

GPS Calibration Report

Project : r2510cz

TIP Number	R-2510C	Date & Time	2:19:27 PM 9/28/2005
User name	breigner	Zone	North Carolina 3200
Coordinate System	US State Plane 1983(at ground)	Geoid Model	GEOID03 (Conus)
Horizontal Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD88		
Coordinate Units	US survey feet		
Distance Units	US survey feet		
Height Units	US survey feet		

LOCAL SITE INFORMATION

Localized around	R2510AW-2
Latitude	35°33'45.20023"N
Longitude	77°05'05.91010"W
Site Scale Factor	1.0001071915
Height	-116.567sft

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	678473.569sft
Easting coordinate of rotation center	2566146.400sft
Rotation about the center point	0°00'00"
Translation north	-0.007sft
Translation east	0.010sft

Scale factor 1.00000000

Vertical Adjustment Parameters

Northing coordinate of origin point 702368.578sft
 Easting coordinate of origin point 2486939.765sft
 Vertical separation at origin 0.022sft
 Slope north -0.997ppm
 Slope east -0.041ppm

Geoid Model Definition

GEOID03 (Conus)

Residual Differences Between GPS (WGS84) And Local Coordinates

Summary

	Maximum error	Root Mean Square error	Point
Horizontal	0.024sft	0.004	r2510b-11_GPS
Vertical	0.088sft	0.016	R2510C-7_GPS
Three-dimensional	0.088sft	0.016	R2510C-7_GPS

Point Residuals

WGS84 Coordinates		Calculated point FOR DISPLAY ONLY		Local Coordinates	
Point	MIDDLE_GPS	Northing	702368.578sft	Point	MIDDLE
Latitude	35°40'07.69974"N	Easting	2486939.765sft	Northing	702368.582sft
Longitude	77°21'37.60155"W	Elevation	42.085sft	Easting	2486939.754sft
Height	-75.290sft	Horz error	0.012sft	Elevation	42.064sft
		Vert error	0.022sft	Utilized	Horz and Vert
		3D error	0.025sft	Quality	Control quality
Point	GROVE_GPS	Northing	727662.502sft	Point	GROVE
Latitude	35°43'58.69920"N	Easting	2592422.694sft	Northing	727662.516sft
Longitude	77°00'13.30924"W	Elevation	36.693sft	Easting	2592422.704sft

Height	-82.475sft
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Horz error	0.017sft
Vert error	0.020sft
3D error	0.026sft

Elevation	36.673sft
Utilized	Horz and Vert
Quality	Control quality

Point	MCKREED_GPS
Latitude	35°29'02.51489"N
Longitude	77°02'57.96756"W
Height	-87.092sft

Northing	636792.413sft
Easting	2580630.167sft
Elevation	33.439sft
Horz error	0.013sft
Vert error	0.023sft
3D error	0.027sft

Point	MCKREED
Northing	636792.411sft
Easting	2580630.180sft
Elevation	33.415sft
Utilized	Horz and Vert
Quality	Control quality

Point	TEE_GPS
Latitude	35°24'59.40812"N
Longitude	77°15'40.02689"W
Height	-79.598sft

Northing	611044.345sft
Easting	2518048.600sft
Elevation	40.215sft
Horz error	0.005sft
Vert error	0.021sft
3D error	0.022sft

Point	TEE
Northing	611044.342sft
Easting	2518048.604sft
Elevation	40.236sft
Utilized	Horz and Vert
Quality	Control quality

Point	r2510b-11_GPS
Latitude	35°34'28.31557"N
Longitude	77°03'58.66522"W
Height	-89.650sft

Northing	669630.608sft
Easting	2574969.721sft
Elevation	30.330sft
Horz error	0.024sft
Vert error	?
3D error	0.024sft

Point	r2510b-11
Northing	669630.594sft
Easting	2574969.701sft
Elevation	30.140sft
Utilized	Horizontal
Quality	Control quality

Point	r2510b-12_GPS
Latitude	35°34'40.82760"N
Longitude	77°04'00.23343"W
Height	-90.974sft

Northing	670892.987sft
Easting	2574815.560sft
Elevation	28.980sft
Horz error	0.024sft
Vert error	0.060sft
3D error	0.064sft

Point	r2510b-12
Northing	670892.967sft
Easting	2574815.547sft
Elevation	28.920sft
Utilized	Horz and Vert
Quality	Control quality

Point	R2510C-1_GPS
Latitude	35°35'19.40921"N
Longitude	77°04'03.50235"W
Height	-93.804sft

Northing	674788.143sft
Easting	2574469.649sft
Elevation	26.069sft
Horz error	0.011sft
Vert error	0.059sft
3D error	0.060sft

Point	R2510C-1
Northing	674788.134sft
Easting	2574469.642sft
Elevation	26.010sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	R2510C-2_GPS
Latitude	35°35'31.83017"N
Longitude	77°04'05.20017"W

Northing	676041.115sft
Easting	2574305.005sft
Elevation	31.676sft

Point	R2510C-2
Northing	676041.111sft
Easting	2574305.002sft

Height	-88.169sft
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Horz error	0.004sft
Vert error	0.084sft
3D error	0.084sft

Elevation	31.760sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	R2510C-3_GPS
Latitude	35°36'29.78088"N
Longitude	77°03'50.43795"W
Height	-77.633sft

Northing	681923.423sft
Easting	2575409.727sft
Elevation	42.117sft
Horz error	0.004sft
Vert error	0.057sft
3D error	0.057sft

Point	R2510C-3
Northing	681923.425sft
Easting	2575409.730sft
Elevation	42.060sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	SHAW RM5_GPS
Latitude	35°36'41.19242"N
Longitude	77°04'15.84707"W
Height	-75.334sft

Northing	683036.242sft
Easting	2573289.563sft
Elevation	44.352sft
Horz error	0.004sft
Vert error	0.058sft
3D error	0.058sft

Point	SHAW RM5
Northing	683036.245sft
Easting	2573289.565sft
Elevation	44.410sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	R2510C-4_GPS
Latitude	35°37'26.72259"N
Longitude	77°03'44.24490"W
Height	-75.837sft

Northing	687689.974sft
Easting	2575808.637sft
Elevation	43.805sft
Horz error	0.008sft
Vert error	0.065sft
3D error	0.065sft

Point	R2510C-4
Northing	687689.980sft
Easting	2575808.643sft
Elevation	43.740sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	R2510C-5_GPS
Latitude	35°37'38.89834"N
Longitude	77°03'44.50225"W
Height	-76.336sft

Northing	688920.482sft
Easting	2575763.366sft
Elevation	43.281sft
Horz error	0.008sft
Vert error	0.049sft
3D error	0.050sft

Point	R2510C-5
Northing	688920.488sft
Easting	2575763.371sft
Elevation	43.330sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	R2510C-6_GPS
Latitude	35°38'21.11569"N
Longitude	77°03'53.01732"W
Height	-75.410sft

Northing	693174.795sft
Easting	2574977.324sft
Elevation	44.106sft
Horz error	0.009sft
Vert error	0.004sft
3D error	0.010sft

Point	R2510C-6
Northing	693174.803sft
Easting	2574977.328sft
Elevation	44.110sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	R2510C-7_GPS
Latitude	35°38'35.99293"N
Longitude	77°04'02.08185"W

Northing	694664.260sft
Easting	2574199.966sft
Elevation	40.682sft

Point	R2510C-7
Northing	694664.268sft
Easting	2574199.972sft

Height	-78.791sft
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Horz error	0.010sft
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Elevation	40.770sft
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Vert error	0.088sft
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Utilized	Horz and Vert
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3D error	0.088sft
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Quality	Adjusted quality
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