PROJECT REFERENCE NO.	SHEET NO.
R-5861	2G-4

GEOTECHNICAL ENGINEER — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 041709 GREGORY K. GOINS

DocuSigned by: Gregory Goins — 10/30/2023 (SIGNATURE, DATE)

ENGINEER (SIGNATURE, DATE)

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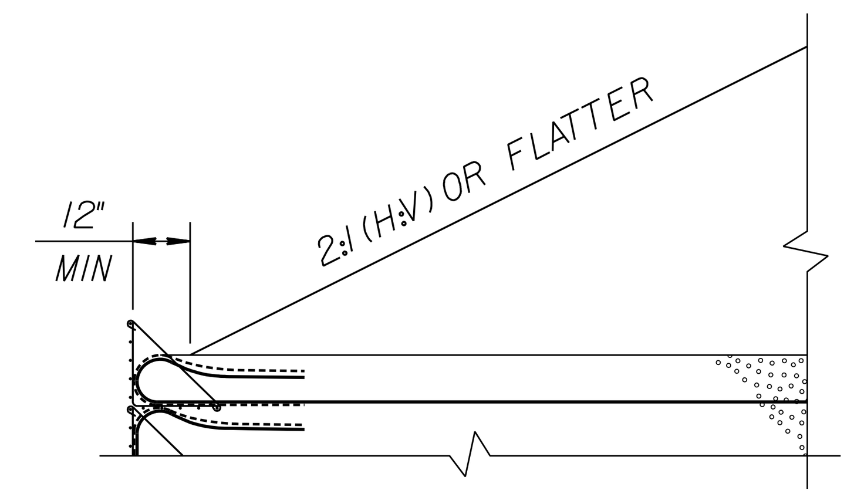
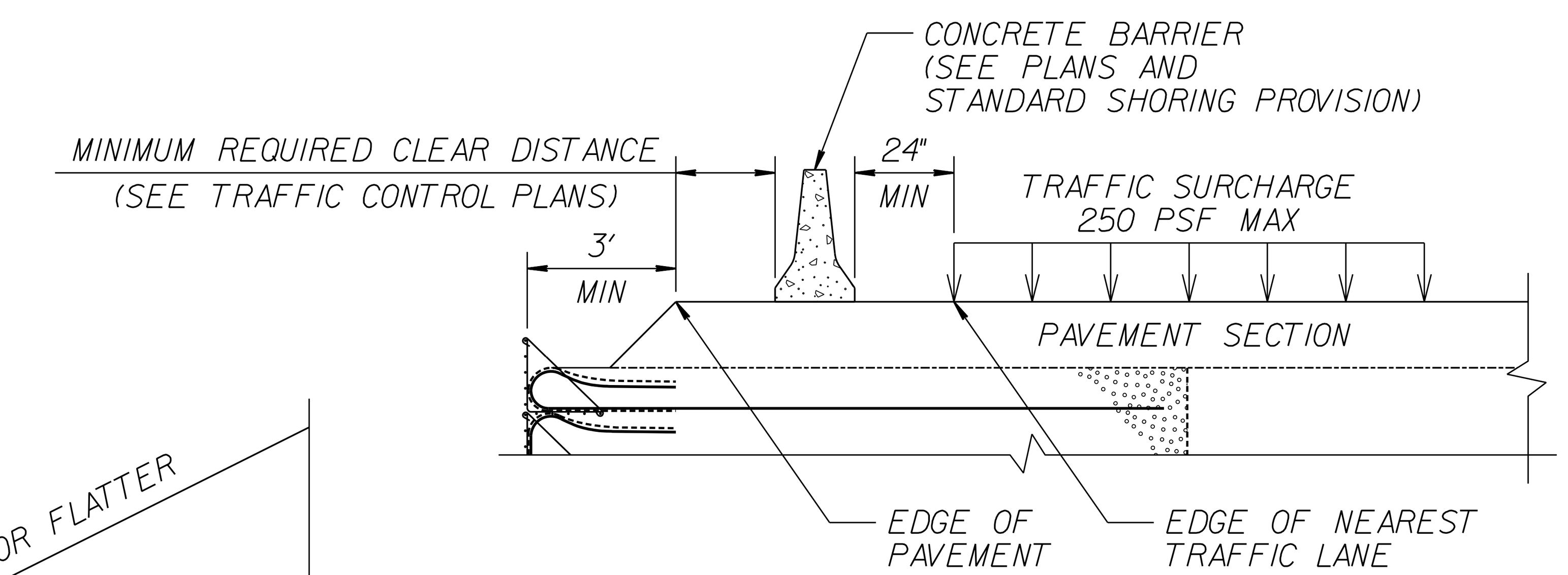
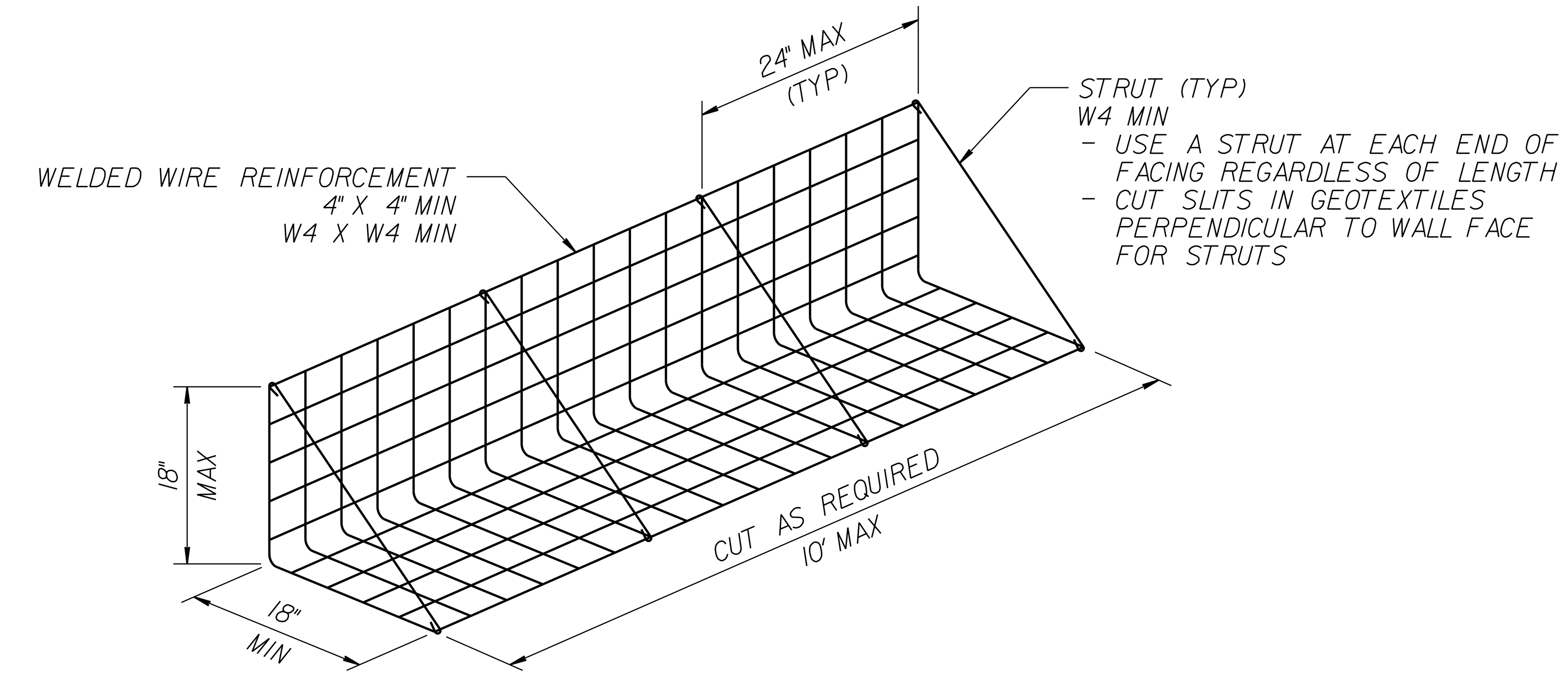


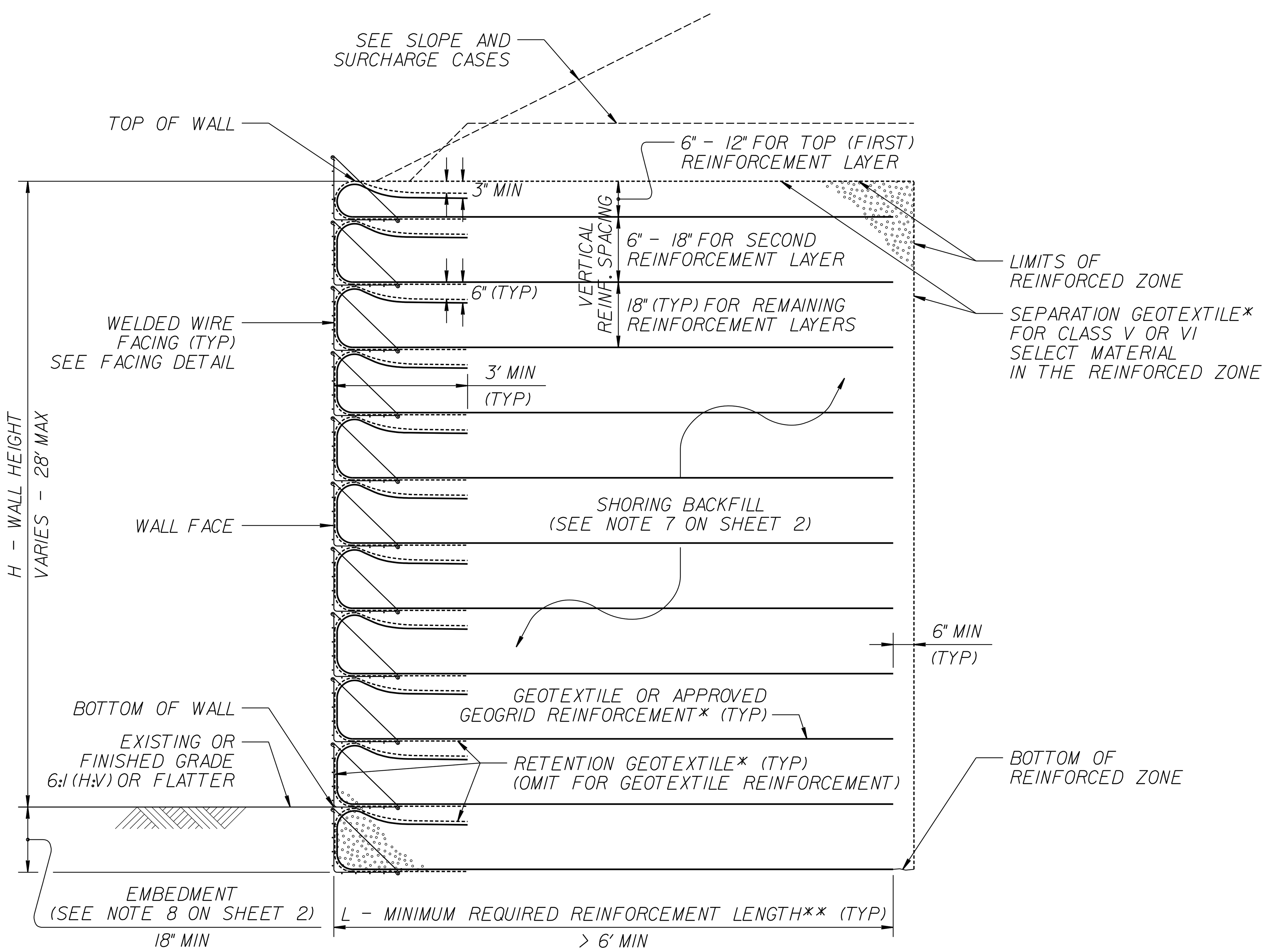
SLOPE CASE



SURCHARGE CASE

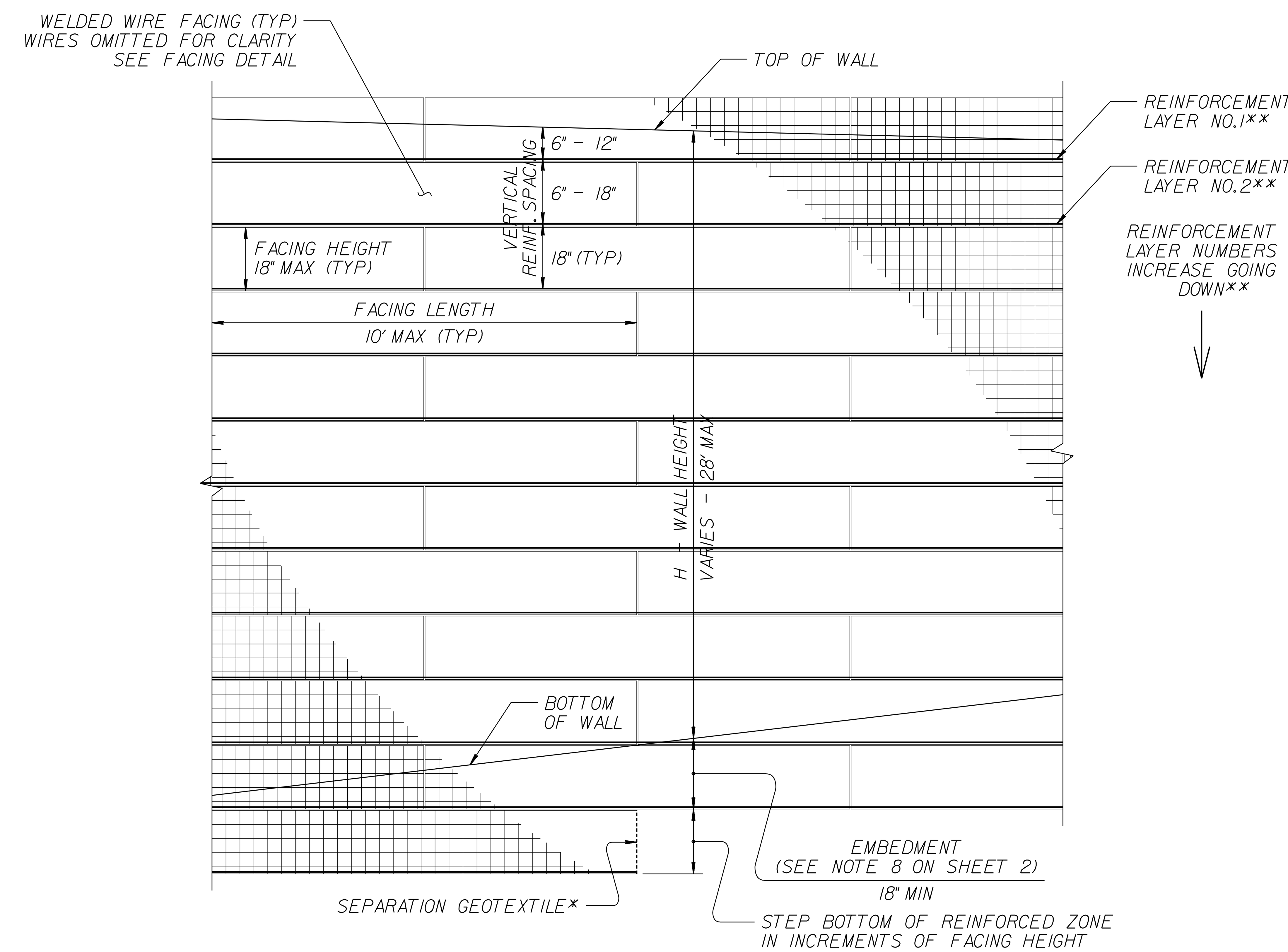


FACING DETAIL



STANDARD TEMPORARY WALL

(FOR STANDARD TEMPORARY WALLS ON STRUCTURES,
SEE TEMPORARY WALL ON STRUCTURE DETAIL ON SHEET 2.)
*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.
**SEE REINFORCEMENT TABLES ON SHEET 3.



STANDARD TEMPORARY WALL – PARTIAL ELEVATION

*SEE GEOSYNTHETIC PLACEMENT DETAILS ON SHEET 2.
**SEE REINFORCEMENT TABLES ON SHEET 3.

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

STANDARD DETAIL NO. 1801.02

STANDARD
TEMPORARY WALL
SHEET 1 OF 3

DATE: 11-19-13

PROJECT REFERENCE NO.	SHEET NO.
R-5861	2G-5

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 041709 ENGINEER GREGORY K. GOINS

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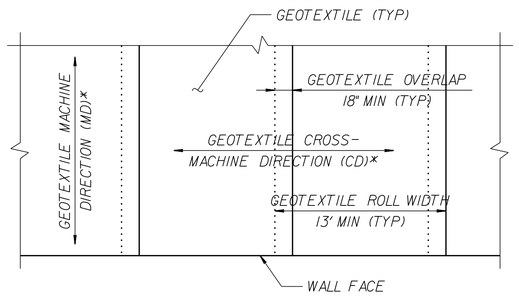
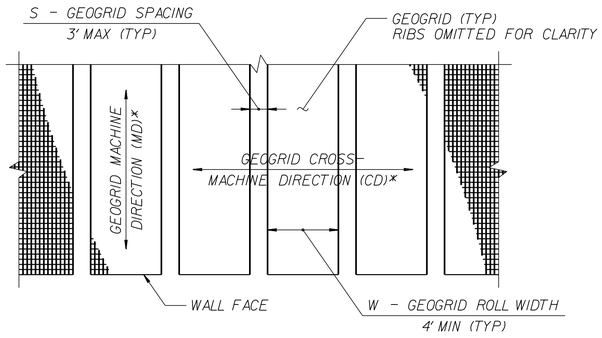


GEOTEXTILE PLACEMENT

(100% COVERAGE MIN FOR GEOTEXTILE REINFORCEMENT)

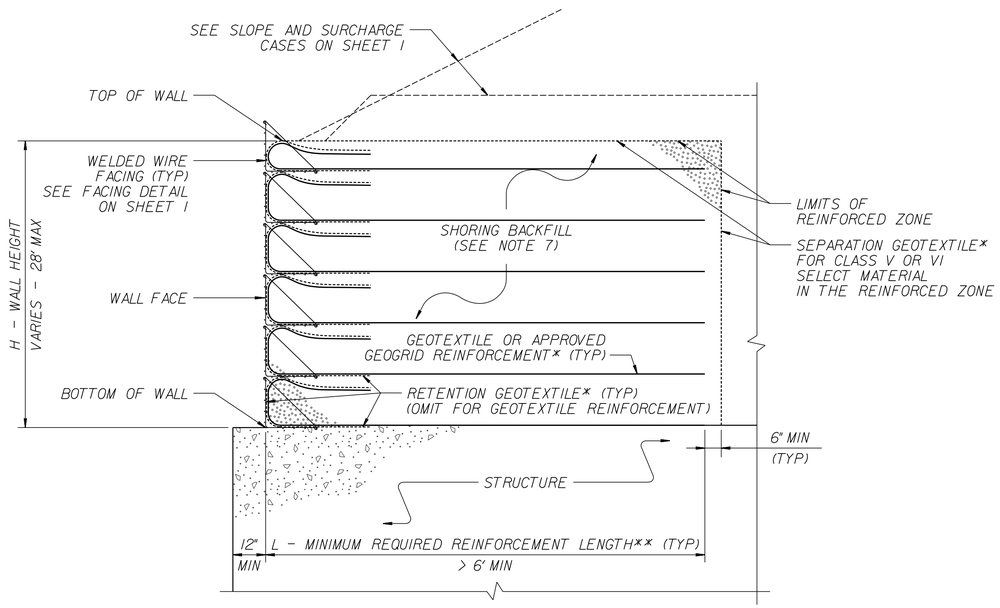


GEOGRID PLACEMENT

(80% COVERAGE MIN FOR GEOGRID REINFORCEMENT – $\frac{W}{W+S}$ x 100 $\geq$ 80%, SEE NOTE 11)

GEOSYNTHETIC PLACEMENT DETAILS

(PLAN VIEW)
*SEE NOTE 12.



TEMPORARY WALL ON STRUCTURE DETAIL

*SEE GEOSYNTHETIC PLACEMENT DETAILS.
**SEE REINFORCEMENT TABLES ON SHEET 3.

NOTES:

1. AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY WALLS AS NOTED IN THE PLANS.
2. FOR STANDARD TEMPORARY WALLS, SEE STANDARD SHORING PROVISION.
3. STANDARD TEMPORARY WALLS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
   UNIT WEIGHT, γ = 120 PCF
   FRICTION ANGLE, ϕ = 30 DEGREES
   COHESION, c = 0 PSF
4. DO NOT USE STANDARD TEMPORARY WALLS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
5. DO NOT USE STANDARD TEMPORARY WALLS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW TEMPORARY WALLS.
6. USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, ASSUME GROUNDWATER DEPTH IS LESS THAN 7' BELOW BOTTOM OF REINFORCED ZONE. DO NOT USE STANDARD TEMPORARY WALLS IF GROUNDWATER IS ABOVE BOTTOM OF REINFORCED ZONE.
7. DO NOT USE A-2-4 SOIL FOR STANDARD TEMPORARY WALLS AROUND CULVERTS OR IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS FOR SLOPE CASES. DO NOT USE CLASS VI SELECT MATERIAL IN THE REINFORCED ZONE OF STANDARD TEMPORARY WALLS WITH GEOTEXTILE REINFORCEMENT.
8. EMBEDMENT IS NOT REQUIRED FOR STANDARD TEMPORARY WALLS ON STRUCTURES OR ROCK AS DETERMINED BY THE ENGINEER.
9. DO NOT USE MORE THAN 4 DIFFERENT REINFORCEMENT STRENGTHS FOR EACH STANDARD TEMPORARY WALL.
10. GEOGRIDS ARE TYPICALLY APPROVED FOR ULTIMATE TENSILE STRENGTHS IN THE MACHINE DIRECTION (MD) AND CROSS-MACHINE DIRECTION (CD) OR SHORT-TERM DESIGN STRENGTHS FOR A 3-YEAR DESIGN LIFE IN THE MD BASED ON MATERIAL TYPE. THE LIST OF APPROVED GEOGRIDS WITH DESIGN STRENGTHS IS AVAILABLE FROM: connect.ncdot.gov/resources/Materials/Pages/Materials-Manual-by-Manual.aspx
    DEFINE MATERIAL TYPE FROM THE WEBSITE ABOVE FOR SHORING BACKFILL AS FOLLOWS:

MATERIAL TYPE	SHORING BACKFILL
BORROW	A-2-4 SOIL
FINE AGGREGATE	CLASS II, TYPE I OR CLASS III SELECT MATERIAL
COARSE AGGREGATE	CLASS V OR VI SELECT MATERIAL

    IF THE WEBSITE DOES NOT LIST A SHORT-TERM DESIGN STRENGTH FOR AN APPROVED GEOGRID, USE A SHORT-TERM DESIGN STRENGTH EQUAL TO THE ULTIMATE TENSILE STRENGTH DIVIDED BY 3.5 FOR THE GEOGRID REINFORCEMENT.
11. FOR GEOGRID REINFORCEMENT WITH LESS THAN 100% COVERAGE, STAGGER REINFORCEMENT SO GEOGRIDS ARE CENTERED OVER GAPS IN THE REINFORCEMENT LAYER BELOW.
12. AT THE CONTRACTOR'S OPTION, REINFORCEMENT MAY BE INSTALLED WITH THE MD PARALLEL TO THE WALL FACE IF BOTH OF THE FOLLOWING CONDITIONS OCCUR:
    - W (REINFORCEMENT ROLL WIDTH) $\geq$ (MINIMUM REQUIRED REINFORCEMENT LENGTH) + 4.5' AND
    - REINFORCEMENT STRENGTH IN CD $\geq$ MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD.
13. SUBMIT A "STANDARD TEMPORARY WALL SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY WALL CONSTRUCTION. STANDARD SHORING SELECTION FORMS ARE AVAILABLE FROM: connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx
14. DO NOT PLACE SHORING BACKFILL OR REINFORCEMENT UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.
15. FOR STANDARD TEMPORARY WALLS WITH PILE FOUNDATIONS IN THE REINFORCED ZONE, DRIVE PILES THROUGH REINFORCEMENT AFTER CONSTRUCTING TEMPORARY WALLS.
16. DO NOT SPLICE OR OVERLAP REINFORCEMENT SO SEAMS ARE PARALLEL TO THE WALL FACE.
17. CONTACT THE ENGINEER WHEN EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, PAVEMENTS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH REINFORCEMENT.
18. FOR STANDARD TEMPORARY WALLS WITH INTERIOR ANGLES LESS THAN 90 DEGREES, WRAP GEOSYNTHETICS AT ACUTE CORNERS AS DIRECTED BY THE ENGINEER.
19. FOR STANDARD TEMPORARY WALLS WITH TOP OF WALL WITHIN 5' OF FINISHED GRADE, REMOVE TOP FACING AND INCORPORATE TOP REINFORCEMENT LAYER INTO FILL WHEN PLACING FILL IN FRONT OF WALL.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

STANDARD DETAIL NO. 1801.02

STANDARD TEMPORARY WALL
SHEET 2 OF 3

DATE: 11-19-13

PROJECT REFERENCE NO.	SHEET NO.
R-5861	2G-6

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 041709 ENGINEER GREGORY K. GOINS

DocuSigned by: Gregory Goins A40B119A... SIGNATURE 10/30/2023 DATE

ENGINEER

SIGNATURE DATE

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SLOPE OR SURCHARGE CASE	GROUNDWATER DEPTH BELOW BOTTOM OF REINFORCED ZONE (SEE NOTE 6 ON SHEET 2) (FT)	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)	H – WALL HEIGHT (FT)																								
			< 4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
SLOPE CASE	> 0	CLASS II,TYPE I, CLASS III,CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	8	9	11	12	13	13	14	15	16	17	18	19	20	21	22	23	24	24	25	26	27	27
SURCHARGE CASE	> 0 TO 7 FOR H < 20′ > 0 TO 10 FOR H ≥ 20′	ALL SHORING BACKFILL TYPES	6	7	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	17	17	18	19	19	20	21	22
	> 7 FOR H < 20′ > 10 FOR H ≥ 20′	A-2-4 SOIL	6	6	7	8	8	9	9	10	11	11	12	12	13	14	14	15	16	16	17	18	18	19	20	20	21
		CLASS II,TYPE I OR CLASS III SELECT MATERIAL	6	6	7	7	8	8	9	10	10	11	11	12	12	13	14	15	15	16	16	17	17	18	18	19	20
		CLASS V OR CLASS VI SELECT MATERIAL	6	6	7	7	7	8	8	9	9	10	10	11	12	13	13	14	14	15	15	16	17	17	18	19	19

L – MINIMUM REQUIRED REINFORCEMENT LENGTH (FT)

(FOR ALL REINFORCEMENT TYPES)

REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL	A-2-4 SOIL	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V SELECT MATERIAL
1	2400	2400	2400	2400	2400
2	2400	2400	2400	2400	2400
3	2400	2400	2400	2400	2400
4	2400	2400	2500	2400	2400
5	2500	2400	3000	2400	2400
6	3000	2400	3500	2800	2400
7	3500	2700	4000	3200	2600
8	4000	3100	4500	3600	2900
9	4500	3500	5000	4000	3200
10	5000	3900	5500	4400	3500
11	5500	4300	6000	4800	3800
12	6000	4700	6500	5200	4100
13	6500	5100	7000	5600	4400
14	7000	5400	7500	6000	4700
15	7500	5800	8000	6400	5000
16	8000	6200	8500	6800	5300
17	8500	6600	9000	7200	5600
18	9000	7000	9500	7600	5900
19	9500	7400	10000	8000	6200
20	10000	7800	10500	8400	6500

GEOTEXTILE REINFORCEMENT
ULTIMATE TENSILE STRENGTH (LB/FT)

REINFORCEMENT LAYER NUMBER*	SHORING BACKFILL TYPE IN THE REINFORCED ZONE (SEE NOTE 7 ON SHEET 2)				
	SLOPE CASE		SURCHARGE CASE		
	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL	A-2-4 SOIL	CLASS II,TYPE I OR CLASS III SELECT MATERIAL	CLASS V OR CLASS VI SELECT MATERIAL
1	240	200	340	290	240
2	380	310	520	430	350
3	530	420	700	570	460
4	690	550	870	720	570
5	860	690	1050	860	680
6	1030	830	1220	1000	790
7	1200	970	1400	1150	900
8	1370	1110	1580	1290	1010
9	1550	1240	1750	1430	1120
10	1720	1380	1930	1580	1230
11	1890	1520	2100	1720	1340
12	2060	1660	2280	1860	1450
13	2240	1800	2450	2010	1560
14	2410	1940	2630	2150	1670
15	2580	2080	2800	2290	1780
16	2750	2220	2980	2440	1890
17	2930	2360	3160	2580	2000
18	3100	2500	3330	2720	2110
19	3270	2640	3510	2860	2220
20	3440	2780	3690	3000	2330

GEOGRID REINFORCEMENT
SHORT–TERM DESIGN STRENGTH (LB/FT)

(SEE NOTE 10 ON SHEET 2.)

WALL HEIGHT (H) + EMBEDMENT (FT)	NUMBER OF REINFORCEMENT LAYERS*
2.5 – 4	3
4 – 5.5	4
5.5 – 7	5
7 – 8.5	6
8.5 – 10	7
10 – 11.5	8
11.5 – 13	9
13 – 14.5	10
14.5 – 16	11
16 – 17.5	12
17.5 – 19	13
19 – 20.5	14
20.5 – 22	15
22 – 23.5	16
23.5 – 25	17
25 – 26.5	18
26.5 – 28	19
28 – 29.5	20

*BASED ON VERTICAL REINFORCEMENT SPACING SHOWN ON SHEET 1.

MINIMUM REQUIRED REINFORCEMENT STRENGTH IN MD

(SEE NOTE 9 ON SHEET 2.)
*SEE PARTIAL ELEVATION ON SHEET 1
FOR REINFORCEMENT LAYER NUMBERING.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

STANDARD DETAIL NO. 1801.02

STANDARD TEMPORARY WALL SHEET 3 OF 3

DATE: 11-19-13

PROJECT REFERENCE NO.	SHEET NO.
R-5861	3B-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

IN CUBIC YARDS

CHAIN	BEGINNING STATION	ENDING STATION	UNCL. EXCA. C.Y.	UNDERCUT C.Y.	EMBANK. +% C.Y.	BORROW C.Y.	WASTE C.Y.
SUMMARY 1							
-L- (L_DET1)	12+09.43	24+50.00	186		25,763	25,577	
-L- (L_DET1)	26+00.00	42+38.95	22,516		18,242		4,274
-L-	54+37.00	63+21.00	409		2,392	1,983	
-L- (L_DET2)	79+85.99	104+00.00	79,655		3,308		76,348
-L-	101+50.00	107+00.00	17,485		1,416		16,069
-L- (L_DET3)	121+83.12	134+61.40	8,475	1,298	22,645	14,170	1,298
-L- (L_DET4)	140+70.08	173+66.15	46,284		20,585		25,699
-Y12-	18+67.00	25+31.00	107		73		34
-Y12-	29+81.00	35+00.00	115		2		113
-DR7-	10+09.43	13+75.00	20,117				20,117
-DR20-	10+55.00	10+98.32	31		25		6
SUBTOTAL			**195,380**	**1,298**	**94,451**	**41,730**	**143,957**
SUMMARY 2							
-L-	49+50.00	54+37.00	780		3,376	2,596	
-Y3-	10+31.53	13+50.00	2,838		3,676	838	
-Y3A-	11+50.00	12+40.00	40		88	48	
-DR6-	12+22.00	12+81.40	37		13		24
SUBTOTAL			**3,695**		**7,152**	**3,481**	**24**
SUMMARY 3							
-L- (L_DET1)	24+50.00	26+00.00			6,524	6,524	
-DET_Y1-	10+40.00	13+13.59	333		2,063	1,730	
SUBTOTAL			**333**		**8,587**	**8,254**	
SUMMARY 4							
-L- RT	10+25.00	40+00.00	81,895		8,668		73,227
-L- RT	40+00.00	49+50.00	145,771		123		145,649
-Y2-	10+18.00	14+70.00	14,188		130		14,058
SUBTOTAL			**241,854**		**8,920**		**232,934**
SUMMARY 5							
-L- LT	25+00.00	30+00.00	8,865		71		8,794
-L- (REMOVE L_DET1)	25+00.00	30+00.00	4,803		733		4,070
-Y1-	10+30.00	16+59.03	4,587		905		3,682
-Y1- (REMOVE DET_Y1)	13+00.00	15+50.00			158	158	
SUBTOTAL			**18,255**		**1,867**	**158**	**16,546**
SUMMARY 6							
-L- LT	137+29.00	143+22.00	3,358		13		3,345
SUBTOTAL			**3,358**		**13**		**3,345**

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.

CHAIN	BEGINNING STATION	ENDING STATION	UNCL. EXCA. C.Y.	UNDERCUT C.Y.	EMBANK. +% C.Y.	BORROW C.Y.	WASTE C.Y.
SUMMARY 7							
-L-	63+21.00	78+00.00	1,314		6,487	5,173	
-L- RT	78+00.00	104+68.00	31,623		22,299		9,324
-L-	106+16.00	107+00.00	2,640		35		2,605
-L-	107+00.00	108+29.00	2,606		8		2,598
-L- LT	108+29.00	133+82.00	44,045	626	28,436		16,235
-L- RT	142+67.00	157+00.00	815		20,047	19,232	
-L-	174+00.00	183+25.00	124,370		65,206		59,164
-L- (L_DET6)	183+25.00	199+00.00	84,904		626		84,278
-L- RT	199+50.00	209+49.00	41		596	555	
-Y5-	10+20.07	11+40.00			486	486	
-Y6-	11+30.00	17+06.36	10,279		386		9,893
-Y8-	10+50.00	12+64.64	1		827	826	
-DR8-	12+00.00	13+68.26	79		138	59	
-DR11-	10+13.88	11+75.00	6		3,342	3,336	
-DR12-	10+18.00	11+55.00			1,468	1,468	
-DR13-	10+11.55	11+40.00	11		26	15	
-DR18-	10+18.00	11+45.00			1,336	1,336	
-DET_DR18-	10+09.97	11+40.00	354		26		328
-DR18B-	10+54.96	11+85.00	13		569	556	
-DET_DR18B-	10+21.08	11+40.00	684				684
-DR19-	10+13.46	11+75.00	1		719	718	
-DET_DR19-	10+17.17	11+40.00	34		125	91	
-DET_DR22-	10+43.66	14+12.68	9,914		91		9,823
-DR29-	10+15.28	12+01.12	5,076		59		5,017
SUBTOTAL			**318,810**	**626**	**153,339**	**33,851**	**199,947**
SUMMARY 8							
-L- RT	139+60.00	142+01.00	75		473	398	
SUBTOTAL			**75**		**473**	**398**	
SUMMARY 9							
-L-	142+01.00	145+00.00	7		2,118	2,111	
SUBTOTAL			**7**		**2,118**	**2,111**	
SUMMARY 10							
-L- LT	142+01.00	151+78.00	2		4,885	4,883	
-L- (REMOVE L_DET4)	142+01.00	151+50.00	9,361		7,433		1,928
-Y10A-	11+00.00	13+88.20	262		12,840	12,578	
-DR16-	10+45.00	11+79.53	16		743	727	
-DR17-	10+96.61	11+48.88	49				49
-DR26-	10+55.00	11+30.00	6		138	132	
SUBTOTAL			**9,696**		**26,039**	**18,320**	**1,977**
SUMMARY 11							
-L- RT	107+00.00	114+00.00	8,321		79		8,242
-Y7-	10+17.15	13+10.00	961		85		876
-DR14-	10+18.18	12+38.00	7,060				7,060
-DR28-	10+18.00	11+77.00	2,593				2,593
SUBTOTAL			**18,935**		**164**		**18,771**
SUMMARY 12							
-L- RT	157+00.00	174+00.00	187,807		1,206		186,601
-Y11-	10+18.07	14+43.61	1,595		8,275	6,680	
-Y11A-	10+09.69	12+35.00	392		967	575	
-Y11A-	13+34.26	14+36.90	7		274	267	
SUBTOTAL			**189,801**		**10,722**	**7,522**	**186,601**

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-5861	3B-2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK

IN CUBIC YARDS

CHAIN	BEGINNING STATION	ENDING STATION	UNCL. EXCA. C.Y.	UNDERCUT C.Y.	EMBANK. +% C.Y.	BORROW C.Y.	WASTE C.Y.
SUMMARY 13							
-L- LT	10+25.00	25+00.00	4,432		1,685		2,747
-L- (REMOVE L_DET1)	14+50.00	25+00.00	20,063		53		20,010
-L- LT	30+00.00	44+00.00	3,218		558		2,660
-L- (REMOVE L_DET1)	30+00.00	42+00.00	12,338		2,495		9,843
-L- LT	48+00.00	51+77.00	144		559	415	
-L- LT	78+00.00	101+50.00	1,141		5,159	4,018	
-L- (REMOVE L_DET2)	84+00.00	103+00.00	1,311		23,216	21,905	
-L-	104+68.00	106+16.00	11		115	104	
-L- RT	114+00.00	139+60.00	21,231		713		20,518
-L- (REMOVE L_DET3)	122+00.00	133+00.00	15,215		8,741		6,474
-L- LT	133+82.00	141+50.00	2,389		815		1,574
-L- LT	151+78.00	172+50.00	38,502		362		38,140
-L- (REMOVE L_DET4)	151+78.00	173+50.00	2,847		3,973	1,126	
-L-	183+25.00	197+00.00	31,760	546	6,688		25,618
-L- LT	199+30.00	209+00.00	17		942	925	
-Y4-	12+72.00	15+28.75	564		6,876	6,312	
-Y9-	10+12.02	13+50.00	420	60	392		88
-Y10B-	14+00.00	19+08.01	27,610		124		27,486
-Y12- RT	18+66.98	24+00.00	104				104
-DR1-	9+80.00	11+11.20	11		508	497	
-DR2-	10+20.00	12+20.00	1,135		864		271
-DR5-	11+20.00	12+45.23	6		84	78	
-DR9-	10+10.00	11+72.31			374	374	
-DR10-	11+10.00	12+15.84			503	503	
-DR15-	10+12.00	13+30.00	2,635		330		2,305
-DR21-	10+00.00	10+94.73	437				437
-DR25-	10+05.00	12+29.68	846		40		806
-DR27-	9+82.00	11+07.42	21		156	135	
SUBTOTAL			**188,408**	**606**	**66,324**	**36,393**	**159,083**
SUMMARY 14							
-Y10B-	11+86.00	14+00.00	1,034		155		879
-Y13-	10+12.47	12+75.00	3,829		1		3,828
SUBTOTAL			**4,863**		**156**		**4,707**
SUMMARY 15							
-L- (REMOVE L_DET6)	179+50.00	197+00.00	1,051		77,196	76,145	
-L-	197+00.00	199+50.00	519		300		219
-DR22-	10+12.00	11+00.00	683				683
SUBTOTAL			**2,253**		**77,496**	**76,145**	**902**
SHEET TOTALS			**1,195,723**	**2,530**	**457,821**	**228,362**	**968,794**
ADDITIONAL UNDERCUT				**9,000**	**10,800**	**10,800**	**9,000**
ROCK WASTE USED TO REPLACE BORROW						**-41,084**	**-41,084**
ADJUST FOR ROCK WASTE					**-8,217**	**-8,217**	
ELIMINATE SHRINKAGE FACTOR ON ROCK					**-9,860**	**-9,860**	
UNSUITABLE MATERIAL			**500**				**500**
EARTH WASTE IN LIEU OF BORROW						**-180,001**	**-180,001**
GRAND TOTAL			**1,196,223**	**11,530**	**450,544**		**757,209**
SAY			**1,197,000**				

-L- PAVEMENT STRUCTURE VOLUME = 26,237 C.Y.

SHOULDER BORROW = 1,400 C.Y.
DRAINAGE DITCH EXCAVATION = 15,980 C.Y.
SHALLOW UNDERCUT = 500 C.Y.
SHALLOW UNDERCUT (CONTINGENCY) = 500 C.Y.

TOTAL UNCLASSIFIED EXCAVATION - ACCEPTABLE = 18,500 C.Y.
BUT NOT TO BE USED IN TOP 3' OF EMBANKMENT OR BACKFILL
-L- STA. 21+75 TO STA. 26+75
-L- STA. 137+25 TO STA. 139+25
-L- STA. 170+75 TO STA. 172+75

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. = C.Y.

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PROJECT REFERENCE NO.	SHEET NO.
R-5861	3B-3

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SHOULDER BERM GUTTER SUMMARY

IN LINEAR FEET

LOCATION	SIDE	BEG. STA.	END STA.	LENGTH
L	LT	12+67.00	17+50.00	480
L	LT	32+50.00	37+74.00	519
L	LT	110+96.50	114+02.00	305
L	LT	119+00.00	122+00.00	300
L/Y8	LT	124+45.00	12+22.00	532
L	LT	130+48.00	132+21.00	172
L	LT	189+00.00	191+28.00	225
L	RT	56+86.00	61+06.00	420
L	RT	68+32.90	73+25.00	488
L	RT	84+45.00	88+09.00	363
L	RT	96+87.00	98+96.50	208
L	RT	100+48.00	101+97.50	149
L	RT	145+45.00	148+22.00	275
L	RT	153+19.00	160+00.00	678
L	RT	179+09.00	181+52.00	240
			TOTAL	5354
			SAY	5360

8" X 12" CONCRETE CURB AND GUTTER

IN LINEAR FEET

LINE	STATION	STATION	SIDE	LENGTH
L	200+43.48	200+88.99	LT	45
L	201+11.04	204+33.99	LT	320
L	204+55.87	206+32.70	LT	177
L	197+58.20	200+89.01	RT	335
L	201+11.01	204+33.86	RT	325
L	204+54.11	204+64.88	RT	12
			TOTAL	1214
			SAY	1,220

2' X 6" CONCRETE CURB AND GUTTER

IN LINEAR FEET

LINE	STATION	STATION	SIDE	LENGTH
L	197+58.20	200+89.01	RT	376
L	201+11.01	204+33.86	RT	364
L	204+54.11	204+64.88	RT	62
L	205+39.28	206+29.79	RT	180
L	206+91.94	209+48.19	RT	330
L	198+00.00	199+37.68	LT	157
L	200+43.48	200+88.99	LT	114
L	201+11.04	204+33.99	LT	373
L	204+55.87	206+32.70	LT	234
L	206+95.13	209+35.38	LT	359
			TOTAL	2547
			SAY	2,550

VINYL COATED CHAIN LINK FENCE SUMMARY

IN LINEAR FEET

STATION TO STATION	LT. OR RT.	A FABRIC L.F.	B END BRACE	C CORNER BRACE	D LINE BRACE	E LINE POSTS	F TERMINAL POSTS
-L- 200+32.95 TO 200+89.78	LT	56	2			4	2
-L- 201+11.27 TO 204+33.00	LT	320	2			26	2
-L- 204+55.00 TO 206+32.00	LT	177	2			14	2
-L- 115+50.00 TO 117+50.00	RT	213	2			17	2
-L- 197+58.12 TO 200+89.23	RT	335	2		1	28	3
-L- 201+11.27 TO 204+33.83	RT	325	2		1	27	3
TOTAL		1426				117	14
SAY		1430				120	14

PAVEMENT BREAKING SUMMARY

IN SQUARE YARDS

LINE	STATION	STATION	LOCATION	LENGTH OR AREA	WIDTH	SQUARE YARDS
L	33+56	39+00	CL	14,113.44		1568.16
L	93+25	105+63	CL	32,054.00		3561.56
L	124+36	130+28	CL	12,442.97		1382.55
L	141+00	150+00	CL	24,417.06		2713.01
L	192+00	197+00	CL	12,730.44		1414.49
Y10A	11+50	13+33	CL	3,210.52		356.72
					TOTAL	10,996.49
					SAY	11,000

EXPRESSWAY GUTTER

IN LINEAR FEET

LINE	STATION	STATION	SIDE	LENGTH
-L-	52+93.00	56+00.00	LT	301
-L-	196+98.00	198+00.00	LT	101
			TOTAL	402
			SAY	405

VALLEY GUTTER

IN LINEAR FEET

LINE	STATION	STATION	SIDE	LENGTH
DR14	11+50.00	12+38.00	LT	86
			TOTAL	86
			SAY	90

PAVEMENT REMOVAL SUMMARY

IN SQUARE YARDS

LINE	STATION	STATION	LOCATION	LENGTH OR AREA	WIDTH	SQUARE YARDS
L	10+25.00	16+75.00	RT	1,048.65		116.52
L	10+25.00	16+75.00	LT	524.83		58.31
L	16+75.00	33+56.00	CL	44,999.89		4999.99
L	38+53.00	49+86.90	LT	30,210.73		3356.75
L	50+00.00	81+34.34	LT	8,253.64		917.07
L	51+71.21	77+51.01	RT	2,507.71		278.63
L	85+00.00	93+25.00	CL	21,430.16		2381.13
L	93+25.00	99+65.00	RT	8,704.89		967.21
L	99+76.00	102+65.00	RT	7,332.06		814.67
L	102+75.00	104+25.00	RT	3,858.14		428.68
L	105+63.00	128+02.00	RT	64,000.67		7111.19
L	106+20.80	106+66.12	LT	614.81		68.31
L	130+10.00	142+70.00	LT	2,904.53		322.73
L	130+10.00	140+74.18	RT	749.95		83.33
L	150+00.00	153+66.51	RT	358.10		39.79
L	151+25.00	153+66.51	LT	205.77		22.86
L	157+54.00	192+00.00	CL	95,816.58		10646.29
L	199+41.83	209+48.19	RT	2,964.92		329.44
L	198+67.31	209+33.04	LT	1,315.34		146.15
Y1	11+43.00	16+64.00	CL	8,420.18		935.58
Y2	10+10.00	13+16.00	CL	8,386.60		931.84
Y7	11+18.00	12+80.00	CL	4,424.15		491.57
Y9	11+01.00	12+47.00	CL	635.00		70.56
Y10A	12+90.00	13+66.98	CL	5,244.44		582.72
Y10B	12+79.00	19+52.00	CL	23,015.94		2557.33
Y11A	10+00.00	15+47.80	CL	7,616.19		846.24
-L_DET1-	10+06.00	40+10.78		69,582.27		7731.36
-L_DET2-	10+00.00	37+82.00		65,501.63		7277.96
-L_DET3-	10+00.00	23+05.73		28,742.32		3193.59
-L_DET4-	10+00.00	42+98.89		80,228.41		8914.27
-L_DET6-	10+00.00	31+13.86		46,895.85		5210.65
-DET_Y1-	10+40.00	13+12.00		6,122.52		680.28
					TOTAL	72,512.98
					SAY	72,520

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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 TL-3		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMOVE & STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	GREU TL-2	GREU TL-3	MEDIAN TL-3	XIII	CAT-1	B-77	AT-1	TES	TYPE III	G	NG				
L	12+14.69	18+82.25	LT	662.50'			17+50	12+00	8'	11'	50	50	1	1			2													
L	31+15.87	38+24.00	LT	700.00'			37+50	32+50	8'	11'	50	50	1	1			2													
L	50+10.57	56+50.02	LT	625.00'			51+00	50+50	10'	13'	50	50	1	1			2													
L	68+48.35	69+72.35	LT	125.00'			69+50	69+00	8'	11'	50	50	1	1			2													
L	70+09.17	71+20.66	LT	112.50'			70+50	70+00	8'	11'	50	50	1	1			2													
DR8/L	13+21.66	79+90.44	LT	818.75'	56.25'		79+50	72+00	8'	11'	50	50	1	1			1					1								
L	80+34.30	83+24.34	LT	293.75'			84+00	81+50	8'	11'	50	50	1	1			2													
L	92+42.64	95+93.88	LT	350.00'			95+50	93+75	8'	11'	50	50	1	1			2													
L/Y8	110+46.30	12+15.65	LT/RT	1881.25'	56.25'		129+00	111+00	8'	11'	50		1				1					1								
L	130+23.97	132+76.42	LT	237.50'	43.75'				8'	11'		50		1			1					1								
L/Y10A	143+09.02	11+70.25	LT/RT	312.50'	187.50'		12+00	144+00	8'	11'	50	50	1	1			2													
Y10A/L	11+70.25	150+27.20	LT/LT	437.50'	125.00'		148+50	12+50	8'	11'	50	50	1	1			2													
L	187+26.08	191+78.36	LT	450.00'			191+00	189+00	8'	11'	50	50	1	1			2													
L	12+05.27	17+62.50	RT	562.50'			13+50	17+50	8'	11'	50	50	1	1			2													
L	32+57.84	36+89.47	RT	437.50'			34+00	36+00	8'	11'	50	50	1	1			2													
Y3A/L	11+06.09	54+05.12	LT/RT	275.00'	12.50'		52+50	54+00	8'	11'	50	50	1	1			2													
L	56+36.00	62+23.83	RT	587.50'			58+00	60+50	8'	11'	50	50	1	1			2													
L	67+82.37	73+75.67	RT	587.50'			68+00	73+00	8'	11'	50	50	1	1			2													
L	83+93.49	88+57.44	RT	462.50'			84+50	84+50	8'	11'	50	50	1	1			2													
L	91+71.63	99+46.79	RT	775.00'			93+50	--	8'	11'	50	50	1	1			2													
L	99+97.80	102+47.75	RT	250.00'			--	--	8'	11'	50	50	1	1			2													
L	102+92.63	104+17.62	RT	125.00'			--	103+50	8'	11'	50	50	1	1			2													
L/Y9	124+65.73	11+30.00	RT/RT	506.25'	62.50'		126+50	129+50	8'	11'	50	50	1	1		1	1													
L	144+94.62	148+72.87	RT	375.00'			145+00	149+00	8'	11'	50	50	1	1			2													
L	152+68.37	160+71.76	RT	800.00'			153+50	159+50	8'	11'	50	50	1	1			2													
L	178+58.45	182+00.69	RT	337.50'			179+00	181+00	8'	11'	50	50	1	1			2													
L	192+12.71	194+47.99	RT	237.50'			194+00	194+00	8'	11'	50	50	1	1			2													
DR13	11+63.00		CL	18.75'																			2							
L	110+15.00		RT	18.75'																			2							
Y11A	14+35.00		CL	18.75'																			2							
L	12+15.50	17+58.68	LT																									539.50		
L	13+02.31	17+73.61	RT																									488.75		
L	31+22.98	35+90.34	RT																									490.08		
L	39+40.58	47+91.69	LT																									826.59		
L	50+67.49	52+60.71	LT																									189.71		
Y3A/L	10+36.21	54+48.64	RT																									325.99		
L	54+92.43	61+87.03	RT																									701.93		
L	71+73.43	79+70.59	LT																									803.57		
L	81+58.55	84+93.45	LT																									339.02		
L	81+90.00	83+29.20	RT																									151.97		
L	83+75.09	85+44.54	RT																									178.38		
L	85+81.34	88+59.12	RT																									277.65		
L	93+17.63	99+45.71	RT																									627.55		
L	100+00.88	102+53.54	RT																									253.20		
L	102+94.09	103+96.17	RT																									102.09		
L	110+38.38	114+26.74	RT																									390.62		
L	119+02.87	121+94.73	RT																									302.28		
L	124+29.89	129+60.41	LT																									551.90		
L	124+62.11	129+54.95	RT																									500.52		
L	144+32.67	148+96.02	LT																									465.63		
L	145+17.11	148+24.67	RT																									305.99		
L	153+08.57	160+88.28	RT																									777.80		
L	168+74.51	171+78.86	RT/LT																									350.65		
L	170+00.44	177+55.12	LT																									784.27		
L	179+49.40	184+62.04	LT																									601.77		
L	180+18.40	182+70.96	LT																									293.12'		
L/Y12	208+84.40	24+60.52	LT/RT																									116.52'		
L	153+09.00	160+84.00	RT																									775.00'		
L	78+00.00	78+99.00	LT																									99.00		
			SHEET TOTALS	13381.25	543.75										0	1	50	0	0	0	0	3	6	0	0	0	0	12611		
	LESS ANCHOR DEDUCTIONS																													
		QUANTITY	LF PER EA	TOTAL LF																										
	GREU TL-2	1	25	25																										
	GREU TL-3	50	50	2500																										
	CAT-1	0	6.25	0																										
	TYPE III	0	18.75	0																										
	TYPE B-77	0	22.875	0																										
	AT-1	3	6.25	0	18.75																									
R-5861 TOTAL (LF)				10,856.25	525.00																									
R-5861 SAY (LF)				10,875.00	525.00	(ADDITIONAL 10 GUARDRAIL POSTS)									0	1	50	0	0	0	0	3	6	0	0	0	0	12611		

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-5861	3B-5

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TEMPORARY GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL WIDTH	FLARE LENGTH		W		ANCHORS								CRASH CUSHION	PORTABLE CONCRETE BARRIER	REMOVE & RESET EXISTING GUARDRAIL	REMOVE & STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GREU TL-3	MEDIA N TL-3	XIII	CAT-1	B-77	AT-1	TES	TYPE III					
L_DET1	10+00.66	19+41.12	LT	937.50'			--	10+41	4'	6'	50	50	1	1			2												
L_DET1	19+71.15	24+64.90	LT	500.00'			24+93	--	4'	6'	50	50	1	1			2												
L_DET1	16+78.71	34+97.64	RT				19+74	28+42																	2	1773			SEE TMP PLANS FOR MORE INFORMATION
L_DET1	29+73.26	36+01.57	LT	625.00'			35+22	30+85	4'	6'	50	50	1	1			2												
L_DET1	36+21.07	39+98.00	LT	375.00'			38+21	39+72	4'	6'		50		1			1												
L_DET2	14+58.18	16+17.91	LT	160.38'			21+70	16+18	4'	6'		50		1			1				1								
L_DET2	21+70.64	23+31.01	LT	160.38'			21+70	16+18	4'	6'	50		1				1				1								
L_DET2	16+17.91	21+69.85	LT																							554			SEE TMP PLANS FOR MORE INFORMATION
												50																	
L_DET3	10+00.00	18+02.66	LT																										
L_DET3	11+18.04	18+00.24	RT	687.50'			12+72	17+34	4'	6'	50	50	1	1			2												
L_DET 4	12+62.98	18+93.37	LT	637.50'			17+93	13+34	4'	6'	50	50	1	1			2												
L_DET 4	29+00.00	39+50.00	RT	1050.00'			30+50	39+00	4'	6'	50	50	1	1			2												
L_DET 4	39+07.46	42+98.89	LT	387.50'			41+80	40+28	4'	6'		50		1			1												
TEMPORARY GUARDRAIL (TRAFFIC CONTROL) : PHASE 1																													
-L-	18+89.19	21+14.73	LT	225.00'			19+39	20+64	2'	4'	50	50	1	1			2												
-L-	21+93.69	26+94.01	LT	500.00'			22+44	26+44	2'	4'	50	50	1	1			2												
-L-	28+03.20	31+28.32	LT	325.00'			30+78	28+53	2'	4'	50	50	1	1			2												
-L-	68+26.27	73+91.00	RT	537.50'	43.75'		68+77	73+91	2'	4'	50		1	1			1			1									
-L-	71+55.00	71+75.00	LT		37.50'		71+75		2'	4'												1							
-L-	169+73.63	173+62.18	LT	387.50'			39+58	42+99	2'	4'	50		1				1												
-L-	153+09.00	160+84.00	RT																							775			
TEMPORARY GUARDRAIL (TRAFFIC CONTROL) : PHASE 2																													
-L-	78+00.00	78+99.00	LT																							99			
			SHEET TOTALS	7495.75	81.25										0	0	24	0	0	1	2	1	0	0	4	3102	875		SEE TMP PLANS FOR MORE INFORMATION
		LESS ANCHOR DEDUCTIONS																											
		QUANTITY	LF PER EA	TOTAL LF																									
	GREU TL-3	24	50	1200																									
	CAT-1	1	6.25		6.25																								
	TYPE III	0	18.75	0																									
	TYPE B-77	2	22.875	45.75																									
	AT-1	1	6.25		6.25																								
R-5861 TOTAL (LF)				6,250.00	68.75																								
R-5861 SAY (LF)				6,262.50	75.00										0	0	24	0	0	1	2		0	0	4	3102	875		

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-5861	3D-1

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
REGIONAL TIER

Note: Invert Elevations indicated are for Information Purposes only and should be verified by the contractor for project construction stakeout.

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

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET		STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	% MINIMUM REQUIRED SLOPE	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP-III	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE, PP, OR PVC
-L_DET1-																				
- Y12- 32+62.38		LT	D1-1			1724.3	1706.7	2.0%			88									
- L- 22+73.49		LT	D1-4	D1-5		1759.9	1759.0	0.4%			20									
- L- 22+73.28	-38	LT	D1-5		1764.1															
- L- 22+73.28		LT	D1-5	D1-6		1759.0	1755.8	0.5%			92									
- L_DET1- 19+77.00	19	RT	D1-6		1758.8															
- L_DET1- 19+77.00		RT	D1-6	D1-7		1755.8	1738.8	1.9%			84									
- L- 26+52.70	-16	LT	D1-8		1777.2															
- L- 26+52.70		LT	D1-8	D1-9		1772.3	1764.0	0.5%			88									
- DR2- 11+04.44		RT	D1-25	D1-26						20										
- L- 26+52.70	-16	LT	D1-9		1777.2															
-L_DET1- 27+92.76	19	RT	D1-10		1773.9															
-L_DET1- 27+92.77		RT	D1-10	D1-11		1772.1	1740.4	1.8%		324										
-L- 33+30.21	-37	LT	D1-11		1753.3															
-L- 33+30.21		LT	D1-11	D1-12		1740.4	1740.3	0.7%						24						
-L_DET1- 31+15.00	10	RT	D1-12		1745.1															
-L_DET1- 31+15.00		RT	D1-12	D1-19		1738.5	1738.4	0.7%						20						
- L_DET1- 31+31.74	10	RT	D1-19		1743.5															
- L_DET1- 31+31.74		RT	D1-19	D1-20		1737.4	1733.7	0.4%								88				
- Y12- 32+62.38	-30	LT	D1-13		1600.4															
- Y12- 32+62.38		LT	D1-13	D1-22		1732.9	1728.8	0.5%			44									
- L_DET1- 34+07.34	10	RT	D1-22		1732.1															
- L_DET1- 34+07.34		RT	D1-22	D1-14		1728.8	1726.3	0.5%			52									
-L_DET1- 36+21.34	18	RT	D1-21		1733.4															
-L_DET1- 36+21.34		RT	D1-21	D1-15		1730.6	1730.1	1.1%		140										
- Y12- 32+62.38	-20	LT	D1-15		1600.4															
- Y12- 32+62.38		LT	D1-15	D1-16		1729.8	1725.8	0.5%			72									
- L- 40+42.04		LT	D1-17	D1-18		1720.0	1719.2	1.2%					12							
-L_DET2																				
- L- 86+00.00	-17	LT	D2-1		1665.9															
- L- 86+00.00		LT	D2-1	D2-2		1663.2	1657.4	0.6%		64										
-L_DET2- 26+35.36	-18	LT	D2-6								36									
- L_DET2- 31+62.00	-32	LT	D2-4		1739.3															
- L_DET2- 31+62.00		LT	D2-4	D2-5		1735.1	1732.8	0.5%					84							
- L_DET2- 32+10	-30	LT	D2-7								64									
-L_DET3																				
- L_DET3- 16+82.82	-22	LT	D3-4		1657.6															
- L_DET3- 16+82.82		LT	D3-4	D3-5		1647.0	1637.1	0.5%		104										
-L_DET3- 18+06.72	-34	LT	D3-6							36										
-L_DET4																				
-L_DET4- 13+36.26	21	RT	D4-4							40										
- L_DET4- 15+09.75	38	RT	D4-1		1670.1															
- L_DET4- 15+09.75		RT	D4-1	D4-2		1656.1	1653.7	1.5%						104						
-L_DET4- 16+13.00	-64	LT	D4-3							68										
- DET_DR19- 11+08.10		RT	D4-15	D4-16		1665.5	1664.9	1.8%					20							
- DET_DR19- 11+08.10		RT	D4-4	D4-11		1719.8	1719.6	0.5%			68									
- L_DET4- 27+53.47	38	RT	D4-10		1725.4															
- L_DET4- 27+53.47		RT	D4-10	D4-11		1722.7	1719.8	0.5%		56										
SHEET TOTALS									0	852	708	0	116	148	0	88				

LINE & STATION	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	PIPE AS NOTED 36"	42"	Trenchless Installation Welded Steel	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.
-L_DET1-																					
- Y12- 32+62.38																					
- L- 22+73.49																					
- L- 22+73.28																					
- L- 22+73.28																					
- L_DET1- 19+77.00																					
- L_DET1- 19+77.00																					
- L- 26+52.70																					
- L- 26+52.70																					
- DR2- 11+04.44																					
- L- 26+52.70																					
-L_DET1- 27+92.76																					
-L_DET1- 27+92.77																					
-L- 33+30.21																					
-L- 33+30.21																					
-L_DET1- 31+15.00																					
-L_DET1- 31+15.00																					
- L_DET1- 31+31.74																					
- L_DET1- 31+31.74																					
- Y12- 32+62.38																					
- Y12- 32+62.38																					
- L_DET1- 34+07.34																					
- L_DET1- 34+07.34																					
-L_DET1- 36+21.34																					
-L_DET1- 36+21.34																					
- Y12- 32+62.38																					
- Y12- 32+62.38																					
- L- 40+42.04																					
-L_DET2																					
- L- 86+00.00																					
- L- 86+00.00																					
-L_DET2- 26+35.36																					
- L_DET2- 31+62.00																					
- L_DET2- 31+62.00																					
- L_DET2- 32+10																					
-L_DET3																					
- L_DET3- 16+82.82																					
- L_DET3- 16+82.82																					
-L_DET3- 18+06.72																					
-L_DET4																					
-L_DET4- 13+36.26																					
- L_DET4- 15+09.75																					
- L_DET4- 15+09.75																					
-L_DET4- 16+13.00																					
- DET_DR19- 11+08.10																					
- DET_DR19- 11+08.10																					
- L_DET4- 27+53.47																					
- L_DET4- 27+53.47																					
SHEET TOTALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LINE & STATION	QUANTITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. "A" + (1.3 X COL."B") PER EACH (0' THRU 5.0')	LIN. FT. A 5.0' THRU 10.0'	LIN. FT. B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO FLAT GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FR. WITH TWO FLAT GRATES STD. 840.29	DRIVEWAY DROP INLET LIN. FT. STD. 840.30	D.I. IN APPROACH SLAB STD. 840.13	J.B. STD. 840.31 OR 840.32
-L_DET1-																					
- Y12- 32+62.38																					
- L- 22+73.49																					
- L- 22+73.28	1	0.1											1				1				
- L- 22+73.28																					
- L_DET1- 19+77.00	1												1				1				
- L_DET1- 19+77.00																					
- L- 26+52.70	1																				
- L- 26+52.70																					
- DR2- 11+04.44																					
- L- 26+52.70	1												1								
-L_DET1- 27+92.76	1												1								
-L_DET1- 27+92.77																					
-L- 33+30.21	1																				1
-L- 33+30.21																					
-L_DET1- 31+15.00	1																				1
-L_DET1- 31+15.00																					
- L_DET1- 31+31.74	1	1.1																			1
- L_DET1- 31+31.74																					
- Y12- 32+62.38	1																				1
- Y12- 32+62.38																					
- L_DET1- 34+07.34	1																				
- L_DET1- 34+07.34																					
-L_DET1- 36+21.34	1	1.1											1				1				
-L_DET1- 36+21.34																					
- Y12- 32+62.38	1												1				1				
- Y12- 32+62.38																					
- L- 40+42.04																					
-L_DET2																					
- L- 86+00.00	1												1				1				
- L- 86+00.00																					
-L_DET2- 26+35.36																					
- L_DET2- 31+62.00	1																				
- L_DET2- 31+62.00																					
- L_DET2- 32+10																					
-L_DET3																					
- L_DET3- 16+82.82	1	5.0	0.7										1				1				
- L_DET3- 16+82.82																					
-L_DET3- 18+06.72																					
-L_DET4																					
-L_DET4- 13+36.26																					
- L_DET4- 15+09.75	1	5.0	4.0																		
- L_DET4- 15+09.75																					
-L_DET4- 16+13.00																					
- DET_DR19- 11+08.10																					
- DET_DR19- 11+08.10																					
- L_DET4- 27+53.47	1												1				1				
- L_DET4- 27+53.47																					
SHEET TOTALS	17	12.3	4.7	0	0	0	0	0	0	0	0	0	9	0	0	0	7	0	0	0	4

LINE & STATION	TBJB STD. 840.34	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME (BICYCLE SAFE) SP DETAIL 2C-6	M.H. FRAME AND COVER STD. 840.54	ADJUST JB	ADJUST CB	ADJUST DI	BERM DRAINAGE OUTLET STD. (4" CONCRETE PAVED DITCH SY)	CONV DI TO JBMH	CONV JB TO OTCB	CONV CB TO JB	OTCB Std 840.04 or 840.05	FLOWABLE FILL (CY)	DRAINAGE PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
-L_DET1-																		
- Y12- 32+62.38																	88	
- L- 22+73.49																0.4465	29	
- L- 22+73.28																		
- L- 22+73.28																	92	
- L_DET1- 19+77.00																		
- L_DET1- 19+77.00																	84	
- L- 26+52.70	1			1														
- L- 26+52.70																	11	
- DR2- 11+04.44																0.3999		
- L- 26+52.70																		
-L_DET1- 27+92.76																	0	
-L_DET1- 27+92.77																	324	
-L- 33+30.21				1														SPECIAL DETAIL 2C-6
-L- 33+30.21																	24	
-L_DET1- 31+15.00																		
-L_DET1- 31+15.00																	20	
- L_DET1- 31+31.74																		
- L_DET1- 31+31.74																	88	
- Y12- 32+62.38				1														
- Y12- 32+62.38																	44	
- L_DET1- 34+07.34	1																	
- L_DET1- 34+07.34																	52	
-L_DET1- 36+21.34																		
-L_DET1- 36+21.34																	140	
- Y12- 32+62.38																		
- Y12- 32+62.38																	72	
- L- 40+42.04																0.656	12	
-L_DET2																		
- L- 86+00.00																		
- L- 86+00.00																	64	
-L_DET2- 26+35.36																	36	
- L_DET2- 31+62.00												1						SPECIAL DETAIL 2C-10
- L_DET2- 31+62.00																	84	
- L_DET2- 32+10																		
-L_DET3																		
- L_DET3- 16+82.82																		
- L_DET3- 16+82.82																	104	
-L_DET3- 18+06.72																	36	
-L_DET4																		
-L_DET4- 13+36.26																	40	
- L_DET4- 15+09.75		1	1															
- L_DET4- 15+09.75																	123	
-L_DET4- 16+13.00																	68	
- DET_DR19- 11+08.10																0.656	105	
- DET_DR19- 11+08.10																	68	
- L_DET4- 27+53.47																		
- L_DET4- 27+53.47																	56	
SHEET TOTALS	2	1	1	3	0	0	0	0	0	0	0	1	0	0 TOTAL	0	2.1584	1864	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I.(N.S.)	(NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
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Note: Invert Elevations indicated are for Information Purposes only and should be verified by the contractor for project construction stakeout.

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

LINE & STATION (SIZE / THICKNESS OR GAUGE)	OFFSET		STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	% MINIMUM REQUIRED SLOPE	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP-III	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE, PP, OR PVC
-L_DET4- (cont.)																				
- L_DET4- 26+98.69	38	RT	D4-11		1729.5															
- L_DET4- 26+98.69		RT	D4-11	D4-12		1719.1	1718.2	0.4%				68								
-L_DET4- 27+95.52	-37	LT	D4-19							44										
-L_DET4- 28+42.87	-20	LT	D4-18							28										
-L_DET4- 29+29.68	-19	RT	D4-5							32										
- DET_DR19- 11+08.10	40	RT	D4-7		1675.0															
- DET_DR19- 11+08.10		RT	D4-6	D4-7		1759.0	1743.6	1.7%			84									
-L_DET4- 38+07.87	-20	LT	D4-17							36										
- L_DET4- 38+63.94	38	RT	D4-13		1764.4															
- L_DET4- 38+63.94		RT	D4-13	D4-14		1762.5	1762.0	0.4%		52										
- DET_DR19- 11+08.10		RT	D4-8	D4-9		1734.4	1729.5	1.7%			48									
-L_DET4- 21+90		LT	D4-20							44										
-L_DET4- 23+70		LT	D4-21							28										
-L_DET6-																				
-L_DET6- 14+22.50	23	RT	D6-7							28										
- L- 191+00.00		RT	D6-5			1627.8	1627.5	0.5%												
-L_DET6- 26+26.91	29	RT	D6-8								56									
- L- 194+99.99		RT	D6-6			1611.0	1610.5	0.4%												
TEMPORARY DRN																				
FOR TCP:																				
-L- 26+55.69	42	RT	-	-							24									
-L- 26+53.03	-45	LT	-	-							56									
-L- 37+11.43	31	RT	-	-							16									
-L- 39+23.90	50	RT	-	-						32										
-L- 62+22.76	38	RT	-	-								16								
-L- 107+09.10	-40	LT	-	-							56									
-L- 110+59.51	-14	LT	-	-							56									
													56							
SHEET TOTALS									0	324	396	84	56	0	0	0	0	0	0	0
TEMPORARY & DETOUR TOTALS									0	1176	1104	84	172	148	0	88				

LINE & STATION	FROM	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	PIPE AS NOTED 36"	42"		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE
																		Trenchless Installation Welded Steel							
- L_DET4- 26+98.69	D4-11																						1	5.0	0.5
- L_DET4- 38+63.94	D4-13																						1		
- L- 191+00.00	D6-5														56										
- L- 194+99.99	D6-6													64											
SHEET TOTALS		0	0	0	0	0	0	0	0	0	0	0	0	64	56	0	0	0	0	0	0	0	2	5	0.4585
TEMPORARY & DETOUR TOTALS		0	0	0	0	0	0	0	0	0	0	0	0	64	56	0	0	0	0	0	0	0	19	17.3	5.1

LINE & STATION	FROM	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO FLAT GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FR. WITH TWO FLAT GRATES. STD. 840.29	DRIVEWAY DROP INLET LIN. FT. STD. 840.30	D.I. IN APPROACH SLAB STD. 840.13	J.B. STD. 840.31 OR 840.32	TBJB STD. 840.34	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME (BICYCLE SAFE) SP DETAIL 2C-6	M.H. FRAME AND COVER STD. 840.54	ADJUST JB	ADJUST CB	ADJUST DI	BERM DRAINAGE OUTLET STD. (4" CONCRETE PAVED DITCH SY)	CONV DI TO JBMH	CONV JB TO OTCB	CONV CB TO JB	OTCB Std 840.04 or 840.05	FLOWABLE FILL (CY)
- L_DET4- 26+98.69	D4-11																			1			1									
- DET_DR19- 11+08.10	D4-7																							1								
- L_DET4- 38+63.94	D4-13											1			1																	
SHEET TOTALS		0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0
TEMPORARY & DETOUR TOTALS		0	0	0	0	0	0	0	0	0	9	1	0	0	8	0	0	0	4	3	1	1	4	1	0	0	0	0	0	0	1	0

LINE & STATION	FROM	DRAINAGE PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
- L_DET4- 26+98.69	D4-11				68	
-L_DET4- 27+95.52	D4-19				44	
-L_DET4- 28+42.87	D4-18				28	
-L_DET4- 29+29.68	D4-5				32	
- DET_DR19- 11+08.10	D4-7					See concrete ditch spreadsheet
- DET_DR19- 11+08.10	D4-6				84	
-L_DET4- 38+07.87	D4-17				36	
- L_DET4- 38+63.94	D4-13				52	
- DET_DR19- 11+08.10	D4-8			0.4465	48	
-L_DET4- 21+90	D4-20				44	
-L_DET4- 23+70	D4-21				28	
-L_DET6- 14+22.50	D6-7				28	
- L- 191+00.00	D6-5				56	
-L_DET6- 26+26.91	D6-8				56	
- L- 194+99.99	D6-6				64	
-L- 26+55.69	-			0.4465		COLLAR & PIPE FOR TCP PH III
-L- 26+53.03	-					DRIVEWAY PIPE FOR JIM CORDELL RD, TCP PH III
-L- 37+11.43	-			0.4465		COLLAR & PIPE FOR TCP PH II
-L- 39+23.90	-					DRIVEWAY PIPE FOR TEMP CONNECTION
-L- 62+22.76	-			0.5526		COLLAR & PIPE FOR TCP PH I
-L- 107+09.10	-					DRIVEWAY PIPE FOR PRICE WEAVER RD
-L- 110+59.51	-			0.4465		COLLAR & PIPE FOR TCP PH II
SHEET TOTALS		0 TOTAL	0	2.3386	668	
TEMPORARY & DETOUR TOTALS		0 TOTAL	0	4.497	2532	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I.(N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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PROJECT REFERENCE NO.	SHEET NO.
R-5861	3D-3

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
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Note: Invert Elevations indicated are for Information Purposes only and should be verified by the contractor for project construction stakeout.

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

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET		STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	% MINIMUM REQUIRED SLOPE	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP-III	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE, PP, OR PVC
SHEET 4																				
- L- 22+00.00		RT	401	402		1775.0	1744.5	2.0%		60							X			X
- L- 22+00.00	32	RT	402		1748.5															
- L- 22+00.00		RT	402	403		1743.7	1729.1	0.5%				384								
- L- 18+20.00	28	RT	403		1734.1															
- L- 18+20.00		RT	403	404		1729.1	1721.5	2.6%				76					X			X
- L- 12+70.00	-19	LT	409		1707.9															
- L- 12+70.00		LT	409	410		1703.8	1686.3	1.8%		60							X			X
- L- 18+00.00	-31	LT	411		1733.1															
- L- 18+00.00		LT	411	412		1730.0	1708.7	2.4%			112						X			X
-L- 21+34	-32	LT	413								40									
- DR2- 11+36.00		LT	414			1739.5	1736.0	0.5%												
SHEET 5																				
- Y1- 16+32.45		LT	501			1757.0	1756.6	0.5%												
- L- 25+50.00	34	RT	503		1755.9															
- L- 25+50.00		RT	503	402		1752.5	1744.5	1.1%		352										
- L- 32+00.00	-37	LT	504		1754.0															
- L- 32+00.00		LT	504	505		1751.2	1743.0	2.2%		56							X			X
- L- 29+00.00	46	RT	506		1757.6															
- L- 29+00.00		RT	506	511		1754.8	1754.0	0.9%												
- L- 29+85.00	34	RT	511		1757.8															
- L- 29+85.00		RT	511	507		1753.7	1752.4	0.7%												
- L- 32+00.00	34	RT	507		1756.7															
- L- 32+00.00		RT	507	508		1752.4	1743.3	3.3%			64						X			X
- L- 33+14.98		RT	509			1741.2	1737.6	0.4%												
-Y1- 12+75	22	RT	510							32										
-Y2- 12+02	20	LT	512							28										
-Y2- 14+40	23	RT	513							40										
-Y2- 12+00	23	LT	514							32										
SHEET TOTALS									0	660	216	460	0	0	0	0				

LINE & STATION	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	PIPE AS NOTED 36" (Trenchless Installation Welded Steel)	42"		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.
- DR2- 11+36.00 (414)					60																
- Y1- 16+32.45 (501)											60										
- L- 29+00.00 (506-511)		88																			
- L- 29+85.00 (511-507)			220																		
- L- 33+14.98 (509)								120												6	
SHEET TOTALS	0	88	220	0	60	0	0	120	0	0	60	0	0	0	0	0	0	0	0	6	0

LINE & STATION	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO FLAT GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FR. WITH TWO FLAT GRATES. STD. 840.29	DRIVEWAY DROP INLET LIN. FT. STD. 840.30	D.I. IN APPROACH SLAB STD. 840.13	J.B. STD. 840.31 OR 840.32	TBJB STD. 840.34	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME (BICYCLE SAFE) SP DETAIL 2C-6	M.H. FRAME AND COVER STD. 840.54	ADJUST JB	ADJUST CB	ADJUST DI
- L- 22+00.00 (402)	1											1					1												
- L- 18+20.00 (403)	1	0.0										1					1												
- L- 12+70.00 (409)	1												1					1											
- L- 18+00.00 (411)	1												1				1												
- L- 25+50.00 (503)	1												1				1												
- L- 32+00.00 (504)	1												1				1												
- L- 29+00.00 (506)	1												1				1												
- L- 29+85.00 (511)	1												1				1												
- L- 32+00.00 (507)	1												1				1												
SHEET TOTALS	9	0.04	0	0	0	0	0	0	0	0	0	2	7	0	0	0	8	1	0	0	0	0	0	0	0	0	0	0

LINE & STATION	BERM DRAINAGE OUTLET STD. (4" CONCRETE PAVED DITCH SY)	CONV DI TO JBMH	CONV JB TO OTCB	15" PARALLEL PIPE END SECTION 310.02	18" PARALLEL PIPE END SECTION 310.03	24" PARALLEL PIPE END SECTION 310.04	OTCB Std 840.04 or 840.05	SPECIAL DETAIL DROP INLET	SPECIAL DETAIL TRAFFIC BEARING DROP INLET	SPECIAL DETAIL CB	SPECIAL DETAIL JB	FLOWABLE FILL (CY)	DRAINAGE PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
- L- 22+00.00 (401-402)	4.4												2 @ 15				See concrete ditch spreadsheet
- L- 22+00.00 (402)												2.8					
- L- 18+20.00 (403-404)													2 @ 24			28	
- L- 12+70.00 (409-410)													2 @ 15				
- L- 18+00.00 (411-412)													2 @ 18				
-L- 21+34 (413)					1												
- DR2- 11+36.00 (414)																50	
- Y1- 16+32.45 (501)					1											88	
- L- 32+00.00 (504-505)													2 @ 15				
- L- 29+85.00 (511-507)																43	
- L- 32+00.00 (507-508)													2 @ 18				
- L- 33+14.98 (509)												24					BURIED 0.8'
-Y1- 12+75 (510)				1													
													6 @ 15"				
													4 @ 18"				
													2 @ 24"				
SHEET TOTALS	4.4	0	0	1	2	0	0	0	0	0	0	27	12 TOTAL	0	0	209	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I.(N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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PROJECT REFERENCE NO.	SHEET NO.
R-5861	3D-4

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
REGIONAL TIER

Note: Invert Elevations indicated are for Information Purposes only and should be verified by the contractor for project construction stakeout.

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

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET		STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	% MINIMUM REQUIRED SLOPE	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP-III	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE, PP, OR PVC
SHEET 6																				
- L- 36+36.00		RT	601	602		1739.0	1735.9	0.7%												
- L- 37+72.00	-19	LT	603		1740.6															
- L- 37+72.00		LT	603	602		1736.6	1736.2	0.5%												
- L- 36+37.00	-19	LT	602		1745.5															
- L- 36+37.00		LT	602	604		1735.9	1728.8	3.4%			36						X			X
- L- 39+00.00		RT	605	607		1733.1	1723.6	0.5%												
- L- 40+60.00		RT	606	607		1728.1	1721.8	1.7%						16			X			X
- L- 40+60.00	28	RT	607		1726.3															
- L- 40+60.00		RT	607	608		1721.8	1720.0	0.5%												
- L- 47+00.00		RT	610	609		1768.0	1694.9	1.6%		156							X			X
- L- 47+50.00	40	RT	609		1697.7															
- L- 47+50.00		RT	609	701		1694.7	1679.2	0.7%			260									
-L- 48+44	-31	LT	612							32										
SHEET 7																				
- L- 50+00.00	44	RT	701		1683.5															
- L- 50+00.00		RT	701	704		1678.7	1674.7	0.5%				92								
-L- 49+93	-44	LT	719							60										
- L- 55+80.00	-24	LT	712		1655.4															
- L- 55+80.00		LT	712	713		1651.4	1651.0	0.6%												
- L- 56+00.00	-24	LT	713		1655.1															
- L- 56+00.00		LT	713	714		1651.0	1648.2	0.6%												
-L- 56+57.37	-51	LT	720							60										
- L- 58+39.72	-48	LT	728		1649.8															
- L- 58+39.72		LT	728	715		1641.0	1640.0	0.4%												
- L- 58+74.00	-35	LT	715		1646.2															
- L- 58+74.00		LT	715	716		1640.0	1638.5	0.5%												
- L- 61+00.00	19	RT	726		1645.8															
- L- 61+00.00		RT	726	727		1641.8	1640.0	1.8%		16							X			X
- DR7- 10+50.00	-11	LT	721		1669.1															
- DR7- 10+50.00		LT	721	722		1666.3	1664.2	0.9%												
- DR7- 10+50.00	11	RT	722		1669.1															
- DR7- 10+50.00		RT	722	723		1664.2	1661.5	1.0%												
- Y3- 12+50.00		RT	724	723		1664.4	1661.5	0.5%												
- Y3- 12+15.00	26	RT	723		1664.3															
- Y3- 12+15.00		RT	723	725		1661.3	1649.2	0.8%												
- L- 61+75.95		LT	718	717		1645.7	1639.8	1.8%			20						X			X
- L- 61+75.00	-28	LT	717		1642.8															
- L- 61+75.00		LT	717	801		1639.8	1639.0	0.8%												
SHEET TOTALS									0	324	316	92	0	16	0	0				

LINE & STATION	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	PIPE AS NOTED 36" (Trenchless Installation Welded Steel)	42"		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	LIN. FT. A 5.0' THRU 10.0'	LIN. FT. B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN
SHEET 6																														
- L- 36+36.00			60																											
- L- 37+72.00																						1								
- L- 37+72.00		136																												
- L- 36+37.00																						1	4.6							
- L- 36+37.00																														
- L- 39+00.00										164																				
- L- 40+60.00																					2.8									
- L- 40+60.00																						1								
- L- 40+60.00						88																								
- L- 47+00.00																														
- L- 47+50.00																						1								
- L- 47+50.00																														
-L- 48+44																														
SHEET 7																														
- L- 50+00.00																						1								
- L- 50+00.00																														
-L- 49+93																														
- L- 55+80.00																						1								
- L- 55+80.00		24																												
- L- 56+00.00																						1								
- L- 56+00.00		104																												
-L- 56+57.37																														
- L- 58+39.72																						1	3.8							
- L- 58+39.72							40																							
- L- 58+74.00																						1	1.3							
- L- 58+74.00																		80												
- L- 61+00.00																						1								
- L- 61+00.00																														
- DR7- 10+50.00																						1								
- DR7- 10+50.00		24																												
- DR7- 10+50.00																						1								
- DR7- 10+50.00		28																												
- Y3- 12+50.00		36																												
- Y3- 12+15.00																						1								
- Y3- 12+15.00			144																											
- L- 61+75.95																														
- L- 61+75.00																						1								
- L- 61+75.00			68																											
SHEET TOTALS	0	352	272	0	0	88	40	0	0	164	0	0	0	0	0	0	0	80	0	0	2.8	14	9.7	0.00	0	0	0	0	0	0

*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B')

LINE & STATION	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO FLAT GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FR. WITH TWO FLAT GRATES. STD. 840.29	DRIVEWAY DROP INLET LIN. FT. STD. 840.30	D.I. IN APPROACH SLAB STD. 840.13	J.B. STD. 840.31 OR 840.32	TBJB STD. 840.34	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME (BICYCLE SAFE) SP DETAIL 2C-6	M.H. FRAME AND COVER STD. 840.54	ADJUST JB	ADJUST CB	ADJUST DI	BERM DRAINAGE OUTLET STD. (4" CONCRETE PAVED DITCH SY)	CONV DI TO JBMH	CONV JB TO OTCB	15" PARALLEL PIPE END SECTION 310.02	18" PARALLEL PIPE END SECTION 310.03	24"PARALLEL PIPE END SECTION 310.04	OTCB Std 840.04 or 840.05	SPECIAL DETAIL DROP INLET	SPECIAL DETAIL TRAFFIC BEARING DROP INLET	SPECIAL DETAIL CB	SPECIAL DETAIL JB	FLOWABLE FILL (CY)	DRAINAGE PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
SHEET 6																																				
- L- 36+36.00																															3.5					
- L- 37+72.00				1					1																											
- L- 37+72.00																															2.6					
- L- 36+37.00				1					1																											
- L- 36+37.00																																2 @ 18				
- L- 39+00.00																							1												37	
- L- 40+60.00																																2 @ 36				SPECIAL DETAIL 2C-7
- L- 40+60.00				1				1																												
- L- 40+60.00																																				
- L- 47+00.00																				4.4												2 @ 15				See concrete ditch spreadsheet
- L- 47+50.00				1				1																												
- L- 47+50.00																																				
-L- 48+44																							1												62	
SHEET 7																																				
- L- 50+00.00			1					1																												
- L- 50+00.00																																				
-L- 49+93																																				
- L- 55+80.00				1					1																											
- L- 55+80.00																																				
- L- 56+00.00				1					1																											
- L- 56+00.00																																			32	
-L- 56+57.37																							1													
- L- 58+39.72												1				1																				
- L- 58+39.72																																				
- L- 58+74.00			1					1																												
- L- 58+74.00																																				
- L- 61+00.00				1					1																											
- L- 61+00.00																																2 @ 15				
- DR7- 10+50.00				1				1																												
- DR7- 10+50.00																																				
- DR7- 10+50.00				1				1																												
- DR7- 10+50.00																																				
- Y3- 12+50.00																																				
- Y3- 12+15.00				1				1																												
- Y3- 12+15.00																																				
- L- 61+75.95																																2 @ 18				
- L- 61+75.00				1				1																												
- L- 61+75.00																																			87	
																																4 @ 15"				
																																4 @ 18"				
																																2 @ 36"				
SHEET TOTALS	0	0	2	11	0	0	0	8	5	0	0	1	0	0	0	1	0	0	0	4.4	0	0	3	0	0	0	0	0	0	0	6.1	10 TOTAL	0	0	218	

ABBREVIATIONS

- C.B. CATCH BASIN
- N.D.I. NARROW DROP INLET
- D.I. DROP INLET
- G.D.I. GRATED DROP INLET
- G.D.I.(N.S.) (NARROW SLOT)
- J.B. JUNCTION BOX
- M.H. MANHOLE
- T.B.D.I. TRAFFIC BEARING DROP INLET
- T.B.J.B. TRAFFIC BEARING JUNCTION BOX

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

LINE & STATION (SIZE / THICKNESS OR GAUGE)	OFFSET		STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	% MINIMUM REQUIRED SLOPE	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP-III	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE, PP, OR PVC
SHEET 8																				
- L- 62+40.00	-28	LT	801		1641.9															
- L- 62+40.00		LT	801	802		1638.8	1638.4	0.6%												
-L- 66+80.35	-29	LT	810									28								
- L- 67+75.00		LT	803			1631.5	1626.8	0.6%												
-L- 67+46.05	33	RT	804							92										
- DR8- 13+38.63		RT	805			1623.5	1620.4	0.4%												
-DR8- 11+90.98	16	RT	806							20										
-L- 74+05.34	51	RT	809									104								
- L- 73+11.64	19	RT	807		1629.8															
- L- 73+11.64		RT	807	808		1625.7	1619.0	1.8%		32							X			X
-L- 69+82.47	39	LT	812							36										
SHEET 9																				
- L- 85+50.00		LT	910	909		1675.0	1654.3	1.6%				64					X			X
- L- 85+00.00	-34	LT	909		1659.1															
- L- 85+00.00		LT	909	906		1654.3	1641.5	0.5%												
- Y4- 14+08.66		LT	911	912		1642.4	1642.0	0.5%												
- Y4- 14+10.00	30	RT	912		1651.2															
- Y4- 14+10.00		RT	912	906		1642.0	1641.5	0.5%												
- L- 83+30.00	-35	LT	906		1649.3															
- L- 83+30.00		LT	906	907		1641.5	1640.6	0.5%												
- L- 82+00.00	-32	LT	907		1645.5															
- L- 82+00.00		LT	907	908		1640.6	1629.0	1.8%					80				X			X
- L- 84+48.00	25	RT	913		1656.8															
- L- 84+48.00		RT	913	914		1652.8	1643.2	1.8%		40							X			X
-Y4- 12+83.54	-10	LT	916								104									
SHEET 10																				
- L- 93+80.00		LT	1001			1700.6	1694.0	0.4%												
- L- 96+44.52		LT	1010			1718.0	1712.0	0.4%												
- L- 96+90.00	19	RT	1012		1726.2															
- L- 96+90.00		RT	1012	1003		1722.2	1702.8	1.8%		96							X			X
- L- 96+00.00	38	RT	1003		1706.5															
- L- 96+00.00		RT	1003	1004		1696.4	1696.3	0.4%												
SHEET TOTALS									0	316	104	196	80	0	0	0				

LINE & STATION	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	PIPE AS NOTED 36" (Trenchless Installation Welded Steel)	42"		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') PER EACH (0' THRU 5.0')	LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN
SHEET 8																														
- L- 62+40.00																						1								
- L- 62+40.00				64																										
-L- 66+80.35																														
- L- 67+75.00				80																										
-L- 67+46.05																														
- DR8- 13+38.63				88																										
-DR8- 11+90.98																														
-L- 74+05.34																														
- L- 73+11.64																						1								
- L- 73+11.64																														
-L- 69+82.47																														
SHEET 9																														
- L- 85+50.00																														
- L- 85+00.00																						1								
- L- 85+00.00				176																										
- Y4- 14+08.66				92																										
- Y4- 14+10.00																						1	4.2							
- Y4- 14+10.00				104																										
- L- 83+30.00																						1	2.8							
- L- 83+30.00					136																									
- L- 82+00.00																						1								
- L- 82+00.00																					10.5									
- L- 84+48.00																						1								
- L- 84+48.00																														
-Y4- 12+83.54																														
SHEET 10																														
- L- 93+80.00														76						3.4										
- L- 96+44.52				64																										
- L- 96+90.00																						1								
- L- 96+90.00																														
- L- 96+00.00																						1	5.0	0.1						
- L- 96+00.00		20																												
SHEET TOTALS	0	20	0	668	136	0	0	0	0	0	0	0	0	76	0	0	0	0	0	3.4	10.5	9	12.0	0.1	0	0	0	0	0	0

LINE & STATION	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO FLAT GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FR. WITH TWO FLAT GRATES. STD. 840.29	DRIVEWAY DROP INLET LIN. FT. STD. 840.30	D.I. IN APPROACH SLAB STD. 840.13	J.B. STD. 840.31 OR 840.32	TBJB STD. 840.34	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME (BICYCLE SAFE) SP DETAIL 2C-6	M.H. FRAME AND COVER STD. 840.54	ADJUST JB	ADJUST CB	ADJUST DI	BERM DRAINAGE OUTLET STD. (4" CONCRETE PAVED DITCH SY)	CONV DI TO JBMH	CONV JB TO OTCB	15" PARALLEL PIPE END SECTION 310.02	18" PARALLEL PIPE END SECTION 310.03	24"PARALLEL PIPE END SECTION 310.04	OTCB Std 840.04 or 840.05	SPECIAL DETAIL DROP INLET	SPECIAL DETAIL TRAFFIC BEARING DROP INLET	SPECIAL DETAIL CB	SPECIAL DETAIL JB	FLOWABLE FILL (CY)	DRAINAGE PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
SHEET 8																																				
- L- 62+40.00					1			1																												
- L- 62+40.00																															4.8					
-L- 66+80.35																									1											
- L- 67+75.00																															31					
-L- 67+46.05																							1													
- DR8- 13+38.63																									1											
-DR8- 11+90.98																																				
-L- 74+05.34																																				
- L- 73+11.64				1					1																											
- L- 73+11.64																															4.3	2 @ 15			62	
-L- 69+82.47																							1													
SHEET 9																																				
- L- 85+50.00																				23												2 @ 24				See concrete ditch spreadsheet
- L- 85+00.00														1	1																					
- L- 85+00.00																																				
- Y4- 14+08.66																																				
- Y4- 14+10.00												1				1																				
- Y4- 14+10.00																																				
- L- 83+30.00												1				1																				
- L- 83+30.00																																				
- L- 82+00.00												1				1																				
- L- 82+00.00																															3	2 @ 30				
- L- 84+48.00				1					1																											
- L- 84+48.00																															2.6	2 @ 15				
-Y4- 12+83.54																																			30	
SHEET 10																																				
- L- 93+80.00																															3.6				34	
- L- 96+44.52																									1										28	
- L- 96+90.00				1					1																											
- L- 96+90.00																															3.7	2 @ 15				
- L- 96+00.00												1				1																				
- L- 96+00.00																																				
																																6 @ 15"				
																																2 @ 24"				
																																2 @ 30"				
SHEET TOTALS	0	0	0	3	1	0	0	1	3	0	0	4	0	1	1	4	0	0	0	23	0	0	2	0	3	0	0	0	0	0	53	10 TOTAL	0	0	154	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I.(N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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bespinosa

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
REGIONAL TIER

Note: Invert Elevations indicated are for Information Purposes only and should be verified by the contractor for project construction stakeout.

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

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET		STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	% MINIMUM REQUIRED SLOPE	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP-III	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE, PP, OR PVC
SHEET 10 (cont.)																				
- L- 88+50.00	35	RT	1013		1677.0															
- L- 88+50.00		RT	1013	917		1674.3	1670.9	0.5%		52										
- L- 99+00.00	-31	LT	1006		1735.7															
- L- 99+00.00		LT	1006	1007		1733.0	1728.2	0.5%		56										
- DR11- 10+72.19		LT	1011			1724.9	1713.1	3.6%					120				X			X
- L- 100+55.00	23	RT	1008		1743.0															
- L- 100+55.00		RT	1008	1009		1730.4	1725.2	2.5%					40				X			X
-L- 89+00	33	RT	1014							32										
SHEET 11																				
- L- 102+50.00	-34	LT	1120		1746.3															
- L- 102+50.00		LT	1120	1121		1743.6	1732.3	0.7%												
- L- 101+25.00	-56	LT	1121		1735.3															
- L- 101+25.00		LT	1121	1008		1731.0	1730.4	0.6%												
- DR12- 10+57.22		LT	1122	1199		1735.7	1735.3	0.4%												
-L- 104+49.13	52	RT	1123							72										
-Y7- 11+56.93	-25	LT	1112							52										
-Y7- 12+42.72	21	RT	1113							32										
- Y6- 15+65.00		LT	1107	1108		1782.2	1755.1	1.7%				60					X			X
- Y6- 16+00.00	-25	LT	1108		1758.6															
- Y6- 16+00.00		LT	1108	1115		1755.1	1754.8	0.5%												
- DR29- 10+35.00	18	RT	1115		1758.3															
- DR29- 10+35.00		RT	1115	1106		1754.8	1740.2	2.0%				96					X			X
- L- 108+50.00	-34	LT	1111		1747.1															
- L- 108+50.00		LT	1111	1106		1744.4	1740.9	0.5%												
- L- 109+50.00	-34	LT	1106		1744.9															
- L- 109+50.00		LT	1106	1109		1740.2	1737.4	0.6%												
- L- 110+50.00	-38	LT	1109		1742.1															
- L- 110+50.00		LT	1109	1110		1737.4	1734.6	0.6%												
- L- 111+50.00	-25	LT	1110		1740.6															
- L- 111+50.00		LT	1110	1217		1734.6	1722.8	0.6%												
- L- 108+50.00	34	RT	1101		1747.1															
- L- 108+50.00		RT	1101	1103		1744.4	1738.5	0.5%												
- L- 109+77.72	65	RT	1102		1750.1															
- L- 109+77.72		RT	1102	1103		1745.7	1738.3	2.9%			72						X			X
- L- 110+40.00	34	RT	1103		1742.5															
- L- 110+40.00		RT	1103	1104		1737.8	1725.7	0.5%												
- L- 112+96.98	79	RT	1105		1749.2															
- L- 112+96.98		RT	1105	1104		1744.1	1726.2	1.9%			60						X			X
- L- 113+80.00	34	RT	1127		1728.1															
- L- 113+80.00		RT	1127	1217		1723.3	1722.8	0.8%												
- L- 113+35.00	34	RT	1104		1730.4															
- L- 113+35.00		RT	1104	1127		1725.7	1723.3	0.7%												
- Y6- 12+35.00		LT	1126			1804.0	1803.7	0.5%												
- DR14- 11+50.00	-6	LT	1128		1750.1															
- DR14- 11+50.00		LT	1128	1129		1747.4	1745.0	0.5%		28										
-Y7- 11+90.05	22	RT	1114							48										
SHEET TOTALS									0	372	132	156	160	0	0	0				

LINE & STATION	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	PIPE AS NOTED 36" (Trenchless Installation Welded Steel)	42"		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN
SHEET 10 (cont.)																														
- L- 88+50.00																						1								
- L- 88+50.00																														
- L- 99+00.00																						1								
- L- 99+00.00																														
- DR11- 10+72.19																														
- L- 100+55.00																						1	5.0	2.6						
- L- 100+55.00																														
-L- 89+00																														
SHEET 11																														
- L- 102+50.00																						1								
- L- 102+50.00		128																												
- L- 101+25.00																						1								
- L- 101+25.00					108																									
- DR12- 10+57.22				40																										
-L- 104+49.13																														
-Y7- 11+56.93																														
-Y7- 12+42.72																														
- Y6- 15+65.00																														
- Y6- 16+00.00																						1								
- Y6- 16+00.00				36																										
- DR29- 10+35.00																						1								
- DR29- 10+35.00																														
- L- 108+50.00																						1								
- L- 108+50.00		100																												
- L- 109+50.00																						1								
- L- 109+50.00				104																										
- L- 110+50.00																						1								
- L- 110+50.00				104																										
- L- 111+50.00																						1	1.1							
- L- 111+50.00				252																										
- L- 108+50.00																						1								
- L- 108+50.00		192																												
- L- 109+77.72																														
- L- 109+77.72																														
- L- 110+40.00																						1								
- L- 110+40.00				296																										
- L- 112+96.98																														
- L- 112+96.98																														
- L- 113+80.00																						1								
- L- 113+80.00				60																										
- L- 113+35.00																						1								
- L- 113+35.00				44																										
- Y6- 12+35.00											48																			
- DR14- 11+50.00																						1								
- DR14- 11+50.00																														
-Y7- 11+90.05																														
SHEET TOTALS	0	420	0	936	108	0	0	0	0	0	48	0	0	0	0	0	0	0	0	0	0	16	6.1	2.6	0	0	0	0	0	0

LINE & STATION	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO FLAT GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FR. WITH TWO FLAT GRATES. STD. 840.29	DRIVEWAY DROP INLET LIN. FT. STD. 840.30	D.I. IN APPROACH SLAB STD. 840.13	J.B. STD. 840.31 OR 840.32	TBJB STD. 840.34	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME (BICYCLE SAFE) SP DETAIL 2C-6	M.H. FRAME AND COVER STD. 840.54	ADJUST JB	ADJUST CB	ADJUST DI	BERM DRAINAGE OUTLET STD. (4" CONCRETE PAVED DITCH SY)	CONV DI TO JBMH	CONV JB TO OTCB	15" PARALLEL PIPE END SECTION 310.02	18" PARALLEL PIPE END SECTION 310.03	24"PARALLEL PIPE END SECTION 310.04	OTCB Std 840.04 or 840.05	SPECIAL DETAIL DROP INLET	SPECIAL DETAIL TRAFFIC BEARING DROP INLET	SPECIAL DETAIL CB	SPECIAL DETAIL JB	FLOWABLE FILL (CY)	DRAINAGE PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
SHEET 10 (cont.)																																				
- L- 88+50.00				1				1																												
- L- 88+50.00																															2.7					
- L- 99+00.00				1				1																												
- L- 99+00.00																																				
- DR11- 10+72.19																																2 @ 30			61	POND OVERFLOW PIPE
- L- 100+55.00									1																		1									SPECIAL DETAIL 2C-4
- L- 100+55.00																															6.3	2 @ 30				
-L- 89+00																							1													
SHEET 11																																				
- L- 102+50.00				1				1																												
- L- 102+50.00																																			57	
- L- 101+25.00																										1										
- L- 101+25.00																																				
- DR12- 10+57.22																																2 @ 24			41	
-L- 104+49.13																							1								2.8					
-Y7- 11+56.93																																				
-Y7- 12+42.72																																				
- Y6- 15+65.00																				23												2 @ 24				See concrete ditch spreadsheet
- Y6- 16+00.00			1					1																												
- Y6- 16+00.00																																				
- DR29- 10+35.00			1					1																												
- DR29- 10+35.00																																2 @ 24				
- L- 108+50.00				1				1																												
- L- 108+50.00																																			32	
- L- 109+50.00			1					1																												
- L- 109+50.00																																				
- L- 110+50.00			1					1																												
- L- 110+50.00																																				
- L- 111+50.00			1						1																											
- L- 111+50.00																																				
- L- 108+50.00				1				1																												
- L- 108+50.00																																			129	
- L- 109+77.72																			1																	
- L- 109+77.72																															7.4	2 @ 18			10	
- L- 110+40.00			1					1																												
- L- 110+40.00																																			151	
- L- 112+96.98																		1																		
- L- 112+96.98																																2 @ 18				
- L- 113+80.00			1					1																												
- L- 113+80.00																																				
- L- 113+35.00			1					1																												
- L- 113+35.00																																				
- Y6- 12+35.00																																			76	
- DR14- 11+50.00														1	1																					
- DR14- 11+50.00																																				
-Y7- 11+90.05																																2 @ 18"				
																																6 @ 24"				
																																4 @ 30"				
SHEET TOTALS	0	0	8	5	0	0	0	12	2	0	0	0	0	1	1	0	0	1	1	23	0	0	2	0	0	1	1	0	0	0	19	14 TOTAL	0	0	557	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I.(N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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PROJECT REFERENCE NO.	SHEET NO.
R-5861	3D-7

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DIVISION OF HIGHWAYS
REGIONAL TIER

Note: Invert Elevations indicated are for Information Purposes only and should be verified by the contractor for project construction stakeout.

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

LINE & STATION (SIZE / THICKNESS OR GAUGE)	OFFSET		STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	% MINIMUM REQUIRED SLOPE	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP-III	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE, PP, OR PVC
SHEET 11																				
- DR12- 10+60.00	12	RT	1199		1742.7															
- DR12- 10+60.00	12	RT	1199	1122A		1735.2	1719.4	0.4%				72					X			X
SHEET 12																				
- L- 113+98.50	-25	LT	1217		1729.1															
- L- 113+98.50		LT	1217	1218		1722.3	1709.6	2.9%					44				X			X
- L- 119+90.00		RT	1206	1219		1692.5	1682.2	2.2%				72					X			X
- L- 117+50.00	33	RT	1211		1706.3															
- L- 117+50.00		RT	1211	1219		1703.5	1688.0	0.5%												
- L- 119+89.00	28	RT	1219		1692.1															
- L- 119+89.00		RT	1219	1207		1682.2	1679.9	0.8%												
- L- 118+00.00	-35	LT	1208		1703.2															
- L- 118+00.00		LT	1208	1207		1700.4	1680.7	1.9%		212							X			X
- L- 120+10.00	-35	LT	1207		1684.3															
- L- 120+10.00		LT	1207	1209		1672.3	1662.0	3.3%				28					X			X
- L- 122+00.00	-19	LT	1201		1681.6															
- L- 122+00.00		LT	1201	1202		1677.6	1668.4	1.8%		36							X			X
- L- 123+50.00		RT	1223	1222		1673.0	1668.7	0.6%												
- L- 124+00.00	28	RT	1222		1671.4															
- L- 124+00.00		RT	1222	1203		1668.7	1666.7	0.6%												
- L- 124+00.00	-31	LT	1203		1669.4															
- L- 124+00.00		LT	1203	1204		1666.7	1649.0	2.6%		108							X			X
SHEET 13																				
- L- 128+00.00	-19	LT	1314		1663.3															
- L- 128+00.00		LT	1314	1307		1659.7	1659.5	0.5%												
- L- 134+10.55	32	RT	1302		1672.5															
- L- 134+10.55		RT	1302	1303		1667.8	1667.5	0.5%												
- L- 136+00.00	-28	LT	1304		1680.4															
- L- 136+00.00		LT	1304	1303		1677.6	1669.3	0.5%												
- L- 134+10.00	-23	LT	1303		1674.9															
- L- 134+10.00		LT	1303	1305		1667.5	1662.5	0.5%												
- L- 131+80.00	-19	LT	1305		1668.3															
- L- 131+80.00		LT	1305	1306		1662.5	1659.3	0.5%												
- L- 130+50.00	28	RT	1309		1664.8															
- L- 130+50.00		RT	1309	1306		1662.1	1661.1	0.5%												
- L- 130+50.00	-19	LT	1306		1665.1															
- L- 130+50.00		LT	1306	1307		1659.3	1657.4	0.5%												
- L- 128+42.20	-19	LT	1307		1663.2															
- L- 128+42.20		LT	1307	1308		1657.4	1635.3	2.2%						64			X			X
SHEET TOTALS									0	356	0	172	44	64	0	0				

LINE & STATION	FROM	TO	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"
SHEET 11																		
- DR12- 10+60.00	1199																	
- DR12- 10+60.00	1199	1122A																
SHEET 12																		
- L- 113+98.50	1217																	
- L- 113+98.50	1217	1218																
- L- 119+90.00	1206	1219																
- L- 117+50.00	1211																	
- L- 117+50.00	1211	1219			240													
- L- 119+89.00	1219																	
- L- 119+89.00	1219	1207				68												
- L- 118+00.00	1208																	
- L- 118+00.00	1208	1207																
- L- 120+10.00	1207																	
- L- 120+10.00	1207	1209																
- L- 122+00.00	1201																	
- L- 122+00.00	1201	1202																
- L- 123+50.00	1223	1222										52						
- L- 124+00.00	1222																	
- L- 124+00.00	1222	1203		60														
- L- 124+00.00	1203																	
- L- 124+00.00	1203	1204																
SHEET 13																		
- L- 128+00.00	1314																	
- L- 128+00.00	1314	1307		44														
- L- 134+10.55	1302																	
- L- 134+10.55	1302	1303						56										
- L- 136+00.00	1304																	
- L- 136+00.00	1304	1303										192						
- L- 134+10.00	1303																	
- L- 134+10.00	1303	1305														232		
- L- 131+80.00	1305																	
- L- 131+80.00	1305	1306														132		
- L- 130+50.00	1309																	
- L- 130+50.00	1309	1306		48														
- L- 130+50.00	1306																	
- L- 130+50.00	1306	1307														204		
- L- 128+42.20	1307																	
- L- 128+42.20	1307	1308																
SHEET TOTALS			0	152	240	68	0	56	0	0	0	244	0	0	0	568	0	0

LINE & STATION	FROM	TO	PIPE AS NOTED (Trenchless Installation Welded Steel) 36"	42"		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN
SHEET 11																
- DR12- 10+60.00	1199															
- DR12- 10+60.00	1199	1122A						1	2.5							
SHEET 12																
- L- 113+98.50	1217							1	1.8							
- L- 113+98.50	1217	1218														
- L- 119+90.00	1206	1219														
- L- 117+50.00	1211							1								
- L- 117+50.00	1211	1219														
- L- 119+89.00	1219							1	4.9							
- L- 119+89.00	1219	1207														
- L- 118+00.00	1208							1								
- L- 118+00.00	1208	1207														
- L- 120+10.00	1207							1	5.0	2.0						
- L- 120+10.00	1207	1209														
- L- 122+00.00	1201							1								
- L- 122+00.00	1201	1202														
- L- 123+50.00	1223	1222														
- L- 124+00.00	1222							1								
- L- 124+00.00	1222	1203														
- L- 124+00.00	1203							1								
- L- 124+00.00	1203	1204														
SHEET 13																
- L- 128+00.00	1314							1								
- L- 128+00.00	1314	1307														
- L- 134+10.55	1302							1								
- L- 134+10.55	1302	1303														
- L- 136+00.00	1304							1								
- L- 136+00.00	1304	1303														
- L- 134+10.00	1303							1	2.4							
- L- 134+10.00	1303	1305														
- L- 131+80.00	1305							1	0.8							
- L- 131+80.00	1305	1306														
- L- 130+50.00	1309							1								
- L- 130+50.00	1309	1306														
- L- 130+50.00	1306							1	0.8							
- L- 130+50.00	1306	1307														
- L- 128+42.20	1307							1	0.8							
- L- 128+42.20	1307	1308														
SHEET TOTALS			0	0	0	0	0	17	19.0	2.0	0	0	0	0	0	0

LINE & STATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO FLAT GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FR. WITH TWO FLAT GRATES. STD. 840.29	DRIVEWAY DROP INLET LIN. FT. STD. 840.30	D.I. IN APPROACH SLAB STD. 840.13	J.B. STD. 840.31 OR 840.32	TBJB STD. 840.34	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME (BICYCLE SAFE) SP DETAIL 2C-6	M.H. FRAME AND COVER STD. 840.54
SHEET 11																		
- DR12- 10+60.00	1199													1				1
- DR12- 10+60.00	1199	1122A																
SHEET 12																		
- L- 113+98.50	1217				1						1							
- L- 113+98.50	1217	1218																
- L- 119+90.00	1206	1219																
- L- 117+50.00	1211					1				1								
- L- 117+50.00	1211	1219																
- L- 119+89.00	1219					1				1								
- L- 119+89.00	1219	1207																
- L- 118+00.00	1208					1				1								
- L- 118+00.00	1208	1207																
- L- 120+10.00	1207													1				1
- L- 120+10.00	1207	1209																
- L- 122+00.00	1201					1					1							
- L- 122+00.00	1201	1202																
- L- 123+50.00	1223	1222																
- L- 124+00.00	1222					1				1								
- L- 124+00.00	1222	1203																
- L- 124+00.00	1203					1				1								
- L- 124+00.00	1203	1204																
SHEET 13																		
- L- 128+00.00	1314					1					1							
- L- 128+00.00	1314	1307																
- L- 134+10.55	1302																	
- L- 134+10.55	1302	1303																
- L- 136+00.00	1304					1				1								
- L- 136+00.00	1304	1303																
- L- 134+10.00	1303													1				1
- L- 134+10.00	1303	1305																
- L- 131+80.00	1305				1						1							
- L- 131+80.00	1305	1306																
- L- 130+50.00	1309					1				1								
- L- 130+50.00	1309	1306																
- L- 130+50.00	1306				1						1							
- L- 130+50.00	1306	1307																
- L- 128+42.20	1307				1						1							
- L- 128+42.20	1307	1308																
SHEET TOTALS			0	0	4	9	0	0	0	7	6	0	0	3	0	0	0	3

LINE & STATION	FROM	TO	ADJUST JB	ADJUST CB	ADJUST DI	BERM DRAINAGE OUTLET STD. (4" CONCRETE PAVED DITCH SY)	CONV DI TO JBMH	CONV JB TO OTCB	15" PARALLEL PIPE END SECTION 310.02	18" PARALLEL PIPE END SECTION 310.03	24"PARALLEL PIPE END SECTION 310.04	OTCB Std 840.04 or 840.05	SPECIAL DETAIL DROP INLET	SPECIAL DETAIL TRAFFIC BEARING DROP INLET	SPECIAL DETAIL CB	SPECIAL DETAIL JB	FLOWABLE FILL (CY)	DRAINAGE PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
SHEET 11																						
- DR12- 10+60.00	1199																					
- DR12- 10+60.00	1199	1122A																				
SHEET 12																						
- L- 113+98.50	1217																					
- L- 113+98.50	1217	1218																2 @ 30				
- L- 119+90.00	1206	1219															12.2	2 @ 24			16	
- L- 117+50.00	1211																					
- L- 117+50.00	1211	1219																			53	
- L- 119+89.00	1219																					
- L- 119+89.00	1219	1207																				
- L- 118+00.00	1208																					
- L- 118+00.00	1208	1207																2 @ 15				
- L- 120+10.00	1207																					
- L- 120+10.00	1207	1209																2 @ 24				
- L- 122+00.00	1201																					
- L- 122+00.00	1201	1202																2 @ 15			52	
- L- 123+50.00	1223	1222							1													
- L- 124+00.00	1222																					
- L- 124+00.00	1222	1203																				
- L- 124+00.00	1203																					
- L- 124+00.00	1203	1204																2 @ 15				
SHEET 13																						
- L- 128+00.00	1314																					
- L- 128+00.00	1314	1307															79.7					
- L- 134+10.55	1302											1									165	SPECIAL DETAIL 2C-10
- L- 134+10.55	1302	1303															16.2				10	
- L- 136+00.00	1304																					
- L- 136+00.00	1304	1303																				
- L- 134+10.00	1303																					
- L- 134+10.00	1303	1305																				
- L- 131+80.00	1305																					
- L- 131+80.00	1305	1306																				
- L- 130+50.00	1309																					
- L- 130+50.00	1309	1306																			60	
- L- 130+50.00	1306																					
- L- 130+50.00	1306	1307																				
- L- 128+42.20	1307																					
- L- 128+42.20	1307	1308																2 @ 36				
																		6 @ 15"				
																		4 @ 24"				
																		2 @ 30"				
																		2 @ 36"				
SHEET TOTALS			0	0	0	0	0	0	1	0	0	1	0	0	0	0	108.1	14 TOTAL	0	0	356	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I.(N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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bespinosa

PROJECT REFERENCE NO.	SHEET NO.
R-5861	3D-8

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
REGIONAL TIER

Note: Invert Elevations indicated are for Information Purposes only and should be verified by the contractor for project construction stakeout.

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

ABBREVIATIONS

- C.B. — CATCH BASIN
- N.D.I. — NARROW DROP INLET
- D.I. — DROP INLET
- G.D.I. — GRATED DROP INLET
- G.D.I.(N.S.) — (NARROW SLOT)
- J.B. — JUNCTION BOX
- M.H. — MANHOLE
- T.B.D.I. — TRAFFIC BEARING DROP INLET
- T.B.J.B. — TRAFFIC BEARING JUNCTION BOX

LINE & STATION (SIZE / THICKNESS OR GAUGE)	OFFSET		STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	% MINIMUM REQUIRED SLOPE	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP-III	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE, PP, OR PVC	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	PIPE AS NOTED 36"	42"	Trenchless Installation Welded Steel	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	LIN. FT. A 5.0' THRU 10.0'	LIN. FT. B 10.0' AND ABOVE (*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B'))	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO FLAT GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FR. WITH TWO FLAT GRATES. STD. 840.29	DRIVEWAY DROP INLET LIN. FT. STD. 840.30	D.I. IN APPROACH SLAB STD. 840.13	J.B. STD. 840.31 OR 840.32	TBJB STD. 840.34	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME (BICYCLE SAFE) SP DETAIL 2C-6	M.H. FRAME AND COVER STD. 840.54	ADJUST JB	ADJUST CB	ADJUST DI	BERM DRAINAGE OUTLET STD. (4" CONCRETE PAVED DITCH SY)	CONV DI TO JBMH	CONV JB TO OTCB	15" PARALLEL PIPE END SECTION 310.02	18" PARALLEL PIPE END SECTION 310.03	24"PARALLEL PIPE END SECTION 310.04	OTCB Std 840.04 or 840.05	SPECIAL DETAIL DROP INLET	SPECIAL DETAIL TRAFFIC BEARING DROP INLET	SPECIAL DETAIL CB	SPECIAL DETAIL JB	FLOWABLE FILL (CY)	DRAINAGE PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
SHEET 13 (cont.)																																																																																						
- Y9- 13+08.00		LT	1315			1637.9	1635.4	0.4%																												60																																															7.4					SPECIAL DETAIL HW; SEE STRUCT PLANS. High Flow Pipe (See 54"> tab for secondary pipe)
- L- 130+50.00		RT	1310							60																																																															1												52	
- Y8- 11+05.00		LT	1312			1639.3	1635.3	0.4%																		44														3.4																																																		BURIED 0.6'
SHEET 14																																																																																							
- L- 142+09.00	38	RT	1401		1682.3																																					1																																					1										SPECIAL DETAIL 2C-10
- L- 142+09.00		RT	1401	1402		1679.1	1673.4	0.8%															84																																																											4.6					
- L- 142+09.92	-44	LT	1402		1681.9																																					1	3.5																			1				1																				
- L- 144+00.00	48	RT	1404		1678.8																																					1												1				1																												
- L- 144+00.00		RT	1404	1410		1676.0	1674.0	0.5%														80																																																																	
- DR18- 10+95.75	20	RT	1410		1677.0																																					1												1				1																												
- DR18- 10+95.75		RT	1410	1415		1674.0	1666.3	0.9%														96																																																														80	
- L- 145+65.00	25	RT	1406		1683.8																																					1												1					1																											
- L- 145+65.00		RT	1406	1407		1679.4	1679.0	0.5%														16																																																									21					
- DR17- 10+50.00	-12	LT	1408		1662.4																																					1												1				1																												
- DR17- 10+50.00		LT	1408	1411		1659.7	1659.5	0.5%														48																																																																	
- DR17- 10+47.85	33	RT	1411		1663.0																																					1												1				1																												
- DR17- 10+47.85		RT	1411	1417		1659.5	1659.0	0.4%		128																																																																													
- L- 147+02.47		LT	1409	1417		1662.7	1662.3	0.5%																124																																																																
- Y10A- 13+15.00	51	RT	1417		1668.7																																					1	5.0	1.7																		1				1																				
- Y10A- 13+15.00		RT	1417	1412		1657.0	1653.0	1.9%				28					X			X																																																													2 @ 24			61	
- L- 149+50.00	-32	LT	1416		1690.2																																					1												1				1																												
- L- 149+50.00		LT	1416	1418		1687.4	1670.0	2.2%		112							X			X																																																												2 @ 15				
- L- 151+70.00	35	RT	1420		1697.1																																					1												1				1																										37	
- L- 151+70.00		RT	1420	1421		1694.1	1681.3	1.0%															220																																																															
- L- 149+50.00	32	RT	1421		1685.2																																					1																				1				1																				
- L- 149+50.00		RT	1421	1422		1681.3	1670.0	3.9%			68						X			X																																																												2 @ 18				
SHEET 15																																																																																							
- L- 157+40.00		LT	1501	1503		1717.0	1716.9	0.4%															28																																																														
- L- 159+00.00	-46	LT	1502		1732.9																																					1												1				1																												
- L- 159+00.00		LT	1502	1517		1730.1	1728.8	0.7%														40																																																																
- L- 158+65.00	-60	LT	1517		1731.5																																					1												1				1																												
- L- 158+65.00		LT	1517	1503		1728.8	1717.2	0.7%														136																																																															
- L- 157+30.00	-53	LT	1503		1724.4																																					1	2.4																			1				1																				
- L- 157+30.00		LT	1503	1504		1716.9	1716.3	0.7%															80																																																											2 @ 15"				
																																																																														2 @ 18"				
																																																																															2 @ 24"				
SHEET TOTALS									0	300	68	28	0	0	0	0					0	416	412	124	0	44	0	0	0	0	0	0	0	0	0	60	0	0	0	3.4	0	14	10.9	1.7	0	0	0	0	0	0	0	0	0	9	0	0	0	8	1	0	0	4	0	0	0	4	0	0	0	0	0	0	1	0	0	1	0	0	0	0	33	6 TOTAL	0	0	230	

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bespinosa

PROJECT REFERENCE NO.	SHEET NO.
R-5861	3D-9

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
REGIONAL TIER

Note: Invert Elevations Indicated are for Information Purposes only and should be verified by the contractor for project construction stakeout.

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

LINE & STATION (SIZE / THICKNESS OR GAUGE)	OFFSET		STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	% MINIMUM REQUIRED SLOPE	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP-III	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE, PP, OR PVC
SHEET 15 (cont.)																				
- L- 157+30.00	25	RT	1504		1728.3															
- L- 157+30.00		RT	1504	1505		1716.3	1712.0	0.8%												
- L- 155+00.00	23	RT	1505		1716.3															
- L- 155+00.00		RT	1505	1506		1712.0	1703.0	0.9%												
- L- 153+21.00	19	RT	1506		1707.3															
- L- 153+21.00		RT	1506	1516		1703.0	1698.4	3.7%			20						X			X
- L- 153+21.00	35	RT	1516		1702.3															
- L- 153+21.00		RT	1516	1420		1698.4	1694.1	0.9%												
-L- 152+34.84	-27	LT	1518							32										
-L- 154+19.3	-27	LT	1514							32										
-L- 160+31.81	-42	LT	1515							32										
- L- 163+76.38	-63	LT	1510		1741.2															
- L- 163+76.38		LT	1510	1511		1738.4	1737.1	0.9%												
- L- 162+50.00	-46	LT	1511		1741.4															
- L- 162+50.00		LT	1511	1512		1736.9	1734.0	0.6%												
- Y11- 11+30.09		LT	1513			1735.8	1718.6	0.4%												
-L- 161+50.00	46	RT	1519							32										
SHEET 16																				
- L- 171+00.00	34	RT	1604		1732.8															
- L- 171+00.00		RT	1604	1605		1730.1	1728.4	0.5%												
- L- 171+00.00	-46	LT	1605		1731.2															
- L- 171+00.00		LT	1605	1606		1728.4	1726.0	1.1%												
- L- 176+00.00	28	RT	1609		1707.0															
- L- 176+00.00		RT	1609	1602		1704.3	1691.3	0.6%		200										
- L- 178+00.00	-52	LT	1603		1694.9															
- L- 178+00.00		LT	1603	1602		1691.8	1690.8	0.5%												
- L- 178+00.00	28	RT	1602		1695.3															
- L- 178+00.00		RT	1602	1713		1690.5	1671.8	1.9%				152					X			X
SHEET TOTALS									0	328	20	152	0	0	0	0				

LINE & STATION	FROM	TO	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	PIPE AS NOTED 36" (Trenchless Installation Welded Steel)	42"		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.
SHEET 15 (cont.)																							
- L- 157+30.00	1504																						
- L- 157+30.00	1504	1505			232																		
- L- 155+00.00	1505																						
- L- 155+00.00	1505	1506			180																		
- L- 153+21.00	1506																						
- L- 153+21.00	1506	1516																					
- L- 153+21.00	1516																						
- L- 153+21.00	1516	1420			152																		
-L- 152+34.84	1518																						
-L- 154+19.3	1514																						
-L- 160+31.81	1515																						
- L- 163+76.38	1510																						
- L- 163+76.38	1510	1511		128																			
- L- 162+50.00	1511																						
- L- 162+50.00	1511	1512			104																		
- Y11- 11+30.09	1513						168															2.3	
-L- 161+50.00	1519																						
SHEET 16																							
- L- 171+00.00	1604																						
- L- 171+00.00	1604	1605		80																			
- L- 171+00.00	1605																						
- L- 171+00.00	1605	1606		124																			
- L- 176+00.00	1609																						
- L- 176+00.00	1609	1602																					
- L- 178+00.00	1603																						
- L- 178+00.00	1603	1602			80																		
- L- 178+00.00	1602																						
- L- 178+00.00	1602	1713																					
SHEET TOTALS			0	332	748	0	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.3	0

LINE & STATION	FROM	TO	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	LIN. FT. A 5.0' THRU 10.0'	LIN. FT. B 10.0' AND ABOVE (*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B'))	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN
SHEET 15 (cont.)											
- L- 157+30.00	1504		1	5.0	2.0						
- L- 157+30.00	1504	1505									
- L- 155+00.00	1505		1								
- L- 155+00.00	1505	1506									
- L- 153+21.00	1506		1								
- L- 153+21.00	1506	1516									
- L- 153+21.00	1516		1								
- L- 153+21.00	1516	1420									
-L- 152+34.84	1518										
-L- 154+19.3	1514										
-L- 160+31.81	1515										
- L- 163+76.38	1510		1								
- L- 163+76.38	1510	1511									
- L- 162+50.00	1511		1								
- L- 162+50.00	1511	1512									
- Y11- 11+30.09	1513										
-L- 161+50.00	1519										
SHEET 16											
- L- 171+00.00	1604		1								
- L- 171+00.00	1604	1605									
- L- 171+00.00	1605		1								
- L- 171+00.00	1605	1606									
- L- 176+00.00	1609		1								
- L- 176+00.00	1609	1602									
- L- 178+00.00	1603		1								
- L- 178+00.00	1603	1602									
- L- 178+00.00	1602		1								
- L- 178+00.00	1602	1713									
SHEET TOTALS			11	5	2.0	0	0	0	0	0	0

LINE & STATION	FROM	TO	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO FLAT GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FR. WITH TWO FLAT GRATES. STD. 840.29	DRIVEWAY DROP INLET LIN. FT. STD. 840.30	D.I. IN APPROACH SLAB STD. 840.13	J.B. STD. 840.31 OR 840.32	TBJB STD. 840.34	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME (BICYCLE SAFE) SP DETAIL 2C-6	M.H. FRAME AND COVER STD. 840.54	ADJUST JB	ADJUST CB	ADJUST DI
SHEET 15 (cont.)																					
- L- 157+30.00	1504					1					1										
- L- 157+30.00	1504	1505																			
- L- 155+00.00	1505					1					1										
- L- 155+00.00	1505	1506																			
- L- 153+21.00	1506					1					1										
- L- 153+21.00	1506	1516																			
- L- 153+21.00	1516													1				1			
- L- 153+21.00	1516	1420																			
-L- 152+34.84	1518																				
-L- 154+19.3	1514																				
-L- 160+31.81	1515																				
- L- 163+76.38	1510					1				1											
- L- 163+76.38	1510	1511																			
- L- 162+50.00	1511					1				1											
- L- 162+50.00	1511	1512																			
- Y11- 11+30.09	1513																				
-L- 161+50.00	1519																				
SHEET 16																					
- L- 171+00.00	1604					1				1											
- L- 171+00.00	1604	1605																			
- L- 171+00.00	1605					1				1											
- L- 171+00.00	1605	1606																			
- L- 176+00.00	1609					1				1											
- L- 176+00.00	1609	1602																			
- L- 178+00.00	1603					1				1											
- L- 178+00.00	1603	1602																			
- L- 178+00.00	1602				1					1											
- L- 178+00.00	1602	1713																			
SHEET TOTALS			0	0	1	9	0	0	0	7	3	0	0	1	0	0	0	1	0	0	0

LINE & STATION	FROM	TO	BERM DRAINAGE OUTLET STD. (4" CONCRETE PAVED DITCH SY)	CONV DI TO JBMH	CONV JB TO OTCB	15" PARALLEL PIPE END SECTION 310.02	18" PARALLEL PIPE END SECTION 310.03	24"PARALLEL PIPE END SECTION 310.04	OTCB Std 840.04 or 840.05	SPECIAL DETAIL DROP INLET	SPECIAL DETAIL TRAFFIC BEARING DROP INLET	SPECIAL DETAIL CB	SPECIAL DETAIL JB	FLOWABLE FILL (CY)	DRAINAGE PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
SHEET 15 (cont.)																			
- L- 157+30.00	1504																		
- L- 157+30.00	1504	1505																	
- L- 155+00.00	1505																		
- L- 155+00.00	1505	1506																	
- L- 153+21.00	1506																		
- L- 153+21.00	1506	1516													2 @ 18				
- L- 153+21.00	1516																		
- L- 153+21.00	1516	1420																	
-L- 152+34.84	1518					1								2.6				45	
-L- 154+19.3	1514					1													
-L- 160+31.81	1515					1								3.3				20	
- L- 163+76.38	1510													6.8					
- L- 163+76.38	1510	1511																	
- L- 162+50.00	1511																		
- L- 162+50.00	1511	1512																	
- Y11- 11+30.09	1513																		BURIED 0.5'
-L- 161+50.00	1519					1													
SHEET 16																			
- L- 171+00.00	1604																		
- L- 171+00.00	1604	1605																42	
- L- 171+00.00	1605																		
- L- 171+00.00	1605	1606																112	
- L- 176+00.00	1609																		
- L- 176+00.00	1609	1602																	
- L- 178+00.00	1603																		
- L- 178+00.00	1603	1602																42	
- L- 178+00.00	1602																		
- L- 178+00.00	1602	1713													2 @ 24				
															2 @ 18"				
															2 @ 24"				
SHEET TOTALS			0	0	0	4	0	0	0	0	0	0	0	12.7	4 TOTAL	0	0	261	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I.(N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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PROJECT REFERENCE NO.	SHEET NO.
R-5861	3D-10

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
REGIONAL TIER

Note: Invert Elevations indicated are for Information Purposes only and should be verified by the contractor for project construction stakeout.

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

LINE & STATION	OFFSET		STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	% MINIMUM REQUIRED SLOPE	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC)											
SIZE / THICKNESS OR GAUGE			FROM	TO					12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP-III	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE, PP, OR PVC
SHEET 17																				
- L- 182+75.00	28	RT	1707		1669.0															
- L- 182+75.00		RT	1707	1708		1662.0	1661.8	0.6%												
- L- 182+25.00	28	RT	1708		1671.7															
- L- 182+25.00		RT	1708	1710		1661.8	1661.0	0.6%												
- L- 181+50.00	19	RT	1709		1678.0															
- L- 181+50.00		RT	1709	1710		1673.9	1672.0	0.5%												
- L- 187+00.00	-40	LT	1715		1647.3															
- L- 187+00.00		LT	1715	1716		1645.4	1644.7	0.5%		28										
- L- 189+00.00		RT	1701	1702		1647.2	1630.6	1.6%				36					X			X
- L- 189+00.00	28	RT	1702		1635.3															
- L- 189+00.00		RT	1702	1703		1630.6	1619.4	0.5%				232								
- L- 191+25.00	28	RT	1703		1624.1															
- L- 191+25.00		RT	1703	1704		1619.4	1618.7	0.5%												
- L- 191+26.00	-31	LT	1704		1623.5															
- L- 191+26.00		LT	1704	1705		1618.7	1615.1	2.1%				20					X			X
-L- 192+07.16	30	RT	1719							76										
SHEET 18																				
- L- 194+54.08		LT	1804	1817		1609.8	1608.3	0.7%												
- L- 194+20.00	46	RT	1802		1611.0															
- L- 194+20.00		RT	1802	1803		1606.8	1603.5	0.7%												
- L- 194+66.48	38	RT	1803		1609.6															
- L- 203+37.00	29	RT	1816		1632.6															
- L- 203+37.00		RT	1816	1805		1629.9	1629.8	0.7%												
- L- 203+37.00	15	RT	1805		1632.9															
- L- 203+37.00		RT	1805	1806		1629.8	1629.6	0.7%												
- L- 203+37.00	-15	LT	1806		1632.8															
- L- 203+37.00		LT	1806	1807		1629.6	1622.6	0.8%												
- L- 201+15.00	-15	LT	1807		1628.0															
- L- 201+15.00		LT	1807	1809		1622.3	1618.5	1.1%												
- L- 200+40.00	-15	LT	1809		1625.4															
- L- 200+40.00		LT	1809	1815		1618.5	1614.5	1.2%												
- L- 200+00.00	-34	LT	1808		1622.1															
- L- 200+00.00		LT	1808	1815		1616.0	1615.0	0.5%												
- L- 200+00.00	-15	LT	1815		1624.2															
- L- 200+00.00		LT	1815	1811		1613.5	1610.7	0.4%												
- L- 198+92.90	-38	LT	1820		1617.5															
- L- 198+92.90		LT	1820	1810		1610.8	1610.5	0.4%												
- L- 199+00.00	-38	LT	1810		1617.5															
- L- 199+00.00		LT	1810	1811		1610.5	1610.0	0.6%												
SHEET TOTALS									0	104	0	288	0	0	0	0				

LINE & STATION	R.C. PIPE CLASS III								R.C. PIPE CLASS IV								PIPE AS NOTED (Trenchless Installation Welded Steel)			ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS		QUANTITIES FOR DRAINAGE STRUCTURES *TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B')			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE			CONCRETE TRANSITIONAL SECTION	
	12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"	36"	42"		R.C.P.	C.S.P.	PER EACH (0' THRU 5.0')	LIN. FT. A 5.0' THRU 10.0'	LIN. FT. B 10.0' AND ABOVE		E	F	G	DROP INLET	CATCH BASIN
SHEET 17																														
- L- 182+75.00																						1	2.0							
- L- 182+75.00		52																												
- L- 182+25.00																						1	4.9							
- L- 182+25.00			56																											
- L- 181+50.00																						1								
- L- 181+50.00		28																												
- L- 187+00.00																						1								
- L- 187+00.00																														
- L- 189+00.00																														
- L- 189+00.00																						1								
- L- 189+00.00																														
- L- 191+25.00																						1								
- L- 191+25.00				60																										
- L- 191+26.00																						1								
- L- 191+26.00																														
-L- 192+07.16																														
SHEET 18																														
- L- 194+54.08		56																												
- L- 194+20.00																						1								
- L- 194+20.00					52																									
- L- 194+66.48																														
- L- 203+37.00																						1								
- L- 203+37.00		16																												
- L- 203+37.00																						1			1			1		
- L- 203+37.00		32																												
- L- 203+37.00																						1			1		1			
- L- 203+37.00		224																												
- L- 201+15.00																						1	0.7		1		1			
- L- 201+15.00			76																											
- L- 200+40.00																						1	1.9		1		1			
- L- 200+40.00			40																											
- L- 200+00.00																						1	1.1							
- L- 200+00.00			20																											
- L- 200+00.00																						1	5.0	0.7						
- L- 200+00.00					100																									
- L- 198+92.90																						1	1.8							
- L- 198+92.90						8																								
- L- 199+00.00																						1	2.0							
- L- 199+00.00						24																								
SHEET TOTALS	0	408	192	60	152	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	19.4	0.7	4	0	3	1	0	0

LINE & STATION	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO FLAT GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FR. WITH TWO FLAT GRATES. STD. 840.29	DRIVEWAY DROP INLET LIN. FT. STD. 840.30	D.I. IN APPROACH SLAB STD. 840.13	J.B. STD. 840.31 OR 840.32	TBJB STD. 840.34	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME (BICYCLE SAFE) SP DETAIL 2C-6	M.H. FRAME AND COVER STD. 840.54	ADJUST JB	ADJUST CB	ADJUST DI	BERM DRAINAGE OUTLET STD. (4" CONCRETE PAVED DITCH SY)	CONV DI TO JBMH	CONV JB TO OTCB	15" PARALLEL PIPE END SECTION 310.02	18" PARALLEL PIPE END SECTION 310.03	24"PARALLEL PIPE END SECTION 310.04	OTCB Std 840.04 or 840.05	SPECIAL DETAIL DROP INLET	SPECIAL DETAIL TRAFFIC BEARING DROP INLET	SPECIAL DETAIL CB	SPECIAL DETAIL JB	FLOWABLE FILL (CY)	DRAINAGE PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
SHEET 17																																				
- L- 182+75.00				1				1																												
- L- 182+75.00																																				
- L- 182+25.00				1				1																												
- L- 182+25.00																																				
- L- 181+50.00				1					1																											
- L- 181+50.00																																				
- L- 187+00.00					1			1																												
- L- 187+00.00																															2.7					
- L- 189+00.00																				23											3.5	2 @ 24				See concrete ditch spreadsheet
- L- 189+00.00			1					1																												
- L- 189+00.00																																				
- L- 191+25.00			1					1																											32	
- L- 191+25.00																																				
- L- 191+26.00				1					1																											
- L- 191+26.00																																2 @ 24				
-L- 192+07.16																							1													
SHEET 18																																				
- L- 194+54.08																							1													
- L- 194+20.00																										1										SPECIAL DETAIL 2C-10
- L- 194+20.00																																				
- L- 194+66.48																			1																	
- L- 203+37.00														1	1																					
- L- 203+37.00																																				
- L- 203+37.00																																				
- L- 203+37.00																																				
- L- 203+37.00																																				
- L- 203+37.00																																				
- L- 201+15.00																																				
- L- 201+15.00																																			46	
- L- 200+40.00																																				
- L- 200+40.00																																			34	
- L- 200+00.00																										1										SPECIAL DETAIL 2C-10
- L- 200+00.00																																			42	
- L- 200+00.00													1			1																				
- L- 200+00.00																																			60	
- L- 198+92.90																										1										SPECIAL DETAIL 2C-10
- L- 198+92.90																																				
- L- 199+00.00																										1										SPECIAL DETAIL 2C-10
- L- 199+00.00																																			27	
																																4 @ 24"				
SHEET TOTALS	0	0	2	4	1	0	0	5	2	0	0	0	1	1	1	1	0	0	1	23	0	0	2	0	0	4	0	0	0	0	6.2	4 TOTAL	0	0	241	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I.(N.S.)	(NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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Note: Invert Elevations indicated are for Information Purposes only and should be verified by the contractor for project construction stakeout.

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

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET		STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	% MINIMUM REQUIRED SLOPE
SHEET 18 (cont.)								
- L- 197+00.00	-16	LT	1812		1615.2			
- L- 197+00.00		LT	1812	1811		1611.2	1610.5	0.5%
- L- 199+00.00	-15	LT	1811		1620.2			
- L- 199+00.00		LT	1811	1813		1609.7	1609.5	0.5%
- L- 199+00.00	28	RT	1813		1621.4			
- L- 199+00.00		RT	1813	1814		1609.5	1608.9	0.5%
- L- 197+60.00	28	RT	1814		1615.9			
- L- 197+60.00		RT	1814	1819		1608.9	1603.0	0.5%
- L- 195+36.12	82	RT	1821		1613.2			
- L- 195+36.12		RT	1821	1818		1604.0	1603.9	0.4%
- L- 195+50.00	53	RT	1818		1610.5			
- L- 195+50.00		RT	1818	1819		1603.9	1603.0	0.5%
- L- 195+50.00	30	RT	1819		1612.3			
- L- 195+50.00		RT	1819	1803		1603.0	1602.0	0.5%
- L- 201+14.04	-32	LT	1822		1625.5			
- L- 201+14.04		LT	1822	1807		1622.7	1622.6	0.8%
SHEET 19								
- L- 206+25.00	-35	LT	1910		1632.6			
- L- 206+25.00		LT	1910	1901		1629.9	1629.1	0.5%
- L- 206+25.00	-15	LT	1901		1632.1			
- L- 206+25.00		LT	1901	1903		1629.1	1624.9	0.5%
- L- 208+25.00	-22	LT	1903		1627.9			
- L- 208+25.00		LT	1903	1915		1624.9	1608.1	2.1%
- L- 208+77.78	-85	LT	1913		1625.1			
- L- 208+77.78		LT	1913	1915		1605.5	1605.4	0.4%
- L- 208+65.28	-61	LT	1915		1626.7			
- L- 208+65.28		LT	1915	1905		1605.4	1604.8	0.5%
- L- 207+50.00	32	RT	1902		1629.0			
- L- 207+50.00		RT	1902	1905		1626.0	1615.9	0.5%
- L- 209+28.00	2	RT	1911		1627.7			
- L- 209+28.00		RT	1911	1907		1623.7	1623.2	0.5%
- L- 209+17.94	2	RT	1907		1627.3			
- L- 209+17.94		RT	1907	1908		1623.2	1623.0	0.4%
- L- 209+28.00	26	RT	1912		1627.0			
- L- 209+28.00		RT	1912	1908		1623.0	1623.0	1.0%
- L- 209+17.94	26	RT	1908		1627.1			
- L- 209+17.94		RT	1908	1904		1623.0	1620.7	0.5%
- L- 209+14.08	61	RT	1904		1625.8			
- L- 209+14.08		RT	1904	1917		1620.7	1620.5	0.5%
- L- 209+15.14	-41	LT	1906		1628.9			
- L- 209+15.14		LT	1906	1907		1625.7	1623.2	0.4%
SHEET TOTALS								

DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) and R.C. PIPE CLASS III

LINE & STATION	DP 12"	DP 15"	DP 18"	DP 24"	DP 30"	DP 36"	DP 42"	DP 48"	DO NOT USE RCP-III	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE, PP, OR PVC	R.C. CLASS III 12"	15"	18"	24"	30"	36"	42"	48"
- L- 197+00.00 (1812–1811)														200						
- L- 199+00.00 (1811–1813)																			44	
- L- 199+00.00 (1813–1814)																			144	
- L- 197+60.00 (1814–1819)																			216	
- L- 195+36.12 (1821–1818)															36					
- L- 195+50.00 (1818–1819)															24					
- L- 195+50.00 (1819–1803)																			88	
- L- 201+14.04 (1822–1807)														20						
- L- 206+25.00 (1910–1901)														20						
- L- 206+25.00 (1901–1903)														204						
- L- 208+25.00 (1903–1915)		60							X			X								
- L- 208+77.78 (1913–1915)																				28
- L- 208+65.28 (1915–1905)																				104
- L- 207+50.00 (1902–1905)														120						
- L- 209+28.00 (1911–1907)														12						
- L- 209+17.94 (1907–1908)														24						
- L- 209+28.00 (1912–1908)														12						
- L- 209+17.94 (1908–1904)														36						
- L- 209+14.08 (1904–1917)														28						
- L- 209+15.14 (1906–1907)														44						
SHEET TOTALS	0	60	0	0	0	0	0	0					0	720	60	0	0	0	492	132

R.C. PIPE CLASS IV, PIPE AS NOTED, ENDWALLS

LINE & STATION	R.C. CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	PIPE AS NOTED 36" (Trenchless Installation Welded Steel)	42"		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.
SHEET TOTALS	0	0	0	0	0	0	0	0	0	0	0	0	0

QUANTITIES FOR DRAINAGE STRUCTURES (*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B')) and structures

LINE & STATION (STR.)	PER EACH (0' THRU 5.0')	LIN. FT. A 5.0' THRU 10.0'	LIN. FT. B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO FLAT GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FR. WITH TWO FLAT GRATES. STD. 840.29
- L- 197+00.00 (1812)	1																	
- L- 199+00.00 (1811)	1	5.0	0.5	1		1												
- L- 199+00.00 (1813)	1	5.0	1.9															
- L- 197+60.00 (1814)	1	2.0																
- L- 195+36.12 (1821)	1	4.2																
- L- 195+50.00 (1818)	1	1.6											1				1	
- L- 195+50.00 (1819)	1	4.3										1					1	
- L- 201+14.04 (1822)	1																	
- L- 206+25.00 (1910)	1												1				1	
- L- 206+25.00 (1901)	1			1			1											
- L- 208+25.00 (1903)	1			1			1											
- L- 208+65.28 (1915)	1	5.0	11.3														1	
- L- 207+50.00 (1902)	1			1		1												
- L- 209+28.00 (1911)	1							1		1	1							
- L- 209+17.94 (1907)	1							1		1	1							
- L- 209+28.00 (1912)	1							1		1	1							
- L- 209+17.94 (1908)	1							1		1	1							
- L- 209+14.08 (1904)	1	0.1		1	1													
- L- 209+15.14 (1906)	1							1		1	1							
SHEET TOTALS	19	27.2	13.7	5	1	2	2	5	0	5	5	1	2	0	0	0	4	0

LINE & STATION (STR.)	DRIVEWAY DROP INLET LIN. FT. STD. 840.30	D.I. IN APPROACH SLAB STD. 840.13	J.B. STD. 840.31 OR 840.32	TBJB STD. 840.34	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME (BICYCLE SAFE) SP DETAIL 2C-6	M.H. FRAME AND COVER STD. 840.54	ADJUST JB	ADJUST CB	ADJUST DI	BERM DRAINAGE OUTLET STD. (4" CONCRETE PAVED DITCH SY)	CONV DI TO JBMH	CONV JB TO OTCB	15" PARALLEL PIPE END SECTION 310.02	18" PARALLEL PIPE END SECTION 310.03	24"PARALLEL PIPE END SECTION 310.04	OTCB Std 840.04 or 840.05	SPECIAL DETAIL DROP INLET	SPECIAL DETAIL TRAFFIC BEARING DROP INLET	SPECIAL DETAIL CB	SPECIAL DETAIL JB	FLOWABLE FILL (CY)	DRAINAGE PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
- L- 197+00.00 (1812)					1	1																					
- L- 199+00.00 (1813)					1	1																					
- L- 197+60.00 (1814)					1	1																					
- L- 195+36.12 (1821)			1				1																				
- L- 195+50.00 (1819–1803)																										100	
- L- 201+14.04 (1822)					1	1																					
- L- 208+25.00 (1903–1915)																							2 @ 15				
- L- 208+77.78 (1913)													1														SPECIAL DETAIL 2C-11
- L- 208+65.28 (1915)																		1									SPECIAL DETAIL 2C-4
																							2 @ 15"				
SHEET TOTALS	0	0	1	0	4	4	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	2 TOTAL	0	0	100	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I.(N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX

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

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET		STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	% MINIMUM REQUIRED SLOPE	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP-III	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE, PP, OR PVC
SHEET 19 (cont.)																				
- L- 209+18.51	-90	LT	1909		1625.7															
- L- 209+88.82	-95	LT	19EX2		1628.6															
- L- 208+66.63	41	RT	1905		1626.9															
- L- 208+66.63		RT	1905	1918		1604.8	1604.5	0.5%												
- L- 208+65.00	118	RT	1918		1621.9															
- L- 208+65.00		RT	1918	1919		1604.5	1604.2	0.5%												
- Y12- 28+04.80	111	RT	1919		1623.1															
- Y12- 28+04.80		RT	1919	2001		1604.2	1602.9	0.5%												
SHEET 20																				
- Y12- 31+11.79	-82	LT	2005		1605.9															
- Y12- 31+11.79		LT	2005	2003		1596.0	1595.5	0.4%												
- Y12- 31+25.00	-82	LT	2003		1606.5															
- Y12- 31+25.00		LT	2003	2006		1594.5	1593.8	0.6%												
Y12- 31+53.87	53	RT	2006																	
- Y12- 31+11.79		LT	2006	2001		1593.8	1593.5	0.6%												
SHEET 21																				
- Y13- 10+14.72		LT	2101			1793.0	1789.2	0.4%												
-Y10B- 14+11.04	-28	LT	2102							36										
-Y10B- 11+14.14	-14	LT	2103							36										
SHEET TOTALS									0	72	0	0	0	0	0	0				
TEMP & DETOUR TOTALS									0	1176	1104	84	172	148	0	88				
FINAL TOTALS									0	2892	856	1544	284	80	0	0				
PROJECT TOTALS									0	4068	1960	1628	456	228	0	88				

LINE & STATION	R.C. PIPE CLASS III 12"	15"	18"	24"	30"	36"	42"	48"	R.C. PIPE CLASS IV 12"	15"	18"	24"	30"	36"	42"	48"	PIPE AS NOTED 36" (Trenchless Installation Welded Steel)	42"		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YARDS R.C.P.	C.S.P.
- L- 208+66.63 (1905–1918)								80													
- L- 208+65.00 (1918–1919)								84													
- Y12- 28+04.80 (1919–2001)								360													
- Y12- 31+11.79 (2005–2003)				16																	
- Y12- 31+25.00 (2003–2006)																	140				
- Y12- 31+11.79 (2006–2001)						56															
- Y13- 10+14.72			76																		
SHEET TOTALS	0	0	76	16	0	56	0	524	0	0	0	0	0	0	0	0	140	0	0	0	0
TEMP & DETOUR TOTALS	0	0	0	0	0	0	0	0	0	0	0	64	56	0	0	0	0	0	0	0	0
FINAL TOTALS	0	2908	2220	1872	624	276	532	776	0	408	108	0	0	644	0	60	140	80	0	15.1	13.3
PROJECT TOTALS	0	2908	2220	1872	624	276	532	776	0	408	108	0	64	700	0	60	140	80	0	15	13

LINE & STATION	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	*TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATE STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR 840.26	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. TYPE "D" STD. 840.19 OR 840.28	G.D.I. FRAME WITH TWO FLAT GRATES STD. 840.20	G.D.I. FRAME WITH TWO GRATES STD. 840.22	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	G.D.I. (N.S.) FR. WITH TWO FLAT GRATES. STD. 840.29	DRIVEWAY DROP INLET LIN. FT. STD. 840.30	D.I. IN APPROACH SLAB STD. 840.13	J.B. STD. 840.31 OR 840.32	TBJB STD. 840.34	T.B.D.I. STD. 840.36	STEEL GRATE AND FRAME (BICYCLE SAFE) SP DETAIL 2C-6
- L- 209+18.51	1			1		1																		
- L- 208+66.63 (41 RT)	1	5.0	12.0			1																		
- L- 208+65.00 (118 RT)	1	5.0	7.4																					
- Y12- 28+04.80 (111 RT)	1	5.0	8.9																					
- Y12- 31+25.00 (-82 LT)	1	5.0	2.0																					
SHEET TOTALS	5	20.0	30.3	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TEMP & DETOUR TOTALS	19	17.3	5.1	0	0	0	0	0	0	0	0	0	9	1	0	0	8	0	0	0	4	3	1	1
FINAL TOTALS	131	129.3	53.1	10	1	7	3	5	0	5	5	20	59	2	0	0	60	23	0	0	14	1	7	7
PROJECT TOTALS	150	147	58	10	1	7	3	5	0	5	5	20	68	3	0	0	68	23	0	0	18	4	8	8

LINE & STATION	M.H. FRAME AND COVER STD. 840.54	ADJUST JB	ADJUST CB	ADJUST DI	BERM DRAINAGE OUTLET STD. (4" CONCRETE PAVED DITCH SY)	CONV DI TO JBMH	CONV JB TO OTCB	15" PARALLEL PIPE END SECTION 310.02	18" PARALLEL PIPE END SECTION 310.03	24"PARALLEL PIPE END SECTION 310.04	OTCB Std 840.04 or 840.05	SPECIAL DETAIL DROP INLET	SPECIAL DETAIL TRAFFIC BEARING DROP INLET	SPECIAL DETAIL CB	SPECIAL DETAIL JB	FLOWABLE FILL (CY)	DRAINAGE PIPE ELBOWS NO. & SIZE	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	CONC. COLLARS CL. "B" C.Y. STD. 840.72	PIPE REMOVAL LIN. FT.	REMARKS
- L- 209+88.82				1																	
- L- 208+66.63 (41 RT)														1							SPECIAL DETAIL 2C-9
- L- 208+66.63 (1905–1918)																33.8					
- L- 208+65.00 (118 RT)	1														1						SPECIAL DETAIL 2C-5
- Y12- 28+04.80 (111 RT)	1														1						SPECIAL DETAIL 2C-5
- Y12- 28+04.80 (1919–2001)																				418	
- Y12- 31+11.79 (-82 LT)	1					1															SPECIAL DETAIL 2C-12
- Y12- 31+25.00 (-82 LT)											1										SPECIAL DETAIL 2C-10
- Y12- 31+25.00 (2003–2006)																33.4					
Y12- 31+53.87																			0.764		COLLAR AT BORE PIT
- Y13- 10+14.72																				51	
SHEET TOTALS	3	0	0	1	0	1	0	0	0	0	1	0	0	1	2	67.2	0 TOTAL	0	0.764	469	
																	24 @ 15"				
																	14 @ 18"				
																	22 @ 24"				
TEMP & DETOUR TOTALS	4	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	8 @ 30"	0	4.5	2532	
FINAL TOTALS	18	0	1	3	79	1	1	16	2	3	8	2	0	1	2	332.1	4 @ 36"	0.0	0.8	2795	
PROJECT TOTALS	22	1	1	3	79	1	1	16	2	3	9	2	0	1	2	332.1	74 TOTAL	0.0	5.3	5327	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I.(N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
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Note: Invert Elevations indicated are for Information Purposes only and should be verified by the contractor for project construction stakeout.

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 54" & OVER)

STATION / SIZE / THICKNESS OR GAUGE	OFFSET		STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	% MINIMUM REQUIRED SLOPE	R.C. PIPE (CLASS AS NOTED) 54" RCP-III	60" RCP-III	66" RCP-III	72" RCP-III	66" RCP-IV		C.S. PIPE (UNLESS NOTED OTHERWISE) SHOP ELON-GATED 54" .109	54" .138	60" .138	60" .168	66" .138	66" .168	TEMPORARY PIPE (TYPE AS NOTED) 60" CSP	60" RCP	66" RCP	TRENCHLESS INSTALLATION (PIPE AS NOTED) WELDED STEEL 60"	66"	72"	REINFORCED ENDWALLS WITH R.C. - C.Y.	WITH C.S. - C.Y.	MASONRY DRAINAGE STRUCTURES CUBIC YARDS	C.B. STD. 840.01 OR 840.02	FRAMES, GRATES & HOOD STANDARD 840.03 TYPE OF GRATE E	F	G		CONCRETE TRANSITIONAL SECTION DROP INLET	CATCH BASIN	OTCB	J.B. STD. 840.31 OR 840.32		G.D.I. TYPE "A" STD. 840.17 OR 840.26	TBJB STD. 840.34	M.H. FRAME AND COVER STD. 840.54	SPECIAL DETAIL JB	SPECIAL DETAIL 2GIA	SPECIAL DETAIL HW	G.D.I. (N.S.) FR. WITH TWO FLAT GRATES. STD. 840.29		FLOWABLE FILL (CY)	REINF. CONC. FLARED END SECTIONS NO. & SIZE			CORR. STEEL FLARED END SECTIONS NO. & Size			CS PIPE ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN. FT.	REMARKS
- L- 13+50.50	49	RT	407			1693.0	1687.0	0.4%																	132			6.6																				59.6											BURIED 1.0'
- DR1- 10+32.26	-21	LT	408			1684.4	1683.2	0.3%					56														6.3																															37	BURIED 1.0'
- L- 50+76.00	-50	LT	703	704		1660.8	1660.5	0.4%																	92			6.6																																BURIED 1.0'
- L- 50+88.00	41	RT	704		1679.4																								10.96													1	1																SPECIAL DETAIL 2C-5
- L- 50+88.00	41	RT	704	702		1660.5	1653.0	0.4%			148																																														65	BURIED 1.0'
- L- 52+28.00	37	RT	702		1661.2																								5.52											1						1													
- L- 52+28.00	37	RT	702	707		1653.0	1644.0	0.4%			108																																				120.5										122	
-L- 71+67.24	19	RT	811																							88																																		SUPPL. TO RCBC EXTENSION
- L- 83+85.32	57	RT	905	915		1641.8	1631.0	0.4%																	176			6.6																				131.5											
- L- 82+25.61	49	RT	904	915		1632.8	1631.0	0.3%	24																		5																																BURIED 0.9'
- L- 82+10.02	35	RT	915		1642.9	1631.0	1628.0	0.5%																					6.94									1				1																	
- L- 82+10.02	35	RT	915	908		1631.0	1628.0	0.5%																		144																			1			28.6										105	SP. DETAIL HWs: SEE STRUCTURE PLANS.
- Y9- 13+00.00	-19	LT	1313			1636.0	1633.5	0.4%	60																																				1												29	STRUCTURES PAY ITEMS
- L- 145+65.18	69	RT	1405	1415		1658.5	1658.4	0.3%				24															7.1																																BURIED 1.0'
- L- 145+50.00	55	RT	1415		1670.0																								7.75									1				1																	
- L- 145+50.00	55	RT	1415	1407		1658.4	1658.3	0.4%				32																																															
- L- 145+50.00	25	RT	1407		1683.7																								15.91															1		1													SPECIAL DETAIL 2C-4
- L- 145+50.00	25	RT	1407	1413		1658.3	1653.2	0.4%				104																																														BURIED 1.0'
- Y10A- 13+50.00	67	RT	1413		1663.6																								7.16												1	1																	
- Y10A- 13+50.00	67	RT	1413	1414		1653.2	1652.0	0.4%				48																																														BURIED 1.0'
- DR19- 11+13.74	-30	LT	1419			1666.0	1664.5	3.3%		68																	5.6																					5.2											BURIED 1.0'
- L- 181+70.00	35	RT	1710		1675.6																								9.67													1	1																SPECIAL DETAIL 2C-5
- L- 181+70.00	35	RT	1710	1720		1660.0	1657.2	0.4%			184																																															BURIED 1.0'
- L- 182+40.74	-133	LT	1712		1667.3																								7.56								1																						
- L- 182+40.74	-133	LT	1712	1717		1655.5	1641.7	1.6%											68																													56.6							2 @ 66"				BURIED 1.0'
- L- 182+23.00	-70	LT	1720		1673.6																								10.11													1	1																SPECIAL DETAIL 2C-5
- L- 182+23.00	-70	LT	1720	1712		1657.2	1655.5	0.4%			64																																															BURIED 1.0'
- L- 193+92.72	-56	LT	1801	1817		1602.1	1601.5	0.6%		20																	5.6																																
- L- 194+00.00	-41	LT	1817		1611.9																								6.61									1				1																	
- L- 194+00.00	-41	LT	1817	1803		1601.5	1591.5	0.6%		104																																															76	
- Y12- 31+64.73	104	RT	2001		1606.4																								6.98													1	1																SPECIAL DETAIL 2C-5
- Y12- 31+64.73	104	RT	2001	2004		1592.6	1592.2	0.5%	100																																																212	
- Y12- 32+65.23	102	RT	2004		1604.1																								6.33												1	1																	
- Y12- 32+65.23	102	RT	2004	2002		1592.2	1581.2	1.9%							84																																								2 @ 54"				
SHEET TOTALS									184	192	504	208	56	0	84	0	0	0	68	0	0	0	0	0	400	232	29.6	19.8	101.49	0	0	0	0	0	0	0	1	3	0	1	2	9	4	1	2	2	0	402	0	0	0	0	0	0	4 TOTAL	0	0	646	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
G.D.I.(N.S.)	GRATED DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
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PROJECT REFERENCE NO.	SHEET NO.
R-5861	3D-14

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
REGIONAL TIER

Note: Invert Elevations indicated are for Information Purposes only and should be verified by the contractor for project construction stakeout.

LIST OF TEMPORARY PIPES, ENDWALLS, ETC. (FOR PIPES 54" & OVER)

STATION	OFFSET		STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	% MINIMUM REQUIRED SLOPE	R.C. PIPE (CLASS NOTED) SIZE						C.S. PIPE (UNLESS NOTED OTHERWISE) SIZE						TEMPORARY PIPE (TYPE AS NOTED) SIZE			TRENCHLESS INSTALLATION (PIPE AS NOTED) SIZE			REINFORCED ENDWALLS		MASONRY DRAINAGE STRUCTURES CUBIC YARDS	C.B. STD. 840.01 OR 840.02	FRAMES, GRATES & HOOD STANDARD 840.03 TYPE OF GRATE			CONCRETE TRANSITIONAL SECTION		OTCB	J.B. STD. 840.31 OR 840.32		G.D.I. TYPE "A" STD. 840.17 OR 840.26	TB.JB STD. 840.34	M.H. FRAME AND COVER STD. 840.54	SPECIAL DETAIL JB	SPECIAL DETAIL 2GIA	SPECIAL DETAIL HW	G.D.I. (N.S.) FR. WITH TWO FLAT GRATES STD. 840.29		FLOWABLE FILL (CY)	REINF. CONC. FLARED END SECTIONS NO. & SIZE	CORR. STEEL FLARED END SECTIONS NO. & Size	CS PIPE ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD. 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN. FT.	REMARKS
									54"	60"	66"	72"	66"		54"	60"	66"			60"	60"	66"	60"	66"	72"	WITH R.C. - C.Y.	WITH C.S. - C.Y.			E	F	G	DROP INLET	CATCH BASIN																			
THICKNESS OR GAUGE									RCP-III	RCP-III	RCP-III	RCP-III	RCP-IV		SHOP ELON-GATED .109	.138	.138	.168	.138	.168	CSP	RCP	RCP	WELDED STEEL																																
DETOURS																																																				
- L_DET1- 31+31.74	10	RT	D1-2	D1-3		1688.9	1686.8	0.7%		28											*																																	
- L_DET3- 15+62.55		RT	D3-1	D3-2		1636.8	1632.9	0.0042		52											*																																	
- L_DET3- 15+70.00	13	RT	D3-2		1639.7																							4.1										1															SLAB LID FOR JB
-L_DET3- 15+60		LT	D3-7		1639.2																							4.10								1															SLAB LID FOR JB
-L_DET3- 15+60		LT	D3-7	D3-8		1632.4	1632.0	0.3%								36					*																																2 @ 60"			34	
DETOUR TOTALS									0	80	0	0	0	0	0	0	36	0	0	0	0	0	0	0	0	0	0	0	8.2	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2 TOTAL	2.9	0	162	
TEMP & DETOUR TOTALS									0	80	0	0	0	0	0	0	36	0	0	0	0	0	0	0	0	0	0	0	8.2	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2 @ 54"				
FINAL TOTALS									184	272	504	208	56	0	84	0	0	0	68	0	0	0	0	0	0	400	232	29.6	19.8	101.49	0	0	0	0	0	0	0	0	1	3	0	1	2	9	4	1	2	2	0	402	0	0	0	0	0	0	2 @ 60"				
PROJECT TOTALS									184	272	504	208	56	0	84	0	36	0	68	0	0	0	0	0	0	400	232	30	20	110	0	0	0	0	0	0	0	0	1	4	0	1	3	9	4	1	2	2	0	402	0	0	0	0	0	0	2 @ 66"		0.0	646	
																																																	6 TOTAL	2.9	0	924	

ABBREVIATIONS	
C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
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PROJECT REFERENCE NO.	SHEET NO.
R-5861	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	17+75	18+75	LT/RT	SD	200
L	23+50	30+25	LT/RT	SD	1,350
L	43+50	45+50	LT/RT	SD	400
L	73+50	75+50	LT/RT	SD	400
L	88+25	88+75	LT/RT	SD	100
L	105+00	111+00	LT/RT	SD	1,200
L	149+25	151+00	LT/RT	SD	350
L_DET2	18+40	18+90	LT/RT	SD	100
L_DET2	18+70	20+80	LT/RT	SD	420
Y1	15+00	16+77	LT/RT	SD	354
Y2	10+00	11+50	LT/RT	SD	300
Y6	15+00	17+23	LT/RT	SD	446
Y9	13+20	13+50	LT/RT	SD	60
Y10B	16+30	19+50	LT/RT	SD	640
CONTINGENCY					500
				TOTAL LF:	6,820

***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 [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Subgrade Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
L	158+75	160+75	ASU	12	350	700	1050		
DR17	10+20	11+40	ASU	12	100	200	300		
DR21	10+00	10+95	ASU	12	50	100	150		
CONTINGENCY					500	1000	1500		
			TOTAL CY/TONS/SY:		1000	2000**	3000**	0	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 Subgrade 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	1:1	93+25	1:5:1	97+25	RT	900	900		
	1.5:1	119+75	1.5:1	121+25	LT	600	600		
					TOTAL SY:	1500	1500	0*	0**

***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.**

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-5861	3P-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	JAMES S. SCROGGS
2	4	SARA INC
3	4,5	TRACY MORROW KEPHART, ET AL
4	4	WILMA EVA HUGHES ESTATE
5	4	AMY M. STILES
6	4,5	TRACEY M. KEPHART
7	4,5	JAMES TANNER
8	5	JOHNNY R. NATION
9	5	JASON AND CHRISTINA HOBBY LIVING TRUST
10	5	DAVID HOBBY
11	5	JAMES S. SCROGGS
12	5	RICHARD S. HOHMAN
13	5,6	JANET B. STILES
14	5	CHRISTOPHER W. WOOD
15	6	MURPHY HIGHWAY LLC
16	6	ROY C. BEBEE
17	6	ROY C. BEBEE
18	6,7	CHEROKEE WELL DRILLING & PUMP CO INC
19		NO CLAIM
20	7	NAOMI MARTIN
21	7	BELLVIEW COMMUNTIY FIRE DEPT
22	7,8	RAYMONDE T. BAUMEISTER
23	6,7	SUELLEN CHAVET
24	7	DAVID FRANKLIN MILLER
25		NO CLAIM
26	8	RAYMONDE T. BAUMEISTER
27	8	RAYMONDE T. BAUMEISTER
28	8	KATHERINE L. MERCER
29	8	DANIEL J. WEEKS
30	8	TIMOTHY J. BARNEY
31	8	DENNIS R. ABSHIER & WIFE BARBARA ABSHIER
32	8	D&G RESIDENTIAL SERVICES, LLC
33	8,9	JAMES TARASZEWSKI
34	9	MARGARET ELWOOD
35	9	DEWEY SENECAL
36	9	DON SMITH AND WIFE, EDNA SMITH
37	9,10	FRANCES H. HARTZELL
38	8,9	TRICIA WISEMAN BURKE, AND HUSBAND WILLIAM BURKE
39	9	HOMER A. SHAFFER
40	9	WILLIAM J. TOVAR, ET UX
41	9,10	CANDACE LOVE, HEIRS
41A	10	MARGUERITE C PROSPERO O'BRYON
42	10	HOMER A. SHAFFER JR.
43	10	HOWARD J. BAUMEISTER
44	10,11	WILLIAM E. CAMPBELL HEIRS, ET AL
45	10	KATIE A. ERWIN
46		DELETED
47	10,11	RAYMONDE T. BAUMEISTER
48	11	BRITTANY RHODES
49	11	KENNETH B. LANCE
50	11,12	THOMAS STADTHAGEN AND WIFE, MICHELE STADTHAGEN
51	11	PATRICIA E. PRATT
52	11	GENE SNEED
53	11	KENNETH P. LANCE
54	11	CLINTON L. ROBERTS JR.
55	11	DIANE J. ANDERSON
56	11	HAROLD M. ROBERSON
57	11	NO CLAIM
58	11,12	SMOKY MOUNTAIN HOLDING
59	12,13	SARAH SKOMP

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
60	12	ROBERT IRWIN, ET AL
61	12	BRUCE BROCKETT
62	12,13	MGHI INTRESTS LLC
63	12,13	MANUEL HERNANDEZ
64	13	BRUCE C. CHYNOWETH
65	13	TITAN SELF STORAGE LLC
66	13	RICHARD DIEHL
67	13	RICHARD M. STOVER
68	13,14	FRONTIER COMMUNICATIONS OF THE CAROLINAS, LLC
69	13	GENE P. FARMER
70	13	BARBARA A. ROBERSON
71	13	NO CLAIM
72	13	WILLIAM CONNELL, HEIRS
73	13,14	RENEGADE SELF-STORAGE, LLC
73A	14	RENEGADE SELF-STORAGE, LLC
74	14	WILLIAM J. KOLB
75	14	KELLY R. HOPKINS AND WIFE, ANGELIA HOPKINS; SHELIA HOEPNER AND HUSBAND KENNETH HOEPPNER
76	14	CARLY HOPKINS
77	14	KELLY HOPKINS AND SHEILA H. HOEPPNER
78		DELETED
79	14	GEORGETTE HOWERTON
80	14	BRENT HEENAN
81	14	JUSTIN M. HEDDEN
82	14,15	FREDERICK DEAN DALRYMPLE, LIFE ESTATE
83	14,15	CHRISTINA L. GUTHRIE
84	14,15	ALFRED F. KINCAID ESTATE
85	15	BARBARA GUTHRIE
86	15	BARBARA GUTHRIE
87	15,21	ERICA LEANN PORTAL
88	15,16,21	JAMMIE ADAMS SAVUGOT
89		DELETED
90	15	PHOEBE M. HEDDEN
91	15	CHARLES GREEN HEIRS, ET AL
92	15	PAUL W. BEASTER
93	15,16	JARRAD S. HAMPTON
94		DELETED
95	15,16	REBEKA FRANKLIN AND HUSBAND, CORY FRANKLIN
96	16,21	RONNIE D. WHITENER AND BETTY SUE WHITENER
97	16,21	RITA COLLEEN KELLY AND CRYSTAL KELLY ROGERS
98	16,17	PAUL Q. RAPER HEIRS AND WILLIAM DALE CLONTS
98A		DELETED
99	17	OLIVER MINOR
100	17,18	PATRICIA FOSTER AND TRACY FOSTER
101	17,18	EVA B. DECKER
102	18	DAVID S. DUFFEK AND WIFE, SHANNON F. DUFFEK
103	18	JOHN T. MCGUIRE
104	18	DELETED
105	18	CHAD DECKER AND WIFE, SONYA DECKER
106	21	STEPHANIE TANNER
107	21	BETTY BEAVERS ESTATE
108	10	ROBERT TRUETT

8/23/2023
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8/17/99

-L-	-DR1-	-DR2-	
PI Sta 12+56.73	PI Sta 10+80.09	PI Sta 9+91.87	PI Sta 10+50.35
Δ = 24° 05' 46.1" (LT)	Δ = 6° 06' 49.5" (LT)	Δ = 13° 05' 15.7" (LT)	Δ = 28° 53' 59.0" (RT)
D = 6° 09' 39.0"	D = 7° 01' 48.6"	D = 21° 37' 15.8"	D = 52° 05' 13.5"
L = 391.12'	L = 86.96'	L = 60.53'	L = 55.48'
T = 198.49'	T = 43.52'	T = 30.40'	T = 28.35'
R = 930.00'	R = 815.00'	R = 265.00'	R = 110.00'
SE = 0.06	SE = 0.02	SE = 0.02	SE = 0.02
RO = 150'	DS = 15 MPH	DS = 15 MPH	DS = 15 MPH
DS = 50 MPH (MATCH EXIST)			

PROJECT REFERENCE NO.	SHEET NO.
R-5861	4
R/W SHEET NO.	____
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 29470 BRANDON J. McINNIS DocuSigned by: Brandon McInnis BE6912CC24204D4... 10/31/2023	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 46155 ALEXIS S. BURKE DocuSigned by: Alexis Burke 08E52EF5827E423... 10/31/2023

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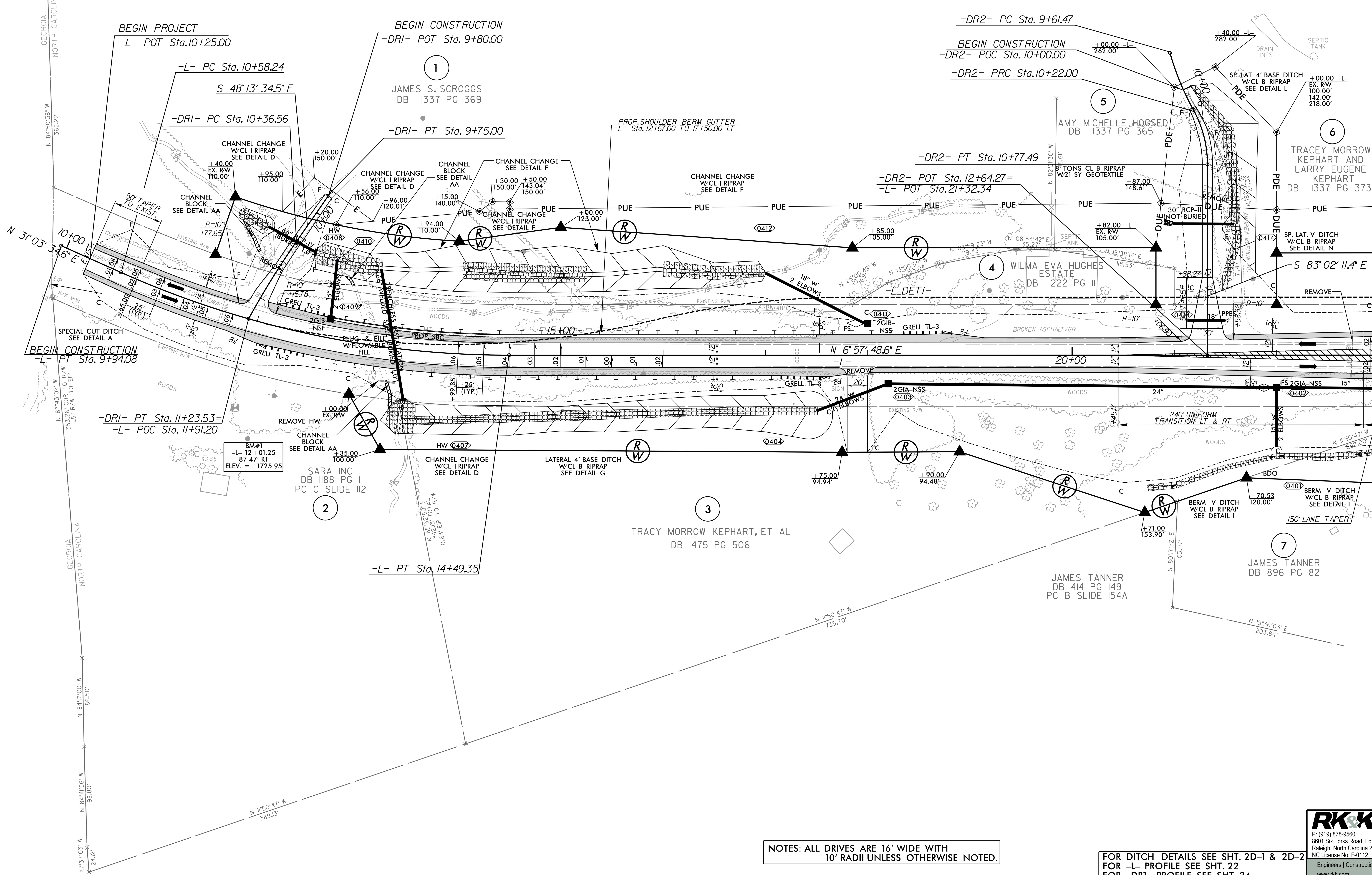

NOTES: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED.

FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2
FOR -L- PROFILE SEE SHT. 22
FOR -DR1- PROFILE SEE SHT. 34
FOR -DR2- PROFILE SEE SHT. 34

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10/31/2023
R:\Roadway\Proj\R5861_Rdy_psh04.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-5861	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

BRANDON J. McINNIS, NORTH CAROLINA PROFESSIONAL ENGINEER, SEAL 29470, 10/31/2023

ALEXIS S. BURKE, NORTH CAROLINA PROFESSIONAL ENGINEER, SEAL 46155, 10/30/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

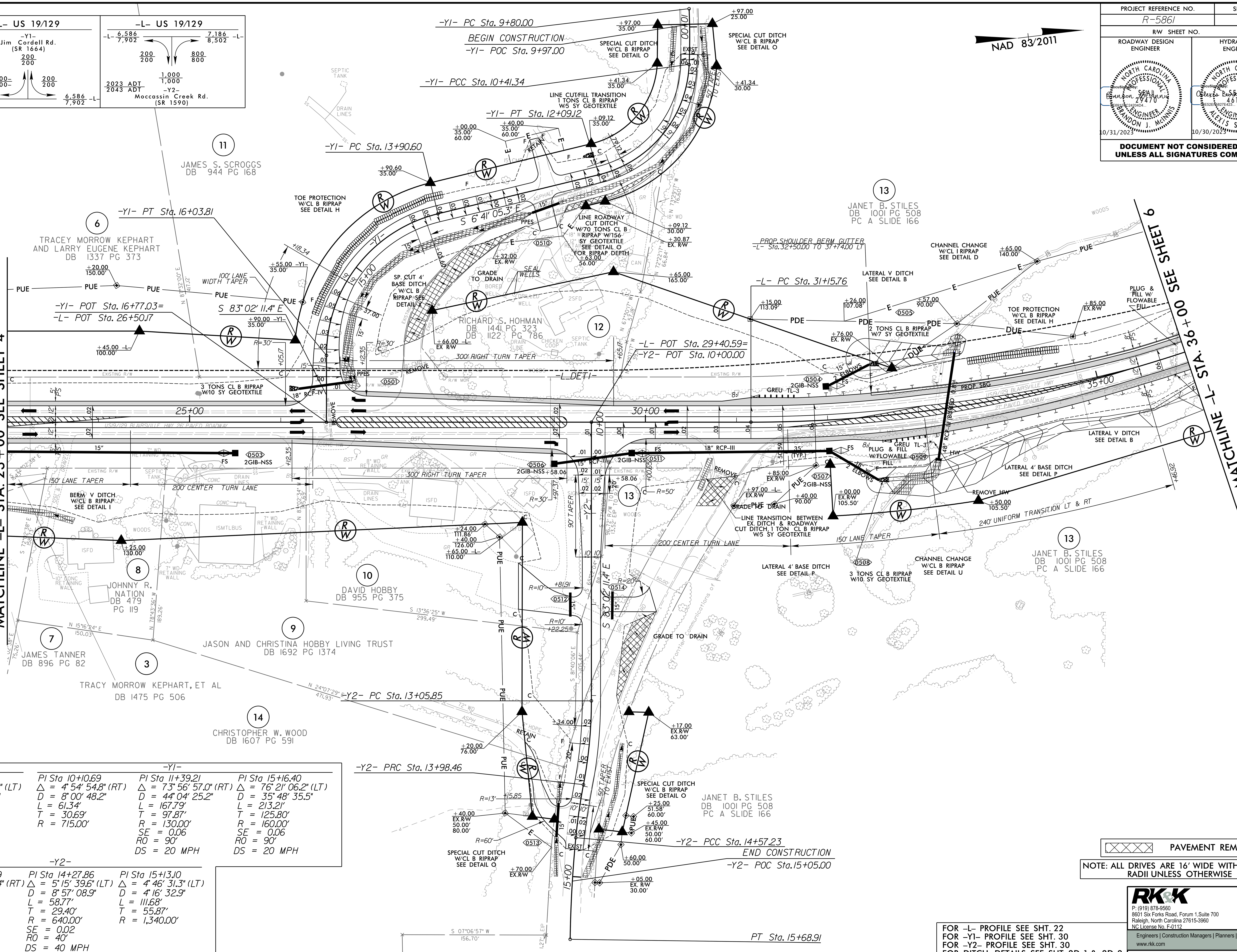
NAD 83/2011

-L- US 19/129

2023 ADT / 2043 ADT -Y1- Jim Cordell Rd. (SR 1664)

-L- US 19/129

2023 ADT / 2043 ADT -Y2- Moccasin Creek Rd. (SR 1590)



-L-
PI Sta 33+81.27
Δ = 19° 56' 40.6" (LT)
D = 3° 47' 39.9"
L = 525.63'
T = 265.50'
R = 1,510.00'
SE = 0.06
RO = 210'
DS = 60 MPH

-Y1-		
PI Sta 10+10.69	PI Sta 11+39.21	PI Sta 15+16.40
Δ = 4° 54' 54.8" (RT)	Δ = 73° 56' 57.0" (RT)	Δ = 76° 21' 06.2" (LT)
D = 8° 00' 48.2"	D = 44° 04' 25.2"	D = 35° 48' 35.5"
L = 61.34'	L = 167.79'	L = 213.21'
T = 30.69'	T = 97.87'	T = 125.80'
R = 715.00'	R = 130.00'	R = 160.00'
	SE = 0.06	SE = 0.06
	RO = 90'	RO = 90'
	DS = 20 MPH	DS = 20 MPH

-Y2-		
PI Sta 13+52.29	PI Sta 14+27.86	PI Sta 15+13.10
Δ = 10° 49' 45.4" (RT)	Δ = 5° 15' 39.6" (LT)	Δ = 4° 46' 31.3" (LT)
D = 11° 41' 34.9"	D = 8° 57' 08.9"	D = 4° 16' 32.9"
L = 92.61'	L = 58.77'	L = 111.68'
T = 46.44'	T = 29.40'	T = 55.87'
R = 490.00'	R = 640.00'	R = 1,340.00'
SE = NC	SE = 0.02	
RO = 40'	RO = 40'	
DS = 40 MPH	DS = 40 MPH	

PAVEMENT REMOVAL

NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE SEE SHT. 22
FOR -Y1- PROFILE SEE SHT. 30
FOR -Y2- PROFILE SEE SHT. 30
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2

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-L-		-DR5-		-DR7-
PI Sta 33+81.27	PI Sta 50+66.87	PI Sta 10+51.11	PI Sta 11+46.56	PI Sta 13+09.35
△ = 19° 56′ 40.6″ (LT)	△ = 58° 48′ 26.3″ (LT)	△ = 54° 08′ 51.5″ (LT)	△ = 13° 11′ 45.2″ (LT)	△ = 110° 06′ 07.5″ (RT)
D = 3° 47′ 39.9″	D = 5° 24′ 18.9″	D = 57° 17′ 44.8″	D = 12° 43′ 56.6″	D = 163° 42′ 08.0″
L = 525.63′	L = 1,087.96′	L = 94.51′	L = 103.64′	L = 67.26′
T = 265.50′	T = 597.37′	T = 51.11′	T = 52.05′	T = 50.08′
R = 1,510.00′	R = 1,060.00′	R = 100.00′	R = 450.00′	R = 35.00′
SE = 0.06	SE = 0.06	SE = 0.02	SE = 0.02	SE = 0.02
RO = 210′	RO = 195′	DS = 15 MPH	DS = 15 MPH	DS = 15 MPH
DS = 60 MPH	DS = 55 MPH			

NAD 83/2011

PROJECT REFERENCE NO.	SHEET NO.
R-5861	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 29470 ENGINEER BRANDON J. McINNIS — DocuSigned by: Brandon McInnis — 10/31/2023	NORTH CAROLINA PROFESSIONAL SEAL 46155 ENGINEER ALEXIS S. BURKE — DocuSigned by: Alexis Burke — 10/30/2023

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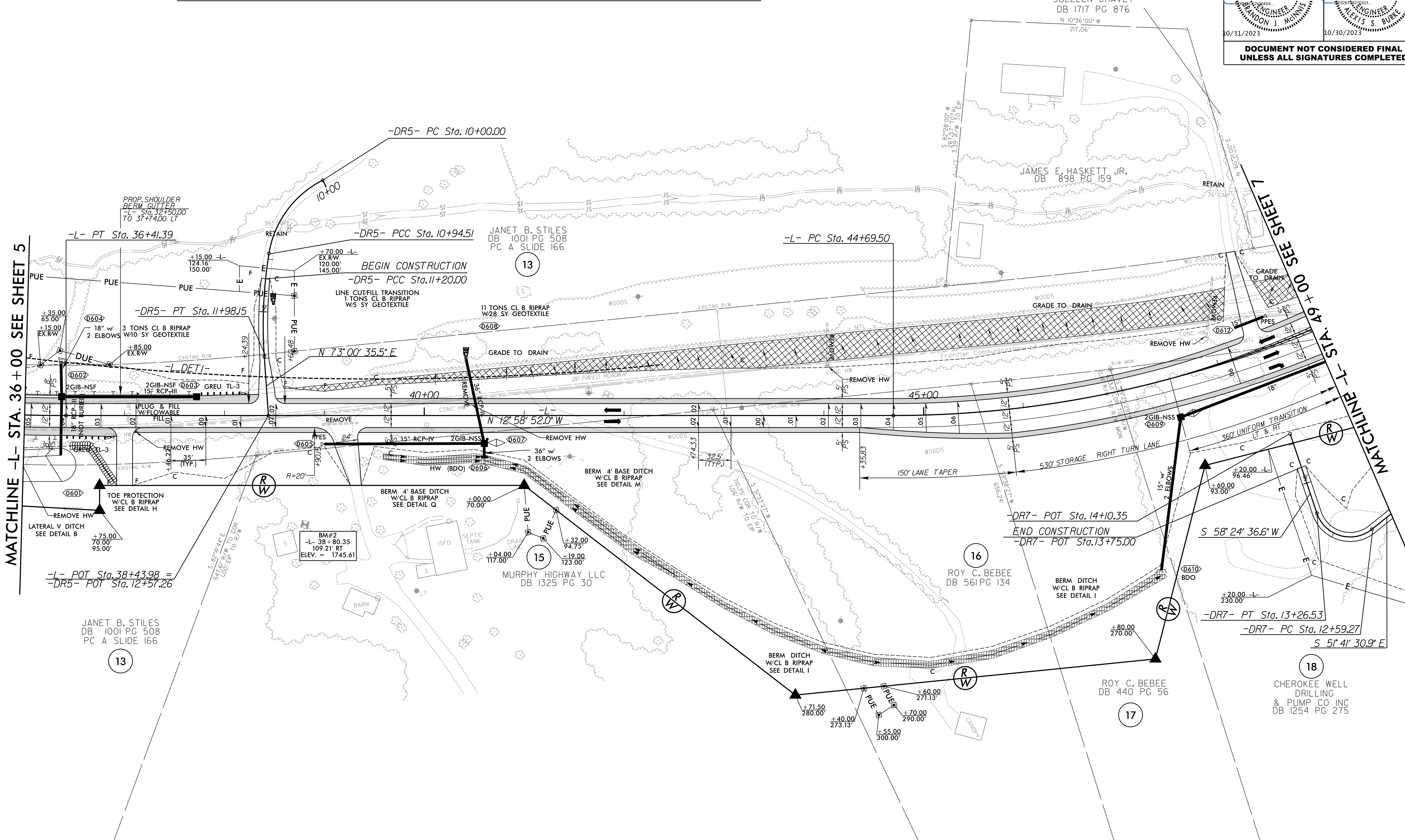

NOTE: ALL DRIVES ARE 16′ WIDE WITH 10′ RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE SEE SHT. 23
FOR -DR5- PROFILE SEE SHT. 34
FOR -DR7- PROFILE SEE SHT. 35
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2

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10/6/2023
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bespinosa

-L-		-Y3A-	-DR6-		-DR7-
PI Sta 50+66.87	PI Sta 59+39.36	PI Sta 11+44.57	PI Sta 11+21.86	PI Sta 11+78.95	PI Sta 12+00.39
Δ = 58° 48' 26.3" (LT)	Δ = 1° 27' 31.2" (RT)	Δ = 63° 45' 38.0" (RT)	Δ = 53° 56' 30.0" (LT)	Δ = 52° 28' 26.9" (LT)	Δ = 19° 53' 23.0" (LT)
D = 5° 24' 18.9"	D = 0° 11' 27.5"	D = 77° 21' 51.7"	D = 76° 23' 39.7"	D = 114° 35' 29.6"	D = 47° 44' 47.3"
L = 1,087.96'	L = 763.75'	L = 82.42'	L = 70.61'	L = 45.79'	L = 41.66'
T = 597.37'	T = 381.90'	T = 49.76'	T = 38.17'	T = 24.64'	T = 21.04'
R = 1,060.00'	R = 30,000.00'	R = 80.00'	R = 75.00'	R = 50.00'	R = 120.00'
SE = 0.06	SE = 0.02	SE = 0.06	SE = 0.02	SE = 0.02	SE = 0.02
RO = 195'	RO = 70'	RO = 90'			
DS = 55 MPH	DS = 60 MPH	DS = 15 MPH	DS = 15 MPH	DS = 15 MPH	DS = 15 MPH

PROJECT REFERENCE NO.	SHEET NO.
R-5861	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 29470 BRANDON J. McINNIS 10/31/2023	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 46155 ALEXIS S. BURKE 10/30/2023

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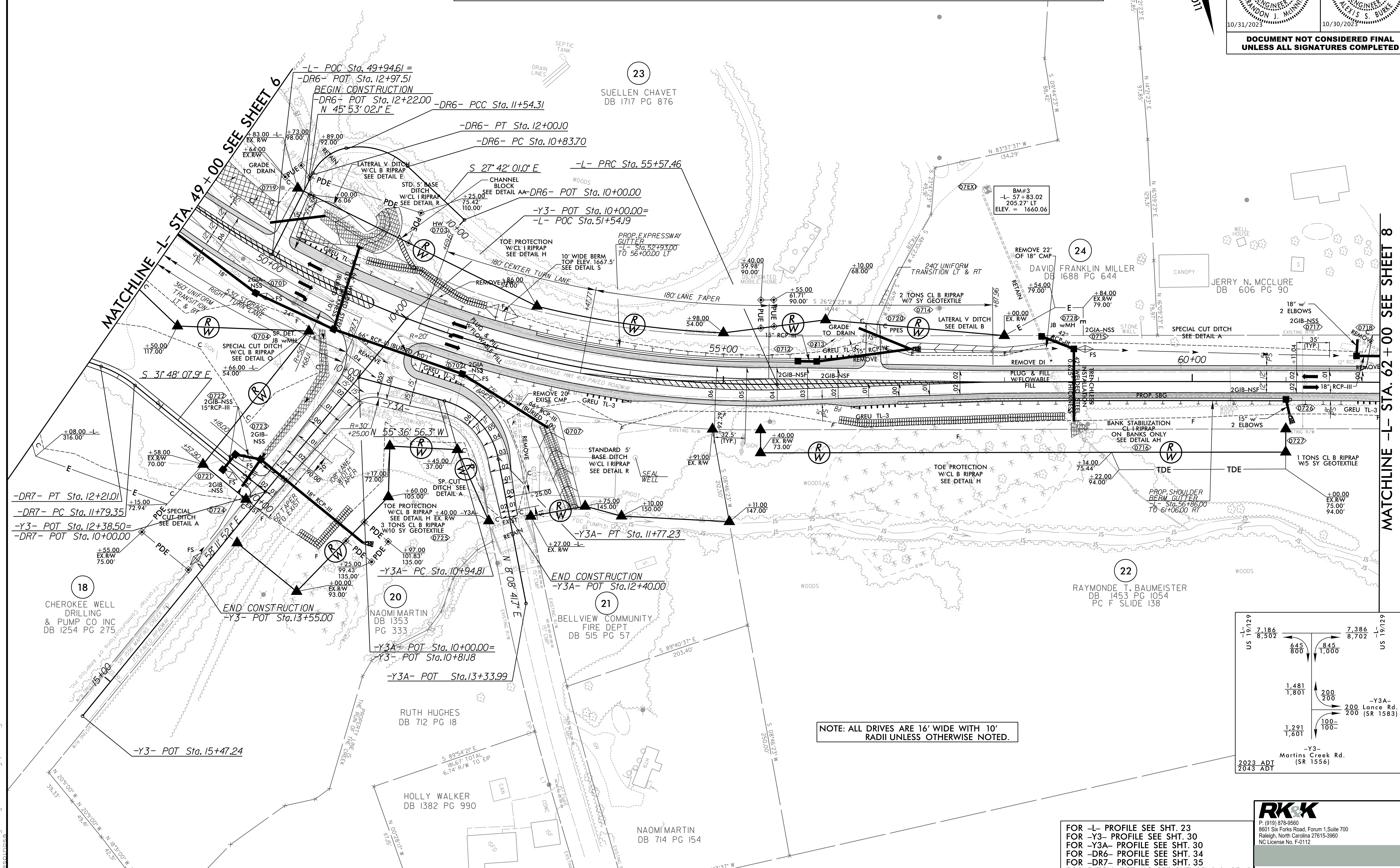

NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE SEE SHT. 23
FOR -Y3- PROFILE SEE SHT. 30
FOR -Y3A- PROFILE SEE SHT. 30
FOR -DR6- PROFILE SEE SHT. 34
FOR -DR7- PROFILE SEE SHT. 35
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2

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-L-	-DR8-
PI Sta 59+39.36	PI Sta 75+17.07	PI Sta 12+56.85
△ = 1° 27' 31.2" (RT)	△ = 60° 30' 48.9" (RT)	△ = 56° 41' 15.7" (LT)
D = 0° 11' 27.5"	D = 2° 47' 41.7"	D = 47° 44' 47.3"
L = 763.75'	L = 2,165.13'	L = 118.73'
T = 381.90'	T = 1,195.85'	T = 64.73'
R = 30,000.00'	R = 2,050.00'	R = 120.00'
SE = 0.02	SE = 0.06	SE = 0.02
RO = 70'	RO = 210'	DS = 15 MPH
DS = 60 MPH	DS = 60 MPH	

PROJECT REFERENCE NO.	SHEET NO.
R-5861	8
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 049470 ENGINEER BRANDON J. McINNIS
10/31/2023

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 040155 ENGINEER ALEXIS S. BURKE
10/30/2023

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NAD 83/2011

8/17/09

-DR8- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-DR8- PT Sta.11+58.00

-DR8- PC Sta. 11+92.12

-DR8- PT Sta. 13+10.85

-L- PCC Sta. 63+21.21

-DR8- POT Sta. 13+80.26=
-L- POC Sta. 71+41.54

END CULVERT
-L- Sta.72+04.04

BEGIN CULVERT
-L- Sta.71+83.47

MATCHLINE -L- STA. 62+00 SEE SHEET 7

MATCHLINE -L- STA. 75+00 SEE SHEET 9

29 DANIEL J. WEEKS DB 1248 PG 719

30 TIMOTHY J. BARNEY DB 1552 PG 202

31 HUBERT M. PICKLESIMER DB 1017 PG 311
DENNIS R. ABSHIER AND WIFE BARBARA ABSHIER DB 1603 PG 794

32 COLLIN CORDELL AND WIFE, JENNIFER CORDELL DB 1710 PG 820

33

28 KATHERINE L. MERCER DB 793 PG 140

27 RAYMONDE T. BAUMEISTER DB 474 PG 82 PC F SLIDE 138

26 RAYMONDE T. BAUMEISTER DB 1058 PG 481 PC F SLIDE 138

JERRY N. MCCLURE DB 606 PG 90

22 RAYMONDE T. BAUMEISTER DB 1453 PG 1054 PC F SLIDE 138

32 D & G RESIDENTIAL SERVICES, LLC DB 1647 PG 999

38 TRICIA WISEMAN BURKE, AND HUSBAND WILLIAM BURKE DB 998 PG 734 PC C SLIDE 36B

NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE SEE SHTS. 23-24
FOR -DR8- PROFILE SEE SHT. 35
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2

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-DR9-		-L-		-Y4-			-DR27-
PI Sta 10+50.15	PI Sta 11+47.91	PI Sta 75+17.07	PI Sta 90+43.98	PI Sta 10+14.44	PI Sta 10+81.45	PI Sta 12+57.81	PI Sta 13+48.53	PI Sta 10+53.28
Δ = 9° 53' 01.0" (LT)	Δ = 26° 16' 20.4" (RT)	Δ = 60° 30' 48.9" (RT)	Δ = 2° 47' 40.83" (RT)	Δ = 7° 51' 52.2" (RT)	Δ = 92° 55' 38.0" (RT)	Δ = 6° 28' 50.8" (LT)	Δ = 84° 21' 27.6" (LT)	Δ = 15° 42' 55.45" (RT)
D = 9° 52' 42.9"	D = 6.3° 39' 43.1"	D = 2° 47' 41.7"	D = 0° 25' 03.9"	D = 27° 17' 01.3"	D = 114° 35' 29.6"	D = 14° 10' 59.9"	D = 83° 37' 14.3"	D = 9° 42' 40.1"
L = 100.05'	L = 41.27'	L = 2,165.13'	L = 668.97'	L = 28.82'	L = 81.09'	L = 45.69'	L = 100.88'	L = 161.83'
T = 50.15'	T = 21.00'	T = 1,195.85'	T = 334.55'	T = 14.44'	T = 52.62'	T = 22.93'	T = 67.96'	T = 81.43'
R = 580.00'	R = 90.00'	R = 2,050.00'	R = 13,715.00'	R = 210.00'	R = 50.00'	R = 405.00'	R = 75.00'	R = 590.00'
SE = 0.02	SE = 0.02	SE = 0.06	SE = 0.02		SE = 0.02	SE = 0.02	SE = 0.02	
DS = 15 MPH	DS = 15 MPH	R0 = 210'	R0 = 70'		R0 = 30'	R0 = 30'	R0 = 30'	
		DS = 60 MPH	DS = 60 MPH		DS = 15 MPH	DS = 15 MPH	DS = 15 MPH	

NAD 83/2011

PROJECT REFERENCE NO.	SHEET NO.
R-5861	9
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 29470 ENGINEER BRANDON J. McINNIS — 10/31/2023

HYDRAULICS ENGINEER: NORTH CAROLINA PROFESSIONAL SEAL 46155 ENGINEER ALEXIS S. BURKE — 10/30/2023

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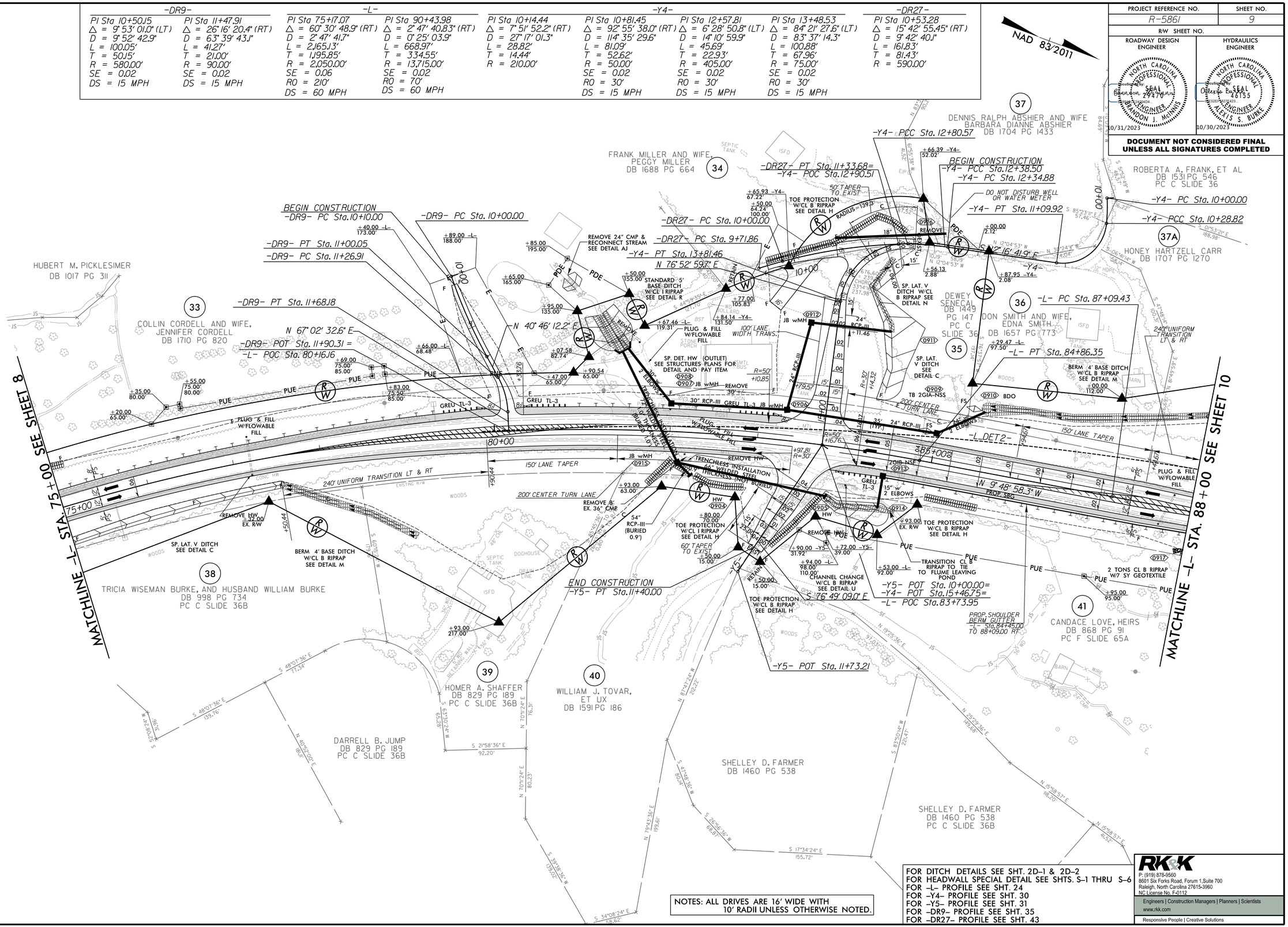

FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2
FOR HEADWALL SPECIAL DETAIL SEE SHTS. S-1 THRU S-6
FOR -L- PROFILE SEE SHT. 24
FOR -Y4- PROFILE SEE SHT. 30
FOR -Y5- PROFILE SEE SHT. 31
FOR -DR9- PROFILE SEE SHT. 35
FOR -DR27- PROFILE SEE SHT. 43

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psheridan

-L-			-DR10-	-DR11-
PI Sta 90+43.98	PI Sta 95+11.13	PI Sta 97+69.79	PI Sta 11+73.39	PI Sta 11+23.42
Δ = 2° 47′ 40.83″ (RT)	Δ = 5° 4′ 00.1″ (LT)	Δ = 4° 48′ 49.0″ (RT)	Δ = 10° 15′ 03.7″ (LT)	Δ = 14° 52′ 01.7″ (RT)
D = 0° 25′ 03.9″	D = 1° 54′ 35.49″	D = 1° 54′ 35.49″	D = 14° 19′ 26.2″	D = 28° 57′ 18.1″
L = 668.97′	L = 265.30′	L = 252.04′	L = 71.57′	L = 51.35′
T = 334.55′	T = 132.73′	T = 126.09′	T = 35.88′	T = 26.09′
R = 13,715.00′	R = 3,000.00′	R = 3,000.00′	R = 400.00′	R = 200.00′
SE = 0.02	SE = 0.05	SE = 0.05	SE = 0.02	SE = 0.02
RO = 70′	RO = 140′	RO = 140′	DS = 15 MPH	DS = 15 MPH
DS = 60 MPH	DS = 60 MPH	DS = 60 MPH		

PROJECT REFERENCE NO.	SHEET NO.
R-5861	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 29470 BRANDON J. McINNIS 10/31/2023	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 46155 ALEXIS S. BURKE 10/30/2023

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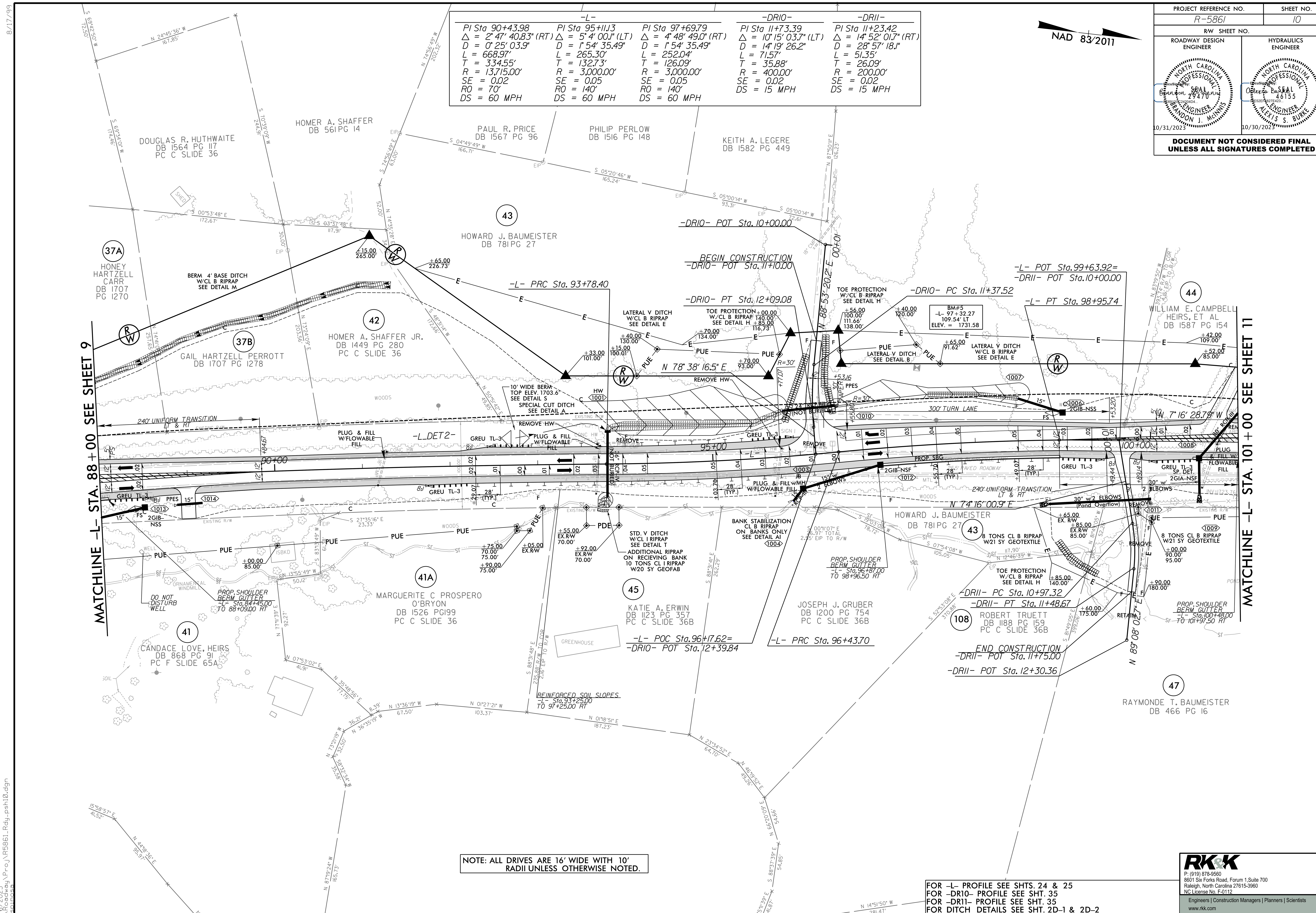

NAD 83/2011
MATCHLINE -L- STA. 88+00 SEE SHEET 9
MATCHLINE -L- STA. 101+00 SEE SHEET 11
DOUGLAS R. HUTHWAITE DB 1564 PG 117 PC C SLIDE 36
HOMER A. SHAFFER DB 561 PG 14
PAUL R. PRICE DB 1567 PG 96
PHILIP PERLOW DB 1516 PG 148
KEITH A. LEGERE DB 1582 PG 449
HOWARD J. BAUMEISTER DB 781 PG 27
HONEY HARTZELL CARR DB 1707 PG 1270
GAIL HARTZELL PERROTT DB 1707 PG 1278
HOMER A. SHAFFER JR. DB 1449 PG 280 PC C SLIDE 36
WILLIAM E. CAMPBELL HEIRS, ET AL DB 1587 PG 154
MARGUERITE C PROSPERO O'BRYON DB 1526 PG199 PC C SLIDE 36
KATIE A. ERWIN DB 1123 PG 357 PC C SLIDE 36B
JOSEPH J. GRUBER DB 1200 PG 754 PC C SLIDE 36B
ROBERT TRUETT DB 1188 PG 159 PC C SLIDE 36B
CANDACE LOVE, HEIRS DB 868 PG 91 PC F SLIDE 65A
RAYMONDE T. BAUMEISTER DB 466 PG 16
-L- PRC Sta. 93+78.40
-DR10- POT Sta. 10+00.00
BEGIN CONSTRUCTION -DR10- POT Sta. 11+10.00
-DR10- PT Sta. 12+09.08
-DR10- PC Sta. 11+37.52
-L- POT Sta. 99+63.92= -DR11- POT Sta. 10+00.00
-L- PT Sta. 98+95.74
-L- POC Sta. 96+17.62= -DR10- POT Sta. 12+39.84
-L- PRC Sta. 96+43.70
-DR11- PC Sta. 10+97.32
-DR11- PT Sta. 11+48.67
END CONSTRUCTION -DR11- POT Sta. 11+75.00
-DR11- POT Sta. 12+30.36
N 78° 38′ 16.5″ E
N 74° 16′ 00.9″ E
N 7° 16′ 28.78″ W
N 88° 53′ 20.2″ E
N 89° 08′ 02.7″ E
BM#5 -L- 97+32.27 109.54′ LT ELEV. = 1731.58
BERM 4′ BASE DITCH W/CL B RIPRAP SEE DETAIL M
10′ WIDE BERM TOP ELEV. 1703.6′ SEE DETAIL S SPECIAL CUT DITCH SEE DETAIL A
240′ UNIFORM TRANSITION LT & RT
300′ TURN LANE
STD. V DITCH W/CL I RIPRAP SEE DETAIL T ADDITIONAL RIPRAP ON RECIEVING BANK 10 TONS CL I RIPRAP W/20 SY GEOFAB
BANK STABILIZATION CL B RIPRAP ON BANKS ONLY SEE DETAIL AI
REINFORCED SOIL SLOPES -L- Sta.93+25.00 TO 97+25.00 RT
PROP. SHOULDER BERM GUTTER -L- Sta.84+45.00 TO 88+09.00 RT
PROP. SHOULDER BERM GUTTER -L- Sta.96+87.00 TO 98+96.50 RT
PROP. SHOULDER BERM GUTTER -L- Sta.100+48.00 TO 101+97.50 RT
DO NOT DISTURB WELL
8 TONS CL B RIPRAP W/21 SY GEOTEXTILE

NOTE: ALL DRIVES ARE 16′ WIDE WITH 10′ RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE SEE SHTS. 24 & 25
FOR -DR10- PROFILE SEE SHT. 35
FOR -DR11- PROFILE SEE SHT. 35
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2
FOR REINFORCED SOIL SLOPE DETAILS SEE SHTS. 2G-1 & 2G-2

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-L-

PI Sta 112+20.71	PI Sta 13+60.37	PI Sta 16+47.26
△ = 0° 38' 52.86" (LT)	△ = 81° 00' 06.6" (LT)	△ = 66° 29' 36.7" (RT)
D = 0° 15' 37.57"	D = 39° 30' 51.6"	D = 67° 24' 24.5"
L = 248.82'	L = 204.99'	L = 98.65'
T = 124.41'	T = 123.85'	T = 55.72'
R = 22,000.00'	R = 145.00'	R = 85.00'
SE = NC	SE = 0.06	SE = 0.05
RO = 70'	RO = 100'	RO = 75'
DS = 60 MPH	DS = 25 MPH	DS = 20 MPH

-Y6-

-DRI2-

PI Sta 11+30.31
△ = 3° 00' 57.2" (RT)
D = 7° 09' 59.9"
L = 42.08'
T = 21.06'
R = 800.00'
SE = 0.02
DS = 15 MPH

-Y7-

PI Sta 10+57.52	PI Sta 12+54.78	PI Sta 13+35.18
△ = 62° 23' 11.4" (RT)	△ = 90° 57' 44.5" (LT)	△ = 6° 35' 41.2" (RT)
D = 63° 30' 49.4"	D = 72° 03' 49.5"	D = 8° 08' 02.0"
L = 98.23'	L = 126.22'	L = 81.08'
T = 57.52'	T = 86.44'	T = 40.62'
R = 95.00'	R = 85.00'	R = 705.00'
SE = 0.02	SE = 0.02	SE = 0.02
RO = 30'	RO = 30'	DS = 15 MPH
DS = 20 MPH	DS = 20 MPH	

-DR28-

PI Sta 10+76.09
△ = 88° 03' 13.4" (LT)
D = 190° 59' 09.4"
L = 46.10'
T = 29.00'
R = 30.00'
SE = 0.02
DS = 15 MPH

-DRI3-

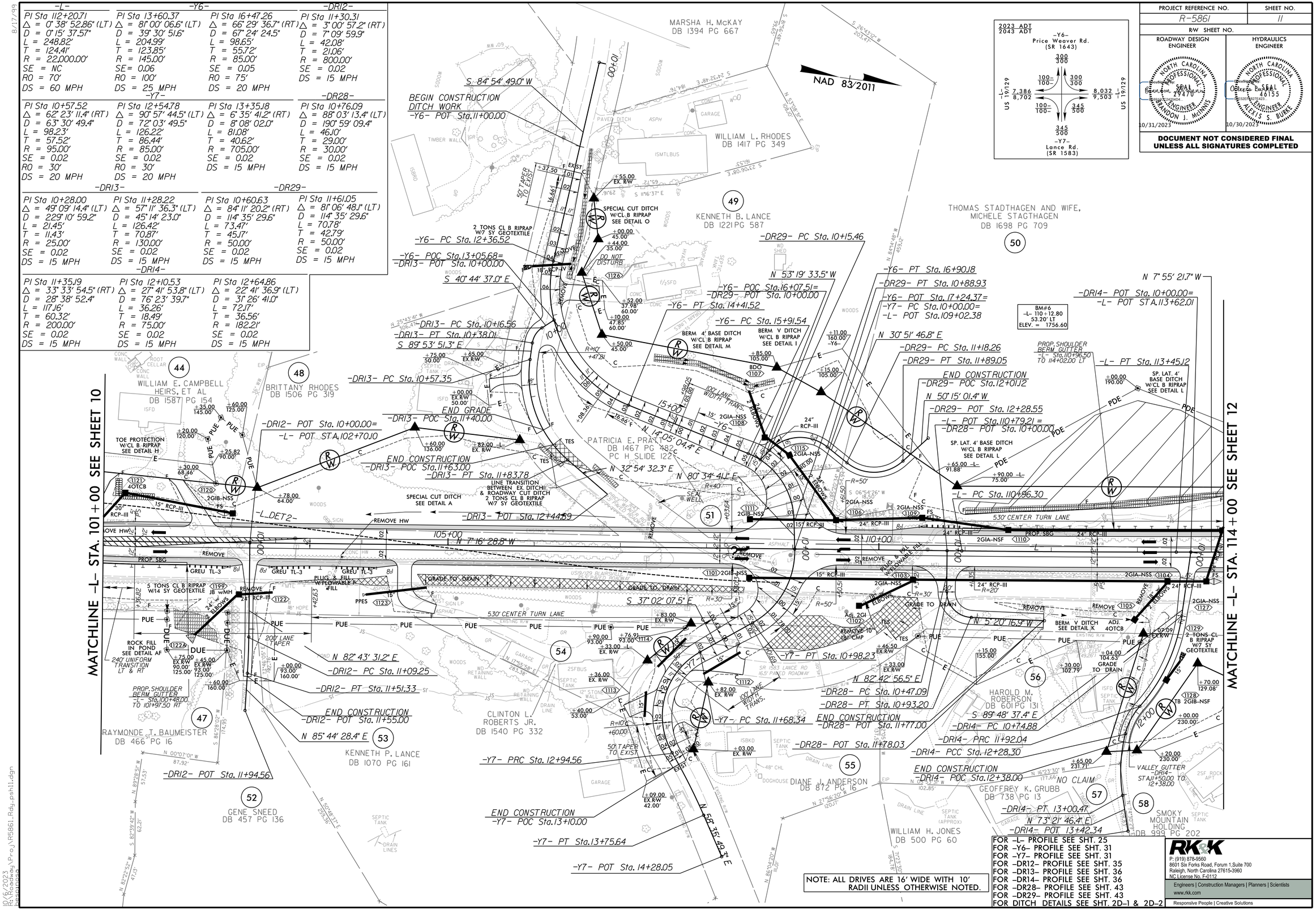
PI Sta 10+28.00	PI Sta 11+28.22
△ = 49° 09' 14.4" (LT)	△ = 57° 11' 36.3" (LT)
D = 229° 10' 59.2"	D = 45° 14' 23.0"
L = 21.45'	L = 126.42'
T = 11.43'	T = 70.87'
R = 25.00'	R = 130.00'
SE = 0.02	SE = 0.02
DS = 15 MPH	DS = 15 MPH

-DR29-

PI Sta 10+60.63	PI Sta 11+61.05
△ = 84° 11' 20.2" (RT)	△ = 81° 06' 48.1" (LT)
D = 114° 35' 29.6"	D = 114° 35' 29.6"
L = 73.47'	L = 70.78'
T = 45.17'	T = 42.79'
R = 50.00'	R = 50.00'
SE = 0.02	SE = 0.02
DS = 15 MPH	DS = 15 MPH

-DRI4-

PI Sta 11+35.19	PI Sta 12+10.53	PI Sta 12+64.86
△ = 33° 33' 54.5" (RT)	△ = 27° 41' 53.8" (LT)	△ = 22° 41' 36.9" (LT)
D = 28° 38' 52.4"	D = 76° 23' 39.7"	D = 31° 26' 41.0"
L = 117.16'	L = 36.26'	L = 72.17'
T = 60.32'	T = 18.49'	T = 36.56'
R = 200.00'	R = 75.00'	R = 182.21'
SE = 0.02	SE = 0.02	SE = 0.02
DS = 15 MPH	DS = 15 MPH	DS = 15 MPH



PROJECT REFERENCE NO.	SHEET NO.
R-5861	11
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
Brandon J. McInnis SEAL 29470 ENGINEER
10/31/2023

HYDRAULICS ENGINEER
Alexis S. Burke SEAL 46155 ENGINEER
10/30/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

FOR -L- PROFILE SEE SHT. 25
FOR -Y6- PROFILE SEE SHT. 31
FOR -Y7- PROFILE SEE SHT. 31
FOR -DR12- PROFILE SEE SHT. 35
FOR -DR13- PROFILE SEE SHT. 36
FOR -DR14- PROFILE SEE SHT. 36
FOR -DR28- PROFILE SEE SHT. 43
FOR -DR29- PROFILE SEE SHT. 43
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2

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bassjones

-L-	-DR15-		
PI Sta 127+30.02	PI Sta 11+99.43	PI Sta 12+96.26	PI Sta 13+52.13
△ = 23° 20′ 58.3″ (LT)	△ = 73° 27′ 47.3″ (RT)	△ = 52° 13′ 28.3″ (LT)	△ = 22° 25′ 31.3″ (RT)
D = 2° 41′ 46.6″	D = 60° 00′ 00.0″	D = 60° 00′ 00.0″	D = 67° 29′ 52.7″
L = 865.99′	L = 122.44′	L = 87.04′	L = 33.22′
T = 439.09′	T = 74.62′	T = 49.02′	T = 17.84′
R = 2,125.00′	R = 100.00′	R = 100.00′	R = 90.00′
SE = 0.06	SE = 0.02	SE = 0.02	SE = 0.02
RO = 165′	DS = 15 MPH	DS = 15 MPH	DS = 15 MPH
DS = 60 MPH			

PROJECT REFERENCE NO.	SHEET NO.
R-5861	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 029470 BRANDON J. McINNIS 10/31/2023	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 046155 ALEXIS S. BURKE 10/30/2023

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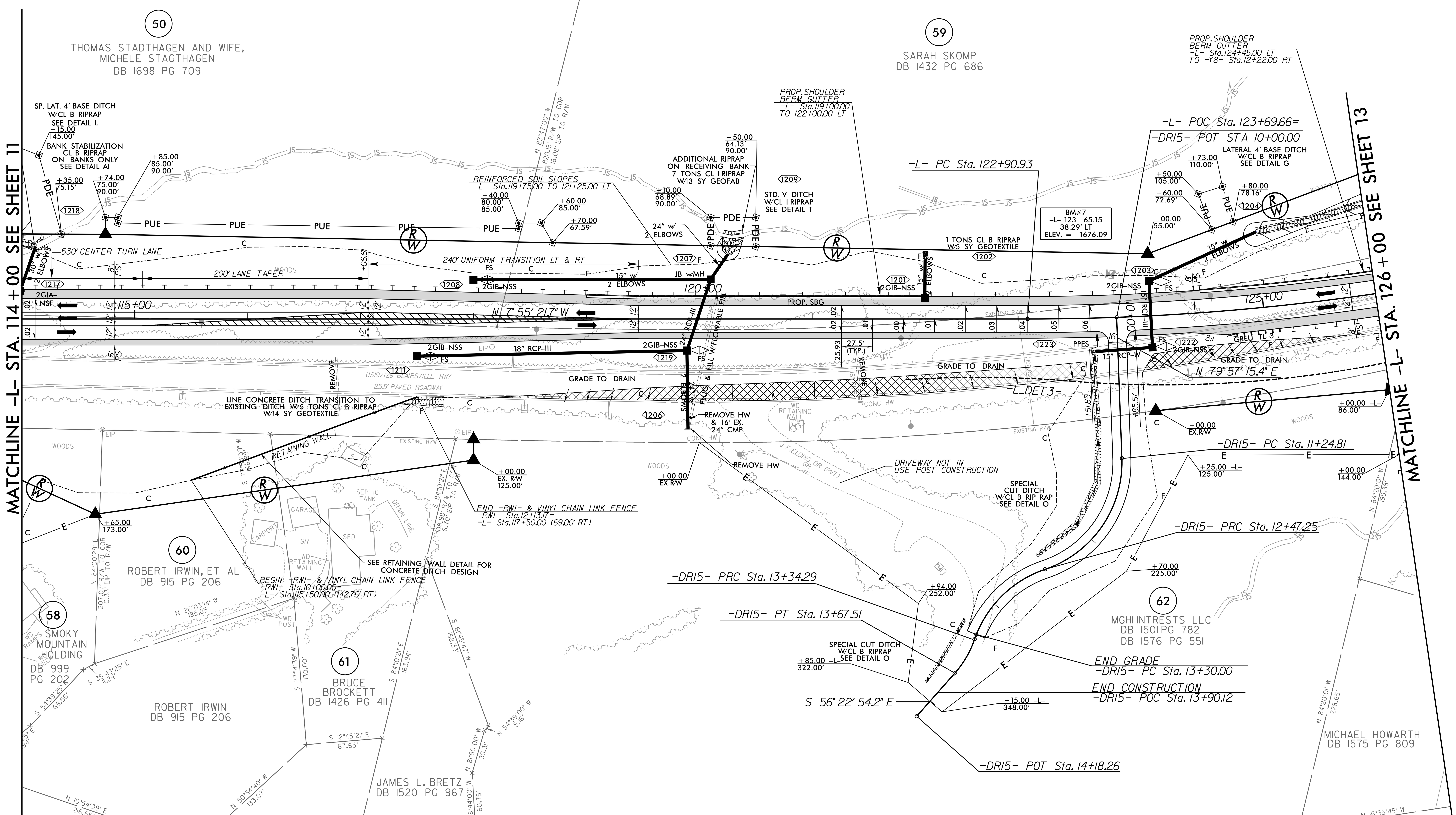
NAD 83/2011



NOTES: ALL DRIVES ARE 16′ WIDE WITH 10′ RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE SEE SHTS. 25 & 26
FOR -DR15- PROFILE SEE SHT. 36
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2
FOR RETAINING WALL ENVELOPE SEE SHT. W-1 THRU W-3
FOR REINFORCED SOIL SLOPE DETAILS SEE SHTS. 2G-1 & 2G-2

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10/6/2023 R:\Roadway\Proj\R5861_Rdy_psh12.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-5861	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 29470 BRANDON J. McINNIS DocuSigned by: Brandon McInnis BE6912CC24204D4... 10/31/2023	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 46155 ALEXIS S. BURKE DocuSigned by: Alexis Burke 08E52EF5827E423... 10/30/2023

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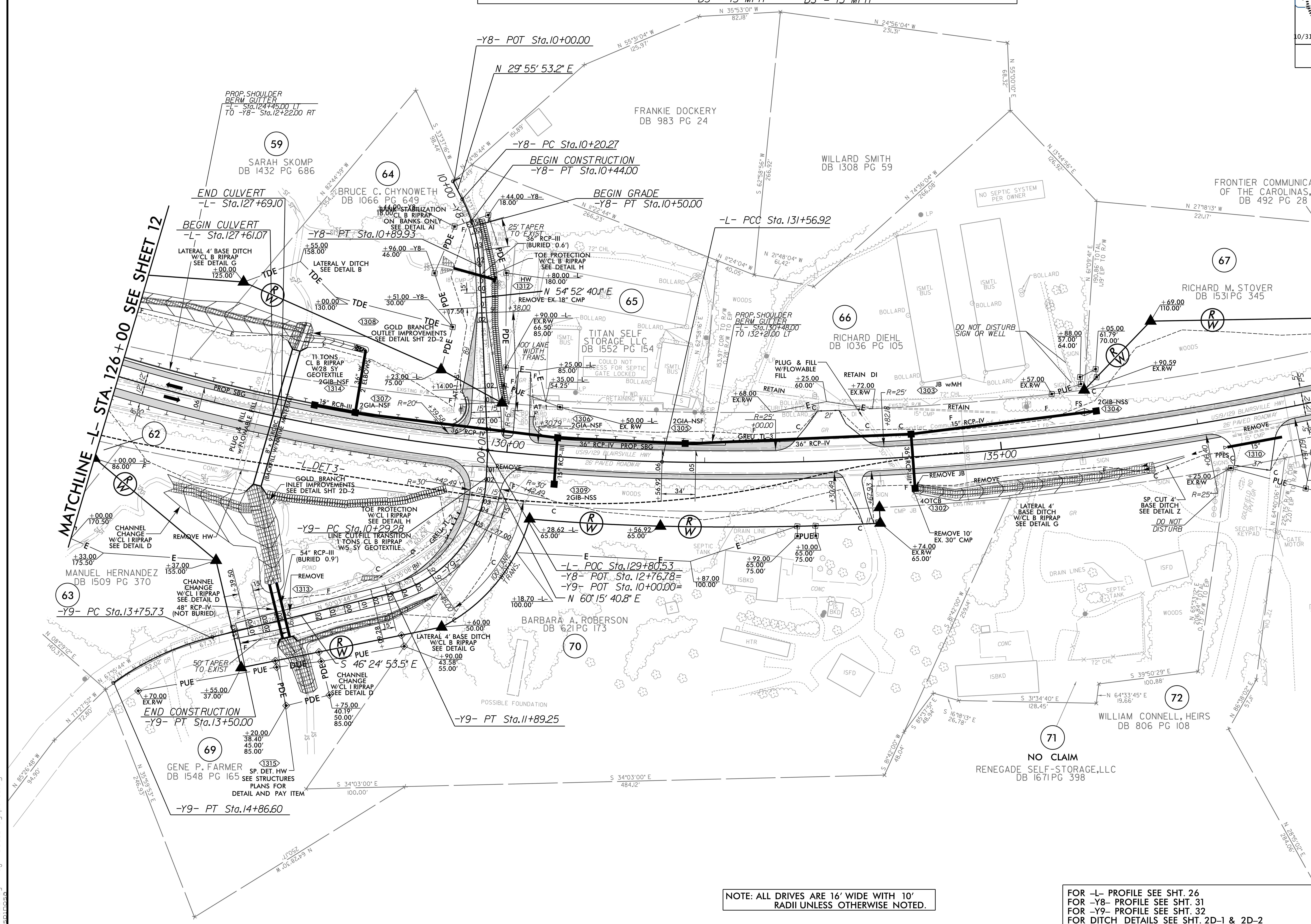
-L-		-Y8-	-Y9-	
PI Sta 127+30.02	PI Sta 135+82.23	PI Sta 10+55.66	PI Sta 11+22.32	PI Sta 14+31.88
△ = 23° 20′ 58.3″ (LT)	△ = 16° 58′ 31.5″ (LT)	△ = 24° 56′ 46.9″ (RT)	△ = 73° 19′ 25.7″ (RT)	△ = 22° 17′ 24.8″ (LT)
D = 2° 41′ 46.6″	D = 2° 00′ 37.4″	D = 35° 48′ 35.5″	D = 45° 50′ 11.8″	D = 20° 06′ 13.6″
L = 865.99′	L = 844.39′	L = 69.66′	L = 159.97′	L = 110.88′
T = 439.09′	T = 425.31′	T = 35.39′	T = 93.04′	T = 56.15′
R = 2,125.00′	R = 2,850.00′	R = 160.00′	R = 125.00′	R = 285.00′
SE = 0.06	SE = 0.05	SE = 0.03	SE = 0.05	
DS = 60 MPH	DS = 60 MPH	RO = 45′	RO = 75′	
		DS = 15 MPH	DS = 15 MPH	



NOTE: ALL DRIVES ARE 16′ WIDE WITH 10′ RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE SEE SHT. 26
FOR -Y8- PROFILE SEE SHT. 31
FOR -Y9- PROFILE SEE SHT. 32
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2
FOR HEADWALL SPECIAL DETAIL SEE SHTS. S-1 THRU S-6

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10/6/2023
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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-5861	14
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 24470 ENGINEER BRANDON J. McINNIS

DocuSigned by: 10/31/2023

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 40755 ENGINEER ALEXIS S. BURKE

DocuSigned by: 10/31/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-	-Y10A-	-DRI6-	-DRI7-	-DRI8-	-DRI9-
PI Sta 135+82.23	PI Sta 10+44.85	PI Sta 10+67.65	PI Sta 11+14.34	PI Sta 10+68.89	PI Sta 10+41.77
Δ = 16° 58' 31.5" (LT)	Δ = 2° 20' 08.2" (LT)	Δ = 76° 43' 07.2" (RT)	Δ = 76° 46' 59.6" (RT)	Δ = 6° 05' 49.0" (RT)	Δ = 26° 47' 02.3" (RT)
D = 2° 00' 37.4"	D = 2° 36' 15.7"	D = 190° 59' 09.4"	D = 190° 59' 09.4"	D = 57° 17' 44.8"	D = 57° 17' 44.8"
L = 844.39'	L = 89.68'	L = 40.17'	L = 40.20'	L = 10.64'	L = 46.75'
T = 425.31'	T = 44.85'	T = 23.74'	T = 23.77'	T = 5.33'	T = 23.81'
R = 2,850.00'	R = 2,200.00'	R = 30.00'	R = 30.00'	R = 100.00'	R = 100.00'
SE = 0.05		SE = 0.02	SE = 0.02	SE = 0.02	SE = 0.02
DS = 60 MPH		DS = 15 MPH	DS = 15 MPH	DS = 15 MPH	DS = 15 MPH

-Y10A-	-DRI7-	-DRI9-
PI Sta 13+38.78	PI Sta 11+43.77	PI Sta 11+53.07
Δ = 52° 18' 34.8" (LT)	Δ = 37° 40' 05.5" (LT)	Δ = 8° 46' 24.5" (LT)
D = 45° 50' 11.8"	D = 32° 44' 25.6"	D = 19° 05' 54.9"
L = 114.12'	L = 115.05'	L = 45.94'
T = 61.39'	T = 59.69'	T = 23.01'
R = 125.00'	R = 175.00'	R = 300.00'
SE = 0.03	SE = 0.02	SE = 0.02
RO = 45'		
DS = 20 MPH	DS = 15 MPH	DS = 15 MPH

-DRI8B-	
PI Sta 10+37.34	PI Sta 11+64.26
Δ = 49° 03' 09.3" (RT)	Δ = 6° 39' 37.5" (LT)
D = 190° 59' 09.4"	D = 6° 54' 11.2"
L = 25.68'	L = 96.48'
T = 13.69'	T = 48.30'
R = 30.00'	R = 830.00'
SE = 0.02	SE = 0.02
DS = 15 MPH	DS = 15 MPH

2023 ADT
2043 ADT
-Y10A-
Taylor Henson Rd. (SR 1667)
400 600
200 200 400 400
8,032 9,503 8,232 9,703
L US 19/129 L US 19/129

BM#8 -L- 142+47.66 89.86' LT ELEV. = 1680.13

NAD 83/2011

MATCHLINE -L- STA. 139+00 SEE SHEET 13

MATCHLINE -L- STA. 152+00 SEE SHEET 15

-DR26- POT Sta. 10+00.00
-L- PT Sta. 140+01.31
-DR26- POT Sta. 11+62.49 = -L- POT Sta.142+14.32
BEGIN CONSTRUCTION -DRI6- POT Sta. 10+45.00
-DRI6- PC Sta. 10+43.91
-DRI6- PRC Sta. 10+84.08
-DRI6- PT Sta. 11+99.13= -L- POT Sta.142+68.72
-DRI8B- PC Sta. 10+23.65
-DRI8B- PT Sta.10+49.33
S 89° 11' 42.1" E
-DRI8B- PC Sta.11+15.97
END CONSTRUCTION -DRI8B- POC Sta.11+85.00
-DRI8B- PT Sta.12+12.45
-DRI6- POT Sta. 10+00.00
N 22° 45' 05.0" E
-L- PC Sta. 144+83.26
-DRI8B- POT Sta.10+00.00= -L- POC Sta.144+58.29
N 41° 45' 08.6" E
-DRI8- PC Sta. 10+63.57
-DRI8- PT Sta. 10+74.21
N 41° 45' 08.6" E
-DRI8- POT Sta. 10+00.00= -L- POC Sta.144+83.73
-DRI8- POT Sta. 11+46.20
END CONSTRUCTION -DRI8- POT Sta. 11+45.00
N 47° 51' 31.2" E
BEGIN CONSTRUCTION -DRI7- POC Sta.10+20.00
-DRI7- PT Sta. 10+00.00
-Y10A- PC Sta. 12+77.40
-DRI8- POT Sta. 10+00.00= -L- POC Sta.145+45.00 TO 148+22.00 RT
-Y10A- POT Sta. 14+06.20= -L- POC Sta.146+04.25
-DRI9- POT Sta. 11+76.00
BEGIN CONSTRUCTION -Y10A- POC Sta.10+50.00
-Y10A- PT Sta. 10+89.68
N 6° 20' 50.5" E
-DRI7- PT Sta. 11+30.78
-DRI7- PC Sta. 10+90.57
N 70° 26' 09.1" W
-Y10A- PC Sta. 10+00.00
-DRI7- POT Sta. 11+58.19 = -Y10A- POT Sta.11+32.55
-Y10A- PT Sta. 13+91.52
-DRI9- POT Sta. 10+00.00= -L- POC Sta.148+97.55
N 50° 03' 07.4" E
-DRI9- PC Sta. 10+17.96
-DRI9- PT Sta. 10+64.71
N 76° 50' 09.7" E
-DRI9- PC Sta. 11+30.06
END CONSTRUCTION -DRI9- POT Sta. 11+75.00

-L DET 4-
N 44° 02' 15.5" E
N 48° 14' 51.4" W

68 FRONTIER COMMUNICATIONS OF THE CAROLINAS, LLC DB 492 PG 28
73 RENEGADE SELF-STORAGE, LLC DB 16719 PG 398
73A RENEGADE SELF-STORAGE, LLC DB 16719 PG 398
74 WILLIAM J. KOLB DB 1136 PG 464
75 KELLY R. HOPKINS AND WIFE, ANGELIA HOPKINS; SHEILA HOEPPNER AND HUSBAND, KENNETH HOEPPNER DB 1688 PG 1090
76 CARLY HOPKINS DB 1657 PG 447
77 KELLY HOPKINS AND SHEILA H. HOEPPNER DB 1598 PG 803
79 GEORGETTE HOWERTON DB 1559 PG 280 PC B SLIDE 116B
80 BRENT HEENAN DB 1398 PG 346 PC B SLIDE 116B
81 JUSTIN M. HEDDEN DB 1719 PG 147
82 FREDRICK DEAN DALRYMPLE, LIFE ESTATE DB 1690 PG 1231
83 CHRISTINA T. GUTHRIE DB 914 PG 127
84 ALFRED F. KINCAID ESTATE DB 574 PG 81
BRENDA KINCAID DB 574 PG 83 DB 574 PG 83

NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE SEE SHTS. 26 & 27
FOR -Y10A- PROFILE SEE SHT. 32
FOR -DR16- PROFILE SEE SHT. 36
FOR -DR17- PROFILE SEE SHT. 36
FOR -DR18- PROFILE SEE SHT. 36
FOR -DR18B- PROFILE SEE SHT. 37
FOR -DR19- PROFILE SEE SHT. 36
FOR -DR26- PROFILE SEE SHT. 43
FOR DITCH DETAILS SEE SHT. 2D-1 & 2D-2

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PROJECT REFERENCE NO.	SHEET NO.
R-5861	15
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 27476 BRANDON J. McINNIS — 10/31/2023	NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 46155 ALEXIS S. BURKE — 10/30/2023

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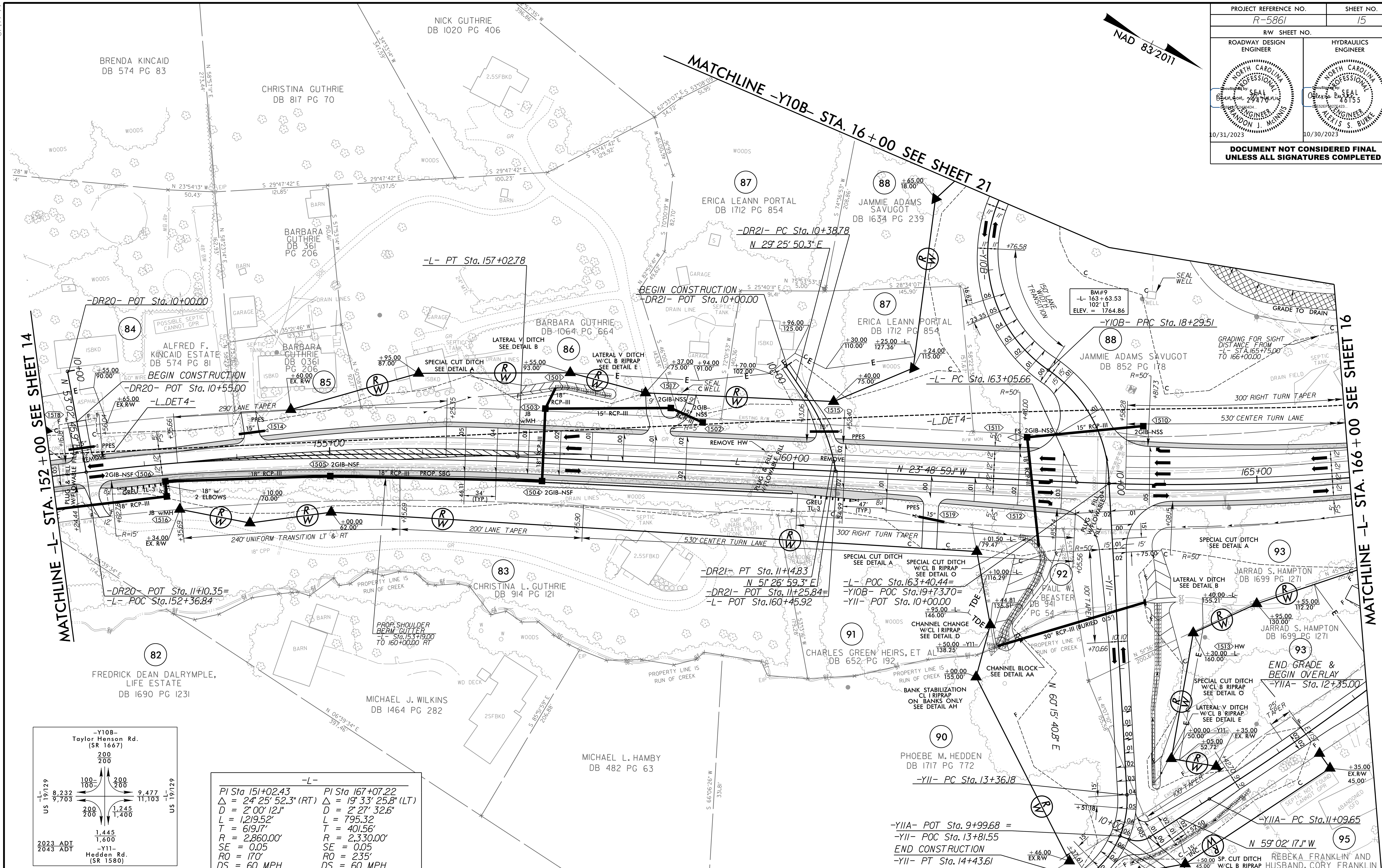

-L-

PI Sta 151+02.43	PI Sta 167+07.22
△ = 24° 25' 52.3" (RT)	△ = 19° 33' 25.8" (LT)
D = 2° 00' 12.1"	D = 2° 27' 32.6"
L = 1,219.52'	L = 795.32
T = 619.17'	T = 401.56'
R = 2,860.00'	R = 2,330.00'
SE = 0.05	SE = 0.05
RO = 170'	RO = 235'
DS = 60 MPH	DS = 60 MPH

-Y10B-

PI Sta 18+53.23	PI Sta 19+07.72
△ = 137° 13' 19.0" (LT)	△ = 55° 04' 47.0" (RT)
D = 38° 11' 49.9"	D = 38° 11' 49.9"
L = 359.25'	L = 144.20'
T = 382.97'	T = 78.22'
R = 150.00'	R = 150.00'
SE = 0.06	SE = 0.06
RO = 90'	RO = 120'
DS = 20 MPH	DS = 40 MPH

-Y11-

PI Sta 13+95.68	PI Sta 14+83.88
△ = 61° 29' 55.2" (RT)	△ = 2° 54' 30.2" (RT)
D = 57° 17' 44.8"	D = 3° 36' 12.6"
L = 107.34'	L = 80.71'
T = 59.49'	T = 40.36'
R = 100.00'	R = 1,590.00'
SE = 0.06	SE = 0.06
RO = 90'	RO = 90'
DS = 20 MPH	DS = 20 MPH

-Y11A-

PI Sta 10+22.65	PI Sta 12+69.51
△ = 52° 38' 56.6" (LT)	△ = 6° 29' 21.2" (LT)
D = 229° 10' 59.2"	D = 2° 01' 54.4"
L = 22.97'	L = 319.39'
T = 12.37'	T = 159.87'
R = 25.00'	R = 2,820.00'
SE = 0.06	SE = 0.02
RO = 60'	DS = 30 MPH
DS <15 MPH	

-DR21-

PI Sta 10+77.69
△ = 22° 01' 09.0" (RT)
D = 28° 57' 18.1"
L = 76.05'
T = 38.91'
R = 200.00'
SE = 0.02
DS = 15 MPH

NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED.

FOR -L- PROFILE SEE SHT. 27
FOR -Y10B- PROFILE SEE SHT. 32
FOR -Y11- PROFILE SEE SHT. 32
FOR -Y11A- PROFILE SEE SHT. 33
FOR -DR20- PROFILE SEE SHT. 36
FOR -DR21- PROFILE SEE SHT. 37
FOR DITCH DETAILS SEE SHT. 2D-1&2D-2

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