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ROY D. CHAPIN, Secretary
COAST AND GEODETIC SURVEY
R. S. PATTON, Director

Special Publication No. 177

LEVELING IN OREGON

By
HOWARD S. RAPPLEYE
MATHEMATICIAN



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LEVELING IN OREGON

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GENERAL STATEMENT

This publication supersedes Coast and Geodetic Survey Special Publication No. 122, First-order Leveling in Oregon. It contains

the descriptions and elevations of all bench marks in Oregon the elevations of which have been determined by first or second order leveling executed by the field parties of the United States Coast and Geodetic Survey. Other marks have been included, the elevations of which were determined by first or second order leveling run by the United States Geological Survey. Also, a number of bench marks have been included in this publication the elevations of which were determined by means of leveling run by other organizations, and in these cases appropriate notes are appended to the descriptions to give credit for the leveling.

The marks the elevations of which were established by first-order leveling by the United States Geological Survey are located along the line from Biggs, through Prineville, Suntext, Burns, and Vale, to Ontario, Oreg. The portions of this line between Suntext and Burns and between Little Valley and Ontario have been rerun by the Coast and Geodetic Survey and the elevations for bench marks along these portions of the line, as given in this publication, result from a combination of the work of the two bureaus.

The second-order leveling of the United States Geological Survey which has been included in this publication is a line extending from Prineville through Powell Butte, Bend, Lapine, Crescent, Chemult, Beaver Marsh, Chinchalo, Sand Creek Junction, Fort Klamath, Crystal, Rocky Point, and Deadwood, to Ashland, Oreg.

COOPERATION

In the preparation of this publication the writer received very valuable assistance from a number of individuals and organizations in Oregon. Lewis A. McArthur, as secretary of the Oregon Geographic Board, called to his aid a large number of engineers in Oregon to assist him in obtaining data for revising most of the descriptions of the bench marks included in this publication. Through Mr. McArthur's efforts and the assistance of his associates, most of the bench marks were visited, the descriptions checked and necessary changes reported to this office.

Mention should also be made of the effective cooperation of the Oregon State Highway Department which set many excellent bench marks of a permanent character ahead of the leveling parties of this bureau during the field seasons of 1930 and 1931. As a result of this cooperation there was an increase in the average number of marks per mile of line, thus making it certain that more marks per unit distance will remain undisturbed.

The writer is also indebted to the officials of the United States Geological Survey for permission to include certain lines of levels run by that organization and for much assistance with the details of combining the work of the two organizations.

The members of the section of leveling of the division of geodesy of this bureau deserve special mention and commendation for their work in connection with the computation and adjustment of the leveling in Oregon and in preparing the manuscript. The work on the publication has been particularly trying owing to a time limit set upon the preparation of the manuscript and the fact that the

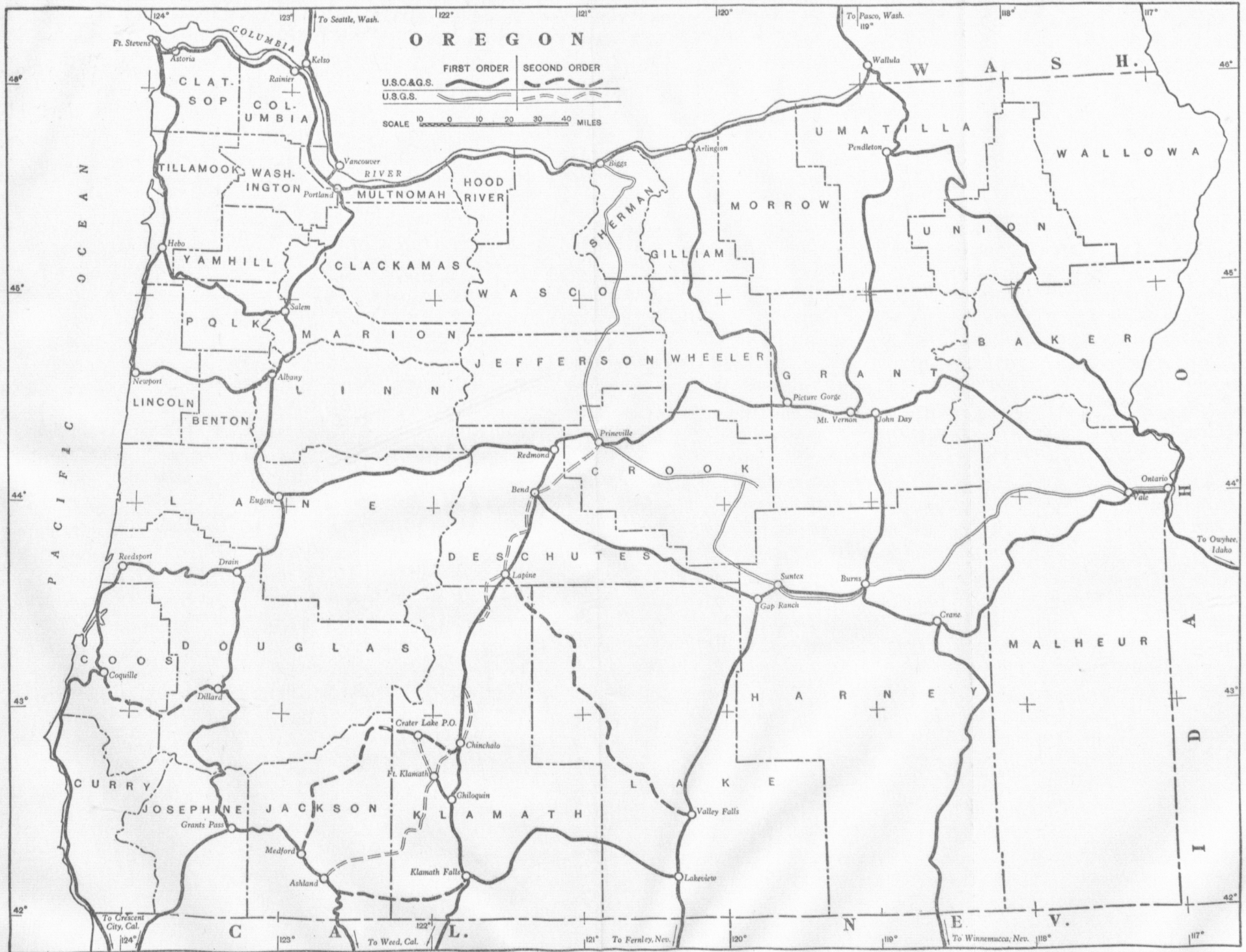


FIGURE 1.—Index map showing leveling in Oregon

great majority of the original descriptions had to be rewritten because of reported changes in the cultural and natural features with reference to which the marks were described.

INSTRUMENTS AND FIELD METHODS

The first-order leveling by the Coast and Geodetic Survey in Oregon was all run with instrumental equipment either exactly like, or very similar to, that described in Coast and Geodetic Survey Special Publication No. 129, *Geodetic Level and Rod*. The field work was done in accordance with the instructions and specifications given in Coast and Geodetic Survey Special Publication No. 140, *Manual of First-order Leveling*.

The second-order leveling by this bureau was run with the same instrumental equipment and under the same instructions as the first-order leveling with the exception that a single running was permitted instead of the double running in opposite directions required for first-order work. The leveling on alternate days on the second-order leveling was run in opposite directions with regard to the general direction of progress, so that approximately half of the second-order leveling was done in a forward direction and the remainder in a backward direction.

The first-order leveling in Oregon which was run by the United States Geological Survey was done in accordance with the then standard practice of that organization. Rods graduated in yards were used, and the line was run by the double rodDED, simultaneous method rather than by independent levelings in opposite directions as is done on the first-order leveling of this bureau.

The second-order leveling by the United States Geological Survey from Prineville to Ashland was a double-run wye-level line except for a portion in the vicinity of Upper Klamath Lake, which was run only in one direction but was checked against water levels across the lake.

For the leveling of other organizations, various standards of accuracy and various types of instrumental equipment were used. Usually the work was done with ordinary instrumental equipment and field methods but with special care in the balancing of the sight lengths and in making the observations. The leveling was ordinarily run independently in opposite directions or else in the form of closed loops of single lines of levels. In most cases the distances covered by this miscellaneous leveling were not large and the elevations determined may be considered as of second-order accuracy. In a few instances it appears to be nearly, if not quite, up to the standards of accuracy required for first-order leveling.

COMPUTATIONS AND ADJUSTMENTS

The office computation of the leveling done by this bureau in Oregon was carried out in accordance with the instructions given in Special Publication No. 140, *Manual of First-order Leveling*. Rod and temperature corrections were applied to the observed differences and, in cases where it was necessary, the level corrections and the corrections for index errors of the rods were also applied.

These corrections, with modern leveling equipment, especially with well graduated invar rods, are exceedingly small and usually are of small moment except in mountainous country where large differences in elevation are encountered.

The computations and corrections for the Coast and Geodetic Survey leveling were carried to four decimal places in meters until the final elevations were derived, when they were rounded off to the nearest millimeter for publication. The elevations in feet were determined by converting the metric elevation, using the factor, 1 meter=3.2808333 feet.

In some cases where the leveling of other organizations has been included and where the leveling was not done with metric rods, the leveling was computed in feet, based on the adjusted elevations of the starting bench marks as published in feet, and in these cases the metric elevation was derived from the elevation in feet by using the factor, 1 foot=0.3048006 meter.

THE 1929 GENERAL ADJUSTMENT

From time to time adjustments of the first-order level net of the United States have been made for the purpose of obtaining elevations which were, from a theoretical standpoint, nearer the exact truth than those derived from unadjusted observations or the arbitrary fitting of new lines to old adjusted values of junction points. In 1898 the first adjustment of the net was made and in 1903 there was another general adjustment. In 1907 and in 1912, adjustments of the first-order level net were made. These last two adjustments can not be considered as strictly general adjustments for the reason that portions of the net as adjusted in 1903 were held fixed in the adjustments of 1907 and 1912.

In 1929 a strictly general adjustment of the combined first-order level nets of the United States and Canada was made. The nets were connected with 21 tidal stations on the coasts of the United States and 5 such stations on the coasts of Canada. Over 66,000 miles of leveling, forming 270 closed circuits, or connections between tidal stations, were included and gave rise to the 270 conditions which were satisfied by the least squares adjustment. The elevations resulting from this adjustment are undoubtedly the best ones available at this time and may be considered as standard or final elevations for all engineering purposes.

THE OREGON SUPPLEMENTARY ADJUSTMENT

In 1930 and 1931 an intensive campaign of control leveling was carried out in Oregon and parts of adjacent States. This leveling was run so soon after the completion of the 1929 general adjustment that it was decided to hold fixed the elevations of the junction bench marks as determined by the 1929 general adjustment for the places listed in the following table and to fit the new leveling in at one time as a supplementary adjustment rather than fit it in, a line at a time, as it was run.

Table of junction elevations from 1929 general adjustment, held fixed in the Oregon supplementary adjustment

Place	B. M.	Elevation
		<i>Meters</i>
Centralia, Wash.....	F 10	57.7240
Portland, Oreg.....	O 14	10.0675
Pasco, Wash.....	Y 2	107.3243
Walla, Wash.....	P 3	127.4484
Ontario, Oreg.....	R 21	655.7807
Reno, Nev.....	H 9	1,370.2910
Brigham, Utah.....	R	1,309.1661

In the 1929 general adjustment a tidal connection was held at Fort Stevens, Oreg. However, this station is some little distance inside the mouth of the Columbia River and the determined datum plane was in reality mean river level rather than mean sea level. Although the station is so near the mouth of the river that the determined datum plane is very close to the true value of mean sea level, nevertheless it was decided that a better connection could be obtained to mean sea level by substituting for the Fort Stevens connection a connection to a tidal datum plane observed at Garibaldi. Garibaldi is, to all intents and purposes, on the open coast, since the streams emptying into the bay in which it is located are so small with relation to the size of the bay itself as to have little or no effect on the water levels. The great volume of water coming down the Columbia River past Fort Stevens has evidently affected the observed datum planes, with the result that mean river level in the vicinity of Fort Stevens is about $\frac{1}{4}$ foot higher than mean sea level.

The Oregon supplementary adjustment, therefore, is based on the 1929 general adjustment elevations of the junction bench marks given in the preceding table and on the observed datum plane of mean sea level as determined at the tide station at Garibaldi.

The first-order leveling in Oregon was adjusted to the above-mentioned fixed points by the method of least squares. The supplementary adjustment gave elevations for all of the junction bench marks at the intersections of the various lines of leveling. Corrections were then distributed throughout the various lines of leveling in proportion to distance to obtain the final elevations of all bench marks.

The second-order leveling, as well as the extra leveling by other organizations, was fitted to the first-order leveling either by simply distributing the necessary correction uniformly in proportion to distance or by means of small supplementary adjustments in cases where several short lines formed circuits.

As a result of this process of adjustment, the elevations of all bench marks given in this publication are in harmony with the results of the 1929 general adjustment of the first-order level net and may be considered as final or standard elevations for all engineering purposes.

Subsequent to the completion of the Oregon supplementary adjustment, a comparison was made of the elevations resulting from the adjustment and the elevations based on observed tidal datum planes for several groups of tidal bench marks along the coast of Oregon. All of these groups of tidal bench marks were located at tidal sta-

tions where only short series of observations were available for determining the tidal datum planes. Even after making due allowance for the shortness of series of observations at the various tidal stations, the differences between the elevations of these tidal bench marks as determined by the Oregon supplementary adjustment and as determined from the locally observed tidal datum planes are of such sizes as to indicate unusual features in the mean sea level surface along the coast of Oregon. It is proposed in the near future to make a comprehensive tidal survey of the Oregon coast. What effect the more complete series of tidal data will have on these differences can not be predicted at the present time. It may be found that the elevations based on the results of the proposed tidal surveys should be used for local engineering work at harbors and at the mouths of rivers instead of the elevations given in this publication.

ORTHOMETRIC CORRECTION

Owing to the fact that the earth is an oblate spheroid, level surfaces at different elevations are not parallel but tend to converge slightly toward the poles of the earth. This necessitates the application of an orthometric correction to the observed differences of elevation in order that the resulting elevations of the bench marks may represent their true height above the sea-level surface. The orthometric correction and the methods used in computing it are discussed in detail in Special Publication No. 140, Manual of First-order Leveling.

The orthometric correction reaches a maximum on north-and-south lines run at high elevations, and it is zero on an east-and-west line. The orthometric correction has been applied to the leveling included in this publication. In order that persons using this publication may form an idea as to the order of size of the orthometric correction the following example is cited:

The difference in elevation between two bench marks at about the latitude of Eugene, Oreg., in such locations that their geographic latitudes would differ by two minutes and the average elevation of the line of levels connecting them would be 2,000 feet, would require an orthometric correction of 0.006 foot. This correction varies directly with the average elevation and with the difference in latitude between the marks and depends slightly upon the latitude. Tables for use in computing the orthometric correction are given in Special Publication No. 140.

BENCH MARKS

The standard bench mark disk now used by the Coast and Geodetic Survey is shown in Figures 2 and 3. These disks are set in existing structures, in concrete posts cast in place for the special purpose, and in outcrops of rock where such outcrops are available. The concrete posts extend deep enough below the surface of the ground to be reasonably free from disturbance by frost action. They usually project a few inches above the ground to aid in their recovery.

In this publication will be found the descriptions and elevations for many points not marked with the standard disks of this bureau. Among the other organizations, which have established bench marks

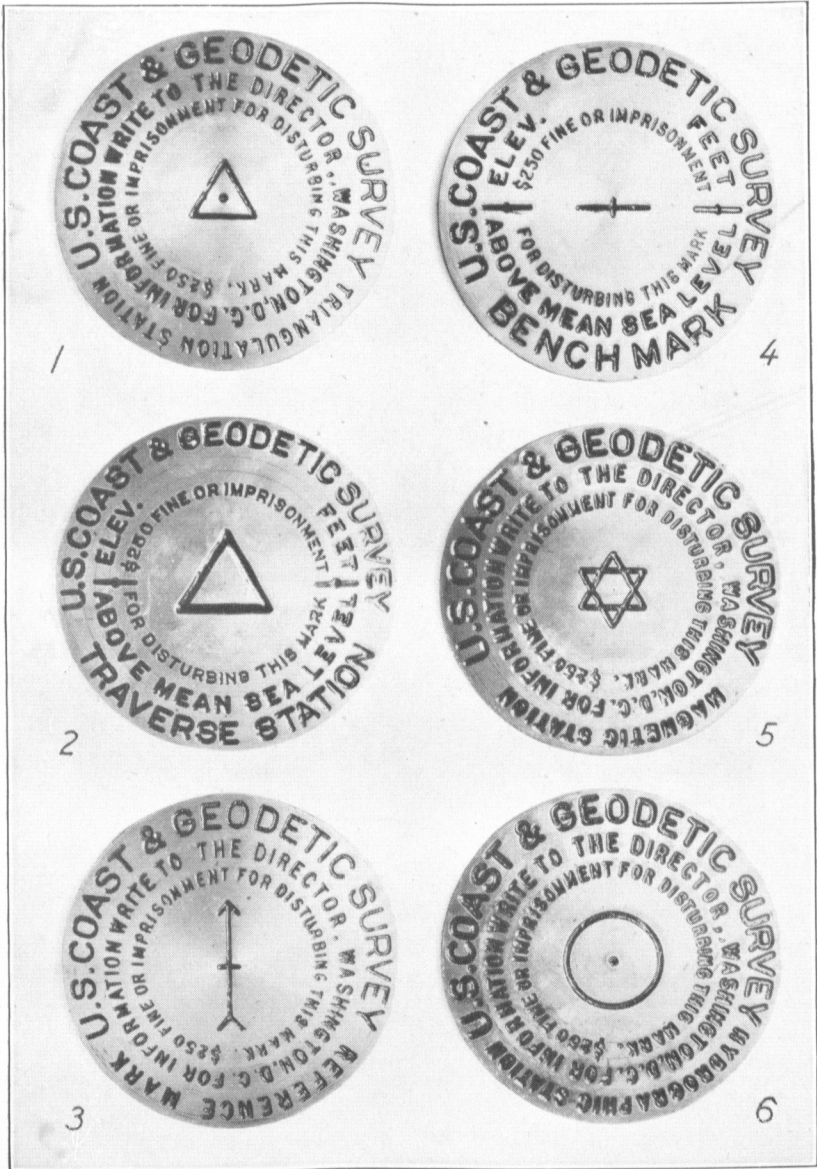


FIGURE 2.—STANDARD MARKS OF THE UNITED STATES COAST AND GEODETIC SURVEY

- | | |
|--------------------------------|-------------------------------|
| 1. Triangulation station mark. | 4. Bench mark. |
| 2. Traverse station mark. | 5. Magnetic station mark. |
| 3. Reference mark. | 6. Hydrographic station mark. |

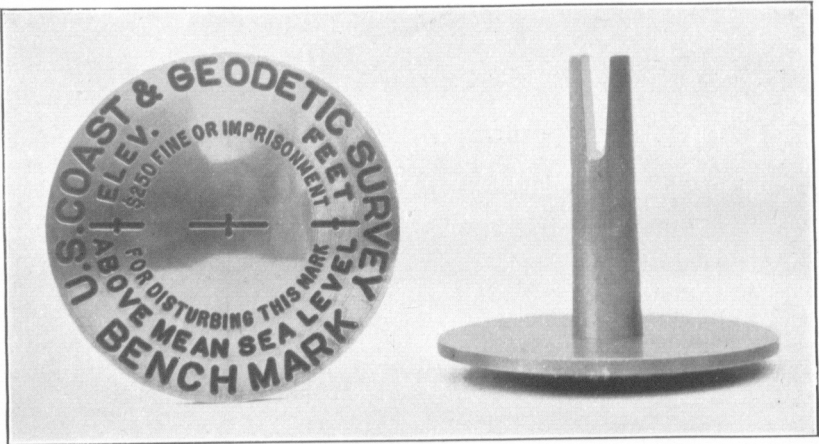


FIGURE 3.—STANDARD BENCH MARK DISK, SHOWING SHANK BY WHICH IT IS FASTENED IN PLACE

in Oregon and which use standard disks of a type somewhat similar to those used by this bureau, are the United States Geological Survey, the Corps of Engineers, United States Army, the United States Bureau of Public Roads, the United States Forest Service, the United States Bureau of Reclamation, the United States General Land Office, the Oregon State Highway Department, the Oregon State Engineer, the Clackamas County highway department, the city of Portland, the Pacific Power & Light Co., and the Portland Electric Power Co.

Many other bench marks will be found marked by copper, brass or iron bolts, chiseled squares, nails in trees, and by special marks of various kinds. In each description a brief note as to the character of the mark itself is given.

In starting new leveling, difficulty is sometimes encountered by field parties in connecting with bench marks which are disks set vertically in walls or which are small chiseled squares with the elevations referred to the bottoms of the holes. The wall bench marks present no difficulty if the levelman uses a tape instead of a rod in taking the sight on the bench mark. If the mark is high on the wall a tape can be allowed to hang down from the mark, giving a "minus backsight" or a "plus foresight."

In connecting with the bottom of a chiseled square which is too small to admit the foot of an ordinary level rod, a small block can be put in the hole. The rod is held on it for the backsight and the same block is carried forward and placed on the first turning point while the foresight is being taken. Then, if the block is removed from the first turning point before the next backsight is taken, the elevation carried forward will be the same as if the rod had been held directly on the bottom of the square. A $\frac{3}{4}$ -inch length of $\frac{1}{2}$ or $\frac{5}{8}$ inch dowel stick, or a similar piece of metal rod, makes an excellent block for use in small chiseled squares.

COOPERATION IN THE PRESERVATION OF BENCH MARKS

A bench mark is useful only as long as it is recoverable. When changes occur, as they often do, in the surrounding natural and cultural features with relation to which the mark is described, it becomes increasingly difficult to find the mark by means of the published description. Engineers and others who have occasion to visit any bench marks established by this bureau or other Government organizations will be doing a public service if they will report the condition of the marks and make suggestions as to needed changes in the descriptions.

Form 685, Report on Condition of Bench Mark (see fig. 4) is a 5 by 8 inch card with blanks to be filled in regarding the condition of a mark. Copies of this form will be furnished on request to anyone who may have occasion to visit any of these marks. Envelopes addressed to the Director, United States Coast and Geodetic Survey, Washington, D. C., and requiring no postage, will also be furnished for returning these reports.

The Coast and Geodetic Survey proposes to issue from time to time, probably in the form of mimeographed sheets, supplements to this publication and to other State leveling publications, in which

will be given such changes in description as may be reported to this office by engineers and others who have visited any of the marks and found the descriptions to be in need of revision. Persons or organizations who have copies of this publication and who wish to receive the supplements as they are issued should write to the Director, United States Coast and Geodetic Survey, Washington, D. C., stating the title and number of the publication for which supplements are desired.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
FORM 685
Ed. Oct., 1929

R

REPORT ON CONDITION OF BENCH MARK

Designation of mark F 14 State Texas County Mitchell
Mark searched for or recovered by—(Name) Robert Muldrow
Date June 14, 1929 (Occupation) Engineer
(Address) Mims Bldg., Ft. Worth, Tex.
Present condition of the mark Good
Letters or numbers found stamped on (not cast in) the mark None

Use the following space for reporting upon the thoroughness of the search in case mark was not recovered, or for suggesting needed changes in the published description, if the mark was recovered

This mark in good condition and has not been disturbed. The railroad station mentioned in the description has been moved one and one-half miles east.

U. S. GOVERNMENT PRINTING OFFICE: 1929

Signed Robert Muldrow

FIGURE 4.—Facsimile of Form 685, Report on Condition of Bench Mark

DESCRIPTIONS AND ELEVATIONS OF BENCH MARKS

LINE 1, BIGGS TO ONTARIO, OREG.

[First-order leveling by the United States Geological Survey]

This line follows the Oregon-Washington Railroad & Navigation Co. track from Biggs to Shaniko and highways from Shaniko through Antelope, Hay Creek, Grizzly, Prineville, Paulina, Oakerman ranch, Burns, Harney, Drewsey, Beulah, Lower Harper ranch, and Vale to Ontario. The field work was done during 1903 and 1904 by C. H. Semper, using the double-rodDED simultaneous method.

For additional bench marks in the vicinity of Biggs, see page 96.

O 25=164 (U. S. G. S.).—About 0.5 mile east along the Oregon-Washington Railroad & Navigation Co. track from Biggs, Sherman County, 330 feet east of a water tank, 140 feet west of the bridge over Spanish Creek, and 27 feet south of the main track, inside of the wye with the Shaniko branch. A United States Geological Survey standard cap, stamped "164 H 1904" and riveted in the top of a 3½-inch iron pipe cased in concrete. (52.586 meters or 172.526 feet.)

889 (U. S. G. S.).—At Thornberry, Sherman County, about 4.8 miles south along the Sherman Highway from its junction with the Columbia River Highway, 540 feet north of the Oregon-Washington Railroad & Navigation Co. station sign, 40 feet east of the track, 15 feet south of a railroad bridge, and 16 feet west of the edge of the highway. A United States Geological Survey standard cap, stamped "889 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (273.675 meters or 897.882 feet.)

1029 (U. S. G. S.).—About 2.9 miles northwest along the Oregon-Washington Railroad & Navigation Co. track from **Wasco**, Sherman County, at **Sink**, about 6.5 miles south along the Sherman Highway from its junction with the Columbia River Highway, 100 feet north of the road crossing at the Sink ranch, 60 feet west of the highway, and 10 feet east of the track. A United States Geological Survey standard cap, stamped "1029 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (313.912 meters or 1,029.894 feet.)

1021 (P. P. & L.).—About 2.9 miles northwest of **Wasco**, Sherman County, at **Sink**, about 200 feet north of the Sink ranch, in the west head wall of a concrete culvert under the Sherman Highway. A Pacific Power & Light Co. standard disk, stamped "1021 1927." (311.407 meters or 1,021.675 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1927.

1028 (P. P. & L.).—About 2.9 miles northwest of **Wasco**, Sherman County, at **Sink**, about 800 feet south of the Sink ranch, in the west head wall of a concrete culvert under the Sherman Highway. A Pacific Power & Light Co. standard disk, stamped "1028 1927." (313.457 meters or 1,028.401 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1927.

1263 (U. S. G. S.).—At **Wasco**, Sherman County, 25 feet south of the Oregon-Washington Railroad & Navigation Co. station, and 18 feet east of the track, at the edge of the sidewalk on the west side of the Sherman Highway. A United States Geological Survey standard cap, stamped "1263 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (387.441 meters or 1,271.129 feet.)

1446 (U. S. G. S.).—About 2 miles west along the Oregon-Washington Railroad & Navigation Co. track from **Klondike**, Sherman County, 50 feet east of the east face of the Kliney ranch house, and 28 feet north of the track, at a fence corner. A United States Geological Survey standard cap, stamped "1446 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (443.378 meters or 1,454.649 feet.)

1527 (U. S. G. S.).—About 1 mile east along the Oregon-Washington Railroad & Navigation Co. track from **Klondike**, Sherman County, 100 feet west of a road crossing, and 15 feet north of the track, at a fence corner. A United States Geological Survey standard cap, stamped "1527 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (467.972 meters or 1,535.339 feet.)

NOTE.—The elevation of this bench mark may have changed as it was found leaning in 1930, at which time it was straightened up and concreted.

1325 (U. S. G. S.).—At **Nish**, Sherman County, at the southwest corner of the Oregon-Washington Railroad & Navigation Co. station. A United States Geological Survey standard cap, stamped "1325 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (406.607 meters or 1,334.010 feet.)

1573 (U. S. G. S.).—At **De Moss**, Sherman County, 60 feet south of the Oregon-Washington Railroad & Navigation Co. station, and 12 feet east of the track, near a crossing signpost. A United States Geological Survey standard cap, stamped "1573 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (479.485 meters or 1,573.111 feet.)

1782 (U. S. G. S.).—At **Moro**, Sherman County, 15 feet north of the Oregon-Washington Railroad & Navigation Co. station, and 30 feet west of the track, in the cinder platform, about 1 inch below its surface. A United States Geological Survey standard cap, stamped "1782 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (545.903 meters or 1,791.017 feet.)

1935 (U. S. G. S.).—About 9.3 miles north along the Oregon-Washington Railroad & Navigation Co. track from **Grass Valley**, Sherman County, 35 feet east of the road crossing at the Leonard More ranch, and 40 feet north of the crossing sign. A United States Geological Survey standard cap, stamped "1935 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (592.424 meters or 1,943.646 feet.)

2155 (U. S. G. S.).—About 7 miles north along the Oregon-Washington Railroad & Navigation Co. track from **Grass Valley**, Sherman County, at the crossing of the old Moro-Grass Valley main road, 12 feet west of the track, and 3 feet south of the crossing sign. A United States Geological Survey standard

cap, stamped "2155-H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (659.378 meters or 2,163.310 feet.)

2391 (U. S. G. S.).—About 2.1 miles north along the Oregon-Washington Railroad & Navigation Co. track from **Grass Valley**, Sherman County, about 150 feet west of the Sherman Highway, 10 feet south of a road crossing at the I. O. O. F. cemetery, and 20 feet west of the track. A United States Geological Survey standard cap, stamped "2391 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (728.910 meters or 2,391.431 feet.)

2261 (U. S. G. S.).—At **Grass Valley**, Sherman County, at the south end of the Oregon-Washington Railroad & Navigation Co. station, 10 feet east of the track, and 3 feet from the sidewalk. A United States Geological Survey standard cap, stamped "2261 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (691.715 meters or 2,269.403 feet.)

2379 (U. S. G. S.).—About 2 miles south along the Oregon-Washington Railroad & Navigation Co. track from **Grass Valley**, about 11.9 miles north of **Kent**, Sherman County, at mileage 40.4, about 630 feet north of a county-road crossing, and about 100 feet east of the Sherman Highway. A United States Geological Survey standard cap, stamped "2379 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (727.712 meters or 2,387.502 feet.)

2457 (U. S. G. S.).—About 9.7 miles north along the Oregon-Washington Railroad & Navigation Co. track from **Kent**, Sherman County, about 200 feet east of the Sherman Highway, on the north side of a road crossing, and 10 feet from the crossing sign on the west side of the track. A United States Geological Survey standard cap, stamped "2457 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (751.409 meters or 2,465.249 feet.)

2464 (O. G. B.).—About 9.7 miles north along the Oregon-Washington Railroad & Navigation Co. track from **Kent**, Sherman County, and about 250 feet west of the track, at the southeast corner of the intersection of the Sherman Highway and a diagonal crossroad, in the east head wall of a highway culvert. A chiseled square. (751.497 meters or 2,465.538 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon Geographic Board in 1925.

2467 (U. S. G. S.).—About 6.6 miles north along the Oregon-Washington Railroad & Navigation Co. track from **Kent**, Sherman County, at **Bourbon** siding, 28 feet south of the main track, and about 2 feet east of the east end of the west warehouse. A United States Geological Survey standard cap, stamped "2467 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (754.588 meters or 2,475.679 feet.)

2699 (U. S. G. S.).—About 2.5 miles north along the Oregon-Washington Railroad & Navigation Co. track from **Kent**, Sherman County, about 400 feet north of milepost 50, 35 feet east of the track, and 40 feet south of a private-road crossing. A United States Geological Survey standard cap, stamped "2699 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (825.325 meters or 2,707.754 feet.)

2701 (U. S. G. S.).—At **Kent**, Sherman County, on the Oregon-Washington Railroad & Navigation Co. right of way, about 300 feet south of the crossing of the main road, 20 feet east of the track, and 3 feet north of a warehouse. A United States Geological Survey standard cap, stamped "2701 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (825.817 meters or 2,709.368 feet.)

2623 (U. S. G. S.).—At **Wilcox**, Sherman County, on the Oregon-Washington Railroad & Navigation Co. right of way, 200 feet south of a warehouse, 17 feet east of the track, and 14 feet north of a pole. A United States Geological Survey standard cap, stamped "2623 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (802.067 meters or 2,631.448 feet.)

2810 (U. S. G. S.).—About 2.8 miles south along the Oregon-Washington Railroad & Navigation Co. track from **Wilcox**, Sherman County, 50 feet south of the south end of trestle No. 59.69, and 22 feet east of the track. A United States Geological Survey standard cap, stamped "2810 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (859.157 meters or 2,818.750 feet.)

3018 (U. S. G. S.).—About 6.8 miles northeast along the Oregon-Washington Railroad & Navigation Co. track from **Shaniko**, Wasco County, at **Kelsey**, about 650 feet north of milepost 63 which is in the fence line of a private-road cross-

ing, and 30 feet west of the center line of the track. A United States Geological Survey standard cap, stamped "3018 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (922.514 meters or 3,026.616 feet.)

3112 (U. S. G. S.).—About 4.1 miles northeast along the Oregon-Washington Railroad & Navigation Co. track from **Shaniko**, Wasco County, at mileage 65.6, about 890 feet south of a private-road crossing, and 45 feet west of the track. A United States Geological Survey standard cap, stamped "3112 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (951.166 meters or 3,120.616 feet.)

3334 (U. S. G. S.).—At **Shaniko**, Wasco County, on the north side of Fifth Street, about 100 feet east of E Street (Sherman Highway), at the sidewalk line. A United States Geological Survey standard cap, stamped "3334 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (1,018.675 meters or 3,342.103 feet.)

3341 (O. G. B.).—At **Shaniko**, Wasco County, on the east side of E Street (Sherman Highway), at the southeast corner of a bell tower, on the top of a concrete footing. A chiseled square, marked "BM." (1,018,379 meters or 3,341.131 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Oregon Geographic Board in 1925. The tower has since been dismantled and the mark destroyed.

3340 (O. G. B.).—At **Shaniko**, Wasco County, at the northwest corner of Fourth and E Streets, on the north end of the lower east concrete step of the Columbia Southern Hotel. A chiseled square, marked "BM." (1,018.188 meters or 3,340.504 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Oregon Geographic Board in 1925.

3083 (U. S. G. S.).—About 1.9 miles north along the county road as used in 1932 from **Antelope**, Wasco County, 100 feet east of the road, near a grove of trees on the east side of an abandoned road. A United States Geological Survey standard cap, stamped "3083 H 1904" and riveted on the top of a 3½-inch iron pipe. (942.349 meters or 3,091.689 feet.)

NOTE.—Leveling by the Pacific Power & Light Co. in 1930 indicates that this bench mark has heaved or been raised. The following elevation was determined from its leveling. (942.392 meters or 3,091.831 feet.)

2622 (U. S. G. S.).—At **Antelope**, Wasco County, on the west side of Main Street, at the southeast corner of the city hose-cart house, and 3 feet from the walk. A United States Geological Survey standard cap, stamped "2622 H 1904" and riveted on the top of a 3½-inch iron pipe. (801.876 meters or 2,630.822 feet.)

2484 (U. S. G. S.).—About 2.6 miles southwest of **Antelope**, Wasco County, in front of the Taylor ranch, which was formerly owned by Polk Mays, 300 feet east of the road and 10 feet north of the gate. A United States Geological Survey standard cap, stamped "2484 H 1904" and riveted on the top of a 3½-inch iron pipe. (759.651 meters or 2,492.287 feet.)

2127 (U. S. G. S.).—In Wasco County, about 6.6 miles northeast along the old **Shaniko** stage road from **Willowdale**, Jefferson County, at the ruins of the old Durbin ranch, at the east end of a row of poplar trees, and 100 feet south of the road. A United States Geological Survey standard cap, stamped "2127 H 1904" and riveted on the top of a 3½-inch iron pipe. (650.753 meters or 2,135.011 feet.)

1848 (U. S. G. S.).—In Wasco County, about 1.8 miles northeast of **Willowdale**, Jefferson County, in a hayfield just east of the junction of The Dalles-California Highway and the stage road to **Antelope**. A United States Geological Survey standard cap, stamped "1848 H 1904" and riveted on the top of a 3½-inch iron pipe. (565.895 meters or 1,856.608 feet.)

1848 (Reset) (U. S. G. S.).—In Wasco County, about 1.8 miles northeast along The Dalles-California Highway from **Willowdale**, Jefferson County, 175 feet southeast of milepost 74, about 50 feet east of the highway, and 35 feet west of the old **Antelope** stage road. A United States Geological Survey standard cap, stamped "1848 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (571.950 meters or 1,876.473 feet.)

NOTE.—This bench mark was reset and its new elevation determined by the Pacific Power & Light Co.

SQ 2 (O. S. H. D.).—In Wasco County, about 1.8 miles northeast along The Dalles-California Highway from **Willowdale**, Jefferson County, about 250 feet

south of milepost 74, just north of the junction with the old stage road to Antelope, in the top of the east head wall of a highway culvert, and about 10 feet below the level of the grade. An Oregon State Highway Department standard disk, stamped "SQ 2." (571.478 meters or 1,874.924 feet.)

NOTE.—This bench mark was originally a chiseled square. Its elevation was determined from leveling by the Oregon Geographic Board in 1925. It was later replaced by the above disk set at exactly the same elevation.

1697 (O. G. B.).—About $1\frac{3}{4}$ miles southwest along The Dalles-California Highway from Willowdale, Jefferson County, about 200 feet east of the Priday ranch house, in the south end of a concrete highway culvert. A chiseled square, (517.221 meters or 1,696.917 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon Geographic Board in 1925.

1686 (U. S. G. S.).—About 1.8 miles southwest along The Dalles-California Highway from Willowdale, Jefferson County, 200 feet north of the Priday ranch house, in a hayfield, just north of the highway. A United States Geological Survey standard cap, stamped "1686 H 1904" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (516.438 meters or 1,694.347 feet.)

1686 (Reset) (U. S. G. S.).—About 1.8 miles southwest along The Dalles-California Highway from Willowdale, Jefferson County, at the Priday ranch house, on the south side of the highway, 20 feet east of the gate, and 8 feet north of the fence. A United States Geological Survey standard cap, stamped "1686 H 1904" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe cased in concrete (521.289 meters or 1,710.263 feet.)

NOTE.—This bench mark was reset and its new elevation determined by the Pacific Power & Light Co.

1869 (U. S. G. S.).—About 5.6 miles southwest of Willowdale, Jefferson County, about 0.5 mile south of The Dalles-California Highway, on the Kennedy ranch, which was formerly known as the Heisler ranch, about 0.5 mile northeast of the ranch house, in a field, near a group of poplar trees, and 25 feet south of the remains of a stone cellar. A United States Geological Survey standard cap, stamped "1869 H 1904" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (572.264 meters or 1,877.502 feet.)

1965 (U. S. G. S.).—About 7.5 miles north along the old Shaniko-Hay Creek road from Hay Creek, Jefferson County, about 3 miles south of the junction with The Dalles-California Highway, 60 feet west of the road, and about 15 feet north of a lane leading to the old McPherson ranch house. A United States Geological Survey standard cap, stamped "1965 H 1904" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (601.421 meters or 1,973.162 feet.)

2757 (U. S. G. S.).—About 2.3 miles north along the Shaniko-Hay Creek road from Hay Creek, Jefferson County, 6 feet west of the east fence, and 15 feet north of the gate leading to the ranch house of the Baldwin Sheep Co. on what was formerly the Parish ranch. A United States Geological Survey standard cap, stamped "2757 H 1904" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (842.852 meters or 2,765.257 feet.)

2938 (U. S. G. S.).—At Hay Creek, Jefferson County, about 500 feet east of the road, in the yard of the Baldwin Sheep Co., at the southwest corner of the lawn around the ranch house, at the edge of a small ditch, flush with the ground. A United States Geological Survey standard cap, stamped "2938 H 1904" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (898.124 meters or 2,946.595 feet.)

3152 (U. S. G. S.).—About 3 miles south of Hay Creek, Jefferson County, about $\frac{1}{4}$ mile south of the Hay Creek school, 50 feet south of a dry wash and 25 feet west of the road. A United States Geological Survey standard cap, stamped "3152 H 1904" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (963.543 meters or 3,161.224 feet.)

3643 (U. S. G. S.).—About 5.7 miles south of Hay Creek, about 5.8 miles north of Grizzly, Jefferson County, on the east side of the road, in the northwest corner of a field, 200 feet southwest of a ranch house, opposite a barn. A United States Geological Survey standard cap, stamped "3643 H 1904" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (1,112.985 meters or 3,651.518 feet.)

3692 (U. S. G. S.).—At Grizzly, Jefferson County, about 17 miles northwest of Prineville, Crook County, 400 feet southwest of a house, on the north side of the road, opposite an abandoned church. A United States Geological Survey

standard cap, stamped "3692 H 1904" and riveted on the top of a 3½-inch iron pipe. (1,127.913 meters or 3,700.494 feet.)

3975 (U. S. G. S.).—About 13 miles northwest along the Prineville-Hay Creek road from **Prineville**, Crook County, about ¼ mile south of the summit, at a sharp turn to the west, at the north edge of the road. A United States Geological Survey standard cap, stamped "3975 H 1904" and riveted on the top of a 3½-inch iron pipe. (1,214.050 meters or 3,983.096 feet.)

3127 (U. S. G. S.).—About 9 miles northwest along the Prineville-Hay Creek road from **Prineville**, Crook County, about 3 miles south of the summit, on the east side of the road, 40 feet south of a barn, and 1 foot west of the east fence. A United States Geological Survey standard cap, stamped "3127 H 1904" and riveted on the top of a 3½-inch iron pipe. (955.746 meters or 3,135.642 feet.)

2962 (U. S. G. S.).—About 7 miles northwest of **Prineville**, Crook County, about 1,000 feet east of the Prineville-Hay Creek road as existing in 1929, and 300 feet east of the abandoned Stewart ranch house, in a field, surrounded by a pile of rocks. A United States Geological Survey standard cap, stamped "2962 H 1904" and riveted on the top of a 3½-inch iron pipe. (905.503 meters or 2,970.803 feet.)

2849 (U. S. G. S.)=S 30.—About 3 miles northwest of **Prineville**, Crook County, about 1,200 feet south of the City of Prineville Railway, and 225 feet north of a county road, in the northeast corner of the yard at the Davenport ranch, near the fence. A United States Geological Survey standard cap, stamped "2849 H 1904" and riveted on the top of a 3½-inch iron pipe. (870.782 meters or 2,856.891 feet.)

2867 (U. S. G. S.)=Q 30.—At **Prineville**, Crook County, at the north or East Third Street entrance to the courthouse, 20 feet south of the street curb, and 1 foot west of the walk leading to the building. A United States Geological Survey standard cap, stamped "2867 H 1904" and riveted on the top of a 3½-inch iron pipe. (874.263 meters or 2,868.311 feet.)

For additional bench marks in the vicinity of **Prineville**, see pages 103, 188, and 209.

3224 (U. S. G. S.).—About 4.5 miles southeast along the Paulina road from **Prineville**, Crook County, at an abandoned ranch, on the north side of the road, 12 feet from a picket fence, and 15 feet from the gate. A United States Geological Survey standard cap, stamped "3224 H 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (982.511 meters or 3,223.456 feet.)

4023 (U. S. G. S.).—About 8.8 miles southeast along the Paulina road from **Prineville**, Crook County, on the south side of the road, just east of the gate to the Yancey ranch house. A United States Geological Survey standard cap, stamped "4023 H 1904" and riveted on the top of a 3½-inch iron pipe. (1,228.876 meters or 4,031.739 feet.)

4027 (U. S. G. S.).—About 12.4 miles southeast along the Paulina road from **Prineville**, Crook County, on the north side of the road, about 10 feet from the fence in front of the Breese ranch house. A United States Geological Survey standard cap, stamped "4027 H 1904" and riveted on the top of a 3½-inch iron pipe. (1,230.030 meters or 4,035.525 feet.)

3708 (U. S. G. S.).—About 15.1 miles southeast along the Paulina road from **Prineville**, Crook County, at **Ralph Porfly's** upper ranch, on the northeast side of the road, 10 feet from the gate leading to the house. A United States Geological Survey standard cap, stamped "3708 H 1904" and riveted on the top of a 3½-inch iron pipe. (1,132.627 meters or 3,715.959 feet.)

3261 (U. S. G. S.).—About 18.5 miles southeast of **Prineville**, Crook County, at the intersection of the new Paulina road and the old road, at the northwest corner of the fence around the yard at an abandoned house on the ranch formerly operated by **Shorty Davis**. A United States Geological Survey standard cap, stamped "3261 H 1903" and riveted on the top of a 3½-inch iron pipe. (996.601 meters or 3,269.682 feet.)

NOTE.—It was reported in 1930 that this bench mark might have been disturbed. It should be used with caution.

3289 (U. S. G. S.).—About 22.4 miles southeast along the Prineville-Paulina road from **Prineville**, Crook County, at the **Riverside ranch**, 25 feet from the corner of the ranch house, outside of the yard fence. A United States

Geological Survey standard cap, stamped "3289 H 1903" and riveted on the top of a 3½-inch iron pipe cased in concrete. (1,004.892 meters or 3,296.882 feet.)

NOTE.—In 1930, the top of this bench mark was found corroded off. It was replaced and surrounded with concrete. The present elevation is probably within 0.1 foot of the original.

3339 (U. S. G. S.).—About 0.2 mile west of the 1929 location of the post office at **Post**, Crook County, about 375 feet east of the Prineville-Paulina road, in an old fence line on the abandoned Welborn ranch. A United States Geological Survey standard cap, stamped "3339 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,020.283 meters or 3,347.380 feet.)

3388 (U. S. G. S.).—About 3.7 miles east along the old Post-Paulina road from the 1929 location of the post office at **Post**, Crook County, on the north side of the road, on the south side of Crooked River, in a field, 10 feet from the fence. A United States Geological Survey standard cap, erroneously stamped "4388 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,035.180 meters or 3,396.253 feet.)

3409 (U. S. G. S.).—About 6.6 miles east along the old Post-Paulina road from **Post**, Crook County, on the north side of the road, on the south side of Crooked River, at the west end of a gate, and 5 feet from the fence. A United States Geological Survey standard cap, stamped "3409 H 1903" and riveted on top of a 3½-inch iron pipe. (1,041.669 meters or 3,417.541 feet.)

3526 (U. S. G. S.).—About 10.1 miles east along the old Post-Paulina road from **Post**, Crook County, on the south side of Crooked River, near the old W. R. Kelley place, and 20 feet north of the road. A United States Geological Survey standard cap, stamped "3526 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,077.255 meters or 3,534.293 feet.)

3473 (U. S. G. S.).—About 19 miles west along the old Post-Paulina road from **Paulina**, Crook County, at **Kramer ranch**, on the south side of Crooked River, on the south side of the road, near the fence in front of the ranch house. A United States Geological Survey standard cap, stamped "3473 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,060.968 meters or 3,480.859 feet.)

3536 (U. S. G. S.).—About 14.5 miles west along the Post-Paulina road from **Paulina**, Crook County, in front of the Miller ranch, and 30 feet south of the bridge over Maury Creek. A United States Geological Survey standard cap, stamped "3536 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,080.342 meters or 3,544.422 feet.)

3558 (U. S. G. S.).—About 12.2 miles west along the Post-Paulina road from **Paulina**, Crook County, in the NW. ¼ sec. 12, T. 17 S., R. 21 E., on the north side of the road, about 100 feet west of the O. B. Gray ranch house, at a fence corner. A United States Geological Survey standard cap, stamped "3558 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,086.910 meters or 3,565.970 feet.)

3583 (U. S. G. S.).—About 8.5 miles west of **Paulina**, Crook County, at **Meyer ranch**, 10 feet east of the gate to the yard, near the south line of the NE. ¼ sec. 16, T. 17 S., R. 22 E. A United States Geological Survey standard cap, stamped "3583 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,094.583 meters or 3,591.144 feet.)

3625 (U. S. G. S.).—About 5.3 miles west along the Post-Paulina road from **Paulina**, Crook County, on the north side of the road, 150 feet east of the bridge over South Fork Crooked River, near the site of the former Gilchrist ranch. A United States Geological Survey standard cap, stamped "3625 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,107.344 meters or 3,633.011 feet.)

3660 (U. S. G. S.).—About 2.5 miles southwest along the old Post-Paulina road from **Paulina**, Crook County, about 700 feet northwest of the abandoned Dunkle ranch buildings, on the south side of Crooked River, in a field, about 150 north of the road. A United States Geological Survey standard cap, stamped "3660 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,117.994 meters or 3,667.952 feet.)

3676 (U. S. G. S.).—At **Paulina**, Crook County, about 300 feet east of the right angle in the county road, in front of the ruins of Paulina Hall which has burned, and 30 feet north of the road. A United States Geological Survey standard cap, stamped "3676 H 1903" and riveted on the top of a 3½-inch iron pipe bedded in concrete. (1,123.010 meters or 3,684.409 feet.)

3767 (U. S. G. S.).—About 3.7 miles due east along the old road to Suplee from **Paulina**, Crook County, about 1.1 miles east of the junction with the road

leading northeast to Beaver Creek, at the summit of a low ridge, at the north edge of the road. A United States Geological Survey standard cap, stamped "3767 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,150.675 meters or 3,775.172 feet.)

3933 (U. S. G. S.).—About 3.4 miles north along the old road to Paulina from **Angell ranch**, Crook County, at the top of a hill, about 500 feet west of the forks of the old and new roads, on the north side of the old road. A United States Geological Survey standard cap, stamped "3933 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,198.783 meters or 3,933.006 feet.)

3963 (U. S. G. S.).—At **Angell ranch**, Crook County, in front of the ranch house, 15 feet south of the gate, in line with the fence. A United States Geological Survey standard cap, stamped "3963 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,210.420 meters or 3,971.186 feet.)

4290 (U. S. G. S.).—About 5.5 miles south along the Prineville-Burns road from **Angell ranch**, Crook County, 25 feet north of a creek crossing, at the side of the road, in the fence line. A United States Geological Survey standard cap, stamped "4290 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,309.933 meters or 4,297.672 feet.)

4757 (U. S. G. S.).—About 8.1 miles south of **Angell ranch**, and about 15.7 miles north of **Street ranch**, Crook County, at the summit of a hill, 30 feet west of the road. A United States Geological Survey standard cap, stamped "4757 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,452.478 meters or 4,765.337 feet.)

4507 (U. S. G. S.).—About 13.1 miles north of **Street ranch**, Crook County, at the Brown ranch house, in the northwest corner of the yard. A United States Geological Survey standard cap, stamped "4507 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,376.137 meters or 4,514.877 feet.)

4478 (U. S. G. S.).—About 11 miles north of **Street ranch**, Crook County, on the west side of the road, near a mail box. A United States Geological Survey standard cap, stamped "4478 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,367.325 meters or 4,485.967 feet.)

4602 (U. S. G. S.).—About 6.7 miles north of **Street ranch**, Crook County, about 1,000 feet north of a deserted house, at the north end of a pasture fence, and 45 feet east of the road. A United States Geological Survey standard cap, stamped "4602 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,405.199 meters or 4,610.225 feet.)

4791 (U. S. G. S.).—About 3.8 miles north of **Street ranch**, Crook County, on the south side of a small hill, and 12 feet east of the road. A United States Geological Survey standard cap, stamped "4791 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,462.769 meters or 4,799.102 feet.)

4776 (U. S. G. S.).—At **Street ranch**, Crook County, at the gate leading into the ranch house yard, in the fence line. A United States Geological Survey standard cap, stamped "4776 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,458.314 meters or 4,784.485 feet.)

5061 (U. S. G. S.).—In Crook County, about 14.9 miles northwest of **Cecil ranch**, Harney County, in a canyon about 0.5 mile east of a road junction. A United States Geological Survey standard cap, stamped "5061 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,545.205 meters or 5,069.560 feet.)

5408 (U. S. G. S.).—In Crook County, about 12.4 miles northwest of **Cecil ranch**, Harney County, near the center of the NW. ¼ sec. 27, T. 21 S., R. 24 E., on the west side of a pine woods, at the edge of a clearing, about 20 feet south of the Paulina road. A United States Geological Survey standard cap, stamped "5408 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,650.973 meters or 5,416.567 feet.)

5058 (U. S. G. S.).—About 9 miles northwest of **Cecil ranch**, Harney County, at the fork of a road leading to a spring, on the south side of the stage road. A United States Geological Survey standard cap, stamped "5058 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,544.116 meters or 5,065.987 feet.)

4722 (U. S. G. S.).—About 5.8 miles northwest of **Cecil ranch**, Harney County, about 100 feet north of a small hill which is topped with boulders, and 21 feet southwest of the road. A United States Geological Survey standard cap, stamped "4722 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,441.699 meters or 4,729.973 feet.)

4761 (U. S. G. S.).—About 2.8 miles northwest of **Cecil ranch**, Harney County, about 0.3 mile southeast of **Dry Lake**, and 20 feet southwest of the

road. A United States Geological Survey standard cap, stamped "4761 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,453,733 meters or 4,769,456 feet.)

4345 (U. S. G. S.).—At Cecil ranch, about 9 miles northwest of Riley, Harney County, on a line with the south face of the ranch house, at the north margin of the road. A United States Geological Survey standard cap, stamped "4345 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,326,916 meters or 4,353,390 feet.)

4295 (U. S. G. S.).—About 5 miles northwest of Riley, Harney County, at the W. B. Johnson upper ranch house, at the southwest corner of the yard fence. A United States Geological Survey standard cap, stamped "4295 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,311,551 meters or 4,302,980 feet.)

4264 (U. S. G. S.).—About 1.8 miles west along the road to Paulina from Riley, Harney County, about 800 feet northeast of a school, about 600 feet east of a road forking to the south, and 75 feet south of the road. A United States Geological Survey standard cap, stamped "4264 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,302,169 meters or 4,272,201 feet.)

For bench marks along this line from Oakerman ranch to Burns, see page 43.

4146 (U. S. G. S.).—About 3.2 miles northeast along the Canyon City highway and the Burns-Drewsey road from Burns, Harney County, on the south side of the road, in the northeast corner of the Poison Creek school yard. A United States Geological Survey standard cap, stamped "4146 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,266,329 meters or 4,154,613 feet.)

4131 (U. S. G. S.).—About 6.7 miles east along the Burns-Drewsey road from Burns, Harney County, 65 feet west of a bridge, on the north side of the road. A United States Geological Survey standard cap, stamped "4131 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,261,606 meters or 4,139,119 feet.)

4138 (U. S. G. S.).—About 10.4 miles east along the Burns-Drewsey road from Burns, about 2.9 miles west of Harney, Harney County, directly opposite the William Krzeska ranch house, and 30 feet north of the road. A United States Geological Survey standard cap, stamped "4138 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,263,708 meters or 4,146,015 feet.)

4161 (U. S. G. S.).—At Harney, Harney County, and 150 feet north of the community hall. A United States Geological Survey standard cap, stamped "4161 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,270,898 meters or 4,169,605 feet.)

4147 (U. S. G. S.).—About 1.6 miles east along the Burns-Drewsey road from Harney, Harney County, 20 feet north of the road, in an acute angle formed with an old road. A United States Geological Survey standard cap, stamped "4147 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,266,391 meters or 4,154,817 feet.)

4133 (U. S. G. S.).—About 5.2 miles east along the Burns-Drewsey road from Harney, Harney County, about 700 feet north of the road, and about half way to the foot of a hill. A United States Geological Survey standard cap, stamped "4133 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,262,253 meters or 4,141,242 feet.)

4132 (U. S. G. S.).—About 8.7 miles east along the Burns-Drewsey road from Harney, Harney County, 30 feet south of the road at the fence line. A United States Geological Survey standard cap, stamped "4132 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,261,864 meters or 4,139,967 feet.)

4174 (U. S. G. S.).—About 13 miles east along the Burns-Drewsey road from Harney, Harney County, about 1,500 feet west of the road on the north edge of an unplowed patch of the Buchanan field. A United States Geological Survey standard cap, stamped "4174 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,274,657 meters or 4,181,937 feet.)

4483 (U. S. G. S.).—About 16.1 miles east of Harney, Harney County, on the Central Oregon highway as used in 1931, 30 feet west of the roadway, at the edge of a borrow pit. A United States Geological Survey standard cap, stamped "4483 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,368,927 meters or 4,491,221 feet.)

NOTE.—It was reported that the pipe had been bent and the cap was gone.

4652 (U. S. G. S.).—About 19.1 miles east along the old Burns-Drewsey stage road from **Harney**, Harney County, near the middle of Nigger Flat, and 10 feet southeast of the road. A United States Geological Survey standard cap, stamped “4652 H 1903” and riveted on the top of a 3½-inch iron pipe. (1,420.307 meters or 4,659.792 feet.)

4718 (U. S. G. S.).—About 21.3 miles east along the old Burns-Drewsey stage road over Stinkingwater Mountain from **Harney**, Harney County, at the highest point on the road, and 20 feet south of the roadway which is now practically abandoned. A United States Geological Survey standard cap, stamped “4718 H 1903” and riveted on the top of a 3½-inch iron pipe. (1,440.535 meters or 4,726.156 feet.)

4099 (U. S. G. S.).—About 10.1 miles west along the old Burns-Drewsey stage road from **Drewsey**, Harney County, and 30 feet south of the roadway which is now practically abandoned. A United States Geological Survey standard cap, stamped “4099 H 1903” and riveted on the top of a 3½-inch iron pipe. (1,251.799 meters or 4,106.945 feet.)

3596 (U. S. G. S.).—About 6 miles west along the old Burns-Drewsey stage road from **Drewsey**, Harney County, and 15 feet north of the roadway. A United States Geological Survey standard cap, stamped “3596 H 1903” and riveted on the top of a 3½-inch iron pipe. (1,098,661 meters or 3,604.524 feet.)

3538 (U. S. G. S.).—About 2.6 miles west along the Burns-Drewsey road from **Drewsey**, Harney County, about 20 feet south of the bridge over Stinkingwater Creek, on the east side of the stream. A United States Geological Survey standard cap, stamped “3538 H 1903” and riveted on the top of a 3½-inch iron pipe. (1,080.749 meters or 3,545.759 feet.)

3508 (U. S. G. S.).—At **Drewsey**, Harney County, on the east side of the main street, opposite the Jarvis Smith pool hall. A United States Geological Survey standard cap, stamped “3508 H 1903” and riveted on the top of a 3½-inch iron pipe. (1,071.825 meters or 3,516.480 feet.)

3523 (U. S. G. S.).—About 4 miles east along the Drewsey-Beulah road from **Drewsey**, Harney County, 90 feet east of the bridge over Warm Springs Creek, and 30 feet north of a wire fence. A United States Geological Survey standard cap, stamped “3523 H 1903” and riveted on the top of a 3½-inch iron pipe. (1,076.281 meters or 3,531.098 feet.)

3612 (U. S. G. S.).—In Harney County, about 8.6 miles southwest along the Drewsey-Beulah road from **Beulah**, Malheur County, on the north margin of the road, and 25 feet west of the gate to the Altnow ranch. A United States Geological Survey standard cap, stamped “3612 H 1903” and riveted on the top of a 3½-inch iron pipe. (1,103.306 meters or 3,619.762 feet.)

3779 (U. S. G. S.).—About 6 miles southwest along the Drewsey-Beulah road as used in 1929 from **Beulah**, Malheur County, about 300 feet south of the road, and about 200 feet southeast of a fence corner, on the south side of a creek bottom. A United States Geological Survey standard cap, stamped “3779 H 1903” and riveted on the top of a 3½-inch iron pipe. (1,154.260 meters or 3,786.936 feet.)

3838 (U. S. G. S.).—About 2.8 miles southwest along the Drewsey-Beulah road from **Beulah**, Malheur County, in a valley at the top of Agency Mountain, on the south margin of the roadway. A United States Geological Survey standard cap, stamped “3838 H 1903” and riveted on the top of a 3½-inch iron pipe. (1,172.396 meters or 3,846.437 feet.)

NOTE.—This bench mark was searched for in 1930 but was not found.

3269 (U. S. G. S.).—At **Beulah**, Malheur County, 25 feet east of the east end of the bridge over North Fork Malheur River, at the north margin of the road. A United States Geological Survey standard cap, stamped “3269 H 1903” and riveted on the top of a 3½-inch iron pipe. (998.748 meters or 3,276.725 feet.)

3471 (U. S. G. S.).—About 4.5 miles south along the Beulah-Westfall road from **Hunter ranch**, Malheur County, 100 feet west of the Art Eldridge house, and 50 feet east of the road. A United States Geological Survey standard cap, stamped “3471 H 1903” and riveted on the top of a 3½-inch iron pipe. (1,060.395 meters or 3,478.980 feet.)

3957 (U. S. G. S.).—About 1.9 miles south along the Beulah-Westfall road from **Hunter ranch**, Malheur County, and 10 feet west of the road. A United States Geological Survey standard cap, stamped “3957 H 1903” and riveted on the top of a 3½-inch iron pipe. (1,208.585 meters or 3,965.165 feet.)

4103 (U. S. G. S.).—At **Hunter ranch**, Malheur County, at the northwest angle of the intersection of the Beulah-Westfall road and the secondary road leading west to the J. S. Hunter house. A United States Geological Survey standard cap, stamped "4103 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,252.969 meters or 4,110.784 feet.)

4454 (U. S. G. S.).—About 7.7 miles west along the stage road from **Fopiano stage station**, Malheur County, about 500 feet east of a gulch, at the point of a hill, and 15 feet north of the road. A United States Geological Survey standard cap, stamped "4454 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,360.062 meters or 4,462.137 feet.)

4535 (U. S. G. S.).—About 4.6 miles west along the old stage road from **Fopiano stage station**, Malheur County, at the foot of Staychain Hill where the road crosses Robbers Roost Gulch, at the south edge of the road. A United States Geological Survey standard cap, stamped "4535 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,384.713 meters or 4,543.012 feet.)

4052 (U. S. G. S.).—About 1.6 miles west along the old stage road from **Fopiano stage station**, Malheur County, at the top of a rocky hill, 10 feet north of the road. A United States Geological Survey standard cap, stamped "4052 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,237.544 meters or 4,060.177 feet.)

3786 (U. S. G. S.).—About 12 miles west along the old Beulah-Westfall stage road from **Westfall**, Malheur County, about 600 feet south of the road, about half way up a hill, and 20 feet south of a former location. A United States Geological Survey standard cap, stamped "3786 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,156.616 meters or 3,794.663 feet.)

3426 (U. S. G. S.).—About 9.4 miles west along the old stage road from **Westfall**, Malheur County, about 1,000 feet west of the Becker Dam, and 10 feet south of the road. A United States Geological Survey standard cap, stamped "3426 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,046.664 meters or 3,433.931 feet.)

3239 (U. S. G. S.).—About 6.2 miles west along the Beulah-Westfall road from **Westfall**, Malheur County, and 15 feet south of the road. A United States Geological Survey standard cap, stamped "3239 H 1903" and riveted on the top of a 3½-inch iron pipe. (989.762 meters or 3,247.243 feet.)

NOTE.—This bench mark was searched for in 1929 but was not found.

3108 (U. S. G. S.).—About 3.1 miles west along the Beulah-Westfall stage road from **Westfall**, Malheur County, about 300 feet south of the road, at the mouths of gulches to the north and south. A United States Geological Survey standard cap, stamped "3108 H 1903" and riveted on the top of a 3½-inch iron pipe. (949.807 meters or 3,116.157 feet.)

2994 (U. S. G. S.).—At **Westfall**, Malheur County, at the side of the Fairman store and between it and a stone warehouse. A United States Geological Survey standard cap, stamped "2994 H 1903" and riveted on the top of a 3½-inch iron pipe. (915.038 meters or 3,002.088 feet.)

2965 (U. S. G. S.).—About 10.1 miles northwest along the Westfall road from **Lower Harper ranch**, Malheur County, and 15 feet east of the road. A United States Geological Survey standard cap, stamped "2965 H 1903" and riveted on the top of a 3½-inch iron pipe. (906.169 meters or 2,972.990 feet.)

NOTE.—This bench mark was searched for in 1929 but was not found.

2712 (U. S. G. S.).—About 6 miles northwest along the Westfall road from **Lower Harper ranch**, Malheur County, about ¼ mile west of a bridge, and 10 feet south of the road. A United States Geological Survey standard cap, stamped "2712 H 1903" and riveted on the top of a 3½-inch iron pipe. (829.220 meters or 2,720.533 feet.)

2585 (U. S. G. S.).—About 3.1 miles northwest along the Westfall road from **Lower Harper ranch**, Malheur County, about 150 feet east of the point of a hill, and 30 feet south of the road. A United States Geological Survey standard cap, stamped "2585 H 1903" and riveted on the top of a 3½-inch iron pipe. (790.530 meters or 2,593.597 feet.)

2504 (U. S. G. S.).—About 1 mile west of **Lower Harper ranch**, Malheur County, about 1,000 feet east of the Duncan house, on the old Westfall stage road, which is now in a field. A United States Geological Survey standard cap, stamped "2504 H 1903" and riveted on the top of a 3½-inch iron pipe. (765.809 meters or 2,512.491 feet.)

2460 (U. S. G. S.).—About 14 miles west along the Oregon Short Line Railroad from **Hope**, Malheur County, near the foot of the road grade leading to Lower Harper ranch, on the south side of the track. A United States Geological Survey standard cap, stamped "2460 H 1903" and riveted on the top of a 3½-inch iron pipe. (752.197 meters or 2,467.833 feet.)

2434 (U. S. G. S.).—About 12 miles west of **Hope**, Malheur County, near the lower end of **Little Valley**, and 20 feet north of the old road in Malheur Canyon. A United States Geological Survey standard cap, stamped "2434 H 1903" and riveted on the top of a 3½-inch iron pipe. (744.495 meters or 2,442.565 feet.)

NOTE.—It was reported in 1929 that this bench mark had been knocked entirely out of plumb and the elevation was only approximate.

For bench marks along this line from Little Valley to Ontario, see page 48.

LINE 2, WALLULA, WASH., TO OWYHEE, IDAHO (PART)

[First-order leveling]

This line enters Oregon in the vicinity of Ring and follows the Northern Pacific Railway to Pendleton, the Oregon-Washington Railroad & Navigation Co. track from Pendleton to Huntington and the Oregon Short Line Railroad from Huntington through Ontario to the Oregon-Idaho State line in the vicinity of Nyssa. The field work was done during the summer of 1904 by F. H. Sewall, aid.

P 4.—About 1.0 mile southeast along the Northern Pacific Railway from **Ring**, Umatilla County, at mileage 12.25, and 17 feet southwest of the track. The bottom of a square hole in the top of a stone post. (317.735 meters or 1,042.436 feet.)

O 4.—About 1 mile northwest along the Northern Pacific Railway from **Stanton**, Umatilla County, near mileage 17.25, on the west side of the track, in the top of a concrete culvert head wall. A standard disk, stamped "1556 O 4 1904." (474.452 meters or 1,556.598 feet.)

NOTE.—This bench mark was originally the bottom of a square hole. It was replaced in 1930 by a standard disk set at exactly the same elevation.

N 4.—At **Stanton**, Umatilla County, at Northern Pacific Railway mileage 18.25, and 50 feet west of the track. A standard cap, stamped "1663 N 4 1904" and fastened on the top of a 3½-inch iron pipe cased in concrete. (507.189 meters or 1,664.003 feet.)

M 4.—About 0.5 mile northwest along the Northern Pacific Railway from **Smeltz**, Umatilla County, at mileage 19.25, on the east side of the track, in the top of a concrete culvert head wall. A standard disk, stamped "1780 M 4 1904." (542.812 meters or 1,780.876 feet.)

NOTE.—This bench mark was originally the bottom of a square hole. It was replaced in 1930 by a standard disk set at exactly the same elevation.

L 4.—About 1¼ miles northwest along the Northern Pacific Railway from **Helix**, Umatilla County, at mileage 22.25, and 20 feet west of the center line of the track. A standard cap, stamped "1799 L 4 1904" and fastened on the top of a 3½-inch iron pipe. (548.358 meters or 1,799.071 feet.)

K 4.—About 4 miles southwest along the Northern Pacific Railway from **Helix**, Umatilla County, about ¼ mile north of **Myrick**, at mileage 27.25, and 30 feet west of the track. A standard cap, stamped "1739 K 4 1904" and fastened on the top of a 3½-inch iron pipe cased in concrete. (530.190 meters or 1,739.465 feet.)

J 4.—About 1 mile north along the Northern Pacific Railway from **McCormach**, Umatilla County, at mileage 31.25, and 30 feet west of the track. A standard cap, fastened on the top of a 3½-inch iron pipe. (508.728 meters or 1,652.648 feet.)

I 4.—About 2 miles southeast along the Northern Pacific Railway from **Fulton**, Umatilla County, at mileage 35.25, and 30 feet south of the track. A standard cap, stamped "1387 I 4 1904" and fastened on the top of a 3½-inch iron pipe cased in concrete. (422.923 meters or 1,387.540 feet.)

H 4.—About 3 miles east along the Oregon-Washington Highway from Main Street at Pendleton, Umatilla County, about 0.1 mile east of a cliff on the south side of the highway, and 26 feet north of the center line of the Northern Pacific Railway, near the center of a long curve to the north. The bottom of a square hole in the top of a stone post. (357.825 meters or 1,173.964 feet.)

G 4.—About 1 mile east along the Northern Pacific Railway from Pendleton, Umatilla County, at the northwest corner of the bridge over Umatilla River, in the top of the abutment. A standard disk, stamped "G 4 1904." (334.808 meters or 1,098.449 feet.)

P 39 (P. P. & L.).—At Pendleton, Umatilla County, at the southwest corner of Garden and West Alta Streets, about 40 feet west of the west line of Garden Street, at the northeast corner of the post office, on a window ledge. A United States Geological Survey standard disk, stamped "1068 P 39." (325.633 meters or 1,068.346 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1925.

E 4.—At Pendleton, Umatilla County, on Main Street, at the entrance to the building occupied by the Delta Confectionary Store. A standard disk. (326.042 meters or 1,069.689 feet.)

NOTE.—This bench mark was searched for in 1930 but not found. It may have been destroyed at the time the store was rebuilt.

D. 4.—At Pendleton, Umatilla County, on the south side of East Webb Street, 50 feet west of the intersection with Cottonwood Street, in a building occupied by a furniture store in 1931, in a stone stringer under a show window. A standard disk, stamped "D 4 1904." (326.721 meters or 1,071.917 feet.)

F 4.—At Pendleton, Umatilla County, at the northwest corner of Court and Thompson Streets, in the corner column supporting a brick building, near the center of the east brick pilaster, and about 4 feet above the sidewalk. A copper bolt, stamped "USBM." (327.869 meters or 1,075.684 feet.)

NOTE.—It was reported in October, 1931, that this bench mark was covered with paint.

P 40 (P. P. & L.).—At Pendleton, Umatilla County, at the Pacific Power & Light Co. outdoor substation on the west side of College Street, in the northeast corner of the concrete base of the voltage regulator. A Pacific Power & Light Co. standard disk, stamped "1076 P 40." (328.008 meters or 1,076.140 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1925.

1075 (P. P. & L.).—At Pendleton, Umatilla County, at the Pacific Power & Light Co. outdoor substation on the west side of College Street, on the east end of the concrete base of the outdoor lightning arresters. A United States Geological Survey standard copper nail and washer. (327.622 meters or 1,074.873 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1925.

1078 (U. S. G. S.).—At Pendleton, Umatilla County, on the south side of the west entrance to the courthouse, in the wall, 2.27 feet above the walk. A United States Geological Survey standard disk, stamped "1078 A 1899." (323.610 meters or 1,078.115 feet.)

1209 (U. S. G. S.).—At Mission, Umatilla County, about 850 feet west of the road crossing, 6 poles west of Oregon-Washington Railroad & Navigation Co. milepost 221, 30 feet west of semaphores No. 220.7 and No. 220.8, 25 feet north of the track, and 15 feet east of the east section-house fence. A United States Geological Survey standard cap stamped "1209 A 1899" and riveted on the top of a 3½-inch iron pipe cased in concrete. (368.577 meters or 1,209.240 feet.)

C 4.—About 0.9 mile west along the Oregon-Washington Railroad & Navigation Co. track from Minthorn, Umatilla County, at mileage 223.8, 481 feet west of semaphore No. 223.8, 4½ rails west of culvert No. 223.83, and 15 feet north of the track. The bottom of a square hole in the top of a stone post. (405.335 meters or 1,329.837 feet.)

NOTE.—It was reported in April, 1932, that this bench mark had been knocked slightly out of plumb.

1358 (U. S. G. S.).—About ¾ mile east along the Oregon-Washington Railroad & Navigation Co. track from Minthorn, Umatilla County, 16 poles east of

milepost 225, about 235 feet west of semaphore No. 225.5, and 19 feet south of the center of the track. A United States Geological Survey standard cap, stamped "1358 1904" and riveted on the top of a 3½-inch iron pipe cased in concrete. (414.167 meters or 1,358.813 feet.)

B 4.—About ¼ mile west along the Oregon-Washington Railroad & Navigation Co. track from **Cayuse**, Umatilla County, at bridge No. 226.86, on the north side of the track, in an offset of the east abutment. The bottom of a square hole. (428.070 meters or 1,404.426 feet.)

A 4.—About 0.5 mile east along the Oregon-Washington Railroad & Navigation Co. track from **Cayuse**, Umatilla County, near mileage 227.58, and 20 feet north of the track. A standard cap, fastened on the top of a 3½-inch iron pipe. (437.080 meters or 1,433.987 feet.)

NOTE.—This bench mark was searched for in 1924 and in April, 1932, but was not found.

Z 3.—About 1.5 miles west along the Oregon-Washington Railroad & Navigation Co. track from **Thorn Hollow**, Umatilla County, 75 feet north of the Thorn Hollow highway, at railroad bridge No. 230.59, in the top of the raised offset of the east abutment, 13 feet south of the track, and 2 feet from the west edge of the concrete. A standard disk, stamped "1521 Z 3 1904." (463.760 meters or 1,521.519 feet.)

NOTE.—This bench mark was originally the bottom of a square hole but it has been replaced by a standard disk set at exactly the same elevation.

1528 (U. S. G. S.).—About 1 mile west along the Oregon-Washington Railroad & Navigation Co. track from **Thorn Hollow**, Umatilla County, 272 feet west of the Thorn Hollow road crossing, 245 feet west of cattle guard No. 231.11, 17 feet north of the track, and 4 feet east of a pole. A United States Geological Survey standard cap, stamped "1528 A" and riveted on the top of a 3½-inch iron pipe cased in concrete. (465.809 meters or 1,528.242 feet.)

Y 3.—About 2.5 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Thorn Hollow**, Umatilla County, 265 feet east of an 8-foot square concrete manhole of the Pendleton city aqueduct, which is 60 feet south of the track, at mileage 234.6, and 40 feet north of the track. The bottom of a square hole in the top of a stone post, marked "USBM." (504.005 meters or 1,653.556 feet.)

NOTE.—This bench mark has been reported as destroyed.

1744 (U. S. G. S.).—At **Gibbon**, Umatilla County, 150 feet east of the Oregon-Washington Railroad & Navigation Co. station, 40 feet north of the track, and 4 feet east of the first pole from the station. A United States Geological Survey standard cap, stamped "1744 A" and riveted on the top of a 3½-inch iron pipe. (533.238 meters or 1,749.465 feet.)

NOTE.—This bench mark was searched for in 1924 and 1930 but was not found.

X 3.—About 1.6 miles southeast along the Oregon-Washington Railroad & Navigation Co. track from **Gibbon**, Umatilla County, in the north abutment of bridge No. 238.67, in the top of an offset, and 11 feet west of the track. A standard disk, stamped "1819 X 3 1904." (554.664 meters or 1,819.760 feet.)

W 3.—About 3.6 miles southeast along the Oregon-Washington Railroad & Navigation Co. track from **Gibbon**, Umatilla County, 16 feet north of culvert No. 240.68, 36 feet west of the track, and 18 feet west of a fence. A standard cap, fastened on the top of a 3½-inch iron pipe. (580.159 meters or 1,903.405 feet.)

2023 (U. S. G. S.).—About 6.4 miles southeast along the Oregon-Washington Railroad & Navigation Co. track from **Gibbon**, Umatilla County, about 1.3 miles south of **Conway**, at mileage 243.5, 23 feet south of the track, and 30 feet east of a whistle post. A United States Geological Survey standard cap, stamped "2023 A" and riveted on the top of a 3½-inch iron pipe. (618.143 meters or 2,028.024 feet.)

NOTE.—This bench mark was searched for in 1924 but was not found.

V 3.—At **Sloan** siding, Umatilla County, 433 feet west of Oregon-Washington Railroad & Navigation Co. iron culvert No. 245.67, and 30 feet north of the track, in line with a row of poles. A standard cap, fastened on the top of a 3½-inch iron pipe. (657.933 meters or 2,158.568 feet.)

U 3.—About 1 mile northwest along the Oregon-Washington Railroad & Navigation Co. track from **Duncan**, Umatilla County, at the northeast corner of

bridge No. 247.22, in the top of an offset of the abutment. A standard disk. (684.940 meters or 2,247.174 feet.)

2264 (U. S. G. S.).—About 0.6 mile north along the Oregon-Washington Railroad & Navigation Co. track from **Duncan**, Umatilla County, 150 feet south of the section house, and 30 feet west of the track. A United States Geological Survey standard cap, stamped "2264 A" and riveted on the top of a 3½-inch iron pipe. (691.764 meters or 2,269.562 feet.)

NOTE.—This bench mark was searched for in 1924 but was not found.

T 3.—About 2.5 miles south along the Oregon-Washington Railroad & Navigation Co. track from **Duncan**, Umatilla County, at mileage 250.66, and 33 feet east of the track. The bottom of a square hole in the top of a stone post, marked "USBM." (745.535 meters or 2,445.976 feet.)

S 3.—About 0.4 mile north along the Oregon-Washington Railroad & Navigation Co. track from **North Fork**, Umatilla County, at bridge No. 251.18, in an offset of the south abutment, and 12 feet east of the track. The bottom of a square hole. (755.950 meters or 2,480.146 feet.)

R 3.—About 0.9 mile south along the Oregon-Washington Railroad & Navigation Co. track from **North Fork**, Umatilla County, at bridge No. 252.52, in the top of an offset of the north concrete abutment, and 14 feet west of the track. The bottom of a square hole, lettered "USBM." (780.894 meters or 2,561.983 feet.)

2570 (U. S. G. S.).—About 1 mile south along the Oregon-Washington Railroad & Navigation Co. track from **North Fork**, Umatilla County, 540 feet south of bridge No. 252.52, and 27½ feet east of the track. A United States Geological Survey standard cap, stamped "2570 A" and riveted on the top of a 3½-inch iron pipe. (785.154 meters or 2,575.959 feet.)

Q 3.—About 2 miles north along the Oregon-Washington Railroad & Navigation Co. track from **Huron**, Umatilla County, at mileage 255.5, and 40 feet south of the track. A standard cap, fastened on the top of a 3½-inch iron pipe. (846.408 meters or 2,776.924 feet.)

NOTE.—This bench mark was searched for in 1924 but was not found.

P 3.—About 0.3 mile north along the Oregon-Washington Railroad & Navigation Co. track from **Huron**, Umatilla County, at bridge No. 257.18 in the top of an offset of the south concrete abutment, 13 feet east of the track, and 8 inches from the outer edge of the abutment. The bottom of a square hole. (882.080 meters or 2,893.957 feet.)

O 3.—About 1.5 miles south along the Oregon-Washington Railroad & Navigation Co. track from **Huron**, Umatilla County, at bridge No. 258.95, in an offset of the north abutment, and 8 feet west of the track. The bottom of a square hole. (933.312 meters or 3,062.041 feet.)

N 3.—About 0.5 mile along the Oregon-Washington Railroad & Navigation Co. track toward Portland from **Porter**, Umatilla County, at the Portland end of bridge No. 260.22, in the bridge seat of the concrete abutment, 10 feet to the left of the center of track facing Huntington, 2 feet from the face of the back wall, and 1½ feet from the face of the bridge seat. The bottom of a square hole, lettered "USBM." (972.013 meters or 3,189.013 feet.)

M 3.—About 3.3 miles along the Oregon-Washington Railroad & Navigation Co. track toward Portland from **Meacham**, Umatilla County, near mileage 261.7. The bottom of a square hole in the top of a stone post. (1,021.579 meters or 3,351.630 feet.)

NOTE.—This bench mark was searched for in 1925 but was not found.

3454 (U. S. G. S.).—About 2.2 miles along the Oregon-Washington Railroad & Navigation Co. track toward Portland from **Meacham**, Umatilla County, near mileage 262.75, and 15 feet north of the track. A United States Geological Survey standard cap, stamped "3454 A" and riveted on the top of a 3½-inch iron pipe. (1,054.856 meters or 3,460.807 feet.)

NOTE.—This bench mark was searched for in 1925 but was not found.

3679 (U. S. G. S.).—At **Meacham**, Umatilla County, 352 feet north of the Oregon-Washington Railroad & Navigation Co. station, 63 feet south of mile-post 265, and 18 feet east of the center line of the main track. A United States Geological Survey standard cap, stamped "3679 A 1899" and riveted on the top of a 3½-inch iron pipe. (1,121.524 meters or 3,679.533 feet.)

NOTE.—This bench mark was reported to be leaning slightly.

L 3.—About $1\frac{3}{4}$ miles south along the Oregon-Washington Railroad & Navigation Co. track from **Meacham**, Umatilla County, near mileage 266.75, and 40 feet east of the track. The bottom of a square hole in the top of a stone post. (1,145.278 meters or 3,757.466 feet.)

NOTE.—This bench mark was searched for in 1925 but was not found.

3958 (U. S. G. S.).—About $3\frac{3}{4}$ miles south along the Oregon-Washington Railroad & Navigation Co. track from **Meacham**, Umatilla County, at mileage 268.75, and 23 feet south of the track. A United States Geological Survey standard cap, stamped "3958 A" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (1,208.668 meters or 3,965.438 feet.)

4199 (U. S. G. S.).—At **Kamela**, Union County, 155 feet south of the north end of the Oregon-Washington Railroad & Navigation Co. station, and 100 feet west of the main track. A United States Geological Survey standard cap, stamped "4199 A" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (1,281.847 meters or 4,205.526 feet.)

NOTE.—This bench mark was searched for in 1931 but was not found. It may be covered by some small wooden buildings.

K 3.—About 2.5 miles south along the Oregon-Washington Railroad & Navigation Co. track from **Kamela**, Union County, near mileage 273.75, and 50 feet east of the track. A standard cap, fastened on the top of a $3\frac{1}{2}$ -inch iron pipe. (1,203.713 meters or 3,949.182 feet.)

NOTE.—This bench mark was searched for in 1925 but was not found.

3581 (U. S. G. S.).—About 5.5 miles northwest along the Oregon-Washington Railroad & Navigation Co. track from **Hilgard**, Union County, near mileage 276.75, and 15 feet southwest of the track. A United States Geological Survey standard cap, stamped "3581 A" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (1,093.768 meters or 3,588.470 feet.)

NOTE.—This bench mark was searched for in 1925 but was not found.

3007 (U. S. G. S.).—At **Hilgard**, Union County, 46 feet west of the Oregon-Washington Railroad & Navigation Co. station, 26 feet north of the center line of the main track, in the shoulder of the cinder platform. A United States Geological Survey standard cap, stamped "3007 A 1899" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (916.726 meters or 3,007.625 feet.)

NOTE.—It was reported in October, 1931, that this bench mark was leaning.

J 3.—About 1.7 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Hilgard**, Union County, 140 feet east of culvert No. 283.68, 70 feet south of the Old Oregon Trail at mileage 280.85, 27 feet north of the center line of the track, and 20 feet east of a private-road crossing. A standard cap, stamped "J 3 1904" and fastened on the top of a $3\frac{1}{2}$ -inch iron pipe. (904.405 meters or 2,967.202 feet.)

2897 (U. S. G. S.).—At **Perry**, Union County, about 100 feet east of Oregon-Washington Railroad & Navigation Co. bridge No. 286.20, 54 feet north of the center line of the main track, 12 feet west of the east face of the Grande Ronde Lumber Co. store, and 6 inches south of the south face. A United States Geological Survey standard cap, stamped "2897 A" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (884.851 meters or 2,903.049 feet.)

I 3.—About 2.5 miles west along the Oregon-Washington Railroad & Navigation Co. track from **La Grande**, Union County, 300 feet east of Pine Cone service station, opposite culvert No. 287.57, just west of a ditch at a private-road crossing, 20 feet south of the track, near Old Oregon Trail mileage 284.9, and 50 feet north of the trail. A standard cap, stamped "I 3 1904" and fastened on the top of a $3\frac{1}{2}$ -inch iron pipe. (871.412 meters or 2,858.958 feet.)

H 3.—About 2 miles west along the Oregon-Washington Railroad & Navigation Co. track from **La Grande**, Union County, at bridge No. 288.02, in the east bridge seat of the abutment, 4.5 feet south of the south rail, 1 foot from the face of the back wall, and 4 inches inside of the capstone. The bottom of a square hole. (868.025 meters or 2,847.845 feet.)

2782 (U. S. G. S.).—At **La Grande**, Union County, on the east side of Chestnut Street, in the west face of the Foley Hotel, just north of the entrance at the southwest corner, and about 1 foot above the sidewalk. A United States

Geological Survey standard disk, stamped "2782 A" and set vertically. (849.726 meters or 2,787.809 feet.)

NOTE.—This bench mark is a reference mark for United States Coast and Geodetic Survey first-order triangulation station "La Grande." Additional leveling indicates that it has changed in position and is no longer reliable as a first-order bench mark. The following elevation was determined from leveling by the Pacific Power & Light Co. (849.406 meters or 2,786.761 feet.)

G 3.—At **La Grande**, Union County, on the west side of Depot Street, about 25 feet south of the south alley line between Adams and Washington Avenues, on the east side of the brick and stone building formerly occupied by the J. C. Penney Co., in the stone step. A standard disk, stamped "G 3 1904." (849.328 meters or 2,786.504 feet.)

NOTE.—Additional leveling indicates that this bench mark has been changed from its original position and is no longer reliable as a first-order bench mark. The following elevation was determined from leveling by the Pacific Power & Light Co. (2,785.78 feet.) In 1931 it was reported that this bench mark was probably covered by some woodwork below the show window.

F 3.—At **La Grande**, Union County, on the north side of Adams Avenue (Old Oregon Trail), 100 feet east of Depot Street, in the front of the building known as Steward's Opera House, in a stone pillar just east of the entrance to the stairway, and about 4 feet above the sidewalk. A standard disk, stamped "F 3 1904" and set vertically. (849.843 meters or 2,788.193 feet.)

E 3.—At **La Grande**, Union County, on the east side of Fir Street, between Jefferson Avenue and the railroad tracks, in the west face of a brick building which was occupied by a secondhand store in 1930, behind a large sheet metal sign, 1 foot from the north corner of the building, and about 4 feet above the sidewalk. A copper bolt, stamped "USBM," access to which is had through a small hole in the sign. (848.907 meters or 2,785.122 feet.)

2773 (U. S. G. S.).—At **La Grande**, Union County, on the Oregon-Washington Railroad & Navigation Co. right of way, 160 feet northeast of the road crossing at First Street, 30 feet north of the northwest corner of the railroad tool house, and 4 feet west of a pole. A United States Geological Survey standard cap, stamped "2773 A" and riveted on the top of a 3½-inch iron pipe. (847.154 meters or 2,779.371 feet.)

NOTE.—This bench mark has been reported as destroyed.

D 3.—About 2.5 miles southeast along the Oregon-Washington Railroad & Navigation Co. track from **La Grande**, Union County, near mileage 292.5, about 125 feet northwest of a semaphore, 45 feet southwest of the track, at the north right-of-way line of the Old Oregon Trail, at trail mileage 290.1. A standard cap, stamped "D 3 1904" and fastened on the top of a 3½-inch iron pipe. (832.547 meters or 2,731.448 feet.)

C 3.—At **Lone Tree**, Union County, near Oregon-Washington Railroad & Navigation Co. railroad mileage 294.6, 70 feet southeast of a concrete telephone booth, 43.5 feet northeast of the track, at Old Oregon Trail mileage 292.2, and 150 feet northeast of the trail. A standard cap, stamped "C 3 1904" and fastened on the top of a 3½-inch iron pipe. (825.368 meters or 2,707.895 feet.)

2696 (U. S. G. S.).—About 2.5 miles northwest along the Oregon-Washington Railroad & Navigation Co. track from **Hot Lake**, Union County, near mileage 296.3, about 0.5 mile northwest of a private road crossing, 47.5 feet southwest of the track, at Old Oregon Trail mileage 293.9, and 30 feet northeast of the trail. A United States Geological Survey standard cap, stamped "2696 A" and riveted on the top of a 3½-inch iron pipe. (823.530 meters or 2,701.865 feet.)

B 3.—About 1.3 miles southeast along the Oregon-Washington Railroad & Navigation Co. track from **Hot Lake**, Union County, 3 poles southeast of milepost 300, and about 40 feet northeast of the center of the track. A standard cap, fastened on the top of a 3½-inch iron pipe. (823.125 meters or 2,700.536 feet.)

2705 (U. S. G. S.).—About 0.7 mile northwest along the Oregon-Washington Railroad & Navigation Co. track from **Union Junction**, Union County, about 0.2 mile northwest of semaphores No. 3019 and No. 3020, 9 poles northwest of milepost 302, 825 feet northwest of cattleguard No. 301.92, about 530 feet northwest of the yard limit sign, and 44 feet northeast of the center of the track. A United States Geological Survey standard cap, stamped "2705 A" and riveted on the top of a 3½-inch iron pipe. (826.451 meters or 2,711.448 feet.)

A 3.—At **Union**, Union County, in the west face of the First National Bank building, 3 feet from the northwest corner, and 4 feet above the ground. A copper bolt, stamped "USBM." (851.273 meters or 2,792.885 feet.)

NOTE.—This bench mark was destroyed when the bank building was remodeled.

2788 (U. S. G. S.).—At **Union**, Union County, in the east face of the Masonic Hall, and 3 feet from the southeast corner. A United States Geological Survey standard disk, stamped "2788." (849.970 meters or 2,788.610 feet.)

Z 2.—At **Union**, Union County, on the south side of railroad, at the west edge of the Old Oregon Trail, at the north side of the brick building occupied by the Union Cash Grocery Co., in the sill, 2 feet from the northeast corner. A standard disk, stamped "Z 2 1904." (850.124 meters or 2,789.115 feet.)

Y 2.—At **Union**, Union County, in the east face of the brick and stone building occupied by Conner's (Inc.), 20 inches from the southeast corner, and 4 feet above the ground. A copper bolt, stamped "USBM." (851.213 meters or 2,792.688 feet.)

X 2.—About 1.5 miles southeast along the Oregon-Washington Railroad & Navigation Co. track from **Union Junction**, Union County, 1 pole southeast of milepost 304, 50 feet southeast of semaphore No. 304.1, and 37.5 feet east of the center of the track. A standard cap, fastened on the top of a 3½-inch iron pipe. (857.391 meters or 2,812.957 feet.)

3021 (U. S. G. S.).—About 1.4 miles south along the Oregon-Washington Railroad & Navigation Co. track from **Pyle**, Union County, 6 poles north of milepost 307, 75 feet southeast of culvert No. 306.80, and 13 feet southwest of the center of the track. A United States Geological Survey standard cap, stamped "3021 A" and riveted on the top of a 3½-inch iron pipe. (922.676 meters or 3,027.146 feet.)

W 2.—About 1 mile south along the Oregon-Washington Railroad & Navigation Co. track from **Crooks**, Union County, 8 poles north of milepost 310, 4 poles north of semaphore No. 309.9, 165 feet south of culvert No. 309.70, and 36 feet east of the center of the track. A standard cap, fastened on the top of a 3½-inch iron pipe. (989.955 meters or 3,247.877 feet.)

3440 (U. S. G. S.).—At **Telocaset**, Union County, 18 feet northeast of the Oregon-Washington Railroad & Navigation Co. track, and 3 feet east of the east corner of the fence at the section house. A United States Geological Survey standard cap, stamped "3440 A" and riveted on the top of a 3½-inch iron pipe. (1,050.535 meters or 3,446.630 feet.)

NOTE.—This bench mark was searched for in 1924 but was not found.

V 2.—About ¼ mile southeast along the Oregon-Washington Railroad & Navigation Co. track from **Telocaset**, Union County, at mileage 312.85, in the northwest fence corner of a private road crossing. The bottom of a square hole in the top of a stone post, lettered "USBM." (1,048.021 meters or 3,438.382 feet.)

NOTE.—This bench mark was searched for in 1925 but was not found.

U 2.—About 3 miles southwest along the Oregon-Washington Railroad & Navigation Co. track from **Telocaset**, Union County, at mileage 315.7, and 90 feet north of the track. A standard cap, fastened on the top of a 3½-inch iron pipe. (1,005.872 meters or 3,300.098 feet.)

NOTE.—This bench mark was searched for in 1925 but was not found.

3228 (U. S. G. S.).—About 5 miles northeast along the Oregon-Washington Railroad & Navigation Co. track from **North Powder**, Union County, at mileage 317.1, 188 feet from the northward portal of tunnel No. 5, and 16 feet east of the track. A United States Geological Survey standard cap, stamped "3228 A" and riveted on the top of a 3½-inch iron pipe. (986.142 meters or 3,235.368 feet.)

T 2.—About 3.8 miles northeast along the Oregon-Washington Railroad & Navigation Co. track from **North Powder**, Union County, at mileage 318.29, in the westward concrete pier of bridge No. 318.29, and 13.5 feet west of the center line of the track. The bottom of a square hole. (971.935 meters or 3,188.757 feet.)

S 2.—About 3.6 miles northeast along the Oregon-Washington Railroad & Navigation Co. track from **North Powder**, Union County, at bridge No. 318.50, in an offset of the westward concrete abutment, 12.5 feet northwest of the center of the track, 2.4 feet from the face of the back wall, and 2 feet above

the bridge seat. The bottom of a square hole. (972,017 meters or 3,189,026 feet.)

R 2.—About $3\frac{1}{4}$ miles northeast along the Oregon-Washington Railroad & Navigation Co. track from **North Powder**, Union County, 495 feet northeast of pile trestle No. 318.95, and 15 feet northwest of the center of the track, in the south face of a rock bluff about 5 feet above the level of the rail. The center of a cross at the bottom of a square hole. (975,302 meters or 3,199,803 feet.)

Q 2.—At **North Powder**, Union County, in the southeast wall of the I. O. O. F. building, 4 feet southwest of the east corner, and 5 feet above the ground. A copper bolt, stamped "USBM." (992,579 meters or 3,256,486 feet.)

NOTE.—The bolt has been removed but the drill hole remains.

3233 (U. S. G. S.).—At **North Powder**, Union County, 980 feet northeast of the Oregon-Washington Railroad & Navigation Co. station, 652 feet northeast of pile trestle No. 322.09, 155 feet from the water tank, and 33.2 feet southeast of the main track. A United States Geological Survey standard cap, stamped "3233 A" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (988,214 meters or 3,242,165 feet.)

P 2.—About 1.7 miles southwest along the Oregon-Washington Railroad & Navigation Co. track from **North Powder**, Union County, at mileage 323.82, 50 feet south of trestle No. 323.82, and 45 feet east of the track. A standard cap, fastened on the top of a $3\frac{1}{2}$ -inch iron pipe. (1,003,626 meters or 3,292,730 feet.)

3372 (U. S. G. S.).—At **Hutchinson**, Baker County, at Oregon-Washington Railroad & Navigation Co. mileage 326.75, 1,500 feet north of a road crossing, 41.3 feet east of the center of the main track, and 8 feet inside of the right-of-way fence. A United States Geological Survey standard cap, stamped "3372 A" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (1,030,124 meters or 3,379,665 feet.)

O 2.—About 1.9 miles north along the Oregon-Washington Railroad & Navigation Co. track from **Haines**, Baker County, at mileage 329.51, 45.3 feet west of the track, and 30 feet north of a road crossing. A standard cap, fastened on the top of a $3\frac{1}{2}$ -inch iron pipe. (1,018,366 meters or 3,341,089 feet.)

N 2.—About 1.4 miles south along the Oregon-Washington Railroad & Navigation Co. track from **Haines**, Baker County, at mileage 332.75, 47 feet west of the track, 3 feet inside of the right-of-way fence, and about 150 feet west of the Old Oregon Trail. A standard cap, stamped "N 2 1904" and fastened on the top of a $3\frac{1}{2}$ -inch iron pipe. (1,014,114 meters or 3,327,139 feet.)

3338 (U. S. G. S.).—About 4.5 miles south along the Oregon-Washington Railroad & Navigation Co. track from **Haines**, Baker County, at mileage 335.94, 100 feet north of trestle No. 335.96, 56.5 feet west of the track, 10 feet south of a private crossing, and 136 feet west of the Old Oregon Trail. A United States Geological Survey standard cap, stamped "3338 A" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (1,019,896 meters or 3,346,109 feet.)

M 2.—About 3 miles north along the Oregon-Washington Railroad & Navigation Co. track from **Baker**, Baker County, at mileage 338.8, on the east side of the track. The bottom of a square hole in the top of a limestone post. (1,028,042 meters or 3,372,834 feet.)

3433 (U. S. G. S.).—At **Baker**, Baker County, on the west side of Fourth Street between Broadway and Washington Street, at the east entrance to Central School, in the astronomical pier. A United States Geological Survey standard disk, stamped "3433 A." (1,048,776 meters or 3,440,859 feet.)

NOTE.—This bench mark was also a United States Geological Survey triangulation and astronomical station. The pier has been removed and the bench mark destroyed.

J 2.—At **Baker**, Baker County, at the southeast corner of Broadway and Main Street, in the north face of the Pollman Building which was occupied by the Jones-McCord Hardware Co. in 1932, about 10 feet east of the northwest corner, and about 4 feet above the ground. A copper bolt, stamped "USBM." (1,049,584 meters or 3,443,510 feet.)

NOTE.—The bolt has been removed but the drill hole remains.

K 2.—At **Baker**, Baker County, in the east face or alley side of the Elks Building, 2 feet from the northeast corner, and about 4 feet above the ground. A standard disk, stamped "K 2 1904." (1,050,588 meters or 3,446,804 feet.)

L 2.—At **Baker**, Baker County, on the south side of Auburn Avenue, in the north face of the city hall, 2 feet from the northwest corner, and 4 feet above

the ground. A standard disk, stamped "L 2 1904" and set vertically. (1,051.213 meters or 3,448.855 feet.)

I 2.—About 2.2 miles southeast along the Oregon-Washington Railroad & Navigation Co. track from **Baker**, Baker County, at bridge No. 343.94, in the top of the back wall of the west concrete abutment, on the east side of the track, in an offset of the abutment, and 18 inches from the east edge. The bottom of a square hole. (1,065.481 meters or 3,495.666 feet.)

3646 (U. S. G. S.).—At **Quartz**, Baker County, 170 feet north of the Oregon-Washington Railroad & Navigation Co. track, near mileage 347.71, north of a section house, and north of the Old Oregon Trail. A United States Geological Survey standard cap, stamped "3646 A" and riveted on the top of a 3½-inch iron pipe. (1,113.816 meters or 3,654.245 feet.)

H 2.—About 1.2 miles southeast along the Oregon-Washington Railroad & Navigation Co. track from **Quartz**, Baker County, at the southwest corner of concrete culvert No. 348.81, on the wing wall. The bottom of a square hole. (1,132.680 meters or 3,716.134 feet.)

G 2.—At **Encina**, Baker County, 780 feet west of the Oregon-Washington Railroad & Navigation Co. station, at mileage 351.9, at a road crossing, 40 feet south of the track. A standard cap, fastened on the top of a 3½-inch iron pipe. (1,205.344 meters or 3,954.533 feet.)

3818 (U. S. G. S.).—About 1.3 miles northwest along the Oregon-Washington Railroad & Navigation Co. track from **Pleasant Valley**, Baker County, opposite milepost 354.2, 115 feet south of cattle guard No. 354.18, and 100 feet southwest of the track. A United States Geological Survey standard cap, stamped "3818 A" and riveted on the top of a 3½-inch iron pipe. (1,166.416 meters or 3,826.816 feet.)

F 2.—About 2.2 miles southeast along the Oregon-Washington Railroad & Navigation Co. track from **Pleasant Valley**, Baker County, at mileage 357.7, and 80 feet north of an 18-inch cast-iron pipe culvert. The bottom of a square hole in the top of a stone post, marked "USBM." (1,076.993 meters or 3,533.434 feet.)

E 2.—About ¼ mile northwest along the Oregon-Washington Railroad & Navigation Co. track from **Unity**, Baker County, at bridge No. 361.64, in an offset of the eastward concrete abutment, 8 inches from the north and east edges. The bottom of a square hole. (957.327 meters or 3,140.830 feet.)

NOTE.—This bench mark was searched for in 1924 but was not found.

3139 (U. S. G. S.).—At **Unity**, Baker County, 185 feet east of the Oregon-Washington Railroad & Navigation Co. track, 125 feet back of the section house, and 12 feet east of the Old Oregon Trail. A United States Geological Survey standard cap, stamped "3139 A" and riveted on the top of a 3½-inch iron pipe. (959.061 meters or 3,146.519 feet.)

NOTE.—It was reported in 1930 that this bench mark was leaning.

D 2.—About 0.4 mile south along the Oregon-Washington Railroad & Navigation Co. track from **Leonard**, Baker County, about 1 mile northwest of bridge No. 366.74, and 2 feet from the fence. The bottom of a square hole in the top of a limestone post. (853.839 meters or 2,817.708 feet.)

NOTE.—This bench mark was searched for in 1924 but was not found.

C 2.—About 2.2 miles northwest along the Oregon-Washington Railroad & Navigation Co. track from **Durkee**, Baker County, at bridge No. 366.74, southwest of the track, in an offset of the west concrete abutment, 2 feet from the south edge, and 16 inches from the west edge. The bottom of a square hole. (834.170 meters or 2,736.773 feet.)

NOTE.—This bench mark was searched for in 1924 but was not found.

2647 (U. S. G. S.).—At **Durkee**, Baker County, 1 foot from the northeast corner of the Oregon-Washington Railroad & Navigation Co. station, inside of the rear yard fence, 54 feet north of the center of the main track. A United States Geological Survey standard cap, stamped "2647 A" and riveted on the top of a 3½ inch iron pipe. (809.466 meters or 2,655.724 feet.)

B 2.—About 2.8 miles southeast along the Oregon-Washington Railroad & Navigation Co. track from **Durkee**, Baker County, about ¼ mile north of **Nelson** station sign, at mileage 371.67, and 50 feet east of the track. A standard cap, fastened on the top of a 3½-inch iron pipe. (780.660 meters or 2,561.215 feet.)

NOTE.—This bench mark was searched for in 1924 but was not found.

2518 (U. S. G. S.).—About 3.6 miles northwest along the Oregon-Washington Railroad & Navigation Co. track from **Weatherby**, Baker County, about 1,000 feet north of bridge No. 373.76, 23 feet north of the track, 13 feet south of an abandoned wagon road, and 4 feet south of the fence. A United States Geological Survey standard cap, stamped "2518 A" and riveted on the top of a 3½-inch iron pipe. (770.019 meters or 2,526.304 feet.)

A 2.—About 0.5 mile north along the Oregon-Washington Railroad & Navigation Co. track from **Weatherby**, Baker County, at bridge No. 376.84, in a concrete offset of the north abutment, 13 feet east of the track, 1.5 feet from the south edge, and 1.75 feet from the east edge. The bottom of a square hole. (735.382 meters or 2,412.666 feet.)

Z.—About 0.2 mile north along the Oregon-Washington Railroad & Navigation Co. track from **Weatherby**, Baker County, 200 feet south of bridge No. 377.09, and 45 feet west of the track. A standard cap, fastened on the top of a 3½-inch iron pipe. (734.541 meters or 2,409.907 feet.)

2369 (U. S. G. S.).—About 1.3 miles south along the Oregon-Washington Railroad & Navigation Co. track from **Weatherby**, Baker County, 550 feet north of the north portal of tunnel No. 6, 40 feet north of the track, and 8 feet east of the north-and-south fence. A United States Geological Survey standard cap, stamped "2369 A" and riveted on the top of a 3½-inch iron pipe. (724.444 meters or 2,376.780 feet.)

Y.—About 0.8 mile south along the Oregon-Washington Railroad & Navigation Co. track from **Jett** siding, Baker County, on bridge No. 381.66, 14 feet east of the track, in the bridge seat of the north concrete abutment, 2.6 feet from the east edge, and 1.3 feet from the south edge. The bottom of a square hole with the letter "Y" on the south side. (695.784 meters or 2,282.751 feet.)

X.—About 1¼ miles north along the Oregon-Washington Railroad & Navigation Co. track from **Lime**, Baker County, on bridge No. 383.27, 8 feet east of the track, in an offset of the east concrete abutment, and 14 inches from the north and east edges. The bottom of a square hole. (683.570 meters or 2,242.679 feet.)

W.—About ¼ mile north along the Oregon-Washington Railroad & Navigation Co. track from **Lime**, Baker County, about 0.15 mile north of bridge No. 384.42, and 30 feet west of the track. A chiseled square in the top of a stone post lettered "USBM." (679.359 meters or 2,228.864 feet.)

NOTE.—This bench mark was searched for in 1924 but was not found.

2215 (U. S. G. S.).—At **Lime**, Baker County, on the Oregon-Washington Railroad & Navigation Co. right of way, 370 feet south of bridge No. 384.42, 30 feet east of the track, and 15 feet north of the station sign. A United States Geological Survey standard cap, stamped "2215 A" and riveted on the top of a 3½-inch iron pipe. (677.529 meters or 2,222.860 feet.)

V.—About 3.6 miles north along the Oregon-Washington Railroad & Navigation Co. track from **Huntington**, Baker County, on bridge No. 385.95, 15 feet east of the track, in a concrete offset of the south abutment, 10 inches from the south edge, and 20 inches from the east edge. The bottom of a square hole. (665.745 meters or 2,184.198 feet.)

U.—About 2.6 miles north along the Oregon-Washington Railroad & Navigation Co. track from **Huntington**, Baker County, on the east side of the track, on bridge No. 386.92, in a concrete offset of the north abutment, 10 inches from the south edge, and 20 inches from the east edge. The bottom of a square hole. (660.011 meters or 2,165.386 feet.)

NOTE.—This bench mark was searched for in 1925 but was not found.

T.—About 1¾ miles north along the Oregon-Washington Railroad & Navigation Co. track from **Huntington**, Baker County, 14 feet east of the track, in a concrete offset of the north abutment of bridge No. 387.75, 10 inches from the south edge, and 20 inches from the east edge. The bottom of a square hole. (654.988 meters or 2,148.906 feet.)

S.—About 1 mile north along the Oregon-Washington Railroad & Navigation Co. track from **Huntington**, Baker County, on the east side of the track, about 100 feet north of the Old Oregon Trail, on railroad bridge No. 388.40 over Burnt River, in a concrete offset of the north abutment, 10 inches from the south edge, and 16 inches from the east edge. The bottom of a square hole. (649.771 meters or 2,131.790 feet.)

R.—At **Huntington**, Baker County, in the front wall of the brick building occupied by the Owl Drug Co. and the post office, midway between the show

window and the stairway, west of the entrance to the store, and 4 feet above the ground. A copper bolt, stamped "USBM." (644.887 meters or 2,115.767 feet.)

NOTE.—This bench mark was searched for in 1924 but was not found.

2105 (U. S. G. S.).—At **Huntington**, Baker County, on the south side of the Old Oregon Trail, in the north wall of the brick building of the Huntington Mercantile Co., near the stairway between the two stores, in the sixth row of bricks above the stone foundation. A United States Geological Survey standard disk, stamped "2105" and set vertically. (644.130 meters or 2,113.283 feet.)

Q.—About 0.9 mile northeast along the Oregon Short Line Railroad from **Huntington**, Baker County, on the east side of the track, in an offset of the south abutment of bridge No. 537.91 over Burnt River, 12 inches from the south edge, and 11 inches from the east edge. The bottom of a square hole. (639.115 meters or 2,096.830 feet.)

P.—About 1 mile northeast along the Oregon Short Line Railroad from **Huntington**, Baker County, on the east side of the track, in an offset of the north abutment of bridge No. 537.79 over Burnt River, 8 inches from the south edge, and 10 inches from the east edge. The bottom of a square hole. (638.262 meters or 2,094.031 feet.)

O.—About 1.8 miles northeast along the Oregon Short Line Railroad from **Huntington**, Baker County, 1 pole south of milepost 537, on bridge No. 537.03 over Burnt River, on the east side of the track, in a concrete offset of the north abutment, 13 inches from the east edge, and 8 inches from the south edge. The bottom of a square hole. (636.067 meters or 2,086.830 feet.)

2079 (U. S. G. S.).—About 2.4 miles northeast along the Oregon Short Line Railroad from **Huntington**, Baker County, on the bridge over Snake River, on the south side of the track, 3 feet east of the west end of the bridge, in a stone stringer. A United States Geological Survey standard disk, stamped "2079 A." (635.940 meters or 2,086.413 feet.)

At this point the line crosses the Snake River into Idaho. It follows the Oregon Short Line Railroad along the east bank of the river and reenters Oregon a short distance north of Ontario.

Y 5.—In Canyon County, Idaho, about $1\frac{3}{4}$ miles north along the Oregon Short Line Railroad from **Ontario**, Malheur County, **Oreg.**, on the bridge over Snake River, on the east side of the track, in a sandstone offset of the north abutment. The bottom of a square hole. (654.761 meters or 2,148.162 feet.)

N.—About 1 mile north along the Oregon Short Line Railroad from **Ontario**, Malheur County, on the bridge over Snake River, on the west side of the track, in the top of a sandstone offset of the north abutment, and 13 inches from the west and south edges. The bottom of a square hole. (654.861 meters or 2,148.490 feet.)

M.—At **Ontario**, Malheur County, in the south face of the Griffin & Staples store building, 3 feet west of the southeast corner, and about 5 feet above the ground. A copper bolt. (657.040 meters or 2,155.639 feet.)

NOTE.—This bench mark was searched for in 1925 but was not recovered.

L.—At **Ontario**, Malheur County, at the southeast corner of Oregon Street and Idaho Avenue, in the north face of the Golden Rule Store building, 5 feet from the northeast corner, and 5 feet above the ground. A copper bolt. (656.855 meters or 2,155.032 feet.)

NOTE.—This bench mark was searched for in 1930 but was not recovered.

K.—At **Ontario**, Malheur County, on the east side of Oregon Street, about 25 feet north of Nevada Avenue, in the west face of the Carter House, 3 feet north of the entrance, and about 5 feet above the walk. A copper bolt. (657.064 meters or 2,155.717 feet.)

R 21=2143 (U. S. G. S.).—See page 50.

I.—About 4.2 miles south along the Oregon Short Line Railroad from **Ontario**, Malheur County, 17 poles north of milepost 494, on bridge No. 494.57, in a concrete offset of the north abutment, 8 inches from the west and south edges. The bottom of a square hole. (658.499 meters or 2,160.425 feet.)

J.—About 5 miles south along the Oregon Short Line Railroad from **Ontario**, Malheur County, 9 poles south of milepost 494, 19 feet east of the track, on culvert No. 493.80, 3 inches from the east edge, and 4 inches from the north edge. The bottom of a square hole. (657.865 meters or 2,158.345 feet.)

H.—About 2 miles north along the Oregon Short Line Railroad from Nyssa, Malheur County, at mileage 490.73, and 85 feet east of the track. The bottom of a square hole in the top of a sandstone post. (660.686 meters or 2,167.601 feet.)

NOTE.—This bench mark was searched for in 1925 but was not recovered.

G.—At Nyssa, Malheur County, at the Oregon Short Line Railroad water tank, in the capstone of the northeast pillar, 4 inches from the east and north edges. The bottom of a 1-inch square hole. (664.773 meters or 2,181.009 feet.)

NOTE.—This bench mark was also a first-order triangulation station. The water tank has been removed and the mark destroyed.

F.—About 1 mile south along the Oregon Short Line Railroad from Nyssa, Malheur County, on bridge No. 487.64 over Snake River, on the east side of the track, on a sandstone offset of the north abutment, 8 inches from the south edge, and 2 inches from the east edge. The bottom of a 1-inch square hole, lettered "USBM." (665.916 meters or 2,184.759 feet.)

NOTE.—This bench mark was searched for in 1925 but was not recovered. The bridge had apparently been reconstructed.

X 5.—In Canyon County, Idaho, about 1¼ miles south along the Oregon Short Line Railroad from Nyssa, Malheur County, Oreg., on the bridge over Boise River, on the east side of the track, in the top of an offset of the north abutment, 4 inches from the east and south edges. The bottom of a square hole. (667.436 meters or 2,189.746 feet.)

LINE 3, WEED, CALIF., TO KIRK, OREG. (PART)

[First-order leveling]

This line enters Oregon near Ivan and follows the Southern Pacific Co. railroad through Klamath Falls to Kirk. A spur line follows the highway from Chiloquin to Klamath Indian Agency, Oreg. The field work was done during the summer and fall of 1919 by C. A. Egner, junior hydrographic and geodetic engineer, and L. J. Chawner, observer.

D 6 (S. P.).—About 0.5 mile south along the Southern Pacific Co. railroad from Ivan, Klamath County, near railroad mileage 413.1, at the southeast corner of ballast deck cattle pass No. 413.09, in the top of the abutment. The top of an iron bolt. (1,269.039 meters or 4,163.505 feet.)

C 6 (S. P.).—About 500 feet north along the Southern Pacific Co. railroad from Ivan, Klamath County, and 700 feet north of the point of the railroad spur, in the top of the southeast corner of cattle pass No. 413.68. The top of an iron bolt. (1,265.192 meters or 4,150.884 feet.)

B 6 (S. P.).—About ¾ mile north along the Southern Pacific Co. railroad from Ivan, Klamath County, at mileage 414.3, on ballast deck culvert No. 414.33, in the top of the southeast corner. The top of an iron bolt. (1,262.459 meters or 4,141.918 feet.)

AX 6 (U. S. G. S.).—About 0.6 mile south along the Southern Pacific Co. railroad from Worden, Klamath County, about 800 feet northwest of the Gordon ranch, about 300 feet southwest of a railroad water tank, and 75 feet north of a county road, just west of a small gully, in bedrock. A United States Geological Survey standard disk, stamped "4121." (1,255.953 meters or 4,120.573 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Oregon Geographic Board in 1927.

A 6 (S. P.).—About 0.6 mile south along the Southern Pacific Co. railroad from Worden, Klamath County, 153 feet east of milepost 415, in a concrete pier supporting a steel water tank, on the side nearest the track. The top of an iron bolt. (1,259.310 meters or 4,131.586 feet.)

C 5.—About 0.4 mile north along the Southern Pacific Co. railroad from Ady, Klamath County, at the north end of the siding, at the southeast corner of bridge No. 418.59 over Klamath Strait, in the abutment. A standard disk, stamped "C 5 1919." (1,246.934 meters or 4,090.983 feet.)

B 5.—About 0.4 mile south along the Southern Pacific Co. railroad from **Midland**, Klamath County, near mileage 421.8, near the south end of the siding, at the water tower, 30 feet east of the track, and 4 feet from the northwest corner of the pump house, in a concrete pier. A standard disk, stamped "B 5 1919." (1,247.034 meters or 4,091.311 feet.)

A 5.—About 0.7 mile south along the Southern Pacific Co. railroad from **Texum**, Klamath County, at the northwest corner of railroad culvert No. 425.51 over the Lost River diversion canal, in the abutment. A standard disk, stamped "A 5 1919." (1,246.938 meters or 4,090.996 feet.)

Z 4.—About 1 mile north along the Southern Pacific Co. railroad from **Texum**, Klamath County, 100 feet north of milepost 427, just north of the junction of the Cascade and Alturas lines, on the west side of the track, on the north side of an overhead highway crossing, in the concrete footing. A standard disk, stamped "Z 4 1919." (1,249.626 meters or 4,099.815 feet.)

ZX 4 (S. P.).—About 1 mile north along the Southern Pacific Co. railroad from **Texum**, Klamath County, about 100 feet north of milepost 427, just north of the junction of the Cascade and Alturas lines, on the north side of an overhead highway crossing, on the west side of the track, in the top of the concrete footing. The top of a roundheaded iron bolt. (1,249.817 meters or 4,100.440 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Oregon Geographic Board in 1927.

T 4.—At **Klamath Falls**, Klamath County, at the southeast corner of the Southern Pacific Co. passenger station, in the south face of a stone block, and about 3 feet above the platform. A standard disk, stamped "T 4 1919." (1,251.961 meters or 4,107.475 feet.)

Q 4.—At **Klamath Falls**, Klamath County, on the north side of Main Street, at the southeast corner of the White Pelican Hotel, in the south face of the building, about 3 feet above the sidewalk. A standard disk, stamped "Q 4 1919." (1,253.317 meters or 4,111.924 feet.)

NOTE.—This bench mark has been destroyed.

R 4.—At **Klamath Falls**, Klamath County, at the northeast corner of Fourth and Main Streets, in the southwest corner of the California Oregon Power Co. building, about 3 feet above the walk. A standard disk, stamped "R 4 1919" and set vertically. (1,251.604 meters or 4,106.304 feet.)

S 4.—At **Klamath Falls**, Klamath County, on Fifth Street, on the north side of the entrance to the city hall, in the vertical face of the concrete base of a lamp-post, about 3 feet above the sidewalk. A standard disk, stamped "S 4 1919." (1,249.395 meters or 4,099.057 feet.)

U 5 (U. S. R. S.).—In the western part of **Klamath Falls**, Klamath County, about 300 feet east of the Link River bridge, on the north side of Main Street, in the sidewalk. A United States Reclamation Service standard disk, stamped "4106.7." (1,251.658 meters or 4,106.481 feet.)

For additional bench marks in the vicinity of Klamath Falls, see pages 34 and 236.

W 4.—About 2.2 miles northwest along the Southern Pacific Co. railroad from the station at **Klamath Falls**, Klamath County, about 0.2 mile southeast of **Chelsea**, at the northwest corner of culvert No. 431.75, in the top of the abut-track. A standard disk, stamped "W 4 1919." (1,264.300 meters or 4,147.958 feet.)

X 4.—About 0.5 mile north along the Southern Pacific Co. railroad from **Wocus**, Klamath County, about 1,000 feet north of the north end of the siding, in the southwest corner of culvert No. 434.58, about 5 feet below the level of the track. A standard disk, stamped "X 4 1919." (1,264.300 meters or 4,147.958 feet.)

U 4.—About 2 miles north along the Southern Pacific Co. railroad from **Wocus**, Klamath County, at the south end of a long fill, just west of The Dalles-California Highway, in the top of the northwest corner of culvert No. 435.76. A standard disk, stamped "U 4 1919." (1,264.146 meters or 4,147.452 feet.)

UX 4 (S. P.).—About 2 miles north along the Southern Pacific Co. railroad from **Wocus**, Klamath County, at the south end of a long fill, just west of

The Dalles-California Highway, in the top of the southeast corner of culvert No. 435.76. The top of a roundheaded iron bolt. (1,264.189 meters or 4,147.593 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Oregon Geographic Board in 1927.

S 5 (S. P.).—About 1 mile south along the Southern Pacific Co. railroad from **Algoma**, Klamath County, about 0.5 mile south of the south end of the siding, on concrete culvert No. 437.70, 16 feet east of the track, in the top of the center of the east head wall. The top of a roundheaded iron bolt. (1,264.293 meters or 4,147.935 feet.)

V 4.—At Algoma, Klamath County, on the Southern Pacific Co. railroad right of way, 200 feet north of milepost 439, at the south end of a long fill across a marsh, on the southeast corner of ballast deck culvert No. 439.04. A standard disk, stamped "V 4 1919." (1,265.257 meters or 4,151.097 feet.)

VX 4 (S. P.).—At **Algoma**, Klamath County, on the Southern Pacific Co. railroad right of way, 200 feet north of milepost 439, at the south end of a long fill across a marsh, on the southwest corner of ballast deck culvert No. 439.04. The top of a bolt. (1,265.251 meters or 4,151.078 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Oregon Geographic Board in 1927. In March, 1932, it was reported that a passing track had been extended over this culvert and that the mark was probably covered.

R 5 (S. P.).—About 0.8 mile south along the Southern Pacific Co. railroad from **Ouxy**, Klamath County, at **Barkley Spring**, about 900 feet south of milepost 442, near the north end of a long fill across a swamp, in the northwest corner of ballast deck culvert No. 441.80. The top of a square-headed iron bolt. (1,265.194 meters or 4,150.891 feet.)

Y 4.—About $\frac{1}{4}$ mile north along the Southern Pacific Co. railroad from **Ouxy**, Klamath County, about 600 feet south of the north end of the siding, at the southeast corner of ballast deck culvert No. 442.83 over a stream issuing from a spring, in the masonry abutment. A standard disk, stamped "Y 4 1919." (1,265.266 meters or 4,151.127 feet.)

YX 4 (S. P.).—About $\frac{1}{4}$ mile north along the Southern Pacific Co. railroad from **Ouxy**, Klamath County, about 600 feet south of the north end of the siding, at the southeast corner of ballast deck culvert No. 442.83 over a stream issuing from a spring, in the masonry abutment. The top of a roundheaded iron bolt. (1,265.268 meters or 4,151.134 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Oregon Geographic Board in 1927.

D 5.—About $\frac{1}{4}$ mile north along the Southern Pacific Co. railroad from the station at **Modoc Point**, Klamath County, about 2,200 feet north of the crossing of The Dalles-California Highway, on culvert No. 447.25, in the top of the south end of the east head wall. A standard disk, stamped "D 5 1919." (1,263.790 meters or 4,146.284 feet.)

DX 5 (S. P.).—About $\frac{1}{4}$ mile north along the Southern Pacific Co. railroad from the station at **Modoc Point**, Klamath County, about 2,200 feet north of the crossing of The Dalles-California Highway, in the west concrete head wall of a pipe culvert. An iron bolt. (1,263.798 meters or 4,146.311 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Oregon Geographic Board in 1927.

Q 5 (S. P.).—About $\frac{3}{4}$ mile north along the Southern Pacific Co. railroad from the station at **Modoc Point**, Klamath County, on culvert No. 447.71, in the east head wall. The top of a roundheaded iron bolt. (1,265.968 meters or 4,153.430 feet.)

P 5 (S. P.).—About 2.3 miles south along the Southern Pacific Co. railroad from **Lobert**, Klamath County, at the northeast corner of 13-foot ballast deck culvert No. 449.50, in the abutment. The top of a square iron bolt. (1,271.220 meters or 4,170.661 feet.)

E 5.—About 1.2 miles south along the Southern Pacific Co. railroad from **Lobert**, Klamath County, at the southwest corner of 13-foot ballast deck culvert No. 450.61, in the abutment. A standard disk, stamped "E 5 1919." (1,271.648 meters or 4,172.065 feet.)

O 5.—About 0.4 mile south along the Southern Pacific Co. railroad from **Lobert**, Klamath County, at the northwest corner of 13-foot ballast deck culvert No. 451.37 over an Indian Irrigation Service canal, in the top of the masonry abutment. The top of a square iron bolt. (1,272.068 meters or 4,173.443 feet.)

N 5 (S. P.).—About 0.6 mile north along the Southern Pacific Co. railroad from **Lobert**, Klamath County, at the northeast corner of 13-foot ballast deck culvert No. 452.40, in the top of the masonry abutment. The top of a square-headed iron bolt. (1,272.580 meters or 4,175.123 feet.)

M 5 (S. P.).—About 2.5 miles south along the Southern Pacific Co. railroad from **Chiloquin**, Klamath County, at the northeast corner of 13-foot ballast deck culvert No. 454.24, in the top of the abutment. The top of a roundheaded iron bolt. (1,267.407 meters or 4,158.151 feet.)

F 5.—About 0.8 mile south along the Southern Pacific Co. railroad from **Chiloquin**, Klamath County, in the south abutment of the Sprague River bridge, 10 feet west of and 3 feet lower than the track. A standard disk, stamped "F 5 1919." (1,274.486 meters or 4,181.376 feet.)

L 5 (S. P.).—At **Chiloquin**, Klamath County, about 1,200 feet north of the Southern Pacific Co. railroad station, and 10 feet east of the track, in the northwest pier of a water tank. The top of a roundheaded iron bolt. (1,276.721 meters or 4,188.709 feet.)

NOTE.—The tank has been moved and the bench mark destroyed.

Spur to Klamath Agency.

Z 5.—About $2\frac{1}{4}$ miles southeast of **Klamath Agency**, Klamath County, $\frac{1}{4}$ mile west of the Jackson house, and 65 feet northeast of a fork in the road which runs around a point of the hills to Chiloquin. A standard disk, stamped "Z 5 1919" and set in the top of an iron pipe filled with concrete. (1,294.924 meters or 4,248.430 feet.)

X 5 (U. S. G. S.).—At **Klamath Agency**, Klamath County, in the northwest part of the agency grounds, in the stone foundation at the northeast corner of the water tower. A United States Geological Survey standard disk, stamped "4169 B BS 1908." (1,270.657 meters or 4,168.814 feet.)

NOTE.—This bench mark has been destroyed.

BXS (U. S. G. S.).—At **Klamath Agency**, Klamath County, in the northwest part of the Agency grounds, on the northeast corner of a concrete platform under the center of the old water tower, and about 2 feet above the ground. A United States Geological Survey standard disk, stamped "4170.5 BXS 1927." (1,271.096 meters or 4,170.254 feet.)

NOTE.—The elevation of this mark was determined by the Oregon Geographic Board in 1927.

W 5.—At **Klamath Agency**, Klamath County, at the fork of a road leading into the agency grounds, 200 feet south of the office building, 100 feet west of the county road, and 35 feet from a fence near a turn in it, between two lone pines. A standard disk, stamped "W 5 1919" and set in the top of an iron pipe filled with concrete. (1,272.948 meters or 4,176.330 feet.)

NOTE.—Searched for but not recovered in 1932. The bench mark may be covered by highway work.

Y 5 (U. S. G. S.).—About 1.8 miles north of **Klamath Agency**, Klamath County, about 7.5 miles south of **Fort Klamath**, 150 feet east of the intersection of The Dalles-California Highway and the road leading to the Klamath State Fish Hatchery on Crooked Creek, and 170 feet southeast of the Coley Ball house, in the side of a large boulder. A United States Geological Survey standard disk, stamped "4157 B BR 1908." (1,267.040 meters or 4,156.947 feet.)

End of spur.

K 5 (S. P.).—About 3.6 miles north along the Southern Pacific Co. railroad from **Chiloquin**, Klamath County, about 0.8 mile south of **Braymill**, on culvert No. 460.32, 8 feet east of the track, in the top of the east concrete head wall. The top of a roundheaded iron bolt. (1,309.293 meters or 4,295.572 feet.)

G 5.—About $3\frac{3}{4}$ miles south along the Southern Pacific Co. railroad from **Calimus**, Klamath County, just north of **Braymill**, on culvert No. 461.41, 8 feet east of the track, in the top of the north end of the east concrete head wall. A standard disk, stamped "G 5 1919." (1,319.818 meters or 4,330.103 feet.)

H 5.—About 3 miles south along the Southern Pacific Co. railroad from **Kirk**, Klamath County, at mileage 467.25, 20 feet east of the track, on the right of way, in the sloping face of a large boulder about 2 feet below the level of the

track. A standard disk, stamped "H 5 1919." (1,393.568 meters or 4,572.064 feet.)

J 5.—About 1 mile south along the Southern Pacific Co. railroad from Kirk, Klamath County, near mileage 469.3, 300 feet south of a road crossing, and 28 feet east of the track. A standard cap, stamped "J 5 1919" and fastened on the top of an iron pipe. (1,384.668 meters or 4,542.865 feet.)

I 5.—At Kirk, Klamath County, on the Southern Pacific Co. railroad, at mileage 470.25, 140 feet south of the freight warehouse platform at the road crossing, at the east right-of-way line. A standard disk, stamped "I 5 1919" and set in the top of a concrete post. (1,380.479 meters or 4,529.121 feet.)

NOTE.—This mark has been destroyed.

For additional bench marks in the vicinity of Kirk, see page 187.

LINE 4, KLAMATH FALLS TO ONTARIO, OREG.

[First-order leveling]

This line follows the highways from Klamath Falls through Olene, Dairy, Yainax, Beatty, Bly, Lakeview, Valley Falls, Alkali Lake, Butte, Egli, Gap ranch, Oakerman ranch, Burns, Lawen, and Saddle Butte to Crane and the Oregon Short Line Railroad from Crane to Ontario. The field work was done during the summer and fall of 1920 by Casper M. Durgin and F. W. Hough, junior hydrographic and geodetic engineers. Additional field work was done during the fall of 1931 by H. J. Oliver, junior hydrographic and geodetic engineer, for the purpose of establishing new bench marks between Klamath Falls and Dairy to replace a number of old bench marks which had been destroyed.

For additional bench marks in the vicinity of Klamath Falls, see pages 31 and 236.

J 74.—At Klamath Falls, Klamath County, at the southeast corner of Sixth and Main Streets, at the northwest corner of the American National Bank building, in the north wall, about 4 feet above the sidewalk. A standard disk, stamped "J 74 1931" and set vertically. (1,252.204 meters or 4,108.273 feet.)

K 74.—At Klamath Falls, Klamath County, at the west entrance to the courthouse, 1 foot north of the banister of the steps, in the wall, about 4 feet above the ground. A standard disk, stamped "K 74 1931" and set vertically. (1,251.180 meters or 4,104.913 feet.)

T 75.—About 1.6 miles southeast along The Dalles-California Highway from Klamath Falls, Klamath County, at mileage 286.6, at the northeast quarter of the intersection with the Midland market road, 40 feet north of the highway, in a fence corner. A standard disk, stamped "T 75 1931" and set in the top of a concrete post. (1,247.413 meters or 4,092.554 feet.)

U 75.—About 3.7 miles southeast along The Dalles-California Highway from Klamath Falls, Klamath County, about 1 mile east of a bridge over a United States Bureau of Reclamation canal, at the northwest quarter of the intersection with a side road to the north, 38 feet north of the center line of the highway, 27 feet west of the side road, and 8 feet north of the fence corner. A standard disk, stamped "U 75 1931" and set in the top of a concrete post. (1,273.248 meters or 4,177.314 feet.)

A 15.—About 4 miles southeast along The Dalles-California Highway from Main Street at Klamath Falls, Klamath County, about 1.3 miles east of a bridge over an irrigation canal, 612 feet south of the center line of the highway, about 100 feet northwest of a house owned by Mrs. John A. Short, and 32 feet east of the center line of a county road leading south from the highway. A standard disk, stamped "A 15 1920" and set in the top of a concrete post. (1,274.421 meters or 4,181.163 feet.)

NOTE.—This bench mark is also a first-order triangulation station on the California-Oregon arc.

V 75.—About 5.0 miles southeast along The Dalles-California Highway from Klamath Falls, Klamath County, in the center of the triangle formed by the junction with the Klamath Falls-Lakeview Highway, in line with the west face

of a service station. A standard disk, stamped "V 75 1931" and set in the top of a concrete post. (1,279.391 meters or 4,197.469 feet.)

B 15.—About 6.5 miles southeast of **Klamath Falls**, Klamath County, about 1.5 miles east along the Klamath Falls-Lakeview Highway from its junction with The Dalles-California Highway, on the north side of the highway, in the southeast corner of a school yard. A standard disk, stamped "B 15 1920" and set in the top of a concrete post. (1,270.417 meters or 4,168.026 feet.)

NOTE.—It was reported in October, 1931, that this bench mark had been destroyed.

W 75.—About 7.0 miles southeast of **Klamath Falls**, Klamath County, about 2.1 miles west along the Klamath Falls-Lakeview Highway from **Olene**, about 0.1 mile east of an electric substation, near the southeast corner of a ranch house yard, and 40 feet north of the highway. A standard disk, stamped "W 75 1931" and set in the top of a concrete post. (1,275.384 meters or 4,184.322 feet.)

X 75.—About 9.1 miles southeast of **Klamath Falls**, at **Olene**, Klamath County, opposite the second house west of the post office, 33 feet north of the center line of the Klamath Falls-Lakeview Highway, 33 feet south of a railroad and 4 feet east of a pole. A standard disk, stamped "X 75 1931" and set in the top of a concrete post. (1,263.868 meters or 4,146.540 feet.)

Y 75.—About 2.0 miles north along the Klamath Falls-Lakeview Highway from **Olene**, Klamath County, 33 feet east of the center line of the highway, and 6 feet east of a fence corner, in the south fence line of a driveway to a large barn across the road from the Rex Burd ranch house. A standard disk, stamped "Y 75 1931" and set in the top of a concrete post. (1,249.716 meters or 4,100.110 feet.)

C 15.—About 3.7 miles north along the Klamath Falls-Lakeview Highway from **Olene**, Klamath County, about $\frac{3}{4}$ mile north of an undergrade railroad crossing, on the west side of the highway, in the northeast corner of a field, and 80 feet northwest of a masonry culvert under the highway. A standard disk, stamped "C 15 1920" and set in the top of a concrete post. (1,258.668 meters or 4,129.480 feet.)

NOTE.—It was reported in October, 1931, that this bench mark had been destroyed.

Z 75.—About 3.8 miles north along the Klamath Falls-Lakeview Highway from **Olene**, Klamath County, about 0.8 mile north of an undergrade railroad crossing, about 200 feet north of a masonry culvert under the highway, in line with a side road to the west, 40 feet east of the center line of the highway, in a flat lava boulder. A standard disk, stamped "Z 75 1931." (1,261.899 meters or 4,140.080 feet.)

A 76.—About 5 $\frac{3}{4}$ miles northeast along the Klamath Falls-Lakeview Highway from **Olene**, about 3.8 miles west of **Dairy**, Klamath County, about 500 feet east of a curve to the south over a small hill, and 40 feet south of the center line of the highway. A standard disk, stamped "A 76 1931" and set in the top of a concrete post. (1,276.293 meters or 4,187.305 feet.)

D 15.—About 7.5 miles northeast along the Klamath Falls-Lakeview Highway from **Olene**, about 2.1 miles west of **Dairy**, Klamath County, about 500 feet east of a small brown house, 56 feet south of the center line of the highway, and 20 feet south of a fence corner. A standard disk, stamped "D 15 1920" and set in the top of a concrete post. (1,275.756 meters or 4,185.543 feet.)

NOTE.—This post was found broken off in 1931 but was evidently repaired. A new elevation was determined from Coast and Geodetic Survey leveling in 1931, as follows: (1,275.742 meters or 4,185.497 feet.)

B 76.—About 7.5 miles northeast along the Klamath Falls-Lakeview Highway from **Olene**, about 2.1 miles west of **Dairy**, Klamath County, about 500 feet east of a small brown ranch house, 46 feet south of the center line of the highway, 2 feet west and 10 feet south of a fence corner, and 10 feet north of bench mark D 15. A standard disk, stamped "B 76 1931" and set in the top of a concrete post. (1,275.916 meters or 4,186.068 feet.)

E 15.—At **Dairy**, Klamath County, 50 feet north of the center line of the Dairy-Bonanza Highway, 80 feet east of the post office which is in the house owned and occupied by C. G. Anderson in 1932, and 2 feet north of the fence. A standard disk, stamped "E 15 1920" and set in the top of a concrete post. (1,255.702 meters or 4,119.749 feet.)

NOTE.—It was reported in 1931 that this bench mark had evidently been disturbed. The above elevation was determined from leveling by the Coast and Geodetic Survey at that time.

J 15=4122 (U. S. G. S.).—At Dairy, Klamath County, 650 feet east of the post office, 30 feet north of the center line of the Dairy-Bonanza highway, and 2 feet south of the fence line. A United States Geological Survey standard cap, stamped "4122" and riveted on the top of a 3½-inch iron pipe. (1,255.844 meters or 4,120.215 feet.)

F 15.—About 2.5 miles north of Dairy, Klamath County, about ¾ mile north of the southwest corner of sec. 23, T. 28 S., R. 11½ E., 35 feet north of the blacksmith shop at the intersection of the Dairy-Yainax and the Dairy-Hildebrand roads, and 2 feet inside of an iron fence on the east side of the road. A standard disk, stamped "F 15 1920" and set in the top of a concrete post. (1,270.441 meters or 4,168.105 feet.)

G 15.—About 5.5 miles north along the Dairy-Yainax road from Dairy, Klamath County, about 0.5 mile north of the Oregon, California & Eastern Railway crossing, in the southwest corner of the fence around two deserted houses, 3 feet east of the road. A standard disk, stamped "G 15 1920" and set in the top of a concrete post. (1,274.915 meters or 4,182.784 feet.)

H 15.—About 10 miles north along the Dairy-Yainax road from Dairy, Klamath County, about 2¾ miles south of Squaw Flat, in the southeast corner of the Eggert field where the road crosses Horton Flat, and 7 feet west of the road. A standard disk, stamped "H 15 1920" and set in the top of a concrete post. (1,291.064 meters or 4,235.766 feet.)

I 15.—About 14 miles north of Dairy, Klamath County, at the north end of Squaw Flat, about 125 feet south of a whistle post on the Oregon, California & Eastern Railway, midway between two road crossings, and 75 feet south of the Dairy-Sprague River road, in the fence line. A standard disk, stamped "I 15 1920" and set in the top of a concrete post. (1,379.813 meters or 4,526.936 feet.)

K 15.—About 7.5 miles west along the Dairy-Yainax road from Yainax, Klamath County, 250 feet south of a gate across the road, 100 feet northwest of a house, at the south end of a ledge over which the road passes, 7 feet west of the road, in bedrock. A standard disk, stamped "K 15 1920." (1,324.816 meters or 4,346.500 feet.)

NOTE.—This mark was searched for in 1929 but was not found. It may be covered by drifting sand.

L 15.—About 6.5 miles west of Yainax, Klamath County, on the Sprague River-Trout Creek road, about 820 feet east of the Dora Walker house, about 500 feet west of the Vierra house, and 8 feet south of the fence on the south side of the Vierra ranch which was formerly the Copperfield property. A standard disk, stamped "L 15 1920" and set in the top of a concrete post. (1,311.453 meters or 4,302.659 feet.)

M 15.—About 3.1 miles west of Yainax, Klamath County, in the northwest quarter of sec. 13, T. 36 S., R. 10 E., about 0.5 mile west of a ranch house, at the intersection of the fence along the Sprague River market road and the fence around a corral on the north side of the road. A standard disk, stamped "M 15 1920" and set in the top of a concrete post. (1,316.136 meters or 4,318.023 feet.)

N 15.—At Yainax, Klamath County, and in the southwest corner of the forest ranger's yard. A standard disk, stamped "N 15 1920" and set in the top of a concrete post. (1,324.601 meters or 4,345.795 feet.)

NOTE.—This bench mark has been destroyed.

O 15.—About 2.5 miles east of Yainax, Klamath County, 130 feet north of the Yainax-Beatty (river) road where it passes through a fence and in the fence line. A standard disk, stamped "O 15 1920" and set in the top of a concrete post. (1,313.082 meters or 4,307.839 feet.)

NOTE.—This bench mark was searched for in 1929 but was not found. It may be covered by drifting sand.

P 15.—About 5.3 miles east along the Yainax-Beatty road from Yainax, Klamath County, about 500 feet east of Whisky Creek bridge, 180 feet west of the center of sec. 19, T. 36 S., R. 12 E., 180 feet west of an angle to the north, and 6 feet west of a gate, inside of the fence on the south side of the road. A standard disk, stamped "P 15 1920" and set in the top of a concrete post. (1,313.832 meters or 4,310.464 feet.)

Q 15.—About 2.3 miles west along the Yainax-Beatty road from Beatty, Klamath County, at a point 290 feet east of a right angle, 240 feet southeast of a ranch house with an old windmill tower, and 10 feet north of the road,

at a fence intersection. A standard disk, stamped "Q 15 1920" and set in the top of a concrete post. (1,316.832 meters or 4,320.306 feet.)

R 15.—At **Beatty**, Klamath County, about 1,000 feet east of the Main Street intersection, on the south side of the Klamath Falls-Lakeview Highway, near a gate, 2 feet inside of the intersecting fences. A standard disk, stamped "R 15 1920" and set in the top of a concrete post. (1,324.159 meters or 4,344.345 feet.)

S 15.—About 1.5 miles east of **Beatty**, Klamath County, in the southwest quarter of sec. 13, T. 36 S., R. 12 E., 80 feet from Sprague River where the road makes a sharp bend, and 7 feet south of the location of the old road, in bedrock. A standard disk, stamped "S 15 1920." (1,318.276 meters or 4,325.044 feet.)

NOTE.—This bench mark was searched for in 1929 but was not found. It may have been destroyed during the construction of the Klamath Falls-Lakeview Highway.

T 15.—About $4\frac{1}{4}$ miles east along the Klamath Falls-Lakeview Highway from **Beatty**, Klamath County, on the north side of the highway, just east of the point at which the road circles around a small hill, and about 35 feet south of Sprague River. A standard disk, stamped "T 15 1920" and set in the top of a concrete post. (1,316.502 meters or 4,319.224 feet.)

NOTE.—This bench mark was searched for in 1929 but was not found. It may have been covered by highway construction.

U 15.—About $4\frac{3}{4}$ miles west along the Bly-Silver Lake road from **Bly**, Klamath County, about 1 mile north of the intersection with the Klamath Falls-Lakeview Highway, about 750 feet north of a house, and about 500 feet south of a bridge across South Fork Sprague River, near the east fence line of the road. A standard disk, stamped "U 15 1920" and set in the top of a concrete post. (1,319.561 meters or 4,329.260 feet.)

V 15.—About 1.5 miles west along the Klamath Falls-Lakeview Highway from **Bly**, Klamath County, on property owned by Mary H. Dixon, 84 feet north of the center line of the highway, and 10 feet west of the wire fence around the house. A standard disk, stamped "V 15 1920" and set in the top of a concrete post. (1,324.704 meters or 4,346.133 feet.)

W 15.—At **Bly**, Klamath County, in the north face of the brick store owned by Mrs. M. L. Kilgore, and near the front corner. A standard disk, stamped "W 15 1920" and set vertically. (1,327.596 meters or 4,355.621 feet.)

X 15.—About 3 miles east along the Klamath Falls-Lakeview Highway from **Bly**, Klamath County, about 1,000 feet north of the east bridge over Paradise Creek, and 50 feet southwest of the James Bell ranch house, at a fence corner. A standard disk, stamped "X 15 1920" and set in the top of a concrete post. (1,332.398 meters or 4,371.376 feet.)

Y 15.—About 7.5 miles east of **Bly**, Klamath County, about $\frac{1}{4}$ mile north of the Klamath Falls-Lakeview Highway, on the old Tull place, which is now owned by Mr. Owen, 175 feet east of a deserted house, 80 feet north of an old rail fence, in line with the south end of a stone dam, and 15 feet south of the old road. A standard disk, stamped "Y 15 1920" and set in the top of a concrete post. (1,468.006 meters or 4,816.283 feet.)

Z 15.—About 9 miles southeast along the Klamath Falls-Lakeview Highway from **Bly**, Klamath County, at the **Owen Round Grove ranch**, 140 feet west of the highway, at the northeast corner of the front yard of the ranch house. A standard disk, stamped "Z 15 1920" and set in the top of a concrete post. (1,490.000 meters or 4,888.442 feet.)

ZX 15 (O. G. B.).—About 9 miles southeast along the Klamath Falls-Lakeview Highway from **Bly**, Klamath County, 200 feet east of the **Owen Round Grove ranch** house, at survey station 3658, on the cement pointing on the top of the northeast masonry head wall of a highway culvert. A chiseled square. (1,493.268 meters or 4,899.162 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon Geographic Board in 1929.

A 16.—At **Quartz Pass**, Lake County, about 13 miles southeast along the Klamath Falls-Lakeview Highway from **Bly**, Klamath County, at the summit of the Klamath-Gooselake watershed, 70 feet east of survey station 2860, and 45 feet north of the highway. A standard disk, stamped "A 16 1920" and set in the top of a concrete post. (1,678.784 meters or 5,507.810 feet.)

5512 (U. S. B. P. R.).—At **Quartz Pass**, Lake County, 40 feet north of the Klamath Falls-Lakeview Highway, and 50 feet west of bench mark A 16, in the

base of a 14-inch lodgepole pine tree marked "5512.38." A copper nail and washer. (1,679.091 meters or 5,508.819 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Oregon Geographic Board in 1929.

B 16.—About 2.6 miles southeast along the Klamath Falls-Lakeview Highway from Quartz Pass, Lake County, near the eastward end of Quartz Valley, at survey station 2991, and 80 feet west of a masonry culvert opposite an abandoned ranch, at the south fence line. A standard disk, stamped "B 16 1920" and set in the top of a concrete post, flush with the ground. (1,617.020 meters or 5,305.173 feet.)

BX 16 (O. G. B.).—About 2.6 miles southeast along the Klamath Falls-Lakeview Highway from Quartz Pass, Lake County, on the south masonry head wall of a highway culvert, and about 80 feet east of bench mark B 16. A chiseled square. (1,616.670 meters or 5,304.025 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon Geographic Board in 1929.

C 16.—About 6 miles southeast of Quartz Pass, about 26.8 miles west of the courthouse at Lakeview, Lake County, 1,950 feet west of Klamath Falls-Lakeview Highway survey station 3172 plus 87, and 25 feet north of the old stage road which was used as a stock trail in 1929, in the southeast corner of the yard of the E. Smalley ranch house. A standard disk, stamped "C 16 1920" and set in the top of a concrete post. (1,521.630 meters or 4,992.214 feet.)

D 16.—About 9 miles southeast of Quartz Pass, about 23.8 miles west of the courthouse at Lakeview, Lake County, about 500 feet east of the Smith and Perkins ranch house, and 15 feet north of the old stage road, at the east end of a rail fence. A standard disk, stamped "D 16 1920" and set in the top of a concrete post. (1,508.403 meters or 4,948.819 feet.)

NOTE.—This bench mark has been reported as destroyed.

E 16.—About 11.5 miles southeast of Quartz Pass, about 21 miles west along the Klamath Falls-Lakeview Highway from Lakeview, Lake County, 278 feet north and 112 feet west of a school, and 101 feet northwest of the west end of a masonry highway culvert. A standard disk, stamped "E 16 1920" and set in the top of a concrete post. (1,503.497 meters or 4,932.723 feet.)

F 16.—About 18.1 miles west along the Klamath Falls-Lakeview Highway from the courthouse at Lakeview, Lake County, about 600 feet west of a masonry culvert at highway survey station 639, and 10 feet north of the old stage road which is now abandoned. A standard disk, stamped "F 16 1920" and set in the top of a concrete post. (1,507.056 meters or 4,944.400 feet.)

G 16.—About 15.7 miles west along the Klamath Falls-Lakeview Highway from the courthouse at Lakeview, Lake County, at the summit west of Antelope Creek, 42 feet south of highway survey station 764 plus 86, and 4 feet south of the top of the cut. A standard disk, stamped "G 16 1920" and set in the top of a concrete post. (1,617.764 meters or 5,307.614 feet.)

H 16.—About 12.9 miles west along the Klamath Falls-Lakeview Highway from the courthouse at Lakeview, Lake County, about 1,390 feet south of the highway near the center of a curve at survey station 916 plus 41, on the Rice ranch, 35 feet south of the old stage road which was used as a stock trail in 1929, in a fence corner near some large rocks. A standard disk, stamped "H 16 1920" and set in the top of a concrete post. (1,550.653 meters or 5,087.434 feet.)

I 16.—About 10.2 miles west along the Klamath Falls-Lakeview Highway from the courthouse at Lakeview, Lake County, about 1,555 feet south of the highway at survey station 1016, 907 feet north of the southwest corner of sec. 18, T. 39 S., R. 19 E., and 7 feet north of the abandoned stage road, at a fence corner on the Stevens ranch. A standard disk, stamped "I 16 1920" and set in the top of a concrete post. (1,497.834 meters or 4,914.144 feet.)

J 16.—About 7.5 miles west along the Klamath Falls-Lakeview Highway from Lakeview, Lake County, 125 feet north of highway survey station 1159 plus 84, just west of a curve, in a fence corner on the Baldwin property. A standard disk, stamped "J 16 1920" and set in the top of a concrete post. (1,464.932 meters or 4,806.198 feet.)

K 16.—About 5.5 miles west along the Klamath Falls-Lakeview Highway from the courthouse at Lakeview, Lake County, 150 feet north of highway survey station 1286, near the west end of McCully lane, on the line of the abandoned

county road. A standard disk, stamped "K 16 1920" and set in the top of a concrete post. (1,464.144 meters or 4,803.612 feet.)

L 16.—About 4 miles west of **Lakeview**, Lake County, 15 feet south of the old Bly stage road, in the northwest corner of a wire fence around a field owned by Walter Leeman. A standard disk, stamped "L 16 1920" and set in the top of a concrete post. (1,444.913 meters or 4,740.519 feet.)

NOTE.—This bench mark was searched for in 1929 but was not found.

M 16.—About 1 mile west along the Klamath Falls-Lakeview Highway from **Lakeview**, Lake County, about 1,625 feet west of the southeast corner of sec. 9, T. 39 S., R. 20 E., 64 feet west of the center line of the entrance to the Lakeview roundup grounds, and 36.7 feet south of the center line of the highway at survey station 1543 plus 87. A standard disk, stamped "M 16 1920" and set in the top of a concrete post. (1,442.949 meters or 4,734.075 feet.)

NOTE.—This bench mark is also a first-order triangulation station on the California-Oregon arc.

N 16.—At **Lakeview**, Lake County, in the south face of the Lakeview Hotel. A standard disk, stamped "N 16 1920" and set vertically. (1,463.319 meters or 4,800.906 feet.)

O 16.—At **Lakeview**, Lake County, in the south face of the Odd Fellows Building. A standard disk, stamped "O 16 1920" and set vertically. (1,461.489 meters or 4,794.902 feet.)

P 16.—At **Lakeview**, Lake County, in the north face of the courthouse, near the northeast corner. A standard disk, stamped "P 16 1920." (1,462.908 meters or 4,799.557 feet.)

Q 16 (N. C. O. Ry.).—At **Lakeview**, Lake County, at the west entrance to the courthouse, on the top of the south balustrade. The top of the balustrade. (1,462.336 meters or 4,797.681 feet.)

For additional bench marks in the vicinity of **Lakeview**, see page 194.

R 16.—About 3.5 miles north along the Fremont Highway from **Lakeview**, Lake County, about 2.3 miles south of a T-road leading east to Warner Valley, 390 feet south of a culvert, and 40 feet east of the highway, near a fence corner. A standard disk, stamped "R 16 1920" and set in the top of a concrete post. (1,489.335 meters or 4,886.260 feet.)

NOTE.—Found destroyed in 1932.

S 16.—About 6 miles north along the Fremont Highway from **Lakeview**, Lake County, 35 feet southwest of the Wilcox ranch house, in the corner of a wire fence. A standard disk, stamped "S 16 1920" and set in the top of a concrete post. (1,514.189 meters or 4,967.802 feet.)

T 16.—About 8.7 miles north along the Fremont Highway from **Lakeview**, Lake County, about 1,000 feet south of a house on the east side of the highway, opposite the intersection with a diagonal road from the southwest, 60 feet east of the highway, in a fence corner on the property of L. C. Meyer. A standard disk, stamped "T 16 1920" and set in the top of a concrete post. (1,505.333 meters or 4,938.747 feet.)

U 16.—About 11.7 miles north along the Fremont Highway from **Lakeview**, Lake County, just north of a sharp turn in the highway, in the top of the west end of a concrete highway bridge. A standard disk, stamped "U 16 1920." (1,433.443 meters or 4,702.888 feet.)

NOTE.—This bench mark was searched for in 1929 but was not found. It may have been covered by new masonry work on the bridge.

W 16.—About 14.2 miles north along the Fremont Highway from **Lakeview**, Lake County, about $\frac{1}{4}$ mile south of the Sullivan ranch house, in a fence corner on the east side of the highway. A standard disk, stamped "W 16 1920" and set in the top of a concrete post. (1,396.159 meters or 4,580.565 feet.)

X 16.—About 17 miles north along the Fremont Highway from **Lakeview**, Lake County, at the northwest corner of the highway bridge over Crooked Creek, in the top of the abutment. A standard disk, stamped "X 16 1920." (1,372.005 meters or 4,501.320 feet.)

YX 16 (O. G. B.).—About 5 miles southwest along the Fremont Highway from **Valley Falls**, Lake County, about 200 feet southwest of the S. B. Chandler ranch house, on the west side of the highway, on the center of a masonry head

wall of a highway culvert. A chiseled square. (1,351.629 meters or 4,434.471 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon-Geographic Board in 1929.

Y 16.—About 5 miles south along the Fremont Highway from **Valley Falls**, Lake County, on the east side of the highway, in the southwest corner of the fence around the S. B. Chandler ranch house. A standard disk, stamped "Y 16 1920" and set in the top of a concrete post. (1,352.264 meters or 4,436.553 feet.)

Z 16.—About 2.5 miles southwest along the Fremont Highway from **Valley Falls**, Lake County, on the east side of the highway, on property owned by H. L. Chandler, in the corner of a wire fence. A standard disk, stamped "Z 16 1920" and set in the top of a concrete post. (1,321.323 meters or 4,335.040 feet.)

A 17.—At **Valley Falls**, Lake County, about 700 feet west of the post office, 12 feet south of the northwest corner of a field owned by C. W. E. Jennings, on the east side of the road leading west to the Fremont Highway, and about 3 inches below the surface of the ground. A standard disk, stamped "A 17 1920" and set in the top of a concrete post. (1,313.329 meters or 4,308.814 feet.)

AX 17 (O. G. B.)—At **Valley Falls**, Lake County, about 400 feet north of the post office, and 50 feet east of the Lake Abert road, in a large boulder at the fence line. An iron bolt. (1,317.295 meters or 4,321.824 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon Geographic Board in 1929.

For additional bench marks in the vicinity of **Valley Falls**, see page 233.

B 17.—About $1\frac{1}{4}$ miles north along the **Valley Falls-Butte** road from **Valley Falls**, Lake County, opposite the **Hotchkiss** ranch house, 140 feet south of the barn, and 20 feet west of the road, at the fence line. A standard disk, stamped "B 17 1920" and set in the top of a concrete post. (1,304.198 meters or 4,278.856 feet.)

BX 17 (O. G. B.)—About 1.8 miles north along the **Valley Falls-Butte** road from **Valley Falls**, Lake County, about 300 feet north of the **Hotchkiss** ranch house, in the top of the dam across **Chewaucan** River, and 40 feet south of the south buttress wall. A galvanized iron bolt. (1,303.723 meters or 4,277.299 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon Geographic Board in 1929.

C 17.—About 4.5 miles north along the **Valley Falls-Butte** road from **Valley Falls**, Lake County, about $2\frac{3}{4}$ miles north of the **Hotchkiss** ranch, on the west shore of **Lake Abert**, 165 feet east of the road, and 20 feet west of the high-water line, in bedrock near a small cairn. A standard disk, stamped "C 17 1920." (1,297.374 meters or 4,256.468 feet.)

CX 17 (O. G. B.)—About 4.5 miles north along the **Valley Falls-Butte** road from **Valley Falls**, Lake County, about $2\frac{3}{4}$ miles north of the **Hotchkiss** ranch, on the west shore of **Lake Abert**, 135 feet east of the road, and about 30 feet west of bench mark C 17, on bedrock. A chiseled square. (1,298.705 meters or 4,260.834 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon Geographic Board in 1929.

D 17.—About 7.5 miles north along the **Valley Falls-Butte** road from **Valley Falls**, Lake County, about $5\frac{1}{4}$ miles north of the **Hotchkiss** ranch, on the west shore of **Lake Abert**, 250 feet east of the road, in bedrock near a small cairn. A standard disk, stamped "D 17 1920." (1,297.644 meters or 4,257.354 feet.)

E 17.—About 9.5 miles north along **Valley Falls-Butte** road from **Valley Falls**, Lake County, about $7\frac{3}{4}$ miles north of the **Hotchkiss** ranch, on the west shore of **Lake Abert**, 100 feet east of the road, and 80 feet west of a spring, in bedrock near a small cairn. A standard disk, stamped "E 17 1920." (1,299.294 meters or 4,262.767 feet.)

F 17.—About 12 miles north along the **Valley Falls-Butte** road from **Valley Falls**, Lake County, about $10\frac{1}{4}$ miles north of the **Hotchkiss** ranch, about $\frac{1}{4}$ mile north of a spring, on the west shore of **Lake Abert**, and 650 feet east of the road, in bedrock. A standard disk, stamped "F 17 1920." (1,297.670 meters or 4,257.439 feet.)

G 17.—About 14.5 miles north along the Valley Falls-Butte road from **Valley Falls**, Lake County, about 500 feet southwest of a small cabin and corral, and 10 feet east of the road, in the corner of a wire fence. A standard disk, stamped "G 17 1920" and set in the top of a concrete post. (1,303.055 meters or 4,275.106 feet.)

H 17.—About 17 miles north along the Valley Falls-Butte road from **Valley Falls**, Lake County, on the west shore of Lake Abert, and 250 feet east of the road, in line with a barbed wire fence on property owned by the Brattain ranch. A standard disk, stamped "H 17 1920" and set in the top of a concrete post. (1,299.945 meters or 4,264.903 feet.)

I 17.—About 19.5 miles north along the Valley Falls-Butte road from **Valley Falls**, Lake County, about $2\frac{3}{4}$ miles south of the Chandler X. L. ranch, and 3 feet east of the road, in a corner of a wire fence on property owned by the ranch. A standard disk, stamped "I 17 1920" and set in the top of a concrete post. (1,304.702 meters or 4,280.510 feet.)

J 17.—About $22\frac{3}{4}$ miles north along the Valley Falls-Butte road from **Valley Falls**, Lake County, 325 feet west of the Chandler X. L. ranch house, and 55 feet west of the gate to the house, on the south side of the road which turns into the ranch, in the corner of a wire fence. A standard disk, stamped "J 17 1920" and set in the top of a concrete post. (1,305.688 meters or 4,283.745 feet.)

K 17.—About 25.5 miles north along the Valley Falls-Butte road from **Valley Falls**, Lake County, about 2.5 miles north of the Chandler X. L. ranch, and 15 feet west of the road, near a small cairn. A standard disk, stamped "K 17 1920" and set in the top of a concrete post. (1,367.828 meters or 4,487.616 feet.)

L 17.—About 28 miles north along the Valley Falls-Butte road from **Valley Falls**, Lake County, about 5 miles north of the Chandler X. L. ranch, and 15 feet east of the road, on top of a ridge, near a small cairn. A standard disk, stamped "L 17 1920" and set in the top of a concrete post. (1,447.116 meters or 4,747.746 feet.)

M 17.—About 30.5 miles north along the Valley Falls-Butte road from **Valley Falls**, Lake County, about $7\frac{3}{4}$ miles north of the Chandler X. L. ranch, and 15 feet east of the road, near a small cairn. A standard disk, stamped "M 17 1920" and set in the top of a concrete post. (1,457.384 meters or 4,781.434 feet.)

N 17.—About $32\frac{3}{4}$ miles north along the Valley Falls-Butte road from **Valley Falls**, Lake County, about 10 miles north of the Chandler X. L. ranch, and 15 feet west of the road, near a small cairn. A standard disk, stamped "N 17 1920" and set in the top of a concrete post. (1,413.812 meters or 4,638.481 feet.)

V 16.—About 35 miles north along the Valley Falls-Butte road from **Valley Falls**, Lake County, about 4.5 miles south of the American Soda Products Co. office at **Alkali Lake**, and 20 feet west of the road, near a small cairn. A standard disk, stamped "V 16 1920" and set in the top of a concrete post. (1,400.280 meters or 4,594.085 feet.)

O 17.—About 2.5 miles south along the Valley Falls-Butte road from the American Soda Products Co. office at **Alkali Lake**, Lake County, about $22\frac{3}{4}$ miles south of Butte, and 15 feet west of the road, near a small cairn. A standard disk, stamped "O 17 1920" and set in the top of a concrete post. (1,354.677 meters or 4,444.469 feet.)

P 17.—At **Alkali Lake**, about 20 miles south along the Valley Falls-Butte road from Butte, Lake County, 7 feet southeast of the southeast corner of the American Soda Products Co. office building, and 7 feet west of the road, in the corner of a wire fence. A standard disk, stamped "P 17 1920" and set in the top of a concrete post. (1,311.828 meters or 4,303.889 feet.)

Q 17.—About 17.5 miles south along the Valley Falls-Butte road from **Butte**, Lake County, 130 feet west of a cabin on the property of Mr. Link Hutton, 80 feet east of the road, and 10 feet north of a gate, in line with a wire fence. A standard disk, stamped "Q 17 1920" and set in the top of a concrete post. (1,300.804 meters or 4,267.085 feet.)

R 17.—About 15 miles south along the Valley Falls-Butte road from **Butte**, Lake County, about 5 miles north of the American Soda Products Co. office at **Alkali Lake**, 50 feet south of the point at which the road cuts through a sand ridge, and 20 feet east of the road, near a small cairn. A standard disk, stamped "R 17 1920" and set in the top of a concrete post. (1,344.497 meters or 4,411.071 feet.)

S 17.—About 12.5 miles south along the Valley Falls-Butte road from **Butte**, Lake County, and 15 feet west of the road, near a small cairn. A standard

disk, stamped "S 17 1920" and set in the top of a concrete post. (1,314.547 meters or 4,312.810 feet.)

T 17.—About 10 miles south along the Valley Falls-Butte road from **Butte, Lake County**, 80 feet southwest of a cabin, and 65 feet west of the road, in the southeast corner of the wire fence around a corral. A standard disk, stamped "T 17 1920" and set in the top of a concrete post. (1,314.547 meters or 4,312.810 feet.)

U 17.—About 7.5 miles south along the Valley Falls-Butte road from **Butte, Lake County**, and 15 feet east of the road, near a small cairn. A standard disk, stamped "U 17 1920" and set in the top of a concrete post. (1,319.351 meters or 4,328.571 feet.)

V 17.—About 5 miles south along the Valley Falls-Butte road from **Butte, Lake County**, and 15 feet east of the road, near a small cairn. A standard disk, stamped "V 17 1920" and set in the top of a concrete post. (1,324.195 meters or 4,344.463 feet.)

W 17.—About 2.5 miles south along the Valley Falls-Butte road from **Butte, Lake County**, and 15 feet west of the road, near a small cairn. A standard disk, stamped "W 17 1920" and set in the top of a concrete post. (1,321.560 meters or 4,335.818 feet.)

Y 17.—About 3 miles east along the Butte-Burns road from **Butte, Lake County**, at the entrance to the gap at the point where the road crosses a creek bed, and 35 feet west of the center of the road, in bedrock near a small cairn. A standard disk, stamped "Y 17 1920." (1,358.340 meters or 4,456.487 feet.)

Z 17.—About 5.5 miles east along the Butte-Burns road from **Butte, Lake County**, about 165 feet east of the point at which the road crosses a rock ledge, and 25 feet west of the center of the road. A standard disk, stamped "Z 17 1920" and set in the top of a concrete post. (1,422.453 meters or 4,666.831 feet.)

X 17.—About $\frac{1}{4}$ mile east along the Butte-Burns road from the post office at **Wagontire, Harney County**, and 65 feet south of the road, in a fence corner. A standard disk, stamped "X 17 1920" and set in the top of a concrete post. (1,462.166 meters or 4,797.123 feet.)

A 18.—About $16\frac{3}{4}$ miles south along the Gap ranch-Lakeview road from **Gap ranch, Harney County**, and about 0.5 mile north of Link Hutton's house, on the east side of the road, in a fence corner at the top of a short, steep hill. A standard disk, stamped "A 18 1920" and set in the top of a concrete post. (1,509.781 meters or 4,953.340 feet.)

B 18.—About 13.5 miles south along the Gap ranch-Lakeview road from **Gap ranch, Harney County**, on the west side of the road, at the point where it makes a right angle, in a fence corner. A standard disk, stamped "B 18 1920" and set in the top of a concrete post. (1,485.203 meters or 4,872.703 feet.)

C 18.—About 11 miles south along the Gap ranch-Lakeview road from **Gap ranch, Harney County**, and about 1.5 miles north of **Egli**, on the east side of the road, in a fence corner. A standard disk, stamped "C 18 1920" and set in the top of a concrete post. (1,455.554 meters or 4,775.430 feet.)

D 18.—About $7\frac{3}{4}$ miles south along the Gap ranch-Lakeview road from **Gap ranch, Harney County**, 15 feet west of the center of the road, near a mail box, and near a cairn. A standard disk, stamped "D 18 1920" and set in the top of a concrete post. (1,451.382 meters or 4,761.742 feet.)

E 18.—About 5.3 miles south along the Gap ranch-Lakeview road from **Gap ranch, Harney County**, and 15 feet east of the road, near a cairn. A standard disk, stamped "E 18 1920" and set in the top of a concrete post. (1,397.279 meters or 4,584.239 feet.)

F 18.—About $2\frac{3}{4}$ miles south along the Gap ranch-Lakeview road from **Gap ranch, Harney County**, and 25 feet east of the road, near a lone juniper tree, and near a cairn. A standard disk, stamped "F 18 1920" and set in the top of a concrete post. (1,411.781 meters or 4,631.818 feet.)

G 18.—About 0.3 mile south of **Gap ranch, Harney County**, on the east side of the Gap ranch-Lakeview road, and just north of the intersection with the old Gap ranch-Bend road to the west. A standard disk, stamped "G 18 1920" and set in the top of a concrete post. (1,358.836 meters or 4,458.114 feet.)

H 18.—At **Gap ranch, Harney County**, just south of the Central Oregon Highway, opposite the ranch house, at the south shoulder of the highway drain. A standard disk, stamped "H 18 1920" and set in the top of a concrete post. (1,341.711 meters or 4,401.930 feet.)

For additional bench marks in the vicinity of Gap ranch, see page 56.

I 18.—About 3 miles east along the Bend-Burns road from **Gap ranch**, Harney County, about 1,000 feet northeast of a house owned by George Felios, about $\frac{1}{4}$ mile south of the Central Oregon Highway, and 7 feet north of the road. A standard disk, stamped "I 18 1920" and set in the top of a concrete post. (1,326.740 meters or 4,352.813 feet.)

J 18.—About 6 miles east along the Bend-Burns road from **Gap ranch**, Harney County, about 2,300 feet north of the Central Oregon Highway near survey station 5100, 312 feet north of a cabin owned by Preston DeWitte, and 25 feet south of the road. A standard disk, stamped "J 18 1920" and set in the top of a concrete post. (1,322.564 meters or 4,339.112 feet.)

K 18.—About 8.7 miles east along the Bend-Burns road from **Gap ranch**, Harney County, about 1 mile north of the Central Oregon Highway at about survey station 5240, about 250 feet northeast of the D. G. Cooper ranch house, 60 feet north of the barn, and 10 feet south of the road, in a fence corner. A standard disk, stamped "K 18 1920" and set in the top of a concrete post. (1,309.176 meters or 4,295.188 feet.)

L 18.—About 3.3 miles southwest along the Bend-Burns road from **Oakerman ranch**, Harney County, about 2,700 feet north of the Central Oregon Highway, about 1,000 feet west of the Shields ranch house, and 35 feet north of the road, at an oblique angle in a wire fence. A standard disk, stamped "L 18 1920" and set in the top of a concrete post. (1,291.439 meters or 4,236.996 feet.)

For additional bench marks in the vicinity of Oakerman ranch, see page 16.

The portion of this line from Oakerman ranch to Burns is a result of a combination of leveling done by the United States Geological Survey in 1903, and leveling done by the Coast & Geodetic Survey in 1920 and 1931.

S 18=4210 (U. S. G. S.).—At **Oakerman ranch**, about 2.2 miles east of **Riley**, Harney County, on the south side of the old Bend-Burns road, 40 feet east of the gate to the ranch house, and 2 feet south of the yard fence. A United States Geological Survey standard cap, stamped "4210 H 1903" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe cased in concrete. (1,285.693 meters or 4,218.144 feet.)

M 18.—About 3 miles east along the Bend-Burns road which was used in 1929 from **Oakerman ranch**, Harney County, about 1,000 feet west of a fence corner, and 25 feet north of the road, near a small cairn. A standard disk, stamped "M 18 1920" and set in the top of a concrete post. (1,332.474 meters or 4,371.625 feet.)

4318 (U. S. G. S.).—About 3 miles east of **Oakerman ranch**, Harney County, about 1,000 feet north of the Central Oregon Highway near survey station 5659, and 15 feet south of the old stage road. A United States Geological Survey standard cap, stamped "4318 H 1903" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (1,318.614 meters or 4,326.152 feet.)

4453 (U. S. G. S.).—About 6.2 miles east of **Oakerman ranch**, about $21\frac{1}{4}$ miles west of **Burns**, Harney County, 90 feet north of the Central Oregon Highway at survey station 5824 plus 20, and 20 feet south of the old stage road, just west of a small summit. A United States Geological Survey standard cap, stamped "4453 H 1903" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe cased in concrete. (1,359.697 meters or 4,460.939 feet.)

N 18.—About 6.4 miles east along the Bend-Burns road from **Oakerman ranch**, Harney County, at a point at which the road is on a tangent, and 30 feet north of the road as used in 1929, near a small cairn. A standard disk, stamped "N 18 1920" and set in the top of a concrete post. (1,354.081 meters or 4,442.514 feet.)

4552 (U. S. G. S.).—About 9 miles east of Oakerman ranch, about 18.7 miles west of **Burns**, Harney County, about 0.3 mile north of the Central Oregon Highway near survey station 5965, 175 feet south of the Bend-Burns road as used in 1929, 30 feet north of the old stage road, and 700 feet west of the acute angle of the intersection. A United States Geological Survey standard cap,

stamped "4552 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,390.005 meters or 4,560.375 feet.)

NOTE.—The above elevation was determined from leveling by the Coast and Geodetic Survey in 1931.

O 18.—About 9 miles east of Oakerman ranch, about 18.6 miles west of **Burns**, Harney County, about 0.3 mile north of the Central Oregon Highway near survey station 5970, and 30 feet south of the Bend-Burns road as used in 1929, in the west acute angle of the intersection with the old stage road, near a small cairn. A standard disk, stamped "O 18 1920" and set in the top of a concrete post. (1,390.849 meters or 4,563.144 feet.)

T 18=4404 (U. S. G. S.).—About 15 miles west of **Burns**, Harney County, in a canyon, 160 feet south of the Central Oregon Highway, and between two older roads. A United States Geological Survey standard cap, stamped "4404 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,344.816 meters or 4,412.117 feet.)

P 18.—About 14.5 miles west of **Burns**, Harney County, on the east slope of a canyon, 215 feet east of the Central Oregon Highway and 15 feet south of an old road. A standard disk, stamped "P 18 1920" and set in the top of a concrete post. (1,319.846 meters or 4,330.195 feet.)

U 18=4195 (U. S. G. S.).—About 12.3 miles west of **Burns**, Harney County, 93 feet north of the center line of the Central Oregon Highway, opposite the gate to the Withers ranch house which is on the south side of the highway, 50 feet northeast of an old deserted house, and 4 feet west of the west post of an abandoned gate in the south line of the old road. A United States Geological Survey standard cap, stamped "4195 H 1903" and riveted on the top of a 3½-inch iron pipe cased in concrete. (1,281.066 meters or 4,202.964 feet.)

Q 18.—About 12.0 miles southwest of **Burns**, Harney County, about ¼ mile east of the Withers ranch house, about 0.2 mile east of the George Dunsmore ranch house, and 30 feet south of the Central Oregon Highway, at a point about 200 feet east of a curve, in the fence line. A standard disk, stamped "Q 18 1920" and set in the top of a concrete post. (1,282.331 meters or 4,207.114 feet.)

R 18.—About 9.3 miles southwest of **Burns**, Harney County, about 1 mile west of the Jenkins ranch house, about 0.5 mile south of the Central Oregon Highway, and 25 feet south of the center line of the old Bend-Burns road, at the intersection of a T-road, in a fence corner. A standard disk, stamped "R 18 1920" and set in the top of a concrete post. (1,266.819 meters or 4,156.222 feet.)

A 19=4138 (U. S. G. S.).—About 8.5 miles southwest of **Burns**, Harney County, about 0.5 mile south of the Central Oregon Highway, on the north side of the old Bend-Burns road, 50 feet west of the Jenkins ranch house, and 20 feet west of the board gate to the yard, in the fence line. A United States Geological Survey standard cap, stamped "4138 H 1903" and riveted on the top of a 3½-inch iron pipe cased in concrete. (1,263.810 meters or 4,146.350 feet.)

NOTE.—Repeated leveling indicates that this bench mark is unstable. The above elevation was determined from Coast and Geodetic Survey leveling in 1931.

B 19=4160 (U. S. G. S.).—About 6 miles southwest of **Burns**, Harney County, 75 feet south of the center line of the Central Oregon Highway, at the point where it leaves the floor of the valley, and 40 feet southeast of a fence corner. A United States Geological Survey standard cap, stamped "4160 H 1903" and riveted on the top of a 3½-inch iron pipe cased in concrete. (1,270.388 meters or 4,167.931 feet.)

V 18.—About 4.2 miles southwest of **Burns**, Harney County, on the east side of the Central Oregon Highway, at a large spring feeding the Hines mill pond. A standard disk, stamped "V 18 1920" and set in the top of a concrete post. (1,262.548 meters or 4,142.210 feet.)

NOTE.—This bench mark has been reported as destroyed.

Z 71.—See page 206.

4147 (U. S. G. S.).—About 2.9 miles southwest of **Burns**, Harney County, north of the Hines mill, south of a large drainage ditch, 75 feet south of Byrd Avenue West, and 40 feet west of the center line of the Central Oregon Highway. A United States Geological Survey standard cap, stamped "4147 H 1903" and riveted on the top of a 3½-inch iron pipe cased in concrete. (1,266.530 meters or 4,155.274 feet.)

Y 71.—See page 206.

W 18.—About 1.5 miles southwest of **Burns**, Harney County, on the southeast side of the Bend-Burns road, in a fence corner. A standard disk, stamped "W 18 1920" and set in the top of a concrete post. (1,275.185 meters or 4,183.669 feet.)

NOTE.—This bench mark was searched for in 1930 but was not found. It may have been destroyed by construction operations.

C 19= X 71.—At **Burns**, Harney County, on the west side of Broadway, about 300 feet southwest of the Welcome Hotel, and about 200 feet south of the Central Oregon Highway, in the bottom of a 3-inch hole in the concrete sidewalk. A standard disk, stamped "X 71 1931" and set in the top of a buried concrete post. (1,264.360 meters or 4,148.154 feet.)

NOTE.—This bench mark is also a first-order triangulation station on the California-Oregon arc.

D 19=4177 (U. S. G. S.).—At **Burns**, Harney County, in the east or front yard of the courthouse, 10 feet from the fence, and 4 feet north of the walk leading to the building. A United States Geological Survey standard cap, stamped "4177 H 1903" and riveted on the top of a 3½-inch iron pipe. (1,275.774 meters or 4,185.602 feet.)

Y 18.—At **Burns**, Harney County, on the north side of Adams Street, just east of Broadway, in the south brick wall of the Voegtly Building which was occupied by a hardware store in 1931, and about 4 feet above the ground. A standard disk, stamped "Y 18 1920." (1,266.433 meters or 4,154.956 feet.)

X 18.—At **Burns**, Harney County, on Broadway, at the southeast corner of the Tonawana Building, in the south wall. A standard disk, stamped "X 18 1920." (1,267.804 meters or 4,159.454 feet.)

Z 18.—At **Burns**, Harney County, at the northeast corner of the east entrance to the public school, in the concrete floor. A standard disk, stamped "Z 18 1920." (1,288.052 meters or 4,225.884 feet.)

For additional bench marks in the vicinity of **Burns**, see pages 16 and 200.

E 19.—About 2.7 miles east along the Burns-Crane Highway from **Burns**, Harney County, 650 feet south of the George Whiting house, 25 feet north of the highway, and 10 feet east of a large gate, at the fence line. A standard disk, stamped "E 19 1920" and set in the top of a concrete post. (1,262.907 meters or 4,143.387 feet.)

F 19.—About 5¼ miles southeast along the Burns-Crane Highway from **Burns**, Harney County, on the Cordon ranch, and 15 feet southwest of the highway, in the corner of a wire fence. A standard disk, stamped "F 19 1920" and set in the top of a concrete post. (1,260.826 meters or 4,136.560 feet.)

G 19.—About 8 miles southeast along the Burns-Crane Highway from **Burns**, Harney County, at a diagonal intersection with a county road, and 15 feet southwest of the highway, in a fence corner. A standard disk, stamped "G 19 1920" and set in the top of a concrete post. (1,259.363 meters or 4,131.760 feet.)

H 19.—About 10¾ miles southeast along the Burns-Crane Highway from **Burns**, Harney County, at an intersection with the old Burns-Crane road, and 15 feet south of the highway, in the corner of a wire fence. A standard disk, stamped "H 19 1920" and set in the top of a concrete post. (1,257.128 meters or 4,124.427 feet.)

I 19.—About 13 miles southeast along the Burns-Crane Highway from **Burns**, Harney County, and 15 feet southwest of the highway, in the corner of a wire fence. A standard disk, stamped "I 19 1920" and set in the top of a concrete post. (1,254.007 meters or 4,114.188 feet.)

J 19.—About 15 miles southeast along the Burns-Crane Highway from **Burns**, Harney County, in the southeast angle of the intersection with the old Burns-Lawen road. A standard disk, stamped "J 19 1920" and set in the top of a concrete post. (1,252.812 meters or 4,110.267 feet.)

K 19.—About 17¾ miles southeast along the Burns-Lawen road from **Burns**, Harney County, 115 feet southwest of a cabin on property which is owned by Bill Catterson, and 15 feet north of the road, in the corner of a wire fence. A standard disk, stamped "K 19 1920" and set in the top of a concrete post. (1,249.925 meters or 4,100.796 feet.)

L 19.—About 2 miles east along the Lawen-Saddle Butte road from **Lawen**, Harney County, on property owned by Blanche Sitz, 15 feet north of the road,

in the corner of a wire fence. A standard disk, stamped "L 19 1920" and set in the top of a concrete post. (1,249.185 meters or 4,098.368 feet.)

M 19.—About $4\frac{1}{4}$ miles east along the Lawen-Saddle Butte road from **Lawen**, Harney County, about 130 feet southeast of a cabin, and 15 feet north of the road, in the corner of a wire fence. A standard disk, stamped "M 19 1920" and set in the top of a concrete post. (1,250.404 meters or 4,102.367 feet.)

N 19.—About 0.3 mile east of **Saddle Butte**, Harney County, 65 feet north of a cabin owned by the Auburn Town Site Co., and 15 feet south of the Lawen-Saddle Butte road, in the corner of a wire fence. A standard disk, stamped "N 19 1920" and set in the top of a concrete post. (1,249.809 meters or 4,100.415 feet.)

O 19.—About 3.5 miles east along the Saddle Butte-Crane road from **Saddle Butte**, Harney County, 65 feet northwest of a small house, and 15 feet south of the road, in the corner of a wire fence. A standard disk, stamped "O 19 1920" and set in the top of a concrete post. (1,252.589 meters or 4,109.536 feet.)

R 19.—At **Crane**, Harney County, in the east face of the Rivoli Theater building. A standard disk, stamped "R 19 1920." (1,259.280 meters or 4,131.488 feet.)

NOTE.—This bench mark has been destroyed.

Q 19.—At **Crane**, Harney County, at the northeast corner of the Crane State Bank building, in the east wall. A standard disk, stamped "Q 19 1920" and set vertically. (1,259.412 meters or 4,131.921 feet.)

P 19.—At **Crane**, Harney County, in the west face of the high school building. A standard disk, stamped "P 19 1920" and set vertically. (1,260.729 meters or 4,136.242 feet.)

For additional bench marks in the vicinity of Crane, see page 180.

S 19.—About 1.9 miles east along the Oregon Short Line Railroad from **Crane**, Harney County, opposite culvert No. 124.75, and 35 feet north of the track. A standard disk, stamped "S 19 1920" and set in the top of a concrete post. (1,264.684 meters or 4,149.217 feet.)

T 19.—About 5.9 miles southeast along the Oregon Short Line Railroad from **Crane**, Harney County, midway between the ninth and tenth poles southeast of milepost 121, and 15 feet north of the track. A standard disk, stamped "T 19 1920" and set in the top of a concrete post. (1,219.208 meters or 4,000.018 feet.)

U 19.—About 8.6 miles east along the Oregon Short Line Railroad from **Crane**, Harney County, near the station sign at **Circle Bar**, at milepost 118. A standard disk, stamped "U 19 1920" and set in the top of a concrete post. (1,183.689 meters or 3,883.486 feet.)

V 19.—About 11.6 miles east along the Oregon Short Line Railroad from **Crane**, Harney County, at milepost 115, near Crane Creek trestle, on the north side of the track. A standard disk, stamped "V 19 1920" and set in the top of a concrete post. (1,163.259 meters or 3,816.459 feet.)

W 19.—About 14.6 miles east along the Oregon Short Line Railroad from **Crane**, Harney County, and about 2,000 feet east of the crossing at Little Crane Creek, at milepost 112, on the north side of the track. A standard disk, stamped "W 19 1920" and set in the top of a concrete post. (1,154.840 meters or 3,788.838 feet.)

X 19.—About 17.6 miles east along the Oregon Short Line Railroad from **Crane**, Harney County, and about 1.5 miles north of **Venator**, at milepost 109, on the northwest side of the track. A standard disk, stamped "X 19 1920" and set in the top of a concrete post. (1,135.506 meters or 3,725.406 feet.)

Y 19.—About 19.6 miles east along the Oregon Short Line Railroad from **Crane**, Harney County, near milepost 107, on the southwest corner of the bridge over South Fork Malheur River. A chiseled square. (1,110.390 meters or 3,643.004 feet.)

Z 19.—About 20.6 miles east along the Oregon Short Line Railroad from **Crane**, Harney County, and about 750 feet east of the Swamp Creek trestle, at milepost 106, on the west side of the track. A standard disk, stamped "Z 19 1920" and set in the top of a concrete post. (1,095.893 meters or 3,595.442 feet.)

A 20.—About 23.6 miles east along the Oregon Short Line Railroad from **Crane**, Harney County, and 900 feet west of the station sign at **Dunnean**, at

milepost 103, on the north side of the track. A standard disk, stamped "A 20 1920" and set in the top of a concrete post. (1,051.942 meters or 3,451.246 feet.)

B 20.—In Malheur County, about 26.6 miles east along the Oregon Short Line Railroad from Crane, Harney County, midway between the second and third poles south of milepost 100, on the west side of the track. A standard disk, stamped "B 20 1920" and set in the top of a concrete post. (1,036.355 meters or 3,400.108 feet.)

C 20.—About 2 miles south along the Oregon Short Line Railroad from Riverside, Malheur County, midway between the first and second poles north of milepost 95, on the west side of the track. A standard disk, stamped "C 20 1920" and set in the top of a concrete post. (1,018.362 meters or 3,341.076 feet.)

D 20.—About 0.5 mile south along the Oregon Short Line Railroad from Riverside, Malheur County, at a road crossing, on the east side of the track, in a fence corner. A standard disk, stamped "D 20 1920" and set in the top of a concrete post. (1,015.269 meters or 3,330.928 feet.)

E 20.—About 1.2 miles north along the Oregon Short Line Railroad from Riverside, Malheur County, on the east side of the track, in the south abutment of bridge No. 91.49. A standard disk, stamped "E 20 1920." (1,004.414 meters or 3,295.315 feet.)

F 20.—About 4.2 miles north along the Oregon Short Line Railroad from Riverside, Malheur County, on the east side of the track, in the north abutment of bridge No. 88.52. A standard disk, stamped "F 20 1920." (973.180 meters or 3,192.841 feet.)

G 20.—About 7.6 miles north along the Oregon Short Line Railroad from Riverside, Malheur County, on the east side of the track, in the south abutment of bridge No. 84.99. A standard disk, stamped "G 20 1920." (953.547 meters or 3,128.429 feet.)

H 20.—About 10.2 miles south along the Oregon Short Line Railroad from Juntura, Malheur County, on the east side of the track, in the north abutment of bridge No. 83.79. A chiseled square, lettered "USBM." (945.366 meters or 3,101.588 feet.)

J 20.—About 6.4 miles south along the Oregon Short Line Railroad from Juntura, Malheur County, a short distance south of milepost 80, on the west side of the track. A standard disk, stamped "J 20 1920" and set in the top of a concrete post. (921.658 meters or 3,023.806 feet.)

I 20.—About 3 miles south along the Oregon Short Line Railroad from Juntura, Malheur County, and about 1 mile north of Wisner, on the east side of the track, in the north abutment of bridge No. 76.66. A standard disk, stamped "I 20 1920." (909.670 meters or 2,984.476 feet.)

K 20.—At Juntura, Malheur County, 4 poles south of the Oregon Short Line Railroad station, on the west side of the track. A standard disk, stamped "K 20 1920" and set in the top of a concrete post. (900.100 meters or 2,953.078 feet.)

Q 20.—At Juntura, Malheur County, in the south face of the high school building, midway between the front door and the southeast corner, and 3 feet above the ground. A standard disk, stamped "Q 20 1920" and set vertically. (907.853 meters or 2,978.514 feet.)

L 20.—About 2.5 miles northeast along the Oregon Short Line Railroad from Juntura, Malheur County, on the southeast side of the track, in the abutment at the northeast corner of the first bridge over the Malheur River east of a small tunnel. A standard disk, stamped "L 20 1920." (891.867 meters or 2,926.087 feet.)

M 20.—At Gwinn, Malheur County, on the Oregon Short Line Railroad, 3 feet south of the station sign. A standard disk, stamped "M 20 1920" and set in the top of a concrete post. (877.991 meters or 2,880.542 feet.)

N 20.—At Peach, Malheur County, on the Oregon Short Line Railroad, 35 feet west of the station sign, and 35 feet south of the track. A standard disk, stamped "N 20 1920" and set in the top of a concrete post. (864.640 meters or 2,836.740 feet.)

O 20.—About 0.4 mile east along the Oregon Short Line Railroad from Jonesboro, Malheur County, on the north side of the track, in the west abutment of bridge No. 61.76. A chiseled square. (853.588 meters or 2,800.480 feet.)

P 20.—About 1.5 miles west along the Oregon Short Line Railroad from **Bohna**, Malheur County, on the south side of the track, in the south abutment of culvert No. 57.87. A chiseled square. (838.920 meters or 2,752.357 feet.)

R 20.—At **Bohna**, Malheur County, on the Oregon Short Line Railroad, opposite the station sign, in the fence line south of the track. A standard disk, stamped "R 20 1920" and set in the top of a concrete post. (831.094 meters or 2,726.681 feet.)

S 20.—At **Namorf**, Malheur County, on the Oregon Short Line Railroad, between the station sign and the water tank, east of a road crossing, on the north side of the track. A standard disk, stamped "S 20 1920" and set in the top of a concrete post. (802.149 meters or 2,631.717 feet.)

T 20.—At **Kime**, Malheur County, on the Oregon Short Line Railroad, at a gate opposite the station sign, on the north side of the track. A standard disk, stamped "T 20 1920" and set in the top of a concrete post. (788.544 meters or 2,587.081 feet.)

U 20.—About 3 miles southwest along the Oregon Short Line Railroad from **Harper**, Malheur County, and 3 poles northeast of milepost 45, on the northwest side of the track. A standard disk, stamped "U 20 1920" and set in the top of a concrete post. (781.236 meters or 2,563.105 feet.)

V 20.—At **Harper**, Malheur County, 50 feet west of the west face of the Oregon Short Line Railroad station, and 100 feet south of the track, in the fence line. A standard disk, stamped "V 20 1920" and set in the top of a concrete post. (766.537 meters or 2,514.880 feet.)

W 20.—About 1½ miles east along the Oregon Short Line Railroad from **Harper**, Malheur County, on the north side of the track, in an abutment of culvert No. 40.44. A chiseled square. (762.428 meters or 2,501.399 feet.)

X 20.—About 3¾ miles east along the Oregon Short Line Railroad from **Harper**, Malheur County, and 50 feet south of the track, in a fence corner. A standard disk, stamped "X 20 1920" and set in the top of a concrete post. (753.277 meters or 2,471.376 feet.)

Y 20.—At **Little Valley**, Malheur County, on the Oregon Short Line Railroad, 50 feet north of the water tank, and 35 feet east of the track. A standard disk, stamped "Y 20 1920" and set in the top of a concrete post. (742.793 meters or 2,436.980 feet.)

Z 20.—About 1.9 miles northeast along the Oregon Short Line Railroad from **Little Valley**, Malheur County, near mileage 32.9, and 7 feet east of the track, in an abutment of a culvert. A chiseled square. (738.453 meters or 2,422.741 feet.)

For additional bench marks in the vicinity of Little Valley, see page 19.

The portion of this line from Little Valley to Ontario is the result of a combination of leveling done by the United States Geological Survey in 1903 and of leveling done by the Coast & Geodetic Survey in 1920 and 1930.

A 21=2384 (U. S. G. S.).—About 4.5 miles east along the Oregon Short Line Railroad from Little Valley, about 6.8 miles west of **Hope**, Malheur County, and 10 feet north of the railroad bed, in a borrow pit. A United States Geological Survey standard cap, stamped "2384 H 1903" and riveted on the top of a 3½-inch iron pipe. (729.319 meters or 2,392.774 feet.)

B 21.—About 5.8 miles west along the Oregon Short Line Railroad from **Hope**, Malheur County, on the southeast corner of bridge No. 3 over Malheur River. A chiseled square. (729.396 meters or 2,393.027 feet.)

2359 (U. S. G. S.).—About 4.9 miles west along the Oregon Short Line Railroad from **Hope**, Malheur County, about 12.9 miles west of Vale, at mileage 28.42, and 150 feet south of the track. A United States Geological Survey standard cap, stamped "2359 H 1903" and riveted on the top of a 3½-inch iron pipe. (721.539 meters or 2,367.249 feet.)

C 21.—About 3.7 miles west along the Oregon Short Line Railroad from **Hope**, Malheur County, on the south abutment of a culvert. A chiseled square. (717.410 meters or 2,353.703 feet.)

D 21=2334 (U. S. G. S.).—About 2.2 miles west along the Oregon Short Line Railroad from **Hope**, Malheur County, and about 10.2 miles west of Vale, at mileage 25.70, on the Louis Paddick ranch, at the south right-of-way line.

A United States Geological Survey standard cap, stamped "2334 H 1903" and riveted on the top of a 3½-inch iron pipe. (714.048 meters or 2,342.672 feet.)

E 21.—At Hope, Malheur County, on the Oregon Short Line Railroad, opposite the station sign, on the north side of the track, in the fence line. A standard disk, stamped "E 21 1920" and set in the top of a concrete post. (707.194 meters or 2,320.186 feet.)

2308 (U. S. G. S.).—About 7 miles west along the Central Oregon Highway from Vale, Malheur County, about 0.6 mile east of the Malheur River bridge, opposite a school, and 3 feet south of the south shoulder of the highway. A United States Geological Survey standard cap, stamped "2308 H 1903" and riveted on the top of a 3½-inch iron pipe. (706.045 meters or 2,316.416 feet.)

F 21.—About 4¼ miles west along the Oregon Short Line Railroad from Vale, Malheur County, on the north side of the track, on a culvert. A chiseled square. (699.640 meters or 2,295.402 feet.)

2395 (U. S. G. S.).—About 3 miles west along the old road up Malheur Canyon from Vale, Malheur County, and 50 feet south of the road. A United States Geological Survey standard cap, stamped "2395 H 1903" and riveted on the top of a 3½-inch iron pipe. (732.502 meters or 2,403.218 feet.)

NOTE.—This bench mark was searched for in 1929 but was not found.

G 21.—About 1¼ miles west along the Oregon Short Line Railroad from Vale, Malheur County, on the north side of the track, on the first culvert west of the bridge over Bully Creek. A chiseled square. (691.158 meters or 2,267.574 feet.)

H 21.—About 0.4 mile west along the Oregon Short Line Railroad from the station at Vale, Malheur County, on the south side of the track, in culvert No. 1578. A standard disk, stamped "H 21 1920." (684.254 meters or 2,244.923 feet.)

2235 (U. S. G. S.).—At Vale, Malheur County, at the northeast corner of the courthouse, in the foundation. A United States Geological Survey standard disk, stamped "2235 H 1903" and set vertically. (683.607 meters or 2,242.800 feet.)

U 21.—At Vale, Malheur County, in the west face of the Vale Trading Co. building. A standard disk, stamped "U 21 1920" and set vertically. (684.289 meters or 2,245.039 feet.)

I 21.—At Vale, Malheur County, at the corner of Main and B Streets, in the west or Main Street face of a brick building which was unoccupied in 1930. A standard disk, stamped "I 21 1920" and set vertically. (684.048 meters or 2,244.249 feet.)

NOTE.—Repeated leveling indicates that this bench mark has moved. The above elevation was determined from Coast and Geodetic Survey leveling in 1930.

For additional marks in the vicinity of Vale, see page 163.

J 21.—About 1.5 miles east along the Oregon Short Line Railroad from Vale, Malheur County, opposite milepost 14, on the south side of the track. A standard disk, stamped "J 21 1920" and set in the top of a concrete post. (680.312 meters or 2,231.990 feet.)

2214 (U. S. G. S.).—About 3 miles east along the old Vale-Ontario road from Vale, Malheur County, about 12.3 miles west of Ontario, on the south side of the road, and near the edge of an unused ditch. A United States Geological Survey standard cap, stamped "2214 H 1903" and riveted on the top of a 3½-inch iron pipe. (677.347 meters or 2,222.264 feet.)

NOTE.—This bench mark was searched for in 1929 but was not found.

K 21.—About 4.5 miles east along the Oregon Short Line Railroad from Vale, Malheur County, about 1 mile west of Mallett, and 25 feet west of the old Vale-Ontario road, in a fence corner north of the track. A standard disk, stamped "K 21 1920" and set in the top of a concrete post. (673.107 meters or 2,208.352 feet.)

2195 (U. S. G. S.).—About 9.1 miles west of Ontario, Malheur County, about 150 feet northeast of the Oregon Short Line Railroad station at Mallett, and 30 feet north of the old Vale-Ontario road. A United States Geological Survey standard cap, stamped "2195 H 1903" and riveted on the top of a 3½-inch iron pipe. (671.650 meters or 2,203.573 feet.)

L 21.—About 7¼ miles west along the Oregon Short Line Railroad from Ontario, Malheur County, about 2¼ miles west of Luse, on the north side of the track, in a fence corner 10 feet east of a gate. A standard disk, stamped

"L 21 1920" and set in the top of a concrete post. (668.800 meters or 2,194.221 feet.)

M 21.—About 6 miles west along the Oregon Short Line Railroad from Ontario, Malheur County, about 0.9 mile west of Luse, and 65 feet west of milepost 6, in the fence line north of the track. A standard disk, stamped "M 21 1920" and set in the top of a concrete post. (671.587 meters or 2,203.365 feet.)

2173 (U. S. G. S.).—About 6 miles west of Ontario, Malheur County, in the center of the Blanton field, about 2,000 feet south of a house, and 10 feet west of the old Nevada Ditch lateral. A United States Geological Survey standard cap, stamped "2173 H 1903" and riveted on the top of a 3½-inch iron pipe. (664.798 meters or 2,181.093 feet.)

N 21.—About 4 miles southwest along the Oregon Short Line Railroad from Ontario, Malheur County, near Cairo, directly opposite the E. L. Springer ranch house, and 25 feet north of the track. A standard disk, stamped "N 21 1920" and set in the top of a concrete post. (670.118 meters or 2,198.545 feet.)

2154 (U. S. G. S.).—About 3.1 miles west along the old Vale-Ontario road from Ontario, Malheur County, and 10 feet south of the road, in the center of a lane leading up a steep hill. A United States Geological Survey standard cap, stamped "2154 H 1903" and riveted on the top of a 3½-inch iron pipe. (659.116 meters or 2,162.450 feet.)

O 21.—About 2.5 miles southwest along the Oregon Short Line Railroad from Ontario, Malheur County, about 0.5 mile west of Malheur Junction, 50 feet north of the track, and 35 feet east of the highway, in the fence line. A standard disk, stamped "O 21 1920" and set in the top of a concrete post. (663.707 meters or 2,177.512 feet.)

P 21.—At Ontario, Malheur County, at the northeast corner of Oregon Street and Colorado Avenue, 3 feet east of the southwest corner of the Ford Garage, in the south face of the building. A standard disk, stamped "P 21 1920" and set vertically. (657.148 meters or 2,155.993 feet.)

Q 21.—At Ontario, Malheur County, about 50 feet west of the northwest corner of Oregon Street and Nevada Avenue, in the south face of the First National Bank building, and about 4 feet above the sidewalk. A standard disk, stamped "Q 21 1920" and set vertically. (656.754 meters or 2,154.700 feet.)

R 21=2143 (U. S. G. S.).—At Ontario, Malheur County, on the north side of Nevada Avenue, about 12 feet east of Oregon Street, in the south part of the sidewalk, just south of the Ontario National Bank. A United States Geological Survey standard cap, stamped "2143 H 1903" and riveted on the top of a 3½-inch iron pipe. (655.781 meters or 2,151.508 feet.)

T 21.—At Ontario, Malheur County, at the southeast corner of Oregon Street and Idaho Avenue, in the north face of the Golden Rule Store building, and 40 feet east of the northwest corner. A standard disk, stamped "T 21 1920" and set vertically. (656.775 meters or 2,154.769 feet.)

For additional bench marks in the vicinity of Ontario, see page 29.

LINE 5, BEND TO GAP RANCH, OREG.

[First-order leveling]

This line follows the old Bend-Burns road from Bend through Millican and Hampton to Gap Ranch. The Central Oregon Highway has been constructed since this line was run and approximately parallels the old road. The field work was done during the fall of 1920 by Casper M. Durgin and Floyd W. Hough, junior hydrographic and geodetic engineers.

For additional marks in the vicinity of Bend, see pages 102, 181, and 210.

J 23=J 2 (U. S. G. S.).—At Bend, Deschutes County, on the west side of Wall Street, 250 feet north of the intersection with Greenwood Avenue, at the sidewalk line, in a lava rock. A United States Geological Survey standard disk, stamped "3629 BB J 2 1908." (1,105.355 meters or 3,626.485 feet.)

NOTE.—This bench mark was searched for in 1931 but was not found. It has probably been destroyed.

I 23.—At Bend, Deschutes County, on the north side of Minnesota Avenue, 20 feet east of Wall Street, in the south brick wall of the building which was

occupied by the Midstate Hardware Co. in 1931, and 4.62 feet above the sidewalk. A standard disk, stamped "I 23 1920" and set vertically. (1,105.676 meters or 3,627.539 feet.)

I (City of Bend).—At Bend, Deschutes County, on the west curb of Wall Street, at the intersection with the south curb line of Minnesota Avenue extended, and 1 foot southeast of a fire hydrant. A chiseled square. (1,104.117 meters or 3,622.424 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1932.

H 23.—At Bend, Deschutes County, on the south side of Minnesota Avenue, about 55 feet east of Bond Street, in the north brick wall of the Bend Hardware Company building, and 4.25 feet above the sidewalk. A standard disk, stamped "H 23 1920" and set vertically. (1,106.263 meters or 3,629.464 feet.)

G 23.—At Bend, Deschutes County, on the north side of Greenwood Avenue, between Kearney and Hill Streets, at the southwest corner of the Deschutes Garage, in the wall. A standard disk, stamped "G 23 1920" and set vertically. (1,106.056 meters or 3,628.785 feet.)

I 2 (U. S. G. S.).—In the east part of Bend, Deschutes County, on the west side of Harriman Street, on the center line of Greeley Avenue extended in an outcrop of lava rock. A United States Geological Survey standard disk, stamped "3647 BB I 2 1908" and set vertically. (1,111.309 meters or 3,646.020 feet.)

3651 (O. S. H. D.).—About 2 miles east along the Central Oregon Highway from Bend, Deschutes County, just southeast of Pilot Butte, on an irrigation siphon culvert, in the west end of the south concrete head wall. An Oregon State Highway Department standard disk, stamped "3651 1929." (1,112.819 meters or 3,650.975 feet.)

3641 (P. P. & L.).—About 2¼ miles east along the Central Oregon Highway from Bend, Deschutes County, and about ¼ mile west of the Arnold Market road, on the south side of the highway, on an irrigation siphon box. A chiseled square. (1,109.794 meters or 3,641.050 feet.)*

F 23.—About 2.5 miles east along the Central Oregon Highway from Bend, Deschutes County, about 1 mile east of Pilot Butte, 33 feet west of the center line of the Arnold Market road, 14 feet south of the center line of the highway, and about 6 inches below the surface of the highway shoulder. A standard disk, stamped "F 23 1920" and set in the top of a concrete post. (1,104.305 meters or 3,623.041 feet.)

FX 23 (P. P. & L.).—About 3.4 miles southeast of Bend, Deschutes County, on the east side of the Arnold Market road, and about 0.9 mile south of the Central Oregon Highway, in the south end of an irrigation culvert parapet. A galvanized iron bolt. (1,124.832 meters or 3,690.386 feet.)*

3701 (O. S. H. D.).—About 3.9 miles southeast of Bend, Deschutes County, and about 1.4 miles south of the Central Oregon Highway, on the west side of the Arnold Market road, in the north masonry abutment of a wooden bridge over an irrigation canal. An Oregon State Highway Department standard disk, stamped "3701 1 1929." (1,128.019 meters or 3,700.842 feet.)*

E 23.—About 4.3 miles southeast of Bend, Deschutes County, and about 1.8 miles south of the Central Oregon Highway, in the west fence line of the Arnold Market road, at a fence corner. A standard disk, stamped "E 23 1920" and set in the top of a concrete post. (1,129.490 meters or 3,705.698 feet.)

EX 23 (P. P. & L.).—About 4.4 miles southeast of Bend, Deschutes County, about 2.0 miles south of the Central Oregon Highway, and 35 feet west of the center line of the Arnold Market road, in a rock outcrop. A galvanized iron bolt. (1,129.562 meters or 3,705.905 feet.)*

3741 (O. S. H. D.).—About 6.9 miles southeast of Bend, Deschutes County, at the Arnold School, 90 feet east of the southeast corner of the building, 7 feet south of the south face, and 8 feet west of a 36-inch yellow pine tree, in a rock outcrop. An Oregon State Highway Department standard disk, stamped "3741 1929." (1,140.205 meters or 3,740.822 feet.)*

D 23.—About 7.2 miles southeast of Bend, Deschutes County, on the Arnold Market road, about 4.7 miles south of the Central Oregon Highway, and about 0.3 mile south of the Arnold School, at the northeast corner of an angle in the

* The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1929.

road. A standard disk, stamped "D 23 1920" and set in the top of a concrete post. (1,144.632 meters or 3,755.347 feet.)

CX 23 (P. P. & L.).—About 9.2 miles southeast of **Bend**, Deschutes County, on the Arnold Market road, about 6.7 miles southeast of the junction with the Central Oregon Highway, about 180 feet west of bench mark C 23, and about 50 feet north of the south fence line, in a rock outcrop. A galvanized iron bolt. (1,169.287 meters or 3,836.235 feet.)*

C 23.—About 9.2 miles southeast of **Bend**, Deschutes County, on the Arnold Market road, about 6.7 miles southeast of the junction with the Central Oregon Highway, near the south line of the road, in a fence corner. A standard disk, stamped "C 23 1920" and set in the top of a concrete post. (1,166.526 meters or 3,827.177 feet.)

B 23.—About 11.3 miles southeast along the old Bend-Burns road from **Bend**, Deschutes County, and about 8.8 miles southeast of the junction with the Central Oregon Highway, at an old road crossing, 30 feet north of the road. A standard disk, stamped "B 23 1920" and set in the top of a concrete post. (1,205.952 meters or 3,956.527 feet.)

BX 23 (P. P. & L.).—About 11.3 miles southeast along the old Bend-Burns road from **Bend**, Deschutes County, about 8.8 miles southeast of the junction with the Central Oregon Highway, 34 feet southeast of bench mark B 23, and 15 feet north of the road, in bedrock. A galvanized iron bolt. (1,205.990 meters or 3,956.652 feet.)*

AX 23 (P. P. & L.).—About 13.3 miles southeast along the old Bend-Burns road from **Bend**, about 15.3 miles west of **Millican**, Deschutes County, about 10.8 miles southeast of the junction with the Central Oregon Highway, 95 feet north of the road, and about 60 feet northwest of bench mark A 23, in a large rock outcrop. A galvanized iron bolt. (1,249.347 meters or 4,098.900 feet.)*

A 23.—About 13.3 miles southeast along the old Bend-Burns road from **Bend**, about 15.3 miles west of **Millican**, Deschutes County, about 10.8 miles southeast of the junction with the Central Oregon Highway, and 15 feet north of the road, near a large mound of rocks. A standard disk, stamped "A 23 1920" and set in the top of a concrete post. (1,248.539 meters or 4,096.248 feet.)

Z 22.—About 15.5 miles southeast along the old Bend-Burns road from **Bend**, about 13 miles west of **Millican**, Deschutes County, about 13 miles southeast of the junction with the Central Oregon Highway, and 20 feet south of the road, near a large mound of rocks. A standard disk, stamped "Z 22 1920" and set in the top of a concrete post. (1,287.792 meters or 4,225.031 feet.)

ZX 22 (P. P. & L.).—About 15.5 miles southeast along the old Bend-Burns road from **Bend**, about 13 miles west of **Millican**, Deschutes County, about 13 miles southeast of the junction with the Central Highway, 50 feet south of the road, and about 30 feet southwest of bench mark Z 22, in a large rock outcrop. A galvanized iron bolt. (1,288.776 meters or 4,228.258 feet.)*

YX 22 (P. P. & L.).—About 11 miles west along the old Bend-Burns road from **Millican**, Deschutes County, about 4.6 miles northwest of the T-road leading south to China Hat, about 200 feet northwest of bench mark Y 22, and 60 feet north of the north line of the Stookey ranch house, in the west fence line of the road, in an embedded rock. A galvanized iron bolt. (1,298.103 meters or 4,258.861 feet.)*

Y 22.—About 11 miles west along the old Bend-Burns road from **Millican**, Deschutes County, about 4.6 miles northwest of the T-road leading south to China Hat, 105 feet southwest of the Stookey ranch house, and 70 feet south of the south face of the house, in the east fence line of the road. A standard disk, stamped "Y 22 1920" and set in the top of a concrete post. (1,298.579 meters or 4,260.421 feet.)

XX 22 (P. P. & L.).—About 8.4 miles west along the old Bend-Burns road from **Millican**, Deschutes County, about 2.2 miles west of the T-road leading south to China Hat, about 600 feet northwest of bench mark X 22, and 170 feet southwest of the road, near a lone pine tree on the south side of the road, in a rock outcrop. A galvanized iron bolt. (1,351.055 meters or 4,432.588 feet.)*

X 22.—About 8.3 miles west along the old Bend-Burns road from **Millican**, Deschutes County, about 2.1 miles west of the T-road leading south to China Hat, and 15 feet north of the road, in a fence corner. A standard disk, stamped "X 22 1920" and set in the top of a concrete post. (1,353.333 meters or 4,440.060 feet.)

* The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1929.

W 22.—About 6.4 miles west along the old Bend-Burns road from Millican, Deschutes County, in the southeast corner of sec. 25, T. 19 S., R. 14 E., 100 feet east of the T-road leading south to China Hat, and 25 feet north of the old Bend-Burns road. A standard disk, stamped "W 22 1920" and set in the top of a concrete post. (1,322.234 meters or 4,338.029 feet.)

WX 22 (P. P. & L.).—About 6.3 miles west along the old Bend-Burns road from Millican, Deschutes County, about 700 feet east of the T-road leading south to China Hat, and 120 feet north of the road, near a lone juniper tree, in a rock outcrop. A galvanized iron bolt. (1,320.937 meters or 4,333.774 feet.)*

VX 22 (P. P. & L.).—About $3\frac{1}{4}$ miles west along the old Bend-Burns road from Millican, Deschutes County, about 3.1 miles east of the T-road leading south to China Hat, at a deserted ranch, about 120 feet west of bench mark V 22, and 50 feet north of the road, in an embedded boulder. A galvanized iron bolt. (1,288.415 meters or 4,227.074 feet.)*

V 22.—About $3\frac{1}{4}$ miles west along the old Bend-Burns road from Millican, Deschutes County, and about 3.1 miles east of the T-road leading south to China Hat, at a deserted ranch, 50 feet north of the road. A standard disk, stamped "V 22 1920" and set in the top of a concrete post. (1,288.581 meters or 4,227.619 feet.)

23 (O. S. H. D.).—At Millican, Deschutes County, about 1,000 feet west of the store and post office as located in 1931, and 115 feet north of the Central Oregon Highway, at survey station 1305, in the rimrock near the top of the bank on the south side of Dry River. An Oregon State Highway Department standard disk, stamped "4253 23 1927." (1,296.112 meters or 4,252.328 feet.)*

X 23 (O. S. H. D.).—At Millican, Deschutes County, about 1,100 feet west of the store and post office as located in 1931, and 60 feet south of the Central Oregon Highway, near survey station 1304 plus 40, on the rimrock at the south edge of Dry River. A chiseled square. (1,298.014 meters or 4,258.569 feet.)*

UX 22 (P. P. & L.).—About 0.6 mile south of Millican, Deschutes County, on the old Bend-Burns road, just west of the abandoned post office, and 90 feet west of bench mark U 22, in the south fence line, in an embedded rock. A galvanized iron bolt. (1,311.231 meters or 4,301.931 feet.)*

U 22.—About 0.6 mile south of Millican, Deschutes County, on the old Bend-Burns road, and 35 feet northeast of the site of the abandoned post office, in the center of a small cañon in the roadway. A standard disk, stamped "U 22 1920." (1,311.697 meters or 4,303.459 feet.)

TX 22 (O. G. B.).—About 3.5 miles southeast along the old Bend-Burns road from Millican, Deschutes County, about 0.7 mile south of the Central Oregon Highway, and 145 feet north of the north line of a yellow bungalow, near the east side of the road, near an angle in the driveway fence, in a rock. A galvanized iron bolt. (1,337.229 meters or 4,387.224 feet.)†

T 22.—About 3.5 miles southeast along the old Bend-Burns road from Millican, Deschutes County, about 0.7 mile south of the Central Oregon Highway, 65 feet southwest of a yellow bungalow, and 20 feet east of the road, in a fence corner. A standard disk, stamped "T 22 1920" and set in the top of a concrete post. (1,339.284 meters or 4,393.968 feet.)

S 22.—About 7 miles southeast along the old Bend-Burns road from Millican, Deschutes County, about 1 mile south of the Central Oregon Highway, about 300 feet south of the ruins of a stone house on the Bishop ranch, and 20 feet north of the road. A standard disk, stamped "S 22 1920" and set in the top of a concrete post. (1,324.376 meters or 4,345.057 feet.)

SX 22 (O. G. B.).—About 7 miles southeast along the old Bend-Burns road from Millican, Deschutes County, about 1 mile south of the Central Oregon Highway, near the ruins of a stone house on the Bishop ranch, and about 500 feet northeast of bench mark S 22, in a rock outcrop. A galvanized iron bolt. (1,328.830 meters or 4,359.669 feet.)†

R 22.—About 8.3 miles southeast along the old Bend-Burns road from Millican, Deschutes County, about 200 feet west of an abrupt turn to the south, and 25 feet south of the road. A standard disk, stamped "R 22 1920" and set in the top of a concrete post. (1,322.150 meters or 4,337.754 feet.)

* The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1929.

† The elevation of this bench mark was determined from leveling by the Oregon Geographic Board in 1929.

RX 22 (O. G. B.).—About 8.3 miles southeast along the old Bend-Burns road from Millican, Deschutes County, near an abrupt turn to the south, and about 200 feet southeast of bench mark R 22, in a rock outcrop. A galvanized iron bolt. (1,328.888 meters or 4,359.859 feet.)*

Q 22.—About 11.2 miles southeast along the old Bend-Burns road from Millican, Deschutes County, about $\frac{3}{4}$ mile south of the old Percival ranch house, 3 feet west of the southeast corner of sec. 23, T. 20 S., R. 16 E., and 15 feet south of the road. A standard disk, stamped "Q 22 1920" and set in the top of a concrete post. (1,340.184 meters or 4,396.920 feet.)

QX 22 (O. G. B.).—About 11.2 miles southeast along the old Bend-Burns road from Millican, Deschutes County, about $\frac{3}{4}$ mile south of the old Percival ranch house, on the north side of the road, and 55 feet northeast of bench mark Q 22, in a fence corner, in a rock. A galvanized iron bolt. (1,340.279 meters or 4,397.232 feet.)*

P 22.—About 13.4 miles southeast along the old Bend-Burns road from Millican, Deschutes County, in sec. 29, T. 20 S., R. 17 E., 220 feet north of an old log cabin, and 35 feet south of the road. A standard disk, stamped "P 22 1920" and set in the top of a concrete post. (1,361.236 meters or 4,465.988 feet.)

PX 22 (O. G. B.).—About 13.4 miles southeast along the old Bend-Burns road from Millican, Deschutes County, 192 feet south of the road, and 30 feet north of an old cabin, in bedrock. A galvanized iron bolt. (1,361.738 meters or 4,467.635 feet.)*

O 22.—About 15.8 miles southeast along the old Bend-Burns road from Millican, about $3\frac{1}{4}$ miles west of Brothers, Deschutes County, in the southeast corner of sec. 22, T. 20 S., R. 17 E., 63 feet north of the north fence of the Elmer King ranch, and 8 feet west of the east fence. A standard disk, stamped "O 22 1920" and set in the top of a concrete post. (1,370.831 meters or 4,497.468 feet.)

OX 22 (O. G. B.).—About 15.8 miles southeast along the old Bend-Burns road from Millican, about $3\frac{1}{4}$ miles west of Brothers, Deschutes County, 57 feet south of bench mark O 22, and 6 feet north of a fence, in an embedded rock. A galvanized iron bolt. (1,370.754 meters or 4,497.216 feet.)*

N 22.—About 2.5 miles south of Brothers, Deschutes County, 20 feet north of the old Bend-Burns road, and 35 feet west of the road leading north to Brothers. A standard disk, stamped "N 22 1920" and set in the top of a concrete post. (1,432.185 meters or 4,698.760 feet.)

NX 22 (O. G. B.).—About 2.5 miles south of Brothers, Deschutes County, on the old Bend-Burns road, 75 feet north of bench mark N 22, and 15 feet west of the road leading north to Brothers, in a rock. A galvanized iron bolt. (1,431.550 meters or 4,696.677 feet.)*

M 22.—About $3\frac{3}{4}$ miles southeast of Brothers, Deschutes County, and about 20 feet north of the old Bend-Burns road where it crosses a small rise, near a cairn. A standard disk, stamped "M 22 1920" and set in the top of a concrete post. (1,417.423 meters or 4,650.329 feet.)

MX 22 (O. G. B.).—About $3\frac{3}{4}$ miles southeast of Brothers, Deschutes County, about 10 feet north of the old Bend-Burns road where it crosses a small rise, and 10 feet south of bench mark M 22, in a rock outcrop. A galvanized iron bolt. (1,417.413 meters or 4,650.296 feet.)*

L 22.—About 6.8 miles southeast of Brothers, Deschutes County, 135 feet south of the old Bend-Burns road, about 175 feet north of the Steinhauer ranch house, and 250 feet northeast of a well, in a fence corner. A standard disk, stamped "L 22 1920" and set in the top of a concrete post. (1,416.698 meters or 4,647.950 feet.)

LX 22 (O. G. B.).—About 6.8 miles southeast of Brothers, Deschutes County, on the south side of the old Bend-Burns road, 230 feet southwest of bench mark L 22, and 15 feet east of the well at the Steinhauer ranch, and in a rock. A galvanized iron bolt. (1,416.894 meters or 4,648.593 feet.)*

K 22.—About 9.2 miles southeast of Brothers, about 14 miles northwest of Hampton Service Station, Deschutes County, on the old Bend-Burns road, and about 4.2 miles west of the Central Oregon Highway, on the south line of the SE. $\frac{1}{4}$, sec. 18, T. 21 S., R. 19 E., in an acute angle formed by the old Bend-Burns

* The elevation of this bench mark was determined from levelling by the Oregon Geographic Board in 1929.

road and a road running due east and west. A standard disk, stamped "K 22 1920" and set in the top of a concrete post. (1,380.613 meters or 4,529.561 feet.)

KX 22 (O. G. B).—About 9.2 miles southeast of Brothers, about 14 miles northwest of **Hampton Service Station**, Deschutes County, on the old Bend-Burns road, about 4.2 miles west of the Central Oregon Highway, and about 550 feet north of the road, in the base of a large rock outcrop. A galvanized iron bolt. (1,381.792 meters or 4,533.430 feet.)*

JX 22 (O. G. B).—About 9.8 miles northwest along the Central Oregon Highway from **Hampton Service Station**, Deschutes County, thence about 1.9 miles due west along the old Bend-Burns road, 240 feet west of the center of T. 21 S., R. 19 E., and 75 feet north of the road, in a rock. A galvanized iron bolt. (1,369.997 meters or 4,494.733 feet.)*

J 22.—About 9.8 miles northwest along the Central Oregon Highway from **Hampton Service Station**, Deschutes County, thence about 1.9 miles due west along the old Bend-Burns road, about 0.3 mile east of a former townsite, 45 feet north of the center of T. 21 S., R. 19 E., and 50 feet north of the road. A standard disk, stamped "J 22 1920" and set in the top of a concrete post. (1,368.711 meters or 4,490.513 feet.)

I 22.—About 8.4 miles northwest along the Central Oregon Highway from **Hampton Service Station**, Deschutes County, thence about $\frac{1}{4}$ mile north on an old road, on the east side of the road, on the south side of a lane leading east to the site of the 1920 location of the **Hampton post office**. A standard disk, stamped "I 22 1920" and set in the top of a concrete post. (1,350.229 meters or 4,429.876 feet.)

IX 22 (O. G. B).—About 8.4 miles northwest along the Central Oregon Highway from **Hampton Service Station**, Deschutes County, thence about $\frac{1}{4}$ mile north on an old road, on the west side of the road, and about 150 feet northwest of bench mark I 22. A galvanized iron bolt, set in rock. (1,350.396 meters or 4,430.425 feet.)*

H 22.—About 7.0 miles northwest along the Central Oregon Highway from **Hampton Service Station**, Deschutes County, 450 feet north of the highway, 15 feet north of the old Bend-Burns road, and about 1,000 feet east of its intersection with the highway, at the northeast corner of the intersection with a T-road leading north to the abandoned **Hampton post office**. A standard disk, stamped "H 22 1920" and set in the top of a concrete post. (1,349.298 meters or 4,426.822 feet.)

G 22.—About 4.8 miles northwest along the Central Oregon Highway from **Hampton Service Station**, Deschutes County, about 0.4 mile south of the highway, and 15 feet east of the old Bend-Burns road, in a fence corner. A standard disk, stamped "G 22 1920" and set in the top of a concrete post. (1,345.469 meters or 4,414.259 feet.)

F 22.—About 2.4 miles northwest along the Central Oregon Highway from **Hampton Service Station**, Deschutes County, and 100 feet north of the highway, near an old solitary fence post. A standard disk, stamped "F 22 1920" and set in the top of a concrete post. (1,346.588 meters or 4,417.931 feet.)

E 22.—At **Hampton Service Station**, Deschutes County, 15 feet north of the old Bend-Burns road, on the north side of the lane leading to Mr. Meek's homestead, in a fence corner. The **Hampton Service Station** was formerly known as **Brookings Halfway House**. A standard disk, stamped "E 22 1920" and set in the top of a concrete post. (1,346.121 meters or 4,416.399 feet.)

E 22 (Reset).—At **Hampton Service Station**, Deschutes County, about 50 feet south of the Central Oregon Highway, at the west fence line of a north-and-south road. A standard disk, stamped "E 22 1920" and set in the top of a concrete post. (1,346.017 meters or 4,416.057 feet.)

NOTE.—This bench mark was reset and its elevation determined by the Oregon State Highway Department in 1929.

D 22.—About 2.5 miles east along the Oregon Central Highway from **Hampton Service Station**, Deschutes County, on the east side of a north-and-south road, about 0.5 mile north of its intersection with the highway, and 80 feet northwest of a white house, in a fence corner. A standard disk, stamped "D 22 1920" and set in the top of a concrete post. (1,346.592 meters or 4,417.944 feet.)

* The elevation of this bench mark was determined from leveling by the Oregon Geographic Board in 1929.

C 22.—About 4.9 miles southeast from **Hampton Service Station**, Deschutes County, about 2 miles southeast of the junction of the old Bend-Burns road with the Central Oregon Highway, about $\frac{1}{4}$ mile south of highway survey station 3569, and 15 feet north of the road, at a small cairn. A standard disk, stamped "C 22 1920" and set in the top of a concrete post. (1,348.613 meters or 4,424.574 feet.)

B 22.—In Lake County, about 7.4 miles southeast from **Hampton Service Station**, Deschutes County, and about 0.5 mile south of Central Oregon Highway survey station 3660, in the angle formed by the old Bend-Burns road and the road leading south to Stauffer. A standard disk, stamped "B 22 1920" and set in the top of a concrete post. (1,359.888 meters or 4,461.566 feet.)

A 22.—In Lake County, about 9.8 miles southeast along the Central Oregon Highway from **Hampton Service Station**, Deschutes County, about 400 feet south of Central Oregon Highway survey station 3814, and 15 feet south of the road, near a small cairn. A standard disk, stamped "A 22 1920" and set in the top of a concrete post. (1,376.608 meters or 4,516.421 feet.)

Z 21.—In Lake County, about 12.8 miles southeast along the Central Oregon Highway from **Hampton Service Station**, on the north slope of **Glass Buttes**, Lake County, about 15.8 miles west of **Gap ranch**, Harney County, about 200 feet north of the Central Oregon Highway, and 15 feet south of the old road, near a prominent lone juniper tree. A standard disk, stamped "Z 21 1920" and set in the top of a concrete post. (1,395.928 meters or 4,579.807 feet.)

NOTE.—This bench mark has been destroyed.

Y 21.—In Lake County, about 13.2 miles west along the old Bend-Burns road from **Gap ranch**, Harney County, about 0.5 mile north of the Central Oregon Highway near survey station 4102, and 15 feet south of the old road, near a small cairn. A standard disk, stamped "Y 21 1920" and set in the top of a concrete post. (1,357.289 meters or 4,453.039 feet.)

X 21.—In Lake County, about 10.7 miles west along the old Bend-Burns road from **Gap ranch**, Harney County, about 100 feet north of the Central Oregon Highway at survey station 4234 plus 50, about 100 feet east of the summit of the first ridge east of **Glass Buttes**, and 15 feet north of the old road, near a small cairn. A standard disk, stamped "X 21 1920" and set in the top of a concrete post. (1,394.409 meters or 4,574.823 feet.)

W 21.—In Lake County, about 8.1 miles west along the old Bend-Burns road from **Gap ranch**, Harney County, about 500 feet south of the Central Oregon Highway near survey station 4368, and 15 feet south of the old road, near a small cairn. A standard disk, stamped "W 21 1920" and set in the top of a concrete post. (1,415.150 meters or 4,642.871 feet.)

V 21.—About 6 miles west along the old Bend-Burns road from **Gap ranch**, Harney County, 480 feet north of Central Oregon Highway survey station 4490, and 20 feet north of the old road, near a small cairn. A standard disk, stamped "V 21 1920" and set in the top of a concrete post. (1,404.460 meters or 4,607.799 feet.)

S 21.—About 3.5 miles west along the old Bend-Burns road from **Gap ranch**, Harney County, about 500 feet north of the Central Oregon Highway at a point about $\frac{1}{4}$ mile east of a cut, and about 30 feet south of the old road at a point where a short tangent enters a gap, near a small cairn. A standard disk, stamped "S 21 1920" and set in the top of a concrete post. (1,370.274 meters or 4,495.641 feet.)

G 18.—See page 42.

LINE 6, WEED, CALIF., TO PORTLAND, OREG. (PART)

[First-order leveling]

This line enters Oregon near Gregory and follows the Southern Pacific Co. railroad through Grants Pass, Roseburg, Eugene, Albany, and Salem to Portland. The railroad closely parallels the Pacific Highway for a large portion of this distance and most of the bench marks are accessible from the highway. The field work was done during the season of 1920 by C. A. Egner, J. D. Crichton, and H. C. Warwick, junior hydrographic and geodetic engineers.

G 35.—About 0.4 mile north along the Southern Pacific Co. railroad from **Cole**, Siskiyou County, Calif., at mileage 403.2, 65 feet southwest of the sign

"California-Oregon State Line," and 10 feet west of the track, in a rock. A standard disk, stamped "G 35 1920." (873.492 meters or 2,865.782 feet.)

A 7=2997 (U. S. G. S.).—About 3 miles south along the Southern Pacific Co. railroad from **Gregory**, Jackson County, at mileage 404.4, and 35 feet west of the track. A United States Geological Survey standard cap, stamped "2997 B 1903" and riveted on the top of a 3½-inch iron pipe. (913.826 meters or 2,998.111 feet.)

B 7.—About 0.9 mile south along the Southern Pacific Co. railroad from **Gregory**, Jackson County, at mileage 406.5, and 15 feet west of the track, in culvert No. 406.49. A standard disk, stamped "B 7 1920." (1,009.915 meters or 3,313.363 feet.)

C 7=3445 (U. S. G. S.).—About 0.1 mile south along the Southern Pacific Co. railroad from **Gregory**, Jackson County, at mileage 407.3, near culvert No. 407.22, and 35 feet north of the track. A United States Geological Survey standard cap, stamped "3445 B 1903" and riveted on the top of a 3½-inch iron pipe. (1,050.336 meters or 3,445.977 feet.)

D 7=3922 (U. S. G. S.).—About 0.4 mile north along the Southern Pacific Co. railroad from **White Point**, Jackson County, at mileage 410.4, and 35 feet east of the track. A United States Geological Survey standard cap, stamped "3922 B 1903" and riveted on the top of a 3½-inch iron pipe. (1,195.685 meters or 3,922.843 feet.)

E 7.—About 0.9 mile south along the Southern Pacific Co. railroad from **Siskiyou**, Jackson County, at mileage 411.3, 260 feet south of the south end of Siskiyou tunnel No. 13, and 15 feet east of the track, on the east end of concrete culvert No. 411.25. A standard disk, stamped "E 7 1920." (1,237.263 meters or 4,059.254 feet.)

F 7.—About 500 feet south along the Southern Pacific Co. railroad from **Siskiyou**, Jackson County, and 325 feet north of the north entrance to Siskiyou tunnel No. 13, on the east side of the track, near a switch stand, on the west edge of the concrete wall of an old turntable, about level with the track. A standard disk, stamped "F 7 1920." (1,258.312 meters or 4,128.312 feet.)

G 7.—At **Siskiyou**, Jackson County, opposite the Southern Pacific Co. station, on the west side of the track, in the top of rubble masonry culvert 412 A, about 3 feet below the level of the track. A standard disk, stamped "G 7 1920." (1,253.189 meters or 4,111.504 feet.)

NOTE.—It was reported in 1923 that this bench mark had been destroyed.

R 6=3918 (U. S. G. S.).—About 1 mile north along the Southern Pacific Co. railroad from **Siskiyou**, Jackson County, at mileage 413.4, on the east side of the track, near culvert No. 413.37. A United States Geological Survey standard cap, stamped "3918 B 1903" and riveted on the top of a 3½-inch iron pipe. (1,194.708 meters or 3,919.638 feet.)

H 7.—About 1.5 miles north along the Southern Pacific Co. railroad from **Siskiyou**, Jackson County, on the east side of the track, at the steel viaduct over **Wall Creek**, on the top of the north abutment, and about 1 foot from the edge of the basalt top block. A rounded knob. (1,172.795 meters or 3,847.745 feet.)

I 7.—At **Wall Creek**, Jackson County, at Southern Pacific Co. mileage 415.6, about 500 feet south of the home block signal at the end of the siding, 165 feet north of the signboard, and 20 feet east of the track, in the top of a large granite boulder. A standard disk, stamped "I 7 1920." (1,109.435 meters or 3,639.871 feet.)

F 6.—About 1.9 miles south along the Southern Pacific Co. railroad from **Steinman**, Jackson County, at mileage 417.4, near the switch stand for **Foliage** siding, near the center of a sharp cut, about 70 feet from semaphores No. 4173 and No. 4174, and 10 feet north of the track, in a rough projection of outcropping bedrock. A standard disk, stamped "F 6 1920." (1,020.851 meters or 3,349.242 feet.)

G 6.—About 0.3 mile south along the Southern Pacific Co. railroad from **Steinman**, Jackson County, 200 feet north of milepost 419, at the large concrete Pacific Highway overhead viaduct, on the east side of the track, on the horizontal surface of the banister connecting the north and south posts of the most westerly central pier, and 3 feet above the ground. A standard disk, stamped "G 6 1920." (941.855 meters or 3,090.069 feet.)

Q 6=3036 (U. S. G. S.).—At **Steinman**, Jackson County, 360 feet south of the Southern Pacific Co. station, at mileage 419.3, on the east side of the track, and on the west side of the Pacific Highway. A United States Geological Sur-

vey standard cap, stamped "3036 B 1903" and riveted on the top of a 3½-inch iron pipe. (925.793 meters or 3,037.373 feet.)

H 6.—About 1.8 miles north along the Southern Pacific Co. railroad from **Steinman**, Jackson County, at mileage 421.1, about 400 feet north of the plate girder bridge over **Torrent Creek**, and about 50 feet from the north end of a cut, on the east side of the track, in an outcropping bed of sandstone. A standard disk, stamped "H 6 1920." (839.492 meters or 2,754.233 feet.)

P 6=2561 (U. S. G. S.).—About 3.3 miles north along the Southern Pacific Co. railroad from **Steinman**, about 0.3 mile south of **Mistletoe**, Jackson County, at mileage 422.3, on the east side of the track, at the fence line. A United States Geological Survey standard cap, stamped "2561 B 1903" and riveted on the top of a 3½-inch iron pipe. (780.985 meters or 2,562.282 feet.)

E 6.—About 0.5 mile north along the Southern Pacific Co. railroad from **Mistletoe**, Jackson County, at mileage 423.4, at the northwest corner of the plate girder bridge over **Neil Creek**, about in the middle of the top of the second sandstone block of the coping. A rounded knob. (732.577 meters or 2,403.463 feet.)

For bench marks in the vicinity of **Klamath Junction**, see page 234.

I 6.—About 1.2 miles north along the Southern Pacific Co. railroad from **Mistletoe**, Jackson County, at mileage 424.1, south of a slight cut, at a sharp curve, on the west side of the track, in bedrock. A standard disk, stamped "I 6 1920." (692.625 meters or 2,272.387 feet.)

J 6=2180 (U. S. G. S.).—At **Clawson**, Jackson County, on the Southern Pacific Co. right of way, at mileage 425.4, 10 feet north of the south end of the siding, on the west side of the track, on the bank, at a pole near the fence line. A United States Geological Survey standard cap, stamped "2180 B 1903" and riveted on the top of a 3½-inch iron pipe. (664.780 meters or 2,181.032 feet.)

K 6.—About 0.6 mile north along the Southern Pacific Co. railroad from **Clawson**, Jackson County, at mileage 426.15, 20 feet west of the west end of culvert No. 426.15, on the west side of the track, in an outcrop of bedrock. A standard disk, stamped "K 6 1920." (636.810 meters or 2,089.267 feet.)

L 6=1874 (U. S. G. S.).—At **Ashland**, Jackson County, about 1,800 feet southeast of the Southern Pacific Co. station, and 42 feet northeast of the main track, on the southeast side of **Mountain Avenue**, at a fence corner. A United States Geological Survey standard cap, stamped "1874 B 1903" and riveted on the top of a 3½-inch iron pipe. (571.447 meters or 1,874.822 feet.)

M 6.—At **Ashland**, Jackson County, on **Main Street**, on the north side of the entrance to the public library, in the top of the concrete banister. A standard disk, stamped "M 6 1920." (594.450 meters or 1,950.291 feet.)

N 6.—At **Ashland**, Jackson County, at the east end of **Lithia Park**, about 165 feet from the city hall, and 80 feet west of the sidewalk line, on the north side of a path, in a granite boulder. A standard disk, stamped "N 6 1920." (577.472 meters or 1,894.589 feet.)

For additional bench marks in the vicinity of **Ashland**, see page 218.

O 6.—About 0.5 mile north along the Southern Pacific Co. railroad from the station at **Ashland**, Jackson County, on the west side of the track, in the south abutment of a crossing over a road. A standard disk, stamped "O 6 1920." (565.672 meters or 1,855.876 feet.)

S 6.—About 3.7 miles north along the Southern Pacific Co. railroad from **Ashland**, Jackson County, at mileage 432.8, 200 feet east of the track, opposite culvert No. 432 I, on the west side of the Pacific Highway, on the south end of a highway culvert, in the top of the railing about 2 feet above the roadway. A standard disk, stamped "S 6 1920." (520.347 meters or 1,707.172 feet.)

T 6=1633 (U. S. G. S.).—At **Talent**, Jackson County, at Southern Pacific Co. mileage 434.6, and about 10 feet from the northwest corner of the station. A United States Geological Survey standard cap, stamped "1633 B 1903" and riveted on the top of a 3½-inch iron pipe. (498.218 meters or 1,634.570 feet.)

V 6.—About 0.9 mile north along the Southern Pacific Co. railroad from **Talent**, Jackson County, at mileage 435.5, on the east side of the track, in the top of concrete culvert No. 435 D. A standard disk, stamped "V 6 1920." (483.334 meters or 1,585.738 feet.)

W 6=1513 (U. S. G. S.).—About 0.6 mile north along the Southern Pacific Co. railroad from **Phoenix**, Jackson County, at mileage 437.6, on the east side

of the track, at the fence line. A United States Geological Survey standard cap, stamped "1513 B 1903" and riveted on the top of a 3½-inch iron pipe. (461.440 meters or 1,513.908 feet.)

X 6.—About 1.3 miles north along the Southern Pacific Co. railroad from **Phoenix**, Jackson County, on the east side of the track, in the top of concrete culvert No. 438 B. A standard disk, stamped "X 6 1920." (451.886 meters or 1,482.563 feet.)

U 6.—About 2.4 miles north along the Southern Pacific Co. railroad from **Phoenix**, Jackson County, about 0.6 mile north of **Voorhies**, near mileage 439.4, 325 feet east of the track, at Pacific Highway mileage 313.25, in the northwest corner of a highway culvert. A standard disk, stamped "U 6 1920." (434.690 meters or 1,426.145 feet.)

NOTE.—It was reported that this culvert has been reconstructed and the bench mark has been moved to a pedestal near the southwest corner, at the same elevation.

Y 6=1376 (U. S. G. S.).—At **Medford**, Jackson County, at the southeast corner of Front and East Main Streets, in the west face of the Nash Hotel, and just south of the corner entrance to a small store. A United States Geological Survey standard disk, stamped "1376 B 1903" and set vertically. (419.750 meters or 1,377.130 feet.)

Z 6.—At **Medford**, Jackson County, on the north side of West Sixth Street, at the east end of the main entrance to the post office, in the lower step, and 8 inches from the wall. A standard disk, stamped "Z 6 1920." (421.288 meters or 1,382.176 feet.)

J 7.—At **Medford**, Jackson County, about 165 feet south of the Southern Pacific Co. station, east of the concrete platform, at the north line of East Sixth Street, in the southwest corner of the lawn. A standard disk, stamped "J 7 1920" and set in the top of a concrete post. (419.101 meters or 1,375.001 feet.)

For additional bench marks in the vicinity of Medford, see page 219.

K 7=1292 (U. S. G. S.).—About 0.7 mile south along the Southern Pacific Co. railroad from **Central Point**, Jackson County, and about 1,200 feet south of milepost 445, at a road crossing, on the east side of the track, at the south edge of the road. A United States Geological Survey standard cap, stamped "1292 B 1903" and riveted on the top of a 3½-inch iron pipe. (394.163 meters or 1,293.183 feet.)

L 7.—At **Central Point**, Jackson County, about 1,000 feet north of the Southern Pacific Co. station, and 100 feet south of the main street crossing, on the west side of the passing track, on the northwest corner of culvert No. 445 D. A standard disk, stamped "L 7 1920." (387.575 meters or 1,271.569 feet.)

M 7=1214 (U. S. G. S.).—About 2 miles north along the Southern Pacific Co. railroad from **Central Point**, Jackson County, 75 feet north of the station sign at **Seven Oaks**, south of a road crossing, 50 feet west of the Pacific Highway and 10 feet east of the track. A United States Geological Survey standard cap, stamped "1214 B 1903" and riveted on the top of a 3½-inch iron pipe. (370.474 meters or 1,215.463 feet.)

NOTE.—This bench mark is also a reference mark for a Coast and Geodetic Survey astronomic station.

N 7.—About 0.5 mile south along the Southern Pacific Co. railroad from **Tolo**, Jackson County, at mileage 449.7, at the Pacific Highway viaduct over the track, in the base of the northwest support, 6 feet west of the rail, and 4 inches from the horizontal support. A standard disk, stamped "N 7 1920." (360.398 meters or 1,182.406 feet.)

O 7=1164 (U. S. G. S.).—About 0.5 mile north along the Southern Pacific Co. railroad from **Tolo**, Jackson County, 150 feet south of old red milepost 452, north of culvert No. 450 F, on the east side of the track, near a pole. A United States Geological Survey standard cap, stamped "1164 B 1903" and riveted on the top of a 3½-inch iron pipe. (355.255 meters or 1,165.532 feet.)

P 7.—At **Ray Gold**, Jackson County, 15 feet north of the Southern Pacific Co. station sign, on the west side of the track, in a large granite boulder. A standard disk, stamped "P 7 1920." (355.751 meters or 1,167.160 feet.)

Q 7=1137 (U. S. G. S.).—About 2.3 miles northwest along the Southern Pacific Co. railroad from **Ray Gold**, Jackson County, about 1,400 feet east of milepost 454, 200 feet west of a switch, and 15 feet north of the track. A United

States Geological Survey standard cap, stamped "1137 B 1903" and riveted on the top of a 3½-inch iron pipe. (346.964 meters or 1,138.331 feet.)

1085 (O. S. H. D.).—At **Gold Hill**, Jackson County, about 1,600 feet east of the Southern Pacific Co. station, at the southwest corner of the Pacific Highway concrete bridge over Rogue River, in the curb. An Oregon State Highway Department standard disk, stamped "1085 1927." (330.785 meters or 1,085.251 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon State Highway Department in 1927.

R 7.—At **Gold Hill**, Jackson County, about 1,500 feet east of the Southern Pacific Co. station, 125 feet north of the railroad bridge over Rogue River, and 175 feet north of the Pacific Highway, in the south concrete retaining wall west of the old highway bridge. A standard disk, stamped "R 7 1920." (329.988 meters or 1,082.636 feet.)

S 7=1084 (U. S. G. S.).—At **Gold Hill**, Jackson County, 25 feet west of the west end of the Southern Pacific Co. station, and 42 feet north of the main track. A United States Geological Survey standard cap, stamped "1084 B 1903" and riveted on the top of a 3½-inch iron pipe. (330.754 meters or 1,085.149 feet.)

T 7.—About 1.5 miles west along the Southern Pacific Co. railroad from **Gold Hill**, Jackson County. (321.103 meters or 1,053.485 feet.)

NOTE.—This bench mark was searched for in 1923 but was not recovered.

U 7=1049 (U. S. G. S.).—About 2.5 miles west along the Southern Pacific Co. railroad from **Gold Hill**, Jackson County, about 0.3 mile west of **Rock Point** station, 275 feet west of structure No. 459 A, and 20 feet north of the track. A United States Geological Survey standard cap, stamped "1049 B 1903" and riveted on the top of a 3½-inch iron pipe. (320.085 meters or 1,050.146 feet.)

V 7=1018 (U. S. G. S.).—About 5.5 miles west along the Southern Pacific Co. railroad from **Gold Hill**, Jackson County, at mileage 462.7, and 10 feet north of the track. A United States Geological Survey standard cap, stamped "1018 B 1903" and riveted on the top of a 3½-inch iron pipe. (310.746 meters or 1,019.506 feet.)

W 7.—About 0.7 mile south along the Southern Pacific Co. railroad from **Rogue River**, Jackson County, 200 feet north of semaphore No. 464.2, on culvert No. 464 B, and 10 feet east of the track. A standard disk, stamped "W 7 1920." (304.593 meters or 999.319 feet.)

X 7=993 (U. S. G. S.).—About 0.5 mile west along the Southern Pacific Co. railroad from **Rogue River**, Jackson County, near a private road crossing, and 20 feet north of the track. A United States Geological Survey standard cap, stamped "993 B 1903" and riveted on the top of a 3½-inch iron pipe. (303.048 meters or 994.250 feet.)

Y 7.—In Josephine County, about 3.5 miles west along the Southern Pacific Co. railroad from **Rogue River**, Jackson County, at the Jackson-Josephine county line, 20 feet west of the sign, and 30 feet north of the track, on a large rock. A standard disk, stamped "Y 7 1920." (304.513 meters or 999.056 feet.)

Z 7=945 (U. S. G. S.).—About 2.2 miles east along the Southern Pacific Co. railroad from **Grants Pass**, Josephine County, about 1,600 feet east of milepost 472, 200 feet east of structure No. 471 F, and 25 feet north of the track. A United States Geological Survey standard cap, stamped "945 B 1903" and riveted on the top of a 3½-inch iron pipe. (288.452 meters or 946.363 feet.)

A 8.—At **Grants Pass**, Josephine County, 150 feet east of the Southern Pacific Co. station, and 40 feet south of the track, on the north side of the water tank between the two center supports. A standard disk, stamped "A 8 1920." (285.498 meters or 936.671 feet.)

B 8.—At **Grants Pass**, Josephine County, 50 feet east of the southeast corner of the courthouse, and 6 feet from the inside edge of the sidewalk. A standard disk, stamped "B 8 1920" and set in the top of a concrete post. (288.847 meters or 947.659 feet.)

C 8=956 (U. S. G. S.).—At **Grants Pass**, Josephine County, at the southwest corner of the Central School, in the west face of the building. A United States Geological Survey standard disk, stamped "956 B 1903" and set vertically. (291.651 meters or 956.858 feet.)

D 8.—At **Grants Pass**, Josephine County, on the campus of the senior high school, 125 feet north of A Street, and 75 feet east of the walk leading to the

main entrance. A standard magnetic-station disk, set in the top of a stone post. (289.336 meters or 949.263 feet.)

NOTE.—This bench mark was lowered 0.53 foot by the city engineer. It is now a few inches underground, 105.8 feet due north of a 1½-inch iron pipe which is in the north line of A Street and 105 feet west of the west line of the Jenning subdivision at an elevation of 948.73 feet.

For additional bench marks in the vicinity of Grants Pass, see page 206.

E 8.—About 2.5 miles north along the Southern Pacific Co. railroad from **Grants Pass**, Josephine County, at **Granite**, about 1,000 feet north of a gravel pit, 500 feet north of culvert No. 476 A, and 50 feet west of the track, at the property line. A standard disk, stamped "E 8 1920" and set in the top of a concrete post. (332.036 meters or 1,089.355 feet.)

F 8=1218 (U. S. G. S.).—About 4 miles north along the Southern Pacific Co. railroad from **Grants Pass**, Josephine County, at mileage 477.9, 100 feet south of culvert No. 477 I, and 15 feet east of the track. A United States Geological Survey standard cap, stamped "1218 B 1903" and riveted on the top of a 3½-inch iron pipe. (371.474 meters or 1,218.744 feet.)

G 8.—About 6.6 miles north along the Southern Pacific Co. railroad from **Grants Pass**, Josephine County, about 2,500 feet south of milepost 481, 30 feet south of a county road crossing, and 15 feet east of the track, on culvert No. 480 G. A standard disk, stamped "G 8 1920." (323.741 meters or 1,062.140 feet.)

H 8=1050 (U. S. G. S.).—About 6.8 miles north along the Southern Pacific Co. railroad from **Grants Pass**, Josephine County, about 1,500 feet south of milepost 481, 40 feet from a county road, and 15 feet east of the track. A United States Geological Survey standard cap, stamped "1050 B 1903" and riveted on the top of a 3½-inch iron pipe. (320.365 meters or 1,051.064 feet.)

J 8.—About 1 mile south along the Southern Pacific Co. railroad from **Merlin**, Josephine County, on the east side of the track, in the base of distant block signal No. 4816. A spike. (295.894 meters or 970.779 feet.)

NOTE.—It was reported in 1931 that this bench mark had probably been covered with cement.

I 8.—At **Merlin**, Josephine County, 400 feet north of the Southern Pacific Co. station, and 6 feet east of the track, in the southeast corner of the bridge over Louise Creek. A standard disk, stamped "I 8 1920." (276.330 meters or 906.593 feet.)

K 8=1252 (U. S. G. S.).—About 0.5 mile south along the Southern Pacific Co. railroad from **Hugo**, Josephine County, at mileage 486.8, at a county road crossing, 15 feet east of the track, and 2 feet from the sign. A United States Geological Survey standard cap, stamped "1252 B 1903" and riveted on the top of a 3½-inch iron pipe. (382.029 meters or 1,253.373 feet.)

L 8.—About 1,000 feet north along the Southern Pacific Co. railroad from the station at **Hugo**, Josephine County, about 100 feet west of a tool house, and 10 feet east of the track, in the top of culvert No. 487 E. A standard disk, stamped "L 8 1920." (396.348 meters or 1,300.352 feet.)

M 8.—About 1.7 miles north along the Southern Pacific Co. railroad from **Hugo**, Josephine County, at mileage 489.1, and 10 feet east of the track, in the top of culvert No. 489 C. The top of a bolt. (436.159 meters or 1,430.965 feet.)

N 8.—About 0.5 mile north along the Southern Pacific Co. railroad from **Leland**, Josephine County, and 6 feet east of the track, on culvert No. 494 D. A standard disk, stamped "N 8 1920." (359.531 meters or 1,179.561 feet.)

O 8=1098 (U. S. G. S.).—About 1.3 miles north along the Southern Pacific Co. railroad from **Leland**, Josephine County, at mileage 495.4, and 60 feet south of the viaduct over Grave Creek, on the east side of the track. A United States Geological Survey standard cap, stamped "1098 B 1903" and riveted on the top of a 3½-inch iron pipe. (334.916 meters or 1,098.804 feet.)

P 8.—About 1¼ miles southwest along the Southern Pacific Co. railroad from **Wolf Creek**, Josephine County, opposite culvert No. 500 A, 50 feet southwest of block signal No. 5003, and 25 feet northwest of the track, in a rock outcrop. The top of a bolt. (371.430 meters or 1,218.600 feet.)

R 8=1289 (U. S. G. S.).—At **Wolf Creek**, Josephine County, 400 feet west of the Southern Pacific Co. station, on the south side of the track, opposite

culvert No. 501 F, and 2 feet north of the Pacific Highway pavement. A United States Geological Survey standard cap, stamped "1289 B 1903" and riveted on the top of a 3½-inch iron pipe. (393.349 meters or 1,290.512 feet.)

NOTE.—This bench mark was probably moved about 1922. The following elevation was determined from Coast and Geodetic Survey leveling in 1931. (393.335 meters or 1,290.467 feet.)

C 76.—At the east edge of **Wolf Creek**, Josephine County, 350 feet west of the Southern Pacific Co. station, 65 feet east of culvert No. 501 F, 30 feet south of a road, and 6 feet west of the rail fence around the section house. A standard disk, stamped "C 76 1931" and set in the top of a concrete post. (392.744 meters or 1,288.528 feet.)

RX 8.—At **Wolf Creek**, Josephine County, in front of the Wolf Creek Tavern, on the east side of the cement foundation of the flagpole. A standard disk, stamped "RX 8 1931." (388.820 meters or 1,275.654 feet.)

1276 (U. S. G. S.).—At **Wolf Creek**, Josephine County, at the Wolf Creek Tavern, 25 feet west of the center line of the road, and 2 feet east of the east fence, near the corner of the yard. A United States Geological Survey standard cap, stamped "G 1276" and riveted on the top of a 3½-inch iron pipe cased in concrete. (389.024 meters or 1,276.323 feet.)

1269 (O. S. H. D.).—At **Wolf Creek**, Josephine County, about 500 feet south of the Wolf Creek Tavern, at the north end of the Wolf Creek bridge, in the west wing wall. A copper bolt. (386.674 meters or 1,268.613 feet.)

Q 8.—About ¼ mile north along the Southern Pacific Co. railroad from **Wolf Creek**, Josephine County, on undergrade crossing No. 503 B, and 3 feet east of the track. A standard disk, stamped "Q 8 1920." (423.020 meters or 1,387.858 feet.)

S 8.—About ¼ mile south along the Southern Pacific Co. railroad from **Glendale**, Douglas County, 230 feet south of a private road crossing, and 6 feet east of the track, in the top of culvert No. 506 G. The top of a bolt. (468.106 meters or 1,535.778 feet.)

SX 8 (S. P.).—About ¼ mile south along the Southern Pacific Co. railroad from **Glendale**, Douglas County, 230 feet south of a private-road crossing, and 6 feet east of the track, in the top of culvert No. 506 G, very near S 8 described above. (468.105 meters or 1,535.776 feet.)

B 9=1425 (U. S. G. S.).—About ¼ mile south along the Southern Pacific Co. railroad from the station at **Glendale**, Douglas County, on the south side of the main road, and 35 feet west of the main track. A United States Geological Survey standard cap, stamped "1425 B 1903" and riveted on the top of a 3½-inch iron pipe. (433.450 meters or 1,422.077 feet.)

NOTE.—This bench mark was loose and leaning in 1920. It was reset before being leveled upon by the Coast and Geodetic Survey party.

T 8.—At **Glendale**, Douglas County, 200 feet north of the Southern Pacific Co. station, and 15 feet east of the track, in the southwest center support of the railroad oil tank. A standard disk, stamped "T 8 1920." (432.156 meters or 1,417.832 feet.)

U 8=1366 (U. S. G. S.).—About 2.7 miles north along the Southern Pacific Co. railroad from **Glendale**, Douglas County, at mileage 510.6, at a private road crossing, and 25 feet east of the track. A United States Geological Survey standard cap, stamped "1366 B 1903" and riveted on the top of a 3½-inch iron pipe. (416.765 meters or 1,367.336 feet.)

V 8=1288 (U. S. G. S.).—About 5¼ miles north along the Southern Pacific Co. railroad from **Glendale**, Douglas County, about 0.4 mile south of tunnel No. 7, at mileage 513.8, 33 feet south of structure No. 513 F, and 25 feet east of the track. A United States Geological Survey standard cap, stamped "1288 B 1903" and riveted on the top of a 3½-inch iron pipe. (392.845 meters or 1,288.859 feet.)

NOTE.—It was reported in 1928 that this bench mark had been destroyed.

W 8.—About 1.3 miles south along the Southern Pacific Co. railroad from **Brandt**, Douglas County, near mileage 515.15, on the west head wall of concrete culvert No. 515 B. A standard disk, stamped "W 8 1920." (377.365 meters or 1,238.072 feet.)

NOTE.—It was reported in 1930 that this bench mark had been covered.

WX 8 (S. P.).—About 1.3 miles south along the Southern Pacific Co. railroad from **Brandt**, Douglas County, near mileage 515.15, 872 feet north of milepost 515, and 16 feet east of the center line of the main track, in the east head wall

of culvert No. 515 B. A United States Geological Survey standard disk. (377.355 meters or 1,238.039 feet.)

NOTE.—This bench mark was established and its elevation determined by the Southern Pacific Co. in 1930.

X 8=1188 (U. S. G. S.).—At **Brandt**, Douglas County, about 400 feet north of the Southern Pacific Co. station sign, near culvert No. 516 F, and 30 feet east of the track, at the foot of the path leading to the Banner mine. A United States Geological Survey standard cap, stamped "1188 B 1903" and riveted on the top of a 3½-inch iron pipe. (362.218 meters or 1,188.377 feet.)

Y 8.—About 2.7 miles south along the Southern Pacific Co. railroad from **West Fork**, Douglas County, about 300 feet north of milepost 519, and 10 feet east of the track, in a rock. A standard disk, stamped "Y 8 1920." (342.818 meters or 1,124.729 feet.)

Z 8=1099 (U. S. G. S.).—About 2 miles south along the Southern Pacific Co. railroad from **West Fork**, Douglas County, 90 feet north of semaphore No. 5197, and 10 feet east of the track. A United States Geological Survey standard cap, stamped "1099 B 1903" and riveted on the top of a 3½-inch iron pipe. (335.284 meters or 1,100.011 feet.)

A 9.—About 0.6 mile south along the Southern Pacific Co. railroad from **West Fork**, Douglas County, about 500 feet north of milepost 521, and 10 feet east of the track, in the abutment at the north corner of bridge No. 521 A over Cow Creek. The top of a bolt. (313.606 meters or 1,028.889 feet.)

AX 9 (S. P.).—About 0.6 mile south along the Southern Pacific Co. railroad from **West Fork**, Douglas County, about 500 feet north of milepost 521, and 10½ feet east of the track, in the abutment at the north corner of bridge No. 521 A over Cow Creek, close to A 9 described above. A United States Geological Survey standard disk. (313.600 meters or 1,028.871 feet.)

C 9=930 (U. S. G. S.).—At **Cow Creek**, Douglas County, near the Southern Pacific Co. station sign, and 6 inches west of the west rail of the main track. A United States Geological Survey standard cap, stamped "930 B 1903" and riveted on the top of a 3½-inch iron pipe. (283.830 meters or 931.199 feet.)

NOTE.—This bench mark was covered with ballast in 1928. It may still be recovered by digging away the ballast.

CX 9 (S. P.).—At **Cow Creek**, Douglas County, about 900 feet north of the Southern Pacific Co. station sign, 812 feet north of bench mark C 9, at mileage 525.8, and 9 feet west of the center line of the main track, in the south end of the west head wall of culvert No. 525 H. A United States Geological Survey standard disk. (282.972 meters or 928.385 feet.)

NOTE.—This bench mark was established and its elevation determined by the Southern Pacific Co. in 1928.

D 9.—About 1.1 miles north along the Southern Pacific Co. railroad from **Cow Creek**, Douglas County, and about 1,500 feet south of milepost 527, on culvert No. 526 D. A standard disk, stamped "D 9 1920." (276.554 meters or 907.328 feet.)

E 9.—About 1.7 miles south along the Southern Pacific Co. railroad from **Peck**, Douglas County, about 1 mile south of tunnel No. 1, about ¼ mile south of milepost 530, 150 feet south of the station sign at **Table Creek**, and 2 feet east of the track, in the north abutment of the bridge over Table Creek. A standard disk, stamped "E 9 1920." (260.420 meters or 854.395 feet.)

853 (U. S. G. S.).—About 1.6 miles south along the Southern Pacific Co. railroad from **Peck**, Douglas County, at mileage 529.8, about 1 mile south of tunnel No. 1, 430 feet northeast of the bridge over Table Creek, at the toe of a side-hill cut, and 12 feet north of the track. A United States Geological Survey standard cap, stamped "853 B 1903" and riveted on the top of a 3½-inch iron pipe. (260.279 meters or 853.931 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Southern Pacific Co. in 1932.

F 9.—About 1 mile south along the Southern Pacific Co. railroad from **Byers**, Douglas County, 750 feet east of semaphore 534.1, near mileage 534.15, and about 9 feet north of the center line of the track, on the top of the concrete head wall of a corrugated iron pipe culvert. The top of a bolt. (243.992 meters or 800.497 feet.)

FX 9 (S. P.).—About 1.3 miles south along the Southern Pacific Co. railroad from **Byers**, Douglas County, 750 feet east of semaphore 534.1, near mileage 534.15, and about 9 feet north of the center line of the track, on the top of the concrete head wall of a corrugated iron pipe culvert, very near to **F 9** described above. A United States Geological Survey standard disk. (243.987 meters or 800.482 feet.)

793 (U. S. G. S.).—About 0.8 mile south along the Southern Pacific Co. railroad from **Byers**, Douglas County, 325 feet north of semaphore No. 5346, 100 feet south of culvert No. 534 I, and 15 feet east of the track. A United States Geological Survey standard cap, stamped "793 B 1903" and riveted on the top of a 3½-inch iron pipe. (241.891 meters or 793.604 feet.)

G 9=752 (U. S. G. S.).—About 2.2 miles north along the Southern Pacific Co. railroad from **Byers**, Douglas County, at mileage 537.7, about 425 feet north of semaphore No. 5376, 225 feet north of a private road crossing, 100 feet north of culvert No. 537 G, and 40 feet east of the track. A United States Geological Survey standard cap, stamped "752 B 1903" and riveted on the top of a 3½-inch iron pipe. (229.538 meters or 753.076 feet.)

H 9.—About 5.5 miles southwest along the Southern Pacific Co. railroad from **Riddle**, Douglas County, at mileage 538.7, 100 feet south of culvert No. 538 C, and 10 feet east of the track, in an outcropping rock. A standard disk, stamped "H 9 1920." (227.884 meters or 747.649 feet.)

I 9=721 (U. S. G. S.).—About 3.9 miles southwest along the Southern Pacific Co. railroad from **Riddle**, Douglas County, 364 feet northeast of **Cornutt** station, at mileage 540.3, 62 feet southwest of a prune drier, on the north side of the track, 25 feet outside of the fence line, and 12 feet northeast of a creek. A United States Geological Survey standard cap, stamped "721 B 1903" and riveted on the top of a 3½-inch iron pipe. (220.060 meters or 721.980 feet.)

J 9.—About 0.6 mile southwest along the Southern Pacific Co. railroad from **Riddle**, Douglas County, on the northwest side of the track, opposite culvert No. 543 F, on a culvert under a county road. The top of an iron bolt. (217.458 meters or 713.443 feet.)

K 9=705 (U. S. G. S.).—At **Riddle**, Douglas County, in front of Hotel **Riddle**, 30 feet west of the face of the building, at the edge of the walk. A United States Geological Survey standard cap, stamped "705 B 1903" and riveted on the top of a 3½-inch iron pipe. (215.181 meters or 705.973 feet.)

L 9.—About 1,050 feet north along the Southern Pacific Co. railroad from the station at **Riddle**, Douglas County, and 10 feet east of the track, on culvert No. 544 C. A standard disk, stamped "L 9 1920." (214.895 meters or 705.035 feet.)

M 9=642 (U. S. G. S.).—About 3.5 miles north along the Southern Pacific Co. railroad from **Riddle**, Douglas County, near mileage 547.7, 30 feet north of structure No. 547 E, and 28 feet west of the track. A United States Geological Survey standard cap, stamped "642 B 1903" and riveted on the top of a 3½-inch iron pipe. (195.772 meters or 642.295 feet.)

N 9.—About 1,500 feet south along the Southern Pacific Co. railroad from the station at **Myrtle Creek**, Douglas County, and 10 feet west of the track, in the abutment at the southwest corner of the bridge over South Umpqua River. A standard disk, stamped "N 9 1920." (187.005 meters or 613.532 feet.)

O 9=612 (U. S. G. S.).—At **Myrtle Creek**, Douglas County, opposite the Southern Pacific Co. station, and 30 feet east of the track. A United States Geological Survey standard cap, stamped "612 B 1903" and riveted on the top of a 3½-inch iron pipe. (186.779 meters or 612.791 feet.)

639 (U. S. G. S.).—In the north part of **Myrtle Creek**, Douglas County, at the southeast corner of the Pacific Highway bridge over the Southern Pacific Co. track and South Umpqua River, in the concrete curb. A United States Geological Survey standard disk, stamped "639." (194.834 meters or 639.218 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Oregon State Highway Department in 1925.

P 9.—About 3.1 miles north along the Southern Pacific Co. railroad from **Myrtle Creek**, Douglas County, at mileage 553.5, on the east side of the track, on culvert No. 553 F. A standard disk, stamped "P 9 1920." (178.741 meters or 586.419 feet.)

Q 9.—About 0.9 mile north along the Southern Pacific Co. railroad from **Dole**, Douglas County, at mileage 555.4, and 200 feet south of semaphore No.

5555, south of the main road crossing, on the west side of the track, in an outcrop of bedrock. A standard disk, stamped "Q 9 1920." (176.006 meters or 577.446 feet.)

R 9=570 (U. S. G. S.).—About 0.9 mile south along the Southern Pacific Co. railroad from **Round Prairie**, Douglas County, at mileage 556.8, and about 490 feet south of a private road crossing, on the east side of the track near the fence line. A United States Geological Survey standard cap, stamped "570 B 1903" and riveted on the top of a 3½-inch iron pipe. (173.897 meters or 570.527 feet.)

S 9=553 (U. S. G. S.).—About 2¼ miles southeast along the Southern Pacific Co. railroad from **Dillard**, Douglas County, just west of a private road crossing, near the east end of a long tangent, on the north side of the track, and 100 feet north of Pacific Highway mileage 211.2. A United States Geological Survey standard cap, stamped "553 B 1903" and riveted on the top of a 3½-inch iron pipe. (168.643 meters or 553.290 feet.)

T 9.—About 1.5 miles southeast along the Southern Pacific Co. railroad from **Dillard**, Douglas County, near railroad mileage 560.5, just southwest of a railroad culvert, and near Pacific Highway mileage 210.25, on the northeast end of a highway culvert. A standard disk, stamped "T 9 1920." (163.012 meters or 534.815 feet.)

For additional bench marks in the vicinity of **Dillard**, see page 239.

U 9=512 (U. S. G. S.).—About 0.9 mile north along the Southern Pacific Co. railroad from **Dillard**, Douglas County, at mileage 562.9, about 670 feet north of semaphore No. 5627, and near a private road crossing, on the west side of the track, at the fence line. A United States Geological Survey standard cap, stamped "512 B 1903" and riveted on the top of a 3½-inch iron pipe. (156.389 meters or 513.086 feet.)

V 9=558 (U. S. G. S.).—About 0.7 mile south along the Southern Pacific Co. railroad from **Carnes**, Douglas County, at mileage 565.6, at a county road crossing, and 25 feet east of the track. A United States Geological Survey standard cap, stamped "558 B 1903" and riveted on the top of a 3½-inch iron pipe. (170.401 meters or 559.057 feet.)

X 9.—About 0.6 mile south along the Southern Pacific Co. railroad from **Green**, Douglas County, at mileage 567.1, on the east side of the track, in the north concrete abutment of culvert No. 567 B. A standard disk, stamped "X 9 1920." (155.955 meters or 511.662 feet.)

W 9=501 (U. S. G. S.).—About 1 mile north along the Southern Pacific Co. railroad from **Green**, Douglas County, at mileage 568.7, about 500 feet south of the Pacific Highway crossing, just west of a county road leading south from the highway, and 25 feet east of the track. A United States Geological Survey standard cap, stamped "501 B 1903" and riveted on the top of a 3½-inch iron pipe. (152.935 meters or 501.754 feet.)

Z 9.—About 2.7 miles south along the Southern Pacific Co. railroad from **Roseburg**, Douglas County, at railroad mileage 569.7, and about 100 feet northeast of a railroad culvert, at Pacific Highway mileage 201.8, in the top of the south head wall of a concrete highway culvert. A standard disk, stamped "Z 9 1920." (147.641 meters or 484.386 feet.)

Y 9=464 (U. S. G. S.).—At **Roseburg**, Douglas County, at the northeast corner of West Oak and North Pine Streets, in the sidewalk near the curb. A United States Geological Survey standard cap, stamped "464 B 1903" and "463.40" and riveted on the top of a 3½-inch iron pipe. (141.459 meters or 464.103 feet.)

NOTE.—It was reported that this bench mark appeared to have been reset at the time the sidewalk was constructed.

A 10.—At **Roseburg**, Douglas County, west of the entrance to the courthouse, 130 feet east of the curb of North Main Street, and 22 feet north of the curb of East Douglas Street, in the lawn. A standard disk, stamped "A 10 1920" and set in the top of a stone post lettered "USGS" on the four corners. The stone is about 6 inches below the surface of the ground and is surrounded by a small concrete curb. (145.617 meters or 477.745 feet.)

B 10.—At **Roseburg**, Douglas County, at the northeast corner of West Cass and North Stephens Streets, in the southwest corner of the post-office yard, and about 3 feet from the property lines of the two streets. A lead plug, set in the top of a concrete post flush with the ground. (146.062 meters or 479.205 feet.)

C 10.—About 1.7 miles north along the Southern Pacific Co. railroad from **Roseburg**, Douglas County, 250 feet north of the station platform at **Edenbower**, and 15 feet west of the center line of the main track at mileage 574.2, in the top of culvert No. 574 B. A standard disk, stamped "C 10 1920." (143.377 meters or 470.396 feet.)

500 (U. S. G. S.).—About 2 miles north along the Southern Pacific Co. railroad from **Roseburg**, Douglas County, about 0.4 mile north of **Edenbower**, about 500 feet south of the crossing of a road leading to an airport, 305 feet south of semaphore 5746, near the north end of a shallow cut, and 20 feet west of the track. A United States Geological Survey standard cap, stamped "500 B 1903" and riveted on the top of a 3½-inch iron pipe. (152.610 meters or 500.688 feet.)

D 10.—About 0.5 mile south along the Southern Pacific Co. railroad from **Winchester**, Douglas County, and about 160 feet east of the track, at Pacific Highway mileage 194.6, in the parapet at the northwest corner of a highway culvert. A standard disk, stamped "D 10 1920." (149.337 meters or 489.950 feet.)

E 10=472 (U. S. G. S.).—About ¼ mile south along the Southern Pacific Co. railroad from **Winchester**, Douglas County, at mileage 577.5, approximately at Pacific Highway mileage 194.3, just west of the highway, and 30 feet east of the track, at the fence line. A United States Geological Survey standard cap, stamped "472 B 1903" and riveted on the top of a 3½-inch iron pipe. (144.216 meters or 473.149 feet.)

459.6 (U. S. G. S.).—About ¼ mile north along the Pacific Highway from **Winchester**, Douglas County, at the southwest corner of the concrete bridge over North Umpqua River, in the top of the wing wall. A United States Geological Survey standard disk, stamped "459.6." (140.195 meters or 459.956 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon State Highway Department in 1925.

449 (U. S. G. S.).—About ¼ mile northwest along the Southern Pacific Co. railroad from the station at **Winchester**, Douglas County, at the south end of the bridge over North Umpqua River, in the top of the concrete pier. A United States Geological Survey standard disk. (136.891 meters or 449.116 feet.)

NOTE.—This bench mark was established and its elevation determined by the Southern Pacific Co. in 1929.

F 10=497 (U. S. G. S.).—About 0.9 mile south along the Southern Pacific Co. railroad from **Wilbur**, Douglas County, at mileage 580.5, 160 feet north of culvert 580 E, and 30 feet east of the track, at the fence line. A United States Geological Survey standard cap, stamped "497 B 1903" and riveted on the top of a 3½-inch iron pipe. (151.684 meters or 497.650 feet.)

G 10.—At **Wilbur**, Douglas County, northeast of the Southern Pacific Co. station, 70 feet east of the track, at a gate leading into a section house, about 2 feet from the fence. A standard disk, stamped "G 10 1920" and set in the top of a concrete post. (142.248 meters or 466.692 feet.)

H 10=486 (U. S. G. S.).—About 2.7 miles south along the Southern Pacific Co. railroad from **Sutherlin**, Douglas County, about 1,000 feet south of the station at **Deady**, at railroad mileage 583.7, at Pacific Highway mileage 188.8, 25 feet west of the track, and 20 feet east of the highway. A United States Geological Survey standard cap, stamped "486 B 1903" and riveted on the top of a 3½-inch iron pipe. (148.260 meters or 486.416 feet.)

I 10.—At **Sutherlin**, Douglas County, 80 feet north of the Southern Pacific Co. station, 90 feet east of the track, on the north side of a street, and 18 inches from a lamp-post. A standard disk, stamped "I 10 1920." (157.815 meters or 517.765 feet.)

J 10=538 (U. S. G. S.).—About 0.4 mile north along the Southern Pacific Co. railroad from **Sutherlin**, Douglas County, at mileage 586.8, at the south edge of a road crossing, and 20 feet west of the center line of the track. A United States Geological Survey standard cap, stamped "538 B 1903" and riveted on the top of a 3½-inch iron pipe. (164.289 meters or 539.005 feet.)

L 10=429 (U. S. G. S.).—At **Oakland**, Douglas County, 150 feet east of the Southern Pacific Co. station, and 50 feet west of the center line of the Pacific Highway, south of the walk leading through the park to the station, close to the base of a metal trespass sign. A United States Geological Survey standard disk, stamped "PRIM TRAV STA 9 429 B 1903" and riveted on the top of a 3½-inch iron pipe. (130.930 meters or 429.560 feet.)

K 10.—At **Oakland**, Douglas County, about 1,200 feet north of the Southern Pacific Co. station, 215 feet south of the overhead crossing of the Pacific Highway, and 30 feet west of the track, in the top of the south end of the east abutment of an abandoned highway bridge which is now used as a retaining wall. A standard disk, stamped "K 10 1920." (130.032 meters or 426.613 feet.)

454 (U. S. G. S.).—In the north part of **Oakland**, Douglas County, at the southeast corner of the Pacific Highway viaduct over the Southern Pacific Co. Railroad and Calapooya Creek, in the concrete curb. A United States Geological Survey standard disk. (138.337 meters or 453.860 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon State Highway Department in 1925.

S 10=464 (U. S. G. S.).—About 3.6 miles north along the Southern Pacific Co. railroad from **Oakland**, Douglas County, at mileage 592.7, about 340 feet south of a wooden culvert, 25 feet east of the track, and 2 feet from the fence line. A United States Geological Survey standard cap, stamped "464 B 1903" and riveted on the top of a 3½-inch iron pipe. (141.592 meters or 464.540 feet.)

M 10=584 (U. S. G. S.).—About ¼ mile north along the Southern Pacific Co. railroad from **Isadora**, Douglas County, near semaphore No. 5956, at the east fence line. A United States Geological Survey standard cap, stamped "584 B 1903" and riveted on the top of a 3½-inch iron pipe. (178.222 meters or 584.717 feet.)

N 10.—At **Rice Hill**, Douglas County, 300 feet east of the Southern Pacific Co. station and 100 feet north of the track, on the top of the north edge of the turntable. A standard disk, stamped "N 10 1920." (216.608 meters or 710.655 feet.)

O 10=617 (U. S. G. S.).—About 1.1 miles north along the Southern Pacific Co. railroad from **Rice Hill**, Douglas County, at mileage 598.6, at a highway crossing, and 10 feet east of the track. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 8 617 B 1903 1917" and riveted on the top of a 3½-inch iron pipe. (188.269 meters or 617.679 feet.)

NOTE.—This bench mark was searched for in 1923 but was not recovered.

P 10=389 (U. S. G. S.).—About 2 miles south along the Southern Pacific Co. railroad from **Yoncalla**, Douglas County, at mileage 601.7, at the north end of a long curve, and 30 feet east of the track, at the fence line. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 7 389 B 1903 1917" and riveted on the top of a 3½-inch iron pipe. (118.748 meters or 389.592 feet.)

Q 10=329 (U. S. G. S.).—About 2 miles north along the Southern Pacific Co. railroad from **Yoncalla**, Douglas County, 100 feet south of block signal No. 6057, and 30 feet east of the track, at the fence line. A United States Geological Survey standard cap, stamped "329 B 1903" and riveted on the top of a 3½-inch iron pipe. (100.510 meters or 329.757 feet.)

R 10.—About 2.7 miles north along the Southern Pacific Co. railroad from **Yoncalla**, Douglas County, at railroad mileage 606.4, at Pacific Highway mileage 165.7, opposite railroad culvert No. 606 B, and 60 feet west of the track, in the east end of a highway culvert. A standard disk, stamped "R 10 1920." (101.945 meters or 334.465 feet.)

NOTE.—Reported destroyed.

T 10=298 (U. S. G. S.).—At **Drain**, Douglas County, about 500 feet north of the Southern Pacific Co. station, 20 feet west of the main track, and 60 feet east of the Pacific Highway. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 6 298 B 1903 1917" and riveted on the top of a 3½-inch iron pipe cased in concrete. (91.055 meters or 298.736 feet.)

303 (U. S. G. S.).—At **Drain**, Douglas County, about 500 feet north of the Southern Pacific Co. station, at the east edge of the Pacific Highway, on the top of the head wall of a culvert. A chiseled cross in a square. (92.596 meters or 303.793 feet.)

For additional bench marks in the vicinity of **Drain**, see page 175.

U 10.—About 1.7 miles north along the Southern Pacific Co. railroad from **Drain**, Douglas County, about 500 feet south of Pacific Highway milepost 161, at railroad mileage 610.7, and 8 feet west of the track, in the north abutment of bridge No. 610 G over Pass Creek. A standard disk, stamped "U 10 1920." (95.818 meters or 314.363 feet.)

V 10.—About $\frac{3}{4}$ mile north along the Southern Pacific Co. railroad from **Leona**, Douglas County, and 8 feet east of the track, on the abutment at the southeast corner of bridge No. 612 A over Pass Creek. A standard disk, stamped "V 10 1920." (99.762 meters or 327.302 feet.)

W 10.—About 0.5 mile south along the Southern Pacific Co. railroad from **Comstock**, Douglas County, and 22 feet west of the track, on the south column of the Pacific Highway overhead crossing. A standard disk, stamped "W 10 1920" and set vertically. (130.865 meters or 429.346 feet.)

X 10=438 (U. S. G. S.).—About 0.3 mile south along the Southern Pacific Co. railroad from **Comstock**, Douglas County, about 300 feet west of the Pacific Highway, 88 feet south of railroad culvert No. 617 D, and 30 feet east of the track, near a pole. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 4 438 B 1903 1917" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (133.600 meters or 438.319 feet.)

Y 10=676 (U. S. G. S.).—In Douglas County, about $\frac{1}{2}$ mile west along the Southern Pacific Co. railroad from **Divide**, Lane County, at mileage 620.9, about 1,000 feet west of the Douglas-Lane county line, and 15 feet north of the track. A United States Geological Survey standard cap, stamped "676 B 1903" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (206.384 meters or 677.111 feet.)

Z 10.—About 0.2 mile west along the Southern Pacific Co. railroad from **Divide**, Lane County, at mileage 621.7, and 25 feet south of the track, on the west end of the concrete drain culvert under the Pacific Highway overhead crossing. A standard disk, stamped "Z 10 1920." (225.656 meters or 740.340 feet.)

A 11=690 (U. S. G. S.).—About $1\frac{3}{4}$ miles northeast along the Southern Pacific Co. railroad from **Divide**, Lane County, at railroad mileage 623.6, at Pacific Highway mileage 147.9, 30 feet south of the highway, and 25 feet north of the track. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 3 690 B 1917" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (210.633 meters or 691.052 feet.)

B 11=640 (U. S. G. S.).—At **Cottage Grove**, Lane County, at the southwest corner of Sixth and Main Streets, in the second step of the First National Bank Building, in a small recess on the east side of the entrance. A United States Geological Survey standard disk, stamped "640 12 1917." (195.244 meters or 640.563 feet.)

C 11.—At **Cottage Grove**, Lane County, 100 feet east of the Southern Pacific Co. station, in the base of the southwest center support of the water tank. A standard disk, stamped "C 11 1920." (195.938 meters or 642.840 feet.)

D 11.—At **Saginaw**, Lane County, 100 feet southwest of the Southern Pacific Co. station, and 60 feet west of the track, in the parapet at the northeast corner of a Pacific Highway culvert. A standard disk, stamped "D 11 1920." (187.101 meters or 613.847 feet.)

E 11=603 (U. S. G. S.).—About 0.7 mile north along the Southern Pacific Co. railroad from **Saginaw**, Lane County, about 700 feet south of milepost 630, and 25 feet east of the track. A United States Geological Survey standard cap, stamped "603 B 1903" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (183.950 meters or 603.509 feet.)

F 11=572 (U. S. G. S.).—About $2\frac{3}{4}$ miles south along the Southern Pacific Co. railroad from **Creswell**, Lane County, at railroad mileage 632.6, at Pacific Highway mileage 138.7, 300 feet north of railroad culvert No. 632 E, 106 feet south of a private road crossing, 100 feet east of the highway, and 25 feet east of the track. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 2 572 B 1917" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (174.652 meters or 573.004 feet.)

G 11.—At **Creswell**, Lane County, 100 feet west of the Southern Pacific Co. track, on the north side of the street, in the vertical face of a column of the city sign which arches across the street. A standard disk, stamped "G 11 1920." (165.606 meters or 543.326 feet.)

H 11=513 (U. S. G. S.).—About 3.1 miles north along the Southern Pacific Co. railroad from **Creswell**, Lane County, at mileage 638.6, about 900 feet south of a road crossing, and 10 feet west of the track. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 1 513 B 1903 1917" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (156.540 meters or 513.582 feet.)

I 11.—At **Goshen**, Lane County, 150 feet south of the Southern Pacific Co. station, and 20 feet east of the track, on the west side of the Pacific Highway, in the southwest center concrete block which formerly supported a water

tank. A standard disk, stamped "I 11 1920." (152.274 meters or 499.586 feet.)

J 11=493 (U. S. G. S.).—About 0.8 mile north along the Southern Pacific Co. railroad from **Goshen**, Lane County, at mileage 641.7, 280 feet north of culvert No. 641 E, and 25 feet west of the track. A United States Geological Survey standard cap, stamped "493 B 1903" and riveted on the top of a 3½-inch iron pipe. (150.622 meters or 494.166 feet.)

NOTE.—This bench mark is also a United States Geological Survey primary traverse station.

K 11=446 (U. S. G. S.).—About 3 miles east along the Southern Pacific Co. railroad from **Eugene**, Lane County, at **Springfield Junction**, 100 feet southwest of the station, and 30 feet south of the Siskiyou line track. A United States Geological Survey standard cap, stamped "446 B 1903" and riveted on the top of a 3½-inch iron pipe. (136.376 meters or 447.427 feet.)

442 (O. G. B.).—About 3 miles east along the Southern Pacific Co. railroad from **Eugene**, Lane County, at **Springfield Junction**, and 100 feet east of the station, on the north end of culvert No. 644 A under the Siskiyou line. The center of the circle in the figure "9." (134.797 meters or 442.245 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Oregon Geographic Board in 1927.

L 11.—About 1.5 miles east along the Southern Pacific Co. railroad from the station at **Eugene**, Lane County, 70 feet south of the east city gate on the Pacific Highway, and 15 feet north of the track, in the top of railroad concrete culvert No. 645 B. A standard disk, stamped "L 11 1920." (136.880 meters or 449.080 feet.)

M 11=449 (U. S. G. S.).—At **Eugene**, Lane County, on the University of Oregon campus, at the northeast corner of Villard Hall, in the north face of the building, and 2 inches below the date "1885." A United States Geological Survey standard disk, stamped "449 B 1903" and set vertically. (137.039 meters or 449.602 feet.)

N 11.—At **Eugene**, Lane County, at the post office, at the left of the side entrance, in the top of the lower step. A standard disk, stamped "N 11 1920." (123.528 meters or 421.679 feet.)

O 11.—At **Eugene**, Lane County, at the southwest corner of the Ferry Street bridge over Willamette River, 6 feet from the railing, in the top of the retaining wall of the abutment. A standard disk, stamped "O 11 1920." (130.858 meters or 429.323 feet.)

For additional bench marks in the vicinity of Eugene, see page 113.

P 11=407 (U. S. G. S.).—About 1.4 miles northwest along the Southern Pacific Co. railroad from **Eugene**, Lane County, about 0.5 mile south of **Eugene Yard**, at mileage 648.8, and 25 feet east of the track. A United States Geological Survey standard cap, stamped "407 B 1903" and riveted on the top of a 3½-inch iron pipe. (124.249 meters or 407.640 feet.)

PX 11 (U. S. G. S.).—At **Eugene Yard**, Lane County, about 850 feet southwest of the Southern Pacific Co. main track, and about 450 feet northwest of the administration building, in a concrete footing for a steel water tank. A United States Geological Survey standard disk. (123.181 meters or 404.135 feet.)

NOTE.—This bench mark was established and its elevation determined by the Southern Pacific Co. in 1930.

Q 11.—About 1.3 miles south along the Southern Pacific Co. railroad from **Irving**, Lane County, at mileage 651.7, and 10 feet east of the track, in the top of concrete culvert No. 651 D. A standard disk, stamped "Q 11 1920." (117.498 meters or 385.491 feet.)

R 11=382 (U. S. G. S.).—About 0.8 mile south along the Southern Pacific Co. railroad from **Irving**, Lane County, at mileage 652.2, at a county road crossing, and 25 feet east of the track. A United States Geological Survey standard cap, stamped "382 B 1903" and riveted on the top of a 3½-inch iron pipe. (116.684 meters or 382.821 feet.)

S 11=363 (U. S. G. S.).—About 1.9 miles north along the Southern Pacific Co. railroad from **Irving**, Lane County, about 575 feet south of mileage 655, 25 feet east of the track, and 3 feet from a red pole. A United States Geological Survey standard cap, stamped "363 B 1903" and riveted on the top of a 3½-inch iron pipe. (110.908 meters or 363.871 feet.)

T 11.—About 2.8 miles north along the Southern Pacific Co. railroad from Irving, Lane County, at mileage 655.8, about 640 feet north of a road crossing, and 10 feet east of the track, in the top of concrete culvert No. 655 D. A standard disk, stamped "T 11 1920." (108.232 meters or 355.091 feet.)

U 11=340 (U. S. G. S.).—About 2.8 miles south along the Southern Pacific Co. railroad from Junction City, Lane County, at mileage 657.9, and 25 feet east of the track. A United States Geological Survey standard cap, stamped "340 B 1903" and riveted on the top of a 3½-inch iron pipe. (104.008 meters or 341.233 feet.)

V 11.—At Junction City, Lane County, about 400 feet east of the Southern Pacific Co. station, in the top of the southwest banister of a Pacific Highway culvert. A standard disk, stamped "V 11 1920." (99.445 meters or 326.262 feet.)

322 (O. S. H. D.).—At Junction City, Lane County, about 400 feet east of the Southern Pacific Co. station, in the southwest wing wall of a concrete culvert under the Pacific Highway. An Oregon State Highway Department standard disk, stamped "322 1927." (98.246 meters or 322.330 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon Geographic Board in 1927.

324 (O. G. B.).—At Junction City, Lane County, about 400 feet east of the Southern Pacific Co. station, on the north side of the Pacific Highway, 40 feet northwest of a concrete culvert, and 6 inches from the southwest corner of a frame building owned by Mr. J. P. Nielsen, on the concrete walk. A chiseled square. (98.714 meters or 323.864 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon Geographic Board in 1927.

W 11=319 (U. S. G. S.).—About 1.4 miles north along the Southern Pacific Co. railroad from Junction City, Lane County, 200 feet south of milepost 662, and 20 feet east of the track. A United States Geological Survey standard cap, stamped "319 B 1903" and riveted on the top of a 3½-inch iron pipe. (97.444 meters or 319.698 feet.)

X 11.—At Harrisburg, Linn County, 300 feet south of the Southern Pacific Co. station, and 30 feet west of the track, in the east part of the north parapet of a culvert under Smith Street. A standard disk, stamped "X 11 1920." (94.207 meters or 309.077 feet.)

Y 11=302 (U. S. G. S.).—About 2¾ miles north along the Southern Pacific Co. railroad from Harrisburg, Linn County, about 800 feet south of milepost 668, and 30 feet east of the track. A United States Geological Survey standard cap, stamped "302 B 1903" and riveted on the top of a 3½-inch iron pipe. (92.440 meters or 303.280 feet.)

A 12=291 (U. S. G. S.).—About 2.8 miles south along the Southern Pacific Co. railroad from Halsey, Linn County, 200 feet south of milepost 671, and 25 feet east of the track. A United States Geological Survey standard cap, stamped "291 B 1903" and riveted on the top of a 3½-inch iron pipe. (89.018 meters or 292.053 feet.)

B 12.—At Halsey, Linn County, about 0.3 mile southwest of the Southern Pacific Co. station, about 800 feet west of the track, and 100 feet west of the Pacific Highway, about opposite the middle of a short diagonal section of the highway, in the east end of a street culvert. A standard disk, stamped "B 12 1920." (86.546 meters or 283.943 feet.)

C 12=281 (U. S. G. S.).—At Halsey, Linn County, 100 feet north of the Southern Pacific Co. station, and 20 feet east of the main track. A United States Geological Survey standard cap, stamped "281 B 1903" and riveted on the top of a 3½-inch iron pipe. (85.961 meters or 282.024 feet.)

NOTE.—It was reported in 1931 that this bench mark had been covered due to the construction of a passing track.

D 12=266 (U. S. G. S.).—About 3.2 miles north along the Southern Pacific Co. railroad from Halsey, Linn County, 210 feet south of milepost 677, and 25 feet east of the track. A United States Geological Survey standard cap, stamped "266 B 1903" and riveted on the top of a 3½-inch iron pipe. (81.404 meters or 267.073 feet.)

E 12.—At Shedd, Linn County, 300 feet south of the Southern Pacific Co. station, and 100 feet west of the main track, on the northeast base of the four center supports for the water tank. A standard disk, stamped "E 12 1920." (80.343 meters or 263.592 feet.)

F 12=249 (U. S. G. S.).—About 1.9 miles north along the Southern Pacific Co. railroad from **Shedd**, Linn County, 740 feet south of milepost 681, and 25 feet east of the track. A United States Geological Survey standard cap, stamped "249 B 1903" and riveted on the top of a 3½-inch iron pipe. (76.191 meters or 249.970 feet.)

G 12.—About 2.5 miles south along the Southern Pacific Co. railroad from **Tangent**, Linn County, at mileage 682.1, on the southwest retaining wall of the bridge over Calapooya River. A standard disk, stamped "G 12 1920." (76.174 meters or 249.914 feet.)

H 12=242 (U. S. G. S.).—About 1.6 miles south along the Southern Pacific Co. railroad from **Tangent**, Linn County, 365 feet south of milepost 683, and 25 feet east of the track. A United States Geological Survey standard cap, stamped "242 B 1903" and riveted on the top of a 3½-inch iron pipe. (74.164 meters or 243.320 feet.)

I 12.—At **Tangent**, Linn County, 200 feet north of the Southern Pacific Co. station, and 100 feet east of the track, at the side entrance to the R. C. Bailey garage and blacksmith shop. A standard disk, stamped "I 12 1920." (75.651 meters or 248.198 feet.)

J 12=240 (U. S. G. S.).—About 1.4 miles north along the Southern Pacific Co. railroad from **Tangent**, Linn County, 175 feet south of milepost 686, and 25 feet east of the track. A United States Geological Survey standard cap, stamped "240 B 1903" and riveted on the top of a 3½-inch iron pipe. (73.536 meters or 241.259 feet.)

K 12.—About 3.4 miles south along the Southern Pacific Co. railroad from **Albany**, Linn County, at mileage 687.5, and 10 feet east of the track, in the top of culvert No. 687 D. A standard disk, stamped "K 12 1920." (71.418 meters or 234.311 feet.)

NOTE.—It was reported in 1932 that this mark had been covered. The culvert has been extended and a new mark (KX 12 1932) was set, as shown below.

KX 12 (S. P.).—About 3.4 miles south along the Southern Pacific Co. railroad from **Albany**, Linn County, at mileage 687.5, 16 feet east of the track, and 1 foot from the north end of the new head wall of culvert No. 687 D. A United States Geological Survey standard disk. (71.467 meters or 234.472 feet.)

L 12=221 (U. S. G. S.).—About 1.9 miles south along the Southern Pacific Co. railroad from **Albany**, Linn County, 50 feet north of milepost 689, and 25 feet east of the track. A United States Geological Survey standard cap, stamped "221 B 1903" and riveted on the top of a 3½-inch iron pipe. (67.742 meters or 222.250 feet.)

M 12.—At **Page**, Linn County, at Southern Pacific Co. railroad mileage 689.7, between the main line and the Lebanon branch, and about 28 feet east of the center track, at a fence corner. A standard disk, stamped "M 12 1920" and set in the top of a concrete post. (67.767 meters or 222.332 feet.)

N 12.—At **Albany**, Linn County, at the Southern Pacific Co. water tank, on the base of the southwest center support. A standard disk, stamped "N 12 1920." (65.871 meters or 216.112 feet.)

O 12.—At **Albany**, Linn County, on the corner of Ninth and Ferry Streets, at the west entrance to Central School, on the first step. A standard disk, stamped "O 12 1920." (65.200 meters or 213.910 feet.)

P 12=214 (U. S. G. S.).—At **Albany**, Linn County, at the main entrance to the courthouse, in the top of the first step. A United States Geological Survey standard disk, stamped "214." (65.350 meters or 214.402 feet.)

Q 12.—At **Albany**, Linn County, at the west or side entrance to the post office, to the left of the entrance, in the lower step. A standard disk, stamped "Q 12 1920." (64.043 meters or 210.114 feet.)

For additional bench marks in the vicinity of Albany, see page 172.

R 12.—About 3 miles northeast along the Southern Pacific Co. railroad from **Albany**, Linn County, at mileage 693.9, and about 100 feet east of the track, opposite a concrete railroad culvert, on a Pacific Highway Bridge, in the top of the west end of the center pier. A standard disk, stamped "R 12 1920." (60.378 meters or 198.090 feet.)

NOTE.—This bridge was widened in 1931. The disk is still accessible but it is impossible to hold a rod upon the bench mark.

S 12=210 (U. S. G. S.).—About 3.1 miles northeast along the Southern Pacific Co. railroad from **Albany**, Linn County, 519 feet north of a concrete

culvert, 113 feet south of milepost 694, 21 feet east of the center line of the track, and just west of the Pacific Highway. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 24 210 B ORE 1903 1911" and riveted on the top of a 3½-inch iron pipe. (64.444 meters or 211.430 feet.)

T 12=214 (U. S. G. S.).—About 1.6 miles north along the Southern Pacific Co. railroad from **Millersburg**, Linn County, 200 feet north of milepost 697, 200 feet south of a private-road crossing, and 20 feet east of the track. A United States Geological Survey standard cap, stamped "214 B 1903" and riveted on the top of a 3½-inch iron pipe. (65.384 meters or 214.514 feet.)

U 12.—In Linn County, about 1¼ miles southwest along the Southern Pacific Co. railroad from **Jefferson**, Marion County, at mileage 698.3, opposite railroad bridge No. 698 B, and 80 feet north of the track, on a Pacific Highway bridge, in the top of the south end of the east abutment. A standard disk, stamped "U 12 1920." (66.179 meters or 217.122 feet.)

NOTE.—This bridge was reconstructed in 1931 and it is reported that the bench mark was probably destroyed.

V 12.—In the south part of **Jefferson**, Marion County, at the northeast corner of the Southern Pacific Co. railroad bridge over Santiam River, in the top of the abutment. An iron bolt. (71.743 meters or 235.377 feet.)

VX 12 (S. P.).—In the south part of **Jefferson**, Marion County, at the northeast corner of the Southern Pacific Co. railroad bridge over Santiam River, in the top of the abutment, and very close to V 12, described above. A United States Geological Survey standard disk. (71.739 meters or 235.365 feet.)

W 12=235 (U. S. G. S.).—About 0.5 mile north along the Southern Pacific Co. railroad from **Jefferson**, Marion County, 50 feet south of milepost 700, 100 feet south of a highway crossing, and 25 feet east of the track. A United States Geological Survey standard cap, stamped "235 B 1903" and riveted on the top of a 3½-inch iron pipe. (71.905 meters or 235.908 feet.)

NOTE.—This bench mark is also a United States Geological Survey primary traverse station. Probably covered by rock dumped on right of way at the point.

X 12=287 (U. S. G. S.).—About 3.5 miles northeast along the Southern Pacific Co. railroad from **Jefferson**, Marion County, 175 feet west of milepost 703, and 30 feet south of the track. A United States Geological Survey standard cap, stamped "287 B 1903" and riveted on the top of a 3½-inch iron pipe. (87.883 meters or 288.329 feet.)

NOTE.—This bench mark is also a United States Geological Survey primary traverse station.

Y 12.—About ¾ mile north along the Southern Pacific Co. railroad from **Marion**, Marion County, 350 feet south of milepost 705, and 15 feet east of the track, in the top of culvert No. 704 C. A standard disk, stamped "Y 12 1920." (94.043 meters or 308.539 feet.)

Z 12=327 (U. S. G. S.).—About 1.8 miles north along the Southern Pacific Co. railroad from **Marion**, Marion County, 200 feet north of milepost 706, and 30 feet west of the track. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 31 327 B ORE 1903 1913" and riveted on the top of a 3½-inch iron pipe. (100.036 meters or 328.201 feet.)

B 13=308 (U. S. G. S.).—About 1.5 miles south along the Southern Pacific Co. railroad from **Turner**, Marion County, near mileage 709.1, about 200 feet west of a county road, and 30 feet west of the track. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 30 308 B ORE 1903 1913" and riveted on the top of a 3½-inch iron pipe. (94.240 meters or 309.186 feet.)

C 13.—About 1 mile south along the Southern Pacific Co. railroad from **Turner**, Marion County, at mileage 709.7, on the west side of the track, in the top of culvert No. 709 C. A standard disk, stamped "C 13 1920." (91.102 meters or 298.890 feet.)

D 13.—At **Turner**, Marion County, 300 feet east of the Southern Pacific Co. station, and 10 feet north of the east end of the footbridge leading from the station, in line with the south wall of the Robertson store, in the concrete retaining wall of the Oregon Light & Power Co. ditch. A standard disk, stamped "D 13 1920." (86.947 meters or 285.259 feet.)

E 13=261 (U. S. G. S.).—About 1.7 miles north along the Southern Pacific Co. railroad from **Turner**, Marion County, 210 feet north of milepost 712, and 30 feet west of the track. A United States Geological Survey standard cap,

stamped "PRIM TRAV STA 29 261 B ORE 1903 1913" and riveted on the top of a 3½-inch iron pipe. (79.947 meters or 262.293 feet.)

F 13.—About 1.3 miles north along the Southern Pacific Co. railroad from State School, Marion County, at mileage 714.6, on the southeast end of culvert No. 714 A. (67.912 meters or 222.808 feet.)

G 13=207 (U. S. G. S.).—About 3 miles southeast along the Southern Pacific Co. railroad from Salem, Marion County, about 40 feet southeast of a road crossing, and 20 feet east of the track, at cattle guard No. 715 A. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 28 207 B ORE 1903 1913" and riveted on the top of a 3½-inch iron pipe. (63.507 meters or 208.356 feet.)

H 13.—At Salem, Marion County, about 400 feet west of the Southern Pacific Co. station, on the east side of South Twelfth Street, at the northeast corner of a bridge, in the top of the retaining wall. A standard disk, stamped "H 13 1920." (48.290 meters or 158.431 feet.)

I 13=171 (U. S. G. S.).—At Salem, Marion County, in the south face of the State capitol, just east of the entrance to the ground floor, and about 3.5 feet above the walk. A United States Geological Survey standard disk, stamped "PRIM TRAV A 1 171 B 1903 1913." (52.361 meters or 171.788 feet.)

J 13.—At Salem, Marion County, at the west or main entrance to the post office, at the south end of the steps, in the top of a small granite buttress. A standard disk, stamped "J 13 1920." (48.452 meters or 158.963 feet.)

K 13.—In the north part of Salem, Marion County, on the Southern Pacific Co. right of way, about 1,000 feet south of the tile works, 500 feet north of Madison Street, and 15 feet west of the center line of the track, on the west head wall of a pipe culvert. A standard disk, stamped "K 13 1920." (50.790 meters or 166.634 feet.)

For additional bench marks in the vicinity of Salem, see page 167.

L 13=162 (U. S. G. S.).—About 2.8 miles north along the Southern Pacific Co. railroad from Salem, Marion County, 12 feet from milepost 721, and 20 feet east of the track. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 34 162 B ORE 1903 1913" and riveted on the top of a 3½-inch iron pipe. (49.561 meters or 162.601 feet.)

M 13.—At Chemawa, Marion County, about 400 feet north of the Southern Pacific Co. station, and 100 feet east of the track, at the Indian school, at the superintendent's office, in the top of the step railing. A standard disk, stamped "M 13 1920." (50.398 meters or 165.347 feet.)

183 (U. S. G. S.).—At Brooks, Marion County, about 200 feet north of the Southern Pacific Co. station, and 14 feet east of the track, at the edge of the graveled platform. A United States Geological Survey standard cap, stamped "PRIM TRAV 35 183 B 1903 1913" and riveted on the top of a 3½-inch iron pipe. (55.974 meters or 183.641 feet.)

N 13.—At Brooks, Marion County about 600 feet north of the Southern Pacific Co. station, 135 feet south of milepost 727, and 235 feet north of a road crossing, on the south end of the west head wall of culvert No. 726 E. A standard disk, stamped "N 13 1920." (55.088 meters or 180.735 feet.)

NOTE.—This bench mark was covered in 1929 by the construction of an additional track.

180 (U. S. G. S.).—At Brooks, Marion County, about 600 feet north of the Southern Pacific Co. station, 135 feet south of milepost 727, 235 feet north of a road crossing, and 14 feet east of the center line of the main track, on the south end of the east head wall of culvert No. 726 E. A United States Geological Survey standard disk, stamped "180 1929." (55.074 meters or 180.690 feet.)

NOTE.—This bench mark was established and its elevation determined by the Southern Pacific Co. in 1929.

O 13.—About 2.3 miles north along the Southern Pacific Co. railroad from Brooks, Marion County, at mileage 729.2, and 12 feet west of the track, in the top of culvert No. 729 B. A standard disk, stamped "O 13 1920." (55.681 meters or 182.680 feet.)

P 13=182 (U. S. G. S.).—About 4.2 miles north along the Southern Pacific Co. railroad from Brooks, Marion County, 530 feet north of a crossing, 300 feet north of milepost 731, and 20 feet east of the track. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 47 182 B 1903 1913" and riveted on the top of a 3½-inch iron pipe. (55.652 meters or 182.585 feet.)

Q 13.—At **Gervais**, Marion County, 200 feet east of the Southern Pacific Co. track, and 10 feet north of the entrance to the Gervais State Bank, in the sidewalk, about 8 inches from the wall. A standard disk, stamped "Q 13 1920." (55.937 meters or 183.520 feet.)

R 13=183 (U. S. G. S.).—About 0.9 mile north along the Southern Pacific Co. railroad from **Gervais**, Marion County, 125 feet south of milepost 733, and 30 feet east of the track. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 48 183 B ORE 1903 1913" and riveted on the top of a 3½-inch iron pipe. (56.218 meters or 184.442 feet.)

S 13=181 (U. S. G. S.).—At **Woodburn**, Marion County, about 210 feet south of the Southern Pacific Co. station, 30 feet east of the track, and just west of a roadway. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 49 181 B ORE 1903 1913" and riveted on the top of a 3½-inch iron pipe. (55.610 meters or 182.447 feet.)

T 13.—At **Woodburn**, Marion County, on the east side of First Street, at the south end of the main entrance to the city hall, in the top step. A standard disk, stamped "T 13 1920." (55.990 meters or 183.694 feet.)

U 13.—At **Hubbard**, Marion County, about 200 feet west of the Southern Pacific Co. station, at the north end of the entrance to the building formerly occupied by the State bank, in a recess. A standard disk, stamped "U 13 1920." (55.624 meters or 182.493 feet.)

183 (U. S. G. S.).—At **Hubbard**, Marion County, 342 feet north of the Southern Pacific Co. station, and 156 feet east of the main track. A United States Geological Survey standard cap, stamped "183 B 1903" and riveted on the top of a 3½-inch iron pipe. (55.264 meters or 181.313 feet.)

NOTE.—This bench mark was moved from its original position by the Southern Pacific Co. in 1919. The above elevation was determined from leveling by that company in 1932.

V 13.—About 2 miles north along the Southern Pacific Co. railroad from **Hubbard**, Marion County, about 1,000 feet south of milepost 741, about 1,000 feet north of a road crossing near a country schoolhouse, and 15 feet west of the track, on culvert No. 740 C. A standard disk, stamped "V 13 1920." (55.313 meters or 181.473 feet.)

W 13=184 (U. S. G. S.).—About ¾ miles north along the Southern Pacific Co. railroad from **Hubbard**, Marion County, about 35 feet north of milepost 742, and 30 feet east of the track. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 57 184 B ORE 1903 1913" and riveted on the top of a 3½-inch iron pipe. (56.258 meters or 184.573 feet.)

X 13.—In Clackamas County, about 0.5 mile north along the Southern Pacific Co. railroad from **Aurora**, Marion County, on the bridge over Pudding River, and 6 feet east of the track, in the east end of the north pier. A standard disk, stamped "X 13 1920." (31.316 meters or 102.743 feet.)

Y 13=100 (U. S. G. S.).—At **Barlow**, Clackamas County, about 100 feet northeast of the Southern Pacific Co. station platform, at Pacific Highway mileage 24.4, 40 feet west of the highway, and 30 feet east of the track. A United States Geological Survey standard cap, stamped "100 B 1903" and riveted on the top of a 3½-inch iron pipe. (30.767 meters or 100.941 feet.)

Z 13.—About 0.8 mile south along the Southern Pacific Co. railroad from **Canby**, Clackamas County, at mileage 746, at the northwest corner of the bridge over Molalla River, on the retaining wall. A chiseled circle. (38.841 meters or 127.431 feet.)

ZX 13 (U. S. G. S.).—About 0.8 mile south along the Southern Pacific Co. railroad from **Canby**, Clackamas County, at mileage 746, at the northwest corner of the bridge over Molalla River, in the retaining wall. A United States Geological Survey standard disk. (38.849 meters or 127.457 feet.)

NOTE.—This bench mark was established and its elevation determined by the Southern Pacific Co. in 1932.

A 14.—At **Canby**, Clackamas County, 100 feet south of the Southern Pacific Co. station, 125 feet west of the track, on the south side of the entrance to the building formerly occupied by the First National Bank, in the top of the second step, and about 6 inches from the wall. A standard disk, stamped "A 14 1920." (46.535 meters or 152.874 feet.)

B 14=130 (U. S. G. S.).—About 1 mile north along the Southern Pacific Co. railroad from **Canby**, Clackamas County, about 300 feet south of milepost 748, and 20 feet east of the track. A United States Geological Survey standard cap,

stamped "130 B 1903" and riveted on the top of a 3½-inch iron pipe. (39.816 meters or 130.630 feet.)

NOTE.—This bench mark is also a United States Geological Survey primary traverse station.

C 14.—About ¼ mile south along the Southern Pacific Co. railroad from the station at **New Era**, Clackamas County, at mileage 749.8, and 10 feet west of the track, in the top of culvert No. 749 G. A standard disk, stamped "C 14 1920." (30.944 meters or 101.522 feet.)

D 14=89 (U. S. G. S.).—About 0.3 mile north along the Southern Pacific Co. railroad from **Coalca**, Clackamas County, 60 feet south of railroad milepost 751, at Pacific Highway mileage 18.1, 25 feet east of the track, and 10 feet west of the edge of the highway. A United States Geological Survey standard cap, stamped "89 B 1903" and riveted on the top of a 3½-inch iron pipe. (27.387 meters or 89.852 feet.)

NOTE.—This bench mark is also a United States Geological Survey primary traverse station.

E 14.—About 1.2 miles south along the Southern Pacific Co. railroad from **Oregon City**, Clackamas County, at mileage 754.3, opposite culvert No. 754 D. on a rock. A chiseled square. (21.728 meters or 71.286 feet.)

F 14.—About 0.5 mile south along the Southern Pacific Co. railroad from the station at **Oregon City**, Clackamas County, about 300 feet south of the city limits, and 6 feet west of the track, in the north end of a retaining wall. A standard disk, stamped "F 14 1920." (21.322 meters or 69.954 feet.)

NOTE.—This wall has been reconstructed and the bench mark has probably been destroyed.

G 14.—At **Oregon City**, Clackamas County, on Main Street, at the main entrance to the courthouse, just east of the steps, and about 4 feet west of the west line of the street, in the top of the north wall. A standard disk, stamped "G 14 1920." (19.477 meters or 63.901 feet.)

H 14.—At **Oregon City**, Clackamas County, on the north side of Seventeenth Street, 300 feet east of the Southern Pacific Co. railroad, at the west edge of the Oregon City-Portland Highway, in the base of an Old Oregon Trail monument. The top of a section of ½-inch galvanized iron pipe, projecting about 3 inches above the stone. (14.004 meters or 45.945 feet.)

I 14=45 (U. S. G. S.).—About 1.5 miles north along the Southern Pacific Co. railroad from **Oregon City**, Clackamas County, about 800 feet south of **Park Place** station, 100 feet east of a sharp curve in the highway, 75 feet south of the crossing of an abandoned road, 50 feet south of railroad cattle guard No. 757 C, and 16 feet east of the track. A United States Geological Survey standard cap, stamped "45 B 1903" and riveted on the top of a 3½-inch iron pipe. (13.938 meters or 45.728 feet.)

J 14.—At **Clackamas**, Clackamas County, about 400 feet north of the Southern Pacific Co. station, south of the main road crossing, on the east side of the track, in front of a small store building, in the northwest corner of the porch. A standard disk, stamped "J 14 1920." (33.828 meters or 110.984 feet.)

112 (U. S. G. S.).—At **Clackamas**, Clackamas County, 410 feet north of the Southern Pacific Co. station, south of a highway crossing, and 14 feet west of the center line of the main track, in the southeast corner of the concrete base of a warning signal. A United States Geological Survey standard disk, stamped "112 1929." (34.319 meters or 112.595 feet.)

NOTE.—This bench mark was established and its elevation determined by the Southern Pacific Co. in 1929.

K 14.—About 1.3 miles north along the Southern Pacific Co. railroad from **Clackamas**, Clackamas County, and 150 feet east of the track, on the retaining wall of a county-road bridge. A standard disk, stamped "K 14 1920." (28.468 meters or 93.399 feet.)

NOTE.—This bench mark was searched for in 1923 but was not recovered. It was reported in 1932 that it was probably still good though it might be covered by a culvert extension.

L 14=109 (U. S. G. S.).—About 1 mile southeast along the Southern Pacific Co. railroad from **East Milwaukie**, Clackamas County, about 75 feet northwest of milepost 763, and 25 feet north of the track, on the right of way of an adjoining county road. A United States Geological Survey standard cap,

stamped "109 B 1903" and riveted on the top of a 3½-inch iron pipe. (33.416 meters or 109.632 feet.)

NOTE.—This bench mark is also a United States Geological Survey primary traverse station.

M 14.—In the southeast part of **Portland**, Multnomah County, in **Sellwood**, at the southeast corner of Southern Pacific Co. railroad bridge No. 765 C over Johnson Creek, on the retaining wall. A standard disk, stamped "M 14 1920." (18.037 meters or 59.176 feet.)

N 14.—In the southeast part of **Portland**, Multnomah County, in **Eastmoreland**, 30 feet west of the center line of the Southern Pacific Co. main track, at the Portland Traction Co. overhead crossing, in the vertical face of the north end of the west abutment. A standard disk, stamped "N 14 1920." (17.319 meters or 56.821 feet.)

O 14.—About 0.5 mile south along the Southern Pacific Co. railroad from the union station at **Portland**, Multnomah County, at the east end of the bridge over Willamette River, in the top of the retaining wall southeast of the east abutment of the lower level, and just west of the angle in the wall. A standard disk, stamped "O 14 1920." (10.068 meters or 33.031 feet.)

For additional bench marks in the vicinity of Portland, see pages 77 and 89.

Additional bench marks in the vicinity of Portland, Oreg.

Under this heading is included a group of Coast and Geodetic Survey standard disks which were set by the Pacific Power & Light Co. The leveling was done by that organization in 1932 and, while the work is classed as second-order leveling, the closures indicate that much of it is very nearly, if not quite, up to the standards of accuracy required for first-order leveling.

T 14=76 (U. S. G. S.).—See page 77.

A 100 (P. P. & L.).—At **Portland**, Multnomah County, on Fifth Street, midway between Main and Salmon Streets, at the west entrance to the courthouse, in the top of the north end of the lowest granite step. A standard disk, stamped "A 100 1932." (19.556 meters or 64.160 feet.)

B 100 (P. P. & L.).—At **Portland**, Multnomah County, at the northeast corner of Sixth and Main Streets, about 6 inches from the southwest corner of the Congress Hotel, in the sidewalk. A standard disk, stamped "B 100 1932." (22.398 meters or 73.484 feet.)

C 100 (P. P. & L.).—At **Portland**, Multnomah County, at the southeast corner of Sixth and Taylor Streets, about 6 inches from the northwest corner of the Public Service Building, in the sidewalk. A standard disk, stamped "C 100 1932." (18.539 meters or 60.825 feet.)

G 100 (P. P. & L.).—At **Portland**, Multnomah County, on the east side of Fifth Street, midway between Yamhill and Taylor Streets, at the entrance to the Portland Chamber of Commerce Building, in the north end of the lower step. A standard disk, stamped "G 100 1932." (15.555 meters or 51.035 feet.)

S 14=54 (U. S. G. S.).—See page 77.

F 100 (P. P. & L.).—At **Portland**, Multnomah County, at the northeast corner of Sixth and Morrison Streets, at the southwest corner of the Meier & Frank Company store, in the sidewalk. A standard disk, stamped "F 100 1932." (14.298 meters or 46.910 feet.)

LINE 7, PORTLAND TO FORT STEVENS, OREG.

[First-order leveling]

This line follows the Spokane, Portland & Seattle Railway from Portland through Astoria to Fort Stevens. A spur line follows the Spokane, Portland & Seattle Railway from Portland across the river to Vancouver. The field work was done during the summer of 1920 by J. D. Crichton and H. C. Warwick, junior hydrographic and geodetic engineers.

For additional bench marks in the vicinity of Portland, see pages 76 and 89.

29 (U. S. G. S.).—At **Portland**, Multnomah County, on the east bank of the Willamette River, about 75 feet west of the foot of Holladay Avenue, and about 50 feet west of the railroad tracks, at the east end of the former location of the old steel bridge, in the extreme southwest corner of the top of a masonry pier. A copper bolt, stamped "29." (9.646 meters or 31.646 feet.)

NOTE.—The elevation of this bench mark was determined by the Pacific Power & Light Co. in 1925.

T 14=76 (U. S. G. S.).—At **Portland**, Multnomah County, at the west or Fifth Street entrance to the city hall, in the granite base of the first column north of the steps, and about 2 feet above the sidewalk. A United States Geological Survey standard disk, stamped "76" and set vertically. (23.489 meters or 77.063 feet.)

NOTE.—This bench mark is the initial point for the city of Portland bench level survey.

S 14=54 (U. S. G. S.).—At **Portland**, Multnomah County, at the north or Morrison Street entrance to the Central post office, 2 feet east of the doorway, in the first course of stone above the water table. A United States Geological Survey standard disk, stamped "54 A" and set vertically. (16.702 meters or 54.796 feet.)

NOTE.—This bench mark is also a Coast and Geodetic Survey triangulation station.

R 14.—At **Portland**, Multnomah County, at the west or main entrance to the customhouse, at the north end of the first step, and about 4 inches from the wall. A standard disk, stamped "R 14 1920." (9.278 meters or 30.440 feet.)

P 14=31 (City of Portland).—At **Portland**, Multnomah County, 60 feet west of North Front Street, 20 feet south of a spur track leading to the union station, on the west abutment of the upper level of the steel bridge over the Willamette River, in the north end of the east face of the concrete wall, and about 2 feet above the ground. A city of Portland standard disk, stamped "31" and set vertically. (9.530 meters or 31.266 feet.)

NOTE.—This bench mark should be used with caution as the abutment shows evidence of settling.

Q 14.—At **Portland**, Multnomah County, at the union station, on the east side of the extreme north end of Sixth Street north, close to the sidewalk, in an angle 30 feet north of the entrance to the dining room. A standard disk, stamped "Q 14 1920" and set in the top of a stone post. (9.607 meters or 31.519 feet.)

U 14.—In the north part of **Portland**, Multnomah County, about 3 miles north along the Spokane, Portland & Seattle Railway from the union station, about 1 mile north of the Oceanic Terminals, on the east side of the track, and 35 feet south of the traces of an old diagonal road crossing to the northeast, at the west edge of North Front Street. A standard disk, stamped "U 14 1920" and set in the top of a concrete post. (9.676 meters or 31.745 feet.)

NOTE.—It has been reported that this bench mark was probably covered during the filling of North Front Street, but that it can probably still be recovered.

V 14.—In the northwest part of **Portland**, Multnomah County, at **Oilton**, just south of Spokane, Portland & Seattle Railway milepost 4, 150 feet east of the Columbia River Highway, 50 feet east of the track, and 35 feet south of the driveway into the Union Oil Co. plant, in the top of a concrete retaining wall, immediately over the third buttress from the north end. A standard disk, stamped "V 14 1920." (11.688 meters or 38.346 feet.)

A spur line leads north across the river to Vancouver, Wash.

B 32=62 (U. S. G. S.).—In the north part of **Portland**, Multnomah County, about 1¼ miles southwest of the station at **East St. Johns**, near the east bank of the Willamette River, on the Spokane, Portland & Seattle Railway bridge over the Oregon-Washington Railroad & Navigation Co. track, on the most westerly corner of the abutment. A United States Geological Survey standard disk, stamped "62." (18.695 meters or 61.335 feet.)

C 32.—In the north part of **Portland**, Multnomah County, at **East St. Johns**, 260 feet southwest of the Spokane, Portland & Seattle Railway station, on a viaduct over the tracks, in the south end of the south foundation of the center pier. A standard disk, stamped "C 32 1920." (18.977 meters or 62.260 feet.)

1233 (City of Portland).—In the north part of **Portland**, Multnomah County, about 0.5 mile northeast along the Spokane, Portland & Seattle Railway from the station at **East St. Johns**, at the southwest corner of the bridge over Columbia Slough, on the abutment. A city of Portland standard disk, stamped "1233." (13.684 meters or 44.895 feet.)

NOTE.—This bench mark should be used with caution as the abutment has been reported to have settled perceptibly.

D 32.—At **North Portland**, Multnomah County, at the southwest corner of Spokane, Portland & Seattle Railway bridge over North Portland Harbor, on the northwest end of the abutment, and 2 feet from the nearest rail. A standard disk, stamped "D 32 1920." (14.507 meters or 47.595 feet.)

R 7=49 (U. S. G. S.).—At **Vancouver**, Clark County, Wash., at the north end of the Spokane, Portland & Seattle Railway bridge over Columbia River, in the top of the east end of the abutment. A United States Geological Survey standard disk, stamped "49 1915." (14.631 meters or 48.002 feet.)

T 7.—At **Vancouver**, Clark County, Wash., 2 blocks east of the Spokane, Portland & Seattle Railway station, in the southwest concrete footing of a water tank. A standard disk, stamped "T 7 1920." (14.929 meters or 48.980 feet.)

The end of the spur.

E 30=1286 (City of Portland).—In the northwest part of **Portland**, Multnomah County, at **Oilton**, in the northwest corner of the Standard Oil Co. building facing the Spokane, Portland & Seattle Railway tracks and the Columbia River Highway, and just south of the driveway leading into the plant. A city of Portland standard disk, stamped "1286" and set vertically. (11.473 meters or 37.641 feet.)

1290 (City of Portland).—In the northwest part of **Portland**, Multnomah County, at **Gasco**, on the east side of the Columbia River Highway, in the base of an ornamental lamp-post at the first bend of the concrete driveway leading to the plant of the Portland Gas & Coke Co. A city of Portland standard disk, stamped "1290." (15.286 meters or 50.151 feet.)

NOTE.—The elevation of this mark was determined by the Pacific Power & Light Co. The post has been moved and the bench mark destroyed.

W 14.—In the northwest part of **Portland**, Multnomah County, at **Gasco**, on the Spokane, Portland & Seattle Railway, just south of the private roadway leading into the Portland Gas & Coke Co. plant, and 12 feet west of the track, in the base of a warning bell. A standard disk, stamped "W 14 1920." (11.227 meters or 36.834 feet.)

NOTE.—The bell has been reconstructed and the disk covered with an iron base plate, but the approximate elevation of the bench mark is still available.

35 (P. P. & L.).—In the northwest part of **Portland**, Multnomah County, at **Gasco**, at the Portland Gas & Coke Co. plant, in the southwest corner of the concrete holder pit in front of the gas holder, and just north of the office. A United States Geological Survey standard copper nail and washer. (10.689 meters or 35.068 feet.)

NOTE.—The mark was established and its elevation determined by the Pacific Power & Light Co.

X 14=40 (U. S. G. S.).—In the northwest part of **Portland**, Multnomah County, at **Linnton**, 210 feet south of the Spokane, Portland & Seattle Railway station, 55 feet east of the track, and 12 feet south of the center line of C Street. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 9 40 A ORE" and riveted on the top of a 3½-inch iron pipe encased in concrete. (12.462 meters or 40.886 feet.)

1293 (City of Portland).—In the northwest part of **Portland**, Multnomah County, at **Linnton**, in the north end of the west curb at the southwest corner of F Street and Second Street (Columbia River Highway). A city of Portland standard disk, stamped "1293." (14.155 meters or 46.439 feet.)

NOTE.—The elevation of this mark was determined by the Pacific Power & Light Co.

1294 (City of Portland).—In the northwest part of **Portland**, Multnomah County, at **Linnton**, about 0.5 mile north of C Street, and 35 feet west of the Columbia River Highway, on a bank about 8 feet higher than the roadway.

A city of Portland standard disk, stamped "1294" and set in the top of a stone milepost lettered "P 9." (18.913 meters or 62.049 feet.)

NOTE.—The elevation of this mark was determined by the Pacific Power & Light Co.

1295 (City of Portland).—In the northwest part of **Portland**, Multnomah County, at **Linnton**, about 1 mile north of C Street, 28 feet west of the Columbia River Highway, and about 40 feet southwest of the crossing of the United Railways track. A city of Portland iron post, stamped "1295." (18.864 meters, or 61.890 feet.)

NOTE.—The elevation of this mark was determined by the Pacific Power & Light Co. by means of a single line of levels.

Y 14.—About 1.5 miles north along the Spokane, Portland & Seattle Railway from **Linnton**, Multnomah County, at mileage 8.8, and 15 feet west of the track. A standard disk, stamped "Y 14 1920" and set in the top of a concrete post. (10.427 meters or 34.209 feet.)

Z 14=35 (U. S. G. S.).—At **Holbrook**, Multnomah County, 100 feet northwest of the Spokane, Portland & Seattle Railway station, 120 feet west of the main track, 60 feet south of a switch stand, and 40 feet east of the center line of the Columbia River Highway. In a garden, at the northwest corner of a chicken house. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 10 35 A B ORE 1914" and riveted on the top of a 3½-inch iron pipe encased in concrete. (10.822 meters or 35.505 feet.)

A 30.—About 2.5 miles north along the Spokane, Portland & Seattle Railway from **Holbrook**, Multnomah County, in the abutment at the northeast corner of bridge No. A 15-3. A standard disk, stamped "A 30 1920." (9.791 meters or 32.123 feet.)

B 30.—At **Rocky Point**, Multnomah County, on the Spokane, Portland & Seattle Railway, in the southeast corner of the concrete base of the water tank. A railroad spike. (10.434 meters or 34.232 feet.)

78 (U. S. G. S.).—At **Rocky Point**, Multnomah County, about 100 feet northwest of the intersection of the Columbia River Highway and the Rocky Point road. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 11 78 B 1914" and riveted on the top of a 3½-inch iron pipe encased in concrete. (25.366 meters or 83.223 feet.)

NOTE.—This bench mark has been moved several times since its installation by the United States Geological Survey and it is no longer in the original primary traverse station position. The above elevation was determined from leveling by the Multnomah County engineer in 1926.

C 30.—In Multnomah County, about 3 miles south along the Spokane, Portland & Seattle Railway from **Scappoose**, Columbia County, in the abutment at the northeast corner of bridge No. A 16-9. A standard disk, stamped "C 30 1920." (9.762 meters or 32.027 feet.)

D 30=61 (U. S. G. S.).—At **Scappoose**, Columbia County, 100 feet southeast of the Spokane, Portland & Seattle Railway station, 200 feet east of the Columbia River Highway, and 90 feet east of the track, in the parking strip on the south side of Columbia Avenue. A United States Geological Survey standard cap, stamped "ORE NO 13 A 61 1914 B" and riveted on the top of a 3½-inch iron pipe. (18.691 meters or 61.322 feet.)

NOTE.—This bench mark has been destroyed.

W 13 (U. S. G. S.).—At **Scappoose**, Columbia County, 100 feet southeast of the Spokane, Portland & Seattle Railway station, 200 feet east of the Columbia River Highway, and 90 feet east of the track, in the parking strip on the south side of Columbia Avenue. A United States Geological Survey standard disk, stamped "W 13 1929" and set in the top of a concrete post. (18.543 meters or 60.838 feet.)

NOTE.—The United States Geological Survey established this bench mark and primary traverse station in the same position as previously occupied by D 30 and determined its elevation as 0.484 foot lower than D 30.

60 (O. G. B.).—At **Scappoose**, Columbia County, in the concrete sidewalk at the southeast corner of Columbia Avenue and the Columbia River Highway. A chiseled square. (18.401 meters or 60.370 feet.)

NOTE.—The elevation of this bench mark was determined by the Oregon Geographic Board in 1929.

60 (O. G. B.).—At **Scappoose**, Columbia County, in the curb at the northwest corner of Columbia Avenue and the Columbia River Highway, in line with the front face of the First National Bank. A chiseled square. (18.352 meters or 60.211 feet.)

NOTE.—The elevation of this bench mark was determined by the Oregon Geographic Board in 1929.

30 (O. S. H. D.).—About 2 miles north along the Columbia River Highway from **Scappoose**, Columbia County, near mileage 23.6, and about 100 feet south of the T-road leading east to Kelvin Grove Farm, in the south end of the east parapet of the highway bridge. An Oregon State Highway Department standard disk, stamped "30 1929." (9.153 meters or 30.029 feet.)

NOTE.—The elevation of this bench mark was determined by the Oregon Geographic Board in 1929.

F 30.—About $2\frac{1}{4}$ miles north along the Spokane, Portland & Seattle Railway from **Scappoose**, Columbia County, 800 feet north of Honeyman station, opposite Columbia River Highway mileage 23.5, in the north end of the east concrete abutment of steel railroad bridge No. A 22-2. A standard disk, stamped "F 30 1920." (15.246 meters or 50.020 feet.)

G 30=48 (U. S. G. S.).—At **Warren**, Columbia County, 90 feet northeast of the Spokane, Portland & Seattle Railway station, 300 feet north of the post office, and 80 feet east of the track, at the east line of a county road. A United States Geological Survey standard cap, stamped "48 A" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe encased in concrete. (14.853 meters or 48.730 feet.)

H 30.—About 1.5 miles south of **St. Helens**, Columbia County, at **McNulty**, on the Spokane, Portland & Seattle Railway, 35 feet south of the remains of the abandoned station, 25 feet west of the track, and 15 feet north of a county road crossing the Columbia River Highway. A standard disk, stamped "H 30 1920" and set in the top of a concrete post. (19.791 meters or 64.931 feet.)

71 (P. P. & L.).—About 1.5 miles south of **St. Helens**, Columbia County, at **McNulty**, 63 feet west of the Columbia River Highway, and 10 feet north of the northeast corner of the McNulty service station, on the south concrete wall of a well. A chiseled square. (21.883 meters or 71.796 feet.)

NOTE.—The elevation of this bench mark was determined by the Pacific Power & Light Co. in 1932.

98 (O. S. H. D.).—At **St. Helens**, Columbia County, in the southeast corner of the Columbia River Highway bridge over Milton Creek. An Oregon State Highway Department standard disk, stamped "98 1929." (29.983 meters or 98.369 feet.)

NOTE.—The elevation of this bench mark was determined by the Oregon Geographic Board.

98.6 (U. S. G. S.).—At **St. Helens**, Columbia County, about 700 feet south of the main highway intersection, at the northeast corner of the Columbia River Highway bridge over Milton Creek. A United States Geological Survey standard disk, stamped "98.6." (30.166 meters or 98.968 feet.)

NOTE.—The elevation of this bench mark was determined by the Pacific Power & Light Co.

I 30=99 (U. S. G. S.).—At **St. Helens**, Columbia County, 210 feet south of the Spokane, Portland & Seattle Railway station, 60 feet west of the track, 60 feet south of the right-angle intersection of the highway and a county road, and immediately south of the second large tree south of the intersection. A United States Geological Survey standard cap, stamped "99 A" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (30.260 meters or 99.278 feet.)

NOTE.—Searched for but not recovered in 1931. Probably covered by the toe of the highway fill.

104 (P. P. & L.).—At **St. Helens**, Columbia County, 200 feet south of the Spokane, Portland & Seattle Railway station, at the south side of the main road crossing, 12 feet west of the track, on the southwest corner of the concrete base of a warning bell. A chiseled square. (31.656 meters or 103.859 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1925.

N 30.—About 0.5 mile north along the Spokane, Portland & Seattle Railway from **St. Helens**, Columbia County, 50 feet east of a rustic building used as a tea house, 65 feet west of the track, and 25 feet west of the Columbia River Highway. A standard disk, stamped "N 30 1920" and cemented in the top of a section of cast-iron pipe. (35.931 meters or 117.884 feet.)

J 30=78 (U. S. G. S.).—About $\frac{3}{4}$ miles north along the Spokane, Portland & Seattle Railway from **St. Helens**, about 2.3 miles south of **Deer Island**, Columbia County, about 0.6 mile south of the station board at **Waterview**, about $\frac{1}{4}$ mile north of an old tower, 80 feet east of the track, 50 feet west of a county road, and across the track from the Columbia River Highway. A United States Geological Survey standard cap, stamped "78 A" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe cased in concrete. (23.813 meters or 78.126 feet.)

K 30.—At **Deer Island**, Columbia County, 260 feet south of the Spokane, Portland & Seattle Railway station, 130 feet east of the Columbia River Highway, opposite the first road crossing south of the station, 50 feet west of the track, and directly behind **Mr. J. Guitten's** woodshed. A standard disk, stamped "K 30 1920" and set in the top of a concrete post. (14.767 meters or 48.448 feet.)

NOTE.—The top of this post was found broken off. It was replaced in its original position by engineers of the Pacific Power & Light Co. and new concrete cast around the mark.

L 30.—About $1\frac{1}{4}$ miles north along the Spokane, Portland & Seattle Railway from **Deer Island**, Columbia County, across the track from the Columbia River Highway, in the abutment at the northeast corner of railroad bridge No. A 34-4. A standard disk, stamped "L 30 1920." (9.049 meters or 29.688 feet.)

M 30.—About 3.5 miles north along the Spokane, Portland & Seattle Railway from **Deer Island**, Columbia County, just south of **Charlton**, on the high point of the largest rock in a pile opposite the middle projection of the cliff west of the track. A chiseled square. (6.308 meters or 20.695 feet.)

O 30 (U. S. E.).—About 0.5 mile south along the Spokane, Portland & Seattle Railway from **Goble**, Columbia County, 150 feet east of the Columbia River Highway, 60 feet north of the northeast corner of the Shell Co. warehouse, 50 feet west of the track, 40 feet southeast of the base of a rock knoll, and about 20 feet north of a road leading east from the highway. A brass rod in the top of a concrete post marked "USEBM." (9.280 meters or 30.446 feet.)

P 30.—At **Goble**, Columbia County, 80 feet westward from the Spokane, Portland & Seattle Railway track, and 80 feet southeast of the post office, at the southwestward corner of the intersection of the Columbia River Highway and a county road, in solid rock at the base of the cliff. A standard disk, stamped "P 30 1920." (9.244 meters or 30.328 feet.)

NOTE.—This mark has been moved, and the description and elevation of it in its present position is given below.

P 30 (Reset).—At **Goble**, Columbia County, 17 feet northeast of the northeast corner of the post office, and 35 feet west of the center line of the Columbia River Highway, in a small shelf on a rock point. A standard disk, stamped "P 30 1920." (10.197 meters or 33.455 feet.)

31.3 (U. S. G. S.).—At **Goble**, Columbia County, about 630 feet north of the post office, 690 feet north of the intersection of the Columbia River Highway and a county road, at the west right-of-way line of the highway, and just south of a private road to a farm. A United States Geological Survey standard cap, stamped "31.3" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe encased in concrete. (9.712 meters or 31.863 feet.)

23 (O. S. H. D.).—At **Goble**, Columbia County, about 1,000 feet north of the post office, in the curb at the southeast corner of the Columbia River Highway bridge over **Goble Creek**. An Oregon State Highway Department standard disk, stamped "23." (7.109 meters or 23.323 feet.)

Q 30.—About 1 mile west along the Spokane, Portland & Seattle Railway from **Prescott**, Columbia County, at **Oasis**, in the northeast footing of the water tank. A standard disk, stamped "Q 30 1920." (6.539 meters or 21.453 feet.)

25 (P. P. & L.).—At **Rainier**, Columbia County, 40 feet east of the southeast corner of the intersection of **A Street East** and **East Fourth Street**, in the east end of the lower concrete step leading to the warehouse of the Northwestern Electric Co. A Pacific Power & Light Co. standard disk, stamped "25 1932." (7.675 meters or 25.179 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co.

Triangulation Station Rainier 2 (U. S. E.).—At Rainier, Columbia County, 30 feet west of the west line of East Fourth Street, 1 foot north of the north sidewalk on A Street East, and 1 foot below the level of the walk. A United States Engineer Department standard disk, stamped "RAINIER 2 1926" and set in the top of a concrete post. (6.828 meters or 22.402 feet.)

NOTE.—The elevation of this bench mark was determined as a part of the Rainier, Oreg., to Kelso, Wash., line which was run by the United States Coast and Geodetic Survey in 1930.

Z 30 (City of Rainier).—At Rainier, Columbia County, at the southeast corner of Quincy and Water Streets, in the sidewalk, 15 feet from the curb. A brass rivet. (7.171 meters or 23.527 feet.)

NOTE.—This bench mark has been reported as destroyed.

R 30.—At Rainier, Columbia County, on the south side of A Street, immediately north of the Spokane, Portland & Seattle Railway ticket office, in the concrete curb. A standard disk, stamped "R 30 1920." (7.057 meters or 23.153 feet.)

NOTE.—This bench mark has been reported as destroyed.

E 46.—At Rainier, Columbia County, on the south side of A Street, at the Spokane, Portland & Seattle Railway station, 2 feet east of the entrance to the waiting room, in the sidewalk, 1 foot north of the building. A standard disk, stamped "E 46 1930." (7.136 meters or 23.412 feet.)

NOTE.—This bench mark was established and its elevation determined as a part of the Rainier, Oreg., to Kelso, Wash., line which was run by the United States Coast and Geodetic Survey in 1930.

41 (P. P. & L.).—At Rainier, Columbia County, 32 feet south of the south line of B Street (Columbia River Highway), at the entrance to the city hall, 2 feet north of the northwest corner of the base of the west porch pillar, in the top of the retaining wall between the lawn and the driveway to the fire station. A Pacific Power & Light Co. standard disk, stamped "41 1932." (12.668 meters or 41.563 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1932.

42 (P. P. & L.).—At Rainier, Columbia County, on the south side of B Street (Columbia River Highway), at the city hall, in the east end of the lower concrete step. A nail and washer. (12.919 meters or 42.385 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co.

S 30.—About 1 mile west along the Spokane, Portland & Seattle Railway from Rainier, Columbia County, 50 feet east of the turntable at Avon, 25 feet south of the track, and between the siding and the spur line to the turntable. A standard disk, stamped "S 30 1920" and set in the top of a concrete post. (6.534 meters or 21.601 feet.)

NOTE.—This bench mark has been reported as destroyed.

T 30.—About 0.5 mile west along the Spokane, Portland & Seattle Railway from Tryon, Columbia County, at mileage 51.9, at the west end of the first cut west of the station, and 15 feet south of the track. A standard disk, stamped "T 30 1920" and set in the top of a concrete post. (6.401 meters or 21.001 feet.)

U 30.—About $\frac{1}{4}$ mile northwest along the Spokane, Portland & Seattle Railway from Pyramid, Columbia County, on the first small promontory northwest of the station, and 15 feet north of the track. A standard disk, stamped "U 30 1920" and set in the top of a concrete post. (5.752 meters or 18.871 feet.)

V 30=18 (U. S. G. S.).—At Mayger, Columbia County, 250 feet southwest of the Spokane, Portland & Seattle Railway station, 200 feet south of the track, and 35 feet south of the southwest corner of a house. A United States Geological Survey standard cap, stamped "18 A" and riveted on the top of a $3\frac{1}{2}$ -inch iron pipe. (5.668 meters or 18.596 feet.)

W 30.—About 1.5 miles west along the Spokane, Portland & Seattle Railway from Mayger, Columbia County, at the foot of a cliff, in the northwest corner of the intersection of two public roads, and 65 feet south of the west end of culvert No. A 57.2. A standard disk, stamped "W 30 1920" and set in the top of a concrete post. (4.935 meters or 16.191 feet.)

X 30.—About 0.4 mile east along the Spokane, Portland & Seattle Railway from Quincy, Columbia County, 37 feet southwest of the west end of culvert No. A 58-9, and 18 feet southeast of the center line of the track, in the north concrete footing of a water tank. A standard disk, stamped "X 30 1920." (5.496 meters or 18.031 feet.)

Y 30=18 (U. S. G. S.).—At Quincy, Columbia County, about 500 feet east of the Spokane, Portland & Seattle Railway station, and 200 feet south of the track, at culvert post No. A 59.16. A United States Geological Survey standard cap, stamped "18 A" and riveted on the top of a 3½-inch iron pipe. (5.836 meters or 19.147 feet.)

Y 30 (Reset)=18 (U. S. G. S.).—At Quincy, Columbia County, about 750 feet east of the Spokane, Portland & Seattle Railway station, 160 feet southwest of culvert No. A 59-16, and 50 feet southeast of the center line of the track, at the south right-of-way fence. A United States Geological Survey standard cap, stamped "18 A" and riveted on the top of a 3½-inch iron pipe cased in concrete. (5.349 meters or 17.549 feet.)

NOTE.—This bench mark was reset and its new elevation determined by the Pacific Power & Light Co. in November, 1931.

13 (P. P. & L.).—About 1.3 miles west along the Spokane, Portland & Seattle Railway from Quincy, Columbia County, at mileage 62.6, about 400 feet north of the Columbia River Highway, 40 feet south of the track, and about 30 feet east of the center line of a crossroad. A Pacific Power & Light Co. standard disk, stamped "13 1931" and set in the top of a concrete post. (4.252 meters or 13.950 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co.

Z 31=23 (U. S. G. S.).—At Clatskanie, Columbia County, 140 feet east of the Spokane, Portland & Seattle Railway station, 170 feet north of the Columbia River Highway, and 70 feet south of the main-line track. A United States Geological Survey standard cap, stamped "23 A" and riveted on the top of a 3½-inch iron pipe. (7.116 meters or 23.346 feet.)

NOTE.—It was reported in March, 1931, that this bench mark had been hit by a truck and its elevation disturbed.

Z 31 (Reset)=23 (U. S. G. S.).—At Clatskanie, Columbia County, 140 feet east of the Spokane, Portland & Seattle Railway station, 170 feet north of the Columbia River Highway, and 70 feet south of the main track. A United States Geological Survey standard cap, stamped "23 A" and riveted on the top of a 3½-inch iron pipe cased in concrete. (7.149 meters or 23.455 feet.)

NOTE.—This bench mark was reset and its new elevation determined by the Pacific Power & Light Co. in 1931.

53 (P. P. & L.).—At Clatskanie, Columbia County, 34 feet north of the intersection of the Columbia River Highway and the road leading to the Spokane, Portland & Seattle Railway station, at the Union Oil Co.'s east tank, No. 2103, in the southeast corner of the concrete base. A Pacific Power & Light Co. standard disk, stamped "53 1931." (16.512 meters or 54.173 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co.

16 (P. P. & L.).—About 2 miles west along the Spokane, Portland & Seattle Railway from Clatskanie, about 0.7 mile west of the siding at Palm, Columbia County, about ¼ mile north of the Columbia River Highway, at mileage 67.5, 45 feet north of the track, and 30 feet east of a county road. A Pacific Power & Light Co. standard disk, stamped "16 1931" and set in the top of a concrete post. (4.941 meters or 16.211 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co.

Y 31=15 (U. S. G. S.).—At Marshland, Columbia County, about 800 feet east of the Spokane, Portland & Seattle Railway station, and 32 feet south of the track, at the west end of an iron gate. A United States Geological Survey standard cap, stamped "15 A" and riveted on the top of a 3½-inch iron pipe cased in concrete. (4.796 meters or 15.735 feet.)

X 31.—At Woodson, Columbia County, about 500 feet south of the Spokane, Portland and Seattle Railway station, 160 feet west of highway milepost 72, just west of a garage, just west of the intersection of the Columbia River

Highway and the road from the station, and 15 feet south of the highway. A standard disk, stamped "X 31 1920" and set in the top of a concrete post. (3.800 meters or 12.467 feet.)

NOTE.—This bench mark was searched for but not found in 1931. It was reported that it had possibly been destroyed in an automobile accident.

W 31.—At **Kerry**, Columbia County, about 400 feet west of the Spokane, Portland & Seattle Railway station, and 15 feet north of the track. A standard disk, stamped "W 31 1920" and set in the top of a concrete post. (3.663 meters or 12.018 feet.)

W 31 (Reset).—At **Kerry**, Columbia County, 184 feet west of the west face of the Spokane, Portland & Seattle Railway station, 61 feet east of a switch point, and 17.5 feet north of the center line of the main track. A standard disk, stamped "W 31 1920" and set in the top of a concrete and tile post. (3.611 meters or 11.846 feet.)

NOTE.—This bench mark was reconstructed and a new elevation determined by the Pacific Power & Light Co. in 1929.

13 (P. P. & L.).—At **Kerry**, Columbia County, about 500 feet west of the Spokane, Portland & Seattle Railway station, south of trestle No. A 69-9, on the southwest corner of a Columbia River Highway culvert. A chiseled square. (4.227 meters or 13.868 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1929.

V 31.—At **Westport**, Clatsop County, about 500 feet southwest of the Spokane, Portland & Seattle Railway station, at the northeast corner of the Columbia River Highway bridge over Plympton Creek, in the east face of the coping of the concrete railing. A standard disk, stamped "V 31 1920." (9.841 meters or 32.287 feet.)

O 31=20 (U. S. G. S.).—At **Westport**, Clatsop County, about 200 feet west of the Spokane, Portland & Seattle Railway station, at the east end of a railway trestle over Plympton Creek, 80 feet south of the track, 60 feet west of the center line of a paved road, and 40 feet east of the creek. A United States Geological Survey standard cap, stamped "20 A" and riveted on the top of a 3½-inch iron pipe cased in concrete. (6.390 meters or 20.965 feet.)

T 31.—About 0.3 mile east along the Spokane, Portland & Seattle Railway from the station at **Wauna**, Clatsop County, on the south side of the track, in a rock cut, in an outcropping rock about 4 feet above the level of the track. A standard disk. (4.860 meters or 15.945 feet.)

Triangulation Station Bugby Hole Eccentric.—At **Bugby**, Clatsop County, on the Spokane, Portland & Seattle Railway, 650 feet north of Bugby Hole Creek, and 150 feet north of a trestle. The highest point or inshore edge of a standard triangulation-station disk set in an irregular concrete pier. (3.649 meters or 11.972 feet.)

M 31=8 (U. S. G. S.).—At **Clifton**, Clatsop County, 80 feet northeast of the Spokane, Portland & Seattle Railway station, 70 feet north of the track, and 80 feet south of the Columbia River. A United States Geological Survey standard cap, stamped "8 A" and riveted on the top of a 3½-inch iron pipe. (2.777 meters or 9.111 feet.)

NOTE.—It was reported in 1929 that this bench mark was destroyed.

15 (U. S. E.).—At **Clifton**, Clatsop County, 146 feet northeast of the northwest corner of the Spokane, Portland & Seattle Railway station, 83 feet north of the center line of the main track, and inside the fence line. A brass screw, set in the top of an iron pipe filled with concrete. (4.573 meters or 15.002 feet.)

NOTE.—The elevation of this bench mark was determined by the Pacific Power & Light Co. in 1929.

13 (U. S. G. S.).—At **Clifton**, Clatsop County, about 300 feet west of the Spokane, Portland & Seattle Railway station, 30 feet south of the center line of the main track, 20 feet east of the point of the east switch, and 19 feet north of the northwest corner of a dwelling. A United States Geological Survey standard disk, stamped "13 1929" and set in the top of a concrete post. (4.143 meters or 13.594 feet.)

NOTE.—The elevation of this bench mark was determined by the Pacific Power & Light Co. in 1929.

L 31.—At **Aldrich Point**, Clatsop County, about 400 feet east of the Spokane, Portland & Seattle Railway station, and 8 feet south of the track, in a 9-foot sandstone boulder. A standard disk, stamped "L 31 1920." (3.814 meters or 12.513 feet.)

K 31=9 (U. S. G. S.).—At **Knappa**, Clatsop County, about 500 feet south of the Knappa Hotel, 122 feet north of the center line of the Spokane, Portland & Seattle Railway track, 11 feet east of a store, 6 feet south and 8 inches west of the southwest corner of a small garage, and 15 inches below the level of the ground. A United States Geological Survey standard cap, stamped "9 A" and riveted on the top of a 3½-inch iron pipe cased in concrete. (2.896 meters or 9.501 feet.)

J 31.—At **Knappa**, Clatsop County, 70 feet east of the Spokane, Portland & Seattle Railway station, 45 feet east of a road crossing, and 15 feet south of the track. A standard disk, stamped "J 31 1920" and set in the top of a concrete post. (3.649 meters or 11.972 feet.)

P 31=8 (U. S. G. S.).—At **Svensen**, Clatsop County, 107 feet south of the Spokane, Portland & Seattle Railway station and the post office, 81 feet south of the center line of the track, 28 feet west of the center line of a graveled road, and 16 feet west of the southeast corner of a warehouse. A United States Geological Survey standard cap, stamped "8 A" and riveted on the top of a 3½-inch iron pipe cased in concrete. (2.824 meters or 9.265 feet.)

10 (P. P. & L.).—At **Svensen**, Clatsop County, about 250 feet west of the Spokane, Portland & Seattle Railway station and the post office, 23 feet south of the center line of the main track, and 6 feet east of the point of the switch leading to the warehouse siding. A copper nail, set in the top of the concrete post. (3.141 meters or 10.304 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1929.

I 31.—At **John Day**, Clatsop County, about 350 feet east of the east end of the Spokane, Portland & Seattle Railway drawbridge over John Day River, and 20 feet south of the track. A standard disk, stamped "I 31 1920" and set in the top of a concrete post. (3.354 meters or 11.004 feet.)

H 31.—At **Astoria**, Clatsop County, at the southwest corner of Forty-fifth and Astor Streets, 35 feet from the bunk of the river, and 1 foot inside of the curb. A standard disk, stamped "H 31 1920" and set in the top of a concrete post. (6.066 meters or 19.902 feet.)

G 31 (Port of Astoria).—At **Astoria**, Clatsop County, on the hill above the city, at the reservoir in the city park, at the north entrance to the waterworks building, on the west buttress. A standard disk, stamped "G 31 1920." (86.464 meters or 283.674 feet.)

NOTE.—This bench mark was established and its elevation determined by the Port of Astoria in 1920.

U 31 (City of Astoria).—At **Astoria**, Clatsop County, at the southeast corner of the customhouse and post office, on the stone base of the iron railing. The highest nub of the rough cut stone. (5.134 meters or 16.844 feet.)

NOTE.—This is the city bench mark of origin. Repeated leveling indicates that it has been steadily settling. The above elevation was determined from leveling by the Coast and Geodetic Survey in 1930. The bench mark was destroyed in 1931 when the building was torn down.

A 32=A 1 (U. S. E.).—At **Astoria**, Clatsop County, at the southeast corner of the customhouse and post office, at the edge of the water table. A chiseled cross, lettered "BM USE." (5.511 meters or 18.081 feet.)

NOTE.—This bench mark was destroyed in 1931 when the building was torn down.

F 31.—At **Astoria**, Clatsop County, on the south side of Commercial Street, at the front entrance to the courthouse, on the east end of the first step. A standard disk, stamped "F 31 1920." (5.789 meters or 18.993 feet.)

NOTE.—Repeated leveling indicates that this mark has been steadily settling. The above elevation was determined from leveling by the Coast and Geodetic Survey in 1930.

E 31.—At **Astoria**, Clatsop County, in front of the Port of Astoria office building, on the west part of the lawn, 1 foot east of the curb. A standard disk, stamped "E 31 1920" and set in the top of a concrete post. (3.844 meters or 12.612 feet.)

NOTE.—Repeated leveling indicates that this mark has been steadily settling. The above elevation was determined from leveling by the Coast and Geodetic Survey in 1930.

D 31.—At **Astoria**, Clatsop County, at the Oregon Coast Highway viaduct over the Youngs Bay belt line railroad of the Port of Astoria, in the southwest pier, and 3 feet above the track. A standard disk, stamped "D 31 1920" and set vertically. (3.346 meters or 10.978 feet.)

For additional marks in the vicinity of Astoria, see pages 87 and 122.

C 31.—At **Warrenton**, Clatsop County, opposite the Spokane, Portland & Seattle Railway station, in the first concrete step leading to the Wilson drug store. A standard disk, stamped "C 31 1920." (1.625 meters or 5.331 feet.)

NOTE.—Repeated leveling indicates that this mark has been settling. The above elevation was determined by the Pacific Power & Light Co. in 1931.

B 31.—At **Flavel**, Clatsop County, 37 feet northeast of the Spokane, Portland & Seattle Railway, opposite the old Flavel Hotel, in the southeast main support pier forming the base of a water tank which has burned. A standard disk, stamped "B 31 1920." (3.577 meters or 11.736 feet.)

A 31.—At **Hammond**, Clatsop County, about 300 feet east of the Spokane, Portland & Seattle Railway station, and 12 feet south of the track, at the most northern point at which the right of way is close to the edge of the river. A standard disk, stamped "A 31 1920" and set in the top of a concrete post. (3.486 meters or 11.437 feet.)

Q 31.—At **Fort Stevens**, Clatsop County, in Battery Clark, at the rear of pit A, about 70 feet in the rear of the battery floor, and opposite the letter "A" in "Pit A." A copper bolt set in the top of a stone post. (3.740 meters or 12.270 feet.)

R 31 (U. S. E.).—At **Fort Stevens**, Clatsop County, at the power house, and 12 feet from the middle of the west side. A copper bolt, set in the top of a stone post. (4.231 meters or 13.881 feet.)

NOTE.—It was reported in 1929 that there was no bolt in the top of this post.

R 31 (Reset) (U. S. E.).—At **Fort Stevens**, Clatsop County, at the old wooden power house, 12 feet from the middle of the west side. A United States Geological Survey copper nail and washer, set in the top of a stone post lettered "US." (4.242 meters or 13.917 feet.)

NOTE.—This copper nail was set and its elevation determined by the Pacific Power & Light Co. in 1929.

S 31=A 3 (U. S. E.).—At **Fort Stevens**, Clatsop County, at the meteorological tower, 13 feet from the southwest leg, 17 feet from the southeast leg, and 8 feet from the edge of the concrete floor. A brass plug, set in the top of a concrete and tile post. (5.957 meters or 19.544 feet.)

For additional bench marks at Fort Stevens, see page 89.

Additional bench marks in the vicinity of Astoria, Oreg.

Under this heading are included three groups of bench marks established by the Pacific Power & Light Co. The leveling was done by that organization and, while the work is classed as second-order leveling, the closures indicate that much of it is very nearly, if not quite, up to the standards of accuracy required for first-order leveling.

I 31.—See page 85.

17 (O. S. H. D.).—About 2.5 miles east along the Columbia River Highway from the eastern city limits of **Astoria**, Clatsop County, and about 0.1 mile south of the point at which the highway turns south from the railroad, on a concrete culvert, in the top of the south end of the east head wall. An Oregon State Highway Department standard disk, stamped "17 1929." (5.436 meters or 17.835 feet.)

12 (O. S. H. D.).—About 1.1 miles east along the Columbia River Highway from the eastern city limits of **Astoria**, Clatsop County, on the concrete highway bridge over Mill Creek, in the east end of the north head wall. An Oregon State Highway Department standard disk, stamped "12 1929." (3.707 meters or 12.162 feet.)

81 (P. P. & L.).—About 0.8 mile east along the Columbia River Highway from the eastern city limits of Astoria, Clatsop County, opposite milepost 101, in the north edge of the concrete pavement. A galvanized iron nail and washer. (24.770 meters or 81.266 feet.)

91 (P. P. & L.).—About 0.6 mile east along the Columbia River Highway from the eastern city limits of Astoria, Clatsop County, 70 feet east of the center line of the Tongue Point Naval Base road, in the north edge of the concrete pavement. A United States Geological Survey standard copper nail and washer. (27.759 meters or 91.073 feet.)

97 (P. P. & L.).—About 0.6 mile east along the Columbia River Highway from the eastern city limits of Astoria, Clatsop County, on the Tongue Point Naval Base road, near the beginning of the first curve, 260 feet northeast of the concrete highway pavement, and 19 feet east of the center line of the road. A Pacific Power & Light Co. standard disk, set in the top of a 4-inch vitrified tile. (29.667 meters or 97.332 feet.)

36 (P. P. & L.).—At Tongue Point, Clatsop County, on the naval base road wooden overhead bridge over the Spokane, Portland & Seattle Railway tracks, in the east end of the wood cap of the north trestle bent. A galvanized iron nail and washer. (11.078 meters or 36.345 feet.)

13 (P. P. & L.).—At Tongue Point, Clatsop County, at the United States lighthouse station, 50 feet south of the flagpole, at the southeast corner of the drinking fountain, on the concrete base. A chiseled square. (3.855 meters or 12.648 feet.)

13 (P. P. & L.).—At Tongue Point, Clatsop County, 40 feet west of the west face of the United States Lighthouse Service warehouse, in line with the north face of the warehouse, on the retaining wall of the United States Coast Guard cable tank. A United States Geological Survey standard copper nail and washer. (3.931 meters or 12.897 feet.)

Tidal 5.—At Tongue Point, Clatsop County, at the United States lighthouse station, at the pump house, in the south side of the brick corner post, about 1 foot from the southeast corner, and about $\frac{1}{2}$ foot above the ground. A standard disk, stamped "5 1925." (3.798 meters or 12.461 feet.)

Tidal 4.—At Tongue Point, Clatsop County, at the United States lighthouse station, in line with the north side of the office building, and in the sea wall. A standard disk, stamped "4 1925." (2.413 meters or 7.917 feet.)

Tidal 3.—At Tongue Point, Clatsop County, at the United States lighthouse station, between the oil house and the machine shop, in the center of the stone wall of the upper fill, and about 1 foot above the ground. A standard disk, stamped "3 1925." (4.476 meters or 14.685 feet.)

Tidal 1.—At Tongue Point, Clatsop County, at the United States lighthouse station, in the north wall of the oil house, 1 foot from the northeast corner, and about 2 feet above the ground. A standard disk, stamped "1 1925." (4.806 meters or 15.768 feet.)

Tidal 2.—At Tongue Point, Clatsop County, at the United States lighthouse station, in the sea wall, about 1 foot south of the north end, and about 2 feet above the bottom of the wall. A standard disk, stamped "2 1925." (2.410 meters or 7.907 feet.)

86 (P. P. & L.).—About 0.6 mile east along the Columbia River Highway from the eastern city limits of Astoria, Clatsop County, and 120 feet west of the center line of the Tongue Point Naval Base road, in the north edge of the concrete pavement. A galvanized iron nail and washer. (28.347 meters or 86.440 feet.)

120 (P. P. & L.).—At Astoria, Clatsop County, on the Columbia River Highway, in the base of the east portal of the eastern city limits. A United States Geological Survey standard copper nail and washer. (36.446 meters or 119.573 feet.)

52 (P. P. & L.).—At Astoria, Clatsop County, on Fifty-third Street between Birch and Ash Streets, near the base of a power pole. A nail. (15.850 meters or 52.001 feet.)

25 (P. P. & L.).—At Astoria, Clatsop County, at the northeast corner of the intersection of Fifty-first and Birch Streets, in the concrete curb. A galvanized H 31.—See page 85.

U 31 (City of Astoria).—See page 85.

T 100 (P. P. & L.).—At Astoria, Clatsop County, on the north side of Bond Street, about midway between Tenth and Eleventh Streets, at the west edge

of the driveway to the Abrahamsen plumbing shop, at the base of the pilaster, in the concrete sidewalk. A Pacific Power & Light Co. standard disk, stamped "T 100 1931." (5.017 meters or 16.460 feet.)

U 100 (P. P. & L.).—At Astoria, Clatsop County, on the south side of Bond Street, about midway between Twelfth and Fourteenth Streets, at the east edge of the entrance to the E. P. Noonan & Co. insurance office, in the concrete sidewalk. A Pacific Power & Light Co. standard disk, stamped "U 100 1931." (4.578 meters or 15.020 feet.)

V 100 (P. P. & L.).—At Astoria, Clatsop County, on the east side of Fourteenth Street, between Commercial and Duane Streets, at the base of the second pilaster north of the west entrance to Hotel Astoria, in the concrete sidewalk. A Pacific Power & Light Co. standard disk, stamped "V 100 1931." (5.449 meters or 17.877 feet.)

W 100 (P. P. & L.).—At Astoria, Clatsop County, on the north side of Exchange Street, between Eleventh and Twelfth Streets, 4 feet east of the southwest corner of the Astorian-Budget Building, and 7 inches northwest of the northwest corner of the concrete stairway, in the concrete sidewalk. A Pacific Power & Light Co. standard disk, stamped "W 100 1931." (5.920 meters or 19.423 feet.)

Z 100 (P. P. & L.).—At Astoria, Clatsop County, on the south side of Duane Street, between Tenth and Eleventh Streets, 11 feet east of the entrance to the Merwyn Hotel, and 1.5 feet east of the northwest corner of the Astoria Savings Bank, in the concrete sidewalk. A United States Coast and Geodetic Survey standard disk, stamped "Z 100 1931." (5.678 meters or 18.629 feet.)

Y 100 (P. P. & L.).—At Astoria, Clatsop County, on the north side of Commercial Street, between Ninth and Tenth Streets, and 15 feet west of the entrance to the Pacific Power & Light Co. office, in the concrete sidewalk. A United States Coast and Geodetic Survey standard disk, stamped "Y 100 1931." (5.397 meters or 17.707 feet.)

X 100 (P. P. & L.).—At Astoria, Clatsop County, on the east side of Eighth Street, between Commercial and Bond Streets, at the base of the second pilaster from the north end of the Eagle Drug Store, in the concrete sidewalk. A United States Coast and Geodetic Survey standard disk, stamped "X 100 1931." (5.312 meters or 17.428 feet.)

U 31 (City of Astoria).—See page 85.

E 31.—See page 85.

16 (P. P. & L.).—At Smith Point, Clatsop County, 25 feet east of the intersection of Florence and Taylor Avenues, in the south concrete curb of Florence Avenue. A copper nail. (4.806 meters or 15.768 feet.)

P 3 (P. P. & L.).—See page 122.

C 31.—See page 86.

4.3 (P. P. & L.).—At Warrenton, Clatsop County, on the Spokane, Portland & Seattle Railway bridge over Skipanon River, near the south side of the large concrete pier of the draw span, in the top face. A copper nail. (1.318 meters or 4.324 feet.)

3.7 (P. P. & L.).—About 0.4 mile east of the Spokane, Portland & Seattle Railway station at Warrenton, Clatsop County, and 100 feet east of the southwest corner of the Pacific Power & Light Co. substation grounds, in the south concrete curb of the highway pavement. A copper nail. (1.125 meters or 3.691 feet.)

P 8 (P. P. & L.).—About 0.4 mile east of the Spokane, Portland & Seattle Railway station at Warrenton, Clatsop County, at the Pacific Power & Light Co. substation, in the southwest corner of the grounds. A Pacific Power & Light Co. standard disk, stamped "3.3 P 8" and set in the top of a cast-iron pipe bedded in concrete. (1.081 meters or 3.547 feet.)

R 100 (P. P. & L.).—About 0.6 mile south of the Spokane, Portland & Seattle Railway station at Warrenton, Clatsop County, on the west side of the Seaside Highway (Main Street), and near the southeast corner of block No. 3 of the Matier addition. A Pacific Power & Light Co. standard disk, stamped "R 100 1931" and set in the top of a concrete post. (2.044 meters or 6.706 feet.)

S 100 (P. P. & L.).—In the southwest part of Warrenton, Clatsop County, on the east concrete porch of the public school, in the corner at the south end. A Pacific Power & Light Co. standard disk, stamped "S 100 1931." (5.384 meters or 17.664 feet.)

P 9 (P. P. & L.).—See page 123.

Q 100 (P. P. & L.).—About 1.2 miles northwest of **Warrenton**, Clatsop County, 150 feet south of the south end of a highway bridge over a slough, and 75 feet southwest of the Fort Stevens highway where it turns north, on the west side of the fence. A Pacific Power & Light Co. standard disk, stamped "Q 100 1931" and set in the top of a concrete post. (1.189 meters or 3.901 feet.)

B 31.—See page 86.

A 31.—See page 86.

9.65 (P. P. & L.).—At **Fort Stevens**, Clatsop County, at the east entrance to the military reservation, at the base of the west face of the south concrete portal, opposite the word "FORT." A United States Geological Survey standard copper nail and washer. (2.942 meters or 9.652 feet.)

18 (U. S. G. S.).—At **Fort Stevens**, Clatsop County, at the flagpole, in the northwest corner of the concrete base. A United States Geological Survey standard disk, stamped "18 1920." (5.584 meters or 18.320 feet.)

17.80 (P. P. & L.).—At **Fort Stevens**, Clatsop County, at the south end of the guard house, on the south end of the bottom step to the east entrance. A chiseled square. (5.426 meters or 17.802 feet.)

12.40 (P. P. & L.).—At **Fort Stevens**, Clatsop County, in Battery Clark, at the rear of pit B, 74 feet from the edge of the concrete battery floor, and directly opposite the letter "B" in "Pit B." A copper bolt, set in the top of a concrete post flush with the ground. (3.778 meters or 12.395 feet.)

R 31 (Reset) (U. S. E.).—See page —.

9.68 (P. P. & L.).—At **Fort Stevens**, Clatsop County, 80 feet northwest of the northwest corner of the United States Engineer office, and 10 feet north of the center line of a gravel road, in the southwest corner of square concrete power and telephone conduit manhole No. 33. A United States Geological Survey standard copper nail and washer. (2.950 meters or 9.678 feet.)

A 2 (U. S. E.).—At **Fort Stevens**, Clatsop County, at the northeast corner of searchlight No. 3, on the top of the concrete footing. A chiseled cross. (2.582 meters or 8.471 feet.)

A 1 (U. S. E.).—At **Fort Stevens**, Clatsop County, at the southwest corner of searchlight No. 4, on the top of the concrete footing. A chiseled cross. (2.594 meters or 8.510 feet.)

LINE 8, PORTLAND, OREG., TO WALLULA, WASH. (PART)

[First-order leveling]

This line follows the track of the Oregon-Washington Railroad & Navigation Co. from Portland through The Dalles, Arlington and Umatilla to the Oregon-Washington State line. From Portland to Umatilla the railroad closely parallels the Columbia River Highway and a greater part of the bench marks are readily accessible from the highway. The field work was done during the summer and fall of 1921 by J. D. Crichton, junior hydrographic and geodetic engineer.

O 14.—See page 76.

K 23.—At **Portland**, Multnomah County, at the Sandy Boulevard viaduct over the Oregon-Washington Railroad & Navigation Co. track, in the face of the west end of the south concrete wall, and about 4 feet above the rail. A standard disk, stamped "K 23 1921." (40.398 meters or 132.539 feet.)

L 23.—At **Portland**, Multnomah County, at **Montavilla** station, at the East Eighty-second Street viaduct over the Oregon-Washington Railroad & Navigation Co. track, in the west end of the south concrete wall, and 4 feet above the rail. A standard disk, stamped "L 23 1921." (67.468 meters or 221.351 feet.)

M 23.—In the east part of **Portland**, Multnomah County, at Burr Road crossing, 10 feet east of the crossing bell, and 18 feet north of the Oregon-Washington Railroad & Navigation Co. track. A standard disk, stamped "M 23 1921" and set in the top of a concrete post. (65.425 meters or 214.649 feet.)

T 23=205 (U. S. G. S.).—In the east part of **Portland**, Multnomah County, at **Clarnie**, 25 feet north of the Oregon-Washington Railroad & Navigation Co. track, and 15 feet east of a private-road crossing. A United States Geological

Survey standard cap, stamped "205 A" and riveted on the top of a 3½-inch iron pipe. (62.641 meters or 205.515 feet.)

N 23.—About 8 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Portland**, Multnomah County, at the crossing of county road No. 110 (Buckley Avenue), 20 feet north of the track, and 6 feet west of the fence at the edge of the road. A standard disk, stamped "N 23 1921" and set in the top of a concrete post. (64.030 meters or 210.072 feet.)

O 23.—About 11 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Portland**, Multnomah County, at the crossing of county road No. 560 (Rockwood Road), 18 feet north of the track, and 10 feet west of the fence at the east edge of the road. A standard disk, stamped "O 23 1921" and set in the top of a concrete post. (47.038 meters or 154.324 feet.)

R 23=114 (U. S. G. S.).—At **Fairview**, Multnomah County, 150 feet west of a road, and 130 feet south of the Oregon-Washington Railroad & Navigation Co. track, at the rear of a house, in a fenced-in yard adjoining the right of way. A United States Geological Survey standard cap, stamped "114 A" and riveted on the top of a 3½-inch iron pipe. (34.878 meters or 114.429 feet.)

P 23.—At **Fairview**, Multnomah County, about 800 feet east of the Oregon-Washington Railroad & Navigation Co. station, at a railroad bridge over a county road, in the west end of the north concrete coping. A standard disk, stamped "P 23 1921." (33.901 meters or 111.224 feet.)

41 (U. S. G. S.).—At **Troutdale**, Multnomah County, 75 feet north and 4 feet west of the northeast corner of the Oregon-Washington Railroad & Navigation Co. station, under a fence. A United States Geological Survey standard cap, stamped "41 A" and riveted on the top of a 3½-inch iron pipe. (12.880 meters or 42.257 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1925.

Q 23.—At **Troutdale**, Multnomah County, at the southwest corner of the Oregon-Washington Railroad & Navigation Co. bridge over Sandy River, in the top of the abutment. A standard disk, stamped "Q 23 1921." (14.571 meters or 47.805 feet.)

S 23.—About 2.5 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Troutdale**, Multnomah County, in the south end of a concrete culvert. A standard disk, stamped "S 23 1921." (12.300 meters or 40.354 feet.)

X 23=46 (U. S. G. S.).—At **Corbett**, Multnomah County, at the east end of the Oregon-Washington Railroad & Navigation Co. station, 60 feet south of the track, and 30 feet west of the post office. A United States Geological Survey standard cap, stamped "46 A" and riveted on the top of a 3½-inch iron pipe. (14.198 meters or 46.581 feet.)

U 23.—At **Corbett**, Multnomah County, about 1,400 feet east of the Oregon-Washington Railroad & Navigation Co. station, in the top of the south end of a concrete culvert. A standard disk, stamped "U 23 1921." (12.572 meters or 41.247 feet.)

V 23=57 (U. S. G. S.).—At **Latourell**, Multnomah County, 50 feet south of the Oregon-Washington Railroad & Navigation Co. station, 100 feet south of the track, 80 feet north of the post office, 50 feet north of a road, 25 feet east of a road, and 10 feet east of a sidewalk. A United States Geological Survey standard cap, stamped "57 A" and riveted on the top of a 3½-inch iron pipe. (17.784 meters or 58.346 feet.)

W 23.—At **Bridal Veil**, Multnomah County, about 1,000 feet west of the Oregon-Washington Railroad & Navigation Co. station, at the northeast corner of the railroad bridge over Bridal Veil Creek, in the top of the abutment. A standard disk, stamped "W 23 1921." (12.899 meters or 42.319 feet.)

Y 23=46 (U. S. G. S.).—At **Multnomah Falls**, Multnomah County, south of the Columbia River Highway, at the east end of Multnomah Falls Lodge, and just south of the top of a short flight of dry masonry steps. A United States Geological Survey standard cap, stamped "46 A" and riveted on the top of a 3½-inch iron pipe. (15.373 meters or 50.436 feet.)

SW (Multnomah County).—At **Multnomah Falls**, Multnomah County, on the west bank of Multnomah Creek, near the southwest corner of the Columbia River Highway bridge, in the top of a concrete post in the masonry wall. A brass screw. (14.118 meters or 46.319 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1928.

NW (Multnomah County).—At **Multnomah Falls**, Multnomah County, on the west bank of Multnomah Creek, near the northwest corner of the Columbia River Highway bridge, in the top of a concrete post in the masonry wall. A brass screw. (14.166 meters or 46.475 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1928.

42 (O. W. R. R. & N.).—At **Multnomah Falls**, Multnomah County, about 75 feet north of the Columbia River Highway, at the southwest corner of Oregon-Washington Railroad & Navigation Co. bridge No. 29.65 over Multnomah Creek, and near the east end of the top of the wing wall. A concrete point within a chiseled circle. (12.904 meters or 42.336 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1928.

Z 23.—At **Horsetail Falls**, Multnomah County, at the southeast corner of the Oregon-Washington Railroad & Navigation Co. bridge over Horsetail Creek, in the top of the abutment. A standard disk, stamped "Z 23 1921." (12.931 meters or 42.424 feet.)

A 24.—At **Dodson**, Multnomah County, 50 feet southwest of the Oregon-Washington Railroad & Navigation Co. station, 40 feet south of the track, and 1 foot north of the right-of-way fence. A standard disk, stamped "A 24 1921" and set in the top of a concrete post. (18.962 meters or 62.211 feet.)

77 (U. S. G. S.).—About 2,000 feet west along the Oregon-Washington Railroad & Navigation Co. track from **Warrendale**, Multnomah County, 150 feet southwest of an old stone foundation, 75 feet south of the main track, and about 100 feet southeast of a gate in the right-of-way fence. A United States Geological Survey standard cap, stamped "77 A" and riveted on the top of a 3½-inch iron pipe. (23.788 meters or 78.045 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1925.

B 24.—About 1 mile east along the Oregon-Washington Railroad & Navigation Co. track from **Warrendale**, Multnomah County, in the north end of a concrete culvert. A standard disk, stamped "B 24 1921." (22.108 meters or 72.533 feet.)

C 24=53 (U. S. G. S.).—At **Bonneville**, Multnomah County, 75 feet southeast of the Oregon-Washington Railroad & Navigation Co. station, 250 feet south of the hotel, 200 feet northwest of the dancing pavilion in the park, and 130 feet south of the track. A United States Geological Survey standard cap, stamped "53 A" and riveted on the top of a 3½-inch iron pipe. (16.366 meters or 53.694 feet.)

NOTE.—This bench mark was searched for but not recovered in 1932.

D 24.—About 2.5 miles southwest along the Oregon-Washington Railroad & Navigation Co. track from **Cascade Locks**, Hood River County, 60 feet south of the track, and about 40 feet west of Ruckel Creek, in a large boulder. A standard disk, stamped "D 24 1921." (24.003 meters or 78.750 feet.)

NOTE.—It was reported that this bench mark should be used with caution as the ground in this neighborhood may be sliding toward the river. Recent leveling by the United States district engineer office at Portland, indicated that bench mark D 24 has settled nearly 0.6 foot.

DX 24 (P. P. & L.).—About 2.5 miles southwest along the Oregon-Washington Railroad & Navigation Co. track from **Cascade Locks**, Hood River County, 50 feet west of Ruckel Creek, and 30 feet southwest of the track, on a rock. A chiseled square. (22.545 meters or 73.967 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1928. It should be used with caution as the ground in this neighborhood may be sliding toward the river.

103 (P. P. & L.).—At **Cascade Locks**, Hood River County, about 800 feet west of the Oregon-Washington Railroad & Navigation Co. station, 150 feet north of the Columbia River Highway, in the southeast concrete wall of a railroad overhead crossing, and 8 feet south of the track. A Pacific Power & Light Co. standard disk, stamped "103 1928." (31.500 meters or 103.345 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1928.

E 24=99 (U. S. G. S.).—At **Cascade Locks**, Hood River County, 400 feet northwest of the Oregon-Washington Railroad & Navigation Co. station, 330 feet northeast of the post office, 80 feet south of the United States engineer office, and 30 feet north of the track. A United States Geological Survey standard cap, stamped "99 A" and riveted on the top of a 3½-inch iron pipe cased in concrete. (30.360 meters or 99.606 feet.)

M 24.—At **Cascade Locks**, Hood River County, on the north side of the middle lock gate, in the northeast corner of the coping. A standard disk, stamped "M 24 1921." (23.020 meters or 75.525 feet.)

F 24.—About 1¼ miles east along the Oregon-Washington Railroad & Navigation Co. track from **Cascade Locks**, Hood River County, at the southwest corner of the railroad bridge over Herman Creek, in the top of the abutment. A standard disk, stamped "F 24 1921." (37.463 meters or 122.910 feet.)

FX 24 (O. S. H. D.).—About 1¼ miles east of **Cascade Locks**, Hood River County, at the southwest corner of the Columbia River Highway bridge over Herman Creek, in the curb. An Oregon State Highway Department standard disk, stamped "111 FX 24 1927." (34.078 meters or 111.804 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1925. It was originally a chiseled square but was replaced in 1927 by setting the above disk at exactly the same elevation. This bridge is to be rebuilt and the mark will probably be moved.

G 24.—About 5 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Cascade Locks**, Hood River County, about 400 feet east of milepost 48, at the south edge of the right of way, in the face of the cliff, about 1.5 feet above the level of the rail. A standard disk, stamped "G 24 1921." (28.801 meters or 94.491 feet.)

GX 24 (P. P. & L.).—About 5 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Cascade Locks**, Hood River County, about 400 feet east of milepost 48, and 25 feet east of bench mark G 24, in a rock ledge about 2.5 feet above the level of the rail. A chiseled square. (29.133 meters or 95.582 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1928.

H 24.—At **Wyeth**, Hood River County, on the Oregon-Washington Railroad & Navigation Co. railroad, at mileage 49.66, 166 feet east of bridge No. 49.63, and 50 feet south of the main track, at the fence line. A standard disk, stamped "H 24 1921" and set in the top of a concrete post. (29.992 meters or 98.399 feet.)

R 24=97 (U. S. G. S.).—About 0.3 mile east along the Oregon-Washington Railroad & Navigation Co. track from the station at **Wyeth**, Hood River County, at mileage 49.88, 49 feet west of the section house, and 25 feet south of the southernmost rail. A United States Geological Survey standard cap, stamped "97 A" and riveted on the top of a 3½-inch iron pipe. (29.840 meters or 97.900 feet.)

NOTE.—This bench mark was searched for in September, 1927, but not found.

I 24.—About 1.5 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Wyeth**, Hood River County, 350 feet east of Columbia River Highway milepost 54, 275 feet west of the west end of the retaining wall between the highway and Shellrock Mountain, 28 feet south of the track, and 16 feet north of the highway. A standard disk, stamped "I 24 1921" and set in the top of the concrete post. (30.567 meters or 100.285 feet.)

IX 24 (P. P. & L.).—About 1.5 miles east of **Wyeth**, Hood River County, about 400 feet east of Columbia River Highway milepost 54, on the south side of the highway, and on the west end of the retaining wall west of Shellrock Mountain. A chiseled square. (31.405 meters or 103.035 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1928.

J 24.—About 2 miles west along the Oregon-Washington Railroad & Navigation Co. track from **Viento**, Hood River County, near the east end of the siding at **Lindsey**, at the northwest corner of the Columbia River Highway bridge over Warren Creek, in the top of the wing wall. A standard disk, stamped "J 24 1921." (31.925 meters or 104.741 feet.)

98 (O. S. H. D.).—About 2 miles west of **Viento**, Hood River County, at **Lindsey**, at mileage 56.4, just north of the Columbia River Highway, at the southeast corner of the Oregon-Washington Railroad & Navigation Co. bridge

over Warren Creek, in the abutment. An Oregon State Highway Department standard disk, stamped "98 1928." (30.123 meters or 98.830 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1928.

LX 24 (P. P. & L.).—At **Viento**, Hood River County, 30 feet south of the Oregon-Washington Railroad & Navigation Co. track, and about 160 feet west of the gate in the south fence, on a bowlder. A chiseled square. (32.878 meters or 107.867 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1928.

L 24=103 (U. S. G. S.).—At **Viento**, Hood River County, 100 feet southeast of the Oregon-Washington Railroad & Navigation Co. station, and 6 feet east of the gate in the south right-of-way fence. A United States Geological Survey standard cap, stamped "103 A" and riveted on the top of a 3½-inch iron pipe cased in concrete. (31.384 meters or 102.966 feet.)

K 24.—About 0.8 mile east along the Oregon-Washington Railroad & Navigation Co. track from **Viento**, Hood River County, about 350 feet east of milepost 56, at the west end of a shallow rock cut, at the south edge of the right of way, in bedrock. A standard disk, stamped "K 24 1921." (29.364 meters or 96.338 feet.)

KX 24 (P. P. & L.).—About 0.8 mile east along the Oregon-Washington Railroad & Navigation Co. track from **Viento**, Hood River County, about 350 feet east of milepost 56, at the west end of a shallow cut, at the south edge of the right of way, 4 feet west of bench mark K 24, on a rock ledge. A chiseled square. (29.079 meters or 95.402 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1928.

N 24.—About 3.5 miles west along the Oregon-Washington Railroad & Navigation Co. track from **Hood River**, Hood River County, about 1,500 feet west of an overhead crossing, at the south edge of the right of way, in the face of a cliff. A standard disk, stamped "N 24 1921." (36.258 meters or 118.956 feet.)

P 24=103 (U. S. G. S.).—At **Hood River**, Hood River County, in the parking space west of the Oregon-Washington Railroad & Navigation Co. station, about 30 feet west of the water tank, at the foot of a sloping bank. A United States Geological Survey standard cap, stamped "103 A" and riveted on the top of a 3½-inch iron pipe cased in concrete. (30.987 meters or 101.663 feet.)

O 24.—At **Hood River**, Hood River County, just southwest of the Oregon-Washington Railroad & Navigation Co. station, at the north end of Second Street, in the north face of the concrete retaining wall. A standard disk, stamped "O 24 1921." (35.395 meters or 116.125 feet.)

Magnetic Station.—At **Hood River**, Hood River County, on the south side of State Street, near the east end of the courthouse yard, and near the band stand. A standard magnetic-station disk, stamped "1917" and set in the top of a concrete post. (62.568 meters or 205.274 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1925.

152 (City of Hood River).—At **Hood River**, Hood River County, on the east side of Second Street, near the city hall, at the first entrance to the red brick building north of the fire station, on the northwest corner of the iron step. A punch-marked cross, lettered "BM." (46.595 meters or 152.870 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1925.

112 (O. S. H. D.).—In the east part of **Hood River**, Hood River County, 3 inches from the southwest corner of the Columbia River Highway bridge over Hood River, in the concrete curb. A copper bolt. (34.341 meters or 112.666 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1925.

M 21 (U. S. G. S.).—In the east part of **Hood River**, Hood River County, near the southeast corner of the Columbia River Highway bridge over Hood River,

in the curb. A United States Geological Survey standard disk, stamped "108 M 21." (33.055 meters or 108.448 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1925.

M 31 (U. S. G. S.)—About 0.5 mile southeast of **Hood River**, Hood River County, at **Powerdale**, at the northwest corner of the Pacific Power & Light Co. Powerdale plant. A United States Geological Survey standard disk, stamped "102 M 31" and set in the top of a concrete post flush with the ground. (31.310 meters or 102.724 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1925.

Q 24.—At **Hood River**, Hood River County, at the southwest corner of the Oregon-Washington Railroad & Navigation Co. bridge over Hood River, in the abutment. A standard disk, stamped "Q 24 1921." (30.608 meters or 100.420 feet.)

S 24.—About 3.5 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Hood River**, Hood River County, 200 feet west of tunnel No. 1½, on the north side of the track, in the top of the concrete base of what was formerly a telltale. A standard disk, stamped "S 24 1921." (29.276 meters or 96.050 feet.)

T 24.—At **Mosier**, Wasco County, at the southwest corner of the Oregon-Washington Railroad & Navigation Co. steel bridge over Mosier Creek, in the top of the concrete abutment. A standard disk, stamped "T 24 1921" (29.568 meters or 97.008 feet.)

M 29 (U. S. G. S.)—At **Mosier**, Wasco County, at the northwest corner of the Columbia River Highway bridge over Mosier Creek, in the concrete curb. A United States Geological Survey standard disk, stamped "111.8." (34.178 meters or 112.132 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1924.

U 24.—About 12.5 miles west along the Oregon-Washington Railroad & Navigation Co. track from **The Dalles**, Wasco County, at **Chatfield** siding, 25 feet east of a road crossing, and 35 feet south of the track. A standard disk, stamped "U 24 1921" and set in the top of a concrete post. (29.766 meters or 97.857 feet.)

V 24.—About 9 miles west along the Oregon-Washington Railroad & Navigation Co. track from **The Dalles**, Wasco County, about 1 mile west of **Rowena** station, 233 feet east of milepost 75, and 47 feet north of the center line of the main track, in a shelf on the west side of a large basalt boulder. A standard disk, stamped "V 24 1921." (29.605 meters or 97.129 feet.)

X 24.—About 5.1 miles west along the Oregon-Washington Railroad & Navigation Co. track from **The Dalles**, Wasco County, 550 feet east of milepost 79, about opposite Columbia River Highway mileage 85.3, 10.6 feet south of the center line of the main track, in a basalt cliff, about 3 feet above the ground. A standard disk, stamped "X 24 1921" and set vertically. (31.935 meters or 104.773 feet.)

Y 24.—About 3.5 miles west along the Oregon-Washington Railroad & Navigation Co. track from **The Dalles**, Wasco County, at the northwest corner of the bridge over Chenoweth Creek, in the top of the wing wall. A standard disk, stamped "Y 24 1921." (38.872 meters or 127.533 feet.)

A 25.—At **The Dalles**, Wasco County, in the north wall of the Oregon-Washington Railroad and Navigation Co. station, and about 3 feet east of the entrance to the waiting room. A standard disk, stamped "A 25 1921" and set vertically. (31.197 meters or 102.352 feet.)

B 25.—At **The Dalles**, Wasco County, at the southwest corner of Second and Union Streets, on the east side of the post office, in the top of the northeast corner of the most northerly area wall. A standard disk, stamped "B 25 1921." (29.904 meters or 98.110 feet.)

C 25.—At **The Dalles**, Wasco County, 85 feet east of the southeast corner of Second and Federal Streets, in the north wall of the Stadelman Bonn Hardware Co. building, 3.75 feet above the sidewalk. A standard disk, stamped "C 25 1921" and set vertically. (32.189 meters or 105.607 feet.)

D 25=103 (U. S. G. S.)—At **The Dalles**, Wasco County, at the northwest corner of Third and Union Streets, 75 feet north of the center of Third

Street, 75 feet west of the center of Union Street, 6 feet 2 inches west and 5 feet 6 inches south of the southeast corner of the old courthouse which is now used as a morgue, under the third wooden step of the south entrance. A United States Geological Survey standard cap, stamped "103 A" and riveted on the top of a 3½-inch iron pipe. (31.758 meters or 104.193 feet.)

E 25.—About 1¾ miles east along the Oregon-Washington Railroad & Navigation Co. track from **The Dalles**, Wasco County, at Columbia River Highway mileage 93.2, 183 feet north of the center line of the highway, at the southwest corner of the railroad bridge over Threemile Creek, in the abutment. A standard disk, stamped "E 25 1921." (34.515 meters or 113.238 feet.)

F 25.—About 3.5 miles east along the Oregon-Washington Railroad & Navigation Co. track from **The Dalles**, Wasco County, at **Seufert**, near the Seufert Cannery, at Columbia River Highway mileage 94.7, 215 feet north of the highway, at the southwest corner of the railroad bridge over Fifteenmile Creek, in the top of the abutment. A standard disk, stamped "F 25 1921." (41.481 meters or 136.092 feet.)

140 (O. S. H. D.).—About 3.5 miles east of **The Dalles**, Wasco County, at **Seufert**, at the northeast corner of the Columbia River Highway concrete viaduct over Fifteenmile Creek, in the curb. A copper bolt. (42.896 meters or 140.734 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1925.

G 25.—About 4.4 miles east of **The Dalles**, Wasco County, at **Big Eddy**, about 0.3 mile east of the west end of the Celilo Canal, at Columbia River Highway mileage 95.3, 50 feet south of the center line of the highway, and 35 feet north of the post office, in the concrete base of a flagpole. A standard disk, stamped "G 25 1921." (41.577 meters or 136.407 feet.)

J 25.—About 7¾ miles east along the Oregon-Washington Railroad & Navigation Co. track from **The Dalles**, Wasco County, at **Dune siding**, 309 feet south of Columbia River Highway milepost 99, at the north edge of the railroad right of way, in an outcropping rock about 15 feet below the level of the track. A standard disk, stamped "J 25 1921." (49.155 meters or 161.269 feet.)

K 25.—About 8.3 miles east along the Oregon-Washington Railroad & Navigation Co. track from **The Dalles**, Wasco County, at Columbia River Highway mileage 99.7, in the highway viaduct over the railroad, in the western column of the first row of columns south of the track. A standard disk, stamped "K 25 1921" and set vertically. (53.418 meters or 175.256 feet.)

92 (U. S. E.).—At **Celilo**, Wasco County, 275 feet west of the Oregon-Washington Railroad & Navigation Co. station, and 100 feet south of the Celilo Canal, at a fence corner. A United States Engineer Department standard disk, stamped "92" and set in the top of a concrete post. (47.526 meters or 155.924 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1927. It is assumed to have settled about 0.07 foot since its establishment.

P 25=159 (U. S. G. S.).—At **Celilo**, Wasco County, about 500 feet north of Columbia River Highway mileage 103.3, 111 feet west of the Oregon-Washington Railroad & Navigation Co. station, and 16 feet north of the center line of the westbound track. A United States Geological Survey standard cap, stamped "159 A" and riveted on the top of a 3½-inch iron pipe cased in concrete. (48.905 meters or 160.449 feet.)

L 25.—At **Celilo**, Wasco County, at the eastern end of the Celilo Canal, 250 feet east of the most easterly swing bridge, at the extreme east end of the south retaining wall, in a circular nub. A standard disk, stamped "L 25 1921." (46.278 meters or 151.830 feet.)

MX 25 (O. S. H. D.).—In Wasco County, about 1 mile west along the Oregon-Washington Railroad & Navigation Co. track from **Miller**, Sherman County, just north of the Columbia River Highway, at the southwest corner of the railroad bridge over Deschutes River, in the top of the concrete abutment. An Oregon State Highway Department standard disk, stamped "165 MX 25 1927." (50.446 meters or 165.506 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1927.

165 (O. S. H. D.).—In Wasco County, about 1 mile west of **Miller**, Sherman County, at the southwest corner of the Columbia River Highway bridge over Deschutes River. A copper bolt. (50.237 meters or 164.819 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1927.

M 25.—About 1 mile west of **Miller**, Sherman County, at the Columbia River Highway bridge over the Deschutes River, in the east end of the north railing. A standard disk, stamped "M 25 1921" and set vertically. (51.077 meters or 167.575 feet.)

NX 25 (O. S. H. D.).—About 0.5 mile west of **Ainsworth**, Sherman County, at Columbia River Highway mileage 108.2, at the southwest corner of a highway bridge, in the curb. A copper bolt. (50.798 meters or 166.661 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1927. This mark will probably be destroyed in 1932.

N 25.—About 0.5 mile west of **Ainsworth**, Sherman County, at the northeast corner of a Columbia River Highway bridge, in the north face of the wing wall, facing the Oregon-Washington Railroad & Navigation Co. track. A standard disk, stamped "N 25 1921." (49.657 meters or 162.916 feet.)

NOTE.—Culvert has been rebuilt and leveling rod can not be held on the disk.

O 25=164 (U. S. G. S.).—See page 8.

OX 25 (U. S. G. S.).—About 0.5 mile east along the Oregon-Washington Railroad & Navigation Co. track from **Biggs**, Sherman County, at mileage 104.46, about 800 feet north of Columbia River Highway mileage 111.4, at the southwest corner of the railroad bridge over Spanish Creek, in the abutment. A United States Geological Survey standard disk, stamped "170 OX 25 1927." (51.912 meters or 170.314 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1927.

Q 25.—At **Grant**, Sherman County, about 430 feet west of the station sign, north of Columbia River Highway mileage 113.6, at the intersection of the Oregon-Washington Railroad & Navigation Co. track and the Maryhill ferry road, in the northwest corner. A standard disk, stamped "Q 25 1921" and set in the top of a concrete post. (53.784 meters or 176.456 feet.)

166 (U. S. G. S.).—At **Grant**, Sherman County, 146 feet west of the Poplar Grove service station gas pump, 27 feet south of the center line of the Columbia River Highway at mileage 113.7, and 25 feet north of the north end of a row of large poplar trees. A United States Geological Survey standard cap, stamped "166 A" and riveted on the top of a 3½-inch iron pipe cased in concrete. (50.715 meters or 166.388 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co.

Y 25=179 (U. S. G. S.).—At **Rufus**, Sherman County, 108 feet west of the west end of the Oregon-Washington Railroad & Navigation Co. station, and 127 feet south of the main track, at the west edge of the roadway leading to the station. A United States Geological Survey standard cap, stamped "179 A" and riveted on the top of a 3½-inch iron pipe cased in concrete. (54.973 meters or 180.357 feet.)

R 25.—At **Rufus**, Sherman County, 380 feet east of the east end of the Oregon-Washington Railroad & Navigation Co. station, at the southeast corner of the railroad bridge, about 20 feet south of the center line of the main track, in the abutment. A standard disk, stamped "R 25 1921." (53.692 meters or 176.155 feet.)

205 (P. P. & L.).—At **Rufus**, Sherman County, 300 feet east of a service station, at Columbia River Highway mileage 116.4, on the northwest corner of a highway culvert. A chiseled square. (62.673 meters or 205.619 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1927.

201 (O. S. H. D.).—About 0.3 mile east along the Columbia River Highway from **Rufus**, Sherman County, at mileage 116.6, in the southwest corner of a highway culvert. A copper bolt. (61.454 meters or 201.621 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1927.

S 25.—About 3.0 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Rufus**, Sherman County, at the east end of **Day** siding, at the northwest corner of a bridge under the railroad, in the upper level of the abutment. A standard disk, stamped "S 25 1921." (55.404 meters or 181.771 feet.)

197 (O. S. H. D.).—About 3.0 miles east of **Rufus**, Sherman County, at Columbia River Highway mileage 119.2, at the southwest corner of a concrete highway bridge, in the curb. A copper bolt. (60.190 meters or 197.475 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1927.

196 (P. P. & L.).—About 3.0 miles east of **Rufus**, Sherman County, near the east end of **Day** siding, at Columbia River Highway mileage 119.2, at the northeast corner of a concrete bridge under the highway, in the abutment. A chiseled square. (59.891 meters or 196.492 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1927.

T 25.—About 5.0 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Rufus**, Sherman County, at the northwest corner of the railroad bridge over John Day River, in the upper level of the abutment, 29 feet west of the east edge of the abutment, and 8 feet north of the center line of the main track. A standard disk, stamped "T 25 1921." (56.886 meters or 186.633 feet.)

TX 25 (O. S. H. D.).—About 5.0 miles east of **Rufus**, Sherman County, at the southwest corner of the Columbia River Highway bridge over John Day River, in the curb. An Oregon State Highway Department standard disk, stamped "199 TX 25 1927." (60.634 meters or 198.929 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon State Highway Department in 1927.

198 (O. S. H. D.).—In Gilliam County, about 5.0 miles east of **Rufus**, Sherman County, at the northeast corner of the Columbia River Highway bridge over John Day River, on the wing wall. A chiseled square. (60.344 meters or 197.978 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon State Highway Department in 1927.

U 25.—About 1¾ miles east along the Oregon-Washington Railroad & Navigation Co. track from the east end of **Goff** siding, Gilliam County, 57 feet west of milepost 117, 40 feet south of the center line of the track, opposite Columbia River Highway mileage 123.95, in the vertical face of a cliff. A standard disk, stamped "U 25 1921." (60.107 meters or 197.201 feet.)

Z 25=193 (U. S. G. S.).—About 0.4 mile east along the Oregon-Washington Railroad & Navigation Co. track from **Hook**, Gilliam County, 70 feet east of milepost 119, 25 feet north of the track, and about 400 feet north of the Columbia River Highway at mileage 125.95. A United States Geological Survey standard cap, stamped "193 A" and riveted on the top of a 3½-inch iron pipe cased in concrete. (59.250 meters or 194.389 feet.)

W 25.—About 1.2 miles east of **Hook**, about 2¾ miles west of **Quinton**, Gilliam County, on the south side of the Columbia River Highway at mileage 127.2, in the east end of a stone retaining wall. A standard disk, stamped "W 25 1921." (61.104 meters or 200.472 feet.)

A 26=226 (U. S. G. S.).—At **Quinton**, Gilliam County, 192 feet west of the Oregon-Washington Railroad & Navigation Co. station, 40 feet north of the track, and 4 feet south of the right-of-way fence. A United States Geological Survey standard cap, stamped "226 A" and riveted on the top of a 3½-inch iron pipe cased in concrete. (69.566 meters or 228.234 feet.)

X 25.—About 0.7 mile east along the Oregon-Washington Railroad & Navigation Co. track from **Quinton**, Gilliam County, at the northwest corner of a bridge over a drain at the Wildcat service station, in the upper level of the abutment, and 123 feet north of the center line of the Columbia River Highway at mileage 130.7. A standard disk, stamped "X 25 1921." (69.670 meters or 228.576 feet.)

235.67 (P. P. & L.).—About 0.7 mile east along the Columbia River Highway from **Quinton**, Gilliam County, at mileage 130.7, 100 feet east of the Wildcat

service station, on the northwest corner of the highway bridge. A chiseled square. (71.833 meters or 235.671 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1927.

235.70 (O. S. H. D.).—About 0.7 mile east along the Columbia River Highway from **Quinton**, Gilliam County, at mileage 130.7, 100 feet east of the Wildcat service station, on the southwest corner of the highway bridge. A copper bolt. (71.841 meters or 235.698 feet.)

NOTE.—The elevation of this bench mark was determined by the Pacific Power & Light Co. in 1927.

B 26.—At **Ramsay**, Gilliam County, about 250 feet east of the east end of the Oregon-Washington Railroad & Navigation Co. siding, 110 feet north of the Columbia River Highway, and 60 feet east of highway milepost 133, at the southeast corner of a railroad bridge, in the abutment. A standard disk, stamped "B 26 1921." (64.436 meters or 211.404 feet.)

C 26.—About 1.6 miles west along the Oregon-Washington Railroad & Navigation Co. track from **Blalock**, Gilliam County, 125 feet northwest of Columbia River Highway milepost 135, 25 feet northeast of railroad milepost 128, and 30 feet south of the track, in a large, conspicuous boulder. A standard disk, stamped "C 26 1921." (64.081 meters or 210.239 feet.)

D 26=214 (U. S. G. S.).—At **Blalock**, Gilliam County, 140 feet southeast of the Oregon-Washington Railroad & Navigation Co. station, 180 feet southwest of the water tank, and 140 feet north of the Columbia River Highway at mileage 136.7. A United States Geological Survey standard cap, stamped "214 A" and riveted on the top of a 3½-inch iron pipe cased in concrete. (65.786 meters or 215.833 feet.)

E 26.—About 0.5 mile east along the Columbia River Highway from **Blalock**, Gilliam County, at mileage 137.1, on a highway bridge, in the top of the east end of the north parapet. A standard disk, stamped "E 26 1921." (65.970 meters or 216.437 feet.)

214 (O. S. H. D.).—About 0.5 mile east along the Oregon-Washington Railroad & Navigation Co. track from **Blalock**, Gilliam County, at railroad mileage 130.1, 55 feet north of the Columbia River Highway at mileage 137.1, on a railroad bridge over a small ravine, in the south end of the west concrete abutment. An Oregon State Highway Department standard disk, stamped "214 1930." (65.272 meters or 214.148 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1930.

G 26 (O. W. R. & N.).—About 1.3 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Blalock**, Gilliam County, near mileage 130.9, at the south edge of the right of way, about 1 foot above the ground, in the vertical face of a 25-foot cliff. An iron bolt. (64.310 meters or 210.990 feet.)

NOTE.—This bench mark was searched for in 1932 but was not found.

F 26.—About 5¼ miles west along the Oregon-Washington Railroad & Navigation Co. track from **Arlington**, Gilliam County, 8 feet south of the track, in a large wedge-shaped boulder, the edge of which points to the north. A standard disk, stamped "F 26 1921." (65.526 meters or 214.980 feet.)

NOTE.—It was reported in 1932 that this bench mark had been destroyed.

H 26.—About 3.5 miles west along the Oregon-Washington Railroad & Navigation Co. track from **Arlington**, Gilliam County, about 0.2 mile west of the east end of **Gilmore** siding, 74 feet south of the track, and 15 feet north of the Columbia River Highway near mileage 141.6, in the top of a highway culvert. A standard disk, stamped "H 26 1921." (67.556 meters or 221.640 feet.)

I 26.—About 1.8 miles west along the Oregon-Washington Railroad & Navigation Co. track from the station at **Arlington**, Gilliam County, 138 feet west of a concrete culvert, 106 feet east of milepost 136, 95 feet north of the Columbia River Highway near mileage 143.3, and 8 feet south of the track, in the face of a large rock. A standard disk, stamped "I 26 1921" and set vertically. (68.865 meters or 225.935 feet.)

M 26=225 (U. S. G. S.).—At **Arlington**, Gilliam County, 60 feet east of the Oregon-Washington Railroad & Navigation Co. station, and 45 feet south of the main track, in the southeast corner of the park west of the lunch room. A

United States Geological Survey standard cap, stamped "M 26 225" and riveted on the top of a 3½-inch iron pipe cased in concrete. (69.290 meters or 227.329 feet.)

For additional marks in the vicinity of Arlington, see page 148.

N 26.—About 2.6 miles east along the Oregon-Washington Railroad & Navigation Co track from **Arlington**, Gilliam County, near railroad mileage 140.4, about ¼ mile north of the Columbia River Highway at mileage 148.3, on a concrete railroad culvert used as a cattle pass, in the top of the north head wall. A standard disk, stamped "N 26 1921." (67.270 meters or 220.702 feet.)

225 (U. S. G. S.).—About 4.05 miles east of **Arlington**, Gilliam County, 712 feet west of Oregon-Washington Railroad & Navigation Co. milepost 142, 100 feet south of the track at the west end of **Silica** siding, and 20 feet south of a large boulder. This mark is also 0.3 mile north of the Columbia River Highway at mileage 149.75. A United States Geological Survey standard cap, riveted on the top of a 3½-inch iron pipe. (69.078 meters or 226.635 feet.)

O 26.—About 4.3 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Arlington**, Gilliam County, about 1,100 feet east of the west end of **Silica** siding, about 0.3 mile north of Columbia River Highway milepost 150, and 27 feet south of the track, in a large boulder. A standard disk, stamped "O 26 1921." (69.772 meters or 228.910 feet.)

P 26.—About 7.3 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Arlington**, Gilliam County, at railroad mileage 145.1, about 90 feet north of the Columbia River Highway at mileage 153.1, on the northwest corner of an undergrade cattle pass. A standard disk, stamped "P 26 1921." (69.141 meters or 226.840 feet.)

Q 26.—At **Willows**, Gilliam County, on the Oregon-Washington Railroad & Navigation Co. right of way, about 700 feet east-southeast of the section house, about 300 feet north of the Columbia River Highway at mileage 154.9, 20 feet south of the track, and 22 feet north of the right-of-way fence, in a vertical well of outcropping rock. A standard disk, stamped "Q 26 1921." (70.352 meters or 230.813 feet.)

R 26=240 (U. S. G. S.).—At **Heppner Junction**, Gilliam County, 360 feet west of the Oregon-Washington Railroad & Navigation Co. station, and 25 feet south of the branch track. A United States Geological Survey standard cap, stamped "240 A" and riveted on the top of a 3½-inch iron pipe. (73.373 meters or 240.725 feet.)

S 26.—At **Heppner Junction**, Gilliam County, at the southeast corner of the Oregon-Washington Railroad & Navigation Co. bridge over Willow Creek, in the top of the abutment. A standard disk, stamped "S 26 1921." (74.149 meters or 243.271 feet.)

T 26.—In Morrow County, about 2.4 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Heppner Junction**, Gilliam County, at railroad mileage 150.7, 30 feet south of the track, and 309 feet north of the Columbia River Highway at mileage 158.6. A standard disk, stamped "T 26 1921" and set in the top of a concrete post. (71.102 meters or 233.274 feet.)

U 26=240 (U. S. G. S.).—At **Boulder**, Morrow County, on the Oregon-Washington Railroad & Navigation Co. right of way, about 500 feet east of the east end of the siding as existing in 1921, and 16 feet south of the main track. A United States Geological Survey standard cap, stamped "240 A" and riveted on the top of a 3½-inch iron pipe. (73.546 meters or 241.292 feet.)

NOTE.—This bench mark was searched for in 1932 but was not found. It may have been covered by an extension of the siding.

V 26.—About 2.8 miles west along the Oregon-Washington Railroad & Navigation Co. track from **Castle Rock**, Morrow County, 102 feet east of block signal No. 1552, 76 feet north of the center line of the Columbia River Highway at mileage 163.2, 35 feet south of the track, and 13 feet north of the right-of-way fence. A standard disk, stamped "V 26 1921" and set in the top of a concrete post. (72.686 meters or 238.471 feet.)

W 26=240 (U. S. G. S.).—At **Castle Rock**, Morrow County, 90 feet east of Oregon-Washington Railroad & Navigation Co. station, about 350 feet northwest of Columbia River Highway milepost 166, 252 feet west of the section foreman's house, 37 feet south of the track, and 11 feet north of the south right-of-way fence. A United States Geological Survey standard cap, stamped "240 A" and riveted on the top of a 3½-inch iron pipe. (73.844 meters or 242.270 feet.)

X 26.—About 3.3 miles west along the Oregon-Washington Railroad & Navigation Co. track from **Boardman**, Morrow County, near railroad mileage 160.5, 45 feet south of the track, 15 feet west of a crossing gate, and 27 feet north of the center line of the Columbia River Highway at mileage 168.5. A standard disk, stamped "X 26 1921" and set in the top of a concrete post. (74.239 meters or 243.566 feet.)

J 26=247.11 (U. S. R. S.).—About 2.5 miles west along the Oregon-Washington Railroad & Navigation Co. track from **Boardman**, Morrow County, at railroad mileage 161.3, north of the Columbia River Highway at mileage 169.3, in the south top face of a concrete railroad culvert over an irrigation canal. A United States Reclamation Service standard disk, stamped "247.11." (75.510 meters or 247.736 feet.)

Y 26=247 (U. S. G. S.).—About 0.8 mile west along the Oregon-Washington Railroad & Navigation Co. track from **Boardman**, Morrow County, 75 feet east of milepost 163, 45 feet south of the track, and 97 feet west of Columbia River Highway milepost 171. A United States Geological Survey standard cap, stamped "247 A" and riveted on the top of a 3½-inch iron pipe. (75.874 meters or 248.930 feet.)

Z 26.—At **Boardman**, Morrow County, 95 feet north of the Oregon-Washington Railroad & Navigation Co. track, and 114 feet west of the road crossing west of the station. A standard disk, stamped "Z 26 1921" and set in the top of a concrete post. (76.144 meters or 249.816 feet.)

NOTE.—It was reported in 1932 that the original disk had been removed from the concrete post. A new disk, stamped "Z 26 1932," was set to replace the old one. Its elevation is undoubtedly very nearly the same as that of the original disk.

A 27.—About 2 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Messner**, Morrow County, about ¼ mile north of the Columbia River Highway at mileage 175.5, at a crossing, 25 feet north of the track, and 3 feet west of the east fence. A standard disk, stamped "A 27 1921" and set in the top of a concrete post. (82.703 meters or 271.335 feet.)

B 27=271 (U. S. G. S.).—About 2.3 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Messner**, Morrow County, about ¼ mile north of the Columbia River Highway at mileage 175.8, about 0.3 mile east of a road crossing, at railroad mileage 167.95, 19 feet south of the track, and 28 feet north of the south fence. A United States Geological Survey standard cap, stamped "271 A" and riveted on the top of a 3½-inch iron pipe. (83.309 meters or 273.323 feet.)

C 27.—About 4.4 miles east along the Oregon-Washington Railroad & Navigation Co. track from **Messner**, Morrow County, at railroad mileage 169.95, 300 feet north of the Columbia River Highway at mileage 173.1, and 97 feet south of the track. A standard disk, stamped "C 27 1921" and set in the top of a concrete post. (84.348 meters or 276.732 feet.)

D 27.—About 4.1 miles west along the Oregon-Washington Railroad & Navigation Co. track from **Irrigon**, Morrow County, 96 feet north of the Columbia River Highway, near highway mileage 179.6, and 33 feet south of the track. A standard disk, stamped "D 27 1921" and set in the top of a concrete post. (81.901 meters or 268.704 feet.)

E 27=278 (U. S. G. S.).—About 2.6 miles west along the Oregon-Washington Railroad & Navigation Co. track from **Irrigon**, Morrow County, at railroad mileage 172.95, 42 feet north of the Columbia River Highway at mileage 181.1, and 31 feet south of the track. A United States Geological Survey standard cap, stamped "278 A" and riveted on the top of a 3½-inch iron pipe. (85.366 meters or 280.072 feet.)

G 27.—About 1 mile west along the Oregon-Washington Railroad & Navigation Co. track from **Irrigon**, Morrow County, at railroad mileage 174.6, 34 feet north of the center line of the Columbia River Highway at mileage 182.7, at a road crossing, 43 feet south of the track, 7 feet west of the west fence, and 5 feet north of the south fence. A standard disk, stamped "G 27 1921" and set in the top of a concrete post. (87.416 meters or 286.797 feet.)

H 27.—At **Irrigon**, Morrow County, 18 feet north of the Oregon-Washington Railroad & Navigation Co. track, and 19 feet west of Main Street. A standard disk, stamped "H 27 1921" and set in the top of a concrete post. (90.642 meters or 297.381 feet.)

I 27.—In Morrow County, just west of **Bailey**, Umatilla County, 225 feet west of the Morrow-Umatilla county line, 41 feet south of the Oregon-Washington

Railroad & Navigation Co. track, and 43 feet north of the Columbia River Highway at mileage 186.8. A standard disk, stamped "I 27 1921" and set in the top of a concrete post. (91.530 meters or 300.295 feet.)

J 27.—About 1 mile west along the Oregon-Washington Railroad & Navigation Co. track from Umatilla, Umatilla County, 57 feet north of the Columbia River Highway at mileage 189.9, and 18 feet south of the track, at the east edge of a road crossing. A standard disk, stamped "J 27 1921" and set in the top of a concrete post. (94.002 meters or 308.405 feet.)

K 27.—At Umatilla, Umatilla County, at the southeast corner of the Oregon-Washington Railroad & Navigation Co. steel bridge over Umatilla River, in the abutment. A standard disk, stamped "K 27 1921." (90.023 meters or 295.350 feet.)

295 (O. S. H. D.).—At Umatilla, Umatilla County, at the southwest corner of the Columbia River Highway bridge over Umatilla River, in the abutment. The top of a bolt. (90.120 meters or 295.670 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1930.

296 (O. S. H. D.).—At Umatilla, Umatilla County, at the southeast corner of the Columbia River Highway bridge over Umatilla River, in the abutment. An Oregon State Highway Department standard disk, stamped "296 1930." (90.126 meters or 295.690 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1930.

L 27=294 (U. S. G. S.).—At Umatilla, Umatilla County, on the Oregon-Washington Railroad & Navigation Co. right of way, 133 feet west of the west station platform, 48 feet east of the northeast corner of the water tank, and 23 feet north of the main track. A United States Geological Survey standard cap, stamped "294 A" and riveted on the top of a 3½-inch iron pipe. (90.250 meters or 296.095 feet.)

M 27.—About 2.3 miles east along the Oregon-Washington Railroad & Navigation Co. track from Umatilla, Umatilla County, and 412 feet west of a section house, in the top of the north head wall of a concrete culvert. A standard disk, stamped "M 27 1921." (97.960 meters or 321.390 feet.)

N 27.—About 4.6 miles northeast along the Oregon-Washington Railroad & Navigation Co. track from Umatilla, Umatilla County, 168 feet west of block signal No. 1876, and 30 feet north of the track. A standard disk, stamped "N 27 1921" and set in the top of a concrete post. (112.536 meters or 369.212 feet.)

O 27=378 (U. S. G. S.).—About 5.0 miles northeast along the Oregon-Washington Railroad & Navigation Co. track from Umatilla, Umatilla County, about 750 feet west of block signal No. 1881, 30 feet east of milepost 188, and 12 feet north of the track. A United States Geological Survey standard cap, stamped "378 A" and riveted on the top of a 3½-inch iron pipe. (115.837 meters or 380.042 feet.)

P 27.—At Riverview, Umatilla County, on the Oregon-Washington Railroad & Navigation Co. right of way, near the west end of the siding, 335 feet east of block signal No. 1899, and 18 feet north of the track, in a large boulder. A standard disk, stamped "P 27 1921." (125.016 meters or 410.157 feet.)

Q 27.—About 1 mile southwest along the Oregon-Washington Railroad & Navigation Co. track from Cold Springs, Umatilla County, 100 feet east of milepost 193, and 87 feet south of the track. A standard disk, stamped "Q 27 1921" and set in the top of a concrete post. (115.636 meters or 379.382 feet.)

R 27=362 (U. S. G. S.).—At Cold Springs, Umatilla County, on the Oregon-Washington Railroad & Navigation Co. right of way, about 950 feet west of the west end of the siding, at mileage 193.85, and 19 feet north of the track. A United States Geological Survey standard cap, stamped "362 A" and riveted on the top of a 3½-inch iron pipe. (110.789 meters or 363.480 feet.)

W 27.—About 1.2 miles northeast along the Oregon-Washington Railroad & Navigation Co. track from Cold Springs, Umatilla County, at mileage 195.15, at the northwest corner of a road crossing, and 22 feet north of the track. A standard disk, stamped "W 27 1921" and set in the top of a concrete post. (103.557 meters or 339.753 feet.)

S 27.—About 0.2 mile northeast along the Oregon-Washington Railroad & Navigation Co. track from **Sand**, Umatilla County, about 470 feet east of the east end of the siding, at mileage 197.4, and 12 feet south of the track, in the vertical face of an outcropping rock. A standard disk, stamped "S 27 1921." (97.318 meters or 319.284 feet.)

T 27=313 (U. S. G. S.).—About 2.2 miles southwest along the Oregon-Washington Railroad & Navigation Co. track from **Juniper**, Umatilla County, near mileage 200.3, near the mouth of Juniper Canyon, and 18 feet north of the track. A United States Geological Survey standard cap, stamped "313 A" and riveted on the top of a 3½-inch iron pipe. (95.830 meters or 314.402 feet.)

U 27.—About 1.2 miles southwest along the Oregon-Washington Railroad & Navigation Co. track from **Juniper**, Umatilla County, near mileage 201.3, at a road crossing, 95 feet south of the track, in the top of a large boulder. A standard disk, stamped "U 27 1921." (90.164 meters or 325.341 feet.)

V 27.—About 1.2 miles northeast along the Oregon-Washington Railroad & Navigation Co. track from **Juniper**, Umatilla County, about 0.5 mile south of the Oregon-Washington State line, at mileage 203.7, and 17 feet south of the track, in the vertical face of a cliff. A standard disk, stamped "V 27 1921." (96.330 meters or 316.043 feet.)

Y 12=318 (U. S. G. S.).—About 6.1 miles southwest along the Oregon-Washington Railroad & Navigation Co. track from **Wallula**, Walla Walla County, Washington, at **State Line**, at mileage 204.15, 135 feet east of the post marking the Oregon-Washington State line, and 16 feet south of the track. A United States Geological Survey standard cap, stamped "318 A" and riveted on the top of a 3½-inch iron pipe. (97.432 meters or 319.658 feet.)

LINE 9, BEND TO PRINEVILLE, OREG.

[First-order leveling]

This line follows the Oregon Trunk Railway from Bend to Prineville Junction and the City of Prineville Railway from Prineville Junction to Prineville. The field work was done during the summer of 1921 by J. D. Crichton, junior hydrographic and geodetic engineer.

A 30.—At **Bend**, Deschutes County, at the main entrance to the Pilot Butte Inn, in the north end of the east concrete step. A standard disk, stamped "A 30 1921." (1,106.864 meters or 3,628.155 feet.)

G 23.—See page 51.

B 30.—About 1.5 miles north along the Oregon Trunk Railway from **Bend**, Deschutes County, on the northwest corner of the concrete bridge over the north canal of the Central Oregon irrigation district. A standard disk, stamped "B 30 1921." (1,086.167 meters or 3,563.533 feet.)

C 30.—About 4 miles north along the Oregon Trunk Railway from **Bend**, Deschutes County, 42 feet south of a road crossing, and 35 feet west of the track, in a ledge of outcropping lava rock. A standard disk, stamped "C 30 1921." (1,048.011 meters or 3,438.349 feet.)

D 30.—About 5.5 miles north along the Oregon Trunk Railway from **Bend**, Deschutes County, 40 feet east of the track, and about 30 feet north of a private road crossing. A standard disk, stamped "D 30 1921" and set in the top of a concrete post. (1,021.307 meters or 3,350.738 feet.)

E 30.—About 0.3 mile north along the Oregon Trunk Railway from **Deschutes**, Deschutes County, on the west side of the track, in the northwest corner of the concrete head wall of an irrigation siphon. A standard disk, stamped "E 30 1921." (999.036 meters or 3,277.671 feet.)

F 30.—About 3 miles north along the Oregon Trunk Railway from **Deschutes**, Deschutes County, 40 feet west of the track, and 25 feet south of a road crossing. A railroad spike set in the top of a concrete post. (960.752 meters or 3,152.067 feet.)

G 30.—At **Redmond**, Deschutes County, 150 feet south of the Oregon Trunk Railway station, in the north concrete footing of the railway water tank. A standard disk, stamped "G 30 1921." (911.785 meters or 2,991.415 feet.)

H 30.—At **Redmond**, Deschutes County, at the southeast corner of the intersection of Sixth and D Streets, near the northwest corner of the First National Bank building, in the north wall. A standard disk, stamped "H 30 1921" and set vertically. (913.871 meters or 2,998.258 feet.)

For additional bench marks at Redmond, see page 121.

I 30.—About $1\frac{1}{4}$ miles north along the Oregon Trunk Railway from Redmond, Deschutes County, at a secondary road crossing, 30 feet west of the track, and 24 feet south of the center of the road, inside the wire fence. A standard disk, stamped "I 30 1921" and set in the top of a concrete post. (908.184 meters or 2,979.600 feet.)

J 30.—At Prineville Junction, Deschutes County, 50 feet south of the O'Neil market road, in the depression between the tracks of the Oregon Trunk and the City of Prineville railways. A standard disk, stamped "J 30 1921" and set in the top of a concrete post. (899.676 meters or 2,951.687 feet.)

K 30.—About $\frac{3}{4}$ mile northeast along the City of Prineville Railway from Prineville Junction, Deschutes County, at a public road crossing, in the southwest corner of the intersection. A standard disk, stamped "K 30 1921" and set in the top of a concrete post. (897.083 meters or 2,943.180 feet.)

L 30.—About 0.2 mile north along the City of Prineville Railway from O'Neil, Crook County, about 600 feet north of the Earl Forrest ranch, at a county road crossing, in the southeast corner of the intersection, on the railroad right of way. A standard disk, stamped "L 30 1921" and set in the top of a concrete post. (846.782 meters or 2,778.151 feet.)

M 30.—About 0.5 mile west along the City of Prineville Railway from McAllister, Crook County, at a county road crossing, in the northeast corner of the intersection, at the north edge of the right of way, and about 20 feet from the southwest corner of the old Weaver homestead house. A standard disk, stamped "M 30 1921" and set in the top of a concrete post. (847.656 meters or 2,781.018 feet.)

N 30.—About 2 miles east along the City of Prineville Railway from McAllister, Crook County, 55 feet north of the track, in the concrete abutment of a road bridge over a creek. A standard disk, stamped "N 30 1921." (852.116 meters or 2,795.651 feet.)

O 30.—At Wilton, Crook County, on the City of Prineville Railway, in the top of the east wall of an irrigation-ditch flume. A standard disk, stamped "O 30 1921." (867.106 meters or 2,844.830 feet.)

S 30=2849 (U. S. G. S.).—See page 13.

P 30.—About 1.2 miles northwest along the City of Prineville Railway from the station at Prineville, Crook County, at a point at which a county road turns to the north away from the railway, and 20 feet south of the track. A standard disk, stamped "P 30 1921" and set in the top of a concrete post. (868.284 meters or 2,848.695 feet.)

Q 30=2867 (U. S. G. S.).—See page 13.

R 30=2872 (U. S. G. S.).—At Prineville, Crook County, on the south side of East Third Street, at the northeast corner of the courthouse, in the north face of the building, and about 4 feet above the ground. A United States Geological Survey standard disk, stamped "2872 BB R 2 1908." (875.361 meters or 2,871.914 feet.)

T 30 (City of Prineville).—At Prineville, Crook County, at the northeast corner of Second and A Streets, on the north side of a hydrant. A cut in the hydrant flange. (873.791 meters or 2,866.763 feet.)

NOTE.—This bench mark has been reported as destroyed.

U 30 (City of Prineville).—At Prineville, Crook County, at the southeast corner of Fourth and A Streets, on the southwest side of a hydrant. A cut in the hydrant flange. (873.332 meters or 2,865.257 feet.)

NOTE.—This bench mark has been reported as destroyed.

LINE 10, PENDLETON TO MOUNT VERNON, OREG.

[First-order leveling]

This line follows the Oregon-Washington Highway from Pendleton to a point about 8 miles southwest of Pilot Rock, the Pendleton-John Day Highway from this point to Ukiah, county roads from Ukiah through Dale to Long Creek, the Pendleton-John Day Highway from Long Creek to a point about 9 miles south of Fox and the highway from this point to Mount Vernon. The section of the Pen-

dleton-John Day Highway from Ukiah to Long Creek was under construction at the time this line was run. The field work was done during the summer of 1930 by Charles Pierce, hydrographic and geodetic engineer, and Curtis Le Fever, junior hydrographic and geodetic engineer.

D 4.—See page 20.

P 25 (P. P. & L.).—In the southwest part of **Pendleton**, Umatilla County, on Tutuilla Road, 100 feet south of West Webb Street, in the northeast corner post of the county highway bridge over Tutuilla Creek. A Pacific Power & Light Co. standard disk, stamped "1047 P 25 1924." (319.284 meters or 1,047.518 feet.)

PP 25 (P. P. & L.).—In the southwest part of **Pendleton**, Umatilla County, at the Oregon-Washington Highway (West Webb Street) bridge over Tutuilla Creek, in the northwest corner pedestal. A Pacific Power & Light Co. standard disk, stamped "1046 PP 25 1924." (318.820 meters or 1,045.995 feet.)

P 26 (P. P. & L.).—About 1.7 miles southwest along the Oregon-Washington Highway from Main Street in **Pendleton**, Umatilla County, at the summit of a hill east of the county farm, at the fence line northwest of the highway. A Pacific Power & Light Co. standard disk, stamped "1203 P 26 1924" and set in the top of a concrete post. (366.921 meters or 1,203.807 feet.)

T. B. M. 2 (P. P. & L.).—About 2.4 miles southwest along the Oregon-Washington Highway from **Pendleton**, Umatilla County, and 600 feet east of the county hospital, on the east end of the south head wall of a culvert. A chiseled square. (331.844 meters of 1,088.725 feet.)

T. B. M. 4 (P. P. & L.).—About 3.1 miles southwest along the Oregon-Washington Highway from **Pendleton**, Umatilla County, and 300 feet south of a rocky bluff on the east side of the highway, on the south end of the east head wall of a culvert. A chiseled square. (329.246 meters or 1,080.201 feet.)

P 27 (P. P. & L.).—About 3.3 miles southwest along the Oregon-Washington Highway from **Pendleton**, Umatilla County, near the west fence of the highway, in the top of a concrete siphon box. A Pacific Power & Light Co. standard disk, stamped "1086 P 27 1924." (331.113 meters or 1,086.327 feet.)

T. B. M. 6 (P. P. & L.).—About 4.4 miles southwest along the Oregon-Washington Highway from **Pendleton**, Umatilla County, on the east side of the highway, on the top of a concrete siphon box. A chiseled square. (346.547 meters or 1,136.963 feet.)

T. B. M. 7 (P. P. & L.).—About 4.4 miles southwest along the Oregon-Washington Highway from **Pendleton**, Umatilla County, on the west side of the highway, about 250 feet northwest of a school, on the top of a concrete siphon box. A chiseled square. (346.794 meters or 1,137.773 feet.)

P 28 (P. P. & L.).—About 4.9 miles southwest along the Oregon-Washington Highway from **Pendleton**, Umatilla County, in the curb near the northwest corner of the highway bridge over McKay Creek. A Pacific Power & Light Co. standard disk, stamped "1152 P 28 1924." (351.316 meters or 1,152.609 feet.)

1151 (O. S. H. D.).—About 4.9 miles southwest along the Oregon-Washington Highway from **Pendleton**, Umatilla County, in the wing wall at the southwest corner of the highway bridge over McKay Creek. A copper bolt. (350.996 meters or 1,151.559 feet.)

P 29 (P. P. & L.).—About 6.5 miles southwest along the Oregon-Washington Highway from **Pendleton**, Umatilla County, and about 1.6 miles southwest of the McKay Creek bridge, in the northwest corner of the intersection of the highway and a crossroad which leads east to McKay Dam. A Pacific Power & Light Co. standard disk, stamped "P 29 1924" and set in the top of a concrete post. (431.920 meters or 1,417.058 feet.)

Spur line to McKay Dam.

T. B. M. 10 (P. P. & L.).—About 6 miles southwest of **Pendleton**, Umatilla County, at the west end of McKay Dam, on the top of the parapet, 1 foot west of the west lamp-post. A chiseled square. (406.203 meters or 1,332.684 feet.)

PP 28 (P. P. & L.).—About 6 miles southwest of **Pendleton**, Umatilla County, at the east end of McKay Dam, south of the roadway, in the top of the parapet running south to the spillway gates. A Pacific Power & Light Co. standard disk, stamped "PP 28 1924." (406.197 meters or 1,332.665 feet.)

1350 (U. S. R. S.).—About 6 miles southwest of **Pendleton**, Umatilla County, at the east end of **McKay Dam**, on the side of a hill, about 80 feet east of the north end of the spillway. An iron pipe in a concrete jacket. (411.512 meters or 1,350.102 feet.)

End of spur.

P 30 (P. P. & L.).—About 8.5 miles southwest along the Oregon-Washington Highway from **Pendleton**, Umatilla County, about 3.6 miles south of the **McKay Creek** bridge, and about 700 feet north of the **Gradaza** mail box, on the west side of the highway. A Pacific Power & Light Co. standard disk, stamped "P 30 1924" and set in the top of a concrete post. (443.110 meters or 1,453.770 feet.)

PP 30 (P. P. & L.).—About 9.5 miles southwest along the Oregon-Washington Highway from **Pendleton**, Umatilla County, about 4.6 miles south of the **McKay Creek** bridge, and 800 feet south of a fill, in the west head wall of a concrete culvert. A Pacific Power & Light Co. standard disk, stamped "PP 30 1924." (436.844 meters or 1,433.212 feet.)

P 32 (P. P. & L.).—About 12¼ miles southwest along the Oregon-Washington Highway from **Pendleton**, Umatilla County, about 2.7 miles north of **Pilot Rock**, and about 250 feet south of the **Glenger** mail box, at the west fence of the highway. A Pacific Power & Light Co. standard disk, stamped "P 32 1924" and set in the top of a concrete post. (462.943 meters or 1,518.839 feet.)

T. B. M. 20 (P. P. & L.).—About 2.4 miles north along the Oregon-Washington Highway from **Pilot Rock**, Umatilla County, on the abutment at the northwest corner of the highway bridge over **Stewart Creek**. A chiseled square. (461.975 meters or 1,515.663 feet.)

E 32.—About 0.9 mile north along the Oregon-Washington Highway from **Pilot Rock**, Umatilla County, about 300 feet north of the **Jensen** house, and 28 feet west of the center line of the highway. A standard disk, stamped "E 32 1930" and set in the top of a concrete post. (492.115 meters or 1,614.547 feet.)

F 32.—At **Pilot Rock**, Umatilla County, just east of the Oregon-Washington Highway, in the concrete foundation of the high school, 3 feet south of the main steps, and 3 feet above the ground. A standard disk, stamped "F 32 1930" and set vertically. (518.258 meters or 1,700.318 feet.)

P 34 (P. P. & L.).—At **Pilot Rock**, Umatilla County, on **Willow Street**, in the curb at the northwest corner of the highway bridge over **East Birch Creek**. A Pacific Power & Light Co. standard disk, stamped "P 34 1924." (498.826 meters or 1,636.565 feet.)

1641 (P. P. & L.).—At **Pilot Rock**, Umatilla County, at the southeast corner of the steel bridge over **West Birch Creek**. The top of the most easterly rivet. (500.290 meters or 1,641.368 feet.)

PP 34 (P. P. & L.).—At **Pilot Rock**, Umatilla County, in the abutment at the northeast corner of the steel bridge over **West Birch Creek**. A Pacific Power & Light Co. standard disk, stamped "PP 34 1924." (500.277 meters or 1,641.325 feet.)

G 32.—About 1.8 miles southwest along the Oregon-Washington Highway from **Pilot Rock**, Umatilla County, in the wing wall at the northeast corner of the highway bridge over **West Birch Creek**. A standard disk, stamped "G 32 1930." (532.719 meters or 1,747.762 feet.)

H 32.—About 4.8 miles southwest along the Oregon-Washington Highway from **Pilot Rock**, Umatilla County, about ¼ mile northeast of a windmill, and 37 feet north of the center line of the highway. A standard disk, stamped "H 32 1930" and set in the top of a concrete post. (598.682 meters or 1,964.176 feet.)

J 32.—About 7.9 miles southwest along the Oregon-Washington Highway from **Pilot Rock**, Umatilla County, about 80 feet northwest of a barn, southeast of a large highway culvert, and 27 feet south of the center line of the highway. A standard disk, stamped "J 32 1930" and set in the top of a concrete post. (681.414 meters or 2,235.606 feet.)

K 32.—About 8.2 miles southwest along the Oregon-Washington Highway from **Pilot Rock**, Umatilla County, about 500 feet northeast of the junction with the **Pendleton-John Day Highway**, opposite a windmill, and 27 feet southeast of the center line of the highway. A standard disk, stamped "K 32 1930" and set in the top of a concrete post. (702.027 meters or 2,303.234 feet.)

L 32.—About 8.4 miles southwest along the highways from **Pilot Rock**, Umatilla County, about 600 feet south of the junction of the Oregon-Washington Highway and the Pendleton-John Day Highway, and 27 feet west of the center line of the latter highway. A standard disk, stamped "L 32 1930" and set in the top of a concrete post. (708.804 meters or 2,325.468 feet.)

T. B. M. 36.—About 9.3 miles southwest along the highways from **Pilot Rock**, Umatilla County, on the Pendleton-John Day Highway, 200 feet north of a water trough in a canyon, and 20 feet west of the highway, in a concrete culvert head wall, 1.5 feet lower than the roadway. A painted corner. (745.653 meters or 2,446.363 feet.)

M 32.—About 11.2 miles southwest along the highways from **Pilot Rock**, Umatilla County, on the Pendleton-John Day Highway, just south of the private road leading to the Winfield Reeves ranch, and 33 feet west of the center line of the highway. A standard disk, stamped "M 32 1930" and set in the top of a concrete post. (834.107 meters or 2,736.566 feet.)

T. B. M. 42.—About 13.4 miles southwest along the highways from **Pilot Rock**, Umatilla County, on the Pendleton-John Day Highway, $\frac{1}{4}$ mile northeast of a ranch house, near the top of a hill, on the east head wall of a highway culvert. A painted triangle. (920.454 meters or 3,019.856 feet.)

N 32.—About 14.0 miles southwest along the highways from **Pilot Rock**, Umatilla County, on the Pendleton-John Day Highway, just south of the entrance to the Frank Kopp ranch, and 40 feet west of the center line of the highway. A standard disk, stamped "N 32 1930" and set in the top of a concrete post. (929.061 meters or 3,048.094 feet.)

P 32.—About 17.2 miles southwest along the highways from **Pilot Rock**, Umatilla County, on the Pendleton-John Day Highway, in the northwest corner of the intersection of the road leading to Gurdane Mill, and 32 feet west of the center line of the highway. A standard disk, stamped "P 32 1930" and set in the top of a concrete post. (995.802 meters or 3,267.060 feet.)

T. B. M. 50.—About 19 miles southwest along the highways from **Pilot Rock**, Umatilla County, on the Pendleton-John Day Highway, at the edge of a cut bank, and 20 feet west of the highway, on a rock. A painted point. (1,052.330 meters or 3,452.519 feet.)

Q 32.—About 15.4 miles north along the Pendleton-John Day Highway from **Ukiah**, Umatilla County, about 20.2 miles southwest of Pilot Rock, about 200 feet north of a sharp curve, and 24 feet east of the highway. A standard disk, stamped "Q 32 1930" and set in the top of a concrete post. (1,144.660 meters or 3,755.439 feet.)

T. B. M. 53.—About 14.3 miles north along the Pendleton-John Day Highway from **Ukiah**, Umatilla County, on the mountain side, near the edge of the timber, 60 feet west of a north-and-south fence line, and 15 feet east of the highway, on a rock ledge. A painted circle. (1,198.572 meters or 3,932.315 feet.)

R 32.—About 12.8 miles north along the Pendleton-John Day Highway from **Ukiah**, Umatilla County, about 0.6 mile north of the Battle Mountain monument, 150 feet south of an iron culvert, 43 feet east of the center line of the highway, and 17 feet northwest of a fir tree. A standard disk, stamped "R 32 1930" and set in the top of a concrete post. (1,215.901 meters or 3,989.168 feet.)

T. B. M. 57.—About 11.6 miles north along the Pendleton-John Day Highway from **Ukiah**, Umatilla County, about 0.6 mile south of the Battle Mountain monument, and 20 feet west of the highway, on a large boulder. A painted square. (1,270.238 meters or 4,167.439 feet.)

T. B. M. 58.—About 11.1 miles north along the Pendleton-John Day Highway from **Ukiah**, Umatilla County, and about 200 feet north of the Cimon service station, at the southeast corner of the intersection of the highway and a road leading east, in a 30-inch fir tree. A railroad spike. (1,297.018 meters or 4,255.300 feet.)

4255 (O. S. H. D.).—About 11.1 miles north along the Pendleton-John Day Highway from **Ukiah**, Umatilla County, and about 200 feet north of the Cimon service station, at the southeast corner of the intersection of the highway and a road leading east, in a 30-inch fir tree. A nail. (1,297.060 meters or 4,255.438 feet.)

S 32.—About 10.4 miles north along the Pendleton-John Day Highway from **Ukiah**, Umatilla County, at the north end of a sharp curve through a cut, and

about 44 feet west of the center line of the highway, in a large bowlder. A standard disk, stamped "S 32 1930." (1,246.544 meters or 4,089.703 feet.)

T. B. M. 61.—About 9.2 miles north along the Pendleton-John Day Highway from Ukliah, Umatilla County, on the south slope of a ridge, at the north end of a fill, and 20 feet east of the highway, on a bowlder. A chiseled square. (1,152.256 meters or 3,780.360 feet.)

T 32.—About 7.5 miles north along the Pendleton-John Day Highway from Ukliah, Umatilla County, about 100 feet north of a gate west of the ruins of a barn, in line with a fence at the south end of a cut, and 35 feet east of the center line of the highway. A standard disk, stamped "T 32 1930" and set in the top of a concrete post. (1,103.924 meters or 3,621.791 feet.)

T. B. M. 65.—About 7.35 miles north along the Pendleton-John Day Highway from Ukliah, Umatilla County, and 150 feet north of survey station 310, on the west head wall of a highway culvert. A corner painted white. (1,098.559 meters or 3,604.189 feet.)

T. B. M. 66.—About 6.5 miles north along the Pendleton-John Day Highway from Ukliah, Umatilla County, and about 800 feet north of a bridge, on the west head wall of a highway culvert. A chiseled circle. (1,101.597 meters or 3,614.156 feet.)

U 32.—About 6.0 miles north along the Pendleton-John Day Highway from Ukliah, Umatilla County, on the outside of a slight curve, in the north end of the west head wall of a concrete highway culvert. A standard disk, stamped "U 32 1930." (1,104.695 meters or 3,624.320 feet.)

T. B. M. 67.—About 5.5 miles north along the Pendleton-John Day Highway from Ukliah, Umatilla County, 75 feet north of survey station 220, and 30 feet west of the center line of the highway, on a rock. A chiseled square. (1,111.303 meters or 3,646.000 feet.)

T. B. M. 69.—About 4.4 miles north along the Pendleton-John Day Highway from Ukliah, Umatilla County, and about 250 feet north of survey station 160, on the west head wall of a concrete highway culvert. A corner painted white. (1,054.860 meters or 3,460.820 feet.)

V 32.—About 3.2 miles northwest along the Pendleton-John Day Highway from Ukliah, Umatilla County, about 2 miles north of the intersection with the county road leading east to Ukliah, beside survey station 100, 40 feet west of the center line of the highway, and just south of a fence corner. A standard disk, stamped "V 32 1930" and set in the top of a concrete post. (1,021.864 meters or 3,352.565 feet.)

W 32.—About 0.3 mile northwest along the road from Ukliah, Umatilla County, in line with a rail fence, and 25 feet south of the county road connecting with the Pendleton-John Day Highway. A standard disk, stamped "W 32 1930" and set in the top of a concrete post. (1,017.667 meters or 3,338.796 feet.)

X 32 (U. S. B. P. R.).—At Ukliah, Umatilla County, in the concrete base of the flagpole which is situated at the center of the intersection of the north-and-south and east-and-west streets. A standard disk, stamped "X 32 1930." (1,020.156 meters or 3,346.962 feet.)

NOTE.—Bench marks X 32 and Z 32 to G 33, inclusive, were set by the United States Bureau of Public Roads, but the elevations were determined by the Coast and Geodetic Survey.

Y 32.—At Ukliah, Umatilla County, about 0.2 mile south of the post office, and about 100 feet south of a wooden bridge, in the southeast corner of the intersection of the Ukliah-Dale County road and a crossroad. A standard disk, stamped "Y 32 1930" and set in the top of a concrete post. (1,017.294 meters or 3,337.572 feet.)

Z 32 (U. S. B. P. R.).—About 2.1 miles south along the old Ukliah-Dale county road from Ukliah, Umatilla County, near a summit, and 30 feet west of the center line of the road, in a large bowlder. A standard disk, stamped "Z 32 1930." (1,157.583 meters or 3,797.837 feet.)

A 33 (U. S. B. P. R.).—About 3.0 miles south along the Ukliah-Dale county road from Ukliah, Umatilla County, about 350 feet north of the Vibrans house, 25 feet east of the center line of the road, and about 5 feet east of a fence, in a large bowlder. A standard disk, stamped "A 33 1930." (1,192.954 meters or 3,913.883 feet.)

B 33 (U. S. B. P. R.).—About 4.3 miles south along the Ukiah-Dale county road from **Ukiah**, Umatilla County, in the fork of the road leading east to Pearson ranger station, 30 feet south of an east-and-west section line on the west side of the road, and about 2 feet from a north-and-south fence, in a large boulder. A standard disk, stamped "B 33 1930." (1,257.962 meters or 4,127.164 feet.)

C 33 (U. S. B. P. R.).—About 5.9 miles south along the Ukiah-Dale county road from **Ukiah**, Umatilla County, about 600 feet north of the top of the grade into Bridge Creek Canyon, 80 feet north of a fence corner, and about 25 feet from the center line of an old road, in bedrock. A standard disk, stamped "C 33 1930." (1,223.686 meters or 4,014.710 feet.)

D 33 (U. S. B. P. R.).—In Umatilla County, about 7.5 miles north along the Ukiah-Dale county road from **Dale**, Grant County, at the top of a small grade out of Bridge Creek Canyon, 45 feet west of the center line of the road, 18 feet north of a small pine tree at the fence line, and 12 feet from the fence, in bedrock. A standard disk, stamped "D 33 1930." (1,184.515 meters or 3,886.196 feet.)

E 33 (U. S. B. P. R.).—In Umatilla County, about 5.7 miles north along the Ukiah-Dale county road from **Dale**, Grant County, at the top of the grade into the canyon of North Fork John Day River, about 80 feet from a property corner, 25 feet south of the east-and-west property line, and 15 feet east of the center line of the road, in a large boulder. A standard disk, stamped "E 33 1930." (1,207.747 meters or 3,962.417 feet.)

F 33 (U. S. B. P. R.).—In Umatilla County, about 2.8 miles north along the Ukiah-Dale county road from **Dale**, Grant County, at the foot of the grade in the canyon of North Fork John Day River, 30 feet southwest of a large stump, and 30 feet east of the center line of the road, in a large boulder. A standard disk, stamped "F 33 1930." (880.537 meters or 2,888.895 feet.)

G 33 (U. S. B. P. R.).—In Umatilla County, about 1.1 miles northeast along the Ukiah-Dale county road from **Dale**, Grant County, and 40 feet from the bridge over North Fork John Day River, near the side road to the Dale ranger station, on a small bench at the side of the road, in bedrock. A standard disk, stamped "G 33 1930." (856.614 meters or 2,810.408 feet.)

H 33.—At **Dale**, Grant County, on the Ukiah-Dale county road, about 200 feet east of a building formerly used as a store, 50 feet south of the Pendleton-John Day Highway, which was under construction in 1930, and 33 feet north of the center line of the road, in a rock outcrop. A standard disk, stamped "H 33 1930." (889.438 meters or 2,918.098 feet.)

J 33.—About 2.7 miles south along the Dale-Long Creek county road from **Dale**, Grant County, and about 20 feet west of the center line of the road, in bedrock. A standard disk, stamped "J 33 1930." (1,010.840 meters or 3,316.398 feet.)

K 33.—About 5.6 miles south along the Dale-Long Creek county road from **Dale**, Grant County, about 200 feet south of a fork in the road, and about 20 feet west of the center line of the road, in a boulder. A standard disk, stamped "K 33 1930." (1,178.682 meters or 3,867.059 feet.)

L 33.—About 8.6 miles south along the Dale-Long Creek county road from **Dale**, Grant County, at the fence line about 15 feet east of the center line of the road, in a boulder. A standard disk, stamped "L 33 1930." (1,130.966 meters or 3,710.511 feet.)

M 33.—About 13.8 miles north along the lower Dale-Long Creek county road from **Long Creek**, Grant County, about 0.2 mile north of a school, about 100 feet north of a ranch gate, and 91 feet (inclined distance) west of the road, in a boulder. A standard disk, stamped "M 33 1930." (1,027.326 meters or 3,370.485 feet.)

N 33.—About 11.0 miles north along the lower Dale-Long Creek county road from **Long Creek**, Grant County, about 0.2 mile south of a wooden bridge across Middle Fork John Day River, about 200 feet south of a small wooden bridge, on the slope, and 19 feet (inclined distance) northwest of the center line of the road, in a rock outcrop. A standard disk, stamped "N 33 1930." (880.971 meters or 2,890.319 feet.)

P 33.—About 8.6 miles north along the lower Dale-Long Creek county road from **Long Creek**, Grant County, about 0.2 mile south of the point where the road begins to descend to the north into the canyon of Middle Fork John Day River, 43 feet east of the center line of the road, and 5 feet west of the fence line, in a large boulder. A standard disk, stamped "P 33 1930." (1,196.436 meters or 3,925.307 feet.)

3814 (U. S. G. S.).—About 5.8 miles north along the lower Dale-Long Creek county road from Long Creek, Grant County, at the junction with the Susanville road, and near the fence on the south side of the Susanville road. A United States Geological Survey standard cap, stamped "3814 ADJ 1903" and riveted on the top of a 3½-inch iron pipe encased in concrete. (1,162.435 meters or 3,813.755 feet.)

Q 33.—About 2.9 miles north along the lower Dale-Long Creek county road from Long Creek, Grant County, and 36 feet east of the east right-of-way fence, in a bowlder. A standard disk, stamped "Q 33 1930." (1,192.321 meters or 3,911.806 feet.)

R 33.—At Long Creek, Grant County, in the school yard, 78 feet north of the school, 21 feet south of the center line of Main Street, and 28 feet east of a board walk. A standard disk, stamped "R 33 1930" and set in the top of a concrete post. (1,145.195 meters or 3,757.194 feet.)

116 (U. S. B. P. R.).—At Long Creek, Grant County, on the Pendleton-John Day Highway, 510 feet south of Main Street, at survey station 747, and 30 feet east of the highway. A United States Bureau of Public Roads standard disk, stamped "3760 34 116 1927" and set in the top of a concrete post. (1,146.078 meters or 3,760.091 feet.)

115 (U. S. B. P. R.).—At Long Creek, Grant County, on the Pendleton-John Day Highway, 510 feet south of Main Street, at survey station 747, and 30 feet west of the highway. A United States Bureau of Public Roads standard disk, stamped "34 115 1929" and set in the top of a concrete post. (1,146.213 meters or 3,760.550 feet.)

113 (U. S. B. P. R.).—About 0.7 mile south along the Pendleton-John Day Highway from Long Creek, Grant County, near survey station 716, at the south end of a tangent, and 30 feet west of the highway. A United States Bureau of Public Roads standard disk, stamped "3923 34 113 1929" and set in the top of a concrete post. (1,195.792 meters or 3,923.194 feet.)

112 (U. S. B. P. R.).—About 0.9 mile south along the Pendleton-John Day Highway from Long Creek, Grant County, at the south end of a long curve, and 40 feet east of the highway. A United States Bureau of Public Roads standard disk, stamped "4003 34 112 1929" and set in the top of a concrete post. (1,220.090 meters or 4,002.912 feet.)

110 (U. S. B. P. R.).—About 1.0 mile south along the Pendleton-John Day Highway from Long Creek, Grant County, near survey station 698, at the south end of a tangent, and 40 feet east of the highway. A United States Bureau of Public Roads standard disk, stamped "4030 34 110 1929" and set in the top of a concrete post. (1,228.383 meters or 4,030.120 feet.)

108 (U. S. B. P. R.).—About 1.4 miles south along the Pendleton-John Day Highway from Long Creek, Grant County, at survey station 678+30, at the north end of a tangent, and 30 feet east of the highway. A United States Bureau of Public Roads standard disk, stamped "4151 34 108 1929" and set in the top of a concrete post. (1,265.077 meters or 4,150.507 feet.)

105 (U. S. B. P. R.).—About 1.5 miles south along the Pendleton-John Day Highway from Long Creek, Grant County, near survey station 670, at the south end of a tangent to a hairpin curve, and 34 feet west of the highway. A United States Bureau of Public Roads standard disk, stamped "4195 34 105 1929" and set in the top of a concrete post. (1,278.471 meters or 4,194.450 feet.)

103 (U. S. B. P. R.).—About 2.0 miles south along the Pendleton-John Day Highway from Long Creek, Grant County, at the northwest end of a tangent, and 30 feet southwest of survey station 644+76. A United States Bureau of Public Roads standard disk, stamped "4211 34 103 1929" and set in the top of a concrete post. (1,313.892 meters or 4,310.661 feet.)

101 (U. S. B. P. R.).—About 2.1 miles south along the Pendleton-John Day Highway from Long Creek, Grant County, at the south end of a tangent, and about 30 feet from survey station 641+13. A United States Bureau of Public Roads standard disk, stamped "34 101 1929" and set in the top of a concrete post. (1,315.385 meters or 4,315.559 feet.)

100 (U. S. B. P. R.).—About 2.5 miles south along the Pendleton-John Day Highway from Long Creek, Grant County, at the north end of a tangent, at survey station 616+11, and 30 feet east of the highway. A United States Bureau of Public Roads standard disk, stamped "4331 34 100 1929" and set in the top of a concrete post. (1,350.446 meters or 4,430.588 feet.)

98 (U. S. B. P. R.).—About 2.6 miles south along the Pendleton-John Day Highway from Long Creek, Grant County, at survey station 611+52, and 30

feet east of the highway. A United States Bureau of Public Roads standard disk, stamped "4357 34 98 1929" and set in the top of a concrete post. (1,358.253 meters or 4,456.202 feet.)

95 (U. S. B. P. R.).—About 3.0 miles south along the Pendleton-John Day Highway from Long Creek, Grant County, at survey station 588+65, and 30 feet north of the highway. A United States Bureau of Public Roads standard disk, stamped "4574 34 95 1929" and set in the top of a concrete post. (1,391.201 meters or 4,564.299 feet.)

93 (U. S. B. P. R.).—About 3.1 miles south along the Pendleton-John Day Highway from Long Creek, Grant County, at the northwest end of a tangent, at survey station 582+32, and 30 feet north of the highway. A United States Bureau of Public Roads standard disk, stamped "4600 34 93 1929" and set in the top of a concrete post. (1,401.836 meters or 4,599.190 feet.)

90 (U. S. B. P. R.).—About 3.7 miles south along the Pendleton-John Day Highway from Long Creek, Grant County, at a point 3,297 feet east of the west quarter section corner of section 21, on the boundary of the Malheur National Forest, and 63 feet west of the highway. A United States Bureau of Public Roads standard disk, stamped "4740 34 90 1929" and set in the top of a concrete post. (1,444.613 meters or 4,739.534 feet.)

88 (U. S. B. P. R.).—About 3.8 miles south along the Pendleton-John Day Highway from Long Creek, Grant County, at a point 2,928 feet east of the west quarter section corner of section 21, on the boundary of the Malheur National Forest, and 33 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "34 88 1929" and set in the top of a concrete post. (1,453.352 meters or 4,768.206 feet.)

Y 33.—About 3.8 miles north along the Pendleton-John Day Highway from Fox, Grant County, about 46 feet west of the center line of the highway, and about 10 feet lower than the highway, in a large bowlder. A standard disk, stamped "Y 33 1930." (1,478.135 meters or 4,849.515 feet.)

76 (U. S. B. P. R.).—About 2.9 miles north along the Pendleton-John Day Highway from Fox, Grant County, at survey station 482+77, and 40 feet south of the highway. A United States Bureau of Public Roads standard disk, stamped "5103 34 76 1929" and set in the top of a concrete post. (1,555.189 meters or 5,102.316 feet.)

74 (U. S. B. P. R.).—About 2.2 miles north along the Pendleton-John Day Highway from Fox, Grant County, at survey station 439+37, and 40 feet east of the highway. A United States Bureau of Public Roads standard disk, stamped "4944 34 74 1929" and set in the top of a concrete post. (1,506.822 meters or 4,943.632 feet.)

72 (U. S. B. P. R.).—About 2.1 miles north along the Pendleton-John Day Highway from Fox, Grant County, at survey station 435+54, and 40 feet east of the highway. A United States Bureau of Public Roads standard disk, stamped "4915 34 72 1929" and set in the top of a concrete post. (1,497.910 meters or 4,914.393 feet.)

67 (U. S. B. P. R.).—About 1.3 miles north along the Pendleton-John Day Highway from Fox, Grant County, at survey station 386+81, and 30 feet northwest of the highway. A United States Bureau of Public Roads standard disk, stamped "4699 34 67 1929" and set in the top of a concrete post. (1,431.968 meters or 4,698.048 feet.)

65 (U. S. B. P. R.).—About 1.1 miles north along the Pendleton-John Day Highway from Fox, Grant County, at survey station 377+16, at the south end of a tangent, and 30 feet northwest of the highway. A United States Bureau of Public Roads standard disk, stamped "4646 34 65 1929" and set in the top of a concrete post. (1,415.804 meters or 4,645.017 feet.)

Z 33.—About 1.0 mile north along the Pendleton-John Day Highway from Fox, Grant County, inside a horseshoe curve, opposite a wooden gate, and 48 feet south of the center line of the road, in an embedded bowlder. A standard disk stamped "Z 33 1930." (1,392.997 meters or 4,570.191 feet.)

63 (U. S. B. P. R.).—About 0.7 mile north along the Pendleton-John Day Highway from Fox, Grant County, and 30 feet north of the highway. A United States Bureau of Public Roads standard disk, stamped "4548 34 63 1929" and set in the top of a concrete post. (1,386.004 meters or 4,547.248 feet.)

61 (U. S. B. P. R.).—About 0.6 mile north along the Pendleton-John Day Highway from Fox, Grant County, at survey station 350+53, and 30 feet north of the highway. A United States Bureau of Public Roads standard disk,

stamped "4518 34 61 1929" and set in the top of a concrete post. (1,377.363 meters or 4,518.898 feet.)

60 (U. S. B. P. R.).—At Fox, Grant County, at survey station 316+96 on the Pendleton-John Day Highway, opposite the road leading west to Monument, 30 feet from the northwest corner of sec. 5, T. 11 S., R. 30 E., and 30 feet east of the highway. A United States Bureau of Public Roads standard disk, stamped "4391 34 60 1929" and set in the top of a concrete post. (1,338.169 meters or 4,390.309 feet.)

58 (U. S. B. P. R.).—About 0.6 mile south along the Pendleton-John Day Highway from Fox, Grant County, near the south end of a tangent, at survey station 286+84, and 30 feet east of the highway. A United States Bureau of Public Roads standard disk, stamped "4380 34 58 1929" and set in the top of a concrete post. (1,335.039 meters or 4,380.040 feet.)

56 (U. S. B. P. R.).—About 0.7 mile south along the Pendleton-John Day Highway from Fox, Grant County, 330 feet north of the bridge over Fox Creek, and 30 feet east of the highway. A United States Bureau of Public Roads standard disk, stamped "4378 34 56 1929" and set in the top of a concrete post. (1,334.183 meters or 4,377.232 feet.)

54 (U. S. B. P. R.).—About 0.9 mile south along the Pendleton-John Day Highway from Fox, Grant County, about 600 feet south of the bridge over Fox Creek, at the north end of a long curve, at survey station 268+57, and 30 feet east of the highway. A United States Bureau of Public Roads standard disk, stamped "4392 34 54 1929" and set in the top of a concrete post. (1,338.284 meters or 4,390.687 feet.)

49 (U. S. B. P. R.).—About 2.4 miles south along the Pendleton-John Day Highway from Fox, Grant County, at the south end of a long tangent, and 30 feet west of the highway. A United States Bureau of Public Roads standard disk, stamped "4479 34 49 1929" and set in the top of a concrete post. (1,364.999 meters or 4,478.334 feet.)

A 34.—About 2.8 miles south along the Pendleton-John Day Highway from Fox, Grant County, about 0.2 mile north of a farm house, and 133 feet east of the center line of the road, in a bowlder. A standard disk, stamped "A 34 1930." (1,391.954 meters or 4,566.769 feet.)

47 (U. S. B. P. R.).—About 3.2 miles south along the Pendleton-John Day Highway from Fox, Grant County, at the north end of a long tangent, at the place where the highway crosses the west line of sec. 20, T. 11 S., R. 30 E., at station 141+61, and 30 feet west of the highway. A United States Bureau of Public Roads standard disk, stamped "4571 34 47 1929" and set in the top of a concrete post. (1,393.108 meters or 4,570.555 feet.)

45 (U. S. B. P. R.).—About 3.7 miles south along the Pendleton-John Day Highway from Fox, Grant County, near the top of a hill on a long tangent, at survey station 113, and 30 feet west of the highway. A United States Bureau of Public Roads standard disk, stamped "34 45 1929" and set in the top of a concrete post. (1,408.619 meters or 4,621.444 feet.)

44 (U. S. B. P. R.).—About 4.3 miles south along the Pendleton-John Day Highway from Fox, Grant County, at the south end of a long tangent, at survey station 82+57, and 30 feet east of the highway. A United States Bureau of Public Roads standard disk, stamped "4622 34 44 1929" and set in the top of a concrete post. (1,408.788 meters or 4,621.999 feet.)

42 (U. S. B. P. R.).—About 4.7 miles south along the Pendleton-John Day Highway from Fox, Grant County, near the north end of a tangent, at survey station 62+20, and 30 feet east of the highway. A United States Bureau of Public Roads standard disk, stamped "4622 34 42 1929" and set in the top of a concrete post. (1,408.558 meters or 4,621.244 feet.)

40 (U. S. B. P. R.).—About 5.1 miles south along the Pendleton-John Day Highway from Fox, Grant County, near the south end of a tangent, at survey station 40+50, and 30 feet east of the highway. A United States Bureau of Public Roads standard disk, stamped "4666 34 40 1929" and set in the top of a concrete post. (1,422.001 meters or 4,665.348 feet.)

38 (U. S. B. P. R.).—About 5.4 miles south along the Pendleton-John Day Highway from Fox, Grant County, at the northwest end of a tangent, at survey station 21+88, and 30 feet north of the highway. A United States Bureau of Public Roads standard disk, stamped "4697 34 38 1929" and set in the top of a concrete post. (1,431.494 meters or 4,696.493 feet.)

36 (U. S. B. P. R.).—About 5.6 miles south along the Pendleton-John Day Highway from **Fox**, Grant County, at the top of a hill on a tangent, at station 12, 20 feet south of a gate, and 30 feet north of the highway. A United States Bureau of Public Roads standard disk, stamped "4712 34 36 1929" and set in the top of a concrete post. (1,436.137 meters or 4,711.726 feet.)

B 34.—About 5.7 miles south along the Pendleton-John Day Highway from **Fox**, Grant County, directly opposite a large barn, and 94 feet south of the center line of the road, in a rock outcrop. A standard disk, stamped "B 34 1930." (1,428.580 meters or 4,686.933 feet.)

34 (U. S. B. P. R.).—About 5.8 miles south along the Pendleton-John Day Highway from **Fox**, Grant County, and about 150 feet southeast of a large barn, on the boundary of the Malheur National Forest, on the east line of sec. 32, T. 11 S., R. 30 E., just south of a 48-inch yellow-pine tree and 33 feet north of the highway. A United States Bureau of Public Roads standard disk, stamped "4694 34 34 1929" and set in the top of a concrete post. (1,430.510 meters or 4,693.265 feet.)

30 (U. S. B. P. R.).—About 6.3 miles south along the Pendleton-John Day Highway from **Fox**, Grant County, at the east end of a short tangent, at survey station 321+9, and 30 feet north of the highway. A United States Bureau of Public Roads standard disk, stamped "4576 34 30 1929" and set in the top of a concrete post. (1,394.699 meters or 4,575.775 feet.)

23 (U. S. B. P. R.).—About 7.2 miles south along the Pendleton-John Day Highway from **Fox**, Grant County, at the northwest end of a tangent, at survey station 286+95, and 40 feet south of the highway. A United States Bureau of Public Roads standard disk, stamped "34 23 1929" and set in the top of a concrete post. (1,318.027 meters or 4,324.227 feet.)

C 34.—About 7.4 miles south along the Pendleton-John Day Highway from **Fox**, Grant County, at the north edge of an old county road, about 150 feet north of a United States Bureau of Public Roads standard disk, and 37 feet north of the center line of the road, in a rock outcrop. A standard disk, stamped "C 34 1930." (1,310.496 meters or 4,299.519 feet.)

22 (U. S. B. P. R.).—About 7.4 miles south along the Pendleton-John Day Highway from **Fox**, Grant County, at the southeast end of a tangent, at survey station 259+8, and 51 feet north of the highway, on a rock shelf. A United States Bureau of Public Roads standard disk, stamped "4290 34 22 1929" and set in the top of a concrete post. (1,307.591 meters or 4,289.988 feet.)

19 (U. S. B. P. R.).—About 8.0 miles south along the Pendleton-John Day Highway from **Fox**, Grant County, at the north end of a short tangent, at survey station 228+56, and 40 feet west of the highway. A United States Bureau of Public Roads standard disk, stamped "4183 34 19 1929" and set in the top of a concrete post. (1,274.955 meters or 4,182.915 feet.)

15 (U. S. B. P. R.).—About 8.3 miles south along the Pendleton-John Day Highway from **Fox**, Grant County, at the northwest end of a short tangent, near the north bank of Beech Creek, at survey station 209+45, and 40 feet south of the highway. A United States Bureau of Public Roads standard disk, stamped "4125 34 15 1929" and set in the top of a concrete post. (1,257.360 meters or 4,125.189 feet.)

D 34.—About 9.7 miles south along the Pendleton-John Day Highway from **Fox**, Grant County, about 147 feet west of the bridge over Beech Creek, and 17 feet north of the center line of the road, in a natural rock wall bordering the road. A standard disk, stamped "D 34 1930" and set vertically. (1,163.312 meters or 3,816.633 feet.)

H 34 (O. S. H. D.).—About 10.4 miles north along the highway from **Mount Vernon**, Grant County, on the west bank of Beech Creek, and 30 feet east of the center line of the road. An Oregon State Highway Department standard disk, stamped "H 34 1930" and set in the top of a concrete post. (1,073.563 meters or 3,522.181 feet.)

S 33.—About 9.8 miles north along the highway from **Mount Vernon**, Grant County, at the foot of a hill, and 36 feet east of the center line of the road. A standard disk, stamped "S 33 1930" and set in the top of a concrete post. (1,048.701 meters or 3,440.613 feet.)

J 34 (O. S. H. D.).—About 8.5 miles north along the highway from **Mount Vernon**, Grant County, about 92 feet north of a bridge at the foot of a hill, and 35.5 feet west of the center line of the road. An Oregon State Highway Department standard disk, stamped "J 34 1930" and set in the top of a concrete post. (1,023.605 meters or 3,358.277 feet.)

K 34 (O. S. H. D.).—About 7.1 miles north along the highway from **Mount Vernon**, Grant County, about 0.2 mile north of a bridge, and 29 feet west of the center line of the highway. An Oregon State Highway Department standard disk, stamped “K 34 1930” and set in the top of a concrete post. (990.927 meters or 3,251.066 feet.)

T 33.—About 6.9 miles north along the highway from **Mount Vernon**, Grant County, about 152 feet south of a highway bridge, and 36½ feet west of the center line of the road. A standard disk, stamped “T 33 1930” and set in the top of a concrete post. (991.288 meters or 3,252.251 feet.)

L 34 (O. S. H. D.).—About 5.1 miles north along the highway from **Mount Vernon**, Grant County, at the north end of a curve around a hill, 78 feet north of the head of a concrete siphon, and 34 feet west of the center line of the road. An Oregon State Highway Department standard disk, stamped “L 34 1930” and set in the top of a concrete post. (968.098 meters or 3,176.168 feet.)

U 33.—About 3.8 miles north along the highway from **Mount Vernon**, Grant County, about 300 feet west of a farm house, and 40 feet north of the road. A standard disk, stamped “U 33 1930” and set in the top of a concrete post. (944.306 meters or 3,098.111 feet.)

V 33.—About 0.8 mile north along the highway from **Mount Vernon**, Grant County, about 17 feet south of a gate, and 22.5 feet east of the center line of the road, in a boulder. A standard disk, stamped “V 33 1930.” (885.952 meters or 2,906.661 feet.)

W 33.—About 0.1 mile north along the highway from **Mount Vernon**, Grant County, about 48 feet north of a pump house, and 27 feet west of the center line of the road, in a natural rock wall. A standard disk, stamped “W 33 1930” and set vertically. (875.230 meters or 2,871.484 feet.)

X 33.—At **Mount Vernon**, Grant County, at the south entrance to the public school building, in the west end of the steps, close to the building. A standard disk, stamped “X 33 1930.” (882.836 meters or 2,896.438 feet.)

For additional bench marks at **Mount Vernon**, see page 156.

LINE 11, EUGENE TO REDMOND, OREG.

[First-order leveling]

This line follows the **McKenzie Highway** from **Eugene** to **Redmond**. The field work was done during the summer of 1930 by **J. H. Brittain**, junior hydrographic and geodetic engineer, and **E. E. Stohsner**, junior engineer.

K 11 (U. S. G. S.).—See page 69.

454 (O. S. H. D.).—About 0.5 mile west along the **McKenzie Highway** from **Springfield**, Lane County, and 150 feet east of the west end of the highway bridge over **Willamette River**, in the south concrete curb. An Oregon State Highway Department standard disk, stamped “454 1928.” (138.770 meters or 455.281 feet.)

455 (O. S. H. D.).—About 0.3 mile west along the **McKenzie Highway** from **Springfield**, Lane County, at the northeast corner of the highway bridge over **Willamette River**, in the concrete curb. An Oregon State Highway Department standard disk, stamped “455 1928.” (138.571 meters or 454.628 feet.)

459 (U. S. G. S.).—At **Springfield**, Lane County, on the south side of **Main Street** (**McKenzie Highway**), at the center of **Sixth Street**, on the northwest corner of a concrete water trough. A chiseled cross. (139.895 meters or 458.972 feet.)

A 45.—At **Springfield**, Lane County, in the east part of town, 300 feet east of the intersection of **Main Street** (**McKenzie Highway**) and **Tenth Street**, north of **Main Street**, and 4 feet south of a concrete walk. A standard disk, stamped “A 45 1930” and set in the top of a concrete post. (140.306 meters or 460.321 feet.)

14 (U. S. G. S.).—About 2.8 miles east along the **McKenzie Highway** from **Springfield**, Lane County, about 50 feet west of a crossroad, and near the north fence of the highway. A United States Geological Survey standard cap, stamped “481 14 1917” and riveted on the top of a 3½-inch iron pipe set in

a concrete base and projecting about 2 feet above the ground. (146.762 meters or 481.502 feet.)

NOTE.—This elevation was determined after the bench mark had been moved by the Oregon State Highway Department in 1929.

483 (O. S. H. D.).—About 2.8 miles east along the McKenzie Highway from Springfield, Lane County, and 30 feet east of a crossroad, in the north parapet of a highway culvert. An Oregon State Highway Department standard disk, stamped "1930." (147.307 meters or 483.290 feet.)

B 45.—About 4.5 miles east along the McKenzie Highway from Springfield, Lane County, 100 feet west of a crossroad, near a service station, and 3 feet south of the north fence of the highway. A standard disk, stamped "B 45 1930" and set in the top of a concrete post. (152.854 meters or 501.488 feet.)

C 45.—About 8.2 miles east along the McKenzie Highway from Springfield, Lane County, about 2.8 miles southeast of Thurston, at the junction with the road through Thurston, about 200 feet east of a sharp turn in the road through Thurston, 45 feet north of the center line of the highway, 5 feet south of the north fence line, and 3 feet higher than the highway. A standard disk, stamped "C 45 1930" and set in the top of a concrete post. (175.807 meters or 576.793 feet.)

16 (U. S. G. S.).—About 4 miles east along the McKenzie Highway from Thurston, Lane County, 0.5 mile west of Hendricks Bridge, 600 feet north of Cedar Flat school, at the south edge of the highway, and just west of a T-road south. A United States Geological Survey standard cap, stamped "561 16 1927" and riveted on the top of a 3½-inch iron pipe. (171.051 meters or 561.190 feet.)

D 45 (O. S. H. D.).—About 1.7 miles southwest along the McKenzie Highway from Walterville, Lane County, at the Hendricks Bridge over McKenzie River, at the southeast corner of the south span, in the concrete curb. An Oregon State Highway Department standard disk, stamped "580 D 45 1927." (176.966 meters or 580.596 feet.)

1 M (U. S. G. S.).—At Walterville, Lane County, on the west edge of the old McKenzie Highway, 10 feet east and 12 feet north of the northeast corner of the Walterville store. A United States Geological Survey standard disk, stamped "1 M 1927" and set in the top of a concrete post. (183.677 meters or 602.614 feet.)

EX 45 (O. S. H. D.).—In the north part of Walterville, Lane County, near the southwest corner of a McKenzie Highway bridge over the Eugene Water Board canal, in the sidewalk. An Oregon State Highway Department standard disk. (184.558 meters or 605.505 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon State Highway Department in 1932.

E 45.—About ¼ mile northeast along the McKenzie Highway from Walterville, Lane County, 65 feet southeast of the crossing of the highway and the old road, 56 feet south of the center line of the highway, and just northeast of a vehicle gate. A standard disk, stamped "E 45 1930" and set in the top of a concrete post. (184.148 meters or 604.159 feet.)

615 (U. S. G. S.).—About 2 miles east along the McKenzie Highway from Walterville, Lane County, and about 150 feet south of the highway, in the northwest corner of the head gates of the Walterville canal of the Eugene Water Board. A United States Geological Survey standard disk. (187.614 meters or 615.530 feet.)

619 (O. S. H. D.).—About 2.5 miles east along the McKenzie Highway from Walterville, Lane County, on the south side of the highway, in the base of a large fir tree. A galvanized nail and washer. (188.796 meters or 619.408 feet.)

2 M (U. S. G. S.).—About 3.1 miles east along the McKenzie Highway from Walterville, Lane County, in the southwest corner of a school yard, and 35 feet north of the highway. A United States Geological Survey standard disk, stamped "626 2 M 1927" and set in the top of a concrete post. (190.948 meters or 626.469 feet.)

669 (U. S. G. S.).—About 5.2 miles east along the McKenzie Highway from Walterville, Lane County, about 0.4 mile east of a junction with the old McKenzie road, about 800 feet south of the highway, 75 feet east of a white house on the north side of the road, and 20 feet south of the road, in the base of a 40-inch maple tree. A United States Geological Survey standard copper nail and washer. (203.773 meters or 668.545 feet.)

3 M (U. S. G. S.).—About 1.2 miles west along the McKenzie Highway from Leaburg, Lane County, about 350 feet south of the highway, about 30 feet south of the old road, and 20 feet north of a 4-foot maple tree. A United States Geological Survey standard disk, stamped "674 3 M 1927" and set in the top of a concrete post. (205.603 meters or 674.549 feet.)

F 45 (U. S. G. S.).—About 0.6 mile west along the McKenzie Highway from Leaburg, Lane County, on the north side of the highway, in the west end of a concrete retaining wall over the penstocks leading to the Eugene power plant. A United States Geological Survey standard disk, stamped "F 45 1930." (208.264 meters or 683.279 feet.)

G 45 (O. S. H. D.).—About 0.6 mile west along the McKenzie Highway from Leaburg, Lane County, on the north side of the highway, in the west end of a concrete retaining wall over the spillway of the Eugene power plant. An Oregon State Highway Department standard disk, stamped "G 45 1930." (208.311 meters or 683.434 feet.)

H 45.—At Leaburg, Lane County, about 300 feet east of the old Slaven store, 100 feet west of the southeast corner of the school yard, south of the McKenzie Highway, and 1 foot north of the north fence of the old road. A standard disk, stamped "H 45 1930" and set in the top of a concrete post. (207.292 meters or 680.090 feet.)

696 (U. S. G. S.).—About 0.9 mile east along the McKenzie Highway from Leaburg, Lane County, 50 feet north of the northeast corner of a white house, and 20 feet south of the highway, in the base of an 18-inch cedar tree. A United States Geological Survey standard copper nail and washer. (212.197 meters or 696.183 feet.)

4 M (U. S. G. S.).—About 1.6 miles east along the McKenzie Highway from Leaburg, Lane County, about 1,000 feet south of the highway, and 30 feet south of the old McKenzie road, at the northwest corner of the Greenwood Cemetery. A United States Geological Survey standard disk, stamped "733 4 M 1927" and set in the top of a concrete post. (223.358 meters or 732.900 feet.)

J 45 (O. S. H. D.).—About 3.2 miles east along the McKenzie Highway from Leaburg, Lane County, and about 4.15 miles west of Vida, in the southwest corner of the concrete highway bridge over the Eugene Water Board Canal. An Oregon State Highway Department standard disk, stamped "J 45 1930." (227.892 meters or 747.676 feet.)

K 45 (U. S. G. S.).—About 2.7 miles west along the McKenzie Highway from Vida, Lane County, on the upstream end of Pier 1 of the Leaburg Dam, on the westward side of the canal intake, and on the river side of the fence just eastward from the highway. A United States Geological Survey standard disk, stamped "K 45 1930." (228.280 meters or 748.949 feet.)

L 45 (U. S. G. S.).—About 2.7 miles west along the McKenzie Highway from Vida, Lane County, at the eastward end of the Leaburg Dam, in the downstream bridge-floor curb opposite Pier 7. A United States Geological Survey standard disk, stamped "L 45 1930." (229.274 meters or 752.210 feet.)

5 M (U. S. G. S.).—About 2.2 miles west along the McKenzie Highway from Vida, Lane County, 150 feet east of the McKenzie fish hatchery, 30 feet north of the highway, and near the north highway fence. A United States Geological Survey standard disk, stamped "745 5 M 1927" and set in the top of a concrete post. (227.650 meters or 746.882 feet.)

777 (O. S. H. D.).—About 0.5 mile west along the McKenzie Highway from Vida, Lane County, about 100 feet east of a suspension bridge over McKenzie River, and 20 feet north of the center line of the highway, in a rock north of the highway and about 6 feet higher. An iron pin. (236.899 meters or 777.226 feet.)

M 45.—At Vida, Lane County, 135 feet west of the post office and service station, and 35 feet south of the center line of the old highway, at the south property line of the old highway. A standard disk, stamped "M 45 1930" and set in the top of a concrete post. (237.661 meters or 779.726 feet.)

N 45 (O. S. H. D.).—At Vida, Lane County, at the southwest corner of the McKenzie Highway bridge over Gate Creek. An Oregon State Highway Department standard disk, stamped "N 45 1930." (240.250 meters or 788.220 feet.)

6 M (U. S. G. S.).—At Vida, Lane County, 150 feet north of the highway bridge, 20 feet east of the road up Gate Creek, and 40 feet west of the creek, at the southeast corner of a vehicle gate. A United States Geological Survey standard disk, stamped "6 M 1927" and set in the top of a concrete post. (238.619 meters or 782.869 feet.)

7 M (U. S. G. S.).—About 3 miles east along the McKenzie Highway from **Vida**, Lane County, about 300 feet west of a rock bluff on the north side of the highway, and 35 feet south of the center line of the highway, in the top of a dome-shaped rock about 6 feet lower than the roadway. A United States Geological Survey standard disk, stamped “868 7 M 1927.” (264.659 meters or 868.302 feet.)

8 M (U. S. G. S.).—About 6.3 miles east along the McKenzie Highway from **Vida**, Lane County, at the east end of a prominent sidehill rock cut, at the north margin of the highway, in a square rock shelf about 1 foot higher than the roadway. A United States Geological Survey standard disk, stamped “8 M 1927.” (270.820 meters or 888.515 feet.)

9 M (U. S. G. S.).—About 8.7 miles east along the McKenzie Highway from **Vida**, Lane County, 6 miles west of **Blue River**, 15 feet west of the T-road leading south to **Nimrod Inn**, and 50 feet south of the highway, in the northeast corner of a school yard. A United States Geological Survey standard disk, stamped “9 M 1927” and set in the top of a concrete post. (291.554 meters or 956.540 feet.)

NOTE.—A garage has been built with its east wall very close to this mark.

10 M (U. S. G. S.).—About 3.2 miles west along the McKenzie Highway from **Blue River**, Lane County, and 60 feet southward from the highway, in the northwest corner of a 30-foot rock at the edge of the river, where a rock-filled path connects the highway and the rock. A United States Geological Survey standard disk, stamped “10 M 1927.” (302.227 meters or 991.556 feet.)

P 45.—About 0.5 mile west along the McKenzie Highway from **Blue River**, Lane County, at the Sparks Ranch Hotel, 165 feet west of the southwest corner of the hotel, 38 feet north of the center line of the highway, and 3 feet from the north fence corner. A standard disk, stamped “P 45 1930” and set in the top of a concrete post. (339.066 meters or 1,112.419 feet.)

R 45 (O. S. H. D.).—At **Blue River**, Lane County, at the southeast corner of the McKenzie Highway bridge over **Blue River**, in the southwest corner of the sidewalk. An Oregon State Highway Department standard disk, stamped “R 45 1930.” (321.940 meters or 1,056.231 feet.)

11 M (U. S. G. S.).—At **Blue River**, Lane County, 100 feet south of the south end of the bridge, 40 feet west of the McKenzie Highway, and 12 feet north of the northeast corner of an old building. A United States Geological Survey standard disk, stamped “11 M 1927” and set in the top of a concrete post. (320.452 meters or 1,051.350 feet.)

NOTE.—In 1931 it was reported that this bench mark was probably covered by the edge of the highway fill.

S 45.—About 1.2 miles east along the McKenzie Highway from **Blue River**, Lane County, about 100 feet southwest of the **Scott ranch** barn, 30 feet south of the highway, and 35 feet north of **McKenzie River**. A standard disk, stamped “S 45 1930” and set in the top of a concrete post. (325.356 meters or 1,067.439 feet.)

12 M (U. S. G. S.).—About 3.1 miles east along the McKenzie Highway from **Blue River**, Lane County, 75 feet southwest of **Peacock Roost** cabin, and 25 feet north of the highway. A United States Geological Survey standard disk, stamped “12 M 1927” and set in the top of a concrete post. (339.691 meters or 1,114.470 feet.)

1182 (U. S. G. S.).—About 5.5 miles east along the McKenzie Highway from **Blue River**, Lane County, 35 feet south of the highway bridge over **Mill Creek**, at the north edge of the river, and at the east edge of the creek, in a large boulder. A copper bolt. (360.279 meters or 1,182.015 feet.)

13 M (U. S. G. S.).—At **Rainbow**, Lane County, about 5.9 miles east of **Blue River**, at the northwest corner of the store and post office, and 27 feet south of the McKenzie Highway. A United States Geological Survey standard disk, stamped “13 M 1927” and set in the top of a concrete post. (368.596 meters or 1,209.302 feet.)

T 45.—About 1.8 miles west along the McKenzie Highway from **McKenzie Bridge**, Lane County, at **Cascade Resort**, 150 feet west of the northwest corner of the store and hotel, 25 feet south of the highway, and 2 feet north of a fence. A standard disk, stamped “T 45 1930” and set in the top of a concrete post. (395.569 meters or 1,297.796 feet.)

U 45.—At **McKenzie Bridge**, Lane County, 300 feet north of **Hayes** store, 150 feet north of the **McKenzie Bridge** garage, at the southeast corner of the

intersection of the highway and the old road, 45 feet south of the center of the highway, and 25 feet northeast of the center of the old road. A standard disk, stamped "U 45 1930" and set in the top of a concrete post. (413.220 meters or 1,355.706 feet.)

14 M (U. S. G. S.).—At **McKenzie Bridge**, Lane County, 60 feet north of the ranger station, in the southwest corner of the base of the McKenzie Pass Pioneer monument. A United States Geological Survey standard disk, stamped "14 M 1927." (418.240 meters or 1,372.176 feet.)

1366 (O. S. H. D.).—At **McKenzie Bridge**, Lane County, at the northwest corner of the concrete highway bridge over McKenzie River. An Oregon State Highway Department standard disk, stamped "1366 1929." (416.512 meters or 1,366.506 feet.)

15 M (U. S. G. S.).—About 3 miles east along the McKenzie Highway from **McKenzie Bridge**, Lane County, and 15 feet south of the highway, in the top of a buried boulder projecting about 1 foot above the ground. A United States Geological Survey standard disk, stamped "15 M 1927." (461.901 meters or 1,515.420 feet.)

NOTE.—It is reported that this mark may have been disturbed.

16 M (U. S. G. S.).—About 5.2 miles east along the McKenzie Highway from **McKenzie Bridge**, Lane County, at the T-road leading north to Belknap Springs, 20 feet west of the southwest corner of the Yale ranch house, and 10 feet north of the highway. A United States Geological Survey standard disk, stamped "16 M 1927" and set in the top of a concrete post. (511.406 meters or 1,677.838 feet.)

17 M (U. S. G. S.).—About 8.5 miles east along the McKenzie Highway from **McKenzie Bridge**, Lane County, about 150 feet west of the Lost Creek Hotel, and just west of a service station. A United States Geological Survey standard disk, stamped "17 M 1927" and set in the top of a concrete post. (596.137 meters or 1,955.826 feet.)

V 45.—About 8.5 miles east along the McKenzie Highway from **McKenzie Bridge**, Lane County, and 125 feet west of the Lost Creek Hotel, at the northeast corner of a store. A standard disk, stamped "V 45 1930" and set in the top of a concrete post. (596.154 meters or 1,955.882 feet.)

W 45.—About 9.2 miles east along the McKenzie Highway from **McKenzie Bridge**, Lane County, 0.7 mile east of the Lost Creek Hotel, 50 feet northwest of a small cut, 35 feet north of the center of the highway, and 10 feet west of a large boulder, in the top of a 4-foot round boulder. A standard disk, stamped "W 45 1930." (619.166 meters or 2,031.380 feet.)

18 M (U. S. G. S.).—About 11.6 miles east along the McKenzie Highway from **McKenzie Bridge**, Lane County, 3.1 miles east of the Lost Creek Hotel, and 200 feet southwest of a lone 48-inch fir tree, south of the highway, in the top of a boulder. A United States Geological Survey standard disk, stamped "18 M 1927." (771.742 meters or 2,531.957 feet.)

2810 (U. S. G. S.).—About 12.5 miles east along the McKenzie Highway from **McKenzie Bridge**, Lane County, 4 miles east of the Lost Creek Hotel, and 18 feet south of the highway, on the top of a 5-foot boulder. A chiseled square. (856.395 meters or 2,809.689 feet.)

19 M (U. S. G. S.).—About 14.3 miles east along the McKenzie Highway from **McKenzie Bridge**, Lane County, 5.8 miles east of the Lost Creek Hotel, and 20 feet south of the highway, in the northeast face of a prominent rock about 12 feet high. A United States Geological Survey standard disk, stamped "19 M 1927" and set vertically. (998.235 meters or 3,275.043 feet.)

3774 (U. S. G. S.).—About 16.1 miles east along the McKenzie Highway from **McKenzie Bridge**, Lane County, 7.6 miles east of the Lost Creek Hotel, 14 feet southeast of a bridge over a creek, in the top of a rock ledge, east of the highway, and 4 feet higher than the roadway. A copper bolt. (1,150.352 meters or 3,774.113 feet.)

4245 (U. S. G. S.).—About 17.8 miles east along the McKenzie Highway from **McKenzie Bridge**, Lane County, 9.3 miles east of the Lost Creek Hotel, about 8 feet southeast of a bridge over a small drain, and in a rock on the southward side of a stream. A copper bolt. (1,294.018 meters or 4,245.457 feet.)

X 45.—About 18 miles east along the McKenzie Highway from **McKenzie Bridge**, Lane County, 9.5 miles east of the Lost Creek Hotel, about 150 feet east of the east end of a cut on the north side of the highway, 70 feet east of the beginning of a sharp hairpin curve, and 20 feet south of the highway, in

a rock outcrop. A standard disk, stamped "X 45 1930." (1,309.531 meters or 4,296.353 feet.)

C 19 (U. S. G. S.).—In Lane County, about 18.9 miles east along the McKenzie Highway from McKenzie Bridge, Lane County, 8.4 miles southwest of McKenzie Pass, Deschutes and Linn Counties, and 10 feet north of the highway, in the top of a boulder. A United States Geological Survey standard disk, stamped "C 19 1926." (1,372.265 meters or 4,502.173 feet.)

C 18 (U. S. G. S.).—In Lane County, about 6.7 miles southwest along the McKenzie Highway from McKenzie Pass, Deschutes and Linn Counties, near a T-road leading east to Frog Camp, 75 feet west of the highway, in the top of a boulder. A United States Geological Survey standard disk, stamped "C 18 1926." (1,447.381 meters or 4,748.616 feet.)

4809 (O. S. H. D.).—In Lane County, about 5.2 miles southwest along the McKenzie Highway from McKenzie Pass, Deschutes and Linn Counties, in the abutment at the southeast corner of a bridge over a drain. An Oregon State Highway Department standard disk, stamped "4809." (1,465.897 meters or 4,809.364 feet.)

C 17 (U. S. F. S.).—In Lane County, about 5.1 miles southwest along the McKenzie Highway from McKenzie Pass, Deschutes and Linn Counties, about 100 feet south of the Oregon State Highway Department storm shelter, in the southward end of a borrow pit where the highway turns south across a small meadow, in a rock, 50 feet west of the highway. A United States Forest Service standard disk, stamped "C 17 1926." (1,466.223 meters or 4,810.433 feet.)

C 16 (U. S. F. S.).—In Lane County, about 3.4 miles southwest along the McKenzie Highway from McKenzie Pass, Deschutes and Linn Counties, and 50 feet north of the highway, in the east end of a lava patch. A United States Forest Service standard disk, stamped "C 16 1926." (1,534.925 meters or 5,035.833 feet.)

5042 (U. S. G. S.).—In Lane County, about 2.7 miles southwest along the McKenzie Highway from McKenzie Pass, Deschutes and Linn Counties, at West Lava, and 40 feet east of the southeast corner of a small bridge over a drain, in a flat boulder. A copper bolt. (1,536.864 meters or 5,042.195 feet.)

C 15 (U. S. G. S.).—In Lane County, about 1.6 miles southwest along the McKenzie Highway from McKenzie Pass, Deschutes and Linn Counties, and 20 feet southward from the highway, in the top of a flat rock. A United States Geological Survey standard disk, stamped "C 15 1926." (1,582.960 meters or 5,193.428 feet.)

C 14 (U. S. F. S.).—At McKenzie Pass, Deschutes and Linn Counties, 150 feet west of the highest point on the McKenzie Highway over the Cascade Range, and 20 feet north of the roadway, in lava. A United States Forest Service standard disk, stamped "C 14 1926." (1,622.825 meters or 5,324.218 feet.)

C 13 (U. S. F. S.).—In Deschutes County, about 0.6 mile east along the McKenzie Highway from McKenzie Pass, Deschutes and Linn Counties, and 60 feet north of the highway, in the top of a large boulder. A United States Forest Service standard disk, stamped "C 13 1926." (1,580.969 meters or 5,186.896 feet.)

5174 (U. S. G. S.).—In Deschutes County, about 1 mile east along the McKenzie Highway from McKenzie Pass, Deschutes and Linn Counties, about 14 miles west of Sisters, 200 feet northeast of milepost 14, and 80 feet northwest of the highway, in a large boulder. A galvanized iron bolt. (1,576.897 meters or 5,173.536 feet.)

C 12 (U. S. F. S.).—About 13.3 miles west along the McKenzie Highway from Sisters, Deschutes County, 1.6 miles southwest of Windy Point, and 50 feet north of the highway, in the toe of the lava where the flow reaches the highway. A United States Forest Service standard disk, stamped "C 12 1926." (1,527.702 meters or 5,012.136 feet.)

C 10 (U. S. G. S.).—About 11.7 miles west along the McKenzie Highway from Sisters, Deschutes County, at Windy Point, at the west end of a cut, and 40 feet north of the highway, in a large rock. A United States Geological Survey standard disk, stamped "4890 C 10 1926." (1,490.394 meters or 4,889.734 feet.)

C 11 (U. S. F. S.).—About 11.7 miles west along the McKenzie Highway from Sisters, Deschutes County, at Windy Point, on the top of the small rock ridge forming the summit of the point, 100 feet north of the highway, in a large rock

at the ground line. A United States Forest Service standard disk, stamped "4909 C 11 1926." (1,496.258 meters or 4,908.973 feet.)

4719 (U. S. G. S.).—About 11 miles west along the McKenzie Highway from Sisters, Deschutes County, 150 feet east of milepost 11, at the east end of a shallow cut, and 20 feet north of the highway, on a rock. A chiseled square. (1,438.460 meters or 4,719.347 feet.)

4542 (U. S. G. S.).—About 10.4 miles west along the McKenzie Highway from Sisters, Deschutes County, and 10 feet south of the highway, on a boulder. A chiseled square. (1,384.294 meters or 4,541.638 feet.)

C 8 (U. S. F. S.).—About 9.8 miles west along the McKenzie Highway from Sisters, Deschutes County, at the north edge of the highway, in a rock outcrop about 2 feet higher than the roadway. A United States Forest Service standard disk, stamped "C 8 1926." (1,335.570 meters or 4,381.783 feet.)

C 7 (U. S. F. S.).—About 8.3 miles west along the McKenzie Highway from Sisters, Deschutes County, 60 feet west of the road leading north to Fourmile Spring, and 40 feet north of the highway, in a rock outcrop. A United States Forest Service standard disk, stamped "C 7 1926." (1,227.092 meters or 4,025.884 feet.)

3907 (U. S. G. S.).—About 7.8 miles west along the McKenzie Highway from Sisters, Deschutes County, 0.2 mile north of a hairpin bend in the highway, and 50 feet west of the highway, at the head of a small drain, on a boulder. A chiseled square. (1,190.924 meters or 3,907.223 feet.)

3787 (U. S. B. P. R.).—About 7.4 miles west along the McKenzie Highway from Sisters, Deschutes County, and 30 feet north of the center line of the highway, in the base of a 24-inch ponderosa pine tree marked "3787.35." A nail. (1,154.293 meters or 3,787.043 feet.)

C 6 (U. S. B. P. R.).—About 7.3 miles west along the McKenzie Highway from Sisters, Deschutes County, and 200 feet north of the highway, on the southeast slope of a small knoll, in the top of a boulder, about 2 feet above the ground. A United States Bureau of Public Roads standard disk, stamped "C 6 1926." (1,154.203 meters or 3,786.748 feet.)

C 5 (U. S. B. P. R.).—About 6.2 miles west along the McKenzie Highway from Sisters, Deschutes County, and 40 feet north of the highway, in the top of a lava outcrop. A United States Bureau of Public Roads standard disk, stamped "C 5 1926." (1,098.082 meters or 3,602.624 feet.)

C 4 (U. S. B. P. R.).—About 4.4 miles west along the McKenzie Highway from Sisters, Deschutes County, and 30 feet north of the highway, in the top of a large lava rock. A United States Bureau of Public Roads standard disk, stamped "C 4 1926." (1,042.942 meters or 3,421.719 feet.)

C 3 (U. S. B. P. R.).—About 3.2 miles west along the McKenzie Highway from Sisters, Deschutes County, about 500 feet west of a small bridge, and 30 feet north of the highway. A United States Bureau of Public Roads standard disk, stamped "C 3 1926" and set in the top of a concrete post. (1,013.064 meters or 3,323.694 feet.)

C 2 (U. S. B. P. R.).—About 2.3 miles west along the McKenzie Highway from Sisters, Deschutes County, 10 feet west of the Deschutes National Forest boundary post, and 30 feet south of the highway. A United States Bureau of Public Roads standard disk, stamped "C 2 1926" and set in the top of a concrete post. (994.836 meters or 3,263.891 feet.)

C 1 (U. S. B. P. R.).—About 1.5 miles west along the McKenzie Highway from Sisters, Deschutes County, and 30 feet north of the highway. A United States Bureau of Public Roads standard disk, stamped "C 1 1926" and set in the top of a concrete post. (983.468 meters or 3,226.595 feet.)

Y 45.—At Sisters, Deschutes County, 54 feet east of the east corner of the Aitken store and post office, and 30 feet south of the center line of the McKenzie Highway. A standard disk, stamped "Y 45 1930" and set in the top of a concrete post. (969.883 meters or 3,182.024 feet.)

3183 (O. S. H. D.).—At Sisters, Deschutes County, in the east part of town, on the south side of the McKenzie Highway, in a concrete head wall of a culvert. An Oregon State Highway Department standard disk, stamped "3183 1925." (969.932 meters or 3,182.185 feet.)

W 1 (U. S. F. S.).—At Sisters, Deschutes County, in the east end of town, 200 feet west of a school, and 75 feet north of the McKenzie Highway, in a large boulder. A United States Forest Service standard disk, stamped "3184 W 1 E 1926." (970.303 meters or 3,183.402 feet.)

3175 (P. P. & L.).—About 0.5 mile east along the McKenzie Highway from Sisters, Deschutes County, on the pier at the northeast corner of the highway bridge over Squaw Creek. A chiseled square. (967.757 meters or 3,175.049 feet.)

3129 (P. P. & L.).—About 1.1 miles east along the McKenzie Highway from Sisters, Deschutes County, at the east end of a curve in the highway, in the north head wall of a concrete culvert. A galvanized iron bolt. (953.709 meters or 3,128.960 feet.)

3107 (O. S. H. D.).—About 1.4 miles east along the McKenzie Highway from Sisters, Deschutes County, near the middle of a short tangent, in the north head wall of a culvert. An Oregon State Highway Department standard disk, stamped "3107 1925." (946.901 meters or 3,106.624 feet.)

3133 (P. P. & L.).—About 2.8 miles east along the McKenzie Highway from Sisters, Deschutes County, in the south head wall of a highway culvert over an irrigation ditch. A galvanized iron bolt. (954.878 meters or 3,132.796 feet.)

Z 45.—About 3.7 miles east along the McKenzie Highway from Sisters, Deschutes County, 100 feet southwest of a T-road leading north to Ducketts Ranch, and 36 feet south of the highway. A standard disk, stamped "Z 45 1930" and set in the top of a concrete post. (951.019 meters or 3,120.135 feet.)

3096 (O. S. H. D.).—About 4.2 miles east along the McKenzie Highway from Sisters, Deschutes County, in the north head wall of a highway culvert. An Oregon State Highway Department standard disk, stamped "3096 1925." (943.449 meters or 3,095.299 feet.)

3090 (P. P. & L.).—About 4.4 miles east along the McKenzie Highway from Sisters, Deschutes County, and 0.5 mile west of the Cloverdale School, on the north head wall of a highway culvert over a canal. A chiseled square. (941.707 meters or 3,089.584 feet.)

3073 (O. S. H. D.).—About 5.3 miles east along the McKenzie Highway from Sisters, Deschutes County, and 0.4 mile east of the Cloverdale School, in the north head wall of a highway culvert over a canal. An Oregon State Highway Department standard disk, stamped "3073 1925." (936.503 meters or 3,072.510 feet.)

3071 (P. P. & L.).—About 7 miles east along the McKenzie Highway from Sisters, Deschutes County, 8.8 miles west of Cline Falls, 200 feet north of a top of a grade, 80 feet northeast of the highway, and 8 feet east of a juniper tree, in a rock outcrop. An iron bolt. (935.978 meters or 3,070.788 feet.)

2863 (O. S. H. D.).—About 8 miles west along the McKenzie Highway from Cline Falls, Deschutes County, in the concrete abutment at the northeast corner of the highway bridge over Deep Canyon. An Oregon State Highway Department standard disk, stamped "2863 1925." (872.503 meters or 2,862.537 feet.)

A 46.—About 7.2 miles west along the McKenzie Highway from Cline Falls, Deschutes County, 300 feet west of the summit of the rise out of Deep Canyon, and 42 feet north of the highway, in the west end of a rock outcrop. A standard disk, stamped "A 46 1930." (916.892 meters or 3,008.170 feet.)

3040 (P. P. & L.).—About 6.7 miles west along the McKenzie Highway from Cline Falls, Deschutes County, 40 feet north of the highway, just west of a short rise, and 8 feet northeast of a 30-inch juniper tree, in a bowlder. A galvanized iron bolt. (926.558 meters or 3,039.882 feet.)

2999 (P. P. & L.).—About 5.3 miles west along the McKenzie Highway from Cline Falls, Deschutes County, at the west end of a small rock cut on the south side of the highway, in a bowlder. A galvanized iron bolt. (914.033 meters or 2,998.790 feet.)

3043 (O. S. H. D.).—About 4.2 miles west along the McKenzie Highway from Cline Falls, Deschutes County, at the southeast corner of the intersection with the Lower Bridge market road, in a concrete culvert. An Oregon State Highway Department standard disk, stamped "3043 1925." (927.451 meters or 3,042.812 feet.)

B 46.—About 3 miles west along the McKenzie Highway from Cline Falls, Deschutes County, 200 feet west of a curve to the south, on the summit of a small rise, 36 feet south of the center of the highway, in the top of a bowlder 20 feet east of a 24-inch juniper tree. A standard disk, stamped "B 46 1930." (937.944 meters or 3,077.238 feet.)

3025 (P. P. & L.).—About 2.6 miles west along the McKenzie Highway from Cline Falls, Deschutes County, and about 50 feet west of a rock cut, in a bowlder on the south side of the highway. A galvanized iron bolt. (922.093 meters or 3,025.233 feet.)

2926 (P. P. & L.).—About 1.4 miles west along the McKenzie Highway from Cline Falls, Deschutes County, at a curve, 100 feet south of the highway, in a bowlder. A galvanized iron bolt. (891.667 meters or 2,925.411 feet.)

2922 (P. P. & L.).—About 0.3 mile west along the McKenzie Highway from Cline Falls, Deschutes County, and 60 feet west of the highway, on the south head wall of a concrete culvert under a private road. A chiseled square. (890.436 meters or 2,921.372 feet.)

2838 (O. S. H. D.).—At Cline Falls, Deschutes County, in the abutment at the northwestward corner of the highway bridge over Deschutes River. An Oregon State Highway Department standard disk, stamped "2838 1925." (865.023 meters or 2,837.996 feet.)

C 46.—At Cline Falls, Deschutes County, about 500 feet east of the east end of the Deschutes River bridge, 75 feet west of a sharp curve in the highway, and 28 feet south of the highway, in a bowlder. A standard disk, stamped "C 46 1930." (873.470 meters or 2,865.709 feet.)

2933 (U. S. G. S.).—About 0.3 mile east along the McKenzie Highway from Cline Falls, Deschutes County, near the top of the highway grade, in the north head wall of a culvert over a canal. A United States Geological Survey standard disk, stamped "2933 1929." (893.737 meters or 2,932.202 feet.)

2989 (U. S. G. S.).—About 3.2 miles west along the McKenzie Highway from Redmond, Deschutes County, opposite the old Cochran ranch, in the south head wall of an irrigation siphon. A United States Geological Survey standard disk, stamped "2989 1929." (910.910 meters or 2,988.544 feet.)

3013 (U. S. F. S.).—About 1.3 miles west along the McKenzie Highway from Redmond, Deschutes County, in the south head wall of a concrete culvert over lateral C of the Pilot Butte Canal. A United States Forest Service standard disk, stamped "3013 1929." (918.260 meters or 3,012.658 feet.)

3008 (P. P. & L.).—About 0.3 mile west along the McKenzie Highway from the highway junction at Redmond, Deschutes County, on the south head wall of a highway culvert. A chiseled square. (916.736 meters or 3,007.658 feet.)

D 46.—At Redmond, Deschutes County, at the southeast corner of Sixth and G Streets, in the top of a concrete culvert over a small canal. A standard disk, stamped "D 46 1930." (914.330 meters or 2,999.764 feet.)

2996 (U. S. G. S.).—At Redmond, Deschutes County, at the northwest corner of Sixth and D Streets, in the concrete sidewalk at the east entrance to the Pacific Power & Light Co. office. A United States Geological Survey standard disk, stamped "2996 1927." (913.114 meters or 2,995.775 feet.)

2996 (O. S. H. D.).—At Redmond, Deschutes County, at the north part of town, at Fifth and A Streets, in the south head wall of a culvert under The Dalles-California Highway. An Oregon State Highway Department standard disk, stamped "2996 1927." (913.050 meters or 2,995.565 feet.)

H 30.—See page 102.

G 30.—See page 102.

LINE 12, ASTORIA, OREG., TO CRESCENT CITY, CALIF. (PART)

[First-order leveling]

This line follows the Oregon Coast Highway from Astoria to Newport, the Oregon Coast Highway from Reedsport to Lakeside, the Southern Pacific Co. railroad from Lakeside to North Bend, the Oregon Coast Highway from North Bend to Marshfield, the Southern Pacific Co. railroad from Marshfield to Coquille, and the Oregon Coast Highway from Coquille to the Oregon-California State line. The field work from Astoria to Newport was done during the summer of 1930 by J. H. Brittain, junior hydrographic and geodetic engineer, and E. E. Stohsner, junior engineer. The field work from Reedsport to the Oregon-California State line was done during the spring of 1931 by E. E. Stohsner, aid. The section from Newport to Reedsport has not yet been run, but is expected to follow the Oregon Coast Highway. The field work will probably be done in the near future.

E 31.—See page 85.

13.26 (Port of Astoria).—At Astoria, Clatsop County, at the Port of Astoria docks, in the northeast concrete footing of the steel water tower. A Port of Astoria bronze disk stamped "ELEVATION ABOVE MEAN LOWER LOW WATER 17.48, ELEVATION ABOVE MEAN TIDE LEVEL 13.26 1926." (4.109 meters or 13.481 feet.)

P 3 (P. P. & L.).—At Astoria, Clatsop County, at the Pacific Power & Light Co. plant on Youngs Bay, north of the operator's cottage, on the west end of the concrete and brick wall. A Pacific Power & Light Co. standard disk, stamped "P 3." (4.089 meters or 13.415 feet.)

NOTE.—Repeated leveling indicates that this bench mark has been steadily settling. The above elevation was determined from leveling by the Coast and Geodetic Survey in 1930.

P 2 (P. P. & L.).—At Astoria, Clatsop County, at the Pacific Power & Light Co. plant at Youngs Bay, in the top of the north concrete footing of the water tower. A Pacific Power & Light Co. standard disk, stamped "P 2." (3.654 meters or 11.988 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co.

P 2 (Reset) (P. P. & L.).—At Astoria, Clatsop County, at the Pacific Power & Light Co. plant at Youngs Bay, in the top of the north concrete footing of the water tower. A Pacific Power & Light Co. standard disk, stamped "P 2." (3.660 meters or 12.008 feet.)

NOTE.—The water tower was reconstructed and this bench mark reset in 1929. The above elevation was determined by the Coast and Geodetic Survey in 1930.

P 1 (P. P. & L.).—At Astoria, Clatsop County, on the south side of the Pacific Power & Light Co. plant at Youngs Bay, on the east face of the condenser intake. A Pacific Power & Light Co. standard disk, stamped "P 1" and set vertically. (3.735 meters or 12.254 feet.)

17 (P. P. & L.).—At Astoria, Clatsop County, at the Pacific Power & Light Co. plant, on the top of the concrete condenser intake, at the foot of the steel support of the screen lifter and tide gage, and near an arrow in the concrete. The top of an iron bolt, access to which is had through a square opening in the planking. (4.005 meters or 13.140 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1931.

D 31.—See page 86.

P 4 (P. P. & L.).—At Astoria, Clatsop County, at the northeast corner of the Oregon Coast Highway bridge over Youngs Bay, in the concrete walk between the post and the curb. A Pacific Power & Light Co. standard disk, stamped "32 P 4." (9.972 meters or 32.716 feet.)

HH 46 (O. S. H. D.).—At Astoria, Clatsop County, on the Oregon Coast Highway bridge over Youngs Bay, at the northwest corner of the draw section, about 2 feet northeast of the corner of the control house, in the concrete walk. An Oregon State Highway Department standard disk, stamped "HH 46 1930." (8.499 meters or 27.884 feet.)

NOTE.—This bench mark was originally a chiseled cross. In the spring of 1931 the State highway department replaced it with a disk set at exactly the same elevation.

12 (U. S. G. S.).—About $\frac{1}{4}$ mile south of Astoria, Clatsop County, at the southeast corner of the Oregon Coast Highway bridge over Youngs Bay, in the concrete sidewalk between the post and the curb. A United States Geological Survey copper nail and washer. (3.530 meters or 11.581 feet.)

P 5 (P. P. & L.).—About 2 miles south of the post office at Astoria, Clatsop County, at Miles Crossing, in the center of the highway intersection, in the top of the south part of the concrete curb around the flower bed. A Pacific Power & Light Co. standard disk, stamped "7.7 P 5." (2.403 meters or 7.884 feet.)

PP 5 (P. P. & L.).—About 2 miles south of the post office at Astoria, Clatsop County, at Miles Crossing, 74.5 feet east of the center line of the Lewis and Clark road, and 17.8 feet south of the center line of the Tucker Creek road. A Pacific Power & Light Co. standard disk, stamped "PP 5 1929" and set in the top of a concrete post. (1.433 meters or 4.701 feet.)

29 (P. P. & L.).—About 3 miles southwest of the post office at Astoria, Clatsop County, about 1 mile west of Miles Crossing, on the Oregon Coast Highway bridge over Lewis and Clark River, on the north side of the roadway,

in the concrete walk, 1 foot east of the east wall of the control house. A Pacific Power & Light Co. standard disk, stamped "29 1930." (8.976 meters or 29.449 feet.)

P 6 (P. P. & L.).—About 3 miles southwest of the post office at Astoria, Clatsop County, and about 1 mile west of Miles Crossing, at the southwest corner of the Oregon Coast Highway bridge over Lewis and Clark River, in the top of the concrete pier. A Pacific Power & Light Co. standard disk, stamped "22 P 6." (6.904 meters or 22.651 feet.)

3 (P. P. & L.).—About 1.5 miles southeast of Warrenton, Clatsop County, at the intersection of the Warrenton and Oregon Coast Highways, 49.4 feet north of the center line of the Oregon Coast Highway, 27.5 feet east of the center line of the Warrenton Highway, adjacent to a service station, 3 feet north of a power pole, and 6 inches below the surface of the ground. A Pacific Power & Light Co. standard disk, stamped "3" and set in the top of a concrete post. (0.955 meters or 3.133 feet.)

H 46 (O. S. H. D.).—About 1.2 miles south of Warrenton, Clatsop County, at the northeast corner of the Oregon Coast Highway bridge over Skipanon River, in the curb. An Oregon State Highway Department standard disk, stamped "H 46 1930." (3.041 meters or 9.977 feet.)

P 9 (P. P. & L.).—About 1.2 miles south of Warrenton, Clatsop County, on the west side of the Warrenton highway, 100 feet north of the junction with the Oregon Coast Highway, in the northeast corner of a yard. A Pacific Power & Light Co. standard disk, stamped "18 P 9" and set in the top of a concrete post. (5.466 meters or 17.933 feet.)

P 10 (P. P. & L.).—About 3 miles south along the Oregon Coast Highway from Warrenton, Clatsop County, on the west side of the highway, in the southeast corner of the Morrison school yard, inside of the fence. A Pacific Power & Light Co. standard disk, stamped "35 P 10" and set in the top of a concrete post. (10.865 meters or 35.646 feet.)

P 11 (P. P. & L.).—About 4 miles south of Warrenton, about 0.7 mile north along the Oregon Coast Highway from Carnahan, Clatsop County, 110 feet north of the north end of a concrete overhead crossing, at the east toe of the highway fill, just south of the junction with a private road, just south of two large stumps, and 25 feet east of the highway. A Pacific Power & Light Co. standard disk, stamped "31 P 11" and set in the top of a concrete post. (9.563 meters or 31.375 feet.)

J 46 (O. S. H. D.).—About 4 miles south of Warrenton, about 0.7 mile north along the Oregon Coast Highway from Carnahan, Clatsop County, at the northeast corner of an overhead highway crossing, in the concrete curb. An Oregon State Highway Department standard disk, stamped "J 46 1930." (12.139 meters or 39.826 feet.)

P 12 (P. P. & L.).—At Carnahan, about 7.5 miles north along the Oregon Coast Highway from Seaside, Clatsop County, 50 feet northwest of the southwest corner of the Pacific Grange Hall, and 40 feet east of the center line of the highway. A Pacific Power & Light Co. standard disk, stamped "21 P 12" and set in the top of a concrete post. (6.536 meters or 21.444 feet.)

P 13 (P. P. & L.).—About 6 miles north along the Oregon Coast Highway from Seaside, Clatsop County, about 300 feet west of the old West Homestead, in a small group of trees, and about 30 feet northwest of the center of a highway curve. A Pacific Power & Light Co. standard disk, stamped "29 P 13" and set in the top of a concrete post. (8.788 meters or 28.832 feet.)

NOTE.—Due to the relocation of the Oregon Coast Highway, this bench mark is now lost to the highway. The trees have been cut down.

G 46.—About 6 miles north along the Oregon Coast Highway from Seaside, Clatsop County, about 300 feet west of the old West Homestead, in a small group of trees, and about 40 feet northwest of the center of a highway curve. A standard disk, stamped "G 46 1930" and set in the top of a concrete post. (9.011 meters or 29.564 feet.)

GX 46 (P. P. & L.).—About 6 miles north along the Oregon Coast Highway from Seaside, Clatsop County, about 375 feet west of the old West Homestead, on the west side of the highway, and 15 feet north of the intersection with an east-and-west road. A Pacific Power & Light Co. standard disk, stamped "GX 46 1932" and set in the top of a concrete post. (8.738 meters or 28.669 feet.)

NOTE.—This mark was established and its elevation determined by the Pacific Power & Light Co. in 1932. It was set to replace G 46 which has been destroyed.

P 14 (P. P. & L.).—About 5 miles north along the Oregon Coast Highway from Seaside, Clatsop County, at Clatsop, on the south side of the county road leading from the highway to the Spokane, Portland & Seattle Railway station, and 15 feet north of the flagpole in the school yard. A Pacific Power & Light Co. standard disk, stamped "22 P 14" and set in the top of a concrete post. (6.843 meters or 22.451 feet.)

P 15 (P. P. & L.).—About 4 miles north along the Oregon Coast Highway from Seaside, Clatsop County, about 1.6 miles north of Gearhart, 15 feet south of the gate to the driveway leading into Ocean Home Farm, and 12 feet east of the highway pavement. A Pacific Power & Light Co. standard disk, stamped "18 P 15" and set in the top of a concrete post. (4.877 meters or 16.001 feet.)

P 16 (P. P. & L.).—About 2.5 miles north along the Oregon Coast Highway from Seaside, Clatsop County, at Gearhart, at the northeast corner of the intersection with the road leading east to the Spokane, Portland & Seattle Railway station, and about 16 feet east of the highway pavement. A Pacific Power & Light Co. standard disk, stamped "16 P 16" and set in the top of a concrete post. (4.990 meters or 16.371 feet.)

P 17 (P. P. & L.).—About 1 mile north along the Oregon Coast Highway from Seaside, Clatsop County, at Neawanna, on the east bank of Neawanna Creek, west of the shelter shed, 20 feet south of the pavement, and about 15 feet north of the Spokane, Portland & Seattle Railway track. A Pacific Power & Light Co. standard disk, stamped "11 P 17" and set in the top of a concrete post. (3.306 meters or 10.846 feet.)

PP 17 (O. S. H. D.).—About 1 mile north along the Oregon Coast Highway from Seaside, Clatsop County, at Neawanna, at the extreme northeast corner of the highway bridge over Neawanna Creek, in the concrete sidewalk. An Oregon State Highway Department standard disk, stamped "PP 17 1931." (4.770 meters or 15.648 feet.)

NOTE.—The elevation of this mark was determined by the Pacific Power & Light Co.

P 19 (P. P. & L.).—In the east part of Seaside, Clatsop County, near the north curb line of Ninth Avenue, 120 feet east of the Oregon Coast Highway, 80 feet east of the Spokane, Portland & Seattle Railway tracks, at the south line of the fence surrounding the Pacific Power & Light Co. substation, 1 foot south of the fence, and 3 feet east of a gate. A Pacific Power & Light Co. standard disk, stamped "16 P 19" and set in the top of a concrete post. (4.940 meters or 16.207 feet.)

PP 19 (P. P. & L.).—In the east part of Seaside, Clatsop County, at the southeast corner of the Pacific Power & Light Co. substation, inside the inclosure. A Pacific Power & Light Co. standard disk, stamped "PP 19 1931" and set in the top of a concrete post. (4.914 meters or 16.122 feet.)

NOTE.—This mark was established and its elevation determined by the Pacific Power & Light Co.

Reference Mark Seaside No. 1.—At Seaside, Clatsop County, just north of Second Avenue west and in the concrete steps leading from the promenade to the Seaside bathhouse. A standard reference-mark disk, stamped "SEASIDE REF 1." (6.512 meters or 21.365 feet.)

Reference Mark Seaside No. 2.—At Seaside, Clatsop County, at the extreme west end of Second Avenue west, in the top of the concrete steps leading to the beach. A standard reference-mark disk, stamped "SEASIDE REF 2." (5.993 meters or 19.662 feet.)

Triangulation Station Seaside.—At Seaside, Clatsop County, at the south corner of the intersection of Second Avenue west and the promenade facing the Pacific Ocean. A standard triangulation-station disk, stamped "SEASIDE 1926" and set in the top of a concrete post. (6.108 meters or 20.039 feet.)

P 20 (U. S. G. S.).—At Seaside, Clatsop County, at the west end of Broadway extended to the seawall overlooking the Pacific Ocean, at the northeast part of the circular flower bed, in the concrete curb. A United States Geological Survey standard disk, stamped "23 P 20." (6.957 meters or 22.825 feet.)

P 18 (U. S. G. S.).—At Seaside, Clatsop County, at Seventh Street and Broadway, 25 feet north of the northeast corner of the intersection, in the concrete curb. A United States Geological Survey standard disk, stamped "13 P 18." (4.067 meters or 13.343 feet.)

P 21 (U. S. G. S.).—At Seaside, Clatsop County, at Seventh Street and Avenue 1, 13 feet north of the northeast corner of the intersection, in the

concrete curb near a hydrant. A United States Geological Survey standard disk, stamped "14 P 21." (4.197 meters or 13.770 feet.)

L 46 (O. S. H. D.).—About 1.5 miles south along the Oregon Coast Highway from Seaside, Clatsop County, at a point about 150 feet south of the north end of a long tangent, in the west head wall of a concrete highway culvert. An Oregon State Highway Department standard disk, stamped "L 46 1930." (3.539 meters or 11.611 feet.)

17 (O. S. H. D.).—About 1.9 miles south along the Oregon Coast Highway from Seaside, Clatsop County, at the bridge over Beerman Creek, at the east end of the south wooden abutment, in the top of the pile. An Oregon State Highway Department nail and washer. (5.252 meters or 17.231 feet.)

M 46.—About 2.5 miles south along the Oregon Coast Highway from Seaside, Clatsop County, at the beginning of a curve, 150 feet northwest of a house on a small hill just east of the highway, 80 feet east of Necanicum River, and 30 feet west of the center line of the highway. A standard disk, stamped "M 46 1930" and set in the top of a concrete post. (6.328 meters or 20.761 feet.)

N 46 (O. S. H. D.).—About 2.9 miles south along the Oregon Coast Highway from Seaside, Clatsop County, at the northeast corner of the bridge at the first crossing of Necanicum River, in the concrete curb. An Oregon Highway Department standard disk, stamped "N 46 1930." (11.478 meters or 37.657 feet.)

43 (P. P. & L.).—About 4.1 miles south along the Oregon Coast Highway from Seaside, Clatsop County, at Cannon Beach Junction, at the east highway right-of-way fence, and 8 feet south of an angle power pole. A Pacific Power & Light Co. standard disk, stamped "43 1928" and set in a vitrified tile bedded in concrete. (13.046 meters or 42.802 feet.)

K 46 (O. S. H. D.).—About 4.5 miles southeast along the Oregon Coast Highway from Seaside, Clatsop County, about 500 feet east of the west end of a long tangent, in the south headwall of a concrete highway culvert. An Oregon State Highway Department standard disk, stamped "K 46 1930." (22.670 meters or 74.376 feet.)

P 46 (O. S. H. D.).—About 5.6 miles southeast along the Oregon Coast Highway from Seaside, Clatsop County, near the east end of a short tangent, and about 100 feet east of a house with a cobbled chimney, in the south head wall of a concrete highway culvert. An Oregon State Highway Department standard disk, stamped "P 46 1930." (22.120 meters or 72.572 feet.)

R 46 (O. S. H. D.).—About 6.4 miles southeast along the Oregon Coast Highway from Seaside, Clatsop County, about midway of a half-mile tangent, in the south head wall of a concrete highway culvert. An Oregon State Highway Department standard disk, stamped "R 46 1930." (28.099 meters or 92.188 feet.)

S 46 (O. S. H. D.).—About 6.8 miles southeast along the Oregon Coast Highway from Seaside, Clatsop County, about 300 feet east of a small house, in the south head wall of a double concrete highway culvert. An Oregon State Highway Department standard disk, stamped "S 46 1930." (31.835 meters or 104.445 feet.)

T 46 (O. S. H. D.).—About 7.6 miles southeast along the Oregon Coast Highway from Seaside, Clatsop County, about midway of a half-mile tangent, just west of a cut, in the south head wall of a concrete highway culvert. An Oregon State Highway Department standard disk, stamped "T 46 1930." (39.647 meters or 130.075 feet.)

U 46 (O. S. H. D.).—About 8.5 miles southeast along the Oregon Coast Highway from Seaside, Clatsop County, and about 600 feet east of the second bridge over Necanicum River, in the south head wall of a concrete highway culvert. An Oregon State Highway Department standard disk, stamped "U 46 1930." (45.153 meters or 148.139 feet.)

V 46 (O. S. H. D.).—About 10.0 miles southeast along the Oregon Coast Highway from Seaside, Clatsop County, about 500 feet west of a curve, in the south head wall of a concrete highway culvert. An Oregon State Highway Department standard disk, stamped "V 46 1930." (68.839 meters or 225.849 feet.)

W 46 (O. S. H. D.).—About 11.1 miles southeast along the Oregon Coast Highway from Seaside, Clatsop County, at the fish hatchery, about 50 feet north of the highway, in the north edge of the circular flower bed around the flagpole. An Oregon State Highway Department standard disk, stamped "W 46 1930" and set in the top of a concrete post. (92.509 meters or 303.507 feet.)

X 46 (O. S. H. D.).—About 12.8 miles southeast along the Oregon Coast Highway from Seaside, Clatsop County, on the concrete box culvert over Charlie Creek, in the south head wall. An Oregon State Highway Department standard disk, stamped "X 46 1930." (110.127 meters or 361.308 feet.)

Y 46 (O. S. H. D.).—About 14.1 miles southeast along the Oregon Coast Highway from Seaside, Clatsop County, about 0.7 mile south of the third crossing of Necanicum River, and 70 feet southwest of the intersection with the road to Hamlet, on the west side of the highway. An Oregon State Highway Department standard disk, stamped "Y 46 1930" and set in the top of a concrete post. (130.172 meters or 427.073 feet.)

Z 46 (O. S. H. D.).—About 16.5 miles south along the Oregon Coast Highway from Seaside, Clatsop County, at the summit of the Necanicum-Nehalem watershed, and 20 feet west of the center line of the highway. An Oregon State Highway Department standard disk, stamped "Z 46 1930" and set in the top of a concrete post. (238.033 meters or 780.947 feet.)

C 47 (O. S. H. D.).—About 18.8 miles south along the Oregon Coast Highway from Seaside, Clatsop County, and 100 feet south of the north end of a long tangent leading toward Jack Horner Creek, on a 4-foot bank on the west side of the highway. An Oregon State Highway Department standard disk, stamped "C 47 1930" and set in the top of a concrete post. (112.571 meters or 369.327 feet.)

A 47.—About 19.0 miles south along the Oregon Coast Highway from Seaside, Clatsop County, about 0.5 mile north of the bridge over Jack Horner Creek, 20 feet west of the center line of the highway, and 6 feet west of the milepost. A standard disk, stamped "A 47 1930" and set in the top of a concrete post. (111.622 meters or 366.213 feet.)

B 47 (O. H. S. D.).—About 20.0 miles south along the Oregon Coast Highway from Seaside, Clatsop County, at the northeast corner of the bridge over Soapstone Creek, in the wing wall. An Oregon State Highway Department standard disk, stamped "B 47 1930." (81.023 meters or 265.823 feet.)

D 47 (O. S. H. D.).—About 21.4 miles south along the Oregon Coast Highway from Seaside, Clatsop County, about 1,000 feet south of the bridge over the North Fork Nehalem River, at the north end of a long tangent, on a 3-foot bank on the east side of the highway. An Oregon State Highway Department standard disk, stamped "D 47 1930" and set in the top of a concrete post. (56.731 meters or 186.125 feet.)

E 47 (O. S. H. D.).—About 22.8 miles south along the Oregon Coast Highway from Seaside, Clatsop County, about 2.1 miles north of the Clatsop-Tillamook County line, 220 feet south of the crossing of a logging railroad, and 30 feet east of the center line of the highway. An Oregon State Highway Department standard disk, stamped "E 47 1930" and set in the top of a concrete post. (41.770 meters or 137.040 feet.)

F 47 (O. S. H. D.).—About 6.5 miles north along the Oregon Coast Highway from Mohler, Tillamook County, about 0.3 mile south of the Clatsop-Tillamook County line, and about 200 feet north of a secondary road leading west, in the northwest corner of the floor slab of a concrete highway culvert over a small creek. An Oregon State Highway Department standard disk, stamped "F 47 1930." (24.987 meters or 81.978 feet.)

G 47 (O. S. H. D.).—About 5.7 miles north along the Oregon Coast Highway from Mohler, Tillamook County, on the west side of the highway, in the northwest corner of a concrete head wall about 10 feet below the roadway. An Oregon State Highway Department standard disk, stamped "G 47 1930." (10.806 meters or 35.453 feet.)

H 47 (O. S. H. D.).—About 4.7 miles north along the Oregon Coast Highway from Mohler, Tillamook County, and about 0.6 mile south of a T-road leading west to Nehalem, at the northwest corner of a 16-foot concrete highway bridge over Little Rackheap Creek, in the concrete floor slab. An Oregon State Highway Department standard disk, stamped "H 47 1930." (6.075 meters or 19.931 feet.)

J 47 (O. S. H. D.).—About 4.6 miles north along the Oregon Coast Highway from Mohler, Tillamook County, at the northwest corner of the 24-foot concrete bridge over Rackheap Creek, in the concrete curb. An Oregon State Highway Department standard disk, stamped "J 47 1930." (6.782 meters or 22.251 feet.)

K 47 (O. S. H. D.).—About 3.7 miles north along the Oregon Coast Highway from Mohler, Tillamook County, at the northwest corner of a concrete box

culvert, in the concrete floor slab. An Oregon State Highway Department standard disk, stamped "K 47 1930." (8.377 meters or 27.484 feet.)

L 47 (O. S. H. D.).—About 1.8 miles north along the Oregon Coast Highway from Mohler, Tillamook County, and 150 feet north of a T-road leading west to Nehalem, on the west side of the highway. An Oregon State Highway Department standard disk, stamped "L 47 1930" and set in the top of a concrete post. (10.936 meters or 35.879 feet.)

M 47 (O. S. H. D.).—About 0.3 mile east along the Oregon Coast Highway from Mohler, Tillamook County, at the northeast corner of the highway bridge over Nehalem River, in the concrete wing wall. An Oregon State Highway Department standard disk, stamped "M 47 1930." (8.171 meters or 26.808 feet.)

10 (P. P. & L.).—About 1 mile west of Mohler, Tillamook County, on the road extending north from the Oregon Coast Highway to Nehalem, and about 200 feet north of the junction of this road and the highway, on a shoulder of the southwest wing wall of a concrete viaduct under the road. A chiseled square. (3.187 meters or 10.457 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1932.

N 47 (O. S. H. D.).—About 1.6 miles west along the Oregon Coast Highway from Mohler, just east of Wheeler, Tillamook County, opposite Southern Pacific Co. Railroad bridge No. 832 G, on a 4 by 4 foot concrete highway culvert, in the east end of the north head wall about 5 feet below the level of the roadway. An Oregon State Highway Department standard disk, stamped "N 47 1930." (1.470 meters or 4.823 feet.)

NOTE.—Additional leveling indicates that this bench mark has settled. The following elevation was determined from leveling by the Pacific Power & Light Co. in 1932. (1.432 meters or 4.699 feet.)

MM 47 (P. P. & L.).—At Wheeler, Tillamook County, on the Oregon Coast Highway, at the entrance to the public school auditorium, near the wall, and 1 foot west of the southeast corner of the porch. A United States Geological Survey standard copper nail and washer. (15.210 meters or 49.901 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1932.

NN 47 (P. P. & L.).—At Wheeler, Tillamook County, on the Oregon Coast Highway, at the front entrance to the public school gymnasium, in the east end of the lowest concrete step. A Pacific Power & Light Co. standard disk. (14.640 meters or 48.033 feet.)

NOTE.—This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1932.

P 47 (O. S. H. D.).—At Wheeler, Tillamook County, on the Oregon Coast Highway, opposite Southern Pacific Co. Railroad bridge No. 833 C, on a 5 by 5 foot concrete highway culvert, in the east end of the north head wall about 10 feet below the roadway. An Oregon State Highway Department standard disk, stamped "P 47 1930." (1.676 meters or 5.499 feet.)

R 47 (O. S. H. D.).—About 1.9 miles west along the Oregon Coast Highway from Wheeler, about 1.6 miles north of Brighton, Tillamook County, at the east end of the cut at Fishery Point, and 20 feet north of the center line of the highway. An Oregon State Highway Department standard disk, stamped "R 47 1930" and set in the top of a concrete post. (8.060 meters or 26.444 feet.)

Q 47 (O. S. H. D.).—At Brighton, Tillamook County, on the Oregon Coast Highway, 100 feet south of the Southern Pacific Co. railroad station, in the northeast corner of a concrete highway culvert, and about 12 feet below the roadway. An Oregon State Highway Department standard disk, stamped "Q 47 1930." (4.054 meters or 13.300 feet.)

Triangulation Station River.—About 0.4 mile south along the Oregon Coast Highway from Brighton, Tillamook County, about 3.8 miles north of Rockaway, opposite a rock bluff on the east side of the highway, 60 feet west of the highway, and about 20 feet west of the Southern Pacific Co. railroad track, in a rock outcrop. A standard triangulation-station disk, stamped "RIVER 1926." (7.052 meters or 23.136 feet.)

Reference Mark River No. 1.—About 0.4 mile south along the Oregon Coast Highway from Brighton, Tillamook County, about 3.8 miles north of Rockaway,

opposite a rock bluff east of the highway, 65 feet west of the highway, and about 25 feet west of the Southern Pacific Co. railroad track, in a rock outcrop. The center of a standard reference-mark disk, stamped "RIVER REF 1 1926." (6.629 meters or 21.749 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1932.

Reference Mark River No. 2.—About 0.4 mile south along the Oregon Coast Highway from Brighton, Tillamook County, about 3.8 miles north of Rockaway, opposite a rock bluff east of the highway, 60 feet west of the highway, and about 20 feet west of the Southern Pacific Co. railroad track, in the north end of a rock outcrop. The center of a standard reference-mark disk, stamped "RIVER REF 2 1926." (7.115 meters or 23.343 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1932.

S 47 (O. S. H. D.).—About 2.2 miles south along the Oregon Coast Highway from Brighton, about 2.2 miles north of Rockaway, Tillamook County, and 110 feet north of a garage on the east side of the highway, opposite Southern Pacific Co. railroad culvert No. 838 D, on a concrete highway culvert, in the northeast corner of the east head wall. An Oregon State Highway Department standard disk, stamped "S 47 1930." (3.654 meters or 11.988 feet.)

T 47 (O. S. H. D.).—About 1¼ miles north along the Oregon Coast Highway from Rockaway, Tillamook County, at Manhattan Beach, about 90 feet south of the Southern Pacific Co. railroad station, and 20 feet west of the center line of the highway. An Oregon State Highway Department standard disk, stamped "T 47 1930" and set in the top of a concrete post. (4.650 meters or 15.256 feet.)

U 47 (O. S. H. D.).—At Rockaway, Tillamook County, about 35 feet north of the Southern Pacific Co. railroad station, on the Oregon Coast Highway, on a highway culvert, in the northwest corner of the concrete head wall. An Oregon State Highway Department standard disk, stamped "U 47 1930." (4.755 meters or 15.600 feet.)

V 47 (O. S. H. D.).—About 0.5 mile south along the Oregon Coast Highway from Rockaway, Tillamook County, at Saltair, and about 200 feet north of the Southern Pacific Co. railroad station, in the west head wall of a highway culvert. An Oregon State Highway Department standard disk, stamped "V 47 1930." (4.488 meters or 14.724 feet.)

Triangulation Station Rockaway.—About 0.8 mile south of Rockaway, Tillamook County, 675 feet south of the Southern Pacific Co. station at Saltair, in the Midway Beach addition, about 400 feet west of the center line of the Oregon Coast Highway, 245 feet west of the west line of Breakers Avenue, and 25 feet south of the south line of Heitmiller Street. A standard triangulation-station disk, stamped "ROCKAWAY 1926" and set in the top of a concrete post. (6.299 meters or 20.666 feet.)

Reference Mark Rockaway No. 1.—About 0.8 mile south of Rockaway, Tillamook County, about 600 feet south of the Southern Pacific Co. station at Saltair, in the Midway Beach addition, about 300 feet west of the center line of the Oregon Coast Highway, 126 feet west of the west line of Breakers Avenue, and 70 feet north of the south line of Heitmiller Street. A standard reference-mark disk, stamped "ROCKAWAY REF 1 1926" and set in the top of a concrete post. (5.764 meters or 18.911 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1932.

Reference Mark Rockaway No. 2.—About 0.8 mile south of Rockaway, Tillamook County, about 700 feet south of the Southern Pacific Co. station at Saltair, in the Midway Beach addition, about 300 feet west of the center line of the Oregon Coast Highway, 137 feet west of the west line of Breakers Avenue, and 70 feet south of the south line of Heitmiller Street. A standard reference-mark disk, stamped "ROCKAWAY REF 2 1926" and set in the top of a concrete post. (7.360 meters or 24.148 feet.)

NOTE.—The elevation of this bench mark was determined from leveling by the Pacific Power & Light Co. in 1932.

W 47 (O. S. H. D.).—About 1¼ miles south along the Oregon Coast Highway from the Southern Pacific Co. railroad station at Rockaway, Tillamook County, opposite railroad culvert No. 842 A, on a concrete box culvert under the highway,

in the south end of the east head wall. An Oregon State Highway Department standard disk, stamped "W 47 1930." (4.950 meters or 16.240 feet.)

X 47 (O. S. H. D.).—About 3.3 miles south along the Oregon Coast Highway from Rockaway, near **Barview**, Tillamook County, east of the United States Coast Guard station, on the west side of the highway, at the south end of a masonry wall, in the top of the stone coping. An Oregon State Highway Department standard disk, stamped "X 47 1930." (12.035 meters or 39.485 feet.)

Tidal 6.—At **Garibaldi**, Tillamook County, on the north side of the Oregon Coast Highway, opposite the office of the Hammond Tillamook Lumber Co., at the southwest corner of the A. S. Bent & Co. store. A standard disk, stamped "6 1927" and set in the top of a concrete post. (2.947 meters or 9.669 feet.)

Tidal 4.—At **Garibaldi**, Tillamook County, 15 feet south of the first industrial track south of the main track of the Southern Pacific Co. railroad, at the west end of the board fence, beside an electric-light pole. A standard disk, stamped "4 1927" and set in the top of a concrete post. (2.724 meters or 8.937 feet.)

Tidal 5.—At **Garibaldi**, Tillamook County, 30 feet west of the road passing under the Southern Pacific Co. tracks, just south of the west bulkhead of the railroad trestle, just south of the main line, and 30 feet north of the industrial tracks. A standard disk, stamped "5 1927" and set in the top of a concrete post. (2.429 meters or 7.969 feet.)

NOTE.—It was reported in 1931 that this mark might be covered in the future.

Tidal 3.—At **Garibaldi**, Tillamook County, about 70 feet east of a Southern Pacific Co. spur track, across the tracks from the sash factory, south of a ball field, at the north face of the dry kiln, near a bank of transformers. A standard disk, stamped "3 1926" and set in the top of a 6-inch tile filled with concrete. (2.305 meters or 7.562 feet.)

Tidal 1.—At **Garibaldi**, Tillamook County, about 450 feet north of the dock, and 2 feet south of the south side of the Hammond Tillamook Lumber Co. shipping clerk's office. A standard disk, stamped "1 1926" and set in the top of a 3½-inch iron pipe filled with concrete. (3.127 meters or 10.259 feet.)

Y 47 (O. S. H. D.).—About 1.1 miles southeast along the Oregon Coast Highway from **Garibaldi**, Tillamook County, at the northwest corner of the highway bridge over Miami River, in the concrete curb. An Oregon State Highway Department standard disk, stamped "Y 47 1930." (4.824 meters or 15.827 feet.)

Z 47 (O. S. H. D.).—About 2¼ miles south along the Oregon Coast Highway from **Garibaldi**, Tillamook County, at the south entrance to a deep cut, and 25 feet west of the center line of the highway. An Oregon State Highway Department standard disk, stamped "Z 47 1930" and set in the top of a concrete post. (37.608 meters or 123.386 feet.)

A 48 (O. S. H. D.).—At **Bay City**, Tillamook County, at the steps leading to the Bayview Apartments, 20 feet east of the center line of the Oregon Coast Highway, in the curb of the sidewalk. An Oregon State Highway Department standard disk, stamped "A 48 1930." (5.227 meters or 17.149 feet.)

B 48 (O. S. H. D.).—About 2 miles southeast along the Oregon Coast Highway from **Bay City**, and about 4.1 miles north of **Tillamook**, Tillamook County, at highway milepost 73, at the southwest corner of a concrete culvert, in the wing wall. An Oregon State Highway Department standard disk, stamped "B 48 1930." (9.537 meters or 31.289 feet.)

C 48 (O. S. H. D.).—About 3.3 miles north along the Oregon Coast Highway from **Tillamook**, Tillamook County, near highway mileage 73.75, at the northwest corner of a concrete culvert, in the wing wall. An Oregon State Highway Department standard disk, stamped "C 48 1930." (5.821 meters or 19.098 feet.)

D 48 (O. S. H. D.).—About 2.8 miles north along the Oregon Coast Highway from **Tillamook**, Tillamook County, near the northwest corner of the concrete approach to the bridge over Kilchis River, in the concrete curb. An Oregon State Highway Department standard disk, stamped "D 48 1930." (7.826 meters or 25.676 feet.)

62 (O. S. H. D.).—About 2.2 miles north along the Oregon Coast Highway from **Tillamook**, Tillamook County, at the Juno overhead crossing, in the southeast corner of the sidewalk. An Oregon State Highway Department standard disk, stamped "62 1931." (19.064 meters or 62.546 feet.)

NOTE.—This mark was established and its elevation determined by the Oregon State Highway Department in 1931.

E 48 (O. S. H. D.).—About 2.0 miles north along the Oregon Coast Highway from Tillamook, Tillamook County, at the northwest corner of a bridge over a slough, in the concrete curb. An Oregon State Highway Department standard disk, stamped "E 48 1930." (3.933 meters or 12.904 feet.)

NOTE.—The Oregon Coast Highway was relocated in 1931 so that this mark is now on a county road about $\frac{1}{4}$ mile west of the highway.

20 (O. S. H. D.).—About 1.5 miles north along the Oregon Coast Highway from Tillamook, Tillamook County, at the highway bridge over Wilson Slough, in the southeast corner of the sidewalk. An Oregon State Highway Department standard disk, stamped "20 1931." (6.185 meters or 20.292 feet.)

NOTE.—This mark was established and its elevation determined by the Oregon State Highway Department in 1931.

24 (O. S. H. D.).—About 1.4 miles north along the Oregon Coast Highway from Tillamook, Tillamook County, at the southeast corner of the highway bridge over Wilson River, in the sidewalk. An Oregon State Highway Department standard disk, stamped "24 1931." (7.471 meters or 24.511 feet.)

NOTE.—This mark was established and its elevation determined by the Oregon State Highway Department in 1931.

13 (O. S. H. D.).—About 0.7 mile north along the Oregon Coast Highway from Tillamook, Tillamook County, at the southeast corner of the highway bridge over Hall Slough, in the sidewalk. An Oregon State Highway Department standard disk, stamped "13 1931." (4.143 meters or 13.592 feet.)

NOTE.—This mark was established and its elevation determined by the Oregon State Highway Department in 1931.

F 48 (O. S. H. D.).—About 0.5 mile north along the Oregon Coast Highway from Tillamook, Tillamook County, on the steel highway bridge over Dougherty Slough, in the top of the northwest pier. An Oregon State Highway Department standard disk, stamped "F 48 1930." (3.428 meters or 11.247 feet.)

NOTE.—It was reported in 1931 that this mark had been destroyed.

12 (O. S. H. D.).—About 0.5 mile north along the Oregon Coast Highway from Tillamook, Tillamook County, at the southeast corner of the highway bridge over Dougherty Slough, in the sidewalk. An Oregon State Highway Department standard disk, stamped "12 1931." (3.898 meters or 12.789 feet.)

NOTE.—This mark was established and its elevation determined by the Oregon State Highway Department in 1931.

12 (O. S. H. D.).—In the north part of Tillamook, Tillamook County, at the southeast corner of the Oregon Coast Highway bridge over Hoquarten Slough, in the sidewalk. An Oregon State Highway Department standard disk, stamped "12 1931." (3.723 meters or 12.215 feet.)

NOTE.—This mark was established and its elevation determined by the Oregon State Highway Department in 1931.

23 (City of Tillamook).—At Tillamook, Tillamook County, at the northeast corner of Stillwell Avenue and First Street West, at the southeast corner of an old bank building, in the water table. A copper bolt. (7.099 meters or 23.291 feet.)

NOTE.—The elevation of this mark was determined by the Oregon State Highway Department in 1931.

22 (City of Tillamook).—At Tillamook, Tillamook County, at the northeast corner of Stillwell Avenue and First Street West, at the west entrance to an old bank building, on the step. A chiseled cross. (6.748 meters or 22.139 feet.)

NOTE.—The elevation of this mark was determined by the Oregon State Highway Department in 1931.

G 48.—At Tillamook, Tillamook County, at the northeast corner of the intersection of Second Street East and Third Avenue, at the corner of the courthouse grounds, 20 feet from the north side of Second Street East, in the concrete curb of Third Avenue. A standard disk, stamped "G 48 1930." (7.114 meters or 23.340 feet.)

H 48 (O. S. H. D.).—At Tillamook, Tillamook County, on the east side of the Oregon Coast Highway or Second Avenue, and near the north line of Third Street East, in front of the Tillamook National Bank, in the concrete curb. An Oregon State Highway Department standard disk, stamped "H 48 1930." (6.708 meters or 22.008 feet.)

J 48 (O. S. H. D.).—At Tillamook, Tillamook County, in the north curb of Twelfth Street East, about 10 feet east of the center line of the Oregon Coast Highway projected north, and 31 feet south of a cheese factory. An Oregon State Highway Department standard disk, stamped "J 48 1930." (4.758 meters or 15.610 feet.)

K 48 (O. S. H. D.).—About 1.9 miles south along the Oregon Coast Highway from Tillamook, Tillamook County, near highway mileage 79.8, opposite a lane leading to a farmhouse, 24 feet south of a pipeline crossing, and 11 feet east of the pavement. An Oregon State Highway Department standard disk, stamped "K 48 1930" and set in the top of a concrete post. (6.284 meters or 20.617 feet.)

L 48 (O. S. H. D.).—About 2.5 miles south along the Oregon Coast Highway from Tillamook, Tillamook County, on the highway bridge over South Prairie Creek, in the northwest wing wall. An Oregon State Highway Department standard disk, stamped "L 48 1930." (2.288 meters or 7.507 feet.)

M 48 (O. S. H. D.).—About 2.7 miles south along the Oregon Coast Highway from Tillamook, Tillamook County, on the highway bridge over Anderson Creek, in the northwest wing wall. An Oregon State Highway Department standard disk, stamped "M 48 1930." (3.493 meters or 11.460 feet.)

N 48 (O. S. H. D.).—About 3.9 miles south along the Oregon Coast Highway from Tillamook, Tillamook County, at a curve in the highway, 70 feet northeast of the center line of the highway, 32 feet north of the northwest corner of the State highway department scales, and just west of three small trees. An Oregon State Highway Department standard disk, stamped "N 48 1930" and set in the top of a concrete post. (11.571 meters or 37.963 feet.)

P 48 (O. S. H. D.).—About 5.6 miles south along the Oregon Coast Highway from Tillamook, Tillamook County, at the northwest corner of the 40-foot concrete bridge over Killam Creek, in the wing wall. An Oregon State Highway Department standard disk, stamped "P 48 1930." (31.145 meters or 102.182 feet.)

R 48 (O. S. H. D.).—About 6.3 miles south along the Oregon Coast Highway from Tillamook, Tillamook County, on the steel highway bridge over Fawcett Creek, in the top of the northwest pier. An Oregon State Highway Department standard disk, stamped "R 48 1930." (37.233 meters or 122.155 feet.)

NOTE.—In 1931 it was reported that this bridge had been replaced by a new bridge just to the west but that the old bridge was still intact.

S 48 (O. S. H. D.).—About 7.0 miles south along the Oregon Coast Highway from Tillamook, Tillamook County, at the northwest corner of the concrete highway bridge over Simmons Creek, in the concrete wing wall. An Oregon State Highway Department standard disk, stamped "S 48 1930." (38.094 meters or 124.980 feet.)

T 48 (O. S. H. D.).—About 7.4 miles south along the Oregon Coast Highway from Tillamook, Tillamook County, on a 4 by 8 foot concrete box culvert under the highway, in the top of the north end of the west head wall. An Oregon State Highway Department standard disk, stamped "T 48 1930." (37.900 meters or 124.344 feet.)

U 48 (O. S. H. D.).—About 7.5 miles south along the Oregon Coast Highway from Tillamook, Tillamook County, at the northwest corner of the concrete highway bridge over Munson Creek, in the wing wall. An Oregon State Highway Department standard disk, stamped "U 48 1930." (40.193 meters or 131.867 feet.)

V 48 (O. S. H. D.).—About 8.0 miles south along the Oregon Coast Highway from Tillamook, Tillamook County, at the northwest corner of an 8-foot concrete highway culvert, in the wing wall. An Oregon State Highway Department standard disk, stamped "V 48 1930." (41.076 meters or 134.764 feet.)

W 48 (O. S. H. D.).—About 8.8 miles south along the Oregon Coast Highway from Tillamook, Tillamook County, at the northwest corner of a concrete highway culvert in the northwest wing wall. An Oregon State Highway Department standard disk, stamped "W 48 1930." (46.054 meters or 151.095 feet.)

X 48 (O. S. H. D.).—About 10.8 miles south along the Oregon Coast Highway from Tillamook, Tillamook County, at the junction of the highway and a county road leading northwest, at the summit of a ridge, near the south end of the cut, 35 feet north of the end of the black pavement, and 35 feet west of the center line of the highway. An Oregon State Highway Department standard disk, stamped "X 48 1930" and set in the top of a concrete post. (74.946 meters or 245.885 feet.)

Y 48 (O. S. H. D.).—About 11.5 miles south along the Oregon Coast Highway from Tillamook, and about $\frac{1}{4}$ mile north of **Hemlock**, Tillamook County, on a concrete highway bridge over Tiger Creek, in the northeast wing wall. An Oregon State Highway Department standard disk, stamped "Y 48 1930." (63.089 meters or 206.984 feet.)

Z 48 (O. S. H. D.).—About 0.1 mile south along the Oregon Coast Highway from Hemlock, about 3.6 miles north of **Beaver**, Tillamook County, on a 30-foot concrete highway bridge over Tiger Creek, in the northwest wing wall. An Oregon State Highway Department standard disk, stamped "Z 48 1930." (61.735 meters or 202.542 feet.)

A 49 (O. S. H. D.).—About 2.8 miles north along the Oregon Coast Highway from **Beaver**, Tillamook County, near the northwest corner of a 50-foot concrete highway bridge over West Beaver Creek, in the parapet. An Oregon State Highway Department standard disk, stamped "A 49 1930." (58.270 meters or 191.174 feet.)

B 49 (O. S. H. D.).—About 2.3 miles north along the Oregon Coast Highway from **Beaver**, Tillamook County, and about 0.1 mile south of highway milepost 91, near the northwest corner of a concrete highway culvert, in the concrete parapet. An Oregon State Highway Department standard disk, stamped "B 49 1930." (53.723 meters or 176.256 feet.)

C 49 (O. S. H. D.).—About 0.7 mile north along the Oregon Coast Highway from **Beaver**, Tillamook County, and 4 feet south of the northwest corner of the 105-foot concrete highway bridge over Beaver Creek, in the concrete curb. An Oregon State Highway Department standard disk, stamped "C 49 1930." (34.679 meters or 113.776 feet.)

D 49 (O. S. H. D.).—At **Beaver**, Tillamook County, at the northeast corner of the concrete highway bridge over Beaver Creek, in the concrete wing wall. An Oregon State Highway Department standard disk, stamped "D 49 1930." (26.442 meters or 86.752 feet.)

E 49 (O. S. H. D.).—At the west edge of **Beaver**, Tillamook County, at the northwest corner of the Oregon Coast Highway bridge over West Creek, in the concrete wing wall. An Oregon State Highway Department standard disk, stamped "E 49 1930." (25.118 meters or 82.408 feet.)

F 49 (O. S. H. D.).—About 1.4 miles south along the Oregon Coast Highway from **Beaver**, about 3.2 miles north of **Hebo**, Tillamook County, about 0.1 mile north of highway milepost 95, in the west end of an 8-foot concrete arch culvert over Sailing Creek, in a shelf west of the parapet and just below it. An Oregon State Highway Department standard disk, stamped "F 49 1930." (23.064 meters or 75.669 feet.)

G 49 (O. S. H. D.).—About 2.0 miles north along the Oregon Coast Highway from **Hebo**, Tillamook County, just south of highway milepost 96, at the northwest corner of a 27-foot steel span bridge over Farmer Creek, in the concrete wing wall. An Oregon State Highway Department standard disk, stamped "G 49 1930." (15.640 meters or 51.312 feet.)

H 49 (O. S. H. D.).—About 0.8 mile north along the Oregon Coast Highway from **Hebo**, Tillamook County, on the northwest corner of the steel span bridge over Nestucca River, in the top of the concrete pier about 5 feet below the roadway. An Oregon State Highway Department standard disk, stamped "H 49 1930." (14.822 meters or 48.629 feet.)

K 49 (O. S. H. D.).—At **Hebo**, Tillamook County, at the northeast corner of the Oregon Coast Highway bridge over Three Rivers, in the top of a concrete pier. An Oregon State Highway Department standard disk, stamped "K 49 1930." (16.512 meters or 54.173 feet.)

For additional bench marks in the vicinity of **Hebo**, see page 163.

L 49 (O. S. H. D.).—At **Cloverdale**, Tillamook County, in front of the county highway equipment shop, 30 feet west of the center line of the Oregon Coast Highway, and 6 feet south of the northeast corner of the building. An Oregon State Highway Department standard disk, stamped "L 49 1930" and set in the top of a concrete post. (7.788 meters or 25.551 feet.)

M 49 (O. S. H. D.).—About 1.1 miles southwest along the Oregon Coast Highway from **Cloverdale**, Tillamook County, and about 0.3 mile south of highway milepost 102, at the northwest corner of a 30-foot concrete highway bridge over Clear Creek, in the concrete wing wall. An Oregon State Highway Department standard disk, stamped "M 49 1930." (7.702 meters or 25.269 feet.)

N 49 (O. S. H. D.).—About 2.2 miles southwest along the Oregon Coast Highway from Cloverdale, Tillamook County, just south of the junction with a county road leading to Pacific City, on a 36-inch concrete culvert near the middle of a curve, in the southeast head wall about 5 feet below the level of the roadway. An Oregon State Highway Department standard disk, stamped "N 49 1930." (3.343 meters or 10.968 feet.)

P 49 (O. S. H. D.).—About 3.0 miles southwest along the Oregon Coast Highway from Cloverdale, Tillamook County, and about $\frac{1}{4}$ mile south of highway milepost 104, on a double concrete highway culvert, in the northeast corner of the east head wall. An Oregon State Highway Department standard disk, stamped "P 49 1930." (1.163 meters or 3.816 feet.)

R 49 (O. S. H. D.).—About 4.2 miles southwest along the Oregon Coast Highway from Cloverdale, and about 1.0 mile northeast of Oretown, Tillamook County, on the north side of the highway bridge over Little Nestucca River, in the top of the west concrete pier. An Oregon State Highway Department standard disk, stamped "R 49 1930." (3.970 meters or 13.025 feet.)

T 49 (O. S. H. D.).—About 0.5 mile south along the Oregon Coast Highway from Oretown, Tillamook County, about 1,500 feet south of the schoolhouse, at the northwest corner of a 9-foot concrete highway culvert, in the concrete wing wall. An Oregon State Highway Department standard disk, stamped "T 49 1930." (27.716 meters or 90.932 feet.)

U 49 (O. S. H. D.).—About 1.3 miles south along the Oregon Coast Highway from Oretown, Tillamook County, at a curve near the top of a hill, in line with the prolongation of a tangent to the south, and 35 feet west of the center line of the highway. An Oregon State Highway Department standard disk, stamped "U 49 1930" and set in the top of a concrete post. (47.433 meters or 155.620 feet.)

V 49 (O. S. H. D.).—About 2.7 miles north along the Oregon Coast Highway from Neskowin, Tillamook County, opposite a group of farm buildings, 150 feet east of a red barn and in line with its north end, and 25 feet east of the center line of the highway. An Oregon State Highway Department standard disk, stamped "V 49 1930" and set in the top of a concrete post. (28.343 meters or 92.989 feet.)

W 49 (O. S. H. D.).—At Neskowin, Tillamook County, about 90 feet north and 4 feet east of the northeast corner of the Neskowin Hotel, and 29 feet west of the center line of the Oregon Coast Highway. An Oregon State Highway Department standard disk, stamped "W 49 1930" and set in the top of a concrete post. (5.168 meters or 16.955 feet.)

X 49 (O. S. H. D.).—About $\frac{1}{4}$ miles southeast along the Oregon Coast Highway from Neskowin, Tillamook County, on a concrete highway culvert, in the west corner of the south head wall. An Oregon State Highway Department standard disk, stamped "X 49 1930." (17.130 meters or 56.201 feet.)

Y 49 (O. S. H. D.).—About 3.5 miles southeast along the Oregon Coast Highway from Neskowin, Tillamook County, on a concrete highway culvert, in the west corner of the south head wall. An Oregon State Highway Department standard disk, stamped "Y 49 1930." (57.880 meters or 189.895 feet.)

Z 49 (O. S. H. D.).—About 5.6 miles southeast along the Oregon Coast Highway from Neskowin, Tillamook County, just west of an abrupt curve to the south, 195 feet north of a large wooden bridge over Neskowin Creek, and 30 feet south of the center line of the highway. An Oregon State Highway Department standard disk, stamped "Z 49 1930" and set in the top of a concrete post. (129.768 meters or 425.747 feet.)

A 50 (O. S. H. D.).—About 6.7 miles southeast along the Oregon Coast Highway from Neskowin, Tillamook County, about $\frac{3}{4}$ mile north of the Tillamook-Lincoln county line, at the north end of a summit cut, and 23 feet west of the center line of the highway. An Oregon State Highway Department standard disk, stamped "A 50 1930" and set in the top of a concrete post. (214.447 meters or 703.565 feet.)

B 50 (O. S. H. D.).—About 1.9 miles north along the Oregon Coast Highway from Otis, Lincoln County, on a 5 by 5 foot box culvert, in the west corner of the north concrete head wall. An Oregon State Highway Department standard disk, stamped "B 50 1930." (65.740 meters or 215.682 feet.)

C 50 (O. S. H. D.).—At Otis, Lincoln County, 150 feet north of the intersection of the Oregon Coast Highway with the old Salmon River road, 258 feet north of the Salmon River bridge, and 26 feet west of the center line of the highway. An Oregon State Highway Department standard disk,

stamped "O 50 1930" and set in the top of a concrete post. (11.343 meters or 37.214 feet.)

D 50 (O. S. H. D.).—About 1.7 miles southwest along the Oregon Coast Highway from Otis, Lincoln County, at the south end of a cut, about 1,000 feet north of a red and white striped barn, 30 feet east of the center line of the highway, and 10 feet south of an alder stump. An Oregon State Highway Department standard disk, stamped "D 50 1930" and set in the top of a concrete post. (9.123 meters or 29.941 feet.)

E 50 (O. S. H. D.).—About 3.4 miles southwest along the Oregon Coast Highway from Otis, about 2.0 miles northeast of Oceanlake, Lincoln County, about 500 feet east of the point at which the highway crosses an arm of Devils Lake, and 30 feet south of the center line of the highway, at the highway fence, just east of a barn gate. An Oregon State Highway Department standard disk, stamped "E 50 1930" and set in the top of a concrete post. (12.198 meters or 40.020 feet.)

F 50 (O. S. H. D.).—About $\frac{1}{4}$ mile north along the Oregon Coast Highway from the post office at Oceanlake, Lincoln County, opposite the intersection with a secondary road, in front of a small house, 30 feet east of the center line of the highway, at the highway fence. An Oregon State Highway Department standard disk, stamped "F 50 1930" and set in the top of a concrete post. (34.751 meters or 114.012 feet.)

B 52.—About 0.5 mile south along the Oregon Coast Highway from Oceanlake, about 0.5 mile north of Delake, Lincoln County, and about 100 feet east of the highway, at the west entrance to the Delake school, in the north end of the concrete step. A standard disk, stamped "B 52 1930." (9.592 meters or 31.470 feet.)

G 50 (O. S. H. D.).—At Delake, Lincoln County, at the northwest corner of the intersection of the Oregon Coast Highway and Second Street, and 32 feet west of the center line of the highway. An Oregon State Highway Department standard disk, stamped "G 50 1930" and set in the top of a concrete post. (18.801 meters or 61.683 feet.)

Reference Mark Delake No. 2.—About 0.2 mile south of Delake, Lincoln County, about 0.2 mile west of the Oregon Coast Highway, near the north line of Fifth Street, and 30 feet southwest of a concrete water tank on a hill. A standard reference-mark disk stamped "DELAKE REF 2 1927" and set in the top of a tile filled with concrete. (42.909 meters or 140.777 feet.)

D 52 (O. S. H. D.).—At Nelscott, Lincoln County, about 500 feet north of the main intersection, and 26 feet east of the center line of the highway. An Oregon State Highway Department standard disk, stamped "D 52 1930" and set in the top of a concrete post. (10.606 meters or 34.797 feet.)

NOTE.—It was reported in 1931 that this mark had probably been covered by the new highway which is east of the mark.

E 52 (O. S. H. D.).—At Taft, Lincoln County, 36 feet west and 32 feet north of the northwest corner of The Pines Hotel, just north of the group of rhododendrons, and 44 feet east of the center line of the Oregon Coast Highway. An Oregon State Highway Department standard disk, stamped "E 52 1930" and set in the top of a concrete post. (3.285 meters or 10.778 feet.)

EX 52.—At Taft, Lincoln County, on the east side of the Oregon Coast Highway, at the west entrance to The Pines Hotel, at the north end of the lowest step, in the concrete sidewalk. A standard disk, stamped "EX 52 1930." (3.398 meters or 11.149 feet.)

NOTE.—The elevation of this mark was determined by the Oregon State Highway Department in 1931.

Triangulation Station Lone Tree.—About 0.4 mile south along the Oregon Coast Highway from Taft, Lincoln County, about $\frac{1}{4}$ mile south of Schooner Creek, about 300 feet northwest of the entrance to Cutler City, about 30 feet west of the center line of the highway, and 15 feet east of a small pine tree on top of a prominent knoll. A standard triangulation-station disk, stamped "LONE TREE 1927" and set in the top of a tile filled with concrete. (10.148 meters or 33.294 feet.)

F 52 (O. S. H. D.).—About 2.3 miles south along the Oregon Coast Highway from Taft, at Kernville, Lincoln County, at the northwest corner of the steel drawbridge over Siletz River, in the top of a pier. An Oregon State Highway Department standard disk, stamped "F 52 1930." (7.936 meters or 26.037 feet.)

E 100.—About 1.8 miles south along the Oregon Coast Highway from Kernville, at **Gleneden**, Lincoln County, about 1,000 feet north of the post office, north of a service station, in the top of the curb of a concrete fish pool. A standard disk, stamped "E 100 1931." (20,035 meters or 65,732 feet.)

NOTE.—The elevation of this mark was determined by the Oregon Geographic Board in 1932.

G 52 (O. S. H. D.).—At **Gleneden**, Lincoln County, about 800 feet north of the post office, on the west side of the Oregon Coast Highway, and 2 feet east of the northeast corner of block No. 20. An Oregon State Highway Department standard disk, stamped "G 52 1930" and set in the top of a concrete post. (19,486 meters or 63,930 feet.)

H 52 (O. S. H. D.).—About 1.5 miles south along the Oregon Coast Highway from **Gleneden**, Lincoln County, about 0.4 mile south of the north end of a long tangent, at the north end of a small cut, 25 feet west of the center line of the highway, and about level with the roadway. An Oregon State Highway Department standard disk, stamped "H 52 1930" and set in the top of a concrete post. (24,186 meters or 79,350 feet.)

J 52 (O. S. H. D.).—About 3.2 miles south along the Oregon Coast Highway from **Gleneden**, Lincoln County, about 800 feet southwest of Fogarty Creek Bridge, at the east end of a very short cut, and 25 feet north of the center line of the highway. An Oregon State Highway Department standard disk, stamped "J 52 1930" and set in the top of a concrete post. (11,923 meters or 39,117 feet.)

K 52 (O. S. H. D.).—At **Depoe Bay**, Lincoln County, on the Oregon Coast Highway, in the northeast corner of the concrete arch bridge over the entrance to the bay. An Oregon State Highway Department standard disk, stamped "K 52 1930." (17,362 meters or 56,962 feet.)

L 52 (O. S. H. D.).—About 2.4 miles south along the Oregon Coast Highway from **Depoe Bay**, at **Rocky Creek Bridge**, Lincoln County, at the northwest corner of the concrete arch bridge over Rocky Creek, in the concrete curb. An Oregon State Highway Department standard disk, stamped "L 52 1930." (24,090 meters or 79,035 feet.)

Triangulation Station Whale.—At **Otter Crest**, about 1.2 miles north along the Oregon Coast Highway from the post office at **Otter Rock**, Lincoln County, on a prominent rocky point in Otter Crest State park, about 300 feet west of the highway, and 10 feet east of the west edge of the bluff. A standard triangulation-station disk, stamped "WHALE 1927" and set in rock. (138,318 meters or 453,798 feet.)

Reference Mark Whale No. 1.—At **Otter Crest**, about 1.2 miles north along the Oregon Coast Highway from the post office at **Otter Rock**, Lincoln County, and about 300 feet west of the highway, at the extreme south edge of the bluff. A standard reference-mark disk, stamped "WHALE REF 1 1927" and set in rock. (132,971 meters or 436,256 feet.)

M 52 (O. S. H. D.).—At **Otter Rock**, Lincoln County, about 100 feet south of the intersection of the highway and Otter Rock Street running west, about 75 feet south of Otter Rock service station, and 25 feet west of the center line of the highway. An Oregon State Highway Department standard disk, stamped "M 52 1930" and set in the top of a concrete post. (39,936 meters or 131,023 feet.)

N 52 (O. S. H. D.).—About 1.5 miles south along the Oregon Coast Highway from Otter Rock, about 4.1 miles north of **Agate Beach**, Lincoln County, 15 feet east and 18 feet south of the southeast corner of the Ocean Park dance hall, and 25 feet west of the center line of the highway. An Oregon State Highway Department standard disk, stamped "N 52 1930" and set in the top of a concrete post. (7,991 meters or 26,217 feet.)

P 52 (O. S. H. D.).—About 2.4 miles north along the Oregon Coast Highway from **Agate Beach**, Lincoln County, 20 feet west of a road leading south to the Hutchinson Logging Camp, 20 feet east of a signboard reading "Hutchinson & Co. Camp & Office," and 25 feet south of the center line of the highway. An Oregon State Highway Department standard disk, stamped "P 52 1930" and set in the top of a concrete post. (21,482 meters or 70,479 feet.)

Triangulation Station Otter.—About 2 miles north of **Agate Beach**, Lincoln County, and about 600 feet north of a railroad repair shop, just south of a long high trestle on a logging railroad, on the south side of a small creek, on a grassy shoulder about midway between the track and the beach. A standard triangula-

tion-station disk, stamped "OTTER 1927" and set in the top of a concrete post. (20.090 meters or 65.912 feet.)

R 52 (O. S. H. D.).—At **Agate Beach**, Lincoln County, just east of the intersection of the Oregon Coast Highway with a road leading to Yaquina Head Lighthouse, 25 feet east of the center line of the highway, and 2 feet west of the road sign. An Oregon State Highway Department standard disk, stamped "R 52 1930" and set in the top of a concrete post. (37.665 meters or 123.573 feet.)

S 52.—In the northeast part of **Newport**, Lincoln County, at the intersection of Cape and Olive Streets, about 5 feet west of the southwest corner, in the concrete sidewalk. A standard disk, stamped "S 52 1930." (42.852 meters or 140.590 feet.)

T 52.—At **Newport**, Lincoln County, at the main entrance to the city hall, in the south end of the concrete step. A standard disk, stamped "T 52 1930." (40.967 meters or 134.406 feet.)

Recent leveling and reports from engineers and others who are familiar with conditions at Newport, indicate unstable ground along Front Street and the following three bench marks located on or near that street should be used with extreme caution.

Tidal 3.—At **Newport**, Lincoln County, at the northwest corner of the intersection of Front and Case Streets, about 13 feet northeast of the intersection of the projection of the curb lines. A standard disk, stamped "3 1914" and set in the top of a concrete post flush with the ground. (4.197 meters or 13.770 feet.)

Tidal 4.—At **Newport**, Lincoln County, on the south side of the west part of Front Street, in the south vertical face of the concrete bulkhead, 6 inches below the top of the wall, and about 3 feet east of the runway leading to the Coast Guard boathouse. A standard disk, stamped "4 1928" and set vertically. (2.344 meters or 7.690 feet.)

NOTE.—It was reported in 1931 that an extension of the Coast Guard boathouse will make it impossible to hold a rod on this mark.

Tidal 2.—In the southwest part of **Newport**, Lincoln County, at the northeast corner of the intersection of Front and Bay Streets. A standard disk, stamped "2-1914" and set in the top of a concrete post flush with the ground. (4.431 meters or 14.537 feet.)

NOTE.—It was reported in September, 1931, that this post was loose but the elevation probably still good. It has since been strengthened with additional concrete by the Oregon State Highway Department.

For additional bench marks in the vicinity of Newport, see page 167.

R 58.—In the west part of **Reedsport**, Douglas County, on the Oregon Coast Highway, at the south entrance to Union High School, at the top of the steps, in the center of the west concrete pillar. A standard disk, stamped "R 58 1931." (8.393 meters or 27.536 feet.)

D 56.—See page 173.

E 56.—See page 172.

Q 58.—About 2.0 miles northeast along the Oregon Coast Highway from **Winchester Bay**, Douglas County, 40 feet northwest of the center line of the highway, 15 feet northeast of the edge of a canyon, and 6 feet southeast of a high cut. A standard disk, stamped "Q 58 1931" and set in the top of a concrete post. (23.827 meters or 78.172 feet.)

P 58.—At **Winchester Bay**, Douglas County, at the northwest corner of the intersection of the Oregon Coast Highway and Clear Lake Avenue, across the highway from the office of the Roosevelt Auto Camp, and 38 feet northwest of the center line of the highway. A standard disk, stamped "P 58 1931" and set in the top of a concrete post. (4.890 meters or 16.043 feet.)

N 58.—About 2.3 miles south along the Oregon Coast Highway from **Winchester Bay**, Douglas County, 70 feet north of a deep cut, and 30 feet west of the center line of the highway, midway between two large stumps. A standard disk, stamped "N 58 1931" and set in the top of a concrete post. (111.810 meters or 366.830 feet.)

M 58.—About 4.3 miles south along the Oregon Coast Highway from **Winchester Bay**, Douglas County, about 1.2 miles north of the Coos-Douglas county line, 40 feet north of the north end of a curve, and 33 feet west of the

center line of the highway. A standard disk, stamped "M 58 1931" and set in the top of a concrete post. (76.323 meters or 250.403 feet.)

L 58.—About 2.0 miles north along the Oregon Coast Highway from the junction with the T-road leading east to Lakeside, Coos County, about 0.1 mile south of a bridge, in line with the road to the H. B. Cox ranch house, and 30 feet west of the center line of the highway. A standard disk, stamped "L 58 1931" and set in the top of a concrete post. (23.710 meters or 77.789 feet.)

K 58.—At Lakeside, Coos County, 36 feet southwest of the southwest corner of the Southern Pacific Co. railroad station, and 50 feet southeast of the main track, in line with the white guard posts. A standard disk, stamped "K 58 1931" and set in the top of a concrete post. (8.622 meters or 28.287 feet.)

25 (U. S. G. S.).—At Lakeside, Coos County, about 500 feet northeast of the Southern Pacific Co. railroad station, and 70 feet north of the track, in the southeast corner of a yard of a large yellow house. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 14 25 1917" and riveted on the top of a 3½-inch iron pipe cased in concrete. (7.617 meters or 24.990 feet.)

J 58.—About 1.8 miles south along the Southern Pacific Co. railroad from Lakeside, Coos County, at overhead crossing No. 753 B, in the first step of the southwest wing wall, and about 8 feet above the Oregon Coast Highway. A standard disk, stamped "J 58 1931." (7.476 meters or 24.528 feet.)

H 58.—About 4.4 miles north along the Southern Pacific Co. railroad from the station at Hauser, Coos County, 3½ poles north of milepost 755, 20 feet east of the center of the track, and 21 feet south of the center line of a crossroad. A standard disk, stamped "H 58 1931" and set in the top of a concrete post. (17.014 meters or 55.820 feet.)

G 58.—About 2.9 miles north along the Southern Pacific Co. railroad from the station at Hauser, Coos County, at Helon siding, about midway between the switch stands, 22 feet west of the track, and 25 feet north of a crossroad. A standard disk, stamped "G 58 1931" and set in the top of a concrete post. (20.387 meters or 66.886 feet.)

F 58.—At Hauser, Coos County, 74 feet east of the main track of the Southern Pacific Co. railroad, 50 feet south of the south side of the station, opposite marker 759 C, and 7 feet north of a 12-inch pine tree. A standard disk, stamped "F 58 1931" and set in the top of a concrete post. (8.241 meters or 27.037 feet.)

E 58.—About 2.6 miles north along the Southern Pacific Co. railroad from North Bend, Coos County, at Coos siding, on block signal No. 7630, in the south part of the concrete base. A standard disk, stamped "E 58 1931." (3.142 meters or 10.308 feet.)

43.743 (S. P.).—About 1.9 miles north along the Southern Pacific Co. railroad from North Bend, Coos County, on railroad bridge No. 763 B over Coos Bay, in the west end of the north abutment. The top of an iron bolt, set near a Southern Pacific Co. iron plate stamped "BM 43.743." (4.502 meters or 14.770 feet.)

21 (U. S. G. S.).—About 1.5 miles north along the Southern Pacific Co. railroad from North Bend, Coos County, on railroad bridge No. 763 B over Coos Bay, in the west end of the south concrete abutment, near the base of the rail. A United States Geological Survey standard disk, stamped "21 1917." (6.403 meters or 21.024 feet.)

43.713 (S. P.).—About 1.5 miles north along the Southern Pacific Co. railroad from North Bend, Coos County, on railroad bridge No. 763 B over Coos Bay, in the west end of the south abutment. The top of an iron bolt, set near a Southern Pacific Co. iron plate stamped "BM 43.713." (4.495 meters or 14.747 feet.)

C 58.—At North Bend, Coos County, at the southeast corner of the North Bend Hotel, in the south face of the pillar, about 3 feet west of the corner, and 4 feet above the sidewalk. A standard disk, stamped "C 58 1931" and set vertically. (12.610 meters or 41.371 feet.)

D 58.—At North Bend, Coos County, at the northeast corner of Virginia and McPherson Avenues, in the south face of Kiezer Bros. Hospital, 6 inches east of the southwest corner, and 4 feet above the sidewalk. A standard disk, stamped "D 58 1931" and set vertically. (19.291 meters or 63.291 feet.)

Spur line to Empire.

Tidal 5.—At **Empire**, Coos County, near the southeast corner of the old courthouse yard, west of a filling station, at the edge of the curb, 10 feet north of the north edge of the roadway of G Street, and 24 feet west of the west edge of Broadway. The center of the top of a stone post lettered "C S." (13.002 meters or 42.657 feet.)

NOTE.—This stone formerly held a copper bolt which was Tidal 3. The south part of the top of the stone has been broken away and the bolt removed.

44 (U. S. G. S.)—**Tidal 6.**—At **Empire**, Coos County, at the southeast corner of the old courthouse yard, 12 feet north of G Street, 12 feet west of Broadway, and 1 foot west of the northwest corner of a filling station. A United States Geological Survey standard cap, stamped "44" and riveted on the top of a 3½-inch iron pipe cased in concrete. (13.275 meters or 43.553 feet.)

Tidal 10.—At **Empire**, Coos County, at the southeast corner of the intersection of G Street and the lane which runs south of and parallel to Broadway, about 75 feet east of the northeast corner of the United States Engineer yard, and just outside of a wooden fence on a property line. A standard disk, stamped "10" and set in the top of a concrete post. (5.889 meters or 19.321 feet.)

Tidal 9.—At **Empire**, Coos County, in the northeast corner of the United States Engineer yard, 37 feet west of the east fence, and about 8 feet south of the north fence. A standard disk, stamped "9" and set in the top of a concrete post. (2.646 meters or 8.681 feet.)

Tidal 8.—At **Empire**, Coos County, in the United States Engineer yard, near the entrance gate, on the south side of the driveway, about due east of the north tangent of the fuel tank, 26 feet west of the east fence, and 2 feet north of a jog in the fence. A standard disk, stamped "8" and set in the top of a concrete post. (3.053 meters or 10.016 feet.)

Tidal 7.—At **Empire**, Coos County, in the United States Engineer yard, at the northeast side of the large steel fuel tank, in the concrete base, and 32 feet measured clockwise around the circumference from the ladder on the side of the tank. A standard disk, stamped "7." (2.662 meters or 8.734 feet.)

Tidal 4.—At **Empire**, Coos County, in the United States Engineer yard, at the large steel fuel tank, in the concrete base, at the point nearest the bay, 1½ feet north of the valve. A standard disk, stamped "4." (2.663 meters or 8.737 feet.)

End of spur.

23 (U. S. G. S.)—At **North Bend**, Coos County, about 400 feet south of the Southern Pacific Co. railroad station, at the northeast corner of Stanton and Vermont Streets, in the top of a concrete banister post. A United States Geological Survey standard disk, stamped "23 1917." (6.905 meters or 22.654 feet.)

A 58.—In the southern part of **North Bend**, Coos County, on the Oregon Coast Highway, in the yard of the Mountain States Power Co., at the south door to the turbine room, in the west end of the concrete doorsill. A standard disk, stamped "A 58 1931." (2.656 meters or 8.714 feet.)

B 58.—In the southern part of **North Bend**, Coos County, on the Oregon Coast Highway, in the yard of the Mountain States Power Co., at the north door to the boiler room, in the east end of the concrete doorsill. A standard disk, stamped "B 58 1931." (2.612 meters or 8.570 feet.)

Z 57.—About 1.2 miles north along the Oregon Coast Highway from **Marshfield**, Coos County, about 100 feet south of the southeast corner of the Union Oil Co. yards, 15 feet west of the highway, and 15 feet north of a side road. A standard disk, stamped "Z 57 1931" and set in the top of a concrete post. (2.465 meters or 8.087 feet.)

11 (U. S. G. S.)—At **Marshfield**, Coos County, at the southwest corner of the intersection of Front and Commercial Streets, in the face of the El Dorado Building, 1½ feet west of the northeast corner, and about 1 foot above the sidewalk. A United States Geological Survey standard disk, stamped "PRIM TRAV STA 16 11 1917" and set vertically. (3.120 meters or 10.236 feet.)

NOTE.—This mark is also a triangulation station of the Coast and Geodetic Survey.

Tidal 5.—At **Marshfield**, Coos County, at the southwest corner of the intersection of Broadway and Central Avenue, on the east side of the First National

Bank Building, about 8 feet north of the southeast corner, in the concrete base of the building. A standard disk, stamped "5 1922." (2.629 meters or 8.625 feet.)

Y 57.—At Marshfield, Coos County, in the north side of the city hall, 6 feet east of the northwest corner, in the windowsill 1 foot above the lawn. A standard disk, stamped "Y 57 1931" and set vertically. (2.767 meters or 9.078 feet.)

Tidal 4.—At Marshfield, Coos County, at the southwest corner of the intersection of Curtis Avenue and Broadway, in the north side of a building, about 3 feet west of the northeast corner, in the concrete base. A standard disk, stamped "4 1922" and set vertically. (2.562 meters or 8.405 feet.)

X 57.—About 2.4 miles south along the Southern Pacific Co. railroad from the station at Marshfield, Coos County, opposite the switch stand at Cleo siding, 100 feet north of the plank crossing of the road leading to Millington, and 21 feet west of the track. A standard disk, stamped "X 57 1931" and set in the top of a concrete post. (4.614 meters or 15.138 feet.)

W 57.—About 3.9 miles south along the Southern Pacific Co. railroad from the station at Marshfield, Coos County, 60 feet south of railroad culvert No. 772 G, 40 feet west of the track, 8 feet west of the right-of-way fence, and 24 feet east of the center line of the Oregon Coast Highway. A standard disk, stamped "W 57 1931" and set in the top of a concrete post. (5.137 meters or 16.854 feet.)

V 57.—About 5.8 miles south along the Southern Pacific Co. railroad from the station at Marshfield, Coos County, 96 feet north of the bridge over Davis Slough, opposite a switch stand, 33 feet west of the track, and 51 feet east of the center line of the Oregon Coast Highway. A standard disk, stamped "V 57 1931" and set in the top of a concrete post. (4.689 meters or 15.384 feet.)

10 (U. S. G. S.).—About 6.6 miles south along the Southern Pacific Co. railroad from the station at Marshfield, Coos County, about 0.6 mile south along the Oregon Coast Highway from the south end of the bridge over Davis Slough, in a dense growth of bushes about 80 feet east of the highway, directly in line with a short stretch of old fence on the east bank of Isthmus Slough, and 31 feet west of the center of the track. A United States Geological Survey standard cap, stamped "10" and riveted on the top of a 3½-inch iron pipe. (2.513 meters or 8.245 feet.)

U 57.—About 9.0 miles north along the Southern Pacific Co. railroad from the station at Coquille, Coos County, about 500 feet north of Demar, 10 feet north of milepost 777, 45 feet west of the track, 41 feet east of the center line of the Oregon Coast Highway, and 3 feet outside of the right-of-way fence. A standard disk, stamped "U 57 1931" and set in the top of a concrete post. (3.251 meters or 10.666 feet.)

T 57.—About 6.8 miles north along the Southern Pacific Co. railroad from the station at Coquille, Coos County, 4 rails south of milepost 779, at a crossing, and 30 feet west of the track, at the west end of a gate, outside of the fence. A standard disk, stamped "T 57 1931" and set in the top of a concrete post. (7.330 meters or 24.049 feet.)

Z 44.—About 4.4 miles north along the Southern Pacific Co. railroad from the station at Coquille, Coos County, about 200 feet south of a railroad cut, about 100 feet east of the track, and 30 feet east of the center line of the Oregon Coast Highway, directly in line with a rail fence over a hill. A standard disk, stamped "Z 44 1931" and set in the top of a concrete post. (10.417 meters or 34.176 feet.)

Y 44.—About 2.5 miles north along the Southern Pacific Co. railroad from the station at Coquille, Coos County, 15 feet east of the track, and 15 feet north of a crossing, near a signboard marked "Basin." (4.138 meters or 13.576 feet.)

X 44 (O. S. H. D.).—About 0.1 mile north along the Oregon Coast Highway from Coquille, Coos County, and 51 feet south of a railroad crossing, at the south end of a highway bridge, in the west concrete wing wall. An Oregon State Highway Department standard disk, stamped "X 44 1931." (6.399 meters or 20.994 feet.)

W 44 (O. S. H. D.).—At the north end of Coquille, Coos County, on the Oregon Coast Highway, in the west end of the bridge over Cunningham Creek, in the south concrete curb. An Oregon State Highway Department standard disk, stamped "W 44 1931." (6.859 meters or 22.503 feet.)

U 44.—At Coquille, Coos County, at the southwest corner of the intersection of First and Taylor Streets, in front of the office of the Mountain States Power

Co., 12 feet south of the north curb, and 1 foot east of the west curb, in the concrete sidewalk. A standard disk, stamped "U 44 1931." (12.139 meters or 39.826 feet.)

S 44.—At **Coquille**, Coos County, at the corner of First and Taylor Streets, in the east wall of the First National Bank Building, 2 feet north of the southeast corner, and about 4 feet above the sidewalk. A standard disk, stamped "S 44 1931" and set vertically. (13.505 meters or 44.308 feet.)

Magnetic station.—At **Coquille**, Coos County, in the southwest corner of the courthouse yard. A standard magnetic-station disk, stamped "1917" and set in the top of a concrete post. (16.548 meters or 54.291 feet.)

61 (U. S. G. S.).—At **Coquille**, Coos County, at the northwest corner of the courthouse yard, and about 20 feet from either sidewalk. A United States Geological Survey standard cap, stamped "61" and riveted on the top of a 3½-inch iron pipe. (18.178 meters or 59.639 feet.)

V 44.—At **Coquille**, Coos County, in front of the house at 508 Coulter Street, about 4 feet east of the west curb, in line with the walk leading from the front steps. A standard disk, stamped "V 44 1931" and set in the top of a concrete post. (22.911 meters or 75.167 feet.)

T 44.—At **Coquille**, Coos County, at the steps to the front entrance of the high school, in the center of the north concrete banister. A standard disk, stamped "T 44 1931." (22.846 meters or 74.954 feet.)

R 44 (O. S. H. D.).—At **Coquille**, Coos County, on the Oregon Coast Highway bridge over Coquille River, in the top of the west end of the north concrete pier. An Oregon State Highway Department standard disk, stamped "R 44 1931." (6.914 meters or 22.684 feet.)

For additional bench marks in the vicinity of Coquille, see page 236.

Q 44.—About 2.0 miles west along the Oregon Coast Highway from the bridge over Coquille River at **Coquille**, Coos County, about 0.5 mile east of the intersection with the Fat Elk Road, at the west end of a long tangent, at the east end of a curved wooden bridge, and 29 feet south of the center line of the highway. A standard disk, stamped "Q 44 1931" and set in the top of a concrete post. (4.484 meters or 14.711 feet.)

P 44.—About 4.0 miles west along the Oregon Coast Highway from the bridge over Coquille River at **Coquille**, Coos County, near the west end of a quarter-mile tangent, 120 feet east of survey station 530, 40 feet southeast of the center line of the highway, and 10 feet west of the east end of a deep culvert, at a fence corner. A standard disk, stamped "P 44 1931" and set in the top of a concrete post. (4.900 meters or 16.076 feet.)

N 44.—About 6.1 miles west along the Oregon Coast Highway from the bridge over Coquille River at **Coquille**, Coos County, at **Riverton**, 50 feet west of survey station 420, 74 feet west of a service station, 23 feet north of the center line of the highway, and 8 feet west of a power pole. A standard disk, stamped "N 44 1931" and set in the top of a concrete post. (5.171 meters or 16.965 feet.)

M 44.—About 7.2 miles west along the Oregon Coast Highway from the bridge over Coquille River at **Coquille**, Coos County, about 1.1 miles west of **Riverton**, 63 feet west of survey station 360, and 30 feet north of the center line of the highway. A standard disk, stamped "M 44 1931" and set in the top of a concrete post. (6.518 meters or 21.384 feet.)

L 44.—About 9.3 miles west along the Oregon Coast Highway from the bridge over Coquille River at **Coquille**, Coos County, 175 feet south of the driveway leading to the J. J. Edgmon ranch, 15 feet northeast of a gate to a side road leading through a field, and 25 feet west of the center line of the highway. A standard disk, stamped "L 44 1931" and set in the top of a concrete post. (1.577 meters or 5.174 feet.)

K 44.—About 11.4 miles west along the Oregon Coast Highway from the bridge over Coquille River at Coquille, about 6.4 miles east of **Bandon**, Coos County, about 1.6 miles west of the intersection with the Lampa Creek road, and 21 feet south of the center line of the highway, at the west end of a board head wall in a small draw. A standard disk, stamped "K 44 1931" and set in the top of a concrete post. (7.194 meters or 23.602 feet.)

J 44.—About 4.3 miles east along the Oregon Coast Highway from **Bandon**, Coos County, about 0.4 mile east of the intersection with the Bear Creek road, 35 feet north of a milkhouse, 15 feet east of the south end of a large barn, and 30 feet west of the center line of the highway, at a fence corner. A

standard disk, stamped "J 44 1931" and set in the top of a concrete post. (4.781 meters or 15.686 feet.)

H 44.—About 2.3 miles east along the Oregon Coast Highway from **Bandon**, Coos County, 28 feet west of a service station, 48 feet south of the center line of the highway, and 9 feet east of a flagpole. A standard disk, stamped "H 44 1931" and set in the top of a concrete post. (65.960 meters or 216.404 feet.)

G 44.—In the east part of **Bandon**, Coos County, at the southwest corner of the intersection 2 blocks east of the arch leading to the business district, and across the street which is west of the Standard Oil Co. warehouse. A standard disk, stamped "G 44 1931" and set in the top of a concrete post. (2.794 meters or 9.167 feet.)

Tidal 2.—At **Bandon**, Coos County, at the corner of Second Street and Alabama Avenue, near the northwest corner of the First National Bank building, in the concrete sidewalk. A standard disk, stamped "2 1922." (2.763 meters or 9.065 feet.)

13 (U. S. E.).—At **Bandon**, Coos County, at the Bank of **Bandon**, in the top of the square concrete base of the north entrance pillar. A chiseled cross. (3.890 meters or 12.762 feet.)

Tidal 4.—At **Bandon**, Coos County, on the north side of First Street, on the west side of the Biggs and Buckingham Building, 3 feet north of the southwest corner, in the top of a concrete foundation. The top of a one-half-inch bolt set in a triangular form of cement. (2.924 meters or 9.593 feet.)

Tidal 5.—In the northwest part of **Bandon**, Coos County, at the foot of the steps leading to the United States Coast Guard quarters, in the concrete walk. A standard disk, stamped "5 1922." (4.888 meters or 16.037 feet.)

F 44 (O. S. H. D.).—About 1.6 miles south along the Oregon Coast Highway from **Bandon**, Coos County, at the northwest corner of the highway bridge over Johnson Creek, in the concrete wing wall. An Oregon State Highway Department standard disk, stamped "F 44 1931." (14.351 meters or 47.083 feet.)

E 44.—About 2.1 miles south along the Oregon Coast Highway from **Bandon**, Coos County, about 500 feet south of a board fence, 100 feet south of survey station 80, 25 feet west of the center line of the highway, and 2 feet east of the fence. A standard disk, stamped "E 44 1931" and set in the top of a concrete post. (24.930 meters or 81.791 feet.)

D 44 (O. S. H. D.).—About 3.0 miles south along the Oregon Coast Highway from **Bandon**, Coos County, at the northwest corner of the 12 by 12 foot concrete box highway culvert over Crooked Creek, in the concrete wing wall. An Oregon State Highway Department standard disk, stamped "D 44 1931." (14.831 meters or 48.658 feet.)

C 44.—In Coos County, about 10.3 miles north along the Oregon Coast Highway from **Langlois**, Curry County, about 0.2 mile north of an old school house at the south end of a cut at the top of a small hill, across the highway from and 20 feet south of the center of an iron gate, and 28 feet west of the center line of the highway. A standard disk, stamped "C 44 1931" and set in the top of a concrete post. (21.353 meters or 70.056 feet.)

B 44.—In Coos County, about 8.2 miles north along the Oregon Coast Highway from **Langlois**, Curry County, 25 feet south of the gate to the Riesland farm, and 28 feet west of the center line of the highway, near the fence, in line with a small lath fence at right angles to the highway. A standard disk, stamped "B 44 1931" and set in the top of a concrete post. (31.854 meters or 104.508 feet.)

A 44 (O. S. H. D.).—In Coos County, about 5.7 miles north along the Oregon Coast Highway from **Langlois**, Curry County, at the northwest corner of the highway bridge over Fourmile Creek, in the concrete curb. An Oregon State Highway Department standard disk, stamped "A 44 1931." (15.964 meters or 52.375 feet.)

Z 43.—In Coos County, about 4.8 miles north along the Oregon Coast Highway from **Langlois**, Curry County, 215 feet south of survey station 440, 27 feet west of the center line of the highway, and 13 feet north of a side road. A standard disk, stamped "Z 43 1931" and set in the top of a concrete post. (35.854 meters or 117.631 feet.)

Y 43.—In Coos County, about 2.6 miles north along the Oregon Coast Highway from **Langlois**, Curry County, 100 feet north of a curve, 25 feet north of a guy pole, and 27 feet east of the center line of the highway. A standard disk,

stamped "Y 43 1931" and set in the top of a concrete post. (25.395 meters or 83.317 feet.)

X 43 (O. S. H. D.).—About 1.6 miles north along the Oregon Coast Highway from **Langlois**, Curry County, at the northwest corner of the highway bridge over Morton Creek, in the concrete wing wall. An Oregon State Highway Department standard disk, stamped "X 43 1931." (16.744 meters or 54.934 feet.)

89 (U. S. G. S.).—At **Langlois**, Curry County, on the east side of the Oregon Coast Highway, in the southwest corner of the yard of a boarding house, and 1 foot west of a flagpole. A United States Geological Survey standard cap, stamped "89 MP" and riveted on the top of a 3½-inch iron pipe cased in concrete. (26.797 meters or 87.916 feet.)

W 43.—About 1.0 mile south along the Oregon Coast Highway from **Langlois**, about 1.5 miles north of **Denmark**, Curry County, at the extreme south end of the highway bridge over Floras Creek, in the west concrete curb. A standard disk, stamped "W 43 1931." (22.479 meters or 73.750 feet.)

V 43 (O. S. H. D.).—At **Denmark**, Curry County, at the northwest corner of the Oregon Coast Highway bridge over Willow Creek, in the concrete wing wall. An Oregon State Highway Department standard disk, stamped "V 43 1931." (29.667 meters or 97.332 feet.)

U 43.—About 8.7 miles north along the Oregon Coast Highway from **Port Orford**, Curry County, at the north end of a long cut, at the south end of a deep fill, 22 feet west of the center line of the highway, and 10 feet south of an old plank road leading west. A standard disk, stamped "U 43 1931" and set in the top of a concrete post. (54.374 meters or 178.392 feet.)

T 43.—About 6.6 miles north along the Oregon Coast Highway from **Port Orford**, Curry County, about 1.1 miles north of the post office at **Sixes**, 125 feet south of a curve sign, and 30 feet west of the center line of the highway. A standard disk, stamped "T 43 1931" and set in the top of a concrete post. (33.332 meters or 109.357 feet.)

S 43.—About 4.3 miles north along the Oregon Coast Highway from **Port Orford**, Curry County, about 0.5 mile north of the bridge over Elk River, 34 feet north of the center line of the highway, and 25 feet east of a side road. A standard disk, stamped "S 43 1931" and set in the top of a concrete post. (50.809 meters or 166.696 feet.)

R 43 (O. S. H. D.).—About 3.9 miles north along the Oregon Coast Highway from **Port Orford**, Curry County, on the highway bridge over Elk River, in the top of the west end of the north pier, and about 15 feet below the roadway. An Oregon State Highway Department standard disk, stamped "R 43 1931." (12.709 meters or 41.696 feet.)

Q 43.—About 2.3 miles north along the Oregon Coast Highway from **Port Orford**, Curry County, 30 feet west of the center line of the highway, 15 feet west of a secondary road leading northwest into a grove of trees, and 6 feet west of a line of poles. A standard disk, stamped "Q 43 1931" and set in the top of a concrete post. (30.580 meters or 100.328 feet.)

P 43.—In the north part of **Port Orford**, Curry County, about 300 feet north of the post office, about 150 feet south of the Myrtle Wood Furniture building, and 30 feet east of the center line of the Oregon Coast Highway. A standard disk, stamped "P 43 1931" and set in the top of a concrete post. (17.982 meters or 58.996 feet.)

Tidal 2.—At **Port Orford**, Curry County, between the dock and a building belonging to the Macleay Estate Co. and occupied by the Standard Oil Co., and about 50 feet from the end of the dock, in a large rock. A standard disk, stamped "2 1924." (4.252 meters or 13.950 feet.)

PP 43.—At **Port Orford**, Curry County, about 200 feet north of the end of the dock, and 50 feet west of the road leading from the town to the dock, in a 3-foot bowlder about 20 feet above the roadway. A standard disk, stamped "PP 43 1931." (13.167 meters or 43.199 feet.)

56 (U. S. G. S.).—In the southeast part of **Port Orford**, Curry County, on the south side of the Oregon Coast Highway, in the center of the front yard of the Knapp Hotel, and about 20 feet north of the front door. A United States Geological Survey standard cap, stamped "56 MP" and riveted on the top of a 3½-inch iron pipe concreted into a section of steel casing. (16.590 meters or 54.429 feet.)

N 43.—About 1.6 miles southeast along the Oregon Coast Highway from **Port Orford**, Curry County, 260 feet south of the bridge over Hubbard Creek,

and 30 feet west of the center line of the highway, at a fence corner. A standard disk, stamped "N 43 1931" and set in the top of a concrete post. (6,310 meters or 20,702 feet.)

M 43.—About 3.4 miles south along the Oregon Coast Highway from Port Orford, Curry County, about 0.1 mile south of a wooden bridge, 30 feet west of the center line of the highway, and 3 feet north of a white guard post. A standard disk, stamped "M 43 1931" and set in the top of a concrete post. (36,760 meters or 120,603 feet.)

L 43.—About 5.6 miles south along the Oregon Coast Highway from Port Orford, Curry County, at the summit of a hill, 50 feet west of a cut, and 25 feet east of the center line of the highway. A standard disk, stamped "L 43 1931" and set in the top of a concrete post. (123,610 meters or 405,544 feet.)

K 43.—About 7.7 miles south along the Oregon Coast Highway from Port Orford, Curry County, on the point of a curve, 65 feet south of the point at which the highway joins the creek bed, and 21 feet west of the center line of the highway. A standard disk, stamped "K 43 1931" and set in the top of a concrete post. (17,692 meters or 58,045 feet.)

170 (U. S. G. S.).—About 9.5 miles south along the Oregon Coast Highway from Port Orford, Curry County, about 0.2 mile north of the Robt. Fromm ranch, and 18 feet west of the center line of the highway, at the edge of a fill, flush with the ground. A United States Geological Survey standard cap, stamped "170 MP" and riveted on the top of a 3½-inch iron pipe cased in concrete. (51,418 meters or 168,694 feet.)

J 43.—About 9.8 miles south along the Oregon Coast Highway from Port Orford, Curry County, 100 feet south of station 530, 70 feet north of a small stream, 35 feet south of a long fill, and 30 feet west of the center line of the highway. A standard disk, stamped "J 43 1931" and set in the top of a concrete post. (59,516 meters or 195,262 feet.)

G 43.—About 11.9 miles south along the Oregon Coast Highway from Port Orford, about 18.5 miles north of Wedderburn, Curry County, about 7.6 miles north of the post office at Ophir, about 0.1 mile south of some ranch buildings at the summit of a hill, 15 feet south of station 640, opposite a high cliff, and 20 feet west of the center line of the highway. A standard disk, stamped "G 43 1931" and set in the top of a concrete post. (201,960 meters or 662,597 feet.)

F 43.—About 16.4 miles north along the Oregon Coast Highway from Wedderburn, Curry County, about 5.5 miles north of the post office at Ophir, about 0.5 mile north of Arizona Inn store, 25 feet south of the center line of the highway, and 3 feet west of a large forked tree. A standard disk, stamped "F 43 1931" and set in the top of a concrete post. (43,339 meters or 142,188 feet.)

E 43.—About 14.4 miles north along the Oregon Coast Highway from Wedderburn, Curry County, about 3.5 miles north of the post office at Ophir, at the top of a ridge running to the ocean, about 200 feet north, measured parallel to the highway, from a rock in the ocean which is 200 feet high, and 36 feet southwest of the center line of the highway. A standard disk, stamped "E 43 1931" and set in the top of a concrete post. (80,854 meters or 265,268 feet.)

D 43.—About 12.4 miles north along the Oregon Coast Highway from Wedderburn, Curry County, about 1.5 miles north of the post office at Ophir, 48 feet northeast of the Koblenzar Bros. store and garage, and 2 feet south of a highway guard rail above a tourist camp. A standard disk, stamped "D 43 1931" and set in the top of a concrete post. (90,948 meters or 298,385 feet.)

19 (U. S. B. P. R.).—About 11.0 miles north along the Oregon Coast Highway from Wedderburn, Curry County, about 0.1 mile north of the post office at Ophir, 55 feet north of the north end of the bridge over Euchre Creek, 30 feet east of the center line of the highway, 5 feet west of the fence, and about 7 feet below the roadway. A United States Bureau of Public Roads standard disk, stamped "19" and set in the top of a small concrete post. (4,947 meters or 16,230 feet.)

C 43 (O. S. H. D.).—About 11.0 miles north along the Oregon Coast Highway from Wedderburn, Curry County, and about 0.1 mile north of the post office at Ophir, on the concrete highway bridge over Euchre Creek, in the west end of

the north abutment. An Oregon State Highway Department standard disk, stamped "C 43 1931." (6.854 meters or 22.487 feet.)

A 43.—About 9.5 miles north along the Oregon Coast Highway from Wedderburn, Curry County, on the point of a curve, opposite a high cut bank, 36 feet west of the center line of the highway, 7 feet north of a pole gate, and 5 feet below the roadway. A standard disk, stamped "A 43 1931" and set in the top of a concrete post. (5.057 meters or 16.591 feet.)

H 43 (O. S. H. D.).—About 7.6 miles north along the Oregon Coast Highway from Wedderburn, Curry County, midway between two deep cuts, on a highway culvert, in the north end of the west concrete head wall, and 15 feet below the roadway. An Oregon State Highway Department standard disk, stamped "H 43 1931." (7.564 meters or 24.816 feet.)

B 43 (O. S. H. D.).—About 7.3 miles north along the Oregon Coast Highway from Wedderburn, Curry County, at the foot of a hill, on a highway culvert, in the north end of the west concrete head wall, and about 15 feet below the roadway. An Oregon State Highway Department standard disk, stamped "B 43 1931." (8.106 meters or 26.594 feet.)

Z 42.—About 7.2 miles north along the Oregon Coast Highway from Wedderburn, Curry County, at the top of a hill, at the south end of a cut, 25 feet west of the center line of the highway, and 12 feet north of a side road leading to the beach. A standard disk, stamped "Z 42 1931" and set in the top of a concrete post. (23.475 meters or 77.018 feet.)

107 (U. S. G. S.).—About 6.2 miles north along the Oregon Coast Highway from Wedderburn, Curry County, about 1,000 feet south along the old stage road from its junction with the highway, and about 100 feet southwest of the Giesel Monument, in the corner of a garden. A United States Geological Survey standard cap, stamped "107 MP" and riveted on the top of a 3½-inch iron pipe. (32.299 meters or 105.968 feet.)

Y 42.—About 5.3 miles north along the Oregon Coast Highway from Wedderburn, Curry County, at the top of a long hill, 70 feet west of the last pole in line with the road, and 30 feet south of the center line of the highway. A standard disk, stamped "Y 42 1931" and set in the top of a concrete post. (58.994 meters or 193.549 feet.)

X 42.—About 3.3 miles north along the Oregon Coast Highway from Wedderburn, Curry County, about 300 feet north of a ranch house, at the north end of a slight curve, and 30 feet east of the center line of the highway, in line with the fence. A standard disk, stamped "X 42 1931" and set in the top of a concrete post. (10.884 meters or 35.709 feet.)

W 42.—About 1.0 mile east along the Oregon Coast Highway from Wedderburn, Curry County, 50 feet west of a high cut bank on the north side of the road, 28 feet north of the center line of the highway, and 6 feet west of an iron gate. A standard disk, stamped "W 42 1931" and set in the top of a concrete post. (4.451 meters or 14.603 feet.)

V 42 (U. S. B. P. R.)=Tidal 5.—At Wedderburn, Curry County, about 75 feet north of the Macleay Estate Co. store building, and about 20 feet northwest of the center line of the Oregon Coast Highway. A United States Bureau of Public Roads standard disk, stamped "V 42 1931" and set in the top of a small concrete post. (5.747 meters or 18.855 feet.)

Norm.—Probably covered by highway grading in 1932.

Tidal 1.—At Wedderburn, Curry County, 27.7 feet from the most northerly corner of the Macleay Estate Co. store building, and about 10 feet east of the east side, in an old concrete foundation block. A standard disk, stamped "1 1927." (3.632 meters or 11.916 feet.)

Tidal 2.—At Wedderburn, Curry County, on the northwest side of the Oregon Coast Highway, and 123.5 feet north of the most northerly corner of the Macleay Estate Co. store building. A standard disk, stamped "2 1927" and set in the top of a 4-inch tile filled with concrete. (7.462 meters or 24.482 feet.)

U 42 (O. S. H. D.).—At Wedderburn, Curry County, on the arch bridge over the Rogue River, in the north end of the east concrete curb. An Oregon State Highway Department standard disk, stamped "U 42 1931." (18.572 meters or 60.932 feet.)

23 (O. S. H. D.).—About 0.5 mile north of Gold Beach, Curry County, on the south bank of the Rogue River, 107 feet north of the old road, 100 feet southeast of the east end of some old piling at the edge of the water, and 71 feet west

of the new highway bridge, in a bowlder about 15 feet above the water. A 1-inch iron pin. (7.097 meters or 23.284 feet.)

T 42.—At **Gold Beach**, Curry County, in the west wall of the Curry County Bank, midway between the south window and the main entrance, and 5 feet above the sidewalk. A standard disk, stamped "T 42 1931" and set vertically. (22.763 meters or 74.682 feet.)

S 42.—At **Gold Beach**, Curry County, near the northeast corner of the courthouse yard, 25 feet south of the north fence, and 10 feet west of the east fence. A standard magnetic-station disk, stamped "S 42 1917" and set in the top of a concrete post. (21.570 meters or 70.768 feet.)

R 42 (O. S. H. D.).—At **Gold Beach**, Curry County, 125 feet south of the Rogue River Garage, and about 20 feet below the middle of a wooden foot bridge, in the west concrete head wall of the culvert over Deans Creek. An Oregon State Highway Department standard disk, stamped "R 42 1931." (9.019 meters or 29.590 feet.)

Q 42 (O. S. H. D.).—About 2.2 miles south along the Oregon Coast Highway from **Gold Beach**, Curry County, at the northwest corner of the highway bridge over Hunters Creek, in the concrete curb. An Oregon State Highway Department standard disk, stamped "Q 42 1931." (7.668 meters or 25.151 feet.)

P 42.—About 4.2 miles south along the Oregon Coast Highway from **Gold Beach**, Curry County, at a curve between two canyons, on the point of a V-shaped fill, and 36 feet west of the center line of the highway. A standard disk, stamped "P 42 1931" and set in the top of a concrete post. (123.263 meters or 404.405 feet.)

N 42.—About 6.6 miles south along the Oregon Coast Highway from **Gold Beach**, Curry County, 25 feet west of a 4½-foot tree on the south bank of a deep canyon, 22 feet east of the center line of the highway, between two cut banks, and about 20 feet from a fill. A standard disk, stamped "N 42 1931" and set in the top of a concrete post. (211.825 meters or 694.963 feet.)

M 42.—About 8.6 miles south along the Oregon Coast Highway from **Gold Beach**, Curry County, about 4.9 miles north of the bridge over Pistol River, at a fill beside the road, 75 feet north of two large fir trees on the east side of the road, and 30 feet east of the center line of the highway. A standard disk, stamped "M 42 1931" and set in the top of a concrete post. (185.482 meters or 608.536 feet.)

L 42 (O. S. H. D.).—About 10.6 miles south along the Oregon Coast Highway from **Gold Beach**, Curry County, at the northwest corner of the highway bridge over Myers Creek, in the concrete curb. An Oregon State Highway Department standard disk, stamped "L 42 1931." (30.461 meters or 99.937 feet.)

K 42 (O. S. H. D.).—About 11.9 miles south along the Oregon Coast Highway from **Gold Beach**, Curry County, and about 1.6 miles north of the bridge over Pistol River, at a curve, on a 5 by 5 foot concrete highway culvert under a deep fill, in the north end of the west concrete wing wall. An Oregon State Highway Department standard disk, stamped "K 42 1931." (18.678 meters or 61.279 feet.)

G 42.—About 12.5 miles south along the Oregon Coast Highway from **Gold Beach**, Curry County, about 1.0 mile north of the bridge over Pistol River, about 0.1 mile north of a gate, at the top of a hill, 25 feet west of the center line of the highway, in line with the fence. A standard disk, stamped "G 42 1931" and set in the top of a concrete post. (58.740 meters or 192.716 feet.)

F 42 (O. S. H. D.).—About 13.5 miles south along the Oregon Coast Highway from **Gold Beach**, Curry County, at the bridge over Pistol River, in the west concrete wall of the north approach. An Oregon State Highway Department standard disk, stamped "F 42 1931." (7.345 meters or 24.098 feet.)

E 42.—About 15.1 miles south along the Oregon Coast Highway from **Gold Beach**, Curry County, about 1.6 miles south of the bridge over Pistol River, 50 feet south of a cut through a small hill, and 25 feet west of the center line of the highway. A standard disk, stamped "E 42 1931" and set in the top of a concrete post. (88.155 meters or 289.222 feet.)

A 42.—About 17.5 miles south along the Oregon Coast Highway from **Gold Beach**, Curry County, midway of a short tangent between two sharp curves, 25 feet west of the center line of the highway, and 20 feet northeast of a tall 4-foot fir tree which has two 1-foot blazes on the northeast side. A standard disk, stamped "A 42 1931" and set in the top of a concrete post. (237.818 meters or 780.241 feet.)

H 42 (O. S. H. D.).—About 17.8 miles south along the Oregon Coast Highway from **Gold Beach**, Curry County, about 4.2 miles south of the bridge over Pistol River, on a 5 by 5 foot concrete highway culvert, in the north end of the east concrete wing wall, and about 15 feet below the roadway. An Oregon State Highway Department standard disk, stamped "H 42 1931." (249.269 meters or 817.810 feet.)

J 42 (O. S. H. D.).—About 19.5 miles south along the Oregon Coast Highway from **Gold Beach**, Curry County, and about 6.0 miles south of the bridge over Pistol River, on a 4 by 4 foot highway culvert, in the north end of the east concrete wing wall about 12 feet below the roadway. An Oregon State Highway Department standard disk, stamped "J 42 1931." (359.675 meters or 1,180.034 feet.)

Z 41.—About 17.4 miles north along the Oregon Coast Highway from **Brookings**, Curry County, and about 6.2 miles south of the bridge over Pistol River, at the point of a curve, opposite a rock wall, 27 feet south of the center line of the highway. A standard disk, stamped "Z 41 1931" and set in the top of a concrete post. (378.342 meters or 1,241.277 feet.)

Y 41.—About 15.1 miles north along the Oregon Coast Highway from **Brookings**, Curry County, and about 8.5 miles south of the bridge over Pistol River, at the south end of a curve, at the north end of a fill, in a cut, 18 feet east of the center line of the highway. A standard disk, stamped "Y 41 1931" and set in the top of a concrete post. (512.194 meters or 1,680.423 feet.)

D 42 (O. S. H. D.).—About 13.6 miles north along the Oregon Coast Highway from **Brookings**, Curry County, on a concrete highway culvert, in the top of the north end of the west concrete head wall, and 10 feet below the roadway. An Oregon State Highway Department standard disk, stamped "D 42 1931." (461.109 meters or 1,512.822 feet.)

X 41.—About 13.1 miles north along the Oregon Coast Highway from **Brookings**, Curry County, about midway of a fill, and about 25 feet east of the center line of the highway. A standard disk, stamped "X 41 1931" and set in the top of a concrete post. (421.006 meters or 1,381.251 feet.)

W 41.—About 10.7 miles north along the Oregon Coast Highway from **Brookings**, Curry County, 66 feet south of a rock culvert, and 31 feet west of the center line of the highway. A standard disk, stamped "W 41 1931" and set in the top of a concrete post. (369.075 meters or 1,210.874 feet.)

V 41.—About 8.6 miles north along the Oregon Coast Highway from **Brookings**, Curry County, about 0.1 mile north of the Charles Warnick ranch house, at the north end of a deep cut, 25 feet south of a culvert, and 15 feet west of the center line of the highway. A standard disk, stamped "V 41 1931" and set in the top of a concrete post. (312.090 meters or 1,023.915 feet.)

C 42 (O. S. H. D.).—About 8.1 miles north along the Oregon Coast Highway from **Brookings**, Curry County, on a concrete highway culvert, in the south end of the east concrete head wall, and about 15 feet below the roadway. An Oregon State Highway Department standard disk, stamped "C 42 1931." (314.259 meters or 1,031.031 feet.)

U 41.—About 6.4 miles north along the Oregon Coast Highway from **Brookings**, Curry County, at the north end of a fill, at the south end of a deep cut, 18 feet west of the center line of the highway, and 2 feet above the roadway. A standard disk, stamped "U 41 1931" and set in the top of a concrete post. (311.175 meters or 1,020.913 feet.)

B 42 (O. S. H. D.).—About 5.5 miles north along the Oregon Coast Highway from **Brookings**, Curry County, on a 4 by 4 foot concrete box culvert under the highway, in the south end of the east concrete head wall, and about 15 feet below the roadway. An Oregon State Highway Department standard disk, stamped "B 42 1931." (250.458 meters or 821.711 feet.)

813.12 (O. S. H. D.).—About 5.4 miles north along the Oregon Coast Highway from **Brookings**, Curry County, on the concrete highway culvert over Taylor Creek, in the south end of the east concrete head wall, and about 15 feet below the roadway. An Oregon State Highway Department standard disk, stamped "813.12." (246.406 meters or 808.417 feet.)

T 41.—About 4.2 miles north along the Oregon Coast Highway from **Brookings**, Curry County, at the west end of an S curve, 28 feet north of the center line of the highway, and 6 feet west of a group of 4-foot boulders. A standard disk, stamped "T 41 1931" and set in the top of a concrete post. (168.511 meters or 552.857 feet.)

S 41.—About 2.1 miles north along the Oregon Coast Highway from **Brookings**, Curry County, about 150 feet south of the foot of a hill, and 42 feet east of the center line of the highway. A standard disk, stamped "S 41 1931" and set in the top of a concrete post. (24.275 meters or 79.642 feet.)

Triangulation station Harris.—About 1.9 miles north along the Oregon Coast Highway from **Brookings**, Curry County, immediately opposite Goat Island, on the highest point of Harris Mound, about 250 feet west of the highway, and about 100 feet above the roadway, in a bowlder. A standard triangulation-station disk, stamped "HARRIS 1924." (74.720 meters or 245.144 feet.)

Reference mark Harris.—About 1.9 miles north along the Oregon Coast Highway from **Brookings**, Curry County, immediately opposite Goat Island, on the west end of Harris Mound, about 290 feet west of the highway, about 100 feet above the roadway, and 42 feet west of triangulation station Harris, in a bowlder. A standard reference-mark disk. (73.708 meters or 241.824 feet.)

120.24 (O. S. H. D.).—About 1.3 miles north along the Oregon Coast Highway from **Brookings**, Curry County, on a concrete highway culvert, in the east concrete head wall, and about 15 feet below the roadway. An Oregon State Highway Department standard disk, stamped "120.24." (35.223 meters or 115.561 feet.)

Q 41.—In the north part of **Brookings**, Curry County, 150 feet south of a curve, 19 feet east of the center line of the Oregon Coast Highway, and 12 feet south of the driveway to a private garage. A standard disk, stamped "Q 41 1931" and set in the top of a concrete post. (39.442 meters or 129.403 feet.)

Tidal 3.—At **Brookings**, Curry County, near the shore end of the California-Oregon Lumber Co. dock, about 4 feet east of the inner end, and about 2 feet above the dock, on the south side of a prominent rock which is about 50 feet high. A standard disk, stamped "3 1928." (8.382 meters or 27.500 feet.)

R 41 (O. S. H. D.).—About 0.9 mile south along the Oregon Coast Highway from **Brookings**, Curry County, at the north end of the highway bridge over Chetco River, in the west concrete pier. An Oregon State Highway Department standard disk, stamped "42.15 R 41 1931." (11.429 meters or 37.497 feet.)

P 41.—About 1.0 mile south along the Oregon Coast Highway from **Brookings**, Curry County, on the south approach to the highway bridge over Chetco River, in the west concrete wing wall, and 1 foot south of a steel girder. A standard disk, stamped "P 41 1931." (7.508 meters or 24.632 feet.)

N 41.—About 2.8 miles south along the Oregon Coast Highway from **Brookings**, Curry County, opposite R. M. Cooley's ranch house, 35 feet north of a gate, 27 feet west of the center line of the highway, and 1 foot east of the fence. A standard disk, stamped "N 41 1931" and set in the top of a concrete post. (44.896 meters or 147.296 feet.)

M 41.—About 5.0 miles south along the Oregon Coast Highway from **Brookings**, Curry County, about 1.4 miles north of the Oregon-California State line, 75 feet south along the highway from a large barn, in line with a board fence which crosses a creek, 28 feet west of the center line of the highway, and 2 feet east of the property line. A standard disk, stamped "M 41 1931" and set in the top of a concrete post. (26.824 meters or 88.005 feet.)

42 L (U. S. G. L. O.).—About 6.4 miles south along the Oregon Coast Highway from **Brookings**, Curry County, on the Oregon-California State line, and 215 feet west of the center line of the highway. A United States General Land Office standard cap, stamped "42 L ORE-CAL 1915" and riveted on the top of an iron pipe cased in concrete. (12.190 meters or 39.993 feet.)

NOTE.—This mark is in the same position as triangulation station Oregon-California Boundary Monument which is described in Special Publication 31.

LINE 13, ARLINGTON TO VALE, OREG.

This line follows the John Day Highway from Arlington to Vale. It was originally run as two separate lines, Mount Vernon to Vale and Mount Vernon to Arlington. The field work for both lines was done during the fall of 1930 by Charles Pierce, hydrographic and geodetic engineer, and Curtis Le Fever, junior hydrographic and geodetic engineer.

Z 40.—About 0.75 mile west along the Oregon-Washington Railroad & Navigation Co. railroad from the station at **Arlington**, Gilliam County, about 4 poles east of railroad milepost 137, 138 feet east of a prominent square rock on the river bank, 60 feet north of Columbia River Highway mileage 144.4, 32 feet west of the east end of a highway guard fence, and 21 feet south of the track, in a large rock. A standard disk, stamped "Z 40 1930." (70.670 meters or 231.856 feet.)

Y 40 (P. P. & L.).—At **Arlington**, Gilliam County, west of the railroad station, 50 feet north of the main track, in the south wall of the concrete settling tank at the city water works, about in line with the prolongation to the north of the center of Main Street. A standard disk, stamped "Y 40 1930." (69.358 meters or 227.552 feet.)

NOTE.—Bench marks Y 40, V 40, T 40, S 40, R 40, Q 40, J 40, G 40, F 40, DD 40, A 40, W 39, and V 39 were set by the Pacific Power & Light Co. but the elevations were determined by the Coast and Geodetic Survey.

M 26.—See page 98.

X 40 (P. P. & L.).—At **Arlington**, Gilliam County, in the west sidewalk of Main Street (Columbia River Highway), and 4 feet south of the entrance of the **Arlington Hotel**. A Pacific Power & Light Co. standard disk, stamped "X 40 1930." (78.050 meters or 256.069 feet.)

W 40 (P. P. & L.).—At **Arlington**, Gilliam County, in the south part of town, at the Pacific Power & Light Co. substation, in the north end of the concrete transformer base. A Pacific Power & Light Co. standard disk, stamped "W 40 1930." (117.555 meters or 385.678 feet.)

V 40 (P. P. & L.).—About 2.0 miles south along the John Day Highway from **Arlington**, Gilliam County, 12 feet north of highway milepost 2, and 28 feet southwest of the center line of the highway, near the right-of-way fence. A standard disk, stamped "V 40 1930" and set in the top of a concrete post. (132.161 meters or 433.598 feet.)

U 40 (O. S. H. D.).—About 3.6 miles south along the John Day Highway from **Arlington**, Gilliam County, and 100 feet south of a side road to the east, in the west head wall of a large highway culvert. An Oregon State Highway Department standard disk, stamped "U 40 1930." (161.950 meters or 531.331 feet.)

T 40 (P. P. & L.).—About 4.0 miles south along the John Day Highway from **Arlington**, Gilliam County, 200 feet northwest of some sheep corrals, 150 feet south of highway milepost 4, and 75 feet north of a railroad bridge, in the west head wall of a highway culvert. A standard disk, stamped "T 40 1930." (168.017 meters or 551.236 feet.)

S 40 (P. P. & L.).—About 6.0 miles south along the John Day Highway from **Arlington**, Gilliam County, 0.8 mile north of **Shutler**, at highway milepost 6, and 66 feet west of the center line of the highway. A standard disk, stamped "S 40 1930." (208.081 meters or 682.679 feet.)

SX 40 (O. S. H. D.).—About 7.1 miles south along the John Day Highway from **Arlington**, Gilliam County, in the west head wall of a highway culvert over **Shutler Creek**. An Oregon State Highway Department standard disk, stamped "SX 40."

NOTE.—This mark was not touched upon in the first-order leveling, but may be connected in the future.

R 40 (P. P. & L.).—About 8.1 miles south along the John Day Highway from **Arlington**, Gilliam County, 50 feet southwest of the north curve sign midway of a short tangent, and 28 feet west of the center line of the highway. A standard disk, stamped "R 40 1930" and set in the top of a concrete post. (236.536 meters or 776.035 feet.)

Q 40 (P. P. & L.).—About 10.6 miles south along the John Day Highway from **Arlington**, Gilliam County, 0.1 mile south of the Wood ranch, and 28 feet east of the center line of the highway, in a fence corner opposite a culvert. A standard disk, stamped "Q 40 1930" and set in the top of a concrete post. (304.863 meters or 1,000.205 feet.)

1199 (U. S. G. S.).—About 13.1 miles south along the John Day Highway from **Arlington**, Gilliam County, at the southwest corner of the intersection of the John Day Highway and the Locust Grove School road, in a rock. A United States Geological Survey standard disk, stamped "1199 ORE." (365.601 meters or 1,199.476 feet.)

1339 (U. S. G. S.).—About 15 miles south along the John Day Highway from Arlington, Gilliam County, and about 14.3 miles north of Gwendolen, near highway milepost 15, at the top of the grade north of Rock Creek Canyon, in a fence corner 200 feet east of the highway and 25 feet north of a county road. A United States Geological Survey standard cap, stamped "1339 ORE 1913" and riveted on the top of a 3½-inch iron pipe, jacketed in concrete. (408.095 meters or 1,338.892 feet.)

969 (P. P. & L.).—At La Grove, Gilliam County, about 12.7 miles north of Gwendolen, at the John Day Highway bridge over Rock Creek, in the east end of the north curb. A Pacific Power & Light Co. standard disk, stamped "969 1927." (295.473 meters or 969.398 feet.)

968 (P. P. & L.).—At La Grove, Gilliam County, about 12.7 miles north of Gwendolen, at the John Day Highway bridge over Rock Creek, in the top of the wing wall, at the northwest corner. An iron bolt. (295.089 meters or 968.138 feet.)

P 40 (O. S. H. D.).—At La Grove, Gilliam County, about 12.7 miles north along the John Day Highway from Gwendolen, in the northwest wing wall of the highway bridge over Rock Creek. An Oregon State Highway Department standard disk, stamped "P 40 1930." (295.089 meters or 968.138 feet.)

N 40 (O. S. H. D.).—About 10.5 miles north along the John Day Highway from Gwendolen, Gilliam County, near highway mileage 18.8, 200 feet south of a small highway bridge, and 35 feet northwest of the center line of the highway. An Oregon State Highway Department standard disk, stamped "N 40 1930" and set in the top of a concrete post. (413.725 meters or 1,357.363 feet.)

M 40 (O. S. H. D.).—About 8.5 miles north along the John Day Highway from Gwendolen, Gilliam County, near highway mileage 20.8, 45 feet north of an east-and-west fence, and 35 feet southwest of the center line of the highway. An Oregon State Highway Department standard disk, stamped "M 40 1930" and set in the top of a concrete post. (505.694 meters or 1,659.098 feet.)

L 40 (O. S. H. D.).—About 6.5 miles north along the John Day Highway from Gwendolen, Gilliam County near highway mileage 22.8 at the intersection with the Clem market road, and 45 feet southwest of the center line of the highway. An Oregon State Highway Department standard disk, stamped "L 40 1930" and set in the top of a concrete post. (591.673 meters or 1,941.180 feet.)

K 40 (P. P. & L.).—About 4.5 miles north along the John Day Highway from Gwendolen, Gilliam County, 0.5 mile north of the siding at Speece, near highway mileage 24.8, and 30 feet west of the center line of the highway, in a fence corner. A standard disk, stamped "K 40 1930" and set in the top of a concrete post. (710.705 meters or 2,331.705 feet.)

J 40 (P. P. & L.).—About 2.5 miles north along the John Day Highway from Gwendolen, Gilliam County, at the south end of a long curve, and 26 feet west of the center line of the highway. A standard disk, stamped "J 40 1930" and set in the top of a concrete post. (761.245 meters or 2,497.518 feet.)

2508 (U. S. G. S.).—At Gwendolen, Gilliam County, 125 feet north of the store, and 40 feet east of the center line of the John Day Highway, at the fence line. A United States Geological Survey standard cap, stamped "2508 ORE 1913" and riveted on the top of a 3½-inch iron pipe, jacketed in concrete. (764.329 meters or 2,507.636 feet.)

H 40.—At Gwendolen, Gilliam County, 55 feet southeast of the railroad station, 40 feet east of the track, and 57 feet west of the center line of the John Day Highway. A standard disk, stamped "H 40 1930" and set in the top of a concrete post. (763.991 meters or 2,506.527 feet.)

G 40 (P. P. & L.).—About 1.3 miles south along the John Day Highway from Gwendolen, Gilliam County, at highway mileage 30.4, and 34 feet west of the center line of the highway. A standard disk, stamped "G 40 1930" and set in the top of a concrete post. (733.447 meters or 2,570.359 feet.)

2663 (U. S. G. S.).—About 3.2 miles south along the John Day Highway from Gwendolen, Gilliam County, near highway mileage 32.4, 0.1 mile southeast of a yellow ranch house, and 36 feet east of the center line of the highway. A United States Geological Survey standard cap, stamped "2663 ORE 1913" and riveted on the top of a 3½-inch iron pipe, jacketed with concrete. (811.771 meters or 2,663.285 feet.)

F 40 (P. P. & L.).—About 2.9 miles north along the John Day Highway from Condon, Gilliam County, at highway mileage 34.9, about 500 feet north of a dip in the roadway, and 31 feet west of the center line of the highway. A standard

disk, stamped "F 40 1930" and set in the top of a concrete post. (834.089 meters or 2,736.507 feet.)

E 40.—About 0.7 mile north along the John Day Highway from Condon, Gilliam County, at the northwest corner of the intersection of a road with the highway, 35 feet west of the center line of the highway, near the northwest corner of the fair grounds, east of an oil warehouse. A standard disk, stamped "E 40 1930" and set in the top of a concrete post. (882.462 meters or 2,895.211 feet.)

DD 40 (P. P. & L.).—At Condon, Gilliam County, on the John Day Highway, about midway between Summit and East Streets, north of the back of Rink Hall, in the south head wall of a highway culvert. A standard disk, stamped "DD 40 1930." (872.815 meters or 2,863.561 feet.)

D 40.—At Condon, Gilliam County, in the steps of the main entrance of the Condon school, north of the door, and 6 inches from the building. A standard disk, stamped "D 40 1930." (874.266 meters or 2,868.321 feet.)

2859 (U. S. G. S.).—At Condon, Gilliam County, at the main entrance to the county courthouse, in the north end of the top concrete step. A United States Geological Survey standard disk, stamped "2859 ORE 1913." (871.276 meters or 2,858.511 feet.)

C 40 (P. P. & L.).—At Condon, Gilliam County, on Main Street (John Day Highway), in the sidewalk curb in front of the Hotel Condon. A Pacific Power & Light Co. standard disk, stamped "C 40 1930." (866.970 meters or 2,844.384 feet.)

B 40 (O. S. H. D.).—About 0.9 mile south along the John Day Highway from Condon, Gilliam County, near mileage 38.7, in the center of the east end of a large concrete highway culvert. An Oregon State Highway Department standard disk, stamped "B 40 1930." (816.895 meters or 2,680.096 feet.)

A 40 (P. P. & L.).—About 2.4 miles south along the John Day Highway from Condon, Gilliam County, 0.3 mile north of a ranch house, near mileage 40.2, and 50 feet west of the highway, in the south end of the east pier of an abandoned road bridge. A standard disk, stamped "A 40 1930." (754.604 meters or 2,475.730 feet.)

Z 39 (O. S. H. D.).—About 3.9 miles south along the John Day Highway from Condon, Gilliam County, 0.2 mile south of a small house with corrals, near mileage 41.7, in the center of the east head wall of a large concrete culvert. An Oregon State Highway Department standard disk, stamped "Z 39 1930." (686.784 meters or 2,253.224 feet.)

Y 39 (O. S. H. D.).—About 5.6 miles south along the John Day Highway from Condon, Gilliam County, near mileage 43.3, in the curb at the northwest corner of the Condon Canyon Bridge. An Oregon State Highway Department standard disk, stamped "Y 39 1930." (614.288 meters or 2,015.377 feet.)

X 39.—About 6.0 miles south along the John Day Highway from Condon, Gilliam County, and about 6.8 miles north of Mayville, at the northeast corner of the highway bridge over Thirtymile Creek. A standard disk, stamped "X 39 1930." (600.727 meters or 1,970.885 feet.)

W 39 (P. P. & L.).—About 5.7 miles north along the John Day Highway from Mayville, Gilliam County, 0.1 mile north of a side road, and 25 feet west of the center line of the highway, in the abutment of an abandoned bridge. A standard disk, stamped "W 39 1930." (619.823 meters or 2,033.536 feet.)

V 39 (P. P. & L.).—About 4.3 miles north along the John Day Highway from Mayville, Gilliam County, near mileage 46.1, and 30 feet northeast of the center line of the highway, in a rocky ledge on a side hill. A standard disk, stamped "V 39 1930." (686.216 meters or 2,251.360 feet.)

U 39 (O. S. H. D.).—About 3.1 miles north along the John Day Highway from Mayville, Gilliam County, and 100 feet north of a side road, in the northwest pier of the highway bridge at Ramsey Canyon. An Oregon State Highway Department standard disk, stamped "U 39 1930." (733.334 meters or 2,405.947 feet.)

NOTE.—The elevation was taken on the concrete beside the disk, as the guard rail prevented the rod from being held on the disk.

T 39 (O. S. H. D.).—About 1.8 miles north along the John Day Highway from Mayville, Gilliam County, at the head of a canyon, 0.2 mile north of a red barn, in the northwest corner of a highway bridge. An Oregon State Highway Department standard disk, stamped "T 39 1930." (807.415 meters or 2,648.994 feet.)

2946 (U. S. G. S.).—At **Mayville**, Gilliam County, in the north part of town, about 2 blocks north of the post office, and 40 feet west of the center line of the John Day Highway. A United States Geological Survey standard cap, stamped "2946" and riveted on the top of a 3½-inch iron pipe, jacketed in concrete. (898.010 meters or 2,946.221 feet.)

S 39.—At **Mayville**, Gilliam County, 2 blocks west of the John Day Highway, in the south banister at the main entrance of the Mayville public school, and 1 foot from the face of the building. A standard disk, stamped "S 39 1930." (898.408 meters or 2,947.527 feet.)

R 39 (O. S. H. D.).—At **Mayville**, Gilliam County, in the south part of town, 10 feet east of the John Day Highway, in the top of a concrete culvert. An Oregon State Highway Department standard disk, stamped "R 39 1930." (897.490 meters or 2,944.515 feet.)

Q 39 (U. S. G. S.).—About 4.9 miles north along the John Day Highway from **Fossil**, Wheeler County, about 2 miles south of the county line, at mileage 53.5, at the summit of Cummings Hill, and 15 feet east of the center line of the highway. A United States Geological Survey standard disk, stamped "Q 39 1930" and set in the top of a concrete post. (1,014.715 meters or 3,329.111 feet.)

2967 (U. S. G. S.).—About 3.3 miles north along the John Day Highway from **Fossil**, Wheeler County, at mileage 55.1, near an old road leading north, 70 feet north of the highway, and 20 feet east of a ditch. A United States Geological Survey standard cap, stamped "2967 7 1914" and riveted on the top of a 3½-inch iron pipe, encased in concrete. (904.476 meters or 2,967.435 feet.)

NOTE.—This bench mark has been knocked over and reset since its original establishment in 1914.

P 39.—About 1.1 miles north along the John Day Highway from **Fossil**, Wheeler County, at mileage 57.3, 85 feet west of the center line of the highway, and 75 feet north of a barn, in a large rock. A standard disk, stamped "P 39 1930." (813.253 meters or 2,668.148 feet.)

2668 (P. P. & L.).—About 1.1 miles north along the John Day Highway from **Fossil**, Wheeler County, at mileage 57.3, 85 feet west of the center line of the highway, and 75 feet north of a barn, in the same rock as bench mark "P 39," described above. A chiseled square. (813.321 meters or 2,668.371 feet.)

N 39 (U. S. G. S.).—About 0.8 mile northwest along the John Day Highway from **Fossil**, Wheeler County, at the east end of a curve, opposite a corrugated iron culvert, and 25 feet north of the center line of the highway. A United States Geological Survey standard disk, stamped "N 39 1930" and cemented into an iron hub. (802.178 meters or 2,631.812 feet.)

M 39.—At **Fossil**, Wheeler County, in the concrete foundation of the main entrance of the public school, 5 feet north of the door, and 3 inches from the wall. A standard disk, stamped "M 39 1930." (817.692 meters or 2,682.711 feet.)

2649 (P. P. & L.).—At **Fossil**, Wheeler County, in the concrete walk at the county courthouse, on the north side of the walk, and 8 feet inside the yard. A chiseled square. (807.518 meters or 2,649.332 feet.)

2654 (U. S. G. S.).—At **Fossil**, Wheeler County, at the county courthouse, in the south part of the top step of the east or main entrance. A United States Geological Survey standard disk, stamped "2654 1914." (809.012 meters or 2,654.234 feet.)

L 39.—About 0.5 mile southeast along the John Day Highway from the main part of the town of **Fossil**, Wheeler County, at the west side of the Standard Oil Co. yard, 25 feet north of a highway bridge, and 10 feet southwest of a small building. A standard disk, stamped "L 39 1930" and set in the top of a concrete post. (814.430 meters or 2,672.009 feet.)

K 39.—About 2.2 miles southeast along the John Day Highway from **Fossil**, Wheeler County, and 0.1 mile east of a ranch house, at a curve in the highway, 28 feet north of the center line of the highway. A standard disk, stamped "K 39 1930" and set in the top of a concrete post. (854.765 meters or 2,804.341 feet.)

J 39.—About 4.3 miles southeast along the John Day Highway from **Fossil**, Wheeler County, about 0.2 mile south of a school, near mileage 62.6, 34 feet east of the center line of the highway, and 6 feet east of the fence. A standard disk, stamped "J 39 1930" and set in a rock outcrop. (914.931 meters or 3,001.736 feet.)

H 39.—About 7.4 miles southeast along the John Day Highway from **Fossil**, Wheeler County, near mileage 65.7, 50 feet north of a culvert, 30 feet east of a side road, and 37 feet southwest of the center line of the highway, in the acute angle of the intersection. A standard disk, stamped "H 39 1930" and set in the top of a concrete post. (1,007.293 meters or 3,304.760 feet.)

G 39.—About 10.3 miles southeast along the John Day Highway from **Fossil**, Wheeler County, at Butte Creek Summit, near mileage 68.6, and 34 feet east of the center line of the highway. A standard disk, stamped "G 39 1930" and set in the top of a concrete post. (1,173.956 meters or 3,851.554 feet.)

Summit.—About 10.3 miles southeast along the John Day Highway from **Fossil**, Wheeler County, at the place where the highway crosses the watershed between Butte and Service Creeks. The summit of the roadway. (3,847.6 feet.)

F 39.—About 9.4 miles northwest along the John Day Highway from **Service Creek**, Wheeler County, about 12.3 miles southeast of **Fossil**, near mileage 70.6, opposite the drinking fountain at Shelton Park, 20 feet northeast of the center line of the highway, in a shelf of rock. A standard disk, stamped "F 39 1930." (1,024.781 meters or 3,362.136 feet.)

E 39 (O. S. H. D.).—About 8.4 miles northwest along the John Day Highway from **Service Creek**, Wheeler County, near mileage 71.5, 150 feet south of an arch erected as a memorial to the Eastern Oregon Pioneers, in the northwest pier of the highway bridge over Pioneer Creek. An Oregon State Highway Department standard disk, stamped "E 39 1930." (948.228 meters or 3,110.978 feet.)

D 39.—About 6.0 miles northwest along the John Day Highway from **Service Creek**, Wheeler County, at mileage 73.6, 52 feet south of the point where the highway crosses a small ditch, and 24 feet west of the center line of the highway. A standard disk, stamped "D 39 1930" and set in the top of a concrete post. (853.864 meters or 2,801.385 feet.)

C 39.—About 4.1 miles northwest along the John Day Highway from **Service Creek**, Wheeler County, near mileage 75.4, opposite a 30-inch pine tree, and 25 feet northeast of the center line of the highway. A standard disk, stamped "C 39 1930" and set in a rock outcrop. (751.790 meters or 2,466.498 feet.)

B 39.—About 2.1 miles northwest along the John Day Highway from **Service Creek**, Wheeler County, near mileage 77.6, in a cut about 100 feet north of the Jenkins house, and 15 feet northeast of the center line of the highway. A standard disk, stamped "B 39 1930" and set in a rock ledge. (626.394 meters or 2,055.094 feet.)

A 39 (O. S. H. D.).—About 1.9 miles northwest along the John Day Highway from **Service Creek**, Wheeler County, in the west pier of a highway bridge across Jenkins Creek. An Oregon State Highway Department standard disk, stamped "A 39 1930." (615.039 meters or 2,017.840 feet.)

X 38.—At **Service Creek**, Wheeler County, at the northwest corner of the wooden building used in 1930 as a post office, 40 feet north of the John Day Highway, near mileage 79.6. A standard disk, stamped "X 38 1930" and set in a rock outcrop. (524.101 meters or 1,719.488 feet.)

Spur line to United States Geological Survey stream gaging station.

Y 38 (U. S. G. S.).—About 0.7 mile south along the road to Mitchell from **Service Creek**, Wheeler County, $\frac{1}{4}$ mile below the mouth of **Service Creek**, just south of the road, and 22 feet east of the United States Geological Survey gaging station on the John Day River. A United States Geological Survey standard disk, stamped "Y 38 1930" and set in the top of a concrete post. (503.664 meters or 1,652.438 feet.)

Z 38 (U. S. G. S.).—About 0.7 mile south along the road to Mitchell from **Service Creek**, Wheeler County, $\frac{1}{4}$ mile below the mouth of **Service Creek**, just south of the road, and 8 feet east of the United States Geological Survey gaging station on the John Day River. A United States Geological Survey standard gaging station reference-mark disk, stamped "Z 38 1930" and set in the top of a concrete post. (502.568 meters or 1,648.842 feet.)

End of spur line.

W 38 (O. S. H. D.).—About 0.8 mile east along the John Day Highway from **Service Creek**, Wheeler County, near mileage 80.3, in the southwest pier of the highway bridge over Muleshoe Creek. An Oregon State Highway Department standard disk, stamped "W 38 1930." (511.443 meters or 1,677.959 feet.)

V 38.—About 1.0 mile east along the John Day Highway from Service Creek, Wheeler County, near mileage 80.5, 0.1 mile east of the Myer ranch house, and 18 feet north of the center line of the highway, in a cliff. A standard disk, stamped "V 38 1930." (512.241 meters or 1,680.577 feet.)

U 38.—About 2.9 miles east along the John Day Highway from Service Creek, Wheeler County, and 0.1 mile west of the Butley ranch house, near mileage 82.5, at the east end of a small cut, 30 feet south of the center line of the highway, in a rock outcrop. A standard disk, stamped "U 38 1930." (514.112 meters or 1,686.716 feet.)

T 38.—About 5.0 miles east along the John Day Highway from Service Creek, Wheeler County, 20 feet north of the center line of the highway, 10 feet east of a small drain, and just north of a small pine tree, in a bowlder. A standard disk, stamped "T 38 1930." (521.422 meters or 1,710.699 feet.)

S 38.—About 6.3 miles west along the John Day Highway from Spray, Wheeler County, 0.2 mile east of a ranch house, about 500 feet north of a bridge, near mileage 86.7, and 19 feet northeast of the highway, in a rock outcrop. A standard disk, stamped "S 38 1930." (525.739 meters or 1,724.862 feet.)

R 38.—About 4.0 miles northwest along the John Day Highway from Spray, Wheeler County, at mileage 88.1, about 600 feet south of the base of a prominent flat-topped butte, outside of a curve, 75 feet north of the center line of the highway, in a rock outcrop. A standard disk, stamped "R 38 1930." (533.505 meters or 1,750.341 feet.)

Q 38.—About 1.2 miles northwest along the John Day Highway from Spray, Wheeler County, near mileage 91.4, north of the highway, in a large bowlder in a group of bowlders on the right of way. A standard disk, stamped "Q 38 1930." (536.886 meters or 1,761.433 feet.)

P 38.—At Spray, Wheeler County, at the north end of town, on the east side of the John Day Highway, at the Union High School building, in the second step, 1 foot from the north banister. A standard disk, stamped "P 38 1930." (531.053 meters or 1,742.296 feet.)

N 38.—At Spray, Wheeler County, about 200 feet south of the John Day Highway, in the concrete building occupied by the general store of Baxter & Osborn, in the next to the top concrete step, close to the building wall. A standard disk, stamped "N 38 1930." (540.157 meters or 1,772.165 feet.)

M 38.—At Spray, Wheeler County, near the east town limits, about 100 feet east of the side road leading southwest into Spray, and 35 feet north of the center line of the highway. A standard disk, stamped "M 38 1930" and set in the top of a concrete post. (549.179 meters or 1,801.765 feet.)

L 38.—About 2.2 miles east along the John Day Highway from Spray, Wheeler County, about 200 feet north of milepost 95, and 25 feet east of the highway, in a large black bowlder. A standard disk, stamped "L 38 1930." (549.802 meters or 1,803.809 feet.)

KK 38 (O. S. H. D.).—About 2.8 miles east along the John Day Highway from Spray, Wheeler County, in the northeast abutment stone of a small bridge across Haystack Creek. An Oregon State Highway Department standard disk, erroneously stamped "KK 28 1930." (543.420 meters or 1,782.870 feet.)

K 38 (U. S. B. P. R.).—About 2.9 miles east along the John Day Highway from Spray, Wheeler County, at the intersection of the road to Heppner, and 30 feet south of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "K 38 1930" and set in the top of a concrete post. (544.304 meters or 1,785.771 feet.)

J 38 (U. S. B. P. R.).—About 2.9 miles east along the John Day Highway from Spray, Wheeler County, in the triangle at the intersection of the road to Heppner, and 30 feet north of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "J 38 1930" and set in the top of a concrete post. (545.042 meters or 1,788.192 feet.)

H 38.—About 5.0 miles east along the John Day Highway from Spray, Wheeler County, near mileage 97.6, 58 feet north of a small drain, and 30 feet west of the center line of the highway. A standard disk, stamped "H 38 1930" and set in the top of a concrete post. (552.454 meters or 1,812.509 feet.)

G 38.—In Wheeler County, about 4.9 miles northwest along the John Day Highway from Kimberly, Grant County, near mileage 100.5, about 100 feet west of the east end of a sharp curve, and about 18 feet north of the center line of the highway, in a rock ledge above the level of the highway. A standard disk, stamped "G 38 1930." (550.498 meters or 1,806.092 feet.)

F 38.—In Wheeler County, about 2.0 miles northwest along the John Day Highway from Kimberly, Grant County, near mileage 103.3, 0.2 mile south of Bologna Creek, 26 feet west of the center line of the highway, and 12 feet south of a ditch under the highway. A standard disk, stamped "F 38 1930" and set in the top of a concrete post. (561.558 meters or 1,842.378 feet.)

E 38 (O. S. H. D.).—About 0.3 mile southeast along the John Day Highway from Kimberly, Grant County, in the southwest concrete pier of the highway bridge over North Fork John Day River. An Oregon State Highway Department standard disk, stamped "E 38 1930." (560.196 meters or 1,837.910 feet.)

D 38.—About 0.9 mile southeast along the John Day Highway from Kimberly, Grant County, near mileage 106.2, 150 feet east of the river, at the north end of a curve, 93 feet north of a gate, and 28 feet west of the center line of the highway. A standard disk, stamped "D 38 1930" and set in the top of a concrete post. (560.913 meters or 1,840.262 feet.)

C 38.—About 3.8 miles southeast along the John Day Highway from Kimberly, Grant County, 300 feet south of mileage 109, 42 feet east of the center line of the highway, and 15 feet east of a fence, in a boulder. A standard disk, stamped "C 38 1930." (585.216 meters or 1,919.996 feet.)

B 38.—About 6.6 miles south along the John Day Highway from Kimberly, Grant County, near mileage 111.9, 105 feet north of a bridge, and 30 feet north of the center line of the highway, in a boulder. A standard disk, stamped "B 38 1930." (606.960 meters or 1,991.335 feet.)

A 38.—About 9.7 miles south along the John Day Highway from Kimberly, Grant County, at milepost 115, 500 feet north of the Moore residence, 30 feet south of a culvert, 35 feet east of the center line of the highway, and 3 feet south of a gate. A standard disk, stamped "A 38 1930" and set in the top of a concrete post. (621.392 meters or 2,038.684 feet.)

Z 37.—About 13.3 miles northwest along the John Day Highway from Dayville, Grant County, near mileage 117.9, about 1.1 miles south of Johnny Kirk Spring, about 150 feet east of the John Day River, and 31 feet east of the center line of the highway. A standard disk, stamped "Z 37 1930" and set in the top of a concrete post. (638.658 meters or 2,095.330 feet.)

Y 37 (O. S. H. D.).—About 11.6 miles northwest along the John Day Highway from Dayville, Grant County, at the first crossing (known as Goose Rock Crossing) of the highway over the John Day River, in the northwest pier of the bridge. An Oregon State Highway Department standard disk, stamped "Y 37 1930." (654.505 meters or 2,147.322 feet.)

X 37.—About 10.2 miles northwest along the John Day Highway from Dayville, Grant County, about 250 feet north of milepost 121, 65 feet west of the river bank, and 30 feet east of the center line of the highway, at the fence line. A standard disk, stamped "X 37 1930" and set in the top of a concrete post. (663.626 meters or 2,177.246 feet.)

W 37.—About 7.3 miles northwest along the John Day Highway from Dayville, Grant County, 0.1 mile north of the Rock Creek bridge, and 12 feet west of the center line of the highway, in a boulder. A standard disk, stamped "W 37 1930." (680.370 meters or 2,232.181 feet.)

NOTE.—This bench mark is reported as probably destroyed.

V 37 (O. S. H. D.).—About 7.1 miles northwest along the John Day Highway from Dayville, Grant County, at the north end of Picture Gorge, at the junction of the John Day and Ochoco Highways, in the top of the pier at the northwest corner of the Rock Creek bridge. An Oregon State Highway Department standard disk, stamped "V 37 1930." (679.438 meters or 2,229.123 feet.)

For additional bench marks in the vicinity of Picture Gorge, see page 192.

UU 37 (U. S. G. S.).—About 6.5 miles northwest along the John Day Highway from Dayville, Grant County, 0.7 miles south of the Rock Creek bridge, in Picture Gorge, on the east bank of the John Day River, 5 feet downstream from the United States Geological Survey gaging-station cable tower, and 10 feet south of the gage house. A United States Geological Survey standard disk, stamped "UU 37 1930" and set in the top of a concrete post. (684.020 meters or 2,244.156 feet.)

U 37 (U. S. B. R.).—About 5.8 miles northwest along the John Day Highway from Dayville, Grant County, at the south end of Picture Gorge, about 0.4 mile north of the Rattlesnake Creek bridge, on a rocky point, about 50 feet east of the

highway and separated from the highway by the side of a cut, in bed rock surrounded by large boulders. A United States Bureau of Reclamation standard disk, stamped "U 37 1930." (692.640 meters or 2,272.436 feet.)

T. B. M. 44.—About 5.4 miles northwest along the John Day Highway from Dayville, Grant County, and about 0.4 mile south of the south end of Picture Gorge, in the top of the northwest pier of the highway bridge over Rattlesnake Creek. A chiseled cross within a circle. (690.461 meters or 2,265.287 feet.)

R 19 (U. S. G. S.).—About 4.1 miles northwest along the John Day Highway from Dayville, Grant County, and 0.2 mile southeast of the Cottonwood Creek bridge, at the junction with the Antone road, in a bowlder northeast of the highway. A United States Geological Survey standard disk, stamped "R 19 1930." (697.335 meters or 2,287.840 feet.)

UX 37 (O. S. H. D.).—About 4.0 miles northwest along the John Day Highway from Dayville, Grant County, and 0.1 mile south of the road to Antone, in the north end of the west head wall of a 6 by 6 foot concrete culvert. An Oregon State Highway Department standard disk, stamped "UX 37 1931." (694.013 meters or 2,276.941 feet.)

TT 37.—About 3.9 miles northwest along the John Day Highway from Dayville, Grant County, 0.2 mile south of the junction of the road leading west to Antone, 34 feet east of the center line of the highway, and 5 feet north of a gate. A standard disk, stamped "TT 37 1930" and set in the top of a concrete post. (692.234 meters or 2,271.104 feet.)

2319 (U. S. G. S.).—About 2.9 miles northwest along the John Day Highway from Dayville, Grant County, 150 feet northwest of the Battle Creek bridge, and 20 feet southwest of the highway, in the top of an imbedded bowlder, near a fence. A chiseled square. (707.096 meters or 2,319.864 feet.)

T 37.—About 2.4 miles northwest along the John Day Highway from Dayville, Grant County, opposite an unpainted 2-story house, and 30 feet east of the center line of the highway. A standard disk, stamped "T 37 1930" and set in the top of a concrete post. (703.195 meters or 2,307.066 feet.)

2312 (U. S. G. S.).—About 1.5 miles northwest along the John Day Highway from Dayville, Grant County, at mileage 129.6, in the floor of the valley, 20 feet northeast of the highway, about 10 feet southwest of a fence, and midway between two cottonwood trees inside the right of way, on the top of a bowlder. A chiseled square. (704.687 meters or 2,311.961 feet.)

R 20 (U. S. G. S.).—About 0.3 mile northwest along the John Day Highway from Dayville, Grant County, at the top of a small hill, and 125 feet northeast of the highway, in the top of a sharp bowlder. A United States Geological Survey standard disk, stamped "R 20 1930." (734.194 meters or 2,408.768 feet.)

SS 37 (U. S. B. R.).—At Dayville, Grant County, in the north part of town, about 800 feet east of the John Day Highway, and about 600 feet northeast of the J. E. Snow residence, in a bowlder at the west fence of a field. A United States Bureau of Reclamation standard disk, stamped "SS 37 1930." (714.855 meters or 2,345.320 feet.)

S 37.—At Dayville, Grant County, on a hill just west of the John Day Highway, at the front entrance to the Dayville Public School, in the concrete steps, 1 foot from the east end of the north rail. A standard disk, stamped "S 37 1930." (741.890 meters or 2,434.017 feet.)

R 37 (O. S. H. D.).—At Dayville, Grant County, in the southwest pier of the John Day Highway bridge over the South Fork John Day River. An Oregon State Highway Department standard disk, stamped "R 37 1930." (715.534 meters or 2,347.548 feet.)

Q 37.—About 2.5 miles east along the John Day Highway from Dayville, Grant County, at mileage 133.6, 22 feet south of the center line of the highway, and 3 feet east of a gate to C. M. Moore's barn. A standard disk, stamped "Q 37 1930" and set in the top of a concrete post. (727.456 meters or 2,386.062 feet.)

P 37 (O. S. H. D.).—About 3.3 miles east along the John Day Highway from Dayville, Grant County, near mileage 134.4, at the second highway bridge (known as Stewart Crossing) over the John Day River, in the southwest concrete pier. An Oregon State Highway Department standard disk, stamped "P 37 1930." (730.647 meters or 2,397.131 feet.)

N 37.—About 5.4 miles east along the John Day Highway from Dayville, Grant County, at mileage 136.5, 120 feet east of a point where the highway

crosses a ditch, inside of a curve, and 21 feet north of the center line of the highway. A standard disk, stamped "N 37 1930" and set in the top of a concrete post. (746.241 meters or 2,448.292 feet.)

M 37.—About 8.3 miles east along the John Day Highway from Dayville, Grant County, at mileage 139.6, 0.1 mile east of a secondary-road bridge across the John Day River, and 25 feet north of the center line of the highway, in a rocky shelf about 6 feet higher than the highway. A standard disk stamped "M 37 1930." (769.438 meters or 2,524.398 feet.)

L 37.—About 11.2 miles east along the John Day Highway from Dayville, Grant County, 0.2 mile east of a barn belonging to W. O. Cummings, at mileage 142.4, 32 feet north of the center line of the highway, and 30 feet east of a gate. A standard disk, stamped "L 37 1930" and set in the top of a concrete post. (784.156 meters or 2,572.685 feet.)

K 37 (O. S. H. D.).—About 12.3 miles east along the John Day Highway from Dayville, Grant County, and about 10.8 miles west of Mount Vernon, at mileage 143.5, at the third bridge (known as Moore Crossing) over the John Day River, in the southwest pier. An Oregon State Highway Department standard disk, stamped "K 37 1930." (792.047 meters or 2,598.574 feet.)

J 37.—About 8.9 miles west along the John Day Highway from Mount Vernon, Grant County, at mileage 145.4, opposite the Mekas house, 27 feet south of the center line of the highway, at a wire gate 20 feet east of a ditch. A standard disk, stamped "J 37 1930" and set in the top of a concrete post. (807.203 meters or 2,648.298 feet.)

H 37.—About 6.0 miles west along the John Day Highway from Mount Vernon, Grant County, 37 feet south of the center line of the highway, and 12 feet west of a gate to the Clark house. A standard disk, stamped "H 37 1930" and set in the top of a concrete post. (841.431 meters or 2,760.595 feet.)

G 37.—About 3.3 miles west along the John Day Highway from Mount Vernon, Grant County, 49 feet north of the center line of the highway, and 18 feet east of the gate to the Masson house. A standard disk, stamped "G 37 1930" and set in the top of a concrete post. (850.205 meters or 2,789.381 feet.)

F 37 (O. S. H. D.).—About 1.7 miles west along the John Day Highway from Mount Vernon, Grant County, at mileage 152.5, at the fourth crossing of the highway over the John Day River, in the southwest concrete pier of the bridge. An Oregon State Highway Department standard disk, stamped "F 37 1930." (853.886 meters or 2,801.458 feet.)

X 33.—See page 113.

XX 33 (O. S. H. D.).—About 1.6 miles east along the John Day Highway from Mount Vernon, Grant County, in the top of the pier at the northwest corner of the highway bridge over the John Day River. An Oregon State Highway Department standard disk, stamped "XX 33 1930." (878.950 meters or 2,883.688 feet.)

E 34.—About 3.1 miles east along the John Day Highway from Mount Vernon, Grant County, about 0.1 mile east of a farmhouse gate, near mileage 157.4, and 24 feet south of the center line of the highway. A standard disk, stamped "E 34 1930" and set in the top of a concrete post. (893.756 meters or 2,932.204 feet.)

F 34.—About 6.1 miles east along the John Day Highway from Mount Vernon, Grant County, about 2.4 miles west of John Day, about 0.2 mile west of a 2-story house on the north side of the highway, and 25 feet south of the center line of the highway, at the foot of a bluff. A standard disk, stamped "F 34 1930" and set in the top of a concrete post. (919.151 meters or 3,015.581 feet.)

3011 (O. S. H. D.).—About 2.4 miles west along the John Day Highway from John Day, Grant County, and about 400 feet west of a 2-story house, on the inside of a curve, in the northwest corner of a culvert head wall. A chiseled square. (917.798 meters or 3,011.142 feet.)

NOTE.—This bench mark should be used with caution as identification is uncertain.

G 34.—At John Day, Grant County, on the north side of Main Street (John Day Highway), at the Knox Department Store, at the southwest corner of the building, in the second stone above the sidewalk. A standard disk, stamped "G 34 1930" and set vertically. (940.169 meters or 3,084.533 feet.)

3084 (U. S. B. P. R.).—At John Day, Grant County, on the south side of Main Street (John Day Highway), on the west side of the Canyon City Highway, at the northeast corner of the Grant County Bank, in the sidewalk. A United States Bureau of Public Roads standard disk, stamped "3084 35 1929." (939.787 meters or 3,083.284 feet.)

P 34 1930.—At **John Day**, Grant County, in the east part of town, at the south fence of the John Day Highway, about 300 feet east of milepost 163, and 200 feet west of the Shell Oil Co. plant, just west of a gate. A standard disk, stamped "P 34 1930" and set in the top of a concrete post. (956.226 meters or 3,137.218 feet.)

NOTE.—The top of the original post was broken off and the above bench mark destroyed. In 1931 a new disk, stamped "P 34 1931" was set in the remaining portion of the post.

P 34 1931.—At **John Day**, Grant County, in the east part of town, at the south fence of the John Day Highway, about 300 feet east of milepost 163, and 200 feet west of the Shell Oil Co. plant, just west of a gate. A standard disk, stamped "P 34 1931" and set in the top of a concrete post. (956.118 meters or 3,136.864 feet.)

For additional bench marks in the vicinity of John Day, see pages 85 and 194.

T. B. M. 22 (O. S. H. D.).—About 1.5 miles east along the John Day Highway from **John Day**, Grant County, and about 0.2 mile east of the Frank Oliver residence, just west of an irrigation siphon, in the west end of the south head wall of a highway culvert. Two chiseled crosses forming a square. (966.912 meters or 3,172.277 feet.)

PP 34 (O. S. H. D.).—About 1.8 miles east along the John Day Highway from **John Day**, Grant County, opposite a large unpainted barn, in the top of the south head wall of a box culvert. An Oregon State Highway Department standard disk, stamped "PP 34 1930." (959.464 meters or 3,147.841 feet.)

Q 34.—About 2.7 miles east along the John Day Highway from **John Day**, Grant County, about 175 feet east of a side road, 48 feet east of a concrete culvert, and 27 feet south of the center line of the highway, in a large boulder. A standard disk, stamped "Q 34 1930." (963.546 meters or 3,161.234 feet.)

R 34 (O. S. H. D.).—About 3.5 miles east along the John Day Highway from **John Day**, Grant County, near mileage 166.25, in the top of the south head wall of a highway culvert. An Oregon State Highway Department standard disk, stamped "R 34 1930." (974.118 meters or 3,195.919 feet.)

S 34.—About 6.4 miles east along the John Day Highway from **John Day**, Grant County, at the east end of a small cut, 27 feet south of the center line of the highway. A standard disk, stamped "S 34 1930" and set in the top of concrete post. (1,008.407 meters or 3,308.415 feet.)

N 34.—About 7.3 miles east along the John Day Highway from **John Day**, Grant County, about 6.0 miles west of **Prairie City**, in the top of the wing wall of a triple concrete highway culvert. An Oregon State Highway Department standard disk, stamped "N 34 1930." (1,011.520 meters or 3,318.628 feet.)

T. B. M. 29 (O. S. H. D.).—About 5.5 miles west along the John Day Highway from **Prairie City**, Grant County, about midway of a tangent in the highway, in the west end of the south head wall of a concrete culvert. Two chiseled crosses forming a square. (1,014.892 meters or 3,329.691 feet.)

SS 34 (O. S. H. D.).—About 4.8 miles west along the John Day Highway from **Prairie City**, Grant County, at the highway bridge (known as **Prairie City Crossing**) over John Day River, in the concrete pier at the southeast corner. An Oregon State Highway Department standard disk, stamped "SS 34 1930." (1,018.750 meters or 3,342.349 feet.)

T 34.—About 4.1 miles west along the John Day Highway from **Prairie City**, Grant County, 0.7 mile east of the **Prairie City Crossing**, and 35 feet south of the center line of the highway, in a boulder. A standard disk, stamped "T 34 1930." (1,027.680 meters or 3,371.647 feet.)

U 34 (O. S. H. D.).—About 3.6 miles west along the John Day Highway from **Prairie City**, Grant County, in the top of the south head wall of a large concrete culvert over Bear Creek. An Oregon State Highway Department standard disk, stamped "U 34 1930." (1,036.167 meters or 3,399.491 feet.)

3404 (O. S. H. D.).—About 3.4 miles west along the John Day Highway from **Prairie City**, Grant County, and 0.2 mile east of Bear Creek, in the south head wall of a highway culvert. Two chiseled crosses forming a square. (1,037.508 meters or 3,403.891 feet.)

T. B. M. 32 (O. S. H. D.).—About 2.4 miles west along the John Day Highway from **Prairie City**, Grant County, on a long tangent on the highway, near a point where a side road branches off to the southwest, in the southwest wing

wall of a highway culvert. Two chiseled crosses forming a square. (1,049.119 meters or 3,441.985 feet.)

V 34.—About 1.3 miles west along the John Day Highway from **Prairie City, Grant County**, 57 feet east of the gate leading to the Galbraith house, and 12 feet southwest of a metal flume, at the south line of the highway. A standard disk, stamped "V 34 1930" and set in the top of a concrete post. (1,064.779 meters or 3,493.362 feet.)

W 34 (O. S. H. D.).—At **Prairie City, Grant County**, in the west part of town, in the top of the southwest concrete abutment of the highway bridge over Dixie Creek. An Oregon State Highway Department standard disk, stamped "W 34 1930." (1,077.658 meters or 3,535.616 feet.)

3536 (O. S. H. D.).—At **Prairie City, Grant County**, in the west part of town, in the top of the southeast concrete abutment of the highway bridge over Dixie Creek. Two chiseled crosses forming a square. (1,077.928 meters or 3,536.502 feet.)

X 34.—At **Prairie City, Grant County**, on the south side of Main Street (John Day Highway), at the northwest corner of the post-office building, in the second stone above the sidewalk. A standard disk, stamped "X 34 1930" and set vertically. (1,078.634 meters or 3,538.818 feet.)

Spur to West Coast Power Co. power house.

Y 34.—About 0.5 mile south along a dirt road from Main Street in **Prairie City, Grant County**, at the **Prairie City** public school building, in the north end of the top step of the east entrance. A standard disk, stamped "Y 34 1930." (1,082.233 meters or 3,550.626 feet.)

Z 34.—About 1¼ miles south along a dirt road from Main Street in **Prairie City, Grant County**, south of the power plant of the West Coast Power Co. on the John Day River. A standard disk, stamped "Z 34 1930" and set in the top of a concrete post. (1,069.754 meters or 3,509.685 feet.)

End of spur.

A 35.—About 3.0 miles east along the John Day Highway from **Prairie City, Grant County**, near mileage 179.6, and about 27 feet east of the highway. A standard disk, stamped "A 35 1930" and set in the top of a concrete post. (1,165.480 meters or 3,823.746 feet.)

B 35.—About 5.8 miles east along the John Day Highway from **Prairie City, Grant County**, 0.5 mile northeast of a school, just south of milepost 182, west of Jeff Davis Creek, and 28 feet southeast of the center line of the highway. A standard disk, stamped "B 35 1930" and set in the top of a concrete post. (1,270.844 meters or 4,169.427 feet.)

C 35.—About 8.6 miles northeast along the John Day Highway from **Prairie City, Grant County**, near mileage 184.75, on a bank above the level of the highway, about 17 feet west of the center line of the highway. A standard disk, stamped "C 35 1930" and set in the top of a concrete post. (1,478.300 meters or 4,850.056 feet.)

D 35 (O. S. H. D.).—About 10.3 miles northeast along the John Day Highway from **Prairie City, Grant County**, at **Dixie Pass**, 78 feet north of a highway bridge over a railroad, and 42 feet west of the center line of the highway. An Oregon State Highway Department standard disk, stamped "D 35 1930" and set in the top of a concrete post. (1,609.074 meters or 5,279.104 feet.)

E 35.—About 12.5 miles northeast along the John Day Highway from **Prairie City, Grant County**, opposite the gate to the Bridge Creek ranger station, and 27 feet north of the center line of the highway. A standard disk, stamped "E 35 1930" and set in the top of a concrete post. (1,478.200 meters or 4,849.728 feet.)

F 35 (O. S. H. D.).—About 12.6 miles northeast along the John Day Highway from **Prairie City, Grant County**, 30 feet east of the North Fork Bridge Creek, and 34 feet north of the center line of the highway. An Oregon State Highway Department standard disk, stamped "F 35 1930" and set in the top of a concrete post. (1,465.544 meters or 4,808.206 feet.)

G 35.—About 15.2 miles northeast along the John Day Highway from **Prairie City, Grant County**, at the point where the road, the railroad, and the creek meet, and 23 feet north of the center line of the highway, in a bowlder. A standard disk, stamped "G 35 1930." (1,352.734 meters or 4,438.095 feet.)

GG 35 (O. S. H. D.).—About 17.1 miles northeast along the John Day Highway from **Prairie City**, Grant County, at the intersection of the highway and the road to Austin, opposite Millers Service Station, 30 feet east of the lunch stand, and 27 feet south of the center line of the highway. An Oregon State Highway Department standard disk, stamped "GG 35 1930" and set in the top of a concrete post. (1,292.226 meters or 4,239.578 feet.)

H 35.—About 18.0 miles northeast along the John Day Highway from **Prairie City**, Grant County, about 0.4 mile east of the Oregon State Highway Department truck storage depot, 28 feet south of the center line of the highway, and 8 feet north of the north bank of a small creek. A standard disk, stamped "H 35 1930" and set in the top of a concrete post. (1,286.055 meters or 4,219.332 feet.)

J 35 (O. S. H. D.).—About 19.1 miles northeast along the John Day Highway from **Prairie City**, Grant County, at the summit of a hill, and 23 feet south of the center line of the highway. An Oregon State Highway Department standard disk, stamped "J 35 1930" and set in the top of a concrete pier. (1,374.383 meters or 4,509.122 feet.)

JJ 35 (O. S. H. D.).—In Grant County, about 18.6 miles northwest along the John Day Highway from **Unity**, Baker County, in the top of the south parapet of a concrete highway bridge, and about 3 feet from the west end. An Oregon State Highway Department standard disk, stamped "JJ 35 1930." (1,300.027 meters or 4,265.172 feet.)

K 35.—In Grant County, about 17.8 miles northwest along the John Day Highway from **Unity**, Baker County, opposite an abandoned railroad siding, 75 feet west of a concrete culvert, and 22 feet north of the center line of the highway. A standard disk, stamped "K 35 1930" and set in the top of a concrete post. (1,303.554 meters or 4,276.743 feet.)

4325 (U. S. G. S.).—In Grant County, about 16.7 miles northwest along the John Day Highway from **Unity**, Baker County, about 650 feet south of the highway, 750 feet west of the point where the highway turns up a hill, and 65 feet east of a large barn, in a bowlder about 2 feet above the ground. A copper bolt, stamped "4325 1903." (1,320.697 meters or 4,332.987 feet.)

L 35.—In Grant County, about 15.2 miles northwest along the John Day Highway from **Unity**, Baker County, about 150 feet east of a side road leading to a summit, and 41 feet south of the center line of the highway, in a bowlder. A standard disk, stamped "L 35 1930." (1,408.153 meters or 4,619.915 feet.)

M 35 (O. S. H. D.).—In Grant County, about 12.5 miles northwest along the John Day Highway from **Unity**, Baker County, at the Baker-Grant County line, and 30 feet north of the center line of the highway. An Oregon State Highway Department standard disk, stamped "M 35 1930" and set in the top of a concrete post. (1,554.276 meters or 5,099.320 feet.)

N 35 (O. S. H. D.).—About 11.7 miles northwest along the John Day Highway from **Unity**, Baker County, at the bottom of a high fill at a curve in the highway, in the south head wall of a concrete culvert. An Oregon State Highway Department standard disk, stamped "N 35 1930." (1,488.815 meters or 4,884.554 feet.)

P 35.—About 11.3 miles northwest along the John Day Highway from **Unity**, Baker County, at the east end of a sharp curve, and 28 feet south of the center line of the highway. A standard disk, stamped "P 35 1930" and set in the top of a concrete post. (1,468.890 meters or 4,819.183 feet.)

Q 35.—About 8.5 miles northwest along the John Day Highway from **Unity**, Baker County, at mileage 207.1, about 42 feet west of a concrete culvert, and 25 feet south of the center line of the highway. A standard disk, stamped "Q 35 1930" and set in the top of a concrete post. (1,300.720 meters or 4,267.445 feet.)

QQ 35 (U. S. F. S.).—About 7.7 miles northwest along the John Day Highway from **Unity**, Baker County, opposite the gate to the Middle Fork Burnt River trail, and 31 feet north of the center line of the highway. A United States Forest Service standard disk, stamped "QQ 35 1930" and set in the top of a concrete post. (1,259.109 meters or 4,130.927 feet.)

R 35.—About 5.4 miles northwest along the John Day Highway from **Unity**, Baker County, about 25 feet west of a concrete culvert, 28 feet south of the center line of the highway, and 4 feet inside the wire fence line, in a rock outcrop. A standard disk, stamped "R 35 1930." (1,223.644 meters or 4,014.572 feet.)

S 35 (O. S. H. D.).—About 3.1 miles northwest along the John Day Highway from **Unity**, Baker County, in the south parapet of a highway bridge. An Oregon State Highway Department standard disk, stamped "S 35 1930." (1,197.256 meters or 3,927.997 feet.)

T 35 (O. S. H. D.).—About 1.9 miles north along the John Day Highway from **Unity**, Baker County, at the west fork at the intersection of the John Day Highway and the **Unity-Baker Highway**, and 40 feet north of the center line of the latter highway. An Oregon State Highway Department standard disk, stamped "T 35 1930" and set in the top of a concrete post. (1,196.651 meters or 3,926.012 feet.)

U 35.—About 0.9 mile north along the John Day Highway from **Unity**, Baker County, 37 feet north of a box culvert, and 18 feet west of the center line of the highway. A standard disk, stamped "U 35 1930" and set in the top of a concrete post. (1,202.322 meters or 3,944.618 feet.)

T. B. M. 99.—At **Unity**, Baker County, on the southwest corner of the concrete foundation of the town pump. (1,228.179 meters or 4,029.451 feet.)

UU 35.—At **Unity**, Baker County, about 0.4 mile east of the post office, in the concrete steps of the schoolhouse, in the north corner of the lower step. A standard disk, stamped "UU 35 1930." (1,230.160 meters or 4,035.950 feet.)

T. B. M. 102.—About 1.8 miles east along the John Day Highway from **Unity**, Baker County, on the north head wall of a concrete siphon box. (1,221.553 meters or 4,007.712 feet.)

V 35.—About 2.0 miles east along the John Day Highway from **Unity**, Baker County, at the west end of a fill, and 27 feet south of the center line of the highway. A standard disk, stamped "V 35 1930" and set in the top of a concrete post. (1,217.222 meters or 3,993.502 feet.)

W 35.—About 4.9 miles southeast along the John Day Highway from **Unity**, Baker County, 23 feet west of the center line of the highway. A standard disk, stamped "W 35 1930" and set in the top of a concrete post. (1,219.801 meters or 4,001.964 feet.)

T. B. M. 111.—About 6.8 miles southeast along the John Day Highway from **Unity**, Baker County, on the west head wall of a concrete siphon. (1,292.614 meters or 4,240.851 feet.)

X 35.—About 7.7 miles southeast along the John Day Highway from **Unity**, Baker County, on the west bank of a small creek running parallel to the highway, and 36 feet west of the center line of the highway, in a large volcanic boulder. A standard disk, stamped "X 35 1930." (1,319.622 meters or 4,329.460 feet.)

Y 35 (O. S. H. D.).—About 10.7 miles southeast along the John Day Highway from **Unity**, Baker County, about 7.9 miles west of **Ironside**, Malheur County, at the north end of the cut at **Eldorado Pass**, and 30 feet east of the center line of the highway. An Oregon State Highway Department standard disk, stamped "Y 35 1930" and set in the top of a concrete post. (1,406.820 meters or 4,615.542 feet.)

4662 (U. S. G. S.).—About 7.9 miles west along the John Day Highway from **Ironside**, Malheur County, at **Eldorado Pass**, on the top of the bank above the highway, and about 105 feet east of the center line of the highway. A United States Geological Survey standard cap, stamped "4662 1903" and riveted on the top of a 3½-inch iron pipe. (1,421.601 meters or 4,664.036 feet.)

Z 35.—About 7.1 miles west along the John Day Highway from **Ironside**, Malheur County, about 1.0 mile southeast of **Eldorado Pass**, on the long grade into **Ironside**, and 35 feet north of the center line of the highway. A standard disk, stamped "Z 35 1930" and set in the top of a concrete post. (1,337.342 meters or 4,387.596 feet.)

4123 (U. S. G. S.).—About 4.9 miles west along the John Day Highway from **Ironside**, Malheur County, about 0.5 mile west of the **W. W. Beam** ranch house, about 200 feet northwest of a group of aspen trees, about 25 feet north of the center line of the highway, and 5 feet north of the top of the bank at the side of the highway. A United States Geological Survey standard cap, stamped "4123 1903" and riveted on the top of a 3½-inch iron pipe. (1,257.136 meters or 4,124.454 feet.)

NOTE.—The iron pipe has been bent from a vertical position.

A 36.—About 4.1 miles west along the John Day Highway from **Ironside**, Malheur County, opposite the east end of a cultivated patch which is east of

a small house, and 40 feet north of the center line of the highway. A standard disk, stamped "A 36 1930" and set in the top of a concrete post. (1,225.791 meters or 4,021.616 feet.)

B 36.—About 1.0 mile west along the John Day Highway from **Ironside**, Malheur County, at a cut, 38.5 feet south of the center line of the highway. A standard disk, stamped "B 36 1930" and set in the top of a concrete post. (1,165.477 meters or 3,823.736 feet.)

C 36.—At **Ironside**, Malheur County, at the store and post office operated by Mr. Elms, north of the John Day Highway, in the west end of the concrete platform in front of the store. A standard disk, stamped "C 36 1930." (1,150.309 meters or 3,773.972 feet.)

D 36.—At **Ironside**, Malheur County, opposite the store and post office operated by Mr. Elms, 82 feet east of the gate into the camp grounds, and 43 feet south of the John Day Highway. A standard disk, stamped "D 36 1930" and set in the top of a concrete post. (1,150.996 meters or 3,776.226 feet.)

E 36 (O. S. H. D.).—About 1.3 miles east along the John Day Highway from **Ironside**, Malheur County, 30 feet south of the center line of the highway, and about 3 feet north of the fence. An Oregon State Highway Department standard disk, stamped "E 36 1930" and set in the top of a concrete post. (1,166.049 meters or 3,825.612 feet.)

F 36 (O. S. H. D.).—About 3.5 miles east along the John Day Highway from **Ironside**, Malheur County, at the top of a hill, and 37 feet south of the center line of the highway. An Oregon State Highway Department standard disk, stamped "F 36 1930" and set in the top of a concrete post. (1,159.381 meters or 3,803.736 feet.)

G 36.—About 3.5 miles east along the John Day Highway from **Ironside**, Malheur County, at the top of a hill, and 43 feet south of the center line of the highway. A standard disk, stamped "G 36 1930" and set in the top of a concrete post. (1,158.541 meters or 3,800.980 feet.)

H 36.—About 6.5 miles east along the John Day Highway from **Ironside**, Malheur County, at the side road turning north, and 57 feet north of the highway. A standard disk, stamped "H 36 1930" and set in the top of a concrete post. (1,194.239 meters or 3,918.099 feet.)

J 36 (O. S. H. D.).—About 6.9 miles east along the John Day Highway from **Ironside**, Malheur County, and 30 feet south of the center line of the highway. An Oregon State Highway Department standard disk, stamped "J 36 1930" and set in the top of a concrete post. (1,208.084 meters or 3,963.522 feet.)

K 36.—About 9.9 miles east along the John Day Highway from **Ironside**, Malheur County, at a long tangent, 33 feet north of the center line of the highway. A standard disk, stamped "K 36 1930" and set in the top of a concrete post. (1,188.185 meters or 3,898.237 feet.)

L 36.—About 10.5 miles west along the John Day Highway from **Brogan**, Malheur County, about 0.1 mile west of some new buildings, and 31 feet north of the center line of the highway. A standard disk, stamped "L 36 1930" and set in the top of a concrete post. (1,184.928 meters or 3,887.551 feet.)

T. B. M. 146.—About 9.2 miles west along the John Day Highway from **Brogan**, Malheur County, on the top of the north wing of the first concrete culvert east of the schoolhouse. (1,183.347 meters or 3,882.364 feet.)

M 36 (O. S. H. D.).—About 8.1 miles west along the John Day Highway from **Brogan**, Malheur County, at the top or west end of a long hill into **Brogan**, and 30 feet south of the center line of the highway. An Oregon State Highway Department standard disk, stamped "M 36 1930" and set in the top of a concrete post. (1,214.101 meters or 3,983.263 feet.)

N 36 (O. S. H. D.).—About 7.3 miles west along the John Day Highway from **Brogan**, Malheur County, in the west head wall of a large concrete highway culvert. An Oregon State Highway Department standard disk, stamped "N 36 1930." (1,164.575 meters or 3,820.776 feet.)

P 36.—About 6.7 miles west along the John Day Highway from **Brogan**, Malheur County, in a canyon, 39 feet west of the highway. A standard disk, stamped "P 36 1930" and set in the top of a concrete post. (1,116.552 meters or 3,663.221 feet.)

Q 36 (O. S. H. D.).—About 5.4 miles west along the John Day Highway from **Brogan**, Malheur County, in the west end of a concrete highway culvert. An Oregon State Highway Department standard disk, stamped "Q 36 1930." (1,031.789 meters or 3,385.128 feet.)

R 36.—About 3.6 miles west along the John Day Highway from **Brogan**, Malheur County, 195 feet west of a culvert at a turn in the highway, and 45 feet south of the center line of the highway. A standard disk, stamped "R 36 1930" and set in the top of a concrete post. (918,596 meters or 3,013,760 feet.)

2813 (O. S. H. D.).—About 2.7 miles west along the John Day Highway from **Brogan**, Malheur County, at the northwest corner of a bridge at the foot of a long hill. A bolt head. (857,388 meters or 2,812,947 feet.)

S 36 (O. S. H. D.).—About 1.5 miles west along the John Day Highway from **Brogan**, Malheur County, in the west end of the north pier of the Pole Creek bridge. An Oregon State Highway Department standard disk, stamped "S 36 1930." (815,410 meters or 2,675,224 feet.)

T 36.—At **Brogan**, Malheur County, in the northeast corner of the Brogan Public School, one foot from the east end of the building, and one foot above the ground. A standard disk, stamped "T 36 1930" and set vertically. (817,915 meters or 2,683,443 feet.)

T. B. M. 163.—About 0.7 mile southeast along the John Day Highway from **Brogan**, Malheur County, on the top of an old concrete spillway on the north side of the highway. A bolt. (789,472 meters or 2,590,126 feet.)

U 36.—About 2.7 miles southeast along the John Day Highway from **Brogan**, Malheur County, about 0.3 mile west of a large green barn, and 34 feet north of the center line of the highway, at a fence corner. A standard disk, stamped "U 36 1930" and set in the top of a concrete post. (774,567 meters or 2,541,225 feet.)

V 36 (O. S. H. D.).—About 3.3 miles southeast along the John Day Highway from **Brogan**, Malheur County, about 0.4 mile east of a large green barn, and 20 feet south of the center line of the highway, at a fence corner. An Oregon State Highway Department standard disk, stamped "V 36 1930" and set in the top of a concrete post. (768,837 meters or 2,522,426 feet.)

2508 (U. S. G. S.).—About 3.7 miles southeast along the John Day Highway from **Brogan**, Malheur County, 300 feet north of a spring, at the mouth of a small gulch, 25 feet west of the highway. The top of a 3½-inch iron pipe, on which had formerly been riveted a United States Geological Survey standard cap, stamped "2508 H 1904." The cap had been knocked loose and was lying alongside the pipe. (766,798 meters or 2,515,736 feet.)

W 36.—About 6.0 miles southeast along the John Day Highway from **Brogan**, Malheur County, at **Jamieson**, near the railroad crossing at the Oregon Short Line Railroad station, 72 feet west of the railroad, and 29 feet south of the center line of the highway. A standard disk, stamped "W 36 1930" and set in the top of a concrete post. (763,143 meters or 2,503,745 feet.)

2490 (U. S. G. S.).—About 7.0 miles southeast along the John Day Highway from **Brogan**, Malheur County, about 500 feet south of a drain ditch, 175 feet east of the center line of the highway, and about 15 feet north of an abandoned county road. A United States Geological Survey standard cap, stamped "2490 H 1904" and riveted on the top of a 3½-inch iron pipe. (761,424 meters or 2,498,105 feet.)

X 36 (O. S. H. D.).—About 9.3 miles southeast along the John Day Highway from **Brogan**, Malheur County, in the west head wall at the north end of a highway bridge. An Oregon State Highway Department standard disk, stamped "X 36 1930." (749,136 meters or 2,457,790 feet.)

Y 36.—About 9.4 miles southeast along the John Day Highway from **Brogan**, Malheur County, at a small side road, 30 feet east of the center line of the highway. A standard disk, stamped "Y 36 1930" and set in the top of a concrete post. (749,852 meters or 2,460,139 feet.)

¼ 25/36 (U. S. G. L. O.).—About 9.4 miles southeast along the John Day Highway from **Brogan**, Malheur County, and 0.3 mile southeast along an earth road from the John Day Highway, at the fence line. A United States General Land Office standard cap, stamped "¼ 25/36" and fastened on the top of an iron pipe. (744,879 meters or 2,443,824 feet.)

NOTE.—This post marks the quarter corner on the north line of sec. 36, T. 16 S., R. 43 E.

2398 (U. S. G. S.).—About 9.4 miles southeast along the John Day Highway from **Brogan**, Malheur County, about 1.3 miles southeast along a dirt road from the John Day Highway, about 0.4 mile south of the Scott house, and 15 feet west of the road, in a sagebrush field. A United States Geological Survey standard cap, stamped "2398 H 1904" and riveted on the top of a 3½-inch iron pipe. (733,400 meters or 2,406,163 feet.)

Z 36.—About 11.3 miles northwest along the John Day Highway from Vale, Malheur County, about 100 feet south of a side road leading to a schoolhouse, and 33 feet east of the center line of the highway. A standard disk, stamped "Z 36 1930" and set in the top of a concrete post. (735.735 meters or 2,413.824 feet.)

A 37.—About 8.3 miles northwest along the John Day Highway from Vale, Malheur County, 2 poles west of railroad milepost 8, and 21 feet north of the center line of the highway. A standard disk, stamped "A 37 1930" and set in the top of a concrete post. (712.514 meters or 2,337.640 feet.)

2310 (U. S. G. S.).—About 6.6 miles northwest along the John Day Highway from Vale, Malheur County, about 600 feet southeast of a crossroad, about 570 feet east of the Harris residence, and 320 feet east of the highway. A United States Geological Survey standard cap, stamped "2310 H 1904" and riveted on the top of a 3½-inch iron pipe. (706.592 meters or 2,318.211 feet.)

B 37.—About 5.3 miles northwest along the John Day Highway from Vale, Malheur County, and about 15 feet north of the center line of an irrigation ditch, near a dividing box, 47 feet north of the center line of the highway. A standard disk, stamped "B 37 1930" and set in the top of a concrete post. (700.700 meters or 2,298.880 feet.)

2273 (U. S. G. L. O.).—About 4.4 miles northwest along the John Day Highway from Vale, Malheur County, at the crossing of the Oregon Short Line Railroad, 177 feet southwest of the center line of the highway. A United States General Land Office standard cap, fastened on the top of a small iron pipe. (692.865 meters or 2,273.175 feet.)

2278 (U. S. G. S.).—About 3.3 miles west along the John Day Highway from Vale, Malheur County, and about 0.2 mile south of the center line of the highway, on the south line of the Frizzell ranch, 100 feet east of the west line. A United States Geological Survey standard cap, stamped "2278 H 1904" and riveted on the top of a 3½-inch iron pipe. (696.765 meters or 2,285.970 feet.)

C 37.—About 1.8 miles northwest along the John Day Highway from Vale, Malheur County, 45 feet south of the center line of the highway, and about 4 feet east of the east bank of a ditch. A standard disk, stamped "C 37 1930" and set in the top of a concrete post. (685.443 meters or 2,248.824 feet.)

D 37.—At Vale, Malheur County, on the right of way of the Oregon Short Line Railroad, at the wooden water tank just north of the station, 61 feet south of the tracks, and 88 feet west of the John Day Highway, in the north concrete footing under the water tank. A standard disk, stamped "D 37 1930." (683.153 meters or 2,241.311 feet.)

E 37 (O. S. H. D.).—At Vale, Malheur County, on the John Day Highway at the southeast corner of the Malheur River bridge, in the top of the pier. An Oregon State Highway Department standard disk, stamped "E 37 1930." (683.634 meters or 2,242.889 feet.)

U 21.—See page 49.

LINE 14, HEBO TO SALEM, OREG.

[First-order leveling]

This line follows the McMinnville-Tillamook Highway from Hebo to a point about 2 miles southwest of Willamina, county roads from this point to Dallas, and the Salem-Dallas Highway from Dallas to Salem. The field work was done during the summer of 1930 by J. H. Brittain, junior hydrographic and geodetic engineer, and E. E. Stohsner, junior engineer.

K 49 (O. S. H. D.).—See page 132.

J 49.—At Hebo, Tillamook County, about 0.3 mile south along the McMinnville-Tillamook Highway from its junction with the Oregon Coast Highway, at Three Rivers forest ranger station, about 60 feet east of the roadway, and 15 feet above it, at the north end of the front steps of the residence. A standard disk, stamped "J 49 1930" and set in the top of a concrete post. (24.876 meters or 81.614 feet.)

H 50 (O. S. H. D.).—About 1.5 miles south along the McMinnville-Tillamook Highway from Hebo, Tillamook County, at the southeast corner of the highway

bridge over Cedar Creek, in the concrete curb. An Oregon State Highway Department standard disk, stamped "H 50 1930." (37.716 meters or 123.740 feet.)

J 50.—About 2.4 miles south along the McMinnville-Tillamook Highway from Hebo, Tillamook County, about 150 feet south of a farmhouse, about 9 yards west of the center line of the highway, just north of a gate, and 1 foot east of the west highway fence. A standard disk, stamped "J 50 1930" and set in the top of a concrete post. (50.178 meters or 164.626 feet.)

K 50 (O. S. H. D.).—About 3.5 miles south along the McMinnville-Tillamook Highway from Hebo, Tillamook County, at a curve in the highway, about 150 feet southwest of a house, in the west head wall of a 4 by 4 foot concrete box culvert, and about 10 feet below the roadway. An Oregon State Highway Department standard disk, stamped "K 50 1930." (66.453 meters or 218.021 feet.)

L 50 (O. S. H. D.).—About 4.4 miles south along the McMinnville-Tillamook Highway from Hebo, Tillamook County, about 250 feet southeast of Castle Rock Store, at the southeast corner of the highway bridge over Three Rivers, in the concrete curb. An Oregon State Highway Department standard disk, stamped "L 50 1930." (81.563 meters or 267.595 feet.)

M 50 (O. S. H. D.).—About 5.8 miles south along the McMinnville-Tillamook Highway from Hebo, Tillamook County, at the southeast corner of the highway bridge over Alder Creek, in the concrete curb. An Oregon State Highway Department standard disk, stamped "M 50 1930." (108.323 meters or 355.390 feet.)

N 50 (O. S. H. D.).—About 6.5 miles southeast along the McMinnville-Tillamook Highway from Hebo, Tillamook County, at the southeast corner of a 61-foot highway bridge over Alder Creek, in the concrete wing wall. An Oregon State Highway Department standard disk, stamped "N 50 1930." (121.118 meters or 397.368 feet.)

P 50.—About 8.0 miles southeast along the McMinnville-Tillamook Highway from Hebo, Tillamook County, just east of a sharp curve, opposite milepost 8, across the highway from a cliff, 20 feet east of the center line of the highway, in a rock outcrop about 3 feet above the roadway. A standard disk, stamped "P 50 1930." (158.517 meters or 520.068 feet.)

R 50 (O. S. H. D.).—About 8.8 miles southeast along the McMinnville-Tillamook Highway from Hebo, Tillamook County, at the southeast corner of a 14-foot highway bridge over Alder Creek, in the concrete wing wall. An Oregon State Highway Department standard disk, stamped "R 50 1930." (176.465 meters or 578.952 feet.)

S 50 (O. S. H. D.).—About 10.7 miles southeast along the McMinnville-Tillamook Highway from Hebo, about 0.2 mile north of Dolph, Tillamook County, 182 feet north of the highway bridge over Louis Creek, and 28 feet east of the center line of the highway. An Oregon State Highway Department standard disk, stamped "S 50 1930" and set in the top of a concrete post. (130.179 meters or 427.096 feet.)

T 50 (O. S. H. D.).—In Yamhill County, about 1.4 miles east along the McMinnville-Tillamook Highway from Dolph, Tillamook County, 75 feet west of an old log house, and 27 feet south of the center line of the highway. An Oregon State Highway Department standard disk, stamped "T 50 1930" and set in the top of a concrete post. (167.458 meters or 549.402 feet.)

U 50 (O. S. H. D.).—In Yamhill County, about 3.3 miles east along the McMinnville-Tillamook Highway from Dolph, Tillamook County, at the summit of the Coast Range, 27 feet south of the center line of the highway, on top of a small bank just back of the summit sign. An Oregon State Highway Department standard disk, stamped "U 50 1930" and set in the top of a concrete post. (204.737 meters or 671.708 feet.)

V 50 (O. S. H. D.).—About 6.6 miles west along the McMinnville-Tillamook Highway from the Grand Ronde Agency, Yamhill County, and about 1.6 miles east of the summit of the Coast Range, near the Bee ranch, at a 12-inch culvert at an old channel of the South Yamhill River, and in the east end of the north head wall. An Oregon State Highway Department standard disk, stamped "V 50 1930." (166.038 meters or 544.743 feet.)

W 50 (O. S. H. D.).—About 5.0 miles west along the McMinnville-Tillamook Highway from the Grand Ronde Agency, Yamhill County, and 30 feet east of a small barn at the Timberland ranch, in the east end of the north head wall of

a culvert about 8 feet below the roadway. An Oregon State Highway Department standard disk, stamped "W 50 1930." (137.912 meters or 452.466 feet.)

X 50 (O. S. H. D.).—About 3.5 miles west along the McMinnville-Tillamook Highway from the **Grand Ronde Agency**, Yamhill County, at the northeast corner of the highway bridge over South Yamhill River, in the concrete curb. An Oregon State Highway Department standard disk, stamped "X 50 1930." (122.760 meters or 402.755 feet.)

Y 50 (O. S. H. D.).—About 1.4 miles west along the McMinnville-Tillamook Highway from the **Grand Ronde Agency**, Yamhill County, just east of the Foster mill, at a 30-inch concrete culvert under the highway, in the east end of the north head wall. An Oregon State Highway Department standard disk, stamped "Y 50 1930." (107.887 meters or 353.959 feet.)

Z 50 (O. S. H. D.).—At the **Grand Ronde Agency**, Yamhill County, on the McMinnville-Tillamook Highway, about 800 feet west of the main intersection, at the northeast corner of the concrete highway bridge over Agency Creek, in the curb extension. An Oregon State Highway Department standard disk, stamped "Z 50 1930." (108.352 meters or 355.485 feet.)

A 51 (O. S. H. D.).—About 1.4 miles southeast along the McMinnville-Tillamook Highway from the **Grand Ronde Agency**, Yamhill County, about 0.5 mile west of the point at which the highway turns abruptly south into Polk County, near mileage 23.6, at the west entrance to a small cut, 24 feet south of the center line of the highway, and about 2 feet above the roadway. An Oregon State Highway Department standard disk, stamped "A 51 1930" and set in the top of a concrete post. (110.048 meters or 361.049 feet.)

B 51 (O. S. H. D.).—At **Valley Junction**, Polk County, on the McMinnville-Tillamook Highway, about 600 feet south of the lumber company railroad station at **Cosper Creek**, in the concrete approach to the east end of the highway bridge over South Yamhill River, in the east end of the north curb. An Oregon State Highway Department standard disk, stamped "B 51 1930." (91.064 meters or 298.766 feet.)

C 51 (O. S. H. D.).—About 0.7 mile east along the McMinnville-Tillamook Highway from **Valley Junction**, Polk County, just west of the Fort Hill service station, at the northeast corner of the highway bridge over South Yamhill River, in the concrete curb. An Oregon State Highway Department standard disk, stamped "C 51 1930." (87.169 meters or 285.987 feet.)

D 51.—About 1.8 miles east along the McMinnville-Tillamook Highway from **Valley Junction**, Polk County, about 700 feet west of a church, about 9 yards south of the southwest corner of a large barn on the north side of the highway, across the highway from milepost 27, and about 30 feet north of the center line of the highway. A standard disk, stamped "D 51 1930" and set in the top of a concrete post. (82.785 meters or 271.604 feet.)

E 51 (O. S. H. D.).—About 3.0 miles east along the McMinnville-Tillamook Highway from **Valley Junction**, about 1 mile west of **Wallace Bridge**, Polk County, about 150 feet east of the point of tangency of a curve, near highway mileage 28.20, and 25 feet southwest of a 14-inch oak tree, in the east end of the north head wall of a 12-inch concrete culvert. An Oregon State Highway Department standard disk, stamped "E 51 1930." (79.317 meters or 260.226 feet.)

G 51.—At **Wallace Bridge**, Polk County, about 2.3 miles southwest along the McMinnville-Tillamook Highway from **Willamina**, Yamhill County, 20 feet west of the west edge of the bridge, and 36 feet south of the center line of the highway. A standard disk, stamped "G 51 1930" and set in the top of a concrete post. (75.830 meters or 248.786 feet.)

F 51 (O. S. H. D.).—About 1,500 feet northeast of **Wallace Bridge**, Polk County, about 2.0 miles southwest along the McMinnville-Tillamook Highway from **Willamina**, Yamhill County, and about 100 feet northwest of South Yamhill River, in the southwest end of the northwest head wall of a concrete box culvert, 5 feet below the roadway. An Oregon State Highway Department standard disk, stamped "F 51 1930." (72.674 meters or 238.431 feet.)

H 51.—About 2.5 miles southeast of **Wallace Bridge**, about 2.5 miles northwest along the **Wallace Bridge** road from **Buell**, Polk County, 20 feet east of the road, and 30 feet south of a fork in the road, in a fence corner. A standard disk, stamped "H 51 1930" and set in the top of a concrete post. (108.179 meters or 354.917 feet.)

J 51.—At **Buell**, Polk County, about 35 feet east of the northeast corner of the post-office building, and about 40 feet south of the **Wallace Bridge** road,

in line with the edge of the front porch of the post-office building. A standard disk, stamped "J 51 1930" and set in the top of a concrete post. (115.546 meters or 379.087 feet.)

K 51.—About 2.6 miles east along the Wallace Bridge road from **Buell**, Polk County, about 40 feet south of the intersection of a secondary road leading south, and about 75 feet south of the white farmhouse owned by Mr. May. A standard disk, stamped "K 51 1930" and set in the top of a concrete post. (196.944 meters or 646.140 feet.)

L 51.—About 4.7 miles southeast along the Wallace Bridge road from **Buell**, Polk County, in a triangle at the intersection of the road leading north to **Sheridan**, and about 25 feet north of the Wallace Bridge road. A standard disk, stamped "L 51 1930" and set in the top of a concrete post. (73.500 meters or 241.141 feet.)

M 51.—About 4.9 miles northwest along the Wallace Bridge road from **Dallas**, Polk County, at the top of a small ridge, about 200 feet west of a white house on the north side of the road, and 30 feet north of the center line of the road, just west of a pole. A standard disk, stamped "M 51 1930" and set in the top of a concrete post. (76.266 meters or 250.216 feet.)

N 51.—About 3 miles north along the Wallace Bridge road from **Dallas**, Polk County, about 1,000 feet south of the point at which the road crosses a ridge, 25 feet south of a lane leading to a farmhouse which is about 600 feet east of the road, 25 feet east of the center line of the road, and 15 feet north of a pole. A standard disk, stamped "N 51 1930" and set in the top of a concrete post. (100.732 meters or 330.485 feet.)

P 51.—At the north edge of **Dallas**, Polk County, at the southwest corner of the junction of the Wallace Bridge road and the Salem-Dallas Highway, inside the fence. A standard disk, stamped "P 51 1930" and set in the top of a concrete post. (105.409 meters or 345.829 feet.)

R 51.—At **Dallas**, Polk County, at the Salem-Dallas Highway bridge over **Rickreall** Creek, in the southwest handrail. A standard disk, stamped "R 51 1930." (95.845 meters or 314.451 feet.)

325 (U. S. G. S.).—At **Dallas**, Polk County, near the northwest corner of the courthouse, at the entrance, in the north stone railing of the concrete steps. A United States Geological Survey standard disk, stamped "PRIM TRAV STA 18 325 ORE 1913." (99.054 meters or 324.980 feet.)

Magnetic station.—In the north part of **Dallas**, Polk County, in the west part of the city park, 130 feet east of **Rickreall** Creek, and 103 feet northwest of the southwest corner of the band stand. A standard magnetic-station disk, stamped "1917" and set in the top of a concrete post. (97.665 meters or 320.423 feet.)

S 51.—About 1.9 miles west along the Salem-Dallas Highway from **Rickreall**, Polk County, about 0.6 mile east of a school, at the southwest corner of Mr. C. C. Campbell's yard, and 22 feet north of the center line of the highway. A standard disk, stamped "S 51 1930" and set in the top of a concrete post. (80.872 meters or 265.328 feet.)

209 (U. S. G. S.).—At **Rickreall**, Polk County, about 300 feet north of the intersection of the West Side Pacific and the Salem-Dallas Highways, opposite a store, just south of a gate, in the east fence line of the West Side Pacific Highway. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 23 209 ORE 1913" and riveted on the top of a 3½-inch iron pipe concreted in a drain tile. The concrete is flush with the cap, giving it the appearance of a standard disk set in the top of a concrete post. (63.626 meters or 208.746 feet.)

210.6 (O. S. H. D.).—At **Rickreall**, Polk County, just south of the intersection of the West Side Pacific and the Salem-Dallas Highways, at the northwest corner of the West Side Pacific Highway concrete bridge over **Rickreall** Creek. An Oregon State Highway Department standard disk, stamped "210.6 1926." (64.197 meters or 210.620 feet.)

T 51.—About 0.4 mile east along the Salem-Dallas Highway from **Rickreall**, Polk County, at the northeast corner of a farm owned by Lewis A. McArthur, just west of the east fence, and 10 feet south of the south highway fence. A standard disk, stamped "T 51 1930" and set in the top of a concrete post. (60.833 meters or 199.583 feet.)

U 51.—About 0.7 mile east along the Salem-Dallas Highway from **Rickreall**, Polk County, at **Derry**, about 500 feet south of the highway, and about 500 feet south of the Southern Pacific Co. railroad station, at the northwest corner of

the railroad bridge over Rickreall Creek, in the abutment. A standard disk, stamped "U 51 1930." (58.594 meters or 192.237 feet.)

V 51.—About 3.0 miles east along the Salem-Dallas Highway from Rickreall, Polk County, and about 0.4 mile east of the intersection with the Greenwood road, at a 36-inch concrete pipe culvert under the highway, in the southwest wing wall. A standard disk, stamped "V 51 1930." (50.739 meters or 166.466 feet.)

202 (U. S. G. S.).—About 4 miles east along the Salem-Dallas Highway from Rickreall, at Brunks Corner, Polk County, at the north edge of the highway, just west of the T-road leading south to Independence. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 6 202 ORE 1913" and riveted on the top of a 3½-inch iron pipe concreted in a tile. The concrete is flush with the cap, giving it the appearance of a standard disk set in the top of a concrete post. (61.672 meters or 202.336 feet.)

W 51.—At the east edge of Eola, Polk County, about 100 feet north of the Southern Pacific Co. gravel bunkers, in the south head wall of a 24-inch concrete culvert under the Salem-Dallas Highway. A standard disk, stamped "W 51 1930." (51.858 meters or 170.137 feet.)

NOTE.—It was reported in 1931 that this mark was covered by about 2 feet of earth fill.

150 (U. S. G. S.).—About 1.7 miles east along the Salem-Dallas Highway from Eola, Polk County, and about 3.0 miles west of Salem, Marion County, on the north side of the highway, inside a slight curve, opposite a Southern Pacific Co. railroad switch. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 8 150 ORE 1913" and riveted on the top of a 3½-inch iron pipe. (45.682 meters or 149.875 feet.)

NOTE.—It was reported in the fall of 1931 that this mark was in poor condition.

X 51 (O. S. H. D.).—At West Salem, Polk County, at the west end of the Salem-Dallas Highway bridge over Willamette River, in the west end of the retaining wall. An Oregon State Highway Department standard disk, stamped "X 51 1930." (42.800 meters or 140.420 feet.)

Y 51.—At Salem, Marion County, at the west end of Center Street, on the east end of the Salem-Dallas Highway bridge over Willamette River, on the north side of the highway, in the northeast corner of the sidewalk. A standard disk, stamped "Y 51 1930." (47.137 meters or 154.649 feet.)

Z 51 (U. S. G. S.).—At Salem, Marion County, at the west end of Center Street, near the river gage, on the pier on the Salem side of the Salem-Dallas highway bridge over Willamette River, in the top of the downstream end. A United States Geological Survey standard gaging-station reference-mark disk, stamped "Z 51 1930." (44.552 meters or 146.168 feet.)

J 13.—See page 73.

I 13 (U. S. G. S.).—See page 73.

A 52 (O. S. H. D.).—At Salem, Marion County, at the State office building, in top of the granite block at the east side of the south or courtyard entrance. An Oregon State Highway Department standard disk, stamped "A 52 1930." (52.883 meters or 173.500 feet.)

LINE 15, NEWPORT TO ALBANY, OREG.

[First-order leveling]

This line follows the Corvallis-Newport Highway from Newport to Corvallis and the Albany-Corvallis highway from Corvallis to Albany. The field work was done during the fall of 1930 by J. H. Brittain, junior hydrographic and geodetic engineer, and E. E. Stohsner, junior engineer.

S 52.—See page 136.

U 52 (O. S. H. D.).—About 2.2 miles east along the Corvallis-Newport Highway from Newport, Lincoln County, about 1.1 miles east of the Eureka Cemetery, 50 feet west of the summit of Buford Hill, 20 feet south of the center line of the highway, and 10 feet northwest of a pole. An Oregon State Highway Department standard disk, stamped "U 52 1930" and set in the top of a concrete and tile post about 2 inches below the level of the ground. (102.799 meters or 337.266 feet.)

V 52.—About 3.0 miles west along the Corvallis-Newport Highway from Toledo, Lincoln County, about 500 feet east of a barn south of the highway, about 150 feet east of a bridge at the west end of a cut, and 18 feet south of the center line of the highway. A standard disk, stamped "V 52 1930" and set in the top of a concrete post. (3.182 meters or 10.440 feet.)

W 52 (O. S. H. D.).—About 1.4 miles west along the Corvallis-Newport Highway from Toledo, Lincoln County, about 100 feet west of the west end of the Dunden bridge, and 75 feet west of the intersection with the Siletz road, on the south side of the highway. An Oregon State Highway Department standard disk, stamped "W 52 1930" and set in the top of a concrete and tile post about 3 inches below the level of the ground. (4.423 meters or 14.511 feet.)

X 52 (O. S. H. D.).—At Toledo, Lincoln County, 50 feet south of the intersection of the Corvallis-Newport Highway and Hill or Main Street, on the west side of Hill Street, in the concrete curb. An Oregon State Highway Department standard disk, stamped "X 52 1930." (19.502 meters or 63.983 feet.)

Y 52.—At Toledo, Lincoln County, at the southwest corner of the Lincoln County Bank building, in the top of the concrete water table. A standard disk, stamped "Y 52 1930." (9.550 meters or 31.332 feet.)

Z 52 (O. S. H. D.).—About 3.3 miles east along the Corvallis-Newport Highway from the intersection of the highway and Hill Street at Toledo, Lincoln County, and about 150 feet east of a side road leading to a lemon-colored farmhouse, on a concrete culvert, in the south head wall about 5 feet below the roadway. An Oregon State Highway Department standard disk, stamped "Z 52 1930." (7.280 meters or 23.884 feet.)

A 53.—About 4.8 miles east along the Corvallis-Newport Highway from the intersection of the highway and Hill Street at Toledo, Lincoln County, about 1 mile west of the Pioneer Service Station, and about 500 feet east of a house on the north side of the highway, on a concrete highway culvert, in the east end of the north head wall about 7 feet below the roadway. A standard disk, stamped "A 53 1930." (21.744 meters or 71.338 feet.)

B 53 (O. S. H. D.).—About 5.9 miles east along the Corvallis-Newport Highway from Toledo, Lincoln County, at the summit of Pioneer Mountain, about 200 feet east of the Pioneer Service Station, and about 100 feet west of the summit sign, at the west end of the cut, on the south side of the highway. An Oregon State Highway Department standard disk, stamped "B 53 1930" and set in the top of a concrete post. (127.242 meters or 417.460 feet.)

C 53.—About 7.4 miles east along the Corvallis-Newport Highway from Toledo, Lincoln County, at the east end of a fill, 125 feet east of a culvert, 40 feet south of the center line of the highway, and 2 feet north of the fence line. A standard disk, stamped "C 53 1930" and set in the top of a concrete post. (37.761 meters or 123.888 feet.)

D 53 (O. S. H. D.).—About 9.6 miles east along the Corvallis-Newport Highway from Toledo, Lincoln County, opposite a dam across Simpson Creek, about 300 feet east of a State highway maintenance shed, on a highway culvert, in the north concrete head wall. An Oregon State Highway Department standard disk, stamped "D 53 1930." (12.151 meters or 39.865 feet.)

E 53.—About 6.5 miles west along the Corvallis-Newport Highway from Eddyville, Lincoln County, 27 feet north of the highway, 25 feet east of a secondary road, in line with a covered bridge south of the highway, 7 feet east of a fence corner, and 1 foot south of the fence. A standard disk, stamped "E 53 1930" and set in the top of a concrete post. (15.893 meters or 52.142 feet.)

F 53 (O. S. H. D.).—About 5.3 miles west along the Corvallis-Newport Highway from Eddyville, Lincoln County, at Chitwood, 15 feet west of the center line of a red covered bridge, on a highway culvert, in the north concrete head wall. An Oregon State Highway Department standard disk, stamped "F 53 1930." (18.615 meters or 61.073 feet.)

G 53.—About 3.4 miles west along the Corvallis-Newport Highway from Eddyville, Lincoln County, near the southwest corner of a small shed, and 25 feet north of the center line of the highway. A standard disk, stamped "G 53 1930" and set in the top of a concrete post. (25.300 meters or 83.005 feet.)

H 53.—About 1.6 miles west along the Corvallis-Newport Highway from Eddyville, Lincoln County, opposite Southern Pacific Co. railroad culvert No. 746 G, on a concrete highway culvert, in the west end of the north wing wall. A standard disk, stamped "H 53 1930." (28.110 meters or 92.224 feet.)

J 53.—In the north part of **Eddyville**, Lincoln County, on the bridge over Yaquina River, in the northeast pier. A standard disk, stamped "J 53 1930." (27.942 meters or 91.673 feet.)

K 53.—About 0.9 mile east along the Corvallis-Newport Highway from the Yaquina River bridge at **Eddyville**, Lincoln County, on a highway culvert, 12 feet north of the center line of the highway, in the west end of the head wall. A standard disk, stamped "K 53 1930." (31.013 meters or 101.748 feet.)

L 53.—About 2.8 miles east along the Corvallis-Newport Highway from **Eddyville**, Lincoln County, at the west end of a curve, 100 feet east of a green farmhouse, 30 feet north of the center line of the highway, and just west of a farm gate. A standard disk, stamped "L 53 1930" and set in the top of a concrete post. (44.411 meters or 145.705 feet.)

M 53.—About 4.9 miles east along the Corvallis-Newport Highway from **Eddyville**, Lincoln County, across the highway from a private road leading north, on a concrete culvert, in the top of the south head wall about 6 feet below the roadway. A standard disk, stamped "M 53 1930." (60.299 meters or 197.831 feet.)

N 53.—About 6.1 miles east along the Corvallis-Newport Highway from **Eddyville**, Lincoln County, about 1.6 miles west of the Coast Range summit, at the foot of the grade leading to the summit, about 500 feet east of a highway bridge, at a curve, 40 feet south of the center line of the highway. A standard disk, stamped "N 53 1930" and set in the top of a concrete post. (86.298 meters or 283.129 feet.)

P 53 (O. S. H. D.).—About 2.3 miles west along the Corvallis-Newport Highway from **Burnt Woods**, Lincoln County, at the Coast Range summit, 40 feet west of the summit sign, and 24 feet north of the center line of the highway. An Oregon State Highway Department standard disk, stamped "P 53 1930" and set in the top of a concrete post. (245.193 meters or 804.437 feet.)

R 53 (O. S. H. D.).—About 1.6 miles west along the Corvallis-Newport Highway from **Burnt Woods**, Lincoln County, on a concrete culvert, in the east end of the south head wall. An Oregon State Highway Department standard disk, stamped "R 53 1930." (227.140 meters or 745.208 feet.)

S 53.—About 700 feet west along the Corvallis-Newport Highway from the post office at **Burnt Woods**, Lincoln County, at the intersection with the road leading south to Harlan, about 120 feet west of a wooden bridge, and 15 feet north of the highway. A standard disk, stamped "S 53 1930" and set in the top of a concrete post. (209.036 meters or 685.812 feet.)

T 53 (O. S. H. D.).—At **Burnt Woods**, Lincoln County, about 400 feet east of the post office, on a concrete culvert, in the north head wall. An Oregon State Highway Department standard disk, stamped "T 53 1930." (209.361 meters or 686.879 feet.)

U 53 (O. S. H. D.).—About 0.4 mile east along the Corvallis-Newport Highway from **Burnt Woods**, Lincoln County, on the south side of the highway, at the Coastway Service Station, in the concrete base for the gasoline pumps. An Oregon State Highway Department standard disk, stamped "U 53 1930." (206.000 meters or 675.852 feet.)

V 53 (O. S. H. D.).—About 5.3 miles west along the Corvallis-Newport Highway from **Blodgett**, Benton County, about $\frac{1}{4}$ mile east of the Lincoln-Benton county line, at the west end of a 0.5 mile tangent, opposite a farm gate, and 20 feet north of the highway. An Oregon State Highway Department standard disk, stamped "V 53 1930" and set in the top of a concrete post. (202.266 meters or 663.601 feet.)

W 53.—About 4.3 miles west along the Corvallis-Newport Highway from **Blodgett**, Benton County, about 1.2 miles east of the Lincoln-Benton county line, about $\frac{1}{4}$ mile east of the east end of a long S curve, 60 feet west of a concrete culvert, and 25 feet south of the center line of the highway. A standard disk, stamped "W 53 1930" and set in the top of a concrete post. (199.750 meters or 655.346 feet.)

X 53 (O. S. H. D.).—About 1.7 miles west along the Corvallis-Newport Highway from **Blodgett**, Benton County, opposite a schoolhouse which is about 300 feet south of the highway, 75 feet northwest of the west one of two sheds which are on the south side of the highway, on the north side of the highway, about 3 feet above the roadway. An Oregon State Highway Department standard disk, stamped "X 53 1930" and set in the top of a concrete post. (228.457 meters or 749.529 feet.)

Y 53 (O. S. H. D.).—About 0.7 mile west along the Corvallis-Newport Highway from **Blodgett**, Benton County, opposite the west line of a T road leading

south, 30 feet north of the center line of the highway, on a bank about 5 feet above the roadway. An Oregon State Highway Department standard disk, stamped "Y 53 1930" and set in the top of a concrete post. (230.253 meters or 755.422 feet.)

Z 53 (O. S. H. D.).—At **Blodgett**, Benton County, in front of the J. A. Thompson store and post office building, in the northeast end of the concrete sidewalk, 15 inches from the end of the walk, and 15 inches from the face of the building. An Oregon State Highway Department standard disk, stamped "Z 53 1930." (192.812 meters or 632.584 feet.)

A 54 (O. S. H. D.).—About 1.8 miles east along the Corvallis-Newport Highway from **Blodgett**, Benton County, opposite the Karl Hawley ranch house, 25 feet north of the center line of the highway, 4 feet east of a pole, and 2 feet south of the fence. An Oregon State Highway Department standard disk, stamped "A 54 1930" and set in the top of a concrete post. (217.042 meters or 712.079 feet.)

B 54 (O. S. H. D.).—About 2.5 miles east along the Corvallis-Newport Highway from **Blodgett**, Benton County, at the summit of a small hill, 28 feet north of the center line of the highway, and 2 feet south of the fence. An Oregon State Highway Department standard disk, stamped "B 54 1930" and set in the top of a concrete post. (243.106 meters or 797.590 feet.)

C 54 (O. S. H. D.).—About 3.5 miles east along the Corvallis-Newport Highway from **Blodgett**, Benton County, about 300 feet west of a logging road leading south, about 200 feet northwest of an old sawmill, 60 feet east of an old frame building, 30 feet north of the center line of the highway, and about 6 feet above the roadway. An Oregon State Highway Department standard disk, stamped "C 54 1930" and set in the top of a concrete post. (177.572 meters or 582.584 feet.)

D 54 (O. S. H. D.).—About 4.6 miles east along the Corvallis-Newport Highway from **Blodgett**, about 1.0 mile west of **Wren**, Benton County, about $\frac{1}{4}$ mile north of a steel bridge over Marys River, and about 500 feet south of the junction with the road leading to Kings Valley, at the southeast corner of concrete highway culvert, in the parapet. An Oregon State Highway Department standard disk, stamped "D 54 1930." (135.225 meters or 443.651 feet.)

E 54 (O. S. H. D.).—About 0.8 mile west along the Corvallis-Newport Highway from **Wren**, Benton County, and about 0.3 mile south of the junction with a road to Kings Valley, on the steel bridge over Marys River, in the top of the southeast concrete pier. An Oregon State Highway Department standard disk, stamped "E 54 1930." (131.394 meters or 431.082 feet.)

F 54 (O. S. H. D.).—About $\frac{1}{4}$ mile west along the Corvallis-Newport Highway from **Wren**, Benton County, at the southeast corner of an overhead crossing, in the concrete curb. An Oregon State Highway Department standard disk, stamped "F 54 1930." (156.134 meters or 512.250 feet.)

G 54.—About 0.8 mile south along the Corvallis-Newport Highway from **Wren**, Benton County, at the first summit northwest of **Philomath**, 28 feet west of the center line of the highway, just east of the fence. A standard disk, stamped "G 54 1930" and set in the top of a concrete post. (210.535 meters or 690.730 feet.)

H 54 (O. S. H. D.).—About 3.5 miles southeast along the Corvallis-Newport Highway from **Wren**, about 1.5 miles west of **Philomath**, Benton County, about 0.3 mile east of the covered bridge over Marys River, at the top of a small hill, about 300 feet east of the railroad signpost **Noon**, and 28 feet north of the center line of the highway. An Oregon State Highway Department standard disk, stamped "H 54 1930" and set in the top of a concrete post. (95.108 meters or 312.033 feet.)

T. B. M. 99.—About 1.0 mile west along the Corvallis-Newport Highway from **Philomath**, Benton County, opposite the junction with the **Alsea Highway**, on the north side of the Corvallis-Newport Highway, on the concrete culvert under the Southern Pacific Co. railroad, on the south head wall. The center of the loop of the first "9" in the date "1919" cast in the top of the concrete head wall. (84.087 meters or 275.875 feet.)

W 54 (O. S. H. D.).—About 1.5 miles southwest of **Philomath**, Benton County, on the **Alsea Highway**, about 0.6 mile south of the junction with the Corvallis-Newport Highway, in the west coping of a 4 by 6 foot concrete box culvert. An Oregon State Highway Department standard disk, stamped "W 54 1928." (87.435 meters or 286.860 feet.)

279 (O. S. H. D.).—At **Philomath**, Benton County, at the northeast corner of **Main and O Streets**, on the north side of the Corvallis-Newport Highway,

at the entrance to the Philomath State Bank, in the east end of the lower step. An Oregon State Highway Department standard disk, stamped "279 1927." (85.149 meters or 279.360 feet.)

268 (O. S. H. D.).—About 0.8 mile east along the Corvallis-Newport Highway from **Philomath**, Benton County, on the highway culvert over Newton Creek, in the east end of the north concrete coping. An Oregon State Highway Department standard disk, stamped "268 1928." (81.454 meters or 267.237 feet.)

J 54.—About 2.0 miles east along the Corvallis-Newport Highway from **Philomath**, Benton County, in the east acute angle of a diagonal crossroad, 33 feet south of the center line of the highway, and 22 feet east of the center line of the crossroad. A standard disk, stamped "J 54 1930" and set in the top of a concrete post. (85.101 meters or 279.202 feet.)

241 (O. S. H. D.).—About 3.6 miles east along the Corvallis-Newport Highway from **Philomath**, and about 0.8 mile west of the Oak Creek Bridge at **Corvallis**, Benton County, on a highway culvert over Squaw Creek, in the east end of the north concrete coping. An Oregon State Highway Department standard disk, stamped "241 1928." (73.110 meters or 239.862 feet.)

226 (O. S. H. D.).—At the west city limits of **Corvallis**, Benton County, at the northeast corner of the Corvallis-Newport Highway bridge over Oak Creek, in the curb of the concrete sidewalk. An Oregon State Highway Department standard disk, stamped "226 1928." (68.682 meters or 225.334 feet.)

T 54.—At **Corvallis**, Benton County, on the campus of the Oregon State Agricultural College, at the east entrance to the Union Memorial Building, in the lower concrete step. A standard disk, stamped "T 54 1930." (76.567 meters or 251.204 feet.)

U 54.—At **Corvallis**, Benton County, on the campus of the Oregon State Agricultural College, at the south entrance to the library building, in the lower concrete step. A standard disk, stamped "U 54 1930." (76.625 meters or 251.394 feet.)

V 54.—At **Corvallis**, Benton County, in the southwest part of the campus of the Oregon State Agricultural College, at the east entrance to the poultry building, in the north end of the lower concrete step. A standard disk, stamped "V 54 1930." (72.426 meters or 237.618 feet.)

233 (Tau Beta Pi).—At **Corvallis**, Benton County, on the campus of the Oregon State Agricultural College, 50 feet east of the east entrance to Apperson Hall, in the center of a concrete platform. The center of a 10-inch bronze plate, lettered "O S A C Elevation 233" and set on the top of a concrete pier erected by Tau Beta Pi. (71.166 meters or 233.484 feet.)

235 (U. S. G. S.).—At **Corvallis**, Benton County, on the campus of the Oregon State Agricultural College, 15 feet north of the east entrance to Apperson or Mechanical Hall, and 1 foot from a projection of the building. A United States Geological Survey standard cap, stamped "235" and riveted on the top of a 3½-inch iron pipe. (71.699 meters or 235.232 feet.)

Magnetic station.—At **Corvallis**, Benton County, on the campus of the Oregon State Agricultural College, about 500 feet east of Apperson Hall, 280 feet from the inner edge of the south sidewalk on Monroe Street, 38 feet from the point of a diamond-shaped group of trees and shrubs, and 34 feet northwest of the edge of a gravel walk. A standard magnetic-station disk, set in the top of a stone post flush with the lawn. (68.904 meters or 226.063 feet.)

NN 54 (O. S. A. C.).—At **Corvallis**, Benton County, at the southwest corner of Monroe and South Fourth Streets, 15 feet west of the northeast corner of Hotel Benton, and 1 foot from the building, in the sidewalk. A standard disk, stamped "NN 54 1931." (68.404 meters or 224.422 feet.)

NOTE.—The elevation of this mark was determined by students at Oregon State Agricultural College.

230 (U. S. G. S.).—At **Corvallis**, Benton County, at the northeast corner of the courthouse, about 4.5 feet from the ground, in the second course of stone from the top of the step. A United States Geological Survey standard disk, stamped "230 ORE 1911" and set vertically. (70.390 meters or 230.988 feet.)

K 54.—About 1.4 miles northeast along the Albany-Corvallis Highway from **Corvallis**, Benton County, about 325 feet northeast of a gun-club building, and 25 feet southeast of the center line of the highway. A standard disk, stamped "K 54 1930" and set in the top of a concrete post. (68.502 meters or 224.744 feet.)

L 54.—About 2.9 miles northeast along the Albany-Corvallis Highway from **Corvallis**, Benton County, on a culvert, in the northwest concrete head wall. A standard disk, stamped "L 54 1930." (61.760 meters or 202.624 feet.)

M 54.—About 5.1 miles northeast along the Albany-Corvallis Highway from **Corvallis**, Benton County, opposite the driveway leading to the farm of W. A. Schmidt, and about 25 feet south of the center line of the highway. A standard disk, stamped "M 54 1930" and set in the top of a concrete post. (69.268 meters or 227.257 feet.)

225 (U. S. G. S.).—About 6.5 miles northeast along the Albany-Corvallis Highway from **Corvallis**, Benton County, about 0.1 mile west of a road leading north to Independence, about 100 feet north of the highway, 3 feet south of the Southern Pacific Co. railroad north right-of-way fence, and 3 feet west of old milepost 78. A United States Geological Survey standard cap, stamped "PRIM TRAV STA 37 225 ORE 1911" and riveted on the top of a 3½-inch iron pipe. (68.811 meters or 225.757 feet.)

207 (O. S. H. D.).—About 7.2 miles northeast along the Albany-Corvallis Highway from **Corvallis**, and about 1.2 miles east of **Granger**, Benton County, in the northeast corner of the concrete highway bridge over Bowers Slough. An Oregon State Highway Department standard disk, stamped "207 1927." (63.318 meters or 207.736 feet.)

N 54 (O. S. H. D.).—In Benton County, about 1.4 miles west along the Albany-Corvallis Highway from **Albany**, Linn County, on a concrete highway culvert, in the east end of the south wing wall. An Oregon State Highway Department standard disk, stamped "N 54 1930." (58.678 meters or 192.513 feet.)

S 54.—In Benton County, opposite **Albany**, Linn County, at the northeast corner of the Albany-Corvallis highway bridge over Willamette River, in the concrete sidewalk. A standard disk, stamped "S 54 1930." (63.454 meters or 208.182 feet.)

P 54 (O. S. H. D.).—At **Albany**, Linn County, just opposite a service station, at the extreme southeast corner of the Albany-Corvallis highway bridge over Willamette River, at the outside base of the handrail, in a small concrete shelf. An Oregon State Highway Department standard disk, stamped "P 54 1930." (63.122 meters or 207.093 feet.)

R 54 (U. S. G. S.).—At **Albany**, Linn County, about 70 feet from the south end of the approach to the Albany-Corvallis Highway bridge over Willamette River, in the concrete footing on the downstream side of the bridge. A United States Geological Survey standard gaging-station disk, stamped "R 54 1930." (62.297 meters or 204.386 feet.)

Q 12.—See page 71.

LINE 16, REEDSPORT TO DRAIN, OREG.

[First-order leveling]

This line follows the Umpqua Highway from Reedsport to a point about 15 miles northwest of Elkton, county roads from that point to a point about 10 miles west of Drain, and the Umpqua Highway from that point to Drain. At the time this line was run, the grading of the Umpqua Highway was not complete, making it necessary to run a portion of the line over county roads. These roads rather closely parallel the present highway grade. A United States Geological Survey line was recovered between Scottsburg and Drain. The field work was done during the fall of 1930 by J. H. Brittain, junior hydrographic and geodetic engineer, and E. E. Stohsner, junior engineer.

For additional bench marks in the vicinity of Reedsport, see page 136.

E 56.—About 0.9 mile west of the Southern Pacific Co. station at **Reedsport**, Douglas County, about 750 feet west of the Fir Grove Auto Camp, about 40 feet south of the center line of the Oregon Coast Highway, and 1 foot north of a fence. A standard disk, stamped "E 56 1930" and set in the top of a concrete post. (19.476 meters or 63.898 feet.)

D 56.—About 0.6 mile west of the Southern Pacific Co. station at **Reedsport**, Douglas County, opposite the Cochran service station, 28 feet east of the Oregon Coast Highway, and 25 feet south of a crossroad. A standard disk, stamped "D 56 1930" and set in the top of a concrete post. (19.689 meters or 64.596 feet.)

C 56.—At **Reedsport**, Douglas County, about 600 feet west of the Southern Pacific Co. railroad station, 165 feet west of a road leading to a large stone house, 36 feet south of the center line of the Oregon Coast Highway, and 4 feet west of a power-line pole. A standard disk, stamped "C 56 1930" and set in the top of a concrete post. (3.749 meters or 12.300 feet.)

B 56.—At **Reedsport**, Douglas County, at the Southern Pacific Co. railroad bridge over Umpqua River, on the south abutment or pier 12, in the top of the upstream end. A standard disk, stamped "B 56 1930." (4.820 meters or 15.814 feet.)

45.016 (S. P.).—About 0.3 mile north along the Southern Pacific Co. railroad from **Reedsport**, Douglas County, at the railroad bridge over Umpqua River, on the north abutment or Pier 1, in the top of the upstream end. A galvanized iron bolt, set beside an iron plate stamped "45.016." (4.780 meters or 15.682 feet.)

45.003 (S. P.).—At **Reedsport**, Douglas County, at the Southern Pacific Co. railroad bridge over Umpqua River, on the south abutment or Pier 12, in the top of the upstream end. A galvanized iron bolt, set 3 inches west of an iron plate stamped "45.003." (4.803 meters or 15.759 feet.)

NOTE.—At the time this line was run, the party did not level upon the bolt but determined the elevation of the plate near it. About the 1st of September, 1931, Mr. Lewis A. McArthur determined the elevation of the bolt as being 0.034 foot higher than the plate. The above elevation is based on his determination of this difference.

A 56.—About 1.3 miles east along the Umpqua Highway from **Reedsport**, Douglas County, at a culvert, 15 feet south of the center line of the highway, in the west wall of a concrete catch basin. A standard disk, stamped "A 56 1930." (30.363 meters or 99.616 feet.)

Z 55.—About 3.8 miles east along the Umpqua Highway from **Reedsport**, Douglas County, 20 feet west of the west end of a wooden bridge, at a driveway leading south along the creek to some white barns, 22 feet south of the center line of the highway, and 1 foot west of the west driveway fence. A standard disk, stamped "Z 55 1930" and set in the top of a concrete post. (3.759 meters or 12.333 feet.)

Y 55.—About 6.0 miles east along the Umpqua Highway from **Reedsport**, Douglas County, about 660 feet west of a small wooden bridge over a draw, and 30 feet north of the center line of the highway, in a large flat boulder. A standard disk, stamped "Y 55 1930." (2.487 meters or 8.159 feet.)

X 55.—About 7.2 miles east of **Reedsport**, about 9.4 miles west along the Umpqua Highway from **Scottsburg**, Douglas County, 60 feet south of a small house, 24 feet east of the private road leading to the house, and 21 feet north of the center line of the highway. A standard disk, stamped "X 55 1930" and set in the top of a concrete post. (5.740 meters or 18.832 feet.)

W 55.—About 6.9 miles west along the Umpqua Highway from **Scottsburg**, Douglas County, about 350 feet west of a small wooden shed, about 300 feet west of the west end of a rock cut, about 100 feet west of highway survey post No. 420, and 30 feet north of the center line of the highway, in the top of a large boulder about 4 feet below the roadway. A standard disk, stamped "W 55 1930." (5.380 meters or 17.651 feet.)

V 55.—About 4.4 miles west along the Umpqua Highway from **Scottsburg**, Douglas County, just east of Bills Trout Farm, and 12 feet south of the center line of the highway, in the head wall of a culvert about 3 feet below the roadway. A standard disk, stamped "V 55 1930." (6.664 meters or 21.863 feet.)

NOTE.—It was reported in 1931 that this mark was in good condition but that it might easily be covered.

U 55.—About 2.4 miles west along the Umpqua Highway from **Scottsburg**, Douglas County, between the highway and the Umpqua River, and 32 feet north of the center line of the highway, in the top of a large boulder about 5 feet below the roadway. A standard disk, stamped "U 55 1930." (10.266 meters or 33.681 feet.)

T 55.—At the west edge of **Scottsburg**, Douglas County, on the Umpqua Highway, at the southwest corner of the bridge over the Umpqua River, in the con-

crete curb. A standard disk, stamped "T 55 1930." (13.333 meters or 43.743 feet.)

49 (O. S. H. D.).—At the west edge of **Scottsburg**, Douglas County, on the Umpqua Highway, at the northwest corner of the bridge over the Umpqua River, in the concrete curb. An Oregon State Highway Department standard disk, stamped "49 1929." (15.015 meters or 49.262 feet.)

32 (U. S. G. S.).—At **Scottsburg**, Douglas County, 100 feet south of Main Street, at the east edge of the old road to the ferry landing, in a large boulder. A United States Geological Survey standard disk, stamped "32 BB 1919." (9.831 meters or 32.254 feet.)

40 (U. S. G. S.).—At **Scottsburg**, Douglas County, in the center of the intersection of Main Street and the old road leading south to the ferry landing, in a boulder. A United States Geological Survey standard disk, stamped "PRIM TRAV STA 102 40 B 1919." (12.201 meters or 40.029 feet.)

S 55.—At **Scottsburg**, Douglas County, on the south side of Main Street, 100 feet west of the post office, at a fence corner. A standard disk, stamped "S 55 1930" and set in the top of a concrete post. (14.101 meters or 46.263 feet.)

R 55 (O. S. H. D.).—About 2.3 miles east along the Umpqua Highway from **Scottsburg**, Douglas County, at the northeast corner of the bridge over Wells Creek, in the concrete curb. An Oregon State Highway Department standard disk, stamped "R 55 1930." (17.167 meters or 56.322 feet.)

P 55.—About 4.2 miles east along the Umpqua Highway from **Scottsburg**, Douglas County, at the Burchard place, 50 feet south of the center line of the highway, 30 feet east of the gate to a driveway leading to the barn, and 1 foot north of a fence. A standard disk, stamped "P 55 1930" and set in the top of a concrete post. (16.758 meters or 54.980 feet.)

68 (U. S. G. S.).—About 5.9 miles east along the Umpqua Highway from **Scottsburg**, Douglas County, about 500 feet west of the bridge over Weatherly Creek, about 80 feet north of the center line of the highway, at the north edge of the old road, at the toe of the slope, in a sandstone boulder. A United States Geological Survey standard disk, stamped "PRIM TRAV STA 101 68 BB 1917." (20.564 meters or 67.467 feet.)

60 (O. S. H. D.).—About 6.0 miles east along the Umpqua Highway from **Scottsburg**, Douglas County, at the southeast corner of the highway bridge over Weatherly Creek, in the curb. An Oregon State Highway Department standard disk. (18.361 meters or 60.241 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon State Highway Department in 1932.

N 55.—About 6.1 miles east along the Umpqua Highway from **Scottsburg**, Douglas County, about 200 feet west of a large white house, about 200 feet north of the highway, 60 feet east of Weatherly Creek, and 20 feet south of the old road. A standard disk, stamped "N 55 1930" and set in the top of a concrete post. (13.988 meters or 45.892 feet.)

65 (U. S. G. S.).—About 11.4 miles northwest along the Umpqua Highway from **Elkton**, Douglas County, about 1.8 miles east of the Long Prairie School, about 300 feet east of a concrete culvert, and 135 feet north of the highway, at the south edge of the old road, in the base of a boulder. A United States Geological Survey standard disk, stamped "65 BB 1919." (19.867 meters or 65.180 feet.)

M 55.—About 9.6 miles northwest of **Elkton**, Douglas County, just across the road from a rectangular boulder about 15 feet high and 50 feet long, and 24 feet south of the county road, in a small boulder. A standard disk, stamped "M 55 1930." (21.768 meters or 71.417 feet.)

NOTE.—It was reported in 1931 that this mark was destroyed.

L 55.—About 7.2 miles northwest of **Elkton**, Douglas County, 25 feet east of the center line of the county road, and 20 feet north of a 4-foot Douglas fir tree which stands 33 feet east of the center line of the road. A standard disk, stamped "L 55 1930" and set in the top of a concrete post. (27.386 meters or 89.849 feet.)

K 55.—About 4.8 miles northwest of **Elkton**, Douglas County, about 250 feet west of Brown's service station, 18 feet south of the center line of the county road, and 12 feet north of the fence. A standard disk, stamped "K 55 1930" and set in the top of a concrete post. (36.506 meters or 119.770 feet.)

133 (U. S. G. S.).—About 2.6 miles northwest of **Elkton**, Douglas County, and 15 feet east of the county road, in a large boulder. A United States

Geological Survey standard disk, stamped "133 BB 1919." (40.591 meters or 133.172 feet.)

NOTE.—As a result of highway construction in 1932, bench mark 133 is about 250 feet northeast of the new alignment.

118 (U. S. G. S.).—At **Elkton**, Douglas County, west of the Umpqua Highway, 50 feet north of the north end of the old county road bridge over Elk Creek, at the east edge of the road, in a massive boulder. A United States Geological Survey standard disk, stamped "PRIM TRAV STA 100 118 BB 1917." (35.773 meters or 117.365 feet.)

140 (O. S. H. D.).—At **Elkton**, Douglas County, about 500 feet east of the main part of town, at the southwest corner of the Umpqua Highway steel and concrete bridge over Elk Creek, in the sidewalk. An Oregon State Highway Department standard disk. (42.821 meters or 140.488 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon State Highway Department in 1932.

J 55 (O. S. H. D.).—At **Elkton**, Douglas County, at the Mary Beckley steel bridge over Umpqua River, in the top of the north end of the east pier. An Oregon State Highway Department standard disk, stamped "J 55 1930." (34.689 meters or 113.809 feet.)

H 55.—About 1.2 miles east of **Elkton**, Douglas County, about 0.5 mile west of a large farmhouse, in a small draw, 25 feet north of the center line of the old road, and 1 foot south of a fence. A standard disk, stamped "H 55 1930" and set in the top of a concrete post. (84.681 meters or 277.824 feet.)

NOTE.—It was reported that this mark was covered by the Umpqua Highway grade in 1931.

139 (U. S. G. S.).—About 2.1 miles east of **Elkton**, Douglas County, about 150 feet west of a bridge, and 15 feet south of the old road, in a boulder. A United States Geological Survey standard disk, stamped "139 BB 1919." (42.217 meters or 138.507 feet.)

NOTE.—It was reported that this mark was covered by the Umpqua Highway grade in 1931.

136 (O. S. H. D.).—About 2.1 miles east along the Umpqua Highway from **Elkton**, Douglas County, on a highway culvert, in the top of the south head wall. An Oregon State Highway Department standard disk. (41.452 meters or 135.997 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon State Highway Department in 1932.

145 (O. S. H. D.).—About 2.5 miles east along the Umpqua Highway from **Elkton**, Douglas County, at the northwest corner of the highway bridge over Elk Creek, in the curb. An Oregon State Highway Department standard disk. (44.142 meters or 144.823 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon State Highway Department in 1932.

G 55.—About 12.8 miles west along the old Elkton road from **Drain**, Douglas County, about 2 miles west of the Red Bridge over Elk Creek, and about 0.5 mile west of the summit, outside of and north of a curve, about 10 yards north of the face of a cliff, at the end of a rock point, in the top of a large boulder. A standard disk "G 55 1930." (146.267 meters or 479.878 feet.)

NOTE.—It was reported in September, 1931, that this mark is subject to destruction if the road is widened.

172 (O. S. H. D.).—About 3.4 miles east along the Umpqua Highway from **Elkton**, Douglas County, and about 300 feet west of the west end of the highway tunnel, at the northeast corner of a highway bridge over Elk Creek, in the sidewalk. An Oregon State Highway Department standard disk. (52.350 meters or 171.753 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon State Highway Department in 1932.

185 (O. S. H. D.).—About 3.7 miles east along the Umpqua Highway from **Elkton**, Douglas County, and about 0.3 mile west of the Red Bridge, at the east

end of the highway tunnel, at the northwest corner of a highway bridge over Elk Creek, in the sidewalk. An Oregon State Highway Department standard disk. (56.538 meters or 185.491 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon State Highway Department in 1932.

F 55.—About 4.0 miles east along the Umpqua Highway from Elkton, about 10.8 miles west of **Drain**, Douglas County, on a T road leading south from the Umpqua Highway, at the Red Bridge over Elk Creek, in the top of the south-west pier. A standard disk, stamped "F 55 1930." (54.125 meters or 177.575 feet.)

E 55.—About 9.1 miles west along the Umpqua Highway from **Drain**, Douglas County, 40 feet west of a 30-inch concrete culvert, and 18 feet north of the center line of the highway. A standard disk, stamped "E 55 1930" and set in the top of a concrete post. (54.912 meters or 180.157 feet.)

D 55.—About 7.1 miles west along the Umpqua Highway from **Drain**, Douglas County, across the road from Mr. R. Lancaster's house, 50 feet south of the center line of the highway, and 25 feet east of the center line of a small road leading to a covered bridge. A standard disk, stamped "D 55 1930" and set in the top of a concrete post. (64.641 meters 212.076 feet.)

C 55 (O. S. H. D.).—About 7.0 miles west along the Umpqua Highway from **Drain**, Douglas County, and about 300 feet southwest of The Oaks dairy, at the northwest corner of a small highway bridge, in the concrete wing wall. An Oregon State Highway Department standard disk, stamped "C 55 1930." (62.726 meters or 205.794 feet.)

27 (U. S. G. S.).—About 7.0 miles west along the Umpqua Highway from **Drain**, Douglas County, at The Oaks dairy, about 500 feet north of the highway, and about 150 feet east of a creek, east of a large white house, opposite a large barn, just east of a farm gate, and just south of the fence. A United States Geological Survey standard cap, stamped "210 27 1917" and riveted on the top of a 3½-inch iron pipe cased in concrete. (63.896 meters or 209.632 feet.)

NOTE.—This mark is also a United States Geological Survey primary traverse station.

A 55 (O. S. H. D.).—About 4.8 miles west along the Umpqua Highway from **Drain**, Douglas County, at the southeast corner of the highway bridge over Jack Creek, in the concrete curb. An Oregon State Highway Department standard disk, stamped "A 55 1930." (68.747 meters or 225.547 feet.)

Z 54 (O. S. H. D.).—About 3.2 miles west along the Umpqua Highway from **Drain**, Douglas County, at the southeast corner of the highway bridge over Hardscrabble Creek, in the concrete curb. An Oregon State Highway Department standard disk, stamped "Z 54 1930." (75.040 meters or 246.194 feet.)

Y 54.—About 2.7 miles west along the Umpqua Highway from **Drain**, Douglas County, and 35 feet north of the center line of the highway, near the fence line, in the east one of two large unused culvert footings. A standard disk, stamped "Y 54 1930." (76.822 meters or 252.040 feet.)

X 54 (O. S. H. D.).—At the west edge of **Drain**, Douglas County, on the Pacific Highway, at the northwest corner of the bridge over Elk Creek, in the concrete curb. An Oregon State Highway Department standard disk, stamped "X 54 1930." (88.804 meters or 291.351 feet.)

T 10 (U. S. G. S.).—See page 67.

LINE 17, WINNEMUCCA, NEV., TO CRANE, OREG. (PART)

[First-order leveling]

This line enters Oregon at Denio and follows the Winnemucca-Crane road through Fields, Andrews, Alberson Station, and Folly-farm to Crane. The field work was done during the summer of 1931 by Curtis Le Fever and J. Laskowski, junior hydrographic and geodetic engineers.

A 65.—At **Denio**, Harney County, across the road from the post office, and 125 feet west of the intersection of the Winnemucca-Crane road and the Afturas road, at the corner of the fence. A standard disk, stamped "A 65 1931" and set in the top of a concrete post. (1,293.739 meters or 4,244.542 feet.)

B 65.—About 1.5 miles north along the Winnemucca-Crane road from Denio, Harney County, and 30 feet east of the center of the road. A standard disk, stamped "B 65 1931" and set in the top of a concrete post. (1,279.198 meters or 4,196.835 feet.)

C 65.—About 3.6 miles north along the Winnemucca-Crane road from Denio, Harney County, 120 feet south of a wooden bridge, and 36 feet east of the center of the road. A standard disk, stamped "C 65 1931" and set in the top of a concrete post. (1,294.883 meters or 4,248.295 feet.)

D 65.—About 6.0 miles north along the Winnemucca-Crane road from Denio, Harney County, 32 feet west of the center of the road, and 8 feet east of the fence. A standard disk, stamped "D 65 1931" and set in the top of a concrete post. (1,291.718 meters or 4,237.911 feet.)

E 65.—About 8.0 miles north along the Winnemucca-Crane road from Denio, Harney County, 36 feet east of the center of the road, and 4 feet from the fence. A standard disk, stamped "E 65 1931" and set in the top of a concrete post. (1,267.857 meters or 4,159.627 feet.)

F 65.—About 9.9 miles north along the Winnemucca-Crane road from Denio, Harney County, 50 feet west of the center of the road, and 3 feet east of the corner post. A standard disk, stamped "F 65 1931" and set in the top of a concrete post. (1,284.824 meters or 4,215.293 feet.)

G 65.—About 12.1 miles north along the Winnemucca-Crane road from Denio, Harney County, about 4.3 miles south of Doan ranch, and 36 feet east of the center of the road. A standard disk, stamped "G 65 1931" and set in the top of a concrete post. (1,277.571 meters or 4,191.497 feet.)

H 65.—About 13.9 miles north along the Winnemucca-Crane Road from Denio, Harney County, about 2.4 miles south of Doan ranch, and 28 feet east of the center of the road. A standard disk, stamped "H 65 1931" and set in the top of a concrete post. (1,268.768 meters or 4,162.616 feet.)

J 65.—About 16.3 miles north along the Winnemucca-Crane road from Denio, Harney County, at Doan ranch, 2 feet from the northwest corner of the yard. A standard disk, stamped "J 65 1931" and set in the top of a concrete post. (1,250.898 meters or 4,103.988 feet.)

K 65.—About 2.9 miles south along the Winnemucca-Crane road from Fields, Harney County, about 2.0 miles north of Doan Ranch, and 42 feet east of the center of the road. A standard disk, stamped "K 65 1931" and set in the top of a concrete post. (1,279.208 meters or 4,196.868 feet.)

L 65.—About 0.9 mile south along the Winnemucca-Crane road from Fields, Harney County, and 30 feet east of the center of the road. A standard disk, stamped "L 65 1931" and set in the top of a concrete post. (1,284.433 meters or 4,214.011 feet.)

M 65.—At Fields, Harney County, 140 feet north of the post office, and 85 feet north of a fork in the road. A standard disk, stamped "M 65 1931" and set in the top of a concrete post. (1,293.455 meters or 4,243.610 feet.)

N 65.—About 2.1 miles north along the Winnemucca-Crane road from Fields, Harney County, 150 feet south of a small dry lake, and 29 feet west of the center of the road. A standard disk, stamped "N 65 1931" and set in the top of a concrete post. (1,294.924 meters or 4,248.430 feet.)

P 65.—About 4.2 miles north along the Winnemucca-Crane road from Fields, Harney County, and 72 feet east of the center of the road. A standard disk, stamped "P 65 1931" and set in the top of a concrete post. (1,261.714 meters or 4,139.473 feet.)

R 65.—About 6.1 miles north along the Winnemucca-Crane road from Fields, Harney County, and 33 feet east of the center of the road. A standard disk, stamped "R 65 1931" and set in the top of a concrete post. (1,257.325 meters or 4,125.074 feet.)

S 65.—About 8.3 miles north along the Winnemucca-Crane road from Fields, Harney County, 35 feet east of the center of the road, and 2 feet from the fence. A standard disk, stamped "S 65 1931" and set in the top of a concrete post. (1,236.302 meters or 4,056.101 feet.)

T 65.—About 3.9 miles south along the Winnemucca-Crane road from Andrews, Harney County, at the entrance to a ranch, and 48 feet west of the center of the road. A standard disk, stamped "T 65 1931" and set in the top of a concrete post. (1,239.864 meters or 4,067.787 feet.)

U 65.—About 2.0 miles south along the Winnemucca-Crane road from Andrews, Harney County, at a sharp turn in the road, 42 feet east of the center of the road. A standard disk, stamped "U 65 1931" and set in the top of a concrete post. (1,250.360 meters or 4,102.223 feet.)

V 65.—At **Andrews**, Harney County, 200 feet north of the post office, 51 feet east of the center of the Winnemucca-Crane road, and 2 feet north of the corner of an orchard fence. A standard disk, stamped "V 65 1931" and set in the top of a concrete post. (1,266.084 meters or 4,153.811 feet.)

W 65.—About 2.0 miles north along the Winnemucca-Crane road from **Andrews**, Harney County, 54 feet west of the center of the road, and 12 feet south of the corner of a fence. A standard disk, stamped "W 65 1931" and set in the top of a concrete post. (1,287.713 meters or 4,224.772 feet.)

X 65.—About 3.9 miles north along the Winnemucca-Crane road from **Andrews**, Harney County, and 30 feet east of the center of the road. A standard disk, stamped "X 65 1931" and set in the top of a concrete post. (1,287.236 meters or 4,223.207 feet.)

Y 65.—About 5.8 miles north along the Winnemucca-Crane road from **Andrews**, Harney County, on the north slope of a high hill, 61 feet east of the center of the road, in the top of a rock outcrop. A standard disk, stamped "Y 65 1931." (1,273.067 meters or 4,176.721 feet.)

Z 65.—About 7.5 miles north along the Winnemucca-Crane road from **Andrews**, Harney County, about 7.5 miles south of **Alvord ranch**, and 36 feet east of the center of the road. A standard disk, stamped "Z 65 1931" and set in the top of a concrete post. (1,230.552 meters or 4,037.236 feet.)

A 66.—About 9.9 miles north along the Winnemucca-Crane road from **Andrews**, Harney County, about 5.1 miles south of **Alvord ranch**, and 27 feet west of the center of the road, in the top of a large granite boulder. A standard disk, stamped "A 66 1931." (1,251.213 meters or 4,105.021 feet.)

B 66.—About 11.6 miles north along the Winnemucca-Crane road from **Andrews**, Harney County, about 3.4 miles south of **Alvord ranch**, and 27 feet west of the center of the road, in the top of a large boulder. A standard disk, stamped "B 66 1931." (1,239.421 meters or 4,066.334 feet.)

C 66.—About 13.7 miles north along the Winnemucca-Crane road from **Andrews**, Harney County, about 1.4 miles south of **Alvord ranch**, and 30 feet west of the center of the road. A standard disk, stamped "C 66 1931" and set in the top of a concrete post. (1,265.994 meters or 4,153.515 feet.)

D 66.—About 15.8 miles north along the Winnemucca-Crane road from **Andrews**, Harney County, about 0.7 mile north of **Alvord ranch**, and 30 feet west of the center of the road. A standard disk, stamped "D 66 1931" and set in the top of a concrete post. (1,294.310 meters or 4,246.415 feet.)

E 66.—About 17.8 miles north along the Winnemucca-Crane road from **Andrews**, Harney County, about 2.7 miles north of **Alvord ranch**, 32 feet west of the center of the road, and 3 feet outside of the corner post of the fence. A standard disk, stamped "E 66 1931" and set in the top of a concrete post. (1,322.622 meters or 4,339.302 feet.)

F 66.—About 19.8 miles north along the Winnemucca-Crane road from **Andrews**, Harney County, about 4.7 miles north of **Alvord ranch**, and 33 feet east of the center of the road. A standard disk, stamped "F 66 1931" and set in the top of a concrete post. (1,285.296 meters or 4,216.842 feet.)

G 66.—About 21.9 miles north along the Winnemucca-Crane road from **Andrews**, Harney County, about 6.7 miles north of **Alvord ranch**, 64 feet west of the center of the road, and 27 feet east of the fence. A standard disk, stamped "G 66 1931" and set in the top of a concrete post. (1,287.178 meters or 4,223.016 feet.)

H 66.—About 23.8 miles north along the Winnemucca-Crane road from **Andrews**, Harney County, about 8.0 miles south of **Alberson Station**, and 40 feet west of the center of the road. A standard disk, stamped "H 66 1931" and set in the top of a concrete post. (1,290.544 meters or 4,234.060 feet.)

J 66.—About 5.9 miles south along the Winnemucca-Crane road from **Alberson Station**, Harney County, and 42 feet west of the center of the road. A standard disk, stamped "J 66 1931" and set in the top of a concrete post. (1,280.974 meters or 4,202.662 feet.)

K 66.—About 3.9 miles south along the Winnemucca-Crane road from **Alberson Station**, Harney County, and 48 feet west of the center of the road. A standard disk, stamped "K 66 1931" and set in the top of a concrete post. (1,283.745 meters or 4,211.753 feet.)

L 66.—About 2.0 miles south along the Winnemucca-Crane road from **Alberson Station**, Harney County, and 37 feet east of the road. A standard disk, stamped "L 66 1931" and set in the top of a concrete post. (1,294.276 meters or 4,246.304 feet.)

M 66.—About 600 yards west along the Winnemucca-Crane road from **Alber-son Station**, Harney County, 25 feet east of the road, and 15 feet east of the fence corner. A standard disk, stamped "M 66 1931" and set in the top of a concrete post. (1,275.601 meters or 4,185.034 feet.)

N 66.—About 2.1 miles north along the Winnemucca-Crane road from **Alber-son Station**, Harney County, and 40 feet east of the center of the road. A standard disk, stamped "N 66 1931" and set in the top of a concrete post. (1,254.671 meters or 4,116.366 feet.)

P 66.—About 4.8 miles north along the Winnemucca-Crane road from **Alber-son Station**, Harney County, and 33 feet west of the center of the road, in the top of a rock outcrop. A standard disk, stamped "P 66 1931." (1,231.814 meters or 4,041.376 feet.)

R 66.—About 6.8 miles north along the Winnemucca-Crane road from **Alber-son Station**, Harney County, and 52 feet west of the center of the road, near the northeast corner post of a wire fence. A standard disk, stamped "R 66 1931" and set in the top of a concrete post. (1,229.294 meters or 4,033.109 feet.)

S 66.—About 9.1 miles north along the Winnemucca-Crane road from **Alber-son Station**, Harney County, and 43 feet west of the center of the road. A standard disk, stamped "S 66 1931" and set in the top of a concrete post. (1,244.487 meters or 4,082.954 feet.)

T 66.—About 11.0 miles north along the Winnemucca-Crane road from **Alber-son Station**, Harney County, 28 feet west of the center of the road, and 6 feet north of the mileage signpost lettered "Crane 50, Burns 80 miles." A standard disk, stamped "T 66 1931" and set in the top of a concrete post. (1,277.465 meters or 4,191.150 feet.)

U 66.—In Harney County, about 13.0 miles north along the Winnemucca-Crane road from **Alber-son Station**, Harney County, about 8.2 miles south of **Follyfarm**, Malheur County, and 25 feet east of the center of the road. A standard disk, stamped "U 66 1931" and set in the top of a concrete post. (1,268.646 meters or 4,162.216 feet.)

V 66.—In Harney County, about 5.7 miles south along the Winnemucca-Crane road from **Follyfarm**, Malheur County, on the top of a small ridge between two higher ridges, 26 feet east of the center of the road, in the top of a red rock outcrop. A standard disk, stamped "V 66 1931." (1,281.345 meters or 4,203.879 feet.)

W 66.—In Harney County, about 4.2 miles south along the Winnemucca-Crane road from **Follyfarm**, Malheur County, on the grade leading to the summit of a hill, 36 feet west of the center of the road, in the top of a red rock outcrop. A standard disk, stamped "W 66 1931." (1,275.140 meters or 4,183.522 feet.)

X 66.—In Harney County, about 2.3 miles south along the Winnemucca-Crane road from **Follyfarm**, Malheur County, at a right-angle turn in the road, 17 feet southwest of the center of the curve, and 13 feet west of the corner post. A standard triangulation-station reference-mark disk, set in the top of a concrete post. (1,236.743 meters or 4,057.548 feet.)

Y 66.—At **Follyfarm**, Malheur County, at the junction of the roads, 24 feet north of the road to Vale, and 21 feet east of the road to Crane. A standard disk, stamped "Y 66 1931" and set in the top of a concrete post. (1,239.819 meters or 4,067.639 feet.)

Z 66.—About 1.9 miles north along the Winnemucca-Crane road from **Folly-farm**, Malheur County, and 40 feet west of the center of the road, in the top of a pointed boulder. A standard disk, stamped "Z 66 1931." (1,366.479 meters or 4,483.190 feet.)

A 67.—About 3.5 miles north along the Winnemucca-Crane road from **Folly-farm**, Malheur County, and 46 feet west of the center of the road, in the top of a large boulder. A standard disk, stamped "A 67 1931." (1,488.651 meters or 4,884.016 feet.)

B 67.—About 5.9 miles north along the Winnemucca-Crane road from **Folly-farm**, Malheur County, and 22 feet east of the center of the road, in the top of a rock outcrop. A standard disk, stamped "B 67 1931." (1,533.588 meters or 5,031.447 feet.)

C 67.—About 7.9 miles north along the Winnemucca-Crane road from **Folly-farm**, Malheur County, and 54 feet west of the center of the road, in the top of a large boulder. A standard disk, stamped "C 67 1931." (1,421.116 meters or 4,662.445 feet.)

D 67.—In Harney County, about 9.9 miles north along the Winnemucca-Crane road from Follyfarm, Malheur County, and 41 feet east of the center of the road. A standard disk, stamped "D 67 1931" and set in the top of a concrete post. (1,335.016 meters or 4,379.965 feet.)

E 67.—In Harney County, about 11.8 miles north along the Winnemucca-Crane road from Follyfarm, Malheur County, about 29.4 miles south of Crane, Harney County, 125 feet north of a culvert, and 60 feet east of the center of the road. A standard disk, stamped "E 67 1931" and set in the top of a concrete post. (1,268.661 meters or 4,162.265 feet.)

F 67.—About 27.5 miles south along the Winnemucca-Crane road from Crane, Harney County, at the intersection with the road leading east to the A. E. Brown ranch, 78 feet northeast of the center of the intersection, in the top of a rock outcrop flush with the surface of the ground. A standard disk, stamped "F 67 1931." (1,253.111 meters or 4,111.248 feet.)

G 67.—About 23.0 miles south along the Winnemucca-Crane road from Crane, Harney County, and 57 feet west of the center of the road, in the top of a lava rock ridge flush with the surface of the ground. A standard disk, stamped "G 67 1931." (1,249.186 meters or 4,098.371 feet.)

H 67.—About 22.0 miles south along the Winnemucca-Crane road from Crane, Harney County, on the northwest end of a rock rim, 51 feet east of the center of the road, in the top of a flat rock outcrop. A standard disk, stamped "H 67 1931." (1,254.964 meters or 4,117.328 feet.)

J 67.—About 19.9 miles south along the Winnemucca-Crane road from Crane, Harney County, at the intersection of the roads. A standard disk, stamped "J 67 1931" and set in the top of a concrete post. (1,255.837 meters or 4,120.192 feet.)

K 67.—About 17.3 miles south along the Winnemucca-Crane road from Crane, Harney County, at the southwest corner of a schoolhouse yard, 36 feet east of the center of the road. A standard disk, stamped "K 67 1931" and set in the top of a concrete post. (1,258.240 meters or 4,128.076 feet.)

L 67.—About 15.6 miles south along the Winnemucca-Crane road from Crane, Harney County, about 200 feet north of a sharp curve in the road, and 66 feet north of the road, on a small flat surface on the east side of a large boulder. A standard disk, stamped "L 67 1931." (1,256.053 meters or 4,120.901 feet.)

M 67.—About 13.8 miles south along the Winnemucca-Crane road from Crane, Harney County, about 0.5 mile north of a ranch house, and 31 feet east of the center of the road, in the top of a large boulder. A standard disk, stamped "M 67 1931." (1,255.743 meters or 4,119.883 feet.)

N 67.—About 11.7 miles south along the Winnemucca-Crane road from Crane, Harney County, about 0.4 mile southeast of the intersection of the roads, and 36 feet west of the center of the road, at a fence corner. A standard disk, stamped "N 67 1931" and set in the top of a concrete post. (1,252.236 meters or 4,108.378 feet.)

P 67.—About 11.2 miles south along the Winnemucca-Crane road from Crane, Harney County, at a crossroads, 72 feet northeast of the center of the intersection. A standard disk, stamped "P 67 1931" and set in the top of a concrete post. (1,251.522 meters or 4,106.035 feet.)

R 67.—About 9.5 miles south along the Winnemucca-Crane road from Crane, Harney County, 43 feet west of the center of the highway, and 2 feet from the fence. A standard disk, stamped "R 67 1931" and set in the top of a concrete post. (1,251.480 meters or 4,105.897 feet.)

S 67.—About 7.3 miles south along the Winnemucca-Crane road from Crane, Harney County, 81 feet east of the center of the road, and 23 feet south of a gate, in the top of the west end of a rock ledge. A standard disk, stamped "S 67 1931." (1,262.676 meters or 4,142.629 feet.)

T 67.—About 4.7 miles south along the Winnemucca-Crane road from Crane, Harney County, at a sharp curve, 63 feet northeast of the center of the road. A standard disk, stamped "T 67 1931" and set in the top of a concrete post. (1,255.750 meters or 4,119.906 feet.)

U 67.—About 2.3 miles south along the Winnemucca-Crane road from Crane, Harney County, and 51 feet west of the road. A standard disk, stamped "U 67 1931" and set in the top of a concrete post. (1,259.414 meters or 4,131.927 feet.)

Q 19.—See page 46.

P 19.—See page 46.

V 67.—At Crane, Harney County, about 500 feet west of the Oregon Short Line railroad station, at a derail switch, 36 feet north of the track. A standard disk, stamped "V 67 1931" and set in the top of a concrete post. (1,259.515 meters or 4,132.259 feet.)

LINE 13, BEND TO KIRK, OREG.

[First-order leveling]

This line follows The Dalles-California Highway from Bend to Chinchalo and the Southern Pacific Co. railroad from Chinchalo to Kirk. The field work on the portion of the line between Bend and 3.5 miles south of Bend was done in November, 1930, by Charles Pierce, hydrographic and geodetic engineer. The remainder of the field work was done during the summer of 1931 by H. J. Oliver, junior hydrographic and geodetic engineer, and E. E. Stohsner, aid. This line follows more or less closely the United States Geological Survey line from Prineville to Ashland along the section from Bend to Chinchalo, and frequent ties were obtained between the two lines.

H 23.—See page 51.

A 41.—At Bend, Deschutes County, in the southeast part of the town, on the south side of Franklin Street, about 310 feet east of the Oregon Trunk Railway crossing, at The Dalles-California Highway mileage 142.1, in the east end of a head wall of a bridge over the Pilot Butte Canal. A standard disk, stamped "A 41 1930." (1,107.338 meters or 3,632.991 feet.)

B 41 (O. S. H. D.).—About 2.4 miles south along The Dalles-California Highway from Bend, Deschutes County, at mileage 143.8, in the west end of the south abutment of a bridge over the Central Oregon Irrigation Canal. An Oregon State Highway Department standard disk, stamped "B 41 1930." (1,139.739 meters or 3,739.294 feet.)

BX 41.—About 2.6 miles south along The Dalles-California Highway from Bend, Deschutes County, 220 feet south of milepost 144 and 28 feet west of the center line of the highway, in lava rock flush with the ground. An iron bolt. (1,146.772 meters or 3,762.368 feet.)

C 41 (O. S. H. D.).—About 3.6 miles south along The Dalles-California Highway from Bend, Deschutes County, 265 feet south of the road leading to the Bend Golf Club, 90 feet north of milepost 145, and 37 feet west of the center line of the highway, in a lava outcrop. An Oregon State Highway Department standard disk, stamped "C 41 1930." (1,154.426 meters or 3,787.479 feet.)

CX 41.—About 3.6 miles south along The Dalles-California Highway from Bend, Deschutes County, 150 feet south of the gate at the entrance to the Bend Golf Club, 90 feet north of milepost 145, and 45 feet west of the center line of the highway, in a lava rock outcrop. An iron bolt. (1,154.794 meters or 3,788.687 feet.)

D 41 (O. S. H. D.).—About 4.6 miles south along The Dalles-California Highway from Bend, Deschutes County, 35 feet southwest of milepost 146, and 40 feet west of the center line of the highway, in a lava boulder. An Oregon State Highway Department standard disk, stamped "D 41 1930." (1,176.366 meters or 3,859.461 feet.)

DX 41 (O. S. H. D.).—About 4.6 miles south along The Dalles-California Highway from Bend, Deschutes County, 40 feet southwest of milepost 146, and 45 feet west of the center line of the highway, in a lava outcrop. An iron bolt. (1,176.471 meters or 3,859.806 feet.)

NOTE.—The elevation of this mark was determined by the Pacific Power & Light Co. in 1932.

E 41 (O. S. H. D.).—About 5.5 miles south along The Dalles-California Highway from Bend, Deschutes County, at mileage 146.9, in the west end of the south abutment of the highway bridge over Arnold Ditch. An Oregon State Highway Department standard disk, stamped "E 41 1930." (1,190.331 meters or 3,905.278 feet.)

F 41 (O. S. H. D.).—About 6.6 miles south along The Dalles-California Highway from Bend, Deschutes County, 200 feet northwestward from milepost

148, and 80 feet west of the center line of the highway, in a lava outcrop near a large pile of rocks. An Oregon State Highway Department standard disk, stamped "F 41 1930." (1,217.435 meters or 3,994.201 feet.)

FX 41.—About 6.6 miles south along The Dalles-California Highway from **Bend**, Deschutes County, 200 feet northwestward from milepost 148, and 90 feet west of the center line of the highway, in a lava outcrop. An iron bolt. (1,216.856 meters or 3,992.301 feet.)*

GX 41.—About 7.5 miles south along The Dalles-California Highway from **Bend**, Deschutes County, about 530 feet north of milepost 149, 595 feet north of the Deschutes National Forest boundary, and 60 feet eastward from the center line of the highway, in a lava outcrop. An iron bolt. (1,240.534 meters or 4,069.987 feet.)*

G 41 (O. S. H. D.).—About 7.5 miles south along The Dalles-California Highway from **Bend**, Deschutes County, about 500 feet north of milepost 149, 565 feet north of the Deschutes National Forest boundary, and 72 feet eastward from the center line of the highway, in a lava outcrop. An Oregon State Highway Department standard disk, stamped "G 41 1930." (1,240.861 meters or 4,071.058 feet.)

HX 41.—About 8.6 miles south along The Dalles-California Highway from **Bend**, Deschutes County, 115 feet northwest of milepost 150, and 45 feet west of the center line of the highway, in a lava outcrop. An iron bolt. (1,259.117 meters or 4,130.953 feet.)*

H 41 (O. S. H. D.).—About 8.6 miles south along The Dalles-California Highway from **Bend**, Deschutes County, 115 feet northwest of milepost 150, and 35 feet west of the center line of the highway, in a lava boulder. An Oregon State Highway Department standard disk, stamped "H 41 1930." (1,259.263 meters or 4,131.432 feet.)

JX 41.—About 9.6 miles south along The Dalles-California Highway from **Bend**, Deschutes County, about 100 feet north of milepost 151, and 55 feet east of the center line of the highway, in a lava outcrop on a bank above the highway. An iron bolt. (1,294.764 meters or 4,247.905 feet.)*

J 41 (O. S. H. D.).—About 9.6 miles south along The Dalles-California Highway from **Bend**, Deschutes County, 75 feet north of milepost 151, and 55 feet east of the center line of the highway, in a lava outcrop on the bank. An Oregon State Highway Department standard disk, stamped "J 41 1930." (1,294.953 meters or 4,248.525 feet.)

F 2 (U. S. G. S.).—About 11.2 miles south along The Dalles-California Highway from **Bend**, Deschutes County, at Lava Pass, at the east toe of Lava Butte, 100 feet west of the highway, in a lava outcrop flush with the ground. A United States Geological Survey standard disk, stamped "4506 BB F 2 1908." (1,373.641 meters or 4,506.687 feet.)

For additional marks in this vicinity, see pages 50, 102, and 210.

4506 (O. S. H. D.).—About 11.5 miles south along The Dalles-California Highway from **Bend**, Deschutes County, 0.3 mile south of Lava Pass, at mileage 152.9, in the east head wall of a highway culvert. An Oregon State Highway Department standard disk, stamped "4506." (1,373.203 meters or 4,505.250 feet.)

K 41.—About 12.0 miles south along The Dalles-California Highway from **Bend**, Deschutes County, about 0.8 mile north of Lava River Cave, at mileage 153.4, 200 feet south of the top of a summit on the highway, and 18 feet west of the center line of the highway, in a lava outcrop. A standard disk, stamped "K 41 1930." (1,374.643 meters or 4,509.975 feet.)

4507.7 (U. S. G. S.).—About 12.8 miles south along The Dalles-California Highway from **Bend**, Deschutes County, at Lava River Cave, in the State park, at mileage 154.25, about 170 feet west of the highway, and 35 feet east of the northeast corner of the park cabin, in a triangle formed by three trees. A United States Geological Survey standard disk, stamped "4507.7 1927" and set in the top of a concrete post. (1,373.859 meters or 4,507.402 feet.)

4424 (O. S. H. D.).—About 14.1 miles south along The Dalles-California Highway from **Bend**, Deschutes County, about 1¼ miles south of Lava River

* This bench mark was established and its elevation determined by the Pacific Power & Light Co. in 1932.

Cave, about 0.1 mile north of the T road leading east to Mokst Butte, near mileage 155.55, and 35 feet east of the center line of the highway, in a lava outcrop. An Oregon State Highway Department standard disk, stamped "4424 1929." (1,348,214 meters or 4,423,265 feet.)

L 41.—About 14.5 miles south along The Dalles-California Highway from Bend, Deschutes County, about 1.7 miles south of Lava River Cave, 100 feet south of milepost 156, at a cut, 18 feet west of the center line of the highway, in a rock outcrop. A standard disk, stamped "L 41 1930" and set in the top of a concrete post. (1,368,050 meters or 4,488,344 feet.)

4377 (O. S. H. D.).—About 14.3 miles north along The Dalles-California Highway from Lapine, Deschutes County, 3.2 miles south of Lava River Cave, near mileage 157.5, about 75 feet north of the T road leading west to Elk Lake, and 40 feet east of the center line of the highway, in a rock outcrop about 8 feet higher than the roadway. An Oregon State Highway Department standard disk, stamped "4377 1929." (1,334,078 meters or 4,376,888 feet.)

W 62.—About 13½ miles north along The Dalles-California Highway from Lapine, Deschutes County, near mileage 158.2, at the summit of a small hill, 27 feet east of the center line of the highway. A standard disk, stamped "W 62 1931" and set in the top of a concrete post. (1,300,502 meters or 4,266,730 feet.)

4196 (O. S. H. D.).—About 13.0 miles north along The Dalles-California Highway from Lapine, Deschutes County, at mileage 158.7, in the south end of the east concrete head wall of a highway culvert, 10 feet below the level of the roadway. An Oregon State Highway Department standard disk, stamped "4196 1929." (1,279,008 meters or 4,196,212 feet.)

4206 (O. G. B.).—About 12.2 miles north along The Dalles-California Highway from Lapine, Deschutes County, at mileage 159.55, in the east head wall of a highway culvert. A chiseled square. (1,282,025 meters or 4,206,110 feet.)

V 62.—About 11.2 miles north along The Dalles-California Highway from Lapine, Deschutes County, near mileage 160.6, 100 feet north of the south end of a tangent, 60 feet south of a crossroad, and 36 feet east of the center line of the highway. A standard disk, stamped "V 62 1931" and set in the top of a concrete post. (1,284,201 meters or 4,213,249 feet.)

4212 (O. S. H. D.).—About 9.2 miles north along The Dalles-California Highway from Lapine, Deschutes County, near mileage 162.6, 165 feet south of a logging-railroad crossing, and 30 feet east of the center line of the highway, in a rock outcrop. An Oregon State Highway Department standard disk, stamped "4212 1929." (1,283,788 meters or 4,211,894 feet.)

U 62.—About 8¾ miles northward along The Dalles-California Highway from Lapine, Deschutes County, opposite milepost 163, 31 feet east of the center line of the highway, and 6 feet west of a cut bank. A standard disk, stamped "U 62 1931" and set in the top of a concrete post. (1,282,358 meters or 4,207,203 feet.)

4214 (O. S. H. D.).—About 7.4 miles northeast along The Dalles-California Highway from Lapine, Deschutes County, at mileage 158.7, in the south end of the east concrete head wall of a culvert. An Oregon State Highway Department standard disk, stamped "4214 1929." (1,284,277 meters or 4,213,499 feet.)

T 62.—About 6¾ miles northeast along The Dalles-California Highway from Lapine, Deschutes County, 175 feet north of milepost 165, and 40 feet eastward from the center line of the highway. A standard disk, stamped "T 62 1931" and set in the top of a concrete post. (1,283,044 meters or 4,209,453 feet.)

S 62.—About 6.2 miles northeast along The Dalles-California Highway from Lapine, Deschutes County, near mileage 165.5, at the south fence line of the south fork of a side road at the north end of Paulina Prairie, 105 feet west of the center line of the highway. A standard disk, stamped "S 62 1931" and set in the top of a concrete post. (1,281,204 meters or 4,203,417 feet.)

4216 (U. S. G. S.).—About 5.3 miles northeast along The Dalles-California Highway from Lapine, Deschutes County, near mileage 166.45, and 80 feet west of the highway, in the east head wall of a Great Northern Railway culvert over an irrigation ditch. A United States Geological Survey standard disk, stamped "4216 1927." (1,285,012 meters or 4,215,910 feet.)

R 62.—About 3.7 miles northeast along The Dalles-California Highway from Lapine, Deschutes County, 300 feet south of milepost 168, 54 feet southeast of the Great Northern Railway and 25 feet west of the center line of the highway. A standard disk, stamped "R 62 1931" and set in the top of a concrete post. (1,288,086 meters or 4,225,995 feet.)

Q 62 (O. S. H. D.).—About 3.5 miles north along The Dalles-California Highway from **Lapine**, Deschutes County, near mileage 168.3, in the east head wall of a highway culvert. An Oregon State Highway Department standard disk, stamped "Q 62 1931." (1,286.772 meters or 4,221.684 feet.)

P 62.—About 1.8 miles northeast along The Dalles-California Highway from **Lapine**, Deschutes County, 31 feet south of milepost 170, and 75 feet westward from the center line of the highway. A standard disk, stamped "P 62 1931" and set in the top of a concrete post. (1,287.427 meters or 4,223.833 feet.)

4226 (O. G. B.).—About 1.2 miles northeast along The Dalles-California Highway from **Lapine**, Deschutes County, near mileage 170.7, in the west head wall of a concrete culvert. A chiseled square. (1,288.077 meters or 4,225.966 feet.)

N 62 (U. S. G. S.).—About $\frac{1}{4}$ mile south along The Dalles-California Highway from **Lapine**, Deschutes County, about 200 feet north of milepost 172, and 40 feet westward from the center line of the highway, at the fence line. A United States Geological Survey standard disk, stamped "N 62 1931" and set in the top of a concrete post, flush with the ground. (1,290.288 meters or 4,233.220 feet.)

4224 (O. S. H. D.).—About 0.35 mile south along The Dalles-California Highway from **Lapine**, Deschutes County, in the center of the west head wall of a concrete culvert. An Oregon State Highway Department standard disk, stamped "4224 1927." (1,287.423 meters or 4,223.820 feet.)

For additional marks in this vicinity, see pages 211 and 225.

M 62.—About 2.2 miles southwest along The Dalles-California Highway from **Lapine**, Deschutes County, about 120 feet south of milepost 174, and 25 feet westward from the center line of the highway. A standard disk, stamped "M 62 1931" and set in the top of a concrete post. (1,295.596 meters or 4,250.635 feet.)

L 62.—About 4.2 miles southwest along The Dalles-California Highway from **Lapine**, Deschutes County, on the Deschutes-Klamath County line, 300 feet north of milepost 176, 18 feet south of a crossroad, and 30 feet westward from the center line of the highway. A standard disk, stamped "L 62 1931" and set in the top of a concrete post. (1,300.922 meters or 4,268.108 feet.)

4271 (O. S. H. D.).—In Klamath County, about 4.4 miles southwest along The Dalles-California Highway from **Lapine**, Deschutes County, about 0.2 mile south of the Deschutes-Klamath County line, near mileage 176.15, in the center of the west head wall of a highway culvert. An Oregon State Highway Department standard disk, stamped "4271 1927." (1,301.677 meters or 4,270.535 feet.)

4295 (O. S. H. D.).—In Klamath County, about 6.5 miles southwest along The Dalles-California Highway from **Lapine**, Deschutes County, near mileage 178.3, in the center of the west head wall of an irrigation-canal culvert under the highway. An Oregon State Highway Department standard disk, stamped "4295 1927." (1,308.989 meters or 4,294.575 feet.)

K 62.—In Klamath County, about 7.0 miles southwest along The Dalles-California Highway from **Lapine**, Deschutes County, about 10.4 miles northeast of **Crescent**, near mileage 178.8, about 0.1 mile north of an irrigation-ditch crossing, and 30 feet westward from the center line of the highway. A standard disk, stamped "K 62 1931" and set in the top of a concrete post. (1,310.456 meters or 4,299.388 feet.)

J 62 (O. S. H. D.).—About 9.9 miles northeast along The Dalles-California Highway from **Crescent**, Klamath County, near mileage 179.3, in the west end of the westward head wall of a highway culvert. An Oregon State Highway Department standard disk, stamped "J 62 1931." (1,310.139 meters or 4,298.348 feet.)

H 62.—About 8.2 miles north along The Dalles-California Highway from **Crescent**, Klamath County, about 0.2 mile north of the Log Cabin Service Station, 65 feet north of milepost 181, and 27 feet east of the center line of the highway. A standard disk, stamped "H 62 1931" and set in the top of a concrete post. (1,315.827 meters or 4,317.009 feet.)

G 62.—About 6.2 miles north along The Dalles-California Highway from **Crescent**, Klamath County, 64 feet south of milepost 183, and 28 feet west of the center line of the highway. A standard disk, stamped "G 62 1931" and set in the top of a concrete post. (1,334.191 meters or 4,377.258 feet.)

4354 (O. S. H. D.).—About 5.0 miles north along The Dalles-California Highway from Crescent, Klamath County, in a tree marked "U. S. B. M. 4354.6." A nail. (1,327.162 meters or 4,354.197 feet.)

F 62.—About 4.2 miles north along The Dalles-California Highway from Crescent, Klamath County, 36 feet north of milepost 185, and 27 feet west of the center line of the highway. A standard disk, stamped "F 62 1931" and set in the top of a concrete post. (1,330.050 meters or 4,363.672 feet.)

E 62.—About 2.2 miles north along The Dalles-California Highway from Crescent, Klamath County, 60 feet south of milepost 187, and 31 feet west of the center line of the highway. A standard disk, stamped "E 62 1931" and set in the top of a concrete post. (1,339.750 meters or 4,395.496 feet.)

X 1 (U. S. G. S.).—At Crescent, Klamath County, about 300 feet west of The Dalles-California Highway, 40 feet south of the road leading to the bridge over Little Deschutes River, and 20 feet east of a large tree. A United States Geological Survey standard cap, stamped "4453 BB X 1 1908" and riveted on the top of a 3½-inch iron pipe, encased in concrete. (1,357.038 meters or 4,452.215 feet.)

For additional bench marks in this vicinity, see page 212.

D 62.—About 1.8 miles south along The Dalles-California Highway from Crescent, Klamath County, 97 feet north of milepost 191, and 27 feet east of the center line of the highway. A standard disk, stamped "D 62 1931" and set in top of a concrete post. (1,361.836 meters or 4,467.957 feet.)

C 62.—About 3.8 miles south along The Dalles-California Highway from Crescent, Klamath County, 126 feet south of milepost 193, and 25 feet east of the center line of the highway. A standard disk, stamped "C 62 1931" and set in the top of a concrete post. (1,385.635 meters or 4,546.037 feet.)

W 1 (U. S. G. S.).—About 6.1 miles south along The Dalles-California Highway from Crescent, Klamath County, 357 feet north of survey station 320, and 156 feet west of the center line of the highway, at the west edge of an old road. A United States Geological Survey standard cap, stamped "4508 BB W 1 1908" and riveted on the top of a 3½-inch iron pipe, encased in concrete. (1,373.888 meters or 4,507.498 feet.)

For additional bench marks in this vicinity, see page 212.

BB 62 (U. S. F. S.).—About 6.4 miles south along The Dalles-California Highway from Crescent, Klamath County, at mileage 195.6, and 30 feet west of the center line of the highway. A United States Forest Service standard disk, stamped "BB 62 1931" and set in the top of a concrete post. (1,376.043 meters or 4,514.568 feet.)

B 62.—About 6.8 miles south along The Dalles-California Highway from Crescent, Klamath County, 60 feet north of milepost 196, and 26 feet west of the center line of the highway. A standard disk, stamped "B 62 1931" and set in the top of a concrete post. (1,380.635 meters or 4,529.633 feet.)

A 62.—About 8.8 miles south along The Dalles-California Highway from Crescent, Klamath County, 20 feet south of milepost 198, and 33 feet east of the center line of the highway. A standard disk, stamped "A 62 1931" and set in the top of a concrete post. (1,417.238 meters or 4,649.722 feet.)

4638 (O. G. B.).—About 11.4 miles south along The Dalles-California Highway from Crescent, Klamath County, inside a curve near the foot of a hill, in the top of the east head wall of a highway culvert. A chiseled square. (1,413.681 meters or 4,638.052 feet.)

V 1 (U. S. G. S.).—About 11.45 miles south along The Dalles-California Highway from Crescent, Klamath County, about 6.9 miles north of Chemult, at mileage 200.6, near the west base of Black Butte, and 30 feet west of the center line of the highway. A United States Geological Survey standard cap, stamped "4638 BB V 1 1908" and riveted on the top of a 3½-inch iron pipe, encased in concrete. (1,413.752 meters or 4,638.285 feet.)

For additional bench marks in this vicinity, see page 213.

Z 61.—About 5.5 miles north along The Dalles-California Highway from Chemult, Klamath County, 110 feet south of milepost 202, and 27 feet east of the center line of the highway. A standard disk, stamped "Z 61 1931" and set in the top of a concrete post. (1,440.865 meters or 4,727.238 feet.)

Y 61.—About 3.5 miles north along The Dalles-California Highway from **Chemult**, Klamath County, 154 feet north of milepost 204, and 28 feet east of the center line of the highway. A standard disk, stamped "Y 61 1931" and set in the top of a concrete post. (1,435.658 meters or 4,710.155 feet.)

X 61 (O. S. H. D.)—About 1.2 miles north along The Dalles-California Highway from **Chemult**, Klamath County, in the north end of the west curb of the highway viaduct over the Southern Pacific Co. track. An Oregon State Highway Department standard disk, stamped "X 61 1931." (1,456.058 meters or 4,777.084 feet.)

W 61.—At **Chemult**, Klamath County, opposite the restaurant, and 40 feet west of the center line of The Dalles-California Highway. A standard disk, stamped "W 61 1931" and set in the top of a concrete post. (1,450.215 meters or 4,757.914 feet.)

V 61.—About 1.5 miles south along The Dalles-California Highway from **Chemult**, Klamath County, 12 feet south of milepost 209, and 30 feet west of the center line of the highway. A standard disk, stamped "V 61 1931" and set in the top of a concrete post. (1,444.367 meters or 4,738.727 feet.)

U 61.—About 3.5 miles south along The Dalles-California Highway from **Chemult**, Klamath County, 2.3 miles north of Beaver Marsh, 60 feet south of milepost 211, and 27 feet east of the center line of the highway. A standard disk, stamped "U 61 1931" and set in the top of a concrete post. (1,429.724 meters or 4,690.686 feet.)

S 1 (U. S. G. S.)—About 5.7 miles south along The Dalles-California Highway from **Chemult**, Klamath County, at **Beaver Marsh**, 500 feet north of the Miller Creek bridge, 230 feet west of the highway, and 3 feet east of a 24-inch tree. A United States Geological Survey standard cap, stamped "4640 BB S 1 1908" and riveted on the top of a 3½-inch iron pipe, encased in concrete. (1,414.004 meters or 4,639.111 feet.)

For additional bench marks in this vicinity, see page 213.

4640 (O. S. H. D.)—About 5.8 miles south along The Dalles-California Highway from **Chemult**, Klamath County, at **Beaver Marsh**, in the northwest corner of the highway bridge over Miller Creek. An Oregon State Highway Department standard disk, stamped "4640 1927." (1,414.051 meters or 4,639.266 feet.)

T 61.—About 6.5 miles south along The Dalles-California Highway from **Chemult**, Klamath County, 0.7 mile south of Beaver Marsh, 53 feet north of milepost 214, and 27 feet east of the center line of the highway. A standard disk, stamped "T 61 1931" and set in the top of a concrete post. (1,410.983 meters or 4,629.200 feet.)

S 61.—About 8.5 miles south along The Dalles-California Highway from **Chemult**, Klamath County, 60 feet south of milepost 216, and 33 feet east of the center line of the highway. A standard disk, stamped "S 61 1931" and set in the top of a concrete post. (1,407.309 meters or 4,617.146 feet.)

R 61.—About 10.5 miles south along The Dalles-California Highway from **Chemult**, Klamath County, 130 feet north of milepost 218, and 36 feet west of the center line of the highway. A standard disk, stamped "R 61 1931" and set in the top of a concrete post. (1,410.235 meters or 4,626.746 feet.)

NOTE.—This bench mark is also a transit traverse station of the United States Geological Survey.

Q 61.—About 12.5 miles south along The Dalles-California Highway from **Chemult**, Klamath County, 25 feet north of milepost 220, and 30 feet west of the center line of the highway. A standard disk, stamped "Q 61 1931" and set in the top of a concrete post. (1,403.459 meters or 4,604.515 feet.)

NOTE.—This bench mark is also a transit traverse station of the United States Geological Survey.

P 61.—About 14.5 miles south along The Dalles-California Highway from **Chemult**, Klamath County, 210 feet north of milepost 222, and 30 feet east of the center line of the highway, on a bank about 4 feet higher than the roadway. A standard disk, stamped "P 61 1931" and set in the top of a concrete post. (1,401.598 meters or 4,598.409 feet.)

NOTE.—This bench mark is also a transit traverse station of the United States Geological Survey.

N 61.—About 16.6 miles south along The Dalles-California Highway from **Chemult**, Klamath County, at mileage 224.1, at the intersection with the Diamond Lake-Lenz Ranch road, 36 feet east of the center line of the highway, and 15 feet north of the road. A standard disk, stamped "N 61 1931" and set in the top of a concrete post. (1,404.244 meters or 4,607.090 feet.)

NOTE.—This bench mark is also a transit traverse station of the United States Geological Survey.

M 61.—About 6.0 miles north along the Southern Pacific Co. railroad from **Chinchalo**, Klamath County, 2 poles south of milepost 485, 57 feet south of the Diamond Lake-Lenz Ranch road, and 3 feet west of the west right-of-way fence. A standard disk, stamped "M 61 1931" and set in the top of a concrete post. (1,397.140 meters or 4,583.783 feet.)

N 1 (U. S. G. S.).—About 4.0 miles north along the Southern Pacific Co. railroad from **Chinchalo**, Klamath County, 0.5 mile south of **Lenz**, 2 poles south of milepost 483, 50 feet north of Cow Creek, and 17 feet east of the east right-of-way fence, in a lava outcrop. A United States Geological Survey standard disk, stamped "4549 BB N 1 1908" and set vertically. (1,386.548 meters or 4,549.033 feet.)

NOTE.—The standard elevation given above for this bench mark is based on first-order leveling by the United States Coast and Geodetic Survey in 1931. The standard elevation for this same mark as determined by the United States Geological Survey leveling, which was run in 1908, is 0.158 foot lower than that given above.

For additional bench marks in this vicinity, see pages 214 and 225.

4550.170 (S. P.).—About 3.7 miles north along the Southern Pacific Co. railroad from **Chinchalo**, Klamath County, west of mileage 482.5, in the end of a pipe culvert. A railroad spike. (1,385.494 meters or 4,545.575 feet.)

4549.242 (S. P.).—About 3.2 miles north along the Southern Pacific Co. railroad from **Chinchalo**, Klamath County, west of mileage 482, in the top of a culvert. A railroad spike. (1,385.150 meters or 4,544.446 feet.)

4546.742 (S. P.).—About 2.2 miles north along the Southern Pacific Co. railroad from **Chinchalo**, Klamath County, at mileage 481, west of the track, in the top of a culvert. A railroad spike. (1,384.339 meters or 4,541.785 feet.)

L 61.—About 2.1 miles north along the Southern Pacific Co. railroad from **Chinchalo**, Klamath County, 1½ poles south of milepost 481, 66 feet west of the track, and 15 feet north of a gate at a road leading to a ranch house. A standard disk, stamped "L 61 1931" and set in the top of a concrete post. (1,383.744 meters or 4,539.833 feet.)

4544.772 (S. P.).—About 1.7 miles north along the Southern Pacific Co. railroad from **Chinchalo**, Klamath County, at mileage 480.5, in the west end of a culvert. A railroad spike. (1,383.766 meters or 4,539.906 feet.)

4544.585 (S. P.).—About 0.9 mile north along the Southern Pacific Co. railroad from **Chinchalo**, Klamath County, at mileage 479.7, in the west end of a culvert. A railroad spike. (1,383.679 meters or 4,539.620 feet.)

K 61.—See page 225.

J 61.—About 1.8 miles south along the Southern Pacific Co. railroad from **Chinchalo**, Klamath County, 1 pole south of milepost 477, at semaphore 4769, and 45 feet west of the track. A standard disk, stamped "J 61 1931" and set in the top of a concrete post. (1,380.327 meters or 4,528.623 feet.)

4523.131 (S. P.).—About 1.5 miles north along the Southern Pacific Co. railroad from **Fuego**, Klamath County, at mileage 476, in the west end of a concrete culvert. A railroad spike. (1,377.259 meters or 4,518.557 feet.)

H 61.—At **Fuego**, Klamath County, 45 feet west of the Southern Pacific Co. track, 40 feet south of a small speeder house, and just outside the right-of-way fence. A standard disk, stamped "H 61 1931" and set in the top of a concrete post. (1,378.030 meters or 4,521.087 feet.)

4518.652 (S. P.).—About 1.9 miles north along the Southern Pacific Co. railroad from **Kirk**, Klamath County, near mileage 472.2, in the west end of a concrete culvert. A railroad spike. (1,375.848 meters or 4,513.928 feet.)

G 61.—About 1.9 miles north along the Southern Pacific Co. railroad from **Kirk**, Klamath County, 200 feet north of semaphore 4732, and 45 feet east of the track, in the fence corner. A standard disk, stamped "G 61 1931" and set in the top of a concrete post. (1,375.542 meters or 4,512.924 feet.)

F 61.—At **Kirk**, Klamath County, 300 feet south of the Southern Pacific Co. railroad station, 45 feet east of the track, and 4 feet northwest of the Standard

Oil Co. warehouse. A standard disk, stamped "F 61 1931" and set in the top of a concrete post. (1,380.466 meters or 4,529.079 feet.)

J 5.—See page 34.

LINE 19, PRINEVILLE TO PICTURE GORGE, OREG.

[First-order leveling]

This line follows the Ochoco Highway from Prineville to Picture Gorge. The field work was done in August, 1931, by H. J. Oliver, junior hydrographic and geodetic engineer, and E. E. Stohsner, aid.

2865 (U. S. G. S.).—At Prineville, Crook County, in the concrete curb at the northwest corner of Main and East Second Streets. A United States Geological Survey standard disk, stamped "2865 1929." (873.134 meters or 2,864.607 feet.)

2866 (U. S. G. S.).—At Prineville, Crook County, at the northwest corner of B and East Third Streets, in the parking strip on B Street. A United States Geological Survey standard disk, stamped "2866 1929" and set in the top of a concrete post. (873.445 meters or 2,865.627 feet.)

2867 (U. S. G. S.)=Q 30.—See page 13.

X 62 (O. S. H. D.).—About 0.5 mile east along the Ochoco Highway from Prineville, Crook County, in the wing wall at the southwest corner of the highway bridge over Ochoco Creek. An Oregon State Highway Department standard disk, stamped "X 62 1931." (877.567 meters or 2,879.151 feet.)

Y 62.—About 2.1 miles east along the Ochoco Highway from Prineville, Crook County, 36 feet west of a side road to the north, 42 feet northward from the center line of the highway, and 15 feet west of a fence corner, at the fence line. A standard disk, stamped "Y 62 1931" and set in the top of a concrete post. (891.558 meters or 2,925.053 feet.)

Z 62.—About 3.9 miles east along the Ochoco Highway from Prineville, Crook County, 120 feet east of a T road leading north, 66 feet east of a T road leading south, and 25 feet southward from the center line of the highway. A standard disk, stamped "Z 62 1931" and set in the top of a concrete post. (905.005 meters or 2,969.171 feet.)

A 63 (O. S. H. D.).—About 5.1 miles east along the Ochoco Highway from Prineville, Crook County, 310 feet west of the O. V. Hoxes ranch house, and 15 feet eastward from the center line of the highway, at the bottom of a tall red boulder in a ledge. An Oregon State Highway Department standard disk, stamped "A 63 1931." (914.813 meters or 3,001.349 feet.)

B 63 (O. S. H. D.).—About 5.8 miles east along the Ochoco Highway from Prineville, Crook County, 200 feet west of the Ochoco Canal bridge, and 51 feet southwest of the center line of the highway, in a boulder. An Oregon State Highway Department standard disk, stamped "B 63 1931." (934.882 meters or 3,067.192 feet.)

C 63.—About 5.9 miles east along the Ochoco Highway from Prineville, Crook County, 750 feet west of the Ochoco Dam, 40 feet west of a gate, 30 feet southeast of the old location of the Ochoco Highway, and north of the highway as reconstructed in 1931, in a basalt boulder about 1 foot above the ground. A standard disk, stamped "C 63 1931." (942.358 meters or 3,091.720 feet.)

CX 63 (O. S. E.).—About 6 miles east along the Ochoco Highway from Prineville, Crook County, and 600 feet west of the Ochoco Dam, on the north side of the Ochoco Canal, south of the highway and just east of the water gauge, in the top edge of the concrete canal lining. An Oregon State engineer standard disk, stamped "CX 63 1932." (930.562 meters or 3,053.020 feet.)

NOTE.—The elevation of this bench mark was determined by the Pacific Power & Light Co.

CY 63 (O. S. E.).—About 6 miles east along the Ochoco Highway from Prineville, Crook County, 600 feet west of the Ochoco Dam, and about 100 feet northeastward from the water gauge in the canal, in a boulder. An Oregon State engineer standard disk, stamped "CY 63 1932." (933.219 meters or 3,061.737 feet.)

NOTE.—The elevation of this bench mark was determined by the Pacific Power & Light Co.

D 63 (O. S. H. D.).—About 7.0 miles east along the Ochoco Highway from Prineville, Crook County, 100 feet west of an old road bed, 45 feet south of

the center line of the highway, and 1 foot above the ground, in a rock outcrop. An Oregon State Highway Department standard disk, stamped "D 63 1931." (964.420 meters or 3,164.101 feet.)

E 63.—About 8.3 miles east along the Ochoco Highway from Prineville, Crook County, 300 feet west of the top of a hill, at the west end of a cut, and 36 feet northeast of the center line of the highway. A standard disk, stamped "E 63 1931" and set in the top of a concrete post. (964.007 meters or 3,162.746 feet.)

EX 63.—About 8.4 miles east along the Ochoco Highway from Prineville, Crook County, about 300 feet east of the top of a hill, and 15 feet northwest of the center line of the highway, in a rock outcrop. An iron bolt. (964.799 meters or 3,165.345 feet.)

F 63 (U. S. F. S.).—About 9.8 miles east along the Ochoco Highway from Prineville, Crook County, on a T road leading north just west of Mill Creek, about 300 feet north of the highway, and 40 feet west of the road. A United States Forest Service standard disk, stamped "F 63 1931" and set in the top of a tile and concrete post. (962.662 meters or 3,158.334 feet.)

G 63 (O. S. H. D.).—About 9.9 miles east along the Ochoco Highway from Prineville, Crook County, in the wing wall at the northwest corner of the highway bridge over Mill Creek. An Oregon State Highway Department standard disk, stamped "G 63 1931." (957.612 meters or 3,141.765 feet.)

H 63 (O. S. H. D.).—About 10.3 miles east along the Ochoco Highway from Prineville, Crook County, 0.1 mile east of a school, 300 feet east of the point of a curve, and 30 feet south of the center line of the highway. A standard disk, stamped "H 63 1931" and set in the top of a concrete post. (958.372 meters or 3,144.259 feet.)

J 63.—About 10.8 miles east along the Ochoco Highway from Prineville, Crook County, 500 feet west of a community house, and 36 feet north of the center line of the highway, in a lava boulder. A standard disk stamped "J 63 1931." (960.566 meters or 3,151.457 feet.)

JX 63 (O. S. E.).—About 11.0 miles east of Prineville, Crook County, and about 1,000 feet south of a community hall on the Ochoco Highway, at the Oregon State engineer gaging station on the north bank of Ochoco Creek. An Oregon State engineer standard disk, stamped "JX 63 1932" and set in the top of a concrete post. (957.865 meters or 3,142.597 feet.)

NOTE.—The elevation of this bench mark was determined by the Pacific Power & Light Co.

K 63.—About 12.0 miles east along the Ochoco Highway from Prineville, Crook County, 70 feet north of the center line of the highway, and 15 feet higher than the roadway, in a boulder at the fence line. A standard disk, stamped "K 63 1931." (979.341 meters or 3,213.055 feet.)

L 63.—About 12.1 miles east along the Ochoco Highway from Prineville, Crook County, midway of a short tangent, and 30 feet south of the center line of the highway, at the east edge of a field. A standard disk, stamped "L 63 1931" and set in the top of a concrete post. (977.872 meters or 3,208.235 feet.)

M 63.—About 13.3 miles northeast along the Ochoco Highway from Prineville, Crook County, at the north end of a curve, opposite the curve sign, and 35 feet northwest of the center line of the highway, in a boulder. A standard disk, stamped "M 63 1931." (999.842 meters or 3,280.315 feet.)

MX 63.—About 14.8 miles northeast along the Ochoco Highway from Prineville, Crook County, 0.2 mile northeastward from a ranch house, and 20 feet northwest of the center line of the highway, in a round boulder. A square-headed iron bolt. (1,016.527 meters or 3,335.056 feet.)

N 63 (U. S. F. S.).—About 16.0 miles northeast along the Ochoco Highway from Prineville, Crook County, 50 feet west of Marks Creek, and 75 feet northwest of the center line of the highway, on a hillside. A United States Forest Service standard disk, stamped "N 63 1931" and set in a tile and concrete post. (1,026.966 meters or 3,369.304 feet.)

P 63 (O. S. H. D.).—About 16.0 miles northeast along the Ochoco Highway from Prineville, Crook County, in the wing wall at the southwest corner of the highway bridge over Marks Creek. An Oregon State Highway Department standard disk, stamped "P 63 1931." (1,026.394 meters or 3,367.428 feet.)

PP 63 (U. S. F. S.).—About 16.0 miles northeast along the Ochoco Highway from Prineville, Crook County, in the wing wall at the southeast corner of the highway bridge over Marks Creek. A United States Forest Service standard disk, stamped "PP 63 1931." (1,026.002 meters or 3,366.142 feet.)

Q 63.—About 16.5 miles northeast along the Ochoco Highway from **Prineville**, Crook County, 90 feet south of a fence corner, 33 feet northwest of the center line of the highway, and about 10 feet above the roadway, on a hillside. A standard disk, stamped "Q 63 1931" and set in the top of a concrete post. (1,033.004 meters or 3,389.114 feet.)

QQ 63.—About 18.7 miles northeast along the Ochoco Highway from **Prineville**, Crook County, 0.2 mile northeast of a ranch house, 50 feet northwest of the center line of the highway, and about 15 feet higher than the roadway, in a boulder. A standard disk, stamped "QQ 63 1931." (1,078.359 meters or 3,537.916 feet.)

RX 63.—About 20.5 miles northeast along the Ochoco Highway from **Prineville**, Crook County, 0.2 mile northeast of a ranch house, and 100 feet north of the center line of the highway in a lava outcrop on a hillside. An iron bolt. (1,108.822 meters or 3,637.860 feet.)

R 63.—About 21.0 miles northeast along the Ochoco Highway from **Prineville**, Crook County, 90 feet north of a ranch house, 25 feet southeast of the center line of the highway and 7 feet north of a gate. A standard disk, stamped "R 63 1931" and set in the top of a concrete post. (1,120.211 meters or 3,675.228 feet.)

S 63.—About 22.3 miles northeast along the Ochoco Highway from **Prineville**, Crook County, 175 feet southward from a cemetery, and 30 feet northeast of the center line of the highway. A standard disk, stamped "S 63 1931" and set in the top of a concrete post. (1,146.888 meters or 3,762.748 feet.)

T 63.—About 24.2 miles northeast along the Ochoco Highway from **Prineville**, Crook County, 0.8 mile southwest of Ochoco ranger station, 0.2 mile northeast of the national forest boundary, and 25 feet eastward from the center line of the highway, in a lava outcrop. A standard disk, stamped "T 63 1931." (1,193.750 meters or 3,916.495 feet.)

TT 63 (U. S. F. S.).—About 25.0 miles northeast along the Ochoco Highway from **Prineville**, Crook County, at **Ochoco ranger station**, 4 feet west of a gate to a road leading to Lookout Mountain, and 50 feet southeast of the center line of the highway. A United States Forest Service standard disk, stamped "TT 63 1931" and set in the top of a tile and concrete post. (1,212.900 meters or 3,979.648 feet.)

U 63 (O. S. H. D.).—About 1.8 miles northeast along the Ochoco Highway from **Ochoco ranger station**, Crook County, at a curve, 25 feet northwest of the center line of the highway, at the foot of a high rock outcrop, in rock. An Oregon State Highway Department standard disk, stamped "U 63 1931." (1,289.451 meters or 4,230.474 feet.)

V 63.—About 4.1 miles northeast along the Ochoco Highway from **Ochoco ranger station**, Crook County, 10 feet westward from survey station 990, and 30 feet southeast of the center line of the highway. A standard disk, stamped "V 63 1931" and set in the top of a concrete post. (1,393.293 meters or 4,571.162 feet.)

VX 63.—About 4.1 miles northeast along the Ochoco Highway from **Ochoco ranger station**, Crook County, about opposite survey station 990, about 30 feet northwest of the highway, and 15 feet higher than the roadway, in a prominent rock outcrop. An iron bolt. (1,398.752 meters or 4,589.072 feet.)

W 63 (U. S. F. S.).—In Wheeler County, about 6.5 miles northeast along the Ochoco Highway from **Ochoco ranger station**, Crook County, 30 feet south of a highway marker, and 25 feet northeast of the center line of the highway, in the south end of a rock outcrop. A United States Forest Service standard disk, stamped "W 63 1931." (1,547.981 meters or 5,078.663 feet.)

X 63 (U. S. F. S.).—In Wheeler County, about 8.5 miles northeast along the Ochoco Highway from **Ochoco ranger station**, Crook County, at **Ochoco Pass**, opposite the summit sign, and 30 feet southeast of the center line of the highway. A United States Forest Service standard disk, stamped "X 63 1931" and set in the top of a tile and concrete post. (1,613.584 meters or 5,293.900 feet.)

Y 63 (U. S. F. S.).—In Wheeler County, about 8.5 miles northeast along the Ochoco Highway from **Ochoco ranger station**, Crook County, at **Ochoco Pass**, about 175 feet north of the summit sign, and 60 feet westward from the center line of the highway, in a boulder. A United States Forest Service standard disk, stamped "Y 63 1925 1931." (1,611.354 meters or 5,286.584 feet.)

Z 63.—About 1.9 miles northeast along the Ochoco Highway from **Ochoco Pass**, Wheeler County, 150 feet north of survey station 290, at a curve at the

north end of a cut, and 33 feet northwest of the center line of the highway. A standard disk, stamped "Z 63 1931" and set in the top of a concrete post. (1,456.861 meters or 4,179.718 feet.)

A 64.—About 3.9 miles northeast along the Ochoco Highway from **Ochoco Pass**, Wheeler County, at the point of a curve, opposite a highway culvert, and 33 feet west of the center line of the highway, near four large trees. A standard disk, stamped "A 64 1931" and set in the top of a concrete post. (1,308.950 meters or 4,294.447 feet.)

B 64.—About 6.0 miles northeast along the Ochoco Highway from **Ochoco Pass**, Wheeler County, 15 feet west of a culvert, east of a fence corner on the southeast side of the road, and 25 feet north of the center line of the highway, at the fence line. A standard disk, stamped "B 64 1931" and set in the top of a concrete post. (1,151.096 meters or 3,776.554 feet.)

C 64.—About 8.0 miles northeast along the Ochoco Highway from **Ochoco Pass**, Wheeler County, 180 feet north of a small culvert, at a point about midway of a short tangent, and 25 feet east of the center line of the highway. A standard disk, stamped "C 64 1931" and set in the top of a concrete post. (1,024.241 meters or 3,360.364 feet.)

D 64 (U. S. F. S.).—About 10.9 miles west along the Ochoco Highway from **Mitchell**, Wheeler County, at the intersection with the road to Bear Creek, and 90 feet west of the highway, near a south gatepost. A United States Forest Service standard disk, stamped "D 64 1931" and set in the top of a tile and concrete post. (929.243 meters or 3,048.691 feet.)

E 64.—About 9.0 miles west along the Ochoco Highway from **Mitchell**, Wheeler County, about 200 feet north of a sharp curve, 20 feet north of an old ditch, and 40 feet west of the center line of the highway. A standard disk, stamped "E 64 1931" and set in the top of a concrete post. (866.480 meters or 2,842.776 feet.)

F 64.—About 7.1 miles west along the Ochoco Highway from **Mitchell**, Wheeler County, opposite the west end of a rock bluff across the creek, 60 feet west of a culvert having a deep cut at the south end, and 40 feet northwest of the center line of the highway. A standard disk, stamped "F 64 1931" and set in the top of a concrete post. (802.918 meters or 2,634.240 feet.)

G 64.—About 5.6 miles northwest along the Ochoco Highway from **Mitchell**, Wheeler County, in front of a ranch house on a platform, 36 feet northward from the center line of the highway, and 36 feet west of a gate. A standard disk, stamped "G 64 1931" and set in the top of a concrete post. (750.900 meters or 2,463.578 feet.)

H 64 (O. S. H. D.).—About 4.2 miles northwest along the Ochoco Highway from **Mitchell**, Wheeler County, in the northwest pier of the highway bridge over Bridge Creek. An Oregon State Highway Department standard disk, stamped "H 64 1931." (710.475 meters or 2,330.950 feet.)

2379 (U. S. G. S.).—About 3.6 miles northwest along the Ochoco Highway from **Mitchell**, Wheeler County, 50 feet east of the junction of Bridge Creek and Gable Creek, 50 feet south of the center line of the highway, 8 feet north of Bridge Creek, and about 10 feet lower than the roadway, in a rock outcrop. A United States Geological Survey standard disk, stamped "2379 1915." (725.008 meters or 2,378.630 feet.)

J 64 (O. S. H. D.).—About 2.1 miles northwest along the Ochoco Highway from **Mitchell**, Wheeler County, northeast of the highway, at the northwest corner of the entrance to the Jones Garage, next to the door casing, in the concrete floor. An Oregon State Highway Department standard disk, stamped "J 64 1931." (781.838 meters or 2,565.080 feet.)

2767 (U. S. G. S.).—At **Mitchell**, Wheeler County, in the west part of the town, at the center of the east edge of the Campbell yard, 50 feet north of the center line of the highway. A United States Geological Survey standard cap, stamped "2767 1915" and riveted on the top of a 3½-inch iron pipe. (843.506 meters or 2,767.403 feet.)

K 64.—At **Mitchell**, Wheeler County, on the south side of Main Street (Ochoco Highway), just west of the Standard Oil Co. service station, in the curb in front of a shoe repair shop. A standard disk, stamped "K 64 1931." (846.333 meters or 2,776.877 feet.)

L 64.—At **Mitchell**, Wheeler County, in the curb at the southeast corner of Main Street (Ochoco Highway) and Nelson Street. A standard disk, stamped "L 64 1931." (849.724 meters or 2,787.803 feet.)

M 64 (O. S. H. D.).—At Mitchell, Wheeler County, in the east part of the town, in the curb at the northwest corner of the highway bridge over Bridge Creek. An Oregon State Highway Department standard disk, stamped "M 64 1931." (857.803 meters or 2,814.309 feet.)

N 64 (U. S. F. S.).—About 0.5 mile east along the Ochoco Highway from Mitchell, Wheeler County, 186 feet southeast of the center line of the highway, and 30 feet east of a side road, in a rock ledge behind a barn. A United States Forest Service standard disk, stamped "N 64 1931." (871.444 meters or 2,859.062 feet.)

P 64 (O. S. H. D.).—About 1.8 miles east along the Ochoco Highway from Mitchell, Wheeler County, about 175 feet west of a wooden bridge, and 20 feet westward from the center line of the highway, in a boulder. An Oregon State Highway Department standard disk, stamped "P 64 1931." (946.586 meters or 3,105.591 feet.)

Q 64.—About 3.2 miles east along the Ochoco Highway from Mitchell, Wheeler County, 300 feet southwest of the H. H. Wheeler monument, 225 feet northeast of the Custer Keyes ranch house, and 42 feet southeast of the center line of the highway. A standard disk, stamped "Q 64 1931" and set in the top of a concrete post. (1,031.915 meters or 3,385.541 feet.)

QQ 64 (O. S. H. D.).—About 3.3 miles east along the Ochoco Highway from Mitchell, Wheeler County, 400 feet northeast of a wooden bridge, about 25 feet north of the center line of the highway, and about 12 feet higher than the roadway, in a rock outcrop. An Oregon State Highway Department standard disk, stamped "QQ 64 1931." (1,044.194 meters or 3,425.826 feet.)

R 64 (O. S. H. D.).—About 5.1 miles east along the Ochoco Highway from Mitchell, Wheeler County, in the middle of a deep rock cut, 15 feet north of the center line of the highway, in rock. An Oregon State Highway Department standard disk, stamped "R 64 1931." (1,177.353 meters or 3,862.699 feet.)

S 64 (O. S. H. D.).—About 6.4 miles east along the Ochoco Highway from Mitchell, Wheeler County, inside a U curve, 60 feet southeast of the center line of the highway, in a shelf at the west base of a prominent natural rock monument. An Oregon State Highway Department standard disk, stamped "S 64 1931." (1,283.100 meters or 4,209.637 feet.)

T 64 (O. S. H. D.).—About 7.2 miles east along the Ochoco Highway from Mitchell, Wheeler County, at Keyes Pass, 170 feet north of the center line of the highway, and 40 feet east of a small pine tree. An Oregon State Highway Department standard disk, stamped "T 64 1931" and set in the top of a concrete post. (1,342.072 meters or 4,403.115 feet.)

U 64.—About 9.2 miles east along the Ochoco Highway from Mitchell, Wheeler County, 0.3 mile east of a store and tourist camp, and 42 feet north of the center line of the highway. A standard disk, stamped "U 64 1931" and set in the top of a concrete post. (1,243.314 meters or 4,079.106 feet.)

V 64.—About 11.3 miles east along the Ochoco Highway from Mitchell, Wheeler County, 330 feet west of a concrete culvert, and 36 feet north of the center line of the highway. A standard disk, stamped "V 64 1931" and set in the top of a concrete post. (1,203.267 meters or 3,947.699 feet.)

W 64.—About 13.5 miles east along the Ochoco Highway from Mitchell, Wheeler County, 0.2 mile east of a ranch with several large sheds, and 36 feet north of the center line of the highway, at the fence line. A standard disk, stamped "W 64 1931" and set in the top of a concrete post. (1,178.979 meters or 3,868.034 feet.)

X 64 (U. S. F. S.).—About 15.6 miles east along the Ochoco Highway from Mitchell, Wheeler County, 75 feet west of the road leading southward to Antone, and 30 feet south of the highway. A United States Forest Service standard disk, stamped "X 64 1931" and set in the top of a tile and concrete post. (1,164.428 meters or 3,820.294 feet.)

Y 64.—In Wheeler County, about 15.2 miles west along the Ochoco Highway from Picture Gorge, Grant County, in the south end of the west head wall of a concrete box culvert under the highway. A standard disk, stamped "Y 64 1931." (1,138.871 meters or 3,736.446 feet.)

Z 64.—In Wheeler County, about 14.5 miles west along the Ochoco Highway from Picture Gorge, Grant County, 0.1 mile north of a bridge across a creek and 100 feet eastward across the creek from the highway, in a rock outcrop. A standard disk, stamped "Z 64 1931." (1,125.345 meters or 3,692.069 feet.)

A 70.—In Wheeler County, about 12.3 miles west along the Ochoco Highway from **Picture Gorge**, Grant County, at the north end of a curve to the west, and 140 feet eastward across the creek from the center line of the highway, in the base of a cliff. A standard disk, stamped "A 70 1931." (1,074.599 meters or 3,525.580 feet.)

B 70.—In Wheeler County, about 11.7 miles west along the Ochoco Highway from **Picture Gorge**, Grant County, midway of a short tangent, 30 feet north of the center line of the highway, and 8 feet higher than the roadway, in a boulder on the hillside. A standard disk, stamped "B 70 1931." (1,067.867 meters or 3,503.494 feet.)

C 70.—In Wheeler County, about 10.5 miles west along the Ochoco Highway from **Picture Gorge**, Grant County, at the top of a short, sharp hill, and 25 feet southwest of the center line of the highway, in the top of a boulder. A standard disk, stamped "C 70 1931." (1,061.665 meters or 3,483.146 feet.)

D 70.—In Wheeler County, about 9.4 miles west along the Ochoco Highway from **Picture Gorge**, Grant County, at the west end of a curve, and 20 feet northeast of the center line of the highway, in the base of a cliff. A standard disk, stamped "D 70 1931." (986.744 meters or 3,237.343 feet.)

E 70.—In Wheeler County, about 7.3 miles west along the Ochoco Highway from **Picture Gorge**, Grant County, on a ridge between two dry washes, 60 feet northeast of the center line of the highway, and about 8 feet higher than the roadway, in a boulder. A standard disk, stamped "E 70 1931." (917.138 meters or 3,008.977 feet.)

F 70.—In Wheeler County, about 6.5 miles west along the Ochoco Highway from **Picture Gorge**, Grant County, 10 feet north of two small juniper trees, and 30 feet southwest of the center line of the highway, in the top of a small boulder. A standard disk, stamped "F 70 1931." (861.019 meters or 2,824.860 feet.)

G 70.—In Wheeler County, about 5.1 miles west along the Ochoco Highway from **Picture Gorge**, Grant County, 200 feet south of a sharp turn to the west, and 130 feet west of the center line of the highway, in a rock outcrop across the creek. A standard disk, stamped "G 70 1931." (814.506 meters or 2,672.258 feet.)

H 70 (O. S. H. D.).—In Wheeler County, about 4.1 miles west along the Ochoco Highway from **Picture Gorge**, Grant County, in the curb at the northwest corner of the highway bridge over Rock Creek. An Oregon State highway Department standard disk, stamped "H 70 1931." (782.351 meters or 2,566.763 feet.)

J 70.—In Wheeler County, about 3.5 miles west along the Ochoco Highway from **Picture Gorge**, Grant County, at a point where the creek makes a sharp turn to the north, 125 feet northwest across the creek from the center line of the highway, in a rock outcrop. A standard disk, stamped "J 70 1931." (765.231 meters or 2,510.595 feet.)

K 70.—In Wheeler County, about 2.7 miles west along the Ochoco Highway from **Picture Gorge**, Grant County, in the top of the east end of a concrete siphon box on the north side of the highway. A standard disk, stamped "K 70 1931." (750.687 meters or 2,462.879 feet.)

L 70.—About 1.2 miles westward from the north end of **Picture Gorge**, Grant County, 100 feet northwest across Rock Creek from the center line of the highway, and 6 feet lower than the roadway, in a rock bluff. A standard disk, stamped "L 70 1931." (717.018 meters or 2,352.417 feet.)

M 70.—About 0.1 mile west along the Ochoco Highway from the north end of **Picture Gorge**, Grant County, about 0.1 mile west of the junction with the John Day Highway, and 18 feet southeast of the center line of the highway, in a rock outcrop. A standard disk, stamped "M 70 1931." (682.202 meters or 2,238.191 feet.)

V 37 (O. S. H. D.).—See page 154.

LINE 20, LAKEVIEW, OREG., TO FERNLEY, NEV. (PART)

[First-order leveling]

This line follows the Southern Pacific Co. railroad from Lakeview, Oreg., south to the Oregon-California State line. The field work

was done during the summer of 1931 by Curtis Le Fever and J. Laskowski, junior hydrographic and geodetic engineers.

N 16.—See page 39.

O 16.—See page 39.

P 16.—See page 39.

W 67.—At **Lakeview**, Lake County, in the base of the west wall of the Southern Pacific Co. railroad station, near the north end of the center window, and about 16 inches above the walk. A standard disk, stamped "W 67 1931" and set vertically. (1,446.532 meters or 4,745.830 feet.)

X 67.—About 3.5 miles south along the Southern Pacific Co. railroad from **Lakeview**, Lake County, 20 feet north of a road crossing, and 45 feet east of the track, in a fence corner. A standard disk, stamped "X 67 1931" and set in the top of a concrete post. (1,437.423 meters or 4,715.945 feet.)

Y 67.—About 5.3 miles south along the Southern Pacific Co. railroad from **Lakeview**, Lake County, 75 feet south of a cattle crossing, 48 feet east of the track, and 7 feet south of a fence corner. A standard disk, stamped "Y 67 1931" and set in the top of a concrete post. (1,441.373 meters or 4,728.905 feet.)

Z 67.—About 8.1 miles south along the Southern Pacific Co. railroad from **Lakeview**, Lake County, about 500 feet north of the F. D. Deter ranch house, 27 feet south of a crossroad, and 48 feet east of the track, in a fence corner. A standard disk, stamped "Z 67 1931" and set in the top of a concrete post. (1,437.699 meters or 4,716.851 feet.)

A 68.—About 10.7 miles south along the Southern Pacific Co. railroad from **Lakeview**, Lake County, about 0.5 mile west of the J. F. Sherrard ranch house, 200 feet north of a cattle crossing, and 45 feet east of the track, in a fence corner. A standard disk, stamped "A 68 1931" and set in the top of a concrete post. (1,440.888 meters or 4,727.313 feet.)

B 68.—About 12.5 miles south along the Southern Pacific Co. railroad from **Lakeview**, Lake County, about 2.5 miles north of the siding at **New Pine Creek**, near mileage 500.35, and 51 feet east of the track, at the fence line, at the south side of a gate. A standard disk, stamped "B 68 1931" and set in the top of a concrete post. (1,438.225 meters or 4,718.576 feet.)

LINE 21, JOHN DAY TO BURNS, OREG.

[First-order leveling]

This line follows the highway from John Day to Canyon City and the Canyon City-Burns Highway from Canyon City to Burns. The section from John Day to Canyon City was run as a spur from the Arlington to Vale line. The field work for this section was done during the fall of 1930 by Charles Pierce, hydrographic and geodetic engineer, and Curtis Le Fever, junior hydrographic and geodetic engineer. The field work for the section from Canyon City to Burns was done during the summer of 1931 by H. J. Oliver, junior hydrographic and geodetic engineer, and E. E. Stohsner, aid.

3084 (U. S. B. P. R.).—See page 156.

M 34 (O. S. H. D.).—At **Canyon City**, Grant County, on the west side of Main Street, in front of the Blue Mountain Eagle office, in the sidewalk close to the curb. An Oregon State Highway Department standard disk, stamped "M 34 1930." (973.570 meters or 3,194.121 feet.)

MM 34.—At **Canyon City**, Grant County, on the east side of Main Street, at the post office, in the second stone above the sidewalk, and just south of the door. A standard disk, stamped "MM 34 1930" and set vertically. (974.948 meters or 3,198.642 feet.)

MX 34 (U. S. F. S.).—At **Canyon City**, Grant County, at the northwest corner of Washington Street and Izee Hill road, in front of the fire station, and in line with the north side of the building, in the sidewalk. A United States Forest Service standard disk, stamped "MX 34 1931." (973.438 meters or 3,193.688 feet.)

3235 (U. S. B. P. R.).—At **Canyon City**, Grant County, at the southwest city limits, at the northeast right-of-way line of the Canyon City-Burns Highway, about 150 feet northeast of Canyon Creek, just southeast of a sharp

curve, in an old road at the foot of a bluff. A United States Bureau of Public Roads standard disk, stamped "3235 35 1929" and set in the top of a concrete post. (985.839 meters or 3,234.373 feet.)

3237 (U. S. B. P. R.).—About 0.7 mile south along the Canyon City-Burns Highway from Canyon City, Grant County, at the north end of a curve, and 40 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "3237 35 1929" and set in the top of a concrete post. (986.417 meters or 3,236.270 feet.)

3273 (U. S. B. P. R.).—About 1.2 miles south along the Canyon City-Burns Highway from Canyon City, Grant County, at the north end of a curve, 40 feet southwest of the center line of the highway, on the creek bank. A United States Bureau of Public Roads standard disk, stamped "3273 1929" and set in the top of a concrete post. (997.296 meters or 3,271.962 feet.)

3368 (U. S. B. P. R.).—About 2.3 miles south along the Canyon City-Burns Highway from Canyon City, Grant County, at the north end of a curve, opposite the "Winding Road" sign, 40 feet northwest of the highway, and 20 feet east of the creek. A United States Bureau of Public Roads standard disk, stamped "3368 1929" and set in the top of a concrete post. (1,026.314 meters or 3,367.165 feet.)

3473 (U. S. B. P. R.).—About 3 miles south along the Canyon City-Burns Highway from Canyon City, Grant County, at the south end of a curve, and 40 feet southeast of the highway. A United States Bureau of Public Roads standard disk, stamped "3473 35 1929" and set in the top of a concrete post. (1,058.186 meters or 3,471.732 feet.)

3493 (U. S. B. P. R.).—About 3.2 miles south along the Canyon City-Burns Highway from Canyon City, Grant County, 40 feet east of the center line of the highway, and about 4 feet lower than the highway. A United States Bureau of Public Roads standard disk, stamped "3493 1929" and set in the top of a concrete post. (1,064.458 meters or 3,492.309 feet.)

3572 (U. S. B. P. R.).—About 3.8 miles south along the Canyon City-Burns Highway from Canyon City, Grant County, at the south end of a curve, and 30 feet southeast of the highway. A United States Bureau of Public Roads standard disk, stamped "3572 35 1929" and set in the top of a concrete post. (1,088.690 meters or 3,571.810 feet.)

3609 (U. S. B. P. R.).—About 4.2 miles south along the Canyon City-Burns Highway from Canyon City, Grant County, 200 feet north of a small ranch house, 40 feet north of a gate, and 40 feet southeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "3609 35 1929" and set in the top of a concrete post. (1,099.952 meters or 3,608.759 feet.)

3664 (U. S. B. P. R.).—About 5 miles south along the Canyon City-Burns Highway from Canyon City, Grant County, at the north end of a curve to the west, and 40 feet east of the highway. A United States Bureau of Public Roads standard disk, stamped "3664 35 1929" and set in the top of a concrete post. (1,116.451 meters or 3,662.890 feet.)

N 70.—About 7.2 miles south along the Canyon City-Burns Highway from Canyon City, Grant County, about in the middle of a long curve, and 25 feet east of the center line of the highway, at a fence corner. A standard disk, stamped "N 70 1931" and set in the top of a concrete post. (1,164.727 meters or 3,821.275 feet.)

P 70.—About 9.2 miles south along the Canyon City-Burns Highway from Canyon City, Grant County, at the north end of a cut bank, and 28 feet west of the center line of the highway, on the south bank of a dry wash under the road. A standard disk, stamped "P 70 1931" and set in the top of a concrete post. (1,274.981 meters or 4,183.000 feet.)

Q 70.—About 11.2 miles south along the Canyon City-Burns Highway from Canyon City, Grant County, on the side of a hill, about in the middle of the U curve, 50 feet west of a culvert in a fill, and 35 feet north of the center line of the highway. A standard disk, stamped "Q 70 1931" and set in the top of a concrete post. (1,490.891 meters or 4,891.365 feet.)

R 70 (U. S. F. S.).—About 12.5 miles south along the Canyon City-Burns Highway from Canyon City, Grant County, at the summit of a hill, half way between two curve signs, and 30 feet southwest of the center line of the highway. A United States Forest Service standard disk, stamped "R 70 1931" and set in the top of a concrete post. (1,572.317 meters or 5,158.510 feet.)

S 70.—About 8.4 miles north along the Canyon City-Burns Highway from Seneca, Grant County, across the road from the Masonic camp ground, opposite a water trough, 26 feet west of the center line of the highway, and 4 feet south of a gate. A standard disk, stamped "S 70 1931" and set in the top of a concrete post. (1,479.439 meters or 4,853.793 feet.)

T 70.—About 6.4 miles north along the Canyon City-Burns Highway from Seneca, Grant County, 0.2 mile north of the edge of the forest, and 27 feet east of the center line of the highway, at the fence line. A standard disk, stamped "T 70 1931" and set in the top of a concrete post. (1,449.005 meters or 4,753.944 feet.)

U 70.—About 4.4 miles north along the Canyon City-Burns Highway from Seneca, Grant County, 300 feet north of the north end of a snow fence, 230 feet north of a pipe culvert, and 27 feet east of the center line of the highway, at the fence line. A standard disk, stamped "U 70 1931" and set in the top of a concrete post. (1,439.383 meters or 4,722.376 feet.)

V 70.—About 2.4 miles north along the Canyon City-Burns Highway from Seneca, Grant County, 200 feet south of a house and some barns, and 25 feet east of the center line of the highway, at the fence line. A standard disk, stamped "V 70 1931" and set in the top of a concrete post. (1,427.320 meters or 4,682.799 feet.)

W 70 (U. S. B. P. R.).—About 1.1 miles north along the Canyon City-Burns Highway from Seneca, Grant County, 0.1 mile north of a wooden bridge, at the north end of a curve, and 30 feet west of the center line of the highway, at the fence line. A United States Bureau of Public Roads standard disk, stamped "W 70 1931" and set in the top of a concrete post. (1,424.261 meters or 4,672.763 feet.)

WW 70 (U. S. B. P. R.).—About 1.1 miles north along the Canyon City-Burns Highway from Seneca, Grant County, 0.1 mile north of a wooden bridge, at the north end of a curve, and 30 feet east of the center line of the highway. This mark is across the road from W 70, described above. A United States Bureau of Public Roads standard disk, stamped "WW 70 1931" and set in the top of a concrete post. (1,425.414 meters or 4,676.546 feet.)

X 70 (U. S. B. P. R.).—About 0.6 mile north along the Canyon City-Burns Highway from Seneca, Grant County, 500 feet north of a Standard Oil Co. warehouse, at the south end of a curve, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "X 70 1931" and set in the top of a concrete post. (1,423.569 meters or 4,670.493 feet.)

Y 70 (U. S. B. P. R.).—About 0.6 mile north along the Canyon City-Burns Highway from Seneca, Grant County, 500 feet north of a Standard Oil Co. warehouse, at the south end of a curve, and 40 feet east of the center line of the highway, at the fence line. This mark is across the road from X 70, described above. A United States Bureau of Public Roads standard disk, stamped "Y 70 1931" and set in the top of a concrete post. (1,423.462 meters or 4,670.142 feet.)

Z 70.—At Seneca, Grant County, at the south entrance of the schoolhouse, in the west end of the third step. A standard disk, stamped "Z 70 1931." (1,422.957 meters or 4,668.485 feet.)

B 71 (U. S. F. S.).—At Seneca, Grant County, at the northwest corner of the intersection, and at the southeast corner of the café, in the sidewalk. A United States Forest Service standard disk, stamped "B 71 1931." (1,422.196 meters or 4,665.988 feet.)

4667 (U. S. B. P. R.).—At Seneca, Grant County, at the northwest corner of the intersection, and at the southeast corner of the café, in the sidewalk. A United States Bureau of Public Roads standard disk, stamped "4667 1929." (1,422.202 meters or 4,666.008 feet.)

C 71 (U. S. B. P. R.).—At Seneca, Grant County, 50 feet north of the Seneca Co. store, opposite the filling station, and 40 feet west of the center line of the Canyon City-Burns Highway. A United States Bureau of Public Roads standard disk, stamped "C 71 1931" and set in the top of a concrete post. (1,421.343 meters or 4,663.189 feet.)

A 71 (U. S. B. P. R.).—At Seneca, Grant County, at the southeast corner of the intersection, and at the north end of the lawn at the northwest corner of the filling-station yard. A United States Bureau of Public Roads standard disk, stamped "A 71 1931" and set in the top of a concrete post. (1,422.576 meters or 4,667.235 feet.)

D 71 (U. S. B. P. R.).—About 0.7 mile south along the Canyon City-Burns Highway from Seneca, Grant County, at the south end of a curve, and 40 feet southwest of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "D 71 1931" and set in the top of a concrete post. (1,421.333 meters or 4,663.157 feet.)

DD 71 (U. S. B. P. R.).—About 0.7 mile south along the Canyon City-Burns Highway from Seneca, Grant County, at the south end of a curve, and 40 feet northeast of the center line of the highway. This mark is across the road from D 71, described above. A United States Bureau of Public Roads standard disk, stamped "DD 71 1931" and set in the top of a concrete post. (1,422.925 meters or 4,668.380 feet.)

E 71.—About 2.8 miles south along the Canyon City-Burns Highway from Seneca, Grant County, opposite a pole bridge, 200 feet west of the highway, and 40 feet east of the railroad track, at the right-of-way fence. A standard disk, stamped "E 71 1931" and set in the top of a concrete post. (1,415.655 meters or 4,644.528 feet.)

F 71.—About 5.9 miles south along the Canyon City-Burns Highway from Seneca, Grant County, at the middle of a short tangent, 45 feet east of the railroad track, and 30 feet west of the center line of the highway, at the fence line. A standard disk, stamped "F 71 1931" and set in the top of a concrete post. (1,405.281 meters or 4,610.493 feet.)

161 (U. S. B. P. R.).—About 2.6 miles north along the Canyon City-Burns Highway from Silvies, Grant County, about at the middle of a cut at the east end of a tangent, and 40 feet southwest of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4612 161 1929" and set in the top of a concrete post. (1,405.397 meters or 4,610.873 feet.)

160 (U. S. B. P. R.).—About 2.1 miles north along the Canyon City-Burns Highway from Silvies, Grant County, midway between a cut and a short fill, 42 feet east of the center line of the highway, inside the right-of-way fence, and 6 feet above the level of the highway. A United States Bureau of Public Roads standard disk, stamped "4619 160 1929" and set in the top of a concrete post. (1,407.453 meters or 4,617.619 feet.)

157 (U. S. B. P. R.).—About 1.6 miles north along the Canyon City-Burns Highway from Silvies, Grant County, about 100 feet south of the summit of a small rise, and 40 feet west of the center line of the highway, at the fence line. A United States Bureau of Public Roads standard disk, stamped "4613 157 1929" and set in the top of a concrete post. (1,405.748 meters or 4,612.025 feet.)

158 (U. S. B. P. R.).—About 1.6 miles north along the Canyon City-Burns Highway from Silvies, Grant County, about 100 feet south of the summit of a small rise, and 40 feet east of the center line of the highway, at the fence line. A United States Bureau of Public Roads standard disk, stamped "35 158 1929" and set in the top of a concrete post. (1,405.780 meters or 4,612.130 feet.)

156 (U. S. B. P. R.).—About 1.1 miles north along the Canyon City-Burns Highway from Silvies, Grant County, 300 feet north of a gate on the east side of the road, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 156 1929" and set in the top of a concrete post. (1,396.231 meters or 4,580.801 feet.)

155 (U. S. B. P. R.).—About 1.1 miles north along the Canyon City-Burns Highway from Silvies, Grant County, 300 feet north of a gate on the east side of the road, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4583 155 1929" and set in the top of a concrete post. (1,396.686 meters or 4,582.294 feet.)

154 (U. S. B. P. R.).—About 0.2 mile north along the Canyon City-Burns Highway from Silvies, Grant County, 150 feet south of a board gate, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 154 1929" and set in the top of a concrete post. (1,396.204 meters or 4,581.008 feet.)

153 (U. S. B. P. R.).—About 0.2 mile north along the Canyon City-Burns Highway from Silvies, Grant County, 150 feet south of a board gate, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4582 153 1929" and set in the top of a concrete post. (1,396.253 meters or 4,580.873 feet.)

152 (U. S. B. P. R.).—About 0.15 mile north along the Canyon City-Burns Highway from Silvies, Grant County, 30 feet north of a side road, opposite a

culvert, and 37 feet east of the center line of the highway, in line with a row of poles. A United States Bureau of Public Roads standard disk, stamped "4583 152 1929" and set in the top of a concrete post. (1,396.514 meters or 4,581.730 feet.)

151 (U. S. B. P. R.).—About 0.1 mile north along the Canyon City-Burns Highway from Silvies, Grant County, and 36 feet west of the center line of the highway, at the fence line halfway between two corners. A United States Bureau of Public Roads standard disk, stamped "4588 151 1929" and set in the top of a concrete post. (1,397.954 meters or 4,586.454 feet.)

149 (U. S. B. P. R.).—At Silvies, Grant County, opposite the store, 40 feet west of the center line of the Canyon City-Burns Highway, and 4 feet below the level of the highway. A United States Bureau of Public Roads standard disk, stamped "35 149 1929" and set in the top of a concrete post. (1,398.149 meters or 4,587.094 feet.)

G 71.—About 0.3 mile south along the Canyon City-Burns Highway from Silvies, Grant County, 75 feet south of the junction with the road to Myrtle Park, and 40 feet west of the center line of the highway, at the end of the fence. A standard disk, stamped "G 71 1931" and set in the top of a concrete post. (1,396.279 meters or 4,580.959 feet.)

148 (U. S. B. P. R.).—About 0.7 mile south along the Canyon City-Burns Highway from Silvies, Grant County, 650 feet south of a wooden bridge, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4577 148 1929" and set in the top of a concrete post. (1,394.696 meters or 4,575.765 feet.)

147 (U. S. B. P. R.).—About 0.7 mile south along the Canyon City-Burns Highway from Silvies, Grant County, 650 feet south of a wooden bridge, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 147 1929" and set in the top of a concrete post. (1,394.464 meters or 4,575.004 feet.)

146 (U. S. B. P. R.).—About 1.4 miles south along the Canyon City-Burns Highway from Silvies, Grant County, 75 feet north of survey station 1770, at the north end of a curve, and 40 feet east of the center line of the highway, at the fence line. A United States Bureau of Public Roads standard disk, stamped "4568 146 1929" and set in the top of a concrete post. (1,391.900 meters or 4,566.592 feet.)

145 (U. S. B. P. R.).—About 1.4 miles south along the Canyon City-Burns Highway from Silvies, Grant County, 75 feet north of survey station 1770, at the north end of a curve, and 40 feet west of the center line of the highway, at the fence line. A United States Bureau of Public Roads standard disk, stamped "35 145 1929" and set in the top of a concrete post. (1,391.661 meters or 4,565.808 feet.)

144 (U. S. B. P. R.).—About 1.8 miles south along the Canyon City-Burns Highway from Silvies, Grant County, 150 feet south of a board gate, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4564 144 1929" and set in the top of a concrete post. (1,390.760 meters or 4,562.852 feet.)

143 (U. S. B. P. R.).—About 1.8 miles south along the Canyon City-Burns Highway from Silvies, Grant County, 150 feet south of a board gate, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 143 1929" and set in the top of a concrete post. (1,390.458 meters or 4,561.861 feet.)

142 (U. S. B. P. R.).—About 2.6 miles south along the Canyon City-Burns Highway from Silvies, Grant County, at survey station 1705+69, at the north end of a curve, and 40 feet east of the highway. A United States Bureau of Public Roads standard disk, stamped "4559 142 1929" and set in the top of a concrete post. (1,389.258 meters or 4,557.924 feet.)

141 (U. S. B. P. R.).—About 2.6 miles south along the Canyon City-Burns Highway from Silvies, Grant County, at survey station 1705+69, at the north end of a curve, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 141 1929" and set in the top of a concrete post. (1,389.043 meters or 4,557.219 feet.)

140 (U. S. B. P. R.).—About 2.8 miles south along the Canyon City-Burns Highway from Silvies, Grant County, at survey station 1697+75, at the south end of a curve, 40 feet east of the center line of the highway, and 30 feet south of the fence corner. A United States Bureau of Public Roads standard disk, stamped "4559 140 1929" and set in the top of a concrete post. (1,389.385 meters or 4,558.341 feet.)

139 (U. S. B. P. R.).—About 2.8 miles south along the Canyon City-Burns Highway from *Silvies*, Grant County, at survey station 1697+75, at the south end of a curve, 40 feet west of the center line of the highway, and 30 feet south of the fence corner. A United States Bureau of Public Roads standard disk, stamped "35 139 1929" and set in the top of a concrete post. (1,388.492 meters or 4,555.411 feet.)

137 (U. S. B. P. R.).—About 3.7 miles south along the Canyon City-Burns Highway from *Silvies*, Grant County, at survey station 1652+71, 60 feet north of a wooden bridge, at the north end of a curve, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4556 137 1929" and set in the top of a concrete post. (1,388.486 meters or 4,555.391 feet.)

138 (U. S. B. P. R.).—About 3.7 miles south along the Canyon City-Burns Highway from *Silvies*, Grant County, at survey station 1652+71, 60 feet north of a wooden bridge, at the north end of a curve, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 138" and set in the top of a concrete post. (1,388.702 meters or 4,556.100 feet.)

135 (U. S. B. P. R.).—About 4.1 miles south along the Canyon City-Burns Highway from *Silvies*, Grant County, at survey station 1630+67, at the south end of a curve, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4567 135 1929" and set in the top of a concrete post. (1,391.820 meters or 4,566.329 feet.)

136 (U. S. B. P. R.).—About 4.1 miles south along the Canyon City-Burns Highway from *Silvies*, Grant County, at survey station 1630+67, at the south end of a curve, and 40 feet east of the center line of the highway, at the fence line. A United States Bureau of Public Roads standard disk, stamped "35 136" and set in the top of a concrete post. (1,393.289 meters or 4,571.149 feet.)

134 (U. S. B. P. R.).—On the Harney-Grant County line, about 5.2 miles south along the Canyon City-Burns Highway from *Silvies*, Grant County, on the south line of T. 18 S., R. 32 E., and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4551 134 1929" and set in the top of a concrete post. (1,386.834 meters or 4,549.971 feet.)

133 (U. S. B. P. R.).—On the Harney-Grant County line, about 5.2 miles south along the Canyon City-Burns Highway from *Silvies*, Grant County, on the south line of T. 18 S., R. 32 E., and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 133" and set in the top of a concrete post. (1,386.837 meters or 4,549.981 feet.)

H 71.—In Harney County, about 6.2 miles south along the Canyon City-Burns Highway from *Silvies*, Grant County, and about 36 feet east of the center line of the highway, at a fence corner. A standard disk, stamped "H 71 1931" and set in the top of a concrete post. (1,387.176 meters or 4,551.093 feet.)

132 (U. S. B. P. R.).—In Harney County, about 7.2 miles south along the Canyon City-Burns Highway from *Silvies*, Grant County, 250 feet north of the south line of sec. 7, T. 19 S., R. 32 E., at survey station 1471+80, at the summit of a hill, and 40 feet east of the center line of the highway, at the fence line. A United States Bureau of Public Roads standard disk, stamped "4604 132 1929" and set in the top of a concrete post. (1,402.969 meters or 4,602.907 feet.)

131 (U. S. B. P. R.).—In Harney County, about 7.2 miles south along the Canyon City-Burns Highway from *Silvies*, Grant County, 250 feet north of the south line of sec. 7, T. 19 S., R. 32 E., at survey station 1471+80, at the summit of a hill, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 131" and set in the top of a concrete post. (1,402.871 meters or 4,602.586 feet.)

J 71 (U. S. F. S.).—In Harney County, about 8.2 miles south along the Canyon City-Burns Highway from *Silvies*, Grant County, 900 feet south of Trout Creek, at the north end of a curve, and 40 feet east of the center line of the highway. A United States Forest Service standard disk, stamped "J 71 1931" and set in the top of a concrete post. (1,389.513 meters or 4,558.761 feet.)

130 (U. S. B. P. R.).—In Harney County, about 8.2 miles south along the Canyon City-Burns Highway from *Silvies*, Grant County, 900 feet south of Trout Creek, at survey station 1396+24, at the north end of a curve, and

40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 130" and set in the top of a concrete post. (1,389.641 meters or 4,559.180 feet.)

129 (U. S. B. P. R.).—In Harney County, about 8.2 miles south along the Canyon City-Burns Highway from **Silvies**, Grant County, 900 feet south of Trout Creek, at survey station 1396+24, at the north end of a curve, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 129 4562 1929" and set in the top of a concrete post. (1,390.239 meters or 4,561.142 feet.)

127 (U. S. B. P. R.).—In Harney County, about 8.6 miles south along the Canyon City-Burns Highway from **Silvies**, Grant County, 500 feet south of a side road across the railroad track, at the south end of a curve, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 127" and set in the top of a concrete post. (1,397.022 meters or 4,583.396 feet.)

128 (U. S. B. P. R.).—In Harney County, about 8.6 miles south along the Canyon City-Burns Highway from **Silvies**, Grant County, 500 feet south of a side road across the railroad track, at the south end of curve, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4583 128 1929" and set in the top of a concrete post. (1,396.624 meters or 4,582.091 feet.)

K 71.—About 24.3 miles north along the Canyon City-Burns Highway from **Burns**, Harney County, on the Oregon & Northwestern Railroad, about 1,500 feet west of the highway and 200 feet higher than the highway, 50 feet north of a railroad bridge, 70 feet east of the track, 8 feet north of a gate, and 3 feet west of a fence, in a lava boulder. A standard disk, stamped "K 71 1931." (1,471.714 meters or 4,828.448 feet.)

L 71.—About 22.2 miles north along the Canyon City-Burns Highway from **Burns**, Harney County, on the Oregon & Northwestern Railroad, 50 feet south of the side road which leads to Myrtle Bend, and 55 feet southwest of the track, at the fence corner. A standard disk, stamped "L 71 1931" and set in the top of a concrete post. (1,520.624 meters or 4,988.914 feet.)

97 (U. S. B. P. R.).—About 20.7 miles north along the Canyon City-Burns Highway from **Burns**, Harney County, 270 feet south of the north quarter corner of sec. 14, T. 20 S., R. 31 E., 200 feet north of Oregon & Northwestern Railroad milepost 26, at survey station 1043+16, at the north end of a curve, 20 feet northeast of the track, and 20 feet northwest of the center line of the highway, at the fence line. A United States Bureau of Public Roads standard disk, stamped "5113 97 1929" and set in the top of a concrete post. (1,558.241 meters or 5,112.329 feet.)

93 (U. S. B. P. R.).—About 19.6 miles north along the Canyon City-Burns Highway from **Burns**, Harney County, about 370 feet south of the north line of sec. 23, T. 20 S., R. 31 E., at survey station 984+57, at the north end of a curve and of a cut, and 40 feet southwest of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "5192 93 1929" and set in the top of a concrete post. (1,582.398 meters or 5,191.584 feet.)

94 (U. S. B. P. R.).—About 19.6 miles north along the Canyon City-Burns Highway from **Burns**, Harney County, about 370 feet south of the north line of sec. 23, T. 20 S., R. 31 E., at survey station 984+57, at the north end of a curve and of a cut, and 40 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 94 1929" and set in the top of a concrete post. (1,582.758 meters or 5,192.765 feet.)

92 (U. S. B. P. R.).—About 19.3 miles north along the Canyon City-Burns Highway from **Burns**, Harney County, at survey station 967+62, at the south end of a curve, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "5248 92 1929" and set in the top of a concrete post. (1,599.310 meters or 5,247.070 feet.)

91 (U. S. B. P. R.).—About 19.3 miles north along the Canyon City-Burns Highway from **Burns**, Harney County, at survey station 967+62, at the south end of a curve, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 91 1929" and set in the top of a concrete post. (1,600.956 meters or 5,252.470 feet.)

90 (U. S. B. P. R.).—About 18.8 miles north along the Canyon City-Burns Highway from **Burns**, Harney County, at survey station 941+32, 150 feet north of several tall trees at the west edge of the highway, at the south end of a curve, and 40 feet northeast of the center line of the highway. A United States

Bureau of Public Roads standard disk, stamped "5279 90 1929" and set in the top of a concrete post. (1,608.914 meters or 5,278.579 feet.)

89 (U. S. B. P. R.).—About 18.8 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 941+32, 150 feet north of several tall trees at the west edge of the highway, at the south end of a curve, and 40 feet southwest of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 89 1929" and set in the top of a concrete post. (1,610.141 meters or 5,282.604 feet.)

M 71 (U. S. F. S.).—About 18.5 miles north along the Canyon City-Burns Highway from Burns, Harney County, 255 feet north of survey station 920, and 25 feet east of the center line of the highway. A United States Forest Service standard disk, stamped "M 71 1931" and set in the top of a concrete post. (1,616.120 meters or 5,302.220 feet.)

87 (U. S. B. P. R.).—About 18.4 miles north along the Canyon City-Burns Highway from Burns, Harney County, 759 feet south, measured along the highway, from the south line of sec. 22, T. 20 S., R. 31 E., at survey station 917+44, 150 feet south of a culvert, at the south end of a curve, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 87 1929" and set in the top of a concrete post. (1,614.810 meters or 5,297.922 feet.)

88 (U. S. B. P. R.).—About 18.4 miles north along the Canyon City-Burns Highway from Burns, Harney County, 759 feet south, measured along the highway, from the south line of sec. 22, T. 20 S., R. 31 E., at survey station 917+44, 150 feet south of a culvert, at the south end of a curve, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "5301 88 1929" and set in the top of a concrete post. (1,615.607 meters or 5,300.537 feet.)

86 (U. S. B. P. R.).—About 18.1 miles north along the Canyon City-Burns Highway from Burns, Harney County, about 0.3 mile north of the summit, at survey station 901+87, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "5313 86 1929" and set in the top of a concrete post. (1,619.309 meters or 5,312.683 feet.)

85 (U. S. B. P. R.).—About 18.1 miles north along the Canyon City-Burns Highway from Burns, Harney County, about 0.3 mile north of the summit, at survey station 901+87, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 85 1929" and set in the top of a concrete post. (1,617.369 meters or 5,306.318 feet.)

N 71.—About 17.8 miles north along the Canyon City-Burns Highway from Burns, Harney County, at the summit, 200 feet south of two tall trees on the east side of the road, and 27 feet west of the center line of the highway. A standard disk, stamped "N 71 1931" and set in the top of a concrete post. (1,628.104 meters or 5,341.538 feet.)

84 (U. S. B. P. R.).—About 17.7 miles north along the Canyon City-Burns Highway from Burns, Harney County, about 0.1 mile south of the summit, at survey station 879+77, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 84 1929" and set in the top of a concrete post. (1,623.722 meters or 5,327.161 feet.)

83 (U. S. B. P. R.).—About 17.7 miles north along the Canyon City-Burns Highway from Burns, Harney County, about 0.1 mile south of the summit, at survey station 879+77, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "5332 83 1929" and set in the top of a concrete post. (1,625.064 meters or 5,331.564 feet.)

82 (U. S. B. P. R.).—About 17.1 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 848+20, at the south end of a curve, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 82 1929" and set in the top of a concrete post. (1,596.554 meters or 5,238.028 feet.)

81 (U. S. B. P. R.).—About 17.1 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 848+20, at the south end of a curve, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "5238 81 1929" and set in the top of a concrete post. (1,596.398 meters or 5,237.516 feet.)

80 (U. S. B. P. R.).—About 17.0 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 842+74, at the north end of a curve, and 40 feet east of the center line of the highway. A United

States Bureau of Public Roads standard disk, stamped "35 80 1929" and set in the top of a concrete post. (1,588.023 meters or 5,210.039 feet.)

79 (U. S. B. P. R.).—About 17.0 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 842+74, at the north end of a curve, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "5208 79 1929" and set in the top of a concrete post. (1,587.205 meters or 5,207.355 feet.)

5073 (U. S. B. P. R.).—About 16.2 miles north along the Canyon City-Burns Highway from Burns, Harney County, 0.1 mile north of the John Devine Monument, at the north end of a curve, and 40 feet east of the center line of the highway, on the east bank of the creek. A United States Bureau of Public Roads standard disk, stamped "5073 1929" and set in the top of a concrete post. (1,546.259 meters or 5,073.018 feet.)

NOTE.—This mark is believed to be the same as the one described by the United States Bureau of Public Roads as being at survey station 805, about 240 feet west of the northeast corner of sec. 4, T. 21 S., R. 31 E., and stamped "5074 78A 1929."

78 (U. S. B. P. R.).—About 15.9 miles north along the Canyon City-Burns Highway from Burns, Harney County, 47 feet south and 329 feet west of the east quarter corner of sec. 4, T. 21 S., R. 31 E., at survey station 790+30, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "5047 78 1929" and set in the top of a concrete post. (1,538.293 meters or 5,046.883 feet.)

76 (U. S. B. P. R.).—About 15.8 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 782+21, at the north end of a curve, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "5037 76 1929" and set in the top of a concrete post. (1,535.089 meters or 5,036.371 feet.)

71 (U. S. B. P. R.).—About 15.2 miles north along the Canyon City-Burns Highway from Burns, Harney County, 500 feet south of a sawmill, at survey station 750+22, at the north end of a curve, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4915 71 1929" and set in the top of a concrete post. (1,498.026 meters or 4,914.774 feet.)

67 (U. S. B. P. R.).—About 14.6 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 718, in the middle of a short tangent, and 35 feet west of the center line of the highway, opposite a stone monument. A United States Bureau of Public Roads standard disk, stamped "4825 67 1929" and set in the top of a concrete post. (1,470.450 meters or 4,824.301 feet.)

65 (U. S. B. P. R.).—About 14.4 miles north along the Canyon City-Burns Highway from Burns, Harney County, on the south line of sec. 9, T. 21 S., R. 31 E., at survey station 709+51, at the boundary of the Malheur National Forest, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4806 65 1929" and set in the top of a concrete post. (1,464.840 meters or 4,805.896 feet.)

63 (U. S. B. P. R.).—About 14.3 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 703+69, at the south end of a curve, and 40 feet west of the center line of the highway, on the west bank of the creek. A United States Bureau of Public Roads standard disk, stamped "4797 63 1929" and set in the top of a concrete post. (1,461.916 meters or 4,796.803 feet.)

61 (U. S. B. P. R.).—About 14.1 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 695+18, at the north end of a curve, and 40 feet west of the center line of the highway, on the west bank of the creek. A United States Bureau of Public Roads standard disk, stamped "4776 61 1929" and set in the top of a concrete post. (1,455.673 meters or 4,775.820 feet.)

4704 (U. S. B. P. R.).—About 13.3 miles north along the Canyon City-Burns Highway from Burns, Harney County, 200 feet north of a small house on the east side of the road, and 40 feet east of the center line of the highway, on the east bank of the creek. A United States Bureau of Public Roads standard disk, stamped "4704 1929" and set in the top of a concrete post. (1,433.855 meters or 4,704.249 feet.)

NOTE.—This mark is believed to be the same as the one described by the United States Bureau of Public Roads as being at survey station 651+64, west of the creek, and stamped "4705 58 1929."

4653 (U. S. B. P. R.).—About 12.6 miles north along the Canyon City-Burns Highway from Burns, Harney County, at the south end of a curve, and 40 feet east of the center line of the highway, on the east bank of the creek. A United States Bureau of Public Roads standard disk, stamped "4653 1929" and set in the top of a concrete post. (1,418.310 meters or 4,653.239 feet.)

NOTE.—This mark is believed to be the same as the one described by the United States Bureau of Public Roads as being at survey station 618+19, west of the creek, and stamped "4654 56 1929."

4622 (U. S. B. P. R.).—About 12.4 miles north along the Canyon City-Burns Highway from Burns, Harney County, at the north end of a curve, and 40 feet east of the center line of the highway, on the east bank of the creek. A United States Bureau of Public Roads standard disk, stamped "4622 1929" and set in the top of a concrete post. (1,408.900 meters or 4,622.366 feet.)

NOTE.—This mark is believed to be the same as the one described by the United States Bureau of Public Roads as being at survey station 608+89, and stamped "4623 54 1929."

P 71.—About 11.7 miles north along the Canyon City-Burns Highway from Burns, Harney County, 100 feet west of a prominent stone monument, about in the middle of a long curve, and 30 feet northeast of the center line of the highway. A standard disk, stamped "P 71 1931" and set in the top of a concrete post. (1,382.253 meters or 4,534.942 feet.)

50 (U. S. B. P. R.).—About 11.8 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 577+33, at the north end of a curve, 40 feet northeast of the center line of the highway, and 20 feet west of a 4-foot pine tree. A United States Bureau of Public Roads standard disk, stamped "4548 50 1929" and set in the top of a concrete post. (1,386.049 meters or 4,547.396 feet.)

49 (U. S. B. P. R.).—About 11.4 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 558+27, at the south end of a curve, and 40 feet west of the center line of the highway, at the foot of a rock outcrop on the hillside. A United States Bureau of Public Roads standard disk, stamped "35 49 1929" and set in the top of a concrete post. (1,384.658 meters or 4,542.832 feet.)

48 (U. S. B. P. R.).—About 11.4 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 558+27, at the south end of a curve, and 40 feet east of the center line of the highway, at the foot of a rock outcrop on the hillside. A United States Bureau of Public Roads standard disk, stamped "4488 48 1929" and set in the top of a concrete post. (1,367.694 meters or 4,487.176 feet.)

45 (U. S. B. P. R.).—About 11.3 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 551+19, at the north end of a curve, and 35 feet west of the center line of the highway, on the bank of the creek, in the top of a boulder. A United States Bureau of Public Roads standard disk, stamped "4467 45 1929." (1,361.382 meters or 4,466.467 feet.)

4387 (U. S. B. P. R.).—About 10.8 miles north along the Canyon City-Burns Highway from Burns, Harney County, at the south end of a curve, and 40 feet west of the center line of the highway, on the west bank of the creek. A United States Bureau of Public Roads standard disk, stamped "4387 1929" and set in the top of a concrete post. (1,337.284 meters or 4,387.406 feet.)

NOTE.—This mark is believed to be the same as the one described by the United States Bureau of Public Roads as being at survey station 524+91, east of the creek, and stamped "4388 43 1929."

4364 (U. S. B. P. R.).—About 10.6 miles north along the Canyon City-Burns Highway from Burns, Harney County, at the north end of a curve, and 40 feet west of the center line of the highway, on the west bank of the creek. A United States Bureau of Public Roads standard disk, stamped "4364 1929" and set in the top of a concrete post. (1,330.108 meters or 4,363.863 feet.)

NOTE.—This mark is believed to be the same as the one described by the United States Bureau of Public Roads as being at survey station 515+92, east of Taylor Fork Poison Creek, and stamped "4364 41 1929."

4310 (U. S. B. P. R.).—About 10.0 miles north along the Canyon City-Burns Highway from Burns, Harney County, at the north end of a curve, and 40 feet west of the center line of the highway, on the west bank of the creek. A United

States Bureau of Public Roads standard disk, stamped "4310 1929" and set in the top of a concrete post. (1,313.755 meters or 4,310.211 feet.)

NOTE.—This mark is believed to be the same as the one described by the United States Bureau of Public Roads as being at survey station 484+81, east of Taylor Fork Poison Creek, and stamped "4311 39 1929."

37 (U. S. B. P. R.).—About 9.4 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 454+76, at the place where the road approaches the railroad, at the north end of a curve, 40 feet west of the center line of the highway, and 4 feet below the level of the road, at the fence line. A United States Bureau of Public Roads standard disk, stamped "4283 37 1929" and set in the top of a concrete post. (1,305.370 meters or 4,282.701 feet.)

4264 (U. S. B. P. R.).—About 8.8 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 423+63, 40 feet north-east of the center of the highway, and about 30 feet east of a gate opposite a ranch house which stands about 1,000 feet back from the highway. A United States Bureau of Public Roads standard disk, stamped "4264 35 36 1929" and set in the top of a concrete post. (1,299.561 meters or 4,263.643 feet.)

36 (U. S. B. P. R.).—About 8.8 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 423+63, 40 feet south-west of the center of the Highway, and about 30 feet east of a gate opposite a ranch house which stands about 1,000 feet back from the highway. A United States Bureau of Public Roads standard disk, stamped "35 36" and set in the top of a concrete post. (1,299.223 meters or 4,262.534 feet.)

Q 71.—About 7.8 miles north along the Canyon City-Burns Highway from Burns, Harney County, at the crossing of the Oregon & Northwestern Railroad, 75 feet west along the track from the crossing, 30 feet south of the track, and 8 feet east of a fence corner. A standard disk, stamped "Q 71 1931" and set in the top of a concrete post. (1,294.218 meters or 4,246.114 feet.)

4232 (U. S. B. P. R.).—About 7.5 miles north along the Canyon City-Burns Highway from Burns, Harney County, 0.3 mile south of the crossing of the Oregon & Northwestern Railroad, at the north end of a sharp curve, and 40 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4232 1929" and set in the top of a concrete post. (1,290.000 meters or 4,232.275 feet.)

NOTE.—This mark is believed to be the same as the one described by the United States Bureau of Public Roads as being 30 feet east of survey station 358+22, between the highway and Poison Creek, and stamped "4233 32 1929."

30 (U. S. B. P. R.).—About 6.8 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 326+23, at the south end of a long S curve, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4221 30 1929" and set in the top of a concrete post. (1,286.532 meters or 4,220.897 feet.)

28 (U. S. B. P. R.).—About 6.6 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 318+25, 40 feet north of a culvert at the north end of a curve, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4219 28 1929" and set in the top of a concrete post. (1,285.998 meters or 4,219.145 feet.)

27 (U. S. B. P. R.).—About 6.6 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 318+25, 40 feet north of a culvert at the north end of a curve, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 27 1929" and set in the top of a concrete post. (1,285.128 meters or 4,216.291 feet.)

25 (U. S. B. P. R.).—About 6.0 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 285+80, opposite a small white ranch house, at the south end of a curve, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4207 25 1929" and set in the top of a concrete post. (1,282.170 meters or 4,206.586 feet.)

23 (U. S. B. P. R.).—About 5.6 miles north along the Canyon City-Burns Highway from Burns, Harney County, about 500 feet south of the northwest corner of sec. 22, T. 22 S., R. 31 E., at survey station 265, in the middle of a

long tangent, at the point where the road parallels the track, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4197 23 1929" and set in the top of a concrete post. (1,279.304 meters or 4,197.183 feet.)

24 (U. S. B. P. R.).—About 5.6 miles north along the Canyon City-Burns Highway from Burns, Harney County, about 500 feet south of the northwest corner of sec. 22, T. 22 S., R. 31 E., at survey station 265, in the middle of a long tangent, at the point where the road parallels the track, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "35 24 1929" and set in the top of a concrete post. (1,279.369 meters or 4,197.396 feet.)

R 71 (U. S. B. P. R.).—About 5.0 miles north along the Canyon City-Burns Highway from Burns, Harney County, at survey station 270, at the north end of a curve, and 40 feet east of the center line of the highway, on the east bank of a wash. A United States Bureau of Public Roads standard disk, stamped "R 71 1931" and set in the top of a concrete post. (1,275.218 meters or 4,183.778 feet.)

S 71 (U. S. B. P. R.).—About 4.1 miles north along the Canyon City-Burns Highway from Burns, Harney County, 0.2 mile north of a large barn, at the south end of a long curve, 45 feet northwest of the railroad track, and 40 feet southeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "S 71 1929" and set in the top of a concrete post. (1,270.692 meters or 4,168.929 feet.)

SS 71 (U. S. B. P. R.).—About 4.1 miles north along the Canyon City-Burns Highway from Burns, Harney County, 0.2 mile north of a large barn, at the south end of a long curve, 125 feet northwest of the railroad track, and 40 feet northwest of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "SS 71 1929" and set in the top of a concrete post. (1,270.913 meters or 4,169.654 feet.)

T 71 (U. S. B. P. R.).—About 3.7 miles north along the Canyon City-Burns Highway from Burns, Harney County, at the north end of a curve, 45 feet west of the railroad track, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "T 71 1929" and set in the top of a concrete post. (1,268.118 meters or 4,160.484 feet.)

TT 71 (U. S. B. P. R.).—About 3.7 miles north along the Canyon City-Burns Highway from Burns, Harney County, at the north end of a curve, 125 feet west of the track, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "TT 71 1929" and set in the top of a concrete post. (1,269.110 meters or 4,163.738 feet.)

U 71 (U. S. B. P. R.).—About 2.5 miles north along the Canyon City-Burns Highway from Burns, Harney County, at the southeast corner of a road crossing, 20 feet north of survey station 140, and 40 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "U 71 1929" and set in the top of a concrete post. (1,267.362 meters or 4,158.003 feet.)

UU 71 (U. S. B. P. R.).—About 2.5 miles north along the Canyon City-Burns Highway from Burns, Harney County, at the northwest corner of a road crossing, 20 feet north of survey station 140, and 40 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "UU 71 1929" and set in the top of a concrete post. (1,267.331 meters or 4,158.066 feet.)

V 71.—About 1.5 miles north along the Canyon City-Burns Highway from Burns, Harney County, 90 feet south of a wooden highway bridge, in front of a small ranch house, 45 feet east of the center line of the highway, and 7 feet south of a gate. A standard disk, stamped "V 71 1931" and set in the top of a concrete post. (1,266.918 meters or 4,156.547 feet.)

W 71 (U. S. B. P. R.).—About 0.4 mile north along the Canyon City-Burns Highway from Burns, Harney County, 150 feet north of a small square house, 40 feet southeast of the center line of the highway, and 6 feet north of the fence corner. A United States Bureau of Public Roads standard disk, stamped "W 71 1929" and set in the top of a concrete post. (1,266.091 meters or 4,153.834 feet.)

WW 71 (U. S. B. P. R.).—About 0.4 mile north along the Canyon City-Burns Highway from Burns, Harney County, 150 feet north of a small square house, 40 feet northwest of the center line of the highway, and 6 feet north of the fence corner. This mark is across the road from W 71, described above. A

United State Bureau of Public Roads standard disk, stamped "WW 71 1929" and set in the top of a concrete post. (1,266.058 meters or 4,153.725 feet.)

Y 71.—About 2.3 miles southwest along the Central Oregon Highway from **Burns**, Harney County, midway between two houses on the west side of the road, 38 feet east of the center line of the highway, and 15 feet south of a side road, at the corner of an old fence. A standard disk, stamped "Y 71 1931" and set in the top of a concrete post. (1,264.408 meters or 4,148.312 feet.)

Z 71.—About 4.2 miles southwest along the Central Oregon Highway from **Burns**, Harney County, on the east side of the highway, in the retaining wall around the spring feeding the Hines mill pond, and about 12 feet east of the southwest corner of the pool. A standard disk, stamped "Z 71 1931." (1,263.027 meters or 4,143.781 feet.)

For additional bench marks in the vicinity of **Burns**, see pages 16 and 43.

LINE 22, GRANTS PASS, OREG., TO CRESCENT CITY, CALIF. (PART)

[First-order leveling]

This line follows the Pacific Highway from **Grants Pass**, Oreg., to its junction with the Redwood Highway, and the Redwood Highway from this point to the Oregon-California State line. The field work was done during the winter of 1930-31 by J. H. Brittain, junior hydrographic and geodetic engineer, and E. E. Stohsner, junior engineer.

A 8.—See page 60.

F 56.—In the south part of **Grants Pass**, Josephine County, at the southwest corner of the Pacific Highway bridge over Rogue River, in the concrete sidewalk. A standard disk, stamped "F 56 1930." (280.713 meters or 920.973 feet.)

G 56.—About 1.2 miles south along the Pacific Highway from the Southern Pacific Co. railroad station at **Grants Pass**, Josephine County, at the point where the roads form a Y, 45 feet west of the Pacific Highway, and 54 feet south of the Redwood Highway. A standard disk, stamped "G 56 1930" and set in the top of a concrete post. (287.290 meters or 942.551 feet.)

H 56 (O. S. H. D.).—About 2.1 miles southwest along the highway from the Southern Pacific Co. railroad station at **Grants Pass**, Josephine County, on the Redwood Highway, at a concrete culvert over Allen Creek, in the top of the west end of the south head wall. An Oregon State Highway Department standard disk, stamped "H 56 1930." (278.385 meters or 913.335 feet.)

J 56 (O. S. H. D.).—About 2.7 miles southwest along the highway from the Southern Pacific Co. railroad station at **Grants Pass**, Josephine County, on the Redwood Highway, on a concrete culvert over a small creek, in the top of the north head wall. An Oregon State Highway Department standard disk, stamped "J 56 1930." (281.842 meters or 924.677 feet.)

K 56 (O. S. H. D.).—About 4.1 miles southwest along the highway from the Southern Pacific Co. railroad station at **Grants Pass**, Josephine County, on the Redwood Highway, on the concrete culvert over Sand Creek, in the top of the center of the north head wall. An Oregon State Highway Department standard disk, stamped "K 56 1930." (283.087 meters or 928.761 feet.)

914 (U. S. G. S.).—About 4.8 miles southwest along the highway from the Southern Pacific Co. railroad station at **Grants Pass**, Josephine County, about 0.7 mile west of Sand Creek, at the north edge of the Redwood Highway, in line with a row of power poles. A United States Geological Survey standard cap, stamped "914 B 1904" and riveted on the top of a 3½-inch iron pipe concreted in a file. (278.906 meters or 915.044 feet.)

L 56 (O. S. H. D.).—About 5.5 miles southwest along the highway from the Southern Pacific Co. railroad station at **Grants Pass**, Josephine County, on the Redwood Highway, on a concrete culvert over a drain ditch, in the top of the south head wall. An Oregon State Highway Department standard disk, stamped "L 56 1930." (283.273 meters or 929.371 feet.)

964 (U. S. G. S.).—About 8.4 miles southwest along the highway from the Southern Pacific Co. railroad station at **Grants Pass**, Josephine County, on the Redwood Highway, about 0.2 mile east of the Applegate River bridge, near the junction with the Jerome Prairie road, and about 60 feet south of the center

line of the highway. A United States Geological Survey standard cap, stamped "964 B 1904" and riveted on the top of a 3½-inch iron pipe. (294.148 meters or 965.049 feet.)

Norm.—The elevation of this mark was determined in 1931 by the Oregon State Highway Department.

M 56 (O. S. H. D.).—About 8.6 miles southwest along the highway from the Southern Pacific Co. railroad station at **Grants Pass**, Josephine County, on the Redwood Highway, on the steel bridge over the Applegate River, in the top of the south side of the west concrete pier. An Oregon State Highway Department standard disk, stamped "M 56 1930." (278.781 meters or 914.634 feet.)

936 (U. S. G. S.).—About 10.4 miles southwest along the highway from the Southern Pacific Co. railroad station at Grants Pass, at **Wilderville**, Josephine County, on the north side of the Redwood Highway, opposite a store, and near the fence. A United States Geological Survey standard cap, stamped "936 B 1904" and riveted on the top of a 3½-inch iron pipe concreted in a tile. (285.585 meters or 936.957 feet.)

N 56 (O. S. H. D.).—About 0.5 mile southwest along the Redwood Highway from **Wilderville**, Josephine County, on the culvert over Minnie Creek, in the top of the west end of the south head wall. An Oregon State Highway Department standard disk, stamped "N 56 1930." (288.907 meters or 947.856 feet.)

P 56.—About 1.3 miles southwest along the Redwood Highway from **Wilderville**, Josephine County, opposite an old sawmill, on a concrete highway culvert, in the top of the south end of the west head wall. A standard disk, stamped "P 56 1930." (298.531 meters or 979.430 feet.)

R 56 (O. S. H. D.).—About 1.5 miles northeast along the Redwood Highway from the post office at **Wonder**, Josephine County, on a concrete highway culvert over a drain ditch, in the top of the north end of the east head wall. An Oregon State Highway Department standard disk, stamped "R 56 1930." (304.894 meters or 1,000.306 feet.)

1077 (U. S. G. S.).—About 0.5 mile east along the Redwood Highway from the post office at **Wonder**, Josephine County, about 400 feet north of the highway, and 1 foot north of the steps of the former post office. A United States Geological Survey standard cap, stamped "1077 B 1904" and riveted on the top of a 3½-inch iron pipe concreted in a tile. (328.518 meters or 1,077.813 feet.)

S 56 (O. S. H. D.).—About 0.2 mile east along the Redwood Highway from the post office at **Wonder**, Josephine County, on the concrete highway culvert over Wilson Creek, in the west end of the south head wall. An Oregon State Highway Department standard disk, stamped "S 56 1930." (321.015 meters or 1,053.197 feet.)

T 56 (O. S. H. D.).—About 0.7 mile southwest along the Redwood Highway from the post office at **Wonder**, Josephine County, at the northwest corner of the highway bridge over Waters Creek, in the concrete wing wall. An Oregon State Highway Department standard disk, stamped "T 56 1930." (333.581 meters or 1,094.424 feet.)

U 56 (O. S. H. D.).—About 2.0 miles southwest along the Redwood Highway from the post office at **Wonder**, Josephine County, at the northwest corner of the highway bridge over the Slate Creek overflow, in the top of the concrete wing wall. An Oregon State Highway Department standard disk, stamped "U 56 1930." (356.471 meters or 1,169.522 feet.)

V 56 (O. S. H. D.).—About 2.1 miles southwest along the Redwood Highway from the post office at **Wonder**, Josephine County, at the northwest corner of the highway bridge over Slate Creek, in the top of the concrete wing wall. An Oregon State Highway Department standard disk, stamped "V 56 1930." (358.876 meters or 1,177.412 feet.)

W 56 (O. S. H. D.).—About 2.2 miles southwest along the Redwood Highway from the post office at **Wonder**, Josephine County, at the northwest corner of the highway bridge over Butcherknife Creek, in the top of the concrete wing wall. An Oregon State Highway Department standard disk, stamped "W 56 1930." (359.444 meters or 1,179.276 feet.)

1226 (U. S. G. S.).—About 2.8 miles southwest along the Redwood Highway from the post office at **Wonder**, Josephine County, about 0.7 mile west of Butcherknife Creek, at the foot of the grade leading to the summit of Hayes

Hill, about 300 feet north of and across a creek from the highway, and about 100 feet east of the abandoned station at Love, at the north edge of the old stage road. A United States Geological Survey standard cap, stamped "1226 B 1904" and riveted on the top of a 3½-inch iron pipe concreted in a tile. The concrete is flush with the top of the cap giving it the appearance of a disk set in the top of a concrete tile. (373.900 meters or 1,226.704 feet.)

X 56 (O. S. H. D.).—About 4.6 miles southwest along the Redwood Highway from the post office at **Wonder**, Josephine County, at the summit of Hayes Hill, about 200 feet east of the west end of the cut, and about 75 feet north of the center line of the highway. An Oregon State Highway Department standard disk, stamped "X 56 1930" and set in the top of a concrete post. (505.845 meters or 1,659.593 feet.)

1454 (U. S. G. S.).—About 2.3 miles northeast along the Redwood Highway from **Selma**, Josephine County, and about 200 feet west of the highway, in front of the old Anderson station, 4 feet west of the fence line. A United States Geological Survey standard cap, stamped "1454 B 1904" and riveted on the top of a 3½-inch iron pipe concreted in a tile. (443.379 meters or 1,454.653 feet.)

Y 56 (O. S. H. D.).—About 2.1 miles northeast along the Redwood Highway from **Selma**, Josephine County, and about 0.2 mile southwest of Anderson station, in the northwest corner of Anderson Bridge. An Oregon Highway Department standard disk, stamped "Y 56 1930." (438.833 meters or 1,439.738 feet.)

Z 56 (O. S. H. D.).—About 1.0 mile north along the Redwood Highway from **Selma**, Josephine County, in the northwest corner of the concrete highway bridge over Clear Creek. An Oregon State Highway Department standard disk, stamped "Z 56 1930." (422.459 meters or 1,386.018 feet.)

1323 (U. S. G. S.).—At **Selma**, Josephine County, just across the street from the post office, at the west edge of the Redwood Highway, at a fence corner. A United States Geological Survey standard cap, stamped "1323 B 1904" and riveted on the top of a 3½-inch iron pipe concreted in a tile. (403.812 meters or 1,324.840 feet.)

A 57 (O. S. H. D.).—About 0.6 mile south along the Redwood Highway from **Selma**, Josephine County, about 600 feet south of the Log Cabin Hotel, in the northwest corner of the concrete highway bridge over Deer Creek. An Oregon State Highway Department standard disk, stamped "A 57 1930." (398.495 meters or 1,307.396 feet.)

B 57 (O. S. H. D.).—About 2.6 miles south along the Redwood Highway from **Selma**, Josephine County, on the highway bridge over Montgomery Creek, in the southeast concrete wing wall. An Oregon State Highway Department standard disk, stamped "B 57 1930." (420.586 meters or 1,379.873 feet.)

C 57 (O. S. H. D.).—About 1.9 miles north along the Redwood Highway from **Kerby**, Josephine County, at the northwest corner of the highway bridge over Reeves Creek, in the concrete wing wall. An Oregon State Highway Department standard disk, stamped "C 57 1930." (377.013 meters or 1,236.917 feet.)

D 57 (O. S. H. D.).—About ¼ mile north along the Redwood Highway from **Kerby**, Josephine County, opposite the city limit sign, in the southwest corner of a concrete highway culvert. An Oregon State Highway Department standard disk, stamped "D 57 1930." (382.758 meters or 1,255.765 feet.)

1263 (U. S. G. S.).—At **Kerby**, Josephine County, on the west side of the Redwood Highway, 1 foot from the southeast corner of the Taff store building. A United States Geological Survey standard cap, stamped "1263 2 1915" and set in the footing of the foundation. (384.925 meters or 1,262.875 feet.)

E 57 (O. S. H. D.).—About 0.4 mile south along the Redwood Highway from **Kerby**, Josephine County, at the northwest corner of the highway bridge over Holton Creek, in the concrete wing wall. An Oregon State Highway Department standard disk, stamped "E 57 1930." (385.878 meters or 1,266.001 feet.)

F 57 (O. S. H. D.).—About 1.4 miles south along the Redwood Highway from **Kerby**, Josephine County, at the concrete highway bridge over George Creek, in the top of the southeast wing wall. An Oregon State Highway Department standard disk, stamped "F 57 1930." (397.021 meters or 1,302.560 feet.)

G 57 (O. S. H. D.).—About 2.9 miles south along the Redwood Highway from **Kerby**, Josephine County, and 15 feet north of the highway bridge over the East Fork Illinois River, on the concrete highway culvert over the Kerby irrigation ditch, in the top of the southeast corner of the head wall. An Oregon

State Highway Department standard disk, stamped "G 57 1930." (394.463 meters or 1,294.167 feet.)

H 57 (O. S. H. D.).—About 4.4 miles south along the Redwood Highway from **Kerby**, Josephine County, on a concrete highway culvert, in the south end of the east head wall. An Oregon State Highway Department standard disk, stamped "H 57 1930." (398.993 meters or 1,309.030 feet.)

J 57 (O. S. H. D.).—About 5.6 miles south along the Redwood Highway from **Kerby**, Josephine County, on the highway bridge over the West Fork Illinois River, in the top of the northwest pier. An Oregon State Highway Department standard disk, stamped "J 57 1930." (402.690 meters or 1,321.159 feet.)

K 57 (O. S. H. D.).—About 5.8 miles south along the Redwood Highway from **Kerby**, Josephine County, and about 0.2 mile south of the bridge over the West Fork, Illinois River, at the northwest corner of the highway bridge over Mendenhall Creek, in the concrete curb. An Oregon State Highway Department standard disk, stamped "K 57 1930." (403.122 meters or 1,322.576 feet.)

L 57 (O. S. H. D.).—About 7.8 miles south along the Redwood Highway from **Kerby**, Josephine County, at the northwest corner of the highway bridge over Rough and Ready Creek, in the top of the concrete wing wall. An Oregon State Highway Department standard disk, stamped "L 57 1930." (422.716 meters or 1,386.861 feet.)

M 57 (O. S. H. D.).—About 9.5 miles south along the Redwood Highway from **Kerby**, Josephine County, about 0.4 mile north of the post office at **O'Brien**, on the concrete highway culvert over O'Brien Creek, in the top of the south end of the east head wall. An Oregon State Highway Department standard disk, stamped "M 57 1930." (429.316 meters or 1,408.514 feet.)

1465 (U. S. G. S.).—About 11 miles south of **Kerby**, Josephine County, about 1 mile west of the Redwood Highway, about 1,000 feet east of a bridge, about 600 feet west of a mail box, and 15 feet north of the old stage road leading to Wimer Creek, in a bowlder. A United States Geological Survey standard disk, stamped "1465 6 1915." (446.573 meters or 1,465.132 feet.)

N 57 (O. S. H. D.).—About 11.0 miles south along the Redwood Highway from **Kerby**, Josephine County, about 1.2 miles south of the post office at **O'Brien**, and about 4.2 miles north of the Oregon-California State line, on a concrete highway culvert, in the south end of the west head wall. An Oregon State Highway Department standard disk, stamped "N 57 1930." (447.938 meters or 1,469.610 feet.)

P 57 (O. S. H. D.).—About 12.7 miles south along the Redwood Highway from **Kerby**, Josephine County, and about 2.5 miles north of the Oregon-California State line, on a concrete highway culvert, in the top of the west head wall. An Oregon State Highway Department standard disk, stamped "P 57 1930." (494.260 meters or 1,621.585 feet.)

R 57 (O. S. H. D.).—About 12.9 miles south along the Redwood Highway from **Kerby**, Josephine County, and about 2.3 miles north of the Oregon-California State line, on the concrete highway culvert over Gilligan Creek, in the top of the east head wall. An Oregon State Highway Department standard disk, stamped "R 57 1930." (487.244 meters or 1,598.566 feet.)

S 57 (O. S. H. D.).—About 14.4 miles south along the Redwood Highway from **Kerby**, Josephine County, and about 0.8 mile north of the Oregon California State line, at the southeast corner of the highway bridge over Dwight Creek, in the concrete curb. An Oregon State Highway Department standard disk, stamped "S 57 1930." (502.145 meters or 1,647.454 feet.)

LINE 23, PRINEVILLE TO ASHLAND, OREG.

[Second-order leveling by the United States Geological Survey]

This line follows the old stage road from Prineville through Powell Butte, Bend, Lapine, Crescent, Chemult, Beaver Marsh, Chinchalo, Sand Creek Junction, and Sun Pass to Fort Klamath. From Fort Klamath the line follows roads through Crystal, Rocky Point, and Deadwood via Dead Indian Mountain to Ashland. The field work was done during 1908 by L. F. Biggs.

2867 (U. S. G. S.).—See page 13.

Q 3 (U. S. G. S.).—About 1.9 miles southwest of Prineville, Crook County, about 3,000 feet northwest of the Ochoco Highway, 0.1 mile west of an old

quarry, at the summit of the grade, and 10 feet north of an abandoned road, in bed rock. A United States Geological Survey standard disk, stamped "3239 BB Q 3 1908." (984.395 meters or 3,229.635 feet.)

Q 2 (U. S. G. S.).—About 5.2 miles southwest of **Prineville**, Crook County, 5.8 miles east of Powell Butte, 0.8 mile northeast of the point where the Ochoco Highway makes a turn to the northeast, 800 feet northeast of the intersection of the highway and the old road, east of the highway, and 40 feet east of the old road, in a rock outcrop. A United States Geological Survey standard disk, stamped "3257 BB Q 2 1908." (992.683 meters or 3,256.827 feet.)

P 2 (U. S. G. S.).—About 2.0 miles eastward from **Powell Butte**, Crook County, 0.3 mile east of a road intersection, and 15 feet north of the old stage road used in 1908, in lava rock. A United States Geological Survey standard disk, stamped "3121 BB P 2 1908." (951.127 meters or 3,120.489 feet.)

O 2 (U. S. G. S.).—About 2.8 miles south of **Powell Butte**, Crook County, opposite the Shepherd School, at the southwest corner of a county-road intersection. A United States Geological Survey standard disk, stamped "3251 BB O 2 1908" and set in the top of a stone post. (990.741 meters or 3,250.455 feet.)

NOTE.—It was reported that this mark may have been disturbed and it should be used with caution.

N 2 (U. S. G. S.).—About 5.3 miles southwest of **Powell Butte**, Crook County, about 2.5 miles southwest of the Shepherd School, on the west bank of Dry River, 200 feet east and 90 feet north of the center of sec. 17, T. 16 S., R. 14 E., and 50 feet east of an old road, on a small knoll, in a lava outcrop. A United States Geological Survey standard disk, stamped "3170 BB N 2 1908." (966.095 meters or 3,169.597 feet.)

M 2 (U. S. G. S.).—About 12.5 miles northeast of **Bend**, Deschutes County, near the center of the north half of sec. 26, T. 16 S., R. 13 E., 20 feet north of the abandoned stage road, and 15 feet east of a 30-inch juniper tree, in a lava ledge. A United States Geological Survey standard disk, stamped "3256 BB M 2 1908." (992.099 meters or 3,254.913 feet.)

L 2 (U. S. G. S.).—About 8.1 miles northeast of **Bend**, Deschutes County, in the north half of sec. 8, T. 17 S., R. 13 E., about 20 feet south of the old stage road at a turn east around a rock ridge, in a lava outcrop. A United States Geological Survey standard disk, stamped "3342 BB L 2 1908." (1,018.568 meters or 3,341.752 feet.)

195 (U. S. G. S.).—About 5.7 miles northeast of **Bend**, Deschutes County, 300 feet north of the center of sec. 13, T. 17 S., R. 12 E., 10 feet west of the old stage road, and 80 feet east of a fence, in the base of a 20-inch forked juniper tree marked with a triangular blaze and an aluminum tag stamped "3417 BM 195." A nail. (1,041.429 meters or 3,416.756 feet.)

K 2 (U. S. G. S.).—About 4.8 miles northeast of **Bend**, Deschutes County, 100 feet north and 40 feet west of the southwest corner of sec. 13, T. 17 S., R. 12 E., northwest of the intersection of the old stage road and a T road east, in a rock outcrop. A United States Geological Survey standard disk, stamped "3439 BB K 2 1908." (1,048.075 meters or 3,438.558 feet.)

J 2 (U. S. G. S.).=**J 23.**—See page 50.

I 2 (U. S. G. S.).—See page 51.

H 2 (U. S. G. S.).—About 2.3 miles southwest of **Bend**, Deschutes County, on the west side of the old stage road, 5 feet west of a bridge, on the south bank of an irrigation ditch, in rock. A United States Geological Survey standard disk, stamped "3742 BB H 2 1908." (1,140.480 meters or 3,741.724 feet.)

NOTE.—In 1929 this mark was searched for but not recovered. It has probably been destroyed.

G 2 (U. S. G. S.).—About 7.1 miles southwest of **Bend**, Deschutes County, 0.5 mile west of The Dalles-California Highway, 1,000 feet north of a wet-weather spring, 600 feet southwest of a cabin, 150 feet east of an old cinder road, and 15 feet west of an old railroad grade, in a rock outcrop. A United States Geological Survey standard disk, stamped "3948 BB G 2 1908." (1,203.222 meters or 3,947.572 feet.)

184 (U. S. G. S.).—About 9.2 miles south of **Bend**, Deschutes County, on an abandoned road, in the base of a 40-inch ponderosa pine tree marked with a

triangular blaze and an aluminum tag stamped "4180 BM 184." A nail. (1,274.062 meters or 4,179.984 feet.)

F 2 (U. S. G. S.).—See page 182.

E 2 (U. S. G. S.).—About 4 miles southwest of **Lava Pass**, Deschutes County, and 0.3 mile northeast of **Shonquist** ranch, on the abandoned stage road, in a solitary lava outcrop. A United States Geological Survey standard disk, stamped "4234 BB E 2 1908." (1,290.276 meters or 4,233.182 feet.)

175 (U. S. G. S.).—About 12.7 miles north of **Lapine**, Deschutes County, about 1 mile west of The Dalles-California Highway, and about 1,000 feet north of the **Vandever** ranch, on the east side of the old stage road, in the east base of a 48-inch ponderosa pine tree marked with a triangular blaze and an aluminum tag stamped "4182 B.M. 175." A nail. (1,274.489 meters or 4,181.386 feet.)

4181 (O. T. Ry.).—About 10.5 miles north of **Lapine**, Deschutes County, and about 2 miles south of **Vandever** ranch, on the west side of the old stage road, near some small buildings used for logging operations, in the base of a pine tree marked with a blaze and inscribed "O.T.B.M. 4180.91." A nail. (1,274.603 meters or 4,181.759 feet.)

NOTE.—The elevation of this bench mark was determined by the Pacific Power & Light Co. in 1927.

D 2 (U. S. G. S.).—About 10.5 miles north of **Lapine**, Deschutes County, about 2 miles south of **Vandever** ranch, and 60 feet east of the old stage road, on the west slope of a small ridge, in a rock outcrop. A United States Geological Survey standard disk, stamped "4197 BB D 2 1908." (1,279.051 meters or 4,196.352 feet.)

173 (U. S. G. S.).—About 9.9 miles northward from **Lapine**, Deschutes County, on the west side of the old stage road, in the base of a 30-inch pine tree marked with a triangular blaze and an aluminum tag stamped "4179 B.M. 173." A nail. (1,273.751 meters or 4,178.964 feet.)

172 (U. S. G. S.).—About 8.6 miles north of **Lapine**, Deschutes County, and 20 feet west of the old stage road, west of the west fence, in the base of a 24-inch pine tree marked with a triangular blaze inscribed "4188" and an aluminum tag stamped "4181 B.M. 172." A nail. (1,276.365 meters or 4,187.540 feet.)

C 2 (U. S. G. S.).—About 6 miles north of **Lapine**, Deschutes County, about 1 mile west of The Dalles-California Highway, 0.5 mile south of **Paulina** Creek, and 10 feet west of the old stage road. A United States Geological Survey standard cap, stamped "4205 BB C 2 1908" and riveted on the top of a 3½-inch iron pipe, incased in concrete. (1,281.680 meters or 4,204.978 feet.)

168 (U. S. G. S.).—About 2.3 miles north of **Lapine**, Deschutes County, on the east side of the old stage road, in the base of a 20-inch pine tree marked with a triangular blaze and an aluminum tag stamped "4220 B.M. 168." A nail. (1,286.029 meters or 4,219.246 feet.)

B 2 (U. S. G. S.).—About 1.2 miles north of **Lapine**, Deschutes County, on the west side of the old stage road, at the southeast corner of the yard inclosing the abandoned **Rosland** post office. A United States Geological Survey standard cap, stamped "4226 BB B 2 1908" and riveted on the top of a 3½-inch iron pipe, incased in concrete. (1,288.132 meters or 4,226.146 feet.)

4232 (O. G. B.).—At **Lapine**, Deschutes County, in the north part of the town, at the southeast corner of the public school, on the concrete cap of the stone foundation. A chiseled square. (1,289.770 meters or 4,231.519 feet.)

NOTE.—This bench mark was established and its elevation determined by the Oregon Geographic Board in 1927.

4224 (O. T. Ry.).—About ¼ mile south of **Lapine**, Deschutes County, 50 feet west of The Dalles-California Highway, and just northward from **Long Prairie**, in the base of an 18-inch pine tree marked with a blaze and "4224.15." A nail. (1,287.704 meters or 4,224.743 feet.)

NOTE.—The elevation of this bench mark was determined by the Oregon Geographic Board in 1927.

N 62 (U. S. G. S.).—See page 184.

4223 (O. S. H. D.).—About 0.3 mile south of **Lapine**, Deschutes County, at the east edge of The Dalles-California Highway, just northeast of a concrete

culvert, in the base of an 18-inch pine tree marked "4223." A nail. (1,287.227 meters or 4,223.176 feet.)

NOTE.—The elevation of this bench mark was determined by the Oregon Geographic Board in 1927.

163 (U. S. G. S.).—About 4.5 miles southwest along the old River Road from the school at **Lapine**, Deschutes County, on the west side of the road, in the base of a 40-inch pine tree marked with a triangular blaze and an aluminum tag stamped "4249 B.M. 163." A nail. (1,294.983 meters or 4,248.622 feet.)

162 (U. S. G. S.).—About 5.8 miles southwest along the old River Road from the school at **Lapine**, Deschutes County, on the east side of the road, in the base of a 36-inch pine tree marked with a triangular blaze inscribed "4274 U.S.B.M." A nail. (1,302.503 meters or 4,273.296 feet.)

A 2 (U. S. G. S.).—About 7.2 miles southwest along the old River Road from the school at **Lapine**, Deschutes County, on the Deschutes-Klamath County line, 10 feet east of the road. A United States Geological Survey standard cap, stamped "4284 BB A 2 1908" and riveted on the top of a 3½-inch iron pipe, cased in concrete. (1,305.760 meters or 4,283.980 feet.)

Z 1 (U. S. G. S.).—About 10.8 miles northeast of **Crescent**, Klamath County, about 1.6 miles west of The Dalles-California Highway, on the old River Road, 40 feet northeast of the southwest corner of sec. 12, T. 23 S., R. 9 E. and 10 feet east of the roadway. A United States Geological Survey standard cap, stamped "4297 BB Z 1 1908" and riveted on the top of a 3½-inch iron pipe, cased in concrete. (1,309.446 meters or 4,296.075 feet.)

157 (U. S. G. S.).—About 5.6 miles northeast of **Crescent**, Klamath County, 0.4 mile east of The Dalles-California Highway, and about 10 feet west of the old River Road, in the base of a 36-inch ponderosa pine tree marked with a triangular blaze and an aluminum tag stamped "4387 B.M. 157." A nail. (1,337.066 meters or 4,386.691 feet.)

Y 1 (U. S. G. S.).—About 4.7 miles northeast of **Crescent**, Klamath County, about 0.4 mile east of The Dalles-California Highway, and 15 feet west of the old River Road, at the west edge of a small drain. A United States Geological Survey standard cap, stamped "4401 BB Y 1 1908" and riveted on the top of a 3½-inch iron pipe, incased in concrete. (1,341.247 meters or 4,400.409 feet.)

155 (U. S. G. S.).—About 2.2 miles northeast of **Crescent**, Klamath County, about ¼ mile east of The Dalles-California Highway, and 20 feet east of the old River Road, in the base of a 48-inch ponderosa pine tree marked with a triangular blaze and an aluminum tag stamped "4392 B.M. 155." A nail. (1,338.488 meters or 4,391.356 feet.)

X 1 (U. S. G. S.).—See page 185.

4455 (O. T. Ry.).—At **Crescent**, Klamath County, about 800 feet south of the road west to Crescent Lake, and 300 feet west of The Dalles-California Highway, in the base of a 14-inch pine tree marked "4455.31." A nail. (1,357.826 meters or 4,454.802 feet.)

NOTE.—The elevation of this bench mark was determined by the Oregon Geographic Board.

152 (U. S. G. S.).—About 2.8 miles southwest of **Crescent**, Klamath County, at mileage 191.9 on The Dalles-California Highway, near a concrete culvert in the middle of a long grade, and 36 feet east of the highway, in the base of a 30-inch pine tree marked with a triangular blaze and an aluminum tag stamped "4514 B.M. 152." A nail. (1,375.572 meters or 4,513.023 feet.)

151 (U. S. G. S.).—About 3.7 miles southwest of **Crescent**, Klamath County, about 1,000 feet east of The Dalles-California Highway, east of the old stage road, on the south slope of a ridge, in the base of a 40-inch pine tree marked with a triangular blaze and an aluminum tag stamped "4570 B.M. 151." A nail. (1,392.864 meters or 4,569.754 feet.)

W 1 (U. S. G. S.).—See page 185.

148 (U. S. G. S.).—About 9.3 miles south along the old road from **Crescent**, Klamath County, east of the road, in the base of a 30-inch ponderosa pine tree marked with a triangular blaze and an aluminum tag stamped "4656 B.M. 148." A nail. (1,419.022 meters or 4,655.576 feet.)

147 (U. S. G. S.).—About 10.2 miles south along the old stage road from **Crescent**, Klamath County, 115 feet east of The Dalles-California Highway, and 160 feet south of survey station 280, at the top of a grade, in the base

of a 36-inch pine tree marked with a triangular blaze and an aluminum tag stamped "4651 B.M. 147." A nail. (1,417.590 meters or 4,650.877 feet.)

V 1 (U. S. G. S.).—See page 185.

146 (U. S. G. S.).—About 12.6 miles south of **Crescent**, Klamath County, at the west edge of The Dalles-California Highway, at mileage 201.8, in the base of a pine tree marked with a triangular blaze and inscribed "4714." A nail. (1,436.807 meters or 4,713.925 feet.)

145 (U. S. G. S.).—About 14.1 miles south of **Crescent**, Klamath County, about 675 feet west of The Dalles-California Highway, on the east side of the old stage road, at the point where the north road branches west to Corral Springs, in the base of a pine tree marked with a triangular blaze and an aluminum tag stamped "4711 B.M. 145." A nail. (1,435.758 meters or 4,710.483 feet.)

144 (U. S. G. S.).—About 3.0 miles north of **Chemult**, Klamath County, about 800 feet west of The Dalles-California Highway at mileage 204.5, about 1 mile north of the south T road leading west to Corral Springs, on the east side of the old stage road, in the base of a pine tree marked with a triangular blaze inscribed "4726." A nail. (1,440.472 meters or 4,725.949 feet.)

U 1 (U. S. G. S.).—About 2 miles north of **Chemult**, Klamath County, in the northwestward corner of the intersection of the old stage road and the old emigrant road northwest to Corral Springs and Crescent Lake. A United States Geological Survey standard cap, stamped "4270 BB U 1 1908" and riveted on the top of a 3½-inch iron pipe. (1,438.600 meters or 4,719.806 feet.)

NOTE.—The bench mark has been destroyed.

141 (U. S. G. S.).—About 0.5 mile south of **Chemult**, Klamath County, just south of The Dalles-California Highway milepost 208, on the east side of the old stage road, about 100 feet north of the crossing with the highway and facing away from the highway, on a grade ascending northward, in the base of a pine tree marked with a triangular blaze and an aluminum tag stamped "4762 B.M. 141." A nail. (1,451.270 meters or 4,761.375 feet.)

T 1 (U. S. G. S.).—About 2.5 miles north of **Beaver Marsh**, Klamath County, at the west edge of a Southern Pacific Co. borrow pit near mileage 499.7, 800 feet east of The Dalles-California Highway, 300 feet north of a road crossing, and about 100 feet northwest of a railroad culvert. A United States Geological Survey standard cap, stamped "4694 BB T 1 1908" and riveted on the top of a 3½-inch iron pipe. (1,430.572 meters or 4,693.470 feet.)

4698.261 (S. P.).—About 2.5 miles north of **Beaver Marsh**, Klamath County, 1.7 miles north of the Southern Pacific Co. railroad station at Diamond Lake, and about 250 feet north of a road crossing, at mileage 499.7, in the top near the northwest corner of a railroad culvert. A track spike. (1,430.661 meters or 4,693.762 feet.)

4694 (U. S. B. P. R.).—About 2.5 miles north of **Beaver Marsh**, Klamath County, 1.7 miles north of the Southern Pacific Co. railroad station at Diamond Lake, and about 250 feet north of a road crossing, at mileage 499.7, on the top of the west head wall of a railroad culvert. A chiseled square. (1,430.655 meters or 4,693.740 feet.)

NOTE.—This mark was established and its elevation determined by the United States Bureau of Public Roads in 1925.

139 (U. S. G. S.).—About 2.2 miles north of **Beaver Marsh**, Klamath County, 1.4 miles north of the Southern Pacific Co. railroad station at Diamond Lake, near railroad mileage 499.3, about 800 feet east of The Dalles-California Highway, and 10 feet west of the west railroad fence, on an abandoned road, in the base of a pine tree marked with a triangular blaze and an aluminum tag stamped "4688 B.M. 139." A nail. (1,428.822 meters or 4,687.727 feet.)

138 (U. S. G. S.).—About 1.1 miles north of **Beaver Marsh**, Klamath County, about 365 feet east of The Dalles-California Highway at mileage 212.1, and 400 feet west of the Southern Pacific Co. railroad, on the east edge of the old stage road, near the southeast corner of a small meadow, in the base of a 30-inch pine tree marked with a triangular blaze and an aluminum tag stamped "4671 B.M. 138." A nail. (1,423.744 meters or 4,671.068 feet.)

S 1 (U. S. G. S.).—See page 186.

R 1 (U. S. G. S.).—About 2.9 miles southeast of **Beaver Marsh**, Klamath County, on the old stage road, and 50 feet north of the junction with the road

east to Silver Lake. A United States Geological Survey standard cap, stamped "4655 BB R 1 1908" and riveted on the top of a 3½-inch iron pipe. (1,418.623 meters or 4,654.265 feet.)

135 (U. S. G. S.).—About 8 miles north of **Lenz ranch**, Klamath County, on the east side of the old stage road, in the base of a 24-inch pine tree marked with a triangular blaze and an aluminum tag stamped "4681 B.M. 135." A nail. (1,426.562 meters or 4,680.312 feet.)

Q 1 (U. S. G. S.).—About 6.5 miles north of **Lenz ranch**, Klamath County, 15 feet east of the old stage road, and 20 feet west of the center one of four large ponderosa pine trees. A United States Geological Survey standard cap, stamped "4649 BB Q 1 1908" and riveted on the top of a 3½-inch iron pipe. (1,416.964 meters or 4,648.824 feet.)

P 1 (U. S. G. S.).—About 2 miles north of **Lenz ranch**, Klamath County, and about 150 feet north of a large spring, on the top of a bank, about 15 feet east of a road. A United States Geological Survey standard cap, stamped "4566 BB P 1 1908" and riveted on the top of a 3½-inch iron pipe. (1,391.525 meters or 4,565.361 feet.)

O 1 (U. S. G. S.).—About 6.9 miles northeast of **Chinchalo**, Klamath County, and about 1.5 miles west of **Lenz Ranch**, at the junction of the old stage road and the **Lenz Ranch-Diamond Lake** road. A United States Geological Survey standard cap, stamped "4551 BB O 1 1908" and riveted on the top of 3½-inch iron pipe. (1,387.096 meters or 4,550.830 feet.)

N 1 (U. S. G. S.).—See page 187.

127 (U. S. G. S.).—About 3.2 miles northwestward from **Chinchalo**, Klamath County, and 0.8 mile south along the old stage road from **Cow Creek**, west of the road, in the base of a 30-inch pine tree marked with a triangular blaze and an aluminum tag stamped "4544 B.M. 127." A nail. (1,384.908 meters or 4,543.653 feet.)

M 1 (U. S. G. S.).—See page 225.

124 (U. S. G. S.).—About 3 miles southwest along the old stage road from **Sand Creek**, Klamath County, northwest of the road, in the base of a 40-inch pine tree marked with a triangular blaze and an aluminum tag stamped "4673 B.M. 124." A nail. (1,424.283 meters or 4,672.836 feet.)

L 1 (U. S. G. S.).—About 0.7 mile south of **Sand Creek Junction**, Klamath County, 160 feet southeast of the center line of **The Dalles-California Highway**, 300 feet north of the fork with the old road, 15 feet west of the old road, and 50 feet south of a 60-inch pine tree with a broken top. A United States Geological Survey standard cap, stamped "5035 BB L 1 1908" and riveted on the top of a 3½-inch iron pipe. (1,534.954 meters or 5,035.927 feet.)

NOTE.—This mark is also a transit traverse station of the United States Geological Survey.

122 (U. S. G. S.).—About 1.3 miles southwest of **Sand Creek Junction**, Klamath County, on the northwest side of the old stage road, southeast of **The Dalles-California Highway**, in the base of an 18-inch lodgepole pine tree marked with a triangular blaze inscribed "5161 B.M. 122." A nail. (1,573.184 meters or 5,161.356 feet.)

121 (U. S. G. S.).—About 2.1 miles southwest of **Sand Creek Junction**, Klamath County, on the southeast side of the old stage road, southeast of **The Dalles-California Highway**, in the base of a 30-inch lodgepole pine tree marked with a triangular blaze and inscribed "5242." A nail. (1,597.715 meters or 5,241.837 feet.)

120 (U. S. G. S.).—About 3 miles southwest of **Sand Creek Junction**, Klamath County, 1 mile northeast of the junction of the old stage road and **The Dalles-California Highway**, on the south side of the old stage road, in the base of a 12-inch lodgepole pine tree marked with a triangular blaze and inscribed "5349." A nail. (1,630.422 meters or 5,349.142 feet.)

5405 (U. S. G. S.).—About 3.5 miles southwest of **Sand Creek Junction**, Klamath County, 7.5 miles northeast of **Fort Klamath Junction**, 50 feet northward from **Sun Pass**, at mileage 239.5 on **The Dalles-California Highway**, 25 feet southeast of the center line of the highway, and 8 feet northward from a pine tree, in a boulder. A United States Geological Survey standard disk, stamped "5405 1929." (1,647.289 meters or 5,404.480 feet.)

NOTE.—This mark was established and its elevation determined by the Oregon Geographic Board.

5406 (O. S. H. D.).—About 7.5 miles northeast of **Fort Klamath Junction**, Klamath County, at Sun Pass, near mileage 239.5 on The Dalles-California Highway, and 50 feet southeast of the highway, in the base of an 8-inch lodgepole pine tree marked "B.M. 5406." A nail. (1,647.801 meters or 5,406.162 feet.)

NOTE.—The elevation of this mark was determined by the Oregon Geographic Board in 1929.

Summit.—About 7.5 miles northeast of **Fort Klamath Junction**, Klamath County, at Sun Pass, at mileage 239.5 on The Dalles-California Highway. The summit of the roadway. (5,404.6 feet.)

NOTE.—This elevation was determined by the Oregon Geographic Board in 1929.

K 1 (U. S. G. S.).—About 7.5 miles northeast along the partly abandoned stage road from **Fort Klamath**, Klamath County, about 0.2 mile southwest of Sun Pass, and 5 feet south of the roadway. A United States Geological Survey standard cap, stamped "5329 BB K 1 1908" and riveted on the top of a 3½-inch iron pipe. (1,624.247 meters or 5,328.883 feet.)

NOTE.—In 1929 this mark was searched for but not recovered. As the description places it under the highway grade, it was probably destroyed during the construction of The Dalles-California Highway.

J 1 (U. S. G. S.).—About 4.5 miles north of **Fort Klamath**, Klamath County, about 50 feet north of the abandoned stage road, at the point where the old road crossed Sun Creek, and 10 feet east of the creek. A United States Geological Survey standard cap, stamped "4305 BB J 1 1908" and riveted on the top of a 3½-inch iron pipe. (1,312.173 meters or 4,305.020 feet.)

Q (U. S. G. S.).—At **Fort Klamath**, Klamath County, 59 feet south of the public school, 4 feet west of the line of the east fence, and 8 feet north of a road fence. A United States Geological Survey standard cap, stamped "4184 BB Q 1908" and riveted on the top of a 3½-inch iron pipe, encased in concrete. (1,275.169 meters or 4,183.617 feet.)

Spur to Klamath Agency.

4174 (U. S. G. S.).—About 0.5 mile southeast of **Fort Klamath**, Klamath County, on the Crater Lake Highway, in the floor at the extreme southwest corner of the concrete bridge over Wood River. A United States Geological Survey standard disk, stamped "4174 1923." (1,272.132 meters or 4,173.654 feet.)

NOTE.—The elevation of this bench mark was determined by the Oregon Geographic Board in 1929.

Y 5 (U. S. G. S.).—See page 33.

X 5 (U. S. G. S.).—See page 33.

BXS (U. S. G. S.).—See page 33.

End of spur.

Spur to Crater Lake.

4310 (O. S. H. D.).—About 5.0 miles northwest of **Fort Klamath**, Klamath County, in the north end of the east head wall of a concrete irrigation culvert under the Crater Lake Highway. An Oregon State Highway Department standard disk, stamped "1929." (1,313.778 meters or 4,310.286 feet.)

NOTE.—This mark was established and its elevation determined by the Oregon Geographic Board.

S (U. S. G. S.).—About 5.2 miles northwest of **Fort Klamath**, Klamath County, and 250 feet west of the Crater Lake Highway, on the north side of an old road. A United States Geological Survey standard cap, stamped "4317 BB S 1908" and riveted on the top of a 3½-inch iron pipe encased in concrete. (1,315.725 meters or 4,316.674 feet.)

T (U. S. G. S.).—About 8.5 miles northwest of **Fort Klamath**, Klamath County, at the south entrance to the Crater Lake National Park, 25 feet east of the highway, and 18 feet west of a boundary monument. A United States Geological Survey standard cap, stamped "4780 BB T 1908" and riveted on the top of a 3½-inch iron pipe, encased in concrete. (1,456.854 meters or 4,779.696 feet.)

111 (U. S. G. L. O.).—About 8.5 miles northwest of **Fort Klamath**, Klamath County, at the south entrance to the Crater Lake National Park, 40 feet east

of the highway, and 32 feet south of the Government building. A United States General Land Office boundary disk, stamped "111" and set in the top of a concrete post. (1,457.491 meters or 4,781.784 feet.)

NOTE.—The south boundary of the park has been changed and the building has been moved, but bench marks T and 111 were found undisturbed in 1932.

U (U. S. G. S.).—About 4.4 miles southeast of **Annie Spring**, Klamath County, 40 feet west of the Crater Lake Highway. A United States Geological Survey standard cap, stamped "5508 BB U 1908" and riveted on the top of a 3½-inch iron pipe. (1,678.906 meters or 5,508.211 feet.)

75 (U. S. G. S.).—About 2.4 miles southeast of **Annie Spring**, Klamath County, on the east side of the Crater Lake Highway, 300 feet north of the Pole Bridge Creek, and 50 feet south of a small draw, in the base of a 48-inch fir tree marked with a triangular blaze inscribed "5833." A galvanized iron nail and washer. (1,777.900 meters or 5,832.995 feet.)

NOTE.—The tree was cut down in 1932, but the mark is still in place in the stump.

V (U. S. G. S.).—At **Annie Spring**, Klamath County, west of the intersection of the Crater Lake Highway and the highway to Crater Lake Lodge, opposite a service station, 6 feet south of the southeast corner of a small building formerly used as the park headquarters. A United States Geological Survey standard cap, stamped "6016 BB V 1908" and riveted on the top of a 3½-inch iron pipe, set with the top flush with the ground. (1,833.696 meters or 6,016.052 feet.)

NOTE.—This mark was searched for but not recovered in 1931.

78 (U. S. G. S.).—See page 223.

79 (U. S. G. S.).—About 3.3 miles northeast of **Annie Spring**, Klamath County, 0.5 mile southward from **Government Camp**, Klamath County, 0.3 mile south of a creek, and 40 feet west of the highway, in the base of a 36-inch fir tree marked with a triangular blaze and an aluminum tag stamped "6394 B.M. 79." A nail. (1,948.993 meters or 6,394.320 feet.)

80 (U. S. G. S.).—About 0.3 mile north of **Government Camp**, Klamath County, 30 feet west of the old road, and about 100 feet west of the highway to the rim of Crater Lake, in the base of a 72-inch fir tree marked with a triangular blaze and an aluminum tag stamped "6550 B.M. 80." A nail. (1,996.629 meters or 6,550.607 feet.)

7105 (U. S. G. S.).—At **Crater Lake Lodge**, Klamath County, at the west end of the top concrete step at the north entrance overlooking the lake. A United States Geological Survey standard disk, stamped "7105 1927." (2,165.695 meters or 7,105.283 feet.)

NOTE.—This mark was established and its elevation determined by the Oregon Geographic Board.

7100 (O. G. B.).—At the east end of **Crater Lake Lodge**, Klamath County, at the west end of the north areaway wall at the steps leading to the cellar. A chiseled square. (2,164.130 meters or 7,100.151 feet.)

NOTE.—This mark was established and its elevation determined by the Oregon Geographic Board in 1927.

W (U. S. G. S.).—About 750 feet east of **Crater Lake Lodge**, Klamath County, on the south rim of the lake, in a conspicuous triangular rock. A United States Geological Survey standard disk, stamped "7686 BB W 1908 VA L F BIGGS." (2,156.778 meters or 7,076.030 feet.)

End of spur.

P (U. S. G. S.).—About 4.7 miles southwest of **Fort Klamath**, Klamath County, on the road to Pelican Bay, at an intersection with a road from the east. A United States Geological Survey standard cap, stamped "4152 BB P 1908" and riveted on the top of a 3½-inch iron pipe. (1,265.470 meters or 4,151.796 feet.)

O (U. S. G. S.).—About 9.3 miles southwest of **Fort Klamath**, Klamath County, 4.8 miles north of **Crystal**, 8 feet west of the road, and 300 feet south of a fence, in the top of a large boulder. A United States Geological Survey standard disk, stamped "4176 BB O 1908." (1,272.772 meters or 4,175.753 feet.)

50 (U. S. G. S.).—About 4.3 miles north of **Crystal**, Klamath County, and about 150 feet south of the crest of a small hill, at the east edge of the road, in the base of a 16-inch tree marked with a triangular blaze and an aluminum tag stamped "4191 B.M. 50." A nail. (1,277.531 meters or 4,191.365 feet.)

48 (U. S. G. S.).—About 2.2 miles north of **Crystal**, Klamath County, 50 feet north of Cherry Creek, and 10 feet east of the road, in the base of a 36-inch pine tree marked with a triangular blaze and an aluminum tag stamped "4221 B.M. 48." A nail. (1,286.647 meters or 4,221.276 feet.)

N (U. S. G. S.).—At **Crystal**, Klamath County, 65 feet south of the south line of the school, in line with the east road fence. A United States Geological Survey standard cap, stamped "4163 BB N 1908" and riveted on the top of a 3½-inch iron pipe, encased in concrete. (1,268.899 meters or 4,163.046 feet.)

45 (U. S. G. S.).—About 2.5 miles south of **Crystal**, Klamath County, 4.3 miles north of **Rocky Point**, and 15 feet east of the road, in the base of a 60-inch pine tree marked with a triangular blaze and an aluminum tag stamped "4153 B.M. 45." A nail. (1,265.992 meters or 4,153.508 feet.)

M (U. S. G. S.).—About 0.6 mile southward from **Malone Spring**, Klamath County, and 230 feet east of the Fort Klamath-Pelican Bay Road as used in 1931, on the north side of an abandoned road near where it ran down to a marsh, in sec. 14, T. 35 S., R. 6 E., in a rock outcrop at the ground line. A United States Geological Survey standard disk, stamped "4150 BB M 1908." (1,264.868 meters or 4,149.820 feet.)

L (U. S. G. S.).—About 1¼ miles southwestward from **Rocky Point**, Klamath County, about ½ mile southwest of Pelican Bay Lodge, and 25 feet northwest of the Klamath Falls Road, in the southeast part of a large boulder. A United States Geological Survey standard disk, stamped "4153 BB L 1908." (1,265.774 meters or 4,152.794 feet.)

K (U. S. G. S.).—About 6 miles southwestward from **Rocky Point**, Klamath County, and 4.4 miles southwest of Pelican Bay Lodge, at the junction of the old Dead Indian Road and the road to Odessa. A United States Geological Survey standard cap, stamped "4202 BB K 1908" and riveted on the top of a 3½-inch iron pipe. (1,280.843 meters or 4,202.234 feet.)

I (U. S. G. S.).—About 1.5 miles northeast of **Lake of the Woods**, Klamath County, on the north side of the old Dead Indian Road, 1,000 feet northward from a large draw, and 10 feet south of a blazed tree, in a large boulder. A United States Geological Survey standard disk, stamped "4998 BB I 1908." (1,523.556 meters or 4,998.533 feet.)

33 (U. S. G. S.).—Near the northeast corner of **Lake of the Woods**, Klamath County, near the southwest end of a flat, north of the road, in the base of a 36-inch fir tree marked with a triangular blaze and an aluminum tag stamped "4968 B.M. 33." A nail. (1,514.270 meters or 4,968.068 feet.)

32 (U. S. G. S.).—Near **Lake of the Woods**, Klamath County, about 1.8 miles north of the southeast corner of the lake, 1,500 feet south of the T road leading to the resort, and 12 feet east of the Dead Indian road, in the base of a 36-inch fir tree marked with a triangular blaze and an aluminum tag stamped "4965 B.M. 32." A nail. (1,513.757 meters or 4,966.386 feet.)

H (U. S. G. S.).—At the southeast corner of **Lake of the Woods**, Klamath County, about 2 miles south of the T road leading to the resort, 200 feet east of the road, 100 feet east of the lake bank, 45 feet northeast of the northeast corner of the Ender cabin, and 25 feet south of the southeast corner of the Behan cabin. A United States Geological Survey standard cap, stamped "4990 BB H 1908" and riveted on the top of a 3½-inch iron pipe, encased in concrete. (1,511.869 meters or 4,960.192 feet.)

30 (U. S. G. S.).—About 0.9 mile southwest of **Lake of the Woods**, Klamath County, south of the Dead Indian Road, and 150 feet south of a creek, in the base of a 24-inch tamarack tree marked with a triangular blaze and an aluminum tag stamped "5031 B.M. 30." A nail. (1,533.663 meters or 5,031.694 feet.)

29 (U. S. G. S.).—About 1.9 miles southwest of **Lake of the Woods**, Klamath County, south of the Dead Indian Road, at the summit of a ridge, in the base of a 48-inch larch tree marked with a triangular blaze and an aluminum tag stamped "5372 B.M. 29." A nail. (1,637.901 meters or 5,373.680 feet.)

G (U. S. G. S.).—About 4 miles southwest along the Dead Indian Road from the south end of **Lake of the Woods**, Klamath County, at the junction with the road leading eastward to Buck Lake, and 25 feet south of the Dead Indian

Road. A United States Geological Survey standard cap, stamped "5134 BB G 1908" and riveted on the top of a 3½-inch iron pipe. (1,565.167 meters or 5,135.051 feet.)

F (U. S. G. S.).—In Klamath County, about 5.8 miles east of **Deadwood**, Jackson County, on the Dead Indian Road, 0.7 mile southwest of the summit of the Cascade Range, 600 feet south of a cabin, and 25 feet north of the road, in a large boulder. A United States Geological Survey standard disk, stamped "5305 BB F 1908." (1,616.984 meters or 5,305.056 feet.)

E (U. S. G. S.).—About 3 miles east of **Deadwood**, Jackson County, 200 feet north of Little Butte Creek, and north of the Dead Indian Road as used in 1908, in a large boulder. A United States Geological Survey standard disk, stamped "4847 BB E 1908." (1,477.650 meters or 4,847.923 feet.)

21 (U. S. G. S.).—At **Deadwood**, Jackson County, 300 feet east of the Lee Bradshaw house, and 150 feet west of a barn, on the west side of the road, in the base of a 36-inch pine tree marked with a triangular blaze and an aluminum tag stamped "4634 B.M. 21." A nail. (1,412.790 meters or 4,635.128 feet.)

D (U. S. G. S.).—At **Lilyglen**, Jackson County, 100 feet west of the Lindsey house, at the fence line. A United States Geological Survey standard cap, stamped "4537 BB D 1908" and riveted on the top of a 3½-inch iron pipe. (1,383.266 meters or 4,538.264 feet.)

15 (U. S. G. S.).—On **Dead Indian Mountain**, Jackson County, about 1.1 miles northeast of the point where the road passes over the summit, north of the roadway, in the base of a 30-inch fir tree marked with a triangular blaze and an aluminum tag stamped "4833 B.M. 15." A nail. (1,473.523 meters or 4,834.383 feet.)

C (U. S. G. S.).—On **Dead Indian Mountain**, Jackson County, 15 feet south of the summit on the Dead Indian Road, in a large boulder. A United States Geological Survey standard disk, stamped "5233 1928." (1,595.033 meters or 5,233.038 feet.)

NOTE.—This mark originally consisted of an aluminum disk, which was destroyed. In 1928, a bronze disk was set in the same hole. On account of highway grading, engineers of the United States Geological Survey moved this disk in 1932 to a new location, probably north and west of the roadway, but at the same elevation as originally set.

B (U. S. G. S.).—About 8.2 miles northeast of **Ashland**, Jackson County, 600 feet southwest of the Dead Indian Road as used in 1928, 200 feet north of a house on the point of a hill, and 15 feet west of the old road location, in a boulder. A United States Geological Survey standard disk, stamped "2944 BB B 1908." (897.664 meters or 2,945.086 feet.)

5 (U. S. G. S.).—About 6 miles northeast of **Ashland**, Jackson County, on the south side of the Dead Indian Road, on the north bank of a creek, in the base of a 20-inch oak tree marked with a triangular blaze and an aluminum tag stamped "2179 B.M. 5." A nail. (664.422 meters or 2,179.858 feet.)

4 (U. S. G. S.).—About 5 miles northeast of **Ashland**, Jackson County, 75 feet west of the Dead Indian Road, near the bank of a creek, in the base at the back side of a 36-inch leaning maple tree marked on the front with a triangular blaze and an aluminum tag stamped "2040 B.M. 4." A spike. (622.184 meters or 2,041.283 feet.)

A (U. S. G. S.).—About 4 miles northeast of **Ashland**, Jackson County, 20 feet south of the Dead Indian Road, above a creek, opposite Indian Head Rock, in a boulder. A United States Geological Survey standard disk, stamped "2004." (610.662 meters or 2,003.480 feet.)

NOTE.—This mark originally consisted of an aluminum disk, which was destroyed. In 1928, a bronze disk was set at the same elevation.

2 (U. S. G. S.).—About 2.4 miles east of **Ashland**, Jackson County, on the south side of the Dead Indian Road, opposite a white house, in the base of a 36-inch oak tree marked with a triangular blaze and the remains of an aluminum tag stamped "1913 B.M. 2." A nail. (583.252 meters or 1,913.552 feet.)

L 6 (U. S. G. S.).—See page 58.

LINE 24, MEDFORD TO CHINCHALO, OREG.

[Second-order leveling]

This line follows the Crater Lake Highway from Medford to the west entrance to Crater Lake National Park, the road through the

park to the east entrance, the Crater Lake Highway from the east entrance to Sand Creek Junction and the road from Sand Creek Junction to Chinchalo. The field work was done during the summer of 1931 by E. E. Stohsner, aid.

Y 6.—See page 59.

S 58 (O. S. H. D.).—About 1.8 miles north along the Crater Lake Highway from Medford, Jackson County, and about 300 feet south of the March house, in the south end of the east parapet of a highway culvert. An Oregon State Highway Department standard disk, stamped "S 58 1931." (412.620 meters or 1,353.737 feet.)

N 2 (O. S. H. D.).—About 2.9 miles north along the Crater Lake Highway from Medford, Jackson County, and 0.2 mile northwest of an airway radio station, in the south end of the west parapet of a highway culvert. An Oregon State Highway Department standard disk, stamped "N 2 1930." (411.756 meters or 1,350.903 feet.)

T 58 (O. S. H. D.).—About 3.3 miles north along the Crater Lake Highway from Medford, Jackson County, and about 150 feet north of a pear orchard, in the south end of the east parapet of a highway culvert. An Oregon State Highway Department standard disk, stamped "T 58 1931." (403.798 meters or 1,324.794 feet.)

N 3 (O. S. H. D.).—About 3.7 miles north along the Crater Lake Highway from Medford, Jackson County, just south of the road leading east to Coker Butte, in the north end of the east head wall of a pipe culvert under the highway. An Oregon State Highway Department standard disk, stamped "N 3 1930." (408.642 meters or 1,340.686 feet.)

N 5 (O. S. H. D.).—About 4.7 miles north along the Crater Lake Highway from Medford, Jackson County, and 100 feet south of the Snowy Butte store, at the southwest corner of the intersection of a crossroad, in the top of a culvert head wall. An Oregon State Highway Department standard disk, stamped "N 5 1930." (397.376 meters or 1,303.724 feet.)

N 6 (O. S. H. D.).—About 5.1 miles north along the Crater Lake Highway from Medford, Jackson County, and 0.4 mile north of the Snowy Butte store, near the southwest corner of an apple orchard, in the east parapet of a highway culvert. An Oregon State Highway Department standard disk, stamped "N 6 1930." (394.115 meters or 1,293.026 feet.)

N 7 (O. S. H. D.).—About 5.6 miles north along the Crater Lake Highway from Medford, Jackson County, 1.0 mile north of the Snowy Butte store, and 0.3 mile south of a house, near the south end of the east parapet of a highway culvert. An Oregon State Highway Department standard disk, stamped "N 7 1930." (392.932 meters or 1,289.144 feet.)

N 8 (O. S. H. D.).—About 6.3 miles north along the Crater Lake Highway from Medford, Jackson County, in the north end of the east head wall of an irrigation culvert under the highway. An Oregon State Highway Department standard disk, stamped "N 8 1930." (397.122 meters or 1,302.891 feet.)

U 58 (O. S. H. D.).—About 7.5 miles north along the Crater Lake Highway from Medford, Jackson County, just north of a pear orchard which is on both sides of the highway, in the south end of the east parapet of a highway culvert. An Oregon State Highway Department standard disk, stamped "U 58 1931." (400.319 meters or 1,313.380 feet.)

V 58.—About 8.2 miles northeast along the Crater Lake Highway from Medford, Jackson County, and 1.4 miles south of the Antelope Creek Bridge, in Agate Desert, 28 feet east of the center line of the highway. A standard disk, stamped "V 58 1931" and set in the top of a concrete post. (404.456 meters or 1,326.953 feet.)

W 58 (O. S. H. D.).—About 9.8 miles north along the Crater Lake Highway from Medford, Jackson County, in the curb at the southeast corner of the highway bridge over Antelope Creek. An Oregon State Highway Department standard disk, stamped "W 58 1931." (392.188 meters or 1,286.703 feet.)

X 58 (O. S. H. D.).—About 10.5 miles northeast along the Crater Lake Highway from Medford, Jackson County, in the curb at the southeast corner of the highway bridge over Little Butte Creek. An Oregon State Highway Department standard disk, stamped "X 58 1931." (391.158 meters or 1,283.324 feet.)

Y 58 (O. S. H. D.).—About 11.7 miles northeast along the Crater Lake Highway from Medford, Jackson County, and about 200 feet south of some small

weeping willow trees, near the south end of the top of the east head wall of a highway culvert. An Oregon State Highway Department standard disk, stamped "Y 58 1931." (404.449 meters or 1,326.930 feet.)

Z 58.—About 13.0 miles northeast along the Crater Lake Highway from Medford, Jackson County, 2.5 miles north of the Little Butte Creek bridge, 30 feet west of the center line of the highway, and 9 feet north of a wide gate to a ranch yard. A standard disk, stamped "Z 58 1931" and set in the top of a concrete post. (429.436 meters or 1,408.908 feet.)

A 59 (O. S. H. D.).—About 14.1 miles northeast along the Crater Lake Highway from Medford, Jackson County, 9.6 miles south of Trail, and about 200 feet south of a T road east, in the south end of the east head wall of a highway culvert. An Oregon State Highway Department standard disk, stamped "A 59 1931." (416.442 meters or 1,366.277 feet.)

B 59 (O. S. H. D.).—About 7.9 miles south along the Crater Lake Highway from Trail, Jackson County, in the curb at the southeast corner of the highway bridge over Reese Creek. An Oregon State Highway Department standard disk, stamped "B 59 1931." (411.081 meters or 1,348.638 feet.)

C 59.—About 6.7 miles south along the Crater Lake Highway from Trail, Jackson County, 2 feet north of the gate at the Gonderman ranch, 27 feet east of the center line of the highway, and 4 feet south of an oak tree. A standard disk, stamped "C 59 1931" and set in the top of a concrete post. (451.517 meters or 1,481.352 feet.)

D 59 (O. S. H. D.).—About 5.7 miles south along the Crater Lake Highway from Trail, Jackson County, and 3.3 miles south of a bridge over Rogue River, in the south end of the east head wall of a concrete highway culvert, below the roadway. An Oregon State Highway Department standard disk, stamped "D 59 1931." (440.874 meters or 1,446.434 feet.)

E 59 (O. S. H. D.).—About 4.6 miles south along the Crater Lake Highway from Trail, Jackson County, and about 150 feet south of the road to the Alvin Conover ranch house, in the south end of the east head wall of a culvert, about 10 feet below the highway. An Oregon State Highway Department standard disk, stamped "E 59 1931." (435.151 meters or 1,427.658 feet.)

EX 59 (O. S. H. D.).—About 2.7 miles south along the Crater Lake Highway from Trail, Jackson County, in the curb at the southeast corner of the highway bridge over Indian Creek. An Oregon State Highway Department standard disk, stamped "EX 59 1931." (426.326 meters or 1,398.705 feet.)

NOTE.—This mark was established and its elevation determined by the Oregon State Highway Department.

F 59 (O. S. H. D.) —About 2.5 miles south along the Crater Lake Highway from Trail, Jackson County, in the curb at the southeast corner of the highway bridge over Rogue River. An Oregon State Highway Department standard disk, stamped "F 59 1931." (429.330 meters or 1,408.560 feet.)

G 59.—At Trail, Jackson County, opposite the store and post office, 27 feet south of the center line of the Crater Lake Highway, and 1 foot east of a gate leading to a field. A standard disk, stamped "G 59 1931" and set in the top of a concrete post. (434.738 meters or 1,426.303 feet.)

H 59 (O. S. H. D.).—At Trail, Jackson County, about 300 feet east of the post office, in the curb at the southwest corner of the Crater Lake Highway bridge over Trail Creek. An Oregon State Highway Department standard disk, stamped "H 59 1931." (436.895 meters or 1,433.380 feet.)

J 59 (O. S. H. D.).—About 1.2 miles northeast along the Crater Lake Highway from Trail, Jackson County, in the curb at the southwest corner of the highway bridge over Lewis Creek. An Oregon State Highway Department standard disk, stamped "J 59 1931." (439.496 meters or 1,441.913 feet.)

K 59 (O. S. H. D.).—About 3.3 miles northeast along the Crater Lake Highway from Trail, Jackson County, in the curb at the southwest corner of the concrete approach to the Elk Creek bridge. An Oregon State Highway Department standard disk, stamped "K 59 1931." (449.957 meters or 1,476.234 feet.)

L 59.—About 5.6 miles northeast along the Crater Lake Highway from Trail, Jackson County, at the northward end of a short tangent, 75 feet northward from a highway culvert, and 25 feet north of the center line of the highway. A standard disk, stamped "L 59 1931" and set in the top of a concrete post. (468.528 meters or 1,537.162 feet.)

N 59 (U. S. F. S.).—About 7.0 miles northeast along the Crater Lake Highway from Trail, Jackson County, 8 feet below the deck of a county-road bridge

over *Rogue River*, between the highway and the north bank of the river, 5 feet 9 inches northwest of a pier, and just east of a small cairn, in bedrock. A United States Forest Service standard disk, stamped "N 59 1931." (468.738 meters or 1,537.851 feet.)

M 59 (O. S. H. D.).—About 7.1 miles northeast along the Crater Lake Highway from **Trail**, Jackson County, and about 60 feet southward from the McLeod store, in the top of the southwestward corner of a culvert. An Oregon State Highway Department standard disk, stamped "M 59 1931." (470.848 meters or 1,544.774 feet.)

P 59 (O. S. H. D.).—About 13.5 miles southwest along the Crater Lake Highway from **Prospect**, Jackson County, in the top of the west end of the south head wall of a concrete highway culvert. An Oregon State Highway Department standard disk, stamped "P 59 1931." (483.363 meters or 1,585.833 feet.)

Q 59 (O. S. H. D.).—About 12.0 miles southwest along the Crater Lake Highway from **Prospect**, Jackson County, in the west end of the south concrete curb of the highway bridge over Lost Creek. An Oregon State Highway Department standard disk, stamped "Q 59 1931." (493.976 meters or 1,620.653 feet.)

R 59 (O. S. H. D.).—About 10.0 miles southwest along the Crater Lake Highway from **Prospect**, Jackson County, and about 50 feet south of a graveled side road, in the southeast corner of a 4 by 4 foot box culvert under the highway. An Oregon State Highway Department standard disk, stamped "R 59 1931." (545.248 meters or 1,788.868 feet.)

S 59.—About 9.2 miles southwest along the Crater Lake Highway from **Prospect**, Jackson County, about 200 feet east of a large log house, directly opposite a small shingled house, and 39 feet south of the center line of the highway. A standard disk, stamped "S 59 1931" and set in the top of a concrete post. (568.757 meters or 1,865.997 feet.)

T 59 (O. S. H. D.).—About 8.7 miles southwest along the Crater Lake Highway from **Prospect**, Jackson County, at the point of a sharp curve, in the west end of the south head wall of a 6 by 6 foot concrete culvert, and 15 feet lower than the highway. An Oregon State Highway Department standard disk, stamped "T 59 1931." (564.157 meters or 1,850.905 feet.)

U 59 (O. S. H. D.).—About 6.4 miles southwest along the Crater Lake Highway from **Prospect**, Jackson County, in the curb at the southwest corner of the Cascade Gorge bridge. An Oregon State Highway Department standard disk, stamped "U 59 1931." (666.440 meters or 2,186.479 feet.)

V 59 (O. S. H. D.).—About 4.1 miles southwest along the Crater Lake Highway from **Prospect**, Jackson County, and 125 feet east of the Wildwood store, in the west end of the south head wall of a concrete highway culvert. An Oregon State Highway Department standard disk, stamped "V 59 1931." (706.864 meters or 2,319.103 feet.)

W 59 (O. S. H. D.).—About 2.1 miles southwest along the Crater Lake Highway from **Prospect**, Jackson County, near the southwest corner of an electric substation, in the curb at the southwest corner of the highway bridge over two water conduits. An Oregon State Highway Department standard disk, stamped "W 59 1931." (758.147 meters or 2,487.354 feet.)

X 59 (O. S. H. D.).—About 0.6 mile southwest along the Crater Lake Highway from **Prospect**, Jackson County, in the curb at the southeast corner of the concrete arch bridge over *Rogue River*. An Oregon State Highway Department standard disk, stamped "X 59 1931." (771.297 meters or 2,530.497 feet.)

Y 59 (O. S. H. D.).—About 0.3 mile north along the Crater Lake Highway from **Prospect**, Jackson County, in the curb at the southeast corner of an 18-foot concrete bridge. An Oregon State Highway Department standard disk, stamped "Y 59 1931." (791.882 meters or 2,598.033 feet.)

Z 59.—About 2.4 miles north along the Crater Lake Highway from **Prospect**, Jackson County, 5 feet west of a 4-foot tree, and 24 feet east of the center line of the highway. A standard disk, stamped "Z 59 1931" and set in the top of a concrete post. (842.446 meters or 2,763.925 feet.)

A 60.—About 4.5 miles north along the Crater Lake Highway from **Prospect**, Jackson County, 6 feet north of a 6-foot tree, and 28 feet east of the center line of the highway. A standard disk, stamped "A 60 1931" and set in the top of a concrete post. (885.876 meters or 2,906.411 feet.)

B 60.—About 6.6 miles north along the Crater Lake Highway from **Prospect**, Jackson County, in the center of a small clearing, 40 feet southeast of a tree

used as a telephone pole, and 36 feet east of the center line of the highway. A standard disk, stamped "B 60 1931" and set in the top of a concrete post. (908.344 meters or 2,980.125 feet.)

C 60.—About 8.6 miles north along the Crater Lake Highway from Prospect, Jackson County, 294 feet north of survey station 2860, and 31 feet east of the center line of the highway. A standard disk, stamped "C 60 1931" and set in the top of a concrete post. (953.745 meters or 3,129.078 feet.)

D 60.—About 10.7 miles north along the Crater Lake Highway from Prospect, Jackson County, 0.7 mile southwest of Union Creek, 270 feet north of survey station 2970, and 30 feet east of the center line of the highway. A standard disk, stamped "D 60 1931" and set in the top of a concrete post. (1,005.457 meters or 3,298.737 feet.)

E 60 (O. S. H. D.).—About 0.1 mile southwest along the Crater Lake Highway from Union Creek, Jackson County, in the curb at the southwest corner of the highway bridge over Union Creek. An Oregon State Highway Department standard disk, stamped "E 60 1931." (1,015.596 meters or 3,332.001 feet.)

F 60 (U. S. G. S.).—About 0.1 mile southwest along the Crater Lake Highway from Union Creek, Jackson County, in the top of the south wing wall at the east end of the highway bridge over Union Creek. A United States Geological Survey standard disk, stamped "F 60 1931." (1,015.378 meters or 3,331.286 feet.)

G 60 (U. S. G. S.).—About 1.2 miles northeast along the Crater Lake Highway from Union Creek, Jackson County, near the junction with the Diamond Lake Highway, and 100 feet northwest of the Crater Lake Highway, in a rock ledge on the east bank of Rogue River. A United States Geological Survey standard disk, stamped "G 60 1931." (1,053.039 meters or 3,454.845 feet.)

NOTE.—This mark is also a United States Geological Survey transit traverse station.

3461 (U. S. B. P. R.).—About 1.2 miles northeast along the Crater Lake Highway from Union Creek, Jackson County, 100 feet north of the junction with the Diamond Lake Highway, and 30 feet west of the Diamond Lake Highway. A United States Bureau of Public Roads standard disk, stamped "3461" and set in the top of a 10-inch pipe filled with concrete. (1,054.542 meters or 3,459.777 feet.)

H 60.—About 3.3 miles northeast along the Crater Lake Highway from Union Creek, Jackson County, about 125 feet east along the highway from a tall dead tree, 40 feet west of a secondary road leading north, and 25 feet north of the center line of the highway. A standard disk, stamped "H 60 1931" and set in the top of a concrete post. (1,136.551 meters or 3,728.834 feet.)

J 60.—About 5.9 miles northeast along the Crater Lake Highway from Union Creek, Jackson County, at the east end of a curve at the south end of an old ditch, and 28 feet north of the center line of the highway. A standard disk, stamped "J 60 1931" and set in the top of a concrete post. (1,292.020 meters or 4,238.902 feet.)

K 60 (U. S. G. S.).—About 7.2 miles northeast along the Crater Lake Highway from Union Creek, Jackson County, 3.2 miles west of the west entrance to the Crater Lake National Park, on the west bank of Whiskey Creek, and 50 feet north of the center line of the highway. A United States Geological Survey standard disk, stamped "K 60 1931" and set in the top of a concrete post. (1,352.900 meters or 4,438.639 feet.)

L 60 (O. S. H. D.).—About 7.2 miles northeast along the Crater Lake Highway from Union Creek, Jackson County, and 3.2 miles west of the west entrance to the Crater Lake National Park, in the west end of the south head wall of the highway bridge over Whiskey Creek. An Oregon State Highway Department standard disk, stamped "L 60 1931." (1,351.444 meters or 4,433.862 feet.)

M 60 (U. S. G. S.).—About 6.7 miles west along the Crater Lake Highway from Annie Spring, Klamath County, 10 feet west of the wooden arch at the west entrance to the Crater Lake National Park, and 40 feet north of the center line of the highway. A United States Geological Survey standard disk, stamped "M 60 1931" and set in the top of a concrete post. (1,551.652 meters or 5,090.712 feet.)

N 60.—About 4.8 miles west along the Crater Lake Highway from Annie Spring, Klamath County, 1.9 miles east of the west entrance to the Crater Lake National Park, at the west edge of a small group of tall trees, and 25 feet north of the center line of the highway. A standard disk, stamped "N 60 1931" and set in the top of a concrete post. (1,695.125 meters or 5,561.423 feet.)

P 60 (U. S. G. S.).—About 3.5 miles west along the Crater Lake Highway from **Annie Spring**, Klamath County, 3.2 miles east of the west entrance to the Crater Lake National Park, opposite the middle one of three water pipes, and 40 feet westward from the center line of the highway. A United States Geological Survey standard disk, stamped "P 60 1931" and set in the top of a concrete post. (1,743.348 meters or 5,719.634 feet.)

Q 60.—About 1.4 miles west along the Crater Lake Highway from **Annie Spring**, Klamath County, 0.4 mile west of the summit of the Cascade Range, 25 feet west of the east end of a tangent, and 38 feet north of the center line of the highway. A standard disk, stamped "Q 60 1931" and set in the top of a concrete post. (1,866.774 meters or 6,124.574 feet.)

R 60 (U. S. G. S.).—About 1.0 mile west along the Crater Lake Highway from **Annie Spring**, Klamath County, at the summit of the Cascade Range, 80 feet northeast of the center line of the highway, in a rock outcrop 15 feet higher than the highway. A United States Geological Survey standard disk, stamped "R 60 1931." (1,892.186 meters or 6,207.947 feet.)

NOTE.—This mark is set on a slant and the point used is the "U. S." in "U. S. Geological Survey."

S 60 (U. S. G. S.).—At **Annie Spring**, Klamath County, 30 feet southeast of the ranger house, and 1 foot west of a heavy wooden guard rail. A United States Geological Survey standard disk, stamped "S 60 1931" and set in the top of a concrete post, flush with the ground. (1,833.584 meters or 6,015.683 feet.)

T 60.—About 1.9 miles northeast along the Crater Lake Highway from **Annie Spring**, Klamath County, 1.7 miles southwest of Government Camp, at the south end of a shallow cut, about 95 feet north of a masonry culvert, and 34 feet southwest of the center line of the highway. A standard disk, stamped "T 60 1931" and set in the top of a concrete post. (1,894.929 meters or 6,216.946 feet.)

78 (U. S. G. S.).—About 2.3 miles northeast along the highway from **Annie Spring**, Klamath County, on the westward side of an abandoned road to Government Camp, in the base of a 24-inch fir tree marked with a triangular blaze and an aluminum tag stamped "6242 BM 78." An iron nail. (1,902.056 meters or 6,242.297 feet.)

For additional bench marks in this vicinity, see page 216.

U 60 (U. S. G. S.).—At **Government Camp**, Klamath County, 50 feet east of the south end of the headquarters building, and midway between the building and the road to the rim of the lake. A United States Geological Survey standard disk, stamped "U 60 1931" and set in the top of a concrete post. (1,974.039 meters or 6,476.493 feet.)

V 60.—About 2.0 miles southeast of **Government Camp**, Klamath County, on the road to the east entrance to the Crater Lake National Park, in a clearing about 100 feet west of a curve and a rocky point, and 35 feet southwest of the road. A standard disk, stamped "V 60 1931" and set in the top of a concrete post. (2,074.538 meters or 6,806.213 feet.)

W 60 (U. S. G. S.).—About 2.7 miles southeast of **Government Camp**, Klamath County, on the road to the east entrance to the Crater Lake National Park, at **Vidae Ridge**, 25 feet southeast of the center line of the road, and about 5 feet higher than the roadway, in a rock ledge. A United States Geological Survey standard disk, stamped "W 60 1931." (2,028.123 meters or 6,653.933 feet.)

X 60.—About 3.7 miles east of **Government Camp**, Klamath County, on the road to the east entrance to the Crater Lake National Park, 0.2 mile east of the **Sun Meadow** camp ground, 36 feet north of the center line of the road, and 2 feet south of a small tree in the center of a clearing. A standard disk, stamped "X 60 1931" and set in the top of a concrete post. (2,002.345 meters or 6,569.360 feet.)

Y 60 (U. S. G. S.).—About 5.7 miles east of **Government Camp**, Klamath County, 2.3 miles west of **Lost Creek ranger station**, on the road to the east entrance to the Crater Lake National Park, at the point of a sharp curve at **Dutton Ridge**, and 42 feet east of the center line of the road, in a rock ledge. A United States Geological Survey standard disk, stamped "Y 60 1931." (2,065.292 meters or 6,775.879 feet.)

Z 60 (U. S. G. S.).—At **Lost Creek ranger station**, Klamath County, 55 feet east of the road to **Cloud Cap**, and 40 feet north of the road to the east entrance to the **Crater Lake National Park**, in a bowlder. A United States Geological Survey standard disk, stamped "Z 60 1931." (1,820.357 meters or 5,972.283 feet.)

A 61.—About 1.5 miles southeast of **Lost Creek ranger station**, Klamath County, and 1.7 miles northwest of the east entrance to the **Crater Lake National Park**, in the center of a small clearing, and 37 feet southwest of the center line of the highway. A standard disk, stamped "A 61 1931" and set in the top of a concrete post. (1,726.323 meters or 5,663.778 feet.)

B 61.—About 3.2 miles southeast of **Lost Creek ranger station**, Klamath County, at the east entrance to the **Crater Lake National Park**, 15 feet east of the ranger cabin, and 40 feet south of the highway. A standard disk, stamped "B 61 1931" and set in the top of a concrete post. (1,663.496 meters or 5,457.653 feet.)

96 (U. S. G. L. O.).—About 2.2 miles southeast of **Lost Creek ranger station**, Klamath County, at the east entrance to the **Crater Lake National Park**, on the boundary, and 30 feet north of the highway. A United States General Land Office standard cap, stamped "96" and fastened on the top of an iron pipe encased in concrete. (1,663.315 meters or 5,457.059 feet.)

C 61.—About 2 miles northwest along the **Crater Lake Highway** from **Sand Creek Junction**, Klamath County, about 2.2 miles east of the east entrance to the **Crater Lake National Park**, 135 feet east of survey station 110, and 31 feet south of the center line of the highway. A standard disk, stamped "C 61 1931" and set in the top of a concrete post. (1,602.324 meters or 5,256.958 feet.)

6 (U. S. B. P. R.).—About 1.4 miles northwest along the **Crater Lake Highway** from **Sand Creek Junction**, Klamath County, and 28 feet southwest of the center line of the highway, on a bank about 5 feet higher than the roadway. A United States Bureau of Public Roads standard disk, stamped "5167 3077 6 1928" and set in the top of a concrete post. (1,574.985 meters or 5,167.263 feet.)

5 (U. S. B. P. R.).—About 1.4 miles northwest along the **Crater Lake Highway** from **Sand Creek Junction**, Klamath County, 25 feet northeast of the center line of the highway, and about 4 feet lower than the roadway. A United States Bureau of Public Roads standard disk, stamped "5159 3077 5 1928" and set in the top of a concrete post. (1,572.352 meters or 5,158.625 feet.)

4 (U. S. B. P. R.).—About 0.4 mile northwest along the **Crater Lake Highway** from **Sand Creek Junction**, Klamath County, and 30 feet south of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "5052 3077 4 1928" and set in the top of a concrete post. (1,539.898 meters or 5,052.149 feet.)

3 (U. S. B. P. R.).—About 0.4 mile northwest along the **Crater Lake Highway** from **Sand Creek Junction**, Klamath County, and 20 feet north of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "5054 3077 3 1928" and set in the top of a concrete post. (1,540.460 meters or 5,053.992 feet.)

2 (U. S. B. P. R.).—At **Sand Creek Junction**, Klamath County, west of The **Dalles-California Highway**, at mileage 236, in the southwest triangle of the intersection with the **Crater Lake Highway**. A United States Bureau of Public Roads standard disk, stamped "5004 3077 2 1928" and set in the top of a concrete post. (1,525.156 meters or 5,003.783 feet.)

1 (U. S. B. P. R.).—At **Sand Creek Junction**, Klamath County, west of The **Dalles-California Highway**, at mileage 236, in the northwest triangle of the intersection with the **Crater Lake Highway**. A United States Bureau of Public Roads standard disk, stamped "5003 3077 1 1928" and set in the top of a concrete post. (1,524.838 meters or 5,002.739 feet.)

NOTE.—This bench mark is also a United States Geological Survey transit traverse station.

D 61.—About 2 miles northeast along the road to **Chinchalo** from **Sand Creek Junction**, Klamath County, opposite a 4-foot tree and stump, and 25 feet southeast of the road. A standard disk, stamped "D 61 1931" and set in the top of a concrete post. (1,470.745 meters or 4,825.269 feet.)

E 61.—About 4.9 miles northeast along the road to **Chinchalo** from **Sand Creek Junction**, Klamath County, about 2.5 miles west of **Chinchalo**, 40 feet south of

the Pelican Bay Lumber Co. railroad, and 30 feet southeast of the center line of the road. A standard disk stamped "E 61 1931" and set in the top of a concrete post. (1,397.921 meters or 4,586.346 feet.)

M 1 (U. S. G. S.).—About 1.4 miles northwest along the road from Chinchalo, Klamath County, 1 mile west of the Southern Pacific Co. Cascade line, 150 feet west of the north bridge over the creek, at the place where the old stage road crosses Sand Creek, 50 feet north of the creek, and south of the road at the camp ground. A United States Geological Survey standard cap, stamped "4561 BB M 1 1908" and riveted on the top of a 3½-inch iron pipe cased in concrete. (1,390.184 meters or 4,560.962 feet.)

K 61.—At Chinchalo, Klamath County, about 200 feet north of the Southern Pacific Co. railroad station, 45 feet west of the track, and 5 feet south of a gate to a crossroad. A standard disk, stamped "K 61 1931" and set in the top of a concrete post. (1,382.985 meters or 4,537.343 feet.)

For additional bench marks in the vicinity of Chinchalo, see pages 187 and 214.

LINE 25, LAPINE TO VALLEY FALLS, OREG.

[Second-order leveling]

This line follows the Fremont Highway from Lapine to Valley Falls. The field work was done during the fall of 1931 by H. J. Oliver, junior hydrographic and geodetic engineer, and E. E. Stohsner, aid.

M 62.—See page 184.

H 74.—About 1.8 miles south along The Dalles-California Highway from Lapine, Deschutes County, in the southeast angle of the intersection with the Fremont Highway, 216 feet east of The Dalles-California Highway, 54 feet north of the south branch of the Fremont Highway, and 48 feet west of the east branch. A standard disk, stamped "H 74 1931" and set in the top of a concrete post. (1,294.214 meters or 4,246.100 feet.)

G 74.—About 3.0 miles south along the Fremont Highway from Lapine, Deschutes County, and about 200 feet east of a large barn, in the center of a concrete head wall of a large culvert. A standard disk, stamped "G 74 1931." (1,294.728 meters or 4,247.787 feet.)

4260 (O. S. H. D.).—In Klamath County, about 5.0 miles south along the Fremont Highway from Lapine, Deschutes County, about 0.3 mile south of the crossing of the Great Northern Railway, and 40 feet westward from the center line of the highway. An Oregon State Highway Department standard disk, stamped "4260 1929" and set in the top of a concrete post. (1,298.460 meters or 4,260.031 feet.)

F 74.—In Klamath County, about 6.3 miles south along the Fremont Highway from Lapine, Deschutes County, about 0.5 mile north of a secondary road crossing, and 40 feet westward from the center line of the highway. A standard disk, stamped "F 74 1931" and set in the top of a concrete post. (1,300.897 meters or 4,268.026 feet.)

4307 (O. S. H. D.).—In Klamath County, about 8.2 miles south along the Fremont Highway from Lapine, Deschutes County, about 300 feet northward from the top of a hill, and 85 feet east of the center line of the highway, in a rock outcrop. An Oregon State Highway Department standard disk, stamped "4307." (1,312.720 meters or 4,306.815 feet.)

E 74.—In Klamath County, about 9.6 miles south along the Fremont Highway from Lapine, Deschutes County, about 100 feet northward from a tall pine tree on the east side of the highway, and 25 feet west of the center line of the highway. A standard disk, stamped "E 74 1931" and set in the top of a concrete post. (1,321.611 meters or 4,335.985 feet.)

4343 (O. S. H. D.).—In Klamath County, about 11.1 miles south along the Fremont Highway from Lapine, Deschutes County, about 200 feet north of a small rise, just north of a crossroad, and 30 feet west of the center line of the highway. An Oregon State Highway Department standard disk, stamped "4343" and set in the top of a concrete post. (1,323.852 meters or 4,343.338 feet.)

D 74.—In Klamath County, about 12.1 miles southeast along the Fremont Highway from Lapine, Deschutes County, 100 feet south of the south end of a curve at the south end of a 10-mile tangent, and 40 feet west of the center line of the highway. A standard disk, stamped "D 74 1931" and set in the top of a concrete post. (1,330.076 meters or 4,363.758 feet.)

2 (U. S. B. P. R.).—In Klamath County, about 14.1 miles southeast along the Fremont Highway from Lapine, Deschutes County, 10 feet east of a large tree blazed with a cross, and 36 feet north of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4541 2 1929" and set in the top of a concrete post. (1,384.265 meters or 4,541.543 feet.)

3 (U. S. B. P. R.).—In Klamath County, about 15.9 miles southeast along the Fremont Highway from Lapine, Deschutes County, at the west end of a curve, and 36 feet south of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4618 3 1929" and set in the top of a concrete post. (1,407.768 meters or 4,618.652 feet.)

6 (U. S. B. P. R.).—In Klamath County, about 16.1 miles southeast along the Fremont Highway from Lapine, Deschutes County, at the east end of a curve, and 36 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4650 6 1929" and set in the top of a concrete post. (1,417.343 meters or 4,650.066 feet.)

8 (U. S. B. P. R.).—In Klamath County, about 16.6 miles southeast along the Fremont Highway from Lapine, Deschutes County, at a curve, and 36 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4704 8 1929" and set in the top of a concrete post. (1,433.992 meters or 4,704.689 feet.)

10 (U. S. B. P. R.).—In Klamath County, about 17.0 miles southeast along the Fremont Highway from Lapine, Deschutes County, at the east end of a curve, and 36 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4696 10 1929" and set in the top of a concrete post. (1,431.394 meters or 4,696.165 feet.)

12 (U. S. B. P. R.).—In Klamath County, about 17.7 miles southeast along the Fremont Highway from Lapine, Deschutes County, at the west end of a curve, and 36 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4718 12 1929" and set in the top of a concrete post. (1,438.007 meters or 4,717.861 feet.)

14 (U. S. B. P. R.).—In Klamath County, about 18.0 miles southeast along the Fremont Highway from Lapine, Deschutes County, at the east end of a curve, and 36 feet north of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4704 14 1929" and set in the top of a concrete post. (1,433.743 meters or 4,703.872 feet.)

16 (U. S. B. P. R.).—In Klamath County, about 18.4 miles southeast along the Fremont Highway from Lapine, Deschutes County, 200 feet west of the top of a small hill, and 36 feet north of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4730 16 1929" and set in the top of a concrete post. (1,441.686 meters or 4,729.931 feet.)

17 (U. S. B. P. R.).—In Klamath County, about 18.8 miles southeast along the Fremont Highway from Lapine, Deschutes County, about $\frac{1}{8}$ mile west of the old Summit stage station, 180 feet west of 18 (U. S. B. P. R.), described below, and 36 feet south of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4719 17 1929" and set in the top of a concrete post. (1,438.522 meters or 4,719.551 feet.)

18 (U. S. B. P. R.).—In Klamath County, about 18.8 miles southeast along the Fremont Highway from Lapine, Deschutes County, about $\frac{1}{8}$ mile west of the old Summit stage station, and 36 feet north of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4720 18 1929" and set in the top of a concrete post. (1,438.681 meters or 4,720.073 feet.)

C 74 (U. S. F. S.).—In Klamath County, about 19.0 miles southeast along the Fremont Highway from Lapine, Deschutes County, at the old Summit stage station, 240 feet south of the center line of the highway, and 54 feet west of a house, at the fence line. A United States Forest Service standard disk, stamped "C 74 1931" and set in the top of a concrete post. (1,438.785 meters or 4,720.414 feet.)

20 (U. S. B. P. R.).—In Klamath County, about 19.3 miles southeast along the Fremont Highway from Lapine, Deschutes County, at the west end of a curve, and 36 feet north of the center line of the highway, in a small clearing.

A United States Bureau of Public Roads standard disk, stamped "4746 20 1929" and set in the top of a concrete post. (1,446.784 meters or 4,746.657 feet.)

22 (U. S. B. P. R.).—In Klamath County, about 19.4 miles southeast along the Fremont Highway from Lapine, Deschutes County, at the east end of a curve, and 36 feet north of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4757 22 1929" and set in the top of a concrete post. (1,450.052 meters or 4,757.379 feet.)

23 (U. S. B. P. R.).—In Klamath County, about 19.8 miles southeast along the Fremont Highway from Lapine, Deschutes County, 150 feet east of the top of a hill, and 36 feet south of the center line of the highway, east of a large pine tree. A United States Bureau of Public Roads standard disk, stamped "4769 23 1929" and set in the top of a concrete post. (1,453.781 meters or 4,769.613 feet.)

24 (U. S. B. P. R.).—In Klamath County, about 19.8 miles southeast along the Fremont Highway from Lapine, Deschutes County, 250 feet east of the top of a hill, and 36 feet north of the highway. A United States Bureau of Public Roads standard disk, stamped "4764 24 1929" and set in the top of a concrete post. (1,452.159 meters or 4,764.292 feet.)

26 (U. S. B. P. R.).—In Klamath County, about 20.1 miles southeast along the Fremont Highway from Lapine, Deschutes County, at the west end of a curve, and 36 feet north of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4725 26 1929" and set in the top of a concrete post. (1,440.144 meters or 4,724.872 feet.)

27 (U. S. B. P. R.).—In Lake County, about 20.2 miles southeast along the Fremont Highway from Lapine, Deschutes County, at the foot of a hill, at the east end of a curve, and 36 feet south of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4714 27 1929" and set in the top of a concrete post. (1,436.774 meters or 4,713.816 feet.)

30 (U. S. B. P. R.).—In Lake County, about 20.4 miles southeast along the Fremont Highway from Lapine, Deschutes County, on the section line, 50 feet east of highway station 6680, and 36 feet north of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4708 30 1929" and set in the top of a concrete post. (1,435.096 meters or 4,708.311 feet.)

32 (U. S. B. P. R.).—In Lake County, about 21.4 miles southeast along the Fremont Highway from Lapine, Deschutes County, at the top of a hill at the west end of a curve, and 36 feet north of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4711 32 1929" and set in the top of a concrete post. (1,435.946 meters or 4,711.099 feet.)

34 (U. S. B. P. R.).—In Lake County, about 21.7 miles southeast along the Fremont Highway from Lapine, Deschutes County, at the east end of a curve, and 36 feet north of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4679 34 1929" and set in the top of a concrete post. (1,426.250 meters or 4,679.288 feet.)

36 (U. S. B. P. R.).—In Lake County, about 22.4 miles southeast along the Fremont Highway from Lapine, Deschutes County, at the west end of a curve, and 36 feet north of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4671 36 1929" and set in the top of a concrete post. (1,423.758 meters or 4,671.113 feet.)

37 (U. S. B. P. R.).—In Lake County, about 22.8 miles southeast along the Fremont Highway from Lapine, Deschutes County, at the south end of a curve, and 36 feet southwest of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4682 37 1929" and set in the top of a concrete post. (1,427.260 meters or 4,682.602 feet.)

40 (U. S. B. P. R.).—In Lake County, about 23.0 miles southeast along the Fremont Highway from Lapine, Deschutes County, opposite highway station 6550, and 36 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4687 40 1929" and set in the top of a concrete post. (1,428.657 meters or 4,687.185 feet.)

42 (U. S. B. P. R.).—In Lake County, about 23.7 miles southeast along the Fremont Highway from Lapine, Deschutes County, at a cut, 36 feet northeast of the center line of the highway, and 5 feet above the level of the roadway. A United States Bureau of Public Roads standard disk, stamped "4691 42 1930" and set in the top of a concrete post. (1,429.446 meters or 4,689.774 feet.)

44 (U. S. B. P. R.).—In Lake County, about 23.9 miles southeast along the Fremont Highway from Lapine, Deschutes County, 200 feet west of a rock cut, and 36 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4683 44 1930" and set in the top of a concrete post. (1,427.437 meters or 4,683.183 feet.)

46 (U. S. B. P. R.).—In Lake County, about 24.4 miles southeast along the Fremont Highway from Lapine, Deschutes County, about 26.0 miles northwest of Silver Lake, about 350 feet south of the side road to the Pot Holes fire road, and 35 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4663 46 1930" and set in the top of a concrete post. (1,421.469 meters or 4,663.603 feet.)

48 (U. S. B. P. R.).—About 25.6 miles northwest along the Fremont Highway from Silver Lake, Lake County, and 36 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4665 48 1930" and set in the top of a concrete post. (1,421.932 meters or 4,665.122 feet.)

50 (U. S. B. P. R.).—About 25.4 miles northwest along the Fremont Highway from Silver Lake, Lake County, 150 feet south of a small crossroad, and 36 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4650 50 1930" and set in the top of a concrete post. (1,417.844 meters or 4,651.710 feet.)

52 (U. S. B. P. R.).—About 25.2 miles northwest along the Fremont Highway from Silver Lake, Lake County, and 36 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4666 52 1930" and set in the top of a concrete post. (1,422.405 meters or 4,666.674 feet.)

54 (U. S. B. P. R.).—About 24.6 miles northwest along the Fremont Highway from Silver Lake, Lake County, 110 feet east of a 4-foot pine tree, and 35 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4649 54 1930" and set in the top of a concrete post. (1,416.986 meters or 4,648.895 feet.)

55 (U. S. B. P. R.).—About 23.8 miles northwest along the Fremont Highway from Silver Lake, Lake County, 190 feet east of survey station 6360, and 35 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4686 55 1930" and set in the top of a concrete post. (1,428.372 meters or 4,686.250 feet.)

58 (U. S. B. P. R.).—About 22.9 miles northwest along the Fremont Highway from Silver Lake, Lake County, at the top of a small hill, and 35 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4676 58 1930" and set in the top of a concrete post. (1,425.215 meters or 4,675.893 feet.)

60 (U. S. B. P. R.).—About 22.7 miles northwest along the Fremont Highway from Silver Lake, Lake County, 95 feet east of survey station 6320, and 35 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4682 60 1930" and set in the top of a concrete post. (1,427.123 meters or 4,682.153 feet.)

62 (U. S. B. P. R.).—About 22.2 miles northwest along the Fremont Highway from Silver Lake, Lake County, 100 feet west of the top of a hill, and 40 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4725 62 1930" and set in the top of a concrete post. (1,440.113 meters or 4,724.771 feet.)

64 (U. S. B. P. R.).—About 22.1 miles northwest along the Fremont Highway from Silver Lake, Lake County, at the north end of a curve, and 40 feet northeast of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4707 64 1930" and set in the top of a concrete post. (1,434.904 meters or 4,707.681 feet.)

66 (U. S. B. P. R.).—About 21.9 miles northwest along the Fremont Highway from Silver Lake, Lake County, at a curve, and 45 feet east of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4677 66 1930" and set in the top of a concrete post. (1,439.230 meters or 4,721.903 feet.)

67 (U. S. B. P. R.).—About 21.0 miles northwest along the Fremont Highway from Silver Lake, Lake County, 125 feet south of a side road marking the boundary of a game reserve, and 33 feet west of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4792 67 1930" and set in the top of a concrete post. (1,460.527 meters or 4,791.748 feet.)

71 (U. S. B. P. R.).—About 20.5 miles northwest along the Fremont Highway from Silver Lake, Lake County, 128 feet west of survey station 6190, and 30 southwest of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4653 71 1930" and set in the top of a concrete post. (1,418.388 meters or 4,653.495 feet.)

74 (U. S. B. P. R.).—About 20.2 miles northwest along the Fremont Highway from Silver Lake, Lake County, at a curve, and 33 feet north of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4602 74 1930" and set in the top of a concrete post. (1,399.254 meters or 4,590.719 feet.)

75 (U. S. B. P. R.).—About 19.9 miles northwest along the Fremont Highway from Silver Lake, Lake County, 200 feet east of the east end of a curve, and 40 feet south of the center line of the highway. A United States Bureau of Public Roads standard disk, stamped "4511 75 1930" and set in the top of a concrete post. (1,374.879 meters or 4,510.749 feet.)

77 (U. S. B. P. R.).—About 19.7 miles northwest along the Fremont Highway from Silver Lake, Lake County, and 35 feet south of the center line of the highway, at an old north-and-south fence line. A United States Bureau of Public Roads standard disk, stamped "4479 77 1930" and set in the top of a concrete post. (1,365.391 meters or 4,479.620 feet.)

N (U. S. F. S.).—About 19.0 miles northwest along the Fremont Highway from Silver Lake, Lake County, 30 feet west of a shed at the Olmstead ranch, formerly known as the Horse ranch, 15 feet south of the west branch of the road to Fort Rock, and 60 feet north of the center line of the highway, in the top of a bowlder. A United States Forest Service standard disk, stamped "4492 N 1929." (1,369.168 meters or 4,492.012 feet.)

B 74.—About 17.4 miles northwest along the Fremont Highway from Silver Lake, Lake County, 45 feet north of the road to the George Peyerl ranch, 55 feet east of the center line of the highway; and 15 feet east of the fence corner. A standard disk, stamped "B 74 1931" and set in the top of a concrete post. (1,375.192 meters or 4,511.776 feet.)

A 74.—About 15.7 miles northwest along the Fremont Highway from Silver Lake, Lake County, about 400 feet north of the south end of a rock ridge, 300 feet west of the center line of the highway, and 100 feet east of the ridge, in a lava bowlder. A standard disk, stamped "A 74 1931." (1,377.139 meters or 4,518.163 feet.)

Z 73.—About 13.5 miles northwest along the Fremont Highway from Silver Lake, Lake County, 0.3 mile north of a service station, and 35 feet west of the center line of the highway. A standard disk, stamped "Z 73 1931" and set in the top of a concrete post. (1,385.552 meters or 4,545.765 feet.)

Y 73.—About 11.2 miles northwest along the Fremont Highway from Silver Lake, Lake County, 0.2 mile south of a curve to the west, and 36 feet west of the center line of the highway. A standard disk, stamped "Y 73 1931" and set in the top of a concrete post. (1,397.018 meters or 4,583.383 feet.)

X 73.—About 9.0 miles northwest along the Fremont Highway from Silver Lake, Lake County, 0.2 mile south of a curve to the west, and 43 feet west of the center line of the highway. A standard disk, stamped "X 73 1931" and set in the top of a concrete post. (1,364.525 meters or 4,476.779 feet.)

W 73.—About 6.7 miles northwest along the Fremont Highway from Silver Lake, Lake County, and 55 feet west of the center line of the highway, opposite a large square rock on the hillside. A standard disk, stamped "W 73 1931" and set in the top of a concrete post. (1,334.020 meters or 4,376.697 feet.)

V 73.—About 4.5 miles northwest along the Fremont Highway from Silver Lake, Lake County, 36 feet west of the center line of the highway, and 6 feet north of the south end of the fence line. A standard disk, stamped "V 73 1931" and set in the top of a concrete post. (1,322.167 meters or 4,337.810 feet.)

U 73.—About 2.2 miles northwest along the Fremont Highway from Silver Lake, Lake County, at the south end of a cut, and 35 feet east of the center line of the highway, at the fence line. A standard disk, stamped "U 73 1931" and set in the top of a concrete post. (1,337.217 meters or 4,387.136 feet.)

E (U. S. F. S.).—About 0.7 mile west along the Fremont Highway from Silver Lake, Lake County, at the Billings Ranger Station, just outside of the northwest corner of the yard. A United States Forest Service iron post, stamped "E 1925." (1,335.606 meters or 4,381.901 feet.)

T 73 (U. S. F. S.).—About 0.7 mile west along the Fremont Highway from Silver Lake, Lake County, at the Billings Ranger Station, just outside of the

northwest corner of the yard. A United States Forest Service standard disk, stamped "T 73 1931" and set in the top of a concrete post. (1,335.534 meters or 4,381.664 feet.)

4344 (O. S. H. D.).—At Silver Lake, Lake County, at the Mount Hager High School, in the northwest corner of the stops at the north side of the building. A chiseled cross. (1,323.985 meters or 4,343.774 feet.)

S 73.—At Silver Lake, Lake County, at the Mount Hager High School, in the north wall, 12 feet east of the west door, and 1 foot above the ground. A standard disk, stamped "S 73 1931" and set vertically. (1,324.344 meters or 4,344.952 feet.)

R 73.—About 1.0 mile east along the Fremont Highway from Silver Lake, Lake County, at the northeast corner of a farmhouse yard, and 36 feet south of the center line of the highway. A standard disk, stamped "R 73 1931" and set in the top of a concrete post. (1,325.213 meters or 4,347.803 feet.)

Q 73.—About 3.3 miles east along the Fremont Highway from Silver Lake, Lake County, and 37 feet north of the center line of the highway, in line with a north-and-south fence. A standard disk, stamped "Q 73 1931" and set in the top of a concrete post. (1,318.032 meters or 4,324.243 feet.)

P 73.—About 5.6 miles east along the Fremont Highway from Silver Lake, Lake County, about 500 feet east of two windmills in a field to the north, and 38 feet north of the center line of the highway, at the fence line. A standard disk, stamped "P 73 1931" and set in the top of a concrete post. (1,314.818 meters or 4,313.699 feet.)

N 73.—About 7.8 miles east along the Fremont Highway from Silver Lake, Lake County, 300 feet east of an old house, 37 feet south of the center line of the highway, and 6 feet east of the gate post, at the fence line. A standard disk, stamped "N 73 1931" and set in the top of a concrete post. (1,314.544 meters or 4,312.800 feet.)

4453 (U. S. B. R.).—About 9 miles east of Silver Lake, Lake County, about 1 mile north of the Fremont Highway, just south of a prominent butte, at the west end of a long knoll, about 500 feet northwest of a fence corner which is probably the quarter corner between secs. 19 and 20, T. 28 S., R. 16 E., in a small rock outcrop 1 foot square. A United States Bureau of Reclamation standard disk, stamped "4453." (1,317.620 meters or 4,322.892 feet.)

M 73.—About 10.0 miles east along the Fremont Highway from Silver Lake, Lake County, and 25 feet south of the center line of the highway, at the fence line. A standard disk, stamped "M 73 1931" and set in the top of a concrete post. (1,320.961 meters or 4,333.853 feet.)

L 73.—About 12.4 miles southeast along the Fremont Highway from Silver Lake, Lake County, at the foot of a steep cliff, and 125 feet east of the center line of the highway, in a large boulder. A standard disk, stamped "L 73 1931." (1,316.926 meters or 4,320.615 feet.)

K 73 (O. S. H. D.).—About 12.6 miles southeast along the Fremont Highway from Silver Lake, Lake County, 200 feet north of a fence corner, and 55 feet east of the center line of the highway, in the top of a large boulder in an open space. An Oregon State Highway Department standard disk, stamped "K 73 1931." (1,318.775 meters or 4,326.681 feet.)

J 73 (O. S. H. D.).—About 13.3 miles southeast along the Fremont Highway from Silver Lake, Lake County, at the south edge of a side road, and 35 feet west of the center line of the highway, in a boulder. An Oregon State Highway Department standard disk, stamped "J 73 1931." (1,330.324 meters or 4,364.571 feet.)

H 73.—About 13.4 miles southeast along the Fremont Highway from Silver Lake, Lake County, at the north end of a curve, and 50 feet northeast of the center line of the highway, in an embedded boulder on the hillside. A standard disk, stamped "H 73 1931." (1,337.429 meters or 4,387.882 feet.)

GG 73.—About 13.9 miles southeast along the Fremont Highway from Silver Lake, Lake County, and 20 feet east of the center line of the highway, in a rock outcrop. A standard disk, stamped "GG 73 1931." (1,387.199 meters or 4,551.169 feet.)

G 73 (O. S. H. D.).—About 14.4 miles southeast along the Fremont Highway from Silver Lake, Lake County, on the top of a ridge, 40 feet east of the center line of the highway, in an embedded boulder about 8 feet higher than the roadway. An Oregon State Highway Department standard disk, stamped "G 73 1931." (1,412.707 meters or 4,634.856 feet.)

F 73 (O. S. H. D.).—About 14.8 miles southeast along the Fremont Highway from Silver Lake, Lake County, near the middle of a long curve, and 45 feet south of the center line of the highway, in an embedded boulder. An Oregon State Highway Department standard disk, stamped "F 73 1931." (1,452.650 meters or 4,765.902 feet.)

D 73 (U. S. F. S.).—About 15.1 miles southeast along the Fremont Highway from Silver Lake, Lake County, 6.2 miles north of Summer Lake, at Picture Rock Pass, at the south edge of the old roadway, 100 feet south of the center line of the highway, and just north of the picture rocks. A United States Forest Service standard disk, stamped "D 73 1931" and set in the top of a concrete post. (1,472.656 meters or 4,831.539 feet.)

E 73 (O. S. H. D.).—About 15.1 miles southeast along the Fremont Highway from Silver Lake, Lake County, 6.2 miles north of Summer Lake, at Picture Rock Pass, at the south edge of the old roadway, 100 feet south of the center line of the highway, in bedrock near the base of the picture rocks. An Oregon State Highway Department standard disk, stamped "E 73 1931." (1,472.528 meters or 4,831.119 feet.)

C 73 (O. S. H. D.).—About 5.6 miles north along the Fremont Highway from Summer Lake, Lake County, 75 feet north of the south end of a curve, and 120 feet west of the center line of the highway, in a boulder. An Oregon State Highway Department standard disk, stamped "C 73 1931." (1,449.036 meters or 4,754.046 feet.)

B 73 (O. S. H. D.).—About 4.9 miles north along the Fremont Highway from Summer Lake, Lake County, at the south end of a small cut, and 37 feet southwest of the center line of the highway, in a boulder. An Oregon State Highway Department standard disk, stamped "B 73 1931." (1,449.775 meters or 4,756.470 feet.)

A 73 (O. S. H. D.).—About 4.5 miles north along the Fremont Highway from Summer Lake, Lake County, at the point of a curve, 37 feet southwest of the center line of the highway, in a boulder. An Oregon State Highway Department standard disk, stamped "A 73 1931." (1,442.146 meters or 4,731.441 feet.)

Z 72 (O. S. H. D.).—About 4.2 miles north along the Fremont Highway from Summer Lake, Lake County, at the point of a U curve, 125 feet north of the center line of the highway, on the west bank of the creek, in rock. An Oregon State Highway Department standard disk, stamped "Z 72 1931." (1,415.684 meters or 4,644.623 feet.)

Y 72.—About 3.8 miles north along the Fremont Highway from Summer Lake, Lake County, at the point of a curve, and 45 feet southwest of the center line of the highway, in rock over the edge of the fill. A standard disk, stamped "Y 72 1931." (1,399.345 meters or 4,591.018 feet.)

X 72 (O. S. H. D.).—About 3.2 miles north along the Fremont Highway from Summer Lake, Lake County, 200 feet east of the west end of a curve, and 40 feet north of the center line of the highway, in a flat boulder. An Oregon State Highway Department standard disk, stamped "X 72 1931." (1,370.609 meters or 4,496.740 feet.)

W 72.—About 2.7 miles north along the Fremont Highway from Summer Lake, Lake County, and 70 feet west of the center line of the highway, in a flat boulder on the hillside. A standard disk, stamped "W 72 1931." (1,347.905 meters or 4,422.252 feet.)

V 72.—About 0.3 mile north along the Fremont Highway from Summer Lake, Lake County, 100 feet north of a slight curve, and 33 feet west of the center line of the highway, at the fence line. A standard disk, stamped "V 72 1931" and set in the top of a concrete post. (1,292.885 meters or 4,241.740 feet.)

U 72.—About 23.3 miles northwest along the Fremont Highway from Paisley, Lake County, 150 feet north of the Lincoln Fur Farm, 42 feet east of the center line of the highway, and 8 feet north of a board gate. A standard disk, stamped "U 72 1931" and set in the top of a concrete post. (1,274.053 meters or 4,179.956 feet.)

T 72.—About 26.0 miles northwest along the Fremont Highway from Paisley, Lake County, opposite a large blue ranch house, and 27 feet east of the center line of the highway, in a large flat boulder. A standard disk, stamped "T 72 1931." (1,297.995 meters or 4,258.505 feet.)

S 72.—About 23.9 miles northwest along the Fremont Highway from Paisley, Lake County, opposite a large barn belonging to Austin Deboy, and 25 feet west of the center line of the highway, at the fence line. A standard disk,

stamped "S 72 1931" and set in the top of a concrete post. (1,282.550 meters or 4,207.833 feet.)

R 72.—About 21.6 miles northwest along the Fremont Highway from Paisley, Lake County, 100 feet north of a long barn, 50 feet north of a rock cut, and 36 feet southwest of the center line of the highway. A standard disk, stamped "R 72 1931" and set in the top of a concrete post. (1,276.652 meters or 4,188.482 feet.)

Q 72 (U. S. F. S.).—About 19.4 miles northwest along the Fremont Highway from Paisley, Lake County, at the summit of a hill, 25 feet east of the center line of the highway, at the fence line. A United States Forest Service standard disk, stamped "Q 72 1931" and set in the top of a concrete post. (1,286.210 meters or 4,219.841 feet.)

P 72.—About 17.2 miles northwest along the Fremont Highway from Paisley, Lake County, 0.2 mile south of a ranch house, and 25 feet east of the center line of the highway, on the bank of a small ditch. A standard disk, stamped "P 72 1931" and set in the top of a concrete post. (1,275.328 meters or 4,184.139 feet.)

N 72.—About 14.6 miles northwest along the Fremont Highway from Paisley, Lake County, in the middle of a short tangent, and 100 feet west of the center line of the highway, in a boulder 6 feet square. A standard disk, stamped "N 72 1931." (1,266.386 meters or 4,154.801 feet.)

M 72 (U. S. F. S.).—About 12.4 miles northwest along the Fremont Highway from Paisley, Lake County, 0.1 mile west of Harvey Creek, and 30 feet southwest of the center line of the highway, at the fence line. A United States Forest Service standard disk, stamped "M 72 1931" and set in the top of a concrete post. (1,289.134 meters or 4,229.434 feet.)

L 72.—About 10.1 miles northwest along the Fremont Highway from Paisley, Lake County, 150 feet east of the top of a small hill, 10 feet east of a culvert, and 30 feet south of the center line of the highway, at the fence corner. A standard disk, stamped "L 72 1931" and set in the top of a concrete post. (1,304.944 meters or 4,281.304 feet.)

K 72.—About 7.6 miles northwest along the Fremont Highway from Paisley, Lake County, 45 feet east of a metal culvert, and 36 feet north of the center line of the highway. A standard disk, stamped "K 72 1931" and set in the top of a concrete post. (1,283.289 meters or 4,210.257 feet.)

J 72.—About 5.2 miles northwest along the Fremont Highway from Paisley, Lake County, 100 feet east of two small bushy trees, and 37 feet north of the center line of the highway. A standard disk, stamped "J 72 1931" and set in the top of a concrete post. (1,303.577 meters or 4,276.819 feet.)

H 72.—About 3.0 miles northwest along the Fremont Highway from Paisley, Lake County, 400 feet east of a curve to the north, and 36 feet north of the center line of the highway. A standard disk, stamped "H 72 1931" and set in the top of a concrete post. (1,330.050 meters or 4,363.672 feet.)

Paisley South Base.—About 0.7 mile north along the Fremont Highway from Paisley, Lake County, at the junction with the Burns road, 70 feet south of the road to Burns, 63 feet east of the center line of the Fremont Highway, and 25 feet east of the fence corner, at the fence line. A standard triangulation-station disk, stamped "SOUTH BASE 1920" and set in the top of a concrete post. (1,354.118 meters or 4,442.635 feet.)

Paisley North Base.—About 10 miles north of Paisley, Lake County, about 0.4 mile west of the Paisley-Thousand Springs road, at the south base of the southerly one of two rocky buttes near the line between T. 31 S. and T. 32 S., in a boulder. A standard triangulation-station disk, stamped "NORTH BASE 1920." (1,345.00 meters or 4,412.73 feet.)

NOTE.—The elevation of Paisley North Base was determined by means of wye leveling between Paisley South Base and Paisley North Base, in connection with the measurement of the base, in 1920.

4371 (O. S. H. D.).—At the north edge of Paisley, Lake County, in the south end of the east wing wall of the Chewaucan River bridge. An Oregon State Highway Department standard disk, stamped "4371 1920." (1,332.002 meters or 4,370.077 feet.)

G 72.—At Paisley, Lake County, at the west entrance to the town, in front of the opening between the two south pillars of the concrete bridge. A standard disk, stamped "G 72 1931." (1,330.170 meters or 4,364.066 feet.)

F 72.—About 1½ miles east along the Fremont Highway from Paisley, Lake County, opposite the Parker ranch house, and 15 feet north of a fence corner, in the south end of the east head wall of a double culvert. A standard disk, stamped "F 72 1931." (1,318.574 meters or 4,326.021 feet.)

EE 72.—About 3.2 miles south along the Fremont Highway from Paisley, Lake County, in the north end of the west railing of the concrete bridge over an irrigation canal. This mark is opposite 4355 (O. S. H. D.), described below. A standard disk, stamped "EE 72 1931." (1,327.208 meters or 4,354.348 feet.)

4355 (O. S. H. D.).—About 3.2 miles south along the Fremont Highway from Paisley, Lake County, in the north end of the east railing of the concrete bridge over an irrigation canal. An Oregon State Highway Department standard disk, stamped "4355 1929." (1,327.200 meters or 4,354.322 feet.)

E 72.—About 4.5 miles south along the Fremont Highway from Paisley, Lake County, in the north end of the east head wall of a concrete culvert. A standard disk, stamped "E 72 1931." (1,332.475 meters or 4,371.628 feet.)

4375 (O. S. H. D.).—About 6.4 miles south along the Fremont Highway from Paisley, Lake County, in the west end of the south head wall of a concrete culvert. An Oregon State Highway Department standard disk, stamped "4375 1929." (1,333.253 meters or 4,374.181 feet.)

D 72.—About 7.4 miles south along the Fremont Highway from Paisley, Lake County, 63 feet east of a concrete culvert, and 27 feet north of the center line of the highway. A standard disk, stamped "D.72 1931" and set in the top of a concrete post. (1,323.562 meters or 4,342.386 feet.)

4316 (O. S. H. D.).—About 9.2 miles south along the Fremont Highway from Paisley, Lake County, in the east end of the south head wall of a concrete culvert. An Oregon State Highway Department standard disk, stamped "4316 1929." (1,315.255 meters or 4,315.132 feet.)

4315 (O. S. H. D.).—About 12.8 miles north along the Fremont Highway from Valley Falls, Lake County, in the west end of the south head wall of a concrete culvert. A chiseled square. (1,315.194 meters or 4,314.932 feet.)

4303 (O. S. H. D.).—About 11.2 miles north along the Fremont Highway from Valley Falls, Lake County, in the north end of the cap timber of the west abutment of the wooden bridge across Chewaucan River. A 6-inch spike. (1,311.538 meters or 4,302.938 feet.)

4298 (O. S. H. D.).—About 10.2 miles north along the Fremont Highway from Valley Falls, Lake County, in the west end of the south head wall of a concrete culvert. A chiseled square. (1,310.014 meters or 4,297.938 feet.)

4289 (O. S. H. D.).—About 7.9 miles north along the Fremont Highway from Valley Falls, Lake County, at survey station 113 and in the west end of the north head wall of a concrete culvert. An Oregon State Highway Department standard disk, stamped "4289 1929." (1,307.141 meters or 4,288.512 feet.)

4289 (O. S. H. D.).—About 6.4 miles north along the Fremont Highway from Valley Falls, Lake County, in the east end of the south head wall of a concrete culvert. A chiseled square. (1,307.326 meters or 4,289.119 feet.)

4291 (O. S. H. D.).—About 4.6 miles north along the Fremont Highway from Valley Falls, Lake County, in the south end of the east head wall of a culvert. An Oregon State Highway Department standard disk, stamped "4291 1929." (1,307.766 meters or 4,290.562 feet.)

C 72.—About 4.0 miles north along the Fremont Highway from Valley Falls, Lake County, 500 feet south of a wooden bridge, 65 feet north of the fence corner, and 35 feet northeast of the center line of the highway. A standard disk, stamped "C 72 1931" and set in the top of a concrete post. (1,308.150 meters or 4,291.822 feet.)

B 72.—About 2.0 miles north along the Fremont Highway from Valley Falls, Lake County, 27 feet southwest of the center line of the highway, and 20 feet south of a board gate. A standard disk, stamped "B 72 1931" and set in the top of a concrete post. (1,308.322 meters or 4,292.386 feet.)

A 72.—At Valley Falls, Lake County, 100 feet north of the post office and store, 75 feet west of the center line of the Fremont Highway, and 50 feet west of the fence corner, at the fence line. A standard disk, stamped "A 72 1931" and set in the top of a concrete post. (1,318.671 meters or 4,326.340 feet.)

A 17.—See page 40.

LINE 26, KLAMATH JUNCTION TO KLAMATH FALLS, OREG.

[Second-order leveling]

This line follows the Green Springs Highway from Klamath Junction to Klamath Falls. The field work was done during the fall of 1931, by H. J. Oliver, junior hydrographic and geodetic engineer.

E 6.—See page 58.

S 75 (O. S. H. D.).—About 1 mile northwest along the Pacific Highway from Klamath Junction, Jackson County, and about 300 feet east of a side road leading south past a school, on the southward side of the highway, in the west end of a culvert head wall. An Oregon State Highway Department standard disk, stamped "S 75 1931." (650.976 meters or 2,135.744 feet.)

R 75.—At Klamath Junction, Jackson County, 35 feet north of the center line of the Pacific Highway, in line with the Green Springs Highway, and near the direction signs. A standard disk, stamped "R 75 1931" and set in the top of a concrete post. (668.461 meters or 2,193.109 feet.)

Q 75.—About 2 miles east along the Green Springs Highway from Klamath Junction, Jackson County, in the northeast corner of an old school yard, 40 feet west of a wood stave flume, and 20 feet south of the center line of the highway. A standard disk, stamped "Q 75 1931" and set in the top of a concrete post. (673.419 meters or 2,209.375 feet.)

P 75.—About 11.8 miles west along the Green Springs Highway from Lincoln, Jackson County, opposite a tile flume on the point of a curve, on a hillside, about 27 feet north of the center line of the highway. A standard disk, stamped "P 75 1931" and set in the top of a concrete post. (819.084 meters or 2,687.278 feet.)

N 75.—About 10.7 miles west along the Green Springs Highway from Lincoln, Jackson County, in the southwest post of the fountain of the Boiling Point service station. A standard disk, stamped "N 75 1931" and set vertically. (922.481 meters or 3,026.506 feet.)

M 75.—About 9.8 miles west along the Green Springs Highway from Lincoln, Jackson County, 8 feet west of a metal flume under the highway at the west edge of a slide, and 20 feet north of the center line of the highway. A standard disk, stamped "M 75 1931" and set in the top of a concrete post. (1,005.207 meters or 3,297.917 feet.)

L 75.—About 7.8 miles west along the Green Springs Highway from Lincoln, Jackson County, 50 feet west of a curve sign on a fill, and 21 feet south of the center line of the highway. A standard disk, stamped "L 75 1931" and set in the top of a concrete post. (1,199.577 meters or 3,935.612 feet.)

K 75.—About 5.8 miles west along the Green Springs Highway from Lincoln, Jackson County, at Green Springs Pass, 33 feet south of the center line of the highway, and 27 feet east of a fence corner. A standard disk, stamped "K 75 1931" and set in the top of a concrete post. (1,390.389 meters or 4,561.635 feet.)

J 75.—About 4.1 miles west along the Green Springs Highway from Lincoln, Jackson County, at the south end of a curve where the highway starts the descent to Keene Creek, and 43 feet east of the center line of the highway. A standard disk, stamped "J 75 1931" and set in the top of a concrete post. (1,379.151 meters or 4,524.765 feet.)

H 75.—About 2.3 miles west along the Green Springs Highway from Lincoln, Jackson County, at Tub Springs, at the foot of a cut, 120 feet north of the center line of the highway, and 20 feet west of a drinking fountain. A standard disk, stamped "H 75 1931" and set in the top of a concrete post. (1,283.579 meters or 4,211.209 feet.)

G 75.—At the east edge of Lincoln, Jackson County, about opposite the center of a mill pond, 25 feet north of the center line of the Green Springs Highway, and 8 feet east of a gate to a house. A standard disk, stamped "G 75 1931" and set in the top of a concrete post. (1,122.926 meters or 3,684.133 feet.)

F 75.—At Pinehurst, Jackson County, at the south edge of the road in front of the hotel, and 15 feet west of the north door of the hotel, in a rock outcrop. A standard disk, stamped "F 75 1931." (1,026.504 meters or 3,367.789 feet.)

E 75.—About 1.5 miles east along the Green Springs Highway from Pinehurst, Jackson County, 15 feet west of a side road to the south, and 33 feet south of

the center line of the highway. A standard disk, erroneously stamped "E 74 1931" and set in the top of a concrete post. (1,120.848 meters or 3,677.315 feet.)

D 75.—About 3.4 miles east along the Green Springs Highway from Pinehurst, Jackson County, at the west end of a long tangent, and 27 feet north of the center line of the highway. A standard disk, stamped "D 75 1931" and set in the top of a concrete post. (1,228.317 meters or 4,029.903 feet.)

C 75.—In Klamath County, about 5.4 miles east along the Green Springs Highway from Pinehurst, Jackson County, 18 feet east of a side road leading south at Parker Summit, and 26 feet south of the center line of the highway. A standard disk, stamped "C 75 1931" and set in the top of a concrete post. (1,329.456 meters or 4,361.724 feet.)

B 75.—In Klamath County, about 6.8 miles east along the Green Springs Highway from Pinehurst, Jackson County, at the east end of a short tangent, opposite a small metal flume, and 27 feet south of the center line of the highway. A standard disk, stamped "B 75 1931" and set in the top of a concrete post. (1,266.363 meters or 4,154.726 feet.)

A 75.—In Klamath County, about 9.0 miles east along the Green Springs Highway from Pinehurst, Jackson County, 400 feet east of a curve to the south, and 28 feet south of the center line of the highway. A standard disk, stamped "A 75 1931" and set in the top of a concrete post. (1,247.910 meters or 4,094.185 feet.)

Z 74.—In Klamath County, about 10.8 miles east along the Green Springs Highway from Pinehurst, Jackson County, 30 feet west of an old side road, and 25 feet south of the center line of the highway. A standard disk, stamped "Z 74 1931" and set in the top of a concrete post. (1,320.253 meters or 4,331.530 feet.)

Y 74.—In Klamath County, about 12.9 miles east along the Green Springs Highway from Pinehurst, Jackson County, about 12.8 miles west of Keno, 10 feet west of a 6-foot pine tree, and 24 feet south of the center line of the highway. A standard disk, stamped "Y 74 1931" and set in the top of a concrete post. (1,398.660 meters or 4,588.770 feet.)

X 74.—About 10.8 miles west along the Green Springs Highway from Keno, Klamath County, at Hayden Pass, 10 feet northwest of the snow gage, and 27 feet northeast of the center line of the highway. A standard disk, stamped "X 74 1931" and set in the top of a concrete post. (1,432.565 meters or 4,700.007 feet.)

W 74.—About 8.9 miles west along the Green Springs Highway from Keno, Klamath County, at the center of a short tangent, opposite a curve sign, and 42 feet northeast of the center line of the highway. A standard disk, stamped "W 74 1931" and set in the top of a concrete post. (1,332.606 meters or 4,372.058 feet.)

V 74.—About 6.7 miles west along the Green Springs Highway from Keno, Klamath County, 500 feet west of a red brick house, and 30 feet south of the highway, at a fence corner 20 feet east of a private road. A standard disk, stamped "V 74 1931" and set in the top of a concrete post. (1,187.757 meters or 3,896.833 feet.)

9 (U. S. G. S.).—About 6.8 miles west along the Green Springs Highway from Keno, Klamath County, 2,000 feet south of Spencer Bridge, 85 feet north of the east end of the ruins of a dam, 200 feet south of the highway and about 30 feet above Klamath River, on a rock point. A United States Geological Survey standard disk, stamped "3812 9 1905." (1,161.354 meters or 3,810.209 feet.)

UX 74 (U. S. G. S.).—About 6.6 miles west along the Green Springs Highway from Keno, Klamath County, 0.2 mile southwest of Spencer Bridge, 20 feet west of Klamath River, and 8 feet west of a gage house, in a rock ledge about 4 feet high. A United States Geological Survey standard gaging-station reference-mark disk. (1,154.428 meters or 3,787.483 feet.)

U 74 (O. S. H. D.).—About 6.4 miles west along the Green Springs Highway from Keno, Klamath County, at Spencer Bridge, in the south curb at the west end of the highway bridge over Klamath River. An Oregon State Highway Department standard disk, stamped "U 74 1931." (1,158.203 meters or 3,799.871 feet.)

T 74.—About 4.5 miles west along the Green Springs Highway from Keno, Klamath County, and 65 feet south of the center line of the highway, in one of a pile of boulders midway between two small cuts on the highway. A standard disk, stamped "T 74 1931." (1,244.273 meters or 4,082.252 feet.)

S 74.—About 2.2 miles west along the Green Springs Highway from **Keno**, Klamath County, at the west end of a curve, and 30 feet south of the center line of the highway. A standard disk, stamped "S 74 1931" and set in the top of a concrete post. (1,299.585 meters or 4,263.722 feet.)

R 74 (O. S. H. D.).—At **Keno**, Klamath County, in the walk at the southward corner of the Green Springs Highway bridge over Klamath River. An Oregon State Highway Department standard disk, stamped "R 74 1931." (1,247.676 meters or 4,093.417 feet.)

11 (U. S. G. S.).—At **Keno**, Klamath County, about 400 feet northeast of the Green Springs Highway bridge over Klamath River, just northeast of a service station at a small summit, 10 feet northwest of the highway fence line, in a lava outcrop. A United States Geological Survey standard disk, stamped "4111 11 1905." (1,252.465 meters or 4,109.129 feet.)

Q 74.—About 1.0 mile east of **Keno**, Klamath County, 2 feet north of the Weyerhauser Lumber Co. Railroad right-of-way fence, 20 feet east of an 8-foot ditch, and 30 feet east of a north-and-south fence. A standard disk, stamped "Q 74 1931" and set in the top of a concrete post. (1,244.664 meters or 4,083.535 feet.)

PP 74.—About 2.5 miles east of **Keno**, Klamath County, 9.8 miles west of **Klamath Falls**, at the corner of an old rail fence near a large red barn, at the fence line running northwest and southeast. A standard disk, stamped "PP 74 1931" and set in the top of a concrete post. (1,244.595 meters or 4,083.309 feet.)

Norm.—In 1932 it was reported that this bench mark was about midway between the highway and the railroad.

P 74.—About 7.5 miles west of **Klamath Falls**, Klamath County, and 125 feet east of milepost 4, at the corner of a rail fence and the railroad right-of-way fence. A standard disk, stamped "P 74 1931" and set in the top of a concrete post. (1,247.236 meters or 4,091.973 feet.)

N 74.—About 6.3 miles west of **Klamath Falls**, Klamath County, 36 feet north of the south corner of the Weyerhauser Lumber Co. yard fence, 10 feet east of the track, and 2 feet west of a fence. A standard disk, stamped "N 74 1931" and set in the top of a concrete post. (1,247.621 meters or 4,093.237 feet.)

M 74.—About 3.3 miles west of **Klamath Falls**, Klamath County, at the Klamath lumber yards and golf course, 30 feet west of the track, and 33 feet north of a guard fence on the highway, at the fence line. A standard disk, stamped "M 74 1931" and set in the top of a concrete post. (1,248.954 meters or 4,097.610 feet.)

L 74 (O. S. H. D.).—At **Klamath Falls**, Klamath County, at the south edge of the town, in the south wall at the west end of the Link River bridge. An Oregon State Highway Department standard disk, stamped "L 74 1931." (1,247.895 meters or 4,094.135 feet.)

U 5 (U. S. R. S.).—See page 31.

LINE 27, COQUILLE TO DILLARD, OREG.

[Second-order leveling]

This line follows the Coos Bay-Roseburg Highway from Coquille to Dillard. The field work was done during the fall of 1931, by H. J. Oliver, junior hydrographic and geodetic engineer.

S 44.—See page 140.

R 77.—About 7.5 miles north along the Coos Bay-Roseburg Highway from **Myrtle Point**, Coos County, about 1.8 miles south of **Coquille**, 90 feet south of the W. L. Beach ranch house, and 27 feet east of the center line of the highway, in line with the electric power line. A standard disk, stamped "R 77 1931" and set in the top of a concrete post. (8,781 meters or 28,809 feet.)

Q 77.—About 5.5 miles north along the Coos Bay-Roseburg Highway from **Myrtle Point**, Coos County, 500 feet east of a large farm on the north side of the highway, and 30 feet northwest of the center line of the highway, in line with a rail fence. A standard disk, stamped "Q 77 1931" and set in the top of a concrete post. (7,441 meters or 24,413 feet.)

P 77.—About 3.4 miles north along the Coos Bay-Roseburg Highway from **Myrtle Point**, Coos County, 0.3 mile north of **Norway**, at the south end of a curve, and 25 feet southwest of the center line of the highway, in line with a

row of poles. A standard disk, stamped "P 77 1931" and set in the top of a concrete post. (10.541 meters or 34.583 feet.)

N 77 (O. S. H. D.).—About 1.3 miles north along the Coos Bay-Roseburg Highway from Myrtle Point, Coos County, in the east end of the pier at the south end of the bridge over the North Fork Coquille River. A standard disk, stamped "N 77 1931." (11.337 meters or 37.195 feet.)

M 77.—About 0.6 mile north along the Coos Bay-Roseburg Highway from Myrtle Point, Coos County, 10 feet south of a side road to a field, and 75 feet east of the center line of the highway, at a fence corner. A standard disk, stamped "M 77 1931" and set in the top of a concrete post. (7.668 meters or 25.157 feet.)

76 (U. S. G. S.).—At Myrtle Point, Coos County, in the west part of the town, on the south side of the Coos Bay-Roseburg Highway (Spruce Street), and 28 feet east of Front Street, in the north wall of the Myrtle Gold Creamery building, 2 feet above the sidewalk. A United States Geological Survey standard disk, stamped "76" and set vertically. (22.781 meters or 74.741 feet.)

L 77.—At Myrtle Point, Coos County, at the northwest corner of Fourth and Spruce Streets, in the east wall at the southeast corner of the Bank of Myrtle Point. A standard disk, stamped "L 77 1931" and set vertically. (27.364 meters or 89.777 feet.)

K 77.—About 2.1 miles southeast along the Coos Bay-Roseburg Highway from Myrtle Point, Coos County, 0.1 mile north of a 2-story ranch house, about halfway between two curves around the point of a hill, and 25 feet northeast of the center line of the highway. A standard disk, stamped "K 77 1931" and set in the top of a concrete post. (14.613 meters or 47.943 feet.)

J 77.—About 4.0 miles southeast along the Coos Bay-Roseburg Highway from Myrtle Point, Coos County, 100 feet northwest of a deep rock cut on a curve, 25 feet northeast of the center line of the highway, and 4 feet south of a gate to a house on the hillside. A standard disk, stamped "J 77 1931" and set in the top of a concrete post. (23.625 meters or 77.510 feet.)

JX 77 (U. S. G. S.).—About 5.0 miles southeast along the Coos Bay-Roseburg Highway from Myrtle Point, Coos County, 6.0 miles west of Bridge, on the bank of Middle Fork Coquille River, and $\frac{1}{4}$ mile below the mouth of Indian Creek, in the southwest quarter of sec. 28, T. 29 S., R. 12 W., and best reached by following the path from T. A. Brack's house located on the south side of the highway. A United States Geological Survey standard gaging-station reference-mark disk, set in the top of a concrete post. (16.530 meters or 54.232 feet.)

H 77.—About 4.8 miles west along the Coos Bay-Roseburg Highway from Bridge, Coos County, 25 feet southwest of a small stream, 40 feet northwest of the center line of the highway, and 8 feet east of a steep bank. A standard disk, stamped "H 77 1931" and set in the top of a concrete post. (31.143 meters or 102.175 feet.)

G 77.—About 2.6 miles west along the Coos Bay-Roseburg Highway from Bridge, Coos County, 28 feet northwest of the center line of the highway, and 8 feet south of a gate to a field. A standard disk, stamped "G 77 1931" and set in the top of a concrete post. (34.249 meters or 112.365 feet.)

F 77 (U. S. F. S.).—About 0.5 mile northwestward along the Coos Bay-Roseburg Highway from Bridge, Coos County, at the west end of the Big Creek bridge, and 35 feet southwest of the center line of the highway. A United States Forest Service standard disk, stamped "F 77 1931" and set in the top of a concrete post. (32.149 meters or 105.476 feet.)

E 77.—At Bridge, Coos County, at the west end of the town, 27 feet north of the center line of the Coos Bay-Roseburg Highway, and 13 feet east of a board gate across the highway from a large barn. A standard disk, stamped "E 77 1931" and set in the top of a concrete post. (44.474 meters or 145.912 feet.)

D 77.—About 1.3 miles east along the Coos Bay-Roseburg Highway from Bridge, Coos County, 95 feet west of a tall fir tree on the south side of the highway, 25 feet north of the center line of the highway, and 35 feet east of a wire gate. A standard disk, stamped "D 77 1931" and set in the top of a concrete post. (43.397 meters or 142.378 feet.)

C 77.—About 3.3 miles east along the Coos Bay-Roseburg Highway from Bridge, Coos County, 90 feet south of the side-road entrance, at the foot of the grade of the side road, and 35 feet southwest of the center line of the

highway. A standard disk, stamped "C 77 1931" and set in the top of a concrete post. (52.967 meters or 173.776 feet.)

B 77.—About 5.4 miles east along the Coos Bay-Roseburg Highway from **Bridge**, Coos County, 130 feet west of a small ranch house, on the north bank of a creek, and 30 feet southwest of the center line of the highway, in a boulder. A standard disk, stamped "B 77 1931." (59.180 meters or 194.160 feet.)

A 77 (U. S. F. S.).—About 0.3 mile west along the Coos Bay-Roseburg Highway from **Remote**, Coos County, 120 feet east of the Sandy Creek bridge, 42 feet northwest of the center line of the highway, and 30 feet east of an old garage. A United States Forest Service standard disk, stamped "A 77 1931" and set in the top of a concrete post. (72.650 meters or 238.353 feet.)

Z 76 (U. S. F. S.).—About 1.9 miles east along the Coos Bay-Roseburg Highway from **Remote**, Coos County, opposite the south end of the Rock Creek bridge, and 40 feet southwest of the center line of the highway. A United States Forest Service standard disk, stamped "Z 76 1931" and set in the top of a concrete post. (79.178 meters or 259.770 feet.)

Y 76.—About 4.5 miles east along the Coos Bay-Roseburg Highway from **Remote**, Coos County, on the point of a curve, 150 feet west of a stock corral, 25 feet north of the center line of the highway, and 18 feet east of the east end of the guard rail. A standard disk, stamped "Y 76 1931" and set in the top of a concrete post. (111.210 meters or 364.861 feet.)

X 76.—About 10.9 miles southwest along the Coos Bay-Roseburg Highway from **Camas Valley**, Douglas County, 0.1 mile east of the county line, directly below a small house on the hillside, 35 feet south of the center line of the highway, and 10 feet east of a small artificial pool, in a boulder. A standard disk, stamped "X 76 1931." (148.185 meters or 486.170 feet.)

W 76.—About 8.7 miles southwest along the Coos Bay-Roseburg Highway from **Camas Valley**, Douglas County, 100 feet northward from a curve on a hill, at the edge of a fill, and 25 feet westward from the center line of the highway. A standard disk, stamped "W 76 1931" and set in the top of a concrete post. (174.791 meters or 573.460 feet.)

V 76.—About 6.4 miles southwest along the Coos Bay-Roseburg Highway from **Camas Valley**, Douglas County, and 30 feet south of the center line of the highway, in a 10 by 10 foot lava boulder in the creek bed. A standard disk, stamped "V 76 1931." (272.030 meters or 892.485 feet.)

U 76.—About 4.3 miles southwest along the Coos Bay-Roseburg Highway from **Camas Valley**, Douglas County, at the south end of a curve, at a flat place between two cuts, 26 feet eastward from the center line of the highway. A standard disk, stamped "U 76 1931" and set in the top of a concrete post. (316.032 meters or 1,036.848 feet.)

T 76 (O. S. H. D.).—About 2.3 miles southwest along the Coos Bay-Roseburg Highway from **Camas Valley**, Douglas County, and 400 feet south of a curve to the west, in the center of the west head wall of a 4 by 4 foot box culvert under the highway. An Oregon State Highway Department standard disk, stamped "T 76 1931." (324.974 meters or 1,066.186 feet.)

S 76 (O. S. H. D.).—About 1.6 miles southwest along the Coos Bay-Roseburg Highway from **Camas Valley**, Douglas County, in the west end of the south head wall of a highway culvert. An Oregon State Highway Department standard disk, stamped "S 76 1931." (329.185 meters or 1,080.001 feet.)

R 76.—At **Camas Valley**, Douglas County, at the **Camas Valley School**, at the west end of the top step of the south entrance, inside the arch, and 3 inches from the wall. A standard disk, stamped "R 76 1931." (345.427 meters or 1,133.288 feet.)

Q 76 (O. S. H. D.).—About 0.2 mile east along the Coos Bay-Roseburg Highway from **Camas Valley**, Douglas County, in the west end of the south head wall of a 6 by 8 foot box culvert under the highway. An Oregon State Highway Department standard disk, stamped "Q 76 1931." (345.370 meters or 1,133.101 feet.)

P 76.—About 2.6 miles northeast along the Coos Bay-Roseburg Highway from **Camas Valley**, Douglas County, 160 feet west of highway milepost 47, 43 feet west of the summit sign on **Camas Mountain**, and 47 feet northwest of the center line of the highway. A standard disk, stamped "P 76 1931" and set in the top of a concrete post. (448.373 meters or 1,471.037 feet.)

N 76.—About 4.2 miles northeast along the Coos Bay-Roseburg Highway from **Camas Valley**, Douglas County, at the center of a short tangent at the north

end of a cut, and 22 feet southwest of the center line of the highway. A standard disk, stamped "N 76 1931" and set in the top of a concrete post. (338.010 meters or 1,108.954 feet.)

M 76 (O. S. H. D.).—About 12.3 miles southwest along the Coos Bay-Roseburg Highway from **Coos Junction**, Douglas County, and 300 feet west of Camas Mountain Auto Park, in the west end of the south head wall of a 6 by 8 foot box culvert under the highway. An Oregon State Highway Department standard disk, stamped "M 76 1931." (238.191 meters or 781.465 feet.)

L 76 (O. S. H. D.).—About 10.5 miles southwest along the Coos Bay-Roseburg Highway from **Coos Junction**, Douglas County, in the west end of the south head wall of a 6 by 6 foot box culvert under the highway. An Oregon State Highway Department standard disk, stamped "L 76 1931." (221.018 meters or 725.123 feet.)

K 76 (O. S. H. D.).—About 9.5 miles southwest along the Coos Bay-Roseburg Highway from **Coos Junction**, Douglas County, and 0.1 mile west of a side road to Reston, in the center of the south head wall of a metal culvert under the highway. An Oregon State Highway Department standard disk, stamped "K 76 1931." (207.437 meters or 680.566 feet.)

J 76.—About 7.5 miles west along the Coos Bay-Roseburg Highway from **Coos Junction**, Douglas County, 25 feet west of a driveway to a ranch house south of the highway, and 25 feet north of the center line of the highway, at the fence line. A standard disk, stamped "J 76 1931" and set in the top of a concrete post. (207.835 meters or 681.872 feet.)

H 76.—About 5.3 miles west along the Coos Bay-Roseburg Highway from **Coos Junction**, Douglas County, 0.2 mile east of a curve to the south, 0.15 mile west of a ranch house and fruit stand, and 33 feet south of the center line of the highway. A standard disk, stamped "H 76 1931" and set in the top of a concrete post. (189.652 meters or 622.217 feet.)

G 76.—About 3.1 miles west along the Coos Bay-Roseburg Highway from **Coos Junction**, Douglas County, 75 feet east of a small unpainted ranch house, about opposite the middle of a cut on the north side of the highway, and 25 feet south of the center line of the highway, at the fence line. A standard disk, stamped "G 76 1931" and set in the top of a concrete post. (190.219 meters or 624.077 feet.)

F 76 (O. S. H. D.).—About 1.7 miles west along the Coos Bay-Roseburg Highway from **Coos Junction**, Douglas County, and about 300 feet east of the crossroad at the post office at **Brockway**, in the center of the south head wall of a highway culvert. An Oregon State Highway Department standard disk, stamped "F 76 1931." (159.558 meters or 523.483 feet.)

S 77.—At **Coos Junction**, Douglas County, in the triangle at the junction of the Pacific and Coos Bay-Roseburg Highways, and 63 feet west of the center line of the Pacific Highway. A standard disk, stamped "S 77 1931" and set in the top of a concrete post. (162.519 meters or 533.198 feet.)

E 76.—At **Coos Junction**, Douglas County, in the triangle at the junction of the Pacific and Coos Bay-Roseburg Highways, and 27 feet west of the Pacific Highway. A standard disk, stamped "E 76 1931" and set in the top of a concrete post. (162.726 meters or 533.877 feet.)

U 9.—See page 65.

D 76.—At **Dillard**, Douglas County, 57 feet northwest of the Southern Pacific Co. railroad station, and 78 feet west of the main-line track, at the southeast corner of the fence around the section house. A standard disk, stamped "D 76 1931" and set in the top of a concrete post. (158.107 meters or 518.723 feet.)

RAIL ELEVATIONS

The elevations in the following list were determined during the course of the leveling and refer to the top of the rail opposite the railroad station, except in cases covered by appropriate footnotes. These elevations are approximate only, since the track does not accurately maintain a constant elevation for any great length of time.

Approximate rail elevations, in feet

LINE 2, WALLULA, WASH., TO OWYHEE, IDAHO. (PART)

Station	Elevation	Station	Elevation
<i>Northern Pacific Ry.</i>		<i>Oregon-Washington Railroad & Navigation Co.—Continued</i>	
Canon.....	915.2	Steel Spur.....	3,376.2
Vansycle.....	1,406.7	Hilgard.....	3,008.6
Stanton.....	1,662.1	Tie Spur.....	2,930.0
Smeltz.....	1,802.4	La Grande.....	2,784.7
Apex.....	1,911.8	Hot Lake.....	2,701.7
Helix.....	1,759.0	Nodine Spur.....	2,702.6
Myrick.....	1,716.0	Union.....	2,717.2
McCormach.....	1,612.9	Telocaset.....	3,448.8
Fulton.....	1,526.6	North Powder.....	3,242.7
<i>Oregon-Washington Railroad & Navigation Co.</i>		Hutchinson.....	3,372.3
Pendleton.....	1,070.5	Haines.....	3,334.1
Mission.....	1,215.1	Baker.....	3,435.7
Cayuse.....	1,413.9	Norton.....	3,652.5
Thorn Hollow.....	1,572.0	Encina.....	3,965.1
Gibbon.....	1,749.5	Pleasant Valley.....	3,820.0
North Fork.....	2,310.9	Unity.....	3,131.0
Allens Spur.....	2,815.5	Durkee.....	2,654.9
Huron.....	2,911.8	Weatherby.....	2,402.9
Meacham.....	3,680.9	Huntington.....	2,109.4
Nibley Spur.....	3,724.5	<i>Oregon Short Line R. R.</i>	
Murdock Spur.....	3,815.3	Ontario.....	2,153.9
Kameia.....	4,205.2	Arcadia.....	2,171.7
Spring Spur.....	3,940.4	Nyssa.....	2,180.0

LINE 3, WEED, CALIF., TO KIRK, OREG. (PART)

Station	Elevation	Station	Elevation
<i>Southern Pacific Co.</i>		<i>Southern Pacific Co.—Continued</i>	
Ivan.....	4,154.2	Chiloquin.....	4,189.9
Klamath Falls.....	4,104.7	Sprague.....	4,490.3

LINE 6, WEED, CALIF., TO PORTLAND, OREG. (PART)

Station	Elevation	Station	Elevation
<i>Southern Pacific Co.</i>		<i>Southern Pacific Co.—Continued</i>	
Colestin.....	3,711.7	Anlauf.....	374.9
Siskiyou.....	4,109.5	Curtin.....	392.1
Steinman.....	3,030.9	Comstock.....	449.6
Mistletoe.....	2,494.2	Cottage Grove.....	642.5
Ashland.....	1,869.2	Saginaw.....	608.3
Talent.....	1,635.3	Creswell.....	542.1
Phoenix.....	1,543.3	Goshen.....	500.9
Medford.....	1,374.8	Springfield Junction.....	447.7
Central Point.....	1,276.2	Eugene.....	427.3
Tolo.....	1,172.8	Irving.....	377.9
Raygold.....	1,167.2	Junction City.....	327.0
Gold Hill.....	1,084.4	Harrisburg.....	310.4
Rogue River.....	999.8	Alford.....	305.3
Grants Pass.....	936.0	Halsey.....	284.0
Dimmick Summit.....	1,253.8	Shedd.....	263.9
Merlin.....	911.8	Tangent.....	246.3
Hugo.....	1,292.5	Albany.....	213.8
Leland.....	1,190.5	Millersburg.....	245.9
Wolf Creek.....	1,293.9	Jefferson.....	242.6
Glendale.....	1,418.1	Marion.....	300.7
West Fork.....	1,012.0	Turner.....	285.9
Union Creek.....	901.6	Salem.....	163.7
Byers.....	783.7	Chemawa.....	164.7
Riddle.....	708.8	Brooks.....	184.4
Myrtle Creek.....	614.4	Gervais.....	186.0
Dole.....	571.9	Woodburn.....	182.0
Dillard.....	521.5	Hubbard.....	183.6
Green.....	514.1	Aurora.....	120.9
Roseburg.....	462.2	Barlow.....	102.9
Winchester.....	459.0	Canby.....	152.4
Wilbur.....	466.5	New Era.....	92.3
Sutherlin.....	519.3	Coalco.....	90.7
Oakland.....	427.3	Oregon City.....	76.3
Isadora.....	562.6	Clackamas.....	109.3
Rice Hill.....	716.9	Willsburg.....	61.0
Yoncalla.....	355.8	Brooklyn.....	55.4
Drain.....	296.0	Portland, East Morrison Street.....	30.6
Leona.....	324.9		

Approximate rail elevations, in feet—Continued

LINE 7, PORTLAND TO FORT STEVENS, OREG.

Station	Elevation	Station	Elevation
<i>Spokane, Portland & Seattle Ry.</i>		<i>Spokane, Portland & Seattle Ry.—Con.</i>	
Willbridge.....	46.2	Tryon.....	20.7
Gasco.....	37.7	Downings.....	20.0
Claremont.....	34.6	Pyramid.....	20.1
Linton.....	40.8	Mayger.....	18.3
Burlington.....	33.9	Quincy.....	18.0
Holbrook.....	33.1	Clatskanie.....	17.8
Johnsons Crossing.....	34.9	Marshland.....	17.1
Scappoose.....	61.8	Kerry.....	13.3
Honeyman.....	49.7	Westport.....	21.5
Warren.....	50.1	Wauya.....	12.5
McNulty.....	63.2	Clifton.....	11.3
St. Helens.....	107.0	Aldrich Point.....	12.5
Deer Island.....	48.6	Brownsmead.....	9.9
Tide Creek.....	27.7	Blind Slough.....	12.7
Charlton.....	25.1	Knappa.....	10.5
Nehalem Junction.....	24.7	Svensen.....	10.2
Goble.....	28.1	John Day.....	11.0
Prescott.....	22.4	Astoria.....	12.7
Rainier.....	23.3	Warrenton.....	7.4

LINE 8, PORTLAND, OREG., TO WALLULA, WASH. (PART)

<i>Oregon-Washington Railroad & Navigation Co.</i>		<i>Oregon-Washington Railroad & Navigation Co.—Continued</i>	
Fairview.....	114.5	Mosler.....	98.0
Troutdale.....	54.0	The Dalles.....	97.8
Corbett.....	42.5	Ainsworth.....	167.7
Latourell.....	45.5	Biggs.....	171.2
Bridal Veil.....	43.1	Quinton.....	230.0
Multnomah Falls.....	43.5	Bialock.....	219.0
Bonneville.....	51.8	Arlington.....	225.9
Cascade Locks.....	101.6	Heppner Junction.....	240.9
Wyeth.....	98.9	Boardman.....	251.7
Viento.....	104.6	Messner.....	277.0
Hood River.....	101.2	Umatilla.....	295.9

LINE 9, BEND TO PRINEVILLE, OREG.

<i>Oregon Trunk Ry.</i>		<i>City of Prineville Ry.</i>	
Deschutes.....	3,277.2	Prineville.....	2,869.0
Redmond.....	2,994.1		

LINE 12, ASTORIA, OREG., TO CRESCENT CITY, CALIF. (PART)

<i>Southern Pacific Co.</i>		<i>Southern Pacific Co.—Continued</i>	
North Bend.....	12.3	Coquille.....	20.3
Marshfield.....	20.7	Do. ¹	20.9
Overland.....	70.0	Do. ²	11.1
Cedar Point.....	14.7		

¹ The west rail at the Newport Avenue crossing.² The south rail at the Oregon Coast Highway crossing at Coquille.³ The west rail at the Oregon Coast Highway crossing at the Coast Auto Line Station, about 10 miles west of Coquille.

Approximate highway or rail elevations, in feet

The elevations in the following list refer to the top of the highways, at the intersection of the center lines of the traveled ways, or of the top of the rail at the center line of a highway crossing.

Approximate highway or rail elevations, in feet

LINE 13, ARLINGTON TO VALE, OREG.

Nearest town	Elevation	Nearest town	Elevation
Prairie City ¹	3,675.3	Vale ⁴	2,274.7
Prairie City ²	4,237.1	Vale ⁵	2,240.3
Unity ³	3,023.1		

¹ At the intersection of the John Day Highway and the highway leading to Logan Valley, 1.9 miles from Prairie City.

² At the intersection of the John Day Highway and the road leading to Austin, about 17.1 miles northeast of Prairie City.

³ At the intersection of the John Day Highway and the Unity-Baker Highway, 1.7 miles west of Unity.

⁴ At the intersection of the John Day Highway and the Oregon Short Line R. R., 4.4 miles northwest of Vale.

⁵ At the intersection of the John Day Highway and the Oregon Short Line R. R., 0.2 mile west of Vale.

LINE 18, BEND TO KIRK, OREG.

Station	Elevation
Bend ¹	3,848.6
Lapine ²	4,210.5
<i>Great Northern Ry.</i>	
Lapine ³	4,220.2
<i>Southern Pacific Co.</i>	
Chinchalo.....	4,541.3

¹ At the crossing of The Dalles-California Highway and a railroad, about 4.5 miles south of Bend.

² At the crossing of The Dalles-California Highway and a logging railroad, about 9.2 miles north of Lapine.

³ At the crossing of The Dalles-California Highway and the Great Northern Ry., about 1.8 miles northeast of Lapine.

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