Specifications for Descriptions of Tracts of Land

for Use in Land Orders and Proclamations

U. S. Department of the Interior

Bureau of Land Management

CADASTRAL SURVEY

REVISED 1979

Specifications for Descriptions of Tracts of Land for Use in Land Orders and Proclamations

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U.S. DEPARTMENT OF THE INTERIOR

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BUREAU OF LAND MANAGEMENT

As the Nation's principal conservation agency, the Department of the Interior has basic responsibilities for water, fish, wildlife, mineral, land, park, and recreational resources. Indian and Territorial affairs are other major concerns of America's "Department of Natural Resources."

The Department works to assure the wisest choice in managing all our resources so each will make its full contribution to a better United States—now and in the future.

Previous editions of "Specifications for Descriptions of Tracts of Land for Use in Executive Orders and Proclamations" were issued in 1931, revised in 1942, and reprinted without change pending revision April 1960.

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INTRODUCTION
(to 1942 Edition)

In 1930 the Department of State requested the Federal Board of Surveys and Maps to prepare rules and specifications for descriptions of tracts of land appropriate for use in Executive orders and proclamations. The preparation of these specifications was undertaken by the following members of the Board's Committee on Cadastral Surveys:

A. D. Kidder, General Land Office, Chairman;
S. W. Boggs, Department of State;
C. H. Squire, Forest Service;
W. T. Paine, General Land Office.

The original edition, entitled "Specifications for Descriptions of Tracts of Land for Use in Executive Orders and Proclamations," was completed and published in 1931, and reissued, with some corrections as to procedure, in 1941.

The functions connected with the preparation and presentation of Executive orders and proclamations, formerly performed by the Department of State, are now carried on by the Division of the Federal Register, the National Archives, under the provisions of the Federal Register Act, approved July 26, 1935. This has introduced certain changes in procedure and requirements and has rendered inapplicable some of the material contained in the first edition. Further experience in the use of the specifications during the ten-year period which has elapsed since their first publication has indicated the need for additional explanatory text and examples.

A general revision of the publication was, therefore, found advisable, and the work was undertaken in 1940, 1941 and 1942 by the following members of the Board's Committee on Cadastral Surveys and Maps:

W. H. Richards, General Land Office, Chairman;
S. W. Boggs, Department of State;
J. E. Burch, Forest Service;
H. C. Mitchell, U.S. Coast and Geodetic Survey;
P. A. Rosendorn, Bureau of Reclamation;
J. M. Stewart, Office of Indian Affairs.

The revision was nearly complete on March 10, 1942, when the functions of the Federal Board of Surveys and Maps were transferred to the Director of the Bureau of the Budget by Executive Order No. 9094. The completion of this work and the publication of this edition were carried out at the request of the Bureau of the Budget.

(to 1979 Edition)

Certain procedures have been rendered inapplicable due to reorganizations and transfer of functions of various Federal Agencies. The issuance of certain Executive Orders and the enactment of Public Law 94-576, Federal Land Policy and Management Act of 1976, 90 Stat. 2743 have introduced numerous changes.

A general revision has been found necessary and work was undertaken by the Bureau of Land Management in 1979.

EXECUTIVE ORDER 11030

PREPARATION, PRESENTATION, FILING, AND PUBLICATION OF EXECUTIVE ORDERS AND PROCLAMATIONS

By virtue of the authority vested in me by the Federal Register Act (49 Stat. 500, as amended; 44 U.S.C. 301 et seq.), and as President of the United States, I hereby prescribe the following regulations governing the preparation, presentation, filing, and publication of Executive orders and proclamations:

Section 1. Form. Proposed Executive orders and proclamations shall be prepared in accordance with the following requirements:

(a) The order or proclamation shall be given a suitable title.

(b) The order or proclamation shall contain a citation of the authority under which it is issued.

(c) Punctuation, capitalization, spelling, and other matters of style shall, in general, conform to the most recent edition of the Style Manual of the United States Government Printing Office.

(d) The spelling of geographic names shall conform to the decisions of the Board on Geographic Names, established by Section 2 of the Act of July 25, 1947, 61 Stat. 456 (43 U.S.C. 364a).

(e) Descriptions of tracts of land shall conform, so far as practicable, to the most recent edition of the "Specifications for Descriptions of Tracts of Land for Use in Executive Orders and Proclamations," prepared by the Bureau of Land Management, Department of the Interior.

(f) Proposed Executive orders and proclamations shall be typewritten on paper approximately 8 × 13 inches, shall have a left-hand margin of approximately 1 1/2 inches and a right-hand margin of approximately 1 inch, and shall be double-spaced, except that quotations, tabulations, and descriptions of land may be single-spaced.

Section 2. Routing and approval of drafts.

(a) A proposed Executive order or proclamation shall first be submitted, with seven copies thereof, to the Director of the Bureau of Budget, together with a letter, signed by the head or other properly authorized officer of the originating Federal agency, explaining the nature, purpose, background, and effect of the proposed Executive order or proclamation and its relationship, if any, to pertinent laws and other Executive orders or proclamations.

(b) If the Director of the Budget approves the proposed Executive order or proclamation, he shall transmit it to the Attorney General for his consideration as to both form and legality.

(c) If the Attorney General approves the proposed Executive order or proclamation, he shall transmit it to the Director of the Office of the Federal Register, National Archives and Records Service, General Services Administration: Provided, that in cases involving sufficient urgency the Attorney General may transmit it directly to the President; and provided further, that the authority vested in the Attorney General by this section may be delegated by him, in whole or in part, to the Deputy Attorney General, Solicitor General, or to such Assistant Attorney General as he may designate.

(d) After determining that the proposed Executive order or proclamation conforms to the requirements of Section 1 of this order and is free from typographical or clerical error, the Director of the Office of the Federal Register shall transmit it and three copies thereof to the President.

(e) If the proposed Executive order or proclamation is disapproved by the Director of the Bureau of Budget or by the Attorney General, it shall not thereafter be presented to the President unless it is accompanied by a statement of the reasons of such disapproval.

Section 3. Routing and certification of originals and copies.

(a) If the order or proclamation is signed by the President, the original and two copies thereof shall be forwarded to the Director of the Office of the Federal Register for publication in the FEDERAL REGISTER: Provided, that prior to such forwarding the Seal of the United States shall be affixed to the originals of proclamations to the extent required by statute or Executive order.

(b) The Office of the Federal Register shall cause to be placed upon the copies of all Executive orders and proclamations forwarded as provided in subsection (a) of this section the following notation, to be signed by the Director or by some person authorized by him to sign such notation: "Certified to be a true copy of the original."

Section 4. Proclamations calling for the observance of special days or events. Except as may be otherwise provided by law, responsibility for the preparation and presentation of proposed proclamations calling for the observance of special days, or other periods of time, or events shall be assigned by the Director of the Bureau of the Budget to such agencies as he may consider appropriate. Such proposed proclamations shall be submitted to the Director at least sixty days before the date of the specified observances.

Section 5. Proclamations of treaties excluded. Consonant with the provisions of Section 12 of the Federal Register Act (49 Stat. 503; 44 U.S.C. 312), nothing in this order shall be construed to apply to treaties, conventions, protocols, or other international agreements, or proclamations thereof by the President.

Section 6. Definition. The term "Presidential proclamations and Executive orders," as used in Section 5(a) of the Federal Register Act (44 U.S.C. 305 (a)), shall, except as the President or his representative may hereafter otherwise direct, be deemed to include such attachments thereto as are referred to in the respective proclamations or orders.

Section 7. Prior order. Upon its publication in the FEDERAL REGISTER, this order shall supersede Executive Order No. 10006 of October 9, 1948.

The regulations prescribed by this order shall be codified under Title 1 of the Code of Federal Regulations.

JOHN F. KENNEDY

The White House,
June 19, 1962.

EXECUTIVE ORDER 11354

AMENDING EXECUTIVE ORDER NO. 11030 OF JUNE 19, 1962, WITH RESPECT TO THE PREPARATION OF PRESIDENTIAL PROCLAMATIONS

Under and by virtue of the authority vested in me as President of the United States, it is hereby ordered as follows:

Section 1. Section 1 of Executive Order No. 11030[1] of June 19, 1962, relating to the preparation of Executive orders and proclamations (1 CFR 7.1), is hereby amended by adding at the end thereof the following:

"(g). Proclamations issued by the President shall conclude with the following-described recitation---

IN WITNESS WHEREOF, I have hereunto set my hand this _____ day of _____ , in the year of our Lord _____ , and of the Independence of the United States of America the _____ ."

Section 2. Section 3(a) of Executive Order No. 11030 (1 CFR7.3(a)), is hereby amended to read as follows:

"(a) If the order or proclamation is signed by the President, the original and two copies shall be forwarded to the Director of the Office of the Federal Register for publication in the FEDERAL REGISTER."

Section 3. Item 1. of Executive Order No. 10347[2] of April 18, 1952, entitled "Providing for the Affixing of the Seal of the United States to Certain Presidential Documents," is hereby amended to read as follows:

"1. Proclamations by the President of treaties, conventions, protocols, or other international agreements."

Section 4. The provisions of Executive Order No. 3577 of November 8, 1921, shall not apply to proclamations, except proclamations of treaties, conventions, protocols, or other international agreements.

Section 5. This order shall be effective July 1, 1967.

Lyndon B. Johnson

The White House,
May 23, 1967.

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[1] 3 CFR,1959-1963 Comp.,p.610;27 F.R. 5847.
[2] 3 CFR,1949-1953 Comp.,p.870;17 F.R. 3521.

APPLICABLE TO ALL DOCUMENTS FILED WITH FEDERAL REGISTER

The requirements of section 1 of Executive Order No. 11030, as amended, by Executive Order No. 11354, May 23, 1967 are made applicable to all documents required to be filed in the Office of the Director of the Federal Register for publication by Section 2.5 of the Federal Register Regulations.

Chapter I

GENERAL CONSIDERATIONS

PURPOSE

Land orders and proclamations containing descriptions of land are usually designed to reserve and set apart certain tracts or areas owned or controlled by the Federal Government for specified public uses or purposes. Initial action is ordinarily taken by the bureau or agency exercising administrative control or jurisdiction over the land.[1]

A proclamation is usually an announcement by the President issued to carry out the provisions of an act of Congress. Proclamations are usually of wider public application than land orders, as the latter are usually confined to affairs of government. All proclamations are published in the United States Statutes at Large; proclamations and Land orders are published in the Federal Register under the provisions of the act of July 26, 1935 (49 Stat. 500).

The large permanent reservations were ordinarily established by proclamation, while Executive orders usually involved a more limited and particular purpose and often were of a temporary character. Preliminary to the establishment of a permanent reservation by proclamation, it was frequently found desirable to withdraw temporarily the public lands involved for examination and classification. Subsequent modification of the boundaries of such a reservation may become necessary. The general practice was to accomplish these purposes by Executive order or a Land order.

In some cases the authorizing legislation specifies the manner in which the action shall be taken. The national monuments are established by proclamation, as required by the act of June 8, 1906 (34 Stat. 225).

AUTHORITY

Section 2, of the Act of June 8, 1906, (34 Stat. 225) authorizes the President of the United States, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments.

SPECIFICATIONS FOR DESCRIPTIONS OF TRACTS OF LAND

Section 204, of the "Federal Land Policy and Management Act of 1976," Public Law 94-579, 90 Stat. 2743, authorizes the Secretary of the Interior to make, modify, extend, or revoke withdrawals but only in accordance with the provisions and limitations of this section. The Secretary may delegate this withdrawal authority only to individuals in the Office of the Secretary who have been appointed by the President, by and with advice and consent of the Senate.

PREPARATION AND REVIEW

Drafts of proposed proclamations and land orders should be carefully prepared with proper regard for established good usage as to terminology, phraseology, punctuation, arrangement, and paragraphing. The description of the tract or tracts of land involved should be technically competent, definite, and susceptible of only one interpretation. It should furnish sufficient information for the identification of the land on the ground.

The originating bureau or agency is responsible for the authenticity and accuracy of the data upon which the land descriptions are based. Field notes and plats of the basic surveys or copies of deed records, together with maps or diagrams showing the lands referred to, should be available for consultation and reference.

Land descriptions should be reviewed by an officer qualified to pass upon the technical sufficiency and form thereof, who has access to the basic survey data and other records from which the draft of the proposed order was prepared. The review should also take into consideration the acceptability and practicability of the boundaries from the standpoint of the administrative agency.

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[1] By Public Law 94-579 "Federal Land Policy and Management Act of 1976," 90 Stat. 2743, the Secretary of the Interior was authorized to sign all orders withdrawing or reserving public lands of the United States and all orders revoking or modifying such orders.

TYPES OF DESCRIPTIONS

Descriptions of land in land orders and proclamations are of two general types:

(a) Those cases where the location and limits of a tract or tracts are described in specific terms by naming its boundaries; generally termed a metes and bounds description.

(b) Those cases where the lands are described by reference to designated subdivisions based upon surveys of official character and shown upon plats or maps filed in a public office of record.

The type first mentioned is discussed in Chapter IV.

DESCRIPTION BY REFERENCE TO OFFICIAL RECORDS

The second type of description referred to in the preceeding paragraph was considered by the United States Supreme Court in the case of Cragin V. Powell (128 U.S. 691, 696), from which the following is quoted:

> It is a well settled principle that when lands are granted according to an official plat of the survey of such lands, the plat, itself, with all its notes, lines, descriptions, and land marks, becomes as much a part of the grant or deed by which they were conveyed, and controls so far as limits are concerned, as if such descriptive features were written out upon the face of the deed or grant itself.

This fundamental principle finds wide application in the description of lands located in the original public domain and surveyed under the rectangular system of surveys. Because of the large volume of Land orders and proclamations involving lands in the public land States, Chapter III is devoted to the land descriptions, based on the official plats of that system.

This type of description is also used in connection with other kinds of official surveys by specifying designated subdivisions of such surveys, which are shown upon plats filed in a public office of record. For example, parcels may be described by lot and block number of a city or townsite subdivision, based upon a properly identified official plat.

Descriptions based on recorded plats and maps of the character just referred to by designation of subdivision shown thereon should identify the particular plat or map by title and date, giving the name and location of the place of record as well as the approving or certifying authority.

Chapter II

FORM AND ARRANGEMENT

Executive Order No. 11030 of June 19, 1962, as amended by Executive Order No. 11354, May 23, 1967, under Section one, prescribes certain requirements in connection with the preparation of Executive orders and proclamations. The following suggestions relative to the form and arrangement of such documents should also be followed:

1. Titles

The title should indicate, in two or three lines: (a) either the purpose or the content of the document, and (b) the geographic locality of the area, as the State with further details of location whenever appropriate, if they can be briefly indicated.

The titles of Land orders and proclamations are usually arranged in three or more lines in capital letters, with no periods at the ends of the lines.

2. Proclamations

A proclamation is written in more formal style than a land order. The following points should be noted:

(a) The initial and immediately succeeding paragraphs which state the reason and purpose of the action customarily begin with the lead word

WHEREAS,

(b) The paragraph announcing the action begins as follows with capitalization and punctuation as indicated:

NOW, THEREFORE, I, JIMMY CARTER, President of the United States of America,

(c) The citation of authority is usually given in the same paragraph, immediately after the title. The following form should be followed:

_____ by the authority vested in me by section 2 of the Act of June 8, 1906, (34 Stat. 225, 16, U.S.C. 431), do proclaim _____

(d) Preceding the date paragraph, the following introductory sentence is used:

IN WITNESS WHEREOF, I have hereunto set my hand this _____ day of _____ , in the year of our Lord _____ , and of the Independence of the United States of America, the _____ .

3. Public Land Orders

A public land order should be prepared in a form as set forth in the Bureau of Land Management Manual, Section 2310.1 Public Land Order Preparation.

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Chapter III

THE PUBLIC LAND RECTANGULAR SURVEYS

TERMINOLOGY

That part of the United States acquired by the Federal Government by cession from the States, treaty and purchase, now embraced in the States of Alabama, Alaska, Arizona, Arkansas, California, Colorado, Florida, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Ohio, Oregon, South Dakota, Utah, Washington, Wisconsin, and Wyoming, comprised the original public domain. The rectangular system of surveys has been extended or is now in progress over this area as the basis for the identification, administration, and disposal of the public lands.

Description of lands within the scope of the public-land rectangular surveys should conform to the accepted nomenclature of that system, citing the name of the proper reference meridian, the appropriate township and range numbers and, where necessary, the section and sectional subdivisions shown upon the official plats of survey. Each reference meridian has its own base line; and, therefore, the words "and base line" are usually omitted. The name of the reference meridian should be spelled in full. If the lands have not been surveyed, the description should conform to the legal subdivisions that will, when established, include the lands.

The Manual of Instructions for the Survey of the Public Lands of the United States (Edition of 1973), published by the Bureau of Land Management[1], gives a detailed description of the rectangular system of surveys and nomenclature. On pages 60 and 61 of that publication is a table showing the principal meridians and base lines.

The township approximately six miles square, containing 36 sections, each one mile square, numbered from 1 to 36, according to the plan shown in Fig. 1, is the unit of survey. The section lines are usually surveyed from south to north and from east to west, with any excess or deficiency placed against the north and west boundaries of the townships.

The section is subdivided into quarter sections by straight lines, connecting established quarter-section corners on opposite boundaries. This unit is usually designated by symbol in tabular descriptions (NW1/4 sec. 10; SE1/4 sec. 22). The 40-acre unit, resulting from the subdivision of quarter sections into quarter-quarter sections, is designated by symbol, as NW1/4NE1/4 sec. 10; SE1/4NW1/4 sec. 22. Occasionally the quarter-quarter section is further subdivided into its aliquot parts by mid-point subdivision. The resulting 10-acre unit is designated by symbol as NE1/4NW1/4SW1/4 sec. 22.

Contiguous units may be combined. For example, if both NW1/4 sec. 10 and SW1/4 sec. 10 are included, the symbol W1/2 sec. 10 is used.

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[1] For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington D.C. 20402

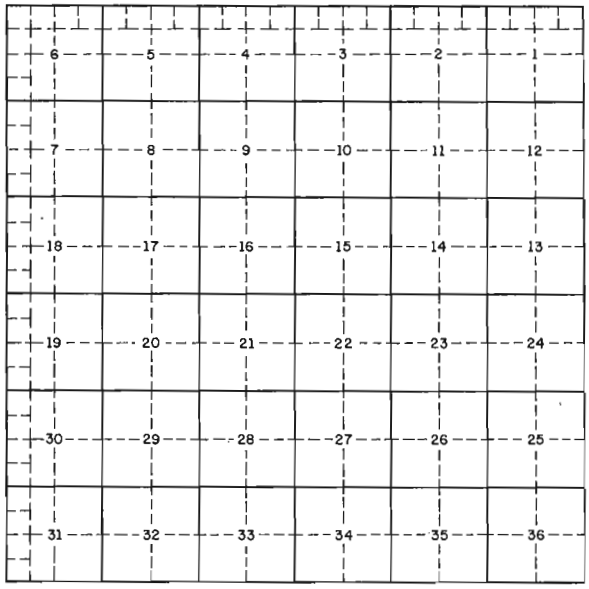

Figure 1.—Plan of numbering sections.

Where NE1/4NW1/4 sec. 22 and SE1/4NW1/4 sec. 22, are included, the resulting 80-acre unit can be designated E1/2NW1/4 sec. 22. In using symbols, the usual punctuation is omitted. Note that the period is omitted after N, NE, S, SE, etc., and that there is no comma and no space between symbols indicating a quarter-quarter section (NE1/4SE1/4 sec. 10).

The fractional units, usually resulting from the subdivision of the quarter sections in the northern tier and western range of sections are developed because of the existence of meanderable bodies of water or irregular boundaries of claims, are designated by lot numbers (lot 1, sec. 4; lot 1, sec. 15).

ABBREVIATIONS

The words "township" and "range" and the designations "north" or "south," "east" or "west" are sometimes written in full when used in the text, but the land description itself should be in tabular form and these terms abbreviated and capitalized where appropriate. The principal abbreviations are as follows:

Township(s)	T., Tps.
Range(s)	R., Rs.
Section(s)	sec., secs.
North	N.
Northeast	NE., etc.

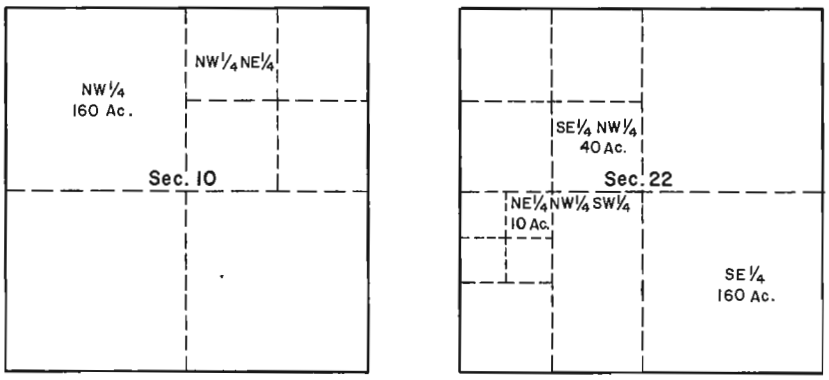

Figure 2.—Normal subdivisional units.

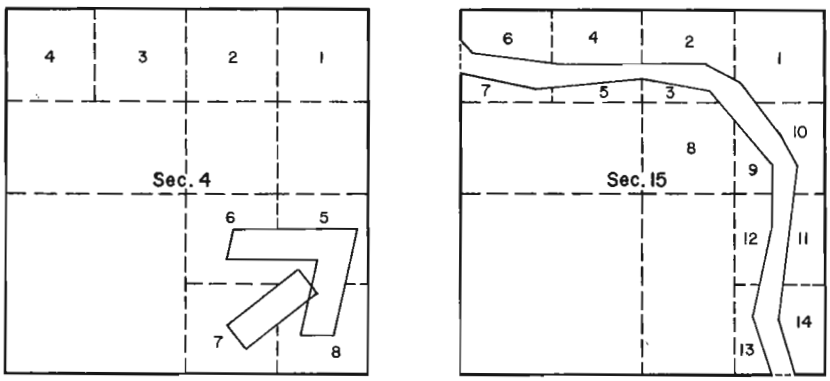

Figure 3.—Fractional lots.

Where two or more township units are to be grouped in the description, the plural abbreviation "Tps." should always be used, even though all the townships have the same number north or south of the base line. The term "range" is abbreviated in the singular or plural as the meaning may require, for example:

Tps. 3 S., Rs. 16 and 17 W.
Tps. 4 and 5 N., R. 14 W.
Tps. 1, 2, and 3 N., Rs. 6, 7, and 8 W.

PREFERRED ORDER

The preferred order of listing is to begin with the lowest-numbered section in each township, giving first the lot numbers in order, then the subdivisions within each quarter section, in the order NE, then the NW, SW, and SE; if parts of the quarter sections are to be described, the same order is to be observed. If several townships are included, the primary order is determined by the range number, beginning with the lowest, and within each range by the township numbers also beginning with the lowest.

Where townships north and south of the base line or east and west of the reference meridian or both are involved, the order of listing is optional but usually follows the order given above; namely, first those north and east of the initial point, followed by those north and west, south and west, and south and east in the order named.

AREA

In some cases, a statement of the total area follows the description. If the lands described are entirely surveyed, the actual acreage as shown upon the official plats of survey should be used. Where unsurveyed land is included, the approximate area should be given in even acres.

Descriptions containing public land only should carry a statement reading as follows:

The area (or areas) described aggregates (or aggregate) _____ acres.

Where both public and nonpublic lands are included, the following statement should be used:

The areas described, including both public and nonpublic lands, aggregate_____ acres.

EXAMPLES OF DESCRIPTIONS OF LANDS BASED UPON THE PUBLIC LAND RECTANGULAR SURVEYS

Example No. 1

Fourth Principal Meridian

T. 31 N., R. 18 W., sec. 9, SE1/4.

The area described contains 160 acres.

Example No. 2

Fifth Principal Meridian

T. 160 N., R. 66 W.,
sec. 6, lots 4 to 7, inclusive, SE1/4NW1/4, and E1/2SW1/4;
sec. 7;
sec. 17, W1/2SW1/4;
sec. 18, NE1/4;
sec. 20, W1/2NW1/4 and SW1/4,
T. 160 N., R. 67 W., sec. 1, SE1/4.

The areas described aggregate 1,550.18 acres.

Example No. 3

Black Hills Meridian

T. 3 S., R. 1 E.,
sec. 8, SE1/4;
sec. 21;
sec. 28, E1/2, N1/2NW1/4, and NE1/4SW1/4;
sec. 31, lots 2 and 4, NW1/4NE1/4, NE1/4NW1/4, and SE1/4;
sec. 34, W1/2NE1/4, W1/2, W1/2SE1/4SE1/4, and W1/2SE1/4.
T. 5 S., R. 2 E.,
sec. 17, N1/2;
sec. 22, N1/2;
sec. 34, N1/2.
T. 5 S., R. 3 E.
T. 6 S., R. 3 E.,
sec. 4, lots 1, 2, 3, 7, and 8, SW1/4NE1/4,S1/2NW1/4, and SE1/4;
secs. 16, 17, and 18.

The areas described, including both public and nonpublic lands, aggregate 28,184.79 acres.

Example No. 4

Salt Lake Meridian

T. 39 S., R. 10 W.,
sec. 31, lots 4 to 14, inclusive, and lots 19 to 30, inclusive.
T. 40 S., R 101/2 W.,
sec. 1;
sec. 2, unsurveyed.
T. 38 S., R. 11 W.,
sec. 31, 32, and 33.
T. 39 S., R. 11 W.,
secs. 4 to 9, inclusive, and secs. 16 to 21, inclusive, partly unsurveyed;
sec. 24, NE1/4 and S1/2;
secs. 25 to 29, inclusive, and secs. 33 to 36, inclusive.
T. 40 S., R. 11 W.,
secs. 2, 3, 4, 9, 10, 15, 16, 21, 22, 27, 28, 33, and 34.
T. 41 S., R. 11 W.,
sec. 4;
sec. 5, E1/2;
sec. 8, NE1/4;
sec. 9, 16, and 21.
T. 38 S., R. 12 W.,
sec. 10, lots 3 to 10, inclusive;
sec. 11, S1/2;
sec. 12, S1/2;
sec. 13, 14, and 15;
sec. 21, E1/2;
secs. 22 to 28, inclusive;
sec. 29, lot 1 and lots 3 to 8, inclusive;
secs. 33 to 36, inclusive.
T. 39 S., R. 12 W.,
secs. 1 to 4 inclusive, and secs. 9 to 15, inclusive, partly unsurveyed.
sec. 16, E1/2;
secs. 22, 23, and 24, partly unsurveyed.

Example No. 5

Mount Diablo Meridian

T. 45 N., R. 21 E.,
secs. 1, 2, 4, 6, and secs. 8 to 17
inclusive.
T. 46 N., R. 21 E.,
secs. 20 to 29, inclusive, E1/2 sec. 30, E1/2 sec. 31, and secs. 32 to 36, inclusive.
T. 46 N., R. 22 E.,
secs. 4 to 9, inclusive, secs. 11 to 14, inclusive, and secs. 16 to 21, inclusive, partly unsurveyed.
T. 45 N., R. 23 E.,
W1/2SE1/4 sec. 8, E1/2 sec. 16, W1/2NE1/4 sec. 20 unsurveyed, W1/2SW1/4 sec. 28, and secs. 29 to 32, inclusive.

Example No. 6

Salt Lake Meridian

Tps. 1, 2, and 3 N., R. 141/2W., unsurveyed.
Tps. 1 to 4 N., R. 15 W., partly unsurveyed.
T. 1 S., R. 18 W., secs. 1 to 18, inclusive.
Tps. 1 to 5 S., R. 19 W., partly unsurveyed.
T. 6 S., R. 19 W., sec. 33 and that part of sec. 34 lying northwest of Snake Creek.

Example No. 7

Sixth Principal Meridian

T. 37 N., R. 67 W.,
secs. 4 to 9, inclusive, secs. 16 to 21, inclusive, and secs. 28 to 33, inclusive.
T. 38 N., R. 67 W.,
secs. 4 to 9, inclusive, secs. 16 to 21, inclusive, and secs. 28 to 33, inclusive.
T. 39 N., R. 67 W.,
secs. 4 to 9, inclusive, secs. 16 to 21, inclusive, and secs. 28 to 33, inclusive.
T. 40 N., R. 67 W.,
secs. 4 to 9, inclusive, secs. 16 to 21, inclusive, and secs. 28 to 33, inclusive.
T. 41 N., R. 67 W.,
secs. 1 to 24, inclusive, and secs. 28 to 33, inclusive.
Tps. 42 to 44 N., R. 67 W.
Tps. 37 to 44 N., R. 68 W.
Tps. 38 to 44 N., R. 69 W.
Tps. 38 to 43 N., R. 70 W.
T. 44 N., R. 70 W.,
secs. 1, 2, 3, secs. 10 to 15, inclusive, secs. 22 to 27, inclusive, secs. 34, 35, and 36.

SUBDIVISIONS THAT DO NOT CONFORM TO STANDARD SPECIFICATIONS

In many of the very old surveys under the rectangular system, especially in the southern public land States, the township subdivisions and the units within the sections do not conform to all the standards shown above, and there are sometimes other complications that must receive special consideration in the preparation of land descriptions. Under such conditions it is advisable to obtain a statement from the Bureau of Land Management relative to the appropriate terms to be employed.

DESCRIPTION BY PERIMETER

The proper form of description for all lands within the scope of the public land rectangular surveys is the tabular form shown in the preceding examples, using the accepted nomenclature of the system. This form is to be preferred to the perimeter method of description, specifying the boundaries of a tract by the bearings and distances of its perimeter along certain township, section, and minor subdivision lines. The latter is in effect a metes and bounds description and necessitates platting the tract before reference can be made to the survey and land status records of the Bureau of Land Management. The use of the perimeter form of description and variations thereof is discussed in the chapter on Metes and Bounds.

ADJUSTMENT TO SUBDIVISIONS OF PUBLIC LAND SURVEYS

Boundaries of lands within the scope of the public land rectangular surveys should conform to the approved subdivisional surveys whenever practicable. Where withdrawals have been made in advance of survey, the regulations of the Department of the Interior require that if possible a subsequent adjustment be made to the lines of legal subdivision.

> "Hereafter, upon receipt of the returns of a survey, the Commissioner of the General Land Office (Director, Bureau of Land Management) shall cause the tract books (land status records) in his office to be examined and if it appears that any part of the area stands withdrawn in advance of survey upon any recommendation of any bureau of this or another department, he shall ascertain whether the lands so withdrawn are capable of adjustment by reference to the legal subdivisions shown upon the plats of survey, and if so, upon acceptance of the survey, he will advise the proper local land officers of such adjustment, in order that notation thereof maybe made upon their records." (42 L.D. 318.)

Chapter IV

METES AND BOUNDS

DEFINITION OF TERMS

The location and limits of a tract of land may be defined by describing its boundaries; by naming natural or artificial monuments to, from or along which they run; by stating the lengths and directions of the lines connecting successive monuments; or by giving the boundaries of abutting tracts of land.

A monument may consist of an object or mark which serves to identify the location of a line constituting a part of the boundary; it may be either natural such as a river, lake, ledge of rock, tree or ridge; or artificial such as a wall, fence, ditch, marked stone or post.

The type of metes and bounds description most commonly used in land orders and proclamations is based upon an actual survey of the tract of land involved. The lengths and directions of the lines forming the boundaries are ascertained by the survey and the record thereof describes the monuments marking the corners or angle points. The plat and field notes furnish the data for the description.

If the lines of an adjoining tract of land form a common boundary with the tract in question, the description should note this fact, identifying the adjoining tract by the name of the owner, survey designation, or other appropriate means.

DIRECTION OF LINES

The direction of a line in land surveying is generally expressed by giving the angle from the meridian[1] within one of the four quadrants, referred to either the north or the south point as may be appropriate. When so

[1] As defined by the axis of the earth's rotation.

expressed (e.g. N. 70° 19′ E.; S. 24° 10′ W.), it is called the "bearing" of the line and unless otherwise stated, is to be interpreted as a "rhumb" line-that is, one that maintains a constant angle with the meridian throughout its length.

Occasionally the basic data have been developed in the execution of geodetic surveys and the direction of certain lines may be given by recording the angles which such lines make with the meridian measured clockwise from south. In such cases the lines are generally to be regarded as great circles rather than rhumb lines and the angles referred to are designated as azimuths. At any two points on a great circle, the forward and back azimuths of the line differ by 180° plus or minus the angle of convergence of the meridians passing through the points. Where either forward or back azimuths or both are given, they should be so designated.

LENGTHS OF LINES

In land surveying, horizontal distances are generally measured and recorded at the mean elevation of the ground. In some cases a general ground level datum may be used for an entire survey or group of surveys. However, in geodetic surveys, the horizontal distances are adjusted to sea level.

The unit of measurement employed will usually depend upon the particular class of surveys upon which the description is based. The foot unit is used in many metes and bounds surveys and in townsite and city subdivisions; the chain is the linear unit in the public land surveys; and the meter is employed in the cadastral surveys of the Philippine Islands and surveys of similar character. Other units such as the vara and the arpent were employed in the surveys of the Spanish, Mexican and French land grants but slightly different values for these units are found in various localities. Consequently, in using data involving these units, it is necessary to ascertain definite equivalents in terms of the foot or chain units which are to be used in the descriptions. For this purpose, examination should be made of the early surveying records and court decisions.

CONVENTIONAL SYMBOLS AND ABBREVIATIONS

The conventional symbols for degrees (°), minutes (′), and seconds (″) of arc should usually be employed in giving the direction of lines.

The abbreviations for the units most frequently used are:

Chains(s) ..... ch., chs.
Link(s) ..... lk., lks.
Foot (feet) ..... ft.

SEQUENCE AND CLOSURE

The bearing and distances of the courses connecting the turning points or corners of a tract are usually given in regular order around the perimeter thereof. Each course is written on a separate line and if any corner or course is coincident with a corner or course of another tract, notation should be made of this fact. The final course should note the return to the place or point of beginning.

An exception to the foregoing is found in the description of a tract of specified width on each side of a definitely described center line such as a right of way. In such a case the terminal point as well as the beginning point should be fully identified.

POINT OF BEGINNING

The location of a tract of land may be defined by stating its position in relation to established monuments of known position or by stating its geographic position (latitude and longitude). In metes and bounds descriptions this is generally accomplished by a complete description of the point of beginning. The information furnished should be sufficient to enable a competent surveyor to locate and identify the initial point. Frequently a statement regarding nearby topographic or cultural features or objects is of great value. The general location (state, county, etc.) is usually given in the first part of the land order or proclamation and need not be repeated in the description.

If the point of beginning is an established corner of an official survey or is connected by survey to such a corner, the latter should be described by corner and survey number or other appropriate designation without detailed description of the monument itself. The latitude and longitude should be given unless the beginning point is a corner of the public land rectangular surveys or connected by survey to such a corner.

NATURAL AND ARTIFICAL BOUNDARIES

Occasionally the boundaries of a tract are defined entirely or in part by natural monuments, such as streams, lakes, divides, or straight lines connecting prominent features of topography. In such cases it is essential that each boundary be described so definitely and specifically that there is no uncertainty as to its identification.

In the case of a stream or river, the middle of the channel or one bank is usually specified. Facing downstream, the bank on the left hand is termed the left bank and that on the right hand the right bank. Where lakes, large rivers, or tidal waters are involved, the intended elevation or stage of water should be specified, such as low-water mark, mean high-water mark, or mean high tide.

Similarly, in referring to a natural monument such as a divide or peak, or to such permanent artificial monuments as highways, railroads, ditches, the specific line or point intended to be used should be described with sufficient particularity as to be capable of definite identification on the ground.

In connection with the type of boundaries just referred to, it is important that the agency preparing the land order or proclamation consider not only the technical sufficiency and form of the description but the feasibility and practicability of the boundary from the viewpoint of proper administration. For example, the selection of a boundary described as paralleling a railroad or highway at a distance of five miles therefrom should be avoided as such a line would be difficult to establish and impracticable from an administrative standpoint.

PUBLIC LAND TRACTS BY PERIMETER

The proper form of description for lands within the scope of the public land rectangular surveys is the tabular form discussed in Chapter III. By using the direct nomenclature of that system, the description can be compared with the land status records and other records of the Bureau of Land Management. However, in localities where the public land surveys are largely incomplete and where it is administratively desirable that part of the boundaries follow natural monuments such as rivers or divides, an exception to the above stated rule is sometimes made. In such situations the land in question may be described in whole or in part by specifying its boundaries around the perimeter thereof as following certain township, section, or minor subdivision lines. The unsurveyed areas are subject to adjustment to the subdivisions shown upon the plats of survey after approval.

AREA

A statement of the tract usually follows the description and in most cases is expressed in acres. Where justified by the accuracy of the survey, the value should be carried to the nearest hundredth of an acre. Approximate areas should be indicated as such and given in even acres.

EXAMPLES OF METES AND BOUNDS DESCRIPTIONS

Example No. 1

Beginning at corner No. 1, a hemlock post, 4 in. square, 24 in. above ground, located on the Takotna Highway about 1/4 mile southeasterly from its intersection with the left bank of Kuskokwim River and in approximate latitude 62° 52′ N., longitude 155° 40′ W. Corner No. 2 of U.S. Survey 999 bears N. 26° 59′ W., 327.6 ft.

From corner No. 1, by metes and bounds,

S. 25° 43′ W., 1900 ft., to corner No. 2;
S. 57° 30′ W., 3000 ft., to corner No. 3;
S. 32° 30′ E., 830 ft., to corner No. 4;
N. 57° 30′ E., 4000 ft., to corner No. 5;
N. 25° 43′ E., 1650 ft., to corner No. 6;
N. 34° 17′ W., 550 ft., to corner No. 7;
S. 85° 38′ W., 871.6 ft., to corner No. 1, the place of beginning.

The tract as described contains 121.66 acres.

Example No. 2

Beginning at corner No. 1, on the south shore of Humboldt Harbor, at mean high tide, in latitude 55° 19′12″ N., longitude 160° 31′07″ W., from which U.S. Location Monument No. 1146 bears S. 79° 32′51″ W., 28.44 chs. distant.

From the initial point

South, 13.44 chs. to corner No. 2, identical with corner No. 3, U.S. Survey No. 1400;
N. 67° 41′ E., 15.93 chs. to corner No. 3;
North, 13.44 chs. to corner No. 4 on south shore of Humboldt Harbor at mean high tide;
Thence with meanders of Humboldt Harbor at mean high tide,
S. 70° 26′ W., 2.60 chs.,
S. 0° 15′ W., 1.50 chs.,
S. 59° 31′ W., 1.50 chs.,
S. 73° 02′ W., 5.00 chs.,
S. 75° 22′ W., 2.50 chs.,
S. 77° 39′ W., 3.90 chs. to corner No. 1, the place of beginning. The tract as described contains 18.65 acres.

Example No. 3

Beginning at the northerly corner of Parcel No. 1 on the boundary of Land Court Application 900, the azimuth (measured clockwise from south) and distance to United States Military Reservation Monument No. 67 is 161° 52′, 2,352.64 feet, the coordinates of monument No. 67, referred to Government Triangulation Station "Uka" being 5,263.18 feet north and 10,120.63 feet west.

From the initial point by azimuths and distances,

351° 54′, 1,183.36 feet, along Land Court Application 900 to a point;
161° 46′30″, 334.59 feet, along the new west side of Kamehameha Highway, to a point;
On a curve to the right, with a radius of 1,969.86 feet, long chord azimuth and distance being 166° 39′20″; 335.19 feet, to a point on said highway;
187° 44′08″, 123.07 feet, along the highway to a point;
On a curve to the left along the highway, with a radius of 1,472.50 feet, long chord azimuth and distance being 179° 49′04″, 405.68 feet to the point of beginning.

The tract as shown on map No. dated on file in the office of the Department Engineer, Fort , Territory of Hawaii, contains 1,195 acres.

Example No. 4

Beginning at the confluence of the Chvilnuk and Yukon Rivers in approximate latitude 61° 58′15″ N., longitude 162° 48′20″W.,

Thence northeasterly upstream along the center of Chvilnuk River to its source in the Tundadula Mountains;
Easterly along the summit of the Tundadula Mountains to the source of the Bonasila River;
Southeasterly downstream along the middle of the main channel of the Bonasila River to its junction with the Stuyahok River;
Southerly upstream along the middle of the main channel of the Stuyahok River to a point due west of the source of Mountain Creek;
East to the source of Mountain Creek;
Southerly downstream along the center of Mountain Creek to its junction with Tucker's Slough;
Southerly along the center of Tucker's Slough to its junction with the Yukon River;
Southerly and westerly downstream along the right bank of the main channel of the Yukon River at mean high-water mark to the mouth of the Chvilnuk River and the place of beginning.

The tract as described contains approximately 1,900,000 acres.

Example No. 5

Gila and Salt River Meridian

Beginning at the corner of Secs. 5, 6, 31, and 32, Tps. 17 and 18 S., R. 3 W., on the southern boundary of the Papago Indian Reservation;

Thence south approximately 5 1/2 miles to the International Boundary between the United States and Mexico;

Northwesterly along the International Boundary to intersection with the position for the third meridional section line through unsurveyed T. 17 S., R. 8 W.;

North on the third meridional section line through Tps. 17, 16, 15, and 14 S., R. 8 W., (unsurveyed), to the point for the corner of Secs. 15, 16, 21, and 22;

East on the third latitudinal section line through Tps. 14 S., Rs. 8, 7, 6, and 5 W., (partly unsurveyed), to the corner of Secs. 13, 18, 19, and 24, Tps. 14 S., Rs. 4 and 5 W., on the west boundary of the Papago Indian Reservation;

Southerly along the boundary of the Papago Indian Reservation to the place of beginning.

The area as described contains approximately 330,700 acres, subject to adjustment to lines of public land surveys.

Example No. 6

A right of way 40 ft. wide, the center line of which is described as follows:

Beginning at station No. 1, on the boundary between the United States Military Reservation and Land Court application 1000 (amended), from which the azimuth and distance to United States Military Reservation Monument No. 80 is 182°36′40″, 6.55 ft.

From station No. 1, by azimuths and distances,

109°55′48″, 444.2 ft. to station No. 2;
159°44′10″, 183.8 ft. to station No. 3;
209°07′56″, 208.3 ft. to station No. 4;
139°02′05″, 414.6 ft. to station No. 5;
173°38′45″, 325.5 ft. to station No. 6;
201°43′50″, 505.9 ft. to station No. 7;
156°57′40″, 435.1 ft. to station No. 8;
186°41′20″, 477.9 ft. to station No. 9;
165°16′45″, 345.4 ft. to station No. 10;
187°43′20″, 1092.1 ft. to station R 1, at the southern intersection of the center of the Honolulu-Waialua road with the Military Reservation boundary between monuments No. 79 and No. 80, and being determined by the following azimuths and distances;

To monument No. 79, 351°53′12″, 2179.0 ft.;
To monument No. 80, 171°53′12″, 3930.2 ft.;

The right of way is shown on map No. in the office of the Judge Advocate, Honolulu, State of Hawaii, dated , file No.

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Chapter V

MAPS

MAPS TO BE PUBLISHED

Paragraphs (a) and (b) Part 18, Section 18.10, of the Federal Register Regulations applicable to the preparation of documents required to be filed in the Office of the Director of the Federal Register for publication, provides as follows:

(a) An original drawing, or a clear reproduction, of each map, chart, graph, or other illustration that is found to be a necessary part of a document to be filed and published may be accepted only after submission to the Director of the Federal Register at least 6 working days before the date on which publication is desired.

(b) A clear and legible reproduction of the original illustration, approximately 8 by 10 1/2 inches, shall be included in the original document and each certified copy.

Under some conditions it is essential that a map be incorporated as an integral part of a land order or proclamation, either in place of a written description or in addition thereto. Such a map usually has to be reduced for publication in the Federal Register. The scale and detail should be planned as to be legible when reproduced within the size specified. The reduction in making the printing plate should not exceed one-third, consequently the drawing should have maximum dimensions of 12 × 15.7 inches.

The following requirements should be observed in the preparation of the map: (See Fig. 4 for example)

(a) The title should be identical with that of the land order or proclamation insofar as practicable.

(b) The date should be the same as that of the land order or proclamation.

(c) Two or more parallels and meridians, with the latitude and longitude of each, should be shown where the size of the tract warrants; otherwise the latitude and longitude of one point and an orientation arrow should be shown.

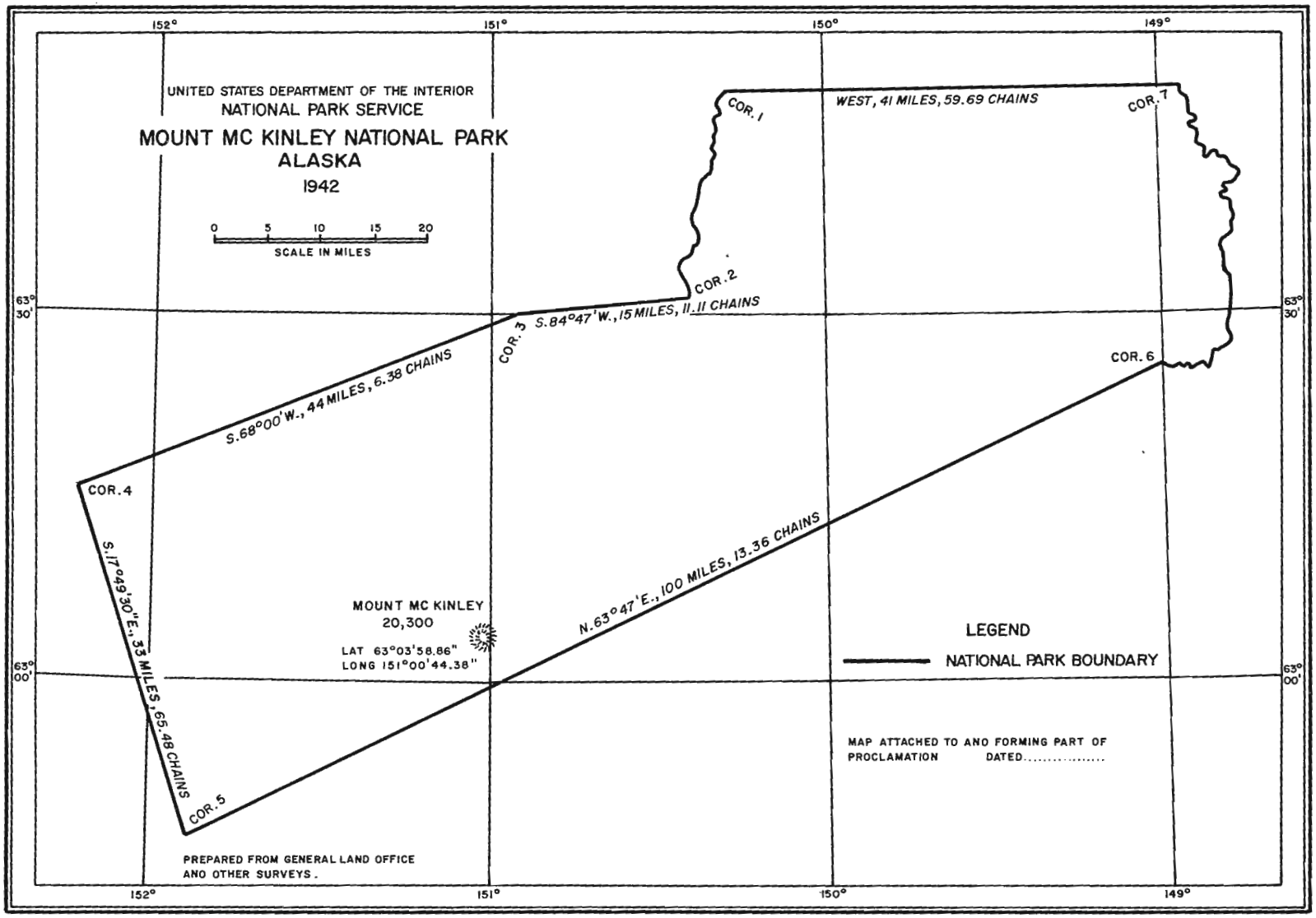
(d) The map should carry an appropriate graphic scale.

(e) The lines and lettering should be in black only and legible when reduced for publication.

(f) The name of the originating bureau or agency, list of sources, and a statement that the map is attached to and forms a part of the land order or proclamation should be shown.

The text of the land order or proclamation should include a clause, reading substantially as follows:

* * * the boundaries (or tract) shown upon the map attached hereto and made a part hereof * * * *



EXAMPLE OF MAP TO BE PUBLISHED AS PART OF LAND ORDER OR PROCLAMATION

MAPS FORMING OFFICIAL SUPPLEMENTS

Where the reduction in scale is so great as to impair the legibility of the map, the publication thereof as an integral part of the land order or proclamation should be avoided. In such cases it is preferable to file a full-scale map as an official supplement. The principle that an official plat or map cited in a deed or other document is in fact a part of such document as much so as if incorporated in it, has already been referred to in Chapter I.

This principle may be utilized under the conditions just referred to by the originating bureau or agency. A properly identified map supplement, bearing the certificate of an officer of the Bureau or agency, may be placed of record in the files thereof.

A file of maps which serve as official supplements to land orders or proclamations should comply with the following requirements:

1. The maps should be adequately indexed, classified, and described.
2. They should be available for inspection and consultation by interested persons.
3. Copies of the maps should be available for sale to the public at uniform listed prices.

Full-scale copies of these maps may be folded and attached to printed copies of land orders and proclamations for administrative use or for sale at cost to interested persons.

Where official supplements are used, the text of the land order or proclamation should include a statement reading substantially as follows:

The boundaries (or tract) described (or referred to) are shown upon _____ _____ (bureau or agency) map entitled _____, dated _____, filed in _____ (place of filing), supplementing this land order (or proclamation).

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Chapter VI

DESCRIPTION BY COORDINATES

The location of a point on the surface of the earth may be accurately described by expressing its position on any well established system of coordinates.

Two general classes of coordinates are available for such use in the United States: Geographical positions (latitudes and longitudes), and plane-coordinate (x and y) positions which are derived from and are dependent upon geographic positions.

GEOGRAPHIC POSITIONS

The United States is covered by a network of triangulation and traverse, which determines the latitudes and longitudes of thousands of marked points, based on a standard geodetic datum known as the North American datum of 1927.

Any survey which is satisfactorily connected with at least two stations, whose positions are known on the North American datum of 1927, may be computed and recorded on that datum.

As this same condition pertains to earliest datums, now superseded by the datum of 1927, it is essential that all computations and recorded values on a geodetic datum be accompanied by a legend identifying the datum used. There is nothing in the form of a geographic position itself to identify it as being on a certain geodetic datum, or, for that matter, as an independent astronomical position.

The use of astronomical methods in determining a geographic position should be avoided, since each individual astronomical position is subject the certain local influences which prevent its direct and accurate coordination with other points determined by such methods. However, astronomical positions may be used in determining a geodetic datum, which, in turn, serves as a base for purposes of computation and record.

Where a boundary is defined by expressing the geodetic latitudes and longitudes of its corners, the forward and back azimuths and the lengths of the lines forming the boundary should also be given. These data should be arranged in the tabular form generally adopted for such data by the various Federal survey bureaus. The descriptions of the station and corner sites, and of their monuments and marks should follow the table of positions, and be in short paragraphs arranged in the same sequence as the positions. The example is taken from the report of the International Boundary Commission, United States and Canada, Northwesternmost Point of Lake of the Woods to Lake Superior.

STATE PLANE COORDINATE SYSTEMS

For each State, certain territories, and the Commonwealth of Puerto Rico, the United States National Geodetic Survey has devised a system of plane-rectangular coordinates for the purpose of defining and stating the positions or locations of established monuments and other points with reference to a point of origin. Each such State system comprises one or more zones, each zone having its own plane-rectangular map projection, called a grid, derived from and mathematically dependent upon the North American datum of 1927, which is the standard geodetic datum for the horizontal control survey of the United States. Each grid is defined by naming the spherical map projection on which it is based, stating the geographic position of its origin, and giving its scale relationship to the geodetic datum.

Where the survey of a tract of land has been connected by an acceptable survey to two monuments whose coordinates on a State system are known, the coordinates on the State system of all corners of the tract can be computed from the grid azimuths and lengths of the boundary lines by the usual methods of latitudes and departures.

Where a boundary is described by stating the plane coordinates of its corners on a State system, appropriate reference to the system used must be incorporated in the description. In a State whose plane coordinate system has been approved by act of legislature, the official title of the State system should appear in the description, and the statute cited. Example: "Maryland Coordinate System (chapter 628, Laws of Maryland, 1939)."

Where a description having the form of metes and bounds is supplemented by the addition of the plane coordinates of the land corners on a State grid, it is important that the descriptions show whether the metes and bounds are bearings and distances on the ground, as taken from the grant, survey, or deed records, or grid azimuths and lengths of lines, based upon the State plane coordinate system.

EXAMPLES OF GEOGRAPHICAL AND PLANE COORDINATE POSITIONS

Example No. 1

Geographic Positions

Station	Latitude Longitude	Azimuth	Back Azimuth	To Station	Distance (meters)
	° ′ ″	° ′ ″	° ′ ″		
Garden	49 11 09.213	13 27 30.55	193 23 59.92	Miller	24,358.21
	94 52 46.906	78 12 34.23	258 01 05.64	Stoney	18,839.79
Big	49 04 50.694	55 16 09.49	235 05 28.34	Miller	21,013.87
	94 43 16.479	104 44 31.37	284 25 52.06	Stoney	31,022.93
		135 22 46.03	315 15 34.65	Garden	16,445.40

GARDEN (Minnesota, Lake of the Woods County; J.J. McArthur, 1913;1917). On Lake of the Woods, near the middle of the lake, on Garden Island. The station is about one-third mile from the northwest end of the island and is nearer the north shore than the south shore.

Station mark: A bronze disk set in a concrete block.

BIG (Ontario, Kenora District; C.H. Sinclair, 1913;1917). On Lake of the Woods, on the southwest point of Big Island. The station is on a bare rock about 3 1/2 meters above the lake level.

Station mark: A bronze disk set in the solid rock.

Example No. 2

Plane Coordinate Positions

A tract of land in Cherokee County, State of North Carolina, described as follows:

Beginning at a concrete monument with bronze tablet marked 472-7 in the Corporation Line of the City of the coordinates of which referred to the North Carolina Coordinate System, are N. 1,470,588 and E. 416, 239; Zone (name or No., if applicable)

From the initial corner,

N. 5°33′ W., 1304 ft., to a TVA monument;

S. 89°19′ E., 2664 ft., to a TVA monument;

S. 6°00′ E., 1311 ft., to a TVA monument;

N. 89°11′ W., 2675 ft., to the point of beginning.

The tract as described contains 79.6 acres.

The position of monuments and direction of lines are referred to the North Carolina Coordinate System.

If a state has more than one zone the zone number or zone name must be given.

GPO 853-174