SURVEY CONTROL SHEET R-4463AA

GPS Calibration Report

Project : R4463BZ

TIP Number	R-4463B		
User name	breigner	**Date & Time**	9:30:38 AM 8/7/2007
Coordinate System	US State Plane 1983(at ground)	**Zone**	North Carolina 3200
Horizontal Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD88	**Geoid Model**	Geoid03 (Conus) NC Sub Grid
Coordinate Units	US survey feet		
Distance Units	US survey feet		
Height Units	US survey feet		

LOCAL SITE INFORMATION

Localized around	R4463W-2
Latitude	35°07'15.49381"N
Longitude	77°06'49.84629"W
Site Scale Factor	1.0001201710
Height	-91.451sft

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	506495.691sft
Easting coordinate of rotation center	2562078.970sft
Rotation about the center point	0°00'00"
Translation north	-0.003sft
Translation east	-0.005sft
Scale factor	1.00000000

Vertical Adjustment Parameters

Northing coordinate of origin point	515845.823sft
Easting coordinate of origin point	2564832.156sft
Vertical separation at origin	-0.005sft
Slope north	0.729ppm
Slope east	-6.329ppm

Geoid Model Definition

Geoid03 (Conus) NC Sub Grid

Residual Differences Between GPS (WGS84) And Local Coordinates

Summary

	Maximum error	Root Mean Square error	Point
Horizontal	0.015sft	0.002	r4463w-1_GPS
Vertical	0.065sft	0.008	r4463w-4_GPS
Three-dimensional	0.065sft	0.008	r4463w-4_GPS

Point Residuals

WGS84 Coordinates		Calculated point FOR DISPLAY ONLY		Local Coordinates	
Point	r4463w-5_GPS	**Northing**	515845.823sft	**Point**	r4463w-5
Latitude	35°09'09.38116"N	**Easting**	2564832.156sft	**Northing**	515845.830sft
Longitude	77°06'36.80860"W	**Elevation**	24.342sft	**Easting**	2564832.158sft
Height	-97.270sft	**Horz error**	0.007sft	**Elevation**	24.393sft
		Vert error	0.051sft	**Utilized**	Horz and Vert
		3D error	0.051sft	**Quality**	Control quality
Point	r4463b-3_GPS	**Northing**	512142.814sft	**Point**	r4463b-3
Latitude	35°08'32.39559"N	**Easting**	2566780.800sft	**Northing**	512142.813sft
Longitude	77°06'14.19811"W	**Elevation**	29.550sft	**Easting**	2566780.800sft
Height	-92.131sft	**Horz error**	0.001sft	**Elevation**	29.550sft
		Vert error	0.000sft	**Utilized**	Horz and Vert
		3D error	0.001sft	**Quality**	Adjusted quality
Point	r4463b-4_GPS	**Northing**	511111.472sft	**Point**	r4463b-4
Latitude	35°08'22.03741"N	**Easting**	2567624.660sft	**Northing**	511111.468sft
Longitude	77°06'04.27662"W	**Elevation**	28.303sft	**Easting**	2567624.660sft
Height	-93.399sft	**Horz error**	0.005sft	**Elevation**	28.303sft
		Vert error	0.000sft	**Utilized**	Horz and Vert
		3D error	0.005sft	**Quality**	Adjusted quality
Point	r4463b-6_GPS	**Northing**	507836.864sft	**Point**	r4463b-6
Latitude	35°07'50.66780"N	**Easting**	2562248.219sft	**Northing**	507836.861sft
Longitude	77°07'09.74699"W	**Elevation**	26.826sft	**Easting**	2562248.220sft
Height	-94.878sft	**Horz error**	0.003sft	**Elevation**	26.826sft
		Vert error	0.000sft	**Utilized**	Horz and Vert
		3D error	0.003sft	**Quality**	Adjusted quality
Point	r4463b-5_GPS	**Northing**	509165.954sft	**Point**	r4463b-5
Latitude	35°08'03.88491"N	**Easting**	2561852.936sft	**Northing**	509165.951sft
Longitude	77°07'14.20212"W	**Elevation**	26.754sft	**Easting**	2561852.936sft
Height	-94.927sft	**Horz error**	0.002sft	**Elevation**	26.754sft
		Vert error	0.000sft	**Utilized**	Horz and Vert
		3D error	0.002sft	**Quality**	Adjusted quality
Point	r4463w-2_GPS	**Northing**	504312.546sft	**Point**	r4463w-2
Latitude	35°07'15.49380"N	**Easting**	2563968.476sft	**Northing**	504312.549sft
Longitude	77°06'49.84629"W	**Elevation**	30.323sft	**Easting**	2563968.482sft
Height	-91.451sft	**Horz error**	0.006sft	**Elevation**	30.331sft
		Vert error	0.008sft	**Utilized**	Horz and Vert
		3D error	0.010sft	**Quality**	Control quality
Point	r4463b-2_GPS	**Northing**	506108.779sft	**Point**	r4463b-2
Latitude	35°07'34.22639"N	**Easting**	2558782.749sft	**Northing**	506108.777sft
Longitude	77°07'51.85282"W	**Elevation**	28.708sft	**Easting**	2558782.750sft
Height	-92.994sft	**Horz error**	0.002sft	**Elevation**	28.707sft
		Vert error	0.000sft	**Utilized**	Horz and Vert
		3D error	0.002sft	**Quality**	Adjusted quality
Point	r4463b-1_GPS	**Northing**	506648.248sft	**Point**	r4463b-1
Latitude	35°07'39.85514"N	**Easting**	2557201.278sft	**Northing**	506648.245sft
Longitude	77°08'10.76617"W	**Elevation**	28.610sft	**Easting**	2557201.277sft
Height	-93.070sft	**Horz error**	0.003sft	**Elevation**	28.609sft
		Vert error	0.000sft	**Utilized**	Horz and Vert
		3D error	0.003sft	**Quality**	Adjusted quality
Point	r4463w-3_GPS	**Northing**	509065.864sft	**Point**	r4463w-3
Latitude	35°08'05.07527"N	**Easting**	2550086.057sft	**Northing**	509065.860sft
Longitude	77°09'35.87059"W	**Elevation**	28.843sft	**Easting**	2550086.050sft
Height	-92.741sft	**Horz error**	0.008sft	**Elevation**	28.823sft
		Vert error	0.020sft	**Utilized**	Horz and Vert
		3D error	0.022sft	**Quality**	Control quality
Point	flynns_GPS	**Northing**	492626.894sft	**Point**	flynns
Latitude	35°05'21.46434"N	**Easting**	2555776.128sft	**Northing**	492626.900sft
Longitude	77°08'31.07945"W	**Elevation**	23.461sft	**Easting**	2555776.129sft
Height	-98.445sft	**Horz error**	0.006sft	**Elevation**	23.458sft
		Vert error	0.003sft	**Utilized**	Horz and Vert
		3D error	0.006sft	**Quality**	Control quality
Point	r4463w-1_GPS	**Northing**	494991.763sft	**Point**	r4463w-1
Latitude	35°05'43.01554"N	**Easting**	2565599.890sft	**Northing**	494991.778sft

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
NCDOT FOR MONUMENT "R4463W-2"
WITH NAD 83/95 STATE PLANE GRID COORDINATES OF
NORTHING: 504312.549(ft) EASTING: 2563968.482(ft)
ELEVATION: 30.396(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999879843
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
"R4463W-2" TO -L- STATION 13+00.00 IS
S 71°37'18.3" W 7316.74'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

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