

09/06/19

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5887	RW01	

TIP PROJECT: U-5887

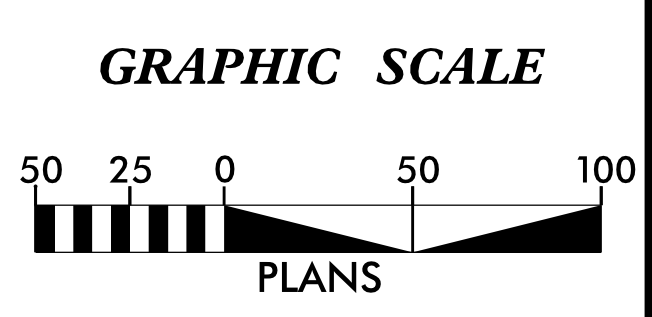
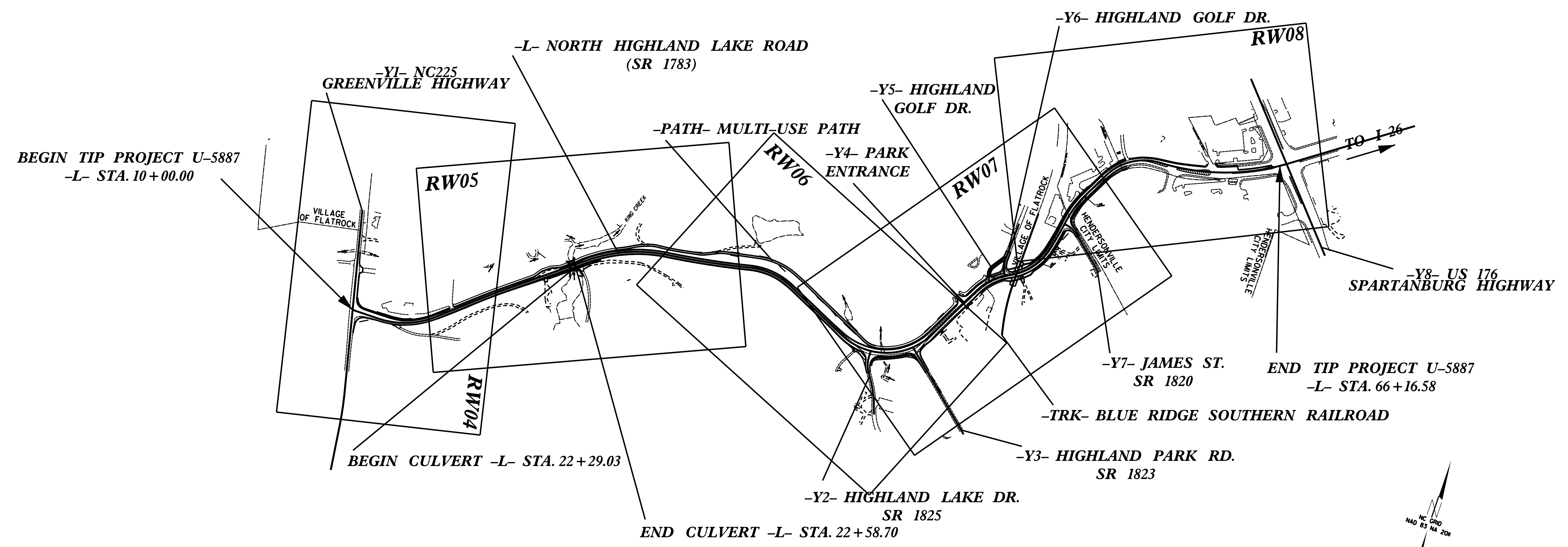
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

HENDERSON COUNTY

LOCATION: SR 1783 (NORTH HIGHLAND LAKE ROAD) FROM NC225
TO WEST OF US 176

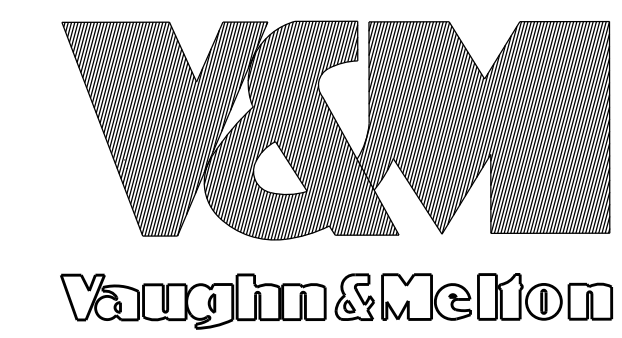
TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS,
SIGNING, CULVERT, AND RETAINING WALLS



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "GPS-100" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 576,661.248(ft) EASTING: 972,523.298(ft) ELEVATION: 2,121.410(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9997750745 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS-100" TO -L- STATION 10+00.00 IS S 15-03'44.9" E 470.02(ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

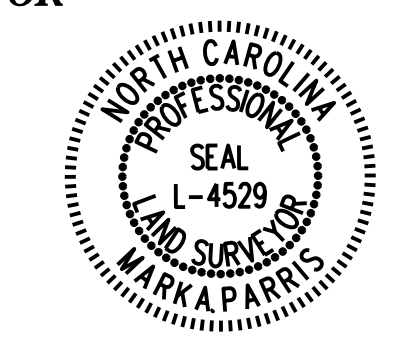


2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 30, 2019

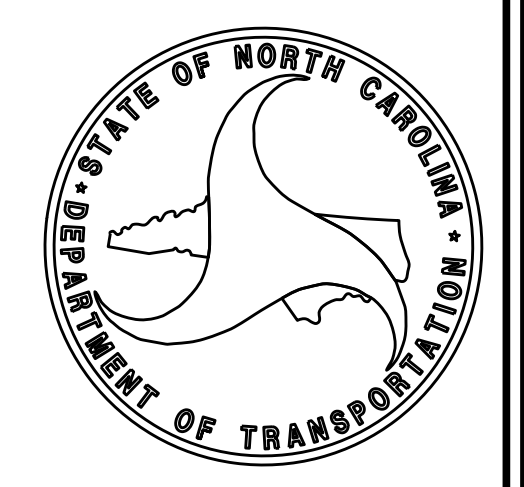
LETTING DATE:

PROFESSIONAL LAND SURVEYOR



DocuSigned by:
Mark A. Parris
SIGNATURE:

Date:



\$\$\$\$\$ SYSTEM TIME\$\$\$\$\$
\$\$\$\$\$ DDNN\$\$\$\$\$
\$\$\$\$\$ USERNAME\$\$\$\$\$


6/2/09

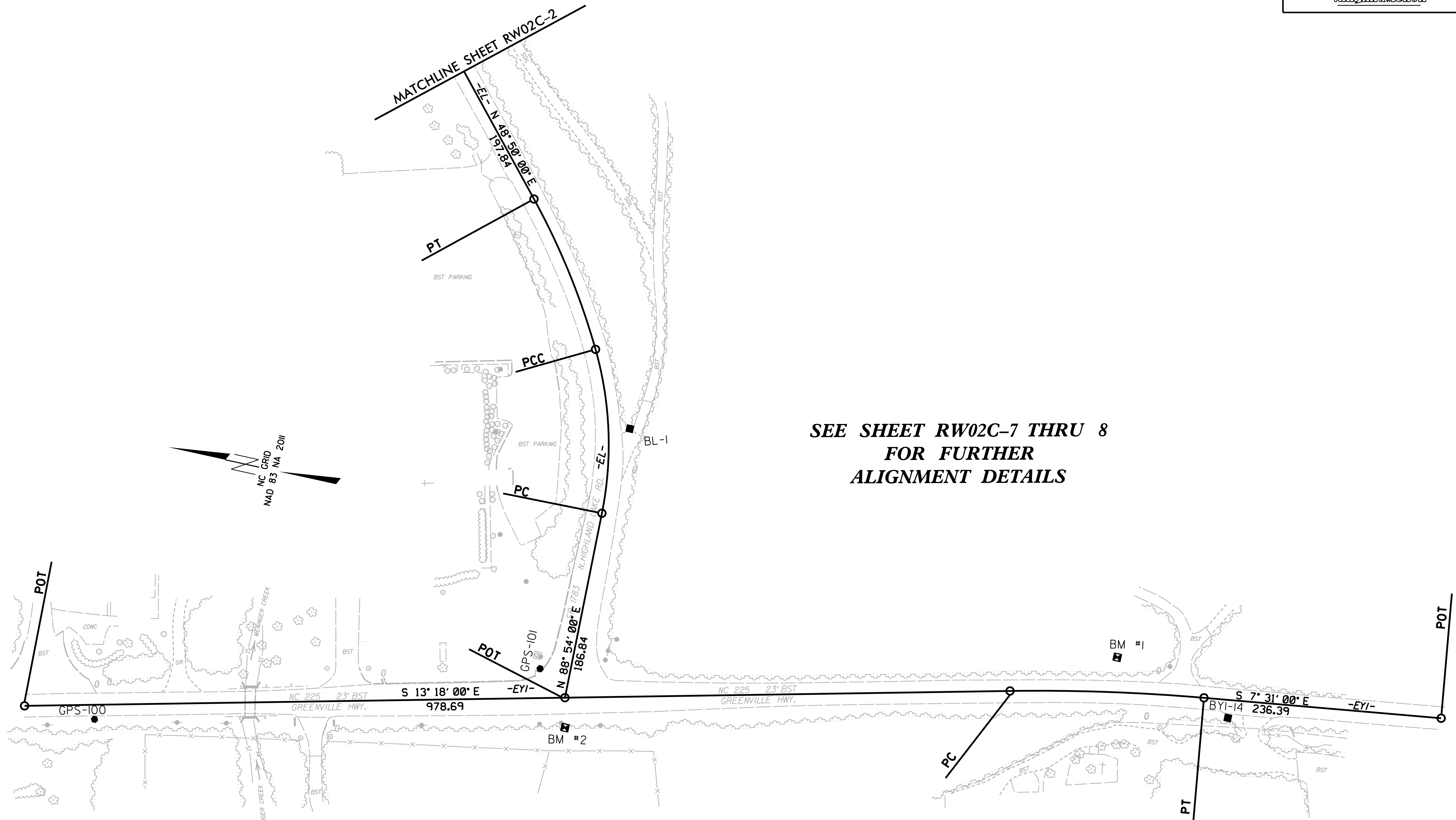
REVISIONS

I6-JUL-2019 14:21
V:\shelville\surveys\2019\31912-55 U-5887 Highland Lake RDW Stoke\Work\U5887-1s-RW02C-1.dgn
stobakova AT VDI-WKUEM-27

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION


PROJECT REFERENCE NO.	SHEET NO.
U-5887	RW02C-1
Location and Surveys	
	



**SEE SHEET RW02C-7 THRU 8
FOR FURTHER
ALIGNMENT DETAILS**

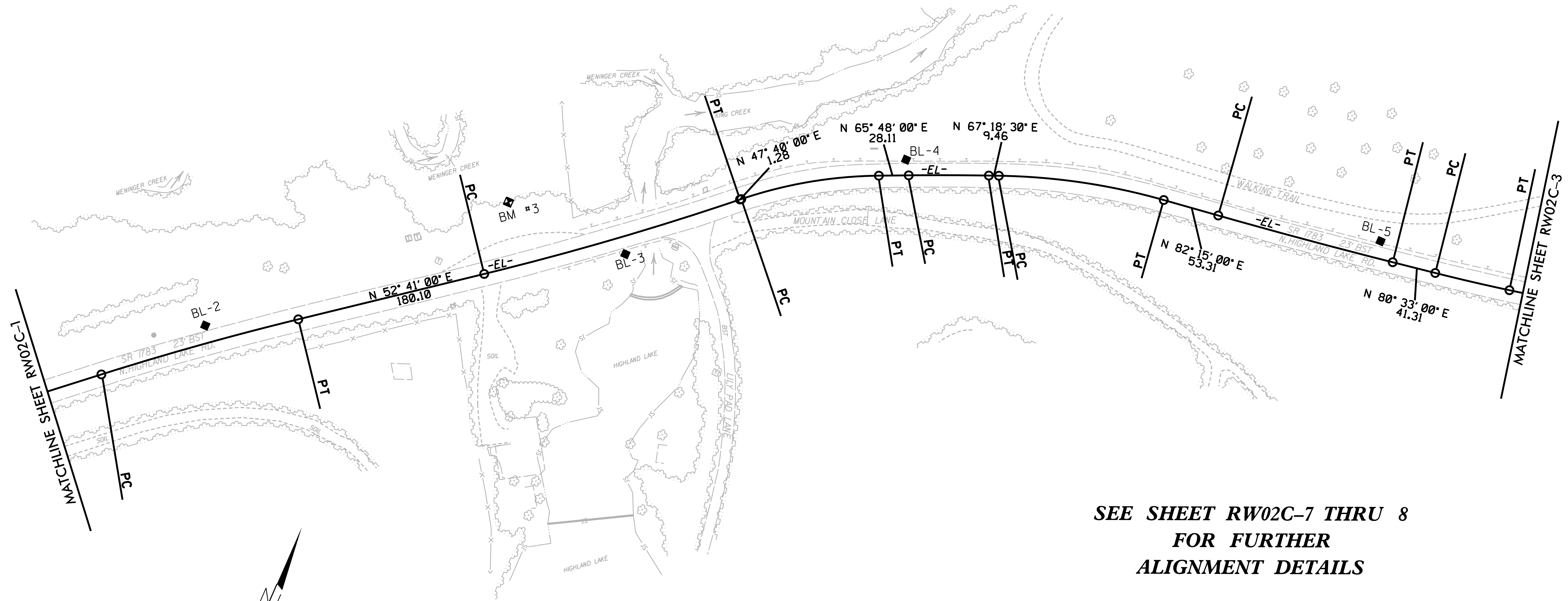
NOTES:

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.

PROJECT REFERENCE NO. U-5887	SHEET NO. RW02C-2
Location and Surveys	
	

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION




**SEE SHEET RW02C-7 THRU 8
FOR FURTHER
ALIGNMENT DETAILS**

NOTES:

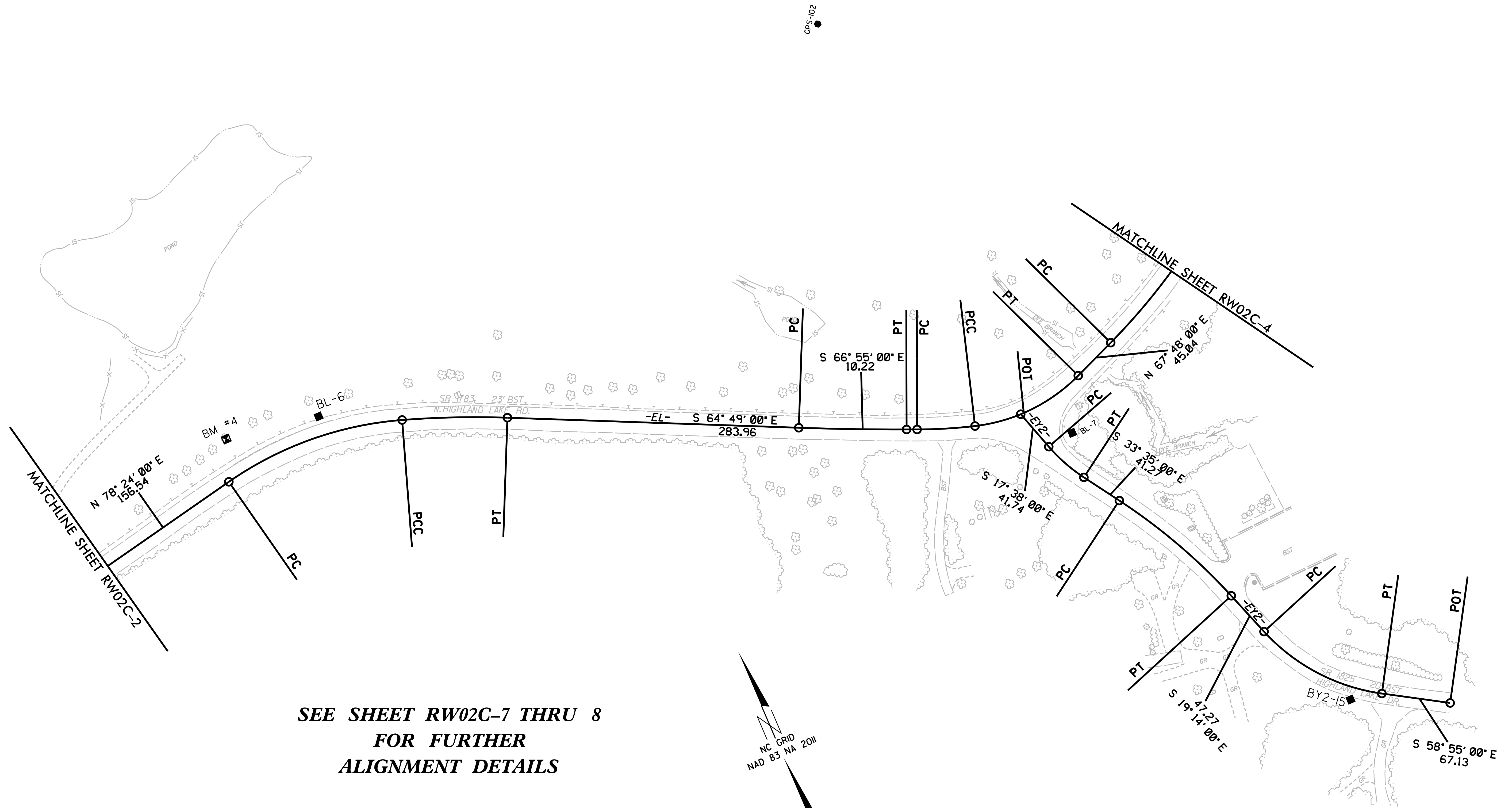
1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

6/2/09

PROJECT REFERENCE NO.	SHEET NO.
U-5887	RW02C-3
Location and Surveys	
	

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION



**SEE SHEET RW02C-7 THRU 8
FOR FURTHER
ALIGNMENT DETAILS**

NOTES:

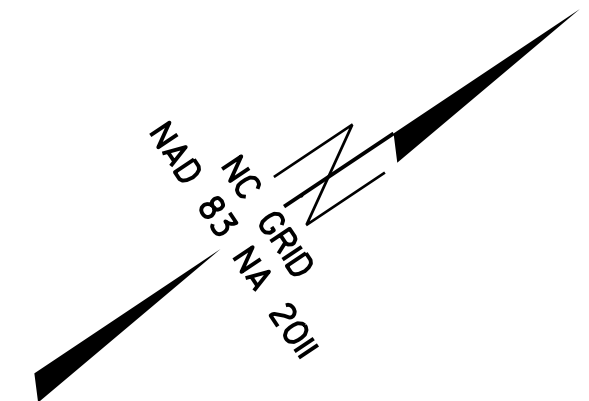
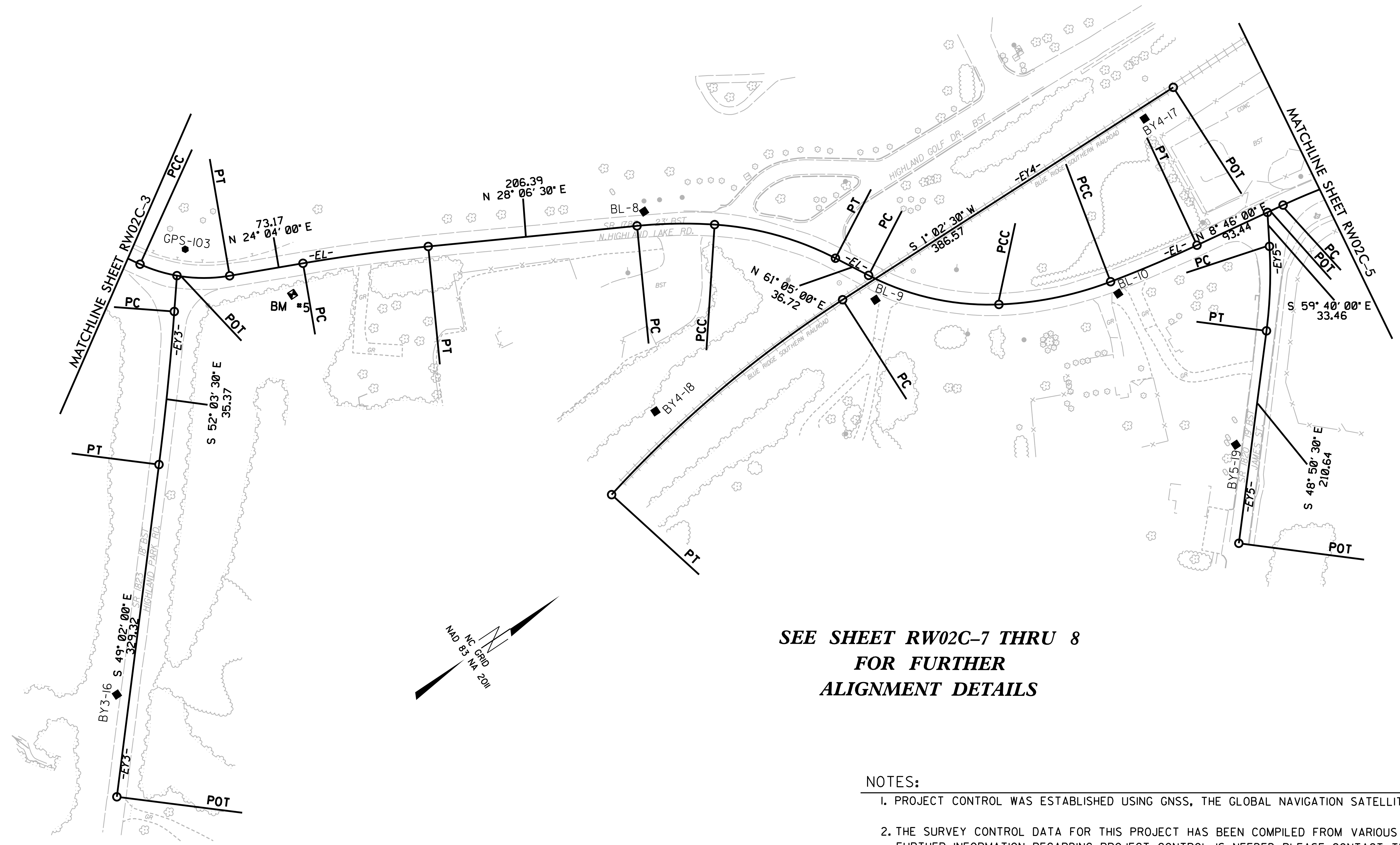
1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

REVISIONS

16-JUL-2019 14:37
 V:\shvevi\1\surveys\2019\31912-55 U-5887 Highland Lake RDW Stoke\Work\U5887-1s-RW02C-3.dgn
 atabakova AT VDI-WKUEM-27

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION




**SEE SHEET RW02C-7 THRU 8
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.

REVISIONS

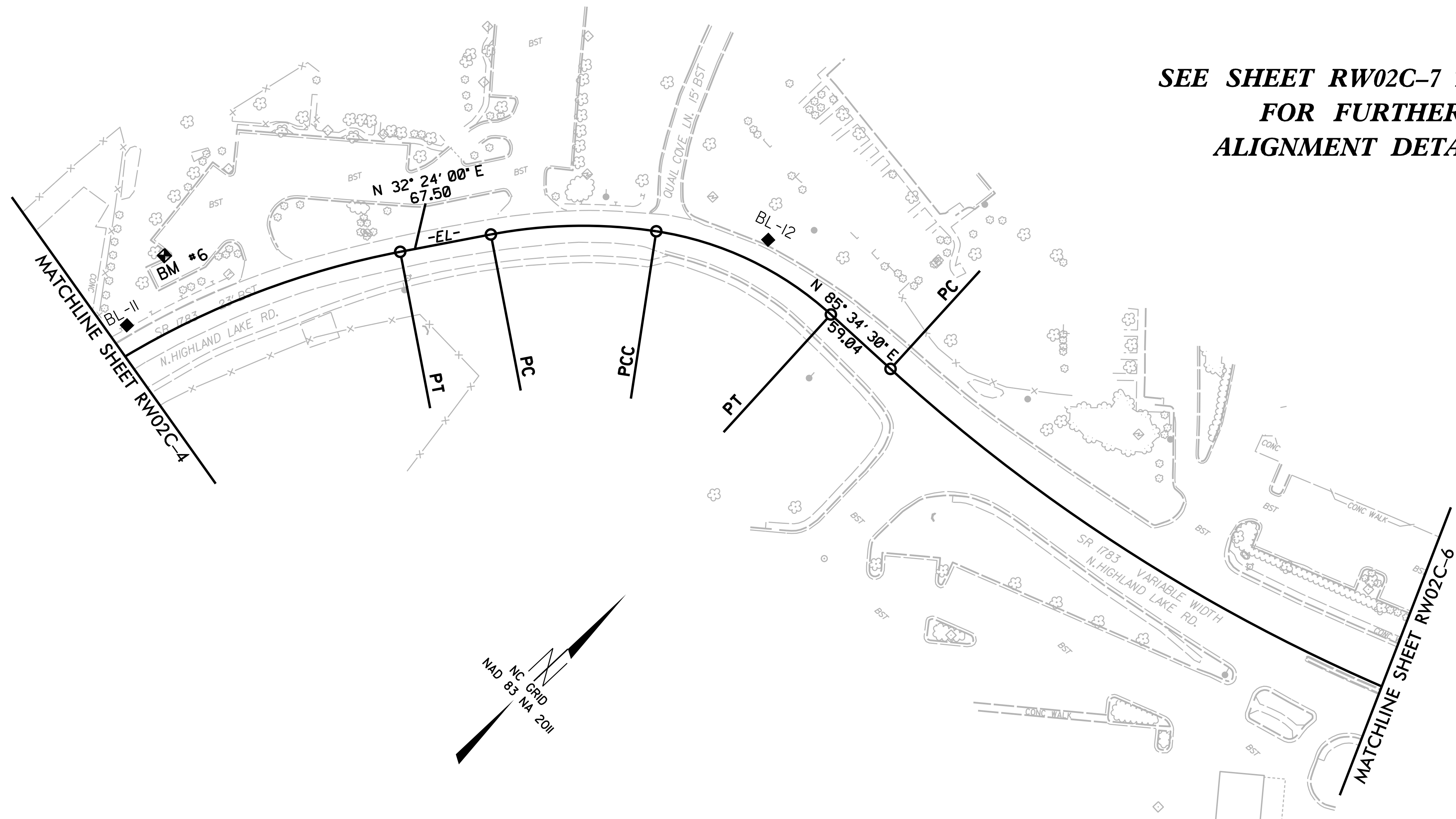
I6-JUL-2019 14:43
 V:\shvevi\1\surveys\2019\31912-55 U-5887 Highland Lake RDW Stoke\Work\U5887-1s-RW02C-4.dgn
 atabakova AT VDI-WKUEM-27

PROJECT REFERENCE NO.	SHEET NO.
U-5887	RW02C-5
Location and Surveys	
	

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

**SEE SHEET RW02C-7 THRU 8
FOR FURTHER
ALIGNMENT DETAILS**



NOTES:

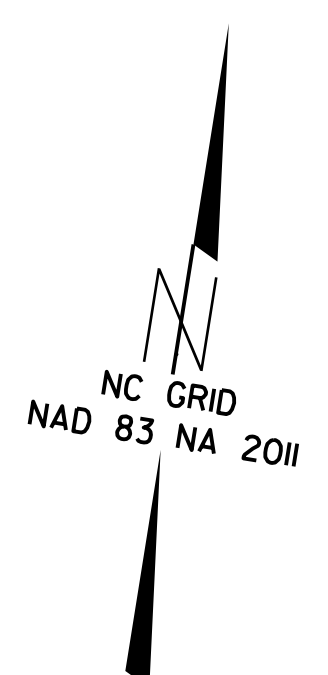
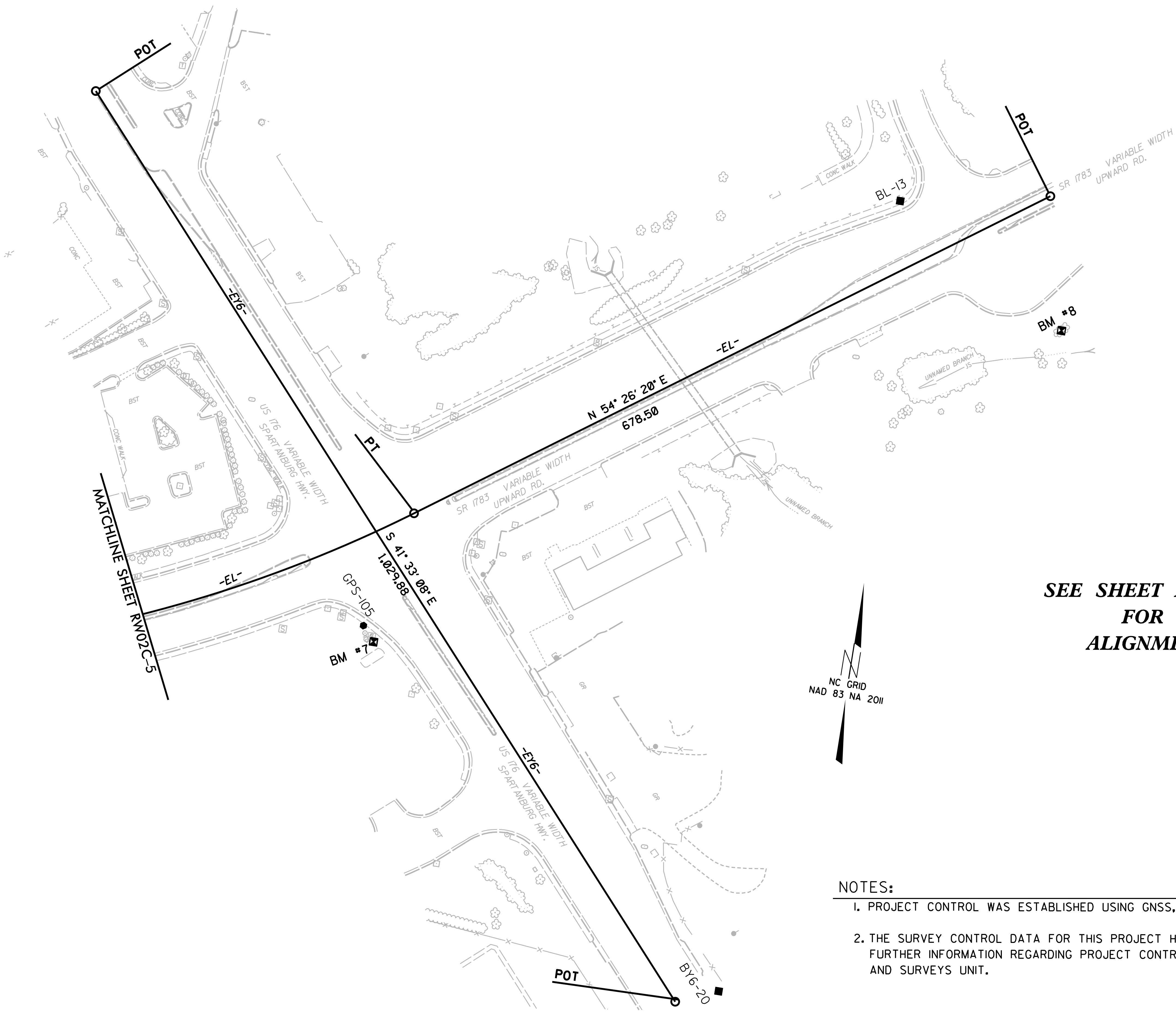
1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

6/2/2019
 16-JUL-2019 14:55
 V:\Asheville\surveys\2019\31912-55 U-5887 Highland Lake ROW Stake\Work\U5887_Is_RW02C-6.dgn
 atabakova

GPS-104



**SEE SHEET RW02C-7 THRU 8
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

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

REVISIONS

BL POINT	DESC.	NORTH	EAST	ELEVATION
G101	GPS-101	576239.9860	972667.7330	2120.20
1	BL-1	576204.2237	972919.6734	2124.81
2	BL-2	576557.8761	973342.0540	2111.64
3	BL-3	576777.8272	973677.4836	2109.26
4	BL-4	576965.0496	973883.9578	2110.22
5	BL-5	577073.5251	974323.8562	2107.77
6	BL-6	577135.3522	974712.2600	2112.66
7	BL-7	576831.3744	975380.4291	2113.87
G103	GPS-103	576989.9030	975555.1430	2111.46
8	BL-8	577385.8593	975774.9903	2134.70
9	BL-9	577527.0194	975973.5925	2145.76
10	BL-10	577729.0518	976101.1317	2142.81
11	BL-11	577967.2449	976110.3354	2143.71
12	BL-12	578351.7844	976385.9469	2146.45
G105	GPS-105	578477.5470	977141.0120	2151.00
13	BL-13	578958.4099	977582.9472	2135.44

BY1 POINT	DESC.	NORTH	EAST	ELEVATION
G100	GPS-100	576661.2480	972523.2980	2121.41
Y101	GPS-101	576239.9860	972667.7330	2120.20
14	BY1-14	575562.5156	972767.0074	2142.97

BY2 POINT	DESC.	NORTH	EAST	ELEVATION
Y7	BL-7	576831.3744	975380.4291	2113.87
15	BY2-15	576485.8217	975527.2992	2137.71

BY3 POINT	DESC.	NORTH	EAST	ELEVATION
Y103	GPS-103	576989.9030	975555.1430	2111.46
16	BY3-16	576690.8157	975881.9073	2120.02

BY4 POINT	DESC.	NORTH	EAST	ELEVATION
17	BY4-17	577846.1819	975972.5261	2138.89
Y9	BL-9	577527.0194	975973.5925	2145.76
18	BY4-18	577286.1275	975944.6153	2149.34

BY5 POINT	DESC.	NORTH	EAST	ELEVATION
Y11	BL-11	577967.2449	976110.3354	2143.71
19	BY5-19	577742.6986	976289.0449	2157.78

BY6 POINT	DESC.	NORTH	EAST	ELEVATION
G104	GPS-104	579053.3030	976650.8770	2147.69
Y105	GPS-105	578477.5470	977141.0120	2151.00
20	BY6-20	578186.5351	977530.7572	2151.66

.....
 BM1 ELEVATION = 2147.45
 N 575683 E 972802
 NAIL SET IN BASE OF 36" OAK

.....
 BM2 ELEVATION = 2123.93
 N 576203 E 972616
 NAIL SET IN BASE OF 20" LOCUST

.....
 BM3 ELEVATION = 2109.70
 N 576779 E 973557
 NAIL SET IN BASE OF 48" DBL. POPLAR

.....
 BM4 ELEVATION = 2111.19
 N 577151 E 974621
 NAIL SET IN BASE OF 15" POPLAR

.....
 BM5 ELEVATION = 2122.73
 N 577053 E 975651
 NAIL SET IN BASE OF 15" PINE

.....
 BM6 ELEVATION = 2141.83
 N 578022 E 976092
 CHISELED 'X' IN BASE OF LIGHT POLE

.....
 BM7 ELEVATION = 2152.09
 N 578464 E 977153
 BOLT IN SIGNAL POLE BASE

.....
 BM8 ELEVATION = 2132.07
 N 578861 E 977754
 NAIL SET IN BASE OF 15" WALNUT

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.

PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
U-5887	RW02D-1
Location and Surveys	

6/2/19
 REVISIONS
 I:\JUL-2019\1237\15\del-rev\le\2019\31912-55 U-5887 High\and Lake ROW Stake\Work\U5887_Ls_RW02D-1.dgn
 AT VIT-WK\FM-C1

L			
TYPE	STATION	NORTH	EAST
POT	10+00.00	576207.3738	972645.4438
PC	11+42.21	576207.3738	972787.6543
PT	14+64.51	576317.9433	973083.0980
PC	16+81.86	576460.6442	973247.0447
PT	18+62.92	576576.3842	973386.2568
PC	23+27.90	576865.4830	973750.4442
PRC	27+63.87	577032.5609	974147.3008
PRC	32+15.06	577111.3423	974591.3679
PT	34+62.07	577086.1151	974832.6237
PC	38+36.41	576928.8624	975172.3284
PT	43+74.75	577089.1517	975632.0031
PC	47+04.34	577383.5654	975780.1590
PRC	49+05.30	577522.4973	975920.4745
PCC	51+71.70	577723.4871	976082.2622
PRC	53+43.00	577891.5089	976115.2902
PT	55+22.52	578061.6975	976169.8752
PC	56+73.60	578196.1494	976238.7773
PRC	59+87.97	578356.4626	976491.9973
PT	66+90.90	578577.3701	977148.7675
POT	73+96.02	578985.5511	977723.7314

Y1			
TYPE	STATION	NORTH	EAST
POT	5+00.00	577967.2449	976110.3354
EOB	45+12.60	575779.5324	972746.5812
EOA	19+78.69	575779.5324	972746.5812
PT	21+71.48	575589.9933	972781.3967
POT	24+07.86	575355.6436	972812.3180

Y2			
TYPE	STATION	NORTH	EAST
POT	10+00.00	576897.7851	975349.5295
PC	10+18.50	576879.2853	975349.9013
PRC	11+17.66	576785.1507	975375.1937
PT	12+99.79	576624.8601	975460.2759
POT	13+47.44	576579.8750	975475.9708

Y3			
TYPE	STATION	NORTH	EAST
POT	10+00.00	576989.6147	975557.0951
POT	15+40.90	576634.9931	975965.5202

Y4			
TYPE	STATION	NORTH	EAST
POT	10+00.00	577349.8389	975651.1956
POT	11+00.04	577304.7660	975740.5053

Y5			
TYPE	STATION	NORTH	EAST
POT	10+00.00	577613.4518	975875.6286
PC	10+90.42	577538.9056	975824.4531
PT	11+39.47	577492.0436	975817.0952
POT	11+79.50	577453.6818	975828.5480

Y6			
TYPE	STATION	NORTH	EAST
POT	10+00.00	577801.8274	975881.3077
PC	12+00.31	577601.6104	975875.2716
PT	12+88.01	577518.1104	975897.6802
POT	12+94.91	577512.2434	975901.3138

Y7			
TYPE	STATION	NORTH	EAST
POT	10+00.00	577879.0096	976113.3733
PC	10+14.79	577876.8044	976128.0000
PT	10+88.72	577846.1334	976194.1776
POT	13+23.89	577691.3618	976371.2314

Y8			
TYPE	STATION	NORTH	EAST
POT	10+00.00	578940.8780	976888.3019
POT	20+29.88	578170.1620	977491.4250

I, Mark A. Parris, 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) (Base map Compilation, 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 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.

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 15th day of July, 2019.

----- L-4529
 Professional Land Surveyor PLS # Seal

- 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.

6/2/19

RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO. U-5887	SHEET NO. RW03E-1
Location and Surveys	
	
PROJECT SURVEYOR 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	10+56.25	-40.00	576247.3738	972701.6938
L	11+00.00	25.73	576181.6442	972745.4438
L	11+42.21	-40.00	576247.3738	972787.6543
L	13+55.00	-40.00	576292.3644	972974.3844
L	13+55.00	-29.63	576283.1287	972979.1092
L	20+22.90	-50.00	576715.0111	973480.4701
L	23+27.90	-50.00	576904.6442	973719.3573
L	23+27.90	-28.45	576887.7662	973732.7554
L	38+36.41	-35.00	576960.6244	975187.0313
L	38+36.41	-26.44	576952.8551	975183.4379
L	43+74.75	-35.00	577104.8848	975600.7385
L	47+04.34	-35.00	577399.2985	975748.8945
L	48+46.60	-24.54	577511.4141	975855.7719
L	48+53.89	-35.00	577524.5705	975856.0111
L	52+64.99	31.59	577808.6480	976133.2308
L	54+05.00	30.00	577944.4872	976156.8077
L	55+22.52	30.00	578048.0155	976196.5736
L	56+89.03	30.00	578194.6259	976272.1133

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y1	14+70.00	-30.00	576281.4821	972658.7521
Y1	16+35.00	-30.00	576120.9076	972696.7103

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y7	10+55.00	-23.21	577885.6124	976176.4893
Y7	10+80.07	23.46	577832.9565	976173.2468

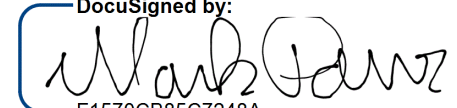
REVISIONS

I, Mark A. Parris, 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) (Base map Compilation, 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 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.

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 15th day of July, 2019.

DocuSigned by:

 F1570CB885C7248A
 Professional Land Surveyor

L-4529
 PLS #

Seal

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:\JUL-2019\1350
 W\Projects\16
 Air\VT\11\FY-2019-14
 Lake ROW Stake\Work\U5887_1s_RW03E-1.dgn
 U-5887 High\and Lake ROW Stake\Work\U5887_1s_RW03E-1.dgn
 U-5887 High\and Lake ROW Stake\Work\U5887_1s_RW03E-1.dgn

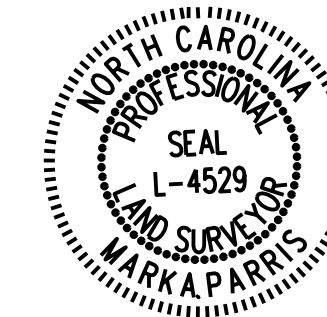
RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
U-5887	RW03E-2

Location and Surveys



PROJECT SURVEYOR



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ROW MARKER PERMANENT EASEMENT - E

ALIGN	STATION	OFFSET	NORTH	EAST
L	10+38.52	-64.39	576271.7652	972683.9654
L	10+56.42	-64.02	576271.3951	972701.8596
L	16+10.91	-60.76	576459.8916	973153.6316
L	16+16.21	-47.24	576453.1671	973166.5070
L	16+29.53	-68.05	576477.6194	973162.8904
L	16+37.85	-46.81	576467.0571	973183.1139
L	18+30.00	-46.00	576591.6024	973331.6619
L	18+30.00	-26.91	576576.7478	973343.6544
L	18+50.00	-26.84	576589.3032	973359.3948
L	18+50.00	-46.00	576604.2707	973347.4342
L	20+17.71	-63.99	576722.7438	973467.7080
L	20+36.43	-71.03	576739.8948	973477.9959
L	20+44.07	-50.70	576728.7230	973496.6204
L	21+05.00	-56.79	576771.3727	973540.5523
L	21+05.00	-50.00	576766.0558	973544.7729
L	21+25.00	-58.79	576785.3733	973554.9738
L	21+25.00	-50.00	576778.4906	973560.4374
L	21+65.35	-82.51	576829.0412	973571.8284
L	21+68.53	-63.14	576815.8489	973586.3656
L	21+85.09	-85.75	576843.8518	973585.2688
L	21+88.64	-64.15	576829.1390	973601.4816
L	23+75.11	-61.33	576943.9227	973753.0242
L	23+79.62	-71.65	576955.1866	973751.1282
L	24+08.25	-63.19	576965.3726	973781.6439
L	24+16.91	-58.65	576966.5327	973791.9538
L	24+37.63	-60.36	576979.5624	973810.0712
L	24+59.90	-29.54	576964.5076	973845.7937
L	24+80.00	-28.16	576973.1513	973864.7921
L	24+80.00	-65.00	577005.8174	973847.7508
L	27+45.00	-70.00	577099.1869	974118.1755
L	27+65.00	-70.00	577102.1457	974139.6057
L	27+70.00	-28.42	577061.5221	974149.7704
L	27+95.00	-28.55	577064.8739	974174.3871
L	28+65.00	-28.66	577074.7259	974243.2452
L	28+65.00	-60.00	577105.7253	974238.6163
L	28+85.00	-28.65	577077.6950	974262.8962
L	28+85.00	-60.00	577108.6830	974258.1297
L	40+40.00	-60.00	576959.6592	975362.1659
L	40+40.00	-35.00	576934.9331	975365.8563
L	40+85.00	-60.00	576967.5154	975398.5883
L	40+85.00	-35.00	576943.4665	975405.4186
L	42+65.00	-35.00	577025.0000	975543.3412
L	42+65.00	-64.18	577045.5154	975522.5941
L	43+00.00	-60.05	577064.2120	975544.8552
L	43+00.00	-35.00	577048.4655	975564.3361
L	43+19.39	-35.00	577062.3321	975574.9232
L	43+43.35	-50.19	577088.2635	975574.0200
L	43+43.35	-73.00	577100.3010	975554.6449
L	43+69.31	-74.00	577118.6018	975563.9443
L	43+69.31	-54.08	577109.3722	975581.5971
L	47+18.18	-59.59	577424.9297	975734.6757
L	47+22.69	-53.28	577426.4242	975742.7975
L	47+30.65	-72.68	577444.5994	975731.0561
L	47+47.75	-51.11	577449.9845	975760.3203
L	47+72.98	-56.76	577477.0117	975773.6659
L	47+77.55	-35.00	577467.1025	975793.7364
L	51+75.00	50.00	577714.8446	976131.6230
L	51+75.00	33.52	577718.7492	976115.6136
L	51+87.47	-26.62	577744.9468	976060.0511
L	52+20.00	48.91	577760.1232	976140.9591
L	52+20.00	32.80	577763.5527	976125.2216
L	54+00.06	-61.29	577962.6326	976067.1930
L	54+09.39	-82.37	577978.2350	976049.5226
L	54+17.79	-55.88	577980.1280	976077.5934
L	54+25.40	-74.33	577993.5657	976062.3482
L	54+63.41	-34.16	578019.9724	976113.8906
L	56+06.35	36.02	578119.8672	976240.1578
L	56+06.35	30.00	578122.6156	976234.8036
L	57+53.14	-28.11	578280.2401	976263.3970
L	57+57.60	-68.00	578311.2475	976237.7727
L	57+63.52	-68.00	578316.4791	976242.8337
L	57+75.65	59.14	578233.9768	976340.3111
L	59+77.03	51.23	578304.8037	976484.5899
L	59+77.03	65.68	578290.3895	976485.5810

ROW MARKER PERMANENT EASEMENT - E

ALIGN	STATION	OFFSET	NORTH	EAST
Y1	13+84.29	30.00	576351.0941	972580.6430
Y1	13+86.07	51.87	576344.3234	972559.7717
Y1	13+87.00	-30.00	576362.2560	972639.6580
Y1	13+87.00	-36.00	576363.6363	972645.4971
Y1	14+04.35	30.00	576331.5656	972585.2592
Y1	14+06.01	50.31	576325.2788	972565.8798

REVISIONS

I, Mark A. Parris, 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) (Base map Compilation, 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 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.

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 15th day of July, 2019.

DocuSigned by:

 F1570CB85C7248A
 Professional Land Surveyor

L-4529
 PLS # Seal

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.

6/22/19

Location and Surveys



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

I, Mark A Parris, 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).

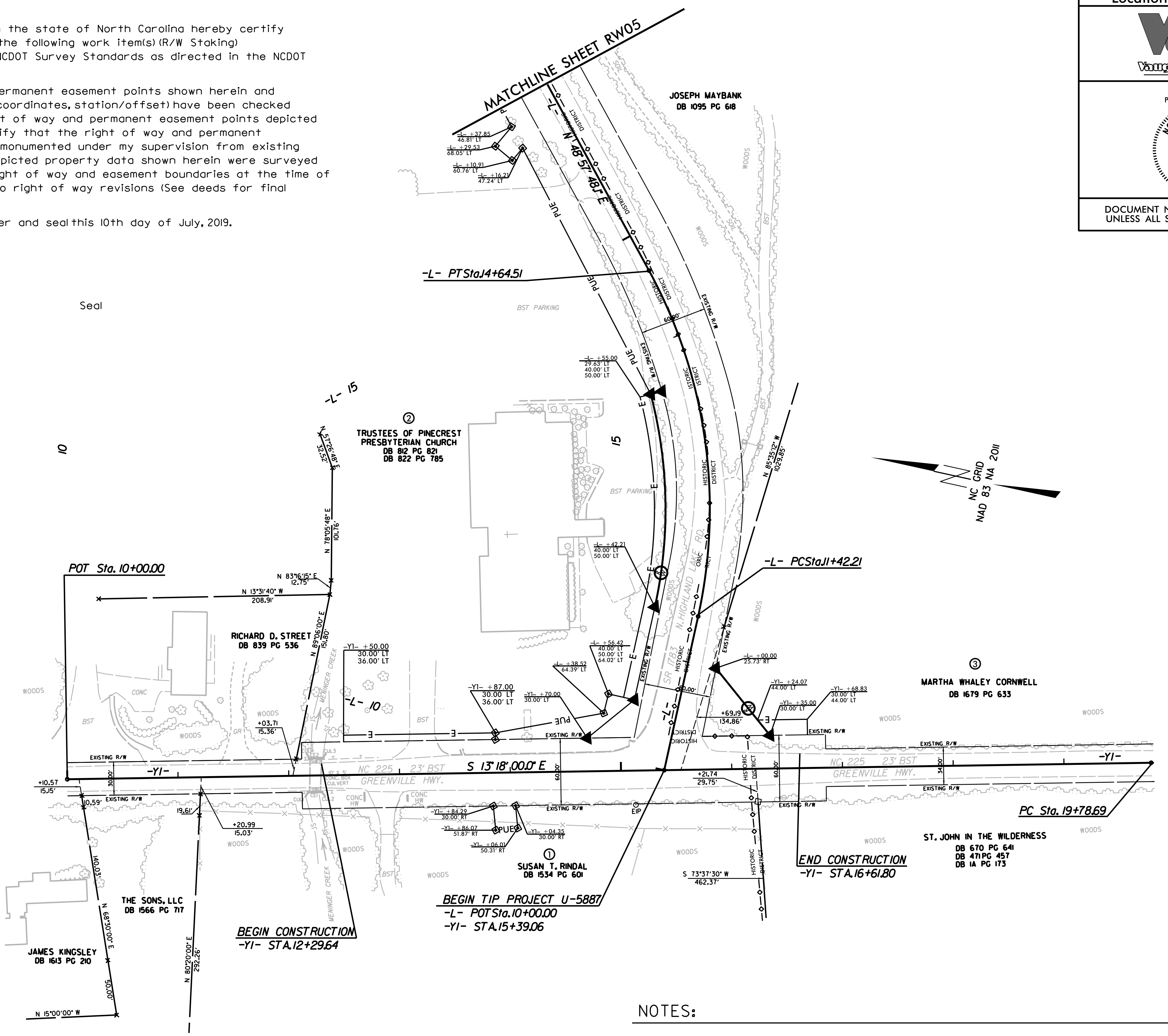
Witness my original signature, registration number and seal this 10th day of July, 2019.

DocuSigned by:

E1570CB8807248A
Professional Land Surveyor

L-4529
PLS # Seal

-L- CURVE DATA	
PI Sta 13+10.62	PI Sta 17+72.41
$\Delta = 41^{\circ} 02' 11.9" (LT)$	$\Delta = 2^{\circ} 35' 36.4" (RT)$
$D = 12^{\circ} 43' 56.6"$	$D = 1^{\circ} 25' 56.6"$
$L = 322.30'$	$L = 181.06'$
$T = 168.41'$	$T = 90.54'$
$R = 450.00'$	$R = 4000.00'$
$DS = 35 MPH$	$DS = 40 MPH$
$e = .04$	$e = 0.02$



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.

REVISIONS

15 - JUL - 2019 13:45
W:\Projects\2019\U-5887\Highland Lake ROW Stake\Work\U5887_1s_RW04.dgn
16 - SEP - 2019 10:27
W:\Projects\2019\U-5887\Highland Lake ROW Stake\Work\U5887_1s_RW04.dgn

PROJECT REFERENCE NO. U-5887	SHEET NO. RW05
Location and Surveys	
PROJECT SURVEYOR 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I, Mark A Parris, 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 10th day of July, 2019.

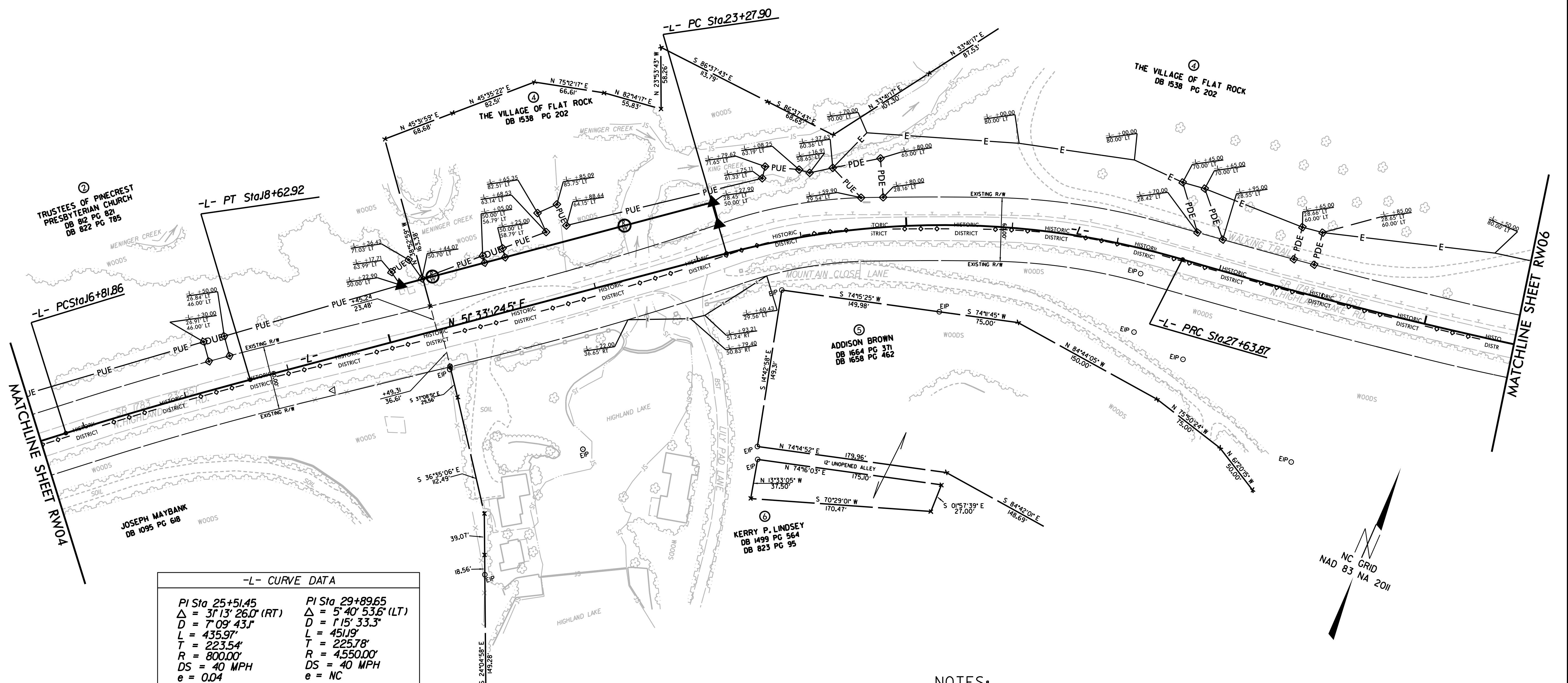
DocuSigned by:

F1570CB85C7248A
Professional Land Surveyor

L-4529

PLS #

Seal


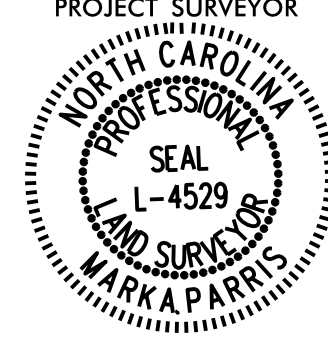


NOTES:

- 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.

REVISIONS

15 JUL 2019 13:54
 W:\projects\191912-55 U-5887 Highland Lake ROW Stake\Work\U5887_Ls_RW05.dgn
 191912-55 U-5887 Highland Lake ROW Stake\Work\U5887_Ls_RW05.dgn
 191912-55 U-5887 Highland Lake ROW Stake\Work\U5887_Ls_RW05.dgn

PROJECT REFERENCE NO. U-5887	SHEET NO. RW06
Location and Surveys	
	
PROJECT SURVEYOR 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I, Mark A. Parris, 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.

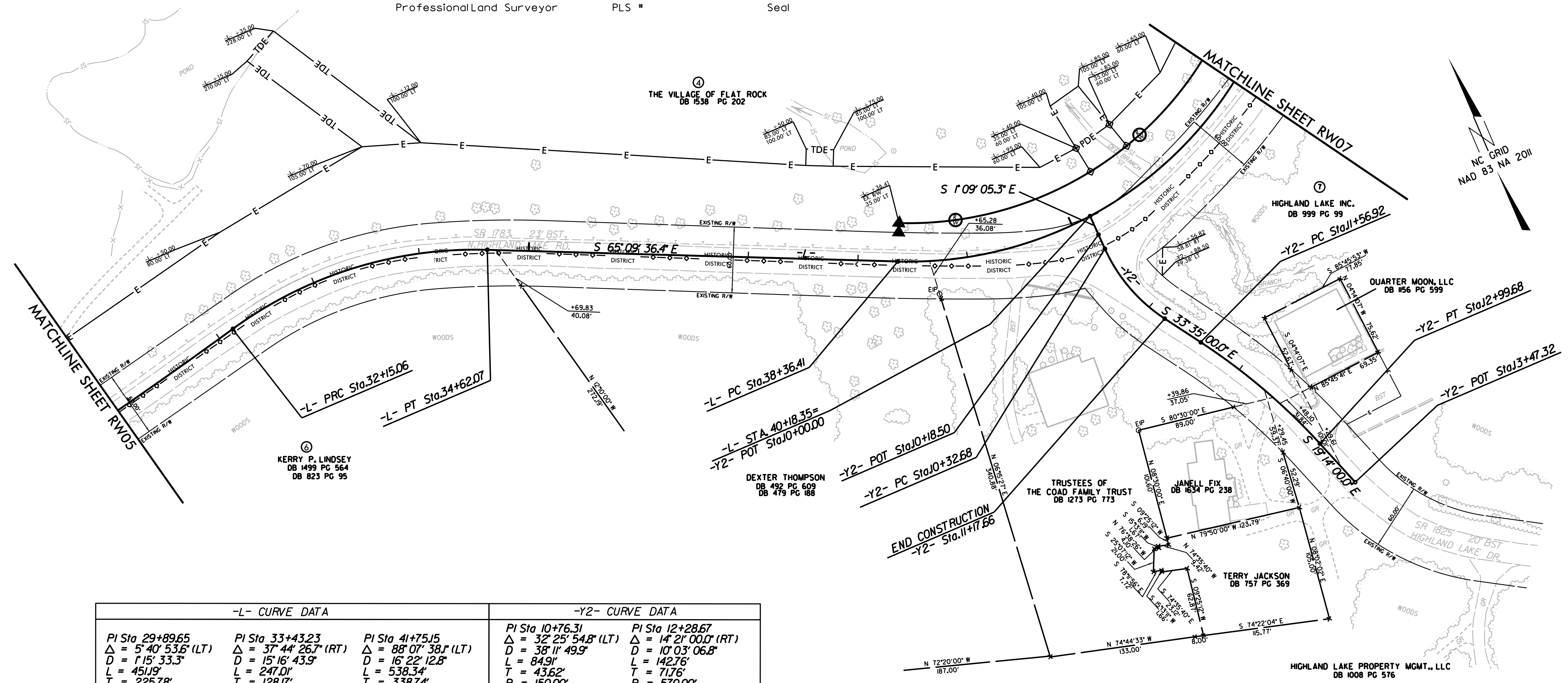
I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway 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 11th day of July, 2019.

DocuSigned by:

 L-4529
 Professional Land Surveyor

L-4529
 PLS # Seal




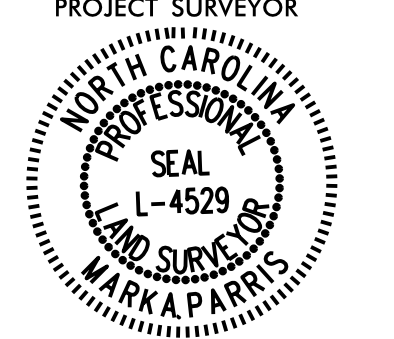
-L- CURVE DATA			-Y2- CURVE DATA	
PI Sta 29+89.65	PI Sta 33+43.23	PI Sta 41+75.15	PI Sta 10+76.31	PI Sta 12+28.67
$\Delta = 5^{\circ}40'53.6\" (LT)$	$\Delta = 37^{\circ}44'26.7\" (RT)$	$\Delta = 88^{\circ}07'38.1\" (LT)$	$\Delta = 32^{\circ}25'54.8\" (LT)$	$\Delta = 14^{\circ}21'00.0\" (RT)$
$D = 115'33.3\"$	$D = 15'16'43.9\"$	$D = 16'22'12.8\"$	$D = 38'11'49.9\"$	$D = 10'03'06.8\"$
$L = 451.9\"$	$L = 247.01\"$	$L = 538.34\"$	$L = 84.91\"$	$L = 142.76\"$
$T = 225.78\"$	$T = 128.17\"$	$T = 338.74\"$	$T = 43.62\"$	$T = 71.76\"$
$R = 4,550.00'$	$R = 375.00'$	$R = 350.00'$	$R = 150.00'$	$R = 570.00'$
$DS = 40 MPH$	$DS = 35 MPH$	$DS = 30 MPH **$	$DS = 15 MPH$	$DS = 15 MPH$
$e = NC$	$e = 0.04$	$e = 0.04$	$e = NC$	$e = NC$

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.

REVISIONS

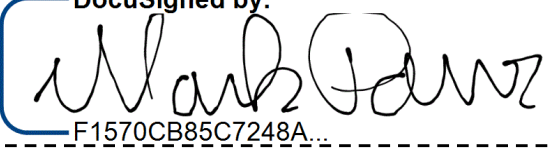
18 JUL 2019 09:06 W:\Projects\2019\31912-55 U-5887 Highland Lake ROW Stake\Work\U5887_Ls_RW06.dgn

PROJECT REFERENCE NO. U-5887	SHEET NO. RW07
Location and Surveys	
	
PROJECT SURVEYOR 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I, Mark A. Parris, 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).

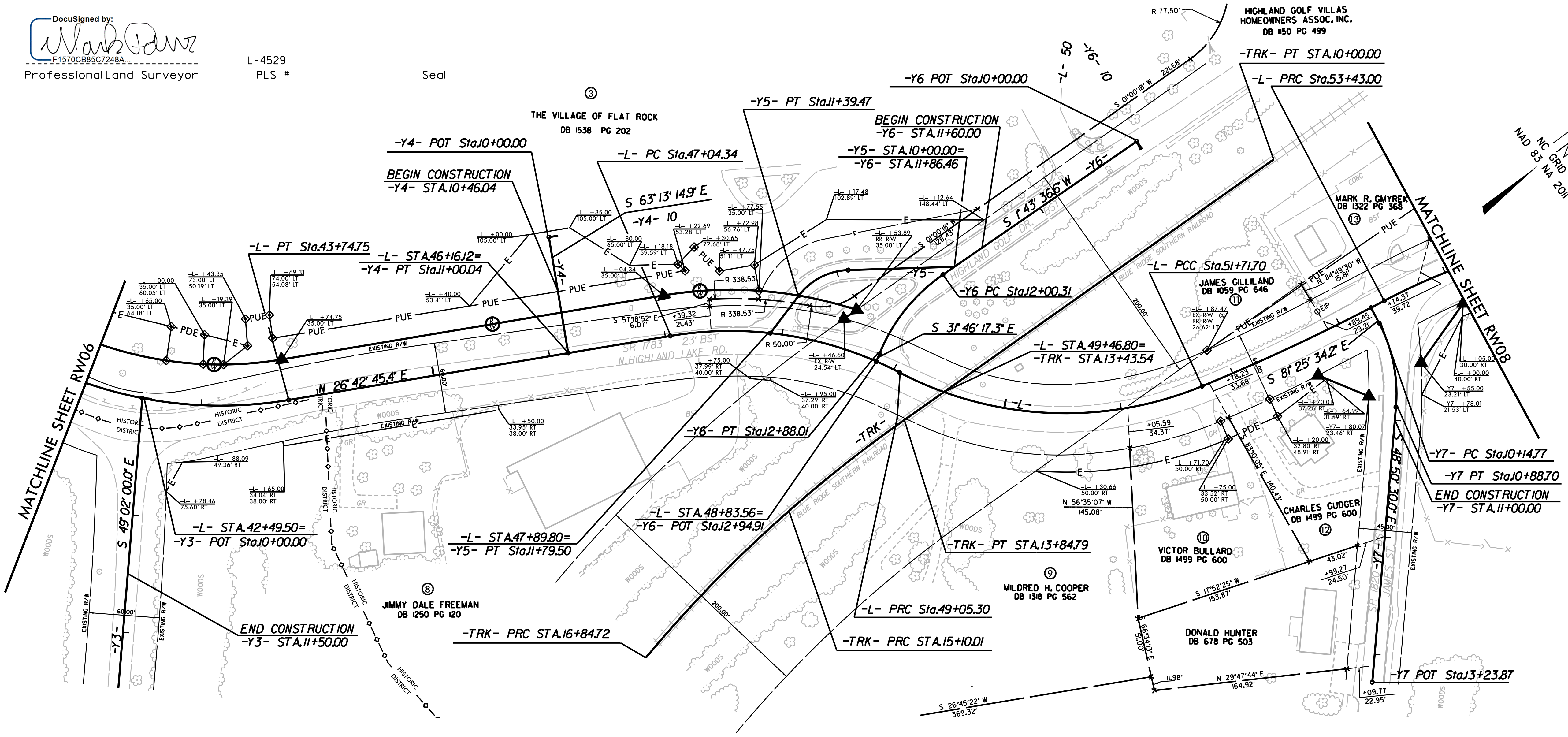
Witness my original signature, registration number and seal this 15th day of July, 2019.

DocuSigned by:

 F1570CB95C7248A
 Professional Land Surveyor

L-4529
 PLS *

Seal

-Y5- CURVE DATA	-Y6- CURVE DATA	-Y7- CURVE DATA
PI Sta 11+16.71	PI Sta 12+45.45	PI Sta 10+52.77
$\Delta = 51^{\circ}05'31.9"$ (LT)	$\Delta = 33^{\circ}29'53.9"$ (LT)	$\Delta = 32^{\circ}35'04.2"$ (RT)
D = 104'10'26.9"	D = 38'11'49.9"	D = 44'04'25.2"
L = 49.04'	L = 87.70'	L = 73.93'
T = 26.29'	T = 45.14'	T = 38.00'
R = 55.00'	R = 150.00'	R = 130.00'
DS = SC	DS = SC	DS = SC
e = NC	e = NC	e = NC



-L- CURVE DATA			
PI Sta 48+08.49	PI Sta 50+47.67	PI Sta 52+75.13	PI Sta 54+76.00
$\Delta = 37^{\circ}08'33.1"$ (RT)	$\Delta = 50^{\circ}02'43.2"$ (LT)	$\Delta = 6^{\circ}29'13.7"$ (LT)	$\Delta = 21^{\circ}16'34.3"$ (RT)
D = 18'28'57.0"	D = 18'47'07.8"	D = 3'08'22.2"	D = 11'01'06.3"
L = 200.96'	L = 266.40'	L = 206.63'	L = 193.10'
T = 104.15'	T = 142.37'	T = 103.43'	T = 97.67'
R = 310.00'	R = 305.00'	R = 1,825.00'	R = 550.00'
DS = 30 MPH **	DS = 30 MPH **	DS = 40 MPH	DS = 35 MPH
e = 0.04	e = 0.04	e = 0.02	e = 0.04


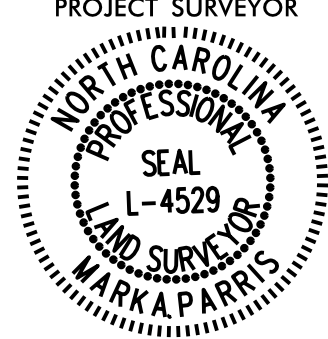
NOTES:

- 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.

REVISIONS

18 JUL 2019 09:10 W:\projects\2019\1912-55 U-5887 Highland Lake ROW Stake\Work\U5887_1s_RW07.dgn

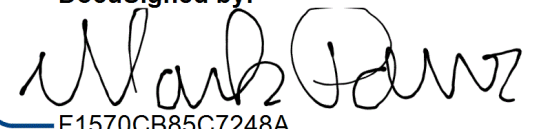
6/2/19

PROJECT REFERENCE NO. U-5887	SHEET NO. RW08
Location and Surveys	
	
PROJECT SURVEYOR 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

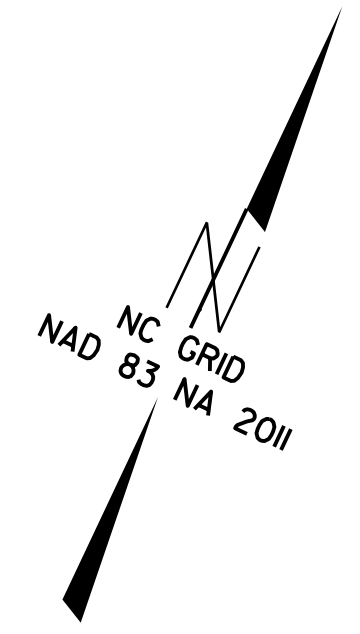
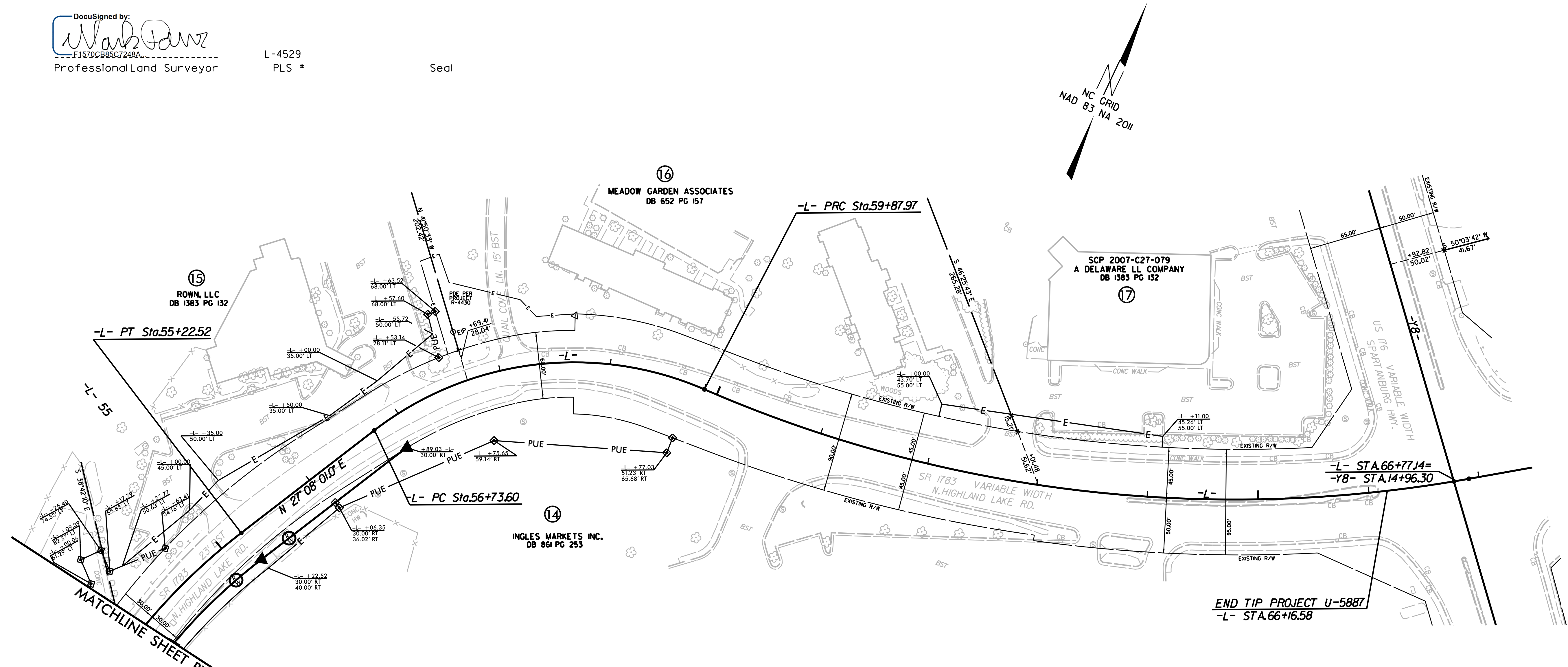
I, Mark A. Parris, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item(s) (R/W Staking) performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and 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 15th day of July, 2019.

DocuSigned by:

 F157DCB85C7248A L-4529
 Professional Land Surveyor PLS # Seal

REVISIONS



-L- CURVE DATA	
PI Sta 58+73.49	PI Sta 63+53.16
$\Delta = 48^{\circ} 58' 28.3''$ (RT)	$\Delta = 33^{\circ} 33' 45.4''$ (LT)
D = 19' 25' 20.3"	D = 4' 46' 28.7"
L = 252.16'	L = 702.93'
T = 134.36'	T = 361.87'
R = 295.00'	R = 1200.00'
DS = 20 MPH **	DS = 40 MPH
e = EXIST.	e = EXIST.

- 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.

15 JUL 2019 14:09
 W:\Projects\2019\1912-55 U-5887 Highland Lake ROW Stake\Work\U5887_1s_RW08.dgn
 15 JUL 2019 14:09
 W:\Projects\2019\1912-55 U-5887 Highland Lake ROW Stake\Work\U5887_1s_RW08.dgn
 15 JUL 2019 14:09
 W:\Projects\2019\1912-55 U-5887 Highland Lake ROW Stake\Work\U5887_1s_RW08.dgn