

SURVEY CONTROL SHEET U-3308

GPS Calibration Report
 Project : 34915.1.1 TIP Number: U3308

User name A.P.Spielvogel Date & Time 10:54:50 AM 6/20/05
 Coordinate System US State Plane 1983(at ground) Zone North Carolina 3200
 Horizontal Datum NAD 1983 (Conus)
 Vertical Datum Geoid Model Geoid99 NC Sub Grid

Coordinate Units US Survey Feet
 Distance Units US Survey Feet
 Height Units US Survey Feet

 LOCAL SITE INFORMATION
 Localized around U3308-1
 Latitude 35°58'52.77432"N
 Longitude 78°53'19.19111"W
 Site Scale Factor 1.000057303
 Height ?

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 806047.0164SFT
 Easting coordinate of rotation center 2028149.21555SFT
 Rotation about the center point 0°00'00"
 Translation north 0.3463SFT
 Translation east -0.2689SFT
 Scale factor 1.00005747

 Vertical Adjustment Parameters
 Northing coordinate of origin point 840519.8109SFT
 Easting coordinate of origin point 1975512.3961SFT
 Vertical separation at origin -0.1436SFT
 Slope north 0.629PPM
 Slope east 0.302PPM

 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	0.010sft	0.002	TURNKEY_WGS84
Vertical	0.079sft	0.011	TURNKEY_WGS84
Three-dimensional	0.079sft	0.011	TURNKEY_WGS84

Point NEALS_ WGS84
 Latitude 36°03'33.70562"N
 Longitude 79°04'58.20354"W
 Height 516.9051sft

Northing 840519.8109sft
 Easting 1975512.3961
 Elevation 617.0749sft
 Horz error 0.008sft
 Vert error 0.017sft
 3D error 0.019sft

Point NEALS Local
 Northing 840519.8117
 Easting 1975512.4040sft
 Elevation 617.0919sft
 Utilized Horz and Vert
 Quality Survey quality

Point EARL SMITH_ WGS84
 Latitude 35°44'57.32992"N
 Longitude 78°51'09.25788"W
 Height 382.9815sft

Northing 727654.554sft
 Easting 2043745.3942sft
 Elevation 488.3649sft
 Horz error 0.007sft
 Vert error 0.004sft
 3D error 0.008sft

Point EARL SMITH Local
 Northing 727654.5486sft
 Easting 2043745.3974sft
 Elevation 488.3684sft
 Utilized Horz and Vert
 Quality Survey quality

Point TURNKEY_ WGS84
 Latitude 35°59'14.51009"N
 Longitude 78°50'47.43883"W
 Height 267.6865sft

Northing 814333.7648
 Easting 2045409.8586sft
 Elevation 371.0434sft
 Horz error 0.010sft
 Vert error 0.078sft
 3D error 0.079sft

Point TURNKEY Local
 Northing 814333.7683sft
 Easting 2045409.8495sft
 Elevation 371.1213sft
 Utilized Horz and Vert
 Quality Survey quality

Point U3308-1_ WGS84
 Latitude 35°58'52.77432"N
 Longitude 78°53'19.19115"W
 Height 283.7035sft

Northing 812119.1554sft
 Easting 2032940.7021sft
 Elevation 386.5564sft
 Horz error 0.004sft
 Vert error 0.015sft
 3D error 0.016sft

Point U3308-1 Local
 Northing 812119.1566sft
 Easting 2032940.6979sft
 Elevation 386.5412sft
 Utilized Horz and Vert
 Quality Survey quality

Point U3308-2_ WGS84
 Latitude 35°58'57.96845"N
 Longitude 78°53'31.18917"W
 Height 293.4541sft

Northing 812643.9091sft
 Easting 2031954.0107sft
 Elevation 396.2549sft
 Horz error 0.003sft
 Vert error 0.019sft
 3D error 0.019sft

Point U3308-2 Local
 Northing 812643.3091sft
 Easting 2031954.0130sft
 Elevation 396.2361sft
 Utilized Horz and Vert
 Quality Survey quality

Point U3308-3_ WGS84
 Latitude 35°59'42.51098"N
 Longitude 78°53'09.71889"W
 Height 231.9418sft

Northing 817149.5425sft
 Easting 2033713.4559sft
 Elevation 334.7078sft
 Horz error 0.002sft
 Vert error 0.033sft
 3D error 0.033sft

Point u3308-3 Local
 Northing 817149.5402sft
 Easting 2033713.4555sft
 Elevation 334.6745sft
 Utilized Horz and Vert
 Quality Survey quality

Point U3308-4_ WGS84
 Latitude 35°59'49.99641"N
 Longitude 78°53'09.05905"W
 Height 246.3414sft

Northing 817906.5538sft
 Easting 2033766.8087sft
 Elevation 349.0921sft
 Horz error 0.003sft
 Vert error 0.031sft
 3D error 0.031sft

Point U3308-4 Local
 Northing 817906.5564sft
 Easting 2033766.8084sft
 Elevation 349.0510sft
 Utilized Horz and Vert
 Quality Survey quality

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "U3308-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF
 NORTHING: 812119.1565(±) EASTING: 2032940.6980(±)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99994270
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U3308-1" TO -LALT- 13+50.00 STATION IS N 84° 58' 17.0" W 634.7202(±)
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

NOTE: DRAWING NOT TO SCALE

NOTES:

1. THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 8395 ADJUSTMENT. THIS CALIBRATION WILL ALLOW THE END USER TO WORK WITHIN THE SAME COORDINATE SYSTEM WHEN USING RTK (REAL TIME KINEMATIC) GPS AND A LOCAL BASE STATION. IF ANOTHER SYSTEM SUCH AS VRS (VIRTUAL REFERENCE STATION) IS USED, ADDITIONAL FIELD TIES MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.
2. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 U3308_LS_GPSCALIB_050829.HTML
 U3308_LS_WGS84_050829.TXT
 U3308_LS_LOCAL_050829.TXT
 U3308_LS_CONTROL_050829.TXT

THE WGS84 AND LOCAL FILES ARE COMMA DELIMITED AND CAN BE USED TO REPRODUCE THE SITE CALIBRATION FOR THE END USER'S GPS EQUIPMENT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

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