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09/08/99

TIP PROJECT: R-2303E

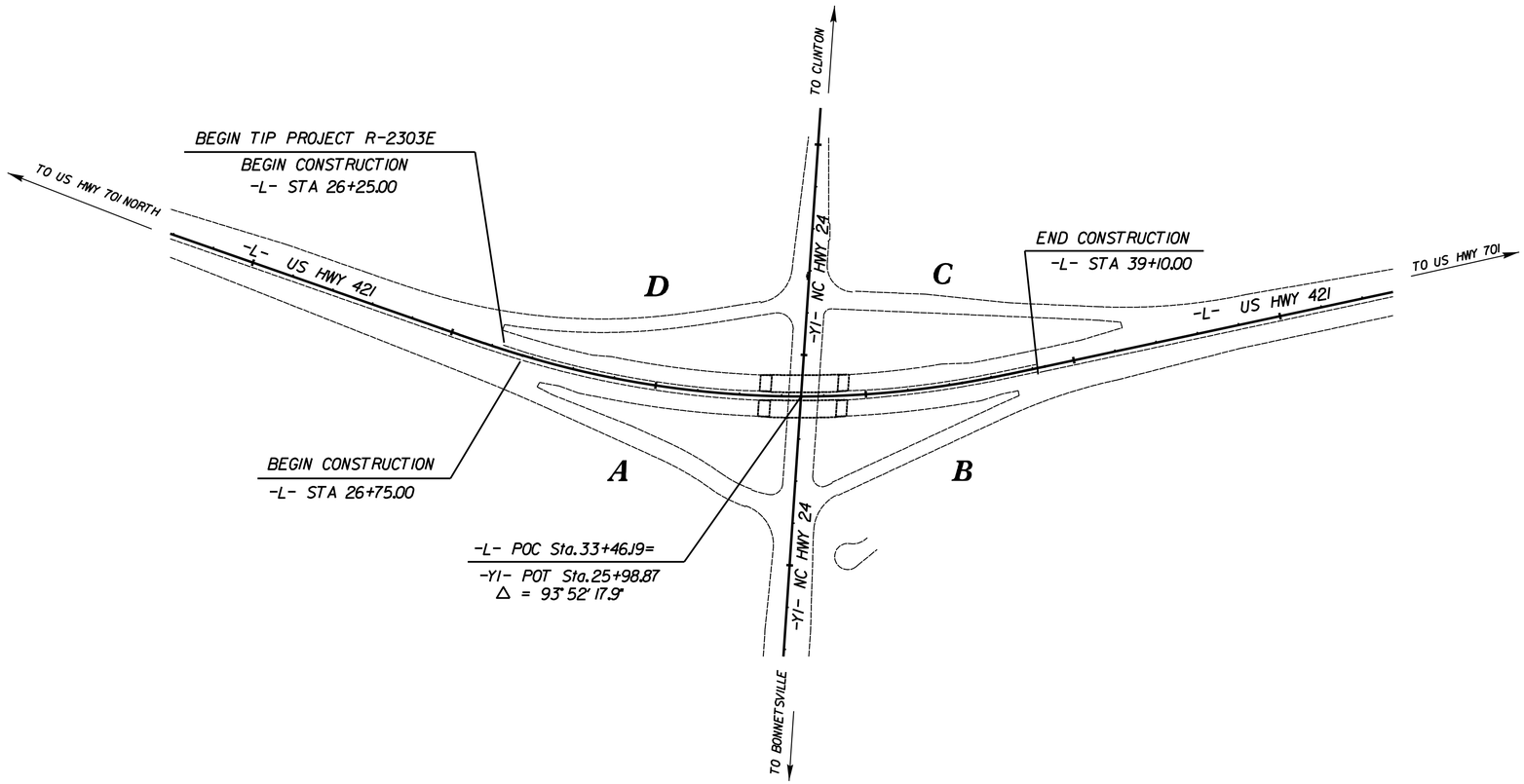
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2303E	RW01	06

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SURVEY CONTROL & EXISTING CENTERLINES

SAMPSON COUNTY

PART 1 OF 2



DRAWING NOT TO SCALE

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "LAKEWOOD" WITH NAD 83/95 STATE PLANE GRID COORDINATES OF NORTHING: 451,606.046' (ft) EASTING: 2,148,380.369' (ft) ELEVATION: 154.547' (ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999917757 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "LAKEWOOD" TO -L- STATION 1097+00.00 IS S 66^ 34' 46" E 21,315.2855'(ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

LOCATION & SURVEYS
NCDOT DIVISION 3
5310 BARBADOS BLVD. SUITE 102
CASTLE HAYNE, N.C. 28429

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	*LETTING DATE:*
AUGUST 16, 2019	*DECEMBER 17, 2019*

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4526 LAND SURVEYOR CHRISTOPHER J. SAWYER

DocuSigned by: 10/31/2019

SIGNATURE 60CB2E1D21467... *Date:*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$DGN$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW02C-1
Location and Surveys	

SURVEY CONTROL SHEET R-2303E

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PART 1 OF 2

GPS CALIBRATION REPORT

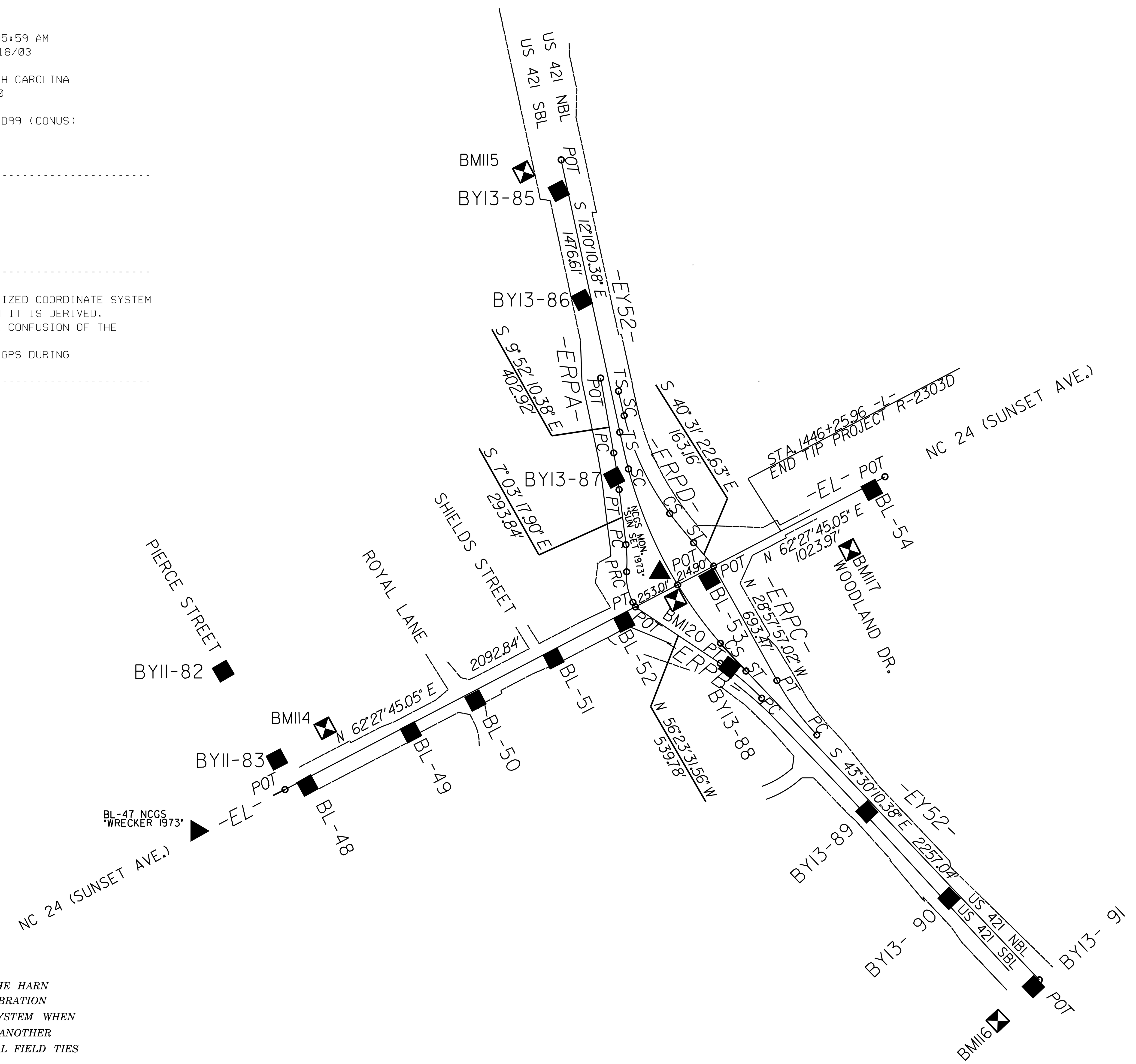
PROJECT : R2303DZ

TIP NUMBER	R-2303 D		
USER NAME	MGWARD	DATE & TIME	11:05:59 AM 12/18/03
COORDINATE SYSTEM	SITE(AT GROUND)	ZONE	NORTH CAROLINA 3200
HORIZONTAL DATUM	NAD 1983 (CONUS)		
VERTICAL DATUM	NAVD 88	GEOID MODEL	GEOID99 (CONUS)
COORDINATE UNITS	METERS		
DISTANCE UNITS	US SURVEY FEET		
HEIGHT UNITS	METERS		

LOCAL SITE INFORMATION
LOCALIZED AROUND

LATITUDE	34•59′23.46713"N
LONGITUDE	78•30′16.47464"W
SITE SCALE FACTOR	1.0000822500
HEIGHT	12.780M

THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION USES A LOCALIZED COORDINATE SYSTEM WHICH IS VERY SIMILAR TO NORTH CAROLINA ZONE 3200 FROM WHICH IT IS DERIVED. PLEASE TAKE CARE IN UTILIZING THESE COORDINATES TO ELIMINATE CONFUSION OF THE TWO SYSTEMS.
THIS FILE IS TO AID IN THE USE OF REAL TIME KINEMATIC (RTK) GPS DURING CONSTRUCTION LAYOUT.



NC GRID
NAD 83/95

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "LAKEWOOD"
WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
NORTHING: 451,606.046′(ft) EASTING: 2,148,380.369′(ft)
ELEVATION: 154.547′(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999917757
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "LAKEWOOD" TO -L- L STATION 1097+00.00 IS
S 66° 34′ 46″ E 21,315.2855′
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES:

1. *THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/95 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORKWITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.*

2. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
   HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/
   THE FILES TO BE FOUND ARE AS FOLLOWS:
   R2303D_LS_CONTROL_100128.TXT
   IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

3. *THE CONTROL DATA FOR THIS PROJECT IS NOT THE SAME AS R-2303A.*
   R-2303B, R-2303C, AND R-2303D HAVE THE SAME FACTOR.

⊚ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION
SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

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

6/2/99

$$$$$$SYSTIME$$$$$ $$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$ $$$$USERNAME$$$$

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW02C-2
Location and Surveys	

SURVEY CONTROL SHEET R-2303E
PART 1 OF 2

GPS CALIBRATION REPORT

PROJECT : R2303DZ

TIP NUMBER	R-2303 D		
USER NAME	MGWARD	DATE & TIME	11:05:59 AM 12/18/03
COORDINATE SYSTEM	SITE(AT GROUND)	ZONE	NORTH CAROLINA 3200
HORIZONTAL DATUM	NAD 1983 (CONUS)		
VERTICAL DATUM	NAVD 88	GEOID MODEL	GEOID99 (CONUS)
COORDINATE UNITS	METERS		
DISTANCE UNITS	US SURVEY FEET		
HEIGHT UNITS	METERS		

LOCAL SITE INFORMATION
LOCALIZED AROUND

LATITUDE	34°59'23.46713"N
LONGITUDE	78°30'16.47464"W
SITE SCALE FACTOR	1.0000822500
HEIGHT	12.780M

THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION USES A LOCALIZED COORDINATE SYSTEM WHICH IS VERY SIMILAR TO NORTH CAROLINA ZONE 3200 FROM WHICH IT IS DERIVED. PLEASE TAKE CARE IN UTILIZING THESE COORDINATES TO ELIMINATE CONFUSION OF THE TWO SYSTEMS.
THIS FILE IS TO AID IN THE USE OF REAL TIME KINEMATIC (RTK) GPS DURING CONSTRUCTION LAYOUT.

DATUM TRANSFORMATION PARAMETERS

DATUM TRANSFORMATION COMPUTATION NOT REQUESTED

UPDATED DEFAULT PROJECTION (TRANSVERSE MERCATOR) DEFINITION

UPDATED DEFAULT PROJECTION NOT REQUESTED

HORIZONTAL ADJUSTMENT PARAMETERS

NORTHING COORDINATE OF ROTATION CENTER	137477.931M
EASTING COORDINATE OF ROTATION CENTER	667448.836M
ROTATION ABOUT THE CENTER POINT	0°00'00"
TRANSLATION NORTH	0.008M
TRANSLATION EAST	0.005M
SCALE FACTOR	1.00000018

VERTICAL ADJUSTMENT PARAMETERS

NORTHING COORDINATE OF ORIGIN POINT	135602.640M
EASTING COORDINATE OF ORIGIN POINT	661596.847M
VERTICAL SEPARATION AT ORIGIN	-0.040M
SLOPE NORTH	3.955PPM
SLOPE EAST	-0.140PPM

GEOID MODEL DEFINITION

GEOID99 (CONUS)

RESIDUAL DIFFERENCES BETWEEN GPS (WGS84) AND LOCAL COORDINATES

SUMMARY

	MAXIMUM ERROR	ROOT MEAN SQUARE ERROR	POINT
HORIZONTAL	0.03SFT	0.004	R2303C-9_GPS
VERTICAL	0.07SFT	0.009	R2303D-8_GPS
THREE-DIMENSIONAL	0.07SFT	0.009	R2303D-8_GPS

POINT RESIDUALS

WGS84 COORDINATES	CALCULATED POINT FOR DISPLAY ONLY	LOCAL COORDINATES
POINT LAKEWOOD_GPS	NORTHING 137649.804M	POINT LAKEWOOD
LATITUDE 34°59'23.46713"N	EASTING 654827.648M	NORTHING 137649.798M
LONGITUDE 78°30'16.47464"W	ELEVATION 47.075M	EASTING 654827.646M
HEIGHT 12.776M	HORZ ERROR 0.02SFT	ELEVATION 47.106M
	VERT ERROR ?	UTILIZED HORIZONTAL CONTROL
	3D ERROR 0.02SFT	QUALITY QUALITY
POINT R2303C-9_GPS	NORTHING 135602.640M	POINT R2303C-9
LATITUDE 34°58'15.85734"N	EASTING 661596.847M	NORTHING 135602.638M
LONGITUDE 78°25'50.01865"W	ELEVATION 46.066M	EASTING 661596.839M
HEIGHT 11.626M	HORZ ERROR 0.03SFT	ELEVATION 46.068M
	VERT ERROR 0.01SFT	HORZ AND UTILIZED
	3D ERROR 0.03SFT	VERT QUALITY CONTROL QUALITY

POINT R2303C-10_GPS	NORTHING 135843.832M	POINT R2303C-10	
LATITUDE 34°58'23.63403"N	EASTING 661865.335M	NORTHING 135843.834M	
LONGITUDE 78°25'39.37939"W	ELEVATION 47.929M	EASTING 661865.334M	
HEIGHT 13.486M	HORZ ERROR 0.01SFT	ELEVATION 47.927M	
	VERT ERROR 0.01SFT	HORZ AND UTILIZED	
	3D ERROR 0.01SFT	VERT QUALITY CONTROL QUALITY	
POINT R2303D-2_GPS	NORTHING 137280.552M	POINT R2303D-2	
LATITUDE 34°59'10.14006"N	EASTING 662482.592M	NORTHING 137280.550M	
LONGITUDE 78°25'14.71455"W	ELEVATION 48.382M	EASTING 662482.588M	
HEIGHT 13.938M	HORZ ERROR 0.01SFT	ELEVATION 48.385M	
	VERT ERROR 0.01SFT	HORZ AND UTILIZED	
	3D ERROR 0.02SFT	VERT QUALITY ADJUSTED QUALITY	
POINT CONCORD_GPS	NORTHING 136903.952M	POINT CONCORD	
LATITUDE 34°58'57.85499"N	EASTING 662820.737M	NORTHING 136903.952M	
LONGITUDE 78°25'01.46880"W	ELEVATION 50.305M	EASTING 662820.736M	
HEIGHT 15.851M	HORZ ERROR 0.01SFT	ELEVATION 50.291M	
	VERT ERROR 0.05SFT	HORZ AND UTILIZED	
	3D ERROR 0.05SFT	VERT QUALITY ADJUSTED QUALITY	
POINT R2303D-3_GPS	NORTHING 136561.234M	POINT R2303D-3	
LATITUDE 34°58'46.72873"N	EASTING 662846.612M	NORTHING 136561.236M	
LONGITUDE 78°25'00.52801"W	ELEVATION 48.178M	EASTING 662846.611M	
HEIGHT 13.720M	HORZ ERROR 0.00SFT	ELEVATION 48.148M	
	VERT ERROR ?	UTILIZED HORIZONTAL ADJUSTED	
	3D ERROR 0.00SFT	QUALITY QUALITY	
POINT R2303D-5_GPS	NORTHING 137931.667M	POINT R2303D-5	
LATITUDE 34°59'30.86341"N	EASTING 664582.829M	NORTHING 137931.666M	
LONGITUDE 78°23'51.74739"W	ELEVATION 50.921M	EASTING 664582.828M	
HEIGHT 16.436M	HORZ ERROR 0.00SFT	ELEVATION 50.917M	
	VERT ERROR 0.01SFT	HORZ AND UTILIZED	
	3D ERROR 0.01SFT	VERT QUALITY ADJUSTED QUALITY	
POINT R2303D-4_GPS	NORTHING 137709.603M	POINT R2303D-4	
LATITUDE 34°59'23.61004"N	EASTING 664822.581M	NORTHING 137709.603M	
LONGITUDE 78°23'42.34675"W	ELEVATION 50.275M	EASTING 664822.581M	
HEIGHT 15.783M	HORZ ERROR 0.00SFT	ELEVATION 50.277M	
	VERT ERROR 0.01SFT	HORZ AND UTILIZED	
	3D ERROR 0.01SFT	VERT QUALITY ADJUSTED QUALITY	
POINT R2303D-6_GPS	NORTHING 138182.338M	POINT R2303D-6	
LATITUDE 34°59'38.64405"N	EASTING 666350.938M	NORTHING 138182.338M	
LONGITUDE 78°22'41.96491"W	ELEVATION 28.601M	EASTING 666350.939M	
HEIGHT -5.922M	HORZ ERROR 0.00SFT	ELEVATION 28.588M	
	VERT ERROR 0.04SFT	HORZ AND UTILIZED	
	3D ERROR 0.04SFT	VERT QUALITY ADJUSTED QUALITY	
POINT R2303D-7_GPS	NORTHING 138239.628M	POINT R2303D-7	
LATITUDE 34°59'40.44157"N	EASTING 666653.848M	NORTHING 138239.629M	
LONGITUDE 78°22'30.03749"W	ELEVATION 28.749M	EASTING 666653.051M	
HEIGHT -5.780M	HORZ ERROR 0.01SFT	ELEVATION 28.755M	
	VERT ERROR 0.02SFT	HORZ AND UTILIZED	
	3D ERROR 0.02SFT	VERT QUALITY ADJUSTED QUALITY	
POINT R2303D-8_GPS	NORTHING 137916.123M	POINT R2303D-8	
LATITUDE 34°59'29.59788"N	EASTING 668321.525M	NORTHING 137916.124M	
LONGITUDE 78°21'24.32628"W	ELEVATION 48.481M	EASTING 668321.527M	
HEIGHT 13.905M	HORZ ERROR 0.01SFT	ELEVATION 48.503M	
	VERT ERROR 0.07SFT	HORZ AND UTILIZED	
	3D ERROR 0.07SFT	VERT QUALITY ADJUSTED QUALITY	
POINT R2303D-9_GPS	NORTHING 137607.712M	POINT R2303D-9	
LATITUDE 34°59'19.59261"N	EASTING 668308.414M	NORTHING 137607.714M	
LONGITUDE 78°21'24.92206"W	ELEVATION 48.301M	EASTING 668308.416M	
HEIGHT 13.720M	HORZ ERROR 0.01SFT	ELEVATION 48.309M	
	VERT ERROR 0.03SFT	HORZ AND UTILIZED	
	3D ERROR 0.03SFT	VERT QUALITY ADJUSTED QUALITY	

NOTES:

1. *THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 8395 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORKWITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.*
2. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
   HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/PAGES/DEFAULT.ASPX
   THE FILES TO BE FOUND ARE AS FOLLOWS:
   R2303D_LS_CONTROL_100128.TXT
   IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
3. *THE CONTROL DATA FOR THIS PROJECT IS NOT THE SAME AS R-2303A, R-2303B, R-2303C, AND R-2303D HAVE THE SAME FACTOR.*

© INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL
BY THE NCDOT LOCATION AND SURVEYS UNIT.
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION
SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

POINT CLINTPORT_GPS	NORTHING 136216.840M	POINT CLINTPORT	
LATITUDE 34°58'34.57345"N	EASTING 667758.225M	NORTHING 136216.844M	
LONGITUDE 78°21'46.96830"W	ELEVATION 43.543M	EASTING 667758.229M	
HEIGHT 8.953M	HORZ ERROR 0.02SFT	ELEVATION 43.543M	
	VERT ERROR 0.00SFT	HORZ AND UTILIZED	
	3D ERROR 0.02SFT	VERT QUALITY CONTROL QUALITY	
POINT R2303D-10_GPS	NORTHING 138655.097M	POINT R2303D-10	
LATITUDE 34°59'53.22216"N	EASTING 669988.943M	NORTHING 138655.096M	
LONGITUDE 78°20'18.38245"W	ELEVATION 42.861M	EASTING 669988.945M	
HEIGHT 8.253M	HORZ ERROR 0.01SFT	ELEVATION 42.914M	
	VERT ERROR ?	UTILIZED HORIZONTAL ADJUSTED	
	3D ERROR 0.01SFT	QUALITY QUALITY	
POINT SUN SET_GPS	NORTHING 138339.629M	POINT SUN SET	
LATITUDE 34°59'42.97107"N	EASTING 670054.099M	NORTHING 138339.630M	
LONGITUDE 78°20'15.89601"W	ELEVATION 50.614M	EASTING 670054.101M	
HEIGHT 15.999M	HORZ ERROR 0.01SFT	ELEVATION 50.604M	
	VERT ERROR 0.03SFT	HORZ AND UTILIZED	
	3D ERROR 0.03SFT	VERT QUALITY ADJUSTED QUALITY	
POINT ELIZABETH_GPS	NORTHING 137438.832M	POINT ELIZABETH	
LATITUDE 34°59'13.55584"N	EASTING 670898.750M	NORTHING 137438.836M	
LONGITUDE 78°19'42.82848"W	ELEVATION 50.864M	EASTING 670898.755M	
HEIGHT 16.210M	HORZ ERROR 0.02SFT	ELEVATION 50.867M	
	VERT ERROR 0.01SFT	HORZ AND UTILIZED	
	3D ERROR 0.02SFT	VERT QUALITY CONTROL QUALITY	
POINT KENANPORT_GPS	NORTHING 139045.474M	POINT KENANPORT	
LATITUDE 34°59'56.98256"N	EASTING 702451.171M	NORTHING 139045.472M	
LONGITUDE 77°58'58.10727"W	ELEVATION 40.280M	EASTING 702451.167M	
HEIGHT 4.666M	HORZ ERROR 0.02SFT	ELEVATION 40.278M	
	VERT ERROR 0.01SFT	HORZ AND UTILIZED	
	3D ERROR 0.02SFT	VERT QUALITY CONTROL QUALITY	

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "LAKEWOOD"
WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
NORTHING: 451,606.046'(ft) EASTING: 2,148,380.369'(ft)
ELEVATION: 154.547'(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999917757
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "LAKEWOOD" TO -L- L STATION 1097+00.00 IS
S 66° 34' 46" E 21,315.2855'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

$$SYSTIME$$ $$SYSNAME$$ $$FILENAME$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW02C-3

Location and Surveys

SURVEY CONTROL SHEET R-2303E

PART 1 OF 2

BL

POINT	DESC.	NORTH	EAST	ELEVATION
145	(R2303C) BL·145	442958.9145	2167616.3083	132.86
146	(R2303C) BL·146	443257.6064	2168115.6657	146.57
147	(R2303C) BL·147	443610.9612	2168709.9855	131.46
148	(R2303C) BL·148	443994.8859	2169354.3462	141.53
149	(R2303C) BL·149	444376.8702	2169959.5221	146.87
C9	R2303C·9	444889.6540	2170588.9620	151.14
C10	R2303C·10	445680.9800	2171469.8490	157.24
BL15	BL·15	445810.9220	2171613.8180	159.56
BL16	BL·16	446313.2880	2172182.4690	168.55
BL17	BL·17	446750.3330	2172628.9020	167.76
BL18	BL·18	447344.4490	2173131.2400	162.33
BL19	BL·19	447916.1730	2173600.7110	161.06
BL20	BL·20	448615.6720	2174173.3840	163.38
BL21	BL·21	449123.6750	2174561.0230	164.70
BL22	BL·22	449377.6200	2175189.0420	158.57
BL23	BL·23	449613.3970	2175768.3500	145.87
BL24	BL·24	449866.2250	2176395.2040	152.85
BL25	BL·25	450097.9180	2176958.5790	153.88
BL26	BL·26	450325.4330	2177518.3380	140.35
BL27	BL·27	450537.4610	2178037.2140	129.75
BL28	BL·28	450915.4140	2178969.9500	156.26
BL29	BL·29	451201.2710	2179673.1940	160.35
BL30	BL·30	451451.4060	2180284.2380	160.43
D4	R2303D·4	451802.2540	2181172.0830	164.95
BL31	BL·31	451948.0320	2181529.5790	164.51
BL32	BL·32	452307.5410	2182395.2020	127.58
BL33	BL·33	452555.8860	2183000.6460	108.47
BL34	BL·34	452782.4070	2183562.9120	94.86
BL35	BL·35	452874.4020	2183858.2870	93.03
BL36	BL·36	452982.0690	2184364.0190	93.36
BL37	BL·37	453193.5240	2185402.8920	92.89
D6	R2303D·6	453353.2200	2186186.3710	93.79
D7	R2303D·7	453541.1810	2187177.5500	94.34
BL38	BL·38	453537.4020	2187743.7310	96.68
BL39	BL·39	453398.9710	2188749.0480	126.31
BL40	BL·40	453096.2540	2189640.9350	150.84
BL41	BL·41	452809.2280	2190656.8260	161.69
BL55	BL·55	452734.7203	2190919.3032	163.91
BL42	BL·42	452507.8140	2191718.6540	161.45
D8	R2303D·8	452479.8170	2192651.5430	159.09
BL43	BL·43	452483.6320	2193259.9840	158.53
BL44	BL·44	452478.6880	2193839.0860	155.63
BL45	BL·45	452464.0820	2194429.4510	154.87
BL46	BL·46	452474.0630	2195023.6500	154.01
BL47	BL·47	452520.1980	2195874.0070	154.76
BL48	BL·48	452759.2760	2196460.6970	158.09
BL49	BL·49	453044.9510	2197007.8180	164.80
BL50	BL·50	453209.8690	2197349.7530	163.28
BL51	BL·51	453433.0750	2197764.3480	160.01
BL52	BL·52	453628.2560	2198138.5230	151.87
BL56	NOT SET	453773.6130	2198405.1047	UNKNOWN
BL53	BL·53	453886.3490	2198611.8600	141.26
BL54	BL·54	454326.1910	2199450.0060	129.29

BENCHMARKS

BM118 ELEVATION · 165.63
N 451946 E 2181004
EL STATION 1255·45.00 830 LEFT
NCGS BM " SA 18" DISK IS SET IN WEST HEADWALL OF CULVERT

BM119 ELEVATION · 95.21
N 453351 E 2186001
EL STATION 1311·42.00 7 RIGHT
NCGS BM "SA 17" DISK IS SET FLUSH WITH WINGWALL

BENCHMARKS

BM114 ELEVATION · 163.40
N 453064 E 2196554
EL STATION 1420·02.00 190 LEFT
RR SPIKE SET AT THE BASE OF A 18" PINE

BM120 ELEVATION · 167.80
N 453743 E 2198410
EL STATION 1439·62.00 67 RIGHT
NCGS BM " SA 1" DISK IS SET IN SW WINGWALL OF SOUTHBOUND LANE BRIDGE

BM117 ELEVATION · 119.54
N 454009 E 2199333
EL STATION 1449·03.00 257 RIGHT
RR SPIKE SET AT THE BASE OF A 20" OAK

BM115 ELEVATION · 109.50
N 456012 E 2197606
EY52 STATION 10·21.00 207 RIGHT
RR SPIKE SET AT THE BASE OF A 20" OAK

BM116 ELEVATION · 148.81
N 451513 E 2200117
EY52 STATION 10·00.00
S 26·52'58.84" E DIST 5115.15
RR SPIKE SET AT THE BASE OF A 10" PINE

BY

POINT	DESC.	NORTH	EAST	ELEVATION
BY60	BY·60	446482.7280	2171295.8110	164.55
BY15	BL·15	445810.9220	2171613.8180	159.60

BY1

POINT	DESC.	NORTH	EAST	ELEVATION
BY16	BL·16	446313.2880	2172182.4690	168.58
BY61	BY1·61	445704.2040	2172138.5670	157.77

BY2

POINT	DESC.	NORTH	EAST	ELEVATION
BY62	BY2·62	449709.6440	2174248.9250	160.20
BY21	BL·21	449123.6750	2174561.0230	164.70
BY63	BY2·63	448259.3940	2174662.3840	159.05

BY3

POINT	DESC.	NORTH	EAST	ELEVATION
BY64	BY3·64	452786.4540	2180110.8900	166.35
D5	R2303D·5	452530.8070	2180385.4930	167.05
BY65	BY3·65	452265.0700	2180668.6920	167.63
BY4	R2303D·4	451802.2540	2181172.0830	164.95

BY4

POINT	DESC.	NORTH	EAST	ELEVATION
BY66	BY4·66	453153.0590	2181369.1050	149.06
BY67	BY4·67	452429.0860	2181476.8170	160.45
BY31	BL·31	451948.0320	2181529.5790	164.51
BY68	BY4·68	451527.2180	2181622.3100	153.72
BY69	BY4·69	451211.4210	2181739.9030	150.73
BY70	BY4·70	450585.2340	2181832.7410	145.27

BY5

POINT	DESC.	NORTH	EAST	ELEVATION
BY34	BL·34	452782.4070	2183562.9120	94.86
BY71	BY5·71	452438.0030	2183651.5890	95.12
BY72	BY5·72	452172.8930	2183707.4210	93.88
BY73	BY5·73	451757.2510	2183705.8140	96.04

BY6

POINT	DESC.	NORTH	EAST	ELEVATION
BY74	BY6·74	453732.9880	2189672.6050	149.38
BY40	BL·40	453096.2540	2189640.9350	150.84
BY75	BY6·75	452527.9170	2189615.2230	157.33

BY7

POINT	DESC.	NORTH	EAST	ELEVATION
BY55	BL·55	452734.7203	2190919.3032	163.91
BY76	BY7·76	452067.3945	2190663.7336	156.31

BY8

POINT	DESC.	NORTH	EAST	ELEVATION
BY78	BY8·78	453286.2920	2191393.6360	164.18
BY79	BY8·79	452768.4610	2191735.5480	158.59
BY42	BL·42	452507.8140	2191718.6540	161.44

BY9

POINT	DESC.	NORTH	EAST	ELEVATION
BY8	R2303D·8	452479.8170	2192651.5430	159.09
BY80	BY9·80	451946.5980	2192638.5370	158.16

BY10

POINT	DESC.	NORTH	EAST	ELEVATION
BY44	BL·44	452478.6880	2193839.0860	155.63
BY81	BY10·81	452023.0340	2193765.4980	159.17

BY11

POINT	DESC.	NORTH	EAST	ELEVATION
BY82	BY11·82	453365.9370	2196013.9860	156.68
BY83	BY11·83	452897.7270	2196298.3990	156.94
BY48	BL·48	452759.2760	2196460.6970	158.09

BY12

POINT	DESC.	NORTH	EAST	ELEVATION
BY50	BL·50	453209.8690	2197349.7530	163.28
BY84	BY12·84	452630.7590	2197439.0130	172.75

BY13

POINT	DESC.	NORTH	EAST	ELEVATION
BY85	BY13·85	455910.3930	2197791.4610	118.72
BY86	BY13·86	455332.6030	2197913.8270	130.37
BY87	BY13·87	454390.8070	2198084.7160	151.83
SUNSET1	SUNSET	453869.2680	2198335.8310	166.02
BY56	(NOT SET) BL·56	453773.6130	2198405.1047	UNKNOWN
BY88	BY13·88	453397.4600	2198677.5160	165.26
BY89	BY13·89	452620.7520	2199423.7600	155.08
BY90	BY13·90	452162.7910	2199858.6330	149.75
BY91	BY13·91	451693.8640	2200306.3070	144.01

NOTES:

1. *THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/95 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORKWITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.*

2. *THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:*
HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/PAGES/DEFAULT.ASPX
THE FILES TO BE FOUND ARE AS FOLLOWS:
R2303D_LS_CONTROL_100128.TXT
IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

3. *THE CONTROL DATA FOR THIS PROJECT IS NOT THE SAME AS R-2303A. R-2303B, R-2303C, AND R-2303D HAVE THE SAME FACTOR.*

⊚ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*
PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION
SEE GPS CALIBRATION SHEET FOR HORIZONTAL AND VERTICAL COORDINATE VALUES.

GPS CALIBRATION REPORT

PROJECT : R2303DZ

TIP NUMBER	R·2303 D		
USER NAME	MGWARD	DATE & TIME	11:05:59 AM 12/18/03
COORDINATE SYSTEM	SITE(AT GROUND)	ZONE	NORTH CAROLINA 3200
HORIZONTAL DATUM	NAD 1983 (CONUS)		
VERTICAL DATUM	NAVD 88	GEOID MODEL	GEOID99 (CONUS)
COORDINATE UNITS	METERS		
DISTANCE UNITS	US SURVEY FEET		
HEIGHT UNITS	METERS		

LOCAL SITE INFORMATION
LOCALIZED AROUND

LATITUDE	34·59'23.46713"N
LONGITUDE	78·30'16.47464"W
SITE SCALE FACTOR	1.0000822500
HEIGHT	12.780M

THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION USES A LOCALIZED COORDINATE SYSTEM WHICH IS VERY SIMILAR TO NORTH CAROLINA ZONE 3200 FROM WHICH IT IS DERIVED. PLEASE TAKE CARE IN UTILIZING THESE COORDINATES TO ELIMINATE CONFUSION OF THE TWO SYSTEMS.
THIS FILE IS TO AID IN THE USE OF REAL TIME KINEMATIC (RTK) GPS DURING CONSTRUCTION LAYOUT.

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "LAKEWOOD"
WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
NORTHING: 451,606.046'(ft) EASTING: 2,148,380.369'(ft)
ELEVATION: 154.547'(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999917757
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "LAKEWOOD" TO -L- L STATION 1097+00.00 IS
S 66° 34' 46" E 21,315.2855'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

6/2/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW02C-4
Location and Surveys	

SURVEY CONTROL SHEET R-2303E

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PART 1 OF 2

EL

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	452739.020	2196341.264							
LINE			N 62°27'45.1" E	3584.72					
POT	454396.339	2199519.865							

ERPA

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	454919.277	2198013.471							
LINE			S 09°52'10.4" E	402.92					
PC	454522.320	2198082.534							
CURVE			S 08°27'44.1" E	196.47	02°48'52.5"(RT)	01°25'56.6"	196.49	98.27	4000.00
PT	454327.984	2198111.446							
LINE			S 07°03'17.9" E	293.84					
PC	454036.366	2198147.537							
CURVE			S 01°20'32.5" E	143.34	11°25'30.8"(RT)	07°57'27.9"	143.57	72.03	720.00
PCC	453893.069	2198150.894							
CURVE			S 11°35'01.0" E	164.92	31°54'27.9"(LT)	19°05'54.9"	167.07	85.76	300.00
PT	453731.510	2198184.010							
LINE			S 27°32'15.0" E	28.10					
POT	453706.598	2198196.999							

ERPB

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	453222.924	2198866.500							
CURVE			N 49°56'51.0" W	287.34	12°53'21.2"(LT)	04°28'34.4"	287.95	144.58	1280.00
PT	453407.825	2198646.554							
LINE			N 56°23'31.6" W	539.78					
POT	453706.598	2198196.999							

ERPC

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	453028.418	2199158.635							
CURVE			N 36°14'03.7" W	356.79	14°32'13.4"(RT)	04°03'48.7"	357.74	179.84	1410.00
PT	453316.203	2198947.743							
LINE			N 28°57'57.0" W	693.47					
POT	453922.928	2198611.902							

ERPD

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R	DELTA S	Ls	LT	ST
TS	0.000	0.000											
SPIRAL			S 13°30'10.2" E	199.96						04°00'00.0"(LT)	200.00	133.37	66.70
SC	454655.522	2198154.903											
CURVE			S 26°20'46.5" E	506.16	20°21'12.3"(LT)	04°00'00.0"	508.84	257.13	1432.39				
CS	454201.934	2198379.535											
SPIRAL			S 39°11'22.8" E	199.96						04°00'00.0"(LT)	200.00	133.37	66.70
ST	454046.956	2198505.886											
LINE			S 40°31'22.6" E	163.16									
POT	453922.928	2198611.902											

EY52

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R	DELTA S	Ls	LT	ST
POT	456075.840	2197803.953											
LINE			S 12°10'10.4" E	1476.61									
TS	454632.413	2198115.230											
SPIRAL			S 13°00'10.3" E	199.98						02°30'00.0"(LT)	200.00	133.35	66.68
SC	454437.558	2198160.226											
CURVE			S 27°50'10.4" E	1044.09	26°20'00.0"(LT)	02°30'00.0"	1053.33	536.14	2291.83				
CS	453514.286	2198647.758											
SPIRAL			S 42°40'10.4" E	199.98						02°30'00.0"(LT)	200.00	133.35	66.68
ST	453367.244	2198783.300											
LINE			S 43°30'10.4" E	2257.04									
POT	451730.126	2200337.024											

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 INFORMATINO REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

$$$$USERNAME$$$$ $$$$SYSTIME$$$$ $$$$PLOTSCALE$$$$ $$$$PLOTDATE$$$$

6/2/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW02D-1
Location and Surveys	

PROPOSED ALIGNMENT CONTROL SHEET R2303E

PART 1 0F 2

L

TYPE	STATION	NORTH	EAST
POT	6+00.00	456466.8507	2197719.6309
TS	24+76.61	454632.4129	2198115.2300
SC	26+76.61	454437.5576	2198160.2261
CS	37+29.94	453514.2862	2198647.7580
ST	39+29.94	453367.2436	2198783.3004
POT	61+86.98	451730.1255	2200337.0240

Y1

TYPE	STATION	NORTH	EAST
POT	10+00.00	454562.7763	2199839.0779
POT	48+81.82	452768.0973	2196397.0317

NOTES:

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$$$$SYSTIME$$$$
$$$$USER$$$$
$$$$FILENAME$$$$

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R–2303E	RW01	16

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

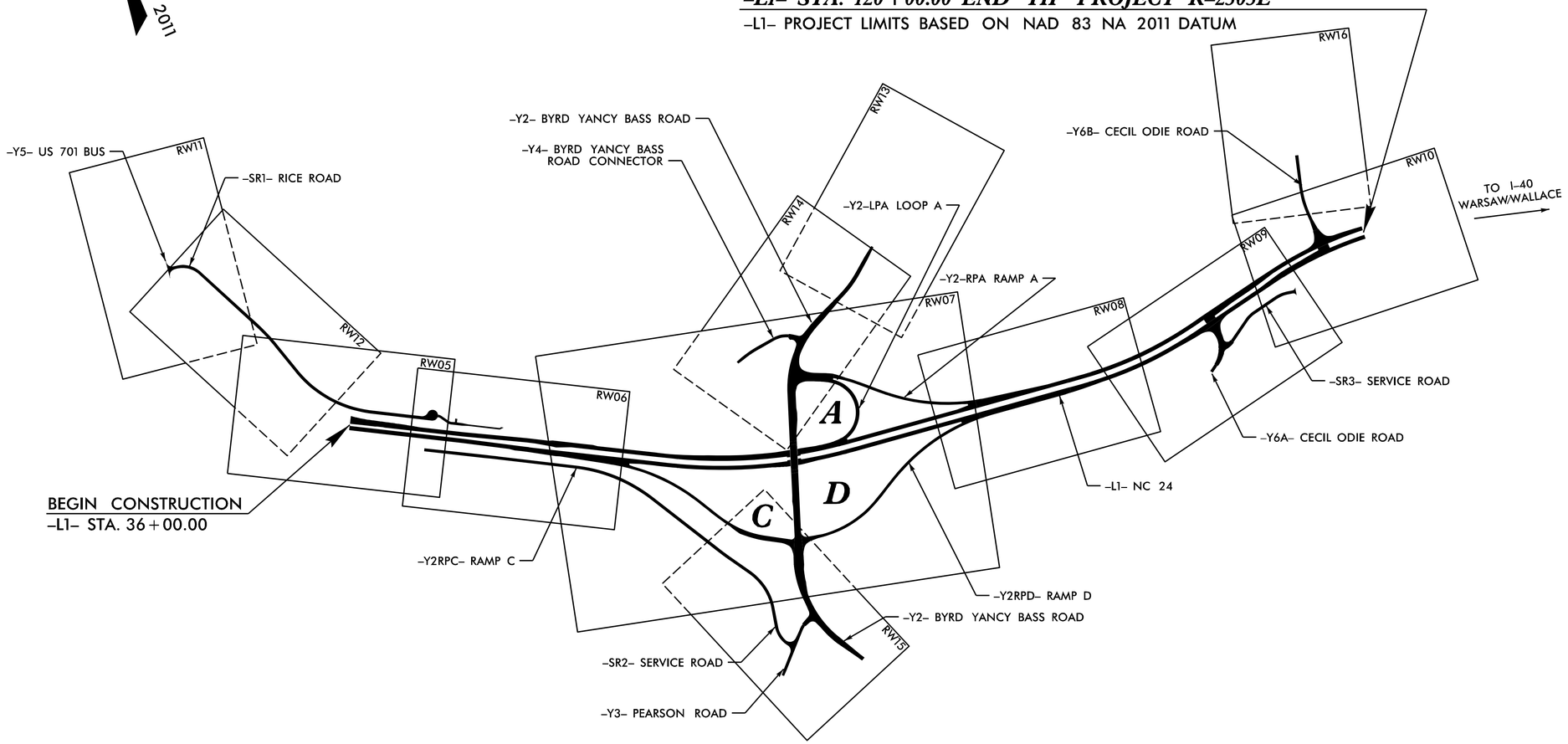
SAMPSON COUNTY *PART 2 OF 2*

TIP PROJECT: R–2303E

NAD 83 NA 2011

–L1– STA. 120 + 00.00 END TIP PROJECT R–2303E

–L1– PROJECT LIMITS BASED ON NAD 83 NA 2011 DATUM



GRAPHIC SCALE

50 25 0 50 100

PLANS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "R2303-25" WITH NAD 1983/NA2011 STATE PLANE GRID COORDINATES OF NORTHING: 439726.045 (ft) EASTING: 2242742.809 (ft) ELEVATION: 151.81 (ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999884395 (1/X= 1.000115618)
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "R2303-25" TO -L1- STATION 10+00.00 IS N 83^ 06' 30.2" W 35651.84 (ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

CH ENGINEERING

3220 GLEN ROYAL RD. RALEIGH, NC 27617
TEL. (919) 788-0224 FAX (919) 788-0232
CORPORATE LICENSE # P-0189

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	*LETTING DATE:*
AUGUST 16, 2018	DECEMBER 17, 2019

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3468 LAND SURVEYOR WATTS R FEARRINGTON JR

DocuSigned by: Watts Fearrington 10/31/2019

SIGNATURE: *Date:*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

09/08/19

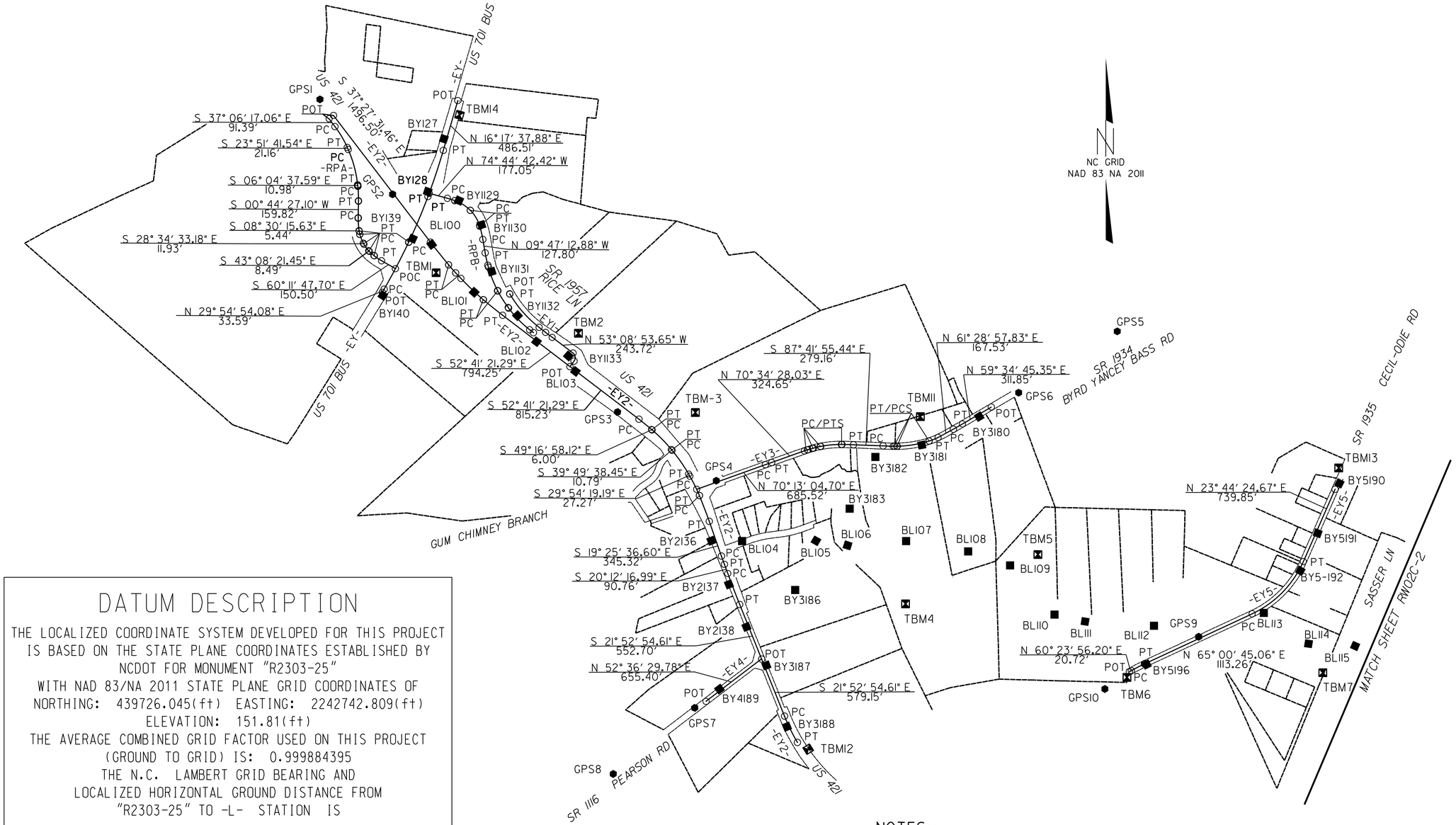
$$$$$$SYSTIME$$$$$$
$$$$$$$$$$DGN$$$$$$$$$$
$$$$$$USERNAME$$$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW02C-1
Location and Surveys	

SURVEY CONTROL SHEET R-2303E

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PART 2 OF 2



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "R2303-25" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 439726.045(ft) EASTING: 2242742.809(ft) ELEVATION: 151.81(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999884395

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "R2303-25" TO -L- STATION IS

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

DRAWING NOT TO SCALE

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

6/2/99

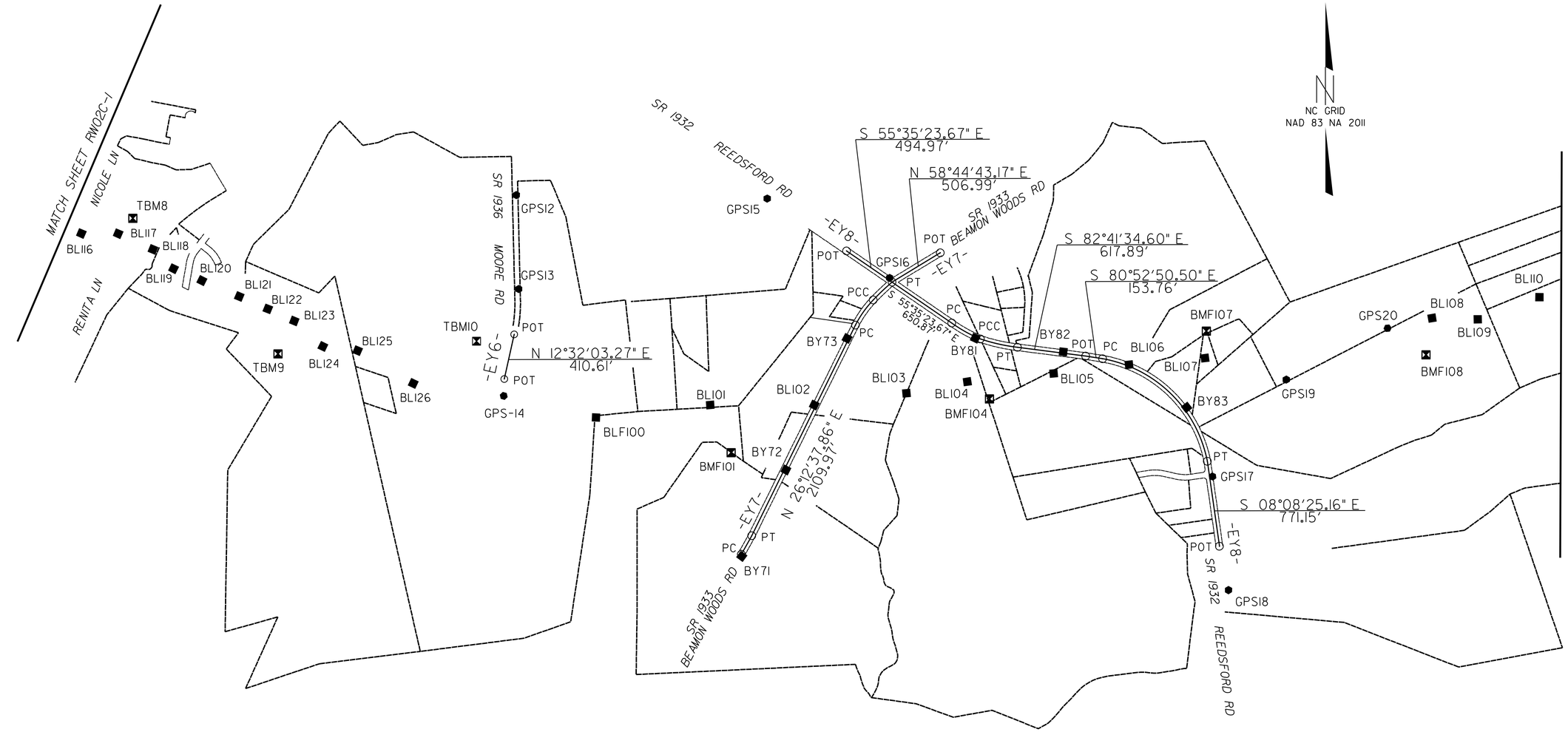
$$$$CSYTIME$$$$
$$$$CSYNAME$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW02C-2
Location and Surveys	

SURVEY CONTROL SHEET R-2303E

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PART 2 0F 2



DRAWING NOT TO SCALE

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REVISIONS

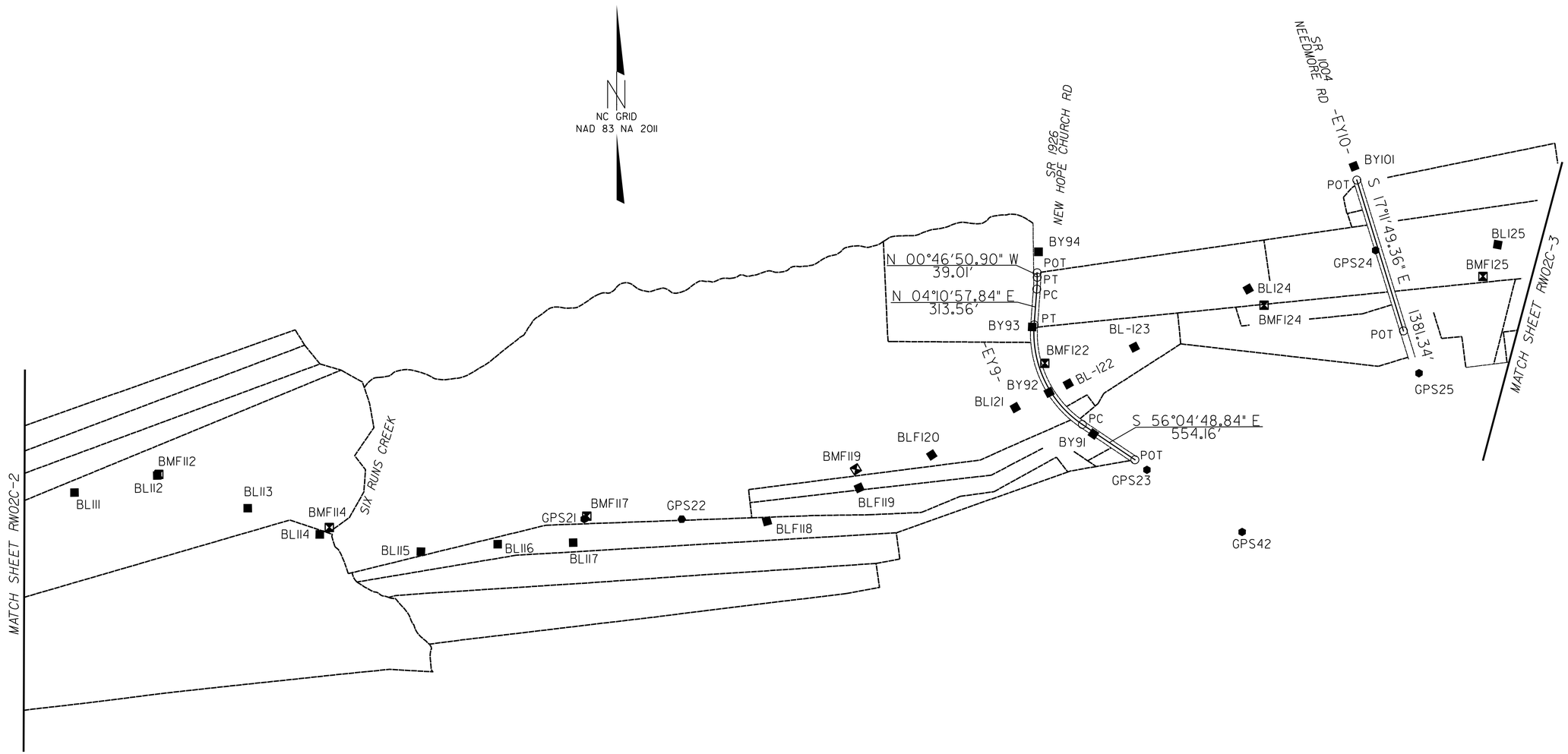
6/2/99

$$$$SYSTIME$$$$
$$$$CELLNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW02C-3
Location and Surveys	

SURVEY CONTROL SHEET R-2303E

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION



DRAWING NOT TO SCALE

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REVISIONS

6/2/99

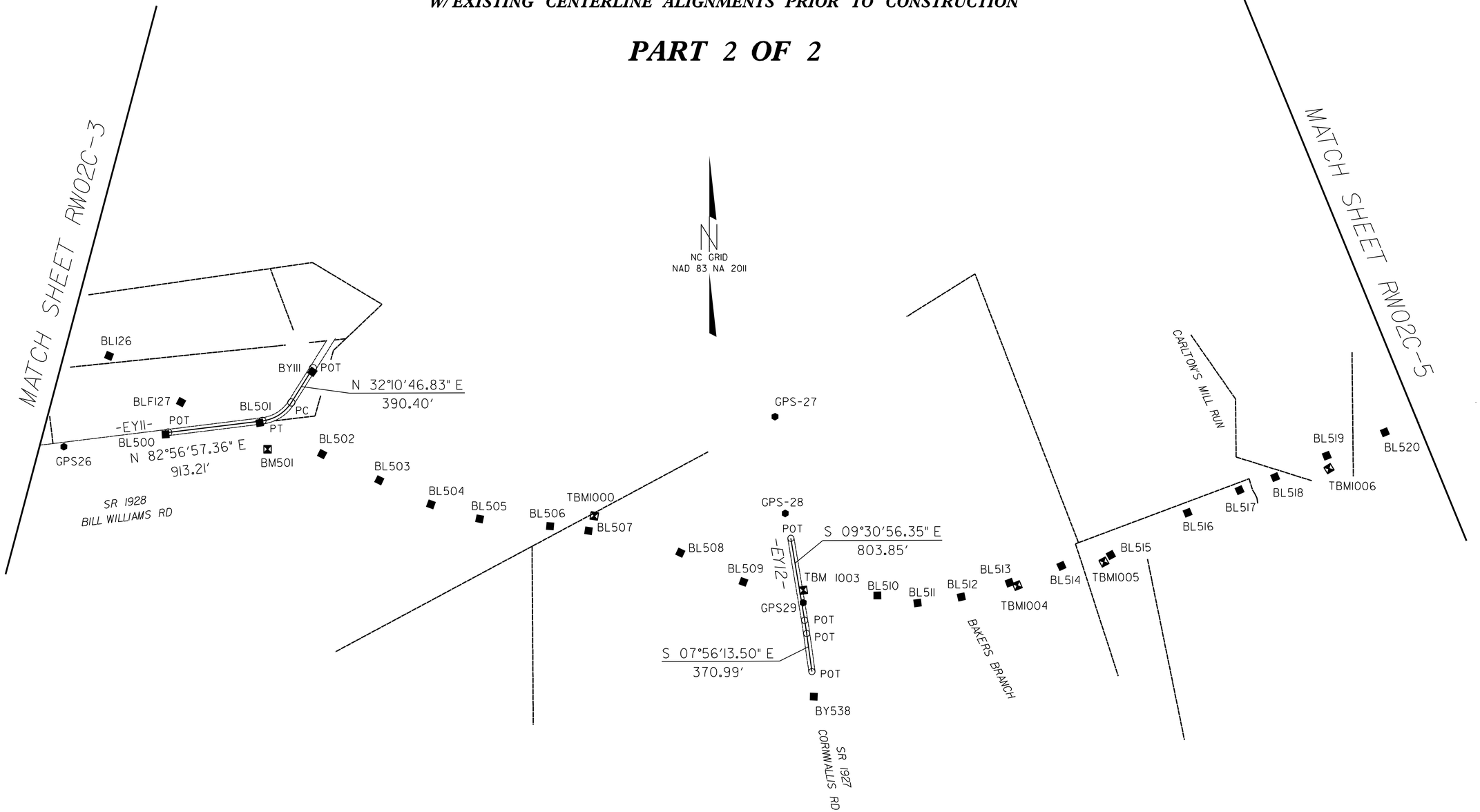
$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$DGNS$$$$
$$$$DGNFILE$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW02C-4
Location and Surveys	

SURVEY CONTROL SHEET R-2303E

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PART 2 OF 2



DRAWING NOT TO SCALE

NOTES:

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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

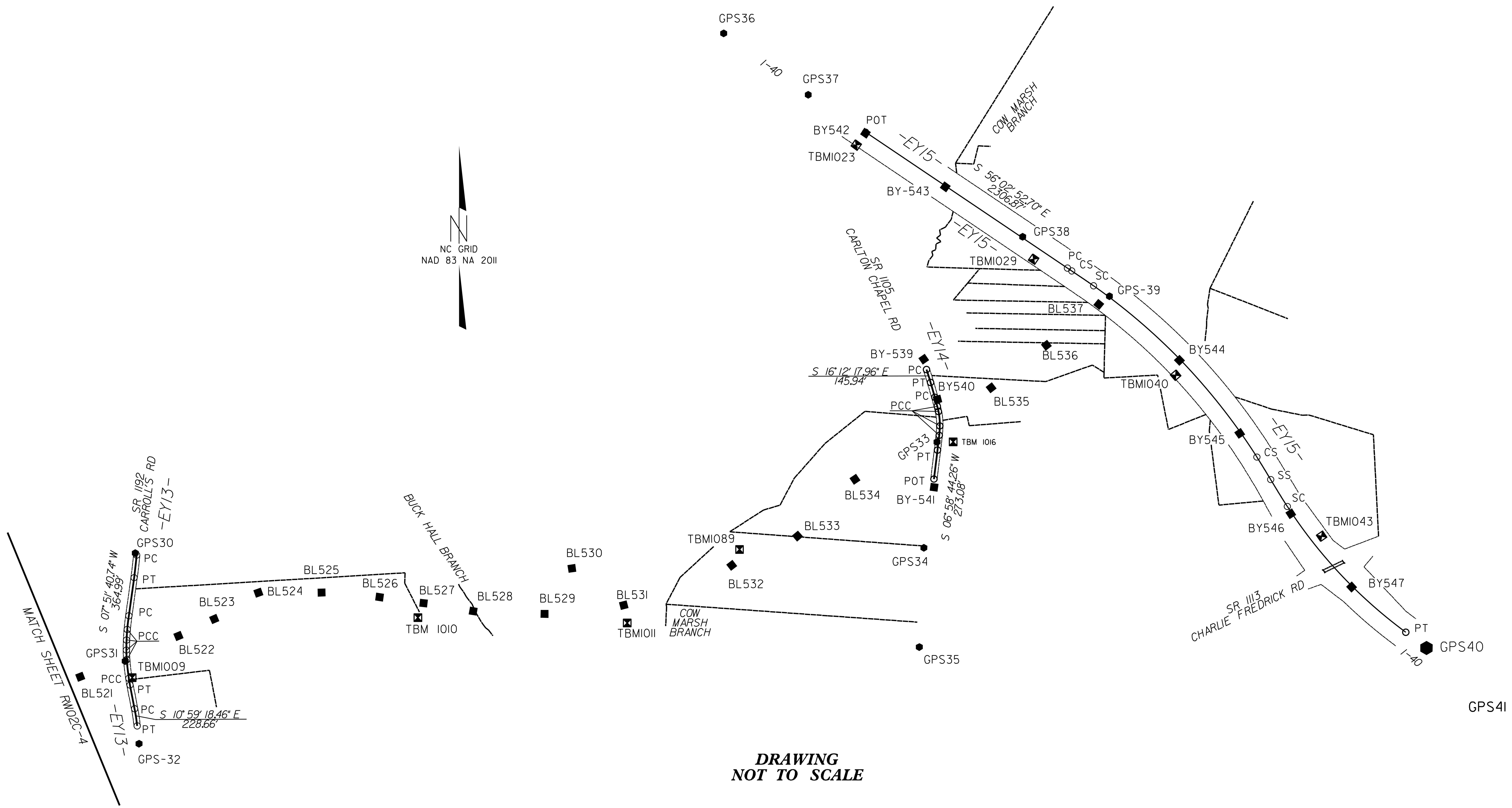
6/2/99

$$$$$$SYSTIME$$$$
$$$$$$SYSNAME$$$$
$$$$$$ISERNAME$$$$

SURVEY CONTROL SHEET R-2303E

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PART 2 OF 2



NOTES:

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REVISIONS

6/2/99

$$$$$$SYSTIME$$$$$ $$$$$$$$$$DGN$$$$$$$$$$$$$$$$ $$$$USERNAME$$$$

6/2/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW02C-6
Location and Surveys	

SURVEY CONTROL SHEET R-2303E

PART 2 OF 2

BL

POINT	DESC.	NORTH	EAST	ELEVATION	BL STATION	OFFSET
GPS1	GPS CAP & REBAR	444154.0940	2207220.9040	137.39	5+00.00	0.00
GPS2	GPS CAP & REBAR	443263.9790	2207903.0320	132.86	16+21.43	0.00
BL100	TRV CAP & REBAR	442793.2130	2208269.5190	137.16	22+18.03	0.00
BL101	TRV CAP & REBAR	442344.5110	2208668.0040	143.59	28+18.13	0.00
BL102	TRV CAP & REBAR	441881.3590	2209253.3290	145.18	35+64.54	0.00
BL103	TRV CAP & REBAR	441602.8440	2209619.3950	139.84	40+24.51	0.00
GPS3	GPS CAP & REBAR	441221.2860	2210014.0290	127.51	45+73.44	0.00
GPS4	GPS CAP & REBAR	440577.3670	2210941.1970	144.51	57+02.27	0.00
BL104	TRV CAP & REBAR	440009.0660	2211183.9920	141.57	63+20.27	0.00
BL105	TRV CAP & REBAR	440013.3410	2211876.2960	139.09	70+12.58	0.00
BL106	TRV CAP & REBAR	439971.7470	2212173.0320	137.52	73+12.22	0.00
BL107	TRV CAP & REBAR	440009.6440	2212722.8850	141.12	78+63.38	0.00
BL108	TRV CAP & REBAR	439913.4170	2213303.3540	141.29	84+51.77	0.00
BL109	TRV CAP & REBAR	439781.4780	2213697.3920	143.08	88+67.31	0.00
BL110	TRV CAP & REBAR	439321.0520	2214115.8740	146.06	94+89.50	0.00
BL111	TRV CAP & REBAR	439257.0620	2214401.8830	149.48	97+82.58	0.00
BL112	TRV CAP & REBAR	439217.4460	2215049.6110	154.15	104+31.52	0.00
GPS9	GPS CAP & REBAR	439114.3460	2215468.6980	155.36	108+63.10	0.00
BL113	TRV CAP & REBAR	439337.4500	2216080.0330	159.00	115+13.87	0.00
BL114	TRV CAP & REBAR	439048.8840	2216498.4150	164.05	120+22.12	0.00
BL115	TRV CAP & REBAR	439027.7030	2216936.0180	163.65	124+60.23	0.00
BL116	TRV CAP & REBAR	439012.9380	2217246.8800	160.95	127+71.45	0.00
BL117	TRV CAP & REBAR	439010.4290	2217577.1270	153.62	131+01.70	0.00
BL118	TRV CAP & REBAR	438869.0920	2217890.0350	133.10	134+45.05	0.00
BL119	TRV CAP & REBAR	438696.3110	2218074.6270	150.60	136+97.89	0.00
BL120	TRV CAP & REBAR	438588.8950	2218329.5370	155.27	139+74.51	0.00
BL121	TRV CAP & REBAR	438446.3440	2218666.3400	144.37	143+40.23	0.00
BL122	TRV CAP & REBAR	438335.0620	2218922.4720	147.09	146+19.50	0.00
BL123	TRV CAP & REBAR	438227.1190	2219160.1500	156.64	148+80.54	0.00
BL124	TRV CAP & REBAR	437997.9860	2219417.0910	154.72	152+24.81	0.00
BL125	TRV CAP & REBAR	437960.2780	2219728.7740	153.81	155+38.76	0.00
BL126	TRV CAP & REBAR	437666.4060	2220228.4300	154.21	161+18.43	0.00
GPS14	GPS CAP & REBAR	437553.7120	2221042.0220	148.40	169+39.79	0.00
BLF100	TRV CAP & REBAR	437359.6854	2221870.9047	153.21	177+91.08	0.00
BLF101	TRV CAP & REBAR	437472.4751	2222897.2060	151.41	188+23.56	0.00
BLF102	TRV CAP & REBAR	437472.6489	2223832.1756	150.42	197+58.53	0.00
BLF103	TRV CAP & REBAR	437579.1129	2224660.1221	149.91	205+93.29	0.00
BLF104	TRV CAP & REBAR	437683.1198	2225207.1071	149.91	211+50.08	0.00
BLF105	TRV CAP & REBAR	437757.7753	2225982.6802	149.54	219+29.24	0.00
BLF106	TRV CAP & REBAR	437836.0426	2226660.3020	147.81	226+11.36	0.00
BLF107	TRV CAP & REBAR	437895.8237	2227342.3641	139.38	232+96.04	0.00
GPS19	GPS CAP & REBAR	437702.3640	2228073.3760	135.28	240+52.22	0.00
GPS20	GPS CAP & REBAR	438164.5920	2228983.2490	129.62	250+72.77	0.00
BLF108	TRV CAP & REBAR	438255.5797	2229382.4482	123.95	254+82.21	0.00
BLF109	TRV CAP & REBAR	438244.7098	2229793.0450	113.67	258+92.95	0.00
BLF110	TRV CAP & REBAR	438444.0606	2230347.5210	97.14	264+82.17	0.00
BLF111	TRV CAP & REBAR	438678.4124	2230981.6977	80.09	271+58.26	0.00
BLF112	TRV CAP & REBAR	438828.4155	2231704.8901	79.42	278+96.85	0.00
BLF113	TRV CAP & REBAR	438542.2723	2232497.0758	77.25	287+39.13	0.00
BLF114	TRV CAP & REBAR	438313.1162	2233126.9969	74.54	294+09.44	0.00
BLF115	TRV CAP & REBAR	438162.3550	2234011.9779	75.30	303+07.17	0.00
BLF116	TRV CAP & REBAR	438228.0639	2234683.8154	81.02	309+82.21	0.00
BLF117	TRV CAP & REBAR	438242.0192	2235343.7378	132.30	316+42.28	0.00
GPS22	GPS CAP & REBAR	438446.8270	2236293.2440	145.69	326+13.62	0.00
BLF118	TRV CAP & REBAR	438429.7671	2237039.4020	145.90	333+59.98	0.00
BLF119	TRV CAP & REBAR	438721.8247	2237845.1534	140.62	342+17.03	0.00
BLF120	TRV CAP & REBAR	439010.2198	2238479.8381	133.42	349+14.16	0.00
BLF121	TRV CAP & REBAR	439424.1698	2239210.4483	128.66	357+53.89	0.00
BY92	TRV CAP & REBAR	439557.7972	2239507.0205	134.70	360+79.18	0.00
BLF122	TRV CAP & REBAR	439632.3671	2239674.1040	136.13	362+62.15	0.00
BLF123	TRV CAP & REBAR	439953.6627	2240252.6209	142.38	369+23.90	0.00
BLF124	TRV CAP & REBAR	440463.1247	2241248.2327	132.52	380+42.28	0.00
GPS24	GPS CAP & REBAR	440801.3340	2242362.4520	151.44	392+06.70	0.00
BLF125	TRV CAP & REBAR	440851.0514	2243430.8155	152.33	402+76.22	0.00
BLF126	TRV CAP & REBAR	440682.7926	2244195.4638	145.52	410+59.16	0.00
BLF127	TRV CAP & REBAR	440237.9586	2244888.5475	147.20	418+82.72	0.00

BL

POINT	DESC.	NORTH	EAST	ELEVATION	BL STATION	OFFSET
BL501	TRV CAP & REBAR	440039.1894	2245645.2091	146.33	426+65.05	0.00
BL502	TRV CAP & REBAR	439738.1084	2246246.6241	142.15	433+37.62	0.00
BL503	TRV CAP & REBAR	439486.4424	2246796.3953	133.75	439+42.26	0.00
BL504	TRV CAP & REBAR	439254.8707	2247293.7059	129.41	444+90.84	0.00
BL505	TRV CAP & REBAR	439115.8716	2247762.0439	136.40	449+79.37	0.00
BL506	TRV CAP & REBAR	439044.7982	2248440.2580	138.16	6+81.93	0.00
BL507	TRV CAP & REBAR	439001.2992	2248809.4183	135.04	460+33.01	0.00
BL508	TRV CAP & REBAR	438791.0248	2249692.5544	131.58	469+40.84	0.00
BL509	TRV CAP & REBAR	438510.0120	2250300.2684	129.81	476+10.38	0.00
GPS29	GPS CAP & REBAR	438309.8320	2250875.8820	124.89	482+19.81	0.00
BL510	TRV CAP & REBAR	438379.1567	2251589.2609	124.41	489+36.55	0.00
BL511	TRV CAP & REBAR	438306.9865	2251976.5482	114.39	493+30.50	0.00
BL512	TRV CAP & REBAR	438365.2765	2252397.3464	99.49	497+55.32	0.00
BL513	TRV CAP & REBAR	438502.7461	2252860.8719	120.35	502+38.80	0.00
BL514	TRV CAP & REBAR	438664.5045	2253360.2994	124.60	507+63.77	0.00
BL515	TRV CAP & REBAR	438768.5383	2253836.4318	118.54	512+51.13	0.00
BL516	TRV CAP & REBAR	439176.4626	2254574.8323	118.03	520+94.72	0.00
BL517	TRV CAP & REBAR	439394.1342	2255074.3849	116.87	526+39.63	0.00
BL518	TRV CAP & REBAR	439519.3051	2255417.1273	105.71	530+04.52	0.00
BL519	TRV CAP & REBAR	439725.4695	2255912.9410	122.91	535+41.49	0.00
BL520	TRV CAP & REBAR	439951.3445	2256472.2171	133.54	541+44.65	0.00
BL521	TRV CAP & REBAR	440125.7685	2256885.1921	129.98	545+92.95	0.00
GPS31	GPS CAP & REBAR	440274.9290	2257311.5570	130.61	550+44.66	0.00
BL522	TRV CAP & REBAR	440513.6048	2257815.7954	125.74	556+02.53	0.00
BL523	TRV CAP & REBAR	440673.8938	2258155.8203	124.90	559+78.44	0.00
BL524	TRV CAP & REBAR	440923.9645	2258573.6005	128.89	564+65.34	0.00
BL525	TRV CAP & REBAR	440924.8789	2259172.8026	127.44	570+64.55	0.00
BL526	TRV CAP & REBAR	440881.9186	2259722.3869	120.73	576+15.81	0.00
BL527	TRV CAP & REBAR	440824.7238	2260139.1893	110.23	580+36.52	0.00
BL528	TRV CAP & REBAR	440749.3474	2260609.6005	95.10	585+12.93	0.00
BL529	TRV CAP & REBAR	440723.4873	2261286.5698	106.11	591+90.39	0.00
BL530	TRV CAP & REBAR	441154.6729	2261545.3319	116.11	596+93.26	0.00
BL531	TRV CAP & REBAR	440806.9063	2262037.0148	112.35	602+95.50	0.00
BL532	TRV CAP & REBAR	441184.2912	2263060.3868	112.26	613+86.24	0.00
BL533	TRV CAP & REBAR	441461.5841	2263684.0340	122.06	620+68.76	0.00
BL534	TRV CAP & REBAR	441999.9364	2264228.0804	127.61	628+34.14	0.00
GPS33	GPS CAP & REBAR	442354.1650	2265006.4460	116.13	636+89.32	0.00
BL535	TRV CAP & REBAR	442864.4586	2265521.5038	122.77	644+14.36	0.00
BL536	TRV CAP & REBAR	443270.3641	2266041.9762	128.59	650+74.40	0.00
BL537	TRV CAP & REBAR	443658.9027	2266539.4137	135.29	657+05.59	0.00
GPS38	GPS CAP & REBAR	444299.5380	2265817.2430	124.56	666+70.96	0.00

BY

POINT	DESC.	NORTH	EAST	ELEVATION	BY STATION	OFFSET
BY127	TRV CAP & REBAR	443783.5380	2208384.1180	141.95	5+00.00	0.00
BY128	TRV CAP & REBAR	443289.6360	2208232.1110	150.68	10+16.76	0.00
BY139	TRV CAP & REBAR	442846.6880	2208091.3640	157.35	14+81.54	0.00
BY140	TRV CAP & REBAR	442313.6290	2207811.8370	154.89	20+83.44	0.00

BY1

POINT	DESC.	NORTH	EAST	ELEVATION	BY1 STATION	OFFSET
Y128	TRV CAP & REBAR	443289.6360	2208232.1110	150.68	5+00.00	0.00
BY1129	TRV CAP & REBAR	443205.1300	2208525.3830	153.05	8+05.20	0.00
BY1130	TRV CAP & REBAR	442977.0860	2208736.9720	147.54	11+16.29	0.00
BY1131	TRV CAP & REBAR	442538.1020	2208833.3190	140.61	15+65.72	0.00
BY1132	TRV CAP & REBAR	442125.0820	2209075.0670	144.06	20+44.29	0.00
BY1133	TRV CAP & REBAR	441747.4980	2209553.0990	142.30	26+53.46	0.00
Y103	TRV CAP & REBAR	441602.8440	2209619.3950	139.84	28+12.58	0.00

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.

$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$ISCONVERT$$$$

6/2/99

REVISIONS

$$$$SYSTIME$$$$
$$$$SYSDATE$$$$
$$$$FILENAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW02C-7
Location and Surveys	

SURVEY CONTROL SHEET R-2303E PART 2 OF 2

BY2

POINT	DESC.	NORTH	EAST	ELEVATION	BY2 STATION	OFFSET
Y4	GPS CAP & REBAR	440577.3670	2210941.1970	144.51	5+00.00	0.00
BY2136	TRV CAP & REBAR	440013.4550	2210894.3620	143.14	10+65.85	0.00
BY2137	TRV CAP & REBAR	439604.7550	2211059.5870	143.66	15+06.69	0.00
BY2138	TRV CAP & REBAR	439205.5130	2211224.6680	144.46	19+38.71	0.00
Y187	TRV CAP & REBAR	438844.3650	2211410.9770	146.96	23+45.09	0.00

BY3

POINT	DESC.	NORTH	EAST	ELEVATION	BY3 STATION	OFFSET
5	GPS CAP & REBAR	441979.6620	2214703.5430	146.75	5+00.00	0.00
6	GPS CAP & REBAR	441404.3450	2213778.0300	146.96	15+89.75	0.00
BY3180	TRV CAP & REBAR	441179.2240	2213407.8640	146.08	20+23.00	0.00
BY3181	TRV CAP & REBAR	440912.3980	2212869.2500	144.15	26+24.08	0.00
BY3182	TRV CAP & REBAR	440800.4650	2212435.0020	139.74	30+72.53	0.00
BY3183	TRV CAP & REBAR	440315.1500	2212192.7270	135.10	36+14.95	0.00
Y105	TRV CAP & REBAR	440013.3410	2211876.2960	139.09	40+52.24	0.00
BY3186	TRV CAP & REBAR	439552.3930	2211680.8700	141.99	45+52.90	0.00
BY3187	TRV CAP & REBAR	438844.3650	2211410.9770	146.96	53+10.63	0.00
BY3188	TRV CAP & REBAR	438269.2510	2211603.7860	149.19	59+17.20	0.00

BY4

POINT	DESC.	NORTH	EAST	ELEVATION	BY4 STATION	OFFSET
Z187	TRV CAP & REBAR	438844.3650	2211410.9770	146.96	5+00.00	0.00
BY4189	TRV CAP & REBAR	438621.7470	2210971.5000	145.68	9+92.64	0.00
GPS7	GPS CAP & REBAR	438445.9900	2210739.6680	144.27	12+83.57	0.00
GPS8	GPS CAP & REBAR	437825.4750	2209975.1420	139.00	22+68.22	0.00

BY5

POINT	DESC.	NORTH	EAST	ELEVATION	BY5 STATION	OFFSET
BY5190	TRV CAP & REBAR	440554.7680	2216788.8930	158.74	5+00.00	0.00
BY5191	TRV CAP & REBAR	440085.4380	2216584.4210	161.31	10+11.94	0.00
BY5192	TRV CAP & REBAR	439734.6860	2216421.6150	161.14	13+98.63	0.00
Y113	TRV CAP & REBAR	439337.4500	2216080.0330	159.00	19+22.53	0.00
Y9	GPS CAP & REBAR	439114.3460	2215468.6980	155.36	25+73.31	0.00
BY5196	TRV CAP & REBAR	438853.5530	2214979.6570	154.94	31+27.54	0.00
10	GPS CAP & REBAR	438623.9690	2214588.1080	153.99	35+81.43	0.00

BY6

POINT	DESC.	NORTH	EAST	ELEVATION	BY6 STATION	OFFSET
13	GPS CAP & REBAR	438514.3890	2221176.1860	146.40	5+00.00	0.00
Y14	GPS CAP & REBAR	437553.7120	2221042.0220	148.40	14+70.00	0.00

BY7

POINT	DESC.	NORTH	EAST	ELEVATION	BY7 STATION	OFFSET
GPS16	GPS CAP & REBAR	438615.4780	2224509.2780	153.88	5+00.00	0.00
BY73	TRV CAP & REBAR	438071.3132	2224126.5740	154.16	11+65.27	0.00
Y102	TRV CAP & REBAR	437472.6489	2223832.1756	150.42	18+32.40	0.00
BY72	TRV CAP & REBAR	436889.1859	2223577.2324	143.71	24+69.13	0.00
BY71	TRV CAP & REBAR	436112.6714	2223181.3640	149.89	33+40.73	0.00

BY8

POINT	DESC.	NORTH	EAST	ELEVATION	BY8 STATION	OFFSET
GPS15	GPS CAP & REBAR	439328.1810	2223409.0520	149.07	5+00.00	0.00
BY816	GPS CAP & REBAR	438615.4780	2224509.2780	153.88	18+10.89	0.00
BY81	TRV CAP & REBAR	438074.0679	2225278.8637	153.23	27+51.84	0.00
BY82	TRV CAP & REBAR	437951.6885	2226069.4567	152.38	35+51.85	0.00
Y106	TRV CAP & REBAR	437836.0426	2226660.3020	147.81	41+53.91	0.00
BY83	TRV CAP & REBAR	437452.1071	2227177.9863	143.54	47+98.43	0.00
GPS17	GPS CAP & REBAR	436831.2320	2227410.3980	139.02	54+61.38	0.00
GPS18	GPS CAP & REBAR	435810.3690	2227554.5690	129.97	64+92.37	0.00

BY9

POINT	DESC.	NORTH	EAST	ELEVATION	BY9 STATION	OFFSET
BY94	TRV CAP & REBAR	440787.2670	2239411.9827	117.52	5+00.00	0.00
BY93	TRV CAP & REBAR	440129.4732	2239358.5547	130.68	11+59.96	0.00
Y92	TRV CAP & REBAR	439557.7972	2239507.0205	134.70	17+50.60	0.00
BY91	TRV CAP & REBAR	439193.8906	2239893.9764	140.91	22+81.79	0.00
GPS23	GPS CAP & REBAR	438880.2820	2240362.4700	142.85	28+45.56	0.00
GPS42	GPS CAP & REBAR	438336.0420	2241195.5060	136.98	38+40.62	0.00

BY10

POINT	DESC.	NORTH	EAST	ELEVATION	BY10 STATION	OFFSET
BY101	TRV CAP & REBAR	441536.0345	2242173.9784	148.53	5+00.00	0.00
BY1024	GPS CAP & REBAR	440801.3340	2242362.4520	151.44	12+58.49	0.00
GPS25	GPS CAP & REBAR	439726.0450	2242742.8090	151.81	23+99.07	0.00

BY11

POINT	DESC.	NORTH	EAST	ELEVATION	BY11 STATION	OFFSET
BY111	TRV CAP & REBAR	440529.5875	2246151.7855	140.75	5+00.00	0.00
BY11501	TRV CAP & REBAR	440039.1624	2245645.1798	146.33	12+05.10	0.00
BL500	TRV CAP & REBAR	439928.2596	2244740.2577	144.78	21+16.79	0.00
GPS26	GPS CAP & REBAR	439808.8020	2243761.4090	148.96	31+02.90	0.00
BY1125	GPS CAP & REBAR	439726.0450	2242742.8090	151.81	41+24.86	0.00

BY12

POINT	DESC.	NORTH	EAST	ELEVATION	BY12 STATION	OFFSET
GPS28	GPS CAP & REBAR	439168.8090	2250702.9970	120.18	5+00.00	0.00
YGPS29	GPS CAP & REBAR	438309.8320	2250875.8820	124.94	13+76.20	0.00
BY12538	TRV CAP & REBAR	437405.4241	2250977.9897	116.07	22+86.36	0.00

BY13

POINT	DESC.	NORTH	EAST	ELEVATION	BY13 STATION	OFFSET
GPS30	GPS CAP & REBAR	441298.7190	2257406.7180	133.52	5+00.00	0.00
YGPS31	GPS CAP & REBAR	440274.9290	2257311.5570	130.61	15+28.20	0.00
GPS32	GPS CAP & REBAR	439491.7390	2257442.7890	129.97	23+22.31	0.00

BY14

POINT	DESC.	NORTH	EAST	ELEVATION	BY14 STATION	OFFSET
BY14539	TRV CAP & REBAR	443139.2269	2264880.3056	112.07	5+00.00	0.00
BY14540	TRV CAP & REBAR	442757.6238	2265009.9932	112.07	9+03.04	0.00
YGPS33	GPS CAP & REBAR	442354.1650	2265006.4460	116.13	13+06.51	0.00
BY14541	TRV CAP & REBAR	441924.9198	2264979.2212	123.06	17+36.62	0.00

BY15

POINT	DESC.	NORTH	EAST	ELEVATION	BY15 STATION	OFFSET
BY15542	TRV CAP & REBAR	445281.1716	2264326.6748	125.37	5+00.00	0.00
BY15543	TRV CAP & REBAR	444772.4290	2265083.1451	122.55	14+11.63	0.00
YGPS38	GPS CAP & REBAR	444299.5380	2265817.2430	124.52	22+84.86	0.00
GPS39	GPS CAP & REBAR	443736.8090	2266639.5360	132.08	32+81.26	0.00
BY15544	TRV CAP & REBAR	443128.5874	2267303.2487	133.76	41+81.51	0.00
BY15545	TRV CAP & REBAR	442436.6518	2267875.6554	129.14	50+79.52	0.00
BY15546	TRV CAP & REBAR	441674.9645	2268359.8333	124.46	59+82.07	0.00
BY15547	TRV CAP & REBAR	440980.6107	2268935.6306	120.07	68+84.11	0.00
GPS40	GPS CAP & REBAR	440402.5460	2269646.3010	115.27	78+00.19	0.00

NOTES:

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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. R-2303E | SHEET NO. RW02C-8
Location and Surveys

SURVEY CONTROL SHEET R-2303E PART 2 OF 2

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

EY

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	442344.040	2207806.580							
LINE			N 29°54'54.1" E	33.59					
PC	442373.152	2207823.330							
CURVE			N 27°38'13.3" E	496.32	04°33'21.6"(LT)	00°55'03.8"	496.45	248.36	6243.33
PT	442812.846	2208053.559							
LINE			N 25°21'32.4" E	4.29					
PC	442816.724	2208055.397							
CURVE			N 22°48'29.2" E	462.70	05°06'06.5"(LT)	01°06'08.1"	462.86	231.58	5198.10
PT	443243.247	2208234.761							
LINE			N 20°15'25.9" E	9.12					
PC	443251.802	2208237.919							
CURVE			N 18°16'31.9" E	447.35	03°57'48.1"(LT)	00°53'08.8"	447.44	223.81	6468.43
PT	443676.592	2208378.203							
LINE			N 16°17'37.9" E	486.51					
POT	444143.560	2208514.700							

EY1

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	441647.913	2209567.340							
LINE			N 37°18'38.7" E	64.31					
PC	441699.064	2209606.321							
CURVE			N 07°55'07.5" W	77.38	90°27'32.4"(LT)	105°07'47.5"	86.04	54.94	54.50
PT	441775.709	2209595.661							
LINE			N 53°08'53.7" W	243.72					
PC	441921.876	2209400.642							
CURVE			N 52°42'15.3" W	77.49	00°53'16.7"(RT)	01°08'45.3"	77.49	38.75	5000.00
PT	441968.829	2209338.998							
LINE			N 52°15'37.0" W	77.48					
PC	442016.254	2209277.726							
CURVE			N 41°18'41.4" W	415.00	21°53'51.2"(RT)	05°14'40.1"	417.54	211.35	1092.50
PT	442327.973	2209003.763							
LINE			N 30°21'45.8" W	3.01					
POT	442330.567	2209002.244							

EY10

POINT	N	E	BEARING	DIST
POT	441416.246	2242197.950		
LINE			S 17°11'49.4" E	1381.34
POT	440096.665	2242606.354		

EY11

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	440565.678	2246158.162							
LINE			S 32°10'46.8" W	390.40					
PC	440235.254	2245950.246							
CURVE			S 57°33'52.1" W	330.10	50°46'10.5"(RT)	14°52'55.3"	341.15	182.69	385.00
PT	440058.207	2245671.647							
LINE			S 82°56'57.4" W	913.21					
POT	439946.112	2244765.341							

EY12

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	438929.305	2250757.229							
LINE			S 09°30'56.3" E	803.85					
PC	438136.518	2250890.119							
CURVE			S 08°43'34.9" E	123.98	01°34'42.8"(RT)	01°16'23.7"	123.98	61.99	4500.00
PT	438013.976	2250908.928							
LINE			S 07°56'13.5" E	370.99					
POT	437646.545	2250960.156							

EY13

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	441279.417	2257420.014							
CURVE			S 06°29'33.3" W	214.98	02°44'14.9"(RT)	01°16'23.7"	215.00	107.52	4500.00
PT	441065.816	2257395.705							
LINE			S 07°51'40.7" W	364.99					
PC	440704.257	2257345.783							
CURVE			S 06°33'32.9" W	129.99	02°36'15.7"(LT)	02°00'12.1"	130.00	65.01	2860.00
PCC	440575.119	2257330.935							
CURVE			S 03°39'55.5" W	99.99	03°10'59.2"(LT)	03°10'59.2"	100.00	50.01	1800.00
PCC	440475.337	2257324.543							
CURVE			S 01°03'02.6" W	99.99	02°02'46.6"(LT)	02°02'46.6"	100.00	50.01	2800.00
PCC	440375.359	2257322.709							
CURVE			S 02°15'51.3" E	89.98	04°35'01.2"(LT)	05°05'34.6"	90.00	45.02	1125.00
PCC	440285.453	2257326.264							
CURVE			S 06°33'41.1" E	174.96	04°00'38.5"(LT)	02°17'30.6"	175.00	87.54	2500.00
PCC	440111.635	2257346.257							
CURVE			S 09°46'39.4" E	64.49	02°25'18.0"(LT)	03°45'17.9"	64.49	32.25	1525.86
PT	440048.084	2257357.208							
LINE			S 10°59'18.5" E	228.66					
PC	439823.619	2257400.793							
CURVE			S 08°21'44.7" E	164.94	05°15'07.6"(RT)	03°10'59.2"	165.00	82.56	1800.00
PT	439660.430	2257424.781							

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

6/2/99

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW02C-9
Location and Surveys	

SURVEY CONTROL SHEET R-2303E PART 2 OF 2

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

EY14

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	443040.717	2264905.572							
CURVE			S 17°33'47.2" E	127.99	02°42'58.5"(RT)	02°07'19.4"	128.00	64.01	2700.00
PT	442918.695	2264944.193							
LINE			S 16°12'18.0" E	145.94					
PC	442778.551	2264984.922							
CURVE			S 15°16'06.3" E	89.25	01°52'23.3"(RT)	02°05'55.1"	89.26	44.63	2730.15
PCC	442692.450	2265008.426							
CURVE			S 13°01'46.8" E	50.00	02°36'15.7"(RT)	05°12'31.3"	50.00	25.00	1100.00
PCC	442643.741	2265019.698							
CURVE			S 05°16'50.2" E	137.80	12°53'37.5"(RT)	09°20'14.6"	138.09	69.34	613.62
PCC	442506.530	2265032.379							
CURVE			S 03°44'40.4" W	89.97	05°09'23.8"(RT)	05°43'46.5"	90.00	45.03	1000.00
PCC	442416.752	2265026.504							
CURVE			S 06°39'03.3" W	143.81	00°39'21.9"(RT)	00°27'22.4"	143.81	71.91	12558.98
PT	442273.910	2265009.848							
LINE			S 06°58'44.3" W	273.08					
POT	442002.855	2264976.667							

EY15

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R	DELTA S	Ls	LT	ST
POT	445291.882	2264327.773											
LINE			S 56°02'52.7" E	2306.87									
PC	444003.499	2266241.334											
CURVE			S 56°07'14.7" E	50.00	00°08'43.9"(LT)	00°17'27.9"	50.00	25.00	19684.04				
CS	443975.626	2266282.845											
SPIRAL			S 55°46'36.6" E	249.99						01°15'00.0"(RT)	250.00	166.67	83.34
SC	443835.025	2266489.554											
CURVE			S 43°39'16.3" E	2243.22	22°34'40.7"(RT)	01°00'00.0"	2257.80	1143.74	5729.58				
CS	442212.022	2268038.066											
SPIRAL			S 31°31'55.9" E	249.99						01°15'00.0"(RT)	250.00	166.67	83.34
SS	441998.940	2268168.808											
SPIRAL			S 31°44'25.9" E	299.99						01°52'30.0"(LT)	300.00	200.01	100.01
SC	441743.821	2268326.622											
CURVE			S 43°17'05.1" E	1638.22	20°35'18.3"(LT)	01°15'00.0"	1647.07	832.51	4583.66				
PT	440551.266	2269449.829											

EY2

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	444003.961	2207348.560							
LINE			S 37°27'31.5" E	1496.50					
PC	442816.051	2208258.718							
CURVE			S 38°28'51.9" E	272.99	02°02'40.9"(LT)	00°44'56.3"	273.00	136.52	7650.00
PT	442602.353	2208428.586							
LINE			S 39°30'12.3" E	0.02					
PC	442602.335	2208428.600							
CURVE			S 41°24'07.5" E	101.05	03°47'50.3"(LT)	03°45'25.6"	101.07	50.55	1525.00
PT	442526.537	2208495.430							
LINE			S 43°18'02.6" E	71.56					
PC	442474.461	2208544.506							
CURVE			S 46°28'52.3" E	288.50	06°21'39.2"(LT)	02°12'13.3"	288.65	144.47	2600.00
PT	442275.802	2208753.711							
LINE			S 49°39'41.9" E	2.13					
PC	442274.424	2208755.333							
CURVE			S 51°10'31.6" E	231.42	03°01'39.4"(LT)	01°18'29.2"	231.45	115.75	4380.00
PT	442129.338	2208935.625							
LINE			S 52°41'21.3" E	1609.48					
PC	441153.774	2210215.738							
CURVE			S 50°59'09.7" E	152.75	03°24'23.2"(RT)	02°13'47.1"	152.77	76.41	2569.61
PT	441057.617	2210334.423							
LINE			S 49°16'58.1" E	6.00					
PC	441053.704	2210338.969							
CURVE			S 44°33'18.3" E	257.93	09°27'19.7"(RT)	03°39'42.3"	258.22	129.41	1564.71
PT	440869.910	2210519.931							
LINE			S 39°49'38.5" E	10.79					
PC	440861.623	2210526.842							
CURVE			S 34°51'58.8" E	271.05	09°55'19.3"(RT)	03°39'21.5"	271.39	136.04	1567.18
PT	440639.227	2210681.793							
LINE			S 29°54'19.2" E	27.27					
PC	440615.592	2210695.387							
CURVE			S 26°07'24.5" E	198.27	07°33'49.3"(RT)	03°48'43.5"	198.41	99.35	1503.00
PT	440437.577	2210782.686							
LINE			S 22°20'29.9" E	0.05					
PC	440437.529	2210782.706							
CURVE			S 20°53'03.2" E	259.22	02°54'53.3"(RT)	01°07'27.6"	259.25	129.65	5096.00
PT	440195.340	2210875.113							
LINE			S 19°25'36.6" E	345.32					
PC	439869.681	2210989.966							
CURVE			S 19°48'56.8" E	83.68	00°46'40.4"(LT)	00°55'46.6"	83.68	41.84	6163.43
PT	439790.958	2211018.333							
LINE			S 20°12'17.0" E	90.76					
PC	439705.786	2211049.678							
CURVE			S 21°02'35.8" E	308.33	01°40'37.6"(LT)	00°32'38.1"	308.34	154.18	10534.05
PT	439418.016	2211160.392							
LINE			S 21°52'54.6" E	1131.85					
PC	438367.710	2211582.226							
CURVE			S 26°08'53.0" E	273.63	08°31'56.8"(LT)	03°06'55.2"	273.89	137.20	1839.15
PT	438122.082	2211702.814							

NOTES:

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REVISIONS

6/2/99

$$$$SYSTIME$$$$
$$$$SCALE$$$$
$$$$ISFRAME$$$$
$$$$ISCNT$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW02C-10
Location and Surveys	

SURVEY CONTROL SHEET R-2303E PART 2 OF 2

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

EY3

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	440496.061	2210757.184							
LINE			N 70°13'04.7" E	685.52					
PC	440728.070	2211402.247							
CURVE			N 70°23'46.4" E	62.22	00°21'23.3"(RT)	00°34'22.6"	62.22	31.11	10000.00
PT	440748.945	2211460.858							
LINE			N 70°34'28.0" E	324.65					
PC	440856.917	2211767.028							
CURVE			N 71°27'54.1" E	31.09	01°46'52.2"(RT)	05°43'46.5"	31.09	15.54	1000.00
PT	440866.799	2211796.502							
LINE			N 72°21'20.2" E	3.05					
PC	440867.722	2211799.404							
CURVE			N 73°08'24.3" E	46.44	01°34'08.2"(RT)	03°22'43.1"	46.44	23.22	1695.82
PT	440881.190	2211843.844							
LINE			N 73°55'28.4" E	8.39					
PC	440883.513	2211851.904							
CURVE			N 76°29'09.9" E	67.04	05°07'23.1"(RT)	07°38'22.0"	67.06	33.55	750.00
PT	440899.178	2211917.086							
LINE			N 79°02'51.5" E	4.99					
PC	440900.126	2211921.981							
CURVE			N 84°43'10.3" E	194.43	11°20'37.7"(RT)	05°49'29.5"	194.75	97.69	983.64
PT	440918.019	2212115.586							
LINE			S 89°36'30.9" E	4.25					
PC	440917.990	2212119.838							
CURVE			S 88°39'13.2" E	108.33	01°54'35.5"(RT)	01°45'46.6"	108.33	54.17	3250.00
PT	440915.445	2212228.136							
LINE			S 87°41'55.4" E	279.16					
PC	440904.236	2212507.065							
CURVE			S 88°14'35.0" E	95.00	01°05'19.1"(LT)	01°08'45.3"	95.00	47.50	5000.00
PT	440901.323	2212602.022							
LINE			S 88°47'14.6" E	13.14					
PC	440901.045	2212615.161							
CURVE			S 89°56'28.1" E	20.14	02°18'27.1"(LT)	11°27'33.0"	20.14	10.07	500.00
PT	440901.024	2212635.297							
LINE			N 88°54'18.3" E	4.11					
PC	440901.103	2212639.407							
CURVE			N 80°45'00.5" E	301.63	16°18'35.5"(LT)	05°23'20.4"	302.65	152.36	1063.20
PT	440949.587	2212937.116							
LINE			N 72°35'42.8" E	2.07					
PC	440950.206	2212939.089							
CURVE			N 68°25'01.4" E	87.43	08°21'22.8"(LT)	09°32'57.5"	87.51	43.83	600.00
PT	440982.367	2213020.389							
LINE			N 61°28'57.8" E	167.53					
PC	441062.349	2213167.593							
CURVE			N 59°51'15.6" E	96.02	00°33'00.6"(LT)	00°34'22.6"	96.02	48.01	10000.00
PT	441110.571	2213250.627							
LINE			N 59°34'45.4" E	311.85					
POT	441268.474	2213519.543							

EY4

POINT	N	E	BEARING	DIST
POT	438507.134	2210845.660		
LINE			N 52°36'29.8" E	655.40
POT	438905.135	2211366.380		

EY5

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	438785.813	2214818.595							
LINE			N 60°23'56.2" E	20.72					
PC	438796.048	2214836.611							
CURVE			N 62°42'20.6" E	139.95	04°36'48.9"(RT)	03°17'44.2"	139.99	70.03	1738.55
PT	438860.226	2214960.983							
LINE			N 65°00'45.1" E	1113.26					
PC	439330.488	2215970.040							
CURVE			N 44°22'34.9" E	686.12	41°16'20.4"(LT)	05°53'09.9"	701.18	366.58	973.41
PT	439820.902	2216449.892							
LINE			N 23°44'24.7" E	739.85					
POT	440498.150	2216747.750							

EY6

POINT	N	E	BEARING	DIST
POT	437706.151	2221047.284		
LINE			N 12°32'03.3" E	410.60
POT	438106.970	2221136.395		

NOTES:

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REVISIONS

6/2/99

$$$$SYSTIME$$$$ $$$$ENAME$$$$ $$$$SNAME$$$$ $$$$LNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW02C-11
Location and Surveys	

SURVEY CONTROL SHEET R-2303E PART 2 OF 2

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

EY7

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
PC	436131.633	2223177.888							
CURVE			N 29°08'02.1" E	190.69	02°34'17.5"(LT)	01°20'54.4"	190.71	95.37	4249.06
PT	436298.197	2223270.725							
LINE			N 26°12'37.9" E	2109.97					
PC	438191.210	2224202.635							
CURVE			N 35°09'49.7" E	276.59	16°17'44.5"(RT)	05°52'18.7"	277.52	139.70	975.77
PCC	438417.322	2224361.926							
CURVE			N 46°20'11.9" E	232.93	04°26'46.6"(RT)	01°54'30.0"	232.99	116.55	3002.38
PT	438578.144	2224530.432							
LINE			N 58°44'43.2" E	506.99					
POT	438841.192	2224963.841							

EY8

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	438857.857	2224122.075							
LINE			S 55°35'23.7" E	1145.84					
PC	438210.330	2225067.408							
CURVE			S 60°51'52.9" E	293.99	12°51'29.9"(LT)	04°21'52.2"	294.61	147.93	1312.77
PCC	438067.192	2225324.202							
CURVE			S 77°21'39.4" E	341.87	11°54'09.6"(LT)	03°28'31.2"	342.49	171.86	1648.64
PT	437992.388	2225657.791							
LINE			S 82°41'34.6" E	617.89					
POT	437913.800	2226270.663							
LINE			S 80°52'50.5" E	153.76					
PC	437889.431	2226422.476							
CURVE			S 45°37'13.5" E	1317.06	69°07'36.4"(RT)	04°56'09.6"	1400.46	799.67	1160.78
PT	436968.270	2227363.805							
LINE			S 08°08'25.2" E	771.15					
POT	436204.887	2227472.999							

EY9

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	438968.413	2240257.576							
LINE			N 56°04'48.8" W	554.16					
PC	439277.652	2239797.722							
CURVE			N 25°48'43.8" W	967.77	60°32'10.0"(RT)	05°58'05.9"	1014.29	560.26	960.00
PT	440148.863	2239376.334							
LINE			N 04°10'57.8" E	313.56					
PC	440461.591	2239399.205							
CURVE			N 01°42'17.0" E	103.77	04°57'21.6"(LT)	04°46'28.7"	103.80	51.93	1200.00
PT	440565.311	2239402.292							
LINE			N 00°46'50.9" W	39.01					
POT	440604.316	2239401.760							

RPA

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	443972.418	2207306.895							
LINE			S 37°06'17.1" E	91.39					
PC	443899.532	2207362.028							
CURVE			S 30°28'59.3" E	227.13	13°14'35.5"(RT)	05°49'03.4"	227.64	114.33	984.87
PT	443703.793	2207477.250							
LINE			S 23°51'41.5" E	21.16					
PC	443684.441	2207485.809							
CURVE			S 14°58'09.6" E	344.91	17°47'04.0"(RT)	05°08'08.3"	346.29	174.55	1115.65
PT	443351.240	2207574.899							
LINE			S 06°04'37.6" E	10.98					
PC	443340.322	2207576.062							
CURVE			S 02°40'05.2" E	139.52	06°49'04.7"(RT)	04°53'01.5"	139.60	69.88	1173.19
PT	443200.951	2207582.556							
LINE			S 00°44'27.1" W	159.82					
PC	443041.146	2207580.490							
CURVE			S 03°52'54.3" E	118.40	09°14'42.7"(LT)	07°47'59.3"	118.53	59.39	734.58
PT	442923.015	2207588.505							
LINE			S 08°30'15.6" E	5.44					
PC	442917.636	2207589.310							
CURVE			S 11°56'07.1" E	29.92	06°51'43.0"(LT)	22°55'05.9"	29.94	14.99	250.00
PT	442888.360	2207595.498							
LINE			S 15°21'58.6" E	0.81					
PC	442887.576	2207595.713							
CURVE			S 21°58'15.9" E	88.22	13°12'34.6"(LT)	14°56'27.6"	88.41	44.40	383.48
PT	442805.767	2207628.718							
LINE			S 28°34'33.2" E	11.93					
PC	442795.288	2207634.426							
CURVE			S 35°51'27.3" E	74.84	14°33'48.3"(LT)	19°24'28.2"	75.04	37.72	295.22
PT	442734.634	2207678.264							
LINE			S 43°08'21.4" E	8.49					
PC	442728.440	2207684.068							
CURVE			S 47°46'49.5" E	58.95	09°16'56.2"(LT)	15°43'39.5"	59.02	29.57	364.30
PT	442688.824	2207727.728							
LINE			S 52°25'17.6" E	3.66					
PC	442686.594	2207730.627							
CURVE			S 56°18'32.7" E	82.47	07°46'30.0"(LT)	09°25'15.6"	82.53	41.33	608.17
PT	442640.849	2207799.241							
LINE			S 60°11'47.7" E	150.50					
POT	442566.049	2207929.832							

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

6/2/99

$$$$SYSTIME$$$$
$$$$SCALE$$$$
$$$$FILENAME$$$$
$$$$DGNS$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW02C-12
Location and Surveys	

SURVEY CONTROL SHEET R-2303E PART 2 0F 2

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

RPB

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	441966.030	2209224.490							
LINE			N 52°00'17.8" W	44.97					
PC	441993.713	2209189.051							
CURVE			N 44°13'49.0" W	282.46	15°32'57.6"(RT)	05°29'17.2"	283.33	142.54	1044.00
PT	442196.107	2208992.023							
LINE			N 36°27'20.2" W	7.52					
PC	442202.159	2208987.552							
CURVE			N 32°05'16.5" W	185.06	08°44'07.6"(RT)	04°42'56.5"	185.24	92.80	1215.00
PT	442358.950	2208889.243							
LINE			N 27°43'12.7" W	0.02					
PC	442358.971	2208889.232							
CURVE			N 21°24'05.5" W	238.61	12°38'14.4"(RT)	05°17'08.1"	239.09	120.03	1084.00
PT	442581.124	2208802.164							
LINE			N 15°04'58.3" W	18.22					
PC	442598.719	2208797.423							
CURVE			N 12°26'05.6" W	119.10	05°17'45.5"(RT)	04°26'41.9"	119.14	59.61	1289.00
PT	442715.027	2208771.776							
LINE			N 09°47'12.9" W	127.80					
PC	442840.969	2208750.052							
CURVE			N 13°20'10.1" W	126.38	07°05'54.4"(LT)	05°36'47.0"	126.46	63.31	1020.76
PT	442963.943	2208720.900							
LINE			N 16°53'07.3" W	6.40					
PC	442970.062	2208719.043							
CURVE			N 31°03'30.4" W	167.32	28°20'46.3"(LT)	16°46'07.8"	169.04	86.29	341.68
PT	443113.398	2208632.719							
LINE			N 45°13'53.6" W	0.35					
PC	443113.645	2208632.470							
CURVE			N 57°56'44.3" W	172.33	25°25'41.4"(LT)	14°38'05.8"	173.75	88.33	391.50
PT	443205.103	2208486.415							
LINE			N 70°39'35.0" W	0.01					
PC	443205.107	2208486.402							
CURVE			N 72°42'08.7" W	73.04	04°05'07.4"(LT)	05°35'31.3"	73.06	36.54	1024.60
PT	443226.825	2208416.663							
LINE			N 74°44'42.4" W	177.05					
POT	443273.410	2208245.850							

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

6/2/99

$$$$SYSTIME$$$$
$$$$DGN$$$$
$$$$FILENAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW02C-13
Location and Surveys	

SURVEY CONTROL SHEET R-2303E PART 2 0F 2

****
BM501 ELEVATION = 150.10
N 439785 E 2245721
BL STATION 428+47.00 194 RIGHT
RR SPIKE SET IN 24" PINE
****
****
BMF101 ELEVATION = 142.48
N 437045 E 2223085
BL STATION 190+11.00 428 RIGHT
RR SPIKE SET IN 10" OAK
****
****
BMF104 ELEVATION = 156.95
N 437528 E 2225406
BL STATION 213+33.00 174 RIGHT
RR SPIKE SET IN 18" SWEET GUM
****
****
BMF107 ELEVATION = 139.44
N 438138 E 2227355
BL STATION 232+96.00 243 LEFT
RR SPIKE SET IN 20" GUM
****
****
BMF108 ELEVATION = 130.42
N 437925 E 2229329
BL STATION 253+57.00 310 RIGHT
RR SPIKE SET IN 16" OAK
****
****
BMF112 ELEVATION = 82.31
N 438839 E 2231720
BL STATION 279+07.00 15 LEFT
RR SPIKE SET IN 6" GUM
****
****
BMF114 ELEVATION = 76.39
N 438373 E 2233211
BL STATION 294+82.00 74 LEFT
RR SPIKE SET IN 6" HOLLY
****
****
BMF117 ELEVATION = 139.92
N 438474 E 2235463
BL STATION 318+08.00 202 LEFT
RR SPIKE SET IN 16" OAK
****

****
BMF119 ELEVATION = 144.42
N 438884 E 2237817
BL STATION 342+58.00 159 LEFT
RR SPIKE SET IN 12" OAK
****
****
BMF122 ELEVATION = 135.44
N 439813 E 2239470
BL STATION 361+49.00 248 LEFT
RR SPIKE SET IN 34" OAK
****
****
BMF124 ELEVATION = 142.38
N 440321 E 2241388
BL STATION 381+34.00 177 RIGHT
RR SPIKE SET IN 18" OAK
****
****
BMF125 ELEVATION = 155.56
N 440574 E 2243301
BL STATION 401+34.00 271 RIGHT
RR SPIKE SET IN 18" GUM
****
****
TBM1 ELEVATION = 152.82
N 442528 E 2208312
BL STATION 24+44.00 144 RIGHT
NAIL IN 6" PEAR
****
****
TBM2 ELEVATION = 149.88
N 441961 E 2209647
BL STATION 38+29.00 302 LEFT
NAIL IN 10" OAK
****
****
TBM3 ELEVATION = 135.97
N 441217 E 2210745
BL STATION 51+76.00 413 LEFT
NAIL IN 18" PINE
****
****
TBM4 ELEVATION = 143.59
N 439423 E 2212717
BL STATION 79+54.00 580 RIGHT
NAIL IN 8" OAK
****

****
TBM5 ELEVATION = 147.11
N 439885 E 2213959
BL STATION 89+66.00 263 LEFT
NAIL IN 14" GUM
****
****
TBM6 ELEVATION = 156.94
N 438733 E 2214795
BL STATION 102+07.00 499 RIGHT
NAIL IN 18" PINE
****
****
TBM7 ELEVATION = 165.87
N 438778 E 2216633
BL STATION 121+70.00 264 RIGHT
NAIL IN 8" PINE
****
****
TBM8 ELEVATION = 150.38
N 439149 E 2217709
BL STATION 131+65.00 181 LEFT
NAIL IN 6" OAK
****
****
TBM9 ELEVATION = 157.94
N 437932 E 2219015
BL STATION 149+69.00 317 RIGHT
NAIL IN 10" PINE
****
****
TBM10 ELEVATION = 153.55
N 438045 E 2220798
BL STATION 166+30.00 454 LEFT
NAIL IN 18" OAK
****
****
TBM11 ELEVATION = 147.21
N 441179 E 2212856
BL STATION 59+02.00 1997 LEFT
NAIL IN 18" OAK
****

NOTES:

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REVISIONS

6/2/99

$$$$SYSTIME$$$$
$$$$FILENAME$$$$

SURVEY CONTROL SHEET R–2303E PART 2 0F 2

****
TBM12 ELEVATION = 149.88
N 438059 E 2211805
BL STATION 72+13.00 1946 RIGHT
NAIL IN 18" PINE
****

TBM13 ELEVATION = 160.28
N 440699 E 2216783
BL STATION 122+26.00 1662 LEFT
NAIL IN 18" OAK

TBM14 ELEVATION = 151.53
N 444008 E 2208530
BL STATION 14+12.00 951 LEFT
NAIL IN 24" OAK

1000 ELEVATION = 138.85
N 439144 E 2248865
BL STATION 460+54.00 152 LEFT
TBM1000 NAIL IN BASE OF 24" PINE

1003 ELEVATION = 130.46
N 438429 E 2250877
BY12 STATION 12+59.00 25 LEFT
TBM1003 NAIL IN BASE OF 34" PINE

1004 ELEVATION = 122.15
N 438475 E 2252936
BL STATION 503+02.00 49 RIGHT
TBM1004 NAIL IN BASE OF 12" PINE

1005 ELEVATION = 127.51
N 438702 E 2253768
BL STATION 511+70.00 51 RIGHT
TBM1005 NAIL IN BASE OF 22" PINE

1006 ELEVATION = 125.92
N 439601 E 2255935
BL STATION 535+14.00 123 RIGHT
TBM1006 NAIL IN BASE OF 16" OAK

1009 ELEVATION = 132.08
N 440118 E 2257378
BY13 STATION 16+94.00 40 LEFT
TBM1009 RR SPIKE IN BASE OF 15" PINE

1010 ELEVATION = 123.43
N 440688 E 2260086
BL STATION 580+02.00 143 RIGHT
TBM1010 RR SPIKE IN BASE OF 23" OAK

1011 ELEVATION = 112.16
N 440638 E 2262069
BL STATION 595+20.00 716 RIGHT
TBM1011 RR SPIKE IN BASE OF 15" OAK

1016 ELEVATION = 119.38
N 442356 E 2265159
BL STATION 637+99.00 106 RIGHT
TBM1016 RR SPIKE IN BASE OF 14" SWEETGUM

1023 ELEVATION = 132.93
N 445169 E 2264240
BY15 STATION 5+00.00
S 37°40'54.7" W DIST 141.49
TBM1023 NAIL IN BASE OF 24" PINE

1029 ELEVATION = 131.70
N 444088 E 2265922
BY15 STATION 24+91.00 116 RIGHT
TBM1029 NAIL IN BASE OF 14" PINE

1040 ELEVATION = 139.39
N 442988 E 2267268
BY15 STATION 42+67.00 117 RIGHT
TBM1040 NAIL IN BASE OF 12" PINE

1043 ELEVATION = 125.85
N 441462 E 2268652
BY15 STATION 63+33.00 89 LEFT
TBM1043 NAIL IN BASE OF 12" PINE

1089 ELEVATION = 119.81
N 441335 E 2263134
BL STATION 615+15.00 108 LEFT
TBM1089 NAIL IN BASE OF 23" SWEET GUM
****

NOTES:

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REVISIONS

6/2/99

$$$$$$SYSTIME$$$$$ $$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$ $$$$USERNAME$$$$

PROPOSED ALIGNMENT CONTROL SHEET R–2303E

PART 2 0F 2

PROJECT REFERENCE NO.	SHEET NO.
R–2303E	RW02D–1

Location and Surveys

CH ENGINEERING

3220 GLEN ROYAL RD. RALEIGH, NC 27617
TEL. (919) 788-0224 FAX (919) 788-0232
CORPORATE LICENSE # P-0189

REVISIONS

6/2/99

L1

TYPE	STATION	NORTH	EAST
POT	10·00.00	444003.9615	2207348.5602
TS	24·79.50	442829.5446	2208248.3790
SC	27·29.50	442633.1888	2208403.0892
CS	33·02.68	442229.3612	2208808.6876
ST	35·52.68	442075.5116	2209005.7184
TS	60·23.93	440581.1231	2210973.9284
SC	62·23.93	440461.5864	2211134.2673
CS	74·78.28	439909.4366	2212254.2223
ST	76·78.28	439855.0422	2212446.6769
TS	93·73.41	439408.3278	2214081.8841
SC	95·73.41	439357.7714	2214275.3786
CS	103·38.96	439277.1820	2215034.5900
ST	105·38.96	439285.9910	2215234.3860
TS	110·73.64	439315.4755	2215768.2498
SC	112·73.64	439324.2845	2215968.0458
CS	124·85.24	439108.7307	2217151.9690
ST	126·85.24	439030.0685	2217335.8394
POT	156·64.03	437828.0637	2220061.3437

Y2

TYPE	STATION	NORTH	EAST
POT	10·00.00	441268.4737	2213519.5428
PC	14·88.65	441021.0479	2213098.1651
PT	16·80.72	440944.5136	2212922.5074
PC	20·00.72	440852.7460	2212615.9479
PT	25·99.81	440483.4510	2212163.9152
PC	39·59.00	439285.2532	2211522.2642
PT	46·57.85	438609.4312	2211485.1435
POT	49·18.34	438367.7096	2211582.2260

Y2LPA

TYPE	STATION	NORTH	EAST
CS	10·00.00	439992.1435	2212149.8669
SC	12·00.00	439957.5829	2212345.2437
CS	17·20.29	440349.7478	2212524.8839
ST	19·20.29	440476.5968	2212372.0968
POT	21·00.25	440572.1514	2212219.6014

Y2RPA

TYPE	STATION	NORTH	EAST
POT	10·00.00	439558.9464	2213708.8904
TS	11·50.00	439605.9944	2213566.4598
SC	13·50.00	439672.9160	2213378.0302
CS	20·21.44	440054.0949	2212832.0860
SRS	22·21.44	440207.9285	2212704.3385
SC	24·21.44	440359.1746	2212573.6898
PT	25·93.63	440465.5449	2212438.7006
POT	28·33.63	440592.9796	2212235.3281

Y2RPC

TYPE	STATION	NORTH	EAST
POT	10·00.00	440989.1821	2210358.7643
TS	13·00.00	440797.5193	2210589.5572
SC	15·00.00	440666.3382	2210740.4721
CS	20·65.62	440208.4983	2211066.7101
SRS	22·65.62	440023.0244	2211141.4308
SC	24·65.62	439839.2905	2211220.0461
PT	27·67.51	439608.1106	2211411.0962
POT	30·22.51	439447.4621	2211609.1292

Y2RPD

TYPE	STATION	NORTH	EAST
TS	10·00.00	439508.1592	2213538.1004
SC	12·00.00	439556.5555	2213344.0849
CS	19·57.03	439517.3750	2212596.0863
SRS	21·57.03	439448.9738	2212408.1888
SC	23·57.03	439384.2702	2212219.0911
PT	27·79.88	439391.7656	2211801.2175
POT	29·79.88	439447.4621	2211609.1292

Y3

TYPE	STATION	NORTH	EAST
POT	10·00.00	438507.1340	2210845.6601
PC	15·35.29	438832.1927	2211270.9464
PT	16·57.64	438873.1254	2211384.2324
POT	17·01.62	438874.9211	2211428.1742

Y4

TYPE	STATION	NORTH	EAST
POT	9·24.55	440881.1902	2211843.8438
PC	9·32.94	440883.5128	2211851.9036
PT	10·00.00	440899.1785	2211917.0862
PC	10·04.99	440900.1257	2211921.9812
PT	12·20.16	440917.6676	2212136.0130
PC	13·47.71	440914.1476	2212263.5087
PT	15·44.19	440820.5978	2212427.3542
POT	15·90.19	440781.6438	2212451.8202

Y5

TYPE	STATION	NORTH	EAST
POT	10·00.00	444143.5600	2208514.7000
POT	14·86.51	443676.5919	2208378.2033

Y6A

TYPE	STATION	NORTH	EAST
POT	10·00.00	438860.2256	2214960.9829
PC	12·15.93	438951.4397	2215156.7038
PT	15·13.40	439191.8258	2215300.7183
POT	16·11.08	439289.3569	2215295.3318

Y6B

TYPE	STATION	NORTH	EAST
POT	10·00.00	440498.1500	2216747.7500
PC	17·32.62	439827.5231	2216452.8042
PT	19·77.20	439592.1721	2216389.8228
POT	22·63.74	439307.3216	2216358.7616

SR1

TYPE	STATION	NORTH	EAST
POT	10·00.00	443838.5243	2208425.5368
PC	10·83.45	443815.1120	2208505.6325
PT	12·82.31	443680.7362	2208641.0484
PC	18·90.88	443097.9429	2208816.2901
PT	21·18.85	442875.4960	2208865.1244
PC	23·62.41	442634.3157	2208899.1406
PT	30·61.96	442045.3924	2209243.2151
PC	34·87.83	441786.5103	2209581.3608
PT	35·08.39	441779.6141	2209600.3958
POT	35·50.89	441777.8401	2209642.8588

SR2

TYPE	STATION	NORTH	EAST
POT	10·00.00	441757.3620	2209207.9508
PC	17·80.35	441287.3602	2209830.8797
PT	18·91.90	441219.7568	2209919.6187
PC	25·06.36	440845.1290	2210406.6573
PT	31·57.66	440330.5550	2210792.7860
PC	38·05.36	439727.2397	2211028.4376
PT	39·65.70	439579.4187	2211090.4869
PC	41·28.55	439430.8818	2211157.2611
PT	44·77.26	439091.0371	2211169.1663
PC	46·23.93	438953.3826	2211118.5372
PT	48·24.94	438762.8922	2211147.3433
POT	48·44.94	438747.0022	2211159.4885

SR3

TYPE	STATION	NORTH	EAST
PC	10·00.00	439037.2072	2215257.6567
PT	11·04.72	439046.1268	2215359.8769
PC	13·02.41	439129.6328	2215539.0583
PT	13·97.64	439152.6524	2215630.8772
PC	16·01.99	439163.9211	2215834.9154
PT	17·07.03	439147.8344	2215937.9339
POT	17·73.72	439124.0317	2216000.2287

DR1

TYPE	STATION	NORTH	EAST
POT	10·00.00	441777.8401	2209642.8588
PC	10·43.97	441750.7925	2209677.5248
PT	10·68.11	441732.0112	2209692.3088
PC	11·37.52	441668.7816	2209720.9644
PT	11·61.10	441650.5016	2209735.4802
PC	15·45.16	441416.8374	2210040.2731
PT	15·54.92	441413.5508	2210049.3043
POT	15·93.06	441411.8738	2210087.4109

DR2

TYPE	STATION	NORTH	EAST
POT	10·00.00	440880.2938	2212369.4373
PC	10·64.05	440931.2980	2212408.1798
PT	10·80.85	440946.8920	2212413.6692
POT	11·08.04	440974.0746	2212414.4148

DR3

TYPE	STATION	NORTH	EAST
POT	10·00.00	439470.6571	2216070.4244
PC	10·98.95	439467.9542	2216169.3375
PT	11·21.31	439474.8879	2216190.1184
PC	11·94.10	439520.1715	2216247.1114
PT	12·19.06	439526.9286	2216270.4871
POT	13·30.62	439514.8353	2216381.3897

DR4

TYPE	STATION	NORTH	EAST
POT	10·00.00	439124.0306	2216000.2316
PC	10·57.25	439177.5740	2216020.4964
PCC	10·93.68	439196.9545	2216048.7124
PCC	12·21.81	439193.4208	2216176.7878
PT	12·60.87	439185.4584	2216214.8662
POT	13·12.14	439167.2901	2216262.8017

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 INFORMATINO REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

6/2/99

REVISIONS

RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW03E-1

Location and Surveys

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TEL. (919) 788-0224 FAX (919) 788-0232
CORPORATE LICENSE # P-0189

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3468 LAND SURVEYOR WATTS B. FEARRINGTON, JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L1	42+80.00	-235.00	441822.8601	2209727.0927
L1	44+20.00	-150.00	441670.5028	2209787.1946
L1	48+26.88	-150.00	441424.4572	2210111.2531
L1	60+23.93	-150.00	440700.5898	2211064.6351
L1	61+30.00	-94.60	440592.9503	2211115.2102
L1	61+50.00	-232.68	440692.0149	2211213.3612
L1	62+23.93	-79.00	440525.7397	2211180.3688
L1	65+00.00	-102.00	440395.7022	2211417.4643
L1	69+00.00	-110.00	440217.1359	2211762.7707
L1	93+73.41	-135.00	439538.5558	2214117.4605
L1	93+73.41	135.00	439278.0998	2214046.3078
L1	95+73.41	-135.00	439489.1127	2214306.5951
L1	95+73.41	135.00	439226.4301	2214244.1621
L1	103+38.96	135.00	439142.2142	2215037.5381
L1	103+38.96	-135.00	439412.1498	2215031.6420
L1	104+80.00	135.00	439147.9809	2215182.5653
L1	105+38.96	-135.00	439420.7856	2215226.9415
L1	110+73.64	-135.00	439450.2701	2215760.8053
L1	112+73.64	-135.00	439459.2523	2215965.0977
L1	118+72.00	-135.00	439410.6799	2216587.4568
L1	121+16.54	115.00	439113.6819	2216772.7996
L1	121+47.35	-135.00	439346.9252	2216867.9395

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y2	13+50.00	-29.93	441065.4453	2213232.8807
Y2	13+50.00	30.07	441117.1855	2213202.4998
Y2	13+50.00	45.00	441130.0576	2213194.9415
Y2	13+50.00	-45.00	441052.4478	2213240.5127
Y2	14+88.65	45.00	441059.8528	2213075.3795
Y2	14+88.65	-45.00	440982.2430	2213120.9507
Y2	16+80.72	45.00	440987.6235	2212909.6026
Y2	16+80.72	-70.00	440877.4537	2212942.5816
Y2	16+80.72	-45.00	440901.4037	2212935.4122
Y2	17+50.00	-70.00	440857.5853	2212876.2091
Y2	18+51.00	45.00	440938.7915	2212746.4740
Y2	20+00.72	-75.00	440780.8961	2212637.4560
Y2	21+55.00	-110.00	440696.9983	2212525.7773
Y2	25+99.81	180.00	440568.4261	2212005.2356
Y2	30+00.00	180.00	440215.6413	2211816.3145
Y2	39+00.00	-105.00	439287.6991	2211642.6819
Y2	39+59.00	-105.00	439235.6844	2211614.8273
Y2	41+79.17	-55.00	439067.5849	2211499.8908
Y2	45+10.00	80.00	438735.2654	2211364.5438
Y2	46+57.85	-55.00	438629.9293	2211536.1810
Y2	46+57.85	80.00	438579.6157	2211410.9072
Y2	48+42.40	50.00	438419.5448	2211507.5255
Y2	48+42.40	80.00	438408.3640	2211479.6869
Y2	48+42.40	-55.00	438458.6776	2211604.9607

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y2RPA	10+00.00	115.00	439668.1432	2213744.9605
Y2RPA	11+50.00	115.00	439715.1913	2213602.5296
Y2RPA	13+50.00	115.00	439779.4674	2213421.2946
Y2RPA	20+21.44	115.00	440131.4226	2212917.2061
Y2RPA	22+21.44	105.00	440273.1977	2212786.5878
Y2RPA	24+21.44	105.00	440434.1891	2212647.1597
Y2RPA	25+93.63	105.00	440554.5204	2212494.4533
Y2RPA	26+50.00	105.00	440584.4498	2212446.6891

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y2RPD	10+00.00	-80.00	439430.9871	2213517.0181
Y2RPD	12+00.00	-80.00	439478.1504	2213328.1905
Y2RPD	19+57.03	-80.00	439441.0594	2212620.0851
Y2RPD	21+57.03	-80.00	439374.4276	2212437.2209
Y2RPD	23+57.03	-80.00	439306.6854	2212238.5999
Y2RPD	27+79.88	-80.00	439314.9303	2211778.9389

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y3	11+45.00	-55.00	438638.8845	2210927.4636
Y3	11+45.00	-30.00	438619.0220	2210942.6451
Y3	11+45.00	30.00	438571.3518	2210979.0808
Y3	11+45.00	55.00	438551.4893	2210994.2623
Y3	13+30.00	-55.00	438751.2278	2211074.4465
Y3	13+70.00	60.00	438684.1505	2211176.0616
Y3	15+35.29	60.00	438784.5225	2211307.3820

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y4	12+83.07	29.44	440886.4991	2212198.0799
Y4	12+87.84	96.15	440819.6905	2212201.0116

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y6A	11+05.96	30.00	438877.7924	2215069.6960
Y6A	11+29.88	-30.00	438942.2818	2215066.0341
Y6A	12+15.93	45.00	438910.6508	2215175.7108
Y6A	13+00.00	-60.00	439041.9526	2215183.6894

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y6B	15+00.00	-50.00	440020.3303	2216592.2241
Y6B	15+00.00	-30.00	440028.3821	2216573.9165
Y6B	15+00.00	30.00	440052.5375	2216518.9936
Y6B	15+00.00	40.00	440056.5634	2216509.8398
Y6B	17+00.00	62.00	439882.3443	2216409.1835
Y6B	17+32.62	-80.00	439795.3159	2216526.0346
Y6B	19+60.00	98.32	439622.0115	2216294.3832
Y6B	19+77.20	-90.00	439582.4160	2216479.2924
Y6B	20+75.00	-115.00	439482.4871	2216493.5440

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
SR1	10+55.00	-75.00	443895.0810	2208499.3701
SR1	10+55.00	75.00	443751.1057	2208457.2855
SR1	10+83.45	40.00	443776.7186	2208494.4099
SR1	10+83.45	-60.00	443872.7014	2208522.4689
SR1	12+82.31	-60.00	443698.0136	2208698.5070
SR1	12+82.31	40.00	443669.2180	2208602.7427
SR1	16+96.00	-60.00	443301.8478	2208817.6312
SR1	17+10.00	55.00	443255.3258	2208711.5336
SR1	17+10.00	94.31	443244.0064	2208673.8890
SR1	17+50.00	-110.00	443264.5329	2208881.0630
SR1	18+90.88	-110.00	443129.6181	2208921.6309
SR1	21+18.85	-110.00	442890.8584	2208974.0464
SR1	23+62.41	-50.00	442641.3015	2208948.6502
SR1	26+11.74	-44.95	442413.5798	2209008.5913
SR1	34+53.48	-116.94	441900.2384	2209625.1803
SR1	34+54.96	-63.30	441856.7496	2209593.7382

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
SR2	13+40.52	-15.94	441564.9900	2209489.3751
SR2	13+43.00	50.00	441510.8577	2209451.6461
SR2	17+80.35	50.00	441247.4466	2209800.7648
SR2	18+91.90	50.00	441180.1249	2209889.1341
SR2	22+00.00	50.00	440992.2811	2210133.3423
SR2	22+00.00	95.00	440956.6124	2210105.9061
SR2	25+06.36	95.00	440769.8268	2210348.7386
SR2	27+80.00	65.00	440613.8810	2210552.4904
SR2	31+57.66	65.00	440306.9063	2210732.2406
SR2	33+90.00	65.00	440090.4879	2210816.7725
SR2	36+75.00	38.00	439834.8431	2210945.6125
SR2	39+07.00	23.90	439623.7722	2211044.9358
SR2	39+07.00	38.14	439618.1718	2211031.8408
SR2	40+45.75	28.74	439494.6156	2211097.1003
SR2	41+28.55	40.00	439414.4810	2211120.7780
SR2	44+77.26	40.00	439104.8448	2211131.6250
SR2	46+23.93	40.00	438967.1902	2211080.9959
SR2	47+60.00	40.00	438807.0540	2211079.0298

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
SR3	11+04.72	50.00	439000.8068	2215380.9979
SR3	13+02.41	30.00	439102.4408	2215551.7309
SR3	13+97.64	30.00	439122.6981	2215632.5316
SR3	16+01.99	30.00	439133.9668	2215836.5697
SR3	17+07.03	30.00	439119.8105	2215927.2260
SR3	17+54.46	79.47	439056.6675	2215953.8782

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
DR3	10+60.00	-27.00	439496.0081	2216131.1396
DR3	10+70.00	-44.00	439512.7286	2216141.6002
DR3	10+73.00	-20.00	439488.6556	2216143.9435
DR3	10+83.00	-37.00	439505.3761	2216154.4042

I, Watts B. Fearrington, Jr., 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 25th day of October, 2019.

DocuSigned by: Watts Fearrington 340DA98917C04B6...

Professional Land Surveyor — PLS # L-3468 — 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.

$$$$SYSTIME$$$$
$$$$SIGN$$$$
$$$$FILENAME$$$$

6/2/99

REVISIONS

PERMANENT EASEMENT CONTROL SHEET

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L1	34+82.77	128.11	442016.0570	2208872.2868
L1	34+82.97	115.83	442025.6972	2208879.9053
L1	35+10.65	127.44	441999.5310	2208895.0636
L1	35+14.90	148.64	441980.0659	2208885.6373
L1	35+30.82	126.85	441987.7241	2208911.5676
L1	35+34.40	144.69	441971.3489	2208903.6377
L1	35+54.41	126.07	441974.0615	2208930.8587
L1	35+54.43	116.45	441981.7081	2208936.6860
L1	38+65.23	126.34	441785.8845	2209178.2476
L1	38+65.25	117.01	441793.3057	2209183.9032
L1	38+94.35	189.46	441718.0076	2209163.2692
L1	38+94.35	127.40	441767.4356	2209200.7980
L1	44+04.00	-159.71	441687.9150	2209780.3258
L1	44+15.00	-172.00	441691.0481	2209796.5160
L1	44+31.00	-157.00	441669.4260	2209800.1885
L1	47+24.00	-150.00	441486.6706	2210029.3139
L1	47+24.00	-170.00	441502.5995	2210041.4081
L1	47+60.00	-150.00	441464.9010	2210057.9859
L1	47+60.00	-170.00	441480.8299	2210070.0801
L1	57+83.70	-150.00	440845.8571	2210873.3083
L1	60+42.42	-162.40	440699.3098	2211086.8358
L1	60+42.90	-173.32	440707.7163	2211093.8203
L1	60+45.92	-164.75	440699.0679	2211091.0312
L1	60+61.91	-179.93	440701.5777	2211112.8549
L1	60+63.20	-176.27	440697.8784	2211111.6619
L1	61+62.42	-142.49	440612.4052	2211169.3017
L1	61+76.54	-162.96	440620.7441	2211192.4866
L1	62+15.57	-164.01	440599.4583	2211223.4779
L1	62+16.05	-144.02	440582.9723	2211212.1548
L1	65+90.00	-160.00	440400.9165	2211521.8057
L1	66+80.00	-160.00	440358.4625	2211596.8362
L1	66+80.00	-110.67	440315.2435	2211573.0531
L1	112+14.85	502.53	438820.3291	2215928.6547
L1	112+20.00	376.00	438946.9385	2215928.4612
L1	112+27.00	362.00	438961.1608	2215934.3017
L1	112+29.38	517.98	438805.3550	2215941.9127
L1	112+29.46	492.00	438831.3209	2215941.0693
L1	112+35.00	333.00	438990.3946	2215940.5673
L1	112+40.00	384.00	438939.5699	2215946.7474
L1	112+49.00	366.00	438957.8092	2215954.2277
L1	112+63.00	350.00	438974.1456	2215966.2610
L1	112+70.00	374.00	438950.3021	2215973.0246
L1	112+72.00	490.00	438834.3710	2215977.3743
L1	112+80.00	356.00	438968.4859	2215981.4251
L1	113+70.00	115.00	439209.8474	2216063.2190
L1	115+48.00	115.00	439203.0121	2216234.2340
L1	116+17.00	115.00	439197.6358	2216300.3694
L1	117+45.00	205.00	439094.4632	2216410.5170
L1	117+58.00	177.00	439120.5313	2216426.4189

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y4	10+60.00	-30.00	440938.7887	2211972.2130
Y4	11+40.00	-55.00	440971.5342	2212052.9152
Y4	12+90.00	-65.00	440980.7155	2212207.6162
Y4	13+94.00	-70.00	440975.2142	2212327.1555
Y4	14+65.00	-100.00	440959.4184	2212430.8462
Y4	14+80.00	-88.50	440936.8982	2212441.4187

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y5	11+08.00	-85.00	444016.0499	2208565.9851
Y5	11+10.00	-55.00	444022.5471	2208536.6289
Y5	11+28.00	-86.00	443996.5726	2208561.3337
Y5	11+29.00	-70.00	444000.1018	2208545.6957
Y5	11+91.00	90.00	443985.4822	2208374.7271
Y5	12+11.00	111.00	443972.1773	2208348.9593
Y5	12+28.00	55.00	443940.1485	2208397.9405
Y5	12+51.49	-71.49	443882.1096	2208512.7583
Y5	12+72.00	55.00	443897.9158	2208385.5957

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y6A	10+26.00	-61.00	438926.4989	2214958.7817
Y6A	10+30.00	-30.00	438900.0902	2214975.5023
Y6A	10+34.00	30.00	438847.3959	2215004.4731
Y6A	10+34.00	49.00	438830.1743	2215012.4991
Y6A	10+46.00	-64.00	438937.6665	2214975.6424
Y6A	10+50.00	-30.00	438908.5375	2214993.6279

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y6B	15+62.00	46.58	440002.4596	2216478.8543
Y6B	15+62.00	87.00	440018.7315	2216441.8564
Y6B	16+48.00	-153.00	439843.3872	2216626.9250
Y6B	16+65.07	-71.29	439860.6550	2216545.2545
Y6B	16+79.00	-157.00	439813.4001	2216618.1062
Y6B	16+95.04	-75.15	439831.6697	2216536.7283
Y6B	17+02.00	89.00	439891.3834	2216383.6630
Y6B	17+05.00	104.00	439894.6761	2216368.7246
Y6B	17+22.00	89.00	439873.0758	2216375.6112
Y6B	17+25.00	104.00	439876.3685	2216360.6728
Y6B	19+18.00	114.00	439671.4402	2216286.3073

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
Y2	11+83.89	30.00	441201.2327	2213345.7802
Y2	11+83.91	53.66	441221.6291	2213333.7801
Y2	11+86.98	71.50	441235.4519	2213322.0972
Y2	12+03.02	46.78	441206.0173	2213320.7884
Y2	12+06.69	68.10	441222.5416	2213306.8222
Y2	12+49.01	30.00	441168.2610	2213289.6277
Y2	13+81.62	-45.00	441036.4384	2213213.2479
Y2	13+90.66	-65.40	441014.2660	2213215.7786
Y2	13+94.11	-49.56	441026.1830	2213204.7840
Y2	14+10.20	-69.65	441000.7042	2213201.0791
Y2	14+13.65	-53.80	441012.6269	2213190.0791
Y2	14+93.06	-75.79	440953.2574	2213132.3700
Y2	14+93.11	-60.05	440966.8538	2213124.4298
Y2	15+03.00	116.00	441114.9609	2213028.7936
Y2	15+09.00	115.00	441111.5850	2213024.7988
Y2	15+11.33	-76.08	440943.1715	2213115.0994
Y2	15+11.71	-60.33	440956.7742	2213107.1555
Y2	15+15.00	145.00	441135.4702	2213005.9644
Y2	15+27.90	45.00	441041.8889	2213042.9923
Y2	15+32.00	113.00	441100.5203	2213008.3512
Y2	15+38.00	112.00	441097.2811	2213004.2167
Y2	15+39.00	142.00	441123.6668	2212989.9162
Y2	17+40.00	-95.00	440836.5031	2212892.9584
Y2	17+40.00	-70.00	440860.4531	2212885.7890
Y2	17+75.00	-82.09	440838.8348	2212855.7259
Y2	17+75.00	-95.00	440826.4660	2212859.4284
Y2	17+75.00	-70.50	440849.9384	2212852.4021
Y2	18+97.78	-87.69	440798.2608	2212739.7126
Y2	19+03.25	-104.54	440780.5459	2212739.3047
Y2	19+14.43	-72.91	440807.6457	2212719.5220
Y2	19+22.27	-98.37	440781.0064	2212719.3100
Y2	19+66.00	79.00	440938.3839	2212626.5521
Y2	19+73.00	73.34	440930.9525	2212621.4698
Y2	19+84.00	103.00	440956.2140	2212602.4256
Y2	20+07.00	84.56	440931.7211	2212585.0195
Y2	42+55.00	-55.00	438997.9975	2211488.0135
Y2	42+85.00	-55.00	438970.2094	2211485.1438
Y2	42+95.00	-106.00	438957.2738	2211535.2881
Y2	43+15.00	-94.00	438940.5143	2211522.2754
Y2	45+15.00	-100.00	438766.2252	2211541.9292
Y2	45+15.00	-55.00	438757.1377	2211497.8563
Y2	45+26.00	80.00	438718.0417	2211368.1626
Y2	45+26.00	109.00	438711.7954	2211339.8433
Y2	45+45.00	80.00	438697.6876	2211372.9062
Y2	45+45.00	110.00	438690.5320	2211343.7721
Y2	45+58.00	-100.00	438729.5973	2211550.5138
Y2	45+58.00	-78.00	438724.0033	2211529.2368
Y2	47+81.00	97.00	438459.0060	2211441.0277
Y2	47+81.00	80.00	438465.3418	2211456.8029
Y2	48+02.00	80.00	438445.8548	2211464.6295
Y2	48+02.00	97.00	438439.5190	2211448.8542
Y2	48+11.00	-66.00	438491.9165	2211603.4651
Y2	48+11.00	-55.00	438487.8168	2211593.2576

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
SR1	10+84.00	72.00	443745.9042	2208485.7713
SR1	10+91.00	52.00	443763.5316	2208496.3768
SR1	17+50.00	-130.00	443270.2920	2208900.2159
SR1	18+50.00	-130.00	443174.5277	2208929.0115
SR1	18+50.00	-110.00	443168.7685	2208909.8586
SR1	22+38.40	-100.29	442771.1235	2208981.1239
SR1	24+50.00	-85.00	442568.3115	2208998.1857
SR1	26+90.92	-74.33	442360.4589	2209067.7663
SR1	27+13.22	-83.38	442347.2491	2209085.6897
SR1	27+60.00	-49.07	442292.3406	2209079.4265
SR1	27+60.00	-60.00	442298.3481	2209088.5584
SR1	31+45.73	-58.47	442040.8950	2209345.2707
SR1	31+47.10	-45.54	442029.7955	2209338.4998
SR1	31+63.51	-80.47	442047.5536	2209372.7601
SR1	31+65.62	-60.58	442030.4797	2209362.3447
SR1	31+83.39	-82.57	442037.1383	2209389.8340
SR1	31+85.40	-63.64	442020.8834	2209379.9183
SR1	32+04.07	-67.37	442012.4983	2209397.0127
SR1	32+07.86	-49.66	441996.1288	2209389.2506

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
SR3	13+32.00	30.00	439112.0203	2215575.9303
SR3	15+65.00	84.00	439078.0091	2215802.6122
SR3	15+76.00	118.00	439044.6674	2215815.4704
SR3	15+83.00	75.00	439087.9880	2215820.0885
SR3	15+96.00	102.00	439061.7459	2215834.5576
SR3	15+97.00	163.00	439000.8939	2215838.9199
SR3	16+00.00	100.00	439063.9635	2215838.4412
SR3	16+42.00	139.00	439024.6918	2215860.3198
SR3	17+19.00	174.00	438981.0229	2215887.0103
SR3	17+67.26	79.82	439051.7729	2215965.7095

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW03E-2

Location and Surveys

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TEL. (919) 788-0224 FAX (919) 788-0232
CORPORATE LICENSE # P-0189

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3468 LAND SURVEYOR WATTS B. FEARRINGTON JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I, Watts B. Fearrington, Jr., 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 25th day of October, 2019.

DocuSigned by: Watts Fearrington 346DA98917C04B6...

Professional Land Surveyor — L-3468 PLS # — Seal

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
SR2	10+08.03	-3.05	441754.9567	2209216.1961
SR2	10+08.03	58.39	441705.9134	2209179.1981
SR2	10+35.72	-2.21	441737.6091	2209237.7967
SR2	10+35.78	-13.84	441746.8607	2209244.8473
SR2	12+42.69	1.44	441610.0436	2209400.8155
SR2	12+56.44	-14.13	441614.1856	2209421.1719
SR2	12+57.68	14.68	441590.4452	2209404.8033
SR2	12+70.92	-0.31	441594.4329	2209424.4017
SR2	12+84.94	-14.61	441597.4020	2209444.2073
SR2	12+85.91	12.94	441574.8345	2209428.3894
SR2	12+99.15	-2.05	441578.8223	2209447.9878
SR2	22+50.00	140.00	440890.4590	2210118.1018
SR2	22+50.00	95.00	440926.1277	2210145.5380
SR2	24+00.00	95.00	440834.6738	2210264.4336
SR2	24+00.00	140.00	440799.0051	2210236.9975
SR2	25+70.00	93.30	440734.1716	2210395.3241
SR2	25+70.00	100.00	440729.0870	2210390.9651
SR2	25+92.00	96.00	440718.8104	2210408.8132
SR2	25+92.00	91.99	440721.8071	2210411.4790
SR2	31+96.00	65.00	440271.1925	2210746.1902
SR2	31+96.00	120.00	440251.1821	2210694.9596
SR2	32+27.00	84.00	440235.4043	2210739.7710
SR2	32+27.00	65.00	440242.3170	2210757.4688
SR2	33+18.00	176.00	440117.1688	2210687.1842
SR2	33+33.00	151.00	440112.2925	2210715.9282
SR2	40+24.53	27.92	439514.3118	2211089.1453
SR2	40+27.00	65.00	439496.8531	2211056.3380
SR2	40+47.00	68.00	439477.3815	2211061.8022
SR2	40+57.00	30.27	439483.7313	2211100.3163

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.

$$$$SYSTIME$$$$
$$$$SYSTIME$$$$ $$$$DGN$$$$ $$$$USERNAME$$$$
$$$$CELLNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW05

Location and Surveys

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TEL. (919) 788-0224 FAX (919) 788-0232
CORPORATE LICENSE # P-0189

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL LAND SURVEYOR SEAL L-3468 WATTS B. FEARRINGTON JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

6/2/99

REVISIONS

I, Watts B. Fearrington, Jr., 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.

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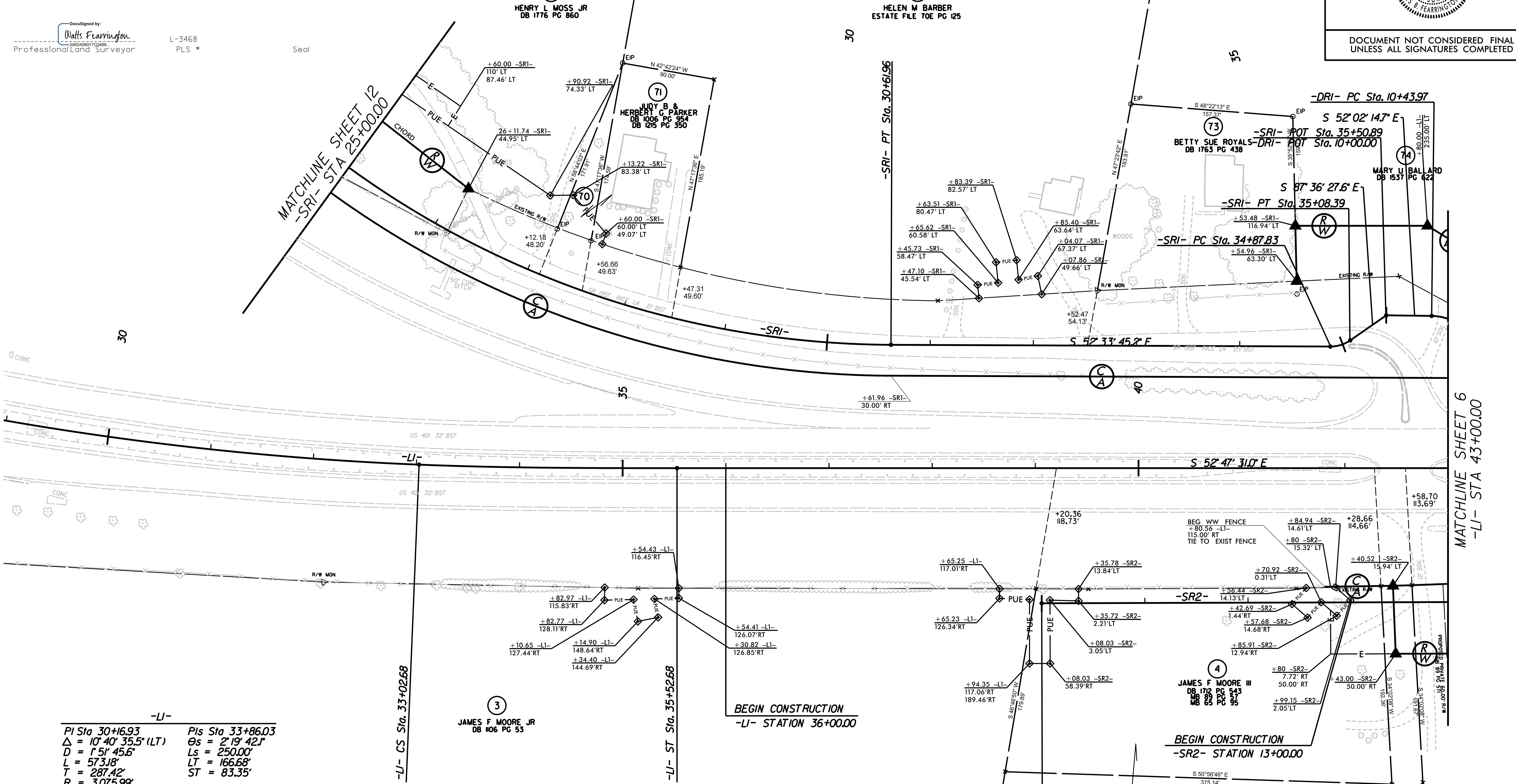
Witness my original signature, registration number and seal this 25th day of October, 2019.

DocuSigned by: Watts Fearrington 346DA98917C04B6...
Professional Land Surveyor — L-3468 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.

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW06

Location and Surveys

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TEL. (919) 788-0224 FAX (919) 788-0232
CORPORATE LICENSE # P-0189

PROJECT SURVEYOR

SEAL L-3468 NORTH CAROLINA PROFESSIONAL LAND SURVEYOR WATTS B. FEARRINGTON JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

6/2/99

REVISIONS

NOTES:

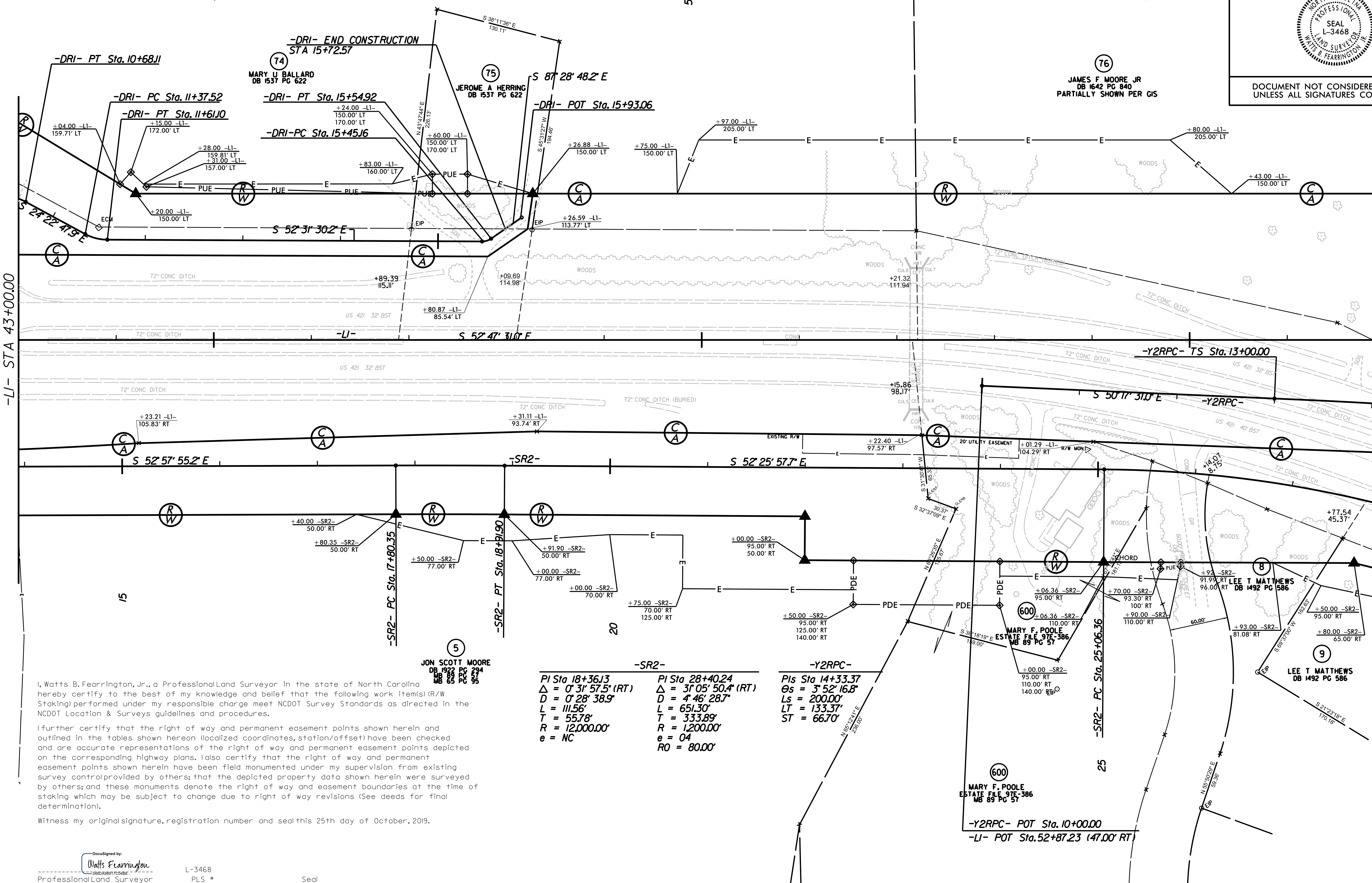
1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

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

NAD 83 NA 2011

-DRI-

PI Sta 10+56.28	PI Sta 11+49.56	PI Sta 15+50.20
△ = 27° 39′ 26.8″ (RT)	△ = 28° 08′ 42.3″ (LT)	△ = 34° 57′ 18.0″ (LT)
D = 114° 35′ 29.6″	D = 119° 21′ 58.3″	D = 358° 05′ 55.0″
L = 24.14′	L = 23.58′	L = 9.76′
T = 12.31′	T = 12.03′	T = 5.04′
R = 50.00′	R = 48.00′	R = 16.00′



-SR2-

PI Sta 18+36.13	PI Sta 28+40.24
△ = 0° 31′ 57.5″ (RT)	△ = 31° 05′ 50.4″ (RT)
D = 0° 28′ 38.9″	D = 4° 46′ 28.7″
L = 111.56′	L = 651.30′
T = 55.78′	T = 333.89′
R = 12,000.00′	R = 1,200.00′
e = NC	e = 04
	RO = 80.00′

-Y2RPC-

PIs Sta 14+33.37
Θs = 3° 52′ 16.8″
Ls = 200.00′
LT = 133.37′
ST = 66.70′

I, Watts B. Fearrington, Jr., 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.

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Professional Land Surveyor — L-3468 PLS # — Seal

$$$$$$SYSTIME$$$$$ $$$$$$$$$DGN$$$$$$$$$$$$$$$$$ $$$$USERNAME$$$$

6/2/99

REVISIONS

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DocuSigned by: Watts Fearrington 346DA98917C04B6...

Professional Land Surveyor — L-3468 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.

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW07

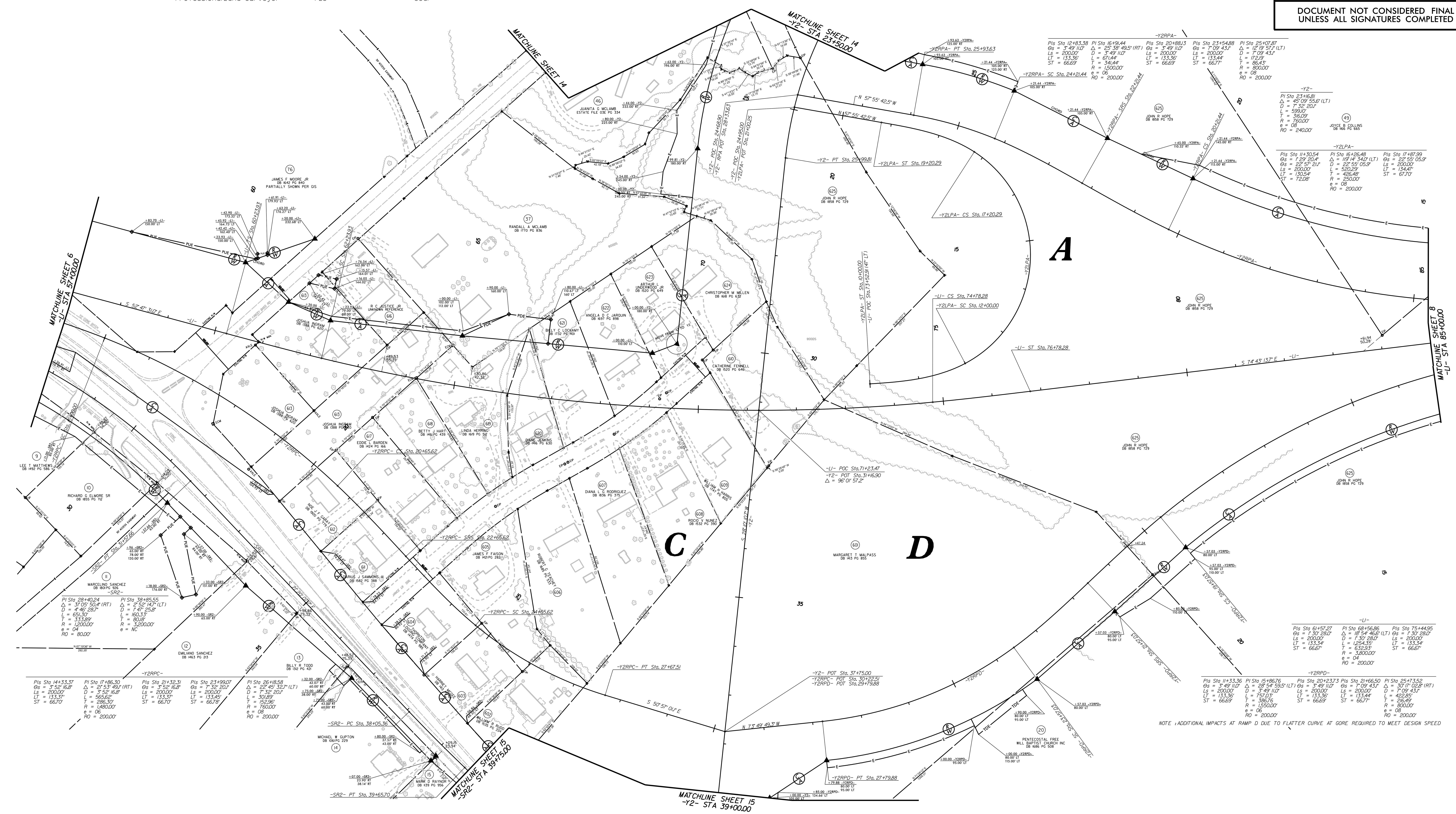
Location and Surveys

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TEL. (919) 788-0224 FAX (919) 788-0232
CORPORATE LICENSE # P-0189

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3468 LAND SURVEYOR WATTS B. FEARRINGTON JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW08

Location and Surveys

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TEL. (919) 788-0224 FAX (919) 788-0232
CORPORATE LICENSE # P-0189

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3468 LAND SURVEYOR WATTS B. FEARRINGTON JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

6/2/99

REVISIONS

NAD 83 NA 2011

51 JOYCE B COLLINS DB 1166 PG 665

49 JOYCE B COLLINS DB 1166 PG 665

77 MICHAEL L WILLIAMSON DB 1281 PG 86

79 ELLIOTT C. & JANE C.BYRD TRUSTEES DB 1770 PG 366

625 JOHN R HOPE DB 1858 PG 729

-Y2RPA-
PIs Sta 12+83.38
Θs = 3° 49' 11.0"
Ls = 200.00'
LT = 133.36'
ST = 66.69'

PI Sta 16+91.44
Δ = 25° 38' 49.5" (RT)
D = 3° 49' 11.0"
L = 671.44'
T = 341.44'
R = 1,500.00'
e = 06
RO = 200.00'

-LI-
PIs Sta 95+06.75
Θs = 1° 54' 35.5"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PI Sta 99+58.28
Δ = 14° 37' 15.5" (LT)
D = 1° 54' 35.5"
L = 765.55'
T = 384.87'
R = 3,000.00'
e = 05
RO = 200.00'

-Y2RPA- SC Sta. 13+50.00
-Y2RPA- TS Sta. 11+50.00
-Y2RPA- POT Sta. 10+00.00
-Y2RPA- POT Sta. 89+73.91 (147.00' LT)
-LI- TS Sta. 93+73.41
-LI- SC Sta. 95+73.41

+30.00 -Y2RPA- 115.00' RT 145.00' RT
+50.00 -Y2RPA- 115.00' RT
+50.00 -Y2RPA- 115.00' RT
+00.00 -Y2RPA- 115.00' RT
+73.41 -LI- 135.00' LT
+73.41 -LI- 135.00' LT

CHORD

N 71°19'32" E 431.81'

-Y2RPA- N 17° 43' 13.7" W

S 74° 43' 13.7" E -LI-

+45.59 +39.81 +65.96

MATCHLINE SHEET 7 -LI- STA 85+00.00

MATCHLINE SHEET 9 -LI- STA 99+00.00

-Y2RPD-

+00.00 -Y2RPD- 80.00' LT 95.00' LT
+00.00 -Y2RPD- 80.00' LT 95.00' LT

-Y2RPD- SC Sta. 12+00.00
-Y2RPD- ST Sta. 10+00.00
-LI- POT Sta. 88+22.54 (47.00' RT)

+25.00 -LI- 132.84' RT 150.00' RT
+73.41 -LI- 135.00' RT
+73.41 -LI- 135.00' RT

S 01°41'30" E 1108.30'

N 01°49'47" W 1430.89'

-Y2RPD-
PIs Sta 11+33.36
Θs = 3° 49' 11.0"
Ls = 200.00'
LT = 133.36'
ST = 66.69'

NOTE : ADDITIONAL IMPACTS AT RAMP D DUE TO FLATTER CURVE AT GORE REQUIRED TO MEET DESIGN SPEED

I, Watts B. Fearrington, Jr., 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.

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Witness my original signature, registration number and seal this 25th day of October, 2019.

DocuSigned by: Watts Fearrington 3492A5B5270A4B5...

Professional Land Surveyor — PLS # L-3468 — 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.

SYSTIME $$$$
DGN $$$$
USERNAME $$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW09

Location and Surveys

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TEL. (919) 788-0224 FAX (919) 788-0232
CORPORATE LICENSE # P-0189

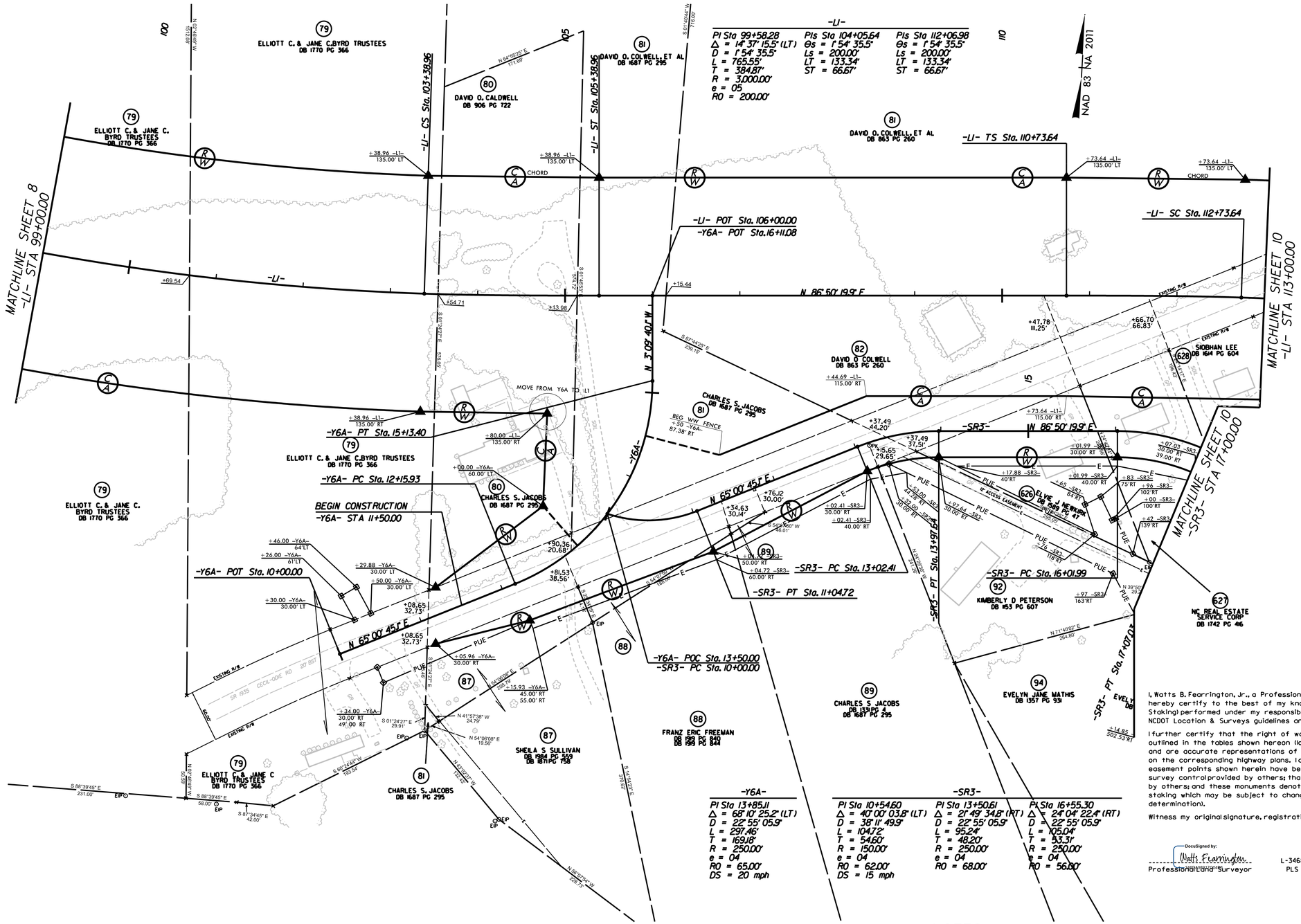
PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3468 LAND SURVEYOR WATTS B. FEARRINGTON, JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

6/2/99



-Y6A-

PI Sta 13+85.11	
Δ = 68° 10' 25.2" (LT)	
D = 22° 55' 05.9"	
L = 297.46'	
T = 169.18'	
R = 250.00'	
e = 04	
RO = 65.00'	
DS = 20 mph	

-SR3-

PI Sta 10+54.60	PI Sta 13+50.61	PI Sta 16+55.30
Δ = 40° 00' 03.8" (LT)	Δ = 21° 49' 34.8" (RT)	Δ = 24° 04' 22.4" (RT)
D = 38° 11' 49.9"	D = 22° 55' 05.9"	D = 22° 55' 05.9"
L = 104.72'	L = 95.24'	L = 105.04'
T = 54.60'	T = 48.20'	T = 53.31'
R = 150.00'	R = 250.00'	R = 250.00'
e = 04	e = 04	e = 04
RO = 62.00'	RO = 68.00'	RO = 56.00'
DS = 15 mph		

I, Watts B. Fearrington, Jr., 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.

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Witness my original signature, registration number and seal this 25th day of October, 2019.

DocuSigned by: Watts Fearrington

Professional Land Surveyor | L-3468 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.

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW10

Location and Surveys

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TEL. (919) 788-0224 FAX (919) 788-0232
CORPORATE LICENSE # P-0189

REVISIONS

6/2/99

MATCHLINE SHEET 16
-Y6B- STA 19+00.00

MATCHLINE SHEET 9
-LI- STA 113+00.00

MATCHLINE SHEET 10
-SR3- STA 17+00.00

-SR3- PT Sta. 17+07.03

-DR3-
PI Sta 11+10.61
Δ = 40° 02' 02.5" (LT)
D = 179° 02' 57.5"
L = 22.36'
T = 11.66'
R = 32.00'

PI Sta 12+07.26
Δ = 44° 41' 30.9" (RT)
D = 179° 02' 57.5"
L = 24.96'
T = 13.15'
R = 32.00'

-LI-
PIs Sta 112+06.98
Θs = 1° 54' 35.5"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PI Sta 118+87.81
Δ = 23° 08' 23.7" (RT)
D = 1° 54' 35.5"
L = 1,211.60'
T = 614.17'
R = 3,000.00'
e = 05
RO = 200.00'

PIs Sta 125+51.92
Θs = 1° 54' 35.5"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

-Y6B-
PI Sta 18+55.87
Δ = 17° 31' 01.3" (LT)
D = 7° 09' 43.1"
L = 244.58'
T = 123.25'
R = 800.00'
e = 04
RO = 76.00'

NAD 83 NA 2011

-DR4-
PI Sta 10+78.09
Δ = 69° 34' 19.1" (RT)
D = 190° 59' 09.4"
L = 36.43'
T = 20.84'
R = 30.00'

PI Sta 11+57.76
Δ = 2° 33' 22.5" (RT)
D = 1° 59' 41.9"
L = 128.13'
T = 64.08'
R = 2,872.00'

PI Sta 12+41.50
Δ = 17° 54' 14.8" (RT)
D = 45° 50' 11.8"
L = 39.06'
T = 19.69'
R = 125.00'

I, Watts B. Fearrington, Jr., 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.

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Witness my original signature, registration number and seal this 25th day of October, 2019.

DocuSigned by: Watts Fearrington 3AB0A0B9122048E...

Professional Land Surveyor — L-3468 — 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.

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL LAND SURVEYOR SEAL L-3468 WATTS B FEARRINGTON JR

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

$$USERNAME$$ $$SYSTIME$$ $$DGN$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW11

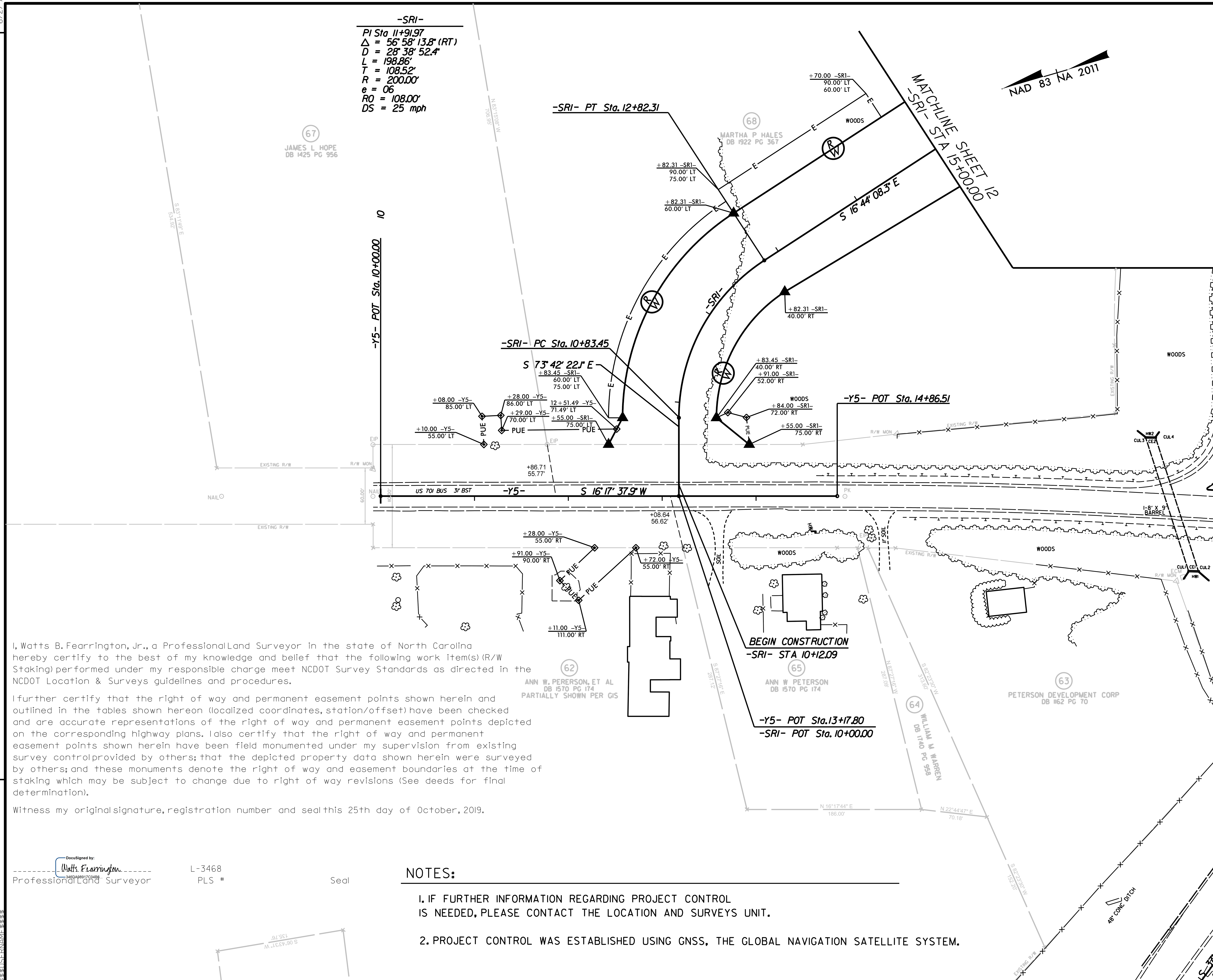
Location and Surveys

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TEL. (919) 788-0224 FAX (919) 788-0232
CORPORATE LICENSE # P-0189

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3468 LAND SURVEYOR WATTS B. FEARRINGTON JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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DocuSigned by: Watts Fearrington 346DA98917C04B6...
Professional Land Surveyor — L-3468 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.

REVISIONS

6/2/99

$$$$$$$$SYSTIME$$$$$ $$$$$$$$DGN$$$$$$$$$$$$$$$$$$$ $$$$$USERNAME$$$$$

6/2/99

REVISIONS

I, Watts B. Fearrington, Jr., 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 25th day of October, 2019.

DocuSigned by:
Watts Fearrington
3460A9857C0486...

Professional Land Surveyor — PLS # L-3468 — Seal

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW12

Location and Surveys

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TEL. (919) 788-0224 FAX (919) 788-0232
CORPORATE LICENSE # P-0189

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3468 LAND SURVEYOR WATTS B. FEARRINGTON, JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

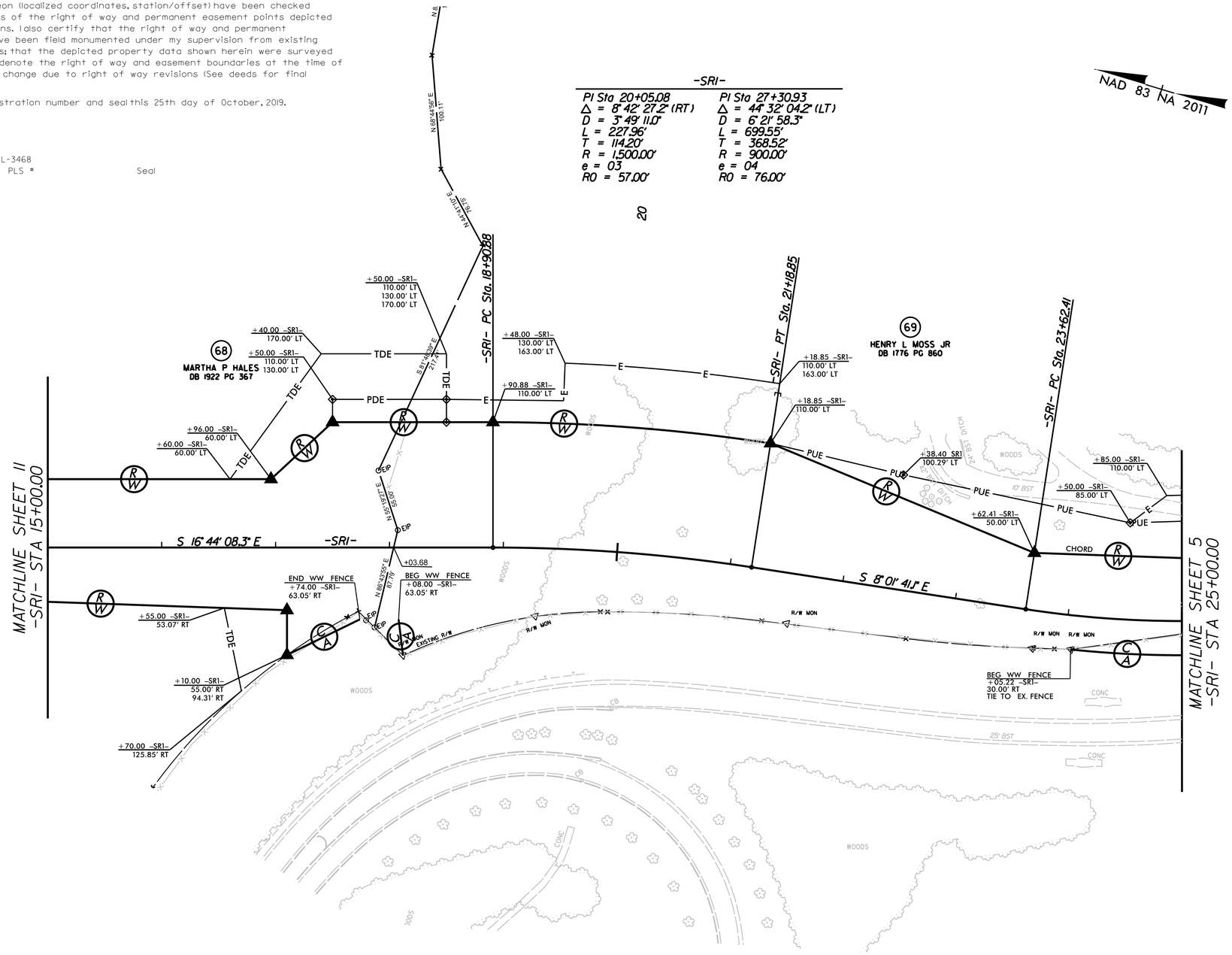
NAD 83 NA 2011

-SRI-

PI Sta 20+05.08
Δ = 8° 42' 27.2" (RT)
D = 3° 49' 11.0"
L = 227.96'
T = 114.20'
R = 1,500.00'
e = 03
RO = 57.00'

PI Sta 27+30.93
Δ = 44° 32' 04.2" (LT)
D = 6° 21' 58.3"
L = 699.55'
T = 368.52'
R = 900.00'
e = 04
RO = 76.00'

20



NOTES:

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

$$$$SYSTIME$$$$
$$$$DGN$$$$
$$$$FILENAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW13

Location and Surveys

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TEL. (919) 788-0224 FAX (919) 788-0232
CORPORATE LICENSE # P-0189

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3468 LAND SURVEYOR WATTS B. FEARRINGTON JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

6/2/99

REVISIONS

NAD 83 NA 2011

-Y2- POT Sta. 10+00.00

-Y2- PC Sta. 14+88.65

-Y2-
PI Sta 15+85.15
Δ = 13° 45' 21.0" (RT)
D = 7° 09' 43.1"
L = 192.07'
T = 96.50'
R = 800.00'
e = 08
RO = 200.00'

BEGIN CONSTRUCTION
-Y2- STA 12+50.00

MATCHLINE SHEET 14
-Y2- STA 16+00.00

49 JOYCE B COLLINS DB 1166 PG 665

50 HARVEY J BASS DB 1166 PG 665

51 JOYCE B COLLINS DB 1166 PG 665

52 WILLIAM T COTTLE JR DB 1166 PG 662

53 BOBBY D CARTER DB 1884 PG 277

54 WILLIAM T COTTLE JR DB 1166 PG 662

60 RICHARD G ELMORE SR DB 1855 PG 712

61 W P COLLINS JR DB 1859 PG 233

S 59° 34' 45.4" W

EXISTING R/W

SR 1934 BRIO YANCEY BASS RD PVT

WOODS

CONC

SOIL

I, Watts B. Fearrington, Jr., 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.

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Witness my original signature, registration number and seal this 25th day of October, 2019.

DocuSigned by: Watts Fearrington 3460A88917C04B6...

Professional Land Surveyor — L-3468 PLS # — Seal

NOTES:

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

$$$$SYSTIME$$$$
$$$$CONDITIONS$$$$
$$$$FILENAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW14

Location and Surveys

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TEL. (919) 788-0224 FAX (919) 788-0232
CORPORATE LICENSE # P-0189

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3468 LAND SURVEYOR WATTS B. FEARRINGTON, JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

6/2/99

NAD 83 NA 2011

-Y2- PT Sta. 16+80.72

-Y2- PC Sta. 20+00.72

-Y2-

PI Sta 15+85.15
Δ = 13° 45' 21.0" (RT)
D = 7° 09' 43.1"
L = 192.07'
T = 96.50'
R = 800.00'
e = 08
RO = 200.00'

PI Sta 23+16.81
Δ = 45° 09' 55.6" (LT)
D = 7° 32' 20.1"
L = 599.10'
T = 316.09'
R = 760.00'
e = 08
RO = 240.00'

MATCHLINE SHEET 13
-Y2- STA 16+00.00

MATCHLINE SHEET 7
-Y2-
STA 23+50.00

-Y4- POT Sta. 15+90.19
-Y2- POC Sta. 21+80.00

-Y4- PT Sta. 15+44.19

-Y4- POT Sta. 14+60.40
-DR2- POT Sta. 10+00.00

-DR2- POT Sta. 11+08.04
-DR2 END CONSTRUCTION
STA 10+90.00
-DR2- PT Sta. 10+80.85
-DR2- PC Sta. 10+64.05

-Y4- PC Sta. 13+47.71
-Y4- PT Sta. 12+20.16
-Y4- PT Sta. 10+00.00
-Y4- PC Sta. 9+32.94
-Y4- PT Sta. 9+25.55
-Y4- PC Sta. 10+04.99

BEGIN CONSTRUCTION
-Y4- STA 10+04.99

49 JOYCE B COLLINS DB 1166 PG 665

60 RICHARD G ELMORE SR DB 1855 PG 712

59 HELEN D WRIGHT DB 1469 PG 342

58 BERNITA F SMITH-VANN DB 1186 PG 132

57 JESSIE C MELVIN DB 1188 PG 17

625 JOHN R HOPE DB 1858 PG 729

56 BISSETTE-ROYAL FARMING CO DB 1365 PG 729 PARTIALLY SHOWN PER GIS

46 JUANITA G MCLAMB ESTATE FILE 03E PG 334

S 73°20'06.3" W

S 32°07'54.8" E

N 37°13'12.4" E

N 1°34'16.4" E

S 88°25'06.7" E

N 79°02'51.5" E

N 73°55'28.4" E

S 73°25'10" W 44.55'

S 73°29'28" W 191.00'

S 73°29'28" W 119.60'

S 73°29'28" W 157.40'

N 13°20'18" W 221.43'

N 02°40'29" E 227.06'

N 02°00'10" E 197.80'

N 11°18'58" E 130.49'

S 11°05'09" E 1244.42'

+00.00 -Y2- 75.00' LT

+80.72 -Y2- 45.00' LT 70.00' LT

+40.00 -Y2- 130.00' LT 95.00' LT 70.00' LT

+75.00 -Y2- 130.00' LT 95.00' LT 82.09' LT 70.50' LT

+50.00 -Y2- 70.00' LT

+03.25 -Y2- 104.54' LT

+97.78 -Y2- 87.69' LT

+00.72 -Y2- 75.00' LT

+22.27 -Y2- 98.37' LT

+14.43 -Y2- 72.91' LT

+80.00 -Y2- 151.68' LT

+55.00 -Y2- 110.00' LT

+50.00 -Y2RPA- 105.00' RT

+94.77 29.40'

+94.65 30.73'

+14.44 40.13'

+80.72 -Y2- 45.00' RT 60.00' RT

+51.00 -Y2- 45.00' RT

+00 -Y2- 70' RT

+66 -Y2- 79' RT

+69.12 -Y2- 83.16' RT

+84 -Y2- 103' RT

+01.45 -Y2- 89.33' RT

+07.00 -Y2- 84.56' RT

+73.00 -Y2- 73.34' RT

+01.16 78.42'

+24.70 126.74'

+44.36 -Y2- 100' RT

+80.00 -Y4- 88.50' LT

+65.00 -Y4- 100.00' LT

+39.69 49.55'

+80.96 29.52'

+87.84 -Y4- 96.15' RT

+83.07 -Y4- 29.44' RT

+84.54 -Y4- 50.00' RT

+58.40 -Y4- 51.95' RT

+85.00 -Y4- 50.00' RT

+83.93 -Y4- 50.05' RT

+84.37 -Y4- 30.00' RT

+94.00 -Y4- 70.00' LT

+90.00 -Y4- 65.00' LT

+40.00 -Y4- 55.00' LT

+60.00 -Y4- 30.00' LT

+10.00 -Y4- 100.00' LT

+52.53 30.00'

+52.78 -Y4- 30.00' LT

+05.00 -Y4- 100.00 LT

TDE PDE PUE E SOIL WOODS EXISTING R/W 60' ACCESS EASEMENT

I, Watts B. Fearrington, Jr., 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 25th day of October, 2019.

DocuSigned by: Watts Fearrington 340DA0B91152486...

Professional Land Surveyor — PLS # L-3468 — Seal

-DR2-

PI Sta 10+72.73
Δ = 35° 39' 16.2" (LT)
D = 21° 12' 23.7"
L = 16.80'
T = 8.68'
R = 27.00'

-Y4-

PI Sta 9+66.49
Δ = 5° 07' 23.1" (RT)
D = 7° 38' 22.0"
L = 67.06'
T = 33.55'
R = 750.00'

PI Sta 14+54.69
Δ = 56° 17' 11.9" (RT)
D = 28° 38' 52.4"
L = 196.48'
T = 106.98'
R = 200.00'
e = 04
RO = 62.00'
DS = 15 mph

PI Sta 11+13.01
Δ = 12° 32' 01.9" (RT)
D = 5° 49' 29.5"
L = 215.18'
T = 108.02'
R = 983.64'
e = 04
RO = 74.00'

NOTES:

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

SYSTIME ##/##/#### ##:##:## ##
FILENAME ##########

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW15

Location and Surveys

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TEL. (919) 788-0224 FAX (919) 788-0232
CORPORATE LICENSE # P-0189

NOTES:

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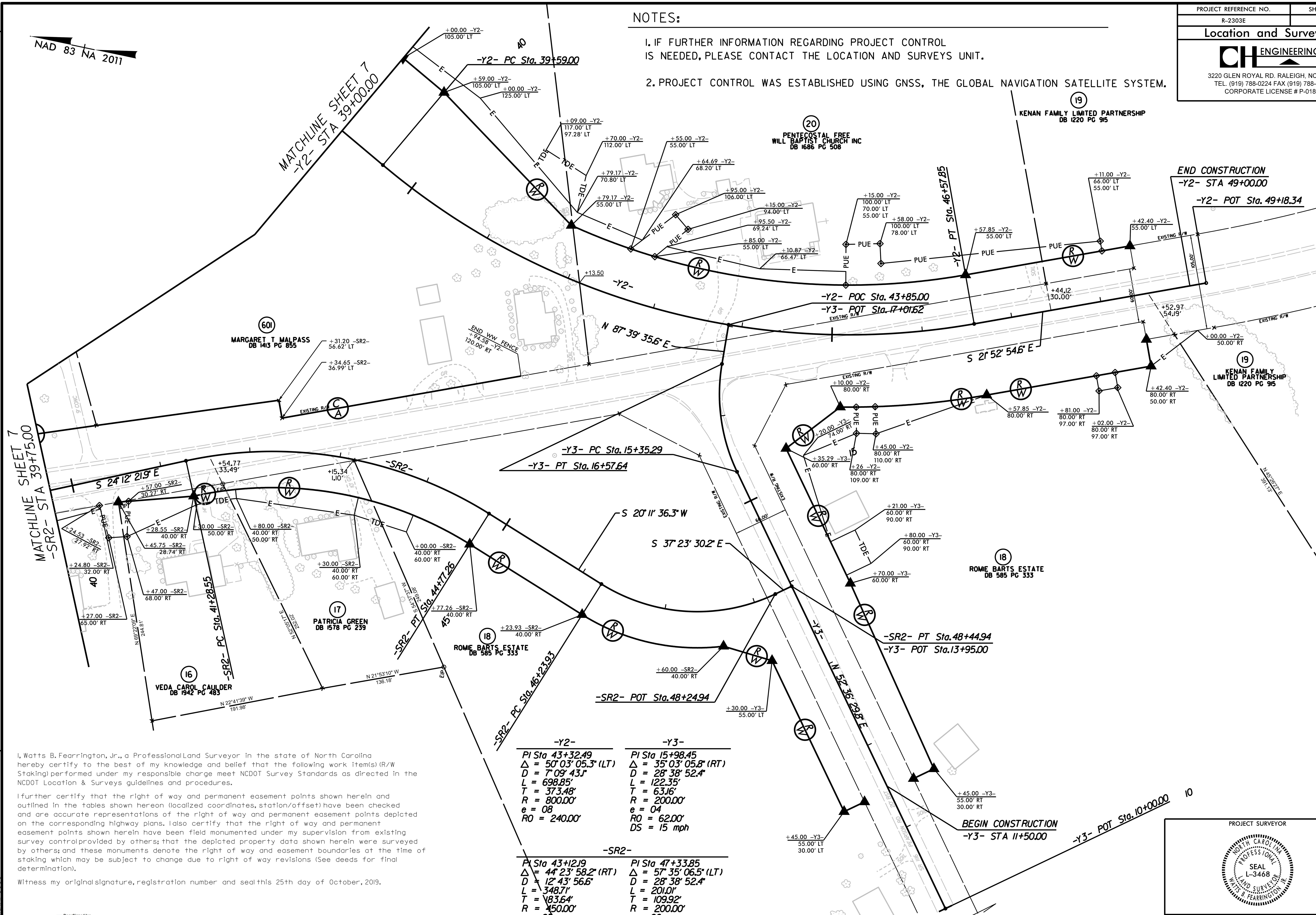

-Y2-	-Y3-
PI Sta 43+32.49	PI Sta 15+98.45
Δ = 50° 03' 05.3" (LT)	Δ = 35° 03' 05.8" (RT)
D = 7° 09' 43.1"	D = 28° 38' 52.4"
L = 698.85'	L = 122.35'
T = 373.48'	T = 63.16'
R = 800.00'	R = 200.00'
e = 08	e = 04
RO = 240.00'	RO = 62.00'
	DS = 15 mph

-SR2-	
PI Sta 43+12.19	PI Sta 47+33.85
Δ = 44° 23' 58.2" (RT)	Δ = 57° 35' 06.5" (LT)
D = 12° 43' 56.6"	D = 28° 38' 52.4"
L = 348.71'	L = 201.01'
T = 183.64'	T = 109.92'
R = 450.00'	R = 200.00'
e = 05	e = 06
RO = 100.00'	RO = 120.00'
	DS = 25 mph

I, Watts B. Fearrington, Jr., 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.

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Witness my original signature, registration number and seal this 25th day of October, 2019.

DocuSigned by: Watts Fearrington 346DA98917C04B6

Professional Land Surveyor — PLS # L-3468 — Seal

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3468 LAND SURVEYOR WATTS B. FEARRINGTON JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

6/2/99

6/2/99

REVISIONS

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DocuSigned by:
Watts Fearrington
34EDA88917C04B6...

Professional Land Surveyor — PLS # L-3468 — Seal

-Y6B-
PI Sta 18+55.87
Δ = 17° 31' 01.3" (LT)
D = 7° 09' 43.1"
L = 244.58'
T = 123.25'
R = 800.00'
e = 04
RO = 76.00'

PROJECT REFERENCE NO.	SHEET NO.
R-2303E	RW16

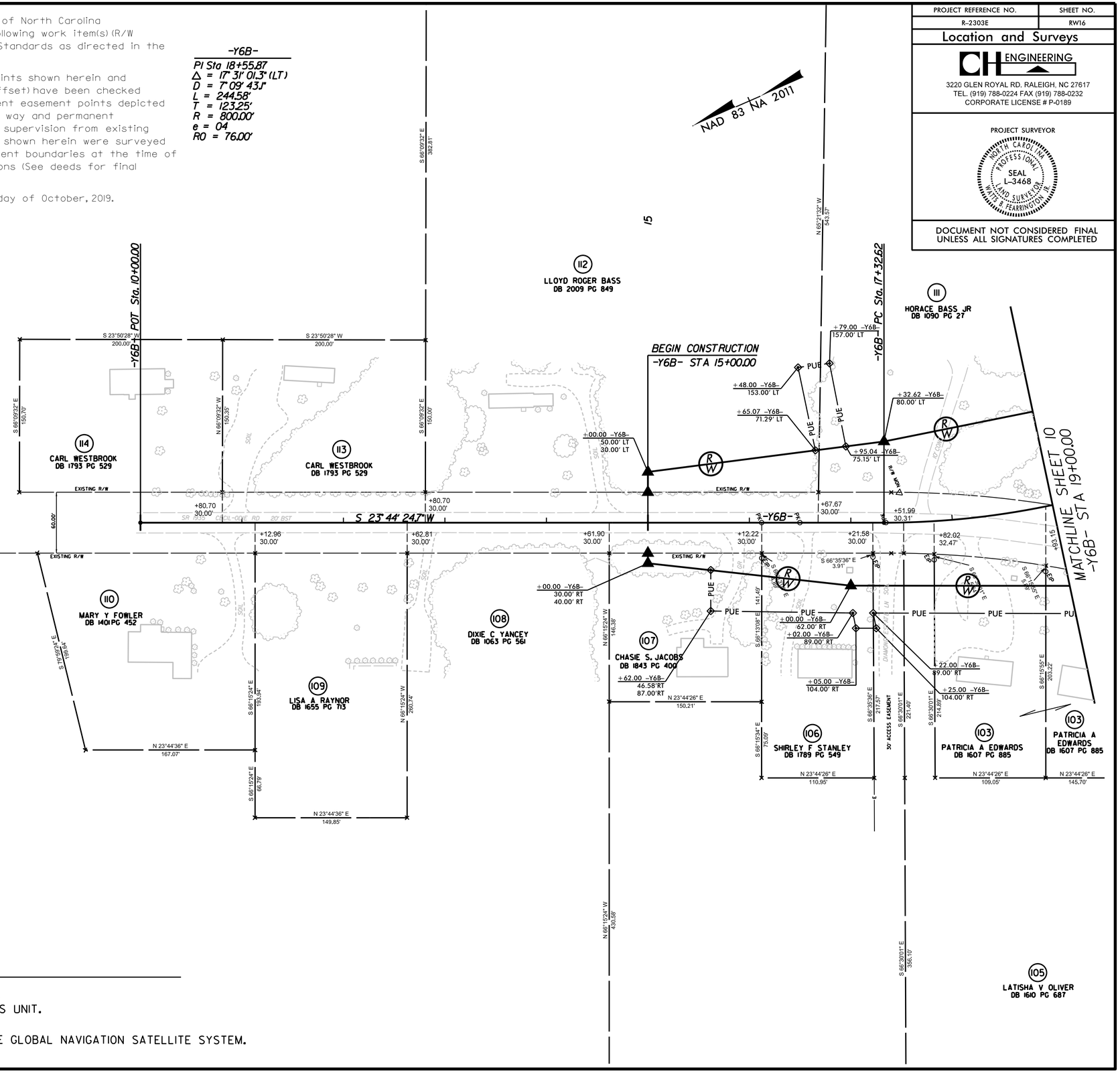
Location and Surveys

CH ENGINEERING
3220 GLEN ROYAL RD. RALEIGH, NC 27617
TEL. (919) 788-0224 FAX (919) 788-0232
CORPORATE LICENSE # P-0189

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3468 LAND SURVEYOR WATTS B. FEARRINGTON JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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$$$$SYSTIME$$$$ $$$$DGN$$$$ $$$$DGNFILENAME$$$$