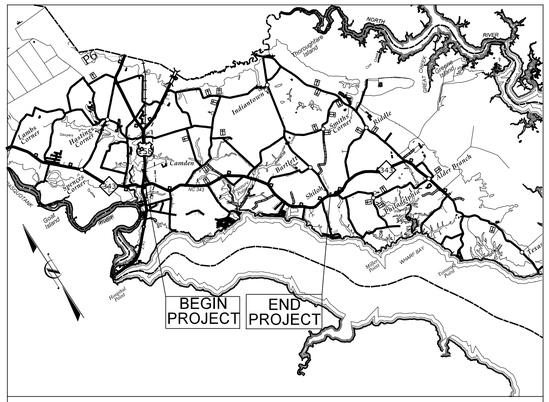
09/08/99

TIP PROJECT: R–5807

CONTRACT:

See Sheet 1A For Index of Sheets
See Sheet 1B for Conventional Symbols



VICINITY MAP

RIGHT OF WAY ACQUISITION PLANS SET

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

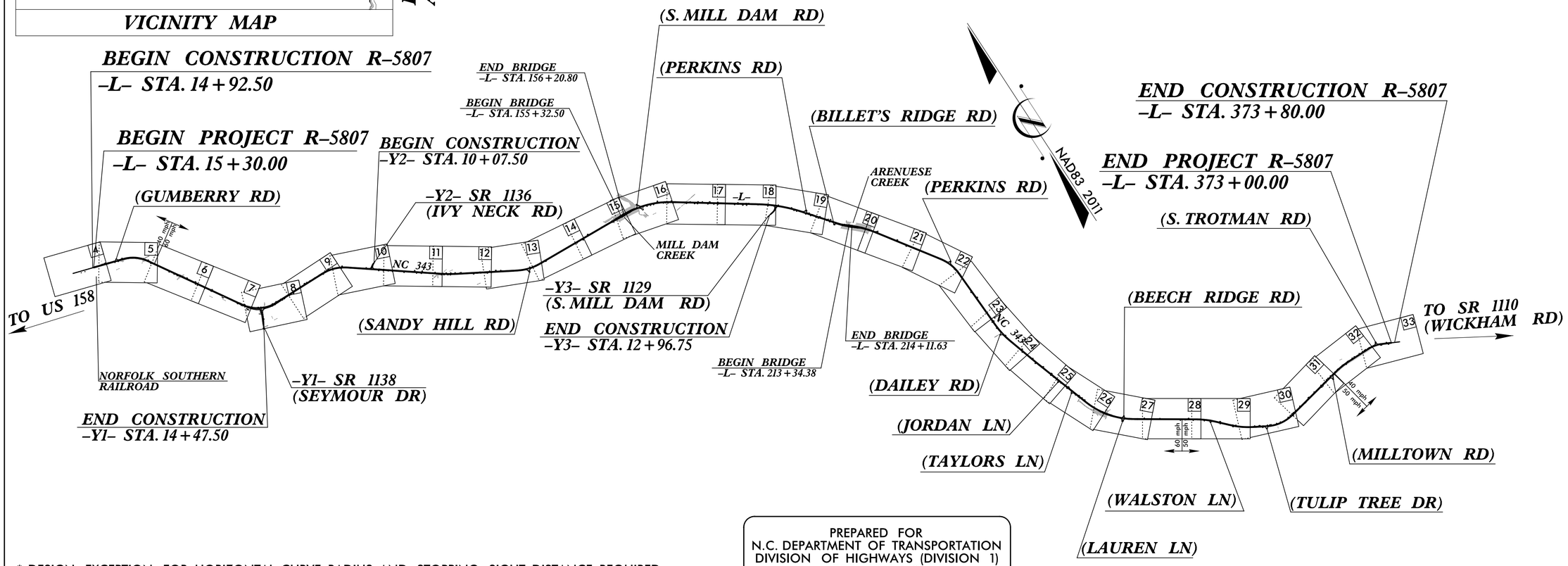
CAMDEN COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R–5807	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
46969.1.1		P.E.
46969.2.1		R/W
46969.3.1		CONST
46969.2.2		UTY

LOCATION: NC 343 FROM EAST OF US 158 TO SR 1119 (TROTMAN RD) IN SHILOH

TYPE OF WORK: GRADING, PAVING, DRAINAGE, PAVEMENT MARKING, SIGNING, AND STRUCTURES

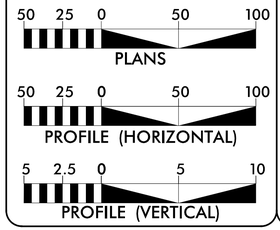


* DESIGN EXCEPTION FOR HORIZONTAL CURVE RADIUS AND STOPPING SIGHT DISTANCE REQUIRED
THIS IS NOT A CONTROL OF ACCESS PROJECT
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARY
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II

PREPARED FOR
N.C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS (DIVISION 1)
EDENTON, NC
PLANS COORDINATED BY:
Roger Bullock
Division 1 Project Manager (NCDOT)

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2026 = 5,400
ADT 2046 = 7,000
K = 11 %
D = 75 %
T = 4 % *
V = 60, 50, 40 MPH
* TTST = 1% DUAL 3%
FUNC CLASS = RURAL COLLECTOR
*R–R–R GUIDELINES USED

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R–5807 =	6.743 miles
LENGTH STRUCTURE PROJECT R–5807 =	0.031 miles
TOTAL LENGTH OF PROJECT R–5807 =	6.774 miles

Prepared In the Office of:

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919)571-7111
NC License Number F-0159

vhb
VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: September 21, 2024

LETTING DATE: December 21, 2027

BRIAN EASON, P.E.
PROJECT ENGINEER

REID CROSSER, E.I.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

8/28/2024
R-5807_RDY_TSH-01.dgn
RCROSSER

9/10/2021

PROJECT REFERENCE NO.	SHEET NO.
R-5807	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin (EIP)
- Computed Property Corner
- Existing Concrete Monument (ECM)
- Parcel/Sequence Number
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary
- Proposed Wetland Boundary
- Existing Endangered Animal Boundary
- Existing Endangered Plant Boundary
- Existing Historic Property Boundary
- Known Contamination Area: Soil
- Potential Contamination Area: Soil
- Known Contamination Area: Water
- Potential Contamination Area: Water
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign
- Well
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream
- Buffer Zone 1
- Buffer Zone 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Secondary Horiz and Vert Control Point
- Vertical Benchmark
- Existing Right of Way Monument
- Proposed Right of Way Monument (Rebar and Cap)
- Proposed Right of Way Monument (Concrete)
- Existing Permanent Easement Monument
- Proposed Permanent Easement Monument (Rebar and Cap)
- Existing C/A Monument
- Proposed C/A Monument (Rebar and Cap)
- Proposed C/A Monument (Concrete)
- Existing Right of Way Line
- Proposed Right of Way Line
- Existing Control of Access Line
- Proposed Control of Access Line
- Proposed ROW and CA Line
- Existing Easement Line
- Proposed Temporary Construction Easement
- Proposed Temporary Drainage Easement
- Proposed Permanent Drainage Easement
- Proposed Permanent Drainage/Utility Easement
- Proposed Permanent Utility Easement
- Proposed Temporary Utility Easement
- Proposed Aerial Utility Easement

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut
- Proposed Slope Stakes Fill
- Proposed Curb Ramp
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

** SUE – Subsurface Utility Engineering*
LOS – Level of Service – A,B,C or D (Accuracy)

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — HH
- H–Frame Pole
- U/G Power Line Test Hole (SUE – LOS A)*
- U/G Power Line (SUE – LOS B)* — P
- U/G Power Line (SUE – LOS C)* — P
- U/G Power Line (SUE – LOS D)* — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Test Hole (SUE – LOS A)*
- U/G Telephone Cable (SUE – LOS B)* — T
- U/G Telephone Cable (SUE – LOS C)* — T
- U/G Telephone Cable (SUE – LOS D)* — T
- U/G Telephone Conduit (SUE – LOS B)* — TC
- U/G Telephone Conduit (SUE – LOS C)* — TC
- U/G Telephone Conduit (SUE – LOS D)* — TC
- U/G Fiber Optics Cable (SUE – LOS B)* — T FO
- U/G Fiber Optics Cable (SUE – LOS C)* — T FO
- U/G Fiber Optics Cable (SUE – LOS D)* — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line Test Hole (SUE – LOS A)*
- U/G Water Line (SUE – LOS B)* — W
- U/G Water Line (SUE – LOS C)* — W
- U/G Water Line (SUE – LOS D)* — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Test Hole (SUE – LOS A)*
- U/G TV Cable (SUE – LOS B)* — TV
- U/G TV Cable (SUE – LOS C)* — TV
- U/G TV Cable (SUE – LOS D)* — TV
- U/G Fiber Optic Cable (SUE – LOS B)* — TV FO
- U/G Fiber Optic Cable (SUE – LOS C)* — TV FO
- U/G Fiber Optic Cable (SUE – LOS D)* — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line Test Hole (SUE – LOS A)*
- U/G Gas Line (SUE – LOS B)* — G
- U/G Gas Line (SUE – LOS C)* — G
- U/G Gas Line (SUE – LOS D)* — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Force Main Line Test Hole (SUE – LOS A)*
- SS Force Main Line (SUE – LOS B)* — FSS
- SS Force Main Line (SUE – LOS C)* — FSS
- SS Force Main Line (SUE – LOS D)* — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line (SUE – LOS B)* — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

5/14/99

PRELIMINARY PAVEMENT SCHEDULE

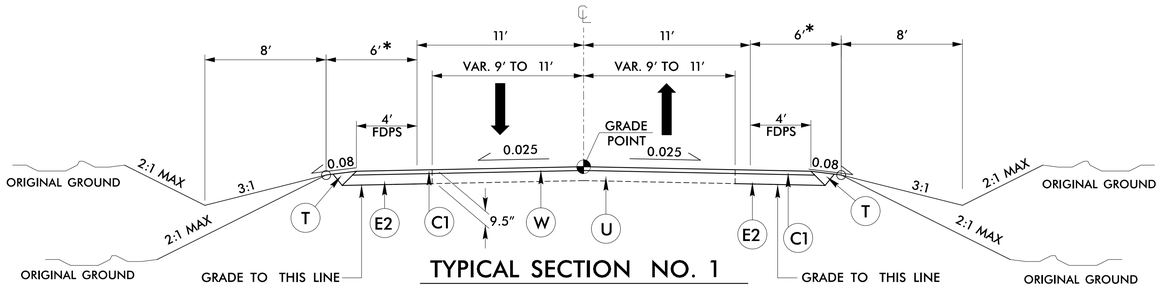
A1	PROP. APPROX. 3 1/2" PORTLAND CEMENT CONCRETE	E2	PROP. APPROX. 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 912 LBS. PER SQ. YD.	T	EARTH MATERIAL.
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS PER SQ YD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.	V	VARIABLE DEPTH MILLING
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS PER SQ YD PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH	R1	SHOULDER BERM GUTTER	W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL W)
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	S	4" CONCRETE SIDEWALK.	U	EXISTING PAVEMENT.

PROJECT REFERENCE NO.	SHEET NO.
R-5807	2A-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

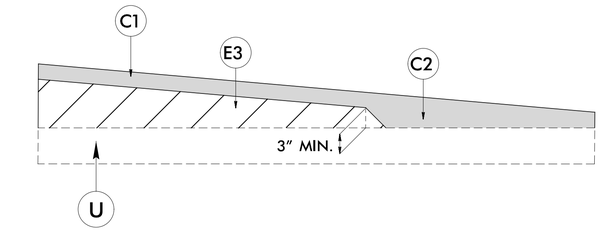
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



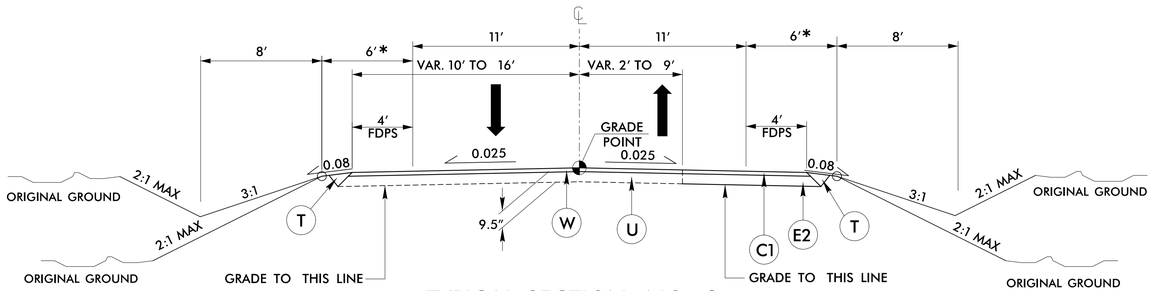
TYPICAL SECTION NO. 1

–L– STA. 15+30.00 TO STA. 155+44+/– (BEGIN BRIDGE)
–L– STA. 156+19+/– (END BRIDGE) TO STA. 159+34.00
–L– STA. 166+70.00 TO STA. 213+35+/– (BEGIN BRIDGE)
–L– STA. 214+10+/– (END BRIDGE) TO STA. 373+00.00

* USE 9' WITH GUARDRAIL



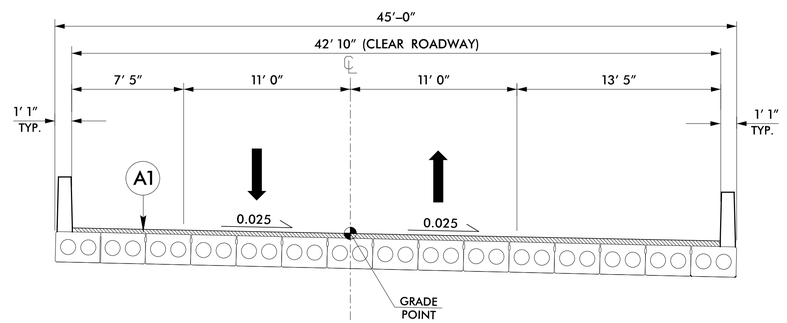
W: WEDGING DETAIL FOR RESURFACING



TYPICAL SECTION NO. 2

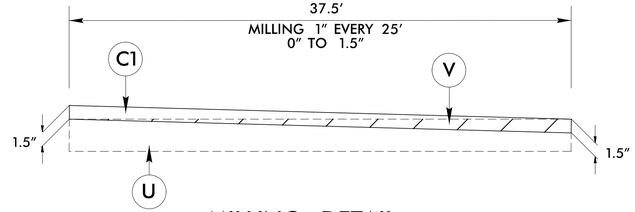
–L– STA. 159+34.00 TO STA. 166+70.00

* USE 9' WITH GUARDRAIL



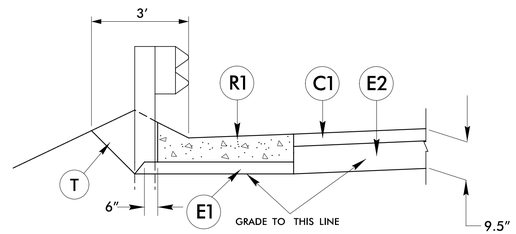
TYPICAL SECTION NO. 3

–L– STA. 155+43.20 (BEGIN BRIDGE) TO STA. 156+20.80 (END BRIDGE)
–L– STA. 213+34.38 (BEGIN BRIDGE) TO STA. 214+11.63 (END BRIDGE) (MIRRORED)



MILLING DETAIL

USE MILLING DETAIL AT RESURFACING TIES

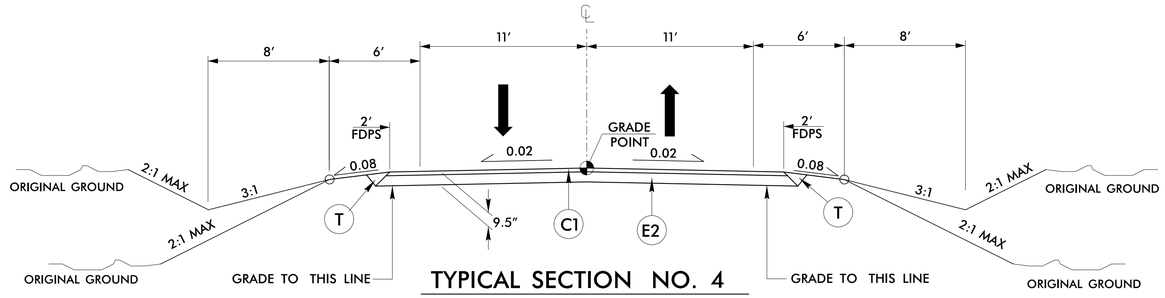


SHOULDER BERM GUTTER DETAIL

–L– STA. 156+33 (END APPROACH SLAB) TO –L– STA. 156+46 (RT)
–L– STA. 214+22 (END APPROACH SLAB) TO –L– STA. 214+34 (RT)

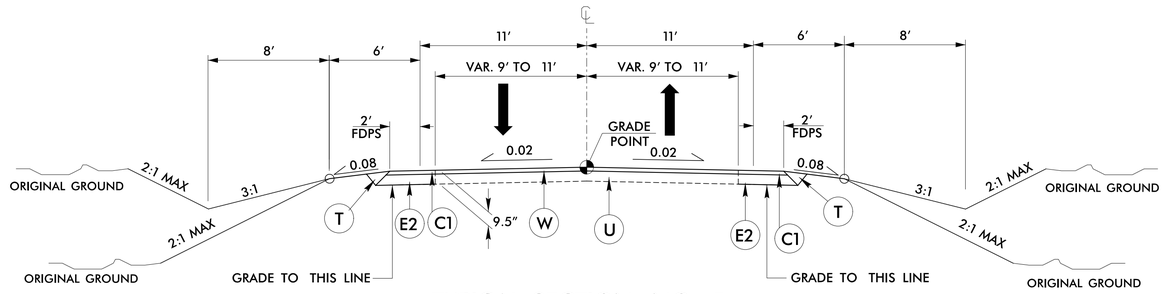
8/28/2024
R-5807_RDY_TYP.dgn
RCROSSER

5/14/99



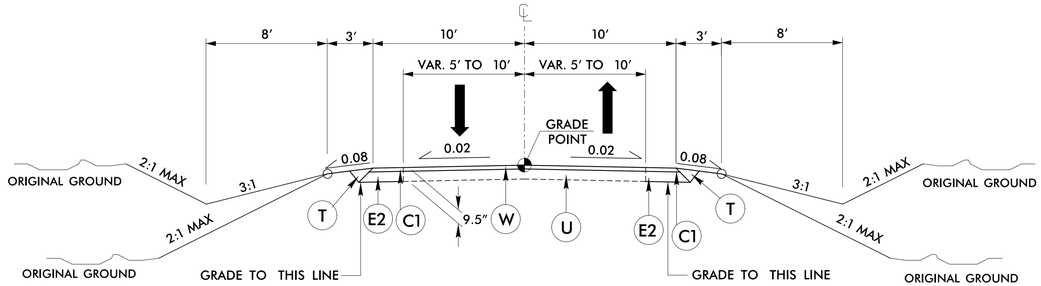
TYPICAL SECTION NO. 4

–Y1– STA. 10+33.06 TO STA. 11+50.00



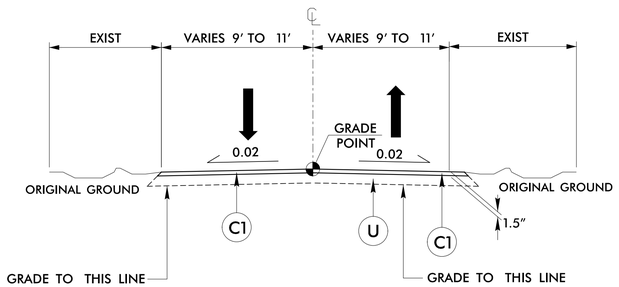
TYPICAL SECTION NO. 5

–Y1– STA. 11+50.00 TO STA. 14+10.00



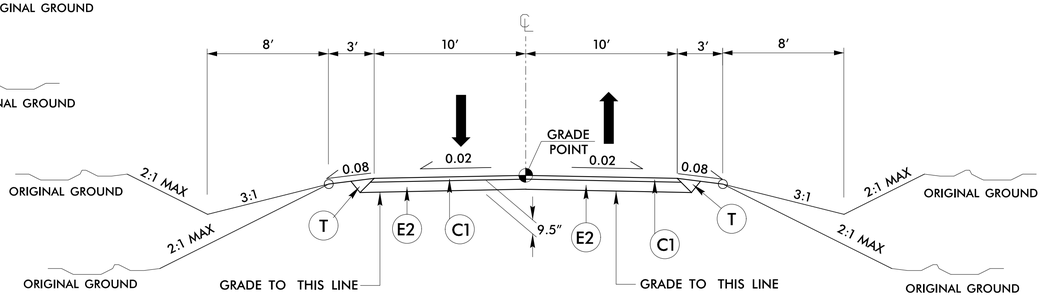
TYPICAL SECTION NO. 6

–Y2– STA. 10+45.00 TO STA. 11+69.56
–Y3– STA. 10+88.36 TO STA. 12+60.00



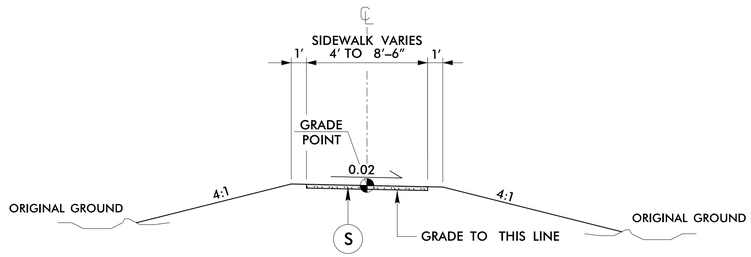
TYPICAL SECTION NO. 8

PAVEMENT OVERLAY OF PERKINS RD DETOUR



TYPICAL SECTION NO. 7

–Y2– STA. 11+69.56 TO STA. 11+94.59
–Y3– STA. 10+11.00 TO STA. 10+88.36



TYPICAL SECTION NO. 9

–SW1– STA. 10+22.02 TO STA. 10+50.00

PROJECT REFERENCE NO.	SHEET NO.
R-5807	2A-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571–7111
NC License Number F–0159

PAVEMENT SCHEDULE	
C1	1.5″ S9.5B
C2	VAR. S9.5C
E1	4″ B25.0C
E2	8″ B25.0C
E3	VAR. B25.0C
S	4″ SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAV.
V	VAR. MILLING
W	WEDGING

8/28/2024
R-5807_RDY_TYP.dgn
RGROSER

6/21/00

COMPUTED BY: RUC DATE: 2/28/23
CHECKED BY: __ DATE: __

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919)571-7111
NC License Number F-0159

PROJECT REFERENCE NO.	SHEET NO.
R-5807	3B-1

PRELIMINARY SUMMARY OF EARTHWORK IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
SUMMARY #1					
-L- 15+50 TO 45+50 RT	1,916	--	690	--	1,226
-L- 15+50 TO 45+50 LT	1,288	--	919	--	369
TOTAL SUMMARY #1	3,204	--	1,609	--	1,595
SUMMARY #2					
-L- 45+50 TO 85+50 RT	2,202	--	2,102	--	100
-L- 45+50 TO 85+50 LT	2,555	--	1,698	--	857
-Y1- 10+33 TO 14+10 RT	106	--	459	353	--
-Y1- 10+33 TO 14+10 LT	91	--	542	451	--
TOTAL SUMMARY #2	4,954	--	4,801	804	957
SUMMARY #3					
-L- 85+50 TO 125+50 RT	3,770	50	2,386	--	1,435
-L- 85+50 TO 125+50 LT	3,110	50	1,712	--	1,448
-Y2- 10+45 TO 11+95 RT	57	--	31	--	26
-Y2- 10+45 TO 11+95 LT	76	--	31	--	45
TOTAL SUMMARY #3	7,013	--	4,160	--	2,853
SUMMARY #4					
-L- 125+50 TO 155+45 RT (BRIDGE)	1,414	--	1,541	127	--
-L- 125+50 TO 155+45 LT (BRIDGE)	2,007	--	1,362	--	645
-Y3- 10+11 TO 12+60 RT	45	--	57	12	--
-Y3- 10+11 TO 12+60 LT	83	--	46	--	38
TOTAL SUMMARY #4	3,549	--	3,006	139	682
SUMMARY #5					
-L- 156+20 (BRIDGE) TO 196+00 RT	3,264	--	1,356	--	1,908
-L- 156+20 (BRIDGE) TO 196+00 LT	1,215	--	2,207	992	--
TOTAL SUMMARY #5	4,479	--	3,563	992	1,908

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT + %	BORROW	WASTE
SUMMARY #6					
-L- 196+00 TO 213+37 (BRIDGE) RT	936	--	1,290	354	--
-L- 196+00 TO 213+37 (BRIDGE) LT	671	--	777	106	--
TOTAL SUMMARY #6	1,607	--	2,067	460	--
SUMMARY #7					
-L- 214+10 (BRIDGE) TO 254+00 RT	2,842	--	3,433	616	25
-L- 214+10 (BRIDGE) TO 254+00 LT	3,054	--	3,731	677	--
TOTAL SUMMARY #7	5,896	--	7,164	1,293	25
SUMMARY #6					
-L- 254+00 TO 294+00 RT	3,893	63	2,547	--	1,409
-L- 254+00 TO 294+00 LT	2,904	63	1,486	--	1,481
TOTAL SUMMARY #6	6,797	125	4,033	--	2,889
SUMMARY #7					
-L- 294+00 TO 334+00 RT	2,426	--	2,188	--	238
-L- 294+00 TO 334+00 LT	1,780	--	1,634	--	146
TOTAL SUMMARY #7	4,206	--	3,822	--	384
SUMMARY #8					
-L- 334+00 TO 373+00 RT	2,452	--	842	--	1,610
-L- 334+00 TO 373+00 LT	2,100	--	1,244	--	856
TOTAL SUMMARY #8	4,552	--	2,087	--	2,466
TOTAL SUMMARIES 1-8	46,257	225	36,311	3,688	10,170
EST. SHOULDER MATERIAL	--	--	--	--	--
LOSS DUE TO CLEARING & GRUBBING	-1,200	--	--	--	-1,200
WASTE IN LIEU OF BORROW	--	--	--	-3,688	-3,688
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT	--	--	--	--	--
GRAND TOTAL	45,057	225	36,311	--	8,970
SAY	45,100	300	36,400	--	9,000

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY LOCHNER. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

PER GEOTECH RECOMMENDATIONS, ESTIMATED 600 CUBIC YARDS OF UNDERCUT TO BE USED AT THE DISCRETION OF THE RESIDENT ENGINEER.

ESTIMATED SHALLOW UNDERCUT (CONTINGENCY) = 500 CUBIC YARDS.

ESTIMATED DDE = 500 CUBIC YARDS

SHOULDER BORROW = 2,380 CUBIC YARDS

8/28/2024
R-5807_PSH_03B.dgn
RCROSSER

COMPUTED BY:	RUC	DATE:	2/09/24
CHECKED BY:	—	DATE:	—

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919)571-7111
NC License Number F-0159

PROJECT REFERENCE NO.	SHEET NO.
R-5807	3B-2

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
-Y1-	10+12.09	11+56.72	LT	379.68
-Y1-	10+77.51	11+07.98	RT	51.20
-Y2-	10+92.85	11+91.37	RT	163.24
-Y3-	10+16.71	11+80.31	LT	435.98
			TOTAL:	1,030.1
			SAY:	1,040.0

SUMMARY OF BREAKING EXISTING ASPHALT PAVEMENT

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
-Y1-	10+30.17	11+48.35	CL	311.97
			TOTAL:	311.97
			SAY:	320.0

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

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS			IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	AT-1	TYPE III	GREU TL-3	EA	G	NG				
-L-	153+06.87	155+58.50	RT	231.25'	56.25'			155+58.50 (BRIDGE)	13'-5"	16'-5"	50'		1		1	1						10'		
-L-	153+93.36	155+33.87	LT	143.75'			155+33.87 (BRIDGE)		7'-5"	10'-5"		50'		1		1	1					11'		
-L-	156+08.81	159+09.63	LT	306.25'			156+08.81 (BRIDGE)		7'-5"	10'-5"		50'		1		1	1					10'		
-L-	156+33.66	157+75.37	RT	143.75'				156+33.66 (BRIDGE)	13'-5"	16'-5"	50'		1			1	1					11.25'		
-L-	210+35.81	213+35.50	RT	306.25'				213+35.50 (BRIDGE)	13'-5"	16'-5"	50'		1			1	1					9.75'		
-L-	212+07.56	213+35.50	LT	106.25'	35.88'		213+35.50 (BRIDGE)		7'-5"	10'-5"		50'		1	1	1						7.85'		
-L-	214+10.50	215+51.47	RT	143.75'			214+10.50 (BRIDGE)		13'-5"	16'-5"		50'		1		1	1					1.90'		
-L-	214+10.50	217+13.71	LT	306.25'				214+10.50 (BRIDGE)	7'-5"	10'-5"	50'		1			1	1					1.90'		
-L-	292+86.31	296+58.15	LT	375.0'				294+50.25(CULVERT)	6'	9'	50'	50'	1	1			2					7.75'		
-L-	293+11.96	295+78.00	RT	275.0'			294+38.78(CULVERT)		6'	9'	50'	50'	1	1			2							
		SUBTOTAL		2337.5'	92.13'																			
		LESS ANCHOR DEDUCTIONS																						
		GREU TL-3	10 x 50.00' =	-500.0'																				
		TYPE III	8 x 18.75' =	-150.0'																				
		AT-1	2 x 6.25' =		-12.5'																			
		TOTAL		1,687.5'	79.63'																			
	10 ADDITIONAL GUARDRAIL POSTS																							

8/28/2024
R-5807_Rdy_PSH_03B-2.dgn
6/21/00

Z1249

COMPUTED BY: VHB DATE: 8/22/2024

CHECKED BY: VHB DATE: 8/22/2024

PROJECT NO.	SHEET NO.
R-5807	3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION	OFFSET		STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) SIZE: 12	15	18	24	30	36	42
THICKNESS OR GAUGE															
L 15+48	2	RT	0401	0402		5.4	5.2								
L 16+84	24	RT	0403												
L 17+26	25	RT	0404												
L 18+00	22	LT	0405							36					
L 11+96	46	RT	0406		8.1										
L 12+94	43	RT	0407		7.9										
L 18+36	22	LT	0501							24					
L 18+82	21	RT	0502												
L 19+05	23	LT	0503							48					
L 20+71	30	RT	0504			3.4	2.9			32					
L 20+93	1	RT	0505	0506											
L 21+55	31	RT	0507										24		
L 22+67	27	LT	0508												
L 27+98	3	LT	0509	0510		0.1	-0.1								
L 28+02	3	LT	0511	0512		0.1	-0.1								
L 28+89	25	RT	0513							24					
L 30+13	26	RT	0514							24					
L 19+85	27	RT	0515												
L 27+29	33	LT	0516												
L 27+26	30	RT	0517												
L 21+21	66	LT	0519	0518		3.5	3.4								
L 21+49	56	LT	0520							32					
L 27+71	30	RT	0521												
L 31+28	1	LT	0601	0602		2.0	1.8								
L 31+90	28	RT	0603							64					
L 33+50	26	RT	0604							44					
L 34+25	26	RT	0605							24					
L 35+13	26	RT	0606							24					
L 36+47	25	RT	0607							28					
L 37+33	24	RT	0608							24					
L 38+34	0	CL	0609	0610		1.5	1.3								
L 42+34	26	RT	0611												
L 42+95	26	RT	0612												
L 46+63	27	RT	0701												
L 46+69	28	LT	0702							36					
L 49+85	28	RT	0703								72				
L 51+24	40	LT	0704							28					
L 53+84	28	RT	0705												
L 54+32	30	LT	0706								44				
L 54+90	32	RT	0707												
L 55+64	31	LT	0708								28				
L 56+65	3	RT	0709	0710		1.1	1.0								
L 56+69	3	RT	0711	0712		1.1	1.0								
L 57+31	38	RT	0713	0714		3.6	1.5								
L 56+67	37	RT	0714		4.9										
			0714	0715		0.7	0.6								
L 57+45	33	LT	0801										44		
L 59+12	32	LT	0802										28		
L 59+81	32	LT	0803										24		
L 59+76	248	RT	0804							24					
							SHEET TOTALS			516	144		120		

Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE)	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	DO NOT USE PP PIPE
THICKNESS OR GAUGE						
L 15+48						
L 16+84						
L 17+26						
L 18+00						
L 11+96						
L 12+94						
L 18+36						
L 18+82						
L 19+05						
L 20+71						
L 20+93						
L 21+55						
L 22+67						
L 27+98						
L 28+02						
L 28+89						
L 30+13						
L 19+85						
L 27+29						
L 27+26						
L 21+21						
L 21+49						
L 27+71						
L 31+28						
L 31+90						
L 33+50						
L 34+25						
L 35+13						
L 36+47						
L 37+33						
L 38+34						
L 42+34						
L 42+95						
L 46+63						
L 46+69						
L 49+85						
L 51+24						
L 53+84						
L 54+32						
L 54+90						
L 55+64						
L 56+65						
L 56+69						
L 57+31						
L 56+67						
L 57+45						
L 59+12						
L 59+81						
L 59+76						
SHEET TOTALS						

C. S. PIPE	.064	.064	.064
	12	15	18
L 15+48			
L 16+84			
L 17+26			
L 18+00			
L 11+96			
L 12+94			
L 18+36			
L 18+82			
L 19+05			
L 20+71			
L 20+93			
L 21+55			
L 22+67			
L 27+98			
L 28+02			
L 28+89			
L 30+13			
L 19+85			
L 27+29			
L 27+26			
L 21+21			
L 21+49			
L 27+71			
L 31+28			
L 31+90			
L 33+50			
L 34+25			
L 35+13			
L 36+47			
L 37+33			
L 38+34			
L 42+34			
L 42+95			
L 46+63			
L 46+69			
L 49+85			
L 51+24			
L 53+84			
L 54+32			
L 54+90			
L 55+64			
L 56+65			
L 56+69			
L 57+31			
L 56+67			
L 57+45			
L 59+12			
L 59+81			
L 59+76			
SHEET TOTALS			

R. C. PIPE CLASS III	12	15	18
L 15+48			
L 16+84			
L 17+26			
L 18+00			
L 11+96			
L 12+94			
L 18+36			
L 18+82			
L 19+05			
L 20+71			
L 20+93			
L 21+55			
L 22+67			
L 27+98			
L 28+02			
L 28+89			
L 30+13			
L 19+85			
L 27+29			
L 27+26			
L 21+21			
L 21+49			
L 27+71			
L 31+28			
L 31+90			
L 33+50			
L 34+25			
L 35+13			
L 36+47			
L 37+33			
L 38+34			
L 42+34			
L 42+95			
L 46+63			
L 46+69			
L 49+85			
L 51+24			
L 53+84			
L 54+32			
L 54+90			
L 55+64			
L 56+65			
L 56+69			
L 57+31			
L 56+67			
L 57+45			
L 59+12			
L 59+81			
L 59+76			
SHEET TOTALS			

R. C. PIPE CLASS IV	12	15	18	24	30	36	42	48	54
L 15+48			64						
L 16+84		36							
L 17+26		8							
L 18+00									
L 11+96									
L 12+94									
L 18+36									
L 18+82		116							
L 19+05									
L 20+71									
L 20+93						60			
L 21+55									
L 22+67		28							
L 27+98						68			
L 28+02						68			
L 28+89									
L 30+13									
L 19+85		32							
L 27+29			28						
L 27+26						16			
L 21+21			32						
L 21+49									
L 27+71						24			
L 31+28				56					
L 31+90									
L 33+50									
L 34+25									
L 35+13									
L 36+47									
L 37+33									
L 38+34						64			
L 42+34		20							
L 42+95		40							
L 46+63		32							
L 46+69									
L 49+85									
L 51+24									
L 53+84		24							
L 54+32									
L 54+90		20							
L 55+64									
L 56+65						68			
L 56+69						68			
L 57+31		132							
L 56+67									
							32		
L 57+45									
L 59+12									
L 59+81									
L 59+76									
SHEET TOTALS		488	124	56	300	136	32		

R. C. PIPE CLASS V	12	15	18	24	30	36	42	48	54	60
L 15+48										
L 16+84										
L 17+26										
L 18+00										
L 11+96										
L 12+94										
L 18+36										
L 18+82										
L 19+05										
L 20+71										
L 20+93										
L 21+55										
L 22+67										
L 27+98										
L 28+02										
L 28+89										
L 30+13										
L 19+85										
L 27+29										
L 27+26										
L 21+21										
L 21+49										
L 27+71										
L 31+28										
L 31+90										
L 33+50										
L 34+25										
L 35+13										
L 36+47										
L 37+33										
L 38+34										
L 42+34										
L 42+95										
L 46+63										
L 46+69										
L 49+85										
L 51+24										
L 53+84										
L 54+32										
L 54+90										
L 55+64										
L 56+65										
L 56+69										
L 57+31										
L 56+67										
L 57+45										
L 59+12										
L 59+81										
L 59+76										
SHEET TOTALS										

STRUCTURAL PLATE PIPE	60	66	72
L 15+48			
L 16+84			
L 17+26			
L 18+00			
L 11+96			
L 12+94			
L 18+36			
L 18+82			
L 19+05			
L 20+71			
L 20+93			
L 21+55			
L 22+67			
L 27+98			
L 28+02			
L 28+89			
L 30+13			
L 19+85			
L 27+29			
L 27+26			
L 21+21			
L 21+49			
L 27+71			
L 31+28			
L 31+90			
L 33+50			
L 34+25			
L 35+13			
L 36+47			
L 37+33			
L 38+34			
L 42+34			
L 42+95			
L 46+63			
L 46+69			
L 49+85			
L 51+24			
L 53+84			
L 54+32			
L 54+90			
L 55+64			
L 56+65			
L 56+69			
L 57+31			
L 56+67			
L 57+45			
L 59+12			
L 59+81			
L 59+76			
SHEET TOTALS			

15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY
L 15+48					
L 16+84					
L 17+26					
L 18+00					
L 11+96					
L 12+94					
L 18+36					
L 18+82					
L 19+05					
L 20+71					
L 20+93					
L 21+55					
L 22+67					
L 27+98			4.500		
L 28+02					
L 28+89					
L 30+13					
L 19+85					
L 27+29					
L 27+26					
L 21+21					
L 21+49					
L 27+71					
L 31+28					
L 31+90					
L 33+50					
L 34+25					
L 35+13					
L 36+47					
L 37+33					
L 38+34					
L 42+34					
L 42+95					
L 46+63					
L 46+69					
L 49+85					
L 51+24					
L 53+84					
L 54+32					
L 54+90					
L 55+64					
L 56+65					
L 56+69					
L 57+31					
L 56+67					
L 57+45					
L 59+12					
L 59+81					
L 59+76					
SHEET TOTALS			4.500		

QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)	A	B
	0' THRU 5'	5' THRU 10'
	EACH	LIN. FT.
L 15+48		
L 16+84		
L 17+26		
L 18+00		
L 11+96		
L 12+94		
L 18+36		
L 18+82		
L 19+05		
L 20+71		
L 20+93		
L 21+55		
L 22+67		
L 27+98		
L 28+02		
L 28+89		
L 30+13		
L 19+85		
L 27+29		
L 27+26		
L 21+21		
L 21+49		
L 27+71		
L 31+28		
L 31+90		
L 33+50		
L 34+25		
L 35+13		
L 36+47		
L 37+33		
L 38+34		
L 42+34		
L 42+95		
L 46+63		
L 46+69		
L 49+85		
L 51+24		
L 53+84		
L 54+32		
L 54+90		
L 55+64		
L 56+65		
L 56+69		
L 57+31		
L 56+67		
L 57+45		
L 59+12		
L 59+81		
L 59+76		
SHEET TOTALS		

C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G
L 15+48			
L 16+84			
L 17+26			
L 18+00			
L 11+96			
L 12+94			
L 18+36			
L 18+82			
L 19+05			
L 20+71			
L 20+93			
L 21+55			
L 22+67			
L 27+98			
L 28+02			
L 28+89			
L 30+13			
L 19+85			
L 27+29			
L 27+26			
L 21+21			
L 21+49			
L 27+71			
L 31+28			
L 31+90			
L 33+50			
L 34+25			
L 35+13			
L 36+47			
L 37+33			
L 38+34			
L 42+34			
L 42+95			
L 46+63			
L 46+69			
L 49+85			
L 51+24			
L 53+84			
L 54+32			
L 54+90			
L 55+64			
L 56+65			
L 56+69			
L 57+31			
L 56+67			
L 57+45			
L 59+12			
L 59+81			
L 59+76			
SHEET TOTALS			

CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05
L 15+48	
L 16+84	
L 17+26	
L 18+00	
L 11+96	
L 12+94	
L 18+36	
L 18+82	
L 19+05	
L 20+71	
L 20+93	
L 21+55	
L 22+67	
L 27+98	
L 28+02	
L 28+89	
L 30+13	
L 19+85	
L 27+29	
L 27+26	
L 21+21	
L 21+49	
L 27+71	
L 31+28	
L 31+90	
L 33+50	
L 34+25	
L 35+13	
L 36+47	
L 37+33	
L 38+34	
L 42+34	
L 42+95	
L 46+63	
L 46+69	
L 49+85	
L 51+24	
L 53+84	
L 54+32	
L 54+90	
L 55+64	
L 56+65	
L 56+69	
L 57+31	
L 56+67	
L 57+45	
L 59+12	
L 59+81	
L 59+76	
SHEET TOTALS	

G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	T.B.D.I. STD. 840.35	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 15+48																			
L 16+84																			
L 17+26																			
L 18+00																			
L 11+96																			
L 12+94																			
L 18+36																			
L 18+82																			
L 19+05																			
L 20+71																			
L 20+93																			
L 21+55																			
L 22+67																			
L 27+98																			
L 28+02																			See Endwall quatities for 0509-0510
L 28+89																			
L 30+13																			
L 19+85																			
L 27+29																			
L 27+26																			
L 21+21																			
L 21+49																			
L 27+71																			
L 31+28																			
L 31+90																			
L 33+50																			
L 34+25																			
L 35+13																			
L 36+47																			
L 37+33																			
L 38+34																			
L 42+34																			
L 42+95																			
L 46+63																			
L 46+69																			
L 49+85																			
L 51+24																			
L 53+84																			
L 54+32																			
L 54+90																			
L 55+64																			
L 56+65																			
L 56+69																			
L 57+31																			
L 56+67															1		1		See Special Detail
L 57+45																			
L 59+12																			
L 59+81																			
L 59+76																			
SHEET TOTALS															1		1		

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

Z11249

COMPUTED BY:	VHB	**DATE:**	8/22/2024
CHECKED BY:	VHB	**DATE:**	8/22/2024

PROJECT NO.	SHEET NO.
R-5807	3D-2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET		STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) 12	15	18	24	30	36	42	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	DO NOT USE PP PIPE	C. S. PIPE 12 .064	15 .064	18 .064	R. C. PIPE CLASS III 12	15	18	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	54	R. C. PIPE CLASS V 12	15	18	24	30	36	42	48	54	60	STRUCTURAL PLATE PIPE 60	66	72	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G	CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	T.B.D.I. STD. 840.35	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 60+16	287	RT	0805							36																																																																								
L 62+69	37	RT	0806																										48																																																						
L 62+87	29	LT	0807										32																																																																							
L 63+38	36	RT	0808							32																																																																								
L 63+96	31	LT	0809										28																																																																							
L 64+65	3	RT	0810	0811		3.5	3.1																									68																																																				
L 65+21	31	LT	0812									40																																																																									
L 65+56	33	RT	0813							24																																																																									
L 66+14	31	RT	0814							24																																																																											
L 67+59	28	RT	0815							24																																																																											
L 68+79	27	RT	0816							36																																																																											
L 71+02	28	LT	0901																													28																																																				
L 72+92	33	LT	0902																														32																																																			
L 73+15	1	LT	0903	0904		3.6	3.5																							56																																																							
L 73+86	31	LT	0905																														44																																																			
L 74+81	26	RT	0906																											24																																																							
L 77+56	27	RT	0907																										28																																																							
L 81+70	26	RT	1001																										24																																																							
L 82+36	26	RT	1002																										28																																																							
L 82+58	31	LT	1003																												36																																																					
L 88+58	28	LT	1004							24																																																																												
L 89+18	1	RT	1005	1006		3.4	3.2																								60																																																						
L 91+72	31	RT	1007									24																																																																									
L 91+89	28	LT	1008								56																																																																											
L 92+84	31	RT	1009									36																																																																									
L 94+13	31	RT	1010									36																																																																									
L 95+13	31	RT	1101									28																																																																									
L 97+89	32	RT	1102									56																																																																									
L 100+63	30	LT	1103								36																																																																										
L 101+12	32	RT	1104									28																																																																									
L 102+31	32	RT	1105									32																																																																									
L 102+47	30	LT	1106								56																																																																											
L 104+03	29	LT	1107								28																																																																											
L 105+74	29	LT	1108								32																																																																											
L 107+37	40	RT	1201									32																																																																									
L 107+99	35	RT	1202								24																																																																										
L 108+51	34	LT	1203								32																																																																										
L 108+91	35	RT	1204								24																																																																										
L 109+54	34	RT	1205								20																																																																										
L 109+62	27	LT	1206								28																																																																										
L 110+75	28	LT	1207																											36																																																								
L 112+11	27	LT	1208																											84																																																							
L 115+30	27	RT	1209																										44																																																								
L 115+84	27	LT	1210								24																																																																										
L 116+21	27	RT	1211																										24																																																								
L 116+88	27	LT	1212								32																																																																										
L 117+05	26	RT	1213																										28																																																								
L 117+72	27	LT	1214								20																																																																										
L 118+22	26	RT	1215																										28																																																								
L 118+66	26	RT	1216																										36																																																								
SHEET TOTALS										200	412	312	60																288	200	96	96	76																																																					

ABBREVIATIONS

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

Z1249

COMPUTED BY: VHB DATE: 8/22/2024

CHECKED BY: VHB DATE: 8/22/2024

PROJECT NO.	SHEET NO.
R-5807	3D-3

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION	OFFSET		STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) SIZE: 12	15	18	24	30	36	42
									THICKNESS OR GAUGE: DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	DO NOT USE PP PIPE	
L 106+51	1	LT	1217	1218		1.0	0.7								
L 106+58	1	RT	1219	1220		1.0	0.7								
L 119+27	27	LT	1301												
L 119+67	26	RT	1302												
L 122+30	27	LT	1303												
L 133+68	24	RT	1401												
L 142+62	26	RT	1402												
L 144+36	27	RT	1501												
L 150+30	27	LT	1502												
L 152+93	29	RT	1503												
L 156+57	22	RT	1601		4.9										
			1601	1602		1.6	1.2			16					
L 161+00	35	RT	1604	1603		0.8	0.6								
L 162+39	30	RT	1605											40	
L 163+31	30	RT	1607											40	
L 164+10	31	RT	1608											40	
L 164+84	0	CL	1609	1610		3.4	1.9								
L 165+15	32	LT	1611							40					
L 166+59	30	RT	1612								32				
L 167+13	30	RT	1613								36				
L 167+72	31	RT	1614								32				
L 159+78	130	LT	1615	1616		1.0	0.6								
L 168+59	28	LT	1701												
L 168+98	30	RT	1702								32				
L 172+14	1	LT	1703	1704		3.0	1.6								
L 172+32	31	RT	1705							32					
L 173+28	28	LT	1706							32					
L 174+34	29	RT	1707							32					
L 175+08	29	RT	1708							32					
L 175+19	26	LT	1709												
L 177+63	27	RT	1710							28					
L 179+13	26	RT	1711							28					
L 180+04	26	LT	1712												
L 180+09	26	RT	1713												
L 184+28	1	LT	1801	1802		3.3	3.2								
L 185+06	29	LT	1803							36					
L 186+33	28	RT	1804												
L 187+19	28	LT	1805							44					
L 187+22	28	RT	1806												
L 187+76	27	LT	1807												
L 190+11	27	RT	1808												
L 192+60	25	RT	1901												
L 193+85	152	RT	1902												
L 199+19	25	RT	1903												
L 199+88	25	RT	1904												
L 201+26	27	RT	1905												
L 202+25	27	RT	1906							28					
L 203+54	27	RT	1907							32					
L 203+89	25	LT	1908							36					
L 204+96	27	RT	1909							24					
				SHEET TOTALS					440	132		120			

	C. S. PIPE SIZE: 12	15	18	R. C. PIPE CLASS III: 12	15	18	R. C. PIPE CLASS IV: 12	15	18	24	30	36	42	48	54
	THICKNESS OR GAUGE: .064	.064	.064												
L 106+51														112	
L 106+58														108	
L 119+27										28					
L 119+67							44								
L 122+30							84								
L 133+68							32								
L 142+62								28							
L 144+36										40					
L 150+30										144					
L 152+93										40					
L 156+57															
L 161+00															
L 162+39															
L 163+31															
L 164+10															
L 164+84															
L 165+15															
L 166+59															
L 167+13															
L 167+72															
L 159+78															
L 168+59							36								
L 168+98															
L 172+14													68		
L 172+32															
L 173+28															
L 174+34															
L 175+08															
L 175+19							28								
L 177+63															
L 179+13															
L 180+04							44								
L 180+09							40								
L 184+28															
L 185+06															
L 186+33										40					
L 187+19															
L 187+22										48					
L 187+76							36								
L 190+11										40					
L 192+60										32					
L 193+85							24								
L 199+19							28								
L 199+88							28								
L 201+26							36								
L 202+25															
L 203+54															
L 203+89															
L 204+96															
							460	216	224			68	220		

	R. C. PIPE CLASS V: 12	15	18	24	30	36	42	48	54	60	STRUCTURAL PLATE PIPE: 60	66	72	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY
L 106+51																	8.000		
L 106+58																			
L 119+27																			
L 119+67																			
L 122+30																			
L 133+68																			
L 142+62																			
L 144+36																			
L 150+30																			
L 152+93																			
L 156+57																			
L 161+00																			
L 162+39																			
L 163+31																			
L 164+10																			
L 164+84																			
L 165+15																			
L 166+59																			
L 167+13																			
L 167+72																			
L 159+78																			
L 168+59																			
L 168+98																			
L 172+14																	6.000		
L 172+32																			
L 173+28																			
L 174+34																			
L 175+08																			
L 175+19																			
L 177+63																			
L 179+13																			
L 180+04																			
L 180+09																			
L 184+28																			
L 185+06																			
L 186+33																			
L 187+19																			
L 187+22																			
L 187+76																			
L 190+11																			
L 192+60																			
L 193+85																			
L 199+19																			
L 199+88																			
L 201+26																			
L 202+25																			
L 203+54																			
L 203+89																			
L 204+96																			
																	14.000		

	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B) A: 0' THRU 5' EACH	B: 5' THRU 10' LIN. FT.	10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G	CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	T.B.D.I. STD. 840.35	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 106+51																										
L 106+58																										See Endwall quatities for 1219-1220
L 119+27																										
L 119+67																										
L 122+30																										
L 133+68																										
L 142+62																										
L 144+36																										
L 150+30																										
L 152+93																										
L 156+57		1																				1	1			
L 161+00																										
L 162+39																										
L 163+31																										
L 164+10																										
L 164+84																										
L 165+15																										
L 166+59																										
L 167+13																										
L 167+72																										
L 159+78																										
L 168+59																										
L 168+98																										
L 172+14																										
L 172+32																										
L 173+28																										
L 174+34																										
L 175+08																										
L 175+19																										
L 177+63																										
L 179+13																										
L 180+04																										
L 180+09																										
L 184+28																										
L 185+06																										
L 186+33																										
L 187+19																										
L 187+22																										
L 187+76																										
L 190+11																										
L 192+60																										
L 193+85																										
L 199+19																										
L 199+88																										
L 201+26																										
L 202+25																										
L 203+54																										
L 203+89																										
L 204+96																										
		1																				1	1			

ABBREVIATIONS

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

Z1249

COMPUTED BY:	VHB	DATE:	8/22/2024
CHECKED BY:	VHB	DATE:	8/22/2024

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
R-5807	3D-4

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

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

LINE & STATION	OFFSET		STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) SIZE: 12	15	18	24	30	36	42
THICKNESS OR GAUGE															
L 205+54	27	RT	2001							32					
L 205+81	26	LT	2002							32					
L 207+63	26	RT	2003							36					
L 207+95	26	LT	2004							32					
L 208+50	27	RT	2005							32					
L 214+32	18	LT	2006		5.8										
			2006	2007		2.5	2.3								
L 214+32	24	RT	2007		6.8										
			2007	2008		2.3	0.5			24					
L 209+79	33	RT	2009	2010		1.9	1.3								
L 211+97	31	LT	2011												
L 211+07	26	LT	2012												
L 220+48	31	LT	2101												
L 228+54	30	RT	2103							56					
L 240+01	37	LT	2203	2201		2.6	2.5								
L 241+99	28	RT	2204								24				
L 242+23	3	LT	2205	2208		1.8	1.3								
L 242+39	74	RT	2206												
L 243+23	52	LT	2207								28				
L 246+27	52	LT	2301												
L 249+07	28	RT	2302							44					
L 252+39	52	LT	2303												
L 258+15	27	RT	2401												
L 258+17	28	LT	2402												
L 259+61	29	RT	2403												
L 260+03	31	RT	2404												
L 261+55	4	RT	2405	2406		-0.7	-0.8								
L 261+59	4	RT	2407	2408		-0.7	0.8								
L 261+73	105	RT	2411	2409		0.4	-0.2								
L 261+72	109	RT	2412	2410		0.4	-0.2								
L 262+85	27	LT	2413												
L 268+61	27	RT	2414								44				
L 270+96	27	LT	2501												
L 271+71	27	LT	2502												
L 272+96	27	RT	2503								36				
L 275+06	28	LT	2504												
L 277+75	28	LT	2505												
L 277+78	28	RT	2506												
L 278+65	28	RT	2507												
L 280+30	28	RT	2508	2509		2.6	2.5								
L 281+00	29	RT	2510								24				
L 282+19	26	LT	2601												
L 282+98	29	RT	2602								56				
L 283+36	27	LT	2603												
L 284+25	32	RT	2604		4.6										
			2604	2607		2.1	1.3	0.4							
L 284+80	28	LT	2605		4.6										
			2605	2607		2.6	1.8								
L 284+78	45	RT	2606		5.0										
			2606	2607		1.9	1.0								
					SHEET TOTALS				288	132	80				

	C. S. PIPE .064 12	15	18	R. C. PIPE CLASS III 12	15	18	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	54
L 205+54															
L 205+81															
L 207+63															
L 207+95															
L 208+50															
L 214+32															
								40							
L 214+32															
L 209+79										68					
L 211+97								36							
L 211+07								44							
L 220+48															
L 228+54										76					
L 240+01															
L 241+99															
L 242+23										60					
L 242+39										24					
L 243+23															
L 246+27								28							
L 249+07															
L 252+39										24					
L 258+15										24					
L 258+17								24							
L 259+61										12					
L 260+03										20					
L 261+55															
L 261+59															
L 261+73												36			
L 261+72												36			
L 262+85										40					
L 268+61															
L 270+96										28					
L 271+71								24							
L 272+96															
L 275+06								40							
L 277+75								48							
L 277+78								24							
L 278+65								28							
L 280+30										64					
L 281+00															
L 282+19								28							
L 282+98															
L 283+36								36							
L 284+25															
										56					
L 284+80															
										60					
L 284+78															
								12							
							220	360	332	128					

	R. C. PIPE CLASS V 12	15	18	24	30	36	42	48	54	60	STRUCTURAL PLATE PIPE 60	66	72	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY
L 205+54																			
L 205+81																			
L 207+63																			
L 207+95																			
L 208+50																			
L 214+32																			
L 214+32																			
L 209+79																			
L 211+97																			
L 211+07																			
L 220+48																			
L 228+54																			
L 240+01																			
L 241+99																			
L 242+23																			
L 242+39																			
L 243+23																			
L 246+27																			
L 249+07																			
L 252+39																			
L 258+15																			
L 258+17																			
L 259+61																			
L 260+03																			
L 261+55							64												
L 261+59							64												
L 261+73																			
L 261+72																			
L 262+85																			
L 268+61																			
L 270+96																			
L 271+71																			
L 272+96																			
L 275+06																			
L 277+75																			
L 277+78																			
L 278+65																			
L 280+30																			
L 281+00																			
L 282+19																			
L 282+98																			
L 283+36																			
L 284+25																			
L 284+80																			
L 284+78																			
							128												
																			3

	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B) A 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G	CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26
L 205+54										
L 205+81										
L 207+63										
L 207+95										
L 208+50										
L 214+32	1									
L 214+32	1									
L 209+79										
L 211+97										
L 211+07										
L 220+48										
L 228+54										
L 240+01										
L 241+99										
L 242+23										
L 242+39										
L 243+23										
L 246+27										
L 249+07										
L 252+39										
L 258+15										
L 258+17										
L 259+61										
L 260+03										
L 261+55										
L 261+59										
L 261+73										
L 261+72										
L 262+85										
L 268+61										
L 270+96										
L 271+71										
L 272+96										
L 275+06										
L 277+75										
L 277+78										
L 278+65										
L 280+30										
L 281+00										
L 282+19										
L 282+98										
L 283+36										
L 284+25										
L 284+80										
L 284+78	1									
	3									

	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	T.B.D.I. STD. 840.35	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 205+54																	
L 205+81																	
L 207+63																	
L 207+95																	
L 208+50																	
L 214+32										1	1						
L 214+32										1	1						
L 209+79																	
L 211+97																	
L 211+07																	
L 220+48																	
L 228+54																	
L 240+01																	
L 241+99																	
L 242+23																	
L 242+39																	
L 243+23																	
L 246+27																	
L 249+07																	
L 252+39																	
L 258+15																	
L 258+17																	
L 259+61																	
L 260+03																	
L 261+55																	
L 261+59																	
L 261+73																	
L 261+72																	
L 262+85																	
L 268+61																	
L 270+96																	
L 271+71																	
L 272+96																	
L 275+06																	
L 277+75																	
L 277+78																	
L 278+65																	
L 280+30																	
L 281+00																	
L 282+19																	
L 282+98																	
L 283+36																	
L 284+25																	
L 284+80																	
L 284+78										1	1						
										3	3						

ABBREVIATIONS

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

Z11249

COMPUTED BY:	VHB	DATE:	8/22/2024
CHECKED BY:	VHB	DATE:	8/22/2024

PROJECT NO.	SHEET NO.
R-5807	3D-5

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) 12	15	18	24	30	36	42	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	DO NOT USE PP PIPE	C. S. PIPE 12 .064	15 .064	18 .064	R. C. PIPE CLASS III 12	15	18	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	54	R. C. PIPE CLASS V 12	15	18	24	30	36	42	48	54	60	STRUCTURAL PLATE PIPE 60	66	72	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G		CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	T.B.D.I. STD. 840.35	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 284+82	32 RT	2607		5.0																																																					1																		1			1							See Special Detail
		2607	2608		0.7	0.1	0.3																									156																																																							
L 286+39	36 RT	2608		4.5																																																				1												1						1										
		2608	2609		0.1	-0.2	0.3																									60																																																							
L 286+41	26 LT	2610																										28																																																										
L 286+91	25 LT	2611																										8																																																										
L 288+22	28 LT	2612																										28																																																										
L 298+87	34 RT	2707	2705		2.0	1.8																									92																																																									
L 298+99	28 LT	2708	2706		2.0	1.8																								76																																																											
L 304+22	26 LT	2709								32																																																																															
L 313+19	26 RT	2801							32																																																																																	
L 314+40	27 RT	2802							40																																																																																
L 315+22	26 LT	2803							36																																																																																
L 316+37	27 RT	2804							32																																																																																
L 318+43	26 RT	2901																											32																																																										
L 319+15	27 RT	2902								32																																																																																
L 320+53	31 LT	2903							36																																																																																
L 320+75	27 RT	2904	2905		4.1	4.0																								60																																																											
L 323+21	31 RT	2906									32																																																																														
L 326+32	25 LT	2907																										36																																																										
L 326+44	33 RT	2908																												40																																																										
L 327+10	24 LT	2909							32																																																																																
L 331+82	24 LT	3001																											28																																																									
L 332+93	24 LT	3002																											28																																																									
L 333+82	28 RT	3003									32																																																																														
L 333+90	25 LT	3004								32																																																																															
L 334+78	31 RT	3005	3006		4.3	4.2																								72																																																												
L 335+00	26 LT	3007																											28																																																									
L 335+60	25 LT	3008																											28																																																									
L 335+93	24 LT	3009																											28																																																									
L 337+37	24 LT	3010																											28																																																									
L 338+42	24 LT	3011																											32																																																									
L 340+70	25 LT	3012																											32																																																									
L 341+43	26 LT	3013																											32																																																									
L 341+98	28 RT	3014							36																																																																																
L 342+12	26 LT	3015								32																																																																																
L 342+49	27 LT	3016								32																																																																																
L 342+95	27 LT	3017																											40																																																									
L 343+40	27 LT	3101																											36																																																									
L 344+74	27 LT	3102																											36																																																									
L 346+39	25 RT	3103																										40																																																											
L 349+76	27 LT	3104								32																																																																																
L 351+97	25 RT	3105								32																																																																																	
L 352+10	28 LT	3106									32																																																																														
L 352+38	24 RT	3107								32																																																																																
L 353+07	28 LT	3108																												32																																																										
L 354+09	28 LT	3109																												32																																																									
L 354+57	28 LT	3110																												28																																																									
L 352+83	25 RT	3111								16																																																																																
L 353+65	28 LT	3112																												16																																																										
SHEET TOTALS									244	272	96																	140	408	356	92	216																								2												1						2			1							

ABBREVIATIONS

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

Z11249

COMPUTED BY:	VHB	DATE:	8/22/2024
CHECKED BY:	VHB	DATE:	8/22/2024

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO.	SHEET NO.
R-5807	3D-6

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

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

LINE & STATION	OFFSET	STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE)							DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	DO NOT USE PP PIPE	C. S. PIPE			R. C. PIPE CLASS III			R. C. PIPE CLASS IV									R. C. PIPE CLASS V										STRUCTURAL PLATE PIPE			15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	REINFORCED ENDWALLS	DRAINAGE STRUCTURE	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03				CONCRETE TRANSITIONAL SECTION		G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	T.B.D.I. STD. 840.35	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	FLOWABLE FILL	CONCRETE COLLARS CL. "B" STD. 840.72	CONCRETE AND BRICK PIPE PLUG STD. 840.71	PIPE REMOVAL	REMARKS
SIZE THICKNESS OR GAUGE		FROM	TO	FT.	FT.	FT.	%	12	15	18	24	30	36	42							12 .064	15 .064	18 .064	12	15	18	12	15	18	24	30	36	42	48	54	12	15	18	24	30	36	42	48	54	60	60	66	72					CY	CY	MASONRY CY	0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.		GRATE TYPE E	F	G		D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05																CY	CY	CY	LIN. FT.	
L 347+67	27 LT	3113								32																																																																									
L 355+46	29 LT	3201																												32																																																					
L 355+53	34 RT	3202	3203		2.6	2.1																								92																																																					
L 356+10	1 RT	3204	3205		2.6	2.1																									68																																																			
L 356+91	30 LT	3206								36																																																																									
L 357+92	31 LT	3207								40																																																																								
L 359+44	29 LT	3208																											44																																																							
L 360+34	29 RT	3209									36																																																																								
L 360+86	25 LT	3210																											48																																																							
L 361+10	20 LT	3211		7.0																																																																															
		3211	3212		4.0	3.5																							108																																																						
L 362+18	27 LT	3212		5.8																																																				1														1						1											
		3212	3213		3.5	3.3																							56																																																						
L 362+76	23 LT	3213		6.3																																																				1														1						1											
		3213	3216		3.3	3.0																							88																																																							
L 362+50	31 RT	3214																														104																																																			
L 362+50	37 RT	3215																														104																																																			
L 363+65	23 LT	3216		5.6																																																				1														1						1											
		3216	3217		3.0	2.8																							56																																																						
L 364+21	23 LT	3217		6.1																																																				1														1						1											
		3217	3218		2.8	2.4																							96																																																						
L 365+18	23 LT	3218		6.0																																																				1														1						1											
		3218	3219		2.4	2.0																							92																																																						
L 366+11	26 LT	3219		6.4																																																				1														1						1											
		3219	3220		2.0	1.8																							52																																																						
L 366+66	29 LT	3220		6.0																																																				1														1						1											
		3220	3301		1.8	1.1																							172																																																						
L 368+37	27 LT	3301		5.4																																																				1														1						1											
		3301	3302		1.1	0.8																							68																																																					
L 367+76	32 RT	3303																														104																																																		
L 367+76	37 RT	3304																														104																																																		
L 368+97	9 LT	3305	3306		0.3	0.2																																					88											8.000																																
L 369+21	54 LT	3308	3307		2.1	0.2																							52																																																							
L 369+23	34 RT	3309								48																																																																											
L 369+89	35 LT	3310							44																																																																												
L 370+41	28 RT	3311																											56																																																							
L 371+76	29 LT	3312							32																																																																												
L 373+05	25 LT	3313																										28																																																									
L 373+40	23 LT	3314																										24																																																									
L 65+41	1 LT	0000																																																																													2				
L 66+14	21 RT	0000																																																																																20	
L 67+58	22 RT	0000																																																																															20	
L 68+78	23 RT	0000																																																																															23	
L 56+68	1 LT	0000																																																																															41	
L 54+30	23 LT	0000																																																																															32	
L 55+66	22 LT	0000																																																																															21	
L 71+02	23 LT	0000																																																																															20	
L 74+83	21 RT	0000																																																																															16	
L 77+62	21 RT	0000																																																																															80	
L 78+26	21 RT	0000																																																																															40	
SHEET TOTALS									76	156	36																	52	988	124	68	416											88											8.000			8													8						8							2			313	

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

Z11249

COMPUTED BY:	VHB	DATE:	8/22/2024
CHECKED BY:	VHB	DATE:	8/22/2024

PROJECT NO.	SHEET NO.
R-5807	3D-7

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

ABBREVIATIONS

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

LINE & STATION	OFFSET	STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE)													C. S. PIPE			R. C. PIPE CLASS III			R. C. PIPE CLASS IV									R. C. PIPE CLASS V										STRUCTURAL PLATE PIPE			15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	REINFORCED ENDWALLS	DRAINAGE STRUCTURE	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03			CONCRETE TRANSITIONAL SECTION		G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	T.B.D.I. STD. 840.35	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	FLOWABLE FILL	CONCRETE COLLARS CL. "B" STD. 840.72	CONCRETE AND BRICK PIPE PLUG STD. 840.71	PIPE REMOVAL	REMARKS
SIZE THICKNESS OR GAUGE		FROM	TO	FT.	FT.	FT.	%	12	15	18	24	30	36	42	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	DO NOT USE PP PIPE	12 .064	15 .064	18 .064	12	15	18	12	15	18	24	30	36	42	48	54	12	15	18	24	30	36	42	48	54	60	60	66	72				CY	CY	MASONRY CY	0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.		GRATE TYPE E	F	G	D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05															CY	CY	CY	LIN. FT.	
L 81+71	23 RT	0000																																																																																17	
L 82+35	24 RT	0000																																																																																	22	
L 82+62	25 LT	0000																																																																																	21	
L 88+58	23 LT	0000																																																																																	15	
L 91+72	24 RT	0000																																																																																	21	
L 91+88	24 LT	0000																																																																																	41	
L 92+84	24 RT	0000																																																																																	32	
L 94+11	23 RT	0000																																																																																	31	
L 95+13	24 RT	0000																																																																																	20	
L 97+88	23 RT	0000																																																																																	52	
L 101+12	23 RT	0000																																																																																	21	
L 100+63	22 LT	0000																																																																																	21	
L 102+31	24 RT	0000																																																																																	21	
L 102+47	22 LT	0000																																																																																	42	
L 104+01	22 LT	0000																																																																																	21	
L 105+69	20 LT	0000																																																																																	21	
L 108+90	23 RT	0000																																																																																	17	
L 109+53	23 RT	0000																																																																																	17	
L 110+71	25 LT	0000																																																																																	22	
L 112+12	23 LT	0000																																																																																	79	
L 115+84	21 LT	0000																																																																																	18	
L 116+87	21 LT	0000																																																																																	20	
L 116+22	22 RT	0000																																																																																	21	
L 117+06	22 RT	0000																																																																																	21	
L 117+72	21 LT	0000																																																																																	11	
L 118+22	22 RT	0000																																																																																	21	
L 118+66	21 RT	0000																																																																																	31	
L 119+28	21 LT	0000																																																																																	21	
L 119+69	21 RT	0000																																																																																	31	
L 122+02	21 LT	0000																																																																																	41	
L 122+43	21 LT	0000																																																																																	21	
L 115+30	23 RT	0000																																																																																	17	
L 107+38	30 RT	0000																																																																																	21	
L 107+91	20 RT	0000																																																																																	30	
L 108+46	25 LT	0000																																																																																	40	
L 65+23	24 LT	0000																																																																																	30	
L 63+95	23 LT	0000																																																																																	21	
L 62+86	26 LT	0000																																																																																	29	
L 59+79	26 LT	0000																																																																																	19	
L 59+12	26 LT	0000																																																																																	24	
L 57+45	26 LT	0000																																																																																	41	
L 57+29	29 RT	0000																																																																																	119	
L 16+85	21 RT	0000																																																																																	31	
L 17+26	22 RT	0000																																																																																	5	
L 46+68	24 LT	0000																																																																																	28	
L 59+74	93 RT	0000																																																																																	49	
L 59+79	247 RT	0000																																																																																	21	
L 107+64	3 LT	0000																																																																																	31	
L 51+28	36 LT	0000																																																																																	5	
L 241+99	20 RT	0000																																																																																	19	
SHEET TOTALS																																																																																			1391	

Z1249

COMPUTED BY: VHB DATE: 8/22/2024

CHECKED BY: VHB DATE: 8/22/2024

PROJECT NO.	SHEET NO.
R-5807	3D-8

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) SIZE	Drainage Pipe THICKNESS OR GAUGE	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	DO NOT USE PP PIPE	C. S. PIPE SIZE	C. S. PIPE THICKNESS OR GAUGE	R. C. PIPE CLASS III	R. C. PIPE CLASS IV	R. C. PIPE CLASS V	STRUCTURAL PLATE PIPE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B) A: 0' THRU 5' EACH	B: 5' THRU 10' LIN. FT.	B: 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G	CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	T.B.D.I. STD. 840.35	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 243+22	30 LT	0000																																																12	
L 246+27	31 LT	0000																																																	12	
L 249+06	23 RT	0000																																																	23	
L 258+15	21 RT	0000																																																	21	
L 259+62	22 RT	0000																																																	5	
L 260+02	23 RT	0000																																																	18	
L 258+17	20 LT	0000																																																	14	
L 262+85	19 LT	0000																																																	21	
L 268+60	24 RT	0000																																																	40	
L 270+96	20 LT	0000																																																	14	
L 271+70	20 LT	0000																																																	21	
L 275+06	21 LT	0000																																																	19	
L 277+77	22 LT	0000																																																	21	
L 272+95	20 RT	0000																																																	17	
L 277+79	20 RT	0000																																																	20	
L 278+65	21 RT	0000																																																	20	
L 280+24	19 RT	0000																																																	38	
L 280+58	19 RT	0000																																																	25	
L 280+98	19 RT	0000																																																	11	
L 282+18	19 LT	0000																																																	22	
L 283+35	20 LT	0000																																																	28	
L 282+97	19 RT	0000																																																	20	
L 284+57	43 RT	0000																																																	37	
L 284+72	5 RT	0000																																																	43	
L 286+41	21 LT	0000																																																	14	
L 286+92	21 LT	0000																																																	4	
L 288+21	21 LT	0000																																																	20	
L 285+37	29 RT	0000																																																	54	
L 286+63	26 RT	0000																																																	41	
L 298+90	28 RT	0000																																																	81	
L 299+00	19 LT	0000																																																	60	
L 304+21	23 LT	0000																																																	16	
L 252+39	27 LT	0000																																																	9	
L 21+39	53 LT	0000																																																	19	
L 369+21	26 RT	0000																																																	37	
L 133+67	18 RT	0000																																																	21	
L 142+63	20 RT	0000																																																	16	
L 144+35	21 RT	0000																																																	21	
L 149+76	19 LT	0000																																																	31	
L 150+24	18 LT	0000																																																	12	
L 152+91	19 RT	0000																																																	21	
L 160+76	26 RT	0000																																																	37	
L 162+33	8 RT	0000																																																	20	
L 162+88	7 RT	0000																																																	19	
L 163+28	8 RT	0000																																																	22	
L 164+08	9 RT	0000																																																	21	
L 166+59	14 RT	0000																																																	21	
L 167+14	17 RT	0000																																																	20	
L 167+71	19 RT	0000																																																	22	
L 165+13	28 LT	0000																																																	20	
				SHEET TOTALS																																																	1201	

ABBREVIATIONS

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

Z11249

COMPUTED BY:	VHB	DATE:	8/22/2024
CHECKED BY:	VHB	DATE:	8/22/2024

PROJECT NO.	SHEET NO.
R-5807	3D-9

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION / SIZE / THICKNESS OR GAUGE	OFFSET	STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE) 12	15	18	24	30	36	42	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	DO NOT USE PP PIPE	C. S. PIPE 12 .064	C. S. PIPE 15 .064	C. S. PIPE 18 .064	R. C. PIPE CLASS III 12	15	18	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	54	R. C. PIPE CLASS V 12	15	18	24	30	36	42	48	54	60	STRUCTURAL PLATE PIPE 60	66	72	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G		CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	CONCRETE TRANSITIONAL SECTION C.B. STD. 852.05	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	T.B.D.I. STD. 840.35	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 201+26	24 RT	0000																																																																																	20	
L 202+25	24 RT	0000																																																																																	20	
L 203+54	22 RT	0000																																																																																	20	
L 204+95	21 RT	0000																																																																																	21	
L 205+54	21 RT	0000																																																																																	20	
L 204+05	17 LT	0000																																																																																	69	
L 205+87	18 LT	0000																																																																																	50	
L 199+20	22 RT	0000																																																																																	20	
L 199+88	23 RT	0000																																																																																	21	
L 207+63	21 RT	0000																																																																																	21	
L 207+93	18 LT	0000																																																																																	25	
L 208+48	21 RT	0000																																																																																	20	
L 209+79	18 RT	0000																																																																																	48	
L 220+26	20 LT	0000																																																																																	33	
L 220+64	20 LT	0000																																																																																	40	
L 228+55	21 RT	0000																																																																																	21	
L 168+98	21 RT	0000																																																																																	21	
L 174+34	22 RT	0000																																																																																	21	
L 175+09	22 RT	0000																																																																																	21	
L 177+63	21 RT	0000																																																																																	20	
L 179+13	22 RT	0000																																																																																	21	
L 180+10	20 RT	0000																																																																																	21	
L 180+10	20 LT	0000																																																																																	22	
L 175+19	20 LT	0000																																																																																	22	
L 173+22	20 LT	0000																																																																																	24	
L 168+59	21 LT	0000																																																																																	21	
L 185+07	23 LT	0000																																																																																	21	
L 187+19	21 LT	0000																																																																																	31	
L 187+76	22 LT	0000																																																																																	31	
L 192+62	22 RT	0000																																																																																	25	
L 190+18	22 RT	0000																																																																																	264	
L 187+25	21 RT	0000																																																																																	20	
L 186+26	30 RT	0000																																																																																	44	
L 193+87	153 RT	0000																																																																																	25	
L 320+53	21 LT	0000																																																																																	39	
L 326+34	20 LT	0000																																																																																	30	
L 326+99	21 LT	0000																																																																																	81	
L 326+43	22 RT	0000																																																																																	19	
L 323+20	25 RT	0000																																																																																	19	
L 321+17	25 RT	0000																																																																																	12	
L 320+73	23 RT	0000																																																																																	39	
L 318+43	23 RT	0000																																																																																	26	
L 331+81	19 LT	0000																																																																																	20	
L 334+77	22 RT	0000																																																																																	75	
L 332+91	18 LT	0000																																																																																	36	
L 333+91	19 LT	0000																																																																																	39	
L 333+80	18 RT	0000																																																																																	25	
L 335+00	21 LT	0000																																																																																	20	
L 335+60	23 LT	0000																																																																																	20	
L 335+92	23 LT	0000																																																																																	18	
SHEET TOTALS																																																																																					1662	

ABBREVIATIONS

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

COMPUTED BY:	VHB	DATE:	8/22/2024
CHECKED BY:	VHB	DATE:	8/22/2024

PROJECT NO.	SHEET NO.
R-5807	3D-10

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION	OFFSET	STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE)													C. S. PIPE			R. C. PIPE CLASS III			R. C. PIPE CLASS IV									R. C. PIPE CLASS V										STRUCTURAL PLATE PIPE			15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE		ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	REINFORCED ENDWALLS	DRAINAGE STRUCTURE	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03				CONCRETE TRANSITIONAL SECTION		G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	T.B.D.I. STD. 840.35	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	FLOWABLE FILL	CONCRETE COLLARS CL. "B" STD. 840.72	CONCRETE AND BRICK PIPE PLUG STD. 840.71	PIPE REMOVAL	REMARKS
SIZE THICKNESS OR GAUGE		FROM	TO	FT.	FT.	FT.	%	12	15	18	24	30	36	42	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	DO NOT USE PP PIPE	12 .064	15 .064	18 .064	12	15	18	12	15	18	24	30	36	42	48	54	12	15	18	24	30	36	42	48	54	60	60	66	72					CY	CY	MASONRY CY	0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.		GRATE TYPE E	F	G		D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05															CY	CY	CY	LIN. FT.	
L 337+39	23 LT	0000																																																																																		16	
L 338+42	23 LT	0000																																																																																		15	
L 340+71	21 LT	0000																																																																																	14	
L 341+43	21 LT	0000																																																																																	13	
L 342+11	21 LT	0000																																																																																	20	
L 342+50	22 LT	0000																																																																																	16	
L 342+91	20 LT	0000																																																																																	29	
L 341+98	21 RT	0000																																																																																	17	
L 369+90	17 LT	0000																																																																																	40	
L 371+74	18 LT	0000																																																																																	18	
L 371+75	15 LT	0000																																																																																	19	
L 373+39	19 LT	0000																																																																																	20	
L 373+05	20 LT	0000																																																																																	18	
L 368+13	18 LT	0000																																																																																	14	
L 367+12	16 LT	0000																																																																																	63	
L 365+55	16 LT	0000																																																																																	173	
L 364+07	16 LT	0000																																																																																	39	
L 364+45	15 LT	0000																																																																																	19	
L 362+49	28 RT	0000																																																																																	61	
L 362+49	33 RT	0000																																																																																	61	
L 362+63	17 LT	0000																																																																																	19	
L 361+44	17 LT	0000																																																																																	34	
L 360+85	18 LT	0000																																																																																	41	
L 360+35	28 RT	0000																																																																																	18	
L 359+46	25 LT	0000																																																																																	31	
L 356+90	18 LT	0000																																																																																	25	
L 357+88	19 LT	0000																																																																																	24	
L 355+69	27 RT	0000																																																																																	44	
L 352+47	28 LT	0000																																																																																	159	
L 349+26	29 LT	0000																																																																																	137	
L 346+40	21 RT	0000																																																																																	39	
L 344+73	20 LT	0000																																																																																	20	
L 343+41	20 LT	0000																																																																																	39	
L 313+16	19 RT	0000																																																																																	16	
L 314+43	19 RT	0000																																																																																	33	
L 315+22	18 LT	0000																																																																																	15	
L 316+37	19 RT	0000																																																																																	20	
L 369+28	30 LT	0000																																																																																	65	
L 319+15	25 RT	0000																																																																																	16	
L 369+82	26 RT	0000																																																																																	158	
L 172+33	22 RT	0000																																																																																	25	
L 18+00	16 LT	0000																																																																																	32	
L 18+37	15 LT	0000																																																																																	22	
L 19+08	17 LT	0000																																																																																	53	
L 20+72	27 RT	0000																																																																																	21	
L 27+26	28 RT	0000																																																																																	11	
L 27+72	28 RT	0000																																																																																	21	
L 21+54	28 RT	0000																																																																																	21	
L 22+69	19 LT	0000																																																																																	26	
L 28+89	20 RT	0000																																																																																	18	
SHEET TOTALS																																																																																					1888	

ABBREVIATIONS

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

Z11249

COMPUTED BY: VHB **DATE:** 8/22/2024

CHECKED BY: VHB **DATE:** 8/22/2024

PROJECT NO.	SHEET NO.
R-5807	3D-11

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION	OFFSET		STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE)													C. S. PIPE			R. C. PIPE CLASS III		
SIZE			FROM	TO					12	15	18	24	30	36	42	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	DO NOT USE PP PIPE	12	15	18	12	15	18
THICKNESS OR GAUGE																						.064	.064	.064			
					FT.	FT.	FT.	%																			
L 27+80	27	LT	0000																								
L 30+13	21	RT	0000																								
L 34+24	22	RT	0000																								
L 33+50	24	RT	0000																								
L 31+89	22	RT	0000																								
L 35+12	23	RT	0000																								
L 36+48	21	RT	0000																								
L 37+34	21	RT	0000																								
L 38+21	0	CL	0000																								
L 40+48	20	RT	0000																								
L 41+20	21	RT	0000																								
L 41+77	21	RT	0000																								
L 42+34	22	RT	0000																								
L 42+94	23	RT	0000																								
L 46+62	22	RT	0000																								
L 49+89	22	RT	0000																								
L 53+84	20	RT	0000																								
L 54+89	21	RT	0000																								
L 60+07	285	RT	0000																								
L 62+68	28	RT	0000																								
L 63+38	23	RT	0000																								
L 65+55	21	RT	0000																								
L 286+39	36	RT	0000																								
L 284+82	32	RT	0000																								
L 368+37	27	LT	0000																								
SHEET TOTALS																											
PROJECT TOTALS										1764	1248	524	300														

LINE & STATION	R. C. PIPE CLASS IV									R. C. PIPE CLASS V										STRUCTURAL PLATE PIPE			15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	
SIZE	12	15	18	24	30	36	42	48	54	12	15	18	24	30	36	42	48	54	60	60	66	72				
L 27+80																										
L 30+13																										
L 34+24																										
L 33+50																										
L 31+89																										
L 35+12																										
L 36+48																										
L 37+34																										
L 38+21																										
L 40+48																										
L 41+20																										
L 41+77																										
L 42+34																										
L 42+94																										
L 46+62																										
L 49+89																										
L 53+84																										
L 54+89																										
L 60+07																										
L 62+68																										
L 63+38																										
L 65+55																										
L 286+39																										
L 284+82																										
L 368+37																										
SHEET TOTALS																										
PROJECT TOTALS		1648	2296	1188	684	844	100	220					120	292			88									

LINE & STATION	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	REINFORCED ENDWALLS	DRAINAGE STRUCTURE	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03				CONCRETE TRANSITIONAL SECTION		G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	T.B.D.I. STD. 840.35	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	FLOWABLE FILL	CONCRETE COLLARS CL. "B" STD. 840.72	CONCRETE AND BRICK PIPE PLUG STD. 840.71	PIPE REMOVAL	REMARKS
			MASONRY		A	B		GRATE TYPE				D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05																			
				0' THRU 5'	5' THRU 10'	10' AND ABOVE		E	F	G																						
	CY	CY	CY	EACH	LIN. FT.	LIN. FT.																						CY	CY	CY	LIN. FT.	
L 27+80																															14	
L 30+13																															22	
L 34+24																															21	
L 33+50																															41	
L 31+89																															60	
L 35+12																															21	
L 36+48																															26	
L 37+34																															21	
L 38+21																															41	
L 40+48																															56	
L 41+20																															80	
L 41+77																															32	
L 42+34																															18	
L 42+94																															38	
L 46+62																															30	
L 49+89																															64	
L 53+84																															22	
L 54+89																															22	
L 60+07																															41	
L 62+68																															40	
L 63+38																															20	
L 65+55																															21	
L 286+39				1												1						1										
L 284+82				1																		1			1							
L 368+37				1												1						1										
SHEET TOTALS				3												2						3			1						751	
PROJECT TOTALS	26.500			17												11						14		4	7			2			7206	

ABBREVIATIONS

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

Z11249

COMPUTED BY:	VHB	DATE:	8/22/2024
CHECKED BY:	VHB	DATE:	8/22/2024

PROJECT NO.	SHEET NO.
R-5807	3D-12

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

LINE & STATION	OFFSET	STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE)													C. S. PIPE							R. C. PIPE CLASS III							R. C. PIPE CLASS IV							R. C. PIPE CLASS V							STRUCTURAL PLATE PIPE		
SIZE		FROM	TO	FT.	FT.	FT.	%	48	54	60	66	72	78	84	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	DO NOT USE PP PIPE	48	54	60	66	72	78	84	48	54	60	66	72	78	84	48	54	60	66	72	78	84	48	54	60	66	72	78	84	60	66	72
THICKNESS OR GAUGE																					.109																														
L 294+40	4 RT	2701	2702																																	84															
L 294+47	5 RT	2703	2704																																	84															
SHEET TOTALS																																																			
PROJECT TOTALS																																											168								

LINE & STATION	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	REINFORCED ENDWALLS CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G	CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATE STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ GRATE STD. 840.29	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	T.B.D.I. FOR STEEL GRATES STD. 840.36	STEEL FRAME WITH TWO GRATES STD. 840.37	TEMP STEEL PLATE COVER MASONRY DRAINAGE	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
L 294+40																															
L 294+47													69																		See Endwall quantities for 2701-2702
SHEET TOTALS																															
PROJECT TOTALS		6.900																													

ABBREVIATIONS

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

5/9/06

COMPUTED BY: RUC	DATE: 3/3/2024
CHECKED BY:	DATE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

PROJECT REFERENCE NO.	SHEET NO.
R-5807	3G-1
RW SHEET NO.	

SUMMARY OF SUBSURFACE DRAINAGE

LINE	STATION	STATION	LOCATION LT/RT/CL	DRAINAGE TYPE* UD/BD/SD	LF
-L-	260+00	265+00		SD	1,000
CONTINGENCY				SD	500
				TOTAL LF:	1,500

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

SUMMARY OF AGGREGATE SUBGRADE /STABILIZATION

LOCATION	STATION	STATION	AGGREGATE TYPE* ASU/AST	AGGREGATE THICKNESS INCHES	SHALLOW UNDERCUT CY	CLASS IV SUBGRADE STABILIZATION TONS	GEOTEXTILE FOR SUBGRADE STABILIZATION SY	GEOTEXTILE FOR SOIL STABILIZATION SY	STABILIZER AGGREGATE TONS	CLASS IV AGGREGATE STABILIZATION TONS
-L-	101+75.00	104+25.00	ASU		100	225	350			
-L-	286+25.00	289+25.00	ASU		125	250	375			
CONTINGENCY					500	1,000	1,500	600		
			TOTAL CY/TONS/SY		725	1,475	2,225	600		

*ASU = Aggregate Subgrade
*AST = Aggregate Stabilization
**Total square yards of "Geotextile for Soil Stabilization" is only the estimated quantity for ASU/AST and may only represent a portion of the geotextile quantity shown in the Item Sheets of the Proposal.

8/28/2024
R-5807_RDY_SUM_03G-1.dgn
RPROSSER

PROJ. REFERENCE NO.	SHEET NO.
R-5807	3P-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	4	CRAIG W. HUDDLE & ALISON H. BOLEN
1A	4	COUNTY OF CAMDEN
2	4	MOUNT ZION CHURCH OF GOD IN CHRIST
2A	4	OAK FORTRESS, LLC
2B	4, 5	LEON GLENN
3	4, 5	PARKWAY AG SUPPLY, INC
3A	5	ADF PROPERTIES, LLC
3B	5	FOX HAVEN HOLDINGS, LLC
4	5	DEBORAH C. BRADSHAW
5	5	RHEMA WHILE WE WAIT MINISTRIES, INC
6	5	LOIS W. MCPHERSON
7	5, 6, 7	NOAH S. MORRISETTE, JR. & PENELOPE MORRISETTE HYDE
8	5, 6	CELESTINO PEREZ, III
9	5, 6	ROBERT A. KRAINIAK & KATIE C. KRAINIAK
10	6	ELBERT M. SAWYER & MARNITA SAWYER
11	6	CHRISTY D. SHAW
12	6	MARK D. & DIANNE P. MEADS
12A	6	STEVENS LANE (PRIVATE) (30' R/W)
13	6, 7	JOHN P. & LINSDAY M. HUNTER
14	7	PETER R. KRAINIAK & LAURIE N. KRAINIAK
15	7	A AND B BUILDING, INC.
16	7	THE CAMDEN UNITED METHODIST CHURCH
17	7	RHONDA J. HARRISON & THOMAS E. HARRISON
18	7	REX M. SAWYER & RHONDA A. SAWYER
19	7, 8	KENNETH J. DAUM
20	8	CALEB JOHN & HAILEY JO GRIBBLE
21	8	PATRICIA LANE PARKER
22	7, 8	THE CAMDEN UNITED METHODIST CHURCH
23	8	THE CHURCH OF THE REDEEMER (ANGLICAN), INC.
24	8	MCDONALD STRICKLAND PARTNERSHIP
25	8	DANIELLE EGEE & JAMES R. SNYDER
26	8	INGE ARENS
27	8	KEITH A. DOWDY C/O JULIEANNE B. DOWDY
28	8	DARRELL NORRIS
29	8	DONTAE STALLINGS & SHANIKA S. WILSON
30	8, 9	7 COUSINS LAND COMPANY, LLC
31	9	DUANE D. LUMSDON & TAMMY WERBELOW
32	9	ADAM W. LAWSON & WHITNEY B. LAWSON
33	8, 9, 10	CAMDEN LAND AND TIMBER
34	9	BEAS LAND HOLDINGS, LLC
35	9	ROBERT F. BERRY
36	9	ZACKARY T. IRVING
37	N/A	NOT USED
38	9, 10	MARSHA W. SANDERLIN
39	10	CHELSEA L. ALBRECHT & ERIC K. ALBRECHT
40	9	KAREN B. FEREBEE
41	10	LLOYD E. MEADS & DELORAS A. MEADS
42	10, 11	ROSS B. MUNRO & TAMMY K. MUNRO
43	10	BRIAN D. & NICOLE L. CIGICH
44	10, 11	THOMAS E. THOMPSON, III
45	N/A	NOT USED
46	11	JULIAN SANDERLIN
47	11	RICKY L. MULLINAX & BELINDA L. MULLINAX
48	11	STEPHEN TIMOTHY & MONICA WILLIAMS WILMOUTH
49	11, 12	MARK CARTWRIGHT
50	10, 11, 12	MARSHA W. SANDERLIN & THOMAS E. THOMPSON, III
51	12	NICHOLAS J. SHOEMAKER
52	12	CAMDEN CHURCH OF CHRIST
53	N/A	NOT USED
54	12	KAYLA R. BUTT

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
55	12	RUBY BAUM BARNES
56	12	RUBY BAUM BARNES
57	12	ANN S. CARTWRIGHT
58	12, 13	DOUGLAS V. CARTWRIGHT & MARTHA C. JACKSON
59	12	LAWRENCE R. ST. CLAIR & DONNA M. ST. CLAIR
60	N/A	NOT USED
61	12, 13	DOUGLAS V. CARTWRIGHT
62	12, 13	ROBERT E. HOCUTT, SR. & BETTY J. HOCUTT
63	13	CAROLYN F. LADOW
64	13, 14, 15, 16	TWIFORD II, LLC
65	N/A	NOT USED
66	13	JIMMY VARNADOE, JR. & VALENNE VARNADOE
67	13, 14	LOIS W. MCPHERSON ET AL
68	14, 15	HARRY G. MCPHERSON, JR. & JANET CLARK & VIVIAN MCPHERSON
69	16	KIM SAWYER
70	15, 16	3D CUSTOM HOMES, LLC
71	16, 17	EDWARD SAWYER
72	16	EDWARD L. SAWYER LE.
73	16	WALTER F. GOLDEN & ROSITA F. GOLDEN
74	16	ROBERT J. FRASER & ELIZABETH P. FRASER
75	16	JUSTIN & ELIZABETH SALE
76	17	MERLIN J. KYNASTON, JR.
77	17	JOSEPH G. RIGGS & SHELTON T. RIGGS & ANGIE RIGGS RUSSEL
78	17	JON R. MERRITT & AMY JO BLACK
79	17	JOHN HUBER
80	17	MICHAEL J. HOFF & MICHELLE L. HOFF
81	17	LOUIS LUCIAN GREGORY, JR. & BRENDA P. GREGORY
82	17	DAVID F. OWENS
83	17, 18	BERTHA M. GREGORY
84	18	BEATRICE M. GODFREY & TAMMY H. WENTZ
85	18, 19	CLAUDE D. GODFREY & LINDA B. GODFREY
86	18	MEGAN G. MEREDITH & DEREK A. MEREDITH
87	18, 19	LAURA L. RIDDICK & BYRON PERRY & RUTH MCCULOCH
88	18	SCOTT S. WENTZ & TAMMY L. WENTZ
89	18, 19	SCOTT S. WENTZ & TAMMY L. WENTZ
90	19	TIMOTHY DENDY & DANIELLE DENDY
91	19	JAMIE M. SHERRILL
92	19	DORIS J. NORMAN
93	19	WILLIAM A. STEVENS & MICHAEL E. STEVENS & WILLIAM W. STEVENS
94	19	ALEXANDER J VASILOFF
95	19, 20	LARRY T. MCPHERSON & CYNTHIA A. MCPHERSON
96	N/A	NOT USED
97	19	ROBERT R. REID, JR & KIMBERLY B. REID
98	19	HENRY DAVID & ANNA TAYLOR
99	19	WILLIAM A. DAVIS, JR. & PATRICIA A. DAVIS
100	19	WILLIAM & LISA FOREHAND
101	19	ARTHUR J. LAMOTHE
102	19	ROBERT T. & ERIN C. STUART
103	19, 20	JAMES R. & BRIDGET M ONEIL
104	20	GREGORY MICHAEL & MICHELLE ANN STEINBERG
105	20	SAMUEL M. VINCENTE PEREZ & EVELYN E. MONTERROSO GARCIA
106	20	ALONZO T. CHANDLER & DANA S. CHANDLER
107	20	SOUTH CAMDEN WATER AND SEWER DISTRICT
108	20, 21	RAMONA H. CURRIE & JOHN R. CURRIE
109	20	CLIFTON HOWARD FRANKLIN BROCK & YUKO BROCK
110	20	CHARLES E. DETORE & NINA L. DETORE
111	20	PATRICIA ANNE MCCOMBS WEGIEL
112	20	RMB HOMES LLC
113	20, 21, 22, 23,24	GB MANSFIELD LLC
114	21, 22	CAROLYN S. MULLEN

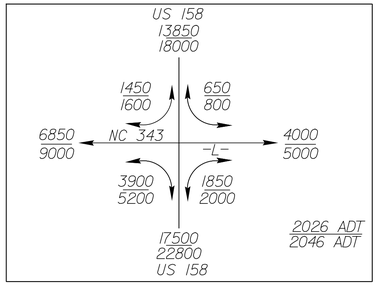
PROJ. REFERENCE NO.	SHEET NO.
R-5807	3P-2

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

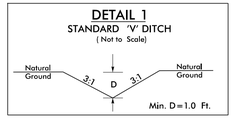
PARCEL INDEX SHEET

PARCEL No.	SHEET No.	PROPERTY OWNER NAME
115	22, 23, 24	RICHARD M. MANSFIELD, III
116	N/A	NOT USED
117	N/A	NOT USED
118	24	ROBERT LEE & ALICE LOUISE FERRIN
119	24, 25, 26	PUGH FARM, LLC
120	24	DENNIS M. BARNES & TAMMY S. BARNES
121	25	ELIZABETH CAROL DENNIS
122	25	JAMES T. WEST, JR. & JO ANNE W. WEST
123	25, 26	DAVID M. AYDLETT & JOYCE W. AYDLETT
124	25	ALICHA RENAE POPE & BRIAN MICHAEL LESINSKI
125	25	WILLIAM D. AYDLETT
126	26	THOMAS J. & CAMMIE T. STAPLES
127	26	PAULA G. ROGERSON
128	26, 27	SIMEON B. WILLIAMS
129	26	PAULA G. ROGERSON
130	26	TAYLORS OAK, LLC
131	26	DONALD LEE JESTER, JR. & NANCY C. JESTER
132	26	GARY L. KING & SHARON M. KING
133	26, 27	MICHAEL BARRY & LISA BARRY
134	27	EDWARD C. SMITH
135	27	STEVEN J. SUTTON & MINERVA D. SUTTON
136	27, 28	DEMPSEY BURGESS, SR.
137	27	JAMES R. SUDA & SHERRY ELAINE SUDA
138	27, 28	BARTLETTS LANDING PROPERTY OWNERS ASSOCIATION, INC.
139	28, 29	VIRGINIA W. GARRETT
140	29	MICHAEL R. SAWYER & MELISSA W. SAWYER
141	28	SCOTTY A. & JENNIFER L. BARTON
142	29	JOSEPH W. WALSTON
143	28	CHARLES R. SAWYER
144	28, 29	STEVEN T. SPENCER & BELINDA S. SPENCER
145	29	PAUL R. SCHUELLEIN
146	29, 30	SIMEON B. WILLIAMS
147	29	RICHARD M. WHITE
148	29	SYLVIA G. JOHNSON
149	29	ROGER BERRY
150	29	JOSEPH W. WALSTON
151	30	JIMMY R., JR. & LESLIE DYAN MCDARIES
151A	30	LYNANNE PRIDGEN
152	30	CHRISTINA H. BURGESS
153	30	JACK M. LEARY & VICKY M. LEARY
154	30	JUDY L. LEARY
155	30	VICTOR B. LEARY
156	30	WILLIAM E. BRINKLEY & PATRICIA R. BRINKLEY
157	30	EDWARD L. SANDERLIN & SUSAN D. SANDERLIN
158	30, 31	ELEANOR F. COLLINS
159	29, 30	MAGNOLIA MANOR HOME OWNER ASSOCIATION
160	30	SEAN DYLAN & ASHLEY JORDAN HANKINSON
160A	30, 31	SIMEON WILLIAMS
161	31	JACK M. LEARY & CLYDE W. LEARY
162	31	TIMOTHY A. IKNER & SARA IKNER
163	31	MARY W. BANKS & ALLEN T. BANKS, JR.
164	31	ERAN ANDREW & AMANDA LEIGH HABER
165	31	MICHELLE REIMERS
166	31	CHARLES D. GREGORY & MARY DENISE GREGORY
167	31	RANDY GLEN SAULS
168	31, 32	TIMOTHY ESTEBAN
169	31	DELFUS HARRIS & LEE THIBA
170	31, 32	DONALD LEE, JR. & BETTY SUE JONES
171	32	MURKY WATERS INC. & CHRISTOPHER D. SMITH
172	32	SHILOH RURITAN BUILDING C/O NICHOLAS J. WILLIAMS
173	32	ROBERT L. & WILLIAM M. MIDGETT
174	32	PHYLIS LANE
175	32, 33	JAMES V. MCMULLEN & CASANDRA M. BASNIGHT
176	32	PHILIP R. SANDERLIN
177	32	RICHARD K. & COLLEEN G. KRAINIAK
178	32	KARINA GARCIA FRANCO, UNMARRIED & EDDIE GARCIA FRANCO, UNMARRIED & JOEL GARCIA FRANCO, UNMARRIED
179	32	CHESEPEAKE ASSOCIATES LIMITED
180	32, 33	GASTON T. WILLIAMS, III & PATRICIA S. WILLIAMS
181	33	JUDY LEARY
182	33	BESS G. SAWYER
183	33	BESS GODFREY SAWYER
184	33	DEBRA G. MASON
185	33	DEBRA G. MASON
186	33	RONALD A. & MARTHA L. BREWER
187	33	WILLIE M. GREGORY
188	33	JOHN WESLEY HYATT & BARBARA WHALEY HYATT & MICHAEL ALLEN HYATT

5/14/99



DETAIL 1
STANDARD 'V' DITCH
(Not to Scale)



FROM STA. 15+51 TO STA. 15+71 -L- LT

NAD 83/2011

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BEGIN PROJECT R-5807 -L- STA. 15+30.00

BEGIN CONSTRUCTION -L- STA. 14+92.50

POT Sta. 10+00.00

MATCHLINE -L- STA. 18+00 SEE SHEET 5

GLENN A. FORBES & GLENN A. FORBES, JR. & TABATHA R. FORBES & FAITH N. FORBES DB 310 PG 113

CHRISTOPHER ENGLISH & ZOENOVA ENGLISH DB 223 PG 426 PC 6 PG 96

GLEN D. GORDON & SHEILA P. GORDON DB 134 PG 880 DB 128 PG 504 DB 94 PG 280 DB 83 PG 679 PC 7 PG 167

SARAH C. EVANS DB 63 PG 110

CRAIG W. HUDDLE ALISON H. BOLEN DB 363 PG 29 (TR. #1) DB 56 PG 576

RAILROAD CROSSING TO BE REMOVED AND REPLACED BY OTHERS

NORFOLK-SOUTHERN RAILROAD DB 42 PG 222

MOUNT ZION CHURCH OF GOD IN CHRIST DB 198 PG 834 PC 4 PG 64A

BRENDA G. SLACK LIVING TRUST DB 305 PG 388 DB 94 PG 68

LEON GLENN DB 409 PG 402 PC 9 PG 39

OAK FORTRESS, LLC DB 413 PG 125 PC 9 PG 39

CAMDEN HIGH SCHOOL

1A COUNTY OF CAMDEN DB 143 PG 441 PC 3 PG 91A

COUNTY OF CAMDEN DB 163 PG 762

3 PARKWAY AG SUPPLY, INC DB 329 PG 2 PC 7 PG 128

STANDARD V DITCH
L=35 FT
SLOPE=4.5%
EST DDE=7 CY
SEE DETAIL 1

CLASS B RIP RAP
EST 3 TONS
EST 10 SY GEOTEXTILE

DITCH CLEANOUT
EST DDE=5 CY

ADJUST DI IN FIELD AS NEEDED TO TIE WITH CONCRETE FLUME

RETAIN

REMOVE

GRADE TO DRAIN

PAVED SHOULDER

SEE SHEET 34 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

10/18/2024
R-5807_RDY_PSH04.dgn
RFROSSER

5/14/99

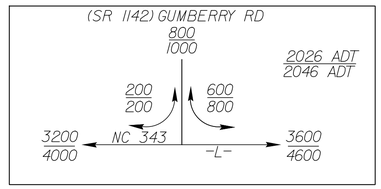
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	05
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

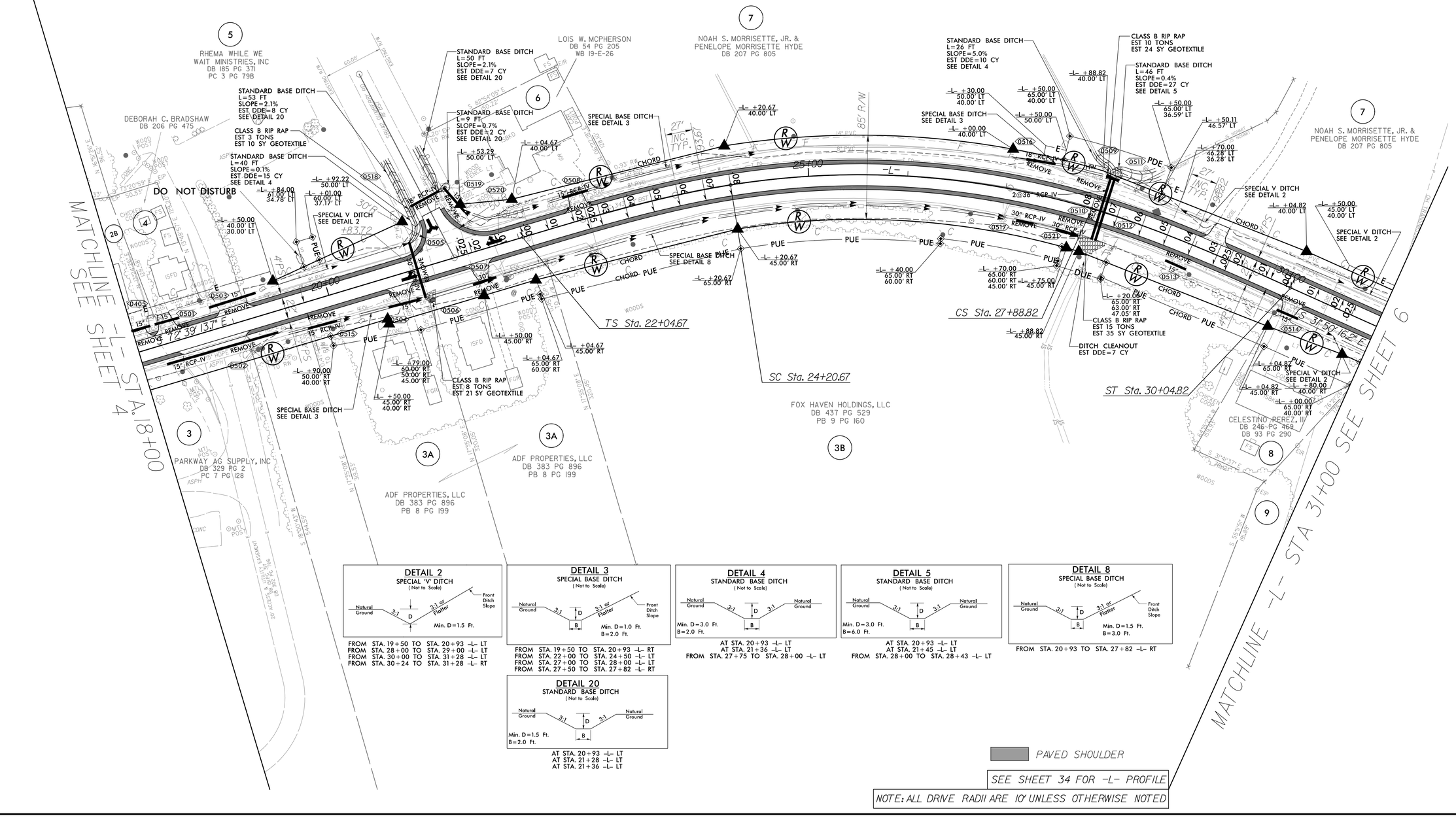
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-L-		
PIs Sta 23+48.80	PI Sta 26+07.90	PIs Sta 28+60.94
Θs = 7° 32' 46.6"	△ = 25° 43' 24.4" (RT)	Θs = 7° 32' 46.6"
Ls = 216.00'	D = 6° 59' 14.2"	Ls = 216.00'
LT = 144.13'	L = 368.15'	LT = 144.13'
ST = 72.12'	T = 187.23'	ST = 72.12'
	R = 820.00'	
	SE = 0.08	

NAD 83/2011



PAVED SHOULDER

DETAIL 2
SPECIAL 'V' DITCH
(Not to Scale)

FROM STA. 19+50 TO STA. 20+93 -L- LT
FROM STA. 28+00 TO STA. 29+00 -L- LT
FROM STA. 30+00 TO STA. 31+28 -L- LT
FROM STA. 30+24 TO STA. 31+28 -L- RT

DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)

FROM STA. 19+50 TO STA. 20+93 -L- RT
FROM STA. 22+00 TO STA. 24+50 -L- LT
FROM STA. 27+00 TO STA. 28+00 -L- LT
FROM STA. 27+50 TO STA. 27+82 -L- RT

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)

AT STA. 20+93 -L- LT
AT STA. 21+36 -L- LT
FROM STA. 27+75 TO STA. 28+00 -L- LT

DETAIL 5
STANDARD BASE DITCH
(Not to Scale)

AT STA. 20+93 -L- LT
AT STA. 21+45 -L- LT
FROM STA. 28+00 TO STA. 28+43 -L- LT

DETAIL 8
SPECIAL BASE DITCH
(Not to Scale)

FROM STA. 20+93 TO STA. 27+82 -L- RT

DETAIL 20
STANDARD BASE DITCH
(Not to Scale)

AT STA. 20+93 -L- LT
AT STA. 21+28 -L- LT
AT STA. 21+36 -L- LT

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

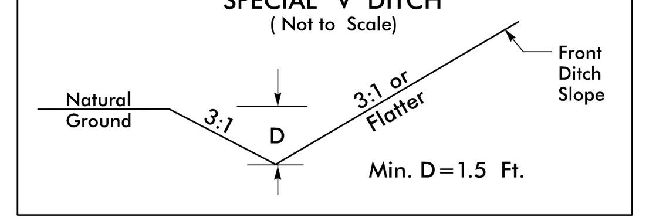
VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	06
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

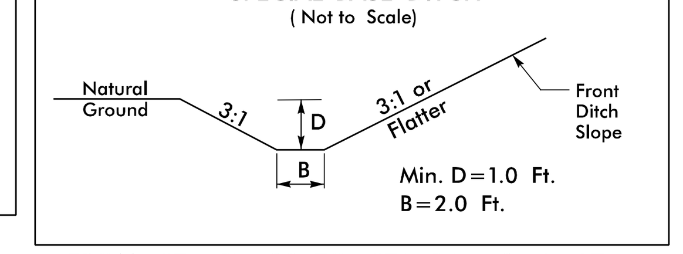
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL 2
SPECIAL 'V' DITCH
(Not to Scale)



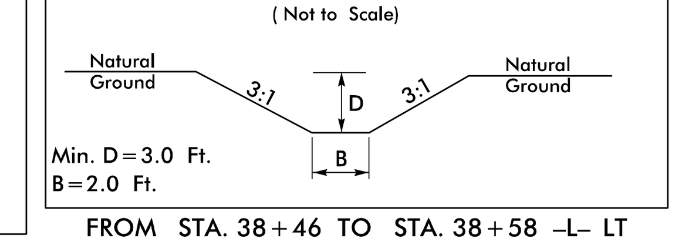
FROM STA. 30+00 TO STA. 31+28 -L- LT
FROM STA. 30+12 TO STA. 31+28 -L- RT
FROM STA. 37+50 TO STA. 38+21 -L- RT

DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)

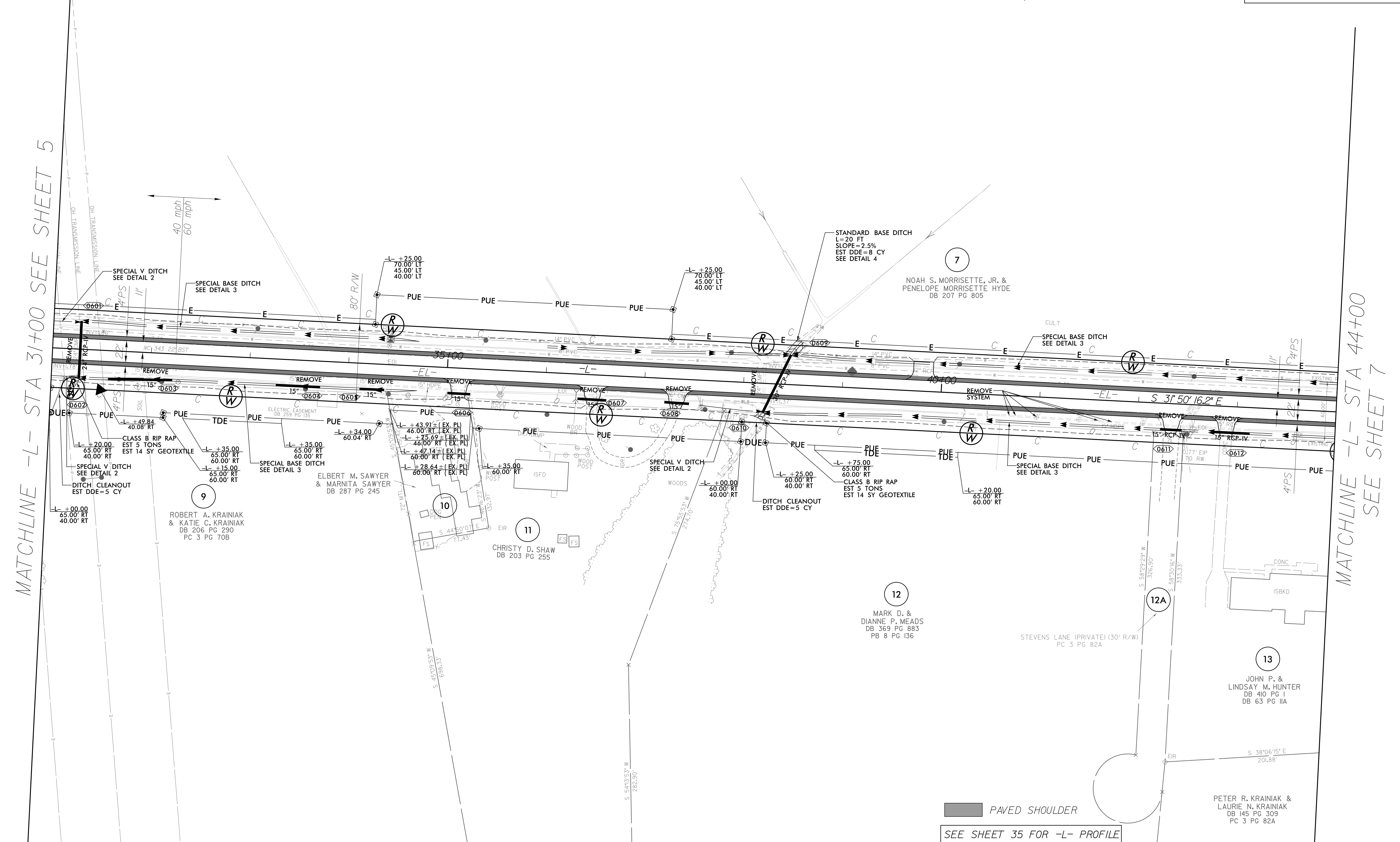


FROM STA. 31+28 TO STA. 34+70 -L- LT
FROM STA. 31+28 TO STA. 34+70 -L- RT
FROM STA. 36+00 TO STA. 48+43 -L- LT
FROM STA. 38+21 TO STA. 44+72 -L- RT

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)



FROM STA. 38+46 TO STA. 38+58 -L- RT



PAVED SHOULDER

SEE SHEET 35 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	07
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

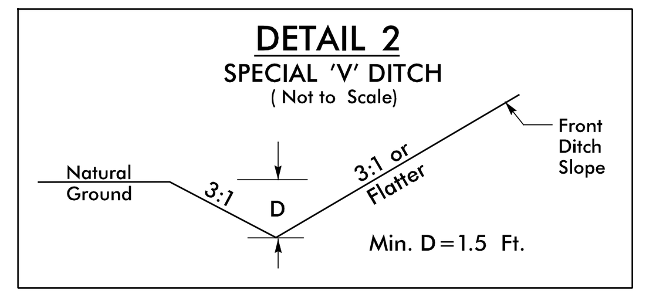
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

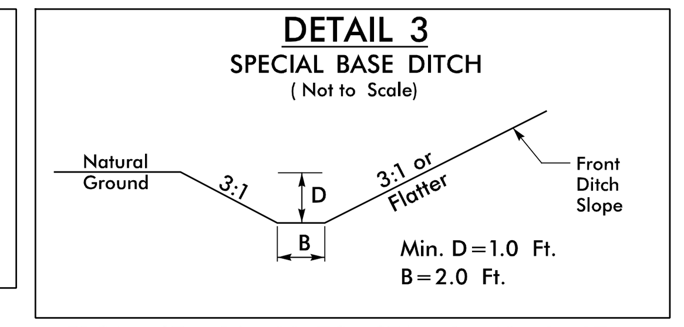
-L-

PIs Sta 55+76.75	PI Sta 59+63.38
Θs = 7° 32' 46.6"	Δ = 41° 59' 53.9" (LT)
Ls = 216.00'	D = 6° 59' 14.2"
LT = 144.13'	L = 601.07'
ST = 72.12'	T = 314.75'
	*R = 820.00'
	SE = 0.08
	V = 50 MPH

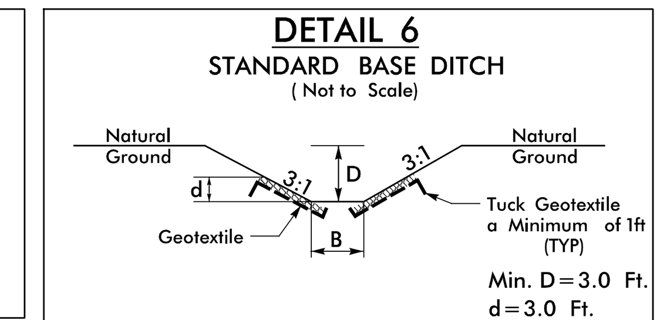
*DESIGN EXCEPTION FOR HORIZONTAL CURVE RADIUS AND STOPPING SIGHT DISTANCE REQUIRED



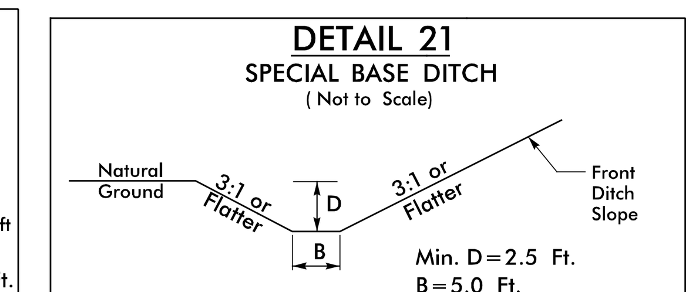
FROM STA. 45+00 TO STA. 46+43 -L- RT



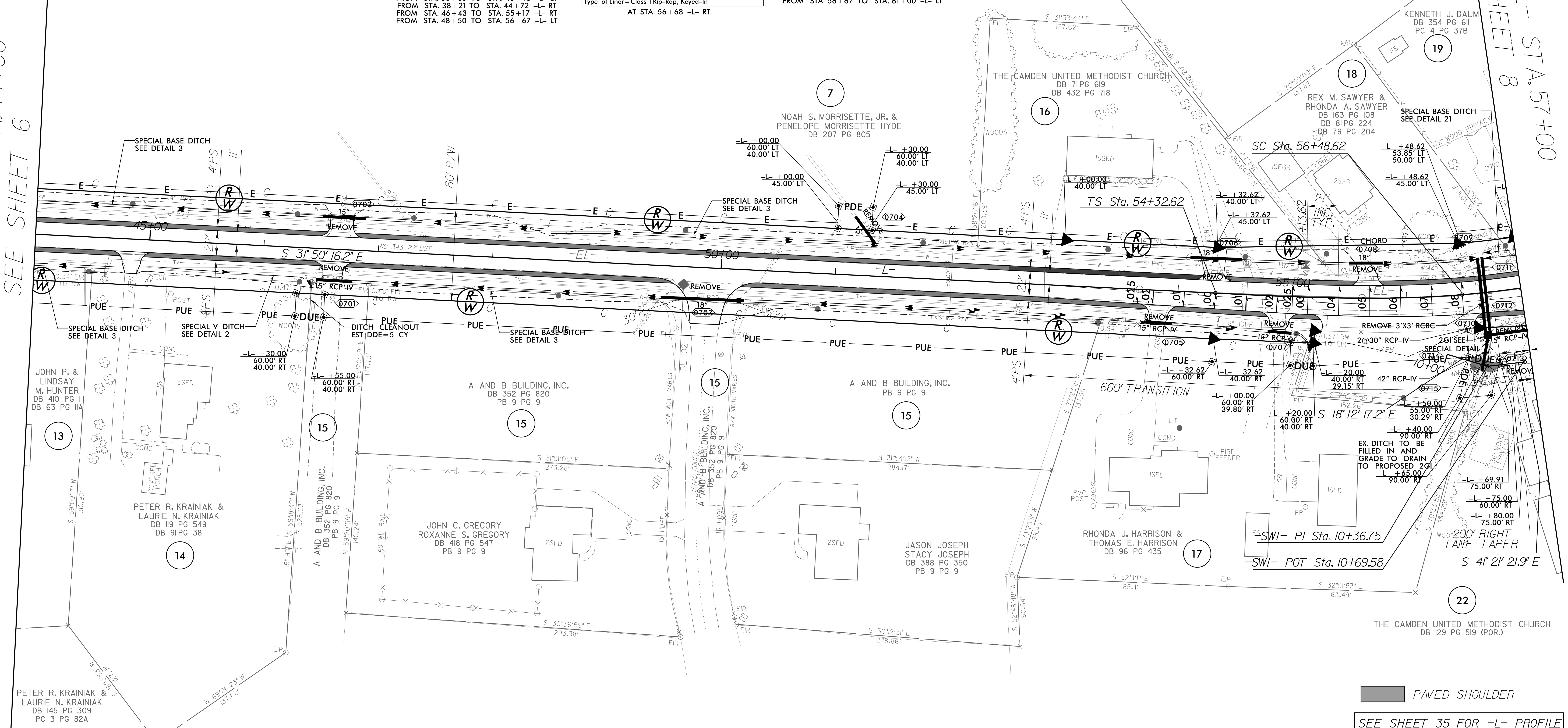
FROM STA. 36+00 TO STA. 48+43 -L- LT
FROM STA. 38+21 TO STA. 44+72 -L- RT
FROM STA. 46+43 TO STA. 55+17 -L- RT
FROM STA. 48+50 TO STA. 56+67 -L- LT



Type of Liner=Class I Rip-Rap, Keyed-In
AT STA. 56+68 -L- RT



FROM STA. 56+67 TO STA. 61+00 -L- LT



PAVED SHOULDER

SEE SHEET 35 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

5/14/99

-Y1-	-L-		
PI Sta 11+14.19	PIs Sta 55+76.75	PI Sta 59+63.38	PIs Sta 63+21.81
Δ = 2° 10' 50.2" (RT)	Θs = 7° 32' 46.6"	Δ = 41° 59' 53.9" (LT)	Θs = 7° 32' 46.6"
D = 0° 57' 17.7"	Ls = 216.00'	D = 6° 59' 14.2"	Ls = 216.00'
L = 228.35'	LT = 144.13'	L = 601.07'	LT = 144.13'
T = 114.19'	ST = 72.12'	T = 314.75'	ST = 72.12'
R = 6,000.00'		*R = 820.00'	
		SE = 0.08	
		V = 50 MPH	

* DESIGN EXCEPTION FOR HORIZONTAL CURVE RADIUS AND STOPPING SIGHT DISTANCE REQUIRED

NAD 83/2011

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111

NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	08
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MATCHLINE -L- STA.57+00 SEE SHEET 7

MATCHLINE -L- STA.69+00 SEE SHEET 9

ST Sta. 64+65.69

CS Sta. 62+49.69

-L- POC Sta.59+83.13
-Y1- POC Sta.10+00.00

-Y1- PC Sta. 12+28.35

END CONSTRUCTION
-Y1- POT STA.14+47.50

KENNETH J. DAUM
DB 354 PG 611
PC 4 PG 37B

CALEB JOHN & HAILEY JO GRIBBLE
DB 435 PG 351

PATRICIA LANE PARKER
DB 112 PG 573

DARRELL NORRIS
DB 356 PG 355

DONTAE STALLINGS & SHANIKA S. WILSON
DB 378 PG 429
PC 8 PG 75

7 COUSINS LAND COMPANY, LLC
DB 358 PG 540
PC 8 PG 77

THE CAMDEN UNITED METHODIST CHURCH
DB 129 PG 519 (POR.)

THE CHURCH OF THE REDEEMER (ANGLICAN), INC.
DB 240 PG 132
PC 2 PG 81B

MCDONALD STRICKLAND PARTNERSHIP
DB 127 PG 520
PC 2 PG 81B

DANIELLE EGEE & JAMES R. SNYDER
DB 439 PG 592
PB 2 PG 81B

INGE ARENS
DB 308 PG 165
PC 2 PG 81B

KEITH A. DOWDY
C/O JULIEANNE B. DOWDY
DB 243 PG 96
PC 2 PG 81B

CAMDEN LAND AND TIMBER
DB 373 PG 330
PB 9 PG 17

CLASS B RIP RAP
EST 8 TONS
EST 21 SY GEOTEXTILE

SPECIAL BASE DITCH SEE DETAIL 21

SPECIAL BASE DITCH SEE DETAIL 8

SPECIAL BASE DITCH SEE DETAIL 3

SPECIAL V DITCH SEE DETAIL 2

DO NOT DISTURB WOOD SIGN

CHURCH SIGN

200' RIGHT LANE TAPER

200' STORAGE

150' TAPER

660' TRANSITION

85' R/W

S 88°55'43.2" E

S 25°39'28.6" W

-Y1- (SR 1138) SEYMOUR DR

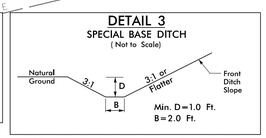
NC 343

3600 / 4600	-L-	5700 / 7000
650 / 800		2700 / 3200
3350 / 4000		2026 ADT / 2046 ADT

DETAIL 2
SPECIAL 'V' DITCH
(Not to Scale)

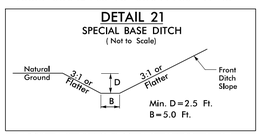
FROM STA. 60+25 TO STA. 61+00 -L- RT
FROM STA. 62+00 TO STA. 64+65 -L- RT
FROM STA. 10+50 TO STA. 14+17 -Y1- LT
FROM STA. 12+65 TO STA. 14+50 -Y1- RT

DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)



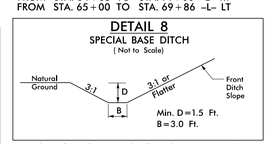
FROM STA. 64+65 TO STA. 71+00 -L- RT
FROM STA. 65+00 TO STA. 69+86 -L- LT

DETAIL 21
SPECIAL BASE DITCH
(Not to Scale)



FROM STA. 56+67 TO STA. 61+00 -L- LT

DETAIL 8
SPECIAL BASE DITCH
(Not to Scale)



FROM STA. 61+00 TO STA. 65+00 -L- LT

PAVED SHOULDER

SEE SHEET 36 FOR -L- PROFILE

SEE SHEET 49 FOR -Y1- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

10/18/2024
R-5807_RDY_PSH08.dgn
RCARTER

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111

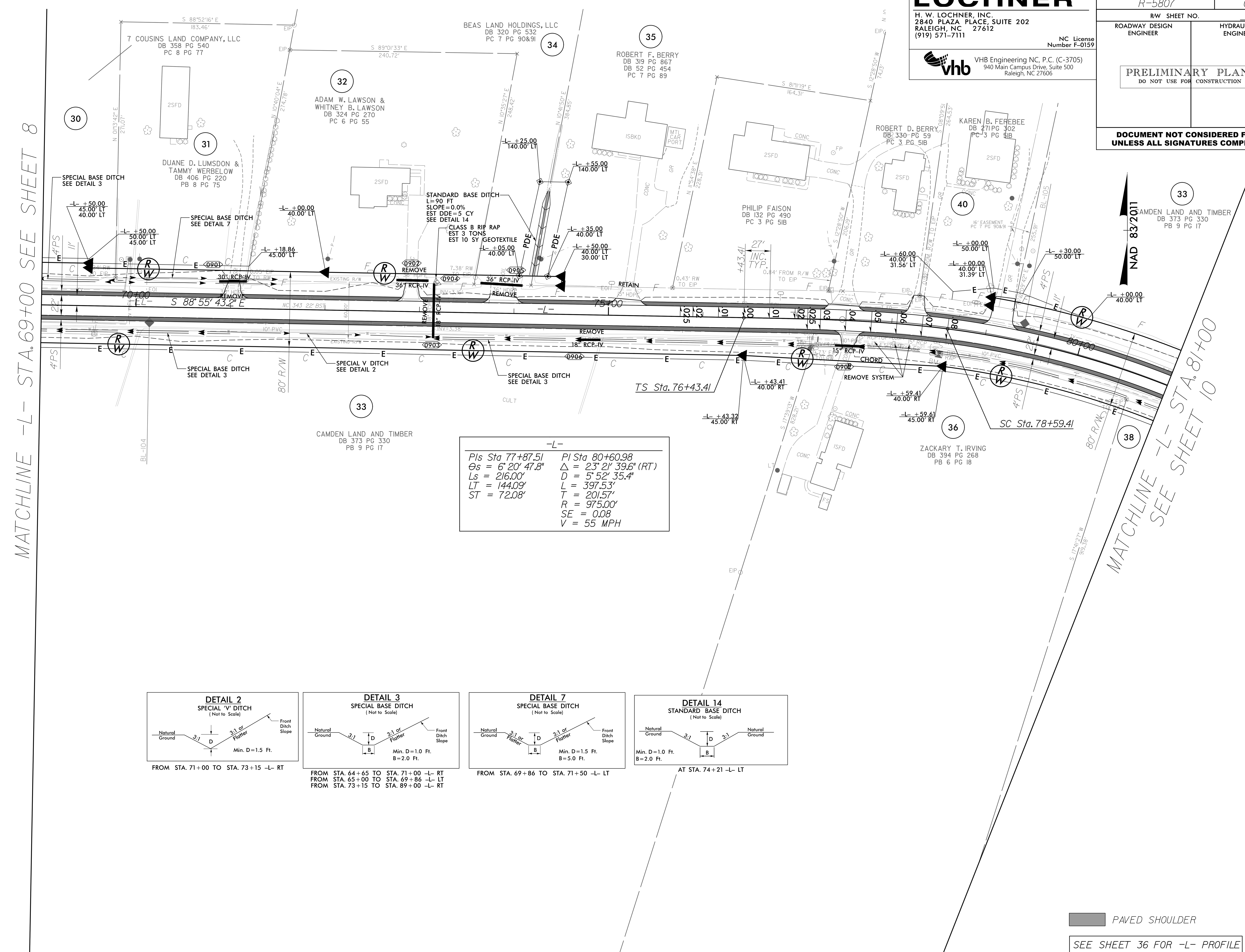
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	09
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-L-	
PIs Sta 77+87.51	PI Sta 80+60.98
Θs = 6° 20' 47.8"	Δ = 23° 21' 39.6" (RT)
Ls = 216.00'	D = 5° 52' 35.4"
LT = 144.09'	L = 397.53'
ST = 72.08'	T = 201.57'
	R = 975.00'
	SE = 0.08
	V = 55 MPH

DETAIL 2
SPECIAL 'V' DITCH
(Not to Scale)
Natural Ground — 3:1 — D — 3:1 or Flatter — Front Ditch Slope
Min. D=1.5 Ft.
FROM STA. 71+00 TO STA. 73+15 -L- RT

DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)
Natural Ground — 3:1 — D — B — 3:1 or Flatter — Front Ditch Slope
Min. D=1.0 Ft.
B=2.0 Ft.
FROM STA. 64+65 TO STA. 71+00 -L- RT
FROM STA. 65+00 TO STA. 69+86 -L- LT
FROM STA. 73+15 TO STA. 89+00 -L- RT

DETAIL 7
SPECIAL BASE DITCH
(Not to Scale)
Natural Ground — 3:1 or Flatter — D — B — 3:1 or Flatter — Front Ditch Slope
Min. D=1.5 Ft.
B=5.0 Ft.
FROM STA. 69+86 TO STA. 71+50 -L- LT

DETAIL 14
STANDARD BASE DITCH
(Not to Scale)
Natural Ground — 3:1 — D — B — 3:1 — Natural Ground
Min. D=1.0 Ft.
B=2.0 Ft.
AT STA. 74+21 -L- LT

PAVED SHOULDER

SEE SHEET 36 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

5/14/99

10/18/2024
R5807_RDY_PSH09.dgn

5/14/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-	-Y2-
PIs Sta 83+29.03	PI Sta 80+60.98	PI Sta 11+28.05
θs = 6° 20' 47.8"	Δ = 23° 21' 39.6" (RT)	Δ = 30° 58' 46.1" (LT)
Ls = 216.00'	D = 5° 52' 35.4"	D = 22° 55' 05.9"
LT = 144.09'	L = 397.53'	L = 135.17'
ST = 72.08'	T = 201.57'	T = 69.28'
	R = 975.00'	R = 250.00'
	SE = 0.08	
	V = 55 MPH	

NAD 83/2011

MATCHLINE -L- STA. 81+00 SEE SHEET 9

MATCHLINE -L- STA. 94+00 SEE SHEET 11

-Y2- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y2- POT STA. 10+07.50

-Y2- PT Sta. 10+58.76

-Y2- PC Sta. 11+93.94

CS Sta. 82+56.95

ST Sta. 84+72.95

-L- POT Sta. 89+94.27
-Y2- POT Sta. 12+05.59

CAMDEN LAND AND TIMBER
DB 373 PG 330
PB 9 PG 17

ROSS B. MUNRO &
TAMMY K. MUNRO
DB 348 PG 854
PC 4 PG 91A

LLOYD E. MEADS &
DELORAS A. MEADS
DB 331 PG 133

CHELSEA L. ALBRECHT
& ERIC K. ALBRECHT
DB 349 PG 304
PC 7 PG 191

MARSHA W. SANDERLIN
WB 14-E-35
DB 94 PG 465
PC 8 PG 16

MARSHA W. SANDERLIN &
THOMAS E. THOMPSON, III
WB 14-E-35
DB (UNKNOWN)
PC 8 PG 16

BRIAN D. & NICOLE L. CIGICH
DB 415 PG 179
PC 3 PG 53A

THOMAS E. THOMPSON, III
DB 134 PG 511
DB 111 PG 556

SPECIAL BASE DITCH
SEE DETAIL 3

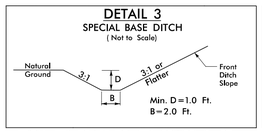
SPECIAL BASE DITCH
SEE DETAIL 9

CLASS B RIP RAP
EST 5 TONS
EST 14 SY GEOTEXTILE

100' TRANSITION

85' R/W

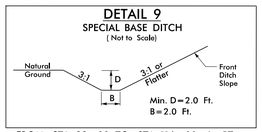
DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)



Min. D = 1.0 Ft.
B = 2.0 Ft.

FROM STA. 73+15 TO STA. 89+00 -L- RT
FROM STA. 81+50 TO STA. 82+83 -L- LT
FROM STA. 82+90 TO STA. 89+61 -L- LT
FROM STA. 90+35 TO STA. 106+85 -L- LT
FROM STA. 10+50 TO STA. 11+75 -Y2- RT
FROM STA. 10+50 TO STA. 11+65 -Y2- LT

DETAIL 9
SPECIAL BASE DITCH
(Not to Scale)



Min. D = 2.0 Ft.
B = 2.0 Ft.

FROM STA. 89+00 TO STA. 116+00 -L- RT

PAVED SHOULDER

SEE SHEET 37 FOR -L- PROFILE

SEE SHEET 49 FOR -Y2- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

10/18/2024
R-5807_RDY_PSH10.dgn
RCRUSER

5/14/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111

NC License Number F-0159

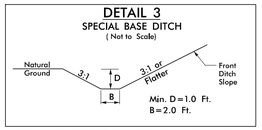
VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

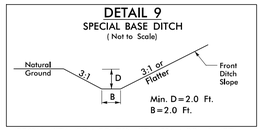
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)



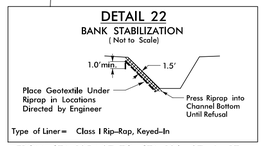
FROM STA. 90+35 TO STA. 106+85 -L- LT

DETAIL 9
SPECIAL BASE DITCH
(Not to Scale)



FROM STA. 89+00 TO STA. 116+00 -L- RT

DETAIL 22
BANK STABILIZATION
(Not to Scale)



Type of Liner = Class I Rip-Rap, Keyed-In

FROM STA. 105+97 TO STA. 106+37 -L- RT

NAD 83/2011

MATCHLINE -L- STA. 94+00
SEE SHEET 10

MATCHLINE -L- STA. 106+00
SEE SHEET 12

42
ROSS B. MUNRO &
TAMMY K. MUNRO
DB 348 PG 854
PC 4 PG 91A

47
RICKY L. MULLINAX &
BELINDA L. MULLINAX
DB 193 PG 590
PC 4 PG 91A

48
STEPHEN TIMOTHY &
MONICA WILLIAMS
WILMOUTH
DB 433 PG 387
PC 4 PG 91A

49
MARK CARTWRIGHT
DB 105 PG 896

46
JULIAN SANDERLIN
DB 134 PG 514
DB 85 PG 290

44
THOMAS E. THOMPSON, III
DB 134 PG 511
DB 111 PG 556

50
MARSHA W. SANDERLIN &
THOMAS E. THOMPSON, III
WB 14-E-35
DB (UNKNOWN)
PC 8 PG 16

N 37°07'33" E 1062.26'
N 37°07'42" E 1666.59'
N 37°08'36" E 79.05'
S 52°52'28.0" E 95.00'
N 84°40'28" E 60.07'
S 36°00'48" W 239.91'
S 35°58'36" W 85.79'
S 55°22'34" E 126.49'
S 36°59'14" W 303.70'
NC 343 22 BS

SPECIAL BASE DITCH SEE DETAIL 3
SPECIAL BASE DITCH SEE DETAIL 9

-L- +25.00 62.00' RT 55.00' RT 45.00' RT
-L- +57.00 62.00' RT 55.00' RT 45.00' RT
-L- +60.00 45.00' RT
-L- +75.00 45.00' RT
-L- +80.00 40.00' LT
-L- +90.00 40.00' LT
-L- +00.00 80.00' RT 55.00' RT 45.00' RT

BANK STABILIZATION ON BANKS ONLY
CLASS I RIP RAP
EST 25 TONS
EST 45 SY GEOTEXTILE
SEE DETAIL 22

PAVED SHOULDER

SEE SHEET 37 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

10/18/2024
R-5807_RDY_PSH11.dgn
DLOGER
RCROSSER

5/14/99

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

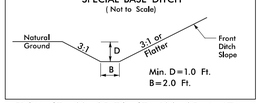
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83:2011

DETAIL 2
SPECIAL 'V' DITCH
(Not to Scale)

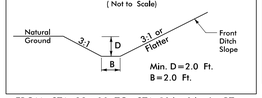
FROM STA. 108+66 TO STA. 129+25 -L- LT
FROM STA. 116+00 TO STA. 128+70 -L- RT

DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)



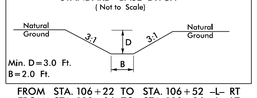
FROM STA. 90+35 TO STA. 106+85 -L- LT

DETAIL 9
SPECIAL BASE DITCH
(Not to Scale)



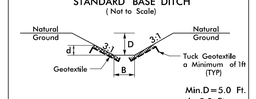
FROM STA. 89+00 TO STA. 106+06 -L- RT
FROM STA. 106+25 TO STA. 116+00 -L- RT

DETAIL 4
STANDARD BASE DITCH
(Not to Scale)



FROM STA. 106+22 TO STA. 106+52 -L- RT
FROM STA. 108+06 TO STA. 108+36 -L- LT

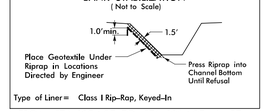
DETAIL 10
STANDARD BASE DITCH
(Not to Scale)



Type of Liner=Class I Rip-Rap, Keyed-In

FROM STA. 106+80 TO STA. 108+23 -L- LT

DETAIL 22
BANK STABILIZATION
(Not to Scale)



Type of Liner= Class I Rip-Rap, Keyed-In

FROM STA. 105+97 TO STA. 106+37 -L- RT

-L-		
PIs Sta 107+12.40	PI Sta 109+09.01	PIs Sta 111+05.44
Θs = 1° 04' 27.5"	△ = 4° 49' 23.0" (LT)	Θs = 1° 04' 27.5"
Ls = 135.00'	D = 1° 35' 29.6"	Ls = 135.00'
LT = 90.00'	L = 303.04'	LT = 90.00'
ST = 45.00'	T = 151.61'	ST = 45.00'
	R = 3,600.00'	
	SE = 0.05	

MATCHLINE -L- STA. 106+00 SEE SHEET 11

MATCHLINE -L- STA. 119+00 SEE SHEET 13

49
MARK CARTWRIGHT
DB 105 PG 896

CAMDEN CHURCH OF CHRIST
DB 40 PG 648

52
CAMDEN CHURCH OF CHRIST
DB 341PG 635

54
KAYLA R. BUTT
DB 400 PG 824

55
RUBY BAUM BARNES
DB 135 PG 567

56
RUBY BAUM BARNES
DB 109 PG 433

59
LAWRENCE R. ST. CLAIR
& DONNA M. ST. CLAIR
DB 131 PG 328

62
ROBERT E. HOCUTT, SR.
& BETTY J. HOCUTT
DB 249 PG 70
PC 3 PG 58A

61
DOUGLAS V. CARTWRIGHT
DB 159 PG 756

58
DOUGLAS V. CARTWRIGHT
& MARTHA C. JACKSON
WB 03-E-32
DB 159 PG 759
PC 4 PG 22A

58
DOUGLAS V. CARTWRIGHT
& MARTHA C. JACKSON
WB 03-E-32
DB 28 PG 255

57
ANN S. CARTWRIGHT
WB 23-E-39

51
NICHOLAS J. SHOEMAKER
DB 431PG 160
PB 42 PG 38A

50

STANDARD BASE DITCH
W/CLASS I RIP RAP
ON BANKS ONLY
L=135 FT
SLOPE=0.2%
EST 200 TONS
EST 360 SY GEOTEXTILE
EST DDE=140 CY
SEE DETAIL 10

SC Sta. 107+57.40
-L- +57.40 40.00' LT

TS Sta. 106+22.40

FILL IN AREA WITH NATIVE MATERAL AND TIE TO BACKSLOPE OF STANDARD BASE DITCH. SEE CROSS SECTIONS

STANDARD BASE DITCH
L=47 FT
SLOPE=4.0%
EST DDE=10 CY
SEE DETAIL 4

SPECIAL BASE DITCH
SEE DETAIL 3

REMOVE EXISTING BOX CULVERT

BANK STABILIZATION
ON BANKS ONLY
CLASS I RIP RAP
EST 25 TONS
EST 45 SY GEOTEXTILE
SEE DETAIL 22

SPECIAL BASE DITCH
SEE DETAIL 9

STANDARD BASE DITCH
L=36 FT
SLOPE=0.3%
EST DDE=14 CY
SEE DETAIL 4

CS Sta. 110+60.44

ST Sta. 111+95.44

SPECIAL BASE DITCH
SEE DETAIL 9

SPECIAL V DITCH
SEE DETAIL 2

SPECIAL V DITCH
SEE DETAIL 2

PAVED SHOULDER

SEE SHEET 38 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

10/18/2024
R-5807_RDY_PSH12.dgn
RCRUSER

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

DETAIL 2
SPECIAL 'V' DITCH
(Not to Scale)

Natural Ground — 3:1 — D — 3:1 or Flatter — Front Ditch Slope
Min. D = 1.5 Ft.

FROM STA. 108+66 TO STA. 129+25 -L- LT
FROM STA. 116+00 TO STA. 128+70 -L- RT

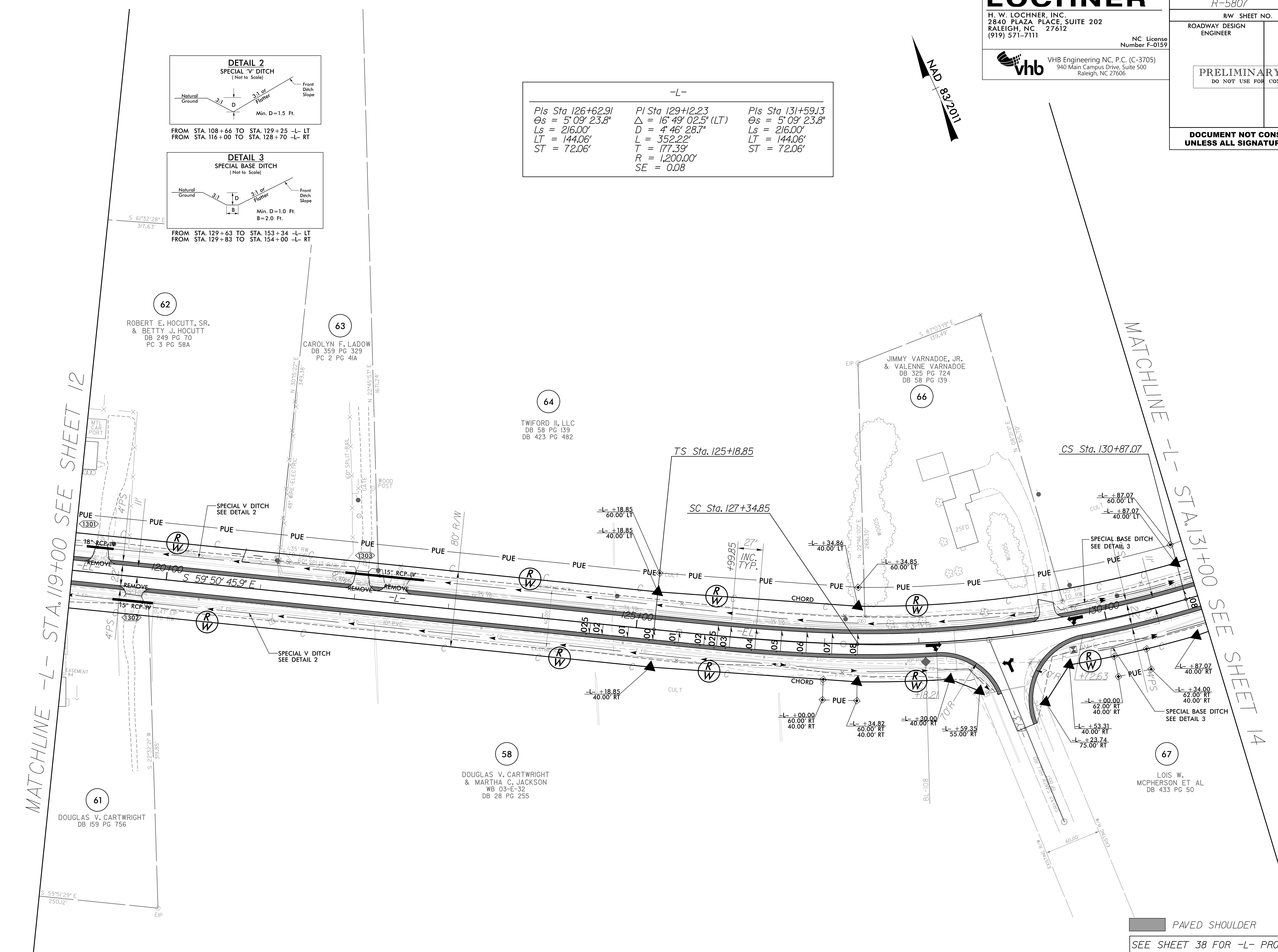
DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)

Natural Ground — 3:1 — D — B — 3:1 or Flatter — Front Ditch Slope
Min. D = 1.0 Ft.
B = 2.0 Ft.

FROM STA. 129+63 TO STA. 153+34 -L- LT
FROM STA. 129+83 TO STA. 154+00 -L- RT

-L-

PIs Sta 126+62.91	PI Sta 129+12.23	PIs Sta 131+59.13
Θs = 5° 09' 23.8"	Δ = 16° 49' 02.5" (LT)	Θs = 5° 09' 23.8"
Ls = 216.00'	D = 4° 46' 28.7"	Ls = 216.00'
LT = 144.06'	L = 352.22'	LT = 144.06'
ST = 72.06'	T = 177.39'	ST = 72.06'
	R = 1,200.00'	
	SE = 0.08	



PAVED SHOULDER

SEE SHEET 38 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

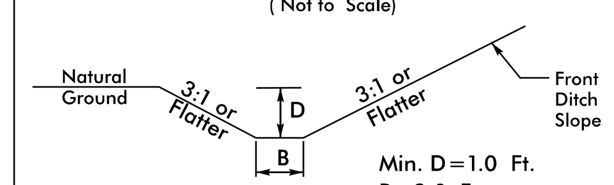
VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

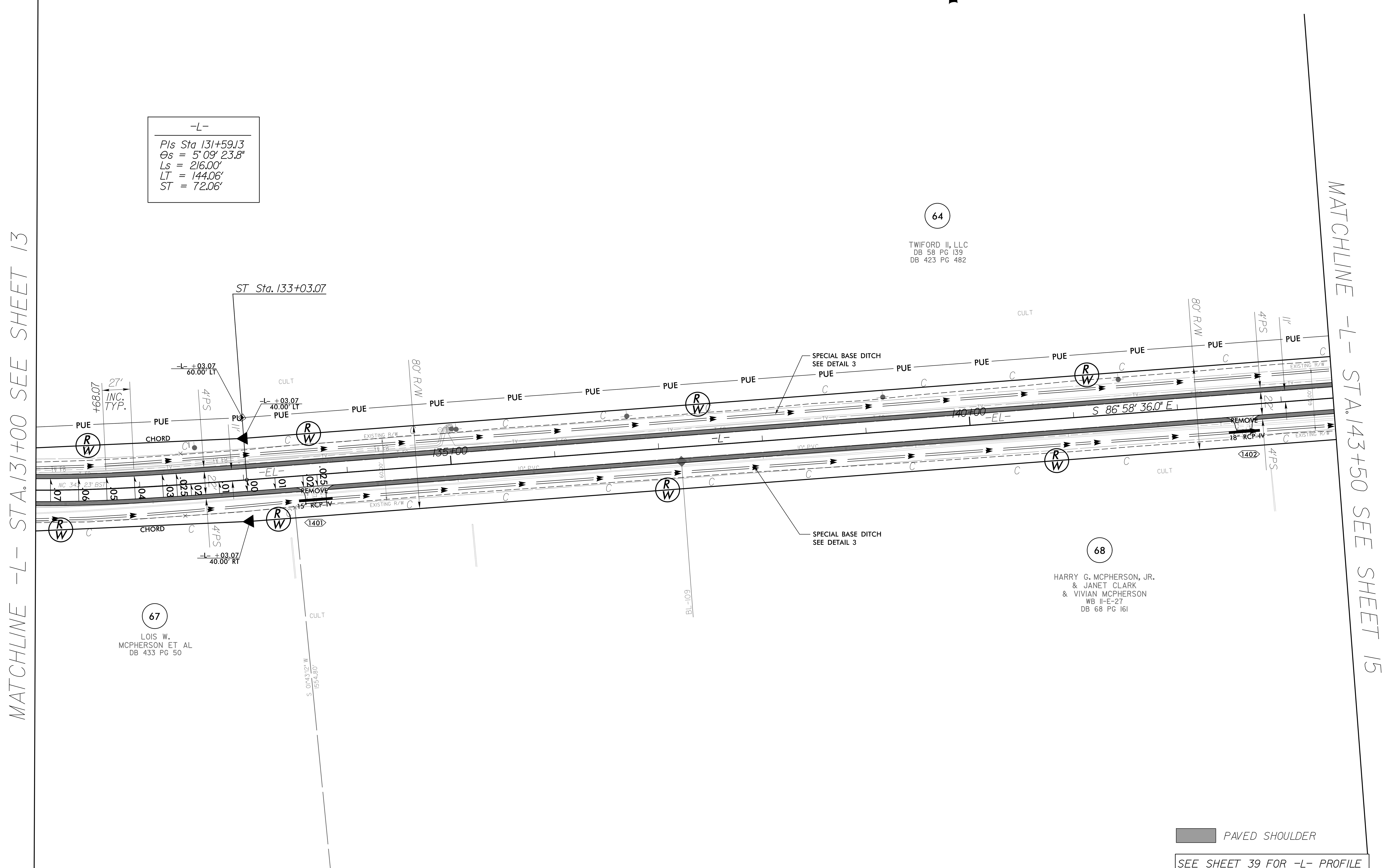
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)



FROM STA. 129+63 TO STA. 153+34 -L- LT
FROM STA. 129+83 TO STA. 154+00 -L- RT


NAD 83/2011
-L-
PIs Sta 131+59.13
Θs = 5°09' 23.8"
Ls = 216.00'
LT = 144.06'
ST = 72.06'
MATCHLINE -L- STA.131+00 SEE SHEET 13
MATCHLINE -L- STA.143+50 SEE SHEET 15
ST Sta. 133+03.07
-L- +03.07 60.00' LT
-L- +03.07 40.00' LT
-L- +03.07 40.00' RT
SPECIAL BASE DITCH SEE DETAIL 3
SPECIAL BASE DITCH SEE DETAIL 3
S 86°58' 36.0" E
135+00
140+00
80' R/W
REMOVE 15" RCP-IV
REMOVE 18" RCP-IV
1401
1402
64
TWIFORD II, LLC
DB 58 PG 139
DB 423 PG 482
67
LOIS W. MCPHERSON ET AL
DB 433 PG 50
68
HARRY G. MCPHERSON, JR. & JANET CLARK & VIVIAN MCPHERSON
WB II-E-27
DB 68 PG 161
CHORD
PUE
CULT

PAVED SHOULDER

SEE SHEET 39 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

5/14/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

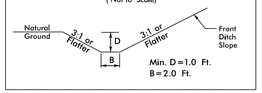
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

MATCHLINE -L- STA. 143+50 SEE SHEET 14

MATCHLINE -L- STA. 154+50 SEE SHEET 16

DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)



FROM STA. 129+63 TO STA. 153+34 -L- LT
FROM STA. 129+83 TO STA. 154+00 -L- RT

64
TWIFORD II, LLC
DB 58 PG 139
DB 423 PG 482

68
HARRY G. MCPHERSON, JR.
& JANET CLARK
& VIVIAN MCPHERSON
WB 11-E-27
DB 68 PG 161

70
3D CUSTOM HOMES, LLC
DB 430 PG 331

PAVED SHOULDER

SEE SHEET 39 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

10/18/2024
R-5807_RDY_PSH15.dgn
RCRASER

5/14/99

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-		
PIs Sta 156+85.51	PI Sta 162+65.28	PIs Sta 168+26.19
Θs = 2° 27' 47.0"	Δ = 26° 45' 53.2" (RT)	Θs = 2° 27' 47.0"
Ls = 187.00'	D = 2° 38' 03.4"	Ls = 187.00'
LT = 124.68'	L = 1,016.02'	LT = 124.68'
ST = 62.34'	T = 517.45'	ST = 62.34'
	R = 2,175.00'	
	SE = 0.07	

NAD 83/2011

64 TWIFORD II, LLC DB 58 PG 139 DB 423 PG 482

69 KIM SAWYER DB 152 PG 455 PC 3 PG 98A

71 EDWARD L. SAWYER DB 329 PG 836 PC 3 PG 98A

72 EDWARD L. SAWYER LE. DB 324 PG 22 PC 3 PG 98A

73 WALTER F. GOLDEN & ROSITA F. GOLDEN DB 126 PG 111 DB 390 PG 105 PC 2 PG 64B

73 WALTER F. GOLDEN & ROSITA F. GOLDEN DB 126 PG 111 DB 390 PG 105 PC 2 PG 64B

74 ROBERT J. FRASER & ELIZABETH P. FRASER DB 291 PG 523 PC 2 PG 64B

75 JUSTIN & ELIZABETH SALE DB 369 PG 19 PC 2 PG 64B

70

BEGIN APPROACH SLAB -L- STA 155+32.50

TS Sta. 155+60.83

END APPROACH SLAB -L- STA 156+31.50

BEGIN BRIDGE -L- STA 155+43.20

END BRIDGE -L- STA 156+20.80

SC Sta. 157+47.83

CS Sta. 167+63.84

MATCHLINE -L- STA. 154+50 SEE SHEET 15

MATCHLINE -L- STA. 168+50 SEE SHEET 17

CLASS II RIP RAP EST 90 TONS EST 110 SY GEOTEXTILE

CLASS II RIP RAP EST 100 TONS EST 120 SY GEOTEXTILE

CLASS II RIP RAP

TOE PROTECTION SEE DETAIL 11

CLASS B RIP RAP EST 2 TONS EST 7 SY GEOTEXTILE

CLASS B RIP RAP EST 14 SY GEOTEXTILE

CLASS B RIP RAP EST 8 TONS EST 21 SY GEOTEXTILE

CLASS B RIP RAP EST 21 SY GEOTEXTILE

SPECIAL BASE DITCH SEE DETAIL 3

SPECIAL BASE DITCH SEE DETAIL 8

EXISTING BRIDGE TO BE REMOVED

PIPE CLEANOUT

DO NOT DISTURB

24" RCP-V

30" RCP-V

15" RCP-IV

REMOVE

PAVED SHOULDER

SEE SHEET 40 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

(SR 1129) N. MILL DAM RD

	200/300	
200/300	<50/<50	
5000/6200	NC 343 -L-	4000/5400
450/600	<50/100	
	450/700	

2026 ADT
2046 ADT

(SR 1129) S. MILL DAM RD

DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1 or Flatter, D, B, 3:1 or Flatter, Front Ditch Slope

Min. D = 1.0 Ft.
B = 2.0 Ft.

FROM STA. 129+63 TO STA. 153+34 -L- LT
FROM STA. 129+83 TO STA. 155+50 -L- RT
FROM STA. 164+82 TO STA. 184+00 -L- RT
FROM STA. 163+79 TO STA. 176+08 -L- LT

DETAIL 11
TOE PROTECTION
(Not to Scale)

Natural Ground, b, 3:1 or Flatter Fill Slope, d, Geotextile

d = 1.5 Ft.
b = 1.5 Ft.

Type of Liner = CLASS B RIP RAP

FROM STA. 156+26 TO STA. 159+00 -L- LT
FROM STA. 156+45 TO STA. 160+00 -L- RT

DETAIL 8
SPECIAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, B, 3:1 or Flatter, Front Ditch Slope

Min. D = 1.5 Ft.
B = 3.0 Ft.

FROM STA. 161+42 TO STA. 170+90 -L- RT

10/18/2024
R-5807_RDY_PSH16.dgn
RCROSER

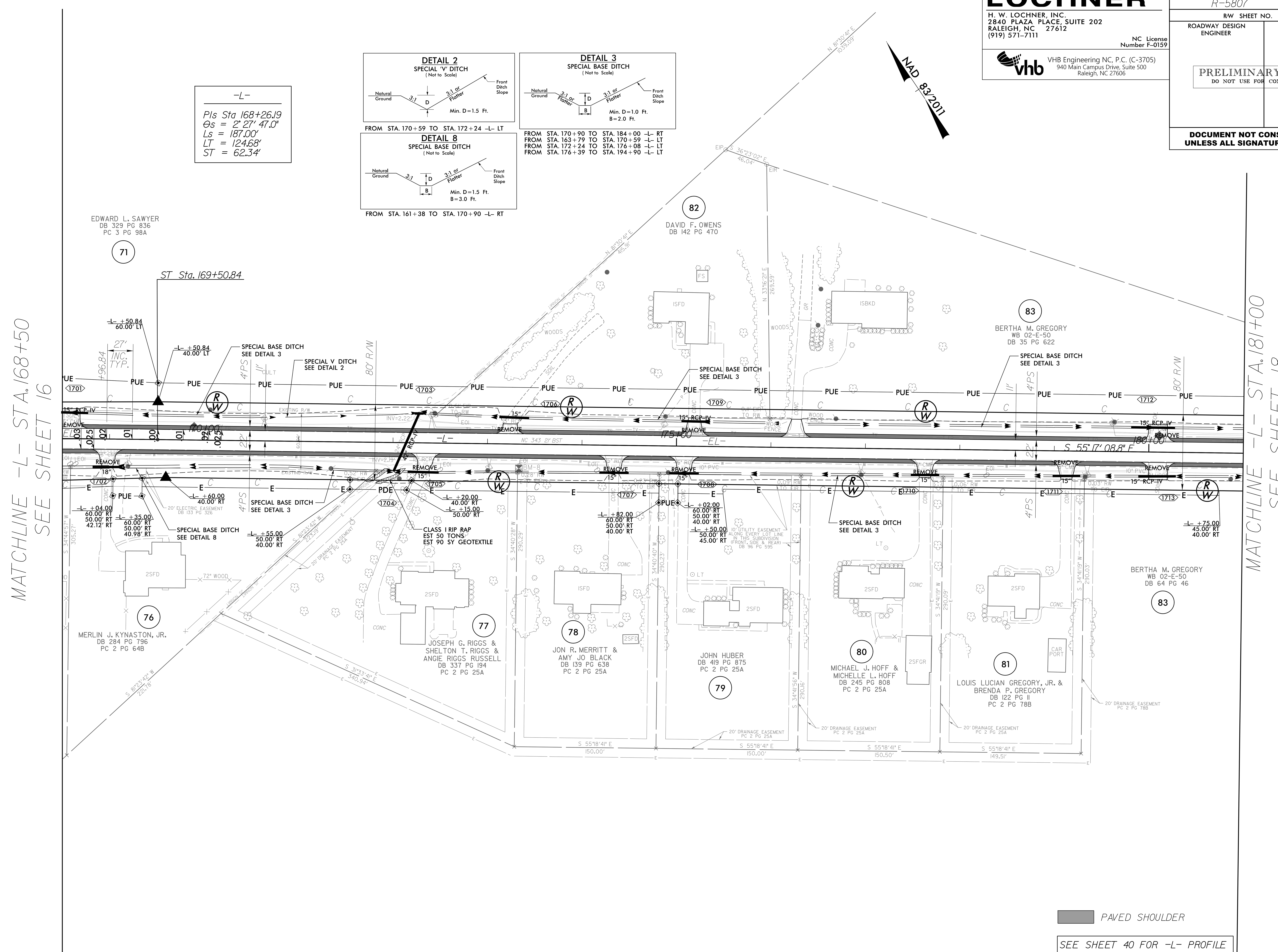
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



NAD 83/2011
-L-
PIs Sta 168+26.19
Θs = 2° 27' 47.0"
Ls = 187.00'
LT = 124.68'
ST = 62.34'
DETAIL 2
SPECIAL 'V' DITCH
(Not to Scale)
Natural Ground
3:1 or Flatter
Front Ditch Slope
Min. D=1.5 Ft.
FROM STA. 170+59 TO STA. 172+24 -L- LT
DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)
Min. D=1.0 Ft.
B=2.0 Ft.
FROM STA. 170+90 TO STA. 184+00 -L- RT
FROM STA. 163+79 TO STA. 170+59 -L- LT
FROM STA. 172+24 TO STA. 176+08 -L- LT
FROM STA. 176+39 TO STA. 194+90 -L- LT
DETAIL 8
SPECIAL BASE DITCH
(Not to Scale)
Min. D=1.5 Ft.
B=3.0 Ft.
FROM STA. 161+38 TO STA. 170+90 -L- RT
EDWARD L. SAWYER
DB 329 PG 836
PC 3 PG 98A
71
ST Sta. 169+50.84
82
DAVID F. OWENS
DB 142 PG 470
83
BERTHA M. GREGORY
WB 02-E-50
DB 35 PG 622
SPECIAL BASE DITCH
SEE DETAIL 3
SPECIAL V DITCH
SEE DETAIL 2
SPECIAL BASE DITCH
SEE DETAIL 8
CLASS I RIP RAP
EST 50 TONS
EST 90 SY GEOTEXTILE
MATCHLINE -L- STA. 168+50
SEE SHEET 16
MATCHLINE -L- STA. 181+00
SEE SHEET 18
NC 343 2' BST
S 55° 17' 08.8" E
170+00
175+00
180+00
MERLIN J. KYNASTON, JR.
DB 284 PG 796
PC 2 PG 64B
76
JOSEPH G. RIGGS &
SHELTON T. RIGGS &
ANGIE RIGGS RUSSELL
DB 337 PG 194
PC 2 PG 25A
77
JON R. MERRITT &
AMY JO BLACK
DB 139 PG 638
PC 2 PG 25A
78
JOHN HUBER
DB 419 PG 875
PC 2 PG 25A
79
MICHAEL J. HOFF &
MICHELLE L. HOFF
DB 245 PG 808
PC 2 PG 25A
80
LOUIS LUCIAN GREGORY, JR. &
BRENDA P. GREGORY
DB 122 PG 11
PC 2 PG 78B
81
BERTHA M. GREGORY
WB 02-E-50
DB 64 PG 46
83

PAVED SHOULDER

SEE SHEET 40 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

5/14/99
10/18/2024 R5807_RDY_PSH17.dgn

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111

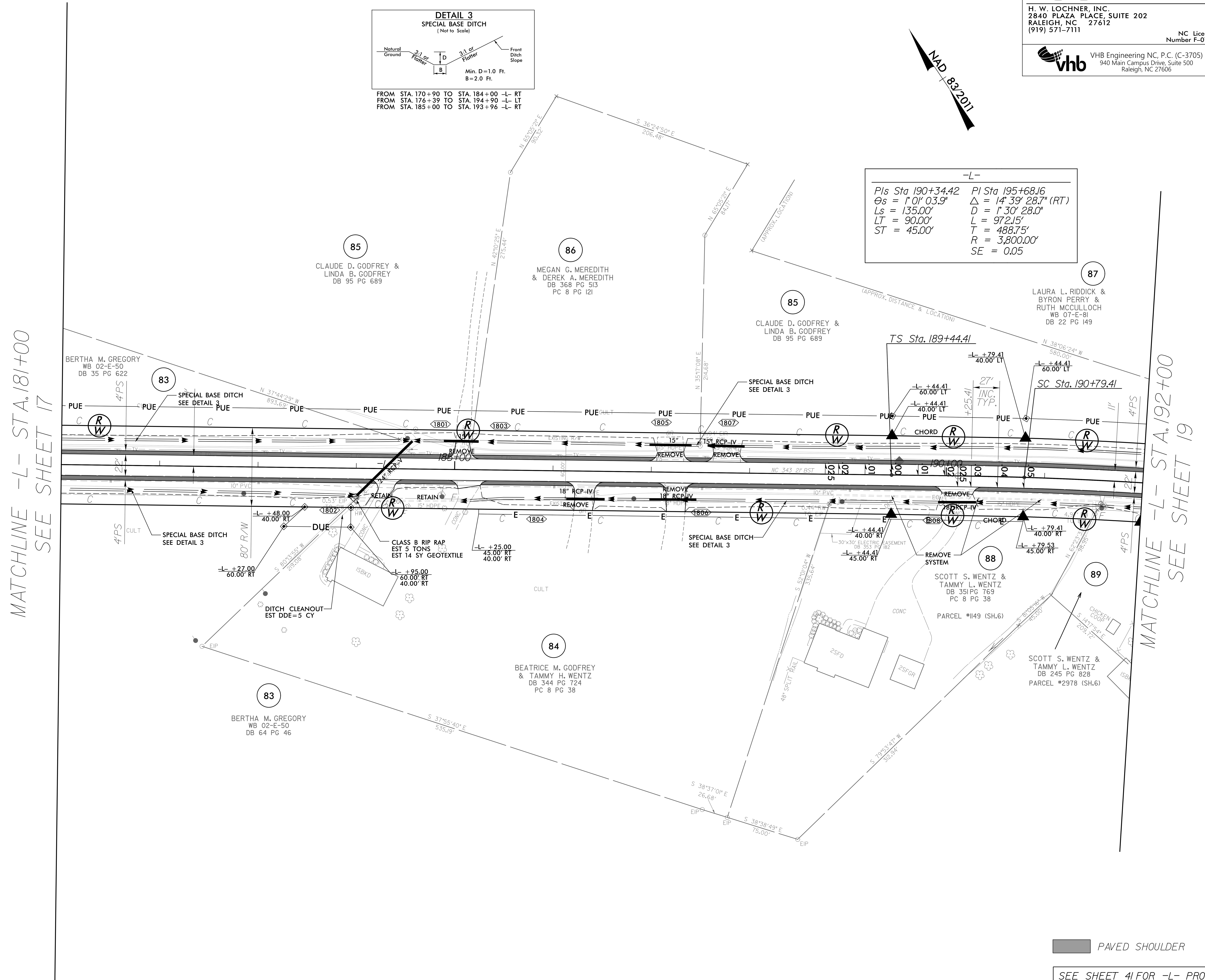
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)
Natural Ground
3:1 or Flatter
Front Ditch Slope
Min. D=1.0 Ft.
B=2.0 Ft.
FROM STA. 170+90 TO STA. 184+00 -L- RT
FROM STA. 176+39 TO STA. 194+90 -L- LT
FROM STA. 185+00 TO STA. 193+96 -L- RT
NAD 83/2011
-L-
PIs Sta 190+34.42
Θs = 1° 01' 03.9"
Ls = 135.00'
LT = 90.00'
ST = 45.00'
PI Sta 195+68.16
Δ = 14° 39' 28.7" (RT)
D = 1° 30' 28.0"
L = 972.15'
T = 488.75'
R = 3,800.00'
SE = 0.05
MATCHLINE -L- STA. 181+00 SEE SHEET 17
MATCHLINE -L- STA. 192+00 SEE SHEET 19
83
BERTHA M. GREGORY
WB 02-E-50
DB 35 PG 622
85
CLAUDE D. GODFREY &
LINDA B. GODFREY
DB 95 PG 689
86
MEGAN G. MEREDITH
& DEREK A. MEREDITH
DB 368 PG 513
PC 8 PG 121
87
LAURA L. RIDDICK &
BYRON PERRY &
RUTH MCCULLOCH
WB 07-E-81
DB 22 PG 149
84
BEATRICE M. GODFREY
& TAMMY H. WENTZ
DB 344 PG 724
PC 8 PG 38
83
BERTHA M. GREGORY
WB 02-E-50
DB 64 PG 46
88
SCOTT S. WENTZ &
TAMMY L. WENTZ
DB 351 PG 769
PC 8 PG 38
PARCEL #1149 (SH.6)
89
SCOTT S. WENTZ &
TAMMY L. WENTZ
DB 245 PG 828
PARCEL #2978 (SH.6)
TS Sta. 189+44.41
SC Sta. 190+79.41
SPECIAL BASE DITCH SEE DETAIL 3
CLASS B RIP RAP
EST 5 TONS
EST 14 SY GEOTEXTILE
DITCH CLEANOUT
EST DDE=5 CY
REMOVE SYSTEM
15" RCP-IV
18" RCP-IV
REMOVE
RETAIN
CHORD
PUE
DUE
185+00
190+00
NC 343
80' R/W

PAVED SHOULDER

SEE SHEET 41 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

10/18/2024
R5807_RDY_PSH18.dgn

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

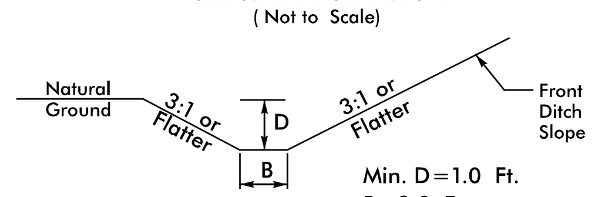
vhb — VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	19
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)

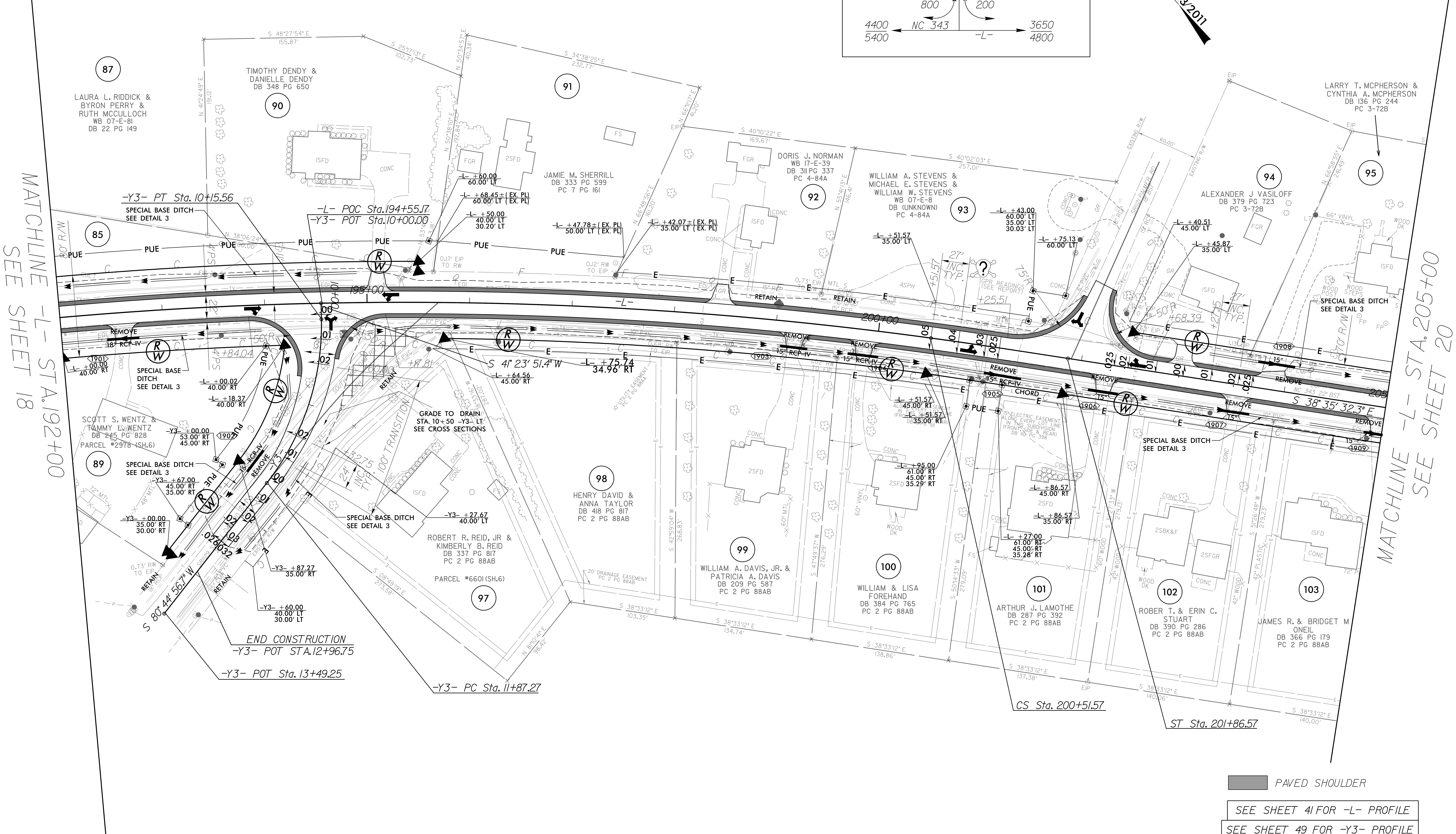


FROM STA. 176+39 TO STA. 194+90 -L- LT
FROM STA. 185+00 TO STA. 193+96 -L- RT
FROM STA. 195+00 TO STA. 212+50 -L- RT
FROM STA. 203+19 TO STA. 212+92 -L- LT
FROM STA. 10+32 TO STA. 13+00 -Y3- RT
FROM STA. 11+50 TO STA. 12+62 -Y3- LT

-Y3-	-L-	
PI Sta 11+04.96	PI Sta 195+68.16	PIs Sta 200+96.57
Δ = 39° 21' 05.3" (RT)	Δ = 14° 39' 28.7" (RT)	Θs = 1° 01' 03.9"
D = 22° 55' 05.9"	D = 1° 30' 28.0"	Ls = 135.00'
L = 171.70'	L = 972.15'	LT = 90.00'
T = 89.39'	T = 488.75'	ST = 45.00'
R = 250.00'	R = 3,800.00'	
	SE = 0.05	

(SR 1121) PALMER RD
850 / 1000
2026 ADT / 2046 ADT
700 / 800 — 100 / 200
4400 / 5400 — NC 343 — -L- — 3650 / 4800

NAD 83/2011



MATCHLINE -L- STA. 192+00 SEE SHEET 18
MATCHLINE -L- STA. 205+00 SEE SHEET 20
-Y3- PT Sta. 10+15.56
-L- POC Sta. 194+55.17
-Y3- POT Sta. 10+00.00
END CONSTRUCTION
-Y3- POT STA. 12+96.75
-Y3- POT Sta. 13+49.25
-Y3- PC Sta. 11+87.27
CS Sta. 200+51.57
ST Sta. 201+86.57
S 41° 23' 51.4" W
S 80° 44' 56.7" W
S 38° 35' 32.3" E
SPECIAL BASE DITCH SEE DETAIL 3
GRADE TO DRAIN STA. 10+50 -Y3- LT SEE CROSS SECTIONS
LAURA L. RIDDICK & BYRON PERRY & RUTH MCCULLOCH WB 07-E-81 DB 22 PG 149
TIMOTHY DENDY & DANIELLE DENDY DB 348 PG 650
JAMIE M. SHERRILL DB 333 PG 599 PC 7 PG 161
DORIS J. NORMAN WB 17-E-39 DB 311 PG 337 PC 4-84A
WILLIAM A. STEVENS & MICHAEL E. STEVENS & WILLIAM W. STEVENS WB 07-E-8 DB (UNKNOWN) PC 4-84A
ALEXANDER J VASILOFF DB 379 PG 723 PC 3-72B
LARRY T. MCPHERSON & CYNTHIA A. MCPHERSON DB 136 PG 244 PC 3-72B
SCOTT S. WENTZ & TAMMY L. WENTZ DB 245 PG 828 PARCEL #2978 (SH.6)
HENRY DAVID & ANNA TAYLOR DB 418 PG 817 PC 2 PG 88AB
ROBERT R. REID, JR & KIMBERLY B. REID DB 337 PG 817 PC 2 PG 88AB PARCEL #6601 (SH.6)
WILLIAM A. DAVIS, JR. & PATRICIA A. DAVIS DB 209 PG 587 PC 2 PG 88AB
WILLIAM & LISA FOREHAND DB 384 PG 765 PC 2 PG 88AB
ARTHUR J. LAMOTHE DB 287 PG 392 PC 2 PG 88AB
ROBER T. & ERIN C. STUART DB 390 PG 286 PC 2 PG 88AB
JAMES R. & BRIDGET M ONEIL DB 366 PG 179 PC 2 PG 88AB

PAVED SHOULDER

SEE SHEET 41 FOR -L- PROFILE

SEE SHEET 49 FOR -Y3- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

5/14/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

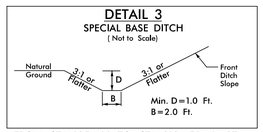
VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

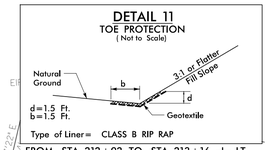
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)



FROM STA. 195+00 TO STA. 212+50 -L- RT
FROM STA. 203+19 TO STA. 212+92 -L- LT

DETAIL 11
TOE PROTECTION
(Not to Scale)



Type of Liner= CLASS B RIP RAP

FROM STA. 212+92 TO STA. 213+16 -L- LT
FROM STA. 214+20 TO STA. 217+00 -L- RT
FROM STA. 214+30 TO STA. 217+00 -L- LT

-L-

PI Sta 211+42.88	PI Sta 217+66.46
Δ = 9° 16' 42.8" (LT)	Δ = 13° 26' 03.4" (RT)
D = 3° 41' 47.4"	D = 2° 38' 25.3"
L = 251.01'	L = 508.81'
T = 125.78'	T = 255.57'
R = 1,550.00'	R = 2,170.00'
SE = 0.08	SE = 0.07
Ro = 216'	Ro = 189'

NAD 83/2011

MATCHLINE -L- STA. 205+00
SEE SHEET 19

MATCHLINE -L- STA. 218+00
SEE SHEET 21

LARRY T. MCPHERSON & CYNTHIA A. MCPHERSON
DB 136 PG 244
PC 3-72B
95

GREGORY MICHAEL & MICHELLE ANN STEINBERG
DB 438 PG 724
104

105
SAMUEL M. VINCENTE PEREZ & EVELYN E. MONTERROSO GARCIA
DB 427 PG 721

106
ALONZO T. CHANDLER & DANA S. CHANDLER
DB 299 PG 390
PC 5 PG 25B

107
SOUTH CAMDEN WATER AND SEWER DISTRICT
DB 103 PG 286

106
ALONZO T. CHANDLER & DANA S. CHANDLER
DB 299 PG 390
PC 5 PG 25B

108
RAMONA H. CURRIE & JOHN R. CURRIE
DB 120 PG 432
PC 2 PG 124
(PC 1PG 122B)

PC Sta. 210+17.10
DO NOT DISTURB

PT Sta. 212+68.11

PC Sta. 215+10.89

END APPROACH SLAB
-L- STA 214+22.50

END BRIDGE
-L- STA 214+11.63

BEGIN APPROACH SLAB
-L- STA 213+23.50

BEGIN BRIDGE
-L- STA 213+34.38

SPECIAL BASE DITCH SEE DETAIL 3

TOE PROTECTION SEE DETAIL 11

EXISTING BRIDGE TO BE REMOVED

CLASS B RIP RAP
EST 3 TONS
EST 10 SY GEOTEXTILE

CLASS B RIP RAP
EST 2 TONS
EST 7 SY GEOTEXTILE

CLASS II RIP RAP

CLASS II RIP RAP
EST 70 TONS
EST 90 SY GEOTEXTILE

CLASS II RIP RAP
EST 90 TONS
EST 110 SY GEOTEXTILE

CLASS II RIP RAP

110
CHARLES E. DETORE & NINA L. DETORE
DB 311PG 20
PC 2 PG 88AB

109
CLIFTON HOWARD FRANKLIN BROCK & YUKO BROCK
DB 380 PG 523
PC 2 PG 88AB

111
PATRICIA ANNE MCCOMBS WEGIEL
DB 246 PG 223
PC 2 PG 88AB

112
RMB HOMES LLC
DB 438 PG 743

113
GB MANSFIELD LLC
DB 362 PG 326

PAVED SHOULDER

SEE SHEET 42 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

10/18/2024
R-5807_RDY_PSH20.dgn
RPROSSER

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111

NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

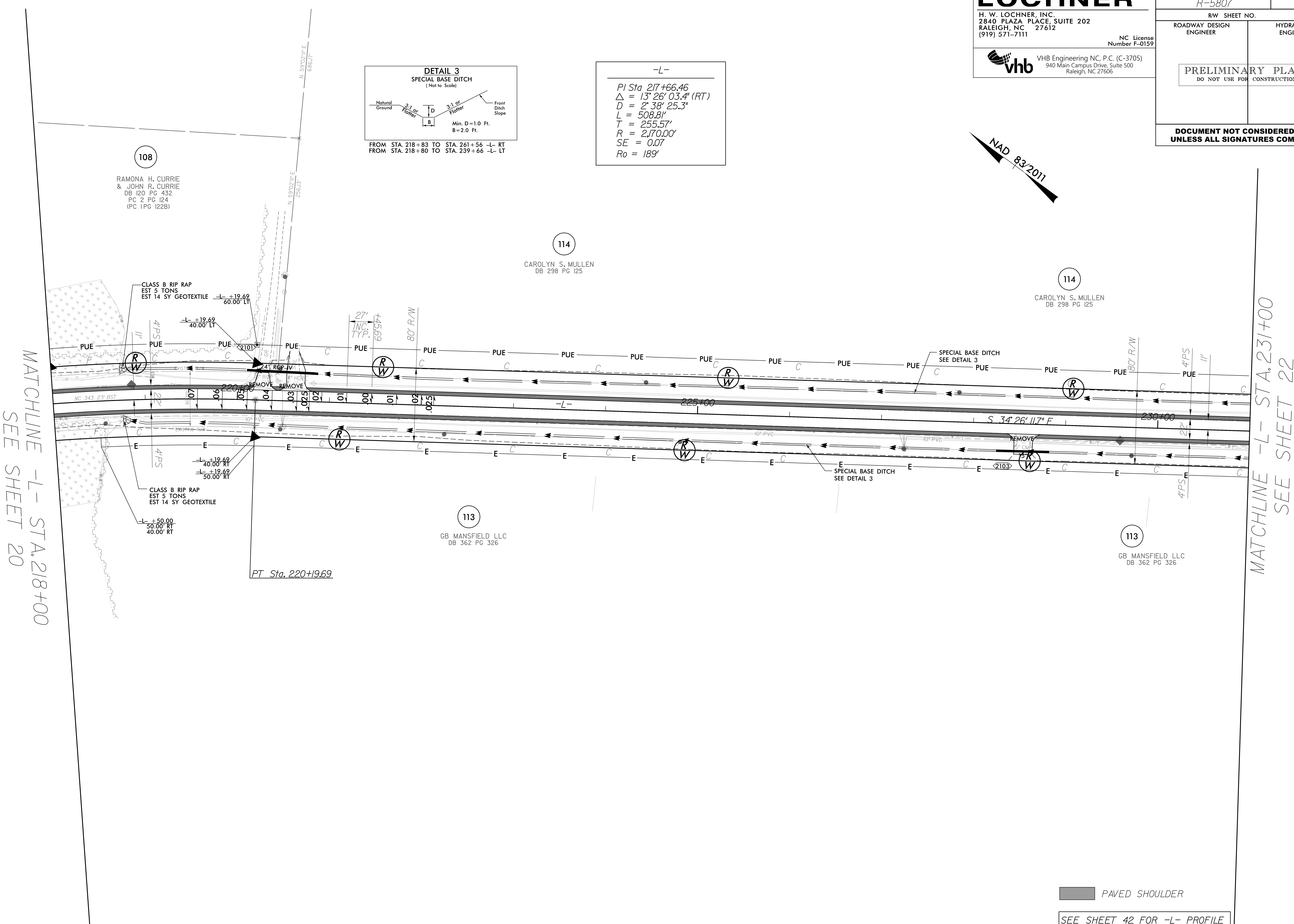
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)

Natural Ground — 3:1 or Flatter — D — B — 3:1 or Flatter — Front Ditch Slope
Min. D = 1.0 Ft.
B = 2.0 Ft.

FROM STA. 218+83 TO STA. 261+56 -L- RT
FROM STA. 218+80 TO STA. 239+66 -L- LT

-L-
PI Sta 217+66.46
Δ = 13° 26' 03.4" (RT)
D = 2° 38' 25.3"
L = 508.81'
T = 255.57'
R = 2,170.00'
SE = 0.07
Ro = 189'



PAVED SHOULDER

SEE SHEET 42 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-5807	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

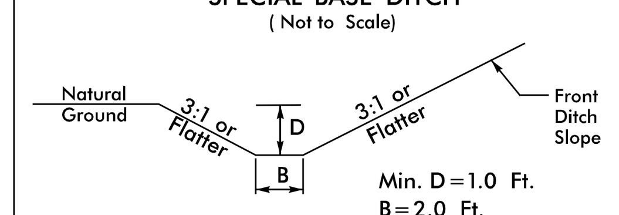
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

-L-

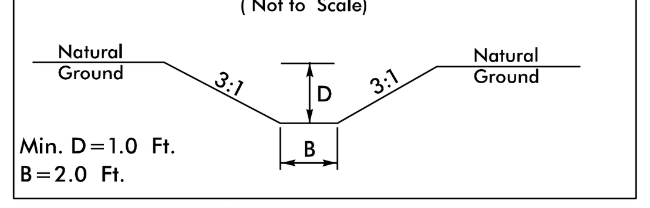
PIs Sta 238+25.58	PI Sta 240+65.81	PIs Sta 243+02.90
Θs = 6° 22' 45.6"	Δ = 19° 41' 19.3" (RT)	Θs = 6° 22' 45.6"
Ls = 216.00'	D = 5° 54' 24.4"	Ls = 216.00'
LT = 144.09'	L = 333.32'	LT = 144.09'
ST = 72.09'	T = 168.32'	ST = 72.09'
	R = 970.00'	
	SE = 0.08	
	V = 55 MPH	

DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)

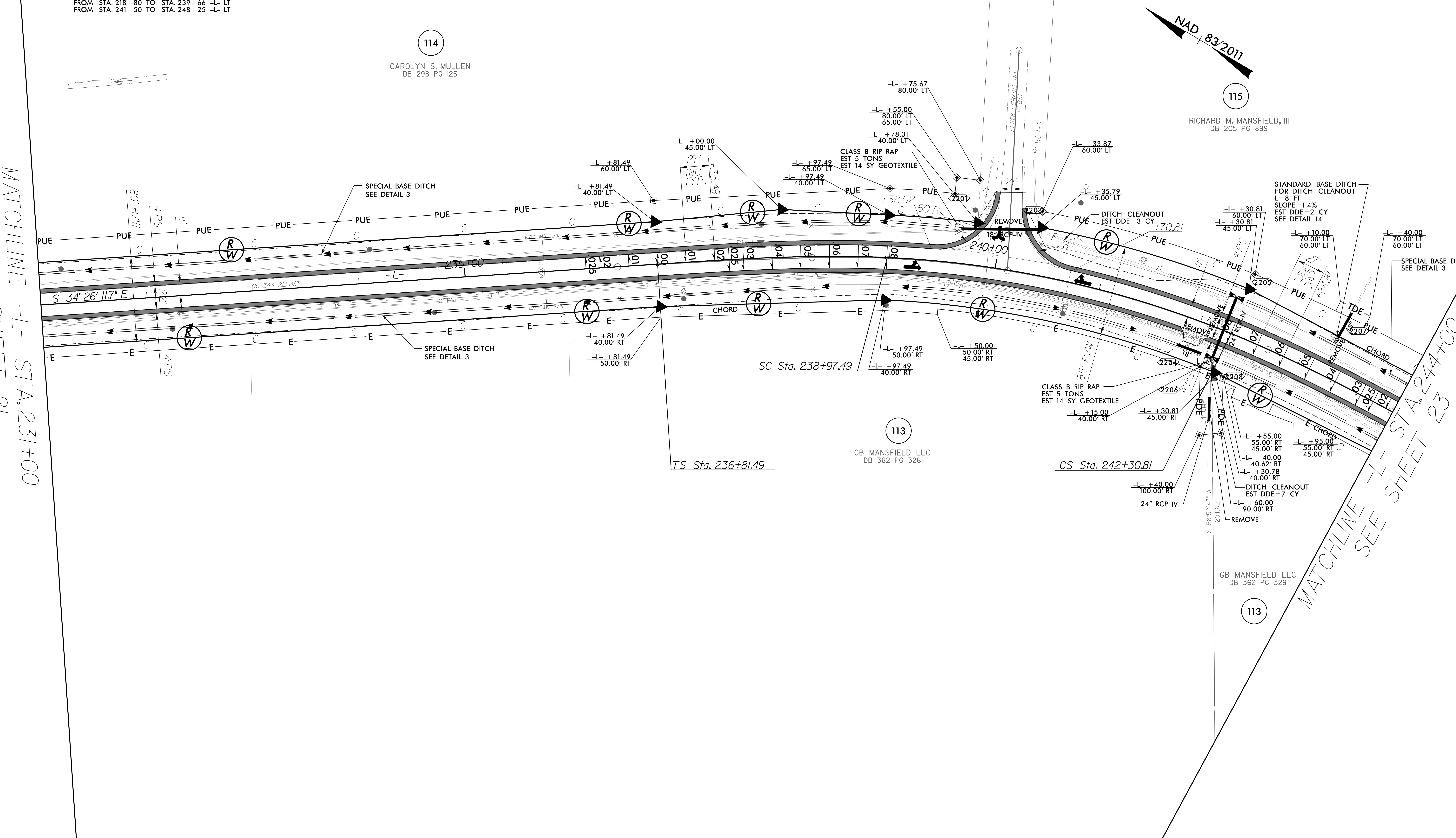


FROM STA. 218+83 TO STA. 261+56 -L- RT
FROM STA. 218+80 TO STA. 239+66 -L- LT
FROM STA. 241+50 TO STA. 248+25 -L- LT

DETAIL 14
STANDARD BASE DITCH
(Not to Scale)



AT STA. 243+24 -L- LT



PAVED SHOULDER

SEE SHEET 43 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	23
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

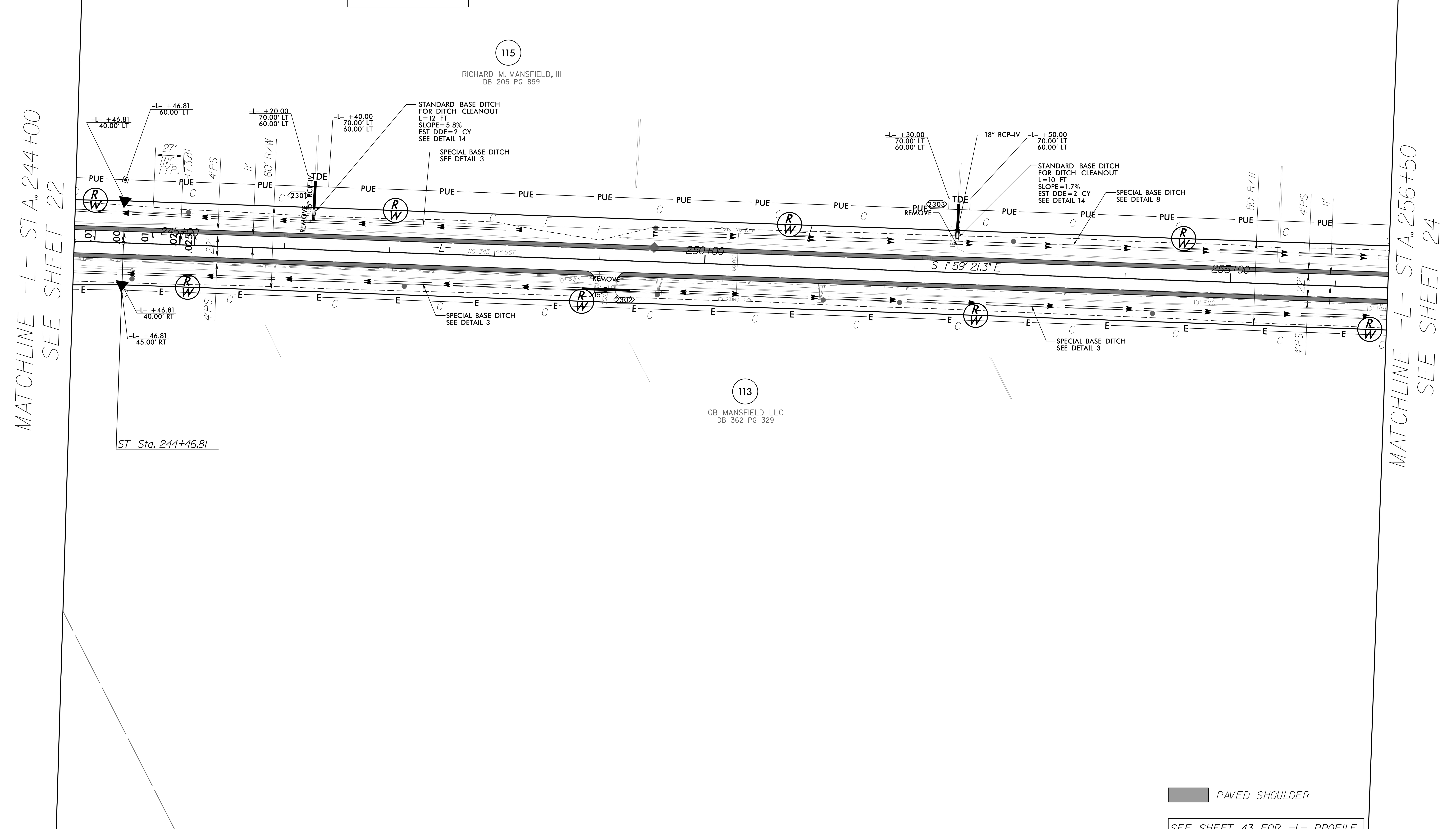
NAD 83/2011

DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)
Natural Ground; 3:1; D; B; 3:1 or Flatter; Front Ditch Slope
Min. D = 1.0 Ft.
B = 2.0 Ft.
FROM STA. 218+83 TO STA. 261+56 -L- RT
FROM STA. 241+50 TO STA. 248+25 -L- LT

DETAIL 8
SPECIAL BASE DITCH
(Not to Scale)
Natural Ground; 3:1; D; B; 3:1 or Flatter; Front Ditch Slope
Min. D = 1.5 Ft.
B = 3.0 Ft.
FROM STA. 249+50 TO STA. 281+00 -L- LT

DETAIL 14
STANDARD BASE DITCH
(Not to Scale)
Natural Ground; 3:1; D; B; 3:1; Natural Ground
Min. D = 1.0 Ft.
B = 2.0 Ft.
AT STA. 246+27 -L- LT
AT STA. 252+39 -L- LT

-L-
PIs Sta 243+02.90
Θs = 6° 22' 45.6"
Ls = 216.00'
LT = 144.09'
ST = 72.09'



PAVED SHOULDER

SEE SHEET 43 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
R-5807	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

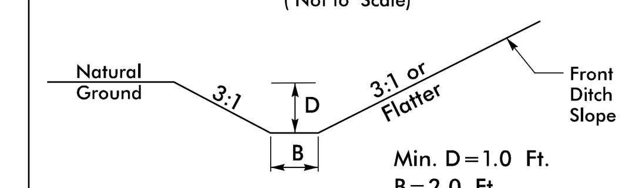
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-

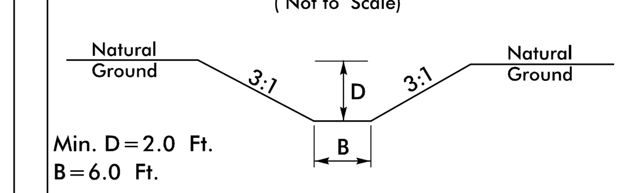
PIs Sta 259+51.08	PI Sta 261+81.61	PIs Sta 264+11.38
Θs = 2° 42′ 26.0″	Δ = 9° 34′ 38.0″ (LT)	Θs = 2° 42′ 26.0″
Ls = 189.00′	D = 2° 51′ 53.2″	Ls = 189.00′
LT = 126.01′	L = 334.31′	LT = 126.01′
ST = 63.01′	T = 167.54′	ST = 63.01′
	R = 2,000.00′	
	SE = 0.07	

DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)



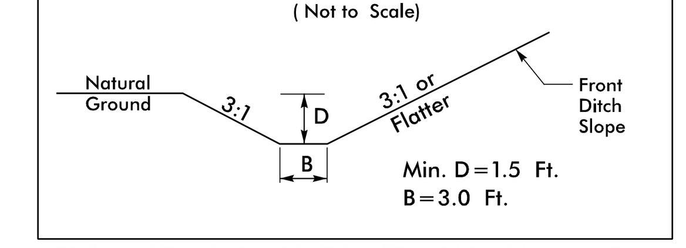
FROM STA. 218+83 TO STA. 261+56 -L- RT
FROM STA. 262+25 TO STA. 280+00 -L- RT

DETAIL 5
STANDARD BASE DITCH
(Not to Scale)



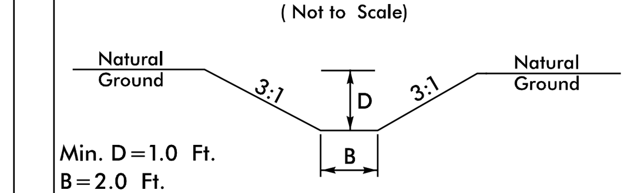
AT STA. 261+62 -L- RT

DETAIL 8
SPECIAL BASE DITCH
(Not to Scale)



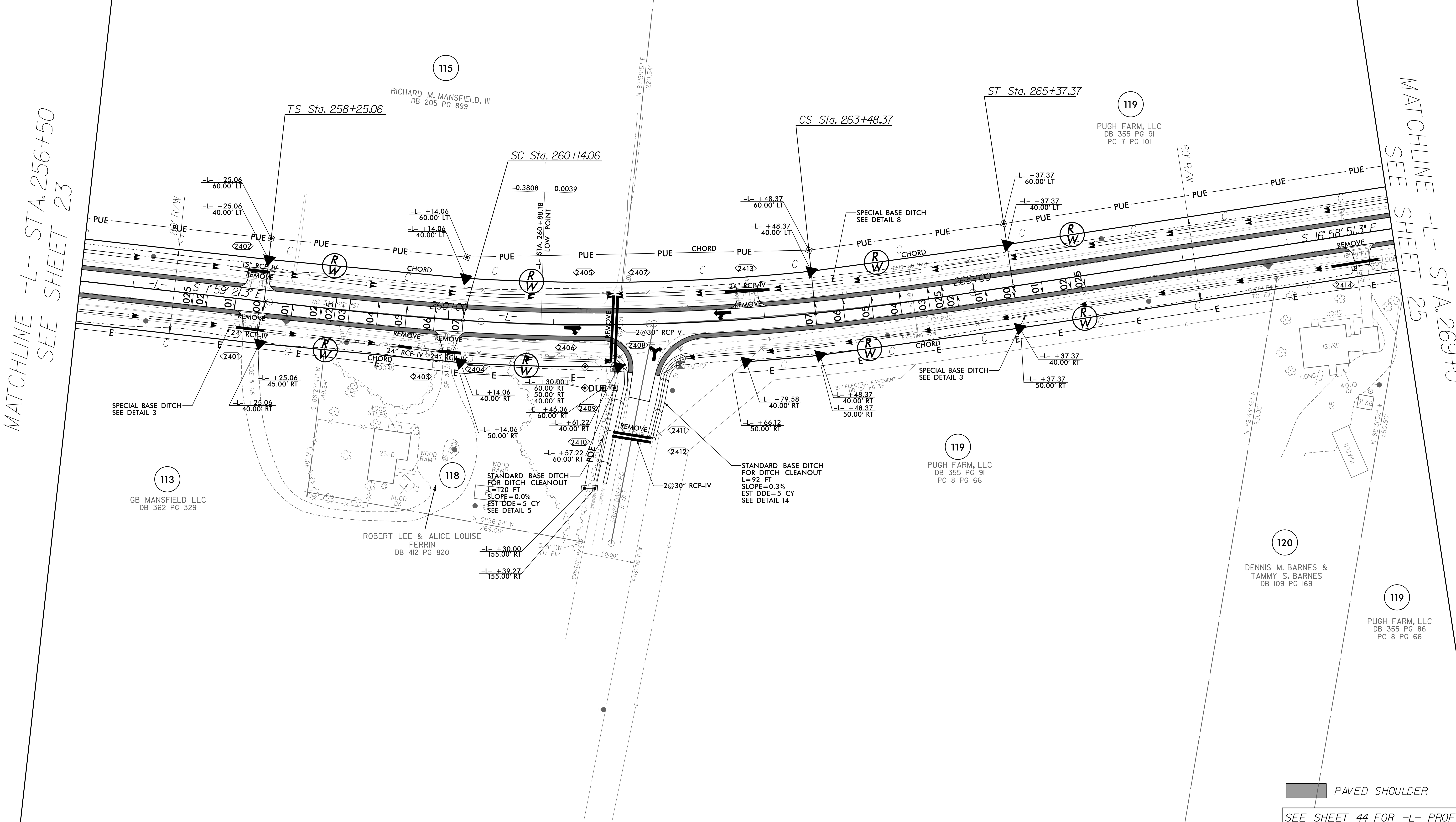
FROM STA. 249+50 TO STA. 281+00 -L- LT

DETAIL 14
STANDARD BASE DITCH
(Not to Scale)



AT STA. 261+89 -L- RT

NAD 83/2011



PAVED SHOULDER

SEE SHEET 44 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10′ UNLESS OTHERWISE NOTED

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111

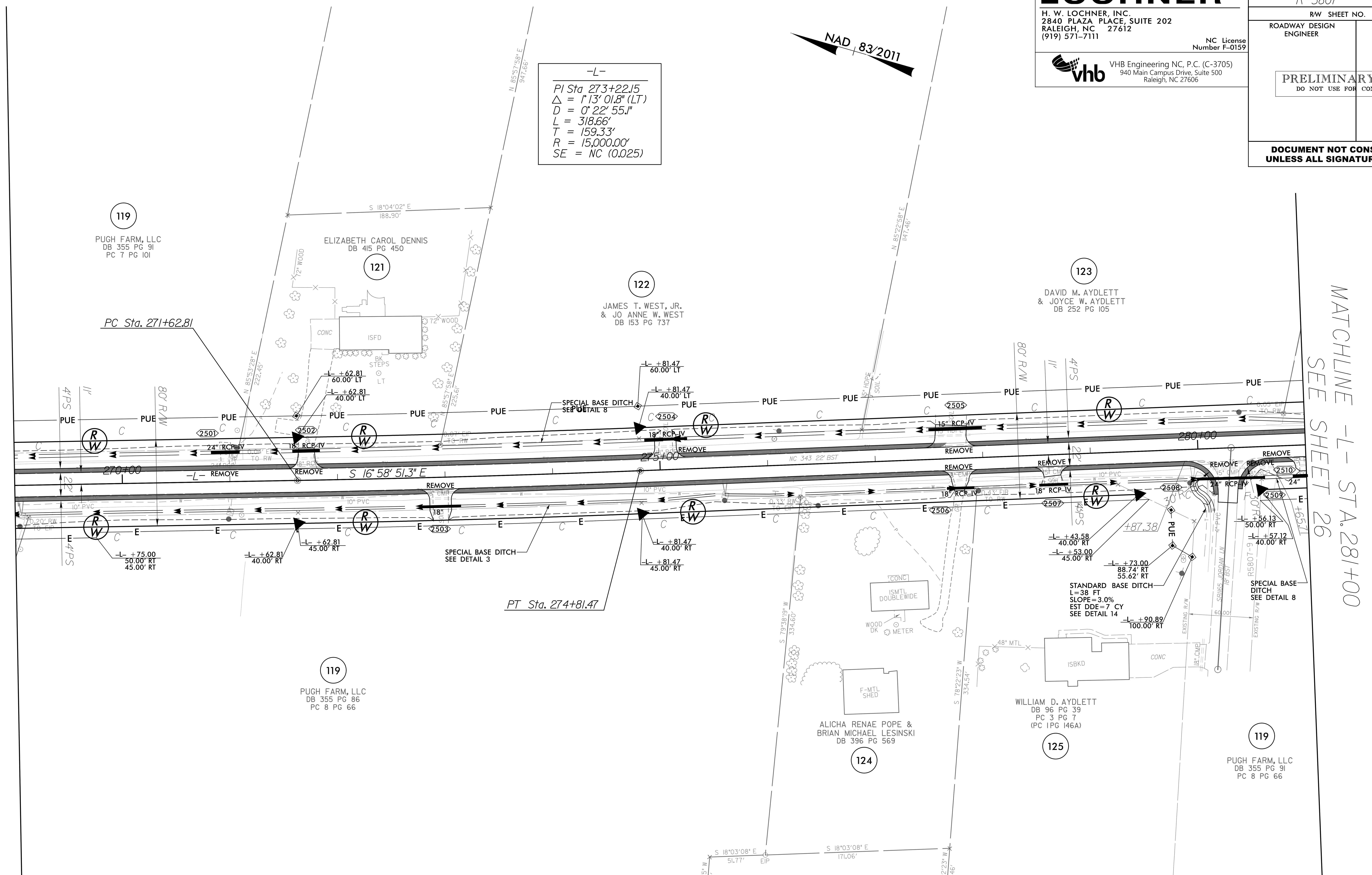
NC License Number F-0159

vhb — VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

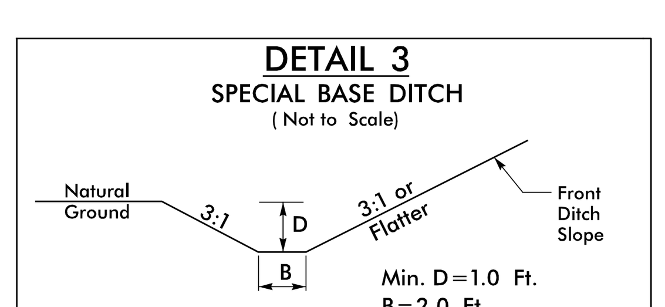
PROJECT REFERENCE NO.	SHEET NO.
R-5807	25
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

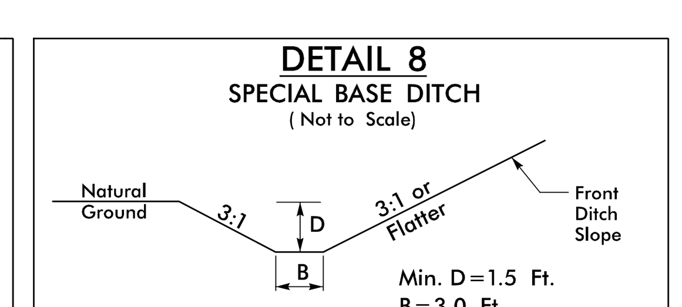
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



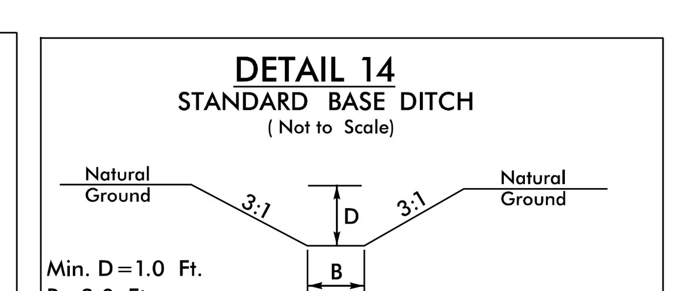
PAVED SHOULDER



FROM STA. 262+25 TO STA. 280+00 -L- RT



FROM STA. 249+50 TO STA. 281+00 -L- LT
FROM STA. 280+60 TO STA. 284+25 -L- RT



AT STA. 280+00 -L- RT

SEE SHEET 44 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

10/18/2024
R5807_RDY_PSH25.dgn

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

vhb
VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

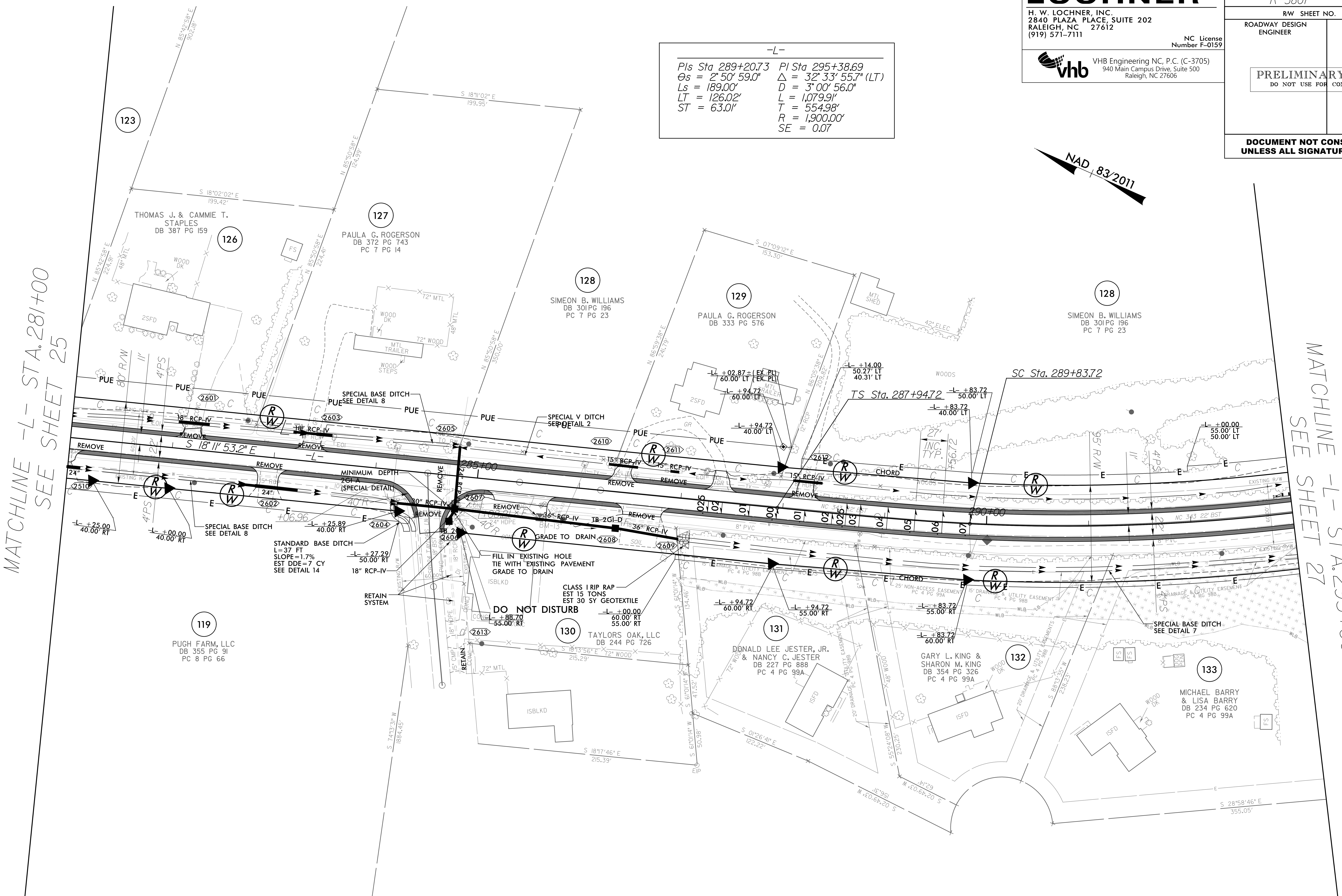
PROJECT REFERENCE NO.	SHEET NO.
R-5807	26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

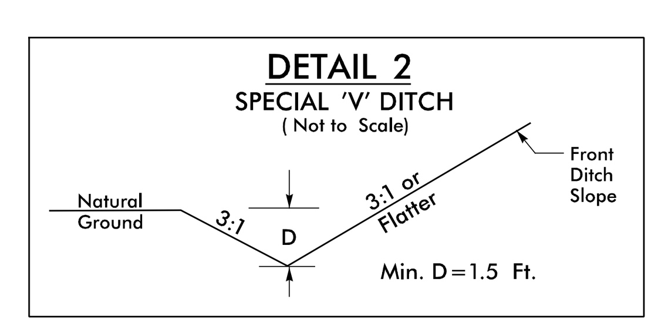
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

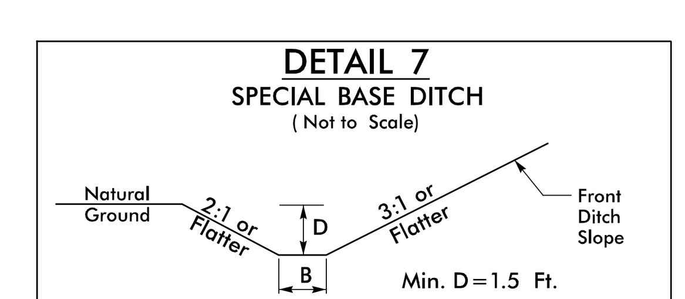
-L-

PIs Sta 289+20.73	PI Sta 295+38.69
Θs = 2° 50' 59.0"	Δ = 32° 33' 55.7" (LT)
Ls = 189.00'	D = 3° 00' 56.0"
LT = 126.02'	L = 1,079.91'
ST = 63.01'	T = 554.98'
	R = 1,900.00'
	SE = 0.07

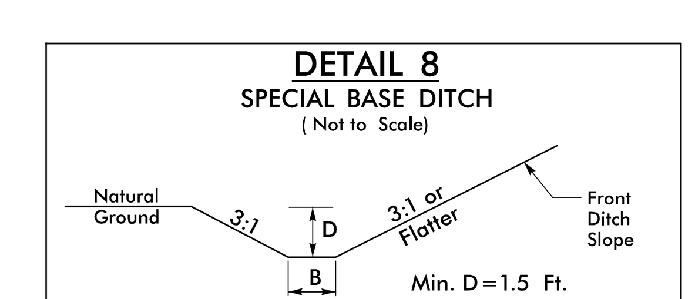

NAD 83/2011
MATCHLINE -L- STA. 281+00
SEE SHEET 25
MATCHLINE -L- STA. 293+00
SEE SHEET 27
THOMAS J. & CAMMIE T. STAPLES
DB 387 PG 159
PAULA G. ROGERSON
DB 372 PG 743
PC 7 PG 14
SIMEON B. WILLIAMS
DB 301 PG 196
PC 7 PG 23
PAULA G. ROGERSON
DB 333 PG 576
PUGH FARM, LLC
DB 355 PG 91
PC 8 PG 66
TAYLORS OAK, LLC
DB 244 PG 726
DONALD LEE JESTER, JR. & NANCY C. JESTER
DB 227 PG 888
PC 4 PG 99A
GARY L. KING & SHARON M. KING
DB 354 PG 326
PC 4 PG 99A
MICHAEL BARRY & LISA BARRY
DB 234 PG 620
PC 4 PG 99A
S 18° 11' 53.2" E
SC Sta. 289+83.72
TS Sta. 287+94.72
SPECIAL BASE DITCH SEE DETAIL 8
SPECIAL V DITCH SEE DETAIL 2
SPECIAL BASE DITCH SEE DETAIL 7
STANDARD BASE DITCH L=37 FT SLOPE=1.7% EST DDE=7 CY SEE DETAIL 14
MINIMUM DEPTH 2GI A (SPECIAL DETAIL)
FILL IN EXISTING HOLE TIE WITH EXISTING PAVEMENT GRADE TO DRAIN
CLASS I RIP RAP EST 15 TONS EST 30 SY GEOTEXTILE
RETAIN SYSTEM
DO NOT DISTURB
GRADE TO DRAIN
REMOVE
PUE
CHORD



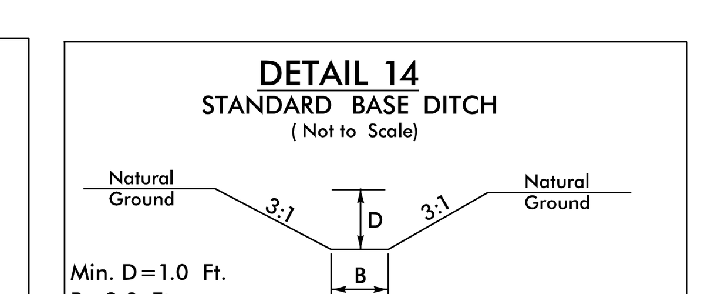
FROM STA. 284+80 TO STA. 294+46 -L- LT



FROM STA. 287+00 TO STA. 294+46 -L- RT



FROM STA. 280+60 TO STA. 284+25 -L- RT
FROM STA. 281+00 TO STA. 284+80 -L- LT



AT STA. 284+25 -L- RT

PAVED SHOULDER

SEE SHEET 45 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

vhb
VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

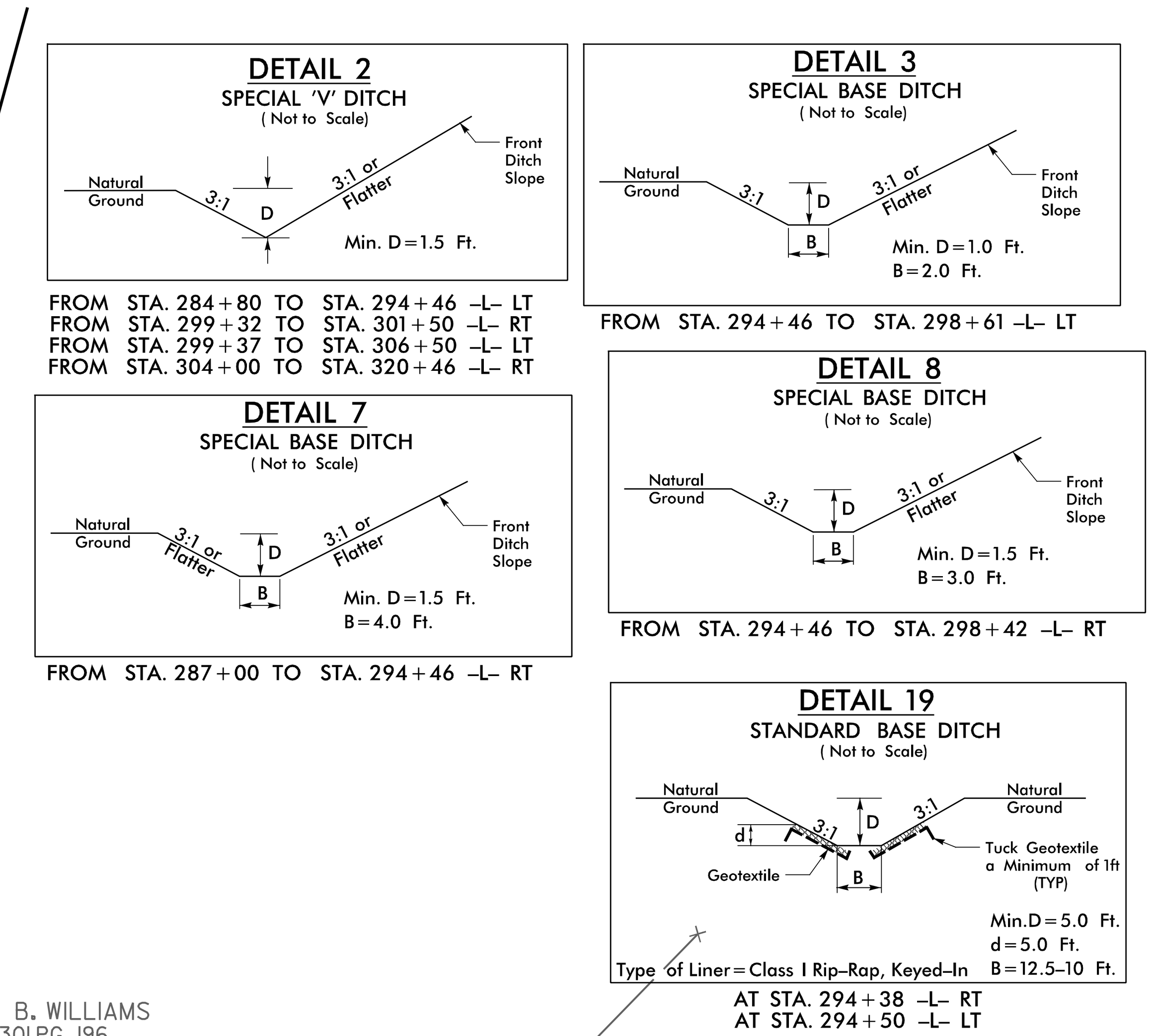
PROJECT REFERENCE NO.	SHEET NO.
R-5807	27
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

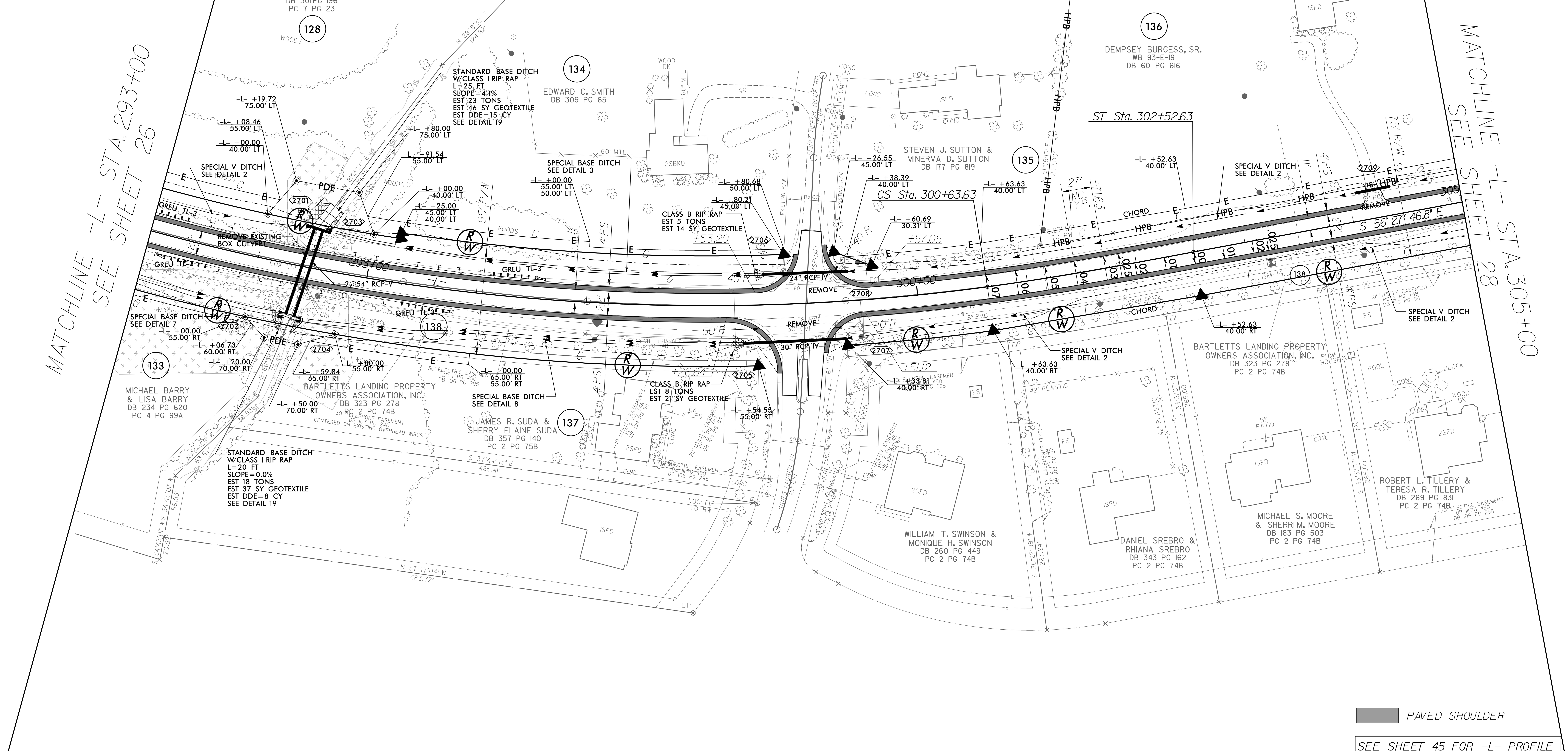
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-

PI Sta 295+38.69	PIs Sta 301+26.64
Δ = 32° 33' 55.7" (LT)	Θs = 2° 50' 59.0"
D = 3° 00' 56.0"	Ls = 189.00'
L = 1,079.91'	LT = 126.02'
T = 554.98'	ST = 63.01'
R = 1,900.00'	
SE = 0.07	

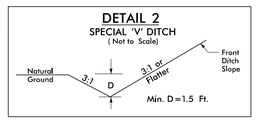

DETAIL 2
SPECIAL 'V' DITCH
(Not to Scale)
Natural Ground
3:1 or Flatter
Front Ditch Slope
Min. D=1.5 Ft.
FROM STA. 284+80 TO STA. 294+46 -L- LT
FROM STA. 299+32 TO STA. 301+50 -L- RT
FROM STA. 299+37 TO STA. 306+50 -L- LT
FROM STA. 304+00 TO STA. 320+46 -L- RT
DETAIL 3
SPECIAL BASE DITCH
(Not to Scale)
Min. D=1.0 Ft.
B=2.0 Ft.
FROM STA. 294+46 TO STA. 298+61 -L- LT
DETAIL 7
SPECIAL BASE DITCH
(Not to Scale)
Min. D=1.5 Ft.
B=4.0 Ft.
FROM STA. 287+00 TO STA. 294+46 -L- RT
DETAIL 8
SPECIAL BASE DITCH
(Not to Scale)
Min. D=1.5 Ft.
B=3.0 Ft.
FROM STA. 294+46 TO STA. 298+42 -L- RT
DETAIL 19
STANDARD BASE DITCH
(Not to Scale)
Geotextile
Tuck Geotextile a Minimum of 1ft (TYP)
Min.D=5.0 Ft.
d=5.0 Ft.
B=12.5-10 Ft.
Type of Liner=Class I Rip-Rap, Keyed-In
AT STA. 294+38 -L- RT
AT STA. 294+50 -L- LT

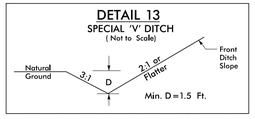

NAD 83/2011
MATCHLINE -L- STA. 293+00 SEE SHEET 26
MATCHLINE -L- STA. 305+00 SEE SHEET 28
SIMEON B. WILLIAMS
DB 301 PG 196
PC 7 PG 23
128
EDWARD C. SMITH
DB 309 PG 65
134
DEMPSEY BURGESS, SR.
WB 93-E-19
DB 60 PG 616
136
STEVEN J. SUTTON & MINERVA D. SUTTON
DB 177 PG 819
135
MICHAEL BARRY & LISA BARRY
DB 234 PG 620
PC 4 PG 99A
133
BARTLETTS LANDING PROPERTY OWNERS ASSOCIATION, INC.
DB 323 PG 278
PC 2 PG 74B
138
JAMES R. SUDA & SHERRY ELAINE SUDA
DB 357 PG 140
PC 2 PG 75B
137
WILLIAM T. SWINSON & MONIQUE H. SWINSON
DB 260 PG 449
PC 2 PG 74B
DANIEL SREBRO & RHIANA SREBRO
DB 343 PG 162
PC 2 PG 74B
MICHAEL S. MOORE & SHERRI M. MOORE
DB 183 PG 503
PC 2 PG 74B
ROBERT L. TILLERY & TERESA R. TILLERY
DB 269 PG 831
PC 2 PG 74B
STANDARD BASE DITCH W/CLASS I RIP RAP
L=25 FT
SLOPE=4.1%
EST 23 TONS
EST 46 SY GEOTEXTILE
EST DDE=15 CY
SEE DETAIL 19
STANDARD BASE DITCH W/CLASS I RIP RAP
L=20 FT
SLOPE=0.0%
EST 18 TONS
EST 37 SY GEOTEXTILE
EST DDE=8 CY
SEE DETAIL 19
CLASS B RIP RAP
EST 5 TONS
EST 14 SY GEOTEXTILE
CLASS B RIP RAP
EST 8 TONS
EST 21 SY GEOTEXTILE
REMOVE EXISTING BOX CULVERT
2@54" RCP-V
24" RCP-IV
30" RCP-IV
GREU TL-3
SPECIAL V DITCH SEE DETAIL 2
SPECIAL BASE DITCH SEE DETAIL 3
SPECIAL BASE DITCH SEE DETAIL 7
SPECIAL BASE DITCH SEE DETAIL 8
ST Sta. 302+52.63
CS Sta. 300+63.63
S 56° 27' 46.8" E
CHORD
295+00
300+00
PDE
REMOVE
75' R/W
95' R/W
2701
2702
2703
2704
2705
2706
2707
2708
2709

PAVED SHOULDER

SEE SHEET 45 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED





LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License
Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

5/14/99

DETAIL 2
SPECIAL 'V' DITCH
(Not to Scale)

FROM STA. 299+37 TO STA. 306+50 -L- LT
FROM STA. 304+00 TO STA. 320+46 -L- RT
FROM STA. 311+81 TO STA. 349+50 -L- LT

DETAIL 13
SPECIAL 'V' DITCH
(Not to Scale)

FROM STA. 306+50 TO STA. 307+00 -L- LT

-L-
PIs Sta 317+42.44
Θs = 2° 34' 41.9"
Ls = 189.00'
LT = 126.01'
ST = 63.01'

▨ PAVED SHOULDER

SEE SHEET 46 FOR -L- PROFILE

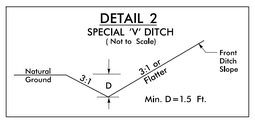
NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

10/18/2024
R-5807_RDY_PSH28.dgn
RCROSSER

5/14/99

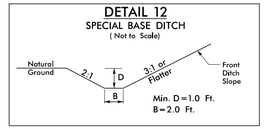
-L-			-L-	
PIs Sta 317+42.44	PI Sta 319+47.56	PIs Sta 321+52.28	PIs Sta 326+09.25	PI Sta 328+47.82
Θs = 2° 34' 41.9"	△ = 7° 44' 39.5" (RT)	Θs = 2° 34' 41.9"	Θs = 2° 50' 59.0"	△ = 10° 33' 34.8" (LT)
Ls = 189.00'	D = 2° 43' 42.1"	Ls = 189.00'	Ls = 189.00'	D = 3° 00' 56.0"
LT = 126.01'	L = 283.84'	LT = 126.01'	LT = 126.02'	L = 350.17'
ST = 63.01'	T = 142.14'	ST = 63.01'	ST = 63.01'	T = 175.58'
	R = 2,100.00'			R = 1,900.00'
	SE = 0.07			SE = 0.07

DETAIL 2
SPECIAL 'V' DITCH
(Not to Scale)



FROM STA. 299+32 TO STA. 301+50 -L- RT
FROM STA. 299+37 TO STA. 306+50 -L- LT
FROM STA. 304+00 TO STA. 320+46 -L- RT
FROM STA. 311+81 TO STA. 349+50 -L- LT

DETAIL 12
SPECIAL BASE DITCH
(Not to Scale)



FROM STA. 321+03 TO STA. 334+48 -L- RT

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	29
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

MATCHLINE -L- STA. 317+00
SEE SHEET 28

MATCHLINE -L- STA. 330+00
SEE SHEET 30

139 VIRGINIA W. GARRETT
WB 95-E-99
DB (UNKNOWN)

145 PAUL R. SCHUELLEIN
DB 334 PG 220
PC 7 PG 153

146 SIMEON B. WILLIAMS
DB 334 PG 407
PC 7 PG 153

146 SIMEON B. WILLIAMS
DB 334 PG 407
PC 7 PG 153

147 RICHARD M. WHITE
DB 218 PG 161
PC 3 PG 30A

146 SIMEON B. WILLIAMS
DB 150 PG 271
PC 3 PG 30A
PC 3 PG 50A

144 STEVEN T. SPENCER &
BELINDA S. SPENCER
DB 80 PG 500

149 ROGER BERRY
DB 82 PG 446

140 MICHAEL R. SAWYER &
MELISSA W. SAWYER
DB 130 PG 660

150 JOSEPH W. WALSTON
DB 103 PG 268

142 JOSEPH W. WALSTON
DB 322 PG 636
DB 206 PG 38
PC 7 PG 99
PC 5 PG 17B

159 MAGNOLIA MANOR
HOME OWNER ASSOCIATION
PC 5 PG 45A & 45B

148 SYLVIA G. JOHNSON
DB 245 PG 749
PC 5 PG 45B

SC Sta. 318+05.42
CS Sta. 320+89.27
ST Sta. 322+78.27
TS Sta. 324+83.24
SC Sta. 326+72.24

PAVED SHOULDER

SEE SHEET 46 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

10/18/2024
R-5807_RDY_PSH29.dgn
RCROSS

5/14/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	30
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

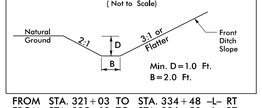
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L-

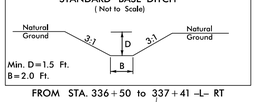
PI Sta 328+47.82	PIs Sta 330+85.43	PIs Sta 335+30.42	PI Sta 338+44.83	PIs Sta 341+49.29
Δ = 10° 33' 34.8" (LT)	Θs = 2° 50' 59.0"	Θs = 6° 30' 49.1"	Δ = 28° 38' 25.6" (LT)	Θs = 6° 30' 49.1"
D = 3° 00' 56.0"	Ls = 189.00'	Ls = 216.00'	D = 6° 01' 52.1"	Ls = 216.00'
L = 350.17'	LT = 126.02'	LT = 144.10'	L = 474.88'	LT = 144.10'
T = 175.58'	ST = 63.01'	ST = 72.09'	T = 242.51'	ST = 72.09'
R = 1,900.00'			R = 950.00'	
SE = 0.07			SE = 0.08	

DETAIL 12
SPECIAL BASE DITCH
(Not to Scale)



FROM STA. 321+03 TO STA. 334+48 -L- RT
FROM STA. 335+10 TO STA. 336+50 -L- RT

DETAIL 14
STANDARD BASE DITCH
(Not to Scale)



FROM STA. 336+50 to 337+41 -L- RT

DETAIL 2
SPECIAL 'V' DITCH
(Not to Scale)

FROM STA. 340+00 TO STA. 352+50 -L- RT
FROM STA. 311+81 TO STA. 349+50 -L- LT

NAD 83/2011

MATCHLINE -L- STA. 330+00
SEE SHEET 29

MATCHLINE -L- STA. 343+00
SEE SHEET 31

CS Sta. 330+22.41
ST Sta. 332+11.41
TS Sta. 333+86.32
SC Sta. 336+02.32
CS Sta. 340+77.20
ST Sta. 342+93.20

146 SIMEON B. WILLIAMS DB 150 PG 271 PC 3 PG 30A PC 3 PG 50A
151 JIMMY R., JR. & LESLIE DYAN MCDARIES DB 364 PG 399 PC 5 PG 45B
151A LYNANNE PRIDGEN DB 109 PG 745
152 CHRISTINA H. BURGESS DB 217 PG 254 PC 3 PG 28B
153 JACK M. LEARY & VICKY M. LEARY DB 337 PG 502
154 JUDY L. LEARY DB 279 PG 92
155 VICTOR B. LEARY DB 279 PG 94
156 WILLIAM E. BRINKLEY & PATRICIA R. BRINKLEY DB 84 PG 223
157 EDWARD L. SANDERLIN & SUSAN D. SANDERLIN DB 102 PG 91
158 ELEANOR F. COLLINS DB 84 PG 159
159 MAGNOLIA MANOR HOME OWNER ASSOCIATION PC 5 PG 45A & 45B
160 SEAN DYLAN & ASHLEY JORDAN HANKINSON DB 385 PG 203 PC 5 PG 45B
160A SIMEON WILLIAMS DB 135 PG 940 DB 91PG 83

SPECIAL V DITCH SEE DETAIL 2
SPECIAL BASE DITCH SEE DETAIL 3
SPECIAL BASE DITCH SEE DETAIL 12
CLASS B RIP RAP EST 5 TONS EST 14 SY GEOTEXTILE
STANDARD BASE DITCH L=96 FT SLOPE=0.1% EST DDE=70 CY SEE DETAIL 14

PAVED SHOULDER

SEE SHEET 47 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

10/18/2024
R-5807_RDY_PSH30.dgn
RCRIGSETH

5/14/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

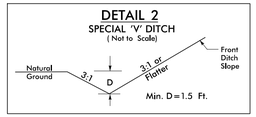
PROJECT REFERENCE NO.	SHEET NO.
R-5807	31
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

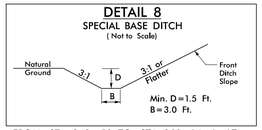
NAD 83/2011

DETAIL 2
SPECIAL 'V' DITCH
(Not to Scale)



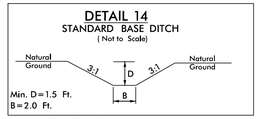
FROM STA. 311+81 TO STA. 349+50 –L– LT
FROM STA. 340+00 TO STA. 352+50 –L– RT
FROM STA. 354+50 TO STA. 355+06 –L– RT

DETAIL 8
SPECIAL BASE DITCH
(Not to Scale)



FROM STA. 349+50 TO STA. 360+14 –L– LT

DETAIL 14
STANDARD BASE DITCH
(Not to Scale)



FROM STA. 354+28 to 354+31 –L– LT

MATCHLINE –L– STA. 343+00
SEE SHEET 30

MATCHLINE –L– STA. 355+00
SEE SHEET 32

JACK M. LEARY & CLYDE W. LEARY
DB 279 PG 96

TIMOTHY A. IKNER & SARA IKNER
DB 350 PG 170

MARY W. BANKS & ALLEN T. BANKS, JR.
DB 339 PG 769

ERAN ANDREW & AMANDA LEIGH HABER
DB 388 PG 528

MICHELLE REIMERS
DB 436 PG 619

CHARLES D. GREGORY & MARY DENISE GREGORY
WB 09-E-40
DB 70 PG 227
DB 31IPG 575
DB 31IPG 579

TIMOTHY ESTEBAN
DB 436 PG 449
PB 9 PG 141

RANDY GLEN SAULS
DB 161PG 185

SIMEON WILLIAMS
DB 135 PG 940
DB 91IPG 83

DELFUS HARRIS & LEE THI BA
DB 411PG 600

DONALD LEE, JR. & BETTY SUE JONES
DB 389 PG 49

-L- +00.00
45.00' LT
40.00' LT

SPECIAL V DITCH
SEE DETAIL 2

SPECIAL BASE DITCH
SEE DETAIL 8

STANDARD BASE DITCH
L=14 FT
SLOPE=1:1%
EST DDE=9 CY
SEE DETAIL 14

REMOVE SYSTEM

REMOVE

18" RCP-IV

24" RCP-IV

15" RCP-IV

-L- +50.00
35.00' RT
30.00' RT

-L- +50.00
40.00' RT
35.00' RT

-L- +70.00
51.00' RT
35.00' RT

-L- +92.00
51.00' RT
35.00' RT

PUE

RETAIN

PAVED SHOULDER

SEE SHEET 47 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

10/18/2024
R-5807_RDY_PSH31.dgn
RGROSER

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

vhb
VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	32
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

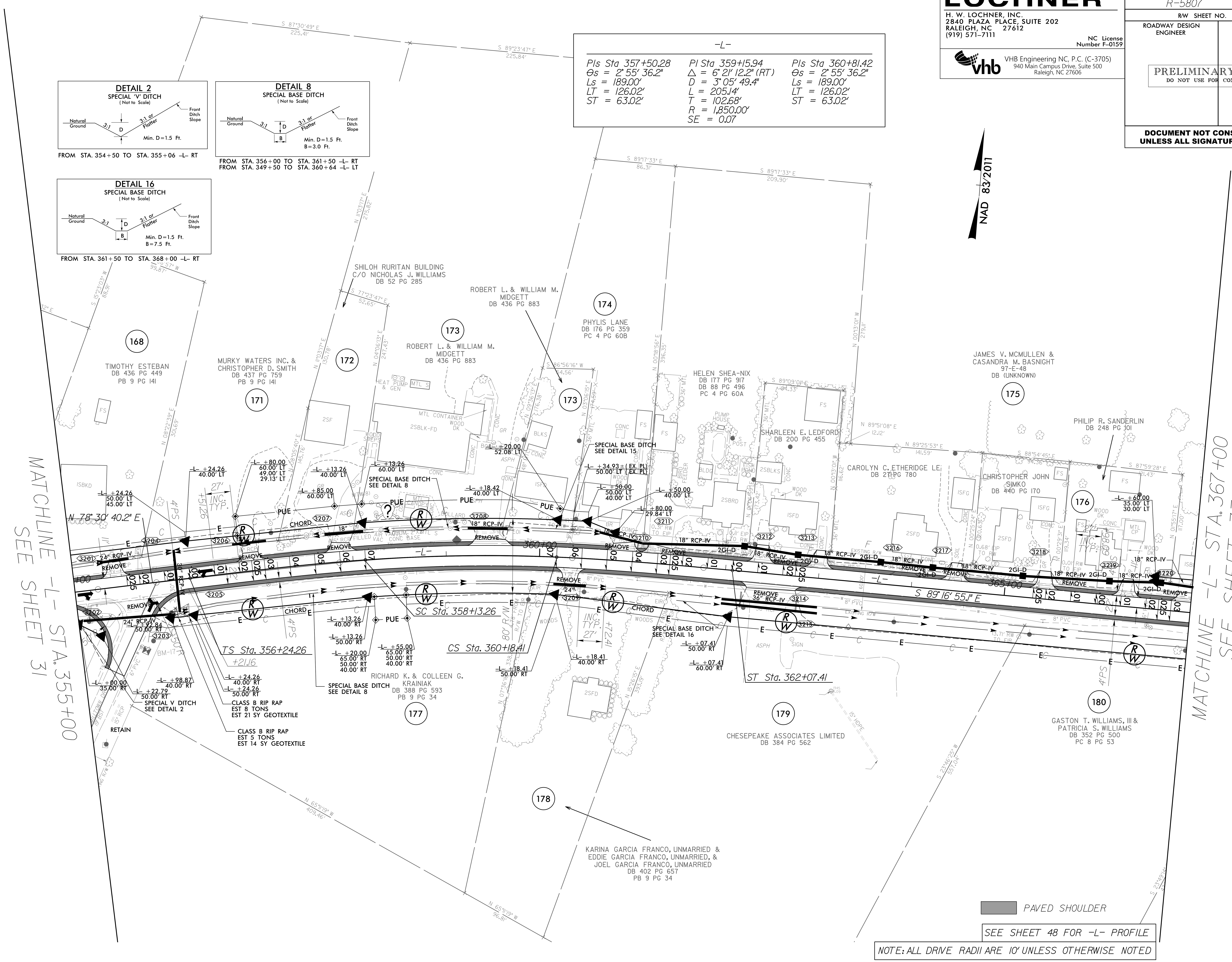
-L-

PIs Sta 357+50.28	PI Sta 359+15.94	PIs Sta 360+81.42
Θs = 2° 55' 36.2"	Δ = 6° 21' 12.2" (RT)	Θs = 2° 55' 36.2"
Ls = 189.00'	D = 3° 05' 49.4"	Ls = 189.00'
LT = 126.02'	L = 205.14'	LT = 126.02'
ST = 63.02'	T = 102.68'	ST = 63.02'
	R = 1,850.00'	
	SE = 0.07	

DETAIL 2
SPECIAL 'V' DITCH
(Not to Scale)
Natural Ground; 3:1; D; 3:1 or Flatter; Front Ditch Slope; Min. D=1.5 Ft.
FROM STA. 354+50 TO STA. 355+06 -L- RT

DETAIL 8
SPECIAL BASE DITCH
(Not to Scale)
Natural Ground; 3:1; D; B; 3:1 or Flatter; Front Ditch Slope; Min. D=1.5 Ft. B=3.0 Ft.
FROM STA. 356+00 TO STA. 361+50 -L- RT
FROM STA. 349+50 TO STA. 360+64 -L- LT

DETAIL 16
SPECIAL BASE DITCH
(Not to Scale)
Natural Ground; 3:1; D; B; 3:1 or Flatter; Front Ditch Slope; Min. D=1.5 Ft. B=7.5 Ft.
FROM STA. 361+50 TO STA. 368+00 -L- RT


NAD 83/2011
MATCHLINE -L- STA. 355+00 SEE SHEET 31
MATCHLINE -L- STA. 367+00 SEE SHEET 33
168 TIMOTHY ESTEBAN DB 436 PG 449 PB 9 PG 141
171 MURKY WATERS INC. & CHRISTOPHER D. SMITH DB 437 PG 759 PB 9 PG 141
172 SHILOH RURITAN BUILDING C/O NICHOLAS J. WILLIAMS DB 52 PG 285
173 ROBERT L. & WILLIAM M. MIDGETT DB 436 PG 883
174 PHYLIS LANE DB 176 PG 359 PC 4 PG 60B
HELEN SHEA-NIX DB 177 PG 917 DB 88 PG 496 PC 4 PG 60A
SHARLEEN E. LEDFORD DB 200 PG 455
CAROLYN C. ETHERIDGE LE DB 271 PG 780
175 JAMES V. MCMULLEN & CASANDRA M. BASNIGHT 97-E-48 DB (UNKNOWN)
CHRISTOPHER JOHN SIMKO DB 440 PG 170
176 PHILIP R. SANDERLIN DB 248 PG 101
177 RICHARD K. & COLLEEN G. KRAINIAK DB 388 PG 593 PB 9 PG 34
178 KARINA GARCIA FRANCO, UNMARRIED & EDDIE GARCIA FRANCO, UNMARRIED, & JOEL GARCIA FRANCO, UNMARRIED DB 402 PG 657 PB 9 PG 34
179 CHESEPEAKE ASSOCIATES LIMITED DB 384 PG 562
180 GASTON T. WILLIAMS, III & PATRICIA S. WILLIAMS DB 352 PG 500 PC 8 PG 53
N 78° 30' 40.2" E
S 89° 16' 55.1" E
TS Sta. 356+24.26
SC Sta. 358+13.26
CS Sta. 360+18.41
ST Sta. 362+07.41
SPECIAL BASE DITCH SEE DETAIL 8
SPECIAL BASE DITCH SEE DETAIL 15
SPECIAL BASE DITCH SEE DETAIL 16
SPECIAL V DITCH SEE DETAIL 2
CLASS B RIP RAP EST 8 TONS EST 21 SY GEOTEXTILE
CLASS B RIP RAP EST 5 TONS EST 14 SY GEOTEXTILE
18" RCP-IV
24" RCP-IV
36" RCP-IV
2GI-D
REMOVE
RETAIN
PUE
CHORD
INC. TYP.
PAVED SHOULDER

SEE SHEET 48 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111

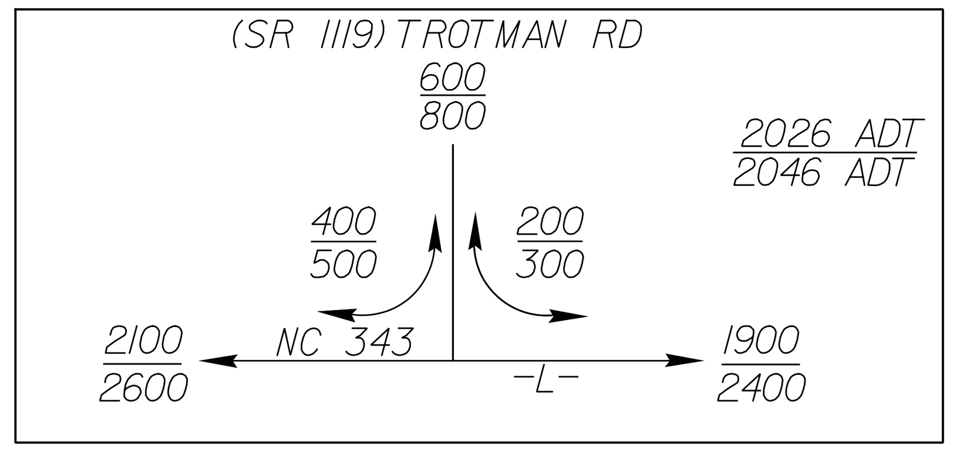
NC License Number F-0159

vhb — VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

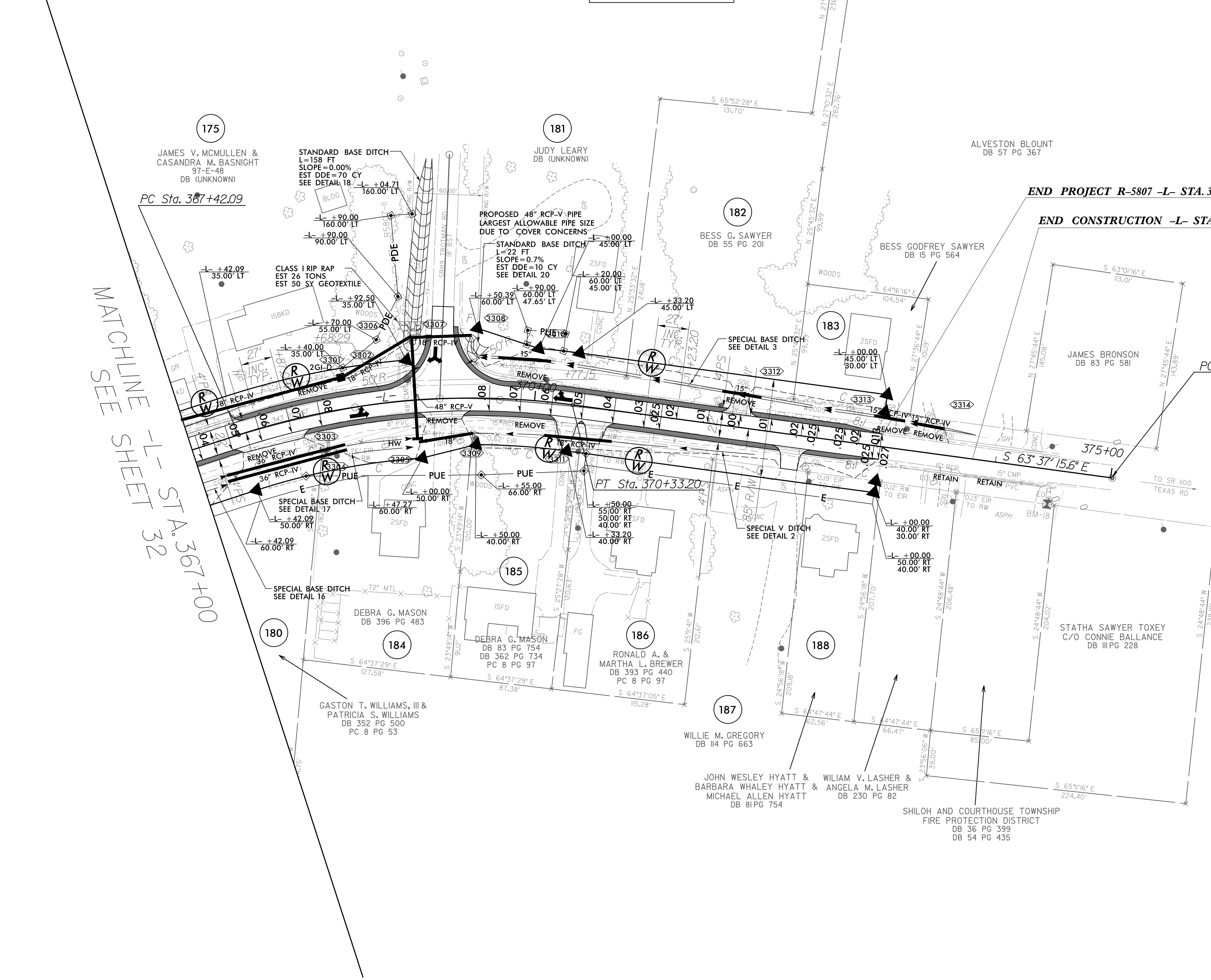
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

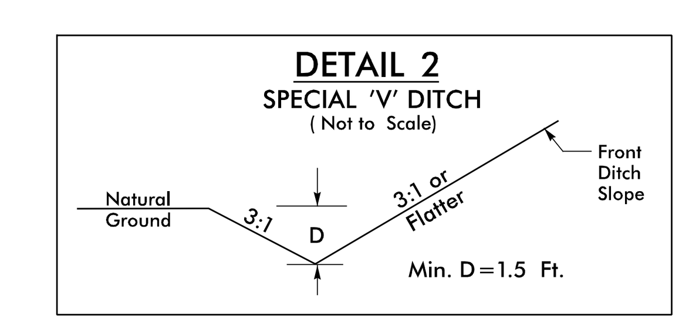
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



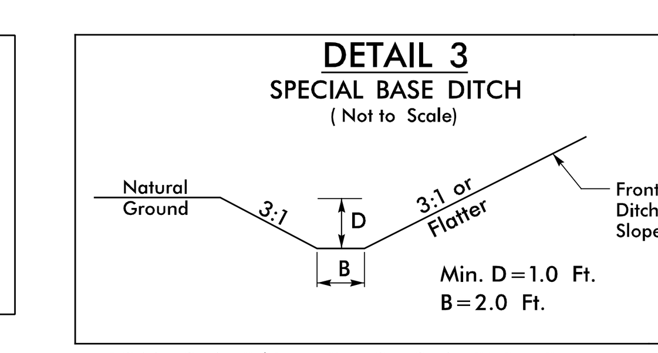
-L-

PI Sta 368+90.13
Δ = 25° 39' 39.6" (RT)
D = 8° 48' 53.0"
L = 291.11'
T = 148.04'
R = 650.00'
SE = 0.08

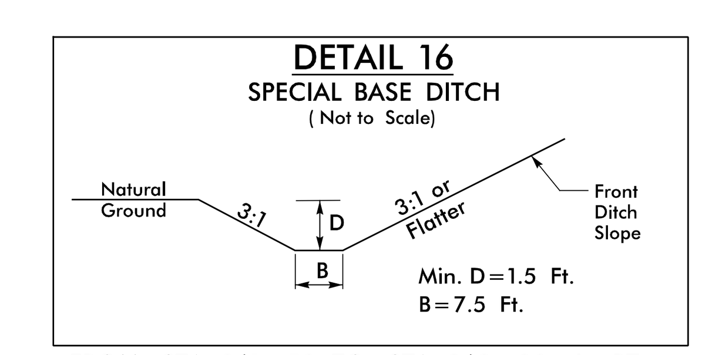




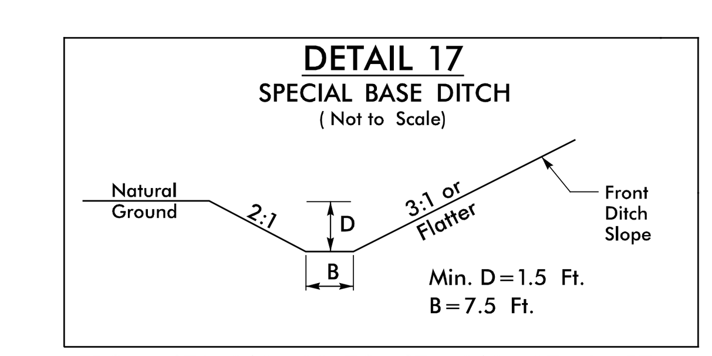
FROM STA. 368+97 TO STA. 372+00 -L- RT



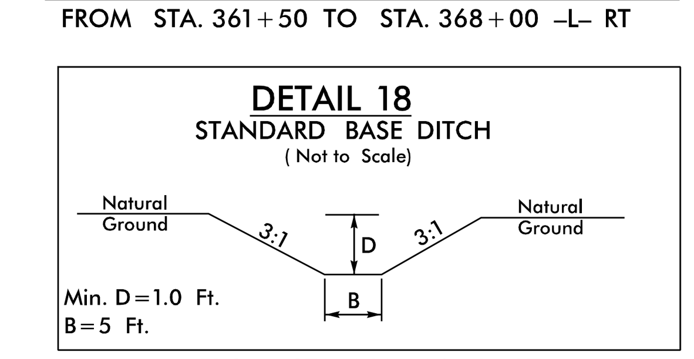
FROM STA. 369+52 TO STA. 373+80 -L- LT



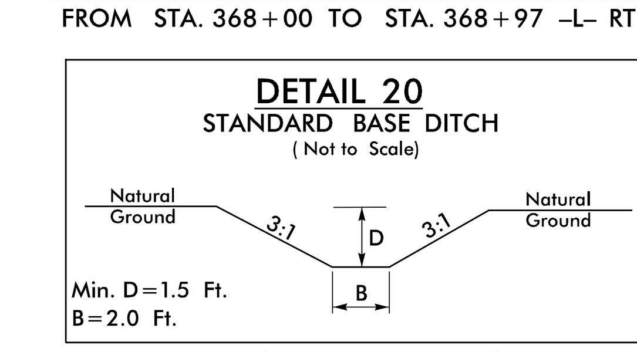
FROM STA. 361+50 TO STA. 368+00 -L- RT



FROM STA. 368+00 TO STA. 368+97 -L- RT



FROM STA. 368+96 -L- LT



FROM STA. 369+37 TO STA. 369+52 -L- LT

PAVED SHOULDER

SEE SHEET 48 FOR -L- PROFILE

NOTE: ALL DRIVE RADII ARE 10' UNLESS OTHERWISE NOTED

5/14/99

R5807-12

10/18/2024
R5807_RDY_PSH33.dgn

5/28/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111

NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	34
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- NC 343

BM1
ELEVATION = 11.22
N 950130 E 2833210
BL STATION 5+04.00 65 RIGHT
CHISELED "X" ON FIRE HYDRANT

PIPE HYDRAULIC DATA
1@18" RCP Sta.15+48

DRAINAGE AREA	= 1.0	AC
DESIGN FREQUENCY	= 50	YR
DESIGN DISCHARGE	= 3.1	CFS
DESIGN HW ELEVATION	= 6.4	FT
100 YEAR DISCHARGE	= 3.3	CFS
100 YEAR HW ELEVATION	= 6.4	FT
OVERTOPPING FREQUENCY	= 500+	YR
OVERTOPPING DISCHARGE	= 13.4	CFS
OVERTOPPING ELEVATION	= 8.5	FT

NORFOLK SOUTHERN RAILROAD

PI = 17+35.00
EL = 8.83'
VC = 180'
K = 818

BEGIN GRADE
-L- STA. 15+30.00
ELEV. 9.10'

PROPOSED GRADE

(-)0.1293%

(-)0.3492%

EXISTING GROUND

18" RCP

SEE SHEET 4 FOR -L- PLAN

MATCHLINE SHEET 34 STA. 18+00.00

10 0 10 0

16 17 18

-L- NC 343

PIPE HYDRAULIC DATA
1@30" RCP Sta.20+93

DRAINAGE AREA	= 9.6	AC
DESIGN FREQUENCY	= 50	YR
DESIGN DISCHARGE	= 23.7	CFS
DESIGN HW ELEVATION	= 6.0	FT
100 YEAR DISCHARGE	= 25.9	CFS
100 YEAR HW ELEVATION	= 6.2	FT
OVERTOPPING FREQUENCY	= 100+	YR
OVERTOPPING DISCHARGE	= 36.0	CFS
OVERTOPPING ELEVATION	= 7.2	FT

PIPE HYDRAULIC DATA
2@36" RCP Sta.28+00

DRAINAGE AREA	= 0.14	SQ.MI.
DESIGN FREQUENCY	= 50	YR
DESIGN DISCHARGE	= 96	CFS
DESIGN HW ELEVATION	= 3.7	FT
100 YEAR DISCHARGE	= 115	CFS
100 YEAR HW ELEVATION	= 3.7	FT
OVERTOPPING FREQUENCY	= 5-	YR
OVERTOPPING DISCHARGE	= 43.1	CFS
OVERTOPPING ELEVATION	= 3.7	FT

PI = 17+35.00
EL = 8.83'
VC = 180'
K = 818

GUMBERRY RD (SR 1142)

PI = 20+60.00
EL = 7.70'
VC = 180'
K = 1553

0% SE LT

PI = 28+25.00
EL = 5.92'
VC = 180'
K = 509

0% SE LT

BEGIN DITCH LT
STA= 19+50.00
EL= 4.91'

PI =20+50.00
EI = 4.01

END DITCH LT
STA= 20+93.00
EL= 3.42'

BEGIN DITCH LT
STA= 21+55.00
EL= 3.97'

PI =24+00.00
EI = 4.38

BEGIN DITCH LT
STA= 27+00.00
EL= 2.63'

END DITCH RT
STA= 27+82.00
EL= 0.99'

PI =28+00.00
EI = 1.10

PI =28+50.00
EI = 2.00

END DITCH LT
STA= 29+00.00
EL= 3.71'

BEGIN DITCH RT
STA= 30+24.00
EL= 2.84'

PROPOSED GRADE

END DITCH LT
STA= 24+50.00
EL= 4.08'

EXISTING GROUND

(-)0.3492%
(+)0.3492%
(-)0.2333%
(-)0.9%
(-)1.4%
(-)1.5%
(-)0.1%
(-)0.6%
(-)0.3%
(+)1.4%
(-)0.2333%
(+)0.1200%
(-)1.5%
(+)1.8%
(+)3.4%
(-)1.0%
(-)1.1%

BEGIN DITCH RT
STA= 19+50.00
EL= 5.10'

PI =20+93.00
EI = 2.93

BEGIN DITCH LT
STA= 30+00.00
EL= 3.40'

30" RCP

36" RCP

LEFT SIDE DITCH LINE

RIGHT SIDE DITCH LINE

SEE SHEET 5 FOR -L- PLAN

MATCHLINE SHEET 34 STA. 18+00.00

MATCHLINE SHEET 35 STA. 31+00.00

10 0 10 0

18 19 20 21 22 23 24 25 26 27 28 29 30 31

10/18/2024
R-5807 RDY_PFL_SHEETS.dgn
BRADSHAW

5/28/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BM2 ELEVATION = 7.00
N 949017 E 2835137
BL STATION 28+32.00 11 LEFT
CHISELED "X" ON FIRE HYDRANT

-L-
NC 343

PIPE HYDRAULIC DATA
1@24" RCP Sta. 31+28

DRAINAGE AREA	= 4.0	AC
DESIGN FREQUENCY	= 50	YR
DESIGN DISCHARGE	= 7.4	CFS
DESIGN HW ELEVATION	= 3.4	FT
100 YEAR DISCHARGE	= 8.1	CFS
100 YEAR HW ELEVATION	= 3.5	FT
OVERTOPPING FREQUENCY	= 100+	YR
OVERTOPPING DISCHARGE	= 8.5	CFS
OVERTOPPING ELEVATION	= 3.5	FT

PIPE HYDRAULIC DATA
1@30" RCP Sta. 38+33

DRAINAGE AREA	= 29.1	AC
DESIGN FREQUENCY	= 50	YR
DESIGN DISCHARGE	= 30.3	CFS
DESIGN HW ELEVATION	= 3.5	FT
100 YEAR DISCHARGE	= 33.5	CFS
100 YEAR HW ELEVATION	= 3.5	FT
OVERTOPPING FREQUENCY	= 5-	YR
OVERTOPPING DISCHARGE	= 17.1	CFS
OVERTOPPING ELEVATION	= 3.5	FT

MATCHLINE SHEET 34 STA. 31+00.00

PI = 35+00.00
EL = 6.72'
VC = 180'
K = 500

PI = 38+00.00
EL = 6.01'
VC = 180'
K = 347

PI = 41+20.00
EL = 6.89'
VC = 180'
K = 731

MATCHLINE SHEET 35 STA. 44+00.00

PI =31+28.00
EI = 1.99

PI =32+00.00
EI = 2.97

PI =32+00.00
EI = 2.97

BEGIN DITCH LT
STA= 36+00.00
EL= 3.31'

PROPOSED GRADE

BEGIN DITCH RT
STA= 37+50.00
EL= 2.91'

PI =38+21.00
EI = 1.30

PI =38+46.00
EI = 1.50

PI =39+00.00
EI = 2.45

PI =39+50.00
EI = 3.31

24" RCP

(+)0.1200%
(−)0.2400%
(−)0.2400%
(+)0.2781%
(+)0.2781%
(+)0.0320%

END DITCH LT
STA= 34+70.00
EL= 3.51'
END DITCH RT
STA= 34+70.00
EL= 3.51'

EXISTING GROUND

(−) 1.1%
(−) 1.0%
(+) 1.4%
(+) 1.6%
(+) 0.2%
(+) 0.2%
(−) 0.2%
(−) 1.1%
(−) 2.4%
(+) 1.6%
(+) 1.8%
(+) 0.1%
(+) 0.1%

PI =31+28.00
EI = 1.80

PI =37+00.00
EI = 3.11

30" RCP

SEE SHEET 6 FOR -L- PLAN

MATCHLINE SHEET 35 STA. 44+00.00

MATCHLINE SHEET 36 STA. 57+00.00

0 10 31 32 33 34 35 36 37 38 39 40 41 42 43 44

BM3 ELEVATION = 6.63
N 947260 E 2836231
BL STATION 49+02.00 29 RIGHT
CHISELED "X" ON FIRE HYDRANT

-L-
NC 343

PIPE HYDRAULIC DATA
2@30" RCP Sta. 56+68

DRAINAGE AREA	= 0.2	SQ.MI.
DESIGN FREQUENCY	= 50	YR
DESIGN DISCHARGE	= 125	CFS
DESIGN HW ELEVATION	= 4.2	FT
100 YEAR DISCHARGE	= 148	CFS
100 YEAR HW ELEVATION	= 4.2	FT
OVERTOPPING FREQUENCY	= 10-	YR
OVERTOPPING DISCHARGE	= 59.7	CFS
OVERTOPPING ELEVATION	= 4.2	FT

MATCHLINE SHEET 35 STA. 44+00.00

PI = 46+43.00
EI = 3.38

PI = 49+80.00
EL = 7.17'
VC = 180'
K = 15891

END DITCH RT
STA= 44+72.00
EL= 3.83'

BEGIN DITCH RT
STA= 45+00.00
EL= 4.44'

END DITCH LT
STA= 48+43.00
EL= 5.00'

BEGIN DITCH LT
STA= 48+50.00
EL= 4.15'

PROPOSED GRADE

PI =51+78.00
EI = 4.08

PI = 53+30.00
EL = 7.24'
VC = 180'
K = 561

0% SE
RT

PI = 56+30.00
EL = 6.34'
VC = 180'
K = 495

END DITCH RT
STA= 55+17.00
EL= 3.75'

(+)0.0320%
(+)0.0206%
(+)0.0206%
(−)0.3000%
(−)0.3000%
(+)0.0636%

EXISTING GROUND

(+) 0.1%
(−) 0.1%
(+) 0.1%
(+) 3.8%
(+) 0.0%
(−) 0.8%
(+) 0.3%
(−) 0.1%
(−) 0.8%
(+) 0.4%

PI =49+00.00
EI = 3.73

PI =48+00.00
EI = 3.35

PI =49+50.00
EI = 3.40

PI =53+50.00
EI = 3.28

PI =56+67.00
EI = 0.70

30" RCP

LEFT SIDE DITCH LINE

RIGHT SIDE DITCH LINE

SEE SHEET 7 FOR -L- PLAN

MATCHLINE SHEET 36 STA. 57+00.00

0 10 44 45 46 47 48 49 50 51 52 53 54 55 56 57

10/18/2024
R-5807_RDY_PFL_SHEETS.dgn
jcarlson

5/28/99

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	36
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- NC 343

PIPE HYDRAULIC DATA
I@30" RCP Sta.64+65

DRAINAGE AREA	= 5.4	AC
DESIGN FREQUENCY	= 50	YR
DESIGN DISCHARGE	= 12.2	CFS
DESIGN HW ELEVATION	= 4.2	FT
100 YEAR DISCHARGE	= 13.3	CFS
100 YEAR HW ELEVATION	= 4.2	FT
OVERTOPPING FREQUENCY	= 5-	YR
OVERTOPPING DISCHARGE	= 1.0	CFS
OVERTOPPING ELEVATION	= 4.2	FT

MATCHLINE SHEET 35 STA. 57+00.00

PI = 56+30.00
EL = 6.34'
VC = 180'
K = 495

-Y1- SEYMOUR DR (SR 1138)

-L- STA.59+83.13
-Y1- STA.10+00.00

BEGIN DITCH RT
STA.= 60+25.00 -L- =
STA.= 10+50.00 -Y1-
EL= 5.51'

PI = 60+90.00
EL = 6.63'
VC = 180'
K = 720

END DITCH RT
STA.= 61+00.00
EL= 6.16'

BEGIN DITCH RT
STA.= 62+00.00
EL= 6.43'

PI =63+00.00
El = 4.91

PI =64+00.00
El = 4.71

PI =64+65.00
El = 3.50

0% SE RT

PI = 65+50.00
EL = 8.08'
VC = 180'
K = 312

PI = 68+00.00
EL = 7.42'
VC = 180'
K = 729

MATCHLINE SHEET 36 STA. 69+00.00

PROPOSED GRADE
EXISTING GROUND
30" RCP

(+)0.0636%
(+)0.3138%
(-)1.45%
(-)0.2%
(-)1.9%
(+)0.3138%
(-)0.2634%
(-)0.2634%
(-)0.0164%
(+) 0.9%
(+) 0.3%
(+) 0.1%
(+) 0.2%
(+) 0.4%
(+) 0.1%
(+) 0.8%
(+) 0.3%

PI =58+00.00
El = 1.21

PI =60+00.00
El = 1.41

PI =61+00.00
El = 2.21

PI =62+50.00
El = 2.66

PI =65+00.00
El = 3.60

SEE SHEET 8 FOR -L- PLAN

57 58 59 60 61 62 63 64 65 66 67 68 69 70
10 0

-L- NC 343

PIPE HYDRAULIC DATA
I@18" RCP Sta.73+15

DRAINAGE AREA	= 8.3	AC
DESIGN FREQUENCY	= 50	YR
DESIGN DISCHARGE	= 13.8	CFS
DESIGN HW ELEVATION	= 4.2	FT
100 YEAR DISCHARGE	= 15.1	CFS
100 YEAR HW ELEVATION	= 4.2	FT
OVERTOPPING FREQUENCY	= 5-	YR
OVERTOPPING DISCHARGE	= 1.0	CFS
OVERTOPPING ELEVATION	= 4.2	FT

MATCHLINE SHEET 36 STA. 69+00.00

PI =69+86.00
El = 4.13

PI =71+00.00
El = 4.20

PROPOSED GRADE
EXISTING GROUND

(+) 0.2%
(-) 0.9%
(+) 0.1%
(-) 0.4%
(+) 0.0%
(-) 0.2%
(-) 0.5%
(+) 0.4%
(-)0.0164%
(+)0.3000%
(+)0.3000%
(-)0.0667%
(+) 0.1%

PI =70+00.00
El = 4.00

PI =70+50.00
El = 3.80

PI =72+50.00
El = 3.90

END DITCH LT
STA= 71+50.00
EL= 3.80'

18" RCP

PI =73+15.00
El = 3.60

PI =74+00.00
El = 3.96

BM4 ELEVATION = 10.44
N 946768 E 2838397
BL STATION 72+35.00 33 RIGHT
CHISELED "X" ON FIRE HYDRANT

PI = 75+30.00
EL = 7.30'
VC = 180'
K = 569

0% SE LT

PI = 80+30.00
EL = 8.80'
VC = 180'
K = 491

MATCHLINE SHEET 37 STA. 81+00.00

---------- LEFT SIDE DITCH LINE
-------- RIGHT SIDE DITCH LINE

SEE SHEET 9 FOR -L- PLAN

69 70 71 72 73 74 75 76 77 78 79 80 81
10 0

10/18/2024
R-5807_RDY_PFL_SHEETS.dgn
ROADUSER

5/28/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	37
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- NC 343

PIPE HYDRAULIC DATA

1@24" RCP Sta. 89+18

DRAINAGE AREA	= 8.7	AC
DESIGN FREQUENCY	= 50	YR
DESIGN DISCHARGE	= 15.5	CFS
DESIGN HW ELEVATION	= 5.2	FT
100 YEAR DISCHARGE	= 17.0	CFS
100 YEAR HW ELEVATION	= 5.2	FT
OVERTOPPING FREQUENCY	= 10-	YR
OVERTOPPING DISCHARGE	= 11.5	CFS
OVERTOPPING ELEVATION	= 5.2	FT

MATCHLINE SHEET 36 STA. 81+00.00

PI = 84+20.00
EL = 8.54'
VC = 180'
K = 1778

0% SE LT

BEGIN DITCH LT
STA= 81+50.00
EL= 5.58'

END DITCH LT
STA= 82+83.00
EL= 5.50'

BEGIN DITCH LT
STA= 82+90.00
EL= 5.77'

(-)0.0667%

(-)0.1679%

(-) 0.1%

(+) 0.1%

(-) 0.2%

EXISTING GROUND

PROPOSED GRADE

PI =83+36.00
EI = 4.80

PI =88+00.00
EI = 4.75

PI =88+00.00
EI = 3.67

(-) 1.4%

(-) 0.4%

PI =89+18.00
EI = 3.40

24" RCP

PI =89+50.00
EI = 3.07

(+) 0.1%

-Y2-
IVY NECK RD (SR 1136)

END DITCH LT
STA= 89+61.00 -L- =
STA= 11+75.00 -Y2-
EL= 3.46'
-L- STA.89+94.27
-Y2- STA.12+05.59

(-)0.1679%

(+)0.0146%

BEGIN DITCH LT
STA= 90+35.00 -L- =
STA= 11+65.00 -Y2-
EL= 3.97'

PI =90+50.00
EI = 3.94

(-) 0.2%

(-) 0.1%

PI =93+50.00
EI = 3.64

(-) 0.1%

(-) 0.1%

SEE SHEET 10 FOR -L- PLAN

MATCHLINE SHEET 37 STA. 94+00.00

10 0

81 82 83 84 85 86 87 88 89 90 91 92 93 94

-L- NC 343

MATCHLINE SHEET 37 STA. 94+00.00

BM5 ELEVATION = 6.59
N 945652 E 2840158
BL STATION 15+27.00 31 LEFT
SET ROD & CAP

PI = 95+80.00
EL = 7.74'
VC = 180'
K = 4236

PI = 98+40.00
EL = 7.89'
VC = 180'
K = 1177

PI = 102+00.00
EL = 7.55'
VC = 180'
K = 5865

BEGIN UNDERCUT EXCAVATION
-L- STA. 101+75

END UNDERCUT EXCAVATION
-L- STA. 104+25

PROPOSED GRADE

(+)0.0146%

(+)0.0571%

(+)0.0571%

(-)0.0959%

(-)0.0959%

(-)0.0652%

EXISTING GROUND

(-) 0.1%

(-) 0.1%

PI =105+00.00
EI = 2.30

PI =106+00.00
EI = 3.02
(-) 0.3%

UNDERCUT EXCAVATION

LEFT SIDE DITCH LINE

RIGHT SIDE DITCH LINE

SEE SHEET 11 FOR -L- PLAN

MATCHLINE SHEET 38 STA. 106+00.00

10 0

94 95 96 97 98 99 100 101 102 103 104 105 106

10/18/2024
R-5807 RDY_PFL_SHEETS.dgn
ROADSTER

5/28/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111

NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	38
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PIPE HYDRAULIC DATA

2@48" RCP Sta.106+54

DRAINAGE AREA	= 0.29	SQ.MI.
DESIGN FREQUENCY	= 50	YR
DESIGN DISCHARGE	= 150	CFS
DESIGN HW ELEVATION	= 4.8	FT
100 YEAR DISCHARGE	= 180	CFS
100 YEAR HW ELEVATION	= 4.8	FT
OVERTOPPING FREQUENCY	= 10-	YR
OVERTOPPING DISCHARGE	= 67.1	CFS
OVERTOPPING ELEVATION	= 4.8	FT

-L-
NC 343

MATCHLINE SHEET 37 STA. 106+00.00

MATCHLINE SHEET 38 STA. 119+00.00

0% SE RT

PI =106+00.00
EI = 3.02'

PI =106+18.00
EI = 2.00'

48" RCP

END DITCH LT
STA= 106+85.00
EL= 0.70'

(-) 0.3%

(-) 2.7%

BEGIN DITCH LT
STA= 108+66.00
EL= 2.67'

PI = 109+60.00
EL = 7.05'
VC = 180'
K = 1225

(+)0.0652%

(+)0.0818%

(+) 0.3%

(+) 0.1%

PI =111+00.00
EI = 2.90

0% SE RT

PI =112+00.00
EI = 3.57

(+) 0.3%

PI =112+50.00
EI = 3.35

PROPOSED GRADE

EXISTING GROUND

(+) 0.1%

(+) 0.1%

SEE SHEET 12 FOR -L- PLAN

106 107 108 109 110 111 112 113 114 115 116 117 118 119

-L-
NC 343

BM6 ELEVATION - 7.33
N 944060 E 2842687
BL STATION 123+47.00 35 RIGHT
SET ROD & CAP

SAND HILLS RD (SR 1132)

PI = 120+60.00
EL = 7.95'
VC = 180'
K = 3213

PI = 124+30.00
EL = 8.46'
VC = 180'
K = 411

0% SE RT

PI = 126+50.00
EL = 7.80'
VC = 180'
K = 758

PI = 130+50.00
EL = 7.55'
VC = 180'
K = 9164

PI =125+50.00
EI = 4.92

PI =126+50.00
EI = 5.92

PI =127+50.00
EI = 4.92

END DITCH LT
STA= 129+25.00
EL= 5.03'

BEGIN DITCH RT
STA= 129+83.00
EL= 5.32'

(+)0.0818%

(+)0.1378%

(+)0.1378%

(-)0.3000%

(-)0.3000%

(-)0.0625%

(-)1.0%

(+) 1.0%

(-)0.0625%

(-)0.0429%

(-) 0.1%

(-) 0.1%

(+) 0.1%

EXISTING GROUND

(+) 0.1%

(-) 0.2%

END DITCH RT
STA= 128+70.00
EL= 4.70'

BEGIN DITCH LT
STA= 129+63.00
EL= 5.27'

LEFT SIDE DITCH LINE

RIGHT SIDE DITCH LINE

SEE SHEET 13 FOR -L- PLAN

MATCHLINE SHEET 38 STA. 119+00.00

MATCHLINE SHEET 39 STA. 131+00.00

10 0

119 120 121 122 123 124 125 126 127 128 129 130 131

10/18/2024
R-5807_RDY_PFL_SHEETS.dgn
ROADUSER

5/28/99

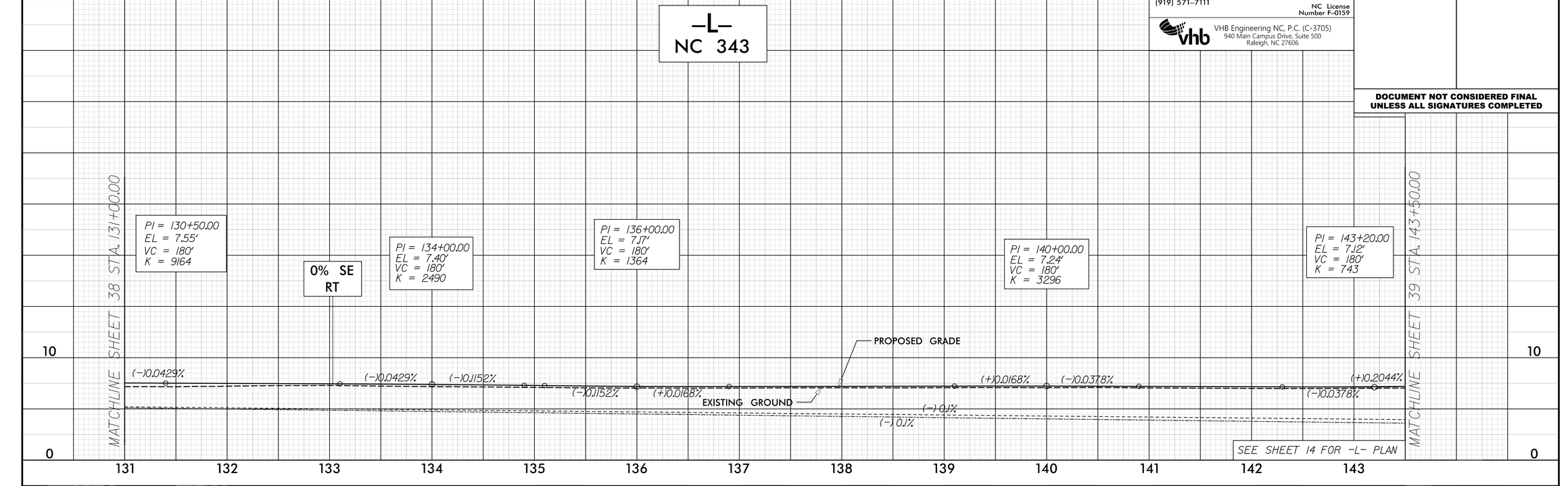
LOCHNER

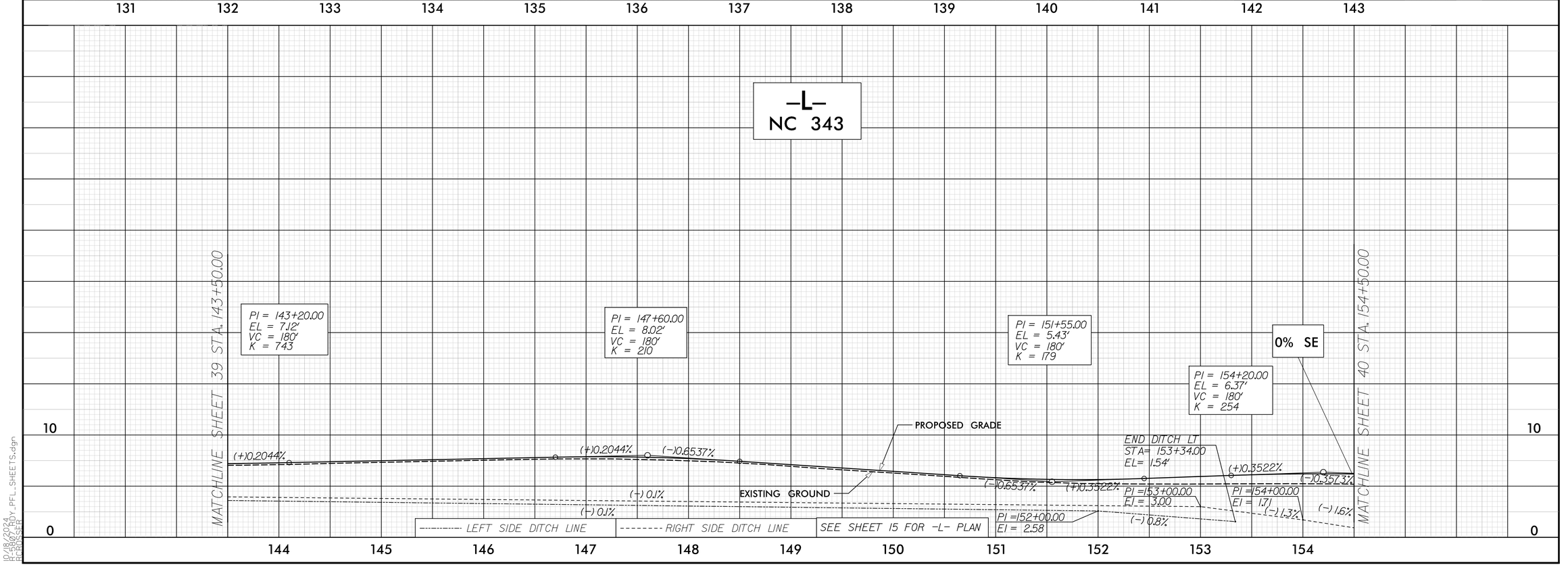
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	39
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED





10/18/2024
R-5807_RDY_PFL_SHEETS.dgn
ROADSTER

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111

NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	40
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- NC 343

BM7 ELEVATION = 4.81
N 943904 E 2845314
BL STATION 149+78.00 5 RIGHT
SET MAGNAIL

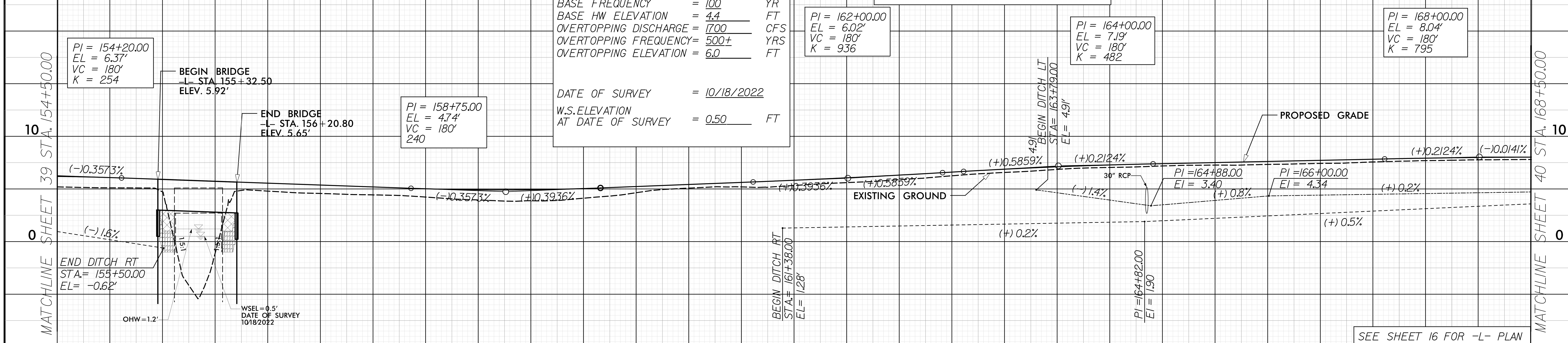
BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	800	CFS
DESIGN FREQUENCY	=	50	YR
DESIGN HW ELEVATION	=	3.3	FT
BASE DISCHARGE	=	1192	CFS
BASE FREQUENCY	=	100	YR
BASE HW ELEVATION	=	4.4	FT
OVERTOPPING DISCHARGE	=	1700	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	6.0	FT
DATE OF SURVEY	=	10/18/2022	
W.S.ELEVATION AT DATE OF SURVEY	=	0.50	FT

PIPE HYDRAULIC DATA

1@30" RCP Sta.164+84

DRAINAGE AREA	=	36J	AC
DESIGN FREQUENCY	=	50	YR
DESIGN DISCHARGE	=	33.8	CFS
DESIGN HW ELEVATION	=	4.9	FT
100 YEAR DISCHARGE	=	37.3	CFS
100 YEAR HW ELEVATION	=	4.9	FT
OVERTOPPING FREQUENCY	=	10-	YR
OVERTOPPING DISCHARGE	=	10.8	CFS
OVERTOPPING ELEVATION	=	4.9	FT



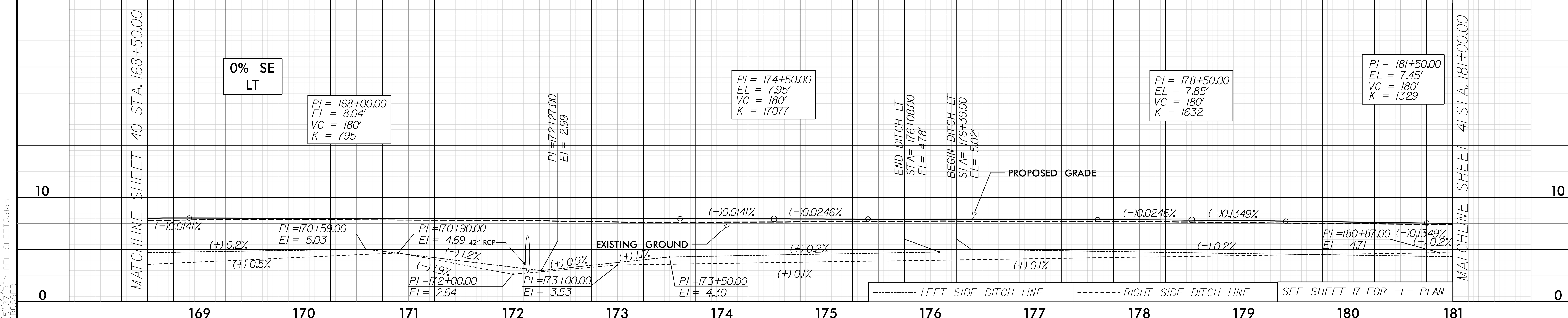
PIPE HYDRAULIC DATA

1@42" RCP Sta.172+14

DRAINAGE AREA	=	13J	AC
DESIGN FREQUENCY	=	50	YR
DESIGN DISCHARGE	=	13.0	CFS
DESIGN HW ELEVATION	=	4.7	FT
100 YEAR DISCHARGE	=	14.3	CFS
100 YEAR HW ELEVATION	=	4.8	FT
OVERTOPPING FREQUENCY	=	100+	YR
OVERTOPPING DISCHARGE	=	17.4	CFS
OVERTOPPING ELEVATION	=	5.0	FT

-L- NC 343

BM8 ELEVATION = 7.62
N 943241 E 2846881
BL STATION 167+27.00 41 RIGHT
CHISELED 'X' ON FIRE HYDRANT



5/28/99

10/18/2024
R-5807_RDY_PFL_SHEETS.dgn

5/28/99

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	41
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- NC 343

PIPE HYDRAULIC DATA

1@24" RCP Sta.184+28

DRAINAGE AREA	= 27.9	AC
DESIGN FREQUENCY	= 50	YR
DESIGN DISCHARGE	= 28.5	CFS
DESIGN HW ELEVATION	= 6.7	FT
100 YEAR DISCHARGE	= 31.5	CFS
100 YEAR HW ELEVATION	= 6.7	FT
OVERTOPPING FREQUENCY	= 10+	YR
OVERTOPPING DISCHARGE	= 22.8	CFS
OVERTOPPING ELEVATION	= 6.7	FT

PI = 181+50.00
EL = 7.45'
VC = 180'
K = 1329

PI = 186+10.00
EL = 7.45'
VC = 180'
K = 4597

PI = 188+70.00
EL = 7.35'
VC = 180'
K = 2106

0% SE LT

PI = 193+25.00
EL = 7.56'
VC = 180'
K = 3342

END DITCH RT
STA.= 184+00.00
EL= 3.73'

BEGIN DITCH RT
STA.= 185+00.00
EL= 3.22'

PROPOSED GRADE

EXISTING GROUND

24" RCP

(-)0.1349% (+)0.0006% (-)0.0386% (+)0.0469% (+)0.0469%

(-) 0.2% (-) 0.2% (-) 0.6% (-) 0.7% (+) 0.3% (+) 0.1% (+) 0.1%

PI =183+00.00
EI = 4.28

PI =183+50.00
EI = 3.95

PI =184+55.00
EI = 3.25

PI =186+00.00
EI = 3.47

MATCHLINE SHEET 40 STA. 181+00.00

MATCHLINE SHEET 41 STA. 193+50.00

SEE SHEET 18 FOR -L- PLAN

10 / 0

181 182 183 184 185 186 187 188 189 190 191 192 193

BM9 ELEVATION = 7.33
N 941996 E 2848620
BL STATION 188+71.00 16 RIGHT
CHISELED "X" ON FIRE HYDRANT

-L- NC 343

PI = 193+25.00
EL = 7.56'
VC = 180'
K = 3342

-Y3- SMILL DAM RD (SR 1129)

-Y3- STA.194+55.17
-Y3- STA.10+00.00

END DITCH LT
STA= 194+90.00
EL= 4.77'

PALMER RD (SR 1121)

PI = 201+25.00
EL = 7.51'
VC = 180'
K = 1538

PROPOSED GRADE

EXISTING GROUND

0% SE LT

BEGIN DITCH LT
STA= 203+19.00
EL= 4.48'

PI = 206+50.00
EL = 6.86'
VC = 180'
K = 728

(-)0.0070% (-)0.0070% (-)0.1241% (-)0.1241%

(+) 0.1% (+) 0.1% (-) 0.2% (-) 0.3%

END DITCH RT
STA.= 193+96.00
EL= 4.30'

BEGIN DITCH RT
STA.= 195+00.00
EL= 4.97'

LEFT SIDE DITCH LINE RIGHT SIDE DITCH LINE

MATCHLINE SHEET 41 STA. 193+50.00

MATCHLINE SHEET 42 STA. 206+00.00

SEE SHEET 19 FOR -L- PLAN

10 / 0

194 195 196 197 198 199 200 201 202 203 204 205 206

10/18/2024
R-5807_RDY_PFL_SHEETS.dgn
ROADWAY

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	42
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

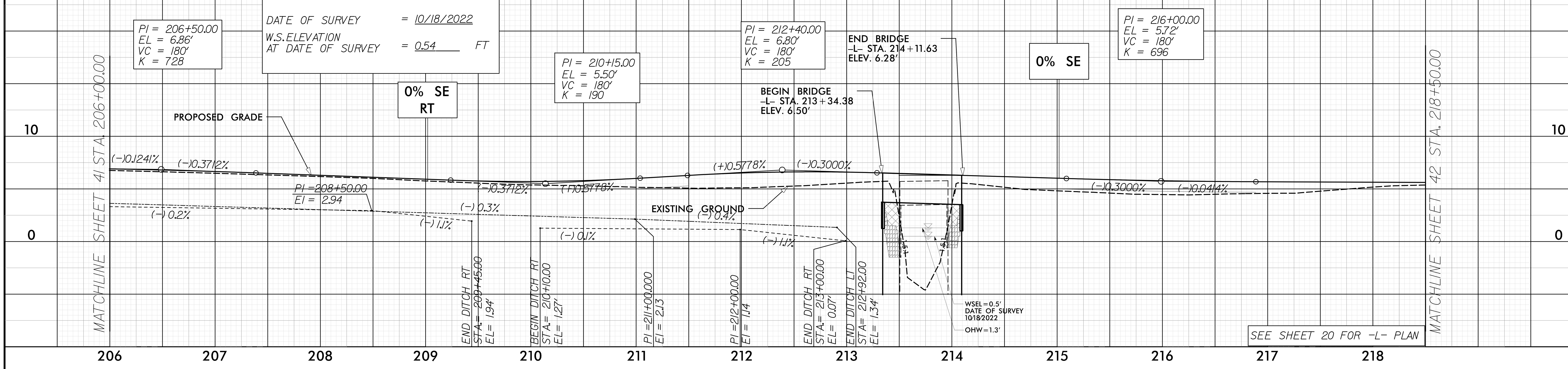
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	850	CFS
DESIGN FREQUENCY	=	50	YR
DESIGN HW ELEVATION	=	2.9	FT
BASE DISCHARGE	=	1100	CFS
BASE FREQUENCY	=	100	YR
BASE HW ELEVATION	=	3.5	FT
OVERTOPPING DISCHARGE	=	2300	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	5.7	FT
DATE OF SURVEY	=	10/18/2022	
W.S.ELEVATION AT DATE OF SURVEY	=	0.54	FT

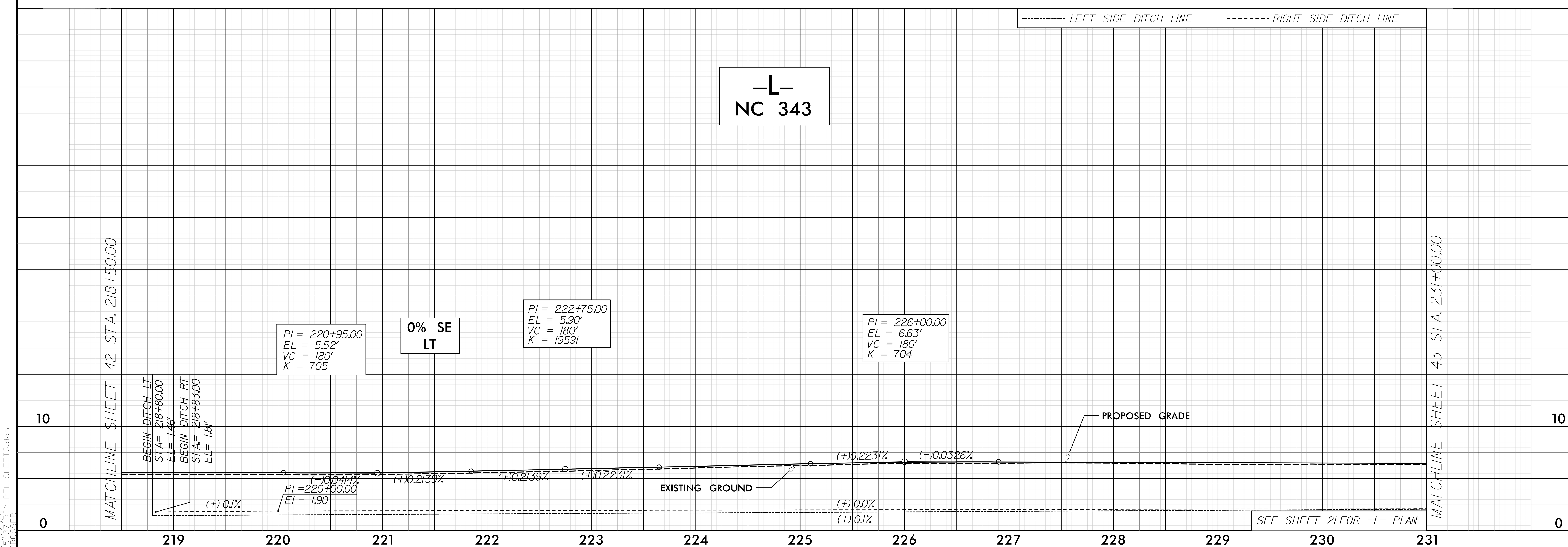
BM10 ELEVATION = 5.19
N 940631 E 2849892
BL STATION 207+46.00 20 LEFT
NCGS BM-CAM9

-L-
NC 343


PI = 206+50.00
EL = 6.86'
VC = 180'
K = 728
0% SE
RT
PI = 210+15.00
EL = 5.50'
VC = 180'
K = 190
PI = 212+40.00
EL = 6.80'
VC = 180'
K = 205
END BRIDGE
-L- STA. 214+11.63
ELEV. 6.28'
BEGIN BRIDGE
-L- STA. 213+34.38
ELEV. 6.50'
0% SE
PI = 216+00.00
EL = 5.72'
VC = 180'
K = 696
PROPOSED GRADE
EXISTING GROUND
(-)0.1241%
(-)0.3712%
(-)0.3712%
(+)0.5778%
(+)0.5778%
(-)0.3000%
(-)0.3000%
(-)0.0414%
PI = 208+50.00
El = 2.94
(-) 0.2%
(-) 0.3%
(-) 1.1%
(-) 0.1%
(-) 0.4%
(-) 1.1%
END DITCH RT STA= 209+45.00 EL= 1.94'
BEGIN DITCH RT STA= 210+10.00 EL= 1.27'
PI = 211+00.000 El = 2.13
PI = 212+00.00 El = 1.14
END DITCH RT STA= 213+00.00 EL= 0.07'
END DITCH LT STA= 212+92.00 EL= 1.34'
WSEL=0.5'
DATE OF SURVEY
10/18/2022
OHW=1.3'
MATCHLINE SHEET 41 STA. 206+00.00
MATCHLINE SHEET 42 STA. 218+50.00
SEE SHEET 20 FOR -L- PLAN
10
0
206
207
208
209
210
211
212
213
214
215
216
217
218

LEFT SIDE DITCH LINE
RIGHT SIDE DITCH LINE

-L-
NC 343


PI = 220+95.00
EL = 5.52'
VC = 180'
K = 705
0% SE
LT
PI = 222+75.00
EL = 5.90'
VC = 180'
K = 19591
PI = 226+00.00
EL = 6.63'
VC = 180'
K = 704
PROPOSED GRADE
EXISTING GROUND
BEGIN DITCH LT STA= 218+80.00 EL= 1.46'
BEGIN DITCH RT STA= 218+83.00 EL= 1.81'
(-)0.0414%
(+)0.2139%
(+)0.2139%
(+)0.2231%
(+)0.2231%
(-)0.0326%
PI = 220+00.00
El = 1.90
(+) 0.1%
(+) 0.0%
(+) 0.1%
MATCHLINE SHEET 42 STA. 218+50.00
MATCHLINE SHEET 43 STA. 231+00.00
SEE SHEET 21 FOR -L- PLAN
10
0
219
220
221
222
223
224
225
226
227
228
229
230
231

5/28/99
10/18/2024
R5807_RDY_PFL_SHEETS.dgn

5/28/99

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	43
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BM11 ELEVATION = 6.12
N 938679 E 2851334
BL STATION 231+79.00 11 LEFT
SET ROD & CAP

-L-
NC 343

PIPE HYDRAULIC DATA

1@24" RCP Sta. 242+23

DRAINAGE AREA	= 13.8	AC
DESIGN FREQUENCY	= 50	YR
DESIGN DISCHARGE	= 17.6	CFS
DESIGN HW ELEVATION	= 2.7	FT
100 YEAR DISCHARGE	= 19.3	CFS
100 YEAR HW ELEVATION	= 2.7	FT
OVERTOPPING FREQUENCY	= 5-	YR
OVERTOPPING DISCHARGE	= 4.2	CFS
OVERTOPPING ELEVATION	= 2.7	FT

PERKINS RD (SR 1128)

MATCHLINE SHEET 42 STA. 231+00.00

PI = 232+45.00
EL = 6.42'
VC = 180'
K = 631

PI = 235+80.00
EL = 7.26'
VC = 180'
K = 364

0% SE LT

PI = 240+90.00
EL = 6.03'
VC = 180'
K = 668

PI =240+00.00
EI = 2.30'

PROPOSED GRADE

END DITCH LT
STA= 239+75.00
EL= 2.50'

BEGIN DITCH LT
STA= 241+50.00
EL= 2.67'

PI =242+23.00
EI = 1.80'
PI =242+23.00
EI = 1.30'

PI =243+00.00
EI = 2.30'
PI =243+00.00
EI = 1.80'

EXISTING GROUND

(-)0.0326% (+)0.2527% (+)0.2527% (-)0.2415% (-)0.2415% (+)0.0281% (+) 0.0% (+) 0.1% (-) 0.5% (+) 0.6% (+) 0.6% (+) 0.2% (+) 0.1% (-) 2.4%

24" RCP

SEE SHEET 22 FOR -L- PLAN

MATCHLINE SHEET 43 STA. 244+00.00

10 0

231 232 233 234 235 236 237 238 239 240 241 242 243 244

-L-
NC 343

MATCHLINE SHEET 43 STA. 244+00.00

0% SE LT

END DITCH LT
STA= 248+25.00
EL= 3.09'

BEGIN DITCH LT
STA= 249+50.00
EL= 3.10'

PI = 251+50.00
EL = 6.33'
VC = 180'
K = 2568

PI = 255+00.00
EL = 6.18'
VC = 180'
K = 531

PROPOSED GRADE

EXISTING GROUND

PI =248+50.00
EI = 2.35'

PI =250+25.00
EI = 2.53'

(+) 0.2% (+)0.1% (+) 0.1% (+)0.028% (-)0.0420% (-)0.0420% (-)0.3808% (-) 0.1%

LEFT SIDE DITCH LINE

RIGHT SIDE DITCH LINE

SEE SHEET 23 FOR -L- PLAN

MATCHLINE SHEET 44 STA. 256+50.00

10 0

244 245 246 247 248 249 250 251 252 253 254 255 256

10/18/2024
R-5807_RDY_PFL_SHEETS.dgn
ROADWAY

5/28/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	44
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PIPE HYDRAULIC DATA

2@30" RCP Sta. 261+58

DRAINAGE AREA	= 0.20	SQ.MI.
DESIGN FREQUENCY	= 50	YR
DESIGN DISCHARGE	= 120	CFS
DESIGN HW ELEVATION	= 2.2	FT
100 YEAR DISCHARGE	= 144	CFS
100 YEAR HW ELEVATION	= 2.2	FT
OVERTOPPING FREQUENCY	= 10-	YR
OVERTOPPING DISCHARGE	= 44.9	CFS
OVERTOPPING ELEVATION	= 3.2	FT

-L-
NC 343

BM12 ELEVATION = 4.30
N 936264 E 2851547
BL STATION 256+31.00 64 RIGHT
CHISELED "X" ON FIRE HYDRANT

MATCHLINE SHEET 43 STA. 256+50.00

0% SE RT

PI = 260+00.00
EL = 4.28'
VC = 180'
K = 468

PI = 264+50.00
EL = 4.29'
VC = 180'
K = 608

0% SE RT

PI = 266+50.00
EL = 4.89'
VC = 180'
K = 1583

PI =259+50.00
EI = 1.60'

PI =260+50.00
EI = 0.50'

PI =260+50.00
EI = 0.90'

END DITCH RT
STA.= 261+56.00
EL= -0.15'

PI =261+59.00
EI = -0.05'

PI =264+00.00
EI = 1.00'

PI =266+50.00
EI = 1.15'

PI =268+50.00
EI = 2.06'

PROPOSED GRADE

EXISTING GROUND

30" RCP

BEGIN DITCH RT
STA.= 262+25.00
EL= 0.65'

(-) 0.1%
(-) 0.2%
(-)0.3808%
(+)0.0039%
(-) 1.1%
(-) 0.9%
(-) 0.6%
(+) 0.3%
(+) 0.2%
(+)0.0039%
(+) 0.1%
(+)0.3000%
(+) 0.1%
(+)0.3000%
(+)0.1863%
(+) 0.3%
(+) 0.1%

10
0

257 258 259 260 261 262 263 264 265 266 267 268 269

SEE SHEET 24 FOR -L- PLAN

MATCHLINE SHEET 44 STA. 269+00.00

MATCHLINE SHEET 44 STA. 269+00.00

PI =270+00.00
EI = 2.20'

PI = 276+00.00
EL = 6.67'
VC = 180'
K = 757

-L-
NC 343

JORDAN LN (SR 1165)

PI =280+50.00
EI = 3.26'

PI =281+00.00
EI = 4.50'

PROPOSED GRADE

EXISTING GROUND

(+) 0.3%
(+) 0.0%
(+) 0.1%
(+) 0.0%
(+)0.1863%
(-)0.0514%
(+) 3.0%
(-) 1.4%
(+) 0.1%
(-) 0.1%
(+) 2.5%

PI =275+00.00
EI = 2.20'

PI =275+50.00
EI = 3.70'

PI =276+00.00
EI = 3.00'

LEFT SIDE DITCH LINE
RIGHT SIDE DITCH LINE

10
0

269 270 271 272 273 274 275 276 277 278 279 280 281

SEE SHEET 25 FOR -L- PLAN

MATCHLINE SHEET 45 STA. 281+00.00

10/18/2024
R-5807_RDY_PFL_SHEETS.dgn
ROADUSER

5/28/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111

NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	45
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BM13 ELEVATION = 7.25
N 934022 E 2852253
BL STATION 10+14.00 19 RIGHT
CHISELED "X" ON FIRE HYDRANT

-L-
NC 343

PIPE HYDRAULIC DATA
1@24" RCP *Sta. 284+86*

DRAINAGE AREA	= 8.8	AC
DESIGN FREQUENCY	= 50	YR
DESIGN DISCHARGE	= 10.5	CFS
DESIGN HW ELEVATION	= 4.3	FT
100 YEAR DISCHARGE	= 11.5	CFS
100 YEAR HW ELEVATION	= 4.4	FT
OVERTOPPING FREQUENCY	= 100+	YR
OVERTOPPING DISCHARGE	= 12.7	CFS
OVERTOPPING ELEVATION	= 4.5	FT

PI = 283+00.00
EL = 6.30'
VC = 180'
K = 622

PI = 287+50.00
EL = 7.38'
VC = 180'
K = 325

0% SE RT

BEGIN UNDERCUT EXCAVATION -L- STA. 286+25

END UNDERCUT EXCAVATION -L- STA. 289+25

PROPOSED GRADE

EXISTING GROUND

MATCHLINE SHEET 44 STA. 281+00.00

MATCHLINE SHEET 45 STA. 293+00.00

PI =281+00.00 EI = 4.50'
PI =281+50.00 EI = 3.60'
PI =283+00.00 EI = 2.30'
END DITCH RT STA.= 284+25.00 EL= 2.05'
PI =284+80.00 EI = 2.58'
BEGIN DITCH RT STA.= 287+00.00 EL= -0.18'
PI =287+00.00 EI = 4.01'
PI =287+37.00 EI = 4.80'
PI =288+00.00 EI = 3.00'
PI =293+00.00 EI = -0.44'

(-) 1.8%
(-) 0.514%
(+) 0.2379%
(-) 0.3%
(-) 0.1%
(-) 0.2%
24" RCP
(+) 0.7%
(+) 2.1%
(-) 2.9%
(+) 0.2379%
(-) 0.3152%
(-) 0.3%
(-) 0.0%

UNDERCUT EXCAVATION

SEE SHEET 26 FOR -L- PLAN

10 0

281 282 283 284 285 286 287 288 289 290 291 292 293

-L-
NC 343

BM14 ELEVATION = 6.09
N 932625 E 2853264
BL STATION 297+38.00 25 RIGHT
SET ROD & CAP

PIPE HYDRAULIC DATA
2@54" RCP *Sta. 294+46*

DRAINAGE AREA	= 0.25	SQ. MI.
DESIGN FREQUENCY	= 50	YR
DESIGN DISCHARGE	= 137	CFS
DESIGN HW ELEVATION	= 3.1	FT
100 YEAR DISCHARGE	= 165	CFS
100 YEAR HW ELEVATION	= 3.2	FT
OVERTOPPING FREQUENCY	= 100+	YR
OVERTOPPING DISCHARGE	= 176.5	CFS
OVERTOPPING ELEVATION	= 4.2	FT

PI = 294+30.00
EL = 5.23'
VC = 180'
K = 327

0% SE RT

PROPOSED GRADE

EXISTING GROUND

MATCHLINE SHEET 45 STA. 293+00.00

MATCHLINE SHEET 46 STA. 305+00.00

PI =293+00.00 EI = -0.44'
PI =293+50.00 EI = 1.08'
PI =294+46.00 EI = -2.2'
PI =294+46.00 EI = -0.80'
54" RCP
PI =296+00.00 EI = 1.32'
PI =296+00.00 EI = 1.02'
PI =299+32.00 EI = 2.00'
PI =299+35.00 EI = 2.00'
PI =300+00.00 EI = 3.43'
PI =300+50.00 EI = 3.75'
BEGIN DITCH RT STA.= 304+00.00 EL= 4.62'
END DITCH RT STA.= 301+50.00 EL= 3.88'

(-) 0.3152%
(+) 0.2357%
(-) 2.0%
(-) 1.2%
(+) 1.2%
(+) 2.3%
(+) 0.2%
(+) 0.3%
(+) 2.1%
(+) 1.5%
(+) 0.3%
(+) 0.1%
(+) 0.1%

LEFT SIDE DITCH LINE
RIGHT SIDE DITCH LINE

SEE SHEET 27 FOR -L- PLAN

10 0

293 294 295 296 297 298 299 300 301 302 303 304 305

10/18/2024
R-5807 RDY_PFL_SHEETS.dgn
rgrissett

5/28/99

LOCHNER

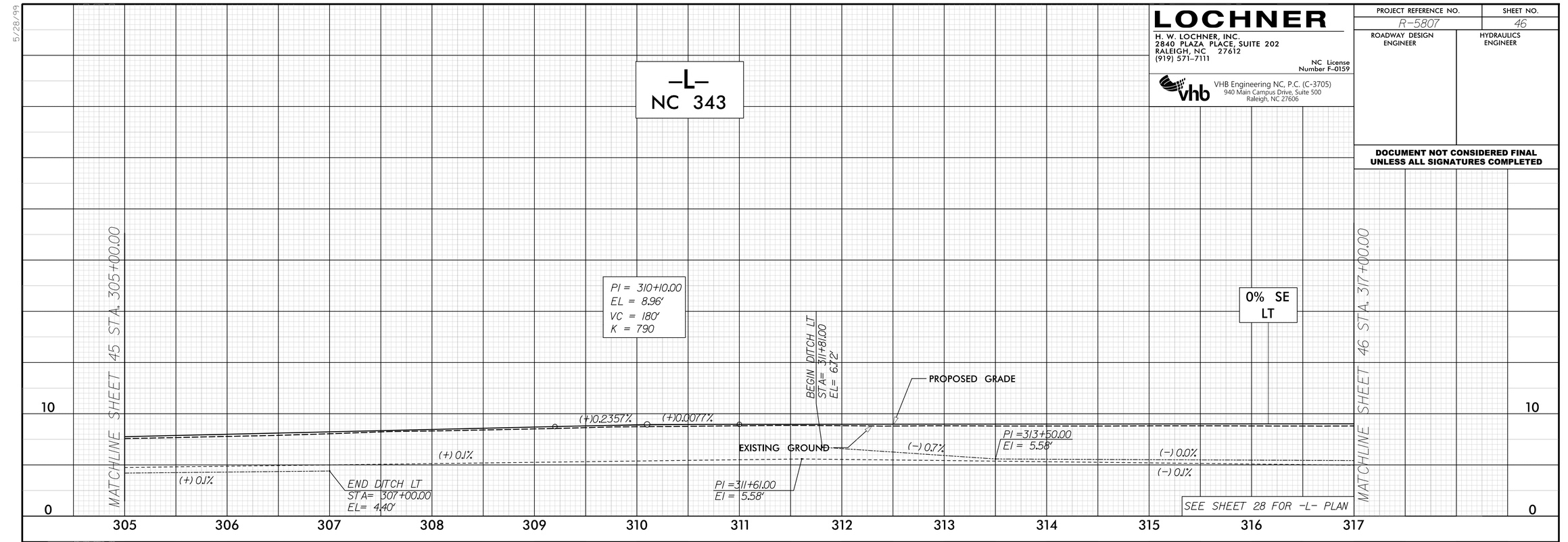
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111

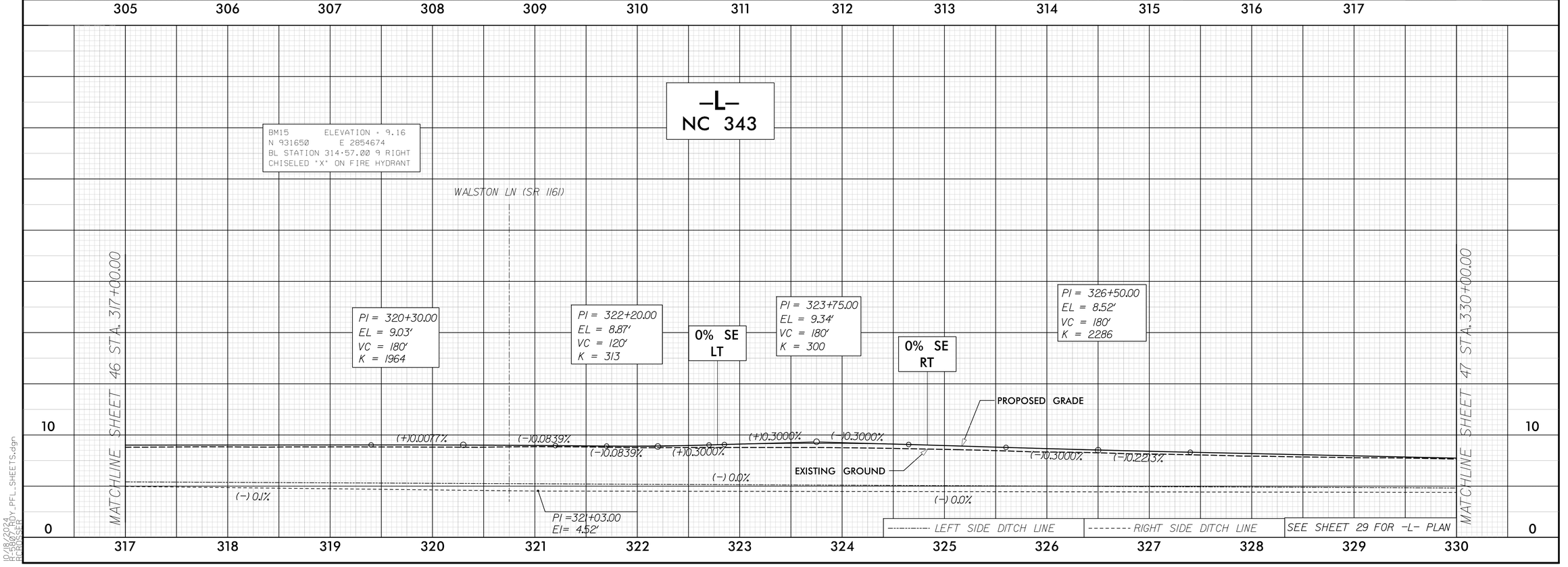
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	46
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED





10/18/2024
R-5807_RDY_PFL_SHEETS.dgn
ROADSIDE

5/28/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111

NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	47
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-L- NC 343

TULIP TREE DR (SR 1179)

BM16 ELEVATION = 8.00
N 930641 E 2856031
BL STATION 331+48.00 61 RIGHT
CHISELED "X" ON FIRE HYDRANT

MATCHLINE SHEET 46 STA. 330+00.00

PI = 331+20.00
EL = 7.47'
VC = 180'
K = 560

0% SE RT

PI = 333+00.00
EL = 7.66'
VC = 170'
K = 850

0% SE RT

PI = 334+75.00
EL = 8.18'
VC = 180'
K = 585

PI = 337+90.00
EL = 8.16'
VC = 180'
K = 8694

0% SE RT

MATCHLINE SHEET 47 STA. 343+00.00

(−)0.2213% (+)0.1000% (+)0.1000% (+)0.3000% (+)0.3000% (−)0.0079% (−)0.0079% (−)0.0286%

(−) 0.0% (−) 0.1%

PROPOSED GRADE

EXISTING GROUND

PI =334+48
EI= 4.33'

END DITCH RT
STA.= 336+50
EL= 4.17'

BEGIN DITCH RT
STA.= 340+00
EL= 4.66'

(−) 0.0%

SEE SHEET 30 FOR -L- PLAN

10 0

330 331 332 333 334 335 336 337 338 339 340 341 342 343

-L- NC 343

MATCHLINE SHEET 47 STA. 343+00.00

PI = 348+20.00
EL = 7.86'
VC = 180'
K = 1916

PI = 352+75.00
EL = 7.30'
VC = 180'
K = 2061

PI = 355+29.41
EL = 7.21'
VC = 180'
K = 680

MATCHLINE SHEET 48 STA. 355+00.00

(+) 0.0% (+) 0.6% (−)0.0286% (−)0.1226% (−) 0.2% (−)0.1226% (−)0.0352% (−)0.0352%

PI =347+00.00
EI = 4.89'

PI =347+50.00
EI = 5.21'

PI =355+00.00
EI = 3.67'

(−) 0.0%

EXISTING GROUND

PROPOSED GRADE

BEGIN DITCH RT
STA.= 354+50
EL= 3.63'

END DITCH RT
STA.= 352+50
EL= 4.06'

(−) 1.9%

LEFT SIDE DITCH LINE — RIGHT SIDE DITCH LINE

SEE SHEET 31 FOR -L- PLAN

10 0

343 344 345 346 347 348 349 350 351 352 353 354 355

10/18/2024
R-5807_RDY_PFL_SHEETS.dgn
ROADWAY

5/28/99

PIPE HYDRAULIC DATA
1@30" RCP Sta. 356+10

DRAINAGE AREA	= 22	AC
DESIGN FREQUENCY	= 50	YR
DESIGN DISCHARGE	= 32.7	CFS
DESIGN HW ELEVATION	= 4.3	FT
100 YEAR DISCHARGE	= 36.2	CFS
100 YEAR HW ELEVATION	= 4.3	FT
OVERTOPPING FREQUENCY	= 10-	YR
OVERTOPPING DISCHARGE	= 12.2	CFS
OVERTOPPING ELEVATION	= 4.3	FT

-L-
NC 343

MILLTOWN DR (SR 1113)

BM17 ELEVATION = 7.66
N 930859 E 2857855
BL STATION 349+83.00 70 RIGHT
CHISELED "X" ON FIRE HYDRANT

MATCHLINE SHEET 47 STA. 355+00.00

PI = 355+29.41
EL = 7.21'
VC = 180'
K = 680

0% SE LT

PI = 357+75.00
EL = 6.48'
VC = 180'
K = 479

PI = 361+10.00
EL = 6.73'
VC = 180'
K = 803

0% SE LT

PI = 363+00.00
EL = 7.30'
VC = 180'
K = 457

PI = 367+00.00
EL = 6.92'
VC = 180'
K = 2254

0% SE LT

MATCHLINE SHEET 48 STA. 367+00.00

PI =355+00.00
EI = 3.67'
PI =355+28
EI= 2.17'
PI =355+93
EI= 2.12'

PROPOSED GRADE
EXISTING GROUND

(-)0.3000%
(-)0.0352%
(-)1.0%
(-) 0.1%
(-)1.0%
30" RCP
PI =356+10.00
EI = 2.58'
PI =356+00.00
EI = 2.68'
(-)0.3000%
(+)0.0759%
(+) 0.4%
PI =360+14.00
EI = 4.30'
(+)0.0759%
(-) 0.4%
END DITCH LT
STA= 360+64
EL= 4.10'
(+)0.3000%
(-) 0.0%
(+)0.3000%
(-)0.0938%
(-)0.0938%
PI =367+00.00
EI = 1.85'

SEE SHEET 32 FOR -L- PLAN

0
10
355 356 357 358 359 360 361 362 363 364 365 366 367

PIPE HYDRAULIC DATA
1@48" RCP Sta. 368+96

DRAINAGE AREA	= 0.19	SQ.MI.
DESIGN FREQUENCY	= 50	YR
DESIGN DISCHARGE	= 102	CFS
DESIGN HW ELEVATION	= 4.6	FT
100 YEAR DISCHARGE	= 120	CFS
100 YEAR HW ELEVATION	= 4.6	FT
OVERTOPPING FREQUENCY	= 10-	YR
OVERTOPPING DISCHARGE	= 61.6	CFS
OVERTOPPING ELEVATION	= 3.9	FT

-L-
NC 343

BM18 ELEVATION = 8.57
N 930709 E 2859648
BL STATION 368+74.00 24 RIGHT
CHISELED "X" ON FIRE HYDRANT

TROTMAN RD (SR 1119)

MATCHLINE SHEET 48 STA. 367+00.00

PI = 367+00.00
EL = 6.92'
VC = 180'
K = 2254

PI =367+00.00
EI = 1.85'

PI = 368+80.00
EL = 6.90'
VC = 180'
K = 1296

PI =368+97.00
EI = 0.34'

0% SE LT

PI = 372+00.00
EL = 7.30'
VC = 180'
K = 2402

BEGIN DITCH LT
STA= 369+52.00
EL= 2.30'

PROPOSED GRADE

END DITCH RT
STA= 372+00
EL= 5.74'

END GRADE
-L- STA. 373+00.00
ELEV. 7.35'

(-)0.0139%
(-)0.0139%
(+)0.1250%
(+)0.1250%
(+)0.0501%
EXISTING GROUND
(+) 1.8%
(+) 0.7%
(-) 0.8%
48" RCP

END DITCH LT
STA= 373+80.00
EL= 5.48'

---------- LEFT SIDE DITCH LINE
-------- RIGHT SIDE DITCH LINE

SEE SHEET 33 FOR -L- PLAN

0
10
367 368 369 370

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	48
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

10/18/2024
R-5807_RDY_PFL_SHEETS.dgn
rgrissett

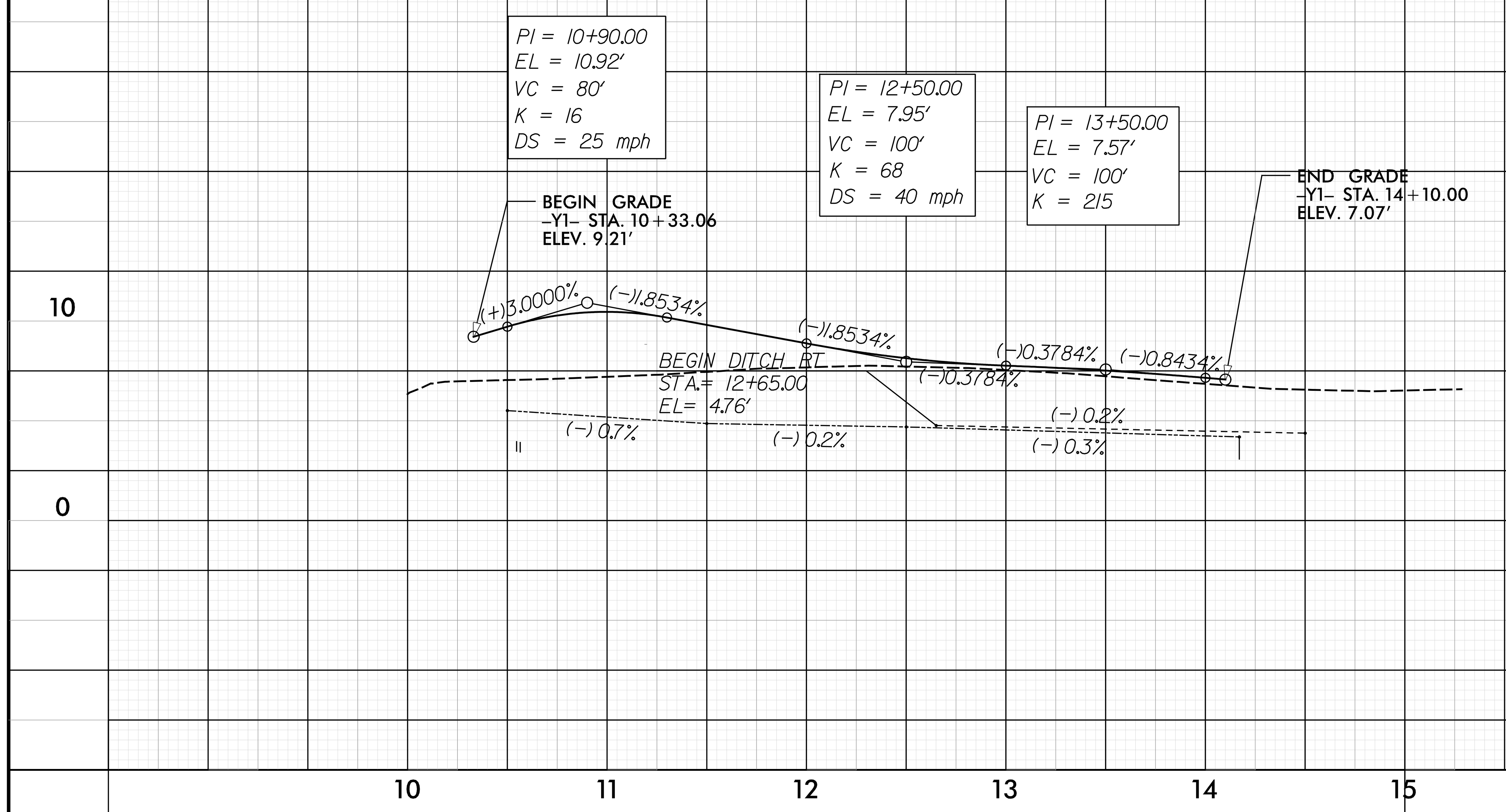
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
(919) 571-7111
NC License Number F-0159

vhb VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

PROJECT REFERENCE NO.	SHEET NO.
R-5807	49
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

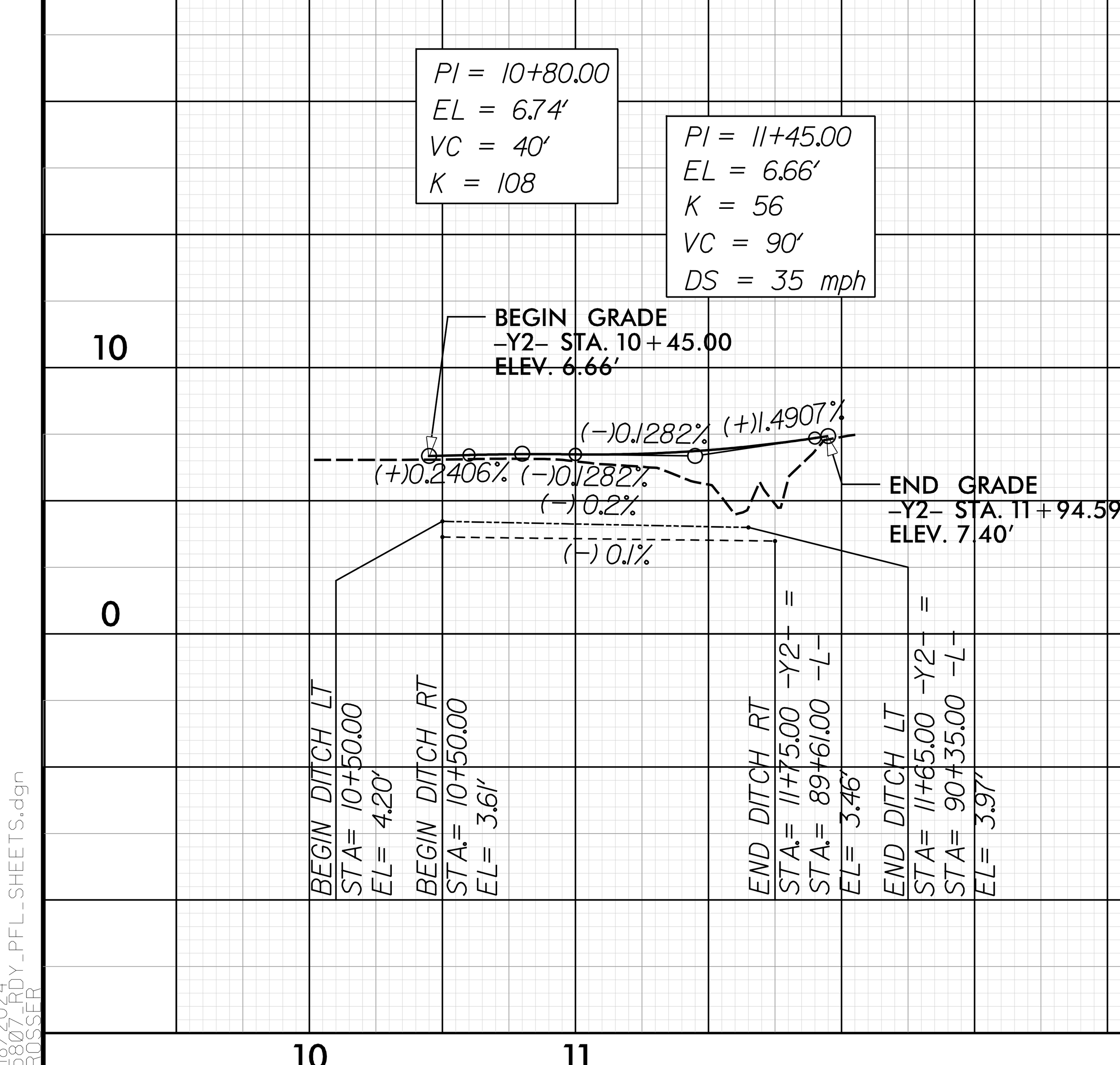
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y1-
SR 1138 (SEYMOUR DR.)

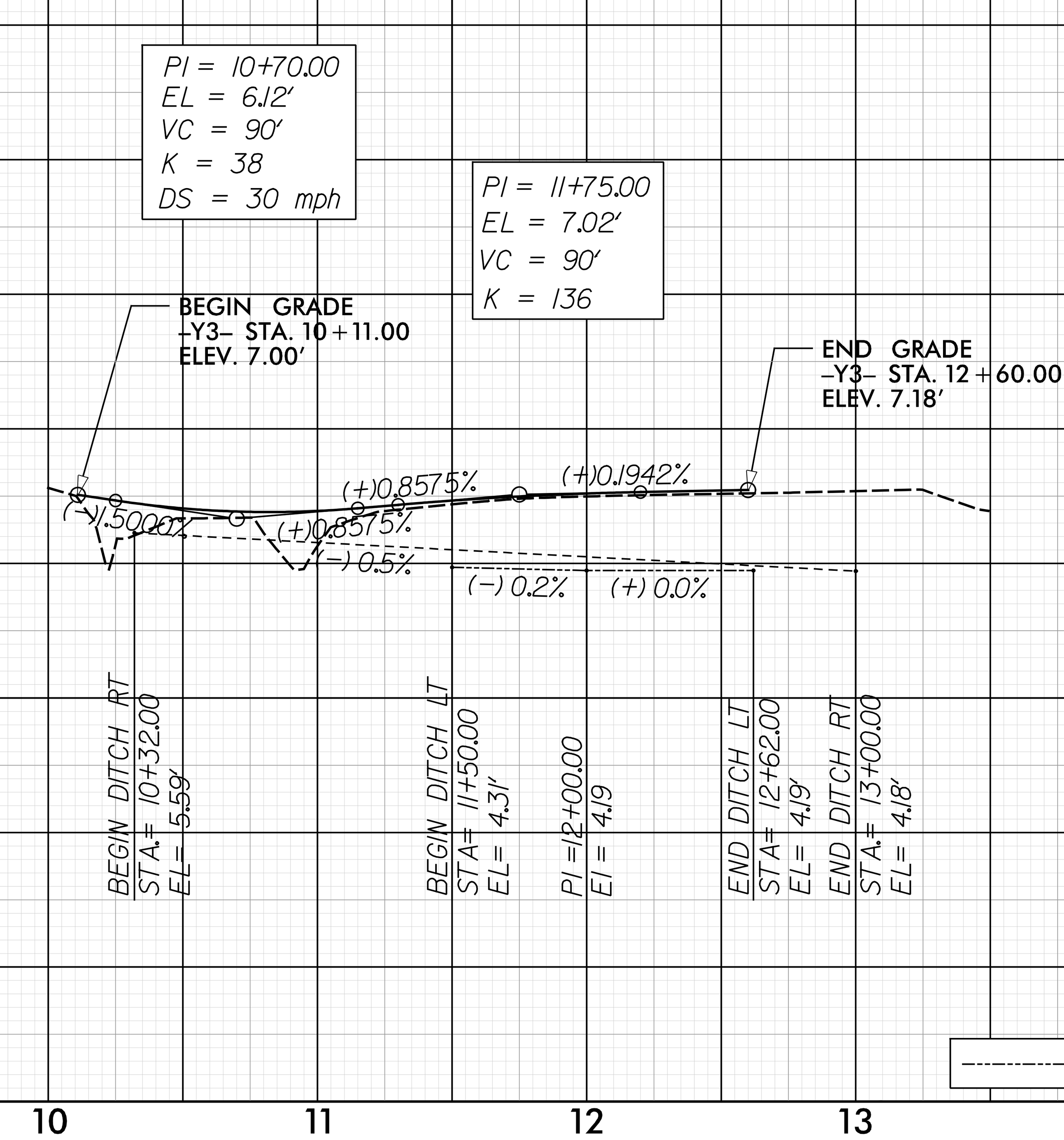


LEFT SIDE DITCH LINE	RIGHT SIDE DITCH LINE	SEE SHEET 8 FOR -Y1- PLAN

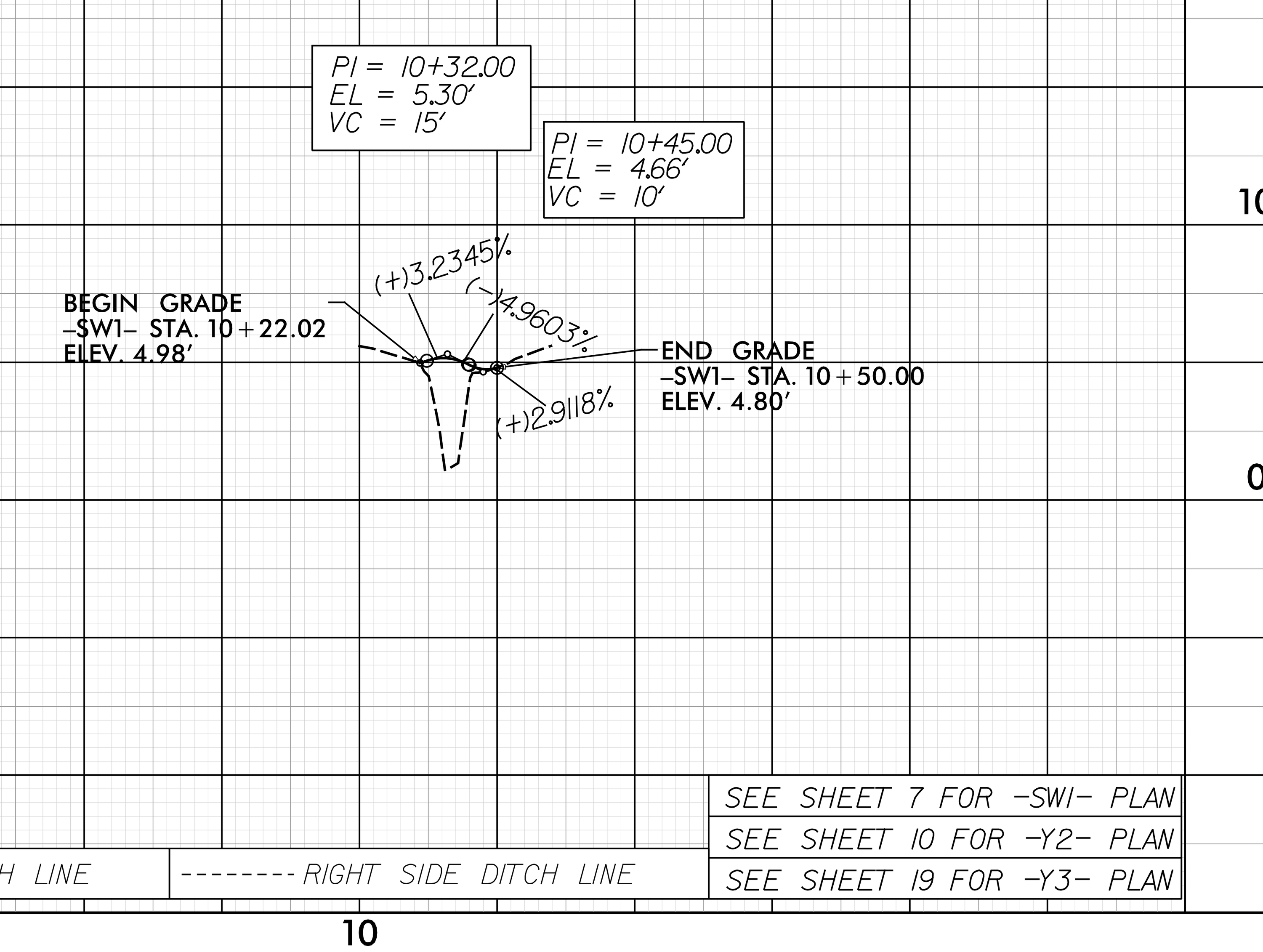
-Y2-
SR 1136 (IVY NECK RD.)



-Y3-
SR 1129 (S. MILL DAM RD.)



-SW1-



SEE SHEET 7 FOR -SW1- PLAN
SEE SHEET 10 FOR -Y2- PLAN
SEE SHEET 19 FOR -Y3- PLAN

LEFT SIDE DITCH LINE	RIGHT SIDE DITCH LINE

5/28/99
10/18/2024 R5807_RDY_PFL_SHEETS.dgn