

MICHIGAN.

PRIMARY TRAVERSE.

BALDWIN, BATTLE CREEK, BAY SHORE, BELLAIRE, BIG PRAIRIE, BIG RAPIDS, CHARLOTTE, COLDWATER, ELK RAPIDS, FIFE LAKE, GALESBURG, GROVE, HASTINGS, HERSEY, HILLSDALE, HOMER, HOWARD CITY, INWOOD, KALKASKA, LEONIDAS, LUTHER, MANTON, MARSHALL, NEWAYGO, NIRVANA, READING, SCHOOLCRAFT, SMYRNA, STURGIS, TORCH LAKE, TUSTIN, UNION CITY, VERMONTVILLE, AND WALKERVILLE QUADRANGLES.

ANTRIM, BARRY, BRANCH, CALHOUN, CHARLEVOIX, EATON, KALAMAZOO, KALKASKA, KENT, MECOSTA, MONTCALM, NEWAYGO, OSCEOLA, TRAVERSE, AND WEXFORD COUNTIES.

In 1916 J. H. Wilson ran a line of primary traverse from Primary Traverse Station No. 1, 1915 (approx. lat. $43^{\circ} 15'$; long. $85^{\circ} 28'$), north to Charlevoix triangulation station of the United States Lake Survey. Distances were measured independently by two sets of chain men, and azimuths were observed at intervals of 8 to 10 miles; the line thus forms a base from which control can be extended over central Michigan.

H. S. Senseney, in 1916, supplemented this work by extending control over Grove, Big Prairie, and White Cloud quadrangles, incidentally locating a few points in Baldwin, Newaygo, Howard City, Nirvana, Smyrna, and Walkerville quadrangles. The work was further extended in 1917 to adjoining quadrangles by Senseney and Oscar Jones.

Positions are given on approximate North American datum. For other positions in Michigan see United States Geological Survey Bulletins 122, 201, 216, 245, 310, 440, 496, 551, and 644. Appendix EEE of Report of the Chief of Engineers, United States Army, for 1902, and unpublished records of the United States Lake Survey, Detroit, Mich., office.

BALDWIN QUADRANGLE.

West along highways near south border of quadrangle. (By H. S. Senseney in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Feet.</i>
T. 16 N., R. 12 W., corner of secs. 20, 21, 28, and 29, crossroads at Town Hall.....	43 45 24.5	85 45 42.7	-----
T. 16 N., R. 12 W., corner of secs. 19, 20, 29, and 30, on south side of road, wooden post.....	43 45 24.0	85 46 55.5	5,340
T. 16 N., Rs. 12 and 13 W., corner of secs. 19, 30, 24, and 25, fence line north (indefinite).....	43 45 23.4	85 48 01.1	4,820
T. 16 N., R. 13 W., corner of secs. 23, 24, 25, and 26, T road north....	43 45 22.9	85 49 13.8	5,338
T. 16 N., R. 13 W., corner of secs. 21, 22, 27, and 28, crossroads....	43 45 22.5	85 51 37.9	10,575

Magnetic declination for south border of quadrangle, $0^{\circ} 26' W.$

BATTLE CREEK QUADRANGLE.

East along highways near south border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 2 S., R. 8 W., corner of secs. 27, 28, 33, and 34, crossroads.....	42 15 39.4	85 14 16.8	.....
T. 2 S., R. 8 W., corner of secs. 26, 27, 34, and 35, T road south...	42 15 39.6	85 13 06.0	5,325
T. 2 S., R. 8 W., corner of secs. 25, 26, 35, and 36, crossroads.....	42 15 39.4	85 11 55.3	5,320
T. 2 S., Rs. 7 and 8 W., corner of secs. 25, 30, 31, and 36, T road south.....	42 15 39.5	85 10 45.1	5,280
T. 2 S., R. 7 W., corner of secs. 29, 30, 31, and 32, fence line north, lane south.....	42 15 39.7	85 09 34.0	5,340
T. 2 S., R. 7 W., corner of secs. 28, 29, 32, and 33, fence line north and south.....	42 15 39.9	85 08 23.6	5,300
Battle Creek, 3 miles south by 3 miles east of, 20 feet south of corner of secs. 27, 28, 33, and 34, T. 2 S., R. 7 W.; iron post stamped "Prim. Trav. Sta. No. 3, S. 1917".....	42 15 40.0	85 07 12.8	5,319
T. 2 S., R. 7 W., corner of secs. 26, 27, 34, and 35, fence line north and south.....	42 15 40.5	85 06 02.4	5,299
T. 2 S., R. 7 W., corner of secs. 25, 26, 35, and 36, crossroads.....	42 15 40.9	85 04 51.7	5,311
T. 2 S., Rs. 6 and 7 W., corner of secs. 25, 30, 31, and 36, T road west.....	42 15 41.4	85 03 41.2	5,300
T. 2 S., Rs. 6 and 7 W., quarter corner between secs. 31 and 36, T road east.....	42 15 14.8	85 03 40.9	2,690
T. 2 S., R. 6 W., quarter corner between secs. 31 and 32, fence line north and south.....	42 15 14.4	85 02 32.4	5,150
T. 2 S., R. 6 W., quarter corner between secs. 32 and 33, T road south.....	42 15 14.0	85 01 21.5	5,330
T. 2 S., R. 6 W., quarter corner between secs. 33 and 34.....	42 15 13.4	85 00 11.2	5,285

Magnetic declination for south border of quadrangle, 2.0° W.

North along highways near west border (south half) of quadrangle. (By Oscar Jones in 1917.)

Babcock corner, road fork.....	42 20 52.6	85 14 31.5	.....
Kalamazoo River, north end of bridge.....	42 20 56.2	85 14 32.4	1,658
T road north.....	42 20 18.2	85 14 40.3	1,919
Michigan Central R. R. crossing, center of track.....	42 19 59.3	85 14 10.8	2,925
Tps. 1 and 2 S., R. 8 W., corner of secs. 3, 4, 33, and 34, T road south.....	42 19 59.3	85 14 22.1	849
Grand Trunk Ry. crossing, center of north track.....	42 19 29.8	85 14 21.3	2,990
T. 2 S., R. 8 W., corner of secs. 3, 4, 9, and 10 T road west.....	42 19 09.1	85 14 20.8	2,090

Magnetic declination, south half of west border of quadrangle, 0.3° W.

East along highways through center of quadrangle. (By Oscar Jones in 1917.)

T road west.....	42 23 55.5	85 14 09.6	.....
Bedford, road fork at opposite signboard "Battle Creek 7 mi."....	42 23 42.9	85 13 56.9	1,580
T. 1 S., R. 8 W., 0.25 mile north of, quarter corner between secs. 11 and 14, T road west.....	42 23 42.7	85 12 40.4	5,737
T. 1 S., R. 8 W., quarter corner between secs. 7 and 12, T road west.....	42 23 56.7	85 10 54.6	8,068
Road fork.....	42 23 30.4	85 10 32.8	3,124
Do.....	42 23 04.3	85 10 27.0	2,670
Crossroads.....	42 22 37.9	85 10 22.5	2,697
T. 1 S., R. 7 W., corner of secs. 17, 18, 19, and 20 crossroads.....	42 22 37.9	85 09 43.1	2,960
T. 1 S., R. 7 W., quarter corner between secs. 17 and 20.....	42 22 37.8	85 09 07.4	2,680
Battle Creek, 5 miles north of, on Maple Street road, in triangle of road fork at schoolhouse; iron post stamped "Prim. Trav. Sta. No. 14, 1917".....	42 22 37.8	85 08 26.3	3,085
Moore Corners, road fork at.....	42 22 11.7	85 08 44.0	2,961
Battle Creek, center of concrete bridge over.....	42 22 11.8	85 07 44.8	4,450
T. 1 S., R. 7 W., quarter corner between secs. 21 and 22, T road west.....	42 22 11.9	85 07 21.4	1,750
T. 1 S., R. 7 W., 0.25 mile south of corner of secs. 14, 15, 22, and 23, T road west at Penfield.....	42 22 24.3	85 06 10.5	5,474
Road fork.....	42 21 55.9	85 05 52.4	3,174
Do.....	42 21 54.6	85 05 16.9	2,667
T. 1 S., R. 7 W., quarter corner between secs. 25 and 26, T road south.....	42 21 19.1	85 04 58.1	3,859
T. 1 S., Rs. 6 and 7 W., quarter corner between secs. 25 and 30, T road west.....	42 21 19.4	85 03 47.6	5,299
T. 1 S., R. 6 W., corner of secs. 30 and 31, T road east, 50 feet north is corner of secs. 25 and 36, T. 1 S., R. 7 W.....	42 20 52.6	85 03 47.0	2,710
T. 1 S., R. 6 W., corner of secs. 29, 30, 31, and 32, T road north.....	42 20 52.9	85 02 38.9	5,110
T. 1 S., R. 6 W., corner of secs. 28, 29, 32, and 33, crossroads.....	42 20 53.4	85 01 28.3	5,300

BATTLE CREEK QUADRANGLE—Continued.

South near east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Feet.</i>
Tps. 1 and 2 S., R. 6 W., corner of secs. 4, 5, 32, and 33, crossroads.	42 20 01.0	85 01 27.5	5,299
Tps. 1 and 2 S., R. 6 W., corner of secs. 3, 4, 33, and 34, T road south.	42 20 01.3	85 00 16.6	5,320
T. 2 S., R. 6 W., corner of secs. 3, 4, 9, and 10, crossroads.	42 19 09.9	85 00 15.7	5,200
T. 2 S., R. 6 W., corner of secs. 9, 10, 15, and 16, T road west.	42 18 27.5	85 00 14.6	5,300
T. 2 S., R. 6 W., corner of secs. 15, 16, 21, and 22, T road east.	42 17 25.1	85 00 13.5	5,310
Crossroads, Verona road.	42 16 45.0	85 00 12.3	4,050
Conley, crossroads at.	42 16 11.2	85 00 11.7	3,420

Magnetic declination through center of quadrangle, 1.0° W.; magnetic declination for east border of quadrangle, 0.5° W.

North along highways near north half of east border of quadrangle. (By Oscar Jones in 1917.)

Station 600-500.	42 20 53.4	85 01 28.3	.....
T. 1 S., R. 6 W., on line between secs. 28 and 29, crossroads.	42 21 45.6	85 01 37.5	5,341
Penfield, 4 miles east of, at triangle of road forks; iron post stamped "Prim. Trav. Sta. No. 15, 1917"	42 22 23.4	85 01 38.4	3,823
T. 1 S., R. 6 W., quarter corner between secs. 16 and 17, T road west.	42 23 04.1	85 01 31.1	4,159
T road east	42 23 17.0	85 01 31.3	1,310
Road fork	42 23 56.1	85 01 31.9	3,950
Do.	42 24 40.2	85 00 48.5	5,526
T. 1 S., R. 6 W., on line between secs. 3 and 4, T road west.	42 24 41.9	85 00 21.3	2,048
Road fork	42 24 55.2	85 00 21.2	1,340
T. 1 S., R. 6 W., corner of secs. 3 and 4, on Eaton-Calhoun county line, road fork	42 25 18.6	85 00 21.4	2,370
Road fork	42 25 52.4	85 00 43.0	2,788
Bellevue, at northeast corner of Dyers Hotel, T. 1 N., R. 6 W., quarter corner between secs. 28 and 29, crossroads.	42 26 37.2	85 01 05.3	4,830
T. 1 N., R. 6 W., quarter corner between secs. 20 and 21.	42 27 29.4	85 01 06.1	5,290
T road east	42 28 08.8	85 01 11.8	4,109
T. 1 N., R. 6 W., on line between secs. 9 and 17, crossroads.	42 28 47.9	85 01 17.2	3,982
T road east	42 29 14.4	85 01 20.1	2,690
T. 1 N., R. 6 W., on line between secs. 4 and 9, 40 feet north by 25 feet east of crossroads; iron post stamped "Prim. Trav. Sta. No. 16, Elev. 967"	42 29 40.8	85 01 20.4	2,678

Magnetic declination north half of east border of quadrangle, 1.40° W.

BAY SHORE QUADRANGLE.

North near west border of quadrangle. (By J. H. Wilson, 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Feet.</i>
Belvedere, railroad bridge over outlet of Pine Lake, extreme south end of.	45 18 51.2	85 14 46.8	.....
Charlevoix, in front of telegraph-office window of depot, center of railroad track.	45 19 07.2	85 14 33.3	1,884
T. 34 N., R. 8 W., secs. 13, 14, 23, and 24, crossroads.	45 19 59.3	85 14 24.8	5,314
Charlevoix Triangulation Station (a Lake Survey station), situated on top of the highest of a group of sand hills, 1 mile north of Charlevoix, locally known as Mount McSaub. The hill is the farthest north of the group. The station is marked by a square concrete monument, almost at the surface, with a cartridge in the top to mark the geodetic center. A large concrete witness monument, bearing S. 16° 14' W., 46.2 feet distant, stands 4 inches above the ground in a little swale, 13.1 feet below the station monument. The witness is marked "U. S. 1913," with the head of a 40 d. nail in the center. A 7-inch ash tree bears S. 78° 13' E., distant 41.2 feet. An 18-inch oak tree bears S. 13° 20' E., distant 88.7 feet. A 12-inch oak tree bears S. 64° 36' W., distant 80.6 feet. A 12-inch pine tree bears S. 82° 34' W., distant 155.8 feet.	45 20 05.583	85 14 45.106	1,586

•BELLAIRE QUADRANGLE.

In southwest corner of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
East-west road crossing.....	44 46 01.7	85 12 54.9	.....
T. 27 N., R. 8 W., quarter corner between secs. 1 and 2, crossroads.	44 45 52.7	85 13 54.8	4,416

BIG PRAIRIE QUADRANGLE.

North along highways near east border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 16 N., R. 10 W., south corner of secs. 33 and 34, T road north; 220 feet east is T. 15 N., R. 10 W., north corner of secs. 3 and 4.	43 43 41.9	85 30 13.5	.....
T. 16 N., R. 10 W., corner of secs. 27, 28, 33, and 34, crossroads....	43 44 33.4	85 30 13.5	5,215

South along highways near west border of quadrangle. (By H. S. Senseney in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 16 N., R. 12 W., corner of secs. 25, 26, 35, and 36, crossroads at Jackson schoolhouse.....	43 44 33.6	85 42 06.0	.....
Tps. 15 and 16 N., R. 12 W., corner of secs. 35, 36, 1, and 2, crossroads.....	43 43 41.4	85 42 05.4	5,290
T. 15 N., R. 12 W., corner of secs. 1, 2, 11, and 12, east and west fence line.....	43 42 49.3	85 42 04.1	5,280
T. 15 N., R. 12 W., corner of secs. 11, 12, 13, and 14, T road west.....	43 41 56.9	85 42 02.8	5,304
T. 15 N., R. 12 W., corner of secs. 13, 14, 23, and 24, east and west fence line.....	43 41 05.4	85 42 05.1	5,223
T. 15 N., R. 12 W., corner of secs. 23, 24, 25, and 26, crossroads.....	43 40 13.2	85 42 05.3	5,280
T. 15 N., R. 12 W., corner of secs. 25, 26, 35, and 36, roads north and west.....	43 39 21.0	85 42 06.1	5,290
Tps. 14 and 15 N., R. 12 W., quarter corner between secs. 2 and 35, T road north.....	43 38 28.2	85 42 40.3	5,906
Woodville, 2 miles south by 2 miles west of, Tps. 14 and 15 N., R. 12 W., corner of secs. 34, 35, 2, and 3, 25 feet south by 25 feet east of T road south; iron post stamped "Prim. Trav. Sta. No. 19, 1916 Mich."	43 38 27.7	85 43 16.9	2,689
T. 14 N., R. 12 W., corner of secs. 2, 3, 10, and 11, east and west fence line.....	43 37 37.5	85 43 17.2	5,090
T. 14 N., R. 12 W., corner of secs. 10, 11, 14, and 15, crossroads.....	43 36 45.8	85 43 17.4	5,240
T. 14 N., R. 12 W., corner of secs. 14, 15, 22, and 23, T road east.....	43 35 53.7	85 43 17.8	5,270
T. 14 N., R. 12 W., quarter corner between secs. 22 and 23, crossroads.....	43 35 27.8	85 43 18.0	2,630
T. 14 N., R. 12 W., quarter corner between secs. 21 and 22, T road south.....	43 35 26.5	85 44 29.8	.....
T. 14 N., R. 12 W., corner of secs. 22, 23, 26, and 27, east and west fence line.....	43 35 01.4	85 43 18.2	.....
T. 14 N., R. 12 W., corner of secs. 26, 27, 34, and 35, crossroads.....	43 34 09.3	85 43 18.9	5,275
Tps. 13 and 14 N., R. 12 W., corner of secs. 2, 3, 34, and 35, T road south.....	43 33 16.1	85 43 19.5	5,389
T. 13 N., R. 12 W., corner of secs. 2, 3, 10, and 11, crossroads.....	43 32 24.7	85 43 20.5	5,207
T road south, about 0.25 mile east of, T. 13 N., R. 12 W., corner of secs. 3, 4, 9, and 10.....	43 32 24.7	85 44 14.1	3,950
T road west, about 0.25 mile east of, T. 13 N., R. 12 W., corner of secs. 9, 10, 15, and 16.....	43 31 32.4	85 44 15.3	5,295
T. 13 N., R. 12 W., quarter corner between secs. 14 and 15, T road south.....	43 31 06.6	85 43 21.6	4,741
Big Prairie, 4 miles west by 1 mile south of, T. 13 N., R. 12 W., quarter corner between secs. 22 and 23, 20 feet south by 20 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 20, 1916 Mich."	43 30 14.1	85 43 22.6	5,317

East along highways near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 13 N., R. 12 W., quarter corner between secs. 23 and 24, crossroads at Fry schoolhouse.....	43 30 15.1	85 42 10.9	5,285
T. 13 N., Rs. 11 and 12 W., quarter corner between secs. 19 and 24, T road west.....	43 30 15.6	85 40 57.8	5,390
T. 13 N., R. 11 W., quarter corner between secs. 19 and 20, crossroads.....	43 30 16.6	85 39 45.4	5,335
Big Prairie, 1 mile south of, T. 13 N., R. 11 W., quarter corner between secs. 20 and 21, 18 feet north by 20 feet east of T road west; iron post stamped "Prim. Trav. Sta. No. 25, 1916, Mich."	43 30 16.4	85 38 33.8	5,280

BIG PRAIRIE QUADRANGLE—Continued.

East along highways near south border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
T. 13 N., R. 11 W., corner of secs. 16, 17, 20, and 21, fenceline west, opposite Forwood schoolhouse.	° ' "	° ' "	Feet.
T. 13 N., R. 11 W., quarter corner between secs. 16 and 17, crossroads at Big Prairie.	43 30 42.5	85 38 34.5	2,639
Muskegon River, east end of bridge over.	43 31 08.5	85 38 34.9	2,630
T. 13 N., R. 10 W., corner of secs. 17, 18, 19, and 20, crossroads.	43 30 49.2	85 37 03.8	6,992
T. 13 N., R. 10 W., corner of secs. 16, 17, 20, and 21, T road north.	43 30 41.6	85 32 33.1	.....
T. 13 N., R. 10 W., corner of secs. 15, 16, 21, and 22, T road south.	43 30 40.5	85 31 20.8	5,335
	43 30 40.8	85 30 09.1	5,280

East through center of quadrangle. (By H. S. Senseney in 1916.)

Tps. 14 and 15 N., Rs. 11 and 12 W., corner of secs. 1, 6, 31, and 36, T road east.	43 38 30.1	85 40 53.2	.....
Tps. 14 and 15 N., R. 11 W., corner of secs. 31, 32, 5, and 6, T road south.	43 38 30.4	85 39 44.1	5,084
Tps. 14 and 15 N., R. 11 W., corner of secs. 4, 5, 32, and 33, crossroads at Free Methodist Church.	43 38 30.9	85 38 32.3	5,280
Tps. 14 and 15 N., R. 11 W., corner of secs. 3, 4, 33, and 34, crossroads.	43 38 31.2	85 37 20.2	5,300
Woodville, 4 miles east by 2 miles south of, Tps. 14 and 15 N., R. 11 W., 25 feet north by 25 feet west of corner of secs. 2, 3, 34, and 35; iron post stamped "Prim. Trav. Sta. No. 17, 1916 Mich."	43 38 31.6	85 36 09.1	5,230
T. 15 N., R. 11 W., corner of secs. 26, 27, 34, and 35, at Hatfield schoolhouse, crossroads.	43 39 23.3	85 36 08.2	5,229
Hatfield schoolhouse, 1 mile east of, T. 15 N., R. 11 W., corner of secs. 25, 26, 35, and 36, 30 feet south by 25 feet west of T road south; iron post stamped "Prim. Trav. Sta. No. 18, 1916 Mich."	43 39 23.6	85 34 56.8	5,252
T. 15 N., Rs. 10 and 11 W., corner of secs. 30, 31, 25, and 36, stone on north side of road, Mecosta-Newago county line (location indefinite).	43 39 24.2	85 33 44.8	5,291
T. 15 N., R. 10 W., corner of secs. 28, 29, 32, and 33, crossroads.	43 39 25.0	85 31 25.5	10,238
Tps. 14 and 15 N., R. 10 W., corner of secs. 32 and 33, T road north (could not locate corner of secs. 4 and 5).	43 38 32.2	85 31 24.8	5,337
T. 14 N., R. 10 W., quarter corner on north side of sec. 4, T road south.	43 38 32.0	85 30 46.6	2,803
T. 14 N., R. 10 W., north corner between secs. 3 and 4, T road south.	43 38 31.7	85 30 12.7	2,495

Magnetic declination for north border of quadrangle, 0° 41' W.; for south border of quadrangle, 0° 28' W., 0° 21' E.; for west border of quadrangle, 1° 0' W.; east and west through center of quadrangle, 0° 23' W.

BIG RAPIDS QUADRANGLE.

North along highways near west border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
Mosley, 2 miles west and 1.5 miles north of, T. 13 N., R. 10 W., corner of secs. 14, 15, 22, and 23, 25 feet north by 20 feet east of; at northeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 2, 1916 Mich."	° ' "	° ' "	Feet.
T. 13 N., R. 10 W., corner of secs. 10, 11, 14, and 15, crossroads.	43 30 41.8	85 28 57.1	.....
T. 13 N., R. 10 W., corner of secs. 2, 3, 10, and 11, crossroads.	43 31 33.4	85 28 57.5	5,218
T. 14 N., R. 10 W., south corner of secs. 34 and 35, T road north; 230 feet east is T. 13 N., R. 10 W., north corner of secs. 2 and 3.	43 32 25.3	85 28 57.6	5,260
T. 14 N., R. 10 W., corner of secs. 26, 27, 34, and 35, east-west fence line.	43 33 18.0	85 29 00.0	5,337
T. 14 N., R. 10 W., corner of secs. 22, 23, 26, and 27; crossroads, in line with road north.	43 34 09.2	85 28 59.8	5,186
T. 14 N., R. 10 W., line between secs. 14 and 23, T road west.	43 35 00.9	85 29 00.1	5,231
Muskegon River, south end of bridge over.	43 35 52.8	85 28 41.8	5,432
T. 14 N., R. 10 W., corner of secs. 2, 3, 10, and 11; crossroads.	43 36 26.6	85 28 49.8	3,464
Big Rapids, 4 miles south of, 25 feet north of north corner of secs. 2 and 3, T. 14 N., R. 10 W., and 25 feet north by 30 feet west of south corner of secs. 34 and 35, T. 15 N., R. 10 W., at northwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 3, 1916 Mich."	43 37 38.8	85 29 01.2	7,367
T. 15 N., R. 10 W., corner of secs. 26, 27, 34, and 35, T road east.	43 38 31.4	85 29 02.0	5,319
T. 15 N., R. 10 W., corner of secs. 22, 23, 26, and 27; T road east.	43 39 23.0	85 29 00.6	5,234
	43 40 10.6	85 29 00.8	4,823

BIG RAPIDS QUADRANGLE—Continued.

North along highways near west border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 15 N., R. 10 W., corner of secs. 14, 15, 22, and 23; crossroads....	43 41 02.4	85 29 02.2	5,243
Big Rapids, intersection of State and Maple streets; corner of secs. 10, 11, 14, and 15, T. 15 N., R. 10 W.....	43 41 54.2	85 29 03.0	5,245
T. 15 N., R. 10 W., line between secs. 3 and 10, road west.....	43 42 45.6	85 29 18.1	5,320
Tps. 15 and 16 N., R. 10 W., road west on township line.....	43 43 41.7	85 29 40.2	5,906

Near west border of quadrangle. (By H. S. Senseney in 1916.)

T. 15 N., R. 10 W., quarter corner on south side of sec. 34, 22 feet east is quarter corner on north side of sec. 3, T. 14 N., R. 10 W., crossroads.....	43 38 31.4	85 29 37.4
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CHARLOTTE QUADRANGLE.

East along highways near south border of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Tps. 1 and 2 N., R. 6 W., corner of secs. 2, 3, 34, and 35, T road south	42 30 33.8	84 59 39.3	.....
T. 2 N., R. 6 W., corner of secs. 35 and 36, T road north; 50 feet west is corner of secs. 1 and 2, T. 1 N., R. 6 W. at T road south..	42 30 34.1	84 58 26.8	5,430
Tps. 1 and 2 N., Rs. 5 and 6 W., corner of secs. 1, 6, 31, and 36, crossroads.....	42 30 34.0	84 57 15.8	5,320
T. 2 N., R. 5 W., corner of secs. 31 and 32, T road north, 140 feet west is north corner of secs. 5 and 6, T. 1 N., R. 5 W.....	42 30 34.1	84 56 04.2	5,360
T. 2 N., R. 5 W., corner of secs. 32 and 33, T road north.....	42 30 34.4	84 54 53.4	5,300
Crossroads.....	42 30 34.4	84 54 25.6	2,080
Tps. 1 and 2 N., R. 5 W., corner of secs. 3, 4, 33, and 34, 20 feet south by 10 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 18, 1917;" azimuth to concrete silo, 271° 28', distance 3,500 feet.....	42 30 34.2	84 53 42.0	3,263
T road south.....	42 30 34.4	84 52 48.1	4,039
T. 2 N., R. 5 W., corner of secs. 34 and 35, T road north.....	42 30 34.4	84 52 31.2	1,260
T. 1 N., R. 5 W., corner of secs. 1 and 2, T road south.....	42 30 34.1	84 51 20.6	5,290
Tps. 1 and 2 N., Rs. 4 and 5 W., at township corner, crossroads..	42 30 33.9	84 50 09.2	5,350
T. 1 N., R. 4 W., corner of secs. 5 and 6, T road south, 210 feet west is corner of secs. 31 and 32, T. 2 N., R. 4 W., T road north..	42 30 33.6	84 49 00.0	5,180
T. 2 N., R. 4 W., corner of secs. 32 and 33, T road north, 80 feet east is corner of secs. 4 and 5, T. 1 N., R. 4 W., T road south....	42 30 33.1	84 47 51.1	5,160
T. 1 N., R. 4 W., 25 feet east to corner of secs. 4, 5, 8, and 9, at northwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 5, 1909 Mich." (in Marshall quadrangle).....	42 29 39.0	84 47 49.7	5,476

Magnetic declination along south border of quadrangle, 1.0° W.

COLD WATER QUADRANGLE.

West along highways near north border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 5 S., R. 7 W., corner of secs. 26, 27, 34, and 35, T road west.....	41 59 58.7	85 05 57.1	.....
Union City, 4 miles south by 1 mile east of, 20 feet north by 20 feet west of corner of secs. 27, 28, 33, and 34, T. 5 S., R. 7 W.; iron post stamped "Prim. Trav. Sta. No. 8, S. 1917".....	41 59 58.3	85 07 06.9	5,273
T. 5 S., R. 7 W., corner of secs. 28, 29, 32, and 33, T road south....	41 59 58.3	85 08 16.2	5,229
T. 5 S., R. 7 W., corner of secs. 29, 30, 31, and 32, crossroads.....	41 59 58.7	85 09 26.6	5,320
T. 5 S., R. 7 W., west corner of secs. 30 and 31, 20 feet south of 10 feet east of east corner of secs. 25 and 36, T. 5 S., R. 8 W.....	41 59 58.8	85 10 33.8	5,070

Magnetic declination along north border of quadrangle, 2.0° W.

ELK RAPIDS QUADRANGLE.

North along highways near east border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
T. 27 N., R. 8 W., quarter corner between secs. 2 and 3, T road north, at W. H. Martin's mail box.....	° ' "	° ' "	Feet.
Line between Tps. 27 and 28 N., R. 8 W., crossroads.....	44 45 53.0	85 15 07.7	.....
Rapid City, 4 miles south by 0.5 mile east of, 15 feet south by 20 feet west of center of crossroads; iron post stamped "Prim. Trav. Sta. No. 18, Mich. 1915".....	44 46 21.5	85 15 33.5	3,434
T road west.....	44 46 51.4	85 16 22.0	4,627
T. 28 N., R. 8 W., quarter corner in center of sec. 21.....	44 47 25.4	85 16 39.2	3,660
Railroad crossing.....	44 48 32.4	85 16 57.5	6,915
Rapid City, opposite telegraph-office window of depot, center of track.....	44 48 58.4	85 17 03.7	2,670
Road crossing.....	44 50 01.6	85 17 04.1	6,400
Alden, 1 mile south of, road crossing.....	44 50 43.1	85 17 04.4	4,205
Alden, opposite window of depot telegraph office, center of track.....	44 51 34.7	85 17 02.3	5,231
Alden, 1 mile east of, 25 feet east by 25 feet south of quarter corner between secs. 26 and 27, T. 29 N., R. 8 W., center of crossroads; iron post stamped "Prim. Trav. Sta. No. 17, Mich. 1915".....	44 52 43.2	85 16 37.6	7,163
T. 29 N., R. 8 W., corner of secs. 22, 23, 26, and 27, crossroads.....	44 52 52.5	85 15 05.6	6,690
T. 29 N., R. 8 W., corner of secs. 21, 22, 27, and 28, crossroads.....	44 53 18.9	85 15 05.9	2,675
T. 29 N., R. 8 W., corner of secs. 15, 16, 21, and 22.....	44 53 19.0	85 16 19.7	5,314
T. 29 N., R. 8 W., corner of secs. 9, 10, 15, and 16, crossroads.....	44 54 11.4	85 16 19.7	5,300
T. 29 N., R. 8 W., corner of secs. 3, 4, 9, and 10.....	44 55 03.8	85 16 19.2	5,315
T. 29 N., R. 8 W., corner of secs. 3, 4, 9, and 10.....	44 55 56.0	85 16 18.9	5,285
T road south.....	44 55 59.6	85 16 18.8	370
Clam Lake, south end of iron bridge over Clam River.....	44 56 32.7	85 17 00.8	4,509
T. 30 N., R. 8 W., quarter corner between secs. 33 and 34, T road north.....	44 57 13.8	85 16 18.6	5,146
Bellaire, 3 miles west by 1 mile north of, 35 feet north by 25 feet west of corner of secs. 21, 22, 27, and 28, T. 30 N., R. 8 W., center of crossroads; iron post stamped "Prim. Trav. Sta. No. 16, Mich. 1915".....	44 58 33.2	85 16 18.6	8,045
T. 30 N., R. 8 W., line between secs. 15 and 22, T road north, 100 feet east of road south.....	44 59 25.4	85 15 59.6	5,456

FIFE LAKE QUADRANGLE.

Northeast along Grand Rapids & Indiana Ry. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
Walton, 190 feet northeast of northeast corner of depot, almost directly opposite southeast corner of post-office building, at fence corner at edge of railroad right of way, on east side of track; U. S. Coast and Geodetic Survey bench-mark tablet No. C 14 set in concrete post stamped "Prim. Trav. Sta. No. 11, 1916".....	° ' "	° ' "	Feet.
T. 25 N., R. 9 W., line between secs. 22 and 27, road crossing.....	44 31 14.8	85 24 01.0	.....
North-south road crossing, 1,060 feet southwest of milepost 356.....	44 32 29.0	85 23 08.4	8,430
Fife Lake, road crossing at depot.....	44 33 31.2	85 22 25.2	7,032
East-west road crossing.....	44 34 35.2	85 20 55.5	9,173
East-west road crossing, 1,430 feet northeast of north-south road crossing.....	44 35 02.9	85 20 37.4	3,095
T. 26 N., R. 8 W., north-south road crossing on line between secs. 31 and 32, at Houseman's siding.....	44 35 54.3	85 19 46.7	6,36
T. 26 N., R. 8 W., line between secs. 29 and 32, road crossing.....	44 36 37.8	85 18 43.5	6,347
T. 26 N., R. 8 W., corner of secs. 20, 21, 28, and 29, crossroads.....	44 36 46.2	85 18 27.4	1,445
South Boardman, just east of road crossing, about 280 feet north of depot, at north end of small park, 25 feet west of water tank; iron post stamped "Prim. Trav. Sta. No. 12, 1916 Mich".....	44 37 37.6	85 17 29.1	6,700
Milepost 365, center of track.....	44 38 28.6	85 16 47.8	5,964
	44 39 23.7	85 15 28.2	8,016

GALESBURG QUADRANGLE.

East along highways near south border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
T. 2 S., Rs. 9 and 10 W., quarter corner between secs. 31 and 36, at crossroads.....	° ' " 42 15 09.2	° ' " 85 24 49.5	Feet.
T. 2 S., R. 9 W., quarter corner between secs. 31 and 32, crossroads..	42 15 09.5	85 23 42.7	5,025
Climax, 1 mile north by 2 miles west of, 15 feet south of quarter corner between secs. 32 and 33, T. 2 S., R. 9 W.; iron post stamped "Prim. Trav. Sta. No. 1, S. 1917".....	42 15 09.7	85 22 32.1	5,310
T. 2 S., R. 9 W., quarter corner between secs. 33 and 34, T road south.....	42 15 10.3	85 21 31.3	5,322
T. 2 S., R. 9 W., quarter corner between secs. 34 and 35, crossroads..	42 15 11.0	85 20 11.0	5,284
T. 2 S., R. 8 W., quarter corner between secs. 31 and 32, bend in road (indefinite).....	42 15 12.6	85 16 38.1	.....
T. 2 S., R. 8 W., quarter corner between secs. 32 and 33, T road west.	42 15 13.0	85 15 27.8	5,290
Battle Creek, 3 miles south by 4 miles west of, 20 feet north by 20 feet east of corner of secs. 28, 29, 32, and 33, T. 2 S., R. 8 W.; iron post stamped "Prim. Trav. Sta. No. 2, S. 1917".....	42 15 39.4	85 15 27.6	2,670

Magnetic declination for south border of quadrangle, 2.1° W.

East along highways through center of quadrangle. (By Oscar Jones in 1917.)

Springbrook, 2 miles south of, 28 feet east of corner of secs. 16, 17, 20, and 21, T. 1 S., R. 10 W., at crossroads; iron post stamped "Prim. Trav. Sta. No. 2, Mich. 1915".....	42 22 34.4	85 28 40.2	.....
T. 1 S., R. 10 W., quarter corner between secs. 20 and 21, T road east.....	42 22 08.1	85 29 39.2	2,667
T. 1 S., R. 10 W., quarter corner between secs. 21 and 22, crossroads.	42 22 07.8	85 28 29.0	5,270
Richland, 0.5 mile southwest of, crossroads.....	42 22 07.9	85 27 50.7	2,880
T. 1 S., R. 10 W., quarter corner between secs. 22 and 23, crossroads.	42 22 08.1	85 27 18.8	2,390
T. 1 S., R. 10 W., quarter corner between secs. 23 and 24, T road north, 1,340 feet east is T road south.....	42 22 08.1	85 26 07.9	5,330
T. 1 S., R. 9 W., quarter corner between secs. 19 and 20, T road west.	42 22 09.3	85 24 06.6	9,107
Road fork.....	42 21 53.7	85 23 53.8	1,850
T road west.....	42 22 02.4	85 23 13.2	3,177
Gull Lake, southeast corner of, at crossroads.....	42 22 14.4	85 23 13.7	1,210
T road east.....	42 22 22.2	85 23 11.1	814
T. 1 S., R. 9 W., 0.25 mile south of corner of secs. 16, 17, 20, and 21, T. 1 S., R. 9 W., 15 feet south by 30 feet west of T road north; iron post stamped "Prim. Trav. Sta. No. 10"; azimuth to windmill, 176° 10' 50" distant 0.5 mile.....	42 22 22.0	85 22 38.4	2,460
Crossroads.....	42 22 27.3	85 21 39.7	4,433
T. 1 S., R. 9 W., 0.25 mile west of corner of secs. 9, 10, 15, and 16, at crossroads.....	42 23 28.0	85 21 45.9	6,159
T road east.....	42 23 27.9	85 20 59.2	3,509
T road north.....	42 23 27.7	85 20 35.2	1,800
T. 1 S., R. 9 W., corner of secs. 11, 12, 13, and 14, T road south....	42 23 28.2	85 19 07.4	6,590
T. 1 S., Rs. 8 and 9 W., corner of secs. 12, 13, 7, and 18, T road west, on Calhoun-Kalamazoo county line.....	42 23 26.7	85 17 56.4	5,329
T. 1 S., Rs. 8 and 9 W., corner of secs. 13, 24, 18, and 19, T road east, on Calhoun-Kalamazoo county line.....	42 22 35.3	85 17 55.2	5,200
Creek crossing.....	42 22 35.5	85 17 22.6	2,448
Crossroads, at section corner (not described).....	42 22 35.7	85 16 46.6	2,710

South along highways near east border of quadrangle.

T. 1 S., R. 8 W., 20 feet south by 30 feet east of corner of secs. 16, 17, 20, and 21 and crossroads; iron post stamped, "Prim. Trav. Sta. No. 11, 1917"; azimuth to center of concrete silo, 8° 23' 20".....	42 22 35.9	85 15 35.8	.....
T road east, 1,470 feet south is road fork to Kalamazoo, Battle Creek and McCrary corners.....	42 21 30.2	85 15 34.8	6,649
T. 2 S., R. 8 W., corner of secs. 4, 5, 8, and 9, T road south.....	42 19 08.3	85 15 30.9	.....
Grand Trunk Ry. crossing, center of north track.....	42 18 45.8	85 15 30.4	2,280
Mapes Corners road forks, 100 feet west of, at crossroads.....	42 18 13.4	85 15 29.5	3,270
T. 2 S., R. 8 W., 0.25 mile north of corner of secs. 16, 17, 20, and 21, crossroads.....	42 17 36.6	85 15 28.7	3,730
T. 2 S., R. 8 W., quarter corner between secs. 20 and 21, T road east.	42 16 57.5	85 15 28.3	3,960
T. 2 S., R. 8 W., quarter corner between secs. 28 and 29, crossroads.	42 16 05.2	85 15 28.0	5,290
Battle Creek, 3 miles south by 4 miles west of, "Prim. Trav. Sta. No. 2, S. 1917" (previously described).....	42 15 39.4	85 15 27.6	2,619

Magnetic declination through center of quadrangle, 0.0°; for south half of east border of quadrangle, 0.3° W.

GALESBURG QUADRANGLE—Continued.

North along highways near east border of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Prim. Trav. Sta. No. 11 (previously described)	42 22 35.9	85 15 35.8	.....
T. 1 S., R. 8 W., 1 mile north of section corner between secs. 8, 9, 16, and 17, crossroads	42 23 42.1	85 15 38.1	6,710
T. 1 S., R. 8 W., 1 mile north of, corner of secs. 7, 8, 17, and 18, cross- roads	42 23 41.7	85 16 48.0	5,250
T. 1 S., R. 8 W., corner of secs. 5, 6, 7, and 8, crossroads	42 24 20.8	85 16 49.2	3,961
T. 1 S., R. 8 W., corner of secs. 5 and 6, on Calhoun-Barry county line	42 25 12.1	85 16 41.8	5,218
T. 1 N., R. 8 W., center of sec. 32, T road west	42 25 38.0	85 16 41.2	2,620
T. 1 N., R. 8 W., quarter corner between secs. 29 and 32, T road east	42 26 01.8	85 16 40.7	2,410
T. 1 N., R. 8 W., center of sec. 29, T road west	42 26 28.2	85 16 41.1	2,670
Road fork	42 26 31.3	85 16 08.9	2,432
Road fork, west on quarter-section line	42 27 23.3	85 17 00.1	6,516
Banfield, crossroad at, corner of secs. 17, 18, 19, and 20, T. 1 N., R. 8 W.	42, 27 49.6	85 17 18.8	3,008
T. 1 N., R. 8 W., quarter corner between secs. 17 and 18, crossroads	42 28 15.6	85 17 18.9	2,630
T. 1 N., R. 8 W., corner of secs. 7, 8, 17, and 18	42 28 42.0	85 17 18.9	2,670
T. 1 N., R. 8 W., corner of secs. 5, 6, 7, and 8, T road east	42 29 34.4	85 17 18.8	5,310

West along highways near north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 1 N., Rs. 8 and 9 W., fence line between secs. 1 and 6, township line	42 29 59.7	85 18 29.3	.....
T. 1 N., R. 9 W., center of sec. 1, crossroads	42 29 58.5	85 19 04.6	2,650
T. 1 N., R. 9 W., quarter corner between secs. 1 and 2, T road north T road north	42 29 57.5	85 19 39.8	2,640
T. 1 N., R. 9 W., quarter corner between secs. 3 and 4, T road north	42 29 57.8	85 20 32.8	3,970
T. 1 N., R. 9 W., 20 feet south by 30 feet west of T road south, center of sec. 5: Iron post stamped "Prim. Trav. Sta. No. 13"	42 29 58.0	85 22 00.2	6,550
Delton, crossroads at	42 29 58.8	85 23 45.6	.....
	42 29 59.3	85 24 29.6	3,301

Magnetic declination near northeast corner of quadrangle, 0.6° W.

GROVE QUADRANGLE.

East along highways near north border of quadrangle. (By H. S. Senseney in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 13 N., R. 11 W., corner of secs. 22, 23, 26, and 27, T road north	43 29 49.7	85 36 08.9	.....
Big Prairie, 3 miles east by 1.5 miles south of, T. 13 N., R. 11 W., corner of secs. 23, 24, 25, and 26, 20 feet south by 20 feet west of T road south; iron post stamped "Prim. Trav. Sta. No. 26, 1916 Mich. 855"	43 29 50.0	85 34 57.2	5,284
T. 13 N., Rs. 10 and 11 W., corner of secs. 19, 30, 24, and 25, cross- roads, on Newaygo-Mecosta county line	43 29 49.7	85 33 45.3	5,299
T. 13 N., R. 10 W., corner of secs. 19, 20, 29, and 30, T road west	43 29 50.0	85 32 33.2	5,319

West through center of quadrangle. (By H. S. Senseney in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 12 N., R. 10 W., south corner of secs. 33 and 34, crossroads; 25 feet east is T. 11 N., R. 10 W., north corner of secs. 3 and 4	43 22 52.4	85 30 09.5	.....
T. 11 N., R. 10 W., north corner of secs. 4 and 5, T road south; 90 feet west is T. 12 N., R. 10 W., south corner of secs. 32 and 33, fence line north	43 22 52.4	85 31 19.7	5,190
T. 12 N., R. 10 W., south corner of secs. 31 and 32, T road north; 160 feet east is T. 11 N., R. 10 W., north corner of secs. 5 and 6, fence line south	43 22 52.8	85 32 32.7	5,390
Tps. 11 and 12 N., Rs. 10 and 11 W., corner of secs. 1, 6, 31, and 36, crossroads, on Newaygo-Montcalm county line	43 22 52.7	85 33 46.4	5,445
Tps. 11 and 12 N., R. 11 W., corner of secs. 1, 2, 35, and 36, T road east	43 22 53.0	85 34 58.0	5,285
T. 12 N., R. 11 W., corner of secs. 25, 26, 35, and 36, crossroads	43 23 45.0	85 34 58.2	5,270

GROVE QUADRANGLE—Continued.

West through center of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 12 N., R. 11 W., corner of secs. 26, 27, 34, and 35, crossroads.....	43 23 45.5	85 36 10.2	5,310
Howard City, 7 miles west of, T. 12 N., R. 11 W., corner of secs. 27, 28, 33, and 34, 25 feet north by 25 feet east of crossroads; iron post stamped "Prim. Trav. Sta. No. 27, 1916, Mich.".....	43 23 45.3	85 37 20.5	5,194
T. 12 N., R. 11 W., corner of secs. 28, 29, 32, and 33, T road east.....	43 23 45.1	85 38 32.0	5,279
T. 12 N., R. 11 W., quarter corner between secs. 31 and 32, T road south.....	43 23 17.8	85 39 44.6	6,028
T. 12 N., Rs. 11 and 12 W., corner of secs. 25, 30, 31, and 36, fence line.....	43 23 43.6	85 40 58.0	6,020
T. 12 N., R. 12 W., corner of secs. 26, 27, 34, and 35, T road north.....	43 23 43.5	85 42 09.4	5,270
T. 12 N., R. 12 W., corner of secs. 26, 27, 34, and 35, T road south.....	43 23 43.3	85 43 21.0	5,290
Little Brook Lake, east side of, T. 12 N., R. 12 W., corner of secs. 27, 28, 33, and 34, 1 foot north of corner post, at old road north; iron post stamped "Prim. Trav. Sta. No. 28, 1916, Mich.".....	43 23 42.8	85 44 32.6	5,287

Near west border of quadrangle.

T. 13 N., R. 12 W., corner of secs. 21, 22, 27, and 28, fence line west.....	43 29 48.0	85 44 35.1	.....
T. 13 N., R. 12 W., corner of secs. 27, 28, 33, and 34, T road north.....	43 28 55.7	85 44 34.9	5,290
T. 13 N., R. 12 W., corner of secs. 26, 27, 34, and 35, crossroads.....	43 28 56.1	85 43 23.3	5,279
Tps. 12 and 13 N., R. 12 W., corner of secs. 2, 3, 34, and 35, T road east.....	43 28 03.8	85 43 23.5	5,298
T. 12 N., R. 12 W., corner of secs. 2, 3, 10, and 11, crossroads.....	43 27 12.7	85 43 22.9	5,179
T. 12 N., R. 12 W., corner of secs. 10, 11, 14, and 15, T road north.....	43 26 19.6	85 43 22.5	5,370
T. 12 N., R. 12 W., corner of secs. 15, 16, 21, and 22, T road north.....	43 25 26.8	85 44 34.2	7,521
T. 11 N., R. 12 W., corner of secs. 21, 22, 27, and 28, crossroads.....	43 19 21.6	85 44 30.7	.....
T. 11 N., R. 12 W., corner of secs. 27, 28, 33, and 34, crossroads.....	43 18 29.5	85 44 30.4	5,275
T. 11 N., R. 12 W., south corner of secs. 33 and 34, T road north, on Newaygo-Kent county line.....	43 17 36.2	85 44 28.7	5,396

Magnetic declination for north border of quadrangle, 0° 28' W. to 0° 21' E.; for west border of quadrangle, 0° 52' W.; east-west through center of quadrangle, 0° 30' W.

HASTINGS QUADRANGLE.

West along highways near south border of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 1 N., R. 8 W., 30 feet south and 30 feet west of crossroads, quarter corner between secs. 5 and 6; iron post stamped "Prim. Trav. Sta. No. 12".....	42 30 01.1	85 17 18.5	.....
T. 1 N., R. 9 W., corner of secs. 3 and 4, T road south, 62 feet west of T road north, corner of secs. 33 and 34, T. 2 N., R. 9 W.....	42 30 29.1	85 22 00.5	.....
Road fork.....	42 30 29.4	85 22 56.8	4,220
T. 1 N., Rs. 9 and 10 W., T road north, line between secs. 1 and 6.....	42 30 13.0	85 25 31.8	.....
T. 1 N., R. 10 W., center of road north and road east, at three corners, center of sec. 2.....	42 30 02.2	85 27 18.6	8,077
Prairieville, crossroads at, quarter corner between secs. 2 and 35, Tps. 1 and 2 N., R. 10 W.....	42 30 30.5	85 27 18.5	2,870
Prairieville, 2 miles west of, 7 feet east of quarter corner of sec. 4, T. 1 N., R. 10 W., 35 feet south by 30 feet west of center of crossroads; iron post stamped "Prim. Trav. Sta. No. 4, Mich., 1915".....	42 30 30.7	85 29 39.2	10,543

Magnetic declination for south border of quadrangle, 0.4° E.

Along highways near southeast corner of quadrangle. (By Oscar Jones in 1917.)

Tps. 1 and 2 N., R. 8 W., quarter corner between secs. 4 and 33, T road east.....	42 30 27.9	85 15 33.1	.....
T. 1 N., R. 8 W., center of sec. 4, crossroads.....	42 30 01.3	85 15 31.6	2,700
Closes on Prim. Trav. Sta. No. 12.....	42 30 01.1	85 17 18.5	7,931

Magnetic declination near southeast corner of quadrangle, 0.5° W.

HERSEY QUADRANGLE.

In southeast portion of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 16 N., R. 10 W., line between secs. 3 and 10; crossroads	43 48 02.3	85 29 53.8	5,542

HILLSDALE QUADRANGLE.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 5 S., R. 4 W., corner of secs. 26, 27, 34, and 35, crossroads	41 59 59.9	84 44 54.1	.....
Litchfield, 3 miles south and 1.5 miles east of, 42 feet south by 20 feet east of corner of secs. 25, 26, 35, and 36, T. 5 S., R. 4 W., at crossroads; iron post stamped "Prim. Trav. Sta. No. 4, Mich. 1912"	41 59 59.2	84 43 48.9	5,302

HOMER QUADRANGLE.

East along highways near north border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Tps. 2 and 3 S., R. 6 W., north corner of secs. 2 and 3, fence south; 6 feet west is south corner of secs. 34 and 35, fence line north	42 14 47.1	84 59 00.2	.....
Tps. 2 and 3 S., R. 6 W., corner of secs. 1, 2, 35, and 36	42 14 47.1	84 57 49.8	5,300
Tps. 2 and 3 S., R. 5 W., corner of secs. 3, 4, 33, and 34, fence line north	42 14 47.6	84 53 13.2	.....
Marshall, 1 mile south by 5 miles east of, 20 feet north by 35 feet west of corner of secs. 2, 3, 34, and 35, Tps. 2 and 3 S., R. 5 W.; iron post stamped "Prim. Trav. Sta. No. 5, 1917"	42 14 48.2	84 52 01.0	5,359
Tps. 2 and 3 S., R. 5 W., corner of secs. 1, 2, 35, and 36, crossroads	42 14 48.1	84 50 51.6	5,289
T. 3 S., Rs. 4 and 5 W., corner of secs. 1, 6, 31, and 36, T road south	42 14 48.4	84 49 40.6	5,340
Tps. 2 and 3 S., R. 4 W., north corner of secs. 5 and 6, fence line south; 20 feet east is south corner of secs. 31 and 32, fence north	42 14 48.3	84 48 54.4	3,480
Tps. 2 and 3 S., R. 4 W., north corner of secs. 4 and 5, fence line south; 10 feet east is south corner of secs. 32 and 33, fence north	42 14 48.2	84 47 43.6	5,320
Albion, intersection of West Erie and South Eaton streets	42 14 34.3	84 45 22.0	10,743
Albion, intersection of North Eaton and West Mulberry streets	42 14 53.9	84 45 22.2	1,990

Magnetic declination along west border of quadrangle, 2.6° W.

South along highways east of west border of quadrangle.

Tps. 2 and 3 S., R. 6 W., corner of secs. 1, 2, 35, and 36	42 14 47.1	84 57 49.8	.....
T. 3 S., R. 6 W., corner of secs. 1, 2, 11, and 12, crossroads	42 13 55.5	84 57 47.8	5,230
T. 3 S., R. 6 W., corner of secs. 11, 12, 13, and 14, fence line east	42 13 03.0	84 57 46.9	5,310
T. 3 S., R. 6 W., corner of secs. 13, 14, 23, and 24, crossroads	42 12 10.7	84 57 46.0	5,300
T road east, on section line between secs. 24, 25, T. 3 S., R. 6 W., the corner is in Lyons Lake	42 11 18.4	84 57 44.5	5,292
T. 3 S., R. 6 W., corner of secs. 25, 26, 35, and 36, T road west	42 10 25.9	84 57 44.8	5,289
Tps. 3 and 4 S., R. 6 W., corner of secs. 1, 2, 35, and 36, crossroads	42 09 33.5	84 57 44.4	5,305
T. 4 S., R. 6 W., corner of secs. 1, 2, 11, and 12, crossroads	42 08 43.8	84 57 44.0	5,040
Marshall, 9 miles south of, 25 feet south by 25 feet east of corner of secs. 11, 12, 13, and 14, T. 4 S., R. 6 W.; iron post stamped "Prim. Trav. Sta. No. 6, S. 1917"	42 07 50.7	84 57 43.2	5,369
T. 4 S., R. 6 W., corner of secs. 13, 14, 23, and 24, T road west	42 06 58.5	84 57 43.1	5,289
Crossroads	42 06 06.0	84 58 26.4	6,236
Tekonsha, crossroads at Home Hotel	42 05 31.8	84 59 10.7	4,813
T road east, on section line between secs. 27 and 34, T. 4 S., R. 6 W	42 05 14.6	84 59 13.6	1,752
T road north, on Branch-Calhoun county line	42 04 21.9	84 59 28.0	5,446

Magnetic declination along west border of quadrangle, 1.9° W.

HOMER QUADRANGLE—Continued.

East along highways through center of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
T. 4 S., R. 6 W., section corner between secs. 10, 11, 14, and 15, fence south.....	° ' "	° ' "	Feet.
Crossroads.....	42 07 51.2	84 58 54.8	745
T. 4 S., R. 7 W., corner of secs. 11, 12, 13, and 14, 25 feet south by 25 feet east of, 9 miles south of Marshall; iron post stamped "Prim. Trav. Sta. No. 6, S. 1917".....	42 07 51.2	84 58 45.0	
	42 07 50.7	84 57 43.2	4,657

East along highway near south border of quadrangle from Girard to Litchfield. (By H. S. Senseney in 1917.)

T. 5 S., R. 6 W., corner of secs. 27, 28, 33, and 34, crossroads.....	42 00 00.1	85 00 02.9	.....
T. 5 S., R. 6 W., corner of secs. 26, 27, 34, and 35.....	42 00 00.2	84 58 52.4	5,320
T. 5 S., R. 6 W., corner of secs. 25, 26, 35, and 36, crossroads.....	42 00 00.2	84 57 42.1	5,310
T. 5 S., R. 5 W., corner of secs. 29, 30, 31, and 32, crossroads.....	42 00 00.1	84 55 28.7	.....
T. 5 S., R. 5 W., corner of secs. 28, 29, 32, and 33, crossroads.....	42 00 00.3	84 54 16.4	5,305
T. 5 S., R. 5 W., corner of secs. 27, 28, 33, and 34, fence line north and south.....	42 00 00.5	84 53 05.6	5,345
T. 5 S., R. 5 W., corner of secs. 26, 27, 34, and 35, fence line north and south.....	42 00 00.4	84 51 55.1	5,320
Quincy, 4 miles north by 2 miles east, 20 feet north by 30 feet west of corner of secs. 25, 26, 35, and 36, T. 5 S., R. 5 W.; iron post stamped "Prim. Trav. Sta. No. 15, S. 1917".....	42 00 00.4	84 50 45.3	5,267
T. 5 S., Rs. 4 and 5 W., corner of secs. 25, 30, 31, and 36, crossroads, on Branch-Hillsdale county line.....	42 00 00.5	84 49 34.3	5,360
T. 5 S., R. 4 W., corner of secs. 29, 30, 31, and 32, fence line north and south.....	42 00 00.4	84 48 25.0	5,230
T. 5 S., R. 4 W., corner of secs. 28, 29, 32, and 33, crossroads.....	42 00 00.3	84 47 14.5	5,325
T. 5 S., R. 4 W., corner of secs. 27, 28, 33, and 34, T road south.....	42 00 00.0	84 46 04.4	5,290

Magnetic declination near southwest corner of quadrangle, 2.5° W.; near southeast corner of quadrangle, 2.25° W.

HOWARD CITY QUADRANGLE.

North along highways near west border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
Cedar Springs, 2 miles north by 4 miles east of, 19 feet west by 32 feet south of crossroads and corner of secs. 14, 15, 22, and 23, T. 10 N., R. 10 W.; iron post stamped "Prim. Trav. Sta. No. 1, Mich. 1915".....	° ' "	° ' "	Feet.
T. 10 N., R. 10 W., corner of secs. 10, 11, 14, and 15, T road south.....	43 14 58.3	85 28 18.3	.....
T. 10 N., R. 10 W., corner of secs. 9, 10, 15, and 16, T road east.....	43 15 50.8	85 28 18.4	.....
T. 10 N., R. 10 W., corner of secs. 3, 4, 9, and 10; small iron bridge.....	43 15 50.8	85 29 30.2	5,316
T. 10 N., R. 10 W., north corner of secs. 3 and 4, on Kent-Montcalm county line.....	43 16 43.0	85 29 30.6	5,290
T. 11 N., R. 10 W., quarter corner between secs. 27 and 34, T road south.....	43 17 39.6	85 29 31.2	5,734
T. 11 N., R. 10 W., corner of secs. 26, 27, 34, and 35, crossroads.....	43 18 32.2	85 29 34.2	5,328
T. 11 N., R. 10 W., corner of secs. 22, 23, 26, and 27, crossroads.....	43 18 31.6	85 28 58.2	2,665
T. 11 N., R. 10 W., corner of secs. 14, 15, 22, and 23, crossroads at Pierson schoolhouse.....	43 19 23.8	85 28 58.1	5,285
T. 11 N., R. 10 W., quarter corner between secs. 11 and 14; fence east.....	43 20 15.9	85 28 58.3	5,275
T. 11 N., R. 10 W., quarter corner between secs. 2 and 11, crossroads at Maple Hill schoolhouse.....	43 21 08.8	85 28 21.5	6,004
Howard City, 1 mile south of, Tps. 11 and 12 N., R. 10 W., quarter corner between secs. 2 and 35, 25 feet north by 20 feet east of, at northeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 1, 1916, Mich".....	43 22 00.8	85 28 21.2	5,270
Howard City, Grand Rapids & Indiana Ry. crossing, 600 feet south of depot, line between secs. 26, 35, T. 12 N., R. 10 W.....	43 22 53.2	85 28 21.4	5,301
T. 12 N., R. 10 W., line between secs. 23 and 26, east-west road crossing.....	43 23 44.8	85 28 15.2	5,251
T. 12 N., R. 10 W., corner of secs. 13, 14, 23, and 24, railroad crossing.....	43 24 37.2	85 28 00.6	5,409
T. 12 N., R. 10 W., corner of secs. 11, 12, 13, and 14.....	43 25 29.3	85 27 46.3	5,380
T. 12 N., R. 10 W., corner of secs. 1, 2, 11, and 12.....	43 26 21.1	85 27 45.8	5,248
Tps. 12 and 13 N., R. 10 W., corner of secs. 1, 2, 35, and 36; crossroads on Montcalm-Mecosta county line.....	43 27 13.0	85 27 46.0	5,260
T. 13 N., R. 10 W., corner of secs. 25, 26, 35, and 36, T road west.....	43 28 05.5	85 27 46.2	5,310
T. 13 N., R. 10 W., corner of secs. 23, 24, 25, and 26, crossroads.....	43 28 57.7	85 27 46.4	5,290
	43 29 50.0	85 27 46.4	5,300

HOWARD CITY QUADRANGLE—Continued.

East along highways near south border of quadrangle. (By H. S. Senseney in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 10 N., R. 9 W., corner of secs. 16, 17, 20, and 21, T road north..	43 15 00.1	85 23 31.8	.....
Lincoln Lake, near north end of, T. 10 N., R. 9 W., corner of secs. 15, 16, 21, and 22, 18 feet east of T road west, iron post stamped "Prim. Trav. Sta. No. 29, 1916, Mich."	43 15 00.1	85 22 20.2	5,304
T. 10 N., R. 9 W., corner of secs. 14, 15, 22, and 23, 25 feet south by 10 feet west of gate.....	43 15 00.0	85 21 08.7	.....
T. 10 N., R. 9 W., corner of secs. 13, 14, 23, and 24, T road south..	43 15 00.6	85 19 57.3	5,280
T. 10 N., Rs. 8 and 9 W., corner of secs. 13, 18, 19, and 24, T road south, on Kent-Montcalm county line.....	43 15 00.4	85 18 45.2	5,340
Gowen, crossroads at.....	43 15 06.0	85 17 58.2	3,525
T. 10 N., R. 8 W., corner of secs. 17, 18, 19, and 20, fence line north.	43 15 00.3	85 17 32.0	2,026
T. 10 N., R. 8 W., corner of secs. 16, 17, 20, and 21, fence line north and south.....	43 15 00.5	85 16 20.2	5,310
Greenville, 5 miles north of, 25 feet north by 29 feet west of corner of secs. 15, 16, 21, and 22, T. 10 N., R. 8 W., center of crossroads; iron post stamped "Prim. Trav. Sta. No. 16, Mich. 1915".....	43 15 01.1	85 15 09.0	5,267

Near west border of quadrangle.

Cedar Springs, 2 miles north and 4 miles east of, 19 feet west by 32 feet south of crossroads and corner of secs. 14, 15, 22, and 23, T. 10 N., R. 10 W.; iron post stamped "Prim. Trav. Sta. No. 1, Mich. 1915".....	43 22 53.2	85 28 21.4	.....
Tps. 11 and 12 N., R. 10 W., corner of secs. 2, 3, 34, and 35, crossroads	43 22 52.7	85 28 57.5	2,664

Magnetic declination for south border of quadrangle, 0° 23' W.

INWOOD QUADRANGLE.

Along highways and Pere Marquette Ry. in southeast corner of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 33 N., R. 8 W., corner of secs. 14, 15, 22, and 23, center of north-south road, at fence east.....	45 15 00.5	85 15 39.2	.....
Crossroads at schoolhouse and town hall.....	45 15 39.6	85 15 51.6	4,067
Railroad crossing, east-west road.....	45 15 39.6	85 15 15.5	2,585
T. 33 N., R. 8 W., line between secs. 2 and 11; crossing of east-west road.....	45 16 44.6	85 15 16.3	6,583
Second-class road crossing, about 450 feet north of milepost P 17.....	45 17 46.9	85 15 07.4	6,341

KALKASKA QUADRANGLE.

Along Grand Rapids & Indiana Ry. in northwest corner of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Crofton, road crossing at depot.....	44 40 23.6	85 14 10.6	.....
Crofton, 1 mile northeast of, road crossing on east-west section line.	44 41 06.1	85 13 18.8	5,700
North-south road crossing.....	44 41 35.6	85 12 42.7	3,970
Road crossing, 260 feet southwest of milepost 369.....	44 41 56.6	85 12 14.8	2,928
Kalkaska, junction of Grand Rapids & Indiana and Pere Marquette railroads, 35 feet north of, 200 feet southeast of Pere Marquette depot; iron post stamped "Prim. Trav. Sta. No. 13, 1916 Mich."	44 43 37.8	85 10 50.8	11,912

LEONIDAS QUADRANGLE.

South along highways near west border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
T. 3 S., R. 10 W., north corner between secs. 4 and 5, at fence line south (nothing found to show that secs. 32 and 33 corner here).....	° ' " 42 14 41.7	° ' " 85 29 30.6	Feet.
T. 3 S., R. 10 W., quarter corner on north side of sec. 4, at T road south, 100 feet west is T. 2 S., R. 10 W., south quarter corner of sec. 33, at T road north.....	42 14 41.7	85 28 55.1	2,665
T. 3 S., R. 10 W., quarter corner between secs. 4 and 9, hedge east.....	42 13 49.3	85 28 54.4	5,305
T. 3 S., R. 10 W., quarter corner between secs. 9 and 16, fence line east and west.....	42 12 57.2	85 28 53.7	5,275
T. 3 S., R. 10 W., quarter corner between secs. 16 and 21, T road east.....	42 12 04.8	85 28 53.6	5,300
T. 3 S., R. 10 W., quarter corner between secs. 20 and 21, crossroads.....	42 11 38.5	85 29 28.7	3,746
T. 3 S., R. 10 W., corner of secs. 20, 21, 28, and 29, fence line east and west, gate west.....	42 11 12.3	85 29 28.6	2,650
T. 3 S., R. 10 W., corner of secs. 28, 29, 32, and 33, at crossroads.....	42 10 20.0	85 29 28.3	5,300
T. 4 S., R. 10 W., quarter corner between secs. 17 and 20, T road south.....	42 06 52.2	85 29 59.8	.....
T. 4 S., R. 10 W., quarter corner between secs. 20 and 29, fence line east and west, lane west.....	42 06 00.0	85 29 58.9	5,290
T. 4 S., R. 10 W., quarter corner between secs. 29 and 32, crossroads.....	42 05 07.4	85 29 57.9	5,314
T. 4 S., R. 10 W., quarter corner between secs. 32 and 33, T road south.....	42 04 41.5	85 29 22.1	3,765
Tps. 4 and 5 S., R. 10 W., corner of secs. 32, 33, 4, and 5, fence line east and west.....	42 04 15.3	85 29 21.6	2,650
T. 5 S., R. 10 W., quarter corner between secs. 4 and 5, T road north.....	42 03 52.2	85 29 21.2	2,340
Portage Lake station, railroad crossing southeast of.....	42 03 12.0	85 29 38.2	4,266
T. 5 S., R. 10 W., corner of secs. 8, 9, 16, and 17, T road south.....	42 02 33.3	85 29 19.7	4,148
T. 5 S., R. 10 W., corner of secs. 16, 17, 20, and 21, T road north.....	42 01 41.2	85 29 19.0	5,280
T. 5 S., R. 10 W., on line between secs. 21 and 28, T road east.....	42 00 48.8	85 29 00.8	5,479
Mendon, 1.5 miles west of, north side of east and west road, at T road south, 25 feet north of quarter corner between secs. 28 and 29, T. 5 S., R. 10 W.; iron post stamped "Prim. Trav. Sta. No. 24, 1913, Mich." (See Bull. 644, p. 304).....	42 00 22.7	85 29 18.0	2,940

Magnetic declination for west border of quadrangle, 1.9° W.

East along highways near north border of quadrangle. (By H. S. Senseney in 1917.)

T. 3 S., R. 10 W., north quarter corner of sec. 4, T road south.....	42 14 41.7	85 28 55.1	.....
T. 3 S., R. 10 W., north corner of secs. 3 and 4, fence line south, 100 feet west is south corner of secs. 33 and 34, fence line north.....	42 14 41.9	85 28 20.0	2,640
T. 2 S., R. 10 W., south corner of secs. 34 and 35, fence line north, 120 feet east is north corner of secs. 2 and 3, fence south.....	42 14 42.4	85 27 10.7	5,210
Tps. 2 and 3 S., R. 10 W., corner of secs. 1, 2, 35, and 36, T road west (no offset shown).....	42 14 42.8	85 25 59.6	5,350
Tps. 2 and 3 S., R. 9 W., corner of secs. 2, 3, 34, and 35, fence east and west.....	42 14 44.7	85 20 10.4	.....
Climax, crossroads at monument, T. 3 S., R. 9 W., quarter corner between secs. 2 and 3.....	42 14 17.3	85 20 09.5	2,775
T. 3 S., R. 9 W., quarter corner between secs. 1 and 2, fence line north and south, gate south.....	42 14 17.7	85 18 59.2	5,285
T. 3 S., Rs. 8 and 9 W., quarter corner between secs. 1 and 6, T road north, on Kalamazoo-Calhoun county line.....	42 14 17.8	85 17 48.8	5,295

Magnetic declination for north border of quadrangle, 2.1° W.

North along highways near east border of quadrangle.

Road forks (junction point).....	42 06 38.8	85 15 10.9	.....
T. 4 S., R. 8 W., corner of secs. 8, 9, 16, and 17, fence line east and west.....	42 07 47.3	85 15 20.8	6,979
T. 4 S., R. 8 W., corner of secs. 4, 5, 8, and 9, fence line east and west.....	42 08 39.6	85 15 21.6	5,295
East Leroy, 1 mile south by 2 miles west of, 25 feet north by 15 feet east of quarter corner between secs. 4 and 5, T. 4 S., R. 8 W.; iron post stamped "Prim. Trav. Sta. No. 10, S. 1917".....	42 09 02.4	85 15 21.6	2,300
Tps. 3 and 4 S., R. 8 W., corner of secs. 4, 5, 32, and 33, fence line east and west.....	42 09 30.8	85 15 22.4	2,874
T. 3 S., R. 8 W., quarter corner between secs. 29 and 32, fence line east and west.....	42 10 22.8	85 15 58.6	5,937
T. 3 S., R. 8 W., quarter corner between secs. 20 and 29, crossroads.....	42 11 15.3	85 16 00.3	5,312
T. 3 S., R. 8 W., quarter corner between secs. 17 and 20, fence line east and west.....	42 12 07.7	85 16 02.2	5,308
T. 3 S., R. 8 W., quarter corner between secs. 8 and 17, crossroads.....	42 13 00.1	85 16 02.4	5,305
T. 3 S., R. 8 W., corner of secs. 4, 5, 8, and 9, T road east.....	42 13 53.1	85 15 28.0	5,955
Tps. 2 and 3 S., R. 8 W., corner of secs. 4, 5, 32, and 33, T road east.....	42 14 46.9	85 15 29.2	5,445

Magnetic declination along east border of quadrangle, 2.3° W.

LEONIDAS QUADRANGLE—Continued.

West along highways through center of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Road fork.....	42 06 38.8	85 15 10.9	.....
T. 4 S., R. 8 W., corner of secs. 17, 18, 19, and 20, T road south.....	42 06 54.7	85 16 30.7	6,230
T. 4 S., Rs. 8 and 9 W., corner of secs. 13, 24, 18, and 19, T road north, on Kalamazoo-Calhoun county line.....	42 06 54.4	85 17 40.4	5,255
T. 4 S., R. 9 W., corner of secs. 13, 14, 23, and 24, small iron bridge.....	42 06 54.0	85 18 50.5	5,285
T. 4 S., R. 9 W., corner of secs. 14, 15, 22, and 23, crossroads.....	42 06 53.7	85 20 00.4	5,270
T. 4 S., R. 9 W., corner of secs. 15, 16, 21, and 22, crossroads at bank of Fulton River.....	42 06 54.0	85 21 10.5	5,285
Fulton, 1 mile west of, 25 feet south by 30 feet west of corner of secs. 16, 17, 20, and 21, T. 4 S., R. 9 W.; iron post stamped "Prim. Trav. Sta. No. 12, S. 1917".....	42 06 53.6	85 22 21.6	5,358
T. 4 S., R. 9 W., corner of secs. 17, 18, 19, and 20, crossroads.....	42 06 53.6	85 23 31.6	5,280
T. 4 S., R. 9 W., west corner of secs. 18 and 19, T road east.....	42 06 53.4	85 24 42.6	5,353
T. 4 S., R. 10 W., east corner of secs. 13 and 24, T road west.....	42 06 54.3	85 24 42.6	95
T. 4 S., R. 10 W., corner of secs. 13, 14, 23, and 24, T road north.....	42 06 53.5	85 25 53.2	5,327
T. 4 S., R. 10 W., corner of secs. 14, 15, 22, and 23, T road north.....	42 06 53.2	85 27 03.3	5,285
T. 4 S., R. 10 W., corner of secs. 15, 16, 21, and 22, fence line north-south.....	42 06 53.2	85 28 14.0	5,330
T. 4 S., R. 10 W., corner of secs. 16, 17, 20, and 21, T road north.....	42 06 52.5	85 29 24.5	5,315
Vicksburg, 1 mile east of, 200 feet east by 25 feet north of quarter corner between secs. 17 and 20, T. 4 S., R. 10 W.; iron post stamped "Prim. Trav. Sta. No. 13, S. 1917".....	42 06 52.6	85 29 57.3	2,474
T road south, quarter corner between secs. 17 and 21, T. 4 S., R. 10 W.....	42 06 52.2	85 29 59.8	200

Magnetic declination for center of quadrangle, 1.8° W.

West along highways near south border of quadrangle. (By H. S. Senseney in 1917.)

Sherwood, 1 mile north of, 20 feet north by 60 feet west of corner of secs. 21, 22, 27, and 28, T. 5 S., R. 8 W.; iron post stamped "Prim. Trav. Sta. No. 9, S. 1917".....	42 00 50.7	85 14 05.7	.....
T road north.....	42 00 49.4	85 15 16.1	4,559
T. 5 S., R. 8 W., corner of secs. 19, 20, 29, and 30, T road east.....	42 00 50.5	85 16 24.8	5,946
T. 5 S., Rs. 8 and 9 W., T road north on Branch-St. Joseph county line.....	42 00 32.2	85 17 35.4	5,646
Mendon, T. 5 S., R. 10 W., quarter corner between secs. 26 and 27, crossroads at First State Bank.....	42 00 24.1	85 26 58.5	.....
Mendon, 1.5 miles west of, Prim. Trav. Sta. No. 24, 1913 Mich. (previously described).....	42 00 22.7	85 29 18.0	10,538

Magnetic declination for south border of quadrangle, 1.7° W.

LUTHER QUADRANGLE.

North along highways near east border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Ashton, 2 miles north of, 20 feet south by 20 feet east of T. 19 N., R. 10 W., corner of secs. 27, 28, 33, and 34, at southeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 6, 1916 Mich.".....	44 00 09.0	85 30 13.1	.....
T. 19 N., R. 10 W., corner of secs. 21, 22, 27, and 28, crossroads at Randolph schoolhouse.....	44 01 00.8	85 30 13.3	5,250
T. 19 N., R. 10 W., corner of secs. 15, 16, 21, and 22, crossroads.....	44 01 52.5	85 30 13.7	5,230
T. 19 N., R. 10 W., corner of secs. 9, 10, 15, and 16, crossroads at schoolhouse.....	44 02 43.9	85 30 13.6	5,210
T. 19 N., R. 10 W., corner of secs. 3, 4, 9, and 10, crossroads.....	44 03 35.0	85 30 13.0	5,175
Tps. 19 and 20 N., R. 10 W., corner of secs. 3, 4, 33, and 34, crossroads.....	44 04 26.0	85 30 13.7	5,163
T. 20 N., R. 10 W., corner of secs. 27, 28, 33, and 34, T road west at schoolhouse.....	44 05 17.8	85 30 14.6	5,250
T. 20 N., R. 10 W., corner of secs. 21, 22, 27, and 28, crossroads.....	44 06 11.4	85 30 16.2	5,428
Tustin, 1 mile north and 2 miles west of, T. 20 N., R. 10 W., 25 feet north by 30 feet west of, corner of secs. 15, 16, 21, and 22, at northwest corner of crossroads at Burdell schoolhouse; iron post stamped "Prim. Trav. Sta. No. 7, 1916, Mich.".....	44 07 04.2	85 30 17.0	5,350
T. 20 N., R. 10 W., corner of secs. 9, 10, 15, and 16, T road west.....	44 07 56.0	85 30 16.2	5,246
T. 20 N., R. 10 W., corner of secs. 3, 4, 9, and 10, crossroads at schoolhouse.....	44 08 48.3	85 30 16.1	5,290
T. 20 N., R. 10 W., north corner of secs. 3 and 4, on Oscoda-Wexford county line, T road south.....	44 09 54.0	85 30 16.4	6,660

MANTON QUADRANGLE.

North along highways and railroad near west border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 22 N., R. 9 W., quarter corner between secs. 29 and 32, T road south.....	44 16 01.0	85 25 35.7	.....
T. 22 N., R. 9 W., corner of secs. 19, 20, 29, and 30; crossroads at Pine Stump schoolhouse.....	44 16 52.5	85 26 12.6	5,869
Cadillac, 2 miles north by 3 miles west of center of town, T. 22 N., Rs. 9 and 10 W., 25 feet south and 30 feet west of corner of secs. 19, 30, 24, and 25, at southwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 8, 1916 Mich.".....	44 16 51.9	85 27 28.2	5,502
T. 22 N., Rs. 9 and 10 W., corner of secs. 18, 19, 13, and 24, crossroads.....	44 17 43.0	85 27 29.7	5,169
T. 22 N., Rs. 9 and 10 W., corner of secs. 7, 18, 12, and 13, crossroads.....	44 18 34.7	85 27 32.1	5,240
T. 22 N., Rs. 9 and 10 W., corner of secs. 6, 7, 1, and 12, crossroads.....	44 19 26.5	85 27 33.9	5,250
T. 22 N., R. 10 W., corner of secs. 1, 2, 11, and 12, crossroads.....	44 19 26.9	85 28 46.5	5,280
Tps. 22 and 23 N., R. 10 W., corner of secs. 1, 2, 35, and 36, crossroads.....	44 20 19.9	85 28 48.5	5,370
T. 23 N., R. 10 W., approximate corner of secs. 23, 24, 25, and 26, 60 feet south of center of crossroads.....	44 22 03.9	85 28 47.2	10,525
T. 23 N., R. 10 W., corner of secs. 13, 14, 23, and 24, at southeast corner of schoolhouse yard, center of road in line with fence west.....	44 22 55.5	85 28 46.8	5,225
T. 23 N., R. 10 W., corner of secs. 11, 12, 13, and 14, crossroads.....	44 23 47.1	85 28 46.1	5,228
T. 23 N., R. 10 W., 25 feet south by 25 feet east of corner of secs. 1, 2, 11, and 12, at southeast corner of crossroads at Gentle schoolhouse, 4 miles west of Manton; iron post stamped "Prim. Trav. Sta. No. 9, 1916 Mich.".....	44 24 38.8	85 28 45.4	5,233
T. 23 N., Rs. 9 and 10 W., corner of secs. 6, 7, 1, and 12, T road north.....	44 24 38.6	85 27 33.4	5,220
T. 23 N., R. 9 W., corner of secs. 5, 6, 7, and 8, crossroads.....	44 24 38.8	85 26 18.1	5,470
T. 23 N., R. 9 W., corner of secs. 4, 5, 8, and 9, 30 feet south by 30 feet east of, at southeast corner of crossroads, 1 mile west of Manton; iron post stamped "Prim. Trav. Sta. No. 10, 1916 Mich.".....	44 24 38.8	85 25 05.5	5,271
Tps. 23 and 24 N., R. 9 W., corner of secs. 4, 5, 32, and 33, crossroads.....	44 25 30.5	85 25 06.3	5,239
T. 24 N., R. 9 W., corner of secs. 28, 29, 32, and 33, T road east, 550 feet north of railroad crossing.....	44 26 22.8	85 25 04.4	5,290
Haire, railroad crossing at depot, line between secs. 20 and 29, T. 24 N., R. 9 W.....	44 27 14.7	85 25 16.7	5,340
Manistee River, north end of railroad bridge over.....	44 29 50.3	85 25 31.3	15,736

MARSHALL QUADRANGLE.

East along highways near south border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Marshall, 1 mile south by 1.7 miles west of, about 0.25 mile east of quarter corner between secs. 33 and 34, T. 2 S., R. 6 W., 18 feet east of T road west; iron post stamped "Prim. Trav. Sta. No. 4, S. 1917".....	42 15 13.5	84 59 53.2	.....
Marshall, T. 2 S., R. 6 W., corner of secs. 25, 26, 35, and 36, at intersection of Kalamazoo and Hughes streets.....	42 15 39.6	84 57 50.5	.....
Road forks.....	42 15 13.5	84 56 39.5	5,960
Center of small bridge.....	42 14 59.5	84 54 08.4	11,447
Closing point, T. 2 S., R. 4 W., corner of secs. 26, 27, 34, and 35, at fence line east (see Bull. 551, p. 192).....	42 15 40.6	84 45 23.0	.....

Magnetic declination along south border of quadrangle, 2.6° W.

Albion, 1 mile north of, 40 feet south by 20 feet east of center of crossroads; iron post stamped "Prim. Trav. Sta. No. 2, 1912".....	42 15 56.5	84 45 23.2	1,615
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South and east along highways in southwest corner of quadrangle. (By Oscar Jones in 1917.)

Road fork.....	42 16 07.2	84 59 45.9	.....
South end of steel bridge over Kalamazoo River.....	42 15 29.9	84 59 55.5	2,845
Prim. Trav. Sta. No. 4, S. 1917 (previously described).....	42 15 13.5	84 59 53.2	1,668

NEWAYGO QUADRANGLE.

West along highways near north border of quadrangle. (By H. S. Senseney in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Railroad crossing, on line between secs. 29 and 32.....	43 28 55.0	85 46 24.2	.....
Crossroads.....	43 28 53.6	85 47 20.0	4,110
T. 13 N., R. 13 W., corner of secs. 25, 26, 35, and 36, crossroads.....	43 28 52.9	85 49 16.5	8,588
T. 13 N., R. 13 W., corner of secs. 26, 27, 34, and 35, T road east.....	43 28 52.8	85 50 28.1	5,280
T. 13 N., R. 13 W., corner of secs. 22, 23, 26, and 27, T road south.....	43 29 45.0	85 50 28.9	5,289
T. 13 N., R. 13 W., corner of secs. 21, 22, 27, and 28, fence line south	43 29 45.1	85 51 41.2	5,325
Fremont, 3 miles east by 2 miles north of, T. 13 N., R. 13 W., 30 feet			
north by 12 feet east of corner of secs. 20, 21, 28, and 29, T road			
east; iron post stamped "Prim. Trav. Sta. No. 31, 1916, Mich.".....	43 29 44.4	85 52 51.6	5,194
T. 13 N., R. 13 W., corner of secs. 19, 20, 29, and 30, T road west.....	43 29 45.0	85 54 03.2	5,276
T. 13 N., Rs. 13 and 14 W., corner of secs. 19, 24, 25, and 30, cross-			
roads.....	43 29 45.9	85 55 14.0	5,220
T. 13 N., R. 14 W., corner of secs. 23, 24, 25, and 26, fence line north			
and south.....	43 29 46.6	85 56 25.6	5,273
T. 13 N., R. 14 W., corner of secs. 22, 23, 26, and 27, crossroads.....	43 29 46.5	85 57 37.0	5,265
T. 13 N., R. 14 W., corner of secs. 21, 22, 27, and 28, crossroads.....	43 29 46.4	85 58 48.1	5,240
Fremont, 2 miles north by 2 miles west of, T. 13 N., R. 14 W., cor-			
ner of secs. 20, 21, 28, and 29, 20 feet south of T road north; iron			
post stamped "Prim. Trav. Sta. No. 32, 1916, Mich.".....	43 29 46.1	85 59 59.3	5,249

Near east border of quadrangle.

T. 12 N., R. 12 W., corner of secs. 16, 17, 20, and 21 T road east.....	43 25 25.9	85 45 45.3	.....
Newaygo, road forks, north side of highway bridge over Muskegon			
River.....	43 25 25.3	85 47 54.1	9,504
Newaygo, 25 feet west of southwest corner of Public Library, large			
square stone, marked "Lat. N. 43° 25' 14.16"; Lon. W. Gr. 85°			
49° 3.78", x mark".....	43 25 13.6	85 47 57.3	1,213
T. 12 N., R. 12 W., line between secs. 19 and 30, fence line west.....	43 24 33.8	85 47 13.8	5,151
T road north.....	43 23 41.6	85 47 13.5	5,290
T. 12 N., R. 12 W., corner of secs. 29, 30, 31, and 32, fence line north.....	43 23 41.7	85 46 55.6	1,325
T. 12 N., Rs. 12 and 13 W., corner of secs. 25, 30, 31, and 36, T road			
east.....	43 23 41.4	85 48 04.0	.....
Tps. 11 and 12 N., Rs. 12 and 13 W., corner of secs. 1, 6, 31, and 36,			
five corners.....	43 22 49.3	85 48 04.3	5,280
Tps. 11 and 12 N., R. 12 W., corner of secs. 5, 6, 31, and 32, T road			
south.....	43 22 49.0	85 46 55.7	5,070
T. 11 N., R. 12 W., corner of secs. 5, 6, 7, and 8, crossroads.....	43 21 57.1	85 46 53.4	5,257
T. 11 N., R. 12 W., corner of secs. 4, 5, 8, and 9, crossroads.....	43 21 57.3	85 45 41.7	5,300
T. 11 N., R. 12 W., corner of secs. 8, 9, 16, and 17, T road west.....	43 21 05.4	85 45 40.9	5,255
T. 11 N., R. 12 W., corner of secs. 16, 17, 20, and 21, crossroads at			
town hall.....	43 20 13.4	85 45 40.5	5,270
T. 11 N., R. 12 W., corner of secs. 20, 21, 28, and 29, crossroads.....	43 19 21.4	85 45 40.9	5,265
T. 10 N., R. 12 W., north corner of secs. 4 and 5, T road south, on			
Newaygo-Kent county line.....	43 17 36.0	85 45 08.8	.....
T. 10 N., R. 12 W., corner of secs. 4, 5, 8, and 9, crossroads.....	43 16 40.6	85 45 08.0	5,610
T. 10 N., R. 12 W., corner of secs. 8, 9, 16, and 17, crossroads.....	43 15 48.0	85 45 07.6	5,325

Magnetic declination for east border of quadrangle, 0° 52' W.; for north border of quadrangle, 0° 56' W.

NIRVANA QUADRANGLE.

North along highways near east border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Paris, 1 mile south of, T. 16 N., R. 10 W., 25 feet north by 25 feet			
west of corner of secs. 21, 22, 27, and 28, at northwest corner of			
crossroads; iron post stamped "Prim. Trav. Sta. No. 4, 1916			
Mich.".....	43 45 25.0	85 30 12.9	.....
Paris, T road west at south edge of; T. 16 N., R. 10 W., corner of			
secs. 15, 16, 21, and 22.....	43 46 16.8	85 30 11.7	5,254
T. 16 N., R. 10 W., corner of secs. 9, 10, 15, and 16, T road west at			
blacksmith shop.....	43 47 09.0	85 30 10.9	5,278
Tps. 16 and 17 N., R. 10 W., corner of secs. 3, 4, 33, and 34, on			
Mecosta-Osceola county line, T road north.....	43 48 55.7	85 30 11.2	5,563
T. 17 N., R. 10 W., corner of secs. 27, 28, 33, and 34, crossroads.....	43 49 47.1	85 30 12.0	5,200

NIRVANA QUADRANGLE—Continued.

North along highways near east border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Feet.</i>
T. 17 N., R. 10 W., corner of secs. 21, 22, 27, and 28, crossroads.....	43 50 39.7	85 30 12.6	5,330
T. 17 N., R. 10 W., corner of secs. 15, 16, 21, and 22, crossroads.....	43 51 31.5	85 30 13.0	5,248
Reed City, at southwest corner of yard of Ward schoolhouse, at northwest corner of cross streets; iron post stamped "Prim. Trav. Sta. No. 5, 1916 Mich."			
T. 17 N., R. 10 W., corner of secs. 3, 4, 9, and 10, crossroads 700 feet north of schoolhouse.....	43 52 10.9	85 30 13.1	3,984
Tps. 17 and 18 N., R. 10 W., corner of secs. 3, 4, 33, and 34, crossroads.....	43 53 15.2	85 30 11.4	6,509
T. 18 N., R. 10 W., corner of secs. 27, 28, 33, and 34, crossroads at schoolhouse.....	43 54 06.6	85 30 10.8	5,215
T. 18 N., R. 10 W., corner of secs. 21, 22, 27, and 28, crossroads at old schoolhouse.....	43 54 58.0	85 30 11.0	5,205
T. 18 N., R. 10 W., corner of secs. 15, 16, 21, and 22, crossroads at schoolhouse.....	43 55 50.0	85 30 11.2	5,260
T. 18 N., R. 10 W., corner of secs. 9, 10, 15, and 16, crossroads.....	43 56 42.0	85 30 11.4	5,275
Ashton, T. 18 N., R. 10 W., corner of secs. 3, 4, 9, and 10, crossroads.....	43 57 33.3	85 30 11.2	5,200
Tps. 18 and 19 N., R. 10 W., corner of secs. 3, 4, 33, and 34.....	43 58 24.7	85 30 11.5	5,205
	43 59 17.2	85 30 14.0	5,319

West along highways near south border of quadrangle. (By H. S. Senseney in 1916.)

Paris, 1 mile south of, T. 16 N., R. 10 W., 25 feet north by 25 feet west of corner of secs. 21, 22, 27, and 28, at northwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 4, 1916 Mich."	43 45 25.0	85 30 12.9	.....
T. 16 N., R. 10 W., corner of secs. 20, 21, 28, and 29, crossroads.....	43 45 25.1	85 31 24.2	5,235
T. 16 N., R. 10 W., corner of secs. 19, 20, 29, and 30, crossroads.....	43 45 26.7	85 32 36.8	5,330
T. 16 N., Rs. 10 and 11 W., corner of secs. 19, 30, 24, and 25, crossroads at Shepherd M. E. Church, on Newaygo-Mecosta county line.....	43 45 26.6	85 33 46.0	5,075
T. 16 N., R. 11 W., corner of secs. 23, 24, 25, and 26, crossroads.....	43 45 27.2	85 34 57.2	5,232
T. 16 N., R. 11 W., corner of secs. 22, 23, 26, and 27, crossroads.....	43 45 25.4	85 36 10.8	5,399
Parks, 1 mile north of, T. 16 N., R. 11 W., 30 feet north by 30 feet west of corner of secs. 21, 22, 27, and 28, crossroads; iron post stamped "Prim. Trav. Sta. No. 15, 1916 Mich."	43 45 25.9	85 37 22.2	5,245
T. 16 N., R. 11 W., corner of secs. 20, 21, 28, and 29, crossroads at Stone schoolhouse.....	43 45 24.8	85 38 33.3	5,215
T. 16 N., R. 11 W., corner of secs. 19, 20, 29, and 30, T road north.....	43 45 26.1	85 39 44.0	5,195
T. 16 N., Rs. 11 and 12 W., corner of secs. 19, 30, 24, and 25, crossroads.....	43 45 26.4	85 40 54.8	5,189
T. 16 N., R. 12 W., corner of secs. 23, 24, 25, and 26, crossroads.....	43 45 25.8	85 42 06.6	5,270
Biteley, 7 miles east of, T. 16 N., R. 12 W., 30 feet south by 25 feet west of corner of secs. 22, 23, 26, and 27, crossroads; iron post stamped "Prim. Trav. Sta. No. 21, 1916 Mich."	43 45 24.9	85 43 20.0	5,388
T. 16 N., R. 12 W., corner of secs. 21, 22, 27, and 28, old log road south.....	43 45 24.8	85 44 31.0	5,212

Magnetic declination for south border of quadrangle, 0° 41' W.

READING QUADRANGLE.

Along highways.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	<i>Feet.</i>
T. 5 S., R. 5 W., west corner of secs. 30 and 31, crossroads; 15 feet north is T. 5 S., R. 5 W., east corner of secs. 25 and 36.....	41 59 59.6	84 56 31.4	.....

SCHOOLCRAFT QUADRANGLE.

South along highways near east border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
Cornstock, 2 miles south of, 30 feet east of center of T road east, and corner of secs. 29, 30, 31, and 32, T. 2 S., R. 10 W.; iron post stamped "Prim. Trav. Sta. No. 1, Mich. 1915"	° ' "	° ' "	<i>Fect.</i>
Tps. 2 and 3 S., R. 10 W., corner of secs. 5, 6, 31, and 32, T road north	42 15 34.1	85 30 42.6	.....
T. 3 S., R. 10 W., quarter corner between secs. 29 and 32, T road south	42 14 41.8	85 30 42.8	5, 289
T. 3 S., R. 10 W., quarter corner south side of sec. 32, T road north (the north quarter corner of sec. 5 could not be found)	42 10 19.8	85 30 03.6	.....
T. 4 S., R. 10 W., north corner between secs. 5 and 6, roads east and south, 60 feet west is south corner of secs. 31 and 32, fence line north	42 09 27.5	85 30 03.1	5, 290
T. 4 S., R. 10 W., corner of secs. 5, 6, 7, and 8; fence line east and west	42 09 27.2	85 30 37.6	2, 600
T. 4 S., R. 10 W., between secs. 7 and 8; east and west road crosses west track of Grand Trunk Ry.	42 08 37.3	85 30 36.8	5, 050
Vicksburg, intersection of South Wilson and East Highway streets.	42 07 44.5	85 31 23.4	6, 394
T. 4 S., R. 10 W., corner of secs. 17, 18, 19, and 20, north and south fence line	42 06 52.1	85 31 23.2	5, 315
	42 06 52.3	85 30 35.3	3, 990

Magnetic declination for east border of quadrangle, 1.9° W.

SMYRNA QUADRANGLE.

East along highways near north border of quadrangle. (By H. S. Senseney in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
Cedar Springs, 2 miles north by 4 miles east of, 19 feet west by 32 feet south of crossroads and corner of secs. 14, 15, 22, and 23, T. 10 N., R. 10 W.; iron post stamped "Prim. Trav. Sta. No. 1, Mich. 1915"	° ' "	° ' "	<i>Fect.</i>
T. 10 N., R. 10 W., corner of secs. 13, 14, 23, and 24, crossroads	43 14 58.3	85 28 18.3	.....
T. 10 N., Rs. 9 and 10 W., corner of secs. 13, 18, 19, and 24, T road west	43 14 58.7	85 27 07.0	5, 279
T. 10 N., R. 9 W., corner of secs. 17, 18, 19, and 20, roads east and south, fence line west	43 14 59.1	85 25 54.8	5, 349
T road north, 660 feet west is T. 10 N., R. 9 W., corner of secs. 21, 22, 27, and 28, fence line north and south	43 14 59.8	85 24 43.4	5, 283
T. 10 N., R. 9 W., corner of secs. 22, 23, 26, and 27, fence line east	43 14 07.8	85 22 11.1	.....
	43 14 07.9	85 21 08.1	4, 665

West through center of quadrangle. (By H. S. Senseney in 1916.)

Belding, 2 miles west by 1.5 miles north of, 25 feet south by 31 feet east is quarter corner of sec. 4, T. 8 N., R. 8 W., center of T road south, 25 feet south by 114 feet east is quarter corner of sec. 33, T. 9 N., R. 8 W., center of T road south; iron post stamped "Prim. Trav. Sta. No. 17, Mich. 1915"	43 07 09.4	85 15 46.4	.....
Tps. 8 and 9 N., R. 8 W., corner of secs. 4, 5, 32, and 33, fence line north and south, on Ionia-Montcalm county line	43 07 09.4	85 16 23.7	2, 765
Tps. 8 and 9 N., R. 8 W., corner of secs. 5, 6, 31, and 32, fence line north and south, on Ionia-Montcalm county line	43 07 08.4	85 17 35.1	5, 295
Tps. 8 and 9 N., Rs. 8 and 9 W., corner of secs. 1, 6, 31, and 36, crossroads at Kent-Ionia-Montcalm county corner	43 07 07.8	85 18 45.8	5, 240
T. 9 N., R. 9 W., corner of secs. 35 and 36, crossroads, 50 feet west is T. 8 N., R. 9 W., corner of secs. 1 and 2	43 07 07.3	85 19 57.2	5, 295
T road south, 710 feet south is T. 9 N., R. 9 W., corner of secs. 34 and 35, wooden post, 710 feet south by 110 feet west is T. 8 N., R. 9 W., corner of secs. 2 and 3, road south	43 07 14.0	85 21 08.8	5, 347
Rockford, 9.75 miles east of, on line between Tps. 8 and 9 N., R. 9 W., secs. 4 and 33, 6 feet north by 18 feet east of T road west; iron post stamped "Prim. Trav. Sta. No. 30, 1916 Mich."	43 07 06.6	85 22 37.6	6, 627
T. 9 N., R. 9 W., corner of secs. 32 and 33, fence line north (could not locate corner of secs. 4 and 5)	43 07 06.2	85 23 31.6	4, 010
Tps. 8 and 9 N., R. 9 W., corner of secs. 5, 6, 31, and 32, T road west	43 07 05.8	85 24 43.0	5, 293
Tps. 8 and 9 N., Rs. 9 and 10 W., corner of secs. 1, 6, 31, and 36, T road south	43 07 05.3	85 25 53.1	5, 196
T. 8 N., R. 10 W., corner of secs. 1 and 2, fence line south, 84 feet west is T. 9 N., R. 10 W., corner of secs. 35 and 36, fence line north	43 07 04.9	85 27 03.7	5, 235
Rockford, 5 miles east of, 15 feet south of T road north and corner of secs. 34 and 35, T. 9 N., R. 10 W.; iron post stamped "Prim. Trav. Sta. No. 6, Mich. 1915"	43 07 04.3	85 28 16.6	5, 401

Magnetic declination for north border of quadrangle, 0° 23' W.; for center (east-west) of quadrangle, 0° 27' W.

STURGIS QUADRANGLE.

West along highways near north border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 5 S., R. 9 W., corner of secs. 25, 26, 35, and 36, crossroads.....	41 59 57.9	85 18 45.3	.....
T. 5 S., R. 9 W., corner of secs. 26, 27, 34, and 35, crossroads.....	41 59 57.8	85 19 56.1	5,345
Leonidas, 1.5 miles south of, 25 feet north by 30 feet east of corner of secs. 27, 28, 33, and 34, T. 5 S., R. 9 W.; iron post stamped "Prim. Trav. Sta. No. 14, S. 1917"			
T. 5 S., R. 9 W., corner of secs. 28, 29, 32, and 33, fence line south.....	41 59 57.8	85 21 06.1	5,289
Road forks, south of bridge over St. Joseph River.....	41 59 57.4	85 22 17.0	5,359
T. 5 S., R. 9 W., corner of secs. 29, 30, 31, and 32, T road south.....	41 59 49.3	85 22 34.6	1,569
T. 5 S., R. 9 and 10 W., corner of secs. 25, 30, 31, and 36, T road south.....	41 59 57.2	85 23 27.9	4,103
T. 5 S., R. 10 W., corner of secs. 25, 26, 35, and 36, T road south.....	41 59 57.1	85 24 37.3	5,240
T. 5 S., R. 10 W., corner of secs. 26, 27, 34, and 35, crossroads.....	41 59 57.0	85 25 47.6	5,315
		85 26 58.1	5,325

Magnetic declination for north border of quadrangle, 1.7° W.

TORCH LAKE QUADRANGLE.

West along highways near north border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 30 N., R. 8 W., line between secs. 10 and 15, T road west.....	45 00 18.0	85 16 04.7	.....
T. 30 N., R. 8 W., quarter corner between secs. 9 and 10, bend in road, 800 feet west of schoolhouse.....	45 00 44.1	85 16 17.2	2,800
T. 30 N., R. 8 W., line between secs. 4 and 9, center of road, 70 feet north of road forks.....	45 01 10.5	85 16 20.4	2,680
T. 30 N., R. 8 W., north corner of secs. 3 and 4, center of north-south road, in line with old rail fence west.....	45 02 07.8	85 16 16.5	5,816
Road forks, at road west.....	45 02 36.6	85 15 34.0	4,223
T. 31 N., R. 8 W., corner of secs. 26, 27, 34, and 35.....	45 03 00.2	85 15 49.1	2,625
T. 31 N., R. 8 W., corner of secs. 22, 23, 26, and 27, T road west near south edge of Central Lake.....	45 03 52.2	85 15 49.9	5,268
Central Lake, intersection of crossstreets, Central Lake Exchange on southwest corner.....	45 04 12.9	85 15 50.2	2,100
T. 31 N., R. 8 W., corner of secs. 14, 15, 22, and 23, bend in road.....	45 04 44.4	85 15 50.4	3,190
T. 31 N., R. 8 W., line between secs. 10 and 15, fence east.....	45 05 36.3	85 16 10.0	5,435
T. 31 N., R. 8 W., corner of secs. 2, 3, 10, and 11, T road west.....	45 06 28.4	85 15 51.2	5,449
T. 32 N., R. 8 W., corner of secs. 22, 23, 26, and 27, at northwest corner of crossroads at Ellsworth Church, iron post stamped "Prim. Trav. Sta. No. 14, 1916, Mich."	45 08 53.0	85 15 50.7	14,644
T. 32 N., R. 8 W., corner of secs. 14, 15, 22, and 23, crossroads.....	45 09 44.6	85 15 49.8	5,232
T. 32 N., R. 8 W., corner of secs. 10, 11, 14, and 15, center of north-south road, at east-west fence line.....	45 10 36.7	85 15 48.6	5,275
T. 32 N., R. 8 W., corner of secs. 2, 3, 10, and 11, center of north-south road at east-west fence line.....	45 11 28.9	85 15 47.5	5,290
T. 32 N., R. 8 W., north corner of secs. 2 and 3, T road east, on Antrim-Charlevoix county line.....	45 12 22.7	85 15 46.5	5,450
T. 33 N., R. 8 W., corner of secs. 26, 27, 34, and 35, crossroad at Phelps Church and schoolhouse.....	45 13 16.4	85 15 40.0	5,457
T. 33 N., R. 8 W., corner of secs. 22, 23, 26, and 27, center of north-south road at fence east.....	45 14 08.4	85 15 39.5	5,275
T. 33 N., R. 8 W., 25 feet north by 18 feet east of quarter corner between secs. 22 and 23, at northeast corner of crossroads, iron post stamped "Prim. Trav. Sta. No. 15, 1916 Mich."	45 14 34.8	85 15 39.1	2,666

TUSTIN QUADRANGLE.

North along highways near east border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
T. 21 N., R. 10 W., south corner of secs. 34 and 35, on Osceola-Wexford county line, T road north.....	44 09 54.2	85 29 47.1	.....
T. 21 N., R. 10 W., corner of secs. 26, 27, 34, and 35, district 2 schoolhouse, T road west at.....	44 10 46.3	85 29 47.8	5,275
T. 21 N., R. 10 W., corner of secs. 22, 23, 26, and 27, fence west.....	44 11 38.5	85 29 48.5	5,290
T. 21 N., R. 10 W., corner of secs. 14, 15, 22, and 23, Cherry Grove schoolhouse, crossroads at.....	44 12 30.7	85 29 49.7	5,290
T. 21 N., R. 10 W., line between secs. 11 and 14, center of road at Cadillac, 4 miles west of, at west end of Lake Cadillac, forks of concrete road, poplar tree in center of triangle.....	44 13 23.0	85 29 12.6	5,945
	44 14 07.2	85 27 20.5	9,305
Cadillac, intersection of Chestnut and Snider streets.....	44 14 56.3	85 25 32.7	9,289

UNION CITY QUADRANGLE.

South along highways near east border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Tps. 4 and 5 S., R. 6 W., corner of secs. 3, 4, 33, and 34, fence line south on Branch-Calhoun county line.....	42 04 22.0	85 00 04.4	.....
T. 5 S., R. 6 W., corner of secs. 3, 4, 9, and 10, T road east.....	42 03 30.2	85 00 04.6	5,242
T. 5 S., R. 6 W., corner of secs. 9, 10, 15, and 16, fence east and west, 655 feet south is T road east.....	42 02 37.7	85 00 04.4	5,315
Girard, T. 5 S., R. 6 W., corner of secs. 15, 16, 21, and 22, crossroads.....	42 01 45.0	85 00 03.9	5,335
Girard, 1 mile south of, 15 feet south by 20 feet west of corner of secs. 21, 22, 27, and 28, T. 5 S., R. 6 W., iron post stamped "Prim. Trav. Sta. No. 7, 1917".....	42 00 52.3	85 00 03.8	5,340

Along highways near south border of quadrangle.

T. 5 S., R. 6 W., corner of secs. 20, 21, 28, and 29, at bend in road, fence line west.....	42 00 52.5	85 01 13.9	5,290
T. 5 S., R. 6 W., corner of secs. 19, 20, 29, and 30, crossroads.....	42 00 52.4	85 02 24.6	5,336

West along highways near south border of quadrangle.

T. 5 S., Rs. 6 and 7 W., corner of secs. 19, 24, 25, and 30, fence line north.....	42 00 52.1	85 03 37.2	5,480
T. 5 S., Rs. 6 and 7 W., quarter corner between secs. 25 and 30, T road west.....	42 00 26.0	85 03 37.0	2,645
T. 5 S., R. 7 W., quarter corner between secs. 25 and 26, fence south.....	42 00 25.0	85 04 47.8	5,340
T. 5 S., R. 7 W., quarter corner between secs. 26 and 27, T road east.....	42 00 25.2	85 05 57.5	5,260
T road west.....	42 00 51.4	85 10 51.8	.....
T. 5 S., R. 8 W., corner of secs. 23, 24, 25, and 26, T road north.....	42 00 50.9	85 11 44.3	3,965
T. 5 S., R. 8 W., corner of secs. 22, 23, 26, and 27, T road north.....	42 00 50.6	85 12 54.6	5,305
Sherwood, 1 mile north of, 20 feet north by 60 feet west of corner of secs. 21, 22, 27, and 28, T. 5 S., R. 8 W., iron post stamped "Prim. Trav. Sta. No. 9, S. 1917".....	42 00 50.7	85 14 05.7	5,370

North along highways near west border of quadrangle.

T. 5 S., R. 8 W., corner of secs. 15, 16, 21, and 22, fence line east, 650 feet north of north end of bridge over St. Joseph River.....	42 01 42.7	85 14 05.6	5,266
T. 5 S., R. 8 W., corner of secs. 9, 10, 15, and 16, fence line east and west.....	42 02 34.8	85 14 06.2	5,280
T. 5 S., R. 8 W., corner of secs. 3, 4, 9, and 10, fence line east and west, 1,330 feet south of crossroads.....	42 03 27.1	85 14 07.0	5,290
Tps. 4 and 5 S., R. 8 W., corner of secs. 3, 4, 33, and 34, on Branch-Calhoun county line.....	42 04 19.1	85 14 07.8	5,265
Athens, cross streets, corner of secs. 27, 28, 33, and 34, T. 4 S., R. 8 W.....	42 05 11.2	85 14 08.4	5,270
T. 4 S., R. 8 W., corner of secs. 21, 22, 27, and 28, fence line east and west.....	42 06 03.4	85 14 09.0	5,290

Magnetic declination along east border of quadrangle, 1.9° W.; along south border of quadrangle, 2.0° W.; along west border of quadrangle, 2.1° W.

East along highways through center of quadrangle. (By H. S. Senseney in 1917.)

T. 4 S., R. 8 W., quarter corner between secs. 3 and 4, fence line north and south.....	42 09 06.0	85 14 12.0	.....
T. 4 S., R. 8 W., quarter corner between secs. 2 and 3, T road north.....	42 09 07.2	85 13 01.5	5,314
T road west.....	42 09 08.2	85 12 28.4	2,645
T road east.....	42 08 42.1	85 12 30.4	2,654
T. 4 S., R. 8 W., corner between secs. 1, 2, 11, and 12, fence line north-south.....	42 08 42.9	85 11 51.0	2,970
T. 4 S., R. 8 W., east corner of secs. 1 and 12, T road west, 75 feet north is west corner of secs. 6 and 7, T. 4 S., R. 7 W., T road east ..	42 08 42.3	85 10 40.5	5,310
Abasco, T. 4 S., R. 7 W., corner of secs. 5, 6, 7, and 8.....	42 08 43.8	85 09 32.4	5,135
T road south.....	42 08 44.5	85 08 39.0	4,025
T. 4 S., R. 7 W., corner of secs. 4, 5, 8, and 9, fence line north and south.....	42 08 44.7	85 08 21.3	1,335
T road north.....	42 08 44.7	85 08 03.5	1,335
T. 4 S., R. 7 W., corner of secs. 3, 4, 9, and 10, crossroads.....	42 08 44.6	85 07 10.1	4,025
Crossroads, quarter corner.....	42 08 44.5	85 06 34.5	2,680
T. 4 S., R. 7 W., corner secs. 2, 3, 10, and 11, fence line north and south.....	42 08 44.3	85 05 59.0	2,680
T road south.....	42 08 44.6	85 05 05.5	4,025

UNION CITY QUADRANGLE—Continued.

East along highways through center of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
Burlington, 2.5 miles north of, 12 feet south by 30 feet east of corner of secs. 1, 2, 11, and 12, T. 4 S., R. 7 W.; iron post stamped "Prim. Trav. Sta. No. 11, S. 1917"	° ' "	° ' "	Feet.
T. 4 S., Rs. 6 and 7 W., corner of secs. 1, 6, 7, and 12, T road north	42 08 44.6	85 04 47.2	1,385
Road forks	42 08 44.2	85 03 37.0	5,285
T. 4 S., Rs. 6 and 7 W., corner of secs. 7, 12, 13, and 18, T road east	42 08 35.7	85 03 14.3	1,915
T. 4 S., R. 6 W., corner of secs. 7, 8, 17, and 18, T road south	42 07 51.4	85 03 37.2	4,802
T. 4 S., R. 6 W., section corner between secs. 8, 9, 16, and 17, fence line north and south	42 07 51.9	85 02 24.9	5,450
Crossroads	42 07 52.1	85 01 14.4	5,310
T. 4 S., R. 6 W., corner of secs. 9, 10, 15, and 16, fence line north and south	42 07 52.0	85 00 38.9	2,680
	42 07 52.1	85 00 04.2	2,615

Magnetic declination through center of quadrangle, 1.7° W.

VERMONTVILLE QUADRANGLE.

West along highways near south border of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
Crossroads	° ' "	° ' "	Feet.
Tps. 1 and 2 N., R. 6 W., corner of secs. 4, 5, 32, and 33, crossroads	42 30 33.5	85 00 54.0	4,940
T road north	42 30 33.1	85 01 59.9	3,990
Tps. 1 and 2 N., R. 6 W., corner of secs. 5, 6, 31, and 32, T road south	42 30 32.9	85 02 53.2	1,430
Tps. 1 and 2 N., Rs. 6 and 7 W., at township corner, crossroads	42 30 32.9	85 03 12.3	5,520
Tps. 1 and 2 N., R. 7 W., corner of secs. 1, 2, 35, and 36, crossroads	42 30 32.8	85 04 26.0	5,269
Tps. 1 and 2 N., R. 7 W., corner of secs. 3, 34, and 35, crossroads	42 30 32.1	85 05 36.3	5,310
Tps. 1 and 2 N., R. 7 W., corner of secs. 3, 4, 33, and 34, 50 feet west by 20 feet south of crossroads; iron post stamped "Prim. Trav. Sta. No. 17, 1917"	42 30 31.6	85 06 47.2	5,340
T. 2 N., R. 7 W., on line between secs. 32 and 33, T road north	42 30 31.1	85 07 58.5	5,402
Tps. 1 and 2 N., R. 7 W., corner of secs. 5, 6, 31, and 32, T road south	42 30 30.7	85 09 09.9	5,387
Tps. 1 and 2 N., R. 7 W., quarter corner between secs. 6 and 31, T road north	42 30 30.4	85 10 20.9	2,610
Tps. 1 and 2 N., R. 8 W., quarter corner between secs. 1 and 36, T road north	42 30 30.2	85 10 55.8	4,920
Tps. 1 and 2 N., R. 8 W., quarter corner between secs. 2 and 35, crossroads	42 30 29.8	85 12 01.5	5,311
Tps. 1 and 2 N., R. 8 W., corner of secs. 2, 3, 34, and 35, T road north	42 30 29.2	85 13 12.4	2,650
	42 30 28.9	85 13 47.8	

Magnetic declination along south border of quadrangle, 0.8° W.

WALKERVILLE QUADRANGLE.

North along highways near east border of quadrangle. (By H. S. Senseney in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
T. 13 N., R. 14 W., corner of secs. 16, 17, 20, and 21, crossroads	° ' "	° ' "	Feet.
T. 13 N., R. 14 W., corner of secs. 8, 9, 16, and 17, crossroads	43 30 39.0	86 00 00.1	5,270
T. 13 N., R. 14 W., corner of secs. 4, 5, 8, and 9, crossroads	43 31 31.1	86 00 00.4	5,220
Tps. 13 and 14 N., R. 14 W., corner of secs. 4, 5, 32, and 33, crossroads	43 32 22.6	86 00 00.4	5,295
T. 14 N., R. 14 W., corner of secs. 28, 29, 32, and 33, crossroads	43 33 14.9	86 00 00.4	5,253
T. 14 N., R. 14 W., corner of secs. 29, 30, 31, and 32, crossroads, 1 mile east of Hesperia	43 34 06.8	86 00 00.3	5,279
T. 14 N., R. 14 W., corner of secs. 17, 18, 19, and 20, crossroads	43 34 07.3	86 01 12.0	10,542
T. 14 N., R. 14 W., corner of secs. 7, 8, 17, and 18, crossroads	43 35 51.4	86 01 11.5	5,270
Hesperia, 4 miles north by 1 mile east of, T. 14 N., R. 14 W., corner of secs. 5, 6, 7, and 8, 25 feet south by 25 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 24, 1916 Mich"	43 36 43.4	86 01 10.5	5,350
	43 37 36.2	86 01 10.7	

WALKERVILLE QUADRANGLE—Continued.

North along highways near east border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Tps. 14 and 15 N., R. 14 W., corner of secs. 5, 6, 31, and 32, T road east.....	43 38 28.4	86 01 11.7	5,290
T. 15 N., R. 14 W., corner of secs. 29, 30, 31, and 32, crossroads....	43 39 20.1	86 01 11.7	5,236
T. 15 N., R. 14 W., corner of secs. 19, 20, 29, and 30, T road east....	43 40 13.5	86 01 11.5	5,409
T. 15 N., R. 14 W., corner of secs. 17, 18, 19, and 20, T road west....	43 41 06.2	86 01 10.4	5,335
T. 15 N., R. 14 W., corner of secs. 7, 8, 17, and 18, crossroads at Volney.....	43 41 58.1	86 01 10.7	5,260
T. 15 N., R. 14 W., corner of secs. 5, 6, 7, and 8, T road east.....	43 42 50.0	86 01 10.8	5,265
Tps. 15 and 16 N., R. 14 W., corner of secs. 5, 6, 31, and 32, crossroads.....	43 43 41.6	86 01 10.8	5,225
Volney, 3 miles north of, T. 16 N., R. 14 W., corner of secs. 29, 30, 31, and 32, 30 feet south by 30 feet east of crossroads at Troy schoolhouse; iron post stamped "Prim. Trav. Sta. No. 23, 1916 Mich.".....	43 44 34.1	86 01 09.4	5,320

Magnetic declination for east border of quadrangle, 0° 45' W.

WHITE CLOUD QUADRANGLE.

West along highways near north border of quadrangle. (By H. S. Senseney in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ' "	° ' "	Feet.
Biteley, 18 feet south by 18 feet east of crossroads, west of post office; iron post stamped "Prim. Trav. Sta. No. 22, 1916 Mich.".....	43 44 49.2	85 51 37.0	.....
T. 16 N., R. 13 W., quarter corner between secs. 28 and 33, T road north.....	43 44 30.0	85 51 55.5	2,378
T. 16 N., R. 13 W., section line between secs. 31 and 32, point is 65 feet north of fence corner.....	43 43 51.4	85 54 00.3	9,962
T. 16 N., R. 14 W., corner of secs. 25, 26, 35, and 36, T road south.....	43 44 32.0	85 56 22.8	11,242
Pere Marquette River, east end of bridge over.....	43 44 36.6	85 57 46.8	0,181
T. 16 N., R. 14 W., corner of secs. 27, 28, 33, and 34, fence line north.....	43 44 32.3	85 58 46.8	4,432
T. 16 N., R. 14 W., corner of secs. 28, 29, 32, and 33, crossroads.....	43 44 33.7	85 59 58.2	5,239

East through center of quadrangle.

T. 14 N., R. 14 W., corner of secs. 27, 28, 33, and 34, crossroads....	43 34 06.5	85 58 48.9	.....
T. 14 N., R. 14 W., corner of secs. 26, 27, 34, and 35, crossroads....	43 34 07.2	85 57 37.2	5,280
T. 14 N., R. 14 W., corner of secs. 22, 23, 26, and 27, corner stone....	43 34 59.4	85 57 37.2	5,280
T. 14 N., R. 14 W., corner of secs. 23, 24, 25, and 26, crossroads....	43 34 59.5	85 56 25.5	5,282
T. 14 N., Rs. 13 and 14 W., corner of secs. 19, 24, 25, and 30, T road east, north of bridge at Aetna.....	43 34 58.3	85 55 14.3	5,239
T. 14 N., Rs. 13 and 14 W., corner of secs. 13, 18, 19, and 24, T road east.....	43 35 50.1	85 55 14.8	5,240
T. 14 N., Rs. 13 and 14 W., corner of secs. 7, 12, 13, and 18, crossroads.....	43 36 42.1	85 55 14.9	5,270
T. 14 N., R. 13 W., corner of secs. 7, 8, 17, and 18, fence line south..	43 36 43.7	85 54 03.9	5,224
Aetna, 2 miles north by 2 miles east of, T. 14 N., R. 13 W., corner of secs. 8, 9, 16, and 17, 18 feet north by 18 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 33, 1916 Mich.".....	43 36 44.9	85 52 49.2	5,500
T. 14 N., R. 13 W., corner of secs. 16, 17, 20, and 21, T road north....	43 35 49.8	85 52 49.2	5,574
T. 14 N., R. 13 W., corner of secs. 15, 16, 21, and 22, crossroads at Lincoln Town Hall.....	43 35 49.3	85 51 38.1	5,230
T. 14 N., R. 13 W., corner of secs. 14, 15, 22, and 23, T road north....	43 35 50.1	85 50 26.9	5,240
T. 14 N., R. 13 W., corner of secs. 13, 14, 23, and 24, T road south....	43 35 49.9	85 49 17.4	5,120
T. 14 N., Rs. 12 and 13 W., corner of secs. 13, 18, 19, and 24, north end of road, blazed tree.....	43 35 50.0	85 48 06.6	5,207
T. 14 N., Rs. 12 and 13 W., quarter corner between secs. 19 and 24, crossroads.....	43 35 23.7	85 48 06.7	2,660
T. 14 N., R. 12 W., quarter corner, center of sec. 20, crossroads.....	43 35 25.5	85 46 17.8	8,015
T. 14 N., R. 12 W., quarter corner between secs. 20 and 21, T road south.....	43 35 25.5	85 45 41.7	2,660

Magnetic declination for north border of quadrangle, 0° 26' W.; for south border of quadrangle, 0° 56' W.; for east border of quadrangle, 1° 0' W.; for west border of quadrangle, 0° 45' W.; east-west through center of quadrangle, 0° 45' W.

