

# GPS Calibration Report

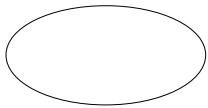
*Project : R2237c*

<b>TIP Number</b>	R-2237C	<b>Date &amp; Time</b>	8:22:37 AM 5/6/03
<b>User name</b>	rgmiller	<b>Zone</b>	North Carolina 3200
<b>Coordinate System</b>	US State Plane 1983(at ground)	<b>Geoid Model</b>	Geoid99 NC Sub Grid
<b>Horizontal Datum</b>	NAD 1983 (Conus)		
<b>Vertical Datum</b>			
<b>Coordinate Units</b>	US survey feet		
<b>Distance Units</b>	US survey feet		
<b>Height Units</b>	US survey feet		

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## LOCAL SITE INFORMATION

Localized around  
Latitude 36°07'05.08084"N  
Longitude 81°39'37.21709"W  
Site Scale Factor 1.0001428400



The North Carolina Department of Transportation us 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.

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## Datum Transformation Parameters

Datum Transformation computation not requested

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## Updated Default Projection (Transverse Mercator) Definition

Updated default projection not requested

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## Horizontal Adjustment Parameters

<b>Northing coordinate of rotation center</b>	874674.842sft
<b>Easting coordinate of rotation center</b>	1213271.217sft
<b>Rotation about the center point</b>	0°00'01"
<b>Translation north</b>	0.188sft
<b>Translation east</b>	-0.179sft
<b>Scale factor</b>	0.99999897

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## Vertical Adjustment Parameters

<b>Northing coordinate of origin point</b>	867565.422sft
<b>Easting coordinate of origin point</b>	1218315.113sft
<b>Vertical separation at origin</b>	-0.067sft
<b>Slope north</b>	-13.988ppm
<b>Slope east</b>	-8.473ppm

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# Geoid Model Definition

Geoid99 NC Sub Grid

## Residual Differences Between GPS (WGS84) And Local Coordinates

### Summary

	Maximum error	Root Mean Square error	Point
Horizontal	0.110sft	0.015	BR3_WGS84
Vertical	0.165sft	0.023	BR3_WGS84
Three-dimensional	0.198sft	0.028	BR3_WGS84

### Point Residuals

#### WGS84 Coordinates

Point	BR2_WGS84
Latitude	36°06'18.24308"N
Longitude	81°38'46.96173"W
Height	2860.804sft

#### Calculated point FOR DISPLAY ONLY

Northing	867565.422sft
Easting	1218315.113sft
Elevation	2964.720sft
Horz error	0.060sft
Vert error	0.050sft
3D error	0.078sft

#### Local Coordinates

Point BR2	
Northing	867565.439sft
Easting	1218315.171sft
Elevation	2964.670sft
Utilized	Horz and Vert
Quality	Control quality

Point	BR3_WGS84
Latitude	36°06'44.67391"N
Longitude	81°39'32.08825"W
Height	3239.063sft

Northing	870336.552sft
Easting	1214684.456sft
Elevation	3342.715sft
Horz error	<b>0.110sft</b>
Vert error	<b>0.165sft</b>
3D error	<b>0.198sft</b>

Point BR3	
Northing	870336.568sft
Easting	1214684.347sft
Elevation	3342.880sft
Utilized	Horz and Vert
Quality	Control quality

Point	BR4_WGS84
Latitude	36°07'05.07924"N
Longitude	81°39'37.21497"W
Height	3550.207sft

Northing	872410.808sft
Easting	1214319.199sft
Elevation	3653.721sft
Horz error	0.030sft
Vert error	0.081sft
3D error	0.087sft

Point BR4	
Northing	872410.789sft
Easting	1214319.222sft
Elevation	3653.640sft
Utilized	Horz and Vert
Quality	Control quality

Point	R2237C-1_WGS84
Latitude	36°07'35.33767"N
Longitude	81°40'17.18538"W
Height	3451.733sft

Northing	875558.030sft
Easting	1211122.855sft
Elevation	3554.974sft
Horz error	0.017sft
Vert error	0.055sft
3D error	0.058sft

Point R2237C-1	
Northing	875558.014sft
Easting	1211122.860sft
Elevation	3554.918sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	R2237C-2_WGS84
Latitude	36°07'48.16852"N
Longitude	81°40'17.87419"W
Height	3400.434sft

Northing	876856.756sft
Easting	1211101.287sft
Elevation	3503.595sft
Horz error	0.010sft
Vert error	0.024sft
3D error	0.026sft

Point R2237C-2	
Northing	876856.747sft
Easting	1211101.291sft
Elevation	3503.571sft
Utilized	Horz and Vert
Quality	Adjusted quality

Point	R2237C-3_WGS84
Latitude	36°08'11.25093"N

Northing	879183.083sft
Easting	1211436.046sft

Point R2237C-3	
Northing	879183.086sft

<b>Longitude</b>	81°40'14.55839"W
<b>Height</b>	3427.742sft

<b>Elevation</b>	3530.772sft
<b>Horz error</b>	0.008sft
<b>Vert error</b>	0.005sft
<b>3D error</b>	0.010sft

<b>Easting</b>	1211436.054sft
<b>Elevation</b>	3530.778sft
<b>Utilized</b>	Horz and Vert
<b>Quality</b>	Adjusted quality

<b>Point</b>	R2237C-4_WGS84
<b>Latitude</b>	36°08'27.50461"N
<b>Longitude</b>	81°40'09.21679"W
<b>Height</b>	3372.083sft

<b>Northing</b>	880814.559sft
<b>Easting</b>	1211918.313sft
<b>Elevation</b>	3475.031sft
<b>Horz error</b>	0.014sft
<b>Vert error</b>	0.041sft
<b>3D error</b>	0.043sft

<b>Point</b>	R2237C-4
<b>Northing</b>	880814.567sft
<b>Easting</b>	1211918.324sft
<b>Elevation</b>	3475.072sft
<b>Utilized</b>	Horz and Vert
<b>Quality</b>	Adjusted quality