

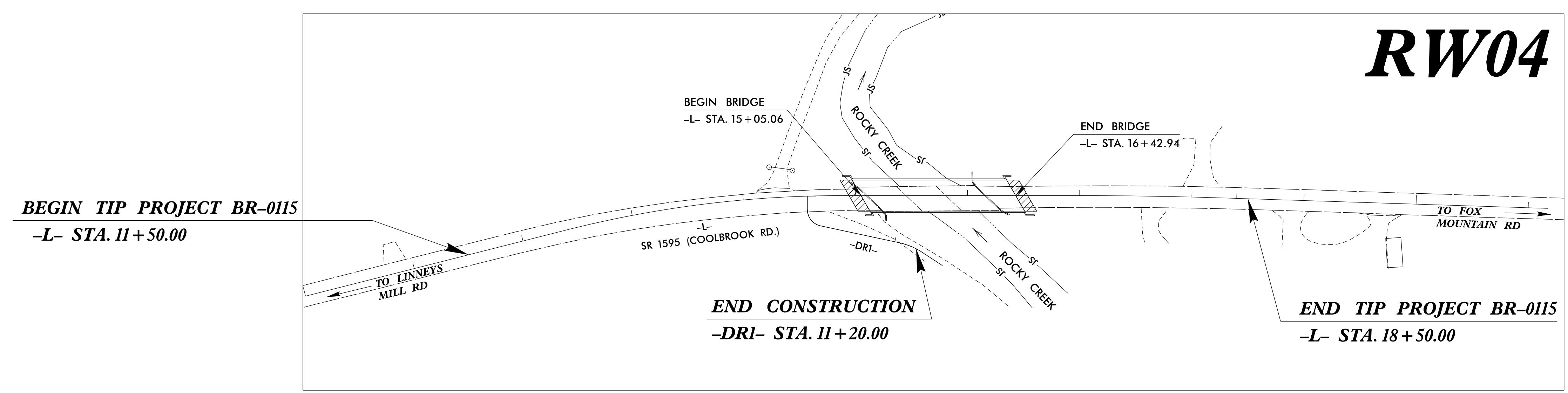
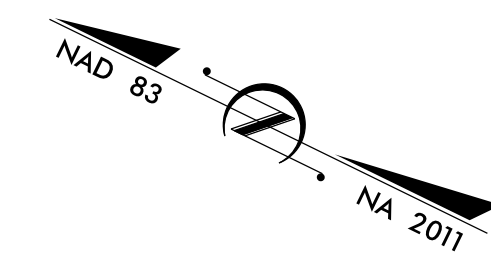
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0115	RW01	5

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

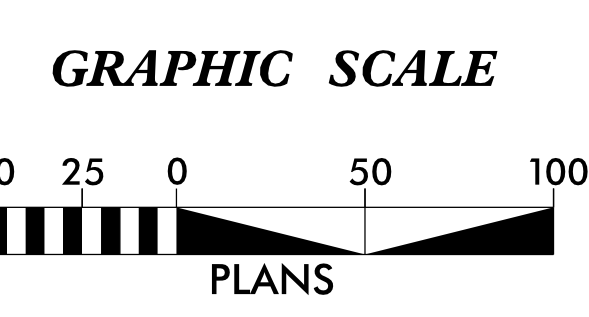
SURVEY CONTROL, EXISTING CENTERLINES,  
RIGHT OF WAY, EASEMENTS AND PROPERTY TIES

**IREDELL COUNTY**

**TIP PROJECT: BR-0115**



**RW04**



**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "BR0115-1" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 830,678.347(ft) EASTING: 1,406,962.799(ft) ELEVATION: 1,131.966(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999912428 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BR0115-1" TO -L- STATION 10+00.00 IS S 42°53'04.22" E 255.017(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:** 11/27/2019

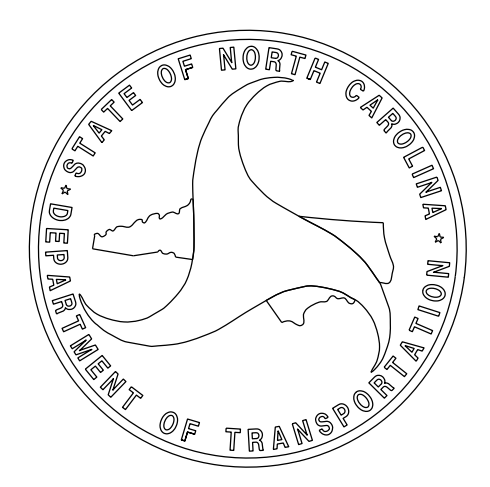
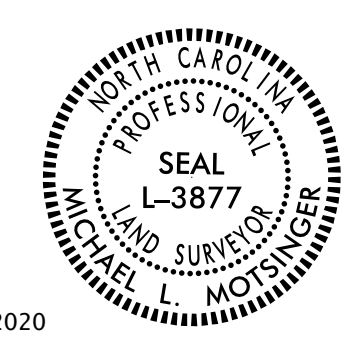
**LETTING DATE:** 07/21/2020

**PROFESSIONAL LAND SURVEYOR**

DocuSigned by:  
Michael L. Molsinger  
FD8BF70E23C40E

4/16/2020

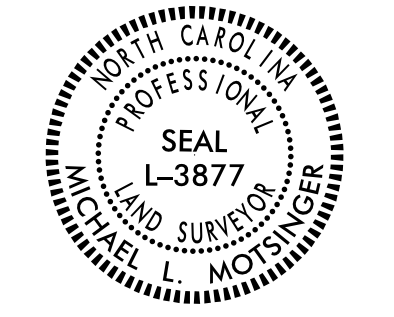
SIGNATURE: \_\_\_\_\_ Date: \_\_\_\_\_



\$\$\$ SYSTEM TIME \$\$\$  
\$\$\$ SUBSENAME \$\$\$

# SURVEY CONTROL SHEET

## W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
BR-0115	RW02C-1
Location and Surveys	
PROJECT SURVEYOR	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

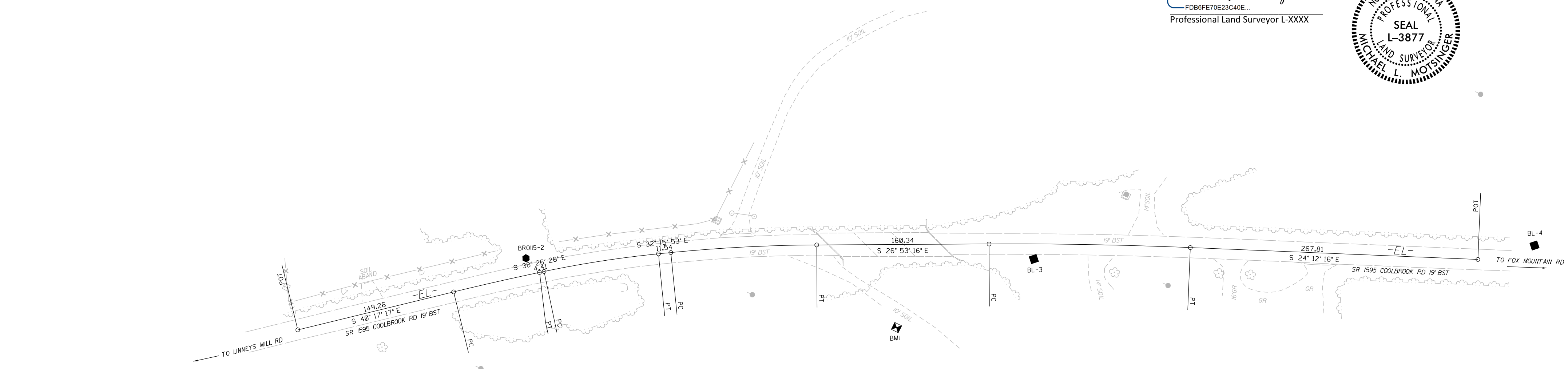
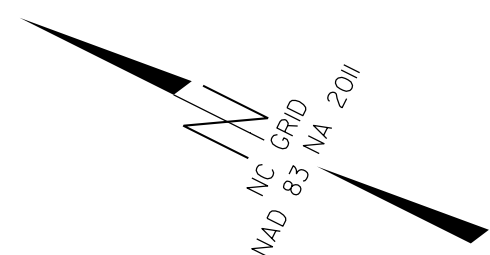
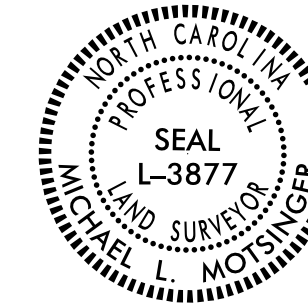
I, Michael L. Motsinger, PLS, certify that the Project Control was verified under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

Class of survey: AA  
 Type of GPS field procedure: OPUS  
 Dates of survey: February 2019  
 Datum: NAD 83 / NA 2011  
 Localized around: BR0115-1  
 Northing: 830678.347  
 Easting: 1406962.799  
 Combined grid factor: 0.999912428  
 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 16th day of April, 2020.

DocuSigned by:  
  
 FDB8F70E23C40E  
 Professional Land Surveyor L-XXXX



SEE SHEET RW02C-2  
 FOR FURTHER  
 ALIGNMENT DETAILS

### 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.

# SURVEY CONTROL SHEET

## BASELINE AND BENCHMARKS

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: BR0115-1  
 Northing: 830678.347  
 Easting: 1406962.799  
 Combined grid factor: 0.999912428  
 Geoid model: 12NC  
 Units: English

BL	POINT	DESC.	NORTH	EAST	ELEVATION
1		BR0115-1	830678.3470	1406962.7990	1131.97
2		BR0115-2	830323.2470	1407297.9330	1098.59
3		BL-3	829900.2710	1407508.6010	1083.38
4		BL-4	829489.2640	1407728.2930	1099.85


"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 16th day of April, 2020.

DocuSigned by:  
  
 Michael L. Motsinger  
 FDBBF70E23C40E  
 Professional Land Surveyor L-XXXX



.....  
 BM1 ELEVATION = 1081.94  
 N 829986 E 1407394  
 RR SPIKE IN BASE OF 18" HICKORY  
 .....  
 .....  
 BM3 ELEVATION = 1103.69  
 N 829271 E 1407760  
 RR SPIKE IN BASE OF 18" POPLAR  
 .....

PROJECT REFERENCE NO. BR-0115	SHEET NO. RW02C-2
<b>Location and Surveys</b>	
PROJECT SURVEYOR	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

REVISIONS

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# SURVEY CONTROL SHEET

## W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

EL POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	830483.298	1407143.288							
LINE			S 40°17'17.1" E	149.26					
PC	830369.441	1407239.805							
CURVE			S 39°21'51.6" E	81.84	01°50'51.0"(RT)	02°15'26.6"	81.84	40.92	2538.13
PT	830306.169	1407291.711							
LINE			S 38°26'26.1" E	4.41					
PC	830302.712	1407294.455							
CURVE			S 35°21'09.6" E	107.74	06°10'33.0"(RT)	05°43'46.5"	107.79	53.95	1000.00
PT	830214.841	1407356.792							
LINE			S 32°15'53.1" E	11.54					
PC	830205.080	1407362.955							
CURVE			S 29°34'34.3" E	135.95	05°22'37.5"(RT)	03°57'13.2"	136.00	68.05	1449.18
PT	830086.842	1407430.058							
LINE			S 26°53'15.5" E	160.34					
PC	829943.834	1407502.571							
CURVE			S 25°32'45.7" E	187.31	02°40'59.6"(RT)	01°25'56.6"	187.32	93.68	4000.00
PT	829774.838	1407583.345							
LINE			S 24°12'15.9" E	267.81					
POT	829530.570	1407693.146							

# PROPOSED ALIGNMENT

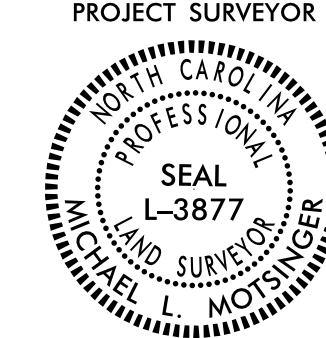
TYPE	STATION	NORTH	EAST
POT	10+00.00	830491.4890	1407136.3440
PC	12+39.87	830308.5155	1407291.4513
PT	14+88.40	830101.0116	1407427.0733
PC	16+97.69	829912.9822	1407518.9773
PT	18+26.41	829796.4471	1407573.6315
POT	21+17.91	829530.5699	1407693.1461

TYPE	STATION	NORTH	EAST
POT	10+00.00	830128.8170	1407412.9414
PC	10+11.89	830123.5941	1407402.2556
PT	10+32.29	830106.5027	1407394.2847
PC	11+04.01	830036.8947	1407411.5695
PT	11+26.09	830014.9728	1407412.8721
POT	11+47.86	829993.3781	1407410.1654

**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 & PERMANENT EASEMENTS

PROJECT REFERENCE NO. BR-0115	SHEET NO. RW03E-1
<b>Location and Surveys</b>	
ENTER CONSULTANT'S NAME IN THIS BOX	
PROJECT SURVEYOR 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	14+00.00	-50.00	830204.4531	1407427.6030
L	14+00.00	-25.26	830191.6692	1407406.4220
L	14+88.40	-50.00	830122.9680	1407471.9946
L	16+70.00	-28.91	829950.5552	1407532.7914
L	16+70.00	-50.00	829959.8163	1407551.7389

ROW MARKER PERMANENT EASEMENT-E

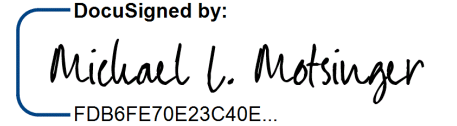
ALIGN	STATION	OFFSET	NORTH	EAST
L	12+05.00	-29.61	830354.2583	1407291.4867
L	12+05.00	-50.00	830367.4459	1407307.0435
L	14+75.00	-72.00	830145.4942	1407485.3644
L	16+30.00	31.67	829959.8876	1407460.7951
L	16+60.00	50.00	829924.8878	1407457.5052
L	16+70.00	-72.00	829969.4771	1407571.5043
L	16+85.00	30.93	829910.8018	1407485.6173
L	16+85.00	50.00	829902.4272	1407468.4833
L	17+60.00	-40.00	829873.7940	1407582.1082
L	17+60.00	-29.54	829869.3464	1407572.6376
L	17+95.00	-67.00	829852.9943	1407621.5333
L	17+95.00	-29.74	829837.4533	1407587.6738

REVISIONS

15-APR-2020 08:30 AM 15-312635 mtsinger  
I:\PR-2020\0320\15-312635\Right of Way Staking\surveycontrol\sheets\tobechecked\BR-0115-LS-rw03e-1.dgn

I, Michael L. Motsinger, 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 from \_\_\_\_\_ to \_\_\_\_\_, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 16th day of April, 2020.

DocuSigned by:  
  
FDB6FE70E23C40E...  
Professional Land Surveyor L-3877



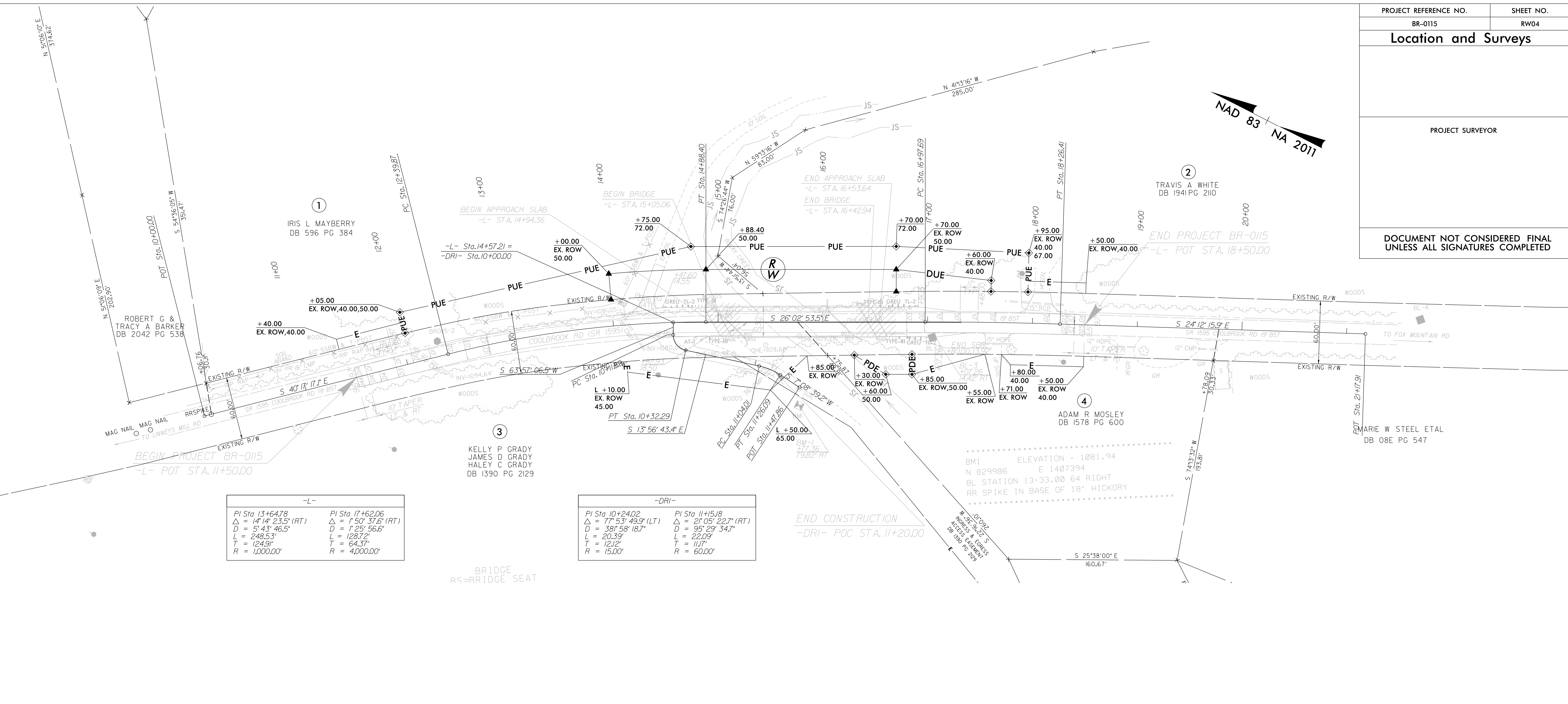
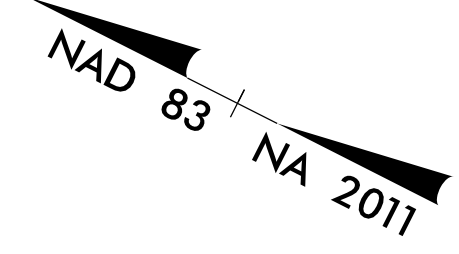
**NOTES:**

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

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



-L-	
PI Sta 13+64.78	PI Sta 17+62.06
$\Delta = 14' 14' 23.5''$ (RT)	$\Delta = 1' 50' 37.6''$ (RT)
$D = 5' 43' 46.5''$	$D = 1' 25' 56.6''$
$L = 248.53'$	$L = 128.72'$
$T = 124.91'$	$T = 64.37'$
$R = 1,000.00'$	$R = 4,000.00'$

-DRI-	
PI Sta 10+24.02	PI Sta 11+15.18
$\Delta = 77' 53' 49.9''$ (LT)	$\Delta = 21' 05' 22.7''$ (RT)
$D = 381' 58' 18.7''$	$D = 95' 23' 34.7''$
$L = 20.39'$	$L = 22.09'$
$T = 12.12'$	$T = 11.77'$
$R = 15.00'$	$R = 60.00'$

BRIDGE  
RS=BRIDGE SEAT

I, Michael L. Motsinger, 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 from \_\_\_\_\_ to \_\_\_\_\_, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 16th day of April, 2020.

DocuSigned by:  
**Michael L. Motsinger**  
FD86FE70E23C40E...  
Professional Land Surveyor L-3877



- 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 \_\_\_\_\_ TO \_\_\_\_\_

6/2/19  
15-APR-2020 13:58  
C:\Users\motsinger\OneDrive\Documents\Projects\BR-0115\Right of Way Staking\surveycontrolsheets\to be checked\BR0115.Ls-rw04.dgn  
motsinger

REVISIONS