

SURVEY CONTROL SHEET

GPS CALIBRATION REPORT

PROJECT : U3302

TIP NUMBER U-3302
 USER NAME JGORDON DATE & TIME 2:46:32 PM 6/30/03
 COORDINATE SYSTEM US STATE PLANE ZONE NORTH CAROLINA 3200
 HORIZONTAL DATUM NAD 1983 (CONUS)
 VERTICAL DATUM GEOID MODEL GEOID99 (CONUS)
 COORDINATE UNITS US SURVEY FEET
 DISTANCE UNITS US SURVEY FEET
 HEIGHT UNITS US SURVEY FEET

LOCAL SITE INFORMATION
 LOCALIZED AROUND
 LATITUDE N/A
 LONGITUDE N/A
 SITE SCALE FACTOR N/A

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 699692.160SFT
 EASTING COORDINATE OF ROTATION CENTER 929284.467SFT
 ROTATION ABOUT THE CENTER
 POINT 0°00'00"
 TRANSLATION NORTH 1.514SFT
 TRANSLATION EAST -3.015SFT
 SCALE FACTOR 1.00020201

VERTICAL ADJUSTMENT PARAMETERS

NORTHING COORDINATE OF ORIGIN POINT 761739.340SFT
 EASTING COORDINATE OF ORIGIN POINT 950744.983SFT
 VERTICAL SEPARATION AT ORIGIN 0.064SFT
 SLOPE NORTH 5.956PPM
 SLOPE EAST -6.772PPM

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	K 138 WGS84
VERTICAL	0.329SFT	0.050	MONTFORD WGS84
THREE-DIMENSIONAL	0.329SFT	0.050	MONTFORD WGS84

POINT RESIDUALS

WGS84 COORDINATES	CALCULATED POINT FOR DISPLAY ONLY	LOCAL COORDINATES
POINT K 138 WGS84 LATITUDE 35°47'29.58515"N LONGITUDE 82°32'19.65981"W HEIGHT 1878.713SFT	NORTHING 761739.340SFT EASTING 950744.983SFT ELEVATION 1977.845SFT HORZ ERROR 0.011SFT VERT ERROR 0.081SFT 3D ERROR 0.082SFT	POINT K 138 LOCAL NORTHING 761739.331SFT EASTING 950744.977SFT ELEVATION 1977.926SFT UTILIZED HORZ AND VERT QUALITY SURVEY QUALITY
POINT PLEMMONS WGS84 LATITUDE 35°37'29.91986"N LONGITUDE 82°42'09.86717"W HEIGHT 2111.088SFT	NORTHING 702912.202SFT EASTING 899885.478SFT ELEVATION 2208.756SFT HORZ ERROR 0.011SFT VERT ERROR 0.125SFT 3D ERROR 0.125SFT	POINT PLEMMONS LOCAL NORTHING 702912.213SFT EASTING 899885.479SFT ELEVATION 2208.631SFT UTILIZED HORZ AND VERT QUALITY SURVEY QUALITY
POINT 27EG1 WGS84 LATITUDE 35°29'55.04183"N LONGITUDE 82°43'58.11475"W HEIGHT 2208.795SFT	NORTHING 657280.584SFT EASTING 889225.000SFT ELEVATION 2305.290SFT HORZ ERROR 0.008SFT VERT ERROR 0.132SFT 3D ERROR 0.133SFT	POINT 27EG1 LOCAL NORTHING 657280.578SFT EASTING 889224.994SFT ELEVATION 2305.422SFT UTILIZED HORZ AND VERT QUALITY SURVEY QUALITY
POINT BASE WGS84 LATITUDE 35°35'58.01135"N LONGITUDE 82°32'46.31828"W HEIGHT 2167.515SFT	NORTHING 691925.444SFT EASTING 946052.039SFT ELEVATION 2265.576SFT HORZ ERROR 0.005SFT VERT ERROR 0.171SFT 3D ERROR 0.171SFT	POINT BASE LOCAL NORTHING 691925.446SFT EASTING 946052.044SFT ELEVATION 2265.747SFT UTILIZED HORZ AND VERT QUALITY SURVEY QUALITY
POINT U3302-1 WGS84 LATITUDE 35°35'59.18026"N LONGITUDE 82°32'52.57463"W HEIGHT 2081.846SFT	NORTHING 692062.033SFT EASTING 945539.874SFT ELEVATION 2179.907SFT HORZ ERROR 0.005SFT VERT ERROR 0.109SFT 3D ERROR 0.109SFT	POINT U3302-1 LOCAL NORTHING 692062.035SFT EASTING 945539.878SFT ELEVATION 2180.016SFT UTILIZED HORZ AND VERT QUALITY SURVEY QUALITY
POINT U3302-2 WGS84 LATITUDE 35°36'00.50401"N LONGITUDE 82°33'08.36524"W HEIGHT 2062.647SFT	NORTHING 692242.441SFT EASTING 944241.337SFT ELEVATION 2160.705SFT HORZ ERROR 0.003SFT VERT ERROR 0.040SFT 3D ERROR 0.040SFT	POINT U3302-2 LOCAL NORTHING 692242.441SFT EASTING 944241.340SFT ELEVATION 2160.665SFT UTILIZED HORZ AND VERT QUALITY SURVEY QUALITY
POINT MONTFORD WGS84 LATITUDE 35°35'48.56383"N LONGITUDE 82°33'35.52073"W HEIGHT 2115.957SFT	NORTHING 691116.100SFT EASTING 941956.700SFT ELEVATION 2214.003SFT HORZ ERROR ? VERT ERROR 0.329SFT 3D ERROR 0.329SFT	POINT MONTFORD LOCAL NORTHING 691116.101SFT EASTING 941956.704SFT ELEVATION 2213.674SFT UTILIZED VERTICAL 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 "U3302-2" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 692242.4410(ft) EASTING: 944241.3399(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99979803 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "U3302-2" TO L- STATION 10+00.00 IS S 62°13'47.3" W 1704.212 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES

- THE SITE CALIBRATION SHOWN IS BASED UPON A NETWORK TIED TO THE HARN (HIGH ACCURACY REFERENCE NETWORK) NAD 83/95 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 MAYBE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.
- 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:
 U3302_LS_GPSCALIB_030701.HTML
 U3302_LS_WGS84_030701.TXT
 U3302_LS_LOCAL_030701.TXT
 U3302_LS_CONTROL_030701.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.