

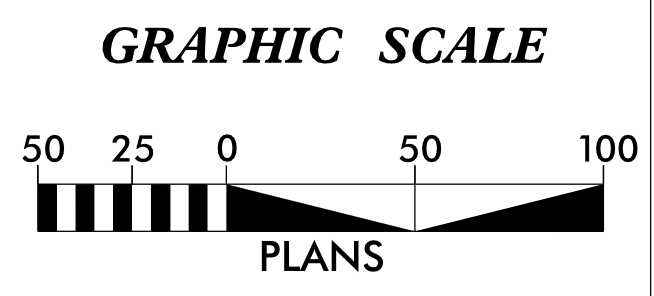
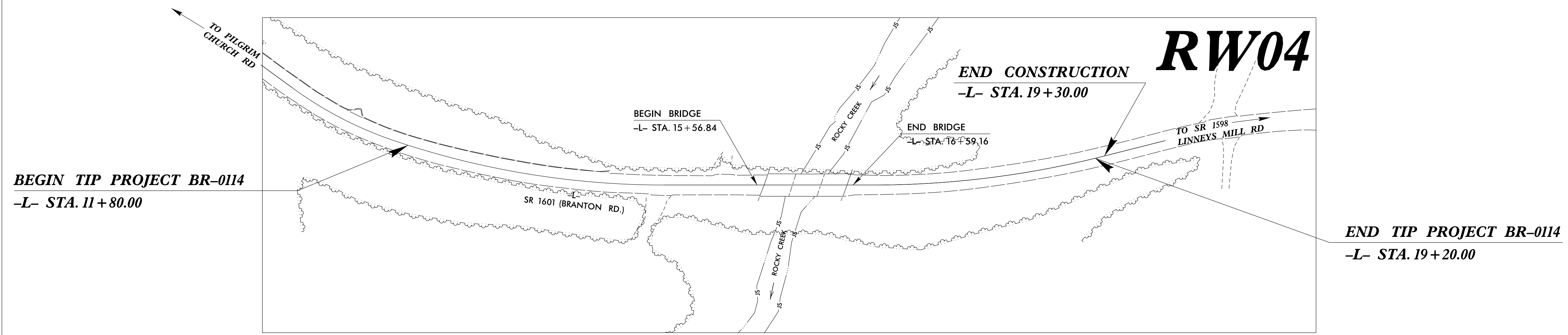
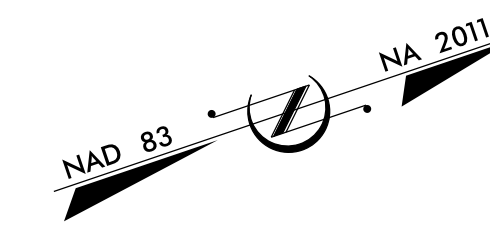
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0114	RW01	5

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

IREDELL COUNTY

TIP PROJECT: BR-0114



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "BR0114-1" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 831,985.245(ft) EASTING: 1,405,618.337(ft)
ELEVATION: 1,091.878(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999915166

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BR0114-1" TO -L- STATION 10+00.00 IS
S 31°51'72" W 643.19(ft)

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

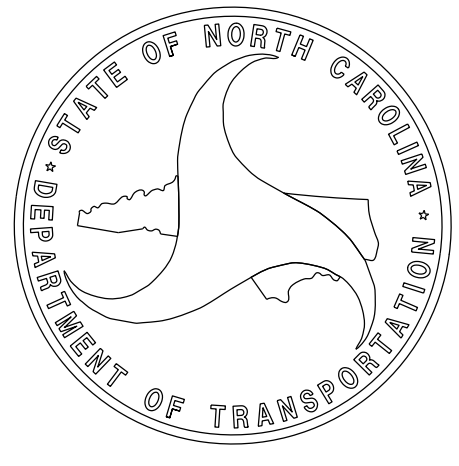
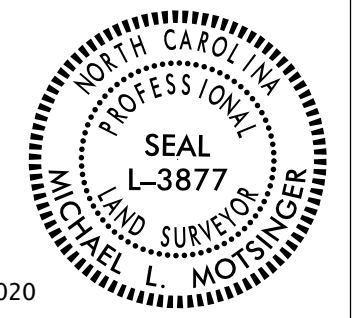
Prepared in the Office of:

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: <u>November 27, 2019</u>	LETTING DATE: <u>July, 21, 2020</u>
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PROFESSIONAL LAND SURVEYOR

DocuSigned by:
Michael L. Molsinger 3/31/2020
FD88FE70E23C40E...
SIGNATURE: _____ Date: _____



\$\$\$SYTIME\$\$\$\$\$
 \$\$\$DCN\$\$\$\$\$
 \$\$\$USERNAME\$\$\$\$\$

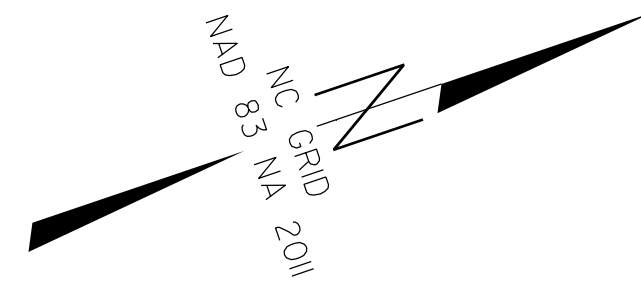
PROJECT SURVEYOR



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

SURVEY CONTROL SHEET

W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION



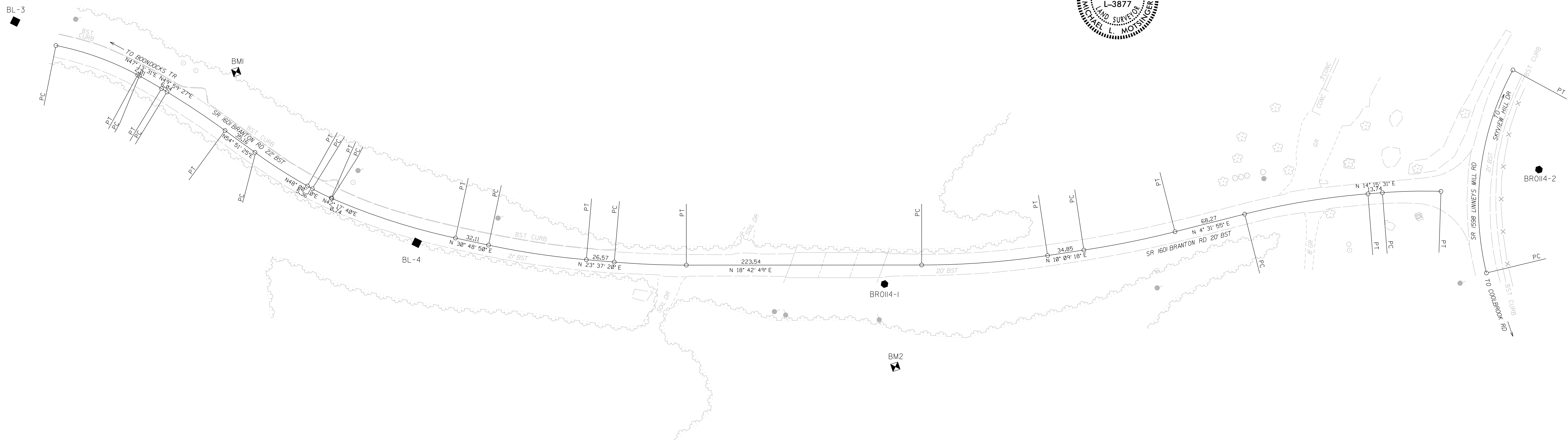
I, Michael L. Motsinger, PLS, certify that the Project Control was verified under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

Class of survey: AA
 Type of GPS field procedure: OPUS
 Dates of survey: February 2019
 Datum: NAD 83 / NA 2011
 Localized around: BR0114-1
 Northing: 831,985.2450
 Easting: 1,405,618.3370
 Combined grid factor: 0.999915166
 Geoid model: 12NC
 Units: English

"I also certify that the baseline control 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 November 2018 to February 2019, 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 31st day of March, 2020.

DocuSigned by:
 Michael L. Motsinger
 Professional Land Surveyor L-3877



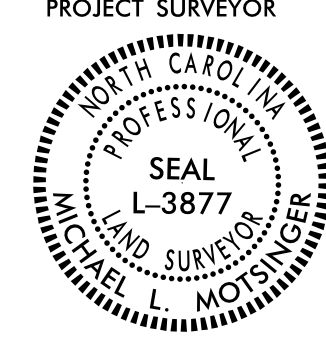
SEE SHEET RW02C-2
 FOR FURTHER
 ALIGNMENT DETAILS

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

BASELINE TEXT AND BENCHMARKS

PROJECT REFERENCE NO.	SHEET NO.
BR-0114	RW02C-2
Location and Surveys	
PROJECT SURVEYOR	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

BL	POINT	DESC.	NORTH	EAST	ELEVATION
3		BL -3	831283.4750	1405116.6130	1126.53
4		BL -4	831577.0780	1405438.3510	1104.36
1		BR0114-1	831985.2450	1405618.3370	1091.88
2		BR0114-2	832608.8070	1405714.9410	1126.30

.....
 BM1 ELEVATION = 1127.27
 N 831467 E 1405230
 RR SPIKE SET IN BASE OF 24" WHITE OAK

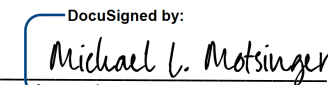
 BM2 ELEVATION = 1090.59
 N 831970 E 1405696
 RR SPIKE SET IN BASE OF 14" POPLAR

I, Michael L. Motsinger, PLS, certify that the Project Control was verified 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: OPUS
 Dates of survey: February 2019
 Datum: NAD 83 / NA 2011
 Localized around: BR0114-1
 Northing: 831,985.2450
 Easting: 1,405,618.3370
 Combined grid factor: 0.999915166
 Geoid model: 12NC
 Units: English

"I also certify that the baseline control 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 November 2018 to February 2019, 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 31st day of March, 2020.

DocuSigned by:

 Michael L. Motsinger
 Professional Land Surveyor L-3877



SURVEY CONTROL SHEET

W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

EL POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	831312.841	1405150.639							
CURVE			N 38°36'04.4" E	82.55	17°14'53.4"(RT)	20°48'51.8"	82.87	41.75	275.27
PT	831377.357	1405202.144							
LINE			N 47°13'31.1" E	2.01					
PC	831378.725	1405203.622							
CURVE			N 48°36'29.1" E	24.13	02°45'55.9"(RT)	11°27'33.0"	24.13	12.07	500.00
PT	831394.681	1405221.726							
LINE			N 49°59'27.0" E	6.04					
PC	831398.565	1405226.354							
CURVE			N 52°25'25.9" E	66.22	04°51'57.8"(RT)	07°20'44.2"	66.24	33.14	780.00
PT	831438.950	1405278.839							
LINE			N 54°51'24.8" E	35.16					
PC	831459.190	1405307.592							
CURVE			N 51°25'47.2" E	59.28	06°51'15.2"(LT)	11°33'23.3"	59.31	29.69	495.79
PT	831496.147	1405353.937							
LINE			N 48°00'09.6" E	5.36					
PC	831499.732	1405357.919							
CURVE			N 45°08'54.9" E	19.92	05°42'29.4"(LT)	28°38'52.4"	19.93	9.97	200.00
PT	831513.779	1405372.039							
LINE			N 42°17'40.2" E	0.74					
PC	831514.328	1405372.538							
CURVE			N 36°33'15.2" E	123.30	11°28'50.0"(LT)	09°17'45.0"	123.50	61.96	616.36
PT	831613.371	1405445.971							
LINE			N 30°48'50.2" E	32.11					
PC	831640.945	1405462.417							
CURVE			N 27°13'05.2" E	93.95	07°11'30.0"(LT)	07°38'58.3"	94.01	47.07	749.01
PT	831724.495	1405505.390							
LINE			N 23°37'20.2" E	26.57					
PC	831748.840	1405516.037							
CURVE			N 21°10'04.7" E	68.52	04°54'31.0"(LT)	07°09'43.1"	68.54	34.29	800.00
PT	831812.733	1405540.778							
LINE			N 18°42'49.2" E	223.54					
PC	832024.453	1405612.498							
CURVE			N 14°26'03.4" E	119.94	08°33'31.6"(LT)	07°07'45.0"	120.05	60.14	803.68
PT	832140.608	1405642.396							
LINE			N 10°09'17.6" E	34.85					
PC	832174.908	1405648.539							
CURVE			N 07°20'36.4" E	88.29	05°37'22.4"(LT)	06°21'58.3"	88.32	44.20	900.00
PT	832262.472	1405659.824							
LINE			N 04°31'55.2" E	68.27					
PC	832330.530	1405665.218							
CURVE			N 09°23'43.2" E	118.69	09°43'36.0"(RT)	08°11'06.4"	118.83	59.56	700.00
PT	832447.629	1405684.594							
LINE			N 14°15'31.2" E	13.74					
PC	832460.943	1405687.978							
CURVE			N 17°27'00.6" E	55.67	06°22'58.8"(RT)	11°27'33.0"	55.70	27.88	500.00
PT	832514.054	1405704.673							

EY POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	832529.983	1405792.001							
CURVE			N 63°49'52.2" W	194.69	41°56'05.1"(RT)	21°03'41.5"	199.11	104.25	272.04
PT	832615.846	1405617.266							

PROPOSED ALIGNMENTS


		L	
TYPE	STATION	NORTH	EAST
POT	10+00.00	831438.9501	1405278.8394
PC	10+42.06	831463.1612	1405313.2317
PCC	11+63.86	831547.2389	1405400.7013
PT	14+57.53	831805.2435	1405538.2414
PC	16+00.38	832016.3133	1405609.7407
PT	19+27.90	832258.1363	1405659.4803
POT	19+97.15	832327.1652	1405664.9518

		DWY	
TYPE	STATION	NORTH	EAST
POT	10+00.00	831854.6328	1405554.9719
POT	10+59.60	831894.5836	1405510.7494

NOTES:

- PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
- 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.

RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO. BR-0114	SHEET NO. RW03E-1
Location and Surveys	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	11+80.00	20.00	831548.2866	1405426.4953
L	11+80.00	10.97	831553.6440	1405419.2240
L	11+80.00	-25.00	831574.9791	1405390.2667
L	11+80.00	-11.03	831566.6939	1405401.5118
L	12+50.00	60.00	831586.3336	1405500.6070
L	14+57.53	60.00	831785.9906	1405595.0685
L	14+57.53	45.00	831790.8032	1405580.8615
L	14+57.53	-25.00	831813.2645	1405514.5631
L	14+80.00	-25.00	831834.5441	1405521.7715
L	16+80.38	45.00	832001.8756	1405652.3617
L	16+80.38	-45.00	832030.7511	1405567.1197
L	18+20.00	-20.00	832154.9596	1405625.5222
L	19+20.00	25.00	832248.0909	1405683.7304
L	19+20.00	10.95	832249.3119	1405669.7315
L	19+20.00	-11.05	832251.2235	1405647.8144
L	19+20.00	-20.00	832252.0009	1405638.9006

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+64.41	60.00	831693.7336	1405558.3965
L	13+94.32	75.51	831716.9496	1405585.5185
L	16+76.53	74.12	831988.8791	1405678.7015
L	19+02.23	67.84	832225.4811	1405724.5891

REVISIONS

6/2/19
3:\MAR_2020_0336\motsinger\Division\Right of Way Staking\survey control sheets\tobechecked\BR-0114-LS-rw03e-1.dgn
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3:\MAR_2020_0336\motsinger\Division\Right of Way Staking\survey control sheets\tobechecked\BR-0114-LS-rw03e-1.dgn

I, Michael L. Motsinger, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item(s) (R/W Staking) performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures.

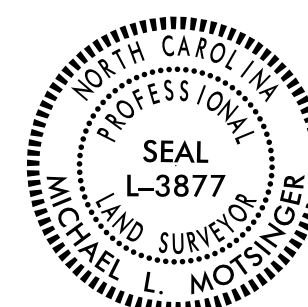
I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans. I also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from existing survey control provided by others; that the depicted property data shown herein were surveyed by others; and these monuments denote the right of way and easement boundaries at the time of staking which may be subject to change due to right of way revisions (See deeds for final determination).

Witness my original signature, registration number and seal this 27th day of March, 2020.

DocuSigned by:
Michael L. Motsinger
FDB8F7E23C40E...

Professional Land Surveyor

L-3877
PLS #



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 _____ TO _____.

Location and Surveys

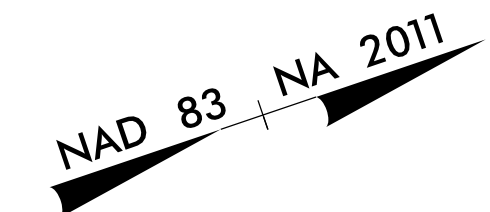
PROJECT SURVEYOR



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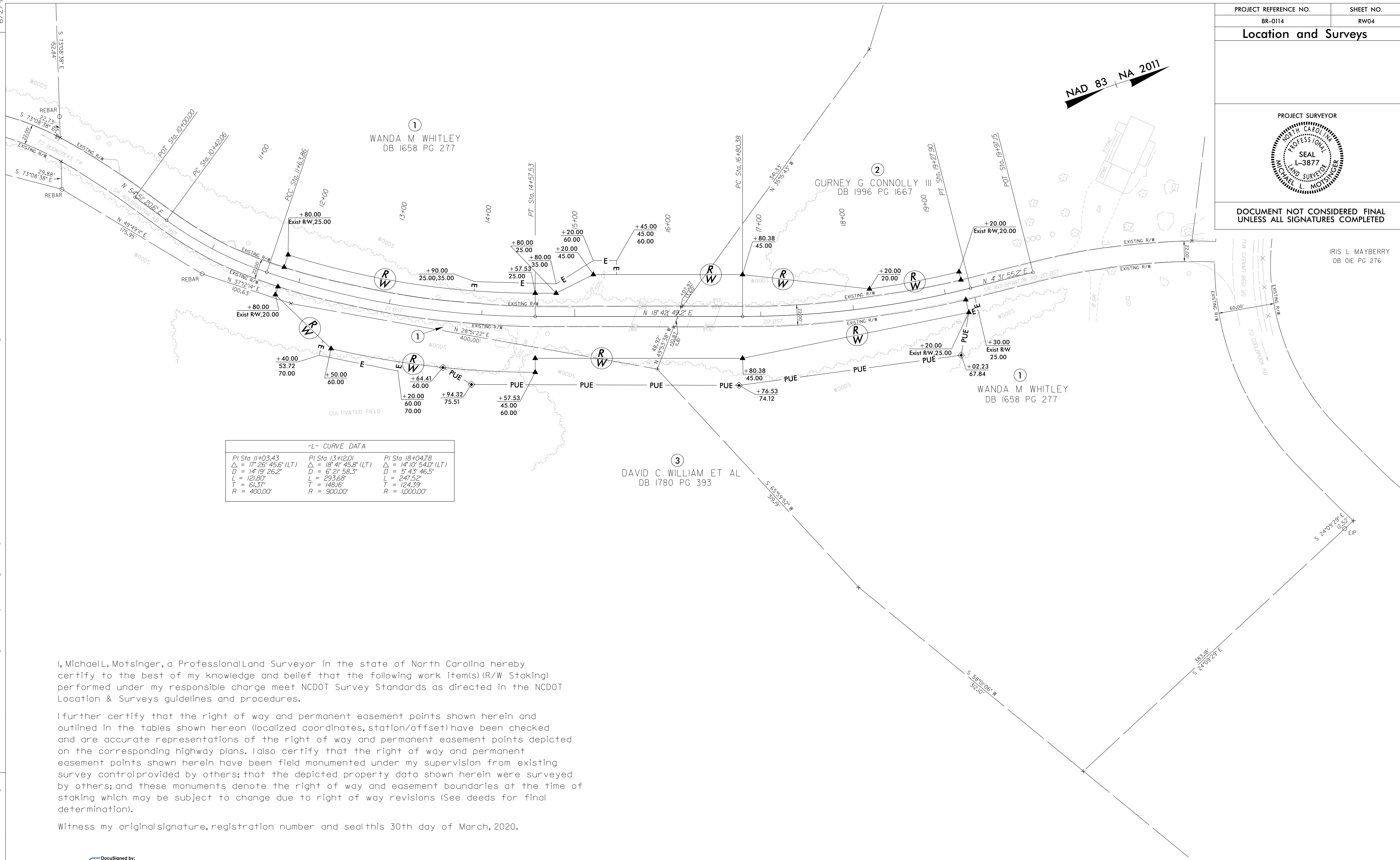
IRIS L MAYBERRY
DB OE PG 276

6/2/09



3:1 MAR 2020 08:53 J:\Projects\2020\0315\0315\GIS\Impact\Division\LowImpact\Bridge\Right of Way Staking\survey control sheets\to be checked\BR-0114.LS.rw04.dgn
 Michael L. Motsinger
 Professional Land Surveyor
 License No. L-3877

REVISIONS



-L- CURVE DATA		
PI Sta 11+03.43 Δ = 17° 26' 45.6" (LT) D = 14° 19' 26.2" L = 121.80' T = 61.37' R = 400.00'	PI Sta 13+12.01 Δ = 18° 41' 45.8" (LT) D = 6° 21' 58.3" L = 293.68' T = 148.16' R = 900.00'	PI Sta 18+04.78 Δ = 14° 10' 54.0" (LT) D = 5° 43' 46.5" L = 247.52' T = 124.39' R = 1000.00'

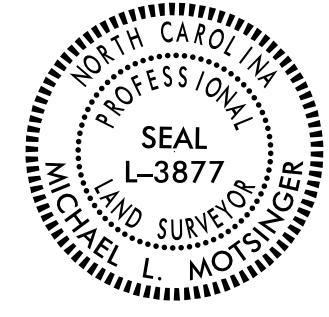
I, Michael L. Motsinger, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item(s) (R/W Staking) performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures.

I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans. I also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from existing survey control provided by others; that the depicted property data shown herein were surveyed by others; and these monuments denote the right of way and easement boundaries at the time of staking which may be subject to change due to right of way revisions (See deeds for final determination).

Witness my original signature, registration number and seal this 30th day of March, 2020.

DocuSigned by:
Michael L. Motsinger
F0B8F70E23C40E
Professional Land Surveyor

L-3877
PLS #



NOTES:

- IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
- RIGHT OF WAY MONUMENTATION ESTABLISHED FROM _____ TO _____.