

IOWA.

PRIMARY TRAVERSE.

Albia, Attica, Chariton, Humeston, Melrose, and New Virginia quadrangles.

LUCAS, MARION, AND MONROE COUNTIES.

The following geographic positions on Des Moines astronomic datum were determined by C. B. Kendall in 1913 and by E. L. McNair in 1914 and are based on positions described in Bulletin 440:

ALBIA QUADRANGLE.

Along highways near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Fect.</i>
T. 72 N., Rs. 18 and 19 W., quarter corner secs. 25 and 30, 20 feet east of T road west, at north-south fence line, 5 feet north of fence line east.....	41 00 28.6	92 58 54.1	.....
T. 72 N., Rs. 18 and 19 W., about 0.25 mile south of corner secs. 24, 25, 19, and 30, 30 feet north and 15 feet east of T road east, near corner fence post, iron post stamped "Prim. Trav. Sta. No. 8, 1914, Iowa".....	41 00 41.8	92 58 53.9	1,333
T. 72 N., Rs. 18 and 19 W., corner secs. 24, 25, 19, and 30, at T road west and in line with center of roads south and west, 15 feet west of road north.....	41 00 54.9	92 58 54.4	1,329
T. 72 N., Rs. 18 and 19 W., quarter corner secs. 24 and 19, center of north-south road.....	41 01 20.8	92 58 54.4	2,620
T. 72 N., Rs. 18 and 19 W., corner secs. 13, 24, 18 and 19, center of north-south road at east-west fence line (road is not used).....	41 01 46.9	92 58 54.5	2,632
T. 72 N., Rs. 18 and 19 W., quarter corner secs. 13 and 18, center of old abandoned road at east-west fence line.....	41 02 12.8	92 58 54.8	2,625
T. 72 N., Rs. 18 and 19 W., corner secs. 12, 13, 7, and 18, in field and in line with east-west fence, and road south.....	41 02 38.8	92 58 54.9	2,634
T. 72 N., Rs. 18 and 19 W., approximately on range line and a few hundred feet north of quarter corner on east side sec. 12, east end of small wooden bridge over Whippoorwill Creek.....	41 03 12.3	92 58 54.8	3,385
T. 72 N., Rs. 18 and 19 W., in southeast quarter of sec. 1, and about 730 feet south of schoolhouse.....	41 03 47.6	92 59 23.5	4,190
T road west, several mail boxes on post at.....	41 04 09.6	92 59 22.0	2,228
T. 72 and 73 N., Rs. 18 and 19 W., corner secs. 1, 6, 31, and 36, in field at intersection of fences about 1,250 feet east of public road.....	41 04 26.3	92 58 55.2	2,670
T. 73 N., R. 19 W., in southeast quarter of sec. 25, public road crossing coal mine branch.....	41 05 33.7	92 59 13.7	6,966
T. 73 N., R. 19 W., in south half of sec. 25, about 60 feet north of T road east, center of small wooden bridge.....	41 05 38.5	92 59 29.7	1,319
T. 73 N., R. 19 W., at quarter corner secs. 24 and 25, center of north-south road at fence line east.....	41 06 10.5	92 59 30.0	3,240
T. 73 N., R. 19 W., in center of sec. 24, crossroads.....	41 06 36.4	92 59 30.1	2,620
T. 73 N., R. 19 W., quarter corner secs. 13 and 24, crossroads.....	41 07 02.7	92 59 30.2	2,660

Magnetic declination near west border of quadrangle, 7° 47' E.

ATTICA QUADRANGLE.

Along highways near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
Dallas, 1 mile north of, at northwest corner of William Clark's lot, 25 feet northwest to T road east, in top of sandstone 26 by 10 by 8 inches, 24 inches in ground; aluminum tablet stamped "Prim. Trav. Sta. No. 4, 1307, Iowa".....	° ' "	° ' "	Feet.
Dallas, "Rock Island Ry." track under highway bridge at.....	41 14 52.6	93 14 07.2	.....
Melcher station, east-west road crossing 0.25 mile north of.....	41 13 58.8	93 14 28.7	5,689
T. 74 N., R. 21 W., corner of secs. 10, 11, 14, and 15, in north-south road at hedge east.....	41 13 34.0	93 14 21.9	2,560
T. 74 N., R. 21 W., quarter corner between secs. 14 and 15, at crossroads.....	41 13 07.9	93 14 59.4	3,898
T. 74 N., R. 21 W., corner of secs. 14, 15, 22, and 23, 15 feet south to T road west.....	41 12 41.5	93 14 59.0	2,670
T. 74 N., R. 21 W., corner of secs. 22, 23, 26, and 27, at T road west.....	41 12 15.3	93 14 58.8	2,650
T. 74 N., R. 21 W., corner of secs. 26, 27, 34, and 35, at crossroads.....	41 11 22.8	93 14 58.6	5,320
Tps. 73 and 74 N., R. 21 W., corner of secs. 2, 3, 34, and 35, at crossroads, 30 feet northeast to corner of wire fence, 40 feet northwest to double elm.....	41 10 30.5	93 14 58.1	5,290
T. 73 N., R. 21 W., corner of secs. 2, 3, 10, and 11, at crossroads.....	41 09 38.0	93 14 57.7	5,320
	41 08 45.1	93 14 57.3	5,350

Along highways near east border of quadrangle.

T. 73 N., R. 19 W., corner secs. 13, 14, 23, and 24, 15 feet south of T road north, on bank 2 feet from fence; iron post stamped "Prim. Trav. Sta. No. 9, 1914, Iowa".....	41 07 02.5	93 00 04.3	.....
T. 73 N., R. 19 W., corner secs. 11, 12, 13, and 14, stone at corner of public crossroads.....	41 07 54.9	93 00 05.0	5,298
T. 73 N., R. 19 W., corner secs. 1, 2, 11, and 12, 660 feet south of schoolhouse, center of north-south road at fence line east.....	41 08 47.0	93 00 05.7	5,280
T. 73 N., R. 19 W., at quarter corner secs. 1 and 2, T road south.....	41 09 13.1	93 00 06.1	2,640
T. 73 N., R. 19 W., near center of sec. 2, at Eldorado Church, 15 feet south of T road north, 15 feet east of fence line south, close to east-west fence; iron post stamped "Prim. Trav. Sta. No. 10, 1914, Iowa, elevation 915".....	41 09 12.8	93 00 40.5	2,634
Tps. 73 and 74 N., R. 19 W., quarter corner secs. 2 and 35, on line between Marion and Monroe counties, fences east-west.....	41 09 38.2	93 00 41.1	2,578
North Cedar Creek, center of covered wooden bridge over.....	41 10 39.2	93 00 43.1	6,174
T. 74 N., R. 19 W., about 0.25 mile south of corner secs. 22, 23, 26, and 27, 20 feet north and 20 feet west of T road north, inside corner of fence; iron post stamped "Prim. Trav. Sta. No. 11, 1914, Iowa, elevation 868".....	41 11 09.9	93 01 13.0	3,854
T. 74 N., R. 19 W., corner secs. 22, 23, 26, and 27, stone at right angle in road, 20 feet east of center of road north, and in line with fence line north.....	41 11 22.8	93 01 15.4	1,315
T. 74 N., R. 19 W., stone at corner secs. 14, 15, 22, and 23, in "Indian Cemetery" in line with roads north, south, and west, 15 feet north of "Monroe monument".....	41 12 15.1	93 01 15.4	5,287
Attica, center of public crossroads at.....	41 13 45.8	93 00 59.4	9,266
T. 74 N., R. 19 W., east of corner secs. 2, 3, 10, and 11, T road west.....	41 13 59.8	93 01 09.6	1,616
Prim. Trav. Sta. No. 2, 1908, Iowa (Bull. 440, p. 257).....	41 14 53.3	93 01 16.9	5,442

Along highways through center of quadrangle.

T. 73 N., R. 19 W., corner secs. 14, 15, 22, and 23, center of east-west road at north-south fence.....	41 07 02.3	93 01 13.4	.....
T. 73 N., R. 19 W., quarter corner secs. 15 and 22, T road south.....	41 07 02.7	93 01 47.9	2,640
T. 73 N., R. 19 W., near corner secs. 15, 16, 21, and 22, 30 feet south and 25 feet east of stone corner at T road north, 1 foot from wire fence, 25 feet east of fence line south; iron post stamped "Prim. Trav. Sta. No. 12, 1914, Iowa, elevation 943".....	41 07 03.0	93 02 21.6	2,581
T. 73 N., R. 19 W., quarter corner secs. 16 and 21, T road south.....	41 07 03.1	93 02 56.4	2,660
T. 73 N., R. 19 W., stone at corner secs. 16, 17, 20, and 21, T road north.....	41 07 02.8	93 03 30.9	2,645
T. 73 N., R. 19 W., quarter corner secs. 17 and 20, T road south.....	41 07 02.8	93 04 05.5	2,644
T. 73 N., R. 19 W., stone at corner secs. 17, 18, 19, and 20.....	41 07 02.3	93 04 39.5	2,603
T. 73 N., R. 19 W., quarter corner secs. 18 and 19, center of road west at north-south fences.....	41 07 03.1	93 05 13.8	2,625
T. 73 N., Rs. 19 and 20 W., approximately corner secs. 18, 19, 13, and 24, 20 feet east of level bench-mark post, near wire fence, at Monroe-Lucas county line.....	41 07 03.4	93 05 48.1	2,628
T. 73 N., R. 20 W., quarter corner secs. 23 and 24, T road east.....	41 06 37.1	93 06 56.5	5,874
T. 73 N., R. 20 W., in north half of sec. 23, road crossing.....	41 06 50.1	93 07 31.7	3,000
T. 73 N., R. 20 W., at crossing of line between secs. 22 and 23, center of east-west road.....	41 06 50.0	93 08 06.3	2,650

ATTICA QUADRANGLE—Continued.

Along highways through center of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
T. 73 N., R. 20 W., 15 feet south and 40 feet west of T road south, in northeast quarter of sec. 22, 5 feet west of telephone pole with painted elevation, iron post stamped "Prim. Trav. Sta. No. 13, Iowa, elevation 986"	41 06 49.6	93 08 24.0	<i>Feet.</i> 1,354
T. 73 N., R. 20 W., on sec. line between secs. 21 and 22, crossroads.	41 06 49.5	93 09 14.9	3,898
T. 73 N., R. 20 W., in northeast quarter of sec. 21, T road south.	41 06 49.3	93 09 41.0	1,999
T. 73 N., R. 20 W., in northeast quarter of sec. 20, public crossroads.	41 06 49.1	93 10 13.5	2,484
T. 73 N., R. 20 W., 0.25 mile south of corner secs. 17, 18, 19, and 20, public crossroads.	41 06 48.9	93 11 33.0	6,085
T. 73 N., R. 20 W., at quarter secs. 18 and 19, T road west.	41 07 01.6	93 12 08.2	2,983
T. 73 N., Rs. 20 and 21 W., corner secs. 18, 19, 13, and 24, crossroads.	41 07 01.4	93 12 39.6	2,410
T. 73 N., R. 21 W., corner secs. 13, 14, 23, and 24, just west of schoolhouse in hollow, at fence line north, at east-west road.	41 07 01.3	93 13 47.9	5,228
T. 73 N., R. 21 W., quarter corner secs. 14 and 23, angle in road, south and east.	41 07 01.0	93 14 22.2	2,625
T. 73 N., R. 21 W., center sec. 23, T road west.	41 06 34.6	93 14 22.1	2,665
T. 73 N., R. 21 W., quarter corner secs. 22 and 23, T road north.	41 06 34.5	93 14 56.3	2,615

Along highways near south border of quadrangle.

T. 72 N., Rs. 20 and 21 W., 30 feet south and 20 feet east of center of road crossing at corner secs. 25, 30, 36, and 31, 3 feet north of corner fence post; iron post stamped "Prim. Trav. Sta. No. 4, Iowa 1914, elevation 1036"	41 00 00.5	93 12 37.9	
T. 72 N., R. 20 W., quarter corner secs. 30 and 31, T road north.	41 00 01.2	93 12 04.5	2,560
T. 72 N., R. 20 W., at corner secs. 29, 30, 31, and 32, public road crossing.	41 00 01.7	93 11 29.7	2,670
T. 72 N., R. 20 W., at corner secs. 28, 29, 32, and 33, T road north.	41 00 02.2	93 10 20.8	5,280
T. 72 N., R. 20 W., 30 feet east and 20 feet north of T road north, at corner secs. 27, 28, 33 and 34, 3 feet south of east-west hedge line; iron post stamped "Prim. Trav. Sta. No. 5, Iowa, 1914, elevation 1023"	41 00 02.7	93 09 11.8	5,200
T. 72 N., R. 20 W., corner secs. 26, 27, 34 and 35, center crossroads.	41 00 02.7	93 08 03.8	5,215
T. 72 N., R. 20 W., corner secs. 25, 26, 35 and 36, crossroads.	41 00 02.8	93 06 55.3	5,255
T. 72 N., R. 20 W., 0.25 mile west of line between Rs. 19 and 20, 30 feet south and 30 feet east of T road corners on line between secs. 25 and 36, 5 feet east of corner fence post; iron post stamped "Prim. Trav. Sta. No. 6, 1914, Iowa, elevation 1012"	41 00 02.7	93 06 04.2	3,920
T. 72 N., Rs. 19 and 20 west, corner secs. 25, 30, 36 and 31, at Lucas-Monroe county line, in line with road north across small ravine, T road south.	41 00 03.0	93 05 46.9	1,325
T. 72 N., R. 19 W., corner secs. 29, 30, 31 and 32, at fence line north-south, center of east-west road.	41 00 03.1	93 04 38.1	5,215
T. 72 N., R. 19 W., quarter corner secs. 29 and 32, T road north.	41 00 03.0	93 04 04.5	2,635
T. 72 N., R. 19 W., corner secs. 28, 29, 32 and 33, stone in center of east-west road at fence line south.	41 00 02.9	93 03 30.0	2,645
T. 72 N., R. 19 W., 40 feet north and 25 feet west of T road north, at quarter corner secs. 23 and 33, 4 feet north of corner fence post; iron post stamped "Prim. Trav. Sta. No. 7, 1914, Iowa, elevation 994"	41 00 03.2	93 02 55.8	2,623
T. 72 N., R. 19 W., corner secs. 27, 28, 33 and 34 east-west, road to north-south fence line.	41 00 02.8	93 02 21.0	2,670
T. 72 N., R. 19 W., quarter corner secs. 27 and 34, T road south.	41 00 02.6	93 01 46.4	2,650
T. 72 N., R. 19 W., corner secs. 26, 27, 34 and 35, east-west road at hedge line north and fence line south.	41 00 02.6	93 01 12.0	2,645
T. 72 N., R. 19 W., quarter corner secs. 26 and 35, angle of road north and west, in line with fence south, at schoolhouse.	41 00 02.8	93 00 37.6	2,635
T. 72 N., R. 19 W., at crossing of line between secs. 25 and 26, T road south.	41 00 15.5	93 00 03.2	2,929

Along highways near west border of quadrangle.

T. 73 N., R. 21 W., at corner secs. 26, 27, 34 and 35, at hedge south and fence north, center of east-west road.	41 05 16.8	93 14 56.7	
T. 73 N., R. 21 W., in northwest quarter of sec. 35, T road north.	41 05 16.9	93 14 39.6	1,310
Tps. 72 and 73 N., R. 21 W., corner secs. 2, 3, 34 and 35, in line with fence north, T road south.	41 04 24.9	93 14 56.9	5,426
T. 72 N., R. 21 W., at corner secs. 2, 3, 10 and 11, public crossroads.	41 03 27.6	93 14 55.3	5,708
T. 72 N., R. 21 W., corner secs. 10, 11, 14 and 15, north-south road at fence line east and hedge line west.	41 02 35.6	93 14 55.6	5,270
T. 72 N., R. 21 W., 0.25 mile south of corner secs. 10, 11, 14 and 15, center of public road crossing.	41 02 22.6	93 14 55.6	1,320
T. 72 N., R. 21 W., corner secs. 14, 15, 22 and 23, at fence line east-west, of north-south road.	41 01 43.6	93 14 55.5	3,950
T. 72 N., R. 21 W., about 0.25 mile north of corner secs. 22, 23, 26 and 27, & road north.	41 01 04.6	93 14 55.7	3,947
T. 72 N., R. 21 W., in south half sec. 23, T road south.	41 01 05.0	93 14 21.4	2,628

Magnetic declination near north border of quadrangle, 7° 31' E.; near south border, 7° 45' E.; near east border, 7° 47' E.; near west border, 7° 42' E.; near center, 7° 55' E.

CHARITON QUADRANGLE.

Along highways near east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
T. 73 N., R. 21 W., secs. 15, 16, 21, and 22, stone, corner of, 12 feet north and 25 feet west of; 50 feet east of the southeast corner of Renfrow schoolhouse; iron bench mark post stamped "Prim. Trav. Sta. No. 1, 1913, Iowa, elevation 993".....	41 07 01.1	93 16 05.6	<i>Fcet.</i>
T. 73 N., R. 21 W., near quarter corner secs. 21 and 22, at road forks, center of small bridge.....	41 06 34.8	93 16 04.0	2,660
T. 73 N., R. 21 W., center of sec. 22, T road forks.....	41 06 34.6	93 15 30.6	2,559
T. 73 N., R. 21 W., quarter corner secs. 22 and 27, north-south road at east-west fence line.....	41 06 08.8	93 15 30.7	2,615
T. 73 N., R. 21 W., quarter corner secs. 27 and 34, at "Central Church," T road north.....	41 05 16.6	93 15 30.8	5,275
Williamson station, about 400 feet south of, public road crossing at center of main track of Chicago, Rock Island & Pacific R. R..	41 05 16.8	93 15 10.7	1,540

Along highways east-west through center of quadrangle.

T. 73 N., R. 21 W., corner of secs. 2, 3, 10, and 11, at crossroads (duplicate).....	41 08 45.1	93 14 57.3	.....
T. 73 N., R. 21 W., corner of secs. 3, 4, 9, and 10, at crossroads, near church and schoolhouse.....	41 08 45.4	93 16 06.2	5,267
T. 73 N., R. 21 W., stone corner of secs. 9, 10, 15, and 16, at crossroads.....	41 07 53.1	93 16 05.5	5,288
T. 73 N., R. 21 W., stone corner of secs. 15, 16, 21, and 22, 12 feet north and 25 feet west of, 50 feet east of the southeast corner of Renfrow schoolhouse; iron bench mark post stamped "Prim. Trav. Sta. No. 1, 1913, Iowa, elevation 993".....	41 07 01.1	93 16 05.6	5,268
T. 73 N., R. 21 W., corner of secs. 16, 17, 20, and 21, in east-west road at wire fence north, 770 feet east of crossroads.....	41 07 01.2	93 17 15.4	5,340
T. 73 N., R. 21 W., corner of secs. 16, 17, 20, and 21, 770 feet west of; four corners.....	41 07 00.9	93 17 25.4	769
Schoolhouse, T road south at.....	41 07 00.3	93 18 06.0	3,111
T. 73 N., R. 21 W., corner of secs. 17, 18, 19, and 20, at fences north and south, 0.25 mile west of T road south.....	41 07 00.2	93 18 23.3	1,320
T. 73 N., R. 21 W., quarter corner between secs. 18 and 19, at crossroads opposite mail box and 50 feet northwest of culvert.....	41 07 00.2	93 18 58.0	2,660
T. 73 N., Rs. 21 and 22 W., corner of secs. 13, 18, 19, and 24, at north-south fences and 0.25 mile east of T road north.....	41 07 00.2	93 19 33.3	2,700
T. 73 N., R. 22 W., quarter corner between secs. 13 and 24, 15 feet south and 20 feet east of, in southeast corner of T road south; iron post stamped "Prim. Trav. Sta. No. 2, 1913, Iowa".....	41 06 59.6	93 20 07.6	2,625
T. 73 N., R. 22 W., quarter corner between secs. 14 and 23, at T road east, 1.25 miles north of Oakley.....	41 06 59.6	93 21 17.0	5,310
Oakley, 1.2 miles north of; iron bridge over White Breast Creek.....	41 07 06.7	93 21 45.7	2,316
T. 73 N., R. 22 W., 40-acre corner of secs. 14, 15, 22, and 23, 0.25 mile north of, at T road west, 750 feet northwest of bridge.....	41 07 12.1	93 21 51.8	716
T. 73 N., R. 22 W., corner of 40-acre corner of secs. 15, 16, 21, and 22, 0.25 mile north of, at crossroads.....	41 07 11.8	93 23 00.3	5,245
T. 73 N., R. 22 W., quarter corner between secs. 16 and 17, 15 feet south and 15 feet west of, inside of wire fence, in southwest corner of a 90° bend in road from north to west; iron post stamped "Prim. Trav. Sta. No. 3, 1913, Iowa, elevation 963".....	41 07 23.8	93 24 09.3	5,421
T. 73 N., R. 22 W., quarter corner stone between secs. 17 and 18, at crossroads.....	41 07 25.8	93 25 17.6	5,230
T. 73 N., Rs. 22 and 23 W., quarter corner between secs. 13 and 18, at crossroads.....	41 07 25.8	93 26 24.6	5,130
T. 73 N., R. 23 W., secs. 13, 14, 23, and 24, corner of T road west at.....	41 07 00.1	93 27 33.8	5,904
T. 73 N., R. 23 W., quarter corner between secs. 14 and 23, 30 feet north of, on north edge of east and west road, on line with center of T road south and at southeast corner of schoolhouse yard; ironpost stamped "Prim. Trav. Sta. No. 4, 1913, Iowa, elevation 1037".....	41 07 00.5	93 28 08.4	2,655
T. 73 N., R. 23 W., corner of secs. 14, 15, 22, and 23, at T road north at Norwood, 50 feet northwest to store.....	41 07 00.1	93 28 43.1	2,650

CHARITON QUADRANGLE—Continued.

Along highways near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
T. 73 N., R. 23 W., corner of secs. 10, 11, 14, and 15, at crossroads north of church, 1 mile north of Norwood.....	41 07 52.2	93 28 43.6	Feet. 5,270
T. 73 N., R. 23 W., 30 feet south and 30 feet west of corner of secs. 2, 3, 10, and 11, in southwest corner of crossroads 2 miles north of Norwood; iron post stamped "Prim. Trav. Sta. No. 5, 1913, Iowa, elevation 1023".....	41 08 44.0	93 28 44.2	5,235
T. 73 N., R. 23 W., quarter corner between secs. 3 and 4, at crossroads.....	41 09 10.9	93 29 53.5	5,960
T. 74 N., R. 23 W., corner of secs. 3, 4, 33, and 34, at T road west, also line between Lucas and Warren counties.....	41 09 38.7	93 29 53.8	2,809
T. 74 N., R. 23 W., corner of secs. 33, 34, 27, and 28, at crossroads, near schoolhouse.....	41 10 31.2	93 29 54.2	5,320
T. 74 N., R. 23 W., corner of secs. 21, 22, 27, and 28, at hedges east and west.....	41 11 23.6	93 29 54.3	5,300
Liberty Center, T. 73 N., R. 23 W., corner of secs. 15, 16, 21, and 22, 40 feet north and 25 feet west of, in northwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 6, 1913, Iowa".....	41 12 16.8	93 29 54.9	5,370
T. 74 N., R. 23 W., corner stone of secs. 9, 10, 15, and 16, at crossroads.....	41 13 08.9	93 29 55.3	5,290
T. 74 N., R. 23 W., corner of secs. 3, 4, 9, and 10, at crossroads, near schoolhouse.....	41 14 01.5	93 29 55.8	5,320
Tps. 74 and 75 N., R. 23 W., corner of secs. 3, 4, 33, and 34, 25 feet south and 60 feet east of, in the northwest corner of sec. 3, in the southeast corner of public crossroads; aluminum tablet stamped "Prim. Trav. Sta. No. 6, 1907, Iowa, elevation 937".....	41 14 52.5	93 29 54.8	5,151

Along highways near south border of quadrangle.

T. 72 N., R. 21 W., on line between secs. 27 and 28, at fence lines north-south, center of public road.....	41 00 06.5	93 16 04.2	.....
T. 72 N., R. 21 W., approximately quarter corner secs. 28 and 29, about 5 feet north of center of public road.....	41 00 25.1	93 17 13.3	5,616
Chariton, crossing of South Avenue and Fourth Street, near middle of sec. 29.....	41 00 26.6	93 17 48.2	2,680
T. 72 N., R. 21 W., corner secs. 19, 20, 29, and 30, at intersection of Main Street and Court Avenue, at southwest corner of public square. (Corner is said to be at intersection of property line on east side of Main Street and north side of Court Avenue).....	41 00 51.4	93 18 22.6	3,641
Chariton, 130 feet southwest of southwest corner of courthouse, 33 feet east of curbing on Main Street, and 12 feet north of curbing on Court Avenue; iron post stamped "Prim. Trav. Sta. No. 1, 1914, Iowa".....	41 00 51.8	93 18 21.9	66

On highway near southwest corner of quadrangle.

White Breast Creek, center of iron bridge over.....	41 00 11.7	93 29 58.5
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Along highways near west border of quadrangle.

[Circuit closed in 1914 by E. L. McNair.]

T. b. m. No. 4, 1913, Iowa (duplicate).....	41 07 00.5	93 28 08.4	.....
Norwood, $\frac{1}{4}$ mile west of, T road south.....	41 06 57.2	93 29 35.1	6,646
Otter Creek, iron bridge over.....	41 06 16.5	93 29 37.4	4,125
T. 73 N., R. 23 W., secs. 27, 28, 33, and 34, corner of, at crossroads.....	41 05 16.4	93 29 52.4	6,198
Tps. 72 and 73 N., R. 23 W., secs. 3, 4, 33, and 34, corner of; corner is near scrub-oak 10 feet east of road at top of hill, at wire fence east.	41 04 24.0	93 29 52.2	5,298
Iron bridge over Otter Creek, T road north 450 feet west of.....	41 04 09.7	93 30 44.3	4,250

Magnetic declination near east border of quadrangle, $7^{\circ} 42'$ E.; near west border, $8^{\circ} 19'$ E.; near center, $7^{\circ} 53'$ E.; near south border, $7^{\circ} 32'$ E.; near north border, $7^{\circ} 49'$ E.

HUMESTON QUADRANGLE.

Along highways near north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 72 N., Rs. 21 and 22 W., corner secs. 25, 30, 31, and 36, at east-west fence line, center of north-south road.....	40 59 58.9	93 19 32.9	.....
Tps. 71 and 72 N., R. 22 W., at quarter corner between secs. 1 and 36, T road west.....	40 59 06.8	93 20 06.9	5,886
Tps. 71 and 72 N., R. 22 W., corner secs. 1, 2, 35, and 36, at fence line south, center of east-west road.....	40 59 06.6	93 20 41.3	2,630
Chariton River, center of iron bridge over.....	40 59 06.6	93 21 10.8	2,260
Tps. 71 and 72 N., R. 22 W., corner secs. 2, 3, 34, and 35, 60 feet east and 20 feet north of T road corners, 30 feet east of fence corner on bank close to wire fence; iron post stamped "Prim. Trav. Sta. No. 2, 1914, Iowa".....	40 59 06.6	93 21 49.3	2,950
Tps. 71 and 72 N., R. 22 W., quarter corner secs. 3 and 34; T road south.....	40 59 06.2	93 22 24.6	2,709
Tps. 71 and 72 N., R. 22 W., at corner secs. 3, 4, 33, and 34; crossroads. (A stone, apparently section corner, is about 20 feet north on line of east-west fence).....	40 59 05.9	93 22 58.9	2,625
Tps. 71 and 72 N., R. 22 W., corner secs. 32, 33, 4, and 5; T road east.....	40 59 05.7	93 24 07.4	5,250
Tps. 71 and 72 N., R. 22 W., about 0.25 mile south of corner secs. 31, 32, 5, and 6; T road east.....	40 58 49.0	93 25 16.1	5,529
T. 71 N., R. 22 W., at corner secs. 5, 6, 7, and 8; crossroads.....	40 58 09.6	93 25 15.4	3,985
T. 71 N., Rs. 22 and 23 W., at corner secs. 6, 7, 1, and 12; T road south.....	40 58 09.7	93 26 25.6	5,380
T. 71 N., R. 23 W., at corner secs. 1, 2, 11, and 12; T road south.....	40 58 11.1	93 27 34.4	5,280
T. 71 N., R. 23 W., 50 feet west and 35 feet south of crossroads at quarter corner secs. 2 and 11, on top of bank, no fence; iron post stamped "Prim. Trav. Sta. No. 3, 1914, Iowa".....	40 58 10.7	93 28 09.3	2,668
Tps. 71 and 72 N., R. 23 W., at apparent quarter corner secs. 2 and 35; T road west.....	40 59 04.9	93 28 08.8	5,480
T. 72 N., R. 23 W., in north half sec. 35; T road south.....	40 59 45.7	93 28 08.5	4,132
T. 72 N., R. 23 W., in northeast quarter sec. 34; T road north.....	40 59 45.8	93 29 00.5	3,980
T. 72 N., R. 23 W., near quarter corner on west side sec. 34, at schoolhouse; T road north.....	40 59 46.0	93 29 52.6	3,993
T. 72 N., R. 23 W., approximately corner secs. 27, 23, 33, and 34, opposite fence line east; center of north-south road.....	40 59 59.7	93 29 52.7	1,390

Magnetic declination near north border of quadrangle, 7° 32' E.

MELROSE QUADRANGLE.

Along highways near northwest corner of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 72 N., R. 21 W., about 360 feet west of quarter corner secs. 26 and 35, about 100 feet east of road bridge, about 10 feet south of center of east-west road, T road south.....	40 59 59.7	93 14 26.0	.....
T. 72 N., R. 21 W., at corner secs. 26, 27, 34, and 35, T road corners east-west-south.....	40 59 59.6	93 14 55.4	2,250

Magnetic declination near north border of quadrangle, 7° 45' E.

NEW VIRGINIA QUADRANGLE.

Along highways near east border of southeast quarter of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 72 N., R. 23 W., on line between secs. 21 and 28; T road west.. Chicago, Burlington & Quincy R. R., public crossroads; 100 feet south of crossing.....	41 00 50.9	93 30 08.5	.....
T. 72 N., R. 23 W., corner secs. 16, 17, 20, and 21; stone at crossroads.....	41 01 17.1	93 30 08.6	2,653
T. 72 N., R. 23 W., corner secs. 8, 9, 16, and 17; stone at T road south.....	41 01 43.4	93 31 00.2	4,761
T. 72 N., R. 23 W., near center northwest quarter sec. 9, 25 feet south and 12 feet west of center of east-west road, at T road south, 200 feet northeast of Palestine public school; iron post stamped "Prim. Trav. Sta. No. 7, 1913, Iowa" (tie with McNair's 1914 line).....	41 02 35.4	93 30 59.4	5,270
T. 72 N., R. 23 W., corner secs. 4, 5, 8, and 9; at cross hedges.....	41 03 13.9	93 30 43.6	4,082
.....	41 03 27.5	93 31 00.1	1,868
Otter Creek, 450 feet west of iron bridge over.....	41 04 09.7	93 30 44.3	4,438

Magnetic declination near east border of quadrangle, 8° 19' E.

MISSOURI.

PRIMARY TRAVERSE.

Crystal City quadrangle.

JEFFERSON COUNTY.

The geographic positions in the following list were determined by J. H. Wilson in 1913 and are based on primary traverse run in 1903, described in Bulletin 245, and Mississippi River Commission triangulation stations Joachim and Simpson 55, on approximate North American datum.

CRYSTAL CITY QUADRANGLE.

Along highways near northwest corner of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
Joachim Bluff, on first prominent rock point below, 1,000 meters below town of Herculanum, 20 feet outside of east rail of Mississippi River and Bonne Terre Ry., 36.5 feet from cross cut on rock about 10 feet south of normal from pipe to rail, 15 feet west of rail, 64.9 feet from cross in rock upstream (distance between crosses is 62 feet); iron pipe (Mississippi River Commission triangulation station Joachim).....	° ' " 38 15 11.0	° ' " 90 22 12.5	<i>Fect.</i>
Road crossing.....	38 14 03.7	90 22 13.7	6,811
Festus, 300 feet west of station, north-south road crossing St. Louis & San Francisco R. R.....	38 13 25.4	90 23 37.4	7,722
Silica Junction, 1,000 feet northwest of; road crossing St. Louis & San Francisco R. R.....	38 13 49.1	90 25 03.7	7,292
Silica, road crossing St. Louis, Iron Mountain & Southern Ry.....	38 14 05.5	90 25 33.6	2,909
Forks of road.....	38 14 12.9	90 26 29.3	4,508
T road south of section line.....	38 14 13.5	90 28 04.2	7,576
Road forks almost in front of house.....	38 14 21.4	90 28 18.9	1,419
T road east.....	38 14 43.3	90 28 43.6	2,971

Along highways near west border of quadrangle.

T. 41 N., R. 5 E., corner of secs. 28, 29, 32, and 33; southwest corner of cemetery.....	38 14 56.3	90 28 53.2	1,523
Zion schoolhouse, southeast corner of yard; iron post stamped "Prim. Trav. Sta. No. 1, 1913".....	38 14 56.2	90 29 00.6	596
T. 41 N., R. 5 E., south corner of secs. 32 and 33.....	38 14 02.9	90 28 54.0	5,417
Center of road at top of ridge, gate on west side of road, 500 feet north of second-class road fork.....	38 13 15.1	90 29 12.6	5,063
Hematite, at station, road crossing St. Louis, Iron Mountain & Southern Ry.....	38 12 10.1	90 28 42.6	6,992
Hematite, near, wagon road at east edge of ford over Swashon Creek.....	38 11 51.5	90 28 51.1	2,009
Swashon Creek, 900 feet east of; road forks.....	38 11 34.4	90 28 56.4	1,787
Bookler's house, 600 feet northwest of; road forks in creek bottom.....	38 10 44.1	90 28 20.9	5,823
T. 40 N., R. 5 E., 0.25 mile west of quarter corner between secs. 27 and 28; T road east on quarter section line.....	38 10 02.7	90 28 07.4	4,322
Center of crossroads.....	38 09 43.8	90 28 08.0	1,410
T. 40 N., R. 5 E., corner of secs. 27, 28, 33, and 34.....	38 09 36.3	90 27 51.7	1,817
T. 39 N., R. 5 E., north corner of secs. 3 and 4 (570 feet east of preceding position is stone at south corner of secs. 33 and 34, T. 40 N., R. 5 E., 280 feet west of road forks).....	38 08 43.4	90 28 01.3	5,402
Platin, 4 miles from, 25 feet south by 20 feet west of intersection of crossroads, at southwest corner of crossroads, near signpost "De Soto 6 mi., Platin 4 mi., Crystal City 8 mi."; iron post stamped "Prim. Trav. Sta. No. 2, 1913".....	38 07 38.5	90 28 22.9	6,792
Lutheran Church, just west of; road forks.....	38 06 20.0	90 29 03.2	8,580
T. 39 N., R. 5 E., corner of secs. 16, 17, 20, and 21; (corner not found and position is only approximate).....	38 05 11.5	90 29 19.8	7,049

CRYSTAL CITY QUADRANGLE—Continued.

Along highways near west border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T road west just south of creek.....	38 05 02.8	90 29 20.0	890
T. 39 N., R. 5 E., corner of secs. 20, 21, 28, and 29, 10 feet north of small wooden bridge; center of north-south road.....	38 04 19.1	90 29 22.3	4,423
Valles Mines, 1.5 miles north of, in front of small house on top of ridge; T road south.....	38 03 48.0	90 29 35.6	3,328
Milepost 20, just northeast of, road crossing Mississippi River & Bonne Terre Ry.....	38 03 02.6	90 29 29.4	4,618
Valles Mines, east-west road crossing Mississippi River & Bonne Terre Ry. (old position).....	38 02 29.3	90 29 51.3	3,804
Valles Mines, 50 feet west of Mississippi River & Bonne Terre Ry. at east-west road crossing; iron post stamped "Prim. Trav. Sta. No. 3, 1913, elev. 745".....	38 02 29.6	90 29 51.9	55

Along highways east-west through center of east half of quadrangle.

Plattin, 50 feet north of station; road crossing Mississippi River & Bonne Terre Ry. (old position).....	38 07 52.9	90 24 38.6	.....
Forks of road 60 feet east of B. W. McCormack's mail box.....	38 07 41.2	90 24 04.0	3,016
T road south, 240 feet west of where road crosses top of ridge, in front of small house.....	38 07 27.2	90 23 10.5	4,511
Forks of road, near J. N. Sherman's mail box.....	38 07 30.0	90 22 09.4	4,897
Road forks, south end of cut-off.....	38 07 40.1	90 21 31.0	3,244
T road east at G. Holzhausen's stock farm.....	38 08 47.2	90 21 42.8	6,839
T. 40 N., R. 6 E., south corner of secs. 33 and 34.....	38 08 35.5	90 21 10.8	2,820
Forks of road, 110 feet west of J. T. Becker's mail box.....	38 08 43.4	90 20 39.0	2,671
South end of bridge over Muddy Creek.....	38 08 33.8	90 20 11.4	2,418
T. 39 N., R. 6 E., north corner of secs. 2 and 3.....	38 08 34.4	90 20 05.1	508
T. 39 N., R. 6 E., north corner of secs. 1 and 2.....	38 08 34.0	90 19 16.6	3,883
West end of bridge over Muddy Creek just west of road forks at Church.....	38 08 18.8	90 19 00.9	1,993
Rush Tower, 0.8 mile west of; T road northwest.....	38 08 40.5	90 18 14.3	4,328
Rush Tower, on bluff north of, 20 feet northwest of old location of shot tower, 275 meters northwest of railroad trestle over Muddy Creek, in Missouri Bluffs; iron pin leaded into rock (Mississippi River Commission triangulation station Simpson 55).....	38 08 59.06	90 17 33.21	3,785

Magnetic declination for northwest corner of quadrangle, 6° 54' E.; for west border, 7° 09' E.; for center line east-west through east half, 6° 18' E.

De Soto, Kimmswick, and St. Louis quadrangles.

JEFFERSON COUNTY.

The geographic positions in the following list were determined by J. H. Wilson in 1913 and are based on primary traverse position at Fenton, determined in 1903, and primary traverse station No. 1, the position of which was determined by Wilson in 1913, on approximate North American datum.

DE SOTO QUADRANGLE.

Along highways near east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Goldman, 1.8 miles northeast of, on top of Sandy Ridge; T road east.....	38 18 45.8	90 30 06.2	.....
Antonia, 2 miles west of, 1,050 feet north of St. Paul's Church, 15 feet north by 30 feet west of center of triangle at road forks, just inside of fence; iron post stamped "Prim. Trav. Sta. No. 5, 1913, elev. 881".....	38 22 20.8	90 30 02.7	.....

KIMMSWICK QUADRANGLE.

Along highways near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 41 N., R. 5 E., corner of secs. 20, 21, 28, and 29.....	38 15 49.5	90 28 51.4	.....
T road north, 140 feet west of, 30 feet north by 15 feet east of mail box; T road south.....	38 16 02.1	90 29 06.8	1,772
Sandy Church, 600 feet northwest of; fork in road.....	38 17 01.9	90 29 07.6	6,060
John Dittner's mail box, 20 feet west of; T road north.....	38 17 05.7	90 29 52.0	3,563
Sandy Ridge, 0.6 mile southwest of, 140 feet south of small wooden bridge, near corner of wire fence; road forks.....	38 18 05.7	90 29 39.8	6,150
Sandy Ridge, southeast corner of field, large stump used as a corner fence post.....	38 18 37.0	90 29 32.4	3,223
Road forks, 60 feet northeast of, wheel holding 7 mail boxes.....	38 19 46.2	90 29 45.1	.....
Antonia school, 0.5 mile southwest of, near F. Ullrich's and four other mail boxes; road forks.....	38 20 24.6	90 29 08.2	4,869
Antonia school; road forks at.....	38 20 47.2	90 28 55.4	2,508
Antonia, northwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 4, 1913".....	38 21 46.5	90 27 56.8	7,601
T. 42 N., R. 5 E., corner of secs. 16, 17, 20, and 21.....	38 22 06.6	90 28 35.4	3,692
Antonia, 2 miles west of, 1,050 feet north of St. Paul's Church, 15 feet north by 30 feet west of center of triangle at road forks; just inside of fence; iron post stamped "Prim. Trav. Sta. No. 5, 1913, elev. 881".....	38 22 20.8	90 30 02.7	7,100
Top of ridge, 250 feet southwest of house; fork in road.....	38 23 03.2	90 29 56.0	4,925
Road forks, on tree in center of triangle Nessel's mail box.....	38 23 34.7	90 29 47.0	2,677
Rock Creek Ford, road at.....	38 24 49.4	90 29 22.8	7,807
Leicht schoolhouse, 500 feet southwest of, 100 feet west of small house, 50 feet east of six mail boxes, center of triangle at road forks; top of hill.....	38 26 15.7	90 29 23.5	8,734
Mr. M. Werner's mail box, 70 feet southwest of, road forks.....	38 27 26.6	90 29 18.8	7,183
Four mail boxes, 40 feet northeast of; center of triangle at road forks.....	38 28 16.9	90 28 32.6	6,281
T. 43 N., R. 5 E., quarter corner in center of sec. 8, 30 feet south of T road (west) at Bowles schoolhouse.....	38 28 45.6	90 29 00.6	3,664
Murphy, road forks at.....	38 29 24.6	90 29 13.2	4,080
Fenton, 2 miles southwest of, about 300 feet northeast of T road southeast; main road at road forks.....	38 29 58.5	90 27 56.9	6,967

Magnetic declination for west border of quadrangle 5° 18' E.; for west half of south border of quadrangle 6° 54' E.

ST. LOUIS QUADRANGLE.

Along highways near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Fenton, 1 mile southwest of; T road southeast.....	38 30 29.4	90 27 07.9	5,000
Fenton, four corners at (old position).....	38 30 47.2	90 26 08.6	5,043

Boynton, Braymer, Chillicothe, Chula, Dawn, Gallatin, Galt, Gower, Green City, Hale, Lucerne, Maysville, Milan, Plattsburg, Polo, Winigan, and Winston quadrangles.

CALDWELL, CLINTON, DAVIESS, DEKALB, GRUNDY, AND SULLIVAN COUNTIES.

The geographic positions on approximate North American datum in the following list were determined by E. L. McNair in 1913.

The line starts at primary traverse station No. 5 located in 1911, at the southwest corner of the Plattsburg quadrangle, described in Bulletin 551, and runs north and east near borders of quadrangles and is tied to primary traverse station No. 9, 1910, near the northwest

corner of the Winigan quadrangle, described in Bulletin 496. The line was double chained and the closure error at primary traverse station No. 9 was plus 29 feet in latitude and minus 12 feet in longitude. This error was distributed along the line through 158 computed positions.

From this double-chained line, single lines were run by McNair in the Braymer, Chillicothe, Chula, Dawn, Gallatin, and Hale quadrangles.

BOYNTON QUADRANGLE.

Along highways near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Fect.</i>
T. 63 N., R. 21 W., stone at quarter corner between secs. 15 and 22.	40 15 14.18	93 14 37.99	-----
T. 63 N., R. 21 W., corner of secs. 14, 15, 22, and 23, 10 feet north by 20 feet east of center of road north, 3 feet south of corner fence post; iron post stamped "Prim. Trav. Sta. No. 16 Mo., 1913"	40 15 14.32	93 14 03.71	2,658
T. 63 N., R. 20 W., corner of secs. 16, 17, 20, and 21, road is 1,335 feet east of corner	40 15 18.11	93 09 37.33	-----
T road east	40 15 27.58	93 09 55.16	1,683
Milan, 4 miles north of, in northeast quarter of sec. 21, T. 63 N., R. 20 W., at forks of road, on west side of road, 1 foot from telephone pole at fence corner; iron post stamped "Prim. Trav. Sta. No. 17 Mo." (From bench-mark post Milan water tower is in azimuth 340° 28' 46")	40 15 04.35	93 08 45.85	5,866
T. 63 N., R. 20 W., corner of secs. 15, 16, 21, and 22; center of east-west road.	40 15 18.45	93 08 28.17	1,980
T. 63 N., R. 20 W., stone at corner of secs. 14, 15, 22, and 23; crossroads	40 15 19.32	93 07 19.76	5,305
T. 63 N., R. 20 W., corner of secs. 13, 14, 23, and 24 (1,495 feet west of preceding position is T road north; T road south is 215 feet east).	40 15 19.80	93 06 10.82	5,346
T. 63 N., R. 20 W., sec. 13; public road crossing Chicago, Burlington & Quincy R. R.	40 15 33.62	93 05 11.17	4,832
T. 63 N., R. 19 W., corner of secs. 17, 18, 19, and 20; T road north.	40 15 18.91	93 03 50.94	6,397
T. 63 N., R. 19 W., corner of secs. 16, 17, 20, and 21; T road west.	40 15 18.40	93 02 42.80	5,284
T. 63 N., R. 19 W., in north quarter of sec. 22; T road east.	40 15 00.58	93 00 45.03	-----

Magnetic declination for south border of quadrangle, 7° 38' E.

BRAYMER QUADRANGLE.

Along highways near north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Fect.</i>
T. 57 N., R. 25 W., west corner of secs. 18 and 19; T road east.	39 44 33.8	93 45 32.8	-----
T. 57 N., R. 25 W., apparent east corner of secs. 13 and 24; stone; T road west.	39 44 30.1	93 45 32.8	370
T. 57 N., R. 26 W., corner of secs. 13, 14, 23, and 24; T road east.	39 44 31.6	93 46 39.2	5,195
T road east, stone on north-south line between secs. 14 and 15.	39 44 45.8	93 47 47.0	5,487
T. 57 N., R. 27 W., stone at quarter corner between secs. 14 and 23.	39 44 36.4	93 53 54.0	-----
T. 57 N., R. 27 W., stone at corner of secs. 14, 15, 22, and 23; crossroads.	39 44 36.7	-93 54 27.7	2,635
T. 57 N., R. 27 W., corner of secs. 15, 16, 21, and 22; crossroads.	39 44 35.6	93 55 35.9	5,330
T. 57 N., R. 27 W., corner of secs. 16, 17, 20, and 21; T road south.	39 44 35.0	93 56 42.9	5,230
T. 57 N., R. 27 W., corner of secs. 17, 18, 19, and 20; crossroads.	39 44 34.3	93 57 50.8	5,311
T. 57 N., R. 27 W., apparent east corner of secs. 13 and 24 (the apparent west corner of secs. 18 and 19, T. 57 N., R. 27 W., is 40 feet south of preceding position)	39 44 33.8	93 59 02.0	5,559

Magnetic declination of north border of quadrangle, 8° 25' E.

CHILLICOTHE QUADRANGLE.

Along highways and Chicago, Rock Island & Pacific Ry. near north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Fect.</i>
T. 60 N., R. 25 W., 1.5 feet north of quarter corner between secs. 19 and 20; iron post stamped "Prim. Trav. Sta. No. 10 Mo., 1913"	39 59 46.24	93 44 41.44	.....
T. 60 N., R. 25 W., quarter corner between secs. 20 and 21; T road south.....	39 59 47.45	93 43 34.99	5,174
Center of Chicago, Rock Island & Pacific Ry. track.....	39 59 42.67	93 42 57.40	2,965
Public road crossing Chicago, Rock Island & Pacific Ry.....	39 59 54.92	93 41 55.01	5,012
Hickory Creek station, center of Chicago, Rock Island & Pacific Ry. track opposite semaphore.....	39 59 59.56	93 40 00.82	8,899
Public road crossing Chicago, Rock Island & Pacific Ry.....	39 59 52.53	93 38 46.26	5,847
T. 60 N., R. 24 W., quarter corner between secs. 19 and 20; T road north.....	39 59 56.72	93 38 12.16	2,688
Iron bridge over Grand River; center.....	39 59 45.81	93 36 48.65	6,593
T. 60 N., R. 24 W., in southeast quarter of sec. 21, opposite road north and on south side of east-west road, 1 foot from wire fence, 3 feet west of gatepost, at T road north; iron post stamped "Prim. Trav. Sta. No. 11 Mo., 1913"	39 59 46.30	93 36 11.53	2,890
T. 60 N., R. 24 W., stone at corner of secs. 22, 23, 26, and 27; T road east.....	39 59 35.07	93 34 46.10	6,746
T. 60 N., R. 24 W., corner of secs. 23, 24, 25, and 26.....	39 59 36.71	93 33 38.37	5,275
T. 60 N., R. 24 W., east corner of secs. 24 and 25; T road west (the west corner of secs. 19 and 30, T. 60 N., R. 23 W. is 90 feet north of preceding position).....	39 59 37.65	93 32 29.94	5,328
T. 60 N., R. 23 W., corner of secs. 20, 21, 28, and 29; crossroads.....	39 59 40.29	93 30 08.11	11,044

Magnetic declination for north border of quadrangle, 6° 56' E.

Along highways near west border of quadrangle.

T. 57 N., R. 25 W., corner of secs. 7, 8, 17, and 18.....	39 45 27.9	93 44 29.2	.....
T. 57 N., R. 25 W., apparent quarter corner between secs. 8 and 17; T road west, the quarter corner stone is 20 feet west by 5 feet north of the T road.....	39 45 27.3	93 43 54.7	2,686
T. 57 N., R. 25 W., quarter corner between secs. 5 and 8; crossroads.....	39 46 19.5	93 43 54.6	5,284
T. 57 N., R. 25 W., corner of secs. 4, 5, 8, and 9; T road south.....	39 46 19.2	93 43 20.7	2,640
Grand River, iron span bridge over; center.....	39 46 37.6	93 42 48.9	3,105
Tps. 57 and 58 N., R. 25 W., stone at corner of secs. 3, 4, 33, and 34; T road north. (There is a long section in next 2 miles).....	39 47 11.1	93 42 21.6	4,000
Sampsel station, 600 feet east of, center of track—azimuth of tangent at this point 121° 13'—(1,510 feet south of preceding position is T road east at quarter corner between secs. 27 and 28).....	39 48 49.0	93 42 20.1	9,910
T. 58 N., R. 25 W., corner of secs. 21, 22, 27, and 28; T road east.....	39 49 00.2	93 42 20.0	1,135
T road west.....	39 49 46.1	93 42 19.6	4,640
T. 58 N., R. 25 W., corner of secs. 15, 16, 21, and 22.....	39 49 52.5	93 42 19.5	650
T. 58 N., R. 25 W., quarter corner between secs. 15 and 16; T road south.....	39 50 18.6	93 42 19.4	2,640
T. 58 N., R. 25 W., quarter corner between secs. 16 and 17; crossroads.....	39 50 18.8	93 43 27.2	5,290
T. 58 N., R. 25 W., stone at corner of secs. 8, 9, 16, and 17; in fence corner.....	39 50 44.8	93 43 26.8	2,634
T. 58 N., R. 25 W., quarter corner between secs. 8 and 9; crossroads.....	39 51 11.0	93 43 26.6	2,647
T. 58 N., R. 25 W., corner of secs. 4, 5, 8, and 9; crossroads.....	39 51 36.9	93 43 26.4	2,625
Tps. 58 and 59 N., R. 25 W., corner of secs. 4, 5, 32, and 33.....	39 52 23.7	93 43 26.2	4,730
Tps. 58 and 59 N., R. 25 W., corner of secs. 5, 6, 31, and 32; T road south.....	39 52 22.2	93 44 36.2	.....
T. 59 N., R. 25 W., corner of secs. 28, 29, 32, and 33.....	39 53 16.3	93 43 26.4	7,728
T. 59 N., R. 25 W., quarter corner between secs. 28 and 29; T road west.....	39 53 42.1	93 43 26.4	2,610
T. 59 N., R. 25 W., corner of secs. 20, 21, 28, and 29; T road south.....	39 54 08.5	93 43 26.4	2,670
T. 59 N., R. 25 W., corner of secs. 16, 17, 20, and 21.....	39 55 01.3	93 43 26.8	5,340
T. 59 N., R. 25 W., corner of secs. 8, 9, 16, and 17; right angle in road.....	39 55 53.2	93 43 27.6	5,251
T. 59 N., R. 25 W., quarter corner between secs. 8 and 9; T road north.....	39 56 19.5	93 43 28.2	2,661
T. 59 N., R. 25 W., corner of secs. 4, 5, 8, and 9; T road west.....	39 56 45.7	93 43 28.7	2,650
T. 59 N., R. 25 W., 0.25 mile east of corner of secs. 5, 6, 7, and 8; right angle in road.....	39 56 44.3	93 44 19.2	3,935
T. 59 N., R. 25 W., 0.25 mile east of northwest corner of sec. 5; T road south, Grundy-Livingston county line.....	39 57 36.0	93 44 19.8	5,230
T. 60 N., R. 25 W., south corner of secs. 31 and 32; T road north, county line.....	39 57 35.8	93 44 41.0	1,650
T. 60 N., R. 25 W., stone at quarter corner between secs. 31 and 32.....	39 58 01.6	93 44 41.0	2,613
T. 60 N., R. 25 W., corner of secs. 29, 30, 31, and 32; crossroads.....	39 58 27.7	93 44 40.9	2,637
Chicago, Rock Island & Pacific Ry.....	39 58 59.4	93 44 41.3	3,213
T. 60 N., R. 25 W., corner of secs. 19, 20, 29, and 30; crossroads.....	39 59 19.9	93 44 41.4	2,073

CHILLICOTHE QUADRANGLE—Continued.

Along highways east-west through center of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Tps. 58 and 59 N., R. 25 W., 300 feet east of corner of secs. 4, 5, 32, and 33, 80 feet northeast of northeast corner of Central M. E. Chapel, 20 feet south of center of road at end of north-south fence; iron post stamped "Prim. Trav. Sta. No. 24 Mo., 1913".....	39 52 23.6	93 43 22.1	.....
T road south.....	39 52 12.3	93 42 35.2	3,838
T road north.....	39 52 15.5	93 41 44.9	3,935
T. 58 N., R. 25 W., apparent north corner between secs. 2 and 3. (The south corner of secs. 34 and 35, T. 59 N., R. 25 W., as indicated by road north, is 30 feet east of preceding position).....	39 52 26.6	93 41 11.1	2,864
T road south.....	39 52 38.9	93 40 19.7	4,198
T. 59 N., R. 25 W., line through center of sec. 36; T road west.....	39 52 41.6	93 39 29.0	3,969
T road south (420 feet south of preceding position is corner of Tps. 58 and 59 N., Rs. 24 and 25 W.).....	39 52 34.0	93 38 54.8	2,773
T. 59 N., R. 24 W., apparent quarter corner on south side of sec. 32; T road north.....	39 52 32.6	93 37 34.0	6,300
T road north, 300 feet east of church.....	39 52 34.0	93 36 36.8	4,469
T. 58 N., R. 24 W., north quarter corner of sec. 4; T road south.....	39 52 34.4	93 36 23.2	1,065
T. 59 N., R. 24 W., south corner of secs. 33 and 34; T road north.....	39 52 35.2	93 35 52.6	2,385
T. 58 N., R. 24 W., north corner of secs. 3 and 4, 20 feet south by 20 feet east of T road corners, 1.5 feet from corner fence post; iron post stamped "Prim. Trav. Sta. No. 25 Mo., 1913".....	39 52 35.0	93 35 48.5	319
T. 59 N., R. 24 W., south corner of secs. 34 and 35; fence north (260 feet east of preceding position is north corner of secs. 2 and 3, T. 58 N., R. 24 W.).....	39 52 37.1	93 34 44.8	4,979
T. 59 N., R. 24 W., south corner of secs. 35 and 36; T road north (110 feet west of preceding position is north corner of secs. 1 and 2, T. 58 N., R. 24 W.; T road south).....	39 52 38.2	93 33 36.1	5,360
T. 59 N., R. 24 W., south quarter corner of sec. 36; T road north.....	39 52 38.5	93 33 01.9	2,665
Tps. 58 and 59 N., Rs. 23 and 24 W.; crossroads.....	39 52 38.9	93 32 28.2	2,630
T road north.....	39 52 39.8	93 31 47.8	3,155
Sturges, crossroads at, south corner of secs. 32 and 33, T. 59 N., R. 23 W.....	39 52 41.5	93 30 04.9	8,030

Magnetic declination for east border of quadrangle, 7° 09' E.; for south border, 7° 53' E.; for east-west line through middle, 7° 16' E.; for west border, 7° 47' E.

CHULA QUADRANGLE.

Along highways near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Prim. Trav. Sta. No. 12, 1913.....	39 59 41.18	93 29 00.25	.....
T. 60 N., R. 23 W., quarter corner between secs. 22 and 27; T road south.....	39 59 41.9	93 28 26.3	2,645
T. 60 N., R. 23 W., quarter corner between secs. 27 and 34; crossroads.....	39 58 49.5	93 28 25.7	5,305
T. 60 N., R. 23 W., south quarter corner of sec. 34, line between Livingston and Grundy counties; T road north.....	39 57 57.0	93 28 25.3	5,305
T. 59 N., R. 23 W., north corner between secs. 3 and 4.....	39 57 56.4	93 29 01.3	2,806
T. 59 N., R. 23 W., corner of secs. 3, 4, 9, and 10; crossroads.....	39 57 05.0	93 29 01.2	5,210
T. 59 N., R. 23 W., corner of secs. 9, 10, 15, and 16; crossroads.....	39 56 12.5	93 29 00.6	5,310
T. 59 N., R. 23 W., corner of secs. 15, 16, 21, and 22; crossroads.....	39 55 20.1	93 28 59.8	5,303
T. 59 N., R. 23 W., corner of secs. 21, 22, 27, and 28; T road west (335 feet south is crossing of Chicago, Milwaukee & St. Paul Ry.).....	39 54 27.7	93 28 59.1	5,300
T. 59 N., R. 23 W., corner of secs. 27, 28, 33, and 34; crossroads.....	39 53 35.1	93 28 58.0	5,320
T. 59 N., R. 23 W., south corner of secs. 33 and 34; T road north.....	39 52 42.6	93 28 56.9	5,319
T. 58 N., R. 23 W., north corner of secs. 3 and 4, 25 feet east by 25 feet south of, 3 feet east of corner fence post at T road corners, 1 mile east of Sturges; iron post stamped "Prim. Trav. Sta. No. 18 Mo., 1913".....	39 52 42.2	93 29 00.9	314
T. 58 N., R. 23 W., corner of secs. 3, 4, 9, and 10; T road corners.....	39 51 51.0	93 29 00.5	5,187
T. 58 N., R. 23 W., quarter corner between secs. 15 and 16; T road east.....	39 50 32.2	93 28 59.2	7,971
T. 58 N., R. 23 W., corner of secs. 15, 16, 21, and 22; T road west, about 940 feet south is T road east.....	39 50 06.0	93 28 58.8	2,650
T. 58 N., R. 23 W., corner of secs. 21, 22, 27, and 28; crossroads.....	39 49 13.5	93 28 58.1	5,310
T. 58 N., R. 23 W., corner of secs. 27, 28, 33, and 34; crossroads.....	39 48 21.0	93 28 57.3	5,315
T. 58 N., R. 23 W., quarter corner between secs. 33 and 34.....	39 47 54.5	93 28 56.9	2,675

CHULA QUADRANGLE—Continued.

Along highways near west border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
Tps. 57 and 58 N., R. 23 W., corner of secs. 3, 4, 33, and 34; T road east (1,535 feet south of this position is crossing of Chicago, Burlington & Quincy R. R.).....	° ' "	° ' "	<i>Feet.</i>
T. 57 N., R. 23 W., corner of secs. 3, 4, 9, and 10; crossroads.....	39 47 28.0	93 28 56.7	2,615
T. 57 N., R. 23 W., quarter corner between secs. 9 and 10; crossroads.....	39 46 35.9	93 28 55.8	5,270
T. 57 N., R. 23 W., corner of secs. 9, 10, 15, and 16 (20 feet south is T road west and 20 feet north is a T road east).....	39 46 08.9	93 28 55.6	2,733
	39 45 41.8	93 28 55.3	2,745

Magnetic declination for west border of quadrangle, 7° 09' E.

Along highways in northwest corner of quadrangle.

T. 60 N., R. 23 W., corner of secs. 21, 22, 27, and 28, 16 feet south of center of east-west road, opposite road north and 4 feet from wire fence line and fence running north; iron post stamped "Prim. Trav. Sta. No. 12, Mo., 1913".....	39 59 41.18	93 29 00.25
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Magnetic declination, 7° 13' E.

DAWN QUADRANGLE.

Along highways near north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
T. 57 N., R. 23 W., quarter corner between secs. 17 and 20; crossroads.....	° ' "	° ' "	<i>Feet.</i>
T. 57 N., R. 23 W., corner of secs. 17, 18, 19, and 20.....	39 44 47.0	93 30 36.6	.....
T road east.....	39 44 45.6	93 31 11.2	2,704
Three-span bridge over Grand River; center of middle span.....	39 44 45.4	93 31 58.3	3,680
T. 57 N., R. 24 W., corner of secs. 23, 24, 25, and 26; T road east.....	39 44 29.9	93 32 04.5	1,644
Iron span bridge over creek; center.....	39 43 51.2	93 33 20.4	7,103
Chicago, Milwaukee & St. Paul Ry. crossing.....	39 43 59.5	93 33 20.5	840
Trestle No. 708 (Chicago, Milwaukee & St. Paul Ry.), south end of; center of track.....	39 44 51.6	93 33 21.8	5,269
T. 57 N., R. 24 W., quarter corner between secs. 21 and 22.....	39 43 54.6	93 34 46.9	8,803
T. 57 N., R. 24 W., quarter corner between secs. 20 and 21; stone.....	39 44 14.6	93 35 41.4	4,710
T. 57 N., R. 24 W., center of sec. 20; crossroads (1,305 feet west of preceding position is T road east).....	39 44 14.1	93 36 48.6	5,250
Utica station, 115 feet N. 67° 50' E. (true) from road crossing, 2.5 feet north of corner of right of way fence, 40 feet north of center of road; iron post stamped "Prim. Trav. Sta. No. 20 Mo., 1913".....	39 44 13.6	93 37 22.7	2,666
T. 57 N., Rs. 24 and 25 W., apparent corner of secs. 13, 18, 19, and 24, or east corner of secs. 13 and 14; a fence runs west and at a point 213 feet north a fence runs east, which may be the corner of secs. 13 and 19 if there is a jog in section line (could not be ascertained).....	39 44 27.9	93 38 05.5	3,645
T road north.....	39 44 37.0	93 38 53.5	3,864
T. 57 N., R. 25 W., corner of secs. 14, 15, 22, and 23; T road west.....	39 44 21.3	93 39 59.7	5,411
T. 57 N., R. 25 W., quarter corner between secs. 15 and 22.....	39 44 33.3	93 41 06.7	5,373
Crossroads.....	39 44 33.8	93 41 40.7	2,655
T. 57 N., R. 25 W., corner of secs. 16, 17, 20, and 21; T road south.....	39 44 34.0	93 42 31.6	3,975
T. 57 N., R. 25 W., corner of secs. 17, 18, 19, and 20, 25 feet south by 20 feet west of, 1.5 feet from corner fence post; iron post stamped "Prim. Trav. Sta. No. 21 Mo., 1913".....	39 44 34.1	93 43 21.2	3,880
	39 44 34.4	93 44 29.5	5,334

Magnetic declination for north border of quadrangle, 7° 53' E.

GALLATIN QUADRANGLE.

Along highways near north border and in northwest corner of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Gallatin, 2 miles west of, in sec. 13, T. 59 N., R. 28 W.; T road north.	39 55 26.69	93 59 28.03	.....
T. 59 N., R. 28 W., line between secs. 1 and 12; crossroads.	39 56 45.13	93 59 29.66	7,940
T. 59 N., Rs. 27 and 28 W., quarter corner between secs. 1 and 6.	39 57 11.79	93 59 12.99	2,995
Tps. 59 and 60 N., Rs. 27 and 28 W., township corner, 30 feet west of road marked by a stone.	39 57 37.86	93 59 13.71	2,638
T. 60 N., R. 28 W., stone at quarter corner between secs. 30 and 31.	39 58 30.44	93 58 32.42	6,217
T. 60 N., R. 28 W., near middle of sec. 30, 15 feet east of north-south road and 35 feet south of center of road, 2 feet from wire fence; iron post stamped "Prim. Trav. Sta. No. 8, 1913"	39 59 02.74	93 58 33.41	3,270
T road north.	39 58 57.36	93 57 25.38	5,324
Public road crossing Wabash R. R.	39 58 44.18	93 57 06.70	1,973
T. 60 N., R. 27 W., north part of sec. 33; T road west.	39 58 23.03	93 56 16.49	4,457
T. 60 N., R. 27 W., quarter corner between secs. 27 and 34.	39 58 32.89	93 55 08.58	5,381
Crossroads.	39 58 33.38	93 54 17.33	3,991
T. 60 N., R. 27 W., corner of secs. 25, 26, 35, and 36; crossroads.	39 58 33.80	93 53 26.27	3,976
T. 60 N., R. 26 W., 15 feet west by 5 feet north of west corner between secs. 30 and 31, in line with road east, 1.5 feet from wire fence, 50 feet south of iron bridge; iron post.	39 58 33.63	93 52 18.24	5,296
T. 60 N., R. 26 W., corner of secs. 29, 30, 31, and 32; T road south.	39 58 33.82	93 51 22.90	4,308
T. 60 N., R. 26 W., corner of secs. 28, 29, 32, and 33; T road north.	39 58 33.01	93 50 14.44	5,332
T. 60 N., R. 26 W., quarter corner between secs. 28 and 33; T road west.	39 58 32.21	93 49 40.41	2,651
Jamesport, 100 feet west of station, at street crossing; semaphore post; center of main track.	39 58 26.46	93 48 03.50	7,568
T. 60 N., R. 26 W., quarter corner between secs. 25 and 26.	39 58 54.62	93 46 51.36	6,299
T. 60 N., R. 26 W., corner of secs. 23, 24, 25, and 26; T road east.	39 59 20.61	93 46 51.40	2,630
Line between Grundy and Davies counties; center of road.	39 59 46.28	93 45 44.65	5,809

Magnetic declination for north border of quadrangle, 7° 51' E.

Along highways near south border of quadrangle.

T. 57 N., R. 26 W., stone at corner of secs. 10, 11, 14, and 15.	39 45 24.9	93 47 47.2	.....
T. 57 N., R. 26 W., stone at quarter corner between secs. 10 and 15.	39 45 25.5	93 48 21.1	2,646
T. 57 N., R. 26 W., corner of secs. 9, 10, 15, and 16; crossroads.	39 45 26.2	93 48 54.7	2,630
T. 57 N., R. 26 W., corner of secs. 8, 9, 16, and 17; crossroads.	39 45 27.3	93 50 02.2	5,276
T. 57 N., R. 26 W., quarter corner between secs. 8 and 17.	39 45 27.7	93 50 35.5	2,600
T. 57 N., R. 26 W., corner of secs. 7, 8, 17, and 18; crossroads.	39 45 27.8	93 51 09.0	2,610
T. 57 N., R. 26 W., west corner of secs. 7, 18, T road east.	39 45 27.8	93 52 13.7	5,055
T. 57 N., R. 26 W., T road corners, apparent east corner of secs. 12 and 13, 22 feet north by 22 feet west of; 1 foot south of corner fence post; iron post stamped "Prim. Trav. Sta. No. 22 Mo., 1913"	39 45 29.2	93 52 14.0	140
T. 57 N., R. 27 W., corner of secs. 11, 12, 13, and 14; crossroads.	39 45 28.4	93 53 20.6	5,205
T. 57 N., R. 27 W., quarter corner between secs. 11 and 14.	39 45 28.5	93 53 55.0	2,685
T. 58 N., R. 28 W., approximate east corner of secs. 1 and 2. (The east corner of secs. 6 and 7, R. 27 W., is about 85 feet north of this position.)	39 51 31.2	93 59 06.8	.....
T. 58 N., R. 27 W., corner of secs. 5, 6, 7, and 8; crossroads.	39 51 33.0	93 57 56.5	5,492
T. 58 N., R. 27 W., quarter corner between secs. 5 and 8; T road south. (580 feet east of preceding position is T road north.)	39 51 33.3	93 57 21.8	2,701
T. 58 N., R. 27 W., corner of secs. 4, 5, 8, and 9; T road north.	39 51 33.4	93 56 47.7	2,664
T road west.	39 51 33.9	93 55 57.7	3,900
T. 58 N., R. 27 W., center of sec. 3; lane north.	39 51 59.7	93 55 04.4	4,083
T. 58 N., R. 27 W., quarter corner between secs. 2 and 3 (apparent); T road west.	39 51 59.8	93 54 30.4	2,655
Grand River, ford.	39 52 21.2	93 53 44.2	4,198
Carlow, west of, 55 feet S. 47° 50' W. (true) from center of track at road crossing, 1 foot east of right of way corner fence post, west of Magill flag station signpost; iron post stamped "Prim. Trav. Sta. No. 23 Mo., 1913"	39 52 43.2	93 53 42.3	2,235
Road crossing.	39 52 39.8	93 52 49.2	4,154
Road crossing.	39 52 36.4	93 51 50.7	4,575
Carlow station, road crossing at Wabash R. R.	39 52 30.5	93 50 08.5	7,990
Carlow Station, crossroads at, near church and store.	39 53 02.1	93 50 08.9	3,200
T. 59 N., R. 26 W., stone in center of sec. 33.	39 52 49.6	93 49 34.8	2,950
T. 59 N., R. 26 W., quarter corner between secs. 33 and 34; crossroads.	39 52 49.1	93 49 00.9	2,640
Crossroads.	39 52 48.4	93 48 10.3	3,950
T. 59 N., R. 26 W., quarter corner between secs. 34 and 35; fence south.	39 52 48.4	93 47 53.1	1,338
T. 59 N., R. 26 W., quarter corner between secs. 35 and 36; T road west.	39 52 47.8	93 46 44.8	5,325
Tps. 58 and 59 N., Rs. 25 and 26 W., stone at corner, line between Livingston and Daviess counties.	39 52 20.8	93 45 36.3	6,004

Magnetic declination for south border of quadrangle, 8° 25' E.; east border, 7° 47' E.; east-west line through center 8° 00' E.

GALT QUADRANGLE.

Along highways near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 60 N., R. 23 W., corner of secs. 15, 16, 21, and 22; right angle in road.	40 00 33.8	93 29 00.5	.....
T road corners, roads north, south, and west.	40 01 13.5	93 28 43.9	4,223
T. 61 N., R. 23 W., south corner of secs. 33 and 34; T road north.	40 01 57.2	93 28 48.6	4,436
T. 61 N., R. 23 W., corner of secs. 27, 28, 33, and 34; T road west.	40 02 49.8	93 28 48.8	5,320
T road, roads north, south, and west.	40 03 55.4	93 28 32.2	6,767
T. 61 N., R. 23 W., quarter corner between secs. 15 and 16.	40 05 01.4	93 28 49.0	6,799
T. 61 N., R. 23 W., corner of secs. 3, 4, 9, and 10; T road north.	40 06 20.1	93 28 49.0	7,963
Dunlap, 475 feet east of station, 22 feet north of center of Quincy, Omaha & Kansas City R. R. track, 15 feet east of center of public road, 5 feet from crossing signpost; iron post stamped "Prim. Trav. Sta. No. 13 Mo., 1913".	40 06 35.6	93 28 49.0	1,570
T. 61 N., R. 23 W., north corner of secs. 3 and 4; T road south.	40 07 11.2	93 28 49.3	3,606
T. 62 N., R. 23 W., 0.25 mile west of corner of secs. 26, 27, 34, and 35; T road north.	40 08 03.9	93 27 58.3	6,644
T. 62 N., R. 23 W., quarter corner between secs. 22 and 23.	40 09 22.6	93 27 41.0	8,072
T. 62 N., R. 23 W., line between secs. 21 and 22; T road north.	40 09 35.6	93 28 49.4	5,476
T. 62 N., R. 23 W., quarter corner between secs. 15 and 16; T road east.	40 10 15.2	93 28 49.3	4,000
T. 62 N., R. 23 W., corner of secs. 9, 10, 15, and 16; T road west.	40 10 41.4	93 28 49.3	2,660
T. 62 N., R. 23 W., corner of secs. 3, 4, 9, and 10.	40 11 34.0	93 28 49.1	5,320
T. 63 N., R. 23 W., south corner of secs. 33 and 34; crossroads. (The north corner of secs. 3 and 4, T. 62 N., R. 23 W., is about 75 feet east of this position, but there is nothing to indicate the line).	40 12 25.4	93 28 49.8	5,200
T. 63 N., R. 23 W., corner of secs. 27, 28, 33, and 34.	40 13 18.2	93 28 49.3	5,346
T. 63 N., R. 23 W., near center of sec. 22, on east side of road, 900 feet south of crossroads, opposite house of James Batson; iron post stamped "Prim. Trav. Sta. No. 14 Mo., 1913".	40 14 28.2	93 28 14.8	7,568
T. 63 N., R. 23 W., quarter corner between secs. 22 and 23; T road west.	40 14 37.1	93 27 41.2	2,761

Magnetic declination for west border of quadrangle, 7° 41' E.

GOWER QUADRANGLE.

Along highways near east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 55 N., R. 32 W., corner of secs. 20, 21, 28, and 29; T road east, west and north roads.	39 33 30.0	94 30 33.0	.....
T. 55 N., R. 32 W., corner of secs. 16, 17, 20, and 21.	39 34 22.3	94 30 31.9	5,291
Atchison, Topeka & Santa Fe Ry. crossing.	39 34 54.8	94 30 31.4	3,286
T. 55 N., R. 32 W., 0.25 mile north of corner of secs. 8, 9, 10, and 17; T road corner, east, west, and south roads.	39 35 28.2	94 30 30.7	3,381
T. 55 N., R. 32 W., 27 feet west of corner of secs. 28, 29, 32, and 33, in ground at T road west, 15 feet east of fence corner; iron post.	39 37 52.0	94 30 28.8	.....
T. 56 N., R. 32 W., quarter corner between secs. 28 and 29, T roads east, west, and south.	39 38 18.0	94 30 28.6	2,627
Tps. 56 and 57 N., R. 32 W., corner of secs. 4, 5, 32, and 33; T road corner, roads east, west, and north.	39 42 13.6	94 30 26.3	.....
T. 57 N., R. 32 W., corner of secs. 28, 29, 32, and 33; T road corners, roads east, west, and south.	39 43 06.6	94 30 27.5	5,372
T road east.	39 43 31.8	94 30 10.9	2,860
Stewartsville, 0.25 mile west of, 45 feet south of center of Chicago, Burlington & Quincy R. R., 65 feet southwest of public road crossing, 18 inches from corner post in wire fence; iron post stamped "Prim. Trav. Sta. No. 2, Mo., 1913".	39 44 59.8	94 30 04.0	8,920

Magnetic declination for east border of quadrangle, 8° 35' E.

GREEN CITY QUADRANGLE.

Along highways in southwest corner of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Feet.</i>
Small truss bridge over creek.....	40 15 07.09	92 59 58.87	.....

Magnetic declination for southwest corner of quadrangle, 7° 47' E.

HALE QUADRANGLE.

Along highways near northwest corner of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Feet.</i>
T. 57 N., R. 23 W., 25 feet west by 15 feet south of corner of secs. 15, 16, 21, and 22, 2 feet from fence corner at crossroads; iron post stamped "Prim. Trav. Sta. No. 19, Mo., 1913".....	39 44 47.9	93 28 54.6	.....
T road south.....	39 44 48.4	93 29 45.0	3,932

Magnetic declination for northwest corner of quadrangle, 8° 00' E.

LUCERNE QUADRANGLE.

Along highways near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Feet.</i>
T. 63 N., R. 23 W., corner secs. 14, 15, 22, and 23; T road east.....	40 15 03.48	93 27 41.15	.....
T. 63 N., R. 23 W., quarter corner between secs. 14 and 23.....	40 15 03.93	93 27 07.12	2,640
T. 63 N., Rs. 22 and 23 W., corner of secs. 18, 19, 23, and 24; crossroads.....	40 15 04.25	93 25 24.15	7,984
T. 63 N., Rs. 22 and 23 W., quarter corner between secs. 13 and 18.....	40 15 30.44	93 25 24.28	2,650
T. 63 N., R. 22 W., quarter corner between secs. 17 and 18.....	40 15 30.71	93 24 18.57	5,095
T. 63 N., R. 22 W., quarter corner between secs. 16 and 17.....	40 15 31.93	93 23 10.67	5,267
Iron bridge, center of.....	40 15 45.68	93 22 38.86	2,831
County line, approximately, between Grundy and Sullivan counties; no fence line.....	40 15 46.07	93 22 01.67	2,884
T. 63 N., R. 22 W., in northwest quarter of sec. 15; T road corners, roads north, south, and west, about 0.25 mile east of county line.....	40 15 46.36	93 21 44.52	1,331
T. 63 N., R. 22 W., in southwest quarter of sec. 10, T road east, 15 feet west of center of road, in line with road; iron post stamped "Prim. Trav. Sta. No. 15 Mo. 1913".....	40 16 12.85	93 21 44.86	2,682
Chicago, Milwaukee & St. Paul Ry. crossing; T road south on line between secs. 10 and 11 is 1,335 feet west of this position.....	40 16 14.14	93 20 36.21	5,325
T. 63 N., R. 22 W., corner of secs. 11, 12, 13, and 14.....	40 16 01.70	93 19 45.08	4,160
T. 63 N., R. 22 W., quarter corner between secs. 12 and 13; crossroads.....	40 16 02.14	93 19 10.90	2,651
T. 63 N., Rs. 21 and 22 W., corner of secs. 7, 18, 12, and 13.....	40 16 02.58	93 18 36.52	2,666
Crossroads.....	40 16 03.60	93 18 20.07	1,278
T. 63 N., R. 21 W., corner of secs. 7, 8, 17, and 18; T road south.....	40 16 03.58	93 17 29.37	3,930
T. 63 N., R. 21 W., corner of secs. 17, 18, 19, and 20; crossroads.....	40 15 11.20	93 17 29.20	5,300
T. 63 N., R. 21 W., corner of secs. 16, 17, 20, and 21; crossroads.....	40 15 12.67	93 16 20.79	5,308

Magnetic declination for south border of quadrangle, 7° 34' E.

MAYSVILLE QUADRANGLE.

Along highways in southwest corner of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Stewartsville, 200 feet east of station; street crossing.....	39 45 02.0	94 29 46.6	.....

Magnetic declination for south border of quadrangle, 8° 24' E.

MILAN QUADRANGLE.

Along highways near north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 63 N., R. 21 W., quarter corner between secs. 23 and 24; T road north.....	40 14 49.6	93 12 55.7	.....
T. 63 N., R. 20 W., apparent west corner of secs. 19 and 30, right angle in road, fence north-south.....	40 14 24.9	93 11 46.9	5,890
T road north.....	40 14 25.0	93 11 36.0	850
T. 63 N., R. 19 W., quarter corner between secs. 20 and 21; T road east.....	40 14 52.3	93 02 42.7	.....
T. 63 N., R. 19 W., quarter corner between secs. 21 and 22; T road north.....	40 14 51.4	93 01 34.3	5,307
T. 63 N., R. 19 W., center of sec. 22; T road south.....	40 14 50.9	93 01 00.4	2,630

Magnetic declination for north border of quadrangle, 7° 38' E.

PLATTSBURG QUADRANGLE.

Along highways near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Primary traverse station No. 5, 1911.....	39 30 10.4	94 29 27.3	.....
T. 54 N., R. 32 W., apparent corner secs. 3, 4, 9, and 10, intersection of fences in field.....	39 30 49.3	94 29 26.8	3,941
T road corner, roads east, west, and south.....	39 31 58.0	94 29 25.9	6,954
T. 55 N., R. 32 W., corner of secs. 27, 28, 33, and 34; crossroads.....	39 32 37.5	94 29 26.0	3,996
T. 55 N., R. 32 W., corner of secs. 21, 22, 27, and 28.....	39 33 30.0	94 29 25.8	5,315
T. 55 N., R. 32 W., northeast quarter of sec. 9; T road corners, roads east, west, and north.....	39 35 54.2	94 29 39.0	.....
T road corners, roads east, west, and south.....	39 36 59.8	94 29 57.2	6,789
T road corners, roads northwest and southeast.....	39 38 19.0	94 29 20.9	.....
T. 56 N., R. 32 W., apparent corner secs. 21, 22, 27, and 28; T roads north, south, and east.....	39 38 44.0	94 29 21.0	2,524
T. 56 N., R. 32 W., stone at quarter corner between secs. 21 and 22; crossroads.....	39 39 10.1	94 29 21.0	2,643
T. 56 N., R. 32 W., corner secs. 15, 16, 21, and 22; crossroads.....	39 39 36.3	94 29 20.9	2,650
T. 56 N., R. 32 W., corner secs. 9, 10, 15, and 16.....	39 40 28.8	94 29 21.0	5,311
T. 56 N., R. 32 W., quarter corner between secs. 9 and 10.....	30 40 54.8	94 29 21.0	2,640
T. 56 N., R. 32 W., corner secs. 3, 4, 9, and 10; T road corners, roads north, south, and east, and lane west.....	39 41 21.0	94 29 20.9	2,649
T road corners, roads east, west, and south.....	39 42 00.4	94 29 29.6	4,039

PLATTSBURG QUADRANGLE—Continued.

Along highways near north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T road corner, roads east, west, and north.....	39 44 52.9	94 28 30.0	.....
T. 57 N., R. 32 W., corner of secs. 13, 14, 23, and 24, east-west road, county line between Clinton and Dekalb counties.....	39 44 52.9	94 27 05.2	6,625
Township line between Rs. 31 and 32 W., intersection of roads, jog of 35 feet, road east is 15 feet south, and road west is 20 feet north.....	39 44 52.0	94 25 56.8	5,344
T. 57 N., R. 31 W., corner of secs. 16, 17, 20, and 21; T road corner, roads east, west, and north.....	39 44 51.1	94 23 36.8	10,935
T. 57 N., R. 31 W., corner of secs. 15, 16, 21, and 22; T road south..	39 44 51.68	94 22 28.95	5,300
Osborn, 1,000 feet west of station, 60 feet south by 25 feet east to center of Burlington R'y. track at public road crossing, 2 feet west by 5 feet south of wire fence; iron post stamped "Prim. Trav. Sta. No. 3, Mo., 1913".....	39 44 52.8	94 21 38.7	3,927
T. 57 N., R. 31 W., corner of secs. 14, 15, 22, and 23.....	39 44 50.9	94 21 23.5	1,205
T. 57 N., R. 31 W., stone at quarter corner between secs. 14 and 23, 465 feet north is T road west.....	39 44 51.1	94 20 49.6	2,648
T. 57 N., R. 31 W., stone at corner of secs. 13, 14, 23, and 24; T road, roads east, west, and north.....	39 44 50.7	94 20 26.0	2,624
T. 57 N., R. 30 W., west corner between secs. 18 and 19; township line.....	39 44 52.1	94 19 07.9	5,323
T. 57 N., R. 30 W., corner of secs. 17, 18, 19, and 20; T road south..	39 44 51.2	94 18 00.5	5,262
T. 57 N., R. 30 W., stone at corner of secs. 16, 17, 20, and 21; T roads north, south, and west.....	39 44 49.9	94 16 52.7	5,296
T. 57 N., R. 30 W., line between secs. 15 and 16; T road north....	39 44 35.2	94 15 44.8	5,511

Magnetic declination for north border of quadrangle 8° 24' E.; west border, 8° 35' E.

POLO QUADRANGLE.

Along highways near north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Cameron, opposite northwest corner of public park, 252 feet east of center of Chicago, Rock Island & Pacific R'y. track, 3.4 feet south of sidewalk, 17.5 feet east of bell signal post at crossing, top of post 3 inches below level of sidewalk; iron post stamped "Prim. Trav. Sta. No. 4, Mo., 1913".....	39 44 34.0	94 14 22.4	.....
T roads east, west, and south.....	39 44 33.6	94 13 37.6	3,500
T. 57 N., R. 29 W., west corner of secs. 18 and 19; approximate corner of Clinton, Dekalb, and Caldwell counties.....	39 44 44.7	94 12 20.8	6,101
T road south.....	39 44 41.2	94 10 04.0	5,185
T. 57 N., R. 29 W., corner of secs. 17, 18, 19, and 20; crossroads....	39 44 43.8	94 11 10.3	5,511
T. 57 N., R. 29 W., corner of secs. 16, 17, 20, and 21, T road corner, roads east, west, and north.....	39 44 39.47	94 09 12.06	4,057
T. 57 N., R. 29 W., corner of secs. 15, 16, 21, and 22.....	39 44 38.8	94 08 54.7	1,359
T. 57 N., R. 29 W., corner of secs. 14, 15, 22, and 23.....	39 44 35.8	94 07 46.8	5,309
T. 57 N., R. 29 W., corner of secs. 13, 14, 23, and 24, 28 feet south by 24 feet west of center of crossroads; iron post stamped "Prim. Trav. Sta. No. 5, Mo., 1913".....	39 44 33.8	94 06 42.0	5,070
T. 57 N., R. 29 W., east corner of secs. 13 and 24 (the west corner of secs. 18 and 19, T. 57 N., R. 29 W. is 100 feet south of this position).....	39 44 34.0	94 05 35.0	5,235
T. 57 N., R. 28 E., corner of secs. 17, 18, 19, and 20; crossroads....	39 44 33.1	94 04 36.7	4,554
T. 57 N., R. 28 E., corner of secs. 16, 17, 20, and 21; center of road, cross fence.....	39 44 33.0	94 03 29.4	5,255
T. 57 N., R. 28 W., quarter corner between secs. 16 and 21.....	39 44 32.7	94 02 56.6	2,560
T. 57 N., R. 28 W., corner of secs. 14, 15, 22, and 23; hedge row on north-south line.....	39 44 32.4	94 01 16.7	7,806
Hamilton, west part of, 2 feet south by 1 foot west of northwest corner of brick school building on West Mill Street; iron post stamped "Prim. Trav. Sta. No. 6, Mo., 1913" (the approximate corner of secs. 13, 14, 23, and 24, T. 57 N., R. 28 W. is 178 feet west of above permanent station mark).....	39 44 32.6	94 00 08.2	5,356

Magnetic declination for north border of quadrangle, 8° 46' E.

WINIGAN QUADRANGLE.

Station.	Latitude.	Longitude.	Distance between stations.
Yellow Creek Baptist Church, 1,100 feet west of, in southeast corner of sec. 23, T. 63 N., R. 19 W., inside wire fence corner in northwest corner of crossroads, 30 feet northwest of intersection of roads; iron post stamped "Prim. Trav. Sta. No. 9, 1910, Mo." (tie point, 1913 work).....	° ' " 40 14 23.6	° ' " 92 59 18.5	<i>Feet.</i>
T. 63 N., R. 19 W., corner of secs. 23, 24, 25, and 26.....	40 14 23.3	92 59 18.2	30

WINSTON QUADRANGLE.

Along highways near east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Feet.</i>
T. 57 N., R. 28 W., approximate corner secs. 11, 12, 13, and 14....	39 45 24.99	94 00 10.30	.....
T. 57 N., R. 28 W., corner of secs. 1, 2, 11, and 12; T road east (T road west is 90 feet south of this position).....	39 46 17.21	94 00 10.63	5,285
T. 57 N., R. 28 W., approximate north corner of secs. 1 and 2 (the south corner of secs. 35 and 36, T. 58 N., R. 28 W., is about 85 feet east of this position).....	39 47 02.42	94 00 11.08	4,576
T. 58 N., R. 28 W., corner of secs. 25, 26, 35, and 36; crossroads....	39 48 02.29	94 00 10.84	6,058
T. 58 N., R. 28 W., corner of secs. 23, 24, 25, and 26; crossroads....	39 48 54.57	94 00 11.70	5,291
T. 58 N., R. 28 W., corner of secs. 13, 14, 23, and 24; crossroads....	39 49 46.84	94 00 12.87	5,291
T road east (on section line?), near end of iron bridge.....	39 50 39.12	94 00 12.74	5,291
T. 58 N., R. 28 W., corner of secs. 1, 2, 11, and 12, 20 feet south of crossroads, 2 feet east of corner fence post; iron post stamped "Prim. Trav. Sta. No. 7, Mo., 1913".....	39 51 31.14	94 00 14.93	5,267
T road south, on north-south section line.....	39 52 10.48	94 00 15.87	3,983
Tps. 58 and 59 N., line between, about 0.25 mile west of southeast corner of sec. 36.....	39 52 22.66	94 00 32.71	1,800
T. 59 N., R. 28 W., in southeast quarter of sec. 26, T road south....	39 53 17.65	94 00 33.49	5,565
T. 59 N., R. 28 W., corner of secs. 23, 24, 25, and 26; center of east-west road.....	39 54 07.35	94 00 17.91	5,174
T. 59 N., R. 28 W., corner of secs. 23, 24, 13, and 14; crossroads....	39 54 59.66	94 00 19.00	5,294
T. 59 N., R. 28 W., quarter corner between secs. 13 and 14.....	39 55 25.85	94 00 19.42	2,651

Magnetic declination for east border of quadrangle, 8° 10' E.

Joplin district, Neosho, Noel, Ritchey, and Wyandotte quadrangles.

McDONALD AND NEWTON COUNTIES.

The following geographic positions were determined by primary traverse and are based upon positions in Wyandotte quadrangle located in 1908, approximate North American datum. A tie was also made with primary traverse station No. 8, 1909, both described in Bulletin 440.

The work was done by E. L. McNair in April, 1914.

JOPLIN DISTRICT.

Along highways near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Feet.</i>
Tps. 26 and 27 N., Rs. 30 and 31 W., 45 feet south and 25 feet west of, at crossroads, close to hedge fence, iron bench mark post stamped "Prim. Trav. Sta. No. 3, 1914, Mo."	37 00 33.9	94 15 37.8	.....
Tps. 26 and 27 N., R. 31 W., corner secs. 1, 2, 35, and 36, crossroads at.....	37 00 35.0	94 16 42.7	5,268
T. 26 N., R. 31 W., north corner between secs. 2 and 3, T road south.....	37 00 35.6	94 17 48.2	5,310
T. 27 N., R. 31 W., 195 feet east of south corner secs. 33 and 34, is T road south at north corner secs. 3 and 4, T. 26 N., R. 31 W.....	37 00 36.1	94 18 50.6	5,060
Tps. 26 and 27 N., 0.25 mile north of line between, on line between secs. 34 and 35; stake.....	37 00 56.5	94 30 57.8	.....
Shoal Creek, north end of bridge over.....	37 01 15.4	94 30 44.2	2,204
T. 27 N., Rs. 32 and 33 W., quarter corner between secs. 31 and 36, stone.....	37 01 08.1	94 28 45.3	9,666
Milepost "K. C. 162" center of track of Kansas City Southern Ry. at.....	37 00 28.1	94 27 55.1	5,738

Magnetic declination for south border of quadrangle, 8° 26' E.

NEOSHO QUADRANGLE.

Along highways through center of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Feet.</i>
Racine station, about 1.20 miles east of, public road crossing.....	36 53 27.2	94 29 57.7	6,209
T. 25 N., R. 32 W., quarter corner between secs. 17 and 18, crossroads at.....	36 53 18.0	94 27 46.1	10,730
T. 25 N., R. 32 W., quarter corner between secs. 16 and 17, T road west.....	36 53 17.5	94 26 40.7	5,310
T. 25 N., R. 32 W., corner secs. 16, 17, 20, and 21, crossroads.....	36 52 51.3	94 26 41.4	2,649
T. 25 N., R. 32 W., corner secs. 15, 16, 21, and 22, crossroads.....	36 52 50.6	94 25 36.2	5,290
T. 25 N., R. 32 W., corner secs. 14, 15, 22, and 23, crossroads.....	36 52 49.6	94 24 31.1	5,294
T. 25 N., R. 32 W., corner secs. 13, 14, 23, and 24, crossroads.....	36 52 48.7	94 23 26.9	5,215
Neosho, T. 25 N., Rs. 31 and 32 W., approximate corner secs. 18, 19, 13, and 24 (this corner is at north end of High Street).....	36 52 47.9	94 22 21.9	5,280
Neosho, 0.61 mile north of Kansas City Southern Ry. station, 180 feet east of above-described section corner, 26 feet west of track on wire fence line; iron bench-mark post stamped "Prim. Trav. Sta. No. 1, 1914, Mo.".....	36 52 47.9	94 22 19.5	195
T. 25 N., R. 31 W., corner secs. 17, 18, 19, and 20, fences east, west, and north.....	36 52 40.2	94 21 17.2	5,126
T. 25 N., R. 31 W., corner secs. 16, 17, 20, and 21, center of east and west road.....	36 52 45.8	94 20 08.4	5,615
T. 25 N., R. 31 W., corner secs. 15, 16, 21, and 22, T road west.....	36 52 44.6	94 19 03.4	5,290
T road north.....	36 52 30.5	94 18 16.0	4,108
T. 25 N., R. 31 W., on line between secs. 22 and 23, T road south.....	36 52 30.1	94 17 59.8	1,315
Crossroads.....	36 52 29.7	94 17 27.6	2,616
T. 25 N., R. 31 W., quarter corner between secs. 14 and 23.....	36 52 42.7	94 17 27.4	1,315
T. 25 N., R. 31 W., corner secs. 13, 14, and 23 and 24.....	36 52 42.2	94 16 55.3	2,606
T. 25 N., Rs. 30 and 31 W., 35 feet north and 20 feet east of crossroads at corner of secs. 13, 18, 19, 24, 2 feet from wire fence line; iron bench-mark post stamped "Prim. Trav. Sta. No. 2, 1914".....	36 52 42.0	94 15 50.6	5,263
T. 25 N., Rs. 30 and 31 W., corner secs. 7, 12, 13, and 18, T road east, fence line west.....	36 53 33.9	94 15 49.2	5,250
T. 25 N., Rs. 30 and 31 W., corner secs. 1, 6, 7, and 12, road north and south, fence line east and west.....	36 54 26.0	94 15 47.7	5,270
Granby station (Missouri Pacific Ry.) street crossing at.....	36 55 09.9	94 15 22.6	4,886
Tps. 25 and 26 N., Rs. 30 and 31 W., corner of, rock in east and west road.....	36 55 19.9	94 15 46.5	2,183
T. 26 N., Rs. 30 and 31 W., corner secs. 25, 30, 31, and 36.....	36 56 12.4	94 15 45.3	5,314
Granby station (Frisco Ry.) about 400 feet east of, public road crossing.....	36 56 34.3	94 15 57.5	2,420

NEOSHO QUADRANGLE—Continued.

Along highways near east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Feet.</i>
T. 26 N., Rs. 30 and 31 W., corner secs. 19, 30, 24, and 25.....	36 57 04.6	94 15 43.2	3,277
T. 26 N., Rs. 30 and 31 W., corner secs. 13, 18, 19, and 24; crossroads.....	36 57 57.1	94 15 42.0	5,310
T. 26 N., Rs. 30 and 31 W., quarter corner between secs. 13 and 18; T road west.....	36 58 22.9	94 15 41.4	2,615
T. 26 N., Rs. 30 and 31 W., corner secs. 7, 12, 13, and 18; crossroads.....	36 58 49.3	94 15 40.6	2,665
T. 26 N., Rs. 30 and 31 W., corner secs. 1, 6, 7, 12; crossroads.....	36 59 41.9	94 15 39.2	5,320

Along highways near north border of quadrangle.

Diamond Village, T. 26 N., R. 31 W., corner secs. 3, 4, 9, and 10; main crossroads at.....	36 59 42.6	94 18 52.4	.....
T. 26 N., R. 31 W., corner secs. 4, 5, 8, and 9; crossroads.....	36 59 43.6	94 19 57.1	5,250
T. 26 N., R. 31 W., corner secs. 6, 6, 7, and 8; road crossing, center of.....	36 59 44.4	94 21 01.3	5,204
T. 26 N., R. 31 W., 15 feet south and 20 feet west of west corner secs. 6 and 7 and 15 feet north and 20 feet west of east corner secs. 1 and 2, T. 26 N., R. 32 W., inside of fence corner; iron post stamped "Prim. Trav. Sta. No. 4, 1914, Mo.".....	36 59 46.1	94 22 15.8	6,045
T. 26 N., R. 32 W., corner secs. 1, 2, 11, and 12; crossroads.....	36 59 46.6	94 23 20.8	5,275
T. 26 N., R. 32 W., corner secs. 2, 3, 10, and 11.....	36 59 47.2	94 24 25.8	5,275
T. 26 N., R. 32 W., corner secs. 3, 4, 9, and 10; rock at fence line north.....	36 59 48.2	94 25 31.5	5,324
T. 26 N., R. 32 W., stone, corner secs. 4, 5, 8, and 9; at intersection fence lines north, east, and west.....	36 59 49.1	94 26 37.2	5,330

Along east border of quadrangle.

T. 25 N., Rs. 30 and 31 W., corner secs. 19, 24, 25, and 30; crossroads at Aromaa.....	36 51 49.5	94 15 52.2	.....
T. 25 N., Rs. 30 and 31 W., quarter corner between secs. 25 and 30; road at fences east and west.....	36 51 23.4	94 15 53.0	2,640
T. 25 N., Rs. 30 and 31 W., corner secs. 25, 30, 31, and 36; stone near center of road crossing.....	36 50 57.4	94 15 53.8	2,636
T. 25 N., Rs. 30 and 31 W., quarter corner between secs. 36 and 31, at second-class T road west.....	36 50 31.1	94 15 54.4	2,655
Tps. 24 and 25 N., Rs. 30 and 31 W., at south corner of secs. 31 and 36; center of east and west road at.....	36 50 05.2	94 15 55.2	2,626
Sweetwater, T road north at, 25 feet northeast to telephone pole at corner roads; 30 feet northwest to corner of stone.....	36 49 37.7	94 15 55.8	2,775
T. 24 N., R. 31 W., corner secs. 2, 3, 10, and 11; T road south.....	36 49 36.0	94 15 07.6	3,920
T. 24 N., R. 31 W., quarter corner between secs. 10 and 11; road at fence line west.....	36 49 09.9	94 15 08.8	2,640
T. 24 N., R. 31 W., corner secs. 10, 11, 14, and 15; center of north and south road near fence line east.....	36 48 41.7	94 15 10.0	2,856

Along highways near south border of quadrangle.

T. 24 N., R. 31 W., stone corner secs. 27, 28, 33, and 34, about 250 feet north of ford across Indian Creek.....	36 46 09.6	94 16 22.2	.....
T. 24 N., R. 31 W., 2,045 feet south of corner secs. 27, 28, 33, and 34, on south side of east and west road and in line with road north; iron bench mark post stamped "Prim. Trav. Sta. No. 5, 1914, Mo.".....	36 45 49.3	94 16 23.2	2,046
Tps. 23 and 24 N., R. 31 W., on line between secs. 4 and 33; center of road at Newton-McDonald county line crossing.....	36 45 18.6	94 16 51.7	3,877
Tps. 23 and 24 N., Rs. 32 and 33 W., corner of; also on McDonald- Newton county line.....	36 45 37.4	94 26 01.0	.....
Forks of road, 0.66 mile west of above township corner.....	36 45 26.5	94 26 41.6	3,484
T road north; center of east and west road at.....	36 45 27.1	94 27 05.8	1,970
T. 23 N., R. 33 W., quarter corner between secs. 2 and 3.....	36 45 16.5	94 28 10.8	5,398
T. 23 N., R. 33 W.; in middle of sec. 3.....	36 45 12.3	94 28 42.5	2,618

Magnetic declination for north border of quadrangle, 8° 26' E.; for south border, 8° 32' E.; for east border, 8° 03' E.; for center, 8° 15' E.

NOEL QUADRANGLE.

Along highways near north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T road north.....	36 44 59.4	94 17 11.1	.....
T road southeast at north side of northeast and southwest road..	36 44 49.0	94 17 26.8	1,659
McNatt, west corner of south abutment of iron truss bridge over Indian Creek.....	36 43 54.8	94 18 42.1	8,217
T. 23 N., Rs. 31 and 32 W., at corner secs. 7, 12, 13, and 18; cross-roads.....	36 43 40.0	94 19 40.3	4,970
T. 23 N., R. 32 W., stone quarter corner between secs. 11 and 14..	36 43 42.6	94 21 18.0	7,957
Erie, 75 feet northwest of August Frost's store, 20 feet north and 35 feet west of T road corners, 12 feet northeast of corner of black-smith shop; iron post stamped "Prim. Trav. Sta. No. 6, 1914, Mo.".....	36 43 42.0	94 21 49.2	2,540
T. 23 N., R. 32 W., corner secs. 10, 11, 14, and 15; iron bolt.....	36 43 43.7	94 21 50.1	187
Goodman station, 100 feet southwest of; public road crossing.....	36 44 23.1	94 24 28.0	13,460
T. 23 N., R. 32 W., corner secs. 5, 6, 7, and 8; T roads east, west, and north.....	36 44 43.1	94 24 59.1	3,240
T road corners, roads east, west, and north.....	36 44 44.8	94 25 47.4	3,940

Magnetic declination along north border of quadrangle, 8° 32' E.

RITCHEY QUADRANGLE.

Spur line to connect with traverse run in 1909. Along St. Louis & San Francisco R. R. from west border to point 2 miles east of Ritchey.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Granby station, about 1.50 miles east of; public road crossing.....	36 56 42.7	94 14 22.8	.....
Granby station, 2.20 miles east of; west end of bridge No. 2999 over Shoal Creek (wagon road passes under end of bridge)....	36 56 35.6	94 13 36.3	3,844
Shoal Creek, abutment west end of Bridge No. 298.5.....	36 56 42.4	94 12 09.0	7,116
Ritchey station, 100 feet west of; railroad crossing.....	36 56 32.8	94 11 08.4	5,017
Ritchey station, 0.81 mile east of; public road crossing.....	36 56 22.2	94 10 17.4	4,279
T. 26 N., Rs. 29 and 30 W., line between secs. 25 and 30; center of track at.....	36 56 11.3	94 09 12.4	5,391
Ritchey, about 2.25 miles east of, on south of road crossing St. Louis & San Francisco R. R., 50 feet west and 60 feet north to crossing; iron bench mark post, stamped "Prim. Trav. Sta. No. 8, 1909, Mo.".....	36 56 08.48	94 08 45.44	2,203
Astronomic value obtained in 1909.....	36 56 11.70	94 08 46.40	.....

On highway near southwest corner of quadrangle.

T road corners, roads north, east, and west, about 150 feet east of small stream.....	36 47 38.2	94 14 56.7
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Magnetic declination along west border of quadrangle, 8° 03' E.

WYANDOTTE QUADRANGLE.

Along highways near northeast corner of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 26 N., R. 33 W., 35 feet southeast of corner secs. 4, 5, 8, and 9, beside wire fence; iron post stamped "Prim. Trav. Sta. No. 9, 1906".....	36 59 52.34	94 33 05.00	.....
T. 23 N., R. 33 W., corner secs. 5, 6, 7, and 8, 500 feet south of forks of road at large oak tree near east bank of Buffalo Creek, just west of May's store, 25 feet east of a walnut tree, near bank of creek; stone just above surface of ground.....	36 44 57.1	94 31 25.9	.....
Tps. 23 and 24 N., R. 33 W., corner secs. 5, 6, 31, and 32; stone on county line between Newton and McDonald counties.....	36 45 49.0	94 31 24.6	5,252
T. 24 N., R. 33 W., corner secs. 29, 30, 31, and 32; road north and west.....	36 46 41.3	94 31 22.1	5,292
T. 24 N., R. 33 W., 200 yards northwest of southeast corner of sec. 19, 6 feet northwest corner of fence near northwest corner of T road west; iron bench-mark post stamped "Prim. Trav. Sta. No. 7, 1906".....	36 47 34.14	94 31 28.2	5,368
Prim. Trav. Sta. No. 8, 1906 (see Bull. 440, p. 489).....	36 53 52.14	94 31 36.40	.....
T. 25 N., R. 33 W., quarter corner between secs. 10 and 15, 125 feet east of bridge; center of east and west road at north and south fence.....	36 53 45.8	94 31 33.5	682
Racine station, center of St. Louis & San Francisco R. R. track at.....	36 53 40.3	94 31 12.3	1,509

Bandyville, Cabool, Cedar Gap, Clear Springs, Eminence, Exchange, Fordland, Lebanon, Long Lane, Macomb, Monteer, Niangua, Passover, Redford, Ruble, Sinkin, Sleeper, Summersville, and Willow Springs quadrangles.

CAMDEN, HOWELL, LACLEDE, REYNOLDS, SHANNON, TEXAS, WEBSTER, AND WRIGHT COUNTIES.

The following geographic positions on North American datum were determined by primary traverse run in the fall of 1913 by E. L. McNair. The line is based upon a traverse position at Linn Creek, Camden County, established in 1902, described in Bulletin 216, and based upon triangulation of the Coast and Geodetic Survey. The line runs south to the main line of the St. Louis & San Francisco Railroad, which it follows southwest to Marshfield, thence goes south across country to Fordland, on the Springfield-Memphis branch of the Frisco Railroad, thence east along this line and the Current River branch to Low Wossie, Shannon County, thence north and east by road via Ellington and Centerville, Reynolds County, to a tie on primary traverse position about 5 miles north of Centerville, established in 1907, described in Bulletin 440.

This line is about 250 miles in length and the error of closure is $-1.65''$ in latitude and $-1.35''$ in longitude.

In the spring of 1914 lines were run by McNair to complete the control of the Eminence quadrangle.

BANDYVILLE QUADRANGLE.

Along St. Louis & San Francisco R. R. Current River branch, from Birch Tree to Low Wossie.

Station.	Latitude.	Longitude.	Distance between stations.
Birch Tree station, 610 feet west of, 48 feet south of center of track in rear of M. L. Lee's blacksmith and wagon shop, 2 feet from fence corner; iron post stamped "Prim. Trav. Sta. No. 50, 1913, Mo.".....	° ' " 36 59 23.0	° ' " 91 29 42.2	<i>Feet.</i> 2,217
Road crossing.....	36 59 36.0	91 29 18.8	2,308
T. 27 N., R. 5 W., quarter corner between secs. 22 and 23, as indicated by fence corner 544 feet north of railroad.....	36 59 41.7	91 28 29.6	4,027
Road crossing.....	36 59 25.2	91 26 51.6	8,128
T. 27 N., Rs. 4 and 5 west; center of track at range line.....	36 59 42.7	91 26 19.0	3,180
T. 27 N., R. 4 W., center of track at line between secs. 19 and 20... Bartlett flag station, 350 feet north 25° east from station signpost, 325 feet northeast from store building and post office, 85 feet from center of track and 2½ feet from corner fence post; iron post stamped "Prim. Trav. Sta. No. 51, 1913, Mo.".....	36 59 53.5	91 25 19.8	4,925
T. 27 N., R. 3 W., quarter corner between secs. 18 and 19; corner about 320 feet south of railroad.....	37 00 12.5	91 24 54.0	2,839
T. 27 N., R. 3 W., corner of secs. 20, 21, 28, and 29.....	37 00 07.3	91 19 10.3	.....
Road crossing under railway.....	36 59 12.9	91 17 33.9	9,570
Low Wossie flag station, 300 feet west of, 190 feet north of track on east side of road leading north, 2 feet from fence line; iron post stamped "Prim. Trav. Sta. No. 52, 1913, Mo.".....	36 59 31.1	91 16 13.9	6,741
T. 27 N., R. W., corner of secs. 22, 23, 26, and 27; a lane north and south and fence east.....	36 59 18.7	91 15 29.4	3,826
	36 59 10.3	91 15 23.0	994

Magnetic declination for north border of quadrangle, 6° 10' E.

CABOOL QUADRANGLE.

Along St. Louis & San Francisco R. R. from Mountain Grove to Sterling flag station.

Station.	Latitude.	Longitude.	Distance between stations.
T. 28 N., R. 12 W., center of track at line between secs. 8 and 9. This is also county line between Wright and Texas counties.	° ' "	° ' "	<i>Feet.</i>
T. 28 N., R. 12 W., center of track at line between secs. 10 and 11.	37 07 45.9	92 14 57.0	2, 735
Road crossing.	37 07 47.6	92 13 53.1	5, 175
Road crossing.	37 07 56.2	92 13 20.0	2, 521
T. 28 N., Rs. 11 and 12 W.; center of track at line between.	37 08 17.6	92 12 07.3	6, 275
Road crossing.	37 08 23.1	92 11 41.7	2, 143
T. 28 N., R. 11 W., stone in east and west public road on line between secs. 5 and 6 and which is 820 feet north of railroad track.	37 08 24.8	92 11 08.6	2, 687
Road crossing under railroad.	37 08 41.0	92 10 37.5	3, 002
Hank's spur, switch stand at.	37 08 18.3	92 10 01.8	3, 695
T. 28 N., R. 11 W., crossing of line between secs. 9 and 10; center of track at.	37 07 45.2	92 08 29.3	999
T. 28 N., R. 11 W., crossing of line between secs. 10 and 11; center of track at.	37 07 39.5	92 07 25.4	5, 212
Road crossing.	37 07 20.6	92 06 46.0	3, 720
Cabool station, 700 feet west of, 90 feet north of track, 12 feet west of fence corner; iron post stamped "Prim. Trav. Sta. No. 43, 1913, Mo."	37 07 13.7	92 06 14.8	2, 627
Road crossing.	37 07 25.4	92 05 39.5	3, 095
Road crossing.	37 07 41.0	92 05 20.9	2, 180
Iron girder bridge No. 280.8; east end abutment of.	37 08 17.2	92 04 43.2	4, 758
T. 28 N., R. 10 W., stone and iron rod at fence corner on section line between secs. 5 and 6, and approximately quarter mile north of corner of secs. 5, 6, 7, and 8. This point is 370 feet west of railroad.	37 07 55.2	92 04 14.6	3, 213
T. 28 N., R. 10 W., road crossing in line between secs. 5 and 8.	37 07 39.0	92 03 52.4	2, 428
T. 28 N., R. 10 W., fence corner 75 feet west of railroad, which is on line between secs. 8 and 9, and approximately quarter mile north of corner of secs. 8, 9, 16, and 17.	37 07 02.4	92 03 10.3	5, 037
Sax's spur, switch stand at.	37 06 43.4	92 02 58.4	2, 151
T. 28 N., R. 10 W., quarter mile north of line between secs. 16 and 21; center of track at crossing of east and west fence line.	37 06 09.6	92 02 31.0	4, 082
Sargent flag station, 300 feet south of, 90 feet south 27° west from road crossing, 50 feet south of public road beside corner fence post; iron post stamped "Prim. Trav. Sta. No. 44, 1913, Mo."	37 05 09.0	92 01 36.6	7, 548
T. 28 N., R. 10 W., quarter mile north of line between secs. 27 and 34; center of track at east and west fence line.	37 04 24.1	92 01 16.7	4, 813
T. 27 N., R. 10 W., north corner for secs. 2 and 3. A road east and south. This is county line between Texas and Howell counties.	37 03 18.2	92 01 02.7	6, 764
Sterling flag station; road crossing at.	37 02 31.8	92 00 26.9	5, 513

Magnetic declination for center of quadrangle, 6° 50' E.; for southeast quarter, 6° 40' E.

CEDAR GAP QUADRANGLE.

Along St. Louis & San Francisco R. R. from Seymour to Macomb.

Station.	Latitude.	Longitude.	Distance between stations.
T. 28 N., R. 17 W., quarter corner between secs. 1 and 12. This corner is 610 feet north of railroad.	° ' "	° ' "	<i>Feet.</i>
Road crossing.	37 08 23.8	92 44 43.6	3, 202
T. 28 N., R. 16 W., corner of secs. 7, 8, 17, and 18; road north and south, fence line east and west.	37 07 47.7	92 43 11.1	8, 332
Road crossing, near center of sec. 16.	37 07 31.9	92 43 11.7	1, 595
NOTE.—County line between Webster and Wright counties could not be located.	37 07 05.0	92 41 39.9	7, 922
Cedar Gap station, 85 feet east from southeast corner of, 60 feet east of center of track on top of bank, 2 feet from corner post of yard fence; iron post stamped "Prim. Trav. Sta. No. 38, 1913, Mo."	37 06 16.8	92 40 16.1	8, 359
T. 28 N., R. 16 W., crossing of line between secs. 22 and 23; center of track.	37 06 01.7	92 39 57.3	2, 157
Road crossing.	37 05 46.3	92 37 53.1	10, 185
T. 28 N., Rs. 15 and 16 west, corner of secs. 19, 30, 24, and 25, approximately within 50 feet; 450 feet south of railroad and 35 feet southwest of fence corner.	37 05 42.9	92 37 48.1	529
Road crossing under railroad.	37 06 15.0	92 36 44.2	6, 110
T. 28 N., R. 15 W., corner of secs. 16, 17, 20, and 21; corner is nearly 500 feet north of railroad.	37 06 33.1	92 35 36.6	5, 773
Mansfield station, 200 feet south 72° west from semaphore post, 80 feet north 43° west from northwest corner of Mansfield hotel, 3 feet from concrete sidewalk and 3 feet from fence corner; iron post stamped "Prim. Trav. Sta. No. 39, 1913, Mo."	37 06 18.7	92 34 58.2	3, 437
T. 28 N., R. 15 W., crossing of line between secs. 26 and 27.	37 05 25.2	92 33 27.5	9, 129
T. 28 N., Rs. 14 and 15 west; crossing of range line.	37 05 07.3	92 31 17.9	10, 659
Road crossing, private.	37 05 21.8	92 30 15.0	5, 299

Magnetic declination along east-west line through center of quadrangle, 7° 10' E.

CLEAR SPRINGS QUADRANGLE.

Along St. Louis & San Francisco R. R. from Sterling flag station to Willow Springs.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Feet.</i>
Road crossing.....	37 01 55.9	91 59 52.1	4,603
T. 27 N., R. 10 W.; crossing of line through middle of sec. 13.....	37 01 05.9	91 59 34.6	5,256
Road crossing.....	37 00 26.4	91 59 08.5	4,520
T. 27 N., R. 10 W.; quarter corner on east side sec. 24; fence north, south, and west.....	37 00 13.3	91 58 54.2	1,761

EMINENCE QUADRANGLE.

Along St. Louis & San Francisco R. R., Current River branch.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Feet.</i>
Bartlett flag station, 350 feet N. 25° E. from station sign post, 325 feet northeast from store building and post office, 85 feet from center of track, and 2.5 feet from corner fence post; iron post stamped "Prim. Trav. Sta. No. 51, 1913, Mo.".....	37 00 12.5	91 24 54.0	840
T. 27 N., R. 4 W., quarter corner between secs. 17 and 20.....	37 00 06.8	91 24 46.5	4,201
Road crossing.....	37 00 08.5	91 23 54.8	4,022
T. 27 N., R. 4 W.; center of track at line between secs. 16 and 17.....	37 00 21.0	91 23 07.7	4,752
Eminence turnout; head block at.....	37 00 36.4	91 22 12.4	1,566
Road crossing.....	37 00 39.7	91 21 53.5	4,735
T. 27 N., R. 4 W., quarter corner between secs. 13 and 14; corner is in east and west road 550 feet south of railroad.....	37 00 32.2	91 20 55.9	5,286
T. 27 N., R. 4 W., quarter corner in east side sec. 13.....	37 00 33.8	91 19 50.8	4,018
Road crossing.....	37 00 10.6	91 19 10.6	329
T. 27 N., R. 3 W.; quarter corner between secs. 18 and 19 corner is 320 feet south of track.....	37 00 07.3	91 19 10.3	

Near east border of quadrangle along and near public roads.

T. 27 N., R. 3 W., corner of secs. 14, 15, 22, and 23; at fence corner.....	37 00 02.6	91 15 21.2	2,639
T. 27 N., R. 3 W., quarter corner between secs. 14 and 15.....	37 00 28.7	91 15 20.4	10,610
T. 27 N., R. 3 W., quarter corner between secs. 2 and 3.....	37 02 13.6	91 15 17.4	2,384
T. 28 N., R. 3 W., south corner between secs. 34 and 35. The north corner for secs. 2 and 3 is 16 feet east of above.....	37 02 37.1	91 15 17.3	5,484
T. 28 N., R. 3 W., in northwest quarter of sec. 33, nail in top of small stump 15 inches high and 4 inches in diameter, 10 feet west of road on top of divide just before descending into Rocky Creek ...	37 03 27.2	91 14 51.3	5,828
T. 28 N., R. 3 W., corner of secs. 22, 23, 26, and 27.....	37 04 21.8	91 15 14.3	4,373
T road west.....	37 05 02.8	91 14 57.0	9,082
T lane west.....	37 06 32.6	91 14 55.1	2,965
T. 28 N., R. 3 W., corner of secs. 2, 3, 10, and 11.....	37 06 59.2	91 15 10.6	2,852
Shawnee post office, private house and store, 72 feet west, across road and just west of wire fence. In southeast quarter of sec. 3; iron post stamped "Prim. Trav. Sta. No. 53, 1913, Mo.".....	37 07 15.4	91 15 39.3	4,707
T. 28 N., R. 3 W., north corner for secs. 3 and 4; corner is 900 feet north of road.....	37 07 51.8	91 16 15.7	7,616
T. 29 N., R. 3 W., corner of secs. 28, 29, 32, and 33.....	37 08 46.3	91 17 20.6	5,923
T. 29 N., R. 3 W., quarter corner between secs. 20 and 29.....	37 09 39.4	91 17 51.5	4,018
Sec. 20, northeast quarter of, at junction of road west to Eminence and road east down Jacks Fork; nail in root of water-oak tree, blazed on two sides and marked "U. S. P. T.".....	37 10 18.6	91 17 59.6	1,509
T. 29 N., R. 3 W., quarter corner between secs. 17 and 20; pile of stones in line with fence west, but 20 feet west of fence south.....	37 10 31.6	91 17 50.4	3,851
Jacks Fork, center of ford at, not far from quarter corner between secs. 9 and 16, but neither corner or line could be found.....	37 10 59.4	91 17 18.0	7,529
T. 29 N., R. 3 W., in northwest quarter sec. 15, 100 feet north of bank of Current River at ford, 10 feet south of rod; nail in root of elm tree, blazed on two sides and marked "U. S. P. T.".....	37 11 09.6	91 15 45.8	5,866
Forks of road, in sec. 14, 33 feet east to signboard "Eminence 8 miles," and 33 feet north to signboard "Centerville 28 miles".....	37 10 50.0	91 14 37.7	

Magnetic declination for south border of quadrangle, 6° 10' E.; for east border, 6° 15' E.

EMINENCE QUADRANGLE—Continued.

Along highways through center of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
T. 29 N., R. 3 W., sec. 20, northeast quarter of, at junction road west to Eminence and road east down Jacks Fork; nail in root of water-oak tree, blazed on two sides and marked "U. S. P. T."...	° ' "	° ' "	Feet.
Jacks Fork, at west side of first ford above Shawnee Creek, forks of road.....	37 10 18.56	91 17 59.61	.....
Forks, roads N. 18° W., S. 28° W., and S. 88° E.....	37 10 26.9	91 18 31.7	2,731
Jacks Fork, on west side at second crossing below Eminence, in root of large elm tree; nail.....	37 09 58.6	91 19 51.8	7,092
Eminence, in northeast corner of courthouse yard, 12 feet south and 6 feet west of corner of stone wall; iron bench mark post stamped "Prim. Trav. Sta. No. 6, 1914, Mo.".....	37 09 41.5	91 20 28.4	3,426
Eminence, T. 29 N., R. 4 W., corner secs. 26, 27, 34, and 35, about 1,500 feet west of Riverside Hotel.....	37 08 53.8	91 21 28.8	6,870
West Eminence station, about 200 feet north of crossing of Salem, Winona & Southern Ry. and road.....	37 08 49.8	91 21 47.3	1,549
T. 29 N., R. 4 W., stone at corner secs. 27, 28, 33, and 34.....	37 08 36.3	91 22 49.7	5,237
Jacks Fork, 200 feet west of railroad trestle over; road crossing.....	37 08 49.4	91 22 52.6	1,339
Jacks Fork, on north side of, near switch at loading spur; railroad crossing.....	37 09 10.8	91 22 40.5	2,377
Milepost No. 16; center track opposite.....	37 09 31.6	91 23 28.9	4,446
Railroad crossing, near small frame house on north side of tracks and 70 feet east of trestle (line leaves railroad about 1,000 feet west of this crossing).....	37 09 38.1	91 24 02.2	2,771
T road corner; roads west and north, lane south.....	37 09 44.0	91 24 44.8	3,506
Signboard "Eminence 5 miles"; road forks at.....	37 09 38.2	91 25 01.6	1,480
T. 29 N., Rs. 4 and 5 W., corner secs. 25, 36, 30, and 31, in field southeast of road at fence corner, buckeye witness tree.....	37 09 35.2	91 25 29.7	2,293
Forks, road southwest to Birch Tree, road north to Alley and Summersville; road east to Eminence.....	37 08 50.5	91 26 07.2	5,445
Alley, on cupola of concrete-block schoolhouse; flagpole.....	37 08 56.4	91 26 28.4	1,817
West one of three forks at triangle of roads, triangle is about 100 feet on each side; road east to Alley, road west to Summersville, road north to Ink.....	37 09 12.4	91 26 39.6	1,863
T road corners; road to Black Pond up hollow road west to Summersville.....	37 09 36.0	91 28 04.1	7,242
Forks at top of ridge, trail east, in notched root of black-oak tree; nail.....	37 09 37.8	91 28 41.0	2,994
	37 09 02.1	91 29 55.3	7,024

Along highways between east border and north border of quadrangle.

T. 29 N., R. 4 W., about $\frac{1}{2}$ mile east of quarter corner secs. 12 and 14, 500 feet northeast of a house just southeast of road, in root of oak tree; nail.....	37 10 59.7	91 20 17.9	.....
Top of hill on divide, road at.....	37 11 08.0	91 20 17.1	840
T. 29 N., R. 4 W., crossing of line between secs. 12 and 13, 29 feet west to black oak tree, 14 feet east to white oak; line tree.....	37 11 26.9	91 19 57.3	2,494
T. 29 N., Rs. 3 and 4 W., corner secs. 1, 6, 7, and 12, at north and south fence, about 900 feet west of Edson Greag's house.....	37 12 19.7	91 19 32.1	5,714
Current River, on east side of, just above Ford, in sec. 6, in notched root of black-oak tree; nail.....	37 13 05.0	91 19 19.8	4,694
T. b. m., just north of wagon track, in notched root of blazed white-oak tree.....	37 13 26.3	91 19 57.2	3,709
Old Stave Mill, near site of, about 170 feet east of ford, 15 feet south of township line, on top of bank, in notched root of rock-maple tree; nail.....	37 14 35.1	91 20 17.7	7,159
Grassy Creek, near mouth of, at junction of roads up Grassy Creek and Current River, 40 feet north of site of old water mill, iron B. M. post stamped "Prim. Trav. Sta. No. 8, 1914, Mo."...	37 14 45.0	91 21 13.4	4,610

Along highways near north border of quadrangle.

Ridge south, about 100 feet west of, and a little north of road turning down ridge to west, in notched root of pine tree; nail.....	37 14 40.2	91 24 12.3	.....
Township line, Government corner on, old stump of witness tree to. White-oak tree with blaze on north and south sides, apparently a "line tree," is just north of top of ridge and 3 feet east of north and south wire fence.....	37 14 37.8	91 24 57.2	3,640
T. 30 N., R. 5 W., south corner secs. 33 and 34; pile of rocks.....	37 14 54.4	91 25 17.9	2,371
	37 14 41.8	91 29 05.2	.....

EMINENCE QUADRANGLE—Continued.

Along highways near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Forks of road, 20 feet south of, 20 feet east of mail box, in notched root of white-oak tree; nail.....	37 13 32.3	91 28 40.1	7,320
Spur No. 3, crossing of Lumber Co.'s. railway track and road at T. 29 N., R. 5 W., corner secs. 2, 3, 10, and 11; at northeast corner of field.....	37 13 13.4	91 28 38.0	1,918
Black-oak tree, 150 feet south of foot of hill, on south side of road; nail in notched root of.....	37 12 23.8	91 28 13.1	5,401
Branson's place, about 1 mile north of, west of wagon track; nail in notched root of white-oak tree.....	37 11 19.2	91 28 29.3	6,664
Red-oak tree, 3 feet east of wagon track; nail in notched root of.....	37 10 14.0	91 28 22.0	6,620
T. 28 N., R. 5 W., corner secs. 15, 16, 21, and 22; stake in fence corner.....	37 06 30.2	91 29 44.3	.....
T. 28 N., R. 5 W., corner secs. 21, 22, 27, and 28, 250 feet north of bottom of ravine, 12 feet east of wire fence; pile of stone.....	37 05 23.6	91 29 27.4	6,871
T. 28 N., R. 5 W., corner secs. 27, 28, 33, and 34, in northwest corner of La Rue's field, near wire fence east, and under north and south wire fence; pile of stone.....	37 04 31.5	91 29 28.9	5,272
T. 27 N., R. 5 W., north corner secs. 3 and 4, 58 feet east of, is south corner secs. 33 and 34, T. 28 N., R. 5 W.....	37 03 38.8	91 29 29.4	5,322
T. 27 N., R. 5 W., corner secs. 3, 4, 9, and 10.....	37 02 46.4	91 29 29.3	5,300
T. 27 N., R. 5 W., corner secs. 9, 10, 15, and 16; stone at T road west.....	37 01 52.6	91 29 32.6	5,445
T. 27 N., R. 5 W., corner secs. 15, 16, 21, and 22; crossroads.....	37 01 00.4	91 29 33.3	5,279
Birch tree, iron bench-mark post No. 50, 1913 (see Buxton quadrangle).....	37 00 08.5	91 29 34.3	5,250
	36 59 23.03	91 29 42.15	4,641

Along Salem, Winona & Southern Ry.

West Eminence, about 2 miles south of; road crossing.....	37 07 04.7	91 23 18.3	.....
Delaware spur, about 1.20 miles north of; road crossing.....	37 06 55.7	91 23 32.3	1,460
Delaware spur, about 0.50 mile north of; public road crossing.....	37 06 25.0	91 24 00.2	3,843
Delaware spur, public road crossing at.....	37 06 17.2	91 24 25.7	2,218
Delaware spur, 1.20 miles south of, at "8" milepost.....	37 05 18.9	91 24 02.8	6,180
Delaware spur, 1.60 miles south of, second-class road crossing.....	37 04 59.0	91 23 58.0	2,042
Delaware spur, 2.20 miles south of, over small dry creek north; small trestle bridge.....	37 04 28.2	91 24 03.0	3,148
Buckhart siding, 1.20 miles north of, second-class road crossing at east and west road.....	37 04 01.6	91 23 56.6	2,739
Buckhart siding, 0.63 mile north of; public road crossing.....	37 03 35.5	91 23 40.5	2,929
Buckhart siding; road crossing at.....	37 03 19.0	91 23 04.8	3,339
Buckhart siding, 0.65 mile south of; center of track at "4" milepost, on east side of track.....	37 02 45.4	91 23 07.6	3,410
Buckhart siding, 1.40 miles southwest of; opposite "3" milepost, center of track.....	37 02 13.4	91 23 35.2	3,931
"3" milepost, 0.50 mile southwest of; second-class road crossing.....	37 01 49.1	91 23 48.4	2,603
Eminence turnout, 1 mile northwest of; second-class road crossing.....	37 01 17.6	91 22 57.0	5,239
Eminence turnout; head block at.....	37 00 36.35	91 22 12.38	.....

Magnetic declination for north border of quadrangle, 6° 30' E.; for west border 6° 30' E.; for through center, 6° 30' E.

EXCHANGE QUADRANGLE.

Near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 28 N., R. 3 W., south corner for secs. 34 and 35. The north corner for secs. 2 and 3 is 16 feet east of above.....	37 02 37.1	91 15 17.3	.....
T. 28 N., R. 3 W., in northwest quarter of sec. 35; nail in top of small stump, 15 inches high and 4 inches in diameter, 10 feet west of road in top of divide just before descending into Rocky Creek.....	37 03 27.2	91 14 51.3	5,484
T. 28 N., R. 3 W., corner of secs. 22, 23, 26, and 27.....	37 04 21.8	91 15 14.3	5,828
T road W.....	37 05 02.8	91 14 57.0	4,373
Forks of road, in southwest quarter of sec. 14.....	37 05 26.7	91 14 33.7	3,070
T. 28 N., R. 3 W., center of road at line between secs. 11 and 14; fence line west.....	37 06 05.8	91 14 48.0	4,118
T lane west.....	37 06 32.6	91 14 55.1	2,767
T. 28 N., R. 3 W., corner of secs. 2, 3, 10, and 11.....	37 06 59.2	91 15 10.6	2,965

EXCHANGE QUADRANGLE—Continued.

Near northwest quarter of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Forks of road in sec. 14, 33 feet east to sign board "Eminence 8 miles" and 33 feet north to sign board "Centerville 28 miles".....	37 10 50.0	91 14 37.7	.....
T. 29 N., R. 3 W., in southeast quarter of sec. 11, 150 feet south of summit of hill in road from Current River to Blair Creek; nail in root of oak tree.....	37 11 35.9	91 14 17.5	4,917
T. 29 N., R. 3 W., corner of secs. 1, 2, 11, and 12.....	37 12 08.6	91 13 58.8	3,638
Blair Creek schoolhouse, 62 feet south 52° west from southwest corner of; nail in root of blazed oak tree.....	37 12 27.6	91 14 03.1	1,955
T. 29 N., R. 3 W., corner on line between secs. 1 and 2, 11 and 12 on east bank of Blair Creek, about 300 feet below house of T. M. Mooney.....	37 13 15.1	91 13 58.0	4,822
Tps. 29 and 30 N., Rs. 2 and 3 W., 1,630 feet south and 90 feet west of, 500 feet north, 40° east of J. P. Knuckle's house, 8 feet west of road and 1 foot west of wire fence; iron post stamped "Prim. Trav. Sta. No. 54, 1913, Mo.".....	37 14 10.8	91 12 52.9	7,711
Tps. 29 and 30 N., Rs. 2 and 3 W., approximate corner of, location by two residents who say it is within 20 or 30 feet of corner as located by county surveyor.....	37 14 27.0	91 12 51.8	1,635

Near north border of quadrangle from Blair Creek to Ellington.

White-oak tree, 2 feet in diameter, on top of ridge 25 feet south of old little-used road; nail in root of tree blazed in 2 sides and marked "U. S. P. T.".....	37 14 07.0	91 11 39.4	6,196
Oak tree, 1 foot in diameter, 10 feet south of old roadway and 60 feet west of dim forks of road; tree blazed and marked "U. S. P. T.".....	37 14 21.4	91 10 26.8	6,043
Oak tree, 1 foot in diameter, 40 feet north of old dim roadway, tree blazed on two sides and marked "U. S. P. T."; nail in root of.....	37 14 12.5	91 09 43.6	3,613
White-oak tree, in hollow just east of and draining into Carr Creek, 1 foot south of old roadway; nail in root of tree blazed on two sides and marked "U. S. P. T.".....	37 14 02.6	91 08 44.5	4,879
Oak tree, 1 foot in diameter, 20 feet east of old road; nail in root of tree blazed on two sides and marked "U. S. P. T.".....	37 14 11.3	91 08 12.0	2,779
Oak tree, 14 inches in diameter, 10 feet south of road; nail in root of tree blazed on two sides and marked "U. S. P. T.".....	37 14 24.0	91 07 23.6	4,116
T. 30 N., R. 2 W., 1,220 feet west of, 490 feet north of, southeast corner, 44 feet north 35° east from northeast corner of Mr. George's house at corner of yard fence; iron post stamped "Prim. Trav. Sta. No. 55, 1913, Mo.".....	37 14 27.5	91 06 34.0	4,025
T. 30 N., R. 2 W., southeast corner of sec. 36. The northeast corner of sec. 1, T. 20 N., R. 2 W., should be about 390 feet east, but was not found.....	37 14 22.7	91 06 18.9	1,317
T. 29 N., R. 1 W., in sec. 5, 75 feet north 25° west from northwest corner of church building; nail in root of oak tree 15 inches in diameter.....	37 13 54.6	91 04 56.5	7,240
T. 29 N., R. 1 W., in sec. 4, at angle of road, 600 feet south of house; nail in root of hickory tree.....	37 13 41.7	91 03 16.5	8,194
Exchange post office and store building, 70 feet west of, in front of frame dwelling house; nail in root of walnut tree.....	37 13 37.0	91 01 59.2	6,276
Oak tree, 20 inches in diameter, 5 feet south of center of road; tree blazed on two sides and marked "U. S. P. T.".....	37 13 52.7	91 00 38.9	6,684
Tps. 29 and 30 N., Rs. 1 E. and 1 W., on fifth principal meridian township corner.....	37 14 18.3	90 59 48.4	4,834

Magnetic declination for west border of quadrangle, 6° 15' E.; for north border, 5° 48' E.

FORDLAND QUADRANGLE.

Along highways.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 29 N., R. 18 W., forks of road in sec. 4.....	37 14 55.0	92 54 32.7	5,624
T. 29 N., R. 18 W., corner of secs. 4, 5, 8, and 9.....	37 13 51.4	92 55 01.3	6,829
T. 29 N., R. 18 W., in east part of sec. 8, 5 miles north of Fordland, east side of road, 69 feet south 67° west from southwest corner of church; iron post stamped "Prim. Trav. Sta. No. 34, 1913, MO.".....	37 13 19.5	92 55 07.9	3,274
T. 29 N., R. 18 W., crossing of line between secs. 8 and 17.....	37 12 59.7	92 55 14.8	2,083
Crossroads near center of sec. 17.....	37 12 34.0	92 55 27.1	2,780
T. 29 N., R. 18 W., corner of secs. 19, 20, 29, and 30; fence corner about 400 feet east of church building.....	37 11 17.2	92 56 11.5	8,555
T. 29 N., R. 18 W., corner of secs. 29, 30, 31, and 32; at T road east..	37 10 25.0	92 56 13.0	5,281
T. 28 N., R. 18 W., north corner for secs. 5 and 6; the south corner for secs. 31 and 32 is 184 feet west of above.....	37 09 32.7	92 56 12.1	5,300

Along St. Louis & San Francisco R. R. from Fordland to Seymour.

Fordland station, 1,100 feet east of, 250 feet north of track, at corner of road north to Marshfield, 4 feet north of concrete walk and 37 feet north 78° east from southeast corner of church building; iron post stamped "Prim. Trav. Sta. No. 35, 1913, Mo.".....	37 09 27.2	92 56 12.5	555
T. 28 N., R. 18 W., north corner for secs. 4 and 5, corner is 65 feet north of railroad track. The south corner for secs. 32 and 33 is 130 feet west of above.....	37 09 30.8	92 55 07.3	5,287
Road crossing in southwest quarter of sec. 34.....	37 09 33.7	92 53 52.4	6,070
T. 29 N., R. 18 W., apparent corner of secs. 25, 26, 35, and 36, which is 64 feet north of center of track.....	37 10 15.1	92 51 50.7	10,709
Diggins station, 150 feet west of, 24 feet north of track, 15 feet west of roadway; iron post stamped "Prim. Trav. Sta. No. 36, 1913, Mo.".....	37 10 19.1	92 51 15.1	2,906
T. 29 N., Rs. 17 and 18 W., crossing of range line. (The southeast corner of sec. 25 should be near railroad; but could not be found).....	37 10 14.9	92 50 45.1	2,471
T. 29 N., R. 17 W., corner of secs. 29, 30, 31, and 32; corner is 700 feet north of railroad.....	37 10 13.0	92 49 37.2	5,500
Road crossing.....	37 10 05.3	92 48 48.0	4,054
Road crossing.....	37 09 42.5	92 47 50.8	5,174
T. 29 N., R. 17 W., south corner for secs. 33 and 34. This corner is 876 feet south of railroad and the north corner for secs. 3 and 4 is 286 feet east of above.....	37 09 18.8	92 47 27.0	3,081
T. 28 N., R. 17 W., quarter corner between secs. 2 and 3. This corner is 615 feet south of railroad.....	37 08 50.1	92 46 18.6	6,246
Seymour station, 175 feet west of, 35 feet north of track, 5 feet west of concrete sidewalk and 3 feet from telephone pole; iron post stamped "Prim. Trav. Sta., No. 37, 1913, Mo.".....	37 08 52.9	92 46 10.2	744
T. 28 N., R. 17 W., crossing of line between secs. 1 and 2.....	37 08 43.2	92 45 14.8	4,589

Magnetic declination for northwest quarter of quadrangle, 7° 07' E.; for east-central part, 6° 55' E.

LEBANON QUADRANGLE.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 35 N., R. 16 W., corner of secs. 19, 20, 29, and 30; crossroads.....	37 44 50.7	92 43 46.6	2,655
T. 35 N., R. 16 W., T road east at quarter corner between secs. 29 and 30.....	37 44 24.5	92 43 47.3	2,650
T. 35 N., R. 16 W., stone at corner of secs. 29, 30, 31, and 32; T road west.....	37 43 58.2	92 43 48.0	2,660
T. 35 N., R. 16 W., stone at south corner of secs. 31 and 32; T roads east, west, and north.....	37 43 05.8	92 43 48.9	5,302
T. 35 N., R. 16 W., 440 feet east of south corner for sections 31 and 32, on south side of township line and public road, at edge of wood and in line with posts on telephone line; iron post stamped "Prim. Trav. Sta. No. 29, 1913, Mo.".....	37 43 05.5	92 43 43.4	441
T. 34 N., R. 16 W., northwest corner of township; T road south.....	37 43 06.8	92 44 43.3	4,815
T road west, 90 feet north of T road east.....	37 42 37.6	92 44 41.4	2,965
T road west, 55 feet north of T road east.....	37 41 58.3	92 44 40.6	3,970
T road east, 90 feet south of a second-class T road west.....	37 41 31.4	92 44 40.0	2,726
T. 34 N., R. 17 W., southeast corner of sec. 1. (The southwest corner of sec. 6, R. 16 W., is 75 feet south and marked by stone).....	37 41 05.9	92 44 40.0	2,580

LEBANON QUADRANGLE—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
T. 34 N., R. 17 W., quarter corner on east side sec. 12. (The quarter corner west side of sec. 7 is 70 feet south of above.)	° ' " 37 40 39.5	° ' " 92 44 39.6	Feet. 2,670
T. 34 N., R. 17 W., stone corner at southeast corner of sec. 12; T road west at High Prairie schoolhouse. The stone corner at southwest corner of sec. 7 is 85 feet south of above at T road east.	37 40 13.5	92 44 39.2	2,630
T. 34 N., R. 17 W., T road west at quarter corner on east side sec. 13; the quarter corner on west side of sec. 18 as indicated by fence line east is 115 feet south of above.	37 39 47.4	92 44 38.7	2,640
T. 34 N., R. 17 W., T road west at southeast corner of sec. 13. The southwest corner of sec. 18 is 90 feet south of above at T road east.	37 39 21.2	92 44 38.4	2,650
T. 34 N., R. 16 W., southwest corner of sec. 19. This corner is 310 feet north of crossroads.	37 38 27.7	92 44 37.4	5,411
T. 34 N., R. 17 W., quarter corner on east side sec. 25. The quarter corner on west side of sec. 30 is 100 feet south of above.	37 38 02.6	92 44 36.9	2,540
T. 34 N., R. 17 W., T road east at southeast corner of sec. 25. The southwest corner of sec. 30 is 100 feet south of above.	37 37 36.6	92 44 36.3	2,635
T. 34 N., R. 16 W., quarter corner of west side of sec. 31	37 37 10.6	92 44 35.7	2,633
Tps. 33 and 34 N., Rs. 16 and 17 W.; corner of townships at fence west	37 36 44.2	92 44 35.2	2,670
T. 33 N., R. 17 W.; stone quarter corner of east side of sec. 1.	37 36 18.1	92 44 34.7	2,640
T. 33 N., R. 17 W.; southeast corner of sec. 1.	37 35 52.0	92 44 34.6	2,635

Magnetic declination for northwest quarter of quadrangle, 7° 10' E.

LONG LANE QUADRANGLE.

Along St. Louis & San Francisco R. R. from Huben Spur to Conway.

Station.	Latitude.	Longitude.	Distance between stations.
Huben spur, 18 feet north of center of track, 15 feet west of road crossing, 5 feet east of cattle-guard fence, 45 feet south 54° west from switch stand; iron post stamped "Prim. Trav. Sta. No. 30, 1913, Mo."	° ' " 37 35 12.23	° ' " 92 45 05.47	Feet. 4,733
T. 33 N., R. 17 W., approximate corner of secs. 11, 12, 13, and 14; location is 300 feet west of road crossing and 50 feet south of center of track.	37 35 00.4	92 45 39.3	2,976
T. 33 N., R. 17 W., corner of secs. 14, 15, 22, and 23.	37 34 09.5	92 46 43.5	7,298
Same position, Springfield astronomic value ^a	37 34 14.0	92 46 48.5	
Philipsburg station, center of track.	37 33 10.7	92 47 05.2	6,200
Same position, Springfield astronomic value ^a	37 33 15.2	92 47 10.6	
Road crossing, in sec. 33	37 32 09.0	92 47 59.6	7,619
Road crossing, in sec. 5	37 31 10.8	92 49 09.8	8,165
T. 32 N., R. 17 W., corner of secs. 4, 5, 8, and 9; corner is 1,245 feet east of railroad.	37 30 43.0	92 48 53.2	3,112
Conway station; center of track opposite semaphore.	37 30 02.8	92 49 14.1	4,396
Same position, Springfield astronomic value ^a	37 30 07.3	92 49 19.8	

^a U. S. Geol. Survey Nineteenth Ann. Rept., pt. 1, p. 160, 1898.

Magnetic declination for northeast quarter of quadrangle, 7° 10' E.; for southeast quarter, 7° 15' E.

MACOMB QUADRANGLE.

Along St. Louis & San Francisco R. R. from Macomb to Mountain Grove.

Station.	Latitude.	Longitude.	Distance between stations.
Macomb flag station, 350 feet northeast of, 70 feet southeast of center of track, 2 feet from fence corner; iron post stamped "Prim. Trav. Sta. No. 40, 1913, Mo."	° ' " 37 05 38.2	° ' " 92 29 28.8	Feet. 4,095
Crossing of north and south fence line in northwest quarter of sec. 21	37 06 23.4	92 28 47.0	5,692
Center of track on north and south line in northeast quarter of sec. 21. A road runs north and one east and west along track.	37 06 33.8	92 28 18.1	2,570
Road crossing, on line between secs. 22 and 23.	37 06 19.4	92 28 57.0	6,726
T. 28 N., R. 14 W., corner of secs. 14, 15, 22, and 23; at T road north.	37 06 35.8	92 28 56.3	1,654
T. 28 N., R. 14 W., corner of secs. 13, 14, 23, and 24.	37 06 35.0	92 25 50.3	5,338
Norwood station, 66 feet N. 68° W. from northwest corner of; iron post stamped "Prim. Trav. Sta. No. 41, 1913, Mo."	37 06 28.0	92 24 59.3	4,216

MACOMB QUADRANGLE—Continued.

Along St. Louis & San Francisco R. R. from Macomb to Mountain Grove—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
T. 28 N., R. 13 W., west corner for secs. 18 and 19. A road east on section line, road west on a jog south corner, is 327 feet south of railroad.....	° ' " 37 06 21.7	° ' " 92 24 45.0	Feet. 1,304
T. 28 N., R. 13 W., corner of secs. 17, 18, 19, and 20; corner stone 593 feet north of railroad.....	37 06 20.5	92 23 41.2	5,171
Road crossing.....	37 06 39.4	92 22 47.6	4,748
T. 28 N., R. 13 W., quarter corner between secs. 16 and 17, about 50 feet southeast of railroad track.....	37 06 45.5	92 22 35.1	1,180
T. 28 N., R. 13 W., corner of secs. 9 and 10, 15 and 16; fence south and east at point 320 feet south of railroad.....	37 07 10.9	92 21 28.8	5,951
T. 28 N., R. 13 W., quarter corner between secs. 10 and 11; corner is 540 feet north of railroad.....	37 07 36.3	92 20 23.8	5,863
Milepost 266, center of track.....	37 07 22.2	92 19 15.5	5,710
Road crossing in range line between Rs. 12 and 13 west.....	37 07 41.1	92 18 14.2	5,322
T. 28 N., R. 12 W., center of track at line between secs. 7 and 8.....	37 07 30.0	92 17 08.7	5,422
Road crossing.....	37 07 34.1	92 16 20.0	3,962
Mountain Grove station, 1,260 feet east of, 50 feet south and 25 feet east of street crossing, 4 feet from corner of right-of-way fence; iron post stamped "Prim. Trav. Sta. No. 42, 1913, Mo.".....	37 07 40.8	92 15 30.1	4,098

Magnetic declination along east-west line through center of quadrangle, 7° 15' E.

MONTEER QUADRANGLE.

Along Current River Branch St. Louis & San Francisco R. R. near Mountain View to Birch Tree.

Station.	Latitude.	Longitude.	Distance between stations.
Road crossing.....	° ' " 36 59 27.4	° ' " 91 44 19.5	Feet. 5,490
T. 27 N., R. 7 W., quarter corner between secs. 20 and 29; corner is 130 feet south of railroad.....	36 59 26.8	91 44 13.9	452
Mountain View station, 760 feet west of, 57 feet north of center of track and about 6 feet higher, 200 feet west of public road, 2 feet from wire fence line; iron post stamped "Prim. Trav. Sta. No. 48, 1913, Mo.".....	36 59 37.1	91 42 16.6	9,575
Road crossing (the quarter corner between secs. 22 and 23 is 437 feet north of crossing).....	36 59 44.7	91 41 30.8	3,794
Road crossing.....	36 59 49.2	91 40 42.7	3,932
T. 27 N., R. 7 W.; crossing of line between secs. 23 and 24.....	36 59 50.1	91 40 24.6	1,472
Road crossing.....	36 59 43.2	91 39 51.4	2,785
Howell-Shannon county line, and line between ranges 6 and 7 W.; center of track at. (The east corner for secs. 24 and 25, T. 27 N., R. 7 W., is 1,420 feet south of track and marked by rock at road west. The west corner for secs. 19 and 30, T. 27 N., R. 6 W., is 1,274 feet south of track at road east).....	36 59 36.5	91 39 22.2	2,460
T. 27 N., R. 6 E., quarter corner between secs. 19 and 30. This corner is 20 feet east of road crossing.....	36 59 23.2	91 38 50.4	2,915
T. 27 N., R. 6 E.; crossing of line between secs. 29 and 30.....	36 59 06.8	91 38 17.7	3,126
Teresita spur; road crossing at.....	36 59 01.9	91 37 45.6	2,650
Center of track at line between secs. 28 and 29, quarter corner near but could not be found.....	36 58 55.0	91 37 13.6	2,684
Center of track at line between secs. 27 and 28.....	36 58 44.6	91 36 07.7	5,454
T. 27 N., R. 6 W.; apparent quarter corner between secs. 26 and 27. This corner is about center of track at point 95 feet west of road crossing.....	36 58 54.3	91 35 02.6	5,370
Monter station, 190 feet west of, 15 feet north of track and 80 feet east of section house, 18 inches from corner of fence; iron post stamped "Prim. Trav. Sta. No. 49, 1913, Mo.".....	36 58 53.0	91 34 39.7	1,865
Road crossing from which the corner of secs. 25, 26, 35, 36, T. 27 N., R. 6 W., is 750 feet south at T road east.....	36 58 33.8	91 33 57.9	3,912
T. 27 N., Rs. 5 and 6 W.; center of track at range line. (The west corner near for secs. 30 and 31 as pointed out by near-by resident is 1,346 feet south of track).....	36 58 39.2	91 32 52.5	5,335
T. 27 N., R. 5 W.; center of track at line between secs. 29 and 30, (quarter corner could not be found).....	36 58 53.7	91 31 44.9	5,681
Road crossing.....	36 59 04.4	91 30 56.4	4,081
T. 27 N., R. 5 W., center of track at line between secs. 28 and 29. The corner of secs. 20, 21, 28, and 29 is 935 feet north of track.....	36 59 07.3	91 30 39.4	1,410
Road crossing. The quarter corner between secs. 21 and 28 is 380 feet north.....	36 59 12.5	91 30 06.1	2,751

Magnetic declination for north border of quadrangle, 6° 10' E.

NIANGUA QUADRANGLE.

Along St. Louis & San Francisco R. R. from Conway to Marshfield.

Station.	Latitude.	Longitude.	Distance between stations.
Conway station, 1,000 feet southwest of, 110 feet northwest of Frisco track, in rear of section house, 2 feet east of northeast corner of board fence surrounding Catholic church grounds. Cupola of two-story brick school building bears south 82° 30' west and is distant about 250 feet; iron post stamped "Prim. Trav. Sta. No. 31, 1913, MO."	° ' "	° ' "	<i>Feet.</i>
T. 32 N., R. 17 W., corner of secs. 17, 18, 19, and 20, at T road west; corner is 75 feet west of railroad.	37 29 53.6	92 49 18.4	1,002
Same position, Springfield astronomic value ^a	37 28 59.4	92 50 00.9	6,459
T. 32 N., R. 17 W., corner of secs. 19, 20, 29, and 30; corner is 200 feet west of railroad.	37 29 03.4	92 50 06.4	.....
Road crossing in sec. 30.	37 28 06.6	92 50 02.2	5,339
Sampson flag station; road crossing at.	37 27 43.1	92 50 03.5	2,382
Tps. 31 and 32 N., center of track at crossing of township line, between secs. 31 and 6.	37 26 27.6	92 50 30.3	7,940
Road crossing in sec. 6.	37 26 22.5	92 50 27.2	573
T. 31 N., R. 17 W., crossing of sec. line between secs. 6 and 7, at point about 150 feet south of road crossing.	37 26 01.0	92 50 21.8	2,219
Road crossing, about 40 feet east of line between secs. 17 and 18.	37 25 30.2	92 50 20.2	3,117
T. 31 N., R. 17 W., corner of secs. 17, 18, 19, and 20, 540 feet west of railroad.	37 24 11.9	92 50 07.9	7,979
Same position, Springfield astronomic value ^a	37 23 45.4	92 50 09.2	2,686
Niangua station, center of track at semaphore.	37 23 23.6	92 50 15.9	.....
Same position, Springfield astronomic value ^a	37 23 14.9	92 49 56.2	3,260
Niangua station, 830 feet south of, 60 feet west of center of track, 3 feet north of fence line; iron post stamped "Prim. Trav. Sta. No. 32, 1913, MO."	37 23 20.1	92 50 02.4	.....
T. 31 N., R. 17 W.; iron pin on line between secs. 31 and 32 and one-fourth mile south of corner of secs. 29, 30, 31, and 32. Point is 285 feet north of center of track.	37 23 06.8	92 49 54.1	830
Tps. 30 and 31 N., Rs. 17 and 18, W.; crossroads one-fourth mile south of township corner; crossroads are 835 feet north of railroad track.	37 21 47.9	92 50 12.4	8,120
Tp. 30 N., R. 18.; road crossing on line between secs. 1 and 12.	37 20 56.6	92 51 22.9	7,695
T. 30 N., R. 18 W., corner secs. 2, 3, 10, and 11. This corner is 1,460 feet north of railroad track.	37 20 18.0	92 51 57.0	4,784
Same position, Springfield astronomic value ^a	37 20 20.2	92 53 36.3	8,021
Marshfield station, center of track at semaphore.	37 20 24.3	92 53 42.6	.....
Same position, Springfield astronomic value ^a	37 20 10.2	92 54 14.6	3,254
Marshfield station, 450 feet east and 500 feet south of, 40 feet west of center of north and south street on lot belonging to T. B. Pampalin; iron post (north meridian post) marked "Prim. Trav. Sta. No. 33, 1913, MO."	37 20 14.3	92 54 23.0	.....
	37 20 05.1	92 54 09.1	677

^a U. S. Geol. Survey Nineteenth Ann. Rept., pt. 1, p. 160, 1898.

Along highways from Marshfield south 5 miles.

Station.	Latitude.	Longitude.	Distance between stations.
Marshfield station, one-half mile south and one-half mile east of, 600 feet west of north and south road, cut-stone U. S. Coast Survey meridian monument	° ' "	° ' "	<i>Feet.</i>
T. 30 N., R. 18 W., corner of secs. 10, 11, 14, and 15 at lane west.	37 19 41.8	92 53 43.8	3,121
T. 30 N., R. 18 W., corner of secs. 14, 15, 22, and 23, second-class crossroad.	37 19 27.9	92 53 36.4	1,533
T. 30 N., R. 18 W., corner of secs. 22, 23, 26, and 27, T road east.	37 18 35.4	92 53 36.9	5,310
T. 30 N., R. 18 W., corner of secs. 26, 27, 34, and 35; stone corner.	37 17 42.9	92 53 37.2	5,310
Tps. 29 and 30 N., township line between; center of road at.	37 16 50.4	92 53 37.5	5,310
Forks of road.	37 15 58.4	92 54 04.7	5,697
	37 15 49.0	92 54 16.4	1,340

Magnetic declination for center of quadrangle, north and south, 7° 15' E.

PASSEOVER QUADRANGLE.

Along Linn Creek and Lebanon highway.

Station.	Latitude.	Longitude.	Distance between stations.
Tps. 38 and 39 N., Rs. 16 and 17 W., corner of; an unmarked stone on bank of Linn Creek at south side of road in eastern edge of village of Linn Creek.	° ' "	° ' "	<i>Feet.</i>
Forks of road in sec. 7.	38 04 05.9	92 44 06.8	.....
T. 38 N., R. 16 W., quarter corner between secs. 7 and 8; fence corner.	38 03 01.2	92 43 14.1	7,788
T road east at apparent line between secs. 8 and 17.	38 02 45.5	92 43 06.4	1,698
	38 02 20.2	92 42 45.1	3,078

Magnetic declination for southwest part of quadrangle, 7° 45' E.

REDFORD QUADRANGLE.

Along public road from Ellington to Centerville.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Feet.</i>
White-oak tree, as above.....	37 15 50.2	90 58 20.6	.....
T. 30 N., R. 1 E., apparent line between secs. 20 and 29; oak tree backed on all sides in center of road; a lane leads west and 305 feet west of tree is a fence line south which may be at quarter corner between secs. 20 and 29.....	37 16 05.1	90 58 12.0	1,658
Oak tree 12 inches in diameter, 20 feet south of road, near gate blazed and marked "U. S. P. T.".....	37 16 53.8	90 57 46.3	5,347
T. 30 N., R. 1 E., approximate corner of secs. 17, 18, 19, and 20. No mark, but near-by resident says it is within 15 or 20 feet of corner.....	37 16 48.0	90 58 35.5	4,019
T. 30 N., R. 1 E., northwest corner of sec. 18, in field; a fence runs north and south and one east.....	37 17 42.3	90 59 42.2	7,701
T. 30 N., R. 1 W.; fence east and west line between secs. 1 and 12. T. 30 N., R. 1 W., in northeast quarter of sec. 1; nail in root of oak tree 20 inches in diameter, east side of road opposite church. A schoolhouse near church.....	37 18 35.3	91 00 00.0	5,543
T. 30 N., and 31 N.; point about 700 feet east of road just on east bank of dry run and in east and west fence running west of north. This is close to principal meridian, but Mr. Falkenberg says corner is 30 to 40 yards east of creek bed.....	37 19 08.6	90 59 52.1	3,433
T. 31 N., R. 1 E., approximate quarter corner on west side sec. 31, in Mr. Falkenberg's garden; no mark.....	37 19 21.4	90 59 39.0	1,666
Oak tree, 15 inches in diameter, 15 feet east of road, blazed and marked "U. S. P. T.".....	37 19 48.1	90 59 40.8	2,711
T. 31 N., R. 1 E., near center of sec. 20, 35 feet east from corner of schoolhouse; nail in root of oak tree 12 inches in diameter.....	37 20 38.9	90 58 40.8	7,063
T. 31 N., R. 1 E., approximate corner of secs. 19, 20, 29, and 30; location by Mr. Wilson, who lives close by.....	37 21 06.3	90 58 12.0	3,616
Forks of road, signboard "Ellington 12 miles"; nail in root of oak tree.....	37 21 24.7	90 58 34.0	2,574
T. 31 N., R. 1 E., sec. 17, 70 feet south of Ed Fear's house, in rail fence line; iron post stamped "Prim. Trav. Sta. No. 57, 1913, Mo.".....	37 21 43.2	90 58 32.1	1,847
Centerville, 2.8 miles south of, 20 feet west of road near top of hill, nail in root of oak tree 8 inches in diameter.....	37 22 49.6	90 58 17.2	6,825
Centerville, 1.8 miles south of, 5 feet west of road; nail in root of oak tree blazed and marked "U. S. P. T.".....	37 23 55.8	90 57 53.8	6,950
T. 32 N., R. 1 E., corner of secs. 28, 29, 32, and 33; corner is 660 feet east of road.....	37 24 43.3	90 57 47.3	4,835
Centerville, public school building, center of cupola.....	37 25 45.8	90 57 22.00	6,647
Centerville Baptist Church, spire of.....	37 25 59.8	90 57 29.5	1,536
Centerville Methodist Church, spire of.....	37 26 00.7	90 57 28.9	100
T. 32 N., R. 1 E., in sec. 20, white oak tree 2 feet in diameter, 40 feet north of road; nail in root of.....	37 26 01.8	90 57 30.0	141
T. 32 N., R. 1 E., in sec. 20; forks of road.....	37 27 12.8	90 58 06.2	7,753
Maple tree at forks of road, blazed and marked "U. S. P. T."; nail in root of.....	37 27 15.3	90 58 08.4	313
Forks of road, old timber road northwest near cabin and site of old sawmill.....	37 28 17.2	90 57 36.6	6,769
T. 32 N., R. 1 E., in sec. 6, about 0.8 mile east of fifth principal meridian, 4.4 miles north and 1.2 miles west of Centerville on high ridge between Brushy Creek and west fork of Black River; aluminum tablet in bowlder marked "Prim. Trav. Sta. No. 13, 1907"; 480 feet distant is nail in root of blazed tree to which the observed azimuth is 169° 28' 30".....	37 28 33.9	90 57 36.1	1,687
	37 29 52.0	90 58 47.7	9,784

Magnetic declination for west border of quadrangle, 6° 18' E.

RUBLE QUADRANGLE.

Along public roads.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Feet.</i>
Tps. 29 and 30 N., Rs. 1 E. and 1 W., township corner on fifth principal meridian.....	37 14 18.3	90 59 48.4	.....
Ellington station, 210 feet south and 600 feet west of, 20 feet south of public road; iron post stamped "Prim. Trav. Sta. No. 56, 1913, Mo.".....	37 14 29.1	90 58 20.0	7,232
T. 29 N., R. 1 E., quarter corner on north side of sec. 5. The quarter corner on south side of sec. 32 is 50 feet east of above; corners are directly east of railroad water tank.....	37 14 08.2	90 58 08.9	2,295
White-oak tree on east side of road in fence line, nail in root of; tree blazed and marked "U. S. P. T.".....	37 15 50.2	90 58 20.6	10,363

SINKIN QUADRANGLE.

Along highways near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 30 N., R. 4 W., approximate corner secs. 27, 28, 33, and 34; red-oak tree on side of steep bluff.....	37 15 28.4	91 21 29.5	-----
Randolph's residence, 100 feet west of, in notched root of white-oak tree; a 20d. spike (bent over).....	37 15 45.9	91 21 47.4	2,287
Randolph's residence, 0.90 mile southwest of, on top of ridge, 15 feet northeast of pine tree, just east of road track; black-oak tree, in notched root of, nail.....	37 15 30.0	91 22 40.6	4,586
Randolph's residence, about 1.90 miles southwest of, 20 feet west of pine tree, just north of wagon track; black-oak tree, in notched root, nail.....	37 15 07.9	91 23 45.7	5,716
On ridge, old gateway, no fence.....	37 15 05.8	91 26 06.7	-----
Forks of road, on top of ridge, road south leads to Mr. Rinehart's house; center of grass triangle.....	37 15 10.1	91 26 44.0	3,048
T. 30 N., R. 5 W., 0.25 mile west of south corner of secs. 35 and 36 (this corner is in field and not marked), 20 rods west of north corner secs. 1 and 2, T. 29 N., R. 5 W. (not marked); pile of stone.....	37 15 59.7	91 26 32.6	5,099
Old church building, 30 feet south of southwest corner of, at summit of hill; center of road at.....	37 15 41.4	91 28 44.8	10,845
T. 30 N., R. 5 W., corner secs. 27, 28, 33, and 34 (the location of above corner is according to description given by Mr. Marion Shedd, who says corner should be about 30 feet west of pine witness tree just east of road).....	37 15 33.8	91 29 03.0	1,664
Ink post office, and store about 650 feet south of, 500 feet north of Mr. Marion Shedd's house, on west side of public road, close to wire fence; iron bench-mark post stamped "Prim. Trav. Sta. No. 9, 1914, Mo.".....	37 15 21.5	91 29 04.8	1,253

Magnetic declination south border of triangle, 6° 30' E.

SLEEPER QUADRANGLE.

Along public road between Linn Creek and Decaturville.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T road west in section 32.....	37 59 23.2	92 42 32.7	-----
T. 38 N., R. 16 W., quarter corner between secs. 32 and 33 (about 650 feet north of public road).....	37 59 16.3	92 42 09.5	1,983
Tps. 37 and 38 N., T road east on line between at point about 1,100 feet east of southwest corner of sec. 33 (not found).....	37 58 50.0	92 41 55.5	2,892
T. 37 N., R. 16 W., crossing of line between secs. 4 and 9.....	37 57 57.8	92 41 46.6	5,319
Decaturville, 4.2 miles north of, in northwest quarter of sec. 9, on east side Decaturville and Linn Creek road, 79 feet north from northwest corner of church building; iron post stamped "Prim. Trav. Sta. No. 26, 1913, Mo.".....	37 57 39.9	92 42 03.6	2,268
T. 37 N., R. 16 W., crossroads on line between secs. 8 and 17.....	37 57 06.3	92 42 31.3	4,064
T. 37 N., R. 16 W., T road south on line between secs. 20 and 21....	37 55 29.7	92 42 15.8	9,850
Secs. 28 and 33, crossing of line between.....	37 54 28.1	92 42 01.4	6,340
Decaturville, 450 feet south of store, road west.....	37 54 21.4	92 41 58.4	712
Decaturville, about 1 mile south of, at line between Tps. 36 and 37 N., and line between Camden and Laclede counties, on west side of road, 2 feet from fence; iron post stamped "Prim. Trav. Sta. No. 27, 1913, Mo.".....	37 53 35.7	92 41 57.9	4,633
Bidwell, oak tree with signboards in center of road, and about 20 feet south of road west.....	37 52 12.4	92 42 28.2	8,764

Between Bidwell and Eldridge.

T road north, south, and west, in south half sec. 8.....	37 52 03.8	92 42 38.8	1,213
T road north.....	37 51 51.6	92 43 46.0	5,528
T. 36 N., R. 16 W., quarter corner on west side sec. 18.....	37 51 26.4	92 44 40.0	5,022
T. 36 N., R. 16 W., west corner of secs. 18 and 19.....	37 51 00.2	92 44 41.0	2,658
T. 36 N., R. 16 W., quarter corner on west side sec. 19.....	37 50 33.9	92 44 41.9	2,657
T. 36 N., R. 16 and 17 W., crossroads at corner of secs. 24, 25, 19, and 30.....	37 50 07.7	92 44 42.9	2,650
Eldridge, 0.12 mile east of store and post office, 15 feet southeast of crossroads, 225 feet north and 10 feet east of quarter corner stone between secs. 25 and 30, T. 36 N., Rs. 16 and 17 W., 2 feet from fence corner; iron post stamped "Prim. Trav. Sta. No. 28, 1913, Mo.".....	37 49 43.6	92 44 43.8	2,441

SLEEPER QUADRANGLE—Continued.

Geographic positions between Eldridge and St. Louis & San Francisco R. R.

Station.	Latitude.	Longitude.	Distance between stations.
T. 36 N., Rs. 16 and 17 west, T road east at corner of secs. 30 and 31, 25 and 36.....	° ' " 37 49 15.2	° ' " 92 44 44.8	<i>Feet.</i> 2,881
T. 36 N., R. 16 W., T roads east, west, and south at quarter corner between secs. 30 and 31.....	37 49 14.1	92 44 07.8	2,974
T. 36 N., R. 16 W., stone quarter corner on south side sec. 31 (the stone quarter corner on north side sec. 6, T. 35 N., is 318 feet west of above).....	37 48 21.9	92 44 09.7	5,285
T road east, in southeast quarter of sec. 7.....	37 46 48.2	92 43 56.3	9,539
T road west and lane east on line between secs. 17 and 18.....	37 46 22.3	92 43 43.6	2,814
T. 35 N., R. 16 W., crossroads at corner of secs. 17, 18, 19, and 20.....	37 45 43.1	92 43 45.0	3,962
T. 35 N., R. 16 W., quarter corner between secs. 19 and 20, T road east.....	37 45 16.9	92 43 45.8	2,656

Magnetic declination for northwest quarter of quadrangle, 7° 53' E.; for southwest quarter, 7° 23' E.

SUMMERSVILLE QUADRANGLE.

Along highways near east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
T. 29 N., R. 5 W., corner secs. 28, 29, 32, and 33, crossroads.....	° ' " 37 08 52.4	° ' " 91 30 31.8	<i>Feet.</i>
T. 29 N., R. 5 W., 150 feet west of schoolhouse; iron bench mark post stamped "Prim. Trav. Sta. No. 10, 1914, Mo.".....	37 08 50.9	91 30 31.6	153
T. b. m. nail in root of white-oak tree.....	37 07 40.2	91 30 31.7	7,153
Jacks Fork, south side of, forks of road, road down river and road south to birch tree.....	37 07 07.6	91 30 05.6	3,911

WILLOW SPRINGS QUADRANGLE.

Along Current River branch St. Louis & San Francisco R. R. from Willow Springs to Mountain View.

Station.	Latitude.	Longitude.	Distance between stations.
Willow Springs station, 300 feet south of, 25 feet east of yard track and 25 feet north of overhead bridge crossing tracks; iron post stamped "Prim. Trav. Sta. No. 45, 1913, Mo.".....	° ' " 36 59 26.5	° ' " 91 53 12.8	<i>Feet.</i> 5,810
T. 27 N., R. 9 West, quarter corner between secs. 29 and 32, at road corners north, south, and east. Corner is 540 feet north of railroad.....	36 58 50.9	91 57 22.2	5,458
Road crossing.....	36 58 23.8	91 56 54.4	3,550
Road crossing; the township line between secs. 4 and 33 is about 175 feet south.....	36 58 01.6	91 56 01.1	4,879
T. 27 N., R. 9 W.; crossing of line between secs. 33 and 34, T line between secs. 3 and 4, T. 26 N., is 95 feet east of above.....	36 57 58.1	91 55 45.2	1,335
Road crossing on line between secs. 2 and 3.....	36 57 47.7	91 54 38.8	5,490
T. 27 N., R. 9 W., center of track at line between secs. 35 and 36. The south corner of township line appears to be under railway embankment. Line south between secs. 1 and 2, is 50 feet east.....	36 57 49.6	91 53 33.7	5,290
Hutton Valley station, 103 feet west of west end of, 35 feet south of center of track, 18 inches from corner fence post; iron post stamped "Prim. Trav. Sta. No. 46, 1913, Mo.".....	36 57 45.2	91 53 04.4	2,422
Tps. 26 and 27 N., Rs. 8 and 9 W., corner of, location said to be about 15 feet south of railway track, in line with a north and south fence.....	36 57 49.5	91 52 22.5	3,425
Road crossing near line between secs. 31 and 32.....	36 58 22.2	91 51 15.5	6,368
T. 27 N., R. 8 W., stone corner of secs. 28, 29, 32, and 33; corner is 400 feet north of track.....	36 58 39.0	91 50 15.2	5,182
Road crossing.....	36 58 47.0	91 49 58.5	1,573
Road crossing.....	36 58 43.7	91 48 40.0	6,375
Track flag station, 200 feet west of, 60 feet south and 35 feet west of corner of secs. 26, 27, 34, and 35, T. 27 N., R. 8 W. (which corner is said to be between main track and siding at road crossing), 2 feet from corner fence post and about 8 feet below track; iron post stamped "Prim. Trav. Sta. No. 47, 1913, Mo.".....	36 58 37.3	91 48 06.2	2,826
Road crossing.....	36 58 48.0	91 47 16.3	4,185
T. 27 N., Rs. 7 and 8 W., center of track at line between.....	36 58 47.2	91 45 54.6	6,639
Road crossing near middle of sec. 30.....	36 58 59.7	91 45 17.7	3,254

Magnetic declination for north border of quadrangle, 6° 20' E.

Altenburg, Campbell Hill, Chester, and Perryville quadrangles.

PERRY COUNTY.

The following geographic positions on approximate North American datum were determined by J. H. Wilson in 1913 and are based on primary traverse run in 1907, described in Bulletin 440, Mississippi River Commission p. b. m. 42 and triangulation station Brick House.

The closure on p. b. m. 42 is fair, but on distributing that closure error through the line it is found that the computed position for the chimney of brick house on bluff at Grand Eddy differs from the position given by the Mississippi River Commission by $-0.58''$ in latitude and $-1.94''$ in longitude. The brick-house chimney sighted by Mr. Wilson may not be the same as the Mississippi River Commission station, or if the same the house may have been moved.

ALTENBURG QUADRANGLE.

Along highways near north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 35 N., R. 12 E., corner in center of southwest quarter of sec. 8. Crosstown, in west wall at northwest corner of foundation of Jas. Grimand's store, just inside the fence; bronze tablet stamped "Prim. Trav. Sta. No. 7, 1913".....	37 44 57.9	89 44 11.7	.....
T. 35 N., R. 12 E., corner of secs. 8, 9, 16, and 17, 0.2 mile east of Crosstown.....	37 44 44.2	89 43 38.6	3,000
	37 44 45.3	89 43 22.2	1,316

Magnetic declination for northwest quarter of quadrangle $4^{\circ} 27' E.$

CAMPBELL HILL QUADRANGLE.

Along highways near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Turn in road, small road leading to house, 200 feet north of main road.....	37 45 08.6	89 41 47.2	.....
Grand Eddy, St. Louis & San Francisco R. R. crossing.....	37 45 21.3	89 41 06.8	3,489
Grand Eddy, in north gable of brick house on bluffs; chimney (Mississippi River Commission triangulation station Brick House).....	37 45 19.78	89 41 08.34	220
Grand Eddy, 640 meters below, at upper extremity of Missouri bluff, 14 meters below extreme upper point of bluff rocks, in vertical face of natural rock; center of copper bolt, letters "U. S. P. B. M." cut in rock near bolt (Mississippi River Commission P. B. M. 42).....	37 45 09.74	89 40 45.33	1,945

Magnetic declination for southwest corner of quadrangle, $4^{\circ} 27' E.$

CHESTER QUADRANGLE.

Along highways near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Prim. Trav. Sta. No. 2, 1907, Bulletin 440.....	37 45 08.7	89 58 18.4	.....
Perryville, 4 miles northeast of, road forks; 35 feet north of J. Collin's mail box.....	37 45 02.8	89 48 30.7	.....

PERRYVILLE QUADRANGLE.

Along highways near north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
Perryville, 6 miles west of, T road, Farmington-Perryville road, 450 feet southeast of house and 40 feet east of mail box.....	° ' " 37 44 29.8	° ' " 89 57 38.2	<i>Feet.</i>
T road south, 50 feet west of J. Tucker's mail box.....	37 44 21.7	89 56 56.9	3,421
T road north, 150 feet west of mail boxes.....	37 44 22.3	89 56 12.7	3,549
Perryville, 3.5 miles west of, north end of bridge over Saline Creek; Farmington-Perryville road.....	37 44 17.2	89 55 21.4	4,146
Perryville, 2.5 miles west of, T road south; Farmington-Perryville road.....	37 43 47.4	89 54 44.5	4,232
Perryville, 1.2 miles west of; water tank of Catholic Seminary.....	37 43 33.8	89 53 21.7	6,011
Perryville, west edge of; Farmington-Perryville road crossing railroad.....	37 43 35.0	89 53 01.7	2,413
Perryville, in south end of lower step at east entrance to courthouse; bronze tablet stamped 'Prim. Trav. Sta. No. 6, 1913'.....	37 43 29.9	89 51 44.7	6,205
Perryville, 0.5 mile east of; road forks.....	37 43 32.2	89 51 06.7	3,060
Perryville, 2 miles northeast of; T road north.....	37 44 12.2	89 49 47.6	7,526
Ford, west bank of Cape Cinque Hommes Creek.....	37 44 51.9	89 47 47.6	
T road south.....	37 44 41.2	89 47 01.1	3,892
Crosstown, 2.8 miles west of, center of road, on hill, in front of large white house.....	37 44 24.0	89 46 13.8	4,180
Crosstown, 2 miles west of, west edge of ford of creek, Perryville-Crosstown road.....	37 44 26.0	89 45 18.2	4,474

Magnetic declination for north border of quadrangle, 4° 27' E.

Harrisonville, Lexington, Sedalia, and Warrensburg quadrangles.**JOHNSON AND LAFAYETTE COUNTIES.**

The following geographic positions on North American datum were determined by primary traverse and are based upon the positions of Baker, Chapel Hill, Cooks Knob, Normal, and Knobnoster triangulation stations (U. S. C. & G. S.). The work was done in 1914 by E. L. McNair.

HARRISONVILLE QUADRANGLE.

Along highways near south border of northeast quarter of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
Baker triangulation station, about 1 mile north of Kingsville, in S. $\frac{1}{2}$ E. $\frac{1}{2}$ SE. $\frac{1}{4}$ sec. 25, T. 46 N., R. 29, on land belonging to Mr. Edward Baker and close to his home (house gone in 1914; only excavation to show where it stood). Permanent mark: An ale bottle filled with ashes, 24 feet below surface. Surface mark: A marble post set flush with surface, with the letters U. S. C. S. cut on top. Two witness posts are set 5 feet north and south of the center of the surface mark.....	° ' " 38 45 37.03	° ' " 94 04 13.09	<i>Feet.</i>
T roads north, south, and east.....	38 45 39.0	94 03 08.4	5,129
T roads north, east, and west.....	38 45 37.0	94 02 17.8	4,009
T road north, center of east and west road at.....	38 45 29.5	94 01 44.5	2,720
T. 46 N., R. 28 W., corner secs. 27, 28, 33, and 34, center of east-west road at, fence line south.....	38 45 20.1	94 00 37.0	5,461
T. 46 N., R. 28 W., quarter corner between secs. 27 and 34.....	38 45 18.9	94 00 02.9	2,700

Magnetic declination, 8° 15' E.

HARRISONVILLE QUADRANGLE—Continued.

Along highways near east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
T. 48 N., R. 28 W., 15 feet south of east-west road, on line between secs. 4 and 9, 125 feet east of road north, 15 feet west of road south, 6 feet from telephone pole; iron bench-mark post stamped "Prim. Trav. Sta. No. 22, 1914, MO."	° ' "	° ' "	<i>Feet.</i>
T. 47 N., R. 28 W., center of sec. 9, T roads east, west, and north.	38 59 13.1	94 00 30.1	.....
T. 47 N., R. 28 W., on line between secs. 9 and 16, center of east and west road at road north.	38 58 47.6	94 00 33.9	2,600
T road forks, roads east, west, and north, center of.	38 58 21.3	94 00 43.3	2,755
T roads forks, roads east, west, and north, center of.	38 57 29.4	94 01 00.0	5,413
T. 48 N., R. 28 W., corner secs. 21, 22, 27, and 28, road crossing.	38 56 37.0	94 00 56.6	5,309
T road forks, roads east, west, and south.	38 56 36.2	94 00 06.5	3,960
T. 48 N., R. 28 W., approximate corner secs. 27, 28, 33, and 34.	38 55 43.4	94 00 09.2	5,349
T road corners, roads east, west, and south.	38 55 16.4	94 00 10.1	.....
T road corners, roads east, west, and south.	38 55 18.9	94 01 17.4	5,326
T road corners, roads north, south, and west.	38 55 07.6	94 02 07.8	4,152
Chapel Hill triangulation station (U. S. C. & G. S.), about 0.25 mile south-southwest of the village of Chapel Hill, in NE. $\frac{1}{4}$ SE. $\frac{1}{4}$ of sec. 1, T. 47 N., R. 29 W., about 6 feet south of middle of line bounding the 40-acre division that contains it. Station mark: A bottle filled with ashes 3 feet below surface, with a marble post 2 feet long and 6 inches square above it, with intersecting grooves and letters U. S. C. S. on face. Reference marks: Two sandstone posts, one 1.9 feet long, the other 2 feet long, 5 feet, respectively, north and south of center of surface mark, with groove and arrow pointing to center of surface mark.	38 54 47.2	94 03 28.58	6,708
Johnson-Lafayette county line crossing, fence line east and west, center of road.	38 54 51.0	94 00 11.9	.....
T. 47 N., R. 28 W., quarter corner secs. 3 and 4, center of public road.	38 54 23.2	94 00 04.5	2,876

Magnetic declination, 8° 04' E.

LEXINGTON QUADRANGLE.

Along highways near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
Tps. 48 and 49 N., Rs. 27 and 28 W., approximate corner secs. 31, 36, 1 and 6, 200 feet north of, center of Main Street and north and south road crossing, about 3,100 feet east of Second Street, Odessa.	° ' "	° ' "	<i>Feet.</i>
T road forks, roads east, west, and north.	39 00 02.2	93 56 32.9	.....
T. 48 N., R. 28 W., apparent quarter corner north side sec. 3, T road forks, roads east, west, and north.	39 00 02.9	93 57 56.8	.....
Odessa, west of, center of tracks, at Chicago & Alton R. R. crossing.	39 00 05.5	93 59 20.4	6,599
	39 00 05.7	93 59 29.0	680

Magnetic declination near west border of quadrangle, 8° 38' E.

SEDALIA QUADRANGLE.

Along highways near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
T. 46 N., R. 24 W., east corner secs. 12 and 13, center of east and west road, on Johnson-Pettis county line.	° ' "	° ' "	<i>Feet.</i>
T. 46 N., R. 24 W., east corner secs. 1 and 12, on north and south fence line at Johnson-Pettis county line.	38 46 52.5	93 29 59.0	.....
Tps. 46 and 47 N., Rs. 23 and 24 W., corner secs. 36, 1, 6, and 31, on Johnson-Pettis county line, center of north-south road.	38 47 44.7	93 29 56.2	5,281
T. 47 N., Rs. 23 and 24 W., quarter corner secs. 36 and 31, center of north-south road at road west.	38 48 40.4	93 29 53.1	5,631
T. 47 N., Rs. 23 and 24 W., corner secs. 25, 30, 31, and 36, center of north-south road, at T road west, on Johnson-Pettis county line.	38 49 06.7	93 29 51.8	2,659
	38 49 33.0	93 29 50.3	2,659

SEDALIA QUADRANGLE—Continued.

Along highways near west border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
T. 47 N., Rs. 23 and 24 W., corner secs. 24, 25, 19, and 30, center of north-south road, at hedge line west.....	° ' " 38 50 25.9	° ' " 93 29 47.6	Feet. 5,350
T. 47 N., Rs. 23 and 24 W., corner secs. 13, 24, 18, and 19, center of north-south road at T road west.....	38 51 18.0	93 29 44.6	5,270
T. 47 N., R. 24 W., east corner secs. 12 and 13, at road south and west (30 feet south of above corner is west corner secs. 7 and 8, T. 47 N., R. 23 W.).....	38 52 10.4	93 29 41.5	5,305
T. 47 N., R. 24 W., southwest quarter of sec. 12, in line with center of road south, 20 feet north of center of east-west road, 4 feet south of east-west wire fence, S. 55° E. and distant 250 feet from Mr. R. S. Tyler's house, iron bench-mark post stamped "Prim. Trav. Sta. No. 16, 1914, Mo.".....	38 52 24.2	93 29 57.5	1,879
Public crossroads, center of.....	38 53 16.5	93 29 53.5	5,297
Dunksburg, 250 feet east of southeast corner of T. 48 N., R. 24 W., in center of east-west road, at crossroads on township line, granite post.....	38 53 58.0	93 29 51.5	4,210
T. 48 N., Rs. 23 and 24 W., corner secs. 24, 25, 19, and 30, at intersection of Pettis County line with corner of Lafayette and Johnson counties, roads north, south, and west.....	38 55 42.3	93 29 49.4	.....
T. 48 N., Rs. 23 and 24 W., corner secs. 13, 24, 18, and 19, intersection of corner of Saline and Pettis counties with Lafayette County line, center of north-south road.....	38 56 34.5	93 29 46.5	5,295
T. 48 N., Rs. 23 and 24 W., corner of secs. 12, 13, 7, and 18, on Lafayette-Saline county line, center of road north and south at road east.....	38 57 26.9	93 29 43.5	5,299
T. 48 N., Rs. 23 and 24 W., east corner secs. 1 and 12, on Lafayette-Saline county line, center of north-south road, 335 feet south of railroad crossing, at Emma flag station, 30 feet south to T road east.....	38 58 19.4	93 29 40.8	5,325
Tps. 48 and 49 N., Rs. 23 and 24 W., 16.5 feet north of stone corner in east-west road, about 10 feet west of center of road, 4 feet south of hedge north, iron bench mark post stamped "Prim. Trav. Sta. No. 17, 1914, Mo.".....	38 59 12.0	93 29 38.2	5,319

Magnetic declination near west border of quadrangle, 8° 00' E.

WARRENSBURG QUADRANGLE.¹

Along highways near west border of northeast quarter of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
T. 47 N., R. 26 W., corner secs. 25, 26, 35, and 36, east and west crossing at gog in north-south road.....	° ' " 38 50 03.4	° ' " 93 44 27.1	Feet.
T. 47 N., R. 26 W., corner secs. 23, 24, 25, and 26, north-south road at T road east and fence line west.....	38 50 55.7	93 44 24.8	5,294
T. 47 N., R. 26 W., corner secs. 13, 14, 23, and 24, center of crossroads.....	38 51 48.6	93 44 22.2	5,346
T. 48 N., R. 26 W., south corner secs. 35 and 36, at crossroads north, south, and west.....	38 54 21.7	93 44 34.9	.....
T. 48 N., R. 26 W., quarter corner secs. 35 and 36, center of crossroads.....	38 54 47.7	93 44 33.9	2,630
T. 48 N., R. 26 W., corner secs. 25, 26, 35, and 36, center of north-south road at hedge line east and west.....	38 55 13.8	93 44 32.9	2,640
T. 48 N., R. 26 W., quarter corner secs. 25 and 26, in line with center of roads north and east.....	38 55 40.1	93 44 32.0	2,658
T. 48 N., R. 26 W., corner secs. 23, 24, 25, and 26, T road forks, east, west, and south, on Johnson-Lafayette county line.....	38 56 06.2	93 44 31.2	2,644

Along highways near north border of quadrangle.

T. 48 N., R. 24 W., north corner secs. 1 and 2, east-west road at T road south.....	38 59 14.5	93 30 46.0	.....
T. 48 N., R. 24 W., north corner secs. 2 and 3, east-west road on township line, at road south.....	38 59 17.4	93 31 53.7	5,354
T. 48 N., R. 24 W., north corner secs. 4 and 3, at east-west road on township line, at road south.....	38 59 20.1	93 33 01.1	5,331
T. 49 N., R. 24 W., quarter corner south side sec. 33, center of east-west road, in line with T road north.....	38 59 21.7	93 33 38.8	2,980

¹ The northeast quarter of this quadrangle is the Knob Noster 15' quadrangle.

WARRENSBURG QUADRANGLE—Continued.

Along highways near north border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
Concordia, T. 48 N., R. 24 W., 300 feet east of apparent corner of secs. 32 and 33, intersection of east-west road with center of Street S.	° ' " 38 59 22.6	° ' " 93 34 03.8	<i>Feet.</i> 1,977
Concordia, about 0.50 mile west of, T road corners, roads north, south, and east.	38 59 23.8	93 34 46.6	3,379
Concordia, about 0.50 mile west of, north rail of track at public road crossing.	38 58 59.9	93 34 48.2	2,423
Intersection public road and Missouri Pacific Railway tracks.	38 59 00.0	93 35 39.6	4,062
Do.	38 59 00.3	93 36 22.6	3,399
Do.	38 58 50.0	93 36 49.8	2,383
Mulkey station, public road crossing at.	38 58 56.2	93 37 57.2	5,358
T. 48 N., R. 25 W., in north part of sec. 2, 50 feet east and 15 feet north of road crossing Missouri Pacific Railway, 3 feet south of wire fence, 5 feet north of telephone pole, iron bench-mark post stamped "Prim. Trav. Sta. No. 18, 1914, Mo."	38 59 15.8	93 38 13.9	2,390
T road corners, center east-west road, at road north.	38 59 16.1	93 38 40.7	2,115
T. 48 N., R. 25 W., at center of sec. 4, roads north, south, and west.	38 59 04.7	93 40 28.8	8,612
T. 48 N., R. 25 W., quarter corner secs. 4 and 5, T road north.	38 59 05.7	93 41 03.0	2,700
T. 48 N., R. 25 W., quarter corner secs. 5 and 6, east-west road at hedge north.	38 59 06.4	93 42 09.7	5,268
T. 48 N., R. 25 W., middle of sec. 6, crossroads.	38 59 07.1	93 42 43.2	2,650
T. 48 N., R. 25 W., quarter corner west side sec. 6.	38 59 07.9	93 43 17.9	2,743
Davis Creek, center of wooden bridge over.	38 59 09.0	93 44 07.4	3,912
T. 48 and 49 N., R. 26 W., is corner secs. 35 and 36.	38 59 36.6	93 44 24.3	3,092

Along highways and Missouri Pacific Ry. near south border of northeast quarter of quadrangle.

Normal triangulation station (C. & G. S.).	38 45 32.997	93 44 16.442	.....
T. 46 N., R. 25 W., corner secs. 22, 23, 26, and 27, T road corners, roads east, west, and north.	38 45 26.8	93 39 01.4	.....
Intersection Missouri Pacific Railway track and public road.	38 46 30.6	93 38 05.8	7,814
Montserrat station, 125 feet east of public road crossing.	38 46 34.7	93 37 16.2	3,956
Rs. 24 and 25 W., center of track at north and south fence.	38 46 28.9	93 36 43.1	2,682
Clear Fork Creek, center of trestle over.	38 46 16.3	93 35 30.8	5,869
Public road crossing, center of track at.	38 46 00.4	93 34 12.3	6,420
Knobnoster station, 265 feet west of, main public road crossing.	38 46 01.7	93 33 22.2	3,969
Knobnoster triangulation station, on an eminence called Knob Noster, $\frac{1}{4}$ mile from village of same name, in SW. $\frac{1}{4}$ NW. $\frac{1}{4}$ sec. 15, T. 46 N., R. 24 W. Station mark: A bottle of ashes underground and 3 stone posts for surface marks; stone over center of station is 6 inches square at top, with letters U. S. C. S. on it. The two other stones 5 inches square are 4 feet, respec- tively, north and south of station mark, with arrows pointing to station.	38 46 35.46	93 33 07.09	3,614
T road south, center of east-west road at.	38 45 51.2	93 32 00.1	6,944
T road north, center of east-west road at.	38 45 49.9	93 31 26.7	2,650
T. 46 N., R. 24 W., about $\frac{1}{4}$ mile south of east corner of secs. 13 and 14, 55 feet north and 15 feet east of intersection of roads, 37 feet north of corner fence post, 1 foot east of wire fence, 25 feet east of Johnson-Pettis county line, iron bench-mark post stamped "Prim. Trav. Sta. No. 15, 1914, Mo."	38 45 47.6	93 30 02.9	6,648
T. 46 N., R. 24 W., east corner secs. 13 and 24.	38 46 00.1	93 30 02.2	1,260
Intersection Missouri Pacific Railroad and Johnson-Pettis county line, center of track.	38 46 22.0	93 30 00.9	2,214

Along highways near east border of quadrangle.

Blackwater Creek, center of iron truss bridge over.	38 54 38.4	93 30 26.4	.....
T. 48 N., R. 24 W., $\frac{1}{4}$ corner secs. 25 and 36, center of north-south road at.	38 54 51.8	93 30 26.1	1,361
T. 48 N., R. 24 W., $\frac{1}{4}$ corner secs. 24 and 25, center of T road south at east-west road on Johnson-Lafayette county line.	38 55 44.2	93 30 23.7	5,309
T road forks, center of east-west road at road north.	38 59 13.2	93 30 12.4	.....

Along highways through center of northeast quarter of quadrangle.

T. 47 N., R. 26 E., east corner secs. 13 and 24, on range line, T road forks north, south, and west.	38 51 47.1	93 43 13.4	.....
T road forks, roads north, south, and east.	38 52 10.9	93 43 11.7	2,411
T. 47 N., R. 25 W., $\frac{1}{4}$ mile east of corner of secs. 7, 8, 17, and 18, roads north, south, and east.	38 52 34.7	93 41 45.5	7,232

WARRENSBURG QUADRANGLE—Continued.

Along highways through center of northern quarter of quadrangle—Continued.

Station.	Latitude."	Longitude.	Distance between stations.
T. 47 N., R. 25 W., corner secs. 8, 9, 16, and 17, east-west road at fence south.....	38 52 33.3	93 40 55.7	3,938
Crossroads.....	38 52 45.5	93 40 20.0	3,082
T. 47 N., R. 25 W., at approximate quarter corner secs. 10 and 15, right angle in road.....	38 52 30.2	93 39 11.9	5,605
T. 47 N., R. 25 W., secs. 10, 11, 14, and 15 crossroads.....	38 52 28.6	93 38 38.0	2,685
T. 47 N., R. 25 W., quarter corner secs. 11 and 14, roads east, west, and north.....	38 52 27.0	93 38 04.7	2,644
T. 47 N., R. 25 W., in NE. $\frac{1}{4}$ sec. 14, 7 feet north of telephone post, 20 feet west of center of north-south road, close to wire fence; iron post stamped "Prim. Trav. Sta. No. 25, 1914, Mo.".....	38 52 13.2	93 37 49.0	1,871
Blackwater Creek, center of truss bridge over.....	38 52 12.0	93 37 19.2	2,367
T. 47 N., R. 27 W., west corner of secs. 7 and 18 (45 feet south of this corner is east corner secs. 12 and 13, T. 47 N., R. 25 W., indicated by road east and fence line west).....	38 52 22.9	93 36 23.8	4,517
T. 47 N., R. 24 W., corner secs. 7, 8, 17, and 18, fence north, hedge south, center east and west road at.....	38 52 20.7	93 35 15.1	5,442
T. 47 N., R. 24 W., quarter corner secs. 8 and 17, crossroads at.....	38 52 19.8	93 34 41.9	2,627
T. 47 N., R. 24 W., corner secs. 8, 9, 16, and 17, 50 feet west of iron bridge, stone in center east and west road.....	38 52 18.6	93 34 09.2	2,594
T. 47 N., R. 24 W., quarter corner secs. 9 and 16, T road corners, roads north, east, and west.....	38 52 17.7	93 33 35.6	2,655
T. 47 N., R. 24 W., $\frac{1}{4}$ mile east of corner of secs. 9, 10, 15, and 16, on line between secs. 10 and 15, T road corners, roads north, south, and east.....	38 52 16.4	93 32 45.5	3,970
T. 47 N., R. 24 W., apparent corner secs. 10, 11, 14, and 15, east-west road at private road north to house.....	38 52 14.6	93 31 55.4	3,964
Cooks Knob triangulation station, a pole on the ridge of Mr. E. Cook's ice house, on the south side of the ventilator. The pole was braced firmly against the south face of the ventilator and the center of the pole is on the ridge 9 inches from the south face of the ventilator. The knob on which are Mr. Cook's house and the signal is about 7 miles distant and north from Knob Noster. It is the left-hand eminence of a range that is noticeable from Knob Noster and is in the northwest corner of the SE. $\frac{1}{4}$ sec. 14, T. 47 N., R. 24 W. (U. S. C. & G. S. station).....	38 51 57.15	93 31 31.86	2,569
T road corners, roads north, south, and east.....	38 52 20.5	93 31 38.1	2,417
T. 47 N., R. 24 W., on line between secs. 11 and 12, T road forks near schoolhouse, roads north, south, and east.....	38 52 25.2	93 30 45.2	4,212

Magnetic declination along north border of northeast quarter of quadrangle, 7° 46' E.; along south border, 8° 00' E.; along east border, 8° 00' E.; along west border, 7° 35' E.; along center, 7° 43' E.

Along highways near south border of northwest quarter of quadrangle.

T. 46 N., R. 28 W., $\frac{1}{4}$ mile south of corner of secs. 26, 27, 34, and 35, 45 feet north and 25 feet east of T road west and lane east, 5 feet east of corner of fence post, just inside fence, iron bench-mark post stamped "Prim. Trav. Sta. No. 11, 1914, Mo.".....	38 45 04.9	93 59 29.2	.....
T road corners, roads north, south, and east.....	38 45 30.8	93 59 28.0	2,618
T. 46 N., R. 28 W., in southern part sec. 26, crossroads.....	38 45 29.3	93 58 54.3	2,670
T road corners, roads north, south, and west, north-south road on section line.....	38 45 25.6	93 58 20.5	2,706
T road forks, roads north, east, and west.....	38 45 26.5	93 57 29.0	4,084
T. 46 N., Rs. 27 and 28 W., on range line between Rs. 27 and 28, and section line secs. 25 and 34, T road forks at roads east, west, and south.....	38 45 25.9	93 57 11.7	1,370
T road forks, roads north, south, and west.....	38 45 11.0	93 56 20.8	4,307
T. 46 N., R. 27 W., quarter corner between secs. 29 and 32, T road forks, roads north, south, and east.....	38 45 09.0	93 55 29.9	4,036
T road corners, roads east, west, and north.....	38 45 06.3	93 53 56.3	7,422
T. 46 N., R. 27 W., on line between secs. 27 and 34, in line with center of roads south and west, 20 feet north of center of road east, 4 feet north and 2 feet west of corner fence post, iron bench mark post stamped "Prim. Trav. Sta. No. 12, 1914, Mo.".....	38 45 05.6	93 53 30.7	2,029
T. 46 N., R. 27 W., corner secs. 26, 27, 34, and 35, center of crossroads.....	38 45 03.7	93 52 39.7	4,045
T. 46 N., R. 27 W., corner secs. 26, 25, 35, and 36, T road forks, roads east, west, and north.....	38 45 01.5	93 51 32.3	5,340

Magnetic declination near south border of northwest quarter of quadrangle, 8° 19' E.

WARRENSBURG QUADRANGLE—Continued.

Along highways near east border of northwest quarter of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 46 N., R. 26 W., quarter corner secs. 26 and 27, north-south road at T road east.....	38 45 14.2	93 45 51.2	.....
Postoak Creek, center of iron truss bridge over.....	38 45 39.0	93 46 07.0	2,807
T. 46 N., R. 26 W., quarter corner between secs. 15 and 22, center of east-west road, at T road south.....	38 46 33.9	93 46 21.3	5,659
T. 46 N., R. 26 W., 0.25 mile west of corner of secs. 10, 11, 14, and 15, on section line between secs. 10 and 15, T road west.....	38 47 25.1	93 46 01.2	5,420
Blackwater Creek, center of iron truss bridge over.....	38 48 06.4	93 46 03.0	4,174
Tps. 46 and 47 N., at quarter corner on north side sec. 3, R. 26 W., in line with roads east, west, and south.....	38 49 15.5	93 46 13.5	7,036
T. 47 N., R. 26 W., about 0.75 mile west of corner of secs. 13, 14, 23, and 24, center of north-south road, in line with center of road east, at crossroads.....	38 51 51.1	93 45 13.6	.....
T road east.....	38 52 38.4	93 45 10.6	4,789
Fayetteville, 295 feet north of main crossroads at, 25 feet east of center of road, 6 feet west of picket fence, 8 feet south of telephone post, directly opposite church, iron bench mark post stamped "Prim. Trav. Sta. No. 20, 1914, Mo.".....	38 52 55.5	93 45 21.6	1,936
Fayetteville, 0.54 mile north of, T road south.....	38 53 23.4	93 45 26.4	2,850
Fayetteville, 0.82 mile north of, center east-west road, at road south.....	38 53 36.8	93 45 34.1	1,487
T. 47 N., R. 26 W., north corner secs. 2 and 3, in line with center of road south and road east on township line.....	38 54 22.9	93 45 21.0	4,778
T. 48 N., R. 26 W., quarter corner between secs. 14 and 23, center of roads, east, west, and south, and lane north.....	38 56 59.6	93 45 02.6	.....
T. 48 N., R. 26 W., corner secs. 14, 15, 22, and 23, T road north.....	38 57 00.2	93 45 35.8	2,624
T. 48 N., R. 26 W., corner secs. 10, 11, 14, and 15, center of.....	38 57 52.6	93 45 34.1	5,306
Davis Creek, center of wooden bridge over.....	38 58 34.7	93 45 33.2	4,258
T. 48 N., R. 26 W., quarter corner secs. 2 and 3, center north and south road at T road east.....	38 59 11.2	93 45 32.2	3,696

Magnetic declination near east border of northwest quarter of quadrangle, 7° 35' E.

Along highways near north border of quadrangle.

Tps. 48 and 49 N., R. 26 W., 15 feet north and 15 feet east of corner of secs. 34, 35, 2, and 3, at T road corners, roads east, west, and south, iron bench mark poststamped "Prim. Trav. Sta. No. 19, 1914, Mo.".....	38 59 38.6	93 45 31.3	.....
Tps. 48 and 49 N., R. 26 W., apparent quarter corner secs. 3 and 34, crossroads.....	38 59 39.3	93 46 04.7	2,639
T. 48 N., R. 26 W., north corner secs. 3 and 4, T road south.....	38 59 40.2	93 46 38.7	2,684
T road corners, roads, east, west, and north.....	38 59 41.7	93 47 28.7	3,955
Tps. 48 and 49 N., R. 26 W., corner secs. 5, 6, 31, and 32, T road south.....	38 59 44.1	93 48 52.6	6,630
Tps. 48 and 49 N., Rs. 26 and 27 W., T road east.....	38 59 46.1	93 49 55.9	4,999
T road corners, roads north, south, and east.....	38 59 34.5	93 50 59.9	5,189
T road corners, roads east, west, and south.....	38 59 21.6	93 51 02.4	1,319
T. 48 N., R. 27 W., in west part of sec. 2, small iron bridge over creek.....	38 59 22.4	93 51 30.2	2,199
T. 48 N., R. 27 W., in west half of sec. 3, in line with T road south, 15 feet north of center of east-west road, 3 feet south of water oak tree and wire fence, iron bench mark poststamped "Prim. Trav. Sta. No. 21, 1914, Mo.".....	38 59 24.8	93 52 26.6	4,460
T road corners, roads north, south, and east, center of.....	38 59 24.6	93 53 13.5	3,706
T road corners, roads north, south, and west, center of.....	38 59 39.5	93 53 16.9	1,540
Davis Creek, center of small wooden bridge over main branch of.....	38 59 42.4	93 54 39.0	6,489
Davis Creek bridge, 0.70 mile west of, T road south.....	38 59 44.5	93 55 26.0	3,716
Odessa Cemetery, T road west at.....	38 59 57.8	93 55 31.9	1,421
Odessa railroad station, about 900 feet southwest of street crossing.....	38 59 57.4	93 57 20.9	.....
T. 47 N., R. 28 W., apparent quarter corner secs. 3 and 4, right angle turn in road at.....	38 59 38.7	93 59 57.0	.....

Magnetic declination for north border of quadrangle, 7° 55' E.

WARRENSBURG QUADRANGLE—Continued.

Along highways near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
T road forks, roads north, south, and east, about 130 feet north of bridge over small stream and near church.....	38 55 19.8	93 59 53.8	.....
Pittsville, 2.60 miles north of, crossroads.....	38 53 16.5	93 59 51.3	.....
T. 47 N., R. 28 W., 0.25 mile east of corner of secs. 15, 16, 21, and 22, 15 feet south of east and west road at T road north, 5 feet north of east and west hedge line, iron bench mark post stamped "Prim. Trav. Sta. No. 23, 1914, Mo.".....	38 52 23.4	93 59 54.5	5,382
Pittsville, 35 feet south of center of road west, 35 feet west of center of road south, and in line with roads north and east, crossroads....	38 51 02.7	93 59 24.9	8,485
T. 47 N., R. 28 W., at section line between secs. 27 and 34, roads north, south, and west.....	38 50 36.6	93 59 26.6	2,649
T road corners, roads north, south, and west.....	38 49 57.0	93 59 28.9	4,009
Tps. 46 and 47 N., crossing of north-south road at line between....	38 49 43.6	93 59 29.6	1,350
T road corners, roads north, south, and east.....	38 49 06.1	93 59 33.0	3,808
T. 46 N., R. 28 W., on line between secs. 10 and 15, crossroads.....	38 47 56.6	93 59 36.7	7,034
T road corners, roads north, south, and east.....	38 47 30.1	93 59 38.3	2,679
T. 46 N., R. 28 W., on line between secs. 15 and 22, roads north, south, and west.....	38 47 03.5	93 59 40.0	2,689

Magnetic declination near west border of quadrangle, 8° 24' E.

Along highways through center of northwest quarter of quadrangle.

T. 47 N., R. 28 W., quarter corner between secs. 26 and 27, fence line north and south, center of east-west roads.....	38 51 02.3	93 59 08.2	.....
T. 47 N., R. 28 W., quarter corner between secs. 25 and 26, roads north, south, and west, stone 15 feet south of center of road west.	38 51 00.0	93 58 58.0	5,379
T. 47 N., R. 28 W., corner secs. 23, 24, 25 and 26, stone.....	38 51 26.4	93 57 58.9	2,674
T. 47 N., R. 28 W., west corner of secs. 19 and 30, in line with road east (30 feet north of the above and in line with road west is apparent corner of secs. 24 and 25, T. 46 N., R. 28 W.).....	38 51 25.1	93 56 50.1	5,440
T. 47 N., R. 27 W., corner secs. 19, 20, 29, and 30, center of crossroads.	38 51 22.5	93 55 43.9	5,244
T road corners, roads east, west, and south.....	38 51 19.8	93 54 53.0	4,040
Blackwater Creek, center of iron truss bridge over north fork of....	38 51 17.4	93 53 58.5	4,317
Columbus, T road corners, roads north, south, and west.....	38 51 23.9	93 53 27.5	2,540
T. 47 N., R. 27 W., corner secs. 15, 16, 21, and 22, roads north, south, and east.....	38 52 10.0	93 53 24.2	4,670
T. 47 N., R. 27 W., corner secs. 14, 15, 22, and 23, roads east, west, and north.....	38 52 07.7	93 52 15.5	5,435
T. 47 N., R. 27 W. near quarter corner secs. 14 and 23, 20 feet south and 20 feet east of intersection of crossroads, 6 feet east and 2 feet north of corner fence post, iron bench-mark post stamped "Prim. Trav. Sta. No. 24, 1914, Mo.".....	38 52 07.3	93 51 41.6	2,681
T. 47 N., R. 27 W., apparent corner of secs. 13, 14, 23, and 24, at angle in road near church and schoolhouse.....	38 52 05.9	93 51 08.3	2,635
T. 47 N., R. 27 W., east corner secs. 13 and 24, roads north, south, and west.....	38 52 06.5	93 49 59.3	5,461
T. 47 N., R. 26 W., corner secs. 17, 18, 19, and 20, center of, east and west road, old unused road south.....	38 52 00.3	93 48 53.7	5,224
T. 47 N., R. 26 W., corner secs. 16, 17, 20, and 21.....	38 51 57.7	93 47 45.9	5,373
T. 47 N., R. 26 W., corner secs. 15, 16, 21, and 22, roads east, west, and north.....	38 51 54.7	93 46 38.1	5,371
T. 47 N., R. 26 W., apparent corner secs. 14, 15, 22, and 23, near turn in roads north and east.....	38 51 51.6	93 45 30.3	5,368

Magnetic declination through center of northwest quarter of quadrangle, 7° 53' E.

WARRENSBURG QUADRANGLE—Continued.

Along highways near north border of southeast quarter of quadrangle

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Feet.</i>
Intersection of highway and "Short Line" Railroad from Warrensburg to Pertle Springs.....	38 44 45.8	93 44 58.8	.....
T. 46 N., R. 26 W., corner secs. 25, 26, 35, and 36, center of east-west road at hedge north, and fence south.....	38 44 45.2	93 44 45.0	1,094
T. 46 N., R. 26 W., quarter corner secs. 25 and 36, roads east, west, and north.....	38 44 44.1	93 44 10.6	.....
T. 46 N., R. 25 W., west corner secs. 30 and 31 (40 feet north of above is east corner secs. 25 and 26, T. 46 N., R. 26 W., roads east, west, and north; jog at range line).....	38 44 42.6	93 43 37.0	2,659
T. 46 N., R. 25 W., corner secs. 29, 30, 31, and 32, center of east and west road at T road south.....	38 44 40.1	93 42 25.2	5,698
T. 46 N., R. 25 W., corner secs. 28, 29, 32, and 33, center of east-west road at north-south wire fence.....	38 44 38.0	93 41 22.0	5,007
Sign post reading "Warrensburg 4 miles," at crossroads.....	38 44 37.5	93 41 04.3	1,402
T. 46 N., R. 25 W., corner secs. 27, 28, 33, and 34, center of east-west road at T road south, fence north, also line between civil townships of Warrensburg and Montserrat.....	38 44 36.3	93 40 11.1	4,220
T. 46 N., R. 25 W., 15 feet south and 30 feet west of corner of secs. 26, 27, 34, and 35, at T road corner, roads east, west, and north; 4 feet north of fence line, iron bench mark post stamped "Prim. Trav. Sta. No. 14, 1914, Mo.".....	38 44 34.4	93 39 04.8	5,258

Magnetic declination near north border of southeast quarter of quadrangle, 8° 00' E.

Along highways near north border of southwest quarter of quadrangle.

T. 46 N., R. 27 W., east corner secs. 25 and 36, roads north, south, and west (115 feet south of above corner is west corner secs. 30 and 31, T. 46 N., R. 26 W., at turn of road north and east).....	38 44 59.8	93 50 23.7	.....
T. 46 N., R. 26 W., corner of secs. 29, 30, 31, and 32, center of crossroads.....	38 44 56.1	93 49 15.8	5,390
T. 46 N., R. 26 W., corner secs. 28, 29, 32, and 33, center of crossroads.....	38 44 53.3	93 48 07.7	5,409
T. 46 N., R. 26 W., corner secs. 27, 28, 33, and 34, center of east-west road at fence north and south.....	38 44 51.0	93 47 01.1	5,280
T. 46 N., R. 26 W., corner secs. 26, 27, 34, and 35, 20 feet north and 25 feet east of intersection of crossroads at, 5 feet east of corner fence post; iron bench mark post stamped "Prim. Trav. Sta. No. 13, 1914, Mo.".....	38 44 48.3	93 45 52.5	5,446

Magnetic declination near north border of southwest quarter of quadrangle, 7° 50' E.