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RESULTS OF SPIRIT LEVELING
IN WISCONSIN

1897 TO 1914, INCLUSIVE

R. B. MARSHALL, CHIEF GEOGRAPHER



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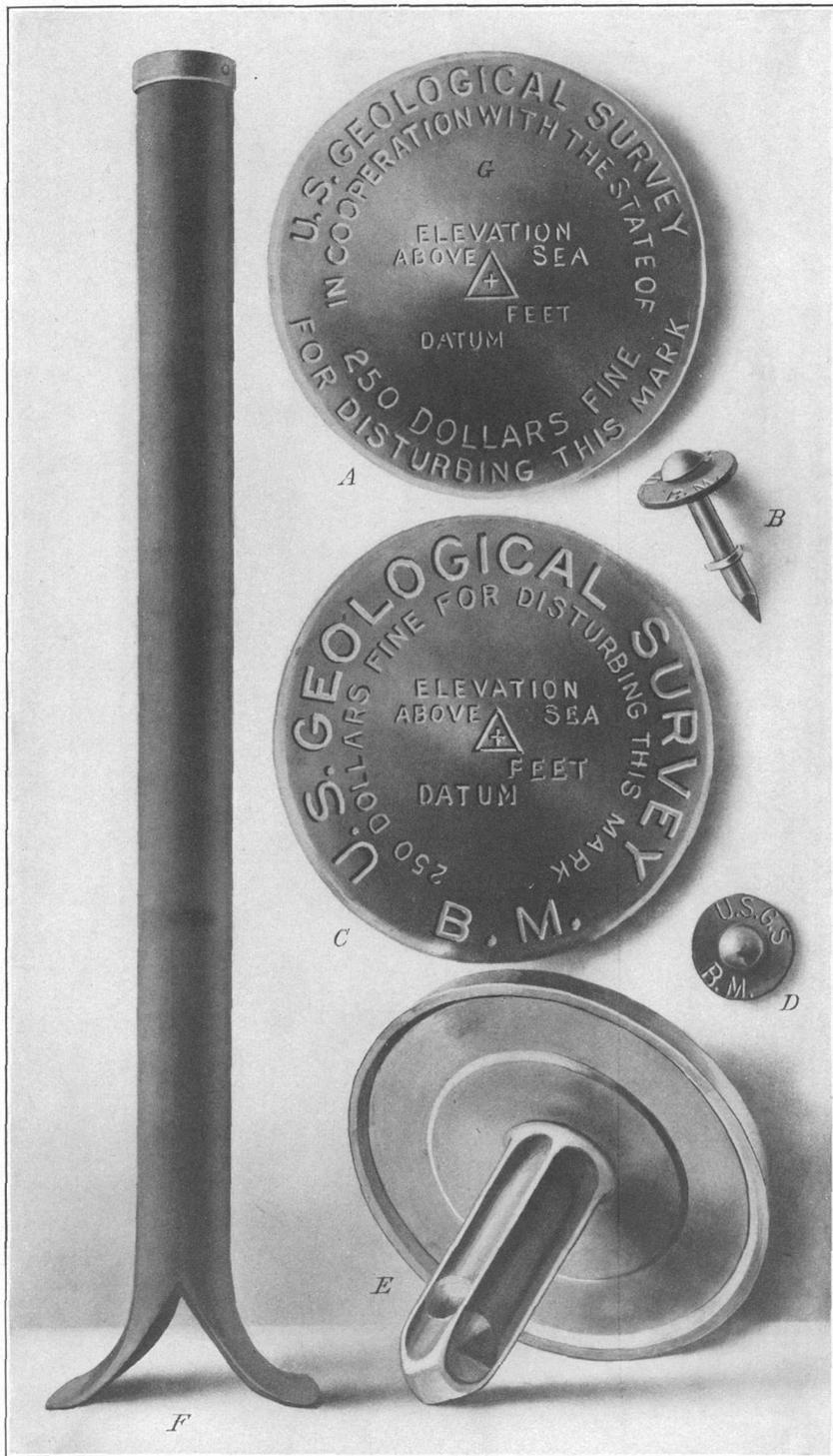
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GEOLOGICAL SURVEY BENCH MARKS.

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

RESULTS OF SPIRIT LEVELING IN WISCONSIN, 1897 TO 1914, INCLUSIVE.

R. B. MARSHALL, Chief Geographer.

INTRODUCTION.

Previous publications.—All results of spirit leveling in Wisconsin previously published by the United States Geological Survey in Bulletin 461 and all the results of later work are included in this report. Unless otherwise stated all elevations are based on the precise level net adjustment of 1912 by the Coast and Geodetic Survey to mean sea level datum. The part of this net which lies within or along the borders of this State comprises the line of the Mississippi River Commission along the western border and the water leveling done by the Corps of Engineers, United States Army, on Lakes Superior and Michigan.

Personnel.—The field work previous to 1903 was done under the general direction of J. H. Renshawe, geographer; that between 1903 and 1906, inclusive, under H. M. Wilson, geographer; and the later work under W. H. Herron, geographer, under the general direction of R. B. Marshall, chief geographer. The names of the respective levelmen are given in the introductions to the several lists. The office work of computation, adjustment, and preparation of lists was done mainly by S. S. Gannett, geographer, under the general direction of E. M. Douglas, geographer.

Classification.—No precise leveling has been done by the United States Geological Survey in this State. For primary lines standard Y levels are used; lines are run in circuits or are closed on precise lines, with an allowable closing error in feet represented by $0.05 \sqrt{D}$, in which D is the length of the circuit in miles, sufficient care being given to the work to maintain this standard. For all levels of this class careful office adjustments are made, the circuit closure errors being distributed over the lines.

Bench marks.—The standard bench marks are of two forms. The first form is a circular bronze or aluminum tablet (*C* and *E*, Pl. I), $3\frac{1}{2}$ inches in diameter and one-quarter inch thick, having a 3-inch stem, which is cemented in a drill hole in solid rock in the wall of

some public building, a bridge abutment, or other substantial masonry structure. The second form (*F*, Pl. I), used where masonry or rock is not available, consists of a hollow wrought-iron post $3\frac{1}{2}$ inches in outer diameter and 4 feet in length, which is set about 3 feet in the ground. The bottom is spread out to a width of 10 inches in order to give a firm bearing on the earth. A bronze or aluminum-bronze cap is riveted upon the top of the post. A third style of bench mark with abbreviated lettering (*B* and *D*, Pl. I), is used for unimportant points. This consists of a special copper nail $1\frac{1}{2}$ inches in length driven through a copper washer seven-eighths inch in diameter. The tablets, as well as the caps on the iron posts, are appropriately lettered. Cooperation by States is indicated by the addition of the State name (*G*, Pl. I).

The numbers stamped on the bench marks described in the following pages represent the elevations to the nearest foot as determined by the levelman. These numbers are stamped with three-sixteenths-inch steel dies on the tablets or post caps, to the left of the word "feet." The office adjustment of the notes and the reduction to mean sea level datum may so change some of the figures that the original markings are 1 or 2 feet in error. It is assumed that engineers and others who have occasion to use the bench-mark elevations will apply to the Director of the United States Geological Survey, at Washington, D. C., for the adjusted values and will use the markings as identification numbers only.

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

The connection with tidal stations for bench marks in certain areas that lie at some distance from the seacoast is still uncertain, and this fact is indicated by the addition of a letter or word to the right of the word "DATUM" on tablets or posts. For such areas

corrections for published results will be made from time to time as the precise-level lines of the United States Geological Survey or other Government organizations are extended.

Topographic maps.—Maps of the following quadrangles wholly or partly in Wisconsin have been published by the United States Geological Survey up to June 20, 1914. They may be obtained (except as noted) for 10 cents each, or \$3 for 50, on application to the Director of the Survey, at Washington, D. C.

Baraboo.	Muskego. ¹
Bayview. ¹	Neenah.
Briggsville.	Oconomowoc.
Brodhead.	Portage.
Cross Plains.	Port Washington.
Delavan.	Poynette.
Denzer.	Racine. ¹
Eagle. ¹	Richland Center.
Elkader (Iowa-Wis.).	St. Croix Dalles (Wis.-Minn.).
Evansville.	Shopiere.
Fond du Lac.	Silver Lake. ¹
Geneva-Racine, double sheet (20 cents). ¹	Sparta.
Hartford.	Stoughton.
Iron River (Mich.-Wis.).	Sun Prairie.
Janesville.	The Dells.
Koshkonong.	Waterloo.
Lake Geneva. ¹	Watertown.
Lancaster (Wis.-Iowa-Ill.).	Waukesha.
Madison.	Waukegan (Ill.-Wis.).
Marathon special.	Waukon (Iowa-Wis.).
Milwaukee.	Wausau special.
Milwaukee special.	West Bend.
Mineral Point (Wis.-Ill.).	Whitewater.

PRIMARY LEVELING.

Evansville, Koshkonong, Madison, Milwaukee, Oconomowoc, Sun Prairie, Waterloo, Watertown, Waukesha, and Whitewater quadrangles.

DANE, DODGE, GREEN, JEFFERSON, MILWAUKEE, ROCK, WALWORTH, WASHINGTON, AND WAUKESHA COUNTIES.

The elevations in the following list were determined by primary leveling extended from bench mark No. 2 of the United States Lake Survey at Milwaukee, and adjusted with those in Poynette quadrangle to agree with the elevation at Portage derived by leveling, also from Milwaukee, by the Army engineers.

The leveling was done in the Milwaukee, Watertown, Waukesha, Whitewater, and Koshkonong quadrangles in 1903 by G. M. Dimmick; in the Oconomowoc quadrangle in 1903 by Dimmick, and in 1906 by L. P. Gerrard; in the Waterloo quadrangle in 1903 by

¹ Bayview, Eagle, Lake Geneva, Muskego, Racine, and Silver Lake sheets, on scale of 1:62,500, have been reduced and form Geneva-Racine double sheet, on scale of 1:125,000.

Dimmick, in 1904 by M. A. Steele, in 1905 by H. Bücher, and in 1908 by E. M. Bandli; in the Sun Prairie quadrangle in 1904 by Steele and in 1905 by Bücher; and in the Evansville and Madison quadrangles in 1904 by Steele. Two bench marks were established in the Watertown quadrangle in 1908 by Bandli.

MILWAUKEE QUADRANGLE.

[Latitude 43°-43° 15'; longitude 87° 45'-88°.

From Milwaukee west along Chicago & Northwestern Ry. to Layton Park (double-rodged line).

Milwaukee, in seventh ward, near southeast corner of courthouse square; top of stone monument (U. S. Lake Survey b. m. 2).....	Feet. 636. 056
Milwaukee, 4.3 miles south of courthouse, south end of east abutment of railroad bridge; chiseled square.....	623. 11
Layton Park, 5.9 miles west of Milwaukee, in foundation wall of school building No. 17, center of front face; bronze tablet stamped "669 Milwaukee 1903".....	669. 070

WAUKESHA QUADRANGLE.

[Latitude 43°-43° 15'; longitude 88°-88° 15'.]

From Layton Park west along Chicago & Northwestern Ry. to Waukesha (double-rodged line).

North Greenfield, 3.5 miles west of Layton Park, in foundation wall of store of R. Polzin, center of east face; bronze tablet stamped "738 Milwaukee 1903".....	738. 223
County line, 3.1 miles west of North Greenfield, in center of east abutment of highway bridge, 50 feet south of railroad track; bronze tablet stamped "776 Milwaukee 1903".....	776. 494
Calhoun 0.5 mile west of, top of south abutment of railroad bridge 1057; aluminum tablet stamped "844 Milwaukee".....	844. 371
Waukesha, 300 feet east of Chicago & Northwestern Ry. station, north face of office of Milwaukee-Waukesha Mining Co., in water table; aluminum tablet stamped "822 Milwaukee 1903".....	821. 889

OCONOMOWOC QUADRANGLE.

[Latitude 43°-43° 15'; longitude 88° 15'-88° 30'.]

From Waukesha west along Chicago & Northwestern Ry. to Dousman (double-rodged line).

Waukesha, 2.1 miles west of, railroad bridge 1074, on top of west end of south abutment; square.....	826. 99
Waukesha, 5.05 miles west of, in south abutment of railroad culvert 1080; aluminum tablet stamped "861 Milwaukee 1903".....	861. 084
Wales, 300 feet east of station, north abutment of railroad bridge 1088; aluminum tablet stamped "1003 Milwaukee 1903".....	1, 002. 594
Wales, 3.6 miles west of, in wooden support of railroad trestle 1098, east end of, south side; iron pin.....	891. 45
Dousman, 5 miles west of Wales, in south end of railroad culvert 1,000 feet west of railroad station; aluminum tablet stamped "866 Milwaukee 1903".....	866. 298

From Waukesha north via Pewaukee and point near Morton to sec. 5, T. 9 N., R. 19 E.

Pewaukee, road crossing at middle of north line of sec. 33, 35 feet north by 25 feet west of road intersection; iron post stamped "951"	Feet. 951.465
Pewaukee village, where Main Street crosses Chicago, Milwaukee & St. Paul Ry. tracks, NE. $\frac{1}{4}$ sec. 8, 30 feet north by 90 feet west of road intersection; iron post stamped "855"	855.683
Lisbon, east of middle of north line of sec. 29, 20 feet north by 60 feet west of road intersection; iron post stamped "1046"	1,046.385
Lisbon, middle of north line of sec. 18, 35 feet west by 25 feet south of intersection of roads; iron post stamped "996"	995.893
Merton, center of W. $\frac{1}{2}$ sec. 1, 20 feet south by 35 feet east of road intersection; iron post stamped "1058.7"	1,058.733
Richfield, road crossing at northeast corner of sec. 30, 20 feet north by 30 feet east of road intersection; iron post stamped "1093"	1,092.559

From Dousman north via Gifford, Mapleton, and point near Alderly to sec. 25, T. 10 N., R. 17 E.

Summit, road crossing at northeast corner of sec. 21, 30 feet north by 40 feet east of road intersection; iron post stamped "880"	880.350
Summit, road intersection just north of center of N. $\frac{1}{2}$ sec. 3, 90 feet south by 20 feet west of; iron post stamped "866"	866.088
Oconomowoc, middle of east line of sec. 22, 75 feet south by 30 feet east of road crossing; iron post stamped "892"	892.224
Oconomowoc, northeast corner of sec. 10, road crossing, 35 feet west by 20 feet south of; iron post stamped "922"	921.473
Ashippun, road crossing at northeast corner of sec. 27, 50 feet east by 20 feet south of; iron post stamped "939"	939.757
Alderly, 3 miles northeast of, northeast corner of sec. 30, 15 feet south by 40 feet west of road crossing; iron post stamped "985"	984.824

From Pewaukee west along Chicago, Milwaukee & St. Paul Ry. to Gifford.

Delafield, road crossing Chicago, Milwaukee & St. Paul Ry. tracks near middle of west line of sec. 2, 20 feet east by 40 feet north of intersection; iron post stamped "928"	927.707
Richfield, village of Nashota, where road crosses Chicago, Milwaukee & St. Paul Ry. tracks, on west line of sec. 5, 70 feet east of center of road, 45 feet north of tracks; iron post stamped "940"	939.960

From Nagawicka north 3 miles.

Merton, middle of north line of sec. 28, 25 feet north by 40 feet west of road intersection; iron post stamped "935"	935.043
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WATERLOO QUADRANGLE.

[Latitude 43°-43° 15'; longitude 88° 45'-89°.]

From Loudon north along highways to Waterloo, thence east and north to point near Hubbleton.

T. 7 N., R. 13 E., near center of sec. 8, 42 feet southeast of road intersection, 2.9 feet north of fence, 18 feet east of southeast corner fence post, in southeast corner of crossroads; iron post stamped "870"	870.040
T. 7 N., R. 13 E., near north center of sec. 5, in southeast corner of T road intersection from southeast, in tree; nail marked "851.7"	851.77
T. 8 N., R. 13 E., 0.25 mile south of the northeast corner of sec. 30, 3.2 miles south of Waterloo station, 38 feet east of T road intersection from west, 3 feet west of fence; iron post stamped "Prim. Trav. Sta. No. 3, 875"	874.998

T. 8 N., R. 13 E., near south center of sec. 5, 0.8 mile east of center of town of Waterloo, 3 feet north of telephone pole, in northeast corner of T road intersection from north, 45 feet northeast of road intersection; iron post stamped "819".....	Feet. 819. 194
T. 9 N., R. 13 E., near center of sec. 34, 3.5 miles northeast of Waterloo, 3.8 feet south of telephone pole, 69 feet northwest of road forks, in northwest angle of fork road from north; iron post stamped "859".....	859. 027
T. 9 N., R. 13 E., center of sec. 26, 6 feet southeast of intersection of cross-roads, 4.3 feet west of fence; iron post stamped "852".....	852. 210
Hubbleton, near northwest corner of sec. 6, T. 8 N., R. 14 E., at road crossing west of station; top of north rail, marked "795.4".....	795. 32
Hubbleton, 1 mile east of, near northeast corner of sec. 5, T. 8 N., R. 14 E., 4 feet east of corner fence post opposite T road from south, 25 feet north-east of road forks; iron post stamped "816".....	815. 769
From point near Hubbleton east along Chicago, Milwaukee & St. Paul Ry. to point near Watertown, thence south by road 3 miles, east to Chicago & Northwestern Ry., and along track to Jefferson Junction.	
T. 8 N., R. 13 E., at northeast corner of sec. 3, 3.5 miles east of Hubbleton, 2 feet north of fence, 36 feet southwest of road intersection, 12 feet west of southwest corner fence post; iron post stamped "831".....	830. 954
T. 9 N., R. 14 E., northeast corner of sec. 27, 2.5 feet west of fence, 30 feet southeast of forks of road, 6 feet south of southeast corner fence post at T roads; iron post stamped "829".....	828. 819
T. 8 N., R. 14 E., southeast corner of sec. 13, 42 feet south of road, 2.3 feet west of porch, 3.6 feet north of building, at northwest corner of school-house; iron post stamped "819".....	819. 192
T. 7 N., R. 15 E., center of sec. 31, 55 feet east of track, 3.6 feet north of fence, in southeast angle of road crossing; iron post stamped "819.6".....	819. 474
T. 7 N., R. 14 E., near center of sec. 13, 200 feet west of track at Johnsons Creek station, 15 feet north of road, 3 feet south of fence, 3 feet from telephone pole at forks of road; iron post stamped "799.3".....	799. 106
Jefferson Junction, near south center of sec. 25, T. 7 N., R. 14 E., opposite water tower; top of rail.....	804. 46
From Helenville west along Chicago & Northwestern Ry. to Lake Mills (double-rodde d line).	
Helenville, 3.3 miles west of, point on top of south end of railroad culvert 1142.....	805. 79
Jefferson Junction, 5.1 miles west of Helenville, 200 feet east of station, in top of east stone railroad culvert, east of Y; aluminum tablet stamped "813 Milwaukee 1903".....	812. 787
T. 7 N., R. 14 W., northeast corner sec. 29, 3.4 miles west of Jefferson Junction, on east abutment of railroad bridge across Crawfish River; aluminum tablet stamped "802 Adj. 1903".....	801. 830
Lake Mills, in front of station; top of rail.....	859. 6
Lake Mills, northeast corner of sec. 23, T. 7 N., R. 13 E., 117 feet south by 81 feet east of southeast corner of station; iron post stamped "862 Adj. 1903".....	862. 236
From Jefferson Junction south along Chicago & Northwestern Ry. to Jefferson (double-rodde d line).	
Jefferson, in foundation wall of courthouse, 10 feet north of center of west face; aluminum tablet stamped "815 Milwaukee 1903".....	814. 720

WATERTOWN QUADRANGLE.

[Latitude 43°-43° 15'; longitude 88° 30'-88° 45'.]

From Dousman west along Chicago & Northwestern Ry. to Helenville (double-rodged line).

Golden Lake station, 3.8 miles west of Dousman, 225 feet east of station, 35 feet south of highway crossing, 15 feet south of track; iron post stamped "864 Milwaukee 1903".....	Feet. 863. 886
Sullivan, 1.6 miles west of, 0.3 mile west of Golden Lake, in south end of railroad culvert; aluminum tablet stamped "850 Milwaukee 1903" ..	850. 411
Sullivan, 3.5 miles west of, on top of south end of railroad culvert 1124; square	836. 87
Helenville, 500 feet west of station, in north abutment of railroad culvert 1131; aluminum tablet stamped "852 Milwaukee 1903".....	851. 929

Bench marks established in the Watertown quadrangle in connection with levels of the Waterloo quadrangle.

T. 8 N., R. 15 E., east center of sec. 6, 12 feet southwest of fork road to south, 2.2 feet north and 2 feet west of southwest corner fence post, 1 mile east of Watertown; iron post stamped "855.7".....	855. 645
T. 8 N., R. 15 E., in southern part of sec. 17, 55 feet west of track, 3 feet east of fence, 3 miles south of Watertown, at private road crossing; iron post stamped "801".....	801. 168

KOSHKONONG QUADRANGLE.

[Latitude 42° 45'-43°; longitude 88° 45'-89°.]

From Jefferson south along Chicago & Northwestern Ry. to Milton Junction.

Fort Atkinson, 6 feet south of railroad water tank; iron post stamped "796 Milwaukee 1903".....	795. 895
Fort Atkinson, 5.1 miles south of, top of west end of south abutment of railroad bridge 164; chiseled square.....	821. 96
Koshkonong, 10 feet from southeast corner of station; iron post stamped "821 Milwaukee 1903".....	820. 949
Milton Junction, 100 feet north of intersection of Chicago & Northwestern and Chicago, Milwaukee & St. Paul railways, 25 feet east of tracks; iron post stamped "881 Milwaukee 1903".....	881. 258

From Milton Junction east along Chicago, Milwaukee & St. Paul Ry. to Whitewater, thence along highway northwest to Fort Atkinson.

Milton, 2.2 miles east of railroad bridge 114, on top of west end of south abutment; square.....	885. 33
Lima, 150 feet east of station, 15 feet north of track, near highway crossing; iron post stamped "894 Milwaukee 1903".....	894. 335
Lima, 3 miles east of, in north end of railroad sluiceway 96; square.....	884. 62
Jefferson, 7 miles southwest of, Oakland Township, in southeast corner of yard of district No. 7 school; iron post stamped "888 Milwaukee 1903" ..	888. 253
Jefferson, 10.4 miles southwest of, Sumner Township, northeast corner of yard of district No. 7 school; iron post stamped "810 Milwaukee 1903".....	809. 925

WHITEWATER QUADRANGLE.

[Latitude 42° 45'-43°; longitude 88° 30'-88° 45'.]

At Whitewater.

Whitewater, 45 feet southwest of southwest corner of freight house, 18 feet south of track; iron post stamped "824 Milwaukee 1903".....	823. 885
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SUN PRAIRIE QUADRANGLE.

[Latitude 43°-43° 15'; longitude 89°-89° 15'.]

From Lake Mills west along Chicago & Northwestern Ry. to point 2.3 miles west of Cottage Grove (double-rodged line).

	Feet.
London, stone culvert, north side of track just east of station; aluminum tablet stamped "868 Adj. 1903".....	868. 481
London, in front of station; top of rail.....	868
Deerfield, in front of station; top of rail.....	860. 9
Deerfield, sec. 21, T. 7 N., R. 12 E., 165 feet north by 69 feet east of station, north side of railroad, west side of highway; iron post stamped "859 Adj. 1903".....	859. 618
T. 7 N., R. 12 E., 0.25 mile east by 0.1 mile south of northwest corner of sec. 20, east side of county road, 30 feet south of track, at crossing; iron post stamped "871 Adj. 1903".....	871. 113
Cottage Grove, 0.3 mile east of, on northeast corner of stone bridge 1205; aluminum tablet stamped "878 Adj. 1903".....	877. 984
Cottage Grove, in front of station; top of rail.....	889. 4
Cottage Grove, 2.3 miles west of, near center of sec. 18, T. 7 N., R. 11 E., 1, 830 feet east of county road, in bridge 1213; aluminum tablet stamped "874 Adj. 1903".....	873. 842

From Cottage Grove north through Sun Prairie to T. 9 N., R. 11 E., thence east to R. 12 E., thence south to Deerfield.

T. 7 N., R. 11 E., 0.25 mile south of north quarter corner of sec. 4, crossroads, at southeast corner of schoolhouse grounds, on west side of road, 2 feet east of fence, 5 feet north of fence corner; iron post stamped "935 Adj. 1903".....	934. 640
T. 8 N., R. 11 E., near west quarter corner of sec. 21, at intersection of east-west road with road to north, on south side of road; iron post stamped "926 Adj. 1903".....	925. 672
Sun Prairie, T. 8 N., R. 11 E., in SE. $\frac{1}{4}$ sec. 5, on south side of lawn around water tower, 1 foot north of fence; iron post stamped "991 Adj. 1903" ..	991. 291
T. 9 N., R. 11 E., 0.1 mile north of southwest corner of sec. 26, 15 feet north of fence corner at road intersection, west side of road; iron post stamped "959 Adj. 1903".....	959. 407
T. 9 N., R. 11 E., southeast corner of sec. 24, 0.25 mile north of intersection, 2 feet south of fence, 12 feet east of fence corner, north side of road; iron post stamped "881 Adj. 1903".....	881. 105
T. 9 N., R. 12 E., southeast corner of sec. 20, 25 feet west of fence corner at crossroads, 1.5 feet south of fence, north side of road; iron post stamped "892 Adj. 1903".....	892. 394
T. 8 N., R. 12 E., north quarter corner of sec. 3, 10 feet west of fence corner at road intersection, south side of road; iron post stamped "916 Adj. 1903".....	915. 690
Marshall district schoolhouse, near southeast corner of grounds, between two large maples; iron post stamped "859 Adj. 1903".....	858. 840
T. 8 N., R. 12 E., 0.25 mile south of northeast corner of sec. 28, 13 feet east of fence corner at road intersection, north side of road; iron post stamped "867 Adj. 1903".....	867. 045
T. 8 N., R. 12 E., near center of sec 33, at southwest corner of road intersection, 2 feet east of fence; iron post stamped "922 Adj. 1903".....	922. 122
T. 7 N., R. 12 E., SE. $\frac{1}{4}$ sec. 9, 10 feet north of fence corner at crossroads, east side of road; iron post stamped "877 Adj. 1903".....	876. 846

MADISON QUADRANGLE.

[Latitude 43°-43° 15'; longitude 89° 15'-89° 30'.]

From point 2.3 miles west of Cottage Grove west along Chicago & Northwestern Ry. to Madison (double-rodged line).

T. 7 N., R. 10 E., 0.25 mile south of northeast corner of sec. 16, 200 yards east of road crossing, bridge 1225; aluminum tablet stamped "896 Adj. 1903"	Feet. 895.994
T. 7 N., R. 10 E., 0.25 mile north by 0.25 mile west of southeast corner of sec. 6, in stone culvert near road crossing; aluminum tablet stamped "864 Adj. 1903"	864.081
Madison, university grounds, between east pillars of south entrance of Engineering Building, 79 feet west from southeast corner, 96.1 feet east of southwest corner of building; aluminum tablet stamped "924 Adj. 1903"	924.239
Madison, university grounds, in water table, south end of east arch of main hall, 2.3 feet north of south end of arch; aluminum tablet stamped "961 Adj. 1903"	961.298

From point northeast of Madison northwest along Chicago & Northwestern Ry. through Mendota to Waunakee (forward and backward spur line).

Mendota, 0.5 mile south of, sec. 26, T. 8 N., R. 9 E., in stone abutment of railroad bridge 259; tablet stamped "886 Adj. 1903"	886.270
Waunakee, in front of station; top of rail	926
Waunakee, 1,300 feet north of, on west end of south abutment of railroad bridge 274; aluminum tablet stamped "925 Adj. 1903"	925.274
Waunakee, 0.8 mile northwest of road crossing, 0.25 mile northeast of center of sec. 6, T. 8 N., R. 9 E., in west abutment of railroad bridge 280; tablet stamped "938 Adj. 1903"	938.509

From point northeast of Madison north along Chicago, Milwaukee & St. Paul Ry. to sec. 5, T. 9 N., R. 10 E. (forward and backward spur line).

T. 8 N., R. 10 E., 0.25 mile east of center of sec. 30, 30 feet south of county road, on east side of track; iron post stamped "885 Adj. 1903"	885.215
Windsor, 0.5 mile south of station, T. 9 N., R. 10 E., sec. 29, in stone culvert; stamped "887 Adj. 1903"	886.927

From Madison southwest along Illinois Central R. R. and Chicago & Northwestern Ry. and return.

T. 7 N., R. 9 E., 0.25 mile east of southwest corner of sec. 32, 30 feet east of track at road crossing, south of county road; iron post stamped "1003 Adj. 1903"	1,002.944
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From Madison south to Syene and return along Chicago & Northwestern Ry.

Syene, 1,500 feet north of station, sec. 11, T. 6 N., R. 9 E., in stone culvert; tablet stamped "895 Adj. 1903"	894.917
Syene, in front of station; top of rail	896.8

EVANSVILLE QUADRANGLE.

[Latitude 42° 45'-43'; longitude 89° 15'-89° 30'.]

From Syene south along Chicago & Northwestern Ry. to Oregon and return.

T. 6 N., R. 9 E., sec. 26, 800 feet north of point where line between secs. 26 and 35 crosses railroad, in stone abutment of bridge 217; tablet stamped "939 Adj. 1903"	939.581
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T. 5 N., R. 9 E., 0.4 mile west of center of sec. 1, 0.5 mile north of Oregon, in stone abutment of railroad bridge just north of road crossing; tablet stamped "944 Adj. 1903"	Feet. 943.795
From Oregon east along highway 6 miles, thence south to Evansville, thence west to Attica, thence north and east to Oregon.	
T. 6 N., R. 10 E., 0.25 mile east of southwest corner of sec. 35, north side of east-west road opposite intersection of north-south road; iron post stamped "935 Adj. 1903"	935.302
T. 5 N., R. 10 E., 0.25 mile north of southeast corner of sec. 15, north side of east-west road, opposite intersection by a road north-south; iron post stamped "910 Adj. 1903"	910.303
Union, 0.25 mile west of center of sec. 10, T. 4 N., R. 10 E., at northwest corner of crossroads; iron post stamped "944 Adj. 1903"	944.219
Evansville, sec. 27, T. 4 N., R. 10 E., in water table of city hall, 3 feet south of northeast corner; tablet stamped "918 Adj. 1903"	918.117
T. 3 N., R. 9 E., northeast corner of sec. 1, at south corner of two formed by intersection of east-west and north-south roads, 10 feet west of corner post; iron post stamped "985 Adj. 1903"	985.432
T. 3 N., R. 9 E., northwest corner of sec. 5, on south side of east-west road, opposite intersection of north-south road; iron post stamped "829 Adj. 1903"	828.729
T. 4 N., R. 9 E., 0.25 mile west of southeast corner of sec. 7, 15 west of fence corner, the west corner of two corners formed by intersection of east-west and north-south roads; iron post stamped "912 Adj. 1903"	912.597
T. 5 N., R. 9 E., northwest corner of sec. 33, 60 feet east of diagonal road at junction of three roads, in northwest corner of school yard; iron post stamped "898 Adj. 1903"	898.353
T. 5 N., R. 9 E., 0.5 mile north of center of sec. 9, 54 feet south of crossroads, east side of north-south road; iron post stamped "954 Adj. 1903"	954.592

Hartford, Juneau, and West Bend quadrangles.

DODGE, OZAUKEE, AND WASHINGTON COUNTIES.

The elevations in the following list were determined by primary levels extended from United States Lake Survey bench mark No. 2, a stone monument near the southeast corner of the courthouse square in Milwaukee, the accepted elevation of which is 636.056 feet above mean sea level.

The leveling was done in 1901 by I. C. Sunderland.

WEST BEND QUADRANGLE.

[Latitude 43° 15'-43° 30'; longitude 88°-88° 15']

From Milwaukee northwest along Chicago & Northwestern Ry. to Rockfield, thence east to sec. 23, T. 10 N., R. 21 E., thence north to point 1.5 miles north of Horns Corners (double-rodged line).

T. 10 N., R. 20 E., southeast corner of, 30 feet west by 25 feet north of center of road intersection, on Washington-Ozaukee county line; iron post stamped "875.95 Mil"	Feet. 876.201
T. 10 N., R. 21 E., northeast corner of sec. 17, 37 feet southwest of section stone, in center of roads; iron post stamped "847.900 Mil"	848.168

From point near Horns Corners west along north side of Jackson Township to northwest corner, thence south and southeast to Rockfield.

T. 10 N., R. 20 E., 0.1 mile east of northwest closing corner of sec. 1, 2 feet south of section stone, at southeast corner of sec. 35, T. 11 N., R. 20 E.; iron post stamped "879.270 Mil".....	Feet. 879. 536
T. 11 N., R. 19 E., southwest corner of sec. 36, West Bend Township, 20 feet north of road east; iron post stamped "1006.906 Mil".....	1, 007. 167
T. 10 N., R. 20 E., southwest corner of, 20 feet east by 50 feet north of center of intersection of roads; iron post stamped "899.819 Mil".....	900. 092

From northwest corner of Jackson Township north along public road through West Bend and Barton to sec. 24, T. 12 N., R. 19 E., thence east to Fillmore and south through Newburg to Horns Corners.

West Bend, in front face of courthouse, at right of entrance, aluminum tablet stamped "942.80 Mil".....	943. 089
T. 12 N., R. 19 E., near center of NW. $\frac{1}{4}$ sec. 24, 2 miles east by 8 miles south of Kewaskum; iron post stamped "968.474 Mil".....	968. 749
T. 12 N., R. 20 E., northwest corner of sec. 24, 55 feet south by 16 feet east of center of road; iron post stamped "847.716 Mil".....	847. 971
Newburg, sec. 12, T. 11 N., R. 20 E., on front corner of brick saloon opposite mill, in stone above water table; bronze tablet stamped "850.278 Mil".....	850. 525

HARTFORD QUADRANGLE.

[Latitude 43° 15'-43° 30'; longitude 88° 15'-88° 30'.]

From West Bend along public road west via Horseshoe Hill and Aurora to Kohlsville.

Aurora, southwest corner of sec. 12, T. 11 N., R. 18 E., in southwest corner of brick building at northeast corner of intersection of road; bronze tablet stamped "1146.169 Mil".....	1, 146. 577
Kohlsville, at northwest corner of sec. 35, T. 12 N., R. 18 E., at southeast corner of intersection of roads; iron post stamped "1013.153 Mil".....	1, 013. 640

From Horseshoe south along public road west of Cedar Lake to Schleisingerville, thence east to Jackson Township.

Schleisingerville, sec. 18, T. 10 N., R. 19 E., 300 feet southwest of post office, in butcher shop, in brick; bronze tablet stamped "1068.964 Mil".....	1, 069. 192
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From southwest corner of Jackson Township west along public road via Oil Spring Farm, thence north through Hartford to Aurora.

T. 9 N., R. 19 E., northwest corner of sec. 5, 2 miles south by 1 mile west of Ackerville, 15 feet south and east from center of intersection of roads; iron post stamped "1093.033 Mil".....	1, 093. 394
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From Kohlsville west along public road to sec. 30, Theresa Township, thence southwest to Woodland.

T. 12 N., R. 17 E., southeast corner of sec. 24, at northwest corner of intersection of roads; iron post stamped "1025.785".....	1, 026. 072
T. 11 N., R. 17 E., 190 feet south by 17 feet west of northeast corner of sec. 6; iron post stamped "1060.005 Mil".....	1, 060. 422
T. 11 N., R. 17 E., northeast corner of sec. 36, 3 miles east of Huilsburg; iron post stamped "1072.070 Mil".....	1, 072. 464

From Hartford southwest along public road through Saylesville to southwest corner of sec. 32, Rubicon Township, thence north through Neosho to Woodland.

Hartford, southeast corner of city hall, in limestone water table; bronze tablet stamped "982.977 Mil".....	Feet. 983.345
T. 10 N., R. 17 E., sec. 25, at intersection of roads; iron post stamped "976.856 Mil".....	977.233

JUNEAU QUADRANGLE.

[Latitude 43° 15'-43° 30'; longitude 88° 30'-88° 45'.]

From Neosho north along highways to Woodland.

Neosho, 1 mile south of, at southeast corner of sec. 30, T. 10 N., R. 17 E.; iron post stamped "922.984 Mil".....	923.366
Woodland, east of southwest corner of sec. 31, T. 11 N., R. 17 E.; iron post stamped "946.069 Mil".....	946.460

Appleton, Fisk, Fond du Lac, Kiel, Neenah, and Oshkosh quadrangles.

CALUMET, FOND DU LAC, OUTAGAMIE, AND WINNEBAGO COUNTIES.

The elevations in the following list were determined by primary leveling extended from United States Army engineers' bench marks at Fond du Lac, Oshkosh, Appleton, and Menasha.

The leveling was done in 1908 by E. M. Bandli.

KIEL QUADRANGLE.

[Latitude 43° 45'-44°; longitude 88°-88° 15'.]

From sec. 29, T. 16 N., R. 19 E., north along highways to sec. 8, T. 16 N., R. 19 E.

T. 16 N., R. 19 E., sec. 29, 10.5 feet from northeast corner of road intersection, 3.6 feet north of tree 48 feet northwest of road intersection at east center of sec. 29; iron post stamped "993".....	Feet. 992.553
T. 16 N., R. 19 E., near southeast corner of sec. 20, opposite intersection with T road from south; on top of rock.....	963.10
T. 16 N., R. 19 E., near southwest corner of sec. 8, 15 feet east of intersection with T road from west, 12 feet northwest of oak tree, in large stone; aluminum tablet stamped "967".....	966.627

FOND DU LAC QUADRANGLE.

[Latitude 43° 45'-44°; longitude 88° 15'-88° 30'.]

From Fond du Lac east along highways to Dotyville, thence north along highways to sec. 32, T. 16 N., R. 19 E.

Fond du Lac, in top surface of top course of stone, north wing of right abutment of Scott Street bridge, 28.8 feet from face of abutment; copper bolt.....	753.966
Fond du Lac, in northeast corner of courthouse, in sill of second window from east, leading under step entrance from east; aluminum tablet stamped "764".....	764.034
T. 15 N., R. 18 E., near center of sec. 18, township of Empire, 100 feet west of center of crossroads, 1.5 feet north of fence, 6.5 feet from northwest corner of school yard; iron post stamped "852".....	851.692
T. 15 N., R. 18 E., at center of sec. 15, township of Empire, in southeast corner of T road intersection, on top of rock; marked "1005".....	1,004.50

T. 15 N., R. 18 E., near east center of sec. 15, township of Empire, 100 feet southeast of intersection with T road from north, 4 feet from telephone pole, 2 feet north of fence; iron post stamped "1014".....	Feet. 1, 014. 082
T. 15 N., R. 18 E., near center of sec. 14, township of Empire, in southeast corner of T road intersection, on stone; marked "1,019".....	1, 019. 09
Dotyville, in Catholic Church, 2 feet above ground, 0.6 foot from northwest corner, in highest course of stone masonry, near southeast corner of sec. 19, T. 15 N., R. 19 E.; aluminum tablet stamped "1041".....	1, 040. 806
T. 15 N., R. 19 E., at northeast corner of sec. 19, township of Forest, at southeast corner of intersection with T road from east, in root of tree; nail marked "1044".....	1, 044. 06
T. 15 N., R. 19 E., at east center of sec. 7, township of Forest, 5 feet south of southeast corner fence post, under fence in school yard, in large stone 56 feet from intersection with road from southeast; aluminum tablet stamped "966".....	966. 407

From sec. 5, T. 16 N., R. 19 W., to point 2 miles north of Brothertown.

T. 16 N., R. 19 E., near southwest corner of sec. 6, township of Marshfield, 0.5 mile east of Hinesburg, opposite T road from north; chisel mark on large rock, marked "981".....	980. 37
T. 16 N., R. 19 E., in northeast corner of sec. 6, township of Marshfield, 54 feet northwest of road intersection, 2.5 feet east of fence, 40 feet north of northwest corner fence post, in northwest corner of T road intersection; iron post stamped "971".....	970. 624
T. 17 N., R. 19 E., in northeast corner of sec. 24, 45 feet southeast of T road intersection, in southeast corner, 2.2 feet from fence, 8 feet north of tree; iron post stamped "894".....	893. 473
Brothertown, 2 miles southeast of, in northwest corner of intersection with T road from west, in root of large tree; nail marked "906".....	906. 20
Brothertown, 96 feet northwest of road intersection, opposite intersection with T road from east, 1 foot east of fence; iron post stamped "813".....	813. 070

From sec. 17, T. 16 N., R. 17 E., to Fond du Lac.

T. 16 N., R. 17 E., near southeast corner of sec. 17, 100 feet east of street car line, 2.2 feet south of fence, north of road; iron post stamped "783".....	782. 601
North Fond du Lac, 45 feet southwest of intersection of crossroads, in southwest corner, 7 feet west and 3 feet north of sidewalk; across from McGivern Hotel; iron post stamped "767".....	766. 424

FISK QUADRANGLE.

[Latitude 43° 45'-44°; longitude 88° 30'-88° 45'.]

From sec. 12, T. 17 N., R. 16 E., south along Chicago & Northwestern Ry. to sec. 8, T. 16 N., R. 17 E., about 1 mile south of Vandyne.

T. 17 N., R. 16 E., near north center of sec. 12, 5 miles north of Vandyne; 50 feet from railroad tangent west, 1.6 feet north of Chicago & Northwestern Ry. fence, 3 feet east of fence; iron post stamped "774".....	773. 599
T. 17 N., R. 17 E., northeast corner of sec. 24, 2.3 feet north of northeast corner of schoolhouse at Black Wolf; iron post stamped "799".....	798. 760
T. 17 N., R. 17 E., near south center of sec. 31, 33 feet southwest of Wisconsin Central Ry. crossing, 2.3 feet north of fence; iron post stamped "790".....	790. 022

OSHKOSH QUADRANGLE.

[Latitude 44°-44° 15'; longitude 88° 30'-88° 45'.]

From sec. 18, T. 19 N., R. 17 E., south along Chicago & Northwestern Ry. to sec. 36, T. 18 N., R. 16 E., about 2.8 miles south of Oshkosh.

State Hospital station, 1 mile north of, in northern part of sec. 30, T. 19 N., R. 17 E., 0.7 foot from northwest corner of foundation, in northwest corner of bridge 352; aluminum tablet stamped "771".....	Feet. 771.144
T. 18 N., R. 16 E., near center of sec. 1, 1.2 feet from northwest corner of foundation of bridge 345, 0.6 foot from edge; aluminum tablet stamped "754".....	753.934
Oshkosh, Chicago & Northwestern Ry. bridge at Broad Street (U. S. Army engineers' b. m.).....	751.716
Oshkosh, corner of Otter and State streets, in south end of stone threshold of east entrance of city hall; copper bolt (U. S. Army engineers' b. m.)..	755.389
Oshkosh, one block east of city hall, in west side of county jail, 2 feet south of door, in highest course of stone; aluminum tablet stamped "758".....	758.314

NEENAH QUADRANGLE.

[Latitude 44°-44° 15'; longitude 88° 15'-88° 30'.]

From Quinney schoolhouse north along highway to sec. 5, T. 20 N., R. 18 E.

Quinney, 2 feet east, thence 2.5 feet south from northeast corner of schoolhouse; iron post stamped "871".....	870.428
Stockbridge, 1 mile south of, 66 feet northwest of T road intersection, 25 feet north of northwest corner and 2 feet east of fence; iron post stamped "849".....	848.778
Stockbridge, 1.6 miles north of, 400 feet west of road back of schoolhouse, 15 feet north of southwest corner of tree, 2.8 feet east of fence, in southwest corner of school yard; in ledge of rock; aluminum tablet erroneously stamped "960".....	985.808
T. 19 N., R. 19 E., southeast corner of sec. 6, township of Harrison, in southeast corner of school yard, 2 feet north of fence, 9 feet southwest of tree at corner; iron post stamped "980".....	979.894
T. 20 N., R. 19 E., in northwest corner of Church schoolhouse at Sherwood, 4.2 feet above ground, 0.5 foot from corner; aluminum tablet stamped "904".....	904.155
T. 20 N., R. 18 E., east center of sec. 12, township of Harrison, in southeast corner of crossroads, 18 feet from southeast corner fence post, 63 feet west of road intersection and 1.7 feet north of fence; iron post stamped "778".....	777.984
T. 20 N., R. 18 E., at north center of sec. 2, on north line of Calumet County, 2.5 feet from fence corner, 33 feet from intersection with road from south, 15 feet west of tree; iron post stamped "766".....	765.485
T. 20 N., R. 18 E., near northeast corner of sec. 3, on north line of Calumet County, at intersection with T road from south, on stone culvert; marked "748".....	747.64
Appleton, 3 miles southeast of, T. 20 N., R. 18 E., at northeast corner of sec. 5, on Calumet County line, 46 feet south of road intersection, 2.5 feet from fence; iron post stamped "789".....	788.308
From sec. 12, T. 20 N., R. 17 E., south along Chicago & Northwestern Ry. to road crossing at Snell, sec. 8, T. 19 N., R. 17 E.	
Menasha, at front entrance of Menasha High School, 4 feet from ground, in support of northeast pillar 2 inches from east edge; aluminum tablet stamped "766".....	766.511

T. 20 N., R. 17 E., near north center of sec. 33, 2 miles south of Neenah, in third course of stone in northeast corner of Chicago & Northwestern Ry. bridge 360, 1.2 feet from northeast corner of foundation; aluminum tablet stamped "749".....	Feet. 749. 475
T. 19 N., R. 17 E., near southeast corner of sec. 5, in southwest corner of bridge 357 of Chicago & Northwestern Ry., 1 foot north of southwest corner, 6 inches from west corner; aluminum tablet stamped "760".....	760. 353

APPLETON QUADRANGLE.

[Latitude 44° 15'-44° 30'; longitude 88° 15'-88° 30'.]

From point about 1.7 miles southeast of Appleton to Appleton, thence southwest along Chicago, Milwaukee & St. Paul Ry. to point about 2.9 miles south of Appleton.

Appleton, Lock No. 1, in upper left-hand corner of right head wall, 4 inches from edge of stone; copper plug (U. S. Army engineers' b. m.).....	741. 841
Appleton, near southeast corner of county jail, in stone step of porch, 3 inches from pillar and 3 inches from east edge; aluminum tablet stamped "790".....	790. 394
Appleton, 2.5 miles southwest of, 23 feet south of middle of road, 2.5 feet north of fence, about 30 feet east of Chicago, Milwaukee & St. Paul Ry., tangent in northeast corner of Winnebago County, on county line; iron post stamped "786".....	785. 873

Briggsville, Portage, and Poynette quadrangles.

ADAMS, COLUMBIA, DANE, MARQUETTE, AND SAUK COUNTIES.

The elevations in the following list were determined by primary leveling extended from the United States Army engineers' bench mark at Portage, 25 feet to the right of the face of right wall of old Lock No. 1, 84.6 feet above the upper end of upper gate recess of new lock, a copper bolt in tile under a hollow iron post sunk 4 feet in ground. The elevation of this is accepted as 787.273 feet above mean sea level, as determined by the United States Army engineers' leveling from Milwaukee.

The leveling in the Briggsville quadrangle was done in 1900 by R. E. Wipfler, and that in the Portage and Poynette quadrangles in 1899 by L. E. Granke.

Nearly all the standard bench marks are stamped 4 feet too high.

POYNETTE QUADRANGLE.

[Latitude 43° 15'-43° 30'; longitude 89° 15'-89° 30'.]

From Portage south along highways to point 0.25 mile south of northwest corner of sec. 11, T. 9 N., R. 9 E., thence east to southeast corner of sec. 5, T. 9 N., R. 10 E., thence north to point 0.25 mile east of center of sec. 20, T. 11 N., R. 10 E.

Arlington, 1 mile west of, southeast corner of sec. 15, T. 10 N., R. 9 E., 5 feet west by 2.5 feet south of fence corner; iron post stamped "1066 Prtg".	1, 061. 832
T. 9 N., R. 9 E., 0.25 mile south of northwest corner of sec. 11, 38 feet east by 2 feet south of most easterly fence corner at intersection of roads; iron post stamped "984 Prtg".....	980. 358
T. 9 N., R. 10 E., at southeast corner of sec. 5, 4.4 feet east by 16 feet north of northwest fence corner at crossroads; iron post stamped "961 Prtg".....	957. 318

T. 10 N., R. 10 E., 0.25 mile north of southeast corner of sec. 17, 5 feet north by 3 feet west of northeast corner of Leeds schoolhouse (district No. 7); iron post stamped "1092 Prtg"..... Feet. 1,088.362

From Poynette east along highways to point 0.25 mile east of center of sec. 20, T. 11 N., R. 10 E., thence north to center of sec. 21, T. 12 N., R. 10 E.

Poynette, 2.5 feet east by 4.5 feet north of northwest corner of Presbyterian Church at corner of Main and Tomlinson streets; iron post stamped "857 Prtg"..... 853.061

T. 11 N., R. 10 E., 0.25 mile east of center of sec. 20, 2.5 feet west by 10 feet north of fence corner at northeast corner or crossroads; iron post stamped "966 Prtg"..... 962.242

T. 12 N., R. 10 E., center of sec. 21, 9.9 feet north by 2.8 feet west of fence corner, the most northerly of the two formed by intersection of roads; iron post stamped "830 Prtg"..... 826.276

PORTAGE QUADRANGLE.

[Latitude 43° 30'-43° 45'; longitude 89° 15'-89° 30']

From Portage north along highways to point 0.25 mile east of southwest corner of sec. 27, T. 15 N., R. 9 E.

Portage, on old Lock No. 1, 25 feet to right of face of old lock, 84.6 feet above the upper end of upper gate recess of new lock; copper bolt in tile under hollow iron post sunk 4 feet in ground..... 787.273

Cap on post..... 791.273

Portage, 28.5 feet west by 49.5 feet south of south end of wagon bridge over Wisconsin River, 2 feet east of fence on west side of road; iron post stamped "803 Prtg"..... 799.148

Portage, 182 feet south by 8.5 feet west of southeast corner of high school building, in U. S. Geological Survey meridian stone; copper bolt stamped "804 Prtg"..... 800.130

T. 13 N., R. 9 E., 0.5 mile north of center of sec. 15, 15.5 feet east by 9.5 feet north of southeast fence corner at crossroads; iron post stamped "837 Prtg"..... 833.429

T. 14 N., R. 9 E., 0.3 mile west by 0.05 mile south of northeast corner of sec. 14, 2 feet west of fence post at forks of roads, east of road; iron post stamped "804 Prtg"..... 800.377

T. 15 N., R. 9 E., 0.25 mile east of southwest corner of sec. 27, 2.2 feet east by 2 feet 7 inches north of southeast corner of schoolhouse; iron post stamped "822 Prtg"..... 818.104

From Wycocena north along highways to southeast corner of sec. 33, T. 15 N., R. 10 E.

T. 13 N., R. 13 E., northeast corner of sec. 21, 4 feet east by 1 foot south of fence corner, south corner of two formed by intersection of roads; iron post stamped "889 Prtg"..... 884.579

T. 14 N., R. 10 E., 0.5 mile south of center of sec. 22, 11.1 feet west by 18.3 feet south of the most easterly fence corner at intersection of roads; iron post stamped "922 Prtg"..... 918.306

T. 15 N., R. 10 E., at southeast corner of sec. 33, 17.9 feet north by 2.5 feet east of intersection of fences on west side of road; iron post stamped "798 Prtg"..... 794.457

BRIGGSVILLE QUADRANGLE.

[Latitude 43° 30'-43° 45'; longitude 89° 30'-89° 45'.]

From Portage west and north along highways to quarter corner on west side of sec. 6, T. 13 N., R. 7 E.

T. 12 N., R. 8 E., near center of sec. 10, near forks of road; iron post stamped "800 Prtg".....	Feet. 795. 664
T. 12 N., R. 7 E., about 0.25 mile east of northwest corner of sec. 11, at intersection of roads; iron post stamped "929 Prtg".....	925. 573
T. 13 N., R. 7 E., near quarter corner on west side of sec. 6, east side of road; iron post stamped "1016 Prtg".....	1, 011. 448

From quarter corner on west side of sec. 6, T. 13 N., R. 7 E., east along highways to southwest corner of sec. 33, T. 14 N., R. 8 E., thence southeast to Portage.

T. 14 N., R. 7 E., near center of sec. 33, north side of road; iron post stamped "941 Prtg".....	937. 235
T. 14 N., R. 8 E., at southwest corner of sec. 33, at northeast corner of intersecting roads; iron post stamped "813 Prtg".....	808. 674
T. 13 N., R. 8 E., near center of west half of sec. 21, at forks of roads; iron post stamped "801 Prtg".....	797. 334

Marathon and Wausau quadrangles.

LANGLADE, LINCOLN, MARATHON, AND TAYLOR COUNTIES.

The elevations in the following list are not on the 1912 adjustment datum, and are only approximate. They were determined by primary leveling extended from Wausau, the initial point being the top of rail in front of the Chicago, Milwaukee & St. Paul Ry. station, the elevation of which is accepted as 1,216 feet.

The leveling was done by Robert Wipfler in the Marathon quadrangle during 1899 and in the Wausau quadrangle during 1899 and 1900.

WAUSAU QUADRANGLE.

[Latitude 44° 45'-45° 15'; longitude 89° 15'-89° 45'.]

From Wausau east along highways to Sunset, thence north and west to Merrill.

Wausau, at point opposite center of Chicago & Northwestern Ry. station; top of rail.....	Feet. 1, 167. 0
Wausau, opposite Chicago, Milwaukee & St. Paul Ry. station; top of east rail.....	1, 216. 0
T. 29 N., R. 8 E., sec. 23; stone abutment northwest corner iron bridge over Big Sandy Creek.....	1, 282. 05
T. 29 N., R. 8 E., northeast corner of sec. 24, opposite Sunset saloon, 15 feet southwest of south end of culvert, south side of road; iron post stamped "1355 W".....	1, 354. 708
T. 30 N., R. 9 E., northeast corner of intersection of roads at southwest corner of sec. 31; iron post.....	1, 458. 665
T. 31 N., R. 7 E., sec. 22, in top of northwest pier of bridge over Pine River; top of bolt.....	1, 268. 23
T. 31 N., R. 7 E., about 0.2 mile east of corner of secs. 15, 16, 21, and 22, at northwest corner of intersection of roads, at schoolhouse; iron post stamped "1305 W".....	1, 305. 935

Merrill, Chicago, Milwaukee & St. Paul Ry. crossing on River Street; top of rail.....	Feet. 1,257.0
T. 31 N., R. 6 E., southeast corner of South Center and First streets, Merrill; iron post stamped "1267 W".....	1,267.046
From southwest corner of sec. 31, T. 30 N., R. 9 E., east along township line to southwest corner of sec. 31, T. 30 N., R. 10 E. (spur line).	
T. 30 N., R. 10 E., southwest corner of sec. 31, 10 feet north of center of road; iron post stamped "1465 W".....	1,465.046
From Merrill northeast along highways to Heller, thence east to Morley.	
T. 31 N., R. 8 E., northwest corner of sec. 7, east side of road, at northwest corner of intersection of roads.....	1,307.520
T. 31 N., R. 9 E., northeast corner of sec. 1, 12 feet west of center of road, 50 feet south of bearing tree; iron post.....	1,528.703
From Mosinee north along highways to Wausau.	
Mosinee, T. 27 N., R. 7 E., southeast corner of Desserts public library; iron post stamped "1159 W".....	1,159.491
Mosinee, in front of Chicago, Milwaukee & St. Paul Ry. station; top of rail.....	1,153.9
Schofield, east side of Mosinee-Schofield road, 1 foot from board fence, T. 28 N., R. 7 E.; iron post.....	1,163.213
From point 1 mile south of Dessert Junction east along highways to range line, Rs. 7 and 8 E., T. 27 N. (spur line).	
T. 27 N., R. 8 E., northwest corner of sec. 19, north side of road, at corner of wire fence, 20 feet northeast of intersection of roads; iron post.....	1,280.123
From Schofield east via Kelly to point near Birnamwood, thence south to point south of Elderon, thence west to point west of Bevent, thence north to Callon.¹	
Kelly, west side of road, 10 feet west of corner of fence diagonally opposite station; iron post stamped "1220 W".....	1,220.045
T. 28 N., R. 9 E., north side of road, 1 foot from log fence, about 10 feet east of corner of fence, about 300 feet west of house on north side of road; iron post.....	1,236.266
T. 29 N., R. 9 E., east pier of Eau Claire River bridge, on top of bolt.....	1,250.42
T. 29 N., R. 9 E., near quarter corner of sec. 33, on south side of road, 50 feet west of west end of Eau Claire bridge, corner of intersection of road; iron post.....	1,248.925
T. 29 N., R. 10 E., southwest corner of sec. 31, 20 feet north of center of road, 50 feet northeast of intersection of roads; iron post.....	1,452.271
T. 28 N., R. 10 E., at Norrie, at intersection of roads, 0.1 mile north of railroad crossing, east side of road running north-south, at corner of fence; iron post.....	1,293.125
T. 27 N., R. 10 E., near quarter corner of sec. 3, south side of road, in front of school; iron post.....	1,252.233
T. 27 N., R. 9 E., sec. 34, Bevent post office, southeast corner of bridge over Plover River; top of bolt.....	1,192.93
T. 27 N., R. 9 E., sec. 6, east side of road, 100 feet from corner of fence, 200 feet north of house; iron post.....	1,301.432

¹ This circuit is based upon a single line from Wausau.

From point 1 mile west of Emmerich east along highways to range line, Rs. 6 and 7 E.,
T. 30 N. (spur line).

	Feet.
T. 30 N., R. 7 E., northwest corner of sec. 18, at corner of fence; iron post stamped "1460 W"	1,459.304

MARATHON QUADRANGLE.

[Latitude 44° 45'-45° 15'; longitude 89° 45'-90° 15'.]

From Mosinee northwest along highways to point 3 miles west of Wehn.

T. 27 N., R. 6 E., 200 feet east of northwest corner of NE. $\frac{1}{4}$ sec. 29; iron post stamped "1293 W"	1,293.198
T. 27 N., R. 5 E., northwest corner of sec. 19, northeast corner of intersection of roads, 10 feet from corner of fence; iron post stamped "1182 W"	1,182.003
T. 27 N., R. 4 E., at northwest corner of NE. $\frac{1}{4}$ sec. 22, at northeast corner of intersection of roads, 40 feet east of corner of rail fence, north side of road; iron post stamped "1243 W"	1,242.927
T. 27 N., R. 3 E., at northeast corner of sec. 1, southwest corner of intersection of roads, 15 feet west of center of road, opposite corner of fence on east side; iron post stamped "1324 W"	1,324.442
T. 28 N., R. 4 E., northwest corner of sec. 19, southeast corner of intersection of roads, 2 feet from corner of fence; iron post stamped "1381 W"	1,381.480

From Mosinee northwest along highways to northwest corner of sec. 24, T. 28 N., R. 5 E., thence west to Cherokee, thence north to point about 3 miles southwest of Milan.

T. 28 N., R. 6 E., southwest corner of sec. 19, at corner of fence; iron post stamped "1412 W"	1,412.143
T. 28 N., R. 5 E., 930 feet east of northwest corner of sec. 24, south side of road; iron post stamped "1404 W"	1,403.727
T. 28 N., R. 4 E., secs. 13-24, top of Chicago, Milwaukee & St. Paul Ry. rail at Colby-Edgar road crossing	1,294.3
T. 28 N., R. 4 E., corner of secs. 15, 16, 21, and 22; top of corner stone....	1,321.14
T. 28 N., R. 3 E., corner of secs. 14, 15, 22, and 23; top of corner stone....	1,328.79
T. 28 N., R. 3 E., corner of secs. 17, 18, 19, and 20; top of corner stone....	1,325.74
T. 28 N., R. 3 E., southwest corner of sec. 18, northeast corner of intersection of roads; iron post stamped "1281 W"	1,280.966
T. 28 N., R. 2 E., corner of secs. 2, 3, 10, and 11; top of corner stone....	1,345.07
T. 29 N., R. 2 E., sec. 34, on top of Minneapolis, St. Paul & Sault Ste. Marie Ry. rail at crossing	1,339.23

From Merrill southwest along highways through Corning, Barney, Athens, and Corinth to point 3 miles southwest of Milan.

T. 31 N., R. 5 E., corner of secs. 15, 16, 21, and 22, on top of corner stone.	1,427.72
T. 31 N., R. 5 E., corner of secs. 26, 27, 34, and 35, on top of corner stone.	1,401.22
T. 31 N., R. 5 E., northeast corner of SE. $\frac{1}{4}$ sec. 34, at corner of fence; iron post stamped "1461 W"	1,459.305
T. 30 N., R. 5 E., northwest corner of sec. 33, 10 feet east of corner of church fence; iron post stamped "1398 W"	1,398.126
T. 30 N., R. 5 E., quarter corner of secs. 29 and 32; on top of stone.....	1,310.10
Athens, near sawmill, at crossing; top of Minneapolis, St. Paul & Sault Ste. Marie Ry. rail	1,333.74
Athens, in front of Athens Hotel, sec. 31, T. 30 N., R. 4 E.; iron post stamped "1386 W"	1,386.223
T. 29 N., R. 4 E., corner of secs. 7, 8, 17, and 18; top of corner stone.....	1,448.91

T. 29 N., R. 3 E., corner of secs. 11, 12, 13, and 14, at intersection of roads, in north end of culvert; on top of nail.....	Feet. 1, 416. 78
T. 29 N., R. 3 E.; northwest corner of sec. 13, northwest corner of intersection of roads, at corner of fence; iron post stamped "1417 W".....	1, 417. 266
T. 29 N., R. 3 E., near corner of secs. 9, 10, 15, and 16, top of Minneapolis, St. Paul & Sault Ste. Marie Ry. rail.....	1, 436. 86

From Wausau west along highway to T. 29 N., R. 4 E., thence south to Edgar.

T. 29 N., R. 5 E., 800 feet east of northwest corner of NE. $\frac{1}{4}$ sec. 25; iron post stamped "1381 W".....	1, 380. 851
Rib Falls, southwest corner of sec. 22, T. 29 N., R. 5 E., in southwest slope (bed) plate of bridge over Rib River, on top of rivet.....	1, 234. 87
T. 28 N., R. 4 E., secs. 1 and 12, on bolt in southeast corner of bridge....	1, 291. 90
Edgar, sec. 25, T. 28 N., R. 4 E., on top of Chicago, Milwaukee & St. Paul Ry. rail at crossing.....	1, 246. 6

From point 2 miles south of Cornig south along highways to southeast corner of sec. 24, T. 29 N., R. 5 E.

T. 30 N., R. 6 E., secs. 18 and 19, and T. 30 N., R. 5 E., secs. 13 and 24; top of corner stone.....	1, 291. 72
T. 30 N., R. 6 E., secs. 19 and 30, and T. 31 N., R. 5 E., secs. 24 and 25; top of corner stone.....	1, 271. 80
Ziegler post office, T. 30 N., R. 6 E., northwest corner of sec. 31, at southwest corner of blacksmith shop; iron post marked "1276 W".....	1, 275. 758

From Athens northwest along highways to point near quarter corner on north side of sec. 4, T. 30 N., R. 3 E. (spur line).

T. 30 N., R. 3 E., southeast corner of sec. 27, at intersection of roads, at corner of rail fence; north of north end of culvert, iron post stamped "1437 W".....	1, 436. 486
T. 30 N., R. 2 E., 125 feet west of northeast corner of sec. 4, 2 feet south of corner of fence; iron post stamped "1502 W".....	1, 502. 202
T. 31 N., R. 2 E., southeast corner of sec. 36, 20 feet west of center of road, 150 feet east of culvert; iron post stamped "1459 W".....	1, 459. 022

Baraboo, Crossplains, and Mazomanie quadrangles.

DANE, IOWA, AND SAUK COUNTIES.

The elevations in the following list were determined by primary leveling extended from Portage, Wis., Dubuque, Iowa, and Milwaukee, Wis.

The leveling was done in 1905 by H. Bücher.

CROSSPLAINS QUADRANGLE.

[Latitude 43°-43° 15'; longitude 89° 30'-89° 45'.]

From Waunakee west along highways to Mazomanie.

T. 8 N., R. 7 E., 0.2 mile east by 0.1 mile south of northwest corner of sec. 9, 110 feet west of center of junction of roads, on south side of road, 20 feet east of telephone pole; iron post stamped "887 Adj. 1903".....	Feet. 886. 694
T. 8 N., R. 6 E., 0.3 mile north of southwest corner of sec. 12, south side of road, 27 feet west of fence corner at southwest corner of junction; iron post stamped "828 Adj. 1903".....	827. 574
T. 8 N., R. 6 E., 0.2 mile west of center of sec. 2, at junction of roads, east side of Chicago, Milwaukee & St. Paul Ry. track, 100 feet north of telegraph guy pole; iron post stamped "759 Adj. 1903".....	758. 920

From Mazomanie northeast to sec. 18, T. 9 N., R. 7 E.

T. 9 N., R. 7 E., 0.1 mile north of southwest corner of sec. 18, north side of public road, 400 feet east of Chicago, Milwaukee & St. Paul Ry. track, 1 foot south of fence; iron post stamped "Prim. Trav. Sta. No. 11, 751 Adj. 1903" Feet.
751.000

From Mount Horeb east along railroad and highway to sec. 32, T. 7 N., R. 9 E.

Mount Horeb, fence corner north of creamery on west side of road, 6.5 feet west of road and 2.5 feet south of fence; iron post stamped "Prim. Trav. Sta. No. 9, 1223 Adj. 1903" 1, 223. 368
Klevenville, 1.3 miles west of, on east side of north-south road, at crossing, 16 feet south of track; iron post stamped "1049 Adj. 1903" 1, 048. 879
T. 7 N., R. 6 E., 0.2 mile east of southwest corner of sec. 27, at northeast corner of crossroads, 16 feet east of west fence line; iron post stamped "985 Adj. 1903" 985. 334
T. 7 N., R. 6 E., 0.2 mile south by 0.2 mile east of northwest corner of sec. 36, at junction of roads, northeast corner, 24 feet north of fence corner; iron post stamped "1011 Adj. 1903" 1, 011. 344
T. 7 N., R. 8 E., 0.2 mile west of southeast corner of sec. 32, at northwest corner of junction of roads; iron post stamped "1073 Adj. 1903" 1, 073. 473
T. 7 N., R. 8 E., 0.3 mile west of southeast corner of sec. 35, northwest corner of junction of roads; iron post stamped "1051 Adj. 1903" 1, 050. 837

MAZOMANIE QUADRANGLE.

[Latitude 43°-43° 15'; longitude 89° 45'-90°.]

From Blackhawk along highway south to sec. 5, T. 8 N., R. 5 E., thence west to Spring Green.

T. 9 N., R. 5 E., 0.1 mile south by 0.2 mile east of northwest corner of sec. 29, opposite center of junction of north-south road with road to southeast, on west side of road, 7 feet south of telephone pole; iron post stamped "973 Adj. 1903" 973. 065
T. 8 N., R. 5 E., 0.2 mile east by 0.3 mile south of northwest corner of sec. 5, on east side of road, 43 feet north of fence corner at northeast corner of junction of roads; iron post stamped "736 Adj. 1903" 735. 518
T. 8 N., R. 4 W., 0.1 mile east by 0.2 mile south of northwest corner of sec. 2, northwest corner of junction of roads, west of road, 30 feet north of fence corner; iron post stamped "728 Adj. 1903" 728. 289

From sec. 17, T. 7 N., R. 4 E., along highway southeasterly to Barneveld, thence along railroad east to Mount Horeb.

T. 7 N., R. 4 E., 0.1 mile north by 0.1 mile west of southeast corner of sec. 14, on north side of road at junction; iron post stamped "771 Adj. 1903" ... 771. 003
T. 7 N., R. 5 E., 0.2 mile north of south quarter corner of sec. 19, in north side of road, 90 feet west of center of junction; iron post stamped "810 Adj. 1903" 810. 374
T. 7 N., R. 5 E., SW. ¼ sec. 32, at junction of east-west road with road to north, on south side of road, opposite center of junction; iron post stamped "887 Adj. 1903" 887. 115
Barneveld, 0.8 mile east of, at southeast corner of crossing, east side of public road, 90 feet south of point where east cattle guard leaves track; iron post stamped "1252 Adj. 1903" 1, 252. 475
Blue Mounds, 0.1 mile west of station, road crossing, 60 feet south of track; iron post stamped "1301 Adj. 1903" 1, 301. 507

Mount Horeb, 2.3 miles west of station, 0.2 mile north by 0.2 mile east of southeast corner of sec. 9, T. 6 N., R. 6 E.; iron post stamped "1260 Adj. 1903".....	Feet. 1,260.243
From Lodi along highway southwest to T. 9 N., R. 5 E., thence northwest to Blackhawk.	
T. 9 N., R. 5 E., northwest corner of sec. 24, at junction of east-west road with road south, on north side of road, opposite junction, 4.2 feet east of fence corner; iron post stamped "893 Adj. 1903".....	892.757
From Blue Mounds north to sec. 29, T. 7 N., R. 6 E. (mean of direct and reverse lines).	
T. 7 N., R. 6 E., SE. $\frac{1}{4}$ sec. 29, on east side of road at crossroads, opposite road west, south of road east, 15 feet east of oak tree; iron post stamped "1114 Adj. 1903".....	1,114.050

BARABOO QUADRANGLE.

[Latitude 43° 15'-43° 30'; longitude 89° 30'-89° 45'.]

From sec. 13, T. 9 N., R. 7 E., northwest across Wisconsin River, thence west to Lodi.	
T. 9 N., R. 6 E., at northwest corner of sec. 13, at northeast corner of crossroads, 8 feet north of fence corner; iron post stamped "762 Adj. 1903".....	762.146
At Baraboo.	
Baraboo, in front of Chicago & Northwestern Ry. station; top of rail.....	863.8
Baraboo, in northeast corner of courthouse; bronze tablet stamped "890 B" (destroyed in 1904 in destruction of building).....	892.981

Denzer, Lavelle, and The Dells quadrangles.**ADAMS, JUNEAU, AND SAUK COUNTIES.**

The elevations in the following list were determined by primary leveling extended from Portage, Wis., and Dubuque, Iowa.

The leveling was done in 1898-99 by D. C. Wray.

The standard bench marks are stamped with the letter "B" in addition to the figures of elevation, nearly all of which are stamped 8 feet too low.

DENZER QUADRANGLE.

[Latitude 43° 15'-43° 30'; longitude 89° 45'-90°.]

From Leland north along highways and east along Chicago & Northwestern Ry. through North Freedom to Baraboo.	
Leland, near quarter corner on north side of sec. 19, T. 10 N., R. 5 E.; iron post stamped "787 B".....	Feet. 790.089
T. 11 N., R. 4 E., SE. $\frac{1}{4}$ sec. 14, near stone church; iron post stamped "1261 B".....	1,264.527
North Freedom, T. 11 N., R. 5 E., near center of sec. 2, 100 feet north of railroad track; iron post stamped "886 B".....	889.141
From North Freedom south along highways via Denzer and Witwen to Lodi Mill.	
Denzer, T. 10 N., R. 5 E., near center of sec. 15, crossroads; iron post stamped "803 B".....	806.476
Lodi Mill, 200 feet south of, NW. $\frac{1}{4}$ sec. 16, T. 9 N., R. 6 E.; iron post stamped "734 B".....	737.565

From Leland south and east via Anderson's cheese factory to Blackhawk.

T. 9 N., R. 4 E., quarter corner on north side of sec. 11, west side of road, 200 feet northeast of Anderson's cheese factory; iron post stamped "815 B".....	Feet. 817. 955
Blackhawk, in sec. 8, T. 9 N., R. 5 E.; iron post stamped "772 B".....	774. 883

From Lodi Mill north along highways to Lyons.

T. 10 N., R. 6 E., quarter corner on south side of sec. 9; iron post stamped "846 B".....	848. 847
T. 11 N., R. 6 E., northwest corner of sec. 27; iron post stamped "1200 B".....	1, 202. 973

THE DELLS QUADRANGLE.

[Latitude 43° 30'-43° 45'; longitude 89° 45'-90°.]

From Reedsburg north along highways via Lyndon to southwest corner of sec. 36, T. 15 N., R. 5 E., thence south and east to starting point.

T. 13 N., R. 4 E., NW. $\frac{1}{4}$ NW. $\frac{1}{4}$ sec. 23, 150 feet north of east-west road, opposite Winfield creamery; iron post stamped "948 B".....	951. 109
T. 14 N., R. 4 E., E. $\frac{1}{4}$ NE. $\frac{1}{4}$ sec. 23, in northeast corner of school yard; iron post stamped "1039 B".....	1, 042. 187
T. 15 N., R. 5 E., in southwest corner of sec. 36, in northwest corner of school yard; iron post stamped "857 B".....	860. 483
T. 14 N., R. 5 E., quarter corner between secs. 34 and 35, 400 feet southeast of church, 600 feet northwest of red tavern; iron post stamped "943 B".....	945. 986
T. 13 N., R. 5 E., 660 feet west of center of sec. 27, in southwest corner of school yard; iron post stamped "887 B".....	890. 500
T. 12 N., R. 5 E., 0.25 mile west of center of sec. 10, northeast of crossroads; iron post stamped "946 B".....	949. 671
Reedsburg, 2 miles east, T. 12 N., R. 4 E., northeast corner of NW. $\frac{1}{4}$ sec. 12, southwest of road crossing; iron post stamped "938 B".....	940. 899

From quarter corner between secs. 34 and 35, T. 14 N., R. 5 E., east and north via Kilbourn to northwest corner sec. 32, T. 15 N., R. 6 E.

Kilbourn, in west side of northwest corner of schoolhouse foundation; iron post stamped "903 B".....	906. 045
T. 14 N., R. 6 E., SE. $\frac{1}{4}$ sec. 28, in northeast corner of school yard, west side of river road; iron post stamped "924 B".....	927. 107
T. 15 N., R. 6 E., in northwest corner of sec. 32, in northwest corner of school yard; iron post stamped "904 B".....	907. 686

LAVALLE QUADRANGLE.

[Latitude 43° 30'-43° 45'; longitude 90°-90° 15'.]

Point 0.25 mile north of center of sec. 34, T. 15 N., R. 4 E.

T. 15 N., R. 4 E., 0.25 mile north of center of sec. 34, in southeast corner of school yard; iron post stamped "897 B".....	900. 001
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Elkader, Lancaster, Mineral Point, Richland Center, and Waukon quadrangles.

GRANT, IOWA, LAFAYETTE, RICHLAND, AND SAUK COUNTIES.

The elevations in the following list were determined by primary leveling, which; together with work on adjacent quadrangles, forms a belt extending from Milwaukee to Mississippi River, adjusted and in agreement at these points and at Portage with the 1912 adjustment

elevations of bench marks of the United States Army Engineers. For additional elevations in the Elkader, Lancaster, and Waukon quadrangles see Iowa lists, Bulletin 569.

The leveling was done in the Lancaster quadrangle in 1897 by C. E. Hewitt; in the Mineral Point quadrangle in 1897 by Hewitt and in 1900 by G. Stubblefield; in the Elkader quadrangle in 1898 by C. B. Zorn; in the Richland Center quadrangle in 1901 by Zorn, in 1901-2-3 by M. A. Steele, and in 1905 by Henry Bücher; and in the Waukon quadrangle in 1900 by T. Burns.

Elevations are stamped as a rule 1 foot too low. Many elevations in the Lancaster quadrangle are stamped about 11 feet too low.

WAUKON QUADRANGLE.

[Latitude 43°-43° 30'; longitude 91°-91° 30'.]

From Victory east and south along highway to Freeman, thence west to De Soto.

T. 12 N., R. 7 W., sec. 34 (fourth prime meridian), 50 feet northeast of fifth post west of the fence corner west of Meddic's house, north of road; iron post stamped "853 Dubq"	Feet. 854. 463
T. 12 N., R. 6 W., near east-west quarter line of sec. 29, just north of forks of road, north of schoolhouse No. 1, in yard; iron post stamped "1165 Dubq"	1, 166. 616
T. 11 N., R. 6 W., 0.25 mile north of center of sec. 14, 10 feet north of north gatepost in front of house on east side of road; iron post stamped "1107 Dubq"	1, 107. 891

From Freeman southwest along highway to Ferryville.

T. 10 N., R. 6 W., southwest of center of sec. 10, 20 feet north of first post south of small gate in front of O. H. Olson's house, inside of fence; iron post stamped "696 Dubq"	697. 008
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From Prairie du Chien east and north along highway to Eastman, thence west to river.

T. 7 N., R. 6 W., SW. $\frac{1}{4}$ sec. 22, road junction commonly called "White Corner," 10 feet north of guidepost at northwest corner; iron post stamped "1211 Dubq"	1, 212. 360
Eastman, SW. $\frac{1}{4}$ sec. 18, T. 8 N., R. 5 W., about 800 feet north of building of F. H. Harvats & Co., blacksmiths and wagon makers, in southwest corner of school yard; iron post stamped "1216 Dubq"	1, 217. 054

From Eastman north to Lynxville.

Lynxville, sec. 23, T. 9 N., R. 6 W., in southwest corner of northeast school yard; iron post stamped "681 Dubq"	682. 633
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ELKADER QUADRANGLE.

[Latitude 42° 30'-43°; longitude 91°-91° 30'.]

From Bradtville south along highways to southwest corner of sec. 2, T. 3 N., R. 6 W.

Bradtville, 0.1 mile east of center of sec. 35, T. 6 N., R. 6 W., at crossroads; iron post stamped "1105"	1, 105. 425
T. 5 N., R. 6 W., quarter corner on south side of sec. 16, 40 yards north of, 375 feet south of crossroads; iron post stamped "641"	640. 936

T. 4 N., R. 6 W., southwest corner of sec. 24, at junction of roads; iron post stamped "1009".....	Feet. 1,010.550
T. 3 N., R. 6 W., southwest corner of sec. 2, in southwest corner of school yard; iron post stamped "634".....	635.950

LANCASTER QUADRANGLE.

[Latitude 42° 30'-43°; longitude 90° 30'-91°.]

From Lancaster Junction south along Chicago & Northwestern Ry. to Lancaster, thence south along highways to Potosi station.

Lancaster Junction, sec. 21, T. 6 N., R. 2 W., 50 feet south of switch; iron post stamped "1166 Dbq".....	1,177.075
Stitzer, sec. 9, T. 5 N., R. 2 W., southeast corner of block opposite station, in foundation of store; bronze tablet stamped "1166 Dbq".....	1,177.512
T. 5 N., R. 3 W., NW. $\frac{1}{4}$ sec. 36, crossing of north-south wagon road and rail-road, end of right of way fence; iron post stamped "1133 Dbq".....	1,144.449
T. 4 N., R. 3 W., near northwest corner of sec. 14, west end of south abutment of bridge over Pigeon Creek; bronze tablet stamped "946 Dbq".....	956.667
T. 3 N., R. 3 W., SW. $\frac{1}{4}$ sec. 26, northeast of Potosi; iron post stamped "986 Dbq".....	997.154
Potosi station, sec. 4, T. 2 N., R. 3 W., 400 feet south of brewery, west side of road; iron post stamped "635 Dbq".....	645.642

From Fairplay north along highways to quarter corner on east side of sec. 11, T. 3 N., R. 2 W., thence east to Platteville.

Fairplay, NW. $\frac{1}{4}$ sec. 25, T. 1 N., R. 2 W., 50 feet southeast of bridge at east edge of town; iron post stamped "862 Dbq".....	863.012
Dickeyville, SW. $\frac{1}{4}$ sec. 22, T. 2 N., R. 2 W., in foundation stone of southwest corner of hotel; bronze tablet stamped "955 Dbq".....	956.526
T. 3 N., R. 2 W., quarter corner on east side of sec. 11, southwest corner of T roads; iron post stamped "1014 Dbq".....	1,014.692

From Platteville north along highways to Preston.

T. 4 N., R. 1 W., SW. $\frac{1}{4}$ sec. 8, crossroads at Bailey's creamery; iron post stamped "1090 Dbq".....	1,100.510
Annaton, sec. 18, T. 5 N., R. 1 W., bridge over Big Platte River, in stone at east end of north abutment; bronze tablet stamped "859 Dbq".....	869.857
T. 6 N., R. 1 W., sec. 10, 0.8 mile east of Preston, near center of road crossing; iron post stamped "1128 Dbq".....	1,139.093

From point northeast of Potosi station northwest along highways to Beetown.

T. 3 N., R. 4 W., SE. $\frac{1}{4}$ sec. 10, north side of wagon road; iron post stamped "980 Dbq".....	991.616
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From Cassville north and east along highways through Beetown, Bloomington, and Mount Hope to Lancaster Junction.

T. 3 N., R. 5 W., near northwest corner of sec. 15; iron post stamped "967 Dbq".....	978.569
Beetown, sec. 30, T. 4 N., R. 4 W., in northwest corner of foundation to post office building; bronze tablet stamped "793 Dbq".....	804.310
T. 4 N., R. 5 W., near quarter corner on south side of sec. 14, 2 miles east of North Andover, in north end of east abutment of bridge; bronze tablet stamped "873 Dbq".....	884.564
Bloomington, sec. 26, T. 5 N., R. 5 W., east side of foundation of building opposite Bloomington Hotel; bronze tablet stamped "901 Dbq".....	912.625

T. 5 N., R. 4 W., near quarter corner on west side of sec. 16; iron post stamped "1092 Dbq".....	Feet. 1, 103. 745
Mount Hope, center of sec. 28, T. 6 N., R. 4 W., in east side of foundation of post office building; bronze tablet stamped "1076 Dbq".....	1, 087. 538
T. 6 N., R. 3 W., sec. 29, Mount Ida cheese factory, in east end of foundation; bronze tablet stamped "1200 Dbq".....	1, 211. 285

From Lancaster southeast along highways to Platteville.

Ellenboro, near center of sec. 33, T. 4 N., R. 2 W., south end of west abutment of bridge over Big Platte River; bronze tablet stamped "712 Dbq".....	723. 448
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At point 4 miles west of Mount Hope.

T. 6 N., R. 5 W., sec. 26, quarter corner on south side of; iron post stamped "1137 Dbq".....	1, 148. 166
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MINERAL POINT QUADRANGLE.

[Latitude 42° 30'-43°; longitude 90°-90° 30'.]

From Platteville southeast along highways through Shullsburg to Gratiot.

Platteville, sec. 15, T. 3 N., R. 1 W., northwest corner of city hall, in stone foundation; bronze tablet stamped "992 Dbq".....	992. 975
T. 2 N., R. 2 E., northeast corner of sec. 29, 46.5 feet east by 36 feet north of northeast corner of O'Brien schoolhouse, in yard; iron post stamped "1082 Dubq".....	1, 083. 396
Shullsburg, about 60 feet west by 102 feet north of northwest corner of high school, in yard; iron post stamped "1019 Dubq".....	1, 020. 013
T. 1 N., R. 3 E., at northwest corner of sec. 11, 2 feet west by 6 feet south of northwest corner of churchyard; iron post stamped "988 Dubq".....	989. 170
Gratiot post office, about 0.25 mile west of, about 312 feet west by 556 feet south of quarter corner on north side of sec. 9, T. 1 N., R. 4 E., on north side of road; iron post stamped "796 Dubq".....	796. 948

From Gratiot north along Chicago, Milwaukee & St. Paul Ry. and highways to Mineral Point.

Red Rock, 0.25 mile south by 60 rods west of center of sec. 17, T. 2 N., R. 4 E., 1.2 feet north by 4.5 feet south of southeast fence corner at intersection of east-west road with track of Chicago, Milwaukee & St. Paul Ry.; iron post stamped "814 Dubq".....	815. 063
Darlington, 195.7 feet north of northeast corner of courthouse; iron post stamped "866 Dubq".....	867. 135
T. 3 N., R. 3 E., 0.25 mile east of center of sec. 23, 1.6 feet west by 11.5 feet north of southwest fence corner at school yard; iron post stamped "1026 Dubq".....	1, 027. 093
Fayette, 334 feet south of northwest corner of sec. 9, T. 3 N., R. 4 E., 4.7 feet north by 0.7 foot west of northeast fence corner at crossroads; iron post stamped "1042 Dubq".....	1, 043. 141
T. 4 N., R. 4 E., 0.25 mile south of northeast corner of sec. 30, 1.2 feet north by 13 ² feet west of west fence corner, at junction of road south with east-west road; iron post stamped "1106 Dubq".....	1, 107. 182
T. 4 N., R. 3 E., 0.25 mile west of northeast corner of sec. 21, 0.6 foot east by 15.6 feet south of south fence corner at junction of road with north-south road; iron post stamped "1065 Dubq".....	1, 065. 925
Mineral Point, 34 feet west of water tower, 1.7 feet east by 16.6 feet north of southwest corner of park; iron post stamped "1134 Dubq".....	1, 135. 108

From Mineral Point north along highways to Edmund, thence east through Dodgeville to quarter corner on north side of sec. 29, T. 6 N., R. 4 E., thence southwest to starting point.

T. 5 N., R. 2 E., 0.25 mile west of northeast corner of sec. 16, 1 mile east of Linden, 1.4 feet north by 7.3 feet east of south fence corner at junction of east road with north-south road; iron post stamped "1128 Dubq".....	Feet. 1, 129. 030
T. 6 N., R. 2 E., quarter corner on west side of sec. 27, 0.8 mile east of Edmund, 2 feet north by 16.6 feet east of east fence corner at junction of road south with east-west road; iron post stamped "1189 Dubq".....	1, 190. 045
Dodgeville, 10.3 feet north by 8.7 feet east of northeast corner of courthouse; iron post stamped "1220 Dubq".....	1, 221. 068
T. 6 N., R. 4 E., quarter corner on north side of sec. 32, 2 feet west by 4.2 feet south of southeast fence corner at intersection of north-south road and east-west road; iron post stamped "1199 Dubq".....	1, 200. 164
T. 5 N., R. 4 E., 0.25 mile east of center of sec. 18, 3.5 feet north by 1 foot west of corner of railroad fence, north of crossing and northeast of railroad; iron post stamped "947 Dubq".....	948. 113

From Belmont south along highways to Benton.

Belmont, 0.5 mile west of, quarter corner on east side of sec. 15, T. 3 N., R. 1 E., 1 foot north of west fence corner formed by junction of road south and east-west road; iron post stamped "1113 Dubq".....	1, 114. 031
T. 2 N., R. 1 E., near quarter corner on east side of sec. 16, 1.5 feet north by 0.5 foot west of southeast corner of school yard; iron post stamped "973 Dubq".....	973. 922
Benton, 22 feet north by 24 feet east of northeast corner of schoolhouse; iron post stamped "921 Dubq".....	921. 978

From Belmont north along highways to Montford.

Rewey, 2.4 feet south by 11.2 feet west of northeast corner of public school yard; iron post stamped "1129 Dubq".....	1, 129. 970
T. 5 N., R. 1 E., 0.25 mile east of southwest corner of sec. 17, about 1.5 feet north by 7.8 feet west of southeast corner of school yard; iron post stamped "1094 Dubq".....	1, 094. 914
T. 6 N., R. 1 E., center of sec. 29, 3.4 feet east by 3.8 feet south of northwest corner of school yard, at junction of north-south and east-west roads; iron post stamped "1201 Dubq".....	1, 201. 924

From Belmont northeast along highways to Mineral Point.

T. 3 N., R. 2 E., quarter corner on east side of sec. 15, 1 mile north of Truman, 14 feet east by 15 feet south of north fence corner at junction of east-west road and road from south; iron post stamped "1056 Dubq".....	1, 057. 083
T. 4 N., R. 2 E., 0.4 mile west by 300 feet south of center of sec. 11, at crossroads, 3.5 feet south by 2.7 feet east of northwest corner of school yard; iron post stamped "1101 Dubq".....	1, 101. 999

From Fairplay northeast along highways through Lewisburg and Georgetown to Platteville.

T. 1 N., R. 1 W., quarter corner on north side of sec. 21, corner of Val Wichterholt's field; iron post stamped "Dbq 913".....	913. 544
Georgetown, sec. 27, T. 2 N., R. 1 W., northwest corner of Georgetown Hall, in foundation stone; bronze tablet stamped "994 Dbq".....	995. 432

RICHLAND CENTER QUADRANGLE.

[Latitude 43°-43° 30'; longitude 90°-90° 30'.]

From Dodgeville along highways north to Lato, thence west through Vine Knob to sec. 15, T. 7 N., R. 1 E., thence south to point near Cobb.

Dodgeville, 10.3 feet north by 8.7 feet east of northeast corner of courthouse; iron post stamped "1220 Dbq".....	1, 221. 268
T. 7 N., R. 2 E., 0.25 mile west of northeast corner of sec. 16, southwest corner of intersection of east-west road with north-south road; iron post stamped "739 Dbq".....	739. 318
Highland, in schoolhouse yard, 7 feet east of front wall of lot, on north side of walk; iron post stamped "1182 Dbq".....	1, 181. 627
T. 6 N., R. 1 E., sec. 29, in northwest corner of school yard; iron post stamped "1201 Dbq".....	1, 202. 124

From Lato north to sec. 28, T. 8 N., R. 3 E., thence west to center of sec. 25, T. 8 N., R. 2 E.

T. 7 N., R. 3 E., NE. $\frac{1}{4}$ sec. 8, in southwest corner of school yard; iron post stamped "799 Dbq".....	798. 847
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From sec. 15, T. 7 N., R. 1 E., north along highway to Muscoda, thence east through Avoca to Lone Rock, thence south to center of sec. 25, T. 8 N., R. 2 E.

Muscoda, in front of station; top of rail.....	693
Avoca, in front of station; top of rail.....	698
Avoca, Wisconsin House, 18 inches north and in line with northeast corner of; iron post stamped "699 Dbq".....	698. 690
Lone Rock, south of station, blacksmith shop, 2 feet east by 2 feet north of northwest corner; iron post stamped "705 Dbq".....	704. 773
T. 8 N., R. 2 E., sec. 25, at northwest corner of bridge over Otter Creek, northeast corner of stone abutment; point.....	709. 16

From sec. 28, T. 8 N., R. 3 E., along highway north, thence east to Hillside schoolhouse, 0.25 mile east of northwest corner of sec. 31, T. 8 N., R. 4 E., thence south to Barneveld, thence southwest to sec. 27, T. 6 N., R. 3 E.

T. 8 N., R. 3 E., 0.5 mile west of center of sec. 22, southeast corner of intersection of roads, 4 feet south of fence post; iron post stamped "706 Dbq".....	706. 537
T. 8 N., R. 4 E., 0.5 mile north of center of sec. 31, northwest corner of Unity Chapel yard; iron post stamped "728 Dbq".....	727. 948
T. 7 N., R. 4 E., at southeast corner of sec. 17; 3 feet west of corner stone; iron post stamped "1062 Dbq".....	1, 062. 141

From Lone Rock northwest along highway via Twin Bluffs to Richland Center, thence north along highway to Buck Creek post office, thence east through Lloyd and Logansville to Denzer quadrangle.

T. 9 N., R. 2 E., NW. $\frac{1}{4}$ sec. 26, southeast corner of house lot on west side of road, 400 feet north of turn of road; iron post stamped "720 Dbq".....	719. 387
Twin Bluffs, in front of Chicago, Milwaukee & St. Paul Ry. station; top of rail.....	703. 4
Twin Bluffs, sec. 12, T. 9 N., R. 1 E., on east side of road, opposite road west; iron post stamped "707 Dbq".....	706. 730
Richland Center, sec. 22; T. 10 N., R. 1 E., on window sill of courthouse basement; aluminum tablet stamped "737 Dbq".....	736. 874
T. 11 N., R. 1 E., sec. 22, 0.25 mile east of Black Creek, in southeast corner of school yard; iron post stamped "764 Dbq".....	763. 361

Lloyd, sec. 22, T. 11 N., R. 2 E., on east side of road, 150 feet south of cross-roads; iron post stamped "810 Dbq".....	Feet. 809. 927
T. 11 N., R. 3 E., in southeast corner of sec. 17, in southeast corner of school yard; iron post stamped "1182 Dbq".....	1, 181. 651

From Logansville south and southwest, connecting near Plain with side lines west from Leland and from Blackhawk, thence southwest to Lone Rock.

T. 9 N., R. 4 E., sec. 5, east corner of two corners formed by intersection of roads at Plain; iron post stamped "800 Dbq".....	799. 334
T. 9 N., R. 3 E., southwest corner of sec. 23, at southwest corner of church lot; iron post stamped "772 Dbq".....	771. 156

From Lloyd southwest 4 miles (direct and reverse line).

Neptune, sec. 4, T. 10 N., R. 4 E., in southwest corner of school yard; iron post stamped "752 Dbq".....	752. 048
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From T. 10 N., R. 4 E., northwest to Loretta (direct and reverse line).

Loretta, sec. 14; T. 10 N., R. 3 E., opposite crossroad from church; iron post stamped "1156 Dbq".....	1, 164. 047
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Bench marks near Spring Green set in 1905 on circuit from Mazomanie quadrangle.

T. 8 N., R. 4 E., 0.25 mile west of, northeast corner of sec. 8, 1.3 feet north of fence, 6.5 feet west of fence corner, at southwest corner of crossroads; iron post stamped "727 Adj. 1903".....	726. 677
T. 8 N., R. 4 E., near south quarter corner of sec. 7, on east side of village of Spring Green, road crossing on Chicago, Milwaukee & St. Paul Ry., on east side of public road, 26 feet north of track, 1.2 feet west of fence; iron post stamped "728 Adj. 1903".....	727. 726
T. 8 N., R. 4 E., near south quarter corner of sec. 18, in field on east side of road, stone monument marking southeast end of base line for triangulation of Wisconsin, Coast and Geodetic Survey, on top of large square stone; point is center of upper loop of east figure 8, in chiseled date "1878".....	716. 88

La Crosse and Sparta quadrangles.

LA CROSSE AND MONROE COUNTIES.

The elevations in the following list were determined by primary leveling extended from a bench mark of the Mississippi River Commission at La Crosse.

The leveling was done in 1905 by H. Bücher.

LA CROSSE QUADRANGLE.

[Latitude 43° 45'–44°; longitude 91°–91° 15'.]

From La Crosse to North La Crosse, thence along Chicago, Milwaukee & St. Paul Ry. to Bangor (mean of direct and reverse lines).

North La Crosse station, south abutment of Chicago, Burlington & Quincy R. R. overhead bridge, in north face of, 11.2 feet east of west end, 3 feet above ground; aluminum tablet stamped "649 Adj. 1903".....	Feet. 648. 814
North La Crosse, 3.4 miles east of, at northwest corner of bridge 514, in top of abutment; aluminum tablet stamped "659 Adj. 1903".....	658. 592

North La Crosse, 6.6 miles east, on Chicago & Northwestern Ry., at west corner of bridge 640, in top of abutment; aluminum tablet stamped "671 Adj. 1903".....	Feet. 670. 608
West Salem, 1.1 miles west of, 100 feet west of overhead bridge, in top at northwest corner of concrete culvert; aluminum tablet stamped "706 Adj. 1903".....	705. 594
West Salem, 1.7 miles east of, in top at northwest corner of stone culvert 625, 3.4 feet east of west edge, 1.2 feet south of north edge; aluminum tablet stamped "763 Adj. 1903".....	763. 165

SPARTA QUADRANGLE.

[Latitude 43° 45'-44"; longitude 90° 45'-91°.]

From Bangor along highways southeast to Portland, thence northeast to Melvina, thence north along railroad to Leon, thence north along highway to Sparta.

Bangor, northeast abutment of railroad bridge over Dutch Creek, in top of first course of masonry below coping; aluminum tablet stamped "740 Adj. 1903".....	739. 827
T. 16 N., R. 5 W., SE. $\frac{1}{4}$ sec. 16, schoolhouse on northeast side of road, at southwest corner of school ground; iron post stamped "794 Adj. 1903".....	793. 747
T. 16 N., R. 5 W., 0.2 mile east of southwest corner of sec. 26, junction of roads, southeast corner, on east side of road, 5 feet south of fence corner; iron post stamped "877 Adj. 1903".....	876. 602
T. 15 N., R. 5 W., 0.1 mile east by 0.2 mile south of northwest corner of sec. 12, junction of roads, on north side of road, 3.8 feet west of fence corner, 0.5 foot south of fence; iron post stamped "1336 Adj. 1903".....	1, 335. 742
T. 15 N., R. 4 W., 0.25 mile south by 0.25 mile east of northwest corner of sec. 8, at southeast corner of junction of roads, on south side of road, 3.5 feet east of fence corner, 1 foot north of fence; iron post stamped "1340 Adj. 1903".....	1, 339. 310
T. 15 N., R. 4 W., 0.2 mile east of south quarter corner of sec. 16, at southwest corner of Portland schoolhouse, at junction of roads, 2.5 feet north of corner, 1.5 feet west of wall; iron post stamped "1,312 Adj. 1903".....	1, 311. 970
T. 15 N., R. 4 W., 0.3 mile west of southeast corner of sec. 12, crossing of Chicago, Milwaukee & St. Paul Ry. (Viroqua branch), on south side of road, in railroad right of way, 35 feet east of center of track, 1.6 feet north of cattle-guard fence; iron post stamped "945 Adj. 1903".....	944. 765
Melvina station, at northeast corner of platform; top of rail.....	863. 4
T. 16 N., R. 3 W., SW. $\frac{1}{4}$ sec. 32, on west side of wagon road, opposite sign-board "Station 1 mile," at southeast corner of Ray Richmond's yard; iron post stamped "863 Adj. 1903".....	863. 207
Leon station, at northeast corner of road crossing, in railroad right of way; iron post stamped "793 Adj. 1903".....	792. 680
T. 17 N., R. 3 W., 0.3 mile north of southwest corner of sec. 32, 70 feet north of junction of roads, on west side of road, 6 feet south of last of a north-south row of butternut trees; iron post stamped "879 Adj. 1903".....	878. 958
Sparta, bridge C 428; northeast of station, at south corner of top of concrete abutment; aluminum tablet stamped "790 Adj. 1903".....	789. 856
Sparta, Monroe County courthouse, at southeast corner of grounds; iron post stamped "793.393 Sparta b. m.".....	791. 970
T. 17 N., R. 4 W., 0.2 mile south by 0.2 mile east of northwest corner of sec. 14, on south side of road opposite junction, 8 feet east of fence corner; iron post stamped "811 Adj. 1903".....	810. 428

T. 17 N., R. 4 W., 0.2 mile west by 0.3 mile north of southeast corner of sec. 8, south of junction of roads, 80 feet from east side of road; iron post stamped "834 Adj. 1903".....	Feet. 834. 263
T. 17 N., R. 4 W., 0.25 mile west of center of sec. 18, junction of roads, east of schoolhouse, on south side of road, 40 feet east of northwest corner of schoolhouse grounds; iron post stamped "795 Adj. 1903".....	794. 416
T. 17 N., R. 5 W., 0.2 mile south of north quarter corner of sec. 25, at southwest corner of junction of roads, in masonry foundation of north wall of schoolhouse; aluminum tablet stamped "787 Adj. 1903".....	786. 564
T. 17 N., R. 5 W., north quarter corner of sec. 33, on west side of road, 12 feet north of fence corner, at northwest corner of junction of road; iron post stamped "778 Adj. 1903".....	777. 443

Lafarge, Millston, Rapp, and Sparta quadrangles.**VERNON, MONROE, AND SPARTA COUNTIES.**

The elevations in the following list were determined by primary leveling extended from bench mark at Monroe County courthouse at Sparta.

The leveling was done in 1912 by L. F. Biggs and in 1914 by J. M. Perkins.

SPARTA QUADRANGLE.

[Latitude 43° 45'-44°; longitude 90° 45'-91°.]

From Sparta east via Chicago, Milwaukee & St. Paul Ry. to Tomah, thence south along highways via Wilton to Oil City. (Part of line.)

Sparta, southeast corner of grounds of Monroe County courthouse; iron post stamped "793.393".....	Feet. 791. 970
Sparta, bridge 428, northeast of railroad station; paint point on northeast abutment.....	789. 84
Sparta, 1 mile northeast of, 60 feet east of milepost 169; spike, in base of telephone pole, painted "795".....	794. 254
Sparta, 2.2 miles northeast of, in base of section post 27-28; spike, aluminum tag stamped "811".....	810. 26

RAPP QUADRANGLE.

[Latitude 43° 45'-44°; longitude 90° 30'-90° 45'.]

From Sparta east via Chicago, Milwaukee & St. Paul Ry. to Tomah, thence south along highways via Wilton to Oil City. (Part of line.)

Sparta, 2.5 miles northeast of, northeast abutment of bridge over Silver Creek; aluminum tablet stamped "812 B 1912 1".....	811. 852
Milepost 167, 10 feet northeast of; spike in base of telephone pole, painted "821".....	820. 28
Chicago, Milwaukee & St. Paul and Chicago & North Western railway crossing, east end of cement retaining wall; chisel point, chiseled "U. S. 841 B. M.".....	839. 74
Milepost 165, fourth telephone pole east of; spike in base, painted "876".....	874. 97
McCoy, in front of Chicago, Milwaukee & St. Paul Ry. station; top of rail. McCoy, in cement base of Chicago & North Western Ry. water tank; aluminum tablet stamped "837 B 1912 2".....	891. 8
McCoy, 1 mile east of, south side of railroad; spike in base of road crossing signboard, marked "913".....	885. 829
McCoy, 1.3 miles east of, on north end of west abutment of undertrack crossing; chisel point, chiseled "U. S. 933 B. M.".....	911. 56
	932. 07

	Feet.
Raymore, 1 mile west of, in base of signboard at road crossing; spike, aluminum tag stamped "965".....	963.46
Raymore, 300 feet west of, north side of track, in sandstone ledge; aluminum tablet stamped "994 B 1912 3".....	993.185
Tomah, 1 mile west of, south side of track, at second-class road crossing, in base of telephone pole; spike.....	980.03
Road crossing; top of rail.....	969.0
Tomah, in front of station; top of rail.....	958.3
Tomah Water Tower, in east base of; aluminum tablet stamped "1000 B 1912 5".....	998.653
Tomah, south edge of town, at T road west, east side of road, in telephone pole; spike.....	999.166
Center of T road east.....	982.7
Tomah, 2 miles south of, 100 feet south of schoolhouse at crossroads, in corner fence post; spike.....	997.89
Tomah, 3 miles south of, near center of sec. 21, at T road east; iron post stamped "1010 B 1912 6".....	1,008.833
Floor of bridge over creek; copper nail marked "1026".....	1,025.9
Center of road at T road west.....	1,033.4
Tomah, 4 miles south of, at Y road southeast; copper nail in base of tree, scribed "1053".....	1,051.77
Tomah, 5.5 miles south of, 300 feet north of red barn, east edge of road; copper nail in base of tree, scribed "1396".....	1,394.49
Tomah, 6.5 miles south of, near center of sec. 4, T. 16 S., R. 1 W., southwest corner of district No. 5 school yard; iron post stamped "1417 B 1912 7, Prim. Trav. Sta. No. 6".....	1,415.992
District school No. 5, 1 mile south of, east edge of road; copper nail in tree scribed "1440".....	1,439.10
District school No. 5, 1.8 miles south of, at road east, in signboard "Tomah 8 miles, Wilton 5 miles"; spike.....	1,368.64
Wilton, 3 miles north by 1 mile east of, at top of hill, east edge of road; copper nail in base of tree, scribed "1404".....	1,402.57
Wilton, 1.5 miles east by 2 miles north of, in corner fence post; spike.....	1,214.26
Wilton, 1.5 miles north by 1.5 miles east of, 20 feet southwest of crossroads; iron post stamped "1190 B 1912 8".....	1,188.914
Wilton, 1.5 miles east of, north side of track, in crossing signpost; spike..	998.95
Wilton, 100 feet north of Chicago & North Western Ry, station, on fence line; iron post stamped "995 B 1912 9".....	995.013
Wilton, 1 mile south of, on west cylinder of bridge over Kickapoo River; paint point.....	950.39
Wilton, 1.6 miles southwest of; northeast cylinder of bridge over Kickapoo River; bolt head, painted.....	938.00
Wilton, 2 miles southwest of, near center of sec. 7, T. 15 N., R. 1 W., at T road south; iron post stamped "943 B 1912 10".....	942.138
Wilton, 2.6 miles southwest of, in floor of bridge over Kickapoo River; copper nail, painted.....	928.35
Wilton, 3.6 miles southwest of, on southwest cylinder of bridge over Kickapoo River; point.....	914.29
Wilton, 4.2 miles southwest of, on southeast cylinder of bridge over Kickapoo River; painted.....	907.35
Oil City, 0.8 mile north of, 200 feet east of Daines farmhouse, south side of road; iron post stamped "908 B 1912 11".....	907.253
Oil City, 0.3 mile south of, on southeast cylinder of bridge over Kickapoo River; painted.....	883.49

From Sparta southeast along Chicago & North Western Ry. to Wilton.

Tps. 16 and 17 N., R. 3 W., near corner of secs. 32, 33, 4, and 5, in base of road-crossing signboard; spike, marked "845".....	Feet. 844. 41
T. 16 N., R. 3 W., sec. 9, 100 feet west of road crossing, on abutment of bridge 579; chisel point, chiseled "U. S. 925 B. M.".....	924. 33
T. 16 N., R. 3 W., near north side of sec. 15, on east abutment of undertrack crossing; chisel point, chiseled "U. S. 989 B. M.".....	989. 01
Tunnel, 0.5 mile west of, north end of east abutment, in undertrack crossing; aluminum tablet stamped "1104 B 1912 16".....	1, 103. 474
Norfolk, 4 miles northwest of, summit of hill, over railroad tunnel at T road west; spike in corner fence post, marked "1404".....	1, 403. 24
Summit station, 0.3 mile south of, at T road west; spike in corner fence post, marked "1384".....	1, 383. 90
Summit station, 400 feet east of, 40 feet north of track at road crossing; chisel point on retaining wall, chiseled "U. S. 1204 B. M.".....	1, 204. 15
Norwalk, 1.5 miles northwest of, east abutment of undertrack crossing; chiseled "U. S. 1100 B. M.".....	1, 099. 71
Norwalk, 0.5 mile northwest of, east abutment of bridge N 557; chiseled "U. S. B. M. 1041".....	1, 041. 22
Norwalk, 100 feet northwest of station, north side of track; iron post stamped "1030 B 1912 17".....	1, 030. 032
Norwalk, 1 mile southeast of, east abutment of undertrack crossing; chiseled "U. S. 1004 B. M.".....	1, 003. 45
Norwalk, 2 miles east of, 20 feet south of track, at road crossing; spike in telephone pole, marked "1060".....	1, 059. 35
Tunnel, 0.3 mile west of, at road crossing; spike in crossing signboard, marked "1125".....	1, 124. 76
Wilton, 1.5 miles west of; spike in road-crossing signboard, marked "1079".....	1, 079. 01

From Wilton north and east to point 5 miles northeast of Wilton.

Wilton, 1 mile north of, north cylinder of bridge, painted "998".....	997. 81
Wilton, 1.7 miles north of, southeast cylinder of bridge, painted "1019".....	1, 019. 56
Wilton, 3 miles north of, at T road east; chisel point on cement culvert over creek, marked "U. S. B. M. 1069".....	1, 069. 56
Tomah, 8.5 miles south of, at T road west; spike in base of cherry tree, marked "1216".....	1, 215. 71
District school, 1.8 miles south of, at T road east, in signboard "Tomah 8 mi., Wilton 5 mi."; spike, marked "1369".....	1, 368. 64
Wilton, 1.5 miles east of, at top of hill, east edge of road; copper nail in base of tree, scribed "1403".....	1, 402. 57

From southwest corner of quadrangle northeast along highway to Tomah.

T. 15 N., R. 3 W., corner of secs. 20, 21, 28, and 29, south side of road, opposite road junction; iron post stamped "1375 B 1912 15".....	1, 372. 711
T. 15 N., R. 3 W., northeast corner of NW. $\frac{1}{4}$ NW. $\frac{1}{4}$ sec. 22, 100 feet south of road corner and 5 feet east of road, in root of 2-foot oak tree; copper nail, painted "1376.9".....	1, 376. 96
St. Marys, 2.2 miles southwest of, at road corner in sec. 15, 12 feet east of road corner, on south side of road; iron post stamped "1387".....	1, 386. 958
St. Marys, 0.9 mile southwest of, at road corner near center of sec. 11, north side of road corner, in leaning 8-inch oak tree, near foot of tree; copper nail painted "1376.1".....	1, 376. 17
St. Marys, 0.2 mile east of, at road corner, on north side of road, 8 feet west of fence corner; iron post stamped "1379".....	1, 379. 288

	Feet.
Norwalk, 3 miles west by 1 mile south of, center of sec. 36, 30 feet east of road corner, in root of 8-inch oak tree; copper nail, elevation 1404.9 painted on tree.....	1, 404.99
Norwalk, 3 miles west of, on road to St. Marys, in SE. $\frac{1}{4}$ sec. 25, east side of road, 10 feet south of road corner; iron bench-mark post stamped "1342".....	1, 342.098
Norwalk, 2.2 miles west of, on road to St. Marys, opposite farmhouse of Charles Arndt, in sec. 30, east side of road, in oak stump; copper nail, painted "1200.3".....	1, 200.35
Norwalk, 1 mile northwest of, in sec. 29, on southwest abutment of steel highway bridge over creek; painted square marked "1064.1".....	1, 064.10
Norwalk, 2.2 miles north of, in sec. 16, opposite farmhouse of William Perry, south side of road, in root of black-cherry tree; copper nail, painted "1350.6".....	1, 350.62
Norwalk, 3.6 miles north by 0.5 mile east of, at road corner, 0.2 mile east of district school No. 4, north side of road; iron bench mark and triangulation post stamped "1418".....	1, 417.974
Ridgeville, 1.7 miles west of brick church, near farm of A. Grill, north side of road, at road corner, in root of oak tree; copper nail painted "1413.5".....	1, 413.50
T. 16 N., R. 2 W., center of sec. 2, at road corner opposite farmhouse of Henry Jerke, in root of large oak tree; copper nail painted "1431.6".....	1, 431.62
T. 17 N., R. 2 W., south edge of SW. $\frac{1}{4}$ sec. 26, at road corner opposite farmhouse of John Graham, 20 feet north of large oak tree; iron bench-mark post stamped "1377".....	1, 377.381
T. 17 N., R. 2 W., NW. $\frac{1}{4}$ sec. 26, opposite farmhouse of E. Westfall, west edge of road, in root of large oak tree; copper nail painted "1354.6".....	1, 354.54
T. 17 N., R. 2 W., NE. $\frac{1}{4}$ sec. 23, at road corner near farmhouse of Harry Rasmussen, west side of road, 10 feet north of elm tree; iron bench-mark post stamped "1039".....	1, 039.338
Tomah, 2 miles south and 2.7 miles west of, at cross roads, in west edge of sec. 18, 50 feet east of road corner, south edge of road, in root of oak tree; copper nail painted "996.3".....	996.23
Tomah, 1.8 miles south by 1.8 miles west of, in NE. $\frac{1}{4}$ sec. 18, south edge of road, 15 feet east of road corner; iron bench-mark post stamped "1009".....	1, 009.279
Tomah, 1.5 miles south by 0.6 mile west of, in SE. $\frac{1}{4}$ sec. 8, south side of road, 110 feet west of road fork, in root of oak tree; copper nail painted "1005.5".....	1, 005.46

From point 1 mile southeast of Norwalk south along highway to Oil City.

Norwalk, 2 miles southeast of, on road to Oil City, on west abutment of steel bridge over Morris Creek; painted square, marked "971.4".....	971.61
Norwalk, 2.7 miles southeast of, at road corner in sec. 3, 6 feet west of northwest fence corner; iron post-stamped "950".....	950.144
Norwalk, 3.2 miles southeast of, on steel bridge over Morris Creek, south abutment; painted square marked "936.6".....	936.82
Oil City, 1.7 miles north of, at road corner in sec. 14, at fence corner, in root of 20-inch oak tree; copper nail marked "926.7".....	926.88
Oil City, 0.3 mile north of, at road corner, on north abutment of steel bridge over Kickapoo River; painted square marked "892.7".....	892.96

MILLSTON QUADRANGLE.

[Latitude 44°-44° 15'; longitude 93° 30'-93° 45'.]

Near Tunnel City.

Raymore, 1 mile east of, in base of signboard reading "Station 1 mile"; spike, tag stamped "1022".....	1, 020.85
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Tunnel City, 1 mile west of, in south end of wagon bridge over railroad; copper nail, tag stamped "1071"	Feet. 1,069.36
Tunnel City, 150 feet south of Chicago, Milwaukee & St. Paul Ry. station, 20 feet southwest of road crossing; iron post stamped "1070 B 1912 4" ..	1,068.393
Tunnel City, 0.8 mile east of, 200 feet east of barn, south side of road, in base of telephone pole; spike	1,032.86
Tunnel City, 1.4 miles east of, on south end of east abutment of undertrack crossing; chiseled "U. S. 1015 B. M."	1,013.59

LAFARGE QUADRANGLE.

[Latitude 43° 30'–43° 45'; longitude 90° 30'–90° 45'.]

From Ontario west and northwest to northwest corner of quadrangle (leveled twice).

NOTE.—This is part of line from Sparta east to Tomah, thence south via highway to Wilton, Oil City, and Ontario, thence west and northwest to sec. 12, T. 15 N., R. 4 W.

Ontario, 0.5 mile north of, southeast cylinder of bridge over Kickapoo River, painted	878.55
Ontario, southwest corner of town, 300 feet west of bridge over Bush Creek; iron post stamped "874 B 1912 12"	871.649
Ontario, 1.5 miles west of, south side of road, at T road south; spike in base of tree, scribed	898.63
Ontario, 3 miles west of, 60 feet south of schoolhouse; iron post stamped "B 1912 13"	925.177
Ontario, 3.8 miles west of, at T road north; spike in base of telephone pole, painted	945.39
Ontario, 4.2 miles west of, at T road north; spike in base of telephone pole ..	949.77
Ontario, 5.2 miles west of, in sec. 35, T. 15 N., R. 3 W., at Y roads; iron post stamped "B 1912 14 1037"	1,034.477
Ontario, 7 miles northwest of, at Y roads, on sandstone boulder; chiseled point	1,116.88

Winona quadrangle.

BUFFALO AND TREMPLEAU COUNTIES.

The elevations in the following list were determined by primary leveling and accord with the Coast and Geodetic Survey 1912 adjustment of precise leveling of the Mississippi River Commission.

The leveling was done in 1906 by Henry Bücher.

WINONA QUADRANGLE.

[Latitude 44°–44° 15'; longitude 91° 30'–91° 45'.]

From Winona, Minn., east along Chicago & North Western Ry. to Marshland, thence north along Green Bay & Western R. R. and highway to sec. 5, T. 20 N., R. 10 W., thence southwest to Fountain City.

Winona, opposite, on left bank of river, on right of way of Chicago & North Western Ry., at east fence, 279 feet north of north end of bridge over Mississippi River:	Feet.
Copper bolt in tile 3 feet underground (Miss. R. Comm. p. b. m. 164) ..	647.479
Top of cap on iron pipe over bolt (Miss. R. Comm. p. b. m. 165)	651.507
Winona, opposite, on bank of river, in abutment of Chicago & North Western Ry. bridge, at upper side of downstream bedplate of northeast post; highest point in square (old U. S. b. m. XVII)	658.912

	Feet.
Winona, opposite, at north end of Chicago & North Western Ry. bridge over Mississippi River; top of rail	662. 0
Bluff Siding, 0.6 mile west of, at junction (crossing) of Chicago & North Western and Chicago, Burlington & Quincy railroads; top of rail.....	659. 6
Bluff Siding, 0.5 mile west of, 800 feet northeast of crossing of Chicago & North Western and Chicago, Burlington & Quincy railroads, in top of stone abutment at southeast corner of culvert (C. & N. W. Ry.); square cut marked "U. S. B. M.□"	659. 12
T. 19 N., R. 10 W., SE. $\frac{1}{4}$ sec. 31, at southeast corner of crossroads at Bluff Siding, south side of road, 1.2 feet north of fence, 18 feet east of fence corner; iron post stamped "675"	674. 811
Bluff Siding, 1.2 miles east of, in top of south wall at southeast corner of stone culvert 703; square cut, marked "U. S. B. M.□"	652. 28
Marshland, 0.9 mile west of, north side of railroad, south side of wagon road, on south side of 18-inch elm tree; nail in root, marked "U. S. B. M."	654. 65
Marshland, at station, crossing of Chicago & North Western and Green Bay & Western railroads; top of rail marked "665.2"	664. 9
Marshland, T. 19 N., R. 10 W., SE. $\frac{1}{4}$ sec. 34, west corner of crossing of Green Bay & Western R. R. and wagon road, northwest side of road, 1.8 feet southwest of fence at junction with first fence west of railroad right of way fence, 90 feet southwest of track; iron post stamped "668"	667. 458
Trempealeau River, under timber bridge 0.9 mile northeast of Marshland; surface of water October 3, 1906	654
Marshland, 2 miles northeast of, on east side of track, near north end of trestle, on each side of 24-inch elm tree; nail in root, marked "U. S. B. M."	659. 34
T. 19 N., R. 10 W., SW. $\frac{1}{4}$ sec. 11, 0.3 mile south of Dodge station, northwest corner of road crossing of Green Bay & Western R. R., north side of road, 70 feet west of track, just west of right of way fence, 1 foot south of fence; iron post stamped "671"	670. 259
Dodge, in front of station; top of rail.....	674. 4
Dodge, T. 19 N., R. 10 W., sec. 10, at southeast corner of wagon bridge over Trempealeau River; square cut in top of stone abutment, marked "U. S. B. M.□"	676. 35
Dodge, 0.9 mile north of, at southeast corner of Green Bay & Western R. R. bridge 415 over Trempealeau River; square cut in top of stone abutment, marked "U. S. B. M."	681. 74
Dodge, 2.2 miles north of, at bridge 413 over Trempealeau River; top of rail marked "685-73"	684. 4
Trempealeau River, at bridge; surface of water October 5, 1906.....	672. 5
Dodge, 2.2 miles north of, north end of bridge 413, east side of track, on northeast side of 36-inch leaning elm tree; nail in root, marked "U. S. B. M."	676. 49
T. 20 N., R. 10 W., SW. $\frac{1}{4}$ sec. 33, 0.6 mile north of bridge 413, southeast corner of road crossing on Green Bay & Western R. R., 15 feet east of track, 9.5 feet south of wagon road; iron post stamped "691"	690. 994
T. 20 N., R. 10 W., near center of sec. 29, road crossing on Green Bay & Western R. R., north side of crossing, southwest corner of railroad bridge over Trempealeau River, on head of first bolt north of corner bolt (old bridge); marked "696.6-86"	696. 25
T. 20 N., R. 10 W., near center of sec. 29, at crossing of Green Bay & Western R. R., 150 feet west of railroad, on north side of road, on south side of large elm tree; nail in root, marked "U. S. B. M."	689. 48

	Feet
T. 20 N., R. 10 W., NW. $\frac{1}{4}$ sec. 32, southeast corner of wagon bridge over Trempealeau River, on northeast side of 36-inch soft maple tree; nail in root, marked "U. S. B. M.".....	686. 44
Trempealeau River, floor of wagon bridge over, marked "691-83".....	690. 3
Trempealeau River, at bridge; surface of water October 8, 1906.....	682. 8
T. 20 N., R. 10 W., NE. $\frac{1}{4}$ sec. 31, southeast corner of crossroads, 1.2 feet northwest of fence and about midway (northeast to southwest) between two small oaks, 13 feet northeast of signboard reading "Arcadia 10 M., Fountain City 9 M., Winona 10 M."; iron post stamped "740".....	739. 279
T. 20 N., R. 10 W., NE. $\frac{1}{4}$ sec. 30, southwest side of road, opposite T road northeast, on northwest side of oak tree; nail in root, marked "773.5"....	773. 19
T. 20 N., R. 10 W., SE. $\frac{1}{4}$ sec. 19, on east side of road, at Y road northwest, in base of willow tree; nail in notch, marked "712.3".....	711. 98
T. 20 N., R. 10 W., SE. $\frac{1}{4}$ sec. 18, at road fork to southwest, in angle between forks, 26 feet west of telephone pole, on east side of road; iron post stamped "713".....	712. 45 $\frac{1}{2}$
T. 20 N., R. 10 W., NW. $\frac{1}{4}$ sec. 17, on west side of road, just north of farm road west, in top of west stone culvert at wall, south end; center of painted circle, marked "U. S. B. M. 716.1".....	715. 79
T. 20 N., R. 10 W., SE. $\frac{1}{4}$ sec. 8, 40 feet south of T road west, on west side of road, in top of old stone wall at north end; square cut, marked "U. S. B. M.".....	706. 10
T. 20 N., R. 10 W., SE. $\frac{1}{4}$ sec. 5, 40 feet south of T road east, on west side of road, on east side of 24-inch oak tree; nail in root, marked "U. S. B. M. 898.5".....	898. 14
T. 20 N., R. 10 W., NW. $\frac{1}{4}$ sec. 5, at top of ridge, southeast corner of T road southeast, 4.5 feet northwest of 12-inch oak tree; iron post stamped "1223".....	1, 223. 085
T. 20 N., R. 10 W., SE. $\frac{1}{4}$ sec. 6, on south side of road, just east of angle, at top of small ridge; on west side of large lone hickory tree; nail in root, marked "U. S. B. M.".....	1, 256. 29
T. 20 N., R. 11 W., SE. $\frac{1}{4}$ sec. 12, corner of most southern branch, 3.1 feet southeast of telephone pole, at road west, west side of road; iron post stamped "1218".....	1, 217. 19
T. 20 N., R. 11 W., NW. $\frac{1}{4}$ sec. 12, 90 feet southwest of road southeast, on northeast side of road; on east side of elm tree; nail in root, marked "U. S. B. M. 913.8".....	913. 42
T. 20 N., R. 11 W., near south quarter corner of sec. 11, 1,000 feet southwest of farm road west to house, northwest side of road, on north side of small oak tree; nail in root, marked "U. S. B. M.".....	821. 31
T. 20 N., R. 11 W., near center of sec. 15, T road east (north of Reformed Church), in center of triangle at road junction, 8.2 feet west of telephone pole; iron post stamped "799".....	798. 187
T. 20 N., R. 11 W., SW. $\frac{1}{4}$ sec. 10, west side of road, just south of house on east side, on east side of 30-inch elm tree; nail in root, marked "U. S. B. M.".....	853. 15
T. 20 N., R. 12 W., NE. $\frac{1}{4}$ sec. 9, northeast corner of T road east, 3 feet north of telephone pole, east side of road; iron post stamped "1198"....	1, 198. 549
T. 20 N., R. 11 W., NE. $\frac{1}{4}$ sec. 16, 3.9 miles off road, in wood lot on east side of road, 150 feet southwest of lowest point in road, on north side of 36-inch oak tree, 2.5 feet above ground; nail in notch, marked "U. S. B. M.".....	1, 161. 52

	Feet.
T. 20 N., R. 11 W., near center of sec. 16, on west side of road, opposite driveway to house of Henry Lettner; on nail in northeast side of trunk of oak tree, marked "U. S. B. M.".....	1, 188. 78
T. 20 N., R. 11 W., NE. $\frac{1}{4}$ sec. 20, on east side of road, at edge of wood lot, 1,100 feet south of farm road west to house of E. Lorenz, on west side of 12-inch oak tree; nail in root, marked "U. S. B. M.".....	1, 201. 81
T. 20 N., R. 11 W., SW. $\frac{1}{4}$ sec. 20, northwest side of road, at south end of gate to field at north end of wood lot, on east side of oak tree; nail in root, marked "U. S. B. M.".....	1, 169. 20
T. 20 N., R. 11 W., SW. $\frac{1}{4}$ sec. 29, junction with farm road west to house of Mr. Schroeder, 120 feet south of farm road east to house of Anton Patzner, in center of triangle at junction of roads, 5 feet north of Schroeder mail box; iron post stamped "1198".....	1, 197. 888
T. 20 N., R. 11 W., NE. $\frac{1}{4}$ sec. 31, north side of Y road east, 100 feet east of Y, on north side of oak tree; on nail in root, marked "U. S. B. M. 667.6".....	667. 18
T. 20 N., R. 11 E., SW. $\frac{1}{4}$ sec. 31, northwest corner of crossroads to west, on east side of 36-inch cottonwood tree; nail in root, marked "U. S. B. M. 663.0".....	662. 56
T. 19 N., R. 11 E., NW. $\frac{1}{4}$ sec. 6, on west side of road, opposite T road east, on east side of small elm tree near ground; nail in knob, marked "U. S. B. M. 669.3".....	668. 87
Fountain City, about 1.25 miles above limekiln at upper end of, 331 feet below south end of Chicago, Burlington & Quincy R. R. bridge 437 over Maumandee Creek, in top of fence post of right of way fence; nail marked "No. 1".....	662. 03
NOTE.—This is the place where p. b. m. 157 should be, but it could not be found.	
Nail in top of fence post at above point, marked "No. 2".....	663. 35
Fountain City, 1.3 miles northwest of, on east side of track, on right of way of Chicago, Burlington & Quincy R. R., in west side of second telephone pole south of milepost 336; head of railroad spike, marked "U. S. B. M.".....	669. 37
Fountain City, 0.5 mile northwest of, on northeast side of track, on right of way of railroad, on southwest side of third telephone pole north of milepost 335; spike, marked "U. S. B. M.".....	664. 22
Fountain City, northwest corner of Main and Eagle streets, at southeast corner of Sherer's Hotel used in 1906 for offices and a small bank, on water table; highest point of triangle inside of circle, marked "B. M.".....	672. 230
Fountain City, east of Eagle Street, on south side of Main Street, on Chas. Nieman's saloon (now Palm Garden), on upper end of window sill; copper bolt, marked "U. S. P. B. M. O" (U. S. C. E. b. m. 159).....	675. 340

Arkansaw, Chippewa Falls, Durand, Elkmound, and Wabasha quadrangles.

BUFFALO, CHIPPEWA, DUNN, EAU CLAIRE, AND PEPIN COUNTIES.

The elevations in the following list were determined by primary leveling extended from the bench mark "Bottom" of the Mississippi River Commission, opposite Reeds, Minn., the elevation of which is accepted as 671.99 feet above mean sea level.

The leveling was done in 1903 by J. R. Ellis.

WABASHA QUADRANGLE.

[Latitude 44° 15'-44° 30'; longitude 92°-92° 15'.]

From Reeds, Minn., northeast along Chicago, Milwaukee & St. Paul Ry. to Maxwell.

Reeds, Minn., opposite (Miss. R. Comm. b. m. "Bottom"), tile and iron pipe in low, flat ground, 721.6 feet (220 meters) from left bank of river, in property of Mrs. G. S. Richards, 147.6 feet (45 meters) west of Chicago, Milwaukee & St. Paul Ry. trestle, 672.4 feet (205 meters) southwest of end of trestle, near small pond; bolt in tile.....	Feet. 668.02
Cap on post.....	671.99
Trevin's at grade crossing of Chicago, Burlington & Quincy and Chicago, Milwaukee & St. Paul railroads; top of rail.....	684.0
Maxwell, 180 feet southwest of platform, in sandstone post 8 by 12 by 30 inches, set 27 inches in ground; bronze tablet stamped "691 E. C."....	690.836

ARKANSAW QUADRANGLE.

[Latitude 44° 30'-44° 45'; longitude 92°-92° 15'.]

From Maxwell northeast along Chicago, Milwaukee & St. Paul Ry. to Durand.

T. 24 N., R. 13 W., 0.25 mile due west of center of sec. 6, just outside of Chicago, Milwaukee & St. Paul Ry. right of way, left bank of river, in sandstone post 12 by 6 by 30 inches; bronze tablet stamped "733 E. C."..	732.518
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DURAND QUADRANGLE.

[Latitude 44° 30'-44° 45'; longitude 91° 45'-92°.]

From Durand northeast along Chicago, Milwaukee & St. Paul Ry. to Meridian.

Durand, county jail building, water table at southwest corner; bronze tablet stamped "724 E. C.".....	724.001
Red Cedar, 0.3 mile south of, quarter corner on north side of sec. 6, T. 25 N., R. 12 W., in ground at T road east, in sandstone post 6 by 12 by 30 inches; bronze tablet stamped "755 E. C.".....	755.310
Meridian, north part of sec. 14, T. 26 N., R. 12 W., at southeast corner of Iver Brock's residence, in stone foundation; bronze tablet stamped "740 E. C.".....	739.563

ELK MOUND QUADRANGLE.

[Latitude 44° 45'-45°; longitude 91° 30'-91° 45'.]

From Meridian northeast along Chicago, Milwaukee & St. Paul Ry. to Eau Claire.

Caryville, east part of sec. 11, T. 26 N., R. 11 W., at northwest corner of post office, in stone foundation of Strand's general store; bronze tablet stamped "760 E. C.".....	759.784
Coolies Lake, near outlet, at southwest corner of B. A. Churchville's residence, in foundation; bronze tablet stamped "779 E. C.".....	778.996
Shawton, 1 mile south of, northeast corner of sec. 36, T. 27 N., R. 10 W., at northwest corner of Henry Trimble's residence, in stone foundation; bronze tablet stamped "781 E. C.".....	780.48

CHIPPEWA FALLS QUADRANGLE.

[Latitude 44° 45'-45°; longitude 91° 15'-91° 30'.]

From Eau Claire north along highway to Chippewa Falls.

Eau Claire, southwest corner of courthouse; bronze tablet stamped "797 E. C.".....	797.113
Eau Claire, Chicago, Milwaukee & St. Paul and Chicago & Northwestern railroads grade crossing; top of rail.....	879.9

Badger Mills, in lawn of summer hotel, 50 feet due west of front window, in sandstone post 10 by 8 by 30 inches; bronze tablet stamped "827 E. C."	Feet. 827. 356
Chippewa Falls, northeast corner of foundation of city building containing quarters of fire department and city jail; bronze tablet stamped "840 E.C."	840. 108

St. Croix Dalles quadrangle.

POLK COUNTY.

The elevations in the following list are based upon permanent bench mark 29 A of the United States Army Engineers' precise leveling at Wyoming Village, Minn., the accepted elevation of which is 891.495 feet above mean sea level. From this point elevations were carried by a double-rodged line of primary leveling to Taylors Falls. The leveling in Minnesota is given in Bulletin 560.

The leveling in Polk County was done in 1897 by S. P. Connor.

The letters "T F" stamped upon the bench marks refer to Taylors Falls; Minn. Points marked with asterisk are on unchecked spur line.

ST. CROIX DALLES QUADRANGLE.

[Latitude 45° 15'-45° 30'; longitude 92° 30'-92° 45'.]

From St. Croix Falls north and east to northeast corner of sec. 1, T. 34 N., R. 18 W., thence southwest along highways to St. Croix Falls.

St. Croix Falls, in front of Minneapolis, St. Paul, & Sault Ste. Marie Ry. station; top of rail.....	Feet. 922. 1
St. Croix Falls, NW. $\frac{1}{4}$ sec. 30, T. 34 N., R. 18 W., southeast corner of Kentucky and Washington streets; iron post stamped "812 T F".....	813. 199
T. 35 N., R. 18 W., southwest corner of sec. 35; iron post stamped "1242 T F".....	1, 242. 834
T. 34 N., R. 18 W., northeast corner of sec. 1; iron post stamped "1232 T F".....	1, 233. 190

From St. Croix Falls along highways via Thaxter Lake, Poplar Lake, Bear Lake, Big Lake, Alden, and Farmington to Osceola.

T. 34 N., R. 18 W., SW. $\frac{1}{4}$ sec. 30, on rock bluff across river from Taylors Falls boat landing between St. Croix River and Thaxter Lake; bronze tablet stamped "848 T F".....	848. 914
*Dresser Junction, in front of station; top of rail.....	954. 6
*Dresser Junction post office, 75 feet west of, near southeast corner of sec. 7, T. 33 N., R. 18 W.; iron post stamped "969 T F".....	970. 260
*T. 33 N., R. 17 W., quarter corner on north side of sec. 7; iron post stamped "1114 T F".....	1, 115. 133
*T. 32 N., R. 17 W., northwest corner of sec. 6; iron post stamped "1019 T F".....	1, 020. 125
Alden post office, T. 32 N., R. 18 W., SW. $\frac{1}{4}$ sec. 15; iron post stamped "953 T F".....	954. 396
*East Farmington, SE. $\frac{1}{4}$ sec. 15, T. 32 N., R. 19 W., in front of town hall; iron post stamped "1038 T F".....	1, 038. 900
Osceola, southeast corner of county jail building, NW. $\frac{1}{4}$ sec. 27, T. 33 N., R. 19 W.; bronze tablet stamped "810 T F".....	811. 366
Osceola, in front of station; top of rail.....	809. 4

From Osceola east along highways to Nye.

Nye, in front of station; top of rail.....	968. 2
Nye, SW. $\frac{1}{4}$ sec. 27, T. 33 N., R. 18 W.; iron post stamped "966 T F".....	966. 847

APPENDIX A.

ELEVATIONS ADJUSTED BY THE COAST AND GEODETIC SURVEY FROM PRECISE LEVELING.

Alma, Cannon Falls, Greenleaf, La Crosse, Lake Elmo, Madeline, Milwaukee, Minneiska, Racine, Red Wing, Stoddard, Sturgeon Bay, Suamico, Waukon, and Winona quadrangles.

BROWN, BUFFALO, CRAWFORD, KENOSHA, LA CROSSE, MILWAUKEE, PIERCE, TREMPLEAU, AND VERNON COUNTIES.

The following descriptions and elevations are taken from reports of the Coast and Geodetic Survey and of the Corps of Engineers, United States Army, and are republished by permission of the chiefs of those bureaus. The bench marks were established from precise leveling by the United States Lake Survey and by the Mississippi River Commission. Most of them were included in the 1912 adjustment by the Coast and Geodetic Survey. The elevations are likely to be changed only slightly by any future adjustment.

ALMA QUADRANGLE.

[Latitude 44° 15' - 44° 30'; longitude 91° 45' - 92°.]

From upper end of Alma southeast along Chicago, Burlington & Quincy R. R. to Cochrane.

Alma, upper end of, 30 feet toward river from center of track of railway, on foundation of water tank; on northeast corner of northwest pier, opposite Aultman Taylor's machine warehouse; highest point in square, marked "U□S".....	Feet. 673. 975
Alma, in upper end of, on foundation of water tank, at same tank as T. B. M. 104, in south part of southeast stone base; copper bolt, marked "U. S. ⊙ P. B. M." (U. S. C. E. p. b. m. 147).....	673. 982
Alma, on river front of John Harry's brick store, near downstream end of stone window base; highest point in circle cut in stone, "⊙" (U. S. C. E. old U. S. B. M. 1).....	680. 396
Alma, on west side of main street, in front of Mr. Fritsche's brick store, on downstream window sill; circle cut in stone, "⊙" (U. S. C. E. old U. S. B. M. 3).....	682. 354
Alma, on east side of main street, in water table of Commercial Hotel, at south side of entrance, 6 inches below iron column; copper bolt, marked "U. S. ⊙ P. B. M." (U. S. C. E. p. b. m. 148).....	687. 348
Alma, in lower end of, opposite sawmill and lumber office, 60 feet above small road bridge on east side of street; at entrance to F. Lane's residence; highest point in square (U. S. C. E. old U. S. B. M. 4).....	679. 966
Alma, 0.8 mile below sawmill, 49 feet below milepost 81, 35 feet below C. Moer's red barn, in large embedded rock forming north bank of north railroad ditch; highest point in square, marked "U□S" (U. S. C. E. t. b. m. 105).....	678. 211

Alma, 0.8 mile below sawmill, at east fence on right of way, near milepost 81, in front of C. Moser's house, 16 feet below gate for farm crossing; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 149 and 150):	Feet.
Copper bolt.....	675. 668
Cap on pipe.....	679. 645
Alma, 2 miles below, in highway, 8 feet west of east road fence, 60 feet above small white house at east roadside, 13 feet northwest of northwest corner of Anton Loetsche's yard; highest point in square on embedded rock, marked "U□S" (U. S. C. E. t. b. m. 107).....	673. 870
Alma, 2.8 miles below, 984 feet below bridge 445, 787 feet below milepost 83, at west fence on right of way of Chicago, Burlington & Quincy R. R., directly opposite large barn with stone foundation and basement owned by Mr. Partsch, midway between two prominent points of bluff, 3,300 feet below t. b. m. 108, 45 feet from center of track; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 151 and 152):	
Copper bolt.....	668. 234
Cap on pipe.....	672. 226

CANNON FALLS QUADRANGLE.

[Latitude 44° 30'-44° 45'; longitude 92° 45'-93°.]

From Prescott southeasterly along Chicago, Burlington & Quincy R. R. to point opposite Smiths Bar.

Prescott, 1.8 miles below, 15 feet east from center of track at foot of bank, 133 meters below Chicago, Burlington & Quincy R. R. bridge over Pine Coulee, 65 feet below milepost 24; highest point in square cut on bowlder (U. S. C. E. t. b. m. 30).....	685. 399
Prescott, 1.8 miles below, 125 meters below Chicago, Burlington & Quincy R. R. bridge across Pine Coulee, 38 feet below milepost 24, 5 feet west of east wire fence of right of way; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 92 and 93):	
Copper bolt.....	687. 032
Cap on pipe.....	691. 026
Prescott, 3.8 miles below, 43 feet south of center of Chicago, Burlington & Quincy R. R. bridge 562, 46 feet east of center of track, 53 feet west from blazed oak tree on slope of bluff; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 94 and 95):	
Copper bolt.....	679. 612
Cap on pipe.....	683. 608

GREENLEAF QUADRANGLE.

[Latitude 44° 15'-44° 30'; longitude 88°-88° 15'.]

At Depere.

Depere, on Fox River about 10 miles from Green Bay, on right bank of canal, 74.5 feet above upper side of lock master's office, on line parallel with inner face of lock wall, 21 feet distant therefrom, in stone 4 feet below surface of ground surmounted by 3½-inch gas pipe leading to surface and covered with a cap marked "U. S. B. M." (U. S. Lake Survey b. m. No. 2 Depere):	
Copper bolt.....	588. 62
Cap on pipe.....	592. 62
Depere, at Lock No. 1 of the Fox River Canal, in top of retaining wall extending from upper right hand corner of lock office; copper bolt (U. S. Lake Survey b. m. Lock No. 1).....	590. 461

LA CROSSE QUADRANGLE.

[Latitude 43° 45'–44°; longitude 91°–91° 15'.]

In vicinity of La Crosse.

	Feet.
La Crosse, above, on east pier of Chicago, Milwaukee & St. Paul Ry. bridge over east channel of Mississippi River, on downstream side directly south of center of shoe, 9 inches from face of stone; copper bolt marked "U. S. Ⓞ P. B. M." (U. S. C. E. p. b. m. 190).....	653. 260
North La Crosse, in west pier of drawbridge over Black River No. 0, in north end of pier; highest point in square cut on coping stone (U. S. C. E. t. b. m. 157).....	649. 355
North La Crosse, on Chicago, Milwaukee & St. Paul Ry. bridge No. 0 over Black River, in south side of east pier, 15 inches from southwest corner; copper bolt marked "U. S. Ⓞ P. B. M." (U. S. C. E. p. b. m. 191).....	647. 013
North La Crosse, near entrance to Chicago, Milwaukee & St. Paul roundhouse, in foundation stone of water tank, northwest pier, on beveled edge of top stone in broken square marked "U. □ S." (U. S. C. E. t. b. m. 158).	645. 907
La Crosse, on west side of Front Street, between Main and Pearl streets, on southeast corner of old building joined to south side of stone building, on top surface of water table, 0.7 foot above lower corner; highest point in square (U. S. C. E. "La Crosse City B. M.").....	651. 495
La Crosse, on United States post-office building, on northeast corner of Fourth and State streets, at south side of south one of three doors fronting on Fourth Street, next door to tower; copper bolt in doorstep, marked "U. S. Ⓞ P. B. M." (U. S. C. E. p. b. m. 192).....	679. 651
La Crosse, on west side of Chicago, Burlington & Quincy R. R. station, on Second Street side, at south side of second door above south end of main building; highest point in square, marked "U □ S" (U. S. C. E. t. b. m. 160).....	657. 594
La Crosse, east end of bridge, just north of land pier to wagon bridge across the Mississippi, on southwest corner of small brick building, 1 foot above south corner and 0.8 foot above ground; bottom of notch cut in brick (U. S. C. E. "La Crosse City B. M.").....	641. 042
La Crosse, in west face of land pier to highway bridge across Mississippi River, 5 feet from its north end, 3.5 feet above ground; copper bolt marked "U. S. Ⓞ P. B. M." (U. S. C. E. p. b. m. 193).....	644. 015
La Crosse, 0.5 mile below highway bridge across Mississippi River, on southeast corner of First and Market streets, on brick building of La Crosse Soap Co., on First Street front, on south end of stone doorstep; highest point in square, marked "U □ S" (U. S. C. E. t. b. m. 161).....	660. 471
La Crosse, in south end of, on John Gund's stone brewery, 60 feet south of center of track, 8.4 feet west of east corner, on sloping water table; highest point in square, marked "U □ S" (U. S. C. E. t. b. m. 162).....	674. 267
La Crosse, at south end of, 2 miles below brewery, on right of way at west wire fence, opposite South Junction station, 33 feet south of same; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 194 and 195):	
Copper bolt.....	649. 697
Cap on pipe.....	653. 693

LAKE ELMO QUADRANGLE.

[Latitude 44° 45'-45°; longitude 92° 45'-93°.]

At Prescott.

Prescott, on west pier of Chicago, Burlington & Quincy R. R. bridge over St. Croix River, on south side of track, on top of stone; highest point in square marked "U. S." (U. S. C. E. t. b. m. 27).....	Feet. 697. 880
Prescott, on east pier of Chicago, Burlington & Quincy R. R. bridge over St. Croix River, on north end of bridge seat; copper bolt marked "U. S. Ⓞ P. B. M." (U. S. C. E. p. b. m. 91).....	694. 851
Prescott, at east end of Chicago, Burlington & Quincy R. R. bridge over St. Croix River, on north side of track, 2½ feet from rail, on retaining wall, 1 foot east of its west end; highest point in square (U. S. C. E. t. b. m. 28).	701. 022

MADELINE QUADRANGLE.

[Latitude 46° 45'-47°; longitude 90° 30'-90° 45'.]

On Raspberry Island.

Raspberry Island, one of the Apostle Island group in Lake Superior, near north end of Raspberry Island lighthouse and residence on west basement window sill; cross cut (U. S. Lake Survey b. m. No. 1, Raspberry Island).	640. 40
Raspberry Island, one of the Apostle Island group in Lake Superior, 60 feet southwest of lighthouse, in root on west side of balsam tree; top of spike (U. S. Lake Survey b. m. No. 2, Raspberry Island).....	638. 64
Raspberry Island, one of the Apostle Island group in Lake Superior, on summit of large sandstone, 5 feet from water's edge, 30 feet north of shore end of lighthouse dock; cross (U. S. Lake Survey b. m. No. 3, Raspberry Island).....	605. 02

MILWAUKEE QUADRANGLE.

[Latitude 43°-43° 15'; longitude 87° 45'-88°.]

At Milwaukee.

Milwaukee, in Seventh Ward, near southeast corner of courthouse square; top of stone monument (U. S. Lake Survey b. m. 2).....	636. 056
Milwaukee, Second Ward, on sidewalk at southeast corner of Eighth and Chestnut streets; top of stone monument (U. S. Lake Survey b. m. 3)...	633. 965
Milwaukee, stone water table at corner of building, Ludington's Block, northwest corner of East Water and Wisconsin streets; highest point of water table (U. S. Lake Survey b. m. 4)	594. 305
Milwaukee, on masonry of Kilbourne gristmill at foot of Poplar Street, on east wall, 10½ inches from southeast corner, 3 feet above ground; cross cut in stone (U. S. Lake Survey b. m. 5 1876).....	590. 545
Milwaukee, house at 321 Poplar Street, top of stone water table; extreme northeast corner (U. S. Lake Survey p. b. m. Lapham).....	596. 385
Milwaukee, on east side of south entrance to City Hall, in top surface of granite stone which is bottom of an inset 2 inches back from face of stone, 3 inches east of base of column, 8½ feet east of center of south doorway; copper bolt marked "U. S." (U. S. Lake Survey p. b. m. City Hall)....	595. 118
Milwaukee, southwest corner of power house at northeast corner of Poplar and Commerce streets; top of north end of lower stone step (U. S. Lake Survey b. m. A, Powerhouse).....	596. 168
Milwaukee, on top of curbstone on north side of Erie Street, 4.2 feet west of east line of Broadway, 19 feet east of curb at northeast corner of Broadway and Erie Street, directly in front of telephone pole, 1½ feet west of street signpost; small square cut (U. S. Lake Survey t. b. m. 1 Milwaukee)....	591. 996

Milwaukee, in center of concrete block 16 by 20 feet, which is most westerly section of new concrete pier, on north side of Milwaukee River, 40 feet west of shore line, due north of storm signal station, a large eyebolt bears SW. 15.6 feet; copper bolt marked "U. S. B. M." (U. S. Lake Survey p. b. m. Breakwater).....	Feet. 587. 408
Milwaukee, on south side of Milwaukee River, in north doorstep of sewage pump house, 80 feet south of U. S. Life-Saving Station, 2 inches back of front face and 3 inches from east side of stone, 16½ feet west of B. M. Pump House; copper bolt marked "U. S. B. M." (U. S. Lake Survey p. b. m. Sewage House).....	586. 296
Milwaukee, on stone sill of window south of door on east side of sewage pumping station, 80 feet south of U. S. Life-Saving Station, south side of mouth of Milwaukee River, in window sill; copper bolt marked "U. S. B. M." (U. S. Lake Survey p. b. m. Pump House).....	589. 249
Milwaukee, on north side of mouth of Milwaukee River, on northerly corner of east side of top foundation course of brick stack of new refuse-disposal plant; highest point in 1-inch square cut on concrete, marked "U. S. B. M." (U. S. Lake Survey b. m. Stack).....	590. 690
Milwaukee, on new south pier near its western end, approximately on line of beach, on top of wall near its northern face; top of highest point in 1-inch square cut in concrete, marked "U. S. B. M." (U. S. Lake Survey b. m. South Pier).....	585. 725

MINNEISKA QUADRANGLE.

[Latitude 44°-44' 15"; longitude 91° 45'-92°.]

From Cochrane southeast along Chicago, Burlington & Quincy R. R. to upper end of Fountain City.

Cochrane, 2,493 feet below station, at mouth of Rose Valley, at road crossing, on right of way, in corner of fence on east side of track below road; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 153 and 154): Copper bolt.....	669. 907
Cap on pipe.....	673. 916
Fountain City, 5.25 miles above limekiln at upper end of, at northeast corner of August Bensel's wagon house, on base stone; highest point in square (U. S. C. E. t. b. m. 117).....	668. 070
Fountain City, 3.8 miles above limekiln at upper end of, at farm residence of Peter Suter, 28 feet above center of railroad viaduct 439, over wagon road, 25 feet southwest of center of railroad; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 155 and 156): Copper bolt.....	657. 426
Cap on pipe.....	661. 423

RACINE QUADRANGLE.

[Latitude 42° 30'-42' 45'; longitude 87° 45'-88°.]

At Kenosha.

Kenosha, on north end of lower stone step of Kenosha Lighthouse (1866); top of square cut in step and marked "U. S. B. M." (U. S. Lake Survey b. m. Lighthouse).....	605. 126
Kenosha, 7 meters west of west line of Washington Street, on line of northwest corner of Kenosha Light dwelling and center of Life Saving Station; nail in east root of 18-inch black oak tree (U. S. Lake Survey b. m. 1 Kenosha).....	598. 550

Kenosha, at southwest corner of Milwaukee Avenue and Middle Street, 6½ feet south of northeast corner and 0.5 foot from face of building, on north end of lower stone step, 0.5 foot above sidewalk; square cut marked "U. S. B. M." (U. S. Lake Survey b. m. 2 Kenosha).....	Feet. 606. 810
Kenosha, southwest corner of North Chicago and Middle streets, in center of first window west of northeast corner of tannery building of N. R. Allen & Sons & Co., 3 feet above sidewalk, on stone window sill; top of square cut marked "U. S. B. M." (U. S. Lake Survey b. m. 3 Kenosha).....	610. 248

RED WING QUADRANGLE.

[Latitude 44° 30'-44° 45'; longitude 92° 30'-92° 45'.]

From point opposite Smiths Bar southeasterly along Chicago, Burlington & Quincy R. R. to Puckerville.

Smiths Bar, opposite, behind and one-third of its length above lower end of small lake, 1,540 feet below milepost 28, 1,078 feet below bridge 554, 15 feet below small wooden box culvert, 20 feet eastward from center of track; highest point in square cut on limestone rock, marked "U. S." (U. S. C. E. t. b. m. 35).....	683. 469
Smiths Landing, 10 feet above lower end of bridge 552, 105 feet east from center of track, 20 feet south of center of creek bed, 154 feet from southeast corner of Smith's house, now occupied by George Gunter, under plum tree; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 98 and 99):	
Copper bolt.....	680. 547
Cap on pipe.....	684. 543
Smiths Landing, opposite extreme lower end of bridge 552, Chicago, Burlington & Quincy R. R., at east foot of embankment, by blazed post, on round embedded boulder; highest point in square cut in stone (U. S. C. E. t. b. m. 37).....	679. 329
Smiths Landing, 1,000 meters below, 124 meters above milepost 30 from St. Paul, 45 feet above bridge 549, 37 feet from center of track, on bank of river, on large blue sandstone; highest point in square (U. S. C. E. t. b. m. 38).....	683. 233
Morgans Coulee, 490 meters below, 124.6 meters below milepost 31, on east side of railroad, on embedded rock in slope of a cut; highest point in square (U. S. C. E. t. b. m. 39).....	687. 584
Bridge 544, Chicago, Burlington & Quincy R. R., 93 meters below, on north side of track at foot of bluff, 8 feet from center of track, opposite blazed tree, on rock; highest point in square (U. S. C. E. t. b. m. 40).....	695. 268
Diamond Bluff, 0.8 mile above, on land of Ed. Colter, 213 meters south of center of bridge over Wind or Spring Creek, about at elevation of extreme high water, at foot of bank, 25 meters south of end of small road bridge over run, 40 meters from river at a medium stage of water; on large embedded granite boulder; highest point in square marked "U. S." (U. S. C. E. t. b. m. 47).....	679. 322
Diamond Bluff, 0.8 mile above, on land of Ed. Colter, 7 meters north of t. b. m. 47, on point of bank, 600 feet below Wind or Spring Creek, 62 feet south of center of small road bridge, 21 feet nearer the river, 22½ feet northwest of 4-inch oak tree blazed; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 100 and 101):	
Copper bolt.....	683. 831
Cap on pipe.....	687. 823

	Feet.
Diamond Bluff, 70 meters below Chicago, Burlington & Quincy R. R. station, 19 meters north of center of track, 3 feet south of wire fence; on large boulder; highest point in square (U. S. C. E. t. b. m. 45).....	722. 945
Diamond Bluff, 70 meters east of station, 14 meters south of main track, 2 meters north of wire fence; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 102 and 103):	
Copper bolt.....	722. 256
Cap on pipe.....	726. 245
Diamond Bluff, 0.8 mile below, 37 feet south of center of track, 94 meters below east end of bridge 536 over Dry Run, on large boulder in borrow pit; highest point in square, marked "U. S. □T. B. M." (U. S. C. E. t. b. m. 46).....	725. 025
Diamond Bluff, 0.8 mile below, 29 meters south of center of track, 90 meters below east end of bridge 536 over Dry Run, 2 meters north of blazed post in wire fence, at foot of bank in borrow pit; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 104 and 105):	
Copper bolt.....	720. 097
Cap on pipe.....	724. 110
Diamond Bluff, 2.2 miles below, 700 feet above Neros Crossing, 400 feet above Gardner Skidmore's house, 12 feet north of center of Chicago, Burlington & Quincy R. R. track, on slanting face of ledge of rock; highest point in square, marked "U□S" (U. S. C. E. t. b. m. 48).....	722. 450
Trenton, on top of bluff, 100 feet back from edge of descent, 45 feet east of old storehouse, in west root of 10-inch oak tree; 6-inch wire spike (U. S. C. E. t. b. m. 50).....	764. 739
Trenton Landing, 70 feet south of road, 65 feet back from line of willows, on top of bank, on south root of 30-inch elm tree, blazed, marked "U"; top of 6-inch wire spike (U. S. C. E. t. b. m. 51).....	675. 514
Trenton Landing, 30 feet below t. b. m. 51, 3.5 feet toward river from blazed tree; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 106 and 107):	
Copper bolt.....	674. 451
Cap on pipe.....	678. 467
Island 24, on left bank of chute opposite head of, 300 meters below north end of pile dike, 6 feet back from top of bank, in center among three cottonwood trees blazed, 7 feet from all, on a 14-inch new cottonwood stump; top of 6-inch wire spike (U. S. C. E. t. b. m. 52).....	676. 974
Pucketville, 2 miles above, on extreme upper end of Island 24, 75 feet east from river bank, on 4-foot elm stump; 6-inch wire spike (U. S. C. E. t. b. m. 53).....	676. 636
Pucketville, 2 miles above, 55 feet south of t. b. m. 53, at center of head of Island 24, on highest ground, 125 feet from river, 100 feet from chute, 2 maple trees near by are blazed facing p. b. m.; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 108 and 109):	
Copper bolt.....	673. 942
Cap on pipe.....	677. 932
Pucketville, opposite Red Wing, on Island 24, 200 feet below ferry landing, in front part of Mr. Truttman's yard, 12 feet back from front angle of retaining wall, 10½ feet northwest from large cottonwood tree carrying t. b. m. 56, 3.7 feet east of 12-inch maple tree, 21 feet from southwest corner of Mr. Truttman's house; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 110 and 111):	
Copper bolt.....	673. 407
Cap on pipe.....	677. 378

STODDARD QUADRANGLE.

[Latitude 43° 30' - 43° 45'; longitude 91° - 91° 15']

From point near Stoddard southerly along Chicago, Burlington & Quincy R. R. to Victory.

Stoddard, 3.8 miles above, on railroad, 870 feet above milepost 140, 0.5 mile below Jack Branak's house and saloon, 0.2 mile above Carl Bay's house, 21 feet below gate to farm crossing, on right of way, 2 feet from east fence; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 196 and 197):	
Copper bolt.....	Feet. 643. 364
Cap on pipe.....	647. 348
Stoddard, 2.2 miles above, 2,526 feet below milepost 141, 15 feet east of center of track, halfway through large cut, on embedded boulder; highest point in square, marked "U□S" (U. S. C. E. t. b. m. 170).....	642. 994
Stoddard, 3,281 feet above, near upper end of first tangent above station, 853 feet below milepost 143, 328 feet below farm crossing, 25 feet east of center of railroad, on embedded boulder; highest point in square, marked "U□S" (U. S. C. E. t. b. m. 172).....	641. 101
Stoddard, on foundation to water tank, on northeast corner of northeast pier; copper bolt marked "U. S. ⊙ P. B. M." (U. S. C. E. p. b. m. 198)..	645. 622
Warners landing, 280½ feet up track from O. Warner's house, 60 feet above bridge 342, 29.2 feet east of center of track, on railroad right of way, at east fence; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 199 and 200):	
Copper bolt.....	636. 868
Cap on pipe.....	640. 865
Britts landing, 75 feet above milepost 147, on east side of track, on rock; highest point in square marked "U□S" (U. S. C. E. t. b. m. 175).....	643. 791
Genoa, 1.6 miles above, 351 feet below bridge 333, 1,837 feet above milepost 148, on right of way, at east fence, between road and highway, in front of Frank Riley's property; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 201 and 202):	
Copper bolt.....	638. 424
Cap on pipe.....	642. 437
Genoa, 1.5 miles above, on line of Chicago, Burlington & Quincy R. R., 2,516 feet below milepost 148, 656 feet above p. b. ms. 201 and 202, 12 feet east of center of track, on large rock; highest point in square marked "U □ S" (U. S. C. E. t. b. m. 177).....	640. 281
Genoa, 0.5 mile above, 2,326 feet below milepost 149, in front of large stone house of John Franzini, on east side of highway which runs along east of railroad, on rough boulder; highest point in square, marked "U □ S" (U. S. C. E. t. b. m. 178).....	642. 174
Genoa, on west side of main street, in front of Albert Zabolio's store, on stone doorstep of upstream door, near southeast corner step; copper bolt marked "U. S. ⊙ P. B. M." (U. S. C. E. p. b. m. 203).....	656. 849
Genoa, on last stone building in town going south, on side facing river, second floor, on upstream corner of stone doorsill; highest point in square (U. S. C. E. old U. S. b. m. i).....	640. 075
Genoa, 1 mile below, 187 feet below bridge 327, 174 feet above milepost 151, 19 feet east of center of track; large spike in oak stump (U. S. C. E. t. b. m. 180).....	641. 885

Genoa, 2.8 miles below, 23 feet below t. b. m. 182, 147 feet above bridge 322, 93.5 feet below John T. Elger's house, on right of way, 34.5 feet east of center of track; copper bolt in tile buried 3 feet underground and surmounted by iron pipe (U. S. C. E. p. b. ms. 204 and 205):	Feet.
Copper bolt.....	634.496
Cap on pipe.....	638.496
Tippets landing, 1,640 feet below Mr. Tippet's house, 1,128 feet below warehouse on river bank, 12 feet west of center of railroad, on embedded rock; highest point in square marked "U □ S" (U. S. C. E. t. b. m. 186).....	641.094
Tippets landing, 150 feet below t. b. m. 186, 1,296 feet below old warehouse, on east side of railroad, 33½ feet from center, 1 mile above Victory, in bed of old wagon road under bluff used before railroad was built; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 206 and 207):	
Copper bolt.....	642.755
Cap on pipe.....	646.764

STURGEON BAY QUADRANGLE.

[Latitude 44° 45'-45"; longitude 87° 15'-87° 30'.]

At entrance to Sturgeon Bay and Lake Michigan Ship Canal.

Sturgeon Bay and Lake Michigan Ship Canal, at Lake Michigan entrance to, at base of lighthouse, south-southeast from center of tower, on iron plate; center of square formed by rows of punch marks (U. S. Lake Survey b. m. No. 1 Sturgeon Bay).....	598.71
Sturgeon Bay and Lake Michigan Ship Canal, at Lake Michigan entrance to, 50 feet south of lighthouse; highest point of stone monument (U. S. Lake Survey b. m. No. 2 Sturgeon Bay).....	597.56
Sturgeon Bay and Lake Michigan Ship Canal, near Lake Michigan entrance to, in east side of U. S. warehouse, near southeast corner, 2 feet above ground; spike (U. S. Lake Survey b. m. No. 3 Sturgeon Bay).....	586.91

SUAMICO QUADRANGLE.

[Latitude 44° 30'-44° 45'; longitude 88°-88° 15'.]

At Green Bay.

Green Bay, on Fox River at foot of Green Bay, building on northwest corner of Washington and Main streets, on window sill on Main Street side; lead plug (U. S. Lake Survey b. m. 1 Green Bay).....	589.45
Green Bay, on Fox River at foot of Green Bay, in Kellogg's Bank building at corner of Washington and Pine streets, in granite course, 2.4 feet from southeast corner of building on Washington Street side; lead plug (U. S. Lake Survey b. m. 2 Green Bay).....	590.95

WAUKON 30' QUADRANGLE (FERRYVILLE 15' AND PRAIRIE DU CHIEN 15' QUADRANGLES).

[Latitude 43°-43° 30'; longitude 91°-91° 30'.]

From Victory southerly along Chicago, Burlington & Quincy R. R. to Prairie du Chien.

Victory, on southeast corner of block 17, at northwest corner of Terhune and Rice streets, on west side of south abutment of wagon bridge, on corner of top stone, 3 inches from end of wall; copper bolt marked "U. S. ⊙ P. B. M." (U. S. C. E. p. b. m. 208).....	640.455
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Victory, 1 mile below, on line of railroad, 2,100 feet above milepost 158, 197 feet above bridge 309, 30 feet east of center of track, on embedded boulder; marked "U□S;" highest point in square (U. S. C. E. t. b. m. 188).	Feet. 638. 490
De Soto, 2.5 miles above, 164 feet east of bridge 307 over Battle Creek, 36 feet east of wagon road, at north side of north wire fence of lane leading from Richard Valliant's house; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 209 and 210):	
Copper bolt.....	633. 348
Cap on pipe.....	637. 354
De Soto, 1 mile above, 1,138 feet above milepost 160, in cut 12 feet east of center of railroad, on embedded boulder; highest point in square marked "U□S" (U. S. C. E. t. b. m. 192).....	638. 079
De Soto, upper end of, at warehouse formerly owned by C. Lytel & Co., now owned by De Soto Lumber Co., on south end of south top stone of pier supporting runway over railroad, 7.2 feet east of center of track; highest point in square marked "U□S" (U. S. C. E. t. b. m. 193).....	642. 200
De Soto, upper end of, on north side of Diamond Jo warehouse, 9 inches from west side, 5.3 feet above ground; copper bolt marked "U. S. ⊙ P. B. M." (U. S. C. E. p. b. m. 211).....	626. 584
De Soto, in foundation of water tank of Chicago, Burlington & Quincy R. R., in top stone of south one of two west piers; copper bolt marked "U. S. ⊙ P. B. M." (U. S. C. E. p. b. m. 212).....	636. 561
De Soto, 1.8 miles below, 860 feet below bridge 298, 360 feet below milepost 163, 15 feet west of center of track; highest point in square on rock, marked "U□S" (U. S. C. E. t. b. m. 195).....	636. 599
De Soto, 1.8 miles below, 394 feet below milepost 163, at upper end of stretch where Winneshiek Slough comes back to railroad, on right of way, at west fence, 26 feet from center of track, at lower end of rock cut, 32 feet below t. b. m. 195; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 213 and 214):	
Copper bolt.....	631. 728
Cap on pipe.....	635. 694
De Soto, 2 miles below, 1,315 feet above milepost 164, 361 feet above bridge 294, 90 feet above an exceedingly large rock, at east railroad fence, in small cut at foot of east slope, 12 feet from center of track, on embedded boulder; highest point in square marked "U□S" (U. S. C. E. t. b. m. 196).....	635. 727
Rush Creek, 1.5 miles above, 2,699 feet below milepost 164, 60 meters above small waterway under bridge 291, directly under a very prominent point of bluff, on east side of railroad, 20 feet from center, on large flat rock embedded and inclining south; highest point in square marked "U□S" (U. S. C. E. t. b. m. 197).....	636. 465
Ferryville, 2.5 miles above, 88 meters below milepost 166, 377 feet below south end of long trestle over Rush Creek; on east side of railroad, at right of way fence, 17 feet from center of track, on large rock embedded; highest point in square marked "U□S" (U. S. C. E. t. b. m. 198).....	633. 575
Ferryville, 2.5 miles above, 18 feet below t. b. m. 198, 394 feet below lower end of long trestle over Rush Creek, 94 meters below milepost 166, opposite blazed elm tree standing on east side of wagon road, 328 feet below blazed elm tree between railroad and wagon road near south end of trestle; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 215 and 216):	
Copper bolt.....	632. 296
Cap on pipe.....	636. 301

Ferryville, 4,593 feet above, on line of railroad, near upper end of first cut above Ferryville, 1,256 feet above milepost 168, 213 feet above bridge 232, 10 feet east of center of track, on large flat rock embedded; highest point in square marked "U□S" (U. S. C. E. t. b. m. 200).....	Feet. 632. 909
Ferryville, 164 feet above station, 29½ feet east of center of track, 39 feet from southeast corner of J. S. Oleson's house and store, all at upper side of road crossing; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 217 and 218):	
Copper bolt.....	628. 909
Cap on pipe.....	632. 919
Ferryville, 1.5 miles below, at lower end of light cut, 256 feet below milepost 170, 12 feet west of railroad, on hard gray sandstone, embedded and marked "U□S;" highest point in square (U. S. C. E. t. b. m. 202)....	635. 412
Ferryville, 4 miles below, at place where Winneshiek Slough comes close to railroad, 1,247 feet below milepost 172, on north side of bridge 273, east of track, at corner of fence, on embedded bowlder marked "U□S;" highest point in square (U. S. C. E. t. b. m. 204).....	629. 858
Ferryville, 4 miles below, at place where Winneshiek Slough comes close to railroad, opposite south end of bridge 273, 46 feet east of center of track, 15 feet west of wagon road, 15 feet south of center of bridge or cattle pass, in corner of fence; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 219 and 220):	
Copper bolt.....	624. 539
Cap on pipe.....	628. 538
Lynxville, 1.25 miles above, at Coopers Coulee, 731 feet above bridge 269, 56 feet above milepost 175, 35 feet west of center of Chicago, Burlington & Quincy Ry. track, outside of right of way, 1½ feet from fence, 25 feet east of forked oak tree; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 221 and 222):	
Copper bolt.....	629. 716
Cap on pipe.....	633. 719
Lynxville, 1.25 miles above, 10 feet down track from p. b. m. 222, at upper side of Coopers Coulee, 722 feet above bridge 269, 46 feet above milepost 175, 12 feet west of center of railroad track, on embedded rock marked "U□S"; highest point in square (U. S. C. E. t. b. m. 206).....	632. 748
Lynxville, in north end of, at station, on foundation stone of water tank, on south one of two west piers; copper bolt marked "U. S. ⊙ P. B. M." (U. S. C. E. t. b. m. 207).....	635. 124
Lynxville, on Bright's warehouse, on northeast corner of warehouse, 984 feet below station, on top of foundation; highest point in circle, marked "B⊙M" (U. S. C. E. old U. S. b. m.).....	637. 915
Lynxville, on north side of principal street running back from river, on south front of Mr. King's brick store, in east end of doorsill; copper bolt marked "U. S. ⊙ P. B. M." (U. S. C. E. p. b. m. 223).....	638. 515
Lynxville, 0.8 mile below, 623 feet below bridge 266, in middle of light cut, 66 feet below milepost 177, on west side of railroad, 12 feet from center, on large embedded bowlder marked "U□S;" highest point in square (U. S. C. E. t. b. m. 209).....	632. 692
Viola, 3.25 miles below Lynxville, 1,345 feet below bridge 261, near upper end of first cut, 525 feet below Mr. Caya's house, just above large cubical rock lying at water's edge, 12 feet east of center of track, on rock marked "U□S;" highest point in square (U. S. C. E. t. b. m. 211).....	632. 531

Viola, 909 feet below bridge 261, 43.6 feet above t. b. m. 211, in southwest corner of Mr. Caya's dooryard, 95 feet from southwest corner of his red frame house, 50 feet southeast from track, 1 foot north from line of fence; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 224 and 225):	
Copper-bolt.....	630. 012
Cap on pipe.....	634. 008
Viola, 0.5 mile below, 702 feet above milepost 180, 9.3 feet east of center of railroad, on natural ledge of rock, marked "U□S;" highest point in square (U. S. C. E. t. b. m. 212).....	634. 864
Viola, 1.5 miles below, in center of first cut below bridge 260, 639 feet distant, 1,529 feet above milepost 181, 3 feet above grade, on natural ledge of rock, marked "U□S;" highest point in square (U. S. C. E. t. b. m. 213).....	635. 376
Charme, 1 mile above, on line of railroad, at lower end of wooded point of land at shore, 689 feet below flat piece of ledge 16 feet high, standing on edge between railroad and river, 55 meters below bridge 256, 1,959 feet above milepost 183, 30 feet from center of track, on embedded boulder, marked "U□S;" highest point in square (U. S. C. E. t. b. m. 215).....	629. 162
Charme, 1 mile above, at lower end of wooded strip at shore, 689 feet below large flat piece of ledge standing on edge between railroad and river, 16 feet high, 1,959 feet above milepost 183, 180 feet below bridge 256, at east railroad fence, directly behind t. b. m. 215; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 226 and 227):	
Copper bolt.....	630. 769
Cap on pipe.....	634. 769
Charme, 984 feet below station, 0.5 mile above Mr. Valley's house, 656 feet above lower end of siding behind center of Island 164, 10 feet east of center of track, 4 feet above grade, in face of natural ledge of rock, marked "U. S. P. B. M. ⊙;" copper bolt (U. S. C. E. p. b. m. 228).....	635. 442
Charme, 984 feet below station, 0.5 mile below Mr. Valley's house, 10 feet east of center of track, 15 or 20 feet below p. b. m. 228, on natural ledge of rock, marked "U□S;" highest point in square (U. S. C. E. t. b. m. 216).....	633. 765
Charme, 1.5 miles below, 518 feet below milepost 185, 492 feet above bridge 246, at north edge of farm crossing, on embedded boulder, 25 feet east of center of railroad; highest point in square marked "U□S;" (U. S. C. E. t. b. m. 218).....	631. 938
Charme, 3 miles below, on G. L. Miller's place, now occupied by M. Sage, 257 feet below section post 30-29, 72 feet above bridge 243, 127 feet from southwest corner of house, 95 feet from northeast corner of barn, on right of way, 18 inches east of west fence; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 229 and 230):	
Copper bolt.....	630. 461
Cap on pipe.....	634. 457
Prairie du Chien, in northeastern part of town, on west end of St. Gabriel's Catholic Church, 19 inches from north side, 4 feet above ground; copper bolt marked "U. S. ⊙ P. B. M." (U. S. C. E. p. b. m. 231).....	643. 464
Prairie du Chien, in northeastern part of, on east side of street, 75 feet south of St. Gabriel's Catholic Church, at street entrance to Father Kramer's residence, on southeast corner of large stone step, marked "U□S;" highest point in square (U. S. C. E. t. b. m. 225).....	639. 215
Prairie du Chien, on east end of Chicago, Milwaukee & St. Paul Ry. bridge across Mississippi River, on south end of cap over piles at end; top of driftbolt over pile, marked with square (U. S. C. E. t. b. m. 226).....	626. 016

Prairie du Chien, 2,100 feet below east end of Chicago, Milwaukee & St. Paul Ry. bridge across Mississippi River, at river front of Dousman House, on upper end of stone sill of first window below upper entrance; copper bolt marked "U. S. ⊙ P. B. M." (U. S. C. E. p. b. m. 232).....	Feet. 631. 068
Prairie du Chien, on Dousman House, on downstream end of downstream doorsill; highest point in circle cut in stone (U. S. C. E. old U. S. B. M. a)	631. 068

WINONA QUADRANGLE.

[Latitude 44°-44° 15'; longitude 91° 30'-91° 45'.]

From upper end of Fountain City southeast along Chicago, Burlington & Quincy R. R. to Winona.

Fountain City, 1.25 miles above limekiln at upper end of, east side of highway, 200 feet below railroad bridge 437 over Maumandee Creek, in front of southwest corner of Martin Ludwig's yard, on opposite side of road, 79 feet from p. b. m. 157; highest point in square on embedded stone, marked "U□S" (U. S. C. E. t. b. m. 121).....	660. 474
Fountain City, 1.25 miles above limekiln at upper end of, on opposite side of road and 79 feet from t. b. m. 121, 331 feet below south end of bridge 437 over Maumandee Creek, on right of way, at east fence; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 157 and 158):	
Copper bolt.....	654. 933
Cap on pipe.....	658. 936
Fountain City, in upper end of, just east of limekiln, on upper side of bridge 433, in east end of cap directly over pile; south one of two spikes, with square around it (U. S. C. E. t. b. m. 122).....	666. 088
Fountain City, 30 feet below bridge 428, 50 feet east of center of track, on south side of Eagle Street, which leads to steamboat landing, at southwest corner of Bohrie's warehouse, on foundation stone, marked "B. M.;" highest point of square within circle cut in stone (U. S. C. E. old U. S. b. m. 1 H. W. G.).....	659. 028
Fountain City, on northwest corner of Main and Eagle streets, at southeast corner of Sherer's Hotel, on water table; highest point of triangle inside of circle, marked "B. M." (U. S. C. E. old U. S. b. m. A).....	672. 230
Fountain City, east of Eagle Street, on south side of Main Street, on Charles Niemann's saloon, on upper end of window sill; copper bolt marked "U. S. ⊙ P. B. M. (U. S. C. E. p. b. m. 159).....	675. 340
Fountain City, 1.8 miles below Eagle Street, 52 feet above milepost 98, 10 feet northeast of center of track, on ledge of rock at about same elevation as track; highest point in square marked "U□S" (U. S. C. E. t. b. m. 123).....	664. 283
Fountain City, 1.8 miles below Eagle Street, 2,362 feet below bridge 221, 31 feet northeast of milepost 98, below large curve in railroad line, on right of way, 1 foot from wire fence; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 160 and 161):	
Copper bolt.....	669. 113
Cap on pipe.....	673. 113
Island 65, at mouth of slough opposite, 1,453 feet below milepost 99, 840 feet below bridge 418, at upper end of cut below Jack Cook's house, on bluff side of track; highest point in square on rock, marked "U□S" (U. S. C. E. t. b. m. 124).....	667. 443
Island 69, at head of, 16 feet above overhead cable track running from quarry to river, on bluff side of railroad, on large rock in side of bank; highest point in square marked "U□S" (U. S. C. E. t. b. m. 125).....	662. 460

Island 69, at head of, 524 feet below t. b. m. 125, on right of way, at east fence, 150 feet above viaduct over road running to low-water landing; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 162 and 163):	
Copper bolt.....	660. 215
Cap on pipe.....	662. 571
Island 69, behind, 12 feet northeast of railroad, 715 feet below milepost 101, 1,148 feet above bridge 415, on embedded rock; highest point in square marked "U□S" (U. S. C. E. t. b. m. 126).....	665. 170
Winona, opposite, on east side of railroad, 3,280 feet above its crossing with Chicago & North Western Ry., 1,640 feet above bridge 413 over slough, behind and 49 feet from milepost 102 in cut, on large rock in foot of bank, marked "U□S;" highest point in square (U. S. C. E. t. b. m. 127).....	668. 565
Winona, opposite, on left bank of river, on right of way of Chicago & North Western Ry., at east fence, 279 feet north of north end of bridge over Mississippi River; copper bolt in tile surmounted by iron pipe (U. S. C. E. p. b. ms. 164 and 165):	
Copper bolt.....	647. 479
Cap on pipe.....	651. 458

APPENDIX B.

ELEVATIONS OF STONE-LINE BENCH MARKS ESTABLISHED BY THE MISSISSIPPI RIVER COMMISSION ALONG MISSISSIPPI RIVER FROM EAGLE BLUFFS TO PRESCOTT AND ELEVATIONS OF SECONDARY BENCH MARKS ESTABLISHED BY THE UNITED STATES LAKE SURVEY ALONG FOX RIVER FROM PORTAGE TO MOUTH OF RIVER.

Alma, Appleton, Cannon Falls, Elkader, Fond du Lac, Galesville, La Crescent, La Crosse, Lake City, Lancaster, Maiden Rock, Minneiska, Montello, Neenah, Neshkoro, Oshkosh, Portage, Poysippi, Red Wing, Ripon, Stoddard, Wabasha, Waukon, and Winona quadrangles.

BROWN, BUFFALO, COLUMBIA, CRAWFORD, GRANT, GREEN, LA CROSSE, MARQUETTE, OUTAGAMIE, PEPIN, PIERCE, TREMPLEAU, VERNON, AND WINNEBAGO COUNTIES.

The following descriptions and elevations of bench marks from Eagle Bluffs to Prescott, Wis., are taken from a report of the Mississippi River Commission, published in 1899, and the list of bench marks along the Fox River from a special list furnished by the Chief of Engineers, United States Army. These data are republished by permission of the Chief of Engineers. The elevations taken from the report and the list mentioned above have been corrected to agree with the 1912 adjustment of the Coast and Geodetic Survey.

Along the Mississippi River the lines of bench marks called stone lines are placed normal to the river at intervals of about 3 miles and are numbered consecutively from Cairo northward. Each stone line generally consists of four bench marks, two on each side of the river, the one farthest from the river on the left (east) bank being No. 1.

The elevations of the stone-line bench marks were determined by the ordinary leveling of the topographic party, running from the adjacent precise-level bench marks. The discrepancy between the precise and ordinary leveling, between successive precise-level bench marks, has averaged about 0.06 foot.

A bench mark consists of a flat tile 4 inches thick and 18 inches square, with a copper bolt leaded vertically into the upper face at the center. The tile is set about 3 feet below the surface of the ground and is surmounted with a 4-inch iron post 4 feet long, upon which an iron cap is bolted. The words "Mississippi River Commission" and letters "U. S." are printed on both tile and cap.

Where standard bench marks are not used, descriptions of the marks employed are given. The numbers of Mississippi River Commission bench marks are given in parentheses and refer to the surface marks.

LANCASTER QUADRANGLE.

[Latitude 42° 30'-43°; longitude 93° 30'-91°.]

From point near Dubuque northerly near Mississippi River to point above Cassville.

Dubuque, 0.8 mile above railroad bridge at, 75 meters above two-story brick house standing on right of way, near fence along right of way of Chicago, Burlington & Quincy R. R.; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 180 2):	
Copper bolt.....	Feet. 626. 21
Cap on pipe.....	630. 16
Eagle Bluffs, at upper end of, on property of Christopher Brant along right of way fence of Chicago, Burlington & Quincy R. R., fence is nearest one to river, 50 meters above end of switch, 150 meters below milepost on road-bed marked 241-190, 200 meters below two-story frame house at foot of bluffs in draw; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 181 1):	
Copper bolt.....	605. 92
Cap on pipe.....	609. 88
Dubuque, 3 miles above, 25 meters back from river, 150 meters below buildings in park; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 181 2):	
Copper bolt.....	598. 68
Cap on pipe.....	602. 63
Sinope, 0.8 mile above, at foot of bluffs, 4 meters toward bluffs from center of Chicago, Burlington & Quincy R. R., 194 meters below railroad bridge, 79 meters below milepost 193-238; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 182 1):	
Copper bolt.....	610. 74
Cap on pipe.....	614. 64
Island No. 217, on left shore of, 10 meters from river bank, 0.25 mile below head of island; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 182 2):	
Copper bolt.....	600. 02
Cap on pipe.....	603. 99
Chicago, Burlington & Quincy R. R. bridge 81 over Platte River, on north corner of southeast abutment, on top of cap where it begins to bevel (U. S. C. E. t. b. m. 30, L. B.).....	615. 09
Spechts ferry, 1.5 miles below, outside of right of way of Chicago, Burlington & Quincy R. R., at jog in fence just below small gully, 130 meters above milepost 234-197, 100 meters below point opposite small log house at foot of bluffs; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 183 1):	
Copper bolt.....	614. 01
Cap on pipe.....	617. 98
Potosi, opposite Chicago, Burlington & Quincy R. R. station; base of rail.....	615. 38
Spechts ferry, 1.5 miles above, in right of way of Chicago, Burlington & Quincy R. R. at nearest fence to river, 175 meters below iron railroad bridge over Grant River, 42 feet below small railroad bridge, 75 meters above small frame house; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 184 1):	
Copper bolt.....	610. 64
Cap on pipe.....	614. 59

Island No. 209, opposite lower end of small island at upper end of, 15 meters back from bank of river, just behind small patch of willows; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 184 2):	
Copper bolt.....	Feet. 601.47
Cap on pipe.....	605.40
Finley landing, 0.8 mile above, on right of way of Chicago, Burlington & Quincy R. R., 100 meters above upper end of railroad bridge at foot of bluffs, 0.5 meter from fence, 10 meters above small log house; 10 meters below milepost 204-227; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 185 1):	
Copper bolt.....	615.07
Cap on pipe.....	619.00
Island No. 203, on lower end of, 20 meters from river bank, about opposite foot of Island No. 204; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 185 2):	
Copper bolt.....	602.31
Cap on pipe.....	606.25
McCartney, in front of Chicago, Burlington & Quincy R. R. station; base of rail.....	617.16
Waupeton, 0.25 mile below, at foot of bluffs, 0.5 meter from right of way fence of Chicago, Burlington & Quincy R. R., 5 meters above upper end of railroad bridge, 200 meters below milepost 224-207; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 186 1):	
Copper bolt.....	621.28
Cap on pipe.....	625.22
Waupeton, 0.25 mile below, at edge of willows, about 30 meters back from river bank, on high ridge, 100 meters below upper end of willows; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 186 2):	
Copper bolt.....	603.13
Cap on pipe.....	607.08
Buena Vista, 0.5 mile below, on right of way of Chicago, Burlington & Quincy R. R., 1 meter from fence, on side of bluff, immediately behind a large bowlder which lies near track, 200 meters below railroad bridge. 112, 0.5 mile below milepost 221-210; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 187 1):	
Copper bolt.....	635.53
Cap on pipe.....	639.48
Buena Vista, 0.5 mile below, 15 meters back from bank of slough, in scattered elms about 500 meters above foot of willow-covered island; this island is separated from left bank of river by small slough 25 meters wide; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 187 2):	
Copper bolt.....	605.91
Cap on pipe.....	609.86
Cassville, 1.25 miles below, at road crossing, at east end of Cassville base, in public road, 6 meters south of south rail of Chicago, Burlington & Quincy R. R., 3 meters east of west road fence; copper bolt in tile surmounted by iron pipe (U. S. C. E. triang. sta. East Base):	
Copper bolt.....	624.98
Cap on pipe.....	628.93
Cassville, 0.5 mile below, at west end of Cassville Base, 1.5 meters north of south right of way fence of Chicago, Burlington & Quincy R. R., 50 meters below coal chute, 1 meter south of prolonged line of south rail of tangent; copper bolt in tile surmounted by iron pipe (U. S. C. E. triang. sta. West Base equals 188 2):	
Copper bolt.....	616.16
Cap on pipe.....	620.14

Cassville, 0.5 mile below, on small island opposite a pickle factory, 45 meters back from bank of river, 30 meters from slough at head of island, in small cleared space in willows; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 188 3):	
Copper bolt.....	603. 57
Cap on pipe.....	607. 53
Cassville, opposite Chicago, Burlington & Quincy R. R. station; base of rail.	620. 11

ELKADER QUADRANGLE.

[Latitude 42° 30'-43°; longitude 91°-91° 30'.]

From point above Cassville northerly near Mississippi River to point about half a mile above mouth of Wisconsin River.

Cassville, 2.5 miles above, on side of bluff 1 meter south of north fence along wagon road, 0.5 mile above rock barn, 50 meters north of Chicago, Burlington & Quincy R. R.; 50 meters above whistling post, 10 meters below small honeylocust tree standing near fence; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 189 1):	
Copper bolt.....	642. 14
Cap on pipe.....	646. 09
Island No. 189, 400 meters above its foot, 75 meters from right bank of Cassville Slough, 100 meters below mouth of small slough which empties into Cassville Slough, in small clearing on ridge; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 189 2):	
Copper bolt.....	605. 01
Cap on pipe.....	608. 97
Guttenberg, 3 miles below, 5 meters west of west right of way fence of Chicago, Burlington & Quincy R. R., 80 meters above railroad bridge, 300 meters above section post 25-24 and milepost 213-218; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 190 2):	
Copper bolt.....	621. 01
Cap on pipe.....	624. 29
Guttenberg, 3 miles below, on Island No. 189, on high ridge 80 meters from left bank of Guttenberg Channel, 25 meters above patch of trees and willows along river bank; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 190 3):	
Copper bolt.....	608. 37
Cap on pipe.....	612. 31
Guttenberg, at upper end of, on right of way of Chicago, Burlington & Quincy R. R., on side of bluff, 0.5 meter from fence, 5 meters above railroad bridge, 2 meters above bend in fence where fence runs down to bridge, 110 meters below milepost 221-210; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 191 2):	
Copper bolt.....	633. 71
Cap on pipe.....	637. 67
Swift Slough, on island in front of, 20 meters from left bank of Guttenberg Channel, 400 meters from head of island; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 191 3):	
Copper bolt.....	609. 03
Cap on pipe.....	612. 98
Glen Haven, in front of Chicago, Burlington & Quincy R. R.; base of rail.	624. 53

Glen Haven, 600 meters above, on right of way of Chicago, Burlington & Quincy R. R., 0.25 meter from fence, 60 meters above point of second curve above water tank at Glen Haven, immediately back of 15-foot railroad cut, 100 meters above mouth of slough running along foot of bluffs; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 192 2):	
Copper bolt.....	649. 51
Cap on pipe.....	651. 78
McMillan Island, 400 meters above head of, 15 meters back from river bank, bank in front of bench mark slopes gently, but about 100 meters below it is very steep; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 192 3):	
Copper bolt.....	609. 59
Cap on pipe.....	613. 53
Bagley, 1 mile below, on right of way of Chicago, Burlington & Quincy R. R., 0.5 meter from west fence, 120 meters below sign "Station One Mile," 220 meters below railroad bridge, on top of sand ridge directly behind a 15-foot railroad cut; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 193 1):	
Copper bolt.....	643. 88
Cap on pipe.....	647. 84
Island No. 181, 20 meters back from bank of river, 400 meters above foot of island; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 193 2):	
Copper bolt.....	609. 87
Cap on pipe.....	613. 82
Bagley, in front of Chicago, Burlington & Quincy R. R. station; base of rail.	626. 16
Clayton, 0.25 mile above, 8½ rail lengths below milepost 201-230, 210 meters above signboard "Station One Mile" (Bagley), on right of way of Chicago, Burlington & Quincy R. R., 1½ meters from fence, on slope of bluffs; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 194 1):	
Copper bolt.....	636. 63
Cap on pipe.....	640. 60
Wyalusing, in front of Chicago, Burlington & Quincy R. R. station; base of rail.....	628. 30
Wyalusing, directly in front of small perpendicular rock cliff, 93 meters above railroad station, 36 meters east of Chicago, Burlington & Quincy R. R. track, 1 meter from rock cliff on side of hill; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 195 2):	
Copper bolt.....	644. 86
Cap on pipe.....	648. 81
Island No. 176, 25 meters back from bank of river, 100 meters above head of Wyalusing Slough which is opposite Wyalusing, Wis., bank in front of bench mark is sloping sand; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 195 3):	
Copper bolt.....	612. 73
Cap on pipe.....	616. 68
Wisconsin River, 0.5 mile below mouth of, on south abutment of bridge 382 K, on river end on second course of stone from top, 1 foot from north-east corner of stone, marked "U □ S"; highest point in square (U. S. C. E. t. b. m. 231).....	627. 56

WAUKON QUADRANGLE.

[Latitude 43°-43° 30'; longitude 91°-91° 30'.]

From point above mouth of Wisconsin River near Mississippi River to Tippets Landing.

Wisconsin River, 0.5 mile above mouth of, 0.25 meter west of east right of way fence of Chicago, Burlington & Quincy R. R., 1 mile above bridge over Wisconsin River, 46 meters above upper end of approach to bridge (trestle), 3 meters above fence running out to cattle guard, 125 meters below milepost 194-237; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 196 1):	
Copper bolt.....	Fect. 637. 57
Cap on pipe.....	641. 54
Pictured Rocks, opposite, 0.5 mile above mouth of Wisconsin River, 125 meters back from river, 10 meters back from and about 200 meters below head of small slough; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 196 2):	
Copper bolt.....	610. 80
Cap on pipe.....	614. 75
Prairie du Chien, 2.5 miles below, where Chicago, Milwaukee & St. Paul Ry. crosses Chicago, Burlington & Quincy R. R.; base of rail.....	640. 87
Prairie du Chien, in lower part of, 200 meters east of Chicago, Burlington & Quincy R. R., 300 meters southeast of 2-story stone schoolhouse, 500 meters west of cemetery, 0.5 mile east of river bank, 1 meter north of east-west fence on north side and 1½ meters west of north-south fence on west side of wagon road; copper bolt in tile surmounted by iron pipe (U. S. C. E. triang. sta. Prairie du Chien):	
Copper bolt.....	654. 42
Cap on pipe.....	658. 37
Prairie du Chien, in old stock yards, 0.25 meter west of east line of property of Chicago, Milwaukee & St. Paul Ry., 150 meters back from river, directly back of large elevator 2 blocks south of Dousman House, 48 meters south of south line of Bridge Street; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 197 2):	
Copper bolt.....	619. 73
Cap on pipe.....	623. 69
Prairie du Chien, opposite waiting room of Chicago, Milwaukee & St. Paul Ry. station; base of rail.....	625. 5
Prairie du Chien, in north end of Diamond Jo warehouse, black line across cement block 2 feet square; high water mark, June 10, 1880.....	626. 87
Prairie du Chien, fastened to piling at north end of Diamond Jo warehouse; zero of gage.....	605. 23
Prairie du Chien, in open ground in upper part of, 0.25 mile back from river, 200 meters below east end of Chicago, Milwaukee & St. Paul R. R. bridge over Mississippi River, 30 meters southwest of west end of footbridge over slough; 6 meters south of footpath and at foot of small slope, 0.25 mile above Main Street bridge over slough, at south end of Prairie du Chien base line; copper bolt in tile surmounted by iron pipe (U. S. C. E. triang. sta. South Base):	
Copper bolt.....	614. 58
Cap on pipe.....	618. 45

Prairie du Chien, in open ground in upper part of, in grass field, 1,620 meters above preceding described bench mark, 15 meters east of small pond, 20 meters west of ditch which is 10 meters west of fence, 45 meters south of bend in fence, 100 meters north of another fence at south side of wagon road, at north end of Prairie du Chien base line; copper bolt in tile surmounted by iron pipe (U. S. C. E. triang. sta. North Base):	Feet.
Copper bolt.....	611. 21
Cap on pipe.....	615. 18
Prairie du Chien, 3 miles above, at head of Island No. 167, on property belonging to Franklin Walter, 1 meter east of east fence of wagon road which runs north from Prairie du Chien, 39 meters north of north fence of road running east, 600 meters west of foot of bluff, 50 meters north of brick house; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 198 1):	
Copper bolt.....	627. 43
Cap on pipe.....	631. 39
Island No. 166, 20 meters back from shore on high ground, 600 meters above head of Island No. 169; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 198 2):	
Copper bolt.....	616. 07
Cap on pipe.....	620. 05
Johnsonport, above, at mouth of Paint Creek, 600 meters below Picatee Creek, on side of Wisconsin bluffs, 6 meters east of east right of way fence of Chicago, Burlington & Quincy R. R., opposite a point 10 meters below telegraph pole marked "185-15", 100 meters below upper end of railroad curve, first curve below Picatee Creek; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 199 1):	
Copper bolt.....	659. 21
Cap on pipe.....	663. 17
Island No. 166, on high ground at west edge of garden, 30 meters below small house at north end of cultivated field, 20 meters back from shore, 15 meters south of dead 4-foot cottonwood tree which branches into four prongs about 12 feet above ground, opposite mouth of Paint Creek, 800 meters below Government light; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 199 2):	
Copper bolt.....	620. 10
Cap on pipe.....	624. 06
Island No. 163, on high ground, in bunch of cottonwood trees, 30 meters back from east shore, 100 meters above running slough opposite foot of Island No. 164, 25 meters north of small dry slough; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 200 3):	
Copper bolt.....	615. 02
Cap on pipe.....	618. 98
Island No. 162, 40 meters below head of, at foot of bluffs, 2 meters west of east right of way fence of Chicago, Burlington & Quincy R. R., 12 meters north of gate in road leading up large ravine; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 201 2):	
Copper bolt.....	640. 32
Cap on pipe.....	644. 27
Island No. 162, opposite head of, on irregular-shaped island just below Island No. 161, in small clump of heavy timber 15 meters from shore; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 201 3):	
Copper bolt.....	615. 65
Cap on pipe.....	619. 62

Lynxville, 1.25 miles below, 0.5 meter west of east right of way fence of Chicago, Burlington & Quincy R. R., 2 meters north of angle in fence, 54 meters below culvert 265, 350 meters below "One Mile" sign below Lynxville; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 202 2):	Feet.
Copper bolt.....	639. 22
Cap on pipe.....	643. 18
Island No. 158, 150 meters below head of island, on high ground, in bunch of elms, 50 meters back from shore; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 202 3):	
Copper bolt.....	614. 62
Cap on pipe.....	618. 58
Lynxville, opposite Chicago, Burlington & Quincy R. R. station; base of rail.....	634. 96
Lynxville, 1.5 miles above, 10 feet down track from p. b. m. 221, 12 feet west of center of embedded rock marked "U□S"; highest point in square (U. S. C. E. t. b. m. 206).....	Feet 632. 75
Lynxville, 2.5 miles above, 0.5 meter east of east right of way fence of Chicago, Burlington & Quincy R. R., 180 meters below lower end of long railroad curve, 250 meters above lower end of island; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 203 1):	
Copper bolt.....	643. 60
Cap on pipe.....	647. 55
Island No. 151, 50 meters back from shore, opposite center of small island, a little below a point opposite Government light, two large elm trees (one appears to be tallest tree in the vicinity) stand close to bench marks; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 203 2):	
Copper bolt.....	615. 69
Cap on pipe.....	619. 65
Ferryville, opposite Chicago, Burlington & Quincy R. R. station; base of rail.....	633. 57
Ferryville, in southeast corner of lot belonging to W. T. Robertson, on side of bluff, about 150 meters above railroad station; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 204 1):	
Copper bolt.....	674. 44
Cap on pipe.....	678. 42
Carol Island, 250 meters below head of Ferry Slough, 25 meters back from shore, opposite foot of first small island below head of Ferry Slough, 100 meters above log cabin, in bunch of elm trees; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 204 2):	
Copper bolt.....	618. 62
Cap on pipe.....	622. 59
Lansing, 2.5 miles below, 0.5 mile above Island No. 147, 3 miles above Ferryville, 0.8 mile above Rush Creek, 260 meters below culvert 288, 360 meters below milepost 165-266, 0.5 meter outside of right of way fence of Chicago, Burlington & Quincy R. R. (bluff side); copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 205 1 equals 206 1):	
Copper bolt.....	653. 23
Cap on pipe.....	657. 17
Island No. 148, 400 meters above head of, on large island, in bunch of willows, 50 meters back from shore, 150 meters above head of bay; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 205 2):	
Copper bolt.....	615. 50
Cap on pipe.....	619. 45

Lansing, 1 mile above railroad station, on Island No. 146, on high ground, in bunch of elm trees, 40 meters back from shore at Government light; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 206 2):	Feet.
Copper bolt.....	619. 61
Cap on pipe.....	623. 57
Island No. 140, opposite foot of Island No. 141, 30 meters back from shore, 100 meters below upper end of timber, 30 meters below old shed, inside a lot, 1 meter from east fence; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 207 3):	
Copper bolt.....	620. 70
Cap on pipe.....	624. 67
De Soto, opposite Chicago, Burlington & Quincy R. R. station; base of rail. Island No. 140, 300 meters above point opposite mouth of large bay, 1 mile above De Soto, in grass and open timber 30 meters from river bank; copper bolt in tile surmounted by iron pipe (U. S. C. E. triang. sta. "Lower Base"):	636. 28
Copper bolt.....	620. 45
Cap on pipe.....	624. 39
De Soto, 2 miles above, at northwest end of De Soto base line, on island No. 140, 10 meters from right bank of main channel of river, 545 meters above wire fence extending west from top of bank, 200 meters below diamond board on right bank; copper bolt in tile surmounted by iron pipe (U. S. C. E. triang. sta. "Upper Base"):	
Copper bolt.....	621. 58
Cap on pipe.....	625. 53
Battle Island (No. 137), on high sand ridge, 0.5 mile above foot of island, 75 meters from edge of sand bar, 20 meters from main bank, 100 meters below lower end of small willows on bar; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 208 2):	
Copper bolt.....	622. 11
Cap on pipe.....	626. 06
Victory, opposite Chicago, Burlington & Quincy R. R. station; base of rail..	637. 50

STODDARD QUADRANGLE.

[Latitude 43° 30'-43° 45'; longitude 91°-91° 15'.]

From Tippetts Landing northerly near Mississippi River to mouth of Root River.

Island No. 135, 100 meters above its lower end, 100 meters above lower end of timber, on ridge, 50 meters back from shore, 200 meters below point opposite warehouse at Tippetts landing; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 209 3):	
Copper bolt.....	622. 09
Cap on pipe.....	626. 05
Island No. 128, 150 meters above head of, 1 meter west of east right of way fence of Chicago, Burlington & Quincy R. R., 80 meters above 20-foot trestle No. 222 at upper side of large ravine, in front of bare rocky cliff, 50 meters below upper edge of cultivated lot, 0.25 mile below milepost 152; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 210 1):	
Copper bolt.....	644. 23
Cap on pipe.....	648. 21
Island No. 128, 100 meters above point opposite head of, in scattered timber on left bank, 8 meters from river bank, back of lower end of sand bar; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 210 2):	
Copper bolt.....	624. 51
Cap on pipe.....	628. 47

Genoa, at lower end of town, a little below station and close to railroad, at south end of same house on which old U. S. b. m. "i" is located; cut in west front, high-water mark (U. S. C. E. b. m.).....	Feet. 635. 91
Genoa, opposite Chicago, Burlington & Quincy R. R. station; base of rail. Genoa, in church lot, 0.5 meter east of north-south fence, 50 meters south of church; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 211 2):	638. 9
Copper bolt.....	692. 55
Cap on pipe.....	696. 52
Genoa, 4 miles above, at edge of first large timber reached after leaving river bank; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 212 1):	
Copper bolt.....	623. 43
Cap on pipe.....	627. 39
Fairy Rock, opposite foot of small narrow island; 10 meters from river, opposite a 1½-story frame house; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 212 2):	
Copper bolt.....	627. 27
Cap on pipe.....	631. 17
Brownsville, 1 mile below, on left bank opposite head of Island No. 120, 50 meters from shore, near large lone elm; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 213 1):	
Copper bolt.....	627. 86
Cap on pipe.....	631. 82
Island No. 120, in grass on high ground, 75 meters below head of island, 50 meters back from west shore; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 213 2):	
Copper bolt.....	628. 42
Cap on pipe.....	632. 39
Brownsville, 2 miles above, on ridge between two lakes (or sloughs), 100 meters above their junction; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 214 1):	
Copper bolt.....	630. 19
Cap on pipe.....	634. 15
Island No. 116, back of, 400 meters above head of Crosby Slough, 100 meters above foot of Island No. 116, 10 meters back from bank of slough; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 214 2):	
Copper bolt.....	630. 69
Cap on pipe.....	634. 64

LA CROSSE QUADRANGLE.

[Latitude 43° 45'-44"; longitude 91°-91° 15'.]

From mouth of Root River northerly near Mississippi River to River Junction.

Root River, at mouth of, 5 meters from east bank of lake, 40 meters below lower edge of bunch of heavy timber, 250 meters above hay shed; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 215 1):	
Copper bolt.....	633. 64
Cap on pipe.....	637. 59
Island No. 112, 50 meters back from river bank, in lower edge of heavy timber, opposite mouth of Root River; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 215 2):	
Copper bolt.....	629. 97
Cap on pipe.....	633. 96

La Crosse, on Eighteenth Street, on right of way of Green Bay & Western R. R., 0.5 meter west of east fence and 50 meters south of south line of Market Street; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 216 1):	Feet.
Copper bolt.....	606. 73
Cap on pipe.....	670. 67

LA CRESCENT QUADRANGLE.

[Latitude 43° 45'-44°; longitude 91° 15'-91° 30'.]

From River Junction northerly near Mississippi River to Lamolle.

La Crosse, at northeast corner of Market and Third streets; cross cut in square plug on top of hydrant (U. S. C. E. b. m. 216 2).....	669. 45
La Crosse, 3 miles above, on north bank of slough, at edge of open field among some maple, ash, and willow trees, 46 meters east of wire fence, on property belonging to Mr. Clark; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 217 1):	
Copper bolt.....	632. 98
Cap on pipe.....	636. 94
Island No. 101, 200 meters below point opposite River Junction, 30 meters back from river bank, 15 meters below slough with dam across head; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 217 2):	
Copper bolt.....	634. 92
Cap on pipe.....	638. 87
Dresbach Island, at foot of, at edge of timber, 20 meters east of east edge of dry lake; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 218 1):	
Copper bolt.....	632. 23
Cap on pipe.....	636. 19
Dresbach Island, opposite foot of, in small timber, 30 meters back from left bank, 30 meters above a small slough, 500 meters above small house; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 218 2):	
Copper bolt.....	636. 12
Cap on pipe.....	640. 09
Dakota, at upper end of, 140 meters north of road, 50 meters west of junction of sloughs, 165 meters north of J. Dolphin's house, in pasture; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 219 1):	
Copper bolt.....	636. 80
Cap on pipe.....	640. 76
French Island, 350 meters below head of slough, at head of island, in bunch of large trees, 5 meters back from river bank, near lower end of sand bar; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 219 2):	
Copper bolt.....	638. 90
Cap on pipe.....	642. 86
Trempealeau, 4 miles below, on east bank and in bend of swale; just above an S bend in swale, 240 meters northeast of slough crossing stone line; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 220 1):	
Copper bolt.....	636. 73
Cap on pipe.....	640. 70
Island No. 89, 75 meters below second dam below head of, 25 meters back from left bank of river; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 220 2):	
Copper bolt.....	339. 95
Cap on pipe.....	643. 90

Trempealeau, 1.5 miles below, on east end of Trempealeau base line, on east side of meadow land, 15 meters west of Third Lake near its lower end; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 221 1 equals triang. sta. East Base):

	Feet.
Copper bolt.....	640. 06
Cap on pipe.....	644. 04

Island No. 87, opposite head of, 20 meters back from left bank of river, 150 meters above dam across slough; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 221 2):

Copper bolt.....	642. 60
Cap on pipe.....	646. 55

GALESVILLE QUADRANGLE.

[Latitude 44°-44° 15'; longitude 91° 15'-91° 30'.]

From Lamolille northerly near Mississippi River to point 6 miles below bridge at Winona.

Lamolille, opposite, on property belonging to John McCarty, in corner of fence, 0.5 meter from fence along railroad, 50 meters above house, opposite foot of small island; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 222 2):

Copper bolt.....	675. 57
Cap on pipe.....	679. 53

Trempealeau, in front of Chicago, Burlington & Quincy R. R. station; base of rail.....

653. 57

Trempealeau, just above station, in southwest corner of southwest foundation stone under water tank, marked "B. M. 88.36"; square cut (railroad bench mark).....

654. 13

WINONA QUADRANGLE.

[Latitude 44°-44° 15'; longitude 91° 30'-91° 45'.]

From point 6 miles below Winona northerly near Mississippi River to point 3 miles above Fountain City.

Winona, 6 miles below bridge at, 975.0 meters back of b. m. 223 2, on bank of slough, on open ground about midway between two points of small timber, 290 meters back from lake; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 223 1):

Copper bolt.....	641. 28
Cap on pipe.....	645. 26

Blacksmith Slough, 150 meters back from, 125 meters back from railroad track, opposite point about 300 meters above lower end of Blacksmith Slough, about opposite center of first curve above lower end of Blacksmith Slough, among three lone elm trees on high ground; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 223 2):

Copper bolt.....	640. 54
Cap on pipe.....	644. 66

Homer, 1.5 miles above, near lone cottonwood tree 75 meters south of Chicago, Burlington & Quincy R. R., between two long trestles and opposite a point about 100 meters above lower trestle; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 224 1):

Copper bolt.....	642. 81
Cap on pipe.....	646. 80

Island No. 74, nearly opposite head of, on north bank of small slough, 150 meters back from bank of river, on clear ground with exception of small bunches of brush; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 224 2):	Feet.
Copper bolt.....	647. 68
Cap on pipe.....	651. 60
Winona, about 75 meters toward river from Chicago, Burlington & Quincy R. R., in open ground, 50 meters below river end of wagon bridge; bridge is first one from railroad track toward Winona and on road which crosses river at Winona; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 225 1):	
Copper bolt.....	644. 39
Cap on pipe.....	648. 49
Winona, on east side of road, 35 meters from Wisconsin end of Winona wagon bridge, 10 meters from road, 1 meter north of prolongation of south side of stone road house, in willow grove; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 225 2):	
Copper bolt.....	646. 82
Cap on pipe.....	650. 79
Winona, opposite, crossing of Chicago, Burlington & Quincy R. R. with Chicago & North Western Ry.; base of rail.....	659. 37
Wild landing, 2 meters from west fence at, opposite point 30 meters above north wall of Mr. Wild's stone house, outside of right of way of Chicago, Burlington & Quincy R. R.; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 226 2):	
Copper bolt.....	660. 05
Cap on pipe.....	664. 01
Island No. 66, 10 meters back from east bank, 250 meters from dam between Islands No. 66 and No. 65, in bunch of large cottonwood trees; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 226 3):	
Copper bolt.....	648. 77
Cap on pipe.....	652. 71
Milepost 99, 900 feet above, in ledge of rock, east side of cut, marked "B. M." (probably a railroad bench mark); square cut (U. S. C. E. t. b. m. 28).....	668. 81
Fountain City, at lower end of, on top of bank of river, 75 meters below lower end of rock wall along railroad track, 10 meters west of center of main track of Chicago, Burlington & Quincy R. R., 25 meters below lower end of curve, 75 meters above head of small slough; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 227 2):	
Copper bolt.....	659. 45
Cap on pipe.....	663. 41
Island No. 60, on property of William Murr, 75 meters back from river, on line of east-west fence which is Mr. Murr's north line; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 227 3):	
Copper bolt.....	648. 91
Cap on pipe.....	652. 90
Fountain City, in front of Chicago, Burlington & Quincy R. R. station; base of rail.....	662. 17

MINNEISKA QUADRANGLE.

[Latitude 44°-44° 15'; longitude 91° 45'-92°.]

From point about 3 miles above Fountain City northerly near Mississippi River to point 3 miles below Alma.

Fountain City, 3 miles above, in high open ground, 25 meters west of small slough, at lower end of ridge, near lone ash tree, 856.7 meters back of following-described bench mark; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 228 1):	Fect.
Copper bolt.....	649. 13
Cap on pipe.....	653. 12
Island No. 55, opposite foot of, on left bank, about 40 meters back from shore, 180 meters above log house which stands on bank of river, 225 meters above slough which puts out from river; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 228 2):	
Copper bolt.....	652. 20
Cap on pipe.....	656. 15
Island No. 55, on right shore of, 25 meters back from bank, 50 meters below lower end of towhead, 600 meters below head of Island No. 55, in bunch of willow trees; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 228 3):	
Copper bolt.....	651. 76
Cap on pipe.....	655. 72
Chimney Rock, 0.5 mile above, in partly cleared opening in timber, 453 meters back of b. m. 229 2, 355 meters back of slough, 20 meters in front of low marshy ground with slough running through center; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 229 1):	
Copper bolt.....	651. 91
Cap on pipe.....	655. 98
Island No. 51, behind center of willow bar above head of, 8 meters from bank, in large timber, 20 meters in front of large slough; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 229 2):	
Copper bolt.....	656. 90
Cap on pipe.....	660. 97
Sommerfield's Island, 0.5 mile below head of lower island behind, in group of three large trees, 50 meters from north bank; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 230 1):	
Copper bolt.....	658. 18
Cap on pipe.....	662. 11
Island No. 40, opposite head of, in grove of large timber behind center of large willow bar, 30 meters in front of and 120 meters above mouth of small slough; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 230 2):	
Copper bolt.....	654. 37
Cap on pipe.....	658. 34
Island No. 46, 7 meters back from bank of Pomme de Terre Slough, 500 meters above mouth of Buffalo City Slough, 535.9 meters back of b. m. 231 2; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 231 1):	
Copper bolt.....	658. 80
Cap on pipe.....	662. 83
Island No. 46, 30 meters back from shore, on high ground, 50 meters below log house, 300 meters above head of Buffalo City Slough; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 231 2):	
Copper bolt.....	658. 24
Cap on pipe.....	662. 19

ALMA QUADRANGLE.

[Latitude 44° 15'-44° 30'; longitude 91° 45'-92°.]

From point 3 miles below Alma northerly near Mississippi River to point 1.25 miles below Wabasha.

Island No. 41, back of, on right of way of Chicago, Burlington & Quincy R. R., 0.5 meter west of east fence, 34 rail lengths below milepost 349-82; 14 rail lengths below bridge 447, about midway between two frame houses which stand about 0.5 mile apart; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 232 1):	
Copper bolt.....	Feet. 668. 45
Cap on pipe.....	672. 43
Island No. 41, 25 meters back from bank of river, 1.5 miles above foot of island, 50 meters below small slough, 50 meters below upper end of revetment; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 232 2):	
Copper bolt.....	661. 04
Cap on pipe.....	665. 00
Island No. 42, 15 meters back from bank of river, in group of elm trees, about 0.8 mile above foot of island, in front of open spot; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 232 3):	
Copper bolt.....	658. 88
Cap on pipe.....	662. 88
Alma, at lower end of, 0.5 meter west of south line of street, 8 meters west of west line of alley between Main and Second streets, south line of street is Carl L. Schultz's north line, street has steps from Main to Second street and is 1½ blocks south of Alma brewery; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 233 2):	
Copper bolt.....	700. 01
Cap on pipe.....	703. 97
Alma, in front of Chicago, Burlington & Quincy R. R. station; base of rail..	673. 98
Island No. 35, west bank of Beef Slough, 0.5 mile above railroad bridge across Beef River, 30 meters below line of south wall of building which is farthest down slough in a small village and stands west of railroad track, 5 meters back from bank, a large 2-foot elm tree stands on edge of bank southeast of bench mark; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 234 1):	
Copper bolt.....	668. 22
Cap on pipe.....	672. 21
Island No. 35, 80 meters back from bank of river, 0.8 mile below foot of Grand Encampment Island, on high ground, 450 meters above a house standing on bank of river; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 234 2):	
Copper bolt.....	664. 97
Cap on pipe.....	668. 94
Alma, 2 miles above, on Chicago, Burlington & Quincy R. R. bridge over Beef River; top of southwest corner of coping stone on upper pier (U. S. C. E. t. b. m. 38).....	674. 27
Wabasha, 1.25 miles below, in open ground near 10-inch lone oak tree, 50 meters east of edge of timber; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 235 1):	
Copper bolt.....	663. 83
Cap on pipe.....	667. 94

Wabasha, 1.25 miles below, on left bank, 20 meters back of revetted bank, on high ground in grass, east of a very large elm tree which stands on edge of bank opposite foot of willow bar; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 235 2):	
Copper bolt.....	Feet. 666. 11
Cap on pipe.....	670. 07

WABASHA QUADRANGLE.

[Latitude 44° 15'-44° 30'; longitude 92°-92° 15'.]

From point 1.25 miles below Wabasha northerly near Mississippi River to point near upper end of Lake City.

Nelson, in front of Chicago, Burlington & Quincy R. R. station; base of rail.....	679. 99
Island No. 29, 0.5 mile below, in timber on bank of small slough, 844.7 meters back of 236 2); copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 236 1):	
Copper bolt.....	667. 09
Cap on pipe.....	671. 11
Island No. 29, 0.5 mile below, on left bank at lower end of small patch of willows and at upper end of open grassy spot, 0.5 mile below head of slough, 10 meters back from bank; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 236 2):	
Copper bolt.....	667. 98
Cap on pipe.....	671. 97
Reeds Landing, opposite, on low flat ground, 220 meters from left bank of river on property of Mrs. S. F. Richards, 45 meters west of Chicago, Milwaukee & St. Paul Ry. trestle to bridge, 205 meters southwest of end of trestle and between trestle and small pond; copper bolt in tile surmounted by iron pipe (U. S. C. E. triang. sta. Bottom):	
Copper bolt.....	668. 02
Cap on pipe.....	671. 99
Reads Landing, 1.25 miles above, near foot of Lake Pepin, in small timber 20 meters toward river from large open spot and 944 meters back of b. m. 237 2; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 237 1):	
Copper bolt.....	667. 38
Cap on pipe.....	671. 44
Lake Pepin, 200 meters below point where widening of river begins, 50 meters back from left bank of river, on shore of and 35 meters below head of bay; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 237 2):	
Copper bolt.....	670. 96
Cap on pipe.....	674. 93
Pepin, at upper end of, 0.5 meter north of south fence of wagon road, 4 meters west of west line of fence of another wagon road which runs north from first road, first road runs east-west at foot of bluffs; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 238 1):	
Copper bolt.....	753. 63
Cap on pipe.....	757. 59
Pepin, in upper end of, in corner of fence at northwest corner of Fourth and Locust Streets, 0.5 meter northeast of corner, on property of Orrin G. Fuller; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 238 2):	
Copper bolt.....	733. 05
Cap on pipe.....	737. 01

Pepin, in front of Chicago, Burlington & Quincy R. R. station; base of rail.....	Feet. 683.04
Lakeport, on edge of sand terrace at, 0.25 mile below mouth of Deer Lake, 100 meters from shore of Lake Pepin, 10 meters north of right-of-way fence of Chicago, Burlington & Quincy R. R., 21 meters southeast of southeast corner of small frame house belonging to Mrs. N. O. Murray, 6 meters west of small ravine, in sec. 22, T. 23, R. 15; copper bolt in tile surmounted by iron pipe (U. S. C. E. triang. sta. Lakeport):	
Copper bolt.....	708.84
Cap on pipe.....	712.80
Lake City, 2.5 miles below, on right of way of Chicago, Burlington & Quincy R. R., 0.5 meter south of north right-of-way fence, 58 meters above bridge 482, 43 meters above north-south fence; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 239 1):	
Copper bolt.....	676.78
Cap on pipe.....	680.74
Lake Pepin, on top of left bank of, 0.5 meter west of north-south fence, 1 mile below point where bluffs come out to lake, back of gravel beach; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 239 2):	
Copper bolt.....	674.28
Cap on pipe.....	678.24

LAKE CITY QUADRANGLE.

[Latitude 44° 15'-44° 30'; longitude 92° 15'-92° 30'.]

From point near upper end of Lake City northerly near Mississippi River to point near Florence.

Stockholm, 300 meters below station, on right of way of Chicago, Burlington & Quincy R. R., 115 meters below headblock of switch, 140 meters above milepost 58-373, 1½ meters north of south right-of-way fence, 1½ meters west of fence running to cattle guard; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 240 2):	
Copper bolt.....	686.21
Cap on pipe.....	690.17
Stockholm, at Chicago, Burlington & Quincy R. R. station; base of rail..	687.77

MAIDEN ROCK QUADRANGLE.

[Latitude 44° 30'-44° 45'; longitude 92° 15'-92° 30'.]

From point near Florence northerly near Mississippi River to point below Red Wing.

Maiden Rock, 2 meters from fence directly in front of, on right of way of Chicago, Burlington & Quincy R. R., 7 meters north of telegraph pole marked "55 20," 110 meters above a post marked "57 58," 125 meters above crossing sign; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 241 2):	
Copper bolt.....	689.00
Cap on pipe.....	692.97
Maiden Rock City, 1 mile below, on left bank, at foot of bluff on north side of Pine Creek, on property of W. M. Hawkinson, 200 meters above bridge across Pine Creek, 15 meters back from Chicago, Burlington & Quincy R. R. track, along path running from track to Mr. Hawkinson's house; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 242 2):	
Copper bolt.....	681.14
Cap on pipe.....	685.11

Maiden Rock City, in front of Chicago, Burlington & Quincy R. R. station; base of rail	Feet. 682. 38
Lake Pepin, on left bank of, on south side of bluff, in line with right-of-way fence of Chicago, Burlington & Quincy R. R., outside corner of right-of-way fence and fence running toward track, back of a gravel beach, 175 meters below milepost 384-47, about 1 mile above Warrenton; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 243 2):	
Copper bolt.....	695. 54
Cap on pipe.....	699. 52
Bay City, 0.5 mile below, on side of bluff 1½ meters outside of right of way of Chicago, Burlington & Quincy R. R., directly back of telegraph pole marked 44 15, burnt snag stands 4 meters northwest of bench mark, 25 meters above lower end of first curve below Bay City; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 244 2):	
Copper bolt.....	703. 55
Cap on pipe.....	707. 53
RED WING QUADRANGLE.	
[Latitude 44° 30'-44° 45'; longitude 92° 30'-92° 45'.]	
From point 2 miles below Red Wing northerly near Mississippi River to point 3 miles below Prescott.	
Goose Bay, opposite head of, on property of L. P. Johnson, 100 meters below his house, 0.5 meter east of north-south fence, 4 meters back from edge of sand ridge; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 245 1):	
Copper bolt.....	757. 01
Cap on pipe.....	760. 98
Island No. 24, opposite foot of Island No. 25, 20 meters back from bank, 100 meters below point where a small slough with revetted banks connects river and lower lake; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 245 2):	
Copper bolt.....	672. 07
Cap on pipe.....	676. 04
Bay City, in front of Chicago, Burlington & Quincy R. R. station; base of rail.....	689. 44
Hager, in front of Chicago, Burlington & Quincy R. R. station; base of rail..	708. 79
Upper Lake, 200 meters below foot of, on sand ridge, 1.8 miles below Hager, 50 meters north of Chicago, Burlington & Quincy R. R. track, 25 meters west of small ravine, on property of Leonard Eaton, in sec. 1, T. 25, R. 18, Pierce County, Wis.; copper bolt in tile surmounted by iron pipe (U. S. C. E. triang. sta. "Lower Base"):	
Copper bolt.....	761. 70
Cap on pipe.....	765. 67
Upper Lake, 30 meters from edge of bank of, in timber, 467.0 meters back from the following-described bench mark; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 246 1):	
Copper bolt.....	670. 29
Cap on pipe.....	674. 29
Red Wing, 1.5 miles above, on Island No. 24, in grassy spot 20 meters back from bank of river, 175 meters above small running slough which connects river and upper end of Upper Lake; copper-bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 246 2):	
Copper bolt.....	674. 68
Cap on pipe.....	678. 63

Trenton, 3 miles above Red Wing, on edge of sand terrace, 75 meters from river, 150 meters below mouth of Trenton Slough, in sec. 23, R. 18, T. 25, Pierce County; copper bolt in tile surmounted by iron pipe (U. S. C. E. triang. sta. Trenton):		Foot.
Copper bolt.....		761.25
Cap on pipe.....		765.21
Trenton, 1 mile above, on top and edge of sand ridge, near wire fence on property of R. Johnson, 150 meters up river from wagon bridge, 50 meters below point where small slough strikes sand bluff and runs along foot of same, surrounded by black-oak tree; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 247 1):		
Copper bolt.....		755.30
Cap on pipe.....		759.29
Island No. 23, 75 meters below point opposite head of an island opposite, on left bank, 15 meters back from bank of chute, 1 mile above Trenton, 150 meters above mouth of small slough; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 247 2):		
Copper bolt.....		672.04
Cap on pipe.....		676.04
Trenton, 1.3 miles above, on left bank, 2 meters back from bank of river; top of stone monument dressed to 8 inches square at top, probably an old U. S. b. m. (U. S. C. E. t. b. m. 84, L. B.)		675.28
Diamond Bluff, 1 mile below, at west end of sand terrace on large mound, 0.25 mile below Trim Belle River, 0.5 mile from bluffs, on property of Gus Mero; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 248 1: same as triang. sta. Mero):		
Copper bolt.....		751.38
Cap on pipe.....		755.35
Diamond Bluff, 1 mile below, about 600 meters above mouth of Trim Belle River, 30 meters back from left bank of river, bank is revetted in front of bench mark, three elm trees stand on slope of revetted bank just below bench mark which is about 20 meters above upper tree and 75 meters above fence; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 248 2):		
Copper bolt.....		673.47
Cap on pipe.....		677.45
Diamond Bluff, 2.25 miles above, in timber, 20 meters back from bank of river, 230 meters below Government light, 500 meters below a small slough which runs to bluffs, 400 meters below triangulation station Diamond; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 249 2):		
Copper bolt.....		674.72
Cap on pipe.....		678.68
Diamond Bluff, 5 miles above, on right of way of Chicago, Burlington & Quincy R. R., 0.5 meter from fence, 300 meters above railroad bridge across Big River, 55 meters above telegraph post 2/8/2/0, 15 feet above track; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 250 2):		
Copper bolt.....		700.71
Cap on pipe.....		704.67

CANNON FALLS QUADRANGLE.

[Latitude 44° 30'-44° 45'; longitude 92° 45'-93°.]

From point 3 miles below Prescott northerly near Mississippi River to bridge over St. Croix River at Prescott.

Prescott, 3 miles below, at head of Island No. 20, 250 meters below a trestle over creek and opposite head of Island No. 20, 1½ meters north of north right of way fence of Chicago, Burlington & Quincy R. R., on sand ridge on property of Edward Scharr; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 251 2):

Copper bolt.....	Fest. 712. 59
Cap on pipe.....	716. 56

Prescott, 25.9 meters east of end of Chicago, Burlington & Quincy R. R. bridge, 10 meters toward river from first street running parallel to river and 10 meters downstream from line of bridge, 10 feet lower than railroad track; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. 252 2):

Copper bolt.....	683. 17
Cap on pipe.....	687. 14

PORTAGE QUADRANGLE.

[Latitude 43° 30'-43° 45'; longitude 89° 15'-89° 30'.]

Along Fox River.

Portage Old Lock No. 1, 25 feet to right of face of right wall of old lock and 84.6 feet above upper end of upper gate recess of new lock; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. Portage Old Lock No. 1):

Copper bolt.....	787. 27
Cap on pipe.....	791. 27

Fort Winnebago Lock No. 1, 38 feet to left of face of left wall of lock and 52.8 feet below upper hollow quoin; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. Fort Winnebago Lock No. 1):

Copper bolt.....	779. 28
Cap on pipe.....	783. 28

MONTELLO QUADRANGLE.

[Latitude 43° 45'-44°; longitude 89° 15'-89° 30'.]

Along Fox River.

Governor Bend Dam No. 1, 20 feet from right bank of river, 154 feet above crest of dam; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. Governor Bend Dam No. 1):

Copper bolt.....	777. 88
Cap on pipe.....	781. 88

Montello Lock No. 1, 20 feet from right bank of canal at point 52.4 feet above head wall of lock; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. Montello Lock No. 1):

Copper bolt.....	771. 79
Cap on pipe.....	775. 79

NESHKORO QUADRANGLE.

[Latitude 43° 45'-44°; longitude 89°-89° 15'.]

Along Fox River.

Grand River Lock No. 1, 85 feet to right of face of right lock wall, 82.5 feet above lower gate recess, 30 feet from nearest corner of lock house; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. Grand River Lock No. 1):	Feet.
Copper bolt.....	764. 62
Cap on pipe.....	768. 62
Princeton Lock No. 1, 50 feet to left of face of left wall of lock and 32.5 feet below upper hollow quoin, 43.6 feet above upper side of lock house; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. Princeton Lock No. 1):	
Copper bolt.....	761. 23
Cap on pipe.....	765. 23
White River Lock No. 1, 67 feet to right of face of right wall of lock and 37.5 feet below upper end of head wall, 36 feet from nearest corner of lock house; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. White River Lock No. 1):	
Copper bolt.....	761. 60
Cap on pipe.....	765. 60

RIPON QUADRANGLE.

[Latitude 43° 45'-44°; longitude 88° 45'-89°.]

Along Fox River.

Berlin Lock No. 1, 103 feet to left of, on line with lower hollow quoin; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. Berlin Lock No. 1):	
Copper bolt.....	752. 20
Cap on pipe.....	756. 20

POYSIPPI QUADRANGLE.

[Latitude 44°-44° 15'; longitude 88° 45'-89°.]

Along Fox River.

Eureka Lock No. 1, 51.5 feet to left of face of upper recess wall and 8 feet below line of tripods; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. Eureka Lock No. 1):	
Copper bolt.....	749. 60
Cap on pipe.....	753. 60

OSHKOSH QUADRANGLE.

[Latitude 44°-44° 15'; longitude 88° 30'-88° 45'.]

Along Fox River.

Oshkosh, northeast corner of Water and W. Division streets, on top of southwest corner of stone water table of Wilson's block; point 1 inch from edge of stone (U. S. C. E. b. m. Omro No. 1).....	759. 187
Oshkosh, corner of Otter and State streets, at east entrance to City Hall, in south end of stone threshold; copper bolt (U. S. C. E. b. m. Oshkosh No. 1).....	755. 389

Oshkosh, Chicago & North Western Ry. bridge crossing Fox River at Broad Street, in lower end of left abutment of draw span, 3 feet 2 inches from point of pier and in center of same; copper bolt (U. S. C. E. b. m. Oshkosh No. 3).....	Feet. 751. 716
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FOND DU LAC QUADRANGLE.

[Latitude 43° 45'-44°; longitude 88° 15'-88° 30'.]

At Fond du Lac.

Fond du Lac, north wing of right abutment of Scott Street bridge, in top surface of top course of stone, 28.2 feet from face of abutment; copper bolt (U. S. C. E. b. m. Fond du Lac No. 1).....	753. 966
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NEENAH QUADRANGLE.

[Latitude 44°-44° 15'; longitude 88° 15'-88° 30'.]

Menasha Dam No. 5, in upper right corner of right abutment of sluiceway of dam; copper bolt (U. S. C. E. Menasha Dam No. 5).....	751. 053'
Menasha Lock No. 1, on right side of lock, 2.6 feet from wall of lock house, 11.5 feet below front of building; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. Manasha Lock No. 1):	
Copper bolt.....	746. 75
Cap on pipe.....	750. 75

APPLETON QUADRANGLE.

[Latitude 44° 15'-44° 30'; longitude 88° 15'-88° 30'.]

Along Fox River.

Appleton First Lock No. 1, in upper left corner of right head wall of lock, 4 inches from edge of stone; copper bolt (U. S. C. E. b. m. Appleton First Lock No. 1).....	741. 841
Appleton Fourth Lock No. 1, left of left lock wall, 38 feet below lower front corner and 43 feet below lower rear corner of lock house, lower front corner being 45 feet above lower gate recess and 31.6 feet from lock wall; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. Appleton Fourth Lock No. 1):	
Copper bolt.....	706. 22
Cap on pipe.....	710. 22
Cedars Lock No. 2, on left side of lock, 20 feet from lower front corner, 13 feet from lower rear corner of lock house, lower end of lock house being 26 feet above head wall of lock and 14.5 feet from face of wing wall; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. Cedars Lock No. 2):	
Copper bolt.....	699. 087
Cap on pipe.....	703. 09
Little Chute Second Lock No. 1, in coping of right head wall, 1.7 feet above gate recess and 1.2 feet from left edge of wall; copper bolt (U. S. C. E. b. m. Little Chute Second Lock No. 1).....	695. 590
Little Chute Combined Locks No. 1, on right side of lock, 40.5 feet below upper hollow quoin, 31.5 feet from face of lock wall; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. Little Chute Combined Locks No. 1):	
Copper bolt.....	673. 44
Cap on pipe.....	677. 44

Kaukauna First Lock No. 1, on left side of lock, 32.5 feet below lower hollow quoin, on line with upper end of lock house, 36 feet to left of same; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. Kaukauna First Lock No. 1):		
Copper bolt.....		Feet. 658. 12
Cap on pipe.....		662. 12
Kaukauna Fifth Lock No. 1, on left side of canal, on line with upper end of lock house, 6.4 feet to left of face of core wall, 24.8 feet above lower end of same; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. Kaukauna Fifth Lock No. 1):		
Copper bolt.....		611. 92
Cap on pipe.....		615. 92
Rapide Croche Lock No. 1, on right side of lock, 74 feet above upper end of head wall, 35 feet from line of inner face of lock wall; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. Rapide Croche Lock No. 1):		
Copper bolt.....		604. 57
Cap on pipe.....		608. 57
Little Kaukauna Lock No. 2, on right side of lock, 48 feet above upper hollow quoin, 24 feet from line of inner face of lock wall; copper bolt in tile surmounted by iron pipe (U. S. C. E. b. m. Little Kaukauna Lock No. 2):		
Copper bolt.....		596. 84
Cap on pipe.....		600. 84

APPENDIX C.

SECONDARY ELEVATIONS.

Secondary elevations from records and topographic maps of the United States Geological Survey, including altitudes of well-known summits and other points, are given below. These elevations are approximate only and should not be used for accurate work.

Locality.	Quadrangle.	County.	Elevation (feet).
Attica.....	Evansville.....	Green.....	843
Beaver Lake, water surface.....	Oconomowoc.....	Waukesha.....	910
Black Earth.....	Cross Plains.....	Dane.....	820
Castle Rock triangulation station.....	Sparta.....	Monroe.....	1,335
Clear Lake, water surface.....	Koshkonong.....	Rock.....	800
De Forest.....	Madison.....	Dane.....	947
Fowler Lake, water surface.....	Oconomowoc.....	Waukesha.....	861
Fries Lake, water surface.....	.....do.....	Washington.....	958
Genesee Lake, water surface.....	.....do.....	Waukesha.....	866
Government Hill triangulation station.....	.....do.....	.....do.....	1,233
Holy Hill triangulation station.....	.....do.....	Washington.....	1,361
Keesus Lake, water surface.....	.....do.....	Waukesha.....	958
Kegonsa Lake, water surface.....	Evansville.....	Dane.....	842
Koshkonong Lake, water surface.....	Koshkonong.....	Jefferson and Rock.....	777
Liberty Pole Hill.....	Evansville.....	Green.....	1,102
Little Lake Butte Des Morts.....	Neenah.....	Winnebago.....	739
Mendota Lake, water surface.....	Madison.....	Dane.....	849
Michigan Lake, water surface.....	Milwaukee.....	Bayview.....	581
Do.....	Bay View.....	Milwaukee.....	581
Do.....	Racine.....	Ozaukee.....	581
Do.....	Port Washington.....	Racine.....	581
Middleton.....	Cross Plains.....	Dane.....	931
Milton.....	Koshkonong.....	Rock.....	877
Monona Lake, water surface.....	Madison.....	Dane.....	845
Nagawicka Lake, water surface.....	Oconomowoc.....	Waukesha.....	890
Nashotah Lakes, water surface.....	.....do.....	.....do.....	871
.....	.....do.....	.....do.....	872
Nehmabin Lakes, water surface.....	.....do.....	.....do.....	870
.....	.....do.....	.....do.....	871
North Lake, water surface.....	.....do.....	.....do.....	897
Oconomowoc Lake, water surface.....	.....do.....	.....do.....	862
Okauchee Lake, water surface.....	.....do.....	.....do.....	873
Pewaukee Lake, water surface.....	.....do.....	.....do.....	852
Pine Lake, water surface.....	.....do.....	.....do.....	903
Rib Hill (highest point in State yet determined).....	Wausau.....	Marathon.....	1,940
Ripley Lake, water surface.....	Koshkonong.....	Jefferson.....	836
Silver Lake, water surface.....	Oconomowoc.....	Waukesha.....	864
Do.....	Portage.....	Columbia.....	792
Stockbridge.....	Neenah.....	Calumet.....	828
Waubesa Lake, water surface.....	Evansville and Madison.....	Dane.....	844
Wingra Lake, water surface.....	Madison.....	.....do.....	849
Winnebago Lake, water surface.....	Fond du Lac and Neenah.....	Calumet, Fond du Lac, and Winnebago.....	747

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