

GPS Calibration Report

Project : r2633ab_z

TIP Number	r2633 AB	Date & Time	2:04:32 PM 3/27/2006
User name	jneal	Zone	North Carolina 3200(3)
Coordinate System	Site(at ground)	Geoid Model	GEOID03 (Conus)(2)
Horizontal Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD 88		
Coordinate Units	US survey feet		
Distance Units	US survey feet		
Height Units	US survey feet		

LOCAL SITE INFORMATION

Localized around	PHOENIX 2
Latitude	34°17'07.13697"N
Longitude	78°04'45.45174"W
Site Scale Factor	0.9999721010
Height	-51.790sft

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	182836.287sft
Easting coordinate of rotation center	2288166.692sft
Rotation about the center point	0°00'00"
Translation north	0.002sft
Translation east	-0.005sft
Scale factor	1.00000010

Vertical Adjustment Parameters

Northing coordinate of origin point	155960.007sft
Easting coordinate of origin point	2276068.189sft
Vertical separation at origin	0.143sft
Slope north	-2.970ppm
Slope east	1.302ppm

Geoid Model Definition

GEOID03 (Conus)(2)

Residual Differences Between GPS (WGS84) And Local Coordinates

Summary			
	Maximum error	Root Mean Square error	Point
Horizontal	0.001sft	0.000	Crossover_GPS
Vertical	0.099sft	0.013	R2633AB-6_GPS
Three-dimensional	0.099sft	0.013	R2633AB-6_GPS

Point Residuals

WGS84 Coordinates		Calculated point FOR DISPLAY ONLY		Local Coordinates	
Point	r2633ab-3_GPS	Northing	155960.007sft	Point	r2633ab-3
Latitude	34°10'30.06193"N	Easting	2276068.189sft	Northing	155960.007sft
Longitude	78°05'14.41103"W	Elevation	21.233sft	Easting	2276068.190sft
Height	-98.598sft	Horz error	0.000sft	Elevation	21.199sft
		Vert error	0.034sft	Utilized	Horz and Vert
		3D error	0.034sft	Quality	Adjusted quality
Point	r2633ab-2_GPS	Northing	157482.842sft	Point	r2633ab-2
Latitude	34°10'45.05824"N	Easting	2276800.926sft	Northing	157482.842sft
Longitude	78°05'05.52363"W	Elevation	25.248sft	Easting	2276800.927sft
Height	-94.556sft	Horz error	0.000sft	Elevation	25.161sft
		Vert error	0.088sft	Utilized	Horz and Vert
		3D error	0.088sft	Quality	Adjusted quality
Point	r2633ab-4_GPS	Northing	163101.269sft	Point	r2633ab-4
Latitude	34°11'40.19955"N	Easting	2281510.100sft	Northing	163101.269sft
Longitude	78°04'08.84982"W	Elevation	19.484sft	Easting	2281510.101sft
Height	-100.279sft	Horz error	0.000sft	Elevation	19.540sft
		Vert error	0.056sft	Utilized	Horz and Vert
		3D error	0.056sft	Quality	Adjusted quality
Point	r2633ab-5_GPS	Northing	163905.843sft	Point	r2633ab-5
Latitude	34°11'48.03700"N	Easting	2282811.187sft	Northing	163905.842sft
Longitude	78°03'53.27169"W	Elevation	37.147sft	Easting	2282811.188sft
Height	-82.630sft	Horz error	0.000sft	Elevation	37.117sft
		Vert error	0.030sft	Utilized	Horz and Vert
		3D error	0.030sft	Quality	Adjusted quality
Point	R2633AB-6_GPS	Northing	163460.218sft	Point	R2633AB-6
Latitude	34°11'43.86771"N	Easting	2280239.165sft	Northing	163460.218sft
Longitude	78°04'23.93893"W	Elevation	24.964sft	Easting	2280239.165sft
Height	-94.749sft	Horz error	0.000sft	Elevation	25.063sft
		Vert error	0.099sft	Utilized	Horz and Vert
		3D error	0.099sft	Quality	Adjusted quality
Point	r2633ab-7_GPS	Northing	174900.776sft	Point	r2633ab-7
Latitude	34°13'37.13239"N	Easting	2279148.653sft	Northing	174900.776sft

Longitude	78°04'35.65348"W
Height	-60.399sft

Elevation	58.911sft
Horz error	0.000sft
Vert error	0.074sft
3D error	0.074sft

Easting	2279148.653sft
Elevation	58.985sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	R2633AB-8_GPS
Latitude	34°13'49.27985"N
Longitude	78°04'36.96772"W
Height	-57.664sft

Northing	176127.712sft
Easting	2279026.882sft
Elevation	61.601sft
Horz error	0.000sft
Vert error	0.015sft
3D error	0.015sft

Point	R2633AB-8
Northing	176127.711sft
Easting	2279026.882sft
Elevation	61.586sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	R2633AB-9_GPS
Latitude	34°15'37.79538"N
Longitude	78°05'10.27516"W
Height	-53.064sft

Northing	187071.436sft
Easting	2276129.314sft
Elevation	65.763sft
Horz error	0.000sft
Vert error	0.025sft
3D error	0.025sft

Point	R2633AB-9
Northing	187071.436sft
Easting	2276129.314sft
Elevation	65.788sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	Culvert_GPS
Latitude	34°15'32.42311"N
Longitude	78°04'57.50205"W
Height	-54.435sft

Northing	186538.254sft
Easting	2277206.408sft
Elevation	64.441sft
Horz error	0.000sft
Vert error	0.049sft
3D error	0.049sft

Point	Culvert
Northing	186538.254sft
Easting	2277206.408sft
Elevation	64.490sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	Crossover_GPS
Latitude	34°15'55.81045"N
Longitude	78°05'52.19916"W
Height	-54.717sft

Northing	188860.353sft
Easting	2272593.989sft
Elevation	63.955sft
Horz error	0.001sft
Vert error	0.091sft
3D error	0.091sft

Point	Crossover
Northing	188860.354sft
Easting	2272593.990sft
Elevation	63.865sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	GUARD_GPS
Latitude	34°15'25.90542"N
Longitude	78°03'26.44768"W
Height	-54.114sft

Northing	185950.999sft
Easting	2284855.183sft
Elevation	65.014sft
Horz error	0.000sft
Vert error	?
3D error	0.000sft

Point	GUARD
Northing	185950.999sft
Easting	2284855.183sft
Elevation	65.239sft
Utilized	Horizontal
Quality	Adjusted quality

Point	PHOENIX2_GPS
Latitude	34°17'07.13693"N
Longitude	78°04'45.45168"W
Height	-51.829sft

Northing	196121.992sft
Easting	2278129.037sft
Elevation	66.792sft
Horz error	0.000sft
Vert error	0.012sft
3D error	0.012sft

Point	PHOENIX2
Northing	196121.992sft
Easting	2278129.037sft
Elevation	66.805sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	r2633ab-10_GPS
Latitude	34°16'31.31185"N
Longitude	78°02'51.91211"W
Height	-84.996sft

Northing	192590.417sft
Easting	2287690.511sft
Elevation	34.020sft
Horz error	0.000sft
Vert error	0.001sft
3D error	0.001sft

Point	r2633ab-10
Northing	192590.417sft
Easting	2287690.511sft
Elevation	34.021sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	r2633ab-11_GPS
Latitude	34°16'43.95360"N

Northing	193867.094sft
Easting	2287548.981sft

Point	r2633ab-11
Northing	193867.094sft

Longitude	78°02'53.45265"W
Height	-84.502sft

Elevation	34.472sft
Horz error	0.000sft
Vert error	0.002sft
3D error	0.002sft

Easting	2287548.981sft
Elevation	34.474sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	r2633ab-12_GPS
Latitude	34°16'44.15896"N
Longitude	78°01'15.60457"W
Height	-99.959sft

Northing	193967.705sft
Easting	2295759.507sft
Elevation	19.283sft
Horz error	0.000sft
Vert error	0.004sft
3D error	0.004sft

Point	r2633ab-12
Northing	193967.705sft
Easting	2295759.507sft
Elevation	19.279sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	r2633ab-13_GPS
Latitude	34°16'33.95558"N
Longitude	78°01'09.37399"W
Height	-98.107sft

Northing	192941.439sft
Easting	2296292.523sft
Elevation	21.184sft
Horz error	0.000sft
Vert error	0.006sft
3D error	0.006sft

Point	r2633ab-13
Northing	192941.439sft
Easting	2296292.523sft
Elevation	21.178sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	r2633ab-17_GPS
Latitude	34°16'23.05570"N
Longitude	78°00'35.43273"W
Height	-101.746sft

Northing	191867.882sft
Easting	2299151.719sft
Elevation	17.681sft
Horz error	0.000sft
Vert error	0.009sft
3D error	0.009sft

Point	r2633ab-17
Northing	191867.882sft
Easting	2299151.719sft
Elevation	17.672sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	r2633ab-18_GPS
Latitude	34°16'23.17837"N
Longitude	78°00'23.32406"W
Height	-102.285sft

Northing	191890.435sft
Easting	2300167.740sft
Elevation	17.177sft
Horz error	0.000sft
Vert error	0.010sft
3D error	0.010sft

Point	r2633ab-18
Northing	191890.434sft
Easting	2300167.740sft
Elevation	17.167sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	r2633ab-14_GPS
Latitude	34°16'40.27850"N
Longitude	77°58'46.22883"W
Height	-109.282sft

Northing	193701.682sft
Easting	2308298.063sft
Elevation	10.417sft
Horz error	0.000sft
Vert error	0.014sft
3D error	0.014sft

Point	r2633ab-14
Northing	193701.682sft
Easting	2308298.063sft
Elevation	10.403sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	r2633ab-15_GPS
Latitude	34°16'30.35823"N
Longitude	77°58'39.09494"W
Height	-107.854sft

Northing	192705.039sft
Easting	2308907.023sft
Elevation	11.900sft
Horz error	0.000sft
Vert error	0.015sft
3D error	0.015sft

Point	r2633ab-15
Northing	192705.039sft
Easting	2308907.023sft
Elevation	11.885sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	r2633ab-16_GPS
Latitude	34°17'04.26301"N
Longitude	77°57'53.82936"W
Height	-87.494sft

Northing	196171.708sft
Easting	2312669.810sft
Elevation	32.293sft
Horz error	0.000sft
Vert error	?
3D error	0.000sft

Point	r2633ab-16
Northing	196171.708sft
Easting	2312669.810sft
Elevation	32.106sft
Utilized	Horizontal
Quality	Adjusted quality

Point	r2633c-79_GPS
Latitude	34°17'14.91148"N

Northing	197241.003sft
Easting	2311975.296sft

Point	r2633c-79
Northing	197241.004sft

Longitude	77°58'01.97309"W
Height	-95.844sft

Elevation	23.884sft
Horz error	0.000sft
Vert error	0.013sft
3D error	0.013sft

Easting	2311975.296sft
Elevation	23.898sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	Lanvale_GPS
Latitude	34°12'37.26313"N
Longitude	78°05'27.46559"W
Height	-50.203sft

Northing	168808.541sft
Easting	2274853.604sft
Elevation	69.182sft
Horz error	0.000sft
Vert error	0.017sft
3D error	0.017sft

Point	Lanvale
Northing	168808.542sft
Easting	2274853.604sft
Elevation	69.164sft
Utilized	Horz and Vert
Quality	Adjusted quality