

Summary of Settlement Act--

Analysis Covers Survey System to Mark Boundaries

(Part Four: This is the fourth installment in "Summary and Analysis of the Alaska Native Land Claims Settlement Act, based on a booklet published by the Rural Alaska Community Action Program. This week's section deals with understanding the survey system which will be used to mark the boundaries of land selected under the act.)

WHAT IS A TOWNSHIP?

In order to understand the land selection procedures contained in the Claims Act, it is necessary to understand existing public land law and practices, especially the United States Land Survey System.

Basically this is a grid system composed of squares, each square six miles on a side, known as townships. Each township is subdivided into 36 squares, one mile on a side, known as sections.

Each section may be further subdivided into halves, quarters, quarters of quarters and so forth. Each township contains 23,040 acres and each section contains 640 acres.

In order to establish a grid, a "prime meridian" is selected. The meridian runs north and south and is named for the locality through which it runs, such as the Seward Meridian, the Umiat Meridian, the Fairbanks Meridian, etc.

At about the middle of the meridian an east-west line is established, known as the "base line." Each of these coordinates is marked off at six mile intervals (to designate townships) and each segment is given a number and direction from the intersection of the two coordinates — the prime meridian and the base line.

If you go north along the prime meridian, you find Town-

ship 1 North, Township 2 North, etc. The horizontal intervals along the base lines are called "ranges" and are numbered similarly, Range 1 East, Range 2 East, etc.

Each six mile square township is located by township, range, and prime meridian. A typical example might be called, Township 12 North, Range 3 West, Seward Meridian.

Theoretically, it would be possible to cover the whole United States with a single grid based on one prime meridian and one base line, but for practical reasons this was not done, and it is always necessary to name the meridian when describing a particular townships.

When different meridians border each other, there will be fractional townships and other irregularities. While it is convenient to think of perfect six

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mile squares, one must remember that the earth is round, and the lines do not go flat.

If you remember your school-room globe, you remember that the lines and squares got smaller at the top and bottom of the globe. In Alaska, which is at the top, the lines converge quite drastically. Laying six mile square townships on the globe would be like trying to paste postage stamps on an orange.

This means that the boundary at the top of a township will be slightly less than six miles, and there will be variations in the base lines as well. This results in a slight reduction in acreage in each township.

SUBDIVIDING TOWNSHIPS

Each township is divided into 36 sections, each of which is numbered in a regular pattern. Again, because of the convergence of lines (the orange and

the postage stamps) adjustments have to be made in the size of the sections.

The sections along the northern and western boundaries of each township usually show a reduction in acreage. The others are normally of full dimension and acreage.

Sections are described by number, township, range, and prime meridian — thus, Section 4, Township 12 North, Range 3

West, Seward Meridian.

They can then be divided into quarters and halves. One can describe 40 acres as the Northeast One-Quarter of Section 4. Or one can describe 40 acres as the Northeast One-Quarter of the Northwest One-Quarter, and 20 acres can be described as the East One-half of the Northeast One-Quarter of the Northwest One-Quarter.

All of these are usually ab-

breivated as follows: NW $\frac{1}{4}$, NE $\frac{1}{2}$ NW $\frac{1}{4}$, E $\frac{1}{2}$ NE $\frac{1}{4}$ NW $\frac{1}{4}$. It is important to remember that in the abbreviated form of description a comma is read as "and." There is a big difference between the Northeast Quarter and the Northwest Quarter, as opposed to the Northeast Quarter, as opposed to the Northeast Quarter of the Northwest Quarter.

When quarter quarter sections do not contain a full 40 acres, they are called "lots". Lot 3, Section 4, Township 12 North, and so on.

MAPS AND PROTRACTION DIAGRAMS

Very little of Alaska has actually been surveyed in accordance with the system described above. To physically survey the entire state thousands of miles of lines and millions of monuments would have to be set.

For practical purposes, therefore, the federal and state governments have adopted "protracted surveys" which cover virtually the entire state. Protracted surveys are simply diagrams on which the grid is drawn and tied to a few known points. It is generally accurate to within 100 feet.

These diagrams are available at offices of the United States Department of the Interior, Bureau of Land Management and at the offices of the Alaska Division of Lands.

Many topographic maps published by the U.S. Geological Survey show the public land survey grid, but for accuracy the official protraction diagram is preferred over the topographical map.

New methods of physical survey are being used, using electronic equipment and helicopters. They are fast and highly accurate.

Two other special surveys used by the government are the United States Surveys (used in issuing patents for homesteads, allotments, T & M sites, townships, military installations, etc.) and U.S. Mineral Surveys (used in connection with patenting of mining claims).

However, the bulk of selections made under the Claims Act will be described by section, township, range, and prime meridian according to protraction diagrams.

Generally, regional and village corporations are required to select full sections. Subdivisions of sections or lots will only become involved where there is a water boundary or conflicting ownership of the land.

NEXT WEEK: Land Ownership, surface rights, title to navigable waters, unpatented mining claims, and public interest withdrawals.