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UNITED STATES GEOLOGICAL SURVEY

GEORGE OTIS SMITH, DIRECTOR

BULLETIN 487

RESULTS OF SPIRIT LEVELING
IN IDAHO

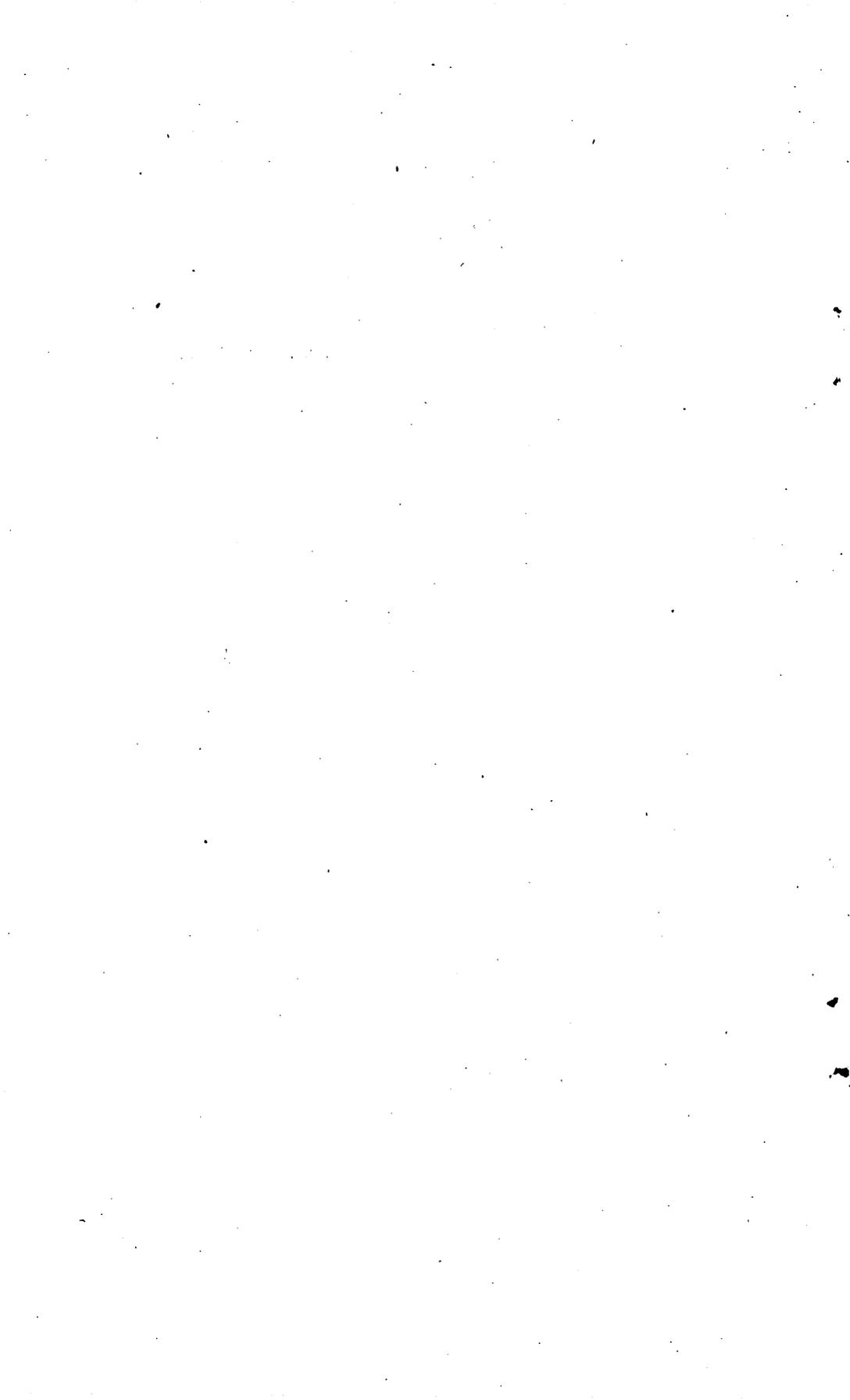
1896 TO 1909, INCLUSIVE

R. B. MARSHALL, CHIEF GEOGRAPHER



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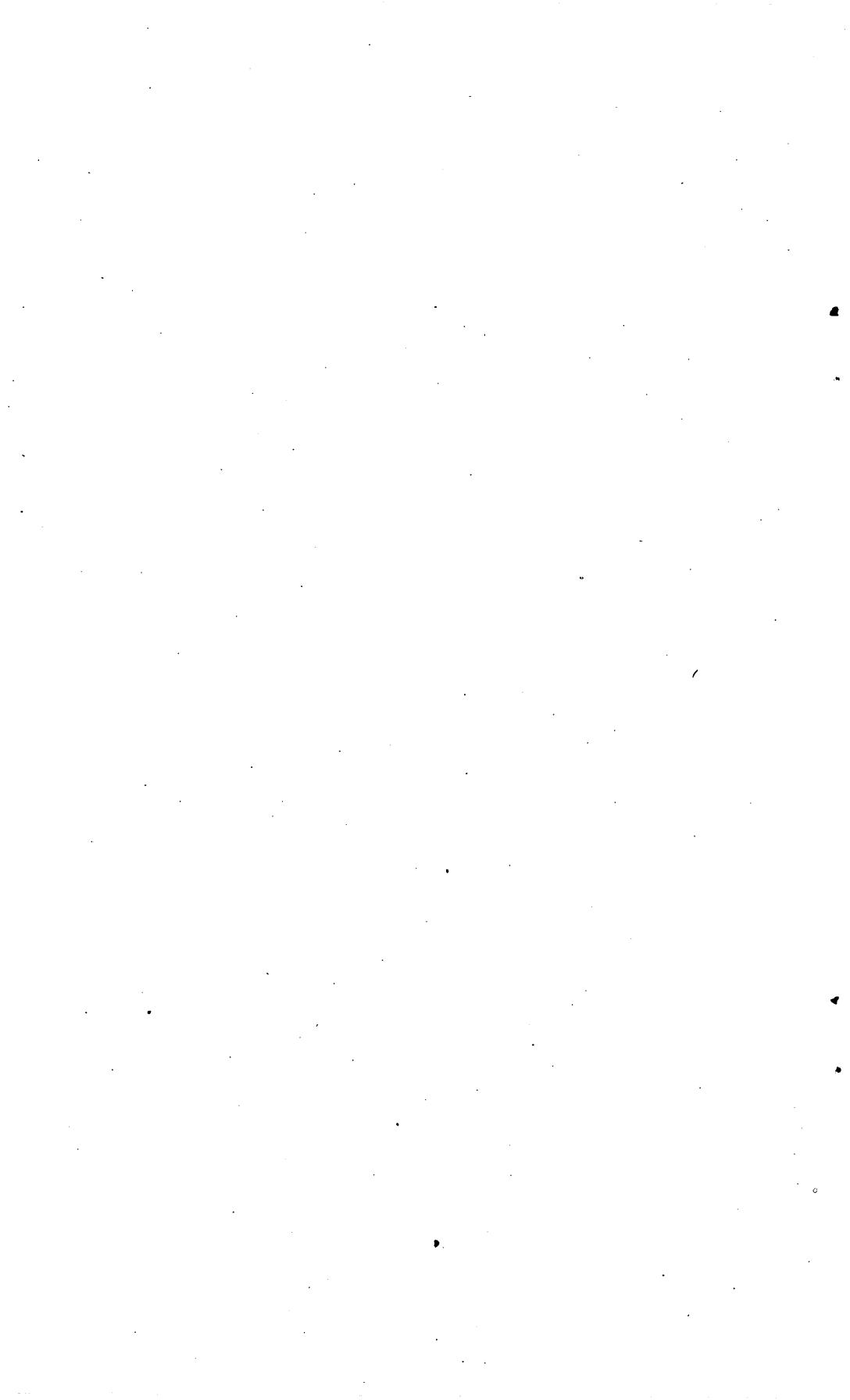


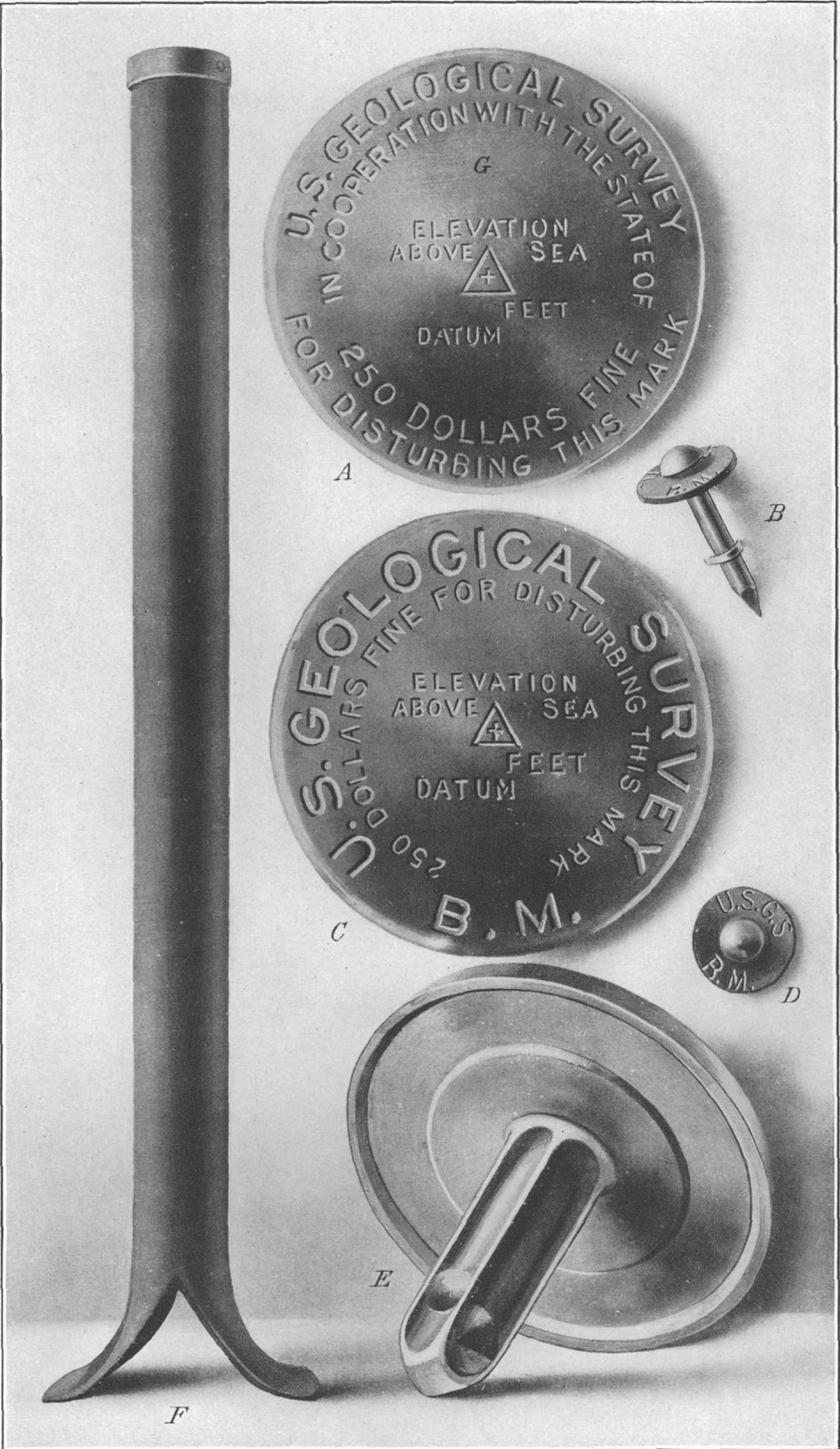
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GEOLOGICAL SURVEY BENCH MARKS.

A, Tablet used in cooperating States. The State name is inserted at G.
 B and D, Copper temporary bench mark, consisting of a nail and copper washer.
 A, C, and E, Tablets for stone or concrete structures.
 F, Iron post used where there is no rock.

RESULTS OF SPIRIT LEVELING IN IDAHO, 1896 TO 1909, INCLUSIVE.

R. B. MARSHALL, Chief Geographer.

INTRODUCTION.

Scope of the work.—All results of spirit leveling in Idaho previously published by the United States Geological Survey and all results of later work in the State are included in this report, rearranged by quadrangles. Most of the elevations are based on the precise-level line of the United States Coast and Geodetic Survey from Seattle, Wash., via Pocatello, Idaho, to Evanston, Wyo., from the preliminary adjustment by that bureau in 1911.

Personnel.—The field work previous to 1903 was done under the general direction of R. U. Goode, geographer; that for 1903 to 1906, inclusive, under E. M. Douglas, geographer; that for 1907 under R. B. Marshall, geographer; and the later work under T. G. Gerdine, geographer, under the general direction of R. B. Marshall, chief geographer. Credit is given to the different levelmen in the introduction to each list. The office work of computation, adjustment, and preparation of lists was done mainly by S. S. Gannett, geographer, and D. H. Baldwin, topographer, and since 1907 under the general direction of E. M. Douglas, geographer.

Classification.—The elevations are classified as precise or primary, according to the methods employed in their determination. For precise lines instruments and rods of the highest grade are used, each line is run in both forward and backward directions, and every precaution is taken to guard against error. The allowable divergence between the forward and the backward lines in feet is represented by the formula $0.017\sqrt{D}$, in which D is the distance in miles between bench marks. For primary lines standard Y levels are used; lines are run in circuits or are closed on precise lines, with an allowable closing error in feet represented by the formula $0.05\sqrt{D}$, in which D is the length of the circuit in miles, sufficient care being given the work to maintain this standard. For levels of both classes careful office adjustments are made, the small outstanding errors being distributed over the lines.

Bench marks.—The standard bench marks are of two forms. The first form is a circular bronze or aluminum tablet (*C* and *E*, Pl. I), $3\frac{1}{2}$ inches in diameter and one-fourth inch thick, having a 3-inch stem, which is cemented in a drill hole in solid rock, in the wall of some public building, in a bridge abutment, or in other substantial masonry structure. The second form (*F*, Pl. I), employed where masonry or rock is not accessible, consists of a hollow wrought-iron post $3\frac{1}{2}$ inches in outer diameter and 4 feet in length after being split at the bottom and expanded to 10 inches in order to give a firm bearing on the earth. A bronze or aluminum-bronze cap is riveted over the top of the post, which is set about 3 feet in the ground. A third style of bench mark with abbreviated lettering (*B* and *D*, Pl. I) is used for unimportant points. This consists of a special copper nail $1\frac{1}{2}$ inches in length driven through a copper washer seven-eighths of an inch in diameter.

The tablets, as well as the caps on the iron posts, are appropriately lettered, and for cooperating States the fact of such cooperation is indicated by the addition of the State name (*G*, Pl. I). The numbers stamped on the bench marks described in the following pages represent the elevations to the nearest foot as determined by the levelman. These numbers are stamped with $\frac{3}{16}$ -inch steel dies on the tablets or post caps, to the left of the word "feet." The office adjustment of the notes and the reduction to mean sea-level datum may so change some of the figures that the original markings are 1 or 2 feet in error. It is assumed that engineers and others who have occasion to use the bench-mark elevations will apply to the Director of the United States Geological Survey, at Washington, D. C., for the adjusted values, and will use the markings as identification numbers only.

Datum.—All United States Geological Survey elevations are referred to mean sea level, which is the level that the sea would assume if the influence of winds and tides were eliminated. This level is not the elevation determined from the mean of the highest and the lowest tides, nor is it the half sum of the mean of all the high tides and of the mean of all the low tides, which is called half-tide level. *Mean sea level is the average height of the water, all stages of the tide being considered.* It is determined from observations made by means of tidal gages placed at stations where local conditions, such as long, narrow bays, rivers, and like features, will not affect the height of the water. To obtain even approximately correct results these observations must extend over at least one lunar month, and if great accuracy is desired they must extend over several years. At ocean stations half-tide level and mean sea level usually differ but little. It is assumed that there is no difference between the mean sea level as determined from observations in the Atlantic Ocean, the Gulf of Mexico, or the Pacific Ocean.

The connection with tidal stations for bench marks in certain areas that lie at some distance from the sea coast is still uncertain, and this fact is indicated by the addition of a letter or a word to the right of the word "Datum" on tablets or posts. For such areas corrections of published results will be made from time to time as the precise-level lines of the United States Geological Survey or other Government organizations are extended.

Topographic maps.—Maps of the following quadrangles wholly or partly in Idaho have been published by the United States Geological Survey up to August 1, 1911. They may be obtained, except as noted, for 5 cents each or \$3 a hundred, on application to the Director of the Survey at Washington, D. C.

Bear Valley.	Mountain Home.
Bisuka.	Nampa (Idaho-Oregon).
Boise.	Oakesdale (Washington-Idaho).
Camas Prairie.	Pullman (Idaho-Washington).
Cœur d'Alene special (Idaho-Montana)	Rathdrum.
(10 cents).	Rocky Bar.
Garden Valley.	Sandpoint.
Hailey.	Sawtooth.
Hamilton (Montana-Idaho).	Silver City.
Idaho Basin.	Spokane (Washington-Idaho).
Meadows.	Squaw Creek.
Mitchell Butte (Oregon-Idaho).	Weiser (Idaho-Oregon).

PRECISE LEVELING.

Birch Creek and Weiser quadrangles.

CANYON AND WASHINGTON COUNTIES.

The elevations in the following list are results of a line of precise leveling begun at Huntington, Oreg., and run southeast along the Oregon Short Line Railroad in Idaho to Ontario, Oreg. This line was redetermined by the Coast and Geodetic Survey, being part of its transcontinental line of precise leveling, and was corrected to accord with the heights obtained by the preliminary 1911 adjustment.

The double simultaneous method of leveling was employed, using a Van Orden type of precise level and special rods.

The leveling was done in 1903 by C. H. Semper.

For results along this line in Oregon see Bulletin 462.

BIRCH CREEK QUADRANGLE.

Point near Huntington, Oreg., south along Oregon Short Line Railroad to Eaton, Idaho.

Huntington, 5.2 miles east of, on north side of railroad, at first telegraph pole west of milepost 536, 8 feet from fence; iron post stamped "2069 H"	Feet. 2, 076. 919
Huntington, 8.1 miles east of, between track and milepost 533, 18 feet east of track; iron post stamped "2070 H"	2, 077. 363
Old's Ferry, 2.2 miles east of, on north side of railroad, 70 feet west of seventh telegraph pole east of milepost 530, 10 feet north of track; iron post stamped "2086 H"	2, 093. 395

Old's Ferry, 5.2 miles east of, on north side of railroad, 15 feet east of fifth telegraph pole east of milepost 527, 10 feet north of track; iron post stamped "2087 H".....	Feet. 2,094.325
Eaton, at road crossing; top of rail.....	2,104.0
Eaton, 0.3 mile southeast of, at mile post 524, on west side of track, at fence line; iron post stamped "2097 H".....	2,104.291

WEISER QUADRANGLE.**Eaton along Oregon Short Line Railroad to point 2.2 miles south of Payette.**

Eaton, 3.2 miles southeast of, first telegraph pole west of milepost 521, at fence line; iron post stamped "2122 H".....	2,129.792
Weiser, 13.6 feet west of new station, 41.3 feet north of track, just inside of park, on fence line; iron post stamped "2107 H".....	2,115.833
Weiser, in front of station; top of rail.....	2,113.8
Weiser, 3.3 miles south of, 4 feet north of milepost 515, west of track; iron post stamped "2113 H".....	2,120.494
Weiser, 6.3 miles south of, first telegraph pole south of milepost 512, at fence line, west of track; iron post stamped "2112 H".....	2,119.775
Crystal, in front of station sign; top of rail.....	2,122.9
Crystal, 2.6 miles south of, west of track, first telegraph pole north of milepost 509, at fence line; iron post stamped "2123 H".....	2,130.752
Payette, 0.9 mile north of, west of track, at fence line, 27 feet south of milepost 506; iron post stamped "2139 H".....	2,146.328
Payette, in front of station; top of rail.....	2,147.2
Payette, 2.2 miles south of, 285 feet south of milepost 503, 10 feet east of track; iron post stamped "2139 H".....	2,147.104

PRIMARY LEVELING.**Cambridge, Meadows, Squaw Creek, and Weiser quadrangles.****BOISE AND WASHINGTON COUNTIES.**

The elevations in the following list are based on the preliminary 1911 adjusted elevation of Bench Mark G₆ of the Coast and Geodetic Survey at Weiser, Idaho, on the transcontinental line of precise levels..

The leveling in the Squaw Creek quadrangle was done by D. A. Maxwell in 1907, and that in the other quadrangles by Maxwell and J. G. Hefty in the same year. A check line was run in the Weiser quadrangle in 1908 by W. B. Jones.

WEISER QUADRANGLE.**Weiser along Pacific & Idaho Northern Railway east 11.7 miles (checked line), thence north to Midvale (mean of direct and reverse lines).**

Weiser, in west wall of brick building occupied by the Masonic Lodge, 9.84 feet (3 meters) north of the southwest corner and 3.94 feet (1.2 meters) above ground; copper bolt leaded in wall, stamped "U. S. B. M." (Coast and Geodetic Survey B. M. G ₆). The Coast and Geodetic Survey description gave this location incorrectly as the northwest corner.....	Feet. 2,121.516
Weiser, in west wall of brick courthouse at Oldtown, about 1 mile east of railroad station; red metal disk lettered "Coast and Geodetic Survey B. M. H ₆ ," set flush with surface.....	1 2,118.520

¹ The corner of building is cracked from settling, just above the bench mark. The Coast and Geodetic Survey elevation of 2,118.234 feet was therefore not accepted.

Weiser, 2 miles east of, 10 feet south of track, in foot of milepost 2; spike head flush with ground.....	Feet. 2, 117. 79
Weiser, 3.8 miles east of, 50 feet north of track, at edge of right of way, opposite milepost 4; iron post stamped "2136 W".....	2, 136. 487
Weiser, 5 miles east of, south side of track, in foot of milepost 5; spike....	2, 148. 81
Weiser, 5.8 miles east of, south side of track, in foot of milepost 6; spike....	2, 159. 09
Weiser, 6.8 miles east of, 50 feet north of track, at edge of right of way, opposite milepost 7, 30 feet east of wagon road crossing railroad at right angles, about 300 feet north of large yellow house; iron post stamped "2167 W".....	2, 167. 278
Weiser, 9.8 miles east of, 50 feet north of track, opposite milepost 10, at mouth of Weiser River Canyon, 1,000 feet southeast of unused smelter, in outcropping boulder; aluminum tablet stamped "2210 W".....	2, 210. 517
Weiser, 10.8 miles east of, 10 feet south of track, in foot of milepost 11; spike.....	2, 215. 92
Weiser, 12.9 miles northeast of, 9 feet west of track, 165 feet north of milepost 13, at foot of low retaining wall along upper side of grade, 100 feet from river, in top of large flat basalt boulder on east side of rocky bluff, 1,800 feet south of mouth of large stream from east; aluminum tablet stamped "2249 W".....	2, 250. 256
Weiser, 15.9 miles northeast of, opposite milepost 16, 40 feet south of track, near mound of rocks, in large basaltic boulder; aluminum tablet stamped "2275 W".....	2, 275. 217
Weiser, 19 miles northeast of, 600 feet north of milepost 19, north side of dry gulch, 50 feet west of track, on point of knoll, in volcanic boulder alongside mound of rocks; aluminum tablet stamped "2338 W".....	2, 338. 450
Midvale, 9.5 miles south of, 270 feet north of milepost 22, near mouth of Thousand Spring Creek, 10 feet west of track, in large volcanic boulder; aluminum tablet stamped "2373 W".....	2, 373. 131
Midvale, 8.5 miles south of, east side of track, in foot of milepost 23; spike..	2, 388. 26
Midvale, 6.5 miles south of, at sharp curve in track, 18 feet northeast of milepost 25, 24 feet east of track, between track and river, near mound of rocks, in top of large boulder; aluminum tablet stamped "2454 W".....	2, 454. 751
Midvale, 4.5 miles south of, east side of track, in base of milepost 27; spike.	2, 501. 66
Diamond Springs, in front of section house; top of rail.....	2, 506. 9
Midvale, 3.5 miles south of, 85 feet north of milepost 28, 14 feet east of track, beside a cairn of rock, top of volcanic boulder; aluminum tablet stamped "2514 W".....	2, 514. 811
Midvale, 1. 5 miles south of, 45 feet west of track, in base of telegraph pole (milepost 30); spike.....	2, 528. 32
Midvale, 0.5 mile south of, 45 feet west of track, in foot of telegraph pole (milepost 31); spike.....	2, 533. 11
Midvale, cement block building occupied by Bank of Washington County, at outer entrance, on south side and inner face of entrance, about 4.5 feet above floor; aluminum tablet stamped "2544 W".....	2, 544. 643
Midvale east along road to J. R. McMahan's ranch.	
Midvale, 3.5 miles east of, on Midvale-Indian Valley road, 1,000 feet east of Richard Gaber's ranch house, 80 feet south of road and 40 feet south of wire fence in field, in volcanic boulder, near mound of rock; aluminum tablet stamped "2724 W".....	2, 726. 181
Midvale, 7 miles east of, on Indian Valley-Midvale road, 10 feet south of road, in base of fencepost; 30-penny nail, aluminum tag.....	3, 210. 91

T. 13 N., R. 2 W., sec. 21, 10.7 miles west of Indian Valley-Midvale crossroads 1,000 feet east of ranch, 40 feet south of road, mound of rocks in top of volcanic boulder; aluminum tablet stamped "3292" W"	Feet. 3, 293. 930
T. 13 N., R. 2 W., secs. 23 and 24, 7.2 miles west of Indian Valley-Midvale crossroads, 40 feet south of county road, at J. R. McMahan's ranch, 200 feet north of house, in volcanic boulder; aluminum tablet stamped "3245 W"	3, 246. 789

CAMBRIDGE QUADRANGLE.

Midvale northeast along Pacific & Idaho Northern Railway to milepost 56.

Midvale, 3.2 miles north of, 9 feet north of telegraph milepost 35, 40 feet west of tract, 10 feet above and 40 feet north of small creek; iron post stamped "2587 W"	2, 587. 267
Midvale, 4.2 miles north of, 25 feet southwest of milepost 36, 75 feet west of tract; point on large boulder.....	2, 590. 46
Trestle 30, northeast corner; bolt head marked with chiseled cross (+).....	2, 596. 82
Midvale, 6.2 miles north of, 80 feet north of milepost 38, west side of track, in face of large volcanic boulder; aluminum tablet stamped "2620 W" ..	2, 620. 783
Midvale, 7.2 miles north of, 140 feet west of trestle 32, 450 feet south of mile- post 39, on slope of rock; chisel mark on rock.....	2, 623. 35
Cambridge, 70 feet north of station, at edge of right of way, corner of lot on south side of central boulevard, at edge of sidewalk; iron post stamped "2651 W"	2, 651. 347
Cambridge, 3.8 miles north of, 1,800 feet north of milepost 44, at short rock cut near end of long low spur from main ridge to west, 20 feet west of track, top of bank 8 feet above level of track, in outcropping rock; aluminum tablet stamped "2700 W"	2, 699. 919
Cambridge, 6.5 miles north of, 600 feet north of trestle 42 across small creek, at point of hill, 10 feet west of track, in cap of box culvert; drift bolt marked with chiseled cross.....	2, 718. 35
Cambridge, 7.5 miles north of, 1.5 miles south of Goodrich Creek, 120 feet east of telegraph pole marked "48 miles," 40 feet west of track, on vol- canic boulder 2.5 by 2.5 by 1 foot, near mound of rocks; aluminum tablet stamped "2736 W"	2, 735. 997
Cambridge, 8.5 miles north of, 150 feet south of milepost 49, 70 feet east of track in root of lone leaning cottonwood tree in field; nail.....	2, 736. 31
Council, 8.5 miles south of, 100 feet south of railroad bridge 47 across Weiser River, 20 feet west of track, in cement at surface of ground; aluminum tablet stamped "2782 W"	2, 782. 399
Council, 5.5 miles south of, 300 feet south of road crossing, 100 feet west of track; point on large boulder.....	2, 819. 25
Council, 5 miles south of, 20 feet west of milepost 55, 8 feet south of track, 100 feet west of trestle 49, in face of solid rock wall 20 feet high, 5 feet above ground, in cement wall flush with surface; aluminum tablet stamped "2860 W"	2, 859. 926

Bench marks established along Indian Valley-Van Wyck road, near Van Wyck.

T. 14 N., R. 2 E., in sec. 25, on Indian Valley road, Lookout Mountain, in volcanic boulder; aluminum tablet stamped "7811 W"	7, 812. 485
Van Wyck, 7.8 miles west of, in saddle 10 feet south of Van Wyck and In- dian Valley road, in pine tree; 30-penny nail.....	7, 379. 369
Van Wyck, 8.9 miles west of, on Van Wyck-Indian Valley road, 30 feet south of, in pine tree; 30-penny nail with aluminum tag.....	7, 020. 118
Van Wyck, 10.2 miles west of, on Van Wyck-Indian Valley road, 50 feet east of, in pine tree; nail.....	6, 565. 49

Van Wyck, 10.8 miles west of, near center of sec. 34, T. 14 N., R. 2 E., 30 feet north of Van Wyck-Indian Valley road, 150 feet south of Sheep Creek, in top of volcanic boulder; aluminum tablet stamped "6210 W"..... 6, 211. 754 Feet.

MEADOWS QUADRANGLE.

Milepost 56 north along Pacific & Idaho Northern Railway to triangulation station 2 miles north of Council.

Council, 4 miles south of, 10 feet east of track, in base of milepost 56; spike. 2, 916. 29
 Council, 2.5 miles south of, sec. 27, T. 16 N., R. 1 W., county road crossing, just north of Cottonwood Creek, 25 feet east of track, east of crossing signpost; iron post stamped "2939 W"..... 2, 940. 200
 Council, 300 feet southeast of station, at foot of and at north side of main street of town, in angle of sidewalk and cross walk; iron post stamped "2910 W"..... 2, 911. 164
 Council, in front of station; top of rail..... 2, 913. 9

Triangulation station 2 miles north of Council east along road to crossroads in T. 17 N., R. 3 E., thence northwest along road to Meadows, thence southwest to point near Council.

Council, 2.8 miles north of, on line between secs. 34 and 35, T. 17 N., R. 1 W., intersection of Council-Meadows and Mill Creek roads, 300 feet northeast of ranch house, west edge of road near fence; iron post stamped "3015 W"..... 3, 015. 880
 Council, 6.2 miles northeast of, 1,000 feet east of line between secs. 31 and 32, T. 17 N., R. 1 E., at August Baurer's sawmill, between house and sawmill, south side of road, 100 feet north of Mill Creek, in top of large boulder; aluminum tablet stamped "4023 W"..... 4, 024. 064
 Council, 7.8 miles east of, in fir tree 15 feet north of road; 20-penny spike... 4, 855. 77
 Council, 9.6 miles northeast of, near southwest corner of sec. 22, T. 17 N., R. 1 E., intersection of roads in saddle, 50 feet east of forks, 10 feet north of road, in volcanic boulder; aluminum tablet stamped "5612 W"..... 5, 613. 351
 Council, 10.1 miles northeast of, in base of pine tree 5 feet south of road; spike..... 5, 941. 18
 Council, 10.3 miles northeast of, in base of fir tree 6 feet south of road; spike. 6, 036. 48
 Council, 10.6 miles northeast of, NW. $\frac{1}{4}$ sec. 26, T. 17 N., R. 1 E., 50 feet east of road, on Miller Summit, at mound of rocks, in volcanic rock; aluminum tablet stamped "6208 W"..... 6, 208. 824
 Mill Creek Summit, 0.6 mile east of, in base of fir tree 3 feet south of road; spike..... 6, 281. 45
 Mill Creek Summit, 1.2 miles east of, in base of balsam tree 3 feet west of road; nail..... 6, 335. 57
 Mill Creek Summit, 1.8 miles east of, in fir tree 10 feet west of road; spike.. 6, 306. 59
 Mill Creek Summit, 3 miles northeast of, in balsam fir 10 feet south of road; 20-penny spike..... 6, 306. 69
 Mill Creek Summit, 3.6 miles east of, near quarter corner between secs. 6 and 31, Tps. 16 and 17 N., R. 2 E., 100 feet southeast of road, 100 feet west of east fork of Weiser River, in top of granite boulder; aluminum tablet stamped "6245 W"..... 6, 246. 098
 Mill Creek Summit, 4.5 miles east of, in tamarack tree 15 feet west of road; nail..... 6, 265. 44
 Mill Creek Summit, 5.4 miles northeast of, in pine tree 20 feet north of road; nail..... 6, 399. 06
 Mill Creek Summit, 6.6 miles east of, in base of fir tree 5 feet northeast of road; nail..... 6, 527. 29

	Feet.
T. 17 N., R. 2 E., NW. $\frac{1}{4}$ sec. 27, 120 feet east of road, mound of rocks, in saddle, in volcanic rock; aluminum tablet stamped "6521 W"	6, 522. 635
Long Valley Summit, 0.9 mile east of, in fir tree 10 feet west of road; nail . .	5, 976. 98
Long Valley Summit, 1.4 miles east of, in fir tree 10 feet east of road; nail . .	5, 534. 749
Long Valley Summit, 2.4 miles east of, in fir tree 10 feet north of road; nail . .	5, 006. 399
Long Valley Summit, 3.9 miles east of, SW. $\frac{1}{4}$ sec. 19, T. 17 N., R. 3 E., junction of Long Valley and Mill Creek roads, northeast corner of James Hartsel's fence, 1,700 feet east of house, 175 feet west of Payette River, 1,320 feet northeast of section corner; iron post stamped "4837 W"	4, 838. 393
Long Valley Summit, 5.3 miles east of, corner of secs. 18, 19, 29, and 30, T. 17 N., R. 3 E., in base of southeast corner fence post, at crossroads; nail with aluminum tag	4, 889. 32
Long Valley Summit, 8.3 miles east of, sec. 22, T. 17 N., R. 3 E., 500 feet south of log house, 5 feet north of road, at southeast corner of fence; iron post stamped "4897 W"	4, 898. 520
Long Valley Summit, 12.2 miles northeast of, in sec. 33, T. 18 N., R. 3 E., 50 feet southeast of road, in Sam Shaw's field, about 1,200 feet north of Tom Yount's house, 1,600 feet east of Gabriel Maenpad's house, in top of granite boulder; aluminum tablet stamped "5029 W"	5, 030. 273
Long Valley Summit, 14.2 miles northeast of, in base of pine tree 10 feet west of road; nail	5, 093. 13
Long Valley Summit, 14.9 miles northeast of, in pine tree 10 feet west of road; nail	5, 073. 85
Old Lardo, sec. 9, T. 18 N., R. 3 E., 16.4 miles northeast of Long Valley Summit, south end of Payette Lake, 500 feet south of McCall Hotel, 200 feet north of sawmill, 20 feet south of road, in top of volcanic boulder, near mound of rocks; aluminum tablet stamped "5030 W"	5, 030. 771
Old Lardo, in front of McCall Hotel; high-water mark	4, 990
Old Lardo; surface of water, Payette Lake, July 30, 1907	4, 985. 5
Lardo, 400 feet east of post office, in sec. 8, T. 18 N., R. 3 E., 17.5 miles northeast of Long Valley Summit, 100 feet south of Payette Lake, 50 feet south of Lardo-Roseberry road, in granite boulder; aluminum tablet stamped "5001 W"	5, 002. 114
Lardo, 1 mile west of, on Lardo-Meadows stage road, in yellow pine tree 25 feet south of road; nail	5, 050. 41
Lardo, 2 miles west of, on Lardo-Meadows stage road, in pine tree 20 feet west of road; nail	5, 180. 76
Lardo, 2.5 miles west of, sec. 1, T. 18 N., R. 2 E., on Lardo-Meadows stage road, on Payette River and Salmon Creek divide, about 80 feet north of road, 20 feet above road, in top of granite boulder; aluminum tablet stamped "5352 W"	5, 352. 766
Lardo, 3.7 miles west of, on Lardo-Meadows stage road, in black pine tree south of road; nail	5, 104. 89
Lardo, 4.8 miles west of, on Lardo-Meadows stage road, in pine tree east of road; nail	5, 052. 15
Lardo, 5.8 miles west of, near center of sec. 34, T. 19 N., R. 2 E., on Lardo-Meadows stage road, on Meadows Summit, in saddle 70 feet north of road, in top of granite boulder; aluminum tablet stamped "5093 W"	5, 093. 695
Lardo, 6.4 miles west of, on Lardo-Meadows stage road, in fir tree east of road; nail	4, 730. 80
Lardo, 7 miles west of, on Lardo-Meadows stage road, in pine tree north of road; nail	4, 354. 61
Meadows, south side of main street of town, north edge of sidewalk, northeast corner of porch at Meadows Hotel; iron post stamped "3975 W"	3, 976. 185

Meadows, 3.3 miles west of, on line between secs. 14 and 23, T. 19 N., R. 1 E., on Council-Meadows stage road, 0.4 mile west of Little Salmon River, 100 feet north of road, 800 feet northeast of sawmill, in rock beside mound of rocks; aluminum tablet stamped "3964 W"	Fect. 3,965.136
Meadows, 4.4 miles west of, in pine tree 10 feet south of Council-Meadows road; nail	4,030.62
Meadows, 5.4 miles west of, in pine tree north of Council-Meadows road; nail	4,020.16
Meadows, 6.9 miles west of, sec. 17, T. 19 N., R. 1 E., on Council-Meadows stage road, at north end of Price Valley, on summit between Little Salmon and Weiser rivers, 100 feet east of road, in top of volcanic rock near mound of rocks; aluminum tablet stamped "4186 W"	4,187.179
Meadows, 7.7 miles southwest of, in pine tree 15 feet west of Council-Meadows stage road; nail	4,143.94
Meadows, 9.9 miles southwest of, in pine tree 50 feet west of Council-Meadows stage road; nail	4,108.33
Meadows, 10.5 miles southwest of, in sec. 31, T. 19 N., R. 1 E., on Council-Meadows stage road, 1 mile south of Price Valley, 60 feet west of road, 50 feet north of small creek, at old sawmill site, in volcanic rock; aluminum tablet stamped "4089 W"	4,089.827
Meadows, 12.5 miles southwest of, in pine tree 60 feet west of Council-Meadows stage road; nail	3,945.95
Meadows, 13.8 miles southwest of, 100 feet east of railroad grade, 200 feet east of Weiser River, in fir tree; nail	3,972.05
Evergreen, at terminal of Pacific & Idaho Northern Railway, in north part of sec. 30, T. 18 N., R. 1 E., 150 feet east of track, 200 feet directly east of Record Commercial Co. store, in top of volcanic boulder; aluminum tablet stamped "3704 W"	3,704.697
Evergreen, 4.8 miles southwest of, sec. 2, T. 18 N., R. 1 W., 600 feet north of old sawmill, 300 feet north of track, at brow of hill, 200 feet northwest of log house, in volcanic boulder near mound of rocks; aluminum tablet stamped "3302 W"	3,302.880
Starkey (Hot Springs), in front of station; top of rail	3,165.8
Starkey (Hot Springs), sec. 34, T. 18 N., R. 1 W., 100 feet southeast of station, 80 feet south of track, in top of volcanic boulder; aluminum tablet stamped "3172 W"	3,172.610
Starkey (Hot Springs), 3.3 miles south of, sec. 15, T. 17 N., R. 1 W., 200 feet west of milepost 66, 400 feet south of house, 100 feet west of railway cut, in top of volcanic boulder near mound of rocks; aluminum tablet stamped "3065 W"	3,066.071
Crossroads in T. 17 N., R. 3 E., south along road via Roseberry to Van Wyck, thence west 11.7 miles.	
T. 17 N., R. 3 E., on line between secs. 23 and 26, 2.6 miles southeast of Lake Fork bridge, on Roseberry-Lardo stage road, 50 feet southeast of bridge across irrigation ditch 40 feet south of road; iron post stamped "4905 W"	4,905.924
Roseberry, near corner of secs. 11, 12, 13, and 14, T. 16 N., R. 3 E., in schoolhouse yard opposite post office; iron post stamped "4871 W"	4,872.034
Tps. 15 and 16 N., R. 3 E., corner of secs. 1, 2, 35, and 36, on Roseberry-Van Wyck stage road, northwest corner of schoolhouse yard, 300 feet southeast of Mr. Moore's house, 360 feet west of log house, in granite boulder; aluminum tablet stamped "4874 W"	4,875.462

Roseberry, 7.8 miles south of, near southwest corner of sec. 14, T. 15 N., R. 3 E., on Roseberry-Van Wyck stage road, 300 feet southwest of Joe Downing's house, 150 feet north of Dry Branch, 50 feet east of road, in volcanic boulder; aluminum tablet stamped "4822 W".....	Feet. 4, 823. 066
Roseberry, 11.4 miles south of, on line between secs. 2 and 3, T. 14 N., R. 3 E., on Roseberry-Van Wyck stage road, 0.5 mile south of Newton Marler house, 60 feet southeast of road, at corner of fence, in granite boulder; aluminum tablet stamped "4802 W".....	4, 802. 900
Van Wyck, on Main Street, at northeast corner of C. B. Fisher's general store; iron post stamped "4777 W".....	4, 778. 103
Van Wyck, 3.7 miles northwest of, near center of sec. 20, T. 14 N., R. 3 E., at road forks 100 feet west of sawmill road, 150 feet south of Van Wyck-Indian Valley road, near mound of rocks, in volcanic boulder; aluminum tablet stamped "4910 W".....	4, 910. 875
Van Wyck, 4.7 miles west of, in pine tree 10 feet north of Van Wyck-Indian Valley road; nail.....	5, 724. 41
Van Wyck, 5.8 miles west of, in pine tree 10 feet north of Van Wyck-Indian Valley road; nail.....	6, 156. 89
Van Wyck, 6.8 miles west of, 20 feet north of Van Wyck-Indian Valley road, in fir tree; nail.....	6, 801. 76

Van Wyck east 3.7 miles to Norris ranch.

Crawford, 1.8 miles east of Van Wyck, northeast corner of W. D. Patterson's yard, opposite post office, 100 feet from main street of town, in top of granite boulder; aluminum tablet stamped "4759 W".....	4, 760. 244
Crawford, 1.9 miles east of, on section line at northwest corner of NE. $\frac{1}{4}$ sec. 29, T. 14 N., R. 4 E., at Anna J. Norris's ranch, 50 feet south of road, 30 feet southeast of house, in granite boulder; aluminum tablet stamped "4811 W".....	4, 812. 608

North along Indian Valley, Midvale, and Council roads to point near Indian Valley.

T. 14 N., R. 1 W., on line between secs. 26 and 35, on Van Wyck, Midvale, and Indian Valley road, at Hillsdale crossroads, 150 feet east of white schoolhouse, at northwest corner of fence, 30 feet east of road, in volcanic boulder near mound of rocks; aluminum tablet stamped "3164 W"....	3, 165. 559
Van Wyck, 34.4 miles northwest of, on Van Wyck, Midvale, and Indian Valley road, 100 feet north of Little Weiser River; nail in knuckle of cottonwood 20 feet west of road.....	3, 029. 16
Indian Valley, near corner of secs. 10, 11, 14, and 15, T. 14 N., R. 1 W., southwest corner of blacksmith shop, east side of Main Street, in volcanic boulder; aluminum tablet stamped "2999 W".....	3, 000. 889
Indian Valley, 3.7 miles north of, near center of sec. 27, T. 15 N., R. 1 W., on Indian Valley-Council road, at foot of Thorn Creek Hill, 150 feet north of Thorn Creek, 100 feet west of road, 500 feet east of Sam Wood's house, near mound of rocks, in boulder; aluminum tablet stamped "2931 W".....	2, 932. 948
Indian Valley, 6.2 miles north of, NW. $\frac{1}{4}$ sec. 15, T. 15 N., R. 1 W., on Indian Valley-Council road, on middle fork of Weiser River Summit, 30 feet east of road, near mound of rocks, in granite boulder; aluminum tablet stamped "3309 W".....	3, 310. 911
Indian Valley, 7.3 miles north of, on Indian Valley-Council road, 50 feet south of creek, 3 feet east of bridge crossing Middle Fork Creek, in cottonwood; nail.....	2, 903. 95

SQUAW CREEK QUADRANGLE.

Bench mark in T. 13 N., R. 1 W.

Van Wyck, 29.6 miles west of, T. 13 N., R. 1 W., 500 feet northeast of crossroads, 100 feet east of Van Wyck-Indian Valley road, in top of volcanic boulder beside mound of rocks; aluminum tablet stamped "3395 W" . . . 3, 396. 379 Feet.

Point 11.7 miles west of Van Wyck southwest to Canyon Hill, sec. 27, T. 13 N., R. 1 E., thence northwest along Indian Valley road to junction of Midvale road.

Van Wyck, 12.8 miles west of, 30 feet east of Van Wyck-Indian Valley road, in tree; nail. 5, 906. 80
 Van Wyck, 12.8 miles west of, 20 feet east of Van Wyck-Indian Valley road, in tree; 30-penny nail. 5, 637. 20
 Van Wyck, 13.6 miles west of, 30 feet east of Van Wyck-Indian Valley road, in pine tree; 30-penny nail. 5, 948. 81
 Van Wyck, 15.3 miles west of, 50 feet south of Van Wyck-Indian Valley road, on Four-bit Summit, near mound of rock, in volcanic rock; aluminum tablet stamped "6154 W" 6, 155. 170
 Van Wyck, 16.6 miles west of, 10 feet west of Van Wyck-Indian Valley road, in pine tree; 30-penny nail. 5, 372. 11
 Van Wyck, 17.9 miles west of, 70 feet north of Van Wyck-Indian Valley road, in pine tree; 30-penny nail. 4, 743. 51
 Van Wyck, 19.1 miles west of, 10 feet north of Van Wyck-Indian Valley road, in pine tree; 30-penny nail. 4, 494. 42
 Van Wyck, 19.2 miles west of, 0.5 mile west of Courtright's house, 60 feet south of Van Wyck-Indian Valley road, in top of volcanic boulder, near mound of rocks; aluminum tablet stamped "4464 W" 4, 464. 983
 Van Wyck, 20.4 miles west of, in pine tree, 40 feet north of Van Wyck-Indian Valley road; 30-penny nail. 4, 136. 58
 Van Wyck, 21.6 miles west of, 150 feet south of Van Wyck-Indian Valley road, on Canyon Hill Summit, in volcanic boulder, near mound of rocks; aluminum tablet stamped "4375 W" 4, 376. 422
 Van Wyck, 23 miles west of, on Van Wyck-Indian Valley road; chisel mark on top of boulder, 2 by 2 by 3 feet. 3, 833. 51
 Van Wyck, 26 miles west of, 0.4 mile southeast of junction of Indian Valley and Midvale roads, in rim of rock, in top of volcanic rock; aluminum tablet stamped "3409 W" 3, 410. 541

Little Weiser River west along Midvale road to McMahan ranch.

Indian Valley-Midvale crossroads, 4.2 miles west of, at J. W. Stippich's ranch, 100 feet northeast of house, in corner of yard, in volcanic boulder; aluminum tablet stamped "3230 W" 3, 231. 166

St. Anthony and Victor quadrangles.

BINGHAM AND FREMONT COUNTIES.

The elevations in the following list are the results of leveling by Goyne Drummond in 1899 from St. Anthony, Idaho, to the Grand Teton and Mount Leidy quadrangles, Wyo., and were originally published in the Twenty-first Annual Report. In 1906 connection was made with the transcontinental line of the Coast and Geodetic Survey leveling by a line brought north from Green River and Rock

Springs, Wyo., to Twogwotee Pass and to a point 12 miles northeast of Kroner ranch, and readjustment was made between these points.

VICTOR QUADRANGLE.

Idaho-Wyoming State line at Trail Creek via Victor to Rigby's house.

	Feet.
Idaho-Wyoming State line, at Trail Creek, 8 feet north of road; bronze tablet stamped "B. M. 6681 ^B ".....	6, 683. 580
Spencer's house, 30-feet west of, 20 feet east of road, 250 feet north of Moses Creek; bronze tablet.....	6, 477. 700
Victor, northeast corner of Porter's store; iron post.....	6, 207. 582
Chapin's ranch, 60 feet east of house; iron post.....	6, 145. 989
Chapin's ranch, 2 miles northwest of, 100 feet north of channel of Darby Creek, 20 feet east of road; iron post.....	6, 124. 608
Drigg's house, 40 feet east of; iron post.....	6, 099. 209
Rigby's house, 1,000 feet northwest of, at milepost 192, Wyoming-Idaho State line; iron post.....	6, 404. 151

Drigg's ranch via Kimball's and Swanner's ranches to Teton Bridge.

Kimball's house, 1,150 feet southwest of; iron post.....	6, 107. 743
Swanner's yard, northeast corner of; iron post.....	5, 976. 158

Drigg's ranch to point 5.4 miles northwest of Teton Bridge.

Drigg's ranch, 3.5 miles north of, 80 feet east of new house; iron post....	6, 158. 321
Lathron's house, 50 feet east of, 300 feet south of ford, T. 6 N., R. 45 E., east of southwest corner of sec. 28, north side of road; iron post.....	6, 064. 717
Teton Bridge, 400 feet east of, 6 feet from northwest corner of Alex West's house; iron post.....	5, 932. 255
Teton Bridge, 3.4 miles northwest of, top of divide between Teton River and Mill Creek; iron post.....	6, 194. 980
Teton Bridge, 5.4 miles northwest of, 20 feet west of Milk Creek, 600 feet south of road fork; iron post.....	6, 071. 942

ST. ANTHONY QUADRANGLE.

Point 5.4 miles northwest of Teton Bridge to St. Anthony.

Teton Bridge, 7.9 miles northwest of, top of divide between Milk Creek and Canyon Creek, 300 feet southwest of trail from Milk Creek; bronze tablet.....	6, 024. 386
Harris ranch, 3 miles northeast of, 30 feet north of road; iron post.....	5, 908. 169
Harris ranch, 10 feet northeast of house; iron post.....	5, 641. 554
St. Anthony, 120 feet to left of station 1956+50, Oregon Short Line Railroad elevation corrected to sea level, 5,010.49 feet; U. S. G. S. elevation ..	4, 958. 665

Montpelier, Pocatello, Soda Springs, and Wayan quadrangles.

BANNOCK AND BEAR LAKE COUNTIES.

The elevations in the following list are results of part of the leveling done in 1909 in Idaho, Utah, and Wyoming, and are based on a bench mark of the Coast and Geodetic Survey near Onyx, Bannock County, Idaho, the first given in the following list. The elevation of this bench mark is accepted as 4,619.392 feet above mean sea level. From Onyx the line was run over the Oregon Short Line Railroad to a point 3.5 miles south of Montpelier, thence south by road via Lake-

town and Randolph, Utah, to Evanston, Wyo., closing on the Coast and Geodetic Survey bench mark at that point.

The leveling was done by L. F. Biggs. The closure errors of this line and circuits are excessive.

Additional elevations in the Montpelier quadrangle will be found in the Wyoming lists.

POCATELLO QUADRANGLE.

Point near Onyx along Oregon Short Line Railroad to Pebble.

	Feet.
Onyx, 1 mile north of, near signboard "1 mile to Onyx," west of third telephone pole south of milepost 197, 24 feet west of right of way fence on west side of track, red stone post 6 feet long and 6 inches square; bottom of square hole cut in top marked "U. S. \square B. M." (Coast and Geodetic Survey bench mark and 1911 preliminary adjustment value).....	4, 619. 392
McCammion, opposite station; top of east rail.....	4, 749. 5
McCammion, opposite point on the tracks 150 feet north of station, 20 feet southeast of third telephone pole north of schoolhouse, 225 feet west of track, 4 feet from fence on west side of main highway, in red stone post 6 feet long and 6 inches square; square cut hole marked "U. S. \square B. M." (Coast and Geodetic Survey bench mark).....	4, 753. 742
McCammion, southeast corner of McCammion Investment Co. building, 3 feet above ground in corner stone; aluminum tablet stamped "4767 B 1909 A".....	4, 767. 081
McCammion, 2.6 miles southeast of, west side of track at turn east, in concrete foundation of semaphore 1888; aluminum tablet stamped "4834 B 1909 B".....	4, 834. 003
McCammion, 6.1 miles east of, 1 mile west of Topaz station, south side of track, 250 feet east of road crossing, in concrete culvert; aluminum tablet stamped "4925 B 1909 C".....	4, 925. 589
Topaz, 2.8 miles east of, 0.8 mile west of Renfro, concrete foundation of distant block signal 1818, 12 feet south of center of track; aluminum tablet.....	5, 017. 180
Lava, in front of station; top of rail.....	5, 147. 0
Lava, 0.2 mile north of, east side of track, in concrete foundation of semaphore 1772; aluminum tablet stamped "5155 B 1909 E".....	5, 155. 072
Lava, 3.7 miles north of, east side of track, cemented in concrete foundation of semaphore 1734; copper nail and washer stamped "5225 B. M. F".....	5, 225. 373

SODA SPRINGS QUADRANGLE.

Pebble along Oregon Short Line Railroad to Rose.

Pebble, 1.5 miles north of, edge of track, in concrete foundation of semaphore 1682; aluminum tablet stamped "5318 1909 B. G.".....	5, 318. 428
Bancroft, 3.4 miles west of, south side of track, in concrete foundation of semaphore 1652; aluminum tablet stamped "5380 B 1909 H".....	5, 380. 640
Bancroft, in northeast corner of brick schoolhouse, 4 feet above ground; aluminum tablet stamped "5417 1909 BI".....	5, 418. 323
Bancroft, in front of station; top of rail.....	5, 421. 9
Bancroft, 4 miles east of, north side of track, in concrete foundation of semaphore 1581; aluminum tablet stamped "5502 B 1909 J".....	5, 503. 484
Way, in front of station; top of rail.....	5, 585. 2

Alexander, 1.9 miles west of, south side of track, in concrete foundation of semaphore 1540; aluminum tablet stamped "5668 B 1909 K".....	Feet. 5, 669. 024
Alexander, in front of station; top of rail.....	5, 731. 8
Soda Springs, 4 miles west of, west edge of track, in concrete foundation of semaphore 1496; aluminum tablet stamped "5730 B 1909 L".....	5, 730. 963
Soda Springs, in front of station; top of south rail.....	5, 777. 6
Soda Springs, southwest corner of schoolhouse, 4 feet above ground; aluminum tablet stamped "5777 B 1909 M".....	5, 777. 860
Soda Springs, 4 miles southeast of, south side of track, in concrete foundation of semaphore 1422; aluminum tablet stamped "5808 B 1909 N".....	5, 808. 296

WAYAN QUADRANGLE.**Rose along Oregon Short Line Railroad to Novene.**

Rose, 1.5 miles southeast of, southwest corner of bridge over Bear River in concrete abutment; aluminum tablet stamped "5807 B 1909 O".....	5, 808. 198
Manson, 2.3 miles southeast of, south side of track, in concrete foundation of semaphore 1336; aluminum tablet stamped "5853 B 1909 P".....	5, 853. 320
Novene, 0.6 mile northwest of, southeast corner of bridge over Bear River, in abutment; aluminum tablet stamped "5881 B 1909 Q".....	5, 882. 163

MONTPELIER QUADRANGLE.¹**Novene along Oregon Short Line Railroad to point 3.5 miles south of Montpelier, thence south along road on east side of Bear Lake to Idaho-Utah State line.**

Novene, in front of station; top of rail.....	5, 889. 0
Woley's spur, 1 mile northwest of, southwest corner of bridge 137 over Bear River, in stone abutment; aluminum tablet stamped "5904 B 1909 R".....	5, 903. 439
Pescadero, 1 mile northwest of, south side of track, in concrete foundation of semaphore 1218; aluminum tablet stamped "5923 B 1909 S".....	5, 923. 794
Pescadero, in front of station; top of rail.....	5, 921. 5
Montpelier, 4.6 miles northwest of, southeast corner of bridge over Bear River, in concrete foundation; aluminum tablet stamped "5914 B 1909 T".....	5, 914. 969
Montpelier, in front of station; top of west rail.....	5, 940. 8
Montpelier, southeast corner of First National Bank building, on step at entrance to bank; aluminum tablet stamped "5944 B 1909 U".....	5, 945. 815
Montpelier, 3.4 miles southeast of, east edge of right of way, at road crossing, in fence corner; iron post stamped "5951 B 1909 V".....	5, 952. 301
Dingle, north end of town, at bend of road, opposite Bridge's ranch house, southwest corner of house yard; iron post stamped "5954 B 1909 W".....	5, 955. 630
Meckley Lake; surface of water, June 1, 1909.....	5, 926. 0
Dingle, 2.9 miles south of, 1,000 feet south of Meckley Lake, 50 feet south of sheep pens, 150 feet west of road; iron post stamped "5939 B 1909 X".....	5, 940. 562
Mud Lake, surface of water in; June 1, 1909.....	5, 924. 2
Hot Springs, 1.6 miles north of, west edge of road, opposite Mini tunnel, on boulder painted "5928 B. M. 72"; chisel point.....	5, 929. 90
Hot Springs, 500 feet west of north-south road, 100 feet south of Turnpike post office, west end of large gate to yard; iron post stamped "5947 B 1909 Y".....	5, 948. 178
Bear Lake, east shore; surface of water, May 31, 1909, light west wind prevailing.....	5, 924. 3
Hot Springs, 1 mile south of, north end of row of poplar trees, 300 feet north of house, in base of 20-inch poplar tree; spike with aluminum tag stamped "5980 B. M. 73".....	5, 981. 75

¹ Additional elevations in this quadrangle will be found in Wyoming list.

Hot Springs, 3.5 miles south of, opposite northeast corner of alfalfa field, at lane to barn; iron post stamped "5958 B 1909 Z".....	Feet. 5,960.008
Hot Springs, 5.7 miles south of, 250 feet west of road, on east shore of lake, 1,000 feet south of clump of small bushes at rocky point on shore, on boulder painted "5925 B. M. 76"; chisel point.....	5,927.01.
North Eden, 1.2 miles north of, 25 feet west of road, 150 feet east of small clump of trees, 100 feet east of lake; iron post stamped "5942 B 1909 A 1".....	5,943.985
North Eden, 0.7 mile south of, at fence corner, 1,000 feet south of sheep sheds, west edge of road; iron post stamped "5958 B 1909 B 1".....	5,959.763

Dingle along Oregon Short Line Railroad to Border.

Dingle, 1.6 mile south of, in southeast corner of concrete abutment of bridge 117 over creek; aluminum tablet stamped "5983 B 1909 32"....	5,984.322
Harer, in front of station; top of rail.....	6,001.2
Pegram, 4.8 miles north of, 2,000 feet south of Harer station, opposite south end of siding, 100 feet west of right of way, on west side of wagon road; iron post stamped "5998 B 1909 33".....	5,999.543
Pegram, 200 feet east of station, east edge of right of way, northwest corner of field, at road crossing; iron post stamped "6030 B 1909 34".....	6,031.733
Pegram, 0.9 mile northeast of, northeast corner of steel bridge over Bear River, in cap; copper nail, with aluminum tag stamped "6042 B. M. 177".....	6,043.30
Pegram, 2.6 miles northeast of, east edge of right of way, opposite milepost 95; iron post stamped "6048 B 1909 35".....	6,048.849
Border, opposite section house, south side of track, 3 feet east of Idaho-Wyoming State line post; iron post stamped "6072 B 1909 30".....	6,073.342

Montpelier by road via Geneva and Raymond to Border.

Montpelier, east side of steps of town hall, on first tier of concrete guard rail; aluminum tablet stamped "5962 B 1909 21".....	5,963.350
Montpelier, 4.4 miles east of, north end of dam, at city water works, in top; aluminum tablet stamped "6211 1909 B 22".....	6,212.100
Montpelier, 8.4 miles east of, 600 feet southeast of junction of Star Valley and Geneva roads, 200 feet south of creek, on point of hill, 20 feet east of road iron post stamped "6444 B 1909 23".....	6,444.837
Montpelier, 9.5 miles east of, 0.7 mile east of junction of Star Valley and Geneva roads, 3 miles west of summit, south side of road, on boulder painted "6608 B. M. 148"; chisel point.....	6,609.86
Montpelier, 11.2 miles east of, 20 feet east of road, 3 miles east of junction of Star Valley and Geneva roads, on summit of ridge between Montpelier and Geneva; iron post stamped "7000 B 1909 24".....	7,001.153
Summit between Montpelier and Geneva, 2 miles east of, 15 feet south of road, on boulder painted "6310 B. M. 151"; chisel point.....	6,311.02
Summit between Montpelier and Geneva, 2.8 miles east of, 2 miles west of Geneva, 800 feet east of log house, at intersection of road to north, southwest corner of field; iron post stamped "6230 B 1909 25".....	6,230.086
Geneva, near post office, 150 feet east of northwest corner of field, at intersection of north-south road; iron post stamped "6171 B 1909 26".....	6,171.811
Geneva, 3.6 miles south of, 3.2 miles northeast of Raymond, south side of east-west road, 20 feet west of canal; iron post stamped "6205 B 1909 27".....	6,206.057
Raymond, 1,500 feet south of schoolhouse, at section corner, junction of east-west road; iron post stamped "6133 B 1909 28".....	6,134.138
Raymond, 3 miles south of, on section line, 0.25 mile east of Idaho-Wyoming State line, northwest corner of alfalfa field belonging to J. Francis, 15 feet south of gate to lane; iron post stamped "6107 B 1909 29".....	6,108.221

Montpelier via Ovid, Paris, and St. Charles to Turnpike (Hot Springs).

	Feet.
Montpelier, 1.7 miles west of, northeast corner of steel bridge over Bear River, in concrete abutment; bolt head painted "5925".....	5,925.97
Montpelier, 3 miles west of, 350 feet west of bridge over slough, southeast corner of field at junction of roads; iron post stamped "5922 B 1909 36".....	5,923.880
Ovid, southwest corner of school yard, at road junction; iron post stamped "5932 B 1909 37".....	5,933.430
Paris, southwest corner of county courthouse, 5 feet above ground; aluminum tablet stamped "5966 B 1909 38".....	5,967.084
St. Charles, 3 miles north of, northeast corner of field, at junction of road to west, 60 feet south of log barn at Joe Patterson's ranch, 300 feet north of creek; iron post stamped "5962 B 1909 39".....	5,963.890
St. Charles, northeast end of town, west edge of road, opposite intersection of Paris and turnpike roads, 35 feet east of frame house, on fence line; iron post stamped "B 1909 5953 40".....	5,954.928
St. Charles, 3 miles east of, 4 miles west of Hot Springs, 50 feet west of outlet of Bear Lake, on turnpike road; iron post stamped "5927 B 1909 41".....	5,928.410
Bear Lake, surface of water, July 19, 1909; (light south winds and light waves, poor level).....	5,924.1
Mud Lake; surface of water, July 19, 1909.....	5,924.1

Hailey, Picabo, Sawtooth, and Soldier quadrangles.**BLAINE COUNTY.**

The elevations in the following list are approximate and are based on the height of the top of rail in front of the station at Hailey, determined by the Oregon Short Line Railroad.

The leveling was done in 1896 by A. B. Searle.

HAILEY QUADRANGLE.**Bench mark established at Hailey Hot Springs.**

Hailey Hot Springs, at southwest corner of porch of hotel; iron post stamped "5418".....	Feet. 5,418.534
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Bench marks along Warm Springs Creek.

Upper Hot Springs, at northwest corner of old cabin, on northeast side of road, about 20 yards from creek crossing; iron post stamped "6286"....	6,286.317
Punch Bowl Lakes, about 1.2 miles above, on southeast side of road; iron post stamped "6010".....	6,010.747
Ketchum, bridge across Wood River, east end of, in top of large rock abutment; bronze tablet stamped "5819".....	5,819.686

Ketchum south along Oregon Short Line Railroad to Hailey.

Cold Springs mill, about 0.2 mile south of, at Point of Rocks; iron post stamped "5690".....	5,689.836
Gimlet, discontinued post office, in front yard of east building; iron post stamped "5544".....	5,543.733
Becker's ranch, at fence corner west of railroad track, about 20 yards south of road crossing; iron post stamped "5465".....	5,465.166

Ketchum north along Sawtooth road.

Ketchum, 2.5 miles north of, first bridge over Wood River, not on main road, about 40 feet northeast of east end, west of road; iron post stamped "5949".....	5,948.921
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Ketchum, 8.5 miles north of, about 90 feet north of third bridge over Wood River, 30 feet east of wagon road; iron post stamped "6236".....	Feet. 6, 235. 937
Ketchum, 10 miles northwest of, south of wagon road, beyond crossing of dry wash, in center of large flat; cross on small basalt rock.....	6, 315. 4

PICABO QUADRANGLE.**Halley along Camas Prairie road to Donphan.**

Gilman, side of house where post office was formerly located, near forks of road; iron post stamped "5547".....	5, 547. 023
Kelly Creek crossing, 50 feet west of; iron post stamped "5857".....	5, 856. 922
Divide between Croy and Camp creeks, south side of road; iron post stamped "6114".....	6, 114. 866
Donphan, south side of post office building, used also as assay office of Camas No. 2 mine; iron post stamped "5788".....	5, 788. 444

SOLDIER QUADRANGLE.**Bench marks established along Willow Creek.**

Willow Creek road and short cut to Soldier, forks of, about 50 feet west of a lone tree at edge of small drain; iron post stamped "5094".....	5, 093. 974
Willow Creek and Soldier roads, about 4 miles north of intersection of, house of A. B. Arnold, at west side of county road, near rail fence at end of bars; iron post stamped "5298".....	5, 297. 747
Willow Creek and Buttercup mine roads, junction of, southeast corner of log house; iron post stamped "5530".....	5, 530. 596

Smoky District to head of Soldier Creek.

Trail Creek and branch of Soldier Creek, divide between; iron post stamped "7082".....	7, 081. 932
T. 14 E., R. 1 N, south line of sec. 9, near Soldier Creek, at southeast corner of John Wordrupp's corral, about 20 feet west of forks of Soldier and Trail Creek roads; iron post stamped "5366".....	5, 365. 63
Soldier Creek, near, 30 yards northwest of little log cabin, west side of wagon road where road makes right-angle turn after crossing creek near clump of quaking asps; iron post stamped "5755".....	5, 755. 02
Soldier Creek, near, 2 miles west of mill, near cluster of big rocks, about 20 yards from large fir tree and 30 yards south of trail; iron post stamped "6558".....	6, 558. 089

SAWTOOTH QUADRANGLE.**Divide between Willow Creek and Smoky Creek to Castle Crag.**

Willow Creek and Smoky Creek divide, highest point of, about 200 feet east of road; iron post stamped "6857".....	6, 857. 009
Soldier road, junction with, opposite Soldier road crossing of Little Smoky Creek, in top of bowlder; bronze tablet stamped "6365".....	6, 364. 689
Carrie Leonard road, junction with, west side of road, about 0.5 mile north of junction of Carrie Leonard and Little Smoky creeks; iron post stamped "6123".....	6, 123. 185
Carrie Leonard Creek and Warm Springs Creek, divide between; iron post stamped "8719".....	8, 718. 579
Summit where Warm Springs Creek crosses road, about 3.5 miles east of, on south side of road and near a group of large stumps; iron post stamped "7281".....	7, 281. 377
Castle Crag, 50 feet east of base of, at west side of road, midway between two creek crossings; in top of rock; bronze tablet stamped "6640".....	6, 640. 174

Smoky District along south Boise trail toward Atlanta.

Worswick's, 1.5 miles from, about 100 yards east of trail; iron post stamped "7148".....	Feet. 7, 148. 267
Little and Big Smoky creeks, junction of, about 200 yards south of forks of South Boise and Big Smoky trails, in east face of rock, about 50 feet above general elevation of valley; copper bolt stamped "5539".....	5, 539. 014
Big Smoky Creek, about 3.5 miles from junction with Little Smoky Creek, on rocky point about 100 feet above creek and about 20 yards southwest from lone fir tree; iron post stamped "5822".....	5, 821. 759
South Boise Creek, 3.8 miles above placer claim, near lone fir tree at south side of trail on flat, and 50 yards east of creek; iron post stamped "5773" ..	5, 772. 815
South Boise Creek, about 9.5 miles above placer claim, at south side of trail and at base of large accumulation of slide rock, at point where the canyon begins to narrow, and where trail goes down to creek; iron post stamped "6169".....	6, 169. 593

Point 13.5 miles northwest of Ketchum up Wood River to divide between Wood and Salmon rivers.

Ketchum, about 13.5 miles northwest of, about 40 feet north of abandoned stable on top of small knoll at south end of road and west of road crossing of Bowlder Creek; iron post stamped "6596".....	6, 595. 866
Ketchum, 17.5 miles northwest of, 300 feet west of seventh bridge over Wood River, at top of wagon grade on north side of road; iron post stamped "7020".....	7, 019. 766
Galena, near southeast corner of second building west of road; iron post stamped "7294".....	7, 294. 195
Galena, 1.2 miles west of, about 70 feet before road crosses stream; cross mark on large rock west of road.....	7, 426. 2
Wood River and Salmon River, divide between, 50 feet northwest of road; iron post stamped "8795".....	8, 795. 582

Chatcolet Station, Kendrick, and Pullman quadrangles.**KOOTENAI AND LATAH COUNTIES.**

The elevations in the following list were determined by primary leveling extended from an aluminum tablet in the top of latitude pier in the grounds of the county courthouse at Spokane, the elevation of which is now accepted as 1,891.954 feet above mean sea level, as obtained by readjustment of a double-rodged line run in 1898 along the Northern Pacific Railway by H. S. Crowe.

The leveling was done in 1903 by E. M. Fry.

PULLMAN QUADRANGLE.**Bench mark at Moscow.**

Moscow, 20 feet north of Northern Pacific Railway station, 5 feet west of platform, near coal house, 15 feet west of track; iron post stamped "2564 S".....	Feet. 2, 564. 873
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KENDRICK QUADRANGLE.**Genesee via county road to Moscow.**

Genesee, northeast corner of Main and Third streets, in brick wall at front entrance to First National Bank, 1 foot above sidewalk; bronze tablet stamped "2676 S".....	2, 676. 945
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Line along Thorn Creek road to Moscow.

Bangs, 2 feet from southeast corner of schoolhouse, in brick foundation, 3 feet north of steps; bronze tablet stamped "2745 S"	Feet. 2, 746. 207
Snow's ranch, 1,000 feet southwest of house, 150 feet west of road at section corner, southeast corner of field, in rock ledge 3 feet above ground; bronze tablet stamped "2586 S"	2, 587. 552

CHATCOLET STATION QUADRANGLE.**Bench mark at Lovell.**

Lovell, 150 feet west of section house, 100 feet east of railroad tool house, 10 feet west of milepost 407, 20 feet south of track; iron post stamped "2586 S"	2, 587. 882
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Cataldo and Rathdrum 30' quadrangles and Cœur d'Alene special quadrangle.**KOOTENAI AND SHOSHONE COUNTIES.**

The elevations in the following list are based on primary leveling.

The leveling in the Cataldo and Cœur d'Alene quadrangles was done in 1900 by F. E. Washburn, in 1901 by S. M. Hatch, and in 1905 by A. P. Anderson; that in the Rathdrum quadrangle was done in 1899 by M. P. Page.

RATHDRUM QUADRANGLE.**Bench marks established near Spirit Lake and Fish Lake.**

Sullivan's ranch, south end of, 4 feet south of road, in root of 40-inch yellow-pine tree; tack	Feet. 2, 298. 7
Spirit Lake, 200 feet east of landing, 15 feet south of road; iron post stamped "2490 S"	2, 490. 593
Spirit Lake, surface of water	2, 442. 6
Fish Lake, 1.5 miles north of, 4 feet west and south of forks of road, in top of boulder 20 by 12 inches, 6 inches above ground; cross mark, "+"	2, 429. 4
Fish Lake, 600 feet east of, northeast of forks of roads, in top of boulder 10 inches by 6 feet; cross mark, "+"	2, 391. 7
Fish Lake, surface of water	2, 313. 6
Fish Lake, 0.2 mile east of south end of, 80 feet south of fork of roads; iron post stamped "2366 S"	2, 366. 308

From point near Hauser Junction along Northern Pacific Railway to milepost "W. 204, H. 42."

Hauser Junction, 1.4 miles east of, 30 feet north of public road and 120 feet north of railroad, in south end of boulder 40 by 30, inches above ground; bronze tablet stamped "2118 T"	2, 119. 193
Rathdrum, in front of station, top of rail	2, 207. 0
Rathdrum, in brick building (Russell's store), eighth tier of bricks above sidewalk; bronze tablet stamped "2216 T"	2, 216. 310
Milepost "W. 190, H. 56," 0.2 mile east of, 10 feet south of wagon road, 300 feet northeast of signboard "Sheridan" in notch of fir tree 18 inches in diameter; copper nail	2, 271. 85
Ramsey, 50 feet north of center of track, 3 feet east of telegraph pole, 20 feet east of wagon road; iron post stamped "2330 T"	2, 330. 828
Milepost "W. 196, H. 50," 215 feet northeast of, 100 feet north of railroad, in pine tree; copper nail	2, 368. 80
North Pole spur, 0.5 mile east of, 40 feet north of railroad track, 3 feet east of telegraph pole; iron post stamped "2396 T"	2, 396. 227

Milepost "W. 201, H. 45," 390 feet northeast of, 40 feet north of track, in north side of fir stump 24 inches in diameter; railroad spike.....	Feet. 2, 376. 90
Athol, in front of railroad section house; center of track.....	2, 392. 1
Athol, 200 feet northeast of milepost "W. 202, H. 44," in notch of fir tree 24 inches in diameter; copper nail.....	2, 393. 40
Milepost "W. 204, H. 42," 13 feet west of, 20 feet west of center of track; iron post stamped "2350 T".....	2, 350. 544

Hauser Junction via Northern Pacific Railway to Cœur d'Alene.

Post Falls, 150 feet south of woolen mill, 200 feet east of bridge over Spokane River, 100 feet west of railroad spur, in large boulder 20 feet south of road; aluminum bolt stamped "2147 S".....	2, 147. 903
Post Falls, 6 miles east of, 500 feet south of track, 8 feet southwest of telegraph pole; iron post stamped "2148 S".....	2, 148. 196
Cœur d'Alene, corner of Sherman and Fourth streets, in southeast corner of Merriam building, 2 feet above sidewalk and 1 foot from door; aluminum tablet stamped "2157 S".....	2, 157. 909
Cœur d'Alene Lake, at Johnson's boat landing, in cottonwood tree at surface of water May 20, 1899; spike.....	2, 131. 1
Cœur d'Alene Lake; surface of water May 23, 1899.....	2, 130. 5
Cœur d'Alene Lake; surface of water, August 23, 1899.....	2, 122. 0
Post Falls, at dam; surface of Spokane River, August 23, 1899.....	2, 120. 1

Cœur d'Alene via King's ranch to Ramsey.

Cœur d'Alene, 1 mile north of, 20 feet west of road, 200 feet southwest of house, in pine stump; spike.....	2, 234. 69
Cœur d'Alene, 2 miles north of, 30 feet east of road, 200 feet northeast of road forks, in pine tree; spike.....	2, 235. 36
Cœur d'Alene, 3.5 miles north of, 40 feet north of forks of road, in gate post; spike.....	2, 254. 27
Cœur d'Alene, 4.3 miles north of, 40 feet northeast of road crossing, 80 feet southwest of schoolhouse, near corner of secs. 13, 14, 23, and 24, T. 51 N., R. 4 W., in pine tree; spike.....	2, 280. 60
Cœur d'Alene, 6.2 miles north of, 30 feet south of crossroads, at corner of secs. 1, 2, 11, and 12, T. 51 N., R. 4 W., in top of pine stump; spike....	2, 314. 13
Cœur d'Alene, 7.2 miles north of, in pine bearing tree to secs. 1, 2, 35, and 36, Tps. 51 and 52 N., R. 4 W.; spike.....	2, 329. 73
Cœur d'Alene, 8.2 miles north of, 30 feet west of road at edge of timber, in pine tree; spike.....	2, 316. 31
Cœur d'Alene, 9.5 miles north of, 3 feet west of road, in root of pine stump 36 inches in diameter; spike.....	2, 285. 43

Cœur d'Alene to Fernan Lake.

Fernan Lake, 15 feet north of, 200 feet east of Fernan's house, on stone 20 by 30 by 20 inches; cross.....	2, 133. 66
Fernan Lake; surface of water, August 18, 1899.....	2, 129. 53

Rathdrum along telephone road to point on Cœur d'Alene branch of Northern Pacific Railway 2.5 miles east of Post Falls.

Rathdrum, 2.8 miles south of, corner common to secs. 12, 7, 13, and 18, T. 51 N., Rs. 4 and 5 W., on stone at foot of telephone pole; cross.....	2, 256. 07
Rathdrum, 3.8 miles south of, 20 feet northwest of crossroads, 300 feet northeast of Thornton's barn, corner common to secs. 13, 18, 24, and 19, T. 51 N., Rs. 4 and 5 W.; iron post stamped "2241 S".....	2, 241. 833

Hauser Junction via county road to Hayden Lake.

Hauser Junction, 4 miles east of, in post southeast of corner of secs. 22, 23, 26, and 27, T. 51 N., R. 5 W.; spike.....	Feet. 2, 206. 45
Hauser Junction, 5 miles east of, on stone set for corner of secs. 23, 24, 25, and 26, T. 51 N., R. 5 W.; cross.....	2, 231. 93
T. 51 N., R. 4 W., corner of secs. 15, 16, 21, and 22, 30 feet southeast of; iron post stamped "2293 S".....	2, 293. 264
Hayden Lake, 40 feet west of, 200 feet east of gate to King's ranch, in pine tree; nail.....	2, 262. 00
Hayden Lake; surface of water, August 29, 1899.....	2, 243. 2

Corner of Tps. 51 and 52 N., Rs. 3 and 4 W., along township line north to Hayden Lake.

Corner of Tps. 51 and 52 N., Rs. 3 and 4 W.; iron post stamped "2424 S".....	2, 424. 05
T. 52 N., R. 3 W., 30 feet east of quarter corner of S. $\frac{1}{4}$ sec. 33; in root of fir tree; spike.....	2, 465. 46
Hayden Lake, 100 feet west of, 3 feet east of trail, on stone; cross.....	2, 330. 0

Corner of secs. 4, 5, 31, and 32, Tps. 51 and 52 N., R. 3 W., to Hudlow's ranch, on Hayden Lake.

Rim Rock, 300 feet northwest of schoolhouse, 60 feet north of road, in tamarack stump; spike.....	2, 519. 19
Hudlow's ranch, 25 feet northeast of house, 600 feet north of Hayden Lake; iron post stamped "2267 S".....	2, 267. 846

Cœur d'Alene via French Gulch to Kelley's ranch.

Cœur d'Alene, 2 miles northeast of, 30 feet north of road and 50 feet west of bridge, in root of tamarack stump; nail.....	2, 296. 39
French Gulch, summit of hill east of, 10 feet north of road, 50 feet south-east of house, in root of pine stump; nail.....	2, 521. 92

West end of Spirit Lake along trail to Brickel's cabin.

Spirit Lake, 1 mile west of, 30 feet west of log cabin, 60 feet east of creek, 5 feet north of trail, in root of fir tree 24 inches in diameter; nail.....	2, 456. 07
Spirit Lake, 2 miles west of, 20 feet southeast of southeast corner of Brickel's cabin, 150 feet north of creek, in root of fir tree 10 inches in diameter; nail.....	2, 476. 07

Schoolhouse at east end of Eightmile Prairie, 2 miles south of Ramsey, east along county road to Pend Oreille Lake.

Schoolhouse at east end of Eightmile Prairie, 100 feet west of, 250 feet east of Northern Pacific Railway; iron post stamped "2385 S".....	2, 385. 500
Schoolhouse at east end of Eightmile Prairie, 2 miles east of, 10 feet north of road at top of hill, in root of pine tree; nail.....	2, 432. 67
Schoolhouse at east end of Eightmile Prairie 4.8 miles east of, 15 feet north of road, in root of pine tree; nail.....	2, 398. 79
Schoolhouse at east end of Eightmile Prairie, 4 miles east of, 250 feet north-west of sawmill, 140 feet northwest of house; iron post stamped "2465 S".....	2, 465. 608
Pend Oreille Lake, 8 feet east of road, 9 feet south of corner of fence, in root of cottonwood tree 10 inches in diameter; nail.....	2, 071. 09
Pend Oreille Lake; surface of water, September 22, 1897.....	2, 055. 5

Collin's ranch along road and Leiberger trail to Chilto Mountain.

Collin's ranch, 2.5 miles east of, 20 feet south of forks of roads, in root of fir tree 12 inches in diameter; nail.....	2, 643. 23
Collin's ranch, 3.5 miles east of, 4 feet north of trail at its beginning, 100 feet south of creek; iron post stamped "2684 S".....	2, 684. 491

Leiberg Creek and Iron Gulch, top of divide between, 1 mile southwest of
Chilco triangulation station; iron post stamped "4944 S"..... 4, 944. 500

Ramsey via Seneaguteen and Rathdrum road to Sheep Springs.

Ramsey, 1 mile north of, 30 feet west of road, in root of pine tree; nail.... 2, 353. 30
 Ramsey, 2.8 miles north of, 10 feet west of road, 100 feet west of fork of
roads; iron post stamped "2424 S"..... 2, 424. 629
 Ramsey, 4.3 miles north of, 30 feet west of fork of roads, 5 feet west of road,
in root of pine tree; nail..... 2, 440. 22
 Ramsey, 5 miles north of, 40 feet north of road, 60 feet northeast of fork of
roads, in root of pine tree; nail..... 2, 437. 49
 Ramsey, 5.8 miles north of, 25 feet northeast of crossroads; iron post stamped
"2491 S"..... 2, 491. 449
 Ramsey, 7.5 miles north of, 30 feet west of road, in root of tree; nail..... 2, 521. 38
 Sheep Springs, 200 yards southwest of, 15 feet north of road, in root of fir
tree; nail..... 2, 486. 24

Cœur d'Alene via Wolf Lodge to Fourth of July Canyon.

Cœur d'Alene, 2.8 miles southeast of, 60 feet southwest of fork of roads,
on stone 30 by 20 by 12 inches; cross..... 2, 504. 445
 Cœur d'Alene, 3 miles southeast of, 45 feet south of road at summit of hill;
iron post stamped "2691 S"..... 2, 691. 893
 Cœur d'Alene, 4.5 miles southeast of, 60 feet east of creek, 10 feet north of
road, in fir tree; nail..... 2, 545. 83
 Cœur d'Alene, 6.7 miles southeast of, 5 feet north of road, 50 feet east of
fork of roads, in fir tree; nail..... 2, 162. 86
 Wolf Lodge, 60 feet west of Johnson's house in yard, 200 feet east of Wolf
Lodge Creek ford; iron post stamped "2155 S"..... 2, 155. 092
 Wolf Lodge, 1.2 miles east of, 5 feet north of road, 300 feet north of drain,
in root of fir tree; nail..... 2, 339. 00
 Fourth of July Canyon and Cedar Creek, top of divide between, 40 feet
north of road; iron post stamped "3136 S"..... 3, 137. 062

Harrison along track of Oregon-Washington Railroad & Navigation Co. to Lane.

Harrison, base of fence around residence of M. Ribstene, in sixth tier of
stone wall; aluminum tablet stamped "2207 S"..... 2, 206. 970
 Lane, 600 feet southeast of post office and station, 40 feet north of house,
in granite boulder 24 by 36 by 40 inches; aluminum bolt stamped
"2153 S"..... 2, 153. 438

Len Landing via Bellgrove to State line.

Len Landing, 1 mile southwest of, 10 feet north of road, in root of fir tree;
nail..... 2, 530. 36
 Len Landing, 2.1 miles southwest of, 6 feet south of trail on summit of
mountain, in root of pine tree; nail..... 2, 070. 37
 Len Landing, 3.2 miles southwest of, 6 feet south by 100 feet west of cross-
roads, in root of fir tree; nail..... 2, 502. 81
 Bellgrove, 1 mile south of, 20 feet east of an old deserted cabin, 100 feet
north of fork of roads; iron post stamped "2411 S"..... 2, 411. 994
 Bellgrove, 2 miles southwest of, 5 feet west of road, 20 feet south of fork of
roads, in root of fir tree; nail..... 2, 464. 55
 Three Pine Springs, 1.1 miles west of, 20 feet south of road, at summit of
hill, in root of fir tree; nail..... 2, 753. 54

Bellgrove via Mica Bay to Post Falls.

Bellgrove, 0.9 mile north of, 15 feet east of road at summit of divide, 600 feet north of B. F. Williams's house; iron post stamped "2585 S".....	2,585.372
Bellgrove, 2.1 miles north of, 24 feet north of creek, 500 feet southeast of barn, 20 feet east of fence, in root of fir tree; nail.....	2,331.21
Bellgrove, 2.8 miles north of, 60 feet west of creek, in root of white pine tree; nail.....	2,290.32
Bellgrove, 5.8 miles north of, 100 feet south of house, on rock 20 by 10 by 7 inches; cross.....	2,149.91
Mica Bay, 0.8 mile north of, 20 feet northwest of fork of roads, on stone 36 by 24 by 18 inches; cross.....	2,471.57
Mica Bay, 1.2 miles north of, 10 feet west of forks of roads on summit of hill, in root of pine tree; nail.....	2,571.32
T. 49 N., R. 4 W., 30 feet east of quarter corner between secs. 4 and 5; iron post stamped "2578 S".....	2,578.170
Cougar Creek, 2 miles northwest of, 12 feet south of road, on summit of divide between Spokane River and Cougar Creek, 800 feet north of cabin; iron post stamped "2810 S".....	2,810.936
Spokane River, 0.5 mile south of, 25 feet southeast of fork of roads, in root of pine tree; nail.....	2,139.44
Post Falls, 1.5 miles southeast of, 15 feet south of ferry over Spokane River, in root of pine tree; nail.....	2,121.59

Various high summits determined by vertical angles.

Cœur d'Alene, 7.5 miles southeast of, 4.5 miles east of Echo Bay, on summit of highest roundtop point, in stone 20 by 20 inches; aluminum bolt stamped "4440 S".....	4,440.5
Cœur d'Alene, 10 miles southwest of, Skalan triangulation station, on summit of high roundtop bald peak, in rock 2 feet by 1 foot; copper bolt stamped "5250 S".....	5,250.5
Cœur d'Alene, 10 miles northeast of, summit of high roundtop burnt point at head of Wolf Lodge Creek, in large boulder; aluminum bolt stamped "4851 S".....	4,851.5
Rathdrum, 3 miles north of, on high roundtop burnt peak known as "Rathdrum Bald," in boulder; aluminum bolt stamped "4970 S".....	4,970.5
Hayden Lake, 5.5 miles east of high roundtop burnt point, in rock; aluminum bolt stamped "5026 S".....	5,026.5
Leiberg Creek and Iron Gulch, 1 mile northeast of divide between, at Chilco triangulation station; copper bolt stamped "5625".....	5,625.5

CATALDO 30' QUADRANGLE AND CŒUR D'ALENE SPECIAL QUADRANGLE**Cataldo along road to mouth of Fourth of July Canyon.**

Cataldo, 4 feet west of section house; iron post stamped "2143 S".....	2,142.886
Cataldo, 1 mile northwest of, in base of telephone pole 1034; spike.....	2,135.450
Cataldo, 3 miles northwest of, 175 feet northwest of schoolhouse, in root of pine stump; nail.....	2,136.87
Cataldo, 3.7 miles northwest of, north of road at forks, in root of fir tree; nail.....	2,152.09
Cataldo, 4.6 miles northwest of, 6 feet west of telephone pole 900, in root of stump; spike.....	2,205.57
Cataldo, 5.7 miles northwest of, south of road, 60 feet southwest of telephone pole 857, in root of fir stump; spike.....	2,257.54
Fourth of July Canyon, mouth of, 200 feet west of old barn, south of road opposite old cellar; iron post stamped "2160 S".....	2,160.446

Kingston along trail via Little North Fork to Cascade Creek, thence northeast via Leiberger mine, Bear Creek, and Weber mine to Lake View.

	Feet.
Little North Fork of Cœur d'Alene River, 150 feet north of mouth of, 30 feet west of, on top of large cliff; iron post.....	2, 204. 880
Little North Fork of Cœur d'Alene River, 100 feet northwest of mouth of, 6 feet above water, on narrow projecting rock; cross.....	2, 193. 450
Kingston, 1 mile northeast of, 90 feet northeast of Oregon-Washington Railroad & Navigation Co. bridge, in root of cottonwood tree branching in two; nail.....	2, 160. 90
Delta, Murray, and Little North Fork roads, 210 feet east of intersection of, 40 feet south of creek at bend in road, in root of 12-inch pine tree; nail..	2, 532. 48
Delta, Murray, and Little North Fork roads, 0.45 mile from intersection of, 20 feet north of creek, in root of fir tree; spike; marked "2436".....	2, 437. 06
Delta, Murray, and Little North Fork roads, 1.2 miles from intersection of, 20 feet south of road, in root of pine tree; nail.....	2, 260. 99
Delta, Murray, and Little North Fork roads, 1.98 miles north of intersection of, 1,700 feet northwest of Jacobson's house, 30 feet west of road, in root of large cedar stump; nail marked "2195".....	2, 195. 06
Ben Vener's house, 50 feet northwest of, in root of 24-inch fir tree; nail....	2, 199. 25
Ben Vener's house, 1 mile northwest of, edge of trail between North Fork of Cœur d'Alene and Little North Fork rivers, in root of 20-inch pine tree; nail marked "2462".....	2, 462. 44
North Fork and Little North Fork rivers, summit of trail between, 25 feet north of trail, in root of 26-inch fir tree; nail marked "2641".....	2, 641. 58
North Fork Cœur d'Alene River, 1.25 mile from, 10 feet north of trail, 20 feet north of small rill, in root of 16-inch fir tree; nail marked "2515"....	2, 514. 82
Little North Fork River, 500 feet northwest of, at edge of trail, in root of fir tree; nail marked "2380".....	2, 382. 27
Canning's house, 880 feet north of, 150 feet northwest of Little North Fork River, 40 feet south of trail, in root of 36-inch cottonwood tree; nail marked "2205".....	2, 206. 10
Canning's house, 0.5 mile north of, 80 feet west of Little North Fork River, 30 feet east of trail, in root of 34-inch cedar tree; nail marked "2212"....	2, 212. 52
Glenwood, 40 feet west of log house, 300 feet northwest of Little North Fork River, in root of 12-inch fir tree; nail marked "2218".....	2, 218. 42
Bumble Bee, east of river, in top of rock 12 feet above water; aluminum tablet stamped "2239 S".....	2, 239. 444
Bumble Bee, 0.25 mile southwest of, 30 feet southeast of river, at edge of trail, in root of 36-inch cottonwood tree; nail marked "2241".....	2, 241. 25
Bumble Bee, 0.8 mile northwest of, 10 feet west of river, at edge of trail at ford, in root of 30-inch cottonwood tree; nail marked "2245".....	2, 245. 09
Bumble Bee, 1.5 miles northwest of, opposite high cliff at bend in river, on bank of river, in root of 24-inch cottonwood tree; nail marked "2250"....	2, 250. 43
Bumble Bee, 2.8 miles northwest of, 1,600 feet south of cabin, 30 feet southwest of river, in root of 36-inch cedar tree; nail marked "2273".....	2, 273. 39
Old Mission trail, intersection with Little North Fork of Cœur d'Alene River crossing, 20 feet south of river, in root of 36-inch fir tree; nail marked "2300".....	2, 300. 06
Old Mission trail, 0.1 mile from, intersection with Little North Fork of Cœur d'Alene, 10 feet from north bank of river, in root of pine tree 30 inches in diameter; nail.....	2, 306. 29
Cox's logging camp, 70 feet east of, 50 feet west of Copper Creek, 30 feet west of Old Mission trail; iron post stamped "2335 S".....	2, 335. 780
Cox's logging camp, 0.25 mile north of, 200 feet from Copper Creek, 10 feet east of trail, in root of 16-inch white pine tree; nail marked "2336"....	2, 336. 85

	Feet.
Cox's logging camp, 1 mile north of, 20 feet southeast of Little North Fork River, at edge of trail where it makes first steep climb above Cox's camp, in root of 30-inch hemlock tree; nail marked "2357".....	2, 357. 25
Little North Fork River, west side of stream, at base of cliff 300 feet high, 10 feet from three large cottonwood trees, in root of fir tree; nail marked "2388".....	2, 388. 35
Old Mission trail, 20 feet north of, south bank of river, in root of 48-inch cedar tree; nail marked "2401".....	2, 401. 88
Cox's lower logging camp, 3 miles northwest of, 50 feet south of river, 10 feet south of Old Mission trail; iron post stamped "2406 S".....	2, 406. 773
Little North Fork River, south bank of stream at bend, at base of cliff 75 feet high, on shelving rock, in root of 18-inch hemlock tree; nail marked "2444".....	2, 444. 97
Old Mission trail, 20 feet north of, 40 feet south of river, in root of 24-inch hemlock tree; nail marked "2467".....	2, 468. 70
Little North Fork River, near bend at base of cliff 100 feet high projecting over river, in root of 36-inch cottonwood tree; nail marked "2481".....	2, 481. 23
Little North Fork River, south bank of, clump of four trees, one partly cut by beavers, in root of cottonwood tree; nail marked "2502".....	2, 503. 20
Leiberg and Old Mission trails, 200 feet west of intersection of, west bank of river, on large rock; cross marked "2540".....	2, 540. 40
Leiberg and Old Mission trails, intersection of, 40 feet north of, 6 feet east of trail, in root of 20-inch hemlock tree; nail marked "2541".....	2, 541. 78
Leiberg and Old Mission trails, 12 feet west of intersection of, 0.75 mile northwest of Handspike mine, 200 feet west of mouth of Leiberg Creek; iron post stamped "2541 S".....	2, 541. 860
S. W. Cope's cabin, 250 feet northeast of, 10 feet north of river, 70 feet below crossing of Old Mission trail, in root of 30-inch cottonwood tree; nail marked "2558".....	2, 559. 04
Prospector's cabin, 0.5 mile northwest of, south bank of river, at base of steep wooded slope, in root of 18-inch cedar tree; nail marked "2630".....	2, 631. 36
Old Mission trail, 100 feet south of, on south bank of river, 400 feet above large riffle, in root of 30-inch cottonwood tree; nail marked "2673".....	2, 672. 52
Old Mission trail, 170 feet south of, 50 feet east of large talus slope, south bank of river, in root of 24-inch cottonwood tree; nail marked "2692".....	2, 692. 56
Old Mission trail ford, 200 feet north of, north bank of river at bend, in root of 12-inch black pine tree; nail marked "2717".....	2, 718. 04
Skookum Creek, mouth of, on bank, in root of dogwood tree; nail marked "2732".....	2, 732. 54
Old Mission and Cœur d'Alene trails, 10 feet east at intersection, 115 feet north of mouth of Deception Creek; iron post stamped "2740 S".....	2, 740. 627
Old Mission and Cœur d'Alene trails, 0.5 mile north of intersection, 200 feet northeast of ford of Old Mission trail, north bank of river, in root of 20-inch white pine tree; nail marked "2754".....	2, 754. 79
Old Mission and Cœur d'Alene trails, 1.5 miles north of intersection of, 20 feet east of river, 6 feet west of Old Mission trail, in root of white pine tree; nail marked "2792".....	2, 792. 89
Cascade Canyon, mouth of, 240 feet south of mouth of Cascade Creek, 30 feet east of river, edge of trail at ford, in root of large pine stump; nail marked "2834".....	2, 834. 62
Cascade Creek, 230 feet south of mouth, 80 feet east of river, 10 feet east of forks of trail; iron post stamped "2837 S".....	2, 837. 547
Cascade Canyon, 0.8 mile northeast of mouth of, 400 feet northeast of cabin, edge of trail, in root of 30-inch white pine tree; nail marked "2912".....	2, 912. 58

	Feet.
Cascade Canyon, 1.2 miles northeast of mouth of, 20 feet south of trail, in root of 38-inch white pine tree; nail marked "2980".....	2, 980. 76
Moore's cabin, 0.8 mile southwest of, between trail and creek, in root of white pine tree 36 inches in diameter; nail marked "3155".....	3, 156. 26
Moore's cabin, 0.5 mile southwest of, 10 feet north of trail, 30 feet south of cabin, in root of 24-inch hemlock tree; nail marked "3293".....	3, 293. 82
Moore's cabin, 340 feet south of, 30 feet east of small creek, 6 feet north of trail, in root of 32-inch hemlock tree; nail marked "3346".....	3, 347. 10
Moore's cabin, 1,700 feet northeast of, 5 feet south of trail, in root of 24-inch hemlock tree; nail marked "3437".....	3, 438. 35
Moore's cabin, 0.6 mile northeast of, edge of trail, in root of hemlock tree; nail marked "3642".....	3, 643. 33
Moore's cabin, 1.5 miles northeast of, north edge of trail, in root of 12-inch fir tree; nail marked "3900".....	3, 900. 36
Moore's cabin, 1.8 miles northeast of, edge of trail, in root of 10-inch white pine tree; nail marked "4144".....	4, 148. 50
Moore's cabin, 1.9 miles northeast of, edge of trail, in root of 20-inch white pine tree; nail marked "4300".....	4, 301. 09
Moore's cabin, 2 miles northeast of, at forks of trail and beginning of second switchback, in root of 20-inch fir tree; nail marked "4473".....	4, 473. 79
Moore's cabin, 2.25 miles northeast of, 60 feet above last switchback, edge of trail, in root of 18-inch black pine tree; nail marked "4661".....	4, 662. 00
Moore's cabin, 2.25 miles northeast of, 800 feet south of Leiberg mine, edge of trail, in root of 24-inch white pine tree; nail marked "4665".....	4, 666. 59
Leiberg mine, 0.5 mile south of, edge of trail, in root of black pine tree 10 inches in diameter; nail marked "4809".....	4, 809. 65
Leiberg mine, 0.8 mile south of, 300 feet west of summit of trail, 6 feet north of trail, in root of 10-inch black pine tree; nail marked "5100".....	5, 100. 64
Leiberg mine, 0.8 mile south of, top of summit in large rock, 20 feet south of trail; aluminum tablet stamped "5127 S".....	5, 127. 864
Leiberg mine, 0.9 mile southeast of, 6 feet south of trail, at base of rocky knoll, in root of white pine tree; nail marked "5094".....	5, 094. 68
Summit of trail, 1,600 feet northeast of, 18 feet north of trail, on steep smooth slope, in root of black pine tree; nail marked "4919".....	4, 920. 495
Leiberg mine, 1 mile southeast of, 0.5 mile east of summit of trail, 3 feet north of trail, in root of 12-inch black pine tree; nail marked "4926".....	4, 926. 796
Leiberg mine, 1.25 miles southeast of, south edge of trail, in root of fir tree; nail marked "4822".....	4, 822. 846
Leiberg mine, 1.8 miles east of, in low sag on ridge, 3 feet south of trail, in root of 12-inch white pine tree; nail marked "4457".....	4, 458. 21
Leiberg mine, 3 miles southeast of, top of last summit between Cascade and Trail creeks, on top of large white quartz boulder 30 feet south of trail; cross marked "4581".....	4, 582. 56
Leiberg mine, 3.1 miles southeast of, 400 feet southeast of last summit on trail between Cascade and Trail creeks, in root of 10-inch hemlock tree; nail marked "4522".....	4, 523. 25
Leiberg mine, 3.25 miles southeast of, edge of trail, in root of 16-inch white pine tree; nail marked "4439".....	4, 440. 20
Leiberg mine, 4 miles southeast of, 1 mile southeast of last summit on trail, edge of trail, in root of 10-inch white pine tree; nail marked "4169".....	4, 170. 14
Leiberg mine, 4.5 miles southeast of, 0.5 mile west of Trail Creek, 3 feet south of trail, in root of 12-inch hemlock tree; nail marked "4001".....	4, 002. 13
Leiberg mine, 4.8 miles southeast of, 500 feet east of Teany's cabin, 1,200 feet west of Trail Creek, 3 feet south of trail, in root of white pine tree; nail marked "3802".....	3, 803. 57

Webb's cabin, 0.25 mile south of, 800 feet west of Trail Creek, on sharp ridge sloping down to creek, 3 feet west of trail, in root of 24-inch red fir tree; nail marked "3571".....	Fect. 3,572.66
Webb's cabin, 120 feet southeast of, 100 feet west of Trail Creek, SW. $\frac{1}{4}$ sec. 29, T. 52, R. 1 E., 3 feet west of trail, in root of 12-inch white pine tree, nail marked "3332".....	3,333.61
Webb's cabin, 0.2 mile east of, 100 feet east of Trail Creek, 8 feet east of forks of trail; iron post stamped "3273 S".....	3,274.068
Trail Creek, 50 feet east of, 2,000 feet north of McDarman's cabin, in root of 10-inch white fir tree; nail marked "3213".....	3,214.27
Big Meadows, 6 miles southwest of, 20 feet east of Trail Creek, 3 feet south of trail, at lower end of large open meadow, in root of 30-inch spruce tree; nail marked "3195".....	3,195.95
Big Meadows, 5 miles southwest of, 110 feet southeast of Trail Creek, 2 feet east of trail, in root of 16-inch white fir tree; nail marked "3147".....	3,147.77
Big Meadows, 4.8 miles southwest of, 12 feet west of Trail Creek, 4 feet east of trail, in root of 36-inch spruce tree; nail marked "3137".....	3,138.61
Heiner's cabin, 30 feet south of, 2.5 miles southwest of Big Meadows, 20 feet north of Trail Creek, in root of 30-inch spruce tree; nail marked "3082"...	3,083.28
Big Meadows, 1.8 miles southwest of, 3 feet south of trail, in root of 16-inch hemlock tree; nail marked "3054".....	3,055.42
Big Meadows, 1.25 miles southwest of, 3 feet north of trail, 70 feet north of Trail Creek, in root of spruce tree 24 inches in diameter; nail marked "3025".....	3,026.79
Big Meadows, 0.8 mile southwest of, 100 feet southeast of fork of Lake View and Cœur d'Alene trails, 3 feet north of trail, 300 feet northwest of mouth of Bear Creek, in root of 10-inch balsam fir tree; nail marked "3021".....	3,022.00
Mouth of Cascade Canyon to point 2.5 miles northwest of Wright's ranch (spur line).	
Wright's ranch, 400 feet west of, 10 feet north of river, in root of 24-inch white pine tree; nail marked "2856".....	2,855.94
Burnt Cabin Creek, 55 feet northeast of mouth, 0.8 mile west of Wright's ranch, on large protruding rock 3 feet above water; cross marked "2874".....	2,874.99
Wright's ranch, 1.25 miles northwest of, 1,600 feet northwest of mouth of Burnt Cabin Creek, 10 feet south of river, in root of white fir tree; nail marked "2882".....	2,883.55
Wright's ranch, 2 miles northwest of, 12 feet east of river, 15 feet west of trail, in root of 36-inch spruce tree; nail marked "2902".....	2,903.05
Wright's ranch, 2.5 miles northwest of, 200 feet west of trail, below dense willow swamp, south bank of river at sharp bend, in root of 20-inch spruce tree; nail marked "2916".....	2,916.99
Mouth of Bear Creek along trail via Magees to mouth of East Fork of Cœur d'Alene River, thence down river to mouth of Little North Fork.	
Big Meadows, 0.2 mile west of, 300 feet west of mouth of Teepee Creek, on steep hillside, 25 feet south of trail, in root of red fir tree 18 inches in diameter; nail marked "3138".....	3,139.06
Magee's ranch, 0.25 mile west of, 260 feet north of mouth of Teepee Creek, 3 feet south of trail, in root of 22-inch spruce tree; nail marked "2997".....	2,998.19
C. Magee's cabin, 120 feet south of, 300 feet north of Trail Creek, 60 feet north of trail, on gravel knoll in open meadow; iron post stamped "2984 S".....	2,985.289
C. Magee's cabin, 1 mile northeast of, 50 feet northwest of Trail Creek, 6 feet southeast of trail, in root of 8-inch white fir tree; nail marked "2957".....	2,958.61

	Feet.
C. Magee's ranch, 2 miles northeast of, 70 feet south of trail, bank of Trail Creek, on projecting rock 3 feet above water; cross marked "2926".....	2, 926. 96
Scott's cabin, 150 feet northeast of, 50 feet west of Trail Creek, 20 feet west of trail, in small meadow, in root of balsam fir tree in clump of three; nail marked "2919".....	2, 920. 12
T. S. Vickere's cabin, 220 feet northwest of, 20 feet southwest of Trail Creek, 8 feet east of trail, in root of spruce tree forking in two; nail marked "2903".....	2, 904. 70
Independence Creek, 200 feet north of mouth, 35 feet east of creek, 7 feet north of trail, 5 feet south of 36-inch cottonwood tree, on small gravel knoll; iron post stamped "2894".....	2, 895. 168
Independence Creek, 1 mile northeast of mouth, 30 feet southwest of river, 15 feet southeast of an old cabin, in root of 20-inch white pine tree; nail marked "2874".....	2, 874. 93
Independence Creek, 2.25 miles northeast of mouth, 30 feet north of river, in root of 35-inch white pine tree; nail marked "2847".....	2, 848. 41
East Fork of Cœur d'Alene River, 1 mile northwest of mouth, 0.5 mile southeast of Peterson's cabin, north bank of river, in root of 12-inch cottonwood tree; nail marked "2813".....	2, 813. 68
East Fork of Cœur d'Alene River, 240 feet southeast of mouth, 30 feet south of north fork of river, 40 feet west of Miss Otterson's cabin; iron post stamped "2796 S".....	2, 797. 072
East Fork of Cœur d'Alene River, 1.25 miles southeast of mouth of, on north bank of river opposite limestone cliff, in root of 18-inch cottonwood tree; nail marked "2768".....	2, 769. 56
East Fork of Cœur d'Alene River, 2.25 miles southeast of mouth of, on east bank of river, on large square rock sloping into river and 3 feet above surface of water; cross marked "2748".....	2, 749. 32
East Fork of Cœur d'Alene River, 3.25 miles southeast of mouth, on east bank of river, opposite large riffle, in root of 18-inch cottonwood tree; nail marked "2731".....	2, 731. 70
East Fork of Cœur d'Alene River, 4.25 miles southeast of mouth, 30 feet south of river, 90 feet northeast of cabin, in root of 10-inch willow tree; nail marked "2714".....	2, 715. 14
East Fork of Cœur d'Alene River, 5 miles southeast of mouth, on south bank of river, 4 feet above water, on shelving rock protruding from a high cliff, 600 feet west of L. Sherman's cabin; cross marked "2701".....	2, 702. 32
Big Henk's meadow, 0.5 mile southeast of, at sharp bend in river, 6 feet above water, on large projecting rock; cross marked "2674".....	2, 675. 07
Big Henk's meadow, 1.25 miles southeast of, 350 feet south of mouth of creek, at base of cliff 200 feet high, 3 feet north of white pine tree 24 inches in diameter, on top of rock; cross marked "2661".....	2, 661. 94
Big Henk's meadow, 2.5 miles southeast of, upper end of Long Pool, at base of cliff, 25 feet above water, on shelving rock; cross marked "2640".....	2, 641. 21
Big Pool, 60 feet north of, 220 feet southeast of an old cabin, 7 feet northeast of hemlock tree 30 inches in diameter; iron post stamped "2636 S".....	2, 636. 840
Big Pool, 1.25 miles southeast of, 300 feet east of mouth of creek, opposite old cabin, 3 feet above water, on highest point of large rock projecting above water; cross marked "2607".....	2, 607. 77
Big Pool, 2.5 miles southeast of, on east bank of river, 60 feet west of foot of high cliff, 3 feet above water, on highest point of large rock; cross marked "2587".....	2, 587. 59
Big Pool, 3 miles southeast of, on west bank of river, at base of cliff, 6 feet above water, on top of large rock; cross marked "2579".....	2, 580. 27

	Feet.
Big Pool, 4 miles southeast of, west bank of river, opposite high cliff, in root of 30-inch cottonwood tree; nail marked "2564".....	2, 564. 77
Kit Price's prairie, southeast end of, 40 feet west of river, in root of 48-inch twin cottonwood tree; nail marked "2535".....	2, 536. 11
Kit Price's prairie, 1 mile southeast of, near middle of river, 3 feet above water, on large rock; cross marked "2519".....	2, 519. 87
Kit Price's prairie, 2 miles southeast of, on west bank of river, in root of 30-inch cottonwood tree; nail marked "2506".....	2, 506. 28
Kit Price's prairie, 3 miles southeast of, 0.5 mile north of mouth of Big Creek, on east bank of river, in root of 24-inch cottonwood tree; nail marked "2492".....	2, 492. 99
Big Creek, 1 mile southeast of mouth, on north bank of river, in root of cottonwood tree forking in three; nail marked "2474".....	2, 475. 06
Big Creek, 1.25 miles southeast of mouth, on south bank of river, opposite jagged cliff, on very large rectangular rock sloping down to water, 1 foot above high water mark; aluminum tablet stamped "2472 S"; sunk into rock.....	2, 472. 314
Copper Bell mine, 200 feet east of mouth of tunnel, 50 feet east of location tunnel, on south bank of river, 7 feet above water, on projecting point of cliff; cross marked "2455".....	2, 456. 11
Copper Bell mine, 1.25 miles south of, 2.8 miles northeast of mouth of Prichard Creek, 5 feet above water, south bank of river, on top of large rock; cross marked "2438".....	2, 438. 32
Prichard Creek, 2 miles northeast of mouth, 1,600 feet west of Whipple's cabin, on south bank of river, in root of 18-inch cottonwood tree; nail marked "2425".....	2, 425. 88
Prichard Creek, 0.8 mile northeast of mouth, on south bank of river, opposite rocky point, in root of 24-inch twin cottonwood tree; nail marked "2409".....	2, 409. 74
Prichard Creek, 0.9 mile southwest of mouth, on east bank of river, 400 feet northwest of old cabin, opposite burned steep rocky slope, in root of 12-inch cottonwood tree; nail marked "2387".....	2, 387. 56
North Fork of Cœur d'Alene River, east side of, 200 feet north of Delta road, at foot of cliff, 7 feet above water; aluminum tablet stamped "2370 S".....	2, 372. 469
North Fork of Cœur d'Alene River, 30 feet east of, 160 feet north of Delta road, on narrow rock projecting from cliff, 11 feet above water; aluminum tablet stamped "2376 S".....	2, 376. 238
Beaver Creek, 3.3 miles west of, on south side of river, 800 feet north of cliff, in root of 30-inch cedar tree; nail marked "2325".....	2, 327. 24
Big Jam, 1.6 miles southwest of, on south bank of river, opposite high craggy cliff, at edge of burn, in root of 10-inch cedar tree; nail marked "2280".....	2, 280. 08
Castle Rock, 50 feet east of west end, flat rock sloping toward cliff, highest part; marked "2256".....	2, 257. 61
Steamboat Rock, 200 feet east of, 60 feet from west end of cliff, east side of Steamboat Creek at mouth; aluminum tablet stamped "2248 S".....	2, 249. 44

Mouth of Bear Creek via Lake View to Pend Oreille Lake.¹

Bear Creek, 0.8 mile north of mouth, 40 feet east of Bear Creek, 10 feet west of trail, in root of 20-inch spruce tree; nail marked "3098".....	3, 099. 46
Bear Creek, 1.25 miles north of mouth, 2 feet west of track, in root of black stump; nail marked "3151".....	3, 152. 78

¹ The closure error in this circuit is excessive.

	Feet.
Bear Creek, 2 miles north of mouth, 30 feet east of Bear Creek, 4 feet east of trail, in root of lone white pine tree 36 inches in diameter; nail marked "3280".....	3, 281. 52
Bear Creek, 2.3 miles north of mouth, on steep open incline, 20 feet northeast of trail, in root of 10-inch black pine tree; nail marked "3575".....	3, 576. 55
Bear Creek, 2.5 miles north of mouth, on steep open incline, sloping toward the south, 6 feet west of trail, in root of 24-inch line white pine tree; nail marked "3974".....	3, 975. 44
Bear Creek, 2.8 miles north of mouth, on steep open incline, sloping toward south, 25 feet east of trail, in root of 20-inch red fir tree; nail marked "4440".....	4, 441. 53
Bear Creek, 2.9 miles north of mouth, on steep open incline, sloping toward the south, 20 feet east of trail, in root of 9-inch fir tree; nail marked "4684".....	4, 685. 03
Bear Creek, 3 miles north of mouth, on top of first summit on trail between mouth of Bear Creek and Lake View, 3 feet north of trail, in root of 24-inch red fir tree; nail marked "4734".....	4, 735. 53
Bear Creek, 3 miles north of mouth, on top of first summit between mouth of Bear Creek and Lake View, 3 feet below apex of rocky point, in flat black shale rock; aluminum tablet stamped "4858 S".....	4, 859. 519
Bear Creek, 3.25 miles northwest of mouth, on top of ridge, where trail makes first big drop toward Independence Creek, 5 feet west of trail, in root of 9-inch balsam fir tree; nail marked "4838".....	4, 839. 75
Bear Creek, 3.5 miles northwest of mouth, 1.8 miles south of Independence Creek, 3 feet east of trail, in root of 24-inch tamarack tree; nail marked "4522".....	4, 523. 21
Bear Creek, 3.6 miles northwest of mouth, 1.7 miles south of Independence Creek, at foot of steep slope, in root of 30-inch fir tree; nail marked "4364".....	4, 365. 71
Bear Creek, 4 miles northwest of mouth, 1.5 miles south of Independence Creek, 30 feet west of trail, on west slope of small grassy knoll, in root of balsam fir tree forking in two; nail marked "4320".....	4, 321. 39
Bear Creek, 4.25 miles northwest of mouth, 1.25 miles south of Independence Creek, on high bushy knoll, in root of 12-inch white fir tree; nail marked "4515".....	4, 516. 27
Bear Creek, 4.4 miles northwest of mouth, 1 mile south of Independence Creek, on steep brushy incline, sloping toward west, 30 feet southwest of trail, in root of 10-inch hemlock tree; nail marked "4200".....	4, 201. 41
Independence Creek, 0.25 mile south of, on steep wooded incline, sloping down to creek, 6 feet north of trail, in root of 30-inch white pine tree; nail marked "3691".....	3, 692. 46
Independence Creek, 0.2 mile south of, on steep wooded point sloping down to creek, 20 feet north of trail, in root of 20-inch hemlock tree; nail marked "3576".....	3, 577. 04
Mrs. Lovell's cabin, 6 feet southwest of, 120 feet south of Independence Creek, 5 feet north of trail, 11 miles southeast of Lake View; iron post stamped "3275 S".....	3, 276. 557
Mrs. Lovell's cabin, 0.25 mile west of, 400 feet north of Independence Creek, 6 feet north of trail, on steep open point sloping south, in root of 10-inch fir tree; nail marked "3429".....	3, 430. 10
Mrs. Lovell's cabin, 0.4 mile west of, 500 feet north of Independence Creek, at beginning of second switchback on trail, in root of 9-inch fir tree; nail marked "3645".....	3, 646. 61
Independence and Bear Creek trails, 120 feet west of intersection of, on high burned divide, 12 feet north of Lake View trail, in root of 12-inch tamarack tree; nail marked "4280".....	4, 281. 22

Weber mine, 1.6 miles southeast of, 150 feet south of summit of divide, 0.5 mile north of Independence Creek, 12 feet south of trail, in root of 30-inch tamarack tree; nail marked "4908".....	Feet. 4, 909. 55
Weber mine, 1.5 miles southeast of, on top of divide, burned ridge, 3 feet north of trail, in root of 24-inch tamarack tree; nail marked "4983"....	4, 984. 75
Lake View, 6 miles southeast of, 1 mile southeast of Weber mine, at head of graded road, on lowest part of divide; iron post stamped "4602 S".....	4, 604. 542
Weber mine, 120 feet southwest of entrance, 30 feet northwest of road, in root of large black stump; nail marked "3606".....	3, 607. 97
Conjecture mill, 4 miles southeast of Lake View, in top of stringer in southwest corner of mill; nail marked "3164".....	3, 165. 49
Lake View, 3.5 miles southeast of, 10 feet west of road, at foot of long hill, in root of black tree; nail marked "2764".....	2, 764. 96
Lake View, 1.8 miles southeast of, on top of hill, 7 feet east of county road, in root of 9-inch jack pine tree; nail marked "2695".....	2, 697. 12
Lake View, corner of South Street and Rus Avenue, 1 foot north of southwest corner lot 8, block 6, 75 feet southeast of post-office; iron post stamped "2269 S".....	2, 269. 824
Pend Oreille Lake, 100 feet south of, 1,500 feet north of Lake View, 50 feet east of North Gold Creek, in root of 36-inch twin cottonwood tree; nail marked "2064".....	2, 065. 60
Pend Oreille Lake, 60 feet east of mouth of North Gold Creek, at water surface; bridge spike.....	2, 051. 45
Pend Oreille Lake, 60 feet east of mouth of North Gold Creek; surface of water, Sept. 9 and Sept. 12, 1905.....	2, 051. 4

Kingston via Oregon-Washington Railroad & Navigation Co. tracks to Wallace.

Kellogg, 200 feet southeast of station, 5 feet west of northwest corner of Hotel McKinniss; iron post stamped "2305 S".....	2, 305. 720
Osburn, 300 feet northwest of hotel, 3 feet north of north corner of grocery store, on west side of Mullan Avenue; iron post stamped "2521 S".....	2, 521. 874
Wallace, 1 foot north of schoolhouse, 1 foot east of wall, 7 feet south of northeast corner; iron post stamped "2728 S".....	2, 728. 506

Osburn via Beaver and Delta to Murray.

Beaver, 6 feet north of northeast corner of station house, 3 feet east of fence, 5 feet north of porch; iron post stamped "2785 S".....	2, 785. 385
Murray and Delta, summit of mountain between, 25 feet north of road; iron post stamped "3321 S".....	3, 321. 819
Murray, at intersection of Main and Second streets, 6 feet west of southwest corner of printing office; iron post stamped "2772 S".....	2, 772. 435

Murray via Eagle and east fork of Eagle Creek to point 4 miles east of Eagle (single spur line).

Murray, 1.7 miles northwest of, 15 feet south of old flume, 5 feet south of road, in poplar tree; spike.....	2, 654. 028
Murray, 2.7 miles northwest of, in tree 15 feet east of road; spike.....	2, 601. 518
Eagle, 20 feet north of cabin, 30 feet east of road; iron post stamped "2546 S".....	2, 547. 088
Eagle, 120 feet north of road, 350 feet west of white house, in fir tree; spike.....	2, 549. 896
Eagle, 1 mile east of, 450 feet southeast of house, south of road, in spruce tree; spike.....	2, 619. 773
Eagle, 1.2 miles east of, 50 feet east of forks of road, in spruce tree; spike.....	2, 626. 716
Eagle, 4 miles east of, 400 feet northeast of branches of creek, north of road, at base of cliff, in quartz rock; copper bolt stamped "2892 S".....	2, 892. 674

Delta, Murray, and Little North Fork roads, intersection of, 210 feet east of, 40 feet south of creek at bend in road, in root of pine tree 12 inches in diameter; nail.....	2, 532. 768
Halzandorf's ranch, 780 feet north of, forks of roads, east side of road, in root of cedar tree; nail.....	2, 230. 457
Wallace east along Northern Pacific Railway to Idaho-Montana boundary line.	
Mullan, 15 feet west of station, at corner of sidewalk, at base of Northern Pacific Railway station steps; iron post stamped "3244 S".....	3, 244. 855
Lookout, summit of Bitterroot Mountain, Mont., 250 feet south of Montana-Idaho State line, 30 feet west of station; iron post stamped "4727 S".....	4, 727. 268
Wallace east via Gem and Burke to Glidden Pass.	
Granite, opposite Granite mill, 10 feet north of Canyon Creek, in root of pine stump; spike.....	3, 168. 202
Gem, 725 feet east of Granite mill, 6 feet west of house, on fence line, 45 feet north of Northern Pacific Railway; 20 feet north of wagon road; aluminum bolt in granite boulder 5 by 5 by 4 feet, stamped "3197 S".....	3, 197. 045
Burke, 15 feet north of Northern Pacific Railway track, 15 feet east of house, 17 feet northeast of telegraph pole, 60 feet west of road crossing, 10 feet north of wagon road, 180 feet west of station, in rock at base of cliff; aluminum tablet stamped "3736 S".....	3, 736. 657
Burke, in front of station; top of rail.....	3, 740. 9
Burke, 1.6 miles northeast of, south of Tiger-Poorman electric station, 18 feet north of wagon road, in spruce tree; spike.....	4, 100. 33
Burke, 3 miles east of, 100 feet north of flume, 1 foot south of road, in root of fir tree 4 inches in diameter; spike.....	4, 783. 67
Glidden Pass, 15 feet east of road, summit of Bitterroot Mountains, in white limestone pillar 5 by 5 inches at top, 2.3 feet high, projecting 4 inches above ground; aluminum tablet stamped "5768".....	5, 768. 296
Murray east via Raven to Thompson Pass, Idaho-Montana State line.	
Murray, 1 mile east of, 2 feet west of road, in root of pine stump; spike.....	2, 911. 337
Raven, 100 feet south of old sawmill, at north end of Burke trail, at mouth of Granite Creek, in boulder 6 inches above ground at base of stump; aluminum tablet stamped "3060 S".....	3, 060. 761
Raven, 1.1 miles east of, 20 feet south of road, in root of pine tree 8 inches in diameter; spike.....	3, 258. 155
Sullivan, 1 mile east of, 2 feet north of road, 35 feet northeast of blazed tree on south side of road, in sandstone; cross.....	3, 908. 110
Summit of Bitterroot Mountain, 25 feet northeast of road, 25 feet southeast of flume; iron post stamped "4862 S".....	4, 862. 292
Burke along trail to Raven.	
Burke, 1 mile north of, 2 feet south of trail at switchback, in root of spruce tree 5 inches in diameter; spike.....	4, 632. 70
Summit, 6 feet east of trail; iron post stamped "5839 S".....	5, 839. 468
Beaver via Dobson Pass to Wallace.	
Beaver, 2 miles southeast of, 12 feet east of road, in pine tree 1 foot in diameter; spike.....	3, 502. 23
Beaver, 3 miles southeast of, 6 feet east of road, in spruce tree 2 feet in diameter; spike.....	3, 948. 90
Dobson Pass, 12 feet south of road; iron post stamped "4179 S".....	4, 179. 934
Dobson Pass, 1.1 miles southeast of, 10 feet west of road, in root of tamarack tree 1 foot 6 inches in diameter; spike.....	3, 802. 13

Kellogg via county road to Wardner.

Kellogg, 0.7 mile south of, 20 feet southeast of telephone pole, west of road, in cedar stump; nail.....	Feet. 2, 521. 353
Wardner, in foundation of Empire State-Idaho Mining & Developing Co. compressor under cylinder head of high pressure air-cylinder; aluminum tablet stamped "2880 S".....	2, 880. 142
Wardner, Bunker Hill & Sullivan machine shop, 300 feet north of, on rock west of road; cross.....	2, 960. 301

Delta along wagon road and trail down North Fork of Cœur d'Alene River to Kingston.

Delta, 1 mile northwest of, 150 feet southeast of house, on west side of bend in road, in root of poplar tree; nail.....	2, 471. 035
Delta, 2 miles northeast of, east side of road, in root of dead fir tree; nail....	2, 433. 166
North Fork of Cœur d'Alene River, at intersection of road with river, in a twin cedar; nail.....	2, 369. 643
North Fork of Cœur d'Alene River, east side of, 200 feet north of Delta road, at foot of cliff, 7 feet above river; aluminum tablet stamped "2370 S"....	2, 371. 772
Morrison's mine, on rock at entrance; cross.....	2, 332. 901
Big Jam, 450 feet east of, sunk into a flat rock sloping into river, 3 feet above surface, on south side; aluminum tablet stamped "2297 S".....	2, 298. 950
Big Jam, 1 mile west of, 1,000 feet southwest of junction of old and northwest channel of river, on south side; cross on rock 3 feet above surface of water.	2, 287. 046

Bonnors Ferry, Calispell, Pend Oreille, and Sandpoint quadrangles.**BONNER AND KOOTENAI COUNTIES.**

The elevations in the following list were determined by a double primary level line from Tacoma and by other primary lines. The list includes descriptions taken from the appendix to the Twentieth Annual Report of the Geological Survey, pages 471 to 474 and pages 521 and 522, inclusive, with readjusted elevations.

The leveling was done in the Sandpoint quadrangle in 1897 by Charles Harlow, jr., in 1898 by W. R. Prowell and H. S. Crowe; in the Pend Oreille quadrangle in 1898 by H. S. Crowe, and in 1903 by G. H. Kendall; in the Calispell quadrangle in 1898 by Prowell; and in the Bonnors Ferry quadrangle in 1904 by M. S. Bright, J. G. Hefty, and G. H. Kendall.

SANDPOINT QUADRANGLE.**Granite along Northern Pacific Railway to Sandpoint.**

Granite, in front of station; top of rail.....	Feet. 2, 260. 7
Granite, 45 feet west of west edge of station platform, 20 feet south of center of track, near telegraph pole; iron post stamped "2262 T".....	2, 262. 666
Milepost "W.213, H.33," 19 feet west of, 28 feet west of center of track; iron post stamped "2251 T".....	2, 251. 252
Cocolalla, in front of section house; base of rail.....	2, 220. 3
Milepost "W.218, H.28," 250 feet northeast of, 18 feet north of railroad, southeast of whistling post; iron post stamped "2226 T".....	2, 226. 419
Algoma siding; top of east head block.....	2, 177. 4
Milepost "W.224, H.22," 390 feet southeast of, 25 feet south of railroad track, at west end of cut; iron post stamped "2167 T".....	2, 167. 277
Sandpoint, in front of station; top of rail.....	2, 086. 4

Sandpoint, 83 feet southwest of Northern Pacific station, 6 feet north of Butler & Culver warehouse, west side of street, at edge of sidewalk, 62 feet west of main track; iron post stamped "2087 T," restamped "2085" when reset.....	Feet. 2, 085. 107
Sandpoint, T. 57 N., R. 2 W., 32 feet northeast of Spokane International Railway section house; iron post stamped "2117 T".....	2, 117. 498
Sandpoint, in front of telegraph office of Northern Pacific Railway station; top of rail.....	2, 119. 4
Albane Falls east and north along Great Northern Railway to 3 miles northeast of Colburn.	
Priest River, in front of station; top of rail.....	2, 080. 4
Priest River, 75 feet south by 167 feet east of water tank, 75 feet south of south rail; iron post stamped "2077 P. R.".....	2, 082. 394
Markham, in southeast corner of sec. 20, T. 56 N., R. 3 W., 60 feet from front door of post office, inside yard; iron post stamped "2088 P. R."....	2, 093. 580
T. 57 N., R. 3 W., SW. $\frac{1}{4}$ sec. 26, in center of C. Carr's front yard, 100 feet from house; iron post stamped "2087 P. R.".....	2, 091. 959
Colburn, 1.2 miles north of section house, northwest corner of T. 58 N., R. 1 W., 1,700 feet northwest of railway track; iron post stamped "2127 P. R.".....	2, 133. 432
Elmira siding to corner of Tps. 59 and 60 N., Rs. 1 and 2 W.	
Elmira, 3.2 miles west of, northwest corner of T. 59 N., R. 1 W.; aluminum tablet stamped "4031 P. R.".....	4, 037. 680
Cary Ferry south and west to Medler Lake.	
T. 55 N., R. 4 W., sec. 33, 100 feet from Vogler's house, at north gatepost; iron post stamped "2222 P. R.".....	2, 227. 625
T. 54 N., Rs. 4 and 5 W., quarter corner between secs. 24 and 19, 900 feet south of road; iron post stamped "2286 P. R.".....	2, 291. 060
Priest River northwest along road up West Branch.	
Terrells Falls, near east side of sec. 16, T. 57 N., R. 5 W., at east end of bridge across West Branch of Priest River, just below falls, about 600 feet east of Terrell's house; iron post stamped "2289 P. R.".....	2, 294. 785
T. 58 N., R. 5 W., SW. $\frac{1}{4}$ sec. 27, at lower end of S. H. Moor's ranch, at west side and north end of bridge across small stream, about 400 feet from section corner; iron post stamped "2411 P. R.".....	2, 416. 192
Priest River north along road to Priest Lake.	
Tps. 56 and 57 N., R. 4 W., on line between, 5 yards west of road; iron post stamped "2371".....	2, 376. 053
Tps. 57 and 58 N., R. 4 W., on line between, 5 yards west of road; iron post stamped "2405".....	2, 410. 730
Tps. 58 and 59 N., R. 4 W., on line between, 4 yards west of road; iron post stamped "2543".....	2, 548. 002
Coolin, northwest of northwest corner of fence, 15 yards from edge of lake; iron post stamped "2442".....	2, 447. 102
Priest Lake; surface of water, September, 1898.....	2, 439. 4
Coolin, Aug. 29, 1905.....	2, 438. 9
Coolin, 200 yards south of, triangulation station; iron post.....	2, 445. 235
Coolin to corner of Tps. 59 and 60 N., Rs. 4 and 5 W.	
Coolin, 2.5 miles northwest of, northwest corner of T. 59 N., R. 4 W., in rock; aluminum tablet stamped "2760".....	2, 765. 854

Coolin to corner of Tps. 59 and 60 N., Rs. 3 and 4 W.

Coolin, 3.8 miles northeast of, northwest corner of T. 59 N., R. 3 W., in rock; aluminum tablet stamped "3852 P. R."..... Feet.
3, 857. 716

Priest Lake road east to southwest corner of T. 58 N., R. 3 W.

T. 58 N., R. 3 W., southwest corner of, in rock; aluminum tablet stamped "3491 P. R.".....
3, 496. 581

Spur line from Northern Pacific Railway to northwest corner of T. 56 N., R. 1 W.

T. 56 N., R. 1 W., northwest corner of, 5.5 miles from Sandpoint and 1.8 miles east of Northern Pacific Railway track; iron post stamped "3376".....
3, 381. 801

Spur line from Northern Pacific Railway to northwest corner of T. 54 N., R. 2 W.

T. 54 N., R. 2 W., northwest corner of, 0.6 mile east of Northern Pacific Railway track; iron post stamped "2289".....
2, 294. 004

PEND OREILLE QUADRANGLE.**Sandpoint along Northern Pacific Railway to Idaho-Montana boundary line.**

Kootenai, 60 feet north of post office door; iron post stamped "2117 T".... 2, 116. 840
Oden siding; top of east head block..... 2, 075. 2
Milepost "W. 240, H. 6," 300 feet east of, on knoll, 30 feet south of center of track; iron post stamped "2079 T"..... 2, 078. 951
Hope, in front of telegraph office; top of rail..... 2, 078. 2
Hope, 70 feet west of station, in lot between hotel and station, 20 feet north of center of track; iron post stamped "2080 T"..... 2, 079. 692
Thornton, 225 feet southeast of station, east end of siding, 45 feet south of track at east end of cut; iron post stamped "2103 T"..... 2, 102. 546
Clark Fork, 90 feet east of milepost "H. 10, HLNA 288," at east corner of fence of railroad section house; iron post stamped "2081 T"..... 2, 081. 141
Clark Fork, second crossing; surface of water..... 2, 062. 5
Milepost "H. 15, HLNA 283," 0.2 mile east of, 15 feet north of track, opposite spur for loading logs; iron post stamped "2101 T"..... 2, 100. 403
Cabinet, in front of section house; top of rail..... 2, 186. 4
Idaho-Montana boundary line, at signboard 15 feet north of track; iron post stamped "2212 T"..... 2, 212. 182

Point near Elmira north via Great Northern Railway.

Elmira, 1 mile north of, 50 feet east of track, 30 feet southeast of road crossing; iron post.....
2, 148. 539

BONNERS FERRY QUADRANGLE.**Point near McCarthy siding north along Great Northern Railway to Bonners Ferry.**

Milepost 1383, 135 feet south of, 40 feet southeast of track, in slope; iron post. 2, 104. 270
Naples, 1,000 feet south of station, opposite milepost 1380, 65 feet east of track, 700 feet south of water tank; iron post..... 2, 018. 337
Naples, in northeast corner of northeast foundation stone under water tank; cross..... 2, 028. 212
Bridge 211, 1,000 feet north of, 300 feet northwest of cut, 120 feet west of track, at first telegraph pole south of milepost 1377; iron post..... 1, 955. 481
Milepost 1374, opposite, 300 feet northeast of tunnel 10, 150 feet west of track on old roadbed, 100 feet southwest of road at Dunn's ranch; iron post. 1, 834. 911
Moravia, in front of station sign; top of west rail..... 1, 849. 1
Mirror Lake; surface of water, July 13, 1904..... 1, 763. 9

Bonnors Ferry, 2.5 miles southwest of, opposite milepost 1371, 60 feet west of track, on east shore of Mirror Lake; iron post.....	Feet. 1,766.663
Bonnors Ferry, in front of Great Northern Railway station; top of rail.....	1,778.8

Bonnors Ferry via Kootenai Valley Railway to international boundary line.

Bonnors Ferry, 0.5 mile east of, 30 feet northeast of railroad track where it enters a cut, south corner of town lot 18, block 1, near residence of Benj. Morrow; iron post.....	1,786.594
Bonnors Ferry, near Kootenai River, under bridge; surface of water, Mar. 28, 1904.....	1,748
Bonnors Ferry, 2.4 miles north of, at edge of right of way, 30 feet east of track, at north edge of small cleared flat at mouth of draw on sharp curve of track; iron post.....	1,792.204
Bonnors Ferry, 6 miles north of, 30 feet east of track, 150 feet north of Wridler's cabin, at fence; iron post.....	1,789.242
Bonnors Ferry, 9 miles north of Empy's house, at road crossing, 30 feet east of track, at edge of wagon road and at foot of rocky bank; iron post.....	1,788.097
Copeland, 5 miles south of, McRay's ranch, in front of house, 20 feet east of track, 50 feet north of small creek; iron post.....	1,789.484
Copeland, 2.4 miles south of, 150 feet south of milepost 14, 30 feet east of track; iron post.....	1,799.751
Copeland, 450 feet north of Cole's store, 40 feet east of track; iron post.....	1,788.474
Port Hill, 2.8 miles south of, on bank 30 feet east of track, 170 feet north of trestle 10; iron post.....	1,783.838
Port Hill, in front of station; top of rail.....	1,781.7
Port Hill, international boundary line, 4 feet west of original stone monument marking boundary, 60 feet east of railroad, east of Kootenai River; iron post.....	1,797.277

CALISPELL QUADRANGLE.

Newport south to Medler Lake.

Newport, Washington-Idaho State line, corner of secs. 24 and 25, T. 56 N., R. 6 W.; iron post stamped "2128 P. R.".....	2,133.281
T. 54 N., R. 5 W., northwest corner of; iron post stamped "2326 P. R.".....	2,331.843

Priest Lake quadrangle.

KOOTENAI COUNTY.

The following elevations are based on that of an iron post stamped "2442" near the edge of Priest Lake at Coolin, the accepted elevation of which is 2,447.102 feet. Water leveling was used in determining elevations at other points on the lake, and from these only single spur primary level lines were run and the elevations are therefore unchecked. The Coolin elevation is determined in part through primary circuits and in part by a single spur line in the Sandpoint quadrangle from the double line from Tacoma, as published on page 521 of the appendix to the Twentieth Annual Report of the Geological Survey.

The leveling was done in 1905 by A. L. Glover.

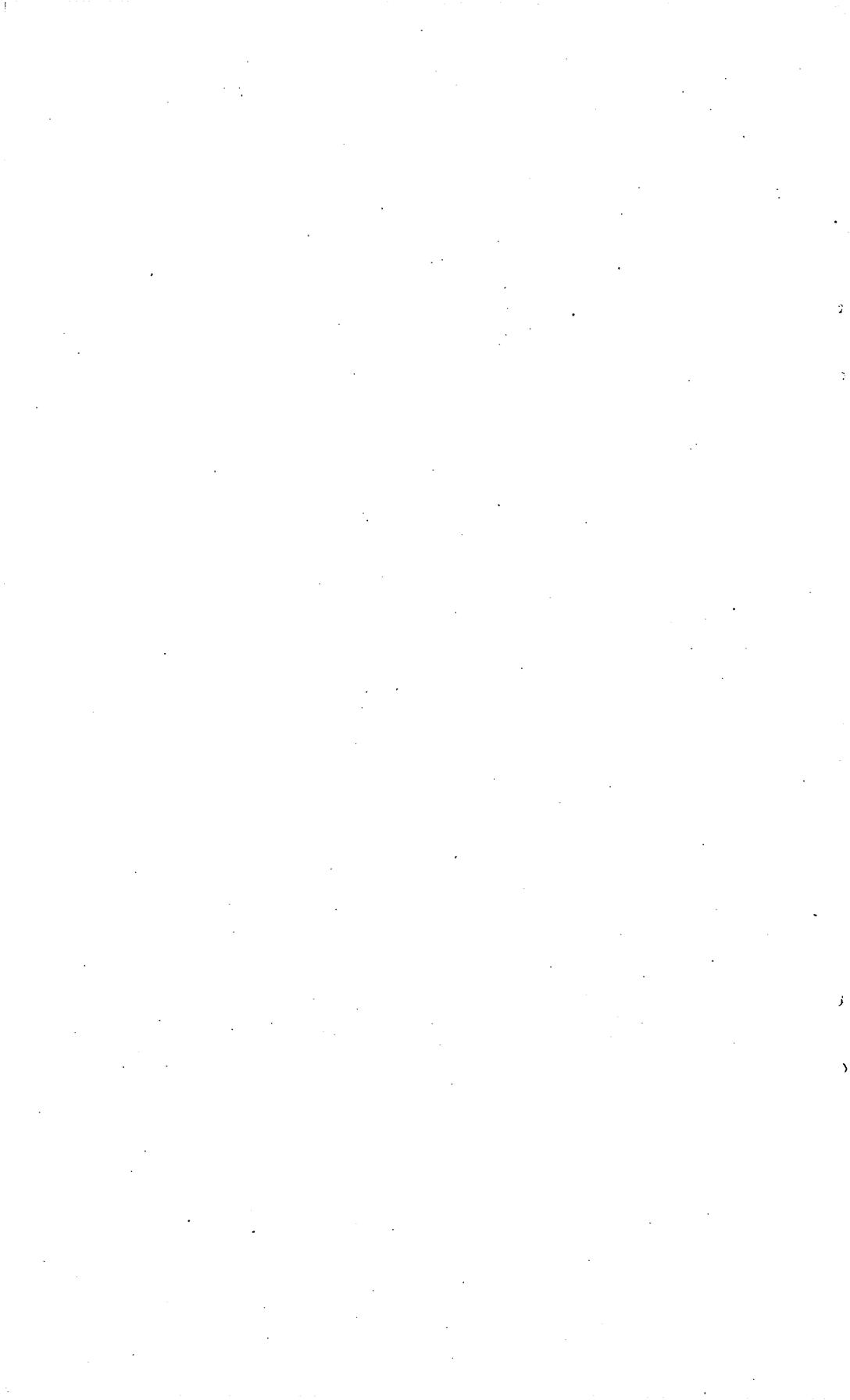
PRIEST LAKE QUADRANGLE.

Bench marks near Reeder Creek and Bear Creek.

	Feet.
Priest Lake; surface of water, August 31, 1905	2, 438. 8
Reeder Creek, about 1,000 feet north of mouth, 90 feet west of end of old Reeder Creek trail, 130 feet west of water's edge on top of first terrace, 7 feet north of trail, 6 feet northwest of stump 10 inches in diameter and 50 feet high, 300 feet north of only live fir and cedar trees in the vicinity; iron post stamped "2468"	2, 467. 999
Bear Creek Bay, south side of, opposite mouth of Granite Creek, about halfway to end of point from mouth of Bear Creek, on east side of lake, at old camp, 50 feet south of water's edge, about middle of small sandy stretch of beach rocky at both ends, 10 feet north of blazed and marked 24-inch pine tree; iron post stamped "2447"	2, 446. 990
Thoroughfare (watercourse between Lower and Upper Priest lakes) north along Continental mine trail to Continental mine.	
Thoroughfare, on east bank, at south end, 200 feet from water opposite entrance, between two large blazed tamarack trees about 18 inches in diameter, one of which has top broken off—the only large trees on the end of bar—10 feet from each tree; iron post stamped "2447"	2, 447. 107
Thoroughfare, 0.7 mile from south end of, on east bank, 15 feet from water, in root of 18-inch blazed tamarack tree; spike marked "2447" . . .	2, 447. 08
Thoroughfare, 1.3 miles from south end of, north side of Caribou Creek, on end of point between entrance of Caribou Creek into Thoroughfare, 30 feet east of Thoroughfare, 15 feet north of water's edge in Caribou Creek, in root of 10-inch pine tree; spike marked "2450"	2, 450. 01
Thoroughfare, 2 miles from south end of, 40 feet west of water's edge, at foot of 30-inch cedar tree, in small stump 3 inches high and 4 inches in diameter, near tree blazed and marked "2455"; spike	2, 455. 41
Thoroughfare, north end of, at south end of upper lake, 8 feet east of blazed and marked spruce tree 18 inches in diameter, 50 feet north of 24-inch blazed pine tree, 75 feet east of water's edge, 20 feet east of edge of sand beach, 150 feet northeast of end of sand point; iron post stamped "2447" . .	2, 447. 004
Upper Priest Lake; surface of water September 2, 1905	2, 438. 95
Upper Priest Lake, at north end on east side, where the Continental mine trail reaches the shore of the lake, 50 feet east of water, 5 feet west of trail, 15 feet east of 10-inch cottonwood tree blazed and marked "2447"; iron post stamped "2447"	2, 447. 025
Continental mine, 10.3 miles south of, 1 foot east of trail, near dead 48-inch cedar tree, in stump; nail marked "2454"	2, 453. 68
Continental mine, 9.9 miles south of, 1 foot west of trail, in root of 24-inch cedar tree; spike marked "2489"	2, 488. 78
Continental mine, 9.4 miles south of, 10 feet west of trail, in root of 18-inch cedar tree; nail marked "2512"	2, 511. 81
Continental mine, 8.9 miles south of, 12 feet east of trail, in root of 24-inch hemlock tree; nail marked "2487"	2, 487. 22
Continental mine, 8.2 miles south of, 20 feet east of trail, in root of dead 12-inch stump 30 feet high; nail marked "2594"	2, 594. 30
Continental mine, 7.8 miles south of, 4 feet west of trail, in root of 24-inch cedar tree; nail marked "2620"	2, 620. 36

	Feet.
Continental mine, 7.4 miles south of, 3 feet east of trail, in root of 30-inch hemlock tree; nail marked "2638".....	2, 638. 27
Continental mine, 6.8 miles south of, 15 feet east of trail, in root of 30-inch cedar tree; nail marked "2664".....	2, 664. 31
Continental mine, 6.5 miles south of, 4 feet west of trail, in root of 12-inch hemlock tree; nail marked "2676".....	2, 676. 34
Continental mine, 5.8 miles south of, 4 feet east of trail, in root of 36-inch cedar tree; nail marked "2705".....	2, 704. 82
Continental mine, 5.1 miles south of, short distance east of mouth of Cedar Creek, 1 foot above and 2 feet east of trail to Continental mine, 10 feet northwest of blazed and marked 18-inch cedar tree 4 feet west of trail, on top of small hill over the end of which the trail passes, in 3 foot granite rock; aluminum tablet stamped "2736".....	2, 735. 990
Continental mine, 4.8 miles south of, west edge of trail, in root of 18-inch hemlock tree; nail marked "2873".....	2, 872. 84
Continental mine, 4.4 miles south of, 6 feet east of trail, in root of 30-inch cedar tree; nail marked "2913".....	2, 913. 15
Continental mine, 4.1 miles south of, 15 feet east of trail, in root of 30-inch hemlock tree; nail marked "2950".....	2, 950. 44
Continental mine, 3.7 miles south of, 15 feet southeast of trail, about 200 yards south of first cabin on Cedar Creek where trail crosses, in root of 42-inch hemlock tree; nail marked "3079".....	3, 079. 23
Continental mine, 3.4 miles south of; surface of water in Cedar Creek at trail crossing, September 17, 1905; elevation marked on 24-inch cedar log across stream 4 feet above water, 30 feet northeast of trail crossing and 75 feet south of cabin.....	3, 089. 7
Continental mine, 3.4 miles south of, 100 feet north of creek, 15 feet west of northwest corner of cabin at trail crossing Cedar Creek, 1 foot east of trail, in root of 48-inch cedar tree; nail marked "3115".....	3, 114. 77
Continental mine, 3 miles south of, 2 feet south of second cabin on trail, 7 feet east of southeast corner of house, side of house marked "3381"; marked point on rock.....	3, 381. 22
Continental mine, 2.6 miles south of, south edge of trail, on top of first high point crossed by trail, above second cabin on trail, in root of 4-inch birch tree; nail marked "3705".....	3, 705. 44
Continental mine, 2.2 miles south of, 10 feet north of trail, 50 feet northwest of small creek just before reaching Cedar Creek, where trail crosses at lowest place trail strikes, in root of 30-inch cedar tree; nail marked "3693".....	3, 692. 87
Continental mine, 1.8 miles south of, 200 feet north of Cedar Creek, 20 feet south of trail; 2 feet southeast of stream 1 foot wide, 100 feet south of large stream, both crossed by trail which then runs parallel to Cedar Creek, in root of 48-inch hemlock tree; nail marked "3920".....	3, 919. 59
Continental mine, 1.77 miles south of, on trail, 1,000 feet south third cabin up trail, near 12-inch hemlock tree. 5 feet north of trail, in a 5-foot granite rock 2 feet above ground; aluminum tablet stamped "3932".....	3, 932. 065
Continental mine, 1.6 miles south of, east edge of trail, near 24-inch dead burnt fir tree marked "4058," 400 feet south of cabin; marked point on rock.....	4, 058. 07
Continental mine, 1.5 miles south of, at southeast corner of cabin, in log, nail; marked on cabin "4176.....	4, 175. 66
Continental mine, 1.1 miles south of, 2 feet east of trail, near point where trail crosses gulch below Dark Horse mine; point on rock marked "4773".	4, 773. 12

Continental mine, 0.8 mile south of, 5 feet east of trail, 6 feet north and 50 feet south of point where trail crosses second draw below Dark Horse mine; point on rock marked "4989".....	Feet. 4,989.18
Continental mine, 0.7 mile south of, 12 feet east of trail; point on rock marked "5167".....	5,166.92
Continental mine, 400 feet south of shaft house, on outcropping rock above rock pile above slide; marked point on rock.....	5,774.26
Continental mine, 400 feet east of shaft house, near top of mound in center of upper saddle in ridge between Cedar Creek and Blue Joe Creek, stump 12 inches in diameter blazed and marked on all four sides; nail marked "5850".....	5,850
Continental mine, 6 feet north of trail from Continental boarding house to Continental shaft house, at top of ridge between Cedar Creek and Blue Joe Creek, in solid rock outcrop; aluminum tablet stamped "5890".....	5,890.001



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