Homer, about 1.5 miles east of, opposite first pole west of milepole 600, 17.3 meters north of center of track of Atchison, Topeka & Santa Fe Ry., 1.3 meters from east post of a rail rack; red metal cap on iron post (U. S. C. & G. S. b. m. Jₙ) 2,002.578

Ibis, 33.33 meters south of Atchison, Topeka & Santa Fe Ry. station, 26.57 meters south of center of main track, 23.17 meters west of a small storehouse belonging to a mining company; red metal cap on iron post (U. S. C. & G. S. b. m. Kₜ) 1,453.790

Java, 3 miles west of, 2 poles east of milepole 588, 3.09 meters south of center of track of Atchison, Topeka & Santa Fe Ry.; in surface of concrete retaining wall at south end of east abutment of bridge D588; copper bolt (probably moved by the railroad in 1911) (U. S. C. & G. S. b. m. Lₖ) 1,141.083
NEEDLES QUADRANGLE
SAN BERNARDINO COUNTY

Precise leveling by U.S. Coast and Geodetic Survey

East along Atchison, Topeka & Santa Fe Ry.

Java, 0.5 mile west of, near milepole 585\(\frac{1}{4}\), 3.1 meters south of center of track, 4\(\frac{1}{2}\) rails east of bridge B586; red metal cap on iron post (probably moved by the railroad in 1911) (U. S. C. & G. S. b. m. M)

Hartoum, near west switch, opposite a rail rack, 12.32 meters south of center of track; red metal cap on iron post (U. S. C. & G. S. b. m. N)

Needles, 58 meters south of south track, at north front of recreation hall for railroad employees, in center line of a landing of stone steps leading to main entrance; cross on an iron bolt half an inch in diameter, set flush with concrete and lettered "U. S. B. M."

Needles, in park west of El Garces Hotel (this bench mark has been destroyed). (U. S. C. & G. S. b. m. P)

Needles, at northeast corner of El Garces Hotel, in north face of concrete column, 1.04 meters above sidewalk; red metal disk (U. S. C. & G. S. b. m. Q)

Needles astronomic station, at Needles, at corner of Third and D streets, in a wooden observing shed, 12 meters southeast of Catholic church, in center of top of a concrete observing pier, 1\(\frac{1}{2}\) by 2 feet, projecting 2 feet above ground; bronze tablet of the U. S. Geological Survey, stamped "496 NE"

Needles, on a hill south of town, on summit of west end of hill, 56 meters southwest of southwest corner of large stone and brick school building, on top of a 1\(\frac{1}{2}\) inch iron bar, projecting several inches from top of a concrete pier, 1 by 1\(\frac{1}{2}\) feet, standing 2 feet above ground; cross mark (probably destroyed) (U. S. C. & G. S. b. m. Bar)

Needles, 5 miles south of, 7 poles south of milepole 573, 5.07 meters east of center of track, in coping stone at northeast corner of masonry culvert C574; copper bolt (U. S. C. & G. S. b. m. R)

Needles, 5 miles south of, 1.65 meters from milepole 573, 11.6 meters west of center of railroad track; bronze cap riveted on iron post (U. S. G. S. b. m. 473)

Needles, 5 miles south of, 1 pole south of milepole 573, in east end of north abutment of bridge 1573, 4.42 meters east of center of track, 10 centimeters from face of coping; red metal disk (U. S. C. & G. S. b. m. S)

Beal, 3 miles south of, 2 poles south of milepole 569, 5.58 meters west of center of track, in west end of north abutment of bridge E569, 30 centimeters from face and 30 centimeters from end of coping; copper bolt (U. S. C. & G. S. b. m. T)

Beal, 5 miles south of, 4\(\frac{1}{2}\) poles south of milepole 567, in coping at northeast corner of bridge C567 of Atchison, Topeka & Santa Fe Ry., 4.34 meters east of center of track, 53 centimeters from face of coping; copper bolt (U. S. C. & G. S. b. m. U)
Beal, about 5 1/2 miles south of, in coping stone at northwest corner of large steel cantilever bridge of Atchison, Topeka & Santa Fe Ry. over Colorado River, 2.24 meters north of center of track, 2.78 meters from north side and 50 centimeters from east side of coping stone; red metal disk (U. S. C. & G. S. b. m. V). 504. 526

Primary leveling by H. Morrison, E. W. Glafecke, and S. E. Blout in 1902

From Liverpool Landing north along California side of Colorado River to Mellen, Ariz.

Mellen, 15 miles southeast of, 0.45 mile west of river, 10 feet east of foot of mesa, in open flat; iron post stamped "431 Y" 431. 547

Chemehuevis Valley, 2.5 miles northeast of triangulation signal at the northern end (California side) of, 600 feet west of Colorado River, near Mohave Rock; iron post stamped "437 Y" 438. 960

From Mellen northwest along Atchison, Topeka & Santa Fe Ry. to Needles

Needles, 4.25 miles south of, on west side of railroad, 6 feet east of milepost 373; iron post stamped "437 Y 1903" (recovered by U. S. C. & G. S.) 473. 992

Near Needles

Needles, Santa Fe station, at road crossing opposite dining room, west front; top of rail 481. 520

Needles, U. S. Coast and Geodetic Survey East Base, in stone monument; bronze tablet stamped "467 Y 1903" 467. 166

Needles, U. S. Coast and Geodetic Survey West Base, in top of stone monument; copper bolt stamped "U. S. G. S. B. M. 490" 490. 956

Needles, U. S. Coast and Geodetic Survey stone monument, on Knoll triangulation station; point on southeast corner, stamped "U. S. G. S. B. M. 680" 680. 131

Needles, west corner of schoolhouse grounds, in top of concrete monument; iron pipe stamped "552 Y 1903" (by U. S. C. & G. S.) 552. 364

Needles, U. S. Coast and Geodetic Survey monument in Catholic churchyard; bronze tablet stamped "503 Y 1903" (by U. S. C. & G. S.) 503. 506

From Needles north 9 miles (part of circuit to Fort Mohave)

Needles, 3 miles northwest of, in sec. 13, T. 9 N., R. 22 E., on west side of road west of river; iron post stamped "482 Y" 482. 368

Needles, 8 miles northwest of, in sec. 22, T. 9 N., R. 22 E., on east side of road west of river; iron post stamped "488 Y" 488. 339

From Needles south along road to West Well

Needles, 5 miles south of, in sec. 20, T. 8 N., R. 23 E., on east side of road leading to Parker; iron post stamped "737 Y" 737. 991

Needles, 10 miles south of, in sec. 7, T. 7 N., R. 23 E., on east side of road leading to Parker; iron post stamped "1215 Y" 1,215. 367

Needles, 15 miles south of, on west side of road leading to Parker; iron post stamped "1933 Y" 1,934. 152

Needles, 20 miles south of, on west side of road leading to Parker; iron post stamped "1906 Y" 1,906. 584

Needles, 25 miles south of, 8 miles northwest of West Well, on west side of road; iron post stamped "1613 Y" 1,613. 262
SPIRIT LEVELING IN CALIFORNIA, 1896–1923

From Needles northwest along Atchison, Topeka & Santa Fe Ry. to Klinefelt

Java, 7 miles northwest of Needles, 50 feet east of section house at Java station; iron post stamped “968 Y”-----------------------------------
Klinefelt station, west side of track, opposite station signboard; iron post stamped “1213 Y”-----------------------------------

PARKER QUADRANGLE
[Latitude 34°–34° 30’; longitude 114°–114° 30’] RIVERSIDE AND SAN BERNARDINO COUNTIES

Primary leveling by E. W. Glafcke and S. E. Blout in 1902–3

Northeast along road to point opposite Bill Williams Fork, thence northwest along road to Liverpool Landing

Parker, 13.5 miles southwest of, 0.5 mile west of river landing of Right & Lawrence Mining Co., 1.5 miles east of Riverside Mountain, top of mesa, in large boulder set in ground; bronze tablet stamped “405 Y”-----------------------------------
Parker, 8 miles southwest of, 0.25 mile west of river, opposite center of large island, at head of big draw, on mesa; iron post stamped “415 Y”-----------------------------------
Parker, 3.5 miles west of, 600 feet west of river, 400 feet due west of triangulation point, top of mesa, on edge of same; iron post stamped “410 Y”-----------------------------------
Bill Williams Fork, 15.1 miles south of, 200 feet west of river, on east slope of mesa, 100 feet west of trail; iron post stamped “372 Y”-----------------------------------
Bill Williams Fork, 10 miles south of, at lower end of Empire Flats, 700 feet west of river, 600 feet east of mesa, in open flat; iron post stamped “370 Y”-----------------------------------
Bill Williams Fork, 4.6 miles south of, 800 feet west of big bend in river at point in cliffs, lower end of Empire Flats (California side), in saddle; iron post stamped “412 Y”-----------------------------------
Bill Williams Fork, 1,200 feet due west of mouth of, 60 feet west of river, on west bank, on large mound of rock, in ledge at foot of cliffs; bronze tablet stamped “400 Y”-----------------------------------
Pete McGuire, 300 feet north of (California side of river); iron post stamped “401 Y”-----------------------------------
Mellen, Ariz., 35 miles southeast of, 2.45 miles south of Tom Drennis’s stamp mill, 300 feet west of river, on east slope of mesa, in boulder; bronze tablet stamped “414 Y”-----------------------------------
Mellen, 30 miles southeast of, on west bank (California side) of river; bronze tablet stamped “417 Y”-----------------------------------
Chemehuevis Valley, lower end of, west bank of river, on point of mesa; iron post stamped “437 Y”-----------------------------------

From Liverpool Landing southwest to West Well

West Well, in Chemehuevis Valley, on east side of road to Parker, 50 feet north of pump; iron post stamped “762 Y”-----------------------------------

From point 11 miles south of West Well southeast to Parker, Ariz.

West Well, 11 miles south of, on west side of road, on summit of mountain; iron post stamped “1888 Y”-----------------------------------
West Well, 15 miles south of, on west side of road; iron post stamped “1402 Y” 1,402.097
West Well, 21 miles south of, 5 miles west of Colorado River at point opposite Parker, on east side of road; iron post stamped “849 Y” 848.520

VIDAL QUADRANGLE
[Latitude 34°–34° 30’; longitude 114°–114° 30’]
RIVERSIDE AND SAN BERNARDINO COUNTIES
Primary leveling by S. E. Blout in 1903

From Needles to West Well, thence 11 miles south

West Well, 3 miles northwest of, on west side of road; iron post stamped “1048 Y” 1,048.925
West Well, 5 miles southwest of, on east side of road; iron post stamped “1282 Y” 1,233.121