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Special Publication No. 198

FIRST- AND SECOND-ORDER TRIANGULATION IN TENNESSEE

(1927 DATUM)

BY
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FIRST- AND SECOND-ORDER TRIANGULATION IN TENNESSEE (1927 DATUM)

GENERAL STATEMENT

This volume contains the results of all the first- and second-order triangulation in Tennessee that has been executed by the United States Coast and Geodetic Survey and Mississippi River Commission, and adjusted on the North American datum of 1927.

The second-order triangulation of the Coast and Geodetic Survey along the Mississippi River begins at the Hopefield base, opposite Memphis, and extends southward. Only the portion as far south as the Tennessee-Mississippi boundary is included in this publication. The field work was done in 1879, and corresponds very closely to similar triangulation executed by the Mississippi River Commission. In a number of cases, the same station mark was used by both organizations, but usually such stations were designated by different names. Wherever this has occurred, both names have been given in this publication; the first one is that of the organization which established the station, and the second, in parentheses, is that of the organization making the later occupation.

The second-order triangulation of the Mississippi River Commission extends along practically the entire length of the Mississippi River. Only the portion, however, which lies between the Tennessee-Kentucky boundary on the north and the Tennessee-Mississippi boundary on the south is included in this publication. The field work for this section was done in 1879 and 1880.

Due to the fact that most of these second-order stations were established directly on the bank of the river, a large number of them have been destroyed by erosion and changes of shore line. By plotting the positions of these second-order stations on the War Department, Corps of Engineers, topographic maps, it was found that their present locations were in the river. The geographic positions of these points have been computed in order to make a complete adjustment of the entire scheme, but in most cases of destroyed stations, description data have not been available. The user of this publication is cautioned, unless a description bears a recent recovery date, that reference points may also have been destroyed by floods and that prolonged search for the station mark will be useless.

The locations of the triangulation arcs can be most readily seen by referring to the index sketches at the back of this publication. On page 5 will be found instructions on how to find the data for any particular station or for all the stations in a particular region.

In order to make geodetic control data of greater use to engineers and surveyors, an effort is being made to establish one or more plane-coordinate systems in each of the 48 States. When this work has been completed the data for each triangulation station in a State will include its x and y coordinates as well as its latitude and longitude. This publication is the first of its kind to have both the x and y co-

ordinates and latitude and longitude of the stations. A detailed explanation of the plane-coordinate system is contained in Special Publications Nos. 193 and 194 and Serial No. 562 of this Bureau.

This volume is one of a series of publications, each of which will contain the geographic positions on the North American datum of 1927, the plane coordinates, the descriptions, and other data for all first- and second-order triangulation and traverse of a State, or occasionally of two States. The following volumes have already been published:

	Spec. Pub. No.
Triangulation in Colorado (1927 Datum)	160
First-Order Triangulation in Southeast Alaska (1927 Datum)	164
First- and Second-Order Triangulation in Oregon (1927 Datum)	175
First-Order Triangulation in Kansas (1927 Datum)	179
First-Order Triangulation and Traverse in Louisiana (1927 Datum)	183
First-Order Triangulation in Missouri (1927 Datum)	186
First-Order Triangulation and Traverse in Arkansas (1927 Datum)	187
Triangulation in Texas (1927 Datum)	189
Triangulation in Oklahoma (1927 Datum)	190
First- and Second-Order Triangulation and Traverse in North Carolina (1927 Datum)	192

READJUSTMENT OF THE TRIANGULATION NET

The triangulation of the United States has been built up by continually adding new arcs to those already measured, and for many years in adjusting this triangulation the plan had to be followed of fitting the new arcs of triangulation to the old ones which had been previously adjusted. This method was the only one that could be followed until a comprehensive net had been built up and it led to no serious difficulty until the point was reached where the new arcs formed closed loops with the old arcs. It then developed that the last arc to close the loop received excessive corrections when adjusted to the previous triangulation because the entire error of closure of the loop had to be absorbed by it.

It was realized that the only way to overcome this difficulty was to adjust the entire network at one time. It was impracticable, however, to readjust the network each time a new arc was added or an additional loop was closed as the time required to do so was too great and if this were done, the geographic positions of the triangulation stations would be in a continual state of change, a condition very disturbing to those using the data.

In 1926 the triangulation net west of the ninety-eighth meridian had become so extended that it could serve as a framework for all future triangulation in that area, and it was found desirable to adjust this portion of the United States net in one piece. In preparation for this adjustment a method was devised, in 1924, at the office of the Coast and Geodetic Survey,[1] by means of which a large network of triangulation could be adjusted within a reasonable time and at a comparatively small cost. This method was applied first to the triangulation west of the ninety-eighth meridian, involving 12,500 miles of arcs in 16 closed loops. Later it was applied to the eastern half of the net involving 13,000 miles of arcs forming 26 loops. The adjusted net of the country is now of such extent and strength that all new arcs hereafter can be fitted to it without having to disturb the old work and without causing excessive corrections to the new work.

[1] For a description of the method used see Special Publication No. 159.

NORTH AMERICAN DATUM OF 1927

The original adjustment of the triangulation included in this publication was computed upon the Clarke spheroid of 1866, on what was called at that time the North American datum. In the readjustment of the triangulation in the western part of the United States the same spheroid was used as surface of reference, but only one station was held in position. The station, Meades Ranch, in Kansas, was assigned the same position that it had in the original United States standard datum, later called the "North American datum." This position of Meades Ranch is as follows:

Latitude =39°13′26″.686
Longitude=98°32′30″.506

This position was held in the new datum because it had been found to be best in accord with the country as a whole in the extensive investigation that was carried out at the time of the adoption of the original datum. If any are interested in the procedure followed in the establishment of this former datum, an account of it can be found in any one of the following publications, which contain triangulation and traverse data based on the datum in use prior to 1927: Special Publications Nos. 11, 13, 16, 17, 19, 24, 30, 31, 43, 46, 54, 62, 70, 74, 76, 78, 79, 86, 88, 101, and 114.

The orientation in the new adjustment is controlled by the various Laplace azimuths distributed throughout the network of arcs. The position of Meades Ranch, together with the Laplace azimuths included in the arcs, serves to define the North American datum of 1927. The date is appended to the name of the new datum to distinguish it from the old North American datum. A station is said to be on this North American datum of 1927 when it is rigidly adjusted to the scheme of the readjusted triangulation.

ARCS INCLUDED IN THIS PUBLICATION

Portions of several general arcs are included in this publication only so far as they lie within the limits of the State. These arcs are: Huntsville, Ala., to Memphis, Tenn.; Mississippi River (first and second order) Coast and Geodetic Survey and Mississippi River (second order) Mississippi River Commission; Cairo, Ill., to Tennessee Loop; Western North Carolina; Bristol, Va., to Charleston, W. Va.; Boone, N. C., to Bluefield, W. Va. (second order); Smithville, Tenn., to Huntsville, Ala. (second order); Lebanon, Tenn., to Florence, Ala. (second order); Sparta, Tenn., to Gadsden, Ala. (second order); Princeton, Ky., to Saulsbury, Tenn. (second order); Louisville, Ky., to Nashville, Tenn.; Paducah, Ky., to Martin, Tenn. (second order); and Moscow, Tenn., to Forest, Miss. Besides these the complete results of the following arcs are given: Tennessee Loop; Corinth, Miss., to Nashville, Tenn.; Union City, Tenn., to La Fayette, Ga. (second order); La Fayette, Ga., to Bristol, Tenn. (second order); and Clarksville, Tenn., to Corinth, Miss. (second order). All of this work forms a complete control survey system for the entire State, and at the present time Tennessee is one of the few of the 48 States to have such an ideal layout.

Triangulation just over the boundary in adjoining States has been included in this publication in order that all data for surveys in Tennessee, even near the boundaries, might be available in the one volume.

STATEMENT OF COMPUTATIONS

The Tennessee Loop of the Eastern Oblique arc, the Huntsville, Ala., to Memphis, Tenn., arc, the Mississippi River (first order) arc, and the Cairo, Ill., to Tennessee Loop arc are the only portions of this State system of triangulation that were included in the readjustment of the triangulation of the eastern part of the United States. A subsequent adjustment with junction figures was made for the main arcs, and subsidiary arcs were then fitted in, in the usual way. Much of this adjustment computation was made under the direction of the author, assisted by G. L. Fentress, C. N. Claire, and R. L. Pfau. The descriptions of stations and the sketches were prepared for this publication under the direction of Hugh C. Mitchell. These men were assisted by the other members of the Division of Geodesy, especially by J. L. Stearn, C. F. Stoneburner, and Gale Murphy.

GENERAL DESCRIPTION OF TABLES AND SKETCHES

The tables of geographic positions, on pages 14 to 99, also contain the distances between contiguous triangulation stations in meters and feet, the logarithms of the distances in meters, and the azimuths of the lines joining these stations. The distances are corrected for elevation above mean sea level, and the azimuths are referred to the true south. Anyone who wishes to obtain the actual distances between the triangulation stations should use the formula given on page 13, by which the true distance at the mean elevation of the stations can be derived from the distance at sea level.

The tables of plane coordinates on pages 102 to 140, based upon the Lambert projection, contain the x and y coordinates of the respective geographic positions of the stations, and also the grid azimuth of the lines joining the azimuth marks. The grid azimuths are referred to a line parallel to the Y axis and measured in a clockwise direction from the grid south.

The descriptions of the stations, given on pages 153 to 309, are designed to enable the engineer to recover and identify the station mark after he has visited the general locality of the station. There will be times when the description, so far as witness and other marks are concerned, will have become out of date from changes by nature or by the work of man. Any engineer who may visit a station and find that the description does not truly represent the present conditions, or who finds the mark destroyed or mutilated, should report the facts to the Director of the Coast and Geodetic Survey, at Washington, D. C., in order that the files of this office may be kept up to date. The engineer should realize that the triangulation extended over the country by the Coast and Geodetic Survey is a public survey, made for the use of the people. The stations really belong to the States in which they are located, and the engineer who is so fortunate as to find one of these stations located near his work should help to perpetuate the monuments in order that they may be of continuous service and value to his locality. The Coast and Geodetic Survey officials will, from time to time, visit the stations established and will re-mark and redescribe them if necessary.

At most of the stations there are reference and witness marks that were established to assist in locating the station. The distance and azimuth from the station to each of these additional marks are usually given in the description of the station, and the measurements are supposed to be so carefully made, at least to the reference marks, that if the station mark becomes lost or destroyed the station can be relocated accurately enough for use in third-order and local surveys.

Near the back of this publication will be found a number of sketches which show graphically the approximate locations of the stations, especially with reference to State and county boundaries, and the lines over which the main-scheme observations were made. It is suggested that if one should wish to learn whether there are triangulation stations in the vicinity of his work he should first consult the sketches. He can obtain from them the names of the stations that may be of help to him; then he should turn to the index on page 325 of this volume, from which he can find the pages upon which the descriptions, geographic positions, and the x and y coordinates of the stations appear.

OTHER PUBLICATIONS OF VALUE TO THE ENGINEER

If an engineer wishes to compute geographic positions for the stations of any triangulation that he may execute, he should procure a copy of Coast and Geodetic Survey Special Publication No. 8 from the Superintendent of Documents, Washington, D. C. The cost of this publication is 30 cents. If he is interested in knowing the length in meters of the degrees, minutes, and seconds of latitude and longitude in the region in which he is working, he can obtain them from Special Publication No. 5, which can be purchased at a cost of 20 cents from the Superintendent of Documents. Condensed tables for the latitude of Tennessee are shown on page 11.

The Coast and Geodetic Survey has issued a number of manuals on the various classes of its work. The ones that would be of value to an engineer in connection with triangulation, including base measurements, are Special Publication No. 120, Manual of First-Order Triangulation, cost 40 cents; Special Publication No. 145, Manual of Second- and Third-Order Triangulation and Traverse, cost 60 cents; and Special Publication No. 137, Manual of First-Order Traverse, cost 30 cents. An engineer, interested in the determination of azimuth to a high degree of accuracy, should procure a copy of Special Publication No. 14, Determination of Time, Longitude, Latitude, and Azimuth, cost 35 cents. If he is interested only in the determination of approximate azimuths, he should secure a copy of Serial No. 166, Directions for Magnetic Measurements, cost 15 cents. If he is interested in the determination of plane-coordinate systems he should secure Special Publication No. 193, Manual of Plane Coordinate Computation, cost 35 cents; Special Publication No. 194, Manual of Traverse Computation on the Lambert Grid, cost 20 cents; and Special Publication No. 195, Manual of Traverse Computation on the Transverse Mercator Grid, cost 25 cents. In computing his triangulation the engineer will find that the pamphlet entitled The ABC of Triangulation Adjustment, no cost, and Special Publication No. 138, Manual of Triangulation Computation and Adjustment, cost 50 cents, will be of great assistance to him.

The reader can secure from the Director of the United States Coast and Geodetic Survey, free of charge, several leaflets which describe geodetic surveying and which also show how triangulation can be used in connection with the boundary surveys of private and public property.

CLASSIFICATION OF TRIANGULATION

Triangulation is divided into different classes according to accuracy. Four classes of triangulation are now defined by the Federal Board of Surveys and Maps, viz, first, second, third, and fourth orders. The first three of these are, respectively, equal in accuracy to the classes primary, secondary, and tertiary as formerly defined and used by the Coast and Geodetic Survey.

The ultimate criterion applied in classifying the different grades of triangulation is the actual error in the length of any line. This is indicated by the discrepancy between the measured length of a base line and its length as computed through the triangulation from the last preceding base. In first-order triangulation such discrepancies must not exceed 1 part in 25,000, in second-order triangulation 1 part in 10,000, and in third-order triangulation 1 part in 5,000. Before making the comparison between the computed and measured lengths the adjustment of the triangulation should be carried to the point where the side and angle equations have been satisfied. It is also necessary to take into consideration the maximum actual error in the measurement of the base lines.

To secure the accuracy indicated above, certain standards are adopted for the field work, the most important one of which relates to the closing errors of the triangles or the discrepancy between the sum of the measured angles in a triangle and 180° plus the spherical excess of the triangle. In first-order triangulation the average closing error of the triangles must not be greatly in excess of 1 second, in second-order it should not be more than 3 seconds, and in third-order not more than about 5 seconds. The shape of the figures in the triangulation scheme, the frequency of bases, the size and type of instrument, and the number and kind of observations are all selected with due regard to the accuracy desired.

Under certain conditions the proportionate error in the length of a line as specified above may be found to be exceeded in any class of triangulation. Where two points are fairly close together as compared with the size of the triangulation scheme, the distance between those points may be in error in excess of that indicated by the class of triangulation of the scheme. The accuracy of the computed length of any line can be estimated by computing the ΣR_1 in accordance with the formula for the strength of figures as given in Coast and Geodetic Survey Special Publication No. 145. In any class of triangulation the subsidiary stations will be located with a less degree of accuracy than the main-scheme stations.

CHARACTERISTICS OF FIRST-ORDER TRIANGULATION

Of the 20 arcs of triangulation in the State, 9 are first-order arcs and 11 are second-order arcs. First-order triangulation is done with such accuracy that the average closing error of the triangles is about 1 second or less. In order that the angles may have this high degree

of accuracy, large theodolites are used. The theodolite, as is well known, is similar in its appearance to the surveyor's transit. The main differences are in the excellence of the workmanship, the accuracy of graduation of the circle, in having micrometer microscopes for reading this circle, and in having a telescope with a high resolving power. Observations are made either on heliotropes, by which the light of the sun is reflected toward the observer, or on acetylene or electric signal lamps. The heliotrope, or lamp, and the theodolite must be centered directly over the station marks.

At certain intervals, depending upon the shape of the triangles, base lines are measured. A base is necessarily a side of one of the triangles. The ends of the base must be intervisible from the ground or from towers that may be erected over them. In the early years of the Coast and Geodetic Survey's existence the base lines were measured with metal bars, but near the beginning of the present century steel tape lines began to be used in the measurements. Since 1907 all of the bases of the Survey have been measured with invar tapes. The probable error of a measured base is about 1 part in 1,000,000 of its length. This accuracy meets all the requirements of engineering and science.

The azimuths of the triangulation depend upon what are called Laplace azimuths, or azimuths determined by observations on Polaris, which have been corrected for the deflection of the vertical at each Laplace station. These deflections are due to the attraction of mountain or plateau masses that are comparatively near the place at which the observations are made. The probable error of a Laplace azimuth is about ± 0.3 second.

If one is interested in the accuracy with which the triangulation of the Coast and Geodetic Survey is done and the reliability of the geographic positions which are given in this publication, he should refer to Special Publication No. 159, The Bowie Method of Triangulation Adjustment as Applied to the First-Order Net in the Western Part of the United States.

CHARACTERISTICS OF SECOND-ORDER TRIANGULATION

In second-order triangulation the same general principles apply as in first-order triangulation, but the details of the work will vary with the circumstances. The angles are nearly always determined with a smaller number of measures. The accuracy of second-order triangulation is represented by an average closing error of a triangle of not more than 3 seconds of arc.

Second-order triangulation has been used principally for three purposes: First, for the main scheme of an isolated region of moderate extent such as the Philippine Islands; second, to connect third-order with first-order triangulation when the latter lies at a considerable distance from the area requiring the detailed third-order control; and third, as the detailed control over areas of economic importance. The increasing demand for second-order horizontal control, under the last set of conditions, and the growing economic importance of the entire coastal region of the United States, led the Director of the Coast and Geodetic Survey to decide, early in 1928, to make the entire coastal main-scheme triangulation of first- or second-order accuracy.

SUPPLEMENTARY STATIONS

In addition to the stations which form the main network of triangles in Tennessee, a number of objects, such as church spires and schoolhouse cupolas, were observed upon from stations of the main scheme. The positions of these supplementary stations have been computed and the data are included in the tables on pages 14 to 99 for latitude and longitude and on pages 102 to 140 for the x and y coordinates. These stations are shown on the sketches and in the index, but only a few of them are included in the descriptions of stations, as in most cases the name of the object is all the description that is available. Ordinarily the name of the supplementary station is sufficient for its accurate identification by the engineer who may wish to use it. In the readjustment of the eastern part of the United States and some of the intermediate arcs, a number of the intersection stations were computed by means of a single triangle, even though several additional lines to the station had been observed. In this volume they are few in number and if the lengths and azimuths of any of these additional lines are needed at any time, the data may be obtained by writing to the Director, Coast and Goedetic Survey, Washington, D. C.

USE OF HORIZONTAL CONTROL DATA

The plan or map for any extensive engineering project, whether or not map construction is the primary object, should have all of its parts properly correlated and should be on the same datum as adjacent surveys. Federal and State mapping organizations have long been aware of the necessity for having all surveys based upon a common datum, but local engineers and surveyors in this country have too often in the past been content, and in many cases compelled, to use a local datum for their surveys. The future economic disadvantage of such a system is now becoming recognized, with the result that city and county surveys are being more generally placed upon a permanent basis by connecting them to stations on the North American datum of 1927.

One other factor must be taken into consideration by the engineer of today. As the States develop industrially they will undoubtedly follow the lead of one of the Eastern States, Massachusetts, which with splendid foresight has extended its triangulation control over the entire State for the purpose of defining property boundaries in terms of latitude and longitude. The advantage of such a system is well stated in the following extracts from the report on the Maryland oyster survey:

> The difficulties of accurately locating and permanently defining the boundaries of a farmer's plantation on land, even with the aid of monuments, public roads, streams of water, and other points of reference, are often great, judging from the disputes frequently arising in connection with boundaries. * * *
>
> There is only one point on the earth's surface at the intersection of any one parallel of latitude and any one meridian of longitude, and therefore there can be no dispute as to the meaning of such a geographic definition of the location of a point, even though all the original triangulation station marks used in its determination, together with the chart on which its position was originally plotted, have been totally destroyed.
>
> In the case of the destruction of an original triangulation station mark, or any other point defined by a geographic position, a competent geodetic engineer can reestablish its exact location by means of a new system of triangulation connecting with other distant triangulation marks which have not been destroyed.

There are a number of instances where corporations owning large tracts of land have attempted to make surveys of their boundaries and of subdivisions of property by means of traverse. This method can be used if certain precautions are taken, but most of these corporations have found it advisable to use the method of triangulation for the determination of relative positions of their boundary monuments and of other points which lie within those boundaries. If the triangulation in question is connected with the triangulation system of the Coast and Geodetic Survey, then true geographic positions can be obtained as well as the relative ones.

In a section of the country covered by adequate geodetic control the data are available to the engineer for any of the following operations, in addition to their possible future use as a basis for cadastral surveys:

1. Extensive mapping.—The topographer needs as initial data for beginning a topographic survey the distance and direction between two points and the geographic position of one of them in latitude and longitude. His local triangulation or traverse, based on this control, will prevent the accumulation of excessive errors as he carries on his mapping operations. In the event that the available first-order triangulation in that region has lines of too great length to join to conveniently, he can measure a base and azimuth at some place visible from a first- or second-order triangulation station and connect his base to the station by triangulation, thus obtaining proper geographic positions for his local surveys.

2. Boundary lines.—If it is desired to locate or to delimit accurately and permanently the boundaries of political subdivisions, such as States, counties, or cities, the methods indicated in the preceding paragraph may be followed. Whenever possible, a line of the adjusted triangulation or traverse should be used as a basis for local surveys rather than a point, since a line gives the three essentials of position, length, and direction.

3. Local intensive surveys.—The necessity for such surveys arises most frequently in connection with extensive improvements over a considerable area or as a basis for city planning, where the needs of a city are being anticipated for a number of years. Here the requirements are somewhat different from those in the two preceding operations, for it is often necessary to extend first- or second-order control in considerable detail over the entire area affected, third-order triangulation or traverse then being used to furnish additional points for the survey. Such a control survey should invariably be started from a line of adjusted triangulation or traverse.

While it may be noted in the preceding paragraphs that the azimuth and length of one line and the geographic position of one end of that line constitute the essential data for the complete utilization of old work as a basis for new work, there is always grave danger in depending upon this minimum of data. There may be failure to identify the true station mark, or the mark, though genuine, may have been tampered with or otherwise disturbed in position. This will, of course, introduce an error into the new work based on these stations. It is the present practice in this Survey, unless unusual conditions render it unnecessary, to establish the integrity of the recovered points by using at least 3 old stations as a basis for new work, the third station serving as a check for the 2 stations on which the new work may actually depend.

In surveys where the area is of limited extent it is usually desirable to use a system of plane coordinates. Such systems are now established for each of the States. This publication has the x and y coordinates for all of the stations in and adjacent to the State of Tennessee within a distance of 10 miles. The Coast and Geodetic Survey will be glad to give advice on any problem arising out of the use of its control points or on any proposed extension of triangulation or traverse from them.

EXPLANATION OF TABLE FOR POLYCONIC MAP PROJECTION

The engineer or surveyor who makes use of the data in this publication may find it desirable to construct a map covering the territory he is surveying. He may wish to show on this map the meridians and parallels so as to be able to plot the positions of the triangulation stations included in the area and show the details of his survey in their correct geographic positions. To enable him to do this with the least possible difficulty, the following table, reprinted in an abbreviated form from Coast and Geodetic Survey Special Publication No. 5, has been inserted. This table may also be used to interpret in terms of degrees, minutes, and seconds of arc any relatively short distance measured along a meridian or parallel. The method of using the table is described below.

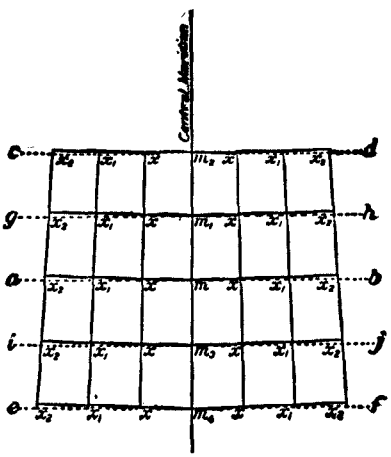

FIGURE 1.—Sketch showing construction of polyconic projection.

NOTE.—In this figure the angles made at the central meridian by the parallels are grossly exaggerated. In an actual projection the parallels appear practically as straight lines.

To make a projection for a large-scale map (1 to 20,000 and larger), first draw a straight line for a central meridian and a construction line *ab* perpendicular thereto, each to be as central to the sheet as the selected interval of latitude and longitude will permit. (See fig. 1.) On the central meridian lay off, on the desired scale, the distances $m\ m_2$ and $m\ m_4$, using the length of 1 minute along the meridian for the latitude of m, as given in the table in the column headed "Arc of the meridian, 1′", and multiplying this length by the number of minutes for the interval between the central parallel and the extreme parallels. Through m_2 and m_4 draw straight lines, *cd* and *ef*, parallel to the line *ab*. On the lines *ef*, *ab*, and *cd* lay off to the scale of the map the distances $m_4\ x_2$, $m\ x_2$, and $m_2\ x_2$ on both sides of the central meridian, taking the values from the column headed "Arc of the parallel, 1′", corresponding to the latitude of m_4, m, and m_2, respectively. The value of 1 minute as taken from the table must be multiplied by the number of minutes out from the central meridian. Draw straight lines through the points thus determined for the extreme meridians—that is, through the x_2 points.

At the two points designated x_2 on the line *ab* lay off along the meridians the value of Y as given in the table under "Y coordinate of curvature", using as argument the interval in minutes between

the central meridian and the extreme meridian. Draw straight lines from these points to the point m for the middle parallel, and from the points of intersection with the extreme meridians lay off distances along these meridians, above and below, equal to the distances $m\ m_2$ and $m\ m_4$ to locate points in the extreme parallels.

Subdivide each of the 3 meridians and 3 parallels already determined into parts corresponding with the projection interval and join the corresponding points of subdivision by straight lines to complete the projection.

The method outlined above may be used for all large-scale maps regardless of the number of meridians and parallels shown. For small-scale maps the method is somewhat more complicated, and it becomes necessary to make use of Special Publication No. 5, which may be obtained for 20 cents from the Superintendent of Documents, Washington, D. C.

Polyconic map projection table

Latitude	Arc of the parallel		Arc of the meridian		Interval of longitude from central meridian	Y coordinate of curvature latitude 34°
	1″	1′	1″	1′		
° ′	*Meters*	*Meters*	*Meters*	*Meters*	° ′	*Meters*
34 00	25.663	1,539.8	30.811	1,848.65	0 01	0.1
05	25.638	1,538.3	30.811	1,848.68	03	1.1
10	25.613	1,536.8	30.812	1,848.70	05	3.1
15	25.588	1,535.3	30.812	1,848.73	07	6.1
20	25.562	1,533.7	30.813	1,848.75	10	12.5
25	25.537	1,532.2	30.813	1,848.78	15	28.2
30	25.512	1,530.7	30.813	1,848.81	20	50.1
35	25.486	1,529.2	30.814	1,848.83	25	78.3
40	25.461	1,527.6	30.814	1,848.86	30	112.7
45	25.435	1,526.1	30.815	1,848.88	40	200.4
50	25.410	1,524.6	30.815	1,848.91	50	313.1
55	25.384	1,523.0	30.816	1,848.93	1 00	450.8

Latitude	Arc of the parallel		Arc of the meridian		Interval of longitude from central meridian	Y coordinate of curvature latitude 35°
	1″	1′	1″	1′		
° ′	*Meters*	*Meters*	*Meters*	*Meters*	° ′	*Meters*
35 00	25.358	1,521.5	30.816	1,848.96	0 01	0.1
05	25.333	1,520.0	30.816	1,848.99	03	1.1
10	25.307	1,518.4	30.817	1,849.01	05	3.2
15	25.281	1,516.9	30.817	1,849.04	07	6.2
20	25.255	1,515.3	30.818	1,849.06	10	12.7
25	25.229	1,513.7	30.818	1,849.09	15	28.6
30	25.203	1,512.2	30.819	1,849.11	20	50.8
35	25.177	1,510.6	30.819	1,849.14	25	79.3
40	25.151	1,509.1	30.819	1,849.17	30	114.2
45	25.125	1,507.5	30.820	1,849.19	40	203.1
50	25.099	1,505.9	30.820	1,849.22	50	317.3
55	25.072	1,504.3	30.821	1,849.24	1 00	456.9

Latitude	Arc of the parallel		Arc of the meridian		Interval of longitude from central meridian	Y coordinate of curvature	
	1″	1′	1″	1′		Lat. 36°	Lat. 37°
° ′	*Meters*	*Meters*	*Meters*	*Meters*	° ′	*Meters*	*Meters*
36 00	25.046	1,502.8	30.821	1,849.27	0 01	0.1	0.1
05	25.020	1,501.2	30.822	1,849.30	03	1.2	1.2
10	24.993	1,499.6	30.822	1,849.32	05	3.2	3.3
15	24.967	1,498.0	30.822	1,849.35	07	6.3	6.4
20	24.940	1,496.4	30.823	1,849.37	10	12.8	13.0
25	24.914	1,494.8	30.823	1,849.40	15	28.9	29.2
30	24.887	1,493.2	30.824	1,849.43	20	51.4	51.9
35	24.860	1,491.6	30.824	1,849.45	25	80.3	81.2
40	24.834	1,490.0	30.825	1,849.48	30	115.6	116.9
45	24.807	1,488.4	30.825	1,849.51	40	205.6	207.8
50	24.780	1,486.8	30.826	1,849.53	50	321.2	324.6
55	24.753	1,485.2	30.826	1,849.56	1 00	462.5	467.5

CONVERSION TABLE

The following table can be used readily for converting a rather large number of one unit to the corresponding number in the other unit by simply taking the conversion value for each digit of the first number, moving the decimal point if necessary, and adding the values together. For example, to convert 24.6 feet to meters we take from the table the value in meters corresponding to 2 feet and move the decimal point one number to the right. We then take the value for 4 feet as given in the table, and next the value for 6 feet, and move the decimal point one number to the left. This gives, by rounding off the third decimal place, 6.096+1.219+0.183=7.498 meters.

Meters	Feet	Feet	Meters
1	3.280833	1	0.3048006
2	6.561667	2	0.6096012
3	9.842500	3	0.9144018
4	13.123333	4	1.2192024
5	16.404167	5	1.5240030
6	19.685000	6	1.8288037
7	22.965833	7	2.1336043
8	26.246667	8	2.4384049
9	29.527500	9	2.7432055
10	32.808333	10	3.0480061

EXPLANATION OF TABLE OF GEOGRAPHIC POSITIONS

In the tables of positions the latitude and longitude of each point are given on the North American datum of 1927, and there are also given the length and azimuth of each line observed over, whether in one or both directions. No lengths and azimuths are repeated, and for a given line the length and azimuth will be found opposite the position of one or the other of the two stations involved.

To aid in the use of the tables, a column of the logarithms of the lengths in meters is given. It must be remembered that it is the logarithm which is derived first from the computation, the lengths given in the table being then derived from the corresponding logarithms. A final column gives these lengths reduced to feet, the reduction being made from the lengths in meters.

The rule followed in recent publications of this Office has been to give the latitudes and longitudes of the stations to thousandths of seconds for all points, the positions of which are fixed by fully adjusted triangulation. Points, the positions of which are given to hundredths of seconds only, are marked by footnotes as being without check (not occupied and observed from two stations only) or checked by vertical angles only.

In the columns giving azimuths, distances, and logarithms of distances the accuracy is indicated to a certain extent by the number of decimal places given, it being understood that in each case some of the final figures are doubtful. In some cases there is very little doubt of the correctness of the second figure from the right, while in a few cases some doubt may exist as to the correctness of even the third figure from the right.

The tables may be conveniently consulted by using as finders the sketches and the index at the end of this publication. In the second column of the index will be found for each point a reference to the page on which its geographic position is given, in the third column

the page on which its x and y plane coordinates are given, in the fourth column the page on which its elevation, if any, is given, in the fifth column the page on which its description is given, and finally in the sixth column the number of the sketch on which it appears.

EXPLANATION OF LENGTHS

The lengths as given in the tables are all reduced to sea level. If the actual length of a line on the ground reduced only to the horizontal is desired—that is, its length in its actual elevation on the surface of the earth—it may be obtained by adding to the sea-level length as given in meters the following correction,

$$\text{Cor.}=\frac{Sh_m}{6{,}370{,}000},$$

in which S is the length of the line in meters and h_m is the mean elevation of the two ends of the line in meters. The correction for the length in feet can also be found by the same formula if S is taken in feet, but h_m must still be kept in meters, since the denominator is the approximate length of the radius of the earth in meters.

AZIMUTH AND BACK AZIMUTH

The azimuth of a line of triangulation is its true direction reckoned clockwise from true south. The cardinal points of the compass on this system are as follows: South is 0° (or 360°), west 90°, north 180°, and east 270°.

Because of the convergence of the meridians, the azimuth and the back azimuth of a line do not differ by exactly 180°, the amount of the divergence varying with the latitude and the difference of longitude of the two ends of the line. To illustrate from the tables on page 14, the azimuth from Harvey to Bean is 288°05′59″.33, while the back azimuth, or the azimuth from Bean to Harvey, is 108°31′35″.72.

The azimuths of the triangulation lines offer a very convenient and accurate means of testing the deflection of the magnetic needle on a surveyor's transit, and even the azimuths over such short distances as those between a station mark and its reference mark may be used for this purpose with fair accuracy, provided the distance is greater than 100 feet. On all recent triangulation, a special azimuth mark has been set for each station at a distance of not less than one-fourth mile. The azimuth of the line from the station to this mark has been very accurately determined and may be used as the starting azimuth for traverse lines and other local surveys.

143113°—35——2

GEOGRAPHIC POSITIONS

Tennessee Loop

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points	° ′ ″	° ′ ″	° ′ ″				
Cohutta (Ga.), 1874	34 53 23.007 84 31 26.726						
High Point 2 (U. S. G. S.) (Ga.), 1874	34 51 49.092 85 23 32.973	267 33 03.85 199 32 42.3	88 01 08.57	Cohutta Azimuth mark.	4.8743647	74,879.81	245,668.2
Bean, 1887	35 11 31.276 84 33 30.021	2 27 30.59 64 39 56.61	182 26 58.03 244 11 12.96	Cohutta High Point 2 (U. S. G. S.)	4.5259138 4.9263013	33,567.10 84,392.00	110,128.1 276,876.1
Harvey, 1887	35 23 32.924 85 17 49.267	288 05 59.33 310 02 33.04 8 27 51.74 62 56 23.4	108 31 35.72 130 27 31.07 188 24 33.97	Bean Cohutta High Point 2 (U. S. G. S.) Azimuth mark.	4.8498997 4.9361196 4.7731417	70,778.23 86,321.62 59,311.88	232,211.6 283,206.8 194,592.4
Roy, 1887	35 31 26.845 84 26 47.098	15 28 01.70 79 32 10.34 190 42 15.2	195 24 08.54 259 02 33.92	Bean Harvey Azimuth mark.	4.5823288 4.8953407	38,223.35 78,585.18	125,404.4 257,824.9
Hinch Mountain, 1884	35 46 52.462 84 58 43.131	300 27 51.70 329 36 57.94 33 52 30.40	120 46 28.51 149 51 36.34 213 41 23.42	Roy Bean Harvey	4.7482488 4.8790094 4.7151172	56,007.83 75,684.93 51,894.01	183,752.4 248,309.6 170,255.6
Luper, 1883	35 57 15.862 84 47 20.525	326 54 26.99 41 45 58.90	147 06 27.44 221 39 18.95	Roy Hinch Mountain	4.7552561 4.4105685	56,918.84 25,737.63	186,741.2 84,440.9
Melton, 1884	35 54 34.213 84 18 18.916	16 40 25.94 77 01 50.85 96 39 08.08 321 22 58.7	196 35 29.28 256 38 11.22 276 22 06.06	Roy Hinch Mountain Luper Azimuth mark.	4.6495818 4.7957245 4.6428721	44,625.37 62,477.62 43,941.22	146,408.4 204,978.7 144,163.8
Cross, 1891	36 11 53.004 84 13 50.379	11 52 41.07 61 54 24.61	191 50 03.02 241 34 40.90	Melton Luper	4.5147463 4.7566590	32,714.95 57,103.01	107,332.3 187,345.5
Cockspur, 1885	35 34 59.975 84 01 32.733	48 15 24.85 80 21 04.12 145 08 39.59	227 56 54.54 260 06 23.57 324 58 51.77	Bean Roy Melton	4.8129736 4.5877427 4.6448886	65,009.01 38,702.83 44,145.72	213,283.7 126,977.5 144,834.7
Clinch, 1891	36 10 32.494 83 43 28.586	22 33 59.23 60 43 42.82 93 16 10.86	202 23 23.83 240 23 12.89 272 58 15.24	Cockspur Melton Cross	4.8520481 4.7787762 4.6588522	71,129.23 60,086.40 45,588.18	233,363.1 197,133.5 149,567.2
English, 1891	35 54 03.758 83 17 52.590	62 02 49.21 128 31 23.06 55 30 08	241 37 18.67 308 16 19.38	Cockspur Clinch Azimuth mark.	4.8732055 4.6907580	74,680.21 49,063.44	245,013.3 160,969.0
McLean, 1892	36 28 18.519 83 55 48.677	330 36 38.87 28 30 40.69 41 41 49.92	150 43 57.26 208 17 23.40 221 31 09.01	Clinch Melton Cross	4.5762091 4.8508304 4.6088063	37,688.52 70,930.07 40,626.21	123,649.8 232,709.7 133,287.8
Short, 1892	36 22 51.688 83 10 47.553	11 19 07.81 65 11 54.47 98 44 15.52 357 38 27.7	191 14 57.14 244 52 34.10 278 17 31.60	English Clinch McLean Azimuth mark.	4.7348626 4.7322826 4.8327403	54,307.85 53,986.18 68,036.23	178,175.0 177,119.7 223,215.5
White Rock (Va.-Ky.), 1892	36 39 53.999 83 27 05.528	322 14 44.01 24 21 33.50 63 33 44.20 79 34 47	142 24 26.05 204 11 49.84 243 16 37.57	Short Clinch McLean Azimuth mark.	4.6000156 4.7749777 4.6804259	39,812.15 59,563.15 47,909.97	130,617.0 195,416.8 157,184.6
King (Ky.), 1892	36 50 58.421 84 05 35.393	289 28 40.75 340 46 59.55	109 51 43.04 160 52 49.86	White Rock McLean	4.7842272 4.6471757	60,845.32 44,378.82	199,623.4 145,599.5
Rogers (Va.), 1894	36 39 35.816 81 32 42.169						
Roan High Bluff (N. C.), 1894	36 05 35.015 82 08 44.479	220 24 49.12	40 46 11.58	Rogers	4.9182222	82,836.58	271,773.0
Fork, 1930	36 15 08.026 82 10 33.854	231 09 36.33 351 11 35.78	51 32 06.20 171 12 40.34	Rogers Roan High Bluff	4.8599430 4.2521653	72,434.08 17,871.67	237,644.1 58,634.0
Big Knob (Va.), 1893	36 39 52.480 82 30 21.760	270 03 20.22 327 01 15.59 332 52 35.67 62 39 56.63 90 18 50.49	90 37 45.96 147 13 01.49 153 05 25.13 242 15 52.92 269 44 57.96	Rogers Fork Roan High Bluff Short White Rock	4.9340946 4.7362717 4.8523907 4.8329071 4.9270080	85,920.06 54,484.34 71,185.36 68,062.38 84,529.44	281,889.4 178,754.0 233,547.3 223,301.3 277,327.0
Big Butt (Tenn.-N. C.), 1893	36 03 40.589 82 37 39.269	189 13 05.12 242 19 30.15 265 12 47.33 73 48 37.93 125 42 25.93 132 10 26.5	9 17 24.52 62 35 29.14 85 29 48.91 253 25 00.05 305 22 51.03	Big Knob Fork Roan High Bluff English Short Azimuth mark, R. M. no. 3.	4.8314030 4.6610779 4.6389911 4.7994659 4.7855524	67,827.06 45,822.41 43,550.29 63,018.19 61,031.27	222,529.3 150,335.7 142,881.2 206,752.2 200,233.4
Supplementary points							
Chimney, 1894	36 24 29.072 82 42 25.362	86 05 33.7 113 22 27.1 212 14 57.4 236 06 34.0	265 48 43.7 292 55 51.5 32 22 08.2	Short White Rock Big Knob Azimuth mark.	4.628653 4.860396 4.527334	42,525.9 72,509.7 33,677.0	139,520 237,892 110,489

Tennessee Loop—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Supplementary points—Continued	° ′ ″	° ′ ″	° ′ ″				
Powell (Tenn.-Va.), 1893	36 35 37.806	0 53 53.1	180 53 44.3	Short	4.373234	23,617.5	77,485
	83 10 32.701	107 50 03.1	287 40 10.8	White Rock	4.413309	25,900.6	84,976
		161 55 18.9		Azimuth mark.			
Buzzard (Va.), 1893	36 44 07.767	329 05 27.4	149 14 07.2	Chimney	4.626485	42,314.1	138,826
	82 56 57.706	27 45 10.4	207 36 56.1	Short	4.617568	44,418.9	145,731
		52 13 57.6	232 05 50.9	Powell	4.408699	25,627.1	84,078
		80 15 43.3	259 57 42.9	White Rock	4.658506	45,551.9	149,448
		226 03 06.4		Azimuth mark.			
Wildcat (Tenn.-Va.), 1893	36 35 37.129	254 43 47.3	74 55 24.2	Big Knob	4.478159	30,071.8	98,661
	82 49 49.907	331 42 57.4	151 47 21.8	Chimney	4.368767	23,375.8	76,692
		53 05 55.9	232 53 28.0	Short	4.593282	39,199.6	128,607
		146 01 03.0	325 56 47.5	Buzzard	4.278528	18,990.1	62,303
		139 09 07.3		Azimuth mark.			
Cloud 2 (Tenn.-Va.), 1934	36 35 43.220	224 45 40.4	44 48 43.5	Big Knob	4.034451	10,825.6	35,517
	82 35 28.709	26 33 12.5	206 29 04.6	Chimney	4.365922	23,223.2	76,191
		17 12 19.6		Azimuth mark.			
Pinnacle (U. S. G. S.) (Va.-Ky.), 1934	36 36 20.251	250 57 52.7	71 05 33.1	White Rock	4.306784	20,266.7	66,492
	83 39 56.988	299 38 30.1	119 55 50.5	Short	4.700446	50,170.2	164,600
		6 19 31.0	186 17 25.5	Clinch	4.681218	47,997.4	157,471
Pinnacle (Va.-Ky.), 1893 [1]	36 36 20.22	250 57 45	71 05 26	White Rock	4.306804	20,267.7	66,495
	83 39 57.01	6 19 29	186 17 23	Clinch	4.681209	47,996.4	157,468
Kentucky Corner (Ky.-Tenn.), 1893	36 34 56.954	221 32 16.6	41 33 11.1	Pinnacle (U. S. G. S.)	3.535374	3,430.6	11,255
	83 41 28.520	246 48 21.6	66 56 56.4	White Rock	4.367657	23,316.2	76,497
		295 51 07.0	116 09 21.5	Short	4.707475	50,988.8	167,286
Minter (Tenn.-Va.), 1893	36 35 49.867	85 28 03.1	265 19 57.0	Kentucky Corner	4.308287	20,337.0	66,722
	83 27 53.036	93 02 22.5	272 55 10.8	Pinnacle (U. S. G. S.)	4.255702	18,017.8	59,113
		188 54 37.4	8 55 05.7	White Rock	3.881798	7,617.2	24,991
Minter (U. S. G. S.) (Va.), 1934 [1]	36 35 55.30	311 01 51	131 01 55	Minter	2.407047	255.298	837.59
	83 28 00.78						
Forge (U. S. G. S.), 1934	36 33 45.389	104 46 14.0	284 42 53.2	Kentucky Corner	3.937938	8,668.4	28,440
	83 35 51.363	128 02 11.7	307 59 45.3	Pinnacle (U. S. G. S.)	3.889337	7,750.6	25,428
		228 56 57.2	49 02 10.9	White Rock	4.238454	17,316.3	56,812
		257 53 11.1		Azimuth mark.			
Virginia corner 2 (Ky.-Tenn.-Va.), 1934	36 36 02.489	237 29 16.2	57 29 36.8	Pinnacle (U. S. G. S.)	3.008056	1,018.7	3,342
	83 40 31.553	301 13 16.5	121 16 03.5	Forge (U. S. G. S.)	3.911021	8,147.4	26,730
Virginia corner (Ky.), 1893 [1]	36 36 03.34	8 28 02	188 28 02	Virginia corner 2	1.422754	26.470	86.84
	83 40 31.40						
Owen, 1884	35 36 30.535	207 04 23.9	27 11 01.9	Melton	4.574349	37,527.4	123,121
	84 29 40.074	273 37 22.6	93 53 44.7	Cockspur	4.629076	42,567.3	139,656
		335 01 42.5	155 03 23.0	Roy	4.013822	10,323.4	33,869
Copper Ridge, 1887	35 40 55.89	313 25 49	133 32 57	Roy	4.406236	25,482.1	83,603
	84 39 01.56	110 24 19	290 12 49	Hinch Mountain	4.500536	31,661.8	103,877
Poe, 1887	35 15 04.95	155 24 17	335 21 33	Harvey	4.236037	17,220.2	56,497
	85 13 05.27	200 12 43	20 21 04	Hinch Mountain	4.797077	62,672.5	205,618
Benton, tree, 1887	35 07 24.20	216 56 30	36 58 40	Bean	3.979037	9,528.8	31,262
	84 37 16.39	350 33 50	170 35 27	Cohutta	4.419572	26,276.8	86,210
Grassy 2 (Ga.), 1887	34 51 42.54	195 31 32	15 35 23	Bean	4.580074	38,025.4	124,755
	84 40 12.34	250 32 37	70 35 55	Cohutta	3.968823	9,307.3	30,536
Brushy, 1885	36 04 36.676	332 52 27.8	152 56 10.6	Melton	4.319265	20,857.6	68,430
	84 24 38.179	57 33 17.3	237 13 17.3	Hinch Mountain	4.784324	60,858.9	199,668
		68 23 45.9	248 10 24.8	Luper	4.564910	36,720.6	120,474
Hangover, tree (U. S. G. S.), 1884	35 23 09.01	109 39 12	289 22 36	Roy	4.662075	45,927.7	150,681
	83 58 10.44	152 28 35	332 16 51	Melton	4.816731	65,573.9	215,137
Little Bald, top, 1885	35 31 14.08	90 35 48	270 15 34	Roy	4.721353	52,644.5	172,718
	83 51 57.77	99 53 48	279 31 52	Owen	4.761929	57,800.2	189,633
Big Fodderstack, 1885	35 24 44.02	108 12 27	287 57 52	Roy	4.601943	39,989.2	131,198
	84 01 39.41	180 30 28	0 30 32	Cockspur	4.278380	18,983.7	62,282
Little Fodderstack, summit, 1885 [1]	35 27 01.87	112 08 44	291 52 04	Owen	4.669970	46,770.3	153,446
	84 00 58.92	176 41 35	356 41 15	Cockspur	4.169062	14,759.2	48,422
Chilhowee 2, tree (U. S. G. S.), 1884	35 35 46.415	48 28 59.7	228 28 22.3	Cockspur	3.334263	2,159.1	7,084
	84 00 28.521	91 54 29.1	271 37 29.5	Owen	4.644532	44,109.5	144,716
		142 21 28.3	322 11 02.9	Melton	4.642932	43,947.3	144,184
House Mountain, 1884	36 06 42.293	103 03 36.7	282 47 11.7	Cross	4.631649	42,820.2	140,486
	83 46 00.744	159 53 05.4	339 47 17.4	McLean	4.629018	42,561.6	139,638
		208 11 06.2	28 12 36.0	Clinch	3.905831	8,050.7	26,413

[1] No check on this position.

Tennessee Loop—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Supplementary points—Continued	° ′ ″	° ′ ″	° ′ ″				
Knoxville, college cupola, 1884	35 57 26.113	134 19 20.9	314 08 34.9	Cross	4.583228	38,302.6	125,664
	83 55 33.543	216 45 22.2	36 52 29.0	Clinch	4.481087	30,275.2	99,328
		219 52 01.3	39 57 38.2	House Mountain	4.349266	22,349.4	73,325
Knoxville latitude and longitude station, 1907	35 57 24.582	179 06 20	359 06 20	Knoxville, college cupola	1.67387	47.2	155
	83 55 33.513						
Knoxville east base, 1907	35 57 24.206	179 06 20	359 06 20	Knoxville, college cupola	1.76931	58.8	193
	83 55 33.506	179 06 20	359 06 20	Knoxville latitude and longitude station.	1.06441	11.6	38
Knoxville west base, 1907	35 57 25.004	236 05 38	56 05 39	Knoxville, college cupola	1.78719	61.3	201
	83 55 35.572	295 25 42	115 25 43	Knoxville east base	1.75827	57.3	188
Terrace, 1907	35 57 24.417	127 23 38	307 23 38	Knoxville west base	1.47446	29.8	98
	83 55 34.626	207 26 55	27 26 56	Knoxville, college cupola	1.77022	58.9	193
		283 02 29	103 02 30	Knoxville east base	1.45966	28.8	94
Knoxville, Y. M. C. A. Building, spire, 1907	35 57 23.376	132 19 57	312 19 56	Knoxville west base	1.87239	74.5	244
	83 55 33.373	135 36 31	315 36 30	Terrace	1.65232	44.9	147
		172 33 40	352 33 40	Knoxville east base	1.41169	25.8	85
Knoxville, Reese Hall, spire, 1907	35 57 25.095	275 39 29	95 39 30	Knoxville west base	1.45339	28.4	93
	83 55 36.700	291 55 15	111 55 16	Terrace	1.74823	56.0	184
Knoxville, Jefferson Hall, flagpole, 1907	35 57 25.023	32 50 24	212 50 24	Knoxville east base	1.47642	30.0	98
	83 55 32.858	67 09 49	247 09 48	Terrace	1.68202	48.1	158
Tower, 1922	35 57 26.555	350 42 53	170 42 53	Knoxville, Y. M. C. A. Building, spire.	1.99691	99.3	326
	83 55 34.012						
		56 15 01	236 15 00	Reese Hall	1.90854	81.0	266
Lookout Point, 1874 [1]	35 00 38	280 34 38	101 01 06	Cohutta	4.854975	71,610.2	234,941
	85 20 39	332 19 25	152 27 50	Johns	4.686043	48,533.7	159,231
Mount Mitchell, summit (N. C.), 1876	35 45 53.257	196 28 01.8	16 32 14.4	Roan High Bluff	4.579640	37,987.4	124,630
	82 15 54.918	252 19 48.5	72 58 48.7	Poore	5.020478	104,828.2	343,924
		291 50 40.8	112 11 50.1	Benn	4.771331	59,065.1	193,783
Big Yellow Mountain (N. C.), 1876 [1]	36 05 57						
	82 04 40						
Grassy Ridge (N. C.), 1876 [1]	36 05 45						
	82 04 37						

Huntsville, Ala., to Memphis, Tenn.

Principal points							
Strickland (Miss.), 1914	34 51 38.078	89 56 51.7		Azimuth mark.			
	88 25 44.857						
Crum (Miss.), 1914	34 51 34.767	269 42 10.13	89 52 35.77	Strickland	4.4441156	27,804.53	91,222.0
	88 43 59.453	251 55 19.1		Azimuth mark.			
Ripley (Miss.), 1914	34 47 16.365	247 39 44.65	67 47 01.43	Crum	4.3223237	21,005.05	68,914.1
	88 56 44.320						
Cypress, 1914	35 03 06.464	306 53 34.40	127 04 10.52	Strickland	4.5473284	35,263.74	115,694.5
	88 44 15.133	358 55 46.12	178 55 55.10	Crum	4.3287638	21,318.85	69,943.6
		33 03 51.66	212 56 42.80	Ripley	4.5429704	34,911.65	114,539.3
		49 21 35		Azimuth mark.			
Camphill (Miss.), 1914	34 56 52.713	244 29 53.02	64 39 01.01	Cypress	4.4285538	26,825.87	88,011.2
	89 00 10.538	343 33 07.71	163 35 05.60	Ripley	4.2675602	18,516.56	60,749.7
Malone (Miss.), 1914	34 58 47.587	255 36 23.61	75 48 12.19	Cypress	4.5093228	32,308.95	106,000.3
	89 04 50.015	296 30 33.47	116 33 13.63	Camphill	3.8989863	7,924.76	25,999.8
		329 53 18.84	149 57 56.62	Ripley	4.3911728	24,613.47	80,752.7
Porter, 1914	35 05 03.591	279 21 32.14	99 29 45.07	Cypress	4.3431268	22,035.70	72,295.5
	88 58 33.078	9 17 05.70	189 16 09.78	Camphill	4.1854681	15,327.39	50,286.6
		39 32 22.06	219 28 45.68	Malone	4.1766232	15,018.38	49,272.8
		48 00 10		Azimuth mark.			
Hickory, 1914	35 08 24.173	292 26 26.73	112 32 05.88	Porter	4.2084567	16,160.57	53,020.1
	89 08 22.712	343 06 31.03	163 08 33.21	Malone	4.2687575	18,567.68	60,917.5
		27 05 49		Azimuth mark.			
Gordon, 1914	35 02 18.290	213 17 49.50	33 20 37.71	Hickory	4.1301208	13,493.38	44,269.5
	89 13 15.328	257 05 35.89	77 14 02.71	Porter	4.3603799	22,928.72	75,225.3
		296 50 03.26	116 54 53.16	Malone	4.1572696	14,363.81	47,125.3
Ebenezer, 1914	35 08 31.624	270 37 26.28	90 44 43.13	Hickory	4.2836304	19,214.56	63,039.8
	89 21 01.683	314 12 19.79	134 16 47.88	Gordon	4.2172111	16,489.64	54,099.8

[1] No check on this position.

Huntsville, Ala., to Memphis, Tenn.—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Jackson, 1914	35 02 55.674	167 56 05.90	347 55 15.64	Ebenezer	4.0247695	10,586.92	34,733.9
	89 19 34.267	239 11 17.17	59 17 43.26	Hickory	4.2965420	19,794.38	64,942.1
		276 48 35.10	96 52 12.68	Gordon	3.9855625	9,673.03	31,735.6
		207 28 01		Azimuth mark.			
Gillespie, 1914	35 07 13.720	258 02 25.46	78 06 43.87	Ebenezer	4.0651979	11,619.78	38,122.6
	89 28 30.737	300 17 26.64	120 22 35.00	Jackson	4.1971583	15,745.57	51,658.6
		166 25 12.4		Hazlett's house, right chimney.			
Church, 1914	35 00 43.177	181 36 42.26	1 36 49.94	Gillespie	4.0806219	12,039.87	39,500.8
	89 28 44.111	219 01 27.00	39 05 52.75	Ebenezer	4.2693150	18,591.52	60,995.7
		253 37 42.62	73 42 58.24	Jackson	4.1620786	14,523.75	47,650.0
		208 32 46		Azimuth mark.			
Crenshaw (Miss.), 1914	34 59 36.182	217 05 07.90	37 09 09.77	Gillespie	4.2475408	17,682.38	58,012.9
	89 35 31.831	258 40 29.31	78 44 23.19	Church	4.0229601	10,542.90	34,589.5
Morris, 1914	35 08 48.728	282 09 24.28	102 14 32.11	Gillespie	4.1416090	13,855.08	45,456.2
	89 37 25.641	318 30 48.92	138 35 48.66	Church	4.3001897	19,961.34	65,489.8
		350 22 44.91	170 23 50.31	Crenshaw	4.2372892	17,269.88	56,659.6
		180 14 26.6		Morris' house, west chimney.			
Martin, 1914	35 04 40.863	244 15 01.76	64 21 02.26	Morris	4.2458595	17,614.06	57,788.8
	89 47 52.395	296 30 51.50	116 37 56.66	Crenshaw	4.3219820	20,988.53	68,859.9
		134 55 01.6		Germantown, church spire.			
Capleville southeast base (Miss.), 1914	34 58 12.549	177 17 49.98	357 17 37.18	Martin	4.0784449	11,979.67	39,303.3
	89 47 30.097	217 57 08.24	38 02 55.45	Morris	4.3958302	24,878.84	81,623.3
		261 53 27.08	82 00 18.88	Crenshaw	4.2648061	18,399.50	60,365.7
Capleville northwest base, 1914	35 00 26.439	205 57 21.15	25 58 47.66	Martin	3.9405590	8,720.85	28,611.7
	89 50 23.058	313 13 56.29	133 15 35.47	Capleville southeast base	3.7797475	6,022.093	19,757.48
Holmes (Miss.), 1914	34 59 26.664	236 06 49.74	56 12 16.80	Martin	4.2402170	17,386.69	57,042.8
	89 57 22.117	260 07 58.02	80 11 58.38	Capleville northwest base	4.0328306	10,785.26	35,384.6
		278 36 03.66	98 41 43.07	Capleville southeast base	4.1815273	15,188.93	49,832.3
		109 26 16.14	289 20 23.71	Weaver	4.2177125	16,508.68	54,162.2
		153 03 46.98	333 00 29.65	Exchange	4.2831186	19,191.93	62,965.5
White, 1914	35 06 05.896	287 57 11.37	108 00 14.63	Martin	3.9288833	8,489.52	27,852.7
	89 53 11.179	329 19 03.79	149 22 19.61	Capleville southeast base	4.2293318	16,956.33	55,630.9
		337 49 35.74	157 51 12.30	Capleville northwest base	4.0528904	11,295.11	37,057.4
		27 21 22.54	207 18 58.44	Holmes	4.1414317	13,849.42	45,437.6
		72 46 51.27	252 38 34.16	Weaver	4.3609142	22,956.95	75,317.9
		107 44 45.81	287 39 03.83	Exchange	4.1986018	15,797.99	51,830.6
Hopefield (Ark.), 1914	35 09 09.236	295 55 50.02	115 56 29.64	Exchange	3.2871269	1,936.99	6,354.9
	90 04 14.389	22 18 51.79	202 16 55.68	Weaver	4.1296976	13,480.24	44,226.4
Hopefield south base (Ark.), 1879	35 07 51.387	203 29 12.93	23 29 36.64	Hopefield	3.4176107	2,615.84	8,582.1
	90 04 55.577	240 51 42.97	60 52 46.29	Exchange	3.5035244	3,188.04	10,459.4
		22 01 26.17	201 59 53.77	Weaver	4.0360333	10,865.09	35,646.5
P. B. M. Vance Senior (M. R. C. & U. S. E.) (Ark.), 1914.	35 08 30.195	194 18 21.57	14 18 28.54	Hopefield	3.0939869	1,241.61	4,073.5
	90 04 26.510	260 08 18.06	80 09 04.65	Exchange	3.3179672	2,079.54	6,822.6
B. M. Hopefield (M. R. C. & U. S. E.) (Ark.), 1914	35 08 55.217	34 44 17.61	214 44 05.45	P. B. M. Vance Senior (M. R. C. & U. S. E.)	2.9723487	938.32	3,078.5
	90 04 05.389	152 11 50.60	332 11 45.41	Hopefield	2.6887772	488.40	1,602.4
		285 19 42.16	105 20 16.59	Exchange	3.1959014	1,570.01	5,150.9
P. B. M. Memphis (U. S. E.), 1914	35 08 43.458	77 02 02.61	257 01 22.26	P. B. M Vance Senior (M. R. C. & U. S. E.)	3.2602695	1,820.83	5,973.3
	90 03 16.416	106 17 54.87	286 17 26.68	B. M. Hopefield (M. R. C. & U. S. E.)	3.1111031	1,291.53	4,237.3
		118 26 00.33	298 25 26.95	Hopefield	3.2223667	1,668.66	5,474.6
P. B. M. 2/3 (M. R. C. & U. S. E.) (Ark.), 1914	35 08 12.173	208 48 18.97	28 48 40.96	Hopefield	3.3025163	2,006.86	6,584.2
	90 04 52.592	251 23 58.96	71 25 00.56	Exchange	3.4561145	2,858.34	9,377.7
		6 43 39.29	186 43 37.57	Hopefield south base	2.8095718	645.02	2,116.2
Supplementary points							
Memphis, south chimney, 1914	35 07 34.451	280 17 57.1	100 23 36.6	White	4.181692	15,194.7	49,851
	90 03 01.452	36 06 56.4	216 04 18.4	Weaver	4.072619	11,820.0	38,779
		147 42 28.9	327 41 46.9	Hopefield	3.538525	3,455.6	11,337
H. B. Duryea tract, steel water tank, 1914 [1]	35 08 46.34	295 24 27	115 29 54	Porter	4.203354	15,971.8	52,401
	89 08 02.59	36 43 21	216 43 10	Hickory	2.930462	852.0	2,795
La Grange, church spire, 1914 [2]	35 02 43.89	289 43 32	109 44 22	Gordon	3.368520	2,336.3	7,665
	89 14 42.09	92 49 54	272 47 06	Jackson	3.870037	7,413.7	24,323
Collierville, water tank, 1914	35 02 36.007	55 11 41.9	235 07 18.0	Capleville southeast base	4.152615	14,210.7	46,623
	89 39 50.125	107 30 53.5	287 26 16.5	Martin	4.107615	12,811.9	42,034
		310 13 05.8	130 15 33.9	Crenshaw	3.933411	8,578.5	28,145
Mississippi-Tennessee State Line, 1914	34 59 39.814	313 14 30.85	133 15 35.47	Capleville southeast base	3.5938061	3,924.697	12,876.28
	89 49 22.801	133 14 30.85	313 13 56.29	Capleville northwest base	3.3216806	2,097.397	6,881.21
Water tank no. 1, 1914 [2]	35 07 10.98	289 51 24	109 56 14	Martin	4.133312	13,592.9	44,596
	89 56 17.04	293 03 57	113 05 44	White	3.708951	15,116.2	16,785

[1] No check on this position.

[2] Checked by vertical angles only

Huntsville, Ala., to Memphis, Tenn.—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Supplementary points—Continued	° ′ ″	° ′ ″	° ′ ″				
Memphis, low chimney, 1914	35 07 34.952 90 02 59.540	280 23 23.0 36 15 39.7 146 53 44.7	100 29 01.4 216 13 00.6 326 53 01.6	White Weaver Hopefield	4.180408 4.074125 3.540178	15,149.8 11,861.1 3,468.8	49,704 38,914 11,381
Memphis, next chimney, 1914	35 07 34.998 90 03 01.429	280 21 43.8 36 04 11.4 147 32 59.2	100 27 23.3 216 01 33.4 327 32 17.2	White Weaver Hopefield	4.181761 4.073132 3.536771	15,197.1 11,834.0 3,441.7	49,859 38,825 11,292
Mississippi River (*first order*)							
Principal points							
Barnes (Mo.), 1929	36 40 24.021 89 24 16.178	117 04 51.5		Azimuth mark, R. M. no. 2			
Hickman (Ky.), 1929	36 34 16.809 89 11 05.279	120 00 22.64 105 43 18.1	299 52 30.84	Barnes Azimuth mark, R. M. no. 1.	4.3556197	22,678.78	74,405.3
Madrid (Mo.), 1929	36 34 53.963 89 33 08.350	232 22 47.55 271 53 04.11 85 38 30.0	52 28 05.05 92 06 12.52	Barnes Hickman Azimuth mark, R. M. no. 2.	4.2222875 4.5173911	16,683.51 32,914.79	54,735.8 107,987.9
Fishgap, 1929	36 29 05.196 89 17 12.659	114 24 39.36 153 19 21.99 223 32 49.88 113 19 01	294 15 10.45 333 15 09.60 43 36 28.55	Madrid Barnes Hickman Azimuth mark.	4.4165036 4.3696644 4.1225005	26,091.77 23,424.18 13,258.69	85,602.7 76,850.8 43,499.6
Pleasant (Mo.), 1929	36 27 15.909 89 34 23.050	187 29 35.23 262 26 02.77 81 11 54.6	7 30 19.68 82 36 15.23	Madrid Fishgap Azimuth mark, R. M. no. 2.	4.1535352 4.4128569	14,240.83 25,873.60	46,721.8 84,887.0
Chigger, 1929	36 23 12.178 89 20 05.513	109 26 43.20 138 03 03.81 201 34 22.79	289 18 14.07 317 55 18.33 21 36 05.45	Pleasant Madrid Fishgap	4.3549868 4.4641075 4.0682600	22,645.76 29,114.38 11,702.00	74,297.0 95,519.4 38,392.3
Stewart (Mo.), 1929	36 19 38.924 89 38 24.107	203 04 42.39 256 24 54.44 348 20 44.6	23 07 05.41 76 35 45.71	Pleasant Chigger Azimuth mark, R. M. no. 1.	4.1850711 4.4497643	15,313.38 28,168.54	50,240.6 92,416.8
Gratio, 1929	36 16 09.160 89 24 56.712	107 51 34.96 145 33 21.91 209 05 44.62 328 14 49.8	287 43 36.99 325 27 46.14 29 08 37.13	Stewart Pleasant Chigger Azimuth mark, R. M. no. 1.	4.3254685 4.3967946 4.1739171	21,157.70 24,934.15 14,925.10	69,414.9 81,804.8 48,966.8
Caruthers (Mo.), 1929	36 11 46.597 89 39 50.218	188 23 31.71 249 59 27.90 16 37 12.2	8 24 22.64 70 08 16.02	Stewart Gratio Azimuth mark, R. M. no. 2.	4.1677938 4.3753918	14,716.14 23,735.14	48,281.2 77,871.0
Obion, 1929	36 06 45.761 89 29 32.999	121 03 20.29 150 56 29.26 201 39 23.82 328 44 17.5	300 57 16.15 330 51 15.43 21 42 06.96	Caruthers Stewart Gratio Azimuth mark, R. M. no. 2.	4.2552868 4.4357465 4.2715392	18,000.59 27,273.86 18,686.98	59,056.9 89,481.0 61,308.9
Cotton (Mo.), 1929	36 03 35.044 89 41 34.656	189 46 17.52 251 54 25.71 159 33 44.7	9 47 19.10 72 01 30.77	Caruthers Obion Azimuth mark, R. M. no. 2.	4.1867869 4.2784740	15,374.00 18,987.77	50,439.5 62,295.7
Head, 1929	36 03 33.706 89 30 00.146	90 11 33.72 135 53 01.61 186 32 35.72 285 39 05.2	270 04 44.91 315 47 13.71 6 32 51.71	Cotton Caruthers Obion Dyersburg, black water tank, finial.	4.2400923 4.3258828 3.7751211	17,381.70 21,177.90 5,958.28	57,026.5 69,481.2 19,548.1
School (Ark.), 1929	35 56 39.824 89 43 57.990	195 39 27.64 238 38 10.05 283 04 45.9	15 40 51.89 58 46 22.54	Cotton Head Azimuth mark, R. M. no. 1.	4.1235752 4.3901802	13,291.54 24,557.28	43,607.3 80,568.3
Edith, 1929	35 51 22.314 89 33 27.148	121 47 28.58 151 37 41.88 192 56 32.18 32 42 46.9	301 41 18.67 331 32 55.62 12 58 33.73	School Cotton Head Azimuth mark, R. M. no. 2.	4.2695594 4.4095272 4.3642006	18,601.99 25,675.99 23,131.33	61,030.0 84,238.6 75,890.0
Anderson (Ark.), 1929	35 52 46.082 89 47 16.365	214 36 24.51 277 00 24.95	34 38 20.86 97 08 30.80	School Edith	3.9422280 4.3214494	8,754.43 20,962.81	28,721.8 68,775.5
Lusk, 1929	35 46 18.472 89 38 42.490	132 50 45.79 157 34 01.08 220 11 06.15 17 37 59.4	312 45 45.01 337 30 56.26 40 14 10.67	Anderson School Edith Azimuth mark, R. M. no. 1.	4.2450436 4.3164312 4.0885746	17,581.00 20,721.98 12,262.38	57,680.3 67,985.4 40,230.8
Cooper (Ark.), 1929	35 46 06.673 89 50 59.642	204 27 40.52 268 48 53.92 248 26 22.0	24 29 51.20 88 56 04.81	Anderson Lusk Azimuth mark, R. M. no. 1.	4.1311603 4.2676347	13,525.72 18,519.73	44,375.6 60,760.1
Cherry, 1929	35 41 29.871 89 43 03.511	125 31 32.20 163 04 29.27 216 23 12.46	305 26 54.15 343 02 01.41 36 25 44.89	Cooper Anderson Lusk	4.1671823 4.3381938 4.0434341	14,695.43 21,786.82 11,051.83	48,213.3 71,478.9 36,259.2
Driver (Ark.), 1929	35 41 02.339 89 58 52.908	231 42 12.02 267 53 14.50 170 39 31.3	51 46 48.36 88 02 28.35	Cooper Cherry Azimuth mark, R. M. no. 2.	4.1803433 4.3781636	15,147.58 23,887.11	49,696.7 78,369.6

Mississippi River (first order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Fort, 1929	35 38 30.787	108 27 25.04	288 21 59.80	Driver	4.1699126	14,788.11	48,517.3
	89 49 35.060	171 24 04.62	351 23 15.25	Cooper	4.1526008	14,210.22	46,621.4
		240 41 58.83	60 45 47.13	Cherry	4.0526574	11,289.05	37,037.5
		22 37 09.2		Azimuth mark, R. M. no. 1.			
Wilson (Ark.), 1929	35 33 54.467	205 53 58.61	25 56 26.96	Driver	4.1661812	14,661.59	48,102.2
	90 03 07.590	247 19 41.38	67 27 34.42	Fort	4.3454556	22,154.17	72,684.1
		35 42 05.4		Azimuth mark, R. M. no. 1.			
Chickasaw, 1929	35 30 31.587	115 23 42.07	295 18 37.61	Wilson	4.1644171	14,602.16	47,907.3
	89 54 23.773	160 48 26.09	340 45 49.43	Driver	4.3135713	20,585.97	67,539.1
		206 11 06.63	26 13 54.60	Fort	4.2164490	16,460.73	54,004.9
		297 04 48.3		Azimuth mark, R. M. no. 2.			
Shawnee (Ark.), 1929	35 29 39.760	216 13 30.56	36 15 43.29	Wilson	3.9882447	9,732.95	31,932.2
	90 06 55.991	265 07 24.42	85 14 41.26	Chickasaw	4.2793266	19,025.08	62,418.1
		190 08 40.9		Azimuth mark, R. M. no. 1.			
Weakley, 1929	35 25 37.602	118 34 38.46	298 29 22.66	Shawnee	4.1937779	15,623.49	51,258.1
	89 57 51.649	152 32 58.15	332 29 54.70	Wilson	4.2370265	17,259.43	56,625.3
		210 01 56.21	30 03 56.83	Chickasaw	4.0198193	10,466.93	34,340.3
		30 11 06.1		Azimuth mark, R. M. no. 2.			
Sanders (Ark.), 1929	35 21 51.126	203 48 13.66	23 50 40.21	Shawnee	4.1983202	15,787.75	51,797.0
	90 11 08.799	250 48 05.35	70 55 47.08	Weakley	4.3282383	21,293.07	69,859.0
		182 54 56		Azimuth mark, R. M. no. 1.			
Locke, 1929	35 20 53.510	97 37 32.48	277 32 26.80	Sanders	4.1288858	13,455.07	44,143.8
	90 02 20.545	156 49 43.32	336 47 03.67	Shawnee	4.2465989	17,644.08	57,887.3
		217 45 32.15	37 48 07.87	Weakley	4.0444382	11,077.41	36,343.1
Marion (Ark.), 1929	35 13 15.470	185 34 43.08	5 35 18.60	Sanders	4.2032233	15,967.00	52,385.1
	90 12 10.282	226 30 24.08	46 36 04.74	Locke	4.3123193	20,526.71	67,344.7
		301 25 30.30	121 30 44.15	Exchange	4.2084059	16,158.68	53,013.9
		354 12 28.35	174 12 48.96	Bollinger	3.9530347	8,975.00	29,445.5
		273 17 58.0		Azimuth mark, R. M. no. 2.			
Benjes, 1929	35 14 41.641	359 24 35.37	179 24 37.97	Exchange	4.0449903	11,091.50	36,389.4
	90 03 10.086	47 48 24.20	227 43 33.49	Bollinger	4.2364179	17,235.26	56,546.0
		79 02 30.05	258 57 18.41	Marion	4.1434934	13,915.33	45,653.9
		137 37 06.81	317 32 30.15	Sanders	4.2535596	17,929.14	58,822.5
		186 13 46.35	6 14 14.98	Locke	4.0617626	11,528.23	37,822.2
Exchange, 1914	35 08 41.745						
	90 03 05.573						
Bollinger (Ark.), 1929	35 08 25.719	267 45 50.35	87 50 43.30	Exchange	4.1103432	12,892.68	42,298.7
	90 11 34.503	17 56 11.8		Azimuth mark, R. M. no. 1.			
Weaver, 1914	35 02 24.511	151 33 39.63	331 31 22.71	Bollinger	4.1024691	12,661.03	41,538.7
	90 07 36.325	210 30 59.80	30 33 35.46	Exchange	4.1302444	13,497.22	44,282.1
Martine (Ark.), 1929	35 02 34.447	201 16 38.91	21 18 14.65	Bollinger	4.0651266	11,617.87	38,116.3
	90 14 21.043	236 27 32.40	56 34 00.74	Exchange	4.3120595	20,514.43	67,304.4
		271 40 39.21	91 44 31.58	Weaver	4.0112476	10,262.37	33,669.1
Lake View (Miss.), 1929	34 59 23.945	119 52 59.84	299 49 08.32	Martine	4.0716673	11,794.17	38,694.7
	90 07 37.572	180 19 30.95	0 19 31.66	Weaver	3.7454192	5,564.41	18,255.9
Horse (Ark.), 1929	34 56 22.941	196 34 40.07	16 35 57.19	Martine	4.0772047	11,945.51	39,191.2
	90 16 35.516	230 47 02.27	50 52 11.46	Weaver	4.2464809	17,639.28	57,871.5
		247 43 36.19	67 48 44.48	Lake View	4.1685892	14,743.11	48,369.7
Derickson (Miss.), 1929	34 53 13.798	118 01 07.51	297 57 00.20	Horse	4.0941721	12,421.44	40,752.7
	90 09 23.409	189 05 10.59	9 06 11.96	Weaver	4.2351932	17,186.73	56,386.8
		193 14 30.42	13 15 31.04	Lake View	4.0688647	11,718.30	38,445.8
Supplementary points							
P. B. M. 17/4 (M. R. C.) (Mo.), 1906 [1]	36 35 23.19	40 33 04	220 32 45	Madrid	3.073879	1,185.4	3,889
	89 32 37.35						
P. B. M. 21/1 (M. R. C.), 1906	36 23 02.853	268 38 53.6	88 43 52.7	Chigger	4.099362	12,570.8	41,243
	89 28 29.753	337 21 35.2	157 23 41.4	Gratio	4.140322	13,814.1	45,322
		131 34 35.7	311 31 06.0	Pleasant	4.070426	11,760.5	38,584
B. M. Caruthersville (M. R. C.) (Mo.), 1906 [1]	36 11 42.22	124 16 59	304 16 54	Caruthers	2.378995	239.33	785.2
	89 39 42.30						
Hickman, standpipe (Ky.), 1929	36 34 16.768	198 44 35.4	18 47 00.0	Chalk	4.272064	18,709.6	61,383
	89 11 05.656	262 18 21.7	82 18 21.9	Hickman	0.975432	9.45	31.0
Portageville, water tank (Mo.), 1929 [1]	36 25 27.99	253 27 22	73 31 50	Pleasant	4.068475	11,707.8	38,411
	89 41 53.75	334 04 38	154 06 43	Stewart	4.077773	11,961.2	39,243
New Madrid, water tank (Mo.), 1929	36 35 21.840	15 33 23.5	195 31 43.8	Pleasant	4.191642	15,546.8	51,006
	89 31 35.612	69 33 57.6	249 33 02.3	Madrid	3.391003	2,460.4	8,072
		229 29 38.8	49 34 01.0	Barnes	4.156888	14,351.2	47,084

[1] No check on this position.

Mississippi River (first order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Supplementary points—Continued	° ′ ″	° ′ ″	° ′ ″				
Tiptonville, silver stack, 1929[1]	36 22 34.00	70 40 24	250 34 20	Stewart	4.211247	16,264.7	53,362
	89 28 08.76	133 00 33	312 56 51	Pleasant	4.105379	12,746.1	41,818
Ridgely, water tank, 1929[1]	36 15 43.14	263 15 51	83 18 33	Gratio	3.836441	6,861.8	22,512
	89 29 29.72	0 17 01	180 16 59	Obion	4.219145	16,563.2	54,341
Hayti, higher water tank (Mo.), 1929	36 13 58.980	296 50 29.5	116 53 40.0	Caruthers	3.955618	9,028.6	29,621
	89 45 12.658	299 32 44.3	119 41 59.0	Obion	4.431589	27,014.0	88,628
		344 09 34.4	164 11 43.0	Cotton	4.300775	19,988.3	65,578
Hayti, lower water tank (Mo.), 1929	36 14 13.940	300 27 32.1	120 30 34.6	Caruthers	3.951929	8,952.2	29,371
	89 44 59.086	300 45 21.7	120 54 28.4	Obion	4.430600	26,952.6	88,427
		345 26 04.5	165 28 05.1	Cotton	4.308444	20,344.4	66,747
Caruthersville, standpipe (Mo.), 1929[1]	36 11 39.80	11 51 08	191 49 54	Cotton	4.183721	15,265.8	50,085
	89 39 29.38	111 55 46	291 55 34	Caruthers	2.749231	561.3	1,842
Caruthersville, water tank (Mo.), 1929	36 10 53.092	14 42 39.9	194 41 16.4	Cotton	4.144832	13,958.3	45,795
	89 39 13.025	150 36 04.5	330 35 42.5	Caruthers	3.277143	1,893.0	6,211
		314 21 39.0	134 27 04.9	Head	4.286767	19,353.8	63,497
B. M. 42/4 (M. R. C.) (Ark.), 1906[1]	35 46 24.13	321 27 57	141 28 07	Cooper	2.837456	687.79	[2] 2,256.52
	89 51 16.70						
Cooper 2 (Ark.), 1933[1]	35 46 10.82	345 04 03	165 04 04	Cooper	2.121756	132.36	[2] 434.25
	89 51 01.00	136 07 28	316 07 19	B. M. 42/4 (M. R. C.)	2.755091	568.97	[2] 1,866.70
Osceola, water tank (Ark.), 1929	35 42 18.321	236 47 16.8	56 51 27.0	Cooper	4.109264	12,860.7	42,194
	89 58 07.997	345 27 19.3	165 29 29.9	Chickasaw	4.352186	22,500.2	73,819
		25 44 47.8	205 44 21.6	Driver	3.414932	2,599.8	8,530
Millington, water tank, 1929[1]	35 20 36.85	92 15 29	272 10 25	Locke	4.123151	13,278.6	43,565
	89 53 35.08	145 04 49	325 02 20	Weakley	4.053331	11,306.6	37,095
P. B. M. Cottonwood south base (M. R. C.) (Mo.), 1929.	36 03 37.303	306 41 16.1	126 41 18.3	Cotton	2.066378	116.51	382.2
	89 41 38.389						

B. M. Barfield (M. R. C.) (Ark.), 1929	35 54 07.272	206 56 08.8	26 57 04.8	School	3.722164	5,274.3	17,304
	89 45 33.316	285 32 08.6	105 39 14.2	Edith	4.276727	18,911.5	62,045
		324 27 15.5	144 31 16.1	Lusk	4.249204	17,750.2	58,235
		45 56 04.1	225 55 03.7	Anderson	3.555990	3,597.4	11,802
B. M. 45/4 (M. R. C.) (Ark.), 1929[1]	35 41 02.564	89 30 14.2	269 29 55.7	Driver	2.902160	798.29	2,619.1
	89 58 21.163						
Driver A (Ark.), 1930	35 41 02.673	89 30 27.3	269 29 59.7	Driver	3.075384	1,189.55	3,902.7
	89 58 05.603						
Driver B (Ark.), 1930	35 43 26.827	359 56 50.8	179 56 50.9	Driver A	3.647655	4,442.78	14,576.0
	89 58 05.765						
Driver E (Ark.), 1930	35 44 00.331	22 40 56.6	202 40 46.6	Driver B	3.048880	1,119.13	3,671.7
	89 57 48.594						
Driver F (Ark.), 1930	35 44 55.854	45 14 18.6	225 13 38.5	Driver E	3.385593	2,429.93	7,972.2
	89 56 39.937						
Driver G (Ark.), 1930	35 44 55.423	91 07 55.4	271 07 39.8	Driver F	2.828082	673.10	2,208.3
	89 56 13.152						
B. M. Luxora (M. R. C.) (Ark.), 1930	35 44 55.649	0 45 31.2	180 45 31.2	Driver G	0.842172	6.95	22.8
	89 56 13.148						
Branch (Ark.), 1929	35 27 40.838	304 41 46.5	124 43 52.6	Weakley	3.824070	6,669.1	21,880
	90 01 29.015	5 55 04.0	185 54 34.1	Locke	4.101068	12,620.2	41,406
		113 59 48.7	293 56 38.9	Shawnee	3.955261	9,021.1	29,597
		167 50 04.0	347 49 06.7	Wilson	4.071130	11,779.6	38,647
P. B. M. 55/3 (M. R. C.) (Ark.), 1929[1]	35 27 40.92	274 25 16	94 25 16	Branch	1.511776	32.49	106.6
	90 01 30.30						
B. M. Thresher (M. R. C.) (Ark.), 1929[1]	35 22 21.82	58 08 47	238 08 12	Sanders	3.253426	1,792.36	5,880.4
	90 10 08.49						
Bass (Miss.), 1929	34 57 07.636	72 01 22.1	251 59 46.4	Horse	3.649276	4,459.4	14,631
	90 13 48.369	175 17 57.5	355 17 38.8	Martine	4.004538	10,105.0	33,153
		223 59 09.4	44 02 42.8	Weaver	4.132843	13,578.2	44,548
		316 57 13.0	136 59 44.6	Derickson	3.993737	9,856.8	32,339
P. B. M. Norfolk (M. R. C.) (Miss.), 1929[1]	34 57 07.06	255 02 26	75 02 28	Bass	1.834071	68.25	223.9
	90 13 50.97						
Martine reference mark no. 2 (Ark.), 1929[1]	35 02 33.70	264 05 45	84 05 50	Martine	2.350384	224.07	[2] 735.15
	90 14 29.84						
Martine 2 (Ark.), 1933[1]	35 02 44.02	2 07 52	182 07 52	Martine	2.470322	295.34	[2] 968.9$_7$
	90 14 20.61	36 18 59	216 18 54	Martine reference mark no. 2	2.596465	394.88	[2] 1,295.5$_5$

[1] No check on this position

[2] Measured in feet.

Mississippi River (first order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Supplementary points—Continued	° ′ ″	° ′ ″	° ′ ″				
B. M. Kurr (U. S. E.) (Ark.), 1931 [1]	35 02 49.87	0 48 59	180 48 59	Martine 2	2.255634	180.15	[2] 591.05
	90 14 20.51	25 22 58	205 22 53	Martine reference mark no. 2	2.741593	551.56	[2] 1,809.58
Memphis, Columbus Tower, flagpole, 1929	35 08 48.035	41 49 09.2	221 41 24.8	Horse	4.488249	30,778.6	100,979
	90 03 06.806	86 58 39.4	266 53 47.2	Bollinger	4.109587	12,870.3	42,225
		179 33 50.6	359 33 48.7	Benjes	4.037323	10,897.4	35,753
West Memphis, water tank (Ark.), 1929	35 08 46.016	226 07 57.6	46 12 17.7	Benjes	4.199340	15,824.9	51,919
	90 10 41.339	270 37 01.8	90 41 24.2	Exchange	4.062122	11,537.8	37,854
		338 15 08.5	158 16 54.9	Weaver	4.102304	12,656.2	41,523
Memphis, Sterick Building, stack, 1929	35 08 40.953	42 21 25.0	222 13 36.2	Horse	4.487770	30,744.7	100,868
	90 02 59.260	87 58 47.3	267 53 50.7	Bollinger	4.115660	13,051.5	42,820
		98 40 57.0	278 40 53.3	Exchange	2.208588	161.7	531
Memphis, National Memphis Garage, occulting light, 1929.[1]	35 07 50.32	122 22 58	302 16 57	Marion	4.272651	18,734.9	61,466
	90 01 44.68	151 12 59	331 07 33	Sanders	4.470953	29,576.9	97,037
Organ (Ark.), 1916	35 09 12.041	298 50 00.5	118 50 39.0	Exchange	3.2868108	1,935.58	6,350.3
	90 04 12.557	28 12 18.5	208 12 17.5	Hopefield	1.9916337	98.09	321.8
Crossing (Ark.), 1916	35 08 53.981	256 42 14.9	76 43 08.5	Organ	3.3840544	2,421.33	7,944.0
	90 05 45.656						
Levee (Ark.), 1916	35 08 14.368	256 46 41.7	76 48 40.0	Crossing	3.7278494	5,343.79	17,532.1
	90 09 11.172						
Hulbert (Ark.), 1916	35 07 42.265	256 32 57.9	76 34 32.0	Levee	3.6291239	4,257.20	13,967.2
	90 11 54.722						
Horse reference mark no. 2 (Ark.), 1929 [1]	34 56 23.37	271 55 43	91 55 52	Horse	2.591450	390.346	1,280.66
	90 16 50.89						
B. M. Brock (M. R. C.) (Ark.), 1931 [1]	34 56 10.53	170 10 01	350 10 00	Horse reference mark no. 2	2.603605	401.4	1,317
	90 16 48.19	220 03 44	40 03 52	Horse	2.698648	499.629	1,639.20
Horse 2 (Ark.), 1934 [1]	34 56 23.16	233 37 12	53 37 12	Horse reference mark no. 2	1.040318	10.973	36.00
	90 16 51.24	270 57 07	90 57 16	Horse	2.600989	399.014	1,309.10
		348 44 55	168 44 56	B. M. Brock (M. R. C.)	2.598400	396.643	1,301.32
B. M. R-92-2-1 (M. R. C.) (Ark.), 1931 [1]	34 55 54.84	160 57 57	340 57 53	B. M. Brock (M. R. C.)	2.708904	511.568	1,678.37
	90 16 41.61	190 07 52	10 07 55	Horse	2.944333	879.697	2,886.14
Station no. 1 (M. R. C.) (Ark.), 1931 [1]	34 56 09.80	92 57 33	272 57 23	B. M. Brock (M. R. C.)	2.638143	434.7	1,426
	90 16 31.08	129 44 49	309 44 38	Horse reference mark no. 2	2.815374	653.7	2,145
		164 28 16	344 28 14	Horse	2.623404	420.149	1,378.44
Mississippi-Tennessee boundary monument, 1929 [1]	34 59 40.77	355 20 03	175 20 04	Lake View	2.716246	520.29	1,707.0
	90 07 39.24						

Mississippi River (second order) Mississippi River Commission

Principal points							
Bayou du Chien (M. R. C.) (Ky.), 1880	36 34 41.899						
	89 10 56.640						
Hickman (M. R. C.) (Ky.), 1880	36 34 24.058	247 20 10.1	67 20 41.7	Bayou du Chien (M. R. C.)	3.154589	1,427.5	4,683
	89 11 49.625						
Wasp (M. R. C.) (Mo.), 1880	36 34 52.515	278 43 09.4	98 44 00.5	Bayou du Chien (M. R. C.)	3.333794	2,156.7	7,076
	89 12 22.386	317 07 09.1	137 07 28.6	Hickman (M. R. C.)	3.078098	1,197.0	3,927
Bushart (M. R. C.) (Ky.), 1880	36 34 00.801	221 58 28.1	41 59 02.5	Wasp (M. R. C.)	3.331287	2,144.3	7,035
	89 13 20.071	252 18 42.4	72 19 36.3	Hickman (M. R. C.)	3.372983	2,360.4	7,744
Ballard (M. R. C.) (Mo.), 1880	36 34 41.238	283 05 16.5	103 06 11.1	Hickman (M. R. C.)	3.368690	2,337.2	7,668
	89 13 21.184	358 43 42.4	178 43 43.1	Bushart (M. R. C.)	3.095773	1,246.7	4,090
Keiser (M. R. C.) (Mo.), 1880	36 33 55.209	234 47 23.0	54 48 11.2	Ballard (M. R. C.)	3.391133	2,461.1	8,074
	89 14 42.064	265 09 38.3	85 10 27.2	Bushart (M. R. C.)	3.310925	2,046.1	6,713
Porter (M. R. C.) (Mo.), 1880	36 34 36.953	301 04 30.1	121 05 14.5	Bushart (M. R. C.)	3.334159	2,158.5	7,082
	89 14 34.422	8 24 04.7	188 23 00.2	Keiser (M. R. C.)	3.114169	1,300.7	4,267
Warren (M. R. C.) (Mo.), 1880	36 34 18.843	257 26 39.8	77 27 39.8	Porter (M. R. C.)	3.409852	2,569.5	8,430
	89 16 15.300	287 26 13.5	107 27 09.0	Keiser (M. R. C.)	3.385620	2,430.1	7,973
Brown (M. R. C.) (Mo.), 1880	36 35 50.823	321 34 52.4	141 36 00.1	Keiser (M. R. C.)	3.657812	4,547.9	14,921
	89 16 35.717	349 50 55.3	169 51 07.5	Warren (M. R. C.)	3.459434	2,880.3	9,450
French's Point (M. R. C.) (Mo.), 1880	36 35 27.455	235 32 01.0	55 32 26.1	Brown (M. R. C.)	3.104790	1,272.9	4,176
	89 17 17.938	323 37 48.2	143 38 25.5	Warren (M. R. C.)	3.419357	2,626.4	8,617
Island No. 8 (M. R. C.) (Ky.), 1880	36 36 19.008	287 20 09.2	107 21 15.9	Brown (M. R. C.)	3.464507	2,914.1	9,561
	89 18 27.632	312 31 30.9	132 32 12.5	French's Point (M. R. C.)	3.371203	2,350.7	7,712

[1] No check on this position.

[2] Measured in feet.

143113°—36——3

Mississippi River (*second order*) *Mississippi River Commission*—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Ray (M. R. C.) (Mo.), 1880	36 37 05.186	317 18 45.8	137 19 36.5	Brown (M. R. C.)	3.493875	3,118.0	10,230
	89 18 00.767	25 07 50.0	205 07 34.0	Island No. 8 (M. R. C.)	3.196509	1,572.2	5,158
St. James (M. R. C.) (Mo.), 1880	36 37 46.076	304 52 23.3	124 53 06.7	Ray (M. R. C.)	3.343234	2,204.1	7,231
	89 19 13.538	336 58 07.6	156 58 35.0	Island No. 8 (M. R. C.)	3.464817	2,916.2	9,568
Woodcock (M. R. C.) (Ky.), 1880	36 37 06.162	211 59 40.5	31 59 58.9	St. James (M. R. C.)	3.161591	1,450.7	4,760
	89 19 44.476	270 39 36.3	90 40 38.1	Ray (M. R. C.)	3.411156	2,577.2	8,455
Hubbard (M. R. C.) (Mo.), 1880	36 37 42.759	267 36 09.9	87 37 08.7	St. James (M. R. C.)	3.389732	2,453.2	8,049
	89 20 52.190	303 50 06.2	123 50 46.6	Woodcock (M. R. C.)	3.306573	2,025.7	6,646
Kase (M. R. C.) (Ky.), 1880	36 36 46.228	185 36 27.1	5 36 31.2	Hubbard (M. R. C.)	3.243269	1,750.9	5,744
	89 20 59.076	234 51 56.7	54 52 59.6	St. James (M. R. C.)	3.506005	3,206.3	10,519
Lovalle (M. R. C.) (Mo.), 1880	36 36 26.227	223 20 40.9	43 21 34.3	Hubbard (M. R. C.)	3.511115	3,244.3	10,644
	89 22 21.815	253 18 11.1	73 19 00.4	Kase (M. R. C.)	3.331760	2,146.6	7,043
Esley (M. R. C.) (Ky.), 1880	36 35 45.521	154 40 21.0	334 40 06.8	Lovalle (M. R. C.)	3.142460	1,388.2	4,554
	89 21 57.919	218 00 14.8	38 00 49.9	Kase (M. R. C.)	3.375657	2,375.0	7,792
Phillippo (M. R. C.) (Mo.), 1880	36 35 04.791	198 32 32.4	18 32 52.6	Lovalle (M. R. C.)	3.422875	2,647.7	8,687
	89 22 55.694	228 50 09.0	48 50 43.4	Esley (M. R. C.)	3.280482	1,907.6	6,259
P. B. M. Mitcham (M. R. C.) (Ky.), 1880	36 34 22.082	159 29 16.0	339 29 04.2	Phillippo (M. R. C.)	3.147865	1,405.6	4,612
	89 22 35.881	200 08 48.9	20 09 11.5	Esley (M. R. C.)	3.437694	2,739.6	8,988
Abbot (M. R. C.) (Mo.), 1880	36 33 55.681	205 22 47.6	25 23 11.8	Phillippo (M. R. C.)	3.372522	2,357.9	7,736
	89 23 36.347	241 34 11.4	61 34 47.4	P. B. M. Mitcham (M. R. C.)	3.232888	1,709.6	5,609
Old J. B. (M. R. C.) (Ky.), 1880	36 33 11.764	163 22 41.3	343 22 31.6	Abbot (M. R. C.)	3.150071	1,412.8	4,635
	89 23 20.094	206 53 32.4	26 53 58.7	P. B. M. Mitcham (M. R. C.)	3.385677	2,430.4	7,974
Phillips Landing (M. R. C.) (Mo.), 1880	36 32 48.169	217 09 32.2	37 10 09.9	Abbot (M. R. C.)	3.416864	2,611.3	8,567
	89 24 39.779	249 50 30.8	69 51 18.2	Old J. B. (M. R. C.)	3.324504	2,111.1	6,926
Lester (M. R. C.) (Ky.), 1880	36 31 16.646	170 15 02.7	350 14 51.1	Phillips Landing (M. R. C.)	3.456742	2,862.5	9,391
	89 24 20.290	202 52 27.5	22 53 03.3	Old J. B. (M. R. C.)	3.585619	3,851.4	12,636
Brier (M. R. C.) (Mo.), 1880	36 31 15.510	201 49 13.0	21 49 40.4	Phillips Landing (M. R. C.)	3.488078	3,076.6	10,094
	89 25 25.757	268 45 46.8	88 46 25.8	Lester (M. R. C.)	3.211978	1,629.2	5,345
Boom (M. R. C.), 1880	36 29 47.647	152 32 02.3	332 31 28.6	Brier (M. R. C.)	3.484651	3,052.5	10,015
	89 24 29.171	184 36 18.7	4 36 24.0	Lester (M. R. C.)	3.439680	2,752.2	9,030
Birdsall (M. R. C.) (Mo.), 1880	36 30 00.491	213 56 59.1	33 57 36.9	Lester (M. R. C.)	3.451784	2,830.1	9,285
	89 25 23.812	286 13 39.5	106 14 12.0	Boom (M. R. C.)	3.151166	1,416.3	4,647
Kentuck (M. R. C.), 1880	36 28 49.442	159 53 43.8	339 53 24.6	Birdsall (M. R. C.)	3.367757	2,332.2	7,652
	89 24 51.600	197 16 59.5	17 17 12.8	Boom (M. R. C.)	3.273918	1,879.0	6,165
Donaldson (M. R. C.) (Mo.), 1880	36 28 56.477	241 57 07.3	61 58 18.0	Boom (M. R. C.)	3.525750	3,355.4	11,009
	89 26 28.158	275 08 49.7	95 09 47.1	Kentuck (M. R. C.)	3.382623	2,413.4	7,918
P. B. M. Tennessee (M. R. C.), 1880	36 26 57.051	170 52 03.9	350 51 49.7	Donaldson (M. R. C.)	3.571525	3,728.4	12,232
	89 26 04.385	207 36 31.7	27 37 14.9	Kentuck (M. R. C.)	3.592140	3,909.7	12,827
Grampus (M. R. C.) (Mo.), 1880	36 28 35.282	258 27 04.0	78 28 20.3	Donaldson (M. R. C.)	3.514033	3,266.1	10,716
	89 28 36.709	308 35 20.3	128 36 50.8	P. B. M. Tennessee (M. R. C.)	3.686018	4,853.1	15,922
P. B. M. State Line (east base) (M. R. C.), 1880	36 29 50.934	293 56 39.4	113 58 09.5	Donaldson (M. R. C.)	3.616358	4,133.9	13,563
	89 28 59.934	320 47 28.2	140 49 12.5	P. B. M. Tennessee (M. R. C.)	3.839835	6,915.7	22,689
		346 04 28.5	166 04 42.3	Grampus (M. R. C.)	3.380654	2,402.4	7,882
Bryan's (M. R. C.) (Mo.), 1880	36 29 46.963	33 26 29.8	213 25 54.9	Grampus (M. R. C.)	3.422865	2,647.7	8,687
	89 27 38.098	93 26 44.0	273 25 55.3	P. B. M. State Line (east base) (M. R. C.).	3.309717	2,040.4	6,694
Everett (M. R. C.) (Ky.), 1880	36 31 17.169	320 35 46.1	140 36 40.7	Bryan's (M. R. C.)	3.556069	3,598.1	11,805
	89 29 09.868	354 41 10.0	174 41 15.9	P. B. M. State Line (east base) (M. R. C.).	3.426442	2,669.6	8,759
Bob Watson (M. R. C.) (Ky.), 1880	36 31 27.859	274 51 25.8	94 52 58.3	Everett (M. R. C.)	3.588951	3,881.1	12,733
	89 31 45.298	305 58 04.6	125 59 43.0	P. B. M. State Line (east base) (M. R. C.).	3.706294	5,085.0	16,683
Compromise (west base) (M. R. C.), 1880	36 29 52.717	167 27 55.0	347 27 39.4	Bob Watson (M. R. C.)	3.477739	3,004.3	9,857
	89 31 19.091	270 53 51.2	90 55 14.0	P. B. M. State Line (east base) (M. R. C.).	3.539544	3,463.73	11,363.9
Island No. 11 (M. R. C.) (Mo.), 1880	36 28 53.382	200 05 46.0	20 06 27.6	Bob Watson (M. R. C.)	3.705044	5,070.4	16,636
	89 32 55.324	232 37 42.2	52 38 39.4	Compromise (west base) (M. R. C.).	3.479096	3,013.7	9,887
Beshire (M. R. C.), 1880	36 27 27.928	157 51 43.5	337 51 17.9	Island No. 11 (M. R. C.)	3.453886	2,843.7	9,330
	89 32 12.275	196 31 08.6	16 31 40.2	Compromise (west base) (M. R. C.).	3.667935	4,655.2	15,273
Point Pleasant (M. R. C.) (Mo.), 1880	36 26 52.066	189 52 41.6	9 52 57.1	Island No. 11 (M. R. C.)	3.579292	3,795.7	12,453
	89 33 21.483	237 19 05.8	57 19 46.9	Beshire (M. R. C.)	3.311216	2,047.5	6,718
Lazalla (M. R. C.), 1880	36 25 17.799	143 52 40.7	323 51 50.1	Point Pleasant (M. R. C.)	3.555997	3,597.5	11,803
	89 31 56.326	174 20 43.3	354 20 33.8	Beshire (M. R. C.)	3.605377	4,030.7	13,224

Mississippi River (second order) Mississippi River Commission—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Cronin (M. R. C.), 1880	36 26 15.374	16 55 26.0	196 55 13.1	Lazalla (M. R. C.)	3.268336	1,855.0	6,086
	89 31 34.650	113 02 16.2	293 01 12.7	Point Pleasant (M. R. C.)	3.461064	2,891.1	9,485
Nall (M. R. C.), 1880	36 25 01.201	106 21 15.6	286 20 34.0	Lazalla (M. R. C.)	3.259482	1,817.5	5,963
	89 30 46.320	152 13 58.9	332 13 30.2	Cronin (M. R. C.)	3.412270	2,583.9	8,477
Gold (M. R. C.) (Mo.), 1880	36 24 15.398	162 09 38.6	342 09 23.8	Lazalla (M. R. C.)	3.305473	2,020.6	6,629
	89 31 31.479	218 33 00.0	38 33 26.8	Nall (M. R. C.)	3.256551	1,805.3	5,923
Phillips (M. R. C.), 1880	36 23 53.199	121 46 10.5	301 45 44.2	Gold (M. R. C.)	3.113851	1,299.7	4,264
	89 30 47.133	180 33 13.0	0 33 13.5	Nall (M. R. C.)	3.321418	2,096.1	6,877
New York (M. R. C.), 1880	36 24 04.853	77 35 05.4	257 34 26.5	Phillips (M. R. C.)	3.222739	1,670.1	5,479
	89 29 41.681	137 09 56.5	317 09 18.1	Nall (M. R. C.)	3.374497	2,368.6	7,771
Buddell (M. R. C.), 1880	36 23 01.484	175 40 26.5	355 40 23.6	Phillips (M. R. C.)	3.203736	1,598.6	5,245
	89 30 42.294	217 42 42.8	37 43 18.8	New York (M. R. C.)	3.392556	2,469.2	8,101
Tiptonville (M. R. C.), 1880	36 22 55.056	96 04 32.7	276 03 48.4	Buddell (M. R. C.)	3.272719	1,873.8	6,148
	89 29 27.537	170 41 46.2	350 41 37.9	New York (M. R. C.)	3.338468	2,180.1	7,153
Reel Foot (M. R. C.) (Mo.), 1880	36 21 47.253	199 53 09.3	19 53 29.0	Buddell (M. R. C.)	3.386167	2,433.1	7,983
	89 31 15.500	232 09 36.8	52 10 40.8	Tiptonville (M. R. C.)	3.532427	3,407.4	11,179
Turkey (M. R. C.) (Mo.), 1880	36 22 16.730	239 05 56.4	59 06 51.3	Buddell (M. R. C.)	3.429213	2,686.7	8,815
	89 32 14.787	301 34 31.9	121 35 07.1	Reel Foot (M. R. C.)	3.239280	1,734.9	5,692
Riley (M. R. C.) (Mo.), 1880	36 21 28.784	214 55 17.8	34 55 42.4	Turkey (M. R. C.)	3.255863	1,802.4	5,913
	89 32 56.179	257 12 49.4	77 13 49.2	Reel Foot (M. R. C.)	3.410579	2,573.8	8,444
Stewart (M. R. C.) (Mo.), 1880	36 22 21.953	273 32 54.2	93 33 55.9	Turkey (M. R. C.)	3.414232	2,595.6	8,516
	89 33 58.709	316 25 38.8	136 26 15.9	Riley (M. R. C.)	3.354465	2,261.9	7,421
Joe Eckles (M. R. C.) (Mo.), 1880	36 20 59.048	201 03 27.3	21 03 50.7	Stewart (M. R. C.)	3.437480	2,738.3	8,984
	89 34 38.178	250 10 25.9	70 11 26.4	Riley (M. R. C.)	3.431902	2,703.3	8,869
Atkinson (M. R. C.) (Mo.), 1880	36 21 27.028	240 17 26.2	60 18 36.8	Stewart (M. R. C.)	3.533645	3,417.0	11,211
	89 35 57.766	293 28 57.7	113 29 44.9	Joe Eckles (M. R. C.)	3.335204	2,163.7	7,099
Solitude (M. R. C.), 1880	36 19 32.668	178 58 17.3	358 58 15.8	Atkinson (M. R. C.)	3.547216	3,525.5	11,567
	89 35 55.228	215 48 43.4	35 49 29.1	Joe Eckles (M. R. C.)	3.516332	3,283.5	10,773
Bass (M. R. C.), 1880	36 18 53.436	113 45 56.2	293 44 51.0	Solitude (M. R. C.)	3.477366	3,001.7	9,848
	89 34 05.089	167 58 13.0	347 57 53.5	Joe Eckles (M. R. C.)	3.597552	3,958.7	12,988
Ingram (M. R. C.), 1880	36 18 06.318	144 05 54.9	324 05 09.2	Solitude (M. R. C.)	3.516671	3,286.0	10,781
	89 34 37.974	209 27 35.7	29 27 55.2	Bass (M. R. C.)	3.222206	1,668.0	5,472
Royal Bill (M. R. C.), 1880	36 17 48.122	107 59 34.6	287 58 53.6	Ingram (M. R. C.)	3.259136	1,816.1	5,958
	89 33 28.746	155 45 22.1	335 45 00.6	Bass (M. R. C.)	3.343982	2,207.9	7,244
Balson (M. R. C.) (Mo.), 1880	36 17 08.645	156 17 13.5	336 16 55.0	Ingram (M. R. C.)	3.288153	1,941.6	6,370
	89 34 06.679	217 52 38.6	37 53 01.1	Royal Bill (M. R. C.)	3.187979	1,541.6	5,058
River Bed (M. R. C.) (Mo.), 1880	36 16 23.320	126 08 38.1	306 07 52.8	Balson (M. R. C.)	3.374555	2,368.9	7,772
	89 32 50.022	159 42 46.9	339 42 24.1	Royal Bill (M. R. C.)	3.445097	2,786.7	9,143
Island No. 14 (M. R. C.) (Mo.), 1880	36 15 57.197	190 32 23.9	10 32 33.7	Balson (M. R. C.)	3.350250	2,240.0	7,349
	89 34 23.098	250 52 38.5	70 53 33.6	River Bed (M. R. C.)	3.390725	2,458.8	8,067
Dr. Smith (M. R. C.), 1880	36 14 44.638	186 19 36.8	6 19 42.7	Island No. 14 (M. R. C.)	3.352212	2,250.2	7,383
	89 34 33.032	220 12 15.4	40 13 16.4	River Bed (M. R. C.)	3.600209	3,983.0	13,068
Garrett (M. R. C.) (Mo.), 1880	36 15 25.144	249 59 52.9	70 00 57.3	Island No. 14 (M. R. C.)	3.460826	2,889.5	9,480
	89 36 11.873	296 49 41.7	116 50 40.2	Dr. Smith (M. R. C.)	3.441785	2,765.6	9,073
Le Duke (M. R. C.) (Mo.), 1880	36 14 32.777	200 41 24.6	20 41 39.1	Garrett (M. R. C.)	3.236886	1,725.4	5,661
	89 36 36.292	263 12 56.3	83 14 09.3	Dr. Smith (M. R. C.)	3.491262	3,099.3	10,168
Hathaway (M. R. C.) (Mo.), 1880	36 15 05.167	256 21 24.5	76 22 25.7	Garrett (M. R. C.)	3.416986	2,612.1	8,570
	89 37 53.552	297 21 24.3	117 22 10.0	Le Duke (M. R. C.)	3.336868	2,172.0	7,126
Mott (M. R. C.) (Mo.), 1880	36 16 02.986	286 50 37.1	106 52 09.0	Garrett (M. R. C.)	3.604477	4,022.3	13,196
	89 38 46.082	323 38 55.1	143 39 26.2	Hathaway (M. R. C.)	3.344901	2,212.6	7,259
Gayosa (M. R. C.) (Mo.), 1880	36 15 22.783	247 54 24.4	67 55 36.7	Mott (M. R. C.)	3.517996	3,296.1	10,814
	89 40 48.434	277 04 28.1	97 06 11.5	Hathaway (M. R. C.)	3.643417	4,399.6	14,434
P. B. M. Myers (M. R. C.), 1880	36 13 39.781	154 09 07.1	334 08 30.7	Gayosa (M. R. C.)	3.547510	3,527.8	11,574
	89 39 46.823	198 57 24.8	18 58 00.7	Mott (M. R. C.)	3.669056	4,667.2	15,312
		227 03 09.0	47 04 16.0	Hathaway (M. R. C.)	3.586975	3,863.5	12,675
Warden (M. R. C.), 1880	36 13 46.324	186 33 17.2	6 33 25.3	Gayosa (M. R. C.)	3.476058	2,992.7	9,819
	89 41 02.118	276 06 55.7	96 07 40.2	P. B. M. Myers (M. R. C.)	3.276728	1,891.2	6,205
Ferris (M. R. C.) (Mo.), 1880	36 12 30.520	149 59 39.7	329 59 07.8	Warden (M. R. C.)	3.431069	2,698.2	8,852
	89 40 08.087	193 58 09.9	13 58 22.5	P. B. M. Myers (M. R. C.)	3.342393	2,199.8	7,217
Island No. 15(M. R. C.), 1880	36 12 44.622	72 58 45.4	252 58 11.8	Ferris (M. R. C.)	3.171566	1,484.5	4,870
	89 39 11.264	152 25 16.1	332 24 55.1	P. B. M. Myers (M. R. C.)	3.282877	1,918.1	6,293

Mississippi River (second order) Mississippi River Commission—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Caruthersville (M. R. C.), 1880	36 11 41.971	123 22 19.8	303 21 26.0	Ferris (M. R. C.)	3.434714	2,720.9	8,927
	89 38 37.123	156 10 22.7	336 10 02.5	Island No. 15 (M. R. C.)	3.324492	2,111.0	6,926
Perkins (M. R. C.), 1880	36 12 05.057	72 25 12.7	252 24 19.6	Caruthersville (M. R. C.)	3.371984	2,355.0	7,726
	89 37 07.267	111 29 59.0	291 28 45.7	Island No. 15 (M. R. C.)	3.522302	3,328.9	10,922
Harbert (M. R. C.), 1880	36 11 03.659	122 23 19.5	302 22 35.5	Caruthersville (M. R. C.)	3.343377	2,204.8	7,234
	89 37 22.602	191 26 40.3	11 26 49.4	Perkins (M. R. C.)	3.285740	1,930.8	6,335
Williams (M. R. C.), 1880	36 11 38.985	52 17 44.7	232 17 11.4	Harbert (M. R. C.)	3.250456	1,780.1	5,840
	89 36 26.238	128 05 53.4	308 05 29.2	Perkins (M. R. C.)	3.114773	1,302.5	4,273
Island No. 16 (M. R. C.), 1880	36 10 25.921	138 36 46.2	318 36 22.0	Harbert (M. R. C.)	3.190448	1,550.4	5,087
	89 36 41.580	189 39 35.6	9 39 44.7	Williams (M. R. C.)	3.358768	2,284.4	7,495
Linwood (M. R. C.), 1880	36 09 44.335	122 20 25.1	302 19 37.3	Island No. 16 (M. R. C.)	3.379579	2,396.5	7,863
	89 35 20.560	155 05 33.4	335 04 54.7	Williams (M. R. C.)	3.590652	3,896.3	12,783
Johnson (M. R. C.) (Mo.), 1880	36 08 46.546	195 20 09.1	15 20 28.9	Island No. 16 (M. R. C.)	3.501889	3,176.1	10,420
	89 37 15.192	238 07 33.2	58 08 40.8	Linwood (M. R. C.)	3.528138	3,373.9	11,069
Booth's Point (M. R. C.) (Mo.), 1880	36 07 05.604	155 54 24.4	335 53 51.6	Johnson (M. R. C.)	3.532533	3,408.3	11,182
	89 36 19.538	196 46 04.2	16 46 39.0	Linwood (M. R. C.)	3.708402	5,109.8	16,764
Wilks (M. R. C.) (Mo.), 1880	36 07 16.992	196 35 15.8	16 35 35.2	Johnson (M. R. C.)	3.459411	2,880.1	9,449
	89 37 48.081	279 00 01.2	99 00 53.4	Booth's Point (M. R. C.)	3.350625	2,241.9	7,355
Parker (M. R. C.), 1880	36 06 22.335	150 27 23.3	330 27 00.8	Wilks (M. R. C.)	3.287012	1,936.5	6,353
	89 37 09.899	223 21 34.2	43 22 03.9	Booth's Point (M. R. C.)	3.263496	1,834.4	6,018
Sand Bar (M. R. C.), 1880	36 06 02.015	214 07 34.0	34 08 10.9	Wilks (M. R. C.)	3.445885	2,791.8	9,159
	89 38 50.712	256 02 38.3	76 03 37.7	Parker (M. R. C.)	3.414685	2,598.3	8,525
Bell's Point (M. R. C.), 1880	36 04 57.510	162 48 47.0	342 48 32.5	Sand Bar (M. R. C.)	3.318295	2,081.1	6,828
	89 38 26.128	216 06 02.1	36 06 47.0	Parker (M. R. C.)	3.510010	3,236.0	10,617
Island No. 18 (M. R. C.), 1880	36 04 50.264	221 34 31.5	41 35 17.7	Sand Bar (M. R. C.)	3.470778	2,956.5	9,700
	89 40 09.145	265 02 22.3	85 03 23.0	Bell's Point (M. R. C.)	3.412825	2,587.2	8,488

McAllister No. 2 (M. R. C.), 1880	36 03 46.710	83 29 07.7	263 28 08.1	P. B. M. Cottonwood south base (M. R. C.)	3.406920	2,552.2	8,373
	89 39 57.069	171 13 53.8	351 13 46.7	Island No. 18 (M. R. C.)	3.297105	1,982.0	6,503
		226 11 37.4	46 12 31.0	Bell's Point (M. R. C.)	3.498701	3,152.8	10,344
P. B. M. Cottonwood north base (M. R. C.) (Mo.), 1879.	36 04 13.543	223 07 04.4	43 07 29.3	Island No. 18 (M. R. C.)	3.190506	1,550.6	5,087
	89 40 51.504	301 15 28.6	121 16 00.6	McAllister No. 2 (M. R. C.)	3.202387	1,593.6	5,228
		46 24 50.1	226 24 22.5	P. B. M. Cottonwood south base (M. R. C.)	3.209507	1,619.97	5,314.9
Mitchell's Point (M. R. C.), 1880	36 03 00.387	131 31 25.4	311 30 55.2	P. B. M. Cottonwood south base (M. R. C.)	3.234645	1,716.5	5,632
	89 40 47.040	177 09 50.9	357 09 48.3	P. B. M. Cottonwood north base (M. R. C.)	3.353637	2,257.5	7,406
Lindale (M. R. C.) (Mo.), 1880	36 02 27.913	219 39 02.3	39 39 44.0	P. B. M. Cottonwood south base (M. R. C.)	3.443723	2,777.9	9,114
	89 42 49.217	251 52 07.3	71 53 19.2	Mitchell's Point (M R. C.)	3.507574	3,217.9	10,557
Franklin (M. R. C.), 1880	36 01 02.120	152 06 34.8	332 06 01.9	Lindale (M. R. C.)	3.475949	2,991.9	9,816
	89 41 53.309	204 28 01.4	24 28 40.4	Mitchell's Point (M. R. C.)	3.602596	4,004.9	13,139
Missouri (M. R. C.), 1880	36 00 31.541	198 37 25.4	18 37 53.8	Lindale (M. R. C.)	3.578066	3,785.0	12,418
	89 43 37.503	250 07 55.2	70 08 56.5	Franklin (M. R. C.)	3.443141	2,774.2	9,102
Island No. 21 (M. R. C.), 1880	35 59 55.139	128 35 50.8	308 35 17.8	Missouri (M. R. C.)	3.254951	1,798.7	5,901
	89 42 41.371	210 14 23.8	30 14 52.1	Franklin (M. R. C.)	3.378340	2,389.7	7,840
Arkansas (M. R. C.) (Ark.), 1880	35 59 05.565	172 07 28.7	352 07 20.1	Missouri (M. R. C.)	3.427343	2,675.1	8,777
	89 43 22.867	214 13 26.1	34 13 50.5	Island No. 21 (M. R. C.)	3.266689	1,847.9	6,063
Stevens (M. R. C.), 1880	35 58 49.639	107 55 17.5	287 54 41.9	Arkansas (M. R. C.)	3.202919	1,595.6	5,235
	89 42 22.264	166 39 50.0	346 39 38.8	Island No. 21 (M. R. C.)	3.316959	2,074.7	6,807
Czar (M. R. C.), 1880	35 57 38.462	161 04 08.6	341 03 47.0	Arkansas (M. R. C.)	3.453039	2,838.2	9,312
	89 42 46.110	195 14 00.4	15 14 14.4	Stevens (M. R. C.)	3.356726	2,273.7	7,460
Mrs. H. (M. R. C.) (Ark.), 1880	35 57 08.151	123 39 39.4	303 39 06.5	Czar (M. R. C.)	3.226760	1,685.6	5,530
	89 41 50.121	165 33 49.6	345 33 30.7	Stevens (M. R. C.)	3.509198	3,230.0	10,597
P. B. M. Slater (M. R. C.), 1880	35 57 38.188	56 01 44.2	236 01 12.0	Mrs. H. (M. R. C.)	3.219212	1,656.6	5,435
	89 40 55.302	90 10 58.8	270 09 53.7	Czar (M. R. C.)	3.443529	2,776.7	9,110
Casselberry (M. R. C.), 1880	35 56 34.932	123 16 28.9	303 15 52.3	Mrs. H. (M. R. C.)	3.270998	1,866.4	6,123
	89 40 47.858	174 32 05.8	354 32 01.4	P. B. M. Slater (M. R. C.)	3.291928	1,958.5	6,426
Michell=B. M. 36/2 (M. R. C.), 1880	35 56 49.022	77 52 02.8	257 51 15.5	Casselberry (M. R. C.)	3.314951	2,065.1	6,775
	89 39 27.304	124 30 06.1	304 29 14.4	P. B. M. Slater (M. R. C.)	3.427443	2,675.7	8,779
Wright's Point (M. R. C.), 1880	35 56 10.266	114 53 33.4	294 52 55.0	Casselberry (M. R. C.)	3.256835	1,806.5	5,927
	89 39 42.479	197 39 42.2	17 39 51.1	Michell=B. M. 36/2 (M. R. C.)	3.098160	1,253.6	4,113

Mississippi River (second order) Mississippi River Commission—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Obion=P. B. M. 32 (M. R. C.), 1880	35 56 02.789 89 38 13.133	95 52 54.8 127 28 31.0	275 52 02.3 307 27 47.4	Wright's Point (M. R. C.) Michell=B. M. 36/2 (M. R. C.)	3.352459 3.369654	2,251.4 2,342.4	7,386 7,685
Tinsley (M. R. C.) (Ark.), 1880	35 55 15.632 89 39 24.690	178 41 45.8 230 58 44.7	358 41 44.2 50 59 26.7	Michell=B. M. 36/2 (M. R. C.) Obion=P. B. M. 32 (M. R. C.)	3.459258 3.363378	2,879.1 2,308.8	9,446 7,575
Hales (M. R. C.), 1880	35 54 17.232 89 38 57.367	159 09 52.6 198 49 11.3	339 09 36.6 18 49 37.3	Tinsley (M. R. C.) Obion=P. B. M. 32 (M. R. C.)	3.284634 3.536202	1,925.9 3,437.2	6,319 11,277
High Water (M. R. C.) (Ark.), 1880	35 54 54.203 89 40 13.658	241 43 04.0 300 46 27.8	61 43 32.7 120 47 12.5	Tinsley (M. R. C.) Hales (M. R. C.)	3.144294 3.347645	1,394.1 2,226.6	4,574 7,305
Nebraska (M. R. C.) (Ark.), 1880	35 54 16.846 89 41 25.791	237 30 51.3 269 48 17.3	57 31 33.6 89 49 44.3	High Water (M. R. C.) Hales (M. R. C.)	3.331237 3.570766	2,144.1 3,721.9	7,034 12,211
Puck (M. R. C.) (Ark.), 1880	35 54 59.340 89 41 12.796	276 05 25.1 13 58 19.6	96 05 59.8 193 58 12.0	High Water (M. R. C.) Nebraska (M. R. C.)	3.173525 3.130212	1,491.2 1,349.6	4,892 4,428
Rucker's Point (M. R. C.) (Ark.), 1880	35 54 17.330 89 42 43.137	240 14 28.2 270 26 05.0	60 15 21.2 90 26 50.4	Puck (M. R. C.) Nebraska (M. R. C.)	3.416501 3.287712	2,609.2 1,939.6	8,560 6,364
Buckner (M. R. C.) (Ark.), 1880	35 54 52.229 89 43 28.311	266 17 53.6 313 30 53.2	86 19 13.1 133 31 19.7	Puck (M. R. C.) Rucker's Point (M. R. C.)	3.532090 3.193690	3,404.8 1,562.0	11,171 5,125
Carr (M. R. C.), 1880	35 53 34.303 89 43 19.044	174 28 27.9 214 10 29.6	354 28 22.5 34 10 50.7	Buckner (M. R. C.) Rucker's Point (M. R. C.)	3.382545 3.204920	2,412.9 1,603.0	7,916 5,259
Barfield (M. R. C.), 1880	35 53 03.947 89 44 28.720	204 24 36.8 241 49 51.5	24 25 12.2 61 50 32.3	Buckner (M. R. C.) Carr (M. R. C.)	3.564081 3.297157	3,665.1 1,982.2	12,025 6,503
Sheep (M. R. C.), 1880	35 52 30.089 89 43 22.893	122 17 48.3 182 47 32.8	302 17 09.7 2 47 35.0	Barfield (M. R. C.) Carr (M. R. C.)	3.290768 3.296982	1,953.3 1,981.4	6,408 6,501
Island No. 25 (M. R. C.), 1880	35 51 24.324 89 43 36.684	156 58 14.9 189 41 08.6	336 57 44.4 9 41 16.7	Barfield (M. R. C.) Sheep (M. R. C.)	3.523278 3.313070	3,336.4 2,056.2	10,946 6,746
K. C. B. (M. R. C.), 1880	35 50 53.662 89 42 34.139	121 03 32.6 157 37 55.8	301 02 56.0 337 37 27.3	Island No. 25 (M. R. C.) Sheep (M. R. C.)	3.262916 3.507020	1,832.0 3,213.8	6,010 10,544

Flood (M. R. C.) (Ark.), 1880	35 50 17.382 89 43 40.129	182 23 56.5 235 58 03.4	2 23 58.5 55 58 42.0	Island No. 25 (M. R. C.) K. C. B. (M. R. C.)	3.314914 3.300635	2,065.0 1,998.2	6,775 6,556
Forked Deer (M. R. C.) (Ark.), 1880	35 49 26.398 89 43 27.313	168 25 55.0 206 23 11.9	348 25 47.5 26 23 43.0	Flood (M. R. C.) K. C. B. (M. R. C.)	3.205183 3.477467	1,603.9 3,002.4	5,262 9,850
Island No. 26 (M. R. C.) (Ark.), 1880	35 49 11.168 89 44 51.298	221 11 30.5 257 26 30.3	41 12 12.1 77 27 19.4	Flood (M. R. C.) Forked Deer (M. R. C.)	3.433306 3.334418	2,712.1 2,159.8	8,898 7,086
Williams (M. R. C.) (Ark.), 1880	35 50 06.173 89 45 08.535	295 44 57.3 345 40 52.7	115 45 56.5 165 41 02.8	Forked Deer (M. R. C.) Island No. 26 (M. R. C.)	3.450392 3.242942	2,820.9 1,749.6	9,255 5,740
Bowen (M. R. C.) (Ark.), 1880	35 49 05.851 89 46 56.633	235 34 23.2 267 00 32.4	55 35 26.4 87 01 45.7	Williams (M. R. C.) Island No. 26 (M. R. C.)	3.517081 3.498386	3,289.1 3,150.5	10,791 10,336
Island No. 27 (M. R. C.), 1880	35 47 58.484 89 46 23.930	158 25 34.7 226 03 54.1	338 25 15.6 46 04 48.3	Bowen (M. R. C.) Island No. 26 (M. R. C.)	3.348837 3.509069	2,232.7 3,229.0	7,325 10,594
Daniel's Point (M. R. C.), 1880	35 47 08.636 89 47 41.999	197 29 48.2 231 54 33.6	17 30 14.7 51 55 19.2	Bowen (M. R. C.) Island No. 27 (M. R. C.)	3.578401 3.396322	3,787.9 2,490.7	12,427 8,172
P. B. M. Ashport (M. R. C.), 1880	35 45 49.602 89 47 30.848	173 26 28.8 202 55 41.5	353 26 22.3 22 56 20.6	Daniel's Point (M. R. C.) Island No. 27 (M. R. C.)	3.389497 3.634785	2,451.9 4,313.1	8,044 14,151
Island No. 28 (east base) (M. R. C.) (Ark.), 1880	35 46 01.678 89 49 47.282	236 43 56.6 276 11 11.9	56 45 09.8 96 12 31.6	Daniel's Point (M. R. C.) P. B. M. Ashport (M. R. C.)	3.575535 3.537490	3,763.0 3,447.4	12,346 11,310
Johnson (M. R. C.), 1880	35 44 33.239 89 50 13.478	193 34 21.9 240 02 41.9	13 34 37.2 60 04 16.9	Island No. 28 (east base) (M. R. C.). P. B. M. Ashport (M. R. C.)	3.447776 3.673505	2,804.0 4,715.3	9,199 15,470
Fletcher (west base) (M. R. C.) (Ark.), 1880	35 45 35.023 89 51 24.353	251 22 29.1 316 54 49.3	71 23 25.8 136 55 30.7	Island No. 28 (east base) (M. R. C.). Johnson (M. R. C.)	3.410463 3.416153	2,573.14 2,607.1	8,442.0 8,553
Island No. 29 (M. R. C.), 1880	35 44 09.808 89 53 02.718	223 15 08.6 260 20 57.8	43 16 06.0 80 22 36.6	Fletcher (west base) (M. R. C.) Johnson (M. R. C.)	3.557065 3.634836	3,606.3 4,313.6	11,832 14,152
Elmot (M. R. C.) (Ark.), 1880	35 44 53.202 89 55 50.488	259 04 02.5 287 35 15.9	79 06 37.9 107 36 53.9	Fletcher (west base) (M. R. C.) Island No. 29 (M. R. C.)	3.833108 3.645685	6,809.4 4,422.7	22,341 14,510
Plum Point (M. R. C.), 1880	35 43 08.753 89 55 50.817	180 08 49.1 245 58 39.6	0 08 49.2 66 00 17.7	Elmot (M. R. C.) Island No. 29 (M. R. C.)	3.507734 3.665089	3,219.1 4,624.8	10,561 15,173
Blackamore (M. R. C.) (Ark.), 1880	35 43 45.406 89 57 30.765	230 19 32.0 294 12 18.4	50 20 30.4 114 13 16.7	Elmot (M. R. C.) Plum Point (M. R. C.)	3.514999 3.440009	3,273.4 2,754.3	10,739 9,036
Osceola (M. R. C.) (Ark.), 1880	35 41 13.338 89 57 26.488	178 41 10.6 214 03 25.6	358 41 08.1 34 04 21.4	Blackamore (M. R. C.) Plum Point (M. R. C.)	3.670979 3.632848	4,687.9 4,293.9	15,380 14,088
P. B. M. Yankee Bar (M. R. C.), 1880	35 41 16.592 89 55 23.371	88 09 16.4 168 42 50.1	268 08 04.6 348 42 34.1	Osceola (M. R. C.) Plum Point (M. R. C.)	3.490990 3.547154	3,097.3 3,525.0	10,162 11,565

Mississippi River (second order) Mississippi River Commission—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
McGavock (M. R. C.) (Ark.), 1880	35 39 37.150	136 41 38.5	316 40 33.7	Osceola (M. R. C.)	3.610056	4,074.3	13,367
	89 55 35.349	185 36 45.4	5 36 52.4	P. B. M. Yankee Bar (M. R. C.)	3.488481	3,079.5	10,103
Morgan (M. R. C.), 1880	35 39 36.835	90 12 33.6	270 11 29.1	McGavock (M. R. C.)	3.444150	2,780.7	9,123
	89 53 44.800	141 07 43.4	321 06 45.9	P. B. M. Yankee Bar (M. R. C.)	3.596527	3,949.4	12,957
Midway (M. R. C.) (Ark.), 1880	35 38 03.564	165 58 23.8	345 58 07.1	McGavock (M. R. C.)	3.473189	2,973.0	9,754
	89 55 06.702	215 37 31.7	35 38 19.4	Morgan (M. R. C.)	3.548601	3,536.7	11,603
P. B. M. Craighead (northeast base) (M. R. C.) (Ark.), 1880.	35 37 26.976	115 52 01.4	295 51 07.6	Midway (M. R. C.)	3.412505	2,585.3	8,482
	89 53 34.248	158 48 29.8	338 47 26.2	P. B. M. Yankee Bar (M. R. C.)	3.880261	7,590.3	24,903
		176 12 21.3	356 12 15.2	Morgan (M. R. C.)	3.603248	4,011.0	13,159
Lanier (southwest base) (M. R. C.) (Ark.), 1880	35 36 58.074	168 22 09.6	348 22 00.0	Midway (M. R. C.)	3.314011	2,060.7	6,761
	89 54 50.191	245 00 15.9	65 01 00.1	P. B. M. Craighead (northeast base) (M. R. C.).	3.323980	2,108.53	6,917.7
Lee (M. R. C.), 1880	35 36 11.284	131 00 23.8	310 59 45.4	Lanier (southwest base) (M. R. C.).	3.342015	2,197.9	7,211
	89 53 44.285	186 10 46.2	6 10 52.0	P. B. M. Craighead (northeast base) (M. R. C.).	3.370402	2,346.4	7,698
Island No. 34 (M. R. C.), 1880	35 35 06.057	175 24 50.3	355 24 43.9	Lanier (southwest base) (M. R. C.).	3.539497	3,463.4	11,363
	89 54 39.188	214 30 18.4	34 30 50.4	Lee (M. R. C.)	3.387306	2,439.5	8,004
Hatchee River (M. R. C.), 1880	35 33 53.210	151 45 54.7	331 45 26.8	Island No. 34 (M. R. C.)	3.406257	2,548.3	8,361
	89 53 51.303	182 22 36.9	2 22 41.0	Lee (M. R. C.)	3.629304	4,259.0	13,973
Pierce (M. R. C.) (Ark.), 1880	35 32 54.055	181 48 30.8	1 48 33.7	Island No. 34 (M. R. C.)	3.609612	4,070.2	13,354
	89 54 44.290	216 11 59.9	36 12 30.7	Hatchee River (M. R. C.)	3.353980	2,259.3	7,412
P. B. M. Hatchee Island (M. R. C.), 1880	35 32 05.703	123 31 31.4	303 30 39.5	Pierce (M. R. C.)	3.431134	2,698.6	8,854
	89 53 14.977	164 33 54.1	344 33 33.0	Hatchee River (M. R. C.)	3.536213	3,437.3	11,277
Morgan Point (M. R. C.), 1880	35 31 41.538	159 29 46.1	339 29 26.8	Pierce (M. R. C.)	3.377689	2,386.1	7,828
	89 54 11.109	242 13 21.2	62 13 53.8	P. B. M. Hatchee Island (M. R. C.).	3.203651	1,598.3	5,244
Randolph (M. R. C.), 1880	35 31 02.474	143 42 17.3	323 41 56.9	Morgan Point (M. R. C.)	3.147277	1,493.7	4,901
	89 53 36.013	195 12 51.1	15 13 03.3	P. B. M. Hatchee Island (M. R. C.).	3.305227	2,019.4	6,625
Chickasaw No. 2 (M. R. C.), 1880	35 30 33.110	222 22 51.0	42 23 35.4	Morgan Point (M. R. C.)	3.455629	2,855.2	9,367
	89 55 27.496	252 08 08.2	72 09 13.0	Randolph (M. R. C.)	3.470031	2,951.4	9,683
O'Dare (M. R. C.) (Ark.), 1880	35 31 23.841	259 27 45.9	79 28 53.6	Morgan Point (M. R. C.)	3.474912	2,984.8	9,793
	89 56 07.581	327 07 58.2	147 08 21.5	Chickasaw No. 2 (M. R. C.)	3.269833	1,861.4	6,107
Whirlpool (M. R. C.), 1880	35 30 45.103	175 56 58.0	355 56 56.0	O'Dare (M. R. C.)	3.078039	1,196.8	3,927
	89 56 04.226	291 45 57.2	111 46 18.5	Chickasaw No. 2 (M. R. C.)	2.998543	996.7	3,270
Richardson (M. R. C.), 1880	35 31 18.261	262 16 59.0	82 17 28.3	O'Dare (M. R. C.)	3.107650	1,281.3	4,204
	89 56 57.974	307 01 53.5	127 02 24.8	Whirlpool (M. R. C.)	3.229583	1,696.6	5,566
Haskins (M. R. C.) (Ark.), 1880	35 32 10.484	307 10 38.0	127 11 21.7	O'Dare (M. R. C.)	3.376303	2,378.5	7,803
	89 57 22.797	338 45 48.5	158 46 02.9	Richardson (M. R. C.)	3.237211	1,726.7	5,665
Island No. 35 (east base) (M. R. C.), 1880	35 32 05.048	263 56 50.8	83 57 27.3	Haskins (M. R. C.)	3.201399	1,590.0	5,217
	89 58 25.561	303 09 18.3	123 10 09.2	Richardson (M. R. C.)	3.420950	2,636.0	8,648
Lanier (M. R. C.), 1880	35 32 58.792	301 21 54.4	121 22 50.7	Haskins (M. R. C.)	3.456330	2,859.8	9,383
	89 58 59.728	332 32 24.3	152 32 44.1	Island No. 35 (east base) (M. R. C.).	3.271047	1,866.6	6,124
Cole (west base) (M. R. C.), 1880	35 32 15.211	239 02 05.7	59 02 57.4	Lanier (M. R. C.)	3.416805	2,611.0	8,566
	90 00 28.616	275 45 34.0	95 46 45.5	Island No. 35 (east base) (M. R. C.).	3.493562	3,115.75	10,222.3
Elliott (M. R. C.), 1880	35 32 58.883	270 02 36.0	90 03 46.4	Lanier (M. R. C.)	3.484046	3,048.2	10,001
	90 01 00.749	328 58 34.1	148 58 52.8	Cole (west base) (M. R. C.)	3.196057	1,570.6	5,153
Golden Lake (M. R. C.), 1880	35 31 59.762	227 12 29.7	47 13 15.1	Elliott (M. R. C.)	3.428525	2,682.4	8,801
	90 02 18.899	260 15 58.5	80 17 02.6	Cole (west base) (M. R. C.)	3.450056	2,818.7	9,248
Strout (M. R. C.), 1880	35 31 03.503	146 57 56.1	326 57 30.1	Golden Lake (M. R. C.)	3.315598	2,068.2	6,785
	90 01 34.145	216 45 23.3	36 46 01.4	Cole (west base) (M. R. C.)	3.440678	2,758.5	9,050
Powers (M. R. C.), 1880	35 30 06.046	179 01 14.1	359 01 12.7	Golden Lake (M. R. C.)	3.544699	3,505.1	11,500
	90 02 16.521	211 05 25.1	31 05 49.7	Strout (M. R. C.)	3.315513	2,067.8	6,784
Blizzard (M. R. C.), 1880	35 30 14.032	77 59 14.4	257 58 47.8	Powers (M. R. C.)	3.072715	1,182.3	3,879
	90 01 30.638	176 41 00.5	356 40 58.5	Strout (M. R. C.)	3.183880	1,527.1	5,010
P. B. M. Pennell (M. R. C.), 1880	35 29 24.394	124 40 09.4	304 39 26.7	Powers (M. R. C.)	3.353516	2,256.9	7,405
	90 01 02.870	153 25 05.5	335 24 49.4	Blizzard (M. R. C.)	3.225894	1,682.3	5,519
Pecan Point (M. R. C.) (Ark.), 1880	35 28 16.214	158 11 04.7	338 10 33.5	Powers (M. R. C.)	3.561823	3,646.1	11,962
	90 01 22.759	193 25 10.1	13 25 21.6	P. B. M. Pennell (M. R. C.)	3.334496	2,160.2	7,087
Wallace (M. R. C.), 1880	35 27 47.435	122 57 30.9	302 56 59.4	Pecan Point (M. R. C.)	3.212307	1,630.4	5,349
	90 00 28.498	163 49 51.5	343 49 31.5	P. B. M. Pennell (M. R. C.)	3.492933	3,111.2	10,207

Mississippi River (*second order*) *Mississippi River Commission*—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Dean (M. R. C.), 1880	35 26 38.359	166 26 26.5	346 26 09.7	Pecan Point (M. R. C.)	3.491673	3,102.2	10,178
	90 00 53.911	196 45 07.6	16 45 22.3	Wallace (M. R. C.)	3.346976	2,223.2	7,294
Wright (M. R. C.), 1880	35 26 28.985	100 55 26.8	280 54 52.4	Dean (M. R. C.)	3.183282	1,525.0	5,003
	89 59 54.539	160 29 52.9	340 29 33.2	Wallace (M. R. C.)	3.409068	2,564.9	8,415
Universe (M. R. C.), 1880	35 25 10.695	159 51 14.2	339 50 51.4	Dean (M. R. C.)	3.459058	2,877.8	9,442
	90 00 14.612	191 51 01.4	11 51 13.0	Wright (M. R. C.)	3.391876	2,465.3	8,088
McGavock (M. R. C.) (Ark.), 1880	35 25 18.337	231 48 57.8	51 50 01.4	Wright (M. R. C.)	3.546877	3,522.7	11,557
	90 01 44.325	275 56 00.3	95 56 52.3	Universe (M. R. C.)	3.357073	2,275.5	7,466
Thomas (M. R. C.) (Ark.), 1880	35 24 14.707	217 11 33.2	37 12 07.4	McGavock (M. R. C.)	3.391250	2,461.8	8,077
	90 02 43.313	245 17 26.0	65 18 52.2	Universe (M. R. C.)	3.615905	4,129.6	13,549
Corona (M. R. C.), 1880	35 25 12.254	267 43 16.2	87 45 05.1	McGavock (M. R. C.)	3.676324	4,746.0	15,571
	90 04 52.301	298 34 39.1	118 35 53.8	Thomas (M. R. C.)	3.568942	3,706.3	12,160
Cutoff (M. R. C.), 1880	35 23 44.022	159 56 04.0	339 55 41.2	Corona (M. R. C.)	3.461636	2,894.9	9,498
	90 04 12.931	247 18 00.7	67 18 52.6	Thomas (M. R. C.)	3.389382	2,451.2	8,042
Brandywine (M. R. C.), 1880	35 23 49.506	198 44 46.3	18 45 06.2	Corona (M. R. C.)	3.430245	2,693.1	8,836
	90 05 26.607	275 11 15.1	95 11 57.8	Cutoff (M. R. C.)	3.271127	1,866.9	6,125
Bateman (M. R. C.), 1880	35 22 23.823	155 31 22.9	335 30 55.3	Brandywine (M. R. C.)	3.462608	2,901.4	9,519
	90 04 38.970	194 53 19.9	14 53 35.0	Cutoff (M. R. C.)	3.407809	2,557.5	8,391
Croaker (M. R. C.), 1880	35 21 47.765	185 53 10.3	5 53 19.2	Brandywine (M. R. C.)	3.576538	3,771.7	12,374
	90 05 41.935	235 02 12.5	55 02 49.0	Bateman (M. R. C.)	3.287673	1,939.4	6,363
P. B. M. Barksdale (M. R. C.), 1880	35 21 05.483	151 00 36.5	331 00 19.9	Croaker (M. R. C.)	3.173104	1,489.7	4,887
	90 05 13.336	199 45 49.8	19 46 09.7	Bateman (M. R. C.)	3.409162	2,565.4	8,417
Fogleman (M. R. C.), 1880	35 21 35.511	240 35 23.1	60 36 23.7	Bateman (M. R. C.)	3.481840	3,032.8	9,950
	90 06 23.631	297 31 55.1	117 32 35.8	P. B. M. Barksdale (M. R. C.)	3.301375	2,001.6	6,567
Island No. 39 (M. R. C.), 1880	35 20 48.416	187 33 11.6	7 33 16.0	Fogleman (M. R. C.)	3.165564	1,464.1	4,803
	90 06 31.254	255 01 34.6	75 02 19.7	P. B. M. Barksdale (M. R. C.)	3.308892	2,036.5	6,682
Hearn (M. R. C.), 1880	35 19 55.389	175 09 47.3	355 09 44.1	Island No. 39 (M. R. C.)	3.214846	1,640.0	5,381
	90 06 25.777	220 15 14.2	40 15 56.1	P. B. M. Barksdale (M. R. C.)	3.451888	2,830.7	9,287
Sand Bar (M. R. C.) (Ark.), 1880	35 19 32.614	220 18 32.1	40 19 17.5	Island No. 39 (M. R. C.)	3.486244	3,063.7	10,051
	90 07 49.743	251 40 48.8	71 41 37.4	Hearn (M. R. C.)	3.349046	2,233.8	7,329
Island No. 40 (M. R. C.) (Ark.), 1880	35 18 17.003	175 40 45.3	355 40 41.2	Sand Bar (M. R. C.)	3.368620	2,336.8	7,667
	90 07 42.772	212 40 18.3	32 41 02.8	Hearn (M. R. C.)	3.556564	3,602.2	11,818
Dixon (M. R. C.) (Ark.), 1880	35 18 38.521	227 54 10.9	47 54 53.0	Sand Bar (M. R. C.)	3.395665	2,486.9	8,159
	90 09 02.804	288 09 07.8	108 09 54.0	Island No. 40 (M. R. C.)	3.327932	2,127.8	6,981
Overton (M. R. C.), 1880	35 17 53.587	153 35 23.0	333 35 07.3	Dixon (M. R. C.)	3.189252	1,546.2	5,073
	90 08 35.581	241 35 16.8	61 35 47.3	Island No. 40 (M. R. C.)	3.180941	1,516.8	4,976
Bradley (M. R. C.) (Ark.), 1880	35 17 23.484	213 58 14.3	33 58 50.0	Dixon (M. R. C.)	3.445375	2,788.5	9,149
	90 10 04.483	247 33 10.4	67 34 01.8	Overton (M. R. C.)	3.385668	2,430.3	7,973
Beef Island (M. R. C.), 1880	35 16 47.661	115 32 04.4	295 31 11.5	Bradley (M. R. C.)	3.408541	2,561.8	8,405
	90 08 33.004	178 09 51.5	358 09 50.0	Overton (M. R. C.)	3.308076	2,032.7	6,669
Ferguson (M. R. C.), 1880	35 15 14.052	149 34 25.6	329 33 32.0	Bradley (M. R. C.)	3.665220	4,626.2	15,178
	90 08 31.767	179 22 44.6	359 22 43.9	Beef Island (M. R. C.)	3.460138	2,884.9	9,465
Island No. 41 (M. R. C.), 1880	35 15 50.258	61 44 30.3	241 43 42.9	Ferguson (M. R. C.)	3.372208	2,356.2	7,730
	90 07 09.671	130 02 02.8	310 01 14.7	Beef Island (M. R. C.)	3.439417	2,750.5	9,024
Trice (M. R. C.) (Ark.), 1880	35 15 12.042	91 46 27.6	271 45 41.8	Ferguson (M. R. C.)	3.302793	2,008.1	6,588
	90 07 12.369	183 18 50.1	3 18 51.7	Island No. 41 (M. R. C.)	3.071768	1,179.7	3,870
Walt (M. R. C.) (Ark.), 1880	35 14 59.545	103 30 31.1	283 29 54.5	Trice (M. R. C.)	3.217311	1,649.3	5,411
	90 06 08.931	135 30 41.9	315 30 06.9	Island No. 41 (M. R. C.)	3.340624	2,190.9	7,188
Pratt (M. R. C.), 1880	35 15 29.834	27 48 40.9	207 48 29.6	Walt (M. R. C.)	3.023376	1,055.3	3,462
	90 05 49.456	75 20 50.3	255 20 02.4	Trice (M. R. C.)	3.335762	2,166.5	7,108
Weatherford (M. R. C.), 1880	35 14 55.674	93 18 40.2	273 17 53.0	Walt (M. R. C.)	3.315861	2,069.5	6,790
	90 04 47.209	123 47 12.8	303 46 36.9	Pratt (M. R. C.)	3.277208	1,893.3	6,212
Patten (M. R. C.) (Ark.), 1880	35 14 17.404	134 06 49.4	314 06 18.8	Walt (M. R. C.)	3.270867	1,865.8	6,121
	90 05 15.944	211 37 52.8	31 38 09.4	Weatherford (M. R. C.)	3.141506	1,385.2	4,545
Cestor (M. R. C.), 1880	35 13 44.325	119 50 08.3	299 49 27.7	Patten (M. R. C.)	3.311611	2,049.3	6,723
	90 04 05.637	154 27 10.0	334 26 46.0	Weatherford (M. R. C.)	3.386873	2,437.1	7,996
Lamberson (M. R. C.) (Ark.), 1880	35 13 01.975	187 15 34.4	7 15 41.1	Patten (M. R. C.)	3.369826	2,343.3	7,688
	90 05 27.655	237 48 53.4	57 49 40.7	Cestor (M. R. C.)	3.389277	2,450.6	8,040
Morrisey (M. R. C.), 1880	35 12 23.843	139 50 50.0	319 50 27.4	Lamberson (M. R. C.)	3.186820	1,537.5	5,044
	90 04 48.454	203 35 00.1	23 35 24.8	Cestor (M. R. C.)	3.432378	2,706.3	8,879
Barton (M. R. C.) (Ark.), 1880	35 12 16.129	212 11 20.6	32 11 40.9	Lamberson (M. R. C.)	3.222588	1,669.5	5,477
	90 06 02.820	262 47 27.5	82 48 10.4	Morrisey (M. R. C.)	3.277847	1,896.0	6,220

Mississippi River (second order) Mississippi River Commission—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Frame's Chute (M. R. C.), 1879	35 10 57.369	131 25 03.9	311 24 01.2	Barton (M. R. C.)	3.564610	3,669.5	12,039
	90 04 14.033	161 54 24.3	341 54 04.5	Morrisey (M. R. C.)	3.447708	2,803.5	9,198
Mound City (M. R. C.) (Ark.), 1879	35 10 39.498	192 40 50.6	12 41 05.9	Barton (M. R. C.)	3.484634	3,052.3	10,014
	90 06 29.309	260 50 55.0	80 52 13.0	Frame's Chute (M. R. C.)	3.539940	3,466.9	11,374
Hopefield (M. R. C.), 1879	35 09 54.549	114 03 18.7	294 02 08.0	Mound City (M. R. C.)	3.531426	3,399.6	11,154
	90 04 26.625	189 20 44.9	9 20 52.2	Frame's Chute (M. R. C.)	3.292695	1,962.0	6,437
P. B. M. Wolf River (M. R. C.), 1879	35 10 05.795	30 01 00.0	210 00 21.3	P. B. M. Vance Senior (M. R. C. & U. S. E.)	3.531763	3,402.2	11,162
	90 03 19.278	78 30 40.0	258 30 01.2	Hopefield (M. R. C.)	3.240354	1,739.2	5,706
		138 55 27.2	318 54 55.7	Frame's Chute (M. R. C.)	3.323971	2,108.5	6,918
Memphis (M. R. C.), 1879	35 08 39.470	80 23 36.9	260 22 58.5	P. B. M. Vance Senior (M. R. C. & U. S. E.)	3.233454	1,711.8	5,616
	90 03 19.838	143 51 10.1	323 50 31.6	Hopefield (M. R. C.)	3.457188	2,865.4	9,401
		180 18 18.5	0 18 18.8	P. B. M. Wolf River (M. R. C.)	3.424930	2,660.3	8,728
Peterson (M. R. C.), 1879	35 07 45.677	167 43 48.2	347 43 41.4	P. B. M. Vance Senior (M. R. C. & U. S. E.)	3.147365	1,404.0	4,606
	90 04 14.724	219 57 54.8	39 58 26.4	Memphis (M. R. C.)	3.335069	2,163.1	7,097
Vance Jr. (M. R. C.) (Ark.), 1879	35 07 39.170	228 40 48.9	48 41 29.5	P. B. M. Vance Senior (M. R. C. & U. S. E.)	3.376903	2,381.8	7,814
	90 05 37.173	264 30 25.1	84 31 12.5	Peterson (M. R. C.)	3.321625	2,097.1	6,880
Forrest (M. R. C.), 1879	35 06 40.704	166 24 13.0	346 24 03.1	Vance Jr. (M. R. C.)	3.268033	1,853.7	6,082
	90 05 19.962	219 31 08.3	39 31 45.8	Peterson (M. R. C.)	3.414258	2,595.7	8,516
Davis (M. R. C.), 1879	35 07 04.724	238 50 03.1	58 50 43.0	Vance Jr. (M. R. C.)	3.312063	2,051.5	6,731
	90 06 46.503	288 39 23.5	108 40 13.3	Forrest (M. R. C.)	3.364199	2,313.1	7,589
Bayou (M. R. C.) (Ark.), 1879	35 08 05.090	284 37 10.1	104 38 19.7	Vance Jr. (M. R. C.)	3.500060	3,162.7	10,376
	90 07 38.043	324 56 48.7	144 57 18.4	Davis (M. R. C.)	3.356473	2,272.3	7,455
Crawford (M. R. C.), 1879	35 06 53.597	207 27 50.5	27 28 16.5	Bayou (M. R. C.)	3.394989	2,483.1	8,147
	90 08 23.277	262 01 37.3	82 02 33.0	Davis (M. R. C.)	3.393472	2,474.4	8,118
Lake (M. R. C.), 1879	35 07 41.322	253 51 46.9	73 52 44.4	Bayou (M. R. C.)	3.421032	2,636.5	8,650
	90 09 18.082	316 39 33.8	136 40 05.3	Crawford (M. R. C.)	3.305796	2,022.1	6,634
Crittenden east base (M. R. C.) (Ark.), 1879	35 08 25.999	319 17 42.0	139 18 31.0	Davis (M. R. C.)	3.518986	3,303.6	10,839
	90 08 11.587	5 56 05.9	185 55 59.2	Crawford (M. R. C)	3.456800	2,862.9	9,393
Crittenden west base (M. R. C.) (Ark.), 1879	35 08 09.189	256 23 11.7	76 24 00.3	Crittenden east base (M. R. C.)	3.342817	2,202.00	7,224.4
	90 09 36.127	321 37 15.9	141 37 57.8	Crawford (M. R. C.)	3.472952	2,971.3	9,748
Appersen (M. R. C.), 1879	35 06 51.083	198 22 59.6	18 23 17.8	Crittenden west base (M. R. C.)	3.404222	2,536.4	8,322
	90 10 07.724	219 04 10.1	39 04 38.7	Lake (M. R. C.)	3.299775	1,994.2	6,543
		268 18 50.2	88 19 50.3	Crawford (M. R. C.)	3.422598	2,646.0	8,681
Leadbetter (M. R. C.) (De Loche), 1879	35 06 07.980	144 54 20.9	324 53 59.7	Appersen (M. R. C.)	3.210447	1,623.5	5,326
	90 09 30.866	230 35 56.2	50 36 35.1	Crawford (M. R. C.)	3.345363	2,214.9	7,267
Jones (M. R. C.), 1879	35 05 25.510	193 27 13.9	13 27 28.2	Appersen (M. R. C.)	3.433210	2,711.5	8,896
	90 10 32.637	230 04 57.0	50 05 32.5	Leadbetter (M. R. C.) (De Loche)	3.309589	2,039.8	6,692
Ensleys (M. R. C.), 1879	35 04 10.475	149 30 10.8	329 29 39.9	Jones (M. R. C.)	3.428733	2,683.7	8,805
	90 09 38.869	183 12 14.7	3 12 19.3	Leadbetter (M. R. C.) (De Loche)	3.559519	3,626.8	11,899
Mathews (M. R. C.), 1879	35 03 59.698	190 14 41.0	10 14 51.8	Jones (M. R. C.)	3.429313	2,687.3	8,817
	90 10 51.505	259 45 54.1	79 46 35.8	Ensleys (M. R. C.)	3.271870	1,870.1	6,135
Fleece (M. R. C.), 1879	35 03 10.786	145 48 26.9	325 48 03.7	Mathews (M. R. C.)	3.260624	1,822.3	5,979
	90 10 11.087	203 55 51.0	23 56 09.5	Ensleys (M. R. C.)	3.303718	2,012.4	6,602
Reeves (M. R. C.), 1879	35 03 03.963	212 52 32.8	32 52 58.0	Mathews (M. R. C.)	3.310721	2,045.1	6,710
	90 11 35.318	264 22 04.3	84 22 52.7	Fleece (M. R. C.)	3.331416	2,144.9	7,037
Watson's (M. R. C.), 1879	35 01 54.258	168 03 35.5	348 03 25.2	Reeves (M. R. C.)	3.341542	2,195.5	7,203
	90 11 17.394	215 28 10.0	35 28 48.1	Fleece (M. R. C.)	3.461774	2,895.8	9,501
Harris (M. R. C.) (Ark.), 1879	35 02 12.720	229 07 59.1	49 08 40.4	Reeves (M. R. C.)	3.382681	2,413.7	7,919
	90 12 47.343	284 00 13.2	104 01 04.8	Watson's (M. R. C.)	3.371053	2,349.9	7,710
Horn Lake (M. R. C.) (Westbrooks), 1879	35 01 19.201	165 39 06.4	345 38 56.9	Harris (M. R. C.)	3.231055	1,702.4	5,585
	90 12 30.699	239 49 20.0	59 50 02.1	Watson's (M. R. C.)	3.332338	2,149.5	7,052
Patterson's (M. R. C.) (Brewer) (Ark.), 1879	35 02 09.356	266 23 56.7	86 24 34.1	Harris (M. R. C.)	3.218282	1,653.0	5,423
	90 13 52.430	306 42 58.8	126 43 45.7	Horn Lake (M. R. C.) (Westbrooks).	3.412434	2,584.8	8,480
Rock Chute (M. R. C.), 1879	35 01 29.286	238 54 14.7	58 55 01.1	Patterson's (M. R. C.) (Brewer)	3.378632	2,391.3	7,845
	90 15 13.215	274 18 03.4	94 19 36.7	Horn Lake (M. R. C.) (Westbrooks).	3.616126	4,131.7	13,555
Scanlan's (M. R. C.) (Scanlan), 1879	35 02 07.811	269 13 39.1	89 15 00.2	Patterson's (M. R. C.) (Brewer)	3.554225	3,582.8	11,755
	90 16 13.766	307 42 56.3	127 43 31.0	Rock Chute (M. R. C.)	3.287909	1,940.5	6,366

Mississippi River (second order) Mississippi River Commission—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Collins (M R. C.), 1879	35 01 32.373	241 34 42.5	61 35 28.2	Scanlan's (M. R. C.) (Scanlan)	3.360768	2,294.9	7,529
	90 17 32.393	271 31 21.3	91 32 41.7	Rock Chute (M. R. C.)	3.550823	3,554.9	11,663
Cow Island (M. R. C.), 1879	35 00 18.853	158 00 26.2	338 00 05.5	Collins (M. R. C.)	3.388002	2,443.4	8,016
	90 16 57.297	198 11 28.1	18 11 53.1	Scanlan's (M. R. C.) (Scanlan)	3.548310	3,534.4	11,596
Cow Island Bend (M. R. C.), 1879	35 00 11.928	193 11 29.7	13 11 42.8	Collins (M. R. C.)	3.405893	2,546.2	8,354
	90 17 56.314	261 52 46.2	81 53 20.0	Cow Island (M. R. C.)	3.179446	1,511.6	4,959
Fairview (M. R. C.) (Miss.), 1879	34 59 11.523	165 28 59.3	345 28 48.4	Cow Island Bend (M. R. C.)	3.283942	1,922.8	6,308
	90 17 37.306	206 03 21.0	26 03 43.9	Cow Island (M. R. C.)	3.363543	2,309.6	7,577
State Line (M. R. C.) (Rock Chute) (Miss.), 1879	34 58 49.720	111 11 38.9	291 10 59.7	Fairview (M R. C.)	3.269263	1,858.9	6,099
	90 16 28.969	165 20 41.6	345 20 25.3	Cow Island (M. R. C.)	3.453185	2,839.1	9,315
McConnell (M. R C), (Miss.), 1879	34 57 58.426	142 04 52.7	322 04 13.0	Fairview (M. R. C.)	3.455695	2,855.6	9,369
	90 16 28.114	179 12 50.3	359 12 49.8	State Line (M. R. C.) (Rock Chute).	3.198880	1,580.8	5,186
Nelmo (M. R. C.) (Miss.), 1879	34 57 51.296	97 50 56.1	277 50 20.1	McConnell (M. R. C.)	3.206805	1,609.9	5,282
	90 15 25.248	138 05 13.3	318 04 36.8	State Line (M. R. C.) (Rock Chute).	3.383731	2,419.5	7,938
Cat Island Chute (M. R. C.) (Ark.), 1879	34 57 17.214	154 36 09.1	334 35 55.5	McConnell (M. R. C.)	3.147943	1,405.9	4,613
	90 16 04.346	223 21 41.7	43 22 04.1	Nelmo (M. R. C.)	3.159763	1,444.7	4,740
Harcklerode (M. R. C.) (Ark.), 1879	34 56 29.052	124 48 07.2	304 47 19.0	Cat Island Chute (M. R. C.)	3.415113	2,600.8	8,533
	90 14 40.175	155 42 59.9	335 42 34.1	Nelmo (M. R. C.)	3.444123	2,780.5	9,122
Cat Island (M. R. C.) (Ark.), 1879	34 55 31.304	175 49 39.2	355 49 33.8	Cat Island Chute (M. R. C.)	3.514862	3,272.4	10,736
	90 15 54.962	226 50 22.3	46 51 05.1	Harcklerode (M. R C.)	3.415269	2,601.8	8,536
Lamb (M. R. C.) (Ark.), 1879	34 55 11.367	120 09 21.1	300 08 57.3	Cat Island (M. R. C.)	3.087465	1,223.1	4,013
	90 15 13.295	199 20 42.9	19 21 01.9	Harcklerode (M. R. C.)	3.404353	2,537.2	8,324

Mississippi River (second order) Coast and Geodetic Survey

Principal points							
Hopefield north base (Ark.), 1879	35 09 01.894	17 08 44.5	197 08 43.1	B. M. Hopefield (M.R.C. & U.S.E)	2.333076	215.3	706
	90 04 02.881	31 33 06.5	211 32 36.1	Hopefield south base	3.406475	2,549.62	8,364.9
Memphis astronomical station, 1879	35 08 45.158	56 16 00.8	236 15 04.4	Hopefield south base	3.474696	2,983.3	9,788
	90 03 17.583	114 13 20.1	294 12 54.1	Hopefield north base	3.099434	1,257.3	4,125
Dorian, 1879	35 07 40.922	109 27 47.9	289 27 27.1	Hopefield south base	2.985853	968.0	3,176
	90 04 19.530	189 35 07.9	9 35 17.5	Hopefield north base	3.403227	2,530.6	8,302
President, 1879	35 06 40.834	195 49 54.0	15 50 08.0	Hopefield south base	3.354100	2,260.0	7,415
	90 05 19.929	219 32 57.6	39 33 32.4	Dorian	3.380510	2,401.7	7,880
Forrest, 1879	35 06 39.938	236 54 00.4	56 55 17.2	Hopefield south base	3.605630	4,033.0	13,232
	90 07 09.022	269 25 08.4	89 26 11.2	President	3.441350	2,762.8	9,064
Four Mile Bayou (Ark.), 1879	35 08 06.297	276 29 01.9	96 30 33.6	Hopefield south base	3.608637	4,061.0	13,323
	90 07 34.953	346 08 19.6	166 08 34.5	Forrest	3.437923	2,741.1	8,993
Brint, 1879	35 06 51.023	218 46 58.0	38 47 40.4	Four Mile Bayou	3.473636	2,976.0	9,764
	90 08 48.584	277 42 27.8	97 43 25.1	Forrest	3.405570	2,544.3	8,347
		38 55 00.5	218 54 36.2	Leadbetter (M. R. C.) (De Loche)	3.231646	1,704.7	5,593
Lakes, 1879	35 07 41.565	253 47 47.3	73 48 46.9	Four Mile Bayou	3.436581	2,732.6	8,965
	90 09 18.603	333 59 02.2	153 59 19.4	Brint	3.238828	1,733.1	5,686
		6 08 47.8	186 08 40.7	Leadbetter (M. R. C.) (De Loche)	3.462491	2,900.6	9,516
Rowley (Ark.), 1879	35 06 21.668	220 18 36.7	40 19 24.2	Lakes	3.509087	3,229.1	10,594
	90 10 41.111	283 19 56.8	103 20 37.2	Leadbetter (M. R. C.) (De Loche)	3.262066	1,828.4	5,999
Merriweather (Ark.), 1879	35 05 11.339	188 09 36.4	8 09 43.5	Rowley	3.340336	2,189.5	7,183
	90 10 53.382	230 07 38.4	50 08 25.9	Leadbetter (M. R. C.) (De Loche)	3.435060	2,723.1	8,934
Quarantine, 1879	35 05 00.638	99 09 54.6	279 09 08.2	Merriweather	3.316316	2,071.6	6,797
	90 09 32.646	181 14 39.3	1 14 40.4	Leadbetter (M. R. C.) (De Loche)	3.317168	2,075.7	6,810
Allen, 1879	35 03 19.619	188 23 49.3	8 24 00.8	Merriweather	3.541590	3,480.1	11,418
	90 11 13.445	219 21 27.0	39 22 24.9	Quarantine	3.604938	4,026.6	13,211
Convict, 1879	35 03 24.746	85 10 33.0	265 09 50.6	Allen	3.273367	1,876.6	6,157
	90 09 59.655	193 02 11.0	13 02 26.5	Quarantine	3.481903	3,033.2	9,951
Ensley, 1879	35 02 18.385	163 35 58.0	343 35 45.4	Allen	3.293815	1,967.0	6,453
	90 10 51.528	212 43 52.9	32 44 22.7	Convict	3.385807	2,431.1	7,976
		54 02 48.9	234 01 52.0	Horn Lake (M. R. C.) (Westbrooks).	3.492171	3,105.8	10,190

149113°—26——4

Mississippi River (second order) Coast and Geodetic Survey—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Tollison (Ark.), 1879	35 02 12.727	229 03 27.2	49 04 21.0	Allen	3.497779	3,146.1	10,322
	90 12 47.225	266 35 16.9	86 36 23.3	Ensley	3.468009	2,937.7	9,638
		345 44 53.2	165 45 02.7	Horn Lake (M. R. C.) (Westbrooks).	3.230915	1,701.8	5,583
		86 24 33.4	246 23 56.0	Patterson's (M. R. C.) (Brewer)	3.219068	1,656.0	5,433
Montgomery, 1879	35 01 23.801	231 58 27.2	51 59 10.9	Tollison	3.388784	2,447.8	8,031
	90 14 03.299	273 26 52.9	93 27 46.1	Horn Lake (M. R. C.) (Westbrooks).	3.371405	2,351.8	7,716
Lawhorn, 1879	35 01 29.077	49 16 45.3	229 15 48.4	Cow Island (M. R. C.)	3.520697	3,316.6	10,881
	90 15 18.164	130 15 52.3	310 15 20.4	Scanlan's (M. R. C.) (Scanlan)	3.266458	1,847.0	6,060
		240 15 38.4	60 16 27.6	Patterson's (M. R. C.) (Brewer)	3.398417	2,502.7	8,211
		274 05 13.7	94 06 49.8	Horn Lake (M. R. C.) (Westbrooks).	3.629035	4,256.3	13,964
Waverly, 1879	35 01 43.170	246 58 23.7	66 59 04.2	Scanlan's (M. R. C.) (Scanlan)	3.288180	1,941.7	6,370
	90 17 24.266	345 15 16.4	165 15 31.9	Cow Island (M. R. C.)	3.429230	2,686.8	8,815
Forsyth, 1879	35 00 16.250	199 07 22.7	19 07 43.7	Waverly	3.452555	2,835.0	9,301
	90 18 00.903	267 08 51.4	87 09 27.9	Cow Island (M. R. C.)	3.208134	1,614.9	5,298
Fairview (Miss.), 1879	34 58 39.532	159 25 31.3	339 25 06.0	Forsyth	3.502918	3,183.6	10,445
	90 17 16.781	189 10 11.0	9 10 22.2	Cow Island (M. R. C.)	3.491405	3,100.3	10,172
		255 28 58.1	75 29 25.6	State Line (M. R. C.) (Rock Chute).	3.097856	1,252.7	4,110
Cat Island Landing (Miss.), 1879	34 57 58.536	135 54 23.3	315 53 55.6	Fairview	3.245299	1,759.1	5,771
	90 16 28.524	179 35 23.5	359 35 23.3	State Line (M. R. C.) (Rock Chute).	3.197920	1,577.3	5,175
Norfolk (Miss.), 1879	34 57 47.828	101 09 37.7	281 08 59.9	Cat Island Landing	3.231888	1,705.6	5,596
	90 15 22.562	138 33 11.5	318 32 33.5	State Line (M. R. C.) (Rock Chute).	3.405634	2,544.7	8,349
Cat Chute (Ark.), 1879	34 56 29.451	168 11 37.7	348 11 24.7	Cat Island Landing	3.447867	2,804.6	9,201
	90 16 05.905	204 28 41.4	24 29 06.2	Norfolk	3.423873	2,653.8	8,707
Tate (Miss.), 1879	34 56 41.188	80 29 07.7	260 28 19.0	Cat Chute	3.339758	2,186.5	7,174
	90 14 40.926	152 46 50.2	332 46 26.3	Norfolk	3.363489	2,309.3	7,576
Lamb (Ark.), 1879	34 54 55.085	160 25 12.5	340 24 49.1	Cat Chute	3.489465	3,086.5	10,126
	90 15 25.145	198 56 26.9	18 56 52.2	Tate	3.538685	3,456.9	11,342

Cairo, Ill., to Tennessee Loop

Principal points							
Trenton (Ky.), 1930	36 42 26.332	129 40 22.8		Azimuth mark.			
	87 14 39.102						
Elkton (Ky.), 1930	36 48 37.411	49 01 57.87	228 56 40.52	Trenton	4.2413287	17,431.26	57,189.1
	87 05 48.812						
Olmstead (Ky.), 1930	36 44 29.075	79 42 02.62	259 33 44.32	Trenton	4.3226768	21,022.14	68,970.1
	87 00 45.782	135 33 18.85	315 30 17.43	Elkton	4.0304802	10,727.05	35,193.7
		62 29 23.6		Azimuth mark.			
McMurry, 1930	36 37 32.470	133 20 32.61	313 16 41.55	Trenton	4.1207504	13,205.36	43,324.6
	87 08 12.172	189 50 06.85	9 51 32.56	Elkton	4.3181309	20,803.24	68,252.0
		220 45 31.53	40 49 58.20	Olmstead	4.2295031	16,963.02	55,652.8
		315 12 45		Azimuth mark, R. M. no. 2.			
Dunn, 1930	36 33 00.428	120 13 43.52	300 07 57.79	McMurry	4.2221939	16,679.92	54,724.0
	86 58 32.143	171 07 22.28	351 06 02.51	Olmstead	4.3321400	21,485.23	70,489.5
Ashburn, 1930	36 37 09.590	61 43 41.91	241 38 00.21	Dunn	4.2092456	16,189.96	53,116.6
	86 48 58.837	91 30 19.05	271 18 51.03	McMurry	4.4573740	28,666.46	94,049.9
		127 43 08.25	307 36 05.95	Olmstead	4.3458163	22,172.58	72,744.5
		156 16 17		Azimuth mark, R. M. no. 2.			
Williams, 1930	36 29 26.732	124 09 37.75	304 05 45.29	Dunn	4.0696847	11,740.45	38,518.5
	86 52 01.533	197 38 58.46	17 40 47.27	Ashburn	4.1753140	14,973.18	49,124.5
Bradley, 1930	36 32 26.109	72 27 24.03	252 20 27.23	Williams	4.2620855	18,284.60	59,988.7
	86 40 21.083	92 19 21.23	272 08 31.54	Dunn	4.4338975	27,157.98	89,100.8
		124 12 47.08	304 07 38.52	Ashburn	4.1919476	15,557.78	51,042.5
Bethel, 1930	36 24 42.662	125 32 30.06	305 27 37.19	Williams	4.1783435	15,077.99	49,468.4
	86 43 48.609	199 51 56.31	19 53 59.68	Bradley	4.1815764	15,190.65	49,838.0
		214 39 26.0		Azimuth mark, R. M. no. 1.			
Lamberth, 1930	36 30 39.412	50 57 04.55	230 51 41.53	Bethel	4.2415005	17,438.15	57,211.7
	86 34 45.059	85 07 18.93	264 57 02.39	Williams	4.4131578	25,891.54	84,945.8
		111 30 10.14	291 26 50.14	Bradley	3.9534460	8,983.51	29,473.4
		131 56 54.4		Azimuth mark, R. M. no. 2.			

Cairo, Ill., to Tennessee Loop—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Baulch, 1930	36 28 01.081	75 14 34.72	255 05 23.99	Bethel	4.3782061	23,889.45	78,377.3
	86 28 21.405	117 06 05.88	297 02 17.74	Lamberth	4.0303641	10,724.18	35,184.2
		152 08 43.9		Azimuth mark, R. M. no. 1. (1930)			
Hester, 1930	36 28 40.644	61 23 37.29	241 18 17.05	Bethel	4.1846651	15,299.07	50,193.7
	86 34 49.519	181 44 11.50	1 44 14.16	Lamberth	3.5637837	3,662.55	12,016.2
		277 09 39.88	97 13 30.59	Baulch	3.9885180	9,739.08	31,952.3
		256 38 12.4		Azimuth mark, R. M. no. 1.			
Taylor, 1879	36 14 40.226	186 30 08.98	6 30 59.31	Bethel	4.2715930	18,689.30	61,316.5
	86 45 13.557	225 32 58.06	45 42 58.06	Baulch	4.5477933	35,301.51	115,818.4
		157 54 17.1		Azimuth mark.			
Duren, 1879	36 25 08.327	66 32 07.15	246 14 35.05	Taylor	4.6842738	48,336.34	158,583.5
	86 15 37.748	89 03 48.89	268 47 05.14	Bethel	4.6246284	42,133.58	138,233.3
		105 42 14.31	285 34 40.68	Baulch	4.2955763	19,750.42	64,797.8
		125 47 04.5		Azimuth mark.			
Seay, 1878	36 12 16.507	97 30 27.48	277 16 59.94	Taylor	4.5367418	34,414.52	112,908.3
	86 22 27.052	203 11 46.59	23 15 48.97	Duren	4.4131060	25,888.45	84,935.7
		268 38 48		Azimuth mark.			
Bennett, 1880	35 55 53.900	160 54 23.39	340 49 39.84	Taylor	4.5651976	36,744.94	120,554.0
	86 37 12.166	210 46 56.13	30 59 40.18	Duren	4.7994228	63,011.93	206,731.6
		216 06 28.44	36 15 09.55	Seay	4.5742716	37,520.76	123,099.4
		189 01 36		Azimuth mark.			
Jennings, 1878	36 08 53.860	56 46 08.65	236 31 50.17	Bennett	4.6407538	43,727.41	143,462.3
	86 12 53.049	102 34 39.43	282 15 33.45	Taylor	4.6958553	49,642.69	162,869.4
		113 34 36.47	293 28 57.65	Seay	4.1943830	15,645.27	51,329.5
		172 13 16.79	352 11 39.32	Duren	4.4816658	30,315.57	99,460.3
		307 33 22		Azimuth mark.			
Lebanon north base, 1877	36 12 46.624	81 17 32.59	261 15 09.59	Seay	3.7865938	6,117.78	20,071.4
	86 18 24.979	310 49 50.02	130 53 05.97	Jennings	4.0400778	10,966.75	35,980.1
Lebanon south base, 1877	36 08 51.642	140 04 41.46	320 02 36.58	Seay	3.9156883	8,235.47	27,019.2
	86 18 55.491	186 00 25.53	6 00 43.54	Lebanon north base	3.8622898	7,282.656	23,893.18
		269 32 16.80	89 35 50.59	Jennings	3.9571765	9,061.01	29,727.7
Hall, 1880	36 16 40.654	57 02 57.28	236 54 13.74	Jennings	4.4216067	26,400.17	86,614.6
	85 58 06.881	77 31 55.25	257 17 32.01	Seay	4.5723808	37,357.76	122,564.6
		120 55 50.31	300 45 27.46	Duren	4.4845906	30,520.43	100,132.4
Apple, 1882	36 10 47.919	84 42 09.14	264 27 34.18	Jennings	4.5708399	37,225.44	122,130.5
	85 48 10.333	126 10 12.29	306 04 19.72	Hall	4.2658350	18,443.14	60,508.9
Short Mountains, 1880	35 52 11.246	96 53 30.92	276 30 45.44	Bennett	4.7693589	58,797.50	192,904.8
	85 58 23.545	135 54 28.29	315 40 19.05	Seay	4.7145403	51,825.12	170,029.6
		144 54 00.80	324 45 29.60	Jennings	4.5775278	37,803.13	124,025.8
		157 05 36.18	336 55 26.17	Duren	4.8208293	66,195.63	217,176.8
		180 31 34.10	0 31 43.91	Hall	4.6560155	45,291.38	148,593.5
		203 59 30.50	24 05 31.15	Apple	4.5761881	37,686.70	123,643.8
Mount Lore, 1882	35 54 54.199	82 47 40.80	262 32 28.40	Short Mountains	4.5949832	39,353.49	129,112.2
	85 32 27.258	136 24 00.99	316 08 53.92	Hall	4.7460163	55,720.67	182,810.2
		141 18 36.84	321 09 21.88	Apple	4.5763451	37,700.32	123,688.5
		286 07 45.44	106 27 30.85	Hinch Mountain	4.7236100	52,918.80	173,617.8
		268 05 50.4		Azimuth mark, R. M. no. 3.			
Walker, 1882	36 10 26.293	31 48 38.16	211 41 40.23	Mount Lore	4.5287249	33,785.08	110,843.2
	85 20 36.988	59 26 43.76	239 04 30.80	Short Mountains	4.8197404	66,029.86	216,633.0
		91 03 35.32	270 47 19.38	Apple	4.6161855	41,322.40	135,571.9
		295 49 50.69	116 09 26.00	Luper	4.7449654	55,586.00	182,368.4
		322 49 33.64	143 02 25.50	Hinch Mountain	4.7372766	54,610.56	179,168.1
Chestnut, 1881	35 52 36.430	89 25 59.72	269 03 07.97	Short Mountains	4.7688464	58,728.16	192,677.3
	85 19 22.677	102 14 29.09	282 06 49.08	Mount Lore	4.3038300	20,129.36	66,041.1
		176 46 35.63	356 45 51.92	Walker	4.5188695	33,027.03	108,356.2
		259 42 41.53	80 01 29.05	Luper	4.6898145	48,956.97	160,619.7
		288 42 53.98	108 54 59.57	Hinch Mountain	4.5167878	32,869.10	107,838.0
		26 48 00		Azimuth mark.			
Supplementary points							
Russellville, beacon light (Ky.), 1930	36 49 32.379	49 54 20.2	229 49 52.4	Olmstead	4.161531	14,505.4	47,590
	86 53 18.517	84 51 22.4	264 43 52.8	Elkton	4.271214	18,673.0	61,263
		344 15 33.5	164 18 08.8	Ashburn	4.376321	23,786.0	78,038
Kentucky-Tennessee boundary monument no. 27, 1930	36 38 37.624	181 53 30.68	1 53 39.30	Olmstead	4.0350023	10,839.33	35,562.0
	87 01 00.205	278 32 59.53	98 40 09.95	Ashburn	4.2583152	18,126.55	59,470.2
		340 29 23.21	160 30 51.48	Dunn	4.0424230	11,026.13	36,174.9
		79 26 09.94	259 21 52.18	McMurry	4.0381434	10,918.01	35,820.2
Springfield, courthouse, 1930	36 30 32.393	119 28 56.9	299 25 43.6	Dunn	3.967509	9,279.2	30,444
	86 53 07.364	259 31 07.0	79 38 43.1	Bradley	4.287442	19,383.9	63,595
		321 00 17.1	141 00 56.3	Williams	3.415628	2,603.9	8,543
Pilot, 1879	36 06 49.094	184 43 03.0	4 44 09.4	Duren	4.531438	33,996.8	111,538
	86 17 29.978	240 55 53.9	60 58 37.2	Jennings	3.898759	7,920.6	25,986
Zeda Mound, 1881 [1]	36 26 48.84						
	85 26 31.88						

[1] No check on this position.

Cairo, Ill., to Tennessee Loop—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Supplementary points—Continued	° ′ ″	° ′ ″	° ′ ″				
Wassum, 1881 [1]	36 07 55.74 85 30 57.80	5 19 11 54 54 11	185 18 18 234 38 05	Mount Lore Short Mountains	4.383671 4.702963	24,192.0 50,461.8	79,370 165,557
Cardwell, 1881	35 40 56.305 85 40 48.715	128 13 22.4 205 57 08.6	308 03 05.7 26 02 01.9	Short Mountains Mount Lore	4.527428 4.458338	33,684.3 28,730.2	110,513 94,259

Western North Carolina

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance Logarithm (meters)	Meters	Feet
Principal points							
Thomkins (N. C.), 1933	36 14 24.468 81 28 38.965						
Grandfather (N. C.), 1933	36 06 05.574 81 49 21.798	243 33 36.40	63 45 49.92	Thomkins	4.5398110	34,658.60	113,709.1
Sandymush (N. C.), 1933	35 40 46.957 82 52 57.436	29 11 11.0		Azimuth mark, R. M. no. 3.			
Water Rock (U. S. G. S.) (N. C.), 1933	35 27 50.450 83 08 15.997	223 57 02.26	44 05 56.61	Sandymush	4.5222101	33,282.05	109,192.9
Guyot (U. S. G. S.) (Tenn.-N. C.), 1933	35 42 18.696 83 15 27.378	274 39 08.48 337 52 25.66 170 29 12.45	94 52 16.08 157 56 36.68 350 27 47.50	Sandymush Water Rock (U. S. G. S.) English	4.5322323 4.4605755 4.3430909	34,059.03 28,878.56 22,033.88	111,742.0 94,745.7 72,289.5
Max Patch (N. C.), 1933	35 47 49.852 82 57 25.181	332 40 30.27 23 56 49.10 69 30 47.59 110 36 47.11 12 14 13.2	152 43 06.65 203 50 29.96 249 20 15.30 290 24 48.27	Sandymush Water Rock (U. S. G. S.) Guyot (U. S. G. S.) English Azimuth mark, R. M. no. 1.	4.1663595 4.6067002 4.4630276 4.5170049	14,667.61 40,429.67 29,042.07 32,885.53	48,122.0 132,643.0 95,282.2 107,891.9
Cheoah (U. S. G. S.) (N. C.), 1933	35 19 31.755 83 40 51.488	252 32 40.39	72 51 33.03	Water Rock (U. S. G. S.)	4.7133775	51,686.55	169,575.0
Standing Indian (N. C.), 1933	35 02 07.127 83 32 17.223	158 01 56.26 143 14 19.7	337 56 59.97	Cheoah (U. S. G. S.) Azimuth mark, R. M. no. 3.	4.5406119	34,722.58	113,919.0
Tatham (Teyahalee (U. S. G. S.)) (N. C.), 1933	35 15 26.339 83 47 42.816	233 55 28.30 316 21 19.87	53 59 25.94 136 30 12.70	Cheoah (U. S. G. S.) Standing Indian	4.1090393 4.5313930	12,854.03 33,993.27	42,171.9 111,526.3
Lance (Ga.), 1933	34 58 55.184 84 00 14.357	211 51 52.26 261 56 52.05 79 02 41.25 114 54 15.07	31 59 04.62 82 12 54.23 258 43 05.93 294 35 07.91	Tatham (Teyahalee (U. S. G. S.)) Standing Indian Cohutta Bean	4.5561483 4.6328049 4.7249444 4.7455765	35,987.22 42,934.35 53,081.65 55,664.27	118,068.1 140,860.4 174,152.0 182,625.2
Laurel (Tenn.-N. C.), 1933	35 17 47.525 84 01 23.501	264 00 31.27 281 46 54.43 303 06 55.11 357 07 22.10 76 45 51.86	84 12 23.40 101 54 48.41 123 23 40.88 177 08 01.90 256 27 20.13	Cheoah (U. S. G. S.) Tatham (Teyahalee (U. S. G. S.)) Standing Indian Lance Bean	4.4953853 4.3261796 4.7230262 4.5433091 4.6995680	31,288.54 21,192.38 52,847.71 34,938.89 50,068.90	102,652.5 69,528.7 173,384.5 114,628.7 164,267.7
Pack Mountain (U. S. G. S.) (N. C.), 1933	35 02 59.600 84 17 10.135	221 07 27.10 286 13 16.56 56 02 08.38 122 30 52.56 111 51 16.2	41 16 32.41 106 22 59.42 235 52 14.26 302 21 28.82	Laurel Lance Cohutta Bean Azimuth mark, Sassafrass Mountain, fire lookout tower.	4.5607060 4.4286581 4.5015547 4.4683210	36,366.88 26,832.31 31,736.18 29,398.22	119,313.7 88,032.3 104,121.1 96,450.7
Supplementary point							
Wayah Bald, fire lookout tower (N. C.), 1933	35 10 48.593 83 33 39.000	145 53 29.8 352 38 59.3	325 49 20.2 172 39 46.5	Cheoah (U. S. G. S.) Standing Indian	4.289589 4.209588	19,480.0 16,202.7	63,911 53,158

Bristol, Va., to Charleston, W. Va.

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance Logarithm (meters)	Meters	Feet
Principal points							
Clinch (Va.), 1894	36 49 44.301 82 04 46.567	98 22 29.71 291 17 19.30 64 31 58.37 154 23 17.2	278 02 42.11 111 36 30.57 244 16 39.89	High Knob 2 Rogers Big Knob Azimuth mark, R. M. no. 2	4.6950257 4.7100648 4.6256060	49,547.95 51,293.79 42,228.53	162,558.6 168,286.4 138,544.8
Holston 2, 1933	36 26 12.909 82 07 46.147	126 57 21.38 185 50 25.53 244 30 52.45	306 43 54.06 5 52 12.68 64 51 45.38	Big Knob Clinch Rogers	4.6245867 4.6408149 4.7625755	42,129.53 43,733.57 57,886.27	138,220.0 143,482.6 189,915.2
Supplementary points							
Bristol 2 (Tenn.-Va.), 1933	36 35 40.868 82 10 25.175	197 53 06.0 347 15 02.4 71 18 14.5	17 56 28.4 167 16 37.0	Clinch Holston 2 Azimuth mark, R. M. no. 3.	4.436532 4.254023	27,323.2 17,948.3	89,643 58,885
Dunn (Tenn.-Va.), 1895	36 35 44.132 82 15 57.925	263 27 58.7 325 09 41.9 109 42 06.9	83 53 47.4 145 14 34.5 289 33 31.5	Rogers Holston 2 Big Knob	4.812167 4.331259 4.357680	64,888.4 21,441.7 22,786.6	212,888 70,347 74,759

[1] No check on this position.

Bristol, Va., to Charleston, W. Va.—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Supplementary points—Continued	° ′ ″	° ′ ″	° ′ ″				
Smathers, 1933	36 18 28.877	160 15 20.1	340 09 40.0	Big Knob	4.623758	42,049.2	137,956
	82 20 49.760	233 43 23.8	53 51 08.6	Holston 2	4.384000	24,210.3	79,430
		158 25 04.6		Azimuth mark, R. M. no. 2.			
Damascus (Tenn.-Va.), 1895	36 36 50.994	95 27 52.0	275 03 32.8	Big Knob	4.785334	61,000.6	200,133
	81 49 36.593	136 37 28.4	316 28 24.3	Clinch	4.516339	32,835.2	107,727
		258 31 04.7	78 41 10.1	Rogers	4.410076	25,708.5	84,345
White Top 2 (Va.), 1933	36 38 06.447	83 22 02.1	263 14 06.6	Damascus	4.299685	19,938.2	65,414
	81 36 19.636	242 57 41.9	62 59 51.7	Rogers	3.782738	6,063.7	19,894
		324 14 42.7		Azimuth mark, R. M. no. 3.			
North Carolina corner (Va.-N. C.-Tenn.), 1894	36 35 16.967	230 59 48.3	51 02 23.2	White Top 2	3.919311	8,304.5	27,246
	81 40 39.399	236 01 29.2	56 06 13.9	Rogers	4.155104	14,292.4	46,891
		34 34 00.6		Azimuth mark, R. M. no. 2.			
Moody, 1933	36 32 27.424	169 09 24.5	349 08 21.4	Big Knob	4.145145	13,968.3	45,828
	82 28 35.948	227 52 28.8	48 06 42.8	Clinch	4.679057	47,759.2	156,690
		318 43 35.0		Azimuth mark, R. M. no. 3.			
Kingsport, 1933	36 33 09.589	198 21 42.4	18 23 21.4	Big Knob	4.116811	13,086.1	42,933
	82 33 07.753	280 51 35.7	100 54 17.5	Moody	3.837850	6,884.1	22,586
		227 41 15.4		Azimuth mark, R. M. no. 2.			

Boone, N. C., to Bluefield, W. Va. (second order)

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points							
Feathercamp (Va.), 1934	36 39 53.507	271 58 24.3	92 04 35.1	Rogers	4.188444	15,432.8	50,632
	81 43 03.194	337 14 51.9	157 16 17.7	North Carolina corner	3.965797	9,242.7	30,324
		60 06 19.5	240 02 24.7	Damascus	4.052178	11,276.6	36,997
		279 02 40.4		Azimuth mark.			
Grant (U. S. G. S.) (Va.), 1934	36 41 39.926	282 10 11.0	102 16 15.4	Feathercamp	4.190253	15,497.2	50,844
	81 53 13.198	328 50 50.8	148 53 00.1	Damascus	4.017242	10,405.0	34,137
		190 44 17.7		Azimuth mark.			
Glenn (N. C.), 1934	36 34 52.317	105 18 50.0	285 13 28.6	Damascus	4.142717	13,890.5	45,572
	81 40 37.478	123 51 15.7	303 43 44.7	Grant (U. S. G. S.)	4.353927	22,590.6	74,116
		158 42 24.4	338 40 57.5	Feathercamp	3.998479	9,965.0	32,694
		176 24 18.6	356 24 17.5	North Carolina corner	2.881565	761.3	2,498
		233 27 46.6	53 32 30.2	Rogers	4.167083	14,692.1	48,202
		166 35 22.9		Azimuth mark.			
Haunted, 1934	36 36 13.653	164 36 08.6	344 35 02.0	Grant (U. S. G. S.)	4.018372	10,432.1	34,226
	81 51 21.620	241 16 03.9	61 21 01.3	Feathercamp	4.149712	14,116.0	46,312
		246 11 40.8	66 12 43.4	Damascus	3.455246	2,852.6	9,359
		278 50 44.9	98 57 08.9	Glenn	4.209696	16,206.8	53,172
Bald Knob (U. S. G. S.), 1934	36 30 46.529	130 09 17.6	310 04 30.9	Haunted	4.194498	15,649.4	51,343
	81 43 20.369	208 07 20.4	28 08 57.4	Glenn	3.934065	8,591.4	28,187
		229 28 12.6		Azimuth mark.			
Shady, 1934	36 30 07.228	193 20 21.9	13 21 26.0	Haunted	4.064769	11,608.3	38,085
	81 53 09.381	244 46 15.4	64 53 43.0	Glenn	4.315218	20,664.2	67,796
		265 13 36.2	85 19 26.6	Bald Knob (U. S. G. S.)	4.167534	14,707.3	48,252
		206 36 50.1		Azimuth mark			
Trout (N. C.), 1934	36 24 11.542	320 24 27.5	140 30 22.3	Thomkins	4.370430	23,465.5	76,986
	81 38 37.887	116 52 26.1	296 43 48.3	Shady	4.385860	24,314.2	79,771
		150 00 23.6	329 57 35.7	Bald Knob (U. S. G. S.)	4.148008	14,060.7	46,131
		13 41 11.9		Azimuth mark.			
Doe, 1934	36 25 36.098	168 24 19.8	348 23 38.8	Shady	3.931023	8,531.5	27,990
	81 52 00.482	233 29 41.7	53 34 50.8	Bald Knob (U. S. G. S.)	4.206848	16,100.8	52,824
		277 21 35.9	97 29 32.3	Trout	4.304601	20,165.1	66,158
Bald of Rich (U. S. G. S.) (N. C.), 1934	36 18 44.002	133 22 54.3	313 17 34.1	Doe	4.267366	18,508.3	60,723
	81 43 00.480	212 56 29.9	32 59 05.5	Trout	4.080368	12,032.8	39,478
		290 20 10.4	110 28 40.1	Thomkins	4.360629	22,941.9	75,269
		22 12 05.1	202 08 19.8	Grandfather	4.402136	25,242.7	82,817
		58 16 27.5		Azimuth mark.			
Stone (Tenn.-N. C.), 1934	36 18 51.500	184 58 34.1	4 58 59.9	Doe	4.097543	12,518.2	41,070
	81 52 44.071	244 52 13.3	65 00 34.9	Trout	4.367161	23,289.5	76,409
		270 51 41.1	90 57 26.7	Bald of Rich (U. S. G. S.)	4.163175	14,560.5	47,771
		347 54 09.0	167 56 08.4	Grandfather	4.382778	24,142.3	79,207
		266 01 21.4		Azimuth mark.			
Supplementary points							
McQueen, 1934	36 34 18.947	192 48 08.9	12 49 23.1	Grant (U. S. G. S.)	4.144264	13,940.0	45,735
	81 55 17.629	267 14 09.4	87 22 53.9	Glenn	4.340581	21,906.9	71,873
		337 38 19.1	157 39 35.6	Shady	3.923723	8,389.2	27,524
Iron (U. S. G. S.), 1934	36 30 59.811	141 56 28.2	321 54 33.0	McQueen	3.891952	7,797.4	25,582
	81 52 04.302	186 15 28.2	6 15 53.6	Haunted	3.988200	9,732.0	31,929
		247 10 58.4	67 17 47.4	Glenn	4.267751	18,524.7	60,776
		275 36		Azimuth mark.			

Boone, N. C., to Bluefield, W. Va. (second order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Supplementary points—Continued	° ′ ″	° ′ ″	° ′ ″				
Luciuda, 1934	36 21 23.141 81 47 19.399	248 11 22.1 307 11 57.5 274 09 16	68 16 31.4 127 14 31.0	Trout Bald of Rich (U. S. G. S.) Azimuth mark.	4.146033 3.908977	13,996.9 8,109.2	45,921 26,606
Green (N. C.), 1934	36 17 25.527 81 51 18.250	141 04 04.0 258 56 17.4 229 30 22	321 03 13.2 79 01 12.1	Stone Bald of Rich (U. S. G. S.) Azimuth mark.	3.532359 4.102192	3,406.9 12,653.0	11,177 41,512
McQueen, fire lookout tower, 1934 [1]	36 34 18.76 81 55 17.87	192 49 15 321 50 52	12 50 30 141 52 48	Grant (U. S. G. S.) Iron (U. S. G. S.)	4.144484 3.891899	13,947.1 7,796.5	45,758 25,579
Feathercamp, fire lookout tower (Va.), 1934	36 39 53.161 81 43 04.191	246 43 54.8 271 55 50.4	66 43 55.4 92 02 01.8	Feathercamp Rogers	1.430510 4.189129	26.947 15,457.1	88.41 50,712
Kong (Va.), 1934	36 40 50.708 81 52 40.187	151 37 29.5 276 58 04.1 328 18 09.6 277 08 13	331 37 09.8 97 03 48.6 148 19 59.2	Grant (U. S. G. S.) Feathercamp Damascus Azimuth mark.	3.236625 4.159440 3.938673	1,724.3 14,435.8 8,683.1	5,657 47,361 28,488
Cress, 1934	36 29 39.090 81 51 57.701	115 56 00.6 260 47 06.9 296 48 49.5 190 42 57	295 55 17.9 80 52 14.6 116 56 44.6	Shady Bald Knob (U. S. G. S.) Trout Azimuth mark.	3.297467 4.115310 4.348904	1,983.7 13,041.0 22,330.8	6,508 42,785 73,264

Corinth, Miss., to Nashville, Tenn.

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points							
Knob (Miss.), 1914	34 47 15.547 88 14 29.709	115 17 53.25 271 19 04	295 11 27.70	Strickland Azimuth mark.	4.2780409	18,968.85	62,233.6
Counce, 1934	35 00 35.805 88 15 55.111	354 58 05.76 42 08 09.67 75 08 20.1	174 58 54.63 222 02 31.96	Knob Strickland Azimuth mark.	4.3936712 4.3488691	24,755.47 22,328.99	81,218.6 73,257.7
Ayer (Miss.), 1934	34 53 28.797 88 13 05.362	10 33 41.06 80 01 45.83 161 53 19.88 275 29 48.6	190 32 52.88 259 54 31.55 341 51 42.63	Knob Strickland Counce Azimuth mark.	4.0681746 4.2919910 4.1413110	11,699.70 19,588.04 13,845.58	38,384.8 64,265.1 45,425.0
Eastport (Miss.), 1934	34 53 10.932 88 07 12.283	45 27 29.98 93 32 29.97 135 58 53.91 47 05 57.4	225 23 20.11 273 29 08.02 315 53 54.42	Knob Ayer Counce Azimuth mark.	4.1932132 3.9533970 4.2805134	15,603.18 8,982.50 19,077.15	51,191.4 29,470.1 62,588.9
Holland, 1934	35 04 38.594 88 08 15.639	355 39 30.13 57 19 00.51	175 40 06.46 237 14 36.69	Eastport Counce	4.3273951 4.1411873	21,251.77 13,841.63	69,723.5 45,412.1
Ticer (Ala.), 1933	34 58 14.110 88 00 55.868	45 40 10.65 100 54 37.20 136 46 39.74 283 49 11.4	225 36 35.14 280 46 01.55 316 42 27.35	Eastport Counce Holland Azimuth mark.	4.1258865 4.3658682 4.2113562	13,362.46 23,220.32 16,268.82	43,840.0 76,182.0 53,375.3
Pinhook, 1934	35 09 31.974 87 58 03.762	11 48 20.02 59 47 04.45 282 06 09.9	191 46 41.14 239 41 12.46	Ticer Holland Azimuth mark.	4.3291867 4.2537928	21,339.62 17,938.78	70,011.7 58,854.1
Powell, 1933	35 03 44.658 87 51 27.027	54 48 43.00 93 48 06.42 136 50 33.44 163 56 26.0	234 43 16.60 273 38 26.91 316 46 45.27	Ticer Holland Pinhook Azimuth mark.	4.2469052 4.4083930 4.1667220	17,656.52 25,609.02 14,679.86	57,928.1 84,018.9 48,162.2
Houston, 1934	35 13 07.765 87 52 55.911	352 36 17.29 49 32 00.60 160 00 00.9	172 37 08.45 229 29 03.21	Powell Pinhook Azimuth mark.	4.2429980 4.0103581	17,498.39 10,241.37	57,409.3 33,600.2
Martin, 1934	35 09 04.621 87 45 01.473	44 45 03.52 92 30 00.99 122 00 39.25 275 51 22.8	224 41 21.79 272 22 30.57 301 56 05.87	Powell Pinhook Houston Azimuth mark.	4.1422878 4.2970607 4.1507721	13,876.75 19,818.04 14,150.51	45,527.3 65,019.7 46,425.5
McCall, 1934	35 13 03.587 87 43 10.773	20 49 56.38 90 32 43.17 178 57 29.1	200 48 52.60 270 27 05.73	Martin Houston Azimuth mark.	3.8964634 4.1702390	7,878.86 14,799.23	25,849.2 48,553.8
Hassell, 1934	35 20 26.494 87 48 34.783	329 00 49.80 345 35 20.11 26 02 14.22 109 38 08.7	149 03 56.94 165 37 23.22 205 59 43.41	McCall Martin Houston Azimuth mark.	4.2018620 4.3363490 4.1773932	15,917.03 21,694.47 15,045.03	52,221.1 71,175.9 49,360.2
Wayne, 1934	35 22 43.286 87 42 29.511	3 20 35.02 65 27 46.66 331 12 44.8	183 20 11.18 245 24 15.27	McCall Hassell Azimuth mark.	4.2527382 4.0060322	17,895.27 10,139.86	58,711.4 33,267.2
Banning, 1934	35 18 28.273 87 31 11.873	61 13 08.18 97 57 29.66 114, 43 20.22 47 32 08.6	241 06 13.14 277 47 26.64 294 36 48.22	McCall Hassell Wayne Azimuth mark.	4.3169006 4.4247598 4.2748537	20,744.39 26,592.54 18,830.15	68,058.9 87,245.7 61,778.6

[1] No check on this position.

Corinth, Miss., to Nashville, Tenn.—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Bon Air, 1934	35 22 59.311	318 03 30.89	138 06 22.70	Banning	4.0501949	11,225.22	36,828.1
	87 36 08.852	87 05 17.26	267 01 36.86	Wayne	3.9832045	9,620.65	31,563.7
		322 16 32.9		Azimuth mark.			
Hurst, 1934	35 32 19.049	357 36 58.83	177 37 23.29	Banning	4.4086660	25,625.12	84,071.7
	87 31 54.059	20 26 52.53	200 24 24.71	Bon Air	4.2650022	18.407.81	60,393.0
		42 08 04.17	222 01 55.54	Wayne	4.3785496	23,908.35	78,439.3
		315 30 07.6		Azimuth mark.			
Henry, 1934	35 22 40.499	50 00 29.41	229 56 57.37	Banning	4.0823314	12,087.36	39,656.6
	87 25 05.308	92 02 08.89	271 55 44.69	Bon Air	4.2242270	16,758.19	54,980.8
		150 00 05.42	329 56 08.30	Hurst	4.3137574	20,594.79	67,568.1
		228 58 48.2		Azimuth mark.			
Summer, 1934	35 29 14.204	38 59 27.58	218 55 42.08	Henry	4.1932290	15,603.75	51,193.3
	87 18 36.347	105 53 12.08	285 45 28.70	Hurst	4,3200063	20,893.26	68,547.3
		5 37 42.4		Azimuth mark.			
Gordon, 1934	35 35 58.952	325 31 23.36	145 34 40.83	Summer	4.1797431	15,126.66	49,628.0
	87 24 16.043	2 53 34.36	182 53 05.76	Henry	4.3916134	24,638.45	80,834.6
		59 35 53.80	239 31 27.38	Hurst	4.1263690	13,377.32	43,888.8
		89 07 34.9		Azimuth mark.			
Kincade, 1934	35 39 59.939	357 52 13.57	177 52 30.65	Summer	4.2991720	19,914.62	65,336.5
	87 19 05.704	46 27 35.06	226 24 34.26	Gordon	4.0324826	10,776.62	35,356.3
		168 30 55.5		Azimuth mark.			
Polk, 1934	35 33 13.821	62 04 21.52	241 59 00.90	Summer	4.1971231	15,744.29	51,654.4
	87 09 24.490	102 50 42.86	282 42 04.17	Gordon	4.3620718	23,018.22	75,518.9
		130 35 51.41	310 30 12.99	Kincade	4.2844795	19,252.16	63,163.1
		160 16 14.5		Azimuth mark.			
McKee, 1934	35 42 17.383	17 20 10.23	197 18 09.29	Polk	4.2442221	17,547.78	57,571.3
	87 05 56.884	78 00 32.07	257 52 51.92	Kincade	4.3071147	20,282.18	66,542.5
		18 53 28.5		Azimuth mark.			
Stevens, 1933	35 47 35.614	309 29 54.43	129 34 30.73	McKee	4.1877244	15,407.22	50,548.5
	87 13 49.807	345 52 35.09	165 55 09.81	Polk	4.4375177	27,385.31	89,846.6
		29 30 17.13	209 27 12.66	Kincade	4.2076982	16,132.37	52,927.6
		228 27 15.2		Azimuth mark.			
Hamilton, 1933	35 53 05.022	353 56 35.43	173 57 24.70	McKee	4.3025928	20,072.10	65,853.2
	87 07 21.130	43 53 11.56	223 49 23.98	Stevens	4.1485780	14,079.20	46,191.5
		250 40 55.4		Azimuth mark.			
Theta, 1933	35 47 00.283	16 24 34.62	196 23 34.96	McKee	3.9585050	9,088.77	29,818.7
	87 04 14.748	94 21 31.73	274 15 55.44	Stevens	4.1608394	14,482.36	47,514.2
		157 25 16.62	337 23 27.51	Hamilton	4.0854998	12,175.87	39,947.0
		40 59 43.8		Azimuth mark.			
Columbia, 1934	35 37 03.239	55 14 44.02	235 10 43.77	Polk	4.0931675	12,392.75	40,658.5
	87 02 40.227	152 57 11.36	332 55 16.71	McKee	4.0363154	10,872.15	35,669.7
		199 52 29.24	19 55 04.81	Wright	4.2943393	19,694.24	64,613.5
		77 51 24.0		Azimuth mark.			
Wright, 1933	35 47 04.112	52 49 56.28	232 45 25.66	McKee	4.1647816	14,614.42	47,947.5
	86 58 13.627	89 17 01.51	269 13 30.35	Theta	3,9576070	9,069.99	29,757.1
		129 02 02.35	308 56 41.82	Hamilton	4.2474626	17,679.20	58,002.5
		146 49 29.1		Azimuth mark.			
Cox, 1934	35 56 54.579	343 33 40.86	163 35 46.11	Wright	4.2781215	18,972.37	62,245.2
	87 01 47.410	49 48 35.83	229 45 20.07	Hamilton	4.0397107	10,957.48	35,949.7
		264 23 17.3		Azimuth mark.			
Carter, 1933	35 53 50.450	28 55 28.28	208 52 46.97	Wright	4.1554952	14,305.24	46,933.1
	86 53 38.130	86 11 11.46	266 03 08.99	Hamilton	4.3157318	20,688.63	67,875.9
		114 52 01.84	294 47 14.79	Cox	4,1308349	13,515.59	44,342.4
		264 16 34.3		Azimuth mark.			
Mayche, 1933	36 02 48.805	19 16 22.49	199 14 06.61	Carter	4.2449131	17,575.72	57,663.0
	86 49 46.809	58 53 21.08	238 46 17.55	Cox	4.3241563	21,093.87	69,205.5
		308 59 55.9		Azimuth mark.			
Gourley, 1933	36 06 44.346	294 25 05.86	114 31 21.31	Mayche	4,2436863	17,526.14	57,500.3
	87 00 24.351	336 52 02.62	156 56 01.41	Carter	4.4138263	25,931.42	85,076.7
		6 31 58.93	186 31 10.07	Cox	4.2623551	18,295.95	60,026.0
		217 32 38.8		Azimuth mark.			
Moore, 1934	36 11 27.474	248 50 45.99	68 56 50.15	Taylor	4.2175000	16,500.61	54,135.8
	86 55 29.882	331 44 59.44	151 48 21.67	Mayche	4.2587120	18,143.12	59,524.6
		40 10 22.63	220 07 28.92	Gourley	4.0575376	11,416.62	37,456.0
		49 25 41.8		Azimuth mark.			
Dillon, 1933	36 09 43.424	18 15 53.51	198 14 14.23	Mayche	4.1289226	13,456.20	44,147.5
	86 46 58.327	104 07 29.54	284 02 27.58	Moore	4.1199136	13,179.95	43,241.2
		195 57 27.25	15 58 29.13	Taylor	3.9784153	9,515.14	31,217.6
		290 22 03.0		Azimuth mark, city hospital.			
Landrum, 1933	36 15 26.869	220 48 52.13	40 54 44.23	Bethel	4.3551084	22,652.09	74,317.7
	86 53 42.852	276 24 32.15	96 29 33.31	Taylor	4.1070845	12,796.30	41,982.5
		316 17 53.64	136 21 52.61	Dillon	4.1653753	14,634.41	48,013.1
		19 55 21.30	199 54 18.05	Moore	3,8947579	7,847.98	25,747.9
		16 57 05.4		Azimuth mark.			

Corinth, Miss., to Nashville, Tenn.—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Cooper, 1933	36 20 15.880	236 40 31.41	56 45 29.45	Bethel	4.1756363	14,984.29	49,161.0
	86 52 11.132	314 45 38.59	134 49 45.75	Taylor	4.1668361	14,683.72	48,174.8
		14 24 56.45	194 24 02.15	Landrum	3.9636639	9,197.37	30,175.0
		136 21 59.4		Azimuth mark.			
Love, 1933	36 08 17.287	120 47 07.56	300 43 14.96	Moore	4.0593311	11,463.87	37,611.0
	86 48 55.714	151 34 30.34	331 31 40.77	Landrum	4.1777990	15,059.10	49,406.4
		227 51 14.38	47 52 23.63	Dillon	3.5973933	3,957.25	12,983.1
Supplementary points							
Iuka, municipal tank (Miss.), 1934[1]	34 48 45.87	56 25 14	236 23 40	Knob	3.701594	5,030.3	16,504
	88 11 44.87	220 16 12	40 18 48	Eastport	4.029730	10,708.5	35,133
Dowdy (Tenn.-Ala.), 1934	35 00 20.812	64 11 28.5	244 08 26.2	Ticer	3.952307	8,960.0	29,396
	87 55 37.893	112 31 53.6	292 24 38.6	Holland	4.317720	20,783.6	68,188
		225 19 47.0	45 22 11.0	Powell	3.951263	8,938.5	29,326
Eaves (Tenn.-Ala.), 1934	35 00 24.215	91 22 22.2	271 16 32.6	Counce	4.189051	15,454.4	50,703
	88 05 45.774	154 09 34.2	334 08 08.1	Holland	3.940057	8,710.8	28,579
		298 34 48.9	118 37 35.1	Ticer	3.922968	8,374.7	27,476
Airway beacon no. 60, 1933	35 56 08.133	293 28 57.5	113 34 00.8	Hamilton	4.150425	14,139.2	46,388
	87 15 58.154	348 28 02.9	168 29 18.1	Stevens	4.207391	16,121.0	52,890
		8 58 59.9	188 57 10.3	Kincade	4.480139	30,209.2	99,111
Hohenwald, municipal water tank (black), 1934	35 32 36.383	286 52 53.7	106 53 34.2	Hurst	3.264574	1,839.0	6,033
	87 33 03.914	326 38 59.7	146 43 37.4	Henry	4.341922	21,974.7	72,095
		14 42 26.4	194 40 39.1	Bon Air	4.264479	18,385.6	60,320
Collingwood, concrete stack, 1934	35 10 20.147	110 50 33.8	290 45 24.0	Houston	4.162757	14,546.4	47,724
	87 43 58.380	193 26 38.4	13 27 05.9	McCall	3.714222	5,178.7	16,990
Airway beacon no. 62, 1934	36 00 35.297	197 00 59.3	17 02 21.2	Gourley	4.075406	11,896.1	39,029
	87 02 43.547	348 18 52.9	168 19 25.9	Cox	3.841773	6,946.6	22,791
Radio station WSM, light on tower, flashing red, 1934	35 59 53.152	39 47 21.4	219 43 43.5	Carter	4.162615	14,541.7	47,709
	86 47 27.048	147 07 59.1	327 06 36.9	Mayche	3.809317	6,446.4	21,150
Airway beacon no. 65, 1933	36 16 44.261	78 04 24.2	257 57 17.5	Taylor	4.265036	18,409.2	60,398
	86 33 12.174	132 56 54.9	312 50 37.7	Bethel	4.335728	21,663.5	71,074
		199 08 07.0	19 10 59.4	Baulch	4.344097	22,085.0	72,457
Airway beacon no. 64, 1933	36 07 57.801	86 18 00.2	266 04 39.1	Gourley	4.532227	34,058.6	111,741
	86 37 45.411	137 57 45.4	317 53 20.8	Taylor	4.222986	16,710.4	54,824
		163 42 56.6	343 39 21.7	Bethel	4.508825	32,271.9	105,879
Airway beacon no. 24, 1933	36 24 54.108	271 53 49.8	91 57 59.0	Bethel	4.019777	10,465.9	34,337
	86 50 48.440	13 31 17.4	193 30 28.3	Cooper	3.945472	8,820.1	28,937
		13 59 05.7	193 57 22.3	Landrum	4.255680	18,016.9	59,110
Airway beacon no. 23, 1933	36 17 18.198	293 36 00.8	113 40 24.4	Taylor	4.084370	12,144.2	39,843
	86 52 39.258	21 31 27.8	201 29 46.8	Moore	4.065184	11,619.4	38,121
		24 49 44.5	204 49 06.9	Landrum	3.577579	3,780.8	12,404
Airway beacon no. 63, 1933	36 03 37.971	173 59 59.4	353 59 05.1	Landrum	4.341836	21,970.3	72,081
	86 52 10.857	214 44 00.0	34 47 04.2	Dillon	4.137050	13,710.4	44,982
		292 47 08.7	112 48 33.5	Mayche	3.592278	3,910.9	12,831
Nashville, Tennessee State Capitol, flagpole on cupola, 1934.[1]	36 09 56.77	42 31 48	222 30 42	Love	3.619112	4,160.2	13,649
	86 47 03.24	135 34 48	315 30 52	Landrum	4.153919	14,253.4	46,763
Nashville latitude and longitude station, 1877[1]	36 09 57.27						
	86 47 00.67						
Nashville, First Baptist Church, spire (Broadway and Seventh Street), 1934.[1]	36 09 33.11	53 13 31	233 12 17	Love	3.591373	3,902.8	12,804
	86 46 50.68	148 59 10	328 59 06	Dillon	2.569257	370.9	1,217
Nashville, old post-office building, finial (Broadway and Eighth Street), 1934.[1]	36 09 31.98	53 05 36	233 04 24	Love	3.583537	3,833.0	12,575
	86 46 53.13	159 46 22	339 46 18	Dillon	2.574953	375.8	1,233
Nashville, Louisville & Nashville Railroad station, ball at foot of statue (Winged Mercury) (Broadway and Tenth Street), 1934.[1]	36 09 26.37	52 15 53	232 14 48	Love	3.541380	3,478.4	11,412
	86 47 05.69	199 17 36	19 17 40	Dillon	2.745791	556.9	1,827
Nashville, radio station WSM (old plant), north tower (Fifteenth Avenue South), 1934.[1]	36 08 25.27	83 32 44	263 31 53	Love	3.339856	2,187.0	7,175
	86 47 28.80	197 32 39	17 32 57	Dillon	3.402492	2,526.3	8,288
Nashville, radio station WSM (old plant), south tower (Fifteenth Avenue South), 1934.[1]	36 08 22.27	85 52 42	265 51 52	Love	3.329184	2,133.9	7,001
	86 47 30.58	197 51 58	17 52 17	Dillon	3.419633	2,628.0	8,622
Large silver water tank southeast of Nashville, 1934[1]	36 06 05.91	122 23 34	302 21 03	Love	3.878681	7,562.8	24,812
	86 44 40.30	152 46 18	332 44 56	Dillon	3.877390	7,540.3	24,738
Nashville, St. Thomas Hospital, stack (Church and Twenty-first Streets), 1934.[1]	36 09 08.17	238 01 08	58 01 49	Dillon	3.312179	2,052.0	6,732
	86 48 07.96	37 16 56	217 16 27	Love	3.294666	1,970.9	6,466
Nashville, Vanderbilt University, College Hall, center of tower, 1934.[1]	36 08 53.00	228 58 08	48 58 50	Dillon	3.374353	2,367.8	7,768
	86 48 09.79	46 12 47	226 12 20	Love	3.201535	1,590.5	5,218
Nashville, Vanderbilt University, power house, stack, 1934.[1]	36 08 44.61	52 02 02	232 01 36	Love	3.136323	1,368.7	4,490
	86 48 12.56	225 39 39	45 40 22	Dillon	3.413977	2,594.0	8,510

[1] No check on this position.

Smithville, Tenn., to Huntsville, Ala. (second order)

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points	° ′ ″	° ′ ″	° ′ ″				
Cope, 1934	35 47 46.077	109 40 23.1	289 31 27.7	Short Mountains	4.386757	24,364.5	79,936
	85 43 09.041	230 37 01.4	50 43 17.3	Mount Lore	4.318456	20,818.8	68,303
		336 02 27.7		Azimuth mark.			
McMinnville, 1934	35 41 37.759	136 26 46.1	316 19 33.0	Short Mountains	4.430830	26,966.8	88,474
	85 46 02.883	201 01 57.8	21 03 39.3	Cope	4.085036	12,162.9	39,904
		219 46 16.8	39 54 13.9	Mount Lore	4.504703	31,967.1	104,879
		92 15 39.0		Azimuth mark, R. M. no. 3.			
Barnes, 1934	35 40 22.374	219 21 15.4	39 28 13.1	Short Mountains	4.451447	28,277.9	92,775
	86 10 18.307	266 14 59.0	86 29 07.9	McMinnville	4.564328	36,671.4	120,313
		182 19 42.2		Azimuth mark, R. M. no. 1.			
Wilson, 1934	35 34 19.257	185 15 29.5	5 16 40.2	Short Mountains	4.520857	33,178.5	108,853
	86 00 24.746	237 59 59.4	58 08 21.5	McMinnville	4.407427	25,552.1	83,832
		126 53 20.9	306 47 35.2	Barnes	4.271007	18,664.1	61,234
		313 21 33.4		Azimuth mark.			
Model, 1934	35 32 28.867	195 02 22.5	15 03 53.2	Barnes	4.179308	15,111.5	49,578
	86 12 54.226	259 43 21.3	79 50 37.1	Wilson	4.282852	19,180.2	62,927
		277 09 50.1		Azimuth mark, R. M. no. 2.			
Forest, 1934	35 30 57.398	145 06 40.7	325 01 59.5	Barnes	4.327101	21,237.4	69,676
	86 02 15.289	204 06 15.2	24 07 19.4	Wilson	3.833516	6,815.8	22,362
		99 59 03.7	279 52 52.4	Model	4.213318	16,342.5	53,617
		49 00 07.0		Azimuth mark, R. M. no. 3.			
Redfern, 1934	35 21 51.787	162 53 43.2	342 51 24.1	Model	4.312695	20,544.5	67,403
	86 08 54.351	210 52 19.4	30 56 10.8	Forest	4.292190	19,597.0	64,294
		129 43 47.8		Azimuth mark.			
Hurricane, 1934	35 21 31.305	204 40 07.7	24 43 42.0	Model	4.348411	22,305.5	73,181
	86 19 03.798	267 36 06.7	87 41 59.3	Redfern	4.187500	15,399.3	50,523
		35 16 24.9		Azimuth mark.			
Huskey, 1934	35 16 29.393	200 45 21.8	20 46 42.5	Hurricane	3.997854	9,950.7	32,647
	86 21 23.473	242 14 15.9	62 21 28.8	Redfern	4.329848	21,372.1	70,118
		112 52 03.5		Azimuth mark.			
Stone, 1934	35 15 21.084	132 49 31.1	312 44 49.1	Hurricane	4.225221	16,796.6	55,107
	86 10 55.859	194 17 33.1	14 18 43.2	Redfern	4.094318	12,425.6	40,766
		97 36 33.5	277 30 31.2	Huskey	4.204196	16,002.8	52,503
		336 42 41.0		Azimuth mark.			
Lois, 1934	35 12 50.314	188 36 50.7	8 37 14.0	Huskey	3.834325	6,828.5	22,403
	86 22 03.940	254 34 04.6	74 40 29.9	Stone	4.243540	17,520.2	57,481
		251 19 35.0		Azimuth mark.			
Cole, 1934	35 08 45.301	135 27 28.4	315 22 07.0	Huskey	4.302801	20,081.7	65,885
	86 12 06.128	188 17 10.3	8 17 50.7	Stone	4.090811	12,325.7	40,439
		116 34 28.8	296 28 44.4	Lois	4.228043	16,906.1	55,466
		39 26 30.3		Azimuth mark.			
Raynolds, 1934	35 02 03.742	169 36 02.5	349 34 39.3	Lois	4.306611	20,258.7	66,465
	86 19 39.356	222 49 02.6	42 53 23.1	Cole	4.227372	16,880.0	55,380
		21 23 34.5		Azimuth mark.			
Patrick, 1934	35 05 31.216	223 40 51.5	43 45 45.9	Lois	4.272387	18,723.5	61,429
	86 30 35.213	290 59 26.0	111 05 42.8	Raynolds	4.250570	17,806.1	58,419
		223 46 16.9		Azimuth mark.			
Quick, 1934	35 00 35.306	208 32 23.6	28 34 15.7	Patrick	4.016269	10,381.7	34,061
	86 33 51.031	262 44 18.3	82 52 26.9	Raynolds	4.337711	21,762.6	71,399
		207 28 02.8		Azimuth mark.			
Hale (Ala.), 1934	34 59 18.001	129 05 21.3	309 00 00.0	Patrick	4.261449	18,257.8	59,901
	86 21 15.754	205 33 56.4	25 34 51.7	Raynolds	3.752984	5,662.2	18,577
		97 09 01.0	277 01 47.9	Quick	4.285567	19,300.4	63,321
		317 56 28.1		Azimuth mark.			
Steger (Ala.), 1934	34 55 57.007	207 50 31.4	27 52 13.8	Quick	3.986774	9,700.1	31,824
	86 36 49.701	255 16 35.5	75 25 30.5	Hale	4.389006	24,491.0	80,351
		271 12 07.9		Azimuth mark.			
Deposit (Ala.), 1934	34 51 46.595	142 37 52.2	322 33 11.0	Quick	4.311988	20,511.1	67,293
	86 25 40.048	205 43 27.6	25 45 58.8	Hale	4.188741	15,443.3	50,667
		114 27 50.7	294 21 27.6	Steger	4.271181	18,671.6	61,258
Supplementary points							
Young, 1934	35 51 05.377	252 57 25.4	73 06 25.5	Mount Lore	4.383198	24,165.6	79,283
	85 47 48.749	311 09 30.2	131 12 13.9	Cope	3.969825	9,328.8	30,606
		97 18 56.3	277 12 44.4	Short Mountains	4.205634	16,055.9	52,677
		167 35 12.5		Azimuth mark, R. M. no. 3.			
Hinton, 1934	35 34 51.834	79 43 01.7	259 40 54.1	Wilson	3.749336	5,614.8	18,421
	85 56 45.346	175 36 08.9	355 35 11.5	Short Mountains	4.506901	32,129.3	105,411
		33 56 48.0		Azimuth mark.			

143113°—35——9

Smithville, Tenn., to Huntsville, Ala. (second order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Supplementary points—Continued	° ′ ″	° ′ ″	° ′ ″				
Bush, 1934	35 42 14.702	228 42 50.6	48 50 59.2	Short Mountains	4.445638	27,902.2	91,542
	86 12 19.286	318 41 05.6	138 42 16.2	Barnes	3.663559	4,608.5	15,120
		2 47 27.0	182 47 06.7	Model	4.257111	18,076.4	59,306
		311 52 47.4		Azimuth mark, R. M. no. 1.			
West, 1934	35 26 34.326	39 47 08.5	219 44 10.2	Hurricane	4.084510	12,148.1	39,856
	86 13 55.891	188 05 28.7	8 06 04.5	Model	4.042828	11,036.4	36,209
		245 17 12.4	65 23 59.0	Forest	4.288559	19,433.9	63,759
		318 49 38.7	138 52 33.3	Redfern	4.063085	11,563.4	37,938
		143 15 34.6		Azimuth mark.			
Center Grove (Transit traverse station no. 73 D 1930 (U. S. G. S.)), 1934.	35 18 48.174	70 23 38.3	250 19 04.5	Huskey	4.104560	12,722.1	41,739
	86 13 29.277	120 46 58.8	300 43 45.4	Hurricane	3.992588	9,830.8	32,253
		230 47 50.2	50 50 29.2	Redfern	3.952146	8,956.7	29,385
		17 53 10.5		Azimuth mark.			
Tullahoma, 1934	35 21 45.616	87 27 06.0	267 23 21.6	Hurricane	3.991193	9,799.3	32,150
	86 12 36.051	167 14 53.2	347 14 06.9	West	3.960125	9,122.7	29,930
		268 02 09.9	88 04 18.1	Redfern	3.748203	5,600.2	18,373
		155 07 18.7		Azimuth mark, R. M. no. 3.			
Kasserman (Primary traverse station no. 13 T 1926 (U. S. G. S.)), 1934.	35 09 33.602	72 53 09.8	252 51 20.0	Cole	3.703617	5,053.8	16,581
	86 08 55.319	164 06 59.4	344 05 49.8	Stone	4.046650	11,134.0	36,529
		124 47 37.8		Azimuth mark.			
Winchester, 1934	35 10 49.913	59 39 32.4	239 38 01.0	Kasserman (Primary traverse station no. 13 T 1926 (U. S. G. S.)).	3.367794	4,653.7	15,268
	86 06 16.631	66 33 34.5	246 30 13.3	Cole	3.984199	9,642.7	31,636
		139 49 20.7	319 46 39.6	Stone	4.039057	10,941.0	35,896
		146 06 52.5		Azimuth mark.			
Elora, 1934	35 00 47.443	227 56 04.9	47 57 03.9	Raynolds	3.545305	3,510.0	11,516
	86 21 22.156	356 37 44.3	176 37 48.0	Hale	3.441069	2,761.0	9,058
		123 57 46.7		Azimuth mark.			
Madilin (Ala.), 1934	34 59 26.566	30 59 59.8	210 58 32.2	Steger	3.876960	7,532.9	24,714
	86 34 16.831	197 09 45.3	17 10 00.1	Quick	3.345772	2,217.0	7,274
		317 10 43.0	137 15 38.9	Deposit	4.285826	19,311.9	63,359
		156 48 13.3		Azimuth mark.			
McMinnville, municipal water tank (aluminum), 1934.[1]	35 41 31.60	202 19 11	22 21 01	Cope	4.096121	12,477.3	40,936
	85 46 17.75	243 04 47	63 04 56	McMinnville	2.622429	419.2	1,375
Summitville, white church spire, 1934 [1]	35 33 34.37	40 10 06	220 08 32	Forest	3.801364	6,329.4	20,766
	85 59 33.26	136 51 54	316 51 24	Wilson	3.277831	1,896.0	6,220
Manchester, white water tank, 1934 [1]	35 29 06.17	118 32 59	298 28 34	Model	4.116813	13,086.2	42,934
	86 05 17.90	233 18 25	53 20 11	Forest	3.758808	5,738.6	18,827
Airway beacon no. 16, 1934	35 27 00.407	87 47 59.3	267 40 12.1	West	4.308258	20,335.6	66,718
	86 00 30.188	118 25 10.4	298 17 58.4	Model	4.328599	21,310.8	69,917
		149 06 53.5	329 01 11.4	Barnes	4.459601	28,813.8	94,533
Tullahoma, Campbell & Dann Mfg. Co., aluminum water tank, 1934.	35 22 22.656	170 42 52.7	350 42 23.7	West	3.895372	7,859.1	25,784
	86 13 05.612	278 30 34.3	98 32 59.8	Redfern	3.807117	6,413.8	21,043
Tullahoma, municipal water tank (aluminum), 1934	35 21 42.054	266 52 18.9	86 54 25.4	Redfern	3.742538	5,527.6	18,135
	86 12 32.979	14 51 49.6	194 51 17.0	Center Grove (Transit traverse station no. 73 D 1930 (U. S. G. S.)).	3.743822	5,544.0	18,189
Tullahoma, black water tank, 1934 [1]	35 21 18.36	109 25 49	289 24 54	Tullahoma	3.402451	2,526.1	8,288
	86 11 01.69	252 13 19	72 14 33	Redfern	3.528393	3,375.9	11,076
Primary traverse station no. 8 T 1926 (U. S. G. S.), 1934 [1]	35 00 48.32	335 31 50	155 31 50	Elora	1.474915	29.848	97.93
	86 21 22.64						
Winchester, municipal water tank (aluminum), ball on top, 1934.	35 11 09.212	114 10 46.9	294 02 24.0	Huskey	4.383009	24,155.1	79,249
	86 06 51.571	141 30 06.3	321 27 45.4	Stone	3.996534	9,920.5	32,548
		303 55 41.0	123 56 01.2	Winchester	3.027548	1,065.5	3,496

Union City, Tenn., to La Fayette, Ga. (second order)

Principal points							
Hagons, 1934	36 26 01.809	71 46 38.5	251 40 21.3	Chigger	4.222036	16,673.9	54,704
	89 09 30.056	116 10 36.3	296 06 01.4	Fishgap	4.108262	12,831.0	42,096
		250 11 02.9		Azimuth mark.			
Troy, 1934	36 21 27.066	103 26 35.4	283 21 11.8	Chigger	4.145568	13,982.0	45,873
	89 10 59,883	146 41 59.7	326 38 18.4	Fishgap	4.227915	16,901.1	55,450
		194 47 57.4	14 48 50.7	Hagons	3.942469	8,759.3	28,738
		335 51 50.0		Azimuth mark.			
Chambers, 1934	36 27 04.025	58 58 54.7	238 52 04.2	Troy	4.303669	20,121.9	66,017
	88 59 28.234	82 45 30.7	262 39 33.2	Hagons	4.179287	15,110.8	49,576
		42 45 34.4		Azimuth mark.			
Rives, 1934	36 21 42.190	87 19 42.7	267 15 48.0	Troy	3.994778	9,880.5	32,416
	89 04 24.025	136 24 13.4	316 21 11.8	Hagons	4.043528	11,054.2	36,267
		216 35 11.3	36 38 06.9	Chambers	4.091957	12,358.3	40,546
		225 11 40.5		Azimuth mark.			

[1] No check on this position.

Union City, Tenn., to La Fayette, Ga. (second order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Union, 1934	36 25 28.755	96 22 41.0	276 19 02.7	Hagons	3.964502	9,215.1	30,233
	89 03 22.381	243 15 12.8	63 17 31.9	Chambers	3.814878	6,529.5	21,422
		12 24 41.4	192 24 04.8	Rives	3.854332	7,150.4	23,459
		150 56 33.8		Azimuth mark.			
Jackson, 1934	36 22 03.650	88 00 53.2	267 53 32.9	Rives	4.267741	18,524.3	60,775
	88 52 01.455	129 47 14.9	309 42 49.7	Chambers	4.160738	14,479.0	47,503
		118 54 52.4		Azimuth mark.			
Bell, 1934	36 17 12.966	122 29 50.7	302 24 40.8	Rives	4.189314	15,463.7	50,734
	88 55 40.891	162 44 19.2	342 42 04.4	Chambers	4.280566	19,079.5	62,597
		211 24 05.0	31 26 15.0	Jackson	4.021156	10,499.2	34,446
		91 33 19.6		Azimuth mark.			
Dresden, 1934	36 18 23.395	83 44 31.7	263 36 46.8	Bell	4.294742	19,712.5	64,673
	88 42 35.676	115 44 26.6	295 38 51.3	Jackson	4.194744	15,658.3	51,372
		109 52 01.7		Azimuth mark.			
Sharon, 1934	36 14 24.584	119 43 20.4	299 39 44.6	Bell	4.020257	10477.5	34,375
	88 49 36.274	165 39 10.6	345 37 44.5	Jackson	4.164530	14606.0	47,920
		234 55 42.6	54 59 51.4	Dresden	4.107932	12821.3	42,065
		170 13 31.9		Azimuth mark.			
Gleason, 1934	36 12 13.124	103 37 24.3	283 30 47.1	Sharon	4.237327	17,271.4	56,665
	88 38 24.047	151 11 26.4	331 08 57.6	Dresden	4.114857	13,027.4	42,741
		252 19 11.6		Azimuth mark.			
Dunn, 1934	36 07 56.505	153 25 36.0	333 23 14.5	Sharon	4.126344	13,376.5	43,886
	88 45 36.629	193 09 01.0	13 10 47.9	Dresden	4.297623	19,843.7	65,104
		233 46 33.2	53 50 48.5	Gleason	4.126969	13,395.8	43,949
		58 17 57.8		Azimuth mark.			
Greenfield, 1934	36 09 11.686	166 08 46.1	346 07 49.9	Sharon	3.997103	9,933.5	32,590
	88 48 01.019	248 45 11.9	68 50 52.5	Gleason	4.189344	15,464.8	50,737
		302 41 07.4	122 42 32.6	Dunn	3.632414	4,289.6	14,073
		0 28 07.5		Azimuth mark.			
McKenzie, 1934	36 07 06.049	94 02 59.4	273 54 12.0	Dunn	4.350734	22,425.1	73,573
	88 30 42.013	129 22 27.4	309 17 54.8	Gleason	4.174103	14,931.5	48,988
		90 52 50.8		Azimuth mark.			
Trez, 1934	36 01 14.370	133 03 03.9	312 57 51.1	Dunn	4.259382	18,171.1	59,616
	88 36 45.578	173 05 32.0	353 04 33.9	Gleason	4.310752	20,452.8	67,102
		219 58 42.5	40 02 16.5	McKenzie	4.150799	14,151.4	46,428
		191 11 37.1		Azimuth mark.			
Boaz, 1934	36 09 08.643	346 42 12.4	166 42 33.4	McKenzie	3.589125	3,882.6	12,738
	88 31 17.719	29 19 30.5	209 16 17.4	Trez	4.224326	16,762.0	54,993
		118 07 28.1	298 03 16.4	Gleason	4.081930	12,076.2	39,620
		335 22 36.8		Azimuth mark.			
McAdams, 1934	36 05 56.088	59 36 00.8	239 30 13.3	Trez	4.233869	17,134.4	56,215
	88 26 55.365	110 50 39.8	290 48 26.1	McKenzie	3.782839	6,065.1	19,899
		348 08 36.2	168 10 03.9	Mann	4.259677	18,183.5	59,657
		303 39 46.6		Azimuth mark.			
Sampson, 1934	35 59 40.811	105 13 52.9	285 09 43.5	Trez	4.041413	11,000.5	36,091
	88 29 41.686	173 43 34.0	353 42 58.3	McKenzie	4.140059	13,805.7	45,294
		199 46 55.2	19 48 33.0	McAdams	4.089658	12,293.0	40,331
		308 13 30.9	128 16 36.1	Mann	4.002706	10,062.5	33,013
		69 41 00.0		Azimuth mark.			
Blanks (Primary traverse station no. 22 (U. S. G. S.)), 1934.	36 00 45.830	136 56 40.2	316 51 47.7	Dunn	4,259559	18,178.5	59,641
	88 37 20.287	224 39 09.3	44 39 29.6	Trez	3.092229	1,236.6	4,057
		279 51 34.6	99 56 04.3	Sampson	4.066667	11,659.2	38,252
		22 12 18.2		Azimuth mark.			
Allen, 1934	36 02 32.793	13 31 11.4	193 30 06.4	Mann	4.074035	11,858.6	38,906
	88 22 35.711	63 36 35.2	243 32 24.7	Sampson	4.075948	11,911.0	39,078
		133 58 53.4	313 56 20.5	McAdams	3.955522	9,026.6	29,615
		132 52 43.0		Azimuth mark.			
Hollow, 1934	36 02 29.258	48 17 20.3	228 12 20.1	Mann	4.234303	17,151.5	56,271
	88 15 55.500	90 39 20.4	270 35 24.9	Allen	4.000823	10,019.0	32,871
		76 51 36.6		Azimuth mark.			
Ridings, 1934	35 58 42.762	66 24 04.8	246 20 07.0	Mann	4.044455	11,077.8	36,344
	88 17 41.318	133 54 17.0	313 51 23.9	Allen	4.009803	10,228.3	33,557
		200 46 42.3	20 47 44.5	Hollow	3.873143	7,466.9	24,498
		354 45 43		Azimuth mark.			
Ethel, 1934	36 02 33.094	51 17 04.6	231 13 36.9	Ridings	4.054737	11,343.2	37,215
	88 11 48.037	88 55 37.0	268 53 11.4	Hollow	3.792099	6,195.8	20,327
		335 34 20.0		Azimuth mark.			
Smothers, 1934	35 57 24.940	105 20 55.2	285 17 30.0	Ridings	3.957994	9,078.1	29,784
	88 11 51.885	146 58 28.0	326 56 04.8	Hollow	4.048809	11,189.5	36,711
		180 34 52.1	0 34 54.4	Ethel	3.977639	9,498.2	31,162
		168 18 44		Azimuth mark.			
Weatherly, 1934	36 04 07.769	23 54 09.4	203 52 00.3	Smothers	4.132852	13,578.5	44,549
	88 08 12.338	61 37 32.7	241 35 25.8	Ethel	3.787939	6,136.8	20,134
		75 21 38.6	255 17 06.0	Hollow	4.078578	11,983.3	39,315
		133 25 38.1		Azimuth mark.			

Union City, Tenn., to La Fayette, Ga. (second order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Pilot, 1934	36 05 18.800	54 08 55.4	234 01 01.8	Smothers	4.396149	24,897.1	81,683
	87 58 26.602	81 33 06.0	261 27 21.1	Weatherly	4.170801	14,818.4	48,617
		111 44 42.1		Azimuth mark.			
Hagard, 1934	35 55 38.441	102 04 18.0	281 58 17.0	Smothers	4.197540	15,759.4	51,704
	88 01 36.915	147 47 02.8	327 43 10.4	Weatherly	4.268605	18,561.2	60,896
		194 54 15.7	14 56 07.6	Pilot	4.267440	18,511.4	60,733
		263 21 08.1		Azimuth mark.			
Buck, 1934	36 00 51.731	66 47 06.7	246 38 20.8	Hagard	4.387811	24,423.7	80,130
	87 46 41.539	115 03 48.6	294 56 53.7	Pilot	4.289430	19,472.9	63,887
		348 02 30.6		Azimuth mark.			
Baker, 1934	35 56 48.297	79 55 22.0	259 50 39.5	Hagard	4.088401	12,257.5	40,215
	87 53 35.509	155 10 02.3	335 07 11.2	Pilot	4.239067	17,340.7	56,892
		234 04 55.1	54 08 58.3	Buck	4.107221	12,800.3	41,996
		291 07 12.1		Azimuth mark.			
Bold, 1934	35 58 55.835	77 29 56.9	257 23 03.4	Baker	4.257168	18,078.7	59,313
	87 41 51.274	116 11 23.3	296 08 32.8	Buck	3.908499	8,100.3	26,576
		103 10 31.8		Azimuth mark.			
Buffalo, 1934	35 53 06.894	122 40 32.9	302 36 23.7	Baker	4.102131	12,651.2	41,506
	87 46 30.618	178 54 23.3	358 54 16.9	Buck	4.156224	14,329.3	47,012
		213 02 42.6	33 05 26.5	Bold	4.108340	12,833.3	42,104
		17 01 24.8		Azimuth mark.			
Spot, 1934	35 53 46.174	86 25 00.6	266 17 36.4	Buffalo	4.279746	19,043.5	62,479
	87 33 52.860	128 33 18.1	308 28 37.3	Bold	4.185428	15,326.0	50,282
		209 30 08.8		Azimuth mark.			
Aircon, 1934	35 47 15.670	157 48 33.1	337 46 50.0	Buffalo	4.067887	11,692.0	38,360
	87 43 34.559	186 50 14.0	6 51 14.5	Bold	4.337148	21,734.4	71,307
		230 26 56.5	50 32 37.1	Spot	4.276918	18,919.9	62,073
		226 23 49.5		Azimuth mark.			
Cobel, 1934	35 43 26.875	147 31 48.9	327 30 04.5	Aircon	3.922171	8,359.3	27,425
	87 40 35.858	207 53 40.3	27 57 36.1	Spot	4.334508	21,602.7	70,875
		299 01 00.8		Azimuth mark.			
Dry, 1934	35 51 39.402	301 03 51.4	121 08 41.8	Stevens	4.162692	14,544.3	47,717
	87 22 05.938	348 07 27.2	168 09 12.6	Kincade	4.342970	22,027.7	72,269
		61 30 58.5	241 20 09.3	Cobel	4.501570	31,737.3	104,125
		102 29 00.4	282 22 06.1	Spot	4.259069	18,158.0	59,573
		240 32 51.8		Azimuth mark.			
Wade, 1934	35 43 08.455	91 58 43.7	271 52 11.1	Cobel	4.228032	16,905.7	55,465
	87 29 23.611	161 02 30.6	340 59 53.0	Spot	4.317742	20,784.6	68,191
		214 52 39.8	34 56 55.7	Dry	4.283385	19,203.7	63,004
		250 35 04.2	70 44 09.8	Stevens	4.395551	24,862.9	81,571
		290 27 15.2	110 33 15.7	Kincade	4.219762	16,586.8	54,419
		80 01 26.9		Azimuth mark.			
Nod, 1934	35 33 30.266	86 54 54.3	266 51 19.3	Polk	3.969764	9,327.5	30,602
	87 03 14.688	165 54 39.8	345 53 05.3	McKee	4.224018	16,750.1	54,954
		212 06 04.1		Azimuth mark.			
Match, 1934	35 37 41.200	57 18 26.8	237 13 48.6	Nod	4.155423	14,302.9	46,925
	86 55 16.743	68 57 22.7	248 49 09.3	Polk	4.359407	22,877.4	75,057
		117 54 58.0	297 48 44.7	McKee	4.260352	18,211.8	59,750
		146 06 27.6		Azimuth mark.			
Baxter, 1934	35 28 17.916	120 04 40.9	299 58 16.9	Nod	4.284161	19,238.0	63,117
	86 52 13.678	165 08 22.9	345 06 36.5	Match	4.254347	17,961.7	58,929
		252 50 06.6		Azimuth mark.			
Hardison, 1934	35 34 39.293	32 36 14.0	212 33 20.8	Baxter	4.144525	13,948.4	45,762
	86 47 15.575	85 02 38.1	264 53 20.2	Nod	4.384637	24,245.8	79,546
		114 52 39.1	294 47 59.0	Match	4.125355	13,346.1	43,786
		263 18 15.1		Azimuth mark.			
Neil, 1934	35 26 48.262	99 37 34.2	279 31 17.3	Baxter	4.220437	16,612.6	54,503
	86 41 24.041	148 38 07.7	328 34 43.5	Hardison	4.230600	17,005.9	55,794
		197 09 46.3		Azimuth mark.			
Poplin, 1934	35 34 17.988	35 39 00.2	215 35 11.3	Neil	4.231715	17,049.6	55,937
	86 34 50.022	92 03 48.2	271 56 34.4	Hardison	4.273797	18,784.4	61,628
		9 07 50.3		Azimuth mark.			
Adams, 1934	35 24 17.688	113 27 58.3	293 23 52.3	Neil	4.067046	11,669.3	38,285
	86 34 19.604	177 37 45.1	357 37 27.5	Poplin	4.267553	18,516.2	60,749
		220 17 49.3		Azimuth mark.			
Horse, 1934	35 30 45.441	49 10 44.5	229 05 26.7	Adams	4.261600	18,264.2	59,922
	86 25 11.845	73 28 18.0	253 18 53.7	Neil	4.407822	25,575.4	83,909
		114 15 46.8	294 10 10.7	Poplin	4.203293	15,969.6	52,394
		198 03 04.0		Azimuth mark.			
Hawthorne, 1934	35 21 43.678	123 20 55.2	303 18 09.6	Adams	3.936466	8,639.0	28,343
	86 29 33.606	201 33 16.9	21 35 48.7	Horse	4.254166	17,954.2	58,905
		271 19 23.0	91 25 27.5	Hurricane	4.201537	15,905.1	52,182
		307 59 49.5	128 04 32.9	Huskey	4.196426	15,719.0	51,571
		33 57 48.0		Azimuth mark.			

Union City, Tenn., to La Fayette, Ga. (second order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Armstrong, 1934	35 24 41.623	67 56 18.5	247 51 08.7	Hawthorne	4.163558	14,573.3	47,813
	86 20 38.623	88 01 36.2	267 53 40.5	Adams	4.316556	20,727.9	68,005
		148 27 13.5	328 24 35.0	Horse	4.119246	13,159.7	43,175
		337 47 39.6	157 48 34.5	Hurricane	3.801725	6,334.7	20,783
		4 16 24.4	184 15 58.5	Huskey	4.182174	15,211.6	49,907
		296 41 29.8		Azimuth mark.			
Shelbyville, 1934	35 29 05.651	40 40 07.8	220 37 12.6	Adams	4.068038	11,696.0	38,373
	86 29 17.533	77 02 37.0	256 55 35.4	Neil	4.274182	18,801.0	61,683
		243 34 07.7	63 36 30.4	Horse	3.839719	6,913.8	22,683
		348 38 25.4		Azimuth mark.			
Elkins, 1934	35 16 02.660	40 08 46.0	220 04 27.2	Cole	4.246077	17,622.9	57,818
	86 04 37.267	82 24 16.2	262 20 37.5	Stone	3.984762	9,655.2	31,677
		204 18 59.0		Azimuth mark.			
Brier, 1934	35 05 41.534	111 08 41.8	291 03 08.3	Cole	4.196780	15,731.9	51,614
	86 02 26.487	144 13 23.8	324 08 30.2	Stone	4.342919	22,025.2	72,261
		170 12 08.5	350 10 53.1	Elkins	4.288363	19,425.1	63,731
		21 32 37.2		Azimuth mark			
Williams, 1934	35 06 58.807	19 50 18.1	199 49 58.6	Brier	3.403374	2,531.5	8,305
	86 01 52.571	166 03 06.8	346 01 31.8	Elkins	4.237294	17,270.1	56,660
		195 52 48.3		Azimuth mark.			
Sewanee, 1934	35 13 10.321	45 08 42.2	225 03 26.4	Brier	4.292111	19,593.5	64,283
	85 53 18.119	48 42 45.7	228 37 49.4	Williams	4.238973	17,337.0	56,880
		107 14 28.9	287 07 56.9	Elkins	4.254633	17,973.5	58,968
		351 55 24		Azimuth mark.			
Holly, 1934	35 00 30.358	120 02 30.7	299 56 14.1	Brier	4.282953	19,184.6	62,941
	85 51 30.825	173 23 27.3	353 22 25.6	Sewanee	4.372480	23,576.5	77,351
		336 45 59		Azimuth mark.			
Lost, 1934	35 10 13.514	60 24 41.2	240 19 06.3	Brier	4.229179	16,950.4	55,611
	85 52 44.552	171 08 39.3	351 08 20.0	Sewanee	3.741502	5,514.4	18,092
		354 03 39.9	174 04 22.3	Holly	4.256900	18,067.6	59,277
		113 10 54.0		Azimuth mark.			

Comfort, 1934	35 09 12.670	31 19 06.5	211 15 24.6	Holly	4.274964	18,834.9	61,794
	85 45 04.709	99 11 21.5	279 06 56.7	Lost	4.071438	11,787.9	38,674
		120 26 17.1	300 21 32.8	Sewanee	4.160569	14,473.3	47,484
		251 37 59.3		Azimuth mark.			
Fuller, 1934	35 04 38.497	67 01 44.4	246 54 56.8	Holly	4.291103	19,548.0	64,134
	85 39 41.011	135 53 37.3	315 50 31.1	Comfort	4.070845	11,771.9	38,622
		222 23 41		Azimuth mark, airway beacon no. 13B.			
Weldon (Ala.), 1934	34 56 12.606	114 08 12.9	294 01 31.3	Holly	4.289285	19,466.4	63,866
	85 39 50.218	161 40 51.0	341 37 50.4	Comfort	4.403560	25,325.6	83,089
		180 51 26.0	0 51 31.3	Fuller	4.192883	15,591.3	51,152
		255 21 16.2	75 32 15.8	Lookout	4.479374	30,156.0	98,937
		288 02 40.7	108 11 59.9	High Point 2	4.416748	26,106.5	85,651
		261 56 18.9		Azimuth mark.			
Aetna, 1934	35 01 03.798	60 22 40.5	240 16 44.5	Weldon	4.258324	18,126.9	59,471
	85 29 29.291	88 20 37.8	268 07 59.5	Holly	4.525337	33,522.5	109,982
		113 09 35.4	293 03 44.1	Fuller	4.226756	16,856.1	55,302
		275 53 21.7	95 58 25.6	Lookout	4.130423	13,502.8	44,300
		332 05 37.5	152 09 01.6	High Point 2	4.286409	19,337.9	63,444
		222 02 09.5		Azimuth mark.			
Scholtze (Tenn.-Ga.), 1934	34 59 00.007	11 58 09.4	191 57 06.0	High Point 2	4.132694	13,573.6	44,533
	85 21 42.149	107 53 14.6	287 48 46.7	Aetna	4.094995	12,445.0	40,830
		213 14 57.2	33 15 33.1	Lookout	3.461369	2,893.1	9,492
		277 04 13.0		Azimuth mark.			
Supplementary points							
Primary traverse station no. 40 1910 (U. S. G. S.), 1934[1]	36 25 29.52	17 49 13	197 49 13	Union	1.392767	24.704	81.05
	89 03 22.08						
Union City, Brown Bilt Shoe Co., black tank, 1934	36 25 56.635	11 19 54.4	191 19 17.0	Rives	3.903015	7,998.6	26,242
	89 03 20.987	91 01 27.3	270 57 48.1	Hagons	3.963520	9,194.3	30,165
		250 16 00.1	70 18 18.0	Chambers	3.789421	6,157.7	20,202
Union City, Cumberland Presbyterian Church, spire, 1934[1]	36 25 44.52	246 24 11	66 26 25	Chambers	3.787212	6,126.5	20,100
	89 03 13.68	24 02 02	204 01 57	Union	2.725995	532.1	1,746
Sharon, black water tank, 1934[1]	36 13 57.89	332 14 36	152 16 54	Dunn	4.099850	12,584.9	41,289
	88 49 31.03	345 41 25	165 42 18	Greenfield	3.959218	9,103.7	29,868
Primary traverse station no. 19 1910 (U. S. G. S.), 1934[1]	36 09 11.91	280 42 19	100 42 20	Greenfield	1.577859	37.832	124.12
	88 48 02.51						
Greenfield, municipal water tank (black), 1934	36 09 17.807	165 35 30.8	345 34 33.4	Sharon	3.989582	9,763.0	32,031
	88 47 58.985	249 20 28.4	69 26 07.8	Gleason	4.186104	15,349.8	50,360
		305 08 15.4	125 09 39.4	Dunn	3.638756	4,352.7	14,286

[1] No check on this position

Union City, Tenn., to La Fayette, Ga. (second order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Supplementary points—Continued	° ′ ″	° ′ ″	° ′ ″				
Trezevant, municipal water tank (black), top of ball on roof, 1934.	36 00 46.550	136 35 44.2	316 30 48.7	Dunn	4.261324	18,252.6	59,884
	88 37 15.027	220 41 36.4	40 41 53.6	Trez	3.053437	1,130.9	3,710
		280 04 52.2	100 09 18.8	Sampson	4.061952	11,533.3	37,839
McKenzie, tall stack, 1934 [1]	36 07 59.19	126 40 48	306 36 39	Gleason	4.117710	13,113.2	43,022
	88 31 23.08	183 34 30	3 34 33	Boaz	3.331392	2,144.8	7,037
McKenzie, municipal water tank, 1934	36 07 47.894	333 12 49.0	153 13 04.2	McKenzie	3.159789	1,444.7	4,740
	88 31 08.048	298 34 58.5	118 37 27.4	McAdams	3.857216	7,198.1	23,616
		351 48 01.7	171 48 52.5	Sampson	4.180912	15,167.4	49,762
Pilot Knob, Nathan Bedford Forrest Monument, 1934 [1]	36 05 18.26	161 36 53	341 36 53	Pilot	1.242318	17.471	57.32
	87 58 26.38						
Columbia, Maury County Courthouse, dome, 1934 [1]	35 36 53.19	261 42 36	81 46 32	Match	4.012942	10,302.5	33,801
	87 02 01.89	16 20 21	196 19 38	Nod	3.814042	6,516.9	21,381
Transit traverse station no. 19 W 1926 (U. S. G. S.), 1934 [1]	35 06 59.99	28 03 38	208 03 38	Williams	1.615350	41.243	135.31
	86 01 51.80						
Sewanee, small black tank, 1934 [1]	35 11 51.05	233 12 11	53 13 26	Sewanee	3.610621	4,079.6	13,384
	85 55 27.29	306 06 54	126 08 27	Lost	3.707387	5,097.8	16,725
Sewanee, municipal water tank, 1934	35 12 20.984	42 09 11.2	222 04 58.1	Brier	4.219983	16,595.2	54,446
	85 55 06.785	241 02 25.1	61 03 27.8	Sewanee	3.497061	3,141.0	10,305
		317 29 49.1	137 31 11.1	Lost	3.726511	5,327.3	17,478

La Fayette, Ga., to Bristol, Tenn. (second order)

Principal points							
Peavine (Ga.), 1934	34 51 38.895	90 59 55.7	270 52 44.2	High Point 2	4.282756	19,175.9	62,913
	85 10 58.142	240 08 55.5		Azimuth mark.			
Boynton (Ga.), 1934	34 55 35.807	349 42 14.9	169 42 44.8	Peavine	3.870398	7,419.9	24,343
	85 11 50.350	68 40 12.7	248 33 30.7	High Point 2	4.282379	19,159.3	62,858
		340 30 40.9		Azimuth mark.			
Lookout, 1934	35 00 18.518	302 56 10.7	123 01 14.0	Boynton	4.264259	16,005.1	52,510
	85 20 39.591	317 17 27.3	137 23 00.3	Peavine	4.337961	21,775.1	71,440
		15 40 18.7	195 38 39.4	High Point 2	4.212275	16,303.3	53,488
		298 50 46.2		Azimuth mark.			
McDaniel, 1934	35 03 05.689	41 36 21.1	221 31 43.2	Boynton	4.267870	18,529.8	60,793
	85 03 45.586	78 44 53.2	258 35 11.2	Lookout	4.418564	26,215.9	86,010
Goat, 1934	35 04 39.947	280 01 30.0	100 07 40.6	McDaniel	4.220153	16,601.7	54,467
	85 14 30.677	346 21 30.7	166 23 02.7	Boynton	4.236891	17,254.0	56,607
		49 16 52.5	229 13 20.7	Lookout	4.091396	12,342.3	40,493
		356 53 34.0		Azimuth mark.			
Buncombe, 1934	35 08 56.722	18 01 38.1	198 00 18.2	McDaniel	4.055965	11,375.4	37,321
	85 01 26.676	68 19 55.9	248 12 24.9	Goat	4.329853	21,372.4	70,119
Harrison, 1934	35 09 31.943	274 07 28.9	94 13 07.4	Buncombe	4.173784	14,920.5	48,952
	85 11 14.605	316 16 17.3	136 20 35.5	McDaniel	4.216485	16,462.1	54,009
		28 54 13.4	208 52 20.6	Goat	4.011874	10,277.2	33,718
		30 40 37.8		Azimuth mark.			
Georgetown, 1934	35 15 43.690	22 55 27.2	202 53 26.4	Buncombe	4.134029	13,615.4	44,670
	84 57 57.159	60 28 05.6	240 20 25.8	Harrison	4.365421	23,196.4	76,104
		115 45 00.0	295 33 30.7	Harvey	4.523769	33,401.7	109,585
		219 33 27.1		Azimuth mark.			
Bakewell, 1934	35 22 11.943	308 01 21.6	128 07 11.2	Georgetown	4.287881	19,403.5	63,660
	85 08 01.871	337 47 26.4	157 51 14.6	Buncombe	4.422663	26,464.5	86,826
		11 45 56.1	191 44 04.8	Harrison	4.378806	23,922.5	78,486
		321 01 13.7		Azimuth mark.			
Crisp, 1934	35 23 50.045	38 01 28.4	217 57 00.4	Georgetown	4.279146	19,017.2	62,392
	84 50 13.717	83 41 14.6	263 30 56.1	Bakewell	4.433428	27,128.6	89,004
		58 40 42.9		Azimuth mark.			
Dayton, 1934	35 29 30.657	298 28 39.8	118 36 03.6	Crisp	4.341856	21,971.3	72,084
	85 02 59.029	343 19 48.2	163 22 43.0	Georgetown	4.424883	26,600.1	87,270
		29 29 28.3	209 26 32.7	Bakewell	4.191150	15,529.2	50,949
		63 55 14.3	243 46 38.1	Harvey	4.398173	25,013.4	82,065
		311 50 31.9		Azimuth mark.			
Pone, 1934	35 31 46.017	36 16 30.7	216 12 23.3	Crisp	4.259765	18,187.2	59,669
	84 43 07.302	82 11 16.5	261 59 44.3	Dayton	4.481725	30,319.7	99,474
Evansville, 1934	35 34 28.759	284 50 08.3	104 57 23.6	Pone	4.290270	19,510.6	64,011
	84 55 35.901	337 33 12.6	157 36 19.7	Crisp	4.328253	21,293.8	69,861
		50 34 58.9	230 30 41.4	Dayton	4.160104	14,457.9	47,434
		285 18 10.9		Azimuth mark.			

[1] No check on this position.

La Fayette, Ga., to Bristol, Tenn. (second order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Stone, 1934	35 38 53.876	325 01 51.5	145 05 24.5	Pone	4.206434	16,085.5	52,774
	84 49 13.228	3 08 12.2	183 07 37.1	Crisp	4.445550	27,896.5	91,524
		49 43 16.7	229 39 33.9	Evansville	4.101408	12,630.1	41,437
		301 14 09.1		Azimuth mark.			
Prigmore, 1934	35 34 22.682	66 27 15.4	246 23 00.1	Pone	4.081676	12,069.1	39,591
	84 35 48.139	112 28 48.0	292 20 59.2	Stone	4.340821	21,919.0	71,913
		291 38 29.6	111 43 44.2	Roy	4.166302	14,665.7	48,116
		270 45 28.9		Azimuth mark.			
Barnard, 1934	35 43 56.607	359 33 35.9	179 33 39.0	Prigmore	4.247692	17,688.5	58,033
	84 35 53.534	25 53 47.7	205 49 35.0	Pone	4.398325	25,022.2	82,094
		65 10 22.1	245 02 35.5	Stone	4.345695	22,166.4	72,724
		117 03 07.1		Azimuth mark.			
Sweetwater, 1934	35 37 32.121	345 36 38.6	165 37 45.3	Roy	4.065264	11,621.5	38,128
	84 28 41.723	61 29 30.1	241 25 21.9	Prigmore	4.087031	12,218.9	40,088
		137 32 00.2	317 27 48.4	Barnard	4.206086	16,072.6	52,732
		347 12 20.2		Azimuth mark.			
Warn, 1934	35 38 18.199	12 39 07.0	192 38 01.3	Roy	4.113694	12,992.5	42,626
	84 24 54.154	66 15 28.2	246 09 07.4	Prigmore	4.255035	17,990.2	59,023
		76 05 24.0	256 03 11.4	Sweetwater	3.770820	5,899.6	19,356
		122 13 29.3	302 07 04.7	Barnard	4.291985	19,587.8	64,264
		198 13 55.3	18 17 46.4	Melton	4.500738	31,676.6	103,926
		134 08 55.4		Azimuth mark.			
Cave, 1934	35 50 17.942	8 17 27.3	188 16 12.2	Warn	4.350559	22,416.0	73,543
	84 22 45.681	20 47 25.3	200 43 57.3	Sweetwater	4.402115	25,241.5	82,813
		59 21 14.1	239 13 33.4	Barnard	4.361979	23,013.3	75,503
		220 15 06.8	40 17 43.1	Melton	4.015033	10,352.2	33,964
		278 07 47.6		Azimuth mark.			
Cloyd, 1934	35 42 37.663	69 30 30.1	249 22 15.7	Warn	4.357354	22,769.5	74,703
	84 10 46.426	128 11 55.2	308 04 54.8	Cave	4.361155	22,969.7	75,360
		152 48 55.2	332 44 30.5	Melton	4.395060	24,834.8	81,479
		98 26 49.0		Azimuth mark.			

Rockford, 1934	35 50 08.410	59 46 07.1	239 36 54.0	Cloyd	4.439774	27,528.0	90,315
	83 55 00.257	103 15 20.8	283 01 41.3	Melton	4.556674	36,030.8	118,211
		106 36 00.8		Azimuth mark.			
Sands, 1934	35 57 59.454	316 45 20.5	136 50 39.2	Rockford	4.299194	19,915.6	65,340
	84 04 03.903	19 36 26.8	199 32 31.1	Cloyd	4.479324	30,152.5	98,925
		73 37 31.1	253 29 09.3	Melton	4.349190	22,345.5	73,312
		123 15 12.4		Azimuth mark.			
Crewes, 1934	35 51 57.757	67 54 12.5	247 50 59.0	Rockford	3.951761	8,948.7	29,359
	83 49 29.893	117 02 03.1	296 53 30.5	Sands	4.390691	24,586.2	80,663
		194 43 21.3	14 46 53.8	Clinch	4.550580	35,528.8	116,564
		265 10 49.9	85 29 22.0	English	4.678954	47,747.9	156,653
		144 17 36.0		Azimuth mark.			
Sharp, 1934	36 00 12.648	325 01 41.3	145 05 50.7	Crewes	4.269656	18,606.1	61,044
	83 56 34.972	352 43 32.3	172 44 27.8	Rockford	4.273553	18,773.8	61,594
		69 58 58.8	249 54 35.0	Sands	4.078164	11,971.9	39,278
		225 46 34.5	45 54 17.7	Clinch	4.438120	27,423.3	89,971
		144 00 18.5		Azimuth mark.			
McBee, 1934	35 57 23.254	65 46 08.5	245 37 28.8	Crewes	4.386949	24,375.2	79,971
	83 34 43.913	99 08 19.9	278 55 29.7	Sharp	4.521890	33,257.5	109,112
		151 41 03.7	331 35 54.8	Clinch	4.441584	27,642.9	90,692
		283 33 00.4	103 42 53.8	English	4.416430	26,087.4	85,588
		288 49 00.4		Azimuth mark.			
Crockett, 1934	36 13 40.525	355 02 44.6	175 03 58.5	English	4.561163	36,405.2	119,439
	83 19 57.961	80 46 35.7	260 32 42.6	Clinch	4.552835	35,713.7	117,171
		218 54 17.4	38 59 43.3	Short	4.339342	21,844.5	71,668
		229 53 12.2		Azimuth mark.			
Rickard, 1934	36 07 06.022	344 28 05.9	164 30 43.0	English	4.398313	25,021.5	82,091
	83 22 19.766	101 26 54.2	281 14 25.8	Clinch	4.509900	32,351.9	106,141
		196 14 13.8	16 15 37.4	Crockett	4.102616	12,665.3	41,553
		308 28 28.8		Azimuth mark.			
Bent, 1934	36 12 58.155	25 10 15.8	205 03 50.4	English	4.586759	38,615.3	126,690
	83 06 57.661	64 51 28.0	244 42 23.9	Rickard	4.406097	25,474.0	83,576
		93 53 51.8	273 46 10.7	Crockett	4.290751	19,532.2	64,082
		162 36 37.1	342 34 21.0	Short	4.282678	19,172.5	62,902
		217 12 56.0		Azimuth mark.			
Caney, 1934	36 03 08.368	56 05 00.4	235 55 16.9	English	4.477397	30,019.1	98,488
	83 01 19.208	103 10 42.7	282 58 20.3	Rickard	4.510241	32,377.3	106,225
		155 03 52.0	335 00 32.4	Bent	4.302149	20,051.6	65,786
		257 50 25.4		Azimuth mark.			
Greeneville, 1934	36 10 53.129	52 18 27.4	232 11 11.4	Caney	4.369152	23,396.6	76,760
	82 48 59.529	98 13 49.7	278 03 12.9	Bent	4.434717	27,209.3	89,269
		201 19 37.4	21 23 30.7	Chimney	4.431434	27,004.4	88,597
		227 58 10.7		Azimuth mark.			

La Fayette, Ga., to Bristol, Tenn. (second order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
High Spur, 1934	36 18 27.086	315 06 23.0	135 11 52.6	Greeneville	4.295246	19,735.4	64,749
	82 58 16.947	9 09 08.2	189 07 20.6	Caney	4.457590	28,680.7	94,097
		52 05 23.4	232 00 15.4	Bent	4.217086	16,484.9	54,084
		113 36 20.8	293 28 55.9	Short	4.310000	20,417.4	66,986
		244 44 06.7	64 53 30.8	Chimney	4.418599	26,218.0	86,017
		120 06 07.9		Azimuth mark.			
Quaker, 1934	36 13 13.768	64 33 17.1	244 29 42.0	Greeneville	4.003378	10,078.1	33,065
	82 42 55.343	112 50 51.2	292 41 46.0	High Spur	4.397073	24,950.1	81,857
		182 03 19.5	2 03 37.2	Chimney	4.318651	20,828.2	68,334
		298 08 17.4		Azimuth mark.			
Brabson, 1934	36 15 25.678	63 32 49.9	243 29 36.7	Quaker	3.959922	9,118.5	29,916
	82 37 28.480	156 10 30.7	336 07 34.8	Chimney	4.262751	18,312.6	60,081
		134 17 32.0		Azimuth mark.			
Walters, 1934	36 19 18.928	58 57 19.7	238 52 36.8	Brabson	4.143797	13,925.1	45,686
	82 29 30.581	60 48 11.9	240 40 15.8	Quaker	4.362204	23,025.2	75,542
		116 23 43.8	296 16 04.4	Chimney	4.333479	21,551.6	70,707
		178 05 07.7	358 04 37.3	Big Knob	4.580286	38,044.0	124,816
		302 25 19.7		Azimuth mark.			
Lyons, 1934	36 27 36.172	44 26 29.0	224 20 31.8	Walters	4.331400	21,448.7	70,370
	82 19 28.513	80 34 04.6	260 20 26.9	Chimney	4.541282	34,776.2	114,095
		144 27 41.0	324 21 11.9	Big Knob	4.445765	27,910.3	91,569
		208 04 48.2	28 13 34.7	Clinch	4.666820	46,432.3	152,337
		278 17 21.5	98 24 18.8	Holston 2	4.247449	17,678.6	58,001
Supplementary points							
Brooks (Ga.), 1934	34 53 23.022	75 57 26.3	255 53 06.4	High Point 2	4.075510	11,899.0	39,039
	85 15 58.516	150 54 10.6	330 51 29.6	Lookout	4.166021	14,656.2	48,085
		204 00 54.3		Azimuth mark.			
Missionary, 1934	35 00 46.115	83 05 11.1	263 02 32.9	Lookout	3.847749	7,042.9	23,107
	85 16 03.861	198 08 20.4	18 09 13.9	Goat	3.879839	7,583.0	24,879
		112 25 55.6		Azimuth mark.			
Rossville (Tenn.-Ga.), 1934	34 59 04.453	117 10 30.2	297 08 49.6	Lookout	3.698956	4,999.8	16,404
	85 17 44.177	219 04 08.4	39 05 06.0	Missionary	3.605909	4,035.6	13,240
		143 59 16.7		Azimuth mark, R. M. no. 1.			
Chattanooga, 1934	35 02 44.438	236 04 08.2	56 06 08.2	Goat	3.804797	6,379.7	20,931
	85 17 59.613	321 09 58.4	141 11 04.8	Missionary	3.670272	4,680.3	15,355
		42 03 35.1	222 02 03.3	Lookout	3.782143	6,055.4	19,867
		113 57 57.5		Azimuth mark.			
Ooltewah, 1934	35 05 04.237	209 14 14.1	29 15 45.2	Buncombe	3.914416	8,211.4	26,940
	85 04 05.123	352 16 54.7	172 17 05.9	McDaniel	3.566626	3,686.6	12,095
		87 22 39.6		Azimuth mark.			
Meadow, 1934	35 14 15.242	237 58 20.7	58 00 00.2	Georgetown	3.711106	5,141.7	16,869
	85 00 49.610	5 27 35.9	185 27 14.5	Buncombe	3.993901	9,860.5	32,351
		30 30 33.0		Azimuth mark.			
Cleveland, 1934	35 09 07.344	88 34 03.0	268 29 13.4	Buncombe	4.105064	12,736.9	41,788
	84 53 03.643	148 43 50.1	328 41 00.9	Georgetown	4.155142	14,293.6	46,895
		199 35 53.0		Azimuth mark.			
Texas, 1934	35 20 00.252	21 44 22.8	201 43 10.8	Georgetown	3.930002	8,511.4	27,924
	84 55 52.441	148 33 22.9	328 29 15.7	Dayton	4.314121	20,612.0	67,625
		212 26 37.0		Azimuth mark.			
Suee, 1934	35 37 18.991	294 28 00.8	114 32 36.4	Prigmore	4.117281	13,100.3	42,980
	84 43 41.678	355 10 33.1	175 10 53.1	Pone	4.012768	10,298.4	33,787
		109 20 40.8	289 17 27.6	Stone	3.946442	8,839.8	29,002
		351 28 45.8		Azimuth mark.			
T. M. I., 1934	35 36 52.340	138 56 44.3	318 56 19.6	Sweetwater	3.211097	1,625.9	5,334
	84 27 59.287	240 23 18.9	60 25 06.8	Warn	3.728977	5,357.7	17,578
		95 05 53.2		Azimuth mark.			
Lenoir, 1934	35 47 26.246	36 17 46.8	216 12 59.1	Warn	4.321106	20,946.2	68,721
	84 16 41.332	169 29 27.2	349 28 30.1	Melton	4.127607	13,415.5	44,014
		314 53 52.3	134 57 19.7	Cloyd	4.100174	12,594.3	41,320
		261 27 48.3		Azimuth mark.			
Deanery, 1934	35 55 21.012	147 51 51.7	327 50 39.8	Sands	3.760986	5,767.5	18,922
	84 02 01.466	222 16 53.1	42 20 04.9	Sharp	4.084727	12,154.2	39,876
		187 15 10.0		Azimuth mark.			
University, 1934	35 57 26.172	162 59 29.2	342 58 52.4	Sharp	3.729638	5,365.8	17,604
	83 55 32.301	216 42 40.2	36 49 46.3	Clinch	4.480799	30,255.1	99,262
		358 23 41.7		Azimuth mark.			
Trent, 1934	36 01 09.750	85 33 02.9	265 24 20.4	Sharp	4.348767	22,323.7	73,240
	83 41 46.312	171 37 03.2	351 36 02.9	Clinch	4.243841	17,532.4	57,521
Mossy, 1934	36 09 09.419	294 38 00.9	114 41 16.2	Rickard	3.959774	9,115.4	29,906
	83 27 51.084	331 43 22.7	151 49 14.7	English	4.500805	31,681.4	103,941
		96 18 47.2	276 09 33.9	Clinch	4.372387	23,571.5	77,334
		28 18 06.2		Azimuth mark.			

La Fayette, Ga., to Bristol, Tenn. (second order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Supplementary points—Continued	° ′ ″	° ′ ″	° ′ ″				
Morristown, 1934	36 13 03.839	112 43 18.5	292 42 14.6	Crockett	3.466652	2,928.5	9,608
	83 18 09.797	211 18 17.8	31 22 39.6	Short	4.326636	21,214.7	69,602
		79 48 14.4		Azimuth mark.			
Whitesburg, 1934	36 16 28.642	158 19 04.0	338 17 12.4	Short	4.104040	12,706.9	41,689
	83 07 39.202	255 22 06.6	75 27 39.4	High Spur	4.161295	14,497.6	47,564
		83 41 57.0		Azimuth mark.			
Tusculum, 1934	36 10 35.208	96 07 24.4	276 05 22.4	Greeneville	3.715387	5,192.6	17,036
	82 45 32.915	190 18 16.3	10 20 07.3	Chimney	4.417049	26,124.6	85,710
		310 19 05.0		Azimuth mark.			
Bailey, 1934	36 21 49.292	250 14 59.3	70 20 26.6	Chimney	4.164543	14,606.4	47,921
	82 51 37.094	320 37 38.6	140 42 47.5	Quaker	4.312653	20,542.5	67,397
		348 58 58.6	169 00 31.9	Greeneville	4.313940	20,603.5	67,597
		61 26 37.1		Azimuth mark.			
Lick, 1934	36 18 52.609	140 05 10.3	320 03 22.0	Bailey	3.851365	7,101.7	23,299
	82 48 34.317	221 32 29.5	41 36 08.3	Chimney	4.141839	13,862.4	45,480
		312 20 09.3		Azimuth mark			
Telford, 1934	36 13 59.290	84 20 54.2	264 15 21.4	Quaker	4.150207	14,132.1	46,365
	82 33 32.270	145 37 53.2	325 32 37.4	Chimney	4.371613	23,529.5	77,196
		32 26 03.9		Azimuth mark.			
Fall Branch, 1934	36 25 49.810	70 18 37.0	250 15 51.5	Chimney	3.867931	7,377.7	24,205
	82 37 46.571	203 02 01.5	23 06 26.4	Big Knob	4.450748	28,232.4	92,626
		227 11 12.4		Azimuth mark.			
Preas, 1934	36 16 09.122	169 13 36.8	349 13 17.3	Smathers	3.641965	4,385.0	14,386
	82 20 16.907	183 15 23.9	3 15 52.6	Lyons	4.326568	21,211.3	69,591
		225 06 19.1	45 13 44.2	Holston 2	4.421544	26,396.4	86,602
		185 23 08.4		Azimuth mark.			
Poplar, 1934	36 26 46.032	8 37 39.1	188 36 28.4	Preas	4.297884	19,855.6	65,143
	82 18 17.577	131 11 19.5	311 10 37.3	Lyons	3.370533	2,347.1	7,700
		273 39 44.7	93 45 59.8	Holston 2	4.197537	15,759.3	51,704
		313 27 09.7		Azimuth mark.			
Bowers, 1934	36 19 06.548	69 40 11.3	249 34 22.1	Preas	4.196031	15,704.8	51,525
	82 10 26.921	196 56 43.1	16 58 18.6	Holston 2	4.137962	13,739.2	45,076
		304 43 14.0		Azimuth mark.			
Elizabethton, 1934	36 20 19.557	52 22 32.2	232 18 34.9	Preas	4.101571	12,634.9	41,453
	82 13 35.988	218 38 59.5	38 42 27.2	Holston 2	4.144621	13,951.5	45,773
		295 29 43.6	115 31 35.6	Bowers	3.718094	5,225.1	17,143
Lookout Mountain Hotel, spire (Ga.), 1934	34 57 56.186	212 27 55.6	32 28 58.7	Lookout	3.715921	5,199.0	17,057
	85 22 29.652	310 15 52.9	130 19 36.8	Brooks	4.114468	13,015.7	42,702
		8 05 32.2	188 04 55.9	High Point 2	4.057888	11,425.8	37,486
Missionary Ridge, large aluminum standpipe, 1934	35 00 45.709	39 24 20.7	219 23 22.8	Rossville	3.606155	4,037.9	13,248
	85 16 03.114	83 12 21.3	263 09 42.7	Lookout	3.848814	7,060.2	23,163
		197 58 25.8	17 59 18.9	Goat	3.880185	7,589.0	24,898
Chattanooga, Hamilton National Bank, flagpole, 1934	35 02 53.174	286 34 08	106 34 29	Chattanooga	2.974917	943.9	3,097
	85 18 35.309	315 33 09	135 34 36	Missionary	3.739061	5,483.5	17,990
		33 28 38	213 27 27	Lookout	3.756876	5,713.2	18,744
Lookout Mountain, New York Monument, flagpole, 1934.	35 00 39.413	226 20 18.7	46 21 50.2	Chattanooga	3.746778	5,581.8	18,313
	85 20 38.942	303 25 19.2	123 26 59.4	Rossville	3.725161	5,310.8	17,424
Lookout Mountain, small water tank, ball on top, 1934	35 00 11.784	204 07 31.6	24 07 33.7	Lookout	2.356734	227.4	746
	85 20 43.256	294 32 24.5	114 34 07.2	Rossville	3.698363	4,993.0	16,381
Chattanooga, octagonal concrete building, cupola, 1934.[1]	35 02 44.60	237 03 54	57 05 58	Goat	3.815641	6,541.0	21,460
	85 18 07.37	40 36 58	220 35 31	Lookout	3.773002	5,929.3	19,453
Sweetwater, municipal water tank (black), 1934[1]	35 36 01.48	160 36 07	340 35 44	Sweetwater	3.471560	2,961.8	9,717
	84 28 02.63	228 22 04	48 23 54	Warn	3.802402	6,344.6	20,816
Philadelphia, hosiery mill, aluminum water tank, 1934.[1]	35 40 37.10	12 23 09	192 22 47	Warn	3.641767	4,383.0	14,380
	84 24 16.79	49 28 38	229 26 04	Sweetwater	3.943020	8,770.4	28,774
Buffalo High Point, fire lookout tower, 1934	36 13 01.673	90 47 27.6	270 35 14.5	Quaker	4.491263	30,993.0	101,683
	82 22 14.557	101 04 51.8	280 55 51.6	Brabson	4.366405	23,249.0	76,276
		188 43 12.3	8 44 50.7	Lyons	4.435698	27,270.8	89,471
Camp Creek Bald, fire lookout tower, 1934	36 01 23.922	96 44 13.4	276 33 24.1	Caney	4.444223	27,811.4	91,245
	82 42 55.733	152 36 52.0	332 33 17.6	Greeneville	4.295864	19,763.5	64,841
		180 01 31.8	0 01 32.0	Quaker	4.340022	21,878.7	71,780
Greenville, standpipe, higher of two, 1934[1]	36 10 11.66	228 57 20	48 57 55	Greeneville	3.289258	1,946.5	6,386
	82 49 58.28	241 59 20	62 03 30	Quaker	4.077909	11,964.9	39,255

[1] No check on this position.

143113°—35——6

Lebanon, Tenn., to Florence, Ala. (second order)

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Principal points	° ′ ″	° ′ ″	° ′ ″				
Mason, 1934	35 59 16.739	76 57 44.8	256 47 16.5	Bennett	4.439829	27,531.4	90,326
	86 19 22.190	169 07 25.5	349 05 36.6	Seay	4.388716	24,474.6	80,297
		208 40 01.3	28 43 50.4	Jennings	4.307045	20,278.9	66,532
		188 34 21		Azimuth mark.			
Barfield, 1934	35 46 45.287	137 30 44.5	317 24 42.3	Bennett	4.360738	22,947.6	75,287
	86 26 53.858	206 01 46.0	26 06 10.7	Mason	4.411326	25,782.6	84,588
		100 05 34		Azimuth mark.			
Sumner, 1934	35 52 48.497	182 44 08.2	2 44 14.5	Bennett	3.757458	5,720.8	18,769
	86 37 23.058	246 05 00.7	66 15 34.9	Mason	4.471566	29,618.7	97,174
		305 16 42.9	125 22 51.2	Barfield	4.286856	19,357.8	63,510
		15 32 20.0		Azimuth mark.			
Rockvale, 1934	35 44 18.403	147 20 16.2	327 16 21.0	Sumner	4.271401	18,681.0	61,289
	86 30 41.132	231 34 18.4	51 36 31.2	Barfield	3.862519	7,286.5	23,906
		18 42 45.6	198 40 20.6	Poplin	4.290810	19,534.8	64,090
		197 00 39.4		Azimuth mark.			
Eagle, 1934	35 44 07.544	194 36 25.1	14 38 02.7	Sumner	4.219930	16,593.2	54,440
	86 40 09.882	256 16 17.9	76 24 03.0	Barfield	4.313458	20,580.6	67,522
		268 36 44.9	88 42 17.1	Rockvale	4.155215	14,296.0	46,903
		336 05 19.9	156 08 26.4	Poplin	4.298233	19,871.6	65,195
		215 39 13.0		Azimuth mark.			
Holt, 1934	35 41 37.908	213 45 38.8	33 46 50.3	Eagle	3.744122	5,547.8	18,201
	86 42 12.570	254 03 25.8	74 10 09.3	Rockvale	4.256953	18,609.8	59,284
		320 34 04.5	140 38 22.3	Poplin	4.244144	17,544.6	57,561
		357 26 38.8	177 27 07.0	Neil	4.438466	27,445.2	90,043
		30 36 16.5	210 33 19.9	Hardison	4.175676	14,985.7	49,166
		284 22 00.2		Azimuth mark.			
Gil, 1934	35 23 05.164	134 15 34.6	314 11 47.1	Baxter	4.140453	13,818.2	45,335
	86 45 41.150	173 39 29.8	353 38 35.0	Hardison	4.332923	21,524.0	70,617
		223 18 46.9	43 21 15.9	Neil	3.975548	9,452.5	31,012
		48 53 42.0		Azimuth mark.			
Fowler, 1934	35 22 10.578	155 33 42.0	335 31 43.7	Baxter	4.094692	12,436.3	40,801
	86 48 49.606	250 30 34.0	70 32 23.1	Gil	3.702910	5,045.6	16,554
		327 29 38.1		Azimuth mark.			
Ashton, 1934	35 25 09.576	232 48 05.5	52 51 01.5	Baxter	3.982540	9,605.9	31,515
	86 57 17.167	282 15 32.1	102 22 15.3	Gil	4.254711	17,976.7	58,979
		293 15 33.0	113 20 27.0	Fowler	4.144457	13,946.2	45,755
		177 17 01.6		Azimuth mark.			
Pierce, 1934	35 15 35.264	171 30 15.4	351 29 14.8	Ashton	4.252750	17,895.8	58,713
	86 55 32.371	219 50 03.6	39 53 56.4	Fowler	4.200641	15,872.3	52,074
		227 04 39.1	47 10 20.9	Gil	4.309150	20,377.5	66,855
		186 48 57.0		Azimuth mark.			
Barlar, 1934	35 12 55.446	189 45 10.6	9 46 39.7	Ashton	4.360910	22,956.7	75,317
	86 59 51.314	233 01 39.6	53 04 09.0	Pierce	3.913440	8,192.9	26,880
		52 35 46.3		Azimuth mark.			
Black, 1934	35 18 24.802	229 12 50.2	49 18 22.2	Ashton	4.281349	19,113.9	62,710
	87 06 50.814	286 53 38.1	107 00 10.0	Pierce	4.253414	17,923.1	58,803
		313 42 47.0	133 46 49.2	Barlar	4.166687	14,678.7	48,158
		6 34 22.6		Azimuth mark.			
Goodspring, 1934	35 08 35.183	177 58 47.9	357 58 33.3	Black	4.259634	18,181.7	59,651
	87 06 25.446	231 09 38.3	51 13 25.4	Barlar	4.107134	12,797.8	41,987
		51 12 32.2		Azimuth mark.			
Wesley, 1934	35 12 09.863	232 31 49.6	52 37 34.4	Black	4.279082	19,014.4	62,383
	87 16 48.172	266 47 32.7	86 57 19.0	Barlar	4.410920	25,758.5	84,509
		292 43 28.2	112 49 26.9	Goodspring	4.232754	17,090.5	56,071
		9 31 39.1		Azimuth mark.			
Crowder (Tenn.-Ala.), 1934	34 59 58.737	174 30 56.5	354 30 07.3	Wesley	4.354773	22,634.6	74,260
	87 15 22.654	220 29 42.1	40 34 50.8	Goodspring	4.321006	20,941.4	68,705
		210 35 24.1		Azimuth mark.			
Davis, 1934	35 07 48.123	215 46 52.1	35 49 04.5	Wesley	3.997601	9,944.9	32,628
	87 20 38.041	266 05 16.8	86 13 27.5	Goodspring	4.335119	21,633.1	70,975
		331 03 19.0	151 06 20.2	Crowder	4.218154	16,525.5	54,217
		357 45 00.3		Azimuth mark.			
Shelton (Ala.), 1934	34 57 04.330	184 08 19.9	4 08 52.5	Davis	4.298661	19,891.2	65,260
	87 21 34.745	240 18 43.7	60 22 17.0	Crowder	4.035884	10,861.4	35,634
		282 17 25.4		Azimuth mark.			
Springer (Ala.), 1934	34 59 55.676	213 39 09.5	33 42 49.5	Davis	4.242949	17,496.4	57,403
	87 27 00.996	269 38 21.1	89 45 01.7	Crowder	4.248200	17,709.2	58,101
		302 30 46.9	122 33 53.9	Shelton	3.991966	9,816.7	32,207
		269 44 06.5		Azimuth mark.			
Elgin (Ala.), 1934	34 51 36.703	158 26 27.4	338 24 10.2	Springer	4.218403	16,535.0	54,249
	87 23 01.397	192 17 08.3	12 17 57.9	Shelton	4.014222	10,332.9	33,901
		216 55 41.8	37 00 04.5	Crowder	4.286953	19,362.1	63,524
		105 16 35.8		Azimuth mark.			

Lebanon, Tenn., to Florence, Ala. (second order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Bailey (Ala.), 1934	34 53 15.049	225 58 49.7	46 03 38.5	Springer	4.249902	17,778.8	58,329
	87 35 25.153	251 24 10.8	71 32 06.2	Shelton	4.346960	22,231.1	72,937
		279 03 20.4	99 10 25.7	Elgin	4.281735	19,130.9	62,765
		122 50 34.6		Azimuth mark.			
Supplementary points							
Lebanon, 1934	36 12 16.281	309 12 48.0	129 15 48.4	Jennings	3.994023	9,863.3	32,360
	86 17 58.745	90 04 53.8	270 02 15.3	Seay	3.826249	6,702.7	21,990
		284 00 49		Azimuth mark.			
Murfreesboro, 1934	35 49 42.165	48 31 36.3	228 29 12.7	Barfield	3.915303	8,228.2	26,995
	86 22 48.390	104 44 04.9	284 35 32.6	Sumner	4.355761	22,686.2	74,430
		117 56 22.0	297 47 55.7	Bennett	4.389336	24,509.6	80,412
		148 46 22		Azimuth mark.			
Kaiser, 1934	35 44 23.841	270 46 07.5	90 50 44.0	Rockvale	4.075454	11,897.5	39,034
	86 38 34.555	78 09 57.0	258 09 01.3	Eagle	3.388728	2,447.5	8,030
		186 34 38.7	6 35 20.5	Sumner	4.194704	15,656.8	51,367
		275 26 26		Azimuth mark.			
Boyce, 1934	35 42 11.595	129 25 15.0	309 23 33.9	Eagle	3.750442	5,629.1	18,468
	86 37 16.837	248 30 55.7	68 34 46.7	Rockvale	4.028814	10,686.0	35,059
		20 43 13.3		Azimuth mark.			
Lewisburg, 1934	35 26 52.734	270 45 20.6	90 49 11.1	Neil	4.001022	10,023.6	32,886
	86 48 01.454	333 12 27.7	153 13 49.0	Gil	3.895199	7,856.0	25,774
		270 35 27.0		Azimuth mark.			
Pulaski, 1934	35 12 28.609	255 36 56.2	75 38 09.8	Barlar	3.522635	3,331.5	10,930
	87 01 58.907	43 10 36.0	223 08 02.4	Goodspring	3.993910	9,860.8	32,352
		146 06 47.2	326 03 58.7	Black	4.121448	13,226.6	43,394
		297 47 22.8		Azimuth mark.			
Rob, 1934	35 11 32.986	216 22 47.6	36 26 21.3	Black	4.197812	15.769.3	51,736
	87 13 01.047	262 41 14.0	82 48 49.3	Barlar	4.304006	20,137.5	66,068
		298 39 39.1	118 43 27.0	Goodspring	4.057386	11,412.6	37,443
		101 12 23.4	281 10 12.5	Wesley	3.767672	5,857.0	19,216
		183 13 52.8		Azimuth mark.			
Lawrenceburg, 1934	35 14 20.852	317 37 43.2	137 39 07.1	Wesley	3.737422	5,462.9	17,923
	87 19 13.715	10 00 16.4	189 59 27.8	Davis	4.089528	12,289.3	40,319
		99 34 43.5		Azimuth mark.			
Lexington (Primary traverse station no. 600 (U.S.G.S.)) (Ala.), 1934.	34 58 11.594	252 26 11.1	72 30 07.4	Crowder	4.039859	10,961.2	35,962
	87 22 14.754	333 54 17.8	153 54 40.7	Shelton	3.363229	2,308.0	7,572
		113 51 29.0	293 48 44.9	Springer	3.899654	7,937.0	26,040
		271 53 49.2		Azimuth mark.			
Robertson (Ala.), 1934	35 00 09.567	273 44 05.5	93 46 33.0	Springer	3.815297	6,535.8	21,443
	87 31 18.182	321 22 43.1	141 27 27.6	Elgin	4.305723	20,217.3	66,330
		26 09 10.8	206 06 49.3	Bailey	4.153149	14,228.2	46,680
		283 48 50.6		Azimuth mark.			
Green Hill (Primary traverse station no. 3, Ala., 1911 (U.S.G.S.)) (Ala.), 1934.	34 59 00.743	148 55 46.8	328 55 17.9	Robertson	3.393789	2,476.2	8,124
	87 30 27.784	252 05 39.1	72 07 37.7	Springer	3.741215	5,510.8	18,080
		270 26 41		Azimuth mark.			
Lebanon, aluminum water tank, 1934 [1]	36 12 43.88	321 44 22	141 46 34	Jennings	3.955528	9,026.7	29,615
	86 16 36.64	84 31 27	264 28 00	Seay	3.944173	8,793.7	28,851
Lebanon, Cumberland University, administration building, finial of clock tower, 1934.	36 12 14.257	195 36 40.7	15 36 41.1	Lebanon	1.811401	64.8	213
	87 17 59.441	308 52 03.1	128 55 03.9	Jennings	3.992888	9,837.6	32,276
		90 36 58.9	270 34 20.8	Seay	3.825143	6,685.6	21,934
Murfreesboro, black water tank, ball on top, 1934 [1]	35 50 57.94	2 07 30	182 07 28	Murfreesboro	3.368657	2,337.0	7,667
	86 22 44.94	38 46 04	218 43 39	Barfield	3.999314	9,984.2	32,756
Airway beacon no. 19, 1934 [1]	35 45 59.38	105 45 18	285 43 21	Barfield	3.717360	5,216.3	17,114
	86 23 33.97	189 27 35	9 28 01	Murfreesboro	3.842675	6,961.1	22,838
Transit traverse station no. 63 D 1930 (U.S.G.S.), 1934 [1]	35 44 23.06	162 04 46	342 04 46	Kaiser	1.403567	25.326	83.09
	86 38 34.24						
Shelbyville, municipal water tank (white northern one), 1934 [1]	35 28 40.08	81 08 03	260 59 38	Neil	4.346048	22,184.4	72,783
	86 26 54.91	131 03 37	310 59 01	Poplin	4.200484	15,866.6	52,056
Lewisburg, municipal water tank (black), 1934	35 27 03.330	272 49 07.9	92 52 42.5	Neil	3.970498	9,343.3	30,654
	86 47 34.065	338 46 44.5	158 47 49.9	Gil	3.896154	7,873.2	25,831
		64 42 00.7	244 41 44.8	Lewisburg	2.883109	764.0	2,507
Pulaski, Old Massey School, spire, 1934 [1]	35 11 59.76	129 14 51	309 14 26	Pulaski	3.147838	1,405.5	4,611
	87 01 15.87	231 14 59	51 15 48	Barlar	3.438112	2,742.3	8,997
Pulaski, municipal water tank (black wooden), 1934 [1]	35 11 35.07	192 10 32	12 10 40	Pulaski	3.227357	1,687.9	5,538
	87 02 12.98	235 20 07	55 21 29	Barlar	3.639113	4,356.3	14,292
Pulaski, Giles County Courthouse, finial, 1934 [1]	35 11 58.54	169 23 22	349 23 18	Pulaski	2.974440	942.8	3,093
	87 01 52.04	240 07 17	60 08 27	Barlar	3.546727	3,521.5	11,553

[1] No check on this position.

Lebanon, Tenn., to Florence, Ala. (second order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Supplementary points—Continued	° ′ ″	° ′ ″	° ′ ″				
Lawrenceburg, Catholic Church, spire, 1934 [1]	35 14 45.84	299 52 50	119 53 20	Lawrenceburg	3.189153	1,545.8	5,072
	87 20 06.72	313 44 06	133 46 00	Wesley	3.842057	6,951.2	22,806
Lawrenceburg, municipal water tank, 1934	35 14 30.559	297 11 32.4	117 15 33.8	Rob	4.077779	11,961.3	39,243
	87 20 01.593	311 32 17.5	131 34 09.0	Wesley	3.815350	6,536.6	21,445
		4 15 19.8	184 14 58.8	Davis	4.094684	12,436.1	40,801
St. Joseph, church spire, 1934	35 01 58.871	308 05 27.3	128 07 16.9	Springer	3.788999	6,151.8	20,183
	87 30 11.921	4 11 31.1	184 11 22.0	Green Hill (primary traverse station no. 3, 1911, Ala., 1911 (U. S. G. S.)).	3.740670	5,503.9	18,057
		26 30 43.4	206 30 05.4	Robertson	3.575646	3,764.0	12,349

Sparta, Tenn., to Gadsden, Ala. (second order)

Principal points							
Spencer, 1934	35 44 49.279	159 10 51.1	339 08 05.6	Mount Lore	4.299924	19,949.1	65,450
	85 27 44.470	221 08 40.7	41 13 34.4	Chestnut	4.281737	19,131.0	62,766
		59 40 12		Azimuth mark.			
Brady, 1934	35 42 13.801	113 04 31.0	293 00 09.2	Spencer	4.087925	12,244.0	40,171
	85 20 16.150	141 59 25.5	321 52 17.8	Mount Lore	4.473752	29,768.2	97,665
		183 59 54.5	4 00 25.8	Chestnut	4.284123	19,236.4	63,111
		2 44 45		Azimuth mark.			
Smart, 1934	35 34 39.284	172 05 20.4	352 04 19.8	Spencer	4.278312	18,980.7	62,273
	85 26 00.498	211 42 28.3	31 45 49.0	Brady	4.216706	16,470.5	54,037
		328 52 15.5	148 57 00.7	Harvey	4.379856	23,980.4	78,676
Meyers, 1934	35 34 10.461	94 19 48.0	274 15 14.5	Smart	4.074422	11,869.2	38,941
	85 18 10.449	143 47 27.1	323 41 52.5	Spencer	4.387657	24,415.0	80,102
		168 01 23.9	348 00 10.7	Brady	4.182649	15,228.2	49,961
		358 26 29.7	178 26 42.0	Harvey	4.293470	19,654.9	64,484
		169 15 22.1		Azimuth mark.			
Cagle, 1934	35 27 29.993	197 53 10.5	17 54 48.9	Smart	4.143114	13,903.2	45,614
	85 28 50.086	232 30 23.7	52 36 35.2	Meyers	4.307510	20,300.7	66,603
		293 36 44.5	113 43 07.5	Harvey	4.260089	18,200.7	59,713
		1 05 52		Azimuth mark.			
Lockhart, 1934	35 19 13.199	205 45 25.5	25 48 15.2	Cagle	4.230514	17,002.5	55,782
	85 33 43.095	251 32 15.1	71 41 27.0	Harvey	4.404451	25,377.6	83,260
		169 49 48		Azimuth mark.			
Bennett, 1934	35 14 10.316	124 03 43.7	303 58 27.7	Lockhart	4.222304	16,684.1	54,738
	85 24 35.902	165 25 21.2	345 22 54.2	Cagle	4.405967	25,466.4	83,551
		210 36 41.4	30 40 36.5	Harvey	4.304337	20,152.9	66,118
		14 26 37		Azimuth mark.			
Big Hill, 1934	35 09 29.481	205 19 02.5	25 22 17.0	Lockhart	4.298948	19,904.3	65,303
	85 39 20.069	248 46 34.9	68 55 04.6	Bennett	4.379905	23,983.1	78,685
		316 06 43.7	136 12 23.4	Aetna	4.334564	21,605.5	70,884
		3 23 09.8	183 22 57.8	Fuller	3.953411	8,982.8	29,471
		181 59 26		Azimuth mark.			
Ketner, 1934	35 10 50.217	9 53 45.9	189 52 34.4	Aetna	4.263489	18,343.8	60,183
	85 27 24.943	58 28 51.4	238 21 47.8	Fuller	4.339954	21,875.3	71,769
		82 13 44.7	262 06 52.7	Big Hill	4.261673	18,267.2	59,932
		148 21 57.2	328 18 18.9	Lockhart	4.260347	18,211.6	59,749
		214 43 23.7	34 45 01.1	Bennett	3.875281	7,503.8	24,619
		112 41 49.9		Azimuth mark.			
Pioneer (Ala.), 1934	34 56 27.826	177 08 56.3	357 08 47.9	Holly	3.874082	7,483.1	24,551
	85 51 16.146	271 29 20.1	91 35 53.0	Weldon	4.240880	17,413.3	57,130
Fabius (Ala.), 1934	34 49 48.650	143 55 34.0	323 52 11.9	Pioneer	4.182539	15,224.4	49,949
	85 45 22.886	154 44 53.0	334 41 22.3	Holly	4.339833	21,869.2	71,749
		215 30 01.5	35 33 11.7	Weldon	4.162509	14,538.1	47,697
		54 08 13.5		Azimuth mark.			
Carr (Ala.), 1934	34 53 19.546	207 00 21.8	27 01 28.4	Pioneer	3.813757	6,512.6	21,367
	85 53 12.681	255 15 56.6	75 23 35.8	Weldon	4.323402	21,057.3	69,085
		298 32 04.3	118 36 32.8	Fabius	4.133169	13,588.4	44,581
		170 47 40.1		Azimuth mark.			
Supplementary points							
Ormsby, 1934	35 41 28.279	42 33 02.4	222 28 34.8	Smart	4.233003	17,100.3	56,103
	85 18 21.228	113 40 43.9	293 35 15.1	Spencer	4.189009	15,452.9	50,698
		115 54 33.3	295 53 26.3	Brady	3.506760	3,211.9	10,538
		114 18 49.9		Azimuth mark.			
Caper (Ala.), 1934	34 51 05.063	11 39 32.0	191 39 21.1	Fabius	3.380981	2,404.3	7,888
	85 45 03.766	108 29 38.9	288 24 59.4	Carr	4.116971	13,090.9	42,949
		220 00 26.2	40 03 25.5	Weldon	4.092626	12,377.3	40,608
		220 30 02		Azimuth mark.			
Pitt (Tenn.–Ala.), 1934	34 59 13.158	314 26 41.9	134 28 49.9	Weldon	3.900001	7,943.3	26,061
	85 43 33.676	8 39 07.2	188 38 15.7	Caper	4.182238	15,213.8	49,914
		35 46 07.4		Azimuth mark.			
Signal Mountain, aluminum standpipe, 1934 [1]	35 08 01.22	115 13 03	295 08 51	Ketner	4.087758	12,239.3	40,155
	85 20 07.32	149 09 58	329 07 23	Bennett	4.122204	13,249.6	43,470

[1] No check on this position.

Princeton, Ky., to Saulsbury, Tenn. (second order)

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Principal points	° ′ ″	° ′ ″	° ′ ″				
Gresham (Ky.), 1934	36 49 24.346	129 57 33		Azimuth mark.			
	87 53 03.986						
Mitchell (Ky.), 1934	36 46 49.735	252 41 40.7	72 47 51.5	Gresham	4.205967	16,068.2	52,717
	88 03 22.989	88 42 24		Azimuth mark.			
Model, 1934	36 40 12.429	156 30 50.0	336 28 41.7	Mitchell	4.125643	13,355.0	43,816
	87 59 48.353	210 29 30.1	30 33 32.0	Gresham	4.295570	19,750.1	64,797
		342 55 24		Azimuth mark.			
Howell (Ky.), 1934	36 40 20.287	89 07 08.2	269 01 09.7	Model	4.173461	14,909.4	48,915
	87 49 48.023	120 45 43.1	300 37 35.8	Mitchell	4.371393	23,517.6	77,157
		163 51 03.3	343 49 06.1	Gresham	4.242070	17,461.0	57,287
		230 17 31		Azimuth mark.			
Dennis, 1934	36 32 41.569	134 05 06.1	313 59 21.2	Model	4.300873	19,992.8	65,593
	87 50 10.040	182 12 51.4	2 13 04.5	Howell	4.150765	14,150.3	46,425
		181 16 05		Azimuth mark.			
Tharpe, 1934	36 36 02.704	162 17 21.0	342 16 21.9	Model	3.907465	8,081.0	26,512
	87 58 09.356	237 26 28.0	57 31 27.1	Howell	4.169390	14,770.3	48,459
		297 26 41.7	117 31 27.3	Dennis	4.128198	13,433.8	44,074
		24 23 43		Azimuth mark.			
Liberty, 1934	36 27 52.918	216 09 57.9	36 14 22.3	Tharpe	4.272059	18,709.4	61,382
	88 05 33.573	248 45 38.2	68 54 47.6	Dennis	4.391723	24,644.7	80,855
		177 32 33		Azimuth mark.			
Wynn, 1934	36 28 25.210	85 00 29.2	264 55 59.2	Liberty	4.055141	11,353.8	37,250
	87 57 59.296	178 59 02.9	358 58 56.9	Tharpe	4.149343	14,104.0	46,273
		235 52 28.0	55 57 07.2	Dennis	4.149201	14,099.4	46,258
		225 17 17		Azimuth mark.			
Licked, 1934	36 21 23.754	153 59 50.9	333 57 31.4	Liberty	4.125433	13,348.5	43,794
	88 01 38.531	202 47 12.6	22 49 22.7	Wynn	4.148981	14,092.3	46,234
		22 01 16		Azimuth mark.			
Eagle, 1934	36 23 18.105	206 10 43.9	26 12 23.2	Liberty	3.974974	9,440.0	30,971
	88 08 20.841	238 30 23.2	58 36 32.3	Wynn	4.258797	18,146.7	59,536
		289 19 52.6	109 23 51.2	Licked	4.026535	10,630.0	34,875
		225 15 16		Azimuth mark.			
Elkhorn, 1934	36 19 42.672	191 53 03.2	11 53 36.4	Eagle	3.831605	6,785.9	22,263
	88 09 16.912	254 42 56.9	74 47 28.5	Licked	4.073637	11,847.8	38,871
		262 23 24		Azimuth mark.			
Carmel, 1934	36 16 04.704	126 00 28.3	305 56 48.8	Elkhorn	4.058282	11,436.2	37,520
	88 03 06.001	149 34 38.8	329 31 32.3	Eagle	4.190213	15,495.8	50,839
		192 30 13.6	12 31 05.4	Licked	4.003168	10,073.2	33,048
		359 42 59		Azimuth mark.			
Carpenter, 1934	36 09 14.734	31 40 39.7	211 38 22.2	Weatherly	4.045920	11,115.3	36,467
	88 04 19.081	54 24 07.8	234 17 17.5	Hollow	4.331226	21,440.1	70,341
		159 00 21.8	338 57 25.7	Elkhorn	4.316686	20,734.1	68,025
		188 12 51.8	8 13 34.9	Carmel	4.106102	12,767.4	41,888
		258 50 57		Azimuth mark.			
Walters, 1934	36 11 48.652	19 50 28.1	199 48 01.6	Hollow	4.263098	18,327.3	60,129
	88 11 47.007	194 22 15.6	14 23 44.4	Elkhorn	4.178496	15,083.3	49,486
		238 43 00.8	58 48 08.7	Carmel	4.182337	15,217.3	49,925
		292 55 51.7	113 00 16.1	Carpenter	4.084851	12,157.7	39,887
		339 16 58.5	159 19 05.1	Weatherly	4.181431	15,185.6	49,821
		95 44 06		Azimuth mark.			
Clark, 1934	35 57 16.797	117 04 10.3	297 02 08.7	Ridings	3.765337	5,825.6	19,113
	88 14 14.260	265 57 53.3	85 59 16.9	Smothers	3.553487	3,576.7	11,735
		181 52 54		Azimuth mark.			
Dollar, 1934	35 54 34.273	158 48 46.6	338 47 37.1	Ridings	3.914576	8,214.4	26,950
	88 15 42.817	203 53 38.9	23 54 30.9	Clark	3.738701	5,479.0	17,976
		227 43 14.2	47 45 29.8	Smothers	3.893301	7,821.7	25,662
		275 16 52		Azimuth mark.			
Mann, 1934	35 56 18.684	246 20 07.0	66 24 04.8	Ridings	4.044455	11,077.8	36,344
	88 24 26.314	283 44 04.2	103 49 11.3	Dollar	4.130748	13,512.9	44,334
		332 59 12		Azimuth mark.			
Eubanks, 1934	35 53 28.377	117 53 15.9	297 49 23.5	Mann	4.050532	11,233.9	36,857
	88 17 50.179	181 18 45.2	1 18 50.4	Ridings	3.986420	9,692.1	31,798
		237 32 19.1	57 33 33.7	Dollar	3.578063	3,785.0	12,418
		89 18 26		Azimuth mark.			
Dill, 1934	35 53 50.703	177 19 45.6	357 19 40.6	Mann	3.659522	4,565.9	14,980
	88 24 17.826	274 01 01.0	94 04 48.3	Eubanks	3.988839	9,746.3	31,976
		326 26 08		Azimuth mark.			
Anderson, 1934	35 55 22.947	249 40 44.9	69 47 15.6	Ridings	4.249910	17,779.1	58,330
	88 28 46.815	255 14 24.7	75 16 57.6	Mann	3.829458	6,752.4	22,153
		292 50 03.7	112 52 41.5	Dill	3.864478	7,319.4	24,014
		39 42 59		Azimuth mark.			

Princeton, Ky., to Saulsbury, Tenn. (second order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Clarksburg, 1934	35 52 02.856	127 32 27.4	307 29 19.6	Anderson	4.005474	10,126.8	33,224
	88 23 26.526	158 50 29.0	338 49 58.9	Dill	3.551971	3,564.3	11,694
		215 02 50.0	35 06 12.5	Ridings	4.177837	15,060.4	49,411
		252 37 24.0	72 40 41.1	Eubanks	3.946409	8,839.1	29,000
		281 03 29		Azimuth mark.			
Palestine, 1934	35 51 27.592	179 04 30.3	359 04 27.6	Anderson	3.860620	7,254.7	23,801
	88 28 42.144	262 09 33.2	82 12 38.2	Clarksburg	3.902705	7,992.9	26,223
		313 14 55		Azimuth mark.			
Howley, 1934	35 52 58.865	230 35 23.5	50 37 29.9	Anderson	3.844931	6,997.3	22,957
	88 32 22.459	296 57 23.7	116 59 32.7	Palestine	3.792513	6,201.7	20,347
		31 18 12		Azimuth mark.			
Douglas, 1934	35 47 40.637	140 20 47.6	320 17 37.8	Howley	4.105297	12,743.7	41,810
	88 26 58.242	159 33 37.6	339 32 36.7	Palestine	3.873043	7,465.2	24,492
		169 11 06.7	349 10 03.1	Anderson	4.161568	14,506.7	47,594
		213 18 32.0	33 20 36.0	Clarksburg	3.985526	9,672.2	31,733
		282 03 46		Azimuth mark.			
Obrian, 1934	35 46 04.955	177 31 36.5	357 31 23.7	Howley	4.106149	12,768.8	41,892
	88 32 00.491	248 44 43.1	68 47 39.8	Douglas	3.910821	8,143.7	26,718
		189 50 20		Azimuth mark.			
Center, 1933	35 42 59.653	129 56 45.8	309 54 07.2	Obrian	3.949329	8,898.8	29,195
	88 27 28.897	185 04 46.7	5 05 04.6	Douglas	3.939224	8,694.1	28,524
		211 50 12		Azimuth mark.			
Williamson, 1934	35 48 22.035	212 24 42.2	32 26 48.8	Howley	4.004683	10,108.4	33,164
	88 35 58.465	305 14 17.8	125 16 37.0	Obrian	3.864441	7,318.8	24,012
		206 54 39		Azimuth mark.			
Gurley, 1934	35 42 13.009	181 33 32.2	1 33 39.4	Williamson	4.056049	11,377.6	37,328
	88 36 10.793	196 02 59.4	16 05 13.0	Howley	4.316280	20,714.8	67,962
		221 19 26.3	41 21 52.5	Obrian	3.978719	9,521.8	31,239
		233 55 32.4	54 00 55.2	Douglas	4.234686	17,166.7	56,321
		263 42 15.5	83 47 20.1	Center	4.120496	13,197.6	43,299
		151 49 54		Azimuth mark.			
Woods, 1934	35 37 59.129	121 02 59.9	300 57 58.1	Gurley	4.181512	15,188.4	49,831
	88 27 33.193	180 40 04.3	0 40 06.8	Center	3.966734	9,262.6	30,389
		64 16 10		Azimuth mark.			
Wilde, 1934	35 40 02.847	213 29 45.2	33 30 46.8	Gurley	3.682225	4,810.9	15,784
	88 37 56.405	250 53 44.6	70 59 50.7	Center	4.222507	16,691.9	54,763
		283 37 08.2	103 43 11.4	Woods	4.207759	16,134.6	52,935
		54 17 12		Azimuth mark.			
Brown, 1934	35 32 14.085	148 22 18.7	328 18 52.7	Wilde	4.229737	16,972.2	55,683
	88 32 02.529	212 30 10.1	32 32 46.8	Woods	4.100782	12,611.9	41,378
		205 51 33.8		Azimuth mark.			
Johnson, 1934	35 34 31.344	199 59 28.8	20 00 54.9	Wilde	4.036332	10,872.6	35,671
	88 40 24.197	251 40 33.5	71 48 02.3	Woods	4.310393	20,435.9	67,047
		288 28 12.5	108 33 04.2	Brown	4.124639	13,324.1	43,714
		187 11 29		Azimuth mark.			
Union, 1934	35 36 58.998	250 28 58.9	70 35 10.2	Wilde	4.220528	16,616.1	54,515
	88 48 33.607	290 13 58.1	110 18 42.9	Johnson	4.118383	13,133.6	43,089
Pinson, 1934	35 29 52.666	200 06 24.5	20 07 37.1	Johnson	3.961255	9,146.5	30,008
	88 42 29.071	254 30 59.5	74 37 03.5	Brown	4.214260	16,378.0	53,733
		189 20 09		Azimuth mark.			
Bain, 1934	35 28 52.463	98 13 08.3	278 08 10.9	Pinson	4.115398	13,043.6	42,794
	88 33 56.861	136 58 25.7	316 54 40.6	Johnson	4.155141	14,293.6	46,895
		204 52 02.1	24 53 08.5	Brown	3.835640	6,849.2	22,471
		221 11 28		Azimuth mark.			
Butler, 1934	35 29 50.328	173 15 56.1	353 15 20.1	Union	4.123951	13,303.0	43,645
	88 47 31.620	231 09 18.7	51 13 27.1	Johnson	4.140455	13,818.3	45,336
		259 12 32.2	79 21 31.9	Brown	4.377061	23,826.5	78,171
		269 26 03.6	89 28 59.2	Pinson	3.882283	7,625.8	25,019
		274 53 49.3	95 01 42.3	Bain	4.314174	20,614.6	67,633
		353 52 03		Azimuth mark.			
McKinney, 1934	35 25 35.293	119 49 42.6	299 44 26.6	Butler	4.199280	15,822.7	51,912
	88 38 27.006	142 26 26.1	322 24 05.6	Pinson	4.000366	10,008.4	32,836
		169 52 23.1	349 51 15.0	Johnson	4.224851	16,782.3	55,060
		218 13 44.2	38 17 27.3	Brown	4.194572	15,652.1	51,352
		228 14 46.7	48 17 23.4	Bain	3.960407	9,128.7	29,950
		194 23 54		Azimuth mark.			
Crown, 1934	35 22 12.290	156 35 26.8	336 33 06.2	Butler	4.187077	15,384.3	50,473
	88 43 29.115	230 36 10.4	50 39 05.4	McKinney	3.993968	9,862.1	32,356
		130 14 52		Azimuth mark.			
King, 1934	35 23 59.276	204 14 57.2	24 16 49.3	Butler	4.074349	11,867.2	38,934
	88 50 44.999	286 38 54.2	106 43 06.6	Crown	4.060122	11,484.8	37,680
		137 33 53		Azimuth mark.			

Princeton, Ky., to Saulsbury, Tenn. (second order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Ross, 1934	35 18 23.858 88 48 11.985	159 31 08.6 225 23 47.3 219 31 38	339 29 40.1 45 26 30.9	King Crown Azimuth mark.	4.042781 4.001273	11,035.2 10,029.4	36,205 32,905
Willoughby, 1934	35 20 08.783 88 55 05.618	222 47 07.9 257 43 54.2 287 09 49.7 147 04 31	42 49 38.8 77 50 37.3 107 13 48.9	King Crown Ross Azimuth mark.	3.985968 4.255109 4.038892	9,682.1 17,993.2 10,936.8	31,765 59,033 35,882
Silerton, 1934	35 20 35.502 88 48 07.173	1 42 58.4 85 34 40.3 27 41 47	181 42 55.7 265 30 38.3	Ross Willoughby Azimuth mark.	3.608400 4.025269	4,058.8 10,599.1	13,316 34,774
Walnut, 1934	35 15 23.808 88 53 25.256	163 54 08.8 234 56 56.4 328 31 48	343 53 10.8 54 59 57.4	Willoughby Ross Azimuth mark.	3.960995 3.985319	9,141.0 9,667.6	29,990 31,718
Hospital, 1934	35 16 38.696 89 01 27.935	236 08 04.5 260 46 56.2 280 40 23.6 289 13 15	56 11 45.5 80 54 36.1 100 45 02.3	Willoughby Ross Walnut Azimuth mark.	4.065500 4.309022 4.093997	11,627.9 20,371.5 12,416.4	38,149 66,835 40,736
Doyle, 1934	35 10 15.742 88 54 08.214	136 44 17.0 186 31 31.6 34 54 10.5 299 27 20	316 40 03.4 6 31 56.4 214 51 38.1	Hospital Walnut Porter Azimuth mark.	4.209923 3.980261 4.069160	16,215.2 9,555.7 11,726.3	53,199 31,351 38,472
Owens, 1934	35 13 55.994 89 01 56.451	188 10 44.9 258 07 58.8 299 46 38.4 342 33 57.0 43 44 00.1 226 47 31	8 11 01.4 78 12 53.8 119 51 08.3 162 35 54.1 223 40 17.5	Hospital Walnut Doyle Porter Hickory Azimuth mark.	3.704631 4.120729 4.135180 4.235413 4.150592	5,065.6 13,204.7 13,651.5 17,195.4 14,144.6	16,619 43,322 44,788 56,415 46,406
Supplementary points							
Kentucky-Tennessee boundary monument no. 19 eccentric (Ky.), 1934.	36 38 10.702 87 43 46.854	43 13 34.9 114 01 56.5 153 28 08	223 09 46.5 293 58 20.9	Dennis Howell Azimuth mark.	4.143516 3.992098	13,916.1 9,819.7	45,656 32,217
Kentucky-Tennessee boundary monument no. 19 (Ky.-Tenn.), 1934.[1]	36 38 10.59 87 43 46.66	126 30 05	306 30 05	Kentucky-Tennessee boundary monument no. 19 eccentric.	0.778947	6.011	19.72
Paris, 1934	36 17 30.015 88 19 38.552	237 32 08.3 255 10 43.5 311 44 48.5 281 13 20	57 38 49.9 75 16 51.6 131 49 27.3	Eagle Elkhorn Walters Azimuth mark.	4.301439 4.205162 4.198385	20,018.8 16,038.4 15,790.1	65,678 52,619 51,805
Big Sandy, 1934 [1]	36 12 27.38 87 58 45.80	130 28 21 135 53 40 295 31 08	310 22 08 315 51 06	Elkhorn Carmel Azimuth mark.	4.315807 3.969966	20,692.2 9,331.8	67,888 30,616
Paris, Episcopal Church, spire, 1934 [1]	36 18 08.44 88 19 32.80	240 16 39 259 14 37	60 23 17 79 20 42	Eagle Elkhorn	4.285202 4.194130	19,284.2 15,636.2	63,268 51,300
Paris, cylindrical water tank, 1934 [1]	36 18 02.46 88 19 40.24	240 04 37 258 42 48	60 11 19 78 48 57	Eagle Elkhorn	4.290857 4.200129	19,537.0 15,853.6	64,098 52,013
Bruceton, municipal water tank (black), 1934	36 02 02.327 88 14 40.454	113 50 34.8 193 29 00.4 248 15 57.5	293 49 50.6 13 30 42.6 68 19 45.9	Hollow Walters Weatherly	3.312586 4.269161 4.019348	2,053.9 18,584.9 10,455.6	6,739 60,974 34,303
Lexington, aluminum water tank, 1934 [1]	35 38 39.73 88 23 38.37	78 03 37 144 07 37	258 01 20 324 05 23	Woods Center	3.780973 3.995113	6,039.1 9,888.1	19,813 32,441
Jackson, Jackson Wood Products Co., tall stack, 1934	35 36 07.861 88 47 59.166	151 11 26.4 284 31 16.1 356 35 06.9	331 11 06.4 104 35 40.8 176 35 22.9	Union Johnson Butler	3.254948 4.073131 4.066541	1,798.7 11,834.0 11,655.8	5,901 38,825 38,241
Henderson, black water tank, 1934	35 26 24.939 88 38 25.684	44 32 35.1 114 44 22.7 1 14 53.8	224 29 39.3 294 39 05.9 181 14 53.1	Crown Butler McKinney	4.038220 4.180421 3.184799	10,919.9 15,150.3 1,530.4	35,826 49,706 5,021
Henderson, courthouse, spire, 1934 [1]	35 25 30.67 88 39 23.81	221 47 07 264 18 46	41 51 23 84 19 19	Brown McKinney	4.222275 3.158385	16,683.0 1,440.1	54,734 4,725
Western State Hospital (near Bolivar), main building, tall spire, 1934.	35 16 32.063 89 01 36.042	6 07 28.7 279 35 03.6 315 38 37.2	186 07 16.9 99 39 47.0 135 42 55.5	Owens Walnut Doyle	3.684596 4.099757 4.209775	4,837.2 12,582.2 16,209.7	15,870 41,280 53,181
Bolivar, aluminum water tank, 1934	35 15 23.426 88 59 35.379	52 56 33 129 12 04 217 45 23	232 55 12 309 10 59 37 48 00	Owens Hospital Willoughby	3.650311 3.564754 4.046347	4,470.0 3,670.7 11,126.2	14,665 12,043 36,503
Bolivar, Episcopal Church, white spire, 1934 [1]	35 15 18.19 88 59 21.36	57 08 58 127 48 03	237 07 29 307 46 50	Owens Hospital	3.669160 3.607301	4,668.3 4,048.6	15,316 13,283

[1] No check on this position.

Clarksville, Tenn., to Corinth, Miss. (second order)

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Principal points	° ′ ″	° ′ ″	° ′ ″				
Needmore, 1934	36 34 57.679	209 27 55.5	29 31 03.4	Trenton	4.201074	15,888.2	52,127
	87 19 53.978	254 38 35.1	74 45 33.6	McMurry	4.257276	18,083.2	59,328
		248 06 29.8		Azimuth mark.			
Sango, 1934	36 30 23.815	130 13 45.8	310 09 46.6	Needmore	4.116592	13,079.5	42,912
	87 13 12.306	174 28 29.7	354 27 37.9	Trenton	4.349770	22,375.4	73,410
		209 26 03.5	29 29 02.3	McMurry	4.181127	15,174.9	49,786
Davenport (Ky.-Tenn.), 1934	36 38 30.611	32 01 39.1	212 00 00.6	Needmore	3.888781	7,740.7	25,396
	87 17 08.852	207 05 20.4	27 06 49.8	Trenton	3.911808	8,162.2	26,779
		117 48 05.3		Azimuth mark.			
Summit, 1934	36 30 55.780	176 31 01.2	356 30 50.3	Needmore	3.873328	7,470.1	24,508
	87 19 35.722	275 51 52.1	95 55 40.2	Sango	3.981885	9,591.5	31,468
		226 39 23.8		Azimuth mark.			
Clarksville, 1934	36 30 48.374	191 12 44.5	11 13 20.9	Needmore	3.893999	7,834.3	25,703
	87 20 55.253	263 24 45.8	83 25 33.1	Summit	3.299296	1,992.0	6,535
		273 43 17.0	93 47 52.4	Sango	4.062383	11,544.7	37,876
		79 00 32.9		Azimuth mark.			
Orgains, 1934	36 26 27.451	191 04 45.1	11 05 22.8	Clarksville	3.913575	8,195.5	26,888
	87 21 58.546	191 08 21.0	11 09 35.1	Needmore	4.204927	16,029.8	52,591
		240 52 39.1	60 57 52.0	Sango	4.175816	14,990.5	49,181
		13 54 15.0		Azimuth mark.			
Henrietti, 1934	36 24 43.381	102 18 40.6	282 12 48.8	Orgains	4.179072	15,103.3	49,551
	87 12 06.077	148 26 49.2	328 22 11.3	Needmore	4.346926	22,229.3	72,931
		171 04 26.5	351 03 47.2	Sango	4.026214	10,622.2	34,850
		101 29 18.6		Azimuth mark.			
Fredona, 1934	36 26 22.295	332 46 18.6	152 46 56.0	Henrietti	3.535122	3,428.6	11,249
	87 13 09.040	90 44 02.8	270 38 48.3	Orgains	4.120209	13,188.9	43,271
		340 52 23.1		Azimuth mark.			
Hamble, 1934	36 17 35.564	161 24 32.1	341 22 20.8	Orgains	4.238017	17,298.8	56,754
	87 18 17.109	215 01 18.8	35 04 58.7	Henrietti	4.207048	16,108.2	52,848
		334 37 55.3		Azimuth mark.			
Marion, 1934	36 19 01.660	205 27 46.2	25 30 22.1	Orgains	4.182464	15,221.7	49,940
	87 26 21.303	243 38 22.4	63 46 49.5	Henrietti	4.376227	23,780.8	78,021
		282 20 59.3	102 25 46.0	Hamble	4.092310	12,368.3	40,578
		46 24 07.1		Azimuth mark.			
Promise, 1934	36 12 52.970	138 32 28.5	318 28 30.3	Marion	4.181020	15,171.2	49,774
	87 19 38.641	193 08 48.0	13 09 36.2	Hamble	3.951577	8,944.9	29,347
		67 42 27.1		Azimuth mark.			
Van Leer, 1934	36 13 53.583	182 22 08.7	2 22 18.0	Marion	3.977901	9,503.9	31,181
	87 26 37.051	241 13 32.3	61 18 28.0	Hamble	4.153280	14,232.5	46,694
		280 06 07.0	100 10 14.3	Promise	4.025945	10,615.6	34,828
		42 36 29.6		Azimuth mark.			
Houston, 1934	36 20 21.239	282 17 17.0	102 21 43.6	Marion	4.060363	11,491.1	37,700
	87 33 51.401	317 45 03.6	137 49 20.6	Van Leer	4.207705	16,132.6	52,928
		71 06 37.9		Azimuth mark.			
Dull, 1934	36 12 22.285	103 43 10.1	283 41 38.4	Promise	3.601132	3,991.5	13,095
	87 17 03.401	169 12 57.6	349 12 14.0	Hamble	3.992546	9,829.8	32,250
		216 13 47.5		Azimuth mark.			
Berry, 1934	36 10 54.561	133 17 28.0	313 15 09.4	Van Leer	3.905789	8,049.9	26,410
	87 22 42.421	231 30 15.9	51 32 04.5	Promise	3.768285	5,865.2	19,243
		252 16 05.8	72 19 26.1	Dull	3.948968	8,891.4	29,171
		255 19 39.8		Azimuth mark.			
Pond, 1934	36 06 31.313	173 22 23.3	353 21 45.9	Van Leer	4.137465	13,723.5	45,025
	87 25 33.632	207 47 56.8	27 49 37.8	Berry	3.962539	9,173.6	30,097
		216 59 51.2	37 03 20.7	Promise	4.168337	14,734.6	48,342
		108 30 54.2		Azimuth mark.			
Dickhum, 1934	36 08 14.588	222 58 48.9	43 02 39.2	Van Leer	4.155013	14,289.4	46,881
	87 33 07.147	252 25 30.0	72 31 38.6	Berry	4.214189	16,375.3	53,725
		285 38 27.5	105 42 54.8	Pond	4.071121	11,779.3	38,646
		133 10 28.1		Azimuth mark.			
McEwen, 1934	36 04 46.397	233 56 40.8	54 00 08.7	Dickhum	4.037826	10,910.0	35,794
	87 38 59.919	260 49 33.5	80 57 28.4	Pond	4.310222	20,427.8	67,020
		339 16 06.6	159 19 07.0	Spot	4.337539	21,754.0	71,371
		21 40 11.2	201 38 30.4	Bold	4.065405	11,625.3	38,141
		200 02 22.3		Azimuth mark.			
Crowel, 1934	36 01 10.464	5 58 35.0	185 58 01.4	Spot	4.138875	13,768.1	45,171
	87 32 55.701	72 51 17.8	252 46 03.0	Bold	4.147397	14,041.0	46,066
		126 09 37.9	306 06 03.6	McEwen	4.052593	11,287.4	37,032
		178 44 45.1	358 44 38.4	Dickhum	4.116453	13,075.3	42,898
		228 10 15.8	48 14 36.0	Pond	4.171394	14,838.6	48,683
		214 06 10.7		Azimuth mark.			

Clarksville, Tenn., to Corinth, Miss. (second order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Lobel, 1934	35 47 19.245	189 14 18.7	9 14 59.4	Buffalo	4.035655	10,855.6	35,615
	87 47 40.102	240 03 30.6	60 11 35.0	Spot	4.379153	23,941.6	78,548
		271 00 13.9	91 02 37.5	Aircon	3.790092	6,167.3	20,234
		303 51 50.5	123 55 58.4	Cobel	4.108592	12,840.8	42,129
		328 29 59.8		Azimuth mark.			
Beard, 1934	35 41 32.150	200 48 36.4	20 50 11.0	Lobel	4.058616	11,445.0	37,549
	87 50 22.015	256 27 31.5	76 33 13.6	Cobel	4.180502	15,153.1	49,715
		203 38 41.0		Azimuth mark.			
Pleasant, 1934	35 39 21.765	112 46 12.1	292 42 29.7	Beard	4.016863	10,395.9	34,107
	87 44 00.767	159 28 53.3	339 26 45.2	Lobel	4.196300	15,714.5	51,557
		214 16 42.4	34 18 41.9	Cobel	3.961132	9,143.9	30,000
		52 17 01.7		Azimuth mark.			
Linden, 1934	35 35 53.762	191 46 39.4	11 47 29.7	Beard	4.027490	10,653.4	34,952
	87 51 48.501	241 23 13.1	61 27 45.5	Pleasant	4.127180	13,402.3	43,971
		341 28 07.4		Azimuth mark.			
Ice, 1934	35 33 19.972	119 28 14.3	299 25 00.3	Linden	3.984164	9,641.9	31,633
	87 46 15.028	157 44 19.2	337 41 55.2	Beard	4.214646	16,392.5	53,781
		196 51 00.1	16 52 18.2	Pleasant	4.066363	11,651.0	38,225
		88 58 25.9		Azimuth mark.			
Flatwoods, 1934	35 28 30.272	179 43 52.0	359 43 50.5	Linden	4.135704	13,668.0	44,842
	87 51 45.952	223 01 06.1	43 04 18.3	Ice	4.086953	12,216.7	40,081
		307 15 21.5	127 20 44.1	Wayne	4.246647	17,646.0	57,894
		342 03 23.6	162 05 14.4	Hassel	4.195069	15,670.0	51,411
		325 44 22.3		Azimuth mark.			
Pope, 1934	35 28 47.330	12 43 39.6	192 42 19.7	Hassel	4.199287	15,822.9	51,912
	87 46 16.737	86 24 08.4	266 20 57.4	Flatwoods	3.919927	8,316.2	27,284
		147 34 23.9	327 31 11.1	Linden	4.192412	15,574.4	51,097
		180 17 36.6	0 17 37.6	Ice	3.924413	8,402.6	27,568
		332 55 09.7	152 57 21.5	Wayne	4.100321	12,598.6	41,334
		58 00 51.1		Azimuth mark.			
Mayberry, 1934	35 29 38.404	206 36 16.2	26 38 30.0	Linden	4.111936	12,940.1	42,454
	87 55 38.710	289 40 18.6	109 42 33.7	Flatwoods	3.794610	6,231.8	20,445
		306 36 25.3		Azimuth mark.			
Zion, 1934	35 31 11.478	243 39 09.6	63 45 56.2	Linden	4.293170	19,641.3	64,440
	88 03 27.715	283 36 11.5	103 40 43.9	Mayberry	4.085023	12,162.5	39,903
		285 37 57.9	105 44 45.4	Flatwoods	4.264150	18,371.7	60,274
		47 23 36.3		Azimuth mark.			
Clifton, 1934	35 25 09.621	146 05 20.8	326 02 28.1	Zion	4.128440	13,441.3	44,099
	87 58 30.104	207 32 24.6	27 34 04.0	Mayberry	3.970496	9,343.2	30,653
		238 43 21.9	58 47 16.3	Flatwoods	4.076339	11,921.7	39,113
		260 13 17.2		Azimuth mark.			
Tucker, 1934	35 28 48.843	246 58 51.8	67 02 50.6	Zion	4.051414	11,256.8	36,932
	88 10 18.894	290 38 51.5	110 45 42.6	Clifton	4.281239	19,109.0	62,693
		67 41 39.1		Azimuth mark.			
Pony, 1934	35 20 25.556	155 34 20.3	335 31 38.4	Tucker	4.231427	17,038.3	55,900
	88 05 39.391	189 27 44.7	9 29 01.1	Zion	4.304951	20,181.4	66,212
		231 01 47.1	51 05 55.7	Clifton	4.143952	13,930.0	45,702
		222 11 09.6		Azimuth mark.			
Saltillo, 1934	35 23 14.810	217 30 08.0	37 33 09.8	Tucker	4.113290	12,980.5	42,587
	88 15 32.365	289 09 44.7	109 15 27.9	Pony	4.200103	15,852.7	52,010
		103 41 45.3		Azimuth mark.			
Cerro Gordo, 1934	35 17 21.863	141 26 22.0	321 23 03.2	Saltillo	4.143499	13,915.5	45,654
	88 09 48.676	177 56 21.4	357 56 04.0	Tucker	4.326030	21,185.1	69,505
		228 01 30.7	48 03 54.8	Pony	3.927763	8,467.7	27,781
		201 54 13.2		Azimuth mark.			
Right, 1934	35 17 41.000	203 43 23.7	23 45 07.3	Saltillo	4.050692	11,238.1	36,870
	88 18 31.508	272 30 50.6	92 35 52.6	Cerro Gordo	4.121365	13,224.1	43,386
		122 42 30.4		Azimuth mark.			
Walker, 1934	35 10 29.597	158 05 08.7	338 03 06.6	Right	4.156300	14,331.8	47,020
	88 14 59.815	178 00 17.6	357 59 58.8	Saltillo	4.372844	23,596.3	77,416
		211 44 36.3	31 47 35.8	Cerro Gordo	4.174458	14,943.7	49,028
		212 14 00.1		Azimuth mark.			
Crump, 1934	35 11 09.848	190 58 37.2	10 59 30.6	Right	4.089170	12,279.2	40,286
	88 20 04.045	279 07 45.3	99 10 40.6	Walker	3.891933	7,797.1	25,581
		117 18 43.1		Azimuth mark.			
Shirley, 1934	35 16 42.056	258 03 53.2	78 07 10.1	Right	3.944661	8,803.6	28,883
	88 24 12.397	309 21 19.1	129 26 37.8	Walker	4.257284	18,083.6	59,329
		328 27 16.1	148 29 39.3	Crump	4.079556	12,010.4	39,404
		327 16 43.9		Azimuth mark.			
Purdy, 1934	35 12 49.417	236 36 16.6	56 40 25.2	Shirley	4.115185	13,037.2	42,773
	88 31 23.093	280 04 24.3	100 10 55.7	Crump	4.241783	17,449.5	57,249
		47 28 32.7	227 21 08.3	Cypress	4.424026	26,547.6	87,098
		123 36 25.6		Azimuth mark.			

143113°—35——7

Clarksville, Tenn., to Corinth, Miss. (second order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Sand Hill, 1934	35 06 13.515	40 32 49.1	220 24 06.8	Crum	4.551427	35,598.1	116,791
	88 28 48.439	76 16 45.5	256 07 52.9	Cypress	4.383358	24,174.5	79,313
		162 13 29.3	342 12 00.3	Purdy	4.107649	12,812.9	42,037
		199 48 16.2	19 50 55.4	Shirley	4.313662	20,590.3	67,553
		235 25 55.8	55 30 57.7	Crump	4.207154	16,112.2	52,861
		297 54 32.5	118 01 56.6	Counce	4.346131	22,188.7	72,797
		350 11 33.4	170 13 18.7	Strickland	4.437374	27,376.3	89,817
		338 57 58.0		Azimuth mark.			
Selmer, 1934	35 10 57.093	242 28 09.5	62 30 41.0	Purdy	3.874717	7,494.1	24,587
	88 35 45.840	309 33 34.8	129 37 35.1	Sand Hill	4.137094	13,711.8	44,986
		41 41 04.7	221 36 11.7	Cypress	4.287975	19,407.7	63,673
		25 45 47.0		Azimuth mark.			
Adams (Miss.), 1934	34 59 32.809	325 13 54.0	145 17 42.8	Strickland	4.250461	17,801.7	58,404
	88 32 24.504	50 11 16.6	230 04 38.7	Crum	4.361369	22,981.0	75,397
		110 07 55.6	290 01 07.7	Cypress	4.282871	19,181.0	62,930
		203 53 52.6	23 55 56.7	Sand Hill	4.130591	13,508.0	44,317
		177 20 17.5		Azimuth mark.			
Michie, 1934	34 59 49.706	85 48 17.4	265 45 37.7	Adams	3.850089	7,080.9	23,231
	88 27 46.046	172 23 25.8	352 22 50.0	Sand Hill	4.076742	11,932.8	39,150
		72 41 26.5		Azimuth mark.			
Corinth (Miss.), 1934	34 56 48.974	155 05 46.2	335 04 53.2	Adams	3.745590	5,566.6	18,263
	88 30 52.076	220 15 36.6	40 17 23.2	Michie	3.863314	7,299.9	23,950
		320 49 32.0	140 52 27.8	Strickland	4.091803	12,353.9	40,531
		183 55 11.1		Azimuth mark.			
Supplementary points							
Guthrie, tie plant, smokestack (Ky.), 1934[1]	36 38 54.18	18 54 44	198 52 35	Sango	4.220829	16,627.6	54,552
	87 09 35.74	278 01 54	98 03 47	Bryan	3.676483	4,747.7	15,576
Clarksville, Garret Snuff Plant, southerly of two tanks, 1934.[1]	36 31 40.65	3 08 46	183 08 44	Clarksville	3.207855	1,613.8	5,295
	87 20 51.69	306 11 17	126 12 02	Summit	3.369614	2,342.1	7,684
Clarksville, American Snuff Co., brown smokestack, 1934.[1]	36 31 39.14	10 05 46	190 05 05	Orgains	3.989370	9,758.2	32,015
	87 20 49.86	305 54 58	125 55 42	Summit	3.357529	2,277.9	7,473
Clarksville, American Snuff Co., black water tank, 1934	36 31 36.499	6 25 15.6	186 24 50.0	Orgains	3.981641	9,586.1	31,450
	87 21 15.502	280 30 57.2	100 35 44.8	Sango	4.087415	12,229.7	40,124
		341 14 21.8	161 14 33.9	Clarksville	3.194964	1,566.6	5,140
Clarksville, courthouse, cupola, 1934	36 31 36.387	4 27 16.8	184 26 59.1	Orgains	3.980066	9,551.4	31,337
	87 21 28.759	200 47 38.8	20 48 35.2	Needmore	3.821992	6,637.3	21,776
		280 13 24.7	100 18 20.1	Sango	4.098765	12,553.5	41,186
Tennessee City, fire lookout tower, 1934[1]	36 05 58.66	155 02 23	335 01 37	Dickhum	3.664766	4,621.3	15,162
	87 31 49.15	263 51 15	83 54 56	Pond	3.975275	9,446.6	30,993
Fire lookout tower west of Pinewood, 1934[1]	35 54 50.10	32 44 32	212 39 17	Cobel	4.398335	25,022.7	82,095
	87 31 37.37	59 54 00	239 52 41	Spot	3.594121	3,927.5	12,885
Airway beacon no. 58, 1934	35 47 16.506	342 57 28.9	162 57 29.1	Aircon	1.430672	26.957	88.44
	87 43 34.875	157 47 50.7	337 46 07.8	Buffalo	4.066888	11,665.1	38,271
		230 31 27.9	50 37 08.7	Spot	4.276681	18,909.5	62,039
Bryan, 1934	36 38 32.620	54 46 47.0	234 45 43.9	McMurry	3.507074	3,214.2	10,545
	87 06 26.491	120 32 13.4	300 27 19.2	Trenton	4.152160	14,195.8	46,574
		217 33 38.8	37 37 02.4	Olmstead	4.141956	13,866.2	45,493
		1 21 43.2		Azimuth mark.			
Kentucky-Tennessee boundary monument no. 26 (Tenn.-Ky.), 1934.[1]	36 38 32.75	47 24 47	227 24 47	Bryan	0.770042	5.889	19.32
	87 06 26.32						
B.M. W 3 (Primary traverse station no. 8 W 1925 Tenn. (U. S. G. S.)), 1934.[1]	36 30 55.53	242 00 46	62 00 46	Summit	1.218325	16.532	54.24
	87 19 36.31						
Primary traverse station no. 26 W 1925 Tenn. (U. S. G. S.), 1934.[1]	36 26 22.34	50 12 45	230 12 45	Fredona	0.314710	2.064	6.77
	87 13 08.98						
Transit traverse station no. 4 D 1929 (U. S. G. S.), 1934[1]	36 12 22.28	269 19 17	89 19 18	Dull	1.387710	24.418	80.11
	87 17 04.38						
Fire lookout tower near station Pope, 1934	35 28 47.275	12 45 19.4	192 43 59.3	Hassel	4.199286	15,822.9	51,912
	87 46 16.442	102 53 03.0	282 53 02.8	Pope	0.881955	7.62	25.0
Savannah, courthouse, cupola, 1934[1]	35 13 29.07	359 30 42	179 30 43	Walker	3.742804	5,531.0	18,146
	88 15 01.68	60 44 00	240 41 06	Crump	3.942976	8,769.5	28,771
Shiloh National Park, main flagpole, 1934[1]	35 09 02.23	70 15 03	250 09 35	Sand Hill	4.186197	15,353.1	50,371
	88 19 17.88	163 27 38	343 27 11	Crump	3.613050	4,102.5	13,460
Shiloh National Park, Iowa State Monument, 1934[1]	35 09 02.55	69 53 56	249 48 33	Sand Hill	4.179688	15,124.7	49,622
	88 19 27.62	166 46 51	346 46 30	Crump	3.605272	4,029.7	13,221
Corinth, black water tank (Miss.), 1934	34 56 16.422	157 41 09.1	337 40 13.0	Adams	3.815716	6,542.1	21,464
	88 30 46.561	189 14 04.5	9 15 12.3	Sand Hill	4.270498	18,642.2	61,162
		214 51 07.7	34 52 51.2	Michie	3.903665	8,010.6	26,281

[1] No check on this position.

Louisville, Ky. to Nashville, Tenn.

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance		
					Logarithm (meters)	Meters	Feet
Principal points	° ′ ″	° ′ ″	° ′ ″				
Griffin (Ky.), 1933	36 45 43.984	287 10 31.3		Azimuth mark.			
	86 15 19.765						
Carman (Ky.), 1933	36 45 39.333	269 26 00.79	89 32 27.32	Griffin	4.2046496	16,019.52	52,557.4
	86 26 05.608	322 26 24.9		Azimuth mark.			
Graves (Ky.), 1933	36 39 06.806	134 14 09.80	314 09 10.12	Carman	4.2394785	17,357.15	56,945.9
	86 17 44.226	196 18 42.55	16 20 08.90	Griffin	4.1057562	12,757.22	41,854.3
		262 25 24.7		Azimuth mark.			
Perry, 1933	36 39 06.003	190 24 27.56	10 25 21.23	Carman	4.0908728	12,327.44	40,444.3
	86 27 35.393	236 02 33.36	56 09 53.07	Griffin	4.3423679	21,997.22	72,169.2
		269 51 16.19	89 57 09.09	Graves	4.1668335	14,683.63	48,174.5
		3 11 56.99	183 11 29.58	Baulch	4.3123366	20,527.53	67,347.4
		331 40 15.0		Azimuth mark.			
Jenkins, 1933	36 33 20.211	1 15 10.21	181 15 02.30	Duren	4.1808515	15,165.32	49,754.9
	86 15 24.438	63 05 50.98	242 58 08.70	Baulch	4.3363025	21,692.15	71,168.3
		120 27 40.18	300 20 24.33	Perry	4.3235202	21,063.00	69,104.2
		161 59 49.83	341 58 26.48	Graves	4.0505439	11,234.25	36,857.7
		263 52 52.0		Azimuth mark.			
		255 59 41.3		Westmoreland, school, chimney.			
Webb, 1933	36 31 18.311	43 54 25.34	223 52 05.60	Baulch	3.9261019	8,435.33	27,674.9
	86 24 26.449	161 58 09.82	341 56 17.20	Perry	4.1807604	15,162.14	49,744.5
		214 39 55.65	34 43 55.39	Graves	4.2446424	17,564.77	57,627.1
		254 22 56.19	74 28 18.88	Jenkins	4.1460079	13,996.13	45,919.0
		310 51 42.92	130 56 57.18	Duren	4.2409477	17,415.97	57,138.9
		306 56 52.7		Azimuth mark.			
Franklin (Ky.), 1933	36 43 20.583	251 31 11.70	71 36 21.04	Carman	4.1310849	13,523.37	44,367.9
	86 34 42.719	306 27 14.12	126 31 29.42	Perry	4.1204454	13,196.09	43,294.2
		145 34 47.2		Azimuth mark.			
Groves (Ky.), 1933	36 38 00.548	171 59 05.18	351 58 31.74	Franklin	3.9983654	9,962.43	32,685.1
	86 33 46.741	218 56 59.31	39 01 34.87	Carman	4.2599334	18,194.22	59,692.2
		257 37 54.79	77 41 36.41	Perry	3.9751024	9,442.83	30,980.4
		311 37 29.06	131 43 02.94	Webb	4.2706476	18,648.66	61,183.1
		44 07 11.7		Azimuth mark.			
Supplementary points							
Airway beacon no. 68 (Ky.), 1933	36 39 59.967	161 25 07.5	341 23 42.7	Carman	4.042849	11,036.9	36,210
	86 23 43.816	229 40 14.4	49 45 15.7	Griffin	4.214829	16,399.4	53,804
		280 22 03.8	100 25 38.5	Graves	3.958078	9,079.8	29,789
Kentucky-Tennessee boundary monument (Ky.-Tenn.), 1933.[1]	36 39 06.10	50 24	230 24	Perry	0.671173	4.69	15.4
	86 27 35.25						
Franklin, municipal water tank (Ky.), 1933 [1]	36 43 20.90	307 59 34	128 03 36	Perry	4.105668	12,754.6	41,846
	86 34 20.08	89 00 10	268 59 56	Franklin	2.749640	561.9	1,844
Primary traverse station no. 7 1920 Ky. (U. S. G. S.) (Ky.), 1933.	36 38 27.849	19 28 07.0	199 26 46.6	Jenkins	4.002572	10,059.4	33,003
	86 13 09.656	100 00 29.4	279 57 45.5	Graves	3.840435	6,925.2	22,720
		166 30 09.5	346 28 51.7	Griffin	4.140704	13,826.2	45,361
Airway beacon no. 67, 1933	36 33 13.731	9 17 59.3	189 17 21.6	Baulch	3.989683	9,765.2	32,038
	86 27 18.022	177 43 28.4	357 43 18.0	Perry	4.036116	10,867.2	35,653
		309 48 01.7	129 49 43.8	Webb	3.744781	5,556.2	18,229
Airway beacon no. 66, 1933 [1]	36 24 24.63	178 59 26	358 59 23	Baulch	3.824303	6,672.7	21,892
	86 28 16.68	265 51 48	85 59 19	Duren	4.277762	18,956.7	62,194

Paducah, Ky., to Martin, Tenn. (second order)

Principal points							
Dobson (Ky.), 1934	36 34 43.425	33 59 43.1		Azimuth mark.			
	88 40 41.411						
Blair (Ky.), 1934	36 34 35.550	268 57 46.0	89 03 22.5	Dobson	4.147380	14,040.4	46,064
	88 50 06.057	1 20 28.7		Azimuth mark.			
Golden, 1934	36 29 24.808	155 34 12.5	335 32 28.3	Blair	4.022074	10,521.4	34,519
	88 47 11.037	224 35 24.0	44 39 15.9	Dobson	4.139826	13,798.3	45,270
		341 22 29.9	161 25 13.2	Dresden	4.332655	21,510.7	70,573
		28 02 14.2	207 59 21.7	Jackson	4.187592	15,402.5	50,533
		157 14 15.3		Azimuth mark.			
Fulton, 1934	36 30 08.149	204 42 06.6	24 43 37.4	Blair	3.957774	9,073.5	29,769
	88 52 38.567	279 16 48.3	99 20 03.1	Golden	3.917000	8,260.4	27,101
		226 03 32.7		Azimuth mark.			
Duke, 1934	36 30 08.410	77 35 59.0	257 33 33.2	Golden	3.795779	6,248.5	20,500
	88 43 05.849	128 15 55.8	308 11 45.6	Blair	4.124057	13,306.3	43,656
		202 57 22.9	22 58 48.9	Dobson	3.964116	9,207.0	30,207
		122 12 00.4		Azimuth mark.			

[1] No check on this position.

Paducah, Ky., to Martin, Tenn. (second order)—Continued

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points—Continued	° ′ ″	° ′ ″	° ′ ″				
Vincent, 1934	36 29 03.374	23 49 18.9	203 45 51.8	Dresden	4.333619	21,558.5	70,730
	88 36 46.667	60 29 27.3	240 20 24.1	Jackson	4.418373	26,204.3	85,972
		92 29 09.3	272 22 58.1	Golden	4.191879	15,555.3	51,034
		117 18 30.6	297 10 34.8	Blair	4.349623	22,367.8	73,385
		150 53 44.0	330 51 24.3	Dobson	4.079134	11,998.7	39,366
		107 27 07.1		Azimuth mark.			
Junior, 1934	36 20 29.520	43 44 16.9	223 41 59.3	Bell	3.923373	8,382.5	27,502
	88 51 48.660	173 43 35.1	353 43 27.5	Jackson	3.465215	2,918.9	9,576
		220 54 52.2		Azimuth mark.			
Martin, 1934	36 20 38.987	48 16 35.6	228 13 46.7	Bell	3.979413	9,537.0	31,289
	88 50 55.653	77 33 21.8	257 32 50.4	Junior	3.131511	1,353.7	4,441
		147 50 53.2	327 50 14.2	Jackson	3.488899	3,082.5	10,113
		12 49 58.4		Azimuth mark.			
Supplementary points							
Martin, Junior College of University of Tennessee, red brick chimney, 1934.	36 20 26.358	107 11 27	287 11 20	Junior	2.518183	329.7	1,082
	88 51 36.027	168 03 53	348 03 38	Jackson	3.486448	3,065.1	10,056
		248 51 35	68 51 59	Martin	3.033203	1,079.5	3,542
Martin, aluminum water tank near chimney, 1934	36 20 32.157	350 16 47.2	170 17 33.2	Sharon	4.060485	11,494.4	37,711
	88 50 53.994	49 23 56.5	229 21 06.5	Bell	3.974494	9,429.6	30,937
		149 11 30.9	329 10 50.8	Jackson	3.516354	3,283.6	10,773
Fulton, black brick chimney (Ky.), 1934	36 30 53.790	213 16 35.1	33 18 22.6	Blair	3.912623	8,177.5	26,829
	88 53 06.524	287 11 44.9	107 15 16.4	Golden	3.966711	9,262.1	30,387
		333 41 08.0	153 41 24.7	Fulton	3.195750	1,569.5	5,149
Primary traverse station no. 34 1910 (U. S. G. S.), 1934[1]	36 20 39.62	330 27 16	150 27 16	Martin	1.355126	22.653	74.32
	88 50 56.10						
Obion County, Tenn.-Fulton County, Ky., county-line marker (Ky.-Tenn.), 1934.[1]	36 30 08.49	29 44 25	209 44 25	Fulton	1.084433	12.146	39.85
	88 52 38.32						
Kentucky-Tennessee boundary monument (Ky.-Tenn.), 1934.[1]	36 30 08.48	78 42 19	258 42 18	Fulton	1.721316	52.64	172.7
	88 52 36.49						
Kentucky-Tennessee boundary monument no. 8 (Ky.-Tenn.), 1934.[1]	36 30 09.23	1 56 09	181 56 09	Duke	1.403120	25.3	83
	88 43 05.81						
R. 1, T. 2 W., sec. 1, southwest corner (Ky.), 1934[1]	36 34 34.27	200 56 03	20 56 04	Blair	1.624777	42.148	138.28
	88 50 06.66						

Moscow, Tenn., to Forest, Miss.

Station	Latitude and longitude	Azimuth	Back azimuth	To station	Distance: Logarithm (meters)	Distance: Meters	Distance: Feet
Principal points							
Beasley (Miss.), 1934	34 59 37.763	97 21 30.17	277 15 34.65	Church	4.1998882	15,844.85	51,984.3
	89 18 24.330	163 47 43.70	343 47 03.57	Jackson	3.8028664	6,351.36	20,837.8
		316 48 22.2		Azimuth mark.			
Skelton (Miss.), 1934	34 55 07.617	139 17 37.51	319 14 16.35	Church	4.1350207	13,646.48	44,771.8
	89 22 53.093	199 15 18.51	19 17 12.51	Jackson	4.1841169	15,279.77	50,130.4
		219 18 01.17	39 20 35.16	Beasley	4.0318555	10,761.07	35,305.3
		141 37 07.4		Azimuth mark.			
Mule (Miss.), 1934	34 52 27.141	165 30 04.11	345 28 34.81	Church	4.1983653	15,789.39	51,802.4
	89 26 08.202	207 15 44.15	27 19 29.89	Jackson	4.3383617	21,795.24	71,506.5
		225 02 06.59	45 03 58.21	Skelton	3.8450767	6,999.66	22,964.7
		341 46 10.7		Azimuth mark.			
Whitten (Miss.), 1934	34 51 30.290	99 11 33.53	279 07 28.97	Mule	4.0416472	11,006.45	36,110.3
	89 19 00.395	138 35 46.26	318 33 33.16	Skelton	3.9509048	8,931.10	29,301.5
		139 02 24.58	318 56 50.32	Church	4.3536688	22,577.13	74,071.8
		183 29 02.86	3 29 23.51	Beasley	4.1775263	15,049.65	49,375.4
		355 09 28.5		Azimuth mark.			
Fite (Miss.), 1934	34 59 33.343	121 55 23.7	301 54 05.5	Church	3.609696	4,071.0	13,356
	89 26 27.835	239 13 41.0	59 17 38.3	Jackson	4.086311	12,198.6	40,022
		326 20 39.0	146 22 42.0	Skelton	3.992799	9,835.6	32,269
		0 45 41.6		Azimuth mark.			
Supplementary point							
Slayden, Marshall County High School, tank (Miss.), 1934.	34 56 53.983	358 48 42.8	178 48 46.6	Mule	3.915115	8,224.6	26,984
	89 26 14.916	151 49 46.5	331 48 20.9	Church	3.903781	8,012.7	26,288
		176 11 00.1	356 10 52.7	Fite	3.692121	4,921.8	16,148

[1] No check on this position.

EXPLANATION OF LIST OF PLANE COORDINATES

The geodetic positions in this publication have been reduced to plane coordinates which are given in the following tables. These coordinates are based on the Lambert conformal projection. Coordinate tables for the State have been computed by this Bureau as a basis for computing the coordinates. The purpose in view in supplying these coordinates has been to provide for computations of surveys by the usual method of plane surveying in which the convergence of the meridians is not considered. A State-wide application can now be made of principles ordinarily confined in common practice to very restricted areas.

The x and y coordinates are given in feet to two decimal places in the table. This is one place farther than geodetic positions justify, but it was thought desirable to accept the positions as if they were perfectly exact to the 3 decimal places and to carry the 2 decimal places on the coordinates so that traverses between 2 fixed points could be adjusted with the use of two decimal places.

The plane coordinates are in all essential features merely the plane representation of the spherical coordinates given in the lists of the geodetic positions. For definite instructions regarding the use of the coordinates, reference should be made to the following special publications of this Bureau: No. 193, Manual of Plane-Coordinate Computation; No. 194, Manual of Traverse Computation on the Lambert Grid; and No. 195, Manual of Traverse Computation on the Transverse Mercator Grid.

A few stations, for which geodetic positions are given in the list, lie so far out of the State that plane coordinates were not computed for them on the grid of this State. If it becomes necessary to use any of these as control for local surveys, their coordinates should be obtained from the Coast and Geodetic Survey on the grid of the State in which they lie. Computations of traverses tied to them would then have to be made by passing from the one grid to the other. The method for accomplishing this is given in Special Publication No. 193. It is not thought that this necessity will arise very often but when it does occur, the method of handling it is not very complicated and the necessary computations can easily be made.

EXPLANATION OF PLANE LENGTHS

This table of plane coordinates does not give any lengths of lines, but such lengths can be computed from the differences of coordinates just as is done in ordinary plane surveying. The resulting length is affected by the distortion due to the reduction of the actual curved surface of the earth to a plane. It must be corrected for the scale of the grid at that point to reduce it to the sea-level length listed in the geographic-position tables. If it should be desired to obtain the actual ground-level length, a further correction must be applied as described on page 13 for lines of triangulation.

EXPLANATION OF PLANE OR GRID AZIMUTHS

The plane or grid azimuths given in the tables of plane-coordinate positions are based upon the central meridian of the proper system and they, therefore, differ from the geodetic azimuths which appear

in the lists of geographic positions and the descriptions. The back azimuth differs from the forward azimuth by exactly 180°, hence it is necessary to list the azimuth of each line in only one direction.

Many of the azimuths listed are to special azimuth marks located at comparatively short distances from the stations. These marks have been placed at such positions as to be visible from the ground at the stations, and thus are readily available as starting azimuths for local surveys such as traverses. Since 1927, it has been the custom to establish these azimuth marks at most of the first-order stations established by this Bureau.

The plane azimuth from a triangulation station to an azimuth mark or other triangulation station may be computed in two ways; first, by means of the formula

$$\text{geodetic azimuth-grid azimuth} = +\theta - \frac{x_2 - x_1}{2\rho_0^2 \sin 1''}\left(y_1 - y_0 + \frac{y_2 - y_1}{3}\right),$$

in which θ is the mapping angle obtained from table II of the plane-coordinate projection tables (pp. 144 to 146), x_1, x_2, y_1, and y_2 are the coordinates of the stations, and $\frac{1}{2\rho_0^2 \sin 1''}$, and y_0 are obtained from the table of constants, page 146, for the zone in which the stations are located; and second, by means of the usual plane-surveying method using the formula

$$\text{tangent grid azimuth} = \frac{\Delta x}{\Delta y},$$

in which Δx and Δy are the respective differences of the x and y coordinates of the two stations.

Since the second term of the first formula is negligible for distances up to approximately 1 mile, the mapping angle, θ, may be applied directly to the geodetic azimuth to obtain the grid azimuth. The first formula, using only the θ angle, will give more consistent results for azimuths over short distances than the second formula. This is due to the fact that there are not sufficient significant figures in the differences of the x and y coordinates to make the second formula sufficiently exact.

Inconsistencies between plane azimuths, as computed from the two formulas, may also arise when the coordinates of the azimuth mark are derived from a "no check" (see p. 12) geodetic position. This results from discarding the third decimal place of the seconds of latitude and longitude and thus using only hundredths of seconds for computing the plane-coordinate position.

Since these inconsistencies diminish as the distance between the station and the azimuth mark increases, the second formula has been used to compute the plane azimuths of such lines as are of sufficient length to make the differences negligible. In other words, when the distances between the station and the azimuth mark is such that both formulas give practically the same result, and when the coordinates of both station and azimuth mark are known, the second (or tangent) formula has been used.

The first formula has been used to compute the plane azimuths to all azimuth marks whose coordinates were not known, and also to

stations whose coordinates were derived from "no check" geodetic positions and to other azimuth marks whose coordinates were known but which did not give consistent results when computed by means of the second formula.

In the tables of plane-coordinate positions, the plane azimuths between stations for which coordinates were available but which were computed by means of the first formula are marked by footnote (*).

PLANE-COORDINATE POSITIONS

Tennessee Loop

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Principal points			
Cohutta (Ga.), 1874	2,427,664.09 184,307.76	° ′ ″	
High Point 2 (U. S. G. S.) (Ga.), 1874	2,182,270.15 172,262.31	199 11 22	Azimuth mark.
Bean, 1887	2,430,767.20 294,397.00		
Harvey, 1887	2,209,532.01 364,940.97	62 31 42	Azimuth mark.
Roy, 1887	2,462,288.22 415,773.42	189 47 41	Azimuth mark.
Hinch Mountain, 1884	2,302,946.72 507,272.67		
Luper, 1883	2,358,405.82 570,942.30		
Melton, 1884	2,501,859.60 556,725.49	320 23 27	Azimuth mark.
Cross, 1891	2,522,048.30 662,137.30		
Cockspur, 1885	2,587,010.09 439,574.05		
Clinch, 1891	2,671,525.18 657,083.77		
English, 1891	2,800,175.29 560,347.55	53 55 13	Azimuth mark.
McLean, 1892	2,608,582.96 763,512.66		
Short, 1892	2,830,095.18 735,986.32	355 59 24	Azimuth mark.
White Rock (Va.-Ky.), 1892	2,747,460.12 837,144.63	78 05 16	Azimuth mark.
King (Ky.), 1892	2,557,990.00 900,047.92		
Rogers (Va.), 1894	3,306,409.98 855,312.32		
Roan High Bluff (N. C.), 1894	3,138,496.23 641,618.17		
Fork, 1930	3,127,263.17 699,164.00		
Big Knob (Va.), 1893	3,024,674.60 845,551.33		
Big Butt (Tenn.-N. C.), 1893	2,996,614.50 624,799.23	130 11 59	Azimuth mark, R. M. no. 3.

Tennessee Loop—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Supplementary points		°	′	″	
Chimney, 1894	2,968,891.49 750,175.30	234	10	53	Azimuth mark.
Powell (Tenn.-Va.), 1893	2,829,073.68 813,465.72	160	16	07	Azimuth mark.
Buzzard (Va.), 1893	2,893,902.84 867,010.69	224	15	56.9	Azimuth mark.
Wildcat (Tenn.-Va.), 1893	2,930,383.77 816,500.45	137	17	47.4	Azimuth mark.
Cloud 2 (Tenn.-Va.), 1934	3,000,557.36 819,476.03	15	12	35.5	Azimuth mark.
Pinnacle (U. S. G. S.) (Va.—Ky.), 1934	2,685,135.93 813,965.58				
Pinnacle (Va.-Ky.), 1893 [1]	2,685,134.21 813,962.40				
Kentucky Corner (Ky.—Tenn.), 1893	2,677,873.01 805,366.82				
Minter (Tenn.-Va.), 1893	2,744,229.95 812,362.21				
Minter (U. S. G. S.) (Va.), 1934 [1]	2,743,584.42 812,895.14	309	32	52*	Minter.
Forge (U. S. G. S.), 1934	2,705,543.30 798,793.34	256	28	48	Azimuth mark.
Virginia Corner 2 (Ky.-Tenn.-Va.), 1934.	2,682,360.88 812,102.67				
Virginia Corner (Ky.), 1893 [1]	2,682,371.31 812,189.01				
Owen, 1884	2,447,519.48 446,251.69				
Copper Ridge, 1887	2,400,791.13 472,402.50				
Poe, 1887	2,233,455.38 313,760.56				
Benton, tree, 1887	2,412,331.81 269,147.74				
Grassy 2 (Ga.), 1887	2,399,010.13 173,745.20				
Brushy, 1885	2,469,675.96 617,111.58				
Hangover, tree (U. S. G. S.), 1884	2,605,206.93 368,047.81				
Little Bald, top, 1885	2,634,988.68 417,736.50				
Big Fodderstack, 1885	2,587,713.71 377,298.16				
Little Fodderstack, summit, 1885 [1]	2,590,782.13 391,300.59				
Chilhowee 2, tree (U. S. G. S.), 1884	2,592,217.25 444,376.00				
House Mountain, 1884	2,659,584.67 633,525.08				
Knoxville, college cupola, 1884	2,613,788.12 576,265.37				

[1] No check on this position.
* This azimuth has been computed by means of the θ correction. See p. 101.

Tennessee Loop—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Supplementary points—Continued			
Knoxville latitude and longitude station, 1907.	2,613,793.87 576,110.64		
Knoxville east base, 1907	2,613,795.26 576,072.65		
Knoxville west base, 1907	2,613,623.72 576,149.72		
Terrace, 1907	2,613,702.74 576,092.03		
Knoxville, Y. M. C. A. Building, spire, 1907.	2,613,807.96 575,988.98		
Knoxville, Reese Hall, spire, 1907	2,613,530.82 576,156.95		
Knoxville, Jefferson Hall, flagpole, 1907	2,613,846.76 576,156.37		
Tower, 1922	2,613,748.62 576,309.23		
Lookout Point, 1874 [1]	2,196,410.77 225,831.61		
Mount Mitchell, summit (N. C.), 1876	3,107,754.64 520,844.78		
Big Yellow Mountain (N. C.), 1876 [1]	3,158,456.23 644,636.40		
Grassy Ridge (N. C.), 1876 [1]	3,158,750.83 643,433.84		

Huntsville, Ala., to Memphis, Tenn.

Principal points		° ′ ″	
Strickland (Miss.), 1914	1,271,232.89 179,627.61	91 22 11	Azimuth mark.
Crum (Miss.), 1914	1,180,025.95 181,698.76	253 31 19	Azimuth mark.
Ripley (Miss.), 1914	1,115,517.81 157,432.96		
Cypress, 1914	1,180,675.57 251,644.02	50 57 45	Azimuth mark.
Camphill (Miss.), 1914	1,100,110.73 216,202.20		
Malone (Miss.), 1914	1,077,219.67 228,534.16		
Porter, 1914	1,109,729.88 265,562.85	49 44 42	Azimuth mark.
Hickory, 1914	1,061,397.42 287,363.52	28 56 06	Azimuth mark.
Gordon, 1914	1,035,889.33 251,179.88		
Ebenezer, 1914	998,420.41 290,206.21		
Jackson, 1914	1,004,522.26 256,011.37	209 24 51	Azimuth mark.

Huntsville, Ala., to Memphis, Tenn.—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Principal points—Continued		° ′ ″	
Gillespie, 1914	960, 867. 55 283, 634. 87	168 27 17	Hazlett's house, right chimney.
Church, 1914	958, 353. 86 244, 212. 63	210 34 58	Azimuth mark.
Crenshaw (Miss.), 1914	924, 209. 69 238, 668. 54		
Morris, 1914	916, 814. 31 294, 845. 57	182 21 44	Morris' house, west chimney.
Martin, 1914	863, 827. 90 271, 776. 77	137 08 26	Germantown, church spire.
Capleville southeast base (Miss.), 1914	864, 159. 20 232, 472. 98		
Capleville northwest base, 1914	850, 305. 23 246, 560. 99		
Holmes (Miss.), 1914	815, 225. 62 241, 910. 40		
White, 1914	837, 692. 13 281, 407. 40		
Hopefield (Ark.), 1914	783, 398. 25 302, 168. 00		
Hopefield south base (Ark.), 1879	779, 652. 61 294, 446. 22		
P. B. M., Vance Senior (M. R. C. & U. S. E.) (Ark.), 1914.	782, 228. 28 298, 265. 99		
B. M. Hopefield (M. R. C. & U. S. E.) (Ark.), 1914.	784, 086. 10 300, 720. 75		
P. B. M. Memphis (U. S. E.), 1914	788, 100. 43 299, 364. 12		
P. B. M. 2/3 (M. R. C. & U. S. E.) (Ark.), 1914.	779, 987. 97 296, 535. 66		
Supplementary points			
Memphis, south chimney, 1914	789, 053. 46 292, 341. 59		
H. B. Duryea tract, steel water tank, 1914. [1]	1, 063, 139. 58 289, 550. 05		
La Grange, church spire, 1914 [2]	1, 028, 763. 81 254, 005. 11		
Collierville, water tank, 1914	903, 412. 84 257, 633. 98		
Mississippi-Tennessee State Line, 1914.	855, 130. 29 241, 654. 25		
Water tank no. 1, 1914 [2]	822, 524. 84 288, 599. 72		
Memphis, low chimney, 1914	789, 214. 26 292, 385. 62		
Memphis, next chimney, 1914	789, 057. 66 292, 396. 76		

[1] No check on this position.
[2] Checked by vertical angles only.

Mississippi River (first order)

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Principal points		°	′	″	
Barnes (Mo.), 1929	1,001,662.11 847,814.67	119	04	27	Azimuth mark, R. M. no. 2.
Hickman (Ky.), 1929	1,064,853.65 808,527.87	107	35	10	Azimuth mark, R. M. no. 1.
Madrid (Mo.), 1929	957,120.87 815,997.13	87	43	17	Azimuth mark, R. M. no. 2.
Fishgap, 1929	1,033,841.83 778,022.83	115	14	28	Azimuth mark.
Pleasant (Mo.), 1929	949,341.01 769,926.76	83	17	25	Azimuth mark, R. M. no. 2.
Chigger, 1929	1,018,517.17 742,821.40				
Stewart (Mo.), 1929	927,941.96 724,471.54	350	28	36	Azimuth mark, R. M. no. 1.
Gratio, 1929	993,227.74 700,891.52	330	14	49	Azimuth mark, R. M. no. 1.
Caruthers (Mo.), 1929	919,112.75 677,005.60	18	45	54	Azimuth mark, R. M. no. 2.
Obion, 1929	968,584.12 644,755.73	330	46	58	Azimuth mark, R. M. no. 2.
Cotton (Mo.), 1929	908,683.38 627,658.09	161	43	28	Azimuth mark, R. M. no. 2.
Head, 1929	965,663.71 625,427.81	287	42	02	Dyersburg, black water tank, finial.
School (Ark.), 1929	895,322.28 586,150.27	285	15	53	Azimuth mark, R. M. no. 1.
Edith, 1929	945,990.86 552,135.79	34	47	45	Azimuth mark, R. M. no. 2.
Anderson (Ark.), 1929	878,108.32 563,160.31				
Lusk, 1929	918,906.56 522,390.39	19	46	02	Azimuth mark, R. M. no. 1.
Cooper (Ark.), 1929	858,160.02 523,523.74	250	41	36	Azimuth mark, R. M. no. 1.
Cherry, 1929	896,304.45 494,040.04				
Driver (Ark.), 1929	817,939.27 494,338.13	172	59	22	Azimuth mark, R. M. no. 2.
Fort, 1929	863,323.12 477,191.43	24	51	34	Azimuth mark, R. M. no. 1.
Wilson (Ark.), 1929	795,156.39 451,975.90	38	04	26	Azimuth mark, R. M. no. 1.
Chickasaw, 1929	837,578.40 429,720.43	299	22	02	Azimuth mark, R. M. no. 2.
Shawnee (Ark.), 1929	775,220.30 427,033.10	192	33	15	Azimuth mark, R. M. no. 1.
Weakley, 1929	819,202.33 400,711.81	32	30	21	Azimuth mark, R. M. no. 2.
Sanders (Ark.), 1929	752,308.41 380,580.72	185	21	58	Azimuth mark, R. M. no. 1.
Locke, 1929	795,782.02 372,922.39				

Mississippi River (first order)—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Principal points—Continued		° ′ ″	
Marion (Ark.), 1929	744,982.50 328,710.86	275 45 36	Azimuth mark, R. M. no. 2.
Benjes, 1929	790,124.95 335,525.92		
Exchange, 1914	788,993.01 299,153.79		
Bollinger (Ark.), 1929	746,693.75 299,314.73	20 23 29	Azimuth mark, R. M. no. 1.
Weaver, 1914	764,918.50 261,985.99		
Martine (Ark.), 1929	731,336.51 264,427.71	86 34 44*	Martine reference mark, R. M. no. 2.
Lake View (Miss.), 1929	764,045.25 243,750.04	177 45 02*	Mississippi-Tennessee boundary monument.
Horse (Ark.), 1929	718,523.90 227,387.84	94 26 05*	Horse reference mark no. 2.
Derickson (Miss.), 1929	753,657.32 206,731.51		
Supplementary points			
P. B. M. 17/4 (M. R. C.) (Mo.), 1906[1]	959,754.77 818,859.34		
P. B. M. 21/1 (M. R. C.), 1906	977,277.71 743,313.17		
B. M. Caruthersville (M. R. C.) (Mo.), 1906.[1]	919,744.73 676,539.03		
Hickman, standpipe (Ky.), 1929	1,064,822.76 808,524.72		
Portageville, water tank (Mo.), 1929 [1]	912,132.58 760,388.58		
New Madrid, water tank (Mo.), 1929	964,781.84 818,541.06		
Tiptonville, silver stack, 1929[1]	978,889.84 740,336.35		
Ridgely, water tank, 1929[1]	970,791.21 699,050.81		
Hayti, higher water tank (Mo.), 1929	893,216.11 691,383.59		
Hayti, lower water tank (Mo.), 1929	894,385.16 692,852.63		
Caruthersville, standpipe (Mo.), 1929 [1]	920,793.86 676,254.90		
Caruthersville, water tank (Mo.), 1929	921,957.21 671,485.05		
B. M. 42/4 (M. R. C.) (Ark.), 1906 [1]	856,824.92 525,342.76	323 43 21*	Cooper.
Cooper 2 (Ark.), 1933 [1]	858,064.70 523,947.12	347 19 18*	Cooper.
Osceola, water tank (Ark.), 1929	821,952.58 501,863.84		
Millington, water tank, 1929 [1]	839,209.59 369,475.74		

[1] No check on this position.
* This azimuth has been computed by means of the θ correction. See page 101.

Mississippi River (first order)—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Supplementary points—Continued		°	′	″	
P. B. M. Cottonwood south base (M. R. C.) (Mo.), 1929.	908,385.72 627,897.91	308	51	28.3	Cotton.
B. M. Barfield (M. R. C.) (Ark.), 1929	886,897.44 571,036.65	48	08	06.0	Anderson.
B. M. 45/4 (M. R. C.) (Ark.), 1929[1]	820,556.80 494,254.47	91	49	50.3	Driver.
Driver A (Ark.), 1930	821,839.83 494,213.42				
Driver B (Ark.), 1930	822,417.30 508,777.28				
Driver E (Ark.), 1930	823,969.05 512,104.71				
Driver F (Ark.), 1930	829,850.98 517,485.44				
Driver G (Ark.), 1930	832,055.27 517,353.02				
B. M. Luxora (M. R. C.) (Ark.), 1930	832,056.51 517,375.84				
Branch (Ark.), 1929	801,740.40 413,895.32				
P. B. M. 55/3 (M. R. C.) (Ark.), 1929[1]	801,634.52 413,907.96				
B. M. Thresher (M. R. C.) (Ark.), 1929[1]	757,431.10 383,468.12	60	35	14*	Sanders.
Bass (Miss.), 1929	732,623.29 231,297.99				
P. B. M. Norfolk (M. R. C.) (Miss.), 1929.[1]	732,404.42 231,249.16				
Martine reference mark no. 2 (Ark.), 1929.[1]	730,602.39 264,383.95	266	34	44*	Martine.
Martine 2 (Ark.), 1933[1]	731,414.39 265,393.15	4	36	46*	Martine.
B. M. Kurr (U. S. E.) (Ark.), 1931[1]	731,448.31 265,983.71	3	17	53*	Martine 2.
Memphis, Columbus Tower, flagpole, 1929.	788,917.02 299,793.45				
West Memphis, water tank (Ark.), 1929.	751,192.88 301,176.24				
Memphis, Sterick Building, stack, 1929.	789,513.55 299,052.09				
Memphis, National Memphis Garage, occulting light, 1929.[1]	795,491.59 293,681.51				
Organ (Ark.), 1916	783,562.04 302,445.04	301	12	59.4	Exchange.
Crossing (Ark.), 1916	775,761.18 300,943.10	259	06	06.9	Organ.
Levee (Ark.), 1916	758,538.74 297,660.66	259	12	33.7	Crossing.
Hulbert (Ark.), 1916	744,827.54 294,997.25	259	00	25.8	Levee.
Horse reference mark no. 2 (Ark.), 1929[1]	717,246.95 227,487.11	274	26	05*	Horse.

[1] No check on this position.
*This azimuth has been computed by means of the θ correction. See page 101.

Mississippi River (first order)—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Supplementary points—Continued		° ′ ″	
B. M. Brock (M. R. C.) (Ark.), 1931 [1]	717,414.79 226,180.30	222 34 05*	Horse.
Horse 2 (Ark.), 1934 [1]	717,216.91 227,467.17	273 27 29*	Horse.
B. M. R-92-2-1 (M. R. C.) (Ark.), 1931.[1]	717,892.84 224,571.48	163 28 14*	B. M. Brock (M. R. C.).
Station no. 1 (M. R. C.) (Ark.), 1931 [1]	718,834.90 226,044.31		
Mississippi-Tennessee boundary monument, 1929.[1]	763,978.28 245,455.52	357 45 02*	Lake View.

Mississippi River (second order) Mississippi River Commission

Principal points			
Bayou du Chien (M. R. C.) (Ky.), 1880	1,065,640.52 811,041.02		
Hickman (M. R. C.) (Ky.), 1880	1,061,261.87 809,378.52	249 12 28.3*	Bayou du Chien (M. R. C.).
Wasp (M. R. C.) (Mo.), 1880	1,058,685.05 812,342.31	318 59 46.5*	Hickman (M. R. C.).
Bushart (M. R. C.) (Ky.), 1880	1,053,810.21 807,269.70	223 51 39.7	Wasp (M. R. C.).
Ballard (M. R. C.) (Mo.), 1880	1,053,854.09 811,359.95	0 36 54.2*	Bushart (M. R. C.).
Keiser (M. R. C.) (Mo.), 1880	1,047,105.94 806,925.45	236 41 21.7	Ballard (M. R. C.).
Porter (M. R. C.) (Mo.), 1880	1,047,868.92 811,124.13	10 17 59.4*	Keiser (M. R. C.).
Warren (M. R. C.) (Mo.), 1880	1,039,583.47 809,567.44	259 21 33.1	Porter (M. R. C.).
Brown (M. R. C.) (Mo.), 1880	1,038,230.21 818,920.10	351 46 00.7	Warren (M. R. C.).
French's Point (M. R. C.) (Mo.), 1880	1,034,709.61 816,673.62	237 27 31.4*	Brown (M. R. C.).
Island No. 8 (M. R. C.) (Ky.), 1880	1,029,204.94 822,075.88	314 27 43.4	French's Point (M. R. C.).
Ray (M. R. C.) (Mo.), 1880	1,031,551.79 826,669.43	27 03 45.5*	Island No. 8 (M. R. C.).
St. James (M. R. C.) (Mo.), 1880	1,025,762.48 831,003.07	306 49 01.3	Ray (M. R. C.).
Woodcock (M. R. C.) (Ky.), 1880	1,023,104.66 827,054.40	213 56 36.7*	St. James (M. R. C.).
Hubbard (M. R. C.) (Mo.), 1880	1,017,713.79 830,941.72	305 47 42.4	Woodcock (M. R. C.).
Kase (M. R. C.) (Ky.), 1880	1,016,957.14 825,247.06	187 34 06.8	Hubbard (M. R. C.).
Lovalle (M. R. C.) (Mo.), 1880	1,010,145.30 823,457.13	255 16 38.5	Kase (M. R. C.).
Esley (M. R. C.) (Ky.), 1880	1,011,951.09 819,275.77	156 38 35.3*	Lovalle (M. R. C.).

[1] No check on this position.
* This azimuth has been computed by means of the θ correction. See page 101.

Mississippi River (second order) Mississippi River Commission—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Principal points—Continued		°	′	″	
Phillippo (M. R. C.) (Mo.), 1880	1,007,099.89 815,321.49	230	48	57.8	Esley (M. R. C.).
P. B. M. Mitcham (M. R. C.) (Ky.), 1880.	1,008,565.96 810,949.02	161	27	52.5*	Phillippo (M. R. C.).
Abbot (M. R. C.) (Mo.), 1880	1,003,543.76 808,451.20	243	33	22.6	P. B. M. Mitcham (M. R. C.).
Old J. B. (M. R. C.) (Ky.), 1880	1,004,715.19 803,966.54	165	21	43.7*	Abbot (M. R. C.).
Phillips Landing (M. R. C.) (Mo.), 1880.	998,133.95 801,807.64	251	50	18.7	Old J. B. (M. R. C.).
Lester (M. R. C.) (Ky.), 1880	999,401.32 792,502.09	172	14	39.5	Phillips Landing (M. R. C.).
Brier (M. R. C.) (Mo.), 1880	994,056.52 792,573.71	270	46	03.8	Lester (M. R. C.).
Boom (M. R. C.), 1880	998,363.44 783,532.34	154	31	44.0	Brier (M. R. C.).
Birdsall (M. R. C.) (Mo.), 1880	993,949.88 784,986.13	288	13	54.4*	Boom (M. R. C.).
Kentuck (M. R. C.), 1880	996,327.81 777,713.55	161	53	37.4	Birdsall (M. R. C.).
Donaldson (M. R. C.) (Mo.), 1880	988,471.60 778,700.68	277	09	42.0	Kentuck (M. R. C.).
P. B. M. Tennessee (M. R. C.), 1880	989,988.18 766,562.63	172	52	41.3	Donaldson (M. R. C.).
Grampus (M. R. C.) (Mo.), 1880	977,903.31 776,929.61	310	37	28.4	P. B. M. Tennessee (M. R. C.).
P. B. M. State Line (east base) (M. R. C.), 1880.	976,279.84 784,642.79	348	06	50.0	Grampus (M. R. C.).
Bryan's (M. R. C.) (Mo.), 1880	982,943.67 784,004.46	95	28	18.1	P. B. M. State line (east base) (M. R. C.).
Everett (M. R. C.) (Ky.), 1880	975,779.77 793,387.06	322	38	13.8	Bryan's (M. R. C.).
Bob Watson (M. R. C.) (Ky.), 1880	963,139.26 794,922.08	276	55	26.0	Everett (M. R. C.).
Compromise (west base) (M. R. C.), 1880.	964,930.87 785,229.58	169	31	38.5	Bob Watson (M. R. C.).
Island No. 11 (M. R. C.) (Mo.), 1880	956,860.69 779,516.82	234	42	21.2	Compromise (west base) (M. R. C.).
Beshire (M. R. C.), 1880	960,061.99 770,753.42	159	55	57.3	Island No. 11 (M. R. C.).
Point Pleasant (M. R. C.) (Mo.), 1880	954,280.02 767,334.02	239	24	01.3	Beshire (M. R. C.).
Lazalla (M. R. C.), 1880	960,889.24 757,555.38	145	56	45.2	Point Pleasant (M. R. C.).
Cronin (M. R. C.), 1880	962,869.46 763,310.10	18	59	18.7	Lazalla (M. R. C.).
Nall (M. R. C.), 1880	966,547.06 755,672.06	154	17	23.6	Cronin (M. R. C.).
Gold (M. R. C.) (Mo.), 1880	962,691.46 751,175.90	220	36	50.9	Nall (M. R. C.).
Phillips (M. R. C.), 1880	966,233.86 748,802.12	123	49	34.6*	Gold (M. R. C.).

*This azimuth has been computed by means of the θ correction. See page 101.

Mississippi River (second order) Mississippi River Commission—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Principal points—Continued		° ′ ″	
New York (M. R. C.), 1880	971,623.65 749,788.33	79 37 51.1	Phillips (M. R. C.).
Buddell (M. R. C.), 1880	966,441.61 743,561.59	219 46 04.9	New York (M. R. C.).
Tiptonville (M. R. C.), 1880	972,527.51 742,693.32	98 07 10.4	Buddell (M. R. C.).
Reel Foot (M. R. C.) (Mo.), 1880	963,458.05 736,157.40	234 13 17.5	Tiptonville (M. R. C.).
Turkey (M. R. C.) (Mo.), 1880	958,719.66 739,311.13	303 38 47.6	Reel Foot (M. R. C.).
Riley (M. R. C.) (Mo.), 1880	955,160.88 734,588.34	216 59 57.3	Turkey (M. R. C.).
Stewart (M. R. C.) (Mo.), 1880	950,245.31 740,147.34	318 30 54.5	Riley (M. R. C.).
Joe Eckles (M. R. C.) (Mo.), 1880	946,713.20 731,887.01	203 09 05.4	Stewart (M. R. C.).
Atkinson (M. R. C.) (Mo.), 1880	940,310.78 734,953.21	295 35 25.3	Joe Eckles (M. R. C.).
Solitude (M. R. C.), 1880	940,093.10 723,388.90	181 04 42.1	Atkinson (M. R. C.).
Bass (M. R. C.), 1880	948,955.30 719,094.35	115 51 16.0	Solitude (M. R. C.)
Ingram (M. R. C.), 1880	946,091.57 714,431.05	211 33 14.6	Bass (M. R. C.).
Royal Bill (M. R. C.), 1880	951,687.67 712,385.73	110 04 36.7	Ingram (M. R. C.).
Balson (M. R. C.) (Mo.), 1880	948,438.95 708,509.41	219 57 59.6*	Royal Bill (M. R. C.).
River Bed (M. R. C.) (Mo.), 1880	954,544.83 703,700.97	128 13 14.8	Balson (M. R. C.).
Island No. 14 (M. R. C.) (Mo.), 1880	946,831.86 701,338.33	252 58 08.8	River Bed (M. R. C.).
Dr. Smith (M. R. C.), 1880	945,750.86 694,035.70	188 25 13.0	Island No. 14 (M. R. C.).
Garrett (M. R. C.) (Mo.), 1880	937,810.59 698,425.81	298 56 16.3	Dr. Smith (M. R. C.).
Le Duke (M. R. C.) (Mo.), 1880	935,616.67 693,207.71	202 48 14.6	Garrett (M. R. C.).
Hathaway (M. R. C.) (Mo.), 1880	929,413.56 696,714.85	299 28 59.3	Le Duke (M. R. C.).
Mott (M. R. C.) (Mo.), 1880	925,331.67 702,717.46	325 47 00.8	Hathaway (M. R. C.).
Gayosa (M. R. C.) (Mo.), 1880	915,166.24 699,029.89	250 03 41.3	Mott (M. R. C.).
P. B. M. Myers (M. R. C.), 1880	919,819.10 688,432.30	156 17 46.2	Gayosa (M. R. C.).
Warden (M. R. C.), 1880	913,679.20 689,324.97	278 16 19.8	P. B. M. Myers (M. R. C.).
Ferris (M. R. C.) (Mo.), 1880	917,815.59 681,498.81	152 08 31.3	Warden (M. R. C.).
Island No. 15 (M. R. C.), 1880	922,522.35 682,749.64	75 07 04.7*	Ferris (M. R.C.).

*This azimuth has been computed by means of the θ correction. See page 101.

Mississippi River (second order) Mississippi River Commission—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Principal points—Continued		° ′ ″	
Caruthersville (M. R. C.), 1880	925,082.40 676,314.52	158 18 22.0	Island No. 15 (M. R. C.).
Perkins (M. R. C.), 1880	932,528.82 678,374.16	74 32 19.8	Caruthersville (M. R. C.).
Harbert (M. R. C.), 1880	931,043.05 672,216.39	193 33 54.9	Perkins (M. R. C.).
Williams (M. R. C.), 1880	935,792.11 675,615.46	54 24 26.5	Harbert (M. R. C.).
Island No. 16 (M. R. C.), 1880	934,262.85 668,278.71	191 46 26.6	Williams (M. R. C.).
Linwood (M. R. C.), 1880	940,746.89 663,832.10	124 26 29.3	Island No. 16 (M. R. C.).
Johnson (M. R. C.) (Mo.), 1880	931,137.24 658,338.76	240 14 44.2	Linwood (M. R. C.).
Booth's Point (M. R. C.) (Mo.), 1880	935,322.77 647,970.19	158 01 02.4	Johnson (M. R. C.).
Wilks (M. R. C.) (Mo.), 1880	928,105.84 649,389.41	281 07 31.2	Booth's Point (M. R. C.).
Parker (M. R. C.), 1880	931,031.89 643,750.43	152 34 31.2	Wilks (M. R. C.).
Sand Bar (M. R. C.), 1880	922,688.49 642,004.22	258 10 44.6	Parker (M. R. C.).
Bell's Point (M. R. C.), 1880	924,461.97 635,411.12	164 56 39.7	Sand Bar (M. R. C.).
Island No. 18 (M. R. C.), 1880	915,984.51 634,994.65	267 11 15.0	Bell's Point (M. R. C.).
McAllister No. 2 (M. R. C.), 1880	916,734.41 628,535.70	173 22 38.9	Island No. 18 (M. R. C.).
P. B. M. Cottonwood north base (M. R. C.) (Mo.), 1879.	912,370.31 631,414.74	303 24 46.6*	McAllister No. 2 (M. R. C.).
Mitchell's Point (M. R. C.), 1880	912,458.46 624,008.97	179 19 05.0	P. B. M. Cottonwood, north base (M. R. C.).
Lindale (M. R. C.) (Mo.), 1880	902,308.32 621,106.58	254 02 32.4	Mitchell's Point (M. R. C.).
Franklin (M. R. C.), 1880	906,568.79 612,263.99	154 16 28.8	Lindale (M. R. C.).
Missouri (M. R. C.), 1880	897,897.66 609,498.88	252 18 47.5	Franklin (M. R. C.).
Island No. 21 (M. R. C.), 1880	902,366.53 605,645.54	130 46 11.9	Missouri (M. R. C.).
Arkansas (M. R. C.) (Ark.), 1880	898,768.63 600,766.01	216 24 11.0	Island No. 21 (M. R. C.).
Stevens (M. R. C.), 1880	903,684.67 598,967.84	110 05 28.6*	Arkansas (M. R. C.).
Czar (M. R. C.), 1880	901,453.25 591,850.32	197 24 24.4	Stevens (M. R. C.).
Mrs. H. (M. R. C.) (Ark.), 1880	905,936.98 588,613.45	125 49 33.8	Czar (M. R. C.).
P. B. M. Slater (M. R. C.), 1880	910,555.08 591,478.56	58 11 03.0	Mrs. H. (M. R. C.).
Casselberry (M. R. C.), 1880	910,926.17 585,064.05	176 41 20.5	P. B. M. Slater (M. R. C.).

*This azimuth has been computed by means of the θ correction. See p. 101.

Mississippi River (second order) Mississippi River Commission—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Principal points—Continued		°	′	″	
Michell=B. M. 36/2 (M. R. C.), 1880	917,598.47 586,239.49	80	00	32.0	Casselberry (M. R. C.).
Wright's Point (M. R. C.), 1880	916,205.01 582,370.15	199	48	19.8*	Michell=B. M. 36/2 (M. R. C.).
Obion=P. B. M. 32 (M. R. C.), 1880	923,519.08 581,340.74	98	00	41.1	Wright's Point (M. R. C.).
Tinsley (M. R. C.) (Ark.), 1880	917,460.49 576,795.12	233	07	11.8	Obion=P. B. M. 32 (M. R. C.).
Hales (M. R. C.) 1880	919,486.09 570,810.39	161	18	03.7	Tinsley (M. R. C.).
High Water (M. R. C.) (Ark.), 1880	913,354.46 574,780.63	302	55	23.3	Hales (M. R. C.).
Nebraska (M. R. C.) (Ark.), 1880	907,282.89 571,229.15	239	40	30.4	High Water (M. R. C.).
Puck (M. R. C.) (Ark.), 1880	908,513.01 575,482.49	16	07	50.0	Nebraska (M. R. C.).
Rucker's Point (M. R. C.) (Ark.), 1880	900,926.31 571,518.64	242	24	50.8	Puck (M. R. C.).
Buckner (M. R. C.) (Ark.), 1880	897,346.94 575,185.96	315	41	43.0*	Rucker's Point (M. R. C.).
Carr (M. R. C.), 1880	897,809.08 567,283.39	176	39	11.4	Buckner (M. R. C.).
Barfield (M. R. C.), 1880	891,963.09 564,434.81	244	01	17.0	Carr (M. R. C.)
Sheep (M. R. C.), 1880	897,245.68 560,807.33	124	28	36.6	Barfield (M. R. C.).
Island No. 25 (M. R. C.), 1880	895,858.38 554,205.73	191	52	04.1	Sheep (M. R. C.).
K. C. B. (M. R. C.), 1880	900,885.65 550,912.13	123	13	50.5	Island No. 25 (M. R. C.).
Flood (M. R. C.) (Ark.), 1880	895,317.26 547,452.84	238	08	59.7	K. C. B. (M. R. C.).
Forked Deer (M. R. C.) (Ark.), 1880	896,175.58 542,261.37	170	36	44.2*	Flood (M. R. C.).
Island No. 26 (M. R. C.) (Ark.), 1880	889,205.50 540,986.52	259	38	06.0	Forked Deer (M. R. C.).
Williams (M. R. C.) (Ark.), 1880	888,000.20 546,598.43	347	52	42.3	Island No. 26 (M. R. C.).
Bowen (M. R. C.) (Ark.), 1880	878,870.51 540,846.30	237	47	13.8	Williams (M. R. C.).
Island No. 27 (M. R. C.), 1880	881,299.23 533,935.91	160	38	07.8	Bowen (M. R. C.).
Daniel's Point (M. R. C.) 1880,	874,677.70 529,148.14	234	07	50.8	Island No. 27 (M. R. C.).
P. B. M. Ashport (M. R. C.), 1880	875,286.20 521,127.41	175	39	41.5	Daniel's Point (M. R. C.).
Island No. 28 (east base) (M. R. C.) (Ark.), 1880.	864,098.66 522,785.18	278	25	43.5	P. B. M. Ashport (M. R. C.).
Johnson (M. R. C.), 1880	861,591.04 513,934.54	195	49	07.8	Island No. 28 (east base) (M. R. C.).
Fletcher (west base) (M. R. C.) (Ark.), 1880.	855,999.16 520,406.25	319	10	16.9	Johnson (M. R. C.).

*This azimuth has been computed by means of the θ correction. See p. 101.

Mississippi River (second order) Mississippi River Commission—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Principal points—Continued		° ′ ″	
Island No. 29 (M. R. C.), 1880	847,556.77 512,117.49	225 31 33.9	Fletcher (west base) (M. R. C.).
Elmot (M. R. C.) (Ark.), 1880	833,912.87 517,053.57	289 53 20.7	Island No. 29 (M. R. C.).
Plum Point (M. R. C.), 1880	833,461.73 506,502.39	182 26 54.0	Elmot (M. R. C.).
Blackamore (M. R. C.) (Ark.), 1880	825,376.73 510,537.41	296 31 21.5	Plum Point (M. R. C.).
Osceola (M. R. C.) (Ark.), 1880	825,107.53 495,160.25	181 00 10.6	Blackamore (M. R. C.).
P. B. M. Yankee Bar (M. R. C.), 1880	835,268.58 495,080.21	90 27 04.7	Osceola (M. R. C.).
McGavock (M. R. C.) (Ark.), 1880	833,878.02 485,073.47	187 54 40.6	P. B. M. Yankee Bar (M. R. C.).
Morgan (M. R. C.), 1880	842,991.87 484,677.18	92 29 23.2	McGavock (M. R. C.).
Midway (M. R. C.) (Ark.), 1880	835,861.29 475,523.99	217 55 10.4	Morgan (M. R. C.).
P. B. M. Craighead (northeast base) (M. R. C.) (Ark.), 1880.	842,339.81 471,523.09	118 08 46.1	Midway (M. R. C.).
Lanier (southwest base) (M. R. C.) (Ark.), 1880.	836,958.37 468,853.19	247 17 46.6	P B. M. Craighead (northeast base) (M. R C.).
Lee (M. R. C.), 1880	842,207.29 463,909.04	133 17 14.5	Lanier (southwest base) (M. R. C.).
Island No. 34 (M. R. C.), 1880	837,413.64 457,500.12	216 47 42.8	Lee (M. R. C.).
Hatchee River (M. R. C.), 1880	841,072.39 449,982.83	154 02 50.2	Island No. 34 (M. R. C.).
Pierce (M. R. C.) (Ark.), 1880	836,459.18 444,181.22	218 29 25.2	Hatchee River (M. R. C.).
P. B. M. Hatchee Island (M. R. C.), 1880.	843,639.54 439,002.32	125 48 04.9	Pierce (M. R. C.).
Morgan Point (M. R. C.), 1880	838,906.57 436,745.60	244 30 27.3*	P. B. M. Hatchee Island (M. R. C.).
Randolph (M. R. C.), 1880	841,648.07 432,683.55	145 59 02.8*	Morgan Point (M. R. C.).
Chickasaw No. 2 (M. R. C.), 1880	832,320.45 430,085.01	254 25 58.5	Randolph (M. R. C.).
O'Dare (M. R. C.) (Ark.), 1880	829,215.30 435,343.17	329 26 11.3	Chickasaw No. 2 (M. R. C.).
Whirlpool (M. R. C.), 1880	829,334.98 431,418.50	178 15 10.3*	O'Dare (M. R. C.).
Richardson (M. R. C.), 1880	825,030.40 434,947.21	309 20 36.3	Whirlpool (M. R. C.).
Haskins (M. R. C.) (Ark.), 1880	823,193.54 440,305.88	341 04 45.0	Richardson (M. R. C.).
Island No. 35 (east base) (M. R. C.), 1880.	817,988.24 439,966.81	266 16 25.8*	Haskins (M. R. C.).
Lanier (M. R. C.), 1880	815,387.81 445,510.98	334 52 17.8	Island No. 35 (east base) (M. R. C.).
Cole (west base) (M. R. C.), 1880	807,868.42 441,408.11	241 22 53.1	Lanier (M. R. C.).

* This azimuth has been computed by means of the θ correction. See page 101.

Mississippi River (second order) Mississippi River Commission—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Principal points—Continued		°	′	″	
Elliott (M. R. C.), 1880	805,396.16 445,928.80	331	19	40.0*	Cole (west base) (M. R. C.).
Golden Lake (M. R. C.), 1880	798,697.24 440,222.02	229	34	20.9	Elliott (M. R. C.).
Strout (M. R. C.), 1880	802,159.10 434,386.27	149	19	22.5	Golden Lake (M. R. C.).
Powers (M. R. C.), 1880	798,419.38 428,726.18	213	27	12.4	Strout (M. R. C.).
Blizzard (M. R. C.), 1880	802,243.10 429,376.71	80	20	37.8*	Powers (M. R. C.).
P. B. M. Pennell (M. R. C.), 1880	804,331.07 424,267.87	157	46	13.0	Blizzard (M. R. C.).
Pecan Point (M. R. C.) (Ark.), 1880	802,404.46 417,447.78	195	46	28.1	P. B. M. Pennell (M. R. C.).
Wallace (M. R. C.), 1880	806,769.71 414,356.36	125	18	20.5	Pecan Point (M. R. C.).
Dean (M. R. C.), 1880	804,382.82 407,464.33	199	06	08.3	Wallace (M. R. C.).
Wright (M. R. C.), 1880	809,252.58 406,316.27	103	15	53.9*	Dean (M. R. C.).
Universe (M. R. C.), 1880	807,269.27 398,475.15	194	11	40.3	Wright (M. R. C.).
McGavock (M. R. C.) (Ark.), 1880	799,881.98 399,551.79	278	17	31.3	Universe (M. R. C.).
Thomas (M. R. C.) (Ark.), 1880	794,738.10 393,325.22	219	33	38.6	McGavock (M. R. C.).
Corona (M. R. C.), 1880	784,311.77 399,581.74	300	58	00.0	Thomas (M. R. C.).
Cutoff (M. R. C.), 1880	787,196.59 390,532.97	162	19	02.3	Corona (M. R. C.).
Brandywine (M. R. C.), 1880	781,125.24 391,341.20	277	34	57.9	Cutoff (M. R. C.).
Bateman (M. R. C.), 1880	784,704.89 382,521.08	157	54	36.7	Brandywine (M. R. C.).
Croaker (M. R. C.), 1880	779,342.46 379,096.22	237	26	04.5	Bateman (M. R. C.).
P. B. M. Barksdale (M. R. C.), 1880	781,530.65 374,725.98	153	24	10.3*	Croaker (M. R. C.).
Fogleman (M. R. C.), 1880	775,840.01 378,003.01	299	56	09.8	P. B. M. Barksdale (M. R. C.).
Island No. 39 (M. R. C.), 1880	775,009.31 373,272.09	189	57	31.0*	Fogleman (M. R. C.).
Hearn (M. R. C.), 1880	775,237.70 367,896.41	177	34	01.9	Island No. 39 (M. R. C.).
Sand Bar (M. R. C.) (Ark.), 1880	768,189.45 365,888.48	254	05	55.0	Hearn (M. R. C.).
Island No. 40 (M. R. C.) (Ark.), 1880	768,444.19 358,226.15	178	05	45.1	Sand Bar (M. R. C.).
Dixon (M. R. C.) (Ark.), 1880	761,908.79 360,680.31	290	34	55.4	Island No. 40 (M. R. C.).
Overton (M. R. C.), 1880	763,970.75 356,045.69	156	00	55.3*	Dixon (M. R. C.).

* This azimuth has been computed by means of the θ correction. See page 101.

Mississippi River (second order) Mississippi River Commission—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Principal points—Continued		°	′	″	
Bradley (M. R. C.) (Ark.), 1880	756, 478. 46 353, 317. 66	249	59	34. 2	Overton (M. R. C.).
Beef Island (M. R. C.), 1880	763, 902. 11 349, 377. 09	117	57	35. 8	Bradley (M. R. C.).
Ferguson (M. R. C.), 1880	763, 604. 13 339, 916. 76	181	48	14. 7	Beef Island (M. R. C.).
Island No. 41 (M. R. C.), 1880	770, 561. 05 343, 286. 87	64	09	11. 7	Ferguson (M. R. C.).
Trice (M. R. C.) (Ark.), 1880	770, 174. 90 339, 435. 83	185	43	33. 6	Island No. 41 (M. R. C.).
Walt (M. R. C.) (Ark.), 1880	775, 378. 82 337, 952. 45	105	54	36. 8	Trice (M. R. C.).
Pratt (M. R. C.), 1880	777, 120. 89 340, 944. 53	30	12	35. 8*	Walt (M. R. C.).
Weatherford (M. R. C.), 1880	782, 134. 87 337, 278. 14	126	10	31. 9	Pratt (M. R. C.).
Patten (M. R. C.) (Ark.), 1880	779, 591. 96 333, 511. 60	214	01	28. 1*	Weatherford (M. R. C.).
Cestor (M. R. C.), 1880	785, 280. 25 329, 927. 04	122	13	03. 7	Patten (M. R. C.).
Lamberson (M. R. C.) (Ark.), 1880	778, 302. 63 325, 932. 50	240	12	35. 2	Cestor (M. R. C.).
Morrisey (M. R. C.), 1880	781, 391. 88 321, 944. 70	142	14	09. 2*	Lamberson (M. R. C.).
Barton (M. R. C.) (Ark.), 1880	775, 193. 14 321, 423. 32	265	11	31. 7	Morrisey (M. R. C.).
Frame's Chute (M. R. C.), 1879	783, 882. 38 313, 090. 28	133	48	04. 4	Barton (M. R. C.).
Mound City (M. R. C.) (Ark.), 1879	772, 586. 75 311, 754. 07	263	15	12. 9	Frame's Chute (M. R. C.).
Hopefield (M. R. C.), 1879	782, 573. 68 306, 787. 75	116	26	25. 2	Mound City (M. R. C.).
P. B. M. Wolf River (M. R. C.), 1879	788, 207. 80 307, 691. 64	80	53	08. 2	Hopefield (M. R. C.).
Memphis (M. R. C.), 1879	787, 799. 76 298, 973. 03	182	40	46. 4	P. B. M. Wolf River (M. R. C.).
Peterson (M. R. C.), 1879	783, 019. 16 293, 728. 09	222	20	53. 5	Memphis (M. R. C.).
Vance Jr. (M. R. C.) (Ark.), 1879	776, 148. 75 293, 356. 36	266	54	10. 7	Peterson (M. R. C.).
Forrest (M. R. C.), 1879	777, 330. 33 287, 390. 46	168	47	50. 0	Vance Jr. (M. R. C.).
Davis (M. R. C.), 1879	770, 248. 30 290, 118. 11	291	03	51. 2	Forrest (M. R. C.).
Bayou (M. R. C.) (Ark.), 1879	766, 227. 50 296, 396. 29	327	21	46. 3	Davis (M. R. C.).
Crawford (M. R. C.), 1879	762, 167. 95 289, 332. 98	209	53	15. 3	Bayou (M. R. C.).
Lake (M. R. C.), 1879	757, 823. 50 294, 346. 85	319	05	29. 5	Crawford (M. R. C.).
Crittenden east base (M. R. C.) (Ark.), 1879.	763, 533. 07 298, 626. 04	53	08	57. 4	Lake (M. R. C.).

* This azimuth has been computed by means of the θ correction. See p. 101.

Mississippi River (second order) Mississippi River Commission—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Principal points—Continued		° ′ ″	
Crittenden west base (M. R. C.) (Ark.), 1879.	756,445.60 297,225.51	258 49 19.2	Crittenden east base (M. R. C.).
Appersen (M. R. C.), 1879	753,487.24 289,447.27	200 49 25.4	Crittenden west base (M. R. C.).
Leadbetter (M. R. C.) (De Loche), 1879.	756,361.61 284,962.95	147 20 27.0	Appersen (M. R. C.).
Jones (M. R. C.), 1879	751,050.22 280,891.35	232 31 37.1	Leadbetter (M. R. C.) (De Locke).
Ensleys (M. R. C.), 1879	755,192.25 273,121.39	151 56 19.3	Jones (M. R. C.).
Mathews (M. R. C.), 1879	749,113.03 272,290.00	262 12 45.3	Ensleys (M. R. C.).
Fleece (M. R. C.), 1879	752,259.38 267,205.83	148 14 55.0	Mathews (M. R. C.).
Reeves (M. R. C.), 1879	745,232.72 266,815.75	266 49 21.1	Fleece (M. R. C.).
Watson's (M. R. C.), 1879	746,420.21 259,710.72	170 30 41.9	Reeves (M. R. C.).
Harris (M. R. C.) (Ark.), 1879	739,026.50 261,896.64	286 28 12.4	Watson's (M. R. C.).
Horn Lake (M. R. C.) (Westbrooks), 1879.	740,176.77 256,430.93	168 06 55.5	Harris (M. R. C.).
Patterson's (M. R. C.) (Brewer) (Ark.), 1879.	733,604.01 261,790.27	309 11 36.0	Horn Lake (M. R. C.) (Westbrooks).
Rock Chute (M. R. C.), 1879	726,715.87 258,033.87	241 23 40.0	Patterson's (M. R. C.) (Brewer).
Scanlan's (M. R. C.) (Scanlan), 1879	721,854.20 262,144.58	310 12 56.4	Rock Chute (M. R. C.).
Collins (M. R. C.), 1879	715,081.30 258,854.60	244 05 29.5	Scanlan's (M. R. C.) (Scanlan).
Cow Island (M. R. C.), 1879	717,755.52 251,296.82	160 30 51.7	Collins (M. R. C.).
Cow Island Bend (M. R. C.), 1879	712,819.52 250,812.52	264 23 46.7	Cow Island (M. R. C.).
Fairview (M. R. C.) (Miss.), 1879	714,131.57 244,641.59	167 59 47.9	Cow Island Bend (M. R. C.).
State Line (M. R. C.) (Rock Chute) (Miss.), 1879.	719,716.53 242,190.38	113 41 47.1	Fairview (M. R. C.).
McConnell (M. R. C.) (Miss.), 1879	719,561.17 237,006.01	181 42 59.1*	State Line (M. R. C.) (Rock Chute).
Nelmo (M. R. C.) (Miss.), 1879	724,757.56 236,057.79	100 20 28.9	McConnell (M. R. C.).
Cat Island Chute (M. R. C.) (Ark.), 1879.	721,356.00 232,756.79	225 51 36.6*	Nelmo (M. R. C.).
Harcklerode (M. R. C.) (Ark.), 1879	728,145.30 227,587.18	127 17 12.9	Cat Island Chute (M. R. C.).
Cat Island (M. R. C.) (Ark.), 1879	721,669.90 222,024.56	229 20 10.1	Harcklerode (M. R. C.).
Lamb (M. R. C.) (Ark.), 1879	725,048.98 219,859.69	122 38 46.1*	Cat Island (M. R. C.).

* This azimuth has been computed by means of the θ correction. See page 101.

Mississippi River (second order) Coast and Geodetic Survey

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Principal points					
Hopefield north base (Ark.), 1879	784, 322. 24 301, 386. 60	°	′	″	
Memphis astronomical station, 1879	788, 010. 71 299, 539. 87	116	35	46. 1*	Hopefield north base.
Dorian, 1879	782, 600. 28 293, 264. 35	220	45	58. 4	Memphis astronomical station.
President, 1879	777, 333. 61 287, 403. 48	221	56	36. 1	Dorian.
Forrest, 1879	768, 273. 65 287, 692. 95	271	49	48. 0	President.
Four Mile Bayou (Ark.), 1879	766, 489. 07 296, 507. 40	348	33	16. 4	Forrest.
Brint, 1879	760, 056. 24 289, 161. 95	221	12	37. 7	Four Mile Bayou.
Lakes, 1879	757, 781. 31 294, 373. 24	336	25	00. 7	Brint.
Rowley (Ark.), 1879	750, 588. 94 286, 594. 17	222	45	21. 0	Lakes.
Merriweather (Ark.), 1879	749, 266. 53 279, 533. 46	190	36	29. 2	Rowley.
Quarantine, 1879	755, 924. 57 278, 166. 65	101	36	03. 3	Merriweather.
Allen, 1879	747, 117. 47 268, 319. 39	221	48	30. 6	Quarantine.
Convict, 1879	753, 269. 12 268, 575. 54	87	36	56. 2	Allen.
Ensley, 1879	748, 673. 66 262, 055. 96	215	10	44. 0	Convict.
Tollison (Ark.), 1879	739, 036. 34 261, 896. 91	269	03	16. 2	Ensley.
Montgomery, 1879	732, 501. 72 257, 227. 72	234	27	10. 8	Tollison.
Lawhorn, 1879	726, 303. 71 258, 030. 65	277	22	52. 9	Montgomery.
Waverly, 1879	715, 887. 54 259, 911. 93	280	14	16. 5	Lawhorn.
Forsyth, 1879	712, 457. 28 251, 265. 85	201	38	25. 0	Waverly.
Fairview (Miss.), 1879	715, 696. 23 241, 335. 30	161	56	08. 7	Forsyth.
Cat Island Landing (Miss.), 1879	719, 527. 57 237, 018. 61	138	24	32. 0	Fairview.
Norfolk (Miss.), 1879	724, 965. 69 235, 697. 75	103	39	07. 7	Cat Island Landing.
Cat Chute (Ark.), 1879	721, 015. 79 227, 937. 82	206	58	36. 0	Norfolk.
Tate (Miss.), 1879	728, 136. 03 228, 815. 78	82	58	14. 3	Cat Chute.
Lamb (Ark.), 1879	723, 991. 41 218, 257. 90	201	25	59. 0	Tate.

* This azimuth has been computed by means of the θ correction. See page 101.

Cairo, Ill., to Tennessee Loop

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Principal points		°	′	″	
Trenton (Ky.), 1930	1,635,244.25 845,137.29	130	24	05	Azimuth mark.
Elkton (Ky.), 1930	1,678,847.14 882,149.39				
Olmstead (Ky.), 1930	1,703,231.43 856,768.20	63	04	58	Azimuth mark.
McMurry, 1930	1,666,407.23 815,035.99	315	52	41	Azimuth mark, R. M. no. 2.
Dunn, 1930	1,713,415.09 787,014.73				
Ashburn, 1930	1,760,404.89 811,783.99	156	44	58	Azimuth mark, R. M. no. 2.
Williams, 1930	1,745,095.84 765,104.44				
Bradley, 1930	1,802,418.17 782,794.47				
Bethel, 1930	1,785,132.85 736,049.49	215	05	05	Azimuth mark, R. M. no. 1.
Lamberth, 1930	1,829,776.51 771,829.00	132	17	15	Azimuth mark, R. M. no. 2.
Baulch, 1930	1,861,020.30 755,649.04	152	25	20	Azimuth mark, R. M. no. 1.
Hester, 1930	1,829,341.17 759,820.47	256	58	36	Azimuth mark, R. M. no. 1.
Taylor, 1879	1,777,719.98 675,183.62	158	20	46	Azimuth mark.
Duren, 1879	1,923,353.10 737,945.35	125	56	13	Azimuth mark.
Seay, 1878	1,889,600.36 660,005.81	268	51	57	Azimuth mark.
Bennett, 1880	1,816,430.81 561,018.99	189	23	23	Azimuth mark.
Jennings, 1878	1,936,598.55 639,372.92	307	40	55	Azimuth mark.
Lebanon north base, 1877	1,909,449.28 662,982.18				
Lebanon south base, 1877	1,906,872.32 639,229.15				
Hall, 1880	2,009,262.29 686,506.94				
Apple, 1882	2,058,179.97 650,895.41				
Short Mountains, 1880	2,007,938.51 537,925.52				
Mount Lore, 1882	2,135,947.15 554,719.81	267	49	43	Azimuth mark, R. M. no. 3.
Walker, 1882	2,193,737.94 649,299.71				
Chestnut, 1881	2,200,578.78 541,164.62	26	43	13	Azimuth mark.
Supplementary points					
Russellville, beacon light (Ky.), 1930	1,739,916.46 887,089.84				
Kentucky-Tennessee boundary monument no. 27, 1930.	1,701,688.18 821,237.54				

Cairo, Ill., to Tennessee Loop—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Supplementary points—Continued			
Springfield, courthouse, 1930	1,739,780.32 771,792.55		
Pilot, 1879	1,913,848.83 626,815.70		
Zeda Mound, 1881 [1]	2,164,075.18 748,476.51		
Wassum, 1881 [1]	2,142,914.75 633,779.74		
Cardwell, 1881	2,094,976.57 469,836.21		
Western North Carolina			
Principal points			
Grandfather (N. C.), 1933	3,233,707.47 648,619.78	° ′ ″	
Sandymush (N. C.), 1933	2,925,693.40 483,480.13	27 21 41	Azimuth mark, R. M. no. 3.
Water Rock (U. S. G. S.) (N. C.), 1933	2,852,244.21 402,688.19		
Guyot (U. S. G. S.) (Tenn.-N. C.), 1933.	2,814,114.65 489,418.57		
Max Patch (N. C.), 1933	2,902,286.35 525,523.12	10 27 20	Azimuth mark, R. M. no. 1.
Cheoah (U. S. G. S.) (N. C.), 1933	2,691,734.00 347,999.57		
Standing Indian (N. C.), 1933	2,736,992.36 243,454.97	141 47 51	Azimuth mark, R. M. no. 3.
Tatham (Teyahalee (U. S. G. S.)) (N. C.), 1933.	2,658,217.37 322,405.06		
Lance (Ga.), 1933	2,597,946.14 220,875.79		
Laurel (Tenn.-N. C.), 1933	2,589,880.84 335,222.99		
Pack Mountain (U. S. G. S.) (N. C.), 1933.	2,512,995.79 243,982.18	110 51 04	Azimuth mark, Sassafrass Mountain, fire lookout tower.
Supplementary point			
Wayah Bald, fire lookout tower (N. C.), 1933.	2,728,879.66 295,992.10		
Bristol, Va., to Charleston, W. Va.			
Principal points			
Clinch (Va.), 1894	3,147,277.31 910,097.01	152 05 34.6	Azimuth mark, R. M. no. 2.
Holston 2, 1933	3,138,330.65 766,886.79		
Supplementary points			
Bristol 2 (Va.-Tenn.), 1933	3,123,100.41 823,769.66	69 03 50.2	Azimuth mark, R. M. no. 3.
Dunn (Va.-Tenn.), 1895	3,095,971.10 823,051.61		

[1] No check on this position.

Bristol, Va., to Charleston, W. Va.—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Principal points—Continued		° ′ ″	
Smathers, 1933	3,076,094.78 717,533.73	156 16 45.9	Azimuth mark, R. M. no. 2.
Damascus (Tenn.-Va.), 1895	3,224,539.35 835,015.66		
White Top 2 (Va.), 1933	3,289,113.24 845,482.18	321 40 20.8	Azimuth mark, R. M. no. 3.
North Carolina corner (Va.-N. C.-Tenn.), 1894.	3,268,717.25 827,416.11	32 02 10.8	Azimuth mark, R. M. no. 2.
Moody, 1933	3,034,910.83 800,879.54	316 39 49.3	Azimuth mark, R. M. no. 3.
Kingsport, 1933	3,012,592.92 804,351.24	225 40 08.8	Azimuth mark, R. M. no. 2.

Boone, N. C., to Bluefield, W. Va. (second order)

Principal points			
Feathercamp (Va.), 1934	3,255,777.18 854,841.60	276 32 14.8	Azimuth mark.
Grant (U. S. G. S.) (Va.), 1934	3,205,666.94 863,463.72	188 19 49.2	Azimuth mark.
Glenn (N. C.), 1934	3,268,983.85 824,932.54	164 03 32.0	Azimuth mark.
Haunted, 1934	3,216,143.73 830,878.86		
Bald Knob (U. S. G. S.), 1934	3,256,796.16 799,515.85	226 57 57.0	Azimuth mark.
Shady, 1934	3,208,921.57 793,483.94	204 12 19.4	Azimuth mark.
Trout (N. C.), 1934	3,281,612.37 760,628.17	11 08 11.0	Azimuth mark.
Doe, 1934	3,215,699.75 766,326.51		
Bald of Rich (U. S. G. S.) (N. C.), 1934	3,261,615.04 726,590.44	55 46 00.3	Azimuth mark.
Stone (Tenn.-N. C.), 1934	3,213,862.88 725,297.77	263 36 35.9	Azimuth mark.
Supplementary points			
McQueen, 1934	3,197,398.83 818,480.19		
Iron (U. S. G. S.), 1934	3,214,006.05 799,020.69	273 11 18.2	Azimuth mark.
Luciuda, 1934	3,239,751.40 741,748.86	271 41 20	Azimuth mark.
Green (N. C.), 1934	3,221,248.58 716,908.30	227 04 46	Azimuth mark.
McQueen, fire lookout tower, 1934 [1]	3,197,379.97 818,460.48		
Feathercamp, fire lookout tower (Va.), 1934.	3,255,697.55 854,803.08		
Kong (Va.), 1934	3,208,562.91 858,603.47	274 43 25	Azimuth mark.
Cress, 1934	3,214,889.16 790,887.44	188 17 44	Azimuth mark.

[1] No check on this position.

Corinth, Miss., to Nashville, Tenn.

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Principal points		° ′ ″	
Knob (Miss.), 1914	1,326,879.27 151,747.58	272 37 48	Azimuth mark.
Counce, 1934	1,321,629.56 232,802.91	76 27 54.4	Azimuth mark.
Ayer (Miss.), 1934	1,334,769.00 189,316.63	276 47 43.5	Azimuth mark.
Eastport (Miss.), 1934	1,364,138.86 186,858.83	48 20 25.6	Azimuth mark.
Holland, 1934	1,360,379.92 256,485.01		
Ticer (Ala.), 1933	1,396,125.47 216,843.54	284 59 59.3	Azimuth mark.
Pinhook, 1934	1,411,825.05 285,075.05	283 15 17.0	Azimuth mark.
Powell, 1933	1,444,096.00 249,321.60	165 01 40.3	Azimuth mark.
Houston, 1934	1,437,802.71 306,386.12	161 06 07.8	Azimuth mark.
Martin, 1934	1,476,722.80 281,076.06	276 52 51.9	Azimuth mark.
McCall, 1934	1,486,338.96 305,070.38	179 57 53.4	Azimuth mark.
Hassell, 1934	1,460,286.16 350,328.18	110 41 42.7	Azimuth mark.
Wayne, 1934	1,490,785.16 363,612.77	332 12 45.0	Azimuth mark.
Banning, 1934	1,546,492.27 336,906.98	48 25 32.1	Azimuth mark.
Bon Air, 1934	1,522,329.53 364,699.64	323 12 50.2	Azimuth mark.
Hurst, 1934	1,544,310.72 420,948.25	316 23 55.7	Azimuth mark.
Henry, 1934	1,577,240.41 361,949.94	229 48 37.1	Azimuth mark.
Summer, 1934	1,609,980.27 401,303.64	6 23 43.5	Azimuth mark.
Gordon, 1934	1,582,478.13 442,612.04	89 56 54.9	Azimuth mark.
Kincade, 1934	1,608,432.14 466,619.13	169 17 13.8	Azimuth mark.
Polk, 1934	1,655,900.34 424,953.81	160 56 52.6	Azimuth mark.
McKee, 1934	1,673,670.70 479,711.24	19 32 05.0	Azimuth mark.
Stevens, 1933	1,635,074.62 512,349.15	229 10 28.6	Azimuth mark.
Hamilton, 1933	1,667,474.20 545,268.86	251 20 21.2	Azimuth mark.
Theta, 1933	1,682,406.58 508,220.06	41 37 20.5	Azimuth mark.
Columbia, 1934	1,689,549.63 447,772.77	78 28 05.4	Azimuth mark.
Wright, 1933	1,712,162.22 508,296.92	147 23 34.4	Azimuth mark.

Corinth, Miss., to Nashville, Tenn.—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Principal points—Continued		°	′	″	
Cox, 1934	1,695,177.64 568,176.71	264	59	27.8	Azimuth mark.
Carter, 1933	1,735,234.88 549,164.33	264	47	58.3	Azimuth mark.
Mayche, 1933	1,754,727.33 603,429.87	309	29	04.5	Azimuth mark.
Gourley, 1933	1,702,619.94 627,736.81	218	08	00.6	Azimuth mark.
Moore, 1934	1,727,051.11 656,126.43	49	58	11.2	Azimuth mark.
Dillon, 1933	1,768,897.90 645,239.50	290	49	33.0	Azimuth mark, city hospital.
Landrum, 1933	1,736,045.49 680,251.47	17	28	32.2	Azimuth mark.
Cooper, 1933	1,743,816.96 709,408.04	136	52	32	Azimuth mark.
Love, 1933	1,759,199.84 636,608.40				
Supplementary points					
Iuka, municipal tank (Miss.), 1934 [1]	1,340,831.57 160,566.12				
Dowdy (Tenn.-Ala.), 1934	1,422,837.90 229,118.53				
Eaves (Tenn.-Ala.), 1934	1,372,283.17 230,501.94				
Airway beacon no. 60, 1933	1,625,172.45 564,301.30				
Hohenwald, municipal water tank (black), 1934.	1,538,566.06 422,791.55				
Collingwood, concrete stack, 1934	1,482,096.73 288,617.81				
Airway beacon no. 62, 1934	1,690,800.64 590,542.03				
Radio station WSM, light on tower, flashing red, 1934.	1,766,060.53 585,574.31				
Airway beacon no. 65, 1933	1,836,881.98 687,331.37				
Airway beacon no. 64, 1933	1,814,167.50 634,232.23				
Airway beacon no. 24, 1933	1,750,825.93 737,483.42				
Airway beacon no. 23, 1933	1,741,354.70 691,461.60				
Airway beacon no. 63, 1933	1,742,942.78 608,503.82				
Nashville, Tennessee State Capitol, flagpole on cupola, 1934.[1]	1,768,505.86 646,592.21				
Nashville latitude and longitude station, 1877.[1]	1,768,717.00 646,641.08				
Nashville, First Baptist Church, spire (Broadway and Seventh Street), 1934.[1]	1,769,516.61 644,191.59				

[1] No check on this position.

Corinth, Miss., to Nashville, Tenn.—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Supplementary points—Continued			
Nashville, old post-office building, finial (Broadway and Eighth Street), 1934.[1]	1,769,314.80 644,078.94		
Nashville, Louisville & Nashville R. R. station, ball at foot of statue (Winged Mercury) (Broadway and Tenth Street), 1934.[1]	1,768,280.31 643,519.93		
Nashville, radio station WSM (old plant), north tower (Fifteenth Avenue South), 1934.[1]	1,766,335.27 637,357.08		
Nashville, radio station WSM (old plant), south tower (Fifteenth Avenue South), 1934.[1]	1,766,186.83 637,054.91		
Large silver water tank southeast of Nashville, 1934.[1]	1,780,048.53 623,157.34		
Nashville, St. Thomas Hospital, stack (Church and Twenty-first Streets), 1934.[1]	1,763,158.92 641,721.04		
Nashville, Vanderbilt University, College Hall, center of tower, 1934.[1]	1,762,996.26 640,188.36		
Nashville, Vanderbilt University, powerhouse, stack, 1934.[1]	1,762,762.13 639,341.88		

Smithville, Tenn., to Huntsville, Ala. (second order)

Principal points		°	′	″	
Cope, 1934	2,083,281.35 511,232.40	335	52	35.8	Azimuth mark.
McMinnville, 1934	2,069,049.03 473,954.43	92	07	28.9	Azimuth mark, R. M. no. 3.
Barnes, 1934	1,948,985.99 466,295.08	182	25	44.2	Azimuth mark, R. M. no. 1.
Wilson, 1934	1,997,955.73 429,536.29	313	21	47.9	Azimuth mark.
Model, 1934	1,936,016.53 418,445.27	277	17	23.4	Azimuth mark, R. M. no. 2.
Forest, 1934	1,988,815.90 409,128.93	49	01	26.2	Azimuth mark, R. M. no. 3.
Redfern, 1934	1,955,742.54 353,995.38	129	49	00.6	Azimuth mark.
Hurricane, 1934	1,905,258.68 352,044.75	35	27	34.5	Azimuth mark.
Huskey, 1934	1,893,578.19 321,559.57	113	04	34.9	Azimuth mark.
Stone, 1934	1,945,605.15 314,509.89	336	49	05.0	Azimuth mark.
Lois, 1934	1,890,139.57 299,421.86	251	32	30.1	Azimuth mark.
Cole, 1934	1,939,694.80 274,505.18	39	33	35.4	Azimuth mark.
Raynolds, 1934	1,901,918.25 234,006.81	21	35	04.9	Azimuth mark.
Patrick, 1934	1,847,483.25 255,216.96	224	04	11.3	Azimuth mark.

[1] No check on this position.

Smithville, Tenn., to Huntsville, Ala. (second order)—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Principal points—Continued		° ′ ″	
Quick, 1934	1,831,037.34 225,388.14	207 47 51.8	Azimuth mark.
Hale (Ala.), 1934	1,893,840.62 217,277.21	318 08 55.0	Azimuth mark.
Steger (Ala.), 1934	1,815,997.41 197,339.94	271 33 41.5	Azimuth mark.
Deposit (Ala.), 1934	1,871,648.54 171,724.64		
Supplementary points			
Young, 1934	2,060,197.63 531,326.79	167 28 04.4	Azimuth mark, R. M. no. 3.
Hinton, 1934	2,016,078.59 432,834.44	33 54 54.0	Azimuth mark.
Bush, 1934	1,939,028.33 477,671.65	312 00 00.2	Azimuth mark, R. M. no. 1.
West, 1934	1,930,835.39 382,610.42	143 23 44	Azimuth mark.
Center Grove (Transit traverse station no. 73 D 1930 (U. S. G. S.)), 1934.	1,932,929.27 335,474.40	18 01 04.3	Azimuth mark.
Tullahoma, 1934	1,937,378.99 353,405.08	155 14 41.3	Azimuth mark, R. M. no. 3.
Kasserman (Primary traverse station no. 13 T 1926 (U. S. G. S.)), 1934.	1,955,548.97 279,360.37	124 52 51.2	Azimuth mark.
Winchester, 1934	1,968,734.12 287,058.85	146 10 33.0	Azimuth mark.
Elora, 1934	1,893,340.80 226,322.34	124 10 17.3	Azimuth mark.
Madilin (Ala.), 1934	1,828,850.50 218,450.58	157 08 17.5	Azimuth mark.
McMinnville, municipal water tank (aluminum), 1934.[1]	2,067,824.18 473,328.81		
Summitville, white church spire, 1934 [1]	2,002,209.35 424,997.88		
Manchester, white water tank, 1934 [1]	1,973,709.65 397,892.70		
Airway beacon no. 16, 1934	1,997,502.35 385,165.45		
Tullahoma, Campbell & Dann Co., aluminum water tank, 1934.	1,934,938.91 357,155.42		
Tullahoma, municipal water tank (aluminum), 1934.	1,937,632.67 353,044.39		
Tullahoma, black water tank, 1934 [1]	1,945,189.39 350,633.61		
Primary traverse station no. 8 T 1926 (U. S. G. S.), 1934.[1]	1,893,300.86 226,411.16		
Winchester, municipal water tank (aluminum), ball on top, 1934.[1]	1,965,835.86 289,013.34		

[1] No check on this position.

Union City, Tenn., to La Fayette, Ga. (second order)

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Principal points		° ′ ″	
Hagons, 1934	1,071,002.44 758,243.19	252 01 59.4	Azimuth mark.
Troy, 1934	1,062,762.11 730,712.16	337 43 39.1	Azimuth mark.
Chambers, 1934	1,120,351.21 762,987.10	44 30 38.6	Azimuth mark.
Rives, 1934	1,095,174.24 731,205.94	226 59 37.8	Azimuth mark.
Union, 1934	1,100,929.27 753,948.38	152 43 55.0	Azimuth mark.
Jackson, 1934	1,155,947.84 731,532.08	120 35 35.0	Azimuth mark.
Bell, 1934	1,137,129.12 702,681.60	93 16 10.7	Azimuth mark.
Dresden, 1934	1,201,586.44 707,949.37	111 27 13.1	Azimuth mark.
Sharon, 1934	1,166,476.28 684,784.18	171 52 49.5	Azimuth mark.
Gleason, 1934	1,221,165.03 669,957.94	253 51 55.6	Azimuth mark.
Dunn, 1934	1,184,993.38 644,997.34	59 54 55.1	Azimuth mark.
Greenfield, 1934	1,173,371.14 652,932.81	2 06 29.3	Azimuth mark.
McKenzie, 1934	1,258,222.33 637,920.74	92 21 04.4	Azimuth mark.
Trez, 1934	1,227,454.38 603,153.89	192 43 23.5	Azimuth mark..
Boaz, 1934	1,255,613.14 650,388.36	336 51 11.3	Azimuth mark.
McAdams, 1934	1,276,634.90 630,377.51	305 05 47.5	Azimuth mark.
Sampson, 1934	1,262,022.73 592,788.26	71 08 38.2	Azimuth mark.
Blanks (Primary traverse station no. 22 (U. S. G. S.)), 1934.	1,224,526.86 600,345.36	23 44 24.9	Azimuth mark.
Allen, 1934	1,297,438.03 609,301.96	134 16 11.9	Azimuth mark.
Hollow, 1934	1,330,287.52 608,165.21	78 11 11	Azimuth mark.
Ridings, 1934	1,321,062.59 585,471.92	356 06 20	Azimuth mark.
Ethel, 1934	1,350,613.89 608,089.74	336 51 29.7	Azimuth mark.
Smothers, 1934	1,349,598.32 576,945.91	169 35 56	Azimuth mark.
Weatherly, 1934	1,368,532.64 617,268.44	134 40 41.5	Azimuth mark.
Pilot, 1934	1,416,754.03 623,439.51	112 54 02.6	Azimuth mark.
Hagard, 1934	1,399,921.79 565,088.64	264 32 20.0	Azimuth mark.
Buck, 1934	1,474,121.91 595,329.87	349 04 58.3	Azimuth mark.

Union City, Tenn., to La Fayette, Ga. (second order)—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Principal points—Continued		°	′	″	
Baker, 1934	1,439,642.80 571,357.78	292	13	42.2	Azimuth mark.
Bold, 1934	1,497,761.10 583,189.46	104	10	09.6	Azimuth mark.
Buffalo, 1934	1,474,166.47 548,320.13	18	03	46.1	Azimuth mark.
Spot, 1934	1,536,574.23 551,227.42	210	25	06.5	Azimuth mark.
Aircon, 1934	1,488,025.10 512,553.86	227	24	27.7	Azimuth mark.
Cobel, 1934	1,502,349.29 489,167.89	299	59	54	Azimuth mark.
Dry, 1934	1,594,550.74 537,539.03	241	20	55.6	Azimuth mark.
Wade, 1934	1,557,742.51 486,409.02	80	53	47.0	Azimuth mark.
Nod, 1934	1,686,472.67 426,271.29	212	43	05.7	Azimuth mark.
Match, 1934	1,726,199.37 451,243.03	146	38	49.4	Azimuth mark.
Baxter, 1934	1,740,804.62 394,154.72	253	20	41.2	Azimuth mark.
Hardison, 1934	1,765,771.34 432,504.57	263	45	55.2	Azimuth mark.
Neil, 1934	1,794,473.02 384,661.93	197	34	00.6	Azimuth mark.
Poplin, 1934	1,827,343.06 429,920.02	9	28	13.9	Azimuth mark.
Adams, 1934	1,829,501.06 369,211.71	220	37	55.1	Azimuth mark.
Horse, 1934	1,875,013.76 408,186.00	198	17	49.1	Azimuth mark.
Hawthorne, 1934	1,853,098.06 353,511.70	34	15	06.3	Azimuth mark.
Armstrong, 1934	1,897,471.97 371,313.57	296	53	34.9	Azimuth mark.
Shelbyville, 1934	1,854,652.24 398,190.90	348	55	34.3	Azimuth mark.
Elkins, 1934	1,977,007.66 318,671.90	204	21	41.3	Azimuth mark.
Brier, 1934	1,987,826.47 255,865.49	21	34	03.0	Azimuth mark.
Williams, 1934	1,990,647.48 263,677.28	195	53	54.2	Azimuth mark.
Sewanee, 1934	2,033,345.82 301,257.31	351	51	29	Azimuth mark.
Holly, 1934	2,042,359.51 224,431.46	336	41	01	Azimuth mark.
Lost, 1934	2,036,153.12 283,384.30	113	06	39.1	Azimuth mark.
Comfort, 1934	2,074,347.20 277,304.69	251	29	15.2	Azimuth mark.
Fuller, 1934	2,101,323.69 249,664.77	222	11	47	Azimuth mark, airway beacon no. 13B.

Union City, Tenn., to La Fayette, Ga. (second order)—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Principal points—Continued		° ′ ″	
Weldon (Ala.), 1934	2, 100, 734. 04 198, 513. 07	261 44 30. 6	Azimuth mark.
Aetna, 1934	2, 152, 282. 94 228, 177. 52	221 44 17. 7	Azimuth mark.
Scholtze (Tenn.-Ga.), 1934	2, 191, 222. 11 215. 889. 25	276 41 47. 7	Azimuth mark.
Supplementary points			
Primary traverse station no. 40 1910 (U. S. G. S.), 1934.[1]	1, 100, 956. 27 754, 024. 93		
Union City, Brown Bilt Shoe Co., black tank, 1934.	1, 101, 131. 16 756, 762. 86		
Union City, Cumberland Presbyterian Church, spire, 1934.[1]	1, 101, 689. 79 755, 519. 67		
Sharon, black water tank, 1934 [1]	1, 166, 827. 76 682, 073. 59		
Primary traverse station no. 19 1910 (U. S. G. S.), 1934.[1]	1, 173, 249. 56 652, 958. 95		
Greenfield, municipal water tank, (black), 1934.	1, 173, 555. 58 653, 546. 73		
Trezevant, municipal water tank (black), top of ball on roof, 1934.	1, 224, 960. 79 600, 406. 56		
McKenzie, tall stack, 1934 [1]	1, 254, 992. 60 643, 379. 08		
McKenzie, municipal water tank, 1934	1, 256, 195. 87 642, 205. 48		
Pilot Knob, Nathan Bedford Forrest Monument, 1934.[1]	1, 416, 771. 15 623, 384. 56		
Columbia, Maury County Courthouse, dome, 1934.[1]	1, 692, 103. 95 446, 723. 17		
Transit traverse station no. 19 W 1926 (U. S. G. S.), 1934.[1]	1, 990, 711. 58 263, 796. 87		
Sewanee, small black tank, 1934 [1]	2, 022, 634. 13 293, 232. 24		
Sewanee, municipal water tank, 1934	2, 024, 333. 48 296, 260. 13		

La Fayette, Ga., to Bristol, Tenn. (second order)

Principal points			
Peavine (Ga.), 1934	2, 245, 186. 25 171, 689. 22	239 40 13. 2	Azimuth mark.
Boynton (Ga.), 1934	2, 240, 638. 65 195, 606. 26	340 02 29	Azimuth mark.
Lookout, 1934	2, 196, 374. 80 223, 861. 55	298 27 44. 3	Azimuth mark.
McDaniel, 1934	2, 280, 571. 10 241, 449. 56		
Goat, 1934	2, 226, 861. 35 250, 514. 80	356 26 56. 1	Azimuth mark.
Buncombe, 1934	2, 291, 766. 70 277, 052. 52		
Harrison, 1934	2, 242, 913. 36 280, 167. 34	30 12 05. 2	Azimuth mark.

[1] No check on this position.

La Fayette, Ga., to Bristol, Tenn. (second order)—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Principal points—Continued		°	′	″	
Georgetown, 1934	2,308,730.82 318,375.99	218	57	08	Azimuth mark.
Bakewell, 1934	2,258,236.79 357,142.45	320	30	48.2	Azimuth mark.
Crisp, 1934	2,346,577.54 367,977.49	57	59	52.1	Azimuth mark.
Dayton, 1934	2,282,886.08 401,730.03	311	17	09.1	Azimuth mark.
Pone, 1934	2,381,247.99 416,538.24				
Evansville, 1934	2,319,197.15 432,247.36	284	40	28.7	Azimuth mark.
Stone, 1934	2,350,483.63 459,414.72	300	32	42.9	Azimuth mark.
Prigmore, 1934	2,417,316.12 432,874.44	269	56	11.3	Azimuth mark.
Barnard, 1934	2,416,039.36 490,890.81	116	13	52.7	Azimuth mark.
Sweetwater, 1934	2,452,240.28 452,552.30	346	18	53.0	Azimuth mark.
Warn, 1934	2,470,949.39 457,508.72	133	13	15.0	Azimuth mark.
Cave, 1934	2,480,347.32 530,445.36	277	10	52.0	Azimuth mark.
Cloyd, 1934	2,540,423.72 484,955.58	97	22	52.3	Azimuth mark.
Rockford, 1934	2,617,466.02 532,076.39	105	22	50.2	Azimuth mark.
Sands, 1934	2,571,772.52 578,777.21	122	07	20.0	Azimuth mark.
Crewes, 1934	2,644,415.36 543,721.62	143	01	11.9	Azimuth mark.
Sharp, 1934	2,608,385.14 592,994.07	142	48	03.3	Azimuth mark.
McBee, 1934	2,716,502.99 578,335.50	287	23	57.7	Azimuth mark.
Crockett, 1934	2,786,622.37 679,010.37	228	19	30.8	Azimuth mark.
Rickard, 1934	2,776,079.17 638,818.88	306	56	10.4	Azimuth mark.
Bent, 1934	2,850,654.88 676,540.68	215	31	37.8	Azimuth mark.
Caney, 1934	2,880,191.31 617,760.94	256	05	49.0	Azimuth mark.
Greeneville, 1934	2,939,370.81 666,642.99	226	06	21.3	Azimuth mark.
High Spur, 1934	2,892,276.02 711,075.40	118	19	44.8	Azimuth mark.
Quaker, 1934	2,968,733.49 681,842.73	296	12	54.8	Azimuth mark.
Brabson, 1934	2,995,041.27 696,084.75	132	18	58.0	Azimuth mark.

La Fayette, Ga., to Bristol, Tenn. (second order)—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Principal points—Continued		°	′	″	
Walters, 1934	3,033,312.83 721,032.54	300	22	05.9	Azimuth mark.
Lyons, 1934	3,080,662.19 773,088.90				
Supplementary points					
Brooks (Ga.), 1934	2,220,073.43 182,018.72	203	35	07.9	Azimuth mark.
Missionary, 1934	2,219,292.93 226,814.38	112	00	12.3	Azimuth mark.
Rossville (Tenn.-Ga.), 1934	2,211,022.05 216,474.61	143	34	32.1	Azimuth mark, R. M. no. 1.
Chattanooga, 1934	2,209,578.44 238,706.94	113	33	22	Azimuth mark.
Ooltewah, 1934	2,278,832.59 253,419.53	86	49	55.5	Azimuth mark.
Meadow, 1934	2,294,520.25 309,286.17	29	55	54.5	Azimuth mark.
Cleveland, 1934	2,333,527.53 278,572.80	198	56	41.7	Azimuth mark.
Texas, 1934	2,318,789.85 344,425.61	211	49	04.5	Azimuth mark.
Suee, 1934	2,377,969.44 450,164.57	350	44	05.5	Azimuth mark.
T. M. I., 1934	2,455,806.17 448,585.29	94	12	01.2	Azimuth mark.
Lenoir, 1934	2,510,647.07 513,599.98	260	27	19.4	Azimuth mark.
Deanery, 1934	2,582,157.02 562,960.32	186	06	05.9	Azimuth mark.
University, 1934	2,613,890.08 576,273.49	357	10	49.8	Azimuth mark.
Trent, 1934	2,681,247.33 600,392.89				
Mossy, 1934	2,748,582.12 650,575.27	26	49	01.8	Azimuth mark.
Morristown, 1934	2,795,583.43 675,544.94	78	13	29.7	Azimuth mark.
Whitesburg, 1934	2,846,627.67 697,716.02	82	01	03.1	Azimuth mark.
Tusculum, 1934	2,956,360.02 665,387.68	308	25	14.6	Azimuth mark.
Bailey, 1934	2,924,331.99 732,543.85	59	36	19.9	Azimuth mark.
Lick, 1934	2,939,856.28 715,169.92	310	28	05.1	Azimuth mark.
Telford, 1934	3,014,682.78 688,028.12	30	25	11.6	Azimuth mark.
Fall Branch, 1934	2,991,387.33 759,110.87	225	12	49.0	Azimuth mark.
Preas, 1934	3,079,310.59 703,511.78	183	14	30.5	Azimuth mark.
Poplar, 1934	3,086,644.43 768,240.15	311	17	21.9	Azimuth mark.

La Fayette, Ga., to Bristol, Tenn. (second order)—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Supplementary points—Continued		° ′ ″	
Bowers, 1934	3, 126, 887. 96 723, 287. 56	302 28 51	Azimuth mark.
Elizabethton, 1934	3, 111, 141. 97 730, 064. 42		
Lookout Mountain Hotel, spire (Ga.), 1934.	2, 187, 310. 28 209, 411. 07		
Missionary Ridge, large aluminum standpipe, 1934.	2, 219, 355. 37 226, 773. 80		
Chattanooga, Hamilton National Bank, flagpole, 1934.	2, 206, 604. 01 239, 569. 11		
Lookout Mountain, New York Monument, flagpole, 1934.	2, 196, 414. 63 225, 974. 50		
Lookout Mountain, small water tank, ball on top, 1934.	2, 196, 074. 44 223, 178. 67		
Chattanooga, octagonal concrete building, cupola, 1934.[1]	2, 208, 933. 30 238, 718. 72		
Sweetwater, municipal water tank (black), 1934.[1]	2, 455, 610. 72 443, 439. 24		
Philadelphia, hosiery mill, aluminum water tank, 1934.[1]	2, 473, 804. 16 471, 601. 04		
Buffalo High Point, fire lookout tower, 1934.	3, 070, 385. 69 684, 211. 04		
Camp Creek Bald, fire lookout tower, 1934.	2, 971, 110. 02 610, 104. 38		
Greenville, standpipe, higher of two, 1934.[1]	2, 934, 692. 58 662, 295. 65		

Lebanon, Tenn., to Florence, Ala. (second order)

Principal points			
Mason, 1934	1, 904, 490. 84 581, 104. 75	188 45 41. 4	Azimuth mark.
Barfield, 1934	1, 867, 024. 80 505, 270. 97	100 21 18. 8	Azimuth mark.
Sumner, 1934	1, 815, 415. 74 542, 278. 52	15 54 13. 2	Azimuth mark.
Rockvale, 1934	1, 848, 220. 92 490, 511. 57	197 18 37	Azimuth mark.
Eagle, 1934	1, 801, 327. 49 489, 696. 51	216 02 43. 8	Azimuth mark.
Holt, 1934	1, 789, 014. 49 474, 653. 36	284 46 57. 7	Azimuth mark.
Gil, 1934	1, 773, 025. 00 362, 263. 67	49 20 26. 8	Azimuth mark.
Fowler, 1934	1, 757, 374. 77 356, 870. 44	327 58 13. 2	Azimuth mark.
Ashton, 1934	1, 715, 517. 18 375, 347. 25	177 50 33. 9	Azimuth mark.
Pierce, 1934	1, 723, 641. 32 317, 199. 88	187 21 27. 9	Azimuth mark.
Barlar, 1934	1, 702, 002. 80 301, 253. 12	53 10 48. 8	Azimuth mark.

[1] No check on this position.

Lebanon, Tenn., to Florence, Ala. (second order)—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Principal points—Continued		°	′	″	
Black, 1934	1,667,574.37 334,926.47	7	13	30.7	Azimuth mark.
Goodspring, 1934	1,669,002.50 275,292.17	51	51	25.4	Azimuth mark.
Wesley, 1934	1,617,570.76 297,626.59	10	16	36.9	Azimuth mark.
Crowder (Tenn.-Ala.), 1934	1,623,718.56 223,618.85	211	19	31.8	Azimuth mark.
Davis, 1934	1,598,131.87 271,421.19	358	32	12.7	Azimuth mark.
Shelton (Ala.), 1934	1,592,517.82 206,400.39	283	05	11.0	Azimuth mark.
Springer (Ala.), 1934	1,565,616.42 224,112.80	270	35	03.1	Azimuth mark.
Elgin (Ala.), 1934	1,584,836.26 173,378.93	106	05	12.1	Azimuth mark.
Bailey (Ala.), 1934	1,523,016.21 184,263.10	123	46	26	Azimuth mark.
Supplementary points					
Lebanon, 1934	1,911,589.70 659,907.26	284	11	21	Azimuth mark.
Murfreesboro, 1934	1,887,319.71 523,069.48	148	59	43	Azimuth mark.
Kaiser, 1934	1,809,197.03 491,291.57	275	49	01	Azimuth mark.
Boyce, 1934	1,815,518.83 477,879.15	21	05	02.8	Azimuth mark.
Lewisburg, 1934	1,761,595.87 385,364.44	271	03	33.9	Azimuth mark.
Pulaski, 1934	1,691,387.23 298,649.71	298	23	40.0	Azimuth mark.
Rob, 1934	1,636,372.36 293,657.92	183	56	37.6	Azimuth mark.
Lawrenceburg, 1934	1,605,671.65 311,029.68	100	21	07	Azimuth mark.
Lexington (Primary traverse station no. 600 (U. S. G. S.)) (Ala.), 1934.	1,589,282.58 213,247.11	272	41	58.2	Azimuth mark.
Robertson (Ala.), 1934	1,544,242.23 225,842.01	284	42	17.7	Azimuth mark.
Green Hill (Primary traverse station no. 3, Ala., 1911 (U. S. G. S.)) (Ala.), 1934.	1,548,327.57 218,819.31	271	19	39	Azimuth mark.
Lebanon, aluminum water tank, 1934 [1]	1,918,326.63 662,678.22				
Lebanon, Cumberland University, administration building, finial of clock tower, 1934.	1,616,496.77 662,114.05				
Murfreesboro, black water tank, ball on top, 1934.[1]	1,887,633.47 530,730.01				
Airway beacon no. 19, 1934 [1]	1,883,476.02 500,558.58				
Transit traverse station no. 63 D 1930 (U. S. G. S.), 1934.[1]	1,809,222.47 491,212.43				

[1] No check on this position.

Lebanon, Tenn., to Florence, Ala. (second order)—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Supplementary points—Continued			
Shelbyville, municipal water tank (white northern one), 1934.[1]	1,866,435.20 395,549.06		
Lewisburg, municipal water tank (black), 1934.	1,763,870.59 386,417.29		
Pulaski, Old Massey School, spire, 1934.[1]	1,694,928.09 295,695.56		
Pulaski, municipal water tank (black, wooden), 1934.[1]	1,690,162.08 293,249.23		
Pulaski, Giles County Courthouse, finial, 1934.[1]	1,691,925.04 295,603.69		
Lawrenceburg, Catholic Church, spire, 1934.[1]	1,601,309.53 313,615.54		
Lawrenceburg, municipal water tank, 1934.	1,601,713.71 312,064.89		
St. Joseph, church spire, 1934	1,549,924.15 236,806.95		

Sparta, Tenn., to Gadsden, Ala. (second order)

		° ′ ″	
Principal points			
Spencer, 1934	2,159,543.83 493,675.10	59 21 19	Azimuth mark.
Brady, 1934	2,196,604.25 478,181.70	2 21 29	Azimuth mark.
Smart, 1934	2,168,471.06 432,048.72		
Meyers, 1934	2,207,319.15 429,385.23	168 50 52.9	Azimuth mark.
Cagle, 1934	2,154,692.92 388,567.20	0 47 37	Azimuth mark.
Lockhart, 1934	2,130,678.07 338,219.99	169 34 25	Azimuth mark.
Bennett, 1934	2,176,208.06 307,835.32	14 05 53	Azimuth mark.
Big Hill, 1934	2,102,960.87 279,091.11	181 47 20	Azimuth mark.
Ketner, 1934	2,162,297.41 287,523.18	112 22 45.3	Azimuth mark.
Pioneer (Ala.), 1934	2,043,617.16 199,911.41		
Fabius (Ala.), 1934	2,073,130.73 159,609.84	53 59 40	Azimuth mark.
Carr (Ala.), 1934	2,033,936.22 180,861.91	170 43 42	Azimuth mark.
Supplementary points			
Ormsby, 1934	2,206,114.75 473,644.80	113 54 27.0	Azimuth mark.
Caper (Ala.), 1934	2,074,705.23 167,339.88	220 21 17	Azimuth mark.
Pitz (Tenn.-Ala.), 1934	2,082,076.46 216,710.23	35 36 30.0	Azimuth mark.
Signal Mountain, aluminum standpipe, 1934.[1]	2,198,741.85 270,661.00		

[1] No check on this position.

Princeton, Ky., to Saulsbury, Tenn. (second order)

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Principal points		°	′	″	
Gresham (Ky.), 1934	1,448,379.24 890,407.66	131	03	45	Azimuth mark.
Mitchell (Ky.), 1934	1,397,725.30 875,786.79	89	54	38	Azimuth mark.
Model, 1934	1,414,364.90 835,250.60	344	05	32	Azimuth mark.
Howell (Ky.), 1934	1,463,282.69 835,088.98	231	21	48	Azimuth mark.
Dennis, 1934	1,460,618.89 788,738.96	182	20	35	Azimuth mark.
Tharpe, 1934	1,421,920.93 809,836.44	25	32	53	Azimuth mark.
Liberty, 1934	1,384,644.98 761,067.12	178	46	03	Azimuth mark.
Wynn, 1934	1,421,811.57 763,562.60	226	26	22	Azimuth mark.
Licked, 1934	1,403,025.64 721,316.84	23	12	29	Azimuth mark.
Eagle, 1934	1,370,377.03 733,578.24	226	30	24	Azimuth mark.
Elkhorn, 1934	1,365,313.77 711,898.60	263	39	05	Azimuth mark.
Carmel, 1934	1,395,195.88 689,209.82	00	55	03	Azimuth mark.
Carpenter, 1934	1,388,334.99 647,889.14	260	03	44	Azimuth mark.
Walters, 1934	1,351,959.09 664,250.18	97	01	15	Azimuth mark.
Clark, 1934	1,337,877.48 576,387.95	183	11	29	Azimuth mark.
Dollar, 1934	1,330,218.93 560,126.41	276	36	19	Azimuth mark.
Mann, 1934	1,287,427.17 571,707.68	334	23	46	Azimuth mark.
Eubanks, 1934	1,319,588.39 553,709.37	90	39	08	Azimuth mark.
Dill, 1934	1,287,757.30 556,732.29	327	50	37	Azimuth mark.
Anderson, 1934	1,265,869.66 566,608.53	41	10	05	Azimuth mark.
Clarksburg, 1934	1,291,710.33 545,727.52	282	27	28	Azimuth mark.
Palestine, 1934	1,265,651.15 542,809.20	314	41	58	Azimuth mark.
Howley, 1934	1,247,761.31 552,499.73	32	47	24	Azimuth mark.
Douglas, 1934	1,273,626.86 519,653.46	283	29	49	Azimuth mark.
Obrian, 1934	1,248,485.17 510,616.08	191	19	19	Azimuth mark.
Center, 1933	1,270,388.81 491,315.49	213	16	32	Azimuth mark.
Williamson, 1934	1,229,249.14 524,985.62	208	25	58	Azimuth mark.

Princeton, Ky., to Saulsbury, Tenn. (second order)—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Principal points—Continued		°	′	″	
Gurley, 1934	1,227,241.77 487,713.65	153	21	20	Azimuth mark.
Woods, 1934	1,269,271.23 460,948.36	65	42	33	Azimuth mark.
Wilde, 1934	1,218,180.69 474,790.82	55	49	40	Azimuth mark.
Brown, 1934	1,246,142.35 426,640.54	207	20	35	Azimuth mark.
Johnson, 1934	1,205,075.14 441,616.18	188	45	23	Azimuth mark.
Union, 1934	1,165,090.91 457,671.30				
Pinson, 1934	1,193,984.04 413,734.14	190	55	16	Azimuth mark.
Bain, 1934	1,236,162.08 406,508.28	222	41	36	Azimuth mark.
Butler, 1934	1,168,970.39 414,200.73	355	30	08	Azimuth mark.
McKinney, 1934	1,213,290.05 387,174.54	195	56	40	Azimuth mark.
Crown, 1934	1,187,725.35 367,342.86	131	50	35	Azimuth mark.
King, 1934	1,151,955.07 379,182.51	139	13	51	Azimuth mark.
Ross, 1934	1,163,646.26 344,917.94	221	10	06	Azimuth mark.
Willoughby, 1934	1,129,693.47 356,523.83	148	47	01	Azimuth mark.
Silerton, 1934	1,164,425.95 358,211.12	29	20	12	Azimuth mark.
Walnut, 1934	1,137,154.42 327,476.87	330	13	20	Azimuth mark.
Hospital, 1934	1,097,375.14 336,254.40	290	59	29	Azimuth mark.
Doyle, 1934	1,132,669.67 296,448.55	301	09	17	Azimuth mark.
Owens, 1934	1,094,502.27 319,885.25	228	34	02	Azimuth mark.
Supplementary points					
Kentucky-Tennessee boundary monument no. 19 eccentric (Ky.), 1934.	1,492,471.88 821,450.29	154	28	53	Azimuth mark
Kentucky-Tennessee boundary monument no. 19 (Ky.-Tenn.), 1934.[1]	1,492,487.49 821,438.68				
Paris, 1934	1,314,140.19 699,652.45	282	35	05	Azimuth mark.
Big Sandy 1934 [1]	1,416,055.09 666,799.60	296	40	40	Azimuth mark.
Paris, Episcopal Church, spire, 1934 [1]	1,314,703.30 703,525.79				
Paris, cylindrical water tank, 1934 [1]	1,314,080.07 702,935.72				
Bruceton, municipal water tank (black), 1934.	1,336,386.60 605,300.81				

[1] No check on this position.

Princeton, Ky., to Saulsbury, Tenn. (second order)—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Supplementary points—Continued			
Lexington, aluminum water tank, 1934.[1]	1,288,749.64 464,571.66		
Jackson, Jackson Wood Products Co., tall stack, 1934.	1,167,785.46 452,421.58		
Henderson, black water tank, 1934	1,213,534.84 392,189.30		
Henderson, courthouse spire, 1934 [1]	1,208,577.96 386,834.51		
Western State Hospital (near Bolivar), main building, tall spire, 1934.	1,096,682.55 335,604.86		
Bolivar, aluminum water tank, 1934	1,106,470.56 328,360.82		
Bolivar, Episcopal Church, white spire, 1934.[1]	1,107,616.53 327,796.14		

Clarksville, Tenn., to Corinth, Miss. (second order)

		° ′ ″	
Principal points			
Needmore, 1934	1,608,986.47 800,104.36	248 53 16.4	Azimuth mark.
Sango, 1934	1,641,401.20 771,983.28		
Davenport (Ky.-Tenn.), 1934	1,622,736.84 821,457.01	118 33 15.2	Azimuth mark.
Summit, 1934	1,610,143.81 775,622.87	227 25 59.7	Azimuth mark.
Clarksville, 1934	1,603,641.55 774,962.72	79 47 55.4	Azimuth mark.
Orgains, 1934	1,598,106.60 748,650.22	14 42 14.5	Azimuth mark.
Henrietti, 1934	1,646,385.31 737,491.65	102 11 31.3	Azimuth mark.
Fredona, 1934	1,641,363.56 747,557.35	341 35 12.6	Azimuth mark.
Hamble, 1934	1,615,482.03 694,621.25	335 23 45.2	Azimuth mark.
Marion, 1934	1,575,975.36 703,882.22	47 14 40.4	Azimuth mark.
Promise, 1934	1,608,420.43 666,137.45	68 29 04.7	Azimuth mark.
Van Leer, 1934	1,574,227.16 672,751.36	43 27 12.2	Azimuth mark.
Houston, 1934	1,539,272.11 712,493.71	72 01 34.7	Azimuth mark.
Dull, 1934	1,621,099.90 662,865.14	216 58 54.2	Azimuth mark.
Berry, 1934	1,593,193.16 654,373.39	256 08 05.0	Azimuth mark.
Pond, 1934	1,578,770.84 627,958.24	109 20 59.6	Azimuth mark.
Dickhum, 1934	1,541,727.23 638,965.97	134 04 59.0	Azimuth mark.

[1] No check on this position.

Clarksville, Tenn., to Corinth, Miss. (second order)—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Principal points—Continued		°	′	″	
McEwen, 1934	1,512,439.68 618,390.67	201	00	19.8	Azimuth mark.
Crowel, 1934	1,541,987.32 596,070.68	215	00	35	Azimuth mark.
Lobel, 1934	1,467,805.34 513,279.13	329	33	01.8	Azimuth mark.
Beard, 1934	1,453,808.64 478,438.32	204	43	17.8	Azimuth mark.
Pleasant, 1934	1,485,017.53 464,683.31	53	17	55.3	Azimuth mark.
Linden, 1934	1,446,024.62 444,365.60	342	33	34.8	Azimuth mark.
Ice, 1934	1,473,277.76 428,307.50	90	00	38.1	Azimuth mark.
Flatwoods, 1934	1,445,381.68 399,529.62	326	49	48.2	Azimuth mark.
Pope, 1934	1,472,637.69 400,748.50	59	03	04.3	Azimuth mark.
Mayberry, 1934	1,426,269.44 406,789.65	307	44	07.5	Azimuth mark.
Zion, 1934	1,387,692.91 416,987.56	48	35	53.1	Azimuth mark.
Clifton, 1934	1,411,551.15 379,901.94	261	22	39.7	Azimuth mark.
Tucker, 1934	1,353,391.08 403,304.13	68	57	56.6	Azimuth mark.
Pony, 1934	1,375,413.07 351,926.33	223	24	43.5	Azimuth mark.
Saltillo, 1934	1,326,692.61 370,126.98	105	01	06.3	Azimuth mark.
Cerro Gordo, 1934	1,354,354.29 333,807.57	203	10	13.0	Azimuth mark.
Right, 1934	1,311,067.33 336,732.16	124	03	36.3	Azimuth mark.
Walker, 1934	1,327,608.56 292,717.42	213	33	02.1	Azimuth mark.
Crump, 1934	1,302,455.23 297,377.41	118	40	43.2	Azimuth mark.
Shirley, 1934	1,282,670.61 331,454.58	328	41	09.4	Azimuth mark.
Purdy, 1934	1,246,365.03 308,839.83	125	05	03.2	Azimuth mark.
Sand Hill, 1934	1,258,179.83 268,496.39	340	25	05.1	Azimuth mark.
Selmer, 1934	1,224,268.43 298,057.30	27	16	58.4	Azimuth mark.
Adams (Miss.), 1934	1,239,180.61 228,456.21	178	49	31.1	Azimuth mark.
Michie, 1934	1,262,386.23 229,571.93	74	07	57.0	Azimuth mark.
Corinth (Miss.), 1934	1,246,443.32 211,698.10	185	03	30.5	Azimuth mark.

Clarksville, Tenn., to Corinth, Miss. (second order)—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Supplementary points			
Guthrie, tie plant, smokestack (Ky.), 1934.[1]	1,659,693.05 823,379.06		
Clarksville, Garret Snuff Plant, southerly of two tanks, 1934.[1]	1,604,005.19 780,244.88		
Clarksville, American Snuff Co., brown smokestack, 1934.[1]	1,604,152.45 780,090.13		
Clarksville, American Snuff Co., black water tank, 1934.	1,602,055.97 779,851.96		
Clarksville, courthouse, cupola, 1934	1,600,973.82 779,855.62		
Tennessee City, fire lookout tower, 1934.[1]	1,547,909.31 625,122.25		
Fire lookout tower west of Pinewood, 1934.[1]	1,547,821.18 557,514.27		
Airway beacon no. 58, 1934	1,488,000.57 512,638.84		
Bryan, 1934	1,675,090.78 821,020.08	° ′ ″ 2 00 37.1	Azimuth mark.
Kentucky-Tennessee boundary monument no. 26 (Ky.-Tenn.), 1934.[1]	1,675,104.86 821,033.07		
B. M. W 3 (Primary traverse station no. 8 W 1925 Tenn. (U. S. G. S.)), 1934.[1]	1,610,095.47 775,598.24		
Primary traverse station no. 26 W 1925 Tenn. (U. S. G. S.), 1934.[1]	1,641,368.53 747,561.84		
Transit traverse station no. 4 D 1929 (U. S. G. S.), 1934.[1]	1,621,019.68 662,865.68		
Fire lookout tower near station Pope, 1934.	1,472,661.98 400,742.50		
Savannah, courthouse, cupola, 1934[1]	1,327,871.00 310,862.05		
Shiloh National Park, main flagpole, 1934.[1]	1,305,980.19 284,386.87		
Shiloh National Park, Iowa State Monument, 1934.[1]	1,305,172.34 284,438.41		
Corinth, black water tank (Miss.), 1934	1,246,817.83 208,396.13		

Louisville, Ky., to Nashville, Tenn.

Principal points			
Griffin (Ky.), 1933	1,925,149.17 862,906.71	287 19 29.8	Azimuth mark.
Carman (Ky.), 1933	1,872,588.41 862,621.70	322 41 41.5	Azimuth mark.
Graves (Ky.), 1933	1,913,271.58 822,770.31	262 35 47.7	Azimuth mark.
Perry, 1933	1,865,094.70 822,875.04	331 56 24.1	Azimuth mark.
Jenkins, 1933	1,924,571.51 787,685.96	264 01 53.2 256 08 42.5	Azimuth mark. Westmoreland, school, chimney.
Webb, 1933	1,880,295.63 775,508.28	307 11 11.2	Azimuth mark.

[1] No check on this position.

Louisville, Ky., to Nashville, Tenn.—Continued

Station	x Coordinate / y Coordinate	Plane Azimuth			Mark
Principal points—Continued		°	′	″	
Franklin (Ky.), 1933	1,830,422.60 848,806.75	145	55	06.5	Azimuth mark.
Groves (Ky.), 1933	1,834,794.15 816,413.48	44	26	58.2	Azimuth mark.
Supplementary points					
Airway beacon no. 68 (Ky.), 1933	1,883,988.90 828,250.19				
Kentucky-Tennessee boundary monument (Ky.-Tenn.), 1933.[1]	1,865,106.40 822,884.79				
Franklin, municipal water tank (Ky.), 1933.[1]	1,832,266.07 848,827.97				
Primary traverse station no. 7 1920 Ky. (U. S. G. S.) (Ky.), 1933.	1,935,638.61 818,771.53				
Airway beacon no. 67, 1933	1,866,344.70 787,242.36				
Airway beacon no. 66, 1933 [1]	1,861,300.85 733,758.41				

Paducah, Ky., to Martin, Tenn. (second order)

Principal points					
Dobson (Ky.), 1934	1,213,647.40 806,762.58	35	33	47.6	Azimuth mark.
Blair (Ky.), 1934	1,167,584.39 807,263.62	3	00	03.7	Azimuth mark.
Golden, 1934	1,180,960.69 775,440.89	158	52	07.9	Azimuth mark.
Fulton, 1934	1,154,354.12 780,595.86	227	44	37.0	Azimuth mark.
Duke, 1934	1,201,097.66 779,285.60	123	47	29	Azimuth mark.
Vincent, 1934	1,231,870.44 771,867.76	108	58	54.1	Azimuth mark.
Junior, 1934	1,156,715.40 721,986.71	222	35	27.3	Azimuth mark.
Martin, 1934	1,161,078.20 722,817.10	14	30	02.5	Azimuth mark.
Supplementary points					
Martin, Junior College of University of Tennessee, red brick chimney, 1934.	1,157,739.19 721,636.87				
Martin, aluminum water tank near chimney, 1934.	1,161,193.77 722,122.76				
Fulton, black brick chimney (Ky.), 1934.	1,152,208.50 785,276.70				
Primary traverse station no. 34 1910 (U. S. G. S.), 1934.[1]	1,161,043.44 722,882.75				
Obion County, Tenn.-Fulton County, Ky., county-line marker (Ky.-Tenn.), 1934.[1]	1,154,374.89 780,629.84				
Kentucky-Tennessee boundary monument (Ky.-Tenn.), 1934.[1]	1,154,524.38 780,624.64				
Kentucky-Tennessee boundary monument no. 8 (Ky.-Tenn.), 1934.[1]	1,201,102.74 779,368.42				
R. 1, T. 2 W., sec. 1, southwest corner (Ky.), 1934. [1]	1,167,531.47 807,135.65				

[1] No check on this position.

Moscow, Tenn., to Forest, Miss.

Station	x Coordinate / y Coordinate	Plane Azimuth	Mark
Principal points		° ′ ″	
Beasley (Miss.), 1934	1,009,658.27 235,815.51	318 44 31.5	Azimuth mark.
Skelton (Miss.), 1934	986,364.67 209,281.88	143 35 54.0	Azimuth mark.
Mule (Miss.), 1934	969,555.38 193,632.19	343 46 51.5	Azimuth mark.
Whitten (Miss.), 1934	1,004,989.05 186,657.78	357 05 58.9	Azimuth mark.
Fite (Miss.), 1934	969,435.19 236,755.55	2 46 33.9	Azimuth mark.
Supplementary point			
Slayden, Marshall County High School, tank (Miss.), 1934.	969,943.69 220,615.18		

EXPLANATION OF PLANE-COORDINATE PROJECTION TABLES

The State tables of plane coordinates are intended primarily for the reduction of geodetic positions to grid coordinates and they were computed with this end in view. However, they serve another purpose and for this they are needed for use in the computation of surveys on the coordinate system. The list of constants are frequently needed and the list of scale factors are needed if computations are to be made with exactness by use of the table of scale variations.

There are several ways in which the table of scales can be used on the Lambert grids. The factors are listed for every minute of latitude and the most rigid method of using them is to determine the mean latitude of each line of a survey and interpolate for this value. But in general, we do not have the latitudes of the stations of a survey and hence we have no means of computing the latitude of the middle of a given line. If the United States Geological Survey quadrangle maps for the region are available, a traverse can be plotted approximately on them by angles and distances and then the latitudes of the middle points of the various lines can be scaled from the map. This has been found to be very satisfactory in a general way. Unfortunately, these maps are not always available and for many sections of the country no such maps have been made.

With most traverses of ordinary length, it would be sufficiently accurate to determine the mean latitude of the whole traverse. If the traverse runs from one geodetic control point to another, the latitudes of the control points would be known and from these a mean latitude of the whole traverse could be found. The scale for this mean latitude could then be adopted for the whole traverse. By noting how much change there is in the scale factor as given for the two control stations, one can judge whether this method would be satisfactory. Except for the greatest exactness, this method would be sufficiently accurate, unless the traverse is a very long one and covers a great distance in a north-south direction.

A third method of approximation can be employed in the following manner: If the computations of the grid coordinates for the control

stations are available, a mean of the y'' values for these control stations can be subtracted from the y coordinates of the various stations to determine approximate y' values for these stations. A mean of these for the ends of each line of the traverse would give a mean approximate y' value for each line with which interpolation could be made in the y' table for a scale factor for the various lines. This method is not very acceptable for two reasons. In general the computations of the grid coordinates of the control stations would not be available, since only the coordinates of the same are given; and in the second place, a preliminary computation of the y coordinates for the various stations of the traverse would have to be made. Either a plotting of the traverse on a map or the adoption of a mean scale factor would seem to be the best solution of the question.

The scale factors are tabulated in two forms; first, as a correction to the final places of the logarithm of the length and, second, as a ratio for direct multiplication. The logarithmic corrections are given in units of the seventh place of logarithms, with tenths for the eighth place. These corrections are given the sign that must be used in applying them to the measured lengths; that is, they must be added algebraically with the sign as given to the logarithms of the measured lengths. Also, the factor form is computed for multiplying the measured length. If one wants to go from the grid length to the geodetic length, the logarithmic correction must be subtracted algebraically and the factor used as a divisor. This correction of a grid length gives a geodetic or sea-level length and a further correction for elevation has to be applied to secure the ground-level length. In the computation of the traverse the measured length should be reduced to sea level before the grid factor is applied.

Reference should be made to Special Publication No. 193, Manual of Plane-Coordinate Computation and to Special Publication No. 194, Manual of Traverse Computation on the Lambert Grid. These publications give a full account of the use of the State tables and of the use of coordinates in computations.

PLANE-COORDINATE PROJECTION TABLES

TABLE I

Latitude		R	y' (y value on the central meridian)	Tabular difference for 1 second of latitude	Scale correction in units of seventh place of logarithms	Scale correction expressed as a ratio
°	′	*Feet*	*Feet*	*Feet*		
34	40	29,435,149.91	100,000.00	101.11183	+668.9	1.0001540
	41	29,429,083.20	106,066.71	101.11167	+643.7	1.0001482
	42	29,423,016.50	112,133.41	101.11133	+618.8	1.0001425
	43	29,416,949.82	118,200.09	101.11100	+594.2	1.0001368
	44	29,410,883.16	124,266.75	101.11083	+570.1	1.0001313
	45	29,404,816.51	130,333.40	101.11050	+546.3	1.0001258
34	46	29,398,749.88	136,400.03	101.11017	+522.8	1.0001204
	47	29,392,683.27	142,466.64	101.11000	+499.7	1.0001151
	48	29,386,616.67	148,533.24	101.10983	+477.0	1.0001098
	49	29,380,550.08	154,599.83	101.10950	+454.6	1.0001047
	50	29,374,483.51	160,666.40	101.10917	+432.6	1.0000996
34	51	29,368,416.96	166,732.95	101.10900	+410.9	1.0000946
	52	29,362,350.42	172,799.49	101.10883	+389.6	1.0000897
	53	29,356,283.89	178,866.02	101.10867	+368.7	1.0000849
	54	29,350,217.37	184,932.54	101.10850	+348.1	1.0000802
	55	29,344,150.86	190,999.05	101.10833	+327.9	1.0000755

143113°—35——10

TABLE I—Continued

Latitude		R	y′ (y value on the central meridian)	Tabular difference for 1 second of latitude	Scale correction in units of seventh place of logarithms	Scale correction expressed as a ratio
°	′	Feet	Feet	Feet		
34	56	29, 338, 084. 36	197, 065. 55	101. 10800	+308. 1	1. 0000709
	57	29, 332, 017. 88	203, 132. 03	101. 10800	+288. 6	1. 0000665
	58	29, 325, 951. 40	209, 198. 51	101. 10767	+269. 5	1. 0000621
	59	29, 319, 884. 94	215, 264. 97	101. 10767	+250. 7	1. 0000577
35	00	29, 313, 818. 48	221, 331. 43	101. 10733	+232. 3	1. 0000535
35	01	29, 307, 752. 04	227, 397. 87	101. 10733	+214. 3	1. 0000493
	02	29, 301, 685. 60	233, 464. 31	101. 10733	+196. 6	1. 0000453
	03	29, 295, 619. 16	239, 530. 75	101. 10700	+179. 3	1. 0000413
	04	29, 289, 552. 74	245, 597. 17	101. 10700	+162. 4	1. 0000374
	05	29, 283, 486. 32	251, 663. 59	101. 10683	+145. 8	1. 0000336
35	06	29, 277, 419. 91	257, 730. 00	101. 10683	+129. 6	1. 0000298
	07	29, 271, 353. 50	263, 796. 41	101. 10667	+113. 8	1. 0000262
	08	29, 265, 287. 10	269, 862. 81	101. 10667	+98. 3	1. 0000226
	09	29, 259, 220. 70	275, 929. 21	101. 10667	+83. 2	1. 0000192
	10	29, 253, 154. 30	281, 995. 61	101. 10650	+68. 4	1. 0000157
35	11	29, 247, 087. 91	288, 062. 00	101. 10633	+54. 0	1. 0000124
	12	29, 241, 021. 53	294, 128. 38	101. 10650	+40. 0	1. 0000092
	13	29, 234, 955. 14	300, 194. 77	101. 10633	+26. 3	1. 0000061
	14	29, 228, 888. 76	306, 261. 15	101. 10633	+13. 0	1. 0000030
	15	29, 222, 822. 38	312, 327. 53	101. 10633	0. 0	1. 0000000
35	16	29, 216, 756. 00	318, 393. 91	101. 10633	−12. 6	0. 9999971
	17	29, 210, 689. 62	324, 460. 29	101. 10633	−24. 8	0. 9999943
	18	29, 204, 623. 24	330, 526. 67	101. 10633	−36. 7	0. 9999915
	19	29, 198, 556. 86	336, 593. 05	101. 10650	−48. 2	0. 9999889
	20	29, 192, 490. 47	342, 659. 44	101. 10633	−59. 3	0. 9999863
35	21	29, 186, 424. 09	348, 725. 82	101. 10650	−70. 1	0. 9999839
	22	29, 180, 357. 70	354, 792. 21	101. 10650	−80. 5	0. 9999815
	23	29, 174, 291. 31	360, 858. 60	101. 10650	−90. 5	0. 9999792
	24	29, 168, 224. 92	366, 924. 99	101. 10650	−100. 2	0. 9999769
	25	29, 162, 158. 53	372, 991. 38	101. 10667	−109. 5	0. 9999748
35	26	29, 156, 092. 13	379, 057. 78	101. 10683	−118. 5	0. 9999727
	27	29, 150, 025. 72	385, 124. 19	101. 10683	−127. 1	0. 9999707
	28	29, 143, 959. 31	391, 190. 60	101. 10683	−135. 3	0. 9999688
	29	29, 137, 892. 90	397, 257. 01	101. 10700	−143. 2	0. 9999670
	30	29, 131, 826. 48	403, 323. 43	101. 10717	−150. 7	0. 9999653
35	31	29, 125, 760. 05	409, 389. 86	101. 10733	−157. 8	0. 9999637
	32	29, 119, 693. 61	415, 456. 30	101. 10733	−164. 6	0. 9999621
	33	29, 113, 627. 17	421, 522. 74	101. 10750	−171. 0	0. 9999606
	34	29, 107, 560. 72	427, 589. 19	101. 10767	−177. 1	0. 9999592
	35	29, 101, 494. 26	433, 655. 65	101. 10783	−182. 8	0. 9999579
35	36	29, 095, 427. 79	439, 722. 12	101. 10800	−188. 1	0. 9999567
	37	29, 089, 361. 31	445, 788. 60	101. 10817	−193. 0	0. 9999556
	38	29, 083, 294. 82	451, 855. 09	101. 10833	−197. 6	0. 9999545
	39	29, 077, 228. 32	457, 921. 59	101. 10867	−201. 8	0. 9999535
	40	29, 071, 161. 80	463, 988. 11	101. 10867	−205. 7	0. 9999526
35	41	29, 065, 095. 28	470, 054. 63	101. 10900	−209. 2	0. 9999518
	42	29, 059, 028. 74	476, 121. 17	101. 10917	−212. 3	0. 9999511
	43	29, 052, 962. 19	482, 187. 72	101. 10933	−215. 0	0. 9999505
	44	29, 046, 895. 63	488, 254. 28	101. 10967	−217. 4	0. 9999499
	45	29, 040, 829. 05	494, 320. 86	101. 10983	−219. 4	0. 9999495
35	46	29, 034, 762. 46	500, 387. 45	101. 11000	−221. 0	0. 9999491
	47	29, 028, 695. 86	506, 454. 05	101. 11050	−222. 3	0. 9999488
	48	29, 022, 629. 23	512, 520. 68	101. 11050	−223. 2	0. 9999486
	49	29, 016, 562. 60	518, 587. 31	101. 11100	−223. 8	0. 9999485
	50	29, 010, 495. 94	524, 653. 97	101. 11117	−224. 0	0. 9999484
35	51	29, 004, 429. 27	530, 720. 64	101. 11150	−223. 8	0. 9999485
	52	28, 998, 362. 58	536, 787. 33	101. 11167	−223. 3	0. 9999486
	53	28, 992, 295. 88	542, 854. 03	101. 11217	−222. 4	0. 9999488
	54	28, 986, 229. 15	548, 920. 76	101. 11233	−221. 2	0. 9999491
	55	28, 980, 162. 41	554, 987. 50	101. 11283	−219. 6	0. 9999494
35	56	28, 974, 095. 64	561, 054. 27	101. 11300	−217. 6	0. 9999499
	57	28, 968, 028. 86	567, 121. 05	101. 11350	−215. 3	0. 9999504
	58	28, 961, 962. 05	573, 187. 86	101. 11367	−212. 6	0. 9999510
	59	28, 955, 895. 23	579, 254. 68	101. 11417	−209. 5	0. 9999518
36	00	28, 949, 828. 38	585, 321. 53	101. 11450	−206. 0	0. 9999526

TABLE I—Continued

Latitude		R	y′ (y value on the central meridian)	Tabular difference for 1 second of latitude	Scale correction in units of seventh place of logarithms	Scale correction expressed as a ratio
°	′	Feet	Feet	Feet		
36	01	28, 943, 761. 51	591, 388. 40	101. 11483	−202. 2	0. 9999534
	02	28, 937, 694. 62	597, 455. 29	101. 11533	−198. 0	0. 9999544
	03	28, 931, 627. 70	603, 522. 21	101. 11567	−193. 4	0. 9999555
	04	28, 925, 560. 76	609, 589. 15	101. 11600	−188. 5	0. 9999566
	05	28, 919, 493. 80	615, 656. 11	101. 11650	−183. 2	0. 9999578
36	06	28, 913, 426. 81	621, 723. 10	101. 11683	−177. 5	0. 9999591
	07	28, 907, 359. 80	627, 790. 11	101. 11733	−171. 5	0. 9999605
	08	28, 901, 292. 76	633, 857. 15	101. 11783	−165. 1	0. 9999620
	09	28, 895, 225. 69	639, 924. 22	101. 11817	−158. 3	0. 9999636
	10	28, 889, 158. 60	645, 991. 31	101. 11867	−151. 2	0. 9999652
36	11	28, 883, 091. 48	652, 058. 43	101. 11917	−143. 7	0. 9999669
	12	28, 877, 024. 33	658, 125. 58	101. 11950	−135. 8	0. 9999687
	13	28, 870, 957. 16	664, 192. 75	101. 12017	−127. 5	0. 9999706
	14	28, 864, 889. 95	670, 259. 96	101. 12050	−118. 9	0. 9999726
	15	28, 858, 822. 72	676, 327. 19	101. 12117	−109. 9	0. 9999747
36	16	28, 852, 755. 45	682, 394. 46	101. 12150	−100. 6	0. 9999768
	17	28, 846, 688. 16	688, 461. 75	101. 12217	−90. 9	0. 9999791
	18	28, 840, 620. 83	694, 529. 08	101. 12267	−80. 8	0. 9999814
	19	28, 834, 553. 47	700, 596. 44	101. 12317	−70. 3	0. 9999838
	20	28, 828, 486. 08	706, 663. 83	101. 12367	−59. 5	0. 9999863
36	21	28, 822, 418. 66	712, 731. 25	101. 12417	−48. 3	0. 9999889
	22	28, 816, 351. 21	718, 798. 70	101. 12483	−36. 8	0. 9999915
	23	28, 810, 283. 72	724, 866. 19	101. 12533	−24. 9	0. 9999943
	24	28, 804, 216. 20	730, 933. 71	101. 12600	−12. 6	0. 9999971
	25	28, 798, 148. 64	737, 001. 27	101. 12650	0. 0	1. 0000000
36	26	28, 792, 081. 05	743, 068. 86	101. 12717	+13. 0	1. 0000030
	27	28, 786, 013. 42	749, 136. 49	101. 12767	+26. 4	1. 0000061
	28	28, 779, 945. 76	755, 204. 15	101. 12833	+40. 2	1. 0000093
	29	28, 773, 878. 06	761, 271. 85	101. 12900	+54. 3	1. 0000125
	30	28, 767, 810. 32	767, 339. 59	101. 12967	+68. 8	1. 0000158
36	31	28, 761, 742. 54	773, 407. 37	101. 13017	+83. 7	1. 0000193
	32	28, 755, 674. 73	779, 475. 18	101. 13083	+98. 9	1. 0000228
	33	28, 749, 606. 88	785, 543. 03	101. 13150	+114. 5	1. 0000264
	34	28, 743, 538. 99	791, 610. 92	101. 13217	+130. 5	1. 0000300
	35	28, 737, 471. 06	797, 678. 85	101. 13283	+146. 8	1. 0000338
36	36	28, 731, 403. 09	803, 746. 82	101. 13367	+163. 5	1. 0000376
	37	28, 725, 335. 07	809, 814. 84	101. 13417	+180. 6	1. 0000416
	38	28, 719, 267. 02	815, 882. 89	101. 13500	+198. 1	1. 0000456
	39	28, 713, 198. 92	821, 950. 99	101. 13550	+215. 9	1. 0000497
	40	28, 707, 130. 79	828, 019. 12	101. 13633	+234. 1	1. 0000539
36	41	28, 701, 062. 61	834, 087. 30	101. 13717	+252. 7	1. 0000582
	42	28, 694, 994. 38	840, 155. 53	101. 13783	+271. 6	1. 0000625
	43	28, 688, 926. 11	846, 223. 80	101. 13850	+290. 9	1. 0000670
	44	28, 682, 857. 80	852, 292. 11	101. 13933	+310. 6	1. 0000715
	45	28, 676, 789. 44	858, 360. 47	101. 14000	+330. 6	1. 0000761
36	46	28, 670, 721 04	864, 428. 87	101. 14083	+351. 0	1. 0000808
	47	28, 664, 652. 59	870, 497. 32	101. 14150	+371. 8	1. 0000856
	48	28, 658, 584. 10	876, 565. 81	101. 14250	+393. 0	1. 0000905
	49	28, 652, 515. 55	882, 634. 36	101. 14317	+414. 5	1. 0000954
	50	28, 646, 446. 96	888, 702. 95	101. 14400	+436. 4	1. 0001005
36	51	28, 640, 378. 32	894, 771. 59	101. 14467	+458. 7	1. 0001056
	52	28, 634, 309. 64	900, 840. 27	101. 14567	+481. 3	1. 0001108
	53	28, 628, 240. 90	906, 909. 01	101. 14633	+504. 3	1. 0001161
	54	28, 622, 172. 12	912, 977. 79	101. 14733	+527. 7	1. 0001215
	55	28, 616, 103. 28	919, 046. 63	101. 14800	+551. 4	1. 0001270
36	56	28, 610, 034. 40	925, 115. 51	101. 14900	+575. 5	1. 0001325
	57	28, 603, 965. 46	931, 184. 45	101. 14983	+600. 0	1. 0001382
	58	28, 597, 896. 47	937, 253. 44	101. 15067	+624. 9	1. 0001439
	59	28, 591, 827. 43	943, 322. 48	101. 15167	+650. 1	1. 0001497
37	00	28, 585, 758. 33	949, 391. 58	----------	+675. 7	1. 0001556

Table II

[1″ of longitude = 0″.58543973 of θ]

Longitude	θ	Longitude	θ	Longitude	θ
° ′	° ′ ″	° ′	° ′ ″	° ′	° ′ ″
81 30	+2 38 04.1236	82 36	+1 59 25.7823	83 41	+1 21 22.5673
31	+2 37 28.9972	37	+1 58 50.6559	42	+1 20 47.4410
32	+2 36 53.8709	38	+1 58 15.5295	43	+1 20 12.3146
33	+2 36 18.7445	39	+1 57 40.4031	44	+1 19 37.1882
34	+2 35 43.6181	40	+1 57 05.2768	45	+1 19 02.0618
35	+2 35 08.4917				
		82 41	+1 56 30.1504	83 46	+1 18 26.9354
81 36	+2 34 33.3653	42	+1 55 55.0240	47	+1 17 51.8090
37	+2 33 58.2389	43	+1 55 19.8976	48	+1 17 16.6827
38	+2 33 23.1126	44	+1 54 44.7712	49	+1 16 41.5563
39	+2 32 47.9862	45	+1 54 09.6448	50	+1 16 06.4299
40	+2 32 12.8598				
		82 46	+1 53 34.5185	83 51	+1 15 31.3035
81 41	+2 31 37.7334	47	+1 52 59.3921	52	+1 14 56.1771
42	+2 31 02.6070	48	+1 52 24.2657	53	+1 14 21.0507
43	+2 30 27.4806	49	+1 51 49.1393	54	+1 13 45.9244
44	+2 29 52.3542	50	+1 51 14.0129	55	+1 13 10.7980
45	+2 29 17.2279				
		82 51	+1 50 38.8865	83 56	+1 12 35.6716
81 46	+2 28 42.1015	52	+1 50 03.7602	57	+1 12 00.5452
47	+2 28 06.9751	53	+1 49 28.6338	58	+1 11 25.4188
48	+2 27 31.8487	54	+1 48 53.5074	59	+1 10 50.2924
49	+2 26 56.7223	55	+1 48 18.3810	84 00	+1 10 15.1661
50	+2 26 21.5959				
		82 56	+1 47 43.2546	84 01	+1 09 40.0397
81 51	+2 25 46.4696	57	+1 47 08.1282	02	+1 09 04.9133
52	+2 25 11.3432	58	+1 46 33.0018	03	+1 08 29.7869
53	+2 24 36.2168	59	+1 45 57.8755	04	+1 07 54.6605
54	+2 24 01.0904	83 00	+1 45 22.7491	05	+1 07 19.5341
55	+2 23 25.9640				
		83 01	+1 44 47.6227	84 06	+1 06 44.4078
81 56	+2 22 50.8376	02	+1 44 12.4963	07	+1 06 09.2814
57	+2 22 15.7113	03	+1 43 37.3699	08	+1 05 34.1550
58	+2 21 40.5849	04	+1 43 02.2435	09	+1 04 59.0286
59	+2 21 05.4585	05	+1 42 27.1172	10	+1 04 23.9022
82 00	+2 20 30.3321				
		83 06	+1 41 51.9908	84 11	+1 03 48.7758
82 01	+2 19 55.2057	07	+1 41 16.8644	12	+1 03 13.6494
02	+2 19 20.0793	08	+1 40 41.7380	13	+1 02 38.5231
03	+2 18 44.9530	09	+1 40 06.6116	14	+1 02 03.3967
04	+2 18 09.8266	10	+1 39 31.4852	15	+1 01 28.2703
05	+2 17 34.7002				
		83 11	+1 38 56.3589	84 16	+1 00 53.1439
82 06	+2 16 59.5738	12	+1 38 21.2325	17	+1 00 18.0175
07	+2 16 24.4474	13	+1 37 46.1061	18	+0 59 42.8911
08	+2 15 49.3210	14	+1 37 10.9797	19	+0 59 07.7648
09	+2 15 14.1947	15	+1 36 35.8533	20	+0 58 32.6384
10	+2 14 39.0683				
		83 16	+1 36 00.7269	84 21	+0 57 57.5120
82 11	+2 14 03.9419	17	+1 35 25.6006	22	+0 57 22.3856
12	+2 13 28.8155	18	+1 34 50.4742	23	+0 56 47.2592
13	+2 12 53.6891	19	+1 34 15.3478	24	+0 56 12.1328
14	+2 12 18.5627	20	+1 33 40.2214	25	+0 55 37.0065
15	+2 11 43.4364				
		83 21	+1 33 05.0950	84 26	+0 55 01.8801
82 16	+2 11 08.3100	22	+1 32 29.9686	27	+0 54 26.7537
17	+2 10 33.1836	23	+1 31 54.8423	28	+0 53 51.6273
18	+2 09 58.0572	24	+1 31 19.7159	29	+0 53 16.5009
19	+2 09 22.9308	25	+1 30 44.5895	30	+0 52 41.3745
20	+2 08 47.8044				
		83 26	+1 30 09.4631	84 31	+0 52 06.2482
82 21	+2 08 12.6780	27	+1 29 34.3367	32	+0 51 31.1218
22	+2 07 37.5517	28	+1 28 59.2103	33	+0 50 55.9954
23	+2 07 02.4253	29	+1 28 24.0840	34	+0 50 20.8690
24	+2 06 27.2989	30	+1 27 48.9576	35	+0 49 45.7426
25	+2 05 52.1725				
		83 31	+1 27 13.8312	84 36	+0 49 10.6162
82 26	+2 05 17.0461	32	+1 26 38.7048	37	+0 48 35.4899
27	+2 04 41.9197	33	+1 26 03.5784	38	+0 48 00.3635
28	+2 04 06.7934	34	+1 25 28.4520	39	+0 47 25.2371
29	+2 03 31.6670	35	+1 24 53.3256	40	+0 46 50.1107
30	+2 02 56.5406				
		83 36	+1 24 18.1993	84 41	+0 46 14.9843
82 31	+2 02 21.4142	37	+1 23 43.0729	42	+0 45 39.8579
32	+2 01 46.2878	38	+1 23 07.9465	43	+0 45 04.7316
33	+2 01 11.1614	39	+1 22 32.8201	44	+0 44 29.6052
34	+2 00 36.0351	40	+1 21 57.6937	45	+0 43 54.4788
35	+2 00 00.9087				

TABLE II—Continued

[1″ of longitude=0″.58543973 of θ

Longitude	θ	Longitude	θ	Longitude	θ
° ′	° ′ ″	° ′	° ′ ″	° ′	° ′ ″
84 46	+0 43 19.3524	85 51	+0 05 16.1375	86 56	−0 32 47.0775
47	+0 42 44.2260	52	+0 04 41.0111	57	−0 33 22.2039
48	+0 42 09.0996	53	+0 04 05.8847	58	−0 33 57.3303
49	+0 41 33.9732	54	+0 03 30.7583	59	−0 34 32.4566
50	+0 40 58.8469	55	+0 02 55.6319	87 00	−0 35 07.5830
84 51	+0 40 23.7205	85 56	+0 02 20.5055	87 01	−0 35 42.7094
52	+0 39 48.5941	57	+0 01 45.3792	02	−0 36 17.8358
53	+0 39 13.4677	58	+0 01 10.2528	03	−0 36 52.9622
54	+0 38 38.3413	59	+0 00 35.1264	04	−0 37 28.0886
55	+0 38 03.2149	86 00	0 00 00.0000	05	−0 38 03.2149
84 56	+0 37 28.0886	86 01	−0 00 35.1264	87 06	−0 38 38.3413
57	+0 36 52.9622	02	−0 01 10.2528	07	−0 39 13.4677
58	+0 36 17.8358	03	−0 01 45.3792	08	−0 39 48.5941
59	+0 35 42.7094	04	−0 02 20.5055	09	−0 40 23.7205
85 00	+0 35 07.5830	05	−0 02 55.6319	10	−0 40 58.8469
85 01	+0 34 32.4566	86 06	−0 03 30.7583	87 11	−0 41 33.9732
02	+0 33 57.3303	07	−0 04 05.8847	12	−0 42 09.0996
03	+0 33 22.2039	08	−0 04 41.0111	13	−0 42 44.2260
04	+0 32 47.0775	09	−0 05 16.1375	14	−0 43 19.3524
05	+0 32 11.9511	10	−0 05 51.2638	15	−0 43 54.4788
85 06	+0 31 36.8247	86 11	−0 06 26.3902	87 16	−0 44 29.6052
07	+0 31 01.6983	12	−0 07 01.5166	17	−0 45 04.7316
08	+0 30 26.5720	13	−0 07 36.6430	18	−0 45 39.8579
09	+0 29 51.4456	14	−0 08 11.7694	19	−0 46 14.9843
10	+0 29 16.3192	15	−0 08 46.8958	20	−0 46 50.1107
85 11	+0 28 41.1928	86 16	−0 09 22.0221	87 21	−0 47 25.2371
12	+0 28 06.0664	17	−0 09 57.1485	22	−0 48 00.3635
13	+0 27 30.9400	18	−0 10 32.2749	23	−0 48 35.4899
14	+0 26 55.8137	19	−0 11 07.4013	24	−0 49 10.6162
15	+0 26 20.6873	20	−0 11 42.5277	25	−0 49 45.7426
85 16	+0 25 45.5609	86 21	−0 12 17.6541	87 26	−0 50 20.8690
17	+0 25 10.4345	22	−0 12 52.7804	27	−0 50 55.9954
18	+0 24 35.3081	23	−0 13 27.9068	28	−0 51 31.1218
19	+0 24 00.1817	24	−0 14 03.0332	29	−0 52 06.2482
20	+0 23 25.0554	25	−0 14 38.1596	30	−0 52 41.3745
85 21	+0 22 49.9290	86 26	−0 15 13.2860	87 31	−0 53 16.5009
22	+0 22 14.8026	27	−0 15 48.4124	32	−0 53 51.6273
23	+0 21 39.6762	28	−0 16 23.5387	33	−0 54 26.7537
24	+0 21 04.5498	29	−0 16 58.6651	34	−0 55 01.8801
25	+0 20 29.4234	30	−0 17 33.7915	35	−0 55 37.0065
85 26	+0 19 54.2970	86 31	−0 18 08.9179	87 36	−0 56 12.1328
27	+0 19 19.1707	32	−0 18 44.0443	37	−0 56 47.2592
28	+0 18 44.0443	33	−0 19 19.1707	38	−0 57 22.3856
29	+0 18 08.9179	34	−0 19 54.2970	39	−0 57 57.5120
30	+0 17 33.7915	35	−0 20 29.4234	40	−0 58 32.6384
85 31	+0 16 58.6651	86 36	−0 21 04.5498	87 41	−0 59 07.7648
32	+0 16 23.5387	37	−0 21 39.6762	42	−0 59 42.8911
33	+0 15 48.4124	38	−0 22 14.8026	43	−1 00 18.0175
34	+0 15 13.2860	39	−0 22 49.9290	44	−1 00 53.1439
35	+0 14 38.1596	40	−0 23 25.0554	45	−1 01 28.2703
85 36	+0 14 03.0332	86 41	−0 24 00.1817	87 46	−1 02 03.3967
37	+0 13 27.9068	42	−0 24 35.3081	47	−1 02 38.5231
38	+0 12 52.7804	43	−0 25 10.4345	48	−1 03 13.6494
39	+0 12 17.6541	44	−0 25 45.5609	49	−1 03 48.7758
40	+0 11 42.5277	45	−0 26 20.6873	50	−1 04 23.9022
85 41	+0 11 07.4013	86 46	−0 26 55.8137	87 51	−1 04 59.0286
42	+0 10 32.2749	47	−0 27 30.9400	52	−1 05 34.1550
43	+0 09 57.1485	48	−0 28 06.0664	53	−1 06 09.2814
44	+0 09 22.0221	49	−0 28 41.1928	54	−1 06 44.4078
45	+0 08 46.8958	50	−0 29 16.3192	55	−1 07 19.5341
85 46	+0 08 11.7694	86 51	−0 29 51.4456	87 56	−1 07 54.6605
47	+0 07 36.6430	52	−0 30 26.5720	57	−1 08 29.7869
48	+0 07 01.5166	53	−0 31 01.6983	58	−1 09 04.9133
49	+0 06 26.3902	54	−0 31 36.8247	59	−1 09 40.0397
50	+0 05 51.2638	55	−0 32 11.9511	88 00	−1 10 15.1661

TABLE II—Continued

[1″ of longitude=0″.58543973 of θ]

Longitude	θ	Longitude	θ	Longitude	θ
° ′	° ′ ″	° ′	° ′ ″	° ′	° ′ ″
88 01	−1 10 50.2924	88 51	−1 40 06.6116	89 41	−2 09 22.9308
02	−1 11 25.4188	52	−1 40 41.7380	42	−2 09 58.0572
03	−1 12 00.5452	53	−1 41 16.8644	43	−2 10 33.1836
04	−1 12 35.6716	54	−1 41 51.9908	44	−2 11 08.3100
05	−1 13 10.7980	55	−1 42 27.1172	45	−2 11 43.4364
88 06	−1 13 45.9244	88 56	−1 43 02.2435	89 46	−2 12 18.5627
07	−1 14 21.0507	57	−1 43 37.3699	47	−2 12 53.6891
08	−1 14 56.1771	58	−1 44 12.4963	48	−2 13 28.8155
09	−1 15 31.3035	59	−1 44 47.6227	49	−2 14 03.9419
10	−1 16 06.4299	89 00	−1 45 22.7491	50	−2 14 39.0683
88 11	−1 16 41.5563	89 01	−1 45 57.8755	89 51	−2 15 14.1947
12	−1 17 16.6827	02	−1 46 33.0018	52	−2 15 49.3210
13	−1 17 51.8090	03	−1 47 08.1282	53	−2 16 24.4474
14	−1 18 26.9354	04	−1 47 43.2546	54	−2 16 59.5738
15	−1 19 02.0618	05	−1 48 18.3810	55	−2 17 34.7002
88 16	−1 19 37.1882	89 06	−1 48 53.5074	89 56	−2 18 09.8266
17	−1 20 12.3146	07	−1 49 28.6338	57	−2 18 44.9530
18	−1 20 47.4410	08	−1 50 03.7602	58	−2 19 20.0793
19	−1 21 22.5673	09	−1 50 38.8865	59	−2 19 55.2057
20	−1 21 57.6937	10	−1 51 14.0129	90 00	−2 20 30.3321
88 21	−1 22 32.8201	89 11	−1 51 49.1393	90 01	−2 21 05.4585
22	−1 23 07.9465	12	−1 52 24.2657	02	−2 21 40.5849
23	−1 23 43.0729	13	−1 52 59.3921	03	−2 22 15.7113
24	−1 24 18.1993	14	−1 53 34.5185	04	−2 22 50.8376
25	−1 24 53.3256	15	−1 54 09.6448	05	−2 23 25.9640
88 26	−1 25 28.4520	89 16	−1 54 44.7712	90 06	−2 24 01.0904
27	−1 26 03.5784	17	−1 55 19.8976	07	−2 24 36.2168
28	−1 26 38.7048	18	−1 55 55.0240	08	−2 25 11.3432
29	−1 27 13.8312	19	−1 56 30.1504	09	−2 25 46.4696
30	−1 27 48.9576	20	−1 57 05.2768	10	−2 26 21.5959
88 31	−1 28 24.0840	89 21	−1 57 40.4031	90 11	−2 26 56.7223
32	−1 28 59.2103	22	−1 58 15.5295	12	−2 27 31.8487
33	−1 29 34.3367	23	−1 58 50.6559	13	−2 28 06.9751
34	−1 30 09.4631	24	−1 59 25.7823	14	−2 28 42.1015
35	−1 30 44.5895	25	−2 00 00.9087	15	−2 29 17.2279
88 36	−1 31 19.7159	89 26	−2 00 36.0351	90 16	−2 29 52.3542
37	−1 31 54.8423	27	−2 01 11.1614	17	−2 30 27.4806
38	−1 32 29.9686	28	−2 01 46.2878	18	−2 31 02.6070
39	−1 33 05.0950	29	−2 02 21.4142	19	−2 31 37.7334
40	−1 33 40.2214	30	−2 02 56.5406	20	−2 32 12.8598
88 41	−1 34 15.3478	89 31	−2 03 31.6670	90 21	−2 32 47.9862
42	−1 34 50.4742	32	−2 04 06.7934	22	−2 33 23.1126
43	−1 35 25.6006	33	−2 04 41.9197	23	−2 33 58.2389
44	−1 36 00.7269	34	−2 05 17.0461	24	−2 34 33.3653
45	−1 36 35.8533	35	−2 05 52.1725	25	−2 35 08.4917
88 46	−1 37 10.9797	89 36	−2 06 27.2989	90 26	−2 35 43.6181
47	−1 37 46.1061	37	−2 07 02.4253	27	−2 36 18.7445
48	−1 38 21.2325	38	−2 07 37.5517	28	−2 36 53.8709
49	−1 38 56.3589	39	−2 08 12.6780	29	−2 37 28.9972
50	−1 39 31.4852	40	−2 08 47.8044	30	−2 38 04.1236

$l = 0.5854397296$
$\log l = 9.7674821915 - 10$
$\log K = 7.6320703805$

$$\text{Geodetic azimuth} - \text{grid azimuth} = +\theta - \frac{x_2 - x_1}{2\rho_0^2 \sin 1''}\left(y_1 - y_0 + \frac{y_2 - y_1}{3}\right)$$

$$y_0 = +524{,}918.82 \textit{ feet}$$

$$\log\left(\frac{1}{2\rho_0^2 \sin 1''}\right) = 0.3729619 - 10$$

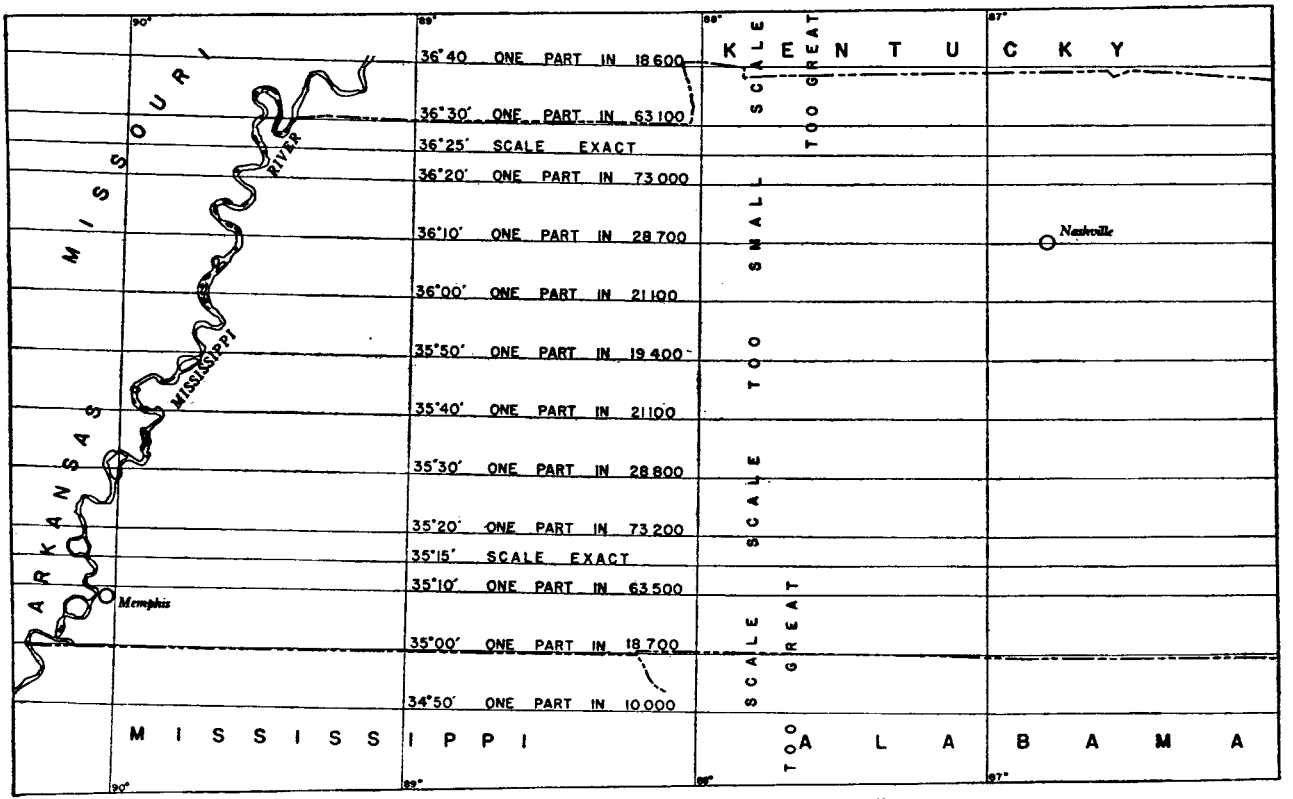

FIGURE 2.—Map of western Tennessee with grid system outline.

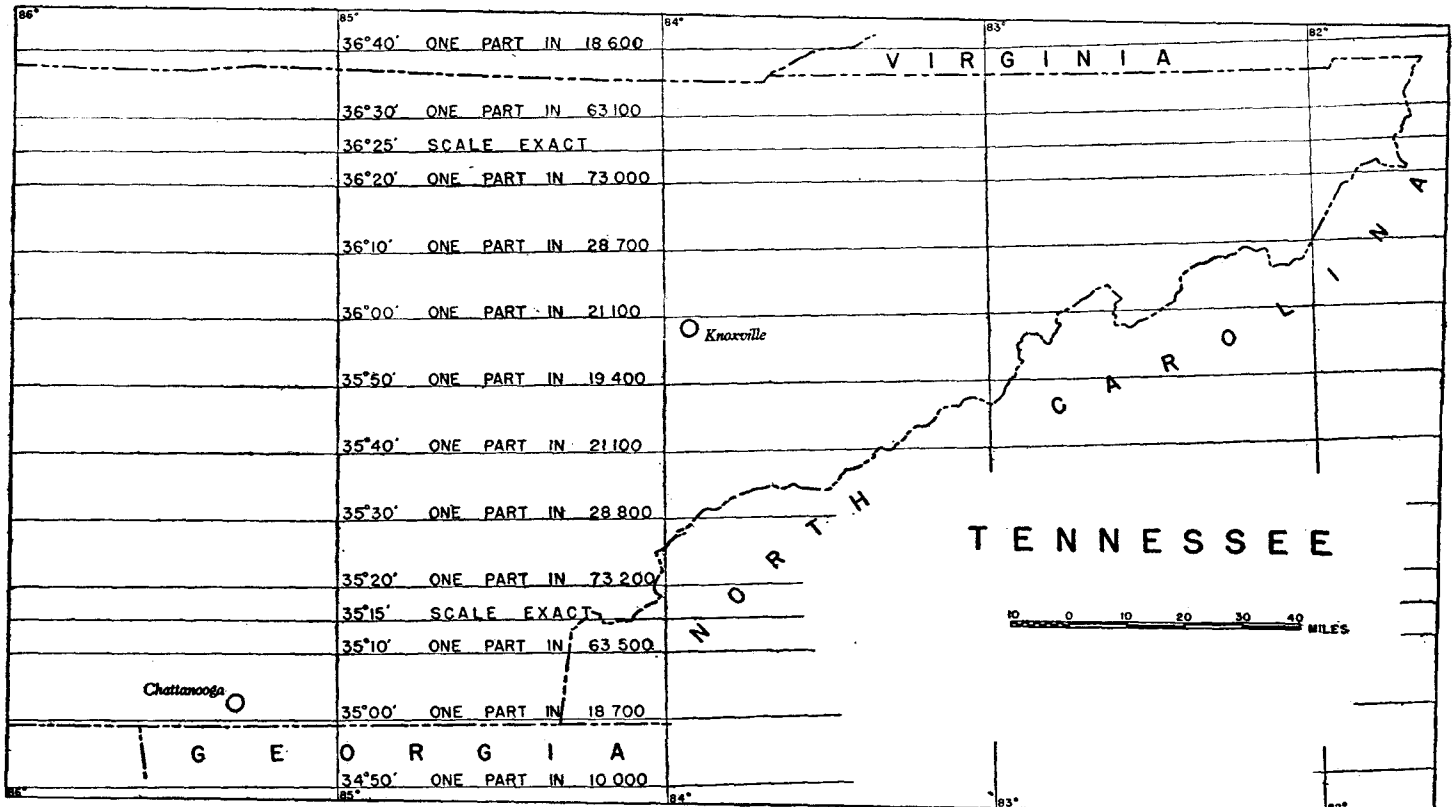

FIGURE 3.—Map of eastern Tennessee with grid system outline.

ELEVATIONS

The elevations given in the following tables are referred to mean sea level. The stations are divided into three classes: First, those fixed by direct connection with sea level, the elevations of which are subject to a probable error of ±0.1 meter; second, the stations in the main scheme fixed by reciprocal measures of vertical angles and subject to probable errors varying from ±0.2 to ±1.7 meters; and, third, the intersection stations, the elevations of which are fixed by measurement of vertical angles which are not reciprocal (the station not being occupied). The probable errors of these last elevations may be as great as ±3 meters.

Since recent adjustments have changed the elevations of bench marks in Tennessee by slight amounts, the elevations of the class 1 stations, as given in the following table, do not agree exactly with the latest adopted elevations of these points. The differences are small, however, and it did not seem advisable to readjust the trigonometric elevations to eliminate these discrepancies, especially as the probable errors of the class 2 and class 3 elevations are several times as large as any changes that would be made by the readjustment.

Table of elevations

Station	Point to which elevation refers	Elevation	
		Meters	Feet
Class 1			
P. B. M. Memphis (U. S. E.) [1]	Station mark	83.468	273.845
Melton [1]	do	413.205	1,355.657
Wayne [1]	do	292.344	959.132
Elora	do	282.102	925.530
P. B. M. Vance Senior (M. R. C. & U. S. E.) (Ark.).	do	66.998	219.81
P. B. M. 2/3 (M. R. C. & U. S. E.) (Ark.).	do	65.687	215.51
Class 2			
Strickland (Miss.)	do	187.3	615
Crum (Miss.)	do	220.6	724
Ripley (Miss.)	do	227.2	745
Cypress	do	185.8	610
Camphill (Miss.)	do	218.8	718
Malone (Miss.)	do	235.5	773
Porter	do	193.8	636
Hickory	do	209.4	687
Gordon (Fayette County)	do	204.6	671
Ebenezer	do	177.4	582
Jackson (Fayette County)	do	166.4	546
Gillespie	do	155.1	509
Church	do	147.9	485
Crenshaw (Miss.)	do	152.4	500
Morris	do	137.0	449
Martin (Shelby County)	do	120.9	397
Capleville southeast base (Miss.)	do	128.5	422
Capleville northwest base	do	120.8	396
Holmes (Miss.)	do	123.9	406
White	do	106.4	349
Exchange	do	156.1	512
Weaver	do	102.3	336
B. M. Hopefield (M. R. C. & U. S. E.) (Ark.).	do	67.3	221
Hopefield (Ark.)	do	66.5	218
Hopefield south base (Ark.)	do	66.1	217
Bean	do	922.3	3,026
Harvey	do	729.2	2,392
Roy	do	479.5	1,573
Owen	do	377.1	1,237
Cockspur	do	822.7	2,699

See footnote at end of table.

Table of elevations—Continued.

Station	Point to which elevation refers	Elevation	
		Meters	Feet
Class 2—Continued			
Brushy	Station mark	984.2	3,229
House Mountain	do	644.8	2,115
Luper	do	832.4	2,731
Hinch Mountain	do	932.6	3,060
Cross	do	1,079.0	3,540
English	do	1,104.9	3,625
Clinch	do	709.3	2,327
McLean	do	889.6	2,919
Short	do	814.2	2,671
White Rock (Va.-Ky.)	do	1,070.0	3,510
King (Ky.)	do	571.8	1,876
Class 3			
Grassy 2	do	1,129.3	3,705
Poe	do	569.5	1,868
Benton, tree	Ground	801.2	2,629
Chilhowee 2, tree (U. S. G. S.)	Ground at pine tree	847.7	2,781
Hangover, tree (U. S. G. S.)	Ground at tree	1,601.7	5,255
Copper Ridge	Station mark	386.8	1,269
Black	do	867.7	2,847
Guyot (U. S. G. S.)	Center of highest point, ground.	2,030.3	6,661
Big Fodderstack	Very sharp top	1,334.9	4,380
Knoxville, college cupola	College cupola	329.6	1,081
Chestnut	Station mark	611.2	2,005
Walker (Putnam County)	do	610.9	2,004
Mount Lore	do	513.0	1,683
Short Mountains	do	636.0	2,087
Apple	do	337.0	1,106
Hall	do	331.0	1,086
Jennings	do	376.4	1,235
Duren	do	320.0	1,050
Pilot	do	369.5	1,212
Seay	do	300.4	986
Lebanon north base	do	182.3	598
Lebanon south base	do	224.8	738
Taylor	do	274.5	901
Bennett (Rutherford-Williamson Counties).	do	340.4	1,117
Rogers (Va.)	do	1,746.0	5,728
Roan High Bluff (N. C.)	do	1,913.0	6,276

[1] Elevations determined by precise leveling and adjusted.

DESCRIPTIONS OF TRIANGULATION STATIONS

The following descriptions of stations may be conveniently consulted by reference to the illustrations at the end of this publication or to the index. Geodetic azimuths are given in the descriptions and are reckoned continuously from true south around by west to 360°; south being 0°, west 90°, north 180°, and east 270°. They should not be confused with the grid azimuths given in the tables on pages 102 to 140. Where magnetic azimuths are given they are indicated as such. Wherever the name of a point is printed in *italics* in the body of the descriptions its position may be found in the tables.

In general, except where the contrary is specifically stated, the surface and underground marks are not in contact, so that a disturbance of the surface mark will not necessarily affect the underground mark. The underground mark should be resorted to only in cases where there is evidence that the surface mark has been disturbed.

The name and dates given in each description immediately after the county refer to the chief of party by whom the station was established, the date of the establishment of the station, and the date when the station was last recovered.

Any person who finds that one of the stations herein described has been disturbed or that the description no longer fits the facts is requested to send such information to the Director, Coast and Geodetic Survey, Washington, D. C.

MARKING OF STATIONS

The standard station and reference marks referred to in the following descriptions and notes consist of a disk and shank of bronze cast in one piece, as shown in figure 4. The disk of the station mark is 90 millimeters in diameter, with a hole at the center surrounded by a 20-millimeter, equilateral triangle, and has the following inscribed legend: "U. S. Coast and Geodetic Survey Triangulation Station. For information write to the Superintendent. Washington, D. C. $250 fine or imprisonment for disturbing this mark." On the marks made since March 1921 the word "Director" replaces the word "Superintendent" in the inscription. The shank is 25 millimeters in diameter and 80 millimeters long, with a slit at the lower end into which a wedge is inserted so that when it is driven into a drill hole in the rock it will bulge at the bottom and hold the mark firmly in place. Present practice is to spread the split end of the shank, and set it in a drill hole with cement. The marks used between 1915 and 1920 have grooves cut around the shank instead of the slit.

The standard disk reference mark, shown in figure 4, is the same size and shape as the station mark, with an arrow on the top in place of the triangle, which, when properly set, points to the station. The legend is the same, except the words "reference mark" take the place of the words "triangulation station."

GENERAL NOTES IN REGARD TO STATION MARKS

The following notes on the marking of stations are made as general as possible in order that it may not be necessary in the field to describe small and unimportant variations. The standard notes on the marking of stations which are given below serve as a guide to the field observer in selecting the best type of mark for each particular station. They are also useful to the observer in writing his descriptions, as he need not describe the marking used at a station, but simply give the numbers of the standard notes which describe the station, underground, and reference marks.

For the convenience of the reader a brief description of the marking is given in each of the following descriptions of stations. In addition, where the marking of a station is described in detail in one of the following notes, the number of the note is also given:

Surface marks

Note 1.—A standard disk triangulation station mark set in the top of (*a*) a square block or post of concrete, (*b*) a concrete cylinder, (*c*) an irregular mass of concrete.

Note 2.—A standard disk triangulation station mark wedged in a drill hole in outcropping bedrock (*a*) and surrounded by a triangle chiseled in the rock, (*b*) and surrounded by a circle chiseled in the rock, (*c*) at the intersection of two lines chiseled in the rock.

Note 3.—A standard disk triangulation station mark set in concrete in a depression in outcropping bedrock.

Note 4.—A standard disk triangulation station mark wedged in a drill hole in a boulder.

Note 5.—A standard disk triangulation station mark set in concrete in a depression in a boulder.

Note 6.—A standard disk triangulation station mark set in concrete at the center of the top of a tile (*a*) which is embedded in the ground, (*b*) which is surrounded by a mass of concrete, (*c*) which is fastened by means of concrete to the upper end of a long wooden pile driven into the marsh, (*d*) which is set in a block of concrete and projects from 12 to 20 inches above the block.

Underground marks

Note 7.—A block of concrete 3 feet below the ground containing at the center of its upper surface (*a*) a standard disk triangulation station mark, (*b*) a copper bolt projecting slightly above the concrete, (*c*) an iron nail with the point projecting above the concrete, (*d*) a glass bottle with the neck projecting a little above the concrete, (*e*) an earthenware jug with the mouth projecting a little above the concrete.

Note 8.—In bedrock (*a*) a standard disk triangulation station mark wedged in a drill hole, (*b*) a standard disk triangulation station mark set in concrete in a depression, (*c*) a copper bolt set in cement in a drill hole or depression, (*d*) an iron spike set point up in cement in a drill hole or depression.

Note 9.—In a boulder 3 feet below the ground (*a*) a standard disk triangulation station mark wedged in a drill hole, (*b*) a standard disk triangulation station mark set in concrete in a depression, (*c*) a copper bolt set with cement in a drill hole or depression, (*d*) an iron spike set with cement in a drill hole or depression.

Note 10.—Embedded in earth 3 feet below the surface of the ground (*a*) a bottle in an upright position, (*b*) an earthenware jug in an upright position, (*c*) a brick in a horizontal position with a drill hole in its upper surface.

Reference marks

Note 11.—A standard disk reference mark with the arrow pointing toward the station set at the center of the top of (*a*) a square block or post of concrete, (*b*) a concrete cylinder, (*c*) an irregular mass of concrete.

Note 12.—A standard disk reference mark with the arrow pointing toward the station (*a*) wedged in a drill hole in outcropping bedrock, (*b*) set in concrete in a depression in outcropping bedrock, (*c*) wedged in a drill hole in a boulder, (*d*) set in concrete in a depression in a boulder.

Note 13.—A standard disk reference mark with the arrow pointing toward the station, set in concrete at the center of the top of a tile (*a*) which is embedded in the ground, (*b*) which is surrounded by a mass of concrete, (*c*) which is fastened by means of concrete to the upper end of a long wooden pile driven into the marsh, (*d*) which is set in a block of concrete and projects from 12 to 20 inches above the block.

Witness marks

Note 14.—A conical mound of earth surrounded by a circular trench.

Note 15.—A tree marked with (*a*) a triangular blaze with a nail at the center of each apex of the triangle, (*b*) a square blaze with a nail at the center and each corner of the square, (*c*) a blaze with a standard disk reference mark set at its center into the tree.

ADDITIONAL NOTE ON THE MARKING OF STATIONS

Station mark

Note 16.—The standard survey mark of the Mississippi River Commission consisting of a steel pipe 4 inches in diameter and 4 feet long, resting on a vitrified tile 18 inches square and 4 inches thick. The bottom end of the pipe is split for several inches and spread out to about 10 inches in diameter. A brass cap is riveted on top of pipe. The cap is marked "Mississippi River Commission. $250 fine for disturbing this mark"; on each side of a small hole in the center are the letters "U. S."; below this are the words "Latitude, Longitude" and "Elevation above sea", with a blank space left for cutting in the data. In the tile is leaded a copper bolt surrounded with the inscription "Mississippi River Commission, U. S." in sunk letters.

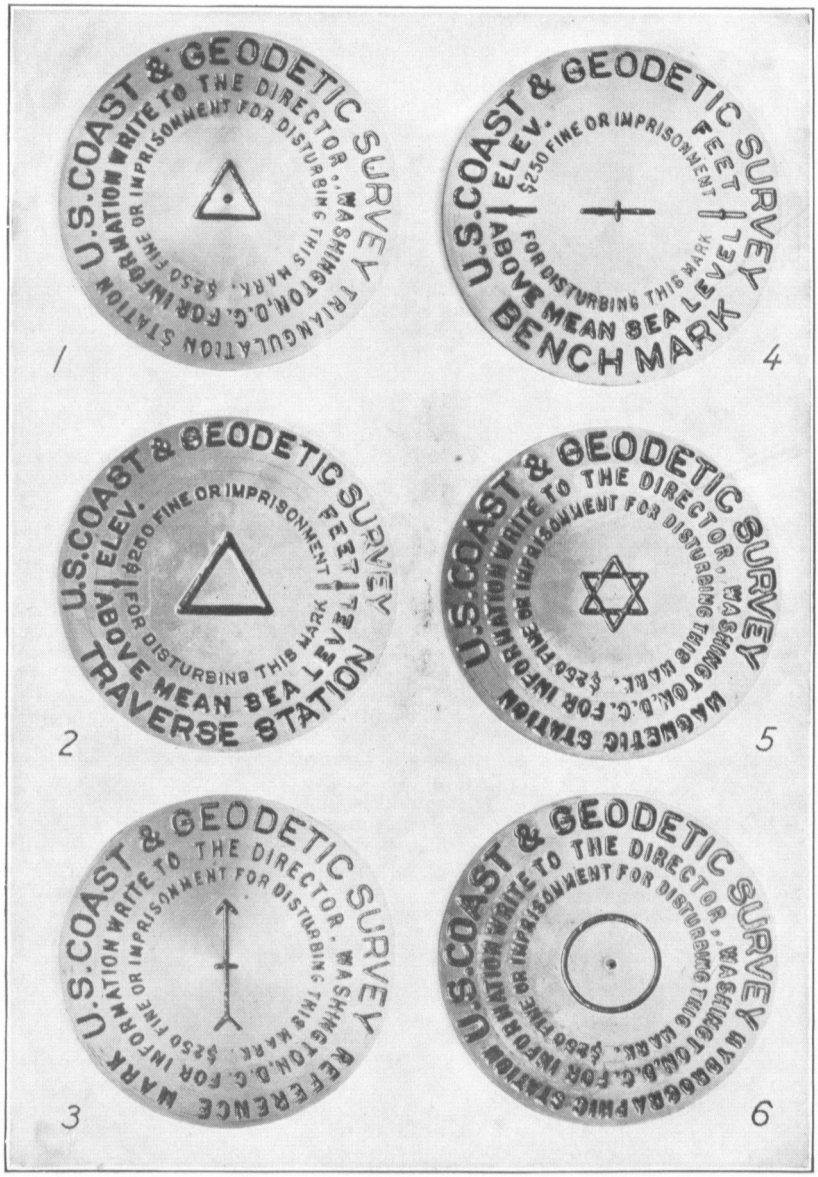

FIGURE 4.—STANDARD MARKS OF THE U. S. COAST AND GEODETIC SURVEY.

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

TENNESSEE LOOP

Principal points

Cohutta (Fannin County, Ga., A. H. Buchanan, 1888; 1934).—On summit of southern and highest peak of Cowpen Mountain, about 7¼ miles south of Tennessee State line. To reach from Parkesville, Tenn., go west on U. S. Route 64 (Tennessee Route 74) to fork at Ocoee Inn, turn left and go 1.6 miles, cross river bridge, continue 0.4 mile, turn left at gravel T-road, and keep on this main road 10 miles to where it forms T-junction with another road, turn right and continue 3.7 miles, cross logging railroad and river bridge, go 0.7 mile, ford small creek, turn sharp to left up steep grade on road known as "Government Road", go 8.3 miles to local top, continue 2.5 miles to point easily distinguished as highest point and marked by triangular blazes in several trees, thence on foot up broad trail on ridge to right about 300 yards to station site. When established this station was intended to re-mark the position of a lost second-order station called "Cowpen", established by F. P. Webber in 1874. Original surface mark for *Cohutta* was drill hole 2 inches deep and north-and-south and east-and-west cross grooves in top of very large and heavy stone flush with surface of ground. Underground mark is nail and cross grooves in plaster of paris which fills drill hole in large stone. Two reference marks were copper bolts driven into ledge for reference marks for old station Cowpen. One was 30½ feet from station in azimuth 19°36′. Other was 47¾ feet from station in azimuth 315°11′. Third reference mark is drill hole in heavy rock set 37¼ feet from station in azimuth 167°29′. In 1933 standard station disk stamped "1874–1888–1933" was set in surface mark, and standard reference disks were set in all three reference marks.

High Point 2 (U. S. G. S.) (Walker County, Ga., A. H. Buchanan, 1888; 1934).—About 15 miles southwest of Chattanooga, 13 miles north-northwest of LaFayette, on summit known as "High Point", on rocky backbone of long ridge on east side of Lookout Mountain, ½ mile south of sharp rocky prominence on top of ridge, ¼ mile south of north end of rocky parapet on longitudinal center of ridge, 120 yards north of south end of parapet, 26 feet west of east edge of parapet, and 18 yards southwest of sharp outcropping face of rock cliff to east. To reach from intersection of Lookout Mountain Scenic Highway and Bragg Avenue North in town of Lookout Point, go south on Scenic Highway 1.85 miles and continue on Durham Road 6.05 miles to settlement of Hinkle, turn east across railroad tracks and continue 1.35 miles to fork, turn left onto dim road, go 2 miles to sawmill, turn right, continue on logging road south and east along cross ridge to its end at foot of main ridge, proceed up ridge about ¼ mile to top, thence south along top 0.3 mile to highest point and station site. Original station mark was drill hole 1 inch in diameter and 1½ inches deep in rock. In 1933 mark was found destroyed. Its position was reproduced from measurements from reference marks nos. 1 and 2, and its was re-marked with standard station disk in bedrock, note 2. Three original reference marks were drill holes in rocks with arrow heads pointing toward station. In 1933 standard reference disks were set in nos. 1 and 2, note 12a. No. 1 is in flat rock outcrop, 6.532 meters (21.43 feet) from station in azimuth 176°39′. No. 2 is on east edge of parapet, in center of large detached rock fragment, and 9.618 meters (31.56 feet) from station in azimuth 257°28′. Third original reference mark, described as being 25.66 feet from station in azimuth 52°24′, was reported destroyed in 1933. A copper bolt driven in ledge with cross on top, used to mark station called "High Point" established in 1875, was recovered in 1889, 3.49 meters (11.5 feet) from station in azimuth 43°27′. Azimuth mark, established in 1934, is standard reference disk in top of large flat boulder, note 12c, about 20 feet below summit, on sharp, rocky prominence on top of ridge, and about 0.5 mile from station in azimuth 199°32′ 42″. Following azimuths are from station: *Lookout Mountain Hotel, spire,* distant 7.1 miles, 188°04′56″; and Rossville, white brick chimney, 266°35′05″.

Bean (Polk County, A. H. Buchanan, 1887; 1934).—About 5 miles east of Benton, about 7 miles south of Cog Hill, on highest and western point of Beans Mountain known as "Oswald Dome", 16.17 feet northwest of north anchor bolt in northwest column footing of 80-foot Forest Service fire tower, and 29.5 feet north-northwest of north anchor bolt in southwest column footing of same. To reach from courthouse in Benton, go 1.4 miles east on Copper Hill Pike, turn left (southeast) at bridge over second creek from Benton, go 2.8 miles to top of ridge, turn left (north) and follow 5.2 miles along top of ridge, turn left (north) at U-turn and go 1.1 miles to station site. Original surface mark was intersection of

For notes in regard to marking of stations see pp. 151–152.

east-and-west and north-and-south grooves with letters "U. S. C. S." in top of very hard sandstone post 3¼ feet by 11 inches by 8 inches projecting 4 inches above ground. Underground mark is center of 2½-inch mouth of stone fruit jar 8 inches long and 5¼ inches in diameter filled with ashes. In 1933 stone surface mark was reset with disk dated "1887–1933". Underground mark was not disturbed. Reference marks are drill holes in rocks in their natural positions at following distances and directions from station: 44 feet 10 inches, N. 45½° E.; 20 feet 5 inches, S. 5° W.; and 15 feet 2 inches, N. 54½° W. In 1933 the first two reference marks mentioned were recovered, re-marked with standard disks, and redescribed. Reference mark no. 1 is 11 feet north of wire fence, 39 feet north of northeast column footing of fire tower, 42.83 feet north-northeast of north anchor bolt in northwest column footing of fire tower, and 13.672 meters (44.86 feet) from station in azimuth 223°22′. Reference mark no. 2 is 20.35 feet southwest of north anchor bolt in northwest column footing of fire tower, 15.67 feet northwest of north anchor bolt in southwest column footing of same, and 6.180 meters (20.28) feet from station in azimuth 2°03′.

Harvey (Sequatchie County, A. H. Buchanan, 1887; 1934).—About 4¾ miles east-northeast of Dunlap, 2½ miles north of Henson Gap, on highest point of high peak on west side of Walden Ridge. To reach from Dunlap, go south on State Route 28 for 2.1 miles (or 0.25 mile past Sequatchie River), turn left onto gravel road at sharp turn to right in pavement, follow main gravel road 1.65 miles (or 0.20 mile past white church to right), turn right onto gravel road through Henson Gap at 2-story frame house, go 3.6 miles (or 0.50 mile past gravel pit on left), turn left onto newly graded T-road, go 0.25 mile, keep to left on new road at Lewis Chapel School, follow new road 2.0 miles, turn onto left fork up hill just after passing home of Jimmie Johnson on right, go 0.35 mile and turn left onto woods road along rail fence on north side of field, go 0.3 mile and take right fork at blazed tree on left, go 0.5 mile, take left fork at old partly torn down cabin on right, go 0.15 mile and take left fork at blazed tree on left, go 0.85 mile to blazed oak on left. Station is about ½ mile along dim road through trees at top of peak, 21.2 feet east of 12-inch pine with triangular blaze and 43 feet north of dead tree with 4 trunks. Surface mark is drill hole 1 inch deep at intersection of north-south and east-west grooves cut in sandstone post 3½ feet long and projecting about 4 inches above ground. Underground mark is center of top of 9-inch-high fruit jar, about 4 feet below surface of ground. Four reference marks are drill holes in sandstone posts similar to surface mark, placed 6 feet north, east, south, and west from station, and projecting about 4 inches above ground. In 1934 station and reference marks were recovered in good condition. Station was re-marked, and two reference marks and an azimuth mark established as follows: Surface mark is standard disk station mark in 6- by 8-inch sandstone post (original mark), concrete capped. Old reference marks are located as follows: North 6 feet, east 6.03 feet, south 6 feet, and west 6.03 feet from station. New reference and azimuth marks are standard reference disks in concrete. No. 1, note 11a, is on down slope, 17 feet west of dead triple tree, and 93.56 feet from station in azimuth 243°47′. No. 2, note 11b, is on down slope, 13.3 feet west of dead twin tree, and 92.9 feet from station in azimuth 189°33′. Azimuth mark, note 11b, is on adjacent knoll, 31.3 feet west-northwest of 7-inch pine, 12 feet south of 7-inch hickory, and about 150 yards from station in azimuth 62°56′23″. Later in year 1934, when station was reoccupied, old reference marks approximately 6 feet north, east, south, and west were not recovered.

Roy (Monroe County, A. H. Buchanan, 1887; 1934).—About 5½ miles a little east of south from Sweetwater, on summit of sharp knob known locally as "Roy's Knob" and which is one of range of knobs called "Fork Creek Knobs", at heads of Fork and Oostanaula Creeks. To reach from Sweetwater, go east ½ mile on State Route 68 to point where it turns sharply to left and gravel road continues straight ahead, follow gravel road 4.8 miles to gravel road on right and home of L. D. Sands, turn right onto gravel road, go 0.55 mile, turn left onto road leading to home of S. R. Roy and go through field about 1 mile to base of most prominent knob in vicinity at end of truck travel. Thence walk about ¼ mile directly to summit of knob and station, 16.8 feet east-northeast of 12-inch poplar tree with triangular blaze on north side. Surface mark is marble post 8 inches square and 2¾ feet long set in cement and projecting 6 inches above ground with north-and-south and east-and-west grooves and letters "U.S.C.S." carved on top. Underground mark is center of mouth of ink jug filled with and set in cement in hole cut in soft rock. In 1934 standard station disk was cemented in drill hole at intersection of cross on surface mark, and two reference marks and an azimuth mark were estab-

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lished. Reference mark no. 1 (probably standard reference disk) is in 1- by 2-foot flat, red sandstone rock, about flush with surface of ground on upper side and protruding about 4 inches on downhill side, 34.41 feet from station in azimuth 164°49′. No. 2 (probably standard reference disk) is in 2-foot square red sandstone rock which is flush with ground on upper side and protrudes about 1 foot on lower side, 69.85 feet from station in azimuth 297°58′. Azimuth mark is standard reference disk cemented in drill hole in east one of three old mill stones in creek bottom pasture just east of small spring house and north of Mr. Sand's home, about 20 feet south of small stream, 40 feet south of east-and-west gravel road, 120 feet west of north-and-south gravel road (these roads leading to station), and about 1 mile from station in azimuth 190°42′15″.

Hinch Mountain (Cumberland County, A. H. Buchanan, 1884; 1934).—About 13 miles northwest of Spring City, on high sharp point just east of head of Sequatchie Valley (formerly called Deadening, now Hinch Mountain), on land owned in 1934 by Mr. Robert Reed. To reach from courthouse at Crossville, go south 9.3 miles on State Route 28, turn left onto county road, and go 4.4 miles to property of Mr. Frank Jewett. Station site is approximately 1 mile south. Original station mark is intersection of north-south and east-west grooves with letters "U.S.G.S." cut in top of blue limestone post 14 inches square by 4½ feet long, projecting 4 inches above ground. In 1934 standard U. S. Geological Survey bench-mark disk stamped "Hinch 1934" was set in top of station mark.

Luper (Cumberland County, A. H. Buchanan, 1883; 1934).—About 15½ miles east of Crossville, 8½ miles northwest of Rockwood, 3¼ miles north of Waldensia, south of Mead Gap, and on Luper Mountain, a high point in Crab Orchard Range. To reach from Rockwood, follow U. S. Route 70 west 6.4 miles passing a 2-mile tangent, turn right onto gravel road, go 2.2 miles to Daysville, turn right, go 0.4 mile to schoolhouse, turn left, go 1.6 miles to the Roy Wright farm, turn right onto dirt road, and go 3.3 miles to top of ridge, thence follow trail on foot to station site. Mountain is horseshoe-shaped, opening southward. East prong has two points higher than the rest and separated by small pond. Station is about 110 meters (361 feet) N. 89° W. from pond and 35 meters (115 feet) back from edge of bluff on line to station *Hinch Mountain.* Two higher points are 100 meters (328 feet) north-northeast and 200 meters (656 feet) southeast from station. Southeast point is end of eastern side of horseshoe. Station mark is intersection of north-south and east-west grooves in cement cap over drill hole in large sand rock (3 feet through at ground line and 2½ feet high) *in situ,* with letters "U. S. G. S." cut in top. It is only rock of any size in immediate vicinity.

Melton (Roane County, A. H. Buchanan, 1884; 1934).—About 8½ miles north-northwest of Lenoir City, on highest point of Melton Hill, about 200 yards west of west edge of cultivated field, in thicket of small trees, 18 feet northwest of double beech tree. To reach from Wheat, follow main-traveled road north from C. N. McKinney's store 1.25 miles, turn east onto good stone road and go 5.6 miles, turn north around barn (0.2 mile before reaching Bougle's Ferry), continue 1.45 miles and turn west onto dim farm road (75 yards before reaching home of Bob Fritz), continue generally west on this dim road through woods 0.5 mile to cultivated field and skirt north edge of field through thicket about 1,500 feet to summit of hill and station site. Surface mark is drill hole at intersection of north-south and east-west grooves with letters "U. S. C. S." cut in top of heavy limestone post 3½ feet long by 1 foot thick by 1½ feet wide and projecting 4 inches above ground. Underground mark is center of mouth of glass pickle jar. In 1934 standard station disk was cemented in drill hole in original surface mark; two standard reference disks were set in concrete, note 11b; and an azimuth mark was established. Reference mark no. 1 is slightly down grade and 54.23 feet (slope distance) from station in azimuth 122°11′. No. 2 is along level slope of top and 72.34 feet from station in azimuth 51°08′. Azimuth mark is in northeast corner of cultivated field, at bend in farm road along north edge of field, about ¼ mile from station in azimuth 321°22′59″.

Cross (Anderson County, A. H. Buchanan, 1891; 1934).—About 7 miles south of Caryville, about 4 miles southwest of Coal Creek, about 3 miles northwest of Briceville, near Anderson and Campbell County line, on Cross Mountain, and in old field called "Vowell Field." To reach from junction of Briceville road and U. S. Route 25W at Coal Creek, go southwest 0.6 mile on Briceville road, turn right, go 0.2 mile, turn left at railroad crossing, go 100 yards, cross railroad tracks, and follow road up mountain. Car can be driven up Cross Mountain 4.2 miles. From here follow trail about 3 miles to mountain top

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and station site. Surface mark is drill hole at intersection of north-south and east-west grooves surrounded by letters "U. S. C. S." cut in top of sandstone, 15 inches square by 2¾ feet long with top projecting about 4 inches. Underground mark is center of mouth of ink jug, about 3 feet below surface of ground. Reference marks are drill holes and arrow heads in sandstones similar to surface mark, and are 2 meters (7 feet) north, east, south, and west from station.

Cockspur (Blount County, A. H. Buchanan, 1885; 1934).—About 2½ miles south of Yellow Sulphur, on high sharp point on Chilhowee Mountain, about ½ mile west of double power lines crossing same. To reach from post office in Maryville, go 6.0 miles southwest on State Route 33, turn left (southeast) onto State Route 115 (Calderwood road), go 4.1 miles to junction, turn left (northeast), go 2.2 miles, make U-turn to right (south), go 0.4 mile, cross Southern Railway tracks, go 1.7 miles to junction, turn right (southeast), go 2.6 miles to cross roads, turn left (east), go 0.7 mile to Alleghany Springs, and follow trail about 1½ miles up side of mountain to station site. Station is marked by drill hole ½ inch deep at intersection of north-and-south and east-and-west cross grooves in top of very hard Potsdam sandstone *in situ*. Reference marks are crosses cut on rocks. No. 1 is on large rock 39 feet 10 inches (slope distance) S. 85½° W. from station. No. 2 is on small rock 15 feet 7½ inches (slope distance) S. 1° W. No. 3 was on small rock 14 feet 9 inches, N. 88¼° E. In 1934 it was reported that top of rock bearing no. 3 had weathered so that cross had worn off.

Clinch (Union County, A. H. Buchanan, 1891; 1934).—About 3 miles northeast of Corryton, about 2 miles southeast of Luttrell, and about 2 miles northwest of Blaine, and on top of higher and more northerly of two points at southwestern terminus of Clinch Mountains. To reach from junction of Routes 11W and 92 in Rutledge, go south 12 miles on Route 11W to sign on left (east) "Leas Lake" (which is 1.7 miles north of Blaine on Route 11W), turn right (west) onto Leas Lake road and go 1 mile to dim T-road on left at triangle-blazed tree, turn left and follow narrow dirt road 0.35 mile to stream where road ends, thence on foot by path across stream and to left about 100 yards to spring, keep right-hand path here which bears immediately to left, continue 150 yards and take right fork up divide, proceed 1½ miles to waterfall, along most prominent path, to top of ridge. Station site can be seen about 700 yards distant directly west along top of ridge. Surface mark was drill hole at intersection of north-and-south and east-and-west grooves cut in large heavy stone set firmly in ground with top projecting just above surface. Three reference marks were drill doles in rocks *in situ* with arrows pointing toward station. No. 1 was 26 feet 8 inches from station in azimuth 316°35′; no. 2, 17 feet 4 inches, in azimuth 22°26′; and no. 3, 21 feet 9 inches, in azimuth 92°35′. In 1930 standard disks were set in drill holes of station surface mark and reference marks nos. 1 and 2. In 1934 reference mark ties were remeasured and described as follows: Reference mark no. 1 is standard disk in concrete in top of rock 4 feet by 3 feet projecting 8 inches above ground, on top of ridge, about same elevation as station, and 26.06 feet from station in azimuth 316°03′. No. 2 is standard disk in concrete in outcropping rock 2 feet by 3 feet, projecting 2½ feet above ground on lower side and 3 inches on upper side, on edge of cliff, 24.82 feet from reference mark no. 1, and 17.05 feet from station in azimuth 22°17′. Azimuth mark established in 1934 is standard reference disk in concrete in large outcropping rock about 2 feet by 8 feet projecting 4 feet above ground, on west end of same knob as station, 3 feet north-northeast of 12-inch pine tree, and 50 yards from station in azimuth 137°43′.

English (Cocke–Sevier–Jefferson Counties, A. H. Buchanan, 1891; 1934).—About 3 miles southwest of Carson Springs which is 7 miles southwest of Newport, on western boundary line of Cocke County, and on highest part of knob of English Mountain Range, known as "Pinnacle". To reach from Carson Springs, follow well-known fire-tower trail 4.6 miles to summit and fire tower of State Forestry Service. Station is 30 feet north of north leg of fire tower and 200 feet northwest of fire warden's cabin. Mark is drill hole at intersection of north-and-south and east-and-west grooves with letters "U. S. C. S." cut in rock *in situ*. Reference marks were drill holes 1½ inches deep, with arrows which point toward station, in rocks *in situ* on highest part of hill. No. 1 was 22 feet 1½ inches N. 16° E. from station. No. 2 was 15 feet 5 inches S. 72° E. from station. No. 3 was 13 feet 11 inches S. 32° E. from station. In 1930 standard disks were set in station mark and in reference marks nos. 1 and 2. No. 1 is 6.67 meters (21.9 feet) from station in azimuth 196°49′. No. 2 is 4.70 meters (15.4 feet) from station. In 1933 station was recovered, with disks gone from station mark and from reference mark no. 1.

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Missing disks were replaced and ties to reference marks nos. 1 and 2 were remeasured; azimuth from station to reference mark no. 1 being 196°54′, and to no. 2, 291°18′. In 1934 azimuth mark was established by setting standard reference disk in flat rock outcrop, note 12a, at base of 6-inch oak tree, 18 feet north of trail to summit, and 140 yards from station in azimuth 55°30′08″.

McLean (Claiborne County, A. H. Buchanan, 1892; 1934).—On Cumberland Mountains, about 17 miles southwest of Cumberland Gap, about 3 miles northeast of Wells Spring, about 3 miles west by north of Speedwell, and on McLean Rock which has precipitous bluff on south side and sloping timbered ground on north. To reach from intersection of Tennessee Avenue and Central Avenue in Lafollette, go northeast 14.3 miles on State Route 63 (Lafollette-Cumberland Gap road), turn north into lane and go about 1 mile to foot of mountain and end of auto travel, thence follow trail up mountain to station site. Original station mark was drill hole at intersection of north-south and east-west grooves surrounded by letters "U. S. C. S." cut in large flat rock. Reference marks were drill holes, in rock two inches deep, with arrowheads which pointed toward station. No. 1 is on edge of bluff, 9.54 meters (31.3 feet) from station in azimuth 328°57′. No. 2 is on edge of bluff, 44.24 feet from no. 1, and 11.38 meters (37.3 feet) from station in azimuth 49°36′. No. 3 is in large flat rock, 11.09 meters (36.4 feet) from station in azimuth 194°14′. In 1928 station was reported destroyed, but its location was redetermined from reference marks which were recovered intact. New station mark (1928) is standard station disk in bedrock, stamped "McLean 1892–1928", about 12 inches below surface of ground. In 1928 standard reference disks were set in original drill holes of reference marks. In 1934 it was reported that reference disks of nos. 1 and 2 had been cut out with chisel.

Short (Hawkins County, A. H. Buchanan, 1892; 1934).—About 10 miles west of Rogersville, about 3 miles a little east of north from Mooresburg, ¾ mile north of Galbraith Springs Hotel, and on Short Mountain which is easily identified as highest point in locality. To reach from Rogersville, go west on U. S. Route 11W about 11 miles, turn right onto gravel road at sign "Galbraith Springs", continue 0.75 mile to Galbraith Springs Hotel, thence on foot up well-defined ridge trail about 1 mile to top of ridge, turn right and go about 100 yards along ridge to station which is in center of wooded ridge, in cleared area, and about 75 feet south of northern extremity. Original surface mark was drill hole at intersection of north-south and east-west grooves with letters "U. S. C. S." cut in top of large undressed stone projecting 5 inches above ground. Underground mark is center of mouth of glass pickle jar, buried with top about 3 feet below surface of ground. In 1928 standard station disk was set in drill hole of surface mark and two standard reference disks were established. No. 1 is in bedrock, 51.32 meters (168.4 feet) from station in azimuth 240° 53′. No. 2 is in rock outcrop at edge of cliff and 26.88 meters (88.2 feet) from station in azimuth 180° 31′. In 1934 azimuth mark was established in boulder, note 12d, 1.2 miles south of Galbraith Springs Hotel sign, on property owned by J. L. Rogers and occupied by Roy Young, 50 feet west of center line of U. S. Route 11W at point where road makes sharp turn to southwest at small concrete bridge, 40 feet east of tenant house, 60 feet west of small stream, and about 2 miles from station in azimuth 357°38′28″.

White Rock (Harlin County, Ky.–Lee County, Va., A. H. Buchanan, 1893; 1934).—About 17 miles northeast of Cumberland Gap, about 3 miles north of Ewing, on Kentucky-Virginia boundary line, in Cumberland Mountains, and on mountain known as "Butt of White Rocks." To reach from Ewing, Va., go go north about 0.5 mile on dirt road that turns off main highway about 100 feet east of post office to home of J. H. Coty on right and end of truck travel. From here follow well-defined trail up hollow about 2 miles to top of ridge and thence to left about ¼ mile to station site. Original station mark was 1½-inch drill hole 2 inches deep at intersection of north-south and east-west grooves, surrounded by letters "U. S. C. S." cut in top of large rock which was in its natural position with top nearly level with ground. Three reference marks were drill holes, with arrows pointing toward station, cut in large rocks in natural positions. West one was 13 feet 11½ inches, N. 89°25′ W. from station; southeast one was 9 feet, S. 41°06′ E. from station; and south one was 30 feet 3 inches, S. 12°21′ W. from station. Station and reference marks were recovered in 1907 and again in 1928 in good condition. In 1928 standard station disk was set in station mark; standard reference disk was set in old south reference mark; and new reference disk was established in outcrop of bedrock, 100 by 25 feet rising about 6 feet

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above ground, 271.08 meters (889.4 feet) from station in azimuth 80°00′27″. Connections to old reference marks were remeasured and reported as follows: West one, 4.28 meters (14.0 feet) from station in azimuth 90°46′; southeast one, 2.72 meters (8.9 feet) from station in azimuth 301°25′; and south one (with new disk), 9.11 meters (29.9 feet) from station in azimuth 12°27′. In 1934 station and three reference marks were recovered, but reference mark established in 1928 which was 271.08 meters (889.4 feet) from station was not found. New azimuth mark was established in boulder projecting about 8 inches above surface of ground, slightly south of backbone of ridge, and about 300 yards from station in azimuth 79°34′47″.

King (Whitley County, Ky., A. H. Buchanan, 1892; 1930).—About 2.5 miles northeast of Rockholds, on east end of highest part of King Mountain which is known locally as "Bald Knob." Surface mark is 1-inch drill hole at intersection of north-south and east-west grooves, surrounded by letters "U. S. C. S." cut in top of stone 2½ feet long with top projecting 4 inches above ground. Underground mark is 1-inch drill hole through thin flat rock about 3 feet below surface. Four reference marks or pointers are 2 meters (7 feet) north, east, south, and west of station. In 1916 U. S. Geological Survey reported hickory tree 14 inches in diameter, 39 feet from station in azimuth 165°00′; black-oak tree 10 inches in diameter, 16.5 feet from station in azimuth 269°51′; and stone set in ground with small drill hole and arrow pointing toward station, 6 feet from station in azimuth 82°13′. In 1928 station recovered in good condition, re-marked, and two reference marks established. Surface mark is standard disk station mark set in drill hole in large rock, flush with surface. Reference marks are standard reference disks in large rocks, flush with surface. No. 1 is 1.86 meters (6.1 feet) from station in azimuth 92°41′. No. 2 is 8.62 meters (28.3 feet) from station in azimuth 160°04′.

Rogers (Grayson–Smyth Counties, Va., A. H. Buchanan, 1894; 1934).—About 25 miles east of Abingdon, about 5½ miles east of Konnarock, about 65 feet north of highest point of Mount Rogers (locally known as "Balsam"), 33.8 feet north of twin 12-inch spruce trees, and in top of rock outcrop which projects about 3 feet above ground. To reach from sign "White Top" at Chilhowie, go south 13.4 miles on Va. Route 79 to White Top Inn on left, follow left fork across mountain 4.1 miles to top of grade, pass through gate on left and follow farm road 2.8 miles (keeping left at fork) to pasture in gap, and continue on foot along well-blazed trail north about 1 mile to station site. Originally marked by drill hole in rock at intersection of north-and-south and east-and-west grooves and surrounded by letters "U. S. C. S.". Station was re-marked in 1930 with standard station disk; and two standard reference disks were established in rock outcrops. No. 1 is at about same elevation as station, near trail leading to station, 39.5 feet south of twin 12-inch trees, and 22.16 meters (72.7 feet) from station in azimuth 9°49′. No. 2 is on downward slope of ridge and 15.01 meters (49.2 feet) from station in azimuth 86°02′. No. 3, established in 1933, is standard reference disk in east-and-west rock outcrop on downward slope of ridge, about 30 feet east-northeast of dead 6-inch tree, and about 75 yards from station in azimuth 83°18′.

Roan High Bluff (Mitchell County, N. C., A. H. Buchanan, 1894; 1933).—On highest part of bluff known locally as "Eagle Cliff" which forms extreme western part of Roan Mountain, about 5 miles north of Bakersville, and about ¾ mile from point where Cloudland Hotel used to be. Trucks may be driven to within ½ mile of station site over very rough roads from either side of mountain. Original station mark was drill hole 2 inches deep at intersection of north-and-south and east-and-west grooves in rock with letters "U. S. C. S." Point was remarked in 1930 with standard station disk in drill hole, note 2c. No reference marks were established for original station mark; but in 1930, two standard reference disks were established in rock outcrops, note 12a. No. 1 is 9.548 meters (31.33 feet) (slope) from station in azimuth 354°16′. No. 2 is 8.110 meters (26.61 feet) from station in azimuth 73°20′. Reference mark no. 3, standard reference disk in rock outcrop, note 12a, was established in 1933, about 60 feet south of center of road leading to station, and approximately 0.5 mile from station in approximate azimuth 224°03′.

Fork (Carter County, C. A. Schanck, 1930).—About 7 miles northwest of village of Roan Mountain, 2½ miles south of village of Hampton, and on highest point of Fork Mountain which is wooded with large hardwood trees. To reach from W. M. Hill's store on main highway about 8 miles by road from Roan Mountain and about 6 miles by road from Hampton, turn onto dirt road leading north

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on west side of store and follow about ½ mile to fork in small stream, turn left up bank and go about ½ mile to house occupied by Dave Honeycutt and locally known for its bowl-shaped spring in solid rock. This is as far as car can be driven. It is about a 50-minute walk from here to station site. Continue along road as it swings to right, at fork about 75 yards from house turn right and continue past spot where a house has burned on left and another small house is on left. At fork just beyond this house make sharp turn back to left along dim road and follow it up draw and back to right along east side of mountain beyond place where it goes down into draw. Short distance from here it swings from west to north in bottom of draw at old apple tree. Leave road here and go west up draw to top of ridge, turn right and go north along ridge about ¼ mile to highest point and station site. Marked by standard station disk in boulder, note 4, about 6 inches below surface of ground. There is no underground mark. Reference marks are standard reference marks in boulders, note 12c, which project about 2 inches above surface of ground. Rock cairn is built over each of three marks. Reference mark no. 1 is 3.635 meters (11.93 feet) from station in azimuth 228°02′. No. 2 is 4.038 meters (13.25 feet) from station in azimuth 95°26′.

Big Knob (Scott County, Va., A. H. Buchanan, 1893; 1934).—About 6 miles (by road) northeast of Gate City, in Clinch Mountain range, on southwesterly and lower one of two high peaks on backbone of ridge at northern edge of summit, 20 feet south of 14-inch white oak, 13 feet north of 6-inch white oak, and 22 feet southwest of 10-inch white oak. Top of mountain is wooded. To reach from Gate City, go east on U. S. Route 58 through Big Mocassin Gap 5.7 miles to home of Thomas Curtis on left (which is about 1 mile west of Hiltons), cross railroad track and drive into Mr. Curtis' barn lot. From here go on foot up old wagon road which narrows into well-blazed path and leads up hollow behind Mr. Curtis' house to top of mountain and station site 2 miles distant. Original station mark was 2-inch-deep drill hole at intersection of cross grooves surrounded by letters "U. S. C. S." in top of large rock flush with surface of ground. Original reference marks were drill holes in rocks with arrows pointing toward station at following distances and azimuths from station: 39.4 feet, 49°01′; 21.7 feet, 78°59′; and 49.7 feet, 122°03′. In 1930 station and two reference marks were recovered; standard station disk was set in original drill hole of station mark, note 3; and two standard reference disks were established in bedrock, note 12b. No. 1 is in drill hole of original reference mark, along backbone of ridge, 1 foot south of 8-inch white oak, and at about same elevation as and 39.1 feet from station in azimuth 48°58′. No. 2 is on downward slope of ridge, about 5 feet lower than station, and 22.7 feet from station in azimuth 163°59′. In 1933 reference mark no. 3, standard reference disk in bedrock, note 12b, was established in 16-foot square rock outcrop on little separate knoll directly on line to Kingsport but on same ridge with station, and about 75 yards from station in azimuth 31°52′. Azimuth from station to smokestack in Kingsport is 11°39′27″.

Big Butt (Madison County, N. C.–Unicoi County, Tenn., A. H. Buchanan, 1893; 1933).—On central one of three high peaks on top of Big Butt Mountain (known locally as "Gravelly Knob"), about 20 miles southeast of Greenville, 15 miles south of Chuckey on Southern Railway, and on or near North Carolina-Tennessee State line. To reach from Erwin, go south 8.6 miles on U. S. Route 23 to gravel road on right which crosses concrete bridge at stone filling station and store, cross bridge, follow gravel road 4.7 miles to fork, keep straight ahead on right fork, continue 7.0 miles to Mill Creek, follow up creek 1.6 miles to farm of Millard Shelton and end of truck travel. Follow well-worn trail about 2¼ miles to top of mountain and about 1¼ miles along top to Gravelly Knob and station site. Original station mark was drill hole at intersection of north-and-south and east-and-west grooved lines on large rock flush with ground. This rock was found dug up in 1930 and station was reestablished with standard disk station mark in drill hole in rock, note 2, about 2 feet below surface of ground and probably within several inches of original position. Original reference marks were drill holes and arrows in rock outcrops. Two of these points were re-marked in 1930 with standard reference disks, note 12c. No. 1 is 3.372 meters (11.06 feet) from station in azimuth 354°37′. No. 2 is 5.125 meters (16.81 feet) from station in azimuth 301°56′. Remaining drill hole, 11.79 feet from station in azimuth 85°00′, could not be found in 1930. Reference mark no. 3, standard reference disk in large white rock, note 12a, established in 1933, is on northwest side of trail which leads to most northerly of peaks on top of mountain, and approximately 0.4 mile from station in azimuth 132°10′26″. *Camp Creek Bald fire lookout*

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tower is 5.6 miles from station in azimuth 62°01′42″. In 1933 large stone probably original station mark, marked with drill hole and letters "U. S. C. S.", was found about 4 feet west of present station.

Supplementary points

Chimney (Hawkins–Sullivan–Greene Counties, A. H. Buchanan, 1894; 1934).—About 4½ miles west-southwest of Fall Branch, about 3 miles north of Jeareldstown, at tricounty corner of Hawkins, Greene, and Sullivan Counties, and on most southwesterly and highest knob of spur of Bays Mountain (known as "Chimneytop Mountain"). To reach from post office at Fall Branch, follow Route 81 north 1.5 miles, turn sharply to left onto gravel road, go 0.8 mile, turn onto T-road to right, follow main road straight ahead 3.7 miles to fork, turn right and go 0.2 mile to Chimney Top School and church, thence continue on foot by trail up ridge past house of Lom [Lum] Baxter 1¼ miles to top of ridge, turn left along fence line and proceed about ¼ mile to triangle-blazed oak on west side of chimneys, from which point climb to top of cliff and continue along top about ½ mile to top of knob and station site at northern end of ridge. Mark was drill hole at intersection of north-south and east-west grooves cut in rock *in situ*. Witness marks were drill holes, at more distant ends of arrows which pointed toward station, cut in rock. One was 11 feet 8 inches from station in azimuth 355°42′; second was 6.688 meters (21.94 feet) from station in azimuth 74°04′; and third was 10 feet 8 inches from station in azimuth 192°16′. In 1934 standard station disk was set in drill hole of station mark, and two reference marks and an azimuth mark were established by setting standard reference disks in boulders. Reference mark no. 1 is along top of ridge, in old drill hole, 6.688 meters (21.94 feet) from station in azimuth 74°04′. No. 2 is on downward slope of ridge, 3.551 meters (11.65 feet) from station in azimuth 356°07′. Azimuth mark is on knob slightly lower than and 0.25 mile from station in azimuth 236°06′34″. Following distances and azimuths are from station: Kingsport, Eastman Kodak Corporation, stack, 12 miles, 229°02′13″; and Fall Branch, Baptist Church (white), 5 miles, 262°19′54″.

Powell (Lee County, Va.–Hancock County, Tenn., A. H. Buchanan, 1893; 1935).—About 12 miles southwest of Jonesville, Va., at crest where Virginia-Tennessee State line crosses top of Powell Mountain, along north edge of ridge, about 17 yards northeast of highest point of knob, 14 yards northeast of 14-inch oak, and 12 yards south-southeast of 16-inch oak. To reach from junction of U. S. Route 58 and State Route 63 southwest of Jonesville, Va., turn south onto Route 63, go 2.3 miles, cross steel bridge over Powell River, continue 3.55 miles on Route 63 to T-road to left down grade at point where Route 63 curves sharply to right just before reaching summit, turn onto T-road, go 1 mile to junction, turn left and go 1.55 miles to home of Mr. Burchett and end of truck travel. Station site is on knob to rear and slightly to right of Mr. Burchett's house. From Mr. Burchett's house go up ravine to southwest to fence line running up and down hill, cross fence, continue along fence and edge of woods to ravine, running up hill about middle of upper edge of clearing, follow this ravine about 200 yards to top of mountain, turn right and follow path along top of mountain about 200 yards to station site. Original station mark which was 1-inch drill hole, 2 inches deep, at intersection of north-south and east-west grooves surrounded by letters "U. S. C. S." cut in top of rock ledge outcrop, was reported recovered by boundary commission in 1902. In 1934 it was again recovered and standard station disk was set in old drill hole. In 1934 two reference marks and an azimuth mark were established. Reference mark no. 1 is standard reference disk in 16-inch square flat rock outcrop flush with surface of ground, note 12b, on top of ridge and 15.73 feet from station in azimuth 273°33′. Reference mark no. 2 is standard reference disk, note 12b, 1 foot south of north edge of 4- by 6-foot rock outcrop which slants to the east and 21.82 feet from station in azimuth 2°25′. Azimuth mark is standard reference disk in 10- by 14-inch buried rock, note 12d, which projects about 3 inches above surface of ground, about 40 feet higher than and 200 feet north of valley road, 2 feet west of path which leads along east edge of clearing from valley road and enters woods near mark, and about 0.5 mile from station in azimuth 161°55′19″. To reach azimuth mark from point on valley road where road leads to Mr. Burchett's house, go west on valley road 0.4 mile to small wooden bridge, continue about 40 feet west of this bridge, and follow path mentioned above to site of mark.

For notes in regard to marking of stations see pp. 151–152.

Buzzard (Lee County, Va., A. H. Buchanan, 1893; 1934).—About 9 miles east-northeast of Jonesville, about 5.7 miles a little south of east of Pennington Gap, 3.0 miles south of Dryden, on highest part of peak called "Buzzard Roost" (which is part of Wallen Ridge), at southwest edge of pasture, 30 feet south-southeast of 12-inch locust, 29.1 feet west-northwest of 15-inch red oak with triangular blaze, and 10 feet north of fence line. To reach from post office at Pennington Gap, go east 3.9 miles on Routes 64 and 65 to crossroads at Woodway, continue straight ahead 2.4 miles to junction with Route 58, turn left onto Route 58 and continue 1.0 mile to home of Mr. S. J. Shelborn (end of truck travel). Station site is about 1¼ miles north. Original station mark, cross surrounded by letters "U. S. C. S." cut in top of stone post, was recovered in good condition in 1934 and standard station disk was set in center of cross. Also in 1934 two reference marks and an azimuth mark were established by setting standard reference disks in concrete in depressions in boulders, note 12d. No. 1 is on east-and-west fence line and 4.277 meters (14.03 feet) from station in azimuth 320°29′. No. 2 is 4 feet northeast of east-and-west fence line and 3.128 meters (10.26 feet) from station in azimuth 61°18′. Azimuth mark is on east slope of pasture, on boulder about 12 feet in diameter, 16 feet south of 20-inch locust, 18 feet northwest of 22-inch locust, and about 170 yards from station in azimuth 226°03′06″.

Wildcat (Scott County, Va.–Hawkins County, Tenn., A. H. Buchanan, 1893; 1934).—At point where Virginia-Tennessee State line crosses crest of Clinch Mountain, about 14 miles west-southwest of Gate City, Va., about 6 miles southwest of Speers Ferry, Va., on highest point of large sloping boulder, about 75 feet southwest of highest point of rocky knob, 31 feet southwest of 12-inch pine, and 9 feet north-northeast of 8-inch pine. To reach from Speers Ferry, turn onto T-road leading southwest just north of underpass, and follow main road 6.3 miles past Speers Ferry post office (or 0.1 mile beyond small store) to end of truck travel. Follow trail to left down hill past home of Irvin Powers and follow about ¼ mile to home of Patton Winegar, follow trail to left around house and continue straight up ridge about ½ mile to top, turn left and follow trail along top of ridge about 50 yards to station site. Original station mark was drill hole 2 inches deep at intersection of north-south and east-west grooves surrounded by letters "U. S. C. S." cut in large immovable rock. Station was reported recovered in 1901 by boundary commission. In 1934 station was again recovered and remarked by setting standard station disk in drill hole. In 1934 two reference marks and an azimuth mark were established by setting standard reference disks in concrete in depressions in boulders, note 12d. No. 1 is in sharp-pointed boulder at southeast edge of summit, 4 feet southwest of 12-inch pine, slightly higher than station and 8.305 meters (27.25 feet) therefrom in azimuth 232°46′. No. 2 is in large sloping boulder at southeast edge of summit, about 5 feet lower than station and 7.950 meters (26.08 feet) therefrom in azimuth 342°28′. Azimuth mark is on slope of pasture, 0.1 mile west of small store, 90 feet north of center line of road, 63 feet north of fence line, 85 feet north-northwest of point where trail crosses fence, and about ¾ mile from station in azimuth 139°09′07″.

Cloud 2 (Scott County, Va.–Sullivan County, Tenn., M. A. Hecht, 1934).—About 3 miles south of Gate City, Va., about 2 miles north of Kingsport, Tenn., on or near State line, on small knoll about ¼ mile northeast of home of Charles Henry, 5 feet north-northeast of wire fence, and 15.5 feet east-southeast of 10-inch triangle-blazed chestnut oak. To reach from junction of U. S. Routes 23 and 11W, go north 2.45 miles on U. S. Route 23, turn left and go 1.1 miles on what is known as the "Carter Valley Road" to home of Charles Henry on right which is end of truck travel. Station is marked by standard station disk in small buried stone, note 4. Reference marks are standard reference disks in small boulders, note 12c. No. 1 is about 5 feet south of 14-inch chestnut oak, about 12 feet lower than station, and 58.3 feet (slope distance) therefrom in azimuth 50°56′. No. 2 is flush with surface of ground, 5 feet east of wire fence, about 10 feet lower than station, and 41.58 feet therefrom in azimuth 153°20′. Azimuth mark is standard disk in boulder, note 12c, projecting about 12 inches above surface of ground, in gully, about 100 yards south-southwest of home of Charles Henry, about 40 feet south of wire fence, and about ¼ mile from station in azimuth 17°12′20″. In 1893 A. H. Buchanan established station "Cloud", marked by intersection of cross grooves cut in large rock and surrounded by letters "U. S. C. S.", about 150 yards westward along same ridge, and approximately 100 feet lower. This station was reported recovered by boundary commission in 1901, but was not recovered in 1934.

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Pinnacle (U. S. G. S.) (Bell County, Ky.–Lee County, Va., M. A. Hecht, 1934).—On or near State line between Kentucky and Virginia, on sharp peak on east side of Cumberland Gap known as "The Pinnacle", 1.9 miles by Scenic Highway from point where U. S. Route 25E passes through gap, on south edge of summit, 30.2 feet west of slanting rock outcrop, and near site of station *Pinnacle* (see description thereof). Station mark is standard U. S. Geological Survey bench-mark disk stamped "Pinnacle 1934" set in drill hole in rock ledge. Reference marks are standard U. S. Geological Survey bench-mark disks. No. 1 is in bedrock at west end of south face of summit and 14.47 feet from station in azimuth 82°24′. No. 2 is in outcropping rock ledge in about center of summit, on south side of path to top, and 20.31 feet from station in azimuth 156°59′. Station *Virginia Corner 2* (see description and geographic position thereof) is visible from ground.

Pinnacle (Bell County, Ky.–Lee County, Va., A. H. Buchanan, 1893).—About ½ mile north of and ¼ mile above town of Cumberland Gap, on or near Virginia-Kentucky boundary line, and on large rock facing northwest 2 or 3 feet from southeast corner of "Pinnacle House." Station mark was drill hole at intersection of north-south and east-west grooves with letters "U. S. C. S." cut in rock. In 1934 it was reported that rock bearing station mark had become detached from mass and had fallen over side of mountain. Station *Pinnacle* (*U. S. G. S.*) (see description thereof) has been established nearby.

Kentucky Corner (Bell County, Ky.–Claiborne County, Tenn., A. H. Buchanan, 1893; 1934).—About 2 miles southwest of Cumberland Gap, about 2 miles southeast of Middlesboro, Ky., about 1 mile northwest of Hamilton Springs, on ridge of Cumberland Mountain, at point just before it drops off rapidly, slightly on western side, near point supposed to be close to corner common to States of Kentucky and Tennessee, and in 1893 was 6 feet 5 inches S. 11° E. from pine tree. To reach from Cumberland Gap (about 4 miles east of Middlesboro on U. S. Route 25E), follow trail up ridge to south about ½ mile to station *Virginia Corner* (see description thereof), and continue along backbone of ridge, over series of knobs, about 2 miles to station site. Station mark is drill hole 2 inches deep at intersection of north-south and east-west grooves cut in large rock. Rock is lettered "U. S. C. S." on eastern face. Stone mentioned in inscription on cut-stone monument at Cumberland Gap (see description of station *Virginia Corner*) as being "at 7 pines and 2 black oaks" could not be identified when station was established. In 1934 two reference marks and an azimuth mark were established. Reference mark no. 1 is in projecting slab of rock flush with surface of ground, about 10 feet east of path, about 10 feet west of bluff, about 6 feet southwest of slanting 6-inch oak snag, and 138.67 feet from station in azimuth 299°36′. No. 2 is in eastern edge of rock outcrop, on western side of ridge, about 45 feet from crest, about 12 feet southwest of 18-inch oak, and 52.04 feet from station in azimuth 206°19′. Azimuth mark is in boulder on crest of ridge, about 225 feet from station in azimuth 357°15′.

Minter (Lee County, Va.–Hancock County, Tenn., A. H. Buchanan, 1893; 1934).—On Virginia-Tennessee State line, about 7 miles southwest of Rose Hill, Va., about 4 miles southwest of Ewing, Va., in wagon road along top of ridge, and north-northeast of double maple tree. To reach from post office in Ewing, go west 2.00 miles on Route 58, turn left onto Frog Level road, go 2.15 miles to Frog Level School, continue 0.95 mile to fork, turn right, go 0.05 mile to another fork, turn right again, go 0.45 mile to fork, turn left, go 0.1 mile to fork at barn of Allen Yeary, turn right, and go 0.05 mile to end of truck travel at sharp left turn. Go up hill to top of ridge and wagon road, follow road along top of ridge to saddle between two knobs and station site. Original station mark which was drill hole at intersection of north-south and east-west grooves surrounded by letters "U. S. C. S." cut in top of stone post 12 by 12 inches by about 3 feet with name "Minter" in west face and projecting about 8 inches above ground was reported recovered in 1902 by boundary commission. It was recovered in 1934 and standard station disk was set in old drill hole. Two reference marks were established in 1934. No. 1 is standard reference disk in small rectangular buried rock, 24.70 feet from station in azimuth 276°25′. No. 2 is standard reference disk in small buried rock on west edge of rail fence and 44.63 feet from station in azimuth 353°29′. Station *Minter* (*U. S. G. S.*) (see description thereof) is 837.59 feet from station in azimuth 131°01′55″.

Minter (U. S. G. S.) (Lee County, Va., M. A. Hecht, 1934).—Probably a standard disk of U. S. Geological Survey set in flat stone on summit of cultivated field belonging to Carter Brooks, 837.59 feet in azimuth 131°01′55″ from station *Minter*. (See description thereof.)

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Forge (U. S. G. S.) (Claiborne County, M. A. Hecht, 1934).—About 4 miles southeast of Cumberland Gap, about 1½ miles southwest of Forge School, on Forge Ridge (a low, bare, rounded knoll), about 25 yards east of west edge of knoll, near northwest apex of triangular plot of uncultivated land, and 105 feet south-southeast of 8-inch walnut with triangular blaze. To reach from junction of U. S. Routes 25E and 58, follow Route 58 east 2.7 miles, turn right onto macadam T-road, go 0.15 mile to fork, turn left and follow main road 4 miles, turn right around Forge school building (brick), continue 0.8 mile on main road to crossroad, turn right up grade, go 0.9 mile, turn onto right fork of field road, go 0.1 mile, turn onto another right fork and follow dim road to top of knoll and station site. Station mark is U. S. Geological Survey disk in buried granite post. Reference mark no. 1 is in rock outcrop, at south edge of summit and 167.28 feet from station in azimuth 333°54′. No. 2 is in buried granite post at edge of summit and 35.89 feet from station in azimuth 28°08′. Azimuth mark is in buried rock on adjoining knoll, at north edge of cultivated field, about 100 yards east-northeast of barn, 80 feet west of west edge of woods, 4 feet south of center line of field road, and about 0.5 mile from station in azimuth 257°53′11″. Stations *Virginia Corner 2* and *Pinnacle* (*U. S. G. S.*) (see descriptions and geographic positions thereof) are visible from ground.

Virginia Corner 2 (Lee County, Va.–Bell County, Ky.–Claiborne County, Tenn., M. A. Hecht, 1934).—At corner common to States of Kentucky, Virginia, and Tennessee, on backbone of ridge, in center of saddle, about 60 feet east of power line, 11.4 feet northeast of 10-inch oak with triangular blaze, and 12.2 feet east-southeast of triangular, inclined rock. To reach from Middlesboro, Ky., go east about 4 miles on U. S. Route 25E to Cumberland Gap and end of truck travel. Follow trail up ridge to south about ½ mile to station site. Station is marked by standard station disk set in concrete frustum of pyramid, 12 by 12 by 4 inches, which now marks corner of States. Reference marks are standard reference disks in rock outcrops, note 12a. No. 1 is flush with surface of ground, on downward slope of side of ridge, 7.8 feet west of western tip of triangular, inclined rock, and 19.96 feet from station in azimuth 113°34′. No. 2 is slightly higher than station, 9 feet east-southeast of black oak which is on crest of ridge, and 24.03 feet from station in azimuth 209°31′. Station *Virginia corner* (see description thereof) is 26.470 meters (86.84 feet) from station in azimuth 188°28′. Station *Pinnacle* (*U. S. G. S.*) (see description and geographic position thereof) is visible from ground.

Virginia Corner (Bell County, Ky., A. H. Buchanan, 1893; 1934).—Near corner common to States of Kentucky, Virginia, and Tennessee, about 100 feet southwest of point of ridge, on west side of backbone of ridge. To reach from Middlesboro, Ky., go east about 4 miles on U. S. Route 25E to Cumberland Gap and end of truck travel. Follow trail up ridge to south about ½ mile to station site. Station mark is drill hole at intersection of north-south and east-west grooves with letters "U. S. C. S." cut in northwest face of vertical rock ledge called [in 1893] "Virginia State Corner" or "Corner Rock." No marks were on rock before station was established. [There are two cut-stone monuments in vicinity of Cumberland Gap. First is southwest of central part of town, between tracks of the K. C. G. & L. and the L. & N. railroads, approximately 978 meters (3,209 feet) in approximate azimuth 19°49′ from station *Pinnacle* (see description thereof), and about ⅜ mile S. 56° E. from station. On north face of this monument is inscription "N. 55°35′ W. to stone at Chestnut Oak (Tenn. and Va.) Corner." On west face is inscription "S. 48°14′ W. to stone at 7 Pines and 2 Black Oaks (Tenn. and Ky.) Corner." Second monument is in gap in Cumberland Mountain, near old Virginia road, about 835 meters (2,739 feet) northwest of first monument, and about ¼ mile north of station. On east face of this monument is inscription "1859 S. 28°14′ W. 1,200 feet to stone at Chestnut Oak (Va.) Corner." On south face are names of field party—words "Engineer" and "——— Rennett" [Bennett] being legible. Nothing was legible on other faces of either monument. Station established is therefore not in accord with inscriptions on these monuments, but was supposed to be close to recognized corner common to States of Kentucky, Virginia, and Tennessee.] In 1934 station *Virginia corner 2* (see description thereof) was established 26.470 meters (86.84 feet) from station in azimuth 8°28′.

Owen (Monroe County, A. H. Buchanan, 1884; 1934).—About 2½ miles northwest of Sweetwater, near center of sec. 33, T. 2 S., R. 1 E. (Hiwassee District Survey), and in northwest corner of field owned (in 1934) by Isaac Walker. To reach from Southern Railway station in Sweetwater, go northeast 0.7 mile on

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Main Street to junction of three roads, turn left (west) onto county road and go 1.7 miles to top of ridge. Station is about ½ mile southwest. Surface mark is intersection of north-south and east-west grooves surrounded by letters "U. S. G. S." cut in top of stone post, 12 by 8 inches at top and 3½ feet long, projecting about 4 inches above ground. Underground mark is center of broken glass goblet buried about 3½ feet below surface of ground.

Brushy (Morgan County, A. H. Buchanan, 1885; 1934).—About 15 miles west-southwest of Clinton, about 14½ miles southwest of Briceville, about 4 miles in direct line N. 61° W. from Oliver Springs and S. 55° E. of State prison at Petros, on what is locally called "Signal Point" of the Bob Williams Mountain. To reach from Petros, turn onto old wagon road 300 yards south of Southern Railway station and follow it up to northwest point of mountain, follow trail around southwest side of mountain ¾ mile to point where pile of flat rocks lies to left of trail and two trees are blazed on south side, follow path to top of ridge, turn right (east), and go along top of ridge ¾ mile to station site. Station was originally marked by east-west and north-south lines surrounded by letters "U. S. C. S." cut in square cement cap set in and cemented to drill hole 2 inches deep in large rock *in situ*. Re-marked in 1934 with standard U. S. Geological Survey bench-mark disk stamped "Brushy 1934" set in rock with letters "U. S. G. S." cut in one corner of top of rock. Four original reference marks are crosses cut on rocks *in situ* at following slope distances and true bearings from station: 37.99 feet, N. 34°43′ E.; 27.72 feet, N. 76°17′ E.; 18.61 feet, S. 36°51′ W.; and 7.60 feet, N. 17°44′ W.

House Mountain (Knox County, A. H. Buchanan, 1884; 1934).—About 5½ miles northwest of Strawberry Plains, about 3 miles south-southeast of Corryton, and on highest point of 1½-mile-long isolated mountain, which is easily found. To reach from Knoxville city limits at Burlington, follow U. S. Route 11W northeast 7.2 miles, turn left (northeast), go 0.8 mile, turn left (northwest) at crossroads, go 0.8 mile, turn right (east) at junction, go 0.5 mile, turn left (northwest) at junction, go 0.5 mile, turn onto right fork (northeast), and go 0.5 mile to property of J. V. Webster. Trail leads up south side of House Mountain to top at west end and along top ¾ mile to station site. Station mark is 1-inch drill hole, 2½ inches deep, at intersection of north-south and east-west grooves surrounded by letters "U. S. G. S." cut in rock. Grooves and drill hole are filled with plaster of paris. Rock is large, of several tons weight, and rises about 2 feet above ground. Three reference marks are crosses cut in rock as follows: No. 1 is 9 feet 9½ inches (slope distance) N. 47½° E. from station; no. 2 is 14 feet 1⅝ inches (slope distance) S. 62° E. from station; and no. 3 is 6 feet 3¾ inches (slope distance) S. 46½° W. from station. Pine tree used as U. S. Geological Survey station was 4.06 meters (13.3 feet) from station in azimuth 208°32′.

Knoxville, college cupola (Knox County, A. H. Buchanan, 1884; 1916).—In city of Knoxville. Station is center of cupola on building known as Old College of University of Tennessee. (Knoxville College is an entirely different institution about a mile northwest of this point.) Prior to 1907 upper part of cupola was torn down and lower half remaining was capped with railing and platform. Since the old cupola was symmetrical, station was reestablished in 1907 at intersection of diagonals of tower. Following distances and azimuths are from station: *Knoxville latitude and longitude stations* (see description thereof), 47.2 meters (155 feet), 359°06′; *Knoxville east base* (see description thereof), 58.8 meters (193 feet), 359°06′ *Knoxville west base* (see description thereof), 61.3 meters (201 feet), 56°06′; and station *Terrace* (see description thereof), 58.9 meters (193 feet), 27°27′. In 1922 it was reported that station was destroyed during erection of new building in 1921.

Knoxville latitude and longitude station (Knox County, W. H. Burger, 1907, Edwin Smith, 1907; 1916).—In city of Knoxville, on campus of University of Tennessee, just south of "Old College" Building, north of Y. M. C. A. Building, southwest of Jefferson Hall, and on direct line between *Knoxville, college cupola* (see description thereof) and *Knoxville east base* (see description thereof). This station was not marked when latitude observations were made by W. H. Burger in March 1907. In November 1907 Edwin Smith made longitude observations from practically the same position and marked the station with block of concrete 2 by 4 feet and 2 feet in ground upon which rests another block 14 by 28 inches and 3 feet high. In 1922 it was reported that station was destroyed during erection of new building in 1921.

Knoxville east base (Knox County, W. H. Burger, 1907; 1916).—In city of Knoxville, on campus of University of Tennessee, on edge of terrace about 7

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paces west of steps leading down terrace between "Old College" Building and Y. M. C. A. Building, and about 3 feet back from edge of terrace. Marked by marble post 22 inches long and 5 inches square on top projecting about 2 inches above surface of ground. Top is marked by two grooves at right angles and letters "U. S." Following distances and azimuths are from station: *Knoxville latitude and longitude station* (see description thereof), 11.6 meters (38 feet), 179°06′; *Knoxville, college cupola* (see description thereof), 58.8 meters (193 feet), 179°06′; station *Terrace* (see description thereof), 28.8 meters (94 feet), 103°02′; station *Knoxville west base* (see description thereof), 57.3 meters (188 feet), 115°26′; *Knoxville, Jefferson Hall, flagpole,* (see description thereof), 30.0 meters (98 feet), 212°50′; and *Knoxville, Y. M. C. A. Building, spire* (see description thereof), 25.8 meters (85 feet), 352°34′. In 1922 it was reported that station was destroyed during erection of new building in 1921.

Knoxville west base (Knox County, W. H. Burger, 1907; 1916).—In city of Knoxville, on campus of University of Tennessee, and about 3 feet back from edge of terrace just south of steps leading down terrace from West College to Reese Hall. Marked in manner similar to station *Knoxville east base* (see description thereof). Following distances and azimuths are from station: *Knoxville, Reese Hall, spire* (see description thereof), 28.4 meters (93 feet), 95°40′; *Knoxville, college cupola* (see description thereof), 61.3 meters (201 feet), 236°06′; *Knoxville east base* (see description thereof), 57.3 meters (188 feet), 295°26′; station *Terrace* (see description thereof), 29.8 meters (98 feet), 307°24′; and *Knoxville, Y. M. C. A. Building, spire* (see description thereof), 74.5 meters (244 feet), 312°20′. In 1922 it was reported that station was destroyed during erection of new building in 1921.

Terrace (Knox County, W. H. Burger, 1907; 1916).—In city of Knoxville, on campus of University of Tennessee, and about 3 feet back from edge of terrace. Marked by marble post 22 inches long and 5 inches square on top projecting about 2 inches above surface of ground. Top is marked by two grooves at right angles and letters "U. S." Following distances and azimuths are from station: *Knoxville, Reese Hall, spire* (see description thereof), 56.0 meters (184 feet), 111°55′; *Knoxville, college cupola* (see description thereof), 58.9 meters (193 feet), 207°27′; *Knoxville, Jefferson Hall, flagpole* (see description thereof), 48.1 meters (158 feet), 247°10′; station *Knoxville east base* (see description thereof), 28.8 meters (94 feet), 283°02′; station *Knoxville west base* (see description thereof), 29.8 meters (98 feet), 127°24′; and *Knoxville, Y. M. C. A. Building, spire* (see description thereof), 44.9 meters (147 feet), 315°36′. In 1922 it was reported that station was destroyed during erection of new building in 1921.

Knoxville, Y. M. C. A. Building, spire (Knox County, W. H. Burger, 1907; 1934).—In city of Knoxville, on campus of University of Tennessee. Station is short blunt spire near center of ridge on Y. M. C. A. Building. Following distances and azimuths are from station: Station *Knoxville west base* (see description thereof), 74.5 meters (244 feet), 132°20′; station *Terrace* (see description thereof), 44.9 meters (147 feet), 135°37′; station *Tower* (see description thereof), 99.3 meters (326 feet), 170°43′; and station *Knoxville east base* (see description thereof), 25.8 meters (85 feet), 172°34′.

Knoxville, Reese Hall, spire (Knox County, W. H. Burger, 1907; 1922).—In city of Knoxville, on campus of University of Tennessee. Station is spire on top of cupola of Reese Hall. Following distances and azimuths are from station: Station *Tower* (see description thereof), 81.0 meters (266 feet), 236°15′; station *Knoxville west base* (see description thereof), 28.4 meters (93 feet), 275°39′; and station *Terrace* (see description thereof), 56.0 meters (184 feet), 291°55′.

Knoxville, Jefferson Hall, flagpole (Knox County, W. H. Burger, 1907; 1922).—In city of Knoxville, on campus of University of Tennessee. Flagpole near center of low wooden auditorium. Following distances and azimuths are from station: Station *Knoxville east base* (see description thereof), 30.0 meters (98 feet), 32°50′; and station *Terrace* (see description thereof), 48.1 meters (158 feet), 67°10′.

Tower (Knox County, C. L. Garner, 1922).—In city of Knoxville, on campus of University of Tennessee, on top of tower of Ayer's Hall. Marking of station not described. Southernmost corner of tower is 12.042 meters (39.51 feet) from westernmost corner, 17.000 meters (55.77 feet) from northernmost corner, 12.025 meters (39.45 feet) from easternmost corner, and 0.550 meter (1.80 feet) from station in azimuth 7°51′. *Knoxville, Y. M. C. A. Building, spire* (see description thereof) is 99.3 meters (326 feet) from station in azimuth 350°43′. *Knoxville, Reese Hall, spire* (see description thereof) is 81.0 meters (266 feet) from station in azimuth 56°15′.

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HUNTSVILLE, ALA., TO MEMPHIS, TENN.

Principal points

Strickland (Alcorn County, Miss., E. H. Pagenhart, 1914; 1934).—About 9 miles southeast of Corinth, about 1¼ miles southeast of Strickland railroad station, about 0.15 mile southwest of Illinois Central Railroad, and on highest point of knoll in cultivated field owned by Federal Land Bank of New Orleans. To reach from Corinth, go east 9.8 miles on U. S. Route 72 to crossroad just before reaching Glens railroad station, turn right, and continue on this main road 1.0 mile to T-road, turn right and go 0.1 mile to station site. Station is 0.1 mile north of road fork, 260 feet north of white house, and 75 feet north-northeast of center line of road. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Upper mark projects 3 inches above surface of ground. Reference mark no. 1 (1914) is standard reference disk in concrete, note 11a, flush with ground, in brush at southeast corner of field, 25 feet northeast of center line of road, 140 feet north of white house, on pasture line fence on south slope of knoll, and 120.35 feet (slope distance) from station in azimuth 317°51′. Reference mark no. 2 (1914) is standard reference disk in concrete, note 11a, flush with ground, in bushes 15 feet north of center line of road, and 165.67 feet from station in azimuth 76°42′. Reference mark no. 3 (1934) is standard reference disk in concrete, note 11b, projecting 6 inches above ground, 15 feet north of center line of road, 193 feet from reference mark no. 1, 54 feet from no. 2, and 115.31 feet from station in azimuth 68°41′. Azimuth mark (1934) is standard reference disk in concrete, note 11b, projecting 6 inches above ground, alongside road at southwest corner of field in which station is located, 12 feet north of center line of road, and approximately 0.15 mile from station in azimuth 89°56′52″.

Crum (Alcorn County, Miss., E. H. Pagenhart, 1914; 1934).—About 17 miles southwest of Corinth, 8 miles west of Kossuth, 1 mile west of J. R. Gleason's place, ¾ mile north of Crum schoolhouse, ½ mile northeast of F. A. Studdard's place, on land owned by John Doggett, in small clearing, about 200 meters (656 feet) north from top of hill known locally as "Flag Tree Hill" and on which is pile of rock forming remains of old Indian mound. To reach from post office at Kossuth, go west 0.65 mile on Route 2 to fork, turn left and keep on main road straight ahead 1.5 miles to fork, turn right, go 2.45 miles to T-road right with cabin on right, turn right, go 1.05 miles to fork, turn right onto uphill fork, continue to shed on right and dim road to left, turn left onto dim road, and go 0.15 mile to clearing and station site. Original surface and underground marks were standard station disks in concrete, notes 1a and 7a. In 1934 surface mark was reported destroyed, but underground mark was found. New standard station disk was set in concrete for surface mark according to note 1b, and location of station was described as being 53.6 feet west of 9-inch pine with triangular blaze and 34.7 feet southeast of 6-inch pine with triangular blaze. Original reference mark no. 1 was standard reference disk in top of rocky outcrop on southeast top of hill and about 1.75 meters (5.7 feet) below and 32.07 meters (105.2 feet) from station in azimuth 34°32′. Original reference mark no. 2 was standard reference disk in concrete, note 11a, on west side of road leading over hill and about 3 meters (10 feet) below and 63.23 meters (207.4 feet) from station in azimuth 208°44′. In 1934 both original reference marks were reported destroyed, and two new reference marks and an azimuth mark were established by setting standard reference disks in concrete, note 11b. Reference mark no. 1 (1934) is 12 feet south of dim road to station and 114.69 feet from station in azimuth 208°31′. No. 2 (1934) is at top of little slope and 102.65 feet from station in azimuth 9°36′. Azimuth mark is about 75 yards east of dim road fork, about 15 feet south of center line of dirt road, and about 0.2 mile from station in azimuth 251°55′19″.

Ripley (Tippah County, Miss., E. H. Pagenhart, 1914).—About 4 miles north of Ripley, 1½ miles west of railroad, about ½ mile north of Ripley-Middleton wagon road, ¼ mile south of Mrs. Wicker's place, on highest point of prominent timber-topped hill known locally as "Wicker" or "Reed Mountain" and owned by W. F. Rogers, who lives about 1 mile west, about 90 meters (295 feet) west of large pile of rocks, about 29.5 meters (97 feet) in azimuth 328° from large dead pine tree burned at base which is on north slope of hill, and 28.82 meters (94.6 feet) in azimuth 79°22′ from largest tree on hill (white oak with triangular blaze on southwest side about 2 feet above ground). Nails used to fasten cleats to

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pine tree when used for reconnaissance purposes remain therein. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference mark is standard reference disk in center of top of large rectangular-shaped rock at south brow of hill, about ½ meter (1.6 feet) below and 32.54 meters (106.8 feet) from station in azimuth 345°09′.

Cypress (McNairy County, E. H. Pagenhart, 1914; 1934).—About 4 miles east of Pocahontas, 2 miles northwest of Cypress switch and tank, 1½ miles south of knoll cleared on its south slope and having road passing over its east slope, about 1½ miles north of prominent hill, ¾ mile north of railroad, ½ mile south of ridge road leading northeast from Pocahontas, ½ mile west of cabin owned by Mrs. Clark, and on highest knob in this vicinity. To reach from Corinth, Miss., go north on U. S. Routes 45 and 72 about 10 miles to Eastview Sinclair filling station, turn left onto gravel road at arrow "Pocahontas 20 miles—Ramer 4 miles, etc.", and follow 9.9 miles (or 5.6 miles beyond railroad crossing at Ramer) to forks at top of hill, keep straight ahead on dim road 1.4 miles to fork just after passing home of Mr. Kennedy, turn left, continue 0.6 mile to another fork, turn right, go 0.4 mile to fork at triangle-blazed tree, turn left, go 0.2 mile to fork at triangle-blazed tree on left, turn right, and proceed 0.4 mile up ridge to highest point and station site. Station is about 40 meters (131 feet) in azimuth 344° from highest tree which has triangular blaze on south side and has double-crooked trunk, about 35 feet west of edge of summit, 38.8 feet east of 10-inch pine with triangular blaze, and 33 feet north-northeast of 16-inch pine. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Surface mark is flush with surface of ground. Reference mark no. 1 was standard reference disk in rocky outcrop at south brow of hill, 7.93 meters (26.0 feet) from station in azimuth 282°53′. Reference mark no. 2 is standard reference disk in concrete, note 11a, on north side of hill, about 9 feet east of woods road leading south over hill, and 47.50 meters (155.8 feet) from station in azimuth 167°52′. In 1934 reference mark no. 1 reported destroyed. New reference mark, also called no. 1, consisting of standard reference disk in concrete, note 11b, was established on downward slope, 10 feet west-southwest of 15-inch white oak, and 65.81 feet from station in azimuth 281°30′. Azimuth mark, standard reference disk in concrete, note 11b, projecting about 8 inches, was established in 1934 on high knob southwest of station, about 100 feet southeast of top on downward slope, about 9 feet south-southeast of 5-inch blazed pine, and about 300 yards from station in azimuth 49°21′35″.

Camphill (Tippah County, Miss., E. H. Pagenhart, 1914).—About 11 miles southeast of Saulsbury, about 7 miles west of Walnut station, ½ mile south of Camphill post office, about 200 meters (656 feet) south of Nubben Hill wagon road, near southeast corner of sec. 32, T. 1 S., R. 3 E., on highest part of old Marlow Field Hill with settlement road leading south over top, about 300 meters (984 feet) southwest of Marlow Spring, on grass-covered hilltop, about 16 meters (52 feet) northwest of tree line, 19.96 meters (65.5 feet) in azimuth 124°42′ from eastern and 18.94 meters (62.1 feet) in azimuth 134°53′ from western of two 14-inch oak trees standing 10 feet apart and bearing triangular blazes 2 feet above ground, and about 9 meters (30 feet) in azimuth 250° from lone hickory tree. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is on tree line to south of station, about 3 meters (10 feet) east of abandoned section of road, and ½ meter (1.6 feet) below and 30.78 meters (101.0 feet) from station in azimuth 25°29′. No. 2 is about 2 meters (7 feet) south of head of large gully to eastward of road on northeast slope of hill, and about level with and 31.24 meters (102.5 feet) from station in azimuth 205°14′.

Malone (Benton County, Miss., E. H. Pagenhart, 1914; 1934).—About 5 miles south of Saulsbury, about 1 mile west of Saulsbury-Ripley road, on highest point of Malone Mountain, and in small cultivated field owned by Mr. Henry Goddard. To reach from Saulsbury, turn south onto Saulsbury-Ripley road just east of post office, go 4.4 miles (always keeping main road) to large frame house on right, turn right onto dirt road, go west 1.0 mile to Mr. Goddard's home, turn right onto lane or farm road, go to foot of Malone Mountain, and follow dim woods road straight about 0.2 mile to cultivated field on top and station site. In 1914 station was described as being between two pits (formerly cisterns), about 10 meters (33 feet) west of east one, about 12 meters (39 feet) east of west one, and about 20 meters (66 feet) west of a third pit which marks old spring and is about 2 meters (7 feet) south of line between first two pits. In 1934 station was described as being between two cisterns, 30 feet from one, 90 feet from other, and 20 feet east

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of straight line between the two . Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a, flush with surface of ground. No. 1 is at north edge of field, on tree line, about 10 meters (33 feet) south of old dike and catch basin, 30 feet southeast of fence line, 100 feet northwest of old cistern, and 1 meter (3 feet) below and 48.97 meters (160.7 feet) from station in azimuth 187°18′. No. 2 is on southeast side of field, on tree line, 110 feet northwest of southeast fence corner, 75 feet west of 10-inch cedar tree, and on level with and 58.24 meters (191.1 feet) from station in azimuth 1°01′.

Porter (Hardeman County, E. H. Pagenhart, 1914; 1934).—About 7½ miles by road northeast of Saulsbury, about 4 miles by road north of Rogers Springs station of Southern Railway, and on summit of low hill locally known as "Porter's Mountain." To reach from railroad station at Rogers Springs, follow Saulsbury–Simpson Ferry road north 2.7 miles to home of Robert Fortune at crossroads, turn right and continue 1.3 miles to station site. In 1914 station was described as 80 meters (262 feet) northeast of junction of public road and northernmost road leading to M. L. Gatewood's house which is about ¼ mile northwest, in cultivated field belonging to Mr. Gatewood, and on highest ground in vicinity. In 1934 station was described as being at top of grade, in forks of road, about 200 yards north of road fork, on east edge of cultivated field, 50 feet south of northeast corner of field, and 37.2 feet west of center of east fork of road. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is in woods gap at south edge of field, about 2 meters (7 feet) northeast of road to Mr. Gatewood's house, about 20 meters (66 feet) from road junction, outside fence at southeast corner of field, and 255.16 feet from station in azimuth 53°32′. No. 2 is about 8 inches below surface of ground, 4.5 meters (15 feet) below station in elevation at east edge of woods, at west edge of field, about 1 meter (3 feet) inside rail fence, about 4 meters (13 feet) northeast of road to Mr. Gatewood's house, about 60 meters (197 feet) from junction of roads, and 193.40 feet from station in azimuth 91°51′. Azimuth mark (1934) is standard reference disk in concrete, note 11b, at northeast corner of fence, 15 feet west of center of road, and 0.2 mile from station in azimuth 48°00′10″.

Hickory (Hardeman County, E. H. Pagenhart, 1914; 1934).—About 8 miles north of Grand Junction, about 1 mile southwest of Hickory Valley, and on land owned by Union Stock Land Bank of Louisville. To reach from junction of U. S. Route 64 and State Route 18 at southwest city limits of Bolivar, go south on Route 18 about 11 miles to Gulf filling station at Hickory Valley, continue south 0.8 mile on Route 18, turn right onto dirt road, go 0.2 mile and turn sharply to right through wire gate, go about 75 feet and turn left through barnyard, go through gate at west side of barnyard, and continue 0.15 mile to cultivated field and station site. Station is in open field, on small hill, about 100 meters (328 feet) west of highest ground in vicinity, about 170 feet south of woods, and 114 feet north-northwest of center line of farm road. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is in fence line, at edge of uncultivated field, 11 feet south-southeast of center line of farm road, on east side of highest point of road leading south, about 80 meters (262 feet) south of turn, and 124.70 feet from station in azimuth 299° 07′. No. 2 is at edge of woods, 1 foot north of fence and property line, about 60 meters (197 feet) west of gully, near southwest corner of manager's yard, and 170.59 feet from station in azimuth 184°19′. Azimuth mark, established in 1934, is standard reference disk in concrete, note 11b, in cleared area, 10 feet west of center line of farm road, 27 feet southwest of twin oak tree, and about 250 yards from station in azimuth 27°05′49″. *H. B. Duryea tract, steel water tank*, is 852.0 meters (2,795 feet) from station in azimuth 216°43′10″.

Gordon (Fayette County, E. H. Pagenhart, 1914).—About 1¾ miles southwest of Grand Junction, about 1½ miles southeast of La Grange, and ½ mile south of State Route 57 (La Grange–Grand Junction road), at highest point of timbered hill known as "Gordon Hill", and about 60 meters (197 feet) south of middle of north side of old horseshoe-shaped fort which is open at south. To reach from crossroads at La Grange, go east 1.55 miles on State Route 57 (or 0.2 mile east of large colonial-style house to north of highway) to dirt lane leading south. Station site may be seen about ½ mile distant in magnetic bearing S. 25° W. Surface and underground marks were standard station disks in concrete, notes 1a and 7a. Reference marks were standard reference disks in concrete, note 11a.

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No. 1 was on west slope of hill, about 5 meters (16 feet) east of edge of small clearing, and 3 meters (10 feet) below and 36.07 meters (118.3 feet) from station in azimuth 139°39′. No. 2 was on top of north breastwork of fort, and about 0.25 meter (0.8 foot) below and 61.69 meters (202.4 feet) from station in azimuth 198°44′. In 1934 station site was visited. Surface mark had been lifted out of ground and disk cut out. Underground mark was not found although searched for 2.5 feet below surface of ground. Reference mark no. 1 was not found. Concrete at reference mark no. 2 had been shattered and disk removed leaving 2-foot hole.

Ebenezer (Fayette County, E. H. Pagenhart, 1914; 1934).—About 7 miles northeast of Moscow, about 2 miles southeast of Williston (town on Moscow-Somerville branch of Southern Railway), 50 meters (164 feet) southwest of Ebenezer Church, on highest hill in vicinity, about 10 meters (33 feet) east of southerly bend in wagon road passing over hill and same distance southwest of churchyard gate. To reach from a point on State Route 76 which is 6.65 miles south of Fayette County courthouse in Somerville, 6.55 miles north of T-junction at Moscow, and 0.45 mile south of T-junction leading to Williston, turn onto dirt T-road and go southeast 1.65 miles to station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is on church property, 30 meters (98 feet) west of church, 18 feet north of churchyard fence, and 19.34 meters (63.5 feet) from station in azimuth 200°27′. No. 2 is at northwest corner of church and 48.48 meters (159.1 feet) from station in azimuth 225°20′. West gable end of Ebenezer Church is 47 meters (154 feet) from station in azimuth 229°58′.

Jackson (Fayette County, E. H. Pagenhart, 1914).—About 5 miles east-southeast of Moscow, about 5 miles west of La Grange, on sparsely wooded high ground owned by Frank Jackson. In 1914 station was described as being about 1½ miles west and ½ mile south of Fortyfive switch of Southern Railway, about 600 meters (1,968 feet) south of its tracks, about ¼ mile north of Mitchell Jackson's house, and 200 meters (656 feet) south of old cotton gin standing between two watering ponds. In 1934 station was described as being, 0.35 mile south of Route 57, 61½ feet west of center line of farm road leading south, and 40 feet northeast of 8-inch oak tree. To reach from junction of Routes 18 and 57 at La Grange, go west 5.0 miles on Route 57, turn south onto farm road, and follow 0.35 mile to station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference mark no. 1 (established in 1914) is standard reference disk in concrete, note 11a. In 1914 it was described as being 4 meters (13 feet) west of road, 2 meters (7 feet) east of small tree, and 0.5 meter (2 feet) in elevation below station. In 1934 it was described as being near base of large spreading oak tree and 139.09 feet from station in azimuth 159°57′. Reference mark no. 2 (established in 1914) was standard reference disk in concrete, note 11a, 2 meters (7 feet) east of road, 3 meters (10 feet) northwest of small tree, and 3.75 meters (12.3 feet) below and 60.72 meters (199.2 feet) from station in azimuth 304°22′. In 1934 it was reported washed out and new reference mark was established. Reference mark no. 2 (established in 1934) is standard reference disk in concrete, note 11b, on top of small bank, east of road, and 116.59 feet from station in azimuth 259°17′. Azimuth mark (established in 1934) is probably a standard reference disk in concrete, 35 feet south of center line of Route 57, 1.0 mile east of junction with above-mentioned farm road, and 1 mile from station in azimuth 207°28′01″.

Gillespie (Fayette County, E. H. Pagenhart, 1914; 1934).—About 8 miles northeast of Rossville, about 7 miles northwest of Moscow, 3 miles southeast of Macon, ½ mile northeast of Mount Zion Church, on property owned by Herman Farley of Rossville (formerly owned by Mrs. A. H. Gillespie), on highest point of prominent knoll on the Gillespie plantation, and about ¾ mile northwest of the Gillespie house. To reach from Holly Springs, Miss., go north 13.8 miles on Route 7 to Slayden, turn left (west), go 4.5 miles to Mount Pleasant, turn right, follow main road north 0.6 mile to T-road, turn left onto main road, go north 5.35 miles to east-and-west crossroad (Route 57), turn left onto Route 57, go west 1.85 miles to Rossville, turn right, follow main gravel road 6.05 miles to two T-roads to right (one angling off to southeast, the other to northeast), turn right onto northeast T-road, go 1.7 miles to end of road at north-and-south road (Moscow-Macon road), turn left, go 0.15 mile, turn onto plantation road to right, go about 400 yards to point opposite highest point of hill at curve to left, turn right, and go about 100 paces to top of hill and station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. In 1934 surface

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mark was stamped "GILLESPIE 1914–1934." Reference marks are standard reference disks in concrete, note 11a, and in 1934 were stamped "GILLESPIE 1914–1934". No. 1 is on south slope of knoll, about 15 feet south of fence line, near head of gully or wash, and about ½ meter (2 feet) below and 28.39 meters (93.1 feet) from station in azimuth 337°12′. No. 2 is on west slope of knoll, about 100 feet south of persimmon tree, 25 feet east of plantation road, and 5½ meters (18 feet) below and 111.02 meters (364.2 feet) from station in azimuth 80°15′55″. In 1934 it was found loose in earth and was made steady. In 1914 right chimney on house occupied by James Hazlett (tenant on the Gillespie plantation) was about ⅓ mile from station in azimuth 166°25′12″.

Church (Fayette County, E. H. Pagenhart, 1914; 1934).—About 6 miles southwest of Moscow, about 5 miles north-northeast of Mount Pleasant, Miss., about 2 miles southwest of Rossville, about 1½ miles north of Mississippi-Tennessee State line, about 0.2 mile southwest of Pleasant Grove Church, in cleared field, on property of Miss Irene Cheek, and on highest ground in vicinity. In 1914 station was described as being about 60 meters (197 feet) south of Moscow-Mount Pleasant wagon road and west of road which branches off about 200 meters (656 feet) west of church and leads south. In 1934 station was described as being 44 feet west of center line of road, 28 feet west of north-and-south fence line, 52 feet south-southwest of 18-inch red oak, and 39 feet northwest of 18-inch black-gum tree with triangular blaze. To reach from post office at Mount Pleasant, Miss., go north 0.9 mile on county road, keep main left fork, follow 4.9 miles to State Route 57, turn right, go 2.25 miles, turn right (south), go 2.55 miles to Pleasant Grove Church, turn onto right fork, and go 0.2 mile to triangle-blazed tree and station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. One was described in 1914 as being 3 meters (10 feet) east of lone cedar tree, on north side of road, about 20 meters (66 feet) west from fork of road, and 2½ meters (8 feet) below station in elevation. In 1934 it was described as being at edge of woods, 40 feet west of north-and-south fence line, and 215.67 feet from station in azimuth 176°54′. Other reference mark was described in 1914 as being about 50 meters (164 feet) south of road fork, and at same elevation as station. In 1934 it was described as being on north-and-south fence line, 16 feet west of center line of road, 4 feet south of 18-inch red oak, and 48.70 feet from station in azimuth 211°59′. In 1934 azimuth mark, standard reference disk in concrete, note 11b, was established in small orchard, about 100 feet southwest of frame dwelling, 24 feet east of lane leading to house, 110 feet east of main road, and about 0.4 mile from station in azimuth 208°32′46″.

Crenshaw (Marshall County, Miss., E. H. Pagenhart, 1914; 1934).—About 6 miles southeast of Collierville, 5 miles northwest of Mount Pleasant, ¾ mile north of State Route 2, about ¼ mile south of Tennessee-Mississippi State line, in cultivated field owned by J. M. Crenshaw. In 1914 station was reported about 60 meters (197 feet) northeast of Mr. Crenshaw's house which stood on prominent knoll, but in 1934 it was reported that house had burned and station was N. 20° W. (magnetic) from remaining brick chimney. To reach from public square in Collierville, go south 4.7 miles on Tennessee Route 86 (Collierville-Mount Pleasant road) to Tennessee-Mississippi State line, continue south 1.8 miles on Mississippi Route 2, at T-junction turn left onto dirt lane (avoiding lane to right), and go 0.7 mile to station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 41.31 meters (135.5 feet) from station in azimuth 257°16′. No. 2 is about 30 feet north of barn, and about ½ meter (2 feet) above and 43.97 meters (144.3 feet) from station in azimuth 60°28′.

Morris (Fayette County, E. H. Pagenhart, 1914; 1934).—About 8 miles north of Collierville, 2½ miles east of Granberry, about 8 miles southwest of Macon, ⅓ mile south of Memphis-Macon road, on land owned by Mrs. Mineola Morris, on first high ground about 15 feet west of plantation road leading south from house, about 100 feet north of fork in road, and opposite several trees. To reach from crossroads at Fisherville, go southeast 2.45 miles on Memphis-Macon road to farm of Mrs. Morris, turn right onto dirt lane east of house and go south 0.5 mile to station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is on west side of road leading south, about 40 feet south of fork where other road leads west, and 56.96 meters (186.9 feet) from

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station in azimuth 13°50′. No. 2 is 9.35 meters (30.7 feet) from station in azimuth 96°28′. Azimuth from station to Morris house, west chimney, distant ¼ mile, is 180°14′27″. In 1934 it was reported that disks had been removed from station and reference marks.

Martin (Shelby County, E. H. Pagenhart, 1914; 1934).—About ¾ mile slightly south of east of Germantown, about 90 meters (295 feet) north of tracks of Southern Railway, 80 meters (262 feet) north of Germantown-Collierville road, in cultivated field belonging (in 1934) to Mr. T. W. Martin, about 40 meters (131 feet) southeast of his house, 7 meters (23 feet) east of his yard fence, and 27 meters (89 feet) northeast of large oak tree. To reach from Southern Railway station in Germantown, go east 1.0 mile on Germantown-Collierville road to point opposite station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference mark was standard reference disk in concrete, note 11a, in yard, about 10 meters (33 feet) south of southeast corner of house, and 31.35 meters (102.9 feet) from station in azimuth 122°59′. In 1934 reference mark was reported destroyed.

Capleville southeast base (De Soto County, Miss., E. H. Pagenhart, 1914; 1934).—About 8 miles south by east from Germantown, 2½ miles east-northeast from Olive Branch, Miss., 1½ miles south of Mississippi-Tennessee State line, ½ mile north of Olive Branch-Mount Pleasant wagon road, 300 meters (984 feet) east of Germantown-Farmer Store-Miller wagon road, on landing belonging to W. H. McCargo, in cultivated field, on highest ground in vicinity, about ½ mile N. 10° W. (magnetic) from Mr. McCargo's barn, and 150 feet south of fence line. To reach from St. Louis-San Francisco Railway passenger station at Olive Branch, go southeast 0.2 mile on U. S. Route 78 (Olive Branch-Byhalia Road), turn left at crossroads onto gravel road, and go 1.95 miles to Mr. McCargo's farm. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks were standard reference disks in concrete, note 11a. No. 1 was on fence row which marks line between north and south half sections of Mr. McCargo's land, and about 1 meter (3 feet) below and 45.60 meters (149.6 feet) from station in azimuth 177°56′. No. 2 was on east slope of knoll, on north-and-south fence row, and 3.6 meters (12 feet) below and 94.25 meters (309.2 feet) from station in azimuth 269°05′. In 1934 both reference marks were reported destroyed.

Capleville northwest base (Shelby County, E. H. Pagenhart, 1914; 1934).—About 3 miles east of Capleville, about ½ mile south of Ross' Store, about 200 meters (656 feet) north of wagon road known as "Holmes Avenue", in cultivated field owned (in 1934) by George Sesti, close to highest point of gently sloping rise, 20 meters (66 feet) south of north fence line, and 24 feet west of east fence line along road. To reach from Capleville, go 3.3 miles east on Shelby Drive to Ross' Store, turn right (southeast) at crossroads onto gravel road and go 0.9 mile to point opposite station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is in right-of-way of highway, 3 feet east of west fence, on line with fence marking property line of George Sesti and Ed. Crumpler, and 22.70 meters (74.5 feet) from station in azimuth 201°04′. No. 2 was on east side of road, 25.60 meters (84.0 feet) from station in azimuth 313°34′. In 1934 no. 2 was reported dug up during road construction and lying in side ditch of road.

Holmes (De Soto County, Miss., E. H. Pagenhart, 1914; 1929).—About 12 miles southeast of Memphis, 3½ miles west and 2 miles south of Capleville, 1 mile north of Plum Point, in NE¼ sec. 20, T. 1 S., R. 7 W., 300 meters (984 feet) southwest of store of F. V. Holmes, about 350 meters (1,148 feet) south of Mississippi-Tennessee State line, about 200 yards west of house occupied by J. D. Smith, in cultivated field owned (in 1914) by W. S. Lester, 90 meters (295 feet) south of State-line wagon road, and 155 meters (509 feet) west of north-and-south section-line road. To reach from Memphis, follow Hernando paved road (State Route 3) south 11 miles to White Haven, thence east on gravel road 1 mile, south 0.1 mile, and east 3.3 miles to crossroads, and thence by southerly road 2.1 miles to J. D. Smith's house. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is on fence line on south side of State-line road, about 100 meters (328 feet) west of road leading north, and about 3 meters (10 feet) below and 86.47 meters (283.7 feet) from station in azimuth 185°33′. No. 2 is on fence line on west side of section-line road running north and south, about 100 meters (328 feet) south of State-line road, and 4.5 meters (15 feet) below and 154.87 meters (508.1 feet) from station in azimuth 266°03′.

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White (Shelby County, E. H. Pagenhart, 1914; 1929).—About 1 mile southeast from White railroad station, about ½ mile south of Southern Railway tracks, about ½ mile east of road which leads south from White, about 200 meters (656 feet) west of old burying ground, about 30 meters (98 feet) east of 1-acre tract owned by C. Tuggle (colored), about 100 meters (328 feet) north of creek bed, about 100 meters (328 feet) west of wooded ravine, and on property line (in 1914) between land of Ralph Graham to north and that of N. E. Perkins to south. (In 1929 Memphis Country Club owned land to south.) To reach from Memphis, follow Poplar Avenue to White station, turn and go south (crossing asphalt road 0.4 mile from White) to dirt lane leading east 1.0 mile south of White, and follow lane about 0.6 mile to end at station site in rear of Negro tenant house and immediately west of ramshackle chicken house. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference mark is standard reference disk in concrete, note 11a, on north fence line between lands of Tuggle and E. E. Davis, about 3 meters (10 feet) west of Davis' east line, and 32.14 meters (105.4 feet) from station in azimuth 107°09′. In 1929 it was reported that two reference marks were recovered, but location of second one was not described.

Hopefield (Crittenden County, Ark., E. H. Pagenhart, 1914; 1928).—About 100 meters (328 feet) west of ferry landing at Hopefield Point, in cultivated field, about 50 meters (164 feet) west of middle of first bight north of yellow barn on point, and about 70 meters (230 feet) south of spur track of Chicago, Rock Island & Pacific Railway. Ferry landing is north of barn and is temporary. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. One is 2 meters (7 feet) west of middle of yellow barn, nearly covered by loose rock piles along barn, 4 meters (13 feet) south of east of well on Hopefield Point, and 80.83 meters (265.2 feet) from station in azimuth 303°41′. Other is in yard about 7 meters (23 feet) northwest of partly hollow and leaning sycamore tree and 90.18 meters (295.9 feet) from station in azimuth 358°23′. In 1920 station and one reference mark were stamped with name and dated "1914-16-20", but other reference mark was not recovered. In 1928 station was not recovered, but was thought to be in place.

Hopefield south base (Crittenden County, Ark., C. H. Boyd, 1879; 1914).—In West Memphis, opposite point about 1¾ miles below Court Square in Memphis, about 300 meters (984 feet) west of Mississippi River, 50 meters (164 feet) north of road leading west from ferry landing, 170 meters (558 feet) south of railroad bridge approach, 47 meters (154 feet) east of store owned by J. A. Templin, in rear of house and on lot owned by Douglas Owens, 28 meters (92 feet) east of west property line, and 12 meters (39 feet) south of north property line. Upper mark is 1-foot square limestone block, smoothed on sides above ground, projecting about 14 inches above ground, and with sides marked as follows: South, "U. S. Coast Survey"; west, "S. Base"; and east, "1879." Underground mark is earthen pyramid 3½ feet below ground. Surface mark extends down to within 6 inches of pyramid. Witness stone (limestone shaft about 3 feet long, 6 inches square on top, with letters "U. S. C. S." on one face, and cross cut into top) is 90 meters (295 feet) from station in azimuth 211°33′.

P. B. M. Vance Senior (M. R. C. & U. S. E.) (Crittenden County, Ark., E. H. Pagenhart, 1914).—In cultivated field about ¾ mile above Memphis bridge, 300 meters (984 feet) from river, 160 meters (525 feet) from east bank of Hopefield Lake, and about 240 meters (787 feet) southwest of lower of two buildings. Marked by stone post projecting 18 inches above ground. P. B. M. reference stone A, projecting 5 inches above ground, is in cultivated field about ¾ mile above Memphis bridge, about 370 meters (1,214 feet) from river bank, 60 meters (197 feet) from timber along east bank of Hopefield Lake, and 78.4 meters (257 feet) from station in approximate azimuth 142°. P. B. M. reference stone B, slightly inclined and without bolt, projecting about 14 inches above ground, is in cultivated field about ¾ mile above Memphis bridge, about 230 meters (755 feet) from river bank, about midway between Hopefield Lake and river bank, and 70.2 meters (230 feet) from station in azimuth 292°16′. P. B. M. reference stone C, without bolt and projecting about 6 inches above ground, is in cultivated field about ¾ mile above Memphis bridge, about 320 meters (1,050 feet) from river bank, about 60 meters (197 feet) east of timber along east side of Hopefield Lake, ½ meter (2 feet) northwest of fence, and 128 meters (420 feet) southwest of station.

B. M. Hopefield (M. R. C. & U. S. E.) (Crittenden County, Ark., E. H. Pagenhart, 1914).—In Hopefield, a little above point opposite customhouse in Memphis, about 350 meters (1,148 feet) below well and yellow barn on Hopefield

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Point, 2 meters (7 feet) west of pasture fence line, on west side of road running from ferry landing down river, on property line between J. Nelson and Memphis Ferry Co., 196 meters (643 feet) below large white house, about 75 meters (246 feet) south of yellow house, directly behind signboard, and about 90 meters (295 feet) back from bank of river. Marked by standard mark of Mississippi River Commission, brass cap on pipe above and copper bolt in tile below, as described in note 16. Distances and azimuths from station to two blazed trees are: 8-inch pecan, 31.6 meters (104 feet), 10°; and 12-inch locust, 23.3 meters (76 feet), 330°.

P. B. M. Memphis (U. S. E.) (Shelby County, E. H. Pagenhart, 1914).—In Memphis, on west side of main building of customhouse at Front and Madison Streets, and 2½ feet north of southwest corner. Marked by copper bolt set horizontally in water table of building. In 1934 it was reported that mark was destroyed while making additions to customhouse in 1930–32.

P. B. M. 2/3 (M. R. C. & U. S. E.) (Crittenden County, Ark., E. H. Pagenhart, 1914).—In cultivated field, 350 meters (1,148 feet) northeast of west abutment of west approach to Memphis bridge, 190 meters (623 feet) east of abandoned railroad at point 265 meters (869 feet) above junction of same with bridge approach, about ⅜ mile from river bank, and about 60 meters (197 feet) southeast of south end of Hopefield Lake. Marked by stone post projecting 12 inches above ground. Distances and azimuths from station to two blazed trees are: 30-inch oak, 33 meters (108 feet), 85°; and 40-inch oak, 40 meters (131 feet), 168°.

Supplementary point

Mississippi-Tennessee State Line (De Soto County, Miss., E. H. Pagenhart, 1914).—About ½ mile east of wagon road leading south to Olive Branch, Miss., on Mississippi side of Mississippi-Tennessee State-line road, on fence line along land belonging (in 1914) to Dr. Festus Stuart of Olive Branch, about 3 meters (10 feet) south of center line between road fences (in 1914), and on line of the Capleville base. To reach from St. Louis-San Francisco Railway passenger station at Olive Branch, Miss., go northwest 0.2 mile on U. S. Route 78 (Olive Branch-Memphis road), turn right at T-junction, cross under railway tracks, go 2.0 miles to Mississippi-Tennessee State-line road, turn right onto gravel road at crossroads, and go 0.3 mile to station site. Station marked at surface by mouth of bottle embedded in concrete bearing legend "U. S. C. & G. S. 1914" cut in top. In 1934 it was reported that mark had been dug up when road was widened and was lying nearby.

MISSISSIPPI RIVER (FIRST ORDER)

Principal points

Barnes (New Madrid County, Mo., H. W. Hemple, 1929).—About 8 miles south of East Prairie, on land owned by Wes Dawson, about one-half mile north-northwest of Barnes Ridge School, about 380 feet west by south of T-junction of road running north and south with a road leading east and west, and on the highest part of Barnes Ridge which is bare on north side and has a sand pit on that side. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is in the northeast corner of east fence line of north-and-south road at T-junction and 119.2 meters (391 feet) from station in azimuth 243°47′. No. 2 is at north fence line of road running east and west, about 880 feet from T-junction with north-and-south road, and 123.1 meters (404 feet) from station in azimuth 117°04′52″.

Hickman (Fulton County, Ky., H. W. Hemple, 1929).—In city of Hickman, in area laid out as public square and partially occupied by school, library, and standpipe. This square lies on north side of State Route 94 (Moscow Street) and east of Troy Avenue. Station is in southeast corner of square, 7.2 meters (24 feet) northeast of exposed bolt in standpipe foundation, and 8.3 meters (27 feet) west of 12-inch double locust tree. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is in curb line on opposite side of Troy Avenue, on line (approximately) between northwest corner of Hickman School and southeast corner of E. C. Johnson's residence, and 125.91 meters (413.1 feet) from station in azimuth 105°43′18″. No. 2 is between road and edge of bluff, in northeast corner of square, and 65.06 meters (213.5 feet) from station in azimuth 171°26′. *Hickman, standpipe,* is 9.45 meters (31.0 feet) from station in azimuth 82°18′.

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Madrid (New Madrid County, Mo., H. W. Hemple, 1929; 1934).—About 1 mile west of New Madrid and 0.17 mile east of junction of U. S. Route 61 with gravel road leading west from New Madrid. These two roads are also intersected here by a road running north and south. To reach from post office in New Madrid, go south 1 block, turn right (west) onto dirt street, follow 0.45 mile to point where it runs into gravel road, and keep ahead on gravel road 1 mile to large yellow house on right near station site. Station is 53 feet south of center line of gravel road, on edge of cultivated field. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Upper mark is 15 inches below surface. Reference marks are standard reference disks in concrete, note 11a. No. 1 is about 0.2 mile east of above junction, in fence line, 27 feet north of center line of gravel road, and 39 meters (128 feet) from station in azimuth 216°50′. No. 2 is 184 feet northeast of the junction, at fence line, 44 feet north of center line of Route 61, and 274.0 meters (899 feet) from station in azimuth 85°38′30″. No. 3 (established in 1934 and stamped "1934") is along fence line, 40 feet south of center line of gravel road, and 120 feet west of station.

Fishgap (Obion County, H. W. Hemple, 1929; 1934).—About 15 miles west of Union City, about 2 miles south of Kentucky-Tennessee State line, on high part of bluff above Reelfoot Lake between Reelfoot Creek and Bayou du Chien, on land owned by T. C. Wilson of Union City. To reach from post office in Union City, go north on U. S. Route 51 to Main Street, turn left at railroad tracks and sign "Walnut Log 20 miles", follow this main road 1.7 miles to fork, turn left onto Samburg road and go 1.85 miles to T-road, turn right, go 11.5 miles on main road to Midway School, go 0.3 mile to fork, turn right, go 0.7 mile to white house on right and T-road left, turn left onto T-road, go 0.5 mile to fork at three mail boxes, keep on main left fork, go 1.25 miles to cabin on right, turn right onto T-road, go up hill onto bluff 1.55 miles to T-road right and mail box, and go straight ahead 0.05 mile to another T-road to right near station site. Station is in wooded area about 60 yards to left (north), about 20 yards west of the Walnut Log and Hickman dirt road, at point nearly opposite an old road leading south, 20 feet west of 12-inch elm tree and 50 yards from edge of bluff. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference marks nos. 1 and 2 are standard reference disks in concrete, note 11a. No. 1 is about 20 feet north of center line of road, about 50 feet southwest of junction of old road leading south, and 47.47 meters (155.7 feet) from station in azimuth 24°36′. No. 2 is about 20 yards east of edge of bluff, and at about same elevation as and 29.94 meters (98.2 feet) from station in azimuth 106°17′. In 1934 azimuth mark, standard reference disk in concrete, note 11b, was established on west side of newly graded road about 0.5 mile from station in azimuth 113°19′01″. To reach azimuth mark from station, go west 0.4 mile along road to three mail boxes, turn sharply to right, go 0.3 mile to wooden gate on left at big tree and home of Dave Tinnon on right, turn left through gate, and go 175 yards to azimuth mark, which is 30 feet to left of center of road and at edge of field.

Pleasant (New Madrid County, Mo., H. W. Hemple, 1929; 1931).—About 5 miles south-southwest of Marston, in village of Point Pleasant, about 75 feet west of top of levee, and 101 feet north of center line of main road into Point Pleasant from point where it ends at levee. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Upper mark is 6 inches below surface. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 18 feet south of center line of main road, at south fence line, 96 feet west of top of levee, and 36.4 meters (119 feet) from station in azimuth 9°03′. No. 2 is 24 feet south of center line of main road, 885 feet west of top of levee, and 244 meters (801 feet) from station in azimuth 81°11′55″.

Chigger (Obion County, H. W. Hemple, 1929; 1934).—About 8 miles east of Tiptonville, 1¼ miles northeast of Samburg, 0.6 mile east of Reelfoot Lake, and on land owned by Mr. J. D. Killion. To reach from post office in Union City, go north 0.2 mile on U. S. Route 51 to arrow "Walnut Log 20", turn left across railroad, go 1.7 miles to fork, turn left, continue 5.15 miles to another fork at white house on left, turn right, go 0.6 mile to fork, turn left, go 5.0 miles to crossroad, keep straight ahead 4.05 miles to fork, turn left, go 5.3 miles to steel truss bridge (0.7 mile from Samburg), turn sharp left up hill just before reaching bridge, go 0.5 mile to small white house on left at top of hill. Station is 60 yards south of tenant house of Mr. J. H. Powers, 30 feet south of 20-inch beech tree, and 8 yards west of center line of road. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks nos.

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1 and 2 are standard reference disks in concrete, note 11a. No. 1 is 5 feet west of edge of road and 30.8 meters (101 feet) from station in azimuth 31°26′. No. 2 is about 20 yards east of head of ravine making southwest, 6 feet southwest of southwest corner of house, and 53.2 meters (175 feet) from station in azimuth 155°03′. In 1934 reference mark no. 3, standard reference disk in concrete, note 11b, was established about 60 yards south of house, 21 yards north-northwest of center line of road, 7 yards west of 16-inch maple tree, and 85.70 feet from station in azimuth 215°08′. Primary traverse station no. 11 W 1921 Tenn. (U.S.G.S.) is marked by a standard U. S. Geological Survey bronze cap on a 3-inch galvanized pipe projecting about 8 inches above ground, 4.176 meters (13.70 feet) from station in azimuth 181°41′. In 1921 it was described by U. S. Geological Survey as being near top of bluff, in yard of Chigger Ridge School, 132 feet southeast of pump, and 177 feet from northeast corner of schoolhouse; and the northeast corner of foundation of schoolhouse was said to be in azimuth 234°41′30″ from the traverse station.

Stewart (Pemiscot County, Mo., H. W. Hemple, 1929).—Station is about 6½ miles east of Swifton, 3 miles west of Stewarts Lower Landing, on west side of levee road, about 600 feet south of levee milepost 15/16, on farm of Jeff Harris, just south of road leading to Harris' house, about 150 feet west of top of levee, and 1,160 feet north of road leading westward from the levee road. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 21 feet west of center line of levee road, 58 feet north of center line of road running west from levee, 150 feet west of top of levee, and 335.4 meters (1,100 feet) from station in azimuth 348°20′45″. No. 2 is 41 feet northeast of northeast corner of Harris' house, 3 feet southeast of corner of shed, and 60.0 meters (197 feet) from station in azimuth 100°28′.

Gratio (Obion County, H. W. Hemple, 1929).—About 4 miles east of Ridgely, 1 mile northeast of village of Gratio and on land owned by J. K. White and Edward Riggin of Dyersburg and occupied by M. B. Davis. To reach from Ridgely, go by gravel road east about 4 miles to road running north from Gratio to Push, turn left (north) 0.2 mile and then right 0.2 mile up steep grade to station. Village of Gratio can be reached from Dyersburg via Burnt Mill bridge and first gravel road to left, north of Obion River at Doo Drop Inn, or from Samburg by gravel road via Push. Station is 300 yards west of Davis' house, in small triangular field between county road and Booger Hollow road, about 60 yards east of road fork, 16 feet south of edge of county road, and 80 feet west of very large chestnut tree growing in edge of orchard. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is about 125 yards south of point where Booger Hollow road turns south, under a wild-cherry tree, on east side of road at first rise, and 184.4 meters (605 feet) from station in azimuth 328°14′50″. No. 2 is 10 feet from edge of road, northwest of Booger Hollow road junction, and 44.2 meters (145 feet) from station in azimuth 81°31′.

Caruthers (Pemiscot County, Mo., H. W. Hemple, 1929).—In northern part of Caruthersville, on land owned by T. J. Medlin, northeast of the Pemiscot County fairgrounds, 64 feet east of center line of State Route 84, 95 feet north of north rail of St. Louis-San Francisco Railway, and 51 feet north of center line of Fourth Street. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Upper mark is about 15 inches below surface. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 262 feet east of center line of Route 84, 23 feet north of north rail of railway, 12 feet south of center line of Fourth Street, and 67.9 meters (223 feet) from station in azimuth 126°31′. No. 2 is at fence line on east side of fairgrounds, 22.3 feet west of center line of Route 84, 56 feet north of center of main entrance to fairgrounds, and 160 meters (525 feet) from station in azimuth 16°37′12″.

Obion (Dyer County, H. W. Hemple, 1929).—About 8 miles northwest of Dyersburg, and 10 miles south of Ridgely, on northwest salient of bluffs lying between the Forked Deer and Obion Rivers, and immediately south of the Obion. To reach from Dyersburg, go west on Route 20 to crossroads 1.1 miles west of Finley, then north on gravel road 3.8 miles to intersection just east of Lennox, and follow road along foot of bluff about 1½ miles to house occupied by Mr. Rodgers. There is a plank bridge just north of house and just north of bridge a triangular blaze on large locust in east fence of road. Pass through east fence (south of blazed tree), cross foot of gully near another blazed tree, follow old wagon tracks up north side of hillside pasture, turn sharply to left around point

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of timber and proceed northwest about 200 yards to station. Station can also be reached from north by gravel roads via Tiptonville and Ridgely to Lennox. Station is in west end of narrow ridge pasture and 20 feet east of an Indian mound. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is in edge of pasture, 276.3 feet from station in azimuth 304°02′, No. 2 is in east end of point of timber, 364.6 feet from station in azimuth 328°44′18″.

Cotton (Pemiscot County, Mo., H. W. Hemple, 1929).—At Cottonwood Point on west bank of Mississippi River, about 8 miles south of Caruthersville, about one-fourth mile east of main part of town of Cottonwood, on small knoll 475 feet east of levee, and 173 feet south of road running east and west (called locally the "River Road"). Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Upper mark is 15 inches below surface. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 16 feet west of the river road just after it turns north, after running east from Cottonwood, 84 feet north of where road turns north, and 80.9 meters (265 feet) from station in azimuth 230°59′. No. 2 is at junction of the river and banquette roads, diagonally across from Cottonwood gin, 25 feet east of center line of banquette road, 48 feet north of center line of river road, and about 150 meters (492 feet) from station in azimuth 159°33′45″. Station *P. B. M. Cottonwood south base* (*M. R. C.*) (see description thereof) is 116.51 meters (382.2 feet) from station in azimuth 126°41′18″.

Head (Dyer County, H. W. Hemple, 1929).—About 7 miles west of Dyersburg, 2 miles northwest of Finley and on land owned by J. M. Head. To reach from Dyersburg, go about 7 miles on Route 20 to crossroads 1.1 miles west of Finley, turn onto gravel road leading north and go 1.9 miles to Mr. Head's gate on right side of road at foot of bluff and opposite shed on left. From gate follow private road 0.2 mile up steep grade to house and inquire for route through orchard to station. Truck can be driven to station in dry weather. Station is in pasture just west of large orchard, on highest knoll of bluff, 20 feet west of orchard fence, 200 yards northwest of two-story square house, and 400 yards south of barn. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is along fence line, 199.50 feet from station in azimuth 203°43′. No. 2 is under apple tree in orchard, 162.70 feet from station in azimuth 248°50′. Azimuth from station to finial of black water tank at Dyersburg is 285°39′05″.

School (Mississippi County, Ark., H. W. Hemple, 1929).—About 10 miles east of Blytheville, 5.3 miles by road from Amorel, in southwest corner of grounds surrounding School No. 48, Hickman District, 68 feet east of center line of north-and-south road, and 129 feet north of center line of east-and-west road. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 22 feet south of center line of road running east and west, and 192 meters (630 feet) from station in azimuth 283°04′46″. No. 2 is 53 feet west of center line of road running north and south, 22 feet south of center line of road running east and west, and 58.2 meters (191 feet) from station in azimuth 37°14′. Southwest corner of School No. 48 is 67.1 meters (220 feet) from station in azimuth 232°41′.

Edith (Lauderdale County, H. W. Hemple, 1929).—About 7 miles northwest of Ripley, 2 miles northwest of Edith (store and crossroad), and on knoll in cultivated field on farm of W. E. Crihfield. To reach from Ripley, go about 6 miles to Edith on new loop road between Ripley and Halls. From Edith, follow new road north 1.5 miles to road turning left and follow this 0.7 mile to second house on left (occupied by Van Thompson). Station is 250 feet north of house, 50 feet north of road, and 20 feet northeast of wreck of old Dodge car. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is across road, in northeast corner of yard around Van Thompson's house, and 154.6 feet from station in azimuth 319°56′. No. 2 is on south side of road, between road and fence, about 20 feet northeast of gate to barn, and approximately 450 feet from station in azimuth 32°42′47″.

Anderson (Mississippi County, Ark., H. W. Hemple, 1929).—About 8 miles southeast of Blytheville, about 3.5 miles south of Amorel, on land owned by Walt Anderson (colored), about 0.3 mile south of road which forks off from State Route 18 at point 1.2 miles from Amorel, about 238 feet west of banquette road, about 200 meters (656 feet) southwest of levee milepost 59/60, and just

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south of large conspicuous hickory tree on east side of private road leading into Anderson's farm. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 68 feet west of top of levee, 19 feet west of center line of banquette road, 77 feet south of road crossing from banquette road to private road, and 78.7 meters (258 feet) from station in azimuth 316°25′. No. 2 is on east side of private road opposite Anderson's house, about ½ mile south of east-and-west road leading from levee into Amorel, and 286.3 meters (939 feet) from station in azimuth 47°39′.

Lusk (Lauderdale County, H. W. Hemple, 1929).—About 7 miles west of Ripley, in cultivated field belonging to Dr. Lusk, who has an office near northeast corner of square in Ripley. To reach from Ripley, go west on Route 19, to dirt road turning south 2.4 miles west of Arp. A large gravel pile is in southeast corner of this fork and dirt road passes through deep cut. Station is 150 feet south of Route 19, on top of 8-foot bank on west side of dirt road, 50 yards south of fork, 16 feet west of fence on edge of bank, 21 feet southwest of blazed 6-inch walnut, and 18 feet northwest of blazed 12-inch walnut. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is about 12 feet west of center of dirt road, 2 feet from 30-inch stump, and approximately 250 yards from station in azimuth 17°37′59″. No. 2 is on bank about 30 feet south from center line of main highway, about 100 yards west of road intersection, and 357.40 feet from station in azimuth 135°40′02″.

Cooper (Mississippi County, Ark., H. W. Hemple, 1929; 1933).—About 5 miles northeast of Luxora, in southeast section of Rosa. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 was 244 meters (801 feet) from station in azimuth 248°26′22″. No. 2 was 34.2 meters (112 feet) from station in azimuth 145°23′. Station was moved in November 1933 due to its imminent destruction by levee construction; and same station marks were used to establish station *Cooper 2* (see description thereof) 434.25 feet distant in azimuth 165°04′04″. Station *B.M. 42/4* (*M.R.C.*) (see description thereof) is 2,256.52 feet from site of station in azimuth 141°28′07″.

Cherry (Lauderdale County, H. W. Hemple, 1929).—About 10 miles southwest of Hennings, 1¼ miles northwest of Cherry (small village on the Hennings-Fulton Road), on edge of Cold Creek bluffs, and in yard of house owned by Allen Barbee, of Ripley, and occupied by Pete Brown. To reach from Route 3 at Hennings, go by new graded road to Cherry, take road leading north from old gin (called Davenport-Ford road) and go 1¼ miles to T-intersection, turn left, go ¼ mile to an old road leading left at large blazed tree and follow this road ½ mile to Brown's house. Station is 15 feet north of east-and-west fence line, 45 feet west of southwest corner of porch, 75 feet east of edge of bluff, and 40 feet east of old bluff road. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is in fence line at northwest corner of barnyard and 188.48 feet from station in azimuth 189°51′. No. 2 is 6 feet from southeast corner of small barn and 169.04 feet from station in azimuth 221°29′.

Driver (Mississippi County, Ark., H. W. Hemple, 1929).—About 2 miles southwest of Osceola, 62.5 feet east of U. S. Route 61, about 1 mile south of point where this highway turns south after passing through Osceola, and about 60 feet south of two-story frame house on east side of the highway. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is on west side of Route 61 and 32.6 meters (107 feet) from station in azimuth 89°44′. No. 2 is on west side of Route 61, 50 feet northeast of frame house, and 197.7 meters (649 feet) from station in azimuth 170°39′31″. Station *B.M. 45/4* (*M. R. C.*) (see description thereof) is 798.29 meters (2,619.1 feet) from station in azimuth 269°29′56″.

Fort (Lauderdale County, H. W. Hemple, 1929).—About 4 miles northeast of Fulton, 18 miles southwest of Hennings, 5 miles southwest of Mack, about 1 mile east of main works of old Fort Pillow on Mississippi River, and on land owned by Ward Volkmar (of Gates) and occupied by Ed. Taylor. To reach from Hennings, go about 18 miles on the new graded road via Glimp, Cherry, and Mack to road leading north to Fort Pillow at Price (about 5 miles from Mack), and follow this north road to top of steep grade with church on left. The Taylor house is on highest part of hill, about ½ mile north of church, and just

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before road descends grade in cut. Station is just north of right-angle bend to left in road 100 yards before reaching Taylor's house, in a small triangular field about 200 feet southeast of Taylor's house, about 35 feet east of 18-inch persimmon tree with blaze on west side, 60 feet west of 24-inch oak tree, and 50 feet west of angle in parapet of old Fort Pillow. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 15 feet west from center line of road, 25 yards northwest of house with small log cabin in rear, and 454.5 feet from station in azimuth 22°37′09″. No. 2 is in fence corner, about 60 yards south of house occupied by Taylor, and 199.8 feet from station in azimuth 93°51′.

Wilson (Mississippi County, Ark., H. W. Hemple, 1929).—About ¼ mile south of Wilson, in northwest corner of grounds about Wilson School, about 100 yards west of west corner of school, 250 feet north of center line of U. S. Route 61, and 35.6 feet west of narrow gravel road leading to rear of school grounds. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 21.9 feet southeast of house on northwest side of Route 61, 42 feet from center line of highway, and 138.7 meters (455 feet) from station in azimuth 35°42′05″. No. 2 is 32 feet southeast of center line of Route 61, 32 feet southeast of curb of road leading from west to main entrance of school, and 71.0 meters (233 feet) from station in azimuth 331°22′.

Chickasaw (Tipton County, H. W. Hemple, 1929).—About 2 miles east of Richardsons Landing, 1 mile southwest of Randolph, southwest of Covington on edge of Chickasaw Bluff No. 2, and on land belonging to W. H. Barton, of Drummond. To reach from Covington, go by dirt road to Randolph, thence keeping right-hand fork at 0.1 mile from Templeton's store, turn right at 1.3 miles, turn right again onto farm road at 1.4 miles, and follow this road 0.7 mile to station which is at point of locust trees at right, north of farm road, 15 feet north of triangle-blazed, 5-inch locust, 40 feet southeast of slip bank at nearest point, and near interior angle in cultivated field. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is on bluff line on north side of field, about 50 yards west of road, and 232.0 feet from station in azimuth 253°14′. No. 2 is about 9 feet south from center line of road and 753.0 feet from station in azimuth 297°04′48″.

Shawnee (Mississippi County, Ark., H. W. Hemple, 1929).—About 2 miles southeast of Joiner, on U. S. Route 61, on land owned jointly by the First National Bank, the Union Planters Bank, and the Fidelity Bank (all located in Memphis), in southeast corner of lot about old gin mill located in center of village of Shawnee, 26.5 feet southeast of southeast corner of loading platform of gin mill, 240 feet east of road running north and south, and 287 feet south of east-and-west road. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is on east side of road running north and south, at northwest corner of cotton pick-up shed, and about 500 meters (1,640 feet) from station in azimuth 190°08′41″. No. 2 is 11.3 feet east of center line of north-and-south road, 287 feet south of crossroads at Shawnee, 94 feet south of 48-inch elm tree, and 76.71 meters (251.7 feet) from station in azimuth 77°20′.

Weakley (Tipton County, H. W. Hemple, 1929).—About 2 miles west of Quito, in vicinity of the "slip bank" and Black Springs Hill, and on land belonging to S. E. Weakley. To reach from Millington and Route 3, go by dirt-and-gravel road to Quito, take road west 1.0 mile to T-fork with well and schoolhouse on right, turn left and go 0.2 mile to main road, keep on main road until 1.3 miles from well and schoolhouse, turn right, proceed to top of grade 0.3 mile past barnyard, turn right through small cut into farm road and follow 0.2 mile to station site. Station is 18 feet west of shed over cistern and blacksmith's forge and on small knoll 150 yards northeast of house occupied by Weakley's son. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is in fence line almost in line with cistern and 208.0 feet from station in azimuth 296°32′. No. 2 is west of road, about 10 feet from the northeast corner of yard around Weakley's house, and 360.4 feet from station in azimuth 30°11′06″.

Sanders (Crittenden County, Ark., H. W. Hemple, 1929).—About 5 miles east of Turrell, about 1 mile southwest of old cotton gin and store of Sanders' plantation, about 1 mile south of road running east from Turrell, ½ mile west of gravel road leading into Marion by way of Clarksdale, in northwest corner of old Negro

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graveyard, on land owned by O. L. Sanders, 59 feet south of road running east and west, and 72 feet east of road running north and south. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 11 feet west of road running north and south, 696 feet north of road running east and west, at southeast corner of cotton pick-up shed, and 230.4 meters (756 feet) from station in azimuth 182°54′56″. No. 2 is 11 feet south of east-and-west road, 165 feet west of the road running north and south, and 73.4 meters (241 feet) from station in azimuth 102°00′. Station *B. M. Thresher* (*M. R. C.*) (see description thereof) is 1,792.36 meters (5,880.4 feet) from station in azimuth 238°08′12″.

Locke (Shelby County, H. W. Hemple, 1929).—About 14 miles north of Memphis, 1½ miles northwest of Locke, and on north side of gravel road near west line of farm belonging to Phelan Jeter who lives about 2 miles north of Locke. To reach from Route 3 in Millington, go about 8 miles on gravel road to Locke, go north 0.8 mile on gravel road to gravel road leading west, follow this road 0.7 mile to white house on north side of road, and turn around house to station site. Station is between main road and beech tree, in east fence line of yard, 50 yards southeast of house, 30 feet north of road, and 40 feet south of large beech tree. Station can be reached more easily from Memphis by oiled gravel road via Benjestown and Locke. Take Benjestown road 1.8 miles north of Wolf River bridge. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is near northeast corner of chicken house in rear of white house and 236.7 feet from station in azimuth 142°17′. No. 2 is in line with front door of house, on north bank, about 20 feet from the center line of road, and 134.7 feet from station in azimuth 69°55′.

Marion (Crittenden County, Ark., H. W. Hemple, 1929; 1932).—About ¼ mile north of Marion, on west side of colored schoolhouse (brick structure on U. S. Route 61), 92 meters (302 feet) south of road running east and west along north side of school property, 145 meters (476 feet) west of center line of Route 61, and 16.6 meters (54 feet) south of a little-used road running around south side of school. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 3.75 meters (12.3 feet) north of east-and-west road, 8.10 meters (26.6 feet) southeast of southeast corner of porch of house, and 90.30 meters (296.3 feet) from station in azimuth 182°54′. No. 2 is 14.9 meters (49 feet) west of center line of Route 61, 32.85 meters (107.8 feet) southeast of corner of school, and 130.35 meters (427.7 feet) from station in azimuth 273°17′58″.

Benjes (Shelby County, H. W. Hemple, 1929).—About 7 miles north of Memphis, ½ mile south of Benjestown store, on land owned by Mr. Larrick of Washington, D. C. Land has not been cultivated for 7 years and consists of wedge-shaped strip cut off from west side of farm by road. To reach from Memphis, go north on Route 3 to point 1.8 miles north of Wolf River bridge, turn onto oiled road leading northwest, and go 3.2 miles to station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is about 25 feet north of center line of road, 75 feet south of road leading to Negro house at left bend in road, and 277.6 feet from station in azimuth 210°17′. No. 2 is about 30 feet east of center line of road, in southeast corner of yard around C. B. Williams' house, and 253.9 feet from station in azimuth 354°19′. Azimuth from station to *Memphis, Columbus Tower, flagpole*, is 359°33′49″.

Exchange (Shelby County, E. H. Pagenhart, 1914; 1929).—In Memphis, on roof of Exchange Building (formerly Cotton Exchange Building) at corner of Second and Madison Streets. Mark is standard station disk flush with concrete roof, under layer of tar and gravel, in southeast corner of building, 1.38 meters (4.5 feet) from inside of cornice on Second Street side, and 1.48 meters (4.9 feet) from inside of cornice on Madison Street side. Center of iron flagpole is 3.08 meters (10.1 feet) from station in azimuth 166°30′.

Bollinger (Crittenden County, Ark., H. W. Hemple, 1929).—About ¾ mile southwest of West Memphis, ½ mile west and ½ mile south of point where U. S. Route 61 turns north after leaving West Memphis, on land owned by the Woods Lumber Co. of Memphis, Tenn., and managed by Oliver Bollinger, 176 feet east of road running north and south, and 57.8 feet east-southeast of chimney on north side of farmhouse which is the third house on east side of road leading to Hulbert from U. S. Route 70. Surface and underground marks are standard

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station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 35 feet west of center line of road running north and south into Hulbert, 150 paces north of 2-story house on west side of road, and 208.5 meters (684 feet) from station in azimuth 17°56′12″. No. 2 is 35 feet west of center line of road leading into Hulbert and 63.9 meters (210 feet) from station in azimuth 105°00′.

Weaver (Shelby County, E. H. Pagenhart, 1914; 1929).—About 8½ miles south of west of Court Square, Memphis, 4 miles west of south of West Junction, 2 miles north of Darwin railroad station, and on the Weaver plantation. To reach from post office on Main Street in Memphis, go south 6.0 miles on Horn Lake road (Tennessee Route 14) to Nonconnah, turn right onto hard-surfaced road and go 4.6 miles to dirt crossroad, turn right and go 1.8 miles, cross railroad and small bridge, turn right just after crossing bridge and go 0.8 mile to station which is about 50 meters (164 feet) to left of road, on small knoll overlooking Mississippi River bottom, and about ¼ mile east of west line and 1 mile west of east line of loop of Yazoo and Mississippi Valley Railroad between West Junction and Darwin. Surface and underground marks are standard station disks in concrete blocks, notes 1a and 7a. Upper mark projects about 6 inches above ground. Reference marks are standard reference disks in concrete, note 11a. No. 1 is at tree line at north edge of head of ravine, 240.04 feet from station in azimuth 344.7°. No. 2, set in 1914 and reported lost in 1929, was 172.33 meters (565.4 feet) from station in azimuth 195°11′.

Martine (Crittenden County, Ark., H. W. Hemple, 1929; 1933).—About 8 miles southwest of West Memphis and 7.7 miles by road southwest of Hulbert. Surface and underground marks were standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 was 58.6 meters (192.3 feet) from station in azimuth 196°59′. *Martine reference mark no. 2* was 735.15 feet from station in azimuth 84°05′50″. In November 1933 station was removed, due to its imminent destruction by levee construction, and same station marks were used to establish station *Martine 2* (see description thereof) 968.97 feet distant in azimuth 182°07′52″.

Lake View (De Soto County, Miss., H. W. Hemple, 1929).—About 1 mile north of Lake View post office, about 500 meters (1,640 feet) south of Tennessee-Mississippi State line, and on land owned by Chiro Jole and occupied by Edd More (colored). To reach from Memphis, take U. S. Route 61 (State Route 14). Station is on east side of Route 61, just north of dog kennel named "Canine-Ritz", near center of small pasture, north of Edd More's house, and southeast of small vacant store on west side of road. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is near fence corner, about 50 feet northeast of deserted soft-drink and grocery store, about 40 feet northwest of center line of highway, and 545.7 feet from station in azimuth 42°34′22″. No. 2 is in east-and-west fence line, about 50 feet east of center line of highway, 20 feet east of fence corner, and 98.9 feet from station in azimuth 138°55′. *Mississippi-Tennessee boundary monument* (see description thereof) is 1,707.0 feet from station in azimuth 175°20′04″.

Horse (Crittenden County, Ark., H. W. Hemple, 1929; 1934).—About 22 miles air line southwest of Memphis, and 9 miles by road south of Neuhardt railroad station. To reach from West Memphis, go west on Route 70 to Arkansas Route 3 and then south on this road to no. 96 corner. Main road turns west at this point. Continue on road leading south to T-branch road, turn left and follow dirt road (keeping to left at all branches) until levee road is reached, turn left (south) onto levee road and go to Locust Grove Church and station site. Station was on banquette of levee, 123.8 feet southeast of southeast corner of church, 92.6 feet east-southeast of 15-inch locust tree in yard of church, 12 feet east of edge of banquette, and 53.5 feet west of crown of levee. Surface and underground marks were standard station disks in concrete, notes 1a and 7a. Reference marks were standard reference disks in concrete, note 11a. No. 1 was on edge of banquette, opposite north edge of church, and 50.93 meters (167.1 feet) from station in azimuth 164°56′. *Horse reference mark no. 2* (see description thereof) is in yard southeast of first farmhouse west of levee road, along road which passes just south of church, and 390.346 meters (1,280.66 feet) from station in azimuth 91°55′52″. In February 1934 station mark was dug up and reset as station *Horse 2* (see description thereof), 399.014 meters (1,309.10 feet) distant, in azimuth 90°57′16″.

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Derickson (De Soto County, Miss., H. W. Hemple, 1929).—About 3 miles east and 1¼ miles south of Lake Cormorant (village on railroad ¼ mile east of U. S. Route 61) and about 10 miles south of Lake View post office. To reach from Lake Cormorant, go east 2.8 miles on graded dirt road to gravel road leading south, then 1.2 miles south to graded dirt road leading east to hills and Oscar Thomas' house, follow road 0.4 mile southeast around foot of hill to wire gate on north side of road, pass through gate and drive up ridge ½ mile beyond tenant house, through two wire fences to station, which is 100 yards north of the Derickson and Thomas fence line, 75 yards east of timber line, and about 50 yards north of head of draw coming in from southwest. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is down gentle slope to southeast, in angle formed by tree line and ravine, about 50 feet from trees, and 383.6 feet from station in azimuth 331°01′37″. No. 2 is on open ridge, 3 feet north of the Derickson and Thomas east-and-west fence line, and 506.4 feet from station in azimuth 22°04′39″.

Supplementary points

P. B. M. 17/4 (M. R. C.) (New Madrid County, Mo., Mississippi River Commission, 1906; H. W. Hemple, 1929).—About 0.60 mile west of railroad station at New Madrid, 950 meters (3,117 feet) back from river bank, 44 paces west of center line of U. S. Route 61, on track of St. Louis Southwestern Railway, between rails, 12 inches north of south rail, and 86 rail lengths west of first cattle guard west of New Madrid railway station. Marked by a stone post with top partly broken off.

P. B. M. 21/1 (M. R. C.) (Lake County, Mississippi River Commission, 1906; H. W. Hemple, 1929).—In cultivated field owned by Harry Tipton, about ¼ mile north of Tiptonville, about 350 meters (1,148 feet) back of river bank, 36 meters (118 feet) east of gravel road leading due north from Tiptonville toward Slough Landing, 50 meters (164 feet) south of drain ditch crossing this road at right angles, 60 meters (197 feet) southeast of concrete bridge over ditch, 50.5 meters (166 feet) south of center of old road which leads east past schoolhouse and was former location of old tramway to Keystone Mill on Reelfoot Lake, and 90 meters (295 feet) southwest of former junction of roads where line of telegraph poles turns north from west. This junction is 111 meters (364 feet) east of center of new gravel road. Drain tile crosses gravel road at junction of old and new roads. Marked by bolt in 6-inch square stone post, projecting about 15 inches above ground and leaning slightly to south.

B. M. Caruthersville (M. R. C.) (Pemiscot County, Mo., Mississippi River Commission, 1906; H. W. Hemple, 1929).—In upper part of Caruthersville, about ½ mile above post office, about 500 meters (1,640 feet) from river bank (in 1912), 187 meters (614 feet) back of levee, on fence line between property of Joe Fisher and St. Louis-San Francisco Railway, 120 meters (394 feet) west of cattle guard, 36 meters (118 feet) from southwest corner of lumberyard, on the northwest corner of Fisher's garden plot, 78 feet south of center line of Fourth Street, 30.3 feet south of south rail of railway, 46.6 feet east of northwest corner of fence line surrounding Fisher's property, and 126.5 feet west of center line of Lower End Street. Marked by standard mark of Mississippi River Commission, brass cap on steel pipe above and copper bolt in tile below, as described in note 16. Station *Caruthers* (see description thereof) is 239.33 meters (785.2 feet) from station in azimuth 124°16′59″.

B. M. 42/4 (M. R. C.) (Mississippi County, Ark., U. S. Engineers, 1906; 1933).—On right bank of Mississippi River, 5 miles northeast of Luxora, about 530 meters (1,739 feet) northwest of gin at Rosa, 218 meters (715 feet) back of angle in levee, 510 meters (1,673 feet) below levee milestone 69/70, in field, about 30 meters (98 feet) out from edge of timber, about 85 meters (279 feet) southwest of building in corner of field, 200 meters (656 feet) north of levee at first angle below Rosa, 30 meters (98 feet) north of tenant house which is 50 meters (164 feet) west of road, and 75 meters (246 feet) west of small house which is 75 meters (246 feet) west of large barn. Marked by standard mark of Mississippi River Commission, brass cap on steel pipe above and copper bolt in tile below, as described in note 16. Distances and azimuths from station to various objects are: B. M. 42/3 (M. R. C.), a stone post projecting 4 inches above ground, 729 meters (2,392 feet), 349°34′; 5-inch ash, 3.7 meters (12 feet), 30°; 6-inch mulberry, 1.8 meters (6 feet), 50°; 14-inch thorn, 7.7 meters (25 feet), 180°; 10-inch

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pecan, 4.7 meters (15 feet), 218°; and 12-inch pecan, 5.8 meters (19 feet), 310°. Station *Cooper* (see description thereof) was 2,256.52 feet from station in azimuth. 321°27′57″. Station *Cooper 2* (see description thereof) is 1,866.70 feet from station in azimuth 316°07′19″.

Cooper 2 (Mississippi County, Ark., U. S. Engineers, 1933).—On right bank of Mississippi River, 5 miles northeast of Luxora, in town of Rosa, 250 feet northwest of center line of proposed set-back levee, 8 feet west of center line of dirt road to levee, 63 feet west of northwest corner of house occupied by J. T. Cooper, 40 feet north of corner of tenant house, and 2 feet northeast of corner of garden fence. Surface and underground marks are standard station disks in concrete, notes 1a and 7a, established in 1929 for station *Cooper* (see description thereof), and reset in above position in 1933. Marks are stamped "Cooper 1929." Station *Cooper*, which was destroyed by levee construction, was 434.25 feet from station in azimuth 345°04′03″. Reference marks are standard reference disks in concrete, note 11a, in same positions as established in 1929. No. 1 is 357 feet north of M. E. Church, on fence line southeast of levee road, 9 feet from center line of levee road, 35 feet (slope) northwest of top of levee, and 860.30 feet from station in azimuth 277°43′25″. No. 2 is 155 feet northwest of levee road, just west of private road leading north from levee road, and 331.35 feet from station in azimuth 351°46′53″. Station *B. M. 42/4 (M. R. C.)* (see description thereof) is 1,866.70 feet from station in azimuth 136°07′28″.

P. B. M. Cottonwood south base (M. R. C.) (Pemiscot County, Mo., C. H. Boyd, 1879; H. W. Hemple, 1929).—On west bank of Mississippi River, about 8 miles south of Caruthersville, about one-fourth mile east of main part of town of Cottonwood Point, directly east of Cottonwood gin, 198 feet south of center line of river road running back from landing, 270 meters (886 feet) back of river bank, 93 feet east of angle in top of levee, in borrow pit, and 90 meters (295 feet) back of Dr. Gay's house. Mark is ½-inch copper bolt, with cross in center, in top of stone post about 10 inches square on top, projecting about 10 inches above surface of ground, and with year "1879" outlined on north face. Station *Cotton* (see description thereof) is 116.51 meters (382.2 feet) distant in azimuth 306°41′16″.

B. M. Barfield (M. R. C.) (Mississippi County, Ark., H. W. Hemple, 1929).—On right (west) bank of Mississippi River, in Barfield, 60 meters (197 feet) back from river bank, 35 meters (115 feet) in front of levee at point 220 meters (722 feet) above levee milepost 57/58, about 40 meters (131 feet) west of track of Jefferson, Lake City & Eastern Railroad, about 13 meters (43 feet) south of center of northwest-and-southeast road that runs through center of town, in center of front dooryard of Mrs. M. A. Robinson, and 13 meters (43 feet) northeast of northeast corner of house. Marked by standard mark of Mississippi River Commission, brass cap on steel pipe above and copper bolt in tile below, as described in note 16, top of pipe being 18 inches above surface.

B. M. 45/4 (M. R. C.) (Mississippi County, Ark., H. W. Hemple, 1929).—On right bank of Mississippi River, about 1 mile south of Osceola, in cultivated field owned by Mr. Will Poole, 25 yards northeast of 10-inch pear tree, and about 1 mile south of Mr. Poole's house. Azimuth to water tank at Osceola is 3° magnetic. The Mississippi River Commission description places station 1 mile back of river bank back of Osceola Bar, 1,310 meters (4,298 feet) west of levee at point 180 meters (591 feet) below levee milepost 80/81, about ¼ mile back of St. Louis-San Francisco Railway, and about 6 meters (20 feet) east of north-and-south fence along second north-and-south road west of levee (this road being line between lands of Fred Keiser and J. D. Driver). To reach mark from Osceola, go south 0.6 mile from courthouse on U. S. Route 61, and turn left and follow private road to station. Station mark is stone post with copper bolt in top and projects 6 inches above surface.

B. M. Luxora (M. R. C.) (Mississippi County, Ark., C. M. Thomas, 1930).—On right bank of Mississippi River, on land belonging to Bill Hail, opposite head of Island No. 30, about 650 meters (2,133 feet) below lower schoolhouse at Luxora, 200 meters (656 feet) along north-and-south road back of levee at point 530 meters (1,739 feet) above levee milepost 75/76, 4 meters (13 feet) back of east-and-west lane, and 0.3 meter (1 foot) east of west fence on north-and-south lane. Marked by standard mark of Mississippi River Commission, brass cap on steel pipe above and copper bolt in tile below, as described in note 16. Pipe projects 18 inches above surface.

Branch (Mississippi County, Ark., H. W. Hemple, 1929).—Station is 48.9 feet southwest of southwest corner of first house from levee, and 127 feet west of

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center line of road. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is on east side of road and 136.9 feet from station in azimuth 275°35′. No. 2 is on east side of road, approximately 600 feet from station in azimuth 359°58′. Station *P. B. M. 55/3 (M. R. C.)* (see description thereof) is 106.6 feet from station in azimuth 94°25′16″.

P. B. M. 55/3 (M. R. C.) (Mississippi County, Ark., H. W. Hemple, 1929).—On right bank of Mississippi River, about opposite foot of Island No. 35, back of head of Barney Chute which runs to Deans Island, about ½ mile below Pecan Point and Black Cat Landing, in cultivated field about 150 meters (492 feet) back of levee at point 830 meters (2,723 feet) above levee milepost 111/112, 10 meters (33 feet) south of east-and-west plantation road separating lands of Emma Wilson and Frank McGavock, and between first and second houses from levee. Station mark is stone post with top 3 inches above surface. Station *Branch* (see description thereof) is 32.49 meters (106.6 feet) distant in azimuth 274°25′.

B. M. Thresher (M. R. C.) (Crittenden County, Ark., H. W. Hemple, 1929).—About 5 miles east of Turrell, on right bank of Mississippi River, on bank of old river that runs down behind Centennial Island, about 2 miles back of present main river bank at mouth of Old River Landing, 1 mile west of Lambethville, about 170 meters (558 feet) back of bank of old river, at base of levee, at point about 120 meters (394 feet) above levee milepost 128/129, about 100 meters (328 feet) below store, abeam of old cotton gin on the Sanders plantation, 14 meters (46 feet) north of small house, on land of G. W. Thresher, about 10 feet off levee road toward top of levee, and at northeast corner of yard. Marked by standard mark of Mississippi River Commission, brass cap on steel pipe above and copper bolt in tile below, as described in note 16. Top of pipe projects 18 inches above surface. Station *Sanders* (see description thereof) is 1,792.36 meters (5,880.4 feet) distant in azimuth 58°08′47″.

Bass (De Soto County, Miss., H. W. Hemple, 1929).—About 5.6 miles southwest of Walls railroad station, 3 miles north of Lake Cormorant, and on the Bass plantation. To reach from Walls railroad station, go southwest 4.9 miles on U. S. Route 61 to cotton gin on west side of road (about 3 miles north of Lake Cormorant), turn onto gravel road and go 0.7 mile to the Bass plantation buildings and station site. Station is in southeast corner of barnyard, 27 feet east of southeast corner of barn, and 34 feet north of center line of gravel plantation road. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Upper mark is flush with ground. Station *P. B. M. Norfolk (M. R. C.)* (see description thereof) is 68.25 meters (223.9 feet) from station in azimuth 75°02′.

P. B. M. Norfolk (M. R. C.) (De Soto County, Miss., H. W. Hemple, 1929).—On left bank of Mississippi River, 5.6 miles southwest of Walls railroad station, 0.7 mile west of U. S. Route 61, on the Bass plantation (Norfolk P. O.), 1,400 meters (4,593 feet) back of bank of Mississippi River, 1,200 meters (3,937 feet) back of levee at a point 500 meters (1,640 feet) above levee milepost 11/12, on south side of east-and-west plantation road leading back from landing, in northeast corner of pasture lot, ½ meter (2 feet) south of south barn fence, 2 meters (7 feet) west of fence west of cabin, 30 feet southwest of tenant house, and 10 feet from center of bell tower. Station is marked by cap on pipe and bolt in tile (probably as described in note 16). Witness marks are at following distances and azimuths from station: Storehouse, 140 meters (459 feet), 56°; plantation house, 167 meters (548 feet), 60°; windmill tower, 15.4 meters (51 feet), 110°; and tree at fork in road, 35 meters (115 feet), 230°. Station *Bass* (see description thereof) is 68.25 meters (223.9 feet) distant in azimuth 255°02′.

Martine 2 (Crittenden County, Ark., U. S. Engineers, 1933).—On right bank of Mississippi River, about 8 miles southwest of West Memphis, about 1,000 feet to land side of Lower St. Francis Levee, at point 1,300 feet below levee milepost 161/162, about 700 feet south of the Fetie Martine plantation house and store, 3 feet west of north-and-south wire fence, and 30 feet east of north-and-south plantation road to levee. To reach from West Memphis, go west on U. S. Route 70 to first gravel road leading south, follow this to gravel road which turns west at point directly south of Hulbert railway station, and follow 7.3 miles to sharp turn to right and station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a, established in 1929 for station *Martine* (see description thereof) and reset in above position in 1933. Marks are stamped "Martine 1929." Station *Martine*, which was

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destroyed by levee construction, was 968.97 feet from station in azimuth 2°07′52″. Reference marks are standard reference disks in concrete, note 11a, in same position as established in 1929. No. 1 is in southeast corner of yard about Waverly schoolhouse, 16 feet west of center line of road, 25 feet south of 20-inch deciduous tree, and 784.80 feet from station in azimuth 358°32′36″. *Martine reference mark no. 2* is on banquette of levee and 1,295.55 feet from station in azimuth 36°18′59″. Station *B. M. Kurr* (*U. S. E.*) (see description thereof) is 1,809.58 feet from *Martine reference mark no. 2* in azimuth 205°22′53″, and 591.05 feet from station in azimuth 180°48′59″.

B. M. Kurr (**U. S. E.**) (Crittenden County, Ark., U. S. Engineers, 1931).—On right bank of Mississippi River, ¼ mile below levee milepost 161/162 in Lower St. Francis Levee, about 1,500 feet back of levee, near schoolhouse, 400 feet north of farmhouse, in yard of tenant house, 30 feet east of gravel road, 20 feet south of 30-inch maple, and 20 feet north of 24-inch maple. Marked by standard mark of Mississippi River Commission, brass cap on steel pipe above and copper bolt in tile below, as described in note 16. Station *Martine 2* (see description thereof) is 591.05 feet from station in azimuth 0°48′59″; and *Martine reference mark no. 2* is 1,809.58 feet from station in azimuth 25°22′58″.

Organ (Crittenden County, Ark., J. S. Bilby, 1916).—On west bank of Mississippi River, at extreme eastern end of old main line of track of Chicago, Rock Island & Pacific Railway at Hopefield, at southeast end of small peninsula which projects in easterly direction and is protected by breakwater on all sides, 5.8 meters (19 feet) from east-side breakwater, and 33.6 meters (110 feet) from north-side breakwater. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Station *Hopefield* (see description thereof) is 98.09 meters (321.8 feet) from station in azimuth 28°12′. In 1920 it was reported that peninsula had been washed away and station destroyed. Measurements from stations *Crossing* and *Hopefield* (see descriptions thereof) located position of *Organ* about 9 feet from low-water mark.

Crossing (Crittenden County, Ark., J. S. Bilby, 1916; 1920).—On right-of-way of Chicago, Rock Island & Pacific Railway, just east of point where this road crosses St. Louis-San Francisco Railway tracks north of Bridge Junction, 1.68 meters (5.5 feet) south of south rail of old main line of former company leading to Hopefield, and 7.68 meters (25.2 feet) west of west abutment of railway bridge. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Intersection of east rail of St. Louis-San Francisco Railway and south rail of Chicago, Rock Island & Pacific Railway leading to Hopefield is 75.84 meters (248.8 feet) from station in azimuth 78°03′. Mark is stamped with name and dates "1916" and "1920." Station was reported not recovered in 1928.

Levee (Crittenden County, Ark., J. S. Bilby, 1916).—On right-of-way of Chicago, Rock Island & Pacific Railway, about 2.5 miles east of Hulbert railway station, and on new levee which will be used as subgrade for main track, 4.31 meters (14.1 feet) north of north rail of main track. Marked by standard station disk in concrete, note 1a. Milepost 7 is 44.25 meters (145.2 feet) from station in azimuth 277°53′. In 1920 it was reported that fill had been widened out; station was dug for but not found. In 1928 it was again reported that station is believed to be under fill.

Hulbert (Crittenden County, Ark., J. S. Bilby, 1916; 1920).—On right-of-way of Chicago, Rock Island & Pacific Railway, at Hulbert railway station, 120 meters (394 feet) east of switch at west end of passing track, 3.52 meters (11.5 feet) south of south rail of main track, and 9.28 meters (30.4 feet) northeast of twenty-sixth telegraph pole west of milepost 9. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Standard reference disk in concrete, note 11a, is 7.11 meters (23.3 feet) east of twenty-sixth telegraph pole west of milepost 9, and 5.914 meters (19.40 feet) from station in azimuth 348°00′. Station and reference marks are stamped with name and dates "1916 1920". In 1928 station mark was reported found out on top of ground and reference mark lost.

Horse reference mark no. 2 (Crittenden County, Ark., H. W. Hemple, 1929; 1934).—About 22 miles airline southwest of Memphis, 9 miles by road south of Neuhardt railroad station, along road which passes just south of Locust Grove Church, and in yard southeast of first farmhouse west of levee road. Marked by standard reference disk in concrete, note 11a. Station *Horse* (see description thereof) was 390.346 meters (1,280.66 feet) distant in azimuth 271°55′43″. Station *B. M. Brock* (*M. R. C.*) (see description thereof) is 401.4 meters (1,317 feet)

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distant in azimuth 350°10′00″. Station *Horse 2* (see description thereof) is 10.973 meters (36.00 feet) distant in azimuth 53°37′.

B. M. Brock (M. R. C.) (Crittenden County, Ark., U. S. Engineers, 1931; 1934).—Three-fourths mile below levee milepost 175/176 in Lower St. Francis Levee District, 2,000 feet southwest of Locust Grove Church, 1,400 feet back of levee, 100 feet south of east-and-west road, in northeast corner of tenant house yard, and on land of T. Keith (colored). Marked by brass cap on iron pipe and concrete tile. Top of pipe projects 14 inches. Station *Horse* (see description thereof) was 499.629 meters (1,639.20 feet) from station in azimuth 220°03′44″. Station *Horse reference mark no. 2* (see description thereof) is 401.4 meters (1,317 feet) from station in azimuth 170°10′01″. Station *Horse 2* (see description thereof) is 396.643 meters (1,301.32 feet) from station in azimuth 168°44′56″. Station *B. M. R-92-2-1 (M. R. C.)* (see description thereof) is 511.568 meters (1,678.37 feet) from station in azimuth 340°57′53″.

Horse 2 (Crittenden County, Ark., U. S. Engineers, 1934).—About 22 miles airline, southwest of Memphis, about 3 miles below Pinckney, 1,360 feet back of Lower St. Francis Levee at point 1,500 feet below milepost 175/176, about 1,000 feet directly back (west) of Locust Grove Church and cemetery, and 3 feet north of northeast corner of tenant house. Marked by standard station disk in concrete, stamped "Horse 1929." Station mark of station *Horse* (see description thereof), which was 399.014 meters (1,309.10 feet) distant in azimuth 270°57′07″, was dug up in February 1934 and reset in above position. Station *Horse reference mark no. 2* (see description thereof) is 10.973 meters (36.00 feet) from station in azimuth 233°37′. Station *B. M. Brock (M. R. C.)* (see description thereof) is 396.643 meters (1,301.32 feet) from station in azimuth 348°44′55″.

B. M. R-92-2-1 (M. R. C.) (Crittenden County, Ark., U. S. Engineers, 1931; 1934).—About 3,000 feet south of Locust Grove Church, 1,300 feet (azimuth 90°) from angle in levee, 314 feet above milepost 176, 1,319.5 feet (azimuth 104°16′) from center of levee at milepost 176, and 3 feet north of northeast corner of small garage. Marked by brass cap on iron pipe and concrete tile. Station *Horse* (see description thereof) was 879.697 meters (2,886.14 feet) from station in azimuth 190°07′52″. Station *B. M. Brock (M. R. C.)* (see description thereof) is 511.568 meters (1,678.37 feet) from station in azimuth 160°57′57″.

Mississippi-Tennessee boundary monument (De Soto County, Miss.-Shelby County, Tenn., H. W. Hemple, 1929).—On east side of U. S. Route 61, 1707.0 feet from station *Lake View* (see description thereof) in azimuth 175°20′04″. Mark is an angle iron set in concrete and is said to mark the State boundary between Mississippi and Tennessee.

MISSISSIPPI RIVER (SECOND ORDER)

MISSISSIPPI RIVER COMMISSION

Principal points

P. B. M. Mitcham (M. R. C.) (Fulton County, Ky., Mississippi River Commission, 1880; 1906).—About 0.3 mile south of point where chute of Island No. 8 empties into river, in grove of small sycamore trees in woods, 200 meters (656 feet) from river bank, 95 meters (312 feet) in front of levee at point 300 meters (984 feet) below angle in levee, 450 meters (1,476 feet) below levee milepost 11/12, and 77 meters (253 feet) below rail fence separating timber from cultivated field. Marked by stone post surmounted by old-style iron pipe without cap which projects 6 inches. Azimuths from station to three blazed 8-inch sycamore trees, each 4 meters (13 feet) distant, are: 50°, 145°, and 260°.

P. B. M. Tennessee (M. R. C.) (Lake County, Mississippi River Commission, 1880; 1906).—One and one-half miles above Slough Landing, 413 meters (1,355 feet) above levee milepost 21 at end of levee, 610 meters (2,001 feet) from river bank back of towhead, on small hillock in borrow pit in front of levee, 32 meters (105 feet) from center of levee, and 63 meters (207 feet) below white house just inside of levee. Marked by stone post. Distances and azimuths from station to blazed trees are: 14-inch cottonwood, 17.4 meters (57 feet), 70°; 16-inch cottonwood, 19.4 meters (64 feet), 80°; and another 14-inch cottonwood, 5.3 meters (17 feet), 160°. In 1927, station was reported destroyed by moving of levee.

P. B. M. State Line (east base) (M. R. C.) (Lake County, Tenn.-Fulton County, Ky., Mississippi River Commission, 1880; 1906).—About 7 miles above New Madrid, Mo., ¾ mile below Bessie Landing, on or near State line between

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Lake County, Tenn., and Fulton County, Ky., on east side of peninsula extending northward toward New Madrid, Mo., 4 meters (13 feet) west of old high bank, 3 meters (10 feet) south of south line fence of Alexander Adams, and 83.5 meters (274 feet) east of large State-line boundary stone. Marked by stone post, with top broken off, which projects 2 inches. Azimuth from station to blazed 12-inch elm tree, distant 11 meters (36 feet), is 170°. In 1927, station was reported destroyed by caving into river.

Mott (M. R. C.) (Pemiscot County, Mo., Mississippi River Commission, 1880; 1927).—Two and one-half miles above Gayoso, on south side of cultivated field, back of willow bar, about 45 meters (148 feet) back of river bank, about 270 meters (886 feet) southwest of bank of Robinson Bayou, and 40 meters (131 feet) back of center line of road along bayou. Marked by stone post, with top broken off, which projects about 3 inches.

P. B. M. Myers (M. R. C.) (Lake County, Mississippi River Commission, 1880; 1906).—Two miles above Caruthersville, Mo., in woods near center of and on eastern side of Island No. 15, 760 meters (2,493 feet) east of river bank (in 1912), 330 meters (1,083 feet) back of wide slough, 250 meters (820 feet) west of old chute of Island No. 15, 33 meters (108 feet) south of east-and-west fence at lower edge of field and upper side of timber, and on land belonging to Rose Powell. Marked by stone post which projects 3 inches. Distances and azimuths from station to blazed trees are: 6-inch boxelder, 9 meters (30 feet), 45°; 6-inch hackberry, 7 meters (23 feet), 195°; 14-inch forked locust, 12 meters (39 feet), 240°; and 5-inch persimmon, 8 meters (26 feet), 345°.

P. B. M. Cottonwood north base (M. R. C.) (Pemiscot County, Mo., C. H. Boyd, 1879; 1906).—About ¾ mile above Cottonwood Point, 300 meters (984 feet) below point opposite foot of Island No. 18, at base of west slope of levee, 40 meters (131 feet) below angle in levee, 70 meters (230 feet) back of river bank, 25 meters (82 feet) south of house of James Garrett, and 11 meters (36 feet) south of yard fence. Marked by copper bolt in stone post which is marked "1879". Top of stone is about 6 inches below surface. A pipe marked with triangle has been placed at side of stone. Azimuth from station to blazed, 60-inch cottonwood tree, distant 48 meters (157 feet), is 10°. In 1927, station was reported destroyed.

P. B. M. Slater (M. R. C.) (Dyer County, Mississippi River Commission, 1880; 1906).—Three hundred meters (984 feet) below point opposite foot of timber on foot of Island No. 21, 86 meters (282 feet) from river bank, at edge of timber on west side of cultivated field, 13 meters (43 feet) northwest of corner of field, and about 40 meters (131 feet) below farm road leading back from river. Marked by stone post, top of which is flush with surface. Distances and azimuths from station to blazed trees are: 36-inch cottonwood, 3 meters (10 feet), 140°; and 14-inch sycamore, 8.5 meters (28 feet), 320°. In 1927, station was reported destroyed.

Michell=B. M. 36/2 (M. R. C.) (Dyer County, Mississippi River Commission, 1880; 1906).—About 2 miles above mouth of Obion River before it turns southwardly, 2 miles below foot of Island No. 21, 90 meters (295 feet) back of old river bank which is used as road, about in center of cottonfield, 80 meters (262 feet) south of north fence, and 75 meters (246 feet) north of south fence. Marked by stone post, top of which is 14 inches below surface. Distances and azimuths from station to blazed trees are: 8-inch cottonwood, 70 meters (230 feet), 30°; and 12-inch cottonwood, 70 meters (230 feet), 40°.

Obion=P. B. M. 32 (M. R. C.) (Dyer County, Mississippi River Commission, 1880; 1906).—Three-fourths mile above Obion River at its junction with the Mississippi River, 330 meters (1,083 feet) below angle in fence at southwest corner of cultivated field, 10 meters (33 feet) west of public road running to Obion River, 6 meters (20 feet) east of east bank of long narrow lake or slough, and in west side of a double osage-orange stump which stands 2 feet above ground and has limbs growing out of it. Marked by copper bolt in stone post, top of which is flush with surface. Distances and azimuths from station to blazed trees are: 18-inch honey locust, 2.4 meters (8 feet), north; 48-inch cottonwood, 30 meters (98 feet), 240°; another 48-inch cottonwood, 35 meters (115 feet), 280°; and 30-inch cottonwood, 135 meters (443 feet), 335°.

Carr (M. R. C.) (Lauderdale County, Mississippi River Commission, 1880).—On upper part of Ruckers Point, opposite Barfield, Ark., about ¾ mile below Tamm Landing and Barr post office, in cultivated field back of bar, 365 meters (1,198 feet) from river bank, on land belonging to J. F. Smith, and 225 meters (738 feet) southeast of his house. Marked by stone post, top of which is 12 inches below surface.

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Williams (M. R. C.) (Mississippi County, Ark., Mississippi River Commission, 1880).—On Barfield Point, opposite Forked Deer River, back of Island No. 25, 2 miles below Tomato Landing at head of island, on main bank between fence and old chute of Island No. 25, about 100 meters (328 feet) west of 55-yard jog in fence line on Island No. 25, about 6 meters (20 feet) from fence, on land belonging to James Williams, and about 25 meters (82 feet) east of house. Marked by stone post, top of which is 6 inches or more below surface.

P. B. M. Ashport (M. R. C.) (Lauderdale County, Mississippi River Commission, 1880; 1906).—In Ashport, about ⅞ mile below foot of Forked Deer or Island No. 27, about 100 meters (328 feet) back of river bank, about 120 meters (394 feet) south of old schoolhouse, 20 meters (66 feet) south of main street of Ashport, about 80 meters (262 feet) west of store, in yard which formerly surrounded cotton gin of John Connor, Jr., and 13 meters (43 feet) west of old site of gin. The gin has been burned, but stacks are still standing. Marked by stone post which leans slightly and projects 12 inches. Station has been reported destroyed.

Fletcher (west base) (M. R. C.) (Mississippi County, Ark., Mississippi River Commission, 1880).—Back of Ashport Bar, in woods on old river bank on Island No. 28, 2¼ miles above Rosa Landing, about 1,030 meters (3,379 feet) southwest of levee milepost 69/70 near Rosa, about 200 meters (656 feet) back of edge of timber and river bank of point opposite foot of towhead, and 50 meters (164 feet) back from edge of heavy timber. Marked by stone post which projects about 10 inches. Distances and azimuths from station to blazed trees are: 12-inch sycamore, 8.6 meters (28 feet), 25°; 26-inch hackberry, 3.2 meters (10 feet), 162°; 8-inch elm, 10.3 meters (34 feet), 290°; and 8-inch persimmon, 5.2 meters (17 feet), 330°.

P. B. M. Yankee Bar (M. R. C.) (Lauderdale County, Mississippi River Commission, 1880; 1906).—About 1½ miles below Plum Point, 1 mile below point opposite lower end of Osceola, Ark., ½ mile below point opposite head of Bullerton Towhead, 560 meters (1,837 feet) back of river bank (in 1912), 22 meters (72 feet) from old river bank, 50 meters (164 feet) below small house, 16 meters (52 feet) back of fence along public road, about 10 meters (33 feet) below small log stable, and in field belonging to J. P. Gillespie. Marked by old-style tile and pipe. The edges of cap on pipe are broken off, and top projects about 18 inches.

P. B. M. Craighead (northeast base) (M. R. C.) (Mississippi County, Ark., Mississippi River Commission, 1880; 1906).—Directly opposite Fulton, Tenn., 58 meters (190 feet) from river bank, 8 meters (26 feet) back of old levee, 27 meters (89 feet) S. 10° W. from small frame church or school, 2 meters (7 feet) south of east-and-west fence along road, and on land belonging to Mrs. Falls. Marked by stone post which projects 4 inches.

P. B. M. Hatchee Island (M. R. C.) (Tipton County, Mississippi River Commission, 1880; 1906).—One mile above Randolph, back of lower part of Hatchee Island, opposite small willow towhead 1¼ miles below foot of Island No. 34, in middle of road running along east bank of dry Hatchee, 8 meters (26 feet) from top of bank, and 12 meters (39 feet) west of fence. Marked by stone post, top of which is broken off and projects 3 inches. Distances and azimuths from station to blazed trees are: 24-inch cottonwood, 14.6 meters (48 feet), 10°; 20-inch sycamore, 17.3 meters (57 feet), 230°; and 12-inch persimmon, 11.9 meters (39 feet), 255°.

P. B. M. Pennell (M. R. C.) (Tipton County, Mississippi River Commission, 1880; 1906).—On lower part of Island No. 35, 1¾ miles above foot of island and Pecan Point, Ark., ¾ mile below Midway Landing, about ½ mile below point opposite Random Shot Landing, 50 meters (164 feet) back of river bank, 10 meters (33 feet) west of north-and-south road running down island, and 55 meters (180 feet) south of line between land of Dr. Childs on south and Lee Ellis on north. Marked by stone post which projects 3 inches. Lee Ellis' house is 214 meters (702 feet) from station in azimuth 150°, and Dr. Childs' house is 93 meters (305 feet) from station in azimuth 305°. Distances and azimuths from station to blazed trees are: 16-inch cottonwood, 22 meters (72 feet), 110°; 18-inch sycamore, 13.3 meters (44 feet), 160°; and 30-inch pecan, 20.8 meters (68 feet), 320°.

Corona (M. R. C.) (Tipton County, Mississippi River Commission, 1880; 1906).—On upper end of old Centennial Island, about 1¼ miles above Corona Landing, 34 meters (112 feet) from high river bank, 3.5 meters (11 feet) back of old landing warehouse, at angle in road, and on land belonging to H. W. Stockley.

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Marked by stone post which projects 6 inches. Stockley's gin is about 133 meters (436 feet) from station in azimuth 150°. Station has been reported destroyed.

Cutoff (M. R. C.) (Shelby County, Mississippi River Commission, 1880; 1906).—About 1¾ miles above Corona, on left bank of old chute behind Brandywine Island, 250 meters (820 feet) from river bank (in 1912), on lower side of field which lies west of Bateman Bayou, about 15 meters (49 feet) north of point where private road to Brandywine Island crosses old chute, in edge of cultivated field, and 6 meters (20 feet) east of edge of bank of chute. Marked by tile and pipe, note 16, which replaced old stone. Top of pipe projects about 12 inches. Distances and azimuths from station to blazed trees are: 4-inch pecan, 12.1 meters (40 feet), 5°; 8-inch cottonwood, 6.3 meters (21 feet), 70°; 3-inch sycamore, 4.4 meters (14 feet), 105°; and 3-inch pecan, 7 meters (23 feet), 180°. Station has been reported destroyed.

P. B. M. Barksdale (M. R. C.) (Shelby County, Mississippi River Commission, 1880; 1906).—Back of chute back of Brandywine Island, about 1½ miles above mouth of chute, 245 meters (804 feet) above mouth of Brinkley Bayou, 15 meters (49 feet) west of river road, 50 meters (164 feet) south of row of 3 abandoned cabins, in small field opposite site of old abandoned sawmill, and 16 meters (52 feet) from bank of chute. Marked by tile and pipe, note 16, which replaced old stone. Distances and azimuths from station to blazed trees are: 12-inch cottonwood, 15.4 meters (51 feet), 125°; 5-inch gum, 8.1 meters (27 feet), 128°; 4-inch gum, 4.5 meters (15 feet), 137°; 8-inch locust, 4.5 meters (15 feet), 242°; and 3-inch gum, 1.4 meters (5 feet), 324°.

P. B. M. Wolf River (M. R. C.) (Shelby County, Mississippi River Commission, 1879).—About 1 mile above mouth of Wolf River, about 1 mile to nearest point on Mississippi River, 350 meters (1,148 feet) west of that part of Loosahatchie (also called Sycamore Chute) cut off by river, 450 meters (1,476 feet) above junction of Loosahatchie and Wolf Rivers, about 130 meters (427 feet) east of old chute and edge of willow trees, 3 meters (10 feet) west of road running north from ferry, and in cultivated field. Marked by stone post which projects about 5 inches.

Forrest (M. R. C.) (Shelby County, Mississippi River Commission, 1879; C. H. Boyd, 1879).—On Presidents Island, approximately in center of line about 428 meters (1,404 feet) south from northeast corner of island. Marked by limestone shaft, about 3 feet long by 4 inches square on top, with letters "U. S." and hole cut in top. Station *President* (see description thereof) is 4.092 meters (13.43 feet) from station in azimuth 191°47′.

Bayou (M. R. C.) (Crittenden County, Ark., Mississippi River Commission, 1879; C. H. Boyd, 1879).—About 4 miles below Memphis, Tenn., on point of land through which Four Mile Bayou empties into Mississippi River. (Type of mark not described.) Station *Four Mile Bayou* (see description thereof) is 86.62 meters (284.2 feet) from station in azimuth 244° 34′.

Crawford (M. R. C.) (Shelby County, Mississippi River Commission, 1879).—In field on Presidents Island, about 2½ miles west of high bank on Tennessee Chute, about ¾ mile above what was formerly foot of Vice Presidents Island, 300 meters (984 feet) northeast of building in field, 300 meters (984 feet) west of bank of chute with cottonfield between, 84 meters (276 feet) southwest of log house, 15 meters (49 feet) south of edge of bank, about 20 meters (66 feet) south of edge of timber, 29 meters (95 feet) south of 48-inch cottonwood tree, and on land belonging to P. J. Doerack. Marked by stone post which projects 1 inch.

Lake (M. R. C.) (Shelby County, Mississippi River Commission, 1879; C. H. Boyd, 1879).—Nearly north of end of willow trees on Vice Presidents Island, on flat point of shore known as "Lakes Landing" which belongs to J. C. and J. J. Castles. (Type of mark not described.) Station *Lakes* (see description thereof) is 15.17 meters (49.8 feet) from station in azimuth 119°35′.

Crittenden east base (M. R. C.) (Crittenden County, Ark., Mississippi River Commission, 1879; 1906).—About 4 miles west of Hopefield, about 400 meters (1,312 feet) from river bank, 1,080 meters (3,543 feet) west of west end of Chicago, Rock Island & Pacific Railway trestle crossing Four Mile Bayou, buried under north side of railway embankment and levee, and 6.5 meters (21 feet) from center line of track. Marked by stone post which is surmounted by 5-inch iron pipe, 8 feet long with large cast-iron cap. Cap projects about 2½ feet.

Crittenden west base (M. R. C.) (Crittenden County, Ark., Mississippi River Commission, 1879).—About ½ mile from river bank at point ¾ mile above Bradley Landing, 50 meters (164 feet) below point where levee leaves Chicago,

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Rock Island & Pacific Railway, and buried under south side of railway embankment. Marked by stone post which is surmounted by 5-inch iron pipe, 10 feet long with cast-iron cap. Pipe stands about half out of ground.

Leadbetter (M. R. C.) (De Loche) (Shelby County, Mississippi River Commission, 1879; C. H. Boyd, 1879).—In cultivated field on western part of Presidents Island, about ½ mile east of bank of island at point near a U. S. light, about 1½ miles below Bradley Landing, about opposite Wyanoke Landing, a little north of east from Rowleys Landing, about 100 meters (328 feet) east of edge of timber, about 160 meters (525 feet) west of building and about on line produced between building and one farther east, on property belonging to Mrs. De Loche, and near boundary of her property and that of Mrs. Palmer. Marked by limestone shaft about 3½ feet long, 4 inches square on top, and projecting about 5 inches. Top of stone is marked with hole surrounded by triangle and letters "U. S." Three witness stones similar to station mark, except that they do not have triangles around holes, are distant from station 55 feet 11 inches, 64 feet 11 inches, and 61 feet 7 inches. Two of the stones are in a line approximately north and south through station, and the third is east of station.

Mathews (M. R. C.) (Shelby County, Mississippi River Commission, 1879).—On levee 1½ miles above Reeves Landing, 1,120 meters (3,675 feet) northeast of Matthews' gin, at intersection of east-and-west road with the levee, 230 meters (755 feet) below bend in levee, and 200 meters (656 feet) above curve and fork in levee. Marked by stone post.

Reeves (M. R. C.) (Shelby County, Mississippi River Commission, 1879).—On levee 550 meters (1,804 feet) above Reeves Landing, 970 meters (3,182 feet) southwest of Matthews' gin, and 225 meters (738 feet) below junction of two levees and road from west. Marked by stone post.

Harris (M. R. C.) (Crittenden County, Ark., Mississippi River Commission, 1879; C. H. Boyd, 1879).—On Tollisons Point, about 3 miles above Scanlans Landing, on land belonging to Mrs. A. H. Tollison, and east of group of houses belonging to R. W. Hulbert. Marked by limestone shaft, about 2 feet long by 4 inches square, with drill hole and letters "U. S." in top. Two reference stones, similar to station mark, are east and southeast of station. Station *Tollison* (see description thereof) is 2.999 meters (9.84 feet) from station in azimuth 265°52′.

Horn Lake (M. R. C.) (Westbrooks) (Shelby County, Mississippi River Commission, 1879; C. H. Boyd, 1879).—At Horn Lake Landing, on property of Dr. Westbrooks, about 100 meters (328 feet) from house of Mr. Lorantz, 40 meters (131 feet) from bank of river, and 12 meters (39 feet) from fence around clearing. Marked by drill hole between letters "U. S." in top of stone monument.

Patterson's (M. R. C.) (Brewer) (Crittenden County, Ark., Mississippi River Commission, 1879; C. H. Boyd, 1879).—About 2 miles above Scanlans Landing, opposite Collins Landing, near edge of river bank, 310 meters (1,017 feet) outside of levee, on property of Mr. Brewer, about 1 mile toward river from his dwelling, and between bank of river and main road. Marked by drill hole between letters "U. S." in top of small stone which projects 6 inches. When this station was occupied by the U. S. Coast and Geodetic Survey, a small triangle was cut in stone surrounding drill hole. Distances and approximate directions from station to blazed trees are: 6 meters (20 feet), southeast; 8 meters (26 feet), north by west; and 15 meters (49 feet), north.

Scanlan's (M. R. C.) (Scanlan) (Shelby County, Mississippi River Commission, 1879; C. H. Boyd, 1879).—About 18 miles below Memphis, at Scanlans Landing, on property of Maj. Wm. Scanlan and about 1 mile down river from his dwelling, about 25 meters (82 feet) from nearest corner of storehouse, and 15 meters (49 feet) back from river bank. Marked by 5-inch square stone post which projects 6 inches. Top of stone is marked with drill hole between the letters "U. S."; and when station was occupied by the U. S. Coast and Geodetic Survey, a small triangle was cut around drill hole.

Cow Island (M. R. C.) (Shelby County, Mississippi River Commission, 1879; C. H. Boyd, 1879).—On Cow Island, about ¼ mile above clearing occupied by Mrs. Tweedle. Marked by drill hole between letters "U. S." in top of limestone shaft which projects about 1 foot. Distances and approximate directions from station to two willow trees are: 21 feet 7 inches, southwest; and 41 feet 3 inches, southeast.

Fairview (M. R. C.) (De Soto County, Miss., Mississippi River Commission, 1879).—On Fairview Plantation, 1,340 meters (4,396 feet) below Green's store, near levee, 300 meters (984 feet) below road leading past cotton gin, near east-

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and-west road, and 320 meters (1,050 feet) from southwest corner of cotton gin in azimuth 42°50′. Marked by stone post.

State Line (M. R. C.) (Rock Chute) (De Soto County, Miss., Mississippi River Commission, 1878; 1913; C. H. Boyd, 1879).—On high ridge at foot of Cow Island No. 47, a little below point opposite Thelma Landing, about ¼ mile above present mouth of Rock Chute, about 120 meters (394 feet) west of bank of chute, between old bank of island and edge of field occupying foot of island and belonging to Herbert Boyd, 158 meters (518 feet) below house in same field, about 90 meters (295 feet) south of another house, and about 150 meters (492 feet) from river bank (in 1913). Marked by ¼-inch drill hole between letters "U. S." in top of square stone post which projects a few inches. When station was occupied by the U. S. Coast and Geodetic Survey, a small triangle was cut around drill hole in top of stone. Two reference stones, similar to the one marking station, are 44.4 meters (146 feet) distant in azimuth 319°20′ and 38.6 meters (127 feet) distant in azimuth 208°18′. Triangle blazes on two cottonwood trees are each about 2½ meters (8 feet) from station to northeast and southeast.

Nelmo (M. R. C.) (De Soto County, Miss., Mississippi River Commission, 1879).—Outside of levee in front of the Nelmo plantation, near edge of river bank, and 95 meters (312 feet) outside of levee from point 450 meters (1,476 feet) above south end of Fish Lake. Marked by stone post.

Cat Island (M. R. C.) (Crittenden County, Ark., Mississippi River Commission, 1879).—Opposite Morganza Crevasse on land belonging to Mr. Harvey, 225 meters (738 feet) outside of levee, 68 meters (223 feet) above narrow enclosed field, and 25 meters (82 feet) from river bank. Marked by copper tack in wooden hub.

MISSISSIPPI RIVER (SECOND ORDER)

COAST AND GEODETIC SURVEY

Principal points

Hopefield north base (Crittenden County, Ark., C. H. Boyd, 1879; 1906).—In Hopefield, directly opposite Memphis, between prolongation of lines of Court and Jefferson Streets in Memphis, approximately at intersections of ranges between northeast corner of Mrs. Langram's lot and south corner of Peabody Hotel, between southeast corner of same lot and chimney of the "Old Soap Factory", about 75 meters (246 feet) from shore, 2 meters (7 feet) from levee and road, 31.9 feet from and directly opposite northeast corner of Mrs. Langram's lot, and on property belonging to O'Connor Williams. Surface mark is 1-inch brass bolt, with cross cut in top, in drill hole in top of stone post in which was set in beton. Post is 1 foot square by 4 feet long and projects 1 foot. Northeast side of stone is marked "U. S. Coast Survey", southeast side, "1879", and northwest side, "N. Base". Underground mark is earthenware pyramid which is buried 6 inches under bottom of stone post. Witness stone, marked with cross on top and "U. S. C. S." on one side, is near southeast corner of Mrs. Langram's lot and 35.9714 meters (118.016 feet) in direction of base line (azimuth 31°33′). Triangle-blazed tree is 40.6 feet northeast of station, and another triangle-blazed tree is 176.0 feet east of station. Station was reported destroyed by floods of 1913.

Memphis astronomical station (Shelby County, C. H. Boyd, 1879).—This station is identical with latitude and longitude station established by W. Eimbeck in 1877. Station is in northwest corner of customhouse grounds in Memphis, in square bounded by Madison, Front, and Adams Streets and levee or steamboat landing, 4.5 meters (15 feet) back from line of north side of customhouse, 44 meters (144 feet) from northwest corner of customhouse, 9.5 meters (31 feet) from fence, and 12 meters (39 feet) from edge of bluff. Marked by double brick piers about 8 inches apart and joined by cement. Station point is midway between piers and marked by hole drilled into cement and filled with wooden plug into which is driven copper tack. This point was determined by the intersection of diagonals drawn from the outer corners of each pier. In 1914 station was reported destroyed.

Dorian (Shelby County, C. H. Boyd, 1879).—About 1½ miles below Court Square in Memphis, on bluff about 90 feet high, on land belonging to and occupied by Mrs. E. M. Dorian, and 73 feet 2 inches from fence corner to north and 90 feet from another fence corner to south. Surface mark is limestone shaft about 3 feet long with letters "U. S. C. S." cut on one face and cross cut in top. Underground mark is earthen pyramid with hole in top, buried about 3½ feet below surface.

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President (Shelby County, C. H. Boyd, 1879).—On Presidents Island, in center of line about 428 meters (1,404 feet) south from northeast corner of island. Surface mark is limestone shaft, about 3 feet long by 6 inches square on top, with letters "U. S. C. S." on one face and cross cut in top. Underground mark is earthen pyramid with hole in top, buried about 3½ feet below surface. Station *Forrest* (*M. R. C.*) (see description thereof) is 4.092 meters (13.43 feet) from station in azimuth 11°47′.

Forrest (Shelby County, C. H. Boyd, 1879).—On Presidents Island, about 800 meters (2,625 feet) west of prison house which is on north side of island, on land known as the "Forrest Plantation", on marked rise in land as approached from river, about 25 meters (82 feet) south of river, in small grove of scattered fruit trees, and about 2 feet west of line of fence which runs north and south. Surface mark is limestone shaft, about 3 feet long by 6 inches square on top, with letters "U. S. C. S." on one side and cross cut in top. Underground mark is earthen pyramid with hole in top, buried about 3½ feet below surface.

Four Mile Bayou (Crittenden County, Ark., C. H. Boyd, 1879).—About 4 miles below Memphis, on point of land through which Four Mile Bayou empties into Mississippi River, and in strip of partially cleared land about 60 meters (197 feet) above bayou. Surface mark is limestone shaft, 6 inches square on top, projecting a few inches, with letters "U. S. C. S." on one side and cross cut in top. Underground mark is earthen pyramid with hole in top, buried about 3½ feet below surface. Distances and approximate directions from station to blazed trees are: 47 feet 6 inches, north; 43 feet, east; and 52 feet, south. Station *Bayou* (*M. R. C.*) (see description thereof) is 86.62 meters (284.2 feet) from station in azimuth 64°34′.

Brint (Shelby County, C. H. Boyd, 1879).—On north side of Presidents Island, about 2¼ miles below (west of) prison house on the Forrest Plantation, and on small but quite well-marked knoll which is first or most easterly of a series of ridges and knolls. There is small ridge back of knoll which runs parallel with shore but not beyond knoll to eastward. Surface mark is limestone shaft, about 3 feet long by 6 inches square on top, with letters "U. S. C. S." on one side and cross cut in top. Underground mark is earthen pyramid with hole in top buried 3½ feet below surface.

Lakes (Shelby County, C. H. Boyd, 1879).—Nearly north of end of willow trees on Vice Presidents Island, on flat point of shore known as "Lakes Landing" which belong to J. C. and J. J. Castles. Surface mark is limestone shaft, about 3 feet long by 6 inches square on top, with letters "U. S. C. S." on one side and cross cut in top. Underground mark is earthen pyramid with hole in top, buried about 3½ feet below surface. A blazed tree is 68 feet 5 inches northeast of station and another blazed tree is 29 feet southwest of station. Station *Lake* (*M. R. C.*) (see description thereof) is 15.17 meters (49.8 feet) from station in azimuth 299°35′.

Rowley (Crittenden County, Ark., C. H. Boyd, 1879).—Just back of Rowleys Landing, on plantation of Colonel Rowley, directly in line of fence surrounding field in northwestern portion of plantation, 30 meters (98 feet) south of northwest fence corner, and about 400 meters (1,312 feet) north of Colonel Rowley's house. Surface mark is stone monument with letters "U. S. C. S." on river face and cross cut in top. Underground mark is earthen pyramid.

Merriweather (Crittenden County, Ark., C. H. Boyd, 1879).—About 1¼ miles below Jones Landing, on ridge at top of gin house belonging to Dr. Miner Merriweather, 35.25 feet from east end, and 22.16 feet from west end. Marked by a copper tack driven into ridge and surrounded by small triangle.

Quarantine (Shelby County, C. H. Boyd, 1879).—On southeast corner of Presidents Island, on quarantine ground belonging to the State of Tennessee and pertaining to Memphis, in front of and 49 meters (161 feet) west of main pest-house. Surface mark is limestone shaft, about 3 feet long by 6 inches square on top, with letters "U. S. C. S." on one side and cross cut in top. Underground mark is earthen pyramid with hole in top, buried about 3½ feet below surface.

Allen (Shelby County, C. H. Boyd, 1879).—On what is called the "Matthews Plantation" and which belongs to Mr. Thomas H. Allen. Surface mark is limestone shaft, about 3 feet long by 6 inches square on top, with letters "U. S. C. S." on one side and cross cut in top. Underground mark is earthen pyramid with hole in center of top, buried about 3½ feet below surface. There are a number of blazed trees near station. One of them is about 83 meters (272 feet) from station.

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Convict (Shelby County, C. H. Boyd, 1879).—About 1 mile below point where the Tennessee Chute empties into the Mississippi River, on plantation belonging to Colonel Ensley, about 930 meters (3,051 feet) below his house, on piece of irregular levee, and 22 meters (72 feet) from bend in levee. Surface mark is limestone shaft, about 3 feet long by 6 inches square on top, with letters "U. S. C. S." on one side and cross cut in top. Underground mark is earthen pyramid with hole in top, buried about 3½ feet below surface.

Ensley (Shelby County, C. H. Boyd, 1879).—About ½ mile below Ensleys Landing, 480 meters (1,575 feet) above clearing and log houses of Si Clark and Joe Toddy, 16 meters (52 feet) back from river bank, 14 meters (46 feet) from road, and on land belonging to Luke Ensley. Surface mark is limestone shaft, 3 feet long by 6 inches square on top, with letters "U. S. C. S." cut on one side and cross cut in top. Underground mark is earthen pyramid with hole in top. A mound, about 1½ feet high and 6 feet in diameter, was raised around station. The surface station mark is flush with surface of mound and earthen pyramid is about 4 or 4½ feet below its surface. Distances and approximate directions from station to blazed trees are: 57 feet 7 inches, northeast; 42 feet 8 inches, east; and 68 feet 3 inches, southeast.

Tollison (Crittenden County, Ark., C. H. Boyd, 1879).—On Tollisons Point, about 3 miles above Scanlans Landing, on land belonging to Mrs. A. H. Tollison, about 175 meters (574 feet) from levee, 128 feet from river bank, and east of group of houses belonging to R. W. Hulbert. Surface mark is limestone shaft, about 3½ feet long by 6 inches square on top, with letters "U. S. C. S." on one side and cross cut in top. Underground mark is earthen pyramid with hole in top, buried about 3½ feet below surface. Station *Harris* (*M. R. C.*) (see description thereof) is 2.999 meters (9.84 feet) from station in azimuth 85°52′. Distances and approximate directions from station to reference stones of station *Harris* (*M. R. C.*) are: 78 feet 9 inches, southeast; and 120 feet 6 inches, east.

Montgomery (Shelby County, C. H. Boyd, 1879).—About ¼ mile above Coahoma Landing, midway between clearings of Dr. Westbrooks and Mr. Lawhorn, on property of William Montgomery, on small rounded point between river bank and wagon road, 67 meters (220 feet) from road, and 7 meters (23 feet) from river bank. Surface mark is limestone shaft marked with letters "U. S. C. S." on river face and cross cut in top. Underground mark is earthen pyramid with hole in top, buried about 3 feet below surface. Distances and approximate directions from station to triangle-blazed trees are: Cottonwood, 2 meters (7 feet), east; sycamore, 12½ meters (41 feet), south-southwest; and another sycamore, 13 meters (43 feet), west.

Lawhorn (Shelby County, C. H. Boyd, 1879).—A little above and opposite Scanlans Landing, within 100 yards of upper mouth of Rock Chute, and on land belonging to Leonard Lawhorn. Surface mark is limestone shaft, 6 inches square on top, projecting a few inches, with "U. S. C. S." cut on one side and cross cut in top. Underground mark is earthen pyramid with hole in top, buried about 3 feet below surface. Distances and approximate directions from station to two blazed trees are: 10 feet 10½ inches, west; and 40 feet, east.

Waverly (Shelby County, C. H. Boyd, 1879).—About 1 mile below Scanlans Landing, on portion of property of Maj. William Scanlan known as the "Waverly Tract", ¾ mile above Graves Bayou, ⅓ mile below clearing, ⅓ mile above mouth of small bayou which is dry except at high water, in midst of canebrake full of cottonwood and sycamore trees, and about 20 meters (66 feet) back from river bank. Surface mark is stone post with "U. S. C. S." cut on one side and cross cut in top. Underground mark is earthen pyramid with hole in top. Distances and approximate directions from station to triangle-blazed cottonwood trees are: 1½ meters (5 feet), northeast; 9 meters (30 feet), northwest; and 9½ meters (31 feet), north-northeast.

Forsyth (Shelby County, C. H. Boyd, 1879).—Opposite point on Cow Island, on the Forsyth place, and about 50 meters (164 feet) below lower fence of clearing around dwelling of F. H. Washburn. Surface mark is limestone shaft, about 30 inches long by 6 inches square on top, with "U. S. C. S." cut on one side and cross cut in top. Underground mark is earthen pyramid with hole in top, buried about 3 feet below surface. Distances and approximate directions from station to blazed trees are: 18 feet 8 inches, north; 21 feet, east; and 22 feet 4 inches, south.

Fairview (De Soto County, Miss., C. H. Boyd, 1879).—About ¼ mile above clearing at Cat Island Landing, opposite point just above Thelma Landing, and in woods near bank of river. Surface mark is limestone shaft which projects a few inches above ground and with letters "U. S. C. S." cut on one side and cross cut in top.

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Underground mark is earthen pyramid with hole in top, buried about 3 feet below surface. Distances and approximate directions from station to following blazed objects are: Stump, 21 feet 11 inches, north; cottonwood tree, 31 feet 7 inches, west; and another cottonwood tree, 59 feet, south.

Cat Island Landing (De Soto County, Miss., C. H. Boyd, 1879).—About ⅓ mile below Cat Island Landing, about 200 meters (656 feet) above old chute which formed Cat Island, in clearing in front of house of J. W. McConnell, and about 10 meters (33 feet) back from river bank. Surface mark is limestone shaft, 30 inches long by 6 inches square on top, with "U. S. C. S." cut on one side and cross cut in top. Underground mark is earthen pyramid with hole in top, buried about 3 feet below surface.

Norfolk (De Soto County, Miss., C. H. Boyd, 1879).—About ¼ mile below Norfolk clearing or settlement, about 200 meters (656 feet) below lower edge of clearing, and about 10 meters (33 feet) back from river bank. Surface mark is limestone shaft, about 3 feet long by 6 inches square on top, projecting about 6 inches and with "U. S. C. S." cut on one side and cross cut in top. Underground mark is earthen pyramid with hole in top, buried about 3 feet below surface. Distances and approximate directions from station to three blazed trees are: 43 feet 6 inches, northeast; 6 feet 4 inches, east; and 69 feet 9 inches, southeast.

Cat Chute (Crittenden County, Ark., C. H. Boyd, 1879).—About 1 mile below Rock Point Landing, opposite upper end of Cat Island Towhead, in dense woods, and about 200 meters (656 feet) below lower edge of clearing. Surface mark is limestone shaft, about 6 inches square on top, projecting a few inches, with "U. S. C. S." cut on one side and cross cut in top. Underground mark is earthen pyramid with hole in top, buried about 3 feet below surface. Distances and approximate directions from station to blazed trees are: 1½-foot sycamore, 10 meters (33 feet), northwest; and 2½-foot cottonwood, 8 meters (26 feet), southeast.

Tate (De Soto County, Miss., C. H. Boyd, 1879).—At Harklerode Landing, about 1½ miles below Norfolk and 2 miles above Star Landing, on land owned by Mr. Harklande and leased by Mr. Tate, just east of easterly one of two ditches between which a road runs, and 69 feet 10 inches north of chimney of destroyed dwelling. Surface mark is limestone shaft, 6 inches square on top, which projects a few inches and has letters "U. S. C. S." cut on one side and cross cut in top. Underground mark is earthen pyramid with hole in top, buried about 3 feet below surface.

Lamb (Crittenden County, Ark., C. H. Boyd, 1879).—About 1 mile above Star Landing, on land belonging to Mr. William T. Lamb, about 30 or 40 yards above line which bounds Mr. Lamb's clearing on upper river side, and within 20 feet or less of river bank. Surface mark is limestone block, about 3 feet long by 6 inches square on top, projecting a few inches, with "U. S. C. S." cut on one side and cross cut in top. Underground mark is earthen pyramid with hole in top, buried about 3½ feet below surface. Distances and approximate directions from station to blazed trees and stumps are: Blazed stump, 29 feet 6 inches, northeast; blazed tree, 27 feet 6 inches, southeast; and blazed stump, 9 feet 5 inches, south-southwest.

CAIRO, ILL., TO TENNESSEE LOOP

Principal points

Trenton (Todd County, Ky., P. A. Smith, 1930; 1934).—About 1½ miles southeast of Trenton, on U. S. Route 41E, on land owned and occupied by W. V. Siske, in his barnyard, 16.4 meters (54 feet) north of northwest corner of smaller of two barns, 5 meters (16 feet) south of fence line and property line between Siske and Bank farms, and 3.8 meters (12.5 feet) east of fence line along west edge of barnyard. To reach from post office in Trenton, go southeast 1.5 miles on Route 41E, and turn left into Siske's yard. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Upper mark is 8 inches below surface of ground. Reference marks are standard reference disks in concrete, note 11a. Station recovered in 1934 and reference mark no. 2 (1930) was made azimuth mark and new no. 2 (also disk in concrete, note 11b) established. No. 1 (1930) is on west edge of cattle lane, 1 foot east of fence, and 182.3 feet from station in azimuth 186°27′. No. 2 (1934) is in barnyard, 55 feet south of large barn, and 158.50 feet from station in azimuth 290°11′. Azimuth mark (reference mark no. 2 of 1930) is at edge of cultivated field, 0.3 mile north along Route 41E from front of Siske's house, 1½ telephone pole spaces northwest from top of rise,

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40 feet northeast of center line of highway, on top of bank, 15 feet northeast of fence line along highway, 12.7 meters (42 feet) northeast of center line of highway, 7.6 meters (25 feet) south from northwest fence corner, and about 0.4 mile from station in azimuth 129°40′23″.

Elkton (Todd County, Ky., P. A. Smith, 1930).—About 3¼ miles east of Elkton, ¾ mile north of Route 68, toward the southerly end of prominent wooded ridge, on land owned by Mrs. Ed. Lindsey. To reach from Elkton, go east 3.4 miles on Route 68, thence north on rock road 0.9 mile to wagon road leading west opposite 30-inch oak. Follow wagon road across brushy flat and up ridge about ½ mile to top of steep pitch, turn sharply to left and follow dim road along top of ridge south about 500 yards through small swale to station site. Station is about 75 meters (246 feet) south of swale, 4 meters (13 feet) west of road, and about 200 meters (656 feet) north of end of ridge, in small clearing. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 8 meters (26 feet) east of road and 12.36 meters (40.6 feet) from station in azimuth 253°56′. No. 2 is along top of ridge and 22.57 meters (74.0 feet) from station in azimuth 143°58′.

Olmstead (Logan County, Ky., P. A. Smith, 1930; 1934).—About 10 miles southeast of Russellville, about 10 miles northeast of Guthrie, and ¾ mile south of Olmstead. To reach from Olmstead railroad station go south on dirt road 0.55 mile, keep to left at forks, continue 0.35 mile to home of Mrs. Wyatt on right, turn right through gate into barn lot, and follow right fork behind barn 0.15 mile to station. Station is about 100 meters (328 feet) south of barn, in southwest corner of small pasture, 20.2 meters (66.3 feet) east by southeast of corner of fence where it turns southeast, 4.8 meters (15.7 feet) northeast of fence, and 5 meters (16.4 feet) south of tree line at west end of grove. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks nos. 1 and 2, established in 1930, are standard reference disks in concrete, note 11a. In 1934 station and reference marks were recovered; reference mark no. 2 was stamped "AZ1" and a new reference mark no. 2 established, standard reference disk in concrete cylinder, note 11b. No. 1 (1930) is about 1 foot northeast of wire fence and 139.1 feet from station in azimuth 316°16′. No. 2 (1934) is along fence line running almost east and west, 3 feet east of 5-inch locust tree, and 268.53 feet from station in azimuth 104°19′. Azimuth mark (reference mark no. 2 of 1930) is along fence line, between property of Mrs. Wyatt and W. W. Jenkins, and about 300 yards across meadow from station in azimuth 62°29′24″.

McMurry (Montgomery County, P. A. Smith, 1930; 1934).—About 2.2 miles by road southeast of Guthrie, Ky., 5 miles northwest of Adams, 1.75 miles southeast of Kentucky-Tennessee State line, on U. S. Route 41E, on summit of gentle rise of ground, on land owned by H. J. McMurray and farmed by J. L. King, about 170 yards southeast along highway from railroad semaphore no. 2132, and 46.8 feet southwest of center line of highway. To reach from Guthrie, follow U. S. Route 41E southeast to top of gentle grade and about 175 meters (574 feet) southeast of swampy strip of timber on right. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. Station recovered in 1934 and additional reference mark (no. 3) was established. No. 1 (1930) is in fence line between railroad and highway, 45 feet northeast of center line of highway, and 29.99 meters (98.4 feet) from station in azimuth 230°31′. No. 2 (1930) (azimuth mark) is in south angle of dirt road junction, at fence corner, about 30 feet southwest of center line of highway, and about 0.35 mile from station in azimuth 315°12′45″. No. 3 (1934) is between highway and wire fence, 30 feet southwest of center line of highway, and 180.49 feet from station in azimuth 308°05′.

Dunn (Robertson County, P. A. Smith, 1930).—About 6 miles northwest of Springfield and 1½ miles east of Cedar Hill, on Route 41E, on land owned and occupied by J. V. Dunn, 14.5 meters (48 feet) north of center line of highway, 5 meters (16 feet) east of west fence line to yard in front of Dunn's house, and 8.8 meters (29 feet) northwest of southwest fence corner. To reach from Cedar Hill, go east 1.6 miles on Route 41E to Dunn's large, well-kept house on left of highway. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is on northwest fence corner, 7.5 meters (25 feet) south of highway, and approximately 150 meters (492 feet) from station in azimuth 91°07′. No. 2 is on east edge of fence on west side of yard, about 25 meters (82 feet)

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from southwest corner of Dunn's home, and 22.98 meters (75.4 feet) from station in azimuth 176°03′.

Ashburn (Robertson County, P. A. Smith, 1930).—About 9 miles north of Springfield, 4 miles southeast of Adairville, Ky., and on land owned by W. M. and G. W. Taylor. To reach from Springfield, go north 2 miles on Route 41E, thence north 5.9 miles on Route 65 to gravel road leading east. Follow this road 2.1 miles to Ashburn, turn right, cross bridge, go 0.2 mile to brick schoolhouse, keep left fork east 0.6 mile to corner, and thence south 0.2 mile to station site. Station is in apex of small field which is north of grove of trees, 17.1 meters (56 feet) north of south corner post, 4.6 meters (15 feet) west of wire fence, and 10.0 meters (33 feet) west of road. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Upper mark is 1 foot below surface. Reference marks are standard reference disks in concrete, note 11a. No. 1 is in fence line, 17 meters (56 feet) north of small wash, 6.5 meters (21 feet) west of road, and 99.23 meters (325.6 feet) from station in azimuth 221°14′. No. 2 is 200 meters (656 feet) east of Taylor's house, 6 meters (20 feet) north of road, and approximately ¼ mile from station in azimuth 156°16′17″.

Williams (Robertson County, P. A. Smith, 1930).—About 1.6 miles in azimuth 321°00′17″ from *Springfield, courthouse*, on land owned and occupied by Stewart Williams. To reach from *Springfield, courthouse*, go southeast 1.9 miles on Route 41E to gravel lane leading left to Williams' house, follow lane around garage to left to station on knoll about 35 meters (115 feet) east of house, about 275 meters (902 feet) north of highway, and 9.83 meters (32.3 feet) east of west corner of small hexagonal pergola. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is on fence line, 40 meters (131 feet) southeast of Williams' house, and 52.41 meters (171.9 feet) from station in azimuth 226°22′. No. 2 is on fence line, about 40 meters (131 feet) east of Williams' house, and 40.92 meters (134.3 feet) from station in azimuth 135°53′.

Bradley (Robertson County, P. A. Smith, 1930).—About 12 miles east by north of Springfield, 1½ miles east-southeast of Cross Plains, and 7 miles northwest of White House, on land owned and occupied by Charles Bradley, in lot west of house, 14.6 meters (48 feet) north of 16-inch oak tree which is in line with north side of old log barn and about 3 meters (10 feet) west of barn, 3.6 meters (12 feet) east of wire fence, and 28.4 meters (93 feet) south of Route 25. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is at west end of small field west of station, about 60 meters (197 feet) south of Route 25, 5 meters (16 feet) east of side road, and in azimuth 91°15′56″ from station. No. 2 is 12.4 meters (41 feet) north of Route 25, immediately southwest of big stump, and 42.89 meters (140.7 feet) from station in azimuth 180°34′.

Bethel (Sumner County, P. A. Smith, 1930; 1933).—About 11 miles southeast of Springfield, 6 miles southwest of White House, 4 miles east-southeast of Green Brier, 2 miles northeast of Ridgetop, on summit of hill, on land owned by John Templeton and occupied by E. R. Spaulding (1930), 30 feet south of most southerly tree of small cherry orchard, and 85 feet east of farm road. To reach from White House, go south 5.2 miles on U. S. Route 31W, turn right (west) where highway goes left, follow dirt road 2.6 miles, turn left (south) onto farm road and continue 650 feet to station. Station was originally marked by standard station disks in concrete, notes 1a and 7a, and re-marked in 1933 according to notes 1b and 7a with upper mark 6 inches below surface. Reference marks nos. 1 and 2 (1930) are standard reference disks in concrete, note 11a. No. 1, projecting 4 inches, is 16 feet east of center line of highway, 130 feet southwest of southwest corner of small house, near southwest corner of small orchard, and approximately 0.25 mile from station in azimuth 214°39′26″. No. 2, projecting 3 inches, is at west edge of cultivated field, 10 feet east of farm road, and 74.67 feet from station in azimuth 108°22′. Reference mark no. 3 (1933) is standard reference disk in concrete, note 11b, projecting 3 inches, 3 feet west of large stump, 7 feet east of farm road, 142.91 feet north-northeast of no. 2, and 158.58 feet from station in azimuth 172°44′. Following azimuths are from station: Silver standpipe, 352°16′01″; *Airway beacon no. 24* (see description thereof), distant 6.5 miles, 91°57′59″; Bethel Baptist Church, east cupola finial, distant approximately 0.5 mile, 135°21′56″.

Lamberth (Sumner County, P. A. Smith, 1930).—About 5 miles northeast of White House, 1½ miles northeast of Johnson Corners, and on land owned by

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Mrs. Lamberth. To reach from Johnson Corners, follow road leading north 1.6 miles (or 0.3 mile beyond Link's Crossroads) to large farmhouse on left side of road and then follow lane leading west from north side of barnyard about ½ mile to point where it turns sharply right about 0.1 mile west of small house on left side of lane. Station is in pasture 41.5 meters (136 feet) south of lane, 4.4 meters (14 feet) west of barbed-wire fence, and 8.5 meters (28 feet) south of lone 14-inch pin-oak tree. Station and reference marks not described, but are probably standard disks in concrete. Reference mark no. 1 is in fence line, 35.50 meters (116.5 feet) from station in azimuth 359°44′. Reference mark no. 2 is in fence line north of lane (where lane stops at pasture) and approximately 175 meters (574 feet) from station in azimuth 131°56′54″.

Baulch (Sumner County, P. A. Smith, 1930; 1933).—About 6¾ miles north of Gallatin on road to Fountain Head, 7¾ miles south-southeast of Portland, 0.3 mile east of State Route 109, at top of long steep hill where road makes sharp turn to left, and on land owned by Cappie Hoffman. Woods roads lead off from both sides of this turn. To reach from junction of U. S. Route 31E and State Route 109 in Gallatin, go west and north 6.0 miles on Route 109 to side road to right at summit of highway grade, turn right onto old highway and go east to where it turns sharply to left and crosses ridge. Station is 150 feet northwest of this turn, in south edge of field, 10 feet north of north edge of woods, and 105 feet west of center line of old road. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Upper mark projects 3 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11a. Reference mark no. 1 (1933), projecting 8 inches above ground, is 15 feet west of center line of road and 280.17 feet (slope distance) from station in azimuth 172°15′. No. 2 (1930), projecting 4 inches above ground, is 12 feet east of center line of road, 45 feet south of south edge of woods, 90 feet south of right-angle turn in road, and 121.90 feet from station in azimuth 260°01′. Azimuth mark (reference mark no. 1 (1930)) is flush with ground, about 250 meters (820 feet) beyond first house on right side of road after crossing hollow to north, 80 yards northwest of junction of old highway and Route 109, 25 feet northeast of center line of old road, 90 feet west-southwest of center line of Route 109, 6 feet northwest of 15-inch pin-oak stump, and approximately 0.35 mile from station in azimuth 152°08′44″. *Airway beacon no. 65* (see description thereof) is 13.7 miles from station in azimuth 19°10′59″. *Airway beacon no. 66* (see description thereof) is 4.1 miles from station in azimuth 358°59′23″.

Hester (Sumner County, P. A. Smith, 1930).—About 4 miles east of White House, 1½ miles southeast of Johnson Corners, on land owned and occupied by J. T. Hester, and in hayfield about 30 meters (98 feet) north of road and about 200 meters (656 feet) west of house. To reach from White House, go 5.75 miles on Route 25 to Cummings Cross Roads and thence southwest (right) on dirt road 0.3 mile to station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 1 meter (3 feet) south of northwest corner of barn, approximately 200 meters (656 feet) from station in azimuth 256°38′12″. No. 2 is 5 meters (16 feet) south of center line of road, 1 meter (3 feet) west of dead chestnut tree, and 40.1 meters (132 feet) from station in azimuth 355°06′.

Taylor (Davidson County, A. H. Buchanan, 1879; 1933).—About 7 miles southwest of Goodlettsville, 6 miles north of Nashville, 300 yards east of U. S. Route 31W, on top of prominent hill known as "Taylor's Knob", and on land owned by Clark Hammond. To reach from corner of Eighth Street and Broadway in Nashville, go west 0.5 mile on Broadway (U. S. Route 31), turn left along river and go north 0.35 mile, turn right, cross bridge over Cumberland River, go 0.3 mile to junction of U. S. Route 31E and U. S. Route 31W, turn left onto U. S. Route 31W and go north 3.9 miles to summit of highway grade from which Taylor's Knob may be seen straight ahead, continue 1.5 miles to summit of grade at stone quarry on left, and proceed east about 300 yards to station site on top of hill. To reach from Goodlettsville, go south 7 miles on Route 41E (old Dickerson Pike) to top of small stone quarry on right and then proceed as mentioned above. Station is 100 feet southwest of northeast end of hill, 75 feet northeast of southwest end of hill, and 15 feet northwest of 15-inch walnut tree with triangular blaze on northwest side. Original surface mark was stone post 1 foot square and 2½ feet long, with cross in top marking station, and projecting 3 inches above surface of ground. Original underground mark was black bottle filled with ashes, center of mouth marking station. No reference marks were set. Recovered

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and re-marked in 1930. Surface mark had been destroyed but underground mark was located. Surface mark is standard station disk in concrete at center of top of 10-inch tile, note 6a, flush with ground. Underground mark is standard station disk in 8-inch cube of concrete, note 7a, 3½ feet below surface of ground. Reference mark no. 1 is standard reference disk in concrete in top of 8-inch tile, note 13a, projecting 8 inches above surface of ground, 2 feet east of 10-inch walnut tree, and 10.0 meters (33 feet) from station in azimuth 99°00′. No. 2 (1930) was marked like no. 1 and was 14.0 meters (46 feet) from station in azimuth 194°49′. In 1933 reference mark no. 2, which had been disturbed, was reset, and an azimuth mark was added. Both marks are standard reference disks in concrete, note 11b. Reference mark no. 2 (1933) projects 8 inches, and is 12 feet south of 18-inch oak tree, and 14.3 meters (47 feet from station in azimuth 194°47′. Azimuth mark projects 6 inches, and is on right-of-way of U. S. Route 31W, 150 yards north of Midway Gardens lunch room and service station, 39.5 feet east of center line of pavement, 0.5 foot west of right-of-way fence, and approximately 0.5 mile from station in azimuth 157°54′17″.

Duren (Trousdale County, A. H. Buchanan, 1879; 1934).—About 10½ miles miles east-northeast of Gallatin, 3½ miles northeast of Castalian Springs, on prominent bare hill known as "Duren's Knob", and on land owned by Tommy Duncan. To reach from Castalian Springs, go north on dirt road just west of post office and follow main-traveled road north and east 2.8 miles, turn north (left) onto rocky road, go 0.55 mile, turn right through gate and follow road about 100 yards past second house on right. Take right fork and follow to Duncan's house which is end of truck travel. From here go up into saddle to east and then turn right up hill to station site. Hill has ridge-like summit and station is on highest point, at northeast end, and 95 feet east of small lone tree. Station was originally marked in 1879 by stone post 1 foot square and 2½ feet long with two grooves at right angles in top. Underground mark is mouth of stone jug filled with ashes. Two stone posts were set, one 6 feet north of station, and another 6 feet south. These two posts were not visible in 1934. Station was re-marked in 1933 with standard disk station marks, notes 1a and 7a. Upper mark projects 2 inches. Reference mark no. 1 (1930) and no. 2 (1930) are standard reference disks in tile, note 13a, both projecting 8 inches above ground. No. 1 is on southeast slope of hill, 10 feet from crest where hill breaks over sharply, and 52.00 feet from station in azimuth 309°19′. No. 2 is near southwest end of hill, about 100 feet northwest of 3-foot pin oak, at northwest of edge of cultivation, about 80 feet northwest of northeast-southwest fence, and 448.5 feet from station in azimuth 50°20′29″. Azimuth mark (1933) is standard reference disk in concrete, note 11a, projecting 3 inches, at north edge of field, near northwest corner, 10 feet southwest of 12-inch cedar, 12 feet east of another 12-inch cedar, 30 feet south of trail leading to Duncan's house, and approximately 0.4 mile from station in azimuth 125°47′04″. *Airway beacon no. 66* (see description thereof) is 11.8 miles from station in azimuth 85°59′19″.

Seay (Wilson County, A. H. Buchanan, 1878; 1934).—About 4 miles west of Lebanon, 2½ miles south of Horn Springs, on high peak known locally as "Hickory Ridge", and on property of Tom Johnson. To reach from square in Lebanon, go west 1.35 miles on U. S. Route 70N, turn left onto gravel road at Haley's service station, go 0.2 mile and keep straight ahead at T-road, continue 0.2 mile to fork, turn right onto main road and go 3.4 miles to triangle-blazed tree on right and gate on left; about 50 feet beyond top of grade (end of truck travel), turn right (north) and go to top of hill and station site. Alternate route is west 3.5 miles on U. S. Route 70N to Batlif's store on right, left (south) on gravel road 1.3 miles, right 1.6 miles to top of rocky grade (where board gate is on left and cedar brush gap is on right), then north through brush gap, and up ridge to north about ¼ mile to wire fence (end of truck travel), over fence and north to station. Station is at southeast end of small grass plot surrounded by sumac, and bears 142° (magnetic) from largest tree on hill, distant 30 yards. Surface mark is stone post 2 feet high and 11 inches square, top dressed with north-south and east-west grooves, set with cement in hole through 1 foot of shaly rock, and projects 4 inches. Underground mark is drill hole in solid rock 1 foot 9 inches below surface, filled with melted lead and marked with cross. No reference marks were set in 1878. When recovered in 1930 underground mark was found 1 foot below surface instead of 1 foot 9 inches, and surface mark was found uprooted. Surface mark set in 1930 is standard station disk set in limestone block, 10 by 10 by 24 inches, which is encased in concrete. In 1930 two standard reference disks were set in small boulders (or rock outcrops) flush with ground, but positions were not

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determined until 1934. No. 1 is 53.54 feet from station in azimuth 334°25′. No. 2 is 84.74 feet from station in azimuth 65°52′. Azimuth mark established in 1934 is standard reference disk wedged in drill hole in boulder flush with ground, note 12c, 165 yards from station in azimuth 268°38′48″. Following distances and azimuths are from station: *Lebanon, aluminum water tank*, 5.5 miles, 264°28′00″; *Lebanon, Cumberland University, administration building, finial of clock tower*, 4.2 miles, 270°34′21″; Lebanon, courthouse, clock tower, 4 miles, 266°12′53″.

Bennett (Williamson–Rutherford Counties, A. H. Buchanan, 1880; 1934).—About 6½ miles southwest of Smyrna, 0.5 mile southwest of Rocky Fork Pike, on Williamson-Rutherford County line, about at center of highest part of rounded summit of high wooded peak, and on property of Noble Naron. To reach from Murfreesboro post office, follow U. S. Route 41 west 10.65 miles, turn left onto gravel road and go 2.70 miles, turn right onto Rocky Fork Pike and go 5.5 miles on this main road, turn left onto rough wagon road and continue 0.3 mile to home of Andrew Naron (end of truck travel). Continue east up ridge along edge of plowed field about ½ mile to summit and station, on east edge of cleared space, 23 feet west of 6-inch twin oak tree with triangular blaze, and 35 feet east of 12-inch stump. Surface mark is intersection of north-south and east-west grooves cut in top of stone post, 8 inches square by 2½ feet long, projecting 3 inches above ground. Underground mark is drill hole filled with lead, on which is marked a cross in solid rock, about 2½ feet below surface of ground. In 1933 surface mark was found badly chipped on top and pushed out of alignment. Underground mark was in good condition. In 1934 original surface mark was reset and standard station disk was set in drill hole in its top. Two reference marks and azimuth mark were also set in 1934. Reference marks are standard reference disks in concrete, note 11b. No. 1 is down southwest slope, along cleared line, and 121.82 feet from station in azimuth 69°10′. No. 2 is down northwest slope, 126.25 feet from station in azimuth 175°22′. Azimuth mark is standard reference disk in large flat rock, note 12a, on Rocky Fork Pike, on northwest side of road, opposite wagon road, and 0.8 mile from station in azimuth 189°01′36″.

Jennings (Wilson County, A. H. Buchanan, 1878; 1934).—About 6 miles southeast of Lebanon, 1 mile northeast of Lebanon-Alexandria Pike, and on high wooded knob west of Maj. Magnese Hankens' home. To reach from square in Lebanon, go east 6.9 miles on U. S. Route 70N and turn left onto gravel road about 100 yards beyond brick school. Follow this road 1.8 miles to Major Hankens' home. Station is on Major Hankens' property, 8.5 feet south-southwest of 14-inch triangle-blazed locust tree, and 24 feet north-northwest of 12-inch triangle-blazed hickory tree. Surface mark is 5-inch square stone, 2½ feet long, projecting 3 inches, with top dressed, two grooves cut in top at right angles, and letters "U. S. G. S." Underground mark is long black bottle filled with ashes, with mouth upward, about 2½ feet below surface of ground. Four locust posts 4 inches square, 6 feet north, south, east, and west of station mark were not recovered in 1934. In 1934 standard station disk was set in surface mark, and two new reference marks and an azimuth mark established. No. 1, standard reference disk in top of 20-inch square rock outcrop slightly below surface, is on northwest side of top of knob, on downhill slope, 14 feet east-northeast of 14-inch triangle-blazed locust tree, and 20.66 feet from station in azimuth 209°52′. No. 2, standard reference disk in top of 12- by 16-inch buried boulder, is on southeast side of top of knob, 5 feet north of 12-inch triangle-blazed hickory tree, and 25.08 feet from station in azimuth 326°43′. Azimuth mark, standard reference disk in top of square block of concrete, is on property of Ezra Hankins, 125 yards behind (northeast of) house, 18 yards northwest of barn, 7 yards northeast of fence line, 3 yards west of center line of field road, and 0.5 mile from station in azimuth 307°33′22″. Following distances and azimuths are from station: *Lebanon, Cumberland University, administration building, finial of clock tower*, 6.1 miles, 128°55′04″; and *Lebanon, aluminum water tank*, 5.6 miles, 141°46′34″.

Lebanon north base (Wilson County, A. H. Buchanan, 1877; 1934).—Near Lebanon, about 1,524 meters (5,000 feet) N. 68¾° W. from square, about 393 meters (1,289 feet) north of Nashville Pike (continuation of West Main Street), on small elevation, and on property owned (in 1878) by W. H. Brown. In 1934 station was reported to be in sidewalk at south entrance to main buliding of Castle Heights Military Academy. Underground mark is cross in 1-inch copper bolt, 6 inches long, leaded into stone post, 1 foot square by 2½ feet long, buried with top 3 feet below surface of ground. About this is foundation, 5 feet square

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by 1 foot thick, laid in cement, leaving clear opening above post 1 foot square. On this rests block of limestone, 2¾ feet square by 2¼ feet deep, rising 3 inches above ground. In top of this is leaded 1-inch bolt, 6 inches long, with cross on head. On this rests polished limestone monument, 2¾ feet high by 1½ feet square, with inscription "North Base U. S. C. S. Tennessee 1877."

Lebanon south base (Wilson County, A. H. Buchanan, 1877; 1934).—About 4 miles from Lebanon, on property owned (in 1934) by Edward and Frank Clemmons. To reach from courthouse in Lebanon, go south on Lebanon-Murfreesboro Pike 4.3 miles, turn left onto lane and go 0.25 mile. Station is about 350 meters (1,148 feet) south of lane, in northwest corner of field. Underground mark is cross on 1-inch copper bolt, 6 inches long, leaded into solid rock 3 feet below surface of ground. Above this is foundation, 5 feet square by 1 foot thick, laid in cement, leaving clear opening above bolt 1 foot square. On this rests block of limestone, 2¾ feet square by 2¼ feet deep, rising 3 inches above ground. In top of this is leaded 1-inch bolt, 6 inches long, with cross on head. On this rests polished limestone monument, 2¾ feet high by 1½ feet square, with inscription "South Base U. S. C. S. Tennessee 1877."

Hall (Smith County, A. H. Buchanan, 1880; 1934).—About 2½ or 3 miles northwest of Carthage, near and easily seen from Carthage-Gallatin road, and on hill of land owned (in 1934) by D. M. Moore. To reach from courthouse at Carthage, go northwest 2.8 miles on Carthage-Gallatin road to top of ridge. From here station site may be seen on top of hill bearing N. 70° E. (magnetic). Surface mark is intersection of north-south and east-west grooves surrounded by letters "U. S. G. S." cut in top of stone post, 8 inches square and 2½ feet long, with top projecting about 15 inches above ground. Underground mark is center of mouth of bottle about 2 feet below surface of ground.

Apple (Putnam County, A. H. Buchanan, 1882; 1934).—About 2.7 miles from Chestnut Mound, in open field owned by M. T. Robinson. To reach from crossroads in front of Methodist Church at Baxter, take gravel road north 1.1 miles, turn left onto State Route 24 at Byer's service station and go 9.95 miles to home of M. T. Robinson which is 0.07 mile east of point where Smith-Putnam County line crosses Route 24. Station is 100 meters (328 feet) south of Chestnut Mount-Cookeville highway and 200 meters (656 feet) from Mr. Robinson's house. Surface mark is intersection of two north-south and east-west grooves surrounded by letters "U. S. C. S." cut in top of stone post, 8 inches square by 3½ feet long, with top projecting 4 inches above ground. Underground mark is center of mouth of ink jug filled with ashes, with top about 3½ feet below surface of ground. In 1925 surface mark was found out of place, but underground mark was recovered in good condition. New surface mark (1925) is U. S. Geological Survey standard disk station mark set in original stone post. Station was recovered in 1934 in good condition, and two standard reference disks were established in concrete, note 11a. No. 1 is 22.13 meters (72.6 feet), N. 80½° W. from station. No. 2 is *20.49 meters (67.2 feet) N. 7° W. from station.*

Short Mountains (Cannon County, A. H. Buchanan, 1880; 1934).—About 17 miles northwest of McMinnville, 11½ miles southwest of Smithville, and on highest of group of Short Mountains (easily identified). To reach from McMinnville courthouse, follow U. S. Route 70S west 13.65 miles (or 0.9 mile beyond Warren-Cannon County line), turn right onto gravel road, follow main road 7.15 miles (or 0.45 mile beyond Womack's store), turn left onto farm road and go 0.55 mile, follow right fork 200 yards, follow right fork 1.7 miles to home of Silas Melton, thence on foot southwest about ⅓ mile to station in cleared field, 11.8 meters (39 feet) northwest of blazed 8-inch white oak, and 6.9 meters (23 feet) north of woods. Surface mark is intersection of north-south and east-west grooves in stone post, 8 inches square by 3 feet long, projecting 3 inches above ground. Underground mark is center of mouth of bottle filled with ashes, about 3 feet below ground. In 1934, standard station disk was set in original stone post, and three standard reference disks in concrete, note 11a, were established. No. 1 is in cleared field, 10 feet north of rail fence and woods, about 32 feet northwest of 24-inch leaning oak, and about 100 yards from station in azimuth 80°10′. No. 2 is near rail fence, 5 feet northeast of 12-inch oak, and 28.40 meters (93.2 feet) from station in azimuth 54°57′. No. 3 is about 10 feet north of woods and 98.79 feet from station in azimuth 255°20′. Station *Bush* (see description and geographic position thereof) is visible from the ground at station.

Mount Lore (White County, A. H. Buchanan, 1882; 1934).—About 4.75 miles west-southwest of Sparta, on highest part of long, sharp-topped hill known as "Gum Spring Mountain", on summit of small knoll at north end of mountain

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locally known as "High Point", and in center of summit which is about 100 feet long by 40 feet wide. To reach from courthouse at Sparta, follow Route 70 west 0.8 mile, turn right onto Route 70N and go 0.55 mile, turn left onto gravel road at Clark's old water mill and go 1.55 miles to school on right, turn left onto T-road, go 1.0 mile, turn right at gravel T-road junction, proceed 0.45 mile to T-road to right, continue straight ahead 0.80 mile and again keep straight ahead at group of six mail boxes on left, go 100 yards, turn onto right fork which is about 200 yards southeast of Earnest Knowle's house, go 0.2 mile and then continue on foot northwest up hill about ½ mile to summit and station site which is 30 feet southeast of 10-inch oak with triangular blaze. Surface mark is intersection of north-south and east-west grooves surrounded with letters "U. S. G. S." cut in top of stone post, 8 inches square by 22 inches long, with bottom resting on solid rock. Underground mark is cross on lead in drill hole in solid rock about 18 inches below ground. In 1907 surface mark was recovered broken off; underground mark was in good condition. Surface mark was reset and new cross line cut in top. Recovered in 1934 in good condition, and standard disk station mark set in stone post (surface mark). In 1934 three reference marks were established as follows: Reference marks nos. 1 and 2 are standard reference disks in rock, note 12a. No. 1 is along longitudinal center of hill, at north end of knoll, and 60.10 feet from station in azimuth 178°55′. No. 2 is at south end, along center of knoll, and 52.49 feet from station in azimuth 358°21′. Reference mark no. 3 (azimuth mark) is standard reference disk in rock, note 12c, down eastern long slope of knoll, about 20 feet northwest of 18-inch gum tree, and 175 yards from station in azimuth 268°05′50″.

Walker (Putnam County, A. H. Buchanan, 1882; 1934).—About 9 miles a little north of east of Cookeville, about 4¾ miles west-northwest of Monterey, on spur ridge of Cumberland Plateau that lies to north of Falling Water River, and on land owned (in 1882) by Sanford Stamps who lived in valley about 1 mile northeast of station. To reach from Sinclair service station in Algood, go south 1 block on Route 42, turn left and keep straight on this street 0.5 mile; just before reaching sawmill, turn right and follow main gravel road (Old Monterey road) 4.05 miles to Brotherton School on left crossroad, keep straight ahead 0.35 mile to fork at Brotherton railroad station, turn right, go 2.35 miles (or 0.65 mile beyond railroad crossing) to T-road with telephone line leading right at sharp left curve in road, turn right onto T-road and follow 0.35 mile to fork (just after passing abandoned house on right), turn right onto road leading around right side of hill ahead and go 0.2 mile to triangle-blazed tree on left at top of grade (end of truck travel), turn left onto dim wagon road up hill and go 200 yards to summit and station site. Surface mark is intersection of north-and-south and east-and-west grooves surrounded by letters "U. S. G. S." cut in top of stone post, 8 inches square and 2¼ feet long, projecting 2 inches above surface of ground. Underground mark is center of mouth of small stone jug, 10 inches long and 4 inches in diameter, with top 3 feet below top of surface mark. In 1934 standard station disk was set in center of surface mark, and two standard reference disks were set in concrete cylinders, note 11b. No. 1 is 12 feet east of triangle-blazed oak and 25.76 meters (84.5 feet) from station in azimuth 6°. No. 2 is 5 feet south of triangle-blazed oak and 23.42 meters (76.8 feet) from station in azimuth 252°.

Chestnut (White County, A. H. Buchanan, 1881; 1934).—About 8¾ miles east-southeast of Sparta, 2¼ miles east of Greentree post office, 4 miles south by west of Clarkstown, on west end of ridge called "Big Chestnut" which is on western edge of the Cumberland Tableland, on backbone of ridge, 16.7 feet north of 10-inch black oak, and 19.5 feet east-northeast of triangle-blazed 8-inch chestnut oak. To reach from courthouse in Sparta, go east 1 block on street south of courthouse, at stone house on left turn right down hill, follow main road through railroad underpass 2.75 miles to fork, turn left onto main road, go 0.9 mile to fork, turn left, go 1.75 miles to fork, turn left onto uphill road, go 4.1 miles to Greentree post office, keep straight ahead 1.0 mile, turn right, cross creek bridge, follow main road up hill 1.65 miles (or 0.3 mile after passing camp of Rocky River Coal and Lumber Co.) to road fork and triangular blaze, turn left, go 0.35 mile to triangle-blazed chestnut on right and road forks (end of truck travel), turn onto dim right fork and follow blazes about ¼ mile to top of hill and triangle-blazed oak on left, turn left and follow blazes about 125 feet to station site. Surface mark is drill hole at intersection of north-and-south and east-and-west grooves with letters "U. S. G. S." cut in top of stone post, 1 foot square and 4 feet long, with top projecting 6 inches above ground. Underground mark is center of mouth of large ink jug filled with ashes, about 3½ feet below surface of ground.

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In 1934 surface mark was recovered in good condition but underground mark was not located. Cylindrical concrete mark was set over center of stone post, thus re-marking center of station. Three standard reference disks were set in concrete cylinders, note 11b. No. 1 is 8 feet south of 12-inch chestnut oak and 88.12 feet along ridge from station in azimuth 292°11′. No. 2 is 11 feet southwest of 14-inch twin black oak and 76.03 feet on downward slope from station in azimuth 20°25′. Azimuth mark is at lumber camp, 7 feet south of center line of woods road, 90 feet south of barn, and about 0.5 mile from station in azimuth 26°48′00″.

Supplementary points

Kentucky-Tennessee boundary monument no. 27 (Logan County, Ky.–Robertson County, Tenn., P. A. Smith, 1930).—About 5½ miles northeast of Adams, Tenn., 7½ miles south of Olmstead, Ky., ½ mile south of Keysburg, Ky., and on land owned by Robert Young. To reach from Adams, go north 1¾ miles on old Route 11 to fork, then on right-hand road 1.7 miles north and northeast; keep left main road northeast 2.4 miles to square corner to right. Monument is 100 yards northeast of square corner, 30 yards north of road, 250 yards west of north-and-south fence with several cedar trees in it, and 50 yards northwest of old peach tree. Mark is standard station disk in top of 8-inch square stone post projecting about 2 feet above ground, and leaning slightly.

Pilot (Wilson County, A. H. Buchanan, 1879; 1934).—About 6 miles south of Lebanon and about 2 miles east of Lebanon-Murfreesboro pike. To reach from courthouse at Lebanon, go south 7.9 miles on Lebanon-Murfreesboro pike to Bairds Mills, turn left onto gravel road, go 1.15 miles to Echo Valley Stock Farm (Homer Hancock, proprietor), turn left into farm, go 100 yards, turn right, and go 1.2 miles to house of Frank McDaniels. From house station site may be seen on high hill bearing N. 60° E. (magnetic). Surface mark is intersection of north-south and east-west grooves surrounded by letters "U. S. G. S." cut in dressed top of stone post, 10 inches square and 2½ feet long, set flush with surface of ground. Underground mark is stone ink jug filled with ashes. Four stone posts roughly dressed at top are 6 feet from station, north, south, east, and west.

WESTERN NORTH CAROLINA

Principal points

Thomkins (Watauga–Wilkes–Ashe Counties, N. C., L. G. Simmons, 1933; 1934).—About 11½ miles east-northeast of Boone, 19½ miles west-northwest of North Wilkesboro, on broad summit of Thomkins Knob, on land owned by Frank Hartley, 60 feet southwest of southwest edge of oak grove, and 80 feet northeast of large dead snag. To reach from North Wilkesboro, go west about 25 miles on Route 421 to Deep Gap, proceed west 0.65 mile, turn right at arrow "Obids 10 mi.—Glendale Springs 15 mi.", proceed 1.05 miles, turn right at T-road, continue 0.6 mile to H. E. Green's house, follow road along creek 1.5 miles, and follow ridge to left about ¼ mile to station site. Mark is standard disk station mark in rock outcrop, note 2a. Reference mark no. 1 is standard reference disk in top of boulder, note 12c, near 18-inch stump, and about 300 yards from station in azimuth 126°14′44″. Reference marks nos. 2 and 3 are standard reference disks in rock outcrops, note 12a. No. 2 is 6.257 meters (20.53 feet) from station in azimuth 219°40′. No. 3 is 13.254 meters (43.48 feet) from station in azimuth 304°58′.

Grandfather (Avery County, N. C., L. G. Simmons, 1933; 1934).—About 8¼ miles west-southwest of Blowing Rock, on Grandfather Mountain, on property of J. R. MacRae, and near center of south edge of bare rock which forms what is known locally as "Third Peak." To reach from Blowing Rock, go west 17.6 miles on Route 28 to J. A. MacRae's store, and continue 2 miles northeast to slope of first peak. Station mark is standard disk station mark in rock outcrop, note 2a. Reference mark no. 1 is standard reference disk in boulder, note 12c, and 5.928 meters (19.45 feet) from station in azimuth 133°46′. Reference mark no. 2 is standard reference disk in rock outcrop, note 12a, 3.540 meters (11.61 feet) from station in azimuth 272°28′. Azimuth from station to cupola on Mayview Manor at Blowing Rock is 255°28′42″.

Sandymush (Haywood–Buncombe Counties, N. C., M. A. Hecht, 1933).—On summit of Sandymush Bald in the Newfound Mountains, about 6 miles northeast of Crabtree post office, and 10½ miles north-northwest of Canton. To reach

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from Canton, go west about 7 to 8 miles on Routes 19 and 23 to junction with Route 209 just east of Lake Junaluska, proceed north 6.4 miles on Route 209 to Crabtree post office, continue north on Route 209 to junction with Route 289, keep right on Route 209, continue 3.8 miles to top of grade at divide in mountain, and go down grade 0.45 mile to end of truck travel at logging road which leads up slope to right (east). Large tree with triangular blaze is about 20 yards east of road at this point. Follow logging road about 200 yards to point where road crosses stream and stream appears to be coming down road, turn left up trail at triangle-blazed tree on right, and follow steep muddy trail about ¾ mile to creek to cleared land. Peak is visible from this point, bearing slightly to right, about ¼ mile distant, and 350 feet in elevation. Station is on north end of summit 73.3 feet east of twin dead chestnut trees, and 15.6 feet west of wire fence. Mark is standard disk station mark in boulder, note 4. Reference marks nos. 1 and 2 are standard reference disks in embedded flat rocks. No. 1 is on west brow of slope, 10 feet east of twin dead chestnut trees, and 19.278 meters (63.25 feet) from station in azimuth 112°00′. No. 2 is along south crest of ridge, in line of wire fence, and 13.890 meters (45.57 feet) from station in azimuth 20°07′. Reference mark no. 3 is a standard reference disk in boulder, on high wooded knoll, on east side of knob, and about 200 yards from station in azimuth 29°11′11″.

Water Rock (U. S. G. S.) (Haywood–Jackson Counties, N. C., M. A. Hecht, 1933).—About 8 miles northeast of Sylva, 8 miles west of Waynesville, 4 miles northwest of Balsam, on summit of Water Rock Knob, the most southerly and highest of four high peaks in Plott Balsam Mountains. (A bare peak almost as high stands about ½ mile east of station.) To reach from post office at Sylva, go east 5.35 miles on Routes 19 and 23 (or 0.75 mile beyond side road to north with arrows "Addie and Bluff Creek Road"), turn left (north) onto road leading up east side of north fork of Scott Creek (water flume in creek at this point), follow rough steep road 1.8 miles up creek to house of Jim Cogdill, and continue 0.3 mile beyond last house to end of truck travel. From sawmill, follow left fork of logging road to fork in canyon at trestle in tram road, follow trail up right canyon along flume a short distance to point where it bears left up ridge, follow this wide trail to 3 or 4 old cabins known as "Spruce Camp." (There is a piped spring at this point and station site can be seen at head of canyon.) Follow trail to left up ridge to gap just below peak. Station site is on peak to right of gap about ¼ mile distant with 300-foot climb. Best route is up ridge along divide. Horses can be taken part way up ridge. Station is 6 feet south of 15-inch balsam stump, and is marked by standard U. S. Geological Survey disk (not stamped) cemented in top of rock which is set firmly in ground and projects 4 inches above surface. Reference marks are standard reference disks in rock outcrops, note 12a. No. 1 is along northwest slope of ridge and 8.845 meters (29.02 feet) from station in azimuth 1°52′. No. 2 is on south slope of ridge and 3.151 meters (10.34 feet) from station in azimuth 160°11′.

Guyot (U. S. G. S.) (Cocke–Sevier Counties, Tenn.—Haywood County, N. C., M. A. Hecht, 1933).—About 18 miles west of south of Newport, on summit of Mount Guyot, a peak of the Great Smoky Mountains on divide between North Carolina and Tennessee, at headwaters of left prong of Little Pigeon River and Cosbys Creek on the north and Big Creek and Raven Fork on the south. To reach from Newport, go south about 17 miles on Route 75 to Cosby post office, continue south 0.15 mile, cross bridge, turn right onto gravel road, proceed 2.6 miles to W. L. Valentine's home and nursery, continue 0.3 mile, cross bridge, turn left onto dim road, follow main-traveled road 1.7 miles to top of grade, follow right fork 0.8 mile down hill to end of road at old house and barns which have been partially torn down. Follow trail which leads south along west side of corn patch from between barn on left and chicken yard on right, at pole gate at small hut follow trail to right (west) leading to Indian Camp Creek, cross creek, proceed about 200 yards, follow left fork of trail to top of Balsam Knob ("USGS BM 6355.9" painted on tree at this point), and follow left trail along ridge about ¾ mile. Near summit of Mount Guyot, Appalachian Trail continues on over ridge to left. Bear right on up to peak which is about 100 yards distant. Station mark is standard U. S. Geological Survey disk stamped "TT Sta. No. 14 D 1929", in drill hole in 8- by 8-inch sandstone set 24 inches in ground. Station was first used by U. S. Geological Survey in 1928 as triangulation station. In 1929 they used it as a transit traverse station. Reference marks are standard reference disks in buried boulders, note 12c. No. 1 is 9.60 meters (31.5 feet) from station in azimuth 145°07′. No. 2 is 17.02 meters (55.8 feet) from station in azimuth 237°23′.

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Max Patch (Madison County, N. C., M. A. Hecht, 1933).—On summit of Max Patch Mountain, about 13½ miles airline and 20 miles by road north of Crabtree post office, 17¼ miles southeast of Newport, Tenn., and about ¼ mile southeast of North Carolina-Tennessee State line. To reach from Canton, go west about 7 or 8 miles on Routes 19 and 23 to junction with Route 209 just east of Lake Junaluska, proceed north 6.4 miles on Route 209 to Crabtree post office, continue north 5.8 miles to junction with Route 289 at stone store, turn left onto Route 289, continue 0.7 mile to junction with Route 292 at creek crossing, turn right onto Route 292, follow 11.75 miles to Max Patch Lodge, follow upper left-hand road 0.2 mile, follow toll road to right at sign "Toll Road to Airport", and continue 0.65 mile to summit and station site. Station is in approximate center of cleared space used as landing field. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11c. No. 1 is near flagpole and about 125 yards from station in azimuth 12°14′13″. No. 2 is 25.730 meters (84.42 feet) from station in azimuth 58°00′. No. 3 is 25.372 meters (83.24 feet) from station in azimuth 159°11′.

Cheoah (**U. S. G. S.**) (Cherokee–Graham Counties, N. C., M. A. Hecht, 1933).—On main peak, known as "Cheoah Bald", of range of mountains on northwest side of Nantahala River, 7¼ miles east of Robbinsville, 2 miles northwest of Hewitt station on Murphy branch of Southern Railway, and 5.5 miles north of Topton. Station is at north end of peak, in small cleared area, and 30 feet southeast of small lone oak tree which was used as signal tree by U. S. Geological Survey in 1928. To reach from junction of Routes 10 and 108 at Topton, follow Route 108 across overhead bridge toward Robbinsville 2.7 miles to sign "Buck Campbell Road", turn right onto this road, proceed 0.9 mile, cross railroad tracks, and continue to house of Geo. Huscusson, who will direct party as to route to station site which requires at least 3½ miles steep climbing. Station mark is standard U. S. Geological Survey disk stamped "U. S. C. & G. S. 1933" cemented in large flat shale rock buried in ground. Reference mark no. 1 is standard reference disk in buried boulder, note 12c, along trail on top of ridge and 22.803 meters (74.81 feet) from station in azimuth 53°46′. Reference mark no. 2 is standard reference disk in rock outcrop, note 12a, on west edge of slope and 29.550 meters (96.95 feet) from station in azimuth 126°21′. Azimuth from station to *Wayah Bald, fire lookout tower*, distant 12.1 miles, is 325°49′20″.

Standing Indian (Macon–Clay Counties, N. C., M. A. Hecht, 1933).—On summit of Standing Indian Mountain in Yellow Mountain Range, about 16 miles airline and 25 miles by road east of Hayesville, 13½ miles southwest of Franklin, and 3 miles north of North Carolina-Georgia State line. To reach from Franklin, go west about 15 miles on Route 28 to Wallace Gap, continue 6 miles (or about 1 mile beyond Black Gap), turn left onto side road, proceed 5.5 miles to Deep Gap and end of truck travel. Follow trail up ridge to left about 2 miles (900 feet elevation) to top. Arrow near top points to spring. Station is on north side of summit, 10 feet north of U. S. Forestry Service fire lookout tower, and about opposite middle of tower wall. Mark is standard station disk in rock outcrop, note 3. Reference marks nos. 1 and 2 are standard reference disks in rock outcrops, note 12b. No. 1 is on backbone of ridge, 60 feet northwest of fire lookout tower, and 15.561 meters (51.05 feet) from station in azimuth 155° 59′. No. 2 is in front of entrance to and 5 feet east of fire tower and 4.763 meters (15.63 feet) from station in azimuth 316°15′. Reference mark no. 3 is standard reference disk in rock outcrop, note 12a, 2.8 miles from U. S. Route 64 along road leading to station, 32 feet north of 12-inch chestnut tree with triangular blaze, 40.9 feet north of center line of road, 20.2 feet west of 14-inch chestnut-oak tree, 16.3 feet southwest of 6-inch hickory tree, and 6 inches from 6-inch maple tree with triangular blaze, and 2 miles from station in azimuth 143°14′20″. Azimuth from station to *Wayah Bald, fire lookout tower*, distant 10.1 miles, is 172°39′46″.

Tatham (Teyahalee (U. S. G. S.)) (Graham–Cherokee Counties, N. C., M. A. Hecht, 1933).—About 18 miles northeast of Murphy, 4 miles north-northeast of Andrews, 3¾ miles south of Robbinsville, 1 mile east of Tatham Gap, on summit of highest peak of Snowbird Mountains known locally as "Tatham Bald Mountain" and shown on U. S. Geological Survey map as "Teyahalee Bald." Station is on east end of summit, in center of ridge, 75 feet south of highest point of summit, and 20 feet north of break of slope to south. To reach from post office at Andrews, go east about 0.5 mile on Route 10, turn left around Shell gas station onto dirt road, keep straight ahead across railroad tracks and concrete bridge with pipe rails for total distance of 0.85 mile from highway,

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keep straight ahead at crossroads, continue 0.15 mile, pass new white house on right, continue 0.1 mile to last house, proceed 4.7 miles on old Andrews-Robbinsville road to top of grade at gap, continue down hill 0.2 mile to end of truck travel, and then follow logging road to right 1½ miles to summit and station site. Station mark is standard U. S. Geological Survey disk in concrete at center of top of stovepipe which is embedded in ground. Reference marks are standard reference disks in buried boulders, note 12c. No. 1 is on downward slope, 10 feet southwest of 10-inch white-oak stump with triangular blaze, and 7.690 meters (25.23 feet) from station in azimuth 58°15′. No. 2 is on northwest top of ridge, midway between 6-inch twin white-oak stump and 10-inch white-oak stump, and 17.049 meters (55.93 feet) from station in azimuth 137°25′. An 8-inch oak tree used by U. S. Geological Survey as signal tree is 7.35 feet from station in azimuth 219°23′. Triangular blaze on same tree is 7.35 feet from station in azimuth 218°33′. Triangular blaze on 10-inch oak stump is 17.24 feet from station in azimuth 48°08′. Triangular blaze on 16-inch oak tree is 100.32 feet from station in azimuth 159°28′. Azimuth from station to spire of high school at Andrews is 23°18′33″.

Lance (Union County, Ga., M. A. Hecht, 1933).—On summit of what is known locally as "Rocky Top" (property of R. L. Lance), about 7½ miles south-southeast of Murphy, and 0.3 mile south of North Carolina-Georgia State line. To reach from Murphy, go south about 10 miles on Route 19 to State line, continue south 2.0 miles (or 1.2 miles beyond crossing Moccasin Creek), turn left onto dirt road through cut at top of grade, proceed 0.4 mile, follow left fork at mail box on left with name "Conley", continue 1.1 miles, follow left fork at bottom of grade, continue 0.6 mile, follow dim right fork, continue 0.45 mile, take left-hand fork up hill after fording small stream, and continue about 0.5 mile to W. E. Kirkland's home on Conley Creek at end of truck travel. Proceed on foot along right side of creek. (Road narrows into path and crosses small creek.) Continue up hill to old abandoned cabin now used as barn, follow trail to right (which soon broadens into wagon road) to triangle-blazed tree at top of gap, follow trail up very steep hill to left, and bear right along ridge to station site. Summit is heavily timbered. Station is on backbone of ridge, 50 feet west of summit, 13 feet southwest of 20-inch water-oak tree, and 46 feet west of twin 12-inch chestnut trees. Station mark is standard disk station mark in buried boulder, note 4. Underground mark is standard disk station mark in concrete, note 7a, 2 feet under ground. Reference marks are standard reference disks in rock outcrops, note 12a. No. 1 is along backbone of ridge, 12 feet southwest of 14-inch chestnut-oak tree, and 17.105 meters (56.12 feet) from station in azimuth 117°11′. No. 2 is along north side of ridge, 10 feet east of 12-inch sourwood tree, and 12.345 meters (40.50 feet) from station in azimuth 174°28′.

Laurel (Cherokee County, N. C., M. A. Hecht, 1933).—On or near Tennessee-North Carolina State line, on summit of Laurel Top Mountain, in the Great Smoky Mountains, on property of U. S. Forestry Service, and about 16 miles east-southeast of Tellico Plains, Tenn. To reach from center of Tellico Plains, go south 0.8 mile to entrance to Cherokee National Forest, follow main forest road 20.8 miles to public camp ground, follow left fork which becomes very steep, and continue about 6 miles to home of R. L. Fain and end of truck travel. Cross field to north and bear to right. Station is on third peak, first being Grassytop, second Lebo, and third Laurel Top. Total climb is about 1½ miles. Station is along backbone of ridge, 150 feet south-southwest of summit, 15 feet southwest of peaked rock outcrop, and 60 feet north-northeast of large rock outcrop. Mark is standard station disk in rock outcrop, note 3. Reference mark no. 1 is standard reference disk in rock outcrop, note 12a, along south side of ridge, and 7.031 meters (23.07 feet) from station in azimuth 294°30′. Reference mark no. 2 is standard reference disk in large boulder, note 12c, along backbone of ridge, and 16.986 meters (55.73 feet) from station in azimuth 32°51′.

Pack Mountain (U. S. G. S.) (Cherokee County, N. C., M. A. Hecht, 1933).—About 23 miles by road west-southwest of Murphy, 7 miles northeast of Copperhill, Tenn., about 5½ miles east and 1 mile north of Ducktown, Tenn., about 4¼ miles north and 2.1 miles east of corner common to North Carolina, Tennessee, and Georgia, and on summit of higher of two peaks of highest mountain in Pack Mountain Range. Summit is about 1,100 feet long, extending northwest and southeast. Ridge is very sharp, ranging in width from 100 feet at north to 25 feet at south. Station is on southeast end of summit, about 30 feet northwest of break in ridge to a gap to the southwest, and 32 feet west of

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15-inch white-oak tree. To reach from Louisville & Nashville Railroad station in Murphy, go west 0.5 mile on Route 10 to junction with Route 28, turn right onto Route 28, proceed 8.7 miles to junction with Route 294, proceed 9.6 miles on Route 294 to Postell post office on right side of road, continue 0.75 mile on Route 294 to church and school on left side of road, turn left onto dirt road marked "Wehutty Road", go 1.0 mile, turn right, go 0.75 mile, turn left, go 1.25 miles, turn right, continue ¼ mile to schoolhouse, turn left onto rough wagon road, and follow about ½ mile to home of Mr. Hughs and end of truck travel. Proceed on foot southwest along steep wagon road, pass last house, continue about 0.15 mile, turn right onto path which leads south to spring and continue on up slope about ½ mile over very rough trail to summit. Total climb is about 1½ miles. Station mark is standard U. S. Geological Survey disk in drill hole in rock outcrop or boulder. Reference marks are standard reference disks in rock outcrops or boulders. No. 1 is on edge of summit, 2 feet northeast of 12-inch water-oak tree, and 11.339 meters (37.20 feet) from station in azimuth 5°29′. No. 2 is on western edge of summit, 15 feet west of 12-inch water-oak tree, and 8.301 meters (27.23 feet) from station in azimuth 98°15′. A 10-inch black-oak tree used as signal by U. S. Geological Survey is at edge of break in ridge to west, and 17.87 feet from station in azimuth 72°58′. Fire lookout tower on Sassafrass Mountain is about 6 miles from station in azimuth 111°51′16″.

BRISTOL, VA., TO CHARLESTON, W. VA.

Principal points

Clinch (Washington County, Va., A. H. Buchanan, 1894; 1934).—About 8 miles north of Abingdon, about 5 miles south of Lebanon, about 5 miles southeast of Hansonville, at head of Little Moccasin Creek, on property of Holston River Lumber Co., and near southeast extremity of bare flat-topped ridge on what is known locally as "Clinch Mountain." To reach from Abingdon at junction of U. S. Routes 11 and 19, go west 11.2 miles (or 0.25 mile beyond Old Fort filling station) on Route 19, turn right onto rock road and go 0.1 mile to fork, turn left and go 0.15 mile to fork, turn left across stream and go 0.9 mile to home of John Reynolds and end of truck travel, follow wagon road to left up valley about 1 mile to gap, turn right onto old tram road, and follow along ridge about ¾ mile to station site. Original surface mark was intersection of north-and-south and east-and-west lines, surrounded by letters "U. S. C. S.", in top of large flat-surfaced rock. In 1932 surface mark was found broken. In 1933 standard station disk in drill hole in large boulder was centered over underground mark. Underground mark is 1-inch drill hole in center of stone, 6 by 4 by 4 inches, buried about 1 foot below surface of ground. Reference marks were drill holes in rocks *in situ*. One was 75 feet north of station; another was 80 feet 3 inches southeast of station; and another was 62 feet 9 inches southwest of station. In 1932 southwest reference mark reported broken. In 1933 standard reference disks were set in drill holes in rocks. No. 1 is in drill hole of old southeast reference mark, on downward slope of ridge, and 80.32 feet from station in azimuth 302°02′. No. 2 is about 10 yards west of top of ridge and about 225 yards from station in azimuth 154°23′17″. No. 3 is in drill hole of old north reference mark, on top of ridge, and 22.886 meters (75.09 feet) from station in azimuth 180°52′. In 1934 disk had been removed from reference mark no. 2 leaving drill hole, and another standard reference disk was cemented in same hole.

Holston 2 (Carter–Sullivan Counties, M. A. Hecht, 1933; 1934).—About 8 miles northeast of Elizabethton, on highest part of summit of western one of two peaks of Holston Mountain. In 1894 A. H. Buchanan established station "Holston", marked by drill hole at intersection of north-south and east-west grooves, in rock *in situ*. Three reference marks were drill holes at more distant end of arrows which pointed toward station, in rock *in situ*, at following distances and directions from station: No. 1, 24 feet 4 inches, S. 74°15′ E.; no. 2, 8 feet 9 inches, N. 38°20′ E.; and no. 3, 25 feet 11 inches, S. 13°05′ W. In 1932 station "Holston" and its reference marks were recovered in good condition. Fire lookout tower had been erected nearby and property was under lease to State Forestry Department. In 1933 station mark of station "Holston" was found destroyed and station *Holston 2* was established in center of group of rocks, about 115 feet southeast of old cabin, 45 feet south-southeast of 12-inch white oak, and

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in drill hole of reference mark no. 2 of station "Holston." To reach from Elizabethton, follow State Route 91 east 8.65 miles (or 0.1 mile past Unaka School), turn left onto farm road and go 0.35 mile to fork, turn right and go 0.02 mile to open glade and end of truck travel, thence on foot along steep trail up ridge to west 300 yards to top, follow rough wagon road along ridge 3½ miles to summit of mountain between two peaks at Low Gap, turn left and continue west ½ mile to summit and station site. Station mark is standard station disk in boulder, note 4. Reference marks nos. 1 and 2 are standard reference disks in bedrock, note 12a. No. 1 is on east edge of summit, 7 feet northeast of 4-inch white oak, and 7.93 meters (26.0 feet) from station in azimuth 282°04′. No. 2 is on south west edge of summit, in drill hole used for reference mark no. 3 of station "Holston," and 10.31 meters (33.8 feet) from station in azimuth 18°56′. Reference mark no. 3 is standard reference disk in boulder, note 12c, 13 feet northwest of 30-inch dead chestnut tree, and 120 feet from station in azimuth 104°14′.

Supplementary points

Bristol 2 (Washington County, Va.–Sullivan County, Tenn., M. A. Hecht, 1933).—About ½ mile east of Bristol, near western end of East Hill Cemetery, 8 feet west of center line of most westerly circular drive in cemetery, 38.2 feet north-northeast of letter "S" in name "Smith" on north face of tallest monument, 20.4 feet south-southeast of letter "P" in "Palmer" on east face of large marble monument, and on Virginia-Tennessee boundary line. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference marks are standard reference disks. No. 1 is in top of northwest corner of concrete wall around burial plot of the Gallaham family, about 6 feet southeast of center line of circular drive, 7 feet west of twin 6-inch cedar in north edge of plot, and 28.620 meters (93.90 feet) from station in azimuth 229°52′. No. 2 is in top of large concrete vault of the Bondurant family, 1.2 feet east of west edge, 1.3 feet east of north edge, and 6.771 meters (22.21 feet) from station in azimuth 319°37′. No. 3 (azimuth mark) is in top of curbing on west side of Pennsylvania Avenue (Pennsylvania Avenue is U. S. Route 421 going east from Bristol), about 13 paces north of center line of McDowell Street extended, and about 0.4 mile from station in azimuth 71°18′14″. Following azimuths are from station: V. I. College, spire, 166°35′02″; Columbia Paper Co., stack, 185°-29′48″; and tannery, stack, 254°18′17″.

Dunn (Washington County, Va.–Sullivan County, Tenn., A. H. Buchanan, 1895; 1933).—On Virginia-Tennessee State line where it crosses ridge about 5 miles west of Bristol, on summit of ridge, and short distance southwest of higher point on same ridge. To reach from Bristol, go west from city limits 0.4 mile on U. S. Route 11, turn right at intersection onto new U. S. Route 58 and follow 1.2 miles to dirt road, turn left, cross creek, turn left, and continue 0.4 mile to large house with rock wall along road, turn right across creek and go 0.8 mile, turn left and continue 1.5 miles to lane on left on property of James Burdine and end of truck travel, and follow lane up hill about 500 yards to station site. Originally marked by drill hole at intersection of north-and-south and east-and-west lines on surface of large rock, surrounded by letters "U. S. C. S." Re-marked in 1933 by setting standard station disk in same drill hole. Two standard reference disks in rock outcrops were established in 1933. No. 1 is 8.452 meters (27.73 feet) from station in bearing N. 54° E. No. 2 is 15.893 meters (52.14 feet) from station in bearing S. 25° E.

Smathers (Washington County, M. A. Hecht, 1933; 1934).—Near south city limits of Johnson City, on low part of lawn of Dr. C. R. Smathers' property on Buffalo Street, about 110 feet northeast of his residence, and 15.7 feet south of Mr. Preas' driveway. To reach from main street, turn south at Southern Railway tracks onto Buffalo Street and follow 0.4 mile to station. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 15 feet east of Buffalo Street, 21.5 feet north of Mr. Preas' driveway, and 40.200 meters (131.89 feet) from station in azimuth 119°19′. No. 2 is in southwest corner of cornice on top of the John Sevier Hotel and 0.5 mile from station in azimuth 158°25′05″. No. 3 is 1 foot northwest of northwest corner of Dr. Smathers' garage, 15.9 feet northeast of northeast side of residence, and 36.043 meters (118.25 feet) from station in azimuth 314°22′.

Damascus (Washington County, Va.–Johnson County, Tenn., A. H. Buchanan, 1895; 1934).—On or near Virginia-Tennessee State line, about 4¾ miles north-

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west of Laurel Bloomery, 3½ miles southeast of Alvarado, about 2½ miles west-southwest of Damascus, on summit of peak in Holston Mountain Range, on backbone of ridge, 6 feet west of 15-inch chestnut-oak tree, 5 feet south of chestnut-oak tree (gone in 1933), and 2 feet north of chestnut oak tree (gone in 1933). To reach from post office in Damascus, go southwest 0.15 mile on gravel road to road end, follow narrow dirt road to right 2.8 miles through several gates to top of ridge where road narrows to path, proceed southwest on foot 1¾ miles to 4 triangle-blazed trees along path, and go up dim steep trail to right (northwest) 150 feet to station site. Originally marked by 5- by 12-inch stone post, 24 inches long, projecting 7 inches. Top of stone is marked with cross and letters "U. S. C. S." Southeast side is marked "U. S.", and northwest side, "C. S." In 1933 standard station disk was set in drill hole in original stone post, and three standard reference disks were established in buried stones. No. 1 is on northeast side of ridge, about 3 feet south of 18-inch hickory tree, and 14.510 meters (47.60 feet) from station in azimuth 225°17′. No. 2 is on southeast side of ridge, 2 feet west of 15-inch water-oak tree, and 12.185 meters (39.98 feet) from station in azimuth 354°30′. No. 3 is in saddle slightly on east side of ridge, about 4 feet north of crooked 30-inch chestnut-oak tree, and approximately 75 yards from station in azimuth 34°24′.

White Top 2 (Grayson County, Va., M. A. Hecht, 1933).—About 20 miles by road southwest of Chilhowie, in open field on south slope of White Top Mountain, about ½ mile below summit, and 30 feet north of center line of road. To reach from Chilhowie, go south on Virginia Route 79 from sign "White Top", cross Norfolk & Western Railway, proceed 3.9 miles to junction of routes, cross intersection, proceed 0.4 mile on U. S. Route 58, turn left across iron bridge, and follow well-marked road 14.2 miles to station site. Surface and underground marks are standard disk station marks in boulders, notes 4 and 9a. Reference marks are standard reference disks in boulders, note 12c. No. 1 is on downward slope of ridge and 28.093 meters (92.17 feet) from station in azimuth 62°36′. No. 2 is on upward slope of ridge and 26.676 meters (87.52 feet) from station in azimuth 177°44′. No. 3 is about 150 feet to right of convention or dance hall, about 15 feet west of center line of road, and about 475 yards from station in azimuth 324°14′43″.

North Carolina corner (Ashe County, N. C.–Grayson County, Va.–Johnson County, Tenn., A. H. Buchanan, 1894; 1934).—On North Carolina-Virginia-Tennessee boundary corner, about 8.5 miles east-southeast of Damascus, Va., about 4 miles southwest of Whitetop, Va., on east face of Pond Mountain, about ¼ mile from top, on sharp ridge which runs due north, about 35.5 feet west of 24-inch ash tree with dead top, and 2 feet south of fence corner. To reach from Chilhowie, Va., go south on Virginia Route 79, cross Norfolk & Western Railway and follow well-marked road 13.4 miles to forks at Lutheran Training School for Girls, follow right fork through Konnarock, Va., 2.8 miles to concrete-block filling station, turn left, proceed 1.3 miles, turn right, proceed 3.1 miles to Green Cove Church, turn left and proceed 1.6 miles to T-road, turn right and proceed 1.5 miles to overhead bridge at Whitetop, Va., bear to right and follow rough farm road 2.7 miles to home of Roby W. Sullivan which is at end of truck travel. Follow dim wagon road up ridge about 1½ miles to station site. Original corner boundary mark was cherry tree which had been blown down in 1894. Position was re-marked with heavy stone with north-and-south and east-and-west grooves in top and letters "U. S. C. S." Stone was recovered in 1933 and intersection grooves marked with standard disk station mark. Three standard reference disks in boulders, note 12c, were established in 1933. No. 1 was on east slope of hill, 15 feet west of wire fence, and 25.675 meters (84.24 feet) from station in azimuth 259°34′. In 1934 this reference mark had been destroyed and standard reference disk in boulder, note 12d, was established on eastern downward slope, 16 feet west of wire fence, and 28.892 meters (94.79 feet) from station in azimuth 260°15′. No. 2 is on top of ascending ridge, 15 feet north of 20-inch dead chestnut tree, and 575.75 feet from station in azimuth 34°34′01″. No. 3 is on top of ascending ridge, about 3 feet from wire fence, and 16.927 meters (55.53 feet) from station in azimuth 37°16′. *Featherecamp, fire lookout tower*, is distant about 6 miles in azimuth 157°06′18″.

Moody (Sullivan County, M. A. Hecht, 1933).—About 4 miles east of Kingsport, on summit of Chestnut Ridge, on property of E. A. Moody, in open field, 35 feet southeast of center line of road, 10½ feet southeast of 10-inch locust tree, and 25 feet southeast of barbed-wire fence. To reach from Kingsport, go east 4.8 miles on U. S. Routes 11W and 23 to Norris Tourist Camp, continue 200 feet,

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turn left onto dirt road, and follow 0.6 mile to station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks nos. 1 and 2 are standard reference disks in concrete, note 11a. No. 1 is 12 feet southeast of center line of dirt road, 2.2 feet southeast of wire fence, and 17.807 meters (58.42 feet) from station in azimuth 73°12′. No. 2 is 11 feet southeast of center line of road, 1½ feet southeast of wire fence, and 22.365 meters (73.38 feet) from station in azimuth 212°18′. No. 3 (azimuth mark) is standard reference disk in drill hole in outcropping bedrock, in front yard of old house, owned by C. B. Hobbs, about 100 feet south of center line of county road, 80 feet northeast of northeast corner of house, 25 feet west of north-and-south wire fence along west side of cultivated field, and about 0.8 mile from station in azimuth 318°43′35″. To reach azimuth mark from Norris Tourist Camp, go toward Bristol about 1½ miles to unpainted barn with "Dobbins Hdwe. Co." on it, turn right at first road beyond barn, and go about ¾ mile to Hobbs' home.

Kingsport (Sullivan County, M. A. Hecht, 1933).—Near northeast city limits of Kingsport, on property owned by The Improvement Corporation. To reach from post office in Kingsport, go north 0.5 mile to Five Points Circle, thence northeast on Watauga Street 0.35 mile, turn left onto East Ravine Street and go 0.1 mile, turn right onto East Park Drive and go 0.2 mile to point where it turns left, continue straight ahead about 200 feet to station site. Station is 38.5 feet west-southwest of center line of West Park Drive, 44 feet from northeast corner of garage owned by H. E. P. Clifford, and 20.3 feet north-northwest of power-line pole. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is on downward slope, 22.5 feet southwest of West Park Drive, and 30.081 meters (98.69 feet) from station in azimuth 153°14′. No. 2 (azimuth mark) is near northeast corner of cow pasture, 29 yards south of center line of Broad Street, 8 yards west of center line of Mill Street, 18 yards south-southwest of southwest corner of old shed, about 1½ feet south of old fence around shed, and about 0.3 mile from station in azimuth 227°41′15″. No. 3 is 43 feet east-northeast of West Park Drive, and at about same elevation as and 25.276 meters (82.93 feet) from station in azimuth 261°58′.

BOONE, N. C., TO BLUEFIELD, W. VA. (SECOND ORDER)

Principal points

Feathercamp (Washington County, Va., M. A. Hecht, 1934.—In Unaka National Forest, about 5½ miles north-northwest of Virginia-Tennessee-North Carolina corner, 4½ miles northeast of Damascus, on summit of Feathercamp Peak of Grosses Mountain, 26.947 meters (88.41 feet) in azimuth 246°44′ from center of *Feathercamp, fire lookout tower*, 30 feet northwest of small log cabin, and in longitudinal center of summit. To reach from railroad crossing on Route 58 in Damascus, go east 6.8 miles on dirt road on north side of railroad tracks to top of grade, turn left onto dirt road and go about 1.5 miles to summit and station site. Marked by standard station disk in boulder, note 4. Reference mark no. 1 is standard reference disk in bedrock, note 12a, down east slope, and 43.26 feet from station in azimuth 345°54′. Reference mark no. 2 is probably standard reference disk in top of concrete footing of northwest leg of fire tower, 78.83 feet from station in azimuth 74°53′. Azimuth mark is standard reference disk in top of boulder on southwest edge of road leading to station, about ¼ mile west of group of rough frame buildings, and between 0.6 and 0.7 mile from station in azimuth 279°02′40″.

Grant (U. S. G. S.) (Washington County, Va., M. A. Hecht, 1934).—About 7 miles northeast of Damascus, 4½ miles east-southeast of Abingdon, on sharp wooded peak of River Knobs owned by W. F. and L. M. Grant, 29 feet west of 24-inch oak tree with top cut out, and 25.3 feet east-southeast of 7-inch triangle-blazed oak tree. To reach from junction of Routes 78 and 58 in Damascus, go northwest 8.45 miles on Route 58 (or 0.2 mile beyond Middle Fork of Holston River), turn right onto gravel road and go 0.1 mile, follow right fork 0.3 mile to lane to home of Mr. Sneed, walk up lane to house and go 0.5 mile back of house to station site. Marked by standard U. S. Geological Survey station disk (probably in concrete) about 6 inches below surface of ground. Reference and azimuth marks are standard reference disks in boulders, note 12c. No. 1 is 13 feet south of 15-inch oak tree and 82.92 feet (slope distance) from station in azimuth 347°58′. No. 2 is on down slope of hill and 34.39 feet (slope distance) from station in

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azimuth 78°52′. Azimuth mark is on property of Gus Smith, 48 yards north of fence corner at road fork, and 0.25 mile from station in azimuth 190°44′18″. *McQueen, fire lookout tower*, is 9 miles from station in azimuth 12°50′30″.

Glenn (Ashe County, N. C., M. A. Hecht, 1934).—About 7 miles southeast of Damascus, Va., on highest part of highest knob at junction of Stone and Pond Mountains, about 40 feet north of stump of large tree, and 6.8 feet southeast from obtuse-angled junction of fence lines. To reach from Whitetop, Va., cross overhead bridge and go to right 2.7 miles over rough farm road to home of Roby W. Sullivan at end of truck travel, follow dim wagon road 1.5 miles up ridge to station *North Carolina corner* (see description thereof), go southwest 0.25 mile along ridge to gap, and follow ridge southeast 0.25 mile to top of knob and station site. Marked by standard station disk in buried rock, note 4. Reference marks are standard reference disks in buried rocks, note 12a. No. 1 is on southern downward slope of knob and is 113.00 feet from station in azimuth 329°57′. No. 2 is on downward slope of knob and 96.58 feet from station in azimuth 30°03′. Azimuth mark was established for station *North Carolina corner* and is standard reference disk in boulder, note 12c, stamped "N.C. Corner", on north side of trail leading to station, about 10 feet north-northeast of large tree, and 0.4 mile from station in azimuth 166°35′23″.

Haunted (Sullivan-Johnson Counties, M. A. Hecht, 1934).—About 4½ miles southwest of Damascus, Va., 2½ miles west of Sutherland, on Holston Mountain in Unaka National Forest, on divide which forms boundary between Sullivan and Johnson Counties, just northeast of Haunted Hollow, in top of 6- by 12-inch outcrop on highest part of northeast-and-southwest rock ledge, and 8 feet west-northwest of 16-inch chestnut tree with triangular blaze on northwest side. To reach from railroad crossing in Damascus, go northwest 0.7 mile on U. S. Route 58, turn left onto slate road and go 3.2 miles, turn left onto side road and go 0.1 mile to old abandoned sawmill site, follow well-defined trail 2 miles to right up ridge to junction with trail leading along top of ridge at arrow on right "2½ miles to State Highway", turn right and follow trail 1 mile along top of ridge to point where trail leads around high knob on left, and go left about 300 feet to station on knob. Marked by standard station disk in rock outcrop, note 3. Reference marks are standard reference disks in rock outcrops, note 12a. No. 1 is in top of 2-foot square rock outcrop which slopes to southeast and in same rock ledge as and 39.22 feet from station in azimuth 256°45′. No. 2 is in 1- by 2-foot rock outcrop on downward slope and 60.11 feet from station in azimuth 354°42′. Azimuth mark is standard reference disk, note 12c, in top of 8- by 24-inch boulder on top of ridge buried 5 feet north-northeast of double 26-inch chestnut tree, and 150 feet from station in azimuth 75°46′.

Bald Knob (U. S. G. S.) (Johnson County, M. A. Hecht, 1934).—About 5½ miles east of Cold Springs, 5¼ miles northeast of Mountain City, 4½ miles southeast of Laurel Bloomery, in center of bald knob on highest point of Bald Knob which is high cleared peak of Blue Ridge Mountains, and 55 feet north-northeast of 20-inch dead chestnut tree. To reach from post office at Mountain City, go southeast about 2 miles on U. S. Route 421 to post office at Shouns, turn left onto gravel crossroad and go 2.0 miles, keep on left fork just after crossing small wooden bridge and go 6.6 miles (or 0.5 mile past cross roads at top of grade), keep to left around side of hill and go 0.45 mile, turn left up creek, follow main road 2.2 miles (or 1.35 miles beyond Hemlock, N. C., post office), turn left around side of hill and follow narrow road 2.35 miles to old frame house with four gables in Cut Laurel Gap and end of truck travel, go left (west) about ¼ mile up dim trail to top of ridge, turn left and go about 2½ miles along top of ridge to highest knob and station site. Marked by U. S. Geological Survey disk, stamped "1934", in irregular-shaped buried stone. Reference and azimuth marks are standard reference disks in boulders, note 12d. No. 1 is in square buried stone on eastern slope of ridge and 17.490 meters (57.38 feet) from station in azimuth 3°33′. No. 2 is in buried stone on western slope of ridge, 8 feet west of 20-inch dead chestnut tree, and 18.150 meters (59.55 feet) from station in azimuth 84°39′. Azimuth mark is in small buried stone flush with ground, near middle and eastern edge of sloping ridge, and 500 yards from station in azimuth 229°28′13″.

Shady (Johnson County, M. A. Hecht, 1934).—In Unaka National Forest, on summit of Iron Mountain, about 4.75 miles west-northwest of Mountain City, about 0.3 mile northeast of point where U. S. Route 421 crosses summit, 200 feet north of south edge of summit, 61.5 feet west-southwest of 24-inch triangle-blazed chestnut tree, 25 feet east of 30-inch maple tree, and near east edge of grassy spot. To reach from point where U. S. Route 421 crosses summit of Iron

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Mountain, go northeast 0.5 mile on dim trail along cross ridge to summit, turn right, and go about 100 yards to station site. Marked by standard station disk in boulder, note 4, flush with ground. Reference and azimuth marks are standard reference disks in rock outcrop, note 12a. No. 1 is flush with ground and 49.41 feet from station in azimuth 172°04′. No. 2 is flush with ground and 57.48 feet from station in azimuth 50° 21′. Azimuth mark is about 100 feet south of north edge of summit, 15 feet southwest of 30-inch triangle-blazed oak tree, and 350 feet from station in azimuth 206°36′50″.

Trout (Ashe County, N. C., M. A. Hecht, 1934).—About 6¾ miles northeast of Trade, Tenn., 7¼ miles northwest of Elks crossroads, 5 miles a little north of east of tricounty corner of Johnson County, Tenn., and Ashe and Watauga Counties, on highest point near north end of sharp rock point of Blue Ridge Mountains known as "The Peak", on southwest end of large sloping boulder, 27 feet west of 10-inch white oak tree, about 25 feet southeast of edge of rock cliff, and 18 feet southwest of 4-inch triangle-blazed white-oak tree. To reach from junction of U. S. Route 421 and Tenn. Route 67 (N. C. Route 16) at Trade, Tenn., go east 7.2 miles on Route 16 (or 1.1 miles past J. S. Stevens' store), turn right across bridge onto county road and go 1.15 miles, keep on main road to left and go 0.4 mile, turn right onto farm road and go 0.3 mile to home of Charlie Osborne at end of truck travel, follow farm road about ½ mile through orchard to gap in fence, bear left onto dim road ¼ mile up left branch of valley, turn left onto cross trail at blazed oak and go ⅛ mile to top of ridge, turn right onto trail along top of ridge and go about 1 mile to triangle-blazed oak tree at top of ridge, turn right and go about 1¼ miles along backbone of ridge to station site. Marked by standard station disk in boulder, note 5. Reference and azimuth marks are standard reference disks in boulders, note 12d. No. 1 is at southwest end of mass of jagged boulders at edge of rock cliff and 17.349 meters (56.92 feet) from station in azimuth 216°32′. No. 2 is in wide flat top of sloping boulder, on downward slope of ridge, and 6.880 meters (22.57 feet) from station in azimuth 320°30′. Azimuth mark is on high rocky spur, in northwest tip of pointed boulder, and about 300 yards from station in azimuth 13°41′12″.

Doe (Johnson County, M. A. Hecht, 1934).—About 4½ miles southwest of Mountain City, 1¾ miles south-southeast of Little Doe, 1¾ miles northwest of Vaughtsville, on highest part at south end of highest ridge of Doe Mountain on what is known locally as "Snake Den Ridge", 21.6 feet east of 7-inch triangle-blazed tree, 15 feet east of center of Civilian Conservation Corps trail, and 12 feet southwest of 10-inch triangle-blazed tree. To reach from junction of Routes 421 and 67 in Mountain City, go west 4.6 miles on Route 67 to small unpainted church on left and three mail boxes on right, turn left and go 0.7 mile to home of John Nelson at end of truck travel, follow wagon road from house about 275 yards, turn left onto trail through woods to creek bed, follow creek bed and blazed trail to top of ridge and above-mentioned trail, turn left onto trail and go about 0.3 mile to triangle-blazed trees and station site. Total walk about 2.5 miles. Marked by standard station disk in boulder, note 4. Reference marks are standard reference disks in boulders, note 12c. No. 1 is 18 feet east of center of trail and 48.70 feet from station in azimuth 174°56′. No. 2 is 1.5 feet northeast of 14-inch chestnut oak and 35.54 feet from station in azimuth 316°55′. Azimuth from station to north red brick chimney of two-story house, distant 3 miles, is 269°33′33″.

Bald of Rich (U. S. G. S.) (Watauga County, N. C., M. A. Hecht, 1934).—About 2½ miles southeast of Zionville, 2¼ miles south of Tennessee-North Carolina State line, on mountain known as "Bald of Rich", on summit of cleared knob which is central one of three peaks of about same elevation, 25 feet west of highest point of summit, and 4 feet north of longitudinal center. To reach from junction of U. S. Route 421 and Tenn. Route 67 at Trade, Tenn., go south 1.0 mile on Route 421, turn east onto "Meat Camp" road and go 0.85 mile, keep up hill at fork and go 2.5 miles to gap at top of grade at foot of mountain and end of truck travel, turn right across field and go ¼ mile to edge of woods, follow path through woods 0.4 mile alongside of ridge, turn right up ridge before reaching large clearing and go 0.7 mile along ridge to second summit and station site. Marked by standard U. S. Geological Survey disk in drill hole in bedrock. Reference mark no. 1 and azimuth mark are standard reference disks in bedrock, note 12a. No. 1 is down north slope of summit and 28.24 feet from station in azimuth 165°00′. Azimuth mark is on backbone of ridge, near southwest end of knob, in center one of three rocks, and between 330 and 350 yards from station

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in azimuth 58°16′28″. Reference mark no. 2 is standard reference disk in bedrock, note 12b, on backbone of ridge and 47.14 feet from station in azimuth 70°53′.

Stone (Watauga County, N. C.–Johnson County, Tenn., M. A. Hecht, 1934).—About 1½ miles southwest of Baker Gap, on summit of second knob northwest of southeast end of Stone Mountain range, on Tennessee-North Carolina State line, on drainage divide, 30 feet northwest of highest part of summit, 18 feet northwest of large dead snag, and 13½ feet west-northwest of triangle-blazed white oak tree. To reach from junction of U. S. Route 421 and N. C. Route 194 at Sugar Grove post office, cross bridge on Route 194, turn right onto George Gap road and go 4.6 miles, keep to left and go 1.65 miles, turn right at brick church and go 2.35 miles, turn sharply to left up hill and go 0.4 mile to home of Mr. Eggers and end of truck travel, follow old road 100 yards from house, turn right onto dim path and go 0.4 mile up mountain to top of ridge, and go left 0.5 mile along ridge to summit and station site. Surface and underground marks are standard station disks in boulders, notes 4 and 9. Reference marks are standard reference disks in bedrock, note 12a. No. 1 is in large rock outcrop down northwest slope and 201.85 feet from station in azimuth 188°54′. No. 2 is in large rock outcrop down southwest slope and 115.99 feet from station in azimuth 125°47′. Azimuth mark is standard reference disk in concrete, note 11b, 80 feet southwest of sharp curve in road leading to station, 0.4 mile north of small settlement, 40.8 feet southwest of fence corner, 14.5 feet east-southeast of center line of road, and between 1.5 and 1.75 miles from station in azimuth 266°01′21″.

Supplementary points

McQueen (Sullivan–Johnson Counties, M. A. Hecht, 1934).—About 9½ miles south-southeast of Abingdon, Va., 2¼ miles northwest of Crandull, on top of high wooded rock ridge on Holston Mountain Range in Unaka National Forest, 20.7 feet from east leg of *McQueen, fire lookout tower*, which is a 40-foot structure, 20.4 feet from north leg, 4.7 feet from short telephone pole, and 20 feet above and 56.3 feet (slope distance) from 16-inch hardwood tree. To reach from courthouse in Mountain City, go northwest 10.7 miles on Route 421 to crossroads with white barn and silo on left, turn right onto stone road and go 3.35 miles (or 0.15 mile beyond second of two small bridges) to greenhouse across creek on left, turn left across bridge and then sharply to right, go 0.2 mile, turn left and follow telephone line 2.55 miles up steep grade to top of ridge and Appalachian Trail, and turn sharply to left and go 0.35 mile up steep grade to station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference mark no. 1 is standard reference disk in concrete, note 11a, 67.2 feet from south leg of tower, 26.3 feet from 14-inch white oak tree, 3.6 feet from 12-inch white oak tree used as telephone pole, and 105.61 feet from station in azimuth 32°05′. Reference mark no. 2 is standard reference disk in concrete footing of west leg of tower, 34.8 feet from short telephone pole, and 38.16 feet from station in azimuth 58°30′. Azimuth mark is standard reference disk in concrete, note 11b, 31.3 feet from north corner of cabin fireplace, 10.8 feet from 6-inch white oak tree, 7.0 feet from center line of Appalachian Trail, and 300 feet from station in azimuth 256°00′. Azimuth from station to Bethel, high school, apex of bell tower of frame building, is 198°35′24″.

Iron (U. S. G. S.) (Johnson County, M. A. Hecht, 1934).—About 4½ miles northwest of Mountain City, 3 miles south-southeast of Crandull, on highest point of top of Iron Mountain in Unaka National Forest, 33.8 feet southwest of wire pasture fence, and 7.8 feet north-northwest of 24-inch chestnut tree with top cut out. To reach from junction of Routes 421 and 67 in Mountain City, go northwest 6.7 miles on Route 421 to top of grade and Iron Mountain Walk, follow trail 1,600 feet up ridge to right to sign "Shady Valley 3", follow right fork 1½ miles over triangle-blazed main-ridge trail to sign "Damascus 12.5 miles", and follow left fork ½ mile to cleared field and station site. Marked by U. S. Geological Survey station disk in boulder flush with ground. Reference and azimuth marks are standard reference disks in boulders, note 12c. No. 1 is 35 feet west of wire fence and 39.63 feet from station in azimuth 183°46′. No. 2 is at about same elevation as and 31.66 feet from station in azimuth 93°28′. Azimuth mark is in small boulder flush with ground, about 48 feet north of wire fence, about 50 feet south of backbone of ridge, and 150 yards from station in azimuth 275°36′27″. Following azimuths are from station: Mountain City,

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red brick school, spire, 308°29′17″; red-roofed white school, spire, distant 4 miles, 252°06′14″; and *McQueen, fire lookout tower*, distant 4.8 miles, 141°52′48″.

Luciuda (Johnson County, M. A. Hecht, 1934).—About 3 miles northwest of Zionville, N. C., 2½ miles a little north of west of Trade, ¼ mile northwest of North Carolina-Tennessee State line, along Luciuda Creek, through State Line Gap, on property of Mr. Mays, on west side of right-of-way of side road running from U. S. Route 421 near Key station and on bank 8 feet above and 14.8 feet from center line thereof, 85 feet from 12-inch white-oak tree, and 10 feet inside and northwest of fence corner. To reach from junction of Routes 421 and 67 in Trade, go northwest 1.85 miles on Route 421 to stone T-road to left just beyond white church on right, turn left and go southwest 2.55 miles to station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 24.6 feet from twin 10-inch chestnut tree, 9 feet above and 16.4 feet (slope distance) from center line of road, and 67.90 feet from station in azimuth 175°13′. No. 2 is across road, 14.9 feet from 12-inch maple tree and 11.6 feet from 8-inch maple tree which are on south side of fence line 21 feet apart, 70 feet (slope distance) from center line of road, 1 foot north of fence line, and 20 feet below and 107.80 feet (slope distance) from station in azimuth 318°40′. Azimuth mark is 133.2 feet northeast of nearer of two 10-inch poplar trees 12 feet apart (trees are 25 feet north-northeast of spring), 79.4 feet west of point where trail leads north from road, 7 feet above and 15.7 feet north of center line of road, on edge of second-growth brush, and 250 yards from station in azimuth 274°09′16″.

Green (Watauga County, N. C., M. A. Hecht, 1934).—About 4½ miles northwest of Sugar Grove, 1½ miles west of Sweetwater post office, in Beaver Dam Township, on land owned by D. F. Greene, opposite vacant 2-story house, 0.15 mile north along road from Edmiston Perry's store, 300 feet south along road from crossroad and mail box 45B, 85 feet south of point where telephone line diverges from road and crosses field, 12 feet above and 22.6 feet west of center line of road, and 6.0 feet inside fence line. To reach from junction of U. S. Route 421 and N. C. Route 603 at post office in Sugar Grove, go west across bridge 0.05 mile on Route 603, turn right off Route 603 where highway turns to left and go 0.4 mile to T-road to right, follow straight ahead up hollow 4.65 miles across George Gap to fork at old store on left, follow left fork across bridge and go 0.2 mile to fork at store with Essolene pump, follow left fork 1.6 miles to fork at Bethel Baptist Church on right, follow left fork 0.15 mile to fork at white school on left, follow main right fork 0.65 mile to crossroad at small plant bridge and mail box 45B at home of Mr. Greene 100 yards to right, and continue 300 feet on main gravel road to station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 8 feet below and 23.1 feet east of center line of road, in cultivated field, and 20 feet below and 57.20 feet (slope distance) from station in azimuth 285°08′. No. 2 is 10 feet above and 24.1 feet (slope distance) from center line of road, 4.2 feet inside fence line, and 4 feet below and 95.95 feet from station in azimuth 354°37′. Azimuth mark is standard reference disk in concrete, note 11b, in yard of Bethel Baptist Church, 74.9 feet from east corner of church, 58.7 feet from north corner, 1 foot inside fence line, 22.2 feet from 3-inch shade tree on fence line, 82.6 feet from center of intersection of roads in front of church, and 0.75 mile from station in azimuth 229°30′22″. Bethel Baptist Church, left edge cornice on chimney, distant 0.75 mile, is in azimuth 228°33′39″.

McQueen, fire lookout tower (Sullivan–Johnson Counties, M. A. Hecht, 1934).—A 40-foot steel structure near station *McQueen* (see description thereof).

Kong (Washington County, Va., M. A. Hecht, 1934).—About 6 miles east-southeast of Abingdon, 6 miles northwest of Damascus, 6¼ miles a little south of west of Lodi, 12 feet above and 36.9 feet north of center line of U. S. Route 58, 6 feet inside fence line of cultivated field, and 20.8 feet from second telephone pole from mailbox with name W. F. Reed (first pole is no. 185). To reach from junction of Routes 58 and 78 at Damascus, go northwest 6.85 miles on Route 58 (or 0.2 mile beyond yellow house and pond on right) to lane leading to right at mail box mentioned above. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 62.0 feet from telephone pole no. 185, 52.4 feet from center line of road, 10.5 feet from center line of farm lane, 3.8 feet inside fence line of cultivated field, and 270.10 feet from station in azimuth

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270°25′. No. 2 is 45.1 feet from second telephone pole from pole no. 185, 12 feet above and 29.5 feet from center line of road, 2 feet inside fence line of cultivated field, and 109.45 feet from station in azimuth 93°26′. Azimuth mark is 78.6 feet north of center line of road, 41.1 feet from northeast corner of shed with concrete foundation, 21.6 feet from 8-inch pear tree, 19.5 feet from 5-inch maple tree, 9 feet from center line of drive, 1 foot outside fence line, and 0.2 mile from station in azimuth 277°08′13″.

Cress (Johnson County, M. A. Hecht, 1934).—About 3½ miles north-northwest of Mountain City, 5 feet above and 39.7 feet from center line on east edge of right-of-way of U. S. Route 421, at vertex of hairpin curve on southwest slope of Iron Mountain, 19.1 feet south of point where wood road enters highway, 84.5 feet from south end post of guard rail on downward side, 65.7 feet from east end post of guard rail on upward side, and 18.4 feet north of 6-inch, blazed chestnut tree. To reach from courthouse in Mountain City, go west 5.2 miles on Route 421 (or 0.9 mile beyond Unaka National Forest entrance sign) to sharp curve to right, wood T-road to left, 6-inch blazed chestnut tree, and station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in second-growth hardwood and brush, 16.4 feet from 4-inch chestnut tree, and 5 feet below and 35.64 feet from station in azimuth 314°31′. No. 2 is 6 feet below and 42.6 feet from center line of highway on edge of side-slope fill, 12.4 feet from 3-inch dogwood tree on edge of woods, 33.6 feet from east end post of guard rail on uphill side, and 8 feet below and 37.13 feet from station in azimuth 64°29′. Azimuth mark is on edge of woods, 25 feet above and 36.7 feet (slope distance) north of center line of Route 421, 19.5 feet southeast of 4-inch pine tree, 16.6 feet southwest of 4-inch pine tree, and 400 yards from station in azimuth 190°42′57″. Stations *Shady*, *Trout*, and *Bald Knob* (*U. S. G. S.*) (see descriptions and geographic positions thereof) are visible from ground.

CORINTH, MISS., TO NASHVILLE, TENN.

Principal points

Knob (Tishomingo County, Miss., E. H. Pagenhart, 1914; 1934).—About 3¾ miles southwest of Iuka, about 20 miles southeast of Corinth, about ½ mile south of Iuka-Burnsville wagon road, on top of higher and more westerly of two wooded knobs known as "Woodall Mountain", 28 feet northeast of 24-inch white-oak tree, and 33 feet northwest of 30-inch hickory tree, each blazed with triangle. To reach from junction of U. S. Route 72 and State Route 25 at Iuka, go southwest 2½ miles on State Route 25 to T-road right, thence to right on this road 1.3 miles to woods road leading right at triple-notch-blazed tree, turn right and go about 50 yards to crossroad; then to right and follow blazed trail to east end of base of hill, westward up hill, cross east knob, go through saddle and continue to top of west knob and station. Originally marked with standard station disks in concrete, notes 1a and 7a, and two reference marks, standard reference disks in concrete, note 11a. In 1934 only underground mark was recovered, and station was re-marked with standard station disks in concrete, notes 1b and 7a. Upper mark projects 8 inches above ground. Reference and azimuth marks established in 1934 are standard reference disks in concrete, note 11b. No. 1, projecting 10 inches above ground, is on slope of hill, 16 feet north of 18-inch elm tree, and about 5 feet below and 80.24 feet from station in azimuth 249°42′. No. 2, projecting 8 inches above ground, is 35 feet north-northwest of 36-inch white-oak tree, and level with and 86.40 feet from station in azimuth 94°36′. Azimuth mark, projecting 6 inches above ground, is on crest of ridge, 50 feet west of small white house on east point of ridge, and about ¼ mile from station in azimuth 271°19′04″.

Counce (Hardin County, G. L. Anderson, 1934).—About 3.75 miles east of Damon, 3½ miles west of Tennessee River, 3.8 miles a little north of west of Tennessee-Alabama-Mississippi corner, 2 miles south by east of Counce, 0.9 mile north of Tennessee-Mississippi State line, on high wooded knob known locally as "Kern Brown's Hill", and on land owned by the Indiana Tie Co. To reach from Counce post office, go southeast about 0.1 mile, follow right fork 1.7 miles, turn right onto dim crossroad at house with hedge on right, go 0.35 mile, follow right fork at lone twin pine tree, pass old chimney on right, continue 1.05 miles along triple-notch-blaze road, follow right fork 0.1 mile around right edge of hill to fork on top of hill, follow left fork 75 feet to 2 triangle-blazed trees

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and station site. Station is 85 feet south-southeast of fork of woods road over ridge, 60 feet east of left fork, 60 feet southeast of triple-notch-blaze oak, 25 feet northwest of 18-inch triangle-blazed oak, and 21 feet northwest of 8-inch triangle-blazed pine tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a Upper mark projects 7 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1, projecting 6 inches above ground, is 115 feet southwest of forks, 63 feet west of left fork, 20 feet east of right fork, and 133.92 feet from station in azimuth 103°26′. No. 2, projecting 5 inches above ground, is 40 feet northeast of forks, 10 feet southeast of main road, 3 feet lower than, and 106.06 feet (slope distance) from station in azimuth 183°03′. Reference mark no. 1 is 154.92 feet southwest of reference mark no. 2. Azimuth mark, projecting 6 inches above ground, is 20 feet northwest of 24-inch oak tree, 7 feet southeast of woods road (right fork 220 yards by trail from station), and about 0.15 mile from station in azimuth 75°08′20″.

Ayer (Tishomingo County, Miss., G. L. Anderson, 1934).—About 5¾ miles north-northwest of Iuka, 5 miles airline west-southwest of Iuka landing on Tennessee River, 1¼ miles airline north-northeast of Center School, and on high wooded knoll owned by Ayer-Lord Tile Co. To reach from crossroad about 50 yards northwest of water tank in Iuka, go northwest 5.7 miles on Route 25 to graded road leading right, turn right onto road, go 0.2 mile to dim road to left, turn left onto woods road, go 0.4 mile to fork, turn left, go 0.4 mile to second fork, turn left, go 0.2 mile, turn right, go up hill, and then along top of ridge 0.25 mile to station site. Station is on highest part of hill, 40 feet west of east slope, and 17 feet north of triangle-blazed oak tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference mark no. 1, projecting 5 inches above ground, is on west slope of hill, 55.5 feet west-southwest of triangle-blazed oak tree, 8 feet east of 8-inch oak tree, and 59.12 feet (slope distance) from station in azimuth 93°08′. Reference mark no. 2, projecting 4 inches above ground, is on north slope of hill, 7 feet east of 12-inch oak tree, and 58.43 feet (slope distance) from station in azimuth 162°37′. Azimuth mark, projecting 12 inches above ground, is on land owned by Mrs. Ellen Walker, about 50 feet west of house on north side of road, and approximately 1.0 mile from station in azimuth 275°29′49″.

Eastport (Tishomingo County, Miss., G. L. Anderson, 1934).—About 6½ miles northeast by north of Iuka, Miss., 1½ miles northeast of Eastport School, 1¼ miles west of Mississippi-Alabama State line, 1 mile south of Tennessee River, 1 mile west of village of Eastport, Miss., on thickly wooded knob, and on land owned by J. C. Jourdan and J. D. Ware, of Iuka. To reach from first street north of main street in Iuka, go east 0.6 mile to road fork, turn left, follow main road 3.1 miles northward to fork (1 mile beyond school and church on left), turn right, follow main road 2.5 miles to road leading left between two plank culverts, turn left onto this road, go 0.45 mile to T-road, turn right, follow main road (keeping on top of ridge) 0.5 mile to fork, turn right, continue on ridge road 0.85 mile to beginning of down grade, then go 200 feet to right to station site. Station is on highest part of hill, 35 feet northeast of old excavated ditch, 22 feet southeast of 6-inch oak tree with triangular blaze on southwest side, and 5 feet northwest of triple oak stump. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 6 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference marks project 8 inches above ground. No. 1 is 16 feet south-southeast of double 10-inch oak tree, 5 feet west of double 6-inch oak tree, and 97.77 feet from station in azimuth 216°47′. No. 2 is 12 feet northeast of double 6-inch white oak tree, and 114.30 feet from station in azimuth 146°00′. Azimuth mark, projecting 4 inches above ground, is 150 feet southeast of fence corner, 18 feet east of 12-inch black oak tree, 10 feet southwest of center line of trail, and about 0.1 mile from station in azimuth 47°05′57″. To see azimuth mark from ground some clearing will be necessary.

Holland (Hardin County, G. L. Anderson, 1934).—About 12 miles south-southeast of Savannah, 3½ miles east-northeast of Duncan's Landing on Tennessee River, 2 miles south of Horse Creek, 1¼ miles west of Holland Creek, on flat wooded ridge, and on land owned by Mr. Robert Johnson. To reach from junction of U. S. Route 64 and State Route 69 at east edge of Savannah, go southeast 8.6 miles on State Route 69, turn left onto gravel road, go 2.5 miles to fork, turn left, go 1.5 miles, turn right, go 0.6 mile to fork (end of truck travel), turn right,

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ford creek, and follow blazed trail about 1.5 miles to station, or follow trail up Porters Hollow about 1½ miles, turn right, and go along top of ridge about ½ mile to station site. Station is on high point of ridge, 80 feet northwest of 8-inch arrow-blazed hickory tree beside trail along top of ridge, and 47 feet northeast of 10-inch triangle-blazed pine tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 4 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference mark no. 1, projecting 5 inches above ground, is 82.70 feet from station in azimuth 190°56′. Reference mark no. 2, projecting 4 inches above ground, is 100 feet west-northwest of blazed-pine tree and 108.38 feet from station in azimuth 102°00′. Reference mark no. 1 is 135.10 feet northeast of reference mark no. 2. Azimuth mark, projecting 6 inches above ground, is 15 feet south of 8-inch pine tree in middle of dim trail and 252.5 feet from station in azimuth 171°35′.

Ticer (Lauderdale County, Ala., G. L. Anderson, 1933).—About 11 miles east of Tennessee River, on northwestern boundary of Alabama, 5 miles northeast by north of Waterloo, Ala., 2½ miles south of Tennessee-Alabama State line, ¾ mile north of Second Creek, ¼ mile east of Manbone Creek, on highest part of south end of Manbone Ridge, and on land owned by R. L. Ticer. To reach from Waterloo, go north and east on main road 0.65 mile to long bridge across Second Creek, turn left at east end of bridge, follow main road along Second Creek 3.5 miles to dirt road leading left at small tin-roofed house, turn left onto dirt road, go 0.5 mile to old church on south bank of Second Creek, ford creek, go northeast across cultivated field to small pines at edge of woods, follow along edge of woods to Manbone Creek, ford creek, go north across field to blazed tree at edge of woods, follow dim trail up hill to top, go north along ridge to station site. Station is about 1½ miles from church on Second Creek and 26 feet northwest of 24-inch white-oak tree with triangular blaze on south side. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 6 inches above ground. Reference marks are standard reference disks in concrete, note 11b. Reference mark no. 1, projecting 6 inches above ground, is 30 feet north of 36-inch white-oak tree and 115.95 feet from station in azimuth 228°55′. Reference mark no. 2, projecting 5 inches above ground, is on west spur of ridge, 34 feet north of 36-inch white-oak tree, 30 feet west of 24-inch black-gum tree, and 108.18 feet from station in azimuth 134°17′. Azimuth mark is standard reference disk in concrete, note 11a, projecting 4 inches above ground, on southeast side of small ravine, 4½ feet northwest of 6-inch post-oak tree, and about 135 yards from station in azimuth 283°49′11″.

Pinhook (Wayne County, G. L. Anderson, 1934).—About 16 miles airline southwest of Waynesboro, 4 miles south of Indian Creek, 1½ miles west of Weatherford Creek, 1½ miles airline northwest by west of the village of Pinhook, 1 mile east of Hardin-Wayne County line, and on timbered land owned by Wayne Land Co. (or Bond Brothers). To reach from courthouse at Waynesboro, go southwest 13.3 miles on U. S. Route 64 to gravel road leading left at point about 50 yards beyond crest of ridge, turn left onto this road and proceed 5.9 miles to road along Indian Creek, turn right, follow main road down Indian Creek and up Weatherford Creek 6.8 miles, turn right onto gravel road and go 0.4 mile to small store, turn right again and go 0.5 mile to road leading left at store in Pinhook (crossing Weatherford Creek by weak bridge or ford enroute), keep straight ahead at store, go up hill to southwest and along ridge 1.8 miles to old woods road to right at tree with triple-notch blaze, turn right onto woods road and follow main-traveled road about 1.4 miles to station near fork in road and two triangular blazes. Station is 24 feet east of center line of woods road, 23.5 feet southwest of 22-inch triangle-blazed oak tree, and 18 feet east of 15-inch triangle-blazed oak tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 5 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b, projecting 6 inches above ground. Reference mark no. 1 is 8 feet west of center line of woods road and 110.13 feet from station in azimuth 187°37′. Reference mark no. 2 is 61 feet west of center line of woods road and 85.92 feet from station in azimuth 100°35′. Azimuth mark is on east slope of second ridge and 150 paces from station in azimuth 282°06′10″.

Powell (Wayne County, G. L. Anderson, 1933).—About 8½ miles airline southwest of McGlamerys Stand, 4 miles airline northwest by north of Cypress Inn, 2 miles south of Powell's mill on Weatherford Creek, and on flat-topped ridge owned by Bon Air Co. To reach from railroad crossing at Collinwood, go

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south 4.1 miles on State Route 13 to gravel road leading right, turn right onto gravel road, go 0.8 mile to fork, turn right, go 0.7 mile to another fork, turn left, follow main road down Cypress Creek 5.0 miles to school on hill and graded road leading right, turn right onto this road, go 4.0 miles up onto ridge and down Weatherford Creek to road leading left at store on left and Powell's grist mill on right, turn left onto woods road, go 0.85 mile to triple-notch blaze, bear left here and follow triple-notch-blazed trail 1.25 miles to station at triangular blaze. Station is in arc made by three small blazed oak trees, 60 feet south-southwest of road at T-intersection, and 23 feet south-southwest of pine tree with large triangular blaze. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 6 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference mark no. 1, projecting 7 inches above ground, is in northwest corner of T-intersection, 12 feet southwest of woods road, 12 feet north of woods road, and 83.40 feet from station in azimuth 173°52′. Reference mark no. 2, projecting 10 inches above ground, is 10 feet northeast of woods road and 118.13 feet from station in azimuth 264°56′. Reference mark no. 1 is 145.86 feet northwest of reference mark no. 2. Azimuth mark, projecting 10 inches above ground, is about 12 feet west of woods road and about 0.15 mile from station in azimuth 163°56′26″.

Houston (Wayne County, G. L. Anderson, 1934).—About 10 miles southwest of Waynesboro, 2½ miles east-southeast of Houston, 1 mile south of Indian Creek, 1 mile northeast of Rayburn Creek, on flat-topped thickly wooded ridge, and on land owned by Messrs. Hassell and Haggard. To reach from Houston, go up Indian Creek 2.5 miles to road to right (0.1 mile beyond ford), follow road to right, go about ½ mile to ford across Indian Creek (end of truck travel), cross creek, follow main road past two sets of buildings to triple-notch-blazed oak tree at road forks on ridge (1 mile beyond buildings), follow left fork, and go 350 feet to dim fork to right and station site. Station is in middle of dim road leading left from main road, 315 feet south-southeast of triple-notch, blazed oak tree at road fork, 38 feet southeast of 18-inch triangle-blazed hickory tree, 27 feet southeast of 24-inch double-triangle-blazed oak tree, and 20 feet east of main woods road. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 6 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b, projecting 6 inches above ground. No. 1 is 75 feet southwest of blazed hickory tree, 65 feet west of main woods road, and 93.94 feet from station in azimuth 89°37′. No. 2 is 60 feet north-northeast of blazed oak tree, 42 feet northeast of main woods road, and 96.90 feet from station in azimuth 186°42′. Azimuth mark is 36 feet north-northwest of 10-inch triple-notch-blazed oak tree at road forks, 20 feet west of main woods road, and about 350 feet from station in azimuth 160°00′01″.

Martin (Wayne County, G. L. Anderson, 1934).—About 1¾ miles south-southwest of Collinwood, 0.4 mile northwest by north of store at McGlamerys Stand, ¼ mile west of State Route 13, and at southwest corner of property owned by D. J. Martin of Collinwood. To reach from Waynesboro, go south 12.7 miles on State Route 13 to Collinwood, continue south 1.7 miles on State Route 13 to board gate on right (about 0.4 mile north of store at McGlamerys Stand), turn right, pass through gate and proceed west ¼ mile along lane on north side of fence to station site. Station is 13 feet north of fence along south side of lane leading to station and 2 feet east of fence along east edge of woods. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 4 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference mark no. 1, projecting 2 inches above ground, is 68 feet west of fence along east edge of woods and 98.80 feet from station in azimuth 51°51′. Reference mark no. 2, projecting 3 inches above ground, is 75 feet west of fence along east edge of woods and 93.40 feet from station in azimuth 122°07′. Azimuth mark, projecting 4 inches above ground, is 30 feet north of fence along south side of lane leading to station, 22 feet west of center line of State Route 13, 1 foot west of right-of-way fence, and about 0.25 mile from station in azimuth 275°51′23″. Azimuth from station to *Collinwood, concrete stack*, is 214°26′37″.

McCall (Wayne County, G. L. Anderson, 1934).—About 7½ miles airline south-southeast of Waynesboro, 3½ miles north-northeast of Collinwood, 1 mile east of head of Chalk Creek, ¾ mile north of McCall Schoolhouse, and on land owned by Bon Air Co. (managed by Mr. McCall who lives about ¼ mile east of station). To reach from Waynesboro courthouse, go south 9.1 miles on State

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Route 13 to station site. Station is in pasture, 37 feet east of State Route 13, 26 feet northeast of guy pole on east side of road, and 20 feet east of fence line. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 6 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference mark no. 1, projecting 2 inches above ground, is 12 feet west of center line of dirt road, 1 foot west of fence line, and 143.33 feet from station in azimuth 223°28′. Reference mark no. 2, projecting 6 inches above ground, is 15 feet west of center line of dirt road, 1 foot west of fence line, and 122.34 feet from station in azimuth 299°56′. Azimuth mark, projecting 3 inches above ground, is 15 feet east of fence corner, 1 foot south of fence line, 27 feet east of center line of State Route 13, and about 0.15 mile from station in azimuth 178°57′29″.

Hassell (Wayne County, G. L., Anderson, 1934).—About 11 miles east by south of Clifton, 3 miles northwest by west of Waynesboro, 1 mile southeast of head of Eagle Creek, on south side of old Waynesboro-Clifton Turnpike, on high point of long narrow ridge, and on land owned by the Hassell heirs. To reach from courthouse in Waynesboro, go west 0.1 mile on U. S. Route 64, turn northeast onto gravel road, go 3.4 miles to T-road, turn west, and go 0.1 mile to top of ridge and station site. Station is 75 feet south of center line of road, 19 feet south of 8-inch triangle-blazed pine tree, 16.9 feet east of 6-inch triangle-blazed pine tree, and 14 feet north of 11-inch triangle-blazed oak tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark projects 10 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1, projecting 10 inches above ground, is about 24 feet from center line of road, 13.7 feet northwest of 16-inch triangle-blazed pine tree, and 77.29 feet from station in azimuth 213°04′. No. 2, projecting 9 inches above ground, is on southeast slope of ridge, 11 feet south of 16-inch oak tree, and at about same elevation as and 75.79 feet from station in azimuth 300°47′. Azimuth mark, projecting 12 inches above ground, is 50 yards west of sharp curve in road, 24 feet south of center line of road, 10 feet southwest of 16-inch oak tree, under telephone line, and about 0.1 mile from station in azimuth 109°38′09″.

Wayne (Wayne County, G. L. Anderson, 1934).—About 14 miles southwest of Hohenwald, 5 miles northeast of Waynesboro, ½ mile north of head of Oldtown Branch, on west side of State Route 48, at point where power line twice crosses curve in road, on flat-topped thickly wooded ridge, and on land owned by Wayne Land Co. To reach from courthouse in Waynesboro, go east 3.6 miles on U. S. Route 64 to gravel road to left at sign "Natural Bridge 6.25 miles", turn left onto State Route 48, and go 3.25 miles to power line and station site. Station is 50 feet north of woods road leading northwest, 117 feet west-southwest of power line pole no. 6E189, 52 feet west of center line of State Route 48, and 43 feet north of small triangle-blazed twin oak tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark projects 3 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference marks project 3 inches above ground. No. 1 is 89 feet east-northeast of blazed oak tree, 30 feet southeast of center line of State Route 48, 30 feet west-southwest of power line pole no. 6E189, and 88.52 feet from station in azimuth 282°28′. No. 2 is 55 feet south of blazed oak tree, 25 feet west of center line of State Route 48, and 97.64 feet from station in azimuth 4°25′. Reference mark no. 1 is 122.20 feet northeast of reference mark no. 2. Azimuth mark, projecting 6 inches above ground, is 20 feet east of center line of State Route 48, opposite beginning of first curve in S-curve of road, 12 feet south-southwest of 10-inch oak tree beside 10-inch oak stump, and about 0.25 mile from station in azimuth 331°12′45″.

Banning (Lawrence County, G. L. Anderson, 1934).—About 14 miles east of Waynesboro, 14 miles southwest of Summertown, 12 miles west of Lawrenceburg, 10 miles southeast by south of Riverside, 0.2 mile south of U. S. Route 64, and on the Leland G. Banning estate. To reach from Waynesboro, go east 15.55 miles on U. S. Route 64 to side road to right, turn right and go 0.2 mile to station. From Lawrenceburg, go west 12.5 miles on U. S. Route 64 to side road to left Station is 30 feet southwest of center line of woods trail, 24 feet north of 24-inch triangle blazed white-oak tree, and 20 feet east of center line of road. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 5 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference marks project 8 inches above ground. No. 1 is 40 feet south of 24-inch white-oak tree, 15 feet west of center

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line of road, and 81.87 feet from station in azimuth 74°11′. No. 2 is 18 feet west of center line of road, across road from junction of woods trail and main road, and 80.00 feet from station in azimuth 193°43′. Azimuth mark, projecting 4 inches above ground, is about 200 feet north of north end of curve in road, 20 feet west of center line of road, and about 0.2 mile from station in azimuth 47°32′09″.

Bon Air (Wayne County, G. L. Anderson, 1934).—About 12 miles airline south-southwest of Hohenwald, 10 miles airline east-northeast of Waynesboro, 1½ miles south of head of Allens Creek, 1 mile southeast of head of Blowing Spring Creek, on wooded flat-topped ridge, on highest ground on divide between Little Buffalo River and Fortyeight Creek, and on land owned by Bon Air Coal Co. To reach from Waynesboro, go east about 4 miles on U. S. Route 64 to intersection with State Route 48, continue 8 miles on U. S. Route 64 to dirt road leading to north on west side of filling station, turn onto this road (bad in wet weather), go 5.3 miles to woods road leading left at triple-notch blaze on left side of road, turn left onto woods road and follow blazes 0.4 mile to station on left side of trail. Station is 75 feet northwest of triangular blaze, 32 feet southwest of trail, and 31½ feet from triangle-blazed small oak tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 6 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference mark no. 1, projecting 8 inches above ground, is 40 feet north of triangular blaze and 91.28 feet from station in azimuth 237°17′. Reference mark no. 2, projecting 12 inches above ground, is on south slope of ridge and 100.16 feet from station in azimuth 346°07′. Azimuth mark, projecting 12 inches above ground, is 0.15 mile west of first T-intersection south of triple-notch blaze, 40 feet west of west end of pass in road, 6 feet south of trail, and about 0.4 mile from station in azimuth 322°16′33″.

Hurst (Lewis County, G. L. Anderson, 1934).—About 1¼ miles east of Hohenwald, ¼ mile west of Tennessee Power Co. transmission line, 0.1 mile north of Route 20, in yard around small shack, and on land owned by Mr. T. C. Hurst. To reach from railroad crossing at Hohenwald, go east 1.1 miles on Route 20 to lane leading left, turn left onto lane, and go 0.1 mile to station site. Station is 17 feet southwest of southwest corner of shack, 15.5 feet north of small cedar tree (northernmost one along east side of lane), 10 feet north of southwest corner of yard, and 1 foot east of east right-of-way fence of lane. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 5 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference marks project 10 inches above ground. No. 1 is in west right-of-way fence of lane, 80 feet south-southwest of cedar tree, and 95.05 feet from station in azimuth 23°53′. No. 2 is in west right-of-way fence of lane, 50 feet northwest of northwest corner of shack, and 94.04 feet from station in azimuth 168°29′. Reference mark no. 1 is 180 feet south of reference mark no. 2. Azimuth mark, projecting 6 inches above ground, is in north right-of-way fence of Route 20, in line with southwest leg of transmission tower nearest road, 110 feet west of power line, 110 feet northeast of and diagonally opposite white house, and about 0.2 mile from station in azimuth 315°30′08″. Azimuth from station to *Hohenwald, municipal water tank (black)*, is 106°53′34″.

Henry (Lawrence County, G. L. Anderson, 1934).—About 14 miles southeast by south of Hohenwald, 7 miles southwest of Summertown, 1½ miles west-southwest of Henryville post office, along Central Pike, and on highest ground between Buffalo Creek and Chief Creek. To reach from Waynesboro, go east 15.3 miles on U. S. Route 64 to gravel road (Central Pike) to left, turn about 45° left and go 7.9 miles northeast on main road to station. To reach from Lawrenceburg, go west about 13 miles to Central Pike and proceed in like manner. Station is in south corner of woods, 30 feet northwest of center line of road, 25 feet northeast of center line of woods trail, and 16 feet south of 18-inch oak tree with triangular blazes on south and east sides. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 6 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference marks project 10 inches above ground. No. 1 is 55 feet southwest of center line of woods trail, 18 feet southeast of center line of road, and 115.57 feet from station in azimuth 17°03′. No. 2 is 8 feet northeast of center line of woods trail and 90.40 feet from station in azimuth 130°59′. Azimuth mark, projecting 8 inches above ground, is 150 feet northeast of small white house on southeast side of road, on prolongation of center

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line of road to southwest, 50 feet northeast of south end of curve in road, 14 feet southeast of center line of road, and about 0.1 mile from station in azimuth 228°58′48″.

Summer (Lewis County, G. L. Anderson, 1934).—About 6.5 miles airline southwest of Mountpleasant, 3.5 miles airline north of Summertown, 2 miles southeast of head of Henry Branch, 0.8 mile southwest of head of West Fork, and on land owned by Tennessee Cooperage Co. To reach from monument at Mountpleasant, go south 1.1 miles on Route 6 to road leading right just beyond railroad track, turn right onto this road and follow main-traveled road, 6.9 miles, through Mount Joy to woods road leading left at board gate in fence corner at top of steep hill, turn left onto this road, and follow main-traveled road 3 miles to fork, turn left, and go 1 mile to station on top of ridge. Station is 61 feet north of 20-inch triangle-blazed oak tree and 38 feet east of center line of road. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 8 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference mark no. 1, projecting 7 inches above ground, is 88 feet west-northwest of blazed tree, 26 feet west-northwest of center line of road, and 128.48 feet from station in azimuth 79°54′. Reference mark no. 2, projecting 8 inches above ground, is 28 feet east of center line of road, 27.5 feet northeast of 9-inch oak tree, and 113.07 feet from station in azimuth 182°02′. Azimuth mark, projecting 12 inches above ground, is 30 yards east of road, 35 feet north of 24-inch oak tree (directly in line with station and azimuth mark), and about 0.2 mile from station in azimuth 5°37′42″.

Gordon (Lewis County, G. L. Anderson, 1934).—About 6 miles airline west of Hampshire, 2 miles airline north-northeast of Gordonsburg, 100 yards east of old Natchez Trace, on flat-topped wooded ridge, and on land owned or controlled by the Charleston Mining Co. To reach from Columbia, follow State Route 99 to bank at Hampshire, continue 0.5 mile on State Route 99 to narrow bridge, turn left onto highway, go 5.3 miles to road leading right at three mail boxes, keep to left along highway, go 0.4 mile to woods road leading right at triple-notch blaze, follow woods road to right, go 2¼ miles (following occasional blazes) to intersection with Natchez Trace at tree with small triangular blaze, bear right on trace, go 0.55 mile to tree on right with large blaze, bear to right and follow blazed trail through woods 100 yards to station site. Station is surrounded by five blazed oak trees and is 40 feet north of oak tree with large triangular blaze and 32 feet west-northwest of another triangle-blazed oak tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 5 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference mark no. 1, projecting 6 inches above ground, is 33 feet northwest of large dead tree and 117.62 feet from station in azimuth 339°43′. Reference mark no. 2, projecting 10 inches above ground, is 145 feet east-northeast of large blaze at right turn to station from old Natchez Trace, 25 feet west of large dead tree, and 176.47 feet from station in azimuth 79°35′. Azimuth mark, projecting 3 inches above ground, is 81 feet northwest of large blaze, 18 feet west of trail, 12 feet east of oak tree, and 134 yards from station in azimuth 89°07′35″.

Kincade (Hickman County, G. L. Anderson, 1934).—About 6 miles west-southwest of Williamsport, 5 miles north-northwest of Hampshire, 1 mile northeast of Hickman-Maury-Lewis County corner, beside old Natchez Trace, near head of Love's Branch, and in bare pasture on land owned by Mr. J. R. Kincade. To reach from courthouse in Columbia, go west on State Routes 6, 50, and 99 to junction of Route 6, continue on Routes 50 and 99 to their junction, continue 10.9 miles on Route 99, turn right just before reaching concrete bridge, go 1.65 miles, turn left across iron bridge, go 0.75 mile to fork, follow left fork 2.7 miles up Love's Branch to crossroads in saddle, turn left and go 0.3 mile on old Natchez Trace to high point and station site. Station is 750 feet southwest of Kincade's residence, 78 feet northwest of center line of Natchez Trace, and 12 feet northeast of southeast-northwest rail fence. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark is 12 inches below surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference marks project 6 inches above ground. No. 1 is in west right-of-way rail fence, 127 feet northeast of southeast-and-northwest fence, and 125.2 feet from station in azimuth 246°01′. No. 2 is in west right-of-way rail fence, 45 feet southwest of northwest-and-southeast fence, and 86.4 feet from station in azimuth 353°30′. No. 1 is 172 feet northeast of no. 2.

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Azimuth mark, projecting 8 inches above ground, is 0.2 mile west of Kincade's residence, 0.1 mile west of road fork, 300 feet east of old barns, 12 feet south of center line of road, 1 foot south of south right-of-way fence, and about 0.3 mile from station in azimuth 168°30′55″. Following azimuths are from station: *Airway beacon no. 60* (see description thereof), distant 18.8 miles, 188°57′10″, and Kincade's residence, west side of stone chimney on south end, distant 750 feet, 202°36′47″.

Polk (Maury County, G. L. Anderson, 1934).—About 8 miles southwest by south of Columbia, 3 miles northwest of Mountpleasant, ¾ mile southeast of State Route 6, and in small grove of trees at top of partly cultivated hill on the old Polk estate (owned by W. P. Ridley and W. A. Dales). To reach from Columbia, go west to junction of State Routes 6, 50, and 99, go southwest 7.3 miles on Route 6 to lane to left leading to large house on the old Polk estate, turn left onto lane and go 0.4 mile to house, pass to left of house through barnyard 0.5 mile up valley, turn right at head of valley and go 0.2 mile to large tobacco barn, turn left and go up steep hill to second tobacco barn, turn right and go 0.7 mile along ridge through fields in a westerly direction to station site. Station is on highest part of hill, 14 feet southwest of 10-inch ash tree with triangular blaze on southwest side, and 100 feet southwest of 10-inch tree at southwest corner of tobacco field. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark projects 8 inches. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference marks project 10 inches above ground. No. 1 is in southwest corner of cultivated field, 35 feet northwest of fence corner, 12 feet northeast of edge of woods, 3 feet southeast of 12-inch elm tree, and 98.42 feet from station in azimuth 262°46′. No. 2 is at northwest edge of woods, at east edge of cultivated field, 70 feet northeast of corner of woods on ridge crest, and 122.55 feet from station in azimuth 160°23′. Azimuth mark, projecting 6 inches above ground, is 0.25 mile southwest along highway from lane to estate, at crest of rise, 235 feet northeast of fence corner, 28 feet southeast of center line of pavement in cut bank, 6 feet south of telephone pole, 1 foot northwest of right-of-way fence of Route 6, and about 0.75 mile from station in azimuth 160°16′14″. Station *Columbia* (see description and geographic position thereof) is visible from ground at this station. Following azimuths are from station: Mountpleasant, Hooven-Mason Phosphate Co., water tank, flat top, 24°59′25″; V. C. Fertilizer Co., water tank, 54°50′02″; and V. C. Fertilizer Co., stack, 54°59′42″.

McKee (Maury County, G. L. Anderson, 1934).—About 7½ miles northwest by north of Columbia, 6½ miles east by north of Williamsport, 2¾ miles southeast of Santa Fe, in open field on highest part of hill, and on land owned by R. Y. McKee and tenanted by Mr. Hayes. To reach from courthouse in Columbia, go west 2 blocks to street just west of post office, turn right onto this street and go northwest 8.2 miles on Santa Fe-Columbia Pike to lane on right, and follow lane to McKee's house and station site. Also reached from Santa Fe by going southeast 3.0 miles on Santa Fe-Columbia Pike to lane leading to McKee's house. Station is 250 yards north of Santa Fe-Columbia Pike, 0.05 mile east of McKee's house, 170 feet east-southeast of his barn, and 150 feet north of fence along north edge of woods. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark projects 6 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1, projecting 6 inches above ground, is 55 feet northeast of fence corner at corner of woods, 0.5 foot northwest of fence along northwest edge of woods, and 510.90 feet (slope distance) from station in azimuth 289°21′26″. No. 2, projecting 5 inches above ground, is 3 feet north of fence along north edge of woods and 188.50 feet (slope distance) from station in azimuth 344°16′. Azimuth mark, projecting 5 inches above ground, is about 0.15 mile south of McKee's house, 140 feet northwest of center of gate at summit of road grade, 18 feet northwest of 8-inch ash tree on fence line, 15 feet southwest of center line of Columbia-Santa Fe Pike, 1 foot northeast of right-of-way fence, and about 0.2 mile from station in azimuth 18°53′28″. Stations *Kincade* and *Stevens* (see descriptions and geographic positions thereof) are visible from ground at this station.

Stevens (Maury County, G. L. Anderson, 1933; 1934).—About 7 miles west-northwest of Santa Fe, 3½ miles west of store at Fly, 2 miles southwest of Primm Springs, on high point of wooded ridge near head of Stevens Hollow, south of Duck Creek, and on land owned either by Ben Haines or Marshall Puckett. To reach from Santa Fe, follow road west over ridge 3.7 miles to Water Valley, just past pony truss bridge turn right and go 3.2 miles along Leipers Creek, turn left onto

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T-road just before reaching plate-girder bridge, go 1.1 miles to fork, follow left fork 2.7 miles, turn sharply to left across Dog Creek at 24-inch triangle-blazed beech tree and go 1.1 miles on poor road up Stevens Hollow to fork at top of ridge, and follow left fork 0.15 mile to station site. Station is 30 feet east of road along crest of ridge, 25 feet east of 16-inch blazed oak tree, and in old unused trail. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark projects 7 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1, projecting 10 inches above ground, is 89 feet north-northwest of blazed oak and 107.03 feet from station in azimuth 169°24′. No. 2, projecting 9 inches above ground, is 140 feet southwest of blazed oak, between present road and unused trail, and 139.39 feet from station in azimuth 56°04′. No. 1 is 206 feet north of no. 2. Azimuth mark, projecting 6 inches above ground, is 80 feet east of road forks, 15 feet west of 18-inch oak near sharp curve, and about 0.15 mile from station in azimuth 228°27′15″.

Hamilton (Williamson County, G. L. Anderson, 1933).—About 13 miles west-southwest of Franklin, 7¼ miles airline west of Hillsboro, 5½ miles airline south-southwest of Fernvale store, and on land owned by Cora Hamilton. To reach from Franklin, follow improved road-to-road intersection and bank at Hillsboro, go southwest 1.1 miles to gravel road to right (Pinewood road), turn right, go 4¾ miles to side road to left, and then keep straight ahead 2½ miles to station site. Station is across road south of house in field, 47 feet east of T-intersection of road, 35 feet east of fence line, 13½ feet south of fence line, 32½ feet north-northeast of large oak tree, and 31 feet south of center line of road. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark is 10 inches below surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference mark no. 1, projecting 8 inches above ground, is 44 feet north of center line of road, 6 feet west of wire fence corner, 2½ feet south of fence line, and 126.60 feet from station in azimuth 220°05′. Reference mark no. 2, projecting 10 inches above ground, is 39 feet north of center line of road, 10 feet west of fence corner in front of house, 1 foot south of board fence line, and 99.05 feet from station in azimuth 126°52′. Azimuth mark, projecting 10 inches above ground, is 27 feet north of Pinewood road, 25 feet east of old wagon trail leading north-northeast, 5 feet west of southwest rail-fence corner, and about 0.35 mile from station in azimuth 250°40′55″.

Theta (Maury County, G. L. Anderson, 1933).—About 12 miles north by west of Columbia, 4½ miles airline northeast of Santa Fe, 1½ miles airline west by north of village of Theta, near head of Snow Creek, and on high wooded ridge. To reach from courthouse at Columbia, go north 4½ miles on U. S. Route 31 to road to left just north of Rutherford Creek, turn left, go 1.1 miles to fork, turn right at fork, go 6¾ miles to T-intersection, turn left, go 2.3 miles to Theta and Barnes' store, continue ahead 0.6 mile to road leading right (50 yards beyond road to left at church), turn right, go 1 mile to forks, turn left at fork, go 0.7 mile to another fork, turn left again and go south along ridge ½ mile to station site. Station is 82 feet west of forks, 30 feet north-northwest of blazed oak tree, and 30 feet west of blazed hickory tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 3 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference mark no. 1, projecting 10 inches above ground, is 45 feet southwest of tree at forks, 15 feet east of large stump, and 78.31 feet (slope distance) from station in azimuth 282°24′. Reference mark no. 2, projecting 8 inches above ground, is on ridge, 60 feet north of trail, and 76.52 feet (slope distance) from station in azimuth 24°51′. Azimuth mark, projecting 8 inches above ground, is 30 feet north of hickory tree, 15 feet east of woods road, 12 feet south of oak tree, and 150 yards from station in azimuth 40°59′44″.

Columbia (Maury County, G. L. Anderson, 1934).—In southwest part of Columbia, on high hill at reservoir of Tennessee Power and Light Co. To reach from courthouse, go west 0.55 mile on West Seventh Street (Route 50), turn right (north) onto Crockett Street (stone) and go 0.1 mile to top of grade, turn right, go 100 feet to several small frame houses on left, turn left past houses and go 200 feet to gate and wire fence on right, follow dim road through gate and up hill about 100 yards to reservoir and station site. Station is 55.6 feet west of center of gate, 35 feet north of south slope of hill, 22.6 feet south of reservoir wall, and 11.7 feet north of heavy wire fence which encircles top of hill. Surface and underground marks are standard station disks in concrete, notes 1b and 7a.

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Upper mark projects 13 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1, projecting 10 inches above ground, is 30 feet east of west slope of hill, 24.5 feet west of reservoir wall, 2 feet east of fence, and 134.90 feet from station in azimuth 131°52′. No. 2, projecting 9 inches above ground, is 32 feet east of reservoir wall, 1 foot west of fence line on east slope of hill, and 106.90 feet from station in azimuth 241°52′. Azimuth mark, projecting 12 inches above ground, is at north edge of public school grounds, about 150 yards north of Route 90, 50 yards north of schoolhouse, 13 paces south of lane, and about 0.3 mile from station in azimuth 77°51′ 24″. Following azimuths are from station: *Columbia, Maury County Courthouse, dome*, 287°46′00″; Massachusetts Knitting Mill, water tank, finial, 341°52′33″.

Wright (Williamson County, G. L. Anderson, 1933).—About 11 miles south-southwest of Franklin, 3 miles northwest of Spring Hill, on high point of Duck Creek Ridge, and on cultivated land owned by Walter Wright. To reach from Spring Hill, go northwest ¾ mile to railroad station, cross tracks, follow main road 3.5 miles (keeping to left fork at 1.5 miles) to narrow fenced-in lane to left at small old graveyard in southwest angle, turn left onto lane and go to station at top of hill. Station is 70 feet east of lane and 14 feet south of east-and-west fence over hill. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 8 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b, projecting 10 inches above ground. Reference mark no. 1 is at west edge of lane, 48 feet south of east-and-west fence, and 87.13 feet from station in azimuth 77°33′. Reference mark no. 2 is at east edge of lane, 94 feet north of east-and-west fence, and 134.64 feet (slope distance) from station in azimuth 154°04′. Reference mark no. 1 is 142.2 feet south of reference mark no. 2. Azimuth mark is in southeast right-of-way fence of highway, 100 feet southeast of and across road from old schoolhouse, and about 0.3 mile from station in azimuth 146°49′29″. Azimuth from station to school chimney, distant about 0.3 mile, is 144°02′39″.

Cox (Williamson County, G. L. Anderson, 1934).—About 20 miles southwest of Nashville, 9 miles airline west by north of Franklin, 3 miles airline east of Fernvale, on high point of long crooked ridge, and on land owned by B. E. Cox and occupied by J. A. Redford. To reach from large concrete bridge at north end of Linton, go south about 100 yards to macadam road, turn left, go 1¼ miles on main-traveled road to gravel road on left along west bank of East Fork, turn left, follow road up stream 3.9 miles to road to right leading up small branch to small house turn right onto this road, follow ¼ mile to Redford's house, pass between house and barn, follow old woods road to top of hill, turn left and go ¼ mile to station site on highest point of ridge. Station is 44 feet south of 24-inch oak tree along trail, 36 feet west of 30-inch triangle-blazed oak tree, and 18 feet southeast of trail along top of ridge. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 3 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference marks project 6 inches above ground. No. 1 is on southeast slope of ridge, 94 feet south-southeast of blazed oak tree, and 115.96 (slope distance) feet from station in azimuth 326°40′. No. 2 is on southwest slope of ridge, beside trail along top of ridge, 10 feet west of 10-inch blazed hickory tree, and 123.06 feet from station in azimuth 59°33′. Azimuth mark, projecting 3 inches above ground, is in fence line at edge of cultivated field, beside road leading to Redford's house, 30 feet east of twin trees at corner of field, and about 0.6 mile from station in azimuth 264°23′17″.

Carter (Williamson County, G. L. Anderson, 1933).—About 6 miles east of Hillsboro, 2.5 miles southwest of Franklin, 1.0 mile west of Dixie Highway (U. S. Route 31), on highest part of high ridge covered with brush and small cedar trees, and on land owned by Ella Carter of Nashville. To reach from square in Franklin, go south 2.0 miles on U. S. Route 31 to narrow lane to right opposite large gray house on east side of road, turn right onto lane, go west 0.55 mile to end of lane at small house, follow trail up sloping ridge to west about 0.5 mile to top, turn left and proceed southward along ridge about ¼ mile to station site on U-shaped ridge at its south angle. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 5 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference mark no. 1, projecting 6 inches above ground, is on southwest slope of hill, 30 feet northeast of 60-inch white-oak tree on slope of hill, 25 feet southeast of group of 8-inch elm trees, and about 6 feet lower than and 61.43 feet from station in azimuth 30°17′. Reference mark no. 2, projecting 5 inches

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above ground, is on crest of ridge and about 2 feet lower than and 65.75 feet from station in azimuth 155°18′. Azimuth mark, projecting 5 inches above ground, is on right of way of U. S. Route 31, 34 feet east of center line of pavement, 1 foot west of right-of-way fence, 1 foot south of fence corner, about 150 feet north of large gray house on east side of road, and about 1.0 mile from station in azimuth 264°16′34″. Azimuth from station to Franklin, municipal water tank, (visible from ground through trees in winter) is 216°46′00″.

Mayche (Davidson County, G. L. Anderson, 1933).—About 8½ miles south-southwest of State Capitol in Nashville, 2½ miles west-northwest of Brentwood, ¾ mile north of Williamson-Davidson County line, on flat top of high wooded hill, and on property owned by Andrew Mayche. To reach from Broadway in Nashville, go south 8.65 miles on U. S. Route 31 (Eighth Street) to gravel road leading right at summit of highway grade, turn right, pass between Gulf service station and Interurban Railroad power station, cross railroad tracks, proceed west 1.9 miles to crossroads, continue west 0.15 mile to T-road, turn right, proceed 0.85 mile to Mayche's house on north side of road and then follow trail up hill to station site. Station is about 0.3 mile northeast of Mayche's house and 29.5 feet south of 15-inch hickory tree with triangular blaze on south side. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 4 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference mark no. 1, projecting 5 inches above ground, is on south slope of hill, 30 feet south of 30-inch oak tree, and about 4 feet lower than and 122.13 feet from station in azimuth 10°15′. Reference mark no. 2, projecting 4 inches above ground, is on crest of ridge near center of large clearing, 80 feet northwest of double hickory tree, and 136.65 feet from station in azimuth 139°53′. Azimuth mark, projecting 4 inches above ground, is visible from ground through trees in winter, and is about 0.15 mile east of crossroads, 25 feet north of center line of road from Brentwood to station, 9 feet north of right-of-way fence, 5 feet east of fence, 8 feet northeast of 60-inch maple tree, and approximately 1.2 miles from station in azimuth 308°59′56″. *Airway beacon no. 63* (see description and geographic position thereof) is visible from ground through trees in winter. *Radio station WSM, light on tower, flashing red*, distant 4 miles, is visible from ground through trees in winter in azimuth 327°06′37″ from station.

Gourley (Davidson County, G. L. Anderson, 1933).—About 12½ miles west-southwest of Capitol in Nashville, 5 miles northwest of Belleview, 1½ miles north of U. S. Route 70, ½ mile east of Davidson-Cheatham County line, on flat brush-covered ridge, and on land owned by J. D. Gourley. To reach from Nashville, leave town on U. S. Route 70 (Broadway) and continue to junction with State Route 100, continue 10.7 miles on U. S. Route 70 to gravel road posted "Charlotte Road", turn right onto this road and go 1.85 miles to station site. Station is 26 feet southeast of center line of gravel road along top of ridge, 21 feet north of 8-inch elm tree, and 10 feet east-northeast of 14-inch stump. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 6 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference mark no. 1, projecting 6 inches above ground, is at the northwest edge of highway and 140.81 feet from station in azimuth 202°55′. Reference mark no. 2, projecting 10 inches above ground, is at northwest edge of highway and 129.60 feet from station in azimuth 61°02′. Reference mark no. 1 is 255.6 feet northeast of reference mark no. 2. Azimuth mark, projecting 10 inches above ground, is at northwest edge of highway and about 0.15 mile from station in azimuth 217°32′39″.

Moore (Davidson County, G. L. Anderson, 1934).—About 8 miles west-northwest of Capitol in Nashville, 1 mile south of State Route 12, on southwestern and lower of two wooded knobs, on ridge of hills in Bells Bend of Cumberland River, and on land owned by J. L. Moore. To reach from Nashville, go northwest on State Route 12 to Cumberland River bridge, continue 6.2 miles from west end of bridge to macadam road, turn left onto macadam road, go 1.2 miles to point opposite knob (end of truck travel), and then go up ridge to station site. Station is on highest point of knob, 50 feet southeast of 3-foot beech tree, and 36 feet north of old dead 3½-foot oak tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 2 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference mark no. 1, projecting 5 inches above ground, is 30 feet southwest of dead oak tree, 3 feet north of 10-inch locust tree, and 63.13 feet from station in azimuth 19°49′. Reference mark no. 2, projecting

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3 inches above ground, is 24 feet west of beech tree and 71.45 feet from station in azimuth 142°27′. Azimuth mark, projecting 6 inches above ground, is between pasture road and small creek in draw, 0.1 mile west of highway past station, 500 feet northwest of barn, and about 0.6 mile from station in azimuth 49°25′42″. To reach azimuth mark from point on highway opposite station, go south ½ mile to first building on right and thence out through barn lot and pasture road to mark. Following azimuths are from station: *Airway beacon no. 23* (see description thereof), distant 7.2 miles, 201°29′47″; large white house, front chimney, distant about 2 miles, 269°17′07″; and white silo, left (north) tangent, distant about 2 miles, 283°17′20″.

Dillon (Davidson County, G. L. Anderson, 1933).—In Nashville, on roof of the Bennie Dillon Building at northwest corner of Seventh and Church Streets, on lower level of roof, 23.6 feet east of inside of west parapet wall, and 5.8 feet north of inside of south parapet wall. Marked by cross on top of brass spike in concrete. Reference mark no. 1 is standard reference disk in drill hole in center of top of raised portion of south parapet wall, 26.5 feet west of southeast corner of building, and 12.53 feet from station in azimuth 271°34′. Reference mark no. 2 is standard reference disk in drill hole in center of top of raised portion of south parapet wall, 24.5 feet east of southwest corner of building, and 6.15 feet from station in azimuth 334°40′. Distance between reference marks is 11.16 feet. Point at center of triangle chiseled on vent pipe on City Hospital was used as azimuth mark. It is on top of northwest wing, at center of first vent pipe northwest of elevator shaft, 22 feet northwest of elevator shaft wall, 22 feet south of northwest corner of wing of building, 2 feet southeast of northwest wall, and about 1.0 mile from station in azimuth 290°22′03″. Following azimuths are from station: *Nashville, First Baptist Church, spire* (*Broadway and Seventh Street*), distant 370.9 meters (1,217 feet), 328°59′06″; *Nashville, old post-office building, finial* (*Broadway and Eighth Street*), distant 375.8 meters (1,233 feet), 339°46′18″. Station *Love* (see description and geographic position thereof) is visible from station.

Landrum (Davidson County, G. L. Anderson, 1933).—About 9 miles airline northwest of Capitol in Nashville, 3¼ miles airline north of Cockrill Bend in Cumberland River, on partly cultivated knob, and on land owned and occupied by Raymond Landrum. To reach from Nashville, go northwest on State Route 12 to Cumberland River bridge, then west 2.5 miles to T-intersection, turn right onto Eaton Creek road, go 4.3 miles to crossroad in saddle, follow gravel road left and go 0.65 mile to lane leading to Landrum's house (part log) on right (west) side of road. Station is on first knoll to right after turning left onto gravel road, 300 yards west of gravel road, 85 feet east-southeast of Landrum's house, and 20 feet east-northeast of wire fence. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Surface mark projects 3 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference marks project 10 inches above ground. No. 1 is 1 foot east of fence line, 25 feet northeast of road, and 92.95 feet from station in azimuth 353°38′. No. 2 is at southeast corner of Landrum's house and 82.26 feet from station in azimuth 104°02′. Azimuth mark, projecting 6 inches above ground, is on south side of gravel road, 25 feet east of H-intersection, 20 feet south of center line of road, and about 0.5 mile from station in azimuth 16°57′05″. Following azimuths are from station: *Airway beacon no. 23* (see description thereof), distant 2.3 miles, 204°49′07″; and Nashville, power company, stack, 312°50′52″.

Cooper (Davidson County, G. L. Anderson, 1933).—About 14 miles north of Nashville, 8.3 miles west by north of Goodlettsville, 1.7 miles north by west of Joelton, on land owned and occupied by J. T. Cooper, about 225 yards south of Mr. Cooper's house, 280 feet east of highway, on highest point of knob on west edge of cultivated field, and 103 feet west of northwest corner of tenant house. To reach from Joelton, go to large brick schoolhouse at east edge of town, turn north and go 1.7 miles to farm of Mr. Cooper and station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark is 14 inches below surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11b, projecting 12 inches above ground. No. 1 is on west slope of knob, about 40 yards south of corner of tenant house, 21 feet east of center line of highway, on east edge of highway right-of-way, and 247.31 feet (slope distance) from station in azimuth 32°43′. No. 2 is on east edge of highway right-of-way, 16 feet east-northeast of center line of highway, and 309.26 feet (slope distance) from station in azimuth 113°23′.

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Azimuth mark is 125 feet west of Mr. Cooper's house, 15 feet west of center line of highway, along telephone line, and approximately 0.2 mile from station in azimuth 136°21′59″.

Love (Davidson County, G. L. Anderson, 1933).—About 5 miles southwest of State Capitol in Nashville, 1 mile west of Vanderbilt University, in southwest edge of town, and on top of Love Circle Reservoir. To reach from Nashville post office, go west on Broadway to West End Drive, continue on this street to Orleans Street, turn left and go up hill to reservoir and station site. Station is on east edge of reservoir, 103.8 feet east of northeast corner of small brick valve house, 76.5 feet southeast of northernmost ventilator, and 54.5 feet east of southernmost ventilator. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Surface mark projects 2 inches above ground. Reference marks are standard reference disks in concrete, note 11a. No. 1, projecting 2 inches above ground, is 21.4 feet east of reservoir wall, beside east curb of road, and about 30 feet below and 118.80 feet (slope distance) from station in azimuth 177°14′. No. 2, flush with ground, is 21 feet east of reservoir wall, beside east curb of road, and about 28 feet below and 146.50 feet (slope distance) from station in azimuth 281°29′. Reference marks are 204.30 feet (slope distance) apart. Following azimuths are from station: *Nashville, St. Thomas Hospital, stack (Church and Twenty-first Streets)*, distant 1.2 miles, 217°16′27″; *Nashville, Vanderbilt University, power house, stack*, distant 0.9 mile, 232°01′36″; and *Nashville, Vanderbilt University, College Hall, center of tower*, distant 1 mile, 226°12′20″. Station *Dillon* (see description and geographic position thereof) is visible from ground.

Supplementary points

Dowdy (Wayne County, Tenn.–Lauderdale County, Ala., G. L. Anderson, 1934).—About 10 miles northeast of Waterloo, Ala., 3.8 miles airline west by south of Cypress Inn, Tenn., and on west edge of highway (Tennessee Route 69 to north and Alabama Route 2 to south). To reach from Waterloo, go northeast to road fork at east end of Second Creek bridge, turn left, go 8¾ miles to Tennessee Route 69, turn right and go 3.7 miles to station on right at State line. Station is 100 feet east of fence corner, 35 feet west of center line of highway, 13 feet south of 6-inch triangle-blazed pine tree, and 11 feet north of road leading to Harvey Dowdy's house. Surface and underground marks are standard station disks in concrete, notes 1b and 7a.

Eaves (Hardin County, Tenn.–Lauderdale County, Ala., G. L. Anderson, 1934).—About 6½ miles north-northwest of Waterloo, Ala., 6 miles east of Tennessee River, on Tennessee-Alabama State boundary line, and at northwest corner of land owned by J. R. Eaves. To reach from post office at Waterloo, go north 2 blocks, east 1 block, north 1 block to 2 small stores, follow road north up Bumpass Creek 0.7 mile to fork, follow left fork and continue along Bumpass Creek 5.2 miles to another fork, turn left, go 2.0 miles to side road leading left (south) at J. B. Highlands' house, turn north here, follow east side of fence, pass through board gate and continue along east side of fence 0.2 miles to station site on west side of fence. Station is approximately on range with north prolongation of J. R. Eaves' west boundary fence, 59.5 feet southeast of 16-inch oak tree, 50.5 feet west of 12-inch pine tree, 29.0 feet north of 12-inch oak tree, and at dividing line of wooded land to east and ploughed land to west. Mark was established by county surveyor of Lauderdale County, Ala., as State boundary marker, and was re-marked in 1934 with standard station disks in conrete, notes 1b and 7a.

Airway beacon no. 60 (Hickman County, G. L. Anderson, 1933).—A 36-inch beacon on 51-foot steel tower, about 5 miles east-northeast of Lyles. To reach from Lyles, go east on dirt road 1.3 miles to intersection with Route 100 and thence east on Route 100 3.4 miles to beacon site which is on left side of road about 300 feet east of a farmhouse.

Airway beacon no. 62 (Davidson County, G. L. Anderson, 1934).—A 36-inch beacon on 62-foot steel tower, 6.8 miles southwest of Belleview, on ridge with ground sloping down toward the north, east, and south and slightly up toward the northwest. Ridge is covered with trees averaging about 40 feet in height; the highest trees being about 60 feet high.

Airway beacon no. 63 (Davidson County, G. L. Anderson, 1933).—A 36-inch beacon on 62-foot tower, about 7 miles southwest of Nashville, about 4 miles east of Belleview, and on hill with ground sloping down toward east, west, and south but about level toward north. Hill is covered with trees, most of which are of recent growth.

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Large silver water tank southeast of Nashville (Davidson County, G. L. Anderson, 1934).—Large silver water tank, about 5 miles southeast of State Capitol, about 5 miles northeast of Brentwood, about 4 miles west of Central State Hospital, east of railroad yards of Louisville & Nashville Railroad, and west of intersection of Antioch Pike with Nolensville Pike (State Route 11).

Airway beacon no. 64 (Davidson County, G. L. Anderson, 1933).—A 36-inch beacon on 51-foot steel tower, about 7 miles east-southeast of Nashville.

Nashville latitude and longitude station (Davidson County, H. W. Blair, 1877; G. W. Dean, 1877; 1934).—In Nashville, in statehouse grounds, on terrace at east front of Capitol, and in grass plot to south and a little east of equestrian statue of Andrew Jackson. Marked by two marble posts, each 7 by 15 by 55 inches, set on end in heavy concrete foundation and projecting 30 inches above ground. Drill hole in concrete between posts marks station. Outside face of west post is inscribed "U. S. Coast and Geodetic Survey" and outside face of east post is inscribed "Astronomical Station". *Nashville, Tennessee State Capitol, flagpole on cupola* (see description thereof) is 15.512 meters (50.89 feet) south and 64.269 meters (210.86 feet) west of station. Latitude observations were made by H. W. Blair and longitude observations by G. W. Dean. In 1934 it was reported that stone slab with lower base 15 by 33 inches and upper base 15 by 27 inches and 16 inches thick had been placed on top of two vertical posts, and that these posts have weathered to such an extent that "U. S. Coast" is the only inscription legible.

Nashville, Tennessee State Capitol, flagpole on cupola (Davidson County, G. L. Anderson, 1934).—Flagpole on cupola of Tennessee State Capitol Building at Capitol Boulevard and Cedar Street in Nashville. Cupola is stone structure resting on four columns brought up through second floor. Stone floor divides cupola into two parts. Lower portion is a square 16 feet 3 inches on an edge and 47 feet high. Upper portion is cylindrical with diameter equal to diagonal of square and 37 feet high. There are four 14-foot windows in lower portion and four 15-foot windows in upper portion in which instrument may be used. This point is probably the same as that determined by A. H. Buchanan in 1879 for cupola.

Airway beacon no. 65 (Wilson County, G. L. Anderson, 1933).—A 24-inch beacon on 87-foot steel tower on knob overlooking Cumberland River Valley. To reach from community house at Old Hickory, go east and south (following signs "To Hermitage") 2.9 miles to Andrew Jackson School, continue east 3 miles on paved road (Rabbit Lane), turn north onto country road and go 0.65 mile, turn northwest, go 2.6 miles to two letter boxes, turn northeast, go 0.5 mile to forks, turn right, go 0.2 mile up bed of stream, turn left leaving stream, go 0.5 mile, turn left, pass through gate, and go 0.2 mile to Sewell's house, near beacon site.

Airway beacon no. 23 (Davidson County, G. L. Anderson, 1933).—Beacon on 51-foot tower about 4 miles southwest of Joelton.

Airway beacon no. 24 (Robertson County, P. A. Smith, 1930; 1933).—Beacon on 51-foot tower about 6 miles west of Green Brier.

SMITHVILLE, TENN., TO HUNTSVILLE, ALA. (SECOND ORDER)

Principal points

Cope (Warren County, M. A. Hecht, 1934).—About 8½ miles north-northeast of McMinnville, 12.8 miles south-southeast of Smithville, and on summit of Cope Mountain. To reach from McMinnville, take main macadam road toward Mountain City Woolen Mills and go 9 miles to Green's Crossroad, turn left and follow gravel road 0.5 mile to rock quarry, and continue about 0.25 mile up hill from quarry. Station is in 4- by 3-foot flat outcropping rock which is flush with ground and in center of group of large rocks, 21 feet west-southwest of 14-inch oak tree with triangular blaze on west side, and 16.5 feet south of fence line. Mark is standard disk station mark wedged in drill hole in rock. Reference marks are standard reference disks in outcropping bedrock, note 12b. No. 1 is in 2- by 1-foot flat rock outcrop which protrudes about 2 inches and 50.12 feet from station in azimuth 190°56′. No. 2 is in 3- by 2-foot rock outcrop which protrudes about 4 inches and 79.25 feet from station in azimuth 255°20′. Azimuth mark is standard reference disk in concrete, note 11a, on property of W. F. Smith, 40 yards north of Green's Crossroad School, 10 yards east of center line of county road, 25 yards northeast of crossroad, and 0.5 mile from station in azimuth

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336°02′28″. Following distances and azimuths are from station: *McMinnville, municipal water tank (aluminum)*, 7.8 miles, 22°21′01″; and Campaign, Rock River Coal & Lumber Co., aluminum water tank, ball on top, 5 miles, 290°33′57″.

McMinnville (Warren County, M. A. Hecht, 1934).—About 1 mile north of McMinnville, on property of T. B. Molloy, across county road from Molloy home, 400 yards east-northeast of city water tank, and 8 yards west of county road. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is diagonally across county road from station, 6 yards east of center line of county road, and 27.252 meters (89.41 feet) from station in azimuth 224°06′. No. 2 is diagonally across county road from station, 6 yards east of county road, 6 yards south of 26-inch oak tree in Molloy's yard, and 37.947 meters (124.50 feet) from station in azimuth 338°24′. No. 3 (azimuth mark) is on property of Mr. Walling, alongside road which runs parallel to line from station to mark, 16 feet south of center line of road which ends about 200 yards before reaching station, and 300 yards from station in azimuth 92°15′39″. Following distances and azimuths are from station: *McMinnville, municipal water tank (aluminum)*, 419.2 meters (1,375 feet), 63°04′56″; and Presbyterian Church, ball on spire, 1 mile, 26°48′57″.

Barnes (Coffee County, M. A. Hecht, 1934).—About 5 miles northeast of Beech Grove, on property of J. T. Barnes, 30 yards southeast of Mr. Barnes' store, 11 yards east of county road to Hoodoo, and 20 yards south-southeast of county road junction. To reach from Woodbury, go south 12.7 miles on Route 53 to Hollow Springs, continue straight ahead at crossroads where Route 53 turns east, and continue 4.3 miles on main-traveled road to home of Mr. Barnes. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 (azimuth mark) is on property of Joe Gilley, on east side of road to Hoodoo, 8 yards east of group of 3 oak trees, 22 yards east of county road, and about ¼ mile from station in azimuth 182°19′42″. No. 2 is 5 yards east of center line of county road and 173.7 feet from station in azimuth 8°10′. No. 3 is across county road from station, 20 yards from center line of road, and 101.5 feet from station in azimuth 96°03′.

Wilson (Coffee County, M. A. Hecht, 1934).—About 1¾ miles northwest of Summitville, about 5½ miles west-southwest of Morrison, on property owned by F. C. Wilson, and on southeast edge of summit of partly cleared and cultivated knob about ¼ mile west of Wilson's house (the southeasterly of two summits of same elevation). To reach from Summitville, go west on county road 1.1 miles from white church at railroad station, turn north into lane at home of G. C. Wilson, continue 200 feet, take dim woods road to west and go 0.3 mile to summit of hill. Station is about 100 yards north of south edge of field and 300 yards northwest of abandoned building. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Upper mark is 1.5 feet below surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is down southeast slope of hill, on southeast edge of field and northwest edge of woods patch, and 423.44 feet from station in azimuth 349°53′. No. 2 is at southwest edge of field and northeast edge of woods patch and 126.40 feet from station in azimuth 49°53′. Azimuth mark is on north side of Summitville road, on outside of sharp curve in road, at apex of curve, between road and fence, 8 feet northwest of center of road, and approximately 0.5 mile from station in azimuth 313°21′33″.

Model (Coffee County, M. A. Hecht, 1934).—About 6 miles south-southeast of Beech Grove, 8½ miles west-northwest of Manchester, in yard of Sixteenth Model School, 32.5 feet east of southeast corner of schoolhouse, 137 feet north of center line of dirt road, and 35 feet south of 10-inch maple tree. To reach from Manchester courthouse, go northwest 5.15 miles on U. S. Route 41, turn left onto dirt road at Busy Corner filling station and proceed 3.45 miles to white schoolhouse on right which is at end of truck travel. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 20 feet north of shed garage in school yard and 200.95 feet from station in azimuth 257°47′. No. 2 (azimuth mark) is in cultivated field on property of Mr. Collins, 15 feet south of center line of dirt road, 100 yards south of red house of Mr. Collins, and 0.35 mile from station in azimuth 277°09′50″. No. 3 is in school yard, 22 feet north of center line of dirt road, and 120.95 feet from station in azimuth 14°50′. Following distances and azimuths are from station: *Manchester, white water tank,*

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8.1 miles, 298°28′34″; Airway beacon no. 18, about 10 miles, 162°24′41″; and *Airway beacon no. 16* (see description thereof), 13.2 miles, 298°17′58″.

Forest (Coffee County, M. A. Hecht, 1934).—About 3.85 miles by road northeast from Manchester, at Forest Mill School, 222 feet northwest of center of State Route 55, in southwest corner of intersection of highway and dirt road to northwest, 116 feet north-northwest of northwest corner of small frame school building, 102 feet southwest of center of dirt road, and 27 feet west-southwest of 4-inch oak. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 110 feet north of northwest corner of school building, 8 feet south of center of dirt road, and 130.94 feet from station in azimuth 294°34′. No. 2 is on north side of dirt road, between road and split-rail fence, about 10 feet northwest of center of road, and 169.61 feet from station in azimuth 188°20′. No. 3 (azimuth mark) is on northwest side of Route 55, 22 feet northwest of center of highway, on southwest edge of cultivated field, in line of telephone poles, and 0.5 mile from station in azimuth 49°00′07″. *Manchester, white water tank*, is 3.6 miles from station in azimuth 53°20′11″.

Redfern (Coffee County, M. A. Hecht, 1934).—About 3.4 miles east of Tullahoma. To reach from Tullahoma, take county road east from State Route 55 at point 0.3 mile northeast of railroad station and go about 1 mile, turn north on gravel T-road, go 1¼ miles, turn east on dim woods road, and go 1.65 miles to slight rise in ground and station site. Station is on highest point of flat-topped high ground, near east end of rise, 59 feet north-northeast of 28-inch oak tree with triangular blaze, 40 feet northeast of center of dim woods road, and 29 feet west of 28-inch oak stump. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 20 feet northwest of 6-inch persimmon tree and 134.10 feet from station in azimuth 225°08′. No. 2 is down slight slope of ground to southeast, 15 feet northwest of 8-inch oak tree, and 141.95 feet (slope distance) from station in azimuth 318°15′. Distance between no. 1 and no. 2 is 201.97 feet (slope distance). Azimuth mark is 50 feet west-southwest of leaning 10-inch oak, in small clearing on summit of slight knoll to northwest of station, and 350 yards from station in azimuth 129°43′48″.

Hurricane (Moore County, M. A. Hecht, 1934).—About 6.8 miles by road west of Tullahoma, at Hurricane School, at south edge of woods, 157 feet northeast of northeast corner of school, 77 feet west of 24-inch oak tree with triangular blaze, and 71 feet northwest of center line of Route 55. To reach from Tullahoma railroad station, go west 5.7 miles on Route 55 to its junction with State route 16, turn left on Route 55 and go 1.1 miles to Hurricane School. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is at edge of woods, 28 feet southeast of center line of Route 55, and 99.22 feet from station in azimuth 309°56′. No. 3 is in school yard, 62 feet southeast of school house, 46 feet northwest of center line of Route 55, 161.4 feet from no. 1, and 127.55 feet from station in azimuth 39°44′. Azimuth mark is in yard of Virgil Hale, 30 feet south of center line of Route 55, and 0.25 mile from station in azimuth 35°16′25″. Center chimney of Mr. Hale's house is 250 yards from station in azimuth 47°17′42″.

Huskey (Moore County, M. A. Hecht, 1934).—About 1.1 miles east-southeast of Lynchburg, in cleared field on land owned by C. T. Huskey. To reach from Lynchburg courthouse, follow dirt road leading south across creek bridge 1.2 miles to abandoned house on left. Station is 104 feet north-northwest of abandoned house, 51 feet southwest of old barn, 20 feet west of lane, and about 200 feet north of main road. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is at north edge of lane, 30 feet north of old barn, and 99.3 feet from station in azimuth 222°07′. No. 2 is in cleared field, 2 feet south of rail fence, and 131.3 feet from station in azimuth 148°59′. Distance between no. 1 and no. 2 is 138.0 feet. Azimuth mark is in southeast corner of Coy White's yard, 20 feet north of main road, 30 feet west of road leading to house, and 0.3 mile by road from station in azimuth 112°52′04″.

Stone (Franklin County, M. A. Hecht, 1934; 1935).—About 8.7 miles south along Route 16 from Tullahoma, at point where it crosses long narrow ridge, on summit of rise, in northwest corner of junction of Route 16 and dirt farm road to west, 59 feet south of double-oak tree, 21 feet southwest of 20-inch tree with triangular blaze, 37.5 feet west of center line of Route 16, and 23 feet north of

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center line of farm road. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. Reference mark no. 1 is 35 feet east of center line of Route 16, near base of 3-foot oak tree, and 151.89 feet from station in azimuth 189°28′. No. 2 is 128 feet east of center line of Route 16, 15 feet north of north edge of cultivated field, 20 feet northwest of 30-inch oak tree, and 178.47 feet from station in azimuth 277°05′. Distance between reference marks is 228.47 feet. Azimuth mark is 20 feet east of center line of Route 16, 125 yards northeast of white school building, 140 feet northeast of white filling station, and 0.8 mile from station in azimuth 336°42′41″. Azimuth from station to *Winchester, municipal water tank (aluminum), ball on top*, distant 6.2 miles, is 321°27′45″.

Lois (Moore County, M. A. Hecht, 1934).—About 5 miles south of Lynchburg, 1¼ miles south of crossroads known as "Lois", in cultivated field, and on property of J. E. Matlock. To reach from Lynchburg, follow State Route 55 west and south 1.1 miles to U. S. Route 64, turn left (east) onto U. S. Route 64, go 2.45 miles to gravel road, take right gravel fork and go 1.45 miles, and continue straight ahead at crossroads at Lois 0.2 mile to fork, take left fork and proceed about 500 yards, then take dim right fork and follow this dirt road 1.2 miles to T-fence corner on right. Station is at edge of field, 2 feet east of east-west wire fence, about 125 feet west of center line of road, and 150 feet northwest of barn. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 2 feet west of north-south wire fence, about 15 feet west of center line of road, and 170.30 feet from station in azimuth 212°31′. No. 2 is 2 feet west of north-and-south wire fence, about 15 feet west of center line of road, and 177.70 feet from station in azimuth 297°48′. Azimuth mark is on crest of ridge, 5 feet east of center line of farm road, on property of Ed. Berry (colored), and 0.3 mile from station in azimuth 251°19′35″.

Cole (Franklin County, M. A. Hecht, 1934).—About 14.8 miles south of Tullahoma, 5.9 miles southwest of Winchester, 1½ miles northwest of Belvidere, in small cleared uncultivated area, on property of Willard Cole, 105.35 feet east of southeast corner of his house, 26 feet south of center of lane to house, and 8 feet east of yard fence on east side of house. To reach from railroad crossing in Belvidere, follow U. S. Route 97 northeast 0.35 mile, turn north (left) on side road leading to "First Reformed Church" and continue 1.5 miles on main road, keep straight ahead (west) on side road, continue 0.35 mile to dim woods road to right, turn right and continue 0.2 mile to home of Willard Cole and station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11b. No. 1 is on property of Alfred Wambroad, along fence line, in wooded area east of Cole's cultivated field, and 131.53 feet from station in azimuth 1°52′. No. 2 is in Cole's yard, 26.7 feet south of south face of concrete foundation of house, 1 foot north of fence, and 121.71 feet from station in azimuth 81°26′. Distance between no. 1 and no. 2 is 162.2 feet. Azimuth mark is standard reference disk in concrete, note 11a, on property of Henry Glaus, on north side of road leading to Cole's house, 46 feet due north of lone cedar tree, 10 feet north of center of road, in edge of cultivated field, and 0.2 mile from station in azimuth 39°26′30″.

Raynolds (Lincoln County, M. A. Hecht, 1934).—About ½ mile west of Franklin County line, on property of F. M. Raynolds, 400 yards northwest of Raynolds' house, 54.0 feet west-northwest of center of road, on top of cut at southeast edge of cultivated field. To reach from Huntsville-Winchester highway at Elora, follow county road north past Cumberland Church 0.65 mile, turn right at crossroad and continue 2.05 miles to top of grade. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is on east edge of field, 7 feet southwest of small cedar tree, and 143.70 feet from station in azimuth 253°20′. No. 2 is on south edge of field, 4 feet north of north edge of woods, and 112.97 feet from station in azimuth 146°28′. Distance between no. 1 and no. 2 is 207.68 feet. Azimuth mark is on edge of cultivated field, 75 feet north of 2 apple trees in fence corner, 75 yards in rear of white dwelling, and 350 yards from station in azimuth 21°23′34″.

Patrick (Lincoln County, M. A. Hecht, 1934).—About 5½ miles southeast of Fayetteville, 3¼ miles southwest of Kelso, in yard of O. B. Patrick, 100.4 feet northwest of northern corner of Mr. Patrick's residence, 33 feet east of center line of road, and 110 feet south of barn. To reach from Fayetteville courthouse, go

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south 2.05 miles on U. S. Route 241 (or 1.35 miles beyond Elk River bridge), turn left onto dirt road, go 0.5 mile and take left fork, continue 1.55 miles to school on left and crossroads, continue straight ahead 1.95 miles, turn left across creek at small store, and follow rough road 1.45 miles to home of Mr. Patrick. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is in Mr. Patrick's yard, 2 feet north of wire fence, about 50 feet west of house, 18 feet east of center line of road, and 133.52 feet from station in azimuth 1°16′. No. 2 is in edge of garden, 5 feet south of barn, 4 feet west of rail fence, and 131.71 feet from station in azimuth 223°22′. Distance between no. 1 and no. 2 is 247 feet. Azimuth mark is in pasture of Mr. Patrick, on top of ridge, 2 feet west of rail fence, and 130 yards from station in azimuth 223°46′17″.

Quick (Lincoln County, M. A. Hecht, 1934).—About 9¾ miles a little east of south of Fayetteville, 8¾ miles west-southwest of Flintville, and 1½ miles north of Alabama State line, in cultivated field, on property of Rufus McClory [or McCrowey]. To reach from point where U. S. Route 241 crosses State line between Fayetteville and Huntsville, Ala., follow Route 241 north 0.2 mile, turn right (east) onto dirt road, go 0.6 mile, turn left at T-road junction follow road 0.8 mile (or 0.55 mile past Quick School), follow right fork through woods, continue 0.15 mile and turn left at tree with triangular blaze, and go 60 yards to field and station site. Station is 60 feet from woods line, 68 feet northwest of tree with triangular blaze, and about 225 feet northwest from main road. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is in woods, 45 feet east of 18-inch oak with triangular blaze, and 127.61 feet from station in azimuth 310°58′. No. 2 is in woods, 29 feet west of 15-inch oak, and 118.50 feet from station in azimuth 48°40′. Distance between no. 1 and no. 2 is 185.3 feet. Azimuth mark is on property of Mrs. Susanna King, in northwest corner of cultivated field, about 20 feet south of T-road junction, and approximately 0.4 mile from station in azimuth 207°28′03″.

Hale (Madison County, Ala., M. A. Hecht, 1934).—About 1.3 miles east of Winchester-Huntsville highway at point where it crosses Alabama-Tennessee State line, 0.1 mile south of Tennessee line, near north end of summit of broad flat-topped hill locally known as "Old Hale Place", in northwest corner of cultivated field, 120 feet east of woods on west side of field, and 140 feet south of small persimmon tree with triangular blaze. To reach from Elora, follow Huntsville highway south 2¼ miles from railroad crossing, turn east onto farm road at home of Robert Bostick, go 0.45 mile to home of J. T. Thompson and end of truck travel, and follow old road up hill to northeast 1½ miles to summit of hill. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. Disks are not numbered. Southwest reference mark is on west edge of field, about 200 feet north of old road, and 124.86 feet from station in azimuth 54°07′. Northwest reference mark is on west edge of field and 86.07 feet from station in azimuth 164°43′. Azimuth mark is on edge of ploughed field, about 50 feet from edge of woods, and 250 yards from station in azimuth 317°56′28″.

Steger (Madison County, Ala., M. A. Hecht, 1934).—About 2½ miles west of Hazel Green, on property of David Steger, in front yard of L. B. Seymour's house, in fence line between yard and garden, 44 feet east of 3-foot oak tree, 36.5 feet southeast of southeast corner of Seymour's house, and 30.5 feet north of center of road. To reach from Hazel Green, follow county road west 2.8 miles from Route 241 at crossroads, turn north on T-road, go 0.65 mile, turn east at crossroad and continue 120 yards. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 20 feet south of center line of road, 3½ feet west of fence corner, and 72.36 feet from station in azimuth 50°14′. No. 2 is 89 feet north of center of road, 36 feet west of west side of Seymour's house, and 100.56 feet from station in azimuth 126°20′. Azimuth mark is alongside road, on second rise of ground to east, on south edge of cultivated field, 70 feet east of clump of oak trees, 20 feet north of center of road, and 0.4 mile from station in azimuth 271°12′08″.

Deposit (Madison County, Ala., M. A. Hecht, 1934).—About 2 miles north-northeast of Deposit, 2.5 miles south of New Market, 1.4 miles northwest of Blackwell, and on summit of north and lower of two peaks. To reach from New Market post office, follow main road south 1.55 miles toward Huntsville, turn left (east) onto county road, go 0.65 mile (or 0.25 mile past home of W. E. Campbell) to

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house on right and end of truck travel, and then follow old wagon road south up backbone of ridge 2½ miles to station. Station is on western side of ridge, about 5 feet lower and 100 yards west of highest point, 42.5 feet south of 30-inch white-oak tree with triangular blaze, and 42 feet east of 24-inch white oak. Mark is standard station disk in boulder, note 4. Reference and azimuth marks are standard reference disks in outcropping bedrock, note 12b. No. 1 is 23 feet south of 30-inch white oak with triangular blaze, and at same elevation as and 5.868 meters (19.25 feet) from station in azimuth 185°52′. No. 2 is at about same elevation as and 10.176 meters (33.39 feet) from station in azimuth 73°53′. Azimuth mark is flush with surface, on highest point on ridge in long flat outcrop, and about 100 yards from station in azimuth 252°09′.

Supplementary points

Young (DeKalb County, M. A. Hecht, 1934).—About 12.7 miles north of McMinnville, on summit of hill known locally as "Green Hill", 75 feet north of Warren-DeKalb County line, 37.5 feet east of center line of State Route 56, and 300 yards northeast of dwelling. To reach from McMinnville, go north 12.7 miles on State Route 56. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference marks no. 1 and no. 3 are standard reference disks in concrete, note 11a. No. 1 is 16 feet southeast of 30-inch oak tree and 103.45 feet from station in azimuth 273°49′. Reference mark no. 2 is standard reference disk in concrete, note 11c, 30 feet east of highway and 126.70 feet from station in azimuth 357°53′. No. 3 is on property of Gabriel Young, 5 yards west of center line of road, about 30 yards west of and directly across road from Mr. Young's residence, about 6 feet southwest of Mr. Young's box, on east edge of cultivated field, and approximately 0.1 mile from station in azimuth 167°35′12″.

Hinton (Warren County, M. A. Hecht, 1934).—About 2 miles southwest of Morrison, on right-of-way of State Route 55, between fence and east drainage ditch, about 5 feet east of center line of ditch, 34.5 feet north of Warren-Coffee County marker, 20.3 feet north of easterly T-road, 26 feet east of center line of Route 55, and 9.4 feet west of fence of the Hinton brothers' property. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 30.3 feet east of center line of Route 55, 1 foot west of fence line, and 108.73 feet from station in azimuth 222°30′. No. 2 is 36 feet west of center line of Route 55, 1.5 feet southeast of large corner fence post, 4 feet south-southeast from center line of lane, and 100.57 feet from station in azimuth 78°24′. Azimuth mark is 10 yards west of center line of highway, in right-of-way thereof, and 0.3 mile from station in azimuth 33°56′48″. Top center of west abutment of large concrete bridge on Route 55 is 0.25 mile from station in azimuth 34°12′23″.

Bush (Coffee–Cannon Counties, M. A. Hecht, 1934).—About 4.9 miles north-northwest of Hoodoo, about 3.4 miles southwest of Bradyville, about 0.1 mile east-northeast of corner of Coffee, Cannon, and Rutherford Counties, and on Coffee-Cannon County line. To reach from Bradyville, go through town by main highway to southern outskirts, follow dirt road southwest 3.8 miles to top of grade, turn north up east side of hill, and continue north 0.25 mile to point where road crosses top of hill. Station is on highest point of large cleared hill, about 50 yards south of line of trees along south edge of cleared summit, 170 feet north of fence line along south edge of cleared summit, and 200 feet north of road crossing summit. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 (azimuth mark) is in southeast corner of fenced summit of hill, at sharp bend in road, 10 feet north of road, 40 feet northwest of 3-foot dead chestnut-oak tree, and 175 yards from station in azimuth 311°52′47″. No. 2 is 4 feet north of south fence line and 174.31 feet from station in azimuth 344°59′. No. 3 is 5 feet north of south fence and 232.97 feet from station in azimuth 53°41′. Station *Short Mountains* (see description and geographic position thereof) is visible from the ground at station.

West (Coffee County, M. A. Hecht, 1934).—About 5½ miles north-northwest of Tullahoma, 2¼ miles east-southeast of Normandy, in small clearing on property of A. S. West, about 150 yards southeast of Mr. West's home, 100 feet west of 10-inch oak tree with triangular blaze, and 30 feet south of center line of road. To reach from railroad station at Tullahoma, go northeast 0.1 mile on Route 55, turn left on to Washington Street at sign "Ovoca 4 miles", proceed along main

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asphalt road 1.95 miles, turn left onto gravel road, follow main road 4.05 miles (or 0.35 mile past white schoolhouse on right), turn left at T-road, and proceed 0.75 mile to top of grade. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is about 45 feet north-northeast of 10-inch oak tree with triangular blaze, 15 feet north of center line of road, and 165.1 feet from station in azimuth 268°47′. No. 2 is in cultivated field, 15 feet north of center line of road, and 151.5 feet from station in azimuth 120°49′. Azimuth mark is in barnyard of Lawrence Throneberry, 10 feet south of center line of road, 60 feet northeast of 30-inch oak tree, and 0.15 mile from station in azimuth 143°15′35″.

Center Grove (Transit traverse station no. 73 D 1930 (U. S. G. S.)) (Franklin County, M. A. Hecht, 1934).—About 3.65 miles south of Tullahoma by State Route 16, on property of Center Grove School, 11 feet east of west fence line of school, and 60 feet northwest of center line of highway. Station is marked by standard U. S. Geological Survey bench mark, stamped "TT Sta. No. 73–D–1930", set in 8- by 8-inch concrete post. Reference marks are standard reference disks in concrete, note 11a. No. 1 is in school yard and 158.10 feet from station in azimuth 143°40′. No. 2 is diagonally across road from station, 20 feet south of center line of highway, and 115.36 feet from station in azimuth 251°43′. Distance between no. 1 and no. 2 is 222.6 feet. Azimuth mark is on north side of highway, 36 feet north from center line of highway, and 500 yards (0.2 mile by road) from station in azimuth 17°53′10″.

Tullahoma (Coffee County, M. A. Hecht, 1934).—In Tullahoma, 47 feet east of center line of Atlantic Street, 92 feet north from center line of Lincoln Street, and 78 feet west of center line of Nashville, Chattanooga & St. Louis Railway. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference mark no. 1 is standard reference disk in sidewalk, on northwest corner of Lincoln and Atlantic Streets, and 90.49 feet from station in azimuth 18°16′. Reference mark no. 2 is standard reference disk in sidewalk, on west side of Atlantic Street, and 115.78 feet from station in azimuth 104°19′. Distance between reference mark no. 1 and no. 2 is 142 feet. Reference mark no. 3 (azimuth mark) is standard reference disk in concrete, note 11a, across railroad tracks from station, between street and tracks, and about ¼ mile from station in azimuth 155°07′19″. *Tullahoma, municipal water tank (aluminum)*, is about 135 meters (443 feet) from station in azimuth 324°35′07″.

Kasserman (Primary traverse station no. 13 T 1926 (U. S. G. S.)) (Franklin County, M. A. Hecht, 1934).—About 3 miles southeast of Winchester, on Nashville, Chattanooga & St. Louis Railway right-of-way, 21 feet west of center line of road, and 26 feet north of center line of railroad tracks. To reach from Winchester, go southwest 2.5 miles on Route 64 to windmill and dirt road on left, go 0.5 mile on dirt road, then to left 0.15 mile, to right 0.8 mile and to left 0.6 mile to railroad and station. Station is marked by standard U. S. Geological Survey bench mark, stamped "P–T Sta. No. 13T–1926", set in concrete post 6 inches square. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is along railroad right-of-way, 15 yards north of railroad, and 168.56 feet from station in azimuth 224°56′. No. 2 is 19 feet west of center line of road, just inside of fence, and 179.33 feet from station in azimuth 124°19′. Azimuth mark is 13 feet east of center line of road and 0.2 mile by road from station in azimuth 124°47′38″.

Winchester (Franklin County, M. A. Hecht, 1934).—In Winchester, about ½ mile southeast of courthouse, and on property of Harvey M. Templeton. To reach from post office, go south on street in front of post office 0.55 mile, turn left at crossroads, go 0.25 mile, and turn left into lane leading to barn. Station is at end of lane, in plowed field on east, 17.6 feet east of center line of lane, 9.7 feet east of north-south wire fence, 8.4 feet south of east-west wire fence, about 50 feet south of barn, and about 150 feet west of large pond. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is about 10 feet north of wooden gate, in same inclosure as barn, about 2 feet west of north-south wire fence, and 133.95 feet from station in azimuth 233°05′. No. 2 is in same inclosure as barn, about 30 feet west of northwest corner of barn, 1 foot east of wire fence, and 129.30 feet from station in azimuth 143°21′. Azimuth mark is 2 feet from fence, at west edge of field adjoining large house which is east of and across street from school, 23.7 feet south of center line of Route 64, 8.2 feet south of center of drainage ditch, and 0.6 mile from station

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in azimuth 146°06′52″. Following distances and azimuths are from station: Winchester, black water tank, 0.5 mile, 81°47′32″; and *Winchester, municipal water tank (aluminum), ball on top*, 0.7 mile, 123°56′01″.

Elora (Lincoln County, M. A. Hecht, 1934).—In Elora, on property of M. A. Pylant, 10 feet north of 20-inch white-oak tree, and just southeast of combined post office and drug store. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is on opposite side of road to Huntland and 123.0 feet from station in azimuth 344°58′. No. 2 is on opposite side of road to Huntland, on property of J. B. Scivally, and 240.4 feet from station in azimuth 51°40′. Distance between no. 1 and no. 2 is 222.42 feet. Azimuth mark is across railroad from station, 20 yards north of track, 8 yards north of center line of road to Fayetteville, on property of J. A. Pylant, and 300 yards from station in azimuth 123°57′47″. *Primary traverse station no. 8 T 1926 (U. S. G. S.)*, marked by standard U. S. Geological Survey disk stamped "P. T. Sta. No. 8–T–1926" in concrete post, is in yard of T. G. Yarbrough and 29.848 meters (97.93 feet) from station in azimuth 155°32′. Station *Hale* (see description and geographic position thereof) is visible from ground.

Madilin (Madison County, Ala., M. A. Hecht, 1934).—Just south of Alabama-Tennessee State line, on right-of-way of U. S. Route 241, 6 feet east of west right-of-way line, and 10 feet south-southwest of State-line marker. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is across road from station, 9 yards from center line of road, and 122.78 feet from station in azimuth 301°15′. No. 2 is across road from station, 9 yards from center line of road, and 179.32 feet from station in azimuth 172°55′. Distance between no. 1 and no. 2 is 272.94 feet. Azimuth mark is across road from station, 6 yards from center line of road, on property of J. T. Hopkins, and 0.25 mile by road from station in azimuth 156°48′13″. Station *Quick* (see description and geographic position thereof) is visible from ground.

Airway beacon no. 16 (Coffee County, M. A. Hecht, 1934).—A 24-inch rotating beacon on 51-foot tower, in Eighth Civil District of Coffee County and 5 or 6 miles southeast of Manchester. To reach from post office at Manchester, go north to State Route 2, thence east on it 5.7 miles to county road known as "Asbury Road." (A 44,000-volt line crosses Route 2 about 75 feet east of this point.) Turn left (north) onto Asbury Road and go 0.3 mile to residence of Mr. Hitson, thence on farm road across Mr. Hitson's property to beacon site.

Primary traverse station no. 8 T 1926 (U. S. G. S.) (Lincoln County, M. A. Hecht, 1934).—In town of Elora, in yard of Mr. T. G. Yarbrough, and 29.848 meters (97.93 feet) in azimuth 155°32′ from station *Elora* (see description thereof). Marked by standard U. S. Geological Survey disk stamped "P. T. Sta. No. 8–T–1926" in concrete post.

UNION CITY, TENN., TO LA FAYETTE, GA. (SECOND ORDER)

Principal points

Hagons (Obion County, M. A. Hecht, 1934).—About 7 miles north of Troy, 5.5 miles west of Union City, 4¾ miles south of Tennessee-Kentucky State line, on divide between north and south forks of Reelfoot Creek, and on property of Bud Hagons. To reach from center of business district of Union City, follow U. S. Route 45W and Route 51 north and just before reaching railroad crossing at Cherry-Moss Grain Co., turn left (west) and follow arrows "Walnut Log—Clayton—etc." 1.7 miles, turn onto left fork and follow main road 4.0 miles to small store, and continue 0.65 mile to home of Mr. Hagons and station on highest point of pasture, about 200 yards northeast of Mr. Hagons' residence, and 255 feet north of center line of road. Surface and underground marks are standard station disks in concrete, notes 1c and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on road bank, 25 feet north of center line of road, and 230.32 feet from station in azimuth 338°52′. No. 2 is flush with surface of ground, in pasture, and 156.71 feet from station in azimuth 83°13′. Azimuth mark is 75 feet west-southwest of small building, 30 feet south of center line of road, 4 feet north of fence line, and 0.35 mile from station in azimuth 250°11′03″.

Troy (Obion County, M. A. Hecht, 1934).—About 7.25 miles north of Obion, 7 miles east-northeast of Hornbeak, 1½ miles northwest of Troy, and on summit of broad highland. To reach from courthouse at Troy, follow U. S. Route 51

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northeast about 0.5 mile, follow first left-hand dirt road northwest 1.8 miles to top of grade and station at west edge of small clearing, 0.4 mile northwest of home of D. Y. Dunbar, 130 yards southeast of road forks, and 41½ feet east of center of road. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on west side of road, in fence line at east side of field, at base of telephone pole, and 103.27 feet from station in azimuth 345°45′. No. 2 is on west side of road, in fence line at east side of field, at base of telephone pole, and 106.00 feet from station in azimuth 95°02′. Azimuth mark is in yard of Mr. Dunbar's residence, 32 feet west of house chimney, 30 feet west-southwest of northwest corner of house, 20 feet north of 20-inch maple, 5 feet east of fence line, and 0.4 mile from station in azimuth 335°51′50″.

Chambers (Obion County, M. A. Hecht, 1934).—About 4 miles north of Union City, 3¾ miles south of Tennessee-Kentucky State line, and on property of T. P. Rucker. To reach from Union City, follow U. S. Route 45W north 4.3 miles to top of grade and station on left, about 250 feet north-northwest of center line of highway, 48.5 feet south of 30-inch wild-cherry tree, 16 feet north of southwest corner of small cemetery, and 10 inches east of west fence line. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is along fence line between cemetery and highway, 30 feet south of south fence line around cemetery, and 97.84 feet from station in azimuth 295°18′. No. 2 is just inside of fence, 4 feet east of northwest corner of north fence line around cemetery, and 135.10 feet from station in azimuth 182°15′. Azimuth mark is 0.08 mile southwest of farm road leading northwest from Route 45E, 25 feet southeast of center line of Route 45E, 1 foot northwest of right-of-way fence line, and 0.3 mile from station in azimuth 42°45′34″.

Rives (Obion County, M. A. Hecht, 1934).—About 5½ miles east-northeast of Troy, 4¾ miles north-northwest of Crockett, 4½ miles south-southwest of Union City, on summit of low ridge, on slight prominence near south end, and on property of A. B. Campbell. To reach from Hotel Davy Crockett in Union City, follow U. S. Route 45W south 4.1 miles, turn right onto dirt road and go 0.5 mile to top of grade and station at south edge of large pasture, about 130 yards southwest of large barn, 105 yards southwest of northwest corner of pasture, 31½ feet north of center of road, and 7 feet inside south fence line. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is along south fence line of pasture, north of road, at base of 20-inch oak, and 108.95 feet from station in azimuth 296°48′. No. 2 is on north fence line of cultivated field, on south side of road, and 110.78 feet from station in azimuth 87°24′. Azimuth mark is along T-road east, on north fence line of pasture in which station is located, 24 feet west-southwest of 30-inch maple, 10 feet south of center of road, and 0.35 mile from station in azimuth 225°11′40″.

Union (Obion County, M. A. Hecht, 1934).—In Union City, on property of W. G. Berry, 30.4 feet north of northeast corner of Park service station at corner of Church and Depot Streets, 93 feet east of center of Depot Street, and 35.2 feet west of most westerly side track of Nashville, Chattanooga & St. Louis Railway. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference mark no. 1 is standard reference disk in south curb of Church Street, 78 feet east of southeast intersection of Church and Depot Streets, and 157.31 feet from station in azimuth 4°31′. Reference mark no. 2 is standard reference disk in west curb of Depot Street, 68 feet north of northwest intersection of curbs of Church and Depot Streets, and 115.62 feet from station in azimuth 74°02′. Azimuth mark is standard reference disk in north edge of concrete drive of former location of Union City Lumber Co. building, about 100 feet north-northeast of center of main track of Nashville, Chattanooga & St. Louis Railway, 90 feet west of center of First Street, and 0.15 mile from station in azimuth 150°56′34″. *Primary traverse station no. 40, 1910* (*U. S. G. S.*) (see description thereof) is 81.05 feet from station in azimuth 197°49′.

Jackson (Weakley County, M. A. Hecht, 1934).—About 2 miles north-northwest of Martin, on property of J. H. Jackson, about 100 yards southeast of his house, at southeast corner of orchard, about 130 yards southeast of road, about 25.0 feet southeast of 18-inch apple tree, and about 3 feet northwest of fence corner. To reach from post office in Martin, follow U. S. Route 45E north 1.75 miles, turn west onto dirt road at Tumble Inn and go 0.95 mile to Jackson's house, and thence left through gates to station site. Surface and underground marks are

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standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is along west side of north-and-south fence and 112.65 feet from station in azimuth 183°49′. No. 2 is along an east-and-west fence line of adjoining field, about 150 feet west of southwest corner of orchard, and 217.82 feet from station in azimuth 93°31′. Azimuth mark is at north edge of large pasture, about 370 yards west of Jackson's house, 12 feet south of center line of road, 2 feet south of fence, and approximately 0.2 mile from station in azimuth 118°54′52″.

Bell (Weakley County, M. A. Hecht, 1934).—About 6¾ miles east-southeast of Crockett, 6½ miles northwest of Sharon, 5½ miles southwest of Martin, on property of Royce Bell, in formerly cultivated field, about 125 yards west of Bell's home, 39.5 feet north of 10-inch triangle-blazed locust tree, 25 feet north of center line of road, and 13.5 feet north of wire fence. To reach from post office in Martin, follow State Route 22 northwest 0.95 mile to T-road to left, turn left onto gravel road and go 2.3 miles on main road to T-road to left, turn left and go 2.1 miles on main road to T-road to right, turn right and keep straight ahead (west) 1.1 miles, turn left at New Hope Church and go 1.1 miles (0.05 mile beyond Bell's house) to station site on right at top of grade. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark is 18 inches below surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is about 16 inches below surface of ground, in center of field, and 137.37 feet from station in azimuth 182°38′. No. 2 is along fence line, 15 feet north of center line of road, and 112.77 feet from station in azimuth 276°36′. Azimuth mark is 75 feet from southeast corner of house, 15 feet north of center line of road, 6 feet east of small peach tree, 2 feet north of fence line, and approximately 150 yards from station in azimuth 91°33′20″. *Sharon, black water tank,* is about 7 miles from station in azimuth 303°02′44″.

Dresden (Weakley County, M. A. Hecht, 1934).—About 1 mile west by north of Dresden, on property of Shed Killum (Andy Jones, tenant), about 50 yards north-northeast of road fork, 23 yards east-southeast of center line of road, 17 yards south-southwest of southwest corner of house, 12 yards south-southwest of 10-inch maple tree, and 2 yards north of fence line. To reach from courthouse in Dresden, go west 1 block, turn right (north) onto Latham road and go 1.0 mile to top of grade and station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is opposite fork in road, 18 feet northeast of center line of road, 3 feet northwest of fence line, and 129.13 feet from station in azimuth 46°24′. No. 2 is 21 feet west of center line of road and 100.11 feet from station in azimuth 134°32′. Azimuth mark is on property of Thomas Dunn, along left fork in road just before reaching station, just south of fence, 20 feet south of center line of road, and approximately 0.4 mile by road from station in azimuth 109°52′02″.

Sharon (Weakley County, M. A. Hecht, 1934).—About ½ mile north of Sharon, 74 yards north of fence line, 11 yards east of center line of Route 45E, and in west edge of cultivated field. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark is flush with surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 17 yards west of center line of Route 45E, 6 feet north of fence line, and 228.54 feet from station in azimuth 22°16′. No. 2 is 25 feet west of center line of Route 45E and 116.85 feet from station in azimuth 153°30′. Azimuth mark is 57 feet south of center line of T-road leading west, 27 feet west of center line of Route 45E, 15 feet east of 6-inch twin-cedar tree, and approximately 0.3 mile from station in azimuth 170°13′32″. Spire on Presbyterian Church in Sharon is 0.2 mile from station in azimuth 0°50′20″. Stations *Jackson* and *Bell* (see descriptions and geographic positions thereof) are visible from ground at station.

Gleason (Weakley County, M. A. Hecht, 1934).—About 1.75 miles west-southwest of Gleason, on summit of prominent heavily wooded hill known locally as "Old Mound", and on property said to belong to Dr. R. W. Bandy. To reach from railroad station in Gleason, take main cross street over track leading southwest and follow straight ahead 0.55 mile, follow left fork at old small stone house in fork 0.5 mile, turn west onto dirt T-road between two farmhouses and go 0.8 mile (60 yards before reaching top of grade), turn right through woods and go about 150 yards to top of hill and station site which is 47 feet north-northeast of 8-inch oak with triangular blaze. Surface and underground

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marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on down slope, 3 feet west of 14-inch hickory, and 101.2 feet (slope distance) from station in azimuth 231°20′. No. 2 is about 6 feet lower in elevation than and 74.2 feet (slope distance) from station in azimuth 146°03′. Azimuth mark is about 125 yards northwest of Jack Dunn's residence, 35 feet east of lane, 15 feet north of center of road on fence line of Jeff Parks, and 0.3 mile from station in azimuth 252°19′12″.

Dunn (Weakley County, M. A. Hecht, 1934).—About 14 miles west by south of McKenzie, 4.75 miles north-northeast of Bradford, 2.75 miles southeast of Greenfield, on highest part of cleared knoll, and on property of William H. Dunn. To reach from junction of State Route 54 and U. S. Route 45E in Greenfield, follow Route 54 east 1 block, turn south and go 0.95 mile to road forks, turn onto right fork and follow main-traveled road 2.4 miles to point where road makes sharp right turn and dim road continues straight ahead (Mr. Cantrell's home on right), continue straight ahead on dim road 0.2 miles to Dunn's home, turn left through gate and up small bank and go 0.3 mile east and north over dim road through field and orchard to top of hill and station site on waste land just north of cotton patch. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is down northeast slope of hill and 84.13 feet (slope distance) from station in azimuth 243°29′. No. 2 is 78.28 feet from station in azimuth 147°54′. Distance between reference marks nos. 1 and 2 is 120.3 feet. Azimuth mark is 50 feet east of road forks, 50 feet west of west corner of house, 27 feet southwest of center line of road in front of Mr. Cantrell's house, 7 feet north-northwest of 18-inch shade tree, and 0.5 mile from station in azimuth 58°17′58″. Following distances and azimuths are from station: Bradford, aluminum tank, 5 miles, 33°46′55″; *Trezevant, municipal water tank (black), top of ball on roof*, 11.3 miles, 316°30′49″; *Sharon, black water tank*, 7.8 miles, 152°16′54″; and *Greenfield, municipal water tank (black)*, 2.7 miles, 125°09′39″.

Greenfield (Weakley County, M. A. Hecht, 1934).—In Greenfield, on property of Illinois Central Railroad, between main track and side track, 114.5 feet south of south end of railroad depot, 93.4 feet east of center line of U. S. Route 45E, 55.5 feet south of street, and 26.76 feet east of center line of main tracks. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is across main track and street from station, 11 yards east of center line of Route 45E, 9 yards west of center line of main tracks, 8 yards northwest of 20-inch sycamore tree, and 120.03 feet from station in azimuth 137°23′. No. 2 is 12 yards west of center line of main tracks, 7 yards east of center line of Route 45E, and 140.08 feet from station in azimuth 22°46′. Azimuth mark is on property of J. A. Mosley, across railroad tracks and Route 45E from station, 21 yards south-southeast of southeast corner of Mosley's filling station, 18 feet west of center line of Route 45E, and 0.3 mile from station in azimuth 0°28′08″. *Primary traverse station no. 19 1910 (U.S.G.S.)* (see description thereof) is 124.12 feet from station in azimuth 100°42′. *Greenfield, municipal water tank (black)*, is about 0.1 mile from station in azimuth 195°07′28″.

McKenzie (Carroll County, M. A. Hecht, 1934).—About 1 mile southeast of McKenzie, at Mount Olive Cemetery, 90 feet west of fence line along east side of cemetery, 6 yards north of center line of road along north side of cemetery, 16 yards north-northwest of 10-inch walnut tree, and 10 yards north-northeast of 14-inch maple tree. To reach from Hotel Lynn in McKenzie, follow State Route 76 south 0.4 mile, keep to left on gravel road where highway bends to right and go 0.5 mile, turn left along north side of cemetery and go 0.25 mile to highest ground near northeast corner of cemetery and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 20 yards north-northeast of northeast corner of cemetery, 1 foot west of fence line on east side of cemetery, 34 feet north of triple oak, and 93.90 feet from station in azimuth 248°25′. No. 2 is along fence line on east side of cemetery, 6 feet east of center line of road along east side of cemetery, 24 feet northeast of 8-inch elm, and 179.65 feet from station in azimuth 337°00′. Azimuth mark is 60 yards east of center line of gravel road along west side of cemetery, 4 yards north of center line of road leading into cemetery, 5 feet east-southeast of 10-inch wild-cherry tree, and 0.2 mile from station in azimuth 90°52′51″.

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Trez (Carroll County, M. A. Hecht, 1934).—About 0.75 mile north-northeast of Trezevant, on property of Mrs. Vida Funderbuck. To reach from crossroads at southwest corner of railroad station in Trezevant, follow State Route 76 north 0.6 mile to stone side road to right, turn right and go 0.25 mile to Mrs. Funderbuck's home and station site along fence line, on north edge of field, about 100 yards east of Route 76, 147.3 feet west of southwest corner of Mrs. Funderbuck's home, 49.4 feet west of large oak, and 27.8 feet south-southeast of center line of stone road at point where it makes T-intersection with sand road. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is along fence line, on east edge of field, and 141.99 feet from station in azimuth 285°34′. No. 2 is along fence line, on south edge of field, and 173.00 feet from station in azimuth 17°10′. Azimuth mark is between highway and railroad tracks, 45 feet west of center line of Route 76, 3 feet south of telephone pole no. H8E, and 0.15 mile from station in azimuth 191°11′37″.

Boaz (Carroll–Henry Counties, M. A. Hecht, 1934).—About 1 mile north of McKenzie, 0.4 mile east of Henry–Carroll–Weakley tricounty corner, on or near Henry–Carroll County line, and on property belonging to John Boaz and rented by McElroy and Montgomery. To reach from Lynn Hotel in McKenzie, follow State Route 22 north and west 0.35 mile, continue straight ahead on Magnolia Street where Route 22 turns west and go 1.05 miles, and just before reaching small bridge turn left into lane leading to house and follow lane about 225 yards beyond house to field and station site on high ground, in east-west fence line separating two fields, about 225 yards west of house, 47 yards west of fence corner, and 29 feet west of clump of peach trees. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in north-south fence line, 37 feet north of 14-inch holly tree, and 201.08 feet from station in azimuth 217°59′. No. 2 is along east-west fence line, 2 feet south of fence, and 133.53 feet from station in azimuth 111°59′. Azimuth mark is in yard of W. R. Montgomery (tenant of Mrs. B. P. Moore), 15 feet northeast of northeast corner of porch, 35 feet west of center line of road, and 0.4 mile from station in azimuth 335°22′37″.

McAdams (Carroll County, M. A. Hecht, 1934).—About 11½ miles northeast of Trezevant, 6½ miles north by west of Huntingdon, 4¾ miles southeast of McKenzie, and on property of Wade McAdams. To reach from courthouse in Huntingdon, follow Route 22 west 6.0 miles (2.0 miles past long concrete bridge), turn right onto dirt side road at double white oak on right which divides into two trunks about 10 feet from ground and go 2.6 miles, follow right fork 0.7 mile, turn left at Mr. Cozart's store and road intersection and go 0.5 mile (0.15 mile past Mr. McAdams' white house on left), turn left into lane and go 0.15 mile to house at top of grade and station site on top of cleared knoll, about 0.1 mile south of house along north-south fence line, 19 yards southeast of fence corner, 14 yards south-southeast of 48-inch oak, and 10 yards north-northwest of 12-inch walnut tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on east-west fence line between two fields, 120 feet east of fence corner, and 122.71 feet from station in azimuth 249°45′. No. 2 is along east-west fence line, 6 yards west of intersection with north-south fence line on which station is located, and 175.71 feet from station in azimuth 7°50′. Azimuth mark is across road from station and 9 yards east of center line thereof, in center of three roads at entrance of Mr. Cozart's driveway to house 30 yards south of 40-inch oak, and 0.3 mile (0.55 mile by road) from station in azimuth 303°39′47″.

Sampson (Carroll County, M. A. Hecht, 1934).—About 9 miles south-southeast of McKenzie, 7½ miles east of Trezevant, 3½ miles west of Huntingdon, 0.15 mile east of County Home road, and on property of R. E. Sampson. To reach from courthouse in Huntingdon, follow U. S. Route 70 and State Route 77 (combined) west 0.6 mile to junction, continue 4.0 miles on State Route 77 to crossroads at top of grade and arrow "Lakewood" on left, turn left and go 0.25 mile, turn sharply to right onto County Home road and go 0.5 mile to dirt road at south end of field on right, follow dirt road 0.15 mile to triangle-blazed tree on left, cotton field on right, and station on left, 56.5 feet west-northwest of 48-inch oak with top blown out, 45 feet north of center of dirt road, and 16 feet north-northeast of 14-inch oak with triangular blaze. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth

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marks are standard reference disks in concrete, note 11b. No. 1 is 30 feet north of center of road and 71.53 feet from station in azimuth 307°00′. No. 2 is 18 feet south of center line of road and 87.38 feet from station in azimuth 57°07′. Azimuth mark is on property of H. H. Newman, 12 feet west of County Home road, on bank about 3 feet above road, and 0.2 mile from station in azimuth 69°41′00″.

Blanks (Primary traverse station no. 22 (U. S. G. S.)) (Carroll County, M. A. Hecht, 1934).—In Trezevant, on property belonging to the Campbell heirs and managed by M. E. Singleton, 150 feet north by west of north corner of Louisville & Nashville Railroad station, 15 feet inside fence corner of property on which Blanks Hotel was formerly located, about 80 feet west of Louisville & Nashville Railroad right-of-way, and 39.5 feet west of light pole where wires cross railroad. Primary traverse station no. 22 (U. S. G. S.) was found marked by an iron pipe from which cap had been removed; a standard disk station mark was placed over pipe. Reference mark no. 1 is standard reference disk in concrete, note 11b, 15 feet west of center line of railroad right-of-way and 100.31 feet from station in azimuth 254°26′. Reference mark no. 2 is standard reference disk in loading platform of railroad freight station, 20 feet east of center line of railroad right-of-way, and 155.25 feet from station in azimuth 358°47′. Azimuth mark is standard reference disk in sidewalk, 90 feet north of north corner of Trezevant High School, 40 feet southeast of center line of highway, 15 feet east of light pole, and 0.2 mile from station in azimuth 22°12′18″. *Trezevant, municipal water tank (black), top of ball on roof*, is about 440 feet from station in azimuth 260°27′07″.

Allen (Carroll County, M. A. Hecht, 1934).—About 5½ miles west of Hollow Rock, 4 miles northeast of Huntingdon, 1½ miles northwest of Rosser, on property of E. G. Armstrong, on high ground, about 115 feet southeast of crossroads church, 21 feet south-southwest of center line of road, and 20.5 feet south-southeast of 8-inch red oak with triangular blaze. To reach from courthouse at Huntingdon, follow U. S. Route 70 east 0.7 mile, turn left onto asphalt road just after crossing railroad and go 1.35 miles, turn right through field and follow main road 0.9 mile, follow right fork 0.95 mile, turn onto left fork of T-road, and go 0.7 mile to crossroads church and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on east bank of road, 9 feet east-northeast of center line of road, and 106.71 feet from station in azimuth 315°42′. No. 2 is in churchyard, 26 feet northeast of center line of lane, 8 feet east of 15-inch white oak, and 93.95 feet from station in azimuth 58°13′. Azimuth mark is on south bank of road, about 100 yards southeast of white house, about 80 yards east of T-road, 15 feet south of center line of road, and 0.5 mile from station in azimuth 132°52′43″.

Hollow (Carroll County, M. A. Hecht, 1934).—About 1.5 miles west of Bruceton, and about 0.6 mile northeast of Hollow Rock railroad station, on summit of high bare hill, at eastern edge of cultivated field, 27.6 feet north-northeast of northeast corner of store operated by Nathan Foulkes, 16 feet west of center line of road, and on land owned by Nathan Foulkes (colored). To reach from Bruceton, go west about 2.4 miles on U. S. Route 70, turn right (north) onto dirt road at Prospect Baptist Church, proceed 0.4 mile to Hollow Rock railroad station, follow village street north 0.1 mile, turn right at street intersection, and follow winding road about 1 mile to negro settlement and station. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Upper marks project 12 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is at point of intersection of curve, in cultivated field, 7 feet northwest of center line of road, and 139.18 feet from station in azimuth 189°52′. No. 2 is in yard of Betty Thorpe, at western edge of garden, 54 feet east of center line of road, and 117.53 feet from station in azimuth 320°37′. Laplace azimuth mark is on western edge of cultivated field, 27 feet east of center line of road, about 6 feet higher than dirt road, 1 foot east of wire fence, and about 1.2 miles from station in azimuth 76°51′37″.

Ridings (Carroll County, M. A. Hecht, 1934).—About 0.5 mile northwest of Buena Vista, on property of Mr. J. E. Ridings, in his yard, 78 feet northwest of northwest corner of house, 15.5 feet west of garage, 60 feet east of center line of road, 52.5 feet southeast of 48-inch black-oak tree. To reach from courthouse at Huntingdon, go east 1.1 miles on U. S. Route 70 (or 0.4 mile after crossing railroad), turn right onto dirt road at arrow "Buena Vista 10 miles", go 7.2

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miles and turn left at top of grade, and proceed 0.15 mile to Mr. Ridings' home and station site. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a, Upper mark projects 12 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is about 100 feet south-southwest of house, 4 feet east-northeast of fence line, and across road from and 194.16 feet from station in azimuth 358°50′. No. 2 is 3 feet northeast of 8-inch black oak with triangular blaze, and in cemetery across road from, and 118.18 feet from station in azimuth 64°23′. Azimuth mark is at T-road leading to station, 15 feet south of center line of road, 32 feet east of twin maple, on property of Mr. Coke Moore, 125 feet south-southwest of frame dwelling, 40 feet north-northeast of tennis court, and 0.15 mile from station in azimuth 354°45′43″.

Ethel (Benton County, M. A. Hecht, 1934).—About 0.5 mile north of Sawyer, 2.5 miles west of Camden, and on property of Mrs. Ethel Johnson. To reach from junction of Zach rural road and Route 70 in Sawyer, go north 0.5 mile on Zach rural road to road fork to right which intersects with Old Stage road. Station is 125 yards north of Zach rural road, about 8 feet higher than and 36 feet north of center of Old Stage road, and 15.9 feet west-northwest of 12-inch oak tree with triangular blaze. Surface and underground marks are standard station disks in concrete, notes 1b and 7b. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 18 feet north of center line of road, 13.6 feet south-southwest of triple oak, and is 111.05 feet from station in azimuth 257°57′. No. 2 is 12 feet east of center of dirt road, about 75 feet south of Old Stage road, and 112.25 feet from station in azimuth 351°59′. Azimuth mark, projecting 8 inches above ground, is on grounds of the Zach School in Sawyers, 8 feet northwest of northeast corner of building, and 0.3 mile from station in azimuth 335°34′20″. *Bruceton, municipal water tank (black)*, is about 3 miles from station in azimuth 77°37′33″.

Smothers (Benton County, M. A. Hecht, 1934).—About 11 miles southwest of Camden, 6 miles east of Buena Vista, 5 miles south of Bruceton, ½ mile southeast of Pleasant Hill Church, on property of W. W. Smothers, at Smothers Crossroads, 40 yards south-southwest of Smothers' house, 30 yards south-southeast of road forks, 12 yards southwest of center line of left fork of road, and 23 yards southeast of 18-inch oak tree. To reach from Bruceton, go west about ½ mile on U. S. Route 70 and turn left (south) onto gravel road about 100 yards before reaching top of grade, and proceed 7.5 miles passing Pleasant Hill and Friendship Churches to home of Mr. Smothers and station site. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in Smothers' front yard, 30 yards west of house, 11 yards east of center line of road, and 114.81 feet from station in azimuth 184°41′. No. 2 is 8 yards southeast of center line of right fork of main road, 17 yards southwest of 18-inch oak tree, and 98.48 feet from station in azimuth 90°27′. Azimuth mark is on Mr. Smothers' property (now occupied by his daughter, Mrs. Butler), 16 yards northwest of northwest corner of Butler's house, 6 yards east-southeast of center line of main road leading to station, and 0.3 mile by road from station in azimuth 168°18′44″.

Weatherly (Benton County, M. A. Hecht, 1934).—About 6¾ miles northeast of Bruceton, 2.5 miles northwest of Camden, on summit of low ridge, on property of J. W. Weatherly, 85.2 feet northeast of northeast corner of his house, 55 feet north-northeast of 30-inch oak tree, and 41 feet east-northeast of center of road. To reach from courthouse at Camden, go south 0.5 mile on U. S. Route 70, turn right (west) onto gravel road and go 2.4 miles to Post Oak church and school, turn left (south) onto dirt road and go 0.25 mile to Weatherly's home and station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 31 feet west of center of road, on east fence line of field, and 157.50 feet from station in azimuth 53°20′. No. 2 is 55 feet west-northwest of road, on east fence line of field, and 92.00 feet from station in azimuth 133°49′. Azimuth mark is in front yard of residence of S. E. Davidson, 30 feet northeast of northeast corner of house, at edge of garden, 25 feet south-southeast of 30-inch oak tree, and 0.5 mile from station in azimuth 133°25′38″. To reach azimuth mark from station, go north 0.25 mile to Post Oak M. E. Church, turn left (west) and go 0.15 mile to two mail boxes and lane to left, turn left and go 0.2 mile to Davidson's residence and mark.

Pilot (Benton County, M. A. Hecht, 1934).—About 11½ miles south-southeast of Big Sandy, 7 miles east-northeast of Camden, 2¼ miles northeast of Eva,

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1¼ miles northwest of Tennessee River, on top of Pilot Knob, between pavilion and Nathan Bedford Forrest Monument, 7.1 feet south-southwest of west pillar at south entrance of stone pavilion, and 20.2 feet west of 14-inch white oak. To reach from northeast corner of square in Camden, go east 0.05 mile on gravel road to forks, follow right fork down hill 2.0 miles to forks, follow main left fork 3.45 miles to T-road at Pafford's store in Eva, turn left and go 0.1 mile to T-road right at Eva post office, turn right (northeast) and follow main road 2.8 miles to pavilion, monument, and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference mark no. 1 is standard reference disk in southeast corner of sidewalk around Forrest Monument, 25.8 feet southeast of monument, and 70.72 feet from station in azimuth 333°56′. Reference mark no. 2 and azimuth mark are standard reference disks in concrete, note 11b. No. 2 is 36.7 feet west of west steps to pavilion, 15 feet southwest of center line of driveway, 2.7 feet northeast of 12-inch oak, and 67.82 feet from station in azimuth 104°51′. Azimuth mark is 25 feet southwest of center line of road leading to pavilion, 6 feet above road, and 675 feet from station in azimuth 111°44′42″. *Pilot Knob, Nathan Bedford Forrest Monument* is 57.32 feet from station in azimuth 341°37′.

Hagard (Benton County, M. A. Hecht, 1934).—About 9½ miles south-southeast of Camden, 9½ miles south by west of Eva, 7½ miles east-northeast of Holladay, on top of heavily wooded knoll. To reach from courthouse in Camden, follow U. S. Route 70 and State Route 69 east 0.2 mile to junction, keep to right on Route 69 and go 0.4 mile, turn left at Odell Jordan Grocery Co., go through underpass, go 5.3 miles keeping straight ahead at crossroads, continue 2.35 miles keeping straight ahead at crossroads at Mount Morian School, go 2.9 miles to T-road right, turn right and go 0.85 mile to triangle-blazed oak and dim road on right, turn right onto dim road and go about 200 yards to station site in center of ridge, 33 feet west-southwest of 12-inch hickory with triangular blaze, 24 feet south of leaning 9-inch oak, and 15 feet east of center line of dim lane. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is along ridge, 15 feet west of 18-inch red oak, and 134.52 feet from station in azimuth 50°37′. No. 2 is on downward slope, 9 feet northeast of 6-inch white oak, and 105.32 feet from station in azimuth 146°21′. Azimuth mark is 15 feet southeast of center line of highway, 15 feet northwest of 10-inch white oak, and 0.3 mile from station in azimuth 263°21′08″.

Buck (Humphreys County, M. A. Hecht, 1934).—About 10½ miles southwest of McEwen, 5½ miles by road south of courthouse in Waverly, 9 yards west of center line of Route 13, 13 yards south-southwest of 16-inch oak with triangular blaze on east side, and 7 yards north-northeast of 12-inch oak. To reach from Waverly, follow Route 13 south as given above. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 7 yards east of center line of road and 143.97 feet from station in azimuth 189°29′. No. 2 is 10 yards north-northwest of 10-inch oak, 7 yards east of center line of road, and 65.77 feet from station in azimuth 297°21′. Distance between reference marks no. 1 and no. 2 is 175.74 feet. Azimuth mark is about 40 yards beyond point of curvature of first curve in road after passing station, 10 yards southeast of center line of road, 5 yards southwest of 12-inch oak, and 0.25 mile from station in azimuth 348°02′31″.

Baker (Humphreys County, M. A. Hecht, 1934).—About 11 miles south-southwest of Waverly, 4½ miles southeast of Hustburg, 1 mile west-northwest of Bakerville, on high wooded ground between Buffalo and Duck Rivers, and on main Bakerville-Sycamore Landing road. To reach from center of small settlement of Bakerville, follow Sycamore Landing road west 1.2 miles to top of grade and woods road, turn right onto woods road and go 0.1 mile, turn sharply to left and go about 200 feet to high point of ground and station site in approximate center of summit, about 100 yards south of top of road grade, 200 feet west of Bakerville road, and 19½ feet southwest of 10-inch oak with triangular blaze. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is along long slope of summit and 93.51 feet from station in azimuth 194°45′. No. 2 is down west slope of summit and 86.25 feet from station in azimuth 105°01′. Azimuth mark is on Bakerville road, at edge of woods, at top of first grade to north, 18 feet south of center of road, and 0.4 mile from station in azimuth 291°07′12″.

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Bold (Humphreys County, M. A. Hecht, 1934).—About 9 miles southeast of Waverly, 4¾ miles east-northeast of Hurricane Mills, 1¾ miles northwest of Bold Springs, on divide between Tumbling and Hurricane Creeks, at head of Bissell and McCallum branches of Hurricane Creek and Luten Hollow from Tumbling Creek, near northern end of summit, 30.8 feet southeast of 12-inch black oak with triangular blaze, and 19 feet north-northeast of 18-inch black oak. To reach from courthouse at Waverly, follow U. S. Route 70 east 0.25 mile and turn right (south) onto Route 13 at sign "Linden 42", follow Route 13 south 3.8 miles (or 1.65 miles beyond Blue Creek Bridge) and bear left onto gravel road at unpainted house, follow this main road up valley 5.55 miles and turn left up dim road about 150 yards beyond point where top of grade is reached and 55 yards beyond oak on left with triangular blaze, follow blazes about ½ mile to foot of rise, then follow dim right fork about 200 yards to highest point and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark projects 8 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b, projecting 9 inches above ground. No. 1 is along downward slope, 20 feet southeast of twin 12-inch oak, and 136.16 feet (slope distance) from station in azimuth 337°54′. No. 2 is along downward slope of ridge and 129.94 feet from station in azimuth 174°08′. Azimuth mark is 0.25 mile from county road along road leading to station, 18 feet west of center line of road, 10 feet east-southeast of blazed black oak, and 0.25 mile from station in azimuth 103°10′32″.

Buffalo (Humphreys County, M. A. Hecht, 1934).—About 1.75 miles east of Buffalo post office, about 0.25 mile north of Buffalo-Only road, on top of flat wooded knoll, about 50 yards south of dim road, and 15.6 feet north-northeast of 8-inch triangle-blazed oak tree. To reach from Buffalo post office, go east 2.0 miles on gravel road to dim crossroads and triangle-blazed tree on left at top of grade, follow dim road to left 0.25 mile to blazed tree on left, and thence up slight hill to left to top of grade and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on down slope, 20 yards south of dim road, and 118.19 feet from station in azimuth 213°12′. No. 2 is on down slope and 109.07 feet from station in azimuth 313°21′. Azimuth mark is about 15 feet northwest of center line of road from Buffalo to station, 26 feet southeast of 10-inch oak with triangular blaze, and 0.25 mile from station in azimuth 17°01′25″. *Airway beacon no. 58* (see description thereof) is 7.2 miles from station in azimuth 337°46′08″.

Spot (Hickman County, M. A. Hecht, 1934).—About 10 miles northwest of Centerville, 5¾ miles west-northwest of Nunnelly, 1.8 miles east of town of Spot, on slight rise on heavily wooded ground, 55.5 feet east-northeast of center of woods road, 58.8 feet southeast of 30-inch white-oak tree with triangular blaze, and 21.5 feet southwest of 30-inch white-oak tree. To reach from Nunnelly, follow Nunnelly-Buffalo road west 6.65 miles from its junction with State Route 48, turn right (west-northwest) onto dim woods road and go 1.2 miles to station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference mark no. 1 is about 40 feet northeast of center of road and 112.43 feet from station in azimuth 214°07′. No. 2 is about 60 feet northeast of center of road and 127.64 feet from station in azimuth 61°50′. Azimuth mark is on east edge of woods road, at base of large tree, and about 500 feet from station in azimuth 209°30′09″.

Aircon (Perry–Hickman Counties, M. A. Hecht, 1934).—On or near Perry-Hickman County line, about 5¼ miles west of Coble, on highest point of small hill, 200 feet southeast of road, at north edge of scrub-oak thicket, and near airway beacon no. 58. To reach from Lobelville post office, keep straight ahead north off State Route 13 onto gravel road 1.2 miles, turn right at end of bridge and go 0.85 mile, turn left up hill and go 2.45 miles to station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 in on southeast side of old road to southwest, 7 feet northwest of 6-inch oak tree, and 91.96 feet from station in azimuth 15°14′. No. 2 in on northwest slope of hill, 40 feet southwest of southwest corner of beacon generator cabin, and 78.99 feet (slope distance) from station in azimuth 114°38′. Azimuth mark is along road leading past station, on small rise of ground, 105 feet southeast of center line of road, 10 feet northwest of 20-inch white-oak tree, and 0.2 mile from station in

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azimuth 226°23′50″. *Airway beacon no. 58* (see description thereof) is 88.44 feet from station in azimuth 162°57′.

Cobel (Hickman County, M. A. Hecht, 1934).—About 7 miles east-southeast of Lobelville, 7.5 miles east of Beardstown, 2.7 miles east of Hickman-Perry County line, on right-of-way of and 29 feet south of center line of State Route 50, at property of Scott Tie Co., 15 feet southeast of 6-inch double oak tree, and 30 feet north-northeast of 12-inch white-oak tree. To reach from junction of Routes 13 and 50 in Beardstown, go east 7.5 miles on Route 50 to top of grade and station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 64 feet north of center line of road, 24 feet north of 8-inch oak tree, 51 feet east-southeast of 16-inch oak tree, and 111.13 feet from station in azimuth 186°59′. No. 2 is 25 feet north of center line of road, 8 feet southeast of 5-inch oak tree, and 203.40 feet from station in azimuth 294°25′. Azimuth mark is 50 feet south of center line of highway, 25 feet east of intersection with dim side road to right, 18 feet north of dim side road, and 0.1 mile by road from station in azimuth 299°01′01″.

Dry (Hickman County, M. A. Hecht, 1934).—About 7½ miles northeast of Centerville, 6 miles east of Nunnelly, 33 feet southeast of center of Route 100, about opposite center of long curve in highway which is concave to southeast, on bank about 5 feet higher than highway, about 43 feet southwest of 6-inch oak with triangular blaze, and 6 feet southeast of State highway boundary marker. To reach from courthouse in Centerville, follow Route 100 northeast 4.9 miles to junction with Route 48 and continue 4.1 miles on Route 100 to station on right. Easley Bros.' Esso station is 0.7 mile beyond station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on fence line, 32 feet northwest of center of road, and 129.6 feet from station in azimuth 83°55′. No. 2 is 45 feet northwest of center of road and 272.8 feet from station in azimuth 219°50′. Azimuth mark is 30 feet northwest of center of Route 100, about 25 feet southwest of narrow-gage railroad, 4 feet southwest of southwest face of railroad watchman's shanty, and 0.15 mile from station in azimuth 240°32′52″.

Wade (Hickman County, M. A. Hecht, 1934).—About 4½ miles south-southwest of Centerville, 2½ miles north by east of Aetna, 1½ miles east by south of crossroads church and school, ¾ mile northwest of State Route 100, and near triangle-blazed tree on east side of road running along top of ridge. To reach from post office in Centerville, follow State Route 100 south 1.15 miles, turn right about 200 yards after passing electric substation on right, go 0.45 mile keeping right across railroad, continue 0.15 mile, keep to left at forks and go 1.95 miles, keep to left at forks and continue 0.95 mile to station on left, 12 yards south-southeast of center line of road, 9 yards northwest of 10-inch chestnut oak, and 7 yards west-southwest of 10-inch oak. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 4 yards northwest of center line of road and 105.10 feet from station in azimuth 199°50′. No. 2 is 4 yards northwest of center line of road and 101.27 feet from station 79°49′. Distance between reference marks no. 1 and no. 2 is 178.8 feet. Azimuth mark is 15 feet northwest of 16-inch oak, 4 yards southeast of center line of road, and 0.2 mile (0.25 mile by road) from station in azimuth 80°01′27″.

Nod (Maury County, M. A. Hecht, 1934).—About 9 miles east-northeast of Mountpleasant, 3.75 miles southwest of Columbia, on summit of Nodgrass Hill, and on property of Mrs. Daws Frierson. To reach from courthouse at Columbia, follow U. S. Route 31 south 0.65 mile, continue south on Highland Avenue and main road 2.6 miles, turn left onto rough, rocky road after passing large house on left, continue 0.9 mile to top of grade, turn left into lane through field and go about ½ mile to home of J. C. Pollock, then southeast through cleared field 250 yards to summit and station site 150 yards west of fence row at east end of summit and 80 yards north of north fence line of field at south edge of summit. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference marks are standard reference disks in concrete, note 11b. No. 1 is along longitudinal center of summit and 85.55 feet from station in azimuth 254°05′. No. 2 is in center of small depression on summit and 84.31 feet from station in azimuth 343°27′. Azimuth mark is standard reference disk in boulder, note 12c, in group of small boulders at north corner of field, 64 feet clear of local timber, 40 feet south of fence corner, near 6-inch twin tree, 25 feet south-

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east of wire fence line, 20 feet west of wire fence line, and about 350 yards from station in azimuth 212°06′04″.

Match (Maury County, M. A. Hecht, 1934).—About 8½ miles south by east of Spring Hill, 6½ miles east by north of Columbia, in cultivated field, and on property of W. C. Ogilvie. To reach from courthouse in Columbia, follow U. S. Route 31 north 1.8 miles to junction with State Route 99, turn right onto Route 99, go 3.65 miles, turn right onto county road across concrete bridge just before reaching store of W. F. Coffey, follow main road straight ahead 0.65 mile, turn right onto T-road, go 0.35 mile to house on left, turn right onto T-road, go 1.4 miles to top of grade, turn left through gate, and follow farm road 0.4 mile to top of ridge and station site at southwest edge of hill and 20 feet northeast of center line of farm road. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark is about 12 inches below surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is along ridge, 8 feet southwest of center line of road, and 93.75 feet from station in azimuth 142°42′. No. 2 is along slope of ridge, 9 feet southwest of center line of road, and 114.28 feet from station in azimuth 1°39′. Azimuth mark is on cleared ridge, near large clump of bushes, 20 feet southwest of small sycamore, and 0.15 mile from station in azimuth 146°06′28″.

Baxter (Marshall County, M. A. Hecht, 1934).—On summit of Baxter Ridge, 4.5 miles west along Route 50 from courthouse in Lewisburg, 1 mile south of highway at this point, about ¼ mile southwest and 200 feet above old Baxter farm, on summit of southeasterly and higher of two ridges of about same elevation, in approximate center of triangle-shaped summit, 130 feet north-northeast of 30-inch oak tree, and 70 feet east of wire fence on west side of hill. To reach from Columbia, go east 15.4 miles on Route 50 (or 2.6 miles east of Silver Creek railroad station), turn right onto dirt road at curve to left in highway, go 0.2 mile, turn right through two large stone posts, go 0.75 mile to end of road at house and two barns (end of truck travel), and then due south about ⅜ mile to station site on most prominent knob or ridge in vicinity. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is about 2 feet east of wire fence and 93.66 feet from station in azimuth 46°49′. No. 2 is about 2 feet east of wire fence and 97.72 feet from station in azimuth 150°45′. Distance between no. 1 and no. 2 is 150.75 feet. Azimuth mark is on Route 50, about 100 yards southwest of S. B. Davis' house, 35 feet north of center line of highway, on south fence line of Davis' property, and 1 mile from station in azimuth 252°50′07″.

Hardison (Marshall County, M. A. Hecht, 1934).—About 3¼ miles north-northwest of Veronal, 2½ miles south-southeast of Caney Springs, and on property of R. S. O. Hardison. To reach from Lewisburg, go north 0.9 mile on State Route 11, turn left onto Caney Springs road, go 9.2 miles to side road on left about 100 yards before reaching Duel River bridge, and follow side road left 0.4 mile to the Hardison home and station site. Station is along fence line on south side of Hardison's front yard, 48 feet south of 26-inch hickory tree, and 90 feet southeast of southeast corner of the Hardison house. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is in Hardison's front yard, along north fence line, 20 feet east of 10-inch peach tree, and 183.54 feet from station in azimuth 223°55′. No. 2 is in barn lot, along east fence line, 28 feet north of north face of barn, and 187.24 feet from station in azimuth 309°08′. Azimuth mark is standard reference disk in concrete, note 11b, on property of Sam Krutcher, along west fence line of highway between Lewisburg and Caney Springs, 0.15 mile north of Duel River bridge, and ½ mile from station in azimuth 263°18′15″.

Neil (Marshall County, M. A. Hecht, 1934).—About 5½ miles east of Lewisburg, 2½ miles east-northeast of Belfast, on small flat-topped hill known locally as "Glenn Hill", and on property of Mrs. Mary Neil. To reach from courthouse at Lewisburg, go east on street on north side of courthouse 0.2 mile, cross creek bridge, turn left and then right between stone walls, go 0.6 mile to the Harwell and Finley store, keep straight ahead on main road 3.8 miles to stone wall, follow right fork 0.55 mile, follow left fork 0.1 mile, and follow left fork 0. 3 mile to home of Otis Luna. Station is on prominent knob about ½ mile east. Go by way of spring about ¼ mile south of station and then left (north) up divide to station site. Station is at south end of ridge, 19 feet northeast of blazed 9-inch hackberry tree, 24 feet southeast of blazed ash, 24 feet south of blazed white oak, and 27.3 feet northwest of another blazed hackberry tree. Mark is standard station disk in

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flat-topped rock outcrop, note 3. Reference and azimuth marks are standard reference disks in outcropping bedrock, note 12b. No. 1 is about 2 feet lower than and 20.454 meters (67.11 feet) from station in azimuth 289°25′. No. 2 is along top of ridge and 10.998 meters (36.08 feet) from station in azimuth 35°04′. Azimuth mark is in large flat rock outcrop and slightly higher than and 150 yards from station in azimuth 197°09′46″.

Poplin (Bedford County, M. A. Hecht, 1934).—About 9 miles northwest of Shelbyville, 3½ miles south-southeast of Unionville, 0.6 mile south of Poplin's Crossroads, on property of E. A. Crowell, in pasture about 300 feet northeast of his house, 125 feet east of fence corner, and 15 feet southeast of wire fence. To reach from junction of State Routes 16 and 99 at Eagleville, follow Route 16 south 9.65 miles (or 0.4 mile beyond main crossroads at Unionville), keep straight ahead where Route 16 turns left, proceed 2.55 miles, keep straight ahead at Poplin's Crossroads and continue 0.55 mile to home of E. A. Crowell and station site on left. To reach from courthouse in Lewisburg, go north 12.7 miles on State Route 11 (or 0.8 mile after crossing Duck River) to narrow gravel road crossing, turn right and follow main road straight ahead 7.1 miles to Poplin's Crossroads and store on right, turn right and go 0.55 mile to home of E. A. Crowell and station site. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is in pasture, 6 feet northwest of fence corner, and 235.02 feet from station in azimuth 33°01′. No. 2 is in pasture, about 60 yards northeast of house, 13 feet southeast of fence corner, and 120.99 feet from station in azimuth 94°45′. Distance between no. 1 and no. 2 is 207.15 feet. Azimuth mark is 15 feet west of road at point where road turns southeast and 0.45 mile from station in azimuth 9°07′50″. Zion Hill Church, center gable, is 0.5 mile from station in azimuth 200°45′21″.

Adams (Bedford County, M. A. Hecht, 1934).—About 8½ miles southwest of Shelbyville, 8.25 miles west-northwest of Flat, 1½ miles north-northeast of Richmond, on top of highest point of heavily wooded ridge, on property of G. E. Adams and 0.3 mile south of home of W. A. Winford. To reach from junction of U. S. Route 241 and State Route 64 (1 mile south of Shelbyville), follow Route 64 west 2.55 miles, turn left (south) onto T-road, go 3.55 miles (0.05 mile beyond store), turn right onto stone road, go 1.5 miles, turn left into lane, go 0.4 mile to W. A. Winford's home (end of truck travel), and continue up hill along north-south fence line 0.3 mile to summit and station site in small saddle, 65 feet north of high point of hill, 59 feet northwest of 34-inch oak with triangular blaze, and 30 feet north of wire fence. Surface mark is standard station disk in boulder, note 4. Underground mark is standard station disk in concrete, note 7a. Reference and azimuth marks are standard reference disks in boulders, note 12c. No. 1 is down east slope of summit toward cleared field and 73.92 feet from station in azimuth 260°08′. No. 2 is on high ground, near large oak tree with triangular blaze, and 65.72 feet from station in azimuth 328°03′. Azimuth mark is in large flat rock outcrop near base of hill, 250 yards west of Winford's house, 40 feet south of large maple tree, and 0.2 mile from station in azimuth 220°17′49″.

Horse (Bedford County, M. A. Hecht, 1934).—About 7½ miles east-southeast of Fallcreek, 5 miles west-southwest of Wartrace, 2½ miles northeast of Shelbyville, on highest point of Horse Mountain, on sharp rounded peak that is heavily wooded on top, and on property of G. L. Bragg. To reach from Hotel Dixie in Shelbyville, go north 0.05 mile to Stewart-Ray Motor Co. on West Lane Street, turn right, go 0.5 mile to asphalt forks, turn onto left fork (Whitthone Street), go 3.2 miles (0.1 mile beyond white church), turn left onto dim road, go 0.25 mile to home of Mr. Bragg, and continue south 0.3 mile to knob and station site at southwest end of pointed top, 23.8 feet southwest of 12-inch black oak with triangular blaze, and 13.7 feet west-northwest of 18-inch black oak. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference marks are standard reference disks in outcropping bedrock, note 12b. No. 1 is on downward slope, 15 feet southwest of 15-inch hickory, and 111.48 feet from station in azimuth 359°34′. No. 2 is on small ledge, 6 feet southwest of 9-inch hickory, and 93.81 feet from station in azimuth 86°30′. Azimuth mark is standard reference disk in lower front step of home of Mr. Bragg and 0.3 mile from station in azimuth 198°03′04″.

Hawthorne (Bedford-Lincoln Counties, M. A. Hecht, 1934).—About 9 miles south by west of Shelbyville, 4.5 miles south-southeast of Pleasant Grove, 0.75 mile north by west of Mount Herman Church, on right-of-way of road along top of ridge said to divide Bedford and Lincoln Counties, and on property

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adjoining that of Mr. Pierce. To reach from courthouse in Shelbyville, follow U. S. Route 241 south 7.05 miles (0.8 mile beyond small red house on left), turn left onto gravel fork, go 1.95 miles, turn sharply to left, past Cedar Grove Settlement onto crossroad along top of ridge, go 0.3 mile to sharp left turn with small log cabin on right, and continue 0.1 mile to right turn and station site 26.8 feet north-northwest of Mount Herman road, 3.7 feet east-southeast of large corner fence post, and 1½ feet south of wire fence. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on edge of field, 21 feet south of center line of road, and 74.76 feet from station in azimuth 301°02′. No. 2 is on edge of field, 18 feet east of center line of road, 3 feet east of fence line, and 92.25 feet from station in azimuth 18°26′. Azimuth mark is near Walter Murray's log cabin, 9 yards south of center line of road, about 5 yards northwest of 15-inch locust, and 0.1 mile from station in azimuth 33°57′48″.

Armstrong (Bedford County, M. A. Hecht, 1934).—About 8 miles southeast of Shelbyville, just west of Route 16, on highest point of ridge on cleared ground owned by Jas. R. Armstrong, about 0.25 mile west-southwest of Mr. Armstrong's house, and about 180 feet east of wire fence line. To reach from junction of Routes 16 and 55 in Tullahoma (at arrow "Shelbyville 18"), follow Route 16 west 5.55 miles to junction with Route 55, turn right and continue on Route 16 3.0 miles (0.7 mile beyond stores on right and left), cross concrete bridge at right turn in road, and continue 0.8 mile to Mr. Armstrong's house on left near top of grade. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark is below surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is below surface of ground and 98.66 feet from station in azimuth 57°22′. No. 2 is in edge of field, at southeast edge of woods, 40 feet east of rail fence line, and 313.10 feet (slope distance) from station in azimuth 158°57′. Azimuth mark is on property of Bob Mitchell, in edge of pasture, 150 feet northeast of Mrs. Ruby Glastoe's house, 38 feet west of center line of gravel road, 1 foot west of rail fence line, 1 foot south of gatepost, and 1.25 miles from station in azimuth 296°41′30″. To reach azimuth mark from Mr. Armstrong's house, follow Route 16 south 0.9 mile, turn sharply to left onto gravel road running north and go 0.2 mile to mark. Azimuth from station to northerly of two white churches, southeast spire, distant 2 miles, is 327°57′36″.

Shelbyville (Bedford County, M. A. Hecht, 1934).—About 1.5 miles west of Shelbyville, on land owned by G. W. Armstrong. To reach from courthouse in Shelbyville, follow State Route 64 southwest 0.15 mile to side road on right just before crossing Duck River bridge, turn right and go 0.1 mile to first crossroad after crossing railroad, turn left and go 1.5 miles (passing two pencil factories) to crossroad (Armstrong's home in far left corner), keep straight ahead 0.05 mile to large lone 12-inch oak, and go southeast 200 feet to station site on northerly end of low rounded ridge which runs through pasture, about 300 feet west-southwest of Armstrong's home, and about 60 feet south of fence line. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark is 12 inches below surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 10 feet below station in elevation, about 60 feet west of west corner of Armstrong's barn, 1.5 feet south of fence line, and 131.32 feet (slope distance) from station in azimuth 230°17′. No. 2 is 15 feet below station in elevation, 15 feet west-northwest of 12-inch oak tree mentioned above, 15 feet southeast of center line of road, 12 feet southwest of T-fence corner, and 180.55 feet (slope distance) from station in azimuth 165°03′. Azimuth mark is in pasture lot, on top of next knoll from station, about 6 feet above road in elevation, 20 feet west of center line of road, 4 feet west of fence line, and approximately 750 feet from station in azimuth 348°38′25″. To reach azimuth mark when coming from Shelbyville, turn left at crossroad at the Armstrong home and go 0.15 mile to mark on right.

Elkins (Franklin County, M. A. Hecht, 1934).—About 4 miles north of Decherd, 3¼ miles east by south of Estill, on west side of old Winchester-Manchester road, and on property of J. R. Elkins. To reach from post office in Decherd, go 0.2 mile northwest on first street northeast of post office, turn right onto main road and go 0.05 mile, keep straight ahead at crossroad and go 0.05 mile, turn left onto main road and go 4.0 miles to top of grade and Mr. Elkins' home on left. Station is 32 yards southeast of southeast corner of Mr. Elkins'

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house, 27 yards west of center line of Winchester-Manchester road, and 9 yards east of picket fence corner in Mr. Elkins' front yard. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is along north fence line around yard, 17 yards west of center line of road, 4 yards west of 8-inch cedar, and 62.76 feet from station in azimuth 214°15′. No. 2 is in front of house, along highway right-of-way, 11 yards south of south fence around yard, 6 yards west of center line of road, and 62.77 feet from station in azimuth 305°24′. Azimuth mark is 13 yards north of telephone pole no. 177, 7 yards east of center line of road leading past station, and approximately 0.1 mile from station in azimuth 204°18′59″. *Winchester, municipal water tank (aluminum), ball on top*, is about 6 miles from station in azimuth 20°36′26″.

Brier (Franklin County, M. A. Hecht, 1934).—About 7½ miles south-southeast of Winchester, 7.1 miles west of Sherwood, 5.25 miles south-southwest of Cowan, on summit of high flat-topped ridge which is enclosed in semicircle of higher ridges open to northwest. To reach from railroad station at Cowan, follow State Route 15 west 0.3 mile to town water tank, turn left (south) and go 2.0 miles to rough, rocky T-road leading up hill, turn left onto this road and go 3.95 miles to junction of four roads, and follow extreme right fork 0.55 mile to triangle-blazed tree on right and station. Station is on highest point of ridge, 65 yards north of road, on dim woods road to north, 40 feet northwest of leaning snag, and 16½ feet southeast of 18-inch oak. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is just off northwest edge of summit and 97.99 feet from station in azimuth 152°32′. No. 2 is at base of 30-inch oak and 131.88 feet from station in azimuth 260°47′. Azimuth mark projecting 8 inches above ground, is at dim roads fork, 50 yards west of point where dim road turns off to station, 9 feet south of center of main road, 3 feet west of 16-inch oak, and 0.15 mile from station in azimuth 21°32′37″.

Williams (Franklin County, M. A. Hecht, 1934).—About 3½ miles south-southwest of Cowan, near northeast end of mountain about 6½ miles southeast of Winchester, 35 feet southwest of center of road at south end of horseshoe curve, and on property of Procter Pyles. To reach from railroad station in Cowan, follow U. S. Route 64 west 0.4 mile, turn left onto stone road at city water tank on right and go 0.8 mile, follow right fork 0.4 mile, keep right fork at cabin on right and go 0.8 mile, turn onto rough dirt road to left at mail box on left with name "Sullivan" on it and go 2.6 miles (0.4 mile past spring on left) to top of grade and station site 35 feet southwest of road and 23.7 feet west of 3-inch oak with triangular blaze on right side of road. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference mark no. 1 is standard reference disk in flat boulder, note 12c, 76.9 feet from station in azimuth 238°22′. Reference mark no. 2 is standard reference disk in concrete, note 11b, 25 feet east of center of road and 102.32 feet from station in azimuth 327°57′. Azimuth mark is standard reference disk in large boulder, note 12c, on north side of large gulley, 25 yards south of top of ridge, about 150 yards north-northeast of 24-inch blazed oak on east side of road, and 0.2 mile from station in azimuth 195°52′48″. *Transit traverse station no. 19 W. 1926 (U. S. G. S.)* (see description thereof) is in large mass of flat-topped boulders, about 30 yards north-northeast of center of road at horseshoe curve, and 135.31 feet from station in azimuth 208°04′.

Sewanee (Franklin County, M. A. Hecht, 1934).—About 6 miles south of Pelham, 3¼ miles southwest of Monteagle, 2½ miles northeast of Sewanee, ¼ mile northeast of St. Andrew School, on small wooded hill, at fence line between lands of St. Andrew School and Adolph Hunziker, and on property of St. Andrew School. To reach from post office in Sewanee, follow U. S. Route 64 east 2.7 miles to gravel road with arrow "St. Andrew", turn left and follow main road 0.8 mile, turn onto left fork just after passing main building of St. Andrew School and go 0.05 mile, follow right fork 0.2 mile, turn right into yard and proceed up hill about ¼ mile to station site a little south of highest part of summit and 19 feet east-northeast of 12-inch chestnut oak with triangular blaze. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on downward slope, 12 feet southeast of 10-inch black oak, and 75.80 feet from station in azimuth 338°55′. No. 2 is along fence line and 105.55 feet from station in azimuth 76°22′. Azimuth mark is on property of John Rufe, about 100 feet

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south of J. C. Foster's log cabin, 27 feet southeast of center line of Route 64, and 1.25 miles from station in azimuth 351°55′24″.

Holly (Marion County, M. A. Hecht, 1934).—About 14 miles east by south of Sewanee, 8½ miles west of South Pittsburg, 1½ miles north of Tennessee-Alabama State line, and on highest point of heavily wooded ridge. To reach from railroad station in Anderson, follow State Route 56 north 0.8 mile, turn right onto rough farm road just before reaching green house with tennis court (home of E. S. Gonce) and go 0.95 mile to gate hung to cedar tree, pass through gate and continue 0.8 mile to triangle-blazed sycamore tree at creek crossing and end of truck travel, continue about ½ mile along road (0.1 mile beyond lone brick chimney), turn right onto dim road at triangle-blazed tree on left and go about ¼ mile to triangle-blazed tree on left, turn left onto path and go about 1 mile to top of ridge, turn right and go about ⅓ mile along ridge, turn right at triangle-blazed tree on right and follow blazes through woods 200 yards to dim road, turn right and continue about ¾ mile along road to triangle-blazed oak and station site. Station is 24.5 feet west of 15-inch white oak, 24 feet north-northwest of triangle-blazed 30-inch chestnut oak, and 22.5 feet east-southeast of 24-inch white oak. Surface mark is standard station disk in buried boulder, note 5. Underground mark is standard station disk in concrete, note 7a. Reference and azimuth marks are standard reference disks in buried boulders, note 12d. No. 1 is 12 feet west of 36-inch oak and 97.42 feet from station in azimuth 54°42′. No. 2 is 10 feet southwest of crooked 16-inch oak and 108.70 feet from station in azimuth 146°32′. Azimuth mark is flush with surface of ground, along top of ridge, and about 200 yards from station in azimuth 336°45′59″.

Lost (Franklin County, M. A. Hecht, 1934).—About 10¼ miles southwest of Tracy City, 3 miles southeast of Sewanee, and on property of J. B. Hunt. To reach from post office in Sewanee, follow U. S. Route 64 east 1.95 miles to railroad crossing, go 0.7 mile, turn right onto dim dirt road at triangle-blazed tree on right, go 3.15 miles to top of grade, blazed tree, and station on left. Station is in wire fence line, about 85 feet east-southeast of 12-inch oak with triangular blaze, and 30 feet north of center line of ridge road (Jumpoff Road). Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 20 feet south of center line of road and 110.7 feet from station in azimuth 328°42′. No. 2 is on line with black stump and station, 20 feet south of center line of road, and 118.9 feet from station in azimuth 95°50′. Azimuth mark, projecting 6 inches above ground, is 21 feet south of center line of road and 0.15 mile from station in azimuth 113°10′54″.

Comfort (Marion County, M. A. Hecht, 1934).—About 10 miles east-southeast of Sewanee, 8.75 miles west-northwest of Jasper, 7.75 miles south-southwest of Tracy City, between east fork of Battle Creek and Big Fiery Gizzard Creek, on south end of east one of two parallel ridges of same elevation, and on what is known locally as "Spieger Point." To reach from junction of State Routes 2 and 56 in Monteagle, follow Route 56 northeast 3.95 miles to crossroads, turn right, go 1.4 miles, turn onto left fork and follow main road 1.35 miles to crossroads, turn right, go 1.45 miles, turn onto left fork up hill, go 2.9 miles, pass through barred gate at house, go 0.3 mile, follow right fork 0.3 mile, follow left fork 0.9 mile, turn onto extreme right-hand fork at tree on left with triangular blaze, go 0.55 mile, turn onto right fork at tree on right with triangular blaze and go 0.15 mile to top of grade at cultivated fields and station site on uncultivated tongue of land between two cultivated fields, at point where slope breaks to east and south, 200 feet north of road, and 80 feet southwest of high point of summit. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is near center of field, on high point of ground, and 75.10 feet from station in azimuth 223°55′. No. 2 is at northwest edge of field, on south slope of point, and 85.88 feet from station in azimuth 322°41′. Azimuth mark is at northeast edge of sage field, 20 feet southwest of center of road, and 0.15 mile from station in azimuth 251°37′59″.

Fuller (Marion County, M. A. Hecht, 1934).—About 5¼ miles north-northeast of South Pittsburg, 2½ miles west by south of Jasper, and on highest point of Fullertons Bluff on the Cumberland Plateau. To reach from Jasper, follow State Route 27 northeast 0.7 mile to sign "Jasper City Limit" on left, turn left onto dim lane and go 0.45 mile to its end, pass through gate, turn left and go 0.1 mile, bear right on rocky road through woods up mountain about ½ mile to home of Mr. Cash, pass around left side of Mr. Cash's house and go ¼ mile

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to road forks with triangle-blazed tree ahead, follow right fork ½ mile to dim road to right, turn right and go 1½ miles on blazed mountain road which follows general direction of bluff to very large tree with two triangular blazes (just past what is known locally as "Lookout"), turn right onto dim woods road and go about ¼ mile to highest point and station site. Station is 7 yards north-northwest of triangle-blazed 6-inch oak, 6 yards west of triangle-blazed 10-inch oak, 5 yards east-southeast of triangle-blazed 9-inch oak, and 5 yards south of triangle-blazed 8-inch oak. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference marks are standard reference disks in concrete, note 11b. No. 1 is 31 feet southeast of 14-inch oak, 26 feet south-southwest of 10-inch oak, and 82.00 feet from station in azimuth 338°33′. No. 2 is 24 feet west-northwest of 10-inch oak, 22.6 feet north-northwest of 6-inch oak, and 65.86 feet from station in azimuth 80°34′. Airway beacon no. 13B is on south edge of bluff, on first ridge north of station, and about 3 miles distant in azimuth 222°23′41″.

Weldon (Jackson County, Ala., M. A. Hecht, 1934).—About 4.7 miles southeast of South Pittsburg, on north edge of Sand Mountain, overlooking Tennessee River, in G. A. Weldon's front yard, about 100 yards south of road, 100 feet east-southeast of Weldon's house, and 12 feet west of barnyard fence. To reach from Cameron Hotel in South Pittsburg, follow street east 0.45 mile to free ferry, cross Tennessee River and go 1.2 miles from east bank, turn right at T-road and go 6.85 miles on main road to summit of Sand Mountain and T-road to left, continue straight ahead 0.05 mile, turn right onto lane and go 0.3 mile to home of G. A. Weldon. Surface and underground marks are standard station disks in concrete, notes 1c and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is at base of small tree, about at center of adjoining pasture, and 115.83 feet from station in azimuth 233°32′. No. 2 is on east fence line of adjoining field and 133.16 feet from station in azimuth 336°24′. Azimuth mark is on fence line, at sharp curve in road to station and 20 feet southwest of center line thereof, and 0.15 mile from station in azimuth 261°56′19″.

Aetna (Marion County, M. A. Hecht, 1934).—About 11 miles west-southwest of Chattanooga, about ¼ or ½ mile south of new Tennessee Electric Power Co.'s high-tension line, and on highest pointof Aetna Ridge known locally as "Little Ridge" (first high ridge west of original Aetna Mines). To reach from junction of U. S. Routes 11 and 64 about 5 miles southwest of Chattanooga, follow Route 11 south 0.7 mile to side road to right at sign "Cummings Road", turn right onto asphalt road and go 0.35 mile to side road to left, turn left across old wooden bridge and go 0.05 mile to end of lane, turn right and follow main steep mountain road 2.35 miles to top of mountain, continue on main road 5.0 miles to T-road with triangle-blazed tree on left, turn left and go 1.0 mile to home of W. I. Davis on right, just beyond Davis' house turn right and go around barn 0.1 mile to dim woods road to right with triangle-blazed tree on right, turn right and go 0.25 mile to triangle-blazed oak on right, turn right off road and cross old tram roadbed, continue straight ahead (east) 50 yards to well-defined woods road, turn right onto woods road and go 50 yards to triangle-blazed tree on left, turn sharply to left onto very dim road and follow along ridge up steep grade 0.45 mile to triangle-blazed tree on left, and go 100 yards to left to station site. Station is 75 feet west of dim road, 22.5 feet southeast of triangle-blazed 16-inch pine, and 14.1 feet southwest of triangle-blazed 14-inch pine. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark is flush with surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1, projecting 4 inches above ground, is 9.5 feet southwest of double hickory tree and 85.95 feet from station in azimuth 203°58′. No. 2 is 12 feet west of dim road and 63.75 feet from station in azimuth 288°16′. Azimuth mark, projecting about 6 inches above ground, is about 30 feet east-northeast of 14-inch hickory tree, 3 feet southeast of 2 small blazed oaks, and 120 yards from station in azimuth 222°02′10″.

Scholtze (Marion County, Tenn.–Dade-Walker Counties, Ga., M. A. Hecht, 1934).—About 2 miles southwest of Lookout Mountain Park, on ridge of Lookout Mountain, on fence line reported to be along State line, and on highest point of fence line reported as separating Dade and Walker Counties, Ga. Fence along State line separates properties of Mrs. G. E. Scholtze to north and E. H. Lawman (receiver) to south. To reach from post office in Lookout Mountain, follow Lookout Mountain Scenic Highway north 0.3 mile, bear left at fountain and follow W. Brow Avenue west 0.15 mile, turn left and follow Sunset Road southwest 0.35 mile, turn right onto Stephenson Avenue and go 0.7 mile (0.25 mile

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past "Western Front" club) to large stone gate on right at entrance to Mrs. Scholtze's home, continue on main dirt road (fence on right) 500 feet to end of stone fence, follow wire fence west (up hill) about 150 feet to top of ridge and station site, about 150 yards south of Mrs. Scholtze's home, 150 feet west of road, and 16 feet south of 12-inch oak. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is flush with surface of ground, on edge of woods, about 4 feet below station in elevation, 1 foot south of fence line, and 76.80 feet from station in azimuth 272°02′. No. 2, projecting 8 inches above ground, is in woods of 10-inch oak and small pine and 81.97 feet from station in azimuth 35°09′. Azimuth mark is 12 feet north of center line of Scenic Highway, on west side of entrance drive to Civilian Conservation Corps camp, and 0.4 mile from station in azimuth 277°04′13″.

Supplementary points

Primary traverse station no. 40 1910 (U. S. G. S.) (Obion County, M. A. Hecht, 1934).—In Union City, 34.4 feet southeast of center of railroad water tank, 6.1 feet southwest of west edge of railroad platform, and 81.05 feet in azimuth 197°49′ from station *Union* (see description thereof). Originally marked by iron post stamped "Prim. Trav. Sta. No. 40 1910."

Primary traverse station no. 19 1910 (U. S. G. S.) (Weakley County, M. A. Hecht, 1934).—In Greenfield, 7 yards west of center line of Route 45E, 5 yards south of east-west street, and 124.12 feet in azimuth 100°42′ from station *Greenfield* (see description thereof). Originally marked by iron post stamped "Prim. Trav. Sta. No. 19 1910."

Transit traverse station no. 19 W 1926 (U. S. G. S.) (Franklin County, M. A. Hecht, 1934).—In large mass of flat-topped boulders, about 30 yards north-northeast of center of road at horseshoe curve, and 135.31 feet in azimuth 208°04′ from station *Williams* (see description thereof). Mark is stamped "TT NO 19W 1926."

LA FAYETTE, GA., TO BRISTOL, TENN. (SECOND ORDER)

Principal points

Peavine (Catoosa County, Ga., M. A. Hecht, 1934).—About 8 miles southeast of Fort Oglethorpe, 6 miles south-southwest of Ringgold, 4½ miles east-northeast of Rock Springs, just east of Peavine Valley, on summit of Peavine Ridge, and on property of W. M. Hargris. To reach from north entrance of Chickamauga Park and south exit of Fort Oglethorpe, turn east and follow asphalt road 1.9 miles to exit of park, continue straight ahead on Ringgold road 3.1 miles to point 0.8 mile beyond town of Boynton, turn sharply to right and proceed along main Peavine Valley road 2.15 miles, follow right fork 0.75 mile to crossroads, turn left and go 0.8 mile, follow left fork 0.4 mile to top of ridge, follow right fork 1.0 mile to Hargris' home, follow farm road through barnyard 0.4 mile to top of ridge and station site in cultivated field, near east edge of summit, about 200 feet north-northeast of 10-inch triangle-blazed walnut tree, and 44.5 feet southwest of fence corner. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference mark no. 1 is standard reference disk in boulder, note 12d, in cultivated field, 5 feet northeast of 6-inch peach tree, and 19.713 meters (64.68 feet) from station in azimuth 194°47′. Reference mark no. 2 is standard reference disk in bedrock, note 12b, in cultivated field, 15 feet southeast of sassafras cluster, and 46.400 meters (152.23 feet) from station in azimuth 53°52′. Azimuth mark is standard reference disk in concrete, note 11a, in R. L. Hargris' yard, 35 feet west-northwest of house, 15 feet east of center line of road, and about 0.5 mile from station in azimuth 240°08′56″. Azimuth from station to Ringgold, airway beacon no. 9B, distant about 6 miles, is 232°15′25″.

Boynton (Catoosa County, Ga., M. A. Hecht, 1934).—About 10½ miles southeast of Chattanooga, 5 miles north-northwest of Ringgold, 5 miles south of Tennessee-Georgia State line, ¼ mile north of gap in Boynton Ridge and Ringgold-Chickamauga Park road, and on property of W. M. Vaughn. To reach from north entrance to Chickamauga Park on U. S. Route 41W, go east 3.8 miles on asphalt road which is gravel after leaving park to top of grade on Boynton Ridge and home of W. M. Vaughn on north side of road. Station is 350 yards north along ridge from Vaughn's home, 5 feet east of Vaughn-Swift-McCullough

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property corner, and 1 foot south of Vaughn-Swift property-line fence. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is on fence line between Swift's and Vaughn's properties and 89.45 feet from station in azimuth 266°16′. No. 2 is on fence line between Vaughn's and McCullough's properties and 65.54 feet from station in azimuth 18°55′. Distance between reference marks no. 1 and no. 2 is 129.66 feet. Azimuth mark is 75 yards south of Ringgold-Chickamauga Park road, 50 yards southwest of A. L. Morris' home, on property of H. M. Boyles, and about 0.25 mile from station in azimuth 340°30′41″. Azimuth from station to *Lookout Mountain Hotel, spire*, is 104°58′57″. Stations *Lookout* and *High Point 2* (see descriptions and geographic positions thereof) are visible from ground at station.

Lookout (Hamilton County, M. A. Hecht, 1934).—About 3½ miles southwest of Chattanooga, in town of Lookout Mountain, on north end of Lookout Mountain, in northwest angle of intersection of Bragg Avenue, North, and Morrison Avenue, West, and on vacant corner lot owned by George K. Brown. To reach from Patten Hotel in Chattanooga, follow U. S. Route 11 south 3.5 miles to arrows "Lookout Point", etc., turn left up mountain and go 2.2 miles, keep to left on Lookout Mountain Scenic Highway and go 0.3 mile to Bragg Avenue, turn right and go to street sign on right, turn north and go 0.8 mile (or 0.5 mile past Morrison Avenue) to station site 77 feet north of 36-inch tree, 38 feet west of center of Bragg Avenue, and 25 feet north of A. W. Tabor's hedge line. Surface and underground marks are standard station disks in concrete, notes 1c and 7a. Upper mark is 6 inches below surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 7 feet east of curb line of Bragg Avenue and 127.30 feet from station in azimuth 216°57′. No. 2 is 10½ feet east of curb line of Bragg Avenue and 107.15 feet from station in azimuth 332°05′. Distance between reference marks no. 1 and no. 2 is 198.25 feet. Azimuth mark is on vacant lot of G. K. Brown, 66 feet east of center of East Brow Avenue, 43½ feet north of northwest corner of stone house of E. A. Magill, 17 feet north of hedge line, and 130 yards from station in azimuth 298°50′46″. *Lookout Mountain, small water tank, ball on top*, is 227.4 meters (746 feet) from station in azimuth 24°07′34″.

McDaniel (Hamilton County, M. A. Hecht, 1934).—About 2¾ miles northwest of Appison, 1¾ miles south of Ooltewah, about ¾ mile south along ridge from McDaniel Gap, and on first high top of summit along White Oak Mountain. To reach from post office in Ooltewah, go south 1.0 mile on asphalt road to crossroads, keep straight ahead 0.15 mile, turn left through yard of Fred Robinson and follow farm road about 0.3 mile to toe of ridge (end of truck travel). Station is on high knob about ¼ mile to southeast, at western edge of summit, about 40 feet southwest of high mass of boulders, 45 feet north of 15-inch triangle-blazed pine tree, 19 feet north of 9-inch triangle-blazed white oak, and 9.2 feet west-southwest of 8-inch triangle-blazed white oak. Mark is standard station disk in boulder, note 5. Reference and azimuth marks are standard reference disks in boulders, note 12d. No. 1 is along ridge, in highest mass of boulders which projects 4 feet above ground and 12.175 meters (39.95 feet) from station in azimuth 217°10′. No. 2 is in boulder which projects 2 feet above ground, along top of ridge, and 13.370 meters (43.86 feet) from station in azimuth 352°00′. Azimuth mark is along top of ridge, on eastern edge of wide sloping mass of boulders, about 2 feet lower than highest point, and about 85 yards from station in azimuth 10°07′. Azimuth from station to *Lookout Mountain, New York Monument, flagpole*, distant about 16 miles, is 80°07′39″.

Goat (Hamilton County, M. A. Hecht, 1934).—About 4½ miles northeast of center of Chattanooga, at north end of Missionary Ridge, on highest point of ridge locally known as "Billy Goat Ridge", in residential section of Battery Heights, on property of George B. Adams, 775 feet south of Jesse J. Turner's home on Ridge Crest Drive, in approximate center of knob comprising highest point of ridge, 75 feet northwest of triangle-blazed tree, 39 feet west-southwest of 32-inch oak tree, and 18 feet west of 28-inch oak tree. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 18.5 feet west of crest of ridge and 86.05 feet from station in azimuth 248°30′. No. 2 is down south slope of hill and 119.35 feet from station in azimuth 53°41′. Distance between reference marks no. 1 and no. 2 is 205 feet (slope distance). Azimuth mark is on west side of Battery Park Hill, 25 feet from center of gravel

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road leading around summit of hill, 18 feet southeast of monument of Tenth Missouri Infantry, and about 0.75 mile from station in azimuth 356°53′34″.

Buncombe (Hamilton County, M. A. Hecht, 1934).—About 5½ miles north-northeast of Ooltewah, 2¼ miles south along ridge from Mahan Gap, and on highest and most southerly one of two peaks (locally known as "Buncombe Peak") on summit of White Oak Mountain Range. To reach from Ooltewah on U. S. Route 11, follow Ooltewah-Georgetown pike 5.15 miles to Clara Huff's home, turn east through gate about 60 yards south of her home, continue on dim rough road to abandoned house, pass to north around house and continue east through cleared field to edge of woods at base of peak (end of truck travel). Follow dim trail east up ridge to south about ½ mile to summit and station site in center of small rounded hump comprising summit, about 65 feet west of long center of ridge, and 21 feet south of 12-inch chestnut-oak tree. Surface mark is standard station disk in boulder, note 4. Underground mark is standard station disk in concrete, note 7a. Reference marks no. 1 and no. 2 are standard reference disks in bedrock, note 12a. No. 1 is in large flat rock outcrop, along south slope of ridge, about 50 feet west of center of ridge, and 302.55 feet from station in azimuth 9°51′. No. 2 is in rock outcrop on south side of path to summit and 104.95 feet from station in azimuth 86°58′. Reference mark no. 3 is standard reference disk in boulder, note 12c, on level summit of hill and 28.30 feet from station in azimuth 308°25′.

Harrison (Hamilton County, M. A. Hecht, 1934).—About 10½ miles northeast of Chattanooga, 6¼ miles south of Daisy, 3 miles east-northeast of Hixon, on highest summit along what is locally known as "River Ridge", and on property of J. B. Davidson. To reach from railroad station at Hixon, go north 1.2 miles on Hixon Pike, keep straight ahead at forks, continue 1.25 miles, turn right onto gravel road at arrow "Big Ridge Road", follow this road up mountain 0.6 mile, turn left at top of grade and cemetery on right, proceed along top of ridge 0.65 mile, follow dim road straight ahead at triangle-blazed oak tree, and continue 0.4 mile to highest point and station site in center of cleared area and 25.2 feet east-southeast of 15-inch triangle-blazed red oak tree. Surface and underground marks are standard station disks in concrete, notes 1c and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 10 feet east of rail fence and woods line, along ridge, and 97.45 feet from station in azimuth 206°54′. No. 2 is 4 feet east of rail fence and woods line, along ridge, and 94.65 feet from station in azimuth 50°12′. Azimuth mark is 25 feet east of woods line, 15 feet east of center line of road, in cleared area, and about 0.55 mile from station in azimuth 30°40′38″.

Georgetown (Bradley–Hamilton Counties, M. A. Hecht, 1934).—About 2 miles south-southwest of Georgetown, on summit along White Oak Mountain, about ¾ mile north along ridge from Taliaferro Gap, and on land of W. B. Roark. To reach from main crossroads (junction of Route 83 and old Route 58) at Georgetown, follow Ooltewah Pike south 1.55 miles to fork, keep straight ahead on right fork and go 0.75 mile to point which is 0.15 mile beyond small cottage with green roof on right, turn left through opening in fence, go along field road to newly built house, pass house and go to foot of clearing leading to peak (end of truck travel). Station is about ½ mile from highway, 500 feet above highway, at west edge of young peach orchard, 36 feet east of wire fence, and 39.5 feet south of triangle-blazed 12-inch tree. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is in young peach orchard and about 6 feet lower in elevation than and 100.38 feet from station in azimuth 291°38′. No. 2 is on backbone of ridge, 50 feet east of wire fence, and 117.83 feet from station in azimuth 16°43′. Azimuth mark is at northeast edge of peach orchard and southwest edge of heavy timber, and 175 yards from station in azimuth 219°33′27″.

Bakewell (Hamilton County, M. A. Hecht, 1934).—About 11 miles south-southwest of Dayton, 1½ miles north of Bakewell, on highest point of ridge just west of Southern Railway and east of Walden Ridge, on sharp pointed knob, and on property of the Durham Land Co. To reach from railway station in Bakewell, go west 0.3 mile on gravel road, turn right onto dirt road, go 1.45 miles, follow rough farm road leading up ridge (small cabin on left) follow road along ridge 1.0 mile, and follow dim road to right at triangle-blazed pine ¼ mile to top of peak and station. Station is near northern end of ridge, 15 feet southeast of triangle-blazed black-oak tree. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are

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standard reference disks in concrete, note 11a. No. 1 is at northern end of ridge and about 10 feet lower than and 136.00 feet from station in azimuth 248°06′. No. 2 is on eastern slope of ridge and about 25 feet lower than and 237.87 feet from station in azimuth 45°43′. Azimuth mark is 300 feet north of road leading up ridge, 110 feet southwest of new log cabin, 20 feet southeast of road on slope of ridge, and 0.75 mile from station in azimuth 321°01′14″.

Crisp (Meigs-McMinn Counties, M. A. Hecht, 1934).—About 8¾ miles north-northwest of Calhoun, 8 miles west-northwest of Riceville, 3¾ miles east of Big Springs, on highest point of hill along McMinn Ridge, and on property of J. H. Crisp. To reach from post office at Big Springs, follow Route 58 north 4.0 miles, turn right (east) onto rough county road at triangle-blazed oak tree on left, proceed 0.45 mile and bear right, continue 1.1 miles to forks with church on right, turn left and go 1.45 miles to T-road, turn right and go 1.0 mile to J. H. Crisp's home, turn left onto farm road and go 0.3 mile to creek (end of truck travel), and follow trail east up ridge about ⅓ mile to station site in cultivated field, about 130 yards north-northwest of small shed, 50 yards south-southeast of woods, and 130 feet north of orchard. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is about 100 feet west of woods, 6 feet north of edge of orchard, and 235.25 feet from station in azimuth 298°16′. No. 2 is 10 feet south of edge of orchard and 138.95 feet from station in azimuth 22°33′. Azimuth mark is about 0.3 mile south of J. H. Crisp's home, 35 feet south of fence corner, 20 feet south of farm road, 20 feet west of county road, and 1.0 mile from station in azimuth 58°40′43″.

Dayton (Rhea County, M. A. Hecht, 1934).—About 1½ miles west-southwest of Dayton, on northeasterly one of three knobs comprising summit known as "Lone Mountain". To reach from principal corner in Dayton, follow U. S. Route 11 south 0.75 mile to south edge of town, turn west onto rough asphalt road and go 1.25 miles, turn right (west) onto dirt road and go up mountain 1.2 miles (end of truck travel), turn right onto dim rough dirt road leading up bank of cut at north edge of cultivated field and follow this winding road east ½ mile to cross ridge, turn left (north) up ridge and go ¼ mile to northeast corner of cleared field, thence up side of ridge 100 yards to backbone of ridge, turn right along summit and go 0.3 mile to station site near southwest end of long narrow summit, about 100 yards southwest of northeast end of summit, in about longitudinal center of ridge top, 20.3 feet west-southwest of 34-inch triangle-blazed oak tree, and 16.7 feet north-northwest of 28-inch white oak stump. Surface mark is standard station disk in boulder, note 4. Underground mark is standard station disk in concrete, note 7a. Reference and azimuth marks are standard reference disks in bedrock, note 12a. No. 1 is in rock outcrop, down southwest slope of hill, 26 feet northeast of twin hickory tree, and 97.40 feet from station in azimuth 63°10′. No. 2 is in flat rock outcrop and 116.00 feet from station in azimuth 188°36′. Azimuth mark is in large flat rock outcrop, down east slope, 15 yards northwest of hollow tree, and 150 yards from station in azimuth 311°50′32″.

Pone (Meigs-McMinn Counties, M. A. Hecht, 1934).—About 10 miles south-southwest of Ten Mile Stand, 4¼ miles north-northeast of Decatur, 2½ miles northwest of Fiketon, on or very near Meigs-McMinn County line, on highest point of McMinn Ridge, on wooded knoll, and on property of either Grace Simms or Mr. Mowery. To reach from junction of Routes 59 and 30 in Decatur, follow Route 30 east 1.4 miles to old road just beyond two mail boxes on right, turn left (west) onto old road and go 0.3 mile to T-road left with 2-story frame house on left, turn left and go 0.4 mile to fork with small barn on left, keep to left 2.5 miles to forks with school on right, follow right fork 0.35 mile to point where main road makes large left turn around old frame house and there are mail boxes on wheel ahead, follow right dirt fork 0.55 mile to road forks with picket fence on right, follow right fork 0.45 mile to triangle-blazed tree on right (end of truck travel), then go southeast up grade along edge of field 475 feet, continue to right along old road 200 feet to dim path up hill through woods, follow this path 1,800 feet to cleared field at top, turn left across field and enter woods at top of ridge, and follow path along top of ridge 1,550 feet to station site 17.7 feet west of 17-inch triangle-blazed oak tree, 17.5 feet north of 9-inch triangle-blazed oak tree, and just a few feet northwest of backbone of ridge. Mark is standard station disk in bedrock, note 3. Reference and azimuth marks are standard reference disks in bedrock, note 12a. No. 1 is 3 feet west of 10-inch chestnut-oak tree, and about 2 feet higher than and 37.44 feet from station in azimuth 343°44′. No.

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2 is about 8 feet lower than and 92.39 feet from station in azimuth 94°51′. Azimuth mark is 5 feet southeast of dim trail, 3 feet north of 10-inch triangle-blazed oak tree, and about 100 yards from station in azimuth 52°07′.

Evansville (Rhea County, M. A. Hecht, 1934).—About 8¾ miles west-northwest of Decatur, 1½ miles east-northeast of Evansville, on property of Ray Redman, to north of his home and of schoolhouse, and on top of hill in open field of second-growth scrub oaks. To reach from Evansville railroad station, follow U. S. Route 27, northeast 1.55 miles to gravel side road to right (southeast), turn right up hollow onto gravel road and go 0.45 mile, turn left just before reaching church and go 60 yards, keep to left fork, and go 0.45 mile to private road at top of grade, turn right and follow private road 0.05 mile to top of hill and station. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is at same elevation as and 77.03 feet from station in azimuth 204°51′. No. 2 is on downhill slope and 73.00 feet from station in azimuth 94°25′. Azimuth mark is standard reference disk in concrete, note 11b, 12 feet south of center line of county road and about 350 yards from station in azimuth 285°18′11″.

Stone (Rhea County, M. A. Hecht, 1934).—About ½ mile southwest of point on State Route 68 which is 4.45 miles east of Spring City, on third and highest ridge top southwest of highway, in center of rounded hilltop, 139 feet southwest of double beech tree, and 130 feet southeast of 36-inch oak tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b No. 1 is on west edge of summit and 109.90 feet from station in azimuth 178°23′. No. 2 is on west edge of summit, east edge of woods on west side of hill, and 128.94 feet from station in azimuth 81°10′. Azimuth mark is 18 feet northeast of center of gravel road leading north from Route 68, 115 yards southeast of road junction, and 0.8 mile from station in azimuth 301°14′09″.

Prigmore (McMinn County, M. A. Hecht, 1934).—About 7½ miles west-southwest of Sweetwater, 3 miles south-southwest of Prigmore, and on property of W. E. McCosh. To reach from intersection of U. S. Route 11 and State Route 68 in Sweetwater, follow Route 68 west 6.0 miles to small bridge and old barn and stone side road on left, turn left and go 0.85 mile, turn right across small stream at group of old buildings, go 1.55 miles to stone quarry and fork, follow left fork 0.6 mile to T-road on left at top of grade and barn on right, and go through gate into barn lot and up lane behind barn 0.2 mile to edge of cultivated field (end of truck travel). Follow along fence to left 350 yards to point where fence crosses ridge. Station is 50 yards southwest of top of cultivated field, in old peach orchard, 45 feet west-southwest of 16-inch triangle-blazed black walnut tree, and 10 feet south of fence line between orchard and cultivated field. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference mark no. 1 is standard reference disk in concrete, note 11a, in edge of woods on hill slope, 35 feet southwest of 20-inch oak tree, and 121.00 feet from station in azimuth 89°20′. Reference mark no. 2 and azimuth mark are standard reference disks in concrete, note 11b. No. 2 is on top of ridge, in peach orchard, and 119.75 feet from station in azimuth 22°16′. Azimuth mark is 18 inches south of fence line leading to station, 3 yards west of center line of gate through fence, about 18 feet lower than and about 175 yards from station in azimuth 270°45′29″.

Barnard (Roane County, M. A. Hecht, 1934).—About 2½ miles south of Barnardsville, 2 miles south of Barnard Narrows, near old abandoned mine, on highest part of peak at head of Hurricane Creek, on small knob near center of long north-and-south ridge, and about 1 mile east of State Route 58. To reach from post office in Kingston, follow State Route 58 south 9.6 miles, turn east onto gravel road through Barnard Narrows, go 1.35 miles, turn south at crossroads and continue 2.15 miles to dim road leading west along railroad grade (end of truck travel). Follow road along old railroad grade west 0.2 mile, turn south onto rough wagon road and go ¼ mile to summit and station site ½ mile west of county road, 20.5 feet east of 8-inch triangle-blazed pine tree, and on west projection of path to summit. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is slightly down northwest slope of knob and 91.53 feet from station in azimuth 219°28′. No. 2 is north

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of path to summit, slightly down north slope of knob, and 93.32 feet from station in azimuth 8°50′. Azimuth mark is on State Route 58, 2.1 miles south along highway from junction with gravel road through Barnard Narrows, 200 yards north-northwest of white house, on edge of orchard, 100 feet south of T-road, 21.5 feet west of center of highway, and 1 mile from station in azimuth 117°03′07″.

Sweetwater (Monroe County, M. A. Hecht, 1934).—About 2¼ miles north-northwest of Sweetwater, 1½ miles west of U. S. Route 11, south of Tennessee River, on high ground on Black Oak Ridge, on summit of small hill overlooking Sweetwater, and on property of Mary Sherman, 50 yards southwest of her house, 31.0 feet west of center of rough dirt road leading to station, and 24 feet west of dead snag. To reach from center of Sweetwater, follow U. S. Route 11 north 0.75 mile to north edge of town, turn west onto gravel road and go 1.65 miles, turn right onto farm road at frame church and go 0.2 mile to top of grade and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is along backbone of hill, at west edge of road, and 102.56 feet from station in azimuth 225°08′. No. 2 is on east side of road, 20 feet southwest of southwest corner of barn, and 104.89 feet (slope distance) from station in azimuth 354°33′. Distance between reference marks no. 1 and no. 2 is 187.6 feet (slope distance). Azimuth mark is 25 yards east of frame church, 20 feet south of center of road, on south side of gravel road, and about ¼ mile from station in azimuth 347°12′20″.

Warn (Monroe County, M. A. Hecht, 1934).—About 4¼ miles northeast of Sweetwater, on top of most southeasterly and slightly higher of two wooded knobs, and on property of Mrs. Warn, of Sweetwater. To reach from junction of U. S. Route 11 and State Route 95 in Loudon, follow Route 11 south 8.3 miles to point 0.1 mile beyond where transmission line crosses highway, turn left (east) onto stone road and go 0.7 mile to Mr. Mill's home (end of truck travel), and from here follow trail and wagon road southeast ¼ mile to top of hill and station site 40 feet north of highest point of ridge and slightly lower, 20.8 feet north of 10-inch triangle-blazed black oak, and 16 feet west of two 15-inch white-oak trees. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is on downward slope of ridge, 15 feet west-northwest of 15-inch twin oak tree, and 91.55 feet from station in azimuth 128°30′. No. 2 is on downward slope of ridge, 25 feet north of 24-inch elm tree, and 107.10 feet from station in azimuth 55°59′. Azimuth mark is on downward slope of adjoining hill, 45 feet south of top of hill, 11 feet north-northeast of 15-inch white-oak tree, and about 150 yards from station in azimuth 134°08′55″.

Cave (Roane County, M. A. Hecht, 1934).—About 6 miles northwest of Lenoir City, on property owned by Floyd Harvey and tenanted by Robert White. To reach from junction of Routes 70 and 95 at Eatons Crossroads, follow Route 70 west 5.25 miles (or 2.45 miles past county-line marker) to bottom of grade, T-road left and old frame house (home of Robert White) just beyond point where transmission line crosses highway. Station is 300 yards up hill to east, in group of fruit trees on cultivated hill at heads of Cave and Pawpaw Creeks, about 100 yards south of U. S. Route 70, 50 yards north of transmission line, 23 feet west of 36-inch cherry tree, and 45.5 feet west-southwest of 30-inch triangle-blazed cherry tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 32 feet south of telephone line, 9 feet north of center of dim road to station, on down slope of hill, and 119.8 feet from station in azimuth 221°33′. No. 2 is 70 feet south of telephone line, at north edge of cultivated field, and 86.84 feet from station in azimuth 146°20′. Azimuth mark is 60 yards southwest of S. W. Waller's home, on south side of U. S. Route 70, in edge of cultivated field, about 6 feet higher than road, and about 0.7 mile from station in azimuth 278°07′48″. Azimuth from station to white school, spire, distant 1½ miles, is 163°33′56″.

Cloyd (Loudon County, M. A. Hecht, 1934).—About 4¼ miles southwest of Friendsville, 3½ miles north-northeast of Morganton, ¾ mile northwest of Meadow, on high pointed knob, and on property of Joe Tuck. To reach from post office at Lenoir City, go north 0.3 mile on U. S. Route 11, turn right onto paved street and go 0.8 mile to ferry, after crossing ferry follow main road 5.1 miles to T-road, follow right fork (main road) 1.3 miles to Turpentine, follow left fork between two stores and go east 0.3 mile to forks (location of azimuth mark), follow right fork 1.3 miles to triangle-blazed cedar tree, turn left onto rough farm road and

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go 0.2 mile to cultivated field (end of truck travel), and follow wagon road straight ahead about ¼ mile to top of hill and station site at northwest edge of peach orchard, 54 feet northeast of 12-inch blazed locust tree, and about 40 feet northwest of and 3 feet lower than highest point. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in orchard, on highest point of ridge, and 77.40 feet from station in azimuth 275°07′. No. 2 is in orchard, slightly lower than highest point of ridge, and 58.45 feet from station in azimuth 358°23′. Azimuth mark is 0.3 mile east of Turpentine, in pasture of H. C. Greenway's farm, near fork in road mentioned above, 79.7 feet from junction of center lines measured along north fork, 24.9 feet east of center line of north fork, 1.9 feet inside of fence line, and about 1.25 miles from station in azimuth 98°26′49″.

Rockford (Blount County, M. A. Hecht, 1934).—About 6½ miles north-northeast of Maryville, 1½ miles east of Rockford, on ridge that runs northeast from Little River and 1½ miles from river, on highest knob in vicinity, and on property of Lon and Bert Anderson. To reach from Rockford, follow State Route 33 south 0.4 mile to gravel road, turn left (east) and go 0.6 mile to forks, follow left fork 0.4 mile, keep to left up hill at road fork and go 0.65 mile to top of grade where there is path to right and private road on left (end of truck travel), from here follow path on right 250 yards to divide, turn right and go 150 yards to highest point and station site 9 feet west of 22-inch ash tree, 9 feet east-southeast of 14-inch pine tree with triangular blaze on northeast side, and 8 feet northwest of highest part of ridge. Mark is standard station disk in concrete, note 1b. Reference mark no. 1 is standard reference disk in bedrock, note 12b, along path to station, on top of ridge, 30 inches southwest of 16-inch oak tree, and 42.34 feet from station in azimuth 223°05′. Reference mark no. 2 is standard reference disk in concrete, note 11b, on downhill slope, 12 feet east-northeast of 18-inch pine tree, and 37.92 feet from station in azimuth 146°35′. Azimuth mark is standard reference disk in concrete, 0.3 mile before reaching end of truck travel along road leading to station, on property of Lon Anderson, 6 yards northwest from center line of road, 8 feet west-southwest of driveway leading to residence, 4 feet northeast of corner post of fence, and about 0.4 mile from station in azimuth 106°36′01″.

Sands (Knox County, M. A. Hecht, 1934).—About 9½ miles north-northwest of Louisville, 7 miles north-northeast of Concord, 3 miles east of Ball Camp, between Clinch and Tennessee Rivers, on top of small knoll on Black Oak Ridge, and on property of Dave Sands. To reach from junction of U. S. Routes 11 and 70 just north of Lenoir City, follow Routes 11 and 70 east 5.65 miles (or 1.05 miles beyond Farragut School on right) to T-road left just before reaching "Noce" Woco Pep service station on right, turn left and go 0.45 mile to forks just after passing 2-story white house on right, follow left fork 0.45 mile to white church on right, follow main road 0.55 mile to 2-story white house on left, keep to right and go 1.65 miles to road forks, follow right fork (main gravel road) 1.7 miles to 2-story white store on right (town of Ball Camp), turn sharply to right around store and go 0.15 mile to forks at Woco Pep service station, follow left fork 1.1 miles to railroad crossing and jogged crossroads, keep straight ahead 0.5 mile, turn right onto main road across railroad tracks and go 1.7 miles (or 0.45 mile after passing pink stucco house on right) to telephone pole no. 130 and three mail boxes on left, turn right onto gravel road and go 0.05 mile, just after crossing railroad tracks turn left up winding road through woods and go 0.35 mile to green house (home of Mr. Ford), thence southwest up hill 300 yards along fence line through old orchard to station site in small grove of pine trees, 11 feet east-southeast of 10-inch triangle-blazed pine tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in line with two 24-inch stumps and 85.93 feet from station in azimuth 272°23′. No. 2 is slightly lower than and 87.79 feet from station in azimuth 30°39′. Azimuth mark is ¼ mile west along Lobetti Pike from paved road, at top of grade, on fence line of property of J. C. Wood, 12½ feet southwest of center of Lobetti Pike, 6 feet east of 4-inch pine tree, and 0.75 mile from station in azimuth 123° 15′12″. Azimuth from station to white school cupola, distant 1½ miles, is 283°17′28″.

Crewes (Knox–Blount Counties, M. A. Hecht, 1934).—About 8½ miles southeast of Knoxville, 7¼ miles east-northeast of Rockford, approximately on Knox-Blount County line, on highest point of knob locally known as "Stiff Knee"

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(highest point of ridge known as "Bays Mountain"), and on property of Jack Shuler. To reach from Andrew Jackson Hotel in Knoxville, follow State Route 35 east 10.6 miles (0.2 mile beyond railroad crossing and county line), turn right onto county road at Burnett's Cash Store and go 0.15 mile to T-road, turn right and go 1.35 miles to T-road, turn right and go 1.0 mile, turn left and go 0.85 mile (0.05 mile beyond sawmill), turn left and go 0.15 mile to fence line (end of truck travel), follow trail straight ahead up ridge ½ mile to station site 34.5 feet south-southeast of 36-inch elm tree and 9 feet northeast of 12-inch triangle-blazed pine tree. Mark is standard station disk in buried stone, note 5. Reference marks are standard reference disks in boulders, note 12d. No. 1 is on downward slope, 5 feet north-northwest of 30-inch elm tree, and 30.63 feet from station in azimuth 94°58′. No. 2 is along top of ridge, 11 feet east-northeast of 36-inch elm tree, and 40.96 feet from station in azimuth 218°08′. Distance between reference marks no. 1 and no. 2 is 63.15 feet. Azimuth mark is standard reference disk in concrete, note 11b, on property of Mr. Whalay, 18 feet northwest of county road, 18 feet south-southwest of 8-inch blazed pine tree, 11 feet southeast of farm road, and about 1.0 mile from station in azimuth 144°17′36″.

Sharp (Knox County, M. A. Hecht, 1934).—About 3 miles north-northwest of center of Knoxville, on highest knob of ridge locally known as "Sharp" or "Roseberry Ridge", on Knoxville city line, and on property line between properties of Metler Bros. and Edgewood Land and Development Co. To reach from center of Knoxville, follow State Route 33 west to junction with Dutch Valley Pike, turn south and follow pike 1.4 miles to T-road, turn east and go 0.25 mile to large barn (end of truck travel), follow steep path east up hill 0.3 mile to summit and station site about 27 feet south of highest point and 15.8 feet north of 20-inch triangle-blazed black-oak tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 20 feet east of double black-oak tree, on level top of knob, and 75.95 feet (slope distance) from station in azimuth 245°05′. No. 2 is 30 feet southeast of path to summit, down east slope of knob, and 93.28 feet (slope distance) from station in azimuth 20°07′. Azimuth mark is 1.4 miles south of junction of State Route 33 and Dutch Valley Pike, 21 feet west of center of Dutch Valley Pike, 21 feet south of T-road to station, 5 feet from telephone pole, and about 0.6 mile from station in azimuth 144°00′18″.

McBee (Sevier County, M. A. Hecht, 1934).—About 7¾ miles east-southeast of Thorngrove, 6¼ miles north-northwest of Sevierville, 1¼ miles north of ferry across French Broad River between Kodak and Sevierville, ¾ mile east-southeast of Kodak post office, on high knoll, on property of Clara Bryant McBee, at west edge of cultivated field, 30.5 feet east-northeast of 24-inch triangle-blazed oak tree, and 26.3 feet south-southeast of fence corner. To reach from junction of U. S. Routes 11E and 70 about 10 miles east of Knoxville, follow Route 70 east 0.65 mile to Texaco gas station and tourist station on left at gravel crossroads, turn right and go 0.25 mile, keep left fork and go 0.85 mile, keep to left on gravel road and go 0.95 mile, turn left onto asphalt road at J. M. Smith's store at Thorngrove and go 0.5 mile, keep to left just after passing 2-story house on right, follow main road ahead 5.1 miles keeping straight ahead at crossroads at Warrens Store and Old Kodak, go 1.85 miles and turn left onto gravel road at small cottage on right, go 2.35 miles (1.0 mile beyond Kodak post office), turn right onto gravel road just after crossing wooden bridge and go 0.25 mile to J. W. Carmichael's home and barn on left at old field road, turn right and follow old field road 0.3 mile to top of hill and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 88½ feet north of east-and-west fence, 61½ feet east of north-and-south fence, and about 4 feet lower than and 103.59 feet from station in azimuth 212°50′. No. 2 is on down slope of hill, 2½ feet north of wire fence, and 82.20 feet from station in azimuth 289°46′. Azimuth mark is ½ mile along main road from road leading to station, 15 feet west of center of road, directly below telephone line, just inside fence at entrance to meadow, and about 0.6 mile from station in azimuth 288°49′00″. Station *English* (see description and geographic position thereof) is visible from ground at station.

Crockett (Hamblen County, M. A. Hecht, 1934).—About 2½ miles west-northwest of Morristown, 0.25 mile north of home of Jim Epps, on highest part of and near west edge of high cleared knoll, highest point of Crockett Ridge, 120 feet east of row of small trees on west edge of summit, and on property of

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I. F. Miller. To reach from center of Morristown, follow U. S. Route 11 south 2.45 miles to gravel road, turn west onto gravel road and go 2.05 miles, turn north along small creek onto rough dirt road, go 0.2 mile, keep to left around unpainted house and continue on winding road 0.7 mile to home of Jim Epps. Go through his barnyard and past house 0.25 mile to summit of hill and station. Mark is standard station disk in outcropping bedrock, note 2. Reference and azimuth marks are standard reference disks in bedrock, note 12a. No. 1 is in large outcropping rock projecting about 2 feet above ground and 60.65 feet from station in azimuth 349°37′. No. 2 is in flat rock outcrop and 48.85 feet from station in azimuth 58°08′. Distance between reference marks no. 1 and no. 2 is 62.46 feet. Azimuth mark is about 200 feet northeast of end of farm road, in southwest corner of peach orchard, in second row of trees from west edge, and about 1,000 feet from station in azimuth 229°53′12″.

Rickard (Jefferson County, M. A. Hecht, 1934).—About 8 miles south-southwest of Morristown, 5 miles northwest of White Plains, 3¼ miles southeast of Talbot, on top of high bare summit along Bays Mountain (known locally as "Jumpoff"), and in cultivated field of Mrs. Matt Rickard. To reach from junction of Routes 11E and 25E at First National Bank Building in Morristown, go east 0.15 mile on Route 25E, turn right around Southern service station and deep straight ahead on asphalt and stone road 5.8 miles to T. J. Peoples' store at northeast angle of road, continue straight ahead 0.3 mile to road forks, follow right gravel fork 1.65 miles to crossroad with store at northwest angle, go 0.45 mile to crossroad and E. L. Henson's house on left, go 0.05 mile, follow old woods road to right 0.1 mile to triangle-blazed oak tree on right, and go up steep grade ¼ mile northwest to station site 64 feet south of 24-inch oak tree and 16 yards east-southeast of fence. Surface and underground marks are standard station disks in concrete, notes 1c and 7a. Upper mark is 8 inches below surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on down slope, 4 feet east of fence, and 54.75 feet from station in azimuth 104°17′. No. 2 is on backbone of ridge and 302.8 feet from station in azimuth 35°25′. Azimuth mark is on west side of road, at edge of field, on property of Tom Miller, about 90 yards east of Dave Miller's home, and about 0.25 mile from station in azimuth 308°28′29″.

Bent (Greene–Hamblen Counties, M. A. Hecht, 1934).—About 9.75 miles east of Morristown, on summit of long narrow ridge which is highest part of Bays Mountain, about ½ mile south of north end of ridge, and in its longitudinal center. To reach from main crossroads in Russellville, go east 5.4 miles on gravel road to point where main road turns south, continue straight ahead about 1 mile on rough dirt road, turn north onto rough dirt road along east side of cross ridge and continue 0.8 mile, turn west across open field, thence west 0.2 mile to top of ridge and north 0.3 mile along ridge to summit and station site 30 feet east of center of farm road crossing top of knoll. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is along center of ridge and 58.50 feet from station in azimuth 229°20′. No. 2 is west of road, down west slope of ridge, and 40.60 feet from station in azimuth 155°56′. Azimuth mark is northwest of northwest corner of wheat field, 50 feet south of northeast corner of woods patch, 3 feet east of dim ridge path, at beginning of slope of next knoll to north, in direction along center of ridge, and about 535 yards from station in azimuth 217°12′56″.

Caney (Greene County, M. A. Hecht, 1934).—About 2½ miles north-northeast of Salem, 2 miles west of Caney Branch, just west of West Chapel Church, on cultivated ridge at east edge of woods, and on the old McIntosh farm (owned by Greensboro Joint Land Co.). To reach from Caney Branch, about 12 miles southwest of Greeneville on Route 35, go 2.5 miles northwest on gravel road (Warrensburg road) past yellow garage (0.2 miles beyond transmission line) to old white frame house on left (home of H. B. McIntosh), turn left here and go ½ mile up hill behind house to top of ridge and station site 25 feet west-northwest of transmission line, 61.5 feet north-northeast of north leg of tower no. 154, and 10 feet east-southeast of rail fence. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference mark no. 1 is standard reference disk in bedrock, note 12a, about 40 feet southeast of transmission line and 119.73 feet from station in azimuth 265°38′. Reference mark no. 2 and azimuth mark are standard reference disks in concrete, note 11b. No. 2 is 15 feet northwest of transmission line, on rail fence line, and 115.57 feet from station in azimuth 42°18′. Azimuth mark is about 25 yards west of Pierson Briggs'

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home, 25 feet northeast of center of road, on fence line on property of C. H. Briggs, and about 1.5 miles from station in azimuth 257°50′25″. Azimuth from station to *Camp Creek Bald, fire lookout tower*, distant 17.3 miles, is 276°33′24″.

Greeneville (Greene County, M. A. Hecht, 1934).—About 1.55 miles northeast along State Route 93 from courthouse in Greeneville, at top of grade, in fence line on west side of small orchard, 125 feet north of small white house on east side of highway, and 30.1 feet east of center of highway. Surface and underground marks are standard station disks in concrete, notes 1c and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is along east edge of highway and 131.45 feet (slope distance) from station in azimuth 232°49′. No. 2 is on west side of highway and 89.25 feet (slope distance) from station in azimuth 99°59′. Azimuth mark is 40 feet north of T-road east, 20 feet east of center of highway, 3 feet from telephone pole, and about 0.2 mile (by road) from station in azimuth 227°58′11″. Azimuth from station to *Greeneville, standpipe, higher of two*, distant 1.2 miles, is 48°57′55″.

High Spur (Hawkins–Greene Counties, M. A. Hecht, 1934).—About 7½ miles northeast of Bulls Gap, 2¾ miles southeast of Persia, near boundary line between Hawkins and Greene Counties, and on top of high peak in Bays Mountains (locally known as "High Spur"). To reach from junction of Routes 11E and 66 in Bulls Gap, follow Route 66 north 6.8 miles to T-road right where Route 66 makes sharp turn to left, turn right onto T-road and go 0.85 mile to forks, follow right fork 0.45 mile across rough bridge, keep to right-hand road and crossing stream three times go 0.15 mile to end of truck travel which is reached just before crossing stream fourth time. Cross stream, follow path to left ¾ mile to gap at old farm buildings and house, turn onto left path immediately in front of house and follow it up divide ½ mile to highest point and station site 20 feet south of center of knob and 8 feet south-southwest of 22-inch oak tree with triangular blaze on west side. Mark is standard station disk in top of 1½- by 3-foot rock outcrop, note 3, which protrudes about 8 inches on southeast side and is flush with ground on northwest side. Reference marks are standard reference disks in bedrock, note 12a. No. 1 is in 2- by 4-foot outcropping rock, across knob from station, on edge of steep slope, 13 feet south-southwest of 10-inch sycamore tree, and 49.60 feet from station in azimuth 180°57′. No. 2 is in 2- by 4-foot outcropping rock, 6 feet south-southeast of 8-inch oak tree, on down slope of hill, and 61.20 feet from station in azimuth 67°15′. Azimuth mark is standard reference disk in concrete, note 11b, 100 yards north along Route 66 from point where T-road turns east to station, on right-of-way of and 6 yards east of center line of Route 66, and about 1 mile from station in azimuth 120°06′08″.

Quaker (Greene County, M. A. Hecht, 1934).—About 7½ miles east-northeast of Greeneville, 0.8 mile west of U. S. Route 11, 0.5 mile south of county road to Rheatown, on rounded summit of small hilltop, on highest part of Quaker Ridge which is known locally as "Carpenter Mountain". To reach from Tusculum, follow U. S. Route 11 north 3.65 miles to county road to Rheatown, turn west and go 1.0 mile to rough dirt road, turn south and go ¼ mile to McAmis' home and end of truck travel. Station is ¼ mile southwest of McAmis' house, in approximate center of summit, 25 yards south of group of large trees, 37 feet north-northeast of 12-inch triangle-blazed tree, and 30 feet east of wire fence. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is east of fence, at base of triangle-blazed tree, and 10.552 meters (34.62 feet) from station in azimuth 100°14′. No. 2 is 10 feet south of large trees, east of fence, and 18.130 meters (59.48 feet) from station in azimuth 203°40′. Azimuth mark is standard reference disk in concrete, note 11b, about 0.5 mile west of junction of U. S. Route 11 and county road to Rheatown, 100 yards northwest of red frame house, 21 feet east of center of county road to Rheatown, and 0.6 mile from station in azimuth 298°08′17″. Azimuth from station to *Camp Creek Bald, fire lookout tower*, distant 13.6 miles, is 0°01′32″.

Brabson (Washington County, M. A. Hecht, 1934).—About 4½ miles northwest of Telford, 2½ miles north-northeast of Limestone, on top of prominent wooded knoll, and on property of Maggie L. Brabson of Columbia, S. C. To reach from railroad underpass on Route 11E at Limestone, follow Route 11E southwest 0.6 mile to gravel road at large, red, mill building on right, turn right and go 1.55 miles, keep to main left fork and go 0.45 mile to gravel T-road, turn right and go 1.4 miles to point 0.05 mile beyond red-brick house on left, turn right onto dirt farm road just before crossing large concrete culvert with iron rails, go 0.5 mile and enter barnyard gate of Fred Buckner (tenant of Mrs. Brab-

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son), turn left short distance beyond gate and down around high tree, cross creek and follow narrow woods road along creek and base of hill to right, and keep to right on road up hill to station. Station is about 0.7 mile from barnyard, 27 feet east of 24-inch oak tree which leans to south, and 16 feet south-southwest of 40-inch oak stump. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 18 feet southeast of dim road to station and slightly lower than and 112.11 feet from station in azimuth 226°59′. No. 2 is about same elevation as and 109.98 feet from station in azimuth 36°40′. Azimuth mark is on east side of main road, about 120 feet northeast of unpainted frame house of Jess Tilson, about 45 feet north along fence line from 10-inch oak tree, and about 0.6 mile from station in azimuth 134°17′32″. Azimuth mark is not visible from ground at station.

Walters (Washington County, M. A. Hecht, 1934).—About 2¼ miles north-northwest of Jonesboro, on property of Earnest Walters, and on summit of small hill about 0.5 mile west of his house. To reach from Jonesboro, go northwest from main street on steep street near courthouse, continue on gravel road about 2 miles to Walters' house, follow winding road through barnyard 0.45 mile to end of truck travel at gate in fence, and then go 125 yards up hill to station site near west edge of cultivated field, 370 feet north of south fence line, 118 feet east of west edge of field, and 125 yards west of gate in east fence. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference marks are standard reference disks in concrete, note 11c. No. 1 is on west fence line, at east edge of woods, and 118.82 feet (slope distance) from station in azimuth 134°51′. No. 2 is on south fence line and 372.34 feet from station in azimuth 36°47′10″. Azimuth mark is standard reference disk in concrete, note 11b, 45 feet south of farm road leading to station, on west edge of fenced pasture, west of fence, and about 0.2 mile from station in azimuth 302°25′20″.

Lyons (Sullivan County, M. A. Hecht, 1934).—About 10 miles north-northeast of Johnson City, 3½ miles west-southwest of Bluff City, 1½ miles northwest of Poplar Ridge Church, and on property of Roy Lyons. To reach from junction of U. S. Route 11E and Route 23 about 3 miles northeast of Johnson City, follow Route 11E northeast 7.2 miles to point 1.05 miles past asphalt crossroad and D. O. Carr's store on right, turn left onto gravel T-road just after passing blacksmith shop on right, go 0.55 mile to crossroad and Poplar Ridge Church on right, keep straight ahead 0.7 mile to T-road junction, turn left, go 0.45 mile, keep main road at junction with red house on left, go 0.3 mile, turn right at T-road (small white house and two mail boxes on right) and go 0.6 mile, turn right onto gravel T-road just before reaching turn to left, and go 0.25 mile to 2-story frame house on left (home of J. H. Mottern). By driving through yard to left and through field up very steep grade, truck may be taken to station in dry weather. Station is reached from house by going 0.25 mile to top of ridge and then to right along ridge 0.25 mile to highest point and station site. Station is on high wooded knoll, 36.8 feet north-northwest of fence and property corner of Roy Lyons, J. H. Mottern, D. Glover, and W. J. Cross, 26 feet south of 24-inch triangle-blazed white oak tree, and on line between 20-inch triangle-blazed oak and 24-inch triangle-blazed chestnut which are 28 feet apart. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11b. No. 1 is 18 feet north-northwest of wire fence, 9½ feet northeast of quadruple chestnut stump, on down slope, and 59.0 feet from station in azimuth 5°22′. No. 2 is 5 feet west of rail fence and 73.45 feet from station in azimuth 154°17′. Following azimuths are from station: *Buffalo High Point, fire lookout tower*, distant 16.9 miles, 8°44′51″; and Poplar Springs School, spire, distant 1½ miles, 310°44′31″. Station *Poplar* (see description and geographic position thereof) is visible from ground at station.

Supplementary points

Brooks (Catoosa County, Ga., M. A. Hecht, 1934).—About 7.3 miles south of post office in Rossville, 0.4 mile south of south exit of Chickamauga Park, on west side of U. S. Route 41W, on highway right-of-way, 0.1 mile south of Arrowhead Dairy, west of and across road from T. M. Brooks' home, 28.4 feet west of center line of highway, 11.0 feet west of telephone pole, and 3.5 feet east of wire fence. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference

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disks in concrete, note 11a. No. 1 is 80.5 feet northeast of entrance to Brooks' home, 24.6 feet east of center line of highway, 2 feet east of row of trees in front of Brooks' home, 1.5 feet west of wire fence, on highway right-of-way, and 95.22 feet from station in azimuth 237°35′. No. 2 is 116 feet southwest of entrance to Brooks' home, 26.65 feet northeast of bronze memorial tablet to Dick's Brigade, 23.8 feet west of center line of highway, 1.5 feet east of wire fence, on highway right-of-way, and 126.94 feet from station in azimuth 1°42′. Distance between reference marks no. 1 and no. 2 is 196.55 feet. Azimuth mark is 19.5 feet east of center line of highway, 18 feet north-northeast of 30-inch oak tree, 4 feet west of wire fence, on highway right-of-way, and about 0.2 mile from station in azimuth 204°00′54″. Following distances and azimuths are from station: *Lookout Mountain Hotel, spire*, 8.1 miles, 130°19′37″; Arrowhead Dairy, north red-brick silo, 0.1 mile, 157°01′44″; and Arrowhead Dairy, south red-brick silo, 0.2 mile, 52°20′20″.

Missionary (Hamilton County, M. A. Hecht, 1934).—In Chattanooga, on Missionary Ridge, on city water company property, 50 feet west of large steel standpipe, 40 feet east-southeast of 18-inch oak tree, and about 2 feet north of south property line. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is in front yard of John Cunio, 6 feet northwest of his house, and 81.80 feet from station in azimuth 3°47′. No. 2 is in same lot as station and on down-hill slope from it, on city water company property, and 73.84 feet from station in azimuth 181°57′. Azimuth mark is diagonally across street from United Church of God, 85 yards south of Twenty-third Street, 14 feet west of center line of Lylery Street, and about 1.0 mile from station in azimuth 112°25′56″.

Rossville (Walker County, Ga.–Hamilton County, Tenn., M. A. Hecht, 1934).—About ½ mile west of Rossville, on low ground, and on north edge of dirt street (State Line Street). To reach from Krystal Lunch Room just north of post office in Rossville, go west on concrete road (Hooker Road) ½ mile to sign "City Limit" and State line, turn left onto dirt street (State Line Street) and go 260 feet to station. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 0.3 mile north along Hooker Road from State Line Street, 33 feet west of center of Hooker Road, on bank about 6 feet higher than road, and about 500 yards from station in azimuth 143°59′17″. No. 2 is 259 feet north of junction of State Line Street and Hooker Road, 26 feet west of center of Hooker Road, and 194.87 feet from station in azimuth 196°18′. No. 3 is at southwest intersection of Hooker Road and State Line Street, 34 feet west of center of Hooker Road, 19 feet south of center of State Line Street, and 237.0 feet from station in azimuth 276°12′. Distance between reference marks no. 2 and no. 3 is 279.20 feet (slope distance). Following distances and azimuths are from station: *Lookout Mountain, New York Monument, flagpole*, 3.3 miles, 123°26′59″; *Missionary Ridge, large aluminum standpipe*, 2.5 miles, 219°23′23″; Rossville, black tank, 0.4 mile, 347°17′26″; *Lookout Mountain Hotel, spire*, 2½ miles, 73°49′22″; and *Lookout Mountain, small water tank, ball on top*, 3.1 miles, 114°34′07″.

Chattanooga (Hamilton County, M. A. Hecht, 1934).—In city of Chattanooga, about ¾ mile northeast of Market Street and main business section, and on grounds of University of Chattanooga. To reach from intersection of McCallie Avenue (Route 64) and Glenwood Drive, go west 2.2 miles on McCallie Avenue to the University grounds. Station is 133 feet southeast of library, 94 feet south of administration building, and 24.1 feet north of flagpole. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference mark no. 1 is standard reference disk in doorsill of library entrance and 135.13 feet from station in azimuth 131°50′. No. 2 is standard reference disk in doorsill of administration building and 95.07 feet from station in azimuth 206°45′. Distance between reference marks no. 1 and no. 2 is 143.52 feet. Azimuth mark is standard reference disk in concrete, note 11a, 130.2 feet from curb line at northwest intersection of Douglas Street and McCallie Avenue, 9.8 feet north of center line of driveway to Christ Church, 3.85 feet west of curb line of Douglas Street, and about 300 yards from station in azimuth 113°57′58″. Azimuth from station to First Presbyterian Church, spire, distant about 0.2 mile, is 91°34′34″.

Ooltewah (Hamilton County, M. A. Hecht, 1934).—About ¾ mile north-northwest of Ooltewah, on right-of-way of and 28 feet south of center line of

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U. S. Route 11, 0.55 mile west of side road leading to Ooltewah, 200 yards east of concrete bridge over Woolfe-Teever Creek, and 2 feet north of right-of-way fence line. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is on north side of and diagonally across road from station and 77.63 feet from station in azimuth 141°09′. No. 2 is on right-of-way of and 28 feet south of center line of highway and 55.05 feet from station in azimuth 275°29′. Distance between reference marks no. 1 and no. 2 is 123.35 feet. Azimuth mark is standard reference disk in top of east end of south railing of concrete bridge over Woolfe-Teever Creek and about 200 yards (0.2 mile by road) from station in azimuth 87°22′40″. Azimuth from station to Southern Railway, semaphore signal post, distant 0.5 mile, is 6°53′16″.

Meadow (Hamilton County, M. A. Hecht, 1934).—About 9.5 miles by road north of Harrison, 5¼ miles southwest of Georgetown, in Meadow View settlement, about 100 yards north of side road leading to Snow Hill, 32 feet west of center line of State Route 58, and 9 feet east of right-of-way fence. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is on right-of-way of and 12 yards west of center line of highway and 130.48 feet from station in azimuth 208°54′. No. 2 is on right-of-way of and 9 yards east of center line of highway and 107.45 feet from station in azimuth 353°50′. Distance between reference marks no. 1 and no. 2 is 226.98 feet. Azimuth mark is 36 feet east of center line of Route 58, 2 feet west of fence line, and 0.45 mile by road from station in azimuth 30°30′33″.

Cleveland (Bradley County, M. A. Hecht, 1934).—About 0.5 mile southwest of Cleveland, on highest point of Fort Hill Cemetery, 13.7 feet north-northwest of northwest corner of Shield's vault, 7.8 feet east of road in front of vault, 3.6 feet southeast of south side of Joseph P. Dickey headstone, and in walkway between Shield's and Dickey's plots. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark is flush with ground. Reference mark no. 1 is standard reference disk in concrete, note 11b, 7 feet east of center line of road behind Shield's vault, 6.7 feet north-northwest of north side of Moore's headstone, 2.5 feet south of southwest corner of coping surrounding Henderson's lot, and 60.48 feet from station in azimuth 297°29′. Reference mark no. 2 is standard reference disk in concrete, note 11c, 55.9 feet south of southwest corner of Shield's vault, 21.4 feet east of southeast edge of Mills' headstone, 6.5 feet west of center line of road, 2 feet south of southeast corner of Mills' lot, and 71.60 feet from station in azimuth 39°00′. Distance between reference marks no. 1 and no. 2 is 102.70 feet. Azimuth mark is standard reference disk in concrete sidewalk at northwest corner of Thirty-second Street and Young Avenue, 38.48 feet north of intersection of two streets, 34.10 feet northeast of center line of Thirty-second Street, 14.60 feet northwest of center line of Young Avenue, 1 foot northwest of edge of sidewalk, and about 0.7 mile from station in azimuth 199°35′53″. Following distances and azimuths are from station to points in Cleveland: Courthouse, top of dome, rod, 0.7 mile, 220°54′21″; Hardwick Mills, red brick stack, 0.5 mile, 238°03′36″; and Cleveland Chair Co., lone aluminum stack, 0.5 mile, 272°40′53″.

Texas (Meigs County, M. A. Hecht, 1934).—About 3¾ miles east-southeast of Birchwood, 3½ miles north by east of Georgetown, on right-of-way of and 42 feet southeast of center line of State Route 58, and at foot of west side of Texas Knobs. To reach from Georgetown, follow State Route 83 northwest 2 miles to junction with Route 58, turn right (northeast) onto Route 58 and go 2.7 miles to top of grade with outcropping flat rocks on right (southeast) and station. Mark is standard station disk in bedrock, note 2, flush with surface of ground. Reference mark no. 1 is standard reference disk in bedrock, note 12a, flush with surface of ground, on right-of-way of and 40 feet southeast of center line of highway, and 77.18 feet from station in azimuth 212°05′. Reference mark no. 2 and azimuth mark are standard reference disks in concrete, note 11a. No. 2 is on right-of-way of and 16 feet northwest of center line of highway and 84.18 feet from station in azimuth 90°01′. Distance between reference marks no. 1 and no. 2 is 141.30 feet. Azimuth mark is on first rise in road north of station, 22 feet northwest of center line thereof, and about 0.3 mile by road from station in azimuth 212°26′37″.

Suee (Meigs County, M. A. Hecht, 1934).—About 8.2 miles north-northeast of Decatur, 1.3 miles west of junction of Routes 68 and 58, on top of knob, and on land of Leonard Smith. To reach from junction of Routes 11 and 68 in Sweetwater, follow Route 68 west 16 miles to intersection with Route 58, turn left (south)

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onto Route 58 and go 0.5 mile, turn right (west) onto Route 68 and go 1.15 miles to small gravel pit and blazed tree on right, cross right-hand ditch and follow dim road 50 yards, turn right and go through woods 0.15 mile to blazed dogwood tree, then turn left through field and go about 0.05 mile to top of hill and station site in cultivated field, 30.6 feet south of 14-inch triangle-blazed pine tree, and 20.0 feet southeast of edge of woods. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is on edge of woods, 7.70 feet northeast of 6-inch triangle-blazed pine tree, and 118.55 feet from station in azimuth 243°13′. No. 2 is on edge of woods, 42.2 feet northeast of 6-inch triangle-blazed oak tree, and 102.28 feet from station in azimuth 48°16′. Distance between reference marks no. 1 and no. 2 is 218.99 feet. Azimuth mark is in northeast corner of cleared field, on edge of woods, 200 feet east of center line of Route 68, about half-way up side of hill, and about 300 yards from station in azimuth 351°28′46″.

T. M. I. (Monroe County, M. A. Hecht, 1934).—About 1.5 miles north of Sweetwater, on grounds of Tennessee Military Institute, west of and about 3 feet lower than athletic field, about 200 yards west of school buildings, 21.6 feet north of northerly of wood columns supporting grandstand, in line with columns, 17.9 feet west of center line of cinder track surrounding field, and 12.5 feet north of 16-inch oak tree. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 20.4 feet west of and 3 feet lower than cinder track, 18.4 feet south-southeast of southeast corner of metal incinerator, and 121.63 feet from station in azimuth 179°46′. No. 2 is 10.3 feet north-northeast of 20-inch oak tree, 6.8 feet southeast of southeast corner of small wood shed, 4.8 feet east of fence line, and 159.71 feet from station in azimuth 71°00′. Distance between reference marks no. 1 and no. 2 is 219.68 feet. Azimuth mark is 16 feet east of center line of Pond Creek road, 2 feet east of fence line surrounding plowed field belonging to R. L. Wilson, 30 feet south of ditch between plowed field and pasture (also belonging to Mr. Wilson), and about 0.5 mile from station in azimuth 95°05′53″. Following distances and azimuths are from station: Tennessee Military Institute, kitchen chimney, southwest edge, 80 yards, 252°57′; and colored boys school, north chimney, 1.0 mile, 57°07′36″.

Lenoir (Loudon County, M. A. Hecht, 1934).—About ½ mile west of center of Lenoir City, 100 yards west of concrete municipal reservoir, on summit of highest hill in vicinity, about 3 feet northeast of northeast edge of cultivated field, in grassy area about midway between southeasterly and northwesterly slopes of hill, 151.2 feet northwest of 30-inch oak tree, and 83 feet northwest of center line of dim road running along easterly edge of hill. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 12 feet west of center line of dim road and 93.62 feet from station in azimuth 281°55′. No. 2 is 25 feet north of above-mentioned 30-inch oak tree, 3 feet northeast of line between oak tree and station, on west edge of dim road, and 126.33 feet from station in azimuth 4°27′. Distance between reference marks no. 1 and no. 2 is 147.03 feet. Azimuth mark is in bank of earth 3 feet west of west side of municipal reservoir and about 300 feet from station in azimuth 261°27′48″. Following distances and azimuths are from station: Lenoir City, high school, spire, 0.5 mile, 241°26′31″; Lenoir City, concrete reservoir, vent, 300 feet, 260°03′23″; and Lenoir City, aluminum water tank, 1 mile, 269°08′40″.

Deanery (Knox County, M. A. Hecht, 1934).—About 20 miles northeast of Lenoir City, on property of the Chas. M. Rogers Real Estate Co. To reach from junction of U. S. Routes 11 and 70, follow Route 70 east about 12 miles to Ten Mile Creek, continue 2.5 miles past creek to gravel road on right at home of W. M. and W. C. Morton, turn right onto this road and go 0.4 mile to brick gateway marked "Deanery", continue about 150 feet to T-road right, turn right and go 0.05 mile to station site 33.9 feet south of 18-inch triangle-blazed oak tree, 22.5 feet south of center line of road, and 13.8 feet south of north edge of field. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in edge of field, 11.6 feet north of center line of road, 3.5 feet east of 12-inch oak tree, and 49.13 feet from station in azimuth 211°04′. No. 2 is in edge of field, 14.5 feet north of center line of road, 6.0 feet east-northeast of triple oak tree, and 69.47 feet from station in azimuth 108°19′. Distance between reference marks no. 1 and no. 2 is about 94 feet. Azimuth

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mark is about 0.2 mile east of road leading to station, 60 feet southeast of gravel T-road north, 28 feet south of center line of Route 70, 34 feet west-northwest of telephone pole no. 7400, and about 0.5 mile from station in azimuth 187°15′10″. Azimuth from station to large standpipe, distant 4.0 miles, is 230°42′20″.

University (Knox County, M. A. Hecht, 1934).—In Knoxville, on campus of University of Tennessee, 90 feet southwest of southeast corner of Ayres Hall, 47 feet west of northwest corner of old South College, and about 6 feet west of proposed extension of east wing of Ayres Hall. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference mark no. 1 is standard reference disk in concrete, note 11a, in south end of oval grass plot, directly south of Ayres Hall tower, 1 foot north of fence around oval, and 169.87 feet from station in azimuth 3°16′. Reference mark no. 2 is standard reference disk in concrete, note 11c, on west side of rear door to Ayres Hall and 112.48 feet from station in azimuth 95°15′. Distance between reference marks no. 1 and no. 2 is 206.95 feet. Azimuth mark is standard reference disk in first concrete step below press box, in first aisle north of south end of west bleachers of athletic stadium, and about 300 yards from station in azimuth 358°23′42″.

Trent (Knox County, M. A. Hecht, 1934).—About 12 miles east of Knoxville, on property of J. E. Chesney. To reach from junction of U. S. Routes 70 and 11E, follow Route 70 east 1.85 miles to Hill Top Inn on left and J. E. Chesney's home on right. Station is about 200 feet south of U. S. Route 70, 150 feet west of J. E. Chesney's house, on fence line between field and pasture, 27.6 feet east-northeast of 16-inch triangle-blazed oak tree, and 25.4 feet west-southwest of 30-inch triangle-blazed tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 13 feet east of southeast corner of and in line with south side of barn, in cultivated field, and 58.25 feet from station in azimuth 229°40′. No. 2 is 24.3 feet west-southwest of 16-inch triangle-blazed oak tree which is in line with station and mark, on fence line, and 52.17 feet from station in azimuth 96°53′. Distance between reference marks no. 1 and no. 2 is 101.03 feet. Azimuth mark is 51.8 feet north of center line of U. S. Route 70, on north edge of driveway to Hill Top Inn, and about 100 yards from station in azimuth 236°51′.

Mossy (Jefferson County, M. A. Hecht, 1934).—About 2 miles northeast of Jefferson City, on west edge of what is locally known as "Green Briar road", and on property of J. P. Ellison. To reach from junction of Routes 25E and 11E in Morristown, follow Route 11E southwest 11.45 miles (2.75 miles southwest of Hamblen-Jefferson County line) to T-road at telephone pole no. 3311, turn right and go 0.75 mile to T-road right, turn right and go 0.4 mile to T-road left just past house on left, turn left and go 0.15 mile to station site in cultivated field, 12.5 feet west of center line of road, and 3.4 feet west of fence line. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is in edge of field across road from station, 13.0 feet east of center line of road, 1 foot east of fence line, and 66.05 feet from station in azimuth 208°29′. No. 2 is in edge of field across road from station, 12.4 feet east of center line of road, 1 foot east of fence line, and 39.10 feet from station in azimuth 324°54′. Distance between reference marks no. 1 and no. 2 is 87.70 feet. Azimuth mark is standard reference disk in concrete, note 11b, 200 feet east of road leading to station, 23.7 feet southeast of center line of U. S. Route 11E, 6.6 feet east of telephone pole no. 3309, in front of J. S. Reeves' red brick home, in edge of field, and about 1.2 miles from station in azimuth 28°18′06″. Azimuth from station to Jefferson City, water tank, white wood top, distant 2.0 miles, is 31°06′31″.

Morristown (Hamblen County, M. A. Hecht, 1934).—In northern edge of city of Morristown, inside wire fence enclosing grounds around new water reservoir, 20.24 feet northwest of northeast corner of reservoir, and 13.6 feet south of northwest fence corner. Reservoir is at head of Jackson Street, and truck can be driven to station. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks. No. 1 is in top of north wall of reservoir, 78.01 feet from station in azimuth 327°56′. No. 2 is in top of west wall of reservoir, 46.20 feet from station in azimuth 33°44′. Azimuth mark is standard reference disk in concrete, note 11b, 15 feet south of center of road, across road from John Shipley's home, and 0.25 mile from station in azimuth 79°48′14″.

Whitesburg (Hamblen County, M. A. Hecht, 1934).—About 0.5 mile east of crossroads at Whitesburg filling station in Whitesburg, at west end of curve, on

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right-of-way of U. S. Route 11E, on north side of road down small embankment near curve, 38.6 feet east of highway right-of-way mark, 28.5 feet west of telephone pole no. 2479, 24.5 feet north of center line of road, and 12.5 feet west-northwest of most westerly post in guard rail around curve. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 66.6 feet east of telephone pole no. 2479, 21.9 feet north of center line of highway, 8.2 feet northwest of tenth post in guard rail from west end, on highway right-of-way, down small embankment, and 94.94 feet from station in azimuth 269°09′. No. 2 is 49.1 feet west of right-of-way marker, 46.5 feet east-northeast of telephone pole no. 2480, 29.0 feet north of center line of road, 2.5 feet south of fence line, on right-of-way, and 87.30 feet from station in azimuth 88°44′. Distance between reference marks no. 1 and no. 2 is 182.31 feet. Azimuth mark is about 50 feet northeast of small white house, 24.1 feet south of center line of highway, 5.0 feet north of fence line, on highway right-of-way, and about 0.25 mile from station in azimuth 83°41′57″.

Tusculum (Greene County, M. A. Hecht, 1934).—About 5½ miles southwest of Rheatown, 4 miles northeast of Greeneville, in town of Tusculum, and on campus of Tusculum College. To reach from junction of Routes 11E and 107 in Tusculum, follow gravel road leading north about ⅛ mile to black water tank. Station is 29 feet southwest of southwest leg of black water tank, 90 feet north of Dr. Meads' residence, and on highest ground of campus. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is about 90 feet north of black tank, along fence line, and 116.14 feet from station in azimuth 207°24′. No. 2 is about 50 feet north of residence of Mr. Dennis, at edge of garden, and 229.00 feet from station in azimuth 308°07′. Azimuth mark is on shoulder of gravel street, 15 feet north of wire fence, and about 0.2 mile from station in azimuth 310°19′05″.

Bailey (Hawkins County, M. A. Hecht, 1934).—About 3.3 miles west-southwest of Van Hill, 2.7 miles north-northwest of Baileyton, on bare knoll, on ridge of Bays Mountain, and on property of John Underhill. To reach from Baileyton post office, go northwest 0.1 mile to Sinclair service station on right, turn left and go 0.4 mile to T-road right at red brick church, turn right and go 0.35 mile, follow left fork at lone white-oak tree 0.8 mile to T-road right, turn right past cabin on left and keep main-traveled road up hollow 2.4 miles, keep left fork at bridge and 2-mail boxes and go 0.1 mile to top of grade and John Underhill's home on left (end of truck travel), turn sharply to right through gate and follow wagon trail marked by triangle-blazed tree to top of ridge, and thence to left along ridge ½ mile to station site 29.2 feet east-northeast of 30-inch stump, 15 feet south from gate in east-and-west fence, and 7 feet west of north-and-south fence. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on property of George McLain, 22.6 feet northwest of fence corner, and 36.78 feet from station in azimuth 245°41′. No. 2 is on down slope from station, 2 feet south of fence, and 26.55 feet from station in azimuth 139°23′. Azimuth mark is at east edge of path behind Brown Mountain School, about 50 feet northeast of northwest corner of school, 12 feet north of 24-inch stump at east side of trail, and about 0.5 mile from station in azimuth 61°26′37″. Following distances and azimuths are from station: Baileyton Auditorium, cupola, 3 miles, 332°19′33″; and Brown Mountain School, chimney, 0.5 mile, 60°40′05″.

Lick (Greene County, M. A. Hecht, 1934).—About 10 miles north-northeast of Greeneville, 1¾ miles southeast of Baileyton, and on property of Mr. Hughes. To reach from Greeneville courthouse, go north 0.7 mile on Route 63 to side road, turn left at side road 100 yards after going under underpass and follow paved road 0.1 mile to gravel road, turn right and go 0.15 mile to crossroad, turn left and follow main road 5.5 miles to T-road with red brick house ahead, turn right and go 0.75 mile to road forks and crossroads, keep left at forks and straight ahead at crossroads 100 feet beyond. Follow this road keeping straight ahead at all intersections 3.8 miles to T-road, turn left and go 1.5 miles to white house on right (end of truck travel). Station is on bald knoll, about 100 yards behind house, 100 yards north of road, and 8 feet west of fence line. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is along top of ridge running west and turning north at mark, and about 4 feet lower than

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and 228.95 feet from station in azimuth 108°23′. No. 2 is along fence line, 18 feet south of 16-inch walnut tree, and 5 feet lower than and 37.95 feet from station in azimuth 192°38′. Distance between reference marks no. 1 and no. 2 is 228.00 feet. Azimuth mark is on property of L. B. Gass, 16 yards northeast of northeast corner of his filling station, 7 yards east of center line of highway leading to station, and about 0.4 mile from station in azimuth 312°20′09″. Azimuth from station to Sulphur Springs, church spire, distant about 0.75 mile, is 334°55′06″.

Telford (Washington County, M. A. Hecht, 1934).—About 1.5 miles south of Telford railroad station, on west side of U. S. Route 11E, on property of E. M. Warwick, 75 feet from northeast corner of Warwick's house, 53.0 feet south of Warwick's driveway entrance, 27.2 feet south of electric-light pole no. 175, and 21.6 feet west of center line of road. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 35.05 feet east of center line of Route 11E, 4.3 feet inside fence line, between fence line and edge of woods, 4 feet above highway, 16.5 feet from telephone pole, 3.5 feet from 10-inch twin black-oak tree, and 143.16 feet from station in azimuth 225°22′. No. 2 is in pine grove, 30.8 feet east of center line of Route 11E, 13.6 feet from telephone pole, 5 feet above highway, 3.5 feet inside fence line, and 75.25 feet from station in azimuth 338°05′. Azimuth mark is in edge of field, 55.3 feet south of pole no. 168 on northwest side of road, 45.0 feet southeast of center line of Route 11E, 2.5 feet southeast of fence line, and about 0.15 mile from station in azimuth 32°26′04″.

Fall Branch (Washington County, M. A. Hecht, 1934).—About 0.95 mile north-northeast of Fall Branch post office, 0.175 mile southwest of Washington-Sullivan County line, and on northwest side of right-of-way of State Route 81. To reach from Fall Branch post office, follow State Route 81 north 0.95 mile to right-hand curve on highway on down grade to gravel turnout and large whitewashed rock on left. Station is 37.9 feet from whitewashed boulder, 24.1 feet from 6-inch white-oak tree, 18.5 feet from center line of road, and 6.3 feet from fence line. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in bedrock, note 12a. No. 1 is 14.1 feet east of center line of road, 9.0 feet outside of fence line, 4 feet above highway, in bedrock outcrop on side slope, and 47.87 feet from station in azimuth 257°51′. No. 2 is 38.7 feet from 14-inch hickory tree, 17.6 feet southeast of center line of road, 7.3 feet outside of fence line, in bedrock outcrop on side slope, 2 feet above highway, and 239.42 feet from station in azimuth 12°48′. Azimuth mark is 46.2 feet from 5-inch pine tree on fence line, 15.6 feet southeast of center line of road, 7.4 feet outside of fence line, 4 feet above highway, in bedrock outcrop on side slope, and about 450 feet from station in azimuth 227°11′12″.

Preas (Carter-Washington Counties, M. A. Hecht, 1934).—About 3½ miles south-southeast of Johnson City, on reputed boundary line between Carter and Washington Counties, and on top of high peak at extreme northeast end of junction of Cherokee and Buffalo Mountains. To reach from junction of Routes 11E and 23 at Magnolia Inn in Johnson City, follow Route 23 south 2.05 miles to point 1.2 miles south of junction with Route 67, turn sharply to right onto dirt road paralleling railroad tracks and go 0.55 mile, turn left across tracks and go 0.25 mile, follow left fork through gate and go 0.5 mile to George Keen's home (end of truck travel), go through barnyard and follow trail which curves to left 200 yards to trail fork, turn onto right fork and follow main blazed trail about 1¾ miles to station. Station is near northern edge of summit, about 300 yards southwest of look-out point known as "White Rock", 23.5 feet east of 9-inch chestnut oak, and 5 feet east-northeast of 12-inch triangle-blazed chestnut-oak tree. Mark is standard station disk in boulder, note 5. Reference marks are standard reference disks in outcropping bedrock, note 12b. No. 1 is along top of ridge and 9.289 meters (30.48 feet) from station in azimuth 58°40′. No. 2 is on downward slope of ridge and 22.030 meters (72.28 feet) from station in azimuth 105°42′. Azimuth mark is standard reference disk in concrete, note 11b, 36 feet south of Route 23, near Esso service station, on property of Buddy Hanes, in northeast edge of clover field, and about 2.0 miles from station in azimuth 185°23′08″.

Poplar (Sullivan County, M. A. Hecht, 1934).—About 10 miles northeast of Johnson City, 3 miles southwest of Bluff City, 2 miles north of Piney Flats, and on grounds of Poplar Springs School. To reach from Johnson City, follow U. S. Route 11E northeast 10.2 miles (or 1.05 miles past asphalt crossroad), turn left (west) onto gravel T-road, go 0.55 mile to jogged crossroad, turn right and go 0.15 mile or just beyond church and cemetery to schoolhouse and station site. Station

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is 55.4 feet southeast of southeast corner of school building, 29.4 feet from light pole, 7.1 feet inside fence line, and about 3 feet lower than top of school foundation wall. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 44.5 feet from 12-inch locust tree, 8.8 feet from southwest corner of school building, and 3 feet above and 81.64 feet from station in azimuth 175°49′. No. 2 is 35.2 feet from light pole, 24.8 feet from 28-inch white-oak tree, 2 feet inside fence line, and 1 foot below and 75.28 feet from station in azimuth 42°51′. Distance between reference marks no. 1 and no. 2 is 143.80 feet. Azimuth mark is 70.5 feet from telephone pole on opposite side of road from station, about 0.15 mile north of gravel T-road, in right-of-way of and 32.0 feet west of center line of U. S. Route 11E, 1 foot outside fence line, and about 0.75 mile from station in azimuth 313°27′10″. Following azimuths are from station: Fire lookout tower, 324°18′00″; and *Buffalo High Point, fire lookout tower*, distant 16 miles, 13°07′02″.

Bowers (Carter County, M. A. Hecht, 1934).—About 1¼ miles northeast of Valley Forge, 0.6 mile west-northwest of gravel road to Valley Forge, and on summit of third and highest of three hills comprising a ridge running northeast of Valley Forge. To reach from Christian Church at Valley Forge, follow gravel road north 1.25 miles, turn left at slight angle in dirt road and continue 80 yards to end of truck travel, follow dim path up hill to west 0.5 mile to station site, about 150 feet north-northwest along summit from highest point of ridge, in longitudinal center of ridge, midway between two trees about 20 feet apart, and 3 feet from line joining them. Mark is standard station disk in outcropping bedrock, note 3. Reference marks are standard reference disks in outcropping bedrock, note 12b. No. 1 is along level slope of summit and 17.733 meters (58.18 feet) from station in azimuth 341°14′. No. 2 is slightly down east slope of summit and 10.802 meters (35.44 feet) from station in azimuth 243°39′. Azimuth mark is standard reference disk in concrete, note 11a, 45 feet east of center of county road to Valley Forge, near old barn, in front yard of residence, and about 0.4 mile from station in azimuth 304°43′14″.

Elizabethton (Carter County, M. A. Hecht, 1934).—In Elizabethton, about 1 mile from center of town, about 200 yards east of large concrete water tank, on bare ridge, on property of American Bemberg Co. 150 feet north of small 2-room house of Nat Gwen, and 25 feet south of dirt road to tank. To reach from First National Bank, follow Route 67 west 0.6 mile to Roan Street, turn left and go 0.2 mile, keep straight ahead at jogged crossroads uphill on cinder road, go 0.2 mile and turn southwest just before reaching small green house on right, and go 0.1 mile to station. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 30 feet south of center of road and 47.65 feet from station in azimuth 248°32′. No. 2 is 12 feet north of center of road and 45.18 feet from station in azimuth 148°35′. Following distances and azimuths are from station: High school, southwest chimney, 1 mile, 220°53′49″; white church, gray spire, 0.5 mile, 251°35′07″; upper city reservoir, 200 yards, 81°59′10″; Glanzstoff smokestack, 0.75 mile, 130°38′39″; lower city reservoir, 250 yards, 139°00′16″; American Bemberg Co., smokestack, 0.75 mile, 143°34′58″; and Baptist Church, bell tower, 1 mile, 208°59′38″.

LEBANON, TENN., TO FLORENCE, ALA. (SECOND ORDER)

Principal points

Mason (Wilson–Rutherford Counties, M. A. Hecht, 1934).—About 4 miles northeast of Walter Hill, 10.5 miles north-northeast of Murfreesboro, and on highest point of small flat-topped wooded ridge known locally as "Mason's Knob." To reach from Walter Hill School (about 8 miles north-northwest of Murfreesboro), go north 0.65 mile on State Route 10, turn right onto gravel road, proceed straight ahead on county road 3.25 miles, take left fork at white church on right, continue 0.35 mile and turn left along creek, proceed 0.7 (0.4 mile past home of P. J. Hall) to triangle-blazed tree in fence corner (end of truck travel). From here go about 300 yards left (west) uphill to top and station site. Station is about 75 yards south of edge of summit, 30.5 feet east of 9-inch hackberry tree, 12.4 feet east-northeast of 8-inch hackberry tree with triangular blazes, and 18.9 feet southeast of 12-inch hackberry tree. Surface mark is standard disk station mark in boulder, note 5. Reference and azimuth marks are standard reference

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disks in outcropping bedrock, note 12b. No. 1 is along ridge, 14 feet southwest of 18-inch gum tree, and 110.43 feet from station in azimuth 255°02′. No. 2 is along downward slope, 9 feet northeast of 9-inch leaning hackberry tree, and 75.38 feet from station in azimuth 189°24′. Azimuth mark is in cultivated field, 10 feet from edge of woods, and about 125 yards from station in azimuth 188°34′21″.

Barfield (Rutherford County, M. A. Hecht, 1934).—About 2¾ miles southeast of Salem post office, on top of what is known locally as "Barfield Hill", on property of T. B. Yeargan, and 8.9 feet west of 8-inch hackberry tree with triangular blaze. To reach from courthouse in Murfreesboro, go west 2.85 miles on State Route 99 (or 0.2 mile after crossing Stones River bridge) to T-road left, turn left onto gravel road and go 2.55 miles to T-road right at blacksmith shop in Barfield, turn right and go 0.9 mile to T-road left just beyond mail box of O. S. Damron, turn left and go 0.95 mile to wooden gate on each side of road and end of truck travel, and from here follow wagon road through gate on left to top of hill and station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is at about same elevation as and 66.00 feet from station in azimuth 204°17′. No. 2 is on down slope of hill and 104.17 feet from station in azimuth 113°10′. Azimuth mark is on south side of Armstrong Valley road, on property of T. B. Yeargan, and 0.3 mile from station in azimuth 100°05′34″. Following distances and azimuths are from station: *Murfreesboro, black water tank, ball on top*, 6.2 miles, 218°43′39″; and *Airway beacon no. 19* (see description thereof), 3.2 miles, 285°43′21″.

Sumner (Williamson-Rutherford Counties, M. A. Hecht, 1934).—About 13 miles northwest of Murfreesboro, on summit of small knob locally known as "Sumner Knob", on Williamson-Rutherford County line, and on property of H. H. Johnson. To reach from junction of State Routes 96 and 11 at Triune, follow Route 11 north 0.75 mile, turn east onto gravel road at top of grade, go 1.85 miles to home of H. H. Johnson, turn right through his barnyard, continue 0.7 mile on farm road to end of road at field at base of knob, and go north across field up knob 0.4 mile to summit and station site. Station is in approximate center of summit, about 4 feet south of highest part, about 30 feet southwest of southwest edge of small cemetery, and in thicket of small trees. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is on fence line, at southeast edge of summit, and 75.44 feet from station in azimuth 327°04′. No. 2 is at edge of graveyard, on northwest slope of summit, and 107.54 feet from station in azimuth 157°49′. Azimuth mark is standard reference disk in concrete, note 11b, in east edge of cultivated field, at end of farm road to base of knob, and 0.5 mile from station in azimuth 15°32′20″.

Rockvale (Rutherford County, M. A. Hecht, 1934).—About 10½ miles southwest of Murfreesboro, 1½ miles southeast of Rockvale post office, on small pointed hill known as "Pinnacle", and near property line of Robert McBride and Mrs. Will Douglas. To reach from post office at Rockvale (about 11 miles southwest on State Route 99 from Murfreesboro), follow gravel road south 0.75 mile, turn left onto rough farm road, proceed 1.35 miles and turn right through gate, and continue 0.1 mile to yard of Emmett Jones (tenant of McBride) which is end of truck travel. Station is on highest knob about ½ mile to southwest, north of fence line, near northern edge of summit, and 21.6 feet west of 10-inch blazed ash. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in outcropping bedrock, note 12b. No. 1 is on downward slope of ridge and 15.228 meters (49.96 feet) from station in azimuth 184°55′. No. 2 (stamped "No. 1" dotted numeral) is on downward slope of ridge and 23.255 meters (76.30 feet) from station in azimuth 273°50′. Azimuth mark is in very large rock outcrop in Jones' yard, about 125 feet west of house, 175 feet north of barn, and 0.5 mile from station in azimuth 197°00′39″. Azimuth from station to concrete block silo, distant 6 miles, is 233°21′58″.

Eagle (Rutherford County, M. A. Hecht, 1934).—About 1 mile southwest of Eagleville, on rounded wooded hill sometimes known as "Wallace Hill", and on property of Mr. Glassby of Eagleville. To reach from junction of State Routes 99 and 16 in Eagleville, follow Route 99 west 1.25 miles to top of grade and red gate on left and follow road through gate about ¼ mile to house in hollow. Station is on hill ⅓ mile south-southeast of this house, 8.65 feet north of wire fence, 10 feet south of 10-inch hackberry tree with triangular blaze, and 15 feet east-southeast of 24-inch stump. Surface and underground marks are standard station

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disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is on down slope of hill, 21 feet northeast of 10-inch triangle-blazed hackberry tree, and 29.95 feet from station in azimuth 215°14′. No. 2 is 4 feet east of twin hackberry tree in line with station, 10 feet north of fence, and 37.92 feet from station in azimuth 122°02′. Azimuth mark is in north edge of cultivated field, beneath telephone lines, 20 feet south of center line of Route 99, 0.55 mile east of top of grade and point where one leaves highway to go to station, about 150 feet west along highway from small stone bridge leading to white house, and about ½ mile from station in azimuth 215°39′13″. Azimuth from station to Eagleville, church spire, distant 1 mile, is 241°06′43″.

Holt (Marshall County, M. A. Hecht, 1934).—About 4½ miles southwest of Eagleville, 5 miles northwest of Chapel Hill, 0.75 mile west-southwest of Holt's Corner railroad station, on summit of prominent wooded knob, in approximate center of small, rounded hilltop, and 107 feet east-southeast of 28-inch oak tree. To reach from Holt's Corner railroad station, go south 0.3 mile on State Route 99, turn west onto gravel road and go 0.5 mile to foot of hill on north (end of truck travel), and follow old wagon road to north to summit and station site. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is slightly down west slope of hill, on east edge of woods, 30 feet north of 30-inch oak tree, and 75.74 feet from station in azimuth 92°08′. No. 2 is at north end of hilltop, in longitudinal center of top, and 78.95 feet from station in azimuth 197°56′. Azimuth mark is on north edge of dirt road leading to hill, on property of G. H. Gault, 30 yards south of his barn, 12 feet north of center of road, and 0.35 mile from station in azimuth 284°22′00″.

Gil (Marshall County, M. A. Hecht, 1934).—About 4.5 miles south-southeast of Lewisburg, 0.25 mile northeast of Gils Chapel Church, and on high cleared field on property of T. Lee Thompson of Lewisburg. To reach from courthouse in Lewisburg, go south 0.75 mile on Route 11 to left fork at sign "Lewisburg ½", follow this road 4.0 miles and turn left at top of grade, go 1.2 miles, follow left fork 0.3 mile to home of Fletcher Finley on left, turn left just beyond house, then right through gate, and follow dim road across pasture to metal gate and continue to highest part of field and station site. Station is in center of and on highest part of field, midway between east-and-west sloping sides of field, and about 40 feet north of centerline of entrance projected. Underground mark is standard station disk in concrete, note 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 1 foot west of wire fence, 130 feet north of entrance to field, and 435.62 feet from station in azimuth 60°12′37″. No. 2 is 128 feet south of entrance to field, 1 foot east of fence inside field, 2.5 feet northeast of corner fence post, 38.5 feet southwest of 24-inch stump inside field, and 571.60 feet from station in azimuth 34°07′09″. Azimuth mark is on west side of road, across hollow west of station, 10 feet south of southeast corner of old building, about 150 yards north of Gils Chapel Church, 20 feet northeast of 14-inch tree in line with mark and station, and 0.25 mile from station in azimuth 48°53′42″. Azimuth from station to *Lewisburg, municipal water tank (black)* distant 4.9 miles, is 158°47′50″.

Fowler (Marshall County, M. A. Hecht, 1934).—About 2 miles east-northeast of Cornersville, on high ridge on property of Lige Fowler. To reach from Cornersville post office, go south 0.4 mile on State Route 11 and turn left just after passing school on right, follow this road and turn left after passing underpass, proceed 0.65 mile, follow lower left fork 1.1 miles, turn left at crossroad at top of grade, and continue 0.7 mile (or 0.1 mile past Mr. Fowler's house) to high rocky ridge at station. Station is 24 feet west of center line of road, 4 yards west of fence line, 80 feet south of 14-inch maple tree, and 0.1 mile north of Fowler's home. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 6 feet east of center line of road, just inside fence, 33 feet northeast of 14-inch maple tree, and 99.85 feet from station in azimuth 327°57′. No. 2 is in same field as station, 8 feet west of center line of road, and 107.24 feet from station in azimuth 175°34′. Azimuth mark is on property of Mr. Fowler, in northwest fence corner, 15 feet west of center line of road leading to station from Cornersville, and 0.15 mile from station in azimuth 327°29′38″.

Ashton (Giles–Marshall Counties, M. A. Hecht, 1934).—About 7.75 miles west-northwest of Cornersville, 4½ miles northeast of Lynnville, on property of O. B. Ashton, in approximate center of cleared star-shaped hill, on east-west fence line,

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250 yards northeast of Ashton's house, 200 yards east along north fence line from road leading to house, 101.7 feet east of gate in north fence, 32.7 feet east of peach tree in fence, and 1.3 feet south of fence. To reach from W. A. Scott's store in Mooresville, follow Lynnville road west 1.5 miles, turn west at crossroads and go 2.7 miles on main road, follow left fork and go 0.15 mile to top of grade and station site. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is slightly down grade, on southeast side of fence along northeast side of adjoining cultivated field, and 138.18 feet (slope distance) from station in azimuth 194°35′. No. 2 is along same fence line as station, 15 feet east of 13-inch hickory tree, and 175.61 feet (slope distance) from station in azimuth 114°49′. Azimuth mark is on west side of north-and-south road leading past station, 25 yards southwest of small graveyard, 15 feet west of center of road, in edge of cultivated field owned by Clarence Fowler, and 0.35 mile from station in azimuth 177°17′02″.

Pierce (Giles County, M. A. Hecht, 1934).—About 8 miles northeast of Pulaski, 9 miles southeast of Lynnville, 2.5 miles south-southwest of Brickchurch, on property of J. W. Pierce at Woodgate, in northwest corner of yard, 49.45 feet northwest of northwest corner of house, 30.5 feet northwest of 18-inch maple, 34 feet northeast of 20-inch maple, and 60 feet east of center line of State Route 11. To reach from courthouse in Pulaski, go north 0.5 mile on U. S. Route 31 to junction with State Route 11, turn right (east) onto Route 11 and proceed 8.0 miles to T-road junction and home of Mr. Pierce on right. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is at edge of cultivated field, 12 feet south of center line of farm road, 35 feet east of center line of Route 11, and 108.46 feet from station in azimuth 30°15′. No. 2 is at edge of cultivated field, 3 feet west of wire fence, 22 feet west of center line of Route 11, and 83.55 feet from station in azimuth 127°23′. Distance between reference marks no. 1 and no. 2 is 145.07 feet. Azimuth mark is at edge of cultivated field, 1 foot east of wire fence, 12 feet east of center line of Route 11 and 0.15 mile from station in azimuth 186°48′57″.

Barlar (Giles County, M. A. Hecht, 1934).—About 2½ miles northeast of Pulaski, 5½ miles east-southeast of Wales railroad station, 0.2 mile east of State Route 11, and on property line of Mrs. J. L. Barlar and J. M. Barlar. To reach from courthouse in Pulaski, go north 0.5 mile on U. S. Route 31 to junction with State Route 11, turn right (east) and go 1.9 miles on Route 11, turn right through gate at small store, follow farm road east 0.2 mile to house and then north 0.2 mile to fence line and station site. Station is near northeast edge of pasture, 0.3 mile northeast of J. C. Barlar's house, and 0.15 mile north of small cemetery. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is in pasture, 4.5 feet south of wire fence and cultivated field, and 101.45 feet from station in azimuth 100°52′. No. 2 is in pasture, about 175 yards north of small cemetery, and 129.80 feet from station in azimuth 358°57′. Distance between reference marks no. 1 and no. 2 is 180.40 feet. Azimuth mark is at west edge of pasture, about 100 yards east of J. C. Barlar's house, 10 feet west of farm road, and 0.3 mile from station in azimuth 52°35′46″.

Black (Giles County, M. A. Hecht, 1934).—About 2¼ miles south-southwest of Campbellsville, on land of W. T. Black. To reach from courthouse in Pulaski, follow U. S. Route 31 north 8.8 miles, turn west onto gravel road through Milky Way Dairy Farm and continue 2.5 miles to junction, turn north and go 3.9 miles, turn south onto rough dirt road and go 1.4 miles to station site. Station is in northwest corner of Black's barnyard, about 250 yards north of his house, 93 feet west of northwest corner of barn, 29 feet south of 12-inch tree in fence corner, and 20 feet from center of county road leading to station. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is in northeast corner of barnyard, 35 feet northeast of northeast corner of barn, 6 feet south of northeast fence corner, and 164.07 feet from station in azimuth 272°54′. No. 2 is on east side of road, 2 feet east of fence along west edge of cultivated field, and 109.49 feet from station in azimuth 181°16′. Distance between reference marks no. 1 and no. 2 is 199.91 feet. Azimuth mark is 135 feet east of Black's house, 12 feet east of center of road, 2 feet inside of fenced pasture, and 260 yards from station in azimuth 6°34′23″.

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Goodspring (Giles County, M. A. Hecht, 1934).—About 6 miles southwest of Pulaski, ½ mile from Good Spring post office, and in yard of Chestnut Grove Church. To reach from courthouse in Pulaski, follow State Route 11 south 7.2 miles (or 0.7 mile beyond Good Spring post office), turn sharply to right at top of long grade, proceed 0.45 mile and turn right, and continue about 200 yards to Chestnut Grove Church and station site. Station is at north corner of yard, 34.6 feet north of northwest corner of church, 66 feet north-northeast of 24-inch white oak, and 15.5 feet southwest of wire fence around cemetery. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 22 feet west of church, 5 feet northwest of 24-inch white oak, and 19.215 meters (63.04 feet) from station in azimuth 41°39′. No. 2 is at northwest edge of yard, about 60 feet west-northwest of northwest corner of church, and 17.109 meters (56.13 feet) from station in azimuth 141°44′. Distance between reference marks no. 1 and no. 2 is 68.00 feet. Azimuth mark is in southwest corner of old churchyard, about 70 yards south-southwest of church, 22 feet north of county road, and 0.3 mile from station in azimuth 51°12′32″. Azimuth from station to spire of old church, distant 0.3 mile, is 48°30′03″.

Wesley (Lawrence County, M. A. Hecht, 1934).—About 4 miles southeast of Lawrenceburg, on property of Wesley Chapel, in southwest corner of chapel yard, at northwest corner of small cemetery, and in line with and to south of two 20-inch oak trees in chapel yard. To reach from Lawrenceburg, follow U. S. Route 64 east 3.8 miles, turn right onto dirt side road with new gray bungalow in southwest angle and follow this road 1.95 miles to Wesley Chapel and station. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is in chapel yard, 9 yards north-northwest of 14-inch oak tree, and 200.19 feet from station in azimuth 204°11′. No. 2 is 15 yards south-southeast of 20-inch oak tree, 15 yards west of center line of road, and 175.04 feet from station in azimuth 293°44′. Distance between reference marks no. 1 and no. 2 is 265.00 feet. Azimuth mark is on property of Mr. W. E. Beard, 8 yards east of center line of road, and 0.3 mile from station in azimuth 9°31′39″.

Crowder (Lawrence County, Tenn.–Lauderdale County, Ala., M. A. Hecht, 1934).—On land of Oscar Crowder, on or very near State line, about 2 miles east of Lawrence-Giles County line, Tenn., and 7 miles east-northeast of Lexington, Ala. To reach from Lexington post office, follow main gravel road north 1.9 miles, turn right, follow main road 3.85 miles to crossroads at Barnertown, keep straight ahead (east) 2.5 miles and turn right through yard of Oscar Crowder, continue 0.45 mile and turn right onto T-road, go through yard of Ben Trapp and continue about 300 yards to tenant house and station site. Station is in pasture, 10 feet north of wire fence and woods line, 120 feet south of tenant house, 42.5 feet west of 10-inch black oak with triangular blaze, and 64 feet east of 20-inch white oak. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is in pasture, 20 feet east of southeast corner of house, 2 feet southeast of fence corner, and 126.42 feet from station in azimuth 211°44′. No. 2 is in pasture, 3 feet north of wire fence and woods line, and 109.49 feet from station in azimuth 92°34′. Distance between reference marks no. 1 and no. 2 is 204.67 feet. Azimuth mark is on east side of road, in cultivated field, 0.2 mile south of Oscar Crowder's house, and 0.3 mile from station in azimuth 210°35′24″.

Davis (Lawrence County, M. A. Hecht, 1934).—About 7.5 miles south of Lawrenceburg, 2.10 miles south of Leoma, on west side of Route 98, and in garden rented by J. F. Bailey which adjoins property on which stands his home. To reach from intersection of Routes 6 and 98 in Leoma, go south 2.15 miles on Route 98 to T-road just past Bailey's home. Station is in southwest corner of garden, 35.5 feet west of center line of Route 98, 45 feet north of center line of T-road, about 75 feet south of Bailey's home, and 15 feet north of bend in wire fence surrounding garden. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is on east edge of plowed field, 20 feet west of center line of Route 98, and 152.53 feet from station in azimuth 3°45′. No. 2 is on north edge of plowed field, 13 feet south of center line of T-road, and 250.07 feet from station in azimuth 83°34′. Distance between reference marks no. 1 and no. 2 is 268.87 feet. Azimuth mark is on east edge of and 18 feet from center line of gravel road, 100 yards north of white dwelling on property of E. R.

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Justice, on edge of cultivated field directly under telephone line, and 0.75 mile from station in azimuth 357°45′00″. Azimuth from station to *Lawrenceburg, municipal water tank*, distant 7.7 miles, is 184°14′59″.

Shelton (Lauderdale County, Ala., M. A. Hecht, 1934).—About 1½ miles south-southeast of Lexington, 3½ miles south of Tennessee-Alabama State line, on property of W. V. Shelton, in barn lot, 100 feet south-southwest (rear of) Shelton's home, and 25 feet north of 20-inch oak tree. To reach from Lexington post office, go south 0.05 mile on gravel road, turn left and go 1.3 miles to Shelton's home and station site. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is along fence line between barn lot and field, 20 feet south of 16-inch oak tree, 60 feet southeast of Shelton's house, and 131.30 feet from station in azimuth 257°56′. No. 2 is along fence line between barn lot and field, 40 feet south of barn, and 103.29 feet from station in azimuth 336°56′. Distance between reference marks no. 1 and no. 2 is 150.75 feet. Azimuth mark is 8 yards south of center line of north fork of road from Lexington, 25 yards southeast of group of small oak trees, and 0.4 mile from station in azimuth 282°17′25″.

Springer (Lauderdale County, Ala., M. A. Hecht, 1934).—About 5 miles west-northwest of Lexington, 4 miles east-southeast of St. Joseph, and on property of R. L. Springer. To reach from Green Hill Settlement (about 17 miles from Florence) on State Route 5, follow gravel road which is 100 feet south of J. W. White's store and go east 1.7 miles, follow left fork at top of grade and go 1.6 miles, follow left fork and go 0.2 mile, keep to main left fork at Green Bros.' store and follow main road 1.7 miles to home of Bob Springer on right. Station is about 250 yards west of house, 75 yards north of road (State-line road), 10.9 feet east of wire fence around cotton field, about 75 feet north of easterly of two dead snags in cotton field, on summit of downward slope, and about 100 feet southeast of lone 14-inch walnut tree. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is on edge of plowed field, 14 feet north of center line of road, about 200 feet west of T-road leading to pasture, and 251.84 feet from station in azimuth 322°45′. No. 2 is on far side of hollow from station, on west edge of small road leading through planted field, 2 feet east of wire fence, and 387.8 feet from station in azimuth 240°31′02″. Azimuth mark is on edge of plowed field, 10 feet north of center line of road, 45 feet southwest of corner of garden owned by J. P. Ward, and 0.3 mile from station in azimuth 269° 44′06″. Azimuth from station to *St. Joseph, church spire*, distant 3.8 miles, is 128°07′17″.

Elgin (Lauderdale County, Ala., M. A. Hecht, 1934).—About 0.7 mile north-northeast of Elgin, 4 miles east of Center Star, and on property of Edgar Crittenden of Hartsville. To reach from Elgin (about 18 miles east of Florence) at intersection of U. S. Route 72 and gravel road, turn north onto gravel road and proceed 0.6 mile, turn right onto farm road and follow it around barn and 0.45 mile to tenant house and station site. Station is in northwest corner of garden, 34.5 feet southeast of 30-inch white oak with triangular blaze, 35.7 feet northeast of northeast corner of house, and 22 feet south of lane. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is at edge of cotton field, 5 feet north of lane, and 124.03 feet from station in azimuth 277°24′. No. 2 is in edge of cultivated field, 7 feet south of farm road leading to rear of house, and 115.36 feet from station in azimuth 12°33′. Azimuth mark is at edge of cultivated field, on property of Edgar Crittenden, 18 feet east of center line of main road, 45 feet east of 24-inch white oak, and 0.5 mile from station in azimuth 105°16′36″. Azimuth from station to Tom Hurston's house, north chimney, distant 0.6 mile, is 122°02′.

Bailey (Lauderdale County, Ala., M. A. Hecht, 1934).—About 8 miles northeast of Florence, 0.5 mile west of Bailey Springs, on north side of sec. 16, T. 2 S., R. 10 W., and on property of Mrs. A. J. Schuppert of Florence. To reach from Florence, follow State Route 5 north 7.6 miles and turn right at sign "Bailey Springs". Continue on road 1.1 miles to top of grade and three small cedar trees on left and station site. Station is about 175 feet north of center line of road, on north side of plowed field, 32.5 feet north of birch with triangular blaze, in line with north-and-south row of trees, and 18 feet southwest of double cedar. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks set in con-

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crete, note 11b. No. 1 is 3 feet northwest of edge of field, 12 feet from center line of road, and 214.70 feet from station in azimuth 296°18′. No. 2 is 15 feet north of center line of road, 36 feet northeast of 10-inch cedar, on edge of plowed field, and 206.65 feet from station in azimuth 22°37′. Distance between reference marks no. 1 and no. 2 is 288.27 feet. Azimuth mark is on east edge of State Route 5, 33 feet from center line of road, on property of Bob Kilbern, about 75 yards south of his residence, and 1.1 miles from station in azimuth 122°50′35″. Following distances and azimuths are from station: Nitrate plant, easterly of three brick stacks, 7 miles, 25°16′31″; and Florence, municipal tank, 7 miles, 52°52′09″.

Supplementary points

Lebanon (Wilson County, M. A. Hecht, 1934).—On campus of Cumberland University, 94.8 feet north of northeast corner of main building, and 121.8 feet from center line of drive. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. One reference mark is 131.2 feet from northeast corner of main building, 15.6 feet from center line of drive, and 137.42 feet from station in azimuth 316°28′. Other is 7.0 feet from northwest corner of main building, 62.5 feet from northeast corner of main building, and 121.94 feet from station in azimuth 53°01′. Azimuth mark is on edge of campus, 24.6 feet from center line of Greenwood Street, 2.4 feet from inside edge of brick sidewalk, 75.3 feet north from center line of main entrance driveway of campus, and ¼ mile from station in azimuth 284°00′49″. Following azimuths are from station: *Lebanon, Cumberland Univerity, administration building, finial of clock tower*, distant 64.8 meters (213 feet), 15°37′; and Cumberland University, dormitory, right edge of top of chimney, 234°11′45″.

Murfreesboro (Rutherford County, M. A. Hecht, 1934).—About 1.45 miles southeast of James K. Polk Hotel in Murfreesboro, on right-of-way of U. S. Route 41, 21.0 feet east of center line of road, 3.5 feet southwest of fence line, and 90.47 feet southeast of telephone pole no. 21. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is on right-of-way of Route 41, 20.0 feet southwest of center line of road, 1.0 foot east of fence line, and 41.18 feet from station in azimuth 50°33′. No. 2 on right-of-way of Route 41, is 23.0 feet northeast of center line of road, 1.5 feet southwest of fence line, 13.09 feet southeast of telephone pole no. 21, and 77.38 feet from station in azimuth 145°51′. Azimuth mark is on right-of-way of Route 41, 20.0 feet southwest of center line of road, 2 feet northeast of fence line, and 0.4 mile from station in azimuth 148°46′22″. Following distances and azimuths are from station: Murfreesboro, First Methodist Church, steeple, 0.75 mile, 154°25′14″; *Murfreesboro, black water tank, ball on top*, 1.5 miles, 182°07′28″; Teachers College campus, brick stack, 1.0 mile, 202°47′26″; and *Airway beacon no. 19* (see description thereof), 4.3 miles, 9°28′01″.

Kaiser (Rutherford County, M. A. Hecht, 1934).—In Eagleville, on front lawn of Eagleville High School, 112.2 feet from northwest corner of school, and 52.1 feet from 12-inch maple. To reach from post office in Eagleville and junction of State Routes 99 and 16, go east 0.5 mile on Route 99 to brick school on right. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is in school yard, 20.2 feet from center line of highway, 56.2 feet from center line of east driveway, 95.2 feet from center line of west driveway, and 148.40 feet from station in azimuth 188°55′. No. 2 is near east edge of sidewalk, 15.8 feet from center line of drive, and 38.75 feet from station in azimuth 277°25′. Distance between reference marks no. 1 and no. 2 is 152.55 feet. Azimuth mark is on north side of right-of-way of Route 99, 20.6 feet from center line of highway, 30.7 feet west of center line of gravel T-road, 1.0 foot outside of fence line, and 0.5 mile from station in azimuth 275°26′26″. *Transit traverse station no. 63 D 1930* (*U. S. G. S.*) (see description thereof) is 75.26 feet from reference mark no. 2 and 83.09 feet from station in azimuth 342°05′.

Boyce (Rutherford-Bedford Counties, M. A. Hecht, 1934).—About 3 miles south-southeast of Eagleville, 6 miles southwest of Rockvale, about 0.1 mile northeast of J. F. Boyce's home, and on highest part of fence line on north side of high cleared field owned by Mr. Boyce. To reach from intersection of State Routes 99 and 16 in Eagleville, go south 3.2 miles on State Route 16 to white

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house on left (J. F. Boyce's home) and county-line sign on right, turn in through barnyard of Mr. Boyce, and follow rough rock road through woods to top of hill and station site. Station is 45 feet south of twin hackberry tree with triangular blaze and 43 feet east of fence corner. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Upper mark is 6 inches below surface of ground. Reference marks are standard reference disks in concrete, note 11a. No. 1 is near northeast corner of high cleared field, 64.7 feet south of wire fence, and 186.3 feet from station in azimuth 282°48′. No. 2 is on west side of high cleared field, 2½ feet east of intersection of wire fences, and 239.7 feet (slope distance) from station in azimuth 42°46′. Azimuth mark is standard reference disk in outcropping bedrock, note 12b, in yard of Mr. Boyce, about 120 feet east of center of State Route 16, 1½ feet west of fence, about 12 feet south of center of lane by Boyce's home, and about 250 yards from station in azimuth 20°43′13″. Azimuth from station to white church, spire, distant 1.5 miles, is 332°17′28″.

Lewisburg (Marshall County, M. A. Hecht, 1934).—At Lewisburg, on property owned by W. D. Fox and rented by J. O. Savage. To reach from courthouse, go south 0.15 mile on State Route 11, turn right around Lambert & Lusby Lumber Co. office and continue 0.6 mile to top of grade and fence on south side of road. Station is in northeast corner of cultivated field surrounded by this fence, 21 feet south of center line of road, 6 feet southwest of northeast corner post of fence, and about 150 yards northeast of Savage's house. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks set in concrete, note 11b. No. 1 is inside field, 1.5 feet west of fence, about 35 feet north of path leading to Savage's house, and 149.42 feet from station in azimuth 0°40′. No. 2 is 2 feet south of wire fence, in line with north-and-south fence between field and Savage's yard, and 144.94 feet from station in azimuth 95°06′. Azimuth mark is 18 feet north of center line of road, about 6 feet from corner post of fence, about 40 feet west of curve in road, and 0.15 mile from station in azimuth 270°35′27″. Following distances and azimuths are from station: *Lewisburg, municipal water tank* (*black*), 0.5 mile, 244°41′45″; and Chase Adams' home, red brick spire, 1.0 mile, 262°57′19″.

Pulaski (Giles County, M. A. Hecht, 1934).—About 0.5 miles north of Pulaski, on approximate center of summit of Fort Hill, on property of John Spears, among old Confederate earthworks behind Spears' pasture, about 125 feet north of north side of city reservoir, 43.8 feet east of southerly of two huckleberry bushes, 36.5 feet east of west edge of abutment, and 31.0 feet west of east edge of abutment. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 2 feet from west abutment of earthworks and 66.86 feet from station in azimuth 169°00′. No. 2 is about 75 feet north of north side of reservoir, on west abutment of earthworks, and 53.84 feet from station in azimuth 33°26′. Distance between reference marks no. 1 and no. 2 is 111.8 feet. Azimuth mark is in Spears' pasture, 1.5 feet north of wire fence between school grounds and pasture, 12 feet east of easterly side of brick school extended, 21 feet west of center of gate leading to pasture, and 0.25 mile from station in azimuth 297°47′23″. Following distances and azimuths are from station: *Pulaski, old Massey School, spire*, 0.9 mile, 309°14′26″; and *Pulaski, Giles County Courthouse, finial*, 0.6 mile, 349°23′18″.

Rob (Giles-Lawrence Counties, M. A. Hecht, 1934).—About 7 miles southeast of Lawrenceburg, on Lawrence-Giles County line, and on property of Jeff Robinson. To reach from Lawrenceburg, go east 6.45 miles on U. S. Route 64, turn right onto dirt road at yellow house in southeast road angle, go 0.8 mile, turn left onto T-road, and continue 1.6 miles on main road to point where it turns sharply east. Station is 21 feet east of triangle-blazed tree, on fence line, and 18 feet south of center line of road after it turns east. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 6 feet south-southeast of 16-inch oak tree and 104.30 feet from station in azimuth 154°44′. No. 2 is 8 feet south of center line of road, 4 feet northwest of 10-inch oak tree, and 74.34 feet from station in azimuth 267°06′. Distance between reference marks no. 1 and no. 2 is 149.39 feet. Azimuth mark is 18 feet west from center line of road, on property of George Robinson, southeast of his house, and 0.3 mile from station in azimuth 183°13′53″.

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Lawrenceburg (Lawrence County, M. A. Hecht, 1934).—About 0.85 mile east of Lawrenceburg, 18 feet south of center line of U. S. Route 64, and 20 feet east of entrance to Miami Cemetery. To reach from Lawrenceburg, go east 0.85 mile on U. S. Route 64 to cemetery on south side of road and station. Surface and underground marks are standard disk station marks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 25 feet north of center line of highway and 112.14 feet from station in azimuth 253°16′. No. 2 is 25 feet north of center line of highway and 128.10 feet from station in azimuth 122°00′. Distance between reference marks no. 1 and no. 2 is 218.90 feet. Azimuth mark is on property of Merida Huckaba, 9 yards north of center line of highway, and 0.3 mile from station in azimuth 99°34′44″.

Lexington (primary traverse station no. 600 (U. S. G. S.)) (Lauderdale County, Ala., M. A. Hecht, 1934).—In Lexington, on property of S. A. Newton, 0.15 mile by road north of post office, in forks of Lexington-Lorette road and old Greenhill road, and 15 yards and 6 yards respectively from center lines of above roads. Mark is standard U. S. Geological Survey bench-mark tablet, stamped "Prim. Trav. Sta. No. 600 754 feet above sea", cemented in top of 3-inch iron pipe projecting 10 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 15 feet east of center line of main road from Lexington and 200.12 feet from station in azimuth 18°23′. No. 2 is 20 feet west of center line of road to Greenhill or St. Joseph and 113.45 feet from station in azimuth 146°15′. Distance between reference marks no. 1 and no. 2 is 284.23 feet. Azimuth mark is on property of Henry McGuire, 15 yards northwest of his house, just outside fence around house, and 200 yards from station in azimuth 271°53′49″.

Robertson (Lauderdale County, Ala., M. A. Hecht, 1934).—About 2½ miles south-southwest of St. Joseph, Tenn., probably on Alabama side of State line but not more than 75 yards therefrom, near center of north side of sec. 6, T. 1 S., R. 9 W., and on land of Lewis Robertson. To reach from St. Joseph post office, follow Tennessee Route 6 south 1.55 miles, turn right onto gravel fork (this fork is 0.8 mile north of Alabama-Tennessee line) and follow main straight road 1.1 miles to top of grade and station site. Station is 38 feet northwest of center line of road, 14 feet northwest of telephone line, and 19 feet west-southwest of telephone pole no. 2136. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference marks are standard reference disks in concrete, note 11a. No. 1 is 19 feet southeast of center line of road, 16 paces southwest of fork of road, directly across road from old barn, and 135.05 feet from station in azimuth 268°41′. No. 2 is 6.4 feet south of center line of small lane, 90 feet southeast of center of main road, 1.5 feet north of fence of Lewis Freeze's property, and 189.82 feet from station in azimuth 11°59′. Azimuth mark is standard reference disk in concrete, note 11b, about 23 feet east of center line of Alabama Route 5, in front of white house with tin roof and dormer windows (Fowler's residence), and 1.0 mile from station in azimuth 283°48′51″. Following distances and azimuths are from station: Fowler's house, chimney at south end, 1 mile, 284°05′50″; and *St. Joseph church spire*, 2.3 miles, 206°30′05″.

Green Hill (Primary traverse station no. 3, Ala., 1911 (U. S. G. S.)) (Lauderdale County, Ala., M. A. Hecht, 1934).—About 1¼ miles south of Tennessee line, 17 miles north of Florence, in NW¼ sec. 8, T. 1 S., R. 9 W., at settlement known as "Green Hill", on property of J. W. White, 50 feet west of center line of State Route 5, 35 paces south of Wilcoxson's store, 24 feet east of wire fence, and 73.5 feet north of 48-inch oak tree. Station mark is U. S. Geological Survey cast-iron pipe with standard cap stamped "Prim. Trav. Station No. 3 1911 Elev. 767 feet." Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 7.5 feet south of Wilcoxson's store, 1.5 feet east of wire fence, 84 feet west of center line of State Route 5, and 109.60 feet from station in azimuth 179°12′. No. 2 is 58 feet southeast of State Route 5, 19 feet southwest of dirt road, at fence corner of Wilcoxson's home, and 108.45 feet from station in azimuth 285°27′. Distance along slope between reference marks no. 1 and no. 2 is 174.4 feet. Azimuth mark is in edge of field, about 50 feet north of center of road at point of first curve, 50 yards from house with tin roof and stone chimney, directly across ditch from dim cart path, and about ¼ mile from station in azimuth 270°26′41″.

Airway beacon no. 19 (Rutherford County, M. A. Hecht, 1934).—A 24-inch beacon, revolving 6 revolutions per minute, on 51-foot tower, about 6 miles south of Murfreesboro. To reach from Murfreesboro, go south 5 miles on Shelby-

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ville road, turn left (east) off concrete road onto gravel road, continue 1½ miles to residence of Mr. Dickens, and thence to highest of three hills just 1 mile south of residence.

Transit traverse station no. 63 D 1930 (U. S. G. S.) (Rutherford County, M. A. Hecht, 1934).—In cornerstone at northeast corner of Eagleville High School, 75.26 feet from reference mark no. 2 of station *Kaiser*, and 83.09 feet in azimuth 342°05′ from station *Kaiser* (see description thereof). Mark is standard disk of U. S. Geological Survey, stamped "T. T. Sta. No. 63–D–1930", and is close to or identical with U. S. P. B. M. 7690.

SPARTA, TENN., TO GADSDEN, ALA. (SECOND ORDER)

Principal points

Spencer (Van Buren County, M. A. Hecht, 1934).—In Spencer, on grounds of Burritt College, between new dormitory and main class building, 66.2 feet east-northeast of northeast corner of main building, 41.0 feet southwest of southeast corner of new dormitory, and 105 feet south-southeast of 30-inch maple. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 26 yards in front (west) of main building, just north of walk leading thereto, and 172.67 feet from station in azimuth 55°27′. No. 2 is at west side of entrance to new dormitory, 7 yards northeast of 30-inch maple tree, and 107.20 feet from station in azimuth 145°42′. Azimuth mark is on property of Edgar Roscoe, 125 yards south of center line of Route 30, 35 yards south of its intersection with Roscoe's driveway, 50 yards south-southeast of southeast corner of Christian Church (brick), 30 feet east-southeast of 16-inch oak, 5 feet east of front gate in picket fence, and 200 yards from station in azimuth 59°40′12″.

Brady (Van Buren County, M. A. Hecht, 1934).—About 8½ miles east-southeast of Spencer, on highest point of wooded ridge known locally as "Big Ridge", on property of company whose agent is Robert Brady, of Spencer, 200 yards north of Route 30, 43.2 feet east-northeast of triangle-blazed 12-inch oak, and 18 feet northeast of triangle-blazed 8-inch oak. To reach from junction of Routes 30 and 111 in Spencer, go southeast 10.5 miles on Route 30 to top of grade and triangle-blazed tree on left and continue north 200 yards up steep bank about 50 yards west of blazed tree to station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1, projecting about 8 inches above ground, is slightly lower in elevation than and 83.63 feet from station in azimuth 34°32′. No. 2, projecting 3 inches above ground, is 6 feet southeast of 6-inch hickory, and at same elevation as and 91.38 feet from station in azimuth 123°57′. Azimuth mark is 100 feet southwest of triangle-blazed 24-inch oak, which is on north side of Route 30, 27 feet south of center of highway, and 200 yards from station in azimuth 2°44′45″.

Smart (Van Buren County, M. A. Hecht, 1934).—About 11¾ miles south-southeast of Spencer, 2¼ miles north by west of tricounty corner of Van Buren, Bledsoe, and Sequatchie Counties, on sharp knoll known locally as "Smart Mountain", at head of Big Brush and Piney Creeks, on land owned by Rocky River Timber Co., about 40 feet west and a little lower than eastern edge of summit, 23 feet north-northeast of 14-inch gum tree, and 21 feet southwest of 12-inch black gum with triangular blaze. To reach from Bouldin Hotel in Spencer, follow main road (Dunlap road) at west side of hotel south 9.1 miles, continue straight ahead at left fork and go 3.25 miles (1.65 miles past power line crossing road), turn left at crossroads with two triangle-blazed trees and go 0.7 mile to point where road leaves clearing at south side of field, follow main road 0.5 mile, follow dim left fork 0.15 mile, and follow dim right fork 0.5 mile up hill to station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference mark no. 1 is standard reference disk in bedrock, note 12b, flush with surface of ground, at eastern edge of summit, 2 feet east-southeast of 4-inch red oak, and 67.21 feet from station in azimuth 217°52′. Reference mark no. 2 and azimuth mark are standard reference disks in boulders, note 12d. No. 2 is on downward slope of ridge and 79.44 feet from station in azimuth 336°05′. Azimuth mark is on eastern side of ridge, 12 feet north of 12-inch oak, and 100 yards from station in azimuth 3°55′.

Meyers (Bledsoe County, M. A. Hecht, 1934).—About 6.75 miles west-southwest of Pikeville, 1 mile north of John Meyers' home, near west end of sum-

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mit of spur ridge of Cumberland Plateau, and on property of the Inman Co. To reach from junction of State Routes 28 and 30 at Pikeville, follow Route 28 south 8.8 miles, turn right at crossroad and go 2.5 miles up mountain to summit, follow main left fork 2.95 miles to Brockbell post office, continue ahead 0.5 mile on main road to oblique crossroads, turn right and go 1.95 miles to home of John Meyers, turn left onto rough woods road just beyond Meyers' house and go 0.25 mile through woods, follow right fork 0.7 mile to dim crossroads, turn right and go 0.45 mile up grade to summit at triangle-blazed tree on right and station site. Station is near south edge of summit, 100 feet south of ridge road, 100 feet south of triangle-blazed oak, and 25 feet southwest of leaning 30-inch oak. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on south side of ridge road, near large white oak, and 95.41 feet from station in azimuth 250°50′. No. 2 is on south side of ridge road, near large oak snag, and 126.80 feet from station in azimuth 161°23′. Azimuth mark is opposite dim T-road leading north, at base of small tree, 12 feet south of center of ridge road, and 200 yards from station in azimuth 169°15′22″.

Cagle (Sequatchie County, M. A. Hecht, 1934).—About 9 miles northwest of Dunlap, 2 miles south-southwest of Cagle post office, on flat-topped hill known locally as "Lockhart Hill", on property of Dunlap Coal Co., about 400 yards northeast of new Dunlap-Spencer road (now under construction), 180 yards east of large triangle-blazed tree, and 27.3 feet west-northwest of 14-inch oak which leans to north. To reach from post office in Cagle, go southwest 0.35 mile, follow right fork (main road) 0.75 mile, follow left fork 0.55 mile (0.35 mile beyond home of Bud Boyd), and follow left fork 0.45 mile to large triangle-blazed tree on left and station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper marks project about 10 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is about 11 feet south of triangle-blazed 6-inch chestnut tree and 148.35 feet (slope distance) from station in azimuth 186°12′. No. 2 is 2 feet south of 24-inch burned stump and at same elevation as and 125.56 feet from station in azimuth 90°46′. Azimuth mark is 20 feet southeast of 18-inch oak, 9 feet north of center of white-sand road, and 0.2 mile from station in azimuth 1°05′52″.

Lockhart (Grundy County, M. A. Hecht, 1934).—About 2¼ miles southwest of Palmer, about 200 yards northwest of Grundy-Sequatchie-Marion tricounty corner, on State-owned property, 200 feet west of center line of Route 108, 54.6 feet west-northwest of southwest leg of fire tower, 50.8 feet west of northwest leg of fire tower, 13 yards northwest of 16-inch oak, and 6 yards south-southwest of 10-inch oak tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is along fence line on east side of forestry lot, 30 feet west of center line of highway, 9 yards north of 22-inch elm, and 168.90 feet from station in azimuth 247°06′. No. 2 is along fence line around forestry lot, 8 yards west of 14-inch oak, and 117.46 feet from station in azimuth 159°18′. Azimuth mark is 15 yards east of center line of highway, 10 yards southeast of 18-inch oak with telephone wires on it, 4 yards southeast of 3- by 3-foot boulder, and 0.2 mile by road from station in azimuth 169°49′48″. Fire lookout tower is 26.08 feet from station in azimuth 280°39′.

Bennett (Sequatchie County, M. A. Hecht, 1934).—About 6¼ miles west-northwest of Fairmount, 5½ miles south by east of Daus, 5 miles east of Shirleyton, 1 mile north of Bennett Gap, on high point on west side of Walden Ridge, at head of North Suck Creek, in woods, 24 feet west of center line of pike, and 21.4 feet northwest of triangle-blazed 24-inch oak tree. To reach from courthouse in Jasper, go north 28.15 miles (0.65 mile past Signal Mountain cement plant) on temporary U. S. Routes 41 and 64, turn left onto concrete road at large arrow "Signal Mountain" and go 3.0 miles, turn sharply to left at Volunteer Food store and go 0.1 mile, turn right onto Maryland Avenue and go 0.25 mile, continue straight ahead (north) 3.1 miles on James Boulevard to small store and arrow "Anderson Pike", follow left fork (asphalt) 2.05 miles to log house on right, and follow left fork 6.2 miles (1.5 miles past unpainted school on left) to triangle-blazed oak tree at top of grade and station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 41 feet east of center line of highway and 155.45 feet from station in azimuth 232°35′. No. 2 is 34 feet east of center line of highway, 17.6 feet west of 20-inch gum tree, and

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135.96 feet from station in azimuth 345°00′. Azimuth mark is in right-of-way, about 2 feet higher and 36 feet east of center line of highway, and 0.15 mile from station in azimuth 14°26′37″.

Big Hill (Marion County, M. A. Hecht, 1934).—About 6 miles northwest of Jasper on ridge known locally as "Pryors Ridge" and "Big Hill", between Dixon and Gizzard Coves. To reach from Chicago Hotel in Sequatchie, go northwest 0.2 mile on gravel road to 2-story white house on left with picket fence, turn right and go across small bridge, go 200 yards up steep hill to new Sequatchie-Tracy City road (now under construction), turn left and follow main-traveled and very rough road 4.65 miles to forks, turn right and go 1.65 miles up steep hill to triangle-blazed 8-inch oaks on each side of road and station site. Station is about 50 feet west of center of dim woods road and directly in line with and 36.3 feet west-southwest of more westerly of two oaks mentioned above. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 13 feet west of center of road and 67.35 feet from station in azimuth 225°25′. No. 2 is 9 feet east of center of road and 91.25 feet from station in azimuth 333°43′. Azimuth mark is 10 feet north of center of road, 7 feet north of triangle-blazed 30-inch oak, and 0.2 mile from station in azimuth 181°59′26″.

Ketner (Marion County, M. A. Hecht, 1934).—About 5.75 miles east-northeast of Whitwel, on first prominent point 0.5 mile south of point where State Route 27 passes through Ketner Gap, and on west edge of Waldron Ridge. To reach from junction of State Routes 108 and 27 near Whitwel, follow Route 27 east 6.95 miles to dirt road at top of grade (Ketner Gap), turn right onto dirt road and go 0.2 mile, follow right fork 0.2 mile, follow right fork 0.15 mile to junction of four roads, and follow middle fork 0.6 mile to junction with dim road and station site. Station is 130 feet northwest of junction, about 60 feet southeast of northwest edge of summit, and 25 feet south-southwest of crooked 18-inch tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference mark no. 1 is standard reference disk in concrete, note 11b, down slope toward road, and 84.41 feet from station in azimuth 288°17′. No. 2 is standard reference disk in large flat rock outcrop and 54.40 feet from station in azimuth 28°42′. Azimuth mark is standard reference disk in concrete, note 11b, at south edge of field, inside fence, 0.5 mile east of junction of State Routes 27 and 28, 30 feet north of center line of Route 27, and 1.5 miles from station in azimuth 112°41′50″.

Pioneer (Jackson County, Ala., M. A. Hecht, 1934).—About 5½ miles north-northwest of Stevenson, on summit of long, flat-topped, detached ridge which is one of group of such ridges on west side of Tennessee River, near a small locally worked coal mine, and on property of the Pioneer Land Co. To reach from post office at Stevenson, follow main street southwest 0.3 mile, turn left across railroad tracks, go 1.1 miles and turn right across railroad tracks, go 1.7 miles to end of truck travel at old mine road to northwest, follow old road northwest up ridge 1.2 miles to summit, go along summit 3.5 miles to junction of three roads, turn sharply to right and go up side of ridge 200 yards to T-shaped summit, and then go south and east 0.35 mile along stem of T-ridge to station site. Station is on highest point of summit, 30½ feet west-southwest of leaning 22-inch white oak, and 14 feet east-southeast of 6-inch oak with triangular blaze. Surface mark is standard station disk in buried boulder, note 4. Underground mark is standard station disk in concrete, note 7a. Reference and azimuth marks are standard reference disks in buried boulders, note 12c. No. 1 is down south side of stem of T-ridge and 85.42 feet from station in azimuth 319°14′. No. 2 is along south spur of ridge and 118.35 feet from station in azimuth 50°46′. Azimuth mark is along cross ridge to east, 6 feet west of 14-inch oak with triangular blaze, and 100 yards from station in azimuth 288°57′.

Fabius (Jackson County, Ala., M. A. Hecht, 1934).—About 5 miles east-southeast of Stevenson, 2.25 miles east of Caperton Ferry, directly east of Tennessee River, near north end of long ridge, near west edge of summit, 78 feet north of 14-inch black-oak tree with triangular blaze, and 39½ feet west of center of road. To reach from Hi Way Inn at Stevenson, follow U. S. Route 72 south 1.75 miles to T-road at old sign "Caperton Ferry", turn left and go 1.0 mile to T-road, turn right and go 0.75 mile to Caperton Ferry, cross Tennessee River on ferry and go 1.05 miles from east bank of river to T-road, turn right and go 3.2 miles up mountain to summit at white store, continue 0.5 mile to old post office, turn left onto Caperton Brow road and go 0.2 mile to church, keep right and go 0.9 mile, and follow right fork 0.9 mile to top of grade and station site.

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Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 20 feet east of center line of road and 102.97 feet from station in azimuth 187°53′. No. 2 is 25 feet east of center line of road and 105.02 feet from station in azimuth 286°06′. Azimuth mark is about 0.25 mile north of road fork, near old barn, 16 feet south of center of road to station, and 0.6 mile from station in azimuth 54°08′14″.

Carr (Jackson County, Ala., M. A. Hecht, 1934).—About 3 miles west-northwest of Stevenson, at east end of flat-topped mountain, between Big Crow and Big Coon Creeks, on property of Luther Gamble, 23.6 feet south of 24-inch chestnut-oak tree, and 7.5 feet east of 10-inch chestnut tree. To reach from post office in Stevenson, follow main street southwest 0.3 mile to railroad crossing, keep to left and follow main gravel road 1.1 miles to point where main road turns right across railroad, continue straight ahead on dirt road 2.3 miles to lane at Coffey's store on left, follow lane to right 0.4 mile to brick home of W. D. Rorex and end of truck travel, go east on lane to old sawmill site and triangle-blazed tree, follow old wagon road about 1 mile up hill to left to spring on right, turn right up mountain about 25 yards beyond spring and go ¼ mile to station site. Surface mark is standard station disk in buried stone about 7 by 7 inches square. Reference marks are standard reference disks in buried stones flush with ground. No. 1 is at same elevation as and 52.62 feet from station in azimuth 37°53′. No. 2 is on line with 24-inch dead oak tree and at same elevation as and 63.50 feet from station in azimuth 148°29′. Azimuth mark is standard reference disk in southern extremity of rock ledge, flush with surface of ground, 8 feet west of 12-inch water-oak tree, 7 feet southeast of 18-inch chestnut-oak tree, and 200 yards from station in azimuth 170°47′40″.

Supplementary points

Ormsby (Van Buren-Bledsoe Counties, M. A. Hecht, 1934).—About 10.75 miles east-southeast of Spencer, 8 miles northwest of Pikeville, on cleared knoll, and on property of Lee Ormsby. To reach from courthouse in Spencer, follow State Route 30 east 12.5 miles to green-and-white house (Lee Ormsby's home) and store on left and station site. Station is on westerly end of low ridge running east and west, about 200 yards east of Lee Ormsby's house, 200 yards east of point where Route 30 crosses Van Buren-Bledsoe County line, 100 yards north of Route 30, and 50 feet south of highest point of ridge. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark is 1 foot below surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1, projecting 8 inches above ground, is 100 feet west of point where dirt road forks to south, 26.6 feet north of center line of Route 30, 2 feet inside picket fence line, and 45 feet below and 352.66 feet from station in azimuth 356°11′25″. No. 2 is on northwest edge of grove of 6-inch white oaks, about 20 feet above and about 50 feet north of center line of Route 30, and 30 feet below and 271.69 feet from station in azimuth 64°13′. Distance between reference marks no. 1 and no. 2 is 355.90 feet (slope distance). Aximuth mark is 100 feet east of dirt T-road leading south, 28 feet south of center line of highway, 2.5 feet outside fence line, and approximately 1.0 mile from station in azimuth 114°18′50″.

Caper (Jackson County, Ala., M. A. Hecht, 1934).—About 7½ miles south-southwest of Bridgeport, 5¼ miles south of east of Stevenson, on rock cliff, on west side of ridge east of Tennessee River, about 100 yards northwest of triangle-blazed oak, 50 yards west of road, 27.5 feet east-southeast of edge of cliff, and 16 feet east of leaning 14-inch cedar. To reach from Hi Way Inn in Stevenson, follow U. S. Route 72 south 1.75 miles, turn left onto T-road at old sign "Caperton Ferry" and go 1.0 mile, keep right at T-road and go 0.75 mile to ferry, cross Caperton Ferry and go 1.05 miles, turn right onto T-road and go up mountain 3.2 miles to white store, keep straight ahead 0.5 mile to old post office and sign "Caperton Brow" and "Trenton, Ga.", turn left and go 0.2 mile, follow right fork at church 0.9 mile, and follow right fork 2.5 miles to triangle-blazed oak on left and station site. Marked by standard station disk in boulder, note 5, about 3 inches below surface of ground. Reference and azimuth marks are standard reference disks in boulders, note 12d. No. 1 is on projection of cliff, 11 feet east-southeast of edge of cliff, 6 feet south of tip, and 65.10 feet from station in azimuth 210°57′. No. 2 is 2 feet east-southeast of edge of cliff and 70.71 feet from station in azimuth 53°11′. Azimuth mark is on rock cliff.

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25 feet west of center line of road, 15 feet north of 8-inch hickory, 8 feet east of edge of cliff, and 0.15 mile from station in azimuth 220°30′02″.

Pitt (Marion County, M. A. Hecht, 1934).—Near Alabama-Tennessee State line, about 2 miles south of post office in South Pittsburg, 1.1 miles south of south city-limit sign of South Pittsburg, on right-of-way of U. S. Route 72 at point where concrete road ends and gravel road begins, 44.3 feet northwest of Tennessee-Alabama State boundary sign, 25.7 feet northwest of center line of road, and 10.7 feet east-northeast of north corner post of gate leading to Mrs. Cooper's barn. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on highway right-of-way, 21.5 feet southeast of center line of road, and 104.50 feet from station in azimuth 244°26′. No. 2 is on highway right-of-way, 27 feet southeast of center line of road, and 78.44 feet from station in azimuth 353°55′. Azimuth mark is on highway right-of-way, 27 feet southeast of center line of road, 1 foot northwest of fence line, and 0.35 mile from station in azimuth 35°46′07″.

PRINCETON, KY., TO SAULSBURY, TENN. (SECOND ORDER)

Principal points

Gresham (Trigg County, Ky., M. A. Hecht, 1934).—About 3.5 miles southwest of Cadiz, in field owned by J. W. Gresham. To reach from courthouse in Cadiz, follow Route 68 southwest 3.15 miles to dirt side road, turn right (west) and continue for 0.65 mile to Mr. Gresham's home on south side of road locally known as "Green Hill Road." Station is about 300 yards behind (south of) Gresham's house, in southeast corner of field, 15 feet southeast of southeast corner of small pond, 15 feet northwest of intersection of two fence lines, 20 feet north of row of trees, and 34.6 feet northeast of 10-inch hickory tree with triangular blaze. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is along north-and-south fence line, 2 feet west of fence, and 120.59 feet from station in azimuth 195°29′. No. 2 is 35 feet southwest of southwest corner of pond, 2 feet north of east-and-west wire fence line, and 85.86 feet from station in azimuth 80°38′. Azimuth mark is in front yard of home of Terry Hall, 0.05 mile north of road, 35 feet south of southeast corner of porch, 21 feet east of gate leading to house, 1.5 feet north of fence, and 0.6 mile from station in azimuth 129°57′33″.

Mitchell (Trigg County, Ky., M. A. Hecht, 1934).—About 9¼ miles northwest of Linton, about 5 miles west-southwest of Canton, on U. S. Route 68 between Cumberland and Tennessee Rivers, and on property of Mr. Jim Miller. To reach from post office in Golden Pond, go west 2.0 miles on U. S. Route 68 (or 0.4 mile beyond store and Shell filling station of H. C. Mitchell) to station. Station is on small embankment, in pasture, 50 feet south-southeast of center line of U. S. Route 68, about 150 feet southeast of home of Mr. M. Bland, and 21 feet south-southeast of wire fence. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference and azimuth marks are standard disk reference marks in concrete, note 11b. No. 1 is in pasture, 10 feet south-southeast of wire fence, and 67.24 feet from station in azimuth 244°32′. No. 2 is along downward slope of pasture and 80.71 feet from station in azimuth 340°32′. Azimuth mark is 25 feet south of center line of U. S. Route 68, on small embankment, 2½ feet north of wire fence, and about 0.4 mile (speedometer) from station in azimuth 88°42′24″.

Model (Stewart County, M. A. Hecht, 1934).—About 13 miles northwest of Dover, 2.55 miles north-northwest of Model, and on property of Abner White of Cadiz. To reach from junction of Routes 76 and 49 (about 3 miles west of Dover), follow Route 49 north 13.4 miles to post office at Model and continue 2.55 miles on Route 49 to station which is 45 feet west of center line of highway, in small cleared space in woods, and 45.9 feet north-northwest of large oak with triangular blaze. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 12 feet east of center line of road and 131.23 feet from station in azimuth 241°47′. No. 2 is 12 feet east of center line of road, 5 feet north of small twin oak tree, and 114.02 feet from station in azimuth 321°07′. Azimuth mark is 15 feet west of center line of road and 0.15 mile from station in azimuth 342°55′24″.

For notes in regard to marking of stations see pp. 151–152.

Howell (Trigg County, Ky., M. A. Hecht, 1934).—About 5 miles southeast of Linton, 0.35 mile west of Union Hill church, and on property of F. F. Howell. To reach station from Cadiz, follow Dover highway south 14.2 miles, turn west onto dirt road, and continue 1.3 miles to station site at top of grade. Station is 100 yards west of Mr. Howell's house, on top of bank, opposite T-road to south, and 44 feet north of center line of road. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on south side of road, 2 feet inside of fence, and 106.38 feet from station in azimuth 263°38′. No. 2 is on north side of road, at east edge of cultivated field, and 120.79 feet from station in azimuth 44°19′. Azimuth mark is in front yard of Mr. Howell's residence, alongside road, at base of large oak tree, and 0.15 mile from station in azimuth 230°17′31″.

Dennis (Stewart County, M. A. Hecht, 1934).—About 3½ miles north-northwest of Dover. To reach from post office in Bumpus Mills, go east on asphalt road 0.5 mile to T-road right at sign "Dover 9 miles"; turn right and go 4.1 miles to woods road right and triangular blaze on right and follow this road 0.7 mile to top of hill and station. Station is on highest point of partly wooded hill, at southeast corner of cultivated field belonging to Duncan E. Green, 38½ feet west of wire fence, and 28.8 feet north of double oak tree with triangular blazes. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is at southeast edge of cultivated field, 12½ feet northwest of wire fence, and 88.0 feet from station in azimuth 223°07′. No. 2 is at south edge of cultivated field and slightly lower in elevation than and 131.7 feet from station in azimuth 84°25′. Azimuth mark is 18 feet west of center line of road, directly across road from old barn, and about 0.7 mile from station in azimuth 181°16′05″. Azimuth from station to square white cupola on red brick building in Dover is 2°51′28″.

Tharpe (Stewart County, M. A. Hecht, 1934).—Twelve miles northwest of Dover, 3 miles south of Model, on property of Erin-Loyd Tie Co., and on high wooded knoll known locally as "Round Top." To reach from Dover, go west 3.2 miles on Route 76 and turn right onto Route 49, follow Route 49 for 7.95 miles, turn left onto gravel road 0.1 mile before reaching white school on right, continue 1.6 miles and take right fork up hill, go 0.6 mile and turn right after passing second house on right (just before reaching paling fence on right), and follow this narrow woods road 1.2 miles to high knoll on right and station site. Station is 134 feet northeast of center line of road at this point, 4 yards southwest of 12-inch triangle-blazed tree, 5 yards north of 6-inch and 12-inch twin oak trees, and 4 yards northeast of 12-inch oak tree. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 4 feet southwest of center line of road leading to station, 10 feet east-northeast of 8-inch triangle-blazed oak tree, and 137.91 feet from station in azimuth 36°01′. No. 2 is 11 yards northwest of 10-inch twin oak trees, 9 yards east-southeast of 8-inch and 10-inch oak trees, and 101.37 feet from station in azimuth 110°05′. Azimuth mark is on east side of T-road that runs south from road leading to station, 6 yards west of small group of persimmon trees, near east side of old field, a little to northwest of highest part of field, and 0.4 mile from station in azimuth 24°23′43″.

Liberty (Henry County, M. A. Hecht, 1934).—About 9¾ miles north-northeast of Elkhorn and about 2 miles northwest of Tennessee River bridge on Route 76. To reach from courthouse in Paris, follow Route 76 east 16.5 miles, turn left around Standard Oil station (1.0 mile west of west end of Tennessee River bridge), go 2.15 miles to crossroad (white school on left), turn right and go 1.0 mile to field on right and triangle-blazed tree on left. Station is on highest part of cultivated field belonging to John Lee, about 50 yards southeast of Ridge road, and about 50 yards southeast of blazed tree. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Upper mark projects 6 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 12 feet east of center of road and 211.33 feet (slope distance) from station in azimuth 182°14′. No. 2 is 10 feet east of center line of road and 208.61 feet (slope distance) from station in azimuth 82°23′. Azimuth mark is on west side of road, at sharp curve to right, and 0.2 mile from station in azimuth 177°32′33″.

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Wynn (Stewart County, M. A. Hecht, 1934).—On State Route 76 between Dover and Paris, 5.95 miles northeast of State toll bridge over Tennessee River, and 4½ miles east-southeast of Fort Henry. To reach from intersection of Routes 49 and 76 (about 3 miles west of Dover), go southwest 4.55 miles on Route 76 to top of grade and short tangent in road and station on right. Station is 15 yards north-northwest of center line of highway, 8 yards north-northeast of 14-inch triangle-blazed oak tree, 8 yards southwest of 12-inch oak tree, and 9 yards southeast of 14-inch oak tree. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 30 feet south of center line of road 40 feet west of 14-inch oak tree, and 114.23 feet from station in azimuth 268°26′. No. 2 is 10 yards south of center line of road 50 feet west of 12-inch oak tree, and 133.24 feet from station in azimuth 351°46′. Azimuth mark is 8 yards south of center line of road, just north of two sets of 6-inch and 10-inch oak trees, and 0.15 mile from station in azimuth 225°17′17″.

Licked (Benton County, M. A. Hecht, 1934).—About 8.2 miles north-northeast of Big Sandy, at settlement of Benny's Creek. To reach station from railroad crossing in Big Sandy, take Lick Springs road and go north 8.25 miles, turn west-northwest onto rough dirt road (Benny's Creek road) and continue 2.6 miles to Odom School, turn right 75 yards past school and continue 0.3 mile to top of grade, turn right onto dim woods road and go 0.2 mile to station. Station is on knob on top of long ridge, between two dim woods roads, 140 feet north of their junction (fork), and 40 feet east of center of west fork. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is east of road, down center of highest part of ridge, and 106.78 feet from station in azimuth 170°32′. No. 2 is on west edge of summit, 20 feet east of west edge, and 70.50 feet from station in azimuth 81°05′. Azimuth mark is about 0.4 mile east of settlement of Benny's Creek, 30 feet south of center of Benny's Creek road, near large barn, and 0.65 mile from station in azimuth 22°01′16″.

Eagle (Henry County, M. A. Hecht, 1934).—About 12 miles northeast of Paris, 4 miles east of north of Elkhorn, and on property of W. C. Wembly. To reach station from courthouse in Paris, follow Route 76 east 11.95 miles (or 1.25 miles past Oak Grove Church and School on left), turn sharply to right at four mail boxes, go 0.5 mile, keep left fork and continue 0.6 mile, turn right onto dim woods road at blazed tree on right, and then go 0.05 mile through woods to large triangle-blazed tree and station. Station is on small wooded knoll, 21.5 feet north-northwest of large blazed tree, 2 feet southwest of 10-inch stump, and 66.7 feet west of dim road. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 15 feet southwest of dim road and 91.69 feet from station in azimuth 212°34′. No. 2 is 30 feet northwest of center line of dim road and 83.49 feet from station in azimuth 333°46′. Azimuth mark is 21 feet east of center line of main gravel road (reached before turning into dim woods road to station), 25 feet north of twin oak tree (larger one about 10 inches in diameter), and 0.15 mile from station in azimuth 225°15′16″.

Elkhorn (Henry County, M. A. Hecht, 1934).—About 2.75 miles north of Springville and 9.5 miles east-northeast of Paris. To reach from Paris, follow Route 76 northeast 4.1 miles to gravel road, turn right (east) onto gravel road and follow 6.0 miles to home of Mr. Pierce. Turn into yard of John Nance just before reaching the Pierce home, go through two gates and follow dim road between two cultivated fields 0.3 mile to pasture. Turn right across pasture, go 0.2 mile to small woods, go through gate to another pasture and cross this to highest part (distant about 100 yards) and station. To reach from Springville, follow dirt road northwest along railroad tracks 3.1 miles to Pierce's home. Go through yard of John Nance's home next to Mr. Pierce's, and then proceed as above. Station is about 0.4 mile behind Pierce's home and 100 feet west of west edge of woods. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on north edge of woods and 116.70 feet from station in azimuth 270°23′. No. 2 is on west edge of woods and 132.13 feet from station in azimuth 314°04′. Azimuth mark is at edge of woods fence, 5 feet southwest of fence line with growth of small sassafras trees, 30 feet south of 3-inch white cedar tree on fence line, and 600 feet from station in azimuth 262°23′24″.

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Carmel (Benton County, M. A. Hecht, 1934).—About 3 miles north-northeast of Big Sandy, about 1½ miles south-southwest of Mount Carmel Church, about 3 miles west-northwest of Faxon, on Lick Creek road, on high heavily wooded ground, and on property of Mr. David Clemant. To reach station from Jordan Grocery Co. on Route 69 just north of railroad crossing in Big Sandy, go east 0.05 mile and turn left at Nobles' store, go 0.05 mile and turn right across small bridge, follow main road 0.45 mile to forks, take left fork with arrow "Danville Ferry" and proceed 0.4 mile to forks, take upper right fork and continue 2.25 miles to triangle-blazed tree and station on left. Station is 30 feet west of center line of road, about 100 yards south-southwest of cabin owned by Mrs. French, and 19 feet southeast of 15-inch black oak with triangular blaze. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in cleared area, 13 feet east of center line of road, 14 feet west of 15-inch hickory tree, and 95.85 feet from station in azimuth 215°56′. No. 2 is at edge of woods, 17 feet east of center line of road, and 129.64 feet from station in azimuth 334°31′. Azimuth mark is 20 feet east of center line of road, 12 feet west of woods line, about 110 feet south of T-road, and 0.3 mile from station in azimuth 359°42′59″.

Carpenter (Benton County, M. A. Hecht, 1934).—About 5.7 miles a little east of south of Big Sandy, 7.0 miles northwest of Eva, 6.6 miles east by north of Camden, and on property of David W. Crockett. To reach from Camden, follow Route 69 north 8.0 miles and turn right at T-road with triangle-blazed tree in northeast angle, and go 0.8 mile to home of Mr. Crockett and station which is in northwest corner of peach orchard, at road forks about ¼ mile southeast of Carpenter's School, 11 yards south of center line of road, 8 yards east of 9-inch oak tree, and 12 yards north of 12-inch oak tree in side yard of Crockett's house. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 6 yards north of center line of and across road from station, 4 yards east of 12-inch oak tree, 25 yards northeast of road intersection, and 121.60 feet from station in azimuth 105°10′. No. 2 is 14 yards north of center line of and across road from station, 4 yards southwest of 14-inch oak tree, and 123.33 feet from station in azimuth 223°49′. Azimuth mark is on property of E. V. Markham, 4 yards southwest of center line of road, 4 yards northwest of 6-inch oak tree, 0.1 mile northeast of T-road left, and about 0.25 mile from station in azimuth 258°50′57″.

Walters (Henry County, M. A. Hecht, 1934).—About 10 miles southeast of Paris, on west slope of small hill, on property of Mrs. Dora Smith, 19 feet west of property line of J. R. Walters, about 150 yards south of Rundelberg road, and in east edge of cleared field. To reach from junction of U. S. Route 70 and State Route 69 in Camden, go north 5.7 miles on Route 69 to stone filling station of J. P. Rushing on left, turn left onto gravel road and go 6.95 miles (or 2.5 miles after crossing Big Sandy River) to dim road left just across road from home of Raymond Walters, turn right and go about 200 yards to top of hill and station site. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7b. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on line between station and 24-inch dead oak tree which is at north edge of road, and 131.4 feet from station in azimuth 23°10′. No. 2 is in field and slightly lower in elevation than and 142.33 feet from station in azimuth 96°49′. Azimuth mark is 25 feet north of center line of Rundelberg road, 18 feet east of center of road to C. C. French property, and 0.25 mile from station in azimuth 95°44′06″. Azimuth from station to *Bruceton, municipal water tank (black)*, distant 11.5 miles, is 13°30′43″.

Clark (Carroll County, M. A. Hecht, 1934).—About 3 miles east of Buena Vista, ¼ mile south of Pond Branch School, and on property of J. G. Clark. To reach from Buena Vista, go east 0.2 mile, take T-road right and go 1.7 miles to Big Sandy bridge, take left fork and go 2.7 miles northeast to top of ridge and T-road left leading to Pond Branch School. Turn left and go 200 feet to slight rise, blazed oak tree on left, and station site. Station is about 8 feet above and 51.4 feet west of center line of dirt road and 28.8 feet west of 10-inch oak tree with two triangular blazes. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in field, 33.8 feet west of center line of road to Pond Branch School and Bruceton, and 69.12 feet from station in azimuth 172°45′. No. 2 is in field, about 150 feet north of road from

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Buena Vista–Smother's Crossroad, and 63.75 feet from station in azimuth 27°00′. Azimuth mark is on road to Pond Branch School and Bruceton, 11 feet west of center line of road, and 0.2 mile from station in azimuth 181°52′54″. Pond Branch School, southeast corner under eave of roof, is ¼ mile from station in azimuth 177°20′33″.

Dollar (Carroll County, M. A. Hecht, 1934).—About 4.2 miles south-southeast of Buena Vista. To reach from Buena Vista, follow main road east 0.4 mile and turn south, continue about 1 mile, cross Big Sandy River and continue 6.6 miles to village of Dollar. Continue to Dollar School, turn right and continue 0.3 mile to station site. Station is on summit of small hill, 250 feet southwest of home of C. L. Saunders, 80 feet south-southeast of center of road, and 48 feet west of dim farm road along east edge of hilltop. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 16 feet northeast of center line of road and 115.49 feet from station in azimuth 200°05′. No. 2 is on north fence line, on southwest side of road, and 91.85 feet from station in azimuth 106°10′. Azimuth mark is 60 feet northwest of Buena Vista road, near well house, at home of Mrs. Boyd, and 0.3 mile from station in azimuth 275°16′52″.

Mann (Carroll County, M. A. Hecht, 1934).—About 5 miles south of Huntingdon, on high hill, in peach orchard, about 200 yards west of Route 22, on property owned by M. A. Weaver and tenanted by Arthur Mann, and about 50 yards back of (southwest of) house. To reach from courthouse in Huntingdon, go south 4.5 miles on Route 22, thence to right along dim farm road to home of Mr. Mann and station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7b. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is slightly lower in elevation than and 108.6 feet (slope distance) from station in azimuth 178°00′. No. 2 (not numbered) is 107.26 feet from station in azimuth 254°26′. Azimuth mark is in front yard of Claude Davis, 27 feet west of center line of Route 22, about 4 feet north of fence corner, and about 0.25 mile from station in azimuth 332°59′12″. Azimuth from station to northwest chimney of house on west side of road and surrounded by three sheds, distant 0.5 mile, is 341°57′49″.

Eubanks (Carroll County, M. A. Hecht, 1934).—On property of M. C. Spellings, at junction of State highway between Westport and Holliday and county road running north to Dollar, and 1 mile east of Westport. To reach from Huntingdon, go southeast 3.6 miles on Route 22, and turn left onto gravel road at bottom of grade and store on right. Follow gravel road 7.1 miles to Westport. Then turn right along railroad and go 0.2 mile, and then left across railroad and go 0.9 mile to dirt road left and station site in northwest angle of road intersection, 15 yards northwest of center line of road to Dollar, 23 yards northeast of center line of main road, 26 feet northeast of 6-inch hickory tree with triangular blaze, and 23 feet north-northeast of 8-inch hickory tree. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in edge of cultivated field, 4 yards south of center line of main road, and 135.90 feet from station in azimuth 340°47′. No. 2 is in edge of cultivated field across road from station, 4 yards south of center line of road, and 100.20 feet from station in azimuth 58°51′. Azimuth mark is 20 feet north of center line of road, on property of Mr. Spellings, directly across road from his house, and 0.3 mile from station in azimuth 89°18′26″.

Dill (Carroll County, M. A. Hecht, 1934).—About 2 miles northwest of Clarksburg, on property of H. L. Dill. To reach from Clarksburg, go north 2.0 miles on Route 22 to top of ridge where highway passes through deep cut, turn left and go west 0.35 mile to top of grade where main dirt road turns sharply to left and woods road goes north past Dill's house. Station is on summit of hill, about ¼ mile west of Dill's home, 37.9 feet west of dim woods road, and in growth of 10-inch white oaks and underbrush. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference mark no. 1 is standard reference disk in bedrock, note 12b, 19.0 feet east of woods road, 46.0 feet northeast of main dirt road, and about 4 feet lower in elevation than and 115.33 feet from station in azimuth 315°15′. Reference mark no. 2 and azimuth mark are standard reference disks in concrete, note 11b. Reference mark no. 2 is between two dim trails which meet just east of station, 10 feet northeast of center line of one trail, 23.0 feet southwest of center line of other trail, and 7 feet lower in elevation than and 95.21 feet (slope distance) from station in azimuth

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169°43′. Azimuth mark is on summit of hill, about 350 yards west of Dill's home, 15.0 feet southwest of center line of main dirt road, and 360 feet from station in azimuth 326°26′08″.

Anderson (Carroll County, M. A. Hecht, 1934).—About 6 miles southwest of Huntingdon and 1 mile by road southeast of Lerch. To reach station from Carroll County Courthouse at Huntingdon, go southwest 5.9 miles on U. S. Route 70 (or about 100 yards beyond store and Gulf filling station of Mr. Goldrun) and turn left onto dirt road, go 0.2 mile and take left fork, continue 0.8 mile to forks, and then turn left into Robert Anderson's property and station on right. Station is in cultivated field, about 250 feet southwest of Anderson's home, 92.4 feet west-northwest of southwest corner of barn, and 30 feet south-southeast of center line of road forks. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Upper mark projects 6 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is at western edge of garden, on east bank of and 18 feet east of center line of road, 45 feet west-northwest of northwest corner of Anderson's home, and 234.32 feet from station in azimuth 242°36′. No. 2 is on north bank of and 18 feet north-northeast of center line of dirt road and 176.77 feet from station in azimuth 129°44′. Azimuth mark is 20 feet east of center line of road, 30 feet northwest of rail fence, 10 feet north of 15-inch oak stump, and about 0.45 mile from station in azimuth 39°42′59″.

Clarksburg (Carroll County, M. A. Hecht, 1934).—In village of Clarksburg, about 0.3 mile southeast of post office, 120 yards east of State Route 22, on grounds and in rear of old church building, 60 yards north of Clarksburg-Yuma road, 40 feet southwest of 40-inch oak tree, and 20 feet west-northwest of west edge of plowed field. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is about 75 feet north-northwest of center of road, 6 feet north of 14-inch oak tree, and 96.07 feet from station in azimuth 2°22′. No. 2 is 15 feet northwest of northwest corner of concrete foundation of old frame building and 122.52 feet from station in azimuth 62°36′. Azimuth mark is on summit of second small rise of ground east of station, 14 feet north of center line of Clarksburg-Yuma road, on top of 4-foot bank, and 0.4 mile from station in azimuth 281°03′29″.

Palestine (Carroll County, M. A. Hecht, 1934).—About 5 miles east of Cedar Grove, about 4 miles west-southwest of Clarksburg, 4 miles southeast of U. S. Route 70, on property of old Palestine Church, 12 feet west of southwest corner of church, 25 feet north of center line of road, and 18 yards southeast of 22-inch white oak tree. To reach from Huntingdon, follow U. S. Route 70 southwest 11.8 miles and turn left onto dirt road at old store building, go 0.4 mile to fork, turn left, continue 0.1 mile to fork, turn left, go 0.6 mile to fork, turn left, go 0.95 mile to fork, turn right, go 2.65 miles to Jumbo, turn right at crossroad, and go 0.95 mile to graveyard on right and church and station site on left. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete note 11b. No. 1 is in north edge of cemetery, 15 feet south of center line of road, 5 feet north of 12-inch pine tree, and 116.84 feet from station in azimuth 321°23′. No. 2 is 14 feet south of center line of road, 9 feet north of 14-inch oak tree, and 138.66 feet from station in azimuth 94°32′. Azimuth mark is 90 yards northwest of road forks, 6 yards west of center line of road, 1 yard south of 10-inch oak tree, about 1½ feet below road elevation, and 0.2 mile from station in azimuth 313°14′55″.

Howley (Carroll County, M. A. Hecht, 1934).—About 10 miles southwest of Huntingdon, about 2.5 miles north of Cedar Grove, on property of W. T. Howley, at rear of Mr. Howley's store, near fence line, 15 feet northeast of northeast corner of small shed, 55.1 feet east of northeast corner of store, and 132 feet south-southeast of center line of U. S. Route 70. To reach from junction of U. S. Route 70 and State Route 104 at Cedar Grove, go north 2.5 miles on Route 70 to Mr. Howley's store. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Upper mark projects 1 inch above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is at western edge of garden, about 75 feet south-southeast of southeast corner of store, and 136.40 feet from station in azimuth 33°25′. No. 2 is 3 feet north of northwest corner of store, 23 feet south of 20-inch black-oak tree, and 92.01 feet from station in azimuth 105°51′. Azimuth mark is in right-

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of-way of U. S. Route 70, 24 feet east of center line of highway, 14 feet northwest of small elm tree, and 0.3 mile from station in azimuth 31°18′12″.

Douglas (Henderson County, M. A. Hecht, 1934).—About 10 miles north-northwest of Lexington. To reach from Parker's crossroads on State Route 22, follow dirt road west 0.4 mile to fork, turn left and continue 0.9 mile, then turn left and go 2.8 miles to station site. Station is on summit of small rise, 0.15 mile west of Rock Springs crossroad, 0.15 mile east of Rock Springs Church, in center of cultivated field, 150 feet southwest of center of road, and 100 feet east of west fence line of field. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on east edge of field and 249.27 feet from station in azimuth 270°03′. No. 2 is on top of bank on south side of road and 145.12 feet from station in azimuth 157°29′. Azimuth mark is 100 feet northwest of house, 310 yards southeast along road from Rock Springs crossroad, 20 feet northeast of center of road, and 0.25 mile from station in azimuth 282°03′46″.

Obrian (Henderson County, M. A. Hecht, 1934).—About 3½ miles northwest of Bargerton. To reach from Huntingdon, go southwest on U. S. Route 70 about 17 miles to side road on east with arrow "Bargerton 11 miles", follow this side road 6.8 miles to Mount Gilliard Church and school, turn right (south) and go 150 yards to high point in road and station on left. Station is on property of R. E. Obrien, 80 yards north-northeast of Mr. Obrien's home, and 25 yards east-southeast of center line of road. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 8 yards west of center line of road, on inside of wide curve at this point, and 116.99 feet from station in azimuth 54°00′. No. 2, projecting 8 inches above ground, is 16 yards west of center line of road and 166.48 feet from station in azimuth 157°05′. Azimuth mark is 44 yards southwest and across road from southwest corner of Mount Gilliard Church, 10 yards west of center line of road, 5 yards east of 18-inch oak tree, and 0.1 mile from station in azimuth 189°50′20″.

Center (Henderson County, M. A. Hecht, 1934).—About 5½ miles northwest of Lexington, in northeast corner of grounds of Center Ridge School, 127.4 feet northeast of northeast corner of school building, and 50.3 feet northwest of center of road. To reach from crossroads in small settlement of Bargerton, follow Route 104 southeast 2.1 miles, turn northeast onto dirt road, and continue 0.4 mile to Center Ridge School and station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 15 feet east of center of road and 108.04 feet from station in azimuth 21°28′. No. 2 is 100 feet northeast of northeast corner of school building and 103.03 feet from station in azimuth 104°40′. Azimuth mark is 250 feet north of dim woods road leading east, 20 feet east of center line of main road, 12 feet southwest of 14-inch black-oak tree, on top of small bank, and 1,000 feet from station in azimuth 211°50′12″.

Williamson (Carroll County, M. A. Hecht, 1934).—About 3 miles southwest of Cedar Grove, 0.4 mile south of Route 70, on property of E. E. Williamson, 39.7 feet east-southeast of southeast corner of Mr. Williamson's house, and 31 feet west of center line of dirt road. To reach from Jackson, go northeast about 15 miles to Madison-Carroll County line, continue 3 miles on Route 70, turn right (south) onto dirt road just beyond small yellow house on right, go 0.4 mile on dirt road, turn right onto intersecting farm road, and go to top of hill to Mr. Williamson's house and station site. Surface mark is standard station disk in concrete, note 1b. Underground mark is copper bolt in concrete, note 7b. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is about 10 feet east of center line of road and 102.30 feet from station in azimuth 207°58′. No. 2 is about 8 feet west of center line of dirt road and 117.37 feet from station in azimuth 353°17′. Azimuth mark is 100 yards east of road intersection, at north edge of cultivated field of Louis Lyles, 12 feet south of center line of dirt road, directly below single wire telephone line, and about 0.2 mile from station in azimuth 206°54′39″.

Gurley (Henderson County, M. A. Hecht, 1934).—About 12 miles west-northwest of Lexington, on property of George W. Gurley, on small knoll about 200 feet south-southeast of Gurley's residence, 33 feet south of 14-inch white-oak tree, and 52 feet south of center line of county road. To reach from Jackson, follow U. S. Route 70 northeast about 7 miles to junction with State Route 20, thence east 8.1 miles on Route 20 (or 0.4 mile beyond Henderson-Madison County

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line), turn right onto dirt road, and proceed 0.3 mile to home of Mr. Gurley and station site. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Upper mark projects 12 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in Mr. Gurley's yard, 3 feet east of fence, 16 feet south-southeast of 24-inch white-oak tree, and 115.86 feet from station in azimuth 184°46′. No. 2 is 10 feet southeast of center line of county road, 4 feet northwest of rail fence, and 197.10 feet from station in azimuth 230°06′. Azimuth mark is in right-of-way of and 33 feet north of center line of Route 20, 0.1 mile east of Madison-Henderson County line, and about 0.35 mile from station in azimuth 151°49′54″.

Woods (Henderson County, M. A. Hecht, 1934).—About 4½ miles west of Lexington, about 2¾ miles northwest of Life, and on property of Geo. L. Woods. To reach from Lexington, go south 2.5 miles on Route 22, turn right onto dirt side road at sign "Life 4 miles", and follow main road 3 miles to right fork (crossing railroad about ½ mile after leaving main gravel road (Route 22)). Station is on left at this point, on sparsely wooded high knob, about 100 yards south-southeast of road, 33 feet east-southeast of 12-inch oak tree, and 21 feet southwest of 10-inch oak tree. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in edge of clearing and about 5 feet lower in elevation than and 90.89 feet from station in azimuth 190°37′. No. 2 is in edge of cleared field, 100 feet southwest of 12-inch oak tree, and 116.03 feet from station in azimuth 78°55′. Azimuth mark is 6 yards southeast of center line of main road, 40 yards northeast of highest point in road, and 300 yards from station in azimuth 64°16′10″.

Wilde (Madison County, M. A. Hecht, 1934).—About 17 miles northeast of Jackson, on property of Albert Wilde. To reach from junction of Routes 70 and 20 (6 miles northeast of Jackson), go 7.1 miles on Route 20 to T-road right (5 mail boxes on left), turn right onto main dirt road and go 4.4 miles (keeping to right at all forks) to triangle-blazed tree on left at entrance to dim woods road, turn left and follow road 0.15 mile to station site. Station is about 0.1 mile east of old Morris road, on small knoll, and on south edge of cultivated field. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Upper mark projects about 10 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on down slope of hill from station and 107.74 feet (slope distance) from station in azimuth 309°22′. No. 2 is at west edge of cultivated field and 119.29 feet (slope distance) from station in azimuth 117°30′. Azimuth mark is about 75 yards southwest of farmhouse and group of barns of M. A. Whitworth, directly across road from peach orchard, about 18 feet west of center line of road, 2 feet east of wire fence, and about 0.5 mile from station in azimuth 54°17′12″.

Brown (Henderson County, M. A. Hecht, 1934).—About 12 miles southwest of Lexington and about 3 miles west of village of Middlefork on State Route 22. To reach from Middlefork, follow Luray road west 3.0 miles to small settlement of "Tignor's Store", then continue to north and west around store about 200 feet to station site, which is 90 yards southwest of Luray road, in southeast corner of cultivated field, and 40 feet north-northeast of dim washed-out road on south side of field. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on east edge of field, 20 feet north of telephone pole, and 88.33 feet from station in azimuth 160°33′. No. 2 is in south edge of field, at edge of small copse, and 88.17 feet from station in azimuth 53°36′. Azimuth mark is 0.15 mile northwest from Luray road along first T-road east of station, 12 feet east of center of road, on top of small bank, and 0.3 mile from station in azimuth 205°51′34″.

Johnson (Madison County, M. A. Hecht, 1934).—About 10 miles by road, east of Jackson, on high wooded point, and on property of R. M. K. Johnson. To reach from railroad crossing on East Chester Street in Jackson, go east 2.8 miles to T-road, turn right at sign "Miflin 12 miles" and go 2.5 miles to forks, take left fork at arrow "Miflin Road" and continue 4.9 miles to top of grade and station, on high wooded point to right, about 150 feet southwest of Miflin Road, 16 feet east-southeast of center line of farm road, and 11 feet west-southwest of 8-inch black oak with triangular blaze. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Upper mark projects 9 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b, projecting 9 inches above ground.

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No. 1 is at edge of woods, 9 feet northwest of center line of farm road, and 103.13 feet from station in azimuth 223°45′. No. 2 is in woods, 29 feet northwest of center line of farm road, 20 feet northwest of wire fence, and 155.70 feet from station in azimuth 64°08′. Azimuth mark is in cleared area, about 90 feet south of white house, 35 feet northeast of center line of Miflin Road, and 0.2 mile from station in azimuth 187°11′29″.

Union (Madison County, M. A. Hecht, 1934).—At Jackson, on campus of Union University, on lawn and just north of driveway at main entrance to recitation hall, west of main building, 24.0 feet northeast of fire hydrant, and 29.2 feet northwest of north corner of lower step of main entrance to building. To reach campus, go to northeast section of Jackson by State Route 1, turn east onto first street north of East Main Street, and then turn left into campus. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference mark no. 1 is standard reference disk in top of concrete step of short flight of steps on sidewalk, 37.0 feet from southwest corner of main building, and 142.74 feet from station in azimuth 4°28′. No. 2 is standard reference disk in concrete, note 11b, flush with surface of ground, on lawn, 30.2 feet east of east side of Everett Lovelace Hall Dormitory, and 12 feet lower in elevation than and 137.17 feet (slope distance) from station in azimuth 111°46′. Distance between reference marks no. 1 and no. 2 is 225.1 feet. Azimuth mark is standard reference disk on low concrete retaining wall just inside of sidewalk in front of residence of E. Webb (second house north of Route 1), 16 feet east of center line of Gates Street, and 100 yards from station in azimuth 195°22′.

Pinson (Madison County, M. A. Hecht, 1934).—About 1 mile north of Pinson, on high hill locally known as "Mount Pinson". To reach from junction of U. S. Route 45 and dirt road running north just west of Pinson depot, go north 1 mile on dirt road to top of grade just after passing high cut. Station is on right, 75 yards southeast of center line of road at this point, on highest point of high hill, and 45 yards east of small grove on east bank of highway cut. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1, projecting about 8 inches above ground, is in center of small flat area, and about 8 feet lower in elevation than and 153.68 feet from station in azimuth 218°51′. No. 2, projecting about 1 foot above ground, is 20 yards east of center line of road, 3 yards south-southeast of 6-inch dogwood tree, and 205.80 feet from station in azimuth 138°20′. Azimuth mark is 60 yards south of forks in road, 8 yards east of center line of road, on top of 4-foot bank, in edge of cultivated field, and 0.2 mile from station in azimuth 189°20′09″. Following distances and azimuths are from station: *Henderson, black water tank*, 6 miles, 316°11′34″; and Pinson, airway beacon, 1 mile, 351°48′09″.

Bain (Chester County, M. A. Hecht, 1934).—About 6 miles northeast of Henderson, on highest part of wooded hill, on property of R. P. Bain, about 200 yards directly east of Bain's house, 23 feet north of 14-inch oak tree with triangular blaze, and 40 feet northwest of large double oak tree. To reach from intersection of Routes 45 and 100 at Henderson, follow Route 100 northeast 4.35 miles to crossroads, continue straight ahead 0.7 mile to lane at Mr. Bain's house, and turn left up lane to station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in edge of clearing and slightly lower in elevation than and 122.59 feet from station in azimuth 169°57′. No. 2 is slightly lower in elevation than and 190.79 feet from station in azimuth 271°44′. Azimuth mark is about 15 feet east of center line of road, on property of Jack Comb, 0.3 mile along road (north) from lane to Mr. Bain's house, and 0.5 mile from station in azimuth 221°11′28″.

Butler (Madison County, M. A. Hecht, 1934).—About 8 miles south of Jackson, on property of O. C. Butler. To reach from Gulf filling station at Malesus (about 5 miles south of Jackson), go north 0.1 mile on State Route 18 and turn right (east) onto gravel road, take right fork at 0.55 mile and continue 3.0 miles to forks at Ade School, take right fork and proceed 1.4 miles to forks, turn right into Butler property and proceed to station site on highest part of small wooded knoll, about 200 feet south of Mr. Butler's house, 40 feet northwest of small family cemetery, and 92 feet south of center line of farm road. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark projects 8 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in Butler's yard, 2 feet

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east of fence corner, 45 feet southeast of southeast corner of porch, and 156.30 feet from station in azimuth 204°39′. No. 2 is in cleared field, about 20 feet south of center of farm road, and 210.16 feet from station in azimuth 123°02′. Azimuth mark is in pasture, 6 feet west of wire fence, 21 feet west of center line of county road, 110 feet west-northwest of abandoned cabin, and 0.2 mile from station in azimuth 353°52′03″.

McKinney (Chester County, M. A. Hecht, 1934).—About 0.8 mile south of Henderson, on land owned by Guy McKinney. To reach from highway bridge over Mobile and Ohio Railroad tracks in Henderson, follow U. S. Route 45 south 1.0 mile to property of Mr. McKinney, then turn west and go 100 yards to station site on summit of small cultivated hill, about 200 feet north of tenant house, on west fence line of small garden plot, 30 feet south of northwest fence corner, and 2 feet west of fence. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is at southeast corner of garden fence and 113.82 feet from station in azimuth 307°56′. No. 2 is at edge of copse, down southwest slope of hill, and 156.09 feet from station in azimuth 42°02′. Azimuth mark is 12 feet east of center line of U. S. Route 45, 0.1 mile south of bridge over creek, 40 feet north of dim woods road to northeast, and 0.28 mile from station in azimuth 194°23′54″.

Crown (Chester County, M. A. Hecht, 1934).—On site of old Crown Point School (destroyed), 2.2 miles southwest of Montezuma, 6.9 miles northeast of Silerton, 7 miles southwest of Henderson, and on cleared patch of land belonging to Mrs. Oliver Stump. To reach from railroad station in Silerton, go northeast 6.1 miles on Route 105 (5.6 miles from county line) to crossroads, turn left onto dirt road, and go 0.6 mile to top of ridge and station. Also reached from northeast by taking Route 105 southwest from Henderson 7.0 miles, or 2.2 miles southwest of Montezuma. Station is 77 feet southwest of center line of road and 39 feet southwest of 16-inch oak tree with triangular blaze. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 18 feet southwest of center line of road, 5.7 feet south of 6-inch oak tree, and 75.71 feet from station in azimuth 198°55′. No. 2 is 25 feet east of dim woods road and 86.83 feet from station in azimuth 316°03′. Azimuth mark is at intersection of roads on property of Jake Droke, about 17 yards west of 24-inch oak tree in intersection of road, about 25 feet south of center line of main road, 20 feet north of road to house, and 0.3 mile from station in azimuth 130°14′52″.

King (Chester County, M. A. Hecht, 1934).—About 6 miles north of Silerton, about 2 miles east of State Route 18, about 1 mile east of Madison-Hardeman-Chester County corner, and on property of C. E. (or W. W.) King. To reach from courthouse in Bolivar, follow Route 18 north 13.8 miles, turn right at crossroad which enters highway in cut at east side, follow this road 0.7 mile to forks and turn right, and keep to main road over several wooden bridges for 2.85 miles to home of Mr. King on right. Station is directly across road from Mr. King's home, in southern end of cleared field, 12 yards north of center line of road, and 25 yards north-northeast of 14-inch pecan tree. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 4 yards south of center line of road, 12 yards south of 10-inch oak tree, and 212.14 feet from station in azimuth 326°10′. No. 2 is 25 yards south of center line of road, 14 yards south-southwest of 14-inch oak tree, and 271.70 feet from station in azimuth 101°05′. Azimuth mark is 9 feet south of center line of road leading to station, 2 feet north of fence line, 3 feet northwest of 6-inch oak tree, and 0.2 mile from station in azimuth 137°33′53″.

Ross (Hardeman County, M. A. Hecht, 1934).—About 11¼ miles northeast of Bolivar. To reach from junction of State Routes 18 and 105 (about 3.5 miles north of Bolivar), follow Route 105 northeast 5.9 miles, turn east onto new Pinetop road, and continue 4.0 miles to top of grade and station site on summit of low ridge locally known as "Ross Mountain", 0.6 mile west of Pinetop railroad station, opposite dim woods road to left (north), 35.8 feet south of center of Pinetop road, and 30.5 feet west of 14-inch pine tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 50 feet north of center line of Pinetop road and 128.41 feet from station in azimuth 272°26′. No. 2 is 20 feet north of center line of Pinetop road and 133.92 feet from station in azimuth 142°28′. Azimuth mark is 500

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yards along dim woods road to north of station, near abandoned house, 60 feet west of large oak tree, 15 feet west of center of woods road, and about ¼ mile from station in azimuth 219°31′38″.

Willoughby (Hardeman County, M. A. Hecht, 1934).—About 6 miles northeast of Bolivar, on property of Lawrence Willoughby. To reach from Hardeman County Courthouse at Bolivar, go northeast 6.35 miles on State Route 18, turn right onto county road just after passing Gulf filling station on left, go 0.55 mile and turn left at Knuckles Crossroads, and go 0.1 mile to top of grade and station site. Station is on small knoll about 150 yards north of Knuckles Crossroads, 36 feet northeast of center line of road, 9 feet southwest of wire fence, and 14 feet west-southwest of 18-inch twin oak tree. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Upper mark projects 12 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on west bank of road, 15 feet southwest of center line of road, and 122.65 feet from station in azimuth 351°35′. No. 2 is on high bank, 18 feet southwest of center line of road, and 120.75 feet from station in azimuth 130°57′. Azimuth mark is at T-road, 18 feet south of road running east and west, 60 feet northeast of corner of tin-roofed shed [barn], and about 0.25 mile from station in azimuth 147°04′31″.

Silerton (Hardeman-Chester Counties, M. A. Hecht, 1934).—Near county line, about ½ mile north of Silerton, on grounds of Hickory Grove Methodist Church, 22.1 feet west-southwest of southwest corner of church, and 37 feet north-northeast of 36-inch oak tree. To reach from railroad crossing on Route 105 in Silerton, go northwest 0.2 mile and bear right to top of hill to Hickory Grove Methodist Church and station site. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 37.9 feet north-northwest of northwest corner of church and 73.92 feet from station in azimuth 171°11′. No. 2 is 15 feet north of center line of road and 155.39 feet from station in azimuth 109°47′. Azimuth mark is 22 feet south from center line of Route 105, about 28 feet north of northwest corner of Silerton Baptist Church, in line of young elm trees, and 0.25 mile from station in azimuth 27°41′47″.

Walnut (Hardeman County, M. A. Hecht, 1934).—About 6 miles east of Bolivar. To reach from courthouse in Bolivar, go east along U. S. Route 64 about 5 miles (or 2.0 miles past Hatchie River bridge) and turn left onto dirt road just before reaching cut at top of grade, follow dirt road 0.5 mile to Walnut Grove Church, turn right (north), and go 1.1 miles to forks in road and station site. Station is in forks, 25 feet north of center line of main road, 18 feet southeast of triangle-blazed 12-inch pine tree, 25 feet south-southeast of 12-inch white-oak tree, and 18 feet northwest of 9-inch oak tree. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is across side road from station, 14 feet north of double 14-inch oak tree, 18 feet north-northeast of center line of main road, and 88.48 feet from station in azimuth 311°57′. No. 2 is 12 feet south of center line of main road, 25 feet east of 10-inch oak tree, 55 feet north-northeast of 20-inch oak tree, and 69.08 feet from station in azimuth 73°27′. Azimuth mark is 6 yards northwest of center line of road leading to station, 16 yards southwest of junction of dim side road on northeast side of road, 12 yards northeast of 20-inch walnut tree, and 0.2 mile from station in azimuth 328°31′48″.

Hospital (Hardeman County, M. A. Hecht, 1934).—About 2.5 miles northwest of Bolivar, on grounds of Western State Hospital, 60 feet south of fence line, and about 100 yards east of main entrance gate. To reach from Bolivar, go northwest 2.5 miles on U. S. Route 64 to hospital grounds on south side of highway. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 35.0 feet north of center of highway, 2 feet outside of fence line, 12.0 feet from telephone pole no. 288, and 157.95 feet from station in azimuth 227°29′. No. 2 is 26.0 feet north of center line of highway, 2.0 feet outside fence line, 48.0 feet from telephone pole no. 287, and 159.59 feet from station in azimuth 136°27′. Distance between reference marks no. 1 and no. 2 is 226.75 feet. Azimuth mark is on north side of highway right-of-way, 1 foot outside fence line, 24.4 feet from center line of highway, 45.9 feet northwest of telephone pole no. 295, and 0.2 mile from station in azimuth 289°13′15″. Azimuth from

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station to *Western State Hospital (near Bolivar), main building, tall spire,* distant about 950 feet, is 45°03′50″.

Doyle (Hardeman County, M. A. Hecht, 1934).—About 8 miles southwest of Bolivar and on property owned by Dr. Hence Dorris of Bolivar and occupied by O. E. Doyle. To reach from courthouse in Bolivar, go east 1.2 miles on U. S. Route 64, turn right onto gravel road and go 5.8 miles to T-road left at four mail boxes on wheel, turn left and go 1.2 miles to top of grade and station site. Station is about 200 feet south of road on highest point in near vicinity, 11 yards west-northwest of 18-inch oak tree, 100 feet southwest of 22-inch walnut tree, and 125 feet southwest of Doyle's house. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 20 feet south of center line of road leading to station, 25 feet south of small apple tree, and 249.90 feet from station in azimuth 200°47′. No. 2 is on down hill slope from station, 15 yards southeast of 22-inch chestnut tree, and 193.43 feet from station in azimuth 55°46′. Azimuth mark is 8 yards north of center line of road, 100 yards west of top of first grade in road east of station, 200 yards along road east of small bridge, and 0.3 mile from station in azimuth 299°27′20″.

Owens (Hardeman County, M. A. Hecht, 1934).—About 2.5 miles southwest of Bolivar. To reach from railroad crossing on Routes 15 and 64 in Bolivar, go west 0.3 mile on Route 64 to gravel road on left (Route 18), turn left onto Route 18 and go 2.4 miles to station site on bank about 8 feet higher than and 44 feet southeast of center of Route 18, on property of Hugh Owens, about 40 yards southwest of intersection of old and new Route 18, and 25 yards west of telephone line. Surface mark is standard station disk in concrete, note 1b. Underground mark is copper bolt in concrete, note 7b. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is at south edge of cultivated field, about 7 feet higher than and 25 feet north of center of Route 18, and 133.3 feet from station in azimuth 195°37′. No. 2 is on bank about 7 feet higher than and 40 feet north of center of Route 18 and 211.0 feet from station in azimuth 70°44′. Azimuth mark is 27 feet northwest of center of Route 18, 9 feet south of telephone line, about 35 yards southwest of intersection of old and new Routes 18, and 0.7 mile from station in azimuth 226°47′31″.

Supplementary points

Kentucky-Tennessee boundary monument no. 19 eccentric (Trigg County, Ky., M. A. Hecht, 1934).—About 6½ miles east-northeast of Bumpus Mills, 6.8 miles east of southeast corner of jog in State line, and on north side of State-line road. To reach from post office in Bumpus Mills, go north on main Cadiz road 5.3 miles to crossroad (this crossroad is 14.1 miles south of Cadiz courthouse), turn right (east) and keep to main straight road 1.4 miles to forks at two mail boxes (one large), take left fork and go 0.75 mile to T-road, turn right and go 1.1 miles to forks at mail boxes, take left fork and go 0.75 mile to T-road with farmhouse ahead, turn left and go 0.25 mile to forks just beyond store on left, take right fork across creek ford and go 0.9 mile to road fork in woods, take left fork and go on main straight road 1.5 miles (or 0.2 mile beyond small wooden bridge) to summit of hill and station site. Station is 15 yards west of highest point of road, on fence line, 16.5 feet north of center line of road, and 19 yards west of fork to southwest. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 20 feet south of center line of main road, 3 feet above road, 1 foot outside of wire fence, and 96.02 feet from station in azimuth 296°30′. No. 2 is 14 feet south of center line of road, opposite small pond 50 yards to north, and 102.32 feet from station in azimuth 76°12′. Azimuth mark is 50 yards northwest of cultivated field, in pasture, 10 feet east of center line of dim field road, and 975 feet from station in azimuth 153°28′08″. *Kentucky-Tennessee boundary monument no. 19* (see description thereof) is 19.72 feet from station in azimuth 306°30′.

Paris (Henry County, M. A. Hecht, 1934).—In city of Paris, about ¾ mile south of courthouse, and about ⅛ mile southeast of Grove High School, about 175 yards west of center line of State Route 76, 25 yards east of top of ridge, at east edge of wooded area and small cemetery, 14 yards south of southeast corner of cemetery, at west edge of small nursery, on property of S. J. Routon, and about 100 yards southwest of his house. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Reference marks are standard

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reference disks in concrete, note 11b. No. 1 is 4 yards east of fence line, 20 yards north-northeast of 24-inch oak tree, and 79.90 feet from station in azimuth 355°04′. No. 2 is 6 yards east-northeast of 8-inch oak tree, 15 yards southeast of 20-inch poplar tree, and 61.60 feet from station in azimuth 210°24′. Azimuth mark is standard reference disk in west edge of east sidewalk of Dunlap Street (State Route 76), 12 yards north of driveway to residence of J. A. Crane at 913 Dunlap Street, and 175 yards from station in azimuth 281°13′20″.

Big Sandy (Benton County, M. A. Hecht, 1934).—On summit of obscure and heavily timbered ridge on west side of Tennessee River, 4.8 miles southeast of Big Sandy, and on small knoll near south end of ridge. To reach from Big Sandy, go south-southeast 0.65 mile on State Route 69 and turn left (southeast) onto gravel road, continue on this main road 7.4 miles and turn left onto farm road at abandoned house, continue 0.4 mile to tree with triangular blaze on right and abandoned house, turn right onto dim woods road, and go 1.2 miles to dim fork, take left fork and continue 0.15 mile to tree with triangular blaze on right, turn sharply to right up hill and go 60 yards to summit and station site which is 50 yards north of dim woods road, 50 feet north of high point of knoll, 30 feet northwest of 8-inch oak tree, and 28 feet south of 28-inch chestnut stump. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is down west slope, near dim woods road to south, and is 81.45 feet from station in azimuth 122°53′. No. 2 is down west slope of hill, 10 feet south of 6-inch oak tree, and 87.80 feet from station in azimuth 175°51′. Azimuth mark is in small clearing on east side of dim woods road, 40 feet northeast of warped oak tree, and 0.15 mile from station in azimuth 295°31′08″.

Kentucky-Tennessee boundary monument no. 19 (Trigg County, Ky.-Stewart County, Tenn., M. A. Hecht, 1934).—On Kentucky-Tennessee State line, 19.72 feet in azimuth 306°30′ from station *Kentucky-Tennessee boundary monument no. 19 eccentric* (see description thereof). Marker by irregular rectangular-shaped sandstone block, 10 inches square at top, projecting 30 inches above ground, and with inscriptions as follows: On south side, "Tenn."; on east side, "1858"; and on west side, "No. 19 – 100 mi."

CLARKSVILLE, TENN., TO CORINTH, MISS. (SECOND ORDER)

Principal points

Needmore (Montgomery County, M. A. Hecht, 1934).—About 4 miles north-northeast of Clarksville, 2¼ miles west-northwest of St. Bethlehem, in yard of Needmore School (colored), on south side of school, 29.1 feet southeast of southwest corner, 28.1 feet southwest of southeast corner, 56.5 feet west-southwest of 48-inch oak, and about 75 yards west of Needmore Church. To reach from Will Woodard's Gulf gas station at St. Bethlehem (about 4½ miles northeast along State Route 13 from Clarksville), follow Route 13 north 0.45 mile, turn left onto gravel road, proceed 1.15 miles, turn onto side road left where main road turns right around large barn and continue 1.25 miles to Needmore School and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is at edge of school yard, about 50 feet west of Needmore Church, and 123.45 feet from station in azimuth 279°47′. No. 2 is in cleared field, 12 feet south of center line of road, and 171.40 feet from station in azimuth 142°41′. Azimuth mark is on top of bank at edge of cultivated field owned by Mr. Peterson, 22 feet north of center line of road, 19 feet west of 24-inch white oak, about 150 feet northwest of large barn, and about 0.4 mile from station in azimuth 248°06′30″.

Sango (Montgomery County, M. A. Hecht, 1934).—About 7.75 miles east-southeast of Clarksville, at small settlement of Sango, on summit of slight rise of ground, 120 yards northeast of Sango School, in rear of small store, 64.5 feet northwest of center line of road, and 34.7 feet east of northeast corner of store. To reach from Clarksville, follow U. S. Route 41W east 7.4 miles, turn right onto gravel road and go 0.9 mile, turn right onto gravel road and continue 0.9 mile to station. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on east-west fence line of pasture, 15 feet east of fence corner, and 303.01 feet from station in azimuth 176°44′. No. 2 is along fence line, 20 feet northwest of fence corner, and 213.14 feet (slope distance)

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from station in azimuth 281°23′. Azimuth mark is at northeast corner of Sango cemetery, across road from station, north of Sango School, in southwest corner of plowed field, and 100 yards from station in azimuth 0°42′.

Davenport (Todd County, Ky.–Montgomery County, Tenn., M. A. Hecht, 1934).—About 9.75 miles northeast of Clarksville, 6.75 miles west of Guthrie, near Kentucky-Tennessee State line, 2 miles east of point where Trenton Pike crosses it, on property of John Davenport, about 0.25 mile west of his home, 23.9 feet from gatepost at fence corner, and 28.2 feet from center line of farm lane where it passes through gate. To reach from store of Will Woodard & Son in St. Bethlehem, go north 0.5 mile on Route 13, turn left onto gravel T-road (Trenton Pike), go 1.10 miles and keep right on main road, continue north 5.25 miles (or 0.4 mile past large brick house on left), turn sharply to right (east) onto dirt lane, go 0.5 mile to home of R. W. Davenport and then by field road through three gates 1.1 miles to fourth gate and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in grassy field and at same elevation as station and 107.05 feet from it in azimuth 179°02′. No. 2 is 10.7 feet northwest of fence line, 7.7 feet from center line of farm lane, and 87.49 feet from station in azimuth 83°51′. Distance between reference marks nos. 1 and 2 is 144.35 feet. Azimuth mark is 2.9 feet from gatepost, 7.8 feet from center line of lane, 15.5 feet from fence corner, and ¼ mile from station in azimuth 117°48′05″. Azimuth from station to house, east gable, distant 0.75 mile, is 128°16′48″.

Summit (Montgomery County, M. A. Hecht, 1934).—About 1.8 miles southeast of Clarksville, on property of J. H. Unseld, in grassy meadow, at west edge of apple orchard, 105.5 feet west of intersection of Route 76 and Tennessee Central Railroad, 46.8 feet north of 36-inch oak, and 27.5 feet north of center line of highway. To reach from courthouse in Clarksville, go southeast 2.05 miles on State Route 76 to railroad grade crossing and station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference mark no. 1 is 45.3 feet east of fence corner, 2 feet east of picket fence, and 99.27 feet from station in azimuth 164°26′. No. 2 is in apple orchard and about 12 feet lower than and 198.27 feet (slope distance) from station in azimuth 258°35′. Azimuth mark is about 50 yards north of row of apple trees, about 15 feet south of walnut tree, and 1,000 feet from station in azimuth 226°39′24″. *B. M. W 3 (primary traverse station no. 8 W 1925 Tenn. (U. S. G. S.))* (see description thereof) is 54.24 feet from station in azimuth 62°01′.

Clarksville (Montgomery County, M. A. Hecht, 1934).—About 1 mile south of Clarksville, near city-limit line, 0.3 mile east of State Route 13, 8 yards north of center line of paved road along north side of Civilian Conservation Corps camp no. 1474, 50 yards west of intersection with side road, and 15 yards south of dirt side road. To reach from courthouse in Clarksville, go south 1.3 miles on State Route 13, turn left onto macadam road and go 0.3 mile to station on left side of road. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 6 yards north of side road, 16 yards north of center line of highway, and 97.73 feet from station in azimuth 238°42′. No. 2 is 7 yards north of center line of highway and 123.76 feet from station in azimuth 82°36′. Azimuth mark is 20 yards south of center line of highway, 10 yards from side road leading to Civilian Conservation Corps blacksmith shop, and 0.2 mile by road from station in azimuth 79°00′33″.

Orgains (Montgomery County, M. A. Hecht, 1934).—About 5¾ miles south of Clarksville, about ¼ mile north of Orgains crossroads, on property formerly owned by Herman Orgains but now owned by a trust company, 34 feet northwest of center of Salem road, and in field covered with small oaks. To reach from courthouse in Clarksville, go south 8.0 miles on State Routes 48 and 13, turn left onto gravel road at end of pavement and go 0.1 mile, turn left onto T-road just past barn on left and go 0.15 mile to station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference mark no. 1 is on north side of Salem road and 365.8 feet from station in azimuth 243°24′05″. No. 2 is on southeast side of road and 232.4 feet from station in azimuth 41°57′. Azimuth mark is on property of Frank Orgains, almost directly in front of his house, about 20 feet east of center of Clarksville-Charlotte road, and 0.2 mile from station in azimuth 13°54′15″. Following distances and azi-

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muths are from station: Clarksville, First Presbyterian Church, steeple, about 6 miles, 184°06′35″; *Clarksville, courthouse, cupola*, 5.9 miles, 184°26′59″; *Clarksville, American Snuff Co., black water tank*, 6.0 miles, 186°24′50″; and *Clarksville, American Snuff Co., brown smokestack*, 6.1 miles, 190°05′05″.

Henrietti (Montgomery County, M. A. Hecht, 1934).—About 11½ miles southeast of Clarksville, ¾ mile north of Henrietta, on property of Bill and Homer Batts, 8 yards south-southeast of 20-inch oak, 11 yards southwest of 30-inch oak, 7 yards north of center line of road, and on high bank just in front of Mr. Barr's house. To reach from small store with Shell Oil Co. pumps in Henrietta, go north 0.45 mile on State Route 12, turn right onto side road just before reaching Baptist Church on left and go 0.2 mile to home of Mr. Barr and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 4 yards north of road and 229.46 feet from station in azimuth 286°00′. No. 2 is 17 yards north-northwest of 30-inch oak tree, 9½ yards north of northeast corner of small log barn, and 160.20 feet from station in azimuth 126°38′. Azimuth mark is on east edge of Herman School property, 9 yards northeast of 18-inch oak, 42 yards southeast of southeast corner of school building, 18 yards north of center line of road leading to station, and 0.15 mile by road from station in azimuth 101°29′19″. East gable of Baptist Church near Henrietta is about 0.2 mile from station in azimuth 92°32′41″.

Fredona (Montgomery County, M. A. Hecht, 1934).—In southwest corner of T-road junction in small village of Fredonia, 11.2 miles from Clarksville, 56.2 feet from intersection of center lines of State Route 12 and road leading to Lock B, and 14.8 feet from telephone pole with transformer box. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on east side of Route 12, 4 feet above and 22.1 feet from center line of road, 34.0 feet from 32-inch oak tree, at edge of cultivated field, and 221.00 feet from station in azimuth 334°33′. No. 2 is 14.1 feet from center line of road, 18.8 feet from center line of driveway, and 177.80 feet from station in azimuth 96°29′. Azimuth mark is at edge of cultivated field, 121.6 feet from north corner of Fredonia School, 46.9 feet southwest of center line of Route 12, and 0.2 mile from station in azimuth 340°52′23″. *Primary traverse station no. 26 W 1925 Tenn.* (*U. S. G. S.*), probably marked by disk in square block of concrete projecting about 0.5 foot above ground, is 6.77 feet from station in azimuth 230°13′. Fredonia School, gable on front entrance, is 0.2 mile from station in azimuth 344° 54′45″.

Hamble (Dickson County, M. A. Hecht, 1934).—About 3½ miles northeast of Cumberland Furnace, on low hill at west end of small ridge, on property of Mrs. Rufus Schmitton, in eastern part of field and orchard, 167.4 feet west of center of road, and about 60 feet north of 10-inch apple tree. To reach from Cumberland Furnace, follow State Route 48 south 1.8 miles, turn left onto dirt road and follow main road 4.7 miles, bear left onto T-road at old barn and continue 0.4 mile to top of grade and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark is 10 inches below surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on edge of thicket and 112.49 feet from station in azimuth 209°21′. No. 2 is on west side of road, on east fence line, and 147.49 feet from station in azimuth 298°10′. Azimuth mark is on west side of main Slayden road, 250 yards northeast of T-road west, 100 feet southwest of large oak tree, 12 feet northwest of center line of road, 2 feet inside fence, and 0.45 mile from station in azimuth 334°37′55″.

Marion (Dickson County, M. A. Hecht, 1934).—About 1 mile south-southwest of Marion post office, on Marion-Slayden road, in cultivated field on property of Mr. Warney Sugs of Marion, 27 feet south of center line of side road, and 26 feet west-northwest of center line of county road. To reach from junction of State Routes 76 and 48 at Clarksville, go south 15.3 miles on Route 48 (or 1.1 miles after passing Sunnyside School), turn right onto county road at T. W. Blackford's store and filling station, proceed straight ahead 3.45 miles, turn left at forks on top of hill with white house on right, and continue 2.1 miles (or 0.9 mile after passing Marion railroad station) to T-road and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark projects 8 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 10 feet north of center line of lane, 30 feet east-southeast of center line of county road, and 161.88 feet from station

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in azimuth 239°55′. No. 2 is in edge of cultivated field, 14 feet southeast of center line of county road, and 155.45 feet from station in azimuth 26°17′. Azimuth mark is at edge of cultivated field, 20 feet northwest of center line of county road, and 0.2 mile from station in azimuth 46°24′07″.

Promise (Dickson County, M. A. Hecht, 1934).—About 2¼ miles north of Charlotte, about 1 mile east of Route 48, on property of Mrs. Lee Hooker, 11 yards southwest of 16-inch triangle-blazed oak tree, 8 yards south of wooded area, and 11 yards east-southeast of triple oak tree in edge of woods. To reach from junction of Routes 48 and 49 in Charlotte, go north 1.1 miles on Route 48 to bottom of grade, turn right and go 0.4 mile on crossroad, keep left just past church on left, and go 1.7 miles to T-road on right just after crossing small pole bridge, turn right and go 0.25 mile to where road enters woods, turn left along edge of woods through field 75 yards to station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in field of scrub bushes, 10 yards south of edge of woods, and 112.73 feet from station in azimuth 104°05′. No. 2 is in field of scrub bushes, 50 yards northwest of road, and 144.94 feet from station in azimuth 16°07′. Azimuth mark is 3 yards west of center line of road, 26 yards north of T-road and small pole bridge, and 0.15 mile from station in azimuth 67°42′27″.

Van Leer (Dickson County, M. A. Hecht, 1934).—In town of Van Leer, on east property line between land of W. T. McGee and High Street, directly across street from home of Mrs. Clyde Turner, and 12 feet east of wire fence. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is at gate, 2 feet south of telephone pole, and 108.32 feet from station in azimuth 219°26′. No. 2 is 20 feet east of center of High Street and 98.68 feet from station in azimuth 237°12′. Azimuth mark is on property of Norman Eubank, about 16 feet west of center of State Route 49 and 125 yards from station in azimuth 42°36′30″.

Houston (Houston County, M. A. Hecht, 1934).—About 1.5 miles by road southwest of point where State Route 13 crosses Yellow Creek, near County line, 112.5 feet southwest of wooden county-line marker, 33.6 feet south from center line of State Route 13, and 21.9 feet from 16-inch black-oak tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on edge of cultivated field, 42.0 feet southeast of center line of road, 33.3 feet from southeast end of concrete culvert wall, and 151.28 feet from station in azimuth 238°09′. No. 2 is on edge of cultivated field, 6 feet above and 24.8 feet southeast of center line of road, and 158.25 feet from station in azimuth 58°22′. Azimuth mark is on edge of woods, 6 feet above and 77.0 feet from center line of road, 21.8 feet from center line of old woods trail, 19.4 feet from 14-inch chestnut tree, and 1,000 feet from station in azimuth 71°06′38″. John Haggie's house, east chimney, right edge of collar, is 270 feet from station in azimuth 246°37′.

Dull (Dickson County, M. A. Hecht, 1934).—About 3¾ miles east-northeast of Charlotte, about 6 miles southeast of Cumberland Furnace, in corner of cultivated field owned by B. F. Sensing, 35 feet from center of road, and about 35 feet north of Mr. Sensing's home. To reach from junction of State Routes 48 and 49 in Charlotte, go east 4.2 miles on Route 49 to W. T. Sensing's store and station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference mark no. 1 is standard reference disk in concrete, note 11b, on west side of road, at fence line of Mrs. M. Bowker's home, and 100.88 feet from station in azimuth 184°02′. No. 2 is standard reference disk in corner of concrete porch of W. T. Sensing's store and 91.16 feet from station in azimuth 84°26′. Azimuth mark is standard reference disk in concrete, note 11b, on property of J. M. Sensing, about 20 feet east of center of road, about 100 yards south of dirt lane, and 0.2 mile from station in azimuth 216°13′48″. *Transit traverse station no. 4 D 1929* (*U. S. G. S.*) is standard disk of U. S. Geological Survey, stamped "T. T. Sta. No. 4 D 1929", set in concrete floor of Mr. Sensing's store porch and 24.418 meters (80.11 feet) from station in azimuth 89°19′.

Berry (Dickson County, M. A. Hecht, 1934).—About 2¼ miles northwest of Charlotte, in barnyard belonging to Arthur Berry, 100 feet south of his house, at edge of rail fence on west side of barnyard, 60 feet northwest of northwest corner of barn, and 30 feet southwest of large double-oak tree in northwest corner of yard. Surface and underground marks are standard station disks in concrete,

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notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on north fence line of barnyard, 100 feet north-northeast of northeast corner of barn, and 133.96 feet from station in azimuth 352°01′. No. 2 is on fence line at north edge of wheat field and 151.49 feet from station in azimuth 186°07′. Azimuth mark is 10 feet west of center line of road, east of fence, and 250 yards from station in azimuth 255°19′40″.

Pond (Dickson County, M. A. Hecht, 1934).—About ½ mile northeast of Pond railroad station, on property of George Miller, inside fence in cultivated field, 9 feet south of east-west fence line, 9 feet west of north-south fence line, 40 feet south of center line of highway, and 32 feet southwest of 12-inch oak with triangular blaze. To reach from junction of U. S. Route 70 and State Route 48 in Dickson, go west 0.9 mile on Route 70 to fork just before reaching overhead railroad bridge, follow right fork 2.2 miles to triangle-blazed tree on left (just after passing home of Mr. Davis (small white house) on right) at station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 60 feet south of center line of highway, 3 feet north of fence line, and 159.30 feet from station in azimuth 98°22′. No. 2 is 60 feet north of center line of highway, 40 feet west of fence line, 4 feet east-southeast of 8-inch oak, and 120.15 feet from station in azimuth 177°59′. Azimuth mark is 18 feet north of center line of highway, 0.05 mile west of railroad crossing, and 0.4 mile by road from station in azimuth 108°30′54″.

Dickhum (Dickson-Humphreys Counties, M. A. Hecht, 1934).—Near Dickson-Humphreys County line, about 5 miles east-northeast of McEwen, 3½ miles north-northwest of Tennessee City, on right-of-way of State Route 1, in cleared area south of county-line sign, 34 feet south of center line of Route 1, and 76.1 feet south of 20-inch lone black-oak tree. To reach from junction of State Route 48 and U. S. Route 70 at Dickson, go west 0.9 mile on U. S. Route 70, turn right onto asphalt road (State Route 1) at West End service station and follow it 11.5 miles to Dickson-Humphreys County line and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete note 11b. No. 1 is in small orchard, 2 feet west of fence corner, 25 feet north of center line of Route 1, and 146.19 feet from station in azimuth 252°35′. No. 2 is at edge of cultivated field, 23 feet north of center line of Route 1, and 174.17 feet from station in azimuth 121°12′. Azimuth mark is in cleared field, 18 feet north of center line of farm road, 135 feet west of lone 10-inch hickory tree, about 100 feet south of woods, and 0.4 mile from station in azimuth 133°10′28″. *Tennessee City, fire lookout tower*, is 2.9 miles from station in azimuth 335°01′37″.

McEwen (Humphreys County, M. A. Hecht, 1934).—About 3½ miles east-southeast of Gorman railroad station, on land of W. O. Priest, on highest ground about 125 yards southeast of Mr. Priest's house, directly under wire fence, and 29 feet north of barn. To reach from main road junction along State Route 70 at side road with arrow "Ruskin 10 miles", take road leading west behind Pan-American gas station, go 0.2 mile and turn left to State Highway Garage, keep main road ahead 0.5 mile, continue straight ahead where main road turns right, continue on main-traveled road 1.55 miles and then bear left to house of Mr. Priest. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in wire fence line and 112.1 feet from station in azimuth 193°27′. No. 2 is at edge of cherry tree and 148.28 feet from station in azimuth 98°11′. Azimuth mark is on south side of dirt road, on property of S. H. Henry, Jr., between two small oaks at north edge of cultivated field, and 0.4 mile from station in azimuth 200°02′22″.

Crowel (Dickson County, M. A. Hecht, 1934).—About 6½ miles south of Tennessee City, about 7¾ miles south-southeast of McEwen, 2.7 miles east-southeast of Holland School, on property of Lee Crowel, 16 feet northwest of 12-inch triangle-blazed oak tree, 13 yards east of road to Tennessee City, and 6 yards east of 4-inch double-oak tree. To reach from McEwen, go east 0.3 mile on U. S. Route 70 and turn south (right) onto gravel road just past new brick house on right, go 2.65 miles and turn right across creek at white house on left, go 0.7 mile and keep right on main road across creek, follow main road 3.05 miles and turn sharply to left across wooden bridge at two mail boxes on left, go 0.6 mile and turn right across creek at two mail boxes just before reaching Holland School, follow main road 2.85 miles and turn left onto dim road at triangle-blazed tree on right, go 0.2 mile, and continue straight ahead at T-road on right 0.2 mile

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to where road runs out of woods at station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 5 yards east of 4-inch double persimmon tree, 20 yards east of road to Tennessee City, and 110.21 feet from station in azimuth 185°58′. No. 2 is 6 yards north-northwest of 8-inch hickory tree and across road from and 111.17 feet from station in azimuth 65°47′. Azimuth mark is 18 yards southeast of center line of road to Tennessee City, 5 yards southwest of 24-inch oak tree, and 250 yards from station in azimuth 214°06′11″.

Lobel (Perry County, M. A. Hecht, 1934).—About 1¼ miles northwest of Lobelville, on highest point of ridge, on right-of-way of and 33 feet west of center line of State Route 13, and 19.5 feet southeast of 9-inch black oak with triangular blaze. To reach from post office at Lobelville, go north 1.6 miles on State Route 13 to triangle-blazed tree at top of ridge and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark projects 9 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b, projecting about 1 foot above ground. No. 1 is on right-of-way of and 27 feet east of center line of Route 13 and 144.82 feet from station in azimuth 227°36′. No. 2 is on right-of-way of and 24 feet east-northeast of center line of Route 13 and 134.15 feet from station in azimuth 341°57′. Azimuth mark is on right-of-way of and 23 feet southwest of center line of Route 13, about 45 feet northeast of 15-inch black oak, and 0.2 mile from station in azimuth 328°30′00″. *Airway beacon no. 58* (see description thereof) is 3.8 miles from station in azimuth 270°45′59″.

Beard (Perry County, M. A. Hecht, 1934).—About 5¼ miles north of Linden, about 2¾ miles southwest of Beardstown, on divide between Buffalo and Tennessee Rivers, at heads of King's Branch, Harriss Hollow, and Tom's Creek, about ¼ mile south of gap through which road up King's Branch and down Tom's Creek passes, and on property of a tie company of Paducah, Ky. To reach from junction of State Routes 13 and 50 at Buffalo River bridge in Beardstown, go south 0.65 mile on Route 13, turn sharply to right and follow main road along King's Branch 2.3 miles to top of grade, turn left and follow right-hand of two forks about 0.2 mile to triangle-blazed oak on top of hill and station site. Station is on highest point of summit, about 50 feet north of lane, 40 feet north-northwest of 12-inch black oak with triangular blaze, and 59 feet north of 12-inch blazed black oak marked "59". Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark projects about 1 foot above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in woods, 5 feet northeast of 9-inch chestnut oak, and 146.05 feet from station in azimuth 331°03′. No. 2 is in cleared area, 6 feet north of lane, and 172.75 feet from station in azimuth 56°36′. Azimuth mark is on bank about 22 feet north of center line of road, 22 feet southeast of 15-inch black oak, 50 yards northwest of top of grade, and about 0.25 mile from station in azimuth 203°38′41″.

Pleasant (Perry County, M. A. Hecht, 1934).—About 7.1 miles northeast of Linden, on top of bank, in small cleared space, about 40 feet above and about 100 feet southeast of center line of State Route 100, 145 feet south of Hickman-Perry county-line mark, 19.1 feet southeast of edge of bank, and 13.7 feet east of 4- by 4-inch concrete right-of-way marker. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference marks are standard reference disks in concrete, note 11b. No. 1 is on top of bank on opposite side of road from station, on right-of-way of highway, 28 feet above and 40 feet (slope distance) from center line of road, 25 feet northeast of telephone pole, and 172.0 feet from station in azimuth 173°31′. No. 2 is on right-of-way of highway, on opposite side from station, 45 feet above and 50 feet (slope distance) from center line of road, 26 feet northwest of telephone pole, and 200.83 feet from station in azimuth 88°43′. Azimuth mark is standard reference disk in outcropping bedrock, note 12b, 13 feet above and 20 feet (slope distance) west of center line of Route 100, 28 feet northeast of 18-inch black-oak tree, and 0.55 mile from station in azimuth 52°17′02″.

Linden (Perry County, M. A. Hecht, 1934).—About 2½ miles southwest of Linden, on divide between Buffalo and Tennessee Rivers, on hill known locally as "Squirrel Hollow Hill", on property of a tie company, 42 feet southeast of leaning 20-inch oak, and 28.5 feet east of double chestnut tree with triangular blaze. To reach from post office at Linden, follow State Route 13 south 1.15 miles to junction with State Route 20, go 1.05 miles on Route 13 and turn sharply

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to right at slanting crossroad near top of grade, go 0.85 mile and turn onto left fork, continue 0.7 mile and turn onto left fork at creek, go 0.25 mile to gap and to right around mail box of W. A. Seagraves, follow woods road along ridge 0.3 mile keeping right and passing Andy Anderson's house on left, go along top of ridge 0.4 mile to top of grade and triangle-blazed tree on right, and thence up slight hill on right about 50 yards to station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is slightly lower in elevation than and 84.25 feet from station in azimuth 183°29′. No. 2 is slightly lower in elevation than and 77.74 feet from station in azimuth 306°41′. Azimuth mark is on east side of Marsh Creek road, at north point of curvature, 5 feet west of rail fence of Ed. Kimble, and 0.7 mile from station in azimuth 341°28′07″. *Fire lookout tower near station Pope* (see description of station *Pope*) is 9.7 miles from station in azimuth 327°30′02″.

Ice (Perry County, M. A. Hecht, 1934).—About 6¾ miles southeast of Linden, about 11 miles west of Hohenwald, on cleared hill near center one of three houses, on property of Walter P. Grover, 40 feet south of center line of road, 18 feet east of house, and 45 feet southwest of 8-inch oak tree. To reach from junction of State Routes 13, 20, and 100 in Linden, go east 9.7 miles on Route 20 to T-road, turn sharply to right and continue 1.05 miles to T-road on right, follow main road left 1.15 miles to rough dirt road to right at left turn in main road, turn right and go 2.8 miles to fork, follow left-hand fork 0.3 mile to top of hill, cleared field, and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 4 yards northwest of center line of road, 5 feet west of 8-inch oak tree, and 127.85 feet from station in azimuth 205°18′. No. 2 is 5 feet north of center line of road, 18 feet east of fence corner, 10 feet east of 6-inch hickory tree, and 132.94 feet from station in azimuth 101°21′. Azimuth mark is 2 yards north of center line of road, 21 yards west of northwest corner of Savage's house, and 0.1 mile by road from station in azimuth 88°58′26″. Azimuth from station to Savage's house, east gable, distant 450.0 feet, is 83°41′30″.

Flatwoods (Wayne-Perry Counties, M. A. Hecht, 1934).—About 9½ miles northeast of Clifton, in forks of road, 220 feet southwest of road intersection, 83 feet west of east fork, 150 feet east of west fork, and 18.8 feet southwest of 36-inch oak tree. To reach from junction of State Routes 13 and 20 in Linden, follow Routes 13 and 20 south 1.15 miles, keep straight ahead on Route 13 and go 8.00 miles, continue straight ahead (up hill) on dirt road where Route 13 bears left, and follow this main road 2.40 miles to station in forks of road. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on east side of east fork of road and 89.20 feet from station in azimuth 275°33′. No. 2 is about 50 feet west of east fork of road and 74.14 feet from station in azimuth 331°16′. Azimuth mark is along east fork of road, on summit of slight rise, on bank on east side of road, 8 feet east of center of road, 2 feet southeast of 24-inch pine tree, and 0.2 mile from station in azimuth 325°44′22″.

Pope (Wayne County, M. A. Hecht, 1934).—About 11 miles north-northwest of Waynesboro, 9¼ miles southeast of Linden, 3.7 miles by road east-northeast of post office at Flatwoods, in center of small flat-topped hill, 101 feet south of center line of State Route 13 between Waynesboro and Flatwoods, and 76 feet east of east side of fire cabin. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark projects about 9 inches. Reference and azimuth marks are standard reference disks in concrete, note 11b, projecting about 9 inches above ground. No. 1 is 25 feet south of center line of Route 13 and 103.81 feet from station in azimuth 232°52′. No. 2 is 32 feet south of center line of Route 13, 11 feet west of center line of drive, and 148.78 feet from station in azimuth 118°28′. Azimuth mark is 24 feet north of center line of Route 13, 10 feet south of rail fence, and 0.25 mile from station in azimuth 58°00′51″. Center of *fire lookout tower near station Pope* is 25.0 feet from station in azimuth 282°53′.

Mayberry (Perry County, M. A. Hecht, 1934).—About 7½ miles south-southwest of Linden, about 8½ miles north-northeast of Clifton, 5 miles slightly north by west of Flatwoods, on main gravel highway between Clifton and State Route 13, 15 feet northwest of triangle-blazed 14-inch oak tree, 32 feet north of center line of highway, and 18 feet northeast of 6-inch twin-hickory tree. To reach from post office in Flatwoods, go north 3.15 miles on Route 13 (this point

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is about 8¾ miles south of Linden on Route 13) turn left (west) onto dirt side road, follow this road 3.9 miles, turn left onto gravel road, go 1.45 miles, keep to main left fork, continue 0.6 mile and take right fork, and follow main gravel road 2.45 miles to top of grade and station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 12 feet south of center line of road, 32 feet northwest of 8-inch oak tree, and 183.71 feet from station in azimuth 319°13′. No. 2 is 18 feet south of center line of road, 30 feet north-northwest of 8-inch twin-oak tree, and 198.88 feet from station in azimuth 107°01′. Azimuth mark is 5 yards south of center line of road, 3 yards northeast of 10-inch oak tree, 6 yards west-northwest of 8-inch hickory tree, and 0.15 mile by road from station in azimuth 306°36′25″.

Zion (Decatur County, M. A. Hecht, 1934).—About 6 miles southeast of Decaturville, 6 miles north-northeast of Bath Springs post office, 10¼ miles east of Scotts Hill post office, 0.4 mile northeast of Cedar Grove Church, 2 miles south of old Mount Zion cemetery, in center and highest point of small wooded knob, about 30 yards east of old woods road leading from Cedar Grove Church to Mount Zion cemetery, 28 feet northeast of 8-inch black oak with triangular blaze, and 117 feet south of 10-inch cedar with triangular blaze. To reach from courthouse at Decaturville, go south 5.5 miles on State Route 69, turn left onto county road at unpainted house on right, follow this main-traveled road 3.85 miles to Cedar Grove Church, turn left onto dim road just east of church and follow about 0.75 mile to triangle-blazed tree at top of grade, turn right and proceed about 30 yards to another triangle-blazed tree and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark projects about 8 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is along western slope of ridge, 19 feet northeast of 10-inch cedar with triangular blaze, and 131.92 feet (slope distance) from station in azimuth 208°19′. No. 2 is along eastern slope of ridge, about 40 feet east of top of ridge, and 113.77 feet from station in azimuth 353°23′. Azimuth mark is in barnyard of Mr. J. G. Yarbro, 2 feet north of barn, 4 feet south of center line of lane leading to barn, 18 feet south of edge of cultivated field, and 0.75 mile from station in azimuth 47°23′36″.

Clifton (Wayne County, M. A. Hecht, 1934).—About 2½ miles north-northeast of Clifton, about ½ mile north of Tennessee River, in approximate center of summit of hill, and 12.4 feet east of 12-inch hickory tree with triangular blaze. To reach from river front at Clifton, follow Linden-Clifton road northeast 3.8 miles to old store on left (Al Steel's home) and dim wagon road leading to west up ridge, turn west onto old road and go about 0.7 mile to end of truck travel at base of hill, and continue about 0.25 mile up hill to highest point of ridge and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on northeast edge of summit and 74.41 feet from station in azimuth 218°53′. No. 2, stamped "II", is on west edge of summit and 78.05 feet from station in azimuth 67°39′. Azimuth mark is 8 feet east of center of Linden-Clifton road, 528 feet north of home of Mr. Altencup, on top of bank, 2 feet west of fence, and 0.6 mile from station in azimuth 260°13′17″.

Tucker (Decatur County, M. A. Hecht, 1934).—About 4¾ miles west-northwest of Bath Springs, 5 miles southeast of Scotts Hill post office, 7¾ miles south-southwest of Decaturville, on summit of hill known locally as "Jessie Tucker Hill," on property of Jessie Tucker, 15 feet west of highest point on ridge, 15 feet west-northwest of 6-inch hickory tree, and 16 feet north-northwest of 12-inch chestnut tree. To reach from junction of Routes 69 and 114 in Bath Springs, follow Route 69 south 1.5 miles, turn sharply to right onto side road just before reaching white church on left, follow this main road 3.1 miles, keep to main road left at right fork, continue 0.85 mile, keep straight ahead at crossroad, proceed 1.25 miles, turn right (north) onto dirt T-road opposite house on left, and continue 0.9 mile to point opposite hill on right. Station is 200 yards northeast of this point on wooded ridge. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 12 feet west-northwest of 8-inch oak tree, on downhill slope on east side of ridge, and 64.94 feet from station in azimuth 264°08′. No. 2 is along top of ridge, about 15 feet west of highest part of ridge, 12 feet east-southeast of 6-inch white-oak tree, and 80.63 feet from station in azimuth 33°26′. Azimuth mark is 10 feet west-southwest of center line

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of road, 25 yards south of small wooden culvert in road, and 500 feet from station in azimuth 67°41′39″.

Pony (Hardin County, M. A. Hecht, 1934).—About 6 miles northeast of Cerro Gordo, about ¾ mile northeast of Mountain View School, and on high wooded ground owned by the P. G. Hardin heirs. To reach from Clifton post office, go west 7.1 miles straight ahead on main gravel Cerro Gordo road to top of grade and triangle-blazed tree on right, turn right onto dim dirt road and go 0.1 mile to triangle-blazed trees and station site 35 feet east of center line of road and 19.2 feet north-northeast of 16-inch oak with triangular blaze. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 16 feet west of center of road, 20.7 feet north-northwest of 17-inch oak, and 158.70 feet from station in azimuth 17°18′. No. 2 is 17 feet west of center of road, 3.5 feet south of 6-inch oak tree, and 117.43 feet from station in azimuth 149°49′. Azimuth mark is on property of the Hardin heirs, 20 feet west of center of Cerro Gordo road, at lane leading to home of Charlie Hardin, and 0.75 mile from station in azimuth 222°11′10″.

Saltillo (Hardin County, M. A. Hecht, 1934).—About 3 miles north-northwest of Saltillo, about 11¼ miles north of Savannah, on southeast end of wooded ridge, on property of Andy Blevins, 75 yards north of center line of road, 14.5 feet south-southwest of 9-inch black oak with triangular blaze, 14.5 feet northeast of 12-inch white oak with triangular blaze, and 13.8 feet north-northwest of 5-inch blazed white oak. To reach from Saltillo at main corner, go west 1.7 miles on State Route 69, turn right (north) at crossroads and follow arrows "Lexington 24", etc., 0.5 mile, follow right of two left forks, continue 0.8 mile (or 0.2 mile beyond G. S. Hanna's house) to top of grade and thence to station on high ground to right. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on downward slope, about 150 feet northwest of center line of road, and 89.00 feet (slope distance) from station in azimuth 313°13′. No. 2 is on downward slope, about 75 feet north of center line of road, and 145.65 feet from station in azimuth 31°28′. Azimuth mark is on south side of county road, 5 feet north of woods line, 18 feet south of center line of road, and 0.15 mile from station in azimuth 103°41′45″.

Cerro Gordo (Hardin County, M. A. Hecht, 1934).—About 6.75 miles northeast of Savannah, on highest point of long ridge paralleling road, 45 feet west-northwest of center of road, and 15 feet southeast of triple-oak tree. To reach from Cerro Gordo on Clifton-Savannah road, follow main road south 1.95 miles, turn sharply to left (northeast) onto dirt road and continue 1.6 miles to top of grade and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 12 feet east of center line of road and 103.96 feet from station in azimuth 232°07′. No. 2 is 10 feet east from center line of road and 92.49 feet from station in azimuth 342°10′. Azimuth mark is 65 feet north of T-road west, 12 feet west of center line of road, and 210 yards from station in azimuth 201°54′13″.

Right (Hardin County, M. A. Hecht, 1934).—About 6¼ miles northeast of Adamsville, 6 miles northwest of Savannah, 1 mile east-southeast of abandoned Right post office, on high ground, 89 feet southwest of center of State Route 22, 42 feet south of double oak at fence gate, 85 feet south of small Taylor cemetery, and in fence line of property of Dr. J. H. Taylor. To reach from junction of State Routes 64, 69, and 22 (about 2 miles west along Route 64 from Savannah), follow Route 22 north 5.45 miles to top of grade and small cemetery on left. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 25 feet north of center of Route 22, about 10 feet west of wire fence on property of Dr. Taylor, and 198.63 feet from station in azimuth 287°20′. No. 2 is 1 foot southwest of wire fence, about 12 feet south-southwest of double oak by small cemetery, and 114.42 feet from station in azimuth 158°48′. Azimuth mark is 28 feet north of center of Route 22, 3 feet south of wire fence, directly across road from home of Earnest Erwin, and 0.15 mile from station in azimuth 122°42′30″.

Walker (Hardin County, M. A. Hecht, 1934).—About 1 mile south-southwest of Walker Community, 3 miles south of Savannah, on property of I. C. Walker, in small cleared field on top of high wooded knob on northwest end of ridge, 13 yards southwest of 20-inch triangle-blazed tree, and 13 yards east-northeast of

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triple-hickory tree. To reach from courthouse in Savannah, go east 0.2 mile on State Route 64, turn south onto gravel road (Hamburg road) and go 3.5 miles by way of Walker Community, turn right into yard of G. A. Barker, and go west about ¼ mile from his house to station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is in northeast corner of clearing, 6 yards west of 8-inch pine tree, 8 yards south-southwest of 16-inch oak tree, and 157.08 feet from station in azimuth 278°44′. No. 2 is 8 yards north-northwest of 8-inch pine tree, 15 yards east-northeast of 12-inch oak tree, and 87.68 feet from station in azimuth 12°53′. Azimuth mark is 6 yards east of center line of road, 5 yards south of double 14-inch locust tree, about 75 yards north of church, and 0.75 mile from station in azimuth 212°14′00″. Rear gable of church near azimuth mark is 0.75 mile from station in azimuth 216°34′43″.

Crump (Hardin County, M. A. Hecht, 1934).—About 5½ miles west-southwest of Savannah, near Shiloh National Park, on State Route 22, 2.65 miles south along Route 22 from junction of State Route 22 and U. S. Route 64 at Crump, 200 feet southwest of home of S. P. Barlow, at southeast corner of field, at north edge of woods, 47.8 feet northwest of center of highway, and 38.1 feet north-northwest of large double-oak tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on west side of road, 30 feet southeast of large oak tree, and 337.65 feet from station in azimuth 200° 58′49″. No. 2 is on east side of road, about 30 feet from center line thereof, and 78.87 feet from station in azimuth 290°31′. Azimuth mark is at east edge of woods and west edge of field, about 100 feet south of mid-point, 25 feet southeast of 15-inch hickory, 10 feet east of fence, and about 300 yards from station in azimuth 117°18′43″.

Shirley (McNairy County, M. A. Hecht, 1934).—About 3 miles west-northwest of Adamsville, on ridge known as "Shirley Hill", on property of Marcus Walker, at northern end and near middle of formerly cultivated field, 28 feet south of center line of county road, and 37 feet south of 12-inch hickory with triangular blaze. To reach from main corner at Adamsville, go north 1.5 miles on gravel road at arrow "Decaturville 41", etc., turn left onto dirt fork, proceed 1.45 miles (or 0.15 mile past store), turn onto upper left fork, and continue 0.3 mile to triangle-blazed hickory at top of grade and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 8 feet north of center line of county road and 180.62 feet from station in azimuth 251°27′. No. 2 is 11 feet north of center line of road, 10 feet southwest of 15-inch black oak, and 110.90 feet from station in azimuth 100°43′. Azimuth mark is about 75 feet northeast of tin-roofed barn, 9 feet northeast of wire fence, 18 feet southwest of center line of county road, about 200 feet southeast of pink house, and 0.5 mile from station in azimuth 327°16′44″.

Purdy (McNairy County, M. A. Hecht, 1934).—About 1 mile south-southeast of Purdy, 4¾ miles northeast of Selmer, 7½ miles west-southwest of Adamsville, on bare-topped knoll, on property of Mrs. Mary Waggoner, near north edge of cultivated field, 173 feet south of center line of road, 40 feet southeast of twin 6-inch pine, and 26 feet south of edge of large gully. To reach from the Meek Hotel in Adamsville, go west 7.1 miles on Route 64 to crossroads at small store, turn right at arrow "Purdy 3 miles" and follow main gravel road 2.4 miles (or 0.05 mile past small shanty on right) to station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is about 36 feet north-northeast of center line of road, 30 feet north-northwest of ravine, and 206.11 feet from station in azimuth 192°13′. No. 2 is at edge of cultivated field, about 50 feet north of 24-inch walnut, and 240.90 feet from station in azimuth 56°35′. Azimuth mark is 20 feet north of center line of road, 85 feet southeast of unpainted house, 100 feet east of T-road, and 0.25 mile from station in azimuth 123°36′26″.

Sand Hill (McNairy County, M. A. Hecht, 1934).—About 8 miles southeast of Selmer, about 0.75 mile north-northwest of Sand Hill Church, on property of Will Cooper, at west corner of cultivated field, at northwest edge of woods, 40.6 feet north of center line of Sand Hill road, and 15.7 feet south-southeast of 18-inch oak with triangular blaze. To reach from Selmer, follow U. S. Route 72 south 2.3 miles, turn east onto State Route 57, go 3.2 miles, turn south onto Sand

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Hill road, and go 4.3 miles to top of grade and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is about 20 feet southeast of center of road and 117.74 feet from station in azimuth 49°31′. No. 2 is 15 feet southeast of center line of road and 117.25 feet from station in azimuth 294°31′. Azimuth mark is on main road, about 75 yards west-southwest of T-road east, 12 feet north of center line of road, and about 375 yards from station in azimuth 338°57′58″.

Selmer (McNairy County, M. A. Hecht, 1934).—In Selmer, about ½ mile west by north of Selmer High School, on high cleared knoll owned by M. L. Robinson, along north-south fence line, 42 feet south of 16-inch oak tree, 51 feet south of center line of road to station, and 45 feet east by south of 22-inch oak tree. To reach from courthouse in Selmer, go west 0.9 mile on State Route 45, turn right onto rough dirt road, and go 0.3 mile to top of grade and station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is along fence line, 39 feet south of 6-inch oak tree, and 113.77 feet from station in azimuth 9°37′. No. 2 is along road leading to station, 12 feet south of road, and 167.88 feet from station in azimuth 106°53′. Azimuth mark is 33 feet east of center line of Route 45, directly across road from State Highway Garage (District 43), in northwest corner of Grady Johnson's yard, and 500 yards (0.7 mile by road) from station in azimuth 25°45′47″. Following distances and azimuths are from station: Selmer, courthouse, west spire, 0.75 mile, 348°41′02″; and east gable of State Highway Garage, 500 yards, 26°51′30″.

Adams (Alcorn County, Miss., M. A. Hecht, 1934).—About 4½ miles north-northwest of Corinth, 2½ miles slightly north of east of Wenasoga, on property of Walter Adams, in front yard of Adams' home, 9 yards east of center line of road leading to station, 40 yards south of house, 8 yards southeast of 6-inch oak tree, and 19 yards south of 14-inch oak tree. To reach from post office in Corinth, follow U. S. Route 45 northwest 3.2 miles to small brick school and side road on left (west), turn left and go 0.7 mile to railroad crossing, continue straight ahead 1.1 miles to T-road, turn right, go 0.05 mile, follow right fork 0.3 mile to road fork with house on right, follow right fork around house 0.4 mile to another road fork and follow right fork 0.3 mile to Walter Adams' house on right. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 3 yards west of center line of road, along east fence line around small orchard and field, and 61.04 feet from station in azimuth 47°04′. No. 2 is 13 yards west of center line of road, 2 yards southwest of 16-inch oak tree, 9 yards north of fence corner, and 147.42 feet from station in azimuth 170°50′. Azimuth mark is 15 feet west of center line of road, 40 feet southeast of 5-inch oak tree, and 0.25 mile by road from station in azimuth 177°20′18″.

Michie (McNairy County, M. A. Hecht, 1934).—About 5 miles north-northeast of Corinth, about 0.1 mile north of Tennessee-Mississippi State line, directly across road from north corner of home of Eli Tucker, on property of P. A. Hopkins, 33.7 feet west of center line of Tennessee Route 22, and 5.7 feet west of wire fence. To reach from post office in Corinth, follow Mississippi Route 2 north 7.1 miles to State-line marker and continue 0.1 mile along Tennessee Route 22, to station. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 60 feet east of center of Route 22, at north edge of lane, and 104.2 feet from station in azimuth 254°46′. No. 2 is 22 feet west of center of Route 22, 2 feet east of wire fence, 9 feet north-northwest of 6-inch oak tree, and 108.68 feet from station in azimuth 2°04′. Azimuth mark is at south edge of cotton field, 12 feet north of center of dirt lane, 0.25 mile west along lane from Route 22, on property of P. A. Hopkins, and 0.25 mile from station in azimuth 72°41′26″.

Corinth (Alcorn County, Miss., M. A. Hecht, 1934).—In Corinth, on land of W. L. Harrison, in northeast corner of garden on south side of Harrison's home, 19.5 feet south of fence corner, and about 50 feet from center line of street. To reach from post office in Corinth, go north 0.25 mile on U. S. Route 45 to junction with State Route 2, turn right onto Route 2 and go 0.65 mile (or 0.2 mile after going through underpass) to jogged corner where Route 2 turns right, turn right and immediately turn left going north 0.1 mile off Route 2 to home of Mr. Harrison on left and station. Surface and underground marks are standard station

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disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 45.5 feet from intersection of center lines of streets and 127.86 feet from station in azimuth 222°33′. No. 2 is 23.1 feet east of center line of street, 27.0 feet from telephone pole with transformer marked "No. 1064–5KW", and 75.16 feet from station in azimuth 288°56′. Azimuth mark is about 25 feet east of center line of road which passes station site and 0.25 mile from station in azimuth 183°35′11″. Azimuth from station to *Corinth, black water tank*, distant about ½ mile, is 352°03′57″

Supplementary points

Airway beacon no. 58 (Perry County, M. A. Hecht, 1934).—Cap of 36-inch beacon on 75-foot steel tower, on summit of small hill, and 88.4 feet in azimuth 162°57′ from station *Aircon* (see description thereof). To reach from Coble, go north on Coble-Lobelville road (dirt) 8.6 miles to site on left of road. To reach from Lobelville, go north on Coble-Lobelville road 2.2 miles to foot of hill (near dwelling house belonging to Mr. John S. Gilmer). Proceed on Coble-Lobelville road 2.7 miles to site which is among trees about 250 feet to right of road.

Bryan (Robertson County, M. A. Hecht, 1934).—About 3 miles east of Guthrie, near Kentucky-Tennessee State line, on property of Hogan Bryan, 30 feet south of center of gravel road, 19.32 feet southwest of State-line marker, and 11 feet south of fence line. To reach from railroad crossing at depot in Guthrie, go southeast 2.55 miles on Route 41E, turn left at jogged crossroads and keep to main straight road 1.6 miles, turn left at T-road junction with sign "Fairgrounds", and proceed 100 yards to station. Surface and underground marks are standard station disks in concrete, notes 1c and 7a. Upper mark is 10 inches below surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is about 18 inches south of wire fence and 137.57 feet from station in azimuth 266°04′. No. 2 is about 2 feet south of wire fence and 218.05 feet from station in azimuth 92°16′. Azimuth mark is on east side of road, 3 feet north of gate entrance to field owned by A. F. Tilley, 2 feet west of fence line, and 0.5 mile from station in azimuth 1°21′43″. Azimuth from station to *Kentucky-Tennessee boundary monument no. 26*, distant 19.32 feet, is 227°25′; and to *Guthrie, tie plant, smokestack*, distant 3 miles, is 98°03′47″.

B. M. W 3 (Primary traverse station no. 8 W 1925 Tenn. (U. S. G. S.)) (Montgomery County, C. M. Durgin, 1921; 1934).—About 1.8 miles southeast of Clarksville, in town of Summit on Tennessee Central Railroad, about 40 feet northwest of railroad station, 26.0 feet south of center line of Route 76, near door of filling station, and 54.24 feet in azimuth 62°01′ from station *Summit* (see description thereof). Marked by standard bench-mark disk, stamped "U. S. C. & G. S. B. M. W–3 1921" and "P.T. Sta. No. 8 W 1925 Tenn.", set in top of square concrete post projecting 1 foot above surface of ground.

Primary traverse station no. 26 W 1925 Tenn. (U. S. G. S.) (Montgomery County, M. A. Hecht, 1934).—About 11.2 miles from Clarksville, in small village of Fredonia, 6.77 feet in azimuth 230°13′ from station *Fredona* (see description thereof). Probably marked by disk in square block of concrete, projecting about 0.5 foot above ground.

Transit traverse station no. 4 D 1929 (U. S. G. S.) (Dickson County, M. A. Hecht, 1934).—A standard disk of U. S. Geological Survey, stamped "T. T. Sta. No. 4 D 1929", set in concrete floor of Mr. Sensing's store porch, 24.418 meters (80.11 feet) in azimuth 89°19′ from station *Dull* (see description thereof.)

LOUISVILLE, KY., TO NASHVILLE, TENN.

Principal points

Griffin (Allen County, Ky., G. L. Anderson, 1933).—About 3½ miles airline west by north of Scottsville, 3¼ miles southeast of Halfway post office, and on timbered knob owned by John Griffin. To reach from park in Bowling Green, follow State Route 71 southeast 17.4 miles to Halfway post office, continue straight ahead 3.7 miles to farm road to right and two mail boxes on left supported on end of 10-foot horizontal pole; turn right onto farm road, go 0.3 mile to forks, turn onto right fork, go 0.5 mile to new barn in farmyard, turn right around barn, go through gate, and follow woods road north 0.3 mile along west side of rail fence up hill to station site. Station is 32 feet east of 24-inch blazed oak tree and 32 feet north of 30-inch blazed oak tree. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Upper mark projects

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7 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1, projecting 9 inches above ground, is on top of knoll, about 35 feet east of 24-inch blazed oak tree, and 78.39 feet from station in azimuth 212°45′. No. 2, projecting 5 inches above ground, is a little down slope to northwest, 29.5 feet south of 36-inch white-oak tree, and 74.40 feet from station in azimuth 118°01′. Azimuth mark, projecting 6 inches above ground, is 0.3 mile southwest of Route 71, 120 feet northeast of forks, 6 feet northwest of center line of farm road, in fence line, and approximately 0.3 mile from station in azimuth 287°10′31″.

Carman (Simpson County, Ky., G. L. Anderson, 1933).—About 8 miles east-northeast of Franklin, Ky., ¾ mile northeast by east of Cold City, on low partly wooded hill, on property owned by Harris Carman, in open field about ½ mile north-northeast of Mr. Carman's house, 230 feet northeast of 15-inch white-oak tree which is most northeasterly tree in small woods, 1 foot south of fence corner, and 0.5 foot southeast of Mr. Carman's northwest property-line fence. To reach from junction of State Route 100 and U. S. Route 31W at courthouse in Franklin, go east 2.1 miles on Route 100 to road fork about 200 feet east of T-road south, follow left fork 6.0 miles on main road to fork at Cold City store, follow right fork 0.5 mile to Mr. Carman's house on left, enter property, pass house on right and follow lane along left edge of woods 0.45 mile to second woods, pass to right of woods and go north about 0.15 mile to station site. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Upper mark projects 8 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1, projecting 5 inches above ground, is 148 feet northeast of 15-inch white-oak tree, 1 foot southeast of property-line fence, and 82.07 feet from station in azimuth 52°55′. No. 2, projecting 6 inches above ground, is 1 foot southwest of fence and 87.95 feet from station in azimuth 143°15′. Azimuth mark, projecting 4 inches above ground, is on right-of-way of road, 0.55 mile east of Mr. Carman's house, 80 feet north-northwest of barn, 18 feet south-southeast of center line of road, 15 feet northeast of 12-inch white-oak free, and approximately 0.5 mile from station in azimuth 322°26′25″. *Airway beacon no. 68* (see description thereof) is 6.9 miles from station in azimuth 341°23′43″.

Graves (Allen County, Ky., G. L. Anderson, 1933).—About 9 miles south-southwest of Scottsville, 2 miles west of Adolphus, ½ mile north of Kentucky-Tennessee State line, and on land owned by Gueen Graves. To reach from Adolphus, follow Route 31E north 0.7 mile, turn left up hill onto gravel road, go 1.1 miles to store, turn left, go 1.5 miles to crossroad, and continue straight ahead 0.1 mile to home of Mr. Graves and station site. Station is on small hill, 79 feet northeast of northwest corner of barn, 18 feet west of lane between Mr. Graves' house and barn, and 18 feet southeast of small cherry tree. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Upper mark projects 7 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference marks project 10 inches above ground. No. 1 is in north fence line, 100 feet northwest of northwest corner of house, and 190.67 feet from station in azimuth 181°38′. No. 2 is in fence line at edge of woods, 140 feet southwest of northwest corner of barn, and 214.72 feet from station in azimuth 41°41′. Azimuth mark, projecting 3 inches above ground, is 0.2 mile east of crossroad, on bank along north side of road where it passes through shallow cut, and approximately 0.25 mile from station in azimuth 262°25′25″. *Airway beacon no. 68* (see description thereof) is 5.6 miles from station in azimuth 100°25′38″.

Perry (Sumner County, G. L. Anderson, 1933).—About 8 miles southeast of Franklin, Ky., 6 miles north-northeast of Portland, Tenn., near Kentucky-Tennessee State line, and on property owned by Modist Perry. To reach from junction of State Route 100 and U. S. Route 31W at courthouse in Franklin, go east 2.05 miles on Route 100 to T-road south, turn right onto gravel road and proceed in a southerly direction 7.3 miles to State line and station site. Station is 70 feet northeast of northeast corner of barn, 50 feet southeast of southeast corner of Mr. Perry's house, 33.5 feet south-southeast of most southerly of four trees in Perry's front yard, and 32 feet west of center line of road. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Upper mark projects 8 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference marks project 6 inches above ground. No. 1 is 50 feet north of north side of house on east side of road, 29 feet east of center line of road, 1 foot west of right-of-way fence, and 92.42

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feet from station in azimuth 203°22′. No. 2 is 65 feet south of south side of house on east side of road, 33 feet east of center line of road, 1 foot west of fence, and 111.40 feet from station in azimuth 303°06′. Azimuth mark, projecting 8 inches above ground, is 125 feet north of 15-inch pine tree on fence line, 15 feet east of center line of road, 1.5 feet west of right-of-way fence, and approximately 0.15 mile from station in azimuth 331°40′15″. Station *Kentucky-Tennessee boundary monument* (see description thereof) is 15.4 feet from station in azimuth 230°24′.

Jenkins (Sumner County, G. L. Anderson, 1933).—About ¾ mile southwest of Westmoreland, on land owned by the Jenkins heirs. To reach from junction of State Route 52 and U. S. Route 31E at west edge of Westmoreland, follow U. S. Route 31E south 0.5 mile to dirt road, turn right onto dirt road, go 0.1 mile, and turn right into farmyard and station site. Station is on small hill 0.1 mile west of U. S. Route 31E, 82 feet northwest of northwest corner of house, 150 feet north of dirt road, and 30 feet southeast of southeast corner of barn. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Upper mark projects 3 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1, projecting 6 inches above ground, is 20 feet north of dirt road, 6 feet west of gate leading into barn lot, and 126.03 feet from station in azimuth 11°19′. No. 2, projecting 8 inches above ground, is 21 feet northwest of southwest corner of barn, 3 feet east of fence, and 83.49 feet from station in azimuth 111°10′. Azimuth mark, projecting 5 inches above ground, is in northwest right-of-way fence of dirt road, 150 feet east of U. S. Route 31E, 150 feet northeast of (across road from) small house with an outside brick chimney on each end, and approximately 0.2 mile from station in azimuth 263°52′52″. Azimuth from station to Westmoreland, school, chimney, distant 0.5 mile, is 255°59′41″.

Webb (Sumner County, G. L. Anderson, 1933).—About 10½ miles north by east of Gallatin, 7½ miles southeast of Portland, on watershed between Barren and Cumberland Rivers, on wood lot owned by W. D. Webb, about 350 meters (1,148 feet) west by north of Mr. Webb's house, 125 feet west of rail fence, 40 feet southeast of blazed 24-inch dead chestnut tree, and 35 feet north of very large stump. To reach from Franklin, Ky., follow U. S. Route 31W south 7 miles to Mitchellville, turn east onto State Route 109, go 4.6 miles to junction with State Route 52 in Portland, bear left, proceed ½ mile, continue straight ahead 2¼ miles on State Route 109 to crossroads, turn left, go 1.7 miles to crossroad, turn right, go 3.1 miles to Dobbine Pike, turn right onto pike, go 1.2 miles, turn left onto dirt road, go 1.1 miles to jog to left, and continue straight ahead 0.3 mile on woods road to top of hill and station site. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Upper mark projects 1 inch above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1, projecting 4 inches above ground, is 45 feet south of very large chestnut tree and 72.63 feet from station in azimuth 188°38′. No. 2, projecting 5 inches above ground, is 45 feet west of rail fence and 82.44 feet from station in azimuth 288°02′. Azimuth mark, projecting 6 inches above ground, is in fence line, on south side of road, north of Mr. Webb's house, and approximately 0.3 mile from station in azimuth 306°56′53″.

Franklin (Simpson County, Ky., G. L. Anderson, 1933).—On south side of courthouse square in center of town of Franklin, 59.5 feet south of center of south wall of Simpson County Courthouse, 58.6 feet north of north curb of Cedar Street, and 27.2 feet southeast of angle formed by convergence of two sidewalks. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7b. Upper mark projects 2 inches above ground. Reference marks are standard reference disks in concrete, note 11b, projecting 3 inches above ground. No. 1 is 44.1 feet north of center line of Cedar Street, 42.8 feet west of west entrance of Franklin Mineral Well which is located on southeast corner of square, 10.4 feet north of north curb, 1 foot south of south sidewalk curb, and 86.91 feet from station in azimuth 312°24′. No. 2 is 120 feet south of south center of Franklin County Courthouse, 35.8 feet north of center line of Cedar Street, 1 foot north of north curb of Cedar Street, and 84.25 feet from station in azimuth 56°37′. Azimuth mark is standard reference disk in drill hole in north curb of old Depot Street, 39.8 feet west of intersection of College and old Depot Streets, 29.6 feet southwest of southeast corner of College Street Presbyterian Church, 9.5 feet south of center line of old Depot Street sidewalk, and approximately 0.1 mile from station in azimuth 145°34′47″.

Groves (Simpson County, Ky., G. L. Anderson, 1933).—On north side of Kentucky-Tennessee boundary road, on property owned by Bertha Weissinger.

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To reach from Franklin, Ky., follow U. S. Route 31W south 6.5 miles to Ellen tourist camp on right and T-road east, turn east onto gravel road and go 0.05 mile to station on north side of road, in southwest corner of cultivated field, about 160 feet southeast of Weissinger's house, 38 feet north of center line of road, and 30 feet east of vineyard. Boundary monument which was near station has been destroyed. Surface and underground marks are standard disk station marks in concrete, notes 1b and 7a. Upper mark projects 4 inches above ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1, projecting 6 inches above ground, is in fence line, 15 feet south of center line of gravel road, 4 feet east of telephone pole, and 159.95 feet from station in azimuth 301°11′. No. 2, projecting 6 inches above ground, is about 125 feet east of T-road intersection, 35 feet west of fence corner, 16 feet south of center line of road, and 130.75 feet from station in azimuth 72°11′. Azimuth mark, projecting 5 inches above ground, is 0.25 mile south of T-road intersection at Ellen tourist camp, 25 feet west of center line of U. S. Route 31W, 13 feet south of lane, and approximately 0.3 mile from station in azimuth 44°07′12″.

Supplementary points

Airway beacon no. 68 (Allen County, Ky., G. L. Anderson, 1933).—A 24-inch beacon on 87-foot steel tower, 12.5 miles by road from Franklin, and about 4 miles south of Hickory Flat.

Kentucky-Tennessee boundary monument (Simpson County, Ky.—Sumner County, Tenn., G. L. Anderson, 1933).—A rough-cut limestone post, about 3 by 6 inches, projecting about 4 inches above surface of ground, without any marks of identification, but locally considered a marker for boundary between Kentucky and Tennessee. It is 56 feet east-southeast of southeast corner of house of Modist Perry, 15 feet west of center line of road, and 15.4 feet in azimuth 230°24′ from station *Perry* (see description thereof).

Primary traverse station no. 7 1920 Ky. (U. S. G. S.) (Allen County, Ky., G. L. Anderson, 1933).—About 3 miles east of Adolphus, 1,000 feet south of Macedonia Church at fork on Kentucky-Tennessee State line, 20 feet north of center line of road, in yard of A. J. Brown, and 30 feet south of southeast corner of his house. To reach from Scottsville, follow U. S. Route 31E southwest 5.3 miles to where old highway forks to left just before reaching railroad underpass, turn left onto old road, cross railroad at 0.9 mile, continue 0.2 mile to fork, follow left fork 0.8 mile, turn right, go 1.0 mile to fork and follow right fork straight ahead 2.8 miles to station site on right side of road at State line. Station mark is iron post stamped "Prim. Trav. Sta. No. 7-1920-Ky."

Airway beacon no. 67 (Sumner County, G. L. Anderson, 1933).—A 24-inch beacon on 87-foot steel tower, 4.95 miles by road from Portland, and about 3 miles east of Fountain Head.

Airway beacon no. 66 (Sumner County, G. L. Anderson, 1933).—A 24-inch beacon on 75-foot steel tower about 2 miles northwest of Gallatin. To reach from Gallatin, go northwest on Route 25 approximately 1.1 miles to bridge, cross bridge, turn right onto dirt road and go approximately 1 mile to beacon site.

PADUCAH, KY., TO MARTIN, TENN. (SECOND ORDER)

Principal points

Dobson (Graves County, Ky., M. A. Hecht, 1934).—About 5½ miles south-southeast of Wingo, in southeast corner of Solomon Dobson's yard, 35 feet west of center line of main road, and 12½ feet north of wire fence. To reach from Wingo Tavern on route 45 about 10 miles south of Mayfield, follow gravel road just north of tavern east 0.25 mile, turn left onto gravel road at arrow "Murray 25½" and go 2.9 miles (0.9 mile beyond brown cottage on right), turn right across small bridge and go 1.3 miles, turn onto left fork at white cottage on right and go 2.3 miles, turn left at crossroads at cottage on left and go 0.5 mile, turn right at crossroads at old barn on left and go 0.25 mile to home of Mr. Dobson on right and station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 1.0 foot north of wire fence and 101.47 feet from station in azimuth 82°07′. No. 2 is 1.0 foot south of wire fence and 140.97 feet from station in azimuth 162°09′. Azimuth mark is on fence line, about 15 yards south of southeast corner of W. L. Shelby's home, and approximately 0.25 mile from station in azimuth 33°59′43″.

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Blair (Hickman County, Ky., M. A. Hecht, 1934).—About 1¼ miles northwest of Water Valley, near southwest corner of sec. 1, range 1, township 2 west, (Blair Township), in yard of D. J. McAllister, 68.0 feet west of northwest corner of his house, 48 feet east of center line of dirt road, and 37.5 feet north-northwest of 30-inch oak. To reach from center of Water Valley, follow U. S. Route 45 south 0.25 mile, turn right (west) onto gravel road and go 0.65 mile to crossroad, turn right (north) and continue 1.3 miles on main road to home of D. J. McAllister and station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark is about 3 inches below surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on south fence line of field, east of road, and 147.40 feet from station in azimuth 181°24′. No. 2 is on west fence line of McAllister's garden, about 25 feet north of southwest fence corner, and 154.75 feet from station in azimuth 303°23′. Azimuth mark is about 120 feet north of first house south of McAllister's, 12 feet east of center line of road, 3 feet west of fence line, and approximately 0.15 mile from station in azimuth 1°20′29″. *R. 1, T. 2 W., sec. 1 southwest corner* (see description thereof) is 138.28 feet from station in azimuth 20°56′.

Golden (Weakley County, M. A. Hecht, 1934).—About 4½ miles east by south of Fulton, on highest ground along east-west fence line between cultivated field and pasture, northwest of three pear trees, on property of B. A. Golden, about 100 yards north of 38-foot windmill back of his house, 98.2 feet west-northwest of 15-inch pear tree, and 11.8 feet north of fence line. To reach from junction of U. S. Routes 45E and 45W in Fulton, Ky., follow Route 45E south 1 block to point where highway makes turn to right, keep straight ahead and follow main straight road (State-line road) 5.0 miles to T-road right just after passing two stores on left, turn right (south) and go 0.9 mile to Golden's house with windmill and station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11a. No. 1 is 166.38 feet from station in azimuth 192°18′. No. 2, marked "II", is 10 feet southeast of small peach tree, 1 foot north of fence line, and 121.67 feet from station in azimuth 275°15′. Azimuth mark is in northwest corner of field, 12 feet east of north-south road, 10 feet south of east-west lane, and approximately 0.25 mile from station in azimuth 157°14′15″.

Fulton (Obion County, M. A. Hecht, 1934).—Near Kentucky-Tennessee State line, in city of Fulton, 48 feet east of large locust tree, and 47.0 feet south of center line of main track of Illinois Central Railroad. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference mark no. 1 is standard reference disk in west end of south concrete rail of highway bridge and 150.6 feet from station in azimuth 118°48′. No. 2 is standard reference disk in concrete, note 11b, at board fence line and 88.23 feet from station in azimuth 358°02′. Azimuth mark is standard reference disk in curb at northwest intersection of Fourth and Lake Streets, in front of Smith's Cafe, on line with east building line, and approximately 0.2 mile from station in azimuth 226°03′33″. *Kentucky-Tennessee boundary monument* (see description thereof) is 172.7 feet from station in azimuth 258°42′. *Obion County, Tenn.–Fulton County, Ky., county-line marker*, is 39.85 feet from station in azimuth 209°44′.

Duke (Weakley County, M. A. Hecht, 1934).—Near Kentucky-Tennessee State line, about 9.25 miles east of Fulton, Ky., 6.5 miles east-southeast of Water Valley, Ky., 300 yards west of Dukedom post office, on top of bank about 8 feet above level of Kentucky-Tennessee State-line road, on property of Dukedom Methodist Church, 70.15 feet north on northwest corner of church, 52 feet south of center line of road, 50.38 feet east-northeast of more northerly of two large red-oak trees, and 36.3 feet west of center line of driveway leading to church. To reach from junction of U. S. Routes 51 and 45E at Standard Oil station in Fulton, follow U. S. Route 45E east one block across railroad tracks, continue straight ahead at point where Route 45E turns to right, and follow State-line road due east 9.3 miles to church and station site. Surface and underground marks are standard station disks in concrete, notes 1a and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is about 50 feet east of rear of church, 45 feet northwest of large red-oak tree, and 124.92 feet from station in azimuth 307°03′. No. 2 is about 75 feet south of center line of road, 15 feet north-northwest of northwest corner of small house, 4 feet east of fence line, and 118.96 feet from station in azimuth 82°50′. Azimuth mark is at edge of pasture, 0.2 mile north of State-line road, 15 feet west of center line of first T-road west of station, 6 feet southeast of 5-inch wild-cherry tree, and approximately 0.4 mile

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from station in azimuth 122°12′00″. *Kentucky-Tennessee boundary monument no. 8* is 83 feet from station in azimuth 181°56′.

Vincent (Weakley County, M. A. Hecht, 1934).—About 4¾ miles east-southeast of Dukedom, 0.8 mile south of Tennessee-Kentucky State line, near northern edge of high partly cleared knoll, in old orchard, on property of Rube Vincent, about 50 feet north of row of cedar trees, and 35 feet northwest of center line of road. To reach from Owen's Cafe in Water Valley, Ky., follow U. S. Route 45E south 3.4 miles, turn left onto dirt road through cut and go 0.75 mile, turn right just after passing Bennett School and go 1.5 miles, turn left at church and cemetery on right and go 9.85 miles (3.2 miles past Dukedom post office), turn right at Foy's store and go 0.85 mile, turn left at T-road and go 1.7 miles, turn right at T-road and go 0.15 mile, turn right just after passing stores in Austin Springs and go 1.0 mile, turn left and go 0.6 mile (0.15 mile beyond white house) to top of grade and station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on downward slope of knoll, 3 feet southeast of fence line, and 114.11 feet from station in azimuth 169°00′. No. 2 is along ridge, 30 feet northwest of center line of road, and 142.03 feet from station in azimuth 67°53′. Azimuth mark is on property of E. J. Jones (Dewey Ainley, tenant), about 100 feet east of house, 16 feet northeast of small shed, and approximately 0.4 mile from station in azimuth 107°27′07″.

Junior (Weakley County, M. A. Hecht, 1934).—About 0.7 mile west of post office in Martin, on grounds of Junior College of University of Tennessee, 19.65 feet east of east side of west wing of Industrial Arts Building, and 12.5 feet north of north side of same building. To reach from post office in Martin, follow route 22 west 0.7 mile, turn left and go to top of hill and station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1, flush with surface of ground, is 87.7 feet north-northeast of northeast corner of Industrial Arts Building, 3.7 feet northwest of 18-inch elm tree, and 150.2 feet from station in azimuth 233°17′. No. 2 is 12 feet west of center line of drive to buildings and 253.8 feet from station in azimuth 134°48′. Azimuth mark is about 100 yards north of east entrance to gymnasium, 1 foot east of east fence of athletic field, and approximately 0.25 mile from station in azimuth 220°54′52″.

Martin (Weakley County, M. A. Hecht, 1934).—In city of Martin, on lawn in right-of-way at southwest corner of intersection of Frederick Street and Broadway, directly across Broadway from Salant & Salant shirt factory, on property of and 100 yards northeast of Illinois Central Railroad freight station, 38.7 feet west of center line of Broadway, and 37.0 feet south of center line of Frederick Street. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 50 feet south of center line of Frederick Street, 20 feet west of center line of railroad track, 5 feet north of telephone pole, and 152.88 feet from station in azimuth 94°39′. No. 2 is on park lawn, 100 feet northeast of Illinois Central Railroad freight station, 80 feet west of center line of Broadway, 50 feet east of center line of railroad track, and 120.36 feet from station in azimuth 19°35′. Azimuth mark is at edge of Illinois Central Railroad park, 50 feet northwest of railroad crossing at Rebecca Avenue, 30 feet west of railroad tracks, and approximately 0.3 mile from station in azimuth 12°49′58″. *Primary traverse station no. 34 1910* (*U. S. G. S.*) (see description thereof) is 74.32 feet from station in azimuth 150°27′. *Martin, aluminum water tank near chimney,* is about 700 feet from station in azimuth 348°51′15″.

Supplementary points

Primary traverse station no. 34 1910 (U. S. G. S.) (Weakley County, M. A. Hecht, 1934).—In city of Martin, 23.5 feet north of center line of Frederick Street, 20 feet east of center line of railroad right-of-way, and 74.32 feet in azimuth 150°27′ from station *Martin* (see description thereof). Marked by standard disk of U. S. Geological Survey set in pipe and projecting 1 foot above surface of ground.

Kentucky-Tennessee boundary monument (Fulton County, Ky.-Obion County, Tenn., M. A. Hecht, 1934).—Square concrete post with "T" on one side and "K" on other, projecting about 1 inch above surface of sidewalk in city of Fulton, 172.7 feet in azimuth 258°42′ from station *Fulton* (see description thereof). Not visible from station *Fulton* in 1934.

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Kentucky-Tennessee boundary monument no. 8 (Graves County, Ky.–Weakley County, Tenn., M. A. Hecht, 1934).—*Boundary monument established in 1858–59.* It is 83 feet in azimuth 181°56′ from station *Duke* (see description thereof).

R. 1, T. 2 W., sec. 1, southwest corner (Hickman County, Ky., M. A. Hecht, 1934).—*Section marker for southwest corner of section 1, range 1, township 2 west* (Blair Township), in center line of road, 14.5 feet from fence corners on east and west sides of road, and 138.28 feet in azimuth 20°56′ from station *Blair* (see description thereof). Corner had been marked formerly by iron pipe which has been removed.

MOSCOW, TENN., TO FOREST, MISS.

Principal points

Beasley (Benton County, Miss., M. A. Hecht, 1934).—About 18.5 miles north-northeast of Holly Springs, 11¾ miles north-northwest of Ashland, 2 miles west of Michigan City, on small hill in sec. 15, T. 1 S., R. 1 W., about ¼ mile a little west of north of Berry's Chapel, and on property of P. R. Beasley of La Grange, Tenn. To reach from Holly Springs, follow State Route 4 east about 16.5 miles to intersection with State Route 5, turn left (north) onto Route 5 and go about 10 miles to intersection with Route 2 on left (west), continue on Route 5 (right) 4.0 miles to Tennessee-Mississippi State line, continue on Route 5 north 0.1 mile, turn left (west) onto dirt road and go 1.5 miles to T-road, turn left (south) and go 0.45 mile to church on right, turn right around church and go 0.15 mile, turn right onto farm T-road and go 0.1 mile to two houses, pass between houses and go 0.2 mile along pasture road to top of small hill and station site in cultivated field, 185 feet west-northwest of fence corner, and about 285 feet southeast of 16-inch oak tree. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is along fence line, 18 feet east of fence corner and 203.67 feet from station in azimuth 288°03′. No. 2 is about 16 feet southwest of 6-inch tree, 12 feet south of 12-foot gully, and 221.70 feet from station in azimuth 15°19′. Azimuth mark is at corner of picket fence, 55 feet northeast of tenanted house, 18 feet west-northwest of small outbuilding, and 300 yards from station in azimuth 316°48′22″.

Skelton (Marshall County, Miss., M. A. Hecht, 1934).—About 11½ miles north-northeast of Holly Springs, 3 miles west of Lamar, in sec. 11, T. 2 S., R. 2 W., on small hill owned by J. D. Skelton, about ¼ mile southwest of his house, 55.4 feet north of fence line of R. W. Skelton, and 46.4 feet west of 12-inch triangle-blazed oak tree. To reach from courthouse in Holly Springs, follow route 7 north 7.7 miles to Atway store, follow Route 7 to left about 100 yards, turn right onto dirt road and go 0.45 mile to fork, follow right fork 4½ miles, turn left onto T-road across creek bed and go 0.45 mile to J. D. Skelton's house, go west past house 0.1 mile to tenant house, bear left around picket fence, and go southwest 0.4 mile to top of hill and station site. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark projects about 10 inches above surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is on wire-fence line, about 50 feet southeast of 12-inch triangle-blazed oak tree, and 92.0 feet from station in azimuth 315°18′. No. 2 is on wire-fence line and 96.8 feet from station in azimuth 59°56′. Azimuth mark is on east edge of wire fence, about 20 feet south of fence intersection and gate, and 0.1 mile from station in azimuth 141°37′07″. Holly Springs, Federal Compress & Warehouse Co., black water tank, is about 10 miles from station in azimuth 16°21′40″.

Mule (Marshall County, Miss., M. A. Hecht, 1934).—About 6¾ miles north-northeast of Holly Springs, 1.4 miles west of Atway store, and in northwest corner of sec. 32, T. 2 S., R. 2 W. To reach from Holly Springs post office go south 1 block, turn left onto Route 7 and go north 7.6 miles (or 0.1 mile before reaching Atway store), turn left (west) onto dirt road and go 1.45 miles to top of grade and station site on left, 11 yards southeast of center line of road, about 80 yards south of highest point in immediate vicinity, 20 yards east of road forks, and 9 yards north of 10-inch oak tree with triangular blaze on north side. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is 4 yards north-northwest of center line of road and about 5 feet higher than and 75.25 feet (slope distance) from station in azimuth 93°34′. No. 2 is 4 yards north-northwest of center line of road and about 5 feet higher

For notes in regard to marking of stations see pp. 151–152.

than and 70.76 feet (slope distance) from station in azimuth 181°44′. Azimuth mark is 35 feet northeast of gate leading to house, 5 feet east of center line of farm road, 2 feet west of fence line, and 350 yards from station in azimuth 341°46′11″.

Whitten (Benton County, Miss., M. A. Hecht, 1934).—About 9½ miles northeast of Holly Springs, 3¼ miles east of Hudsonville, near corner of sec. 4, T. 3 S., R. 1 W., and on high ridge on property owned by J. B. Whitten. To reach from courthouse in Holly Springs, follow Route 7 north 7.7 miles to Atway, turn right and go 2.15 miles to railroad crossing in Hudsonville, continue straight ahead (east) 0.1 mile, turn left onto T-road and go 3.5 miles to junction with Lamar road and station in southeast intersection, 40 feet south of center line of Ashland-Hudsonville road, and 95 feet east of center line of Lamar road. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Reference and azimuth marks are standard reference disks in concrete, note 11b. No. 1 is northwest of road intersection and 139.97 feet from station in azimuth 89°24′. No. 2 is 18 feet north of center line of Ashland road and 71.4 feet from station in azimuth 183°40′. Azimuth mark, projecting 10 inches, is about 3 feet higher than and 24 feet east of center line of road and 0.15 mile from station in azimuth 355°09′28″.

Fite (Marshall County, Miss., M. A. Hecht, 1934).—About 3 miles north of Slayden, on property of J. D. Fite. To reach from junction of Routes 2 and 7 at Slayden (about 17 miles by road north of Holly Springs), follow Moscow road north 1.0 mile to fork, follow left fork 1.1 miles, turn sharply to left over wooden bridge and go straight ahead 1.1 miles (or 0.2 mile beyond small wooden bridge) to triangle-blazed 10-inch tree on left and station site. Station is in field at top of grade, 36 feet west of center line of Moscow-Slayden road, 56.3 feet southwest of most southerly of three oaks on fence line, and 16½ feet west of triangle-blazed 18-inch sassafras tree in fence line. Surface and underground marks are standard station disks in concrete, notes 1b and 7a. Upper mark is about 6 inches below surface of ground. Reference and azimuth marks are standard reference disks in concrete, note 11b. Reference marks project 3 inches. No. 1 is about 25 feet west of center line of road and 155.25 feet from station in azimuth 358°29′. No. 2 is at same elevation as and 157.5 feet from station in azimuth 92°55′. Azimuth mark is on property of J. D. Fite, about 80 feet west and about 10 feet higher than center line of road, about 40 feet west of 10-inch wild-cherry tree, about 12 feet south of more northerly of two lanes leading to main road, and 0.4 mile from station in azimuth 0°45′42″.

Supplementary point

Slayden, Marshall County High School, tank (Marshall County, Miss., M. A. Hecht, 1934).—Center of short, small, aluminum water tank with ornamental tip, at Marshall County High School in Slayden.

For notes in regard to marking of stations see pp. 151–152.

FIGURE 5.—Arcs included in the eastern adjustment and loop closures.

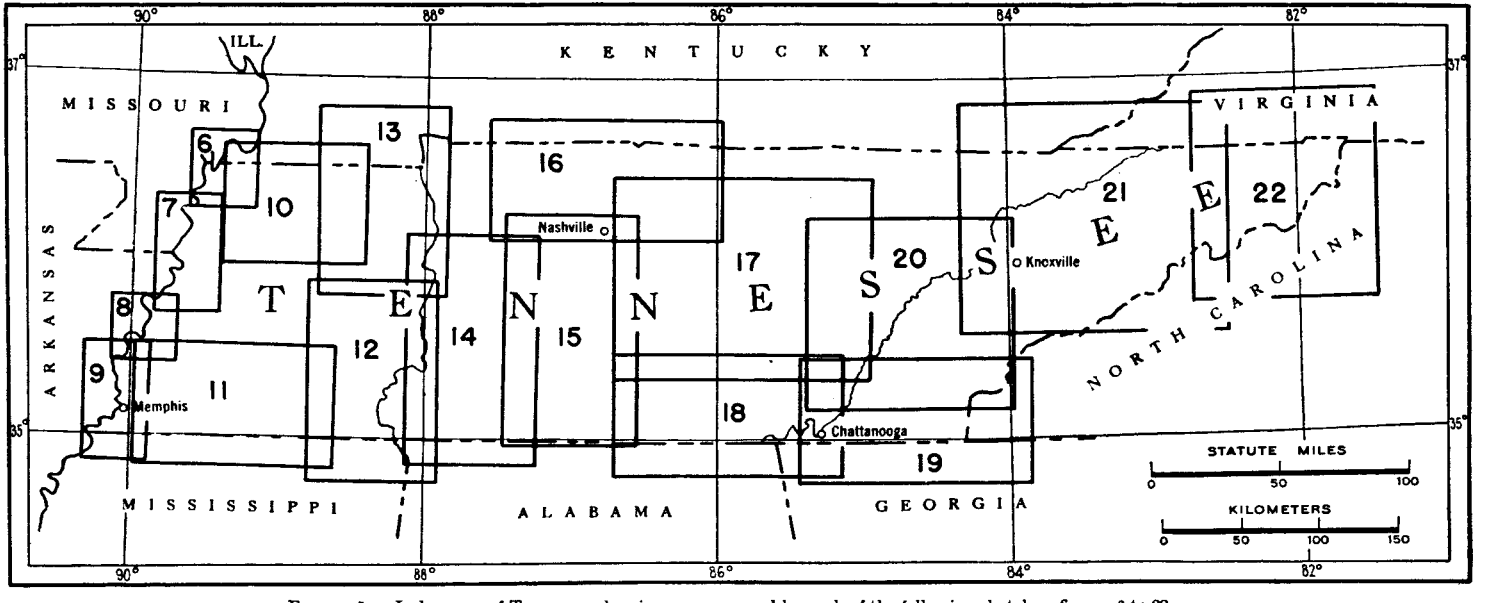

FIGURE 5a.—Index map of Tennessee showing areas covered by each of the following sketches, figures 6 to 22.

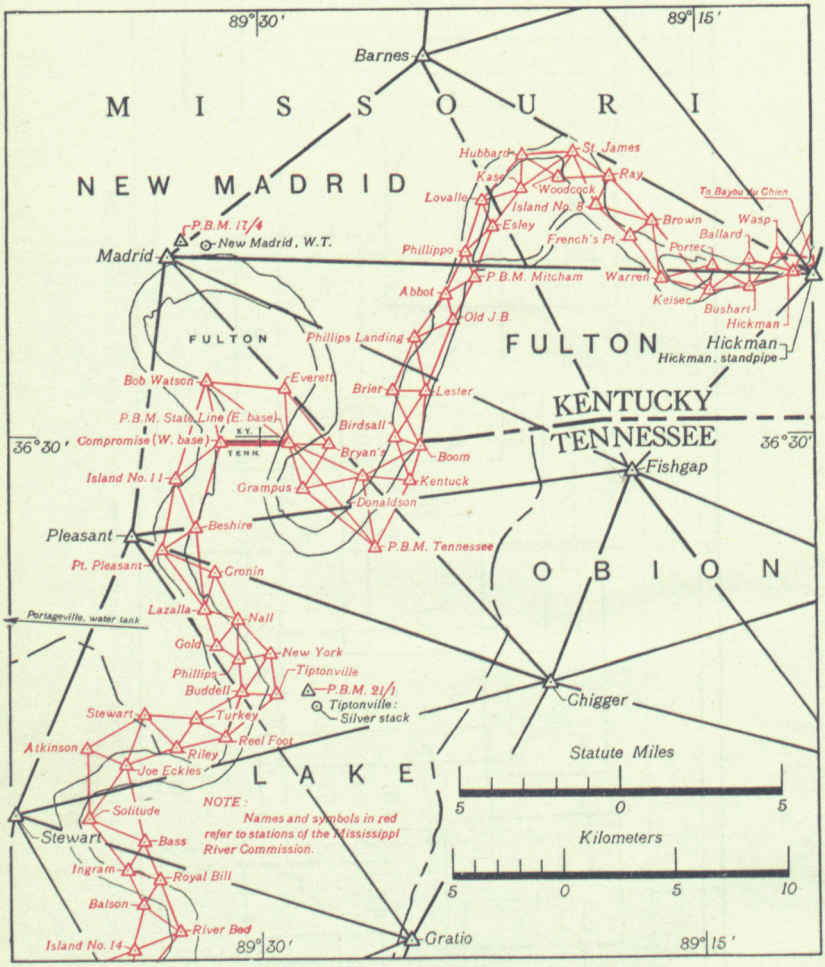

FIGURE 6.—Triangulation, Mississippi River (north).

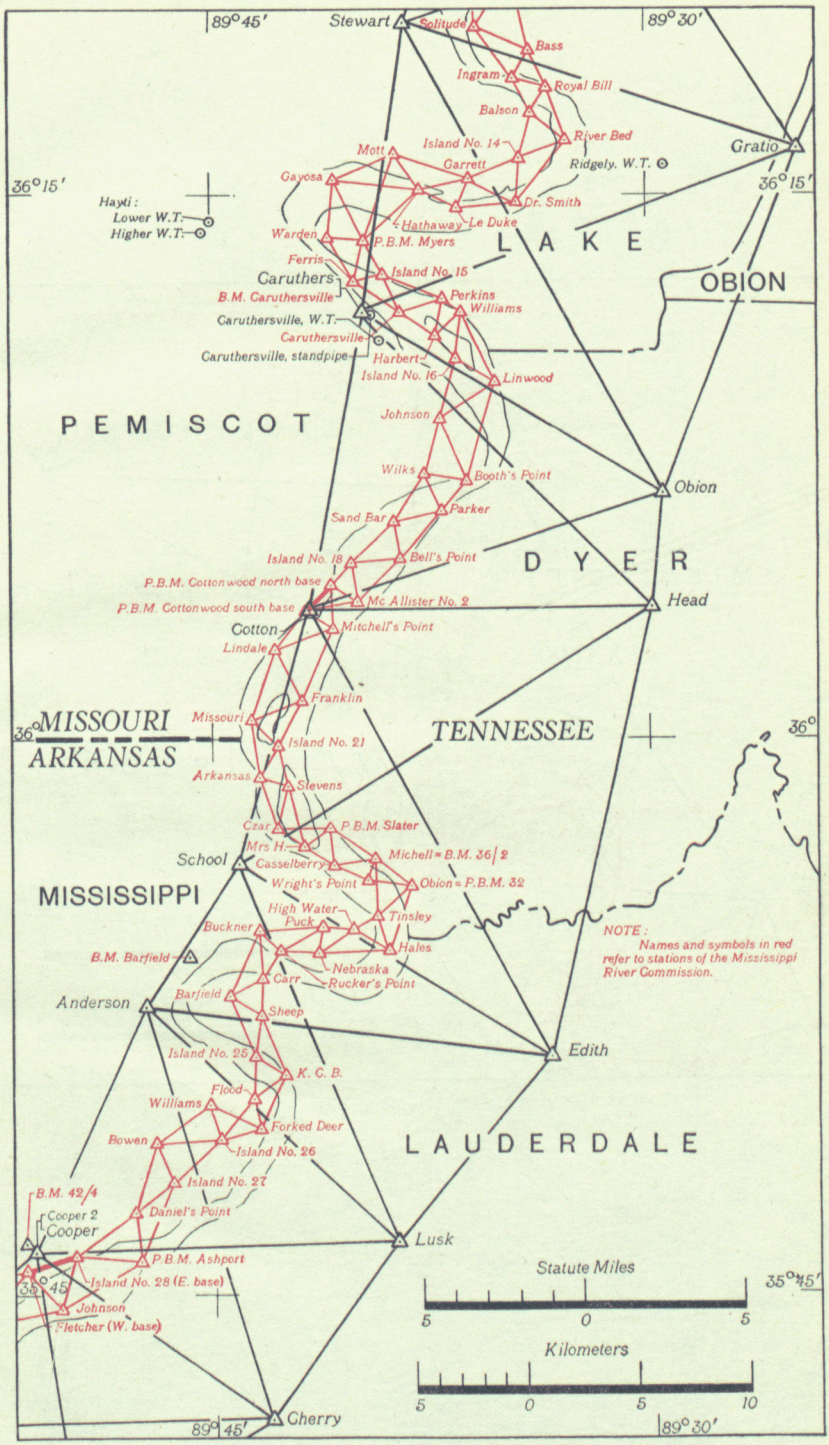

FIGURE 7.—Triangulation, Mississippi River (north central).

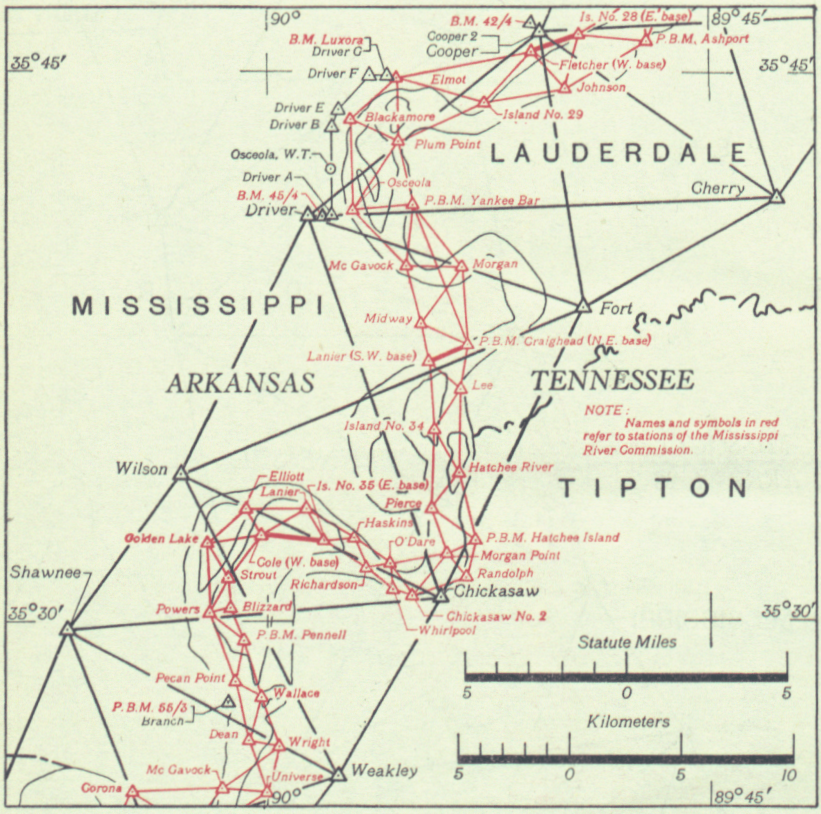

FIGURE 8.—Triangulation, Mississippi River (south central).

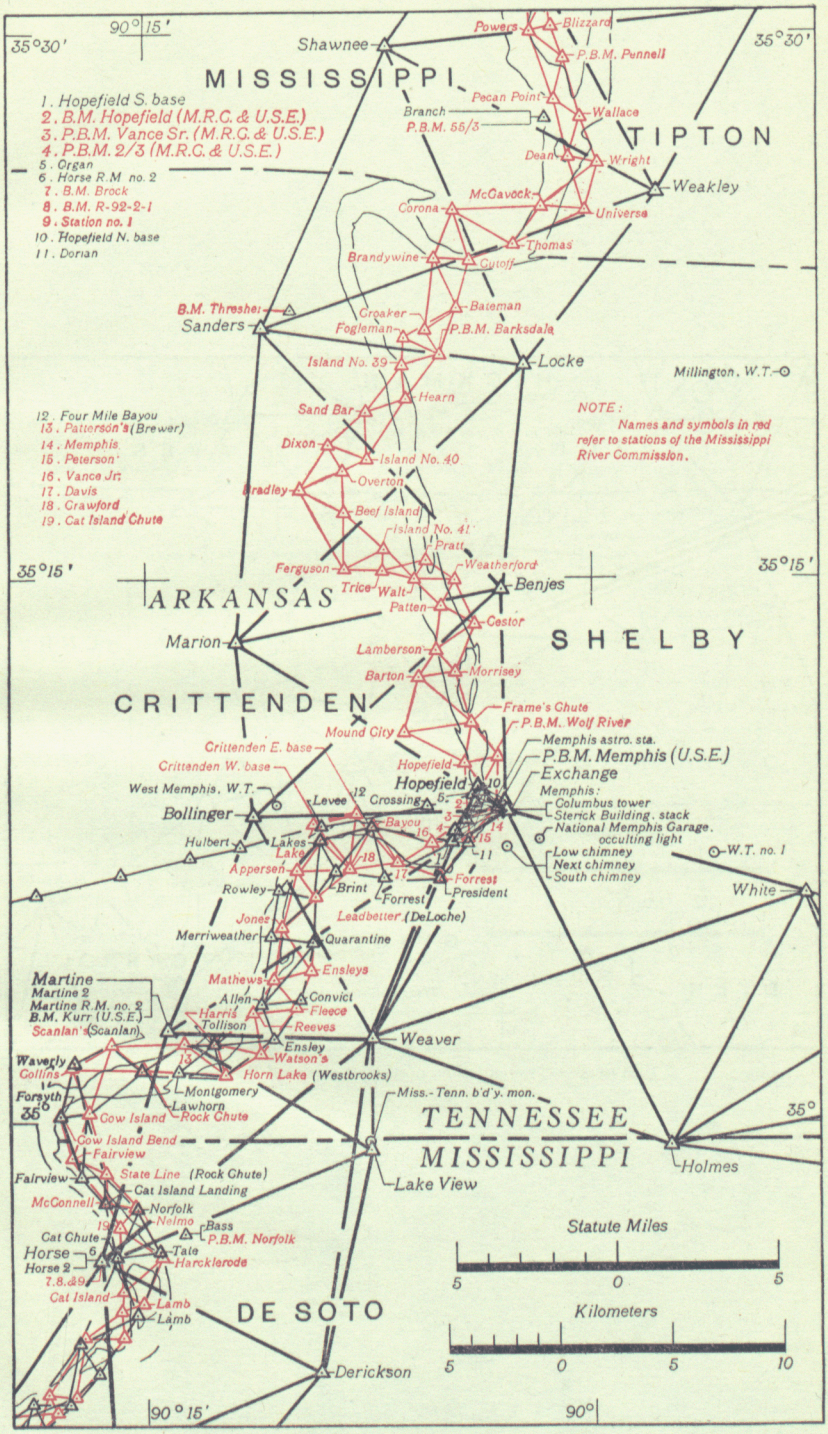

FIGURE 9.—Triangulation, Mississippi River (south).

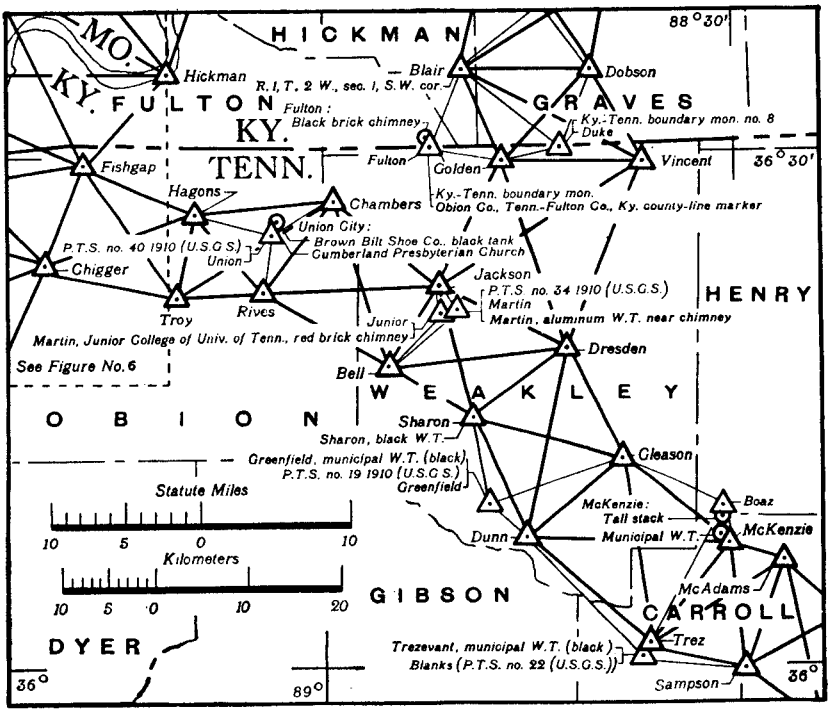

FIGURE 10.—Triangulation, northwest corner of Tennessee.

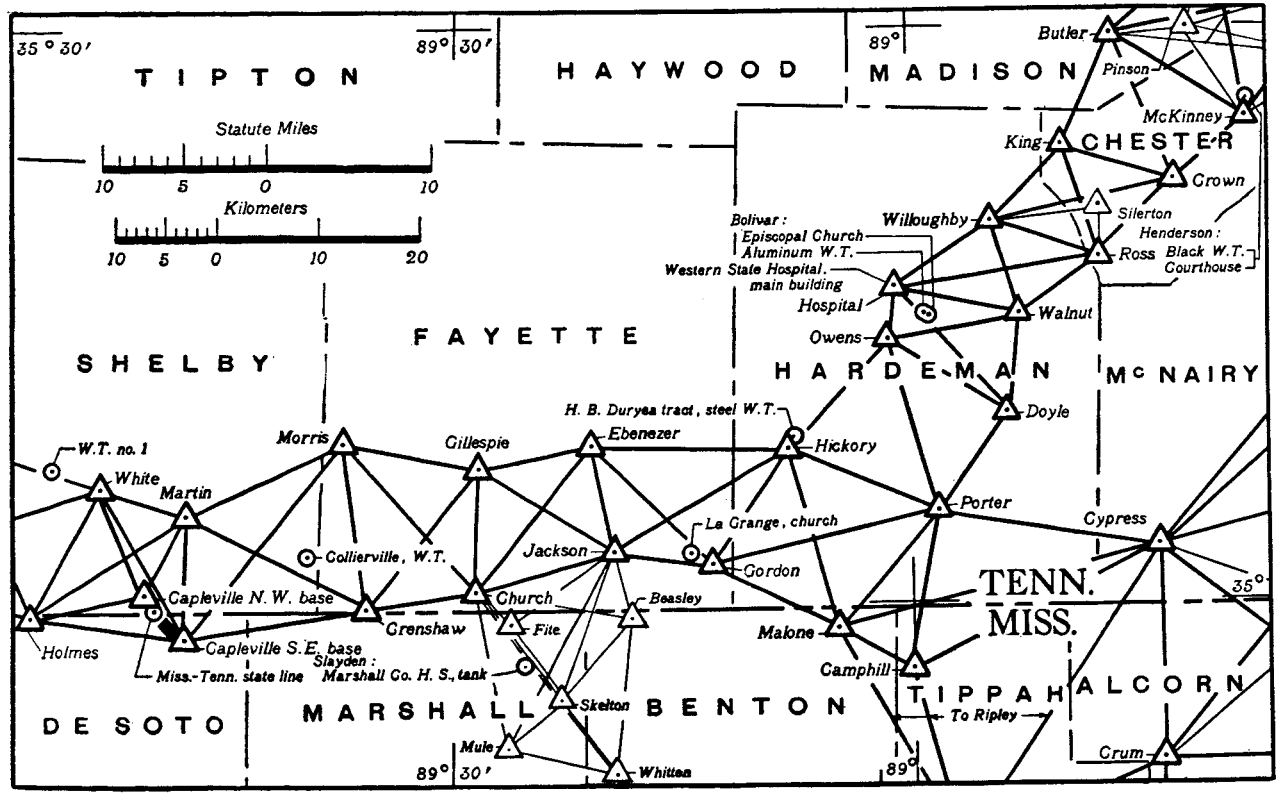

FIGURE 11.—Triangulation, Memphis eastward.

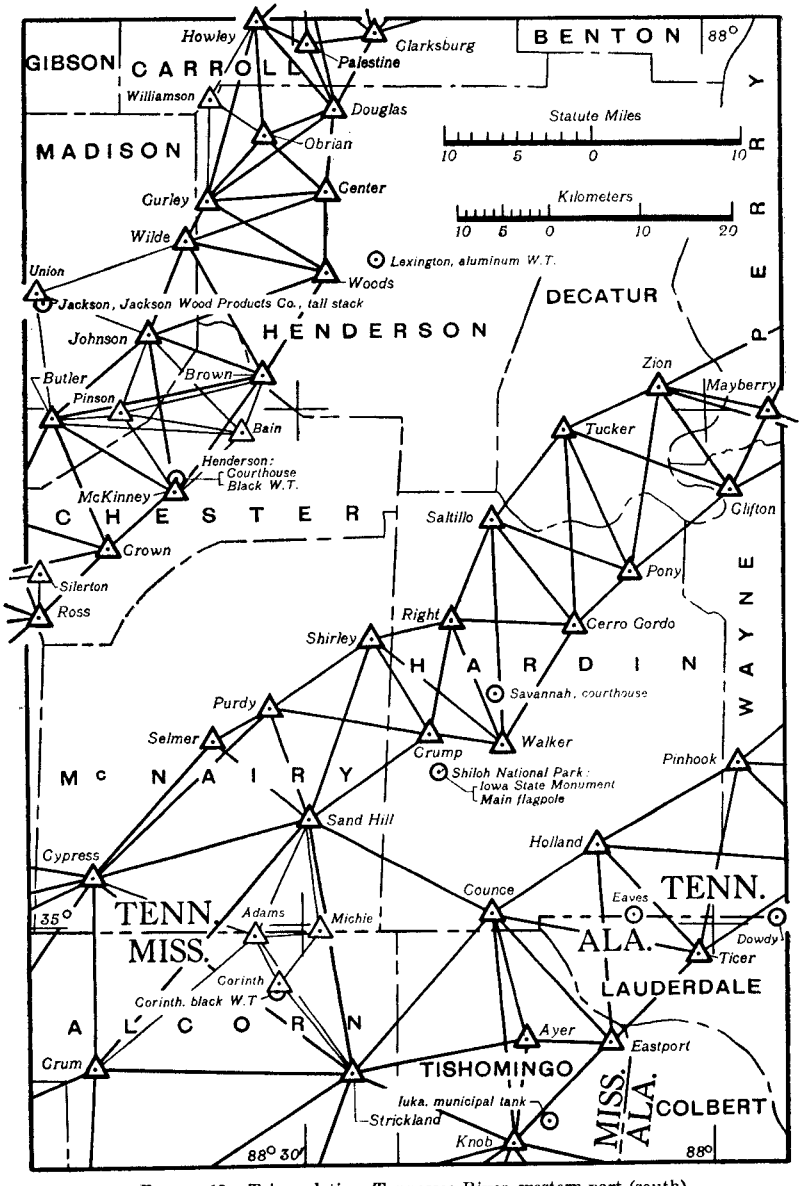

FIGURE 12.—Triangulation, Tennessee River, western part (south).

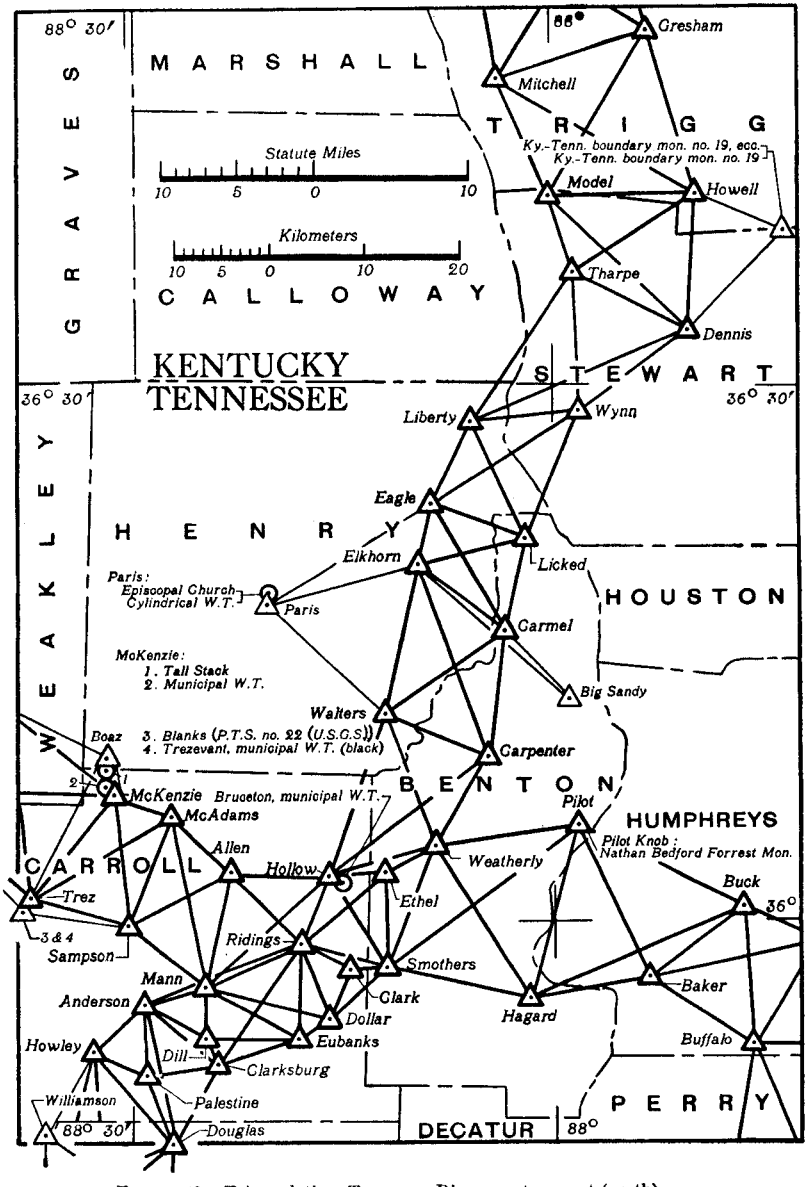

FIGURE 13.—Triangulation, Tennessee River, western part (north).

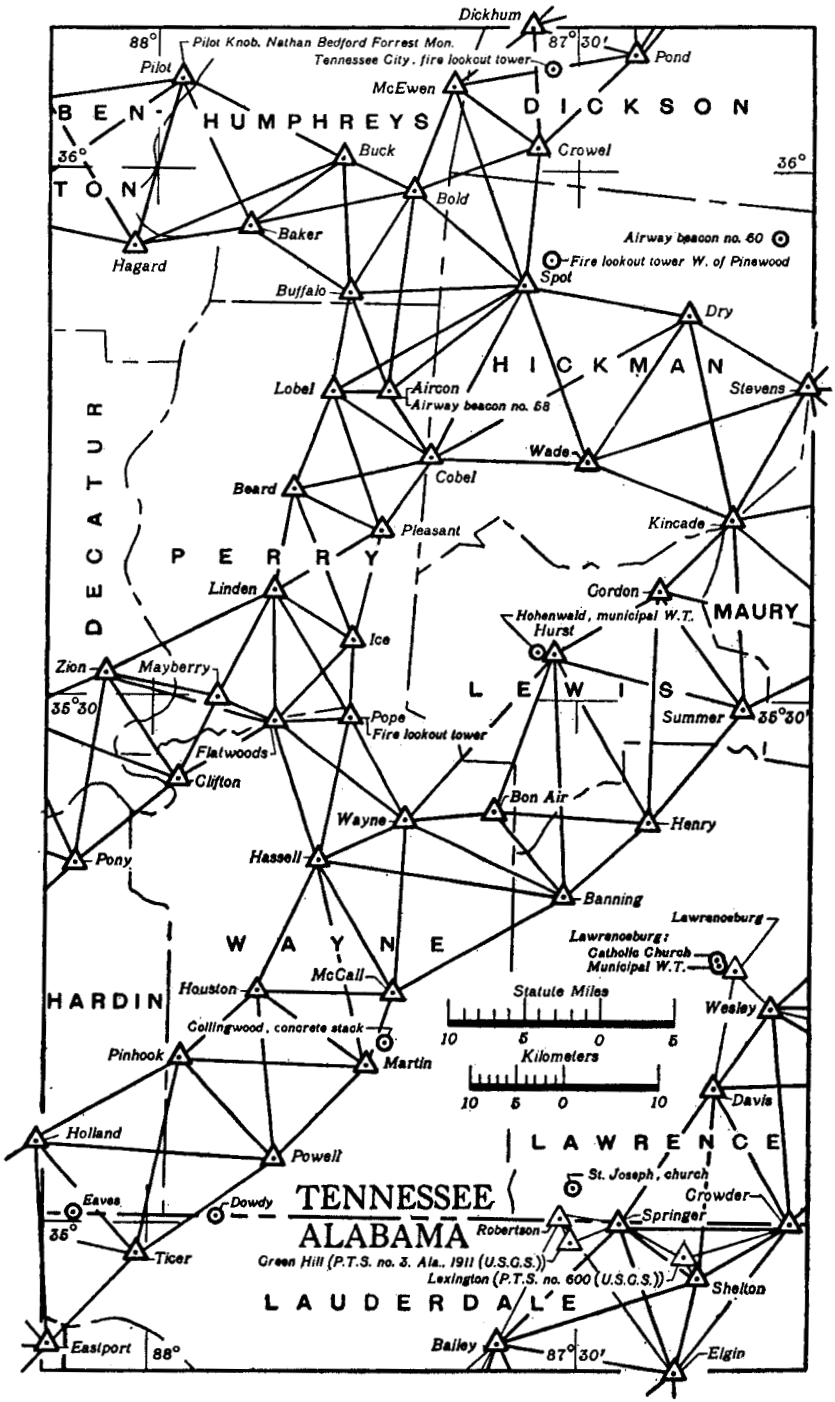

FIGURE 14.—Triangulation, Waynesboro to Waverly.

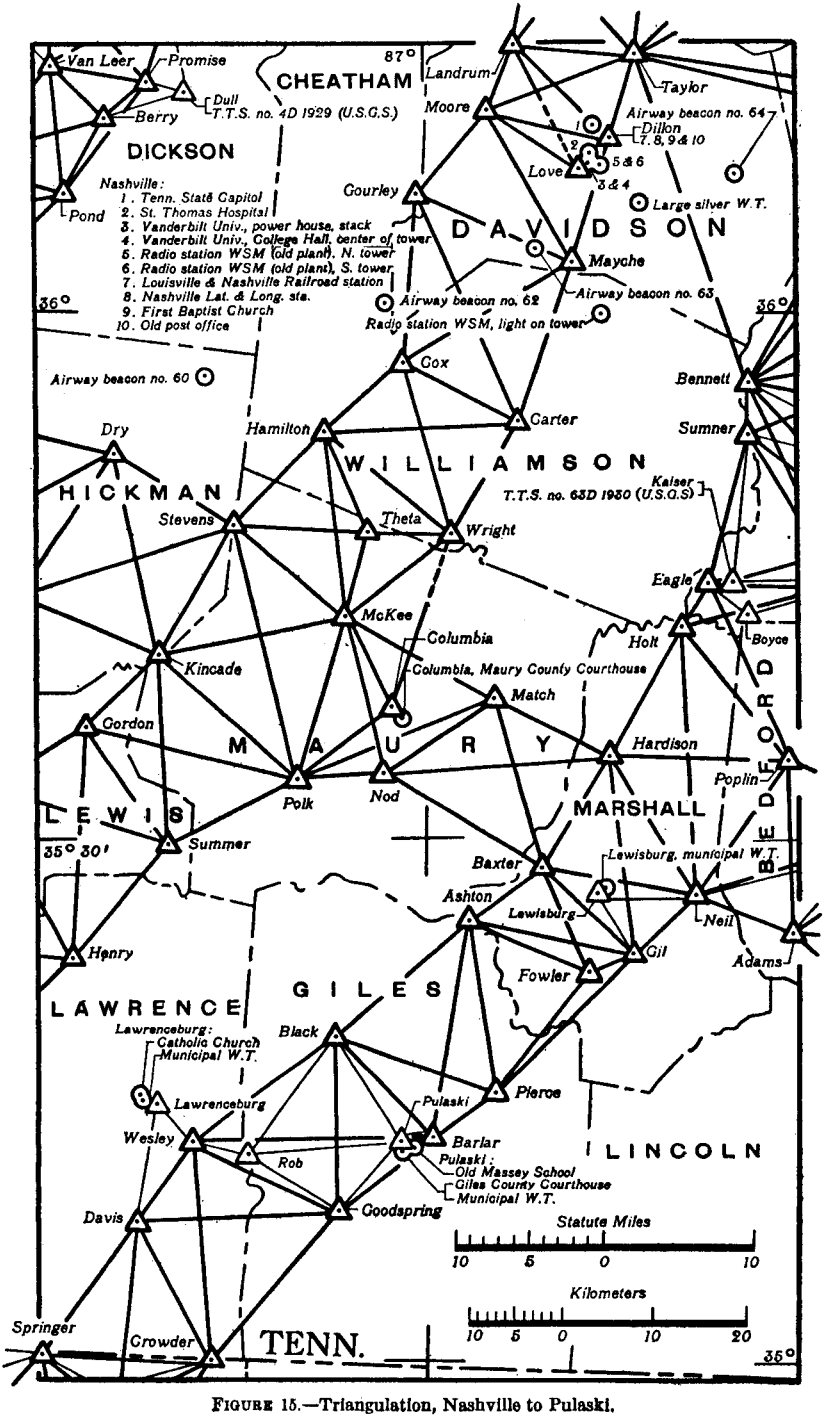

FIGURE 15.—Triangulation, Nashville to Pulaski.

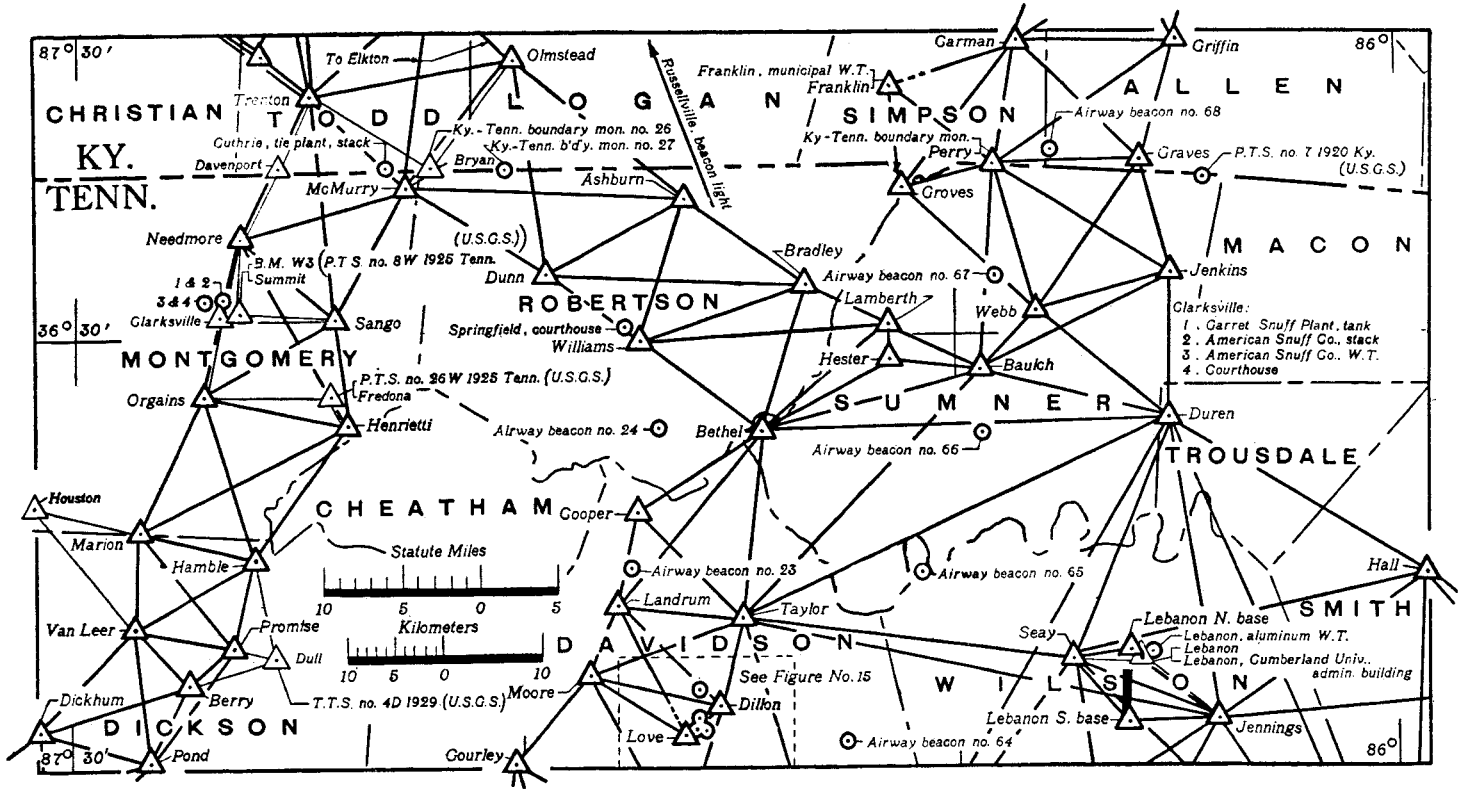

FIGURE 16.—Triangulation, Nashville to northern boundary.

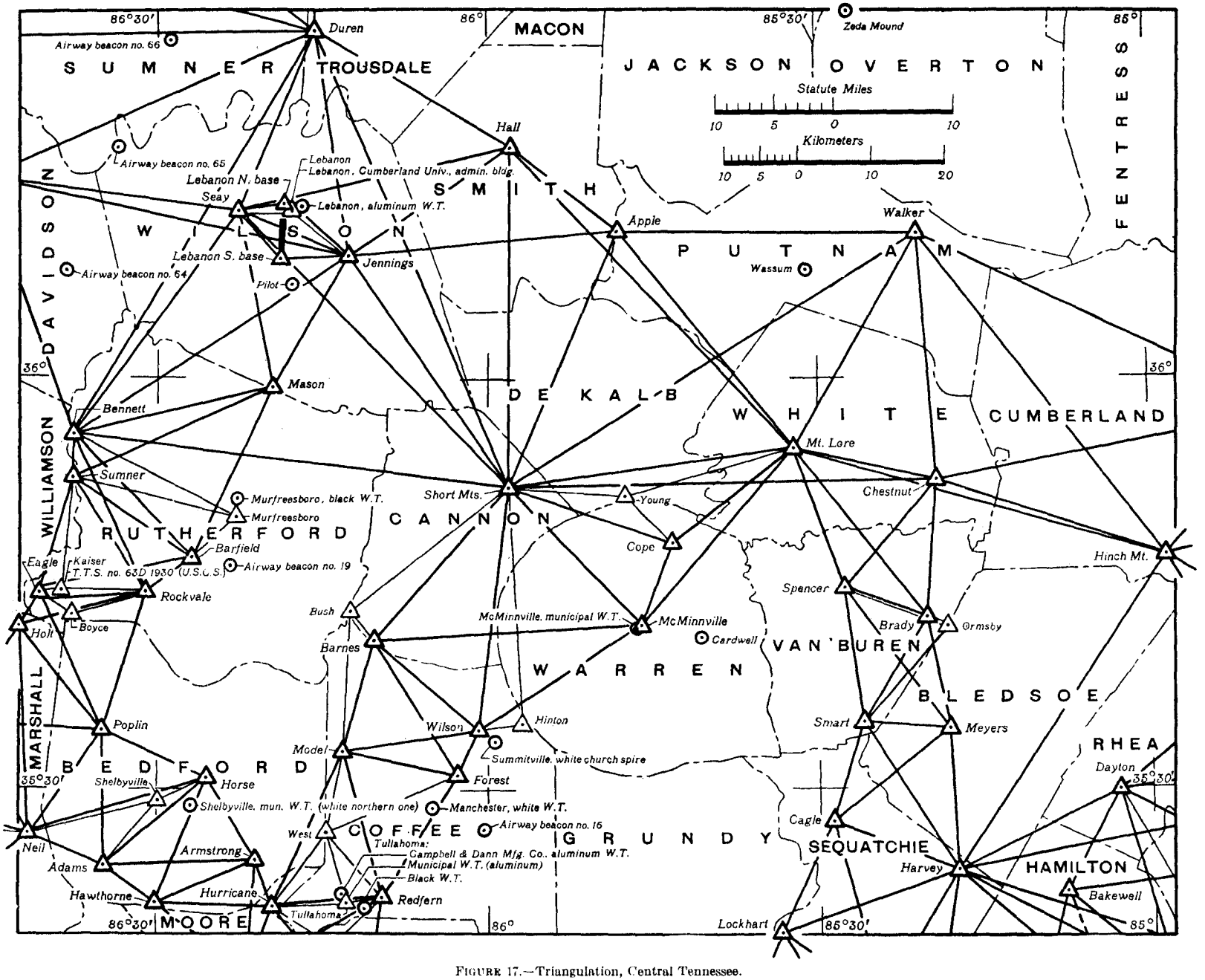

FIGURE 17.—Triangulation, Central Tennessee.

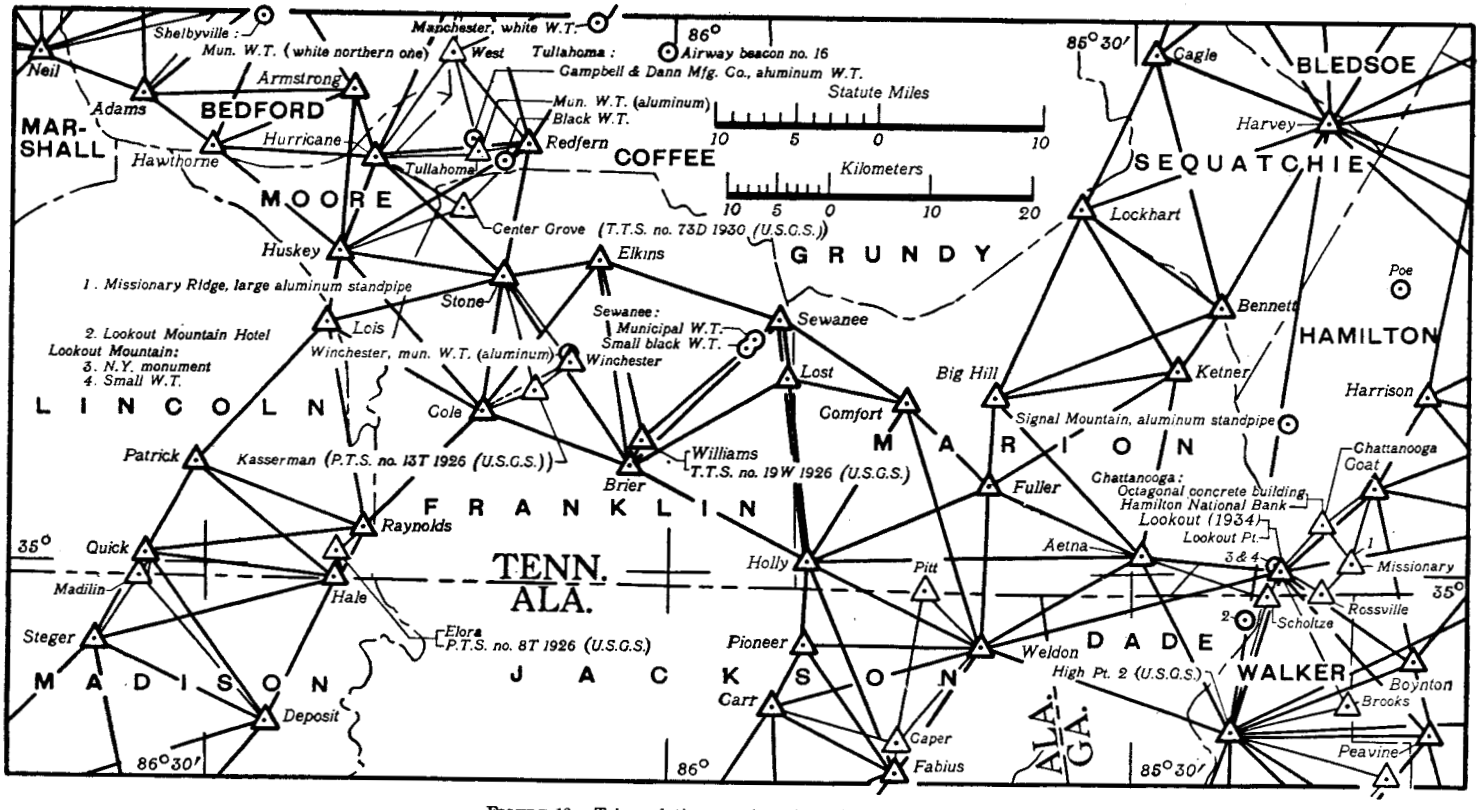

FIGURE 18.—Triangulation, southern boundary, central part.

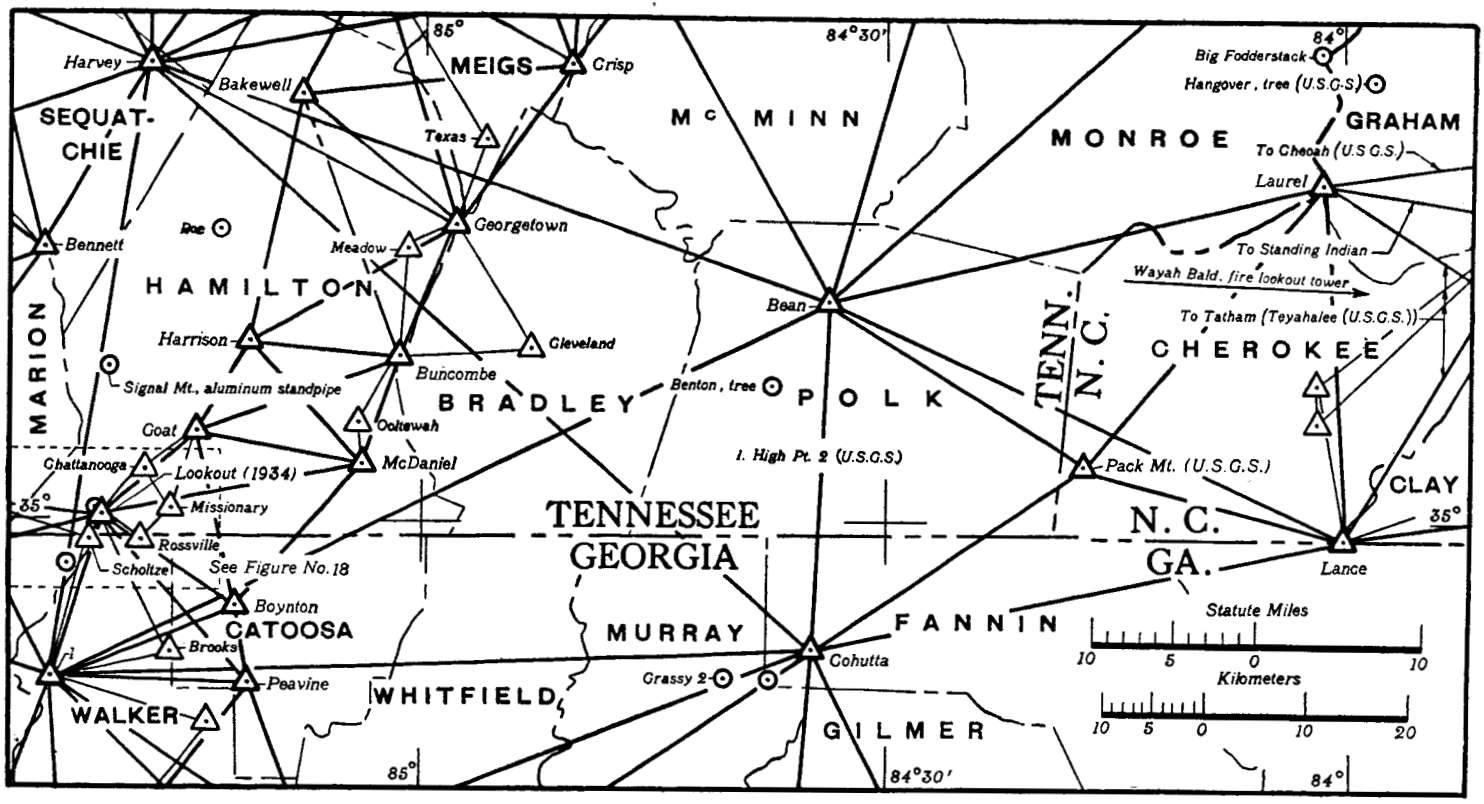

FIGURE 19.—Triangulation, southeast corner of Tennessee.

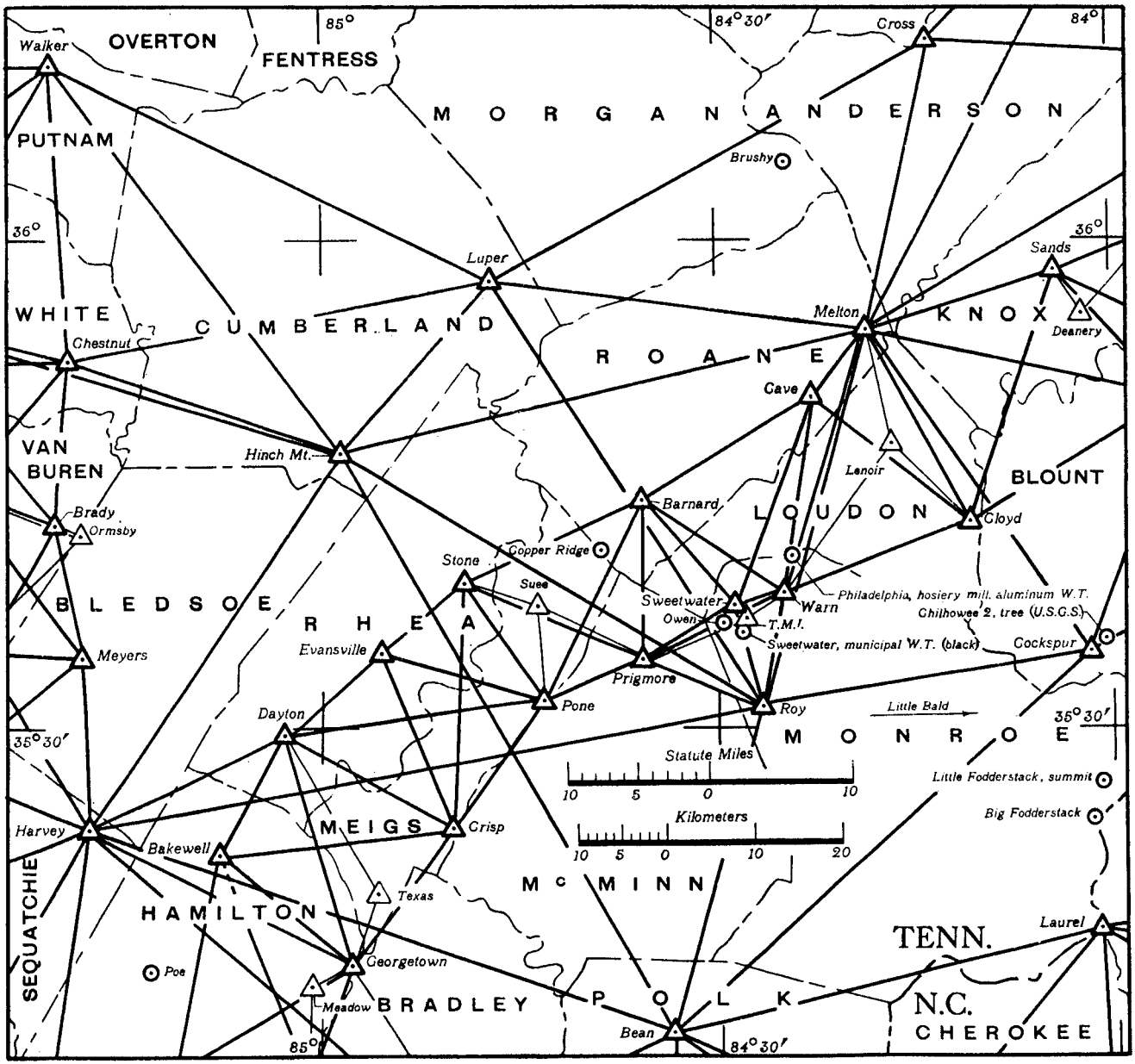

FIGURE 20.—Triangulation, Tennessee River, eastern part (south).

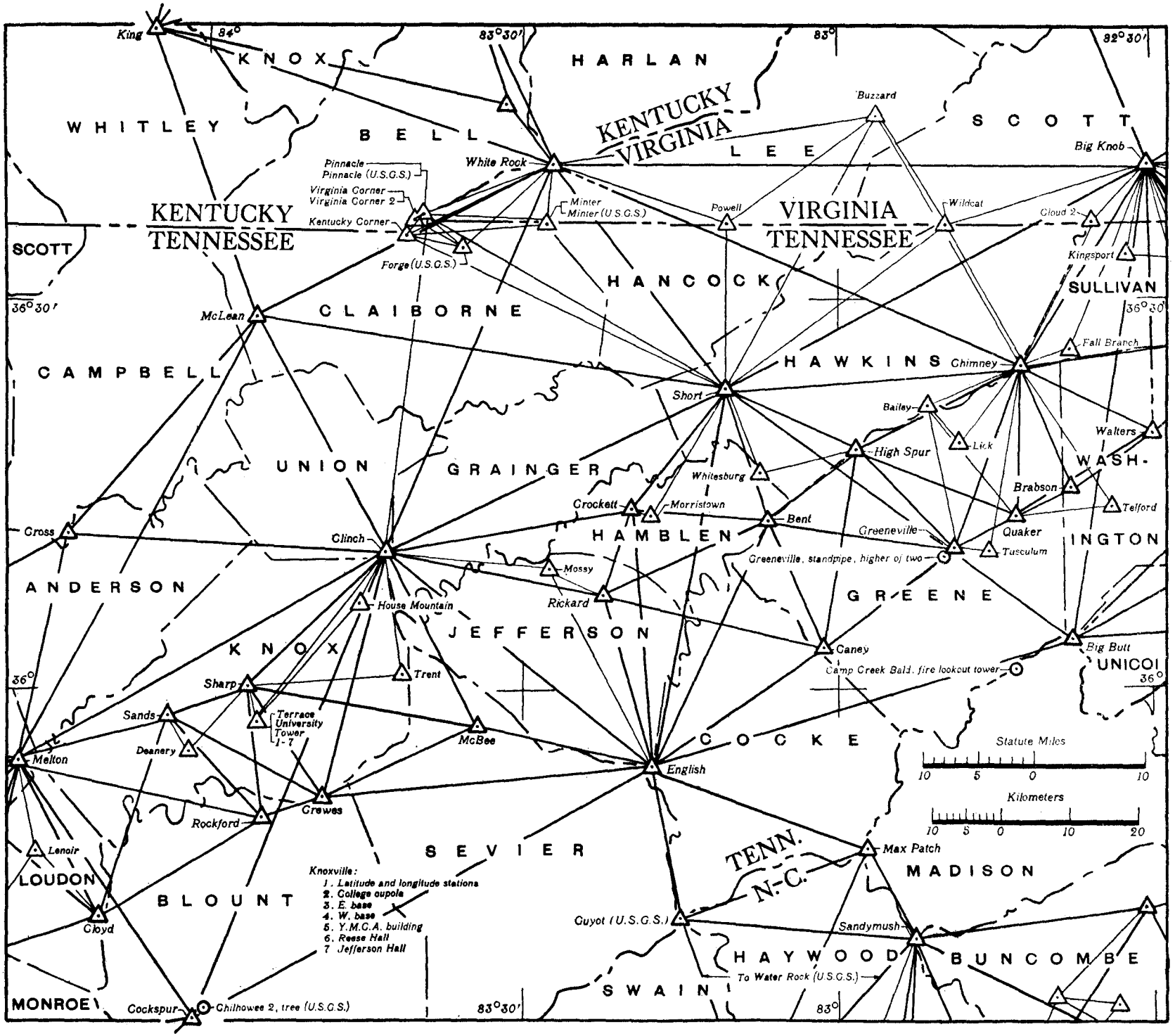

FIGURE 21.—Triangulation, Tennessee River, eastern part (north).

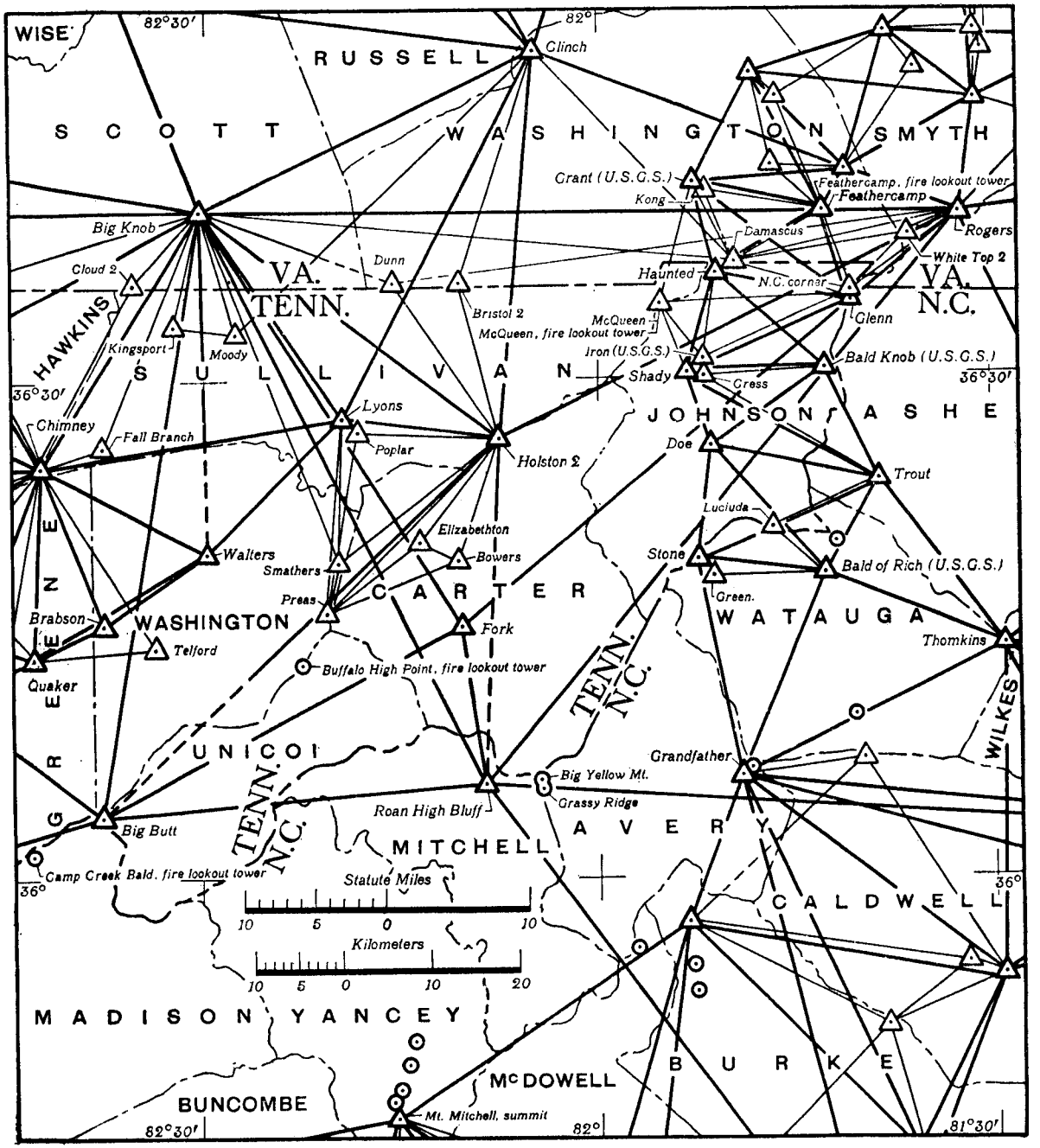

FIGURE 22.—Triangulation, northeast corner of Tennessee.

INDEX TO GEOGRAPHIC POSITIONS, PLANE COORDINATES, ELEVATIONS, DESCRIPTIONS, AND SKETCHES

Station	Geographic position	Plane coordinates	Elevation	Description	Sketch
	Page	*Page*	*Page*	*Page*	*Figure*
Abbot (M. R. C.) (Mo.)	30	110			6
Adams	67	127		244	15, 17, 18
Adams (Miss.)	94	137		301	12
Aetna	69	128		248	18
Aircon	66	127		241	14
Airway beacon, no. 16	63	125		233	17, 18
No. 19	81	132		274	17
No. 23	59	123		226	16
No. 24	59	123		226	16
No. 58	95	138		302	14
No. 60	58	123		225	14, 15
No. 62	58	123		225	15
No. 63	59	123		225	15
No. 64	59	123		226	15, 16, 17
No. 65	58	123		226	16, 17
No. 66	97	139		305	16, 17
No. 67	97	139		305	16
No. 68 (Ky.)	97	139		305	16
Allen (Carroll County)	65	126		238	13
Allen (Shelby County)	45	118		191	9
Anderson	85	134		284	13
Anderson (Ark.)	23	106		176	7
Appersen (M. R. C.)	43	117			9
Apple	49	119	150	199	17
Arkansas (M. R. C.) (Ark.)	35	112			7
Armstrong	68	127		245	17, 18
Ashburn	47	119		195	16
Ashport, P. B. M. (M. R. C.)	37	113		187	7, 8
Ashton	79	131		268	15
Astronomical station, Memphis	45	118		190	9
Atkinson (M. R. C.) (Mo.)	32	111			6
Ayer (Miss.)	54	122		214	12
Bailey	76	130		264	21
Bailey (Ala.)	80	132		271	14
Bain	87	135		287	12
Baker	66	127		240	13, 14
Bakewell	71	129		251	17, 19, 20
Bald Knob (U. S. G. S.)	53	121		209	22
Bald of Rich (U. S. G. S.) (N. C.)	53	121		210	22
Ballard (M. R. C.) (Mo.)	29	109			6
Balson (M. R. C.) (Mo.)	33	111			6, 7
Banning	55	122		217	14
Barfield	78	131		267	17
Barfield (M. R. C.)	36	113			7
Barfield, B. M. (M. R. C.) (Ark.)	27	108		182	7
Barksdale, P. B. M. (M. R. C.)	40	115		188	9
Barlar	79	131		269	15
Barnard	72	129		253	20
Barnes	60	124		227	17
Barnes (Mo.)	22	106		173	6
Barton (M. R. C.) (Ark.)	41	116			9
Bass (Miss.)	27	108		183	9
Bass (M. R. C.)	33	111			6, 7
Bateman (M. R. C.)	40	115			9
Baulch	48	119		196	16
Baxter	67	127		243	15
Bayou (M. R. C.) (Ark.)	42	116		188	9
Bayou du Chien (M. R. C.) (Ky.)	29	109			6
Beacon (*see* Airway beacon).					
Beacon light, Russellville (Ky.)	49	119			16
Bean	14	102	149	153	19, 20
Beard	92	137		296	14
Beasley (Miss.)	99	140		308	11
Beef Island (M. R. C.)	41	116			9
Bell	64	126		235	10
Bell's Point (M. R. C.)	34	112			7
Bench mark (*see* B. M. *and* P. B. M.).					
Benjes	25	107		179	9

Index to geographic positions, plane coordinates, elevations, descriptions, and sketches—Continued

Station	Geographic position	Plane coordinates	Elevation	Description	Sketch
	Page	*Page*	*Page*	*Page*	*Figure*
Bennett (Rutherford-Williamson Counties)	48	119	150	198	15, 17
Bennett (Sequatchie County)	83	133		276	18, 19
Bent	73	129		257	21
Benton, tree	17	103	150		19
Berry	91	136		294	15, 16
Beshire (M. R. C.)	31	110			6
Bethel	47	119		195	16
Big Butt (Tenn.-N. C.)	15	102		159	21, 22
Big Fodderstack	17	103	150		19, 20
Big Hill	83	133		277	18
Big Knob (Va.)	15	102		159	21, 22
Big Sandy	89	135		291	13
Big Yellow Mountain (N. C.)	19	104			22
Birdsall (M. R. C.) (Mo.)	31	110			6
Black	79	132	150	269	15
Blackamore (M. R. C.) (Ark.)	37	114			8
Blair (Ky.)	97	139		306	10
Blanks (Primary traverse station no. 22 (U. S. G. S.))	65	126		238	10, 13
Blizzard (M. R. C.)	39	115			8, 9
B. M., 36/2 (M. R. C.)=Michell (*see also* P. B.M.)	35	113		186	7
42/4 (M. R. C.) (Ark.)	26	107		181	7, 8
45/4 (M. R. C.) (Ark.)	27	108		182	8
Barfield (M. R. C.) (Ark.)	27	108		182	7
Brock (M. R. C.) (Ark.)	28	109		185	9
Caruthersville (M. R. C.) (Mo.)	25	107		181	7
Hopefield (M. R. C. & U. S. E.) (Ark.)	21	105	149	172	9
Kurr (U. S. E.) (Ark.)	28	108		184	9
Luxora (M. R. C.) (Ark.)	27	108		182	8
R-92-2-1 (M. R. C.) (Ark.)	29	109		185	9
Thresher (M. R. C.)	27	108		183	9
W 3 (Primary traverse station no. 8 W 1925 Tenn. (U. S. G. S.))	95	138		302	16
Boaz	65	126		237	10, 13
Bob Watson (M. R. C.) (Ky.)	31	110			6
Bold	66	127		241	14
Bolivar:					
Aluminum water tank	89	136			11
Episcopal Church, white spire	89	136			11
Bollinger (Ark.)	25	107		179	9
Bon Air	56	122		218	14
Boom (M. R. C.)	31	110			6
Booth's Point (M. R. C.) (Mo.)	34	112			7
Boundary monument (*see* Kentucky-Tennessee *and* Mississippi-Tennessee).					
Bowen (M. R. C.) (Ark.)	37	113			7
Bowers	77	131		266	22
Boyce	80	132		272	15, 17
Boynton (Ga.)	70	128		249	18, 19
Brabson	74	129		258	21, 22
Bradley	47	119		195	16
Bradley (M. R. C.) (Ark.)	41	116			9
Brady	82	133		275	17, 20
Branch (Ark.)	27	108		182	8, 9
Brandywine (M. R. C.)	40	115			9
Brewer (Patterson's (M. R. C.)) (Ark.)	43	117		189	9
Brier	88	127		246	18
Brier (M. R. C.) (Mo.)	31	110			6
Brint	45	118		191	9
Bristol 2 (Tenn.-Va.)	51	120		206	22
Brock, B. M., (M. R. C.) (Ark.)	28	109		185	9
Brooks (Ga.)	74	130		259	18, 19
Brown	87	135		286	12
Brown (M. R. C.) (Mo.)	29	109			6
Bruceton, municipal water tank (black)	89	135			13
Brushy	17	103	150	164	20
Bryan	95	138		302	16
Bryan's (M. R. C.) (Mo.)	31	110			6
Buck	66	126		240	13, 14
Buckner (M. R. C.) (Ark.)	36	113			7
Buddell (M. R. C.)	32	111			6
Buffalo	66	127		241	13, 14
Buffalo High Point, fire lookout tower	77	131			22
Buncombe	71	128		251	19
Bush	62	125		231	17
Bushart (M. R. C.) (Ky.)	29	109			6
Butler	87	135		287	11, 12
Buzzard (Va.)	16	103		161	21
Cagle	82	133		276	17, 18

Index to geographic positions, plane coordinates, elevations, descriptions, and sketches—Continued

Station	Geographic position	Plane coordinates	Elevation	Description	Sketch
	Page	*Page*	*Page*	*Page*	*Figure*
Camp Creek Bald, fire lookout tower	77	131			21, 22
Camphill (Miss.)	19	104	149	167	11
Caney	73	129		257	21
Caper (Ala.)	83	133		278	18
Capitol, Nashville, Tennessee State, flagpole on cupola	59	123		226	15
Capleville northwest base	20	105	149	171	11
Capleville southeast base (Miss.)	20	105	149	171	11
Cardwell	50	120			17
Carman (Ky.)	96	138		303	16
Carmel	85	134		282	13
Carpenter	85	134		282	13
Carr (Ala.)	83	133		278	18
Carr (M. R. C.)	36	113		186	7
Carter	57	123		222	15
Caruthers (Mo.)	23	106		175	7
Caruthersville (Mo.):					
B. M. (M. R. C.)	25	107		181	7
Standpipe	26	107			7
Water tank	26	107			7
Caruthersville (M. R. C.)	34	112			7
Casselberry (M. R. C.)	35	112			7
Cat Chute (Ark.)	46	118		193	9
Cat Island (M. R. C.) (Ark.)	44	117		190	9
Cat Island Chute (M. R. C.) (Ark.)	44	117			9
Cat Island Landing (Miss.)	46	118		193	9
Cave	72	129		254	20
Center	86	134		285	12
Center Grove (Transit traverse station no. 73 D 1930 (U. S. G. S.))	62	125		232	18
Cerro Gordo	93	137		299	12
Cestor (M. R. C.)	41	116			9
Chambers	63	126		234	10
Chattanooga	75	130		260	18, 19
Chattanooga:					
Hamilton National Bank, flagpole	77	131			18
Octagonal concrete building, cupola	77	131			18
Cheoah (U. S. G. S.) (N. C.)	50	120		203	19
Cherry	23	106		177	7, 8
Chestnut	49	119	150	200	17, 20
Chickasaw	24	106		178	8
Chickasaw No. 2 (M. R. C.)	39	114			8
Chigger	22	106		174	6, 10
Chilhowee 2, tree (U. S. G. S.)	17	103	150		20, 21
Chimney	15	103		160	21, 22
Chimney: (*See also* Smokestack *and* stack).					
Fulton, black brick (Ky.)	98	139			10
Martin, Junior College of University of Tennessee, red brick	98	139			10
Memphis, low	22	105			9
Memphis, next	22	105			9
Memphis, south	21	105			9
Church	20	105	149	170	11
Church: (*See also* cupola *and* spire).					
Bolivar, Episcopal, white spire	89	136			11
La Grange, spire	21	105			11
Lawrenceburg, Catholic, spire	82	133			14, 15
Nashville, First Baptist, spire (Broadway and Seventh Street)	59	123			15
Paris, Episcopal, spire	89	135			13
St. Joseph, spire	82	133			14
Summitville, white, spire	63	125			17
Union City, Cumberland Presbyterian, spire	69	128			10
Clark	85	134		282	13
Clarksburg	86	134		284	12, 13
Clarksville	90	136		292	16
Clarksville:					
American Snuff Co., black water tank	95	138			16
American Snuff Co., brown smokestack	94	138			16
Courthouse, cupola	95	138			16
Garret Snuff Plant, southerly of two tanks	94	138			16
Cleveland	75	130		261	19
Clifton	93	137		298	12, 14
Clinch	15	102	150	156	21
Clinch (Va.)	51	120		205	22
Cloud 2 (Tenn.-Va.)	16	103		161	21, 22
Cloyd	72	129		254	20, 21
Cobel	66	127		242	14
Cockspur	14	102	149	156	20, 21

Index to geographic positions, plane coordinates, elevations, descriptions, and sketches—Continued

Station	Geographic position	Plane coordinates	Elevation	Description	Sketch
	Page	*Page*	*Page*	*Page*	*Figure*
Cohutta (Ga.)	14	102		153	19
Cole	61	124		229	18
Cole (west base) (M. R. C.)	39	114			8
Collierville, water tank	21	105			11
Collingwood, concrete stack	58	123			14
Collins (M. R. C.)	44	117			9
Columbia	57	122		221	15
Columbia, Maury County Courthouse, dome	70	128			15
Columbus Tower, Memphis, flagpole	28	108			9
Comfort	69	127		247	18
Compromise (west base) (M. R. C.)	31	110			6
Convict	45	118		192	9
Cooper	58	123		224	16
Cooper (Ark.)	23	106		177	7, 8
Cooper 2 (Ark.)	26	107		182	7, 8
Cope	60	124		226	17
Copper Ridge	17	103	150		20
Corinth (Miss.)	94	137		301	12
Corinth, black water tank (Miss.)	95	138			12
Corner, Kentucky (Tenn.-Ky.)	16	103		162	21
Corner, North Carolina (Tenn.-N. C.-Va.)	52	121		207	22
Corner, Virginia (Ky.)	17	103		163	21
Corner, Virginia, 2 (Ky.-Tenn.-Va.)	17	103		163	21
Corona (M. R. C.)	40	115		187	8, 9
Cotton (Mo.)	23	106		176	7
Cottonwood north base, P. B. M. (M. R. C.) (Mo.)	35	112		186	7
Cottonwood south base, P. B. M. (M. R. C.) (Mo.)	26	108		182	7
Counce	54	122		213	12
County-line marker, Obion County, Tenn.-Fulton County, Ky. (Tenn.-Ky.)	98	139			10
Courthouse:					
Clarksville, cupola	95	138			16
Columbia, Maury County, dome	70	128			15
Henderson, spire	89	136			11, 12
Pulaski, Giles County, finial	81	133			15
Savannah, cupola	95	138			12
Springfield	49	120			16
Cow Island (M. R. C.)	44	117		189	9
Cow Island Bend (M. R. C.)	44	117			9
Cox	57	123		222	15
Craighead (northeast base), P. B. M. (M. R. C.) (Ark.)	38	114		187	8
Crawford (M. R. C.)	42	116		188	9
Crenshaw	20	105	149	170	11
Cress	54	121		213	22
Crewes	73	129		255	21
Crisp	71	129		252	19, 20
Crittenden east base (M. R. C.) (Ark.)	43	116		188	9
Crittenden west base (M. R. C.) (Ark.)	43	117		188	9
Croaker (M. R. C.)	40	115			9
Crockett	73	129		256	21
Cronin (M. R. C.)	32	110			6
Cross	14	102	150	155	20, 21
Crossing (Ark.)	28	108		184	9
Crowder (Tenn.-Ala.)	79	132		270	14, 15
Crowel	91	137		295	14
Crown	87	135		288	11, 12
Crum (Miss.)	19	104	149	166	11, 12
Crump	93	137		300	12
Cumberland University, Lebanon, administration building, finial of clock tower	81	132			16, 17
Cupola: (*See also* Church, Courthouse, *and* Spire.)					
Chattanooga, octagonal concrete building	77	131			18
Clarksville, courthouse	95	138			16
Knoxville, college	18	103	150	164	21
Nashville, Tennessee State Capitol, flagpole on	59	123		226	15
Savannah, courthouse	95	138			12
Cutoff (M. R. C.)	40	115		188	9
Cypress	19	104	149	167	11, 12
Czar (M. R. C.)	35	112			7
Damascus (Tenn.-Va.)	52	121		206	22
Daniel's Point (M. R. C.)	37	113			7
Davenport (Tenn.-Ky.)	90	136		292	16
Davis	79	132		270	14, 15
Davis (M. R. C.)	42	116			9

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Dayton	71	129		252	17, 20
De Loche (Leadbetter (M. R. C.))	43	117		189	9
Dean (M. R. C.)	40	115			8, 9
Deanery	75	130		262	20, 21
Dennis	84	134		280	13
Deposit (Ala.)	61	125		230	18
Derickson (Miss.)	25	107		181	9
Dickhum	91	136		295	14, 16
Dill	85	134		283	13
Dillon	57	123		224	15, 16
Dixon (M. R. C.) (Ark.)	41	115			9
Dobson (Ky.)	97	139		305	10
Dr. Smith (M. R. C.)	33	111			7
Doe	53	121		210	22
Dollar	85	134		283	13
Donaldson (M. R. C.) (Mo.)	31	110			6
Dorian	45	118		190	9
Douglas	86	134		285	12, 13
Dowdy (Tenn.-Ala.)	58	123		225	12, 14
Doyle	88	135		290	11
Dresden	64	126		235	10
Driver (Ark.)	23	106		177	8
Driver A (Ark.)	27	108			8
Driver B (Ark.)	27	108			8
Driver E (Ark.)	27	108			8
Driver F (Ark.)	27	108			8
Driver G (Ark.)	27	108			8
Dry	67	127		242	14, 15
Duke	97	139		306	10
Dull	91	136		294	15, 16
Dunn (Robertson County)	47	119		194	16
Dunn (Tenn.-Va.)	51	120		206	22
Dunn (Weakley County)	64	126		236	10
Duren	48	119	150	197	16, 17
Duryea, H. B., tract, steel water tank	21	105			11
Eagle (Henry County)	84	134		281	13
Eagle (Rutherford County)	78	131		267	15, 17
Eastport (Miss.)	55	122		214	12, 14
Eaves (Tenn.-Ala.)	58	123		225	12, 14
Ebenezer	19	104	149	169	11
Edith	23	106		176	7
Elgin (Ala.)	79	132		271	14
Elizabethton	77	131		266	22
Elkhorn	85	134		281	13
Elkins	68	127		245	18
Elkton (Ky.)	47	119		194	16
Elliott (M. R. C.)	39	115			8
Elmot (M. R. C.) (Ark.)	37	114			8
Elora	62	125	149	233	18
English	15	102	150	156	21
Ensley	45	118		192	9
Ensleys (M. R. C.)	43	117			9
Esley (M. R. C.) (Ky.)	30	109			6
Ethel	65	126		239	13
Eubanks	85	134		283	13
Evansville	71	129		253	20
Everett (M. R. C.) (Ky.)	31	110			6
Exchange	25	107	149	179	9
Fabius (Ala.)	83	133		277	18
Fairview (Miss.)	46	118		192	9
Fairview (M. R. C.) (Miss.)	44	117		189	9
Fall Branch	76	130		265	21, 22
Feathercamp (Va.)	52	121		208	22
Feathercamp, fire lookout tower (Va.)	54	121			22
Ferguson (M. R. C.)	41	116			9
Ferris (M. R. C.) (Mo.)	33	111			7
Fire lookout tower:					
Buffalo High Point	77	131			22
Camp Creek Bald	77	131			21, 22
Feathercamp (Va.)	54	121			22
McQueen	54	121		212	22
Near station Pope	95	138			14
Tennessee City	95	138			14
Wayah Bald (N. C.)	51	120			19
West of Pinewood	95	138			14
Fishgap	22	106		174	6, 10
Fite (Miss.)	99	140		309	11

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Flagpole:					
Chattanooga, Hamilton National Bank	77	131			18
Knoxville, Jefferson Hall	18	104		165	21
Lookout Mountain, New York Monument	77	131			18
Memphis, Columbus Tower	28	108			9
Nashville, Tennessee State Capitol, on cupola	59	123		226	15
Shiloh National Park, main	95	138			12
Flatwoods	92	137		297	14
Fleece (M. R. C.)	43	117			9
Fletcher (west base) (M. R. C.) (Ark.)	37	113		187	7, 8
Flood (M. R. C.) (Ark.)	37	113			7
Fogleman (M. R. C.)	40	115			9
Forest	60	124		228	17
Forge (U. S. G. S.)	17	103		163	21
Fork	15	102		158	22
Forked Deer (M. R. C.) (Ark.)	37	113			7
Forrest	45	118		191	9
Forrest (M. R. C.)	42	116		188	9
Forsyth	46	118		192	9
Fort	24	106		177	8
Four Mile Bayou (Ark.)	45	118		191	9
Fowler	78	131		268	15
Frame's Chute (M. R. C.)	42	116			9
Franklin (Ky.)	96	139		304	16
Franklin (M. R. C.)	35	112			7
Franklin, municipal water tank (Ky.)	97	139			16
Fredona	90	136		293	16
French's Point (M. R. C.) (Mo.)	29	109			6
Fuller	69	127		247	18
Fulton	97	139		306	10
Fulton, black brick chimney (Ky.)	98	139			10
Garrett (M. R. C.) (Mo.)	33	111			7
Gayosa (M. R. C.) (Mo.)	33	111			7
Georgetown	71	129		251	19, 20
Gil	78	131		268	15
Gillespie	20	105	149	169	11
Gleason	64	126		235	10
Glenn (N. C.)	53	121		209	22
Goat	71	128		250	18, 19
Gold (M. R. C.) (Mo.)	32	110			6
Golden	97	139		306	10
Golden Lake (M. R. C.)	39	115			8
Goodspring	79	132		270	15
Gordon (Fayette County)	19	104	149	168	11
Gordon (Lewis County)	56	122		219	14, 15
Gourley	57	123		223	15, 16
Grampus (M. R. C.) (Mo.)	31	110			6
Grandfather (N. C.)	50	120		201	22
Grant (U. S. G. S.) (Va.)	52	121		208	22
Grassy 2 (Ga.)	17	103	150		19
Grassy Ridge (N. C.)	19	104			22
Gratio	23	106		175	6, 7
Graves (Ky.)	96	138		303	16
Green (N. C.)	54	121		212	22
Green Hill (Primary traverse station no. 3, Ala., 1911 (U. S. G. S.)) (Ala.)	81	132		274	14
Greeneville	73	129		258	21
Greeneville, standpipe, higher of two	77	131			21
Greenfield	64	126		236	10
Greenfield, municipal water tank (black)	69	128			10
Gresham (Ky.)	84	134		279	13
Griffin (Ky.)	96	138		302	16
Groves (Ky.)	96	139		304	16
Gurley	86	135		285	12
Guthrie, tie plant, smokestack (Ky.)	94	138			16
Guyot (U. S. G. S.) (Tenn.-N. C.)	50	120	150	202	21
Hagard	66	126		240	13, 14
Hagons	63	126		233	10
Hale (Ala.)	61	125		230	18
Hales (M. R. C.)	36	113			7
Hall	49	119	150	199	16, 17
Hamble	90	136		293	16
Hamilton	57	122		221	15
Hangover, tree (U. S. G. S.)	17	103	150		19
Harbert (M. R. C.)	34	112			7
Harcklerode (M. R. C.) (Ark.)	44	117			9
Hardison	67	127		243	15
Harris (M. R. C.) (Ark.)	43	117		189	9

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Harrison	71	128		251	18, 19
Harvey	14	102	149	154	17, 18, 19, 20
Haskins (M. R. C.) (Ark.)	39	114			8
Hassell	55	122		217	14
Hatchee Island, P. B. M. (M. R. C.)	38	114		187	8
Hatchee River (M. R. C.)	38	114			8
Hathaway (M. R. C.) (Mo.)	33	111			7
Haunted	53	121		209	22
Hawthorne	67	127		244	17, 18
Hayti (Mo.):					
Higher water tank	26	107			7
Lower water tank	26	107			7
H. B. Duryea tract, steel water tank	21	105			11
Head	23	106		176	7
Hearn (M. R. C.)	41	115			9
Henderson:					
Black water tank	89	136			11, 12
Courthouse, spire	89	136			11, 12
Henrietti	90	136		293	16
Henry	56	122		218	14, 15
Hester	48	119		196	16
Hickman (Ky.)	22	106		173	6, 10
Hickman (M. R. C.) (Ky.)	29	109			6
Hickman, standpipe (Ky.)	25	107			6
Hickory	19	104	149	168	11
High Point 2 (U. S. G. S.) (Ga.)	14	102		153	18, 19
High Spur	74	129		258	21
High Water (M. R. C.) (Ark.)	36	113			7
Hinch Mountain	14	102	150	155	17, 20
Hinton	61	125		231	17
Hohenwald, municipal water tank (black)	58	123			14
Holland	55	122		214	12, 14
Hollow	65	126		238	13
Holly	68	127		247	18
Holmes (Miss.)	20	105	149	171	9, 11
Holston 2	51	120		205	22
Holt	78	131		268	15, 17
Hopefield (Ark.)	21	105	149	172	9
Hopefield (M. R. C.)	42	116			9
Hopefield, B. M. (M. R. C. & U. S. E.) (Ark.)	21	105	149	172	9
Hopefield north base (Ark.)	45	118		190	9
Hopefield south base (Ark.)	21	105	149	172	9
Horn Lake (M. R. C.) (Westbrooks)	43	117		189	9
Horse	67	127		244	17
Horse (Ark.)	25	107		180	9
Horse 2 (Ark.)	28	109		185	9
Horse reference mark no. 2 (Ark.)	28	108		184	9
Hospital	88	135		289	11
House Mountain	17	103	150	164	21
Houston (Houston County)	91	136		294	16
Houston (Wayne County)	55	122		216	14
Howell (Ky.)	84	134		280	13
Howley	86	134		284	12, 13
Hubbard (M. R. C.) (Mo.)	30	109			6
Hulbert (Ark.)	28	108		184	9
Hurricane	60	124		228	17, 18
Hurst	56	122		218	14
Huskey	60	124		228	18
Ice	92	137		297	14
Ingram (M. R. C.)	33	111			6, 7
Iron (U. S. G. S.)	53	121		211	22
Island, No. 8 (M. R. C.) (Ky.)	29	109			6
No. 11 (M. R. C.) (Mo.)	31	110			6
No. 14 (M. R. C.) (Mo.)	33	111			6, 7
No. 15 (M. R. C.)	33	111			7
No. 16 (M. R. C.)	34	112			7
No. 18 (M. R. C.)	34	112			7
No. 21 (M. R. C.)	35	112			7
No. 25 (M. R. C.)	36	113			7
No. 26 (M. R. C.) (Ark.)	37	113			7
No. 27 (M. R. C.)	37	113			7
No. 28 (east base) (M. R. C.) (Ark.)	37	113			7, 8
No. 29 (M. R. C.)	37	114			8
No. 34 (M. R. C.)	38	114			8
No. 35 (east base) (M. R. C.)	39	114			8
No. 39 (M. R. C.)	40	115			9
No. 40 (M. R. C.) (Ark.)	41	115			9
No. 41 (M. R. C.)	41	116			9
Iuka, municipal tank (Miss.)	58	123			12

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Jackson (Fayette County)	20	104	149	169	11
Jackson (Weakley County)	64	126		234	10
Jackson, Jackson Wood Products Co., tall stack	89	136			12
Jenkins	96	138		304	16
Jennings	48	119	150	198	16, 17
Joe Eckles (M. R. C.) (Mo.)	32	111			6
Johnson	87	135		286	12
Johnson (M. R. C.)	37	113			7, 8
Johnson (M. R. C.) (Mo.)	34	112			7
Jones (M. R. C.)	43	117			9
Junior	98	139		307	10
Kaiser	80	132		272	15, 17
Kase (M. R. C.) (Ky.)	30	109			6
Kasserman (Primary traverse station no. 13 T 1926 (U. S. G. S.))	62	125		232	18
K. C. B. (M. R. C.)	36	113			7
Keiser (M. R. C.) (Mo.)	29	109			6
Kentuck (M. R. C.)	31	110			6
Kentucky Corner (Tenn.-Ky.)	16	103		162	21
Kentucky-Tennessee boundary monument: (*See also* County-line marker.)					
No. 8 (Tenn.-Ky.)	99	139		308	10
No. 19 (Tenn.-Ky.)	89	135		291	13
No. 19, eccentric (Ky.)	88	135		290	13
No. 26 (Tenn.-Ky.)	95	138			16
No. 27 (Tenn.-Ky.)	49	119		201	16
(Fulton County, Ky.-Obion County, Tenn.) (Tenn.-Ky.)	98	139		307	10
(Simpson County, Ky.-Sumner County, Tenn.) (Tenn.-Ky.)	97	139		305	16
Ketner	83	133		277	18
Kincade	56	122		219	14, 15
King	87	135		288	11
King (Ky.)	15	102	150	158	21
Kingsport	52	121		208	21, 22
Knob (Miss.)	54	122		213	12
Knoxville:					
College cupola	18	103	150	164	21
East base	18	104		164	21
Jefferson Hall, flagpole	18	104		165	21
Latitude and longitude station	18	104		164	21
Reese Hall, spire	18	104		165	21
Y. M. C. A. building, spire	18	104		165	21
West base	18	104		165	21
Kong (Va.)	54	121		212	22
Kurr, B. M. (U. S. E.) (Ark.)	28	108		184	9
La Grange, church spire	21	105			11
Lake (M. R. C.)	43	116		188	9
Lake View (Miss.)	25	107		180	9
Lakes	45	118		191	9
Lamb (Ark.)	47	118		193	9
Lamb (M. R. C.) (Ark.)	44	117			9
Lamberson (M. R. C.) (Ark.)	41	116			9
Lamberth	47	119		195	16
Lance (Ga.)	51	120		204	19
Landrum	57	123		224	15, 16
Lanier (M. R. C.)	39	114			8
Lanier (southwest base) (M. R. C.) (Ark.)	38	114			8
Large silver water tank southeast of Nashville	59	124		226	15
Laurel (Tenn.-N. C.)	51	120		204	19, 20
Lawhorn	46	118		192	9
Lawrenceburg	81	132		274	14, 15
Lawrenceburg:					
Catholic Church, spire	82	133			14, 15
Municipal water tank	82	133			14, 15
Lazalla (M. R. C.)	31	110			6
Leadbetter (M. R. C.) (De Loche)	43	117		189	9
Le Duke (M. R. C.) (Mo.)	33	111			7
Lebanon	80	132		272	16, 17
Lebanon:					
Aluminum water tank	81	132			16, 17
Cumberland University, administration building, finial of clock tower	81	132			16, 17
North base	48	119	150	198	16, 17
South base	48	119	150	199	16, 17
Lee (M. R. C.)	38	114			8
Lenoir	75	130		262	20, 21
Lester (M. R. C.) (Ky.)	30	110			6

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Levee (Ark.)	28	108		184	9
Lewisburg	80	132		273	15
Lewisburg, municipal water tank (black)	81	133			15
Lexington (Primary traverse station no. 600 (U. S. G. S.)) (Ala.)	81	132		274	14
Lexington, aluminum water tank	89	136			12
Liberty	84	134		280	13
Lick	76	130		264	21
Licked	84	134		281	13
Lindale (M. R. C.) (Mo.)	35	112			7
Linden	92	137		296	14
Linwood (M. R. C.)	34	112			7
Little Bald, top	17	103			20
Little Fodderstack, summit	17	103			20
Lobel	92	137		296	14
Locke	24	106		179	9
Lockhart	83	133		276	17, 18
Lois	61	124		229	18
Lookout (1934)	71	128		250	18, 19
Lookout Mountain:					
New York Monument, flagpole	77	131			18
Small water tank, ball on top	77	131			18
Hotel, spire (Ga.)	77	131			18
Lookout Point	18	104			18
Lost	68	127		247	18
Louisville & Nashville Railroad station, Nashville, ball at foot of statue (Winged Mercury) (Broadway and Tenth Street)	59	124			15
Lovalle (M. R. C.) (Mo.)	30	109			6
Love	58	123		225	15, 16
Luciuda	54	121		212	22
Luper	14	102	150	155	20
Lusk	23	106		177	7
Luxora, B. M. (M. R. C.) (Ark.)	27	108		182	8
Lyons	74	130		259	22
McAdams	65	126		237	10, 13
McAllister No. 2 (M. R. C.)	35	112			7
McBee	73	129		256	21
McCall	55	122		216	14
McConnell (M. R. C.) (Miss.)	44	117			9
McDaniel	71	128		250	19
McEwen	91	137		295	14
McGavock (M. R. C.) (Lat. 35°25′) (Ark.)	40	115			8, 9
McGavock (M. R. C.) (Lat. 35°40′) (Ark.)	38	114			8
McKee	56	122		220	15
McKenzie	64	126		236	10, 13
McKenzie:					
Municipal water tank	70	128			10, 13
Tall stack	70	128			10, 13
McKinney	87	135		288	11, 12
McLean	15	102	150	157	21
McMinnville	60	124		227	17
McMinnville, municipal water tank (aluminum)	63	125			17
McMurry	47	119		194	16
McQueen	53	121		211	22
McQueen, fire lookout tower	54	121		212	22
Madilin (Ala.)	62	125		233	18
Madrid (Mo.)	22	106		174	6
Malone (Miss.)	19	104	149	167	11
Manchester, white water tank	63	125			17, 18
Mann	85	134		283	13
Marion	91	136		293	16
Marion (Ark.)	24	107		179	9
Martin (Shelby County)	20	105	149	171	11
Martin (Wayne County)	55	122		216	14
Martin (Weakley County)	98	139		307	10
Martin:					
Aluminum water tank near chimney	98	139			10
Junior College of University of Tennessee, red brick chimney	98	139			10
Martine (Ark.)	25	107		180	9
Martine 2 (Ark.)	27	108		183	9
Martine reference mark no. 2 (Ark.)	27	108			9
Mason	78	131		266	17
Match	67	127		243	15
Mathews (M. R. C.)	43	117		189	9
Max Patch (N. C.)	50	120		203	21

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Mayberry	92	137		297	12, 14
Mayche	57	123		223	15
Meadow	75	130		261	19, 20
Melton	14	102	149	155	20, 21
Memphis (M. R. C.)	42	116			9
Memphis:					
Astronomical station	45	118		190	9
Columbus Tower, flagpole	28	108			9
Low chimney	22	105			9
National Memphis Garage, occulting light	28	108			9
Next chimney	22	105			9
P. B. M. (U. S. E.)	21	105	149	173	9
South chimney	21	105			9
Sterick Building, stack	28	108			9
Merriweather (Ark.)	45	118		191	9
Meyers	82	133		275	17, 20
Michell=B. M. 36/2 (M. R. C.)	35	113		186	7
Michie	94	137		301	12
Midway (M. R. C.) (Ark.)	38	114			8
Millington, water tank	26	107			9
Minter (Tenn.-Va.)	16	103		162	21
Minter (U. S. G. S.) (Va.)	16	103		162	21
Missionary	74	130		260	18, 19
Missionary Ridge, large aluminum standpipe	77	131			18
Mississippi-Tennessee boundary monument (Tenn.-Miss.)	29	109		185	9
Mississippi-Tennessee State Line (Miss.)	21	105		173	11
Missouri (M. R. C.)	35	112			7
Mitcham, P. B. M., (M. R. C.) (Ky.)	30	110		185	6
Mitchell (Ky.)	84	134		279	13
Mitchell's Point (M. R. C.)	35	112			7
Model (Coffee County)	60	124		227	17
Model (Stewart County)	84	134		279	13
Montgomery	46	118		192	9
Monument:					
Pilot Knob, Nathan Bedford Forrest	70	128			13, 14
Shiloh National Park, Iowa State	95	138			12
Moody	52	121		207	22
Moore	57	123		223	15, 16
Morgan (M. R. C.)	38	114			8
Morgan Point (M. R. C.)	38	114			8
Morris	20	105	149	170	11
Morrisey (M. R. C.)	41	116			9
Morristown	76	130		263	21
Mossy	75	130		263	21
Mott (M. R. C.) (Mo.)	33	111		186	7
Mound City (M. R. C.) (Ark.)	42	116			9
Mount Lore	49	119	150	199	17
Mount Mitchell, summit (N. C.)	18	104			22
Mrs. H. (M. R. C.) (Ark.)	35	112			7
Mule (Miss.)	99	140		308	11
Murfreesboro	80	132		272	17
Murfreesboro, black water tank, ball on top	81	132			17
Myers, P. B. M. (M. R. C.)	33	111		186	7
Nall (M. R. C.)	32	110			6
Nashville:					
First Baptist Church, spire (Broadway and Seventh Street)	59	123			15
Latitude and longitude station	59	123		226	15
Louisville & Nashville Railroad station, ball at foot of statue (Winged Mercury) (Broadway and Tenth Street)	59	124			15
Old post-office building, finial (Broadway and Eighth Street)	59	124			15
Radio station WSM (old plant), north tower (Fifteenth Avenue South)	59	124			15
Radio station WSM (old plant), south tower (Fifteenth Avenue South)	59	124			15
St. Thomas Hospital, stack (Church and Twenty-first Streets)	59	124			15
Tennessee State Capitol, flagpole on cupola	59	123		226	15
Vanderbilt University, College Hall, center of tower	59	124			15
Vanderbilt University, power house, stack	59	124			15
Water tank, large silver, southeast of	59	124		226	15
Nathan Bedford Forrest Monument, Pilot Knob	70	128			13, 14
National Memphis Garage, Memphis, occulting light	28	108			9

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Station	Geographic position	Plane coordinates	Elevation	Description	Sketch
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Nebraska (M. R. C.) (Ark.)	36	113			7
Needmore	90	136		291	16
Neil	67	127		243	15, 17, 18
Nelmo (M. R. C.) (Miss.)	44	117		190	9
New Madrid, water tank (Mo.)	25	107			6
New York (M. R. C.)	32	111			6
Nod	67	127		242	15
Norfolk (Miss.)	46	118		193	9
Norfolk, P. B. M. (M. R. C.) (Miss.)	27	108		183	9
North Carolina corner (Tenn.-N. C.-Va.)	52	121		207	22
Obion	23	106		175	7
Obion County, Tenn.-Fulton County, Ky., county-line marker (Tenn.-Ky.)	98	139			10
Obion=P. B. M. 32 (M. R. C.)	36	113		186	7
Obrian	86	134		285	12
Octagonal concrete building, Chattanooga, cupola	77	131			18
O'Dare (M. R. C.) (Ark.)	39	114			8
Old J. B. (M. R. C.) (Ky.)	30	110			6
Old post-office building, Nashville, finial (Broadway and Eighth Street)	59	124			15
Olmstead (Ky.)	47	119		194	16
Ooltewah	75	130		260	19
Orgains	90	136		292	16
Organ (Ark.)	28	108		184	9
Ormsby	83	133		278	17, 20
Osceola (M. R. C.) (Ark.)	37	114			8
Osceola, water tank (Ark.)	26	107			8
Overton (M. R. C.)	41	115			9
Owen	17	103	149	163	20
Owens	88	135		290	11
Pack Mountain (U. S. G. S.) (N. C.)	51	120		204	19
Palestine	86	134		284	12, 13
Paris	89	135		290	13
Paris:					
Cylindrical water tank	89	135			13
Episcopal Church, spire	89	135			13
Parker (M. R. C.)	34	112			7
Patrick	61	124		229	18
Patten (M. R. C.) (Ark.)	41	116			9
Patterson's (M. R. C.) (Brewer) (Ark.)	43	117		189	9
P. B. M.: (*See also* B. M.)					
2/3 (M. R. C. & U. S. E.) (Ark.)	21	105	149	173	9
17/4 (M. R. C.) (Mo.)	25	107		181	6
21/1 (M. R. C.)	25	107		181	6
32 (M. R. C.)=Obion	36	113		186	7
55/3 (M. R. C.) (Ark.)	27	108		183	8, 9
Ashport (M. R. C.)	37	113		187	7, 8
Barksdale (M. R. C.)	40	115		188	9
Cottonwood north base (M. R. C.) (Mo.)	35	112		186	7
Cottonwood south base (M. R. C.) (Mo.)	26	108		182	7
Craighead (northeast base) (M. R. C.) (Ark.)	38	114		187	8
Hatchee Island (M. R. C.)	38	114		187	8
Memphis (U. S. E.)	21	105	149	173	9
Mitcham (M. R. C.) (Ky.)	30	110		185	6
Myers (M. R. C.)	33	111		186	7
Norfolk (M. R. C.) (Miss.)	27	108		183	9
Pennell (M. R. C.)	39	115		187	8, 9
Slater (M. R. C.)	35	112		186	7
State Line (east base) (M. R. C.)	31	110		185	6
Tennessee (M. R. C.)	31	110		185	6
Vance Senior (M. R. C. & U. S. E.) (Ark.)	21	105	149	172	9
Wolf River (M. R. C.)	42	116		188	9
Yankee Bar (M. R. C.)	37	114		187	8
Peavine (Ga.)	70	128		249	18, 19
Pecan Point (M. R. C.) (Ark.)	39	115			8, 9
Pennell, P. B. M. (M. R. C.)	39	115		187	8, 9
Perkins (M. R. C.)	34	112			7
Perry	96	138		303	16
Peterson (M. R. C.)	42	116			9
Philadelphia, hosiery mill, aluminum water tank	77	131			20
Phillippo (M. R. C.) (Mo.)	30	110			6
Phillips (M. R. C.)	32	110			6
Phillips Landing (M. R. C.) (Mo.)	30	110			6
Pierce	79	131		269	15
Pierce (M. R. C.) (Ark.)	38	114			8
Pilot (Benton County)	66	126		239	13, 14
Pilot (Wilson County)	49	120	150	201	17

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Pilot Knob, Nathan Bedford Forrest Monument	70	128			13, 14
Pinewood, fire lookout tower west of	95	138			14
Pinhook	55	122		215	12, 14
Pinnacle (Ky.-Va.)	16	103		162	21
Pinnacle (U. S. G. S.) (Ky.-Va.)	16	103		162	21
Pinson	87	135		287	11, 12
Pioneer (Ala.)	83	133		277	18
Pitt (Tenn.-Ala.)	83	133		279	18
Pleasant	92	137		296	14
Pleasant (Mo.)	22	106		174	6
Plum Point (M. R. C.)	37	114			8
Poe	17	103	150		18, 19, 20
Point Pleasant (M. R. C.) (Mo.)	31	110			6
Polk	56	122		220	15
Pond	91	136		295	14, 15, 16
Pone	71	129		252	20
Pony	93	137		299	12, 14
Pope	92	137		297	14
Pope, fire lookout tower near station	95	138			14
Poplar	76	130		265	22
Poplin	67	127		244	15, 17
Portageville, water tank (Mo.)	25	107			6
Porter	19	104	149	168	11
Porter (M. R. C.) (Mo.)	29	109			6
Powell	55	122		215	14
Powell (Tenn.-Va.)	16	103		160	21
Powers (M. R. C.)	39	115			8, 9
Pratt (M. R. C.)	41	116			9
Preas	76	130		265	22
President	45	118		191	9
Prigmore	72	129		253	20
Primary traverse station no.:					
3, Ala., 1911 (U. S. G. S.) (Green Hill) (Ala.)	81	132		274	14
7 1920 Ky. (U. S. G. S.) (Ky.)	97	139		305	16
8 T. 1926 (U. S. G. S.)	63	125		233	18
8 W 1925 Tenn. (U. S. G. S.) (B. M. W 3)	95	138		302	16
13 T 1926 (U. S. G. S.) (Kasserman)	62	125		232	18
19 1910 (U. S. G. S.)	69	128		249	10
22 (U. S. G. S.) (Blanks)	65	126		238	10, 13
26 W 1925 Tenn. (U. S. G. S.)	95	138		302	16
34 1910 (U. S. G. S.)	98	139		307	10
40 1910 (U. S. G. S.)	69	128		249	10
600 (U. S. G. S.) (Lexington) (Ala.)	81	132		274	14
Promise	91	136		294	15, 16
P. T. S. (*see* Primary traverse station).					
Puck (M. R. C.) (Ark.)	36	113			7
Pulaski	80	132		273	15
Pulaski:					
Giles County Courthouse, finial	81	133			15
Municipal water tank (black wooden)	81	133			15
Old Massey School, spire	81	133			15
Purdy	93	137		300	12
Quaker	74	129		258	21, 22
Quarantine	45	118		191	9
Quick	61	125		230	18
R. 1, T. 2 W., sec. 1, southwest corner (Ky.)	99	139		308	10
R-92-2-1, B. M. (M. R. C.) (Ark.)	29	109		185	9
Radio station WSM, light on tower, flashing red	58	123			15
Radio station WSM (old plant), Nashville, north tower (Fifteenth Avenue South)	59	124			15
Radio station WSM (old plant), Nashville, south tower (Fifteenth Avenue South)	59	124			15
Randolph (M. R. C.)	39	114			8
Ray (M. R. C.) (Mo.)	30	109			6
Raynolds	61	124		229	18
Redfern	60	124		228	17, 18
Reel Foot (M. R. C.) (Mo.)	32	111			6
Reeves (M. R. C.)	43	117		189	9
Reference mark no. 2, Horse, (Ark.)	28	108		184	9
Reference mark no. 2, Martine, (Ark.)	27	108			9
Richardson (M. R. C.)	39	114			8
Rickard	73	129		257	21
Ridgely, water tank	26	107			7
Ridings	65	126		238	13
Right	93	137		299	12

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Riley (M. R. C.) (Mo.)	32	111			6
Ripley (Miss.)	19	104	149	166	11
River Bed (M. R. C.) (Mo.)	33	111			6, 7
Rives	63	126		234	10
Roan High Bluff (N. C.)	15	102	150	158	22
Rob	80	132		273	15
Robertson (Ala.)	81	132		274	14
Rock Chute (M. R. C.)	43	117			9
Rock Chute (State Line (M. R. C.)) (Miss.)	44	117		190	9
Rockford	73	129		255	21
Rockvale	78	131		267	17
Rogers (Va.)	15	102	150	158	22
Ross	88	135		288	11, 12
Rossville (Tenn.-Ga.)	74	130		260	18, 19
Rowley (Ark.)	45	118		191	9
Roy	14	102	149	154	20
Royal Bill (M. R. C.)	33	111			6, 7
Rucker's Point (M. R. C.) (Ark.)	36	113			7
Russellville, beacon light (Ky.)	49	119			16
St. James (M. R. C.) (Mo.)	30	109			6
St. Joseph, church spire	82	133			14
St. Thomas Hospital, Nashville, stack (Church and Twenty-first Streets)	59	124			15
Saltillo	93	137		299	12
Sampson	65	126		237	10, 13
Sand Bar (M. R. C.)	34	112			7
Sand Bar (M. R. C.) (Ark.)	41	115			9
Sand Hill	94	137		300	12
Sanders (Ark.)	24	106		178	9
Sands	73	129		255	20, 21
Sandymush (N. C.)	50	120		201	21
Sango	90	136		291	16
Savannah, courthouse, cupola	95	138			12
Scanlan's (M. R. C.) (Scanlan)	43	117		189	9
Scholtze (Tenn.-Ga.)	69	128		248	18, 19
School (Ark.)	23	106		176	7
Seay	48	119	150	197	16, 17
Selmer	94	137		301	12
Sewanee	68	127		246	18
Sewanee:					
Municipal water tank	70	128			18
Small black tank	70	128			18
Shady	53	121		209	22
Sharon	64	126		235	10
Sharon, black water tank	69	128			10
Sharp	73	129		256	21
Shawnee (Ark.)	24	106		178	8, 9
Sheep (M. R. C.)	36	113			7
Shelbyville	68	127		245	17
Shelbyville, municipal water tank (white northern one)	81	133			17, 18
Shelton (Ala.)	79	132		271	14
Shilo National Park:					
Iowa State Monument	95	138			12
Main flagpole	95	138			12
Shirley	93	137		300	12
Short	15	102	150	157	21
Short Mountains	49	119	150	199	17
Signal Mountain, aluminum standpipe	83	133			18, 19
Silerton	88	135		289	11, 12
Skelton (Miss.)	99	140		308	11
Slater, P. B. M. (M. R. C.)	35	112		186	7
Slayden, Marshall County High School, tank (Miss.)	99	140		309	11
Smart	82	133		275	17
Smathers	52	121		206	22
Smokestack: (*See also* Chimney *and* Stack.)					
Clarksville, American Snuff Co., brown	94	138			16
Guthrie, tie plant (Ky.)	94	138			16
Smothers	65	126		239	13
Solitude (M. R. C.)	33	111			6, 7
Spencer	82	133		275	17
Spire: (*See also* Church, Courthouse, *and* Cupola.)					
Bolivar, Episcopal Church, white	89	136			11
Henderson, courthouse	89	136			11, 12
Knoxville, Reese Hall	18	104		165	21
Knoxville, Y. M. C. A. building	18	104		165	21
Lawrenceburg, Catholic Church	82	133			14, 15

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	Page	*Page*	*Page*	*Page*	*Figure*
Spire—Continued					
Lookout Mountain Hotel (Ga.)	77	131			18
Paris, Episcopal Church	89	135			13
Pulaski, Old Massey School	81	133			15
St. Joseph, church	82	133			14
Summitville, white church	63	125			17
Western State Hospital (near Bolivar), main building, tall	89	136			11
Spot	66	127		241	14
Springer (Ala.)	79	132		271	14, 15
Springfield, courthouse	49	120			16
Stack: (*See also* Chimney *and* Smokestack.)					
Collingwood, concrete	58	123			14
Jackson, Jackson Wood Products Co., tall	89	136			12
McKenzie, tall	70	128			10, 13
Memphis, Sterick Building	28	108			9
Nashville, St. Thomas Hospital (Church and Twenty-first Streets)	59	124			15
Nashville, Vanderbilt University, power house	59	124			15
Tiptonville, silver	26	107			6
Standing Indian (N. C.)	50	120		203	19
Standpipe: (*See also* Tank *and* Water tank.)					
Caruthersville (Mo.)	26	107			7
Greeneville, higher of two	77	131			21
Hickman (Ky.)	25	107			6
Missionary Ridge, large aluminum	77	131			18
Signal Mountain, aluminum	83	133			18, 19
State Line (east base), P. B. M. (M. R. C.)	31	110		185	6
State Line (M. R. C.) (Rock Chute) (Miss.)	44	117		190	9
Station no. 1 (M. R. C.) (Ark.)	29	109			9
Steger (Ala.)	61	125		230	18
Sterick Building, Memphis, stack	28	108			9
Stevens	56	122		220	14, 15
Stevens (M. R. C.)	35	112			7
Stewart (Mo.)	22	106		175	6, 7
Stewart (M. R. C.) (Mo.)	32	111			6
Stone (Franklin County)	61	124		228	18
Stone (Rhea County)	72	129		253	20
Stone (Tenn.-N. C.)	53	121		211	22
Strickland (Miss.)	19	104	149	166	12
Strout (M. R. C.)	39	115			8
Suee	75	130		261	20
Summer	56	122		219	14, 15
Summit	90	136		292	16
Summitville, white church spire	63	125			17
Sumner	78	131		267	15, 17
Sweetwater	72	129		254	20
Sweetwater, municipal water tank (black)	77	131			20
Tank: (*See also* Standpipe *and* Water tank.)					
Clarksville, Garret Snuff Plant, southerly of two	94	138			16
Iuka, municipal (Miss.)	58	123			12
Sewanee, small black	70	128			18
Slayden, Marshall County High School (Miss.)	99	140		309	11
Union City, Brown Bilt Shoe Co., black (Ky.)	69	128			10
Tate (Miss.)	47	118		193	9
Tatham (Teyahalee (U. S. G. S.)) (N. C.)	51	120		203	19
Taylor	48	119	150	196	15, 16
Telford	76	130		265	21, 22
Tennessee City, fire lookout tower	95	138			14
Tennessee-Kentucky (*see* Kentucky-Tennessee).					
Tennessee-Mississippi (*see* Mississippi-Tennessee).					
Tennessee, P. B. M. (M. R. C.)	31	110		185	6
Tennessee State Capitol, Nashville, flagpole on cupola	59	123		226	15
Terrace	18	104		165	21
Texas	75	130		261	19, 20
Teyahalee (U. S. G. S.) (Tatham) (N. C.)	51	120		203	19
Tharpe	84	134		280	13
Theta	57	122		221	15
Thomas (M. R. C.) (Ark.)	40	115			9
Thomkins (N. C.)	50			201	22
Thresher, B. M. (M. R. C.) (Ark.)	27	108		183	9
Ticer (Ala.)	55	122		215	12, 14
Tipsley (M. R. C.) (Ark.)	36	113			7
Tiptonville (M. R. C.)	32	111			6

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Tiptonville, silver stack	26	107			6
T. M. I.	75	130		262	20
Tollison (Ark.)	46	118		192	9
Tower	18	104		165	21
Transit traverse station no.:					
4 D 1929 (U. S. G. S.)	95	138		302	15, 16
19 W 1926 (U. S. G. S.)	70	128		249	18
63 D 1930 (U. S. G. S.)	81	132		275	15, 17
73 D 1930 (U. S. G. S.) (Center Grove)	62	125		232	18
Trent	75	130		263	21
Trenton (Ky.)	47	119		193	16
Trez	65	126		237	10, 13
Trezevant, municipal water tank (black), top of ball on roof	70	128			10, 13
Trice (M. R. C.) (Ark.)	41	116			9
Trout (N. C.)	53	121		210	22
Troy	63	126		233	10
T. T. S. (*see* Transit traverse station.)					
Tucker	93	137		298	12
Tullahoma	62	125		232	17, 18
Tullahoma:					
Black water tank	63	125			17, 18
Campbell & Dann Manufacturing Co., aluminum water tank	63	125			17, 18
Municipal water tank (aluminum)	63	125			17, 18
Turkey (M. R. C.) (Mo.)	32	111			6
Tusculum	76	130		264	21
Union (Madison County)	87	135		287	12
Union (Obion County)	64	126		234	10
Union City:					
Brown Bilt Shoe Co., black tank	69	128			10
Cumberland Presbyterian Church, spire	69	128			10
Universe (M. R. C.)	40	115			8, 9
University	75	130		263	21
Van Leer	91	136		294	15, 16
Vance, Jr. (M. R. C.) (Ark.)	42	116			9
Vance, Sr., P. B. M. (M. R. C. and U. S. E.) (Ark.)	21	105	149	172	9
Vanderbilt University, Nashville:					
College Hall, center of tower	59	124			15
Power house, stack	59	124			15
Vincent	98	139		307	10
Virginia Corner (Ky.)	17	103		163	21
Virginia Corner 2 (Ky.-Tenn.-Va.)	17	103		163	21
Wade	67	127		242	14
Walker (Hardin County)	93	137		299	12
Walker (Putnam County)	49	119	150	200	17, 20
Wallace (M. R. C.)	39	115			8, 9
Walnut	88	135		289	11
Walt (M. R. C.) (Ark.)	41	116			9
Walters (Henry County)	85	134		282	13
Walters (Washington County)	74	130		259	21, 22
Warden (M. R. C.)	33	111			7
Warn	72	129		254	20
Warren (M. R. C.) (Mo.)	29	109			6
Wasp (M. R. C.) (Mo.)	29	109			6
Wassum	50	120			17
Water Rock (U. S. G. S.) (N. C.)	50	120		202	21
Water tank: (*See also* Standpipe *and* Tank.)					
Bolivar, aluminum	89	136			11
Bruceton, municipal (black)	89	135			13
Caruthersville (Mo.)	26	107			7
Clarksville, American Snuff Co., black	95	138			16
Collierville	21	105			11
Corinth, black (Miss.)	95	138			12
Duryea, H. B., tract, steel	21	105			11
Franklin, municipal (Ky.)	97	139			16
Greenfield, municipal (black)	69	128			10
Hayti, higher (Mo.)	26	107			7
Hayti, lower (Mo.)	26	107			7
Henderson, black	89	136			11, 12
Hohenwald, municipal (black)	58	123			14
Large silver, southeast of Nashville	59	124		226	15
Lawrenceburg, municipal	82	133			14, 15
Lebanon, aluminum	81	132			16, 17
Lewisburg, municipal (black)	81	133			15
Lexington, aluminum	89	136			12

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Water tank—Continued.	*Page*	*Page*	*Page*	*Page*	*Figure*
Lookout Mountain, small, ball on top	77	131			18
McKenzie, municipal	70	128			10, 13
McMinnville, municipal (aluminum)	63	125			17
Manchester, white	63	125			17, 18
Martin, aluminum, near chimney	98	139			10
Millington	26	107			9
Murfreesboro, black, ball on top	81	132			17
New Madrid (Mo.)	25	107			6
No. 1	21	105			9, 11
Osceola (Ark.)	26	107			8
Paris, cylindrical	89	135			13
Philadelphia, hosiery mill, aluminum	77	131			20
Portageville (Mo.)	25	107			6
Pulaski, municipal (black wooden)	81	133			15
Ridgely	26	107			7
Sewanee, municipal	70	128			18
Sharon, black	69	128			10
Shelbyville, municipal (white northern one)	81	133			17, 18
Sweetwater, municipal (black)	77	131			20
Trezevant, municipal (black), top of ball on roof	70	128			10, 13
Tullahoma, black	63	125			17, 18
Tullahoma, Campbell & Dann Manufacturing Co., aluminum	63	125			17, 18
Tullahoma, municipal (aluminum)	63	125			17, 18
West Memphis (Ark.)	28	108			9
Winchester, municipal (aluminum), ball on top	63	125			18
Watson's (M. R. C.)	43	117			9
Waverly	46	118		192	9
Wayah Bald, fire lookout tower (N. C.)	51	120			19
Wayne	55	122	149	217	14
Weakley	24	106		178	8, 9
Weatherford (M. R. C.)	41	116			9
Weatherly	65	126		239	13
Weaver	25	107	149	180	9
Webb	96	138		304	16
Weldon (Ala.)	69	128		248	18
Wesley	79	132		270	14, 15
West	62	125		231	17, 18
West Memphis, water tank (Ark.)	28	108			9
Westbrooks (Horn Lake (M. R. C.))	43	117		189	9
Western State Hospital (near Bolivar), main building, tall spire	89	136			11
Whirlpool (M. R. C.)	39	114			8
White	21	105	149	172	9, 11
White Rock (Ky.-Va.)	15	102	150	157	21
White Top 2 (Va.)	52	121		207	22
Whitesburg	76	130		263	21
Whitten (Miss.)	99	140		309	11
Wildcat (Tenn.-Va.)	16	103		161	21
Wilde	87	135		286	12
Wilks (M. R. C.) (Mo.)	34	112			8
Williams (Franklin County)	68	127		246	17
Williams (M. R. C.)	34	112			7
Williams (M. R. C.) (Ark.)	37	113		187	7
Williams (Robertson County)	47	119		195	16
Williamson	86	134		285	12, 13
Willoughby	88	135		289	11
Wilson	60	124		227	17
Wilson (Ark.)	24	106		178	8
Winchester	62	125		232	18
Winchester, municipal water tank (aluminum), ball on top	63	125			18
Wolf River, P. B. M. (M. R. C.)	42	116		188	9
Woodcock (M. R. C.) (Ky.)	30	109			6
Woods	87	135		286	12
Wright	57	122		222	15
Wright (M. R. C.)	40	115			8, 9
Wright's Point (M. R. C.)	35	113			7
WSM, radio station:					
Light on tower, flashing red	58	123			15
Nashville (old plant), north tower (Fifteenth Avenue South)	59	124			15
Nashville (old plant), south tower (Fifteenth Avenue South)	59	124			15
Wynn	84	134		281	13
Yankee Bar, P. B. M. (M. R. C.)	37	114		187	8
Young	61	125		231	17
Zeda Mound	49	120			17
Zion	93	137		298	12, 14

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