PROJECT REFERENCE NO.	SHEET NO.
33171.1.1	1D
Location and Surveys	

SURVEY CONTROL SHEET B-3623

GPS CALIBRATION REPORT
PROJECT : 33171.1.1 TIP NUMBER : B-3623

USER NAME	JJEFFREYS	DATE & TIME	1:59:48 PM 11/10/2003
COORDINATE SYSTEM	SITE	ZONE	NORTH CAROLINA 3200
HORIZONTAL DATUM	NAD 1983 (CONUS)		
VERTICAL DATUM	NAVD 88	GEOID MODEL	GEOID99 (CONUS)
COORDINATE UNITS	US SURVEY FEET		
DISTANCE UNITS	US SURVEY FEET		
HEIGHT UNITS	US SURVEY FEET		

LOCAL SITE INFORMATION

LOCALIZED AROUND	B3623-1
LATITUDE	35°18'10.72553"N
LONGITUDE	80°35'37.01067"W
SITE SCALE FACTOR	1.0001270161

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	575607.430SFT
EASTING COORDINATE OF ROTATION CENTER	1545892.042SFT
ROTATION ABOUT THE CENTER POINT	0°00'00"
TRANSLATION NORTH	0.000SFT
TRANSLATION EAST	0.000SFT
SCALE FACTOR	1.00000478

VERTICAL ADJUSTMENT PARAMETERS

NORTHING COORDINATE OF ORIGIN POINT	602896.908SFT
EASTING COORDINATE OF ORIGIN POINT	1520417.165SFT
VERTICAL SEPARATION AT ORIGIN	-0.003SFT
SLOPE NORTH	-0.033PPM
SLOPE EAST	0.078PPM

GEOID MODEL DEFINITION

GEOID99 (CONUS)

RESIDUAL DIFFERENCES BETWEEN GPS (WGS84) AND LOCAL COORDINATES

SUMMARY

	MAXIMUM ERROR	ROOT MEAN SQUARE ERROR	POINT
HORIZONTAL	0.018SFT	0.002	AQUADALE - WGS84
VERTICAL	0.014SFT	0.002	V 49 - WGS84
THREE-DIMENSIONAL	0.021SFT	0.003	V 49 - WGS84

POINT RESIDUALS

WGS84 COORDINATES		CALCULATED POINT FOR DISPLAY ONLY		LOCAL COORDINATES	
POINT	BUFFALO 2 - WGS8	NORTHING	602896.908SFT	POINT	BUFFALO 2 - LOCAL
LATITUDE	35°23'45.14806"N	EASTING	1520417.165SFT	NORTHING	602896.907SFT
LONGITUDE	80°36'33.58113"W	ELEVATION	764.717SFT	EASTING	1520417.165SFT
HEIGHT	664.523SFT	HORZ ERROR	0.001SFT	ELEVATION	764.720SFT
		VERT ERROR	0.003SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.003SFT	QUALITY	CONTROL QUALITY
POINT	M048 - WGS84	NORTHING	545825.046SFT	POINT	M048 - LOCAL
LATITUDE	35°14'17.58670"N	EASTING	1500918.981SFT	NORTHING	545825.039SFT
LONGITUDE	80°40'17.44837"W	ELEVATION	744.833SFT	EASTING	1500918.983SFT
HEIGHT	645.317SFT	HORZ ERROR	0.008SFT	ELEVATION	744.825SFT
		VERT ERROR	0.008SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.011SFT	QUALITY	CONTROL QUALITY

POINT	V49 - WGS84	NORTHING	639679.910SFT	POINT	V 49 - LOCAL
LATITUDE	35°30'01.74832"N	EASTING	1608694.401SFT	NORTHING	639679.920SFT
LONGITUDE	80°18'53.30865"W	ELEVATION	725.627SFT	EASTING	1608694.414SFT
HEIGHT	625.799SFT	HORZ ERROR	0.016SFT	ELEVATION	725.613SFT
		VERT ERROR	0.014SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.021SFT	QUALITY	CONTROL QUALITY
POINT	6A6 C - WGS84	NORTHING	605982.309SFT	POINT	6A6 C - LOCAL
LATITUDE	35°24'34.33812"N	EASTING	1656102.912SFT	NORTHING	605982.316SFT
LONGITUDE	80°09'15.25147"W	ELEVATION	603.129SFT	EASTING	1656102.909SFT
HEIGHT	503.608SFT	HORZ ERROR	0.008SFT	ELEVATION	603.142SFT
		VERT ERROR	0.013SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.015SFT	QUALITY	CONTROL QUALITY
POINT	AQUADALE - WGS84	NORTHING	541771.517SFT	POINT	AQUADALE - LOCAL
LATITUDE	35°13'57.16643"N	EASTING	1637785.686SFT	NORTHING	541771.511SFT
LONGITUDE	80°12'47.03659"W	ELEVATION	568.637SFT	EASTING	1637785.669SFT
HEIGHT	468.818SFT	HORZ ERROR	0.018SFT	ELEVATION	568.631SFT
		VERT ERROR	0.006SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.019SFT	QUALITY	CONTROL QUALITY
POINT	B3623-1 - WGS84	NORTHING	569011.964SFT	POINT	B3623-1 - LOCAL
LATITUDE	35°18'10.72546"N	EASTING	1524557.356SFT	NORTHING	569011.966SFT
LONGITUDE	80°35'37.01075"W	ELEVATION	567.491SFT	EASTING	1524557.358SFT
HEIGHT	467.909SFT	HORZ ERROR	0.003SFT	ELEVATION	567.493SFT
		VERT ERROR	0.002SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.004SFT	QUALITY	CONTROL QUALITY
POINT	B3623-2 - WGS84	NORTHING	569544.790SFT	POINT	B3623-2 - LOCAL
LATITUDE	35°18'15.88723"N	EASTING	1523881.859SFT	NORTHING	569544.792SFT
LONGITUDE	80°35'45.26266"W	ELEVATION	573.867SFT	EASTING	1523881.860SFT
HEIGHT	474.277SFT	HORZ ERROR	0.002SFT	ELEVATION	573.867SFT
		VERT ERROR	0.000SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.002SFT	QUALITY	CONTROL QUALITY
POINT	P1 - WGS84	NORTHING	567750.008SFT	POINT	P1 - LOCAL
LATITUDE	35°17'58.27329"N	EASTING	1524729.028SFT	NORTHING	567750.004SFT
LONGITUDE	80°35'34.69556"W	ELEVATION	576.410SFT	EASTING	1524729.030SFT
HEIGHT	476.836SFT	HORZ ERROR	0.005SFT	ELEVATION	576.413SFT
		VERT ERROR	0.003SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.005SFT	QUALITY	CONTROL QUALITY
POINT	P2 - WGS84	NORTHING	568365.765SFT	POINT	P2 - LOCAL
LATITUDE	35°18'04.47167"N	EASTING	1525417.520SFT	NORTHING	568365.763SFT
LONGITUDE	80°35'26.50962"W	ELEVATION	550.142SFT	EASTING	1525417.515SFT
HEIGHT	450.570SFT	HORZ ERROR	0.005SFT	ELEVATION	550.144SFT
		VERT ERROR	0.002SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.005SFT	QUALITY	CONTROL QUALITY
POINT	P3 - WGS84	NORTHING	568304.176SFT	POINT	P3 - LOCAL
LATITUDE	35°18'03.77586"N	EASTING	1524870.374SFT	NORTHING	568304.174SFT
LONGITUDE	80°35'33.09781"W	ELEVATION	583.561SFT	EASTING	1524870.373SFT
HEIGHT	483.985SFT	HORZ ERROR	0.002SFT	ELEVATION	583.562SFT
		VERT ERROR	0.001SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.003SFT	QUALITY	CONTROL QUALITY
POINT	P4 - WGS84	NORTHING	569302.131SFT	POINT	P4 - LOCAL
LATITUDE	35°18'13.63037"N	EASTING	1524780.734SFT	NORTHING	569302.137SFT
LONGITUDE	80°35'34.37230"W	ELEVATION	540.755SFT	EASTING	1524780.736SFT
HEIGHT	441.174SFT	HORZ ERROR	0.006SFT	ELEVATION	540.754SFT
		VERT ERROR	0.001SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.006SFT	QUALITY	CONTROL QUALITY
POINT	P5 - WGS84	NORTHING	570118.336SFT	POINT	P5 - LOCAL
LATITUDE	35°18'21.55392"N	EASTING	1523849.954SFT	NORTHING	570118.335SFT
LONGITUDE	80°35'45.75878"W	ELEVATION	578.890SFT	EASTING	1523849.954SFT
HEIGHT	479.297SFT	HORZ ERROR	0.001SFT	ELEVATION	578.894SFT
		VERT ERROR	0.004SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.004SFT	QUALITY	CONTROL QUALITY
POINT	P6 - WGS84	NORTHING	570074.846SFT	POINT	P6 - LOCAL
LATITUDE	35°18'21.05705"N	EASTING	1523429.997SFT	NORTHING	570074.845SFT
LONGITUDE	80°35'50.81649"W	ELEVATION	619.205SFT	EASTING	1523429.999SFT
HEIGHT	519.609SFT	HORZ ERROR	0.002SFT	ELEVATION	619.205SFT
		VERT ERROR	0.000SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.002SFT	QUALITY	CONTROL QUALITY
POINT	P7 - WGS84	NORTHING	569876.308SFT	POINT	P7 - LOCAL
LATITUDE	35°18'19.03363"N	EASTING	1523052.617SFT	NORTHING	569876.306SFT
LONGITUDE	80°35'55.33043"W	ELEVATION	628.085SFT	EASTING	1523052.620SFT
HEIGHT	528.486SFT	HORZ ERROR	0.003SFT	ELEVATION	628.087SFT
		VERT ERROR	0.002SFT	UTILIZED	HORZ AND VERT
		3D ERROR	0.004SFT	QUALITY	CONTROL QUALITY

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B3623-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 569011.966(ft) EASTING: 1524557.358(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999873000 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B3623-1" TO -L- STATION 12+30.000 IS N 52°04'28.2" W 962.547 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

NOTES:

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

THE FILES TO BE FOUND ARE AS FOLLOWS:

- *b3623_ls_gpscalib_031112.htm*
- *b3623_ls_wgs84_031112.txt*
- *b3623_ls_local_031112.txt*
- *b3623_ls_baseline_031112.txt*

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 MAY BE NEEDED TO REDUCE POSSIBLE ERRORS, OR BIASES.

△ *INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.*

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

...\b3623_ls_ld_031112.dgn 11/25/2003 08:24:05 AM