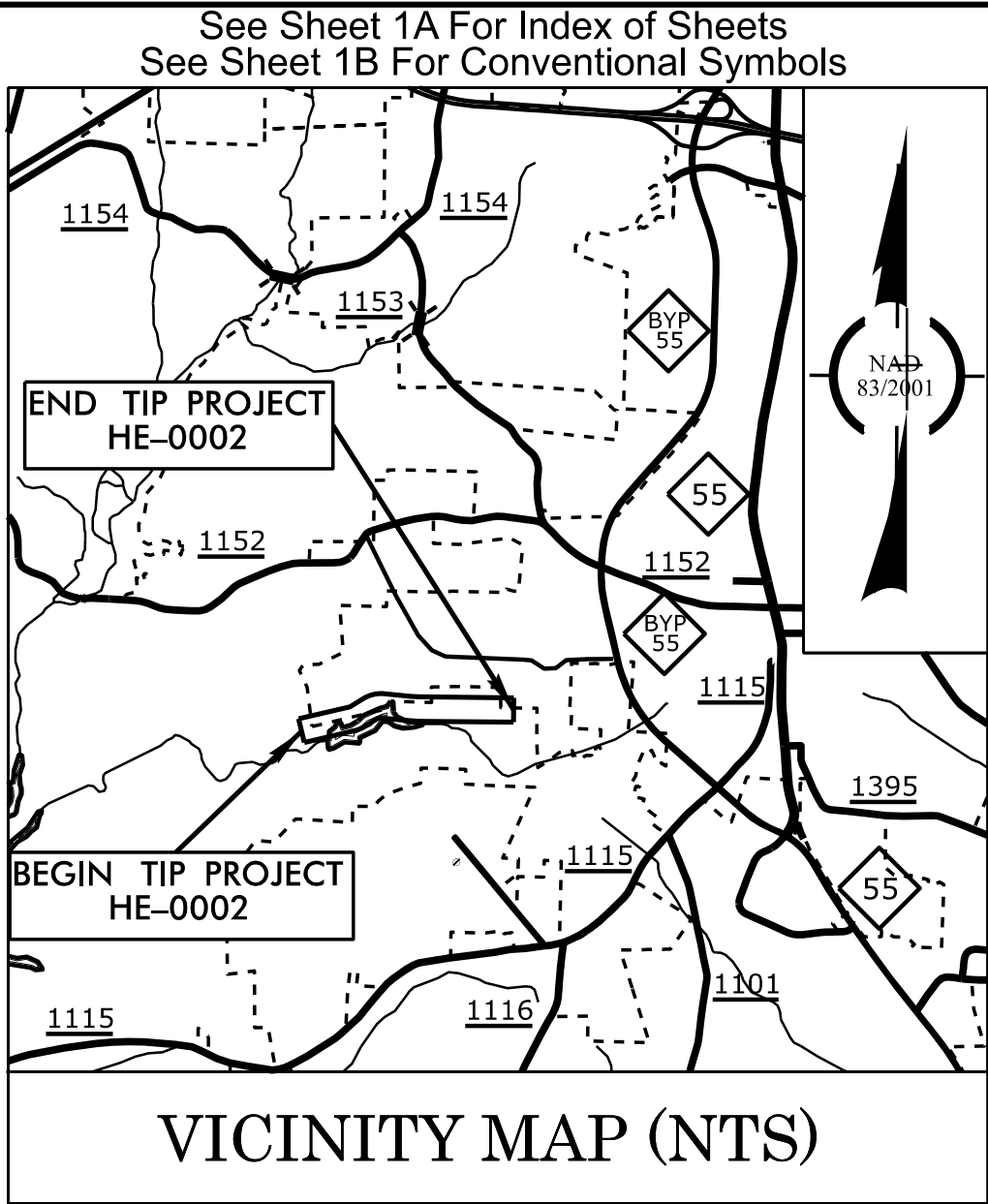


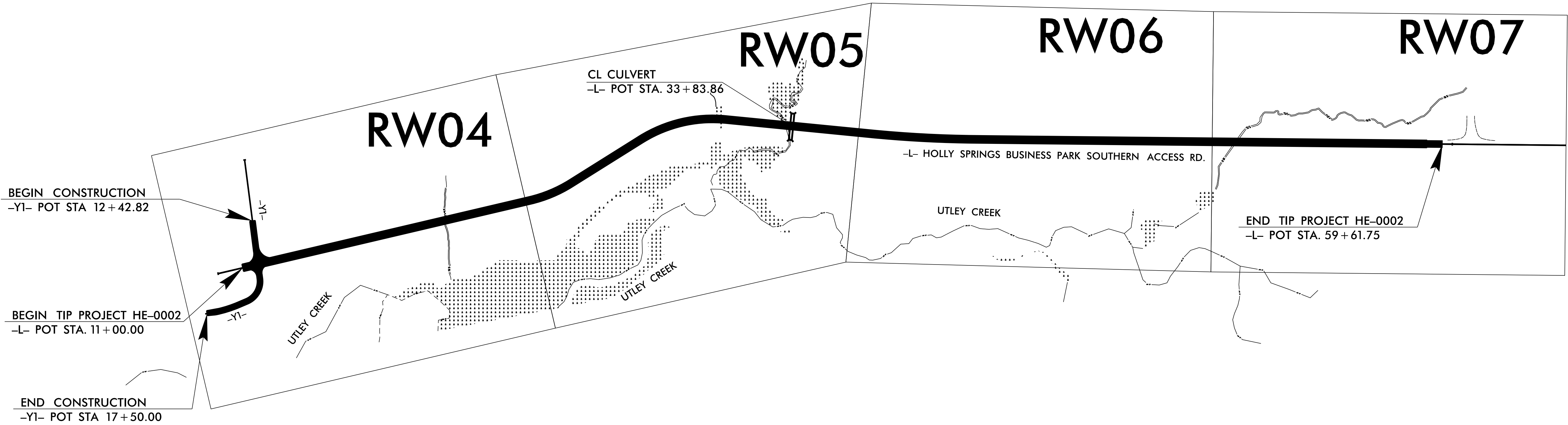
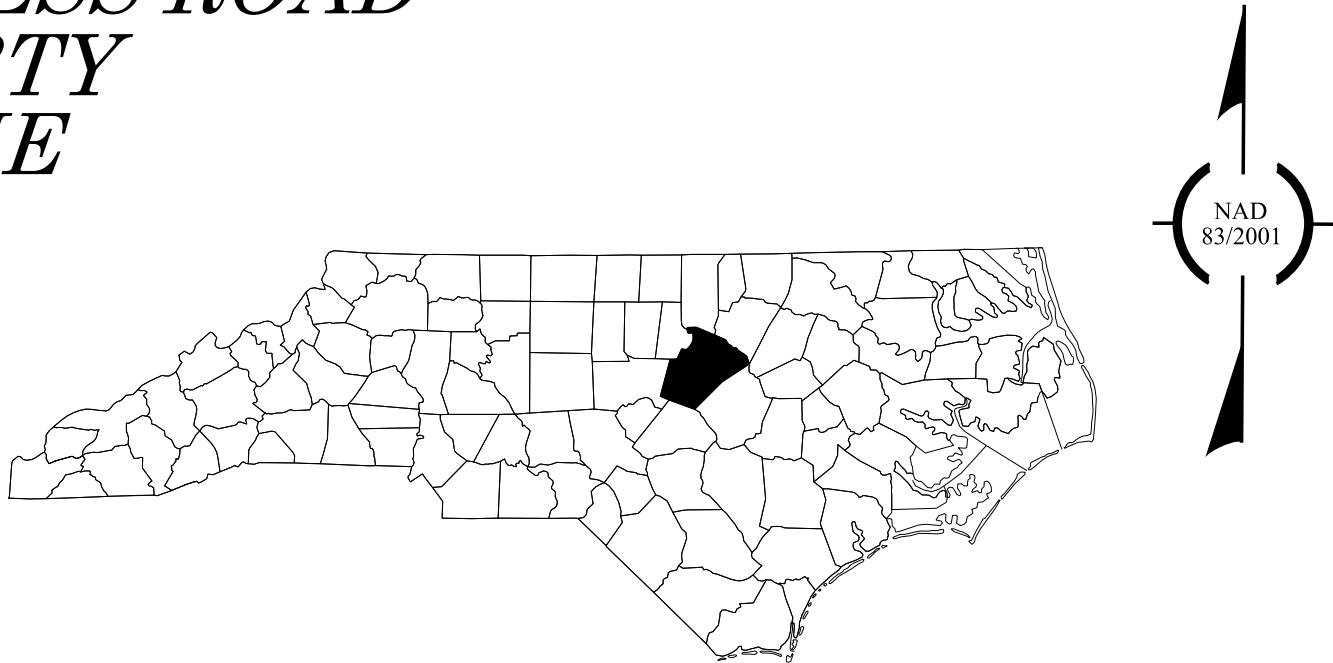
TIP PROJECT: HE-0002



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

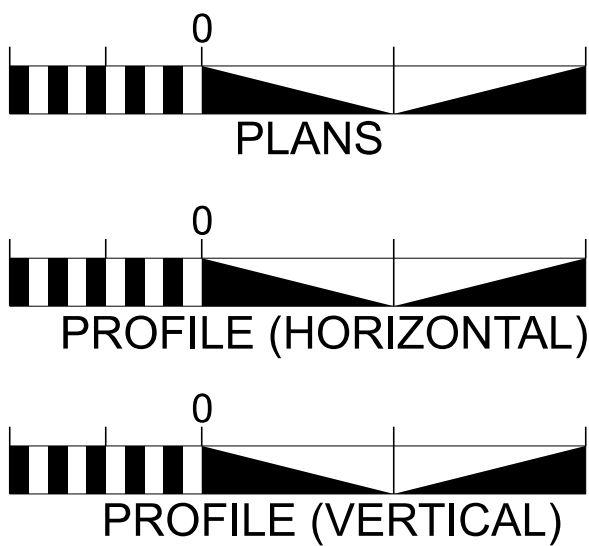
**SURVEY CONTROL, EXISTING CENTERLINES,
RIGHT OF WAY, EASEMENTS AND PROPERTY TIES
WAKE COUNTY**

**LOCATION: HOLLY SPRINGS BUSINESS PARK SOUTHERN ACCESS ROAD
FROM FUJI DIOSYNTH BIOTECHNOLOGIES PROPERTY
& SEWER PUMP STATION TO 110 FEET WEST OF THE
BUMGARDNER ROAD EXTENSION INTERSECTION**



DOCUMENT NOT CONSIDERED FINAL

GRAPHIC SCALES



DESIGN DATA

ADT =
ADT =
K = %
D = %
T = % *
V = MPH
* TTST = DUAL
FUNC CLASS =
TIER

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCGS FOR MONUMENT "GPS-4"
WITH NAD 83/NSRS XXXX STATE PLANE GRID COORDINATES OF
NORTHING: 692,478.163 (ft) EASTING: 2,044,198.718 (ft)
ELEVATION: 399.570 (ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GRID TO GROUND) IS: 0.9998829659
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"GPS-4" TO -L- STATION 67+74.88 IS
S 28-08'4.8" X 2009.83 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:



2641-116 Sumner Blvd.
Raleigh, NC 27616
Ofc: 919.878.7466
Email: info@sam.biz

2024 STANDARD SPECIFICATIONS

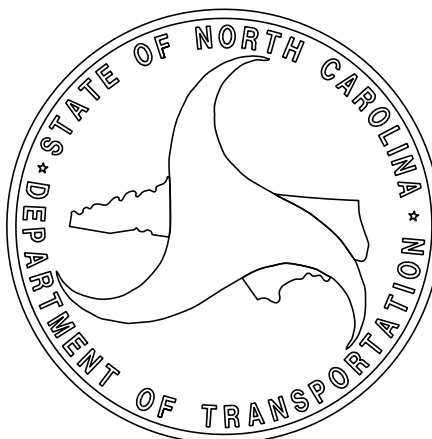
PROFESSIONAL LAND
SURVEYOR



John E. Kaukola, Jr.

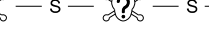
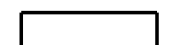
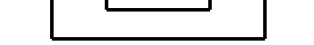
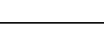
SIGNATURE:

Date:

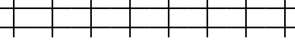
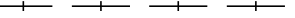


Note: Not to Scale

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	

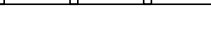
RAILROADS:

Standard Gauge	
RR Signal Milepost	
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:

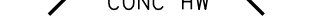
Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Curb Ramp	
Existing Metal Guardrail	
Proposed Guardrail	
Existing Cable Guiderail	
Proposed Cable Guiderail	
Equality Symbol	
Pavement Removal	
VEGETATION:	
Single Tree	
Single Shrub	
Hedge	

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	
Bridge Wing Wall, Head Wall and End Wall	
MINOR:	
Head and End Wall	
Pipe Culvert	
Footbridge	
Drainage Box: Catch Basin, DI or JB	
Paved Ditch Gutter	
Storm Sewer Manhole	
Storm Sewer	

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	
Power Line Tower	
Power Transformer	
U/G Power Cable Hand Hole	
H-Frame Pole	
U/G Power Line Test Hole (SUE - LOS A)*	
U/G Power Line (SUE - LOS B)*	
U/G Power Line (SUE - LOS C)*	
U/G Power Line (SUE - LOS D)*	

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line (SUE - LOS B)*	
U/G Tank; Water, Gas, Oil	
Underground Storage Tank, Approx. Loc.	
A/G Tank; Water, Gas, Oil	
Geoenviromental Boring	
Abandoned According to Utility Records	
End of Information	

3/7/23

REVISIONS

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

CUR DATA -Y1-
Plc 16+81.56
 $\Delta c = 14^{\circ}04'17.8''$ (RT)
D = 11°27'33.0"
Lc = 122.80
Tc = 61.71
R = 500
e = NC
RO = N/A
DS = 40 mph

CUR DATA -Y1-
Plc 15+38.54
 $\Delta c = 74^{\circ}20'29.7''$ (RT)
D = 66°37'22.8"
Lc = 111.59
Tc = 65.21
R = 86
e = NC
RO = N/A
DS = 25 mph

I, John E. Kaukola, Jr., PLS, certify that the Project Control was performed under my supervision from an actual GPS 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/June/July 2022
Datum/Epoch: NAD 83/NA 2011
Published/Fixed-control use: N/A to RTN
Localized around: GPS-4
Northing: 692478.163
Easting: 2044196.718
Combined grid factor: 0.9998829659
Geoid model: 12B (Conus)
Unit: US SURVEY FEET

I also certify that the Baseline Control for this project was verified 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 19, 2022, 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 23rd day of March, 2025.

Professional Seal
John E. Kaukola, Jr.
PLS
L-3909
Surveying
Date: 2025/03/24 09:11:35-0400

PROJECT REFERENCE NO.	SHEET NO.
1022070222	RW02C-1
Location and Surveys	
 2641-116 Summer Blvd. Raleigh, NC 27616 OIC: 919.276.7466 Email: info@sam.biz	
PROJECT SURVEYOR John E. Kaukola, Jr.  L-3999 Surveying J. E. KAUKOLA, JR.	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

GPS-1

GPS-2

BL-1

BM1

BL-2

BL-3

BL-4

MATCH LINE SHEET RW02C-2

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.

3/17/23

REVISIONS

SURVEY CONTROL SHEET

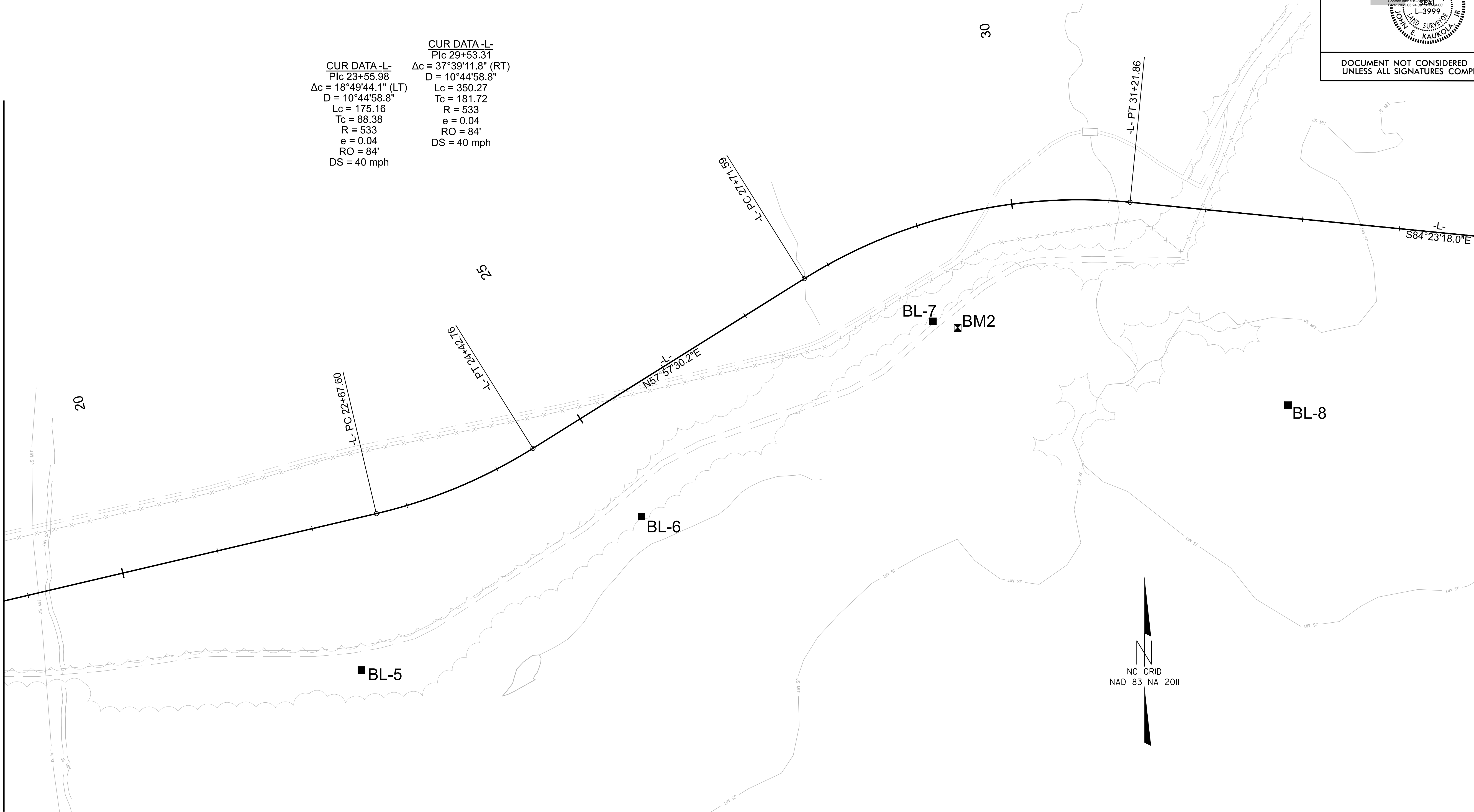
W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

I, John E. Kaukola, Jr., PLS, certify that the Project Control was performed under my supervision from an actual GPS made under my supervision. I also certify that the Baseline Control for this project was verified 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 19, 2022, 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 23rd day of March, 2023,
John E. Kaukola, Jr., PLS
Professional Licensure No. 3999

PROJECT REFERENCE NO.	SHEET NO.
1022070222	RW02C-2
Location and Surveys	
	
PROJECT SURVEYOR John E. Kaukola, Jr., PLS Professional Licensure No. 3999	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

MATCH LINE SHEET RW02C-1



MATCH LINE SHEET RW02C-3

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
W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

I, John E. Kaukola, Jr., PLS, certify that the Project Control was performed under my supervision from an actual GPS made under my supervision. I also certify that the Baseline Control for this project was verified 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 19, 2022, 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 23rd day of May, 2025
John E. Kaukola, Jr.,
Professional Land Surveyor L-3999

PROJECT REFERENCE NO.
1022070222

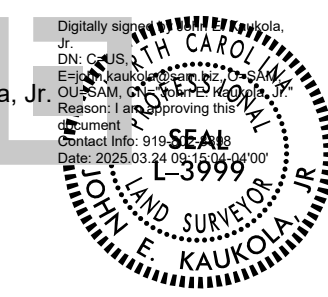
SHEET NO.
RW02C-3

Location and Surveys



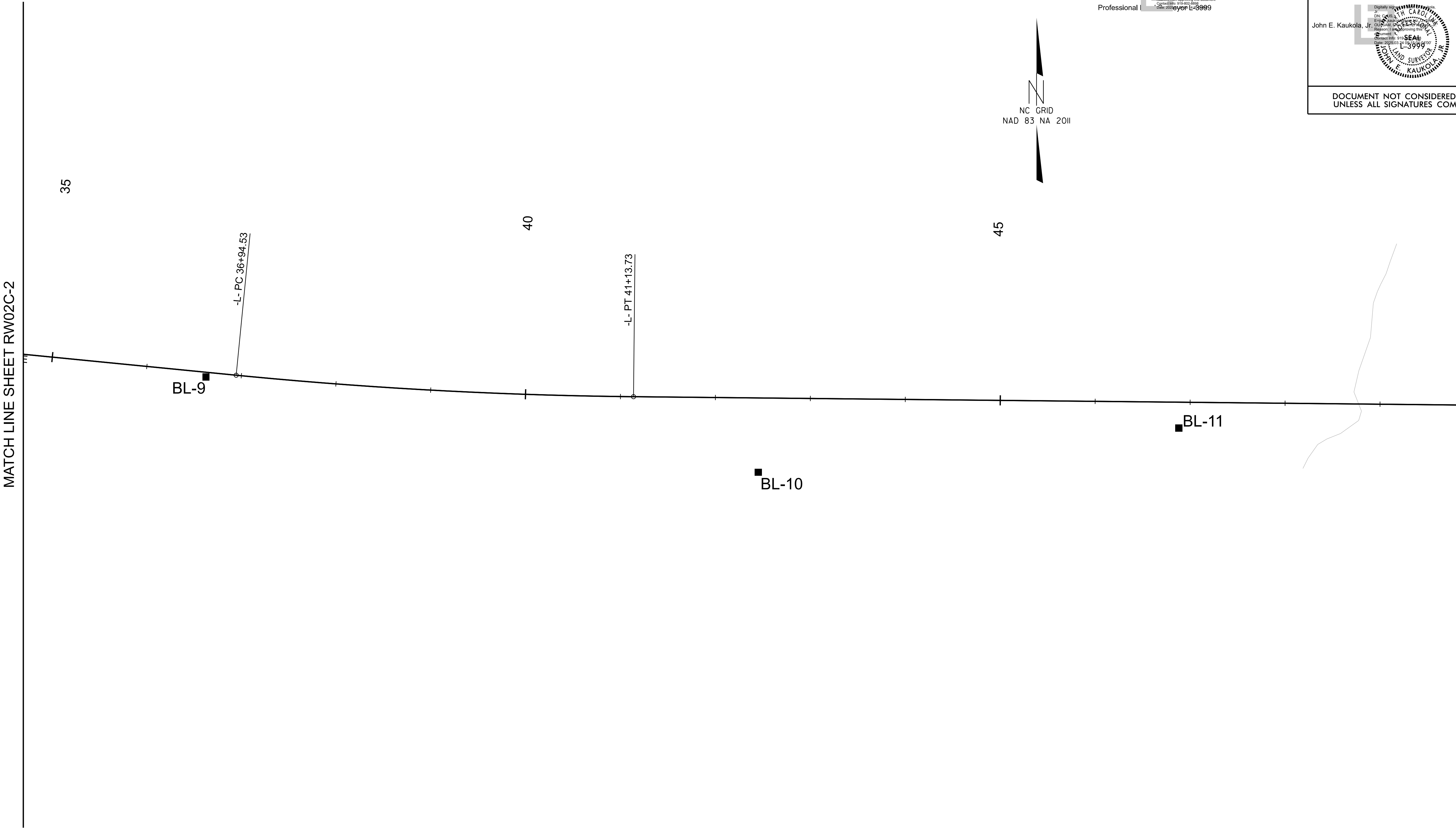
2641-116 Summer Blvd.
Raleigh, NC 27615
P: 919.875.7468
Email: info@sai.biz

PROJECT SURVEYOR



John E. Kaukola, Jr.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



- 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
W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

I, John E. Kaukola, Jr., PLS, certify that the Project Control was performed under my supervision from an actual GPS made under my supervision. I also certify that the Baseline Control for this project was verified 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 19, 2022, 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 23rd day of May, 2025
John E. Kaukola, Jr., PLS
Professional Licensure No. L-3999



MATCH LINE SHEET RW02C-3

50

BL-13

55

BL-14

BL-15

60

BM4

BL-16

S89°25'25.2"E

BL-12
BM3

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.

PROJECT REFERENCE NO.	SHEET NO.
1022070222	RW02C-4
Location and Surveys	
 2641-116 Summer Blvd. Raleigh, NC 27616 Tel: 919.276.7466 Email: info@sam.biz	
PROJECT SURVEYOR Digitally signed by John E. Kaukola, Jr. DN: cn=John E. Kaukola, Jr., o=Professional Licensure, ou=Professional Licensure, email=John.E.Kaukola@nc.gov, c=US John E. Kaukola, Jr. Professional Licensure No. L-3999	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

3/6/23

REVISIONS

SURVEY CONTROL SHEET
W/EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

I, John E. Kaukola, Jr., PLS, certify that the Project Control was performed under my supervision from an actual GPS 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/June/July 2022
Datum/Epoch: NAD 83/NA 2011
Published/Fixed-control use: N/A to RTN
Localized around: GPS-4
Northing: 692478.163
Easting: 2044198.718
Combined grid factor: 0.9998829659
Geoid model: 12B (Conus)
Unit: US SURVEY FEET

I also certify that the Baseline Control for this project was verified 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 19, 2022, 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 23rd day of May, 2022, I, John E. Kaukola, Jr., Professional Licensure No. L-3999, State of North Carolina, do hereby certify that I am the person who performed the survey and that the data herein is true and correct to the best of my knowledge and belief.

PROJECT REFERENCE NO.
1022070222

SHEET NO.
RW02C-5

Location and Surveys



2841-118 Summer Blvd.
Raleigh, NC 27615
Ofc: 919.878.7486
Email: info@sam.biz

PROJECT SURVEYOR



John E. Kaukola, Jr.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

BL

POINT	NORTHING	EASTING	ELEVATION
BL-1	690164.074	2037377.53	268.439
BL-2	690103.637	2037718.547	265.016
BL-3	690241.512	2038056.739	275.331
BL-4	690371.06	2038383.758	279.764
BL-5	690390.471	2038822.065	277.268
BL-6	690548.353	2039109.657	272.54
BL-7	690749.098	2039409.265	277.138
BL-8	690662.993	2039774.046	270.615
BL-9	690813.62	2040149.916	295.542
BL-10	690713.392	2040731.577	298.952
BL-11	690759.99	2041174.567	301.569
BL-12	690682.505	2041480.439	295.796
BL-13	690960.478	2041638.349	304.48
BL-14	690892.562	2042000.322	299.339
BL-15	690956.127	2042310.57	314.696
BL-16	691019.623	2042643.263	320.059

GPS

POINT	NORTHING	EASTING	ELEVATION
GPS-1	690059.709	2037015.887	271.815
GPS-2	690488.09	2037123.294	271.835
GPS-3	692071.532	2044277.374	385.575
GPS-4	692478.163	2044198.718	399.572

BM1 ELEVATION = 270.031
N 690166.677 E 2037705.890
BL STATION 11+99 60' LEFT
BENCH TIE NAIL SET IN BASE OF 18" PINE

BM2 ELEVATION = 277.696
N 690742.380 E 2039434.719
BL STATION 30+93 1' RIGHT
BENCH TIE NAIL SET IN BASE OF 22" HARDWOOD

BM3 ELEVATION = 297.416
N 690678.835 E 2041477.680
BL STATION 51+96 4' RIGHT
BENCH TIE NAIL SET IN BASE OF 10" HARDWOOD

BM4 ELEVATION = 322.009
N 691031.720 E 2042642.337
BL STATION 65+44 12' LEFT
BENCH TIE NAIL SET IN BASE OF 25" OAK

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.

REVISIONS

24-MAR-2025 09:02
\\semrinc\RAL\PROJECTS\022070222\100\Survey\02Base\VR Working - 2025\HE0002_con_SAM_FS - Right of Way.dgn
Victor B. Rainolds AT CHH-1-2PBLT.N3

6/2/99

PROPOSED ALIGNMENT CONTROL SHEET

L			
TYPE	STATION	NORTH	EAST
POB	1000.000	690261.613	2037603.340
PC	2267.603	690551.345	2038837.387
PT	2442.761	690618.431	2038998.336
PC	2771.586	690792.885	2039277.069
PT	3121.860	690871.526	2039611.964
PC	3694.528	690815.528	2040181.888
PT	4113.732	690792.909	2040600.346
PC	6518.602	690768.719	2043005.094
PRC	6920.450	690620.613	2043368.469
PT	8145.446	690986.036	2044269.851
PC	9137.551	691977.480	2044306.044
PT	9355.760	692193.929	2044284.350
POE	9498.803	692332.998	2044250.867

Y1			
TYPE	STATION	NORTH	EAST
POB	1000.000	690711.461	2037708.233
PC	1473.331	690241.984	2037768.510
PT	1584.916	690151.854	2037716.778
PC	1619.851	690138.219	2037684.615
PT	1742.649	690104.581	2037566.834
POE	1757.346	690102.307	2037552.313

PROJECT REFERENCE NO.
HE-0002

SHEET NO.
RW02D

Location and Surveys



2641-116 Sumner Blvd.
Raleigh, NC 27616
Ofc: 919.878.7466
Email: info@sam.biz

PROJECT SURVEYOR

John E. Kaukola, Jr.



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

I, John E. Kaukola, 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 23rd day of March, 2025.

John E. Kaukola, Jr.



Digitally signed by John E. Kaukola, Jr.
DN: cn=JLS, E=john.kaukola@sam.biz,
o=SAM, ou=SAM, cn=John E.
Kaukola, Jr.*
Reason: I am approving this document
Contact Info: 919-802-8698
Date: 2025.03.24 09:30:31-04'00'

Professional Land Surveyor L-3999

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.

REVISIONS

RIGHT OF WAY CONTROL SHEET

PERMANENT EASEMENT MARKER IRON PIN AND CAP: L			
STATION	OFFSET	NORTH	EAST
10+52.000	2.000	690271.552	2037654.421
10+69.000	-47.000	690323.140	2037659.771
11+55.000	-50.000	690345.718	2037742.809
12+11.548	50.000	690261.290	2037820.716
17+44.000	50.000	690382.991	2038339.073
17+44.000	86.107	690347.839	2038347.326
17+55.000	-84.000	690515.958	2038319.154
17+55.000	-50.000	690482.858	2038326.926
17+59.376	83.477	690353.915	2038361.694
17+78.000	50.000	690390.762	2038372.173
17+78.000	86.662	690355.071	2038380.553
17+84.000	-84.000	690522.586	2038347.387
17+84.000	-50.000	690489.486	2038355.158
18+38.000	50.000	690404.476	2038430.585
18+60.000	-50.000	690506.857	2038429.146
18+60.000	-59.000	690515.619	2038427.089
19+00.000	80.000	690389.441	2038497.801
19+38.000	82.000	690396.180	2038535.252
19+70.000	-59.000	690540.761	2038534.177
20+17.000	-50.000	690542.742	2038581.990
21+07.000	50.000	690465.960	2038692.464
24+50.000	-50.000	690664.655	2038977.946
24+90.000	75.000	690579.919	2039078.169
24+90.000	50.000	690601.110	2039064.906
25+00.000	-70.000	690708.135	2039009.718
25+17.000	50.000	690615.435	2039087.793
25+17.000	75.000	690594.243	2039101.056
25+47.000	-50.000	690716.117	2039060.169
27+36.000	77.000	690708.735	2039287.755
27+40.000	50.000	690733.744	2039276.822
27+71.000	89.000	690717.132	2039323.790
27+74.000	-67.000	690851.115	2039243.830
27+85.000	50.000	690756.820	2039313.980
28+05.000	-60.000	690862.467	2039277.347
28+05.000	-50.000	690853.675	2039282.111
28+79.000	50.000	690793.508	2039390.734
29+32.000	69.000	690789.692	2039441.336
29+86.000	50.000	690818.144	2039484.346
30+02.805	50.000	690820.286	2039499.423
30+45.000	-50.000	690923.457	2039532.884
30+69.000	114.000	690760.080	2039559.328
31+00.000	-50.000	690923.136	2039593.016
31+00.000	-65.000	690938.112	2039593.870
31+17.000	117.000	690755.441	2039596.747
31+77.000	-50.000	690915.895	2039671.730
31+80.000	50.000	690816.081	2039664.937
31+93.000	-91.000	690955.134	2039691.662
32+06.000	-76.000	690938.935	2039703.133
33+05.000	-235.000	691087.492	2039817.206
33+10.000	-200.000	691052.171	2039818.760
33+27.000	-186.000	691036.575	2039834.310
33+32.000	85.000	690766.385	2039812.786
33+40.000	130.000	690720.818	2039816.347
33+40.000	-202.000	691051.227	2039848.812
33+54.000	-50.000	690898.587	2039847.881
33+54.000	-139.000	690987.160	2039856.584
33+55.000	50.000	690798.968	2039839.098
33+75.000	132.000	690715.405	2039850.984
33+85.000	-150.000	690995.076	2039888.511
34+05.000	77.000	690767.208	2039886.218
34+18.000	-72.000	690914.223	2039913.726
34+75.000	77.000	690760.363	2039955.883
34+86.000	-87.000	690922.502	2039982.867
35+95.000	-50.000	690875.020	2040087.726
36+00.000	58.000	690767.049	2040082.141
36+41.000	58.000	690763.040	2040122.945
36+62.971	50.025	690768.828	2040145.590
37+07.000	-50.000	690864.097	2040199.061
37+09.500	88.000	690726.482	2040188.460
37+18.000	50.000	690763.506	2040200.609
37+64.000	100.000	690709.585	2040242.746
37+70.000	-85.000	690893.456	2040264.026
37+75.022	50.000	690758.497	2040258.010
38+50.000	-70.000	690872.699	2040341.406
38+84.000	-50.000	690850.665	2040373.680
47+53.000	-50.000	690836.476	2041240.085
47+96.000	81.000	690705.050	2041281.765
48+00.000	-63.000	690849.003	2041287.213
48+13.916	50.000	690735.868	2041299.992
48+19.000	95.000	690690.820	2041304.623
48+76.000	-71.000	690856.238	2041363.290
49+08.000	50.000	690734.922	2041394.071
49+20.000	-50.000	690834.796	2041407.076
50+55.000	50.000	690733.443	2041541.064
50+60.000	-50.000	690833.388	2041547.069
50+60.000	122.000	690661.397	2041545.339
50+95.000	101.000	690682.044	2041580.549
50+97.000	122.000	690661.025	2041582.337
52+00.000	72.000	690709.986	2041685.835
52+21.000	-85.000	690866.767	2041708.413
52+92.000	50.000	690731.060	2041778.052
53+43.000	-50.000	690830.542	2041830.055

PERMANENT ROW MARKER IRON PIN AND CAP: L			
STATION	OFFSET	NORTH	EAST
11+00.000	-50.000	690333.146	2037689.264
11+00.000	50.000	690235.794	2037712.121
12+07.560	-50.000	690357.731	2037793.977
22+67.603	-50.000	690600.022	2038825.959
22+67.603	50.000	690502.669	2038848.815
24+42.761	50.000	690576.048	2039024.863
24+42.761	-50.000	690660.815	2038971.809
27+71.586	50.000	690750.502	2039303.596
27+71.586	-50.000	690835.268	2039250.543
31+21.860	-50.000	690921.287	2039616.854
31+21.860	50.000	690821.766	2039607.075
36+94.528	-50.000	690865.288	2040186.777
36+94.528	50.000	690765.767	2040176.998
41+13.732	-50.000	690842.906	2040600.849
41+13.732	50.000	690742.911	2040599.843
62+00.000	50.000	690721.926	2042686.006
62+00.000	-50.000	690821.921	2042687.012

PERMANENT ROW MARKER IRON PIN AND CAP: Y1			
STATION	OFFSET	NORTH	EAST
12+19.341	-40.000	690499.001	2037775.839
12+56.909	40.000	690451.551	2037701.275
13+50.000	40.000	690359.217	2037713.130

PERMANENT EASEMENT MARKER IRON PIN AND CAP: Y1			
STATION	OFFSET	NORTH	EAST
13+10.000	40.000	690398.892	2037708.036
13+10.000	18.000	690401.693	2037729.857
13+60.000	74.000	690344.969	2037680.680
15+11.000	-45.000	690191.030	2037807.953
15+26.273	-43.677	690170.242	2037797.755
15+50.000	-50.000	690136.964	2037781.430
15+74.000	-60.000	690104.909	2037756.755
15+98.000	36.000	690179.892	2037690.680
16+00.000	-60.000	690090.726	2037726.310
16+00.000	-31.000	690117.426	2037714.991
16+12.025	35.396	690173.862	2037678.003
16+50.000	33.000	690158.398	2037645.493
16+65.000	-25.000	690098.692	2037649.951
17+45.069	32.417	690136.233	2037559.426
17+69.996	-27.130	690076.638	2037543.530
17+69.996	32.558	690129.988	2037535.173

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.

PROJECT REFERENCE NO.

HE-0002

SHEET NO.

RW02E-1

Location and Surveys

SAM

2641-116 Sumner Blvd.
Raleigh, NC 27616
Ofc: 919.878.7466
Email: info@sam.biz

PROJECT SURVEYOR

NORTH CAROLINA
PROFESSIONAL
LAND SURVEYOR
SEAL
L-3999
JOHN E. KAUKOLA

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

I, John E. Kaukola, 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 May 2022, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

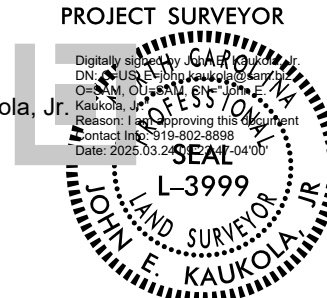
This 23rd day of March, 2025.

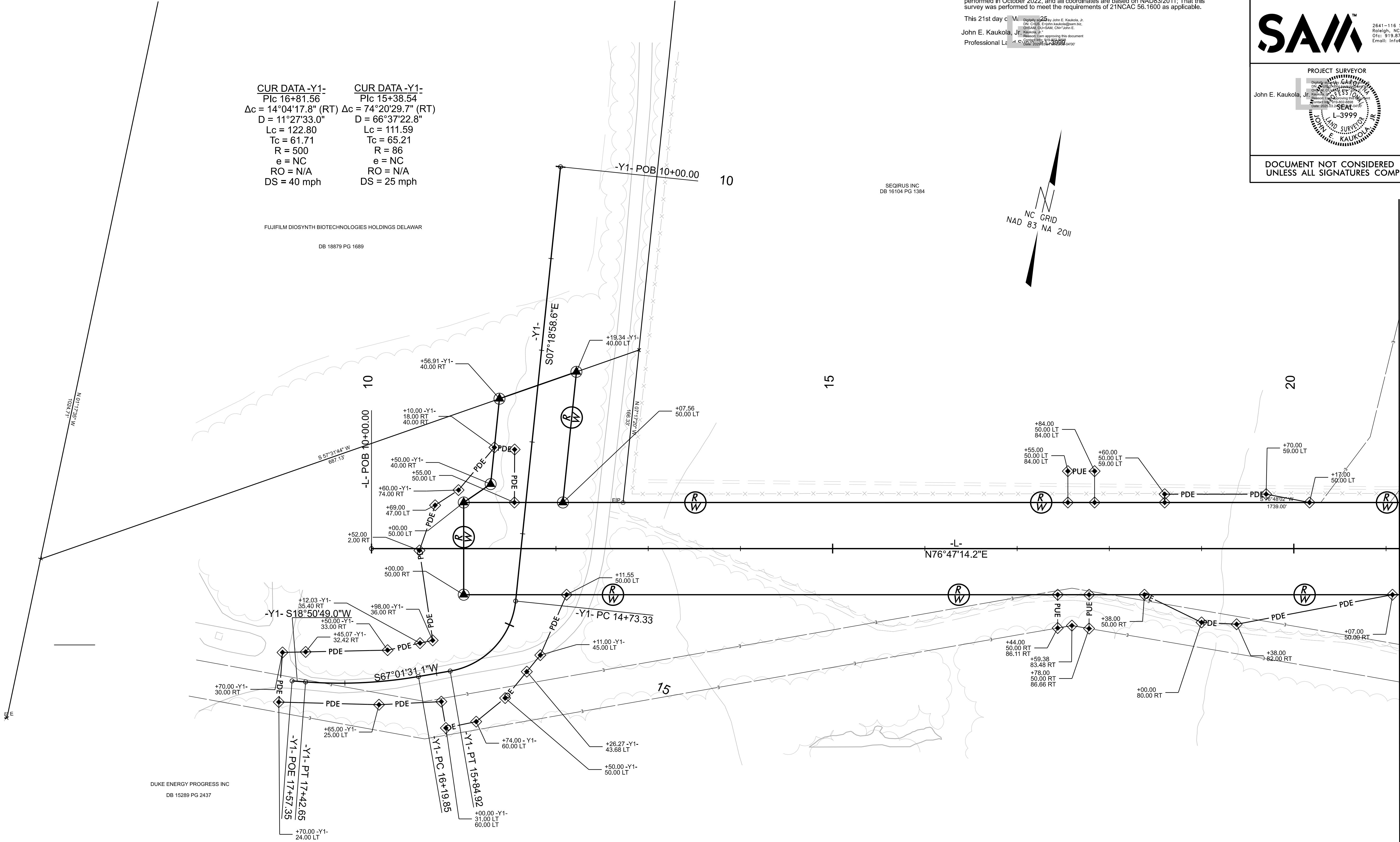
Professional Land Surveyor L-3999

REVISIONS

I, John E. Kaukola, Jr., PLS, 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 in October 2022, and all coordinates are based on NAD83/2011. That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

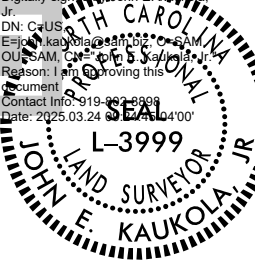
This 21st day of May, 2023, at Raleigh, NC, I, John E. Kaukola, Jr., Professional Land Surveyor, License No. 34389, do hereby certify that I am the author of this document and I am approving this document.

PROJECT REFERENCE NO.	SHEET NO.
HE-0002	RW04
Location and Surveys	
 2641-116 Summer Blvd. Raleigh, NC 27616 Office: 919.878.7466 Email: info@sai.biz	
PROJECT SURVEYOR John E. Kaukola, Jr. 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



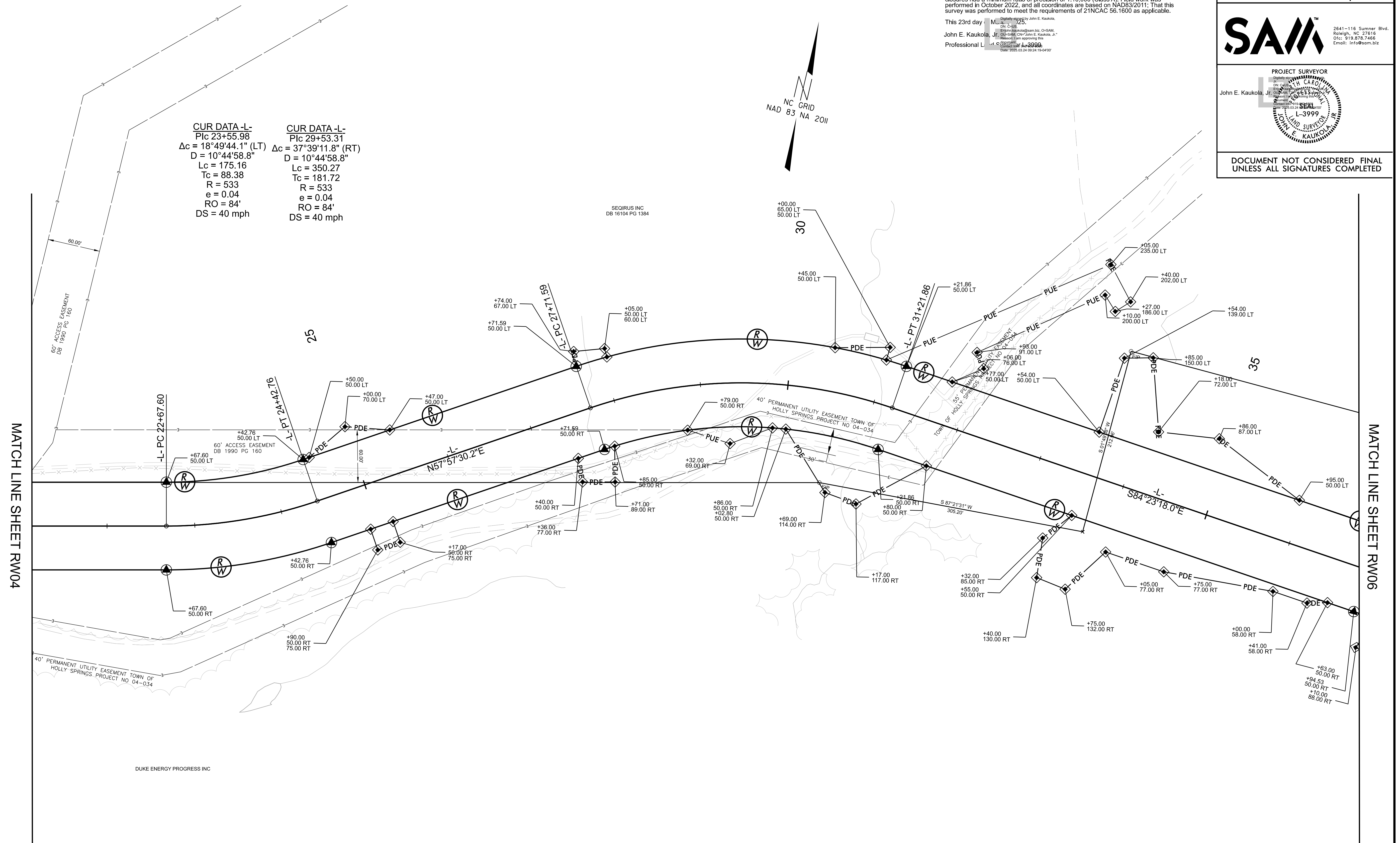
NOTES:

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

PROJECT REFERENCE NO.	SHEET NO.
HE-0002	RW05
Location and Surveys	
 2641-116 Summer Blvd. Raleigh, NC 27616 Ofc: 919.878.7466 Email: info@sam.biz	
John E. Kaukola, Jr. P.E. PROJECT SURVEYOR 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I, John E. Kaukola, Jr., PLS, 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 in October 2022, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 23rd day of March, 2025,
John E. Kaukola, Jr.
Professional Land Surveyor
Digitally signed by John E. Kaukola,
DN: cn=US,
ou=John.kaukola@gmail.biz, o=SAM,
email=US, CN=John E. Kaukola, Jr.,
Reason: I am approving this
document.
Contact Info: 2025-03-24
Date: 2025.03.24 09:24:19-04'00'



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.

I, John E. Kaukola, Jr., PLS, 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 in October 2021, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 23rd day of May, 2025, I, John E. Kaukola, Jr., PLS, do hereby 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 in October 2021, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

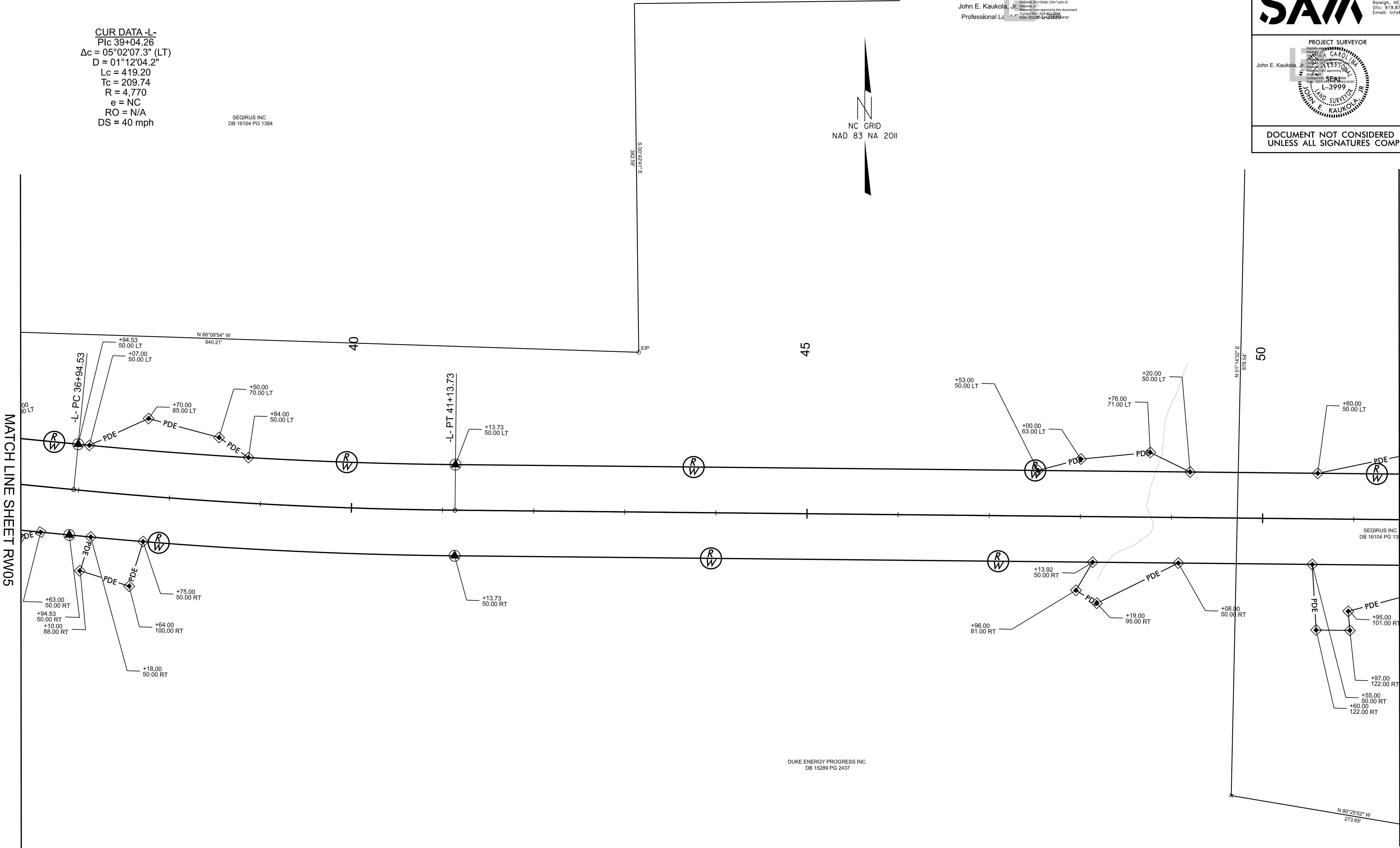
John E. Kaukola, Jr.
Professional Land Surveyor

PROJECT REFERENCE NO.	SHEET NO.
HE-0002	RW06
Location and Surveys	
 2641-116 Summer Blvd. Raleigh, NC 27616 Office: 919.878.7466 Email: info@sai.biz	
PROJECT SURVEYOR John E. Kaukola, Jr. Professional Land Surveyor No. 3999 State of North Carolina	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

CUR DATA -L-
P/C 39+04.26
 $\Delta c = 05^{\circ}02'07.3''$ (LT)
 $D = 01^{\circ}12'04.2''$
 $L_c = 419.20$
 $T_c = 209.74$
 $R = 4,770$
 $e = NC$
 $RO = N/A$
 $DS = 40$ mph

SEQUIRUS INC
DB 16104 PG 1384

NC GRID
NAD 83 NA 2011

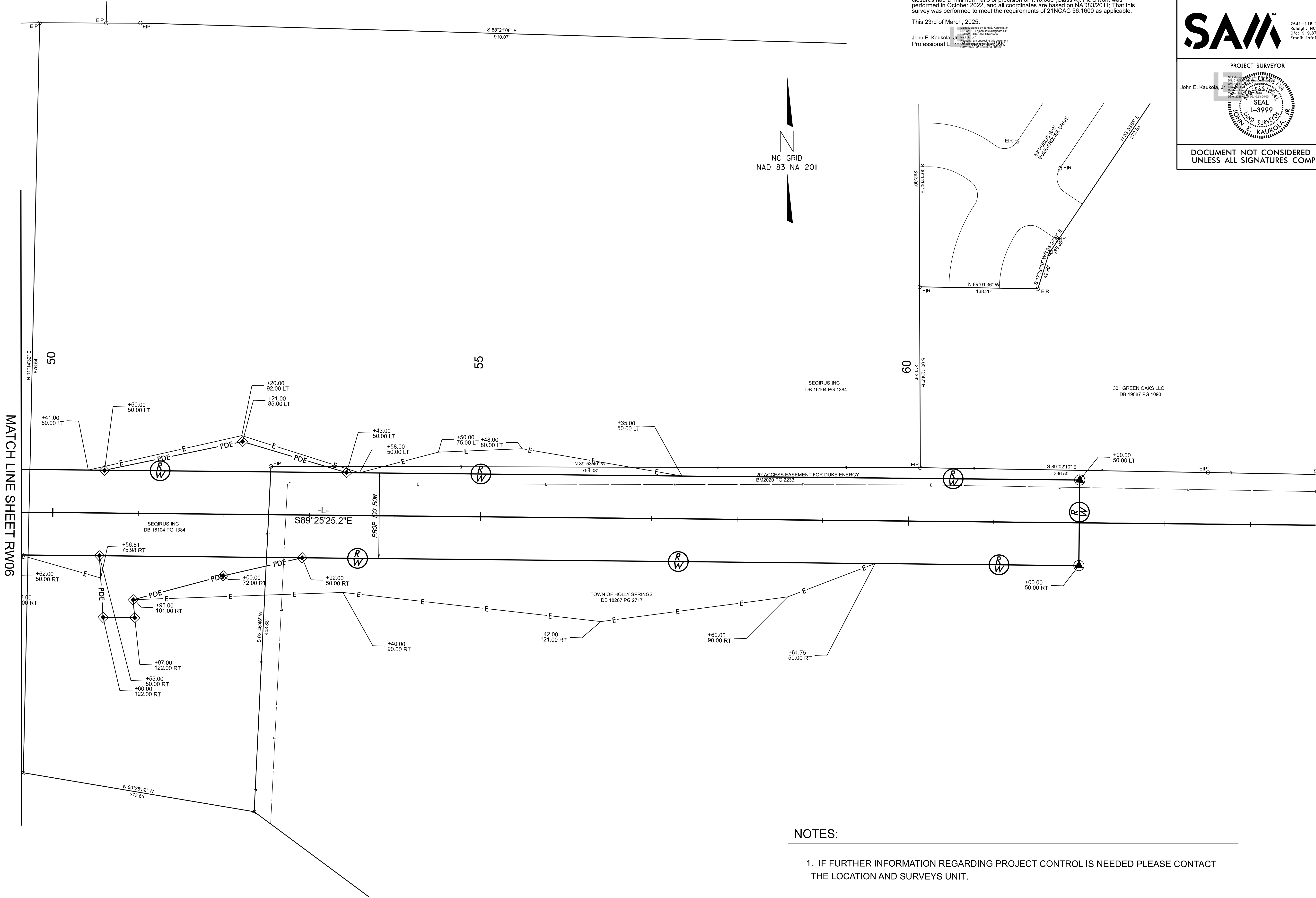


NOTES:

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.

REVISIONS

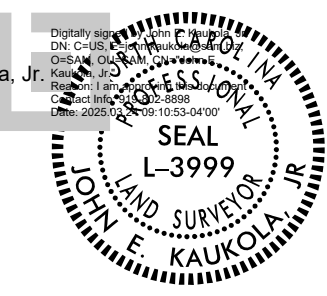
MATCH LINE SHEET RW06



I, John E. Kaukola, Jr., PLS, 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 in October 2022, and all coordinates are based on NAD83/2011; That this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 23rd of March, 2025.

John E. Kaukola, Jr.
Professional Land Surveyor
No. 35488
Date: 03/23/25

PROJECT REFERENCE NO.	SHEET NO.
HE-0002	RW07
Location and Surveys	
 2641-116 Summer Blvd. Raleigh, NC 27616 Ofc: 919.878.7466 Email: info@sam.biz	
PROJECT SURVEYOR John E. Kaukola, Jr. 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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.