

General Notes

This map does not represent a property survey and the positions of set control points established in this survey have not been determined relative to recorded property boundaries or street centerlines.

Field data for this project were collected over a period of three years as part of various GIS and surveying projects for the contributing agencies. All of the data was obtained by GPS receiver observations of the NAVSTAR GPS constellation consisting of twenty-seven (27) Block II satellites. Observations were P-Code encrypted and Selected Availability (SA) was on at all times. Phase and Code on the L1 and L2 frequencies (C/A Code, P-Code) were collected every five (5) seconds from four (4) to nine (9) satellites. Only satellites above a fifteen degree (15°) mask angle were included in the adjustment. Geodetic Dilution of Position (GDOP) was set not to exceed five (5). Observation times varied between six (6) and thirty (30) minutes for each occupation; each station was occupied not less than two separate occasions at intervals exceeding one hour apart. Weather was generally mild with clear skies and moderate temperatures.

The equipment used consisted of three (3) Leica System 300 Dual Frequency P-Code receivers with firmware version 3.22; two (2) Nikon / Novatel Outrider Dual Frequency Systems with SoftSurv core version 2.30. Vertical Control was performed using a Zeiss Dini:10 Digital Auto Level and foldable barcode rod. Post-processing of Leica observation data was performed using Leica SKI software version 1.09B. Nikon / Novatel post-processing was performed using Novatel SoftSurv Post Processor Version 1.51. Network adjustment was performed using Star*Net Version 6.0.5 and Star*Lev Version 1.30.

Horizontal positions and ellipsoid heights are based on the North American Datum of 1983 (NAD 83) 1991.35 epoch adjustment of the High Precision Geodetic Network (HPGN). The positions of the following referenced stations were used in this adjustment and serve as the BASIS OF BEARINGS for this map:

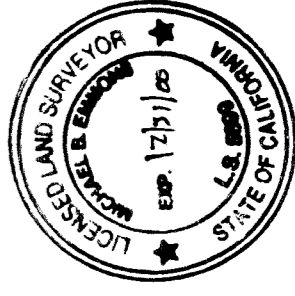
- EW8154 Burro Reset
- HPGN CA 05 01 (PID EW9544) Ortega Hill *
- HPGN D CA 05 AQ (PID DZ1806) Refugio
- HPGN D CA 05 AR (PID EW9580) Naples
- HPGN D CA 05 AS (PID EW9581) Turnpike

* - This station also has a 1995.0 epoch adjustment not used for this survey.

EW9581, HPGN D CA 05 AS (Turnpike) was fixed at its record NAD83, 1991.35 epoch coordinates to validate the other HPGN Stations and establish a relationship with NGS and City of Santa Barbara Stations included in the survey.

County Surveyor's Statement

This Map has been examined in accordance with Section 8766 of the Land Surveyor's Act this 15th day of August, 2000.



Richard B. Emmons
 Michael B. Emmons P.L.S. No. 5899
 County Surveyor
 License Expiration date: 12/31/2000

Recorder's Statement

Filed this 2nd day of August, 2000, at 4:01 p.m. in book 170 of Records of Surveys at Page(s) 47-49, at the request of Sage Consultants, Inc.

Fee: _____
 Kenneth A Pettit, County Clerk - Recorder - Assessor
 By: *Armen Brakke* Deputy

Surveyor's Statement

This Map correctly represents a survey made by me or under my direction in conformance with the requirements of the Land Surveyor's Act at the request of Goleta West Sanitary District and Goleta Water District November, 1999 to May, 2000.

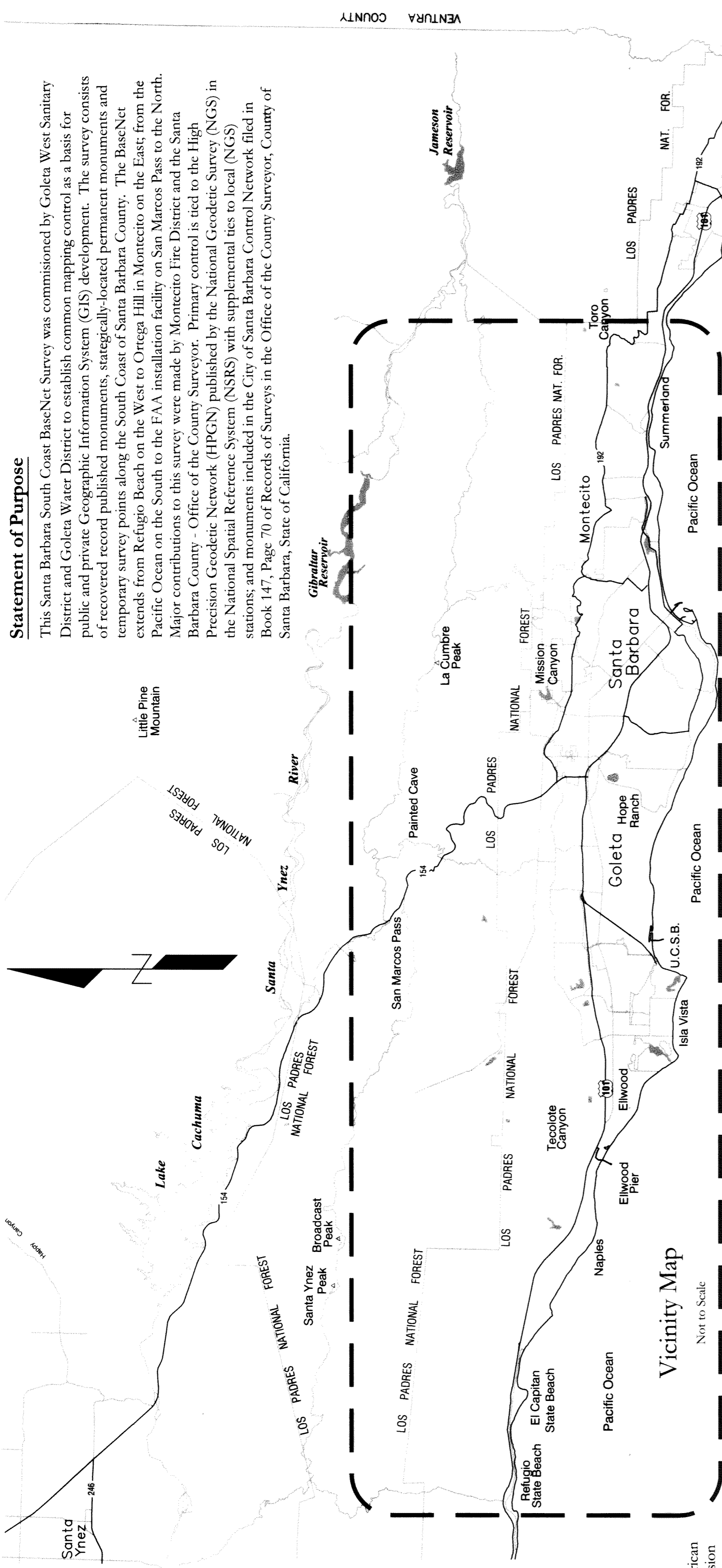
P.L.S. No. 7308
 License Expiration Date 12-31-2000

Richard B. Moore



Statement of Purpose

This Santa Barbara South Coast BaseNet Survey was commissioned by Goleta West Sanitary District and Goleta Water District to establish common mapping control as a basis for public and private Geographic Information System (GIS) development. The survey consists of recovered record published monuments, strategically-located permanent monuments and temporary survey points along the South Coast of Santa Barbara County. The BaseNet extends from Refugio Beach on the West to Ortega Hill in Montecito on the East; from the Pacific Ocean on the South to the FAA installation facility on San Marcos Pass to the North. Major contributions to this survey were made by Montecito Fire District and the Santa Barbara County - Office of the County Surveyor. Primary control is tied to the High Precision Geodetic Network (HPGN) published by the National Geodetic Survey (NGS) in the National Spatial Reference System (NSRS) with supplemental ties to local (NGS) stations; and monuments included in the City of Santa Barbara Control Network filed in Book 147, Page 70 of Records of Surveys in the Office of the County Surveyor, County of Santa Barbara, State of California.



Baseline (vector) precisions at the 95% confidence level (2 sigma) vary between 1 - 10 ppm and average 2.6 ppm. The average baseline (vector) has a length of 6,250 meters. The average 95% relative confidence of vector distance is 0.011 meter

Horizontal closures on the HPGN Stations average 0.0020 meters in latitude, 0.0148 meters in longitude. Average vertical closure is 0.0022 meters.

- Turnpike:Refugio
- HPGN D CA 05 AS : HPGN D CA 05 AQ 0.038/25,627.6 = **1: 674,410**
- Turnpike: Ortega Hill
- HPGN D CA 05 AS : HPGN D CA 01 0.021/16,790.5 = **1:799,548**
- Turnpike:Naples
- HPGN D CA 05 AS : HPGN D CA 05 0.011/15,551.8 = **1:1,413,800**
- Turnpike:Burro Reset
- HPGN D CA 05 AS : EW 8154 0.017/7,532.1 = **1: 427,475**

Horizontal closures on SBCN 0005, 0008 and 0028 (City of Santa Barbara Stations) averages 0.0104 meters in latitude and 0.0086 meters in longitude.

Orthometrics heights (elevations) are based on the North American Vertical Datum of 1988 (NAVD 88) per National Geodetic Survey (NGS) published values and were established by GPS observations and verified by three-wire differential level runs. Referenced stations used in this adjustment are:

- HPGN D CA 05 AQ (PID DZ1806) Refugio
- HPGN D CA 05 AS (PID EW9581) Turnpike
- NGS Carrillo (PID EW9490)
- EW3785, EW3791, EW3794
- Project Stations 2000, 2002, 2003 and 2012

The NAVD 88 elevations computed in Adjustment #4 (See Survey Report on file with the County Surveyor) were obtained by combining GPS ellipsoid heights with the Geoid 96 model constrained to published elevations. Ellipsoid heights are expected to have a probable error of 1-2 centimeter. Probable error in the Geoid 96 model is also expected to be 1-2 centimeter. Relative elevation accuracies are expected to be in the 1-3 centimeter range. The absolute accuracy of the elevations is dependent on the published values of the NGS and HPGN stations used to control the survey.

Record of Survey

of a
 BaseNet Control Network
 established at the request of
 Goleta West Sanitary District and Goleta Water District
 for Geographic Information System Development
 known as the
South Coast BaseNet
 County of Santa Barbara
 State of California



Surveyors * Application Developers * GIS Integrators * Engineers
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June 2000

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