

**United States Department of the Interior  
Geological Survey**

**High-precision gravity stations for monitoring  
vertical crustal motion in southern California**

by

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This report has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature. Any use of trade names is for descriptive purposes only and does not imply endorsement by the U.S.G.S.

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# SOUTHERN CALIFORNIA GRAVITY STATIONS

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## INTRODUCTION

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This report gives descriptions and values for 332 high precision gravity station pairs established beginning in June 1976 in order to monitor gravity changes associated with the southern California uplift (Castle et al. 1976; Castle et al. 1977).

Gravity values given in this report are based on a value of 979,498.692 mGal at the primary reference station PBB5 at Riverside, California, determined by multiple ties to an absolute gravity measurement at station 12172AA in San Francisco, California. The ties to 12172AA were made during 1978 (W. E. Strange, written communication, 1979). The absolute value at 12172AA was 0.080 mGal below the accepted IGSN71 value and 0.050 mGal below a later absolute measurement. Subsequent measurements at 3 absolute sites in southern California including one near our prime base at Riverside suggest our datum to be high by 0.012 to 0.022 mGal. Ties to 5 stations of the high precision network established by the Defense Mapping Agency (Defense Mapping Agency, 1982) and considered to be on the IGSN71 datum, show our network to be well within the limits of uncertainty caused by the location of those stations in areas of subsidence or ground water fluctuation. Thus it is reasonable to consider these stations to be on the IGSN71 datum.

Network station values are based on the Fall 1976 surveys except where noted otherwise after the value. Relative values with respect to Riverside typically have uncertainties of 0.007 – 0.008 mGal (one computed standard error). All stations with station numbers beginning with PB05 and all base stations except PBB3, PBB3A, PBB3B, PBB3C and PBB3D have been tied directly to the primary reference station in Riverside. Other stations have generally been tied to the base indicated by the first digits of the station name. Thus PB1301 has been tied to PBB13 and PB2N01 to MP2N. Users should remember that these stations were established to monitor tectonic changes and that there have been gravity changes of up to about 0.050 mGal observed at several locations. A history of the changes observed during the numerous repeat surveys will be published in a later report.

To attempt to monitor any gravity changes during the 3 to 4 months required for the major relevelling program in early 1978, a series of gravity stations was monitored repeatedly by helicopter. These stations are indicated by the term "Helicopter gravity station" and a number below the station name.

Station descriptions generally assume the use of 15 or 7.5 minute quadrangle maps to find the approximate location.

To minimize the risk of bad readings and possible loss of a station, most stations have 2 reading sites, both of which should be read on each occupation. Unless otherwise indicated the primary station in each station pair is marked with a standard hexagonal gravity marker and all leg holes for the baseplates have been star drilled. All stations have been read using a standard Lacoste & Romberg baseplate unless otherwise indicated. The gravity marker is not necessarily located in the center of the gravity station – look for the leg holes! Some sites have an arrow indicating meter direction.

For detailed information about procedures used in establishment of this network see the report by R. Jachens (Jachens, 1978).

# PRIMARY BASE STATION

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**PBB5**     33° 57.47' 117° 18.30' 979,498.692 mGal  
(Helicopter gravity station HGS0)

Station is located about 1.5 mi southeast of the Riverside campus of the University of California. To reach it take Central Avenue - Watkins Drive exit from Interstate Highway 215, go north 0.1 mi to first side road crossing AT&SF Railway tracks (Gernert Road), then southeast 0.27 mi along northeast side of tracks to quarry siding, then 222 ft along siding to derail switch, 5.7 ft southeast of switchstand, 4.7 ft south of "derail" post, 6.9 ft northeast of northeast rail of siding and 21.0 ft northeast of the northeast rail of the main line on a granitic outcrop, and is marked with a standard gravity mark stamped "PBB5 1976 979498.692 IGSN71". Note: In 1984 the switch from the main line to the siding was removed along with the derail post and switchstand. Station is 217 ft from the center of wooden culvert # "53". Face meter uphill to read.

PBB5A 979,498.281 mGal

63 ft northwest of PBB5 along siding then 28.5 ft northeast of northeast rail on top of granitic outcrop, and marked with a standard gravity mark stamped "PBB5A 1976 -.411". Face meter uphill to read.

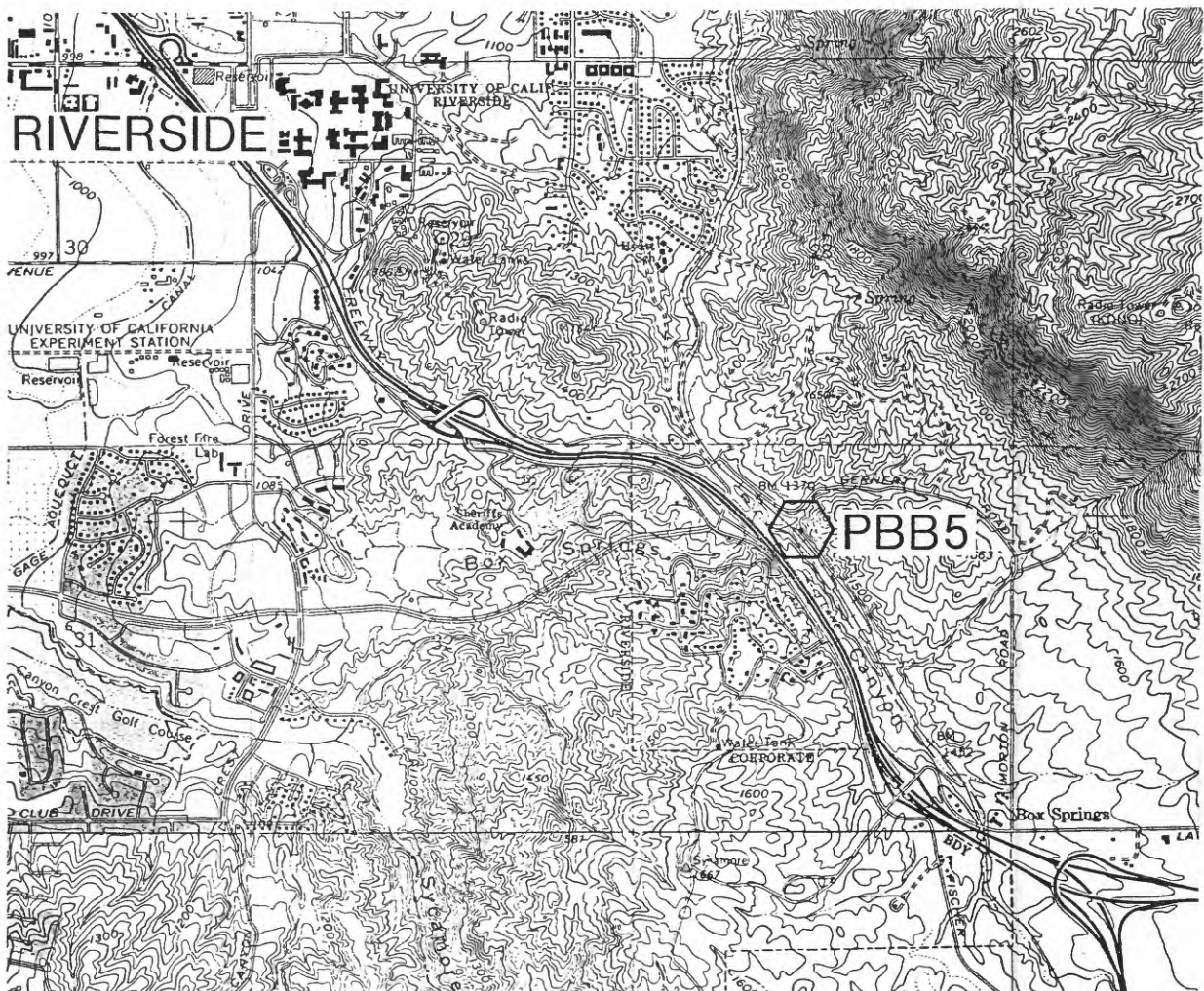


Figure 1. Map showing location of Primary Base Station.

## BASE STATIONS

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**BB1**      34° 17.94' 117° 27.35' 979,385.620 mGal

At Cleghorn Road exit from Interstate Highway 15, 1 mi south of junction with State Highway 138, on east side of freeway, about 100 ft east of freeway offramp and about 125 ft south of Cleghorn Road, on top of granite boulder east of and below large sandstone outcrop and marked with a standard gravity marker stamped "BB1 1976". Read with meter facing northwest.

**BB1A**    979,384.209 mGal

On large outcrop across Cleghorn Road from BB1, about 20 ft above Cleghorn Road and about 50 ft east of freeway entrance ramp, and marked with a standard gravity marker stamped "BB1A 1976 -1.411". Read with meter facing west.

**MP2N**      34° 52.53' 118° 53.33' 979,469.849 mGal  
(Mt Pinos calibration range station MP2N and Helicopter gravity station HGS21)

This station may be reached by proceeding south along Interstate Highway 5 to the Old Ft Tejon exit w. at Ft Tejon, going 0.2 mi north along frontage road which turns east and crosses over the highway, continuing 0.1 mi south along frontage road to the California Highway Patrol station, and bearing left (se) along the Ft Tejon School road 0.15 mi past the highway patrol station to a blacktop road junction 0.1 mi southeast of the Tejon Ranch headquarters (building on hill e of Ft Tejon School road). The station is 25.8 ft northeast of the centerline of Ft Tejon School road, 250 ft south of south entrance to the ranch headquarters, on the southeast corner of intersection with blacktop road, 10.5 ft south of southernmost of 2 vertical pipes, and 4 ft north of a 3-foot angular boulder, and marked with a standard gravity marker stamped "MP2N 1967". Read with meter facing northeast.

**MP2NA**    979,470.080 mGal

North 60° west 85.5 ft from MP2N in the top of the northwest end of a concrete box culvert under the Ft Tejon School road, 24 ft northeast of the centerline of the road and 15.0 ft south of a power pcle, and marked with a standard gravity mark stamped "MP2NA 1976 +.236". Read with meter facing away from road.

**PBB1**      34° 09.49' 118° 12.31' 979,545.081 mGal  
(Helicopter gravity station HGS16)

Take Harvey Drive exit from State Highway 134 (Ventura Freeway) or Holly Drive exit from State Highway 2 (Glendale Freeway), go north on Harvey Drive to Glenoaks Boulevard in Glendale, then east on Glenoaks Boulevard to 0.7 mi past gate at entrance to Scholl Canyon Park, 6.9 ft east of northern corner of City of Glendale Public Service Department concrete block building, on corner of curb, and marked with a standard gravity mark stamped "PBB1". Face meter north (diagonally away from building).

**PBB1A**    979544.840 mGal

Across Glenoaks Boulevard from PBB1, 0.8 ft north 80° east of lamp pole, on concrete foundation for lamp, and marked with a standard gravity marker stamped "PBB1A 1976 -.246". Read with meter facing northwest.

**PBB2**      34° 29.52' 118° 06.83' 979,413.936 mGal  
(Helicopter gravity station HGS17)

South of Palmdale on the Angeles Forest Highway, 1.2 mi south of bridge over the Southern Pacific Railroad track at Soledad Pass, at the north end of a road cut, 45 ft east of the center line of the road, and 17 ft southwest of an NGS witness post, on rock outcrop approximately level with ground, and marked with a standard gravity marker stamped "PBB2 1976". Face meter east to read.

**PBB2A**    979,413.066 mGal

79 ft south of PBB2 on same side of road, north of crest of cut, 9 ft east of edge of cut on rock outcrop level with ground, and marked with a standard gravity marker stamped "PBB2A 1976 -.870". Face meter east to read.

**PBB3**      34° 15.91' 116° 53.97' 979,138.442 mGal (6/1976)

Behind Big Bear Ranger Station at turn in road, next to residence, about 75 ft beyond sign "stop government vehicles only", on right side of road, on southeast end of largest rock, 1.5 ft from wall. Read with meter facing toward wall.

PBB3A 979,138.487 mGal (6/1976)

On rock 6 ft southeast of PBB3. face meter toward wall.

PBB3B 979,141.332 mGal (6/1976)

In front of Big Bear Ranger Station over BM "63-1-11 1975", in front of flagpole. Face meter toward flagpole.

PBB3C 979,141.844 mGal (6/1976)

Approximately 700 ft west of the Big Bear Ranger Station, approximately 40 ft northwest of State Highway 38, near the west end of the first bend west of the ranger station. It may be reached by a foot path that begins approximately 200 ft west of the ranger station and 50 ft north of the highway and passes 8 ft south of the station. The station is on an outcrop 30 ft south of a 30-inch tree and is marked with a standard gravity mark.

PBB3D 979,141.346 mGal (6/1976)

Approximately 0.1 mi east along State Highway 38 from the Big Bear Ranger Station, then south along a dirt road past a small building to a concrete slab in the ground, approximately 40 ft before reaching a 3 ft diameter pinetree. Read 1.5 ft north of a 4 inch well hole.

**PBB4**      34° 12.73' 117° 07.11' 979,166.229 mGal (6/1976)

1.0 mi northwest along State Highway 18 from the Post Office at Running Springs, at a paved turnout on the south side of the highway, 105 ft southwest of the centerline of the highway, over USC&GS BM "P 296 1935", which is set in the top of a rock outcrop about 5 ft lower than the highway. Read with meter facing uphill.

PBB4A 979,166.190 mGal (6/1976)

20 ft west of PBB4 on granite boulder. Face meter south.

**PBB6**      34° 17.41' 117° 50.38' 979,389.013 mGal

Over USC&GS BM "B 171 1934" which is 17.9 mi north along State Highway 39 from the Atchison, Topeka and Santa Fe Railway station at Azusa, across the highway from the Coldbrook Guard Station and the Coldbrook Campground, 28 ft east of the centerline of the highway, 65 ft south of the centerline of the campground entrance road, 67.7 ft south-southwest of a water fountain, about 12 ft from BM "56DOR 1976", 0.5 ft west of a witness post, about 4 ft lower than the highway, and set in the top of a concrete post projecting 0.1 ft above the ground. Read with meter facing north, parallel to road.

PBB6A 979,387.831 mGal

Across State Highway 39 from PBB6 in front of Coldbrook Ranger Station office over small concrete mound with central hole, at left edge of driveway to left garage. Face meter toward building to read.

**PBB7**      34° 26.69' 116° 59.16' 979,384.341 mGal  
(Helicopter gravity station HGS12)

Over USC&GS BM "V 325 1934" which is located 2.15 mi west along State Highway 18 from the junction of Old Woman Springs Road at Lucerne Valley, on the inside of a curve, at the south base of Strawberry Peak, 68 ft north of the centerline of the highway, 155 ft northwest of power line pole 526471 with guy wire, 3.0 ft south of the south face of a rock mound, 0.8 ft south of a witness post, about 2 ft higher than the highway, and set in the top of a concrete post projecting 0.6 ft above the ground, and marked with a standard gravity marker stamped "PBB7 1976". Read with meter facing toward rock outcrop. Note: PBB7

and PBB7A are both behind a chain link fence topped with barbed wire and thus unreadable as of 1984. The suggested alternate station is PB0708.

PBB7A 979,383.997 mGal

About 30 ft north of PBB7 around east side of the granite outcrop on ledge about 4 ft above base of outcrop, over NGS BM "A1308 1978". Face meter west to read.

**PBB8** 34° 04.02' 116° 01.44' 979,396.284 mGal  
(Helicopter gravity station HGS9)

Over USC&GS BM "A726 1944" which is 4.6 mi south of the Joshua Tree National Monument headquarters and visitor center at Twentynine Palms, set in granite outcrop, 142 ft west of the centerline of road, at the south end of a curve, 3 ft above road, at the east base of a rock covered hill and 134 ft northwest of the intersection of a former road leading southwest. Face meter toward Marine Corps base (north) to read. No gravity marker.

PBB8A 979,396.054 mGal

Approximately 50 ft northwest of PBB8 on top of a 3 by 4 ft boulder projecting 1 ft above ground, and marked with a standard gravity marker stamped "PBB8A 1976 -.227". Face meter toward road to read.

**PBB9** 34° 04.38' 115° 11.39' 979,501.812 mGal  
(Helicopter gravity station HGS6)

1.1 mi northeast along State Highway 62 from its junction with State Highway 177, then 1.4 mi northeast along a powerline road to saddle in ridge, 80 ft northeast of saddle, 38 ft southeast of southeast edge of gravel road, on top of rock outcrop 6 ft above base of slope. Face meter northeast to read.

PBB9A 979,502.131 mGal

20 ft north of and 4 ft below PBB9 on outcrop. Face meter northeast to read.

**PBB10** 34° 57.34' 117° 01.11' 979,479.178 mGal  
(Helicopter gravity station HGS13)

3.1 mi north along the Fort Irwin Road from the junction with State Highway 58 at Barstow, on the east side of the road, just before a dirt track labelled "BISHOP ROAD" to the east, at USC&GS BM "E687 1943". On concrete foundation of former witness post which is 1.5 ft east of and 0.4 ft lower than BM. Meter read facing road.

PBB10A 979,478.758 mGal

On top of rock outcrop about 185 ft east of PBB10 and 25 ft south of the center of a dirt road leading east, and marked with a standard gravity marker stamped "PBB10A 1976 -.420". Read with meter facing toward paved road.

**PBB11** 34° 36.54' 117° 39.39' 979,412.106 mGal

At south end of Mt. Elmo 15.2 mi west along El Mirage Road from junction of Highway 395 and El Mirage Road and 0.7 mi east of the Los Angeles County line. Read on rock outcrop 82 ft south of the center of road through east-west saddle, and south 34° east 130 ft from a joshua tree, and marked with a standard gravity marker stamped "PBB11 1976". Saddle is reached by driving 0.55 mi north on a dirt road running just east of Mt. Elmo and turning left at track up to saddle. Meter Read facing north.

PBB11A 979,412.056 mGal

On rock outcrop 22.1 ft northeast of PBB11, and marked with a standard gravity marker stamped "PBB11A 1976 -.050". Meter Read facing north.

**PBB12** 34° 34.20' 115° 29.14' 979,557.325 mGal  
(Helicopter gravity station HGS8)

At Cadiz Summit on south side of National Trails Highway (old Highway 66) across from former gift shop, etc. approximately 80 ft from highway on top of northeasternmost of 2 concrete slabs. Face meter west to read. Marked with gravity marker stamped "PBB12 1976",

PBB12A 979,556.966 mGal

Across old highway from PBB12, 25 ft west of old "jail", on a 3.5 x 6 ft concrete foundation 100 ft north of centerline of highway and marked with a 1 3/8" brass disc stamped "PBB12A -.364" (facing the wrong way). Face meter away from highway to read.

**PBB13** 34° 43.66' 116° 18.71' 979,480.951 mGal

At Lavic Siding on the Atchison Topeka and Santa Fe Railway, 90.5 ft southwest of south rail of south main track, approximately in line with road crossing of track, S80°W 60.7 ft from telegraph pole 112 15, on outcrop flush with ground, and marked with a standard gravity marker stamped "PBB13 1976". Face meter away from track to read.

PBB13A 979,480.925 mGal

55.5 ft southeast parallel to track from PBB13, 89.5 ft SW of the south rail of the south main track, and S25°W 52.5 ft from telegraph pole 112 15, on outcrop flush with ground, and marked with a standard gravity marker stamped "PBB13A 1976 -.029". Face meter away from track to read.

**PBB14** 35° 40.49' 117° 53.69' 979,470.738 mGal

About 5.2 mi north along State Highway 14 from the junction with State Highway 178, then west about 1.6 mi along road up Indian Wells Canyon and 150 ft west of where road bends around large outcropping of granite, at west end of outcropping on a 4 x 9-ft granite boulder. Read with meter facing north.

PBB14A 979,471.059 mGal

97.5 ft east of PBB14 on a granite boulder, and marked with a 1 3/8" brass disc stamped "PBB14A 1976". Read with meter facing north.

**PBB15** 35° 05.75' 118° 18.23' 979,411.485 mGal  
(Helicopter gravity station HGS19)

About 11 mi west along State Highway 58 from Mojave at northeast corner of Cameron Road bridge over Cache Creek wash, and marked with a standard gravity marker stamped "PBB15 1976". Read on concrete next to end of guardrail. Face meter away from road to read.

PBB15A 979,411.429 mGal

Diagonally across bridge from PBB15 on concrete at end of guardrail, and marked with a standard gravity marker stamped "PBB15A 1976 -.064". Face meter away from road to read.

**PBB16** 33° 53.91' 116° 37.41' 979,470.519 mGal  
(Helicopter gravity station HGS11)

3.55 mi southeast along State Highway 111 from its junction with Interstate Highway 10 at Whitewater, 1.10 mi southeast along State Highway 111 from its junction with Whitewater Road, 28 ft south of the south edge of the pavement of Highway 111, set in the top of a rock outcrop at Windy Point, 8 ft above level of road over USGS BM "100DOR 1976". Read with meter facing toward highway.

Note: The observed gravity at this station pair has increased recently due to considerable ground water recharge nearby. The observed gravity may differ by perhaps 0.1 milligal or more from the listed value.

PBB16A 979,470.931 mGal

145 ft east of PBB16 on a small rock ledge which is 28 ft south of the south edge of pavement, and 4 ft above level of highway. Face meter away from road to read.



**PBB17**     $33^{\circ} 43.00' 115^{\circ} 48.49'$  979,393.251 mGal  
(Helicopter gravity station HGS4)

In Cottonwood Canyon, 2.9 mi north of south boundary of Joshua Tree National Monument and 105 ft south of sign indicating curves, 35 mph (southbound), and about 80 ft south of a palo verde tree west of the road, on outcrop 37.5 ft west of centerline of road and approximately 4 ft higher than road. Read over USGS BM "106 DOR 1975". Face meter away from road to read.

PBB17A 979,393.348 mGal

Approximately 65.3 ft south of PBB17, 24 ft west of centerline of road, on outcrop 6 ft above road. Face meter away from road.

**PBB20**     $34^{\circ} 27.49' 117^{\circ} 50.66'$  979,336.786 mGal (12/83)

4.1 mi east along State Highway 138 from the Post Office at Pearblossom, then south 2.0 mi along 165th Street East to where road becomes Bob's Gap road and turns southeast. Continue south along the extension of 165th Street East 1.15 mi to 3rd power pole south of Avenue Y-8, then go southwest 0.65 mi along a dirt road to the top of the ridge. Station is located on a concrete pad 14 ft east of a small wooden building, and 7.5 ft east of USC&GS triangulation mark "LIME 1964". Face meter north.

PBB20A 979,336.792 mGal (12/83)

25.0 ft northeast of PBB20 on top of USC&GS reference mark "LIME NO 1 1964" on pipe projecting above ground. Read with special baseplate that rests on mark, with meter facing north.

PBB20B 979,336.846 mGal (12/83)

17.2 ft southeast of PBB20 and 24.6 ft south-southwest of PBB20A, over USGS mark "LIME RM5 1983". No leg holes for baseplate. Face meter north.

# BIG BEAR LINE – CAJON PASS TO LUCERNE VALLEY

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**BB1**      34° 17.94' 117° 27.35' 979,385.620 mGal

See entry under "Base Stations", on page 3.

**BB2**      34° 20.04' 117° 23.86' 979,344.552 mGal (6/1976)

0.85 mi north along Summit Valley road from the intersection with State Highway 138, at a fence corner, 32 ft east of the centerline of the road, about 10 ft east of fence with "no trespassing" sign, and 3 ft west of powerpole # 772966E on USC&GS BM "D534 1956", which is set in the top of a concrete post projecting 0.3 ft above the ground. Read facing west.

BB2A      979,344.540 mGal (6/1976)

On edge of road near BB2. Face meter west to read. No gravity marker.

**BB3**      34° 19.13' 117° 22.54' 979,360.334 mGal (6/1976)

1.35 mi east along State Highway 138 from the intersection with Summit Valley road, at the entrance to Little Horsethief Ranch, 37.5 ft south of the centerline of the highway and 26 ft east of the centerline of Little Horsethief Canyon Road, 1.5 ft west of a witness post, and 3.5 ft south of sign, "Little Horsethief Canyon 3N21", on USC&GS BM "X523 1956", which is set in the top of a concrete post 0.2 ft below the ground. No gravity marker.

BB3A      979,361.009 mGal (6/1976)

About 0.1 mi east of BB3 along State Highway 138, 74.5 ft east of paddleboard "138 SBD 22.10" on top of granite boulder embedded in concrete 16 ft south of centerline of highway.

**BB4**      34° 17.81' 117° 20.13' 979,348.048 mGal (6/1976)

Over San Bernardino County BM "72-19-7 1975", which is 1.4 mi southeast along State Highway 138 from the intersection with the road to Hesperia (former State Highway 173), in the sidewalk 1.5 ft east of the east corner of a stone drinking fountain at a parking area on the northwest side of the highway, about 200 ft southwest of paddleboard "25.20". No gravity mark. Read with meter facing northwest.

BB4A      979,348.486 mGal (6/1976)

Across State Highway 138 from BB4 at the center of the concrete foundation for former information kiosk. Leg holes drilled but no gravity mark. Read with meter facing northwest.

**BB5**      34° 16.46' 117° 19.37' 979,339.995 mGal (6/1976)

Over San Bernardino County BM "72-19-13 1975", which is 2.4 mi east along State Highway 138 from the overpass over Cleghorn Road, 0.35 mi east of the junction with a forest service road and 0.05 mi east of paddleboard "SBD R28.71", near the easterly end of a shallow cut, 38 ft north of the centerline of the highway, 66 ft west of the west end of a guardrail, 93 ft west of a 40-inch pine tree and about 1 ft above the highway. Leg holes drilled but no gravity mark.

BB5A      979,340.054 mGal (6/1976)

About 50 ft west of BB5.

**BB6**      34° 14.82' 117° 17.99' 979,293.430 mGal (6/1976)

Over San Bernardino County BM "72-19-22 1975", which is 1.0 mi northwest along State Highway 138 from the junction with Crest Forest Drive in Crestline, at the northwest corner of Watters Drive and State Highway 138, in the east side of the porch landing of Waynes Real Estate office, 39 ft north of the centerline of Watters Drive, and 45 ft west of the centerline of Highway 138. No gravity mark. Read with meter facing north.

BB6A      979,293.696 mGal (6/1976)

About 120 ft northwest along State Highway 138 from BB6 on a water meter cover, 12 ft northeast of a fence. Read with meter facing northwest.

**BB7**      34° 14.07' 117° 16.57' 979,236.857 mGal (6/1976)

Over San Bernardino County BM "72-19-25A 1975", which is 1.15 mi east along Crest Forest Drive from the intersection with State Highway 138 at Crestline, at the Crestline Lake Arrowhead Water Agency office, in the top of a granite outcrop near the edge of the lawn, 27 ft east of center of doorway, 11.4 ft south of south side of building and 2.7 ft above concrete slab at doorway. No gravity mark. Read with meter facing toward building.

BB7A 979,236.710 mGal (6/1976)

About 30 ft east of BB7 on granite outcrop.

**BB8**      34° 13.44' 117° 14.31' 979,213.921 mGal (6/1976)

Over San Bernardino County BM "72-19-30 1975", which is 1.45 mi west along State Highway 18 from the Post Office at Rimforest, about 300 ft southwest of paddleboard "18SBD 21.42", on top of concrete box, behind stone wall from, and at the west end of a large turnout and parking area, 25 ft south of centerline of highway, 141 ft west of drinking fountain at vista point and 16.5 ft west of a 2-inch fire hydrant. No gravity mark. Read with meter facing toward stone wall.

BB8A 979,213.607 mGal (6/1976)

Across highway from BB8, then east 70 ft on a granite outcrop 12 ft north of north edge of highway and about 5 ft above centerline of highway. Read with meter facing uphill.

**BB9**      34° 13.87' 117° 12.38' 979,193.073 mGal (6/1976)

Over USC&GS BM "K296 1935", which is 1.1 mi east along State Highway 18 from the Post Office at Rimforest, across the highway from the most easterly entrance to Rim Of The World High School, 37 ft south of the centerline of the highway, 18 ft northwest of a large rock pile, and in the top of a large boulder. Read with meter facing north.

BB9A 979,192.935 mGal (6/1976)

Across the highway from BB9, west of the east entrance to Rim Of The World High School, on top of a road cut 10 ft southeast of 3 oak trees. Read with meter facing west. Note: destroyed by school construction, January 1979.

**BB10**      34° 13.78' 117° 09.92' 979,189.548 mGal (6/1976)

On San Bernardino County BM "72-19-38 1975", which is 0.94 mi east along State Highway 18 from the Post Office at Sky Forest, about 75 ft west of paddleboard "18SBD 26.62", on the outside of a curve, in a rock outcrop 75 ft southwest of the westerly end of a guardrail and about 4 ft below the centerline of the highway.

BB10A 979,189.356 mGal (6/1976)

About 200 ft south along ridge from BB10, 10 ft south of southernmost small clump of pine trees, 30 ft northwest of large oak tree, on granite outcrop. Read with meter facing north.

**BB11**      34° 13.89' 117° 08.51' 979,160.184 mGal (6/1976)

On USC&GS BM "A 709 1943" which is located 2.45 mi northeast along State Highway 18 from the Post Office at Skyforest, set in rock outcrop projecting about 3 ft above ground, 36 ft north of the centerline of road, at the west end of a rock cut bank and about 6 ft above the road. Read with meter facing away from road.

BB11A 979,159.939 mGal (6/1976)

About 15 ft north of BB11 on granite outcrop. Face meter east to read.

**BB12**      34° 12.65' 117° 04.95' 979,171.212 mGal (6/1976)

On USC&GS BM "R 296 1935" which is 0.1 mi northeast along State Highway 18 from the Golden Elk Restaurant at Arrowbear Lake, 30 ft southeast of the centerline of the highway, 24 ft east of the southeast concrete headwall of a culvert, and in the southwest side of the base of a large rock outcrop. Read with meter facing toward road.

BB12A 979,170.903 mGal (6/1976)

Approximately 20 ft east of BB12 on granite outcrop. Face meter toward road.

**BB13**      34° 13.78' 117° 03.44' 979,979,142.952 mGal (6/1976)

On USC&GS BM "S296 1935", which is located 2.2 mi northeast along State Highway 18 from the Golden Elk Restaurant at Arrowbear Lake, at a water fountain, 101 ft northeast of a water-fountain pipe, 72 ft northwest of the north concrete headwall of a culvert, 35 ft north of the centerline of the highway, in the top of a large rock outcrop, and about 6 ft higher than the highway. Read with meter facing northwest parallel to top of rock.

BB13A 979,141.904 mGal (6/1976)

About 70 ft north of BB13, and about 12 ft southeast of a 36 inch tree, on a rock outcrop. Read facing uphill.

**BB14**      34° 13.10' 117° 01.61' 979,979,119.458 mGal (6/1976)

On San Bernardino County benchmark "72-19-54", which is 4.9 mi northeast along State Highway 18 from the Golden Elk Restaurant at Arrowbear Lake, at the north end of a long turn, in the top of the concrete headwall for a 24 inch pipe culvert, at paddleboard "18 SBD 38.38" and sign "no parking any time". Read with meter facing northwest parallel to concrete wall of culvert.

BB14A 979,119.015 mGal (6/1976)

About 30 ft northwest of BB14 on granite outcrop, 4 ft north of a small pine tree. Read with meter facing uphill.

**BB15**      34° 15.01' 117° 00.16' 979,102.212 mGal (6/1976)

2.2 mi west along State Highway 18 from the Big Bear Lake dam, on San Bernardino County BM "72-19-60 1975", which is 130 ft west of paddleboard "18 SBD 42.16", set in the top of a large granite boulder on the eastern toe of a large draw and on the north side of a stream, 70 ft north of the centerline of the pavement, 45 ft east of a large boulder on the west toe of a draw, and about 1 ft higher than the centerline of the pavement. Read facing north-northwest along top of boulder.

BB15A 979,101.455 mGal (6/1976)

About 10 ft above and 30 ft northwest of BB15 on granite boulder. No gravity markers have been set. Read facing upstream.

**BB16**      34° 14.79' 116° 58.27' 979,131.801 mGal (6/1976)

2.95 mi southwest along State Highway 38 from the Post Office in Fawnskin over San Bernardino County BM "72-19-62 1975", which is set in a granite boulder about 12 ft south of the centerline of a dirt road leading to residence 220, 30 ft northwest of the centerline of highway, and about 8 ft above the highway. Read facing toward rock.

BB16A 979,131.738 mGal (6/1976)

20 ft west of BB16 on granite boulder 2 ft from pine tree. Read facing uphill.

**BB17**      34° 15.80' 116° 55.94' 979,140.627 mGal (6/1976)

1.05 mi east of the Post Office at Fawnskin, on top of concrete headwall of pipe culvert at mi 54.89, on San Bernardino county BM "63-1-7 1975", which is 18 ft south of the centerline of highway and 102 ft southeast of power pole no. 23383 CIT. Read facing toward road.

BB17A 979,140.895 mGal (6/1976)

About 130 ft southwest of BB17 and 20 ft southeast of a 36 inch jeffrey pine tree, on an old foundation. Read facing toward highway.

**BB18**      34° 16.44' 116° 49.87' 979,147.035 mGal (6/1976)

On USC&GS BM "H 1152 1961", which is 0.95 mi northeast along State Highway 18 from the junction of State Highway 30 at Big Bear City, at the junction of a track road leading northeast, 35 ft north of the centerline of the highway, 157 ft east-northeast of the center of the junction, 19 ft south of the centerline of the road, 2 ft east of power pole 1052, 1.8 ft west of a witness post, about 3.5 ft higher than the road, and set in the top of a concrete post projecting 0.4 ft above the ground. Read facing away from highway.

BB18A 979,146.628 mGal (6/1976)

48 ft northwest of BB18 on quartzite boulder. Read facing uphill.

**BB19**      34° 17.46' 116° 48.08' 979,143.444 mGal (6/1976)

On USC&GS BM "L1152 1961" which is 4.6 mi northeast along State Highway 18 from the junction with State Highway 30 at Big Bear City, at the summit of Johnson Grade, 79 ft southeast of the centerline of the highway, in the top of a 2 by 3-ft quartzite outcrop which projects 0.5 ft above the ground, 60 ft southeast of the southeast leg of a sign "Winding road next 2 mi 11% grade", 48 ft southeast of a witness post, and about 1.5 ft higher than the highway. Read facing southeast.

BB19A 979,143.204 mGal (6/1976)

About 45 ft southeast of BB19, directly away from witness post, on a 3 by 3-ft quartzite boulder. Read with meter facing southeast.

**BB20**      34° 19.26' 116° 49.03' 979,200.717 mGal (6/1976)

On USC&GS BM "Q1152 1961" which is 7.6 mi northeast along State Highway 18 from the junction of State Highway 30 at Big Bear City, 0.1 mi south of the junction of a dim track road leading northeast, at the south-southeast end of a long parking area, 50 ft west-southwest of the centerline of the highway, in the top of a 12 by 12-ft boulder which projects 2.5 ft above the ground, 16 ft west-southwest of the center of a drain ditch, 5 ft west-southwest of a witness post, and about 5 ft higher than the highway. Read with meter facing north along road.

BB20A 979,199.882 mGal (6/1976)

83 ft west-northwest of BB20 toward largest pine tree on bluff, on top of granite outcrop. Read facing toward road.

**BB21**      34° 20.69' 116° 50.48' 979,265.302 mGal (6/1976)

On USC&GS BM "C 1153 1961", which is 10.05 mi southeast along State Highway 18 from the junction of Old Woman Springs road at Lucerne Valley, 10.4 mi north of Big Bear City, 19 ft southeast of the centerline of the highway, in the top of the south end of the south concrete wing wall of concrete bridge "54-392H", 1 ft north of the south end of the wing wall, and about 0.5 ft higher than the highway. Read facing away from the highway, perpendicular to the wingwall.

BB21A 979,266.424 mGal (6/1976)

Across the road and 236 ft downstream from BB21, 62 ft southwest of the centerline of the highway and 21 ft east of power pole # "1785763E" on top of a 5 by 12-ft boulder. Read with meter facing east.

**BB22A**    34° 22.14' 116° 51.49' 979,318.647 mGal (6/1976)

Over a railroad spike which is 7.55 mi southeast along State Highway 18 from the junction of Old Woman Springs road at Lucerne Valley, at the west side of a parking area, 46 ft west of the centerline of the highway, in the top of a 4 by 4-ft dark granite boulder which projects 2.0 ft above the ground, 83 ft west of and across the highway from power line pole # "89414", 11.5 ft west-southwest of a witness post, and about 2 ft lower than the highway. (USC&GS designation "CHECK BM") Read facing toward highway.

BB22    979,318.576 mGal (6/1976)

48 ft south of and about level with BB22A, and 49 ft west of the centerline of the highway on top of a flat 2 by 4-ft boulder. Marked with a standard gravity marker stamped "BB22 1976". Read facing toward the highway.

**BB23**    34° 23.26' 116° 52.72' 979,345.113 mGal (6/1976)

Over USC&GS BM "X 1152 1961" which is 5.7 mi southeast along State Highway 18 from the junction of Old Woman Springs road at Lucerne Valley, in the top of the northwest end of the southwest concrete curb of concrete bridge "54-569", 17 ft southwest of the centerline of the highway, 0.7 ft southeast of the northwest end of the curb, and about 0.5 ft higher than the highway. Read facing northwest along the highway.

BB23A    979,345.160 mGal (6/1976)

South 70° west 191 ft from BB23, and 18.5 ft from a fence, midway between two fence corners, on top of a 2 by 3-ft boulder projecting 2 ft above the ground (1979). Read with meter facing west.

**BB24**    34° 25.57' 116° 55.50' 979,374.899 mGal (6/1976)

Over USC&GS BM "U 325 1934" which is 1.85 mi southeast along State Highway 18 from the junction of Old Woman Springs road at Lucerne Valley, 2½ poles southeast of the "T" junction of a power line, 0.45 mi northwest of Post Office road, 33 ft southwest of the centerline of the highway, 25 ft southeast of power line pole # "1721569E", 138 ft west-southwest of and across the highway from power line pole # "89314", 0.9 ft northeast of a witness post, about 1½ ft higher than the highway, and set in the top of a concrete post projecting 0.4 ft above the ground. Read facing northwest along the highway. There is no alternate station.

# CALIFORNIA AQUEDUCT LINE

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This series of stations is located along the California Aqueduct from the outlet of the Carley V. Porter Tunnel through the Tehachapi Mountains, along the south side of the Antelope Valley to the San Bernardino County line. This line has been surveyed by Los Angeles County and the gravity station numbers are their designations for the preexisting California Department of Water Resources bench marks whose numbers are enclosed in parentheses (127-1 is gravity station CA1).

**CA1**      34° 49.60' 118° 42.41' 979,423.405 mGal (6/1976)

Along the California Aqueduct 2800 ft south of the south portal of Carley V. Porter Tunnel on east lip of aqueduct, over USC&GS BM "J 1221 1971" ("127-1"). Face meter upstream. There is no alternate station.

**CA20**      34° 48.49' 118° 39.60' 979,419.707 mGal (6/1976)

Along the California Aqueduct 50 ft east of the 300th Street West bridge on north lip of aqueduct on BM "127-20" ("307.24B"). Face meter upstream to read.

CA20A    979,419.696 mGal (6/1976)

50 ft west of CA20 on lip of aqueduct under 300th Street West bridge. Face meter upstream to read.

**CA46**      34° 47.31' 118° 36.51' 979,418.972 mGal (6/1976)

Along California Aqueduct at bend west of 270th Street West, on north lip of aqueduct over BM "127-46" ("310.5b"). Face meter upstream.

CA46A    979,418.706 mGal (6/1976)

East of CA46 on ledge level with bottom of and on the east side of concrete flume. Read below sign "499.71KM". Face meter upstream to read.

**CA68**      34° 46.49' 118° 33.63' 979,421.593 mGal (6/1976)

Along the California Aqueduct near 245th Street West, just north of the crossing of State Highway 138, over BM "127-68", on northeast lip of aqueduct. Face meter upstream to read.

CA68A    979,420.947 mGal (6/1976)

At State Highway 138 bridge over California Aqueduct, east of bridge at end of metal guard rail on north side of highway. Read over copper disc marked "LA CO ENG R". Face meter away from highway.

**CA84**      34° 45.03' 118° 31.05' 979,434.785 mGal (6/1976)

Along the California Aqueduct, at approximately 220th Street West, 1.7 mi east of the crossing of Lancaster Road, on the north lip of the aqueduct over BM "127-84" ("316.7B") west of concrete overchute. Read with meter facing upstream.

CA84A    979,434.536 mGal (6/1976)

On ledge level with bottom of and on east side of concrete overchute east of CA84. Read with meter facing upstream.

**CA100**     34° 44.17' 118° 28.45' 979,433.092 mGal (6/1976)

Along the California Aqueduct at the crossing of 195th Street West, on north lip of aqueduct west of bridge, over BM "127-100" ("319.8B"). Read with meter facing upstream.

CA101 (alternate to CA100) 979,432.189 mGal (6/1976)

On 195th Street West bridge over California Aqueduct, at northwest corner of bridge over BM "127-101J" ("319.8A 1971"). Read with meter facing upstream.

**CA118** 34° 43.47' 118° 26.50' 979,435.658 mGal (6/1976)

0.4 mi east of the 180th Street West bridge over the California Aqueduct, above culvert over BM "127-118" ("321.9B"), on north lip of aqueduct. Read with meter facing upstream.

CA118A 979,435.669 mGal (6/1976)

15 ft east of CA118 on lip of aqueduct. Read with meter facing upstream.

**CA143** 34° 42.13118.24.98' 979,443.295 mGal (6/1976)

Along the California Aqueduct east of Fairmont Reservoir, 99 ft north of the first bridge south of Myrick Siphon, over BM "127-143" on east lip of aqueduct. Read with meter facing upstream. There is no alternate station.

**CA159** 34° 41.32' 118° 23.08' 979,442.036 mGal (6/1976)

Along the California Aqueduct just west of the Munz Ranch Road (Elizabeth Lake - Willow Springs road), over BM "127-159" ("328.6C 1968"), on the north lip of the aqueduct 46.0 ft northwest of the north end of the north concrete wing wall of the inlet of Willow Siphon. Read with meter facing upstream.

CA159A 979,441.486 mGal (6/1976)

Near CA159, at entrance to building at Willow Siphon inlet. Read on center of concrete step 0.5 ft back from edge. Face meter upstream.

**CA176A** 34° 40.43' 118° 21.24' 979,442.049 mGal (6/1976)

Along the California Aqueduct 0.4 mi east of the crossing of 130th Street West near BM "127-176", where concrete culvert passes under aqueduct. Read 6.5 ft from east end of dam across outfall from culvert. Read with meter facing upstream along the aqueduct.

CA176B 979,441.985 mGal (6/1976)

Near CA176A, 1.5 ft inside east half of culvert under aqueduct and 1 ft from center divider. Face upstream along aqueduct. Note: both CA176A and CA176B were buried under mud in March 1978 and were not recovered.

**CA188** 34° 39.77' 118° 19.77' 979,442.896 mGal (6/1976)

Along the California Aqueduct on the west side of Johnson Road over BM "127-188" ("RE 7078 1976"), on the east end of the south concrete headwall of 3 3-ft pipe culverts under the aqueduct service road. Face meter northwest to read.

CA188A 979,443.085 mGal (6/1976)

Across the aqueduct service road from CA188, on the east end of the north concrete headwall of 3, 3 ft pipe culverts. Read with meter facing northwest.

**CA204** 34° 38.78' 118° 17.26' 979,442.185 mGal (6/1976)

Along the California Aqueduct over BM "127-204", on the north lip of the aqueduct just west of the 90th Street West bridge. Read with meter facing upstream.

CA204A 979,442.021 mGal (6/1976)

East of CA204, on the north lip of the aqueduct under the center of the 90th Street West bridge. Read with meter facing upstream.



**CA222**    34° 37.91' 118° 15.17' 979,441.133 mGal (6/1976)

On the northwest corner of the 70th Street West bridge over the California Aqueduct, next to BM "127-222" ("336.2A 1970"). Note: station reset 0.8 ft west in May 1977 due to interference with guardrail. Read with meter facing upstream.

CA222A    979,441.219 mGal (6/1976)

Diagonally across bridge from CA222, on the southeast corner of the 70th Street West bridge over the California Aqueduct. Read with meter facing upstream.

**CA230**    34° 37.91' 118° 15.17' 979,443.397 mGal (6/1976)

Along the California Aqueduct at the crossing of Godde Hill Road, over BM "127-230" on northeast lip of aqueduct 179 ft northwest of bridge. Read with meter facing upstream.

CA112-3B (alternate to CA230)    979,442.559 mGal (6/1976)

At the northwest corner of Godde Hill Road bridge over the California Aqueduct, over BM "112-3BJ" ("337.7 1971"). Read with meter facing upstream.

**CA241**    34° 36.40' 118° 12.16' 979,445.256 mGal (6/1976)

Along the California Aqueduct, west of the projection of 40th Street West, over BM "127-241" ("340.1B") on north lip of aqueduct. Read with meter facing upstream.

CA241A    979,445.277 mGal (6/1976)

35 ft downstream from CA241 on north lip of aqueduct. Read with meter facing upstream.

**CA274**    34° 35.00' 118° 10.65' 979,452.587 mGal

1500 ft west along Elizabeth Lake - Pine Canyon Road from the intersection of 25th Street West, over USC&GS BM "X 1221 1971" ("121-274J"), set in concrete foundation of cattleguard on road leading south. Read with meter facing north.

CA274A    979,452.744 mGal (6/1976)

About 135 ft east of CA274 on west end of culvert on south side of Elizabeth Lake - Pine Canyon Road. Read facing north.

**CA293**    34° 33.49' 118° 08.78' 979,437.204 mGal (6/1976)

Along the California Aqueduct, 127 ft north of the Avenue S bridge, over BM "127-293" ("345.2B") on lip of aqueduct. Read with meter facing upstream.

CA294 (alternate to CA293)    979,436.479 mGal (6/1976)

Next to BM "127-294" ("345.2A 1971") on the northeast corner of the Avenue S bridge over the California Aqueduct. Read with meter facing upstream.

**CA314**    34° 32.40' 118° 06.86' 979,434.703 mGal (6/1976)

Along the California Aqueduct west of Sierra Highway and east of the Antelope Valley Freeway (State Highway 14) at the crossing of Curson Road, over BM "127-314" ("347.6B 1971") which is on the lip of the aqueduct 94.5 ft northwest of the bridge. Read with meter facing upstream.

CA315 (alternate to CA314)    979,433.886 mGal (6/1976)

On the deck of Curson Road bridge over the California Aqueduct, 3 ft south of BM "127-315" ("347.6A 1971") which is at the northwest corner of the bridge. Read with meter facing upstream.

**CA327** 34° 32.12' 118° 05.04' 979,425.076 mGal (6/1976)

1.2 mi northeast of Sierra Highway, at the north corner of the Pearblossom Highway bridge over the California Aqueduct, 1 ft southwest of BM "127-327" ("349.6A 1971"). Read with meter facing upstream.

CA327A 979,425.956 mGal (6/1976)

83 ft northwest along the north lip of the California Aqueduct from the northwest edge of the Pearblossom Highway bridge, 2 ft north of painted "403 + 19.05". Read with meter facing upstream.

**CA343** 34° 31.83' 118° 02.67' 979,423.341 mGal (6/1976)

On the north lip of the California Aqueduct west of the 47th Street East bridge, over BM "127-343". Read with meter facing upstream.

CA345 (alternate to CA343) 979,422.455 mGal (6/1976)

On the northwest corner of the 47th Street East bridge over the California Aqueduct, over BM "127-345J" ("352.0A 1971"). Read with meter facing upstream.

**CA359** 34° 31.35' 118° 00.72' 979,421.737 mGal (6/1976)

Along the California Aqueduct, 0.9 mi east of the crossing of Cheeseboro Road, over BM "127-359" ("354.0B 1971") on the north lip of the aqueduct next to a wooden post holding a lifering, at the east end of painted miage "354.00". Read with meter facing upstream.

CA359A 979,421.728 mGal (6/1976)

44 ft east of CA359 on the north lip of the aqueduct. Read with meter facing upstream.

**CA373** 34° 30.90' 117° 58.97' 979,420.538 mGal (6/1976)

Along the California Aqueduct at Littlerock, 69 ft west of the 82nd Street East bridge, over BM "127-373" ("mi 356.1B") on the north lip of the aqueduct. Read with meter facing upstream.

CA374 (alternate to CA373) 979,419.929 mGal (6/1976)

At the northwest corner of the 82nd Street East bridge over the California Aqueduct, 1 ft south of BM "127-374" ("356.1A 1971"). Read with meter facing upstream.

**CA392** 34° 31.48' 117° 56.39' 979,419.209 mGal (6/1976)

Along the California Aqueduct just west of the 106th Street East bridge, on the north lip of the aqueduct over BM "127-392". Read with meter facing upstream.

CA123-1B (alternate to CA392) 979,418.594 mGal (6/1976)

At the northwest corner of the 106th Street East bridge over the California Aqueduct, over BM "123-1BJ". Read with meter facing upstream.

**CA414** 34° 29.52' 117° 54.99' 979,383.595 mGal (6/1976)

Northwest along the California Aqueduct from the crossing of 121st Street East, on the east lip of the aqueduct just downstream from the outlet of the Pearblossom Pumping Plant, over BM "127-414" ("361.9B"). Read with meter facing upstream.

CA414A 979,383.582 mGal (6/1976)

74.5 ft south of CA414 on the east lip of the aqueduct. Read with meter facing upstream.

**CA426** 34° 28.90' 117° 52.99' 979,382.312 mGal (6/1976)

Approximately 1 mi east along the California Aqueduct from the crossing of Longview Road, on the lip of the aqueduct 91 ft west of the bridge at mi 364.57 (586.70KM), over BM "127-426". Read with meter facing upstream.

CA427 (alternate to CA426) 979,381.549 mGal (6/1976)

On the northwest corner of the bridge east of CA426 over BM "127-427" ("364.6A"). Read with meter facing upstream.

**CA446** 34° 28.71' 117° 50.02' 979,378.580 mGal (6/1976)

Along the north lip of the California Aqueduct east of 165th Street East, near the outlet of the Big Rock siphon, over BM "127-446" ("367.5B"). Read with meter facing upstream.

CA446A 979,378.576 mGal (6/1976)

37.8 ft east of CA446 on the north lip of the aqueduct. Read with meter facing upstream.

**CA463** 34° 28.92' 117° 47.96' 979,375.307 mGal (6/1976)

1 mi east along the California Aqueduct from the crossing of 175th street east, west of a concrete overchute at mi 369.65 (594.88 kilometers), over BM "127-463" ("369.6B") on the north lip of the aqueduct. Read with meter facing upstream.

CA463A 979,374.783 mGal (6/1976)

East of and across aqueduct road from CA463 on the west wing wall of concrete overchute. Read 3 ft from west end of wing wall with meter facing upstream (west).

**CA475** 34° 29.55' 117° 45.86' 979,371.017 mGal (6/1976)

Along the California Aqueduct at the northwest corner of the Largo Vista Road bridge, over BM "127-475" ("371.7A RESET 1971"). Read with meter facing upstream.

CA476 (alternate to CA475) 979,370.793 mGal (6/1976)

Diagonally across from CA476 at the southeast corner of the Largo Vista Road bridge, over BM "127-476" ("S 1220 1971"). Read with meter facing east.

**CA489** 34° 29.00' 117° 43.00' (approx) 979,368.722 mGal (6/1976)

0.4 mi east along the California Aqueduct from the crossing of State Highway 138 which is southeast of the junction of highways 18 and 138, on the north lip of the aqueduct 69 ft west of a concrete overchute at mi 374.34 (602.43 kilometers), over BM "127-489" ("374.3B 1971"). Read with meter facing upstream.

CA489A 979,368.251 mGal (6/1976)

Near CA489, 2 ft from the west end of the west wing wall at the north end of the overchute. Read with meter facing upstream.

**CA498** 34° 29.00' 117° 41.00' (approx) 979,367.973 mGal (6/1976)

2.7 mi east along the California Aqueduct from the crossing of State Highway 138, at a rest area, just west of the pillar at the southeast corner of the westernmost of two shelters, 1 ft northwest of BM "127-498". Read with meter facing upstream (west).

CA498A 979,367.967 mGal (6/1976)

East-northeast of CA498 1 ft south of the pillar at the northeast corner of the east shelter. Read with meter facing upstream (west) along the aqueduct.

## REGIONAL STATIONS

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**LYTLE**      $34^{\circ} 13.94' 117^{\circ} 29.04'$  979,402.058 mGal (1978)

Over BM "141 FMK" just north of Lytle Creek Ranger Station on schist outcrop east of road across from building housing Crystal Union Water Company well "MN". Read with meter facing north.

LYTLEA 979,402.014 mGal (1978)

10.5 ft east of, and about level with LYTLE. Read with meter facing into rock wall.

**MP3**      $34^{\circ} 49.38' 118^{\circ} 57.69'$  979,346.481 mGal  
(Mt Pinos calibration line station MP-3)

At the Frazier Park Substation of the Kern County Fire Department, which may be reached by taking the Frazier Park exit from Interstate Highway 5, proceeding 5 mi west along the Frazier Park Road, through Frazier Park on the old road, or 5.2 mi west past Frazier Park on the new road to the junction of a road on the north, then east along that road 0.5 mi to the Kern County Fire Station, on a hill on the north side of the road, 1.1 mi west of the Frazier Park Post Office, 3 ft north of the flagpole at the south edge of blacktop parking area.

MP3A 979,346.467 mGal

Center of path to office, 13" back from edge.

**MP4**      $34^{\circ} 49.30' 119^{\circ} 04.88'$  979,243.958 mGal  
(Mt Pinos calibration line station MP-4)

2.4 mi west along Frazier Valley Road from MP3, then 9 mi west along Cuddy Valley Road to the turnout for a 4 x 8 ft U.S. Forest Service public information sign "Forest-grazing...". This turnout is 3.2 mi west of sign "Mt. Pinos Recreation Area" and 2.8 mi west of gate controlling access to Mt. Pinos. The station is in line with 2 posts supporting the USFS sign and is 2 ft south-southeast of a witness post.

**MP5**      $34^{\circ} 48.77' 119^{\circ} 07.53'$  979,138.648 mGal  
(Mt Pinos calibration line station MP-5)

At the parking area at the end of the paved road up Mt. Pinos, 5.5 mi west along the road from MP4, at the southwest end of the parking area, 50 ft south of the dirt road leading to the summit of Mt. Pinos, 35 ft west of the main road, and 2 ft east of a witness post.

**MP6**      $34^{\circ} 48.77' 119^{\circ} 08.67'$  979,098.750 mGal  
(Mt Pinos calibration line station MP-6)

At the summit of Mt. Pinos, which may be reached by proceeding 1.8 mi west of station MP5 on dirt road leading to Mt. Pinos summit, 0.1 mi north of the junction with road spur leading to condor observation site, 60 ft northwest of the center of U.S. Air Force microwave antenna tower, and one ft west of USC&GS triangulation BM "MT PINOS 1941".

**MW3**      $34^{\circ} 13.15' 118^{\circ} 11.95'$  979,508.021 mGal  
(Mt Wilson calibration line station MW-3)

One mi north along State Highway 2 from the junction with Interstate Highway 210, west of the highway at a turn, on the west side of the former Angeles Crest Highway, 85 ft south of the centerline of Vista del Valle, on a water meter cover, and level with curb.

MW3A 979,508.348 mGal

Across the street from, and 60 ft south of MW3, on curb over south end of drain. Read facing east.

**MW4**      34° 14.05' 118° 10.98' 979,465.829 mGal  
(Mt Wilson calibration line station MW-4)

3.6 mi north along State Highway 2 (Angeles Crest Highway) from Interstate Highway 210, on the west side of the highway, in front of the Angeles Crest Ranger station. Gravity meter is read on asphalt 2 ft east of base of sign "Angeles Crest Ranger Station Angeles National Forest".

MW4A    979,465.645 mGal

About 100 ft west of MW4, behind fence, at northwest corner of large concrete slab. Read facing north.

**MW5**      34° 16.24' 118° 09.20' 979,384.053 mGal  
(Mt Wilson calibration line station MW-5)

At the junction of the Angeles Crest Highway (State Highway 2), and the Angeles Forest Highway, at the Clear Creek Ranger Station, on the cement curb 4 ft south of drinking fountain at the southeast corner of garage building.

MW5A    979,383.501 mGal

About 90 ft northeast of MW5, and 18 ft east of retaining wall, on top of a 4 by 4-ft granite boulder.

**MW6**      34° 15.48' 118° 06.26' 979,320.075 mGal  
(Mt Wilson calibration line station MW-6)

At the junction of the Angeles Crest Highway (State Highway 2) and the Mt. Wilson Road, in front of the door on the porch of the Red Box Ranger Station.

MW6A    979,320.026 mGal

On the top of the west side of the stone retaining wall just northwest of MW6, on the eighth and largest, rock south from the northwest corner. Read with baseplate set 0.4 ft back from edge.

**MW7**      34° 13.37' 118° 03.42' 979,240.591 mGal  
(Mt Wilson calibration line station MW-7)

On the top of Mt. Wilson, about 1200 ft south of the 100 inch telescope building, on the south end of the concrete slab with plaque commemorating Michelson's measurement of the velocity of light.

MW7A    979,240.761 mGal

About 12 ft east of MW7, over USC&GS VABM "MICHELSON 1922". Read facing north.

**PB0101**    34° 17.36' 118° 13.58' 979,481.220 mGal

Over USGS BM "140 FMK 1973" which is 6.07 mi east of Sunland along Big Tujunga Canyon Road, 0.1 mi west of Y road fork to U.S. Forest Service ranger station, 41 ft south of centerline of highway at turnout, 1 ft north of 2 x 8- inch white wooden post; set in concrete and rock drain wall. Face meter away from highway to read.

PB0101A 979,481.238 mGal

5.5 ft southeast of PB0101 on rock wall, over copper nail and disc. Face meter away from road to read.

**PB0102**    34° 23.40' 118° 04.80' 979,301.879 mGal

Along the Angeles Forest Highway at Mill Creek Summit Ranger Station, at northeast corner of building with fuel pump, on north side of wooden column, on concrete slab. Face meter south to read. Leg holes drilled but no gravity mark.

PB0102A 979,302.066 mGal

40 ft west of PB0102 on concrete slab for telephone. Face meter south to read.

**PB0103** 34° 22.58' 118° 10.32' 979,216.894 mGal

At the summit of Mt. Gleason, on octagonal concrete slab at base of old radar pier. Read on north side of pier with meter facing south.

PB0103A 979,218.876 mGal

Approximately 400 ft east of PB0103 inside small concrete building located between two large tanks. Read on 2 x 2 ft concrete pier against north wall. Face meter north.

**PB0104** 34° 07.13' 118° 17.97' 979,551.385 mGal

At Griffith Park Observatory at the base of sculpture which stands in front of main building. Meter read on concrete sidewalk at edge nearest sculpture immediately in front of statue of Newton. Read facing Newton. Leg holes not drilled and no gravity mark.

PB0104A 979,550.684 mGal

At Griffith Park Observatory in center of sidewalk at base of front step leading to main entrance of building. Base plate touching bottom step and directly over center groove in sidewalk. Read facing building. Legholes not drilled and no gravity mark.

**PB0105** 34° 06.85' 118° 22.72' 979,575.137 mGal

At Wonderland Avenue School, located at the intersection of Wonderland Avenue, and Laurel Pass Road, at west edge of east driveway to faculty parking lot, about 175 ft west along Wonderland Avenue from junction with Laurel Pass Road, and marked with a standard gravity marker stamped "PB0105 1976". Read with meter facing toward fence.

PB0105A 979,575.277 mGal

115 ft east of PB0105 on southeast corner of concrete water company access bunker set flush with curb level. Read facing toward fence.

**PB0106** 34° 16.32' 118° 36.27' 979,546.082 mGal

At Chatsworth, along the (old) Santa Susana Pass Road, where the road passes over the west portal of tunnel number 26 on the Southern Pacific Railroad. Read on center of concrete wall directly over track with meter facing west.

PB0106A 979,546.003 mGal

About 150 ft west of PB0106 on top of giant boulder on north side of track, approximately 10 ft southwest of bolt in rock. Face meter west to read.

**PB0107** 34° 17.22' 118° 48.77' 979,573.039 mGal  
(Helicopter gravity station HGS24)

1 ft south of and 0.1 ft lower than USC&GS BM "H 31 1920", which is 4.05 mi east along the Southern Pacific Railroad from the station at Moorpark, in the top of the south end of the west concrete abutment of stone culvert "431.09", 6.0 ft south of the south rail and about 2 ft lower than the track. Face meter east to read. (Note: BM missing, March 1978)

PB0107A 979,573.052 mGal

Diagonally across bridge from PB0107 on top rock of northeast wing wall. Face meter south to read.

**PB0108** 34° 12.29' 118° 58.56' 979,624.602 mGal

0.35 mi east of U.S. Highway 101 along road to Camarillo Oak Grove County Park, at a turn, midway along old roadway, on pavement approximately 30 ft west from gate in fence and 5 ft southwest of fence. Note: In March 1978 station was 15 ft southwest of the nearest of a group of beehives. Face meter north to read.

PB0108A 979,624.355 mGal

Approximately 75 ft southeast of PB0108 on old roadway and 6 ft southwest of fence. Face meter northeast to read.

**PB0109** 34° 07.91' 118° 45.38' 979,598.021 mGal

1.1 mi south along Kanan Road from the junction with U.S. Highway 101, on Silvercreek Road approximately 200 ft from junction with Kanan Road, on a stone and concrete retaining wall of drainage outlet on north side of road. Read on southeast wing wall 3 inches northeast of 0.5 inch square lead mark with nail. Face meter east along road to read.

PB0109A 979,597.748 mGal

Approximately 50 ft west of PB0109 on end of same rock and concrete wall. Face meter east to read.

**PB0110** 34° 20.10' 118° 20.51' 979,479.768 mGal

Along Little Tujunga Road, 150 ft southwest of turnout for picnic area at Barrel Spring, on concrete and stone wall for drainage pipe, 0.5 ft southwest of Los Angeles County Engineer BM "212-20 1973 RE 7078". Face meter away from road to read.

PB0110A 979,479.339 mGal

150 ft northeast of PB0110, at turnout, on west end of concrete and stone wall. Face meter away from road to read.

**PB0111** 34° 22.58' 118° 25.77' 979,491.813 mGal

3.1 mi south along Sand Canyon Road from State Highway 14, then 1.05 mi west to the upper end of Placerita Canyon, at Los Angeles County Engineer BM "203.10 1966 RE 5869", which is located on the south side of the road about 120 ft west of the center of the driveway to "Special Devices Incorporated". Baseplate offset 0.2 ft northwest of mark. Face meter away from road to read.

PB0111A 979,491.678 mGal

125 ft east of PB0111 on east side of driveway to "Special Devices Incorporated". Read on north end of stone and concrete headwall of pipe culvert under and at the east side of driveway. Face meter south to read.

**PB0112** 34° 26.27' 118° 19.96' 979,508.627 mGal

Read over standard gravity mark 0.5 ft east of USC&GS BM "R 486 1955" which is located 3.0 mi east along the Southern Pacific Railroad from the station at Lang, 0.1 mi east of the Soledad Canyon Road overpass ("435.77"), at concrete culvert "435.66", at a 10- by 8-ft concrete box culvert, in the top of the east end of the south concrete head wall, 25.5 ft west of signal "4357 P", 14.3 ft south of the south rail, and about 1 ft lower than the track. Face meter away from track to read.

PB0112A 979,509.295 mGal

Below PB0112 in outlet of culvert 1.5 ft back from edge and 5.75 ft east of western wall. Face meter toward track.

**PB0113** 34° 17.57' 118° 00.23' 979,269.905 mGal

Along Angeles Crest Highway at Choulton Flats Picnic Grounds, 0.4 mi south along Vetter Mountain Road from the intersection with the Angeles Crest Highway on granite outcrop on the outside of a turn, 31.5 ft east of center of road, at base of 6-inch oak tree, 13.5 ft north of a 20-inch diameter pine tree, and marked with a standard gravity marker stamped "PB0113 1976". Meter read facing north.

PB0113A 979,269.998 mGal

On outcrop 11.5 ft east of PB0113, and 10.5 ft south of the eastern of 2 6-inch diameter oak trees. Meter read facing road.

**PB0114**    34° 21.15' 117° 56.82' 979,182.695 mGal

Along the Angeles Crest Highway about 1 mi west of Cloudburst Summit then west 0.1 mi along a side road almost over USGS and LA County COOP BM "R86 1929", and marked with a standard gravity marker stamped "PB0114 1976". Read with meter facing PB0114A.

PB0114A 979,182.396 mGal

On rock outcrop 45 ft east of PB0114. Meter read facing toward Angeles Crest Highway.

**PB0118**    34° 21.39' 117° 50.94' 979,184.806 mGal

At intersection of Angeles Crest Highway (State Highway 2) and San Gabriel Canyon Road (State Highway 39) on granite outcrop located roughly 350 ft east of intersection, on south side of road, about 50 ft above road level, and marked with a standard gravity marker stamped "PB0118 1976". Meter read facing south.

PB0118A 979,183.326 mGal

On granite outcrop located about 40 ft south of, and about 20 ft higher than PB0118 and about 7 ft higher than trail. Meter read facing south.

**PB0201**    34° 35.27' 118° 18.15' 979,420.434 mGal

On Bouquet Canyon Road, on concrete pillar of LA County BM "209-6A 1969", on north side of road 10 ft west of dirt track leading north, and marked with a standard gravity marker stamped "PB0201 1976". Meter read facing north.

PB0201A 979,419.471 mGal

Meter read on partially buried granite boulder 190 ft west of PB0201. Boulder is about 30 ft north of centerline of road and is under a barbed wire fence. Meter read facing north.

**PB0202**    34° 32.72' 118° 26.16' 979,500.524 mGal

On Bouquet Canyon Road at Bouquet Campground, on schist outcrop uphill and west of campground. Meter read on flat rock about 40 ft above road, 30 ft south of small gully and about 170 ft west of centerline of road and marked with a standard gravity marker stamped "PB0202 1976". Face meter uphill. Note: Marker missing in 1983.

PB0202A 979,500.381 mGal

On same outcrop as, and about 4 ft higher and 8 ft south of PB0202. Face meter uphill.

**PB0203**    34° 27.53' 118° 29.63' 979,515.267 mGal

On Bouquet Canyon Road, 3.8 mi northeast of Bouquet Junction, on concrete post of LA County BM "204-9B 1973", located southeast of road and just south of a topographic nose, and marked with a standard gravity marker stamped "PB0203 1976". Meter read facing parallel to road.

PB0203A 979,514.954 mGal

In center of large concrete slab about 80 ft south of PB0203.

**PB0204**    34° 37.87' 118° 32.01' 979,473.807 mGal

0.75 mi west along Lake Elizabeth Road from the Post Office at Lake Hughes, then 7.20 mi southwest along Lake Hughes Road, 190 ft southwest of paddleboard "7.15", on concrete post bearing State of California Department of Water Resources BM "E118 1961", located at edge of turnout, 71 ft south-southeast of the centerline of the road, and marked with a standard gravity marker stamped "PB0204 1976". Meter read facing road.

PB0204A 979,473.545 mGal

On culvert about 415 ft south of PB0204. Meter read on east end of rock and concrete culvert headwall north of road, 4 ft west of paddleboard 7.28. Read facing away from road.



**PB0205**     34° 40.42' 118° 27.38' 979,414.785 mGal

0.75 mi west along Elizabeth Lake Road from the Post Office at Lake Hughes, then 0.45 mi south along Lake Hughes Road, then 0.55 mi west along forest service road leading to Sawmill Mountain, on concrete post projecting 0.1 ft above the ground and bearing USC&GS BM "HUGHES C 1964" on outside of turn 21 ft east of centerline of the road, 57 ft southeast of the north end of a gate. Meter read facing west. There is no alternate station.

**PB0206**     34° 41.78' 118° 29.96' 979,393.961 mGal

On Elizabeth Lake – Pine Canyon Road, at the west edge of section 17, T. 7 N., R. 15 W., on concrete post bearing LA County BM "111-44A 1967". The BM is located north of the road and opposite the entrance to driveway to 20810 Pine Canyon Road. Meter read facing north. There is no alternate station.

**PB0207**     34° 42.90' 118° 33.92' 979,366.844 mGal

On Elizabeth Lake – Pine Canyon Road 2.5 mi southeast of Three Points. Meter read on concrete pier bearing LA County BM "111-51 1960". BM is located north of road at base of telephone pole. Face meter north.

PB0207A     979,366.994 mGal

On top of a large granite boulder on north side of road 170 ft west of PB0207, about 15 ft north of centerline and about 6 ft above road. Face meter west to read.

**PB0208**     34° 45.49' 118° 35.86' 979,412.856 mGal

On Three Points Road, 1.5 mi south of the junction with State Highway 138, on concrete post bearing LA County BM "111-57". BM is 20 ft east of centerline of the road, at the base of a power pole, and marked with a standard gravity marker stamped "PB0208 1976". There is no alternate station. Face meter north.

**PB0209**     34° 40.13' 118° 23.66' 979,421.111 mGal

At the junction of Munz Ranch Road and Elizabeth Lake Road, on Los Angeles County BM "111-32 1960", which is east of power pole at northeast corner of intersection. Read with meter facing north.

PB0209A     979,422.308 mGal

South of Elizabeth Lake Road on southeast corner of second 2 by 2- ft concrete slab containing "water" cover. Face meter north to read.

**PB0210**     34° 38.30' 118° 20.80' 979,415.526 mGal

About 4 mi northwest of Leona Valley, on the north side of the Elizabeth Lake Road, over Los Angeles County BM "111-25 1961". Face meter away from road. There is no alternate station.

**PB0211**     34° 37.11' 118° 17.36' 979,432.780 mGal

At the west end of the village of Leona Valley on the south side of the highway, 2 ft north of power pole # "825309E", on Los Angeles County BM "111-18 1959". Face meter toward highway.

PB0211A     979,432.517 mGal

Across the highway from PB0211 on cover of water meter. Read on south end facing northwest. Station not marked.

**PB0212**     34° 35.70' 118° 13.76' 979,444.034 mGal

Over Los Angeles County BM "111-10 1959", which is 1.85 mi west along Palmdale Boulevard from the Southern Pacific Railroad at Palmdale, then 5.1 mi west along Avenue Q and Elizabeth Lake – Pine Canyon Road, 0.1 mi east of the junction of a dirt road north, 36.5 ft south of the centerline of the road, 2 ft south of telephone pole "485958H", 2.0 ft north of a witness post, about 3 ft higher than the road, and set in the top of a concrete post projecting 0.3 ft above the ground. Face meter away from road.

PB0212A     979,442.170 mGal

Proceed south uphill to fence from PB0212 then west approximately 50 ft, on rock outcrop 2 ft north of fence. Face meter uphill to read.

**PB0501**    33° 56.55' 117° 11.45' 979,457.118 mGal

2 mi east of Sunnymead on State Highway 60, then 1200 ft north on Nason Street to a roadcut, east of the road on a large rock outcrop containing USC&GS reference mark "FAULT F NO. 2". Read just south of mark with meter facing north.

PB0501A 979,457.093 mGal

Over USC&GS BM "FAULT F 1950". Face meter south.

**PB0502**    33° 46.33' 117° 09.31' 979,487.237 mGal

About 4 mi east of Perris at the junction of Menifee Road and Ellis Avenue, 80 ft east of the centerline of Menifee Road and 15 ft south of the projection of the centerline of Ellis Avenue, on a large domelike granite outcrop. Face meter north to read.

PB0502A 979,486.904 mGal

26.5 ft east of PB0502, and 85.0 ft north of power pole # "270743" on a 3 by 4 ft granite boulder projecting 1 ft above ground level. Face meter north.

**PB0503**    33° 39.45' 117° 23.80' 979,422.001 mGal

8.7 mi west-southwest along State Highway 74 from the junction with Interstate Highway 15 at Lake Elsinore, to the viewpoint northwest of "The Lookout", at the northwest end of the parking area on a 3 by 3 ft granite boulder 4 ft northeast of guardrail and 5 ft from southeast end of guardrail. Face meter away from road.

PB0503A 979,422.042 mGal

Southeast of PB0503, down steps from parking area then about 6 ft to the right, midway between 2 stone and concrete wingwalls. Face meter toward wall with baseplate touching wall.

**PB0504**    34° 10.17' 116° 48.82' 979,153.486 mGal

Northeast of State Highway 38, about 0.25 mi northeast of Wildhorse Creek, at paddleboard "31.61" where an abandoned road turns off on north side of highway, down abandoned road approximately 150 ft to a 3 by 7 ft boulder on right, then south 10° east 10 ft, on top of a 2 by 4 ft boulder imbedded in ground. Face meter north toward large boulder.

PB0504A 979,153.297 mGal

On top of the 3 by 7 ft boulder north of PB0504. Face meter away from highway.

**PB0505**    34° 08.99' 116° 58.44' 979,187.581 mGal

Read on ledge 0.9 ft. above USC&GS BM "B 1150 1961" which is at Angelus Oaks, at the Glen Lodge Cafe, set vertically in the northeast face of the concrete foundation of the loading platform, about 200 ft northwest of the centerline of the highway, 0.3 mi southwest of the junction of Mill Creek Road, 24.6 ft west of the southwest side of a chimney, 9.0 ft northwest of the northwest wall of the main part of the building, 6.6 ft northwest of the northwest end of a set of concrete steps, and about 0.8 ft higher than the ground. Note that site is behind building. Read with baseplate touching wall and offset 0.4 ft southeast from BM. Face meter toward wall. Note: destroyed by fire 1980.

PB0505A 979,187.705 mGal

South 50° east 8 ft from PB0505. Baseplate centered on bottom step. Face meter up steps to read. Not marked. Note: destroyed by fire 1980.

**PB0506** 34° 04.53' 117° 03.92' 979,390.351 mGal

Read over USC&GS BM "L 525 1956" which is located 4.1 mi east along State Highway 38 from the Post Office at Mentone, at the "T" junction of a track road leading south, two poles southwest of a point where a power line crosses the highway, 90.5 ft south of the centerline of the highway, 7.5 ft east of the centerline of the road, 1.8 ft southwest of power line pole "246201E", 2.0 ft north of a witness post, about level with the highway, and set in the top of a concrete post projecting 0.3 ft above the ground. Read with meter facing toward power pole. No gravity mark.

PB0506A 979,390.266 mGal

North 10° west about 50 ft from PB0506 to a 1.5 by 2.5 ft boulder projecting 0.7 ft above ground, and marked with a standard gravity marker. Read with meter facing toward highway.

**PB0507** 33° 54.19' 116° 51.69' 979,384.538 mGal

1.9 mi south along State Highway 243 from the junction of Lincoln Street and San Geronio Avenue in Banning to a dirt track on a hill above the highway, north 10° west from an old foundation, on a 2.5 by 5 ft boulder projecting 2 ft above ground, just west of a boulder projecting 6 ft above ground and leaning over station. Face meter southeast to read. Marker gone 1/83.

PB0507A 979,384.557 mGal

15 ft east of PB0507 on a granite outcrop. Face meter toward Banning to read.

**PB0508** 33° 59.26' 116° 57.20' 979,341.501 mGal

At Bogart County Park north of Beaumont, 0.5 mi northeast of the entrance station to a junction then left 0.1 mi to a concrete slab on left. To reach park go north on Beaumont Road, east on 14th Street East, then north on Cherry Avenue. Park is open from 8am to 5pm (weekends only during winter as of 1983). Read on northeast corner of concrete slab, about 5 ft from campsite marker "10", over gravity marker with meter facing north 20° west (parallel to the side of the slab next to the road).

PB0508A 979,341.491 mGal

On the southeast corner of the concrete slab and 1 ft from campsite marker "9". No gravity marker or leg holes. Face meter toward road with baseplate tangent to sides of slab.

**PB0509** 34° 00.81' 117° 08.26' 979,399.138 mGal

About 4 mi southeast of Redlands, on the top of a hill south of Sunset Drive, west of a City of Redlands water tank, 10 ft north of and about 2 ft lower than the crest of the ridge which has a sheer drop to the south, over USC&GS triangulation mark "BRINK 2 1967". Face meter west to read.

PB0509A 979,398.978 mGal

102 ft south of PB0509, over USC&GS reference mark "BRINK NO. 2 1950". Face meter toward water tank to read.

**PB0510** 33° 50.05' 117° 21.49' 979,493.677 mGal

0.5 mi west along Cajalco Road from the Cajalco Fire Station, on the south side of the road, at Metropolitan Water District of Southern California BM "41 H 1941". Base plate is set 0.4 ft east-northeast of BM. Face meter away from road to read.

PB0510A 979,493.515 mGal

78.3 ft south of PB0510 on relatively flat, low portion of east side of largest outcrop. Face meter away from road to read.

**PB0511**    34° 01.64' 117° 27.87' 979,528.286 mGal

West of Riverside in the Jurupa Mtns. Take Pyrite Street exit from State Highway 60, go north 0.2 mi along Pyrite Street to the road to Hillside Auto Salvage, then northwest 0.05 mi to the junction of a dirt road on right, then 0.54 mi north along dirt road along the west side of creek to just before a turn to the left, 67 ft west of dirt road, about 100 ft west of creek, about 20 ft above road, 22.5 ft north of a large boulder capped by some bushes and 14 ft south of a 5 x 8 ft granite boulder which projects 6 ft above the ground, on a granite outcrop projecting 1 ft above ground, and marked with a standard gravity marker stamped "PB0511 1976". Read with meter facing north.

PB0511A 979,528.250 mGal

On granite outcrop 2 ft above ground and north 20° east 43.5 ft from PB0511. Read with meter facing north-northwest.

**PB0512**    34° 10.28' 117° 33.50' 979,436.902 mGal

On Ontario 15' quadrangle, at the east side of section 13, T. 1 N., R. 7 W., on dirt road going up east side of Deer Canyon wash, about 0.6 mi northwest of junction with powerline road, on large granite boulder on west side of small wash coming in from the north, about 20 ft north of centerline of road and 5 ft above road, and marked with a standard gravity marker stamped "PB0512 1976". Wash comes down east of station.

PB0512A 979,435.155 mGal

On large boulder 60 ft uphill from PB0512 and located on east side of wash.

**PB0513**    34° 10.40' 117° 40.37' 979,431.571 mGal

On east branch of San Antonio Canyon Road at Stoddard Canyon. Station is located on large buried granite boulder 55 ft east of centerline of old alignment of road, about 100 ft east of the centerline of the new road, and about 65 ft south of center of gully coming out of Stoddard Canyon, about 3 ft above road level, and marked with a standard gravity marker stamped "PB0513 1976". Boulder is approximately level with ground at base of pile of large boulders rising about 8 ft above station.

PB0513A 979,431.212 mGal

About 45 ft south of PB0513 on top of large boulder 4 ft above ground and at base of small sycamore tree and unknown variety of tree with a 6 inch diameter trunk.

**PB0514**    34° 15.99' 117° 37.55' 979,198.709 mGal

On Mt Baldy Road 0.2 mi south of road end and Mt. Baldy Ski Resort, at intersection with side road leading west, on granite outcrop about 60 ft north of centerline of side road and west of main road. Station is about 8 ft above road level, and marked with a standard gravity marker stamped "PB0514 1976".

PB0514A 979,198.362 mGal

On granite outcrop about 60 ft north of and slightly higher than PB0514.

**PB0515**    34° 13.74' 117° 46.05' 979,468.436 mGal

On East Fork of San Gabriel River 0.2 mi east of junction between East Fork Road and Glendora Mountain Road, on gneiss outcrop on southwest bank of river, 105 ft east of forest service gate located on south abutment of bridge, about 4 ft above river bed, and marked with a standard gravity marker stamped "PB0515 1976". Read facing west.

PB0515A 979,468.668 mGal

Station located on concrete abutment at south end of bridge, on east side of bridge on concrete ledge about 1 ft wide and about 5 ft below bridge surface. Read facing south.

**PB0516** 34° 04.74' 116° 52.95' 979,149.062 mGal

At end of road up Mill Creek Canyon, opposite Vivian Creek Trail sign. On top of boulder at south edge of road, 10 ft east of U.S. Forest Service bulletin board. Face meter south to read.

PB0516A 979,149.262 mGal

About 25 ft west of PB0516 on rock outcrop, north 10° west 14 ft from a 5 ft cedar tree. Face meter east-southeast to read.

**PB0517** 34° 06.38' 116° 59.17' 979,283.315 mGal

Over USC&GS BM "P 324 1934" which is 8.1 mi south along State Highway 38 from the junction of Mill Creek Road at Angelus Oaks, then 1.2 mi northeast along old Mill Creek Road, in the top of the center of the northeast concrete headwall of bridge "2763003" over Skinner Creek, and about 2 ft higher than the road. Read with meter facing away from road. No gravity marker left.

PB0517A 979,283.555 mGal

Across the road from PB0517 at bend in wall 4 ft from south end of bridge. Marked with standard gravity marker.

**PB0518** 34° 04.77' 117° 46.49' 979,515.302 mGal  
(Helicopter gravity station HGS15)

In Pomona, on a hill 0.5 mi north of the San Bernardino Freeway, about 600 ft southeast of Ganesha Boulevard, and 69 ft northeast of the northeast edge of the northeasternmost water tank, over USC&GS BM "MT MEADOWS 1963". Face meter north 80° west to read.

PB0518A 979,515.235 mGal

23 ft southwest of PB0518, over USC&GS reference mark "MT MEADOWS NO. 1 1963". Face meter toward PB0518 to read.

**PB0519** 33° 54.68' 117° 32.60' 979,541.755 mGal

1.0 mi east on 2nd Street from State Highway 31 in Norco, then 0.1 mi north on Hillside Avenue, on a large granite outcrop east of road. Read about 10 ft south of top of outcrop with meter facing east.

PB0519A 979,541.915 mGal

About 10 ft south of PB0519 on outcrop. Face meter east-southeast to read.

**PB0520** 33° 42.23' 116° 44.02' 979,268.208 mGal

On State Highway 74 about 0.6 mi west of junction with State Highway 243, adjacent to paddle board "074 RIV 58.59" and a culvert, on granite outcrop (boulder?) in a subdued gully 35 ft east of centerline of road and about 15 ft above road, and marked with a standard gravity marker stamped "PB0520 1976". Meter read facing west.

PB0520A 979,268.047 mGal

On granite outcrop 10 ft east of and 3 ft higher than PB0520. Meter read facing west.

**PB0521** 33° 33.69' 116° 36.10' 979,247.741 mGal

Over USC&GS BM "N516 1955", which is 5.2 mi east along Cahuilla Road (State Highway 371) from the Post Office at Anza, 1.0 mi north of BM "T 586" along the old Cahuilla Road, 0.15 mi east of Burnt Road, and 1.3 mi west of the junction with State Highway 74, in the top of a 3 by 3-ft boulder, in the northwest side of a short, high fill between two deep cuts, 33.5 ft northeast of the northeast end of a cut, 27.5 ft northwest of the centerline of the road, 16 ft northeast of the southwest bank of a deep wash, 15 ft southwest of paddleboard "75.92", about 3 ft lower than the road, 3 ft northwest of and 2 ft below base of witness post, and marked with a standard gravity marker stamped "PB0521 1976". Meter read facing east.

PB0521A 979,248.344 mGal

On east end of metal pipe culvert crossing road one gully southwest of PB0521 at paddleboard "371 RIV 75.88". Culvert is 135 ft southwest along road from PB0521, in manzanita bush. Meter read facing north.

**PB0522A** 33° 35.10' 116° 26.58' 979,295.402 mGal

On State Highway 74 about 0.7 mi east of Pinyon Flat Camp, on north side of highway, on same granite outcrop as, and located about 3 ft east of USC&GS BM "G587 1939", adjacent to paddle board "74 RIV 81.16". Face north to read.

PB0522 979,295.450 mGal

On granite 12 ft east of PB0522A, and marked with a standard gravity mark stamped "PB0522 1976". Face meter north to read

**PB0523** 33° 46.54' 116° 27.18' 979,527.831 mGal

0.3 mi east of Date Palm Road in Cathedral City, on outcrop located 60 ft south of south edge of State Highway 111, 135 ft east of a concrete culvert passing under highway, at about the same elevation as the highway, 125 ft west of place where cliff meets highway, and marked with a standard gravity marker stamped "PB0523 1976". Read meter facing south.

PB0523A 979,527.823 mGal

3 ft north of PB0523.

**PB0524** 33° 58.73' 116° 39.18' 979,406.671 mGal

On Whitewater Canyon Road, about 2.2 mi north of Bonnie Bell, on southeast corner (concrete) of cattleguard going across the road. Read meter facing north.

PB0524A 979,406.616 mGal

On northwest corner of same cattleguard as PB0524.

**PB0525** 33° 58.25' 116° 26.61' 979,444.169 mGal

On Colorado River Aqueduct, in Long Canyon, about 3.5 mi north of Dillon Road, on concrete spur of aqueduct port on west side of valley, and marked with a standard gravity marker stamped "PB0525 1976". Meter read facing north.

PB0525A 979,443.867 mGal

On flat rock ledge about 30 ft west of PB0525 and projecting 2 ft above ground. Read facing south.

**PB0526** 34° 18.86' 117° 50.19' 979,282.163 mGal (1/1983)

Over USC&GS BM "R1167 1962", which is located on the north side of State Highway 39 in the upper portion of San Gabriel Canyon just west of the Crystal Lake junction. Read with meter facing away from highway. No gravity marker.

PB0526A 979,282.221 mGal (1/1983)

North 25° west 8.7 ft from PB0526 on a rock outcrop, and marked with a standard gravity marker stamped "PB0526A 1981". Read with meter facing toward highway.

**PB0527** 34° 09.54' 117° 54.43' 979,551.752 mGal (1/1983)

North of Azusa along State Highway 39 at entrance to San Gabriel Canyon, at stream gauging station about 250 ft south of the highway. Read on north side of concrete slab just south of a small (3 x 4 x 4.5 ft) concrete block structure. Marked with a standard gravity marker stamped "PB0527 1983". Face meter north.

PB0527A 979,551.792 mGal (1/1983)

4.7 ft west of PB0527 and 1.3 ft east of west edge of slab. Face meter north.

**PB0550**    33° 12.37' 117° 06.58' 979,469.522 mGal

Take Mountain Meadow Road exit from Interstate Highway 15 5.1 mi north of Escondido. Go east 1.2 mi to crest of Mountain Meadow Road, on southeast side of road, south 50° west about 15 ft from power pole # P214664 on elongate granite outcrop. Face meter north to read.

PB0550A 979,470.359 mGal

North 60° west about 30 ft from PB0550 and about 20 ft southeast of centerline of road on large granite outcrop projecting 5 ft above road. Face meter southwest to read.

**PB0551**    32° 52.14' 117° 14.90' 979,519.069 mGal  
(Helicopter gravity station HGS1)

From Interstate Highway 15 go west on Miramar Road – La Jolla Village Drive – No. Torrey Pines Road to La Jolla Shores Drive in La Jolla then left 0.55 mi, over USC&GS BM “L 895 1955”, which is 0.9 mi northeast along La Jolla Shores Drive from Scripps Institute of Oceanography, at the “Y” junction of a paved road leading south, near a white board gate, 53.7 ft south of the centerline of the drive, 18 ft northwest of the centerline of the road, 2.5 ft west of the west side of the concrete base of the west one of two ornamental gate pillars, 1.8 ft southeast of a witness post, about 3 ft lower than the road, and set in the top of a concrete post projecting 0.4 ft above the ground. Face meter uphill (N70°E) to read.

PB0551A 979,519.012 mGal

4.5 ft east of PB0551 on concrete foundation of concrete gatepost on north side of pillar. Face meter toward pillar.

**PB0552**    34° 24.57' 118° 43.41' 979,536.737 mGal

4.0 mi east of Piru along State Highway 126, and about 0.74 mi west of a railroad crossing, near a windmill, on the northeast side of the Southern Pacific Railroad track, on the southeast end of the northeast wall of a culvert dated “1943”. Read facing away from track.

PB0552A 979,536.716 mGal

Diagonally across track and culvert from PB0552, on the northwest end of the southwest wall of culvert. Read facing away from track.

**PB0553**    34° 26.98' 119° 08.01' 979,485.818 mGal

About 9 mi northwest of Santa Paula along State Highway 150, to the Summit School, then north 1 mi along road up Sisar Canyon to a locked gate, just south of a path leading west from road just before gate, on a 6 by 5 ft boulder projecting 1 ft above ground. Read with meter facing toward road.

PB0553A 979,485.807 mGal

North of PB0553 on a 3 by 6 ft boulder southwest of an oak tree. Read with meter facing toward gate.

**PB0554**    34° 27.49' 118° 54.23' 979,499.276 mGal

About 3.5 mi north of Fillmore along Goodenough Road, then northeast along Squaw Flat Road to a large drain crossing, 800 ft before a horseshoe turn, 11 ft northwest of the center of the road and 8 ft west of outlet of drain pipe, over USGS BM “35D 1950 1378”. No gravity marker. Read with meter facing away from road.

PB0554A 979,499.290 mGal

About 17 ft east of PB0554 at bend in wall. Read with meter facing away from road.

**PB0701**    34° 33.59' 116° 46.84'    979,387.326 mGal

On Camp Rock Road, at the north edge of section 4, T 5 N, R 2 E, on rock outcrop on northwest face of topographic nose 225 ft southeast of centerline of road, 20 ft above gully bottom, and marked with a standard gravity marker stamped "PB0701 1976". Meter read facing southwest.

PB0701A    979,386.465 mGal

On rock outcrop 40 ft northeast of and about 6 ft higher than PB0701. Meter read facing east.

**PB0702**    34° 36.18' 116° 44.93'    979,375.204 mGal

About 18.9 mi northeast of the Post Office at Lucerne Valley, in the northwest corner of section 23, T 6 N, R 2 E, on Camp Rock Road, on prominent rock knob standing about 8 ft above the ground surface, about 330 ft southeast of the road and lying southwest of and at the base of a ridge, and 25 ft northeast of and about 10 ft above USC&GS BM "Q712 1944", and marked with a standard gravity marker stamped "PB0702 1976". Meter is set in a small flat bottomed notch near top of knob. Meter read facing southeast.

PB0702A    979,375.449 mGal

On same knob as PB0702, 8 ft northwest of and 4 ft lower than PB0702. Meter read facing southeast.

**PB0703**    34° 41.41' 116° 41.73'    979,336.609 mGal

Over USC&GS BM "W712 1944", which is on the Lucerne Valley – Newberry Road, 26.1 mi northeast of the Post Office at Lucerne Valley and 1.5 mi northeast of where the Camp Rock Road turns northwest toward Daggett, on rock outcrop 24 ft west of the west side of a wash, 53 ft west of and about 6 ft higher than road, and 0.2 mi south of the summit. Station is marked with a standard gravity marker stamped "PB0703 1976". Meter read facing northwest.

PB0703A    979,336.770 mGal

On boulder 25 ft northeast of and 3 ft lower than PB0703. Meter read facing north.

**PB0704**    34° 34.87' 116° 33.68'    979,391.131 mGal

In Upper Johnson Valley just south of the westernmost portion of the abandoned Bessemer Mine, on flat outcrop about 240 ft northwest of and up slope from an old concrete foundation, and marked with a standard gravity marker stamped "PB0704 1976". Meter read facing north.

PB0704A    979,390.403 mGal

75 ft east of and 10 ft higher than PB0704. Meter read facing north.

**PB0705**    34° 30.04' 116° 39.86'    979,379.201 mGal

On Bessemer Mine Road, 3.6 mi north of Soggy Dry Lake, on northernmost bedrock outcrop northwest of road before descending into Upper Johnson Valley, on top of large outcrop in the shape of a giant hotdog bun, about 14 ft above road, and marked with a standard gravity marker stamped "PB0705 1976". Meter read facing northeast.

PB0705A    979,380.054 mGal

Northeast of PB0705 and about 3 ft above road. Meter read facing northeast.

**PB0706**    34° 24.31' 116° 42.92'    979,372.442 mGal

Meter read on concrete post of USC&GS BM "L 720" which is located 0.62 mi southeast of the junction of Old Woman Springs road and road leading northeast to Soggy Dry Lake, 30 ft north of centerline of highway, and marked with a standard gravity marker stamped "PB0706 1976". Concrete post is almost too small for base plate. One leg is set on northeast corner of concrete about 1 centimeter below top, other two legs straddle sides of post when plate is level. Meter read facing north. There is no alternate station.



**PB0707** 34° 21.60' 116° 36.76' 979,384.953 mGal

About 21 mi east of Lucerne Valley along Old Woman Springs Road (State Highway 247), on Pony Road about 0.7 mi south of Old Woman Springs road and about 0.2 mi north of USC&GS BM "S720 1944", on rock outcrop about 85 ft east of and about 4 ft higher than road, and marked with a standard gravity marker stamped "PB0707 1976". Read facing east.

PB0707A 979,380.705 mGal

0.2 mi south of PB0707 on USC&GS BM "S720 1944". Read in same manner as at PB0706 with meter facing north.

**PB0708** 34° 28.77' 116° 50.01' 979,381.216 mGal

Reached by going 2.5 mi north along Camp Rock road from the intersection of Old Woman Springs road (State Highway 247) to Mercury Road then 1.4 mi east along Mercury Road, on south side of low (15') rock nose projecting west from a butte, about 215 ft east of "T" junction at the end of Mercury road, about 8 ft above ground level, and marked with a standard gravity marker stamped "PB0708 1976". Meter read facing north.

PB0708A 979,381.809 mGal

On a rock outcrop about 50 ft west of PB0708, and about 5 ft lower than PB0708. Face meter east.

**PB0709** 34° 36.62' 116° 29.72' 979,409.267 mGal

About 4.4 mi northeast of the Bessemer Mine along the continuation of the Bessemer Mine Road on southwest face of granite knob about 600 ft northwest of road, about 20 ft above desert floor, and marked with a standard gravity marker stamped "PB0709 1976".

PB0709A 979,409.829 mGal

On granite outcrop about 60 ft southeast of and 6 ft lower than PB0709.

**PB0710** 34° 25.24' 116° 45.48' 979,376.096 mGal

On flat rock outcrop south 30° east 159 ft from PB0710A. Face meter northeast to read.

PB0710A 979,376.098 mGal

Over USC&GS BM "H720 1944", which is located about 6.0 mi east along State Highway 247 from Camp Rock Road, 1.2 mi east of the Blackhawk Landslide, about 35 ft east of a 10 ft tall outcrop, and 40 ft southwest of a lone joshua tree, on a low flat outcrop at east end of prominent rock outcrop, about 300 ft north of centerline of highway. Face meter northeast to read.

**PB0711A** 34° 28.39' 117° 07.42' 979,394.486 mGal

West-southwest of and on rock containing USC&GS BM "B 327 1935", which is 4.7 mi southeast along State Highway 18 from the junction of Yucca Loma Road at Apple Valley, at the "Y" junction of the Bear Valley Cutoff road, 82 ft south-southwest of the centerline of the highway, 315 ft southeast of the center of the junction, 12 ft west-northwest of the west-northwest side of a large granite boulder, in the top of a 6 by 7-ft granite outcrop projecting 2.5 ft above the ground, and about 10 ft higher than the highway. Face meter toward road.

PB0711 979,394.338 mGal

15 ft southwest of PB0711A on top of 6 by 7-ft rock projecting 4 ft above the ground and marked with a standard gravity marker. Face meter toward road.

**PB0712** 34° 32.21' 117° 17.09' 979,413.037 mGal

0.4 ft east of USC&GS BM "E 708 1943", which is 0.5 mi east along State Highway 18 from the Atchison Topeka & Santa Fe Railway station at Victorville, then 0.1 mi northeast along Stoddard Well Road, then 0.05 mi northeast along an abandoned asphalt road (a former alignment of State Highway 18), about 100 yards southwest of a hairpin curve, in the top of an outcrop flush with ground level, 114 ft east of and across the road from power line pole # 813081, 106 ft north of a power line pole, 39 ft east of the centerline of the road where the road presently makes a right angle turn, and about level with the road. Face meter northeast.

PB0712A 979,412.587 mGal

North 80° east 57.5 ft from PB0712 on a 3 by 5-ft granite boulder projecting 0.5 ft above ground. Face meter uphill to read.

**PB0713** 34° 34.99' 117° 19.90' 979,426.293 mGal

Approximately 3 ft south of and on same outcrop as USC&GS BM "W 41 1924" which is 1.1 mi south along National Trails Highway (formerly U.S. 66) from the Atchison, Topeka and Santa Fe Railway station at Oro Grande, on the outside of a curve, on the rocky point of a hill, in the top of a large rock outcrop, 83.5 ft west of the centerline of the highway, 49 ft northwest of powerline pole # "463747" with a guy wire, and about level with the highway. Face meter toward BM.

PB0713A 979,426.458 mGal

South 15° west about 30 ft from PB0713 on bedrock outcrop. Face meter toward PB0713.

**PB0714** 34° 38.69' 116° 56.67' 979,355.393 mGal

On State Highway 247, about 0.7 mi south of the pass at Stodard Ridge, south 11° west about 150 ft from a U.S. General Land Office section corner "1916 T7N R1W S35 S36", across road and south 65° west from power pole # "263573", 75 ft west of the centerline of the highway on a 2 by 5-ft outcrop projecting 0.3 ft above ground level. Face away from road.

PB0714A 979,354.736 mGal

South 70° west about 50 ft from PB0714 on a 2 by 5-ft outcrop projecting 0.5 ft above the ground. Read with meter facing away from road.

**PB0715** 34° 40.51' 117° 04.26' 979,372.307 mGal

About 7.5 mi northwest of State Highway 247 along the Lucerne Valley Cutoff, 0.13 mi northwest of BM "3735 FT. 9LC 1953", and about 0.5 mi before the summit of the road, 130 ft southwest of centerline of road and approximately 20 ft east of highest and largest outcrop on rock ledge. Read with meter facing uphill.

PB0715A 979,372.504 mGal

About 12 ft east of PB0715 on outcrop. Face meter uphill.

**PB0716** 34° 32.75' 116° 57.40' 979,403.412 mGal

About 7 mi north along State Highway 247 from Lucerne Valley to where a high voltage powerline crosses the road, then west 0.6 mi along a dirt road to a small granite hill, on the south side of and about 10 ft above the base of the hill on a 6 by 8-ft outcrop projecting 1.5 ft. Read with meter facing northwest.

PB0716A 979,403.029 mGal

Northeast of PB0716 on largest boulder outcropping at east end of rockpile. Read on west end with meter facing south.

**PB0717** 34° 31.45' 117° 12.92' 979,406.450 mGal

Over USC&GS BM "K 1153 1961", which is 2.2 mi northwest along State Highway 18 from the junction of Yucca Loma road at Apple Valley, at the east corner of the junction of State Highway 18 and Apple Valley Inn road, at the west corner of the Shear Associates office building, 120 ft northeast of and across a frontage road from the centerline of the highway, 35 ft northeast of the centerline of the frontage road, in the top of the concrete sidewalk, 12.6 ft northwest of the center of the doorway to Shear Associates, 1.3 ft southwest of the southwest face of the southwest wall of the building, 1.1 ft southeast of the stone pillar at the west corner of the building, and about 1.5 ft higher than the street. Face meter toward building (away from highway).

PB0717A 979,406.449 mGal

At the side of the Shear Associates office building, on sidewalk in front of stone pillar. Baseplate centered in front of and touching pillar. Face meter toward pillar.

**PB0718** 34° 38.90' 117° 12.84' 979,401.711 mGal

About 8.5 mi north of Victorville along Interstate Highway 15 to the Boulder Road exit, then 0.35 mi north along the east frontage road to some outcrops, 20 ft east of center of dirt road and 50.0 ft east of fence along highway, on the southwest side of northernmost large outcrop. Face meter east to read.

PB0718A 979,402.260 mGal

South 80° east 57 ft from PB0718 on rock outcrop. Face meter west-southwest.

**PB0719** 34° 27.84' 117° 04.97' 979,386.567 mGal

On top of rock containing USC&GS BM "F 1153 1961", which is 7.3 mi southeast along State Highway 18 from the junction of Yucca Loma Road at Apple Valley, on the inside of a small curve, 44 ft northeast of the centerline of the highway, set vertically in the southeast face of a 6 by 10-ft granite boulder which projects 4 ft above the ground, 113 ft east of and across the highway from telephone pole # "2313" with a guy wire, about 2.1 ft above the ground and about 4.5 ft higher than the highway. Face meter away from highway.

PB0719A 979,386.574 mGal

Approximately 50 ft north of PB0719, on top of an 8 by 10 ft granite boulder projecting 3 ft above ground. Face meter away from highway.

**PB0720** 34° 22.37' 117° 06.49' 979,269.322 mGal

Along forest road 3N14 between Apple Valley and Fawnskin. From the Bear Valley Cutoff go 3.1 mi south on Central Avenue to Ocotillo Way, then 2.4 mi east on Ocotillo Way to a junction, turn right (sign Paradise Valley Ranch) and continue 2.7 mi up main dirt road to a junction with a poorer road to left, turn left (note large rockpile and powerline ahead) then 2.3 mi to a hairpin turn to the right, then 0.2 mi to two large boulders and a left turn, south 20° west of easternmost boulder about 250 ft, on a large outcrop, about 0.8 mi north of the boundary of San Bernardino National Forest, about 100 ft west of the road on a 25 by 40-ft granite outcrop. Face meter toward Bell Mountain (NW) to read.

PB0720A 979,270.486 mGal

North 30° west about 150 ft from PB0720 and south 60° west about 175 ft from the easternmost of two boulders mentioned above, on a 20 by 40-ft granite outcrop. Read 2 ft southwest of a small depression. Face meter toward Bell Mountain (NW) to read.

**PB0721** 34° 28.02' 116° 30.45' 979,421.731 mGal

About 4 mi east of Melville Lake, in the northeast corner of section 1, T 4 N, R 4 E, on granite outcrop about 70 ft north of road, about 4 ft above ground level, and marked with a standard gravity marker stamped "PB0721 1976". Meter read facing north.

PB0721A 979,421.824 mGal

On round granite outcrop 45 ft east of PB0721. Meter read facing north.

**PB0722** 34° 11.55' 116° 43.14' 979,028.594 mGal

On State Highway 38 at Onyx Summit, on a granite outcrop about 70 ft west of centerline of road, 55 ft north of sign Reading "Onyx Summit Elev 8443 Ft", about 20 ft above road, 40 ft west of top of road cut, at the base of a 3 ft diameter evergreen tree with a broken top, and marked with a standard gravity marker stamped "PB0722 1976". Meter read facing west.

PB0722A 979,028.416 mGal

On rock outcrop about 5 ft west of, and about 3 ft higher than PB0722. Meter read facing north.

**PB0723** 34° 20.52' 116° 41.67' 979,334.917 mGal

About 0.35 mi northwest of Two Hole Springs, on a rock nose 85 ft east of a small wash, 265 ft north of a road junction 7 ft above the wash bottom, and marked with a standard gravity marker stamped "PB0723 1976". Meter read facing north.

PB0723A 979,334.921 mGal

On same outcrop as and 10 ft north of PB0723. Face meter east to read.

**PB0724A** 34° 19.17' 117° 00.84' 979,140.511 mGal

About 6 mi northwest of Fawnskin along forest road 3N14 at the campground at Big Pine Flat, on the hill west of the ranger station, north 60° east 75 ft from a water tank, on top of a 3.5 by 5-ft granite boulder projecting 2 ft above the ground, and 12 ft north of a 20-inch diameter jeffrey pine.

PB0724 979,140.692 mGal

From PB0724A about 40 ft around south side of a large rockpile to a 4 by 6-ft granite boulder projecting 3 to 5 ft above ground, and about 8 ft south of a tree growing in a crack in the rock. Baseplate is set on a level baseplate-sized depression on top of rock. Face meter south 60° east to read.

**PB0733** 34° 19.00' 116° 28.96' 979,368.133 mGal

14 mi east along Old Woman Springs road (State Highway 247) from the Old Woman Springs Ranch, 8.2 mi southeast of the junction with Pony Road, and 0.2 mi southeast of Lobo Road, on a large granite outcrop and rock pile northeast of road, set on a flat granite outcrop about 160 ft northeast of centerline of road, north 12° east 197 ft from power pole #67275, 60 ft north of dirt track leading around south edge of outcrop, and about 2 ft above ground surface. Meter read facing north.

PB0733A 979,368.353 mGal

On flat granite outcrop south 25° east 25 ft from PB0733 and 1.5 ft above ground. Read with meter facing northeast.

**PB0801** 34° 08.37' 116° 24.71' 979,336.692 mGal  
(Helicopter gravity station HGS10)

On NGS BM "M1266 1976", which is 2.0 mi east along State Highway 62 from the Post Office at Yucca Valley, then 1.15 mi north along State Highway 247 (Old Woman Springs Road), 0.15 mi northwest of the "T" junction of Highway 247 and Farrello Road, in the top of rock outcrop, 67 ft southwest of the centerline of the highway, 133 ft southwest and across the highway from power and telephone pole "242746" with 3 guy wires, (note power and telephone lines make a double 90 degree turn at this point), 0.15 mi southeast of the intersection of the highway and Buena Suerte Road. No gravity mark. Meter read facing north.

PB0801A 979,336.364 mGal

66 ft north of PB0801 on large granite outcrop. Meter read facing north.

**PB0802**     34° 11.08' 116° 25.77' 979,329.720 mGal

About 4.6 mi north along State Highway 247 from the junction of State Highway 62 at Yucca Valley, on granite boulder about 40 ft south of USC&GS BM "E721 1944". BM is at the summit of a sharp rise, 75 ft east of the centerline of, and about 15 ft higher than the highway, set in the top of a partially buried boulder 3 ft above the ground, and marked with a standard gravity marker stamped "PB0802 1976". Meter read facing west (marker faces southeast).

PB0802A 979,329.875 mGal

On boulder bearing USC&GS BM "E721 1944". Meter read 0.6 ft southwest of BM and facing west.

**PB0804**     34° 05.61' 116° 10.07' 979,350.247 mGal

In Joshua Tree National Monument, at Indian Cove, on granite outcrop 140 ft south of north end of circle and road end near Sneakeye Spring, 60 ft east of dirt road, about level with sloping ground, about 4 ft above base of slope, and marked with a standard gravity marker stamped "PB0804 1976". Meter read facing east.

PB0804A 979,350.057 mGal

On granite outcrop 70 ft south of PB0804, 35 ft east of a trail and about 3 ft above desert floor. Meter read facing east.

**PB0805**     34° 03.68' 116° 13.64' 979,314.059 mGal

In Joshua Tree National Monument, in the northwest corner of section 26, T 1 S, R 7 E, on granite outcrop in small rock pile west of road, in rock alcove opening south, 140 ft north along a trail from a turnout on west side of road. Meter read on rock 2 ft above ground, and marked with a standard gravity marker stamped "PB0805 1976". Meter read facing west.

PB0805A 979,314.134 mGal

On flat rock outcrop about 10 ft west of, and about 1 ft lower than PB0805. Meter read facing west.

**PB0806**     33° 55.64' 116° 11.19' 979,230.196 mGal

At Keys View (Salton View) in Joshua Tree National Monument, on boulder projecting about 1 ft above ground, 15 ft northwest of northwest corner of parking area, and marked with a standard gravity marker stamped "PB0806 1976". Meter is read on a rock just northwest of a small juniper 3 ft high which is 5 ft west of a 3 ft round boulder. Meter read facing north. Note: Rock has been turned over destroying station.

PB0806A 979,230.980 mGal

On concrete sidewalk at northeast corner of parking area. Base plate set about 0.5 ft from each wall at corner. Meter read facing north.

**PB0807**     34° 13.02' 116° 14.99' 979,415.351 mGal

On northwest end of Copper Mountains, 6.0 mi north along Sunfair Road from the junction with Twentynine Palms Highway, on a granite outcrop 350 ft east of Sunfair Road, 200 ft northeast of power pole "1694251E", 20 ft northwest of, and about 4 ft above a gully, and marked with a standard gravity marker stamped "PB0807 1976". Meter read facing north.

PB0807A 979,415.206 mGal

10 ft northwest of and about 2.5 ft higher than PB0807. Read with meter facing north.

**PB0808** 34° 09.39' 116° 18.58' 979,391.539 mGal

Proceed north along Sunburst Avenue (road to Sportsmans Park) 1.53 mi from junction with 29 Palms Highway in Joshua Tree, then 0.12 mi west along a dirt road, then 0.20 mi south and southeast along a dirt track to the east-northeast base of a rocky hill, on an outcrop about 40 ft west of the dirt track, about 15 ft above desert floor, and marked with a standard gravity marker stamped "PB0808 1976". Face meter north to read.

PB0808A 979,391.466 mGal

About 20 ft south of and about level with PB0808. Face meter north to read.

**PB0809A** 34° 21.05' 116° 15.14' 979,448.030 mGal

On the Twentynine Palms Marine Corps Base, on large rounded granite outcrop on west face of hill.

PB0809 979,446.672 mGal

On hill 130 ft east of, and about 20 ft higher than PB0809A, and marked with a standard gravity marker stamped "PB0809 1976". Meter read facing north.

**PB0810** 33° 55.51' 115° 55.99' 979,416.749 mGal

Along Pinto Basin Road in Joshua Tree National Monument, about 0.3 mi west of Cholla Garden Nature Trail on top of a rocky hill, 1 ft north of USCE triangulation BM "BLONDY 1941". Face meter north to read.

PB0810A 979,416.725 mGal

About 1 ft northeast of USCE reference mark "RM2 BLONDY". Face meter north to read.

**PB0811** 33° 56.09' 115° 57.77' 979,400.785 mGal

0.9 ft south of NGS BM "U 1251 1974" which is 1.05 mi east along State Highway 62 from the junction of Adobe Road at Twentynine Palms, then 4.0 mi south along Utah Trail, then 12.3 mi south along Park Route 1 (7.86 mi south along the road to Pinto Basin), at point where the road passes by the northeast end of an outcrop, at the northeast end and base of the outcrop, 25.5 ft southwest of the center line of the road, in the top of a ledge of the outcrop which projects about 1.5 ft above the ground, 1.6 ft northwest of a witness post, and about 1.5 ft higher than the road. Face meter away from BM.

PB0811A 979,400.739 mGal

About 15 ft northwest from PB0811 on top of a 5 by 6 ft boulder projecting 1.5 ft above ground. Face meter away from road.

**PB0812** 33° 57.82' 115° 59.20' 979,369.176 mGal

Over USC&GS BM "G 726 1944" which is 14.90 mi southeast along the Twentynine Palms - Indio Road from the National Park Service office in Twentynine Palms, at the center of a long rounded curve, 32 ft west of the road centerline, 8 ft northwest of a small wash, 2 ft above the road and 3 ft east of a white reference post. No gravity mark left. Read with meter facing away from road.

PB0812A 979,369.174 mGal

From PB0812, south 80° east across road and wash to where rock juts out into wash. Read on 4 by 6-ft boulder projecting 2.5 ft above the wash. Marked with standard gravity mark. Read with meter facing uphill.

**PB0813** 33° 58.80' 116° 00.79' 979,333.777 mGal

In Joshua Tree National Monument, about 0.4 mi southeast along the Pinto Basin Road from the White Tank Campground, southeast of a large outcrop, in the top of a large rock at a parking area, over NGS BM "S1251 1974". Read with meter facing away from main road.

PB0813A 979,333.729 mGal

South 40° east about 30 ft to ledge on side of large boulder. Marked with a standard gravity marker. Read with meter facing away from main road.

**PB0814** 34° 01.39' 116° 01.07' 979,348.187 mGal

3.3 mi south of PBB8 and 0.1 mi north of a road junction, east of the road near the north end of a turnout, north 65° east about 45 ft from NPS BM "4 1967 3624.05", on outcrop. Read with meter facing uphill (N30°E)

PB0814A 979,347.912 mGal

North 20° east about 9 ft from PB0814, on top of outcrop. Read with meter facing uphill (N10°E).

**PB0815** 34° 04.12' 115° 45.26' 979,472.198 mGal

About 4.5 mi south along the Gold Crown Road from the Twentynine Palms Highway, on a small hill northwest of the road leading northeast to an abandoned mine, on a large outcrop. Face meter toward mine to read.

PB0815A 979,471.623 mGal

North 25° west about 30 ft from PB0815 on top of an outcrop. Face meter toward mine to read.

**PB0816** 34° 11.54' 115° 55.00' 979,485.223 mGal

About 10 mi northeast of Twentynine Palms, 1.8 mi north of Amboy Road, and 0.8 mi east of Godwin Road, on a small hill. From the crest of a dirt road over the north end of the hill go south 60° west about 100 ft to a 10 by 20 ft boulder projecting 6 ft above ground. Face meter north.

PB0816A 979,485.624 mGal

South 35° west about 75 ft from the crest of the road over the hill to a 3 by 4 ft outcrop projecting 1.5 ft above ground. Face meter toward PB0816 to read.

**PB0817A** 34° 12.29' 115° 43.18' 979,475.558 mGal

About 24 mi east of Twentynine Palms along the Amboy Road, about 2.4 mi south of Sheephole Pass, west of the highway at the southern end of a rocky hill, 0.5 ft west of NGS BM "J1251 1974". Read with meter facing away from road.

PB0817 979,473.601 mGal

North 40° west about 200 ft from PB0817A over ridge to large rock outcrop. Read with meter facing road.

**PB0818A** 34° 04.62' 115° 34.18' 979,466.863 mGal

About 28 mi east of Twentynine Palms along the Twentynine Palms Highway (State Highway 62), southwest of the highway opposite north end of turnout to a gravel pit, on rock outcrop about 25 ft southwest of and about 7 ft higher than NGS BM "H1330 1978". Face meter away from road to read.

PB0818 979,466.594 mGal

About 30 ft west of and about 6 ft higher than PB0818A on outcrop. Face meter away from road to read.

**PB0819** 34° 00.53' 115° 27.72' 979,477.706 mGal

In the eastern portion of Joshua Tree National Monument, at the western end of the Coxcomb Mountains, located at the base of a steep fan where several large boulders project above fan, on a 4 by 5 ft boulder projecting 2.5 ft above the ground. Read with meter facing north 20° east. Note: It was reported in 1978 that this area has been declared a wilderness and that the roads in this area will be closed to all vehicles, leaving this station over three mi from the nearest road.

PB0819A 979,477.471 mGal

North 35° east about 65 ft from PB0819 to an outcrop. Face meter north 85° east to read.

**PB0820**     34° 27.99' 116° 20.32' 979,444.594 mGal

On the Twentynine Palms Marine Corps Base, about 1 mi southwest of Quackenbush Lake, on the first 15 ft high granite outcrop south of road as approached from Emerson Lake, on west end of low ridge (15-20ft high), and marked with a standard gravity marker stamped "PB0820 1976". Meter read facing northeast.

PB0820A 979,443.651 mGal

On same low ridge, at highest point near east end, 175 ft east of PB0820. Face meter south to read.

**PB0821**     34° 27.61' 116° 12.10' 979,424.002 mGal

On the Twentynine Palms Marine Corps Base, in section 1, T 4 N, R 7 E, on rock outcrop 520 ft west of USGS BM "63LC 1953", which is 20.8 mi northwest of the south entrance of the Marine Corps Base along the main road towards Rainbow Canyon, at the west end of a sharp ridge, 2.9 mi south of summit, 53 ft west of center of road, and 9 ft north of the north edge of a large boulder. Station is marked with a standard gravity marker stamped "PB0821 1976". Meter read facing north.

PB0821A 979,423.991 mGal

On top of round outcrop 30 ft south of PB0821 and 25 ft above ground. Meter read facing north.

**PB0822**     34° 15.70' 116° 03.96' 979,461.243 mGal

On Twentynine Palms Marine Corps Base, on road to rifle range, on outcrop south of road and opposite side road to refuse disposal area, 180 ft east of intersection 40 ft uphill, and marked with a standard gravity marker stamped "PB0822 1976". Meter read facing north.

PB0822A 979,462.609 mGal

On same outcrop and roughly 50 ft west of PB0822. Meter read facing north.

**PB0823**     34° 20.50' 115° 56.53' 979,445.543 mGal

On the Twentynine Palms Marine Corps Base, on Cleghorn Pass Road 3.3 mi north of junction with east-west road, on a low rocky ridge between a dry wash and the road, at crest of ridge 180 ft north of an old wooden bridge across the wash, 120 ft west of old road, 180 ft west of new road, and marked with a standard gravity marker stamped "PB0823 1976". Meter read facing northeast.

PB0823A 979,445.707 mGal

On rock outcrop projecting 3 ft above ground and 35 ft south of PB0823. Face meter northeast to read.

**PB0824**     34° 10.55' 115° 35.94' 979,463.496 mGal

On northeast side of the Sheephole Mountains, about 1 mi west-northwest of a small dry lake, 0.1 mi southeast of the end of a ridge, where a large rock projects 6 ft above wash. Read on top of an outcrop 20 ft west of the large rock. Face meter south 40° east to read.

PB0824A 979,463.035 mGal

South 40° west about 35 ft from PB0824 on a granite outcrop. Face meter north 30° west to read.

**PB0825**     34° 05.56' 115° 24.61' 979,478.859 mGal

About 38.5 mi east of Twentynine Palms on the Twentynine Palms Highway (State Highway 62), just east of a turn and 285 ft east of paddleboard "62 SBD 73.00", at the second outcrop eastbound on the north side of the highway on a 6 ft by 6 ft outcrop 40 ft north of the centerline of the highway. Face meter north 70° east to read.

PB0825A 979,478.791 mGal

North 18° west about 65 ft from PB0825. Face meter away from road to read.



**PB1001** 35° 02.01' 116° 53.45' 979,461.182 mGal

On Fort Irwin Road at Jackhammer Gap, on breccia boulder projecting 3 ft above ground and located 235 ft northeast of road, 120 ft west of powerlines, at the south base of a small breccia outcrop approximately 40 ft high and south 40° west about 7 ft from a claim notice, and marked with a standard gravity marker stamped "PB1001 1976". Face meter northwest to read.

PB1001A 979,461.051 mGal

On breccia boulder 15 ft north of PB1001 and marked with a standard gravity marker stamped "PB1001A 1976". Face meter northwest to read.

**PB1002** 35° 08.07' 116° 48.16' 979,514.647 mGal

19.3 mi northeast along Ft Irwin Road from station PBB10, on the southwest face of a northwest-southeast trending linear ridge in the Paradise Range, on a granite outcrop 0.8 mi north of Fort Irwin Road, along a dirt track, about 730 ft north of a pipe frame building and 6 ft above the wash bottom. Face meter north to read.

PB1002A 979,514.458 mGal

35 ft north of PB1002 and 7 ft above wash. Face meter northeast to read.

**PB1003** 35° 13.49' 116° 43.53' 979,468.146 mGal

Along Fort Irwin Road on granite outcrop 0.6 mi northeast of guardhouse at entrance to Fort Irwin, roughly 500 ft southeast of road and 900 ft northwest of prominent tank crossing, on flat granite outcrop 3 ft above wash and on northwest face of outcrop. Tank crossing is marked by yellow and black barber poles. Face meter northeast to read.

PB1003A 979,467.532 mGal

North 85° east about 20 ft on same outcrop and about 10 ft above PB1003. Face meter northeast to read.

**PB1004** 35° 25.56' 116° 33.05' 979,421.082 mGal

On Fort Irwin Military Reservation, 14 mi northeast of Fort Irwin, at a summit, north of the road, on granite outcrop bearing USGS BM "P42 1947". Face meter north to read.

PB1004A 979,421.314 mGal

North 80° east 75 ft from PB1004. Face meter east to read.

**PB1005** 34° 57.47' 117° 12.69' 979,486.624 mGal

About 2 mi northwest of Hinkley on the top of the hill near the center of section 17, about 50 ft north of and about 15 ft lower than the rocky outcrop at the highest point of the hill, on angular rock in rocky outcrop. Face meter southeast to read.

PB1005A 979,486.264 mGal

About 25 ft northeast of the rocky outcrop at the highest point of the mountain, on a flatish outcrop. Read facing the highest point of the hill.

**PB1006A** 34° 54.41' 117° 03.99' 979,506.584 mGal

Along State Highway 58 about 2.7 mi west of the junction with Fort Irwin Road, on east corner of south end of culvert going beneath railroad track, and directly over USC&GS BM "A1138 1961". Read facing railroad track.

PB1006 979,506.494 mGal

On north end of culvert going beneath railroad track, across track from PB1006A. Read facing railroad track (south).

**PB1007** 34° 45.33' 117° 18.93' 979,457.423 mGal

About 1 mi north of Helendale, on a 2 by 2 ft concrete post which is part of a culvert structure on the southwest side of the railroad tracks (opposite side of the dirt road), on the southernmost post. Face meter south parallel to tracks to read.

PB1007A 979,457.442 mGal

On the 2 by 2 ft concrete post 30 ft north of PB1007. Face meter south parallel to tracks to read.

**PB1008** 34° 50.88' 117° 11.96' 979,484.189 mGal

1.98 mi north along Hinkley Road from the intersection with old State Highway 66/91, on north side of low ridge about 350 ft west of the center of the road, on a low flat rock outcrop projecting 0.5 ft above ground. Read with meter facing southeast.

PB1008A 979,483.809 mGal

On highest outcrop at crest of ridge about 40 ft southeast of PB1008. Read with meter facing southeast.

**PB1009** 34° 47.43' 117° 05.95' 979,452.970 mGal

On the east side of the northbound lanes of Interstate Highway 15, 2.46 mi south of Sidewinder Road and 3.4 mi north of Hodge Road, on a low piece of bedrock on the west side of the outcrop, about 5 ft below the highway level, 68 ft east of center of concrete culvert beneath highway, 58 ft southeast of the southeast edge of the highway, and marked with a standard gravity marker stamped "PB1009 1976". Note: marker formerly stamped PB1022. Face meter north to read.

PB1009A 979,452.990 mGal

On a low outcrop on the north side of the outcropping about 55 ft from the edge of Interstate Highway 15, and 60 ft northeast of PB1009, on a low outcrop about 5 ft below highway level, and marked with a brass disc stamped "PB1009A". Read facing north.

**PB1010** 35° 08.81' 117° 22.38' 979,511.682 mGal

On continuation of Lockhart Road, in center of section 16, T 32 S, R 43 E, on 10 ft high granite knob 65 ft west of centerline of road, 0.38 mi north of junction with road coming from McDonald Well and about 10 ft above desert floor. Read facing east. ( 0.27 mi. north of USCE BM "LL21? 1952" (last number unreadable)).

PB1010A 979,511.786 mGal

6 ft east of and 3 ft lower than PB1010. Face north.

**PB1011** 35° 04.62' 117° 34.17' 979,471.662 mGal

0.5 mi west of U.S. Highway 395 along Seneca Road leading to "Federal Prison Camp, Boron, Calif", (formerly Boron Air Force Station), and 0.1 mi east of Kanabec Road, 155 ft south of road on 3' high granite outcrop south of telephone pole "48". Station is level with ground. Face meter north to read.

PB1011A 979,471.863 mGal

10 ft north of and 2 ft lower than PB1011. Face meter south.

**PB1012** 35° 13.61' 117° 36.35' 979,475.798 mGal

On USC&GS BM "T289 1935", which is 6.2 mi south of Atolia along U.S. Highway 395, 320 ft northeast of power-line tower "1246", and 38 ft east of the centerline of the highway. Read with meter facing north.

PB1012A 979,475.627 mGal

On concrete at PG&E gas line shutoff installation 90 ft south of PB1012A. Face meter north.

**PB1013**     35° 21.22' 117° 37.17' 979,439.289 mGal

At Red Mountain, 0.14 mi southwest along Red Mountain Road from junction with U.S. Highway 395, 35 ft north of and about 4 ft above road, on outcrop about 0.5 ft above ground. Face meter north to read.

PB1013A 979,438.196 mGal

90 ft north of and 16 ft higher than PB1013 on east face of outcrop. Face meter north to read.

**PB1014**     35° 31.30' 117° 40.32' 979,485.018 mGal

On U.S. Highway 395, on granite outcrop 400 ft north of paved over railroad crossing of Highway 395, 150 ft east of centerline of road, directly under powerlines parallel to road, on a flat rounded rock about 2 ft above ground. Face meter northeast to read.

PB1014A 979,484.932 mGal

10 ft east of and 1 ft higher than PB1014. Face meter northeast.

**PB1015**     35° 21.34' 116° 50.99' 979,450.872 mGal  
(Helicopter gravity station HGS14)

7.0 mi northwest of the Goldstone Tracking Station Guardhouse and about 2.25 mi east-southeast of Goldstone Lake, on a breccia outcrop 225 ft southwest of centerline of road, 45 ft southwest of powerlines, 60 ft west of power pole "1730103E" and about 8 ft above desert floor. Face meter southwest (uphill) to read.

PB1015A 979,450.956 mGal

North 35° west about 20 ft from PB1015 and 1.5 ft lower. Face meter southwest (uphill) to read.

**PB1016**     35° 03.46' 116° 59.07' 979,394.272 mGal

On the Copper City road 5.4 mi north of Fort Irwin Road and 13 mi north of Barstow in a small canyon, opposite power pole # "2236 665E", on a granite outcrop about 50 ft west of and about 25 ft higher than road, and marked with a standard gravity marker stamped "PB1016 1976". Face meter northeast to read.

PB1016A 979,394.276 mGal

About 5 ft southeast of and about 1 ft lower than PB1016, and marked with a standard gravity marker stamped "PB1016A 1976".

**PB1017**     35° 09.68' 117° 01.57' 979,437.450 mGal

On the Copper City Road about 20 mi north of Barstow, 12.7 mi north of the Fort Irwin Road, and about 0.27 mi north of NGS BM "L1297 1977", on low granite outcrop at base of fallen joshua tree, about 70 ft west of center of road and about 100 ft south of a former road leading west, and marked with a standard gravity marker stamped "PB1017 1976". Face meter northwest to read.

PB1017A 979,437.469 mGal

5 ft east of PB1017, and marked with a standard gravity marker stamped "PB1017A 1976". Face meter northwest to read.

**PB1018**     34° 55.78' 116° 50.19' 979,492.864 mGal

1.05 mi northwest along Calico Road from the junction with Interstate Highway 15 at Yermo then 0.7 mi northeast along Mule Canyon Road at the first outcrop on southeast side of Mule Canyon Road, directly opposite large outcrop on northwest side of road, about 60 ft from center of and 15 ft above road. Face meter uphill to read.

PB1018A 979,493.201 mGal

North 40° west of and below PB1018 on outcrop.

**PB1019** 35° 03.56' 116° 37.62' 979,528.819 mGal

Westbound along Interstate Highway 15 take Field Road exit south to old Highway 66 (Yermo Road) then proceed west 4.5 mi to Alvord Mtn Road, then go north along Alvord Mtn Road about 5.5 mi to 0.3 mi north of Alvord Spring, up canyon toward Alvord Mine. Note: Where road climbs to west bank of wash one should proceed up wash to reach station. Station is located on slab of bedrock on east side of wash approximately in line with two stone pillars. Face away from pillars.

PB1019A 979,528.975 mGal

Southeast of easternmost of the two pillars and south-southwest of PB1019. Face meter east.

**PB1020** 35° 11.36' 116° 09.42' 979,587.098 mGal

On Interstate Highway 15 northeastbound, 175 ft east of sign "ZZYZX RD EXIT 1 mi", on top of largest (6 x 8 foot) boulder. Face meter toward freeway to read.

PB1020A 979,585.750 mGal

South 8° west about 150 ft from PB1020 and south 78° east from sign on 2 x 2.5 ft rock projecting 1 ft above ground. Read with meter facing toward highway.

**PB1021** 35° 23.29' 116° 07.27' 979,627.615 mGal

9.3 mi north of Baker, 0.25 mi east of State Highway 127 under middle of three powerlines, about 325 ft east of east leg of tower "71 II 2" on marble outcrop flush with ground on north side of small hill east of power pole (midway between center and southernmost cables). No gravity marker.

PB1021A 979,627.623 mGal

20 ft northeast of PB1021 on marble outcrop. Marked with standard gravity marker.

**PB1022** 35° 36.87' 116° 15.88' 979,672.840 mGal

South 0.4 mi along State Highway 127 from the junction with road into the south end of Death Valley, 0.1 mi south of paddleboard "127 SBD 29.39", then south 0.35 mi along a dirt road (projection of highway) to an intersection, then left, on second large boulder ahead and slightly to the right, north 20° west from a hill, on a 5 x 7 ft boulder projecting 1 ft above ground, on south side of road southwest of old highway (bypass of washout on old highway) east of wash. Read with meter facing east. No marker left.

PB1022A 979,671.328 mGal

South 75° west of PB1022 on 6 x 12 ft rock projecting 5 ft above ground. Face meter southeast along rock to read.

**PB1023** 35° 04.83' 116° 23.20' 979,548.760 mGal

East along telephone line road on north side of Interstate Highway 15 from the Afton Road turnoff about 1.5 mi to a rocky hill between road and freeway, on north side of hill south 60° about 45 ft from telephone pole # "T-612-S" (telephone line closest to highway) on top of a 5 x 5 ft boulder projecting 5 ft above its base. Read facing northeast.

PB1023A 979,548.136 mGal

South 10° east about 25 ft up hill from PB1023 on outcrop. Read with meter facing south.

**PB1030** 35° 31.43' 117° 21.63' 979,516.408 mGal

12.3 mi east along Randsburg Wash Road from the junction with road leading to Trona, at entrance gate to China Lake Naval Weapons Center Mojave Range B, on southeast corner of concrete slab 33 ft east-southeast of southeast corner of guard building. Read with meter facing north.

PB1030A 979,516.494 mGal

On concrete walkway leading to guard shack. Set baseplate with south edge in center of walk at northernmost expansion joint (in line with fence). Read with meter facing south.

**PB1031**     $34^{\circ} 57.51' 117^{\circ} 26.64'$  979,476.441 mGal

About 6.2 mi east along State Highway 58 from the junction with U.S. Highway 395 at Kramer Junction, at crest of hill, on Calif. Division of Highways BM "GRAW 1973". Read with meter facing north.

PB1031A 979,476.458 mGal

40 ft west of PB1031 on Calif. Division of Highways "reference mark 2". Read with meter facing north.

**PB1032**     $34^{\circ} 43.88' 116^{\circ} 48.73'$  979,356.899 mGal

About 10 mi southeast of Daggett along the Camp Rock Road, in section 6, T 7 N, R 2 E, 1 ft up on small rock outcrop 170 ft southwest of USC&GS & SS BM "1514". BM is 170 ft southwest of center of Camp Rock Road and 3 ft higher than road.

PB1032A 979,356.959 mGal

7 ft northwest of PB1032.

**PB1033**     $34^{\circ} 48.23' 116^{\circ} 56.48'$  979,411.483 mGal

Southwest of Daggett, on power line road, at boundary between sections 1 and 12, on outcrop 40 ft northwest of centerline of road, 40 ft north-northwest of center of southernmost powerlines and about 12 ft above road near crest of knob. Read with meter facing northwest.

PB1033A 979,412.465 mGal

On outcrop 150 ft west-northwest from PB1033. Read with meter facing east.

**PB1034**     $34^{\circ} 49.50' 116^{\circ} 40.71'$  979,500.779 mGal

At Newberry, south of highway on an outcrop on the north face of a slope south of old U.S. Highway 66 (National Trails Highway), 150 ft south of the centerline of the old highway and about 6 ft above ground surface, just east of the projection of Mt. View Road that intersects the old highway from the north. Read with meter facing north.

PB1034A 979,500.199 mGal

On rock outcrop 45 ft east and 9 ft above PB1034. Read with meter facing south.

**PB1035**     $34^{\circ} 54.13' 116^{\circ} 24.45'$  979,460.310 mGal

Proceed along road to highest point in saddle in Cady Mountains, then about 0.08 mi to top of ridge just north of road, on volcanic outcrop at southeast end of ridge, on flat rock projecting about 1.5 ft above ground. Read with meter facing north.

PB1035A 979,460.293 mGal

15 ft northwest of PB1035. Read with meter facing north.

**PB1101**     $34^{\circ} 37.08' 117^{\circ} 31.69'$  979,411.626 mGal

On Southwest Flank of Shadow Mountains about 1.1 mi north of El Mirage Road on rock outcrop on west face of saddle about 12 ft below crest, about 40 ft south of gully, and marked with a standard gravity marker stamped "PB1101 1976". Meter read facing west.

PB1101A 979,411.245 mGal

About 30 ft north of and about 7 ft higher than PB1101, on rock outcrop about 10 ft south of gully. Meter read facing west.

**PB1102** 34° 43.64' 117° 32.43' 979,396.691 mGal

On Shadow Mountain Road, 4.65 mi west of the junction with U.S. Highway 395, on flat outcrop about 600 ft west of turn, 105 ft north of centerline, north of junction with dirt road leading northwest, and marked with a standard gravity marker stamped "PB1102 1976". Meter read facing north.

PB1102A 979,396.641 mGal

50 ft northwest of PB1102, on rock outcrop about 1 ft above ground. Meter read facing north.

**PB1103** 34° 48.72' 117° 32.66' 979,433.168 mGal

At the base of Red Buttes, on volcanic boulder in pile of boulders in bottom of small gully to the southwest of southernmost butte, between 2 large boulders, both standing about 5 ft above the ground, and marked with a standard gravity marker stamped "PB1103 1976". To reach station, proceed north along U.S. Highway 395 17.7 mi from intersection with Crippen Avenue in Adelanto to a long straight dirt road leading southwest, proceed southwest along road 3.1 mi until you reach a dirt road leading north toward west side of Red Buttes, then proceed north 0.7 mi along this road and boulder pile should be visible to east. Marked with a standard gravity marker stamped "PB1103 1976".

PB1103A 979,433.216 mGal

On rock about 35 ft southeast of PB1103.

**PB1104A** 34° 54.78' 117° 42.60' 979,462.121 mGal

On Leuhman Ridge, Edwards Air Force Base, about 1 mi east along Mercury Boulevard from the junction of Rocket Site Road, on granite outcrop 165 ft northwest of centerline of road, 30 ft southeast of buried telephone line, and 35 ft east of a large Joshua tree, on flat outcrop projecting about 1 ft above the ground. Meter read facing east.

PB1104 979,462.117 mGal

On granite outcrop 115 ft east of PB1104A. Meter read facing east.

**PB1105** 34° 57.50' 117° 53.65' 979,501.072 mGal

On Rosamond Boulevard, Edwards Air Force Base, just south of the more northerly junction with Lancaster Boulevard, on granite outcrop bearing USC&GS BM "X1139 1961", located 275 ft south of intersection of road and railroad and 60 ft east of centerline of road. Meter read on rock about 1 ft higher than BM. Face meter north to read.

PB1105A 979,501.221 mGal

On granite outcrop about 10 ft south of PB1105. Meter read facing north.

**PB1106** 34° 52.08' 117° 59.72' 979,481.523 mGal

On Rosamond Boulevard, Edwards Air Force Base, 5.5 mi southwest of the more southerly junction with Lancaster Boulevard, on concrete pillar bearing USC&GS BM "Z 1154 1961", 50 ft south of centerline of road. Meter read facing northeast.

PB1106A 979,480.988 mGal

On Defense Mapping Agency BM "TER-C 1975", located 285 ft north of PB1106 and 230 ft north of centerline of road, 20 ft east of small man made (?) gully. Meter read facing north.

**PB1107** 34° 40.69' 117° 46.44' 979,420.990 mGal

South 0.55 mi along 200th Street East from the crossing of Avenue J, to the boundary of Saddleback Butte State Park, then south 0.4 mi to where 200th Street East goes through the saddle at the east edge of Saddleback Butte State Park, at south end of rock outcropping west of road, in the top of a 2 by 3-ft boulder imbedded in ground and 2 ft south of a 4 ft high overhanging boulder. Face meter north to read.

PB1107A 979,420.597 mGal

About 50 ft northwest of PB1107 and 15 ft west of highest part of rock pile.

**PB1108**    34° 37.75' 117° 53.89' 979,414.475 mGal

Up 130th Street East, past microwave tower to end of road at base of Alpine Butte, on large granite outcrop ahead and to the right. Face meter south to read.

PB1108A 979,414.751 mGal

About 20 ft west of PB1108 on lower granite outcrop. Face meter toward PB1108.

**PB1109**    34° 48.00' 117° 44.82' 979,447.514 mGal

East 1.55 mi along Avenue C from the junction with 200th Street East, then 0.6 mi north along a dirt road to where the road begins to climb a rocky hill, 130 ft east of the road on a north-south trending outcrop at the east end of cove. Read with meter facing east.

PB1109A 979,447.585 mGal

North 60° west about 120 ft from PB1109 and about 17 ft east of the center of the road, on an outcrop. Read with meter facing northeast.

**PB1110**    34° 25.86' 117° 46.00' 979,307.180 mGal

Along Los Angeles County Highway N4 – Largo Vista Road approximately 4.8 mi south of State Highway 138 on east side of road at the base of a steep slope. Read over cover to L.A. County road BM 1963. Face meter toward witness post.

PB1110A 979,304.813 mGal

Up steep slope way above PB1110. look for paint mark on rock. Face meter uphill to read.

**PB1111**    34° 22.51' 117° 46.02' 979,165.132 mGal

Over USC&GS BM "W 1166 1962" which is located 6.4 mi west along State Highway 2 from the ranger station at Big Pines, in the top and 3.4 ft south-southeast of the north-northwest end of a concrete guard rail, 16.4 ft east-northeast of the centerline of the highway and about 1 ft higher than the highway. Face meter northwest along the wall.

PB1111A 979,165.002 mGal

About 60 ft north-northwest of PB1111, 25 ft east-northeast of the centerline of the highway on bedrock flush with ground.

**PB1112**    34° 22.71' 117° 41.81' 979,166.380 mGal

0.45 mi west along State Highway 2 from the junction at Big Pines 1.5 ft northeast of USC&GS BM "R 1166 1962" on corner of headwall for pipe culvert. Face meter northeast (away from bench mark and toward road).

PB1112A 979,166.247 mGal

Southeast of PB1112 on a large boulder southwest of road. Face meter toward road.

**PB1113**    34° 22.57' 117° 35.71' 979,269.549 mGal

1.5 mi west along State Highway 2 from the junction with State Highway 138, then south along an unpaved road 0.27 mi to an abandoned quarry. Station is located on a large concrete slab foundation. Read 2.5 ft north of south edge and 1 ft back from west edge of foundation, with meter facing east.

PB1113A 979,269.582 mGal

About 35 ft north-northeast of PB1113 and about 12 ft east of west edge of foundation. Face meter east to read.

**PB1114**     $34^{\circ} 31.98'$   $117^{\circ} 42.52'$  979,394.009 mGal

On the east side of the southernmost extension of the Three Sisters, on top of a granite boulder about 20 ft above the road, and 62 ft southeast of the southeast corner of a concrete foundation near transmission tower "184/6". Read with meter facing northeast.

PB1114A 979,394.695 mGal

On top of the westernmost of 2 protrusions on an old concrete foundation 68 ft east-northeast of PB1114. Face meter north to read.

**PB1115**     $34^{\circ} 25.92'$   $117^{\circ} 55.32'$  979,311.140 mGal

On Juniper Hills Road, on a large light granite boulder 100 ft along 116th Street East from centerline of Juniper Hills Road, at inside of turn in dirt road, north of dirt road in a row of pine trees. Boulder stands about 3 ft above ground. Meter read facing southeast.

PB1115A 979,311.774 mGal

On large dark granitic boulder about 190 ft west of PB1115, 80 ft north of centerline of Juniper Hills road, and about 15 ft west of a power pole. Face meter north.

**PB1116**     $34^{\circ} 35.23'$   $117^{\circ} 51.12'$  979,426.034 mGal (1978)

At south end of Lovejoy Butte. Proceed along Avenue Q 0.55 mi east from intersection with 150th Street East to rocky nose, on large boulder on east side of nose about 100 ft north of centerline of road. Boulder projects about 5 ft above ground. Read with meter facing north.

PB1116A 979,425.503 mGal (1978)

On boulder about 40 ft north of PB1116. Face meter north to read.

**PB1117**     $34^{\circ} 31.46'$   $117^{\circ} 48.46'$  979,401.520 mGal (1978)

1.1 mi north along 165th Street East from State Highway 138, then east along powerline road to 0.3 mi past intersection with Southern Pacific Railroad tracks, to powerpole "1905", over Los Angeles County BM "LLANO BASE CH PT8 RM1 1967" which is 22 ft north of centerline of road. Read with meter facing north.

PB1117A 979,401.528 mGal (1978)

45 ft south of PB1117A, over Los Angeles County BM "LLANO BASE CH PT8 RM2 1967". Read with meter facing north.

**PB1118**     $34^{\circ} 27.40'$   $117^{\circ} 48.72'$  979,352.000 mGal (1978)

2.0 mi south along 165th Street East from the junction with State Highway 138, then southeast 1.9 mi along Bob's Gap Road to 0.28 mi north of the limekiln ruins, on the west side of road, on granitic outcrop 36 ft from centerline of road, 2 ft above road, and directly across from guardrail. Read with meter facing toward cliff.

PB1118A 979,351.868 mGal (1978)

5 ft north of and 2 ft above PB1118. Read with meter facing cliff.

**PB1119**     $34^{\circ} 26.15'$   $117^{\circ} 50.15'$  979,351.325 mGal (1978)

About 1.1 mi southeast of Valyermo, at the intersection of Valyermo Road and Bob's Gap Road near USGS BM "LS56 1959 RESET 1960", on east end of concrete bridge # B490. Read with meter facing toward guardrail (N35°E).

PB1119A 979,351.383 mGal (1978)

On opposite side of bridge from PB1119, on east end. Face meter toward guardrail (S35°W).



**PB1120** 34° 23.88' 117° 48.26' 979,295.979 mGal (1978)

Located on top of large granitic boulder 0.22 mi southeast of the junction of Red Gulch Road and Big Rock Creek Road, 0.02 mi southwest of paddleboard "3.79", 80 ft northeast of centerline, and 30 ft above road surface. Walk uphill on the northwest side of a large wash. Read with meter facing north.

PB1120A 979,296.174 mGal (1978)

15 ft northwest of and 2 ft below PB1120. Read with meter facing north.

**PB1121** 34° 25.17' 117° 50.24' 979,339.313 mGal (1978)

About 1.3 mi south along Big Rock Creek Road from PB1119 on solution pocketed sandstone outcrop, 40 ft east of centerline of road and 20 ft above road surface. A small wash occurs just south of outcrop. Face meter N25°E.

PB1121A 979,339.087 mGal (1978)

10 ft N25°E of PB1121 and 4 ft above on sandstone ledge. Face meter N25°E.

**PB1201A** 34° 47.09' 115° 09.45' 979,480.888 mGal

6.4 mi northeast along the National Trails Highway (old U.S. Highway 66) from Essex, on the southeast side of the highway, on top of a small rocky nose on northeast side of hill about 15 ft south 20° east from a 6 by 6-inch concrete "C" post, on outcrop. Face meter northwest.

PB1201 979,481.604 mGal

North 58° west about 65 ft from PB1201A on outcrop flush with ground. Face meter south-southeast.

**PB1202** 34° 49.72' 115° 02.95' 979,461.432 mGal

On south side of Interstate Highway 40 on first rocky knob east of Mountain Springs Road overpass and about 75 ft south of fence along freeway. Face meter toward freeway.

PB1202A 979,461.404 mGal

1.5 ft southeast of PB1202. Face meter toward freeway.

**PB1203** 34° 51.52' 114° 52.15' 979,502.468 mGal

On westbound Interstate Highway 40, east of South Pass, in roadcut on north side of highway, about 0.1 mi east of paddle board "40 SBD 126.00", and about 3 ft above the highway. Face meter away from highway. Look for orange spot on rock.

PB1203A 979,502.566 mGal

About 22 ft east of PB1203 in roadcut. Face meter away from highway.

**PB1204** 34° 39.61' 115° 22.57' 979,504.047 mGal

About 2.5 mi north 45° west of Danby, north of National Trails Highway (old U.S. Highway 66), and about 0.7 mi southeast of VABM "BONANZA", on a large rocky nose, about 10 ft southwest of cleared area on end of nose, on a 5 by 5-ft boulder projecting 1.5 ft above ground. Turn off highway 1/8 mi east of Danby Road at west end of bridge. Read with meter facing west.

PB1204A 979,504.208 mGal

South 30° east about 25 ft from PB1204 on a 2 by 2-ft outcrop. Read with meter facing west.

**PB1210A** 34° 48.73' 115° 36.53' 979,375.224 mGal

On Kelbaker Road, in Granite Pass, over USGS BM "6 JRH 1956" which is on an outcrop about 20 ft north of fence, just north of microwave station.

PB1210 979,375.340 mGal

4 ft west of and 2 ft below PB1210A. Face meter south.

**PB1211** 34° 42.23' 115° 40.57' 979,450.230 mGal

10.4 mi north along Kelbaker Road from the National Trails Highway (old U.S. Highway 66), on south end of west face of outcrop about 130 ft east of centerline of road, and about 30 ft above road. Face meter north.

PB1211A 979,451.336 mGal

About 30 ft south of and 15 ft below PB1211. Read with meter facing north.

**PB1212** 34° 33.88' 115° 39.34' 979,575.424 mGal

About 5 mi east of Amboy, on east face of granite outcrop 0.75 mi west along north pipeline road from Kelbaker Road, 95 ft south of pipeline road and about 5 ft above desert floor. Read with meter facing west.

PB1212A 979,575.544 mGal

80 ft north of PB1212 and about 5 ft above desert floor. Read with meter facing north.

**PB1213** 34° 16.71' 115° 11.12' 979,560.364 mGal

About 1 mi west of Milligan, on rocky ridge south of railroad and north of dirt road, about 85 ft from southernmost base (at the tip) of the ridge, approximately 30 ft above the surrounding desert, 20 ft east of and 20 ft below first rocky knob on ridge, on 1 by 2-ft flattish piece of bedrock. Read with meter facing west.

PB1213A 979,559.955 mGal

20 ft north of and 6 ft above PB1213, on rounded 2 ft long ledge jutting from hillside. Read with meter facing west.

**PB1214A** 34° 21.39' 115° 16.73' 979,549.476 mGal

On Cadiz Road, 0.7 mi southeast of the southeast end of Chubbuck siding, near some ruins, over NGS BM "T 1264 1976", which is located 42 ft east of center of road. Read with meter facing northwest, parallel to railroad tracks.

PB1214 979,549.508 mGal

On bedrock 39 ft east of and 1 ft lower than BM. Read with meter facing northwest parallel to railroad tracks.

**PB1215** 34° 26.86' 115° 25.21' 979,572.905 mGal

At the southwest end of Ship Mountains, on southward extending ridge approximately 60 ft above the surrounding desert, on a flatish outcrop on the "knife edge" of the ridge, and about 12 vertical ft above a small flat area on the "knife edge" of the ridge just before the bedrock becomes continuous up the ridge. Read with meter facing toward top of hill.

PB1215A 979,573.160 mGal

6 ft east of and about 3.5 ft lower than PB1215, on a flattish rock outcrop. Read with meter facing west (approximately toward PB1215).

**PB1216A** 34° 38.26' 115° 10.07' 979,441.910 mGal

About 8.3 mi southeast of Essex, 1.3 mi south of "Y" junction along southwest fork of road on low rise (about 6 ft high) 240 ft west of center of dirt road, about 4 ft above road level on some low protruding bedrock (about 0.4 ft above ground level). Read with meter facing summit of mountain to east-northeast.

PB1216 979,441.729 mGal

On outcrop 70 ft west of PB1216A. Outcrop is about 3 ft above ground level and 3 ft below, and across a very small wash from PB1216A. Read facing slightly south of west.

**PB1217** 34° 56.58' 115° 30.67' 979,369.566 mGal

In Providence Mountains State Recreation Area, about 25 ft west of center of south edge of campground parking area, about 55 ft south of the southern corner of the mens restroom, on a low outcrop about at ground level from uphill side. Read with meter facing north (toward parking lot).

PB1217A 979,369.930 mGal

On the top of the largest boulder about 30 ft southeast of PB1217. Read with meter facing north.

**PB1218** 34° 49.30' 115° 20.74' 979,491.870 mGal

At the extreme southwest tip of the solid looking outcrop of the Blind Hills, on a 4 ft high ledge (above surrounding ground), about 14 ft above surrounding desert. It is part of a wall that can be seen from west of the hill. Face meter toward wall to read.

PB1218A 979,491.620 mGal

North along wall from PB1218 on a ledge 2 ft high (above surrounding ground), and about 15 ft above the desert floor. Read with meter facing into wall.

**PB1301** 34° 42.71' 116° 30.61' 979,422.201 mGal

About 6.5 mi south of the National Trails Highway (old U.S. Highway 66) on an outcrop of vesicular basalt about 13 ft west of the center of the road to the Silver Bell Mine, where the road crosses under a powerline just northeast of the mine, and marked with a standard gravity marker stamped "PB1301 1976". To reach the station turn off old Highway 66 west of a clump of trees then turn east and follow the power line. Read with meter facing away from road.

PB1301A 979,421.962 mGal

75 ft south along road from PB1301 on northern of two conglomerate boulders on east side of road. Read with meter facing toward the road.

**PB1302** 34° 43.21' 116° 10.89' 979,505.016 mGal

About 1 ft northeast of USC&GS BM "W 161 1938 ELEV 1823.490 FT", which is located 1.3 mi west along the Atchison Topeka & Santa Fe Railway from the station at Ludlow, in the top of the north side of the east abutment of bridge "695 B". Marked with a standard gravity marker stamped "PB1302 1976". Face meter west-southwest parallel to tracks to read.

*WARNING: This station is very close to the westbound mainline and there is very little warning of approaching trains.*

PB1302A 979,504.849 mGal

Diagonally across bridge and tracks from PB1302. Face meter east-northeast parallel to tracks to read.

**PB1303** 34° 37.80' 116° 10.03' 979,469.860 mGal

About 7 mi south of Ludlow on rocky knob south of no trespassing sign at entrance to Bagdad Chase Mine property, and marked with a standard gravity marker stamped "PB1303 1976". Read with meter facing east.

PB1303A 979,469.816 mGal

About 11 ft north of PB1303. Read with meter facing north-northwest.

**PB1304** 34° 52.33' 116° 10.92' 979,548.717 mGal

At the north end of Broadwell Lake. From road crossing of old railroad grade proceed east across country to the most prominent rocky nose at the west end of hill, on the southeast side of rock outcropping marked with orange paint spot, about 20 ft from end of nose, and marked with a standard gravity marker stamped "PB1304 1976". Read with meter facing northwest.

PB1304A 979,548.578 mGal

2 ft west-southwest of and 1.5 ft higher than PB1304. Face meter toward PB1304.

**PB1305** 35° 00.62' 116° 11.90' 979,593.555 mGal

Over USC&GS BM "K 162 1933", which is 20.4 mi north along the road leading to Crucero from the junction of old U.S. Highway 66 at Ludlow, about 1200 ft west of the road, on the abandoned Tonopah and Tidewater Railroad, just southeast of a 90 degree right turn northbound, at a road crossing, on the east side of a hill, 34 ft southeast of a small spring, 94 ft west of the centerline of the former track, in the top of a granite ledge, and about 12 ft higher than the former track. Read with meter facing north 80° west.

PB1305A 979,593.468 mGal

South 10° east 8 ft from and about 1.5 ft higher than PB1305, on granite outcrop. Face meter west to read.

**PB1306** 34° 44.00' 115° 55.00' 979,455.340 mGal

On Interstate Highway 40 at large turnout 14.3 mi west of Kelbaker Road junction and 14.7 mi east of Ludlow, at top of road cut on south side of eastbound lanes just above paddle board indicating radiator water in Spanish, 10 ft south of fence in rock outcrop (boulder?). Read with meter facing toward road.

PB1306A 979,455.271 mGal

15 ft west of PB1306. Read with meter facing toward road.

**PB1307A** 34° 33.99' 115° 47.71' 979,567.495 mGal

About 3.2 miles west of Amboy along the National Trails Highway (old U.S. 66), on a lava flow from Amboy Crater, directly over NGS BM "M1250 1974". Face meter north to read.

PB1307 979,567.495 mGal

25 ft west of PB1307A. Read with meter facing south.

**PB1308** 34° 36.30' 115° 56.45' 979,555.482 mGal

Just south of Trojan (site) on the south face of a granite outcrop, 65 ft north of the centerline of pipeline road, 0.18 mi east of Trojan Road (one which crosses railroad tracks) and about 8 ft above desert. Face meter north to read.

PB1308A 979,555.521 mGal

10 ft west of PB1308. Face meter north to read.

**PB1309A** 34° 39.22' 116° 00.81' 979,521.255 mGal

About 10.6 mi east of Ludlow along National Trails Highway (old U.S. Highway 66), on boulder bearing USC&GS VABM "SIBE 1934". Face meter northwest parallel to track.

PB1309 979,521.446 mGal

75 ft south of PB1309A and on boulder. Face meter northwest parallel to tracks.

**PB1501** 35° 07.68' 118° 24.79' 979,410.671 mGal

East of Tehachapi just west of where the freeway crosses the railroad tracks, on the south side of the tracks, over USC&GS BM "D 993 1965". Face meter away from tracks.

PB1501A 979,410.753 mGal

About 300 ft east of PB1501, on southwest corner of concrete foundation for light pole, about 10 ft west-northwest of railroad crossing sign, and about 75 ft west of projection of centerline of freeway entrance/exit ramp. Face meter toward tracks.

**PB1502**     35° 11.83' 118° 32.01' 979,473.935 mGal

On the south side of the Tehachapi Loop on the Southern Pacific and Atchison Topeka and Santa Fe railroads, at the east end of Walong Siding on a rocky knoll south of track, about 12 ft east of a telegraph pole, 70 ft southwest of a small signal building, and marked with a standard gravity marker stamped "PB1502 1976". Face meter toward track to read.

PB1502A 979,474.006 mGal

Approximately 10 ft east of PB1502 on an outcrop. Face meter toward track to read.

**PB1503**     35° 17.26' 118° 37.58' 979,578.852 mGal

Just south of Caliente at the railroad bridge over Caliente Road, over USC&GS BM "P365 1953". Read with meter facing away from track.

PB1503A 979,578.745 mGal

Across Caliente Road from PB1503, on concrete abutment about 3 ft farther from the track than PB1503, and about 1.3 ft higher relative to track. Face meter toward PB1503.

**PB1504**     35° 19.94' 118° 34.96' 979,480.251 mGal

6.8 mi northeast of the Post Office at Caliente, along the Caliente – Bodfish Road, at a horseshoe curve, 40 ft north of and 12 ft higher than the road, in the center of a 2 x 3-ft rock outcrop, about 0.5 ft east of USGS BM "101 HLS 1971 ELEV 2917". Read with meter facing uphill (N30°W).

PB1504A 979,479.504 mGal

North 35° east about 75 ft from PB1504 to outcrop about 12 ft above bottom of gully. Read with meter facing up gully (about N30°E).

**PB1505**     35° 26.40' 118° 31.68' 979,430.119 mGal

South of Havilah in the northeast corner of section 3, at a point where power line crosses road, north 25° east of paddle board "483 XY 22.0", about 50 ft north of road, and 35 ft south 25° east of power pole "1849787E".

PB1505A 979,430.700 mGal

South 52° west of PB1505, north 30° west about 22 ft from paddle board "483 XY 22.0".

**PB1506**     35° 31.86' 118° 30.62' 979,471.283 mGal

About 1.3 mi north of Havilah, 300 ft north along the road from a point where the high voltage power line crosses the road, near paddleboard "483 Y 2889", on rocky hillside east of and about 80 ft from road, south 35° west about 60 ft from transmission line pole (eastern) number "1568278E", on granite outcrop about 12 ft east of a pine tree, and marked with a standard gravity marker stamped "PB1506 1976". Read with meter facing east.

PB1506A 979,471.202 mGal

South 50° east about 10 ft from PB1506 on a 3.5 by 4-ft granite boulder projecting 2 ft above the ground. Read with meter facing toward power pole.

**PB1507**     35° 23.97' 118° 27.94' 979,433.013 mGal

On Walker Basin Road, at the south edge of section 17, T 29 S, R 33 E, at a point where the high voltage powerline crosses the road, about 60 ft west of power pole number "1640836E", and about 50 ft north of centerline of road, on top of a 15 by 18-ft granite outcrop projecting 3 to 7 ft above ground level.

PB1507A 979,432.803 mGal

24 ft north of PB1507 on a granite outcrop. Read with meter facing toward PB1507.

**PB1508**     35° 20.08' 118° 23.48' 979,450.501 mGal

About 18.4 mi east of Caliente via Caliente Bodfish Road and Caliente Creek Road, about 1.1 mi north of the junction with the road to Back Canyon, about 60 ft uphill from old road approximately in line with projection of present road, and north 68° east about 30 ft from a 24 inch oak tree. Face meter north 20° west.

PB1508A 979,450.542 mGal

South 85° west about 60 ft from PB1508, north 20° west about 10 ft from a 24 inch oak tree. Read with meter facing north.

**PB1509**     35° 18.52' 118° 29.82 979,504.498 mGal

About 8.6 mi east of Caliente via Caliente Bodfish Road and Caliente Creek Road, on a large outcrop containing Indian grinding holes that is between the road and the creek, north 22° east about 6.5 ft from northern of two holes that are approximately in line with station. Read with meter facing west parallel to creek.

PB1509A 979,504.696 mGal

North of PB1509 on ledge 1 ft above base of outcrop, almost directly below PB1509. Read with meter facing southwest.

**PB1510**     35° 10.84' 118° 07.53' 979,437.290 mGal

Take dirt track leading west-northwest from State Highway 14 at a point about 3.8 mi northeast of junction between Highway 14 and Randsburg Cutoff. The track leads to the Los Angeles Aquaduct. Follow dirt track 2.1 mi west-northwest to a northeast-southwest dirt track, then go southwest along track 0.4 mi until road to aquaduct is reached, and 110 ft northeast along aquaduct on the southwest corner of an open concrete enclosure surrounding a water level gauge (?) located 15 ft east-southeast of centerline of road. Read with meter facing west-northwest.

PB1510A 979,437.436 mGal

25 ft northeast of PB1510 on concrete channel which carries water from wash over the aquaduct and road. Read with meter facing west-northwest.

**PB1511**     35° 19.02' 118° 04.90' 979,494.190 mGal

5.3 mi west along Jawbone Canyon Road from the junction with State Highway 14, on an outcrop about 50 ft south of, and about 25 ft above road. Face meter south. Site is 0.47 mi west of road leading north toward Alpie Spring.

PB1511A 979,495.306 mGal

35 ft south of centerline of road and 25 ft west of and about 18 ft lower than PB1511. Read meter facing north.

**PB1512**     35° 22.83' 117° 58.90' 979,478.461 mGal

On State Highway 14, north of Red Rock Canyon, 1.3 mi south of the northern junction of Abbott Drive, on basalt outcrop (fairly prominent layer) about 150 ft southwest of centerline of southbound lane. Depart from road 0.49 mi north of paddleboard "14 KER 41.31" and 0.22 mi south of paddleboard "14 KER 42.00". Face meter southwest.

PB1512A 979,478.444 mGal

45 ft southwest of PB1512. Face meter northeast.

**PB1513**     $35^{\circ} 24.47'$   $117^{\circ} 48.98'$  979,478.935 mGal  
(Helicopter gravity station HGS20)

In El Paso Mountains, on Mesquite Canyon Road, 350 ft northwest of junction with road leading to town of Garlock, on volcanic outcrop 45 ft northeast of centerline of road, and 4 ft above road, and about 150 ft northwest of NGS BM "L 1291 1977". Face meter north to read.

PB1513A 979,478.651 mGal

15 ft southeast of and 5 ft higher than PB1513. Read with meter facing north.

**PB1514**     $35^{\circ} 12.71'$   $117^{\circ} 45.19'$  979,435.263 mGal

About 10 mi northeast of Castle Butte, on Galileo Hill, on flat granite boulder 2 ft south of USGS VABM "C(R?)\_TAL 1953" (crystal?). Face meter north to read.

PB1514A 979,435.213 mGal

Over USGS VABM reference mark 2. Face meter north.

**PB1515**     $35^{\circ} 06.50'$   $117^{\circ} 53.10'$  979,484.613 mGal

Take dirt track running due east and just south of Castle Butte, proceed 2.55 mi east from junction of track and California City Blvd to a wash, on outcrop 180 ft south of centerline of track, 35 ft east of wash, and projecting 5 ft above ground. Face meter north to read.

PB1515A 979,484.217 mGal

On outcrop east of wash and about 100 ft south of PB1515. Read with meter facing north.

**PB1516**     $35^{\circ} 02.87'$   $117^{\circ} 45.63'$  979,485.506 mGal

5 miles west of Boron along State Highway 58, then 2.6 mi north along Gephart Road, then take paved-dirt road leading west-northwest 1.25 mi to a faint dirt track leading toward the east side of the top of a low hill about 0.1 mi south of road, on east-southeast face of hill, on basalt outcrop about 7 ft below crest. Face meter west.

PB1516A 979,485.567 mGal

3 ft east of and 1 ft below PB1516. Face meter west.

**PB1517**     $35^{\circ} 01.36'$   $118^{\circ} 01.30'$  979,473.365 mGal

Proceed 9.1 mi east along State Highway 58 from the junction with State Highway 14 in Mojave to a road leading north to a microwave relay station, follow road north and west to west gate of installation, on concrete platform about 0.3 ft high, on the north side of road and west of fence. Read with meter facing east.

PB1517A 979,473.368 mGal

12 ft west of PB1517 on concrete platform at base of telephone booth. Read with meter facing north.

**PB1518**     $34^{\circ} 59.59'$   $118^{\circ} 10.48'$  979,457.892 mGal

Proceed 0.95 mi west along Silver Queen road from the junction with State Highway 14 to Anaconda Street, then 0.1 mi south to Treadwell Street, then 0.07 mi west to a prominent rock nob just north of road, on east side of nob near top, 15 ft north of centerline of road and about 8 ft above road. Read with meter facing west.

PB1518A 979,457.742 mGal

6 ft southwest of PB1518. Read meter facing northwest.

**PB1519**    34° 52.91' 118° 09.84' 979,472.637 mGal

On the north corner of the west headwall of culvert at mi 392.73 on the Southern Pacific Railroad 1.2 mi north of Rosamond Boulevard in Rosamond. Face meter north to read.

PB1519A 979,472.618 mGal

Diagonally across track and culvert from PB1519 on south end of east headwall of culvert at mi 392.73. Face meter north to read.

**PB1520**    34° 52.72' 118° 17.29' 979,450.937 mGal

On southwest face of mountain east of Willow Springs, on volcanic outcrop 30 ft north-northwest of head of dirt track to mine shaft and 100 ft west of mine shaft. Read with meter facing north.

PB1520A 979,450.657 mGal

On volcanic outcrop north of road head, about 40 ft east of and above PB1520. Face meter north.

**PB1521**    34° 57.02' 118° 17.16' 979,440.497 mGal

6 mi north along State Highway 14 from Rosamond, then west about 8 miles along Backus Road, 0.3 mi east of Tehachapi Willow Springs Road, on large volcanic boulder projecting about 5 ft above ground, and located 95 ft north of road at south base of volcanic ridge. Face meter north.

PB1521A 979,439.858 mGal

50 ft west-northwest of PB1521 and about 10 ft higher. Face meter north.

**PB1522**    35° 05.30' 118° 40.99' 979,421.052 mGal

To reach station proceed west of Cummings Valley along Comanche Point Road, go left on Jacks Hill Road, right on Horsethief Drive, right on Buckskin Drive, and left on Dapple Grey Court to a wooden deck at Stallion Springs Observation Point, about 30 ft west-northwest of the oak tree which is just west of the deck. Face meter toward oak tree by observation deck.

PB1522A 979,421.329 mGal

About 20 ft south-southwest of PB1522. Face toward oak tree. Standard mark set.

**PB1523**    35° 12.32' 118° 17.25' 979,349.255 mGal

In Horse Canyon, in the east side of section 26, T 31 S, R 34 E, 0.5 mi past a (dry) creek crossing to a side road to the left, up side road 180 ft to a gate consisting of two green metal fenceposts and barbed wire (there is no fence), in a rockpile on northeast side of road north 50° east from northeast gatepost, south 65° west about 12 ft from a juniper tree. Read with meter facing north.

PB1523A 979,348.992 mGal

North 85° west of PB1523 and north 25° east of gatepost. Read with meter facing away from road (about N20°E).

**PB1524**    35° 16.78' 117° 53.14' 979,525.420 mGal

Station is located in Fremont Valley south of Koehn Dry Lake and is reached by proceeding 5.8 mi east along Munsey Road from the intersection with Neuralia Road, then 0.50 mi south along a dirt track to a fence, about 150 ft south of centerline of road north of fence, on outcrop over USGS BM "69DOR 1977". Read with meter facing north.

PB1524A 979,525.264 mGal

About 5 ft north of and about 2 ft higher than PB1524. Read meter facing north.



**PB1601** 33° 48.92' 116° 10.17' 979,483.499 mGal

On Berdoo Canyon Road, on large flat boulder on top of low ridge adjacent to and immediately east of road and Berdoo Canyon and 1.48 mi north of junction with Dillon Road, and marked with a standard gravity marker stamped "PB1601 1976". Meter read facing north.

PB1601A 979,483.809 mGal

30 ft west of and 5 ft lower than PB1601.

**PB1602** 33° 52.89' 116° 18.07' 979,483.315 mGal

Over Metropolitan Water District of Southern California BM "30X 1931", which is 12.0 mi north-northwest of Indio, about 0.4 mi north of the junction of Dillon Road and Thousand Palms Road, about 500 ft west of the junction of the aqueduct road and the Thousand Palms Road, 30 ft north of and about 10 ft higher than the road, in a rock outcrop. Meter read facing north.

PB1602A 979,482.654 mGal

60 ft west of and 10 ft higher than PB1602. Meter read facing north.

**PB1603** 33° 54.69' 116° 21.93' 979,475.460 mGal

About 4.3 mi northwest of PB1602 and 0.25 mi northeast of Dillon Road, on west slope of a gneiss rubble ridge, on large gneiss boulder (?) located 45 ft east of dirt road, 275 ft north of the south end of ridge, 6 ft above ground, and marked with a standard gravity marker stamped "PB1603 1976". Meter read facing north.

PB1603A 979,474.568 mGal

25 ft north of and 15 ft above PB1603. Meter read facing north.

**PB1604** 34° 11.93' 116° 34.33' 979,256.652 mGal

On Burns Canyon Road, on large boulder 85 ft south of centerline of, and 15 ft above road, 315 ft west along road from west end of turn and 1.6 mi west of right angle turn in rimrock, and marked with a standard gravity marker stamped "PB1604 1976". Meter read facing south.

PB1604A 979,257.362 mGal

30 ft downslope from and 10 ft lower than PB1604, on large boulder. Read with meter facing south.

**PB1701A** 33° 41.87' 115° 39.70' 979,452.702 mGal

Over Metropolitan Water District of Southern California BM "2 U", which is about 4 mi east along Interstate Highway 10 from Chiriaco Summit, then 1.9 mi north along Hayfield Road, then northwest about 0.6 mi along a dirt road, then southwest along a poor dirt road, on the south side of a small rocky mound, on the east side of a wash, about 1500 ft east of the Los Angeles Water Department triangulation station "RED BUTTE", and in bedrock. Face meter uphill to read.

PB1701 979,452.531 mGal

About 6 ft north of and 2.5 ft higher than PB1701A. Face meter north-northeast to read.

**PB1702** 33° 42.98' 115° 30.51' 979,474.003 mGal

About 7.5 miles east of Hayfield, near the mouth of Difficult Canyon, near MWDSC BM 3E, approximately 35° ft northwest of center of road on top of an 8 by 18-ft outcrop projecting 3.5 ft above ground. Face meter northeast parallel to road.

PB1702A 979,474.102 mGal

North 28° east from PB1702 to a 2.5 by 3.5-ft outcrop projecting 1.5 ft above ground. Read with meter facing away from road.

**PB1703** 33° 46.66' 115° 27.14' 979,508.123 mGal

About 5.2 mi northwest of Desert Center along Interstate Highway 10 and then Eagle Mountain Road, just north of a crossing of the Eagle Mountain Railroad, at the west base of the first hill north of Desert Center, on outcrop south 10° east about 55 ft from BM "3R 1931". Face meter northeast to read.

PB1703A 979,508.131 mGal

About 13 ft northwest of PB1703 on outcrop. Face meter uphill to read.

**PB1704** 33° 50.84' 115° 28.72' 979,501.593 mGal

Just south of the town of Eagle Mountain, southwest of the Eagle Mountain High School, on top of a small hill south of the Eagle Mountain Railroad, north 40° west 3.5 ft from a drill rod projecting from rock. Face meter toward Eagle Mountain High School.

PB1704A 979,501.852 mGal

South 18° east about 6 ft from drill rod. Face meter toward Eagle Mountain High School.

**PB1705** 33° 57.67' 115° 41.52' 979,496.578 mGal

On Old Dale Road in Joshua Tree National Monument, at a small hill about 0.4 mi northeast of the crossing of Pinto Wash, at a former mill(?) site south 40° east from circular structure on top of hill, on upper concrete foundation. Face meter uphill to read.

PB1705A 979,496.973 mGal

North 80° west of PB1705, south 60° west from structure on hill, on a concrete foundation.

**PB1706** 33° 51.76' 115° 47.71' 979,414.085 mGal

Over USC&GS BM "T 726 1944" which is located along the Twentynine Palms – Indio Road, 29.7 mi southeast of the National Park Service Office at Twentynine Palms, and about 1.6 miles northwest of the crossing of Porcupine Wash, in a rock outcrop, at north edge of a group of large boulders, 98 ft west of the centerline of the road and about 4 ft above the road. Face meter east to read.

PB1706A 979,414.067 mGal

South 70° east about 10 ft from PB1706. Face meter away from road.

**PB1707** 33° 50.46' 115° 46.25' 979,403.743 mGal

Over USC&GS BM "V 726 1944" which is 31.8 mi southeast along the Twentynine Palms – Indio Road from the National Park Service Office at Twentynine Palms, and 1.2 mi northwest of the Junction of Old Dale Road, set in rock outcrop at the north edge of a group of large boulders, 70 ft north of the road centerline, and about 3 ft below the road. Note: Station is north 50° east from witness post. Read with meter facing away from road.

PB1707A 979,403.695 mGal

South 55° east about 11 ft from PB1707 on a granite outcrop, north 72° east from witness post.

**PB1708** 33° 51.83' 115° 39.26' 979,454.389 mGal

About 0.9 mi east of the boundary of Joshua Tree National Monument on the Black Eagle Mine Road, 15 ft north of the center of the road on an outcrop. Face meter away from road to read.

PB1708A 979,453.346 mGal

North 20° east about 100 ft from PB1708, south 25° east from white metal pipe (claim marker?) on top of hill, on outcrop projecting 2 ft above ground, and just uphill from large outcrop. Face meter uphill to read.

**PB1709** 33° 46.88' 115° 47.79' 979,357.565 mGal

In Joshua Tree National Monument, 2.95 mi north of the Cottonwood Visitor Center, on the south side of a group of large boulders which is on the southeast side of Pinto Basin Road, just opposite the former dirt road leading to Smoke Tree Well, on top of a 6 by 8-ft boulder projecting 3.5 ft above ground level. Face meter north 55° east to read.

PB1709A 979,357.822 mGal

About 40 ft north 80° east from PB1709 on a 3 by 6-ft boulder projecting slightly above ground level. Face meter northeast to read.

**PB1710** 33° 44.27' 115° 49.34' 979,370.198 mGal

In Cottonwood Canyon, 2.1 mi north of PBB17 on a hill east of the road, north 50° east about 45 ft from National Park Service BM "JT 49" on a 3 by 4-ft granite boulder projecting 1 ft above ground. Read with meter facing east-northeast.

PB1710A 979,370.036 mGal

15 ft east of PB1710 on a granite outcrop. Face meter northeast to read.

**PB1711** 33° 34.54' 115° 13.27' 979,492.629 mGal

On the east side of the Chuckwalla Mountains, on Dupont Road (road leading to Aztec Mines), on rock outcrop 6.1 mi west of intersection with Chuckwalla Road, 280 ft west of east end of ridge, 15 ft above dry creek bottom, 8 ft below ridge crest, on south side, on rock projecting 2 ft above ground, and marked with a standard gravity marker stamped "PB1711 1976". Read with meter facing north.

PB1711A 979,492.182 mGal

15 ft west of and 5 ft higher than PB1711. Read with meter facing north.

**PB1712** 33° 42.34' 115° 20.75' 979,518.556 mGal

3.1 mi east of Desert Center, along Interstate Highway 10, on rock outcrop 90 ft south of south edge of the highway, 30 ft north of a fence, 180 ft west of the west end of bridge "56-44R", about level with highway, and marked with a standard gravity marker stamped "PB1712 1976". Read with meter facing south.

PB1712A 979,518.169 mGal

20 ft west and about 6 ft higher than PB1712. Face meter west.

**PB1713** 33° 35.99' 115° 30.33' 979,441.118 mGal

4.15 mi southeast along the Red Cloud Mine Road from Interstate Highway 10, then south 2.95 mi along Gas Line Road, on northeast end of east-west ridge (last ridge encountered when proceeding south), 105 ft west of, upslope from and about 30 ft above centerline of road, across road from power pole "78071D", nearly at top of ridge, on flat outcrop at northeast edge, and marked with a standard gravity marker stamped "PB1713 1976". Read with meter facing south.

PB1713A 979,441.836 mGal

North of and 10 ft almost directly below PB1713. Face meter south to read.

**PB1714** 33° 40.81' 115° 59.43' 979,463.473 mGal

On Interstate Highway 10, 11.3 mi west of junction with road up through Cottonwood Canyon, on granite outcrop 70 ft north of north edge of highway, 90 ft west of telephone lines which cross highway, 25 ft south of fence and about 5 ft above highway. Face meter east to read.

PB1714A 979,464.097 mGal

30 ft west of and 8 ft lower than PB1714. Read with meter facing east.

**PB1715** 33° 45.54' 116° 05.35' 979,487.005 mGal

In Fargo Canyon, on fresh granite outcrop on east side of canyon 1.7 mi north of sharp bend in road (where road turns from due east-west to northeast), about 220 ft south of southernmost of two palo verde trees at eastern edge of wash and 0.06 mi north of south end of first granite outcrop on east side of wash, 25 ft east of east edge of wash, about 8 ft above wash, and marked with a standard gravity marker stamped "PB1715 1976". (Site is 4.8 mi from junction with Dillon Road). Read with meter facing west.

PB1715A 979,487.206 mGal

On granite outcrop about 15 ft west of, and about 3 ft lower than PB1715. Read with meter facing west.

**PB1716** 33° 34.19' 116° 12.86' 979,554.344 mGal

At the base of the Santa Rosa Mountains, 8 mi west of Mecca and 2 mi west of Valerie, on boulder over USGS BM "110 DOR 1976", and marked with a standard gravity marker stamped "PB1716 1976". Meter read facing west. This is the prime base for the Cottonwood Pass and Frink lines (Fett, written communication 1976).

PB1716A 979,554.400 mGal

On north end of boulder 85 ft north of PB1716. Read with meter facing west.

**PB1717** 33° 26.31' 115° 41.39' 979,552.262 mGal

Approximately 6 mi northwest of Frink, on concrete wall on the southwest side of Colorado River Aqueduct siphon number "21", on westernmost wall about 15 ft from center of road, at the corner of the wall. Read facing along short wall toward aqueduct (northwest).

PB1717A 979,552.356 mGal

On concrete wall on southwest side of Colorado River Aqueduct siphon number "21", at the corner of the easternmost wall closest (approx. 15 ft) to the road, about 2 ft from corner of wall. Read with meter facing aqueduct along long wall (northeast).

**PB1718** 33° 32.19' 115° 38.61' 979,487.084 mGal

8.1 mi southwest along Bradshaw Road from Summit Siding on the Eagle Mountain Railroad, on northern side of large rock outcrop in the center of Bradshaw Wash, approximately 50 ft from center of road, on rock bench 10 ft above wash, and 60 ft west of a palo verde tree. Read with meter facing south.

PB1718A 979,487.297 mGal

Approximately 100 ft east of PB1718, 47 ft from center of road, about 2 ft up from wash, 10 ft east of rock face, and 40 ft east of a palo verde tree. Read with meter facing south.

**PB1719** 33° 30.75' 115° 48.57' 979,562.890 mGal

On concrete wall on southwestern corner of Coachella Canal siphon number "26", on westernmost wall about 10 ft from center of road at the corner of the wall. Read with meter facing along long wingwall of the siphon (NE).

PB1719A 979,562.797 mGal

On concrete wall on southwestern corner of Coachella Canal siphon number "26", on easternmost wall about 10 ft from center of the road at the corner of the wall. Read with meter facing north along the long wingwall of the siphon.

**PB1720** 33° 50.22' 115° 15.79' 979,544.056 mGal

11.7 mi northeast of Desert Center at the southeast end of the Coxcomb Mountains, on the first knob (farthest toward the end) of bedrock on a low ridge (about 100 ft high), at the peak of the knob. Read with meter facing west.

PB1720A 979,544.445 mGal

10 ft below the first knob (farthest toward the end of bedrock), on a low (about 100 ft high) ridge. From the peak of the knob (at PB1720), about 10 ft down and 30 ft south on a rock jutting slightly from the ridge. Read with meter facing west.

**PB2N01** 34° 42.17' 118° 56.15' 979,401.163 mGal

About 8 mi southwest of Gorman just southwest of a crossing of Piru Creek, near the Gold Hill Campground, about 100 ft south of road, on ledge approximately 6 ft above base of large outcrop. Read with meter facing toward creek.

PB2N01A 979,401.095 mGal

Approximately 60 ft south of road on a large boulder. Face meter toward creek.

**PB2N02** 34° 41.48' 118° 51.03' 979,449.596 mGal

About 7 mi south of Gorman at the site of the Buck Creek Guard Station, on Piru Creek, west of the road where it turns south to cross the creek, west-northwest along a dirt track to where there is a large boulder sticking up in the track (there is an orange arrow painted on the rock), east of dirt track on a 2 by 4-ft boulder projecting 0.4 ft above the ground. Face meter northeast to read.

PB2N02A 979,449.381 mGal

40 ft east from PB2N02, next to orange marked boulder, on a 1.5 by 2 ft boulder flush with ground. Face meter southeast.

**PB2N03** 34° 47.55' 118° 50.00' 979,408.593 mGal

On USC&GS BM "E 452 1953" which is 1.1 mi east along the Gorman Post Road from the Post Office at Gorman, 60.1 ft northwest of the west end of the north concrete head wall of culvert "K 459.50", 46.5 ft north of the centerline of the road, 5.0 ft northwest of a fence corner, 1.3 ft southwest of a fence, 1.9 ft southeast of a witness post, and set in the top of a concrete post projecting 0.3 ft above the ground. Face meter away from road (north).

PB2N03A 979,408.223 mGal

About 50 ft northwest of PB2N03, midway between 3 2-inch pipes. Read on Calif. Division of Highways BM "LEBEC E-10 1973". Face meter away from road.

**PB2N04** 34° 48.51' 118° 53.04' 979,401.191 mGal

0.6 mi northwest of summit of Tejon Pass along old U.S. Highway 99, along driveway to "Mesa Valley Farms", 30 ft before gate, at concrete culvert on east side of driveway. Read on center of concrete headwall facing toward driveway (west).

PB2N04A 979,401.235 mGal

About 10 ft north along driveway from PB2N04, 4 ft from east edge of driveway, at 4 by 4-inch concrete post flush with driveway. South leg of baseplate is on post. Read with meter facing north along driveway.

**PB2N05A** 34° 38.48' 119° 03.29' 979,329.136 mGal

About 16 mi southwest of Gorman, along Lockwood Valley Road and Mutau Road, 0.2 mi before summit just northwest of Mutau Flat, at only spot where rocks crop out. Read on 2 by 2-ft outcrop about level with road and approximately 20 ft from largest outcrop. Face meter downhill to read.

PB2N05 979,330.312 mGal

Approximately 150 ft southeast of PB2N05A inside draw about 100 ft south of road. Read on outcrop about 10 ft from bottom of draw and 6 ft from a 4-inch jeffrey pine tree. Read meter facing uphill.

**PB2N06** 34° 39.95' 119° 07.00' 979,306.184 mGal

About 5.0 mi south along Mutau Road from the junction with Lockwood Valley Road, on side of hill east of road equidistant from largest jeffrey pine (to the south) and jeffrey pine on west side of road. Reading is made on conglomerate outcrop with meter facing up hill.

PB2N06A 979,305.579 mGal

Approximately 100 ft east of PB2N06 on south slope of hill. Read on conglomerate outcrop with meter facing up hill.

**PB2N07** 34° 44.86' 119° 04.71' 979,321.136 mGal

At USC&GS BM "X 1098 1968", which is about 10 mi southwest of Frazier Park along the Lockwood Valley Road, about 400 ft east of the junction of a road leading west, about 300 ft north of the road and set in the top of a boulder. Baseplate set midway between BM and witness post. Read with meter facing away from BM.

PB2N07A 979,322.275 mGal

Across the road from PB2N07 near northeast end of small hill southeast of road, on a 3 by 5-ft boulder projecting about 1 ft above ground, and about 40 ft south of centerline of road. Face meter toward road.

**PB2N08** 34° 47.82' 119° 02.01' 979,320.928 mGal

On USC&GS BM "T 951 1959" which is 5.9 mi southwest along Frazier Park Road and Lockwood Valley Road from the fire station at Frazier Park, 0.2 mi southwest of the center of a sharp curve, 29 ft southeast of the centerline of the road, 5 power poles southwest of an angle in a powerline, 3.5 ft southeast of power pole "7352905", 1.1 ft northwest of a witness post, about 1.5 ft higher than road, and set in the top of a concrete post approximately at ground level. Read with meter facing northeast parallel to road. Note: Leg holes not drilled, marker nailed to power pole. There is no alternate station.

**PB2N09** 34° 53.08' 118° 34.99' 979,384.148 mGal

On Liebre Twins 7.5 minute quadrangle on dirt track about 1 mi east of Canyon del Gato-Montes and 2.1 mi along road from fence corner with US General Land Office Survey marker indicating the corner of sections 16, 17, 20 and 21, 0.7 mi west of where road enters section 10, at an elevation of about 3840 ft, on a mostly buried boulder, 55 ft south of fence, 45 ft south of road and 450 ft east of first gully bottom to the west, and marked with a standard gravity marker stamped "PB2N09 1976". Face meter north.

PB2N09A 979,383.835 mGal

On mostly buried boulder 150 ft east of PB2N09 and 8 ft north of fence. Adjacent metal fence post painted orange. Read with meter facing north.

**PB2N10** 34° 52.48' 118° 27.65' 979,420.976 mGal

On north side of hairpin turn of road up to Los Angeles Aquaduct, on southwest corner of concrete casing around aquaduct access port, and marked with a standard gravity marker stamped "PB2N10 1976". Meter read facing north. Effects of changes in ground water level are possible and uncertain.

PB2N10A 979,421.082 mGal

On southeast corner of concrete culvert head wall at north edge of road. Meter read facing north.

**PB2N11** 34° 45.83' 118° 23.78' 979,431.807 mGal

On Fairmont Butte, at south end of 150th Street West, which becomes a rough dirt track leading to the crest of the butte, at crest of ridge, at base of east face of 10 ft rock face running parallel to butte about 80 ft northeast along ridge from end of 150th Street West, and marked with a standard gravity marker stamped "PB2N11 1976". Meter read facing west.

PB2N11A 979,431.007 mGal

80 ft north along ridge at very crest at east base of 4 ft rock face. Meter read facing rock.

**PB2N12** 34° 39.31' 118° 27.99' 979,442.403 mGal

On Lake Hughes Road about 2.3 mi south of junction with Elizabeth Lake Road, on stone headwall of culvert under road. Meter read on north end of headwall on west side of road at paddle board "2.24" with meter facing upstream. Station is marked with a standard gravity marker stamped "PB2N12 1976".

PB2N12A 979,442.371 mGal

On rock shelf of road cut on west side of road 115 ft north of PB2N12. Meter read facing roadcut.

**PB2N13** 34° 44.01' 118° 35.69' 979,399.808 mGal

On Elizabeth Lake – Pine Canyon Road about 0.25 mi south of Three Points, on rock outcrop east of road, about 60 ft south of dirt road leading to a shaft, about 30 ft above road at the top of the outcrop, and marked with a standard gravity marker stamped "PB2N13 1976". Meter read facing east.

PB2N13A 979,400.088 mGal

About 15 ft west of and about 7 ft lower than PB2N13.

**PB2N14** 34° 44.47' 118° 42.51' 979,362.697 mGal

On USC&GS BM "W53 1926", which is 0.5 mi southeast along the Old Ridge Route from the Los Angeles County Quail Lake Fire Station, 131.3 ft northeast of and across the highway from the foundation of the old Sandberg Post Office building, 58 ft east of the centerline of the highway, 38 ft southeast of a telephone pole, 3.1 ft south of a concrete gatepost, 1.3 ft north of a witness post, about 6 ft higher than the highway, set in the top of a concrete post projecting 0.3 ft above the ground, and marked with a standard gravity marker stamped "PB2N14 1976". Meter read facing south.

PB2N14A 979,363.387 mGal

On raised concrete platform on foundation across road from PB2N14. Face meter away from road.

**PB2N15** 34° 43.05' 119° 07.44' 979,296.648 mGal

On Wagon Road Canyon Road about 4 mi southwest of Lockwood Valley, about 700 ft west of USC&GS BM "M595", at short dirt road leading north just east of a gully and a sharp left turn when heading west, on a granite boulder in a rockfall about 120 ft north of the centerline of the road, about 200 ft east of gully bottom, and marked with a standard gravity marker stamped "PB2N15 1976".

PB2N15A 979,296.394 mGal

On a granite boulder about 20 ft west of PB2N15.

**PB2N16** 34° 43.25' 119° 11.52' 979,340.920 mGal

Meter read on USC&GS BM "G595" on Lockwood Valley Road in the northeast corner of section 10, T 7 N, R 22 W. Station is marked with a standard gravity marker stamped "PB2N16 1976". Note: New road is about 60 ft north of old road shown on 1943 San Guillermo 7.5 minute quadrangle map. Meter read facing south.

PB2N16A 979,340.904 mGal

Meter read next to 2 ft metal pipe sticking above ground, and on concrete well cover (?) about 20 ft west of PB2N16.

**PB2N17** 34° 43.04' 119° 15.23' 979,365.810 mGal

6.9 mi east along Lockwood Valley Road from the junction with State Highway 33, 0.2 mi west of the junction of a dim dirt road north, near USC&GS BM "B 595", on boulder on north side of road about 80 ft west of BM, about 60 ft north of and 6 ft above road, and marked with a standard gravity marker stamped "PB2N17 1976". Face meter north to read.

PB2N17A 979,366.832 mGal

Meter read on east end of north concrete headwall of culvert about 255 ft west of BM "B 595". Face meter north to read.

**PB2N18** 34° 40.45' 119° 22.23' 979,386.948 mGal

On north end of top of large boulder bearing USC&GS BM "H174 1934" which is about 35.6 mi south along State Highway 33 from the Post Office at Maricopa, and 1.6 mi south of the junction of Lockwood Valley Road, in the mouth of a wash, in the top of a lone 6-ft high by 12-ft long brown boulder, 37 ft east of the centerline of the highway, 30 ft southeast of the east end of a 24-inch pipe culvert no. "E MI. 4.53", about 1.5 ft higher than the highway, and marked with a standard gravity marker stamped "PB2N18 1976". Meter read facing north.

PB2N18A 979,388.492 mGal

On low sandstone outcrop on west side of road about 270 ft north of PB2N18, and about 2 ft above the highway. Meter read facing north.

**PB2N19** 34° 52.69' 119° 20.44' 979,368.910 mGal

On Cerro Noroeste Road, at Valle Vista Public Camp at large barbeque pit at northwest end of campground. Read on southeast wall of pit with baseplate centered directly over gravity mark, which is 1.75 ft from chimney and 0.3 ft back from edge. Face meter northwest.

PB2N19A 979,369.122 mGal

About 35 ft northwest of PB2N19 at small barbeque pit. Read on southwest corner of pit with meter facing north along edge of pit.

**PB2N20** 34° 49.90' 119° 12.17' 979,142.480 mGal

At the summit of Cerro Noroeste, about 0.2 mi beyond lodge where road forks, at west end of a large rock pile south of road. Face meter toward road to read.

PB2N20A 979,142.485 mGal

Near opposite end of rockpile from PB2N20, about 15 ft west of a 5-inch pine tree on a 3 by 6-ft boulder. Face meter toward PB2N20 to read.

**TDL8X** 33° 43.20' 118° 16.30' 979,636.605 mGal (6/1976)

At Los Angeles Outer Harbor in the top of the southeast corner of the concrete loading platform at the extreme south end of Signal Street, 11 ft southeast of the southeast corner of the main large building at berth 60, about 3.5 ft above the level of the street, over the former iron bolt of Los Angeles Harbor Department BM "TIDAL 8X". There is no alternate station.



## REFERENCES

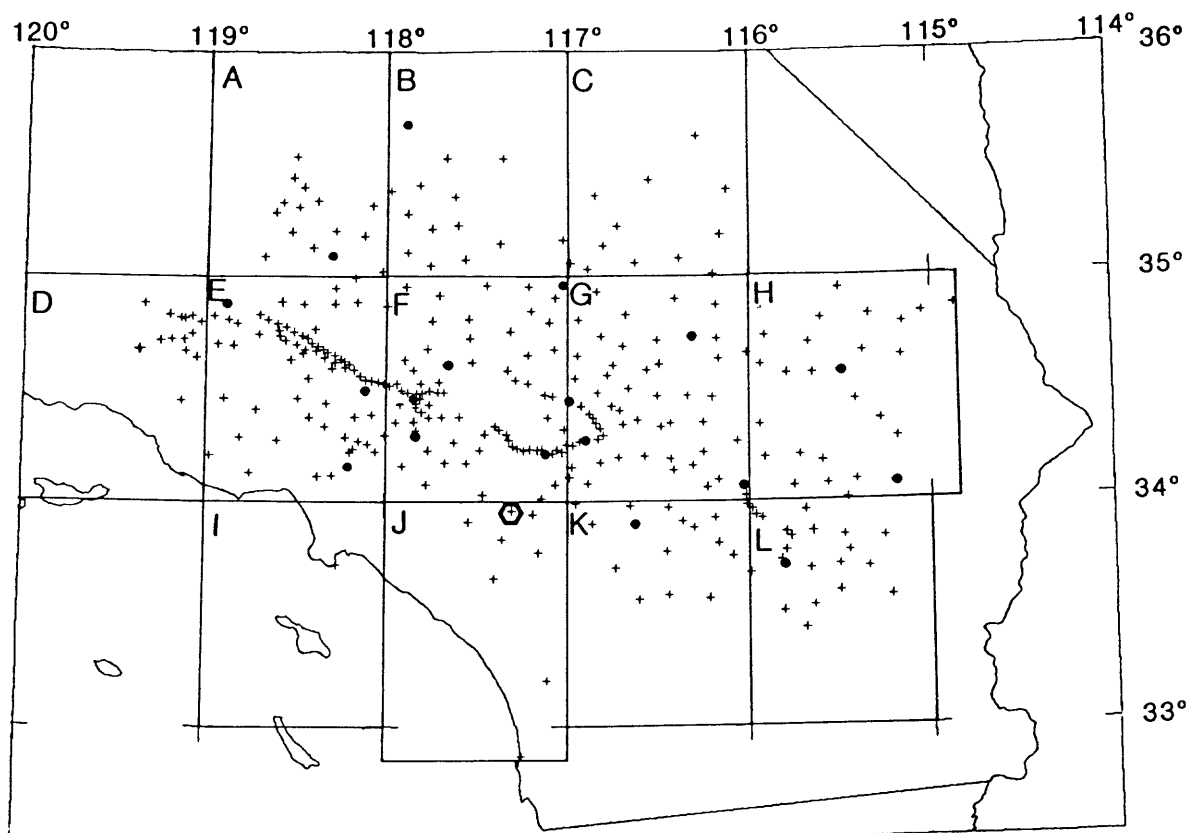
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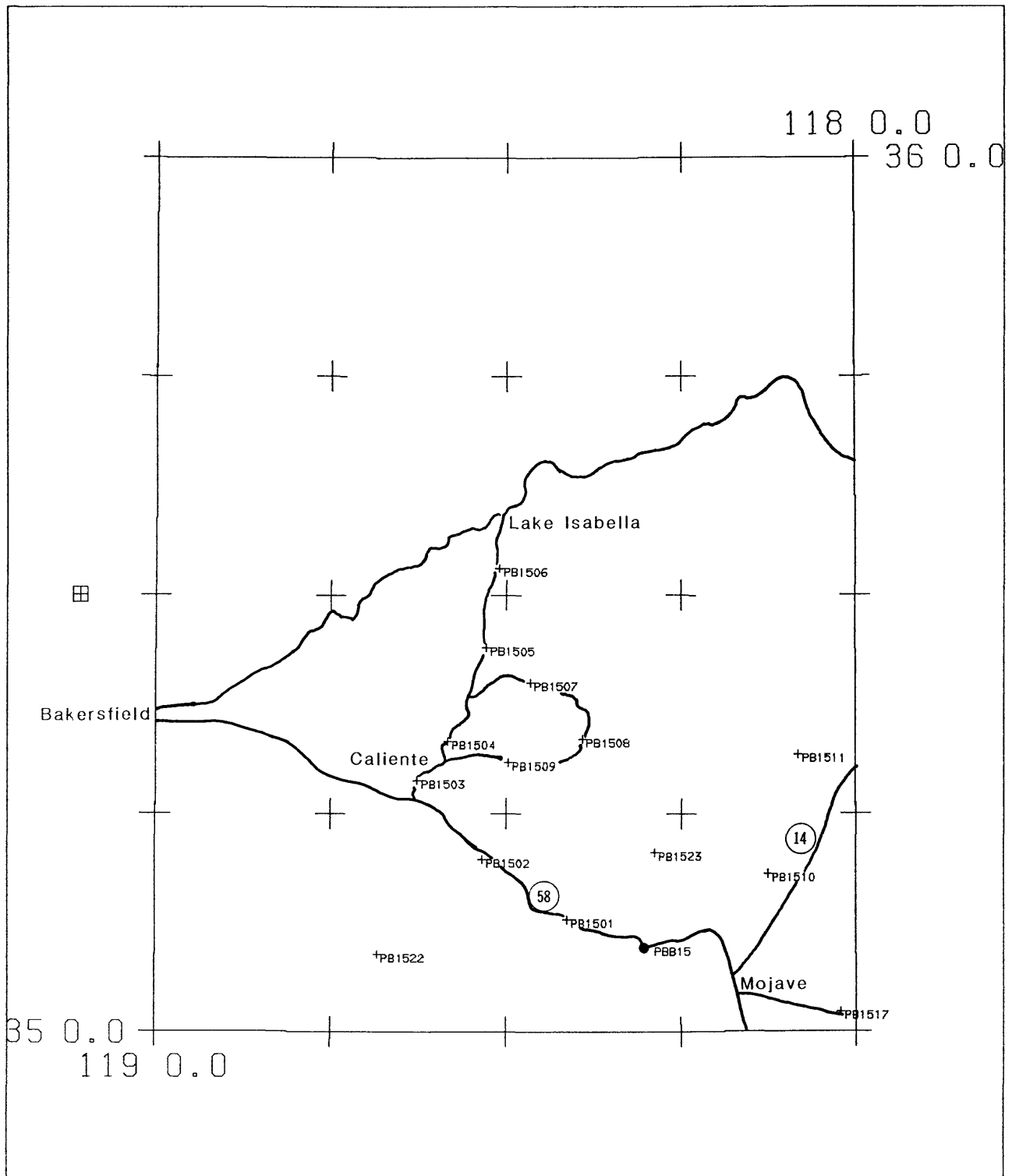
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Jachens, R.C., 1978, Temporal gravity changes as applied to studies of crustal deformation: U.S. Geological Survey open-file report 79-370, (Proceedings of conference VII stress and strain measurements related to earthquake prediction), p 222-243.



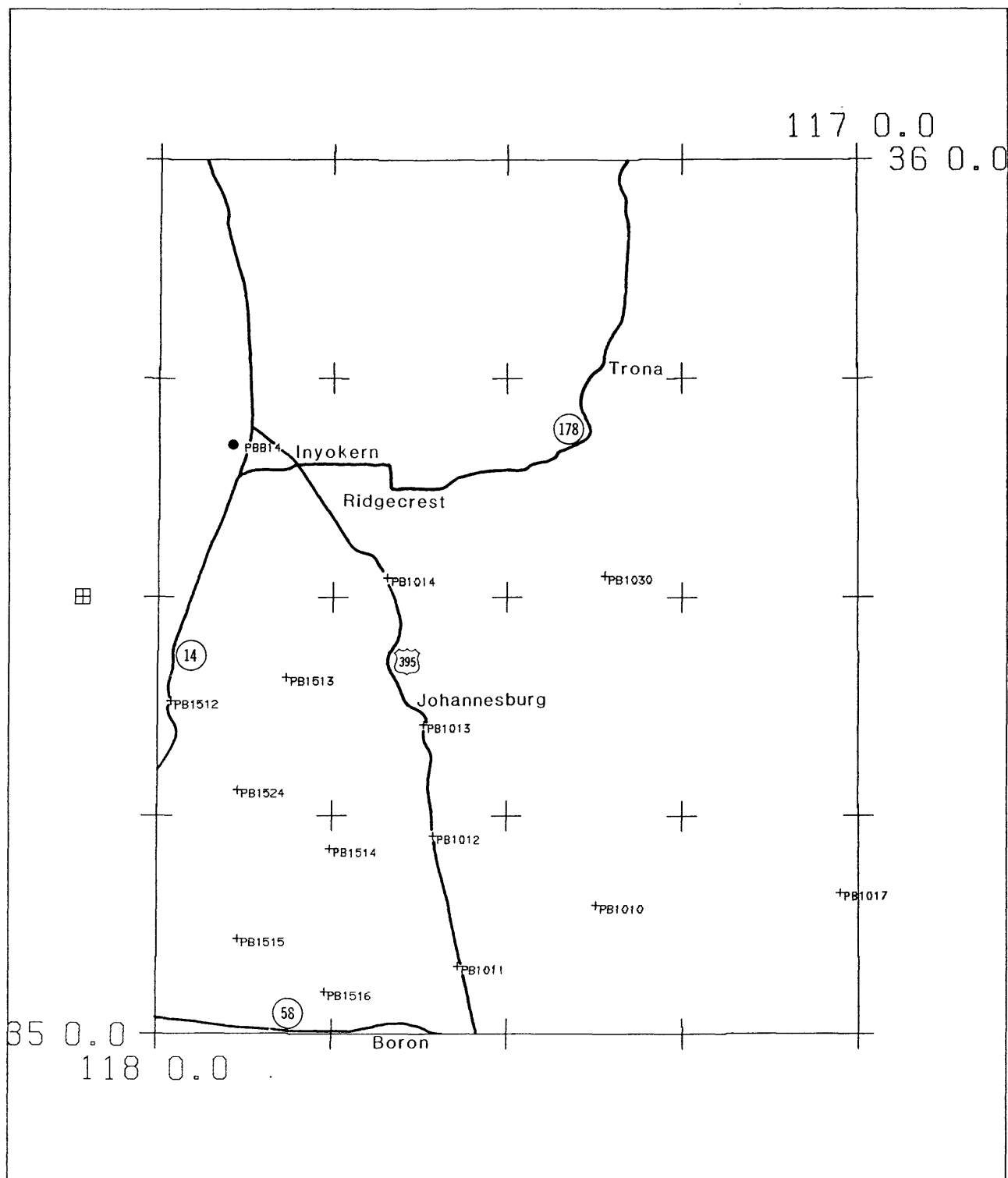
- ⊕ Primary Gravity Base Station
- Gravity Base Station
- + Gravity Station

**Figure 2.** Index to plots of gravity station locations. (Figures 2A – 2L)



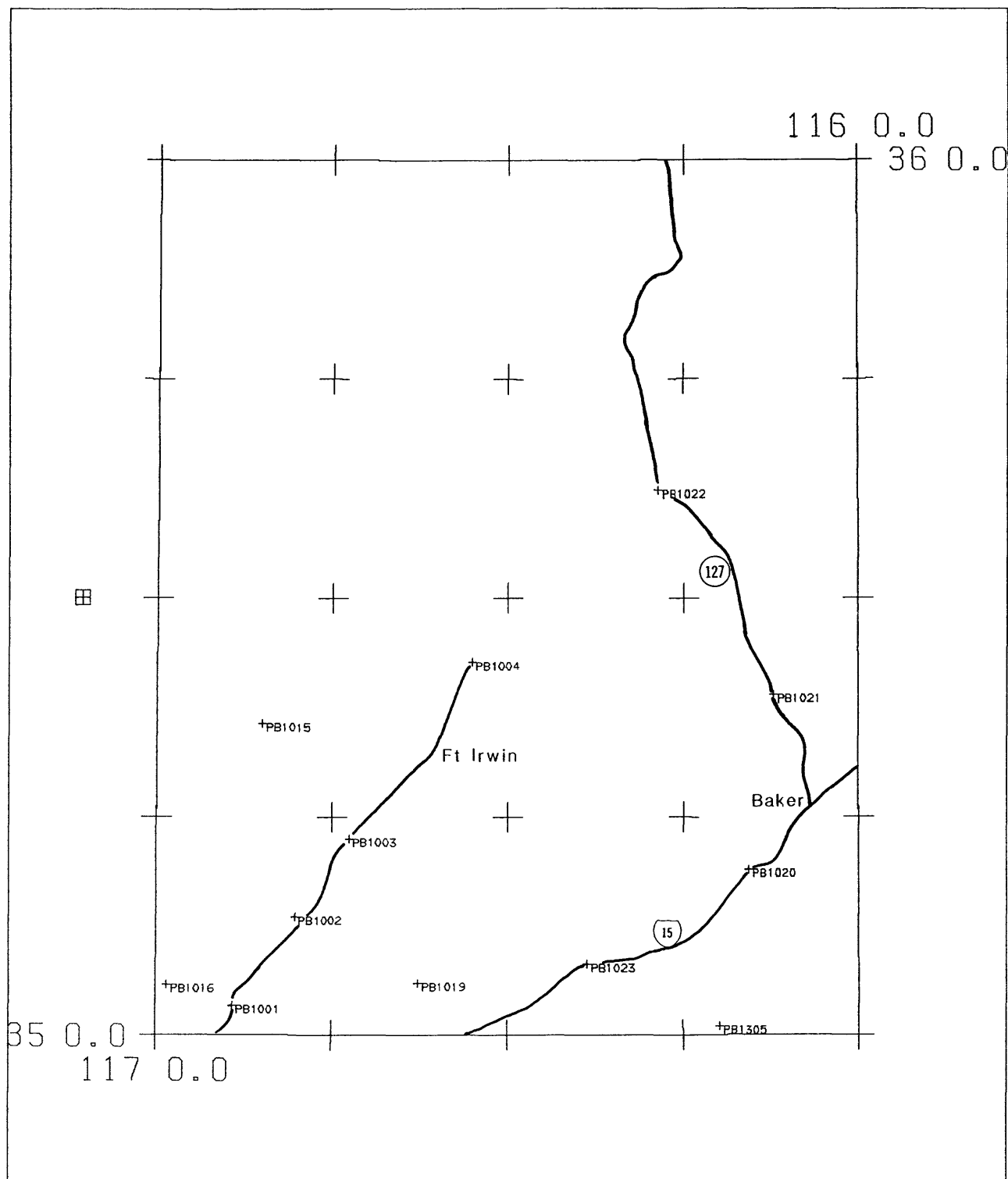
**Figure 2A.** Gravity stations in the eastern half of the Bakersfield quadrangle.

Scale 1:750,000



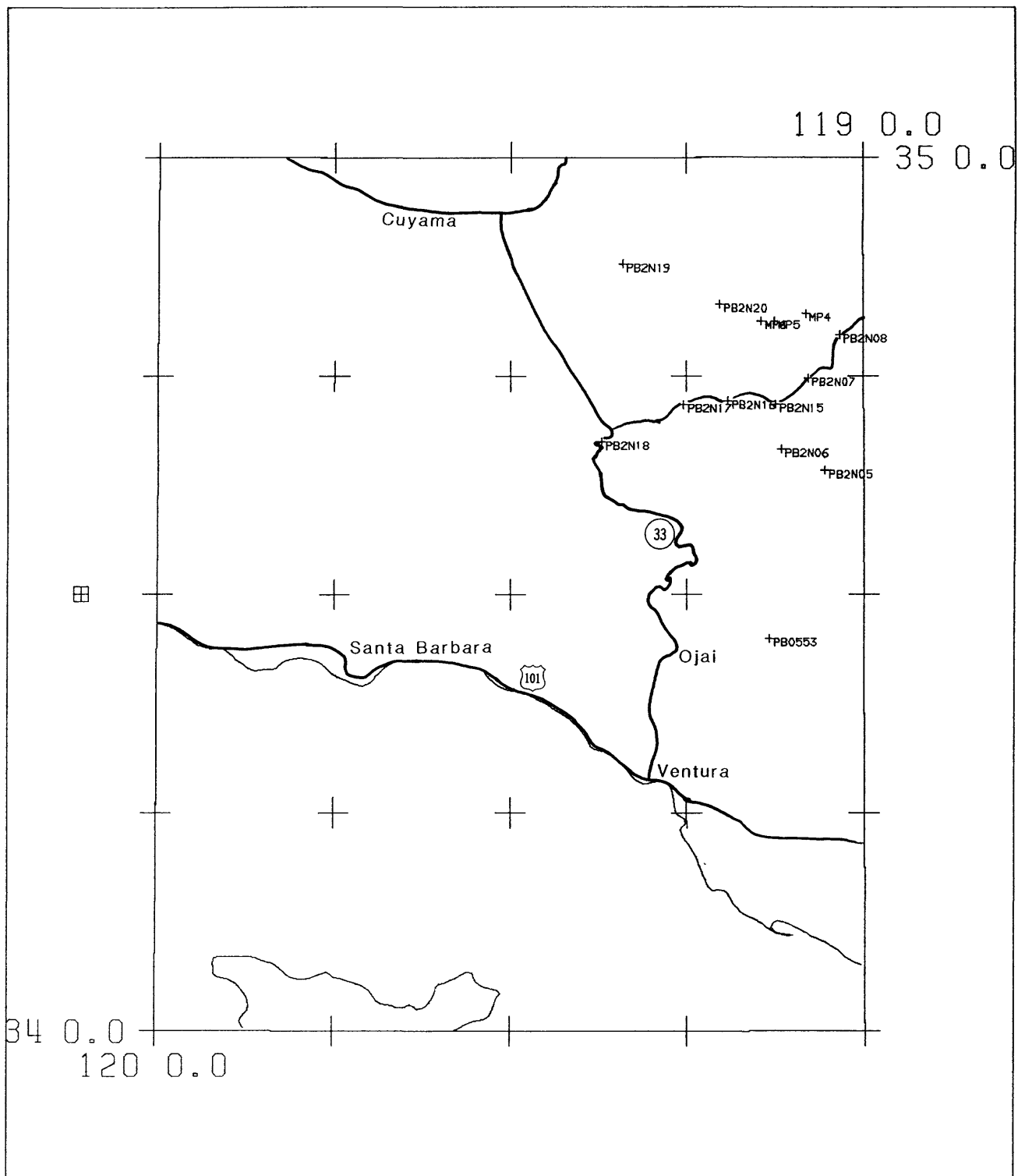
**Figure 2B.** Gravity stations in the western half of the Trona quadrangle.

Scale 1:750,000



**Figure 2C.** Gravity stations in the eastern half of the Trona quadrangle.

Scale 1:750,000



**Figure 2D.** Gravity stations in the western half of the Los Angeles quadrangle.

Scale 1:750,000



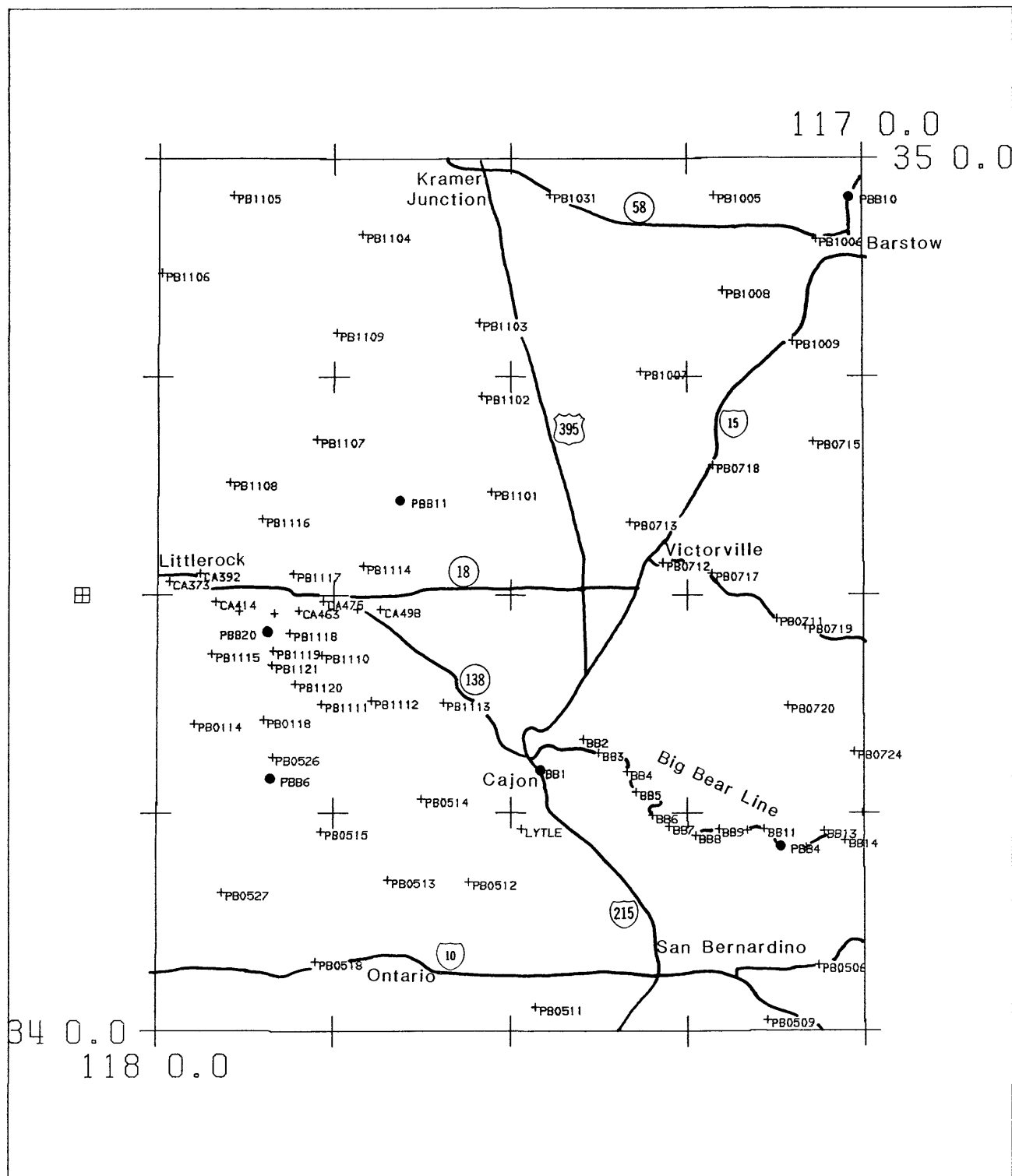
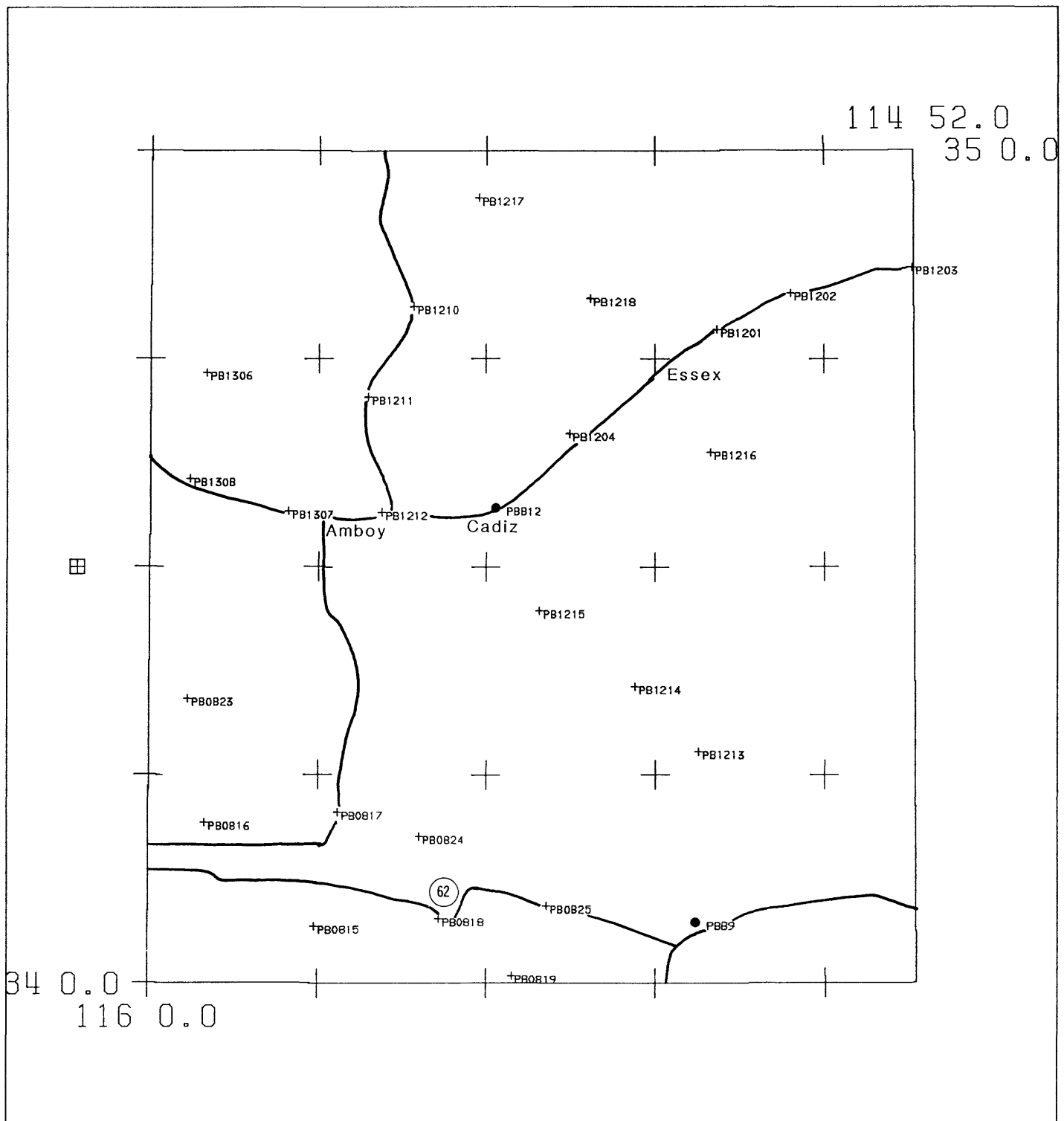


Figure 2F. Gravity stations in the western half of the San Bernardino quadrangle.

Scale 1:750,000

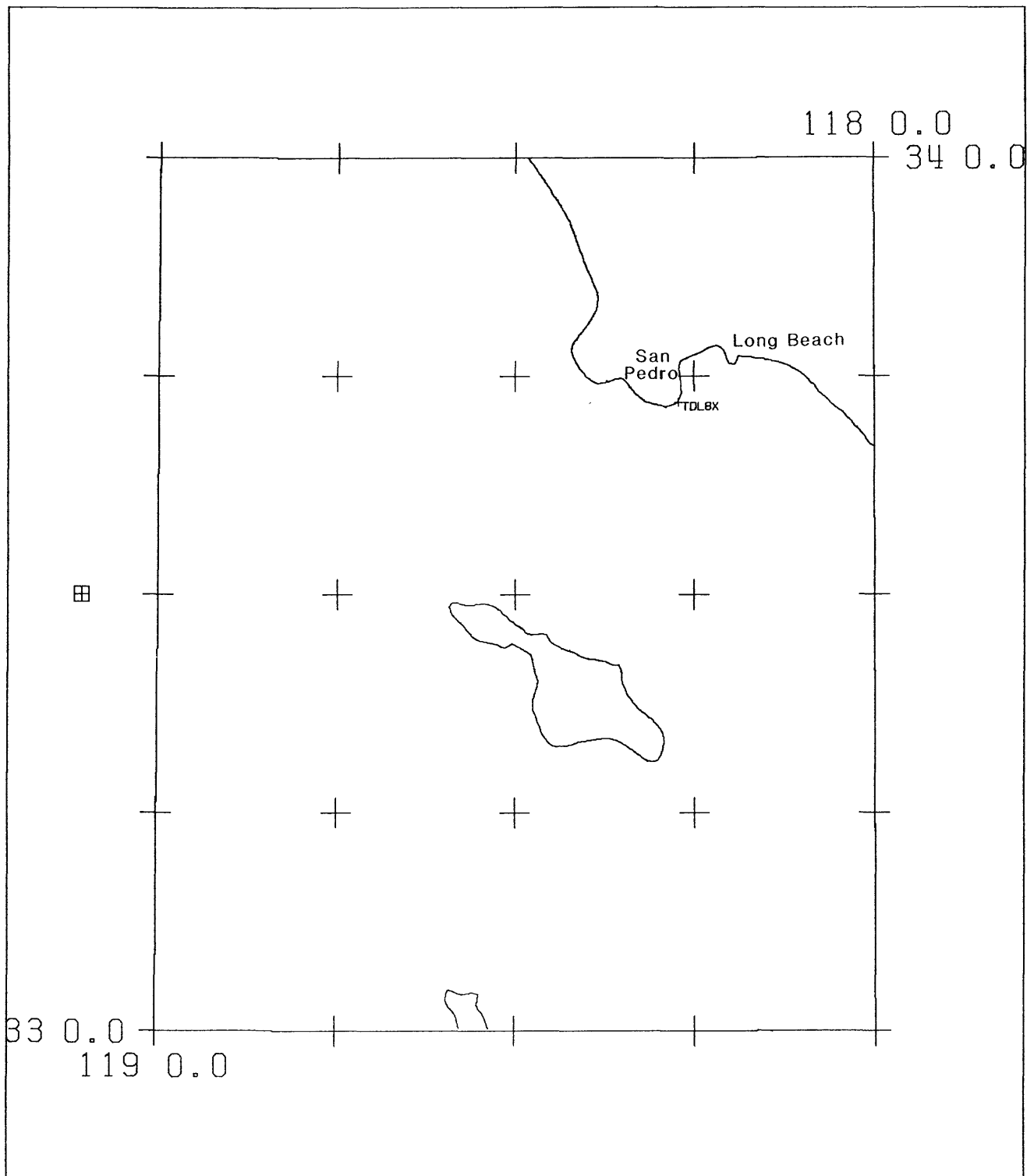






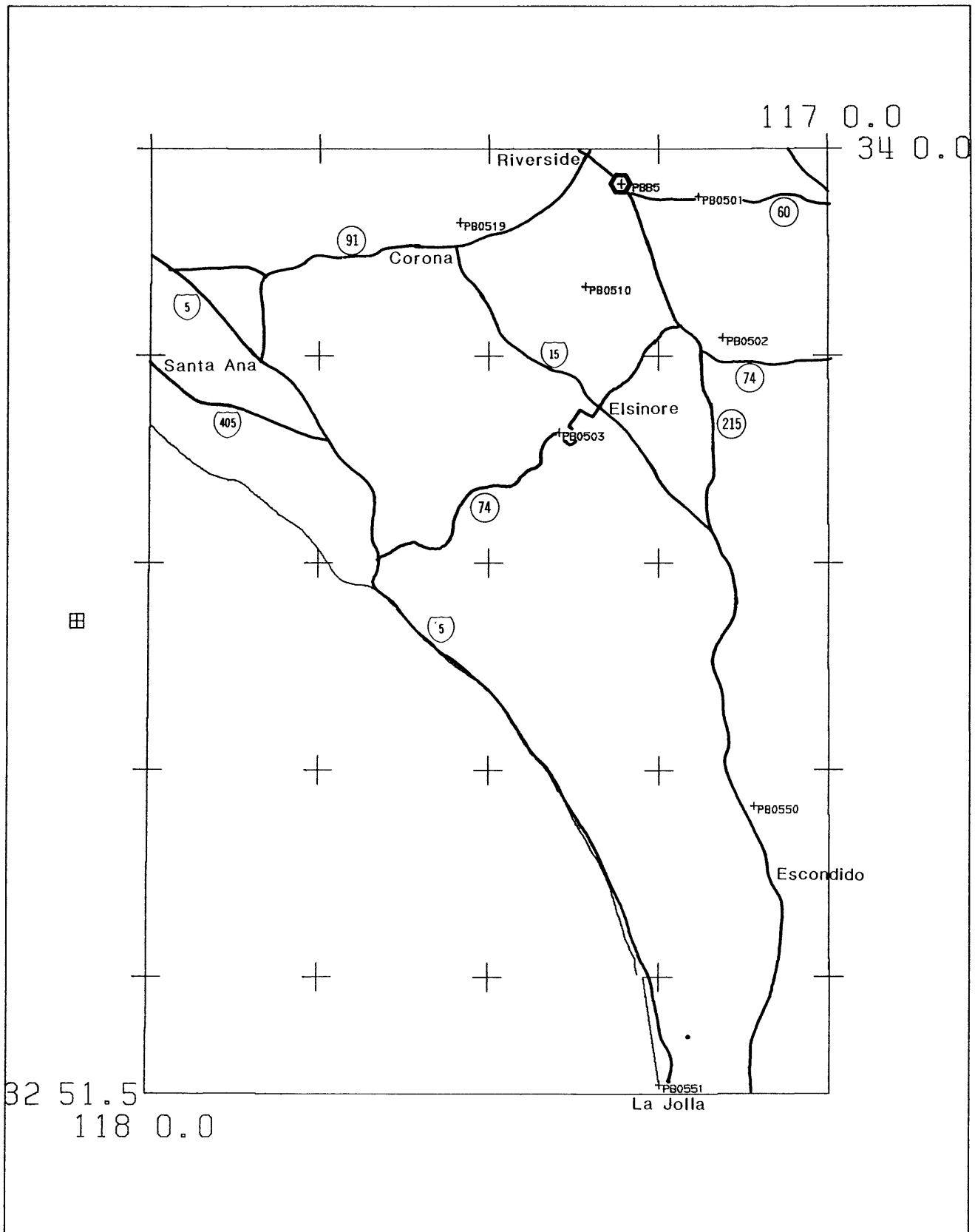
**Figure 2H.** Gravity stations in the western portion of the Needles quadrangle.

Scale 1:750,000



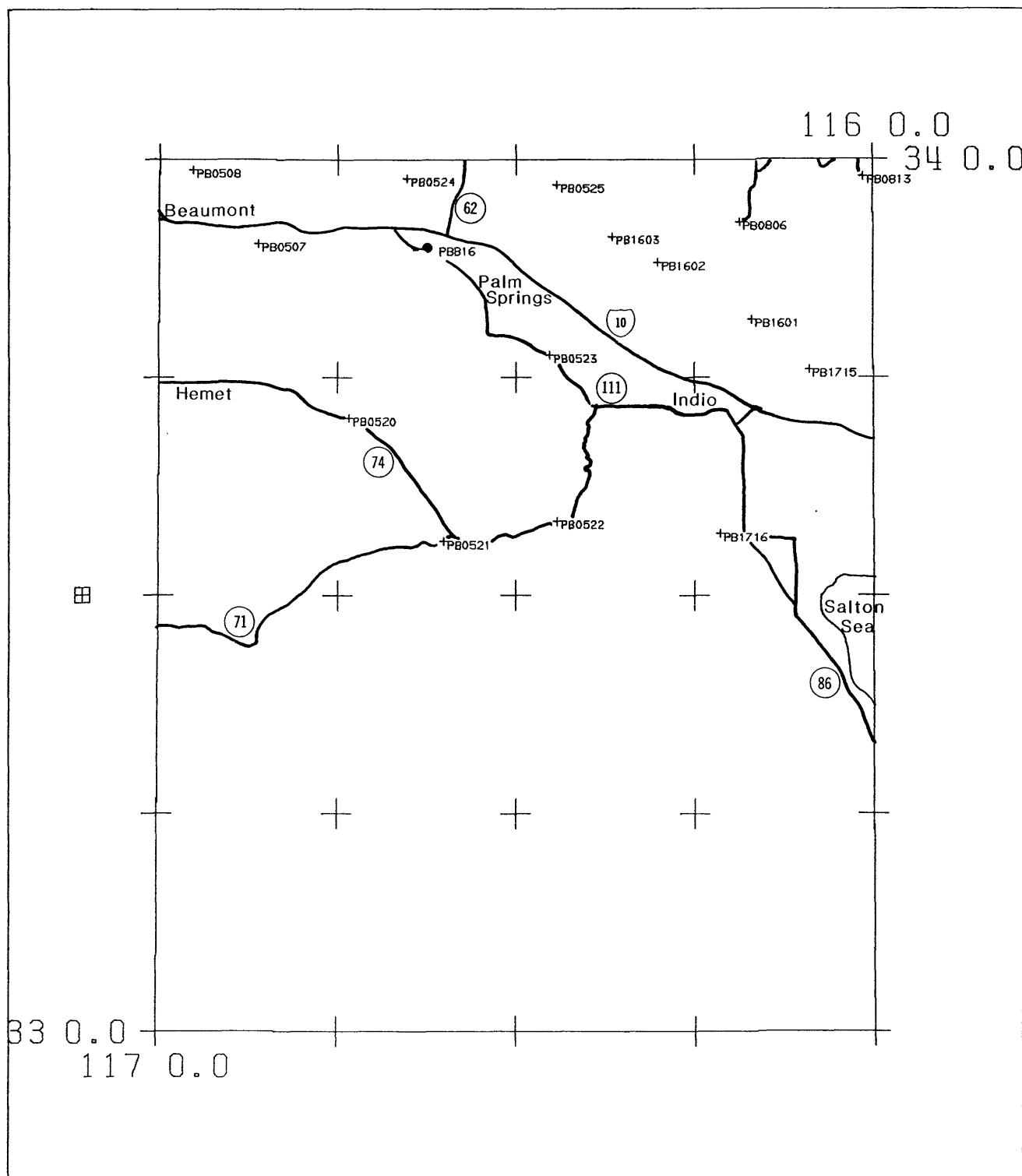
**Figure 2I.** Gravity stations in the eastern half of the Long Beach quadrangle.

Scale 1:750,000



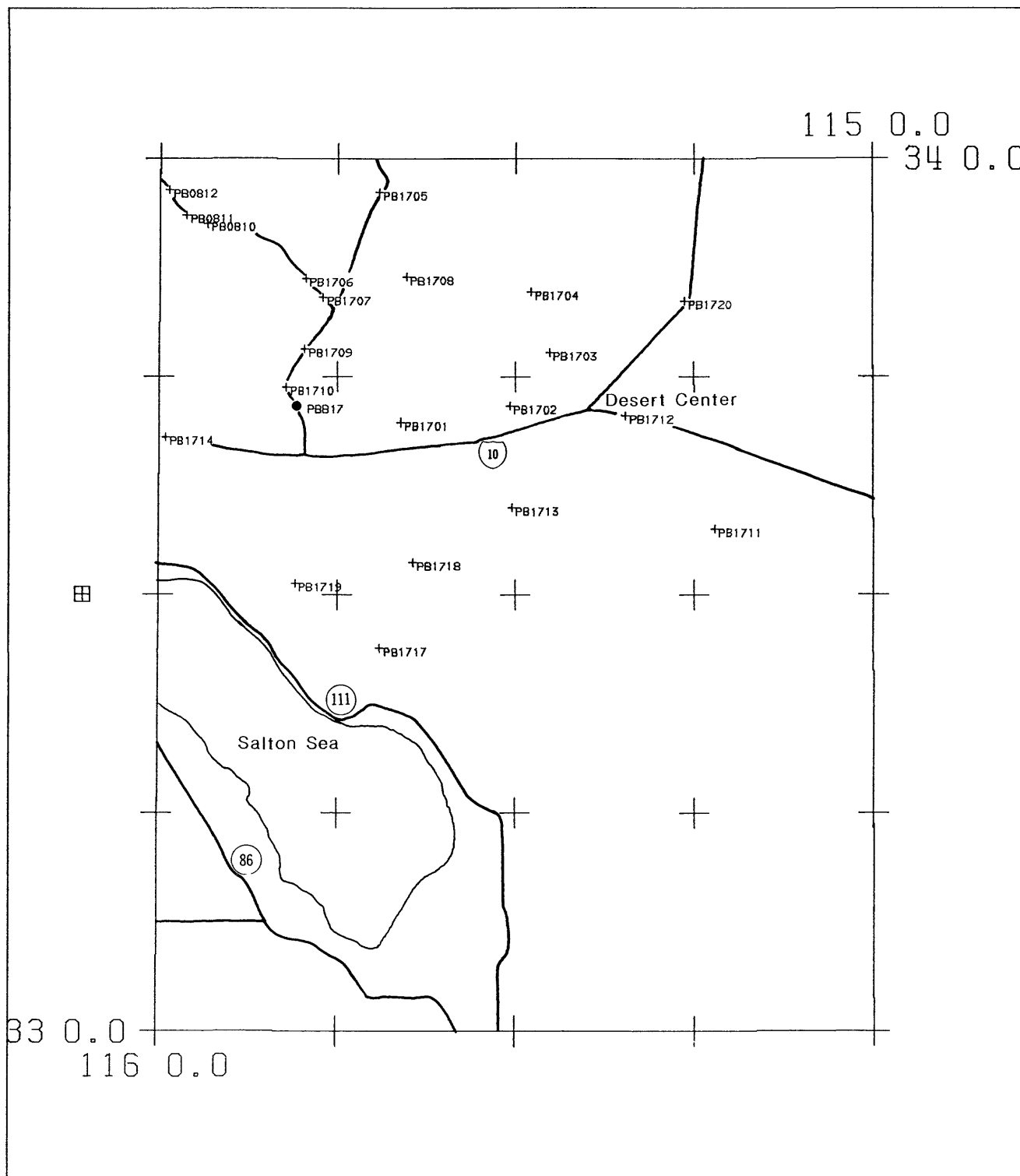
**Figure 2J.** Gravity stations in the western portion of the Santa Ana and San Diego quadrangles.

Scale 1:750,000



**Figure 2K.** Gravity stations in the eastern half of the Santa Ana quadrangle.

Scale 1:750,000



**Figure 2L.** Gravity stations in the western half of the Salton Sea quadrangle.

Scale 1:750,000