

GPS Calibration Report

Project : u3621z

TIP Number	u3621		
User name	pwoodard	Date & Time	2:42:33 PM 4/12/04
Coordinate System	US State Plane 1983(at ground)	Zone	North Carolina 3200
Horizontal Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD88	Geoid Model	GEOID99 (Conus)
Coordinate Units	Meters		
Distance Units	Meters		
Height Units	Meters		

LOCAL SITE INFORMATION

Localized around	u4019-10
Latitude	35°59'07.78174"N
Longitude	77°50'26.02039"W
Site Scale Factor	1.0000490100
Height	12.143m

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	244949.374m
Easting coordinate of rotation center	720576.537m
Rotation about the center point	0°00'00"
Translation north	0.001m
Translation east	0.003m
Scale factor	1.00000013

Vertical Adjustment Parameters

Northing coordinate of origin point	251068.833m
Easting coordinate of origin point	744724.300m
Vertical separation at origin	-0.004m
Slope north	-0.260ppm
Slope east	-0.259ppm

Geoid Model Definition

GEOID99 (Conus)

Residual Differences Between GPS (WGS84) And Local Coordinates

Summary

	Maximum error	Root Mean Square error	Point
Horizontal	0.002m	0.001	cutoff_GPS
Vertical	0.009m	0.004	u4019-2_GPS
Three-dimensional	0.009m	0.004	u4019-2_GPS

Point Residuals

WGS84 Coordinates

Point	cutoff_GPS
Latitude	36°00'14.53294"N
Longitude	77°30'04.24620"W
Height	-5.923m

Calculated point FOR DISPLAY ONLY

Northing	251068.833m
Easting	744724.300m
Elevation	29.278m
Horz error	0.002m
Vert error	0.001m
3D error	0.003m

Local Coordinates

Point	cutoff
Northing	251068.832m
Easting	744724.302m
Elevation	29.277m
Utilized	Horz and Vert
Quality	Control quality

Point	shingled_GPS
Latitude	35°45'10.19685"N
Longitude	77°38'02.50711"W
Height	-3.589m

Northing	223026.310m
Easting	733131.314m
Elevation	31.804m
Horz error	0.002m
Vert error	0.000m
3D error	0.002m

Point	shingled
Northing	223026.313m
Easting	733131.314m
Elevation	31.804m
Utilized	Horz and Vert
Quality	Control quality

Point	u4019-2_GPS
Latitude	35°57'43.25357"N
Longitude	77°50'57.40964"W
Height	6.970m

Northing	245987.598m
Easting	713396.448m
Elevation	41.787m
Horz error	0.001m
Vert error	0.009m
3D error	0.009m

Point	u4019-2
Northing	245987.599m
Easting	713396.448m
Elevation	41.778m
Utilized	Horz and Vert
Quality	Control quality

Point	u4019-10_GPS
Latitude	35°59'07.78174"N
Longitude	77°50'26.02039"W
Height	12.143m

Northing	248601.886m
Easting	714152.501m
Elevation	46.955m
Horz error	0.002m
Vert error	0.005m
3D error	0.005m

Point	u4019-10
Northing	248601.885m
Easting	714152.499m
Elevation	46.950m
Utilized	Horz and Vert
Quality	Control quality

Point	u3331-5_GPS
Latitude	35°58'20.46009"N
Longitude	77°49'16.01224"W
Height	-2.002m

Northing	247164.100m
Easting	715923.414m
Elevation	32.870m
Horz error	0.001m
Vert error	0.003m
3D error	0.003m

Point	u3331-5
Northing	247164.100m
Easting	715923.413m
Elevation	32.873m
Utilized	Horz and Vert
Quality	Adjusted quality

Point	u3331-6_GPS
Latitude	35°58'16.27100"N

Northing	247037.426m
Easting	716129.518m

Point	u3331-6
Northing	247037.426m

Longitude	77°49'07.84665"W
Height	2.013m

Elevation	36.891m
Horz error	0.001m
Vert error	0.003m
3D error	0.003m

Easting	716129.518m
Elevation	36.894m
Utilized	Horz and Vert
Quality	Adjusted quality

Point	u3621-1_GPS
Latitude	35°58'09.28644"N
Longitude	77°48'43.53903"W
Height	0.061m

Northing	246829.431m
Easting	716741.069m
Elevation	34.956m
Horz error	0.000m
Vert error	0.003m
3D error	0.003m

Point	u3621-1
Northing	246829.431m
Easting	716741.068m
Elevation	34.959m
Utilized	Horz and Vert
Quality	Adjusted quality

Point	u3621-2_GPS
Latitude	35°58'05.16712"N
Longitude	77°48'51.07766"W
Height	4.176m

Northing	246700.217m
Easting	716553.717m
Elevation	39.068m
Horz error	0.000m
Vert error	0.002m
3D error	0.002m

Point	u3621-2
Northing	246700.217m
Easting	716553.717m
Elevation	39.070m
Utilized	Horz and Vert
Quality	Adjusted quality

Point	u3621-3_GPS
Latitude	35°57'57.38898"N
Longitude	77°48'15.74380"W
Height	-8.992m

Northing	246471.118m
Easting	717441.850m
Elevation	25.924m
Horz error	0.001m
Vert error	0.002m
3D error	0.002m

Point	u3621-3
Northing	246471.118m
Easting	717441.850m
Elevation	25.926m
Utilized	Horz and Vert
Quality	Adjusted quality

Point	u3621-4_GPS
Latitude	35°58'01.74114"N
Longitude	77°48'10.51376"W
Height	-8.937m

Northing	246606.828m
Easting	717571.268m
Elevation	25.980m
Horz error	0.001m
Vert error	0.002m
3D error	0.002m

Point	u3621-4
Northing	246606.828m
Easting	717571.269m
Elevation	25.983m
Utilized	Horz and Vert
Quality	Adjusted quality