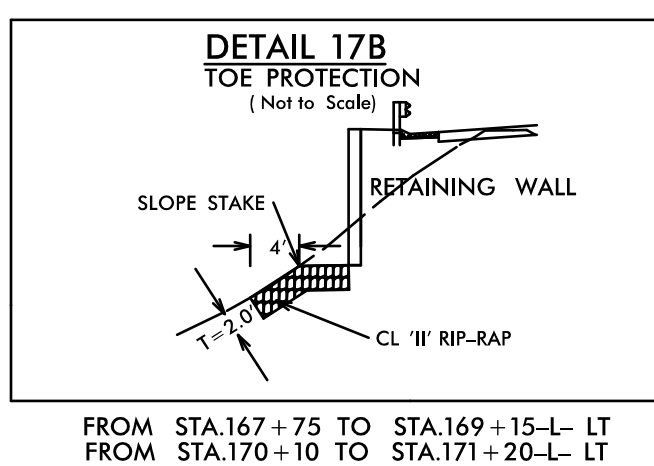
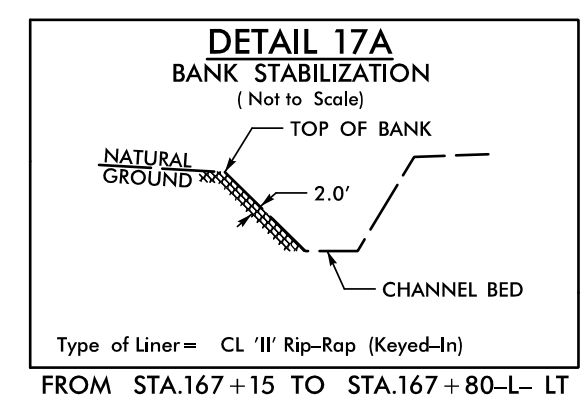
PROJECT REFERENCE NO. A-0009CA	SHEET NO. 17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
201 W. MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

-L- CURVE DATA
 PI Sta 166+10.36
 $\Delta = 35^{\circ} 44' 58.6" (LT)$
 $D = 3^{\circ} 00' 56.0"$
 $L = 1,185.50'$
 $T = 612.76'$
 $R = 1,900.00'$
 $SE = 0.07$
 $DS = 60 MPH$

-DRI- CURVE DATA
 PI Sta 10+41.97
 $\Delta = 48^{\circ} 49' 47.4" (RT)$
 $D = 190^{\circ} 59' 09.4"$
 $L = 25.57'$
 $T = 13.62'$
 $R = 30.00'$
 ③ -DRI- PC 11+34.96
 ④ -DRI- PT 11+67.50



NOTE: ALL DRIVEWAYS ARE TO BE ASPHALT UNLESS OTHERWISE NOTED. END LOCATION OF DRIVEWAY ON PLANS REPRESENTS TIE-IN PER CROSS-SECTIONS, THE CONTRACTOR SHALL EXTEND THE DRIVES AND PAVE UP TO THE RIGHT OF WAY LINE FROM ROW POINT ON MATCH DRIVEWAY IN KIND, UNLESS OTHERWISE NOTED.

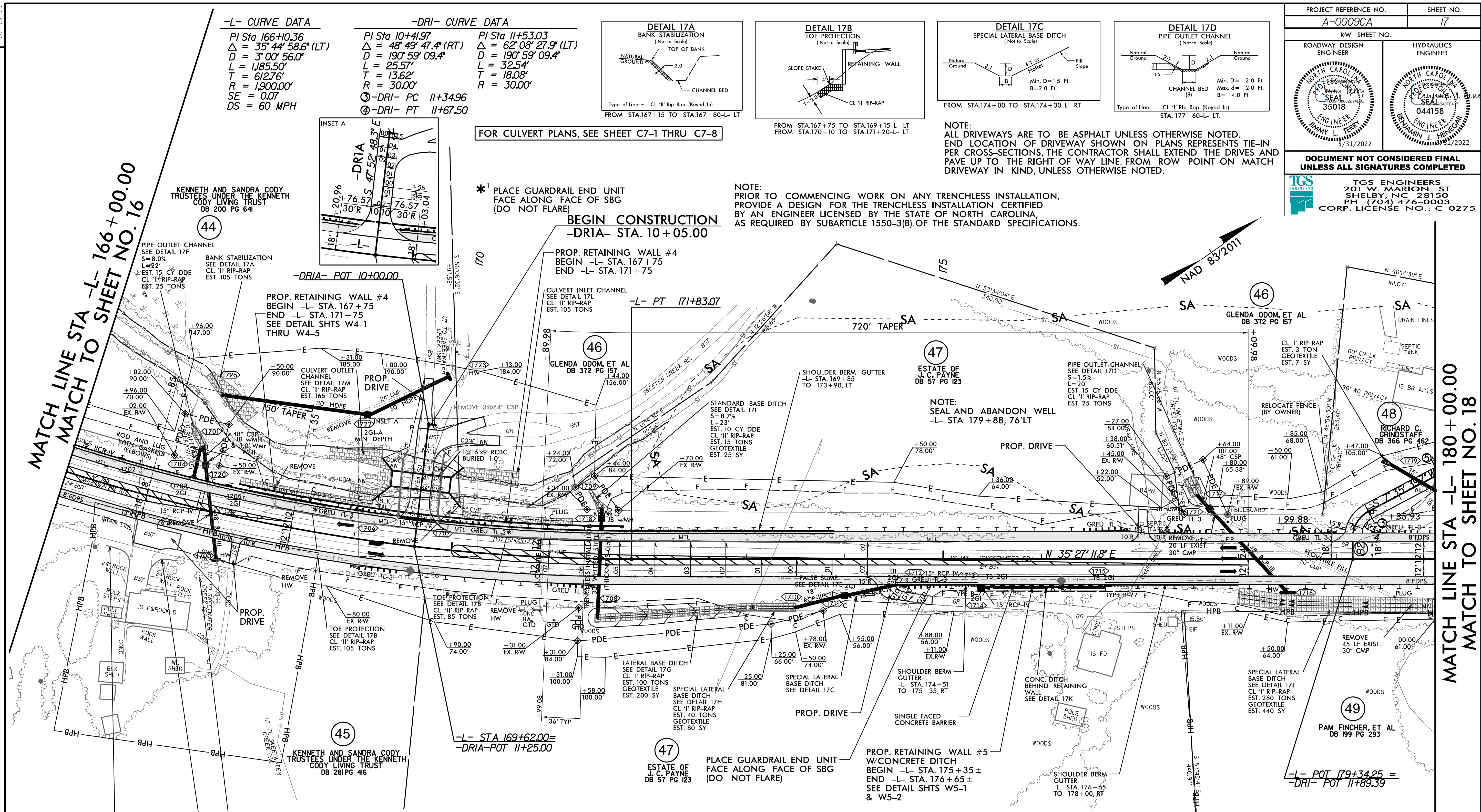
FOR CULVERT PLANS, SEE SHEET C7-1 THRU C7-8

NOTE: PRIOR TO COMMENCING WORK ON ANY TRENCHLESS INSTALLATION, PROVIDE A DESIGN FOR THE TRENCHLESS INSTALLATION CERTIFIED BY AN ENGINEER LICENSED BY THE STATE OF NORTH CAROLINA, AS REQUIRED BY SUBARTICLE 1550-3(B) OF THE STANDARD SPECIFICATIONS.

* PLACE GUARDRAIL END UNIT FACE ALONG FACE OF SBG (DO NOT FLARE)

MATCH LINE STA -L- 166+00.00
MATCH TO SHEET NO. 16

MATCH LINE STA -L- 180+00.00
MATCH TO SHEET NO. 18



--- SA --- ELIGIBLE AND UNASSESSED SITES

FOR -L- PROFILE, SEE SHEET NO. 26
 FOR -DRI- PROFILE, SEE SHEET NO. 28
 FOR -DRI- PROFILE, SEE SHEET NO. 28

REVISIONS

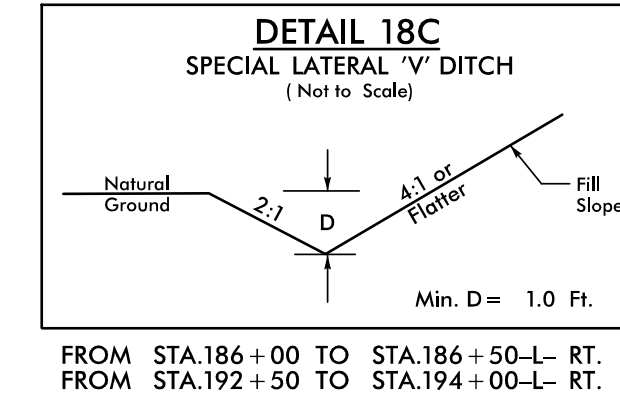
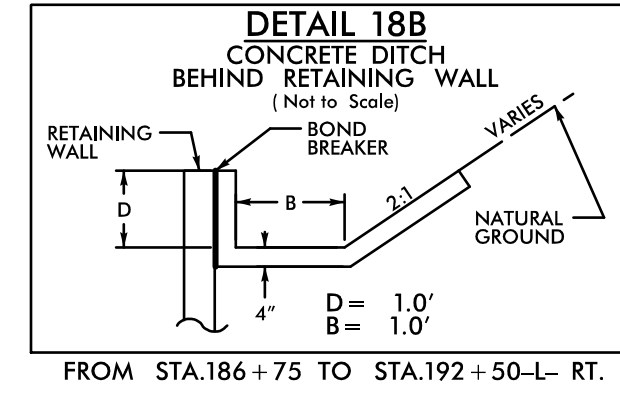
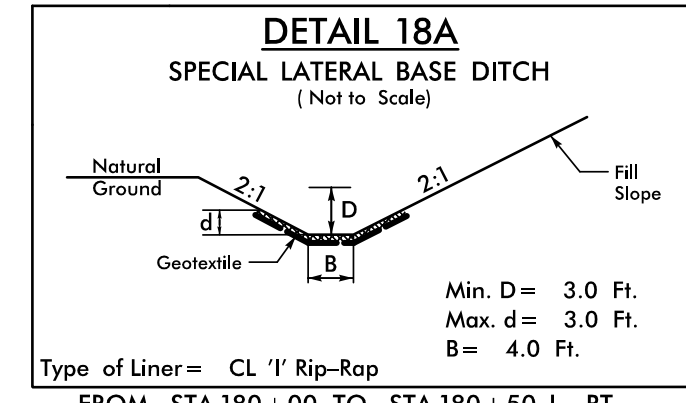
5/20/2022 Roadway\Proj\A-0009CA_Plan Sheets\A-0009CA_Rdy_psh_17.dgn
 8/17/99
 11/17/2022

PROJECT REFERENCE NO. A-0009CA		SHEET NO. 18	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		ENGINEER	

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

TGS ENGINEERS
201 W. MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

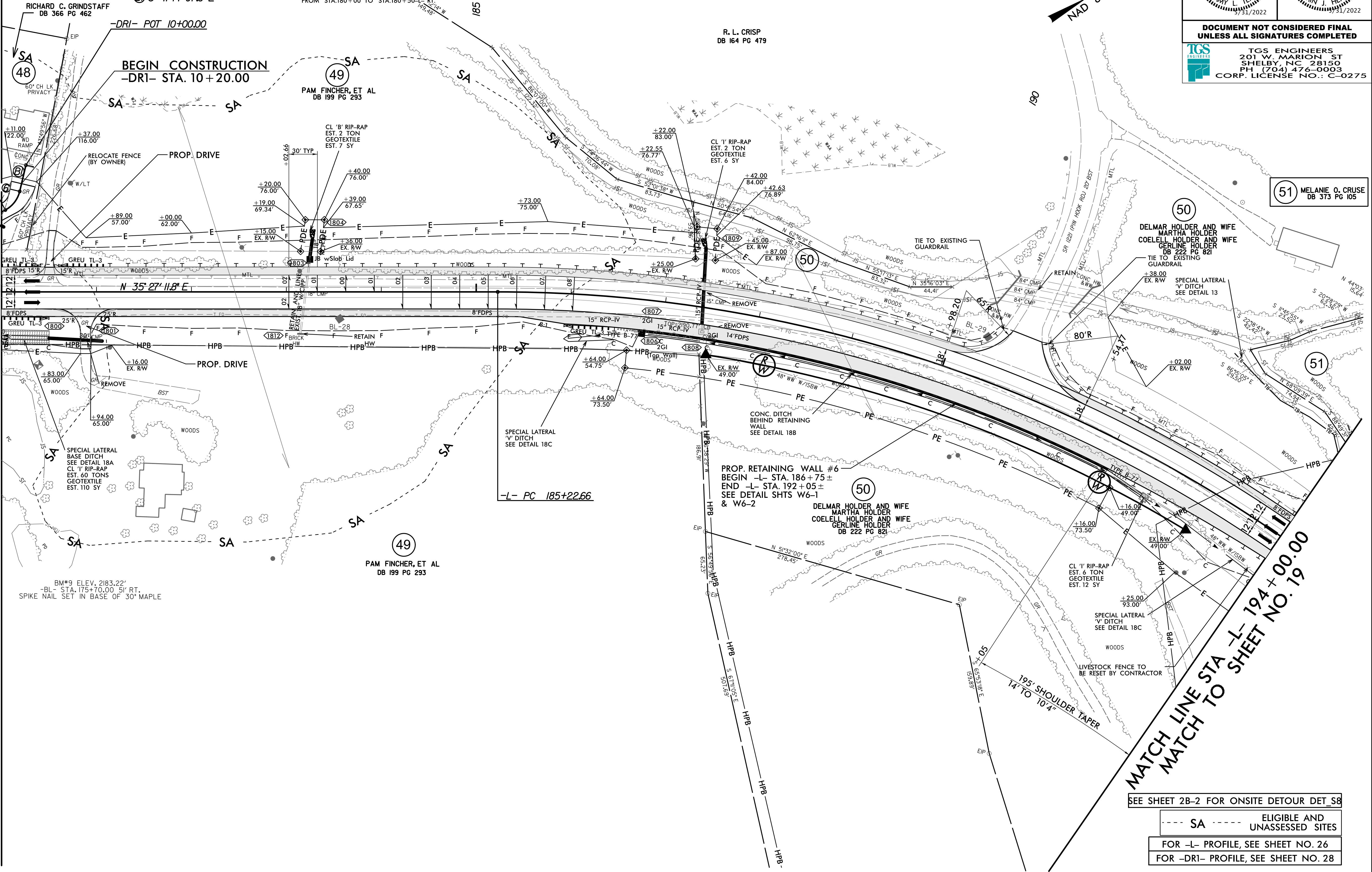
-L- CURVE DATA	-DRI- CURVE DATA
PI Sta 190+83.76	PI Sta 10+41.97
$\Delta = 42^\circ 18' 27.4" (RT)$	$\Delta = 43^\circ 49' 47.4" (RT)$
$D = 3^\circ 57' 05.2"$	$D = 190^\circ 59' 09.4"$
$L = 1,070.69'$	$L = 25.57'$
$T = 561.07'$	$T = 13.62'$
$R = 1,450.00'$	$R = 30.00'$
$SE = 0.08$	Ⓞ -DRI- PC 10+28.35
$DS = 60 MPH$	Ⓞ -DRI- PT 10+53.92
	Ⓞ S 41° 14' 07.6" E



NOTE:
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MATCH LINE STA -L- 180+00.00
MATCH TO SHEET NO. 17

MATCH LINE STA -L- 194+00.00
MATCH TO SHEET NO. 19



SEE SHEET 2B-2 FOR ONSITE DETOUR DET 58

--- SA --- ELIGIBLE AND UNASSESSED SITES

FOR -L- PROFILE, SEE SHEET NO. 26

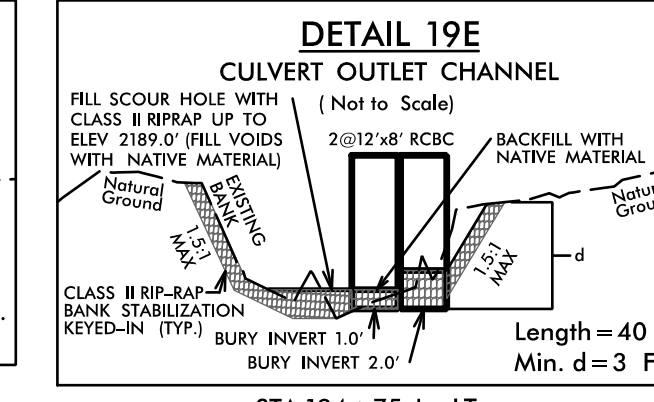
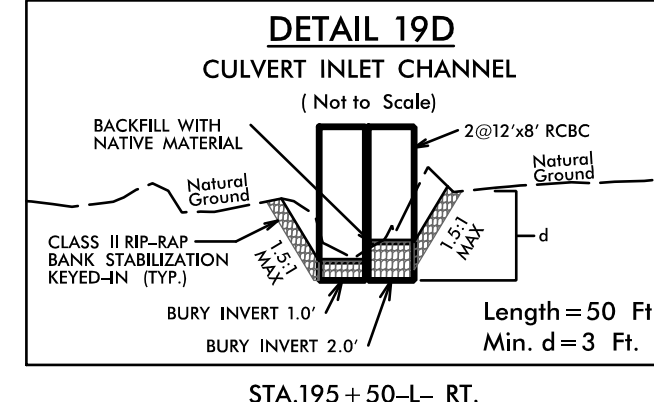
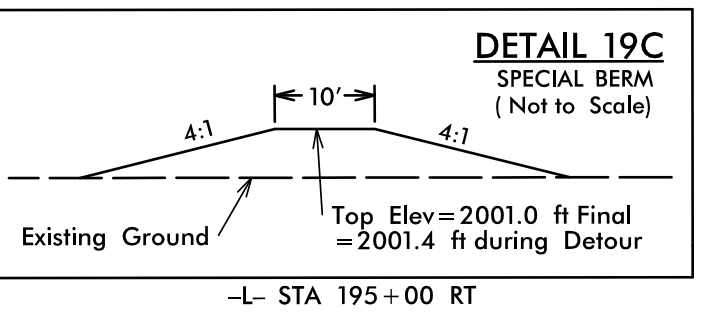
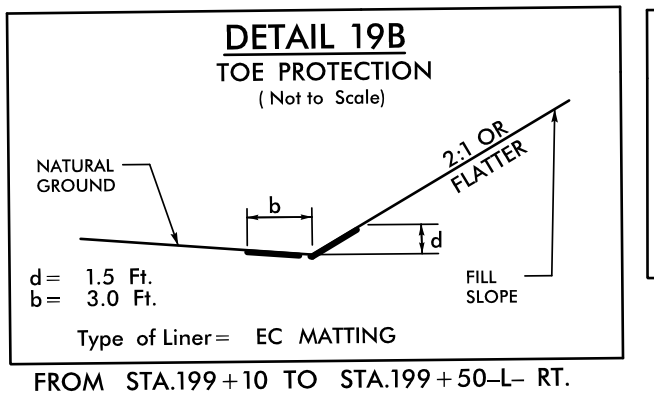
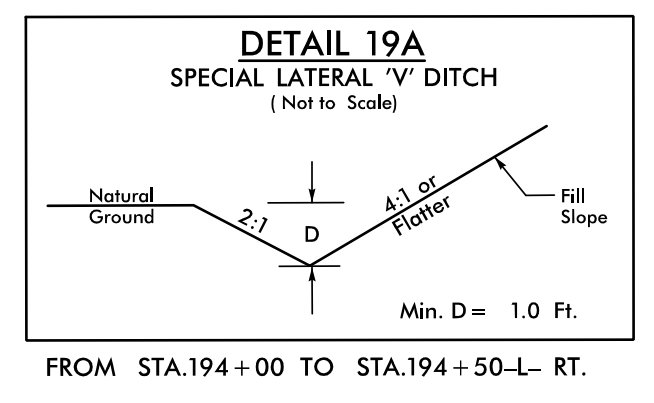
FOR -DRI- PROFILE, SEE SHEET NO. 28

REVISIONS

5/21/2022 A-0009CA-Roadway\Proj\A-0009CA_Plan_Sheets\A-0009CA_Rdy_psh_18.dgn

8/17/99

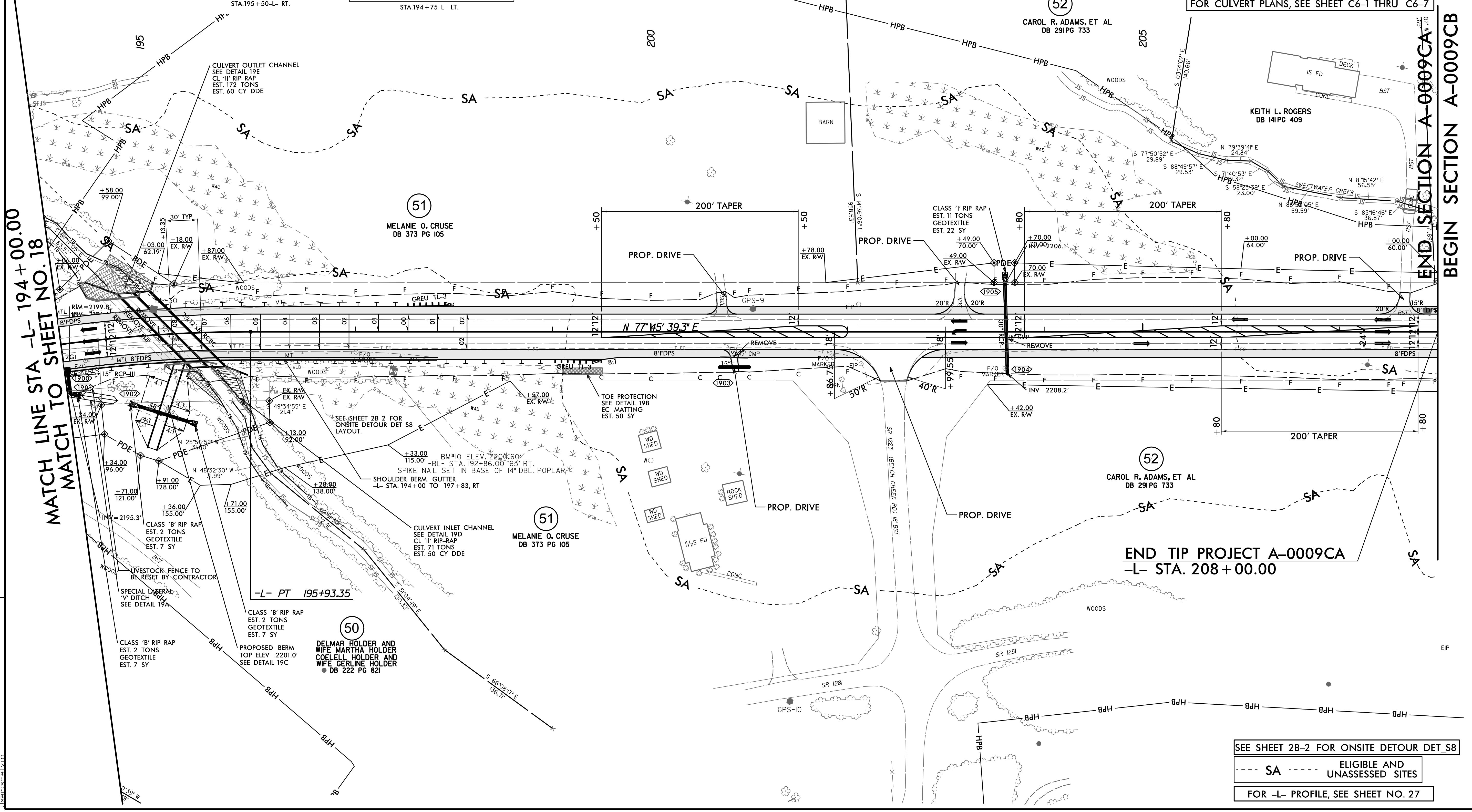
-L- CURVE DATA
 PI Sta 190+83.76
 $\Delta = 42' 18" 27.4" (RT)$
 $D = 3' 57" 05.2"$
 $L = 1,070.69'$
 $T = 561.07'$
 $R = 1,450.00'$
 $SE = 0.08$
 $DS = 60 MPH$



NOTE:
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PROJECT REFERENCE NO. A-0009CA	SHEET NO. 19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH: (704) 476-0003 CORP. LICENSE NO.: C-0275	



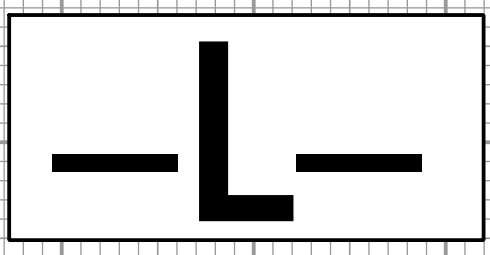
SEE SHEET 2B-2 FOR ONSITE DETOUR DET S8
 --- SA --- ELIGIBLE AND UNASSESSED SITES
 FOR -L- PROFILE, SEE SHEET NO. 27

END SECTION A-0009CA
 BEGIN SECTION A-0009CB

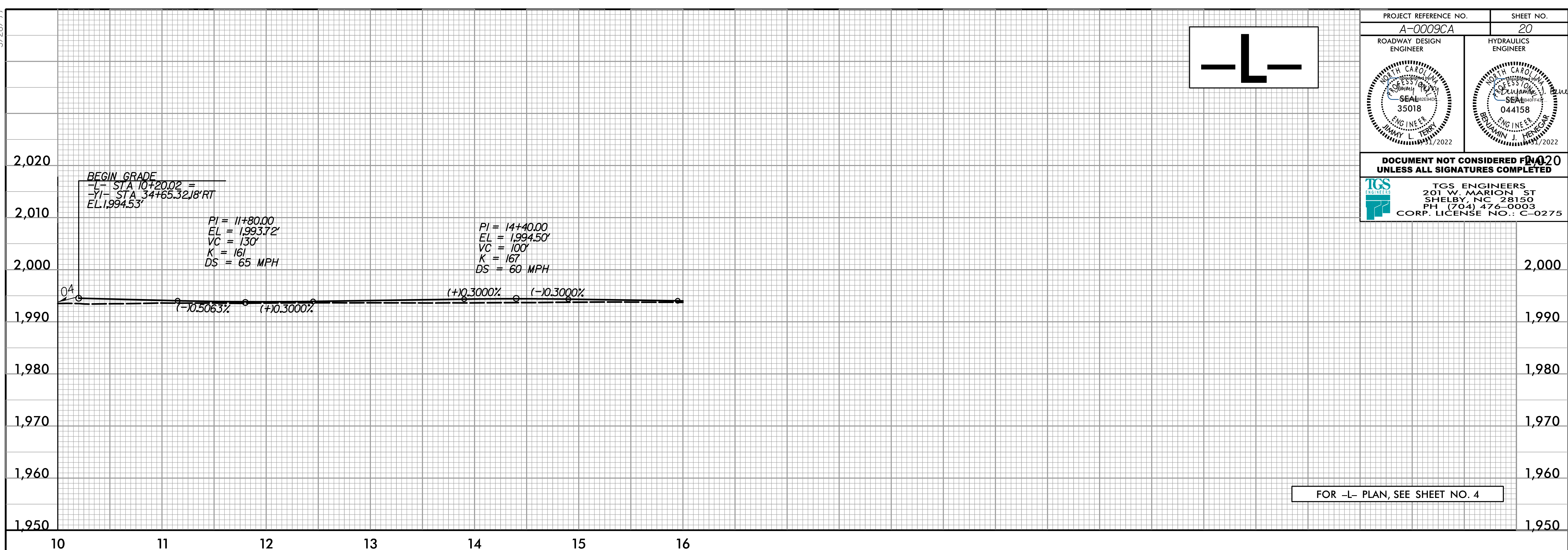
REVISIONS

5/20/2009 Roadway\Proj\A-0009CA\Plan Sheets\A-0009CA_Rdy_psh_19.dgn
 5/20/2009 Roadway\Proj\A-0009CA\Plan Sheets\A-0009CA_Rdy_psh_19.dgn

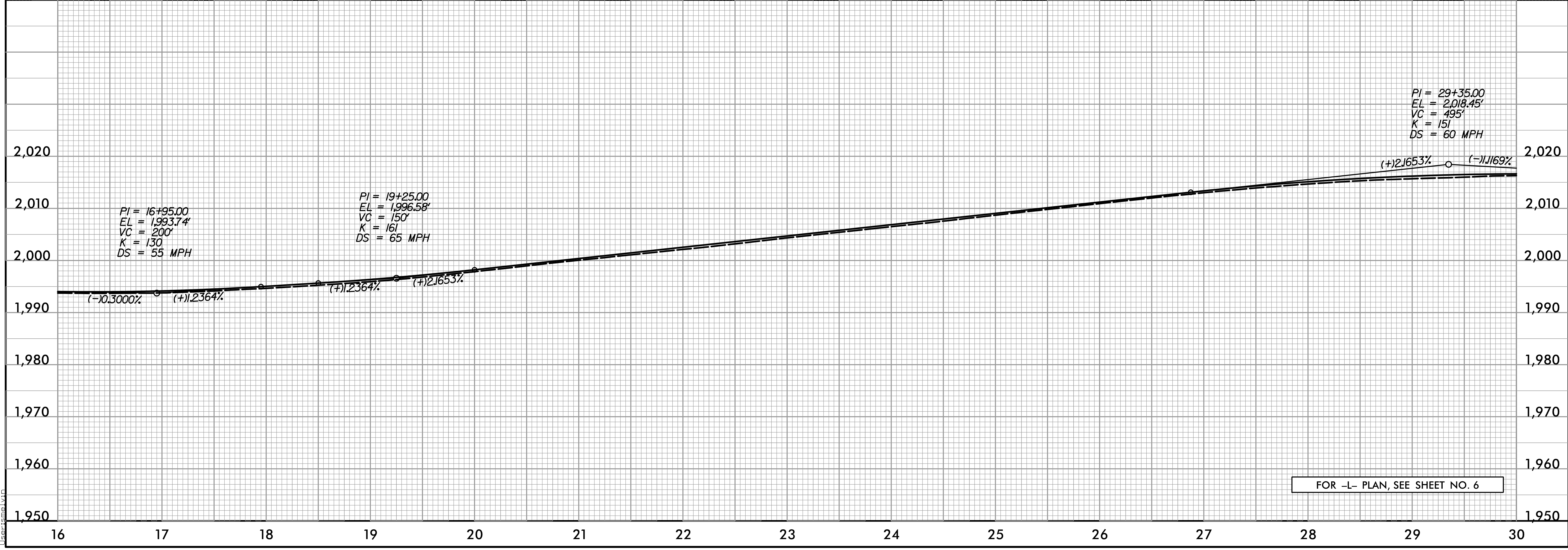
5/28/22



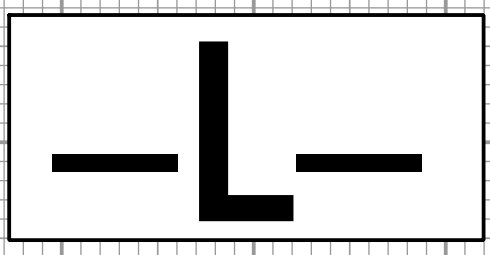
PROJECT REFERENCE NO. A-0009CA	SHEET NO. 20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	



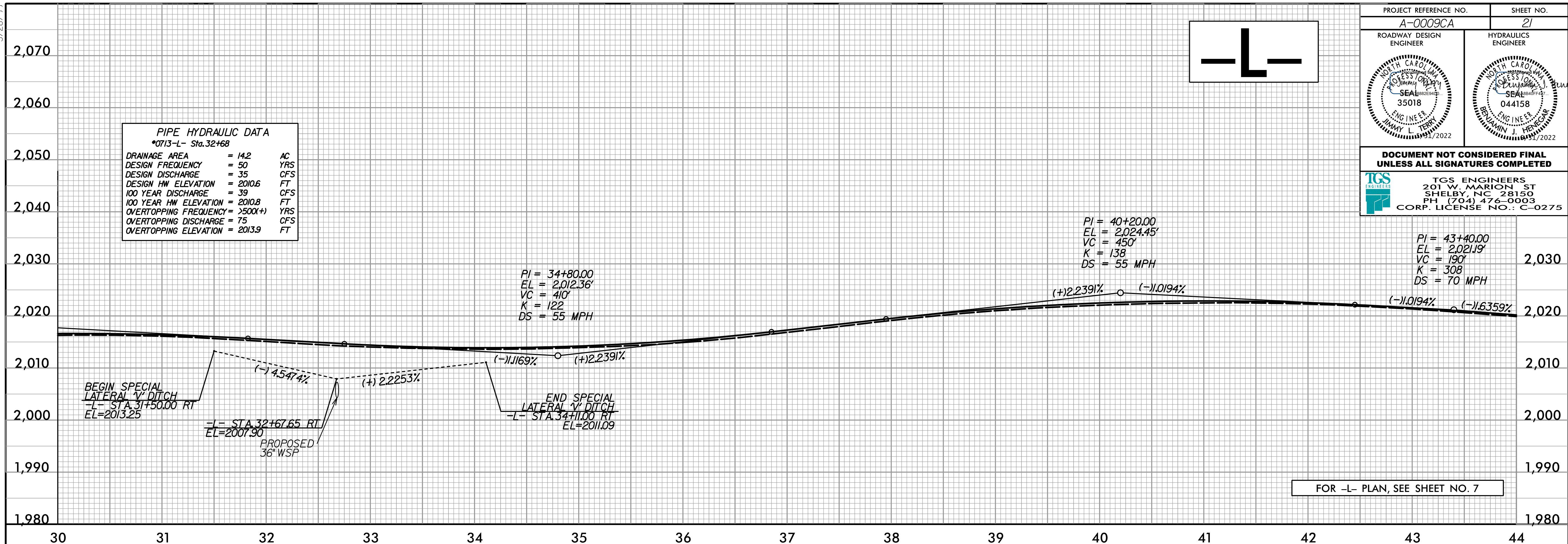
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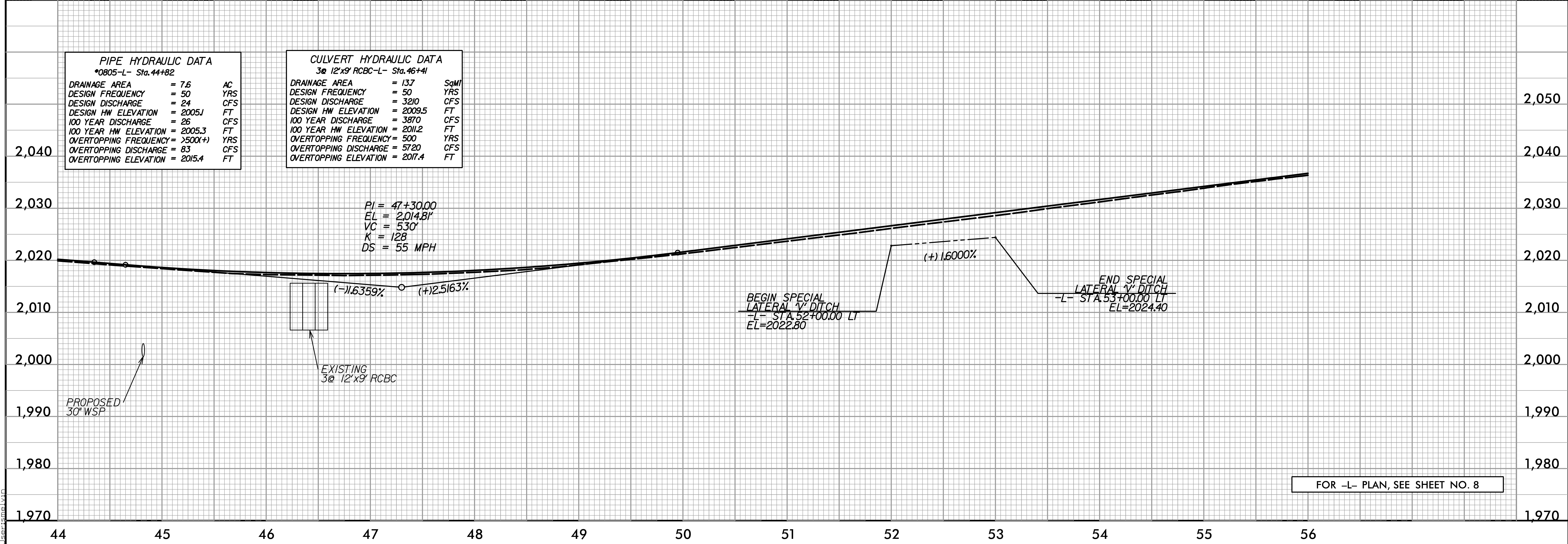
5/28/22



PROJECT REFERENCE NO. A-0009CA	SHEET NO. 21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	



FOR -L- PLAN, SEE SHEET NO. 7



FOR -L- PLAN, SEE SHEET NO. 8

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5/28/24

PROJECT REFERENCE NO. A-0009CA	SHEET NO. 22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	

PIPE HYDRAULIC DATA
*0900-L- Sta.65+00

DRAINAGE AREA	= 5J	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 18	CFS
DESIGN HW ELEVATION	= 2052.3	FT
100 YEAR DISCHARGE	= 20	CFS
100 YEAR HW ELEVATION	= 2052.5	FT
OVERTOPPING FREQUENCY	= >500(+)	YRS
OVERTOPPING DISCHARGE	= 46	CFS
OVERTOPPING ELEVATION	= 2056.2	FT

PIPE HYDRAULIC DATA
*0922/0923-L- Sta.57+35

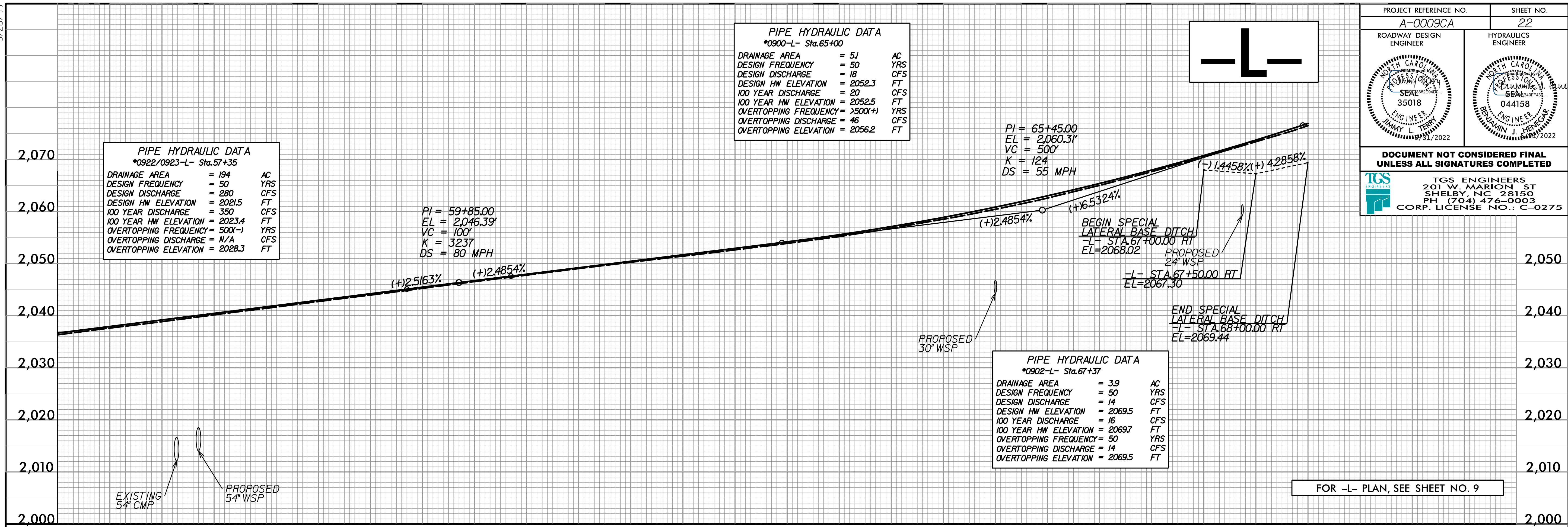
DRAINAGE AREA	= 194	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 280	CFS
DESIGN HW ELEVATION	= 2021.5	FT
100 YEAR DISCHARGE	= 350	CFS
100 YEAR HW ELEVATION	= 2023.4	FT
OVERTOPPING FREQUENCY	= 500(-)	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= 2028.3	FT

PI = 65+45.00
EL = 2,060.31'
VC = 500'
K = 124
DS = 55 MPH

PI = 59+85.00
EL = 2,046.39'
VC = 100'
K = 3237
DS = 80 MPH

PIPE HYDRAULIC DATA
*0902-L- Sta.67+37

DRAINAGE AREA	= 3.9	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 14	CFS
DESIGN HW ELEVATION	= 2069.5	FT
100 YEAR DISCHARGE	= 16	CFS
100 YEAR HW ELEVATION	= 2069.7	FT
OVERTOPPING FREQUENCY	= 50	YRS
OVERTOPPING DISCHARGE	= 14	CFS
OVERTOPPING ELEVATION	= 2069.5	FT



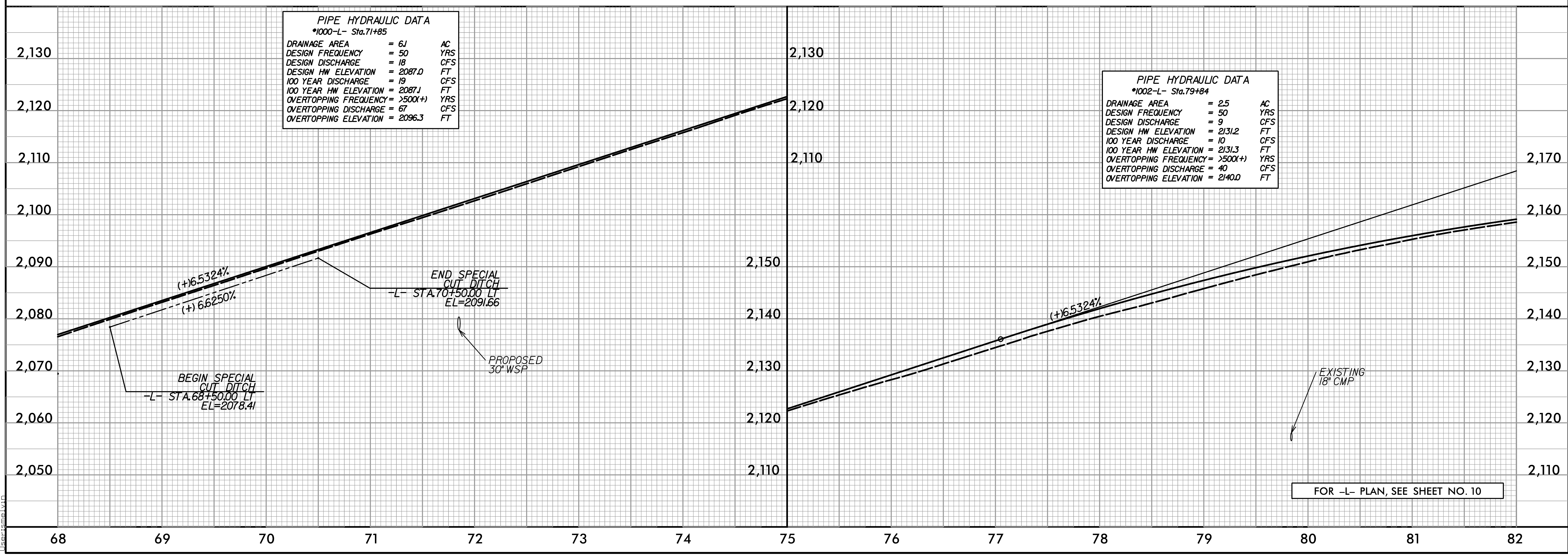
FOR -L- PLAN, SEE SHEET NO. 9

PIPE HYDRAULIC DATA
*1000-L- Sta.71+85

DRAINAGE AREA	= 6J	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 18	CFS
DESIGN HW ELEVATION	= 2087.0	FT
100 YEAR DISCHARGE	= 19	CFS
100 YEAR HW ELEVATION	= 2087J	FT
OVERTOPPING FREQUENCY	= >500(+)	YRS
OVERTOPPING DISCHARGE	= 67	CFS
OVERTOPPING ELEVATION	= 2096.3	FT

PIPE HYDRAULIC DATA
*1002-L- Sta.79+84

DRAINAGE AREA	= 2.5	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 9	CFS
DESIGN HW ELEVATION	= 2131.2	FT
100 YEAR DISCHARGE	= 10	CFS
100 YEAR HW ELEVATION	= 2131.3	FT
OVERTOPPING FREQUENCY	= >500(+)	YRS
OVERTOPPING DISCHARGE	= 40	CFS
OVERTOPPING ELEVATION	= 2140.0	FT

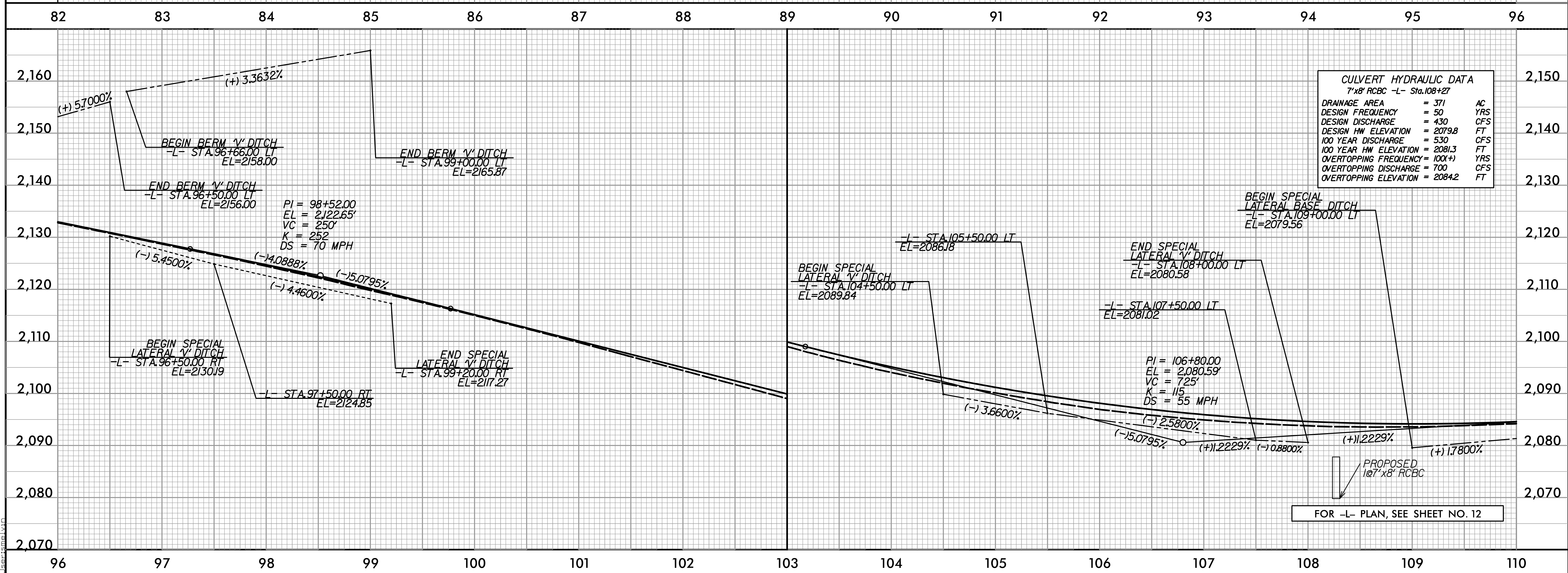
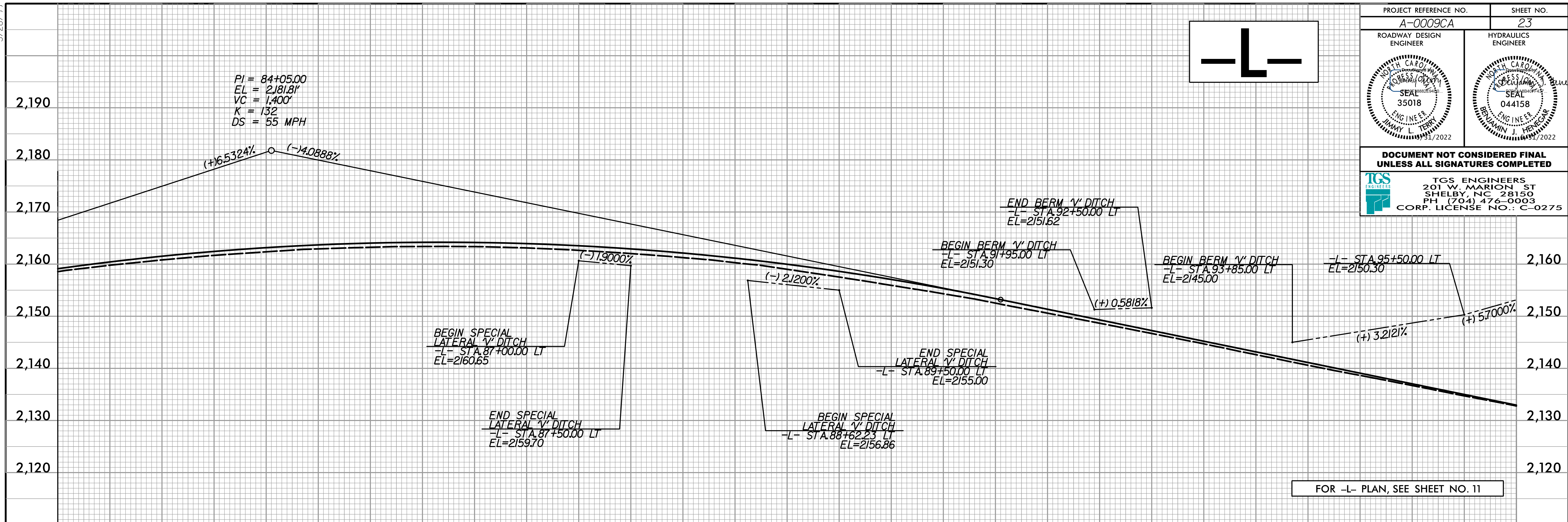


FOR -L- PLAN, SEE SHEET NO. 10

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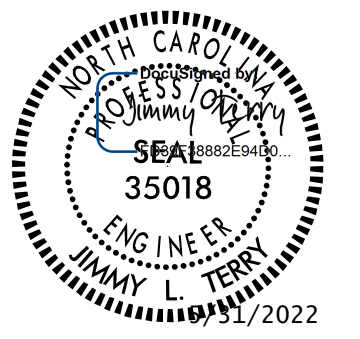
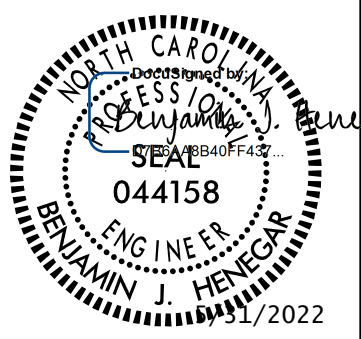
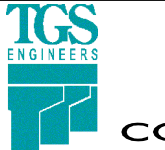
5/28/2022

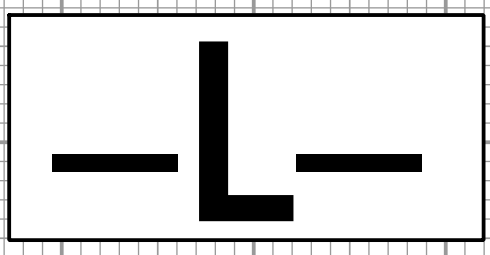
PROJECT REFERENCE NO. A-0009CA	SHEET NO. 23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	



5/10/2022 A:\0009\Roadway\Proj\A-0009CA\Plan_Sheets\A-0009CA_Rdy_pfl_Sheets.dgn

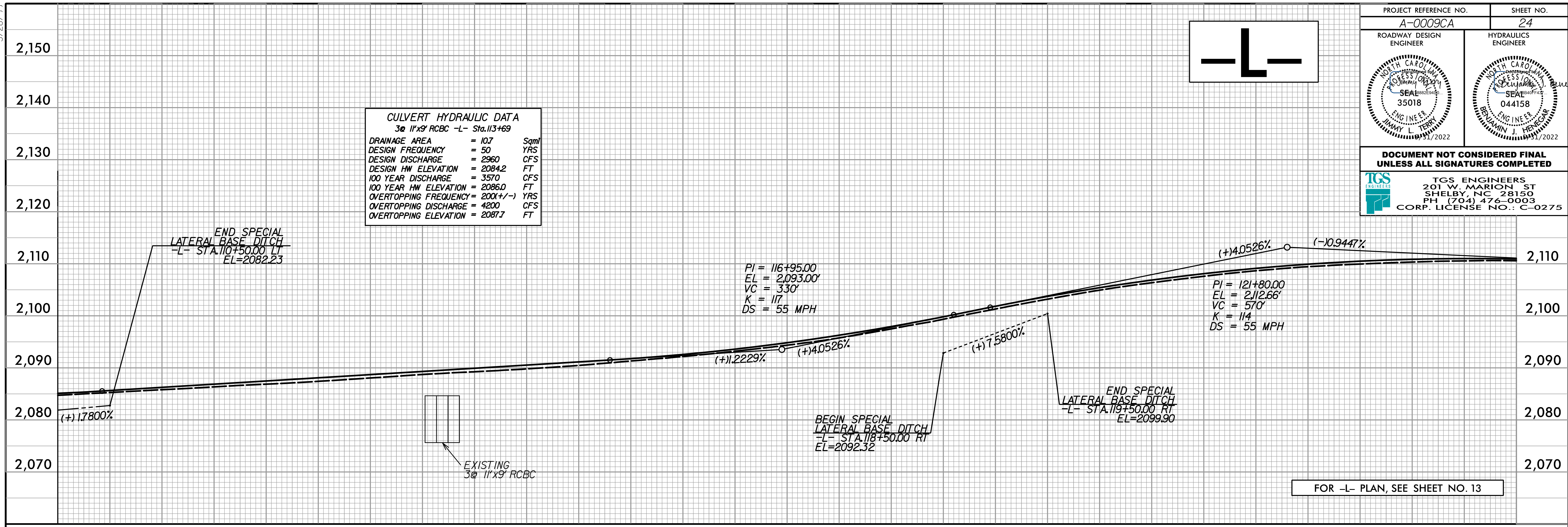
5/28/24

PROJECT REFERENCE NO. A-0009CA	SHEET NO. 24
ROADWAY DESIGN ENGINEER 35018	HYDRAULICS ENGINEER 044158
 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	



CULVERT HYDRAULIC DATA
3@ 11'x9' RCBC -L- Sta.113+69

DRAINAGE AREA	= 107	Sqmi
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 2960	CFS
DESIGN HW ELEVATION	= 2084.2	FT
100 YEAR DISCHARGE	= 3570	CFS
100 YEAR HW ELEVATION	= 2086.0	FT
OVERTOPPING FREQUENCY	= 200(+/-)	YRS
OVERTOPPING DISCHARGE	= 4200	CFS
OVERTOPPING ELEVATION	= 2087.7	FT



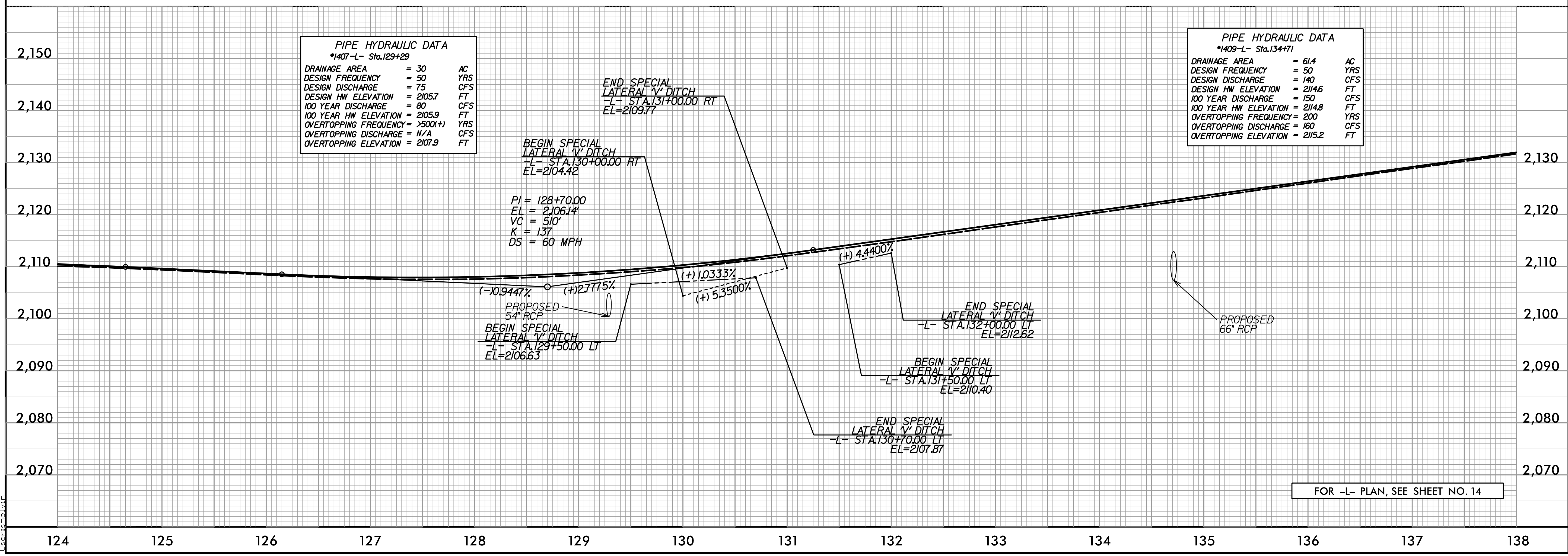
FOR -L- PLAN, SEE SHEET NO. 13

PIPE HYDRAULIC DATA
*1407-L- Sta.129+29

DRAINAGE AREA	= 30	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 75	CFS
DESIGN HW ELEVATION	= 2105.7	FT
100 YEAR DISCHARGE	= 80	CFS
100 YEAR HW ELEVATION	= 2105.9	FT
OVERTOPPING FREQUENCY	= >500(+)	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= 2107.9	FT

PIPE HYDRAULIC DATA
*1409-L- Sta.134+71

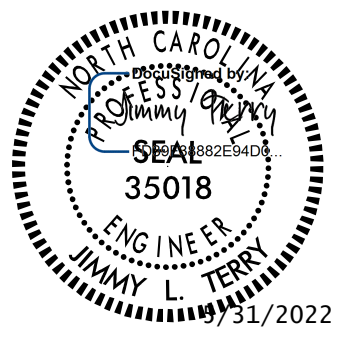
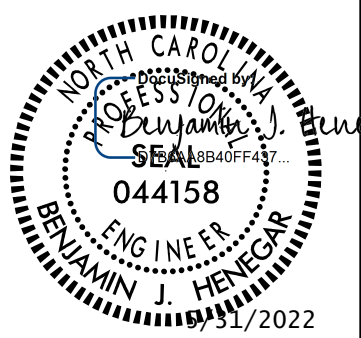
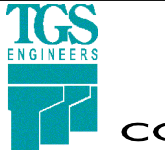
DRAINAGE AREA	= 61.4	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 140	CFS
DESIGN HW ELEVATION	= 2114.6	FT
100 YEAR DISCHARGE	= 150	CFS
100 YEAR HW ELEVATION	= 2114.8	FT
OVERTOPPING FREQUENCY	= 200	YRS
OVERTOPPING DISCHARGE	= 160	CFS
OVERTOPPING ELEVATION	= 2115.2	FT

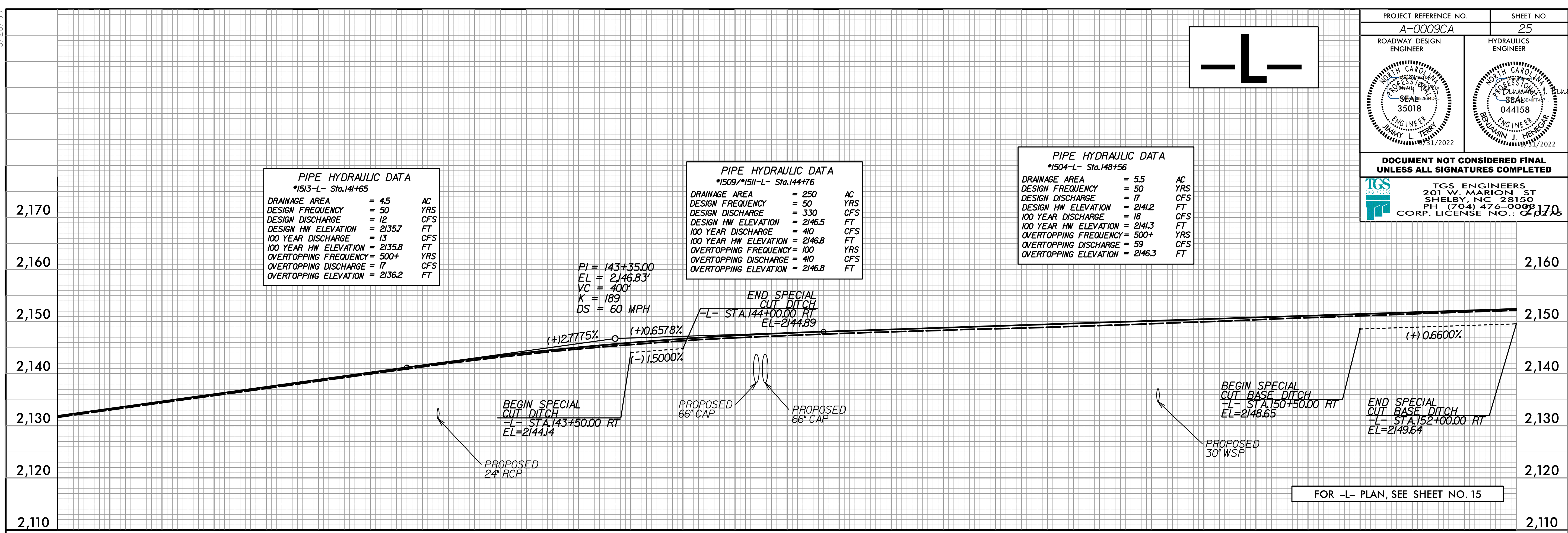
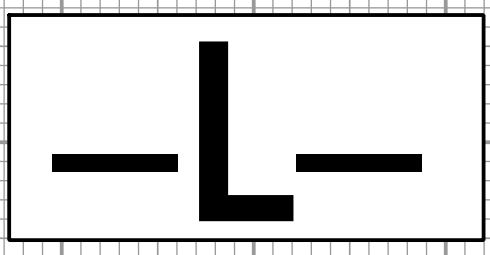


FOR -L- PLAN, SEE SHEET NO. 14

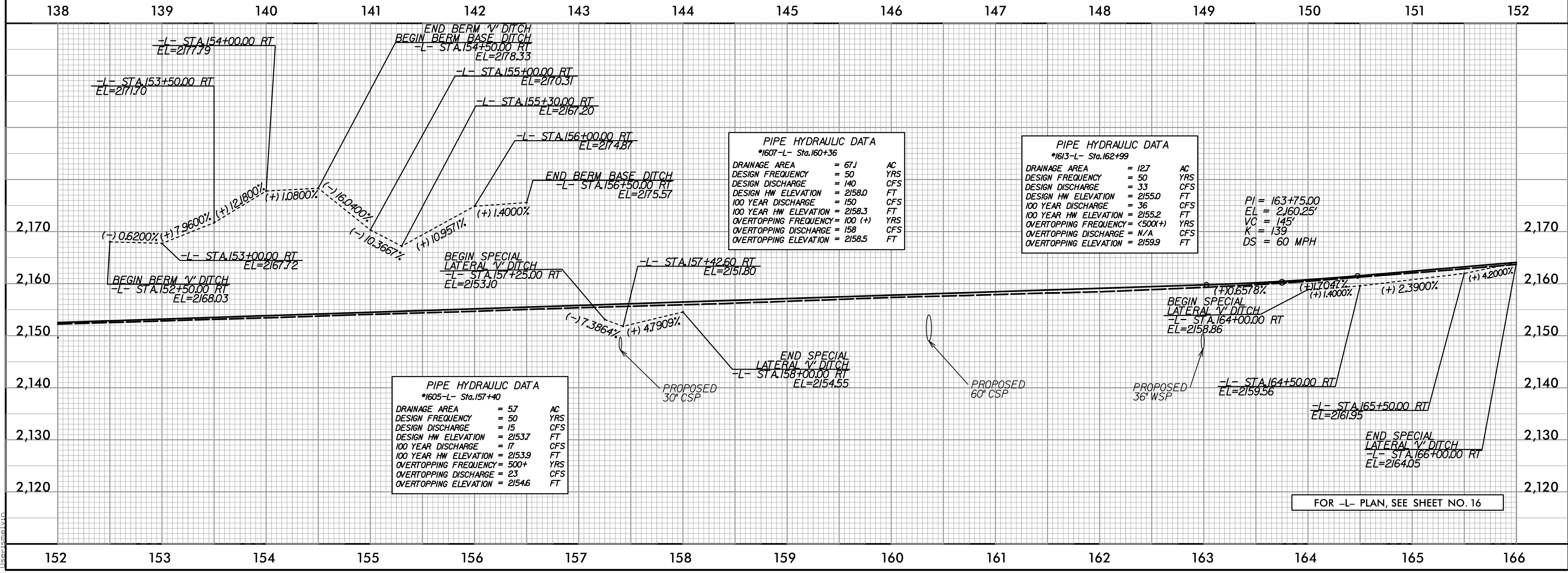
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5/28/2022

PROJECT REFERENCE NO. A-0009CA	SHEET NO. 25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH (704) 476-0093 CORP. LICENSE NO.: 20170	



FOR -L- PLAN, SEE SHEET NO. 15

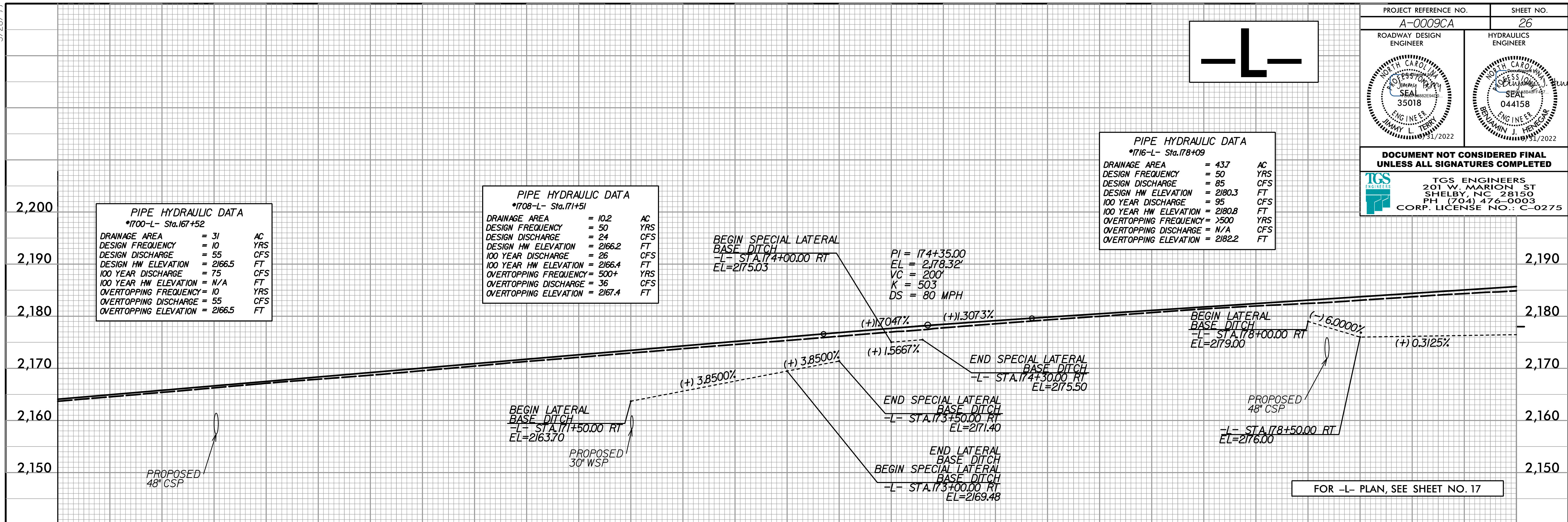
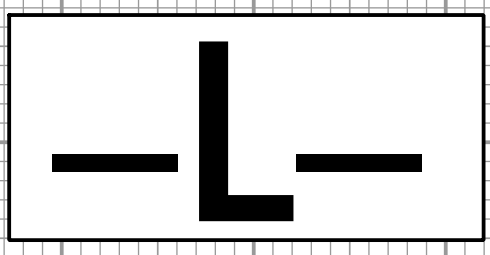


FOR -L- PLAN, SEE SHEET NO. 16

5/10/2022 A-0009CA-0009CA-0009CA Plan Sheets\A-0009CA-Rdy_pfl_Sheets.dgn

5/28/2022

PROJECT REFERENCE NO. A-0009CA	SHEET NO. 26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	



PIPE HYDRAULIC DATA
*1700-L- Sta.167+52

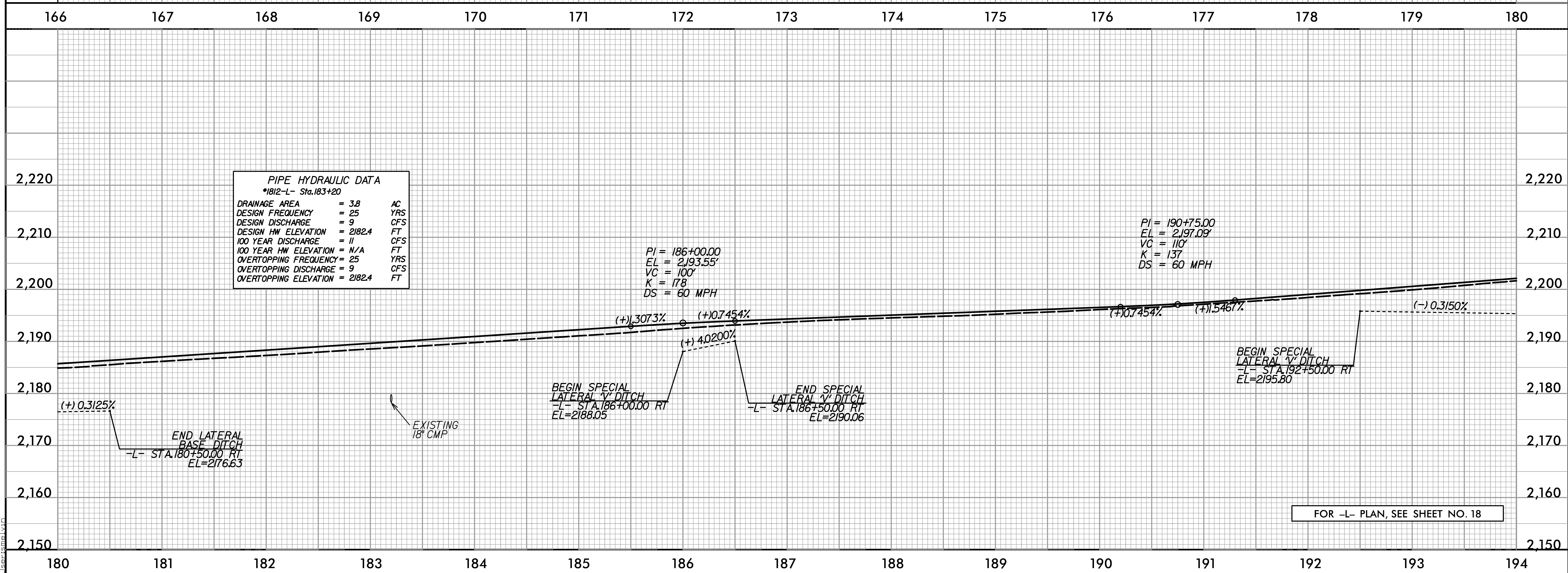
DRAINAGE AREA	= 31	AC
DESIGN FREQUENCY	= 10	YRS
DESIGN DISCHARGE	= 55	CFS
DESIGN HW ELEVATION	= 2166.5	FT
100 YEAR DISCHARGE	= 75	CFS
100 YEAR HW ELEVATION	= N/A	FT
OVERTOPPING FREQUENCY	= 10	YRS
OVERTOPPING DISCHARGE	= 55	CFS
OVERTOPPING ELEVATION	= 2166.5	FT

PIPE HYDRAULIC DATA
*1708-L- Sta.171+51

DRAINAGE AREA	= 10.2	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 24	CFS
DESIGN HW ELEVATION	= 2166.2	FT
100 YEAR DISCHARGE	= 26	CFS
100 YEAR HW ELEVATION	= 2166.4	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 36	CFS
OVERTOPPING ELEVATION	= 2167.4	FT

PIPE HYDRAULIC DATA
*1716-L- Sta.178+09

DRAINAGE AREA	= 437	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 85	CFS
DESIGN HW ELEVATION	= 2180.3	FT
100 YEAR DISCHARGE	= 95	CFS
100 YEAR HW ELEVATION	= 2180.8	FT
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING ELEVATION	= 2182.2	FT



PIPE HYDRAULIC DATA
*1812-L- Sta.183+20

DRAINAGE AREA	= 3.8	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 9	CFS
DESIGN HW ELEVATION	= 2182.4	FT
100 YEAR DISCHARGE	= 11	CFS
100 YEAR HW ELEVATION	= N/A	FT
OVERTOPPING FREQUENCY	= 25	YRS
OVERTOPPING DISCHARGE	= 9	CFS
OVERTOPPING ELEVATION	= 2182.4	FT

FOR -L- PLAN, SEE SHEET NO. 18

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5/28/2022

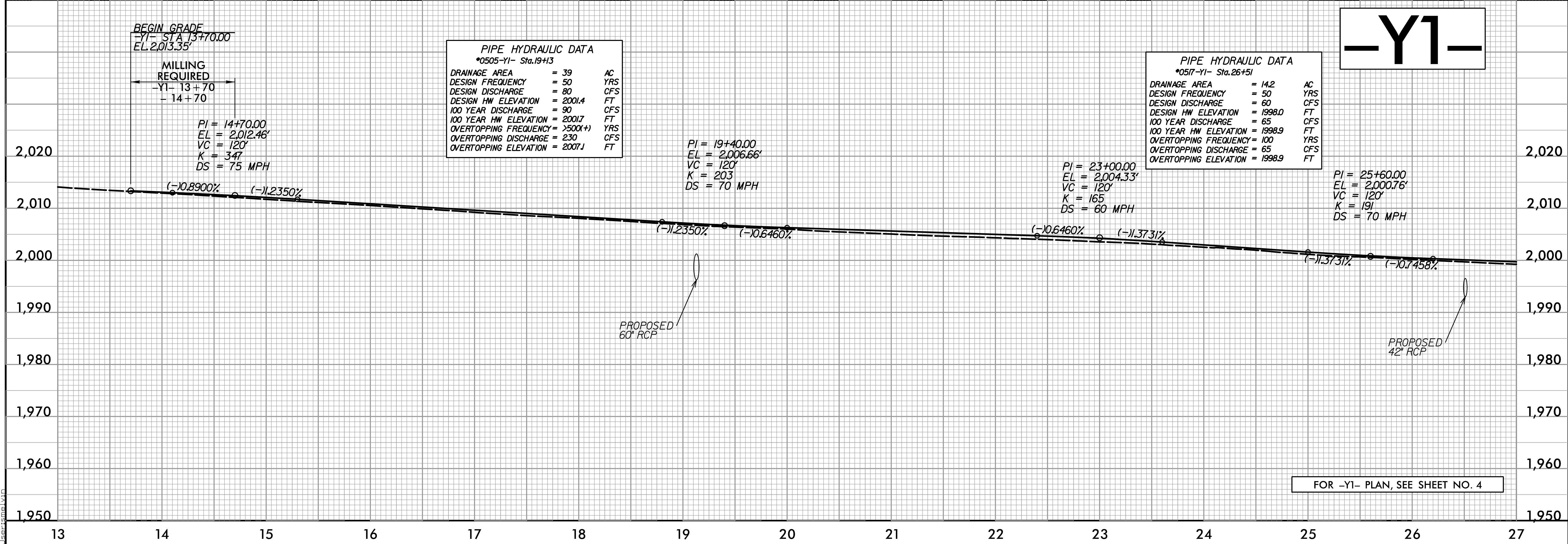
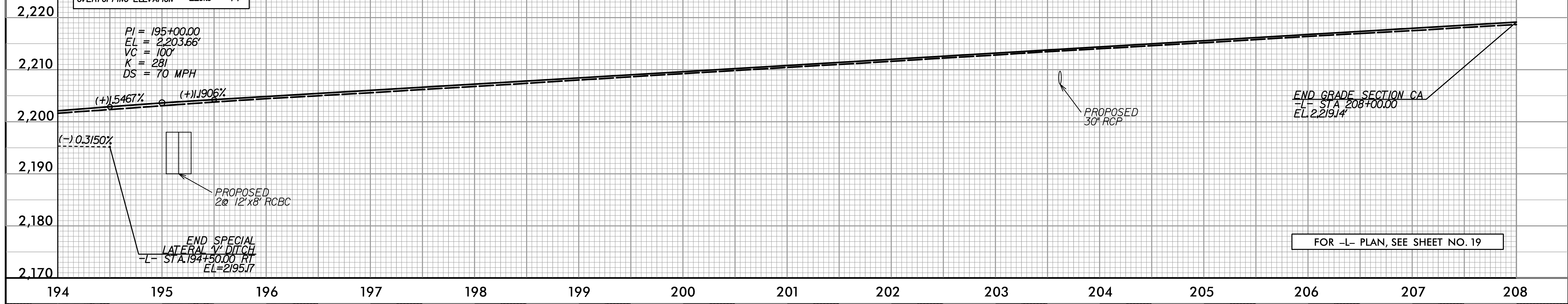
PROJECT REFERENCE NO. A-0009CA	SHEET NO. 27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	

CULVERT HYDRAULIC DATA
2@ 12"x8" RCBC -L- Sta.195+16

DRAINAGE AREA	= 4.39	Sqmi
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 1400	CFS
DESIGN HW ELEVATION	= 2200.3	FT
100 YEAR DISCHARGE	= 1700	CFS
100 YEAR HW ELEVATION	= 2201.4	FT
OVERTOPPING FREQUENCY	= 50+	YRS
OVERTOPPING DISCHARGE	= 1600	CFS
OVERTOPPING ELEVATION	= 2201.0	FT

PIPE HYDRAULIC DATA
*1904-L- Sta.203+62

DRAINAGE AREA	= 13.2	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 19	CFS
DESIGN HW ELEVATION	= 2210.3	FT
100 YEAR DISCHARGE	= 21	CFS
100 YEAR HW ELEVATION	= 2210.5	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 38	CFS
OVERTOPPING ELEVATION	= 2211.7	FT



PIPE HYDRAULIC DATA
*0505-Y1- Sta.19+13

DRAINAGE AREA	= 39	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 80	CFS
DESIGN HW ELEVATION	= 2001.4	FT
100 YEAR DISCHARGE	= 90	CFS
100 YEAR HW ELEVATION	= 2001.7	FT
OVERTOPPING FREQUENCY	= >500(+)	YRS
OVERTOPPING DISCHARGE	= 230	CFS
OVERTOPPING ELEVATION	= 2007.1	FT

PIPE HYDRAULIC DATA
*0517-Y1- Sta.26+51

DRAINAGE AREA	= 14.2	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 60	CFS
DESIGN HW ELEVATION	= 1998.0	FT
100 YEAR DISCHARGE	= 65	CFS
100 YEAR HW ELEVATION	= 1998.9	FT
OVERTOPPING FREQUENCY	= 100	YRS
OVERTOPPING DISCHARGE	= 65	CFS
OVERTOPPING ELEVATION	= 1998.9	FT

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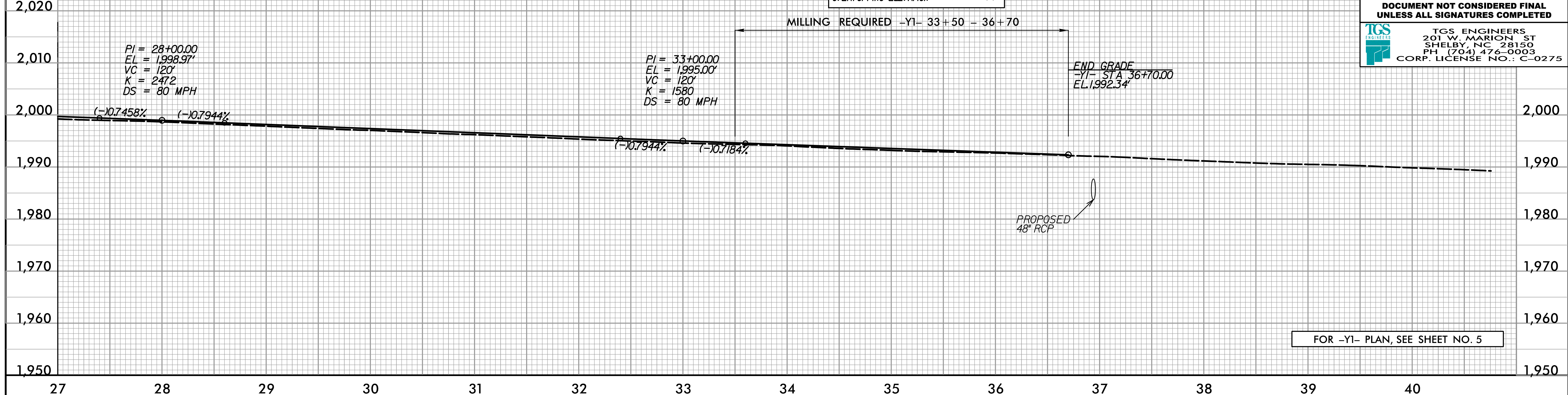
5/28/24

-Y1-

PROJECT REFERENCE NO. A-0009CA	SHEET NO. 28
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	

PIPE HYDRAULIC DATA
*0419-Y1- Sta. 36+94

DRAINAGE AREA	= 181	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 60	CFS
DESIGN HW ELEVATION	= 1989.4	FT
100 YEAR DISCHARGE	= 80	CFS
100 YEAR HW ELEVATION	= N/A	FT
OVERTOPPING FREQUENCY	= 25	YRS
OVERTOPPING DISCHARGE	= 60	CFS
OVERTOPPING ELEVATION	= 1989.4	FT

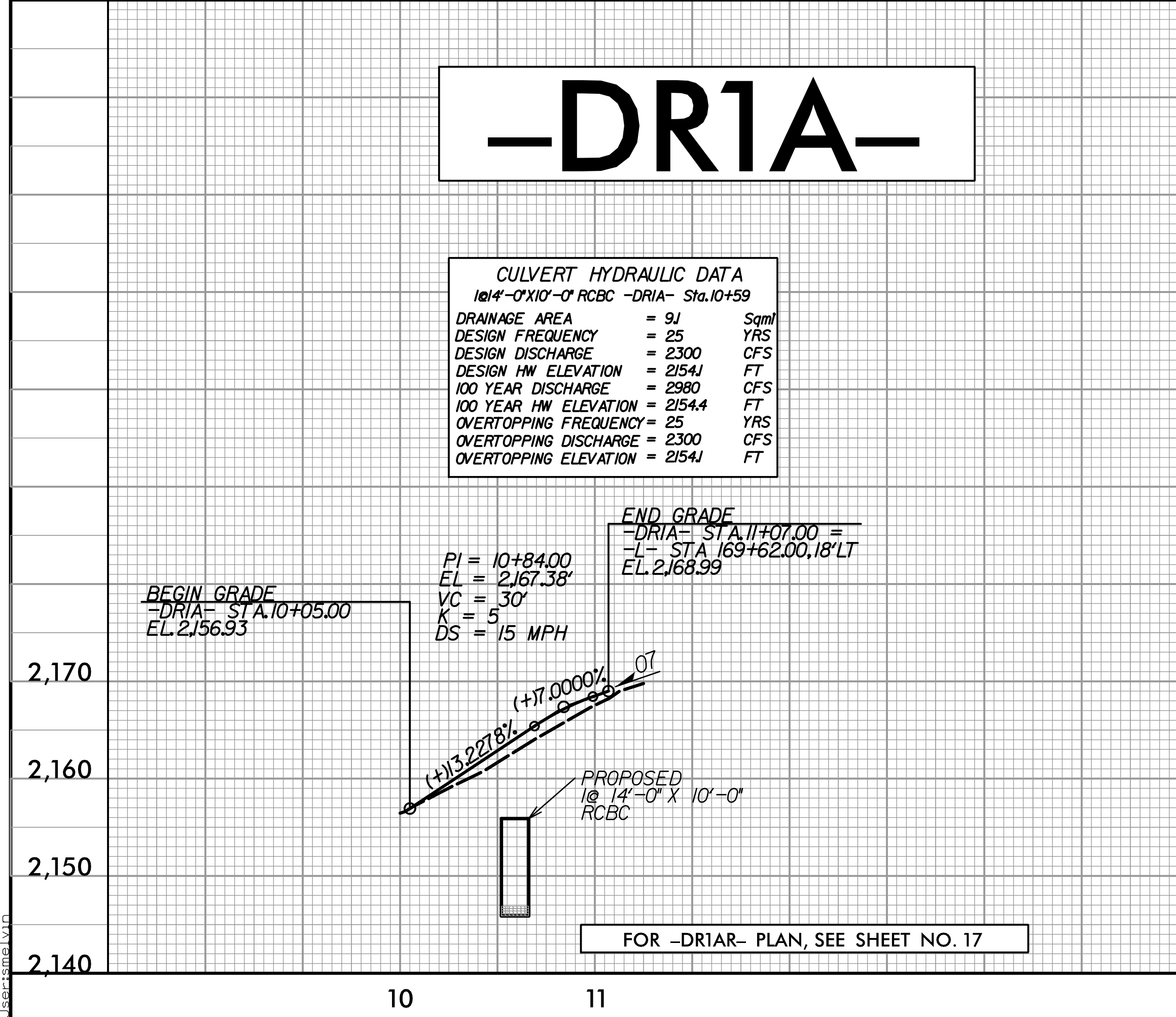


FOR -Y1- PLAN, SEE SHEET NO. 5

-DR1A-

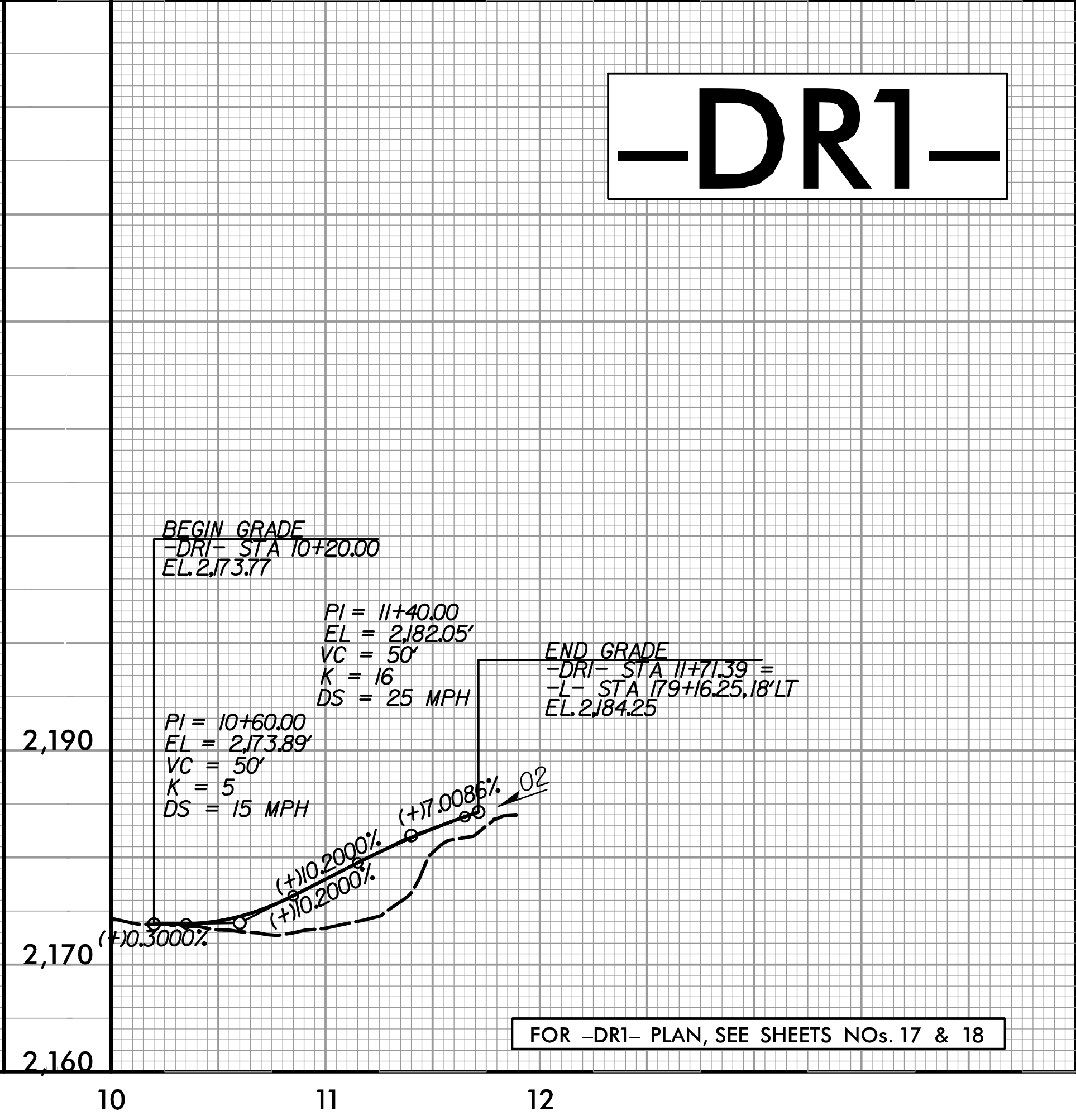
CULVERT HYDRAULIC DATA
10'-0" X 10'-0" RCBC -DR1A- Sta. 10+59

DRAINAGE AREA	= 9J	Sqmi
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 2300	CFS
DESIGN HW ELEVATION	= 2154J	FT
100 YEAR DISCHARGE	= 2980	CFS
100 YEAR HW ELEVATION	= 2154.4	FT
OVERTOPPING FREQUENCY	= 25	YRS
OVERTOPPING DISCHARGE	= 2300	CFS
OVERTOPPING ELEVATION	= 2154J	FT



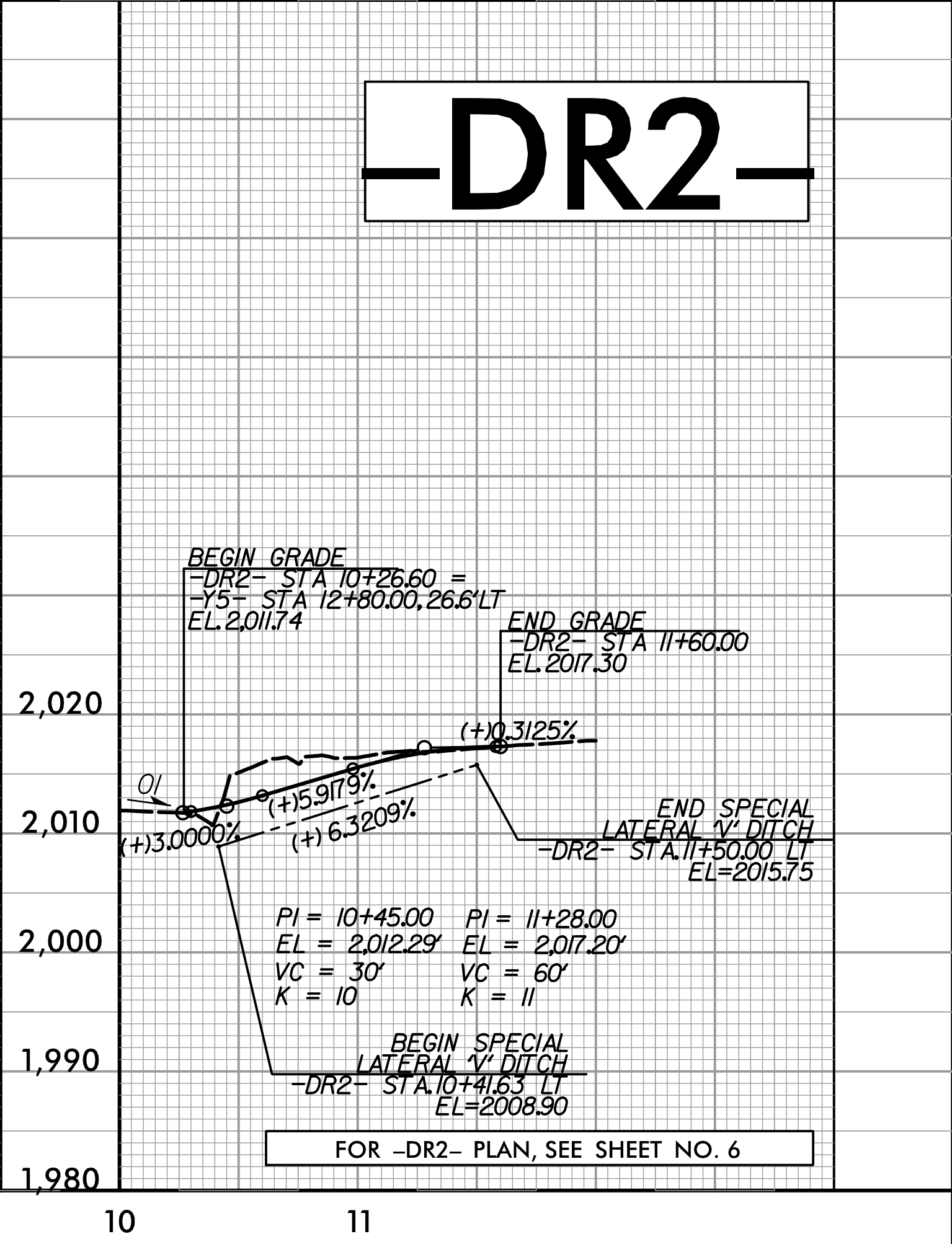
FOR -DR1A- PLAN, SEE SHEET NO. 17

-DR1-



FOR -DR1- PLAN, SEE SHEETS NOS. 17 & 18

-DR2-



FOR -DR2- PLAN, SEE SHEET NO. 6

5/10/2024 A-0009CA-0009CA Plan Sheets\A-0009CA-0009CA_Rdy_pfl_Sheets.dgn