STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

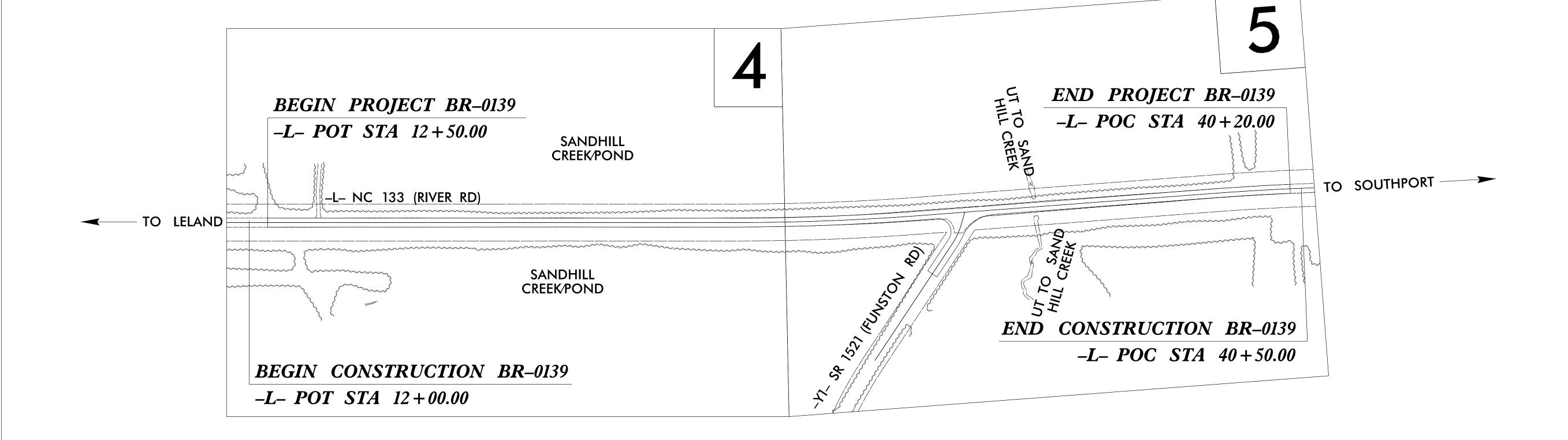
N.C.BR-0139 RW01 10

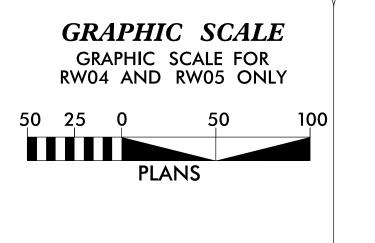
SURVEY CONTROL, EXISTING CENTERLINES, RIGHT OF WAY, EASEMENTS AND PROPERTY TIES

# BRUNSWICK COUNTY

LOCATION: REPLACE BIRDGE OVER SAND HILL CREEK ON NC 133 (RIVER RD)







VICINITY MAP (N.T.S.)

OFFSITE DETOUR •

#### **DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "GPS2" WITH NAD 83/NSRS 2011 STATE PLANE GRID COORDINATES OF NORTHING: 128,194.280(ft) EASTING: 2,312,445.227(ft) ELEVATION: 15.128(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.0000786326 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS2" TO -L- STATION 10+00.00 IS

N 26<sup>32</sup>'22.93" W 2051.14(ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES

**VERTICAL DATUM USED IS NAVD 88** 

RIGHT OF WAY DATE:

LETTING DATE: **SEPTEMBER** 17, 2024

Prepared in the Office of: LOCATION AND SURVEYS, DIV 3 5310 BARBADOUS BLVD., SUITE 102 CASTLE HAYNE, N.C., 28429

2024 STANDARD SPECIFICATIONS

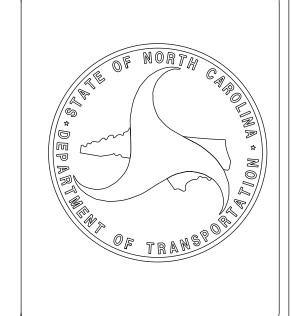
**APRIL** 27, 2023

PROFESSIONAL LAND **SURVEYOR** 

Christopher Bawyer

SIGNATURE:

06/25/2024



### SURVEY CONTROL SHEET

#### W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

ELEVATION

20.07

9.47

15.13

22.17

EAST

2311627.7300

2312084.6919

2312445.2270

2312991.6600

EY									
POINT	N	E	BEARING	DIST	DELTA			T	R
POT	1281Ø9.718	2312521.052							
LINE			N 83°00′32.4" W	483.85					
PC	128168.609	2312040.798							
CURVE			N 86°Ø7′23.4" W	139.81	Ø6°13′42.Ø"(LT)	Ø4°27′Ø9.3"	139.88	70.01	1286.80
PT	128178.062	23119Ø1.3Ø5							
LINE			N 89°14′14.4" W	6.09					
PC	128178.143	2311895.215							
CURVE			S 62°29′36.1" W	231.47	56°32′18.9"(LT)	23°26′5Ø.2"	241.13	131.41	244.36
PT	128Ø71.241	2311689.915							

Location and S	urveys
BR-0139	RW02C-1
PROJECT REFERENCE NO.	SHEET NO.

LOCATION & SURVEYS UNIT 5310 BARBADOUS BLVD., SUITE 102 CASTLE HAYNE, N.C., 28429



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I, CHRISTOPHER J. SAWYER, PLS, certify that the Project Control was
PERFORMED under my supervision from an actual GPS survey made under my
supervision and the following information was used to perform the survey:

Class of survey: *AA* Type of GPS field procedure: RTN Dates of survey: MAY 2017 Datum/Epoch:NAD 83/NA 2011 Published/Fixed-control use: N/A for RTN Localized around: GPS2 Northing:128194.280 Easting:2312445.227 Combined grid factor: 1.0000786326 Geoid model:G12 NC Units:US SURVEY FEET

I also certify that the Baseline Control BL-1 for this project was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed from MAY 2017 to JULY 2017, and all coordinates are based on NAD 83/2011 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 10 day of MARCH, 2024.

Christopher Lawyer CHRISTOPHER J. SAWYER Professional Land Surveyor L-4526

TO NC 87

### NOTES:

- 1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
- 2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

BL

GPS1

BL1

GPS2

GPS3

POINT

ELEVATION = 24.51 N 13Ø875 E 2311Ø17 BL STATION 5+12.00 98 RIGHT RR SPK IN BASE OF 14" PINE 

NC 133 RIVER ROAD

NORTH

129754.5555

128878.1587

128194.2800

127276.2840

DESC.

GPS CAP & REBAR

TRV CAP & REBAR

GPS CAP & REBAR

GPS CAP & REBAR

JO US 74

06-MAR-2024 |2:57 S:\Units\DivØ3\Projects mjduval AT LS-3287251

844.01

S 26° 32′ 28" E

PROJECT REFERENCE NO.

BR-0139

Location and Surveys

WITHERSRAVENEL INC

115 MACKENAN DR
CARY NC 27511

OFFICE #: 919–469–3340
LICENSE#: F–1479

SHEET NO.

RW02C-2



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I, RUDOLF A. VANDERVELDE JR., PLS, certify that the Baseline Control (BL2, BL3, BL4, BL5) for this project was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed from 10/25/2021 to 11/12/2021, and all coordinates are based on NAD 83/2011 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 29TH day of FEBRUARY, 2024.

Rudolf II. Vander Vilde Jr. 2/29/2024

Professional Land Surveyor L-5146

DATUM DESCRIPTION, GPS 1, GPS2, GPS3 AND BL1 PROVIDED BY NCDOT: (SEE DATUM DESCRIPTION BELOW)

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT

IS BASED ON THE NAD 1983/NA 2011
STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR GPS
MONUMENT "GPS2" WITH A NORTHING OF 128194.280; EASTING OF
2312445.227; ELEVATION OF 15.128'.
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS 1.0000786326.

ALL LINEAR DISTANCES ARE LOCALIZED HORIZONTAL DISTANCES. THE VERTICAL DATUM IS NAVD 88

VERTICAL DATUM IS NAVD 88.

| Color |

#### NOTES:

- 1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
- 2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

NA NC NA SON

SOIL PATH

NC 133 - RNER RD

S 26° 40′ 59" E 511.49

354.42

S 26° 27′ 11" E

y\Geomatics\NCDOT\Submittal\Revised C-Sheets subittal 2-28-24\brØ139\_ls\_rw(

PROJECT REFERENCE NO. SHEET NO. BR-0139 RW02C-3 SURVEY CONTROL SHEET Location and Surveys WITHERSRAVENEL INC W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION 115 MACKENAN DR CARY NC 27511 OFFICE #: 919-469-3340 LICENSE#: F-1479 PROJECT SURVEYOR DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED I, RUDOLF A. VANDERVELDE JR., PLS, certify that the Baseline Control (BL2, BL3, BL4, BL5) for this project was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed from 10/25/2021 to 11/12/2021, and all coordinates are based on NAD 83/2011 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable. This 29TH day of FEBRUARY, 2024. Rudolf A. VanderVelde Jr. 2/29/2024 Professional Land Surveyor L-5146 DATUM DESCRIPTION, GPS 1, GPS2, GPS3 AND BL1 PROVIDED BY NCDOT: (SEE DATUM DESCRIPTION BELOW) THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE NAD 1983/NA 2011 STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR GPS MONUMENT "GPS2" WITH A NORTHING OF 128194.280; EASTING OF 2312445.227; ELEVATION OF 15.128'. THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS 1.0000786326. ALL LINEAR DISTANCES ARE LOCALIZED HORIZONTAL DISTANCES. THE VERTICAL DATUM IS NAVD 88. 330.39 293.72 <del>- 242.66</del>-NC 133 - RIVER RD \$\ 26° 10′ 17" E |\$\_26.30′17"E 26° 17′ 14" E 165.15 S 30° 51′ 51" E MATCHL NOTES: 1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM. 2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

# SURVEY CONTROL SHEET

#### W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

BL				
POINT	DESC.	NORTH	EAST	ELEVATION
BL - 2	TRV CAP & REBAR	130925.3290	2311102.4680	22.52
BL - 3	TRV CAP & REBAR	130208.1740	2311418.0020	21.64
BL - 4	TRV CAP & REBAR	126710.9480	2313312.7220	25.09
BL - 5	TRV CAP & REBAR	125974.5080	2313636.5590	20.26

EL									
POINT	N	E	BEARING	DIST	DELTA	D		T	R
POT	130953.117	2311067.159							
LINE			S 26°40′58.7" E	511.49					
PC	130496.102	2311296.844		4 (X 1 (2)	00010/17 01/07)	0.000.01.00.01	4 (3, 1 (2)		10000000
CURVE PT	130460.215	2311314.789	S 26°34′Ø4.9" E	40.12	ØØ°13′47.6"(RT)	ØØ°34′22.6"	40.12	20.06	10000.00
LINE	130460.213	2311314.707	S 26°27′11.1" E	354.42					
PC	130142.906	2311472.670	J 20 27 11:1 L	<u> </u>					
CURVE			S 26°19′45.2" E	21.62	ØØ°14′51.8"(RT)	Ø1°Ø8′45.3"	21.62	10.81	5000.00
PT	13Ø123.531	2311482.258							
LINE	100055501	0011515 704	S 26°12′19.3" E	75.79					
PC CURVE	130055.534	2311515.724	S 26°22′23.7" E	 29.3Ø	00°20′08.8"(LT)	Ø1°Ø8′45.3"	29.30	14.65	5000.00
PT	130029.282	2311528.740	J 20 22 2J./ L				<u> </u>	17.00	
LINE			S 26°32′28.1" E	844.01					
PC	129274.223	2311905.877							
CURVE	1000000117	0011010 005	S 26°37′52.9" E	15.75	00°10′49.6"(LT)	Ø1°Ø8′45.3"	15.75	7.87	5000.00
PT	129260.147	2311912.935	S 26°43′17.7" E	1 ( ) / ()					
LINE PC	129113.304	2311986.858	3 20 43 1/./ E	164.40					
CURVE	12 7110.001	2311700.030	S 26°30′44.9" E	36.50	ØØ°25′Ø5.5"(RT)	Ø1°Ø8′45.3"	36.50	18.25	5000.00
PT	129080.647	2312003.149							
LINE			S 26°18′12.2" E	123.22					
PC	128970.185	2312057.751		202.74	00°00/00 71/1 T)	0/0/°1/0// CII	20271	10007	24220 07
CURVE PCC	128619.111	2312233.802	S 26°37′55.5" E	392.74	ØØ°39′26.7"(LT)	00°10′02.6"	392.74	196.37	34229.07
CURVE	12001 7.111	2312233.002	S 28°54′45.Ø" E	433.08	Ø3°54′12.3"(LT)	00°54′04.1"	433.17	216.67	6358.19
PT	128240.007	2312443.187			200112101217			210107	
LINE			S 30°51′51.1" E	8Ø3.91					
PC	127549.946	2312855.594			0 4 ° 4 1 / O 4 4 H / D T \	00° F 0/00 1 II		270.02	C080 0F
CURVE	127060.023	2313121.797	S 28°31′Ø3.9" E	557.57	Ø4°41′34.4"(RT)	00°50′29.1"	557.73	279.02	68Ø9.35
LINE	12/000.023	2313121./ //	S 26°10′16.7" E	330.39					
PC	126763.504	2313267.519	0 20 10 1017 2						
CURVE			S 26°20′16.8" E	29.09	00°20′00.1"(LT)	Ø1°Ø8′45.3"	29.09	14.55	5000.00
PT	126737.432	2313280.425		000 70					
LINE PC	100474 570	) ) ) ) ) ) ) ) ) )	S 26°3Ø′16.8" E	293.72					
CURVE	126474.579	2313411.506	S 26°23′45.5" E	18.97	ØØ°13′Ø2.7"(RT)	Ø1°Ø8′45.3"	18.97	9.49	5000.00
PT	126457.583	2313419.941		10.7/	WW 10 WC 0/ \\\\\\	WI WO 10:0	1 O a ) /	7 1 7	
LINE			S 26°17′14.1" E	165.15					
PC	1263Ø9.515	2313493.080				74066445			
CURVE	120202 000	2212505 704	S 26°Ø7′18.9" E	28.85	ØØ°19′5Ø.3"(RT)	Ø1°Ø8′45.3"	28.85	14.43	5000.00
PT LINE	126283.608	2313505.784	S 25°57′23.8" E	242.66					
POT	126Ø65.429	2313611.993	J ZJ J/ ZJ.O L	<u> </u>					
						L		1	

PROJECT REFERENCE NO.	SHEET NO.
BR-0139	RW02C-4

WITHERSRAVENEL INC

115 MACKENAN DR
CARY NC 27511

OFFICE #: 919-469-3340
LICENSE#: F-1479

Location and Surveys



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I, RUDOLF A. VANDERVELDE JR., PLS, certify that the Baseline Control (BL2, BL3, BL4, BL5) for this project was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed from 10/25/2021 to 11/12/2021, and all coordinates are based on NAD 83/2011 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 29TH day of FEBRUARY, 2024.

Rudolf a. VanderVelde Jr. 2/29/20.

Professional Land Surveyor L-5146

DATUM DESCRIPTION GPS 1 GPS2 GPS3 AND

DATUM DESCRIPTION, GPS 1, GPS2, GPS3 AND BL1 PROVIDED BY NCDOT: (SEE DATUM DESCRIPTION BELOW)

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE NAD 1983/NA 2011
STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR GPS MONUMENT "GPS2" WITH A NORTHING OF 128194.280; EASTING OF 2312445.227; ELEVATION OF 15.128'.
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS 1.0000786326.
ALL LINEAR DISTANCES ARE LOCALIZED HORIZONTAL DISTANCES. THE VERTICAL DATUM IS NAVD 88.

#### NOTES:

- 1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
- 2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

29-FEB-2024 08:06 K:\20\20-0620\200626.20-BR-0139 Conv Survey\Geomatics\NCDOT\Su rvandervelde AT WR1963

SHEET NO.

LOCATION & SURVEYS UNIT 5310 BARBADOUS BLVD., SUITE 102 CASTLE HAYNE, N.C., 28429



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I, Christopher J. Sawyer, PLS, certify that the data compiled came from available surveys/mapping performed by others and provided to me by NCDOT and do not certify to the accuracy or quality of the individual data sources.

This 8th day of March, 2024.

DocuSigned by:

Professional Land Surveyor L-4526

TYPE	STATION	NORTH	EAST			
POT	10+00.00	130029.2824	2311528.7404			
PC	25+07.20	128680.9161	2312202.2205			
PT	30+20.28	128230.9961	2312448.5718			
PC	38+13.68	127549.9456	2312855.5945			
PT	43+71.41	127060.0234	2313121.7972			
POT	47+01.81	126763.5036	2313267.5187			

### $\forall$ 1

		I L	
TYPE	STATION	NORTH	EAST
POT	10+00.00	128130.6575	23125Ø8.5381
PC	10+31.75	128124.7135	2312477.3511
PT	10+93.87	128122.6698	2312415.5168
POT	14+71.39	128168.7Ø93	2312040.8089

#### NOTES:

- 1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
- 2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

PPIPS SHEETS/BR0139 | S RW02N-1 NATE

# PERMANENT EASEMENT CONTROL SHEET

PROJECT REFERENCE NO. SHEET NO. BR-0139 RW03E-1 Location and Surveys

LOCATION & SURVEYS UNIT 5310 BARBADOUS BLVD., SUITE 102 CASTLE HAYNE, N.C., 28429

PROJECT SURVEYOR

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I , Christopher J. Sawyer , certify that the right of way and permanent easement monumentation for this project shown herein was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:10,000 (Class A). Field work was performed July 18, 2023, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 8th day of March, 2024.

Professional Land Surveyor L-4526

## ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
	30+58.00	50.00	128172.96411	2312425.00513
	32+40.00	50.00	128016.73794	2312518.37206

## ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y 1	11+00.00	29.99	128153.18232	2312413.08551
Y 1	10+50.00	-35.64	128086.64330	2312462.74591

#### NOTES:

- 1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- 2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
- 3. RIGHT OF WAY MONUMENTATION ESTABLISHED JULY 18, 2023.

