

# GPS Calibration Report

*Project : u2717SiteCal*

<b>TIP Number</b>	U-2717	<b>Date &amp; Time</b>	4:35:06 PM 7/12/04
<b>User name</b>	khudson	<b>Zone</b>	North Carolina 3200
<b>Coordinate System</b>	US State Plane 1983(at ground)	<b>Geoid Model</b>	GEOID96 (Conus)
<b>Horizontal Datum</b>	NAD 1983 (Conus)		
<b>Vertical Datum</b>	NGVD29		
<b>Coordinate Units</b>	Meters		
<b>Distance Units</b>	Meters		
<b>Height Units</b>	Meters		

## LOCAL SITE INFORMATION

Localized around	SUNOCO
Latitude	35°57'33.72996"N
Longitude	79°56'19.13377"W
Site Scale Factor	1.0000868830
Height	225.538m

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>	246047.371m
<b>Easting coordinate of rotation center</b>	522941.760m
<b>Rotation about the center point</b>	0°00'02"
<b>Translation north</b>	0.006m
<b>Translation east</b>	0.019m

Scale factor 0.99999413

## Vertical Adjustment Parameters

Northing coordinate of origin point 243073.952m  
 Easting coordinate of origin point 516813.326m  
 Vertical separation at origin -0.182m  
 Slope north 18.187ppm  
 Slope east 7.170ppm

## Geoid Model Definition

GEOID96 (Conus)

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

### Summary

	Maximum error	Root Mean Square error	Point
Horizontal	0.034m	0.018	<a href="#">lucy_gps</a>
Vertical	0.029m	0.019	<a href="#">scrap_gps</a>
Three-dimensional	0.043m	0.026	<a href="#">lucy_gps</a>

### Point Residuals

WGS84 Coordinates		Calculated point FOR DISPLAY ONLY		Local Coordinates	
Point	<a href="#">scrap_gps</a>	Northing	243073.952m	Point <a href="#">SCRAP</a>	
Latitude	35°56'12.64198"N	Easting	516813.326m	Northing	243073.939m
Longitude	80°01'42.07501"W	Elevation	277.197m	Easting	516813.335m
Height	246.279m	Horz error	<b>0.016m</b>	Elevation	277.226m
		Vert error	<b>0.029m</b>	Utilized	Horz and Vert
		3D error	<b>0.033m</b>	Quality	Control quality
Point	<a href="#">lucy_gps</a>	Northing	249651.167m	Point <a href="#">LUCY</a>	
Latitude	35°59'49.33598"N	Easting	527253.984m	Northing	249651.138m
Longitude	79°54'47.98324"W	Elevation	254.773m	Easting	527254.003m

<b>Height</b>	223.816m
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<b>Horz error</b>	<b>0.034m</b>
<b>Vert error</b>	<b>0.027m</b>
<b>3D error</b>	<b>0.043m</b>

<b>Elevation</b>	254.800m
<b>Utilized</b>	Horz and Vert
<b>Quality</b>	Control quality

<b>Point</b>	<a href="#">sunoco_gps</a>
<b>Latitude</b>	35°57'33.72992"N
<b>Longitude</b>	79°56'19.13374"W
<b>Height</b>	225.546m

<b>Northing</b>	245492.903m
<b>Easting</b>	524931.444m
<b>Elevation</b>	256.348m
<b>Horz error</b>	0.010m
<b>Vert error</b>	0.009m
<b>3D error</b>	0.014m

<b>Point</b>	<a href="#">SUNOCO</a>
<b>Northing</b>	245492.913m
<b>Easting</b>	524931.442m
<b>Elevation</b>	256.339m
<b>Utilized</b>	Horz and Vert
<b>Quality</b>	Control quality

<b>Point</b>	<a href="#">U2717-1_gps</a>
<b>Latitude</b>	35°57'58.53784"N
<b>Longitude</b>	79°58'49.73578"W
<b>Height</b>	244.725m

<b>Northing</b>	246294.027m
<b>Easting</b>	521165.236m
<b>Elevation</b>	275.693m
<b>Horz error</b>	0.010m
<b>Vert error</b>	0.029m
<b>3D error</b>	0.031m

<b>Point</b>	<a href="#">U2717-1</a>
<b>Northing</b>	246294.030m
<b>Easting</b>	521165.226m
<b>Elevation</b>	275.664m
<b>Utilized</b>	Horz and Vert
<b>Quality</b>	Control quality

<b>Point</b>	<a href="#">u2717-2_gps</a>
<b>Latitude</b>	35°57'59.49486"N
<b>Longitude</b>	79°58'40.88661"W
<b>Height</b>	236.956m

<b>Northing</b>	246321.334m
<b>Easting</b>	521387.249m
<b>Elevation</b>	267.919m
<b>Horz error</b>	0.016m
<b>Vert error</b>	0.015m
<b>3D error</b>	0.022m

<b>Point</b>	<a href="#">U2717-2</a>
<b>Northing</b>	246321.329m
<b>Easting</b>	521387.233m
<b>Elevation</b>	267.904m
<b>Utilized</b>	Horz and Vert
<b>Quality</b>	Control quality

<b>Point</b>	<a href="#">u2717-3_gps</a>
<b>Latitude</b>	35°57'52.56782"N
<b>Longitude</b>	79°57'23.08926"W
<b>Height</b>	233.796m

<b>Northing</b>	246088.823m
<b>Easting</b>	523334.452m
<b>Elevation</b>	264.681m
<b>Horz error</b>	0.010m
<b>Vert error</b>	0.007m
<b>3D error</b>	0.013m

<b>Point</b>	<a href="#">U2717-3</a>
<b>Northing</b>	246088.831m
<b>Easting</b>	523334.446m
<b>Elevation</b>	264.674m
<b>Utilized</b>	Horz and Vert
<b>Quality</b>	Control quality

<b>Point</b>	<a href="#">u2717-4_gps</a>
<b>Latitude</b>	35°57'51.44802"N
<b>Longitude</b>	79°57'12.09391"W
<b>Height</b>	227.653m

<b>Northing</b>	246051.656m
<b>Easting</b>	523609.623m
<b>Elevation</b>	258.527m
<b>Horz error</b>	0.011m
<b>Vert error</b>	0.001m
<b>3D error</b>	0.011m

<b>Point</b>	<a href="#">U2717-4</a>
<b>Northing</b>	246051.666m
<b>Easting</b>	523609.616m
<b>Elevation</b>	258.526m
<b>Utilized</b>	Horz and Vert
<b>Quality</b>	Control quality

<b>Point</b>	<a href="#">u2717-6_gps</a>
<b>Latitude</b>	35°57'30.91619"N
<b>Longitude</b>	79°56'14.81221"W

<b>Northing</b>	245405.156m
<b>Easting</b>	525038.913m
<b>Elevation</b>	256.518m

<b>Point</b>	<a href="#">U2717-6</a>
<b>Northing</b>	245405.172m
<b>Easting</b>	525038.925m

<b>Height</b>	225.725m
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<b>Horz error</b>	0.021m
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<b>Elevation</b>	256.523m
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<b>Vert error</b>	0.005m
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<b>Utilized</b>	Horz and Vert
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<b>3D error</b>	0.021m
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<b>Quality</b>	Control quality
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