

# GPS Calibration Report

*Project : K4703*

<b>TIP Number</b>	K-4703	<b>Date &amp; Time</b>	10:19:44 AM 3/18/2004
<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>	Geoid03 (Conus) NC Sub Grid
<b>Horizontal Datum</b>	NAD 1983 (Conus)		
<b>Vertical Datum</b>	NAVD88		
<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	K4703-2
Latitude	36°08'00.16345"N
Longitude	81°07'24.90169"W
Site Scale Factor	1.0000573300
Height	1015.549sft

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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.

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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>	864440.943sft
<b>Easting coordinate of rotation center</b>	1391037.847sft
<b>Rotation about the center point</b>	0°00'00"
<b>Translation north</b>	-0.007sft
<b>Translation east</b>	-0.003sft
<b>Scale factor</b>	1.00000005

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## Vertical Adjustment Parameters

<b>Northing coordinate of origin point</b>	874031.353sft
<b>Easting coordinate of origin point</b>	1371930.348sft
<b>Vertical separation at origin</b>	-0.023sft
<b>Slope north</b>	-0.087ppm
<b>Slope east</b>	-0.836ppm

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# 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	0.007sft	0.001	RONDA 2_GPS
Vertical	0.016sft	0.002	RONDA 2_GPS
Three-dimensional	0.017sft	0.003	RONDA 2_GPS

### Point Residuals

WGS84 Coordinates		Calculated point FOR DISPLAY ONLY		Local Coordinates	
<b>Point</b>	K4703-1_GPS	<b>Northing</b>	874031.353sft	<b>Point</b> K4703-1	
<b>Latitude</b>	36°07'58.68065"N	<b>Easting</b>	1371930.348sft	<b>Northing</b>	874031.353sft
<b>Longitude</b>	81°07'37.06801"W	<b>Elevation</b>	1104.724sft	<b>Easting</b>	1371930.349sft
<b>Height</b>	996.247sft	<b>Horz error</b>	0.001sft	<b>Elevation</b>	1104.725sft
		<b>Vert error</b>	0.001sft	<b>Utilized</b>	Horz and Vert
		<b>3D error</b>	0.002sft	<b>Quality</b>	Adjusted quality
<b>Point</b>	K4703-2_GPS	<b>Northing</b>	874159.911sft	<b>Point</b> K4703-2	
<b>Latitude</b>	36°08'00.16350"N	<b>Easting</b>	1372931.403sft	<b>Northing</b>	874159.911sft
<b>Longitude</b>	81°07'24.90166"W	<b>Elevation</b>	1124.060sft	<b>Easting</b>	1372931.404sft
<b>Height</b>	1015.571sft	<b>Horz error</b>	0.001sft	<b>Elevation</b>	1124.062sft
		<b>Vert error</b>	0.002sft	<b>Utilized</b>	Horz and Vert
		<b>3D error</b>	0.002sft	<b>Quality</b>	Adjusted quality
<b>Point</b>	K4703-3_GPS	<b>Northing</b>	874871.404sft	<b>Point</b> K4703-3	
<b>Latitude</b>	36°08'08.08665"N	<b>Easting</b>	1377149.680sft	<b>Northing</b>	874871.404sft
<b>Longitude</b>	81°06'33.67733"W	<b>Elevation</b>	1122.369sft	<b>Easting</b>	1377149.679sft
<b>Height</b>	1013.824sft	<b>Horz error</b>	0.000sft	<b>Elevation</b>	1122.374sft
		<b>Vert error</b>	0.004sft	<b>Utilized</b>	Horz and Vert
		<b>3D error</b>	0.004sft	<b>Quality</b>	Adjusted quality
<b>Point</b>	K4703-4_GPS	<b>Northing</b>	875122.575sft	<b>Point</b> K4703-4	
<b>Latitude</b>	36°08'10.81482"N	<b>Easting</b>	1378317.124sft	<b>Northing</b>	875122.574sft
<b>Longitude</b>	81°06'19.51409"W	<b>Elevation</b>	1149.493sft	<b>Easting</b>	1378317.123sft
<b>Height</b>	1040.931sft	<b>Horz error</b>	0.002sft	<b>Elevation</b>	1149.497sft
		<b>Vert error</b>	0.005sft	<b>Utilized</b>	Horz and Vert
		<b>3D error</b>	0.005sft	<b>Quality</b>	Adjusted quality
<b>Point</b>	B 90_GPS	<b>Northing</b>	892948.360sft	<b>Point</b> B 90	
<b>Latitude</b>	36°11'00.72155"N	<b>Easting</b>	1348895.312sft	<b>Northing</b>	892948.362sft
<b>Longitude</b>	81°12'22.91593"W	<b>Elevation</b>	1335.606sft	<b>Easting</b>	1348895.315sft
<b>Height</b>	1227.609sft	<b>Horz error</b>	0.003sft	<b>Elevation</b>	1335.611sft
		<b>Vert error</b>	0.005sft	<b>Utilized</b>	Horz and Vert
		<b>3D error</b>	0.006sft	<b>Quality</b>	Control quality
<b>Point</b>	RONDA 2_GPS	<b>Northing</b>	909111.397sft	<b>Point</b> RONDA 2	
<b>Latitude</b>	36°13'57.89849"N	<b>Easting</b>	1433505.930sft	<b>Northing</b>	909111.404sft

<b>Longitude</b>	80°55'14.88755"W
<b>Height</b>	1033.310sft

<b>Elevation</b>	1142.606sft
<b>Horz error</b>	<b>0.007sft</b>
<b>Vert error</b>	<b>0.016sft</b>
<b>3D error</b>	<b>0.017sft</b>

<b>Easting</b>	1433505.929sft
<b>Elevation</b>	1142.590sft
<b>Utilized</b>	Horz and Vert
<b>Quality</b>	Control quality

<b>Point</b>	HOUSTON RESET_GP
<b>Latitude</b>	36°01'00.76265"N
<b>Longitude</b>	80°42'49.48472"W
<b>Height</b>	937.813sft

<b>Northing</b>	829414.557sft
<b>Easting</b>	1493212.946sft
<b>Elevation</b>	1046.054sft
<b>Horz error</b>	0.006sft
<b>Vert error</b>	0.007sft
<b>3D error</b>	0.010sft

<b>Point</b>	HOUSTON RESET
<b>Northing</b>	829414.553sft
<b>Easting</b>	1493212.941sft
<b>Elevation</b>	1046.061sft
<b>Utilized</b>	Horz and Vert
<b>Quality</b>	Control quality

<b>Point</b>	FAIR_GPS
<b>Latitude</b>	35°53'22.84485"N
<b>Longitude</b>	81°11'11.89806"W
<b>Height</b>	1064.950sft

<b>Northing</b>	785867.937sft
<b>Easting</b>	1352360.008sft
<b>Elevation</b>	1171.660sft
<b>Horz error</b>	0.005sft
<b>Vert error</b>	0.009sft
<b>3D error</b>	0.010sft

<b>Point</b>	FAIR
<b>Northing</b>	785867.933sft
<b>Easting</b>	1352360.011sft
<b>Elevation</b>	1171.651sft
<b>Utilized</b>	Horz and Vert
<b>Quality</b>	Control quality