

GPS Calibration Report

Project : R2408B Site Calibration Use

TIP Number	R2408B	Date & Time	10:02:56 AM 12/12/2005
User name	rmcdonald	Zone	North Carolina 3200
Coordinate System	US State Plane 1983(at ground)	Geoid Model	Geoid99 NC Sub Grid
Horizontal Datum	NAD 1983 (Conus)		
Vertical Datum	NAVD 88		
Coordinate Units	US survey feet		
Distance Units	US survey feet		
Height Units	US survey feet		

LOCAL SITE INFORMATION

Localized around	GP105
Latitude	35°12'35.26242"N
Longitude	83°24'00.08379"W
Site Scale Factor	1.0002225940
Height	1995.564sft

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	562873.086sft
Easting coordinate of rotation center	685695.171sft
Rotation about the center point	0°00'00"
Translation north	-0.001sft
Translation east	-0.002sft
Scale factor	0.99999983

Vertical Adjustment Parameters

Northing coordinate of origin point	567873.588sft
Easting coordinate of origin point	622656.081sft
Vertical separation at origin	-0.008sft
Slope north	0.199ppm
Slope east	-0.525ppm

Geoid Model Definition

Geoid99 NC Sub Grid

Residual Differences Between GPS (WGS84) And Local Coordinates

Summary			
	Maximum error	Root Mean Square error	Point
Horizontal	0.048sft	0.006	KYLE_WGS84
Vertical	0.061sft	0.009	GPS-105_WGS84
Three-dimensional	0.063sft	0.011	GPS-105_WGS84

Point Residuals

WGS84 Coordinates		Calculated point FOR DISPLAY ONLY		Local Coordinates	
Point	KYLE_WGS84	Northing	567873.588sft	Point	KYLE_Local
Latitude	35°13'20.56030"N	Easting	622656.081sft	Northing	567873.540sft
Longitude	83°36'48.60785"W	Elevation	3211.787sft	Easting	622656.085sft
Height	3119.467sft	Horz error	0.048sft	Elevation	3211.806sft
		Vert error	0.019sft	Utilized	Horz and Vert
		3D error	0.052sft	Quality	Survey quality
Point	GATEWAY_WGS84	Northing	636779.258sft	Point	GATEWAY_Local
Latitude	35°25'19.58153"N	Easting	708574.447sft	Northing	636779.258sft
Longitude	83°20'10.40801"W	Elevation	1864.695sft	Easting	708574.468sft
Height	1770.384sft	Horz error	0.021sft	Elevation	1864.726sft
		Vert error	0.031sft	Utilized	Horz and Vert
		3D error	0.038sft	Quality	Survey quality
Point	GRAY_WGS84	Northing	509223.876sft	Point	GRAY_Local
Latitude	35°04'10.28754"N	Easting	687694.468sft	Northing	509223.867sft
Longitude	83°23'14.33202"W	Elevation	2069.727sft	Easting	687694.440sft
Height	1976.007sft	Horz error	0.029sft	Elevation	2069.773sft
		Vert error	0.046sft	Utilized	Horz and Vert
		3D error	0.054sft	Quality	Survey quality
Point	CITY_WGS84	Northing	554098.431sft	Point	CITY_Local
Latitude	35°11'37.78802"N	Easting	697202.652sft	Northing	554098.433sft
Longitude	83°21'43.78095"W	Elevation	2152.172sft	Easting	697202.655sft
Height	2058.621sft	Horz error	0.004sft	Elevation	2152.221sft
		Vert error	0.049sft	Utilized	Horz and Vert
		3D error	0.050sft	Quality	Survey quality
Point	GPS-101_WGS84	Northing	553175.480sft	Point	GPS-101_Local
Latitude	35°11'26.17959"N	Easting	691483.854sft	Northing	553175.490sft
Longitude	83°22'52.11945"W	Elevation	2004.104sft	Easting	691483.849sft
Height	1910.630sft	Horz error	0.011sft	Elevation	2004.107sft
		Vert error	0.003sft	Utilized	Horz and Vert
		3D error	0.011sft	Quality	Survey quality
Point	GPS-102_WGS84	Northing	553561.096sft	Point	GPS-102_Local
Latitude	35°11'29.83553"N	Easting	691131.229sft	Northing	553561.104sft

Longitude	83°22'56.56833"W
Height	1911.102sft

Elevation	2004.572sft
Horz error	0.009sft
Vert error	0.012sft
3D error	0.015sft

Easting	691131.225sft
Elevation	2004.560sft
Utilized	Horz and Vert
Quality	Survey quality

Point	GPS-103_WGS84
Latitude	35°11'58.83573"N
Longitude	83°23'25.43591"W
Height	1961.136sft

Northing	556596.511sft
Easting	688866.969sft
Elevation	2054.577sft
Horz error	0.008sft
Vert error	0.014sft
3D error	0.016sft

Point	GPS-103_Local
Northing	556596.519sft
Easting	688866.968sft
Elevation	2054.563sft
Utilized	Horz and Vert
Quality	Survey quality

Point	GPS-104_WGS84
Latitude	35°12'03.93511"N
Longitude	83°23'31.45770"W
Height	1993.689sft

Northing	557133.747sft
Easting	688390.455sft
Elevation	2087.125sft
Horz error	0.008sft
Vert error	0.016sft
3D error	0.017sft

Point	GPS-104_Local
Northing	557133.755sft
Easting	688390.454sft
Elevation	2087.109sft
Utilized	Horz and Vert
Quality	Survey quality

Point	GPS-105_WGS84
Latitude	35°12'35.26242"N
Longitude	83°24'00.08379"W
Height	1995.564sft

Northing	560403.569sft
Easting	686157.217sft
Elevation	2088.984sft
Horz error	0.017sft
Vert error	0.061sft
3D error	0.063sft

Point	GPS-105_Local
Northing	560403.586sft
Easting	686157.220sft
Elevation	2088.923sft
Utilized	Horz and Vert
Quality	Survey quality

Point	GPS-106_WGS84
Latitude	35°12'43.49170"N
Longitude	83°24'04.23877"W
Height	1969.387sft

Northing	561250.161sft
Easting	685849.615sft
Elevation	2062.808sft
Horz error	0.016sft
Vert error	0.029sft
3D error	0.034sft

Point	GPS-106_Local
Northing	561250.177sft
Easting	685849.617sft
Elevation	2062.779sft
Utilized	Horz and Vert
Quality	Survey quality

Point	GPS-107_WGS84
Latitude	35°13'28.41162"N
Longitude	83°23'52.11134"W
Height	1972.015sft

Northing	565743.335sft
Easting	687056.212sft
Elevation	2065.480sft
Horz error	0.002sft
Vert error	0.034sft
3D error	0.034sft

Point	GPS-107_Local
Northing	565743.336sft
Easting	687056.214sft
Elevation	2065.446sft
Utilized	Horz and Vert
Quality	Survey quality

Point	GPS-108_WGS84
Latitude	35°13'30.33125"N
Longitude	83°23'47.18611"W
Height	1959.036sft

Northing	565919.158sft
Easting	687473.075sft
Elevation	2052.507sft
Horz error	0.002sft
Vert error	0.011sft
3D error	0.011sft

Point	GPS-108_Local
Northing	565919.156sft
Easting	687473.075sft
Elevation	2052.496sft
Utilized	Horz and Vert
Quality	Survey quality

Point	GPS-110_WGS84
Latitude	35°14'01.76189"N
Longitude	83°23'32.08400"W
Height	1885.399sft

Northing	569038.810sft
Easting	688865.508sft
Elevation	1978.895sft
Horz error	0.005sft
Vert error	0.016sft
3D error	0.017sft

Point	GPS-110_Local
Northing	569038.805sft
Easting	688865.509sft
Elevation	1978.911sft
Utilized	Horz and Vert
Quality	Survey quality

Point	GPS-109_WGS84
Latitude	35°14'05.35493"N

Northing	569426.176sft
Easting	688330.585sft

Point	GPS-109_Local
Northing	569426.170sft

Longitude	83°23'38.73184"W
Height	1880.519sft

Elevation	1974.012sft
Horz error	0.006sft
Vert error	0.013sft
3D error	0.014sft

Easting	688330.586sft
Elevation	1974.025sft
Utilized	Horz and Vert
Quality	Survey quality