

GPS Calibration Report

Project : r3307 Calibration

TIP Number	R-3307	Date & Time	8:02:11 AM 5/1/2007
User name	breigner	Zone	North Carolina 3200
Coordinate System	US State Plane 1983(at ground)	Geoid Model	Geoid03 (Conus) NC Sub Grid
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	MRH A
Latitude	34°44'06.42000"N
Longitude	76°39'55.16263"W
Site Scale Factor	1.0000813570
Height	-118.952sft

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	367113.468sft
Easting coordinate of rotation center	2706349.095sft
Rotation about the center point	0°00'00"
Translation north	-0.020sft
Translation east	0.005sft
Scale factor	1.00000000

Vertical Adjustment Parameters

Northing coordinate of origin point	352226.701sft
Easting coordinate of origin point	2696914.564sft
Vertical separation at origin	-0.052sft
Slope north	3.182ppm
Slope east	-0.249ppm

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	0.028sft	0.004	R3307W-1_GPS
Vertical	0.034sft	0.005	MACO B_GPS
Three-dimensional	0.041sft	0.006	MACO B_GPS

Point Residuals

WGS84 Coordinates		Calculated point FOR DISPLAY ONLY		Local Coordinates	
Point	MACO B_GPS	Northing	352226.701sft	Point	MACO B
Latitude	34°41'43.56620"N	Easting	2696914.564sft	Northing	352226.685sft
Longitude	76°40'52.46971"W	Elevation	4.227sft	Easting	2696914.550sft
Height	-118.653sft	Horz error	0.022sft	Elevation	4.193sft
		Vert error	0.034sft	Utilized	Horz and Vert
		3D error	0.041sft	Quality	Control quality
Point	r3307-1_GPS	Northing	362194.290sft	Point	r3307-1
Latitude	34°43'21.25298"N	Easting	2700702.803sft	Northing	362194.275sft
Longitude	76°40'04.31112"W	Elevation	8.897sft	Easting	2700702.800sft
Height	-114.040sft	Horz error	0.015sft	Elevation	8.899sft
		Vert error	0.002sft	Utilized	Horz and Vert
		3D error	0.015sft	Quality	Adjusted quality
Point	R3307W-1_GPS	Northing	363137.729sft	Point	R3307W-1
Latitude	34°43'29.07780"N	Easting	2707147.635sft	Northing	363137.701sft
Longitude	76°38'46.85751"W	Elevation	7.195sft	Easting	2707147.642sft
Height	-115.786sft	Horz error	0.028sft	Elevation	7.221sft
		Vert error	0.026sft	Utilized	Horz and Vert
		3D error	0.038sft	Quality	Control quality
Point	r3307-4_GPS	Northing	365124.195sft	Point	r3307-4
Latitude	34°43'48.94226"N	Easting	2706202.700sft	Northing	365124.191sft
Longitude	76°38'57.61125"W	Elevation	9.744sft	Easting	2706202.701sft
Height	-113.239sft	Horz error	0.004sft	Elevation	9.762sft
		Vert error	0.018sft	Utilized	Horz and Vert
		3D error	0.019sft	Quality	Adjusted quality
Point	MRH A_GPS	Northing	366777.354sft	Point	MRH A
Latitude	34°44'06.41999"N	Easting	2701358.874sft	Northing	366777.373sft
Longitude	76°39'55.16263"W	Elevation	4.010sft	Easting	2701358.869sft
Height	-118.952sft	Horz error	0.019sft	Elevation	4.016sft
		Vert error	0.006sft	Utilized	Horz and Vert
		3D error	0.020sft	Quality	Control quality
Point	R3307-5_GPS	Northing	370089.732sft	Point	R3307-5
Latitude	34°44'37.86523"N	Easting	2706964.064sft	Northing	370089.737sft

Longitude	76°38'47.08170"W
Height	-113.807sft

Elevation	9.204sft
Horz error	0.004sft
Vert error	0.002sft
3D error	0.005sft

Easting	2706964.065sft
Elevation	9.206sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	R3307-6_GPS
Latitude	34°44'28.62859"N
Longitude	76°38'29.10073"W
Height	-112.316sft

Northing	369191.783sft
Easting	2708486.385sft
Elevation	10.701sft
Horz error	0.003sft
Vert error	0.006sft
3D error	0.006sft

Point	R3307-6
Northing	369191.785sft
Easting	2708486.387sft
Elevation	10.707sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	r3307-8_GPS
Latitude	34°44'59.45047"N
Longitude	76°37'49.96724"W
Height	-116.870sft

Northing	372384.751sft
Easting	2711676.985sft
Elevation	6.185sft
Horz error	0.006sft
Vert error	0.007sft
3D error	0.009sft

Point	r3307-8
Northing	372384.755sft
Easting	2711676.988sft
Elevation	6.178sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	r3307-7_GPS
Latitude	34°45'03.76719"N
Longitude	76°38'04.70519"W
Height	-113.098sft

Northing	372791.721sft
Easting	2710437.106sft
Elevation	9.951sft
Horz error	0.009sft
Vert error	0.008sft
3D error	0.012sft

Point	r3307-7
Northing	372791.729sft
Easting	2710437.109sft
Elevation	9.942sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	R3307-3_GPS
Latitude	34°44'01.84027"N
Longitude	76°39'04.35932"W
Height	-116.398sft

Northing	366414.486sft
Easting	2705608.770sft
Elevation	6.588sft
Horz error	0.004sft
Vert error	0.014sft
3D error	0.015sft

Point	R3307-3
Northing	366414.490sft
Easting	2705608.770sft
Elevation	6.602sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	R3307W-2_GPS
Latitude	34°45'38.15390"N
Longitude	76°37'46.32884"W
Height	-119.148sft

Northing	376303.796sft
Easting	2711887.085sft
Elevation	3.933sft
Horz error	0.021sft
Vert error	0.024sft
3D error	0.032sft

Point	R3307W-2
Northing	376303.817sft
Easting	2711887.088sft
Elevation	3.909sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	R3307W-3_GPS
Latitude	34°44'55.09368"N
Longitude	76°37'23.95254"W
Height	-121.043sft

Northing	371996.294sft
Easting	2713857.745sft
Elevation	2.028sft
Horz error	0.005sft
Vert error	0.008sft
3D error	0.009sft

Point	R3307W-3
Northing	371996.293sft
Easting	2713857.750sft
Elevation	2.020sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	R3307-2_GPS
Latitude	34°43'37.40887"N
Longitude	76°39'56.77155"W
Height	-119.390sft

Northing	363841.987sft
Easting	2701293.588sft
Elevation	3.558sft
Horz error	0.003sft
Vert error	0.007sft
3D error	0.007sft

Point	R3307-2
Northing	363841.987sft
Easting	2701293.585sft
Elevation	3.565sft
Utilized	Horz and Vert
Quality	Adjusted quality