Control Point "CRWN"

Control Point "CRWN" is located on the rooftop of the Crowne Plaza Hotel located in Ventura, CA.

For the purposes of the SWATH bathymetry survey conducted between the dates of July 08-21, 2010, the RTK base station was programmed using the WGS84 coordinates derived below. The coordinates represent the antenna's reference point (ARP), however a set of permanent coordinates should be derived by subtracting out the length of the all-thread rod used in the installation and transferring the coordinates to the top of the eyebolt cemented into the concrete wall of the hotel.

The coordinates were derived by taking the OPUS solution for occupation date JD 2010-189 and converting the ITRF00 values to WGS84 with an epoch date of 7/1/2010. The conversion was performed using the software "Blue Marble Desktop" by Blue Marble Geographics.

A slightly edited, recorded interactive session follows:

Conversion Date: 7/8/2010 10:27:37 PM

Source Coordinate System

Coordinate System: ITRF 00 Coordinate System

Datum: ITRF 2000

Epoch Date: 7/8/2010 (2010.51780821918)

Ellipsoid: GRS 1980

Semi-major axis(meters): 6378137.00000000

Semi-minor axis(meters): 6356752.31414036

Eccentricity: 0.08181919104281582

Eccentricity Squared: 0.0066943800229007921

Inverse Flattening: 298.257222101

Inverse Flattening Definitive: True

Vertical Reference: Ellipsoidal Height

Target Coordinate System

Coordinate System: WGS84_G1150 Coordinate System

Datum: WGS_84(G1150)

Epoch Date: 6/30/2010 (2010.49589041096)

Ellipsoid: WGS 1984

Semi-major axis(meters): 6378137.00000000

Semi-minor axis(meters): 6356752.31424518

Eccentricity: 0.08181919084262157

Eccentricity Squared: 0.00669437999014133

Inverse Flattening: 298.257223563

Inverse Flattening Definitive: True

Vertical Reference: Ellipsoidal Height

****

Source Point Name: "CRWN-OPUS-2010-189"

Geodetic latitude (Degree): N34 16 34.36317

Geodetic longitude (Degree): W119 17 36.51035

Height (Meter): 7.374m

Orthometric Height Scale: 00.999998839777663

****

Target Point Name: "CRWN-OPUS-2010-189"

Geodetic latitude (Degree): N34 16 34.36316

Geodetic longitude (Degree): W119 17 36.51032

Height (Meter): 7.374m

Orthometric Height Scale: 00.999998839775956

NGS OPUS solution

FILE: BCRWNA10.189 000037792

1008 NOTE: Antenna offsets supplied by the user were zero. Coordinates

1008 returned will be for the antenna reference point (ARP).

1008

2005 NOTE: The IGS precise and IGS rapid orbits were not available

2005 at processing time. The IGS ultra-rapid orbit was/will be used to

2005 process the data.

2005

NGS OPUS SOLUTION REPORT

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All computed coordinate accuracies are listed as peak-to-peak values.

For additional information: http://www.ngs.noaa.gov/OPUS/about.html#accuracy

USER: treiss@usgs.gov DATE: July 09, 2010

RINEX FILE: crwn189v.10o TIME: 02:43:17 UTC

SOFTWARE: page5 0909.08 master28.pl 081023 START: 2010/07/08 21:30:00

EPHEMERIS: igu15914.eph [ultra-rapid] STOP: 2010/07/08 23:58:00

NAV FILE: brdc1890.10n OBS USED: 5833 / 6139 : 95%

ANT NAME: ASH701975.01A NONE # FIXED AMB: 35 / 41 : 85%

ARP HEIGHT: 0.0 OVERALL RMS: 0.015(m)

REF FRAME:	NAD_83(CORS96)(EPOCH:2002.0000)		ITRF00 (EPOCH:2010.5177)	
X:	-2581491.308(m)	0.019(m)	-2581492.214(m)	0.019(m)
Y:	-4601394.333(m)	0.032(m)	-4601392.782(m)	0.032(m)
Z:	3571809.897(m)	0.019(m)	3571810.023(m)	0.019(m)
LAT:	34 16 34.34317	0.009(m)	34 16 34.36317	0.009(m)
E LON:	240 42 23.55020	0.005(m)	240 42 23.48965	0.005(m)
W LON:	119 17 36.44980	0.005(m)	119 17 36.51035	0.005(m)
EL HGT:	8.055(m)	0.038(m)	7.374(m)	0.038(m)
ORTHO HGT:	44.080(m)	0.038(m) [NAVD88 (Computed using GEOID09)]		

	UTM COORDINATES	STATE PLANE COORDINATES
	UTM (Zone 11)	SPC (0405 CA 5)
Northing (Y) [meters]	3795162.418	586867.038
Easting (X) [meters]	288871.281	1880900.784
Convergence [degrees]	-1.29211431	-0.73728660
Point Scale	1.00014949	0.99995625
Combined Factor	1.00014823	0.99995498

US NATIONAL GRID DESIGNATOR: 11SKT8887195162(NAD 83)

BASE STATIONS USED

PID	DESIGNATION	LATITUDE	LONGITUDE	DISTANCE(m)
DL7686	COPR COPR_SCGN_CS2001 CORS ARP	N342453.647	W1195246.233	56073.6
DL7689	CRU1 CRU1_SCGN_CS2000 CORS ARP	N340145.315	W1194705.262	52954.8
DL7674	ANA1 ANA1_SCGN_CS2002 CORS ARP	N340053.999	W1192148.433	29684.8

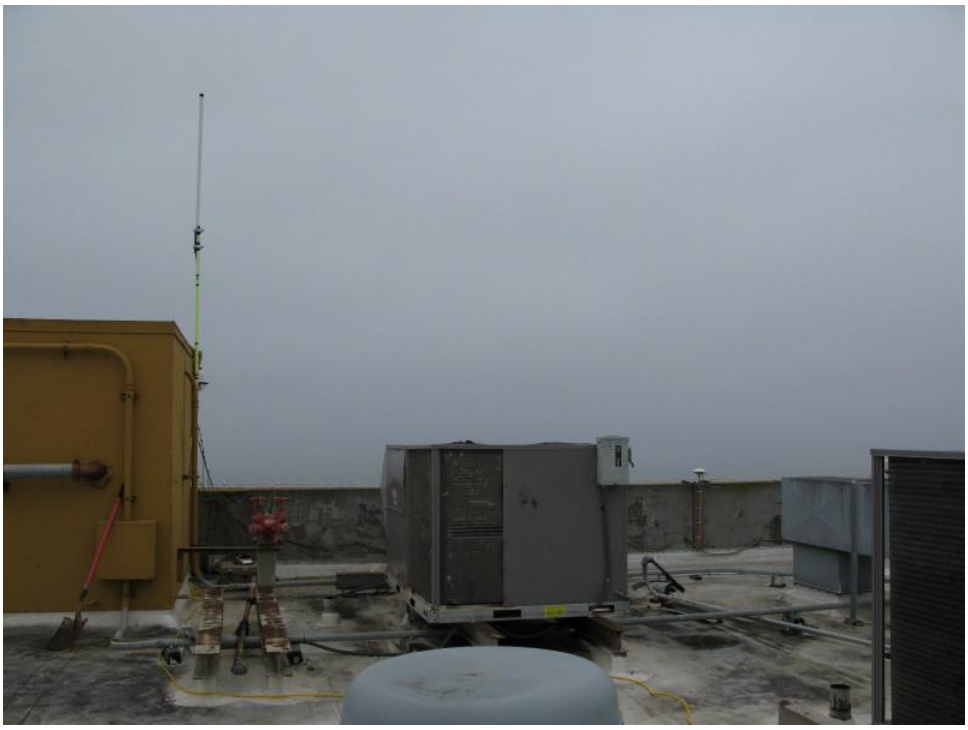
NEAREST NGS PUBLISHED CONTROL POINT

EW5899	NUT RM 1	N341636.	W1191736.	52.5

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

Control Point (at the base of the all-thread rod)

GPS antenna (left)



Radio antenna (left), electronics box (base of wall), and GPS antenna (right)

Electronics box

GPS antenna

Broadcasting radio antenna