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Public Land Surveys in the Indian Territory

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IN THE SENATE OF THE UNITED STATES.

MARCH 16, 1896.—Referred to the Committee on Public Lands and ordered to be printed.

The VICE-PRESIDENT presented the following

LETTER FROM THE SECRETARY OF THE INTERIOR, TRANSMITTING, IN RESPONSE TO SENATE RESOLUTION OF MARCH 10, 1896, CONCERNING THE PROGRESS AND RESULT OF PUBLIC-LAND SURVEYS IN THE INDIAN TERRITORY UNDER THE DIRECTION OF THE UNITED STATES GEOLOGICAL SURVEY, THE REPORT OF THE DIRECTOR COVERING THE POINTS SET FORTH.

DEPARTMENT OF THE INTERIOR,
Washington, March 14, 1896.

SIR: I have the honor to hand you herewith report of the Director of the Geological Survey, dated the 12th instant, in response to Senate resolution of March 10, 1896, concerning progress and result of public-land surveys in the Indian Territory under direction of the Geological Survey, etc.

The report of the Director appears to cover all the points set forth in the resolution.

Very respectfully,

HOKE SMITH,
Secretary.

The PRESIDENT OF THE SENATE.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., March 12, 1896.

SIR: I am in receipt, by reference from the Department, of a copy of Senate resolution of March 10, 1896, calling for information regarding the progress and character of the subdivision surveys of the lands in Indian Territory which are being carried on by this office.

The act authorizing the survey is as follows:

For the survey of the lands in the Indian Territory, two hundred thousand dollars, or so much thereof as may be necessary, to be immediately available: *Provided*, That the Secretary of the Interior may, in his discretion, direct that the surveys herein authorized, or any part of them, in the Indian Territory, shall be made under the supervision of the Director of the Geological Survey, by such persons as may be employed by or under him for the purpose. And such surveys shall be executed under instructions to be issued by the Secretary of the Interior, and subdivisional surveys shall be executed under the rectangular system, as now provided by law: *Provided further*, That when any surveys shall have been so made and plats and field notes thereof prepared, they shall be approved and certified to by the Director of the Geological Survey, and two copies thereof shall be returned, one for filing in

the Indian Office and one in the General Land Office; and such surveys, field notes, and plats shall have the same legal force and effect as heretofore given to the acts of surveyors-general: *Provided further*, That all laws inconsistent with the provisions hereof are declared to be inoperative as respects such surveys. (Indian act, March 2, 1895.)

The plan for the field work under which the survey was inaugurated is as follows:

Method of doing the work.—It is proposed to survey all township exteriors and standard lines, a total of 4,500 miles, by men who are experienced in that kind of work, who are now connected with the United States Geological Survey. This will probably require four parties, each of which will comprise, besides the surveyor, a rodsman, two chain men, one or two corner men, a cook and a driver; and, in the case of the standard lines, two additional chain men and one additional rodsman, since these lines must be double chained. These parties will live in camp, and will be provided with facilities for moving camp frequently. The surveyors will not only run and locate the lines, but will make profiles of them by vertical angles.

The subdivision of the townships will be done by men of experience in that class of surveying, who will be hired temporarily for that purpose. The subdivision parties will consist, besides the surveyor, of a rodsman, two chain men, and one or two corner men. They will be provided with camp outfits and animals for carrying the surveying corps to and from their work, but will, as a rule, hire the facilities for moving camp, inasmuch as they will move camp infrequently. At least twelve such subdivision parties, and very likely more, will be found necessary and they will, if practicable, be grouped—two, three, or four parties in one camp. Each such group of subdivision parties will be placed in charge of a topographer of this office, who will measure elevations in the interior of the townships, resting his measurements upon the heights determined in the township exteriors, and who will sketch the topography. He will have control of the surveyors who are making the subdivisions and will superintend their work. A thorough examination will be made of every township monument, as the topographer must occupy every corner in marking his work.

Locality of work.—It is proposed to commence work in the western portion of the Choctaw Nation by extending eastward the base line of the Chickasaw Nation, to establish a new principal meridian on or near the eastern line of range 8 east, and to build up on these lines a system of surveys which will be consistent with those of the Chickasaw Nation, so far as they may be accurate and correct, but will not conform to any irregularities which may exist in those surveys. The plan of work will, of course, conform to the requirements of the General Land Office as specified in its manual.

It is proposed to survey first the western half of the Choctaw Nation, working generally from the west northward and eastward, and extending the work into the Creek, Cherokee, and Seminole country as far as time and money will permit.

Office work.—For the drawing of plats and the making of fair copies of field notes, it is proposed to employ draftsmen and clerks in the office in Washington. Rough plats of the township exteriors and of subdivisions and the original field notes will be prepared in the field and forwarded to this office for the preparation of these copies.

It is proposed to send parties to the field as soon as the necessary arrangements in Washington can be made, the expectation being that field work can be commenced by the 1st of April upon the standard lines; that as soon as a block of townships has been outlined the work of surveying township exteriors will be commenced, and that as soon as the exteriors of such a block have been surveyed that the subdivision parties will be organized and the work of subdivision taken up. It will be entirely feasible to continue field work until the end of November, and, if necessary, it can be continued through the winter, although the shortness of the days will render it less economical than to work in summer.

It is proposed to put two triangulation parties in the field with a view to carrying over the entire area a system of primary triangulation permanently marked, and connecting the points in this primary triangulation with township corners, some corner of each township to be connected with a primary triangulation point. The purpose of this is, first, to serve as a check upon the accuracy of the work and, second, to furnish permanent points from which corners may be recovered in case the marks should be lost. These parties will measure a base on the Missouri, Kansas and Texas Railroad, and expansion will be carried eastward, northward, and southward therefrom.

The triangulation will, as stated above, serve the purpose of an examination of all exterior lines, and the topographers who prepare the topographic map will, in the course of their duties, thoroughly examine the subdivision work.

Employees.—The men employed as surveyors on subdivision work should be men

experienced in this class of surveying, and I have had full assurance that such men can be obtained for from \$100 to \$125 per month, to be hired at the outfitting point and be discharged at the same point at the close and completion of the work for which engaged. The assistants, such as rods-men, chain men, corner men, and general camp men, to be employed under the existing regulations governing the employment of such men in the Geological Survey. Such men can be hired at from \$30 to \$35 per month, being taken up at the outfitting point and discharged under the same conditions as the subdivision surveyors.

Inspection.—The subdivision surveys will be made by parties who work in advance of the topographer who has them immediately in charge. The exterior lines will be connected with stations in a primary triangulation carried on independently, and the topographer will visit every section corner while making his topographic map, thus inspecting every corner with relation to the marking thereof on the ground by stakes, pits, etc. He is moreover working directly in connection with the surveyors, and is able to inspect their notes at night and to keep informed as to their methods of work.

Under this plan the work was begun and carried forward.

Organization of force.—The work constitutes a division in the Topographic Branch of this office, and is in charge of a division chief. The field work is carried on by 22 surveyors, 1 of whom is engaged in running standard lines, 5 in running township exteriors, which close upon and test the standard lines, and 16 in running subdivision or section lines, which in turn close upon and test the township exteriors. Furthermore, the entire work is controlled by a system of triangulation, carried on by independent parties. Certain of the surveyors are men in the permanent employ of this office, and others have been temporarily employed for this work.

The surveying parties are provided with tents, wagons, animals, and other necessities of camp life.

Standard lines are run by transit and checked constantly by azimuth observations upon the pole star. Township exteriors are in some cases run by transit and in other cases by solar compass. The section lines are run with solar compass or with a solar attachment upon the transit. Standard lines are in all cases double chained.

History of the work.—The work commenced early in April, 1895, by the extension of the Indian base eastward for 50 miles in the Choctaw Nation by one standard line party. The second guide meridian east, which runs through the western part of the Choctaw Nation, was extended northward and southward as a principal meridian by a second standard line party.

During the month of April two parties for running township exteriors were placed in the field, and during the month of May eight subdivision parties for running section lines commenced work. From time to time this force was increased until by the 1st of October the number of surveyors given above, namely 22, was in the field and at work. Work has been continued during the fall and winter, and is at present in full progress.

A small office force is maintained in South McAlester, the headquarters in Indian Territory, for the purpose of writing up field notes, and a few draftsmen and copyists are employed in this office for making copies of the notes and preparing the plats.

Progress of the work.—The progress made in this work up to the end of February may be summarized by the statement that 14,127 miles of line have been run. This is classified as follows:

	Miles.
Standard lines	1, 024
Township exteriors	2, 195
Subdivision and meander lines	10, 908
Total	14, 127

Up to the close of February, 157 full townships had been subdivided and 26 fractional townships, making a total of 183 townships subdivided.

The work is carried on in all respects in strict accordance with the requirements of the General Land Office, as expressed in its Manual, and under instruction of the Secretary of the Interior. The lines are marked by monuments at every section and quarter-section corner, as that Manual prescribes, and the stakes or stones marking the corners and the witness trees are properly marked.

The provision under which the standard, exterior, and subdivision lines are run by different surveyors, thus checking the work of one another, has resulted in the detection of a few errors in the original running of certain lines. In all such cases these errors have been corrected by rerunning and remarking the lines thus found to be in error.

The work has proceeded more slowly than was anticipated, owing to the difficulties met with in the lowlands and river bottoms of the Canadian and Arkansas drainage. With the work in those areas it was a question of rapidity in the chopping out of undergrowth and timber, rather than one of survey, in the strict sense. In the estimate submitted by the Land Office it was estimated that one-fourth of the country was timber and three-fourths open. The actual surveys and observations, however, show that the reverse is the case. Considerable delay was occasioned also by illness in the camps, due to malarial influences.

An examination of the reports of the surveyors thus far received shows that three-fourths of the country is timbered and that one-third of this is mountainous and broken. This proportion will probably be exceeded rather than reduced in the remaining parts of the Territory.

Expenditures.—The total amount expended to March 1, 1896, upon this survey, including the purchase of an outfit and instruments, and the current expenses of field and office work, amounts to about \$147,000. (A few small accounts incurred in February may still be outstanding.) Of this sum, \$25,000, approximately, has been expended upon a permanent plant in the way of outfit, and \$10,000 upon office work, leaving \$112,000 as the amount expended directly upon field work. The balance remaining of the appropriation, is, therefore, \$53,000.

The total amount earned by the surveyors in field work, under the rates allowed to contractors by the Department, aggregates \$133,000. The current expenses have been, therefore, \$21,000 less thus far than would have been expended under the contract system.

The men employed as surveyors are in every case thoroughly competent for the work. It is true that in one or two cases mistakes have been made and incompetent men have been employed, but these, after a short trial, have been discharged.

Since this work is not done under contract, but by salaried officers of the Government, no bonds, other than oaths of office, have been required from the men engaged in the work.

There is submitted herewith a map of Indian Territory, showing progress.

Yours, with respect,

CHAS. D. WALCOTT,
Director.

The SECRETARY OF THE INTERIOR.