

# GPS Calibration Report

*Project : U3601*

<b>TIP Number</b>	U-3601	<b>Date &amp; Time</b>	1:13:38 PM 11/13/2003
<b>User name</b>	jpgordon	<b>Zone</b>	North Carolina 3200
<b>Coordinate System</b>	US State Plane 1983(at ground)	<b>Geoid Model</b>	GEOID99 (Conus)
<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		

## LOCAL SITE INFORMATION

Localized around	
Latitude	35°31'56.30503"N
Longitude	82°36'18.49658"W
Site Scale Factor	1.0002177000

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

<b>Northing coordinate of rotation center</b>	670880.611sft
<b>Easting coordinate of rotation center</b>	925629.442sft
<b>Rotation about the center point</b>	0°00'00"
<b>Translation north</b>	0.604sft
<b>Translation east</b>	-0.437sft
<b>Scale factor</b>	1.00021775

## Vertical Adjustment Parameters

Northing coordinate of origin point	702925.199sft
Easting coordinate of origin point	899882.354sft
Vertical separation at origin	-0.065sft
Slope north	-2.400ppm
Slope east	0.701ppm

## Geoid Model Definition

GEOID99 (Conus)

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

### Summary

	Maximum error	Root Mean Square error	Point
Horizontal	0.011sft	0.002	<u>BASE STATION WGS</u>
Vertical	0.067sft	0.010	<u>PLEMMONS WGS84</u>
Three-dimensional	0.067sft	0.010	<u>PLEMMONS WGS84</u>

### Point Residuals

WGS84 Coordinates		Calculated point FOR DISPLAY ONLY		Local Coordinates	
<b>Point</b>	<u>PLEMMONS WGS84</u>	<b>Northing</b>	702925.199sft	<b>Point</b>	<u>PLEMMONS Local</u>
<b>Latitude</b>	35°37'29.91996"N	<b>Easting</b>	899882.354sft	<b>Northing</b>	702925.200sft
<b>Longitude</b>	82°42'09.86709"W	<b>Elevation</b>	2208.564sft	<b>Easting</b>	899882.349sft
<b>Height</b>	2111.026sft	<b>Horz error</b>	<b>0.005sft</b>	<b>Elevation</b>	2208.631sft
		<b>Vert error</b>	<b>0.067sft</b>	<b>Utilized</b>	Horz and Vert
		<b>3D error</b>	<b>0.067sft</b>	<b>Quality</b>	Survey quality
<b>Point</b>	<u>27 EG 1 WGS84</u>	<b>Northing</b>	657282.919sft	<b>Point</b>	<u>27 EG 1 Local</u>
<b>Latitude</b>	35°29'55.04183"N	<b>Easting</b>	889219.372sft	<b>Northing</b>	657282.916sft
<b>Longitude</b>	82°43'58.11483"W	<b>Elevation</b>	2305.326sft	<b>Easting</b>	889219.370sft
<b>Height</b>	2208.664sft	<b>Horz error</b>	0.004sft	<b>Elevation</b>	2305.291sft
		<b>Vert error</b>	0.035sft	<b>Utilized</b>	Horz and Vert

		<b>3D error</b>	0.036sft	<b>Quality</b>	Survey quality
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<b>Point</b>	<a href="#">CRANSTON_WGS84</a>	<b>Northing</b>	625689.739sft	<b>Point</b>	<a href="#">CRANSTON_Local</a>
<b>Latitude</b>	35°25'06.92657"N	<b>Easting</b>	955916.124sft	<b>Northing</b>	625689.747sft
<b>Longitude</b>	82°30'18.77096"W	<b>Elevation</b>	2070.890sft	<b>Easting</b>	955916.121sft
<b>Height</b>	1971.246sft	<b>Horz error</b>	0.008sft	<b>Elevation</b>	2070.931sft
		<b>Vert error</b>	0.041sft	<b>Utilized</b>	Horz and Vert
		<b>3D error</b>	0.042sft	<b>Quality</b>	Survey quality

  

<b>Point</b>	<a href="#">BASE STATION_WGS</a>	<b>Northing</b>	691935.872sft	<b>Point</b>	<a href="#">BASE STATION_Loc</a>
<b>Latitude</b>	35°35'58.01142"N	<b>Easting</b>	946059.678sft	<b>Northing</b>	691935.869sft
<b>Longitude</b>	82°32'46.31836"W	<b>Elevation</b>	2265.781sft	<b>Easting</b>	946059.689sft
<b>Height</b>	2167.414sft	<b>Horz error</b>	<b>0.011sft</b>	<b>Elevation</b>	2265.747sft
		<b>Vert error</b>	<b>0.034sft</b>	<b>Utilized</b>	Horz and Vert
		<b>3D error</b>	<b>0.036sft</b>	<b>Quality</b>	Survey quality

  

<b>Point</b>	<a href="#">U3601-1_WGS84</a>	<b>Northing</b>	666629.120sft	<b>Point</b>	<a href="#">U3601-1_Local</a>
<b>Latitude</b>	35°31'41.28099"N	<b>Easting</b>	927258.627sft	<b>Northing</b>	666629.117sft
<b>Longitude</b>	82°36'22.62876"W	<b>Elevation</b>	2190.293sft	<b>Easting</b>	927258.627sft
<b>Height</b>	2092.296sft	<b>Horz error</b>	0.002sft	<b>Elevation</b>	2190.282sft
		<b>Vert error</b>	0.011sft	<b>Utilized</b>	Horz and Vert
		<b>3D error</b>	0.011sft	<b>Quality</b>	Survey quality

  

<b>Point</b>	<a href="#">U3601-2_WGS84</a>	<b>Northing</b>	668135.327sft	<b>Point</b>	<a href="#">U3601-2_Local</a>
<b>Latitude</b>	35°31'56.30497"N	<b>Easting</b>	927655.236sft	<b>Northing</b>	668135.328sft
<b>Longitude</b>	82°36'18.49661"W	<b>Elevation</b>	2210.703sft	<b>Easting</b>	927655.235sft
<b>Height</b>	2112.696sft	<b>Horz error</b>	0.001sft	<b>Elevation</b>	2210.695sft
		<b>Vert error</b>	0.008sft	<b>Utilized</b>	Horz and Vert
		<b>3D error</b>	0.008sft	<b>Quality</b>	Survey quality

  

<b>Point</b>	<a href="#">U3601-3_WGS84</a>	<b>Northing</b>	677259.287sft	<b>Point</b>	<a href="#">U3601-3_Local</a>
<b>Latitude</b>	35°33'27.26050"N	<b>Easting</b>	929912.254sft	<b>Northing</b>	677259.287sft
<b>Longitude</b>	82°35'55.21555"W	<b>Elevation</b>	2102.858sft	<b>Easting</b>	929912.256sft
<b>Height</b>	2004.770sft	<b>Horz error</b>	0.002sft	<b>Elevation</b>	2102.847sft
		<b>Vert error</b>	0.011sft	<b>Utilized</b>	Horz and Vert
		<b>3D error</b>	0.012sft	<b>Quality</b>	Survey quality

  

<b>Point</b>	<a href="#">U3601-4_WGS84</a>	<b>Northing</b>	677192.257sft	<b>Point</b>	<a href="#">U3601-4_Local</a>
<b>Latitude</b>	35°33'26.31725"N	<b>Easting</b>	929128.394sft	<b>Northing</b>	677192.257sft
<b>Longitude</b>	82°36'04.66362"W	<b>Elevation</b>	2127.070sft	<b>Easting</b>	929128.393sft
<b>Height</b>	2029.002sft	<b>Horz error</b>	0.002sft	<b>Elevation</b>	2127.063sft
		<b>Vert error</b>	0.007sft	<b>Utilized</b>	Horz and Vert

	<b>3D error</b>	0.008sft	<b>Quality</b>	Survey quality
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