

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 5.856PPM
 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	NORTHING	761739.340SFT	POINT K 138 LOCAL	NORTHING 761739.331SFT	
LATITUDE 35°47'29.58515"N	EASTING	950744.983SFT	EASTING	950744.977SFT	
LONGITUDE 82°32'19.65981"W	ELEVATION	1977.845SFT	ELEVATION	1977.926SFT	
HEIGHT 1878.713SFT	HORZ ERROR	0.011SFT	UTILIZED HORZ AND VERT	QUALITY SURVEY QUALITY	
	VERT ERROR	0.0081SFT			
	3D ERROR	0.082SFT			
POINT PLEMMONS WGS84	NORTHING	702912.202SFT	POINT PLEMMONS LOCAL	NORTHING 702912.213SFT	
LATITUDE 35°37'29.91986"N	EASTING	899885.478SFT	EASTING	899885.479SFT	
LONGITUDE 82°42'09.86717"W	ELEVATION	2208.756SFT	ELEVATION	2208.631SFT	
HEIGHT 2111.088SFT	HORZ ERROR	0.011SFT	UTILIZED HORZ AND VERT	QUALITY SURVEY QUALITY	
	VERT ERROR	0.125SFT			
	3D ERROR	0.125SFT			
POINT 27E61 WGS84	NORTHING	657280.584SFT	POINT 27E61 LOCAL	NORTHING 657280.578SFT	
LATITUDE 35°29'55.04183"N	EASTING	889225.000SFT	EASTING	889224.994SFT	
LONGITUDE 82°43'58.11475"W	ELEVATION	2305.290SFT	ELEVATION	2305.422SFT	
HEIGHT 2208.795SFT	HORZ ERROR	0.008SFT	UTILIZED HORZ AND VERT	QUALITY SURVEY QUALITY	
	VERT ERROR	0.132SFT			
	3D ERROR	0.133SFT			
POINT BASE WGS84	NORTHING	691925.444SFT	POINT BASE LOCAL	NORTHING 691925.446SFT	
LATITUDE 35°35'58.01135"N	EASTING	946052.039SFT	EASTING	946052.044SFT	
LONGITUDE 82°32'46.31028"W	ELEVATION	2265.576SFT	ELEVATION	2265.747SFT	
HEIGHT 2167.515SFT	HORZ ERROR	0.005SFT	UTILIZED HORZ AND VERT	QUALITY SURVEY QUALITY	
	VERT ERROR	0.171SFT			
	3D ERROR	0.171SFT			
POINT U3302-1 WGS84	NORTHING	692062.033SFT	POINT U3302-1 LOCAL	NORTHING 692062.035SFT	
LATITUDE 35°35'59.18026"N	EASTING	945539.874SFT	EASTING	945539.878SFT	
LONGITUDE 82°32'52.57463"W	ELEVATION	2179.907SFT	ELEVATION	2180.016SFT	
HEIGHT 2081.846SFT	HORZ ERROR	0.005SFT	UTILIZED HORZ AND VERT	QUALITY SURVEY QUALITY	
	VERT ERROR	0.109SFT			
	3D ERROR	0.109SFT			
POINT U3302-2 WGS84	NORTHING	692242.441SFT	POINT U3302-2 LOCAL	NORTHING 692242.441SFT	
LATITUDE 35°36'00.50401"N	EASTING	944241.337SFT	EASTING	944241.340SFT	
LONGITUDE 82°33'08.36524"W	ELEVATION	2160.705SFT	ELEVATION	2160.665SFT	
HEIGHT 2062.647SFT	HORZ ERROR	0.003SFT	UTILIZED HORZ AND VERT	QUALITY SURVEY QUALITY	
	VERT ERROR	0.040SFT			
	3D ERROR	0.040SFT			
POINT MONTFORD WGS84	NORTHING	691116.100SFT	POINT MONTFORD LOCAL	NORTHING 691116.101SFT	
LATITUDE 35°35'48.56383"N	EASTING	941956.700SFT	EASTING	941956.704SFT	
LONGITUDE 82°33'35.52073"W	ELEVATION	2214.003SFT	ELEVATION	2213.674SFT	
HEIGHT 2115.957SFT	HORZ ERROR	?	UTILIZED VERTICAL	QUALITY SURVEY QUALITY	
	VERT ERROR	0.329SFT			
	3D ERROR	0.329SFT			

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: 692242.441(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.