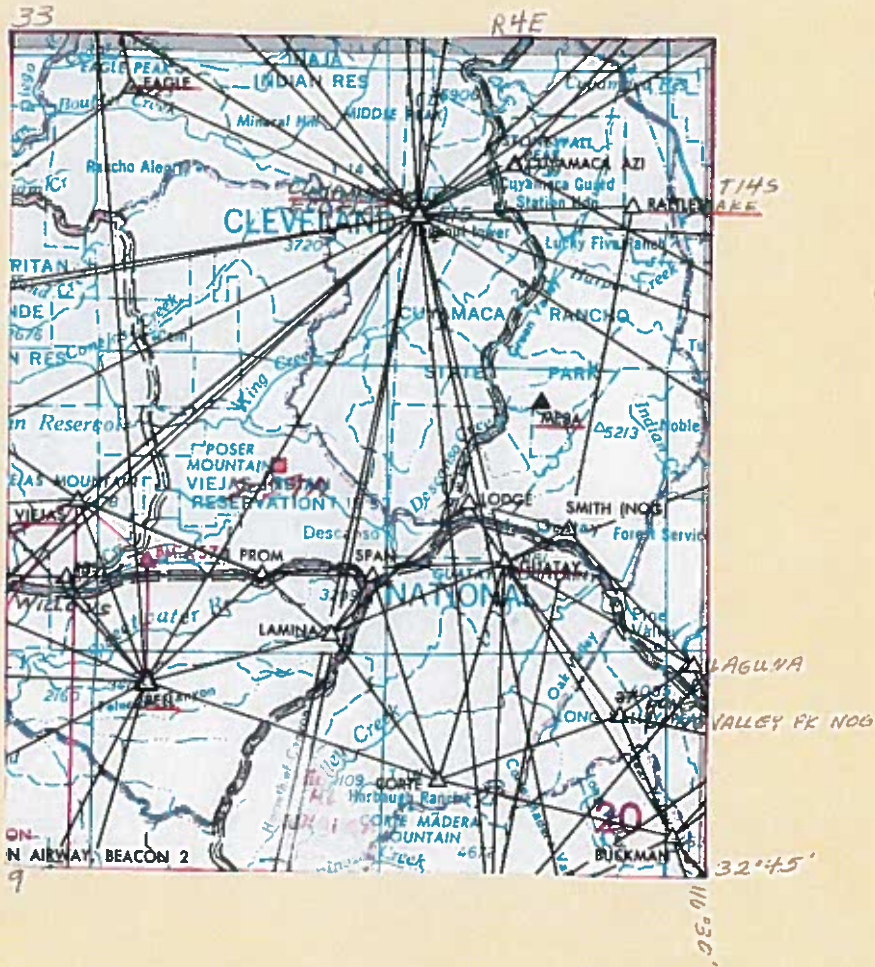


32° 45'  
116 30



32°45'  
116 30

CALIFORNIA 20

Index

32 116 41

Station

Project

~~Al~~

USFS

Baker

USFS

Bell (C&GS)

USFS & Campo

Bluff

~~USFS~~

~~BM-V-894-USC&GS~~

~~USFS~~

Brett

~~USFS~~

Bud

~~USFS~~

C&GS BM "A 574 1939"

Campo

Graig

USFS

Gut

~~USFS~~

Cuyamaca (C&GS)

Campo

Eagle (C&GS)

Campo

~~End~~

USFS

Flora

~~USFS~~

Gere

~~USFS~~

Guatay (C&GS)

Campo

Harry

USFS

Harwood

~~USFS~~

Jen

~~USFS~~

Kim

USFS

Knob

~~USFS~~

Kurt

USFS

Lawson USC&GS *Not in folder*

USFS

CALIFORNIA 20

<u>Station</u>	<u>Project</u>
Mesa (C&GS)	Campo
<del>Mill</del>	<del>USFS</del>
<del>Moreno</del>	<del>USFS</del>
<del>Peck</del>	<del>USFS</del>
<del>Pine</del>	<del>USFS</del>
<del>P.J.W.</del>	<del>USFS</del>
Rattlesnake (C&GS)	Campo
<del>Snake</del>	<del>USFS</del>
Viejas (C&GS)	Campo
<del>West</del>	<del>USFS</del>
S2-29 A	Campo

USFS Project Master - - Diagram Included

Campo Project Master in CALIFORNIA 7 - Book: PH 498

20<sup>c</sup>

Calif. (20)

San Diego County

BELL (C&GS)

1927 N.A.D.

USE. USC&GS, 1939 1941  
W. B. Cook, 1957

Books: PH 497-498

FILE COPY

Described by U.S. Coast and Geodetic Survey in Description List  
No. ~~309, p. 12.~~ **32 1164-1003**

Note by W.B.C., 1957: Station found as described.

Station and reference marks found in good condition and undisturbed.

Signal: Red flag over white X-tgt. nailed to 2 x 2 pole, 49.54 ft.  
from station mark and 3.2 ft. lower in azimuth 149°58'. (Signal was  
moved from this position to center of station mark on March 28, 1957.)

Signal Data:	Top red flag	11.0 ft.
(After March 28	Bottom red flag	8.0
1957)	Top white X-tgt.	7.0
	Bottom white X-tgt.	3.6

Image point No. 1: Neck of white area, 89.5 ft. from station mark  
and 17.1 ft. lower in azimuth 116°00'.

Image point No. 2: Center of rock pinnacle, 158.0 ft. from station  
mark and 10.4 ft. higher in azimuth 189°49'.

Photo No. USN COP 2-27

CALIF.ZONE 6

\*X=1,861,574.80

V.A. elevation 3409. ft.

\*Y= 233,048.88

\*Latitude: 32°48'22.919"

\*Longitude: 116°42'01.764"

\*=Values by USC&GS

FILE COPY

6/5/57 ew  
S.H.

20c

Calif. (20)

San Diego County

C&GS BM " A 574 1939"

1927 N.A.D. (Prelim.)

W. B. Cook, 1957

Books: PH 497-498

Described by U.S. Coast and Geodetic Survey in Calif. Level Line No. 4, p. 6.

FILE COPY

Located about 23 mi. NE. of El Cajon, 4 mi. E. of Alpine, and 1.0 mi. N. of U.S. Hwy. 80, along the old Viejas Grade Road in the Viejas Indian Reservation.

To reach from Alpine P.O., drive 2.4 mi. E. along U.S. Hwy. 80; thence left (NE) 0.5 mi. along old U.S. Hwy. 80; thence left 1.1 mi. NE. along the Old Viejas Grade Road; 0.1 mi. W. of a curve in the rd. to the N.; 19.3 ft. S. of the centerline of the rd.; 5.5 ft. SW. of power pole No. 78884; 1.6 ft. N. of the right-of-way fence; 2 ft. E. of a white, wooden witness post.

Station mark: Standard C&GS BM disk stamped "A 574 1939" set in the top of concrete post.

Signal: Telephone pole with fluorescent over white cloth wrapped around the pole, 5.20 ft. from station mark in azimuth 221°51'. (The bottom of the pole is level with the station mark.)

Signal Data:	Top fluorescent panel	12.4 ft.
	Between panels	8.6
	Bottom white panel	5.6

Image point No. 1: T-rd. N., 565 ft. from station mark and 4 ft. lower in azimuth 91°18'.

Image point No. 2: Centerline E-W. rd., 20 ft. from station mark in azimuth 180°00'.

Photo No. USN COP 2-28

CALIF. ZONE 6  
X=1,860,725.  
Y= 247,316.

Elevation 2345.031 ft. (Second-order leveling by C&GS in Calif. Level Line No. 4)

Latitude: 32°50'44.05"

Longitude: 116°42'12.45"

<u>TO STATION</u>	<u>AZIMUTH</u>	<u>BACK AZIMUTH</u>	<u>FEET</u>
Viejas (C&GS)	130°22'57."	310°22'15."	8,728.
Bell (C&GS)	355 20 34.	176 20 40.	14,293.

FILE COPY

6/5/57 ew/  
JW.

20A

Calif. (20)

San Diego County

CUYAMACA (C&GS)

1927 N.A.D.

C. F. Urquhart, 1904  
U.S.G. USC&GS, 1898, 1935-36, 1939, 1954  
W. B. Cook, 1957 1941

Books: 3789-3798 PH 497-498

Described by U.S. Coast and Geodetic Survey in Special Publication No. 202, p. 313 and Description List No. 309, p. 12 and 13 and Description List No. 736, p. 4. **32 1164 - 1008**

FILE COPY

Recovered by U.S. Geodetic Survey in Bul. 276, p. 179.

Note by W.B.C., 1957: Station found as described.

Station and reference marks found in good condition and undisturbed. (A USC&GS RM. "CUYAMACA NO 3 1954" was found. It is assumed the Coast occupied this station at that date although the notes are not available in the field.)

Identification not requested. Lookout tower can be used as photo image point.

Signal: Center of the lookout, 25.16 ft. from station mark in azimuth 333°39'. The ground at base of tower is 7.6 ft. lower than station mark.

Signal Data:	Eaves	32.2 ft.
	Shutters	30.7
	Top of lightstand centered over station mark	4.3

Photo No. USN COP 13-13

FILE COPY

CALIF. ZONE 6

\*X=1,890,823.30

\*Y= 283,992.38

V.A. elevation 6512. ft.

\*Latitude: 32°56'48.099"

\*Longitude: 116°36'21.134"

\*=Values by USC&GS

6/5/57 ew

*[Handwritten signature]*

20B

Calif. (20)

San Diego County

EAGLE (C&GS)

1927 N.A.D.

Books: PH 497-498

USC&GS, 1939  
W. B. Cook, 1957  
USE., 1941

Described by U.S. Coast and Geodetic Survey in Description List  
~~No. 399, p. 13.~~ 32 116 4 - 10 10

Note by W.B.C., 1957: Found as described.

Note: For verticals only.

Signal: Fluorescent flag over white X-tgts. centered over station mark.

Signal Data:	Top fluorescent flag	11.0 ft.
	Bottom fluorescent flag	8.0
	Top white X-tgt.	7.0
	Bottom white X-tgt.	3.7

Image point No. 1: White spot, 554 ft. from station mark in  
azimuth ~~57°59'~~ 296°49'.

CALIF. ZONE 6

\*X=1,859,204.26

\*Y= 297,726.78

V.A. elevation 3226. ft.

\*Latitude: 32°59'02.771"

\*Longitude: 116°42'32.873"

\*=Values by USC&GS

6/5/57 ew / j.

FILE COPY

FILE COPY

Calif. (20)

San Diego County

GUATAY (C&GS)

1927 N.A.D.

Books: PH 497-498

20D  
USC&GS, 1939

W. B. Cook, 1957

USE. 1941

Describe by U.S. Coast and Geodetic Survey in Description List  
No. ~~309, p. 14.~~ **32 1164-1014**

Note by W.B.C., 1957: Station found as described and all marks are solid. Some of the cement has come out from under one side at station tablet.

Signal: White flag over red X-tgt. nailed to 2 x 4 pole centered over station mark.

Signal Data:	Top white flag	11.0 ft.
	Bottom white flag	8.0
	Top red X-tgt.	7.7
	Bottom red X-tgt.	4.6

Image point No. 1: Intersection of rock outcrop and fire break., 40 ft. from station mark and 9 ft. lower in azimuth 79°08'.

Image point No. 2: Center of rock on top of hill, 12 ft. from station mark and 2 ft. higher in azimuth 229°23'.

Photo No. USN COP 11-36

CALIF. ZONE 6

\*X=1,900,628.77

\*Y= 246,409.97

V.A. elevation 4885. ft.

\*Latitude: 32°50'36.555"

\*Longitude: 116°34'24.704"

&-Values by USC&GS

6/5/57 ew

FILE COPY

FILE COPY



20A

Calif. (20)

San Diego County

MESA (C&GS)

1927 N.A.D.

U.S.I.E. USC&GS, 1935  
W. B. Cook, 1957

Books: PH 497-498

Described by U.S. Coast and Geodetic Survey in Description List  
No. ~~575, p. 5.~~ **32 1164 - 1022**

FILE COPY

Note by W.B.C., 1957: Station found as described. New "To reach"  
as follows:

To reach from Descanso Junction on U.S. Hwy. 80, drive NE. 1.4 mi.  
on U.S. Hwy. 80 to jct. with State Hwy. 79; turn left (N) for 4.8 mi.;  
turn right (E) just before reaching bridge No. 5756 and pass through  
gate. (Key must be obtained from USFS ranger at Descanso R.S.); drive  
easterly on truck trail 2.1 mi.; take right fork main-traveled rd. onto  
grass mesa for 0.6 mi.; take right fork for 0.3 mi.; take right fork  
and proceed SW. for 2.0 mi. to base of rocky peak. Continue on foot  
northwesterly to top. A 20-minute pack.

Note: A new rd. is in the process of construction at this time (1957)  
which will pass directly below the N. side of the mountain and should  
considerably shorten the foregoing description.

No image points turned in as identification was not requested.  
Station mark is on highest point. Rocks project about 3. ft. above  
station mark. Station mark pinpricked on photo USN COP 11-35.

Signal: White flag over red X-tgts. centered over station mark.

Signal Data:	Top white flag	13.0 ft.
	Bottom white flag	10.0
	Top red X-tgt.	8.9
	Bottom red X-tgt.	5.8

Photo No. USN COP 11-35

FILE COPY

CALIF ZONE 6

\*X=1,904,542.49

\*Y= 263,615.54

V.A. elevation 5054. ft.

\*Latitude: 32°53'26.914"

\*Longitude: 116°33'39.434"

\*=Values by USC&GS

6/5/57 ew *[Signature]*

Calif. (20)

San Diego County

20A

RATTLESNAKE (C&GS)

1927 N.A.D.

Books: PH 497-498

USC&GS, 1935  
W. B. Cook, 1957  
U.S.E. 1941

Described by U.S. Coast and Geodetic Survey in Description List  
No. ~~575~~, p. 7. **32 116 4 - 1022**

Note by W.B.C., 1957: Station found as described.

Note: For verticals only.

Signal: Red fluorescent flag over white X-tgts. centered over station mark.

Signal Data:	Top red fluorescent flag	10.2
	Bottom red fluorescent flag	7.2
	Top white X-tgt.	6.9
	Bottom white X-tgt.	3.6

Image point No. 1: Center of rock pinnacle, 245 ft. from station mark in azimuth 140°05'.

Image point No. 2: Center of rock pinnacle, 250 ft. from station mark in azimuth 337°34'.

Photo No. UNK

CALIF. ZONE 6  
\*X=1,914,350.06  
\*Y= 284,162.58

V.A. elevation 5407. ft.

\*Latitude: 32°56'50.492"

\*Longitude: 116°31'45.066"

\*=Values by USC&GS

6/5/57 ew *[Signature]*

FILE COPY

FILE COPY

Calif. (20)

San Diego County

VIEJAS (C&GS)

200

1927 N.A.D.

USC&GS, 1939, 1941  
A. E. Letey, 1954  
W. B. Cook, 1957

Books: PH 297-298 PH 497-498

Described by U.S. Coast and Geodetic Survey in Description List  
~~No. 309, p. 12~~ **32 116 4 - 1032**

Recovered by A.E.L. 1954.

Note by W.B.C., 1957: Station found as described. Station and reference marks found in good condition and undisturbed.

Signal: White flag over red X-tgt. nailed to 2 x 3 pole centered over station mark.

Signal Data:	Top white flag	11.0 ft.
	Bottom white flag	8.0
	Top red X-tgt.	7.8
	Bottom red X-tgt.	5.5

Image point No. 1: Center of largest boulder in rock outcrop, 229.1 ft. from station mark and 75.6 ft. lower in azimuth 285°09'.

Image point No. 2: Center of largest boulder in rock outcrop, 361.4 ft. from station mark and 74.4 ft. lower in azimuth 309°52'.

Photo No. USN COP 11-14

FILE COPY

FILE COPY

CALIF. ZONE 6

\*X=1,854,101.20

\*Y= 252,999.90

V.A. elevation 4187. ft.

\*Latitude: 32°51'59.996"

\*Longitude: 116°43'30.387"

\*=Values by USC&GS

6/5/57 ew *[Signature]*

Calif. (20)

San Diego County

2-29A

1927 N.A.D. (Unadj.)

W. B. Cook, 1957

Books: PH 497-498

FILE COPY

Located about 7 mi. NE. of Alpine, Calif., about 3 mi. NW. of Descanso, and 0.4 mi. NW. of the summit of the Old Viejas Grade Rd.; on the highest point of a rocky ridge, 5 ft. N. and 4 ft. below highest point of hill.

Station mark: Ground at center of "Y" crack in large, granite boulder.

Signal: White flag over red over white X-tgts. nailed to 2 x 4 pole centered over station mark.

Signal Data:	Top white flag	13.1 ft.
	Bottom white flag	10.1
	Top red X-tgt.	10.0
	Between X-tgts.	6.6
	Bottom white X-tgt.	3.5

Photo No. USN COP 2-29A

Image pint No. 1: S. edge of firebreak at drain head, 614.4 ft. from station mark and 141.5 ft. lower in azimuth 129°54'.

Image point No. 2: Top of main boulder in rock outcrop, 452.0 ft. from station mark and 78.7 ft. lower in azimuth 210°23'.

FILE COPY

CALIF. ZONE 6

X=1,876,387.

Y= 256,598.

V.A. elevation 3928. ft.

Latitude: 32°52'16.53"

Longitude: 116°39'09.29"

<u>TO STATION</u>	<u>AZIMUTH</u>	<u>BACK AZIMUTH</u>	<u>FEET</u>
Bell (C&GS)	31°56'53."	211°55'19."	27,821.
Viejas (C&GS)	80 36 25.	260 34 03.	22,575.

6/5/57 ew *AW*

208

Calif. (20)

San Diego County

EAGLE (C&GS)

1927 N.A.D.

USC&GS, 1939  
W. B. Cook, 1957  
USE., 1941

Books: FH 497-498

Described by U.S. Coast and Geodetic Survey in Description List  
No. 309, p. 13. **32 116 4 - 10 10**

Note by W.B.C., 1957: Found as described.

Note: For verticals only.

Signal: Fluorescent flag over white X-tgts. centered over station  
mark.

Signal Data:	Top fluorescent flag	11.0 ft.
	Bottom fluorescent flag	8.0
	Top white X-tgt.	7.0
	Bottom white X-tgt.	3.7

Image point No. 1: White spot, 554 ft. from station mark in  
azimuth ~~57°55'~~ **296°49'**

CALIF. ZONE 6

\*X=1,859,204.26

\*Y= 297,726.78

V.A. elevation 3226. ft.

\*Latitude: 32°59'02.771"

\*Longitude: 116°42'32.873"

\*=Values by USC&GS

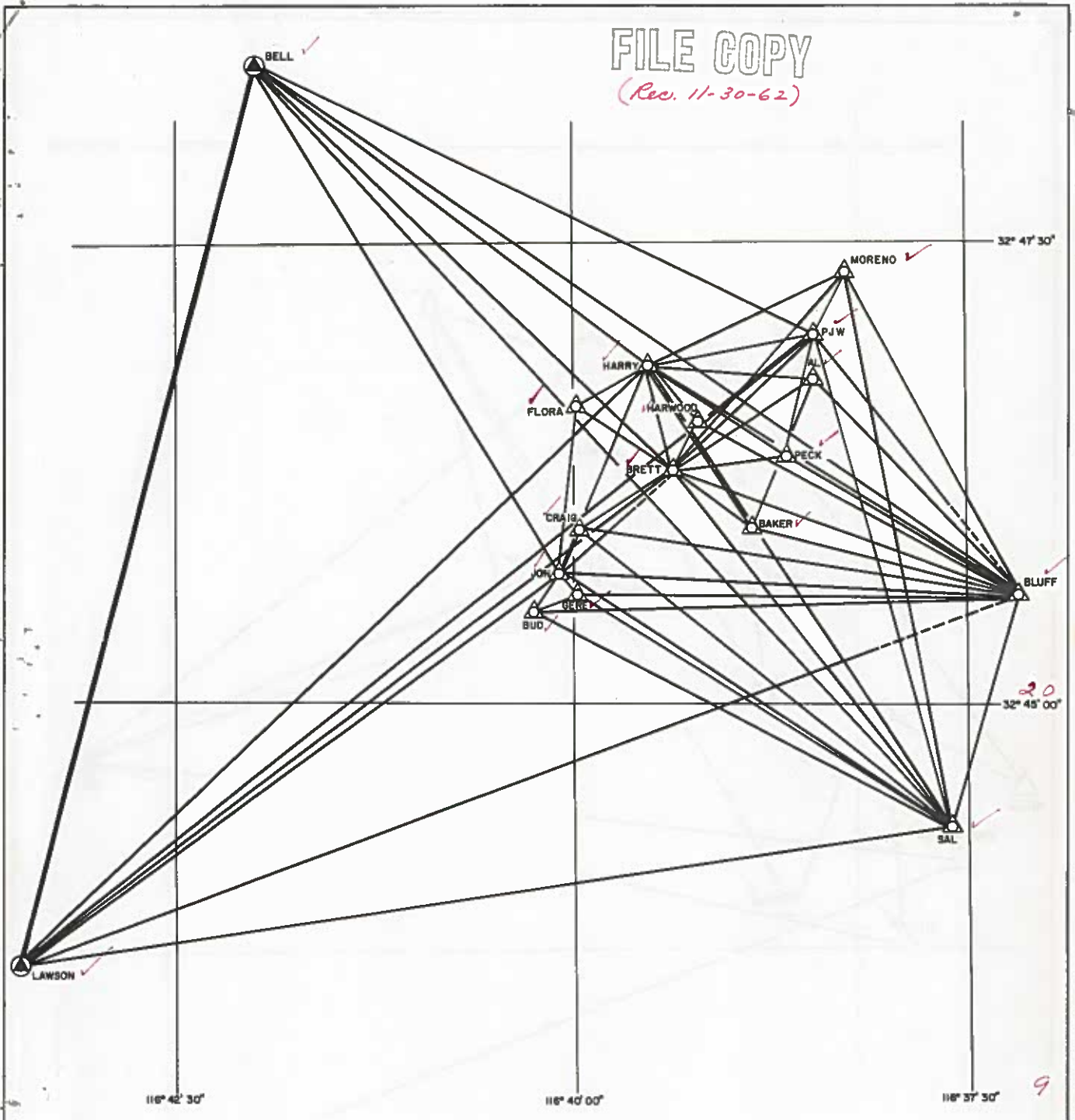
6/5/57 ew / (w)

FILE COPY

FILE COPY

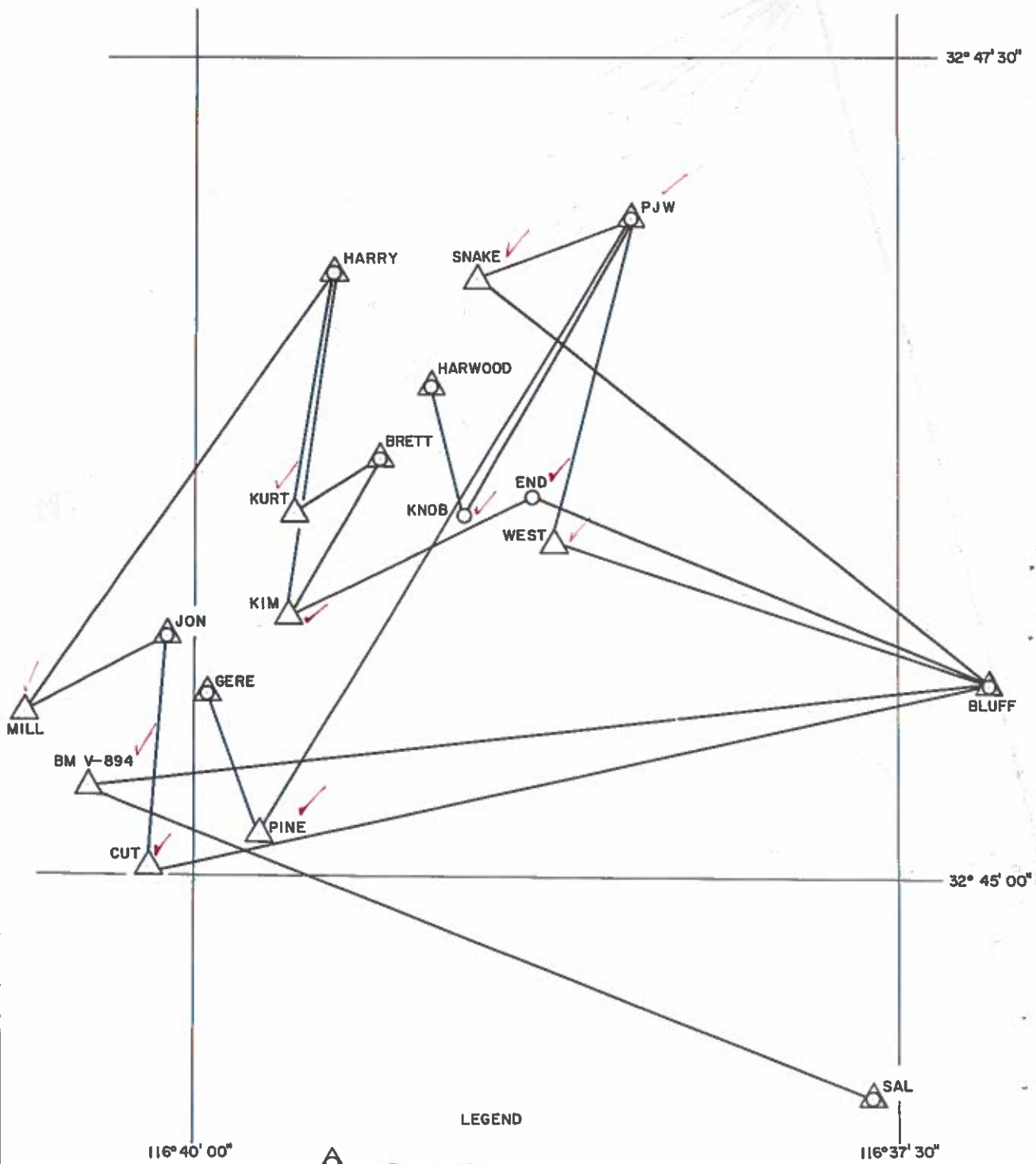
FILE COPY

(Rec. 11-30-62)



USFS CONTROL DIAGRAM  
 HORSETHIEF - LOS BANCOS ROAD NO. 15527  
 CLEVELAND N.F. R-5 CALIF (ZONE 6)  
 TRIANGULATION BY D.S. Harwood Jr., 1962

- LEGEND
- USCGGS
  - ▲ USFS PRIMARY (ADJUSTED)



LEGEND

- △ USFS PRIMARY
- △ USFS SECONDARY (UNADJUSTED)
- USFS FOURTH ORDER

TRIANGULATION STATION RECORD

20<sup>c</sup> CALIF 20

Station BAKER County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Year 1962 Accuracy 3rd Photo No. CL 1962 2-4

Description:

Station is located in San Diego County in the Descanso District of the Cleveland National Forest approximately 6 1/2 air miles southwest of Descanso and 7 air miles southeast of Alpine, California. The station is on the highest point south of the end of the existing Horsethief Truck Trail. The station mark is set about 5 feet lower than some boulders to the east and north.

ROUTE TO STATION: To reach from Descanso Junction, take U. S. Highway No. 80 west for 0.6 mile to turnoff to Japatul Valley Road, take turnoff left (southwest) for 0.1 mile to Japatul Valley Road. Take Japatul Valley Road for 1.6 mile to Griffin Truck Trail which is on left leading east. Take Griffin Truck Trail through the Martin Ranch buildings and up hill for 1.3 miles to Horsethief Truck Trail, thence take right (south) onto Horsethief Truck Trail for 3.4 mile to end of Horsethief Truck Trail (1962) and pack up hill to south to Station BAKER.

STATION MARK: Station mark is a small standard bronze disc stamped "BAKER 1962" and is grouted into a crack in the boulders.

FILE COPY

North Amer. 1927 Datum. Latitude 32° 45' 54" 941 Longitude 116° 38' 51" 490  
 Plane Coordinates: Zone 6 X = 1877758.45 Feet Y = 218027.49 Feet  
 Δα = -0° 13' 06" 6 Elevation 2882.6 Obtained by VA

To Station	Azimuth			Back Azimuth			Distance	
	°	'	"	°	'	"	Meters	Feet
Cut	50	12	41.8	230	12	00.0	2620.00	8595.77
Lawson	59	10	43.1	239	08	12.3	8452.44	27,731.04
Gere	65	58	09.8	245	57	34.9	1837.91	6029.88
Bud	71	07	18.0	251	06	31.6	2359.66	7741.64
Kim	76	17	40.6	256	17	14.4	1292.28	4239.77
Craig	87	03	45.5	267	03	10.0	1708.57	5605.54
Kurt	102	44	09.1	282	43	42.2	1329.51	4361.89
Brett	124	59	25.1	304	59	08.7	963.94	3162.53
Harry	146	57	03.1	326	56	41.3	1921.04	6302.60
Harwood	153	09	31.9	333	09	21.7	1080.93	3546.36
Snake	170	51	12.0	350	51	06.7	1608.97	5278.76
PJW	197	13	45.4	17	13	57.7	2001.41	6566.31
Moreno	199	08	05.0	19	08	23.3	2683.53	8804.22
Al	200	59	44.4	20	59	56.1	1565.18	5135.11
Bluff	283	41	41.3	103	42	36.1	2713.76	8903.38



TRIANGULATION STATION RECORD

Station ..... BELL USC&GS ..... County ..... San Diego ..... State ..... California ..... Quadrangle 3245-11630/15  
 Established by ..... USC&GS ..... Year ..... 1939 ..... Accuracy ..... 1st ..... Photo No. ....

Description:

See USC&GS description.

FILE COPY

North Amer. 1927 Datum. Latitude  $32^{\circ} 48' 22''$ .919 ..... Longitude  $116^{\circ} 42' 01''$ .764 .....

Plane Coordinates: Zone ..... 6 ..... X = 1861574.79 ..... Feet Y = 233048.88 ..... Feet

$\Delta\alpha = -0^{\circ} 14' 51''$ .2 ..... Elevation ..... 3409.1 feet ..... Obtained by ..... VA .....

To Station	Azimuth			Back Azimuth			Distance	
	°	'	"	°	'	"	Meters	Feet
Lawson USC&GS	14	31	38.1	194	30	50.2	9185.20	30135.11
PJW	295	30	23.1	115	32	18.5	6143.09	20154.46
Bluff	304	24	32.6	124	27	10.4	9199.05	30180.54
Harry	307	03	07.9	127	04	29.2	4891.77	16049.08
Brett	313	53	37.8	133	55	04.4	5776.27	18950.98
Sal	317	06	07.6	137	08	32.4	10230.94	33566.04
Craig	325	03	18.4	145	04	25.9	5667.41	18593.84
Jon	328	39	21.3	148	40	23.5	5752.06	18871.56

TRIANGULATION STATION RECORD

20D

CALIF 20

Station BLUFF County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Year 1962 Accuracy 3rd Photo No. \_\_\_\_\_

Description:

Station is located approximately 6 air miles south of Descanso and 9 air miles southeast of Alpine, California. It is located in San Diego County in the Descanso District of the Cleveland National Forest. Station Bluff is on a small bluff about 100 feet west of a curve on the Corte Madera Truck Trail.

ROUTE TO STATION: To reach from Descanso Junction, take U. S. Highway No. 80 west 0.6 mile to turnoff to Japatul Valley Road, thence southwest for 0.1 mile to Japatul Valley Road. Take Japatul Valley Road south to junction with Japatul Valley-Lyons Valley Road and Dehesa Road. Follow Lyons Valley Road south for 5.9 miles to road on left (east) to Barret Honor Camp. Go east 1.4 miles to fork, take right fork east for 0.8 mile to fork, take right fork east for 0.4 mile to intersection. Take right (south) to intersection, take left (north) for 2.1 miles to intersection. Continue east for 1.1 miles to fork, take right fork (east) for 0.6 mile to gate and intersection, thence left (north) for 0.1 mile. Pass a locked gate (Forest Service Key) and continue 0.6 mile to fork, take right fork (northeast) for 0.1 mile to fork. Take left fork (north) for 4.2 miles to station Bluff which is to the west of road.

STATION MARK: Station mark is a copperweld bar with a brass cap stamped "BLUFF USFS 1961" which extends ±0.2 feet above the ground.

FILE COPY

North Amer. 1927 Datum. Latitude 32° 45' 34"073 Longitude 116° 37' 10"199  
 Plane Coordinates: Zone \_\_\_\_\_ X=1886400.65 Feet Y=215886.66 Feet  
 Δα = -0° 12' 11"0 Elevation 3228.2 Obtained by VA

To Station	Azimuth			Back Azimuth			Distance	
							Meters	Feet
Sal	15	16	30.4	195	16	17.4	2380.12	7808.76
Lawson USC&GS	69	34	24.5	249	30	58.9	10560.30	34,646.59
Cut	77	28	33.2	257	26	56.5	4763.47	15,628.14
BM V-894	83	44	09.5	263	42	23.3	5138.42	16,858.29
Bud	88	35	30.0	268	33	48.8	4870.83	15,980.39
Gere	88	36	31.0	268	35	01.3	4316.52	14,161.78
Jon	93	36	02.1	273	34	26.5	4606.22	15,112.24
Craig	97	17	48.7	277	16	18.4	4378.24	14,364.28
Kurt	103	23	41.0	283	22	19.2	4043.14	13,264.86
Baker	103	42	36.1	283	41	41.3	2713.76	8903.38
West	108	47	17.2	288	46	24.2	2693.26	8836.14
Brett	109	14	46.1	289	13	34.9	3628.80	11,905.50

Continued

TRIANGULATION STATION RECORD

Station BLUFF County \_\_\_\_\_ State \_\_\_\_\_ Quadrangle \_\_\_\_\_

Established by \_\_\_\_\_ Year \_\_\_\_\_ Accuracy \_\_\_\_\_ Photo No. \_\_\_\_\_

Description:

FILE COPY

North Amer. 1927 Datum. Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

Plane Coordinates: Zone \_\_\_\_\_ X= \_\_\_\_\_ Feet Y= \_\_\_\_\_ Feet

Elevation \_\_\_\_\_ Obtained by \_\_\_\_\_

To Station	Azimuth			Back Azimuth			Distance	
	°	'	"	°	'	"	<del>Meters</del>	<del>Feet</del>
Harwood ✓	117	13	52.1 ✓	297	12	47.1 ✓	3513.67 ✓	11,527.76 ✓
Peck ✓	121	23	35.8 ✓	301	22	48.0 ✓	2692.69 ✓	8834.28 ✓
Harry ✓	121	27	30.5 ✓	301	26	13.9 ✓	4318.38 ✓	14,167.88 ✓
Bell ✓	124	27	10.4 ✓	304	24	32.6 ✓	9199.05 ✓	30,180.54 ✓
Snake ✓	127	39	34.4 ✓	307	38	34.2 ✓	3652.82 ✓	11,984.31 ✓
A1 ✓	135	23	54.0 ✓	315	23	10.8 ✓	2955.46 ✓	9696.36 ✓
PJW ✓	141	20	53.6 ✓	321	20	11.1 ✓	3271.15 ✓	10,732.11 ✓
Moreno ✓	151	04	37.7 ✓	331	04	01.2 ✓	3631.12 ✓	11,913.10 ✓

TRIANGULATION STATION RECORD

20C CALIF 20

Station BM V-894 USC&GS, Vert. County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Jr. Year 1962 Accuracy 3rd Photo No. CL 1962 2-1

Description:

See USC&GS Line Level

FILE COPY

North Amer. 1927 Datum. Latitude 32° 45' 15.830 Longitude 116° 40' 26.413

Plane Coordinates: Zone 6 X = 1869636.51 Feet Y = 214106.69 Feet

$\lambda = -0° 13' 58.8$  Elevation 2602.24 Obtained by Level line

To Station	Azimuth			Back Azimuth			Distance	
	°	'	"	°	'	"	Meters	Feet
Mill	149	21	19.4	329	21	14.1	496.80	1629.91
Bud	208	22	00.3	28	22	05.2	501.25	1644.52
Gere	240	03	47.0	60	04	03.5	914.24	2999.47
Bluff	263	42	23.3	83	44	09.5	5138.42	16,858.29
Sal	291	08	31.1	111	10	04.2	4805.01	15,764.43

TRIANGULATION STATION RECORD

206

CALIF 20

Station BRETT County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Year 1962 Accuracy 3rd Photo No. CL 1962 2-4

Description:

Station Brett is located in San Diego County in the Descanso District of the Cleveland National Forest approximately 5 air miles southwest of Descanso and 7.5 air miles southeast of Alpine, California. It is placed among a group of small boulders 25 feet west of a group of large boulders, the tops of which are about 3-4 feet higher than the station mark.

ROUTE TO STATION: To reach from Descanso Junction, take U. S. Highway 80 west .6 mile to turnoff to Japatul Valley Road, take turnoff left to southwest .1 mile to Japatul Valley Road to left (south). Take Japatul Valley Road 5.3 miles to entrance to Davis Ranch. Pack about .75 mile southeast to top of ridge and Station Brett.

STATION MARK: Station mark is a copperweld bar and brass cap stamped "Brett USFS 1962" set flush with ground.

FILE COPY

North Amer. 1927 Datum. Latitude 32° 46' 12"884 Longitude 116° 39' 21"832  
 Plane Coordinates: Zone 6 X=1875174.49 Feet Y=219850.88 Feet  
 Δα = -0° 13' 23"3 Elevation 3035.0 Obtained by VA

To Station	Azimuth			Back Azimuth			Distance	
	°	'	"	°	'	"	Meters	Feet
Kim	28	27	55.0	208	27	45.3	977.10	3205.71
Jon	52	13	39.0	232	13	14.6	1481.21	4859.61
Lawson USC&GS	52	56	45.8	232	54	31.4	8105.31	26,592.18
Craig	55	03	31.8	235	03	12.7	1118.12	3668.37
Kurt	62	52	48.7	242	52	38.1	569.70	1869.11
Flora	120	56	48.8	300	56	27.3	1204.46	3951.62
Bell USC&GS	133	55	04.4	313	53	37.8	5776.27	18,950.98
Harry	166	17	13.3	346	17	08.0	1088.46	3571.07
Harwood	216	13	26.3	36	13	32.5	510.39	1674.51
Moreno	220	05	38.5	40	06	13.2	2591.73	8503.02
PJW	225	29	24.8	45	29	53.5	1938.51	6359.92
Al	236	03	58.0	56	04	26.1	1627.66	5340.06
Peck	259	36	05.5	79	36	29.0	1146.23	3760.60
Bluff	289	13	34.9	109	14	46.1	3628.80	11,905.50
West	290	32	40.3	110	32	58.5	935.88	3070.45
Baker	304	59	08.7	124	59	25.1	963.94	3162.53
Sal	321	16	06.5	141	17	04.6	4475.42	14,683.12

TRIANGULATION STATION RECORD

20C CALIF 20

Station BUD County San Diego State California Quadrangle 3245-11630/15
Established by D.S.H. Year 1962 Accuracy 3rd Photo No. CL 1962 2-2

Description:

Station Bud is located in San Diego County in the Descanso District of the Cleveland National Forest approximately 6.5 air miles southwest of Descanso and approximately 7.5 air miles southeast of Alpine, California. It is on a small top about 2000 feet north of the Japatul Valley-Lyons Valley Road and about 600 feet east of the same road as it curves from the north into Horsethief Canyon.

ROUTE TO STATION: To reach Bud from Descanso Junction, take U. S. Highway 80 west .6 mile to turnoff to Japatul Valley Road. Take turnoff left, southwest .1 mile to Japatul Valley Road to left (south). Take Japatul Valley Road to junction with Japatul Valley-Lyons Valley Road and Dehesa Road. Take Japatul Valley-Lyons Valley Road to left .7 mile. Pack up hill about 2000 feet to small top and Station Bud.

STATION MARK: Station mark is a copperweld bar and brass cap stamped "Bud USFS 1962". Mark extends .2 feet above ground and about 3 feet lower than a group of boulders about 20 feet to the north on the same top.

FILE COPY

North Amer. 1927 Datum. Latitude 32° 45' 30" 148 Longitude 116° 40' 17" 264
Plane Coordinates: Zone 6 X= 1870423.73 Feet Y= 215550.57 Feet
Elevation 2809.1 Obtained by VA

Table with 4 columns: To Station, Azimuth, Back Azimuth, Distance (Meters and Feet). Rows include BM V-894, Lawson, Jon, Kim, Baker, Gere, Bluff, Sal, and Cut.

TRIANGULATION STATION RECORD

20C CALIF 20

Station CRAIG County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Year 1962 Accuracy 3rd Photo No. CL 1962 2-3

Description:

Station is located in San Diego County in the Descanso District of the Cleveland National Forest approximately 5 1/2 air miles southwest of Descanso and 7 1/2 miles southeast of Alpine, California. Station is on a large, flat boulder about 15 feet across the top. The station is on the east side toward the middle of a group of boulders ranging in size from 10 feet to 40 feet. Station is about 15 feet lower than the highest of these boulders. These boulders are about 500 feet south of another group of large boulders on the same ridge.

ROUTE TO STATION: To reach from Descanso Junction, take U. S. Highway No. 80 west for 0.6 miles to turnoff to Japatul Valley Road. Take turnoff left (southwest) for 0.1 mile to Japatul Valley Road; thence, left (south) on Japatul Valley Road for 5.3 miles to entrance to the Davis Ranch. Pack 3/4 mile to south and station among boulders.

STATION MARK: Station mark is a small standard USDA bronze disc stamped "CRAIG 1962" set in a drill hole in the surface of the boulder.

FILE COPY

North Amer. 1927 Datum. Latitude 32° 45' 52".094 Longitude 116° 39' 57".046  
 Plane Coordinates: Zone 6 X = 1872159.21 Feet Y = 217761.61 Feet  
 $\Delta \alpha = -0^\circ 13' 42".7$  Elevation 3006.3 Obtained by VA

To Station	Azimuth			Back Azimuth			Distance	
	°	'	"	°	'	"	Meters	Feet
Jon	43	36	17.8	223	36	12.5	368.62	1209.37
Lawson	52	36	10.0	232	34	14.6	6988.08	22,926.71
Bell	145	04	25.9	325	03	18.4	5667.41	18,593.84
PJW	228	58	56.5	48	59	44.3	3046.75	9995.87
Harwood	229	10	40.7	49	11	06.0	1609.64	5280.96
Brett	235	03	12.7	55	03	31.8	1118.12	3668.37
Baker	267	03	10.0	87	03	45.5	1708.57	5605.54
Bluff	277	16	18.4	97	17	48.7	4378.24	14,364.28
Sal	307	29	02.2	127	30	19.5	4684.14	15,367.90
Gere	357	35	20.4	177	35	29.7	661.47	2170.17

TRIANGULATION STATION RECORD

20C CALIF 20

Station CUT County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Year 1962 Accuracy 3rd Photo No. CL 1962 2-1

Description:

Station is located approximately 7 air miles southwest of Descanso and 7 1/2 air miles southeast of Alpine, California. It is located in San Diego County in the Descanso district of the Cleveland National Forest. Cut is on the north side of an abandoned road bed about 60 feet north of the present Lyons Valley - Japatul Valley Road.

ROUTE TO STATION: To reach from Descanso Junction, take U. S. Highway No. 80 west 0.6 mile to turnoff to Japatul Valley Road; thence, southwest for 0.1 mile to Japatul Valley Road. Take Japatul Valley Road south to junction with Japatul Valley-Lyons Valley Road and Dehesa Road. Follow Japatul Valley - Lyons Valley Road 1.2 miles to station Cut on left, 60 feet north of road.

STATION MARK: Station mark is a copperweld bar and brass cap which extends +0.35 feet above ground and is stamped "CUT USFS 1962."

FILE COPY

North Amer. 1927 Datum. Latitude 32° 45' 00" 505 Longitude 116° 40' 08" 825  
 Plane Coordinates: Zone 6 X = 1871132.38 Feet Y = 212551.81 Feet  
 $\Delta\alpha = 0^\circ 13' 49" 1$  Elevation 2541.75 Obtained by Level line

To Station	Azimuth			Back Azimuth			Distance	
	°	'	"	°	'	"	Meters	Feet
Bud	166	28	25.3	346	28	20.7	939.20	3081.34
Jon	182	16	05.3	002	16	06.4	1323.30	4341.51
Gere	199	48	44.7	19	48	51.7	986.71	3237.23
Al	219	21	00.9	39	21	54.4	4058.62	13,315.65
Peck	223	58	04.2	43	58	53.1	3385.59	11,107.57
Baker	230	11	60.0	50	12	41.8	2620.00	8595.77
Pine	246	32	25.8	66	32	39.6	719.91	2361.91
Bluff	257	26	56.5	77	28	33.2	4763.47	15,628.14

NE



TRIANGULATION STATION RECORD

Station END County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Year 1962 Accuracy 4th Photo No. CL 1962 2-4  
 Plane Coordinate Computation

Description:

Station End is located in San Diego County in the Descanso district of the Cleveland National Forest approximately 6 air miles southwest of Descanso and 7 air miles southeast of Alpine, California. It is in the flat area at the south end of Horsethief Truck Trail. ✓

ROUTE TO STATION: To reach from Descanso Junction, take U. S. Highway No. 80 west for 0.6 mile to turnoff to Japatul Valley Road, take turnoff southwest for 0.1 mile to Japatul Valley Road; thence, take left (south) onto Japatul Valley Road for 1.6 miles to Griffin Truck Trail which is on left leading east. Take Griffin Truck Trail through Martin Ranch buildings and up hill for 1.3 miles to Horsethief Truck Trail thence right (south) onto Horsethief Truck Trail for 3.4 miles to end of Truck Trail ✓ and station..

STATION MARK: Station mark is a copperweld bar and brass cap stamped "END USFS 1962" set flush with ground, ✓

FILE COPY

North Amer. 1927 Datum. Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
 Plane Coordinates: Zone 6 X = 18780833 ✓ Feet Y = 2192751 ✓ Feet  
 Elevation 2637.8 ✓ Obtained by VA ✓

To Station	Azimuth	Back Azimuth	Distance	
			Meters	Feet
Bluff ✓	567 50 04E ✓			8981.1 ✓
Kim ✓	563 18 21W ✓			4978.3 ✓

TRIANGULATION STATION RECORD

20C CALIF 20

Station FLORA County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Year 1962 Accuracy 3rd Photo No. \_\_\_\_\_

Description:

Station is located approximately 5 1/2 air miles southwest of Descanso and 6 1/2 air miles southeast of Alpine, California. It is located in San Diego County in the Descanso District of the Cleveland National Forest. Station is approximately 32 feet west of the Japatul Valley Road centerline across the road from the Davis Ranch entrance where USC&GS BMG-894 is found. Station is on a flat area about 4 feet higher than the road.

ROUTE TO STATION: To reach from Descanso Junction, take U. S. Highway No. 80 west for 0.6 mile to turnoff to Japatul Valley Road. Take turnoff left to southwest for 0.1 mile to Japatul Valley Road. Take Japatul Valley Road for 5.3 miles to entrance to Davis Ranch on left of road and station FLORA on right (west) side of road.

STATION MARK: Station mark is a copperweld bar and brass cap stamped "Flora USFS 1962" set flush with ground.

FILE COPY

North Amer. 1927 Datum. Latitude 32° 46' 32" 989 Longitude 116° 40' 01" 524  
 Plane Coordinates: Zone 6 X = 1871793.34 Feet Y = 221896.16 Feet  
 $\Delta\alpha = -0^\circ 13' 45" 1$  Elevation 2837.72 Obtained by Level Line

To Station	Azimuth			Back Azimuth			Distance	
							Meters	Feet
Jon	05	09	09.8	185	09	06.9	1532.87	5029.10
Mill	24	48	29.8	204	48	11.1	2147.59	7045.88
Harry	240	30	59.1	60	31	15.2	890.20	2920.61
Brett	300	56	27.3	120	56	48.8	1204.46	3951.62
Kurt	329	06	12.3	149	06	23.3	1024.40	3360.87

TRIANGULATION STATION RECORD

20C CALIF 20

Station GERE County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Year 1962 Accuracy 3rd Photo No. CL 1962 2-2

Description:

Station Gere is located in San Diego County in the Descanso District of the Cleveland National Forest approximately 6.5 air miles southwest of Descanso and approximately 7.5 air miles southeast of Alpine, California. It is on a steep rocky top overlooking Horsethief Canyon to the east. It is set among a group of large boulders which are about 15 feet higher and 100 feet north of the station on the same top.

ROUTE TO STATION: To reach from Descanso Junction, take U. S. Highway 80 .6 miles west to turnoff to Japatul Valley Road. Take turnoff left, southwest .1 mile to Japatul Valley Road to left (south). Take Japatul Valley Road to junction with Japatul Valley-Lyons Valley Road and Dehesa Road. Take Japatul Valley-Lyons Valley Road to left .7 mile. Pack past station Bud then east to top overlooking Horsethief Canyon.

STATION MARK: Station mark is a small standard USDA bronze disk stamped "Gere 1962" set in a drill hole in a flat boulder which is lower than the surrounding boulders.

FILE COPY

North Amer. 1927 Datum. Latitude 32° 45' 30" 640 Longitude 116° 39' 55" 977

Plane Coordinates: Zone 6 X = 1872241.85 Feet Y = 215593.00 Feet

$\Delta\alpha = -0^\circ 13' 42" 1$  Elevation 2858.0 Obtained by VA

To Station	Azimuth			Back Azimuth			Distance	
	°	'	"	°	'	"	Meters	Feet
Cut	19	48	51.7	199	48	44.7	986.71	3237.23
Lawson	57	17	26.9	237	15	31.0	6630.98	21,755.16
BM V-894	60	04	03.5	240	03	47.0	914.24	2999.47
Bud	88	26	05.4	268	25	53.9	554.31	1818.61
Jon	144	23	59.4	324	23	53.5	484.52	1589.64
Craig	177	35	21.0	357	35	20.4	661.47	2170.17
Baker	245	57	34.9	65	58	09.8	1837.91	6029.88
Bluff	268	35	01.3	88	36	31.0	4316.52	14,161.78
Sal	300	41	25.2	120	42	41.8	4290.01	14,074.82
Pine	333	04	21.7	153	04	28.4	719.75	2361.38

TRIANGULATION STATION RECORD

200 CALIF 20

Station HARRY County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Year 1962 Accuracy 3rd Photo No. \_\_\_\_\_

Description:

Station Harry is located in San Diego County in the Descanso District of the Cleveland National Forest approximately 5 air miles southwest of Descanso and 7 air miles southeast of Alpine, California. It is on a large rounded boulder at the top of the most prominent hill on the Davis Ranch east of the Japatul Valley Road.

ROUTE TO STATION: To reach from Descanso Junction, take U. S. Highway 80 west .6 mile to turnoff to Japatul Valley Road to left. Take turnoff to southwest .1 mile to Japatul Valley Road to left (south). Take Japatul Valley Road 5.3 miles to entrance to Davis Ranch. Pack about .5 mile to northeast to highest point on most prominent hill east of road and station Harry.

STATION MARK: Station mark is a small standard USDA bronze disk set flush in a drill hole in the boulder and is stamped "Harry 1962".

FILE COPY

North Amer. 1927 Datum. Latitude 32° 46' 47" 211 Longitude 116° 39' 31" 747  
 Plane Coordinates: Zone 6 X = 1874341.45 Feet Y = 223323.43 Feet  
 $\alpha = -0^{\circ} 13' 28" 8$  Elevation 3184.3 Obtained by VA

To Station	Azimuth			Back Azimuth			Distance	
	°	'	"	°	'	"	Meters	Feet
Kim	06	11	00.9	186	10	56.6	1927.64	6324.25
Kurt	10	42	19.4	190	42	14.2	1340.48	4397.88
Jon	24	55	03.7	204	54	44.8	2166.41	7107.62
Mill	35	04	21.7	215	03	46.9	2917.08	9570.45
Lawson USC&GS	46	16	02.1	226	13	53.1	8594.87	28,198.32
Flora	60	31	15.2	240	30	59.1	890.20	2920.61
Bell USC&GS	127	04	29.2	307	03	07.9	4891.77	16,049.08
Moreno	244	21	14.7	64	21	54.8	2137.79	7013.74
PJW	259	35	01.0	79	35	35.2	1667.92	5472.16
Al	275	17	04.9	95	17	38.3	1615.34	5299.64
Bluff	301	26	13.9	121	27	30.5	4318.38	14,167.88
Peck	301	32	42.7	121	33	11.5	1625.69	5333.62
Harwood	319	04	55.9	139	05	07.6	854.47	2803.38
Sal	326	05	04.4	146	06	07.9	5481.12	17,982.65
Baker	326	56	41.3	146	57	03.1	1921.04	6302.60
5660-6 (Rev. 1-52) Brett	346	17	08.0	166	17	13.3	1088.46	3571.07

TRIANGULATION STATION RECORD

20C CALIF 20

Station HARWOOD County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Year 1962 Accuracy 3rd Photo No. CL 1962 2-5

Description:

Station is located in San Diego County in the Descanso District of the Cleveland National Forest approximately 5 air miles southwest of Descanso and approximately 7 1/2 air miles southeast of Alpine, California. The station is located near the east end of a ridge which leads to Horsethief Canyon and is on the highest point toward the east end of the ridge.

ROUTE TO STATION: To reach from Descanso Junction, take U. S. Highway No. 80 west for 0.6 mile to turnoff to Japatul Valley Road; thence, southwest for 0.1 mile to Japatul Valley Road. Take Japatul Valley Road for 5.3 miles to entrance to Davis Ranch. Pack to station Harwood which is approximately 3/4 mile east of road and 1/2 mile southeast of station Harry which is on most prominent hill in area east of road.

STATION MARK: Station mark is a copperweld bar and brass cap stamped "HARWOOD USFS 1962" set flush with the ground.

FILE COPY

North Amer. 1927 Datum. Latitude 32° 46' 26"250 Longitude 116° 39' 10"243

Plane Coordinates: Zone 6 X = 1876169.28 Feet Y = 221197.87 Feet

$\alpha$  = -0° 13' 16"9 Elevation 3017.4 Obtained by VA

To Station	Azimuth			Back Azimuth			Distance	
	°	'	"	°	'	"	Meters	Feet
Harry	36	13	32.5	216	13	26.3	510.39	1674.51
Snake	139	05	07.6	319	04	55.9	854.47	2803.38
PJW	200	24	53.8	20	24	58.6	665.87	2184.60
Peck	228	46	13.1	48	46	35.6	1437.13	4714.98
Bluff	283	56	01.5	103	56	18.7	850.82	2791.41
Knob	297	12	47.1	117	13	52.1	3513.67	11,527.76
	344	40	05	164	40	09	693.5	2275.2

TRIANGULATION STATION RECORD

20C

CALIF 20

Station JON / County San Diego / State California / Quadrangle 3245-11630/15  
 Established by D.S.H. / Year 1962 / Accuracy 3rd / Photo No. CL 1962 2-3

Description:

Station is located in San Diego County in the Descanso District of the Cleveland National Forest approximately 6 1/2 air miles southwest of Descanso and 7 air miles southeast of Alpine, California. Station is on a sharp top at the south end of the ridge on which station CRAIG is located. The hill is very rocky and the station is lower than some boulders to the south.

ROUTE TO STATION: To reach from Descanso Junction, take U. S. Highway No. 80 west for 0.6 mile to turnoff to Japatul Valley Road, take left (southwest) on turnoff for 0.1 mile to Japatul Valley Road. Take left (south) onto Japatul Valley Road to junction with Japatul Valley-Lyons Valley Road; thence, left on Japatul Valley-Lyons Valley Road for 0.7 mile. Pack up hill to north for 1/2 mile to station JON, the highest point at the south end of the ridge.

STATION MARK: Station mark is a small standard USDA bronze disc set in an aggregate mix extending 0.2 feet above the boulder on which the station is located and is stamped "JON 1962".

FILE COPY

North Amer. 1927 Datum. Latitude 32° 45' 43" 429 / Longitude 116° 40' 06" 813

Plane Coordinates: Zone 6 X = 1871321.64 Feet Y = 216889.21 Feet

$\Delta\alpha = -0^\circ 13' 48" 0$  Elevation 2990.1 Obtained by VA

To Station	Azimuth			Back Azimuth			Distance	
	°	'	"	°	'	"	Meters	Feet
Cut /	02	16	06.4	182	16	05.3	1323.30	4341.51
Bud /	33	37	20.1	213	37	14.4	491.31	1611.89
Lawson USC&GS /	53	05	59.8	233	04	09.8	6624.25	21,733.05
Mill /	61	01	30.1	241	01	14.3	872.65	2863.01
Bell /	148	40	23.5	328	39	21.3	5752.06	18,871.56
Flora /	185	09	06.9	05	09	09.8	1532.87	5029.10
Harry /	204	54	44.8	24	55	03.7	2166.41	7107.62
Craig /	223	36	12.5	43	36	17.8	368.62	1209.37
PJW /	228	24	04.0	48	24	57.1	3413.92	11,200.49
Brett /	232	13	14.6	52	13	39.0	1481.21	4859.61
Bluff /	273	34	26.5	93	36	02.1	4606.22	15,112.24
Sal /	303	02	43.9	123	04	06.4	4737.65	15,543.44
Gere /	324	23	53.5	144	23	59.4	484.52	1589.64

TRIANGULATION STATION RECORD

20C CALIF 20

Station KIM County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Year 1962 Accuracy 3rd Photo No. CL 1962 2-3

Description:

Station Kim is located in San Diego County in the Descanso District of the Cleveland National Forest approximately 6 air miles southwest of Descanso and 7 miles southeast of Alpine, California. It is on a 40 foot high boulder overlooking Horsethief Canyon. The boulder as seen from a distance is almost spherical.

ROUTE TO STATION: To reach from Descanso Junction, take U. S. Highway 80 .6 mile west to turnoff to Japatul Valley Road. Take turnoff left to southwest .1 mile to Japatul Valley Road on the left (south). Take Japatul Valley Road 5.3 miles to the entrance to the Davis Ranch. Pack to station Kim about 6000 feet to southeast.

STATION MARK: Station mark is a small standard USDA bronze disk stamped "Kim 1962" set in a drill hole on the top of the boulder.

FILE COPY

North Amer. 1927 Datum. Latitude 32° 45' 44" 999 Longitude 116° 39' 39" 724  
 Plane Coordinates: Zone 6 X = 1873635.59 Feet Y = 217038.69 Feet  
 $\Delta\alpha = -0^\circ 13' 33" 1$  Elevation 2991.2 Obtained by VA

To Station	Azimuth			Back Azimuth			Distance	
	°	'	"	°	'	"	Meters	Feet
Harry	186	10	56.6	06	11	00.9	1927.64	6324.25
Brett	208	27	45.3	28	27	55.0	977.10	3205.71
Baker	256	17	14.4	76	17	40.6	1292.28	4239.77

TRIANGULATION STATION RECORD

200 CALIF 20

Station        KNOB        County        San Diego        State        California        Quadrangle       

Established by        D.S.H.        Year        1962        Accuracy        4th        Photo No.        CL 1962 2-4       

Intersected

Description:

No description.

FILE COPY

North Amer. 1927 Datum. Latitude        32° 46' 04" 54        Longitude        116° 39' 03" 20       

Plane Coordinates: Zone        6        X =        1876762.4        Feet Y =        219001.3        Feet

$\Delta\alpha = 0^\circ 13' 13" 1$  Elevation        2567.5        Obtained by        VA       

To Station	Azimuth			Back Azimuth			Distance	
	'	"	"	'	"	"	Meters	Feet
Al <u>      </u>	216	35	40 <u>      </u>	36	35	58 <u>      </u>	1451.8 <u>      </u>	4763.2 <u>      </u>
PJW <u>      </u>	209	02	51 <u>      </u>	29	03	09 <u>      </u>	1848.5 <u>      </u>	6064.5 <u>      </u>
Harwood <u>      </u>	164	40	09 <u>      </u>	344	40	05 <u>      </u>	693.5 <u>      </u>	2275.2 <u>      </u>
Pine <u>      </u>	31	51	57 <u>      </u>	211	51	35 <u>      </u>	1985.1 <u>      </u>	6512.8 <u>      </u>



TRIANGULATION STATION RECORD

20C CALIF 20

Station KURT County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Jr. Year 1962 Accuracy 3rd Photo No. CL 1962 2-4

Description:

Station is located in San Diego County in the Descanso District of the Cleveland National Forest, approximately 5 1/2 air miles southwest of Descanso and 7 air miles southeast of Alpine, California. It is on a large slanting boulder at the head of a gulch overlooking Horsethief Canyon to the east. The station is about 10 feet south and 3 feet lower than the highest point on the boulder.

ROUTE TO STATION: From Descanso Junction, take U. S. Highway 80 west for 0.6 miles to turnoff to Japatul Valley Road. Take turnoff left, southwest, for 0.1 miles to Japatul Valley Road. Take turnoff left, south, for 5.3 miles to Davis Ranch Entrance. Pack 1/2 mile southeast, passing ranch buildings and go to largest group of boulders at head of gulch.

STATION MARKER: The station marker is a small standard USDA Bronze Disk stamped "KURT 1962" cemented into a large crack.

FILE COPY

North Amer. 1927 Datum. Latitude 32° 46' 04" 453 Longitude 116° 39' 41" 314

Plane Coordinates: Zone 6 X=187350757 Feet Y=219005.33 Feet

$\Delta\alpha = -0^\circ 13' 34" 0$  Elevation 2946.2 Obtained by VA

To Station	Azimuth			Back Azimuth			Distance	
	°	'	"	°	'	"	Meters	Feet
Flora	149	06	23.3	329	06	12.3	1024.40	3360.87
Harry	190	42	14.2	10	42	19.4	1340.48	4397.88
Brett	242	52	38.1	62	52	48.7	569.71	1869.11
Baker	282	43	42.2	102	44	09.1	1329.51	4361.89
Kim	356	02	57.8	176	02	58.7	600.70	1970.80

TRIANGULATION STATION RECORD

20C CALIF 20

Station MILL County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Year 1962 Accuracy 3rd Photo No. CL 1962 2-2

Description:

Station Mill is located in San Diego County in the Descanso District of the Cleveland National Forest approximately 7 air miles southwest of Descanso and approximately 7.5 miles southeast of Alpine, California. It is located on the southern most and lower of two small tops about 600 feet northwest of the Japatul Valley-Lyons Valley Road and .5 miles south of the junction of this road and the Dehesa Road.

ROUTE TO STATION: To reach from Descanso Junction, take U. S. Highway 80 west .6 mile to Japatul Valley Road turnoff, take turnoff left to southwest .1 mile to Japatul Valley Road to left (south). Take Japatul Valley Road to junction with Japatul Valley-Lyons Valley Road and Dehesa Road. Take Japatul Valley-Lyons Valley Road to left (south) .5 mile to farm driveway on right to west, follow driveway around to back of house and continue north for 1000 feet. Pack to top of hill and station 400 feet to east.

STATION MARK: Station mark is about 15 feet lower and about 40 feet northeast of the top highest point on the small top on which it has been placed. It is a copperweld bar and brass cap stamped "MILL USFS 1962" set flush with ground.

FILE COPY

North Amer. 1927 Datum. Latitude 32° 45' 29.705 Longitude 116° 40' 36.141

Plane Coordinates: Zone 6 X = 1868811.43 Feet Y = 215512.35 Feet

$\Delta\alpha = -0^{\circ} 14' 04.1$  Elevation 2647.7 Obtained by VA

To Station	Azimuth			Back Azimuth			Distance	
	°	'	"	°	'	"	Meters	Feet
Bell	157	20	29.0	337	19	42.6	5782.37	18,970.99
Flora	204	48	11.1	24	48	29.8	2147.59	7045.88
Harry	215	03	46.9	35	04	21.7	2917.08	9570.45
Jon	241	01	14.3	61	01	31.4	872.65	2863.01
BM V-894	329	21	14.1	149	21	19.4	496.80	1629.91

TRIANGULATION STATION RECORD

200 CALIF 20

Station MORENO County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Jr. Year 1962 Accuracy 3rd Photo No. CL 1962 2-7

Description:

Station is located in San Diego County, in the Descanso District of the Cleveland National Forest, approximately 4 air miles southwest of Descanso and 7 air miles southeast of Alpine, California. It is on a top along Horsethief Ridge about 500 feet west of the road and 100 feet south and 6 feet lower than the top of the ridge.

ROUTE TO STATION: From Descanso Junction, take U. S. Highway 80 west for 0.6 miles to turnoff to Japatul Valley Road. Take the Japatul Valley Road for 1.6 miles to Griffin Truck Trail on left leading east. Take this truck trail through Martin Ranch buildings and up the hill for 1.3 miles to Horsethief Truck Trail, thence, right, south; for 1.7 miles. Station is west on hill.

STATION MARK: The station marker is a small standard USDA bronze disk stamped "MORENO 1962" cemented with small stones on top of a large boulder.

FILE COPY

North Amer. 1927 Datum. Latitude 32° 47' 17" 241 Longitude 116° 38' 17" 686  
 Plane Coordinates: Zone 6 X= 1880676.09 Feet Y= 226334.23 Feet  
 Δα = -0° 12' 48" 1 Elevation 3126.7 Obtained by VA

To Station	Azimuth			Back Azimuth			Distance	
							Meters	Feet
Baker	19	08	23.3	199	08	05.0	2683.53	8804.22
PJW	24	42	10.7	204	42	04.7	686.46	2252.16
Brett	40	06	13.2	220	05	38.5	2591.73	8503.02
Craig	44	35	58.7	224	35	04.9	3683.26	12,084.16
Lawson	49	51	07.5	229	48	18.4	10,647.73	34,933.43
Snake	50	10	54.9	230	10	31.3	1478.34	4850.19
Harry	64	21	54.8	244	21	14.7	2137.79	7013.74
Bell	109	09	15.9	289	07	14.5	6171.35	20,247.18
Bluff	331	04	01.2	151	04	37.7	3631.12	11,913.10
Sal	348	20	09.3	168	20	32.8	5589.47	18,338.13

TRIANGULATION STATION RECORD **20C**

CALIF 20

Station PECK County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Year 1962 Accuracy 3rd Photo No. CL 1962 2-5

Description:

Station is located in San Diego County in the Descanso District of the Cleveland National Forest approximately 6 air miles south west of Descanso and approximately 7 1/2 air miles southeast of Alpine, California. The station is in a firebreak on a flat area north of and lower than a small top on Horsethief Ridge.

ROUTE TO STATION: To reach from Descanso Junction, take U. S. Highway No. 80 west for 0.6 mile to turnoff to Japatul Valley Road. Take turnoff for 0.1 mile to Japatul Valley Road; thence left (south) onto Japatul Valley Road for 1.6 mile to Griffin Truck Trail which is on left, leading east. Take Griffin Truck Trail through Martin ranch buildings and up hill for 1.3 mile to Horsethief Truck Trail. Take right (south) onto Horsethief Truck Trail for 3.1 miles to heliport on west side of road and pack to station PECK 150 feet east of road.

STATION MARK: Station mark is a copperweld bar and brass cap stamped "PECK USFS 1962" set flush with ground.

FILE COPY

North Amer. 1927 Datum. Latitude 32° 46' 19.598 Longitude 116° 38' 38.514

Plane Coordinates: Zone 6 X = 1878875.95 Feet Y = 220515.24 Feet

$\Delta\alpha = -0^\circ 12' 59.5$  Elevation 2791.4 Obtained by VA

To Station	Azimuth			Back Azimuth			Distance	
	°	'	"	°	'	"	Meters	Feet
Baker	23	58	23.0	203	58	15.9	831.25	2727.20
Brett	79	36	29.0	259	36	05.5	1146.23	3760.60
Harry	121	33	11.5	301	32	42.7	1625.69	5333.62
PJW	192	29	14.2	12	29	19.5	1179.95	3871.23
Bluff	301	22	48.0	121	23	35.8	2692.69	8834.28

TRIANGULATION STATION RECORD

20C CALIF 20

Station PINE County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Jr. Year 1962 Accuracy 3rd Photo No. CL 1962 2-1

Description:

Station is located in San Diego County, in the Descanso District of the Cleveland National Forest, approximately 7 air miles southwest of Descanso and 7 1/2 air miles southeast of Alpine, California. It is on the side hill about 40 feet east of the Pine Creek Truck Trail in a clearing in the brush about 30 feet in diameter.

ROUTE TO STATION: From Descanso Junction, take U. S. Highway 80 west for 0.6 miles to turnoff to Japatul Valley Road. Take turnoff left, southwest, for 0.1 mile to Japatul Valley Road on left, south. Take the Japatul Valley Road to junction with Japatul Valley - Lyons Valley Road and Dehesa Road. Take the Japatul Valley - Lyons Valley Road to left for 1.4 miles to heliport on the east side of the road and the Pine Creek Truck Trail at the north side of the heliport, thence pass gate, U.S. Forest Service Key, at entrance to Pine Creek Truck Trail and descend for 0.6 miles. Station 40 feet east of road.

STATION MARK: The station marker is a copperweld bar and brass cap stamped "PINE USFS 1962" set flush with the ground.

FILE COPY

North Amer. 1927 Datum. Latitude 32° 45' 09"808 Longitude 116° 39' 43"456

Plane Coordinates: Zone 6 X = 1873302.83 Feet Y = 213483.38 Feet

$\Delta\alpha = 0^\circ 13' 35"2$  Elevation 2092.5 Obtained by VA

To Station	Azimuth			Back Azimuth			Distance	
							Meters	Feet
Cut	66	32	39.6	246	32	25.8	719.91	2361.91
Gere	153	04	28.4	333	04	21.7	719.75	2361.38
P.J.W.	210	30	02.9	30	30	43.3	3832.40	12573.48
Knob	211	51	35	31	51	57	1985.1	6512.8

TRIANGULATION STATION RECORD 20C

Station P.J.W. County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H., Jr. Year 1962 Accuracy 3rd Photo No. CL 1962 2-7

Description:

Station is located in San Diego County, in the Descanso District of the Cleveland National Forest, approximately 4 1/2 air miles southwest of Descanso and 7 1/2 air miles southeast of Alpine, California. It is on a small top along Horsethief Ridge.

ROUTE TO STATION: From Descanso Junction, take U. S. Highway 80 west for 0.6 mile to Japatul Road turnoff. Take the turnoff left, southwest, for 0.1 mile to Japatul Valley Road. Take the Japatul Valley Road for 1.6 miles to Griffin Truck Trail thence through Martin Ranch building and up the hill for 1.3 miles to Horsethief Truck Trail. Turn right, south, for 2.3 miles to saddle north of station. Station is about 250 feet south on highest point.

STATION MARK: Station marker is a 1 inch pipe driven in between rocks with a brass survey tag held on the top by an iron nail. The survey tag is stamped "PAFFORD, JONES and WHITE, 3rd Order Control Station." Several other letters or numbers have been stamped on the tag but are not decipherable.

FILE COPY

North Amer. 1927 Datum. Latitude 32° 46' 56".996 Longitude 116° 38' 28".710  
 Plane Coordinates: Zone 6 X = 1879727.27 Feet Y = 224291.70 Feet  
 Δα = -0° 12' 54".1 Elevation 3027.5 Obtained by VA

To Station	Azimuth			Back Azimuth			Distance	
	°	'	"	°	'	"	Meters	Feet
Peck	12	29	19.5	192	29	14.2	1179.95	3871.23
West	16	42	08.1	196	41	57.6	1761.64	5779.64
Baker	17	13	57.7	197	13	45.4	2001.4	6566.31
Knob	29	03	09	209	02	51	1848.5	6064.5
Pin	30	30	43.3	210	30	02.9	3832.40	12,573.48
Kim	39	48	40.4	219	48	01.9	2887.00	9471.77
Brett	45	29	53.5	225	29	24.8	1938.51	6359.92
Jon	48	24	57.1	228	24	04.0	3413.92	11,200.49
Harwood	48	46	35.6	228	46	13.1	1437.13	4714.98
Lawson USC&GS	51	31	01.3	231	28	18.2	10,030.59	32,908.68
Snake	69	09	32.9	249	09	15.2	908.00	2979.01
Harry	79	35	35.2	259	35	01.0	1667.92	5472.16
Bell	115	32	18.5	295	30	23.1	6143.09	20,154.46
Moreno	204	42	04.7	24	42	10.7	686.46	2252.16
Bluff	321	20	11.1	141	20	53.6	3271.15	10,732.11
Sal	343	42	50.3	163	43	19.8	5053.13	16,578.48

TRIANGULATION STATION RECORD 20C

Station SNAKE County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H., Jr. Year 1962 Accuracy 3rd Photo No. CL 1962 2-6

Description:

Station Snake is located in San Diego County in the Descanso District of the Cleveland National Forest approximately 5 air miles southwest of Descanso and 7.5 air miles southeast of Alpine, California. It is on a small top overlooking Horsethief Canyon to the east. There are a number of large boulders on the top and the station mark is set in the ground among the boulders.

ROUTE TO STATION: To reach from Descanso Junction, take U. S. Highway 80 .6 miles to west to turnoff to Japatul Valley Road. Take turnoff left to southwest .1 mile to Japatul Valley Road to left (south). Take Japatul Valley Road 5.3 miles to entrance to Davis Ranch. Pack south of hill on which station Harry is located to east end of hill, then turn north for about 500 feet and turn east again and go to second small top east of station Harry to station Snake.

STATION MARK: Station mark is a copperweld bar and brass cap stamped "SNAKE USFS 1962" set flush with ground.

FILE COPY

North Amer. 1927 Datum. Latitude 32° 46' 46" 508 Longitude 116° 39' 01" 318  
 Plane Coordinates: Zone 6 X = 1876939.21 Feet Y = 223242.30 Feet  
 = -0° 13' 12" 0 Elevation 2891.8 Obtained by VA

To Station	Azimuth			Back Azimuth			Distance	
	'	"	"	'	"	"	Meters	Feet
Harwood	20	24	58.6	200	24	53.8	665.87	2184.60
PJ	249	09	15.2	69	09	32.9	908.00	2979.01
Al	278	51	19.5	98	51	36.5	826.42	2711.35
Bluff	307	38	34.2	127	39	34.4	3652.82	11,984.31
Peck	324	23	52.9	144	24	05.2	1019.50	3344.82
Sal	333	24	35.4	153	25	22.5	5062.60	16,609.53
West	345	54	36.0	165	54	43.1	1406.56	4614.69
Baker	350	51	06.7	170	51	12.0	1608.97	5278.76

TRIANGULATION STATION RECORD

20C

Station WEST County San Diego State California Quadrangle 3245-11630/15  
 Established by D.S.H. Year 1962 Accuracy 3rd Photo No. CL 1962 2-4

Description:

Station West is located in San Diego County in the Descanso District of the Cleveland National Forest approximately 6 air miles southwest of Descanso and 7 air miles southeast of Alpine, California. It is on a small flat area about halfway between the end of the Horsethief Truck Trail and the top of the first hill to the south. The station is at the west side of a firebreak.

ROUTE TO STATION: To reach station from Descanso Junction, take U. S. Highway 80 west .6 mile to turnoff to Japatul Valley Road, take turnoff left to southwest .1 mile to Japatul Valley Road to the left (south). Take the Japatul Valley Road 1.6 miles to Griffin Truck Trail on left leading east. Take truck trail through Martin Ranch buildings and uphill 1.3 miles to Horsethief Truck Trail and take right (south) 3.4 miles to end of truck trail (1962) and pack uphill to south 500 feet to station West.

STATION MARK: Station mark is a copperweld bar and brass cap stamped "WEST USFS 1962" set flush with ground.

FILE COPY

North Amer. 1927 Datum. Latitude 32° 46' 02".221 Longitude 116° 38' 48".162

Plane Coordinates: Zone 6 X = 1878045.45 Feet Y = 218762.16 Feet

$\alpha = -0^{\circ} 13' 04".8$  Elevation 2762.9 Obtained by VA

To Station	Azimuth			Back Azimuth			Distance	
						Meters	Feet	
Brett	110	32	58.5	290	32	40.3	935.88	3070.45
P.J.W.	196	41	57.6	16	42	08.1	1761.64	5779.64



32 116 4

CALIF. 20

32°45'

116 30

<u>NAME</u>	<u>STATION</u>
BELL	1003
BUCKMAN	1005
CORTE	1007
CUYAMACA	1008
CUYAMACA ECCENTRIC	1008 <sup>A</sup>
CUYAMACA AZIMUTH	1008 <sup>B</sup>
EAGLE	1010
GUATAY	1011
LAGUNA	1015
LAMINA	1016
LODGE	1018
LONG	1019
LONG VALLEY PEAK (NOG)	1019
MESA	1022
PROM	1025
RATTLESNAKE	1026
SMITH (NOG)	1029
SPAN	1030
VIEJAS	1032
WILLOWS	1034
CUYAMACA LOOKOUT TOWER	1037

# HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

QUAD 321164 STATION 1003  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

CHLIP 20  
 32 45  
 116 30

**BELL** (San Diego County, Calif., A.C.T., 1939)--Station is on the highest point of a rocky and brushy ridge known as Bell Bluff. Is 16 miles E of El Cajon and 4 1/2 miles SE of Alpine.

Station mark is a standard bronze disk wedged in a drill hole in a boulder as described in note 4. Reference and azimuth marks are standard bronze disks in a boulder as described in note 12c.

Station mark is a standard disk set in center of a large boulder, about 12 feet in diameter, projects about 1 foot above ground, stamped "BELL 1938."

Azimuth mark is a standard disk set in top of a large boulder, 4 feet above ground, and 100 yards W of the road, stamped "BELL 1938."

Reference marks are standard disks set in rock boulders, stamped "BELL NO.1" "BELL NO.2, 1938."

Reached from El Cajon by going E on Highway 80 for 15 miles to Alpine, continue E for 2.15 miles, turn right on dirt road (Sign, Bell Bluff T.T.) and go 0.1 mile to board gate on left, turn left through gate and go 0.15 mile to another gate (Locked by Forest Service, except in winter months) continue straight ahead 0.35 mile to another gate, continue 0.95 mile to road fork, take right fork 0.35 mile to Sweetwater River. Ford river and continue 3.55 miles to wire gate, continue 0.25 mile to top of ridge and end of truck travel. From this point the station is SE 0.6 mile. A 1 hour pack and very brushy.

OBJECT	DISTANCE	DIRECTION
LAWSON 1938	meters	0°00'00"0
R.M.No.2 SW	4.832	11 24 10
Azimuth Mark NE	1/2 mile	208 37 53.9
R.M.No.1 E	4.885	237 29 55

**BELL** (San Diego County, Calif., A.C.T., 1939; W.R.H., 1957)

--The station was recovered as described and all marks were found in good condition. A complete description follows:

The station is located (airline) about 16 mi. E of El Cajon, and about 4-1/2 mi. SE of Alpine, on the highest point of a rocky, brush-covered ridge known as Bell Bluff.

The station is a standard disk, stamped "BELL 1938" set in a drill hole in a large boulder which projects about 1 ft. above the ground.

Reference mark 1 is a standard disk, stamped "BELL NO 1 1938" set in a drill hole in a large boulder which projects about 3 ft. above the ground, and is about 1 ft. lower than the station.

Reference mark 2 is a standard disk, stamped "BELL NO 2 1938" set in a drill hole in a large boulder which projects about 3 ft. above the ground, and is about 2 ft. lower than the station.

The azimuth mark is a standard disk, stamped "BELL 1938" set in a drill hole in a large boulder which projects about 4 ft. above the ground. It is about 60 yd. S of the centerline of the road, and about 100 yd. W-SW of a fence corner which is along the N side of the road.

To reach the station from the post office in Alpine, go E on U.S. Highway 80 for 2.15 mi.; turn right (off the highway at sign "Bell Bluff T.T.") and go SE for 0.15 mi.; take the left fork and go NE for 0.15 mi.; continue straight ahead (SE at the side road left) for 1.3 mi.; take the right fork and go W for 0.2 mi.; take the left fork and go W (crossing the Sweetwater River, which is dry) for 3.5 mi. to a locked gate. Pass through and continue upgrade for 0.25 mi. to a fence corner on the left, N side and the azimuth mark which is about 100 yd. W-SW in a large boulder on a bluff. Continue NE for 0.1 mi. to the crest of the saddle and the end of truck travel. Pack SW for about 100 yd. to a rocky point; pass to the left side and continue SW for about 0.4 mi. to the highest point of the ridge and the station. This is about a 40-minute pack. To obtain a key to the locked gate see the U.S. Forest Service.

1957 observations:

OBJECT	DISTANCE	DIRECTION
LAWSON 1938	meters feet	0°00'00"0
R.M. 2 SW	4.830 15.846	11 25 31
Azimuth Mark NE	(about 0.5 mi.)	208 37 54.6
R.M. 1 E	4.874 15.992	237 29 01

(A.M.S., 1957)--The mark was recovered as described with the following addition:

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **BELL** YEAR: 1939  
 STATE: California LOCALITY: Southern California Area  
 First -ORDER Triangulation SOURCE: G-4386 FIELD SKETCH: CALIF 310

GRID DATA	COORDINATES (Foot)	PLANE AZIMUTH & ORANG ANGLE	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,861,574.80 y 233,048.88	223°24'23" - 0 14 51	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE:	LONGITUDE:		
	32°48'22".919	116 42 01.764		

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS

AZIMUTH MARK	THIRD-ORDER 223°09'31".5		
--------------	-----------------------------	--	--

*V.A Elev. 3409 ft. (USCS 1957)*

FORM 284 (1-57-52)

USCOMM-DC 3397

FILE COPY

20 Calif.

JULY 1963  
PUBLISHED AND PRINTED BY:  
U.S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY  
WASHINGTON D.C.

# HORIZONTAL CONTROL DATA

by the  
Coast and Geodetic Survey  
NORTH AMERICAN 1927 DATUM

QUAD 321164 STATION 1003  
CALIF-MEXICO  
LATITUDE 32°30' TO 33°00'  
LONGITUDE 116°30' TO 117°00'  
DIAGRAM NI 11-11 SAN DIEGO

BELL (Continued)

32 45  
116 30

BELL (San Diego County, Calif., A.C.T., 1939; W.R.H., 1957)

The mark is 140.5 ft. S of a sharp drop off at the N edge of a peak; 180.5 ft. E of E edge of a large crop of boulders on the W slope; 95.5 ft. NW of a very large and tall boulder (N most of two such boulders on SE slope).

FORM 526  
(11-8-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: BELL  
ESTABLISHED BY:  
RECOVERED BY: U.S.P.S.

YEAR: 1938 STATE: California  
YEAR: 1962 COUNTY: San Diego

Detailed statement as to the fitness of the original description including marks found, stampings, changes made, and other pertinent facts:  
Station found in good condition as described.

\* Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note.  
Note.—One of these forms must be used for every station recovered. COM-DC 34314

FILE COPY

NI  
44

JULY 1963

U.S. DEPARTMENT OF COMMERCE  
 ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
 COAST AND GEODETIC SURVEY  
 REVISED JAN 1969

HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

CALIFORNIA

20

QUAD 321164 STATION 1004  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

32°45'  
 116°30'

BOUNDARY MONUMENT 254 ECCENTRIC (San Diego County, Calif., A.C.T., 1938)--Station is approximately 5 miles SE of Otay, 1 1/2 miles NE of Tijuana, Mexico. In section 5, T 19 S, R 1 W. Mark is 15.8 meters N of U.S.-Mexico boundary fence and 29.369 meters NE of Boundary Monument No. 254.

Station mark is standard station disk set in a 10-inch square concrete post, note 1a, stamped "BOUNDARY 254 ECCENTRIC 1938." Projects 10 inches. Underground mark is standard station disk set in a 10-inch square concrete post, note 7a, stamped "BOUNDARY 254 ECCENTRIC 1938", 36 inches beneath surface.

Reference mark No. 1 is a standard reference disk set in a 10-inch concrete post, note 11a, SSE of station, stamped "BOUNDARY 254 ECCENTRIC NO.1 1938." Projects 10 inches.

Reference mark No. 2 is a standard reference disk set in NW corner of concrete base of boundary monument, SW of station, stamped "BOUNDARY 254 ECCENTRIC NO.2 1938."

Azimuth mark is standard azimuth disk set in a 10-inch square concrete post, note 11a, 0.3 mile E of station, 18 inches N of boundary fence, stamped "BOUNDARY 254 ECCENTRIC 1938." Projects 10 inches.

To reach from the main corner in Otay go E on main paved road up Otay Valley 3.2 miles, continue on main road bearing right up grade and S across mesa for 2.5 miles and turn left, E, go 0.55 mile and turn right, S, go 1.05 miles and pass gate and reservoir at ranch, go S across earth dam, keep left fork and go 1.1 miles to gate in N-S fence adjacent to U.S.-Mexico boundary fence, follow W near boundary fence through two gates for 0.75 mile to Monument 254 and station.

Barometric elevation (No. 212) 75 feet.

OBJECT	HOR. DISTANCE	DIRECTION
SAN MIGUEL ECC. (RM 2)	meters	0°00'00"0
Azimuth mark		66 13 18.0
R.M. No. 1 (SSE)	16.143	134 04 28
Boundary Mon. 254	29.869	212 38 50
R.M. No. 2 (SW)	30.005	213 31 57

U.S. DEPARTMENT OF COMMERCE  
 COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: BOUNDARY MON. 254 ECC.  
 ESTABLISHED BY: A.C.T. YEAR: 1938 STATE: CALIFORNIA  
 RECOVERED BY: V.J. CURREN YEAR: 1965 COUNTY: SAN DIEGO  
 Calif. Div. of Highways.

HEIGHT OF TELESCOPE ABOVE STATION MARK METERS. HEIGHT OF LIGHT ABOVE STATION MARK METERS.

Station and Reference Mark No. 2 recovered in good condition. Reference Mark No. 1 destroyed.

New description follows:

From National Avenue and Main Street in Otay, go east on Main Street and Otay Valley Road 4.2 miles to right angle turn in Otay Valley Road. Continue south and southeast on Otay Valley Road 1.7 miles to Heritage Road. Turn right (south) and go 0.3 mile to Otay Mesa Road. Turn left (east) and go 0.5 mile to Cactus Road. Turn right (south) 1.0 mile to end of pavement at Siempre Viva Road. Turn left (east) and to 0.4 mile to dirt road on right. Turn right (south) on dirt road and go 0.5 mile to dirt road along International Border fence. Turn right (west) and go 1.15 mile to the station.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT NO 254 YEAR: 1938  
 STATE: California LOCALITY: Southern California Area  
 Second order Traverse SOURCE: G-4386 FIELD SKETCH: CALIF 310  
 (No check on this position)

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH θ (OR α) ANGLE	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,768,861.54 y 138,425.13	- 0 24 44	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE:	LONGITUDE:	NORTH WEST	METERS FEET
	32°32'41"392	116 59 59.971		

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
Computed from station BOUNDARY MONUMENT 254 ECC			

BOUNDARY MONUMENT 254 (San Diego County, Calif., A.C.T., 1938; A.M.S., 1957) Station recovered as described, with the following: 15.0 ft. N-NE of the centerline of a dim trail; 46.0 ft. N-NE of a trail junction; 72.0 ft. E-NE of the NE corner of a building; and 12.0 ft. S-SE of a dim trail.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BOUNDARY MONUMENT NO. 254 ECC.  
 STATE: CALIFORNIA YEAR: 1938 SECOND-ORDER  
 LOCALITY: SOUTHERN CALIFORNIA AREA  
 SOURCE: G-4386, G-13559 FIELD SKETCH: CALIF. 310, 514

GEODETIC LATITUDE:	ELEVATION:	METERS FEET
32 32 41.98420		
GEODETIC LONGITUDE:	116 59 59.06420	

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	θ (OR α) ANGLE
CALIF. VI	0406	1,768,939.60	138,484.43	- 0 24 43

TO STATION OR OBJECT	GEODETIC AZIMUTH (From north)	PLANE AZIMUTH (From north)	CODE
AZIMUTH MARK	265 56 56.6	266 21 40	0406

20

JULY 1963

## CALIFORNIA

U. S. DEPARTMENT OF COMMERCE  
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
COAST AND GEODETIC SURVEY

32°45'  
116°30'

## HORIZONTAL CONTROL DATA

by the  
Coast and Geodetic Survey  
NORTH AMERICAN 1927 DATUM

QUAD 321164 STATION 1005  
CALIF-MEXICO  
LATITUDE 32°30' TO 33°00'  
LONGITUDE 116°30' TO 117°00'  
DIAGRAM NI 11-11 SAN DIEGO

200

BUCKMAN (San Diego County, Calif., A.C.T., 1939)--Station is on the highest point of a brushy peak that is located 4.5 miles SSE of Pine Valley Post Office, 1.5 miles W of the Campo road and 11 miles N of the Mexico border.

Station mark is a standard bronze disk wedged in a drill hole in a boulder as described in note 4. Reference and azimuth marks are standard bronze disks in a boulder as described in note 12c.

Station mark is a standard station disk set in a boulder, stamped "BUCKMAN 1938."

Reference marks are standard disks set in boulders, note 12c, stamped "BUCKMAN NO.1 and NO.2 1938."

Azimuth mark is a standard disk set in a large boulder, projecting 4 feet above ground, stamped "BUCKMAN 1938." Is about 125 yards SS of the "Long Valley" sign.

Barometric elevation 4425 feet.

Reached from Pine Valley Post Office go SE on U.S. Highway 80 for 4.5 miles, turn right on oiled road at sign (Campo 12) and go 1.55 miles to locked gate on right (Forest Service Key), turn right through gate on dirt road and go 1.35 miles to board gate, continue up grade 0.4 mile to forks at sign (Long Valley) keep left fork, 0.15 mile to first wash and end of truck travel. The station is NW about 3/4 mile and is a 45 minutes pack.

OBJECT	DISTANCE	DIRECTION
CAMERON 1935	meters	0°00'00"0
R.M.No.2 SSE	6.653	00 09 30
R.M.No.1 ESE	5.010	299 52 24
Azimuth Mark SE	1/2 mile	324 19 29.1

BUCKMAN (San Diego County, Calif., A.C.T., 1939; W.R.H., 1958)

--The station was recovered as described and all marks were found in good condition. A complete description follows:

The station is located about 4-1/2 mi. (airline) S-SE of Pine Valley, about 11 mi. N of the United States-Mexican Border Line, and about 1-1/2 mi. W of the Campo Road, on the highest point of a brushy peak.

The station is a standard disk, stamped "BUCKMAN 1939" set in a drill hole in a large boulder which projects about 1 1/2 in. above the ground.

Reference mark 1 is a standard disk, stamped "BUCKMAN NO 1 1939" set in a drill hole in a large boulder which projects about 3 ft. above the ground and is about 2 ft. higher than the station.

Reference mark 2 is a standard disk, stamped "BUCKMAN NO 2 1939" set in a drill hole in a large boulder which projects about 6 in. above the ground and is about 1 ft. lower than the station.

The azimuth mark is a standard disk, stamped "BUCKMAN 1939" set in a drill hole in a large boulder which projects about 4 ft. above the ground. It is about 100 yd. S-SE of a fork and a sign "Long Valley T.T."

To reach the station from the post office in Pine Valley, go E on U.S. Highway 80 for 4.5 mi.; take the right fork (leaving the highway) and go S on the oiled road for 1.55 mi.; turn right off the paved road, pass through a steel gate and go W uphill on a dirt road for 1.35 mi. to a cattle guard; continue uphill on the dirt road, N for 0.4 mi. to a fork, a sign "Long Valley T.T." and the azimuth mark. Take the left fork and go downhill, SW for 0.3 mi. to a parking area on the left, S side and the end of truck travel. Pack N up the steep hill for about 0.4 mi. to the highest point and the station. Parking time is about 45 minutes.

1958 observations:

OBJECT	DISTANCE	DIRECTION
CAMERON 1935	meters feet	0°00'00"0
R.M. 2 S-SE	6.669 21.880	0 10 48
R.M. 1 E-SE	5.050 16.569	299 56 01
AZIMUTH MARK SE	(about 0.35 mi.)	324 19 33.8

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BUCKMAN

YEAR: 1939

STATE: California

LOCALITY: Southern California Area

Second-order Triangulation SOURCE: G-4386

FIELD SKETCH: CALIF 310

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH θ (or Δ) ANGLE	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,919,198.13 y 216,979.37	304°50'57" - 0 08 40	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE:	LONGITUDE:	NORTH WEST	METERS FEET
	32°45'45"869	116 30 46.189		

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
AZIMUTH MARK	THIRD-ORDER 304°42'16"8		

VA Elev. 4641 FT (USGS 1957)

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MAY 1969

JULY 1963  
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 U.S. DEPARTMENT OF COMMERCE  
 COAST AND GEODETIC SURVEY  
 WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

QUAD 321164 STATION 1007  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

20D

32 45  
 116 30

DEPARTMENT OF COMMERCE  
 U.S. COAST AND GEODETIC SURVEY  
 FORM 823  
 REV. AUG. 1958

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: CORTE STATE: California COUNTY: San Diego

CHIEF OF PARTY: Walter R. Helm YEAR: 1957 Described by: V.H. Burns

NOTE	HEIGHT OF TELESCRIPT ABOVE STATION MARK	HEIGHT OF LIGHT ABOVE STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	
	1	1		
			feet	meters
4	Surface-station mark			
	Underground-station mark			
	BELL 1939			
12c	R.M. #1	NW	25.202	7.682
12c	R.M. #2	E	13.919	3.958
17c	Azimuth Mark	SE	(about 0.5 mile)	208 01 40.3
	Lyons Peak Lookout Tower	SW	(about 5 miles)	313 25 07.0

The station is located airline, about 5 miles southwest of Pine Valley, about 4 1/2 miles south-southeast of Descanso Junction and about 1 3/4 miles west-northwest of the Corte Madera Ranch, on the highest point and southwestern most end of a mountain at the northwest end of Corte Madera Valley.

The station is a standard disk stamped "CORTE 1957" set in a drill hole in a large boulder which projects about 1 foot above the ground. It is 13 feet west of a small cairn.

Reference mark number one is a standard disk stamped "CORTE NO 1 1957" set in a drill hole in a large boulder which projects about 4 feet above the ground and is about 3 feet lower than the station.

Reference mark number two is a standard disk stamped "CORTE NO 2 1957" set in a drill hole in a large boulder which projects about 5 feet above the ground and is about 4 feet higher than the station. It is 1 foot south of a small cairn.

The azimuth mark is a standard disk stamped "CORTE 1957" set in a drill hole in a large boulder which projects about 4 feet above the ground. It is about 100 yards west of a steel gate across the road and 65 feet south of the center line of the road.

To reach the station from the post office in Pine Valley, go westerly on US Highway 80 for 0.25 mile; turn left off the highway and follow the Corte Madera Road southwest-erly for 0.65 mile; pass through the locked gate and continue southerly for 4.0 miles; take the right fork and go southerly for 0.15 mile; take the right fork and go south-westerly for 0.25 mile; take the right fork as per sign "Skye Valley 7.2", and go west, passing through two gates, for 1.05 miles; take the the left fork as per sign "Skye Valley-Lyons Valley", and go westerly for 0.4 mile to a locked gate, pass through and go west-northwest for about 75 yards to a trail on the right, north side, the azimuth mark and the end of truck travel. Pack northwesterly uphill on the dim trail for about 0.4 mile to the second rocky outcropping; leave the trail and pack westerly cross country for about 0.3 mile to the highest point of the mountain, a cairn and the station. This is about a 40 minute pack. See the US Forest Service about keys.

\* Refer to notes in manuals of triangulation and state publications of triangulation. 1 Direction-angle measured clockwise, referred to initial station.  
 † To nearest meter only, unless no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: CORTE YEAR: 1957  
 STATE: California LOCALITY: El Cajon To Jacumba  
 Second -ORDER Triangulation SOURCE: G-11609 FIELD SKETCH: CALIF 443

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH & IONOSPHERIC ANGLE	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,893,595.22 y 222,103.31	316°53'58" - 0 11 25	AZIMUTH MARK
STATE: ZONE: CODE:	Z Y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE:	LONGITUDE:	NORTH WEST	METERS FEET
	32°46'35"8281	116 35 46.1960		

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
AZIMUTH MARK	THIRD ORDER 316°42'32"8		

JULY 1963 Revised F.L.L. 1977  
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 COAST AND GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

20A

Calif 20

QUAD 321164 STATION 1008  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

**CUYAMACA** (San Diego County, Calif., A.T.M., 1898; 1935)--On Cuyamaca Peak, about 35 miles NE of San Diego, 9 miles S of Julian, 6 1/2 miles N of Descanso, 3 miles SW of Cuyamaca, 14.2 meters (47 feet) NNW of center of fire-lookout tower, and 10 feet S of highest point. Peak is highest point of backbone of large ledge which forms highest part of southern and taller peak of Cuyamaca Peak. To reach from Julian, drive past Cuyamaca Dam to summit, leave main road and follow dim road to right 2 miles up through forest to station site. In 1898 station was marked by cross on copper bolt set in drill hole in ledge. Reference marks were copper bolts at intersections of cross lines cut in rock at following approximate directions and distances from station: S, 1.900 meters (6.23 feet); N, 2.343 meters (7.68 feet); and NE, 2.150 meters (7.05 feet). In 1910 copper bolt marking station had been removed; center of drill hole was used as station. A cross was cut in face of large rock almost directly under old N reference mark, and rock containing original N reference mark, although split, was replaced in old position over new mark. In 1919 a cross cut in top of large boulder was placed 1/2 meter (2 feet) below and 8.88 meters (29.1 feet) from station in azimuth 334°11'. In 1923 standard station disk was set in drill hole marking station. Standard reference disk (No.1) was established in rock outcrop 22.220 meters (72.90 feet) from station in azimuth 326°17'. In 1935, standard reference disk (No.2) was established in rock outcrop 14.792 meters (48.55 feet) from station in azimuth 239°11'.

**CUYAMACA** (San Diego County, Calif., A.T.M., 1898; recovered, W.M., 1936)--Station recovered; marks in good condition; additional azimuth mark established. Detailed description as follows:--About 9 miles S of Julian; 3 miles SSW of Cuyamaca Lake; and 6 1/2 miles N of Descanso; on lands of the Cuyamaca State Park. Station is on summit of Cuyamaca Peak, highest in vicinity, and on which a steel fire lookout tower is located.

Mark is standard tablet set in rock about 10 feet S of highest point of peak, and 7.67 meters NW of center of lookout tower.

Reference mark No.1 is behind SE leg of tower, and not visible from station; standard tablet set in 1923.

Reference mark No.2, standard tablet set in 1935 is in boulder NE from station.

Azimuth mark is standard azimuth mark tablet set in solid rock on highest point of Stonewall Peak, about 2 1/4 miles NE of station. Reached by good graded trail from point on highway opposite fire station, distance about 2 miles, and 35 minutes pack.

Reached from Julian by paved Highway 79 S 9 miles to Cuyamaca Lodge; continue S 2.5 miles to stone fire station and picnic grounds on W side of highway at summit of grade; thence follow road leading W, 3.0 miles to lookout on summit of Cuyamaca Mountain. Truck to point about 30 yards S of station.

OBJECT	DISTANCE meters	DIRECTION 0°00'00"0
SAN MIGUEL Azimuth Mark approx. 2 1/4 miles		196 11 27.72
R.M.No.1, tablet in rock	22.220	
R.M.No.2, tablet in boulder	14.466	191 03 29.9
R.M. copper plug in cross in rock S of station	1.850	316 29 59.4
R.M. copper plug in rock NNW of station, top of large lone boulder	6.158	120 08 44.9
R.M. copper plug in cross in rock N of station	2.353	147 19 02.1
R.M. copper plug in S face of boulder NE of station	2.153	202 56 52.7
Center of lookout tower	7.665	285 35 10
R.M. established in 1919, cross on boulder, was destroyed in building lookout tower.		
Original data, not checked. All distances are horizontal.		

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION CUYAMACA

STATE CALIFORNIA

YEAR 1938

SECOND -ORDER

SOURCE G- 271

GEODETIC LATITUDE	32 56 48.09900	ELEVATION	1985.1 METERS
GEODETIC LONGITUDE	116 36 21.13400		6513 FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	S FOR Δ BY ANGLE °
CA 6	0406	1,890,823.29	283,992.38	- 0 11 44 °

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE S FOR Δ BY FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From 1938)	PLANE AZIMUTH * (From 1938)	CODE
CUYAMACA 1898 AZ MK 1939	244° 18' 51.6"	244° 30' 36"	0406

RD 127

FORM 284 (9-21-60)

FILE COPY

JUL 17 1978

Calif 20

JULY 1963  
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 U.S. DEPARTMENT OF COMMERCE  
 COAST AND GEODETIC SURVEY  
 WASHINGTON D.C.

# HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

QUAD 321164 STATION 1008  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

CUYAMACA (San Diego County, Calif., A.T.M., 1898; recovered, A.C.T., 1939)--Station located about 9 miles, airline, S of Julian in Cuyamaca State Park on a prominent high peak known as Cuyamaca Mountain.

Station is marked by a standard disk set in a large boulder stamped "CUYAMACA 1923."

Reference marks are standard marks set in rock stamped "CUYAMACA 1923" and "CUYAMACA NO. 2 1935."

Station reached from the intersection of U.S. Highway 80 and State Highway 79, by going westerly on Highway 79 for 0.25 mile; thence northerly on Highway 79 for 8.8 miles to Cuyamaca Ranger Station on left; turn left onto Ranger Station, follow oil road about 50 yards; turn left on track road 0.15 mile to a board gate; this gate is locked by a Forest Service lock and a key will be needed; continue on main traveled road 2.55 miles to lookout tower and station.

CUYAMACA (San Diego County, Calif., A.T.M., 1898; L.S.B., 1954)

--Station and all marks, with the exception of the azimuth mark, were recovered and found in good condition. There is now an observation platform at the site of the azimuth mark, and a concrete monument with a 3/4-in. bolt in the top is in the approximate position of the previous azimuth-mark disk. The concrete monument can be used for the azimuth mark. The reference mark, set in 1923, is behind the SE leg of the lookout tower and is not visible from the station. A new reference mark, R.M. 3, was established.

Reference mark 2 and the copper plugs to the S, N-NW, and E-NE of the station checked the 1936 distances and directions. Slight differences in the distances to the center of the lookout tower and copper plug to the N of the station were found. The directions to these two points checked the previous data. A tie-in was made to station CUYAMACA ECC.

Due to the legs on the W side of the lookout tower, it is necessary to make an eccentric set-up in order to make observations on station LOS PINOS.

The following is an adaptation of the previous description with any changes or additions noted:

Station is located about 9 mi. (airline) S of Julian, in Cuyamaca State Park. It is on the summit of Cuyamaca Mountain, just NW of the center of the lookout tower.

To reach the station from the intersection of U.S. Highway 80 and State Highway 79, go W and N on State Highway 79 for 10 mi. to the Cuyamaca Ranger Station on the left. The concrete monument is on the summit of Stone Wall Peak, and is reached by a good trail just across the highway, E of the fire station. This is about a 35-minute pack. To reach the lookout tower and station, turn left (W) into the ranger station grounds and follow an oiled road for about 50 yds., thence left on the track road for 0.15 mi. to a locked gate. The key may be obtained at the ranger station. Continue on the mountain road for 2.55 mi. to the lookout tower and the station. A four-wheel drive vehicle is recommended.

The station mark is a standard disk, stamped "CUYAMACA 1923" and set in a rock outcrop. There is a higher boulder about 10 ft. N of the station point.

Reference mark 2 is a standard disk, stamped "CUYAMACA NO 2 1935" and set in a boulder about 8 ft. lower than the station.

Reference mark 3 is a standard disk, stamped "CUYAMACA NO 3 1954" and set in the concrete base of the SE leg of the lookout tower.

Station CUYAMACA ECC is a standard station-mark disk, stamped "ECC CUYAMACA 1939" and set in a rock outcrop about 4 ft. lower than the station.

The concrete monument is about 4 ft. high, 3 ft. square at the base, and 1 ft. square at the top.

The copper plugs are 1 in. in diameter, and set in drill holes flush with the outcropping rocks.

OBJECT	DISTANCE		DIRECTION
	meters	feet	
TECATE 2			
San Diego-Tucson			
Airway Beacon 2			30 33 18.4
Copper plug N-NW	6.159	20.21	157 35 31
Copper plug N	2.338	7.67	184 45
CUYAMACA ECC E-NE	8.075	26.49	208 31 53
R.M. 2 NE	14.466	47.46	228 28 25
Monument NE	app. 2-1/4 mi.		233 36 18.6
Copper plug E-NE	2.152	7.06	240 23
R.M. 3 SE	11.025	36.16	315 37 12
Lookout tower (center) SE	7.684	25.21	322 52 12
Copper plug S	1.850	6.07	353 55
Height of instrument above station mark - 1.64 m.			
NOTE--The distances given above are horizontal.			

CUYAMACA (San Diego County, Calif., A.T.M., 1898; R.L.E., 1956)

--The station mark, reference marks 2 and 3, a reference mark set in 1923 (not numbered), the azimuth mark, and the copper plugs to the N, S and N-NW were recovered and found in good condition. A new and complete description follows:

The station is about 9 mi. S of Julian, in Cuyamaca State Park, and at the summit of Cuyamaca Mountain. The station mark is 25.2 ft. NW of the center of Cuyamaca Lookout Tower, and 23-1/2 ft. SW of a powerline pole. It is stamped "CUYAMACA 1923" (note 4).

Reference mark 2 is 25 ft. N-NW of a telephone pole, and 23-1/2 ft. NE of a powerline pole. It is stamped "CUYAMACA NO 2 1935" (note 12c).

Reference mark 3 is in the abutment at the SE leg of the lookout tower. It is stamped "CUYAMACA 1954."

A reference mark set in 1923 is 36 ft. SE of the SE leg of the lookout tower, and 15 ft. E of the steps leading to the lookout tower. It is stamped "CUYAMACA 1923" (note 12c).

The azimuth mark is at the summit of Stonewall Peak, 5 ft. W of a monument that is about 4 ft. high and 1 ft. W of the guard-rail that encloses the monument. It is a standard reference-mark disk, cemented in a drill hole in a boulder, and is stamped "CUYAMACA AZIMUTH NO 2 1939."

To reach the station from the post office in Julian, go S on State Highway 79 for 8.7 mi. to the Cuyamaca Lodge, continue S on State Highway 79 for 2.5 mi. to a picnic grounds and the Cuyamaca Ranger Station on the right. A key to the gate (SW of the ranger station) can be obtained at the ranger station. Continue S (past the ranger station) for 50 yd., then turn right and go SW (passing to the left of the Cuyamaca Fire Station) for 0.1 mi. to a locked gate. Pass thru gate and follow the macadam road for 2.7 mi. to a fork, take left fork and go about 60 yd. to the end of truck travel. From here pack NW for about 40 yd. to the lookout tower, the station and reference marks as described.

To reach the azimuth mark from the Cuyamaca Ranger Station pack E-NE up the well-marked trail to the summit of Stonewall Peak and the azimuth mark as described.

OBJECT	DISTANCE		DIRECTION
	meters	feet	
SANJACINTO 1898			
1923			0°00'00"0
North Brass Plug N	2.353	7.72	18 23
R.M. 2 NE	14.466	47.46	63 11 24
Azimuth mark E (2.25 mi.)			68 18 09.2
R.M. 3 SE	11.034	36.20	150 20 46
Center of Cuyamaca			
Lookout SE	7.690	25.23	157 38 18
South Brass Plug S	1.850	6.07	189 21
North-Northwest Brass Plug N-NW	6.158	20.20	352 18

JUL 17 1978

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Calif 20

JAN 1978  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY

# HORIZONTAL CONTROL DATA

QUAD 321164 STATION 1008  
LATITUDE 0' 10' 0"  
LONGITUDE 0' 10' 0"  
DIAGRAM

by the  
NATIONAL GEODETIC SURVEY  
NORTH AMERICAN 1927 DATUM

CUYAMACA (Continued)

Form 526  
(11-8-55)

## U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: CUYAMACA  
ESTABLISHED BY: A.T.M. YEAR: 1898 STATE: California  
RECOVERED BY: I.L. Crabbe YEAR: 1975 COUNTY: San Diego

Detailed statement as to the status of the original description, including marks found, stampings, changes made, and other pertinent facts:

All marks were found in good useable condition. The station is located approximately 35 miles northeast of San Diego, 3 miles south of Julian, and 3 miles south west of Cuyamaca. It is on the highest part of Cuyamaca Mountain, 14.8 meters north of a fire observation tower. The itinerary to the station is correct. The station mark is a bronze disc nine 9 centimeters in diameter set with cement in a hole bored in a big boulder. It is engraved: "CUYAMACA 1923". Reference mark 1 set with cement in a hole bored in solid rock, and stamped "R.W.W. 1 CUYAMACA 1923". Reference mark 2 is a bronze disk set with cement in a hole bored in solid rock and stamped "R.W.W. 2 CUYAMACA 1935". Reference mark 3 is a bronze disk set with cement in a hole bored in solid rock and stamped "R.W.W. 3 CUYAMACA 1935". The azimuth mark is a bronze disk set with cement in a hole bored in solid rock and stamped "AZIMUTH CUYAMACA". It is located on the highest part of Mt. Peak that is approximately 2 1/2 miles north of the station. A few measurements to the reference and azimuth marks were taken. R.W.W. 1 could not be checked because the tower interfered.

OBJECT	DISTANCE	DIRECTION
SAN MIGUEL (V.G.)	SW	00 00 00.0
Plug	SW	20.24 ft. 6.158 m. 120 10 14
RM No. 1	NE	47.46 ft. 14.473 m. 191 04 16
Azimuth Mark	N	2 1/2 miles approx. 190 11 41.0
RM No. 3	SE	36.18 ft. 11.028 m. 278 13 41
Center of Tower	SE	28.52 ft. 7.776 m. 285 22 51
Plug North of Station	N	7.72 ft. 2.354 m.
Plug in face of boulder	NE	7.06 ft. 2.158 m.
Plug South of Station	S	6.06 ft. 1.846 m.

## SHEET 1 OF 2 RECOVERY NOTE, TRIANGULATION STATION

R

321164-1008  
NAME OF STATION: CUYAMACA  
ESTABLISHED BY: A. T. M. YEAR: 1898 STATE: California BENCH MARK ALSO   
RECOVERED BY: I. L. Crabbe YEAR: 1975 COUNTY: San Diego  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 10 miles northeast of Alpine  
HEIGHT OF TELESCOPE ABOVE STATION MARK 4 FEET. HEIGHT OF LIGHT ABOVE STATION MARK 4 FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
BOUCHER 2 (VG)	NNW	20.22	6.164	0 00 00.00
Copper Plug (Slope)	N	7.71	2.353	22 18 52
Copper Plug (Slope)	NE	Approx 2	miles	98 21 34.1
Monument (Top Center)	NE	7.06	2.154	105 09
Copper Plug	SE	25.1	7.65	187 38 43
Cuyamaca Mtn LOT	S	6.12	1.866	218 39
Copper Plug (Slope)				

The station mark, CUYAMACA ECCENTRIC 1939, reference marks 2, 3 and 1923, and the four copper plugs were recovered in good condition. The monument over the azimuth mark was not visited. CUYAMACA ECCENTRIC 1939 and reference mark 2 are in dense brush and trees, no clearing allowed. Reference mark 3 is blocked by the lookout tower steps. Reference mark 1923 is blocked by the lookout tower leg. The directions to the copper plugs, the lookout tower, and the monument checks the 1957 data. The distances to the copper plugs (north-northwest, north, and northeast) previously mentioned as being horizontal, checked the slope distance obtained at this time. A difference in distance of plus 0.020 meter was noted to the copper plug (south), and plus 0.11 meter to the lookout tower. A complete new description follows:

The station is located 35 miles east-northeast of San Diego, 10 miles northeast of Alpine, 9 miles south of Julian, on Cuyamaca Mountain in the Cuyamaca Rancho State Park, at 6500 feet elevation.

To reach the station from the junction of Interstate Highway 8 and Tavern Road, at the west end of Alpine, go east on Highway 8 for 9.1 miles to its junction with State Highway 79. Go north on Highway 79 for 2.7 miles to a road left. Turn left and continue northerly on Highway 79 for 10.1 miles to the California Forest Service fire station on the left. Turn left on the macadam drive, keeping to the left of the station, and go 0.1 mile to a crossroad and a locked gate. Pass through the gate and follow the narrow macadam road for 2.8 miles to top of hill and a dirt road left. Turn left and go west for about 50 feet to a small parking area and the lookout tower on the right, and end of truck travel. Walk northerly for 100 feet to the station on the left.

The station mark, a standard disk stamped CUYAMACA 1923, is cemented in a drill hole in outcropping bedrock which projects about 3 feet above ground. The area around the disk has been built up with cement to form a rectangular shape that is about 1 inch higher than the rock. It is 24.5 feet southwest of a utility pole, 24 feet west of a trail, 15.0 feet north of the northwest leg of the tower, in line with the 2 west legs of the tower. It is on the west edge of the ridge. Note 4

CUYAMACA ECCENTRIC, a standard disk stamped ECC CUYAMACA 1939, is cemented in a drill hole in a 1 X 2 X 0.5 foot high boulder. It is 33.7 feet north of the northeast leg of the tower, 10.0 feet north-northwest of a utility pole, 5.2 feet south of a 10-inch stunted pine tree, and 11 feet west of the trail, and 4 feet lower than the station. Note 4

Reference mark 1923, a standard disk stamped CUYAMACA 1923, is cemented in a drill hole in a large rock outcrop, about 8 feet lower than the station. It is 35.5 feet southeast of the southeast leg of the tower, 20.1 feet west of a utility pole, and 10.5 feet east of the sidewalk leading to the tower. Note 12c

Reference mark 2, a standard disk stamped CUYAMACA NO 2 1935, is cemented in a drill hole in a 1 X 2 X 1-foot high boulder on the east side of the ridge. It is 55 feet south of a utility pole with an antenna, 22 feet northeast of a utility pole and 15 feet east of the trail. Note 12c

Reference mark 3, a standard disk stamped CUYAMACA NO 3 1954, is cemented in a drill hole in the northwest corner of the southeast concrete footing of the tower.

Monument, as described by R.W.W. in 1950, states the monument is 4 feet high, 3 feet at the base, 16 inches at the top with a 3-1/2 inch high 3/4-inch bolt projecting from the top, and centered in the monument.

Copper plug, north-northwest, is 1/2-inch in diameter, set flush in a drill hole, has a cross in the top, and is 1 foot lower than the station, in a 10 foot high boulder.

Copper plug, north, is 1/2 inch in diameter with a cross in the top, in a flat boulder that is 2 feet lower than the station.

Copper plug, northeast, is 1/2 inch in diameter with a cross in the top, set in the south face of a low boulder, about level with the station.

Copper plug, south, is 1/2 inch in diameter with a cross in the top, in a rounded boulder about 1 foot lower than the station.

No suitable location for an azimuth mark (additional).

*Serge R. Head*

\* Name of chief of party should be inserted here. The person who actually visited the station should sign his name at the end of the recovery note.

NOAA FORM 78-N SUPERSEDES CASE FORM 536A WHICH MAY BE USED  
U.S. DEPARTMENT OF COMMERCE NOAA  
U.S. GOVERNMENT PRINTING OFFICE: 1973-7015761-1000 10 1

FILE COPY

JAN 1978

PUBLISHED AND PRINTED BY:  
U.S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY  
WASHINGTON D.C.

# HORIZONTAL CONTROL DATA

by the  
Coast and Geodetic Survey  
NORTH AMERICAN 1927 datum

20A

QUAD 321164 STATION 1008A  
CALIF-MEXICO  
LATITUDE 32°30' TO 33°00'  
LONGITUDE 116°30' TO 117°00'  
DIAGRAM N1 11-11 SAN DIEGO

Calif 20

## ADJUSTED HORIZONTAL CONTROL DATA

**CUYAMACA ECCENTRIC (San Diego County, Calif., A.C.T., 1939)--**  
Station is located about 9 miles, airline, S of Julian in Cuyamaca State Park on a prominent high peak known as Cuyamaca Mountain.

Station mark is a standard bronze disk wedged in a drill hole in outcropping bedrock as described in note 2. Reference marks are standard bronze disks in outcropping bedrock as described in note 12a.

Station is marked by a standard disk set in rock about 28 feet NE of old station and about 50 feet NE of lookout tower, stamped "CUYAMACA ECCENTRIC 1939."

Reference mark No.2 is a standard disk set in rock, stamped "CUYAMACA NO.2 1935."

Reference mark 1923 is a standard disk set in rock, stamped "CUYAMACA 1923."

Station is reached from the intersection of U.S. Highway 80 and State Highway 79 by going westerly on Highway 79 for 0.25 mile; thence northerly on Highway 79 for 8.8 miles to Cuyamaca Ranger Station on left; turn left into Ranger Station, follow oil road about 50 yards, turn left on track road 0.15 mile to a board gate; this gate is locked by a Forest Service lock and a key will be needed, continue on main-traveled road for 2.55 miles to lookout and station.

OBJECT	DISTANCE	DIRECTION
GRANITE 1939	meters	0°00'00"00
R.M.No.2 1935 NE	7.420	35 18 40
R.M. 1923 SE	25.677	118 11 51
CUYAMACA 1898 SW	8.073	173 29 38

NAME OF STATION: CUYAMACA ECC

STATE: CALIFORNIA

YEAR: 1939

SECOND ORDER

SOURCE: G- 4386

GEODETIC LATITUDE	32 56 48.30200	ELEVATION	METERS
GEODETIC LONGITUDE	116 36 20.93700		FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	θ (OR Δ) ANGLE °
CA 6	0406	1,890,840.15	284,012.84	- 0° 11' 44"

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE θ (OR Δ) FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
CUYAMACA 1898 AZ MK 1939	244° 22' 07.6"	244° 33' 51"	0406

### RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: CUYAMACA ECCENTRIC 321164  
ESTABLISHED BY: A. C. T. YEAR: 1939 STATE: California BENCH MARK ALSO   
RECOVERED BY: I. L. Crabbe YEAR: 1975 COUNTY: San Diego  
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 10 miles northeast of Alpine  
HEIGHT OF TELESCOPE ABOVE STATION MARK FEET. HEIGHT OF LIGHT ABOVE STATION MARK FEET.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION				
OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
No observations or measurements from this station				

The station mark, CUYAMACA 1898, reference marks 2, 3, and 1923 were recovered in good condition. The station mark is in dense brush and trees. No clearing was allowed at this time. Station CUYAMACA 1898 was used this date. A complete new description follows:

The station is located 35 miles east-northeast of San Diego, 10 miles northeast of Alpine, 9 miles south of Julian, on Cuyamaca Mountain in the Cuyamaca Rancho State Park, at 6500 feet elevation.

To reach the station from the junction of Interstate Highway 8 and Tavern Road at the west end of Alpine, go east on Highway 8 for 9.1 miles to its junction with State Highway 79. Go north on Highway 79 for 2.7 miles to a road left. Turn left and continue northerly on Highway 79 for 10.1 miles to the California Forest Service fire station on the left. Turn left on the macadam drive, keeping to the left of the station, and go 0.1 mile to a crossroad and a locked gate. Pass through the gate and follow the narrow macadam road for 2.8 miles to top of hill and a dirt road left. Turn left and go west for about 50 feet to a small parking area and the lookout tower on the right, and end of truck travel. Walk northerly for 150 feet to the station on the left.

RD 128

USCOMM-NOAA-ASHEVILLE

FILE COPY

JUL 17 1978

Calif 20

JAN 1978  
U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY

# HORIZONTAL CONTROL DATA

by the  
NATIONAL GEODETTIC SURVEY  
NORTH AMERICAN 1927 DATUM

QUAD 321164 STATION 1008 A

LATITUDE ° ' TO ° '  
LONGITUDE ° ' TO ° '  
DIAGRAM

CUYAMACA ECC (Continued)

The station mark, a standard disk stamped ECC CUYAMACA 1939, is cemented in a drill hole in a 1 X 2 X 0.5-foot high boulder. It is 33.7 feet north of the northeast leg of the lookout tower, 10.0 feet northwest of a utility pole, 5.2 feet south of a 10-inch stunted pine tree, 11 feet west of a trail, and 4 feet lower than station CUYAMACA 1898. Note 4

CUYAMACA 1898, a standard disk stamped CUYAMACA 1923, is cemented in a drill hole in outcropping bedrock which projects 3 feet above ground. It is 24.5 feet southwest of a utility pole, 24 feet west of the trail, 15.0 feet north of the northeast leg of the tower, in line with the 2 west legs of the tower. The area around the disk has been built up with cement to form a rectangular shape that is about 1 inch higher than the rock. Note 4

Reference mark 1923, a standard disk stamped CUYAMACA 1923, is cemented in a drill hole in a large rock outcrop about 8 feet lower than the station. It is 35.5 feet southeast of the southeast leg of the tower, 20.1 west of a utility pole, and 10.5 feet east of the sidewalk leading to the tower. Note 12c

Reference mark 2, a standard disk stamped CUYAMACA NO 2 1935, is cemented in a drill hole in a 1 X 2 X 1-foot high boulder on the east side of the ridge. It is 55 feet south of a utility pole with an antenna, 22 feet northeast of a utility pole and 15 feet east of the trail. Note 12c

Reference mark 3, a standard disk stamped CUYAMACA NO 3 1954, is cemented in a drill hole in the northwest corner of the southeast concrete footing of the tower.

FORM C&GS-528 (9-66)  
USCOMM-DC 26486-P00

*George R. Haid*  
U.S. DEPARTMENT OF COMMERCE  
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
COAST AND GEODETTIC SURVEY

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JUL 17 1978

USCOMM-NDAA-ASHEVILLE

JULY 1963  
 PUBLISHED AND PRINTED BY:  
 U.S. DEPARTMENT OF COMMERCE  
 COAST AND GEODETIC SURVEY  
 WASHINGTON D.C.  
 advised 1:LB 1977

# HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

20A

QUAD 321164 STATION 1008B  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

Calif 20

## ADJUSTED HORIZONTAL CONTROL DATA

CUYAMACA AZIMUTH (San Diego County, Calif., A.C.T., 1939)--Station is located about 8 1/2 miles, airline, SSE of Julian in Cuyamaca State Park on a sharp prominent rocky peak known as Stonewall Peak.

Station mark is a standard bronze disk wedged in a drill hole in outcropping bedrock and surrounded by a triangle chiseled in the rock as described in note 2a. Reference marks are standard bronze disks in outcropping bedrock as described in note 12a.

Station is marked by a standard azimuth disk set on top of a pinnacle rock stamped "CUYAMACA 1898, 1936."

Reference mark No.1 is a standard disk set in rock about 8 feet lower than station stamped "CUYAMACA AZIMUTH NO.1 1939."

Reference mark No.2, is a standard disk set in rock about 2 feet lower than station stamped "CUYAMACA AZIMUTH NO.2 1939."

Station is reached from the intersection of U.S. Highway 80 and California State Highway 79, by going westerly on Highway 79 for 0.25 mile; thence northerly on Highway 79 for 8.8 miles to Cuyamaca Ranger Station on left; turn right on dirt road, pass through opened fence and end of truck travel. Pack on trail, which begins at fence line, to top of mountain and station. A 1 hour pack.

OBJECT	DISTANCE		DIRECTION
	feet	meters	
GRANITE 1939			0°00'00"0
R.M.No.2 W of station Hor.			
Dist.	6.918	2.108	228 39
R.M.No.1 N of station Hor.			
Dist.	44.947	13.700	329 28 07

CUYAMACA AZIMUTH (San Diego County, Calif., A.C.T., 1939; R.W.W., 1950)  
 --Station is lost. A stone monument has been erected over the station disk. The monument is about 36 inches square at the base, about 16 inches square at the top, and about 47 inches high. In the center of the top of the monument is a 3/4-inch bolt which is 3-1/2 inches high. The monument does not appear to be centered over the bronze disk, as the W side of it is about 70 inches from reference mark 2 which is 82.9 inches from the bronze disk.

Reference mark 2 was located and is apparently in good condition.

Reference mark 1 was not located as distance and bearing were not known. It is probably in good condition because all of the improvements were done around the location of the azimuth disk.

CUYAMACA AZIMUTH (San Diego County, Calif., A.C.T., 1939; U.S.G.S., 1957)  
 No evidence of tablet found. Reference marks 1 and 2 found in good shape and as described. A masonry cairn 4.0 ft. high has been constructed approximately in the tablet position. Evidence indicates the top of the rock pinnacle has been removed to accommodate a State Park observation point for tourists. A 1-3/4-in. pipe railing has been constructed along a stairway to the top and encloses the area where the description indicates the tablet should be.

NAME OF STATION CUYAMACA 1898 AZ MK

STATE CALIFORNIA

YEAR 1939

SECOND

ORDER

SOURCE G-14960

GEODETIC LATITUDE	32 57 38.82161	ELEVATION	METERS
GEODETIC LONGITUDE	116 34 15.99904		FEET

STATE COORDINATES (FPM)				
STATE & ZONE	CODE	X	Y	θ 10R Δ θ 1 ANGLE °
CA 6	0406	1,901,502.90	289,084.05	- 0 10 35 °

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE θ 10R Δ θ 1 FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From 1927)	PLANE AZIMUTH (From 1927)	CODE
GRANITE 1939	220°45'40.5"	220°56'16"	0406

THESE DATA OBTAINED FROM READJUSTMENT OF JUN 1973

RD 129

USCOMM-NOAA-ASHEVILLE

FILE COPY

JUL 17 1978

JULY 1963

U. S. DEPARTMENT OF COMMERCE  
 ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
 COAST AND GEODETIC SURVEY  
 REVISED JAN 1969

HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

QUAD 321164 STATION 1009  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

DEHESA (San Diego County, Calif., A.C.T., 1938)--Station is located on a brush covered hill 5 miles E of El Cajon and about 1 mile SW of the town of Suncrest.

Station mark is a standard bronze disk wedged in a drill hole in outcropping bedrock as described in note 2. Reference and azimuth marks are standard bronze disks in outcropping bedrock as described in note 12a.

Station is marked by a standard disk set in bedrock, stamped "DEHESA 1938."

Reference marks are standard marks set in bedrock, stamped "DEHESA NO.1 1938" and "DEHESA NO.2 1938."

Azimuth mark is a standard mark set in a large mass of bedrock 1/2 mile N of station.

Station is reached from the post office in El Cajon, go E on U.S. Highway 80 for 3.0 miles to an oil road to right and sign reading (La Cresta 4 and Suncrest 4 1/2) turn right onto oil road and follow road 4.4 miles to end, continue straight ahead for 0.1 mile to forks and sign reading (Suncrest Chamber of Commerce) turn right and continue 0.1 mile (2 blocks) and keep left fork, continue on main traveled road for 0.1 mile and bear right at the store; continue on main traveled road for 0.15 mile to crossroads, keep straight ahead and continue 0.05 mile to 5 points; keep right fork here and continue 0.1 mile to T road and mail box on right and sign on power pole (No Shooting in Suncrest) continue straight ahead onto track road go about 50 yards to cross road; continue straight ahead on track road about 200 yards to end of road and truck travel. Pack up trail leading W up hill to the crest of ridge at N end of ridge, trail forks here; take left fork and follow trail S along crest of ridge for about 1/2 mile to the highest point in the vicinity and station. About a 25 minutes pack.

OBJECT	DISTANCE	DIRECTION
SAN MIGUEL BCG.		
R.M.No.2	meters	0°00'00"0
Azimuth Mark N	1/2 mile	144 33 01.4T
R.M.No.1	E 6.106	209 18 39 T
R.M.No.2	S 3.718	296 44 20 T

DEHESA (San Diego County, Calif., A.C.T., 1938; W.R.H., 1957)

--The station was recovered as described and all marks were found in good condition. A complete description follows:

The station is located (airline) about 5 mi. E of El Cajon, and about 1 mi. SW of Suncrest, on the highest point of a rocky brush-covered hill.

The station is a standard disk, stamped "DEHESA 1938" set in a drill hole in outcropping bedrock which projects about 6 in. above the ground. It is 8 ft. S of a cairn.

Reference mark 1 is a standard disk, stamped "DEHESA NO 1 1938" set in a drill hole in outcropping bedrock which projects about 1 ft. above the ground and is about the same elevation as the station.

Reference mark 2 is a standard disk, stamped "DEHESA NO 2 1938" set in a drill hole in outcropping bedrock which projects about 10 in. above the ground and is about 1 ft. higher than the station.

The azimuth mark is a standard disk, stamped "DEHESA 1938" set in a drill hole in outcropping bedrock which projects about 8 ft. higher than the ground.

To reach the station from the post office in El Cajon, go N on Magnolia Street for 0.15 mi.; turn right and go E on U.S. Highway 80 for 2.85 mi.; turn right off the highway and go S on Greenfield Drive for 0.6 mi.; take the left fork and go E on La Cresta Road for 3.85 mi. to the St. Louise De Marillac Church. Keep left on Crest Drive E for 0.35 mi.; turn right (S) on South Lane for 0.25 mi. to a fork; take the left fork for about 40 ft. to a wire gate on the left; turn left, pass through the gate and follow the dirt track road SE for 0.2 mi. to the end of truck travel at a water tank. Pack S up the trail to the crest and the azimuth mark in a large outcropping of bedrock which is about 50 yd. W of the trail. Continue S on the trail for about 0.25 mi. to the highest point of the hill, a small cairn and the station. This is about a 30-minute pack.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: DEHESA  
 STATE: CALIFORNIA YEAR: 1938 SECOND-ORDER  
 LOCALITY: SOUTHERN CALIFORNIA AREA  
 SOURCE: G-4386, G-12247, G-13559 FIELD SKETCH: CALIF.310,514

GEODETIC LATITUDE:	32 47 43.87070	ELEVATION:	METERS
GEODETIC LONGITUDE:	116 52 15.99350		FEET

STATE COORDINATES (Fm)				
STATE & ZONE	CODE	X	Y	θ (OR Δ α) ANGLE
CALIF. VI	0406	1,809,124.43	229,371.94	- 0 20 29

TO STATION OR OBJECT	GEODETIC AZIMUTH (From mark)	PLANE AZIMUTH (From mark)	CODE
AZIMUTH MARK	173 20 52.6	173 41 22	0406

1957 observations:

OBJECT	DISTANCE	DIRECTION
	meters feet	
COCHES	(about 0.25 mi.)	0°00'00"0
Azimuth Mark N-NW		42 35 28.5
R.M. 1	NE 6.111 20.050	107 17 36
R.M. 2	SE 3.731 12.241	194 50 15
1938 observations:		
Azimuth Mark N	(about 0.5 mi.)	42 35 34.9
R.M. 1	E 6.106	107 18 13
R.M. 2	S 3.716	194 46 54

(A.M.S., 1957)--Station recovered as described. Reference marks 1 and 2 recovered as described in good condition. It is 55.0 ft. S of sharp rock and bush, 40.0 ft. SE of a small row of bushes, and 14.0 ft. NW of the NW bush line.

RECOVERY DESCRIPTION OF TRIANGULATION STATION

DEPARTMENT OF COMMERCE  
 U. S. COAST AND GEODETIC SURVEY  
 FORM 556  
 Rev. Aug. 1965

NAME OF STATION: DEHESA STATE: CALIFORNIA COUNTY: SAN DIEGO  
 CHIEF OF PARTY: A. D. WADE YEAR: 1964 Recovered BY: A. D. WADE  
 NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK METERS: HEIGHT OF LIGHT ABOVE STATION MARK METERS:

The published description is adequate.

Approximate California State Plane Coordinates, Zone 6  
 X = 1,809,124  
 Y = 229,372

JULY 1963

U.S. DEPARTMENT OF COMMERCE  
 ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
 COAST AND GEODETIC SURVEY

revised DEC 1976

HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

20B

CALIFORNIA

20

QUAD 321164 STATION 1010  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION EAGLE  
 STATE CALIFORNIA YEAR 1939 SECOND ORDER

SOURCE G-14960

GEODETIC LATITUDE:	32 59 02.77150	ELEVATION	METERS
GEODETIC LONGITUDE:	116 42 32.87368		FEET

STATE COORDINATES (FPS)				
STATE & ZONE	CODE	X	Y	SECTOR Δ BY ANGLE *
CA 6	0406	1,859,204.20	297,726.83	- 0 15 08 "

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE SECTOR Δ BY FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
EAGLE 1939 AZ MK	267° 03' 30.4"	267° 18' 39"	0406

THESE DATA OBTAINED FROM READJUSTMENT OF JUN 1973

VA Elev 3226 ft (USGS 1957)

RD 134

FILE COPY

APR 19 1977

EAGLE (San Diego County, Calif., A.C.T., 1939)--Station is about 10 1/2 miles NW of Descanso Post Office, about 9 miles SW of Julian, on highest point of ridge known locally as Eagle Peak, in Section 6, T 14 S, R 3 E.

Station mark is a standard bronze disk wedged in a drill hole in a boulder as described in note 4. Reference and azimuth marks are standard bronze disks in a boulder as described in note 12c.

Station mark is standard station disk set in boulder outcrop, note 4, stamped "EAGLE 1939."

Reference mark No.1 is standard reference disk set in boulder outcrop, note 12c, NNE of station, stamped "EAGLE NO.1 1939."

Reference mark No.2 is standard reference disk set in boulder outcrop, note 12c, WSW of station, stamped "EAGLE NO.2 1939."

Azimuth mark is standard azimuth disk set in a boulder, note 12c, about 1 mile E of station on low ridge, stamped "EAGLE 1939."

Barometric elevation (0212) 3200 feet.

To reach from post office in Descanso, go northerly on oil road towards Hulburd Grove 1.0 mile and take left fork at sign "Descanso 1 mile." Go 0.1 mile and take left fork at sign "Hulburd Grove", go 0.55 mile and turn right at sign "Boulder Creek 1 1/2 miles", go 0.45 mile and turn left at sign "Boulder Creek 1 1/2 miles", follow Boulder Creek signs and main-traveled road 8.5 miles to a board gate across road, continue 0.8 mile and take right fork at sign "Tule Springs", go 0.9 mile and take right fork at sign "Fishermans Camp", go 0.5 mile and keep main-traveled road at Fishermans Camp, go 2.2 miles and take extreme left fork at sign "Boulder Creek 2, Julian 13 miles", go westerly along top of ridge 0.85 mile to end of truck travel at end of road. Follow cow trail westerly approximately, then bear left across shallow canyon and up to top of rocky ridge, then along top of ridge to highest point and station. A 1 hour pack.

OBJECT	DISTANCE	DIRECTION
COYAMAGA ECC. 1938	meters	0°00'00.00"
R.M.No.2 WSW	7.423	141 48 17.
R.M.No.1 NNE	5.827	269 22 36
Azimuth E		
on low ridge	1 mile	333 52 26.55

JULY 1963  
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 COAST AND GEODETIC SURVEY  
 WASHINGTON D.C.

APR 1980

# HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

QUAD 321164 STATION 1013  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

DEPARTMENT OF COMMERCE  
 U.S. COAST AND GEODETIC SURVEY  
 Form 502  
 Rev. Aug. 1956

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: **GAVIN** STATE: **California** COUNTY: **San Diego**

CHIEF OF PARTY: **Walter R. Helm** YEAR: **1957** Described by: **D.L.W.** REFERS.

NOTE	HEIGHT OF TELESCOPE ABOVE STATION MARK 1.3 METERS	HEIGHT OF LIGHT ABOVE STATION MARK REFERS.	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
			BEARING	DISTANCE		DIRECTION
	OBJECT		feet	meters		
12 c	FLINN R.M. No. 2	WNW	78.380	23.890	00 00 00.0	
17 c	Azimuth Mark	N	about 0.4 mile		88 54 49.4	
12 c	R.M. No. 1	NNE	81.595	24.870	101 25 02	

The station is located about 10 miles airline east-northeast of El Cajon, 3 miles airline west-northwest of Alpine, and about 1/4 mile airline northeast of U.S. Highway 80. Station is on the west bank of the San Diego County disposal area.

To reach from the Post Office in El Cajon, go north on So. Magnolia Street for two blocks to U.S. Highway 80. Turn right on U.S. Highway 80 and go easterly for 10.0 miles to side road left and sign "Gavin Road". Turn left on Gavin Road and go easterly for 0.25 mile to fork. Keep left fork and continue about 40 yards to station on right.

The station mark is a standard bronze disk stamped "GAVIN 1957", set in the top of a 10 inch square concrete monument which projects 6 inches. Mark is 51 feet south-east of the approximate center line of east-west road, and 15 feet west of a cut bank, and 6 feet south of a white witness post.

Reference mark number one is a standard bronze disk stamped "GAVIN NO 1 1957", set in a drill hole in concrete in a 5 by 3 foot boulder which projects 2 feet. Mark is 13 feet east of the approximate center line of road mentioned above, and about 4 feet higher than station.

Reference mark number two is a standard bronze disk stamped "GAVIN NO 2 1957", set in a drill hole in concrete in a 4 by 2 foot boulder which projects 15 inches. Mark is 21 feet west of the approximate center line of road mentioned above, and about the same elevation as station.

To reach the Azimuth Mark from the station continue east and north on Gavin Road for 0.4 mile to high bank on right and mark in outcropping boulder mass.

The Azimuth Mark is a standard bronze disk stamped "GAVIN 1957", set in a drill hole in concrete in a 7 by 5 foot boulder which projects 4 feet. Mark is 42 feet north of the approximate center line of road, and 100 feet west-northwest of a small white wooden water tank, and 15 feet north of a sign.

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: **GAVIN**  
 ESTABLISHED BY: **W.R.H.** YEAR: **1957** STATE: **CA** BENCH MARK(S) ALSO   
 RECOVERED BY: **E.H. (USA)** YEAR: **1973** COUNTY: **San Diego**

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: **3 miles West of Alpine, California.**

Detailed statements as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station recovered in good condition as described.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **GAVIN** YEAR: **1957**

STATE: **California** LOCALITY: **El Cajon To Jacumba**

Second -ORDER Triangulation SOURCE: **G-11609** FIELD SKETCH: **CALIF 443**

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH θ (OR AGE ANGLE)	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,828,542.68 y 251,392.96	178°28'13" - 0 18'24"	AZIMUTH MARK
STATE: ZONE: CODE:			

GEODEIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE:	LONGITUDE:	NORTH WEST	METERS FEET
	32°51'22"8429	116 48 29.9061		

TO STATION	GEODEIC AZIMUTH (From center)	DISTANCE	
		LOGARITHM (Meters)	METERS
AZIMUTH MARK	THIRD ORDER 178°10'12"8		

FORM 502 (REV. 5-54)

USCGM-DC, 597.

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 WASHINGTON D.C.

APR 1980

# HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

# CALIFORNIA

QUAD 321164 STATION 1014  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

20D

QUATAY (San Diego County, Calif., A.C.T., 1939)--Station is on the highest point of a brush covered ridge, that is 3/4 mile SW of Quatay. Quatay is a small village on U.S. Highway 80, 42 miles E of San Diego.

Station mark is a standard bronze disk wedged in a drill hole in a boulder as described in note 4. Reference marks are standard bronze disks in a boulder as described in note 12c. Station mark is a standard disk set in a boulder, note 4, and is stamped "QUATAY 1939."

Reference marks are standard disk set in outcropping bed-rock, note 12c, stamped "QUATAY NO.1 and QUATAY NO.2 1939." U.S. Forest Service Lookouts on Cuyamaca and Los Pinos were used as Azimuth Marks.

Reached from Quatay by following the Forest Service fire-break up ridge SW about 1 mile to highest point and station. A 45 minutes pack.

OBJECT	DISTANCE	DIRECTION
CUYAMACA ECC 1938	meters	0°00'00"0
R.M.No.1 SE	3.962	134 11 29
Los Pinos Lookout		196 11 57.8
R.M.No.2 SW	5.706	250 25 57.0
Cuyamaca Lookout		359 58 32.2

QUATAY (San Diego County, Calif., A.C.T., 1939; W.R.H., 1957)

--The station and reference marks were recovered and found to be in good condition. A complete description follows:

The station is located on the highest point of Quatay Mountain, a prominent, brushy mountain, about 3/4 mi. (airline) SW of the village of Quatay, and 2-1/2 mi. E-SE of Desecano.

To reach the station from the post office in Quatay, go W on U.S. Highway 80 for 0.45 mi. to a brown house on the left and a side road on the right. Turn left into a driveway on the W side of the house, and go S for 0.1 mi. to the start of a fire break about 100 yd. SE of a small house. Pack S up the fire break about 1/2 mi. to a fork. Take the right fork and pack SW about 1/4 mi. up the fire break to the highest point and the station. Packing time: about 3/4 hour.

The station mark is a standard disk, stamped "QUATAY 1938" cemented in a drill hole in the top of a boulder that projects 8 in. above the ground. It is 9 ft. SW of a 3-ft. cairn.

Reference mark 1 is a standard disk, stamped "QUATAY NO 1 1938" cemented in a drill hole in the top of a boulder that projects 8 in. above the ground. It is 2 ft. lower than the station.

Reference mark 2 is a standard disk, stamped "QUATAY NO 2 1938" cemented in a drill hole in the top of a boulder that projects 8 in. above the ground. It is 2 ft. lower than the station.

1957 observations:

OBJECT	DISTANCE		DIRECTION
CUYAMACA ECCENTRIC	meters	feet	0°00'00"0
1939			
R.M. 1	E-SE 3.962	12.997	134 09 32
Los Pinos Look-out	S		196 11 51.8
R.M. 2	SW 5.706	18.719	250 25 56
Cuyamaca Lookout N-W			359 58 30.8
Height of stand:	4 ft.		

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
 RECOVERY NOTE, TRIANGULATION STATION

FORM 500  
 (11-6-54)

NAME OF STATION: QUATAY  
 ESTABLISHED BY: A.C.T. YEAR: 1939 STATE: California  
 RECOVERED BY: G. Essex YEAR: 1959 COUNTY: San Diego

Detailed statement as to the status of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station and reference marks 1 and 2 were recovered in good condition. The surroundings of the mark are undisturbed. There is a small wooden tower built above the station. It is located on top of Quatay Mountain.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: QUATAY YEAR: 1939  
 STATE: California LOCALITY: Southern California Area  
 Second-order Triangulation SOURCE: G-4386 FIELD SKETCH: CALIF 310

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH & IONOSPHERIC ANGLE	MARK	
STATE: Calif ZONE: 6 CODE: 0406	x 1,900,628.77 y 246,409.97	- 0 10 40		
STATE: ZONE: CODE:				
GEODETTIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE: 32°50'36".555 LONGITUDE: 116°34'24".704	NORTH WEST		METERS FEET
	TO STATION	GEODETTIC AZIMUTH (From south)	LOGARITHM (Meters)	DISTANCE METERS
	CUYAMACA ECC	165°13'51".2		

## REPORT ON CONDITION OF SURVEY MARK

Form Approved  
 Budget Bureau No. 41-R1913

Name or Designation: QUATAY Year Established: 1939  
 State: CALIFORNIA County: SAN DIEGO Organization Established by: USC&G  
 Distance and direction from nearest town: 3/4 M. SW QUATAY  
 Description published in: (Line, book, or quadrangle number): QUAD 321164 STATION 1014  
 Mark searched for or recovered by: Name: WALTER D. DAVIS  
 Organization: CUBIC CORP.  
 Date of report: 14 JULY 1978 Address: 9233 BALBOA AVE. SAN DIEGO, CALIF 92123  
 Condition of mark: List letters and numbers found stamped in (not cast in) each mark.

Mark stamped:	Condition:
QUATAY 1938	MISSING
QUATAY NO. 1 1938	FOUND DAMAGED
QUATAY No. 2 1938	FOUND OK

Marks accessible?  Yes  No Property owner contacted?  Yes  No  
 Please report on the thoroughness of the search in case a mark was not recovered, suggested changes in description, need for repairing or moving the mark, or other pertinent facts:

Witness Post? Yes \_\_\_ No \_\_\_  
 Witness Post set \_\_\_ feet \_\_\_ of \_\_\_ mark.  
 Witness Post set \_\_\_ feet \_\_\_ of \_\_\_ mark.

If additional forms are needed, indicate number required.

NOAA FORM 78-91 U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY  
 (11-73)

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OCT 30 1980



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 COAST AND GEODETIC SURVEY  
 WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

200

QUAD 321164 STATION 1015  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

32 45  
 116 30

DEPARTMENT OF COMMERCE  
 U.S. COAST AND GEODETIC SURVEY  
 FORMS 523  
 Rev. 4-24-1944

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: LAGUNA STATE: California COUNTY: San Diego

CHIEF OF PARTY: Walter R. Helm YEAR: 1958 Described by: R.F. Hanson

NOTE*	HEIGHT OF TELESCOPE ABOVE STATION MARK	HEIGHT OF LIGHT ABOVE STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
7a	DISTANCE		DIRECTION:			
	OBJECT	BEARING	feet	meters		
12c	CLIFF	SSE	47.466	14.467	00 00 00.0	
17c	R.M. No. 2	WSW	About	0.35 mile	21 36 08	
	Azimuth Mark	NW			190 44 15.4	
17a	Cuyamaca Lookout Tower	ENE	17.211	5.246	284 53 06	
	R.M. No. 1					

The station is located near the site of an abandoned mine on a brush-covered slope at the west base of a steep, rocky hill. It is about 1-1/2 miles airline southeast of Pine Valley and 1/4 mile airline northeast of the junction of Sunrise highway with U.S. Highway 80.

To reach from the post office in Pine Valley, go easterly on U.S. Highway 80 for 1.3 miles to culvert number E87 + 38 on the right and the azimuth mark. Continue easterly on U.S. Highway 80 for 0.2 mile to the summit and a sign on the left "SUNRISE HIGHWAY". Turn left and go north on Sunrise Highway for 0.15 mile to a sign "WINDING ROAD" on the right and a dim side road right. Turn right and go on dim side road through dense brush for 0.05 mile to a fork. Take left fork and go northerly for 0.05 mile to end of road and station.

The station mark is a standard disk stamped "LAGUNA 1958", set in the top of a

10-inch-square concrete monument that projects 3 inches. It is 15 feet east of the end of the dirt road, 8 feet south of a standard witness post and 100 feet southeast of an abandoned, fenced-in, vertical mine shaft.

Reference mark number one is a standard disk stamped "LAGUNA NO 1 1958", set in the top of a 10-inch-square concrete monument that projects 3 inches. It is about 4 feet west of a shallow dry wash and about 1-1/2 feet higher than the station.

Reference mark number two is a standard disk stamped "LAGUNA NO 2 1958", cemented in a drill hole in a 2-foot boulder that projects 2 feet. It is on the east side of a shallow dry wash and 7 feet lower than the station.

The azimuth mark is a standard disk stamped "LAGUNA 1958", cemented in a drill hole in a boulder that is 10 feet long, 6 feet wide and projects 10 feet on its lower side. It is 80 feet south of the center line of U.S. Highway 80, 30 feet south of a steep, brushy ravine which runs up from culvert number E87 + 38 and is about 37 feet higher than the highway.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: LAGUNA YEAR: 1958

STATE: California LOCALITY: El Cajon To Jacumba  
 Second -order Triangulation SOURCE: G-11609 FIELD SKETCH: CALIF 443

GRID DATA	COORDINATES (Foot)	PLANE AZIMUTH θ (ORANG ANGLE)	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,921,044.73 y 235,061.25	71°27'53" -0 08 28	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE:	LONGITUDE:	NORTH WEST	METERS FEET
	32°48'44"8268	116 30 25.0873		

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
AZIMUTH MARK	THIRD ORDER 71°19'25"0		

\* Refers to notes in manuals of triangulation and state publications of triangulation. † Direction-angle measured clockwise, referred to initial station.  
 ‡ For nearest meter only, when no trigonometric leveling is being done.

FORM 784 (10-21-52)

USCGM-DC 1287

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 WASHINGTON D.C.

CALIF 20

HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

QUAD 321164 STATION 1016  
 CALIP-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

32 45  
 116 30

20C

DEPARTMENT OF COMMERCE  
 U.S. COAST AND GEODETIC SURVEY  
 FORM 523  
 REV. APR. 1943

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: LAMINA STATE: California COUNTY: San Diego

CHIEF OF PARTY: Walter R. Helm YEAR: 1957 Described by: P.F. Hanson

NOTE	HEIGHT OF TELESCOPE ABOVE STATION MARK FEET	HEIGHT OF LIGHT ABOVE STATION MARK METERS	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
			BEARING	DISTANCE		DIRECTION
				feet	meters	
12c	BELL 1000		NNW	15.616	4.740	00 00 00.0
17c	R.M. No. 2		ENE	About	1/4 mile	150 27 25.0
12c	Azimuth Mark		SW	18.799	5.770	327 00 41
	F.V. No. 1					

The station is located on the highest point of a rocky, brush-covered hill that is on the north end of a north-south ridge. It is about 8 miles air-line east of Alpine, 2 miles air-line southwest of Escanso and 1-1/2 miles air-line south of U.S. Highway 80.

To reach from the U.S. Post Office in Alpine, go east on U.S. Highway 80 for 8.9 miles to a side road right and sign "JAPATUL VALLEY 5", just before crossing bridge over Sweetwater River. Turn right and go southerly on hard surfaced road for 0.2 mile to a side road right and sign "JAPATUL VALLEY 5", just after crossing a small bridge across Sweetwater River. Turn right and go southerly on hard surfaced road for 0.8 mile to a side road right and a green mailbox on the left. Turn right and go westerly on narrow, hard surfaced road for 0.25 mile to a wire gate at the top of a small rise and the azimuth mark on the right. Continue westerly for 0.25 mile to a

fork. Take left fork and go westerly on dirt road for 50 yards to a wire gate. Pass through gate and continue on dirt road for 0.25 mile to northwest side of hill. From here pack southeast up steep brushy slope of hill for about 250 yards to highest point and station.

The station mark is a standard disk stamped "LAMINA 1957", cemented in a drill hole in a 15-foot boulder that projects 5 feet.

Reference mark number one is a standard disk stamped "LAMINA NO 1 1957", cemented in a drill hole in a 4 x 4-foot boulder that projects 2 feet. It is about 6 feet lower than the station.

Reference mark number two is a standard disk stamped "LAMINA NO 2 1957", cemented in a drill hole in a 2 x 4-foot boulder that projects 2 feet. It is about 4 feet lower than the station.

The azimuth mark is a standard disk stamped "LAMINA 1957", cemented in a drill hole in a 10-foot boulder that projects 3 feet. It is 18 feet north of the center line of the hard surfaced road, 4 feet east of a fence line and 10 feet north of the north gate post of a wire gate.

Detailed description

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: LAMINA YEAR: 1957

STATE: California LOCALITY: El Cajon To Jacumba

Second -ORDER Triangulation SOURCE: G-11609

FIELD SKETCH: CALIF 443

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH & HORIZ. ANGLE	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,881,787.17 y 238,405.87	234°32'46" - 0 12 41	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE:	LONGITUDE:	NORTH WEST	METERS FEET
	32°49'16"7248	116 38 05.1934		

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
AZIMUTH MARK	THIRD ORDER 234°20'04"8		

\*Refer to notes in manuals of triangulation and state publications of triangulation. †Direction-angle measured clockwise, referred to initial station.  
 ‡To nearest meter only, when no trigonometric leveling is being done.

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JULY 1963

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COAST AND GEODETIC SURVEY  
WASHINGTON D.C.

# HORIZONTAL CONTROL DATA

by the  
Coast and Geodetic Survey  
NORTH AMERICAN 1927 DATUM

QUAD 321164 STATION 1017  
CALIF-MEXICO  
LATITUDE 32°30' TO 33°00'  
LONGITUDE 116°30' TO 117°00'  
DIAGRAM NI 11-11 SAN DIEGO

LAWSON (San Diego County, Calif., A.C.T., 1938)--Station is 24 miles E of San Diego, 9 miles E of Jamul on a high rocky peak on range lying between Lyons and Lawson Valleys know as Lawson Peak, in section 1, T 17 S, R 2 E.

Station mark is a standard bronze disk wedged in a drill hole in outcropping bedrock as described in note 2. Reference marks are standard bronze disk in outcropping bedrock as described in note 12a.

Station mark is a standard station disk set on N end of huge granite rock note 2, stamped "LAWSON 1938."

Reference mark No.1 is a standard reference disk set in granite rock, note 12a, E of station, stamped "LAWSON NO.1 1938."

Reference mark No.2 is a standard reference disk set in a granite rock, note 12a, W of station, stamped "LAWSON NO.2 1938."

Station "LYONS" is designated as azimuth mark.  
Barometric elevation (G212) 3220 feet.

To reach from Jamul go N on the Lyons Valley road 4.4 miles and take right fork, go 4.4 miles to Lyons Guard Station and continue E, go 1.05 miles and turn left, N, across small bridge at Lawson Valley sign, follow this road 1.05 miles to summit of grade and junction with Wisecarver Truck Trail and turn right, E, on truck trail, go 1.0 mile and keep right fork E, go 1.0 mile to locked gate (USFS key), continue E 1.2 miles to junction with Carvers Truck Trail in high saddle. From here go N and W up ridge to highest point and station, about 1/4 mile.

OBJECT	DISTANCE	DIRECTION
BELL 1939	meters	0°00'00"0
R.M.No.2 W	18.565	256 19 28
R.M.No.1 S	10.608	189 19 34
LYONS PE. 1938		
Azimuth Mark		218 16 51.2

Form 528  
(11-3-55)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: LAWSON

ESTABLISHED BY:

RECOVERED BY: U.S.F.S.

YEAR: 1938 STATE: California

YEAR: 1962 COUNTY: San Diego

Detailed statement as to the status of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station in good condition as described. Ropes required to haul gear up to top of rock on which station is placed.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: LAWSON

YEAR: 1938

STATE: California

LOCALITY: Southern California Area

Second-order Triangulation

SOURCE: G-4386

FIELD SKETCH: CALIF 310

GRID DATA	COORDINATES (Foot)	PLANE AZIMUTH θ (DMS) ANGLE	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,853,889.64 y 203,910.09	- 0 15 40	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE:	LONGITUDE:	NORTH WEST	METERS FEET
	32°43'34"268	116 43 30.245		

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
BELL	194°30'50"3		

\* Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note.  
Note.—One of these forms must be used for every station recovered. COM-DC 345 14'

CALIF 20

JULY 1963  
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COAST AND GEODETIC SURVEY  
WASHINGTON D.C.

# HORIZONTAL CONTROL DATA

by the  
Coast and Geodetic Survey  
NORTH AMERICAN 1927 DATUM

QUAD 321164 STATION 1018  
CALIF-MEXICO  
LATITUDE 32°30' TO 33°00'  
LONGITUDE 116°30' TO 117°00'  
DIAGRAM NI 11-11 SAN DIEGO

32 45  
116 30

20D

DEPARTMENT OF COMMERCE  
U.S. COAST AND GEODETIC SURVEY  
FORM 323  
REV. AUG. 1961

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: LODGE STATE: California COUNTY: San Diego

CHIEF OF PARTY: Walter R. Helm YEAR: 1957 Described by: R.F. Hanson

NOTE	HEIGHT OF TELESCOPE ABOVE STATION MARK Surface station mark Underground station mark	HEIGHT OF SIGHT ABOVE STATION MARK METERS	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION		
			BEARING	DISTANCE	
	OBJECT		feet	meters	
12a	SMITH R.M. No. 1	NW	16.496	5.085	00 00 00.0
17c	Azimuth Mark	SSW	About	1/4 mile	105 17 17.3
12c	R.M. No. 2	SE	17.755	5.112	123 50 08

The station is located on a small flat rocky area about halfway up the steep rocky ridge that lies on the north side of U.S. Highway 80, at the extreme east end of Descanso Valley.

To reach from the U.S. Post Office in Alpine, go east on U.S. Highway 80 for 9.8 miles to Descanso Junction. Continue easterly on U.S. Highway 80 for 1.3 miles to its junction with State Highway 79. Continue easterly on U.S. Highway 80 for 0.25 mile to a curve in the highway and the azimuth mark on the right. Continue east on the highway for 0.15 mile to Antler Lodge on the left. From here pack northerly, crossing dry creek bed, then up the steep rocky slope for about 750 yards to a prominent brown rocky outcrop and the station.

The station mark is a standard disk stamped "LODGE 1957", cemented in a drill hole in a 2-foot boulder that projects 4 inches. It sets between two large boulders

that project 4 feet above the ground.

Reference mark number one is a standard disk stamped "LODGE NO 1 1957", cemented in a drill hole in outcropping bedrock that projects 2 feet. It is about 2 feet higher than the station.

Reference mark number two is a standard disk stamped "LODGE NO 2 1957", cemented in a drill hole in a large boulder that projects 3 feet. It is about 1 foot higher than the station.

The azimuth mark is a standard disk stamped "LODGE 1957", cemented in a drill hole in a 10-foot boulder that projects 4 feet. It is 6 feet north of a fence line, 22 feet east of a triangular blazed tree and 33 feet south of the center line of U.S. Highway 80.

Detailed description

\* Refer to notes in manuals of triangulation and state publications of triangulation. † Direction-angle measured clockwise, referred to initial station.  
‡ To nearest meter only, when no trigonometric leveling is being done.

16-50202-1 U. S. GOVERNMENT PRINTING OFFICE

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: LODGE

YEAR: 1957

STATE: California

LOCALITY: El Cajon To Jacumba

Second -order Triangulation

SOURCE: G-11609

FIELD SKETCH: CALIF 443

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH § (or Δ) ANGLE	MARK
STATE: Calif ZONE: 6 CODE: 0406	X 1,896,284.74 Y 251,657.47	25°28'01" -0 11 08	AZIMUTH MARK
STATE: ZONE: CODE:			

GEODETTIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE:	LONGITUDE:	NORTH WEST	METERS FEET
	32°51'28"3403	116 35 15.8182		

TO STATION	GEODETTIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
AZIMUTH MARK	THIRD ORDER 25°16'52"7		

FORM 284 (9-51-58)

USCOMM-DC 8297

JULY 1963  
PUBLISHED AND PRINTED BY:  
U.S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY  
WASHINGTON D.C.

# HORIZONTAL CONTROL DATA

by the  
Coast and Geodetic Survey  
NORTH AMERICAN 1927 DATUM

QUAD 321164 STATION 1019  
CALIF-MEXICO  
LATITUDE 32°30' TO 33°00'  
LONGITUDE 116°30' TO 117°00'  
DIAGRAM NI 11-11 SAN DIEGO

20D

32 45  
116 30

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: LONG STATE: California COUNTY: San Diego  
CHIEF OF PARTY: Walter R. Helm YEAR: 1958 Described by: L. A. Critchlow

NOTE	HEIGHT OF TELESCOPE ABOVE STATION MARK METERS	HEIGHT OF LIGHT ABOVE STATION MARK METERS	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION		
			OBJECT	BEARING	DIRECTION
2	1				00 00 00.0
17c			CORTE 1957		09 57 09.4
12a			Azimuth Mark	WSW.	about 2 miles
12c			R.M. 2	WNW.	20.843 - 6.353 - 42 10 46 -
			R.M. 1	S.	12.886 - 3.928 - 291 24 47 -
			LONG VALLEY PEAK (NOG)	SSW.	14.031 - 4.277 - 317 54 59 -

The station is located airline about 2 miles south of Pine Valley, 4 miles southeast of Guatay, and 5 miles northwest of Boulder Oaks, on the top of a prominent, rocky mountain.

To reach the station from the post office and general store in Pine Valley go northwest on U. S. Highway 80 for 0.2 mile to a side road on the left. Turn left as per sign "CORTE MADERA RD." and go southwest 0.7 mile to a locked gate. Pass through the gate and continue southwest 2.3 miles to a cairn and the azimuth mark on the right. Continue southwest 1.8 miles to a cross road and a sign "BEAR VALLEY TK. TR.". Turn left and go northeast 0.7 mile to a locked gate. Pass through the gate and continue northeast 0.9 mile to a fork. Take the left fork and go northeast 0.8 mile to a line of trees near the northeast edge of the valley. Turn left and go north on an old trail through the woods 0.4 mile to a small, washed-out earthen dam and the end of truck

travel. Pick way through heavy brush and pack northeast about 1 mile up a steep slope to the highest point and the station. Packing time: About 1-1/4 hours.

The station mark is a standard disk stamped "LONG 1958" cemented in a drill hole in outcropping bedrock that projects 6 inches above the ground. It is 21.4 feet northeast of and about 5 feet lower than the highest point of the mountain.

Reference mark number 1 is a standard disk stamped "LONG NO 1 1958" cemented in a drill hole in the top of a boulder that projects 3 feet above the ground and is 4 feet higher than the station.

Reference mark number 2 is a standard disk stamped "LONG NO 2 1958" cemented in a drill hole in the top of a boulder that projects 3-1/2 feet above the ground and is 3 feet lower than the station.

LONG VALLEY PEAK (NOG) is a bronze disk stamped "NORMAN GLOVER L.S. 1880 LONG VALLEY PEAK 1939" cemented in a drill hole in outcropping bedrock that projects 5 feet above the ground on the northeast and is 4 feet higher than the station. It is 7 feet northeast of and 1 foot lower than the highest point of the mountain.

The azimuth mark is located on the northwest side of the Corte Madera Road and is a standard disk stamped "LONG 1958" cemented in a drill hole in the top of a boulder that projects 6 inches above the ground. It is 2 feet south of a 2-foot cairn and 46 feet northwest of the centerline of the road.

\* Refer to notes in manuals of triangulation and state publications of triangulation. (To nearest tenth only, when no trigonometric leveling is being done.)

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: LONG YEAR: 1958  
STATE: California LOCALITY: El Cajon To Jacumba  
Second -ORDER Triangulation SOURCE: G-11609 FIELD SKETCH: CALIF 443

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH & IONOSPHERIC ANGLE	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,913,523.28 y 229,511.40	79°33'13" - 0 09 17	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE:	LONGITUDE:		
	32°47'49".7213	116 31 53.0372		
	TO STATION		GEODETIC AZIMUTH (From center)	DISTANCE
			THIRD-ORDER 79°24'20".1	LOGARITHM (Meters) METERS

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: LONG VALLEY PEAK NOG YEAR: 1958  
STATE: California LOCALITY: El Cajon To Jacumba  
Second -ORDER Traverse SOURCE: G-11609 FIELD SKETCH: CALIF 443  
(No check on this position)

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH & IONOSPHERIC ANGLE	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,913,516.79 y 229,498.95	- 0 09 17	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE:	LONGITUDE:		
	32°47'49.5980	116 31 53.1128		
	TO STATION		GEODETIC AZIMUTH (From center)	DISTANCE
	Computed from station LONG			LOGARITHM (Meters) METERS

FILE COPY

JULY 1963  
 PUBLISHED AND PRINTED BY:  
 U.S. DEPARTMENT OF COMMERCE  
 COAST AND GEODETIC SURVEY  
 WASHINGTON D.C.

APR 1980

# HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

QUAD 321164 STATION 1021  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

LYONS PEAK (San Diego County, Calif., A.C.T., 1938)--Station is located about 22 miles E of San Diego and 7 miles E of Jamul, a small settlement on State Highway 94; on the summit of a rocky peak known as Lyons Peak. There is a Forest Service Lookout Tower 300 yards NE of station.

Station mark is a standard bronze disk wedged in a drill hole in a boulder as described in note 4. Reference marks are standard bronze disks in a boulder as described in note 12c.

Station marked by a standard disk set in a large boulder, stamped "LYONS PEAK 1938."

Reference marks are standard marks set in large boulders, stamped "LYONS PEAK NO.1 and NO.2 1938."

Station is reached from Jamul by going N from filling station on paved road for 0.3 mile to Lawson Valley road; turn right on paved road, becoming a dirt road and leading up winding grade 4.15 miles to fork, take right fork, Lyons Valley road, SE, for 4.4 miles to top of grade, looked gate on right about 50 yards before reaching Lyons Guard Station. Enter gate (USFS Key) and follow truck trail E, up peak for 3.1 miles to summit and station. Key to locked gate can be obtained at Guard Station or the gate can be avoided by turning into Guard Station grounds by unlocked gate just W of house, thence into road leading to summit.

OBJECT	DISTANCE	DIRECTION
SAN MIGUEL ECC. (R.M.No.2)		
R.M.No.1 NE	meters 6.693	0°00'00"0
R.M.No.2 W	124 40 25	
Station LAWSON	8.110	367 50 04
Asimuth Mark		144 48 15.8

## RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: LYONS PEAK  
 ESTABLISHED BY: USC&GS YEAR: 1938 STATE: California BENCH MARK ALSO   
 RECOVERED BY: A.T. Dickey YEAR: 1977 COUNTY: San Diego  
 AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 7 miles East of Jamul  
 HEIGHT OF TELESCOPE ABOVE STATION MARK FEET. HEIGHT OF LIGHT ABOVE STATION MARK FEET.

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	

The 1977 to reach description was adequate to find the station. The station was occupied by the light keeper and all marks were found in good condition as described.

*A.T. Dickey*

## ADJUSTED HORIZONTAL CONTROL DATA

ADJUSTMENT BY NGS

NAME OF STATION: LYONS PEAK OBS BY CGS  
 STATE: CALIFORNIA YEAR: 1938 SECOND ORDER

SOURCE: G-04386

GEODETIC LATITUDE: 32 42 06.190	ELEVATION: 1139.6 METERS
GEODETIC LONGITUDE: 116 45 47.515	3739 FEET

STATE COORDINATES (Foot)				
STATE & ZONE	CODE	X	Y	± 10R Δ ± 11 ANGLE *
CA 6	0406	1.842.118.59	195.058.08	- 0 16 55

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE ± 10R Δ ± 11 FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From peak)	PLANE AZIMUTH (From peak)	CODE
SHECKLER CADM	3 41 52.3	3 58 47	0406

THESE DATA ARE OBTAINED FROM ADJUSTMENT OF 1940

6R 021

JULY 1963  
 PUBLISHED AND PRINTED BY:  
 U.S. DEPARTMENT OF COMMERCE  
 COAST AND GEODETIC SURVEY  
 WASHINGTON D.C.

# HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

CALIFORNIA 20

QUAD 321164 STATION 1022  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

20A

MESA (San Diego County, Calif., C.P., 1935)--Station is located on the highest point of the mountain known as East Mesa. About 4-1/2 miles, airline, southeast of Cuyamaca and 10-1/2 miles north of Los Pinos. Station is located on brushy mountain with rock capped summit. It is marked with a bolt set in cement between the two largest boulders on top.

Reached from Desconso Junction on U.S. Highway 80: Turn right north and go 0.2 mile, turn right, and go 4.6 miles. Turn right, east, just before reaching bridge No. 5756 and pass through gate. (Key must be obtained from ranger at Desconso). Go 1.3 miles and take left fork main-traveled road. Go 1.2 miles and take right fork main-traveled road. Go 1.0 mile and take right fork, continue 0.1 mile and take left fork main-traveled road. Go 0.5 mile and take right fork, go 0.3 mile and take right fork. Go 0.8 mile and take right fork. Go 0.4 mile and take right fork. Go 0.55 mile and turn right off road up into a grass mesa which leads to the base of mountain. Go 0.1 mile to end of truck travel. Continue on foot to west and then north to summit. A 20 minute pack.

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
 RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: MESA  
 ESTABLISHED BY: C.P. YEAR: 1935 STATE: California  
 RECOVERED BY: U.S.G.S. YEAR: 1957 COUNTY: San Diego

Detailed statement as to the status of the original description, including marks found, stampings, changes made, and other pertinent facts:

To reach from Desconso Junction on U.S. Highway 80: Proceed north-east 1.4 miles on U.S. Highway 80 to junction with State Highway 79, turn left, north, and go 4.6 miles. Turn right, east, just before reaching bridge No. 5756 and pass through gate. (Key must be obtained from ranger at Desconso R.S.) Proceed easterly on truck trail 2.1 miles and take right fork main-traveled road onto grass mesa. Go 0.6 mile and take right fork, continue 0.3 mile and take right fork. Proceed southwest from here 2.0 miles to end of truck travel at base of rocky peak. Continue on foot northwesterly to top. A 20 minute pack. A new road is in the process of construction at this time (1957) which will pass directly below the north side of the mountain and should considerably shorten the foregoing description.

\* Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note.  
 Note.—One of these forms must be used for every station recovered.  
 CGS-DC 34314

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: MESA YEAR: 1935  
 STATE: California LOCALITY: Yuma, Arizona to San Diego, Calif.-Miland to El Centro  
 Third -ORDER Triangulation SOURCE: G-3054 FIELD SKETCH: CALIF 276

ORIG DATA	COORDINATES (Foot)	PLANE AZIMUTH & (OR) ANG	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,904,542.49 y 263,615.54	- 0 10 15	
STATE: ZONE: CODE:			

GEODETTIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE:	LONGITUDE:	NORTH WEST	METERS FEET
	32°53'26"914	116 33 39.434		

TO STATION	GEODETTIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS

FILE COPY OCT 30 1980

USCGM-DC 3431

JULY 1963  
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 COAST AND GEODETIC SURVEY  
 WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

QUAD 321164 STATION 1025  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

20C

32 45  
 116 30

DEPARTMENT OF COMMERCE  
 U. S. COAST AND GEODETIC SURVEY  
 FORM 284  
 Rev. Aug. 1944

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: PROM STATE: California COUNTY: San Diego

CHIEF OF PARTY: Walter R. Helm YEAR: 1957 Described by: L. A. Critchlow

NOTE	HEIGHT OF TELESCOPE ABOVE STATION MARK 1 METERS	HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION			
			BEARING	DISTANCE		DIRECTION
	Surface-station mark Underground-station mark		feet	meters		
12a	GUATAY 1939 R.M. 1 San Diego-Tucson Airway Beacon No. 3	ESE.	27.015	8.235	00 00 00.0 30 42 22	
12a	R.M. 2	SSE.	50.837	15.496	60 17 20.5 109 11 44	
17c	Azimuth Mark	W.	about 3/4 mile		183 47 59.0	

The station is located near the summit of a brushy hill, airline about 3 miles west-southwest of Descanso, 6 miles east of Alpine, and 1/10 mile north of a prominent curve in U. S. Highway 80.

To reach the station from the post office in Alpine go east on U. S. Highway 80 5.1 miles to a side road and a sign "WILLOWS RD" on the left. Continue east on the highway 1.3 miles to Highway Post D-356441 on the right. Pack northwest up the left side of a draw, then southwest to the top of the hill. Continue south about 50 yards to the station.

The station mark is a standard disk stamped "PROM 1957" cemented in a drill hole in outcropping bedrock that projects 2 inches above the ground.

Reference mark number 1 is a standard disk stamped "PROM NO 1 1957" cemented in a drill hole in outcropping bedrock that projects 2 feet above the ground and is 4 feet lower than the station.

Reference mark number 2 is a standard disk stamped "PROM NO 2 1957" cemented in a drill hole in outcropping bedrock that projects 2 feet above the ground and is 3 feet lower than the station.

The azimuth mark is a standard disk stamped "PROM 1957" cemented in a drill hole in the top of a boulder that projects 4 feet above the ground. It is 2 feet north of a 2-foot cairn and 40 feet south of the centerline of a road.

To reach the azimuth mark from the Willows Road junction mentioned above go east on U. S. Highway 80 for 0.5 mile to a side road on the right. Turn sharp right and go southwest 0.1 mile to the top of a rise and the azimuth mark on the left.

Detailed description

\* Refer to notes in manuals of triangulation and state publications of triangulation. † Direction-angle measured clockwise, referred to initial position.  
 ‡ To insert meter only, when no trigonometric leveling is being done. 16-58850-1 U. S. GOVERNMENT PRINTING OFFICE

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PROM YEAR: 1957

STATE: California LOCALITY: El Cajon To Jacumba

Second-order Triangulation SOURCE: G-11609 FIELD SKETCH: CALIF 443

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH ∠ (OR Azm ANGLE)	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,874,148.54 y 244,416.86	89°29'44" -0 13 30	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE:	LONGITUDE:	NORTH WEST	METERS FEET
	32°50'15"9128	116°39'34"9772		

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
AZIMUTH MARK	THIRD ORDER 89°16'14"2		

FILE COPY



CALIF 20

JULY 1963  
 PUBLISHED AND PRINTED BY:  
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 COAST AND GEODETIC SURVEY  
 WASHINGTON D.C.

HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

QUAD 321164 STATION 1026  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

32 45  
 116 30

20A

RATTLESNAKE (San Diego County, Calif., C.P., 1935)--Station is located on highest point of Rattlesnake Mountain. About 4.0 miles, airline, east of Cuyamaca Lookout Station on which is located U.S. Coast and Geodetic Survey Station, Cuyamaca. About 1.5 miles airline, northeast from Cuyamaca Rancho State Park and U.S. Forest Service Headquarters. Rattlesnake Mountain is very brushy and hard walking. Mountain is covered with large white boulders and station can be seen about half way up from end of truck travel.

Reached as follows: From Descanso Junction on U.S. Highway 80 turn right and go 0.2 mile. Take right fork and go 6.6 miles. (Road paved to here.) Turn right, east, and go 0.2 mile to Cuyamaca Rancho State Park Headquarters. (Rangers in charge here will direct you to station. From Rangers Office go straight ahead (North) 0.1 mile, passing through gate, keep straight ahead 0.6 miles to another gate. Go 0.2 mile and take right fork, go 0.2 mile and take left fork, go 0.6 mile to end of truck travel. There is a large pine tree here, about five feet through, on right of road, which will be blazed by the Forest Service. From end of truck travel continue on foot due east. After walking about 200 yards, you will reach a small gulley, follow this gulley to station. About half way up from end of truck travel, station can be seen straight ahead, (east.) One hours hard pack.

Surface and reference marks are standard bronze disks wedged in a drill hole in outcropping bedrock as described in notes 2 and 12a, respectively.

OBJECT	DISTANCE meters	DIRECTION
LOS PINOS		0°00'00"0
Stone Wall Mt. NW.		100 05 52.5
R.M.No.1 SE.	9.730	288 42 03.8

\*\*\*\*\*

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: RATTLESNAKE YEAR: 1935  
 STATE: California LOCALITY: Yuma, Arizona to San Diego, Calif-Niland to El Centro  
 Second -order Triangulation SOURCE: G-3054 FIELD SKETCH: CALIF 276

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH & CORRECT ANGLE	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,914,350.06 y 284,162.58	110°56'00" - 0 09 12	STEEL PIPE WITH POLE ON STONE WALL MT (AZIMUTH MARK)
STATE: ZONE: CODE:	x y		

GEODETTIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE:	LONGITUDE:	NORTH WEST	METERS FEET
	32°56'50"492	116 31 45.066		

TO STATION	GEODETTIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
STEEL PIPE WITH POLE ON STONE WALL MT (AZIMUTH MARK)	THIRD-ORDER 110°46'48"1		
V.A. Elev. 5407 ft. (4565 1957)			

FORM 264 (2-51-55)

USCGM-DC 8257

FILE COPY

# HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

CHMF 20  
 QUAD 321164 STATION 1029  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM HI 11-11 SAN DIEGO

200

32 45  
 116 30  
 YEAR 1957

DEPARTMENT OF COMMERCE  
 U. S. COAST AND GEODETIC SURVEY  
 FORM 525  
 REV. AUG. 1949

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: SMITH (NOG) STATE: California COUNTY: San Diego

CHIEF OF PARTY: Walter R. Helm YEAR: 1957 Described by: D.L.W.

NOTE	HEIGHT OF TELESCOPE ABOVE STATION MARK	HEIGHT OF LIGHT ABOVE STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION		
	FEET	METERS			
SEE below	1.3				
	Surface-station mark				
	Underground-station mark				
OBJECT	BEARING	DISTANCE		DIRECTION	
		Feet	Meters		
LAGUNA				00 00	00.00
12 a R.M. NO. 1	SE	19.210	5.855	17 23	45
12 a R.M. NO. 2	SW	30.760	9.375	96 31	19
17 c Azimuth Mark	W	about 0.4 mile		114 55	14.8

The station is located about 2 1/2 miles airline north-northwest of Pine Valley, 1/2 mile airline north of the village of Guatay, on the summit of a brush covered hill overlooking the village of Guatay.

To reach the station from the post office in Guatay, go west on U.S. Highway 80 for 0.05 mile to a side road right, at east end of the Hill Top Lumber Co. Turn right on the main traveled road for 0.1 mile to the intersection of several roads and drive ways, and sign 'Mc Laren. Turn left and go 0.1 mile to the gateway of the J.D. Wier residence; pass through the gate and continue north on the dim track road past the east side of the garage for 0.15 mile to a reversed fork left; continue on main traveled road up ridge for 0.35 mile to second and highest summit and station.

The station is a 3 inch bronze disk stamped "NORMAN O GLOVER SMITH 1940 LS 1830", cemented in a 3x5 foot outcropping that projects about 15 inches above the ground.

The mark is 12 feet south of an east-west fenceline and 25 feet west of a lone live oak tree at the corner of the fenceline.

Reference mark number one is a standard bronze disk stamped "SMITH NOG NO 1 1957", cemented in a drill hole in bedrock and is 29 feet west of a lone live oak tree. It is 2 feet lower in elevation than the station.

Reference mark number two is a standard bronze disk stamped "SMITH NOG NO 2 1957", cemented in a drill hole in bedrock on the edge of the south slope of the ridge. It is 3 feet lower in elevation than the station.

To reach the azimuth mark, turn left at the reverse fork mentioned above and go 100 yards to the mark on the left.

The azimuth mark is a standard bronze disk stamped "SMITH NOG 1957", cemented in a drill hole in a split boulder which is 5 feet long and 2 feet wide. The mark projects 3 feet above the ground and is 10 feet southeast of a track road and 25 feet north-north-east of a dry wash.

Form 525  
 (11-8-49)

U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
 RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: SMITH (NOG)  
 ESTABLISHED BY: W.R.H. YEAR: 1957 STATE: California  
 RECOVERED BY: G. Essex YEAR: 1959 COUNTY: San Diego

Detailed statement as to the status of the original description; including marks found, stampings, changes made, and other pertinent facts:

Reference mark 2 found in good condition.  
 The station was recovered in good condition.  
 A search was made for reference mark 1 and could not be found.  
 The station is located about 1/2 mile NE of Union Service Station.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: SMITH NOG

STATE: California LOCALITY: El Cajon To Jacumba

Second -order Triangulation SOURCE: G-11609

FIELD SKETCH: CALIF 443

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH θ (OR Δ) ANGLE	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,907,554.06 y 249,633.93	102°07'44" - 0 09 56	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION METERS FEET
	LATITUDE:	LONGITUDE:		
	32°51'08"6597	116°33'03".6441		

TO STATION	GEODETIC AZIMUTH (From mark)	DISTANCE	
		LOGARITHM (Meters)	METERS
AZIMUTH MARK	THIRD ORDER 101°57'48"4		

FORM 524 (10-51-58)

USCGO-DC 5247

FILE COPY

CALIF 20

HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

QUAD 321164 STATION 1030  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

32 45  
 116 30

200

DEPARTMENT OF COMMERCE  
 U.S. COAST AND GEODETIC SURVEY  
 FORM 823  
 Rev. 10-19-60

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: SPAN STATE: California COUNTY: San Diego

CHIEF OF PARTY: Walter R. Helm YEAR: 1957 Described by: D.L.W.

NOTE	HEIGHT OF TELESCOPE ABOVE STATION MARK METERS	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	HEIGHT OF LIGHT ABOVE STATION MARK METERS	
			feet	meters
12 c	1.3	CORTE R.M. No. 2	28.110	8.570
17 c		Azimuth Mark	about 1.2 mile	
12 c		R.M. No. 1	46.800	14.265

The station is located about 8-1/2 miles airline east of Alpine, 5-1/2 miles airline west-northwest of Pine Valley, and 0.1 mile north of and 150 feet higher than U.S. Highway 80 bridge over the Sweetwater River.

To reach from the Post Office in Alpine, go east on U.S. Highway 80 for 8.6 miles to side road right and sign "Japatul Valley." Turn right for 0.15 mile to side road right and farm driveway on left. Turn left through farmyard for 0.1 mile to right of way fence line and end of truck travel. Cross over the fence and pack under highway bridge, across river about 0.05 mile to base of mountain and cairn. From this point pack northerly, up steep slope, past triangle blazed tree to top of first bench and station.

The station mark is a standard bronze disk stamped "SPAN 1957", set in concrete

in a drill hole in a buried boulder which is in the center of a sloping ridge. Mark is 15 feet north of a prominent boulder that is the largest in the vicinity, projecting 10 feet above ground level.

Reference mark number one is a standard bronze disk stamped "SPAN NO 1 1957", set in cement in a drill hole in a 10 by 5 foot boulder, which projects 3 feet. Mark is about 4 feet higher than station.

Reference mark number two is a standard bronze disk stamped "SPAN NO 2 1957", set in concrete in a drill hole in a 10 by 10 foot boulder. Mark is set in a low shoulder of this outcropping. (This boulder is visible from highway and will be of help in finding the station.) Mark is about 2 feet higher than station.

To reach Azimuth Mark, turn right on Japatul Valley road at farm driveway as above for 0.05 mile to mark on left in pasture.

The Azimuth Mark is a standard bronze disk stamped "SPAN 1957", cemented in a drill hole in a 4 by 3 foot boulder which projects 2 feet. Mark is 21 feet east of a north-south fence line, 40 feet east of the approximate center line of the Japatul Valley road, and 1 foot west of a cairn.

\* Refer to notes in manuals of triangulation and state publications of triangulation. † Direction-angle measured clockwise, referred to initial station.  
 ‡ To record meter only, when no trigonometric leveling is being done.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: SPAN YEAR: 1957  
 STATE: California LOCALITY: El Cajon To Jacumba  
 Second-order Triangulation SOURCE: G-11609 FIELD SKETCH: CALIF 443

GRID DATA	COORDINATES (Foot)	PLANE AZIMUTH θ FOR SIGHT ANGLE	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,886,278.34 y 244,393.83	10°38'43" -0 12 12	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION METERS FEET
	LATITUDE:	LONGITUDE:		
	32°50'16"1336	116 37 12.8165		

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
AZIMUTH MARK	THIRD ORDER 10°26'30"7		

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JULY 1963  
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 U.S. DEPARTMENT OF COMMERCE  
 COAST AND GEODETIC SURVEY  
 WASHINGTON D.C.

# HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

# CALIFORNIA 20

QUAD 321164 STATION 1032  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

VIEJAS (San Diego County, Calif., A.C.T., 1939)--Station is about 3 miles NE of Alpine, 6 1/2 miles WNW of Descanso, on highest point of Viejas Mountain. Near 1/4 corner of sections 13 and 24, T 15 S, R 2 E.

Station mark is a standard bronze disk wedged in a drill hole in a boulder as described in note 4. Reference and azimuth marks are standard bronze disks in a boulder as described in note 12c.

Station mark is standard station disk set in boulder outcrop, note 4, stamped "VIEJAS 1938."

Reference mark No.1 is a standard reference disk set in boulder outcrop, note 12c, SW of station, stamped "VIEJAS NO.1 1938."

Reference mark No.2 is a standard reference disk set in boulder outcrop, note 12c, NNW of station, stamped "VIEJAS NO.2 1938."

Azimuth mark is a standard disk set in boulder outcrop, note 12c, 1/4 mile SSW of station on first prominent point, stamped "VIEJAS 1938."

Barometric elevation (No.212) 4250 feet.

To reach from Alpine, go E on U.S. Highway 80 for 2.25 miles to Shell Service Station on right, turn left and go N 0.1 mile to end of truck travel at house. Station is on highest point of mountain to N. Go W about 150 yards to top of ridge, then N along ridge for about 3 miles to highest point and station. A 2 hour pack..

OBJECT	DISTANCE	DIRECTION
BELL 1939	meters	0°00'00.0
Azimuth Mark SSW	1/4 mile	51 13 02.1
R.M.No.1 SW	4.439	80 42
R.M.No.2 NNW	7.891	180 20 38

VIEJAS (San Diego County, Calif., A.C.T., 1939; W.R.N., 1957)

--The station was recovered and all marks found to be in good condition. A complete description follows:

The station is located on the highest point of a prominent, brush-covered mountain that is known locally as Viejas Mountain. It is about 3 mi. (airline) NE of Alpine, and 12 mi. (airline) W-NW of Pine Valley.

To reach the station from the U.S. Post Office in Alpine, go E on U.S. Highway 80 for 0.8 mi. to Victoria Drive on the left. Turn left and go N on Victoria Drive for 1.3 mi. to a side road right and sign "WEST BOUNDARY TRUCK TRAIL." Turn right and go 0.1 mi. to a fork. Take left fork and go E for 0.3 mi. to a fork at two water tanks. Take left fork and go N for 0.4 mi. to the start of a right curve in the road. From this point a trail begins and goes all the way to the top of the mountain. It is rather dim at the beginning, but is marked by small cairns all the way, and becomes more well-defined about 100 yd. after leaving road. Pack E on trail for about 1 mi. to the top of the mountain and the azimuth mark 200 ft. S of the trail on a small rocky knoll. Pack N along ridge top for about 1/4 mi. to the highest point and the station.

The station mark is a standard disk, stamped "VIEJAS 1938," cemented in a drill hole in a 3- by 5-ft. bedrock outcrop that projects 6 in. It is 10 ft. E of, and 3 ft. lower than the highest point of the mountain.

Reference mark 1 is a standard disk, stamped "VIEJAS NO 1 1938" cemented in a drill hole in a large boulder that projects 1 ft. It is about 2 ft. higher than the station.

Reference mark 2 is a standard disk, stamped "VIEJAS NO 2 1938" cemented in a drill hole in a large boulder that projects 2 ft. It is about 6 in. lower than the station.

The azimuth mark is a standard disk, stamped "VIEJAS 1938" cemented in a drill hole in a large bedrock ledge that projects about 5 ft. It is 15 ft. N of the highest point of the knoll, and 12 ft. N of a 3-ft. stake set in a small cairn.

1957 observations:

OBJECT	DISTANCE	DIRECTION
BELL 1939	meters feet	0°00'00.0
Azimuth Mark S-SW	about 1/4 mi.	51 13 09.2
R.M. 1 W-SW	4.432 14.539	80 44 34
R.M. 2 N-NW	7.888 25.880	180 22 28

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: VIEJAS

YEAR: 1939

STATE: California

LOCALITY: Southern California Area

Second-Order Triangulation SOURCE: G-4386

FIELD SKETCH: CALIF 310

GRID DATA	COORDINATES (Foot)	PLANE AZIMUTH & IONOSPHERIC ANGLE	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,854,101.20 y 252,999.90	30°40'54" - 0 15 40	AZIMUTH MARK
STATE: ZONE: CODE:	  	  	  

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION	
	LATITUDE:	LONGITUDE:		NORTH WEST	METERS FEET
	32°51'39".996	116 43 30.387			

TO STATION	GEODETIC AZIMUTH (From mark)	DISTANCE	
		LOGARITHM (Meters)	METERS
AZIMUTH MARK	THIRD-ORDER 30°25'14".1		

FILE COPY

OCT 30 1960

FORM 284 (1-51-59)

USCGM-DC 2287

# HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

QUAD 321164 STATION 1033  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

APR 1980

DEPARTMENT OF COMMERCE  
 U. S. COAST AND GEODETIC SURVEY  
 FORM 533  
 Rev. Aug. 1968

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: WAYS STATE: California COUNTY: San Diego

CHIEF OF PARTY: Walter R. Hels YEAR: 1957 Described by: V.H. BUSTIS

HEIGHT OF TELESCOPE ABOVE STATION MARK 1 METERS. HEIGHT OF LIGHT ABOVE STATION MARK 1 METERS.

NOTE	HEIGHT OF TELESCOPE ABOVE STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION		
		BEARING	DISTANCE feet meters	DIRECTION
4	Surface-station mark			
	Underground-station mark			
12c	DEHESA 1938			
17c	R.M. #2	W	23.378 7.125	00 00 00.0
	Azimuth Mark	WNW	(about 1 mile)	41 36 20
12c	San Diego-Tucson Airway Beacon No. 3	ESE	(about 7 miles)	60 57 08.6
	R.M. #1	SSE	23.819 7.260	241 20 41.0
				301 52 10

The station is located airline, about 1 1/2 miles west of Alpine and about 0.2 mile south of US Highway 80, on the most northwesterly point of a ridge which is between Arnold Way and Midway Drive. It is 60 feet northeast of the center line of a road. The station is a standard disk stamped "WAYS 1957" set in a drill hole in a large boulder which projects about 2 feet above the ground, 15 feet north of a witness post. Reference mark number one is a standard disk stamped "WAYS NO 1 1957" set in a drill hole in a large boulder which projects about 1 foot above the ground and is about 6 inches lower than the station. It is 35 feet north of the center line of the road. Reference mark number two is a standard disk stamped "WAYS NO 2 1957" set in a drill hole in a large boulder which projects about 18 inches above the ground and is about 3

feet lower than the station. It is 50 feet north of the center line of the road. The azimuth mark is a standard disk stamped "WAYS 1957" set in a drill hole in a large boulder which projects about 1 foot above the ground. It is about 225 feet northeast of the center line of the Harbison Canyon Road and about 175 feet northeast of the center line of a fork, formed by a dirt side road, just northeast of the Harbison Canyon Road. To reach the station from the post office in El Cajon, go north on Magnolia Street for 0.15 mile; turn right and go east on US Highway 80 for 10.7 miles; turn right off the highway and go southeasterly on Harbison Canyon Road for 0.5 mile to a side road, left and the azimuth mark. Continue easterly on Harbison Canyon Road for 0.1 mile; take the left fork, straight ahead, easterly on Arnold Way for 0.65 mile to a reverse Y fork; turn sharp left and go northwesterly on Midway Drive for 0.4 mile; turn right off the paved road and follow a dirt track road uphill, easterly for 0.05 mile; take the left fork and continue easterly for 0.15 mile to the top of the ridge, a white witness post and the station.

## REPORT ON CONDITION OF SURVEY MARK

Form Approved  
 Budget Bureau No. 41-R1725

Name or Designation: "WAYS" Year Established: 1957

State: California County: San Diego Organization Established by: RESERVE

Distance and direction from nearest town: 11 miles East of El Cajon, Calif.

Description published in: (Line, book, or quadrangle number) Quad 321164 (El Cajon 1033)

Mark searched for or recovered by: Name - Walter Hels

Organization - U.S. Army Corp of Engineers

Date of report: 1973 Address - P.O. Box 2711 Los Angeles, Cal. 90053

Condition of marks: List letters and numbers found stamped in (not cast in) each mark.

Mark stamped:	Condition:
<u>WAYS 1957</u>	<u>Good</u>
<u>RM 1</u>	<u>Good</u>
<u>RM 2</u>	<u>Good</u>

Marks accessible?  Yes  No Property owner contacted?  Yes  No

Please report on the thoroughness of the search in case a mark was not recovered, suggested changes in description, need for repainting or moving the mark, or other pertinent facts.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: WAYS YEAR: 1957

STATE: California LOCALITY: El Cajon To Jacumba

Second -order Triangulation SOURCE: G-11609 FIELD SKETCH: CALIF 443  
G-12247

GRID DATA	COORDINATES (Foot)	PLANE AZIMUTH θ (OR ANG. ANGLE)	MARK
STATE: <u>Calif</u> ZONE: <u>6</u> CODE: <u>0406</u>	X <u>1,833,783.23</u> Y <u>244,508.88</u>	<u>119°24'28"</u> <u>- 0 17 50</u>	<u>AZIMUTH MARK</u>
STATE: ZONE: CODE:	X Y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE:	LONGITUDE:	NORTH WEST	METERS FEET
	<u>32°50'15"0022</u>	<u>116 47 28.0562</u>		

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
<u>AZIMUTH MARK</u>	<u>THIRD ORDER</u> <u>119°06'38"5</u>		

JULY 1963  
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 COAST AND GEODETIC SURVEY  
 WASHINGTON D.C.

# HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

CALIF 20  
 QUAD 321164 STATION 1034  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

20c

32 45  
 116 30

DEPARTMENT OF COMMERCE  
 U. S. COAST AND GEODETIC SURVEY  
 Form 525  
 Rev. Aug. 1947

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: WILLOWS STATE: California COUNTY: San Diego  
 CHIEF OF PARTY: Walter R. Holz YEAR: 1957 Described by: D.L.W.

NOTE	HEIGHT OF TELESCOPE ABOVE STATION MARK	HEIGHT OF SIGHT ABOVE STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	
			feet	meters
1	Surface-station mark			
	Underground-station mark			
	OBJECT	BEARING	DISTANCE	
			feet	meters
17 c	From Azimuth Mark	SN	about 0.3 mile	00 00 00.3
12 c	R.M. No. 2	WN	24.950	7.605 159 42 75
12 c	R.M. No. 1	WN	23.955	7.305 299 09 29

The station is located about 2 1/4 miles airline east of Alpine, and 1/3 mile airline west-northwest of a village called The Willows, and 1/4 mile north of U.S. Highway 80. It is on a flat area on the south slope of Vieja Mountain, about 300 feet higher than the highway.

To reach from the Post Office in Alpine, go easterly on U.S. Highway 80 for 2.2 miles to a sideroad left, just after passing Sailey's Motel on right. Turn left on main traveled road for 0.05 miles to forks. Keep right fork, around base of mountain and up a slight grade, for 0.1 mile to end of truck travel. From this point pack north up slope about 0.2 miles to first bench, thence bear right and continue north-east up ridge about 0.1 mile to east edge of crest and station.

The station mark is a standard bronze disk stamped "WILLOWS 1957", set in

concrete in a drill hole in a 1 x 1 1/2 foot boulder, which projects 2 inches. Mark is 24 feet east of a cairn.

Reference mark number one is a standard bronze disk stamped "WILLOWS NO 1 1957" set in concrete in a drill hole in a boulder, which projects 2 1/2 feet, and is the largest boulder in the vicinity. Mark is 4 feet higher than station.

Reference mark number two is a standard bronze disk stamped "WILLOWS NO 2 1957", set in concrete in a drill hole in a 4 x 8 foot boulder, which projects 3 feet. Mark is 3 feet higher than station and 1 foot south of a cairn.

To reach Azimuth from turn off to station, go easterly on U.S. Highway 80 for 0.3 miles to mark on right, just before crossing Vieja creek bridge.

Azimuth mark is a standard bronze disk stamped "WILLOWS 1957", set in concrete in a drill hole in a 10 x 3 foot boulder, which projects 18 inches. Mark is 150 feet west of the southwest abutment of the Vieja Creek bridge, and 18 feet southeast of an 18 inch triangle blazed oak tree, and 25 feet south of the approximate center line of U.S. highway 80.

Detailed description

\*Refer to notes in manuals of triangulation and state publications of triangulation. (Direction-angle measured clockwise, referred to initial station.)  
 (To nearest meter only, when no trigonometric leveling is being done.)  
 20-52200-1 U. S. GOVERNMENT PRINTING OFFICE

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: WILLOWS YEAR: 1957  
 STATE: California LOCALITY: El Cajon To Jacumba  
 Second -order Triangulation SOURCE: G-11609 FIELD SKETCH: CALIF 443

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH θ (ON SET ANGLE)	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,853,008.97 y 244,169.37	309°14'57" - 0 15 47	AZIMUTH MARK
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE:	LONGITUDE:	NORTH WEST	METERS FEET
	32°50'12"5730	116 43 42.7161		

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
AZIMUTH MARK	THIRD ORDER 308°59'10"4		

Form 525 (2-21-52)

USCOM-DC 5007

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AUG 1963

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 WASHINGTON D.C.  
 JAN 1978

# HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

QUAD 321164 STATIONS 1035, 1036  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: AIRWAY BEACON NO 3 8 MI S OF STA QUATAY YEAR: 1957  
 STATE: California LOCALITY: El Cajon To Jacumba  
 Third -order Triangulation SOURCE: G-11609 FIELD SKETCH: CALIF 443

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH & HORIZ. ANGLE	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,899,477.68 y 206,886.27	-0 10 47	
STATE: ZONE: CODE:	x y		

GEODETIC DATA	POSITION		SECONDS IN METERS	ELEVATION
	LATITUDE:	LONGITUDE:	NORTH WEST	METERS FEET
	32°44'05".451	116°34'36".743		

TO STATION	GEODETIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
Computed from stations FROM, QUATAY, MILLER, LIVE OAK			

DEPARTMENT OF COMMERCE  
 U.S. COAST AND GEODETIC SURVEY  
 FORM 558 b

### DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: AIRWAY BEACON NO. 3, 8 miles S of Quatay  
 CHIEF OF PARTY: Walter R. Helm YEAR: 1957 STATE: California COUNTY: San Diego

Description, including sketch of object:

The station is the center of the C.A.A. airway beacon on the summit of Los Pinos Mountain, about 35 miles east of San Diego, 8 miles south of Quatay and 6 miles west of Boulder Oaks. It is a standard beacon, flashing white.

Described by *Walter R. Helm*

COGS-DC 87800

## ADJUSTED HORIZONTAL CONTROL DATA ADJUSTMENT BY NGS

NAME OF STATION: BROWN FIELD APT BCN  
 STATE: CALIFORNIA YEAR: 1957 THIRD ORDER  
 SOURCE: G-11606

GEODETIC LATITUDE:	32 34 06.15100	ELEVATION:	METERS
GEODETIC LONGITUDE:	116 59 16.37833		FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	PLANE AZIMUTH ANGLE
CA 6	0406	1,772,679.68	146,964.39	- 3 24 23

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\Delta$  OR  $\Delta$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE

BROWN FIELD N.A.S., BEACON (San Diego County, Calif., R.C.B., 1957)--The station is the revolving light atop a metal tower, located at the Navy Auxiliary Air Station, Brown Field, which is located about 7 miles SE of Chula Vista, and 5 miles NE of San Ysidro. The beacon is S of the main buildings in the SW section of the field.

This is an intersection station.

INTERSECTION RECOVERY NOTE, TRIANGULATION STATION 321164

NAME OF STATION: Brown Field Apt Bcn  
 ESTABLISHED BY: R.C.B. YEAR: 1957 STATE: California BENCH MARK(S) ALSO   
 RECOVERED BY: I.L. Crabbe YEAR: 1976 COUNTY: San Diego  
 AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: 3 miles east of San Ysidro

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Brown Field NAAS Beacon was recovered as previously described. The name was changed to Brown Field Apt Bcn as Brown Field is no longer a Navy Auxiliary Air Station.

2N 053

JULY 1963  
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 COAST AND GEODETIC SURVEY  
 WASHINGTON D.C.  
 JAN 1978

# HORIZONTAL CONTROL DATA

by the  
 Coast and Geodetic Survey  
 NORTH AMERICAN 1927 DATUM

QUAD 321164 STATIONS 1037, 1038  
 CALIF-MEXICO  
 LATITUDE 32°30' TO 33°00'  
 LONGITUDE 116°30' TO 117°00'  
 DIAGRAM NI 11-11 SAN DIEGO

*Calif 20*

THIS POINT ADJUSTED TO SURVEY OF 1941 MADE AFTER EL CENTRO EARTHQUAKE  
 ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: CUYAMACA LOOKOUT TOWER **20A** YEAR: 1936-1954  
 STATE: California LOCALITY: El Cajon To Jacumba  
 Third -ORDER Triangulation SOURCE: G-11609 FIELD SKETCH: CALIF 443

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH θ FOR Δ OR ANGLE	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,890,834.44 y 283,969.77	-0 11 44	
STATE: ZONE: CODE:	x y		

GEODETTIC DATA	POSITION		SECONDS IN METERS	ELEVATION METERS FEET
	LATITUDE:	LONGITUDE:		
	32°56'47".876 NORTH	116 36 21.002 WEST		

TO STATION	GEODETTIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
Computed from stations EL CAJON, CUYAMACA, LAGUNA, SMITH NOG, LONG CAMERON, GUATAY			

CUYAMACA PEAK, LOOKOUT TOWER (San Diego County, Calif., W.M., 1936; W.R.H., 1957)  
 The station is the center of the steel fire lookout tower on the summit of Cuyamaca Peak, about 9 mi. S of Julian, and 6-1/2 mi. N of Descanso. It is 25.2 ft. SE of triangulation station CUYAMACA 1898, and about 50 ft. SW of triangulation station CUYAMACA ECCENTRIC 1939.

This is an intersection station.

RECOVERY NOTE, TRIANGULATION STATION 321164-1037 INTERSECTION **R**

NAME OF STATION: Cuyamaca Mtn LOT  
 ESTABLISHED BY: W. M. YEAR: 1936 STATE: Calif. BENCH MARK(S) ALSO   
 RECOVERED BY: I. L. Crabbe YEAR: 1975 COUNTY: San Diego  
 AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN:

9 miles south of Julian

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

The Cuyamaca Mountain Lookout Tower, formerly known as Cuyamaca Lookout Tower, is located 10 miles northeast of Alpines, on Cuyamaca Mountain, in the Cuyamaca Rancho State Park, adjacent to triangulation station CUYAMACA 1898.

There is some doubt if this tower is the same one taken in 1936. There is a separate set of concrete piers inside the present tower, although the approximate center appears to be the same for both at ground level.

The tower is about 40 feet high, with a walkway around the large cabin. CUYAMACA NO 3 1954 is set in the southeast pier of the present tower. The point intersected was a measured point on the ground.

The center of the tower is 7.65 meters, 25.1 feet southeast of station CUYAMACA 1898.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: LA CRESTA WATER TANK YEAR: 1957  
 STATE: California LOCALITY: El Cajon To Jacumba  
 Third -ORDER Triangulation SOURCE: G-11609 FIELD SKETCH: CALIF 443

GRID DATA	COORDINATES (Feet)	PLANE AZIMUTH θ FOR Δ OR ANGLE	MARK
STATE: Calif ZONE: 6 CODE: 0406	x 1,807,627.44 y 232,891.66	-0 20 38	
STATE: ZONE: CODE:	x y		

GEODETTIC DATA	POSITION		SECONDS IN METERS	ELEVATION METERS FEET
	LATITUDE:	LONGITUDE:		
	32°48'18".608 NORTH	116 52 31.777 WEST		

TO STATION	GEODETTIC AZIMUTH (From south)	DISTANCE	
		LOGARITHM (Meters)	METERS
Computed from stations COCHES, EL CAJON, WILLOWS, SPAN			

DEPARTMENT OF COMMERCE  
 U.S. COAST AND GEODETIC SURVEY  
 FORM 535-B  
 DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: LA CRESTA, WATER TANK,  
 CHIEF OF PARTY: W.R. Helm YEAR: 1957 STATE: California COUNTY: San Diego

Description, including sketch of object:

The station is about 5 miles east of El Cajon, 3/4 mile west of the adjoining villages of La Cresta and Suncrest, and on the summit of a prominent hill that is 1768 feet in elevation.

The station is the center of a concrete water tank belonging to the Suncrest Water District. The tank is approximately 15 feet high, 60 feet in diameter and has a concrete-block shed adjoining its west side.

The tank is reached from La Cresta and Sunset by following Alta Lane westward.

Described by *James L. Campbell*

Coast-DC 3-1950

JUL 17 1978

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