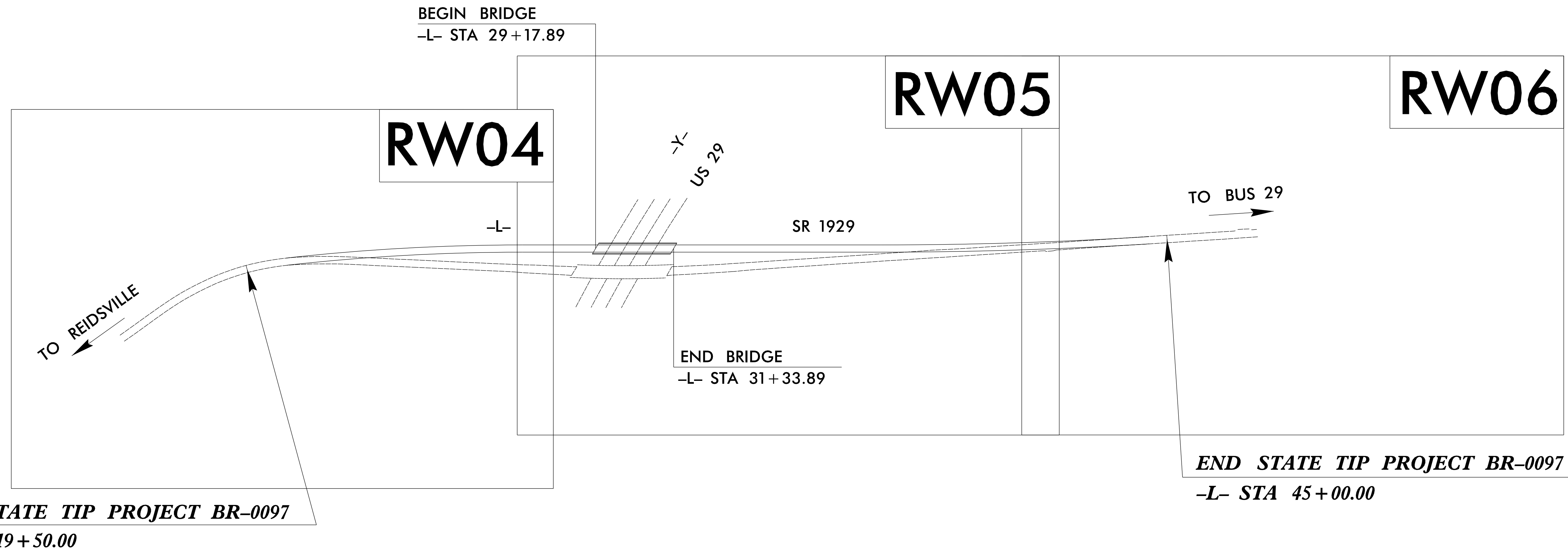
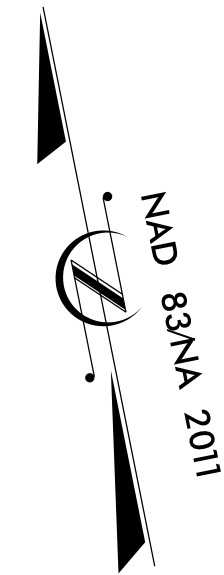


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0097	RW01	

TIP PROJECT: BR-0097

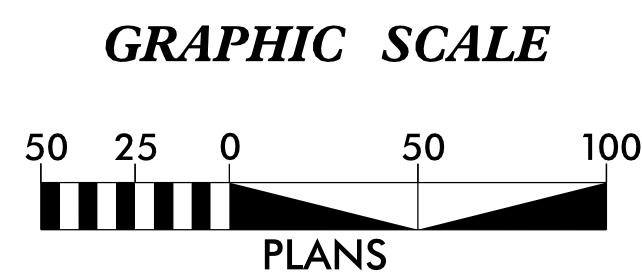
STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
 SURVEY CONTROL, EXISTING CENTERLINES,
 RIGHT OF WAY, EASEMENTS AND PROPERTY TIES

ROCKINGHAM COUNTY



BEGIN STATE TIP PROJECT BR-0097
-L- STA 19+50.00

END STATE TIP PROJECT BR-0097
-L- STA 45+00.00



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "BR0097-1" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 980893.451(ft) EASTING: 1832790.910(ft) ELEVATION: 637.12(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.00006479

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BR0097-1" TO -L- STATION 30+17.89 IS N 59-30'21" W 141.069(ft)

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88/ GEOID G12NC

Prepared In the Office of:

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
05/27/23

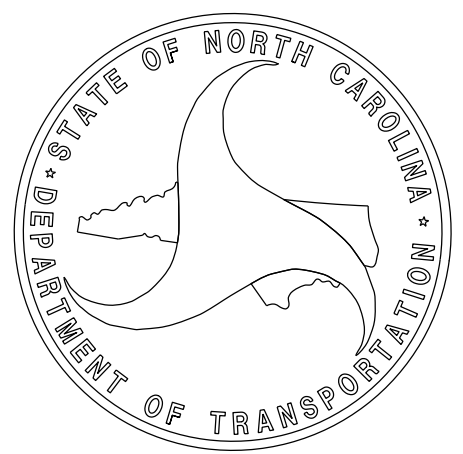
LETTING DATE:
4/16/24

PROFESSIONAL LAND SURVEYOR



DocuSigned by:
Robert H. Bengtson
EA79E7CA33884F1

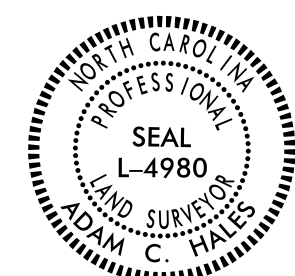
Date:
5/24/2023



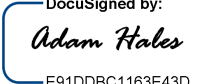
6/2/99

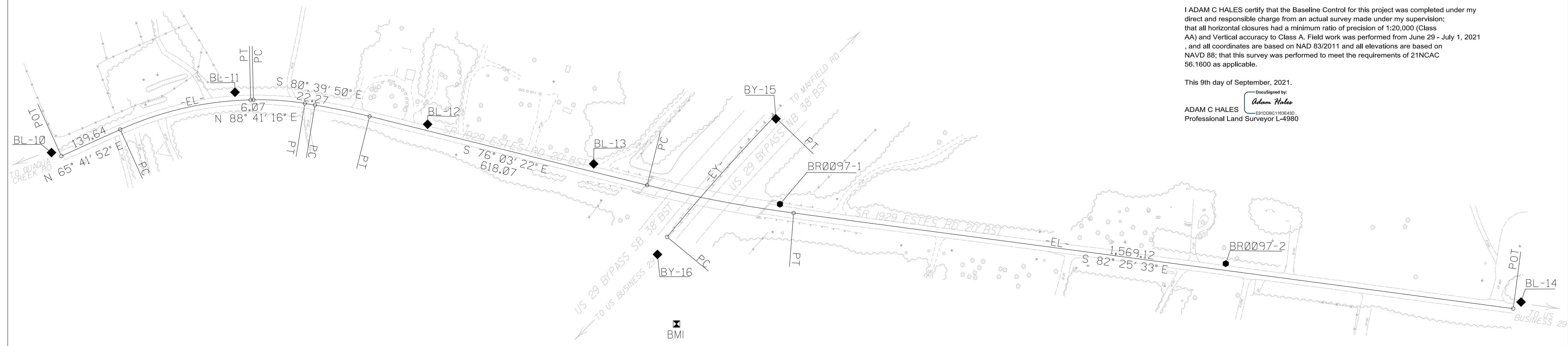
SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO. BR-0097	SHEET NO. RW02C-1
Location and Surveys	
Dewberry Engineers Inc.	
PROJECT SURVEYOR	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I ADAM C HALES 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 June 29 - July 1, 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 9th day of September, 2021.
 DocuSigned by:

 ADAM C HALES
 ES1000C1163E43D
 Professional Land Surveyor L-4980



SEE SHEET RW02C-2
FOR FURTHER
CONTROL 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.

REVISIONS

OR: SER: 20210414
 P: N: 1001
 AT: M: 398RM
 BR0097-CAD\Survey\br-0097-1s-rw02c-1-210909.dgn
 6/2/2021
 ahales

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO. BR-0097	SHEET NO. RW02C-2
Location and Surveys	
DEWBERRY ENGINEERS, INC	
PROJECT SURVEYOR	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

BL	POINT	DESC.	NORTH	EAST	ELEVATION
10		BL - 10	981005.0560	1831216.2430	586.75
11		BL - 11	981135.5730	1831612.9650	594.07
12		BL - 12	981066.3580	1832029.2330	610.95
13		BL - 13	980980.6230	1832388.1320	627.87
1		BR0097-1	980893.4510	1832790.9100	637.12
2		BR0097-2	980764.8480	1833754.5160	663.65
14		BL - 14	980681.6900	1834392.7810	687.82

.....
 BM1 ELEVATION = 618.59
 N 980634 E 1832567
 BY STATION 9+71.00
 S 15°21'42.8" E DIST 155.96
 RAILROAD SPIKE IN A 15' MAPLE

BY	POINT	DESC.	NORTH	EAST	ELEVATION
15		BY - 15	981078.0530	1832782.1260	612.57
1		BR0097-1	980893.4510	1832790.9100	637.12
16		BY - 16	980784.7410	1832526.0790	610.52

I, ADAM C HALES, 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: RTN
 Dates of survey: February 12, 2019
 Datum/Epoch: NAD83/2011
 Published/Fixed-control use: N/A
 Localized around: BR0097-1
 Northing: 980893.451
 Easting: 1832790.910
 Combined grid factor: 1.00006479
 Geoid model: GEOID G12NC
 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 June 29 - July 1, 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 9th day of September, 2021.

DocuSigned by:

 ADAM C HALES
ES1008C1183E43D
 Professional Land Surveyor L-4980

EL									
POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	980997.518	1831237.679							
LINE			N 65°41'52.2" E	139.64					
PC	981054.989	1831364.950							
CURVE			N 77°11'34.1" E	288.96	22°59'24.0"(RT)	07°54'10.3"	290.91	147.44	725.00
PT	981119.043	1831646.720							
LINE	981119.182	1831652.792	N 88°41'16.1" E	6.07					
PC									
CURVE			S 85°59'17.0" E	111.35	10°38'53.8"(RT)	09°32'57.5"	111.51	55.92	600.00
PT	981111.391	1831763.868							
LINE			S 80°39'50.1" E	22.27					
PC	981107.779	1831785.838							
CURVE			S 78°21'36.1" E	120.60	04°36'28.0"(RT)	03°49'11.0"	120.63	60.35	1500.00
PT	981083.447	1831903.957							
LINE			S 76°03'22.1" E	618.07					
PC	980934.511	1832503.812							
CURVE			S 79°14'27.7" E	322.24	06°22'11.2"(LT)	01°58'32.6"	322.40	161.37	2900.00
PT	980874.356	1832820.385							
LINE			S 82°25'33.3" E	1569.12					
POT	980667.533	1834375.819							


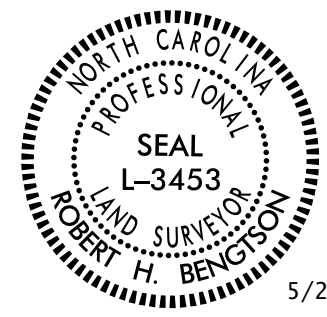
EY									
POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	980822.584	1832546.926							
CURVE			N 41°41'02.4" E	348.90	04°21'44.4"(RT)	01°15'00.0"	348.99	174.58	4583.66
PT	981083.153	1832778.953							

REVISIONS

NOTES:

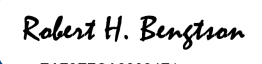
1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO. BR-0097	SHEET NO. RW02D-1
Location and Surveys	
 Dewberry Engineers Inc. <small>551 PINEY FOREST ROAD DANVILLE, VA 24540 PHONE: 434.797.4497 FAX: 434.797.4341 NCBELS #F-0929</small>	
PROJECT SURVEYOR  <small>5/24/2023</small>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I, Robert h. Bengtson, 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 24th day of May, 2023.

DocuSigned by:

 Professional Land Surveyor L-3453

REVISIONS

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	980770.3902	1830734.6979
PC	16+91.53	981054.9888	1831364.9500
PCC	20+61.59	981116.5362	1831725.7947
PT	27+15.23	981024.2926	1832372.5574
PC	37+08.12	980829.8970	1833346.2263
PT	44+86.54	980702.3472	1834113.9944
POT	52+00.00	980608.3081	1834821.2249

Y

TYPE	STATION	NORTH	EAST
PC	10+00.00	981416.1215	1833134.9342
PT	22+28.53	980509.9336	1832310.8674

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.

RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO. BR-0097	SHEET NO. RW03E-1
Location and Surveys	
 Dewberry Engineers Inc. <small>551 PINEY FOREST ROAD DANVILLE, VA 24040 PHONE: 434.797.4497 FAX: 434.797.4341 NCBELS #F-0929</small>	
PROJECT SURVEYOR <small>5/24/2023</small>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	20+45.00	-30.04	981147.7572	1831711.1493
L	20+61.59	-30.00	981146.4247	1831728.3797
L	27+15.23	-30.00	981053.7120	1832378.4311
L	28+51.38	-30.00	981027.0567	1832511.9393
L	32+55.70	-50.00	980967.5078	1832912.3527
L	37+08.12	-30.00	980859.3164	1833352.1000
L	42+96.32	-30.00	980758.5863	1833930.0570
L	42+96.34	-28.50	980757.0953	1833929.8599

NOT SET, HITS IN TREE

I, Robert H. Bengtson, 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 4/25/23 to 5/11/23, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 24th day of May, 2023.
 Designed by:

 EA79E7CA3388F1
 Professional Land Surveyor L-3453

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	21+65.00	-30.00	981136.5618	1831831.8448
L	21+65.00	-44.00	981150.4865	1831833.2954
L	21+88.00	-44.00	981148.0406	1831856.3374
L	21+88.00	-30.00	981134.1217	1831854.8326
L	33+23.36	-61.86	980965.8893	1832981.0242
L	33+34.40	-78.66	980980.2087	1832995.1410
L	33+54.73	-45.62	980943.8252	1833008.6114
L	33+57.92	-66.49	980963.6679	1833015.8223
L	33+72.99	-71.88	980966.0041	1833031.6598
L	33+82.83	-44.38	980937.1058	1833035.9227
L	34+06.23	74.97	980815.4885	1833035.4999
L	34+11.75	88.15	980801.4772	1833038.3390
L	34+28.18	107.92	980778.8773	1833050.5741
L	34+38.36	72.88	980811.2434	1833067.4184
L	34+45.72	98.32	980784.8562	1833069.6594
L	35+25.00	75.00	980792.2009	1833151.9688
L	35+25.00	67.25	980799.8001	1833153.4860
L	35+55.00	65.30	980795.8375	1833183.2870
L	35+55.00	75.00	980786.3272	1833181.3882
L	36+96.77	-35.52	980866.9477	1833342.0506
L	36+97.10	-30.49	980861.9518	1833341.3884
L	36+99.87	-64.66	980894.9171	1833350.8019
L	37+19.90	-65.96	980892.2890	1833370.6285
L	37+26.76	-37.46	980863.0054	1833371.7905
L	37+27.24	-30.00	980855.5967	1833370.8084

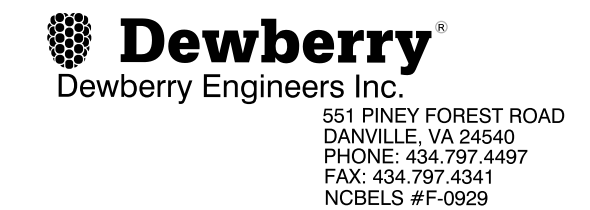
NOT SET, HITS IN TREE

NOTES:

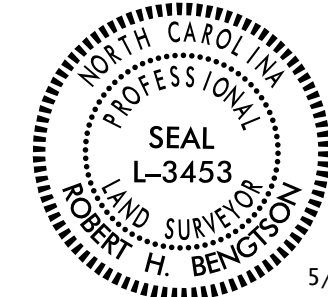
1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED 4/25/23 TO 5/11/23 .

REVISIONS

Location and Surveys



PROJECT SURVEYOR



5/24/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I, Robert H. Bengtson, 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 4/25/23 to 5/11/23, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 24th day of May, 2023.

Decalsigned by: Robert H. Bengtson

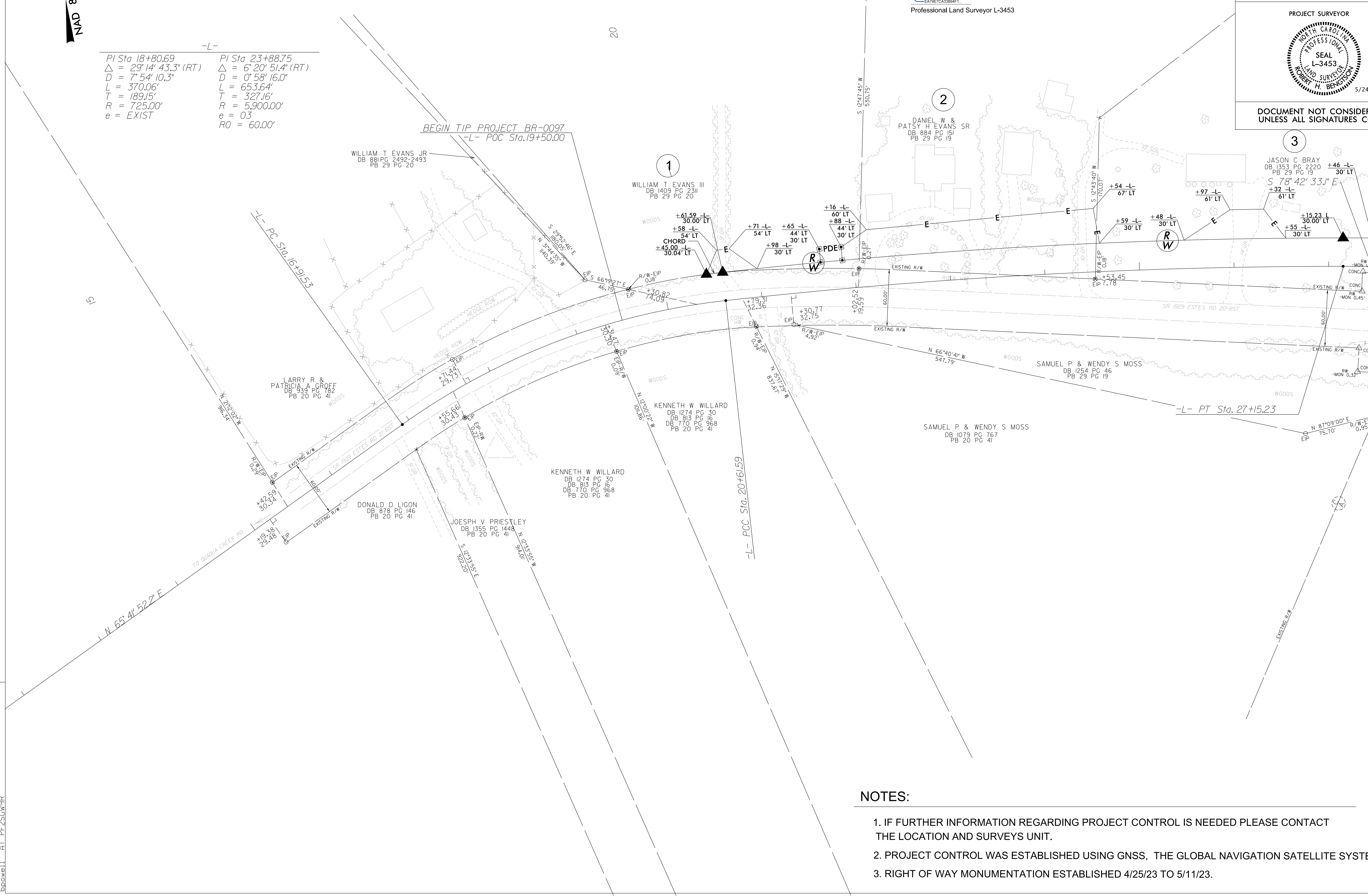
Professional Land Surveyor L-3453

-L- PI Sta 18+80.69 Δ = 29°14'43.3" (RT) D = 7°54'10.3" L = 370.06' T = 189.15' R = 725.00' e = EXIST
-L- PI Sta 23+88.75 Δ = 6°20'51.4" (RT) D = 0°58'16.0" L = 653.64' T = 327.16' R = 5,900.00' e = 03 RO = 60.00'

BEGIN TIP PROJECT BR-0097 -L- POC Sta.19+50.00

REVISIONS

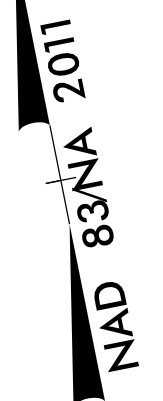
MATCHLINE -L- 27 + 50.00 SEE SHEET 05




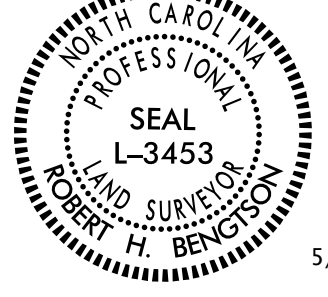
NOTES:

- 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 4/25/23 TO 5/11/23.

6/2/2023 11:50 P:\5016223\01_Survey\mcr-estation\RW SHEETS\BR0097.LS.RW04_230525.dgn

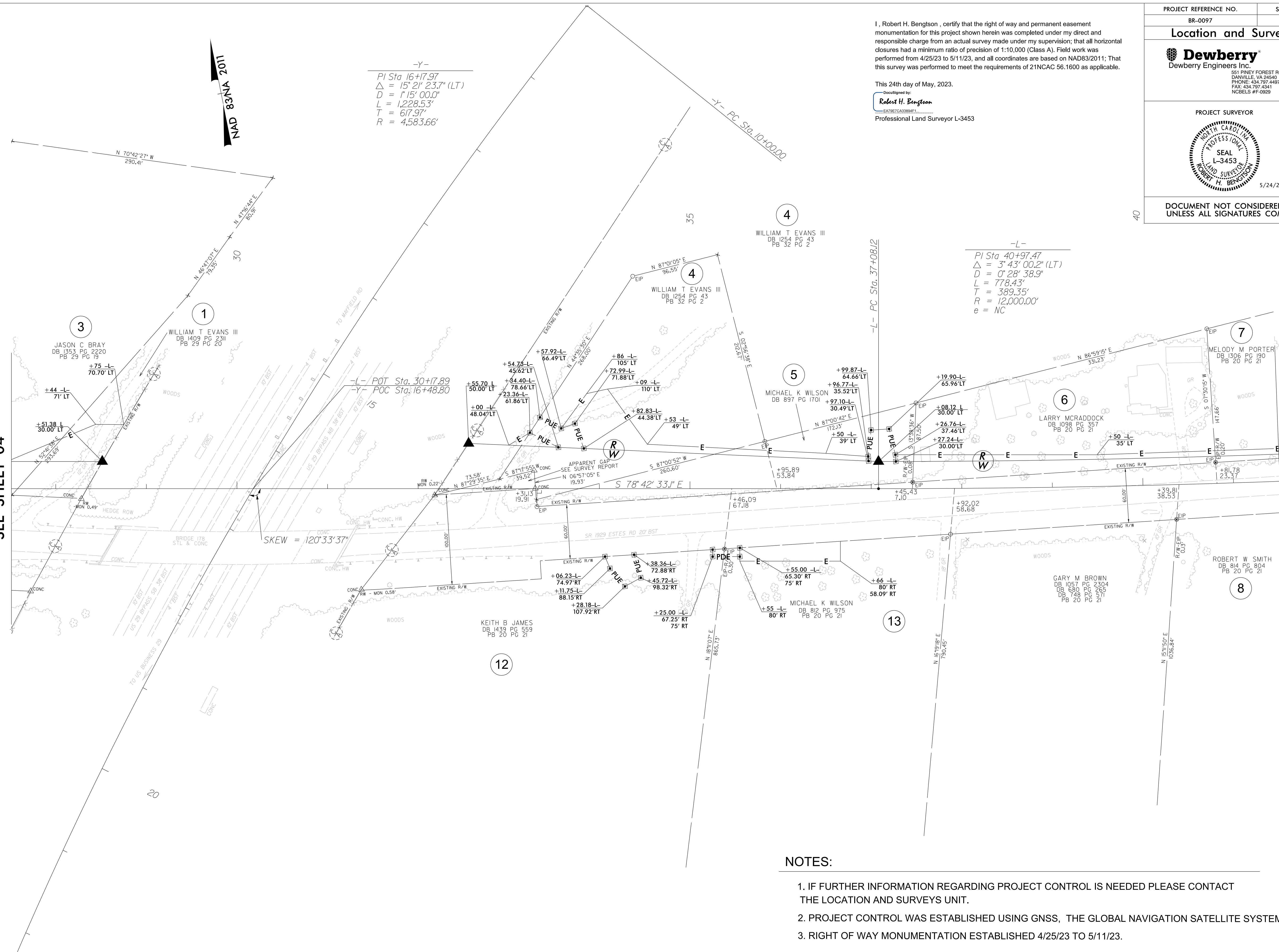


6/2/09

PROJECT REFERENCE NO.	SHEET NO.
BR-0097	RW05
Location and Surveys	
 Dewberry Engineers Inc. 551 PINEY FOREST ROAD DANVILLE, VA 24040 PHONE: 434.797.4407 FAX: 434.797.4341 NCBELS #F-0929	
PROJECT SURVEYOR	
 SEAL L-3453 ROBERT H. BENGTSON 5/24/2023	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I, Robert H. Bengtson, 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 4/25/23 to 5/11/23, and all coordinates are based on NAD83/2011; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 24th day of May, 2023.
 DocuSigned by:
Robert H. Bengtson
 EA79EFCAS3884F1
 Professional Land Surveyor L-3453



-Y-
 PI Sta 16+17.97
 $\Delta = 15' 21'' 23.7''$ (LT)
 $D = 1' 15'' 00.0''$
 $L = 1,228.53'$
 $T = 617.97'$
 $R = 4,583.66'$

-L-
 PI Sta 40+97.47
 $\Delta = 3' 43'' 00.2''$ (LT)
 $D = 0' 28'' 38.9''$
 $L = 778.43'$
 $T = 389.35'$
 $R = 12,000.00'$
 $e = NC$

MATCHLINE -L- 27 + 50.00
SEE SHEET 04

MATCHLINE -L- 41 + 50.00
SEE SHEET 06

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 4/25/23 TO 5/11/23.

REVISIONS

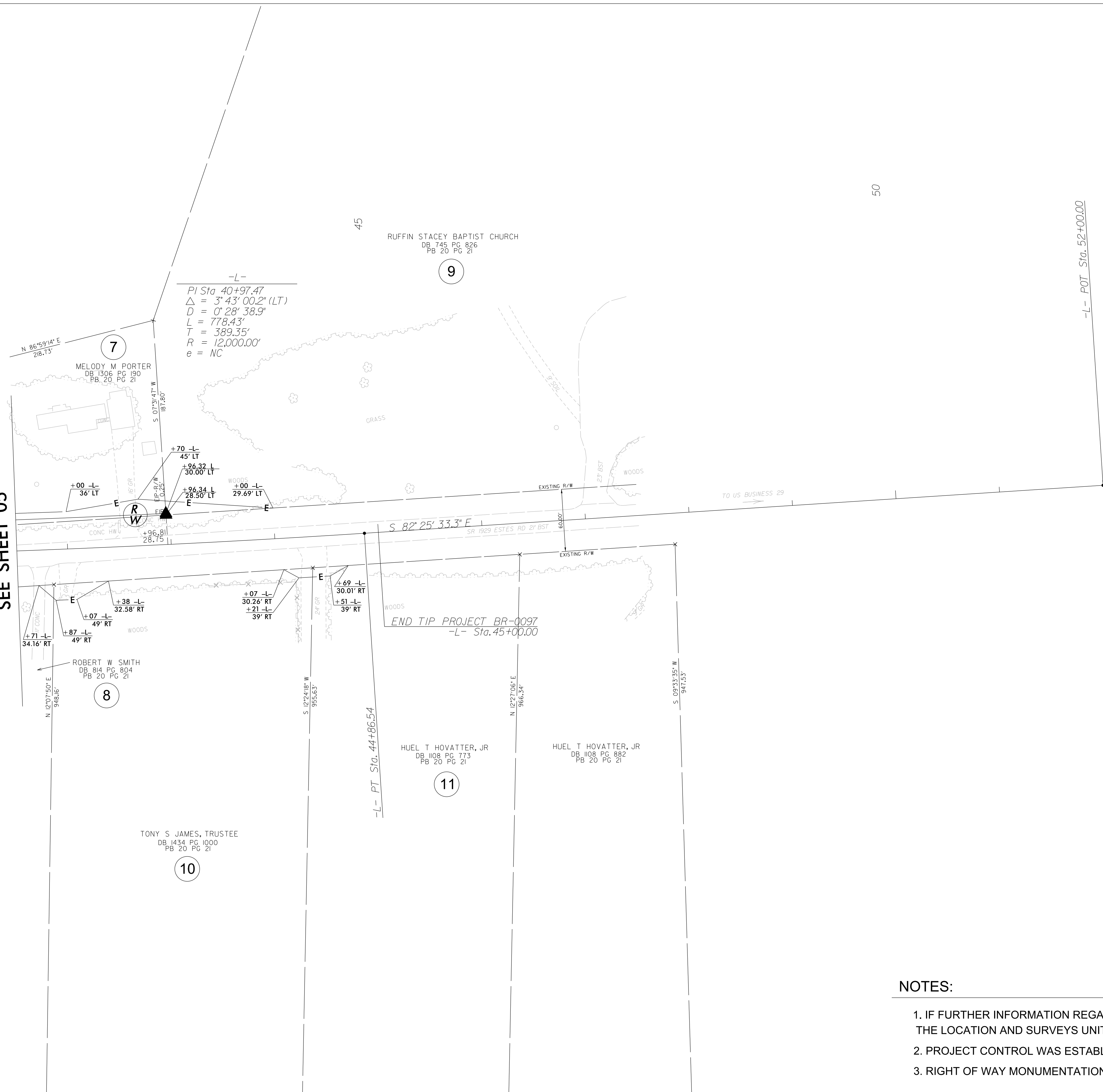
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 5/16/23
 bbowell

6/2/09

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bpoore11 AT PF250W9R

REVISIONS

MATCHLINE -L- 41+50.00
SEE SHEET 05



50

NAD 83/NA 2011

PROJECT REFERENCE NO. BR-0097	SHEET NO. RW06
Location and Surveys	
 Dewberry Dewberry Engineers Inc. <small>551 PINEY FOREST ROAD DANVILLE, VA 24540 PHONE: 434.797.4407 FAX: 434.797.4341 NCBELS #F-0929</small>	
PROJECT SURVEYOR 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I, Robert H. Bengtson, 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 4/25/23 to 5/11/23, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 24th day of May, 2023.

DocuSigned by:

 Professional Land Surveyor L-3453

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 4/25/23 TO 5/11/23.